BANGLADESH NATIONAL FREQUENCY ALLOCATION PLAN IN THE FREQUENCY RANGE 9 kHz to 275 GHz

1. INTRODUCTION

The radio frequency spectrum is a finite national resource; it is therefore highly desirable that the spectrum resource is utilised in an efficient and effective manner. The National Frequency Allocation Plan (NFAP) is a key to spectrum resource management; it identifies the distribution of spectrum between stake holders, government and non government, as well as providing an indication of the manner in which the radio frequency spectrum is utilised in Bangladesh.

In addition to honouring international agreements, the NFAP will reflect national policy on the use of the radio spectrum (in support of the broader objectives for the telecommunications sector) and will be the result of a planned process. The Bangladesh Telecommunications Regulatory Commission (BTRC) in consultation with the members of the Spectrum Management Committee (SMC), have produced a NFAP for Bangladesh, which can be found in subsequent pages.

The extent to which the full benefits of the radio spectrum are realised depends on the actual use that is made of it and how efficiently it is managed. The primary objectives to be achieved with the radio spectrum include the following:

- To allow the development of new services to meet customer and governmental demand for radio services,
- To manage the radio spectrum within Bangladesh taking account of governmental requirements and the needs of the various commercial sectors,
- To harmonise spectrum use with international developments (ITU, APT),
- To enable liberalisation of, and competition for, telecommunications (including radiocommunications) services and equipment,
- To enable the realisation of public policy objectives on safety (including emergency services), cultural (including broadcasting) and social issues,
- To stimulate technological innovation and competitiveness,
- To support economic growth, create employment and to promote general welfare,
- To support national security and governmental applications.

The use of radio frequencies for equipment and networks which are not classified as radiocommunications is not covered in the NFAP but will be addressed in future Electro Magnetic Compatability (EMC) regulations. In general apparatus, equipment and networks using or generating radio frequency emissions for applications which are not considered to be radiocommunications, for example but not limited to, information technology apparatus and equipment, large machines such as lifts (elevators) and cable television as well as other wired electrical and electronic networks, shall be designed, constructed, manufactured, installed and maintained in accordance with good engineering practice and shall:

1. Not radiate electromagnetic emissions at such a level that causes harmful and sustained interference to radiocommunications services operating in accordance with the NFAP and

2. Operate as intended in the presence of electromagnetic fields arising from any radiocommunications station licensed by BTRC in accordance with the NFAP and other legal and regulatory provisions.

Where problems or disputes arise and until EMC regulations are in force, a demonstration of conformity, by the owner of the non-radiocommunications equipment in question, with the EMC or 'non-intentional radiator' regulatory requirements in force in a state or country acceptable to BTRC may be required. BTRC may also require other remedial action by the owner of non-radiocommunications apparatus or equipment causing harmful and sustained interference to radiocommunications services.

2. NFAP - DETAILS

The NFAP is based on current and expected spectrum requirements in Bangladesh in the foreseeable future. Where a longer term implementation is expected, this is mentioned in the remarks column. It is expected that the NFAP will be implemented in part or in whole, as soon as is practicably possible.

It is expected that the NFAP will be used as a source document by importers, manufacturers, and users of radiocommunications equipment as well as by foreign administrations and regional telecommunication organizations.

The NFAP will be reviewed periodically and BTRC will, in consultation with SMC members review and revise as appropriate, the NFAP after an International Telecommunication Union (ITU) World Radiocommunication Conference (WRC) or subsequent to any frequency harmonisation initiative of the Asia Pacific Telecommunity (APT).

A revision to the NFAP may also result from national developments, for example:

- Decisions to adopt new technologies by the Government,
- Requests to update technology by incumbent users,
- Changing demands for different radio-based applications,
- Requirements arising from service based national consultative committees.

The activities of other United Nations specialized agencies are also relevant, in particular the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO). Since radio frequencies do not respect national borders it is also necessary to take account of spectrum usage in neighbouring countries.

3. BASIS FOR THE TABLE

The first NFAP has been developed in a project initiated by the BTRC under a World Bank assisted contract, BTRC 4-3, in September 2004 to assist with the development of spectrum management activities in Bangladesh. In this regard InterConnect Communications Limited (InterConnect) has been commissioned to produce a national frequency allocation plan (NFAP) and a final report and NFAP was published in 2005[1]. The structure of the NFAP was decided subsequent to consulting with the key officials responsible for spectrum management in Bangladesh. It was chosen from a design already in use, its 'easy to understand' approach and its ability to be published on the World Wide Web as an HTML file with minimal problems, were key factors in the choice of layout.

[1] Bangladesh, Spectrum Management Consultancy (BTRC-4.3), Final Report, 22 April 2005, Interconnect Communications.

Helios Limited has been commissioned by the BTRC to undertake a similar World Bank assisted project BTRC Package 4.6 in September 2009 to review the existing National Frequency Allocation Plan (NFAP) and propose any necessary revisions. The project will also review the existing spectrum pricing policy and recommend a new pricing policy for spectrum allocation in Bangladesh.

The main source of documentation used in the revision of the first version of the NFAP was material available within the Spectrum Management Department of the BTRC, the ITU Radio Regulations and the Final Acts of the ITU World Radiocommunication Conference in 2007 (WRC-07).

The NATO (North Atlantic Treaty Organization) Joint Civil/Military Frequency Agreement (NJFA) was also used as a reference in helping to determine typical bands used for defence systems, which in turn would likely be of similar size and capacity to those used in other countries. The use of harmonised military bands should in addition provide a common military frequency resource to facilitate exercises and Peace Keeping Operations (PKO) with UN forces and include the core frequency assets for day-to-day training, exercise, combat readiness and deployment.

4. CONSTRUCTION OF THE TABLE

The NFAP comprises five individual columns:

Column 1: Frequency Band

Indicates the frequency band referenced in that row of the NFAP

Column 2: RR Region 3 allocations and relevant footnotes

This column contains details of the allocations to radiocommunication services pertaining to the frequency band in question within the ITU Radio Regulations (RR) for Region 3, the geographical (ITU) region in which Bangladesh is located. Included are:

- Current RR Article 5 allocations which correspond to Region 3 and
- Current RR Article 5 footnotes relevant to Bangladesh in particular which are underlined.

See also Annex 3 for details of the RR Article 5 footnotes mentioned in Column 2 which are relevant to Bangladesh.

Column 3: The Bangladesh National Frequency Allocations

For each frequency band:

- National allocations to radiocommunication services in Bangladesh.
- RR Article 5 footnotes affecting Bangladesh which are underlined.
- Bangladesh national footnotes relevant to the frequency band in question e.g. BGD1.

See also Annex 2 for details of the Bangladesh National footnotes mentioned in Column 3.

Column 4: Main Use

This column includes where appropriate, in each frequency band and for the services allocated in the NFAP the major user or major application in Bangladesh. However mention of specific utilisations within a specific radiocommunications service does not preclude the use of other services mentioned in the NFAP i.e. Column 3. Throughout this document reference is made to a category for the NFAP which will indicate that a band is allocated within Bangladesh for governmental use. As there are many state, or semi-state organisations within Bangladesh some clarification is necessary. Governmental use is therefore intended to imply usage by organisations that are unlikely now or in the future to be in the private or commercial sector in Bangladesh e.g. the armed forces (army, navy and air-force), the border security body – Bangladesh Rifles (BDR) and governmental security services; civil police requirements have also been included in the governmental category. All other governmental applications including civil aviation and the merchant navy are considered to be in the civil sector.

The Bangladesh Telecommunications Act, 2001 in Chapter IV, section 31 clearly places the overall responsibility for spectrum management on BTRC. Where limited delegated responsibility for detailed frequency management in certain frequency bands has been transferred to other state bodies, BTRC shall continue to ensure that these frequency bands are utilised in an efficient and effective manner through regular review. Furthermore, BTRC shall ensure that all obligations on Bangladesh arising form the Constitution, Convention and Radio Regulations of the International Telecommunication Union are fully respected.

Column 5: Notes

In this column details maybe provided of frequency plans and channel arrangements utilised in Bangladesh, as well as any pairing arrangements between bands. Reference is also made to ITU or other regulatory texts, where the contents have been adopted in Bangladesh. In addition other relevant information may also be included in this Column.

Column 1 therefore defines the frequency bands referenced in Column 3, which reflect the national allocated services proposed for Bangladesh. This is logical since normally the NFAP will be consulted for knowledge of a frequency in the first instance.

Column 2 reflects the services allocated in the Column 1 band as determined in the ITU Radio Regulations, a treaty based document. Column 3 indicates the services in a particular band proposed for Bangladesh. In the majority of cases they are the same or a sub-set of the Column 2 ITU designated services. Where they are not, details are generally found in a national footnote.

Column 4 is the usage column where the possible uses of a frequency band in Bangladesh can be found. Column 5 provides useful information on the channelling and pairing of frequencies as well as other pertinent references or parameters.

5. PERTINENT ITU DEFINITIONS

The following definitions are reproduced from the ITU Radio Regulations (RR) and are relevant in the context of the NFAP:

5.1 Allocation (of a frequency band): Entry in the Table of Frequency Allocations of a given frequency band for the purpose of its use by one or more terrestrial or space radiocommunication services or the radio astronomy service under specified conditions. This term shall also be applied to the frequency band concerned.

5.2 Allotment (of a radio frequency or radio frequency channel): Entry of a designated frequency channel in an agreed plan, adopted by a competent conference, for use by one or more administrations for a terrestrial or space radiocommunication service in one or more identified countries or geographical areas and under specified conditions.

5.3 Assignment (of a radio frequency or radio frequency channel): Authorisation given by an administration for a radio station to use a radio frequency or radio frequency channel under specified conditions.

5.4 Region 1: Region 1 includes the area limited on the east by line A (lines A, B and C are defined below) and on the west by line B, excluding any of the territory of the Islamic Republic of Iran which lies between these limits. It also includes the whole of the territory of Armenia, Azerbaijan, Russian Federation, Georgia, Kazakstan, Mongolia, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan, Turkey and Ukraine and the area to the north of Russian Federation which lies between lines A and C.

5.5 Region 2: Region 2 includes the area limited on the east by line B and on the west by line C.

5.6 Region 3: Region 3 includes the area limited on the east by line C and on the west by line A, except any of the territory of Armenia, Azerbaijan, Russian Federation, Georgia, Kazakstan, Mongolia, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan, Turkey and Ukraine and the area to the north of Russian Federation. It also includes that part of the territory of the Islamic Republic of Iran lying outside of those limits.

5.7 Line A: Line A extends from the North Pole along meridian 40° East of Greenwich to parallel 40° North; thence by great circle arc to the intersection of meridian 60° East and the Tropic of Cancer; thence along the meridian 60° East to the South Pole.

5.8 Line B: Line B extends from the North Pole along meridian 10° West of Greenwich to its intersection with parallel 72° North; thence by great circle arc to the intersection of meridian 50° West and parallel 40° North; thence by great circle arc to the intersection of meridian 20° West and parallel 10° South; thence along meridian 20° West to the South Pole.

5.9 Line C: Line C extends from the North Pole by great circle arc to the intersection of parallel 65° 30' North with the international boundary in Bering Strait; thence by great circle arc to the intersection of meridian 165° East of Greenwich and parallel 50° North; thence by great circle arc to the intersection of meridian 170° West and parallel 10° North; thence along parallel 10° North to its intersection with meridian 120° West; thence along meridian 120° West to the South Pole.

5.10 Primary Services: Radiocommunication services detailed in columns 2 and 3 of the NFAP which are in upper case letters (e.g. MOBILE) have primary status, the highest category of 'access' to radio frequencies;

5.11 Secondary Services: Radiocommunication detailed in columns 2 and 3 of the NFAP which are in lower case letters (e.g. Mobile) have secondary status;

5.11.1 Stations of a secondary service:

- shall not cause harmful interference to stations of primary services to which frequencies are already assigned or to which frequencies may be assigned at a later date

- cannot claim protection from harmful interference from stations of a primary service to which frequencies are already assigned or may be assigned at a later date
- can claim protection, however, from harmful interference from stations of the same or other secondary service(s) to which frequencies may be assigned at a later date

5.11.2 When more than one service is listed as having the same status, the order of their listing does not indicate any relative priority among the listed services.

6. ICNIRP GUIDELINES FOR LIMITING EXPOSURE TO TIME-VARYING ELECTROMAGNETIC FIELDS

The International Commission on Non-Ionizing Radiation Protection (ICNIRP) is an independent scientific organization that was established in 1992. The functions of the Commission are to investigate the hazards that may be associated with the different forms of non-ionizing radiation (NIR), develop international guidelines on NIR exposure limits that are given in the Table 1 below, and deal with all aspects of NIR protection.

ICNIRP was established to advance non-ionizing radiation protection for the benefit of people and the environment. It develops international guidelines on limits of exposure to non-ionizing radiations which are independent and science based; provides science based guidance and recommendations on protection from non-ionizing radiation exposure; establishes principles of non-ionizing radiation protection for formulating international and national protection programs.

ICNIRP is a non-governmental organization in non-ionizing radiation in formal relations with the World Health Organization (WHO) and the International Labour Office (ILO). It maintains a close liaison and working relationship with all international bodies engaged in the field of non-ionizing radiation protection, and interacts with radiation protection professionals worldwide through its close collaboration with the International Radiation Protection Association (IRPA) and its national societies.

The electromagnetic environment consists of natural radiation and man-made electromagnetic fields that are produced either intentionally or as by-products of the use of electrical devices and systems.

The natural electromagnetic environment originates from terrestrial and extraterrestrial sources and this natural background is orders of magnitude below local field levels produced by man-made RF-sources. The everyday use of devices and systems emitting radio frequency (RF) electromagnetic fields is continuously increasing. Sources generating high levels of electromagnetic fields are typically found in medical applications and at certain workplaces. Medical devices used for magnetic resonance imaging, diathermy, hyperthermia, various kinds of RF ablation, surgery, and diagnoses may cause high levels of electromagnetic fields at the patients position or locally inside the patient's body. In addition, some of these medical applications may produce high fields at certain workspaces.

For broadcasting high RF power is generally required to maximize the area of coverage. Close to the antennas electric field strengths can reach several hundred volts per meter. Even higher values can be found close to occupational sources used for processing of various materials by heating and sometimes by formation of plasma discharge in the material. In many such applications RF-safety problems arise because RF- power is high and it may be difficult to enclose the field-generating electrodes and processing space inside a good electromagnetic shield. Sources used by the general public e.g. for wireless communication, data transmission or food processing generate comparably much lower

fields at the position of the usér. But this may also depend on the behavior of the user especially concerning the distance to the source.

Cellular mobile communication networks cause on average low levels of electromagnetic fields in areas accessible to the general public. Handsets and cell phones, however, might cause significantly higher peak levels of exposure during use.

Electronic article surveillance (EAS) systems and radio frequency identification devices (RFID) operate at many different frequencies within the RF band. Inside some EAS gates electromagnetic fields could get close to the existing exposure limits. In general these systems cause only low fields in the environment.

Radars produce high power main beams only a few degrees wide and usually not accessible during operation. In addition radar antennas typically rotate and signals are pulsed, leading to a reduction in average exposure.

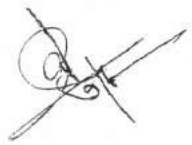
Table 1: Reference levels for general public exposure to time-varying electric and magnetic fields (unperturbed rms values)

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (μT)	Equivalent plane wave power density *Seq* (W/m^2)
9 – 150 kHz	87	5	6.25	—
0.15 – 1 MHz	87	$0.73 / f$	$0.92 / f$	—
1 – 10 MHz	$87 / f^{1/2}$	$0.73 / f$	$0.92 / f$	—
10 – 400 MHz	28	0.073	0.092	2
400 – 2000 MHz	$1.375 f^{1/2}$	$0.0037 f^{1/2}$	$0.0046 f^{1/2}$	$f / 200$
2 – 300 GHz	61	0.16	0.20	10

Notes:

1. f is the frequency as indicated in the frequency range column.
2. Provided that basic restrictions are met and adverse indirect effects can be excluded, field strength values can be exceeded.
3. For frequencies between 100 kHz and 10 GHz, *Seq*, E^2, H^2, and B^2 are to averaged over any 6-minute period.
4. For frequencies exceeding 10 GHz, *Seq*, E^2, H^2, and B^2 are to be averaged over any $68/f^{1.05}$ - minute period (f in GHz).

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
9-14 kHz	RADIONAVIGATION	RADIONAVIGATION	SRD ISM Ultra Low Power Active Medical Implants	
14-19.95	FIXED MARITIME MOBILE 5.57 5.56	FIXED MARITIME MOBILE 5.57 5.56	SRD Maritime applications Ultra Low Power Active Medical Implants	
19.95-20.05	STANDARD FREQUENCY AND TIME SIGNAL (20kHz)	STANDARD FREQUENCY AND TIME SIGNAL (20kHz)		
20.05-70	FIXED MARITIME MOBILE 5.57 5.56	FIXED MARITIME MOBILE 5.57 5.56	SRD Maritime applications Ultra Low Power Active Medical Implants	
70-72	RADIONAVIGATION Fixed Maritime Mobile 5.59 5.60	RADIONAVIGATION FIXED MARITIME MOBILE 5.59 5.60	SRD Ultra Low Power Active Medical Implants	
72-84	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60	SRD Maritime applications Ultra Low Power Active Medical Implants	
84-86	RADIONAVIGATION 5.60 Fixed Maritime Mobile 5.59	RADIONAVIGATION 5.60 FIXED MARITIME MOBILE 5.59	SRD Ultra Low Power Active Medical Implants	
86-90	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60	SRD Maritime applications Ultra Low Power Active Medical Implants	
90-110	RADIONAVIGATION 5.62 Fixed 5.64	RADIONAVIGATION 5.62 Fixed 5.64	SRD LORAN-C Ultra Low Power Active Medical Implants	
110-112	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	SRD Maritime applications Ultra Low Power Active Medical Implants	
112-115	RADIONAVIGATION 5.60 Fixed Maritime Mobile 5.64 5.65	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64 5.65	SRD Maritime applications Ultra Low Power Active Medical Implants	
115-117.6	RADIONAVIGATION 5.60 Fixed Maritime mobile 5.64 5.65	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64 5.65	SRD Maritime applications Ultra Low Power Active Medical Implants	
117.6-126	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	SRD Maritime applications Ultra Low Power Active Medical Implants	
126-129	RADIONAVIGATION 5.60 Fixed Maritime Mobile 5.64 5.65	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64 5.65	SRD Maritime applications Ultra Low Power Active Medical Implants	
129-130 kHz	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	SRD Maritime applications Ultra Low Power Active Medical Implants	



Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
130-160 kHz	FIXED MARITIME MOBILE RADIONAVIGATION 5.64	FIXED MARITIME MOBILE RADIONAVIGATION Amateur 5.67A BGD3 5.64	SRD Maritime applications Ultra Low Power Active Medical Implants	Amateur applications within the band 135.7-137.8 kHz
160-190	FIXED Aeronautical Radionavigation	FIXED Aeronautical Radionavigation	Ultra Low Power Active Medical Implants	
190-200	AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	Aeronautical Radio Beacons Ultra Low Power Active Medical Implants	
200-285	AERONAUTICAL RADIONAVIGATION Aeronautical Mobile	AERONAUTICAL RADIONAVIGATION Aeronautical Mobile	Aeronautical Radio Beacons Ultra Low Power Active Medical Implants	
285-315	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73	Aeronautical Radio Beacons Maritime Radio Beacons Ultra Low Power Active Medical Implants	DGPS 295 kHz, 300 kHz and 305 kHz
315-325	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73	Aeronautical Radio Beacons Maritime Radio Beacons	
325-405	AERONAUTICAL RADIONAVIGATION Aeronautical Mobile	AERONAUTICAL RADIONAVIGATION Aeronautical Mobile	Aeronautical Radio Beacons	
405-415	RADIONAVIGATION 5.76 Aeronautical Mobile	RADIONAVIGATION 5.76 Aeronautical Mobile	Aeronautical Radio Beacons Maritime Radio Beacons	
415-495	MARITIME MOBILE 5.79 5.79A Aeronautical Radionavigation 5.82	MARITIME MOBILE 5.79 5.79A Aeronautical Radionavigation 5.82	Maritime applications Navtex transmissions national language 490kHz Receiver IF 455-457 kHz GMDSS	
495-505	MOBILE 5.82A 5.82B	MOBILE 5.82A 5.82B	Radiotelegraphy	
505-526.5	MARITIME MOBILE 5.79 5.79A 5.84 AERONAUTICAL RADIONAVIGATION Aeronautical Mobile Land Mobile	MARITIME MOBILE 5.79 5.79A 5.84 AERONAUTICAL RADIONAVIGATION Aeronautical Mobile Land Mobile	Aeronautical Radio Beacons Maritime applications Navtex transmissions International 518 kHz	
526.5-535	BROADCASTING Mobile	BROADCASTING Mobile	Broadcasting	
535-1606.5	BROADCASTING	BROADCASTING	Broadcasting	
1606.5-1800	FIXED MOBILE RADIOLOCATION RADIONAVIGATION	FIXED MOBILE RADIOLOCATION RADIONAVIGATION	Maritime applications Radiodetermination applications	
1800-2000	AMATEUR FIXED MOBILE except aeronautical mobile RADIONAVIGATION Radiolocation 5.97	AMATEUR FIXED MOBILE except aeronautical mobile RADIONAVIGATION Radiolocation 5.97	Radiodetermination applications Maritime applications Amateur applications	
2000-2046	FIXED MOBILE	FIXED MOBILE	Maritime applications Governmental fixed and land mobile applications	
2046-2065 kHz	FIXED MOBILE	FIXED MOBILE BGD35.1	Maritime applications Civil fixed and land mobile applications	

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
2065-2107 kHz	MARITIME MOBILE 5.106	MARITIME MOBILE Fixed 5.106	Maritime applications Governmental fixed NIB to maritime services	
2107-2145	FIXED MOBILE	FIXED MOBILE	Maritime applications Governmental fixed and land mobile applications	
2145 - 2170	FIXED MOBILE	FIXED MOBILE BGD35.1	Maritime applications Civil fixed and land mobile applications	
2170-2173.5	MARITIME MOBILE	MARITIME MOBILE	Maritime applications	
2173.5-2190.5	MOBILE (distress and calling) 5.108 5.109 5.110 5.111	MOBILE (distress and calling) 5.108 5.109 5.110 5.111	DSC distress and calling 2187.5 kHz Maritime GMDSS 2182 kHz distress and calling Telex distress 2174.5 kHz	
2190.5-2194	MARITIME MOBILE	MARITIME MOBILE	Maritime applications	
2194-2274	FIXED MOBILE	FIXED MOBILE	Maritime applications Governmental fixed and land mobile applications	
2274-2300	FIXED MOBILE	FIXED MOBILE BGD35.1	Maritime applications Civil fixed and land mobile applications	
2300-2495	FIXED MOBILE BROADCASTING 5.113	FIXED MOBILE 5.113 BGD35.1	Maritime applications Civil fixed and land mobile applications	
2495-2501	STANDARD FREQUENCY AND TIME SIGNAL	STANDARD FREQUENCY AND TIME SIGNAL		
2501-2502	STANDARD FREQUENCY AND TIME SIGNAL Space Research	STANDARD FREQUENCY AND TIME SIGNAL Space Research		
2502-2505	STANDARD FREQUENCY AND TIME SIGNAL	STANDARD FREQUENCY AND TIME SIGNAL		
2505-2746	FIXED MOBILE	FIXED MOBILE	Maritime applications Governmental fixed and land mobile applications	
2746-2850	FIXED MOBILE	FIXED MOBILE BGD35.1	Maritime applications Civil fixed and land mobile applications	
2850-3025	AERONAUTICAL MOBILE (R) 5.111 5.115	AERONAUTICAL MOBILE (R) 5.111 5.115	Aeronautical Mobile (R) applications Telephony distress traffic and calling by rescue centres 3023kHz	RR Appendix 27 Allotment Plan
3025-3155	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical Mobile (OR) applications	RR Appendix 26 Allotment Plan
3155-3200	FIXED MOBILE except aeronautical mobile (R) 5.116	FIXED MOBILE except aeronautical mobile (R) 5.116	SRD (hearing aid devices) Maritime applications Governmental fixed and land mobile applications	
3200-3230	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116	FIXED MOBILE except aeronautical mobile 5.113 5.116	SRD (hearing aid devices) Maritime applications Governmental fixed and land mobile applications	
3230-3327 kHz	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116	FIXED MOBILE except aeronautical mobile (R) 5.113 5.116	SRD (hearing aid devices) Maritime applications Governmental fixed and land mobile applications	

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
3327-3400 kHz	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116 BGD35.1	SRD (hearing aid devices) Maritime applications Civil fixed and land mobile applications	
3400-3500	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical Mobile (R) applications	RR Appendix 27 Allotment Plan Including HF Data Links
3500-3550	AMATEUR FIXED MOBILE	AMATEUR Fixed Mobile BGD35.1	Amateur applications	Reserved band for Fixed and Mobile Service in BGD
3550-3600	AMATEUR FIXED MOBILE	FIXED MOBILE Amateur BGD1.2	Civil fixed and land mobile applications Amateur applications	
3600-3850	AMATEUR FIXED MOBILE	AMATEUR Fixed Mobile BGD35.1	Amateur applications	Reserved band for Fixed and Mobile Service in BGD
3850-3900	AMATEUR FIXED MOBILE	FIXED MOBILE Amateur BGD1.2	Civil fixed and land mobile applications Amateur applications	
3900-3950	AERONAUTICAL MOBILE BROADCASTING	AERONAUTICAL MOBILE BROADCASTING	Aeronautical mobile applications Broadcasting	
3950-4000	BROADCASTING FIXED 5.126	BROADCASTING FIXED 5.126 BGD1.2	Broadcasting Applications Shared Civil & Governmental fixed applications	Digital systems to be introduced
4000-4063	FIXED MARITIME MOBILE 5.126 5.127	FIXED MARITIME MOBILE 5.126 5.127 BGD1.2	Maritime applications Civil Fixed applications	RR Appendix 17 channelling plan RR Appendix 25 allotment plan
4063-4438	MARITIME MOBILE 5.79A 5.109 5.110 5.130 5.131 5.132 5.128	MARITIME MOBILE 5.79A 5.109 5.110 5.130 5.131 5.132 5.128 BGD1.2	Maritime applications DSC calling 4208, 4208.5, 4209, 4219.5, 4220, 4220.5kHz DSC distress traffic 4207.5 kHz Maritime Safety Information 4210 kHz Meteorological and navigational warnings 4209.5 kHz Telephony distress traffic and calling by rescue centres 4125 kHz Telex distress traffic 4177.5 kHz	RR Appendix 17 channelling plan RR Appendix 25 allotment plan
4438-4587	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	Governmental fixed and land and maritime mobile applications	
4587-4650	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile BGD35.1	Civil fixed and land and maritime mobile applications	
4650-4700	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical Mobile (R) applications	RR Appendix 27 allotment plan Including HF Data Links
4700-4750 kHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical Mobile (OR) applications	RR Appendix 26 allotment plan

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
4750-4850 kHz	FIXED BROADCASTING 5.113 Land Mobile	FIXED BROADCASTING 5.113 Land Mobile BGD1.2	Broadcasting Applications Shared Civil & Governmental fixed and land mobile applications	
4850-4995	FIXED LAND MOBILE BROADCASTING 5.113	FIXED LAND MOBILE BROADCASTING 5.113 BGD1.2	Broadcasting Applications Shared Civil & Governmental fixed and land mobile applications	
4995-5003	STANDARD FREQUENCY AND TIME SIGNAL (5000kHz)	STANDARD FREQUENCY AND TIME SIGNAL (5000kHz)		
5003-5005	STANDARD FREQUENCY AND TIME SIGNAL Space Research	STANDARD FREQUENCY AND TIME SIGNAL Space Research		
5005-5060	BROADCASTING 5.113 FIXED	FIXED Land Mobile	Governmental fixed and land mobile applications	
5060-5193	FIXED Mobile except aeronautical mobile	FIXED Mobile except aeronautical mobile	Governmental fixed and land and maritime mobile applications	
5193-5250	FIXED Mobile except aeronautical mobile	FIXED Mobile except aeronautical mobile BGD35.1	Civil fixed and land and maritime mobile applications	
5250-5310	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile Amateur BGD4 BGD35.1	Civil fixed and land and maritime mobile applications Amateur Applications	Amateur propagation experiments with stations of administrations permitting such activities.
5310-5450	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	Governmental fixed and land and maritime mobile applications	
5450-5480	AERONAUTICAL MOBILE (OR) FIXED LAND MOBILE	AERONAUTICAL MOBILE (OR) FIXED LAND MOBILE	Governmental fixed, land and aeronautical (OR) mobile applications	
5480-5680	AERONAUTICAL MOBILE (R) 5.111 5.115	AERONAUTICAL MOBILE (R) 5.111 5.115	Aeronautical mobile (R) applications Telephony distress traffic and calling by rescue centres 5680kHz	RR Appendix 27 Allotment plan Including HF Data Links
5680-5730 kHz	AERONAUTICAL MOBILE (OR) 5.111 5.115	AERONAUTICAL MOBILE (OR) 5.111 5.115	Aeronautical mobile (OR) applications Telephony distress traffic and calling by rescue centres 5680kHz	RR Appendix 26 Allotment plan

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
5730-5850 kHz	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R	Governmental fixed and mobile applications	
5850-5900	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R) BGD35.1	Civil fixed and mobile applications	
5900-5950	BROADCASTING 5.134 5.136	BROADCASTING Fixed 5.134 5.136 BGD1.2	Broadcasting Shared governmental and civil fixed applications on NIB to broadcasting	WARC92 bands to be implemented 2007 Digital systems to be introduced
5950-6200	BROADCASTING	BROADCASTING	Broadcasting	RR Article 12 planning procedure Digital systems to be introduced
6200-6525	MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137	MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137 BGD1.2	Maritime applications civil & governmental DSC calling 6312.5, 6313, 6313.5, 6331, 6331.5, 6332 kHz Maritime Safety Information 6314 kHz Telephony distress traffic and calling by rescue centres 6215 kHz Telex distress traffic 6268 kHz	RR Appendix 17 channelling plan RR Appendix 25 allotment plan DSC distress traffic 6312 kHz
6525-6685	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical Mobile (R) applications	RR Appendix 27 Allotment plan including HF Data Links
6685-6765	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical Mobile (OR) applications	RR Appendix 26 Allotment plan
6765-6930	FIXED Land Mobile 5.139 5.138 5.138A	FIXED Land Mobile 5.138 5.138A BGD1.1	SRD 6765-6795 kHz ISM applications Governmental fixed and land mobile applications	
6930-7000	FIXED Land Mobile 5.139 5.138 5.138A	FIXED Land Mobile 5.138 5.138A BGD35.1	SRD 6765-6795 kHz ISM applications Civil fixed and land mobile applications	
7000-7100	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	Amateur applications Amateur-satellite applications	
7100-7200	AMATEUR 5.141C	AMATEUR 5.141C BGD5	Amateur applications	
7200-7300	BROADCASTING	BROADCASTING	Broadcasting	
7300-7400 kHz	BROADCASTING 5.134 5.143 5.143A	BROADCASTING 5.134 Fixed Land Mobile 5.143 5.143A BGD1.2	Broadcasting Shared governmental and civil fixed and land mobile applications on NIB to broadcasting	

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
7400-7450 kHz	BROADCASTING 5.143A	BROADCASTING Fixed Land Mobile 5.143A BGD1.2	Broadcasting Shared governmental and civil fixed and land mobile applications on NIB to broadcasting	
7450-7905	FIXED MOBILE except aeronautical mobile (R) 5.143E	FIXED MOBILE except aeronautical mobile (R) 5.143E BGD1.1	SRD 7400-7900 kHz Governmental fixed and mobile applications	
7905-8100	FIXED MOBILE except aeronautical mobile (R) 5.143E 5.144	FIXED MOBILE except aeronautical mobile (R) 5.143E 5.144 BGD35.1	SRD 7905-8100 kHz Civil fixed and mobile applications	
8100-8195	FIXED MARITIME MOBILE	FIXED MARITIME MOBILE BGD1.2	SRD 8100-8800kHz Maritime applications Civil fixed applications	RR Appendix 17 channelling plan
8195-8815	MARITIME MOBILE 5.109 5.110 5.132 5.145 5.111	MARITIME MOBILE 5.109 5.110 5.132 5.145 5.111 BGD1.2	SRD Maritime applications DSC calling 8415, 8415.5, 8416, 8436.5, 8437, 8437.5 kHz DSC distress traffic 8364 and 8414.5 kHz Maritime Safety Information 6416.5 kHz Telephony distress traffic and calling by rescue centres 8291 kHz Telex distress traffic 8376.5 kHz	RR Appendix 17 channelling plan RR Appendix 25 allotment plan Governmental non maritime usage to be transferred prior to 1 September 2010
8815-8965	AERONAUTICAL MOBILE(R)	AERONAUTICAL MOBILE(R)	Aeronautical Mobile (R) applications	RR Appendix 27 allotment plan including HF Data Links
8965-9040	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical Mobile (OR) applications	RR Appendix 26 Allotment Plan
9040-9291	FIXED	FIXED	Governmental fixed applications	
9291-9400	FIXED	FIXED BGD35.1	Civil fixed applications	
9400-9500	BROADCASTING 5.134 5.146	BROADCASTING Fixed Mobile 5.134 5.146 BGD1.2	Broadcasting Shared governmental and civil fixed applications on NIB to broadcasting	WARC92 bands to be implemented 2007 Digital systems to be introduced
9500-9775	BROADCASTING 5.147	BROADCASTING 5.147	Broadcasting	RR Article 12 planning procedure Digital systems to be introduced
9775-9900 kHz	BROADCASTING 5.147	BROADCASTING Fixed 5.147 BGD 1.2	Broadcasting Shared governmental and civil fixed applications on NIB to broadcasting	RR Article 12 planning procedure Digital systems to be introduced

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BCD footnotes	Main use	Notes
9900-9995 kHz	FIXED	FIXED	Governmental fixed applications	
9995-10003	STANDARD FREQUENCY AND TIME SIGNAL (10000kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (10000kHz) 5.111		
10003-10005	STANDARD FREQUENCY AND TIME SIGNAL Space Research 5.111	STANDARD FREQUENCY AND TIME SIGNAL Space Research 5.111		
10005-10100	AERONAUTICAL MOBILE (R) 5.111	AERONAUTICAL MOBILE (R) 5.111	Aeronautical Mobile (R) applications	RR Appendix 27 Allotment Plan Including HF Data Links
10100-10150	Amateur FIXED	Amateur FIXED	Amateur applications Civil fixed applications	
10150-10866	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R) BGD1.1	SRD 10.2-11 MHz Governmental fixed and mobile applications	
10866-11175	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R) BGD35.1	SRD 10.2-11 MHz Civil fixed and mobile applications	
11175-11275	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical Mobile (OR) applications	RR Appendix 26 Allotment Plan
11275-11400	AERONAUTICAL MOBILE(R)	AERONAUTICAL MOBILE(R)	Aeronautical Mobile (R) applications	RR Appendix 27 Allotment Plan Including HF Data Links
11400-11540	FIXED	FIXED	Governmental fixed applications	
11540-11600	FIXED	FIXED BGD35.1	Civil fixed applications	
11600-11650	BROADCASTING 5.134 5.146	BROADCASTING Fixed Mobile 5.134 5.146	Broadcasting Shared governmental and civil fixed applications on NIB to broadcasting	WARC92 bands to be implemented 2007 Digital systems to be introduced
11650-11700	BROADCASTING 5.147	BROADCASTING Fixed 5.147	Broadcasting Shared governmental and civil fixed applications on NIB to broadcasting	RR Article 12 planning procedure Digital systems to be introduced
11700-11975	BROADCASTING	BROADCASTING	Broadcasting	RR Article 12 planning procedure Digital systems to be introduced
11975-12050 kHz	BROADCASTING 5.147	BROADCASTING Fixed 5.147	Broadcasting Shared governmental and civil fixed applications on NIB to broadcasting	RR Article 12 planning procedure Digital systems to be introduced

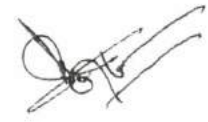
Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
12050-12100 kHz	BROADCASTING 5.134 5.146	BROADCASTING 5.146	Broadcasting	WARC92 bands to be implemented 2007 Digital systems to be introduced
12100-12190	FIXED	FIXED	Governmental fixed applications	
12190-12230	FIXED	FIXED	Civil fixed applications	
12230-13200	MARITIME MOBILE 5.109 5.110 5.132 5.145	MARITIME MOBILE 5.109 5.110 5.132 5.145 BGD1.2	Civil and governmental maritime applications Maritime Safety Information 12579 kHz DSC calling 12577.5, 12578, 12578.5, 12657, 12657.5, 12658 kHz DSC distress traffic 12577 kHz Telephony distress traffic and calling by rescue centres 12290 kHz Telex distress traffic 12520 kHz	
13200-13260	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical Mobile (OR) applications	RR Appendix 26 Allotment Plan
13260-13360	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical Mobile (R) applications	RR Appendix 27 Allotment Plan Including HF Data Links
13360-13410	FIXED RADIO ASTRONOMY 5.149	FIXED RADIO ASTRONOMY 5.149	Radioastronomy Shared governmental and civil fixed applications on NIB to radioastronomy	
13410-13522	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	Governmental fixed and mobile applications	
13522-13570	FIXED Mobile except aeronautical mobile (R) 5.150	FIXED Mobile except aeronautical mobile (R) 5.150	SRD 13553-13567 kHz ISM 13553-13567 kHz Civil fixed and mobile applications	
13570-13600	BROADCASTING 5.134 5.151	BROADCASTING 5.134 5.151 Fixed Mobile except aeronautical mobile (R)	Broadcasting	WARC92 bands to be implemented 2007 Digital systems to be introduced
13600-13800	BROADCASTING	BROADCASTING	Broadcasting	RR Article 12 planning procedure Digital systems to be introduced
13800-13870 kHz	BROADCASTING 5.134 5.151	BROADCASTING 5.134 5.151 Fixed Mobile except aeronautical mobile (R)	Broadcasting Shared governmental and civil fixed applications on NIB to broadcasting	WARC92 bands to be implemented 2007 Digital systems to be introduced

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
13870-13960 kHz	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	Governmental fixed and mobile applications	
13960-14000	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	Civil fixed and mobile applications	
14000-14250	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	Amateur applications Amateur-Satellite applications	
14250-14350	AMATEUR	AMATEUR	Amateur applications	
14350-14798	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	Governmental fixed and mobile applications	
14798-14990	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	Civil fixed and mobile applications	
14990-15005	STANDARD FREQUENCY AND TIME SIGNAL (15000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (15000 kHz) 5.111		
15005-15010	STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD FREQUENCY AND TIME SIGNAL Space research		
15010-15100	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical Mobile (OR) applications	RR Appendix 26 Allotment Plan
15100-15600	BROADCASTING	BROADCASTING	Broadcasting	RR Article 12 planning procedure Digital systems to be introduced
15600-15800	BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146 Fixed	Broadcasting Shared governmental and civil fixed applications on NIB to broadcasting	WARC92 bands to be implemented 2007 Digital systems to be introduced
15800-16192	FIXED 5.153	FIXED 5.153	Governmental fixed applications	
16192-16360	FIXED	FIXED	Civil fixed applications	
16360-17410 kHz	MARITIME MOBILE 5.109 5.110 5.132 5.145	MARITIME MOBILE 5.109 5.110 5.132 5.145 BGD1.2	Civil and governmental maritime applications Maritime Safety Information 16806.5 kHz DSC calling 16805, 16805.5, 16806, 16903, 16903.5, 16904 kHz DSC distress traffic 16804.5 kHz Telephony distress traffic and calling by rescue centres 16420 kHz Telex distress traffic 16695 kHz	RR Appendix 17 channelling plan RR Appendix 25 allotment plan

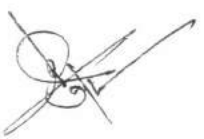
Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
17410-17459 kHz	FIXED	FIXED	Governmental fixed applications	
17459-17480	FIXED	FIXED	Civil fixed applications	
17480-17550	BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146 Fixed	Broadcasting Shared governmental and civil fixed applications on NIB to broadcasting	WARC92 bands to be implemented 2007 Digital systems to be introduced
17550-17900	BROADCASTING	BROADCASTING	Broadcasting	RR Article 12 planning procedure Digital systems to be introduced
17900-17970	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical Mobile (R) applications	RR Appendix 27 Allotment Plan Including HF Data Links
17970-18030	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical Mobile (OR) applications	RR Appendix 26 Allotment Plan
18030-18052	FIXED	FIXED	Governmental fixed applications	
18052-18068	FIXED Space Research	FIXED Space Research	Civil fixed applications	
18068-18168	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	Amateur applications Amateur-satellite applications	
18168-18596	FIXED Mobile except aeronautical mobile	FIXED Mobile except aeronautical mobile	Governmental fixed and mobile applications	
18596-18780	FIXED Mobile except aeronautical mobile	FIXED Mobile except aeronautical mobile	Civil fixed and mobile applications	
18780-18900	MARITIME MOBILE	MARITIME MOBILE	Maritime applications DSC calling 18898.5, 18899, 18899.5 kHz	RR Appendix 17 channelling plan
18900-19020	BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146 Fixed	Broadcasting Shared governmental and civil fixed applications on NIB to broadcasting	WARC92 bands to be implemented 2007 Digital systems to be introduced
19020-19482	FIXED	FIXED	Governmental fixed applications	
19482-19680	FIXED	FIXED BGD35.1	Civil fixed applications	
19680-19800	MARITIME MOBILE 5.132	MARITIME MOBILE 5.132	DSC calling 19703.5, 19704, 19704.5 kHz Maritime applications Maritime Safety Information 19680.5 kHz	RR Appendix 17 channelling plan RR Appendix 25 allotment plan
19800-19933 kHz	FIXED	FIXED	Governmental fixed applications	

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
19933-19990 kHz	FIXED	FIXED	Civil fixed applications	
19990-19995	STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	Search and rescue applications 19993 kHz (+/-3kHz) concerning manned space vehicles.	
19995-20010	STANDARD FREQUENCY AND TIME SIGNAL (20000kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (20000kHz) 5.111		
20010-20703	FIXED Mobile	FIXED Mobile	Governmental fixed and mobile applications	
20703-21000	FIXED Mobile	FIXED Mobile	Civil fixed and mobile applications	
21000-21450	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	Amateur applications Amateur-Satellite applications	
21450-21850	BROADCASTING	BROADCASTING	Broadcasting	RR Article 12 planning procedure Digital systems to be introduced
21850-21870	FIXED	FIXED	Governmental fixed applications	
21870-21924	FIXED 5.155B	FIXED 5.155B	Civil fixed applications in support of aircraft flight safety	
21924-22000	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical mobile (R) applications	RR Appendix 27 Allotment Plan Including HF Data Links
22000-22855	MARITIME MOBILE (R) 5.132	MARITIME MOBILE (R) 5.132 BGD1.2	Governmental and civil Maritime applications DSC calling 22374.5, 22375, 22375.5, 22444, 22444.5, 22445 kHz. Maritime Safety Information 22376 kHz	RR Appendix 17 channelling plan RR Appendix 25 allotment plan
22855-23000	FIXED	FIXED	Governmental fixed applications	
23000-23097	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	Governmental fixed and mobile applications	
23097-23200	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	Civil fixed and mobile applications	
23200-23350 kHz	AERONAUTICAL MOBILE (OR) FIXED 5.156A	AERONAUTICAL MOBILE (OR) FIXED 5.156A	Aeronautical Mobile (OR) applications	

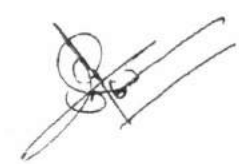
Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
23350-24000 kHz	FIXED Mobile except aeronautical mobile 5.157	FIXED Mobile except aeronautical mobile 5.157	Governmental fixed and mobile applications	
24000-24448	FIXED LAND MOBILE	FIXED LAND MOBILE	Governmental fixed and land mobile applications	
24448-24890	FIXED LAND MOBILE	FIXED LAND MOBILE	Civil fixed and land mobile applications	
24890-24990	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	Amateur applications Amateur-Satellite applications	
24990-25005	STANDARD FREQUENCY AND TIME SIGNAL (25000kHz)	STANDARD FREQUENCY AND TIME SIGNAL (25000kHz)		
25005-25010	STANDARD FREQUENCY AND TIME SIGNAL Space Research	STANDARD FREQUENCY AND TIME SIGNAL Space Research	Space Research	
25010-25052	FIXED Mobile except aeronautical mobile	FIXED Mobile except aeronautical mobile	Governmental fixed and mobile applications	
25052-25070	FIXED Mobile except aeronautical mobile	FIXED Mobile except aeronautical mobile	Civil fixed and mobile applications	
25070-25210	MARITIME MOBILE	MARITIME MOBILE	Maritime applications DSC calling 25208.5, 25209, 25209.5 kHz	RR Appendix17 channelling plan
25210-25448	FIXED Mobile except aeronautical mobile	FIXED Mobile except aeronautical mobile	Governmental fixed and mobile applications	
25448-25550	FIXED Mobile except aeronautical mobile	FIXED Mobile except aeronautical mobile	Civil fixed and mobile applications	
25550-25670	RADIO ASTRONOMY 5.149	RADIO ASTRONOMY 5.149	Radioastronomy	
25670-26100	BROADCASTING	BROADCASTING	Broadcasting	RR Article 12 planning procedure Digital systems to be introduced
26100-26175 kHz	MARITIME MOBILE 5.132	MARITIME MOBILE 5.132 BGD1 2	Civil and governmental maritime applications DSC calling 26121, 26121 5, 26122 kHz. Maritime Safety Information 26100.5 kHz	RR Appendix 17 channelling plan RR Appendix 25 allotment plan



Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
26.175-27.5 MHz	FIXED Mobile except aeronautical mobile 5.150	FIXED Mobile except aeronautical mobile 5.150	CB 26.960-27.410 MHz SRD 26.957-27.283 MHz ISM 26.957-27.283 MHz Model Control SRD 26.995, 27.045, 27.095, 27.145, 27.195 MHz Civil fixed and mobile applications	
27.5-28	FIXED METEOROGICAL AIDS MOBILE	FIXED METEOROGICAL AIDS MOBILE	Civil fixed and mobile applications	
28-29.7	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	Amateur applications Amateur-satellite applications	
29.7 - 30	FIXED MOBILE	MOBILE	Civil systems	
30 – 30.005	FIXED MOBILE	MOBILE BGD2	Governmental systems	
30.005 - 30.01	FIXED MOBILE SPACE OPERATION (satellite identification) SPACE RESEARCH	MOBILE BGD2	Governmental systems	
30.01 – 31.0	FIXED MOBILE	MOBILE BGD2	Governmental systems	The bands 30.3-30.5 MHz and 32.15-32.45 MHz are internationally harmonised military bands
31.0- 32.0			UNDESIGNATED	
32.0 – 33.0			Governmental systems	
33.0 - 34.995			UNDESIGNATED	
34.995–35.225			Model Aircraft	
35.225-37.500			PMR	
37.5 – 38.25	FIXED MOBILE Radio Astronomy 5.149	MOBILE except Aeronautical Mobile Radio Astronomy 5.149	PMR	RA continuum measurements
38.25 - 39.986	FIXED MOBILE	MOBILE	PMR	39.0-39.2 MHz will be permitted for meteor scatter applications
39.986 - 40.02	FIXED MOBILE Space Research	MOBILE Space Research	PMR	
40.02 - 40.66 MHz	FIXED MOBILE	MOBILE	PMR	



Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
40.66-40.7 MHz	FIXED MOBILE 5.150	MOBILE 5.150	ISM Non specific SRD Model Control	
40.7-40.98	FIXED MOBILE	MOBILE	PMR	
40.980 - 41.015	FIXED MOBILE Space Research	MOBILE Space Research	PMR	
41.015 - 44.0	FIXED MOBILE	MOBILE BGD2	Governmental systems	41 – 44 MHz is an internationally harmonised military band.
44.0 - 46.4	FIXED MOBILE	MOBILE BGD2, BGD6	Governmental systems Military Harmonised Band	44 – 47 MHz is an internationally harmonised military band. Geographical sharing with wind profiler radars in the range 46-68 MHz
46.4 – 47.0	FIXED MOBILE	MOBILE except Aeronautical Mobile BGD2, BGD6	Governmental systems Military Harmonised Band	44 – 47 MHz is an internationally harmonised military band. Geographical sharing with wind profiler radars in the range 46-68 MHz
47.0 – 48.0	FIXED MOBILE BROADCASTING	MOBILE BGD6	PMR Onsite paging 47 – 47.25 MHz Long range rural CTs 47.25 – 47.5 MHz	47.25 – 47.5 MHz paired with 76.25 – 76.5 MHz Not for use within 15 km of Metropolitan areas or within 10 km of District areas. Geographical sharing with wind profiler radars in the range 46-68 MHz
48.0 – 48.5	FIXED MOBILE BROADCASTING	MOBILE BGD6	PMR	Geographical sharing with wind profiler radars in the range 46-68 MHz
48.5 – 50.0	FIXED MOBILE BROADCASTING	MOBILE BGD6	PMR Short Range Devices	Geographical sharing with wind profiler radars in the range 46-68 MHz
50.0 - 54.0	AMATEUR 5.167	AMATEUR 5.167 BGD6	Amateur applications	Geographical sharing with wind profiler radars in the range 46-68 MHz
54.0 – 57.5	FIXED MOBILE BROADCASTING	MOBILE BGD1.1 BGD6	Governmental systems	MTx, paired with 61-64.5 MHz Geographical sharing with wind profiler radars in the range 46-68 MHz
57.5 – 61.0 MHz		MOBILE BGD1.2 BGD6	PMR SAB	MTx, paired with 64.5-68 MHz Geographical sharing with wind profiler radars in the range 46-68 MHz



Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
61.0 – 64.5 MHz	BROADCASTING LAND MOBILE	MOBILE BGD1.1 BGD6	Governmental systems	BTx, paired with 54- 57.5 MHz Geographical sharing with wind profiler radars in the range 46-68 MHz
64.5 – 68.0		MOBILE BGD1.2 BGD6	PMR	BTx, paired with 57.5 - 61 MHz Geographical sharing with wind profiler radars in the range 46-68 MHz
68.0 – 74.8	FIXED MOBILE except aeronautical mobile 5.149	MOBILE 5.149	Governmental systems	
74.8 - 75.2	AERONAUTICAL RADIONAVIGATION 5.180	AERONAUTICAL RADIONAVIGATION 5.180	Marker Beacons	
75.2 – 76.25	FIXED MOBILE	MOBILE	Governmental systems	
76.25 – 76.5	FIXED MOBILE	MOBILE	Long range rural cordless telephones PMR	Not for use within 15 km of Metropolitan areas or within 10 km of District areas. 12.5 kHz single frequency applications within above areas
76.5 – 77.0	FIXED MOBILE	MOBILE BGD11	PMR	Single frequency
77.0 – 82.0	FIXED MOBILE	MOBILE BGD11	PMR	MTx, paired with 82.0 -87 MHz
82.0 – 87.0	FIXED MOBILE	MOBILE BGD11	PMR	BTx, paired with 77.0 – 82.0 MHz
87.0 – 100	FIXED MOBILE BROADCASTING	BROADCASTING BGD7	FM Sound Broadcasting	Broadcasting Band II See Annex 4B
100 – 108	BROADCASTING			
108 - 117.975	AERONAUTICAL RADIONAVIGATION 5.197A	AERONAUTICAL RADIONAVIGATION AERONAUTICAL MOBILE (R) 5.197A BGD8	ILS VOR	
117.975-121.45 MHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE(R) BGD1.2 BGD9	Aeronautical mobile communications for safety and regularity of flights, airline business and airport mobile communications	

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
121.45-121.55 MHz	AERONAUTICAL MOBILE (R) 5.111 5.200	MOBILE-SATELLITE (E/S) AERONAUTICAL MOBILE(R) 5.111 5.200 BGD1.2	EPIRB	Band only available for distress and safety purposes
121.55-136	AERONAUTICAL MOBILE (R) 5.200	AERONAUTICAL MOBILE(R) 5.200 BGD1.2 BGD9	Aeronautical mobile communications for safety and regularity of flights, airline business and airport mobile communications	
136-137	AERONAUTICAL MOBILE(R)	AERONAUTICAL MOBILE(R) AERONAUTICAL MOBILE(OR) BGD9 BGD10	Aeronautical mobile communications for safety and regularity of flights, airline business and airport mobile communications	
137-137.025	SPACE OPERATION (S/E) METEOROLOGICAL – SATELLITE (S/E) MOBILE- SATELLITE (S/E) 5.208A 5.208B 5.209 SPACE RESEARCH (S/E) Fixed Mobile except aeronautical mobile (R) 5.204 5.208	METEOROLOGICAL – SATELLITE (S/E) MOBILE MOBILE- SATELLITE (S/E) 5.208A 5.208B 5.209 Space Operation (S/E) Space Research (S/E) 5.204 5.208	Low earth orbiting satellites Meteorological Satellite Mobile applications Air Sport Activities	
137.025-137.175	SPACE OPERATION (S/E) METEOROLOGICAL – SATELLITE (S/E) SPACE RESEARCH (S/E) Fixed Mobile-satellite (S/E) 5.208A 5.208B 5.209 Mobile except aeronautical mobile (R) 5.204 5.208	METEOROLOGICAL – SATELLITE (S/E) MOBILE Mobile-Satellite (S/E) 5.208A 5.208B 5.209 Space Research (S/E) Space Operation (S/E) 5.204 5.208	Aeronautical and Aircraft stations and Base and mobile stations in support of aviation	
137.175-137.825 MHz	SPACE OPERATION (S/E) METEOROLOGICAL – SATELLITE (S/E) SPACE RESEARCH (S/E) Mobile-satellite (S/E) 5.208A 5.208B 5.209 Fixed Mobile except aeronautical mobile (R) 5.204 5.208	METEOROLOGICAL – SATELLITE (S/E) MOBILE Mobile-Satellite (S/E) 5.208A 5.208B 5.209 Space Research (S/E) Space Operation (S/E) 5.204 5.208	Aeronautical and Aircraft stations and Base and mobile stations in support of aviation	

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
137.825-138 MHz	SPACE OPERATION (S/E) METEOROLOGICAL-SATELLITE (S/E) SPACE RESEARCH (S/E) Mobile-satellite (S/E) 5.208A 5.208B 5.209 Fixed Mobile except Aeronautical mobile (R) 5.204 5.208	METEOROLOGICAL-SATELLITE (S/E) MOBILE Mobile-satellite (S/E) 5.208A 5.209 Space Research (S/E) Space Operation (S/E) 5.204 5.208	Aeronautical and Aircraft stations and Base and mobile stations in support of aviation	
138-140	FIXED MOBILE Space research (S/E)	MOBILE Space research (S/E) BGD11	PMR	Single frequency applications
140-141	FIXED MOBILE Space research (S/E)	MOBILE Space research (space-to-Earth) BGD11	Long range rural cordless telephones PMR	Paired with 230-231 MHz Not for use within 15 km of Metropolitan areas or within 10 km of District areas. 12.5 kHz single frequency applications within above areas
141-143.6	FIXED MOBILE Space research (S/E)	MOBILE Space research (S/E)	Governmental mobile systems	Single frequency applications
143.6-143.65	FIXED MOBILE SPACE RESEARCH (S/E)	MOBILE SPACE RESEARCH (S/E)	Undesignated	
143.65-144	FIXED MOBILE Space research (S/E)	MOBILE Space research (S/E)	Governmental mobile systems	Single frequency applications
144-146	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	
146-146.55	AMATEUR FIXED MOBILE 5.217	MOBILE 5.217	Governmental mobile systems	Single frequency applications
146.55-148	AMATEUR FIXED MOBILE 5.217	MOBILE 5.217 BGD11 BGD35.1	PMR	Annex 1A, Annex 4A MTx paired with 151.6 - 153.05 MHz
148-149	FIXED MOBILE MOBILE-SATELLITE (E/S)	MOBILE 5.219 5.221 BGD11 BGD35.1	PMR	Annex 1A MTx paired with 153.05 - 154.05 MHz
149-149.9 MHz	5.209 5.218 5.219 5.221	MOBILE 5.219 5.221 BGD11 BGD35.2	Governmental mobile services	Annex 1A ML paired with 154.05 - 154.95 MHz

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
149.90-150.05 MHz	MOBILE-SATELLITE (E/S) 5.209 5.224A RADIONAVIGATION-SATELLITE 5.224B 5.220 5.222 5.223	RADIONAVIGATION-SATELLITE 5.224B MOBILE-SATELLITE (E/S) 5.209 5.224A Mobile 5.220 5.222 5.223 BGD11	PMR	Annex 1A Single Frequency BUT NOTE 5.223
150.05-150.95	FIXED MOBILE	MOBILE BGD11 BGD35.1	PMR	Annex 1A MTx paired with 155.1-156 MHz
150.95-151.6	FIXED MOBILE	MOBILE BGD11 BGD35.1	PMR	Annex 1A Single Frequency
151.6 – 153.05	FIXED MOBILE	MOBILE BGD11 BGD12 BGD35.1	PMR	Annex 1A, Annex 4A BTx paired with 146.55-148 MHz
153.05-154.05	FIXED MOBILE	MOBILE BGD11 BGD35.1	PMR	Annex 1A BTx paired with 148-149 MHz
154.05 -154.95	FIXED MOBILE	MOBILE BGD11 BGD35.2	Governmental mobile systems	Annex 1A BTx paired with 149 -149.9 MHz
154.95-155.1	FIXED MOBILE	MOBILE BGD11 BGD35.1	PMR	Annex 1A Single frequency applications
155.1-156	FIXED MOBILE	MOBILE BGD11 BGD35.1	PMR	Annex 1A BTx paired with 150.05-150.95 MHz
156-156.4875	FIXED MOBILE 5.226	MOBILE 5.226 BGD1.2	Maritime mobile on sea and inland waterways	RR Appendix 18 Ship stations paired with 160.625-160.950 MHz Single frequency use in 156.375-156.475 MHz
156.4875-156.5625	MARITIME MOBILE (distress and calling) 5.111 5.226 5.227	MOBILE 5.111 5.226 5.227 BGD1.2	MARITIME MOBILE DISTRESS, SAFETY AND CALLING	Digital Selective Calling (DSC) for distress, safety and calling
156.5625-156.7625	FIXED MOBILE 5.226	MOBILE 5.226 BGD1.2	Maritime mobile on sea and inland waterways	RR Appendix 18 Single frequency use
156.7625-156.8375	MARITIME MOBILE (distress and calling) 5.111 5.226	MARITIME MOBILE (distress and calling) 5.111 5.226 BGD1.2	MARITIME MOBILE DISTRESS, SAFETY AND CALLING	International distress, safety and calling frequency + guard bands
156.8375-157.45 MHz	FIXED MOBILE 5.226	MOBILE 5.226 BGD1.2	Maritime mobile on sea and inland waterways	RR Appendix 18 Ship stations paired with 161.5-162.0 MHz and Single frequency use

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
157.45-157.55 MHz	FIXED MOBILE	MOBILE BGD13	PRIVATE MARITIME MOBILE	Annex 1A, MTx paired with 162.05-162.15 MHz
157.55 – 159.8	FIXED MOBILE	MOBILE BGD11	Governmental mobile systems (police)	Annex 1A, MTx paired with 162.15-164.4 MHz
159.8-160.6	FIXED MOBILE	MOBILE BGD11	PMR	Annex 1A Single frequency use
160.6 -160.975	FIXED MOBILE 5.226	MOBILE 5.226	MARITIME MOBILE (International)	RR Appendix 18 Coast stations, paired with 156.025-156.350 MHz
160.975-161.475	FIXED MOBILE	MOBILE BGD11	PMR	Annex 1A, Single frequency use
161.475-162.05	FIXED MOBILE 5.226 5.227A	MOBILE 5.226 5.227A	MARITIME MOBILE (International) Shipborne AIS 161.975 MHz 162.025 MHz	RR Appendix 18 Coast stations, paired with 156.9-157.4 MHz
162.05-162.15	FIXED MOBILE	MOBILE BGD13 BGD35.1	PRIVATE MARITIME MOBILE	Annex 1A, BTx paired with 157.45-157.55 MHz
162.15- 164.4	FIXED MOBILE	MOBILE BGD11 BGD35.2	Governmental mobile systems (police)	Annex 1A, BTx paired with 157.55-159.8 MHz
164.4-166.0	FIXED MOBILE	MOBILE BGD11 BGD35.1	PMR	Annex 1A, Annex 4A MTx paired with 170.9 – 172.5 MHz
166.0-167.5	FIXED MOBILE	MOBILE BGD11 BGD35.2	Governmental mobile systems	Annex 1A, Annex 4A MTx paired with 172.5 – 174 MHz
167.5-169.0	FIXED MOBILE	MOBILE BGD11 BGD35.1	PMR	Annex 1A, Single frequency applications
169.0-170.9	FIXED MOBILE	MOBILE BGD11 BGD35.2	Governmental mobile systems	Annex 1A, Single frequency applications
170.9-172.5	FIXED MOBILE	MOBILE BGD11 BGD35.1	PMR	Annex 1A, Annex 4A BTx paired with 164.4 – 166.0 MHz
172.5 – 174 MHz	FIXED MOBILE	MOBILE BGD11 BGD35.2	Governmental mobile systems	Annex 1A, Annex 4A BTx paired with 166.0 – 167.5 MHz

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
174-200 MHz	FIXED MOBILE BROADCASTING	BROADCASTING	BROADCASTING TV BAND 3	Annex 4B
200-216	FIXED MOBILE BROADCASTING 5.238	BROADCASTING AERONAUTICAL RADIONAVIGATION 5.238		Annex 4B
216-223	FIXED MOBILE BROADCASTING	BROADCASTING BGD7		Annex 4B
223-230	FIXED MOBILE BROADCASTING AERONAUTICAL RADIONAVIGATION	BROADCASTING BGD7		Annex 4B
230-231	FIXED MOBILE AERONAUTICAL RADIONAVIGATION	MOBILE	Long range rural cordless telephones PMR	Paired with 140 – 141 MHz Not for use within 15 km of Metropolitan areas or within 10 km of District areas. 12.5 kHz single frequency applications within above areas
231-236	FIXED MOBILE 5.254	MOBILE 5.254 BGD12	PMR	Annex 1A, MTx paired with 236 – 241 MHz
236-241	FIXED MOBILE 5.254	MOBILE 5.254 BGD12	PMR	Annex 1A, BTx paired with 231 -236 MHz
241-242.95	FIXED MOBILE 5.254	MOBILE 5.254 BGD12	PMR	Single frequency
242.95-243.055	FIXED MOBILE 5.254 5.111 5.256	MOBILE-SATELLITE (E/S) MOBILE 5.254 5.256 5.111		Band only available for distress and safety purposes
243.055 -244 MHz	FIXED MOBILE 5.254	MOBILE 5.254	Governmental systems	Single Frequency

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
244 -247 MHz	FIXED MOBILE 5.254	MOBILE 5.254	Civil mobile systems VHF CB 245-246 MHz VHF SBR 245-246 MHz	Single frequency
247 – 252	FIXED MOBILE 5.254	MOBILE 5.254	Governmental systems	MTx can be paired with 252–257 MHz
252 – 257	FIXED MOBILE 5.254	MOBILE 5.254	Governmental systems	BTx can be paired with 247–252 MHz
257 – 262	FIXED MOBILE 5.254	MOBILE 5.254 BGD12	PMR	Annex 1A, BTx paired with 262 – 267 MHz
262 - 267	FIXED MOBILE 5.254	MOBILE 5.254 BGD12	PMR	Annex 1A, MTx paired with 257 – 267 MHz
267- 272	FIXED MOBILE Space Operation (S/E) 5.254 5.257	MOBILE 5.254 5.257 BGD12	PMR	Single Frequency
272-273	SPACE OPERATION (S/E) FIXED MOBILE 5.254	MOBILE 5.254 BGD12	PMR	Single Frequency
273-287	FIXED MOBILE 5.254	MOBILE BGD1.1	Governmental mobile systems	
287-297	FIXED MOBILE 5.254	MOBILE 5.254 BGD14	PMR	BTx may be paired with 297-307 MHz
297-307	FIXED MOBILE 5.254	MOBILE 5.254 BGD14	PMR	MTx may be paired with 287-297 MHz
307-315 MHz	FIXED MOBILE Mobile-Satellite (E/S) 5.254 5.255	MOBILE 5.254 5.255 BGD14	PMR	

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
315-322 MHz	FIXED MOBILE 5.254	MOBILE 5.254 BGD14	PMR	
322-328.6	FIXED MOBILE RADIO ASTRNOMY 5.149	MOBILE RADIO ASTRONOMY 5.149 BGD14	PMR	
328.6-335.4	AERONAUTICAL RADIONA VIGATION 5.258	AERONAUTICAL RADIONAVIGATION 5.258	ILS (glide path)	
335.4-336	FIXED MOBILE 5.254	MOBILE 5.254	PMR	Single frequency
336 - 337	FIXED MOBILE 5.254	MOBILE 5.254	PMR	MTx, see Annex 1B, paired with 346 – 347 MHz
337 - 340.5	FIXED MOBILE 5.254	MOBILE 5.254	Governmental mobile systems	MTx, see Annex 4C, paired with 347-350.5 MHz
340.5 - 346	FIXED MOBILE 5.254	MOBILE 5.254	PMR	MTx, see Annex 1B, paired with 350.5-356 MHz
346 - 347	FIXED MOBILE 5.254	MOBILE 5.254	PMR	BTx see Annex 1B, paired with 336 – 337 MHz
347 - 350.5	FIXED MOBILE 5.254	MOBILE 5.254	Governmental mobile system	MTx, see Annex 4C, paired with 337-340.5 MHz
350.5 - 356	FIXED MOBILE 5.254	MOBILE 5.254	PMR	MTx, see Annex 1B, paired with 340.5-346 MHz
356 - 360 MHz	FIXED MOBILE 5.254	MOBILE 5.254	UNDESIGNATED	

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
360 - 362 MHz	FIXED MOBILE 5.254	MOBILE 5.254	Governmental mobile systems	MTx can be paired with 370 – 372 MHz
362 - 370	FIXED MOBILE 5.254	MOBILE 5.254 BGD12	PMR	Annex 1B, MTx paired with 372 – 380 MHz
370 - 372	FIXED MOBILE 5.254	MOBILE 5.254	Governmental mobile systems	BTx can be paired with 360 – 362 MHz
372 - 380	FIXED MOBILE 5.254	MOBILE 5.254 BGD12	PMR	Annex 1B, BTx paired with 362 – 370 MHz
380-385	FIXED MOBILE 5.254	MOBILE 5.254 BGD15	PMR	Annex 1B, MTx paired with 390.0-395.0 MHz
385-387	FIXED MOBILE 5.254	MOBILE 5.254 BGD12	PMR	Annex 1B, MTx paired with 395-397 MHz
387-390	FIXED MOBILE Mobile-Satellite (S/E) 5.208A 5.208B 5.254 5.255	MOBILE 5.208A 5.208B 5.254 5.255 BGD12	PMR	Annex 1B, MTx paired with 397.00-399.90 MHz.
390-395	FIXED MOBILE 5.254	MOBILE 5.254 BGD15	PMR	Annex 1B, BTx paired with 380-385 MHz
395-399.9	FIXED MOBILE 5.254	MOBILE 5.254 BGD12	PMR	Annex 1B, BTx paired with 385-389.9 MHz
399.9-400.05 MHz	MOBILE-SATELLITE (E/S) 5.209 5.224A RADIONAVIGATION - SATELLITE 5.222 5.224B 5.260 5.220	MOBILE-SATELLITE (E/S) 5.209 5.224A RADIONAVIGATION - SATELLITE 5.222 5.224B 5.260 5.220		

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
400.05-400.150 MHz	STANDARD FREQUENCY AND TIME SIGNAL SATELLITE (400.1 MHz) 5.261	STANDARD FREQUENCY AND TIME SIGNAL SATELLITE (400.1 MHz)		
400.15-401.00	METEOROGICAL AIDS METEOROLOGICAL-SATELLITE (S/E) MOBILE-SATELLITE (S/E) 5.208A 5.208B 5.209 SPACE RESEARCH (S/E) 5.263 Space Operation (S/E) 5.264	METEOROGICAL AIDS METEOROLOGICAL-SATELLITE (S/E) MOBILE-SATELLITE (S/E) 5.208A 5.208B 5.209 SPACE RESEARCH (S/E) 5.263 5.264		
401-402	METEOROGICAL AIDS EARTH EXPLORATION SATELLITE (S/E) METEOROGICAL SATELLITE (E/S) SPACE OPERATION (S/E) Fixed Mobile except aeronautical mobile	EARTH EXPLORATION SATELLITE (S/E) METEOROGICAL AIDS METEOROGICAL SATELLITE (E/S) SPACE OPERATION (S/E) Mobile except aeronautical mobile	Medical devices	Ultra low power medical implants (3MHz within the band 401-406 MHz)
402-403	METEOROGICAL AIDS EARTH EXPLORATION SATELLITE (E/S) METEOROGICAL SATELLITE (E/S) Fixed Mobile except aeronautical mobile	METEOROGICAL AIDS EARTH EXPLORATION SATELLITE (E/S) METEOROGICAL SATELLITE (E/S) Mobile except aeronautical mobile		
403-406	METEOROGICAL AIDS Fixed Mobile except aeronautical mobile	METEOROGICAL AIDS Mobile except aeronautical mobile		
406.0-406.1	MOBILE-SATELLITE (E/S) 5.266 5.267	MOBILE-SATELLITE (E/S) 5.266 5.267	COSPAS SARSAT EPIRB	Band only available for distress and safety purposes
406.1-410 MHz	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149	LAND MOBILE RADIO ASTRONOMY 5.149 BGD11	PMR	Annex 1B Single frequency operation. RA continuum measurement and pulsar observation. Annex 1A, Single frequency applications

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
410-411.675 MHz	FIXED MOBILE except Aeronautical Mobile SPACE RESEARCH (S/S) 5.268	MOBILE except Aeronautical Mobile BGD11	PMR	Annex 1B, MTx paired with 420-421.675 MHz
411.675-415.850	FIXED MOBILE except Aeronautical Mobile SPACE RESEARCH (S/S) 5.268	FIXED MOBILE except Aeronautical Mobile BGD16	Civil WLL applications	Annex 1B, MTx paired with 421.675-425.850 MHz
415.850-417.5	FIXED MOBILE except Aeronautical Mobile SPACE RESEARCH (S/S) 5.268	MOBILE except Aeronautical Mobile BGD11	PMR	Annex 1B, MTx paired with 425.850-427.5 MHz
417.5-420	FIXED MOBILE except Aeronautical Mobile SPACE RESEARCH (S/S) 5.268	MOBILE except Aeronautical Mobile BGD11	Governmental systems (Police)	MTx can be paired with 427.5-430 MHz
420-421.675	FIXED MOBILE except Aeronautical Mobile Radiolocation	MOBILE except Aeronautical Mobile Radiolocation BGD11	PMR	Annex 1B, FB paired with 410-411.675 MHz
421.675-425.850	FIXED MOBILE except Aeronautical Mobile Radiolocation	FIXED MOBILE except Aeronautical Mobile Radiolocation BGD16	Civil WLL applications	Annex 1B, MTx paired with 411.675-415.850 MHz
425.850-427.5	FIXED MOBILE except Aeronautical Mobile Radiolocation	MOBILE except Aeronautical Mobile Radiolocation BGD11	PMR	Annex 1B, FB paired with 415.850-417.5 MHz
427.5-430 MHz	FIXED MOBILE except Aeronautical Mobile Radiolocation	MOBILE except Aeronautical Mobile Radiolocation BGD11	Governmental systems (Police)	FB can be paired with 417.5-420 MHz

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
430-432 MHz	RADIOLOCATION Amateur 5.276	FIXED MOBILE except aeronautical mobile RADIOLOCATION Amateur BGD17 5.276 BGD18	Civil and governmental fixed and mobile services Amateur	Annex 1B Paired with 438 – 440 MHz
432-433.05	RADIOLOCATION Amateur Earth Exploration Satellite (active) 5.279A 5.276	FIXED MOBILE except aeronautical mobile RADIOLOCATION AMATEUR BGD17 Earth Exploration Satellite (active) 5.279A 5.276 BGD18	Civil and governmental fixed and mobile services Amateur	Amateur only primary within Metropolitan and District Areas after 2011.
433.05-434.79	RADIOLOCATION Amateur Earth Exploration-Satellite (active) 5.279A 5.276	FIXED MOBILE except aeronautical mobile RADIOLOCATION AMATEUR BGD17 Earth Exploration-Satellite (active) 5.279A 5.276 BGD18	SRD Civil and governmental fixed and mobile services Amateur	Short range devices may be permitted in this band at a future date Amateur only primary within Metropolitan and District Areas after 2011.
434.79-435	RADIOLOCATION Amateur Earth Exploration Satellite (active) 5.279A 5.276	FIXED RADIOLOCATION MOBILE except aeronautical mobile AMATEUR BGD17 Earth Exploration Satellite (active) 5.279A 5.276 BGD18	Civil and governmental fixed and mobile services Amateur	Amateur only primary within Metropolitan and District Areas after 2011.
435-438	RADIOLOCATION Amateur Earth Exploration Satellite (active) 5.279A 5.276	FIXED RADIOLOCATION AMATEUR BGD17 Amateur satellite BGD17 Earth Exploration Satellite (active) 5.279A 5.276 BGD18	Civil and governmental fixed services Amateur	Amateur only primary within Metropolitan and District Areas after 2011. Amateur Satellite Service restricted to 435-438 MHz.
438-440 MHz	RADIOLOCATION Amateur 5.276	FIXED MOBILE except aeronautical mobile RADIOLOCATION Amateur BGD17 5.276 BGD18	Civil and governmental fixed and mobile services Amateur	Annex 1B Paired with 430 – 432 MHz

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
440 – 450 MHz	FIXED MOBILE except aeronautical mobile Radiolocation 5.286	MOBILE except aeronautical mobile Radiolocation	PMR 446 Analogue and Digital Land Mobile Onsite paging	Annex 1B, Single frequency applications PMR 446 446-446.1 MHz DMO (for mobile to mobile TETRA communications, see 380-385MHz & 390-395 MHz) 445.2-445.3 MHz On-site paging Call-out & answer-back
450 - 455	FIXED MOBILE 5.286AA 5.209 5.286 5.286A	MOBILE 5.286AA 5.209 5.286 5.286A	Civil WLL applications IMT	Annex 1B, MTx paired with 460.525 - 464.6 MHz Identified for IMT services
455 – 456	FIXED MOBILE 5.286AA 5.209 5.286A	MOBILE 5.286AA 5.209 5.286A BGD35.1	IMT	Maritime on board communications in 457.525 - 457.575 MHz Identified for IMT services
456 - 459	FIXED MOBILE 5.286AA 5.287	MOBILE 5.286AA 5.287 BGD35.1		
459 - 460	FIXED MOBILE 5.286AA 5.209 5.286A	MOBILE 5.286AA 5.209 5.286A BGD35.1		
460 - 465	FIXED MOBILE 5.286AA Meteorological-Satellite (S/E) 5.289	MOBILE 5.286AA 5.289	Civil WLL applications IMT	Annex 1B, BTx paired with 450.525 - 454.6 MHz Identified for IMT services
465 - 470	FIXED MOBILE 5.286AA Meteorological-Satellite (S/E) 5.287 5.289	MOBILE 5.286AA 5.287 5.289 BGD35.1	IMT	Maritime on board communications in 467.525 - 467.575 MHz Identified for IMT services
470-472	FIXED MOBILE BROADCASTING	MOBILE BGD11	PMR	Annex 1B, MTx paired with 480-482 MHz
472-476.475		FIXED MOBILE BGD16	Civil WLL applications	Annex 1B, MTx paired with 482-486.475 MHz
476.475-479		MOBILE BGD11	Governmental mobile systems	MTx can be paired with 486.475-489 MHz
479-480 MHz		MOBILE BGD11	PMR	Annex 1B, MTx paired with 489-490 MHz

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
480-482 MHz	FIXED MOBILE BROADCASTING	MOBILE BGD11	PMR	Annex 1B, BTx paired with 470-472 MHz
482-486.475		FIXED MOBILE BGD16	Civil WLL applications	Annex 1B, BTx paired with 472-476.475 MHz
486.475-489		MOBILE BGD11	Governmental mobile systems	BTx can be paired with 476.475-479 MHz
489-490		MOBILE BGD11	PMR	Annex 1B, BTx paired with 479-480 MHz
490-495	FIXED MOBILE BROADCASTING	MOBILE BGD11	PMR	Annex 1B, MTx paired with 495-500 MHz
495-500				Annex 1B, BTx paired with 490-495 MHz
500-505	FIXED MOBILE BROADCASTING	MOBILE BGD11	PMR	Annex 1B, MTx paired with 505-510 MHz
505-510				Annex 1B, BTx paired with 500-505 MHz
510-515	FIXED MOBILE BROADCASTING	MOBILE BGD11	Governmental mobile systems	MTx can be paired with 515-520 MHz
515-520				BTx can be paired with 510-515 MHz
520-522	FIXED MOBILE BROADCASTING	MOBILE BGD11	PMR	Single frequency applications
522-585	FIXED MOBILE BROADCASTING	BROADCASTING Mobile	BROADCASTING	Annex 4B Identified for DVB-T 4 MHz guard band is included in 522 - 526 MHz
585-610	FIXED MOBILE BROADCASTING RADIONAVIGATION 5.149 5.306	BROADCASTING Mobile Radio Astronomy 5.149 5.306	BROADCASTING	Annex 4B Identified for DVB-T Radio Astronomy in band 608 - 614 MHz
610-698 MHz	FIXED MOBILE BROADCASTING 5.149 5.306 5.311A	BROADCASTING Mobile Radio Astronomy 5.149 5.306 5.311A BGD36	BROADCASTING	Annex 4B Identified for DVB-T Radio Astronomy in band 608 - 614 MHz 4 MHz guard band is included in 694 - 698 MHz

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
698 – 748 MHz	FIXED MOBILE 5.313A BROADCASTING 5.311A	MOBILE 5.313A 5.311A BGD36	IMT	Identified for IMT services
748 - 756	FIXED MOBILE 5.313A BROADCASTING 5.311A	FIXED MOBILE 5.313A 5.311A	IMT	Identified for IMT services
756 - 806	FIXED MOBILE 5.313A 5.317A BROADCASTING 5.311A	MOBILE 5.313A 5.317A 5.311A	IMT	Identified for IMT services
806-816	FIXED MOBILE 5.317A BROADCASTING 5.320	MOBILE 5.317A FIXED	Trunked civil mobile applications Civil fixed service	Annex 1C, MTx paired with 851-861 MHz
816-821		MOBILE 5.317A	Civil fixed and mobile service	Annex 1C, MTx paired with 861-866 MHz
821-824			Governmental mobile applications (police systems)	Annex 1C, paired with 866-869 MHz Annex 1B, Short Range Devices
824-825			Governmental cellular mobile applications	Annex 1C, MTx paired with 869-870 MHz
825-835			Cellular mobile applications	Annex 1C, MTx paired with 870-880 MHz
835-845			Cellular mobile applications	Annex 1C, MTx paired with 880-890 MHz
845-851			Civil fixed and mobile systems	
851-861		MOBILE 5.317A FIXED	Trunked civil mobile applications Civil fixed service	Annex 1C, BTx paired with 806-816 MHz
861-866		MOBILE 5.317A	Civil fixed and mobile service	Annex 1C, BTx paired with 816-821 MHz
866-869			Governmental mobile applications (police systems)	Annex 1C, paired with 821-824 MHz Annex 1B, Short Range Devices
869-870			Governmental cellular mobile applications	Annex 1C, BTx paired with 824-825 MHz
870-880			Cellular mobile applications	Annex 1C, BTx paired with 825-835 MHz
880-890			Cellular mobile applications	Annex 1C, BTx paired with 835-845 MHz Or MTx paired with 925-935 MHz for E-GSM

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
890-915	FIXED MOBILE 5.317A BROADCASTING Radiolocation	MOBILE 5.317A	GSM 900 systems	Annex 1C, MTx paired with 935-960 MHz GSM core band
915-925		MOBILE 5.317A FIXED	Governmental fixed and mobile applications RFID	RFID in band 925-927 MHz
925-935		MOBILE 5.317A	Cellular mobile applications E-GSM systems	Annex 1C, BTx paired with 880- 890 MHz
935-942	FIXED MOBILE 5.317A BROADCASTING Radiolocation	MOBILE 5.317A	GSM 900 systems	Annex 1C, BTx paired with 890-897 MHz GSM core band
942-960	FIXED MOBILE 5.317A BROADCASTING 5.320	MOBILE 5.317A		Annex 1C, BTx paired with 897-915 MHz GSM core band
960-1164	AERONAUTICAL RADIONAVIGATION 5.328 AERONAUTICAL MOBILE (R) 5.327A	AERONAUTICAL RADIONAVIGATION 5.328 AERONAUTICAL MOBILE (R) 5.327A	AERONAUTICAL RADIONAVIGATION	
1164-1215	AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION-SATELLITE (S/E) (S/S) 5.328A 5.328B	AERONAUTICAL RADIONAVIGATION 5.328	AERONAUTICAL RADIONAVIGATION	The band 1164-1215 MHz is reserved for Distance Measuring Equipment (DME)
1215-1240	EARTH EXPLORATION SATELLITE (active) RADIOLOCATION RADIONAVIGATION SATELLITE (S/E)(S/S) SPACE RESEARCH (active) 5.328B 5.329 5.329A 5.330 5.331 5.332	RADIOLOCATION RADIONAVIGATION SATELLITE (S/E) EARTH EXPLORATION SATELLITE (active) SPACE RESEARCH (active) RADIONAVIGATION FIXED MOBILE 5.328B 5.329 5.329A 5.330 5.331 5.332 BGD27 BGD28	AERONAUTICAL RADIONAVIGATION	The frequency 1224 MHz is designated for the Galileo positioning system
1240-1260 MHz	EARTH EXPLORATION SATELLITE (active) RADIOLOCATION RADIONAVIGATION SATELLITE (S/E) SPACE RESEARCH (active) Amateur 5.282 5.328B 5.329 5.329A 5.330 5.331 5.332	RADIOLOCATION RADIONAVIGATION SATELLITE (S/E) EARTH EXPLORATION SATELLITE (active) SPACE RESEARCH (active) RADIONAVIGATION FIXED MOBILE	Low Looking Radar (LLR)	LLR from 1250 MHz Co-ordination of civil and defence radionavigation systems to be effected

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
		Amateur 5.282 5.328B 5.329 5.329A 5.330 5.331 5.332 BGD1.2 BGD27 BGD28		
1260-1270 MHz	EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) RADIONAVIGATION-SATELLITE (S/E)(S/S) 5.329 5.329A 5.328B Amateur 5.282 5.330 5.331 5.335A	RADIOLOCATION EARTH EXPLORATION SATELLITE (active) SPACE RESEARCH (active) RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.329 5.329A 5.328B FIXED MOBILE Amateur Amateur-Satellite 5.282 5.330 5.331 5.335A BGD1.2 BGD27 BGD28	DME LLR Radionavigation Amateur	This band 1260-1300 MHz is proposed to be protected for distance measurement equipment (DME) Co-ordination of civil and defence radionavigation systems to be effected
1270-1300	EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) RADIONAVIGATION-SATELLITE 5.329 5.329A 5.328B Amateur 5.282 5.330 5.331 5.335A	RADIOLOCATION EARTH-EXPLORATION SATELLITE (active) SPACE RESEARCH (active) RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.329 5.329A 5.328B FIXED MOBILE Amateur 5.282 5.330 5.331 5.335A BGD1.2 BGD27 BGD28	Wind profiler radars Radionavigation LLR Amateur	Wind profiler radars between 1270 MHz and 1295 MHz Co-ordination of civil and defence radionavigation systems to be effected
1300-1350	AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION RADIONAVIGATION-SATELLITE 5.337A 5.149	AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION RADIONAVIGATION-SATELLITE 5.337A 5.149 BGD1.2	LLR	RA spectral line observations 1330-1400 MHz. Co-ordination of civil and defence radionavigation systems to be effected
1350-1400	RADIOLOCATION 5.338A 5.149 5.339	FIXED RADIOLOCATION 5.338A Fixed-satellite (S/E) 5.149 5.339 BGD32	Broadcasting fixed links	Annex 4D and Annex 4E Broadcasting Fixed Links 1350-1375 MHz unidirectional or paired with 1492-1517 MHz 1375-1400 MHz paired with 1427-1452 MHz.
1400-1427 MHz	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH	Passive band	

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
	(passive) 5.340 5.341	(passive) 5.340 5.341		
1427-1429 MHz	SPACE OPERATION (E/S) FIXED MOBILE except aeronautical mobile 5.338A 5.341	SPACE OPERATION (E/S) FIXED MOBILE except aeronautical mobile 5.338A 5.341	Broadcasting fixed links	Annex 4E, paired with 1375-1377 MHz.
1429-1452	FIXED MOBILE 5.338A 5.341	FIXED MOBILE 5.338A 5.341	Broadcasting fixed links	Annex 4E, paired with 1377-1400 MHz.
1452-1492	FIXED MOBILE BROADCASTING 5.345 BROADCASTING-SATELLITE 5.208B 5.345 5.341	BROADCASTING 5.345 BROADCASTING-SATELLITE 5.208B 5.345 FIXED MOBILE 5.341 BGD1.2 BGD7	Reserved for digital audio broadcasting Channel=0.25-0.50-1-2-3.5 Fixed and mobile civil applications in support of broadcasting and governmental fixed and mobile applications until band is used for broadcasting	
1492-1518	FIXED MOBILE 5.341	FIXED MOBILE 5.341 BGD37	Fixed links Governmental mobile systems	Annex 4D Fixed links 1492-1517 MHz paired with 1350-1375 MHz.
1518-1525	FIXED MOBILE MOBILE-SATELLITE (S/E) 5.348 5.351A 5.341	FIXED MOBILE MOBILE-SATELLITE (S/E) 5.348 5.351A 5.341 BGD1.2 BGD37		
1525-1530	SPACE OPERATION (S/E) FIXED MOBILE-SATELLITE (S/E) 5.351A Earth exploration Satellite Mobile 5.341 5.351 5.352A 5.354	SPACE OPERATION (S/E) FIXED MOBILE-SATELLITE (S/E) 5.351A Earth exploration Satellite Mobile 5.341 5.351 5.352A 5.354 BGD1.2 BGD37	Mobile satellite applications Governmental mobile systems	
1530-1535 MHz	SPACE OPERATION (S/E) MOBILE-SATELLITE (S/E) 5.353A 5.351A Earth exploration Satellite Fixed Mobile	SPACE OPERATION (S/E) MOBILE-SATELLITE (S/E) 5.353A 5.351A Earth exploration Satellite Fixed Mobile	Mobile satellite applications Governmental mobile systems	GMDSS priority

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
	5.341 5.351 5.354	5.341 5.351 5.354 BGD1.2 BGD37		
1535-1540 MHz	MOBILE-SATELLITE (S/E) 5.351A 5.341 5.351 5.353A	MOBILE-SATELLITE (S/E) 5.351A 5.341 5.354 5.353A	Mobile satellite applications	
1540-1544	5.354 5.355	MOBILE-SATELLITE (S/E) 5.351A Fixed 5.341 5.351 5.353A 5.354 5.355		
1544-1545	MOBILE-SATELLITE (S/E) 5.341 5.354 5.355 5.356	MOBILE-SATELLITE (S/E) Fixed 5.341 5.354 5.356 5.355	Mobile satellite applications limited to distress communications	Search and rescue satellite systems including GMDSS
1545-1550	MOBILE-SATELLITE (S/E) 5.351A 5.341 5.351 5.354 5.355 5.357 5.357A	MOBILE-SATELLITE (S/E) 5.351A 5.341 5.351 5.354 5.355 5.357 5.357A	Mobile satellite applications	
1550-1555		MOBILE-SATELLITE (S/E) 5.351A FIXED 5.341 5.351 5.354 5.355 5.357 5.357A		
1555-1559	MOBILE-SATELLITE (S/E) 5.351A 5.341 5.351 5.354 5.355	MOBILE-SATELLITE (S/E) 5.351A FIXED 5.341 5.351 5.354 5.355	Mobile satellite applications	
1559-1610	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (S/E) (S/S) 5.208B 5.328B 5.329A 5.341	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (S/E) (S/S) 5.208B 5.328B 5.329A 5.341 BGD29	GNSS applications	1575.42 MHz is protected for clock signal
1610-1610.6	AERONAUTICAL RADIONAVIGATION MOBILE SATELLITE (E/S) 5.351A Radiodetermination satellite (E/S) 5.341 5.355 5.364 5.366 5.367 5.368 5.372	AERONAUTICAL RADIONAVIGATION MOBILE SATELLITE (E/S) 5.351A Radiodetermination satellite (E/S) FIXED 5.341 5.355 5.364 5.366 5.367 5.368 5.372	Mobile satellite applications	
1610.6-1613.8 MHz	AERONAUTICAL RADIONAVIGATION MOBILE SATELLITE (E/S) 5.351A RADIO ASTRONOMY Radiodetermination satellite (E/S)	AERONAUTICAL RADIONAVIGATION MOBILE SATELLITE (E/S) 5.351A RADIO ASTRONOMY Radiodetermination satellite (E/S)	Mobile satellite applications	Important band for radio astronomy spectral line observations.

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
	5.149 5.341 5.355 5.364 5.366 5.367 5.368 5.372	FIXED 5.149 5.341 5.355 5.364 5.366 5.367 5.368 5.372		
1613.8-1626.5 MHz	MOBILE SATELLITE (E/S) 5.351A AERONAUTICAL RADIONAVIGATION Radiodetermination satellite (E/S) Mobile Satellite (S/E) 5.341 5.355 5.364 5.365 5.366 5.367 5.368 5.372	MOBILE SATELLITE (E/S) 5.351A AERONAUTICAL RADIONAVIGATION FIXED Radiodetermination satellite (E/S) Mobile Satellite (S/E) 5.341 5.355 5.364 5.365 5.366 5.367 5.368 5.371 5.372	Mobile satellite applications	
1626.5-1631.5	MOBILE-SATELLITE (E/S) 5.351A 5.341 5.351 5.353A 5.354 5.355	MOBILE-SATELLITE (E/S) 5.351A FIXED Mobile 5.341 5.351 5.353A 5.354 5.355 BGD1.2 BGD37	Mobile satellite applications Governmental mobile systems	
1631.5-1636.5	MOBILE-SATELLITE (E/S) 5.351A 5.341 5.351 5.353A 5.354 5.355 5.374	MOBILE-SATELLITE (E/S) 5.351A FIXED Mobile 5.341 5.351 5.353A 5.354 5.355 5.374 BGD1.2 BGD37	Mobile satellite applications Governmental mobile systems	
1636.5-1645.5	MOBILE-SATELLITE (E/S) 5.351A 5.341 5.351 5.353A 5.354 5.355	MOBILE-SATELLITE (E/S) 5.351A FIXED Mobile 5.341 5.351 5.353A 5.354 5.355 BGD1.2 BGD37	Mobile satellite applications Governmental mobile systems	
1645.5-1646.5	MOBILE-SATELLITE (E/S) 5.341 5.354 5.375	MOBILE-SATELLITE (E/S) 5.341 5.354 5.375	Mobile satellite applications limited to distress communications	Search and rescue satellite systems including GMDSS
1646.5-1656.5	MOBILE-SATELLITE (E/S) 5.351A 5.341 5.351 5.354 5.355 5.357A 5.376	MOBILE-SATELLITE (E/S) 5.351A FIXED Mobile 5.341 5.351 5.354 5.357A 5.376 5.355 BGD1.2 BGD37	Mobile satellite applications Governmental mobile systems	
1656.5-1660 MHz	MOBILE-SATELLITE (E/S) 5.351A 5.341 5.351 5.354 5.355	MOBILE-SATELLITE (E/S) 5.351A FIXED Mobile	Mobile satellite applications Governmental mobile systems	

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
		5.341 5.351 5.354 5.355 BGD1.2 BGD37		
1660-1660.5 MHz	MOBILE-SATELLITE (E/S) 5.351A RADIO ASTRONOMY 5.149 5.341 5.351 5.354 5.376A	MOBILE-SATELLITE (E/S) 5.351A RADIO ASTRONOMY 5.149 5.341 5.351 5.354 5.376A	Mobile satellite applications	Important band for radio astronomy. Continuum line and VLBI Measurements
1660.5-1668	RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379 5.379A	RADIO ASTRONOMY SPACE RESEARCH (passive) Meteorological Aids Fixed Mobile except aeronautical mobile 5.149 5.341 5.379 5.379A BGD1.2 BGD37	Meteorological applications Governmental mobile applications	Important band for radio astronomy. Continuum line and VLBI measurements.
1668-1668.4	MOBILE-SATELLITE (E/S) 5.351A 5.379B 5.379C RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379 5.379A	MOBILE-SATELLITE (E/S) 5.351A 5.379B 5.379C RADIO ASTRONOMY SPACE RESEARCH (passive) Meteorological Aids Fixed Mobile except aeronautical mobile 5.149 5.341 5.379 5.379A BGD1.2 BGD37		Important band for radio astronomy. Continuum line and VLBI measurements.
1668.4-1670	METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (E/S) 5.351A 5.379B 5.379C RADIO ASTRONOMY 5.149 5.341 5.379D 5.379E	METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (E/S) 5.351A 5.379B 5.379C RADIO ASTRONOMY 5.149 5.341 5.379D 5.379E BGD1.2 BGD37	Meteorological applications Governmental mobile applications	Important band for radio astronomy. Continuum line and VLBI measurements.
1670-1675 MHz	METEOROLOGICAL AIDS FIXED METEOROGICAL-SATELLITE (S/E) MOBILE MOBILE-SATELLITE (E/S) 5.351A 5.379B 5.341 5.379D 5.379E	METEOROLOGICAL AIDS FIXED METEOROGICAL-SATELLITE (S/E) MOBILE MOBILE-SATELLITE (E/S) 5.351A 5.379B 5.341 5.379D 5.379E	Meteorological applications Governmental mobile applications	

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
	5.380A	5.380A BGD1.2 BGD37		
1675-1680 MHz	METEOROLOGICAL AIDS FIXED METEOROGICAL-SATELLITE (S/E) MOBILE except aeronautical mobile 5.341	METEOROLOGICAL AIDS FIXED METEOROGICAL-SATELLITE (S/E) MOBILE except aeronautical mobile 5.341 BGD1.2 BGD37	Meteorological applications Governmental mobile applications	
1680-1690	METEOROLOGICAL AIDS FIXED METEOROGICAL-SATELLITE (S/E) MOBILE except aeronautical mobile 5.341	METEOROLOGICAL AIDS FIXED METEOROGICAL-SATELLITE (S/E) MOBILE except aeronautical mobile 5.341	Meteorological applications Civil low capacity fixed links	Paired with 1785 – 1795 MHz Identified for IMT services
1690-1700	METEOROLOGICAL AIDS METEOROGICAL-SATELLITE (S/E) 5.289 5.341	METEOROLOGICAL AIDS METEOROGICAL-SATELLITE (S/E) 5.289 5.341	Meteorological applications	
1700-1710	FIXED METEOROGICAL-SATELLITE (S/E) MOBILE except aeronautical mobile 5.289 5.341	FIXED METEOROGICAL-SATELLITE (S/E) MOBILE except aeronautical mobile 5.289 5.341	Low capacity fixed links Meteorological applications	Paired with 1795 – 1805 MHz Identified for IMT services
1710-1785	FIXED MOBILE 5.384A 5.149 5.341 5.385	MOBILE 5.384A 5.149 5.341 5.385	GSM 1800	MTx, paired with 1805-1880 MHz Identified for IMT services
1785-1805	FIXED MOBILE 5.384A	MOBILE 5.384A FIXED BGD1.2 BGD37	Governmental systems	Identified for IMT services
1805-1880	FIXED MOBILE 5.384A	MOBILE 5.384A	GSM 1800	BTx, paired with 1710-1785 MHz Identified for IMT services
1880-1900	FIXED MOBILE 5.384A 5.388A 5.388	MOBILE 5.384A 5.388A 5.388	IMT - TDD	Identified for IMT services

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
1900 -1910 MHz	FIXED MOBILE 5.388A 5.388	MOBILE 5.388A Fixed 5.388	Civil WLL CDMA applications	MTx, paired with 1980-1990 MHz Identified for IMT services
1910-1920 MHz	FIXED MOBILE 5.388A 5.388	MOBILE 5.388A 5.388 BGD30	IMT - TDD	Identified for IMT services.
1920-1980	FIXED MOBILE 5.388A 5.388	MOBILE 5.388A 5.388 BGD30	IMT - FDD	MTx, paired with 2110-2170 MHz. Identified for IMT services.
1980 -1990	FIXED MOBILE MOBILE-SATELLITE (E/S) 5.351A 5.388 5.389A	MOBILE Fixed 5.388 5.389A	Civil WLL CDMA applications	BTx, paired with 1900-1910 MHz Identified for IMT services.
1990-2010	FIXED MOBILE MOBILE-SATELLITE (E/S) 5.351A 5.388 5.389A	MOBILE MOBILE-SATELLITE (E/S) 5.351A Fixed 5.388 5.389A BGD30	IMT - Satellite	Identified for IMT services. The fixed service operates on secondary basis.
2010-2025	FIXED MOBILE 5.388A 5.388	MOBILE 5.388A 5.388 BGD30	IMT - TDD	Identified for IMT services.
2025-2070	SPACE OPERATION (E/S) (S/S) EARTH EXPLORATION SATELLITE (E/S) (S/E) FIXED MOBILE 5.391 SPACE RESEARCH (E/S) (S/E) 5.392	FIXED MOBILE 5.391 SPACE RESEARCH (E/S) (S/E) SPACE OPERATION (E/S) (S/S) EARTH EXPLORATION SATELLITE (E/S) (S/E) 5.392 BGD38	Civil and governmental ixed and mobile systems	Paired with 2200 – 2245 MHz
2070-2110			Civil fixed links	Annex 4F, Paired with 2245-2290 MHz
2110-2120	FIXED MOBILE 5.388A SPACE RESEARCH (deep space) (E/S) 5.388	MOBILE 5.388A 5.388 BGD30 BGD38	IMT - FDD	BTx, paired with 1920-1930 MHz. Identified for IMT services

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
2120-2170 MHz	FIXED MOBILE 5.388A 5.388	MOBILE 5.388A 5.388 BGD30 BGD38	IMT - FDD	BTx, paired with 1930-1980 MHz. Identified for IMT services.
2170-2180 MHz	FIXED MOBILE MOBILE-SATELLITE (S/E) 5.351A 5.388 5.389A	MOBILE MOBILE-SATELLITE (S/E) 5.351A Fixed 5.388 5.389A BGD30 BGD38	Unidirectional fixed links	Identified for IMT services.
2180-2200	FIXED MOBILE MOBILE-SATELLITE (S/E) 5.351A 5.388 5.389A	MOBILE MOBILE-SATELLITE (S/E) 5.351A Fixed 5.388 5.389A BGD30 BGD38	IMT - Satellite	Identified for IMT services. The fixed service operates on secondary basis.
2200-2245	SPACE OPERATION (S/E) (S/S) EARTH EXPLORATION SATELLITE (S/E) (S/S) FIXED MOBILE 5.391 SPACE RESEARCH (S/E) (S/S) 5.392	SPACE OPERATION (S/E) (S/S) EARTH EXPLORATION SATELLITE (S/E) (S/S) FIXED MOBILE 5.391 SPACE RESEARCH (S/E) (S/S) 5.392 BGD38	Civil and governmental fixed and mobile systems	Paired with 2025 – 2070 MHz
2245-2290	SPACE OPERATION (S/E) (S/S) EARTH EXPLORATION SATELLITE (S/E) (S/S) FIXED MOBILE 5.391 SPACE RESEARCH (S/E) (S/S) 5.392	SPACE OPERATION (S/E) (S/S) EARTH EXPLORATION SATELLITE (S/E) (S/S) FIXED MOBILE 5.391 SPACE RESEARCH (S/E) (S/S) 5.392 BGD38	Civil and governmental fixed links	Annex 4F, Paired with 2070-2110 MHz
2290-2300	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (S/S)	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (S/S) BGD38	Fixed and mobile applications	
2300-2400	FIXED MOBILE 5.384A RADIOLOCATION Amateur	FIXED MOBILE 5.384A RADIOLOCATION Amateur BGD30	IMT – TDD	Identified for IMT services

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
2400-2450 MHz	FIXED MOBILE RADIOLOCATION Amateur 5.150 5.282	FIXED MOBILE RADIOLOCATION Amateur 5.150 5.282 BGD1.2	Fixed Links Amateur SRDs RLAN AVI RFID WLAN ISM	The band 2400-2500 MHz is designated for Industrial, Scientific and Medical (ISM) applications. Radiocommunication services operating in this band must accept harmful interference which may be caused by these applications
2450-2483.5 MHz	FIXED MOBILE RADIOLOCATION 5.150	FIXED MOBILE RADIOLOCATION 5.150 BGD1.2	Fixed Links SRDs RLAN AVI RFID WLAN ISM	The band 2400-2500 MHz is designated for Industrial, Scientific and Medical (ISM) applications. Radiocommunication services operating in this band must accept harmful interference which may be caused by these applications
2483.5-2500	FIXED MOBILE MOBILE-SATELLITE (S/E) 5.351A RADIOLOCATION Radiodetermination satellite (S/E) 5.398 5.150 5.400 5.402	FIXED MOBILE MOBILE-SATELLITE (S/E) 5.351A RADIOLOCATION Radiodetermination satellite (S/E) 5.398 5.150 5.400 5.402	Fixed Links SRDs RLAN AVI RFID WLAN ISM	The band 2400-2500 MHz is designated for Industrial, Scientific and Medical (ISM) applications. Radiocommunication services operating in this band must accept harmful interference which may be caused by these applications
2500-2520	FIXED FIXED-SATELLITE (S/E) 5.415 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (S/E) 5.351A 5.414 5.414A	MOBILE except aeronautical mobile 5.384A Fixed BGD30 BGD31	IMT - FDD	Identified for IMT services Fixed services will not be implemented within 20 km of central Dhaka once IMT is implemented 2500-2510/2620-2630 MHz will be reserved for Governmental systems
2520-2535	FIXED FIXED-SATELLITE (S/E) 5.415 MOBILE except aeronautical mobile 5.384A BROADCASTING - SATELLITE 5.413 5.416 5.403 5.414A	MOBILE except aeronautical mobile 5.384A BROADCASTING - SATELLITE 5.413 5.416 Fixed 5.403 5.414A BGD30 BGD31		
2535-2570	FIXED MOBILE except aeronautical mobile 5.384A BROADCASTING – SATELLITE 5.413 5.416	MOBILE except aeronautical mobile 5.384A BROADCASTING – SATELLITE 5.413 5.416 Fixed BGD30 BGD31		

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
2570-2620 MHz	FIXED MOBILE except aeronautical mobile 5.384A BROADCASTING – SATELLITE 5.413 5.416	MOBILE except aeronautical mobile 5.384A BROADCASTING – SATELLITE 5.414 5.416 Fixed BGD30 BGD31	IMT - TDD	Identified for IMT services Fixed services will not be implemented within 20 km of central Dhaka once IMT is implemented
2620-2655 MHz	FIXED MOBILE except aeronautical mobile 5.384A BROADCASTING – SATELLITE 5.413 5.416	MOBILE except aeronautical mobile 5.384A BROADCASTING – SATELLITE 5.415 5.416 Fixed BGD30 BGD31	IMT - FDD	Identified for IMT services Fixed services will not be implemented within 20 km of central Dhaka once IMT is implemented
2655-2670	FIXED FIXED-SATELLITE (E/S) 5.415 MOBILE except aeronautical mobile 5.384A BROADCASTING - SATELLITE 5.413 5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.208B 5.420	MOBILE except aeronautical mobile 5.384A BROADCASTING – SATELLITE 5.416 5.416 Fixed 5.149 5.208B 5.420 BGD30 BGD31		
2670-2690	FIXED FIXED-SATELLITE (E/S) 5.415 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (E/S) 5.351A 5.419 Earth exploration -satellite (passive) Radio astronomy Space research (passive) 5.149	MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (E/S) 5.351A 5.419 Fixed 5.149 BGD30 BGD31		
2690-2700	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	FIXED MOBILE except aeronautical mobile EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive)	PASSIVE BAND	

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
		5.340		
2700-2900 MHz	AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423	AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423 BGD3.1	Radar and navigation systems Meteorological radars	Co-ordination of civil and defence radionavigation systems to be effected
2900-3100 MHz	RADIONAVIGATION 5.426 RADIOLOCATION 5.424A 5.425 5.427	RADIONAVIGATION 5.426 RADIOLOCATION 5.424A 5.425 5.427 BGD3.1	MARITIME AND AERONAUTICAL RADIONAVIGATION Primary radar	Co-ordination of civil and defence radionavigation systems to be effected
3100-3300	RADIOLOCATION Earth exploration Satellite (active) Space research (active) 5.149	RADIOLOCATION Earth exploration Satellite (active) Space research (active) 5.149	RADARS	Airborne Radars of other administrations may impact spectrum up to 3410 MHz
3300-3400	RADIOLOCATION Amateur 5.149 **5.429**	RADIOLOCATION FIXED MOBILE Amateur 5.149 **5.429**	RADARS Amateur Fixed Links	Airborne Radars of other administrations may impact spectrum up to 3410 MHz
3400-3410	FIXED FIXED-SATELLITE (S/E) Amateur Mobile **5.432B** Radiolocation 5.433 5.282	FIXED FIXED-SATELLITE (S/E) Amateur Mobile **5.432B** Radiolocation 5.433 5.282	IMT Fixed wireless access systems	Airborne Radars of other administrations may impact spectrum up to 3410 MHz Paired with 3500-3510 MHz Identified for IMT services
3410-3500	FIXED FIXED-SATELLITE (S/E) Amateur Mobile **5.432B** Radiolocation 5.433 5.282	FIXED FIXED SATELLITE (S/E) Mobile **5.432B** Radiolocation 5.433	IMT Fixed wireless access systems	Paired with 3510-3600 MHz Identified for IMT services
3500-3600	FIXED FIXED-SATELLITE (S/E) MOBILE except aeronautical mobile 5.433A Radiolocation 5.433	FIXED FIXED-SATELLITE (S/E) MOBILE except aeronautical mobile 5.433A Radiolocation 5.433	IMT Fixed wireless access systems	Paired with 3400-3500 MHz Identified for IMT services

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
3600-3700 MHz	FIXED FIXED-SATELLITE (S/E) MOBILE except aeronautical mobile Radiolocation 5.433	FIXED FIXED-SATELLITE (S/E) Mobile except aeronautical mobile Radiolocation 5.433	Fixed Links	See Annex 4G
3700-4200 MHz	FIXED FIXED-SATELLITE (S/E) MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (S/E) Mobile except aeronautical mobile	Fixed Links Earth stations	See Annex 4G
4200-4400	AERONAUTICAL RADIONAVIGATION 5.438 5.440	AERONAUTICAL RADIONAVIGATION 5.438 5.440	Radio Altimeters	
4400-4500	FIXED MOBILE	FIXED MOBILE BGD1.2	Governmental systems	Paired with 4700-4800 MHz
4500-4700	FIXED FIXED-SATELLITE (S/E) 5.441 MOBILE	FIXED FIXED-SATELLITE (S/E) 5.441 MOBILE	ENG/OB Fixed links SAB	Coordinated ENG/OB links for occasional use. Telecommunication satellites to coordinated Earth stations. Fixed satellite frequency plan in 4500-4800 MHz.
4700-4800		FIXED FIXED-SATELLITE (S/E) 5.441 MOBILE BGD1.2	Governmental systems	Paired with 4400-4500 MHz
4800-4940	FIXED MOBILE 5.442 Radio astronomy 5.149	FIXED MOBILE 5.442 Radio astronomy 5.149	ENG/OB Fixed links SAB	Coordinated ENG/OB links for occasional use. RA continuum measurements.
4940-4990	FIXED MOBILE 5.442 Radio astronomy 5.149 5.339	FIXED MOBILE 5.442 Radio astronomy 5.149 5.339 BGD19	ENG/OB SAB PPDR systems	Coordinated ENG/OB links for occasional use. RA continuum measurements. APT PPDR system
4990-5000	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	ENG/OB Fixed links SAB	Coordinated ENG/OB links for occasional use.

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
	RADIO ASTRONOMY Space research (passive) 5.149	RADIO ASTRONOMY 5.149		
5000-5010 MHz	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (S/E) 5.367	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (E/S)	Satellite Navigation	
5010-5030 MHz	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (S/E)(S/S) 5.443B 5.328B 5.367	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (E/S) 5.367	Satellite Navigation	
5030-5091	AERONAUTICAL RADIONAVIGATION 5.367 5.444	AERONAUTICAL RADIONAVIGATION 5.367 5.444	MLS	
5091-5150	AERONAUTICAL RADIONAVIGATION AERONAUTICAL MOBILE 5.444B 5.367 5.444 5.444A	AERONAUTICAL RADIONAVIGATION AERONAUTICAL MOBILE 5.444B 5.367 5.444 5.444A	MLS	
5150-5250	AERONAUTICAL RADIONAVIGATION FIXED-SATELLITE (E/S) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B 5.446 5.447B 5.447C	AERONAUTICAL RADIONAVIGATION FIXED-SATELLITE (E/S) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B 5.446 5.447B 5.447C	Wireless Access RLANs	
5250-5255	EARTH EXPLORATION – SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.447D MOBILE except aeronautical mobile 5.446A 5.446F 5.448 5.448A	EARTH EXPLORATION – SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.447D MOBILE except aeronautical mobile 5.446A 5.446F 5.448 5.448A	Governmental Systems Wireless Access RLANs Shipborne and VTS Radar	
5255-5350	EARTH EXPLORATION – SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) MOBILE except aeronautical mobile 5.446A 5.446F 5.448 5.448A	EARTH EXPLORATION – SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) MOBILE except aeronautical mobile 5.446A 5.446F 5.448 5.448A	Governmental Systems Wireless Access RLANs Shipborne and VTS Radar	

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
5350-5460 MHz	EARTH EXPLORATION – SATELLITE (active) 5.448B SPACE RESEARCH (Active) 5.448C AERONAUTICAL RADIONAVIGATION 5.449 RADIOLOCATION 5.448D	EARTH EXPLORATION – SATELLITE (active) 5.448B SPACE RESEARCH (Active) 5.448C AERONAUTICAL RADIONAVIGATION 5.449 RADIOLOCATION 5.448D	Governmental Systems Shipborne and VTS Radar	
5460-5470 MHz	RADIONAVIGATION 5.449 EARTH EXPLORATION – SATELLITE (active) SPACE RESEARCH (Active) 5.448C RADIOLOCATION 5.448D 5.448B	RADIONAVIGATION 5.449 EARTH EXPLORATION – SATELLITE (active) SPACE RESEARCH (Active) 5.448C RADIOLOCATION 5.448D 5.448B	Governmental Systems Shipborne and VTS Radar	
5470-5570	MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A EARTH EXPLORATION SATELLITE (active) SPACE RESEARCH (Active) RADIOLOCATION 5.450B 5.452 5.448B	MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A EARTH EXPLORATION SATELLITE (active) SPACE RESEARCH (Active) RADIOLOCATION 5.450B 5.452 5.448B	Governmental Systems Wireless Access RLANs Shipborne and VTS Radar	
5570-5650	MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B 5.452	MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B 5.452		
5650-5725	RADIOLOCATION MOBILE except eronautical mobile 5.450A 5.446A Amateur Space Research (deep space) 5.282 5.453	FIXED MOBILE 5.450A 5.446A RADIOLOCATION Amateur 5.453 5.282	Governmental Systems Wireless Access RLANs Shipborne and VTS Radar Amateur applications	Amateur Satellite Service (Earth to space), 5650-5670 MHz from RR 5.282.
5725-5830	RADIOLOCATION Amateur 5.150 5.453	FIXED MOBILE RADIOLOCATION Amateur 5.150 5.453	Amateur applications ISM SRDs Radars	The band 5725-5875 MHz is an ISM band RTTT in the band 5805-5815 MHz SRDs 5725-5875 MHz

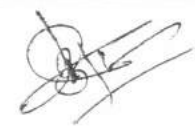
Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
5830-5850 MHz	RADIOLOCATION Amateur Amateur-Satellite (S/E) 5.150 **5.453**	FIXED MOBILE RADIOLOCATION Amateur Amateur-Satellite (S/E) 5.150 **5.453**	Fixed Links Amateur applications ISM SRDs Radars	Amateur Satellite 5830-5850 MHz (S/E)
5850-5925 MHz	FIXED FIXED-SATELLITE (E/S) MOBILE Radiolocation 5.150	FIXED FIXED-SATELLITE (E/S) MOBILE Radiolocation 5.150	Fixed Links Earth stations ISM SRDs	ISM to 5875 MHz SRDs
5925-6425	FIXED FIXED-SATELLITE (E/S) 5.457A MOBILE 5.457C 5.149 5.440 5.458	FIXED FIXED-SATELLITE (E/S) 5.457A 5.149 5.440 5.458	Fixed Links Earth stations	Channel Arrangement ITU R F. 383 Fig 1 – Centre Frequency 6175 MHz, Channel Separation 252.04 MHz
6425-6700	FIXED FIXED-SATELLITE (E/S) 5.457A MOBILE 5.457C 5.149 5.440 5.458	FIXED FIXED-SATELLITE (E/S) 5.457A Earth Exploration-satellite (passive) 5.149 5.440 5.458	Fixed Links Earth stations	Channel Arrangement ITU R F. 384 Centre Frequency 6770 MHz, Channel Separation 340 MHz
6700-7075	FIXED FIXED-SATELLITE (E/S)(S/E) 5.441 MOBILE 5.458 5.458A 5.458B 5.458C	FIXED FIXED-SATELLITE (E/S) 5.441 Earth Exploration-satellite (passive) 5.458 5.458A 5.458B 5.458C	Fixed Links Earth stations	Channel Arrangement ITU R F. 384 Centre Frequency 6770 MHz, Channel Separation 340 MHz
7075-7100	FIXED MOBILE 5.458	FIXED Earth Exploration-satellite (passive) 5.458	Fixed Links	Channel Arrangement ITU R F. 384 Centre Frequency 6770 MHz, Channel Separation 340 MHz
7100-7145	FIXED MOBILE 5.458	FIXED Earth Exploration-satellite (passive) 5.458	Fixed Links	Channel Arrangement ITU R F. 385 Fig 1, 7125 MHz – Centre Frequency 7275 MHz, Channel Separation 161 MHz
7145-7235	FIXED MOBILE SPACE RESEARCH (E/S) 5.460 5.458	FIXED Earth Exploration-satellite (E/S) Space research (e/s) 5.458	Fixed Links	Channel Arrangement ITU R F. 385 Fig 1, 7125 MHz – Centre Frequency 7275 MHz, Channel Separation 161 MHz

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
7235-7250 MHz	FIXED MOBILE 5.458	FIXED Earth Exploration-satellite (E/S) Space Research (E/S) 5.458		Channel Arrangement ITU R F. 385 Fig 1, 7125 MHz – Centre Frequency 7275 MHz, Channel Separation 161 MHz
7250-7300 MHz	FIXED FIXED-SATELLITE(S/E) MOBILE 5.461	FIXED FIXED-SATELLITE (S/E) MOBILE	Fixed Links	Channel Arrangement ITU R F. 385 Fig 1, 7125 MHz – Centre Frequency 7275 MHz, Channel Separation 161 MHz
7300-7450	FIXED FIXED-SATELLITE (S/E) MOBILE except aeronautical mobile 5.461	FIXED FIXED-SATELLITE (S/E) MOBILE except aeronautical mobile 5.461 BGD1.2	Fixed Links	To 7425 MHz. Channel Arrangement ITU R F. 385 Fig 1, 7125 MHz – Centre Frequency 7275 MHz, Channel Separation 161 MHz From 7425 MHz - Channel Arrangement ITU R F. 385 – Centre Frequency 7662.5 MHz, Channel Separation 245 MHz
7450-7550	FIXED FIXED-SATELLITE (S/E) METEOROGICAL-SATELLITE (S/E) MOBILE except aeronautical mobile 5.461A	FIXED FIXED-SATELLITE (S/E) METEOROGICAL-SATELLITE (S/E) MOBILE except aeronautical mobile 5.461A BGD1.2	Fixed Links	Channel Arrangement ITU R F. 385 – Centre Frequency 7662.5 MHz, Channel Separation 245 MHz Meteorological satellites limited to geostationary systems.
7550-7750	FIXED FIXED-SATELLITE (S/E) MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (S/E) MOBILE except aeronautical mobile BGD1.2	Fixed Links	Channel Arrangement ITU R F. 385 – Centre Frequency 7662.5 MHz, Channel Separation 245 MHz Channel arrangement in this band is tentative pending further studies by BTRC
7750-7850	FIXED METEOROGICAL-SATELLITE (S/E) 5.461B MOBILE except aeronautical mobile	FIXED METEOROGICAL-SATELLITE (S/E) 5.461B MOBILE except aeronautical mobile BGD1.2	Fixed Links	Channel Arrangement ITU R F. 385 – Centre Frequency 7662.5 MHz, Channel Separation 245 MHz Channel arrangement in this band is tentative pending further studies by BTRC
7850-7900	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile BGD1.2	Fixed Links	Channel Arrangement ITU R F. 385 – Centre Frequency 7662.5 MHz, Channel Separation 245 MHz Channel arrangement in this band is tentative pending further studies by BTRC
7900-8025	FIXED FIXED-SATELLITE (E/S) MOBILE 5.461	FIXED FIXED-SATELLITE (E/S) MOBILE	Fixed Links	Channel Arrangement ITU R F. 386 – Centre Frequency 8157 MHz, Channel Separation 266 MHz Channel arrangement in this band is tentative pending further studies by BTRC
8025-8175 MHz	EARTH-EXPLORATION SATELLITE (S/E)	EARTH-EXPLORATION SATELLITE (S/E)	Fixed Links	Channel Arrangement ITU R F. 386 – Centre Frequency 8157 MHz, Channel

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
	FIXED FIXED-SATELLITE (E/S) MOBILE 5.463 5.462A	FIXED FIXED-SATELLITE (E/S) 5.462A		Separation 266 MHz Channel arrangement in this band is tentative pending further studies by BTRC
8175-8215 MHz	EARTH-EXPLORATION SATELLITE (S/E) FIXED FIXED-SATELLITE (E/S) METEOROGICAL-SATELLITE (E/S) MOBILE 5.463 5.462A	EARTH-EXPLORATION SATELLITE (S/E) FIXED FIXED-SATELLITE (E/S) METEOROGICAL-SATELLITE (E/S) 5.462A	Fixed Links	Channel Arrangement ITU R F. 386 – Centre Frequency 8157 MHz, Channel Separation 266 MHz Channel arrangement in this band is tentative pending further studies by BTRC
8215-8400	FIXED FIXED-SATELLITE (E/S) MOBILE 5.463 EARTH-EXPLORATION SATELLITE (S/E) 5.462A	FIXED FIXED-SATELLITE (E/S) EARTH-EXPLORATION SATELLITE (S/E) 5.462A	Fixed Links	Annex 2 to Channel Arrangement ITU R F. 386 – Centre Frequency 8387.5 MHz, Channel Separation 119 MHz Channel arrangement in this band is tentative pending further studies by BTRC VLBI observations s
8400-8500	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (S/E) 5.465	FIXED SPACE RESEARCH (S/E) 5.465 Radiolocation	Fixed Links	Annex 2 to Channel Arrangement ITU R F. 386 – Centre Frequency 8387.5 MHz, Channel Separation 119 MHz
8500-8550	RADIOLOCATION 5.468	RADIOLOCATION FIXED MOBILE 5.468	Fixed Links	
8550-8650	EARTH-EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.468 5.469A	RADIOLOCATION SPACE RESEARCH (active) EARTH-EXPLORATION SATELLITE (active) FIXED MOBILE 5.468 5.469A	Fixed Links	
8650-8750	RADIOLOCATION 5.468	RADIOLOCATION FIXED MOBILE 5.468	Fixed Links	

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
8750-8850 MHz	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470		
8850-9000 MHZ	RADIOLOCATION MARITIME RADIONAVIGATION 5.472	RADIOLOCATION MARITIME RADIONAVIGATION 5.472		
9000-9200	AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION	AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION	Aeronautical primary Radars	
9200-9300	RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.474	RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.474	Motion sensors Maritime primary Radars	
9300-9500	RADIONAVIGATION EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.427 5.474 5.475 5.475A 5.475B 5.476A	RADIONAVIGATION Radiolocation Space Research (active) 5.427 5.474 5.475 5.475A 5.475B 5.476A BGD1.2	Aeronautical primary Radars Motion sensors Maritime primary Radars	Co-ordination of civil and defence radionavigation systems to be effected
9500-9800	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) 5.476A	RADIOLOCATION EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) 5.476A	Governmental systems Motion sensors	
9800-9900	RADIOLOCATION Earth exploration-satellite (active) Space research (active) Fixed 5.477 5.478A 5.478B	RADIOLOCATION FIXED 5.477 5.478A 5.478B	Fixed Links	

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
9900-10000 MHz	RADIOLOCATION Fixed 5.477 5.479	RADIOLOCATION FIXED 5.477 5.479	Fixed Links	
10.00-10.15 GHz	FIXED MOBILE RADIOLOCATION Amateur 5.479	FIXED MOBILE RADIOLOCATION Amateur 5.479 BGD1.2	Fixed Links Amateur applications SAB	
10.15-10.30	FIXED MOBILE RADIOLOCATION Amateur	FIXED MOBILE RADIOLOCATION Amateur BGD1.2	Fixed Links including FWA	Annex 1 of Channel Arrangement ITU R F. 1568 – Channel Separation 350 MHz
10.30-10.45	FIXED MOBILE RADIOLOCATION Amateur	FIXED MOBILE RADIOLOCATION Amateur BGD1.2	Fixed Links Amateur applications SAB	Annex 1 of Channel Arrangement ITU R F. 1568 – Channel Separation 350 MHz
10.45-10.50	RADIOLOCATION Amateur Amateur Satellite	RADIOLOCATION FIXED Amateur Amateur Satellite BGD1.2	Fixed Links Amateur applications SAB	Annex 1 of Channel Arrangement ITU R F. 1568 – Channel Separation 350 MHz
10.50-10.55	FIXED MOBILE RADIOLOCATION	FIXED MOBILE RADIOLOCATION BGD1.2	Fixed Links FWA SAB	Annex 1 of Channel Arrangement ITU R F. 1568 – Channel Separation 350 MHz
10.55-10.60	FIXED MOBILE except aeronautical mobile Radiolocation	FIXED MOBILE except aeronautical mobile Radiolocation BGD1.2	Fixed Links FWA SAB	Annex 1 of Channel Arrangement ITU R F. 1568 – Channel Separation 350 MHz
10.60-10.65 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive)	Fixed Links FWA SAB	Annex 1 of Channel Arrangement ITU R F. 1568 – Channel Separation 350 MHz



Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
	Radiolocation 5.149 5.482 5.482A	Radiolocation 5.149 5.482 5.482A BGD1.2		
10.65-10.68 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation 5.149 5.482 5.482A	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 5.482 5.482A BGD1.2	Fixed Links SAB	Annex 1 of Channel Arrangement ITU R F. 1568 – Channel Separation 350 MHz
10.68-10.70	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340		
10.70-11.70	FIXED FIXED-SATELLITE (S/E) 5.441 5.484A MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (S/E) 5.441 5.484A Mobile except aeronautical mobile BGD33	Fixed Links Earth stations	Channel Arrangement ITU R F. 387, Center Frequency 11200 MHz ,Channel separation 530 MHz
11.70-12.20	FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 5.492 FIXED 5.487 5.487A	FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 5.492 5.487 5.487A	DVB-S Fixed Links	RR Appendix 30 Satellite Broadcasting
12.20-12.50	FIXED FIXED-SATELLITE (S/E) MOBILE except aeronautical mobile BROADCASTING 5.484A 5.487	FIXED FIXED-SATELLITE (S/E) MOBILE except aeronautical mobile BROADCASTING 5.484A 5.487	DVB-S Fixed Links	
12.50-12.75 GHz	FIXED FIXED-SATELLITE (S/E) 5.484A MOBILE except aeronautical	FIXED-SATELLITE (S/E) 5.484A Fixed Mobile except aeronautical	VSAT and Digital Satellite News gathering Fixed Links	Priority for civil networks. Low density carriers, including VSATs and digital SNG are encouraged to use this band.

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
	mobile BROADCASTING-SATELLITE 5.493	mobile Broadcasting-satellite 5.493 BGD34		
12.75-13.25 GHz	FIXED FIXED-SATELLITE (E/S) 5.441 MOBILE Space research (deep space) (S/E)	FIXED FIXED-SATELLITE (E/S) 5.441	Fixed Links Earth stations	Channel Arrangement ITU R F. 497. Center Frequency 12796 MHz ,Channel separation 266 MHz
13.25-13.40	EARTH EXPLORATION-SATELLITE (active) AERONAUTICAL RADIONAVIGATION 5.497 SPACE RESEARCH (active) 5.498A 5.499	FIXED 5.499 AERONAUTICAL RADIONAVIGATION 5.497 EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) 5.498A	Fixed links Doppler Navigation aids Ship berthing radars	
13.40-13.75	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.501A Standard Frequency and time Signal Satellite (E/S) 5.499 5.501B	FIXED 5.499 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.501A 5.501B	Doppler Navigation aids Ship berthing radars Motion Sensors Fixed links	
13.75-14.00	FIXED-SATELLITE (E/S) 5.484A RADIOLOCATION Standard Frequency and time Signal Satellite (E/S) Earth exploration satellite Space research 5.499 5.502 5.503	FIXED 5.499 FIXED-SATELLITE (E/S) 5.484A RADIOLOCATION Earth exploration satellite Space research 5.502 5.503	Ship berthing radars Motion Sensors Fixed links Earth stations Radars	
14-14.25	FIXED-SATELLITE (E/S) 5.457A 5.484A 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (E/S) 5.506A Space research 5.504A	FIXED FIXED-SATELLITE (E/S) 5.457A 5.484A 5.506 5.506B Mobile-satellite (E/S) 5.506A Space research 5.504A BGD34	Fixed Links VSAT SNG	Low density carriers, including VSATs and digital SNG, are encouraged to use this band.
14.25-14.30 GHz	FIXED-SATELLITE (E/S) 5.457A 5.484A 5.506 5.506B RADIONAVIGATION 5.504	FIXED FIXED-SATELLITE (E/S) 5.457A 5.484A 5.506 5.506B Mobile-satellite (E/S)	Fixed Links Earth stations	Fixed links to be coordinated with fixed satellite service on a national basis.

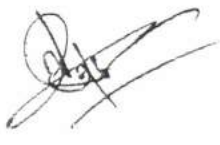
Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
	Mobile-satellite (E/S) 5.506A Space research 5.504A	5.506A Space Research 5.504A		
14.30-14.40 GHz	FIXED FIXED-SATELLITE (E/S) 5.457A 5.484A 5.506 5.506B MOBILE except aeronautical mobile Mobile-satellite (E/S) 5.506A Radionavigation-satellite 5.504A	FIXED FIXED-SATELLITE (E/S) 5.457A 5.484A 5.506 5.506B Mobile-satellite (E/S) 5.506A 5.504A BGD20	Fixed Links	Fixed links to be coordinated with fixed satellite service on a national basis.
14.40-14.47	FIXED FIXED-SATELLITE (E/S) 5.457A 5.484A 5.506 5.506B MOBILE except aeronautical mobile Mobile-satellite (E/S) 5.506A Space research (S/E) 5.504A	FIXED FIXED-SATELLITE (E/S) 5.457A 5.484A 5.506 5.506B Mobile-satellite (E/S) 5.506A Radio astronomy 5.504A	Fixed Links	Channel Arrangement ITU-R F. 636 Fig 1. Tx-Rx Separation 420 MHz Fixed links to be coordinated with fixed satellite service on a national basis.
14.47-14.50	FIXED FIXED-SATELLITE (E/S) 5.484A 5.506 5.457A 5.506B 5.457B MOBILE except aeronautical mobile Mobile-satellite (E/S) 5.506A 5.509A Radio astronomy 5.149 5.504A	FIXED FIXED-SATELLITE (E/S) 5.484A 5.506 5.457A 5.506B 5.457B Mobile-satellite (E/S) 5.506A 5.509A Radio astronomy 5.149	Fixed Links	Channel Arrangement ITU-R F. 636 Fig 1. Tx-Rx Seperation 420 MHz Fixed links to be coordinated with fixed satellite service on a national basis. RA spectral line observations and future VLBI.
14.50-14.80	FIXED FIXED-SATELLITE (E/S) 5.510 MOBILE Space research	FIXED MOBILE Radio Astronomy	Fixed Links	Channel Arrangement ITU-R F. 636 Fig 1. Tx-Rx Seperation 420 MHz VLBI observations
14.80-15.35 GHz	FIXED MOBILE Space Research 5.339	FIXED MOBILE Radio Astronomy Space Research 5.339	Fixed Links	Channel Arrangement ITU-R F. 636 Fig 1. Tx-Rx Seperation 420 MHz VLBI observations

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
15.35-15.40 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Passive applications	RA continuum measurements and future VLBI.
15.40-15.43	AERONAUTICAL RADIONAVIGATION 5.511D	AERONAUTICAL RADIONAVIGATION	Doppler radar low power sensing Ground movement radars	
15.43-15.63	FIXED-SATELLITE (S/E) (E/S) 5.511A AERONAUTICAL RADIONAVIGATION 5.511C	FIXED-SATELLITE (S/E) (E/S) 5.511A AERONAUTICAL RADIONAVIGATION 5.511C	Doppler radar low power sensing Ground movement radars	
15.63-15.70	AERONAUTICAL RADIONAVIGATION 5.511D	AERONAUTICAL RADIONAVIGATION	Doppler radar low power sensing Ground movement radars	
15.70-16.60	RADIOLOCATION 5.512	FIXED 5.512 Radiolocation	Fixed Links	
16.60-17.10	RADIOLOCATION Space Research (deep space) (E/S) 5.512	FIXED 5.512 Radiolocation Space Research (E/S)	Fixed Links	
17.10-17.20	RADIOLOCATION 5.512	FIXED 5.512 Radiolocation Mobile	Fixed Links Wireless Access RLANs	
17.20-17.30	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.512 5.513A	FIXED EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) MOBILE Radiolocation 5.513A 5.512	Fixed Links Wireless Access RLANs	Fixed and Mobile allocations have priority over space services.
17.30-17.70 GHz	FIXED-SATELLITE (E/S) 5.516 Radiolocation 5.514	FIXED-SATELLITE (E/S) 5.516 Fixed Mobile	Point to Multipoint systems	Feeder links for RR Appendix 30 plan 11.7 - 12.5 GHz

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
		Radiolocation 5.514		
17.70-18.10 GHz	FIXED FIXED-SATELLITE (E/S) 5.516 (S/E) 5.484A MOBILE	FIXED FIXED-SATELLITE (E/S) 5.516 (S/E) 5.484A	Fixed links	Similar to Channel Arrangement ITU-R F. 595 – Centre Frequency 18 700 MHz, Channel Separation 1010 MHz
18.10-18.40	FIXED FIXED-SATELLITE (E/S) 5.520 (S/E) 5.484A MOBILE 5.519	FIXED FIXED-SATELLITE (E/S) 5.520 (S/E) 5.484A METEOROGICAL-SATELLITE (S/E) 5.519	Fixed links	Similar to Channel Arrangement ITU-R F. 595 – Centre Frequency 18 700 MHz, Channel Separation 1010 MHz
18.40-18.60	FIXED FIXED-SATELLITE (S/E) 5.484A (E/S) 5.520 MOBILE	FIXED FIXED-SATELLITE (S/E) 5.484A (E/S) 5.520	Fixed links	Similar to Channel Arrangement ITU-R F. 595 – Centre Frequency 18 700 MHz, Channel Separation 1010 MHz
18.60-18.80	EARTH EXPLORATION SATELLITE FIXED FIXED-SATELLITE (S/E) 5.522B MOBILE except aeronautical mobile Space Research (passive) 5.522A	EARTH EXPLORATION SATELLITE FIXED FIXED-SATELLITE (S/E) 5.522B 5.522A	Fixed links	Similar to Channel Arrangement ITU-R F. 595 – Centre Frequency 18 700 MHz, Channel Separation 1010 MHz
18.80-19.30	FIXED FIXED-SATELLITE (S/E) 5.523A MOBILE	FIXED FIXED-SATELLITE (S/E) 5.523A	Fixed links	Similar to Channel Arrangement ITU-R F. 595 – Centre Frequency 18 700 MHz, Channel Separation 1010 MHz
19.30-19.70	FIXED FIXED-SATELLITE (S/E)(E/S) 5.523B 5.523C 5.523D 5.523E MOBILE	FIXED FIXED-SATELLITE (S/E) 5.523B 5.523C 5.523D 5.523E	Fixed links	Similar to Channel Arrangement ITU-R F. 595 – Centre Frequency 18 700 MHz, Channel Separation 1010 MHz
19.70-20.10	FIXED-SATELLITE (S/E) 5.484A 5.516B Mobile satellite (S/E)	FIXED-SATELLITE (S/E) 5.484A 5.516B Mobile satellite (S/E) BGD34	VSAT	
20.10-20.20 GHz	FIXED-SATELLITE (S/E) 5.484A 5.516B MOBILE-SATELLITE (S/E) 5.525 5.526 5.527 5.528	FIXED-SATELLITE (S/E) 5.484A MOBILE-SATELLITE (S/E) 5.525 5.526 5.527 5.528	VSAT	

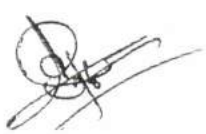
Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
		BGD34		
20.20-21.20 GHz	FIXED-SATELLITE (S/E) MOBILE-SATELLITE (S/E) Standard Frequency and time Signal Satellite (S/E)	FIXED-SATELLITE (S/E) MOBILE-SATELLITE (S/E) BGD34	VSAT	
21.20-21.40	EARTH EXPLORATION SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	EARTH EXPLORATION SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) BGD39	Fixed links SAB	Passive systems will be phased out by 2015
21.40-22.00	FIXED MOBILE BROADCASTING SATELLITE 5.530	BROADCASTING SATELLITE BROADCASTING FIXED 5.530 BGD39	MVDS-DVB	
22.00-22.21	FIXED MOBILE except aeronautical mobile 5.149	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 BGD39	Fixed links Fixed links for GSM Infrastructure SAB	Annex 4H RA spectral line observations (water line and red shifted water line below 22.5 GHz).
22.21-22.50	EARTH EXPLORATION SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 5.532	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Earth exploration satellite (passive) 5.149 5.532 BGD39	Fixed links Fixed links for GSM Infrastructure SAB	Annex 4H
22.50-22.55 GHz	FIXED MOBILE	FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH	Fixed links Fixed links for GSM Infrastructure SAB	Annex 4H

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
		(passive) BGD39		
22.55-23.00 GHz	FIXED INTER-SATELLITE 5.338A MOBILE 5.149	FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 BGD39	Fixed links Fixed links for GSM Infrastructure SAB	Annex 4H
23.00-23.55		FIXED INTER-SATELLITE 5.338A MOBILE 5.149 BGD39		
23.55-23.60	FIXED MOBILE	FIXED MOBILE BGD39	Fixed links Fixed links for GSM Infrastructure SAB	Annex 4H
23.60-24.00	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Passive applications	Continuum observations. Ammonia line. Water vapour measurements
24.00-24.05	AMATEUR AMATEUR-SATELLITE 5.150	AMATEUR AMATEUR-SATELLITE 5.150	Amateur ISM	ISM 24-24.5 GHz
24.05-24.25	RADIOLOCATION Amateur Earth exploration Satellite (active) 5.150	RADIOLOCATION Amateur Earth exploration Satellite (active) Fixed Mobile 5.150	Amateur ISM SAB Motion Sensors SRDs	ISM 24-24.5 GHz
24.25-24.45	RADIONAVIGATION FIXED MOBILE	FIXED MOBILE	SAB Unidirectional Fixed links	
24.45-24.50	FIXED INTER-SATELLITE MOBILE	FIXED MOBILE RADIONAVIGATION	SAB Unidirectional Fixed links	



Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
24.50-24.65 GHz	RADIONAVIGATION 5.533	FIXED RADIONAVIGATION	Fixed Links FWA	Annex 4I CRS paired with 25.5-26.5 GHz for FDD systems
24.65-24.75 GHz	FIXED INTER-SATELLITE MOBILE 5.533	FIXED	Fixed Links FWA	Annex 4I CRS paired with 25.5-26.5 GHz for FDD systems
24.75-25.25	FIXED FIXED-SATELLITE (E/S) 5.535 MOBILE	FIXED	Fixed links FWA	Annex 4I CRS paired with 25.5-26.5 GHz for FDD systems
25.25-25.50	FIXED INTER-SATELLITE 5.536 MOBILE Standard frequency and Time Signal Satellite (E/S)	FIXED MOBILE INTER-SATELLITE 5.536	Fixed links FWA	Annex 4I CRS paired with 25.5-26.5 GHz for FDD systems
25.50-26.50	EARTH EXPLORATION SATELLITE (S/E) FIXED INTER-SATELLITE 5.536 MOBILE SPACE RESEARCH (S/E) Standard frequency and time signal-satellite (E/S) 5.536A	FIXED INTER-SATELLITE 5.536 MOBILE SPACE RESEARCH (S/E) Earth exploration satellite (S/E) 5.536A	Fixed links FWA	Annex 4I TS paired with 24.5-25.5 GHz for FDD systems
26.50-27.00		FIXED INTER-SATELLITE 5.536 MOBILE SPACE RESEARCH (S/E) Earth exploration satellite (S/E) 5.536A	Fixed links	Paired with 27-27.5 GHz
27.00-27.50	FIXED FIXED-SATELLITE (E/S) INTER-SATELLITE 5.536 5.537 MOBILE	FIXED INTER-SATELLITE 5.536 5.537 MOBILE	Fixed links	Paired with 26.5-27 GHz
27.50-28.50 GHz	FIXED 5.537A FIXED-SATELLITE (E/S) 5.484A 5.516B 5.539 MOBILE 5.538 5.540	FIXED FIXED-SATELLITE (E/S)(S/E) 5.484A 5.516B 5.539 5.538 5.540	Fixed links VSAT FWA	Annex 4J Feeder Links to Broadcasting Satellites (11.7-12.5 GHz) 27.5-29.5 GHz. Fixed Links 28.0525-28.4445 GHz, applies Earth- to- Space for uncoordinated earth stations 27.5-27.8285GHz and

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
				28.4445-28.5GHz Fixed Wireless Access CRS paired with 28.5-29.5 GHz for FDD systems
28.50-29.10 GHz	FIXED FIXED-SATELLITE (E/S) 5.484A 5.523A 5.539 5.516B MOBILE Earth exploration satellite (E/S) 5.541 5.540	FIXED FIXED-SATELLITE (E/S) 5.484A 5.523A 5.539 5.516B Earth exploration satellite (E/S) 5.541 5.540	Fixed links VSAT FWA	Annex 4J Feeder Links to Broadcasting Satellites (11.7-12.5 GHz) 27.5-29.5 GHz. Uncoordinated earth stations within band 28-28.8365 GHz Fixed Wireless Access TS paired with 27.5-28.1 GHz for FDD systems
29.10-29.50	FIXED FIXED-SATELLITE (E/S) 5.523C 5.523E 5.535A 5.539 5.541A 5.516B MOBILE Earth exploration satellite (E/S) 5.541 5.540	FIXED FIXED-SATELLITE (E/S) 5.523C 5.523E 5.535A 5.539 5.541A 5.516B Earth exploration satellite (E/S) 5.541 5.540	Fixed links VSAT FWA	Annex 4J Feeder Links to Broadcasting Satellites (11.7-12.5 GHz) 27.5-29.5 GHz. Fixed Links 29.1-29.4525 GHz Uncoordinated earth stations within band 29.4525-29.5 GHz TS paired with 28.1-28.5 GHz for FDD systems
29.50-29.90	FIXED-SATELLITE (E/S) 5.484A 5.539 5.516B Earth exploration satellite (E/S) 5.541 Mobile-Satellite (E/S) 5.540	FIXED-SATELLITE (E/S) 5.484A 5.539 5.516B Earth exploration satellite (E/S) 5.541 Mobile-Satellite (E/S) 5.540 BGD34	VSAT	Uncoordinated earth stations
29.90-30.00	FIXED-SATELLITE (E/S) 5.484A 5.539 5.516B MOBILE-SATELLITE (E/S) Earth exploration satellite (E/S) 5.541 5.543 5.525 5.526 5.527 5.538 5.540	FIXED-SATELLITE (E/S) (S/E) 5.484A 5.539 5.516B MOBILE-SATELLITE (E/S) Earth exploration satellite (E/S) 5.541 5.543 5.525 5.526 5.527 5.538 5.540 BGD34	VSAT	Uncoordinated earth stations
30.00-31.00	FIXED-SATELLITE (E/S) 5.338A MOBILE-SATELLITE (E/S) Standard frequency and time signal-satellite (S/E)	FIXED-SATELLITE (E/S) (S/E) 5.338A MOBILE-SATELLITE (E/S) BGD34	VSAT	Uncoordinated earth stations
31.00-31.30	FIXED 5.338A MOBILE Standard frequency and time signal-satellite (S/E) Space research 5.544 5.149	FIXED 5.338A MOBILE 5.149	Fixed Links	Fixed includes point to multipoint applications. Fixed service channel arrangement for 31.0 – 31.3 and 31.5 – 31.8 GHz See Annex 4K RA continuum measurements
31.30-31.50 GHz	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY	Passive band	



Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
	SPACE RESEARCH (passive) 5.340	SPACE RESEARCH (passive) 5.340		
31.50-31.80 GHz	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical Mobile 5.149	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) FIXED MOBILE except aeronautical Mobile 5.149 5.346 **BGD40**	Fixed Links	Fixed includes point to multipoint applications. Fixed service channel arrangement for 31.0 – 31.3 and 31.5 – 31.8 GHz See Annex 4K RA continuum measurements
31.80-32.00	FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space)(S/E) 5.547 5.548	FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (S/E) 5.547 5.548	Fixed Links	Fixed service channel arrangement for 31.8-33.4 GHz Annex 4L. Fixed includes point to multipoint
32.00-32.30	FIXED 5.547A INTER-SATELLITE RADIONAVIGATION SPACE RESEARCH (deep space)(S/E) 5.547 5.548	FIXED 5.547A RADIONAVIGATION INTER-SATELLITE SPACE RESEARCH (S/E) 5.547 5.548	Fixed Links	Fixed service channel arrangement for 31.8-33.4 GHz Annex 4L. Fixed includes point to multipoint
32.30-33.00	FIXED 5.547A INTER-SATELLITE RADIONAVIGATION 5.547 5.548	FIXED 5.547A INTER-SATELLITE RADIONAVIGATION 5.547 5.548	Fixed Links	Fixed service channel arrangement for 31.8-33.4 GHz Annex 4L. Fixed includes point to multipoint
33.00-33.40	FIXED 5.547A RADIONAVIGATION 5.547	FIXED 5.547A RADIONAVIGATION INTER-SATELLITE 5.547	Fixed Links	Fixed service channel arrangement for 31.8-33.4 GHz Annex 4L. Fixed includes point to multipoint
33.40-34.20	RADIOLOCATION 5.549	RADIOLOCATION FIXED MOBILE 5.549	UNDESIGNATED	
34.20-34.70 GHz	RADIOLOCATION SPACE RESEARCH (deep space)(E/S) 5.549	RADIOLOCATION SPACE RESEARCH (E/S) FIXED MOBILE	UNDESIGNATED	

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
		5.549		
34.70-35.20 GHz	RADIOLOCATION Space Research 5.549	RADIOLOCATION FIXED MOBILE Space Research 5.549	UNDESIGNATED	
35.20-35.50	METEOROLOGICAL AIDS RADIOLOCATION 5.549	METEOROLOGICAL AIDS RADIOLOCATION FIXED MOBILE 5.549	UNDESIGNATED	
35.50-36.00	METEOROLOGICAL AIDS EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.549 5.549A	METEOROLOGICAL AIDS EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) FIXED MOBILE 5.549 5.549A	UNDESIGNATED	
36-37	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149 5.550A	EARTH EXPLORATION SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) Radio Astronomy 5.149 5.550A	Radio astronomy applications	Hydrogen cyanide and Hydroxyl lines 36.43-36.5 GHz
37-37.50	FIXED MOBILE SPACE RESEARCH (S/E) 5.547	FIXED SPACE RESEARCH (S/E) 5.547	Fixed links for GSM Infrastructure	Channel arrangement ITU-R {F.749 Annex1}
37.50-38	FIXED FIXED-SATELLITE (S/E) MOBILE SPACE RESEARCH (S/E) Earth exploration satellite (S/E) 5.547	FIXED FIXED-SATELLITE (S/E) SPACE RESEARCH (S/E) Earth exploration satellite (S/E) 5.547	Fixed links for GSM Infrastructure	Channel arrangement ITU-R {F.749 Annex1}
38-39.50 GHz	FIXED FIXED-SATELLITE (S/E) MOBILE	FIXED FIXED-SATELLITE (S/E) Earth exploration satellite	Fixed links for GSM Infrastructure	Channel arrangement ITU-R {F.749 Annex1}

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
	Earth exploration satellite (S/E) 5.547	(S/E) 5.547		
39.5-40 GHz	FIXED FIXED-SATELLITE (S/E) 5.516B MOBILE MOBILE SATELLITE (S/E) Earth Exploration Satellite (S/E) 5.547	FIXED FIXED-SATELLITE (S/E) 5.516B MOBILE MOBILE SATELLITE (S/E) Earth Exploration Satellite (S/E) 5.547	Fixed Satellite Service applications	
40-40.5	EARTH EXPLORATION SATELLITE (E/S) FIXED FIXED SATELLITE (S/E) 5.516B MOBILE MOBILE-SATELLITE (S/E) SPACE RESEARCH (E/S) Earth exploration Satellite (S/E)	FIXED FIXED SATELLITE (S/E) 5.516B MOBILE MOBILE-SATELLITE (S/E) SPACE RESEARCH (E/S) Earth exploration Satellite (E/S) (S/E)	Fixed Satellite Service applications	
40.50-41.00	FIXED FIXED-SATELLITE (S/E) BROADCASTING BROADCASTING SATELLITE Mobile 5.547	BROADCASTING BROADCASTING SATELLITE FIXED 5.547	Fixed Satellite Service applications Multimedia Wireless Systems MWS	
41.00-42.00	FIXED FIXED-SATELLITE (S/E) BROADCASTING BROADCASTING-SATELLITE Mobile 5.547	FIXED BROADCASTING BROADCASTING-SATELLITE 5.547	Fixed Satellite Service applications Multimedia Wireless Systems MWS	
42.00-42.50	FIXED FIXED-SATELLITE (S/E) BROADCASTING BROADCASTING-SATELLITE Mobile 5.547 5.551H 5.551I	FIXED BROADCASTING BROADCASTING-SATELLITE 5.551H 5.551I	Fixed Satellite Service applications Multimedia Wireless Systems MWS	
42.50-43.50 GHz	FIXED FIXED SATELLITE (E/S) 5.552	FIXED FIXED SATELLITE (E/S) 5.552	Radio astronomy applications Fixed Satellite Service applications	Silicon monoxide lines and many other spectral lines in this band.

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
	MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149 5.547 5.551H 5.551I	MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149 5.547 5.551H 5.551I	Multimedia Wireless Systems MWS	
43.50-45.50 GHz	MOBILE 5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	MOBILE 5.553 MOBILE-SATELLITE Fixed Satellite 5.554		
45.50-47.00	MOBILE 5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	MOBILE 5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554		
47.00-47.20	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	Amateur applications Amateur satellite applications	
47.20-47.50	FIXED FIXED-SATELLITE (E/S) 5.552 MOBILE 5.552A	FIXED FIXED-SATELLITE (E/S) 5.552 MOBILE 5.552A	Fixed Satellite Service applications HAPS SAB	Feeder link band for 40GHz broadcasting satellites
47.50-47.90	FIXED FIXED-SATELLITE (E/S) 5.552 MOBILE	FIXED FIXED-SATELLITE (E/S) 5.552 MOBILE	Fixed Satellite Service applications SAB	Feeder link band for 40GHz broadcasting satellites
47.90-48.20	FIXED FIXED-SATELLITE (E/S) 5.552 MOBILE 5.552A	FIXED FIXED-SATELLITE (E/S) 5.552 MOBILE 5.552A	Fixed Satellite Service applications HAPS SAB	Feeder link band for 40GHz broadcasting satellites
48.20-48.94	FIXED FIXED-SATELLITE (E/S) 5.338A 5.552 MOBILE 5.149 5.340 5.555	FIXED FIXED-SATELLITE (E/S) 5.338A 5.552 MOBILE 5.149 5.340 5.555	Fixed satellite applications SAB	Feeder link band for 40GHz broadcasting satellites 48.5-49.2 GHz Fixed service channel arrangement for 48.5 – 50.2 GHz – Annex 4M
48.94-49.04		FIXED FIXED-SATELLITE (E/S) 5.338A 5.552 MOBILE RADIO ASTRONOMY 5.149 5.340 5.555	Fixed satellite applications Radio astronomy applications SAB	Feeder link band for 40GHz broadcasting satellites 48.5-49.2 GHz Carbon monosulphide line 48.94-49.4 GHz Fixed service channel arrangement for 48.5 – 50.2 GHz – Annex 4M

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
49.04-50.20 GHz		FIXED FIXED-SATELLITE (E/S) 5.338A 5.552 MOBILE 5.149 5.340 5.555	Fixed satellite applications SAB	Carbon monosulphide line 48.94-49.4 GHz Fixed service channel arrangement for 48.5 – 50.2 GHz – Annex 4M
50.20-50.40 GHz	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	Passive applications	
50.40-51.40	FIXED FIXED-SATELLITE (E/S) 5.338A MOBILE Mobile-Satellite (E/S)	FIXED FIXED-SATELLITE (E/S) 5.338A MOBILE Mobile-Satellite (E/S)		
51.40-52.60	FIXED 5.338A MOBILE 5.547 5.556	FIXED 5.338A MOBILE RADIO ASTRONOMY 5.547 5.556	Fixed links	Fixed service channel arrangement for 51.4-52.6 GHz – Annex 4N
52.6-54.25	EARTH EXPLORATION SATELLITE (passive) SPACE RESEARCH (passive) 5.340 5.556	EARTH EXPLORATION SATELLITE (passive) SPACE RESEARCH (passive) 5.340 5.556	Passive applications	Atmospheric temperature sounding
54.25-55.78	EARTH EXPLORATION SATELLITE (passive) INTER-SATELLITE 5.556A SPACE RESEARCH (passive)	EARTH EXPLORATION SATELLITE (passive) SPACE RESEARCH (passive)	Passive applications	Atmospheric temperature sounding
55.78-56.9	EARTH EXPLORATION SATELLITE (passive) FIXED 5.557A INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	EARTH EXPLORATION SATELLITE (passive) FIXED 5.557A INTER-SATELLITE 5.556A SPACE RESEARCH (passive) 5.547 5.558	Fixed links Passive applications	Fixed service channel arrangement for 55.78 – 57.0 GHz – Annex 4O
56.90-57.00 GHz	EARTH EXPLORATION SATELLITE (passive) FIXED INTER-SATELLITE	EARTH EXPLORATION SATELLITE (passive) FIXED MOBILE 5.558	Fixed links Passive applications	Fixed service channel arrangement for 55.78 – 57.0 GHz – Annex 4O Atmospheric temperature sounding

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
	5.558A SPACE RESEARCH (passive) 5.547	SPACE RESEARCH (passive) 5.547 5.558A		
57.00-58.20 GHz	EARTH EXPLORATION SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	EARTH EXPLORATION SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	Fixed links Passive applications	Fixed service channel arrangement for 57.0 – 59.0 GHz – Annex 4P May be considered for un-coordinated links. Atmospheric temperature sounding
58.2-59.00	EARTH EXPLORATION SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.547 5.556	EARTH EXPLORATION SATELLITE (passive) FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.547 5.556	Fixed links Passive applications	Fixed service channel arrangement for 57.0 – 59.0 GHz – Annex 4P May be considered for un-coordinated links. Atmospheric temperature sounding
59.00-59.30	EARTH EXPLORATION SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 RADIOLOCATION 5.559 SPACE RESEARCH (passive)	EARTH EXPLORATION SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 RADIOLOCATION 5.559 SPACE RESEARCH (passive)	Passive applications	Atmospheric temperature sounding. The band 59-61 GHz is a possible future governmental band for fixed, mobile and radiolocation systems
59.30-62.0	FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138	FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138	Fixed links Cordless local area networks ISM in the band 61-61.5 GHz SRD in the band 61-61.5 GHz	The band 59-61 GHz is a possible future governmental band for fixed, mobile and radiolocation systems
62.00-63.00	FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138	INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559	Broadband mobile systems for connection to IBCN paired with 65-66 GHz Short range radiolocation	

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
63.00-64 .00 GHz	FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138	INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559	RTTT	Road Transport and Traffic Telematics Vehicle to road/ vehicle to vehicle
64.00-65.00 GHz	FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.547 5.556	FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.547 5.556	Fixed links	
65.00-66.00	EARTH EXPLORATION SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH 5.547	EARTH EXPLORATION SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH 5.547	Fixed links Broadband mobile systems For connection to IBCN paired with 62-63 GHz	
66.00-71.00	INTER-SATELLITE MOBILE 5.553 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	INTER-SATELLITE MOBILE 5.553 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554		
71.00-74.00	FIXED FIXED-SATELLITE (E/S) MOBILE MOBILE-SATELLITE (E/S)	FIXED FIXED-SATELLITE (S/E) MOBILE MOBILE-SATELLITE (S/E)		Pairing of this band with 81-84 GHz may be required for future governmental systems.
74.00-76.00	FIXED FIXED-SATELLITE (S/E) MOBILE BROADCASTING BROADCASTING-SATELLITE Space research (S/E) 5.561	FIXED FIXED-SATELLITE (S/E) MOBILE BROADCASTING BROADCASTING-SATELLITE Space research (S/E) 5.561	VLBI	VLBI with the band 74-84 GHz
76.00-77.50 GHz	RADIO ASTRONOMY RADIOLOCATION	RADIO ASTRONOMY RADIOLOCATION	Amateur applications Amateur Satellite applications	Spectral line and wide band continuum observations Road Transport and Traffic

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
	Amateur Amateur-Satellite Space Research (S/E) 5.149	Amateur Amateur-Satellite Space Research (S/E) 5.149	Civil radiolocation Radio astronomy applications RTTT	Telematics 76-77 GHz Radar
77.50-78.00 GHz	AMATEUR AMATEUR SATELLITE Radio Astronomy Space Research (S/E) 5.149	AMATEUR AMATEUR SATELLITE Radio Astronomy Space Research (S/E) 5.149	Amateur applications Radio astronomy applications	Spectral line and wide band continuum observations
78.00-79.00	RADIOLOCATION Amateur Amateur Satellite Radio astronomy Space Research (S/E) 5.149 5.560	RADIOLOCATION Amateur Amateur-Satellite Radio astronomy Space Research (S/E) 5.149 5.560	Amateur applications Radio Astronomy applications	Spectral line and wide band continuum observations
79.00-81.00	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur Satellite Space Research (S/E) 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur Satellite Space Research (S/E) 5.149	Amateur applications Radio Astronomy applications	Spectral line and wide band continuum observations
81.00-84.00	FIXED FIXED-SATELLITE (E/S) MOBILE MOBILE-SATELLITE (E/S) RADIO ASTRONOMY Space Research (S/E) 5.149 5.561A	FIXED FIXED-SATELLITE (E/S) MOBILE MOBILE-SATELLITE (E/S) RADIO ASTRONOMY Space Research (S/E) 5.149 5.561A	Amateur Applications Radio Astronomy applications	Spectral line and wide band continuum observations Amateur (secondary) 81 – 81.5 GHz Pairing of this band with 71-74 GHz may be required for future governmental systems.
84.00-86.00	FIXED FIXED-SATELLITE (E/S) 5.561A MOBILE RADIO ASTRONOMY 5.149	FIXED FIXED-SATELLITE (E/S) 5.561A MOBILE RADIO ASTRONOMY 5.149	Radio Astronomy applications	Spectral line and wide band continuum observations
86.00-92.00	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Passive applications	RA: Continuum and spectral line measurements

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
92.00-94.00 GHz	FIXED MOBILE RADIOLOCATION RADIO ASTRONOMY 5.149	FIXED MOBILE RADIOLOCATION RADIO ASTRONOMY 5.149	Radio astronomy applications Short range radar	RA: Diazenylium line and numerous other spectral lines including wide band continuum observations
94.00-94.10 GHz	EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio astronomy 5.562 5.562A	EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio astronomy 5.562 5.562A	Short range radar Cloud profiler radar	
94.10 - 95.00	FIXED MOBILE RADIOASTRONOMY RADIOLOCATION 5.149	FIXED MOBILE RADIOASTRONOMY RADIOLOCATION 5.149	Radio astronomy applications Short range radar	Spectral line and wide band continuum observations
95.00-100.00	FIXED MOBILE RADIONAVIGATION RADIO ASTRONOMY RADIONAVIGATION-SATELLITE RADIOLOCATION 5.149 5.554	FIXED MOBILE RADIONAVIGATION RADIO ASTRONOMY RADIONAVIGATION-SATELLITE RADIOLOCATION 5.149 5.554	Radio astronomy applications	RA: Multiple line Observations. Continuum observations
100-102	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	Earth Exploration Satellite systems Radio astronomy applications	Limb sounding of atmospheric constituents Spectral line and wide band continuum observations
102-105	FIXED MOBILE RADIO ASTRONOMY 5.149 5.341	FIXED MOBILE RADIO ASTRONOMY 5.149 5.341		
105-109.5	FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341		

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
109.5-111.8 GHz	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	Radio astronomy applications	Observations of CO lines at 109.8 and 110.2 GHz and for continuum observations
111.8-114.25 GHz	FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341		
114.25-116	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	Radio astronomy applications	Observations of the 115.3 GHz CO line
116-119.98	EARTH EXPLORATION SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.341	EARTH EXPLORATION SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.341	Passive applications	Passive sensing as part of the oxygen absorption band with peak at 118.75 GHz
119.98-120.0	EARTH EXPLORATION SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.341	EARTH EXPLORATION SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.341	Passive applications	Passive sensing as part of the oxygen absorption band with peak at 118.75 GHz
120.0-122.25	EARTH EXPLORATION SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.138	EARTH EXPLORATION SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.138	Passive applications ISM	Passive sensing as part of the oxygen absorption band with peak at 118.75 GHz ISM 122-123 GHz
122.25-123	FIXED INTER-SATELLITE MOBILE 5.558 Amateur 5.138	FIXED INTER-SATELLITE MOBILE 5.558 Amateur 5.138	Amateur applications Amateur satellite applications SRD	ISM 122-123 GHz
123-126 GHz	FIXED-SATELLITE (S/E) MOBILE-SATELLITE (S/E) RADIONAVIGATION	FIXED-SATELLITE (S/E) MOBILE-SATELLITE (S/E) RADIONAVIGATION		

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
	RADIONAVIGATION-SATELLITE Radio Astronomy 5.554	RADIONAVIGATION-SATELLITE Radio Astronomy 5.554		
126-130 GHz	FIXED-SATELLITE (S/E) MOBILE-SATELLITE (S/E) RADIONAVIGATION RADIONAVIGATION-SATELLITE Radio Astronomy 5.149 5.554	FIXED-SATELLITE (S/E) MOBILE-SATELLITE (S/E) RADIONAVIGATION RADIONAVIGATION-SATELLITE Radio Astronomy 5.149 5.554		
130-134	EARTH EXPLORATION SATELLITE (active) 5.562E FIXED INTER-SATELLITE MOBILE 5.558 RADIO ASTRONOMY 5.149 5.562A	EARTH EXPLORATION SATELLITE (active) 5.562E FIXED INTER-SATELLITE MOBILE 5.558 RADIO ASTRONOMY 5.149 5.562A	Radio astronomy applications	Spectral line and wide band continuum observations
134-136	AMATEUR AMATEUR-SATELLITE Radio Astronomy	AMATEUR AMATEUR-SATELLITE Radio Astronomy	Amateur applications Amateur Satellite applications	
136-141	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur satellite 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur satellite 5.149	Radio astronomy applications Amateur applications Amateur Satellite applications	Spectral line and wide band continuum observations
141-148.5	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	Radio astronomy applications	Spectral line and wide band continuum observations
148.5-151.5	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Passive applications	Harmonised reference window for passive sensor observations
151.5-155.5 GHz	FIXED MOBILE	FIXED MOBILE	Radio astronomy applications	Spectral line and wide band continuum observations

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
	RADIO ASTRONOMY RADIOLOCATION 5.149	RADIO ASTRONOMY RADIOLOCATION 5.149		
155.5-158.5 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.562F 5.562G	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.562F 5.562G	Radio astronomy applications Earth Exploration Satellite systems	Spectral line and wide band continuum observations Protection until 1.1.2018
158.5-164	FIXED FIXED SATELLITE (S/E) MOBILE MOBILE SATELLITE (S/E)	FIXED FIXED SATELLITE (S/E) MOBILE MOBILE SATELLITE (S/E)		
164-167	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Passive applications	Harmonised reference window for passive sensor observations of the 183.31 GHz water vapour line. Microwave limb sounding of the 164.38 GHz CO line
167-168	FIXED FIXED-SATELLITE (S/E) INTER-SATELLITE MOBILE 5.558	FIXED FIXED-SATELLITE (S/E) INTER-SATELLITE MOBILE 5.558		
168-174.5	FIXED FIXED-SATELLITE (S/E) INTER-SATELLITE MOBILE 5.558 5.149	FIXED FIXED-SATELLITE (S/E) INTER-SATELLITE MOBILE 5.558 5.149		
174.5-174.8	FIXED INTER-SATELLITE MOBILE 5.558	FIXED INTER-SATELLITE MOBILE 5.558	Passive applications	Passive sensing of the water vapour absorption line whose peak is at 183.31 GHz
174.8-182	EARTH EXPLORATION SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	EARTH EXPLORATION SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	Passive applications	Passive sensing of the water vapour absorption line whose peak is at 183.31 GHz
182-185 GHz	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY	Passive applications	Passive sensing of the water vapour absorption line whose peak is at 183.31 GHz

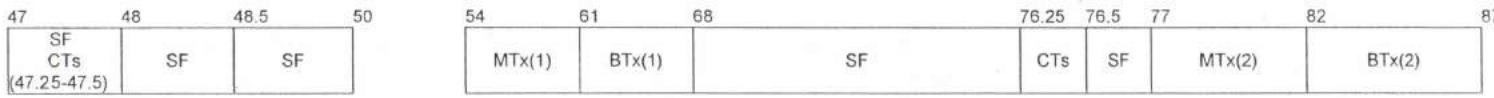
Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
	SPACE RESEARCH (passive) 5.340	SPACE RESEARCH (passive) 5.340		
185-190 GHz	EARTH EXPLORATION SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	EARTH EXPLORATION SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	Passive applications	Passive sensing of the water vapour absorption line whose peak is at 183.31 GHz
190-191.8	EARTH EXPLORATION SATELLITE (passive) SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION SATELLITE (passive) SPACE RESEARCH (passive) 5.340	Passive applications	Passive sensing of the water vapour absorption line whose peak is at 183.31 GHz
191.8-200	FIXED INTER-SATELLITE MOBILE 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.341 5.554	FIXED INTER-SATELLITE MOBILE 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.341 5.554		
200-202	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341 5.563A	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341 5.563A	Earth exploration observations Radio astronomy applications	Atmospheric chemistry and atmospheric remote sensing of nitrous oxide at 201 GHz Spectral line and wide band continuum observations
202-209	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341 5.563A	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341 5.563A	Earth exploration observations	Atmospheric chemistry and atmospheric remote sensing of water vapour at 203.4 GHz and ozone at 208.5 GHz
209-217	FIXED FIXED-SATELLITE (E/S) MOBILE RADIO ASTRONOMY 5.149 5.341	FIXED FIXED-SATELLITE (E/S) MOBILE RADIO ASTRONOMY 5.149 5.341	Radio astronomy applications	Spectral line and wide band continuum observations
217-226 GHz	FIXED FIXED-SATELLITE (E/S) MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B	FIXED FIXED-SATELLITE (E/S) MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B		

Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
	5.149 5.341	5.149 5.341		
226-231.5 GHz	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Passive applications Radio astronomy applications (Observations of the 230.5 GHz CO line)	Passive sensors for limb sounding of atmospheric constituents. Reference window for higher frequency water vapour measurements
231.5-232	FIXED MOBILE Radiolocation	FIXED MOBILE Radiolocation		
232-235	FIXED FIXED-SATELLITE (S/E) MOBILE Radiolocation	FIXED FIXED-SATELLITE (S/E) MOBILE Radiolocation		
235-238	EARTH EXPLORATION SATELLITE (passive) FIXED-SATELLITE (S/E) SPACE RESEARCH (passive) 5.563A 5.563B	EARTH EXPLORATION SATELLITE (passive) FIXED-SATELLITE (S/E) SPACE RESEARCH (passive) 5.563A 5.563B	Passive applications Radio astronomy applications	Passive sensing limited to microwave sounding Spectral line and wide band continuum observations
238-240	FIXED FIXED-SATELLITE (S/E) MOBILE RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE	FIXED FIXED-SATELLITE (S/E) MOBILE RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE		
240-241	FIXED MOBILE RADIOLOCATION	FIXED MOBILE RADIOLOCATION		
241-248	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-Satellite 5.138 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-Satellite 5.138 5.149	Radio astronomy applications Amateur applications Amateur satellite applications SRD	Spectral line and wide band continuum observations

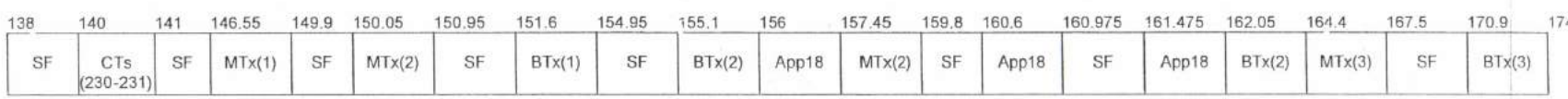
Frequency Band (kHz, MHz or GHz)	RR R3 Allocation & RR footnotes relevant in Bangladesh	National Allocation including relevant RR and BGD footnotes	Main use	Notes
248-250 GHz	AMATEUR AMATEUR-SATELLITE Radio Astronomy 5.149	AMATEUR AMATEUR-SATELLITE Radio Astronomy 5.149	Amateur applications Amateur satellite applications	
250-252 GHz	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.563A	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.563A	Earth exploration observations	Limb sounding of nitrous oxide near 251GHz
252-265	FIXED MOBILE MOBILE-SATELLITE (E/S) RADIO ASTRONOMY RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	FIXED MOBILE MOBILE-SATELLITE (E/S) RADIO ASTRONOMY RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	Radio astronomy applications	Spectral line and wide band continuum observations
265-275	RADIO ASTRONOMY FIXED FIXED-SATELLITE (E/S) MOBILE 5.149 5.563A	RADIO ASTRONOMY FIXED FIXED-SATELLITE (E/S) MOBILE 5.149 5.563A		
275-1000 GHz	(Not Allocated) 5.565	(Not allocated) 5.565		

ANNEX 1A – FUTURE 47 - 330 MHz BAND PLAN IN BANGLADESH – FIXED & MOBILE SERVICES

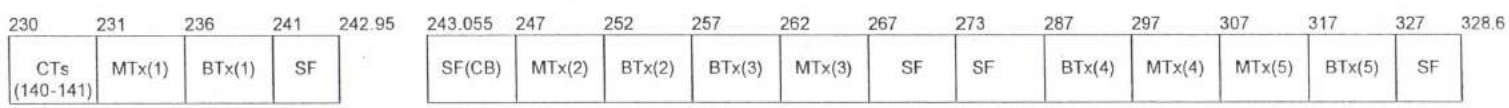
Low VHF Band



High VHF Band



High-High VHF Band

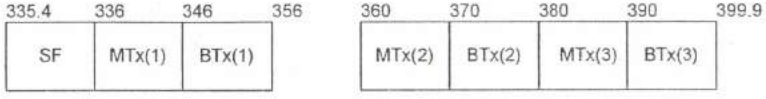


Key to Annexes 1a – 1c

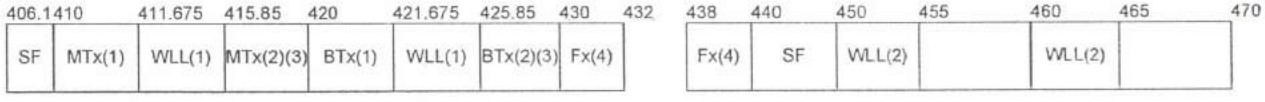
CB Citizens Band (245-246 MHz)
CT Cordless Telephone Band
MTx Mobile Transmit Band
SF Single Frequency Band
Fx Fixed Service Band
BTx Base Transmit Band
PPDR Public Protection & Disaster Relief
SRD Short Range Device

ANNEX 1B – FUTURE 335 - 520 MHz BAND PLAN IN BANGLADESH – FIXED & MOBILE SERVICES

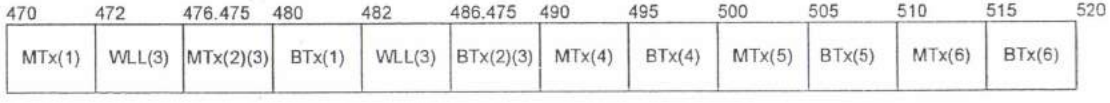
Low-UHF Band



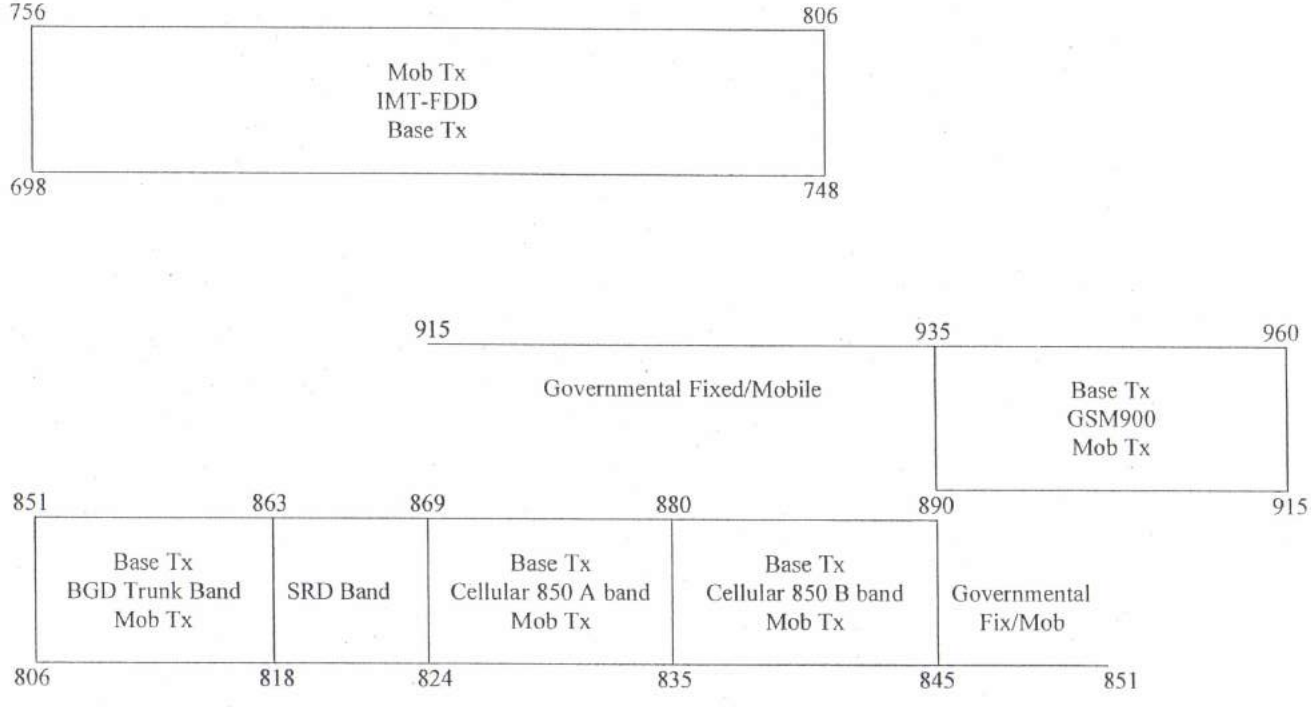
UHF Band



High UHF Band



ANNEX 1C – FUTURE 698 - 960 MHz BAND PLAN IN BANGLADESH – FIXED & MOBILE SERVICES



Annex 2 – National Footnotes

BGD1.1 This band identified for governmental systems and granted delegated management authority is shared with civil systems on a coordinated basis.

BGD1.2 This band identified for civil systems is shared with governmental systems on a coordinated basis.

BGD2 This band may be used for civil low power, short range, narrow-band, radio microphones on an uncoordinated, non protected, shared basis with governmental systems.

BGD3 *Additional Allocation*: In Bangladesh the band 135.7 – 137.8 kHz is allocated nationally to the amateur service on a secondary basis. Stations of the amateur service in Bangladesh shall operate under the conditions of No.4.4 of the ITU Radio Regulations. Such stations shall not cause harmful interference to stations of other administrations operating in accordance with Article 5 of the ITU Radio Regulations.

BGD4 *Additional Allocation*: In Bangladesh the band 5250 - 5310 kHz is allocated nationally to the amateur service on a secondary basis for propagation experiments. Stations of the amateur service in Bangladesh shall operate under the conditions of No.4.4 of the ITU Radio Regulations. Such stations shall not cause harmful interference to stations of other administrations operating in accordance with Article 5 of the ITU Radio Regulations.

BGD5 *Additional Allocation*: Until 29 March 2009 the band 7100 – 7200 kHz In Bangladesh is allocated nationally to the amateur service on a secondary basis. Stations of the amateur service in Bangladesh shall operate under the conditions of No.4.4 of the ITU Radio Regulations. Such stations shall not cause harmful interference to stations of other administrations operating in accordance with Article 5 of the ITU Radio Regulations.

BGD6 The band 46-68 MHz may also be used in Bangladesh for wind profiler radars operating in the radiolocation service on a secondary basis. Any such radars shall operate in accordance with Resolution 217 of ITU WRC-97.

BGD7 The bands 87-108 MHz, 216-230 MHz and 1452-1492 MHz may be utilized for Digital Audio Broadcasting (DAB) in accordance with a Terrestrial Broadcasting Digitization Policy. It is envisaged that DAB may be introduced in Bangladesh in the bands 216-230 MHz and 1452-1492 MHz after 1 January 2010. At a date yet to be determined it is envisaged that DAB will replace FM broadcasting in the band 87.-108 MHz. The use of the band 216 – 230 MHz for DAB will be dependent on the policy developed for the introduction of Digital terrestrial television (DTV) in Bangladesh in the bands 174 – 230 MHz, 520 – 704 MHz and 716 - 734 MHz.

BGD8 In the longer term VORs will be decommissioned in this band, after which the band will be exclusively allocated to the aeronautical mobile service.

BGD9 In the medium term 8.33 KHz channel spacing in the band 117.975-137 MHz should be introduced at the earliest possible date in accordance with regional plans developed under the auspices of the International Civil Aviation Organization (ICAO).

BGD10 The band 136-137 MHz is additionally allocated to the aeronautical mobile (OR) service to facilitate occasional off route requirements.

BGD11 From 1 January 2006 all new land mobile stations in this band will be assigned frequencies/channels in an interleaved 12.5 kHz channelling plan. Existing land mobile stations in this band may continue to use their current 25 kHz channel assignments until 1 January 2011 on a non interference and non protected basis with respect to land mobile stations operating in accordance with the interleaved channel plans for the mobile service in Bangladesh, detailed in Annex 4a. After 1 January 2011 the current 25 kHz channels will be designated as 12.5 kHz channels.

BGD12 From 1 January 2006 this band is designated for professional land mobile radio systems (PMR and PAMR) utilising 12.5 kHz channels. It will be used where necessary to facilitate the transfer of similar systems operating in the bands 146 – 174 MHz, certain sub-bands in the range 230 – 272 MHz, 410 – 440 MHz, 450 – 470 MHz and 470 – 490 MHz, which may require transferring to alternative frequencies as a consequence of the introduction of new channel arrangements or technologies in the aforementioned bands.

BGD13 The bands 157.45-157.55 MHz (Ship station transmit) and 162.05-162.15 MHz (Coast Station transmit) are designated for private maritime applications.

BGD14 The band 287-328.6 MHz is provisionally identified for civil mobile systems with the following arrangement. 287-297 MHz BTx4, 297-307 MHz MTx4, 307-317 MHz MTx5, 317-327 MHz BTx5 and 327-328.6 MHz SF. See Annex1a concerning the symbols used.

BGD15 The bands 380-385 MHz paired with 390-395 MHz are designated for digital trunked land mobile systems.

BGD16 This band has been designated for public wireless local loop (WLL) systems. Existing stations may continue to utilise their current assignments until 6 months prior to the planned installation of WLL systems in their respective geographical area, after which transfer to adjacent bands will be required.

BGD17 Until 1 January 2011 the amateur service for the band 430 – 440 MHz and amateur-satellite service for the band 435 – 438 MHz is authorised to establish stations on a non-interference, non-protected basis within Metropolitan areas and District areas. Outside these geographical areas, the use of the band is restricted to the sub-bands 430 – 431 MHz and 435 – 436 MHz. After 1 January 2011 in the band 432 – 438 MHz (435 – 438 MHz for the amateur-satellite service) stations of the amateur service will have primary status ONLY in the aforementioned geographical areas. In the remainder of the territory of Bangladesh and in the bands 430 – 432 MHz and 438 – 440 MHz amateur stations shall operate on a secondary non-interference, non-protected basis to all other services which are allocated the bands 430 – 432 MHz and 438 – 440 MHz in this NFAP.

BGD18 In the band 432 – 438 MHz, in the vicinity of Metropolitan and District areas stations of the fixed and mobile services will be reassigned frequencies in the period 1 January 2006 to 1 January 2011, in the sub-bands 430-432 MHz and 438-440 MHz, or transferred to appropriate adjacent bands designated for such applications in this NFAP.

BGD19 The bands 771-776 MHz, 801-806 MHz and 4940-4990 MHz are provisionally designated for disaster relief (PPDR) applications, which are being harmonised within ITU Region 3 by the Asia Pacific Telecommunity.

BGD20 *Different category of service:* In Bangladesh the band 14.3 – 14.4 GHz is allocated to the fixed service on a primary basis. At an appropriate ITU World Radiocommunication Conference Bangladesh will propose an appropriate footnote in Article 5 of the Radio Regulations to reflect this situation.

BGD21 The band 863 - 870 MHz is for Short Range Devices (SRDs) and is partitioned as follows 864.8-865 MHz narrow band analogue voice devices, 863-865 MHz radio microphones, 869.2-869.25 MHz alarms for the elderly and infirm, 863-865 MHz wireless audio.

BGD27 At a future ITU WRC, Bangladesh intends to join No. 5.331 of the Radio Regulations concerning a primary allocation to the Radionavigation Service in the band 1215-1300 MHz.

BGD28 The use of the band1215-1300 MHz by the fixed and mobile services in Bangladesh shall be on a secondary basis to other primary services operating in accordance with the NFAP.

BGD29 All use by the fixed service of the band 1559 – 1610 MHz in Bangladesh will cease by 1 January 2006 in order to protect GNSS applications from harmful interference. Bangladesh therefore intends to withdraw from No. 562C of the ITU Radio Regulations at a future ITU WRC.

BGD30 The policy for the introduction of IMT 2000 third generation mobile services has yet to be formulated. Once a request has been announced for Expressions of Interest to operate a third generation mobile service, remaining stations of the fixed service must cease operations within 90 days of the announcement, see also BGD31.

BGD31 In the long term the band 2500 – 2690 MHz has been identified as the most likely future expansion band for IMT2000 in the Bangladesh. However this will be subject to the policy for the introduction of third generation mobile systems, yet to be formulated. The use of this band for IMT2000 is likely to be restricted to the greater Dhaka area. Once a request has been announced for Expressions of Interest to operate third generation mobile services in the expansion band, stations of the fixed service in the affected geographical area must cease operations within 90 days of the announcement see also BGD30.

BGD32 *Additional Allocation* The band 1350 – 1400 MHz is also allocated to the fixed service on a primary basis in Bangladesh. A footnote to the ITU Radio Regulations will be entered at a future relevant WRC.

BGD33 The direction reception of broadcasting satellite emissions in the band 10.7-11.7 GHz which are intended for the general public are permitted. However no protection is afforded to earth stations used for this purpose.

BGD34 The bands 12.5-12.75 GHz, 14-14.25 GHz, 19.7-21.2 GHz and 29.5-31.0 GHz allocated to the fixed satellite service are intended for commercial VSAT (uncoordinated earth stations) applications. Fixed service use of these bands will generally be phased out by 1 January 2010. At a future ITU WRC Bangladesh may withdraw from No. 5.505, No. 5.524 and No. 5.542 of the Radio Regulations. The fixed service may continue to use 14.0-14.25 GHz on a non protected basis with respect to VSAT earth station transmitters.

BGD35.1 From 1 September 2005 no new assignments to governmental stations will be made in this frequency band. Existing assignments to governmental stations will be transferred to alternative bands not later than 1 September 2010.

BGD35.2 From 1 September 2005 no new assignments to civil stations will be made in this frequency band. Existing assignments to civil stations will be transferred to alternative bands not later than 1 September 2010.

BGD36 The use of the bands 610 – 704 MHz and 716 – 734 MHz for governmental mobile systems is on a strictly non interference basis to the reception of emissions from stations operating in the broadcasting service. Governmental mobile systems shall cease the use of these bands by 1 September 2010.

BGD37 The bands 1517 – 1535 MHz, 1626.5 – 1660 MHz, 1660.5 – 1680 MHz and 1785 – 1805 MHz are designated for governmental mobile systems. Where a secondary status is indicated in this NFAP for the mobile service in these frequency bands, all practicable measures shall be taken to avoid interference to primary services. In particular the geostationary orbit shall be protected in bands allocated to the mobile-satellite service (Earth-to-space).

BGD38 The band 2100 – 2300 MHz is additionally utilised for existing governmental stations operating in the fixed service on a primary basis until 1 June 2010 in accordance with the channel arrangement detailed in ITU Recommendation ITU-R F.283. However the provisions of BGD30 above shall take precedence and stations impeding the introduction of IMT-2000 shall be transferred to alternative frequencies as required.

BGD39 From 1 June 2005 no new stations in the fixed service shall be implemented in the band 21.2 – 22.0 GHz which utilise the channel arrangement detailed in ITU Reccommendation ITU-R F.637. Stations of the fixed service installed prior to 1 June 2005 which operate in the band 21.2 – 22.0 GHz and utilise channel arrangements specified in ITU Recommendation ITU-R F.637 for the band 21.2 -23.6 GHz may continue until 1 June 2008. Thereafter they shall be transferred to the band 22.0 – 23.6 GHz in accordance with the channel arrangement at Annex 4H to the NFAP.

BGD40 At a future ITU WRC, Bangladesh intends to join No. 5.546 of the Radio Regulations concerning a primary allocation to the Fixed Service in the band 31.5-31.8 GHz.

Annex 3 - RR Footnotes in Region 3 Allocations Relevant to Bangladesh

RR-footnote	*Radio Regulation footnote text*
5.53	Administrations authorizing the use of frequencies below 9 kHz shall ensure that no harmful interference is caused thereby to the services to which the bands above 9 kHz are allocated.
5.54	Administrations conducting scientific research using frequencies below 9 kHz are urged to advise other administrations that may be concerned in order that such research may be afforded all practicable protection from harmful interference.
5.56	The stations of services to which the bands 14-19.95 kHz and 20.05-70 kHz and in Region 1 also the bands 72-84 kHz and 86-90 kHz are allocated may transmit standard frequency and time signals. Such stations shall be afforded protection from harmful interference. In Armenia, Azerbaijan, Belarus, Bulgaria, the Russian Federation, Georgia, Kazakhstan, Mongolia, Kyrgyzstan, Slovakia, Tajikistan and Turkmenistan, the frequencies 25 kHz and 50 kHz will be used for this purpose under the same conditions. (WRC-07)
5.57	The use of the bands 14-19.95 kHz, 20.05-70 kHz and 70-90 kHz (72-84 kHz and 86-90 kHz in Region 1) by the maritime mobile service is limited to coast radiotelegraph stations (A1A and F1B only). Exceptionally, the use of class J2B or J7B emissions is authorized subject to the necessary bandwidth not exceeding that normally used for class A1A or F1B emissions in the band concerned.
5.59	*Different category of service:* in **Bangladesh** and Pakistan, the allocation of the bands 70-72 kHz and 84-86 kHz to the fixed and maritime mobile services is on a primary basis (see No. **5.33**). (WRC-2000)
5.60	In the bands 70-90 kHz (70-86 kHz in Region 1) and 110-130 kHz (112-130 kHz in Region 1), pulsed radionavigation systems may be used on condition that they do not cause harmful interference to other services to which these bands are allocated.
5.62	Administrations which operate stations in the radionavigation service in the band 90-110 kHz are urged to coordinate technical and operating characteristics in such a way as to avoid harmful interference to the services provided by these stations.
5.64	Only classes A1A or F1B, A2C, A3C, F1C or F3C emissions are authorized for stations of the fixed service in the bands allocated to this service between 90 kHz and 160 kHz (148.5 kHz in Region 1) and for stations of the maritime mobile service in the bands allocated to this service between 110 kHz and 160 kHz (148.5 kHz in Region 1). Exceptionally, class J2B or J7B emissions are also authorized in the bands between 110 kHz and 160 kHz (148.5 kHz in Region 1) for stations of the maritime mobile service.
5.65	*Different category of service:* in **Bangladesh**, the allocation of the bands 112-117.6 kHz and 126-129 kHz to the fixed and maritime mobile services is on a primary basis (see No. 5.33). (WRC-2000)
5.67A	Stations in the amateur service using frequencies in the band 135.7-137.8 kHz shall not exceed a maximum radiated power of 1 W (e.i.r.p.) and shall not cause harmful interference to stations of the radionavigation service operating in countries listed in No. 5.67. (WRC-07)
5.73	The band 285-325 kHz (283.5-325 kHz in Region 1) in the maritime radionavigation service may be used to transmit supplementary navigational information using narrow-band techniques, on condition that no harmful interference is caused to radiobeacon stations operating in the radionavigation service. (WRC-97)
5.76	The frequency 410 kHz is designated for radio direction-finding in the maritime radionavigation service. The other radionavigation services to which the band 405-415 kHz is allocated shall not cause harmful interference to radio direction-finding in the band 406.5-413.5 kHz.
5.79	The use of the bands 415-495 kHz and 505-526.5 kHz (505-510 kHz in Region 2) by the maritime mobile service is limited to radiotelegraphy.
5.79A	When establishing coast stations in the NAVTEX service on the frequencies 490 kHz, 518 kHz and 4 209.5 kHz, administrations are strongly recommended to coordinate the operating characteristics in accordance with the procedures of the International Maritime Organization (IMO) (see Resolution 339 (Rev.WRC 07)). (WRC 07)
5.79B	The use of the band 495-505 kHz is limited to radiotelegraphy. (WRC 07)
5.82	In the maritime mobile service, the frequency 490 kHz is to be used exclusively for the transmission by coast stations of navigational and meteorological warnings and urgent information to ships, by means of narrow-band direct-printing telegraphy. The conditions for use of the frequency 490 kHz are prescribed in Articles 31 and 52. In using the band 415-495 kHz for the aeronautical radionavigation service, administrations are requested to ensure that no harmful interference is caused to the frequency 490 kHz. (WRC 07)
5.82A	The use of the band 495-505 kHz is limited to radiotelegraphy. (WRC 07)
5.82B	Administrations authorizing the use of frequencies in the band 495-505 kHz by services other than the maritime mobile service shall ensure that no harmful interference is caused to the maritime mobile service in this band or to the services having allocations in the adjacent bands, noting in particular the conditions of use of the frequencies 490 kHz and 518 kHz, as prescribed in Articles 31 and 52. (WRC 07)
5.83	*SUPPRESSED*
5.84	The conditions for the use of the frequency 518 kHz by the maritime mobile service are prescribed in Articles 31 and 52. (WRC 07)

RR-footnote	*Radio Regulation footnote text*
5.97	In Region 3, the Loran system operates either on 1 850 kHz or 1 950 kHz, the bands occupied being 1 825 - 1 875 kHz and 1 925 - 1 975 kHz respectively. Other services to which the band 1 800 - 2 000 kHz is allocated may use any frequency therein on condition that no harmful interference is caused to the Loran system operating on 1 850 kHz or 1 950 kHz.
5.106	In Regions 2 and 3, provided no harmful interference is caused to the maritime mobile service, the frequencies between 2 065 kHz and 2 107 kHz may be used by stations of the fixed service communicating only within national borders and whose mean power does not exceed 50 W. In notifying the frequencies, the attention of the Bureau should be drawn to these provisions.
5.108	The carrier frequency 2 182 kHz is an international distress and calling frequency for radiotelephony. The conditions for the use of the band 2 173.5-2 190.5 kHz are prescribed in Articles 31 and 52. (WRC 07)
5.109	The frequencies 2 187.5 kHz, 4 207.5 kHz, 6 312 kHz, 8 414.5 kHz, 12 577 kHz and 16 804.5 kHz are international distress frequencies for digital selective calling. The conditions for the use of these frequencies are prescribed in Article 31
5.110	The frequencies 2174.5kHz, 4177.5kHz, 6268kHz, 8376.5kHz, 12520kHz and 16695kHz are international distress frequencies for narrow-band direct-printing telegraphy. The conditions for the use of these frequencies are prescribed in Article 31.
5.111	The carrier frequencies 2 182 kHz, 3 023 kHz, 5 680 kHz, 8 364 kHz and the frequencies 121.5 MHz, 156.525 MHz, 156.8 MHz and 243 MHz may also be used, in accordance with the procedures in force for terrestrial radiocommunication services, for search and rescue operations concerning manned space vehicles. The conditions for the use of the frequencies are prescribed in Article 31. The same applies to the frequencies 10 003 kHz, 14 993 kHz and 19 993 kHz, but in each of these cases emissions must be confined in a band of ±3 kHz about the frequency. (WRC 07)
5.113	For the conditions for the use of the bands 2 300-2 495 kHz (2 498 kHz in Region 1), 3 200-3 400 kHz, 4 750-4 995 kHz and 5 005-5 060 kHz by the broadcasting service, see Nos. 5.16 to 5.20, 5.21 and 23.3 to 23.10.
5.115	The carrier (reference) frequencies 3 023 kHz and 5 680 kHz may also be used, in accordance with Article 31, by stations of the maritime mobile service engaged in coordinated search and rescue operations. (WRC 07)
5.116	Administrations are urged to authorize the use of the band 3 155-3 195 kHz to provide a common worldwide channel for low power wireless hearing aids. Additional channels for these devices may be assigned by administrations in the bands between 3 155 kHz and 3 400 kHz to suit local needs. It should be noted that frequencies in the range 3 000 kHz to 4 000 kHz are suitable for hearing aid devices which are designed to operate over short distances within the induction field.
5.126	In Region 3, the stations of those services to which the band 3 995-4 005 kHz is allocated may transmit standard frequency and time signals.
5.127	The use of the band 4 000-4 063 kHz by the maritime mobile service is limited to ship stations using radiotelephony (see No. 52.220 and Appendix 17).
5.128	Frequencies in the bands 4 063-4 123 kHz and 4 130-4 438 kHz may be used exceptionally by stations in the fixed service, communicating only within the boundary of the country in which they are located, with a mean power not exceeding 50 W, on condition that harmful interference is not caused to the maritime mobile service. In addition, in Afghanistan, Argentina, Armenia, Azerbaijan, Belarus, Botswana, Burkina Faso, the Central African Rep., China, the Russian Federation, Georgia, India, Kazakhstan, Mali, Niger, Kyrgyzstan, Tajikistan, Chad, Turkmenistan and Ukraine, in the bands 4 063-4 123 kHz, 4 130-4 133 kHz and 4 408-4 438 kHz, stations in the fixed service, with a mean power not exceeding 1 kW, can be operated on condition that they are situated at least 600 km from the coast and that harmful interference is not caused to the maritime mobile service. (WRC-07)
5.129	*SUPPRESSED*
5.130	The conditions for the use of the carrier frequencies 4 125 kHz and 6 215 kHz are prescribed in Articles 31 and 52. (WRC 07)
5.131	The frequency 4 209.5 kHz is used exclusively for the transmission by coast stations of meteorological and navigational warnings and urgent information to ships by means of narrow-band direct-printing techniques. (WRC-97)
5.132	The frequencies 4 210 kHz, 6 314 kHz, 8 416.5 kHz, 12 579 kHz, 16 806.5 kHz, 19 680.5 kHz, 22 376 kHz and 26 100.5 kHz are the international frequencies for the transmission of maritime safety information (MSI) (see Appendix 17).
5.134	The use of the bands 5 900-5 950 kHz, 7 300-7 350 kHz, 9 400-9 500 kHz, 11 600-11 650 kHz, 12 050-12 100 kHz, 13 570-13 600 kHz, 13 800-13 870 kHz, 15 600-15 800 kHz, 17 480-17 550 kHz and 18 900-19 020 kHz by the broadcasting service is subject to the application of the procedure of Article 12. Administrations are encouraged to use these bands to facilitate the introduction of digitally modulated emissions in accordance with the provisions of Resolution 517 (Rev.WRC 07). (WRC-07)
5.136	*Additional allocation*: frequencies in the band 5 900-5 950 kHz may be used by stations in the following services, communicating only within the boundary of the country in which they are located: fixed service (in all three Regions), land mobile service (in Region 1), mobile except aeronautical mobile (R) service (in Regions 2 and 3), on condition that harmful interference is not caused to the broadcasting service. When using frequencies for these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations. (WRC-07)
5.137	On condition that harmful interference is not caused to the maritime mobile service, the bands 6 200-6 213.5 kHz and 6 220.5-6 525 kHz may be used exceptionally by stations in the fixed service, communicating only within the boundary of the country in which they are located, with a mean power not exceeding 50 W. At the time of notification of these frequencies, the attention of the Bureau will be drawn to the above conditions.

RR-footnote	*Radio Regulation footnote text*
5.138	The following bands: 6 765 - 6 795 kHz (centre frequency 6 780 kHz), 433.05 - 434.79 MHz (centre frequency 433.92 MHz) in Region 1 except in the countries mentioned in No. 5.280, 61 - 61.5 GHz (centre frequency 61.25 GHz), 122 - 123 GHz (centre frequency 122.5 GHz), and 244 - 246 GHz (centre frequency 245 GHz) are designated for industrial, scientific and medical (ISM) applications. The use of these frequency bands for ISM applications shall be subject to special authorisation by the administration concerned, in agreement with other administrations whose radiocommunication services might be affected. In applying this provision, administrations shall have due regard to the latest relevant ITU-R Recommendations.
5.138A	Until 29 March 2009, the band 6 765-7 000 kHz is allocated to the fixed service on a primary basis and to the land mobile service on a secondary basis. After this date, this band is allocated to the fixed and the mobile except aeronautical mobile (R) services on a primary basis. (WRC 03)
5.141C	In Regions 1 and 3, the band 7 100-7 200 kHz is allocated to the broadcasting service until 29 March 2009 on a primary basis. (WRC 03)
5.143	*Additional allocation*: frequencies in the band 7 300-7 350 kHz may be used by stations in the fixed service and in the land mobile service, communicating only within the boundary of the country in which they are located, on condition that harmful interference is not caused to the broadcasting service. When using frequencies for these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations. (WRC-07)
5.143A	In Region 3, the band 7 350-7 450 kHz is allocated, until 29 March 2009, to the fixed service on a primary basis and to the land mobile service on a secondary basis. After 29 March 2009, frequencies in this band may be used by stations in the above mentioned services, communicating only within the boundary of the country in which they are located, on condition that harmful interference is not caused to the broadcasting service. When using frequencies for these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations. (WRC 03)
5.143E	Until 29 March 2009, the band 7 450-8 100 kHz is allocated to the fixed service on a primary basis and to the land mobile service on a secondary basis. (WRC 03)
5.144	In Region 3, the stations of those services to which the band 7 995-8 005 kHz is allocated may transmit standard frequency and time signals.
5.145	The conditions for the use of the carrier frequencies 8 291kHz, 12 290kHz and 16 420kHz are prescribed in Articles 31 and 52. (WRC 07)
5.146	*Additional allocation*: frequencies in the bands 9 400-9 500 kHz, 11 600-11 650 kHz, 12 050-12 100 kHz, 15 600-15 800 kHz, 17 480-17 550 kHz and 18 900-19 020 kHz may be used by stations in the fixed service, communicating only within the boundary of the country in which they are located, on condition that harmful interference is not caused to the broadcasting service. When using frequencies in the fixed service, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations. (WRC-07)
5.147	On condition that harmful interference is not caused to the broadcasting service, frequencies in the bands 9 775-9 900 kHz, 11 650-11 700 kHz and 11 975-12 050 kHz may be used by stations in the fixed service communicating only within the boundary of the country in which they are located, each station using a total radiated power not exceeding 24 dBW.
5.149	In making assignments to stations of other services to which the bands: 13 360-13 410 kHz, 25 550-25 670 kHz, 37.5-38.25 MHz, 73-74.6 MHz in Regions 1 and 3, 150.05-153 MHz in Region 1, 322-328.6 MHz, 406.1-410 MHz, 608-614 MHz in Regions 1 and 3, 1 330-1 400 MHz, 1 610.6-1 613.8 MHz, 1 660-1 670 MHz, 1 718.8-1 722.2 MHz, 2 655-2 690 MHz, 3 260-3 267 MHz, 3 332-3 339 MHz, 3 345.8-3 352.5 MHz, 4 825-4 835 MHz, 4 950-4 990 MHz, 4 990-5 000 MHz, 6 650-6 675.2 MHz, 10.6-10.68 GHz, 14.47-14.5 GHz, 22.01-22.21 GHz, 22.21-22.5 GHz, 22.81-22.86 GHz, 23.07-23.12 GHz, 31.2-31.3 GHz, 31.5-31.8 GHz in Regions 1 and 3, 36.43-36.5 GHz, 42.5-43.5 GHz, 48.94-49.04 GHz, 76-86 GHz, 92-94 GHz, 94.1-100 GHz, 102-109.5 GHz, 111.8-114.25 GHz, 128.33-128.59 GHz, 129.23-129.49 GHz, 130-134 GHz, 136-148.5 GHz, 151.5-158.5 GHz, 168.59-168.93 GHz, 171.11-171.45 GHz, 172.31-172.65 GHz, 173.52-173.85 GHz, 195.75-196.15 GHz, 209-226 GHz, 241-250 GHz, 241-250 GHz, 252-275 GHz are allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from spaceborne or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. **4.5** and **4.6** and Article **29**). (WRC-07)
5.150	The following bands: 13 553 - 13 567 kHz (centre frequency 13 560 kHz), 26 957 - 27 283 kHz (centre frequency 27 120 kHz), 40.66 - 40.70 MHz (centre frequency 40.68 MHz), 902 - 928 MHz in Region 2(centre frequency 915 MHz), 2 400 - 2 500 MHz (centre frequency 2 450 MHz), 5 725 - 5 875 MHz (centre frequency 5 800 MHz), and 24 - 24.25 GHz (centre frequency 24.125 GHz) are also designated for industrial, scientific and medical (ISM) applications. Radiocommunication services operating within these bands must accept harmful interference which may be caused by these applications. ISM equipment operating in these bands is subject to the provisions of No. 15.13.

RR-footnote	*Radio Regulation footnote text*
5.151	*Additional allocation:* frequencies in the bands 13 570-13 600 kHz and 13 800-13 870 kHz may be used by stations in the fixed service and in the mobile except aeronautical mobile (R) service, communicating only within the boundary of the country in which they are located, on the condition that harmful interference is not caused to the broadcasting service. When using frequencies in these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations. (WRC-07)
5.153	In Region 3, the stations of those services to which the band 15 995-16 005 kHz is allocated may transmit standard frequency and time signals.
5.155B	The band 21 870-21 924 kHz is used by the fixed service for provision of services related to aircraft flight safety.
5.156A	The use of the band 23 200-23 350 kHz by the fixed service is limited to provision of services related to aircraft flight safety
5.157	The use of the band 23 350-24 000 kHz by the maritime mobile service is limited to inter-ship radiotelegraphy.
5.167	*Alternative allocation:* in **Bangladesh**, Brunei Darussalam, India, Iran (Islamic Republic of), Pakistan, Singapore and Thailand, the band 50-54 MHz is allocated to the fixed, mobile and broadcasting services on a primary basis. (WRC-07)
5.180	The frequency 75 MHz is assigned to marker beacons. Administrations shall refrain from assigning frequencies close to the limits of the guardband to stations of other services which, because of their power or geographical position, might cause harmful interference or otherwise place a constraint on marker beacons. Every effort should be made to improve further the characteristics of airborne receivers and to limit the power of transmitting stations close to the limits 74.8 MHz and 75.2 MHz.
5.197A	*Additional allocation:* the band 108-117.975 MHz is also allocated on a primary basis to the aeronautical mobile (R) service, limited to systems operating in accordance with recognized international aeronautical standards. Such use shall be in accordance with Resolution **413 (Rev.WRC-07)**. The use of the band 108-112 MHz by the aeronautical mobile (R) service shall be limited to systems composed of ground-based transmitters and associated receivers that provide navigational information in support of air navigation functions in accordance with recognized international aeronautical standards. (WRC-07)
5.198	*SUPPRESSED*
5.199	*SUPPRESSED*
5.200	In the band 117.975-137 MHz, the frequency 121.5 MHz is the aeronautical emergency frequency and, where required, the frequency 123.1 MHz is the aeronautical frequency auxiliary to 121.5 MHz. Mobile stations of the maritime mobile service may communicate on these frequencies under the conditions laid down in Article 31 for distress and safety purposes, with stations of the aeronautical mobile service. (WRC 07)
5.203	*SUPPRESSED*
5.204	*Different category of service:* in Afghanistan, Saudi Arabia, Bahrain, **Bangladesh**, Brunei Darussalam, China, Cuba, the United Arab Emirates, India, Indonesia, Iran (Islamic Republic of), Iraq, Kuwait, Montenegro, Oman, Pakistan, the Philippines, Qatar, Serbia, Singapore, Thailand and Yemen, the band 137-138 MHz is allocated to the fixed and mobile, except aeronautical mobile (R), services on a primary basis (see No. **5.33**). (WRC-07)
5.208	The use of the band 137-138 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. (WRC-97)
5.208A	In making assignments to space stations in the mobile-satellite service in the bands 137-138 MHz, 387-390 MHz and 400.15-401 MHz, administrations shall take all practicable steps to protect the radio astronomy service in the bands 150.05-153 MHz, 322-328.6 MHz, 406.1-410 MHz and 608-614 MHz from harmful interference from unwanted emissions. The threshold levels of interference detrimental to the radio astronomy service are shown in the relevant ITU-R Recommendation. (WRC-07)
5.208B	In the bands: 137-138 MHz, 387-390 MHz, 400.15-401 MHz, 1 452-1 492 MHz, 1 525-1 610 MHz, 1 613.8-1 626.5 MHz, 2655-2690 MHz, 21.4-22 GHz, Resolution 739 (Rev.WRC-07) applies. (WRC-07)
5.209	The use of the bands 137-138 MHz, 148-150.05 MHz, 399.9-400.05 MHz, 400.15-401 MHz, 454-456 MHz and 459-460 MHz by the mobile-satellite service is limited to non-geostationary-satellite systems.
5.217	*Alternative allocation:* in Afghanistan, **Bangladesh**, Cuba, Guyana and India, the band 146-148 MHz is allocated to the fixed and mobile services on a primary basis.
5.218	Additional allocation: the band 148 - 149.9 MHz is also allocated to the space operation service (Earth-to-space) on a primary basis, subject to agreement obtained under No. 9.21. The bandwidth of any individual transmission shall not exceed ± 25 kHz.
5.219	The use of the band 148 - 149.9 MHz by the mobile-satellite service is subject to coordination under Resolution 46 (Rev.WRC-97)/No. 9.11A. The mobile-satellite service shall not constrain the development and use of the fixed, mobile and space operation services in the band 148 - 149.9 MHz.
5.220	The use of the bands 149.9 - 150.05 MHz and 399.9 - 400.05 MHz by the mobile-satellite service is subject to coordination under Resolution 46 (Rev.WRC-97)/No. 9.11A. The mobile-satellite service shall not constrain the development and use of the radionavigation-satellite service in the bands 149.9 - 150.05 MHz and 399.9 - 400.05 MHz.

RR-footnote	*Radio Regulation footnote text*
5.221	Stations of the mobile-satellite service in the band 148-149.9 MHz shall not cause harmful interference to, or claim protection from, stations of the fixed or mobile services operating in accordance with the Table of Frequency Allocations in the following countries: Albania, Algeria, Germany, Saudi Arabia, Australia, Austria, Bahrain, **Bangladesh**, Barbados, Belarus, Belgium, Benin, Bosnia and Herzegovina, Botswana, Brunei Darussalam, Bulgaria, Cameroon, China, Cyprus, Congo (Rep. of the), Korea (Rep. of), Côte d'Ivoire, Croatia, Cuba, Denmark, Egypt, the United Arab Emirates, Eritrea, Spain, Estonia, Ethiopia, the Russian Federation, Finland, France, Gabon, Ghana, Greece, Guinea, Guinea Bissau, Hungary, India, Iran (Islamic Republic of), Ireland, Iceland, Israel, Italy, the Libyan Arab Jamahiriya, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kuwait, The Former Yugoslav Republic of Macedonia, Lesotho, Latvia, Lebanon, Liechtenstein, Lithuania, Luxembourg, Malaysia, Mali, Malta, Mauritania, Moldova, Mongolia, Montenegro, Mozambique, Namibia, Norway, New Zealand, Oman, Uganda, Uzbekistan, Pakistan, Panama, Papua New Guinea, Paraguay, the Netherlands, the Philippines, Poland, Portugal, Qatar, the Syrian Arab Republic, Kyrgyzstan, Dem. People's Rep. of Korea, Slovakia, Romania, the United Kingdom, Senegal, Serbia, Sierra Leone, Singapore, Slovenia, Sri Lanka, South Africa, Sweden, Switzerland, Swaziland, Tanzania, Chad, Thailand, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Ukraine, Viet Nam, Yemen, Zambia and Zimbabwe. (WRC-07)
5.222	Emissions of the radionavigation-satellite service in the bands 149.9 - 150.05 MHz and 399.9 - 400.05 MHz may also be used by receiving earth stations of the space research service.
5.222A	The emissions of the fixed service and the fixed-satellite service in the band 18.6-18.8 GHz are limited to the values given in Nos. 21.5A and 21.16.2, respectively.
5.222B	The use of the band 18.6-18.8 GHz by the fixed-satellite service is limited to geostationary systems and systems with an orbit of apogee greater than 20 000 km.
5.223	Recognising that the use of the band 149.9 - 150.05 MHz by the fixed and mobile services may cause harmful interference to the radionavigation-satellite service, administrations are urged not to authorise such use in application of No. 4.4.
5.224A	The use of the bands 149.9 - 150.05 MHz and 399.9 - 400.05 MHz by the mobile-satellite service (Earth-to-space) is limited to the land mobile-satellite service (Earth-to-space) until 1 January 2015.
5.224B	The allocation of the bands 149.9 - 150.05 MHz and 399.9 - 400.05 MHz to the radionavigation-satellite service shall be effective until 1 January 2015.
5.226	The frequency 156.525 MHz is the international distress, safety and calling frequency for the maritime mobile VHF radiotelephone service using digital selective calling (DSC). The conditions for the use of this frequency and the band 156.4875-156.5625 MHz are contained in Articles **31** and **52**, and in Appendix **18**. The frequency 156.8 MHz is the international distress, safety and calling frequency for the maritime mobile VHF radiotelephone service. The conditions for the use of this frequency and the band 156.7625-156.8375 MHz are contained in Article **31** and Appendix **18**. In the bands 156-156.4875 MHz, 156.5625-156.7625 MHz, 156.8375-157.45 MHz, 160.6-160.975 MHz and 161.475-162.05 MHz, each administration shall give priority to the maritime mobile service on only such frequencies as are assigned to stations of the maritime mobile service by the administration (see Articles **31** and **52**, and Appendix **18**). Any use of frequencies in these bands by stations of other services to which they are allocated should be avoided in areas where such use might cause harmful interference to the maritime mobile VHF radiocommunication service. However, the frequencies 156.8 MHz and 156.525 MHz and the frequency bands in which priority is given to the maritime mobile service may be used for radiocommunications on inland waterways subject to agreement between interested and affected administrations and taking into account current frequency usage and existing agreements. (WRC-07)
5.227	*Additional allocation:* the bands 156.4875-156.5125 MHz and 156.5375-156.5625 MHz are also allocated to the fixed and land mobile services on a primary basis. The use of these bands by the fixed and land mobile services shall not cause harmful interference to nor claim protection from the maritime mobile VHF radiocommunication service. (WRC-07)
5.227A	*Additional allocation:* the bands 161.9625-161.9875 MHz and 162.0125-162.0375 MHz are also allocated to the mobile-satellite service (Earth-to-space) on a secondary basis for the reception of automatic identification system (AIS) emissions from stations operating in the maritime-mobile service (see Appendix **18**). (WRC-07)
5.238	*Additional allocation:* in **Bangladesh**, India, Pakistan and the Philippines, the band 200-216 MHz is also allocated to the aeronautical radionavigation service on a primary basis.
5.254	The bands 235-322 MHz and 335.4-399.9 MHz may be used by the mobile-satellite service, subject to agreement obtained under No. 9.21, on condition that stations in this service do not cause harmful interference to those of other services operating or planned to be operated in accordance with the Table of Frequency Allocations except for the additional allocation made in footnote No. 5.BE03. (WRC 03)
5.255	The bands 312-315 MHz (Earth-to-space) and 387 - 390 MHz (space-to-Earth) in the mobile-satellite service may also be used by non-geostationary-satellite systems. Such use is subject to coordination under Resolution 46 (Rev.WRC-97)/No. 9.11A.
5.256	The frequency 243 MHz is the frequency in this band for use by survival craft stations and equipment used for survival purposes. (WRC-07)
5.257	The band 267 - 272 MHz may be used by administrations for space telemetry in their countries on a primary basis, subject to agreement obtained under No. 9.21.
5.258	The use of the band 328.6 - 335.4 MHz by the aeronautical radionavigation service is limited to Instrument Landing Systems.
5.260	Recognising that the use of the band 399.9 - 400.05 MHz by the fixed and mobile services may cause harmful interference to the radionavigation satellite service, administrations are urged not to authorise such use in application of No. 4.4.
5.261	Emissions shall be confined in a band of ± 25 kHz about the standard frequency 400.1 MHz.

RR-footnote	*Radio Regulation footnote text*
5.263	The band 400.15 - 401 MHz is also allocated to the space research service in the space-to-space direction for communications with manned space vehicles. In this application, the space research service will not be regarded as a safety service.
5.264	The use of the band 400.15 - 401 MHz by the mobile-satellite service is subject to coordination under Resolution 46 (Rev.WRC-97)/No. 9.11A. The power flux-density limit indicated in Annex 2 of Resolution 46 (Rev. WRC-95)/Annex 1a of Appendix 5 shall apply until such time as a competent world radiocommunication conference revises it.
5.266	The use of the band 406-406.1 MHz by the mobile-satellite service is limited to low power satellite emergency position-indicating radiobeacons (see also Article **31**). (WRC-07)
5.267	Any emission capable of causing harmful interference to the authorised uses of the band 406 - 406.1 MHz is prohibited.
5.268	Use of the band 410-420 MHz by the space research service is limited to communications within 5 km of an orbiting, manned space vehicle. The power flux-density at the surface of the Earth produced by emissions from extra-vehicular activities shall not exceed −153 dB(W/m2) for $0° \delta \leq \delta \leq 5°$, $-153 + 0.077 (\delta - 5)$ dB(W/m2) for $5° \delta \leq \delta \leq 70°$ and −148 dB(W/m2) for $70° \delta \leq \delta \leq 90°$, where δ is the angle of arrival of the radio-frequency wave and the reference bandwidth is 4 kHz. No. 4.10 does not apply to extra-vehicular activities. In this frequency band the space research (space-to-space) service shall not claim protection from, nor constrain the use and development of, stations of the fixed and mobile services. (WRC-97)
5.276	*Additional allocation:* in Afghanistan, Algeria, Saudi Arabia, Bahrain, **Bangladesh**, Brunei Darussalam, Burkina Faso, Burundi, Egypt, the United Arab Emirates, Ecuador, Eritrea, Ethiopia, Greece, Guinea, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Italy, Libyan Arab Jamahiriya, Jordan, Kenya, Kuwait, Lebanon, Malaysia, Malta, Nigeria, Oman, Pakistan, the Philippines, Qatar, the Syrian Arab Republic, the Dem. People's Rep. of Korea, Singapore, Somalia, Switzerland, Tanzania, Thailand, Togo, Turkey and Yemen, the band 430-440 MHz is also allocated to the fixed service on a primary basis and the bands 430-435 MHz and 438-440 MHz are also allocated to the mobile, except aeronautical mobile, service on a primary basis. (WRC-07)
5.279A	The use of this band by sensors in the Earth exploration-satellite service (EESS) (active) shall be in accordance with Recommendation ITU R SA.1260 1. Additionally, the EESS (active) in the band 432-438 MHz shall not cause harmful interference to the aeronautical radionavigation service in China. The provisions of this footnote in no way diminish the obligation of the EESS (active) to operate as a secondary service in accordance with Nos. 5.29 and 5.30. (WRC 03) 5.282In the bands 435 - 438 MHz, 1 260 - 1 270 MHz, 2 400 - 2 450 MHz, 3 400 - 3 410 MHz (in Regions 2 and 3 only) and 5 650 - 5 670 MHz, the amateur-satellite service may operate subject to not causing harmful interference to other services operating in accordance with the Table (see No. 5.43). Administrations authorising such use shall ensure that any harmful interference caused by emissions from a station in the amateur-satellite service is immediately eliminated in accordance with the provisions of No. S25.11. The use of the bands 1 260 - 1 270 MHz and 5 650 - 5 670 MHz by the amateur-satellite service is limited to the Earth-to-space direction.
5.282	In the bands 435-438 MHz, 1 260-1 270 MHz, 2 400-2 450 MHz, 3 400-3 410 MHz (in Regions 2 and 3 only) and 5 650-5 670 MHz, the amateur-satellite service may operate subject to not causing harmful interference to other services operating in accordance with the Table (see No. **5.43**). Administrations authorizing such use shall ensure that any harmful interference caused by emissions from a station in the amateur-satellite service is immediately eliminated in accordance with the provisions of No. **25.11**. The use of the bands 1 260-1 270 MHz and 5 650-5 670 MHz by the amateur-satellite service is limited to the Earth-to-space direction.
5.286	The band 449.75 - 450.25 MHz may be used for the space operation service (Earth-to-space) and the space research service (Earth-to-space), subject to agreement obtained under No. 9.21.
5.286A	The use of the bands 454-456 MHz and 459-460 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. (WRC-97)
5.286AA	The band 450-470 MHz is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT). See Resolution **224 (Rev.WRC-07)**. This identification does not preclude the use of this band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. (WRC-07)
5.287	In the maritime mobile service, the frequencies 457.525 MHz, 457.550 MHz, 457.575 MHz, 467.525 MHz, 467.550 MHz and 467.575 MHz may be used by on-board communication stations. Where needed, equipment designed for 12.5 kHz channel spacing using also the additional frequencies 457.5375 MHz, 457.5625 MHz, 467.5375 MHz and 467.5625 MHz may be introduced for on-board communications. The use of these frequencies in territorial waters may be subject to the national regulations of the administration concerned. The characteristics of the equipment used shall conform to those specified in Recommendation ITU-R M.1174-2. (WRC-07)
5.289	Earth exploration-satellite service applications, other than the meteorological-satellite service, may also be used in the bands 460 - 470 MHz and 1 690 - 1 710 MHz for space-to-Earth transmissions subject to not causing harmful interference to stations operating in accordance with the Table.
5.306	*Additional allocation:* in Region 1, except in the African Broadcasting Area (see Nos. **5.10** to **5.13**), and in Region 3, the band 608-614 MHz is also allocated to the radio astronomy service on a secondary basis.
5.311	*SUPPRESSED*
5.311A	For the frequency band 620-790 MHz, see also Resolution **549 (WRC-07)**. (WRC-07)
5.313A	The band, or portions of the band 698-790 MHz, in **Bangladesh**, China, Korea (Rep. of), India, Japan, New Zealand, Papua New Guinea, Philippines and Singapore are identified for use by these administrations wishing to implement International Mobile Telecommunications (IMT). This identification does not preclude the use of these bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. In China, the use of IMT in this band will not start until 2015. (WRC-07)

RR-footnote	*Radio Regulation footnote text*
5.317A	Those parts of the band 698-960 MHz in Region 2 and the band 790-960 MHz in Regions 1 and 3 which are allocated to the mobile service on a primary basis are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT). See Resolutions **224 (Rev.WRC-07)** and **749 (WRC-07)**. This identification does not preclude the use of these bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-07)
5.320	*Additional allocation*: in Region 3, the bands 806-890 MHz and 942-960 MHz are also allocated to the mobile-satellite, except aeronautical mobile-satellite (R), service on a primary basis, subject to agreement obtained under No. 9.21. The use of this service is limited to operation within national boundaries. In seeking such agreement, appropriate protection shall be afforded to services operating in accordance with the Table, to ensure that no harmful interference is caused to such services.
5.327A	The use of the band 960-1 164MHz by the aeronautical mobile (R) service is limited to systems that operate in accordance with recognized international aeronautical standards. Such use shall be in accordance with Resolution **417 (WRC-07)**. (WRC-07)
5.328	The use of the band 960-1 215 MHz by the aeronautical radionavigation service is reserved on a worldwide basis for the operation and development of airborne electronic aids to air navigation and any directly associated ground-based facilities.
5.328A	Stations in the radionavigation-satellite service in the band 1 164-1 215 MHz shall operate in accordance with the provisions of Resolution **609 (Rev.WRC-07)** and shall not claim protection from stations in the aeronautical radionavigation service in the band 960-1 215 MHz. No. **5.43A** does not apply. The provisions of No. **21.18** shall apply. (WRC-07)
5.328B	The use of the bands 1 164-1 300 MHz, 1 559-1 610 MHz and 5 010-5 030 MHz by systems and networks in the radionavigation-satellite service for which complete coordination or notification information, as appropriate, is received by the Radiocommunication Bureau after 1 January 2005 is subject to the application of the provisions of Nos. **9.12**, **9.12A** and **9.13**. Resolution **610 (WRC-03)** shall also apply; however, in the case of radionavigation-satellite service (space-to-space) networks and systems, Resolution **610 (WRC-03)** shall only apply to transmitting space stations. In accordance with No. **5.329A**, for systems and networks in the radionavigation-satellite service (space-to-space) in the bands 1 215-1 300 MHz and 1 559-1 610 MHz, the provisions of Nos. **9.7**, **9.12**, **9.12A** and **9.13** shall only apply with respect to other systems and networks in the radionavigation-satellite service (space-to-space). (WRC-07)
5.329	Use of the radionavigation-satellite service in the band 1 215-1 300 MHz shall be subject to the condition that no harmful interference is caused to, and no protection is claimed from, the radionavigation service authorized under No. 5.331. Furthermore, the use of the radionavigation-satellite service in the band 1 215-1 300 MHz shall be subject to the condition that no harmful interference is caused to the radiolocation service. No. 5.43 shall not apply in respect of the radiolocation service. Resolution [COM5/5] (WRC 03) shall apply. (WRC 03)
5.329A	Use of systems in the radionavigation-satellite service (space-to-space) operating in the bands 1 215-1 300 MHz and 1 559-1 610 MHz is not intended to provide safety service applications, and shall not impose any additional constraints on radionavigation-satellite service (space-to-Earth) systems or on other services operating in accordance with the Table of Frequency Allocations. (WRC-07)
5.330	*Additional allocation:* in Angola, Saudi Arabia, Bahrain, **Bangladesh**, Cameroon, China, the United Arab Emirates, Eritrea, Ethiopia, Guyana, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kuwait, Lebanon, Libyan Arab Jamahiriya, Mozambique, Nepal, Pakistan, the Philippines, Qatar, Syrian Arab Republic, Somalia, Sudan, Chad, Togo and Yemen, the band 1 215-1 300 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-03)
5.331	*Additional allocation:* in Algeria, Germany, Saudi Arabia, Australia, Austria, Bahrain, Belarus, Belgium, Benin, Bosnia and Herzegovina, Brazil, Burkina Faso, Burundi, Cameroon, China, Korea (Rep. of), Croatia, Denmark, Egypt, the United Arab Emirates, Estonia, the Russian Federation, Finland, France, Ghana, Greece, Guinea, Equatorial Guinea, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Ireland, Israel, Jordan, Kenya, Kuwait, The Former Yugoslav Republic of Macedonia, Lesotho, Latvia, Lebanon, Liechtenstein, Lithuania, Luxembourg, Madagascar, Mali, Mauritania, Montenegro, Nigeria, Norway, Oman, the Netherlands, Poland, Portugal, Qatar, the Syrian Arab Republic, Dem. People's Rep. of Korea, Slovakia, the United Kingdom, Serbia, Slovenia, Somalia, Sudan, Sri Lanka, South Africa, Sweden, Switzerland, Thailand, Togo, Turkey, Venezuela and Viet Nam, the band 1 215-1 300 MHz is also allocated to the radionavigation service on a primary basis. In Canada and the United States, the band 1 240-1 300 MHz is also allocated to the radionavigation service, and use of the radionavigation service shall be limited to the aeronautical radionavigation service. (WRC-07)
5.332	In the band 1 215-1 260 MHz, active spaceborne sensors in the earth exploration-satellite and space research services shall not cause harmful interference to, claim protection from, or otherwise impose constraints on operation or development of the radiolocation service, the radionavigation-satellite service and other services allocated on a primary basis.
5.335A	In the band 1 260-1 300 MHz, active spaceborne sensors in the Earth exploration-satellite and space research services shall not cause harmful interference to, claim protection from, or otherwise impose constraints on operation or development of the radiolocation service and other services allocated by footnotes on a primary basis.
5.337	The use of the bands 1 300-1 350 MHz, 2 700-2 900 MHz and 9 000-9 200 MHz by the aeronautical radionavigation service is restricted to ground-based radars and to associated airborne transponders which transmit only on frequencies in these bands and only when actuated by radars operating in the same band.
5.337A	The use of the band 1 300-1 350 MHz by earth stations in the radionavigation-satellite service and by stations in the radiolocation service shall not cause harmful interference to, nor constrain the operation and development of, the aeronautical-radionavigation service.
5.338A	In the bands 1 350-1 400 MHz, 1 427-1 452 MHz, 22.55-23.55 GHz, 30-31.3 GHz, 49.7-50.2 GHz, 50.4-50.9 GHz and 51.4-52.6 GHz, Resolution **750 (WRC-07)** applies. (WRC-07)

RR-footnote	*Radio Regulation footnote text*
5.339	The bands 1 370 - 1 400 MHz, 2 640 - 2 655 MHz, 4 950 - 4 990 MHz and 15.20 - 15.35 GHz are also allocated to the space research (passive) and earth exploration-satellite (passive) services on a secondary basis.
5.339A	*SUPPRESSED*
5.340	All emissions are prohibited in the following bands: 1 400-1 427 MHz, 2 690-2 700 MHz, except those provided for by No. 5 422, 10.68-10.7 GHz, except those provided for by No. 5.483, 15.35-15.4 GHz, except those provided for by No. 5.511, 23.6-24 GHz, 31.3-31.5 GHz, 31.5-31.8 GHz, in Region 2, 48.94-49.04 GHz, from airborne stations, 50.2-50.4 GHz 2, 52.6-54.25 GHz, 86-92 GHz, 100-102 GHz, 109.5-111.8 GHz, 114.25-116 GHz, 148.5-151.5 GHz, 164-167 GHz, 182-185 GHz, 190-191.8 GHz, 200-209 GHz, 226-231.5 GHz, 250-252 GHz. (WRC 03)
5.341	In the bands 1 400 - 1 727 MHz, 101 - 120 GHz and 197 -220 GHz, passive research is being conducted by some countries in a programme for the search for intentional emissions of extraterrestrial origin.
5.345	Use of the band 1 452 - 1 492 MHz by the broadcasting-satellite service, and by the broadcasting service, is limited to digital audio broadcasting and is subject to the provisions of Resolution 528 (WARC-92).
5.347	*SUPPRESSED*
5.347A	*SUPPRESSED*
5.348	The use of the band 1 518-1 525 MHz by the mobile-satellite service is subject to coordination under No. 9.11A. In the band 1 518-1 525 MHz stations in the mobile-satellite service shall not claim protection from the stations in the fixed service. No. 5.43A does not apply. (WRC-03)
5.348C	*SUPPRESSED*
5.351	The bands 1 525 - 1 544 MHz, 1 545 - 1 559 MHz, 1 626.5 - 1 645.5 MHz and 1 646.5 - 1 660.5 MHz shall not be used for feeder links of any service. In exceptional circumstances, however, an earth station at a specified fixed point in any of the mobile-satellite services may be authorised by an administration to communicate via space stations using these bands.
5.351A	For the use of the bands 1 518-1 544 MHz, 1 545-1 559 MHz, 1 610-1 645.5 MHz, 1 646.5-1 660.5 MHz, 1 668-1 675 MHz, 1 980-2 010 MHz, 2 170-2 200 MHz, 2 483.5-2 520 MHz and 2 670-2 690 MHz by the mobile-satellite service, see Resolutions **212 (Rev.WRC-07)** and **225 (Rev.WRC-07)**. (WRC-07)
5.352A	In the band 1 525-1 530 MHz, stations in the mobile-satellite service, except stations in the maritime mobile-satellite service, shall not cause harmful interference to, or claim protection from, stations of the fixed service in France and French overseas territories in Region 3, Algeria, Saudi Arabia, Egypt, Guinea, India, Israel, Italy, Jordan, Kuwait, Mali, Malta, Morocco, Mauritania, Nigeria, Oman, Pakistan, Philippines, Qatar, Syria, Tanzania, Viet Nam and Yemen notified prior to 1 April 1998.
5.353A	In applying the procedures of Section II of Article S9 to the mobile-satellite service in the bands 1 530-1 544 MHz and 1 626.5-1 645.5 MHz, priority shall be given to accommodating the spectrum requirements for distress, urgency and safety communications of the Global Maritime Distress and Safety System (GMDSS). Maritime mobile-satellite distress, urgency and safety communications shall have priority access and immediate availability over all other mobile satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, distress, urgency and safety communications of the GMDSS. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (The provisions of Resolution 222 (WRC-2000) shall apply.)
5.354	The use of the bands 1 525 - 1 559 MHz and 1 626.5 - 1 660.5 MHz by the mobile-satellite services is subject to coordination under Resolution 46 (Rev. WRC-97)/No. 9.11A.
5.355	*Additional allocation:* In Bahrain, **Bangladesh**, Congo, Egypt, Eritrea, Iraq, Israel, Kuwait, Lebanon, Malta, Qatar, Syrian Arab Republic, Somalia, Sudan, Chad, Togo and Yemen, the bands 1 540-1 559 MHz, 1 610-1 645.5 MHz and 1 646.5-1 660 MHz are also allocated to the fixed service on a secondary basis. (WRC-03)
5.356	The use of the band 1 544 - 1 545 MHz by the mobile-satellite service (space-to-Earth) is limited to distress and safety communications (see Article 31).
5.357	Transmissions in the band 1 545 - 1 555 MHz from terrestrial aeronautical stations directly to aircraft stations, or between aircraft stations, in the aeronautical mobile (R) service are also authorised when such transmissions are used to extend or supplement the satellite –to-aircraft links.
5.357A	In applying the procedures of Section II of Article S9 to the mobile-satellite service in the bands 1 545-1 555 MHz and 1 646.5-1 656.5 MHz, priority shall be given to accommodating the spectrum requirements of the aeronautical mobile-satellite (R) service providing transmission of messages with priority 1 to 6 in Article 44. Aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article 44 shall have priority access and immediate availability, by pre-emption if necessary, over all other mobile-satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article 44. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (The provisions of Resolution 222 (WRC-2000) shall apply.)

RR-footnote	*Radio Regulation footnote text*
5.364	The use of the band 1 610 - 1 626.5 MHz by the mobile-satellite service (Earth-to-space) and by the radiodetermination satellite service (Earth-to-space) is subject to coordination under Resolution 46 (Rev.WRC-97)/No. 9.11A. A mobile earth station operating in either of the services in this band shall not produce a peak e.i.r.p. density in excess of -15 dB(W/4 kHz) in the part of the band used by systems operating in accordance with the provisions of No. 5.366 (to which No. 4.10 applies), unless otherwise agreed by the affected administrations. In the part of the band where such systems are not operating, the mean e.i.r.p. density of a mobile earth station shall not exceed -3 dB(W/4 kHz). Stations of the mobile-satellite service shall not claim protection from stations in the aeronautical radionavigation service, stations operating in accordance with the provisions of No. 5.366 and stations in the fixed service operating in accordance with the provisions of No. 5.359. Administrations responsible for the coordination of mobile-satellite networks shall make all practicable efforts to ensure protection of stations operating in accordance with the provisions of No. 5.366.
5.365	The use of the band 1 613.8 - 1 626.5 MHz by the mobile-satellite service (space-to-Earth) is subject to coordination under Resolution 46 (Rev.WRC-97)/No. 9.11A.
5.366	The band 1 610 - 1 626.5 MHz is reserved on a worldwide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities. Such satellite use is subject to agreement obtained under No. 9.21.
5.367	Additional allocation: the bands 1 610 - 1 626.5 MHz and 5 000 - 5 150 MHz are also allocated to the aeronautical mobile-satellite (R) service on a primary basis, subject to agreement obtained under No. 9.21.
5.368	With respect to the radiodetermination-satellite and mobile-satellite services the provisions of No. 4.10 do not apply in the band 1 610 - 1 626.5 MHz, with the exception of the aeronautical radionavigation-satellite service.
5.372	Harmful interference shall not be caused to stations of the radio astronomy service using the band 1 610.6 - 1 613.8 MHz by stations of the radiodetermination-satellite and mobile-satellite services (No. 29.13 applies).
5.374	Mobile earth stations in the mobile-satellite service operating in the bands 1 631.5 - 1 634.5 MHz and 1 656.5 - 1 660 MHz shall not cause harmful interference to the stations in the fixed service operating in the countries listed in No. 5.359.
5.375	The use of the band 1 645.5 - 1 646.5 MHz by the mobile-satellite service (Earth-to-space) and for inter-satellite links is limited to distress and safety communications (see Article 31).
5.376	Transmissions in the band 1 646.5 - 1 656.5 MHz from aircraft stations in the aeronautical mobile (R) service directly to terrestrial aeronautical stations, or between aircraft stations, are also authorised when such transmissions are used to extend or supplement the aircraft-to-satellite links.
5.376A	Mobile earth stations operating in the band 1 660-1 660.5 MHz shall not cause harmful interference to stations in the radio astronomy service.
5.379	*Additional allocation:* in **Bangladesh**, India, Indonesia, Nigeria and Pakistan, the band 1 660.5-1 668.4 MHz is also allocated to the meteorological aids service on a secondary basis.
5.379A	Administrations are urged to give all practicable protection in the band 1 660.5 - 1 668.4 MHz for future research in radio astronomy, particularly by eliminating air-to-ground transmissions in the meteorological aids service in the band 1 664.4 1 668.4 MHz as soon as practicable.
5.379B	The use of the band 1 668-1 675 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. In the band 1 668-1 668.4 MHz, Resolution **904 (WRC-07)** shall apply. (WRC-07)
5.379C	In order to protect the radio astronomy service in the band 1 668-1 670 MHz, the aggregate power flux-density values produced by mobile earth stations in a network of the mobile-satellite service operating in this band shall not exceed –181 dB(W/m2) in 10 MHz and 194 dB(W/m2) in any 20 kHz at any radio astronomy station recorded in the Master International Frequency Register, for more than 2% of integration periods of 2 000 s. (WRC-03)
5.379D	For sharing of the band 1 668.4-1 675 MHz between the mobile-satellite service and the fixed and mobile services, Resolution **744 (Rev.WRC-07)** shall apply. (WRC-07)
5.379E	In the band 1 668.4-1 675 MHz, stations in the mobile-satellite service shall not cause harmful interference to stations in the meteorological aids service in China, Iran (Islamic Republic of), Japan and Uzbekistan. In the band 1 668.4-1 675 MHz, administrations are urged not to implement new systems in the meteorological aids service and are encouraged to migrate existing meteorological aids service operations to other bands as soon as practicable. (WRC-03)
5.380	*SUPPRESSED*
5.380A	In the band 1 670-1 675 MHz, stations in the mobile-satellite service shall not cause harmful interference to, nor constrain the development of, existing earth stations in the meteorological-satellite service notified before 1 January 2004. Any new assignment to these earth stations in this band shall also be protected from harmful interference from stations in the mobile-satellite service. (WRC-07)
5.384A	The bands, or portions of the bands, 1 710-1 885 MHz, 2 300-2 400 MHz and 2 500-2 690 MHz, are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution **223 (Rev.WRC-07)**. This identification does not preclude the use of these bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-07)
5.385	Additional allocation: the band 1 718.8-1 722.2 MHz is also allocated to the radio astronomy service on a secondary basis for spectral line observations.

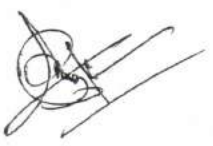
RR-footnote	*Radio Regulation footnote text*
5.388	The bands 1 885-2 025 MHz and 2 110-2 200 MHz are intended for use, on a worldwide basis, by administrations wishing to implement International Mobile Telecommunications-2000 (IMT-2000). Such use does not preclude the use of these bands by other services to which they are allocated. The bands should be made available for IMT-2000 in accordance with Resolution 212 (Rev.WRC-97). (See also Resolution 223 (WRC-2000))
5.388A	In Regions 1 and 3, the bands 1 885-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz and, in Region 2, the bands 1 885-1 980 MHz and 2 110-2 160 MHz may be used by high altitude platform stations as base stations to provide International Mobile Telecommunications 2000 (IMT 2000), in accordance with Resolution 221 (Rev.WRC 03). Their use by IMT 2000 applications using high altitude platform stations as base stations does not preclude the use of these bands by any station in the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC 03)
5.389A	The use of the bands 1 980-2 010 MHz and 2 170-2 200 MHz by the mobile-satellite service is subject to coordination under No. 9.11A and to the provisions of Resolution **716 (Rev.WRC-2000)**. (WRC-07)
5.391	In making assignments to the mobile service in the bands 2 025-2 110 MHz and 2 200-2 290 MHz, administrations shall not introduce high-density mobile systems, as described in Recommendation ITU-R SA.1154, and shall take that Recommendation into account for the introduction of any other type of mobile system.
5.392	Administrations are urged to take all practicable measures to ensure that space-to-space transmissions between two or more non-geostationary satellites, in the space research, space operations and Earth exploration-satellite services in the bands 2 025 - 2 110 MHz and 2 200 - 2 290 MHz, shall not impose any constraints on Earth-to-space, space-to-Earth and other space-to-space transmissions of those services and in those bands between geostationary and non-geostationary satellites
5.398	In respect of the radiodetermination-satellite service in the band 2 483.5 - 2 500 MHz, the provisions of No. 4.10 do not apply.
5.400	*Different category of service:* in Angola, Australia, **Bangladesh**, Burundi, China, Eritrea, Ethiopia, India, Iran (Islamic Republic of), Lebanon, Liberia, Libyan Arab Jamahiriya, Madagascar, Mali, Pakistan, Papua New Guinea, Dem. Rep. of the Congo, Syrian Arab Republic, Sudan, Swaziland, Togo and Zambia, the allocation of the band 2 483.5-2 500 MHz to the radiodetermination-satellite service (space-to-Earth) is on a primary basis (see No. **5.33**), subject to agreement obtained under No. 9.21 from countries not listed in this provision. (WRC-03)
5.402	The use of the band 2 483.5 - 2 500 MHz by the mobile-satellite and the radiodetermination-satellite services is subject to the coordination under Resolution 46 (Rev.WRC-97)/No. 9.11A. Administrations are urged to take all practicable steps to prevent harmful interference to the radio astronomy service from emissions in the 2483.5 - 2500 MHz band, especially those caused by second-harmonic radiation that would fall into the 4 990 -5 000 MHz band allocated to the radio astronomy service worldwide.
5.403	Subject to agreement obtained under No. **9.21**, the band 2 520-2 535 MHz may also be used for the mobile-satellite (space-to-Earth), except aeronautical mobile-satellite, service for operation limited to within national boundaries. The provisions of No. **9.11A** apply. (WRC-07)
5.409	*SUPPRESSED*
5.411	*SUPPRESSED*
5.413	In the design of systems in the broadcasting-satellite service in the bands between 2 500 MHz and 2 690 MHz, administrations are urged to take all necessary steps to protect the radio astronomy service in the band 2 690 - 2 700 MHz.
5.414	The allocation of the frequency band 2 500-2 520 MHz to the mobile-satellite service (space-to-Earth) is subject to coordination under No. **9.11A**. (WRC-07)
5.414A	In Japan and India, the use of the bands 2 500-2 520 MHz and 2 520-2 535 MHz, under No. **5.403**, by a satellite network in the mobile-satellite service (space-to-Earth) is limited to operation within national boundaries and subject to the application of No. **9.11A**. The following pfd values shall be used as a threshold for coordination under No. **9.11A**, for all conditions and for all methods of modulation, in an area of 1 000 km around the territory of the administration notifying the mobile-satellite service network: -136 dB(W/(m^2 · MHz)) for $0° \le \theta \le 5°$ $-136 + 0.55\,(\theta - 5)$ dB(W/(m^2 · MHz)) for $5° < \theta \le 25°$ -125 dB(W/(m^2 · MHz)) for $25° < \theta \le 90°$ where θ is the angle of arrival of the incident wave above the horizontal plane, in degrees. Outside this area Table **21-4** of Article **21** shall apply. Furthermore, the coordination thresholds in Table 5-2 of Annex 1 to Appendix **5** of the Radio Regulations (Edition of 2004), in conjunction with the applicable provisions of Articles **9** and **11** associated with No. **9.11A**, shall apply to systems for which complete notification information has been received by the Radicommunication Bureau by 14 November 2007 and that have been brought into use by that date. (WRC-07)
5.415	The use of the bands 2 500-2 690 MHz in Region 2 and 2 500-2 535 MHz and 2 655-2 690 MHz in Region 3 by the fixed-satellite service is limited to national and regional systems, subject to agreement obtained under No. **9.21**, giving particular attention to the broadcasting-satellite service in Region 1. (WRC-07)
5.416	The use of the band 2 520-2 670 MHz by the broadcasting-satellite service is limited to national and regional systems for community reception, subject to agreement obtained under No. **9.21**. The provisions of No. **9.19** shall be applied by administrations in this band in their bilateral and multilateral negotiations. (WRC-07)
5.419	When introducing systems of the mobile-satellite service in the band 2 670-2 690 MHz, administrations shall take all necessary steps to protect the satellite systems operating in this band prior to 3 March 1992. The coordination of mobile-satellite systems in the band shall be in accordance with No. **9.11A**. (WRC-07)

RR-footnote	*Radio Regulation footnote text*
5.420	The band 2 655-2 670 MHz may also be used for the mobile-satellite (Earth-to-space), except aeronautical mobile-satellite, service for operation limited to within national boundaries, subject to agreement obtained under No. **9.21**. The coordination under No. **9.11A** applies. (WRC-07)
5.423	In the band 2 700 - 2 900 MHz, ground-based radars used for meteorological purposes are authorised to operate on a basis of equality with stations of the aeronautical radionavigation service.
5.424A	In the band 2 900-3 100 MHz, stations in the radiolocation service shall not cause harmful interference to, nor claim protection from, radar systems in the radionavigation service. (WRC 03)
5.425	In the band 2 900 - 3 100 MHz, the use of the shipborne interrogator-transponder system (SIT) shall be confined to the sub-band 2 930 -2 950 MHz.
5.426	The use of the band 2 900 - 3 100 MHz by the aeronautical radionavigation service is limited to ground-based radars.
5.427	In the bands 2 900 - 3 100 MHz and 9 300 - 9 500 MHz, the response from radar transponders shall not be capable of being confused with the response from radar beacons (racons) and shall not cause interference to ship or aeronautical radars in the radionavigation service, having regard, however, to No. 4.9 of these Regulations.
5.429	*Additional allocation:* in Saudi Arabia, Bahrain, **Bangladesh**, Brunei Darussalam, China, Congo (Rep. of the), Korea (Rep. of), Côte d'Ivoire, the United Arab Emirates, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, the Libyan Arab Jamahiriya, Japan, Jordan, Kenya, Kuwait, Lebanon, Malaysia, Oman, Uganda, Pakistan, Qatar, the Syrian Arab Republic, the Dem. People's Rep. of Korea and Yemen, the band 3 300-3 400 MHz is also allocated to the fixed and mobile services on a primary basis. The countries bordering the Mediterranean shall not claim protection for their fixed and mobile services from the radiolocation service. (WRC-07)
5.432B	*Different category of service:* in **Bangladesh**, China, India, Iran (Islamic Republic of), New Zealand, Singapore and French Overseas Communities in Region 3, the band 3 400-3 500 MHz is allocated to the mobile, except aeronautical mobile, service on a primary basis, subject to agreement obtained under No. **9.21** with other administrations and is identified for International Mobile Telecommunications (IMT). This identification does not preclude the use of this band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. At the stage of coordination the provisions of Nos. **9.17** and **9.18** also apply. Before an administration brings into use a (base or mobile) station of the mobile service in this band it shall ensure that the power flux-density (pfd) produced at 3 m above ground does not exceed -154.5 dB(W/(m^2 · 4 kHz)) for more than 20% of time at the border of the territory of any other administration. This limit may be exceeded on the territory of any country whose administration has so agreed. In order to ensure that the pfd limit at the border of the territory of any other administration is met, the calculations and verification shall be made, taking into account all relevant information, with the mutual agreement of both administrations (the administration responsible for the terrestrial station and the administration responsible for the earth station) with the assistance of the Bureau if so requested. In case of disagreement, the calculation and verification of the pfd shall be made by the Bureau, taking into account the information referred to above. Stations of the mobile service in the band 3 400-3 500 MHz shall not claim more protection from space stations than that provided in Table **21-4** of the Radio Regulations (Edition of 2004). This allocation is effective from 17 November 2010. (WRC-07)
5.433	In Regions 2 and 3, in the band 3 400-3 600 MHz the radiolocation service is allocated on a primary basis. However, all administrations operating radiolocation systems in this band are urged to cease operations by 1985. Thereafter, administrations shall take all practicable steps to protect the fixed-satellite service and coordination requirements shall not be imposed on the fixed-satellite service.
5.433A	In **Bangladesh**, China, Korea (Rep. of), India, Iran (Islamic Republic of), Japan, New Zealand, Pakistan and French Overseas Communities in Region 3, the band 3 500-3 600 MHz is identified for International Mobile Telecommunications (IMT). This identification does not preclude the use of this band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. At the stage of coordination the provisions of Nos. **9.17** and **9.18** also apply. Before an administration brings into use a (base or mobile) station of the mobile service in this band it shall ensure that the power flux-density (pfd) produced at 3 m above ground does not exceed -154.5 dB(W/(m^2 · 4 kHz)) for more than 20% of time at the border of the territory of any other administration. This limit may be exceeded on the territory of any country whose administration has so agreed. In order to ensure that the pfd limit at the border of the territory of any other administration is met, the calculations and verification shall be made, taking into account all relevant information, with the mutual agreement of both administrations (the administration responsible for the terrestrial station and the administration responsible for the earth station), with the assistance of the Bureau if so requested. In case of disagreement, the calculation and verification of the pfd shall be made by the Bureau, taking into account the information referred to above. Stations of the mobile service in the band 3 500-3 600 MHz shall not claim more protection from space stations than that provided in Table **21-4** of the Radio Regulations (Edition of 2004). (WRC-07)
5.438	Use of the band 4 200 - 4 400 MHz by the aeronautical radionavigation service is reserved exclusively for radio altimeters installed on board aircraft and for the associated transponders on the ground. However, passive sensing in the earth exploration-satellite and space research services may be authorised in this band on a secondary basis (no protection is provided by the radio altimeters).
5.440	The standard frequency and time signal-satellite service may be authorised to use the frequency 4 202 MHz for space-to-Earth transmissions and the frequency 6 427 MHz for Earth-to-space transmissions. Such transmissions shall be confined within the limits of 2 MHz of these frequencies, subject to agreement obtained under No. 9.21.

RR-footnote	*Radio Regulation footnote text*
5.441	The use of the bands 4 500-4 800 MHz (space-to-Earth), 6 725-7 025 MHz (Earth-to-space) by the fixed-satellite service shall be in accordance with the provisions of Appendix **30B**. The use of the bands 10.7-10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by geostationary-satellite systems in the fixed-satellite service shall be in accordance with the provisions of Appendix **30B**. The use of the bands 10.7-10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by a non-geostationary-satellite system in the fixed-satellite service is subject to application of the provisions of No. **9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. **5.43A** does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC-2000)
5.442	In the bands 4 825-4 835 MHz and 4 950-4 990 MHz, the allocation to the mobile service is restricted to the mobile, except aeronautical mobile, service. In Region 2 (except Brazil, Cuba, Guatemala, Paraguay, Uruguay and Venezuela), and in Australia, the band 4 825-4 835 MHz is also allocated to the aeronautical mobile service, limited to aeronautical mobile telemetry for flight testing by aircraft stations. Such use shall be in accordance with Resolution **416 (WRC-07)** and shall not cause harmful interference to the fixed service. (WRC-07)
5.443B	In order not to cause harmful interference to the microwave landing system operating above 5 030 MHz, the aggregate power flux-density produced at the Earth's surface in the band 5 030 - 5 150 MHz by all the space stations within any radionavigation-satellite service system (space-to-Earth) operating in the band 5 010 - 5 030 MHz shall not exceed –124.5 dB(W/m2) in a 150 kHz band. In order not to cause harmful interference to the radio astronomy service in the band 4 9905 000 MHz, radionavigation-satellite service systems operating in the band 5 010-5 030 MHz shall comply with the limits in the band 4 990-5 000 MHz defined in Resolution [COM5/1] (WRC 03). (WRC 03)
5.444	The band 5 030-5 150 MHz is to be used for the operation of the international standard system (microwave landing system) for precision approach and landing. In the band 5 030-5 091 MHz, the requirements of this system shall take precedence over other uses of this band. For the use of the band 5 091-5 150 MHz, No. **5.444A** and Resolution **114 (Rev.WRC-03)** apply. (WRC-07)
5.444A	*Additional allocation:* the band 5 091-5 150 MHz is also allocated to the fixed-satellite service (Earth-to-space) on a primary basis. This allocation is limited to feeder links of non-geostationary satellite systems in the mobile-satellite service and is subject to coordination under No. **9.11A**. In the band 5 091-5 150 MHz, the following conditions also apply: – prior to 1 January 2018, the use of the band 5 091-5 150 MHz by feeder links of non-geostationary-satellite systems in the mobile-satellite service shall be made in accordance with Resolution **114 (Rev.WRC-03)**; – after 1 January 2016, no new assignments shall be made to earth stations providing feeder links of non-geostationary mobile-satellite systems; – after 1 January 2018, the fixed-satellite service will become secondary to the aeronautical radionavigation service. (WRC-07)
5.444B	The use of the band 5 091-5 150 MHz by the aeronautical mobile service is limited to: – systems operating in the aeronautical mobile (R) service and in accordance with international aeronautical standards, limited to surface applications at airports. Such use shall be in accordance with Resolution **748 (WRC-07)**; – aeronautical telemetry transmissions from aircraft stations (see No. **1.83**) in accordance with Resolution **418 (WRC-07)**; – aeronautical security transmissions. Such use shall be in accordance with Resolution **419 (WRC-07)**. (WRC-07)
5.446	Additional allocation: in the countries listed in Nos. 5.369 and 5.400, the band 5 150 - 5 216 MHz is also allocated to the radiodetermination-satellite service (space-to-Earth) on a primary basis, subject to agreement obtained under No. 9.21. In Region 2, the band is also allocated to the radiodetermination-satellite service (space-to-Earth) on a primary basis. In Regions 1 and 3, except those countries listed in Nos. 5.369 and 5.400, the band is also allocated to the radiodetermination satellite service (space-to-Earth) on a secondary basis. The use by the radiodetermination-satellite service is limited to feeder links in conjunction with the radiodetermination-satellite service operating in the bands 1 610-1 626.5 MHz and/or 2 483.5-2 500 MHz. The total power flux-density at the Earth's surface shall in no case exceed -159 dB(W/m²) in any 4 kHz band for all angles of arrival.
5.446A	The use of the bands 5 150-5 350 MHz and 5 470-5 725 MHz by the stations in the mobile, except aeronautical mobile, service shall be in accordance with Resolution **229 (WRC-03)**. (WRC-07)
5.446B	In the band 5 150-5 250 MHz, stations in the mobile service shall not claim protection from earth stations in the fixed-satellite service. No. 5.43A does not apply to the mobile service with respect to fixed-satellite service earth stations. (WRC 03)
5.447A	The allocation to the fixed-satellite service (Earth-to-space) is limited to feeder links of non-geostationary-satellite systems in the mobile-satellite service and is subject to coordination under Resolution 46 (Rev.WRC-97)/ No. 9.11A.
5.447B	Additional allocation: the band 5 150 - 5 216 MHz is also allocated to the fixed-satellite service (space-to-Earth) on a primary basis. This allocation is limited to feeder links of non-geostationary-satellite systems in the mobile-satellite service and is subject to provisions of Resolution 46 (Rev.WRC-97)/ No. 9.11A. The power flux-density at the Earth's surface produced by space stations of the fixed-satellite service operating in the space-to-Earth direction in the band 5 150 - 5 216 MHz shall in no case exceed -164 dB(W/m²) in any 4 kHz band for all angles of arrival.

RR-footnote	*Radio Regulation footnote text*
5.447C	Administrations responsible for fixed-satellite service networks in the band 5 150 - 5 250MHz operated under Nos. 5.447A and 5.447B shall coordinate on an equal basis in accordance with Resolution 46 (Rev.WRC-97)/No. 9.11A with administrations responsible for non-geostationary-satellite networks operated under No. 5.446 and brought into use prior to 17 November 1995. Satellite networks operated under No. 5.446 brought into use after 17 November 1995 shall not claim protection from, and shall not cause harmful interference to, stations of the fixed-satellite service operated under Nos. 5.447A and 5.447B.
5.447D	The allocation of the band 5 250 - 5 255 MHz to the space research service on a primary basis is limited to active spaceborne sensors. Other uses of the band by the space research service are on a secondary basis.
5.447F	In the band 5 250-5 350 MHz, stations in the mobile service shall not claim protection from the radiolocation service, the Earth exploration-satellite service (active) and the space research service (active). These services shall not impose on the mobile service more stringent protection criteria, based on system characteristics and interference criteria, than those stated in Recommendations ITU R M.1638 and ITU R SA.1632. (WRC 03)
5.448A	The Earth exploration-satellite (active) and space research (active) services in the frequency band 5 250-5 350 MHz shall not claim protection from the radiolocation service. No. 5.43A does not apply. (WRC-03)
5.448B	The Earth exploration-satellite service (active) operating in the band 5 350-5 570 MHz and space research service (active) operating in the band 5 460-5 570 MHz shall not cause harmful interference to the aeronautical radionavigation service in the band 5 350-5 460 MHz, the radionavigation service in the band 5 460-5 470 MHz and the maritime radionavigation service in the band 5 470-5 570 MHz. (WRC 03)
5.448C	The space research service (active) operating in the band 5 350-5 460 MHz shall not cause harmful interference to nor claim protection from other services to which this band is allocated. (WRC 03)
5.448D	In the frequency band 5 350-5 470 MHz, stations in the radiolocation service shall not cause harmful interference to, nor claim protection from, radar systems in the aeronautical radionavigation service operating in accordance with No. 5.449. (WRC 03)
5.449	The use of the band 5 350 - 5 470 MHz by the aeronautical radionavigation service is limited to airborne radars and associated airborne beacons.
5.450A	In the band 5 470-5 725 MHz, stations in the mobile service shall not claim protection from radiodetermination services. Radiodetermination services shall not impose on the mobile service more stringent protection criteria, based on system characteristics and interference criteria, than those stated in Recommendation ITU R M.1638. (WRC 03)
5.450B	In the frequency band 5 470-5 650 MHz, stations in the radiolocation service, except ground-based radars used for meteorological purposes in the band 5 600-5 650 MHz, shall not cause harmful interference to, nor claim protection from, radar systems in the maritime radionavigation service. (WRC 03)
5.452	Between 5 600 MHz and 5 650 MHz, ground-based radars used for meteorological purposes are authorised to operate on a basis of equality with stations of the maritime radionavigation service.
5.453	*Additional allocation:* in Saudi Arabia, Bahrain, **Bangladesh**, Brunei Darussalam, Cameroon, China, Congo, Côte d'Ivoire, Korea (Rep. of), Egypt, the United Arab Emirates, Gabon, Guinea, Equatorial Guinea, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kenya, Kuwait, Lebanon, the Libyan Arab Jamahiriya, Madagascar, Malaysia, Nigeria, Oman, Pakistan, the Philippines, Qatar, the Syrian Arab Republic, the Dem. People's Rep. of Korea, Singapore, Sri Lanka, Swaziland, Tanzania, Chad, Thailand, Togo, Viet Nam and Yemen, the band 5 650-5 850 MHz is also allocated to the fixed and mobile services on a primary basis. In this case, the provisions of Resolution [COM5/16] (WRC-03) do not apply. (WRC-03)
5.457A	In the bands 5 925-6 425 MHz and 14-14.5 GHz, earth stations located on board vessels may communicate with space stations of the fixed-satellite service. Such use shall be in accordance with Resolution [COM4/20] (WRC 03). (WRC03)
5.458	In the band 6 425 - 7 075 MHz, passive microwave sensor measurements are carried out over the oceans. In the band 7 075 - 7 250 MHz, passive microwave sensor measurements are carried out. Administrations should bear in mind the needs of the Earth exploration-satellite (passive) and space research (passive) services in their future planning of the bands 6 425 -7 025 MHz and 7 075 - 7 250 MHz.
5.458A	In making assignments in the band 6 700 - 7 075 MHz to space stations of the fixed-satellite service, administrations are urged to take all practicable steps to protect spectral line observations of the radio astronomy service in the band 6 650 - 6 675.2 MHz from harmful interference from unwanted emissions.
5.458B	The space-to-Earth allocation to the fixed-satellite service in the band 6 700 - 7 075 MHz is limited to feeder links for non-geostationary satellite systems of the mobile-satellite service and is subject to coordination under Resolution 46 (Rev.WRC-97)/No. 9.11A. The use of the band 6 700 - 7 075 MHz (space-to-Earth) by feeder links for non-geostationary satellite systems in the mobile-satellite service is not subject to No. 22.2.
5.458C	Administrations making submissions in the band 7 025 - 7 075 MHz (Earth-to-space) for geostationary-satellite systems in the fixed-satellite service after 17 November 1995 shall consult on the basis of relevant ITU-R Recommendations with the administrations that have notified and brought into use non-geostationary-satellite systems in this frequency band before 18 November 1995 upon request of the latter administrations. This consultation shall be with a view to facilitating shared operation of both geostationary-satellite systems in the fixed-satellite service and non-geostationary-satellite systems in this band.
5.460	The use of the band 7 145-7 190 MHz by the space research service (Earth-to-space) is restricted to deep space; no emissions to deep space shall be effected in the band 7 190-7 235 MHz. Geostationary satellites in the space research service operating in the band 7 190-7 235 MHz shall not claim protection from existing and future stations of the fixed and mobile services and No. 5.43A does not apply. (WRC 03)

RR-footnote	*Radio Regulation footnote text*
5.461	Additional allocation: the bands 7 250 - 7 375 MHz (space-to-Earth) and 7 900 - 8 025 MHz (Earth-to-space) are also allocated to the mobile-satellite service on a primary basis, subject to agreement obtained under No. 9.21.
5.461A	The use of the band 7 450-7 550 MHz by the meteorological-satellite service (space-to-Earth) is limited to geostationary-satellite systems. Non-geostationary meteorological-satellite systems in this band notified before 30 November 1997 may continue to operate on a primary basis until the end of their lifetime.
5.461B	The use of the band 7 750-7 850 MHz by the meteorological-satellite service (space-to-Earth) is limited to non-geostationary satellite systems.
5.462A	In Regions 1 and 3 (except for Japan), in the band 8 025-8 400 MHz, the earth exploration-satellite service using geostationary satellites shall not produce a power flux-density in excess of the following provisional values for angles of arrival (θ), without the consent of the affected administration: -174 dB(W/m2) in a 4 kHz band for $0° \leq \theta < 5°$ $-174 + 0.5\,(\theta - 5)$ dB(W/m2) in a 4 kHz band for $5° \leq \theta < 25°$ -164 dB(W/m2) in a 4 kHz band for $25° \leq \theta \leq 90°$ These values are subject to study under Resolution 124 (WRC-97)
5.463	Aircraft stations are not permitted to transmit in the band 8 025 - 8 400 MHz.
5.465	In the space research service, the use of the band 8 400 - 8 450 MHz is limited to deep space.
5.468	*Additional allocation:* in Saudi Arabia, Bahrain, **Bangladesh**, Brunei Darussalam, Burundi, Cameroon, China, the Congo, Costa Rica, Egypt, the United Arab Emirates, Gabon, Guyana, Indonesia, Iran (Islamic Republic of), Iraq, Jamaica, Jordan, Kenya, Kuwait, Lebanon, Libyan Arab Jamahiriya, Malaysia, Mali, Morocco, Mauritania, Nepal, Nigeria, Oman, Pakistan, Qatar, Syrian Arab Republic, Dem. People's Rep. of Korea, Senegal, Singapore, Somalia, Swaziland, Tanzania, Chad, Togo, Tunisia and Yemen, the band 8 500-8 750 MHz is also allocated to the fixed and mobile services on a primary basis. WRC-03)
5.469A	In the band 8 550-8 650 MHz, stations in the earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, or constrain the use and development of, stations of the radiolocation service.
5.470	The use of the band 8 750 - 8 850 MHz by the aeronautical radionavigation service is limited to airborne Doppler navigation aids on a centre frequency of 8 800 MHz.
5.472	In the bands 8 850 - 9 000 MHz and 9 200 - 9 225 MHz, the maritime radionavigation service is limited to shore-based radars.
5.474	In the band 9 200 - 9 500 MHz, search and rescue transponders (SART) may be used, having due regard to the appropriate ITU-R Recommendation (see also Article 31).
5.475	The use of the band 9 300-9 500 MHz by the aeronautical radionavigation service is limited to airborne weather radars and ground-based radars. In addition, ground-based radar beacons in the aeronautical radionavigation service are permitted in the band 9 300-9 320 MHz on condition that harmful interference is not caused to the maritime radionavigation service. (WRC-07)
5.475A	The use of the band 9 300-9 500 MHz by the Earth exploration-satellite service (active) and the space research service (active) is limited to systems requiring necessary bandwidth greater than 300 MHz that cannot be fully accommodated within the 9 500-9 800 MHz band. (WRC-07)
5.475B	In the band 9 300-9 500 MHz, stations operating in the radiolocation service shall not cause harmful interference to, nor claim protection from, radars operating in the radionavigation service in conformity with the Radio Regulations. Ground-based radars used for meteorological purposes have priority over other radiolocation uses. (WRC-07)
5.476A	In the band 9 300-9 800 MHz, stations in the Earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, nor claim protection from, stations of the radionavigation and radiolocation services. (WRC-07)
5.477	*Different category of service:* in Algeria, Saudi Arabia, Bahrain, **Bangladesh**, Brunei Darussalam, Cameroon, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Guyana, India, Indonesia, Iran (Islamic Republic of), Iraq, Jamaica, Japan, Jordan, Kuwait, Lebanon, Liberia, Malaysia, Nigeria, Oman, Pakistan, Qatar, Syrian Arab Republic, the Dem. People's Rep. of Korea, Singapore, Somalia, Sudan, Trinidad and Tobago, and Yemen, the allocation of the band 9 800-10 000 MHz to the fixed service is on a primary basis (see No. **5.33**). (WRC-07)
5.478A	The use of the band 9 800-9 900 MHz by the Earth exploration-satellite service (active) and the space research service (active) is limited to systems requiring necessary bandwidth greater than 500 MHz that cannot be fully accommodated within the 9 300-9 800 MHz band. (WRC-07)
5.478B	In the band 9 800-9 900 MHz, stations in the Earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, nor claim protection from stations of the fixed service to which this band is allocated on a secondary basis. (WRC-07)
5.479	The band 9 975 - 10 025 MHz is also allocated to the meteorological-satellite service on a secondary basis for use by weather radars.



RR-footnote	*Radio Regulation footnote text*
5.482	In the band 10.6-10.68 GHz, the power delivered to the antenna of stations of the fixed and mobile, except aeronautical mobile, services shall not exceed −3 dBW. This limit may be exceeded, subject to agreement obtained under No. **9.21**. However, in Algeria, Saudi Arabia, Armenia, Azerbaijan, Bahrain, **Bangladesh**, Belarus, Egypt, United Arab Emirates, Georgia, India, Indonesia, Iran (Islamic Republic of), Iraq, Jordan, Libyan Arab Jamahiriya, Kazakhstan, Kuwait, Lebanon, Morocco, Mauritania, Moldova, Nigeria, Oman, Uzbekistan, Pakistan, Philippines, Qatar, Syrian Arab Republic, Kyrgyzstan, Singapore, Tajikistan, Tunisia, Turkmenistan and Viet Nam, this restriction on the fixed and mobile, except aeronautical mobile, service is not applicable. (WRC-07)
5.482A	For sharing of the band 10.6-10.68 GHz between the Earth exploration-satellite (passive) service and the fixed and mobile, except aeronautical mobile, services, Resolution **751 (WRC-07)** applies. (WRC-07)
5.484A	The use of the bands 10.95-11.2 GHz (space-to-Earth), 11.45-11.7 GHz (space-to-Earth), 11.7-12.2 GHz (space-to-Earth) in Region 2, 12.2-12.75 GHz (space-to-Earth) in Region 3, 12.5-12.75 GHz (space-to-Earth) in Region 1, 13.75-14.5 GHz (Earth-to-space), 17.8-18.6 GHz (space-to-Earth), 19.7-20.2 GHz (space-to-Earth), 27.5-28.6 GHz (Earth-to-space), 29.5-30 GHz (Earth-to-space) by a non-geostationary-satellite system in the fixed-satellite service is subject to application of the provisions of No. 9.12 for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-GSO FSS systems and of the complete coordination or notification information, as appropriate, for the GSO networks, and No. 5.43A does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated.
5.487	In the band 11.7-12.5 GHz in Regions 1 and 3, the fixed, fixed-satellite, mobile, except aeronautical mobile, and broadcasting services, in accordance with their respective allocations, shall not cause harmful interference to, or claim protection from, broadcasting-satellite stations operating in accordance with the Regions 1 and 3 Plan in Appendix 30. (WRC 03)
5.487A	Additional allocation: in Region 1, the band 11.7-12.5 GHz, in Region 2, the band 12.2-12.7 GHz and, in Region 3, the band 11.7-12.2 GHz, are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis, limited to non geostationary systems and subject to application of the provisions of No. 9.12 for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed satellite service shall not claim protection from geostationary-satellite networks in the broadcasting-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. 5.43A does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC 03)
5.492	Assignments to stations of the broadcasting-satellite service which are in conformity with the appropriate regional Plan or included in the Regions 1 and 3 List in Appendix 30 may also be used for transmissions in the fixed-satellite service (space-to-Earth), provided that such transmissions do not cause more interference, or require more protection from interference, than the broadcasting-satellite service transmissions operating in conformity with the Plan or the List, as appropriate.
5.497	The use of the band 13.25 - 13.4 GHz by the aeronautical radionavigation service is limited to Doppler navigation aids.
5.498A	The earth exploration-satellite (active) and space research (active) services operating in the band 13.25-13.4 GHz shall not cause harmful interference to, or constrain the use and development of, the aeronautical radionavigation service.
5.499	*Additional allocation:* in **Bangladesh**, India and Pakistan, the band 13.25-14 GHz is also allocated to the fixed service on a primary basis.
5.501A	The allocation of the band 13.4 – 13.75 GHz to the space research service on a primary basis is limited to active spaceborne sensors. Other uses of the band by the space research service are on a secondary basis.
5.501B	In the band 13.4-13.75 GHz, the earth exploration-satellite (active) and space research (active) services shall not cause harmful interference to, or constrain the use and development of, the radiolocation service.
5.502	In the band 13.75-14 GHz, an earth station of a geostationary fixed-satellite service network shall have a minimum antenna diameter of 1.2 m and an earth station of a non-geostationary fixed-satellite service system shall have a minimum antenna diameter of 4.5 m. In addition, the e.i.r.p., averaged over one second, radiated by a station in the radiolocation or radionavigation services shall not exceed 59 dBW for elevation angles above 2° and 65 dBW at lower angles. Before an administration brings into use an earth station in a geostationary-satellite network in the fixed-satellite service in this band with an antenna diameter smaller than 4.5 m, it shall ensure that the power flux-density produced by this earth station does not exceed: −115 dB(W/(m^2 · 10 MHz)) for more than 1% of the time produced at 36 m above sea level at the low water mark, as officially recognized by the coastal State; −115 dB(W/(m^2 · 10 MHz)) for more than 1% of the time produced 3 m above ground at the border of the territory of an administration deploying or planning to deploy land mobile radars in this band, unless prior agreement has been obtained. For earth stations within the fixed-satellite service having an antenna diameter greater than or equal to 4.5 m, the e.i.r.p. of any emission should be at least 68 dBW and should not exceed 85 dBW. (WRC-03)

RR-footnote	*Radio Regulation footnote text*
5.503	In the band 13.75-14 GHz, geostationary space stations in the space research service for which information for advance publication has been received by the Bureau prior to 31 January 1992 shall operate on an equal basis with stations in the fixed-satellite service; after that date, new geostationary space stations in the space research service will operate on a secondary basis. Until those geostationary space stations in the space research service for which information for advance publication has been received by the Bureau prior to 31 January 1992 cease to operate in this band: – in the band 13.77-13.78 GHz, the e.i.r.p. density of emissions from any earth station in the fixed-satellite service operating with a space station in geostationary-satellite orbit shall not exceed: i) 4.7D + 28 dB(W/40 kHz), where D is the fixed-satellite service earth station antenna diameter (m) for antenna diameters equal to or greater than 1.2 m and less than 4.5 m; ii) 49.2 + 20 log(D/4.5) dB(W/40 kHz), where D is the fixed-satellite service earth station antenna diameter (m) for antenna diameters equal to or greater than 4.5 m and less than 31.9 m; iii) 66.2 dB(W/40 kHz) for any fixed-satellite service earth station for antenna diameters (m) equal to or greater than 31.9 m; iv) 56.2 dB(W/4 kHz) for narrow-band (less than 40 kHz of necessary bandwidth) fixed-satellite service earth station emissions from any fixed-satellite service earth station having an antenna diameter of 4.5 m or greater; – the e.i.r.p. density of emissions from any earth station in the fixed-satellite service operating with a space station in non-geostationary-satellite orbit shall not exceed 51 dBW in the 6 MHz band from 13.772 to 13.778 GHz. Automatic power control may be used to increase the e.i.r.p. density in these frequency ranges to compensate for rain attenuation, to the extent that the power flux-density at the fixed-satellite service space station does not exceed the value resulting from use by an earth station of an e.i.r.p. meeting the above limits in clear-sky conditions. (WRC 03)
5.504	The use of the band 14 - 14.3 GHz by the radionavigation service shall be such as to provide sufficient protection to space stations of the fixed-satellite service (see Recommendation 708).
5.504A	In the band 14-14.5 GHz, aircraft earth stations in the secondary aeronautical mobile-satellite service may also communicate with space stations in the fixed-satellite service. The provisions of Nos. 5.29, 5.30 and 5.31 apply. (WRC 03)
5.506	The band 14 - 14.5 GHz may be used, within the fixed-satellite service (Earth-to-space), for feeder links for the broadcasting-satellite service, subject to coordination with other networks in the fixed-satellite service. Such use of feeder links is reserved for countries outside Europe.
5.506A	In the band 14-14.5 GHz, ship earth stations with an e.i.r.p. greater than 21 dBW shall operate under the same conditions as earth stations located on board vessels, as provided in Resolution [COM4/20] (WRC 03). This footnote shall not apply to ship earth stations for which the complete Appendix 4 information has been received by the Radiocommunication Bureau prior to 5 July 2003. (WRC-03)
5.506B	Earth stations located on board vessels communicating with space stations in the fixed-satellite service may operate in the frequency band 14-14.5 GHz without the need for prior agreement from Cyprus, Greece and Malta, within the minimum distance given in Resolution [COM4/20] (WRC 03) from these countries. (WRC 03)
5.508A	In the band 14.25-14.3 GHz, the power flux-density produced on the territory of the countries of Saudi Arabia, Botswana, China, Côte d'Ivoire, Egypt, France, Guinea, India, Iran, Italy, Kuwait, Lesotho, Nigeria, Oman, Syrian Arab Republic, the United Kingdom and Tunisia by any aircraft earth station in the aeronautical mobile-satellite service shall not exceed the limits given in Annex 1a, Part B of Recommendation ITU R M.1643, unless otherwise specifically agreed by the affected administration(s). The provisions of this footnote in no way derogate the obligations of the aeronautical mobile-satellite service to operate as a secondary service in accordance with No. 5.29. (WRC 03)
5.509A	In the band 14.3-14.5 GHz, the power flux-density produced on the territory of the countries of Saudi Arabia, Botswana, Cameroon, China, Côte d'Ivoire, Egypt, France, Gabon, Guinea, India, Iran, Italy, Kuwait, Lesotho, Morocco, Nigeria, Oman, Syrian Arab Republic, the United Kingdom, Sri Lanka, Tunisia and Viet Nam by any aircraft earth station in the aeronautical mobile-satellite service shall not exceed the limits given in Annex 1a, Part B of Recommendation ITU R M.1643, unless otherwise specifically agreed by the affected administration(s). The provisions of this footnote in no way derogate the obligations of the aeronautical mobile-satellite service to operate as a secondary service in accordance with No.5.29. (WRC 03)
5.510	The use of the band 14.5 - 14.8 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service. This use is reserved for countries outside Europe.
5.511A	The band 15.43-15.63 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a primary basis. Use of the band 15.43-15.63 GHz by the fixed-satellite service (space-to-Earth and Earth-to-space) is limited to feeder links of non-geostationary systems in the mobile-satellite service, subject to coordination under No. 9.11A. The use of the frequency band 15.43-15.63 GHz by the fixed-satellite service (space-to-Earth) is limited to feeder links of non-geostationary systems in the mobile-satellite service for which advance publication information has been received by the Bureau prior to 2 June 2000. In the space-to-Earth direction, the minimum earth station elevation angle above and gain towards the local horizontal plane and the minimum coordination distances to protect an earth station from harmful interference shall be in accordance with Recommendation ITU-R S.1341. In order to protect the radio astronomy service in the band 15.35-15.4 GHz, the aggregate power flux-density radiated in the 15.35-15.4 GHz band by all the space stations within any non-GSO MSS feeder-link (space-to-Earth) system operating in the 15.43-15.63 GHz band shall not exceed the level of –156 dB(W/m2) in a 50 MHz bandwidth, into any radio astronomy observatory site for more than 2% of the time.

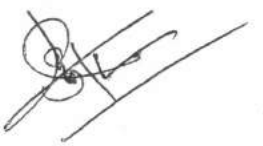
RR-footnote	*Radio Regulation footnote text*
5.511C	Stations operating in the aeronautical radionavigation service shall limit the effective e.i.r.p. in accordance with Recommendation ITU-R 1340. The minimum coordination distance required to protect the aeronautical radionavigation stations (No. 4.10 applies) from harmful interference from feeder link earth stations and the maximum e.i.r.p. transmitted towards the local horizontal plane by a feeder link earth station shall be in accordance with Recommendation ITU-R 1340.
5.511D	Fixed-satellite service systems for which complete information for advance publication has been received by the Bureau by 21 November 1997 may operate in the bands 15.4-15.43 GHz and 15.63-15.7 GHz in the space-to-Earth direction and 15.63-15.65 GHz in the Earth-to-space direction. In the bands 15.4-15.43 GHz and 15.65-15.7 GHz, emissions from a non-geostationary space station shall not exceed the power flux-density limits at the Earth's surface of –146 dB(W/m2/MHz) for any angle of arrival. In the band 15.63-15.65 GHz, where an administration plans emissions from a non-geostationary space station that exceed –146 dB(W/m2/MHz) for any angle of arrival, it shall coordinate under Resolution 46 (Rev.WRC-97)/No. 9.11A with the affected administrations. Stations in the fixed-satellite service operating in the band 15.63-15.65 GHz in the Earth-to-space direction shall not cause harmful interference to stations in the aeronautical radionavigation service (No. 4.10 applies).
5.512	*Additional allocation:* in Algeria, Angola, Saudi Arabia, Austria, Bahrain, **Bangladesh**, Brunei Darussalam, Cameroon, Congo (Rep. of the), Costa Rica, Egypt, El Salvador, the United Arab Emirates, Eritrea, Finland, Guatemala, India, Indonesia, Iran (Islamic Republic of), the Libyan Arab Jamahiriya, Jordan, Kenya, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Montenegro, Mozambique, Nepal, Nicaragua, Oman, Pakistan, Qatar, Syrian Arab Republic, Serbia, Singapore, Somalia, Sudan, Swaziland, Tanzania, Chad, Togo and Yemen, the band 15.7-17.3 GHz is also allocated to the fixed and mobile services on a primary basis. (WRC-07)
5.513A	Spaceborne active sensors operating in the band 17.2-17.3 GHz shall not cause harmful interference to, or constrain the development of, the radiolocation and other services allocated on a primary basis.
5.514	*Additional allocation:* in Algeria, Angola, Saudi Arabia, Bahrain, **Bangladesh**, Cameroon, Costa Rica, El Salvador, the United Arab Emirates, Guatemala, India, Iran (Islamic Republic of), Iraq, Israel, Italy, the Libyan Arab Jamahiriya, Japan, Jordan, Kuwait, Lithuania, Nepal, Nicaragua, Nigeria, Oman, Uzbekistan, Pakistan, Qatar, Kyrgyzstan and Sudan, the band 17.3-17.7 GHz is also allocated to the fixed and mobile services on a secondary basis. The power limits given in Nos. **21.3** and **21.5** shall apply. (WRC-07)
5.516	The use of the band 17.3-18.1 GHz by geostationary-satellite systems in the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service. The use of the band 17.3-17.8 GHz in Region 2 by systems in the fixed-satellite service (Earth-to-space) is limited to geostationary satellites. For the use of the band 17.3-17.8 GHz in Region 2 by feeder links for the broadcasting-satellite service in the band 12.2-12.7GHz, see Article 11. The use of the bands 17.3-18.1GHz (E/S) in Regions 1 and 3 and 17.8-18.1GHz (Earth-to-space) in Region2 by non-geostationary-satellite systems in the fixed-satellite service is subject to application of the provisions of No. 9.12 for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-GSO FSS systems and of the complete coordination or notification information, as appropriate, for the GSO networks, and No.5.43A does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated.
5.516B	The following bands are identified for use by high-density applications in the fixed-satellite service (HDFSS): 17.3-17.7 GHz (space-to-Earth) in Region 1 18.3-19.3 GHz (space-to-Earth) in Region 2 19.7-20.2 GHz (space-to-Earth) in all Regions 39.5-40 GHz (space-to-Earth) in Region 1 40-40.5 GHz (space-to-Earth) in all Regions 40.5-42 GHz (space-to-Earth) in Region 2 47.5-47.9 GHz (space-to-Earth) in Region 1 48.2-48.54 GHz (space-to-Earth) in Region 1 49.44-50.2 GHz (space-to-Earth) in Region 1 and 27.5-27.82 GHz (Earth-to-space) in Region 1 28.35-28.45 GHz (Earth-to-space) in Region 2 28.45-28.94 GHz (Earth-to-space) in all Regions 28.94-29.1 GHz (Earth-to-space) in Region 2 and 3 29.25-29.46 GHz (Earth-to-space) in Region 2 29.46-30 GHz (Earth-to-space) in all Regions 48.2-50.2 GHz (Earth-to-space) in Region 2. This identification does not preclude the use of these bands by other fixed-satellite service applications or by other services to which these bands are allocated on a co-primary basis and does not establish priority in these Regulations among users of the bands. Administrations should take this into account when considering regulatory provisions in relation to these bands. See Res. [COM5/6] (WRC 03).
5.519	*Additional allocation:* the bands 18-18.3 GHz in Region 2 and 18.1-18.4 GHz in Regions 1 and 3 are also allocated to the meteorological-satellite service (space-to-Earth) on a primary basis. Their use is limited to geostationary satellites. (WRC-07)
5.520	The use of the band 18.1-18.4 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links of geostationary-satellite systems in the broadcasting-satellite service
5.522A	The emissions of the fixed service and the fixed-satellite service in the band 18.6-18.8 GHz are limited to the values given in Nos. 21.5A and 21.16.2, respectively
5.522B	The use of the band 18.6-18.8 GHz by the fixed-satellite service is limited to geostationary systems and systems with an orbit of apogee greater than 20 000 km.
5.523A	The use of the bands 18.8-19.3 GHz (space-to-Earth) and 28.6-29.1 GHz (Earth-to-space) by geostationary and non-geostationary fixed-satellite service networks is subject to the application of the provisions of No. 9.11A/Resolution 46 (Rev.WRC-97) and No. 22.2 does not apply. Administrations having geostationary-satellite networks under coordination prior to 18 November 1995 shall cooperate to the maximum extent possible to coordinate pursuant to No. 9.11A/Resolution 46 (Rev.WRC-97) with non-geostationary-satellite networks for which notification information has been received by the Bureau prior to that date, with a view to reaching results acceptable to all the parties concerned. Non-geostationary-satellite networks shall not cause unacceptable interference to geostationary fixed-satellite service networks for which complete Appendix 4 notification information is considered as having been received by the Bureau prior to 18 November 1995.

RR-footnote	*Radio Regulation footnote text*
5.523B	The use of the band 19.3 - 19.6 GHz (Earth-to-space) by the FSS is limited to feeder links for non-GSO systems in the MSS. Such use is subject to the application of the provisions of Resolution 46 (Rev.WRC-97)/No.9.11A, and No.22.2 does not apply.
5.523C	No. 22.2 of the Radio Regulations shall continue to apply in the bands 19.3 - 19.6 GHz and 29.1 - 29.4 GHz, between feeder links of non-geostationary mobile-satellite service networks and those fixed-satellite service networks for which complete Appendix 4 coordination information, or notification information, is considered as having been received by the Bureau prior to 18 November 1995.
5.523D	The use of the band 19.3-19.7 GHz (space-to-Earth) by geostationary fixed-satellite service systems and by feeder links for non-geostationary-satellite systems in the mobile-satellite service is subject to the application of the provisions of Resolution 46 (Rev.WRC-97)/ No. 9.11A, but not subject to the provisions of No. 22.2. The use of this band for other non-geostationary fixed-satellite service systems, or for the cases indicated in Nos. 5.523C and 5.523E, is not subject to the provisions of Resolution 46 (Rev.WRC-97)/No. 9.11A and shall continue to be subject to Articles S9 (except No. 9.11A) and 11 procedures, and to the provisions of No. 22.2.
5.523E	No.22.2 of the Radio Regulations shall continue to apply in the bands 19.6-19.7GHz and 29.4-29.5GHz, between feeder links of non-geostationary mobile-satellite service networks and those fixed-satellite service networks for which complete Appendix 4 coordination information, or notification information, is considered as having been received by the Bureau by 21 Nov. 1997.
5.525	In order to facilitate interregional coordination between networks in the mobile-satellite and fixed-satellite services, carriers in the mobile-satellite service that are most susceptible to interference shall, to the extent practicable, be located in the higher parts of the bands 19.7-20.2 GHz and 29.5-30 GHz
5.526	In the bands 19.7 - 20.2 GHz and 29.5 - 30 GHz in Region 2, and in the bands 20.1 - 20.2 GHz and 29.9 - 30 GHz in Regions 1 and 3, networks which are both in the fixed-satellite service and in the mobile-satellite service may include links between earth stations at specified or unspecified points or while in motion, through one or more satellites for point-to-point and point-to-multipoint communications.
5.527	In the bands 19.7-20.2GHz and 29.5-30GHz, the provisions of No 4.10 do not apply with respect to the mobile-satellite service
5.528	The allocation to the mobile-satellite service is intended for use by networks which use narrow spot-beam antennas and other advanced technology at the space stations. Administrations operating systems in the mobile-satellite service in the band 19.7 - 20.1 GHz in Region 2 and in the band 20.1 - 20.2 GHz shall take all practicable steps to ensure the continued availability of these bands for administrations operating fixed and mobile systems in accordance with the provisions of No. 5.524.
5.530	In Regions 1 and 3, the use of the band 21.4-22 GHz by the broadcasting-satellite service is subject to the provisions of Resolution **525 (Rev.WRC-07)**. (WRC-07)
5.532	The use of the band 22.21 - 22.5 GHz by the earth exploration-satellite (passive) and space research (passive) services shall not impose constraints upon the fixed and mobile, except aeronautical mobile, services.
5.533	The inter-satellite service shall not claim protection from harmful interference from airport surface detection equipment stations of the radionavigation service.
5.535	In the band 24.75-25.25 GHz, feeder links to stations of the broadcasting-satellite service shall have priority over other uses in the fixed-satellite service (Earth-to-space). Such other uses shall protect and shall not claim protection from existing and future operating feeder-link networks to such broadcasting satellite stations.
5.535A	The use of the band 29.1-29.5 GHz (Earth-to-space) by the fixed-satellite service is limited to geostationary-satellite systems and feeder links to non-geostationary-satellite systems in the mobile-satellite service. Such use is subject to the application of the provisions of Resolution 46(Rev.WRC-97)/No. 9.11A, but not subject to the provisions of No. 22.2, except as indicated in Nos. 5.523C and 5.523E where such use is not subject to the provisions of Resolution 46 (Rev.WRC-97)/No. 9.11A and shall continue to be subject to Articles S9 (except No. 9.11A) and 11 procedures, and to the provisions of No. 22.2.
5.536	Use of the 25.25 - 27.5 GHz band by the inter-satellite service is limited to space research and Earth exploration-satellite applications, and also transmissions of data originating from industrial and medical activities in space.
5.536A	Administrations operating earth stations in the Earth exploration-satellite service or the space research service shall not claim protection from stations in the fixed and mobile services operated by other administrations. In addition, earth stations in the Earth exploration-satellite service or in the space research service should be operated taking into account Recommendations ITU R SA.1278 and ITU R SA.1625, respectively. (WRC 03)
5.537	Space services using non-geostationary satellites operating in the inter-satellite service in the band 27-27.5 GHz are exempt from the provisions of No. 22.2.
5.538	*Additional allocation:* the bands 27.500-27.501 GHz and 29.999-30.000 GHz are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis for the beacon transmissions intended for up-link power control. Such space-to-Earth transmissions shall not exceed an equivalent isotropically radiated power (e.i.r.p.) of +10 dBW in the direction of adjacent satellites on the geostationary-satellite orbit. (WRC-07)
5.539	The band 27.5 - 30 GHz may be used by the fixed-satellite service (Earth-to-space) for the provision of feeder links for the broadcasting-satellite service.
5.540	Additional allocation: the band 27.501 - 29.999 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a secondary basis for beacon transmissions intended for up-link power control.

RR-footnote	*Radio Regulation footnote text*
5.541	In the band 28.5 - 30 GHz, the earth exploration-satellite service is limited to the transfer of data between stations and not to the primary collection of information by means of active or passive sensors.
5.541A	Feeder links of non-geostationary networks in the mobile-satellite service and geostationary networks in the fixed-satellite service operating in the band 29.1-29.5 GHz (Earth-to-space) shall employ uplink adaptive power control or other methods of fade compensation, such that the earth station transmissions shall be conducted at the power level required to meet the desired link performance while reducing the level of mutual interference between both networks. These methods shall apply to networks for which Appendix 4 coordination information is considered as having been received by the Bureau after 17 May 1996 and until they are changed by a future competent world radiocommunication conference. Administrations submitting Appendix 4 information for coordination before this date are encouraged to utilize these techniques to the extent practicable.
5.543	The band 29.95 - 30 GHz may be used for space-to-space links in the earth exploration-satellite service for telemetry, tracking, and control purposes, on a secondary basis.
5.544	In the band 31 - 31.3 GHz the power flux-density limits specified in Article 21, Table 21-4 shall apply to the space research service.
5.547	The bands 31.8-33.4 GHz, 37-40 GHz, 40.5-43.5 GHz, 51.4-52.6 GHz, 55.78-59 GHz and 64-66 GHz are available for high-density applications in the fixed service (see Resolution **75 (WRC-2000)**). Administrations should take this into account when considering regulatory provisions in relation to these bands. Because of the potential deployment of high-density applications in the fixed-satellite service in the bands 39.5-40 GHz and 40.5-42 GHz (see No. **5.516B**), administrations should further take into account potential constraints to high-density applications in the fixed service, as appropriate. (WRC-07)
5.547A	Administrations should take practical measures to minimize the potential interference between stations in the fixed service and airborne stations in the radionavigation service in the 31.8-33.4 GHz band, taking into account the operational needs of the airborne radar systems
5.548	In designing systems for the inter-satellite service in the band 32.3-33 GHz, for the radionavigation service in the band 3233 GHz, and for the space research service (deep space) in the band 31.8-32.3 GHz, administrations shall take all necessary measures to prevent harmful interference between these services, bearing in mind the safety aspects of the radionavigation service (see Recommendation 707). (WRC-03)
5.549	*Additional allocation:* in Saudi Arabia, Bahrain, **Bangladesh**, Egypt, the United Arab Emirates, Gabon, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kuwait, Lebanon, Libyan Arab Jamahiriya, Malaysia, Mali, Malta, Morocco, Mauritania, Nepal, Nigeria, Oman, Pakistan, the Philippines, Qatar, Dem. Rep. of the Congo, Syrian Arab Republic, Singapore, Somalia, Sudan, Sri Lanka, Togo, Tunisia and Yemen, the band 33.4-36 GHz is also allocated to the fixed and mobile services on a primary basis. (WRC-03)
5.549A	In the band 35.5-36.0 GHz, the mean power flux-density at the Earth's surface, generated by any spaceborne sensor in the Earth exploration-satellite service (active) or space research service (active), for any angle greater than 0.8° from the beam centre shall not exceed 73.3 dB(W/m2) in this band. (WRC 03)
5.550A	For sharing of the band 36-37 GHz between the Earth exploration-satellite (passive) service and the fixed and mobile services, Resolution **752 (WRC-07)** shall apply. (WRC-07)
5.551H	The equivalent power flux-density (epfd) produced in the band 42.5-43.5 GHz by all space stations in any non-geostationary-satellite system in the fixed-satellite service (space-to-Earth), or in the broadcasting-satellite service operating in the 42-42.5 GHz band, shall not exceed the following values at the site of any radio astronomy station for more than 2% of the time: −230 dB(W/m^2) in 1 GHz and −246 dB(W/m^2) in any 500 kHz of the 42.5-43.5 GHz band at the site of any radio astronomy station registered as a single-dish telescope; and −209 dB(W/m^2) in any 500 kHz of the 42.5-43.5 GHz band at the site of any radio astronomy station registered as a very long baseline interferometry station. These epfd values shall be evaluated using the methodology given in Recommendation ITU-R S.1586-1 and the reference antenna pattern and the maximum gain of an antenna in the radio astronomy service given in Recommendation ITU-R RA.1631 and shall apply over the whole sky and for elevation angles higher than the minimum operating angle θ_{min} of the radiotelescope (for which a default value of 5° should be adopted in the absence of notified information). These values shall apply at any radio astronomy station that either: – was in operation prior to 5 July 2003 and has been notified to the Bureau before 4 January 2004; or – was notified before the date of receipt of the complete Appendix 4 information for coordination or notification, as appropriate, for the space station to which the limits apply.

RR-footnote	*Radio Regulation footnote text*
5.551I	The power flux-density in the band 42.5-43.5 GHz produced by any geostationary space station in the fixed-satellite service (space-to-Earth), or the broadcasting-satellite service operating in the 42-42.5 GHz band, shall not exceed the following values at the site of any radio astronomy station: −137 dB(W/m^2) in 1 GHz and −153 dB(W/m^2) in any 500 kHz of the 42.5-43.5 GHz band at the site of any radio astronomy station registered as a single-dish telescope; and −116 dB(W/m^2) in any 500 kHz of the 42.5-43.5 GHz band at the site of any radio astronomy station registered as a very long baseline interferometry station. These values shall apply at the site of any radio astronomy station that either: – was in operation prior to 5 July 2003 and has been notified to the Bureau before 4 January 2004; or – was notified before the date of receipt of the complete Appendix 4 information for coordination or notification, as appropriate, for the space station to which the limits apply. Other radio astronomy stations notified after these dates may seek an agreement with administrations that have authorized the space stations. In Region 2, Resolution **743 (WRC-03)** shall apply. The limits in this footnote may be exceeded at the site of a radio astronomy station of any country whose administration so agreed. (WRC-03)
5.552	The allocation of the spectrum for the fixed-satellite service in the bands 42.5 - 43.5 GHz and 47.2 - 50.2 GHz for Earth-to-space transmission is greater than that in the band 37.5 - 39.5 GHz for space-to-Earth transmission in order to accommodate feeder links to broadcasting satellites. Administrations are urged to take all practicable steps to reserve the band 47.2 - 49.2 GHz for feeder links for the broadcasting-satellite service operating in the band 40.5 - 42.5 GHz.
5.552A	The allocation to the fixed service in the bands 47.2-47.5 GHz and 47.9-48.2 GHz is designated for use by high altitude platform stations. The use of the bands 47.2-47.5 GHz and 47.9-48.2 GHz is subject to the provisions of Resolution **122 (Rev.WRC-07)**. (WRC-07)
5.553	In the bands 43.5-47 GHz and 66-71 GHz, stations in the land mobile service may be operated subject to not causing harmful interference to the space radiocommunication services to which these bands are allocated (see No. 5.43).
5.554	In the bands 43.5-47 GHz, 66-71 GHz, 95-100 GHz, 123-130 GHz, 191.8-200 GHz and 252-265 GHz, satellite links connecting land stations at specified fixed points are also authorized when used in conjunction with the mobile-satellite service or the radionavigation-satellite service.
5.554A	The use of the bands 47.5-47.9 GHz, 48.2-48.54 GHz and 49.44-50.2 GHz by the fixed-satellite service (space-to-Earth) is limited to geostationary satellites. (WRC 03)
5.555	Additional allocation: the band 48.94-49.04 GHz is also allocated to the radio astronomy service on a primary basis.
5.555B	The power flux-density in the band 48.94-49.04 GHz produced by any geostationary space station in the fixed-satellite service (space-to-Earth) operating in the bands 48.2-48.54 GHz and 49.44-50.2 GHz shall not exceed −151.8 dB(W/m2) in any 500 kHz band at the site of any radio astronomy station. (WRC 03)
5.556	In the bands 51.4-54.25 GHz, 58.2-59 GHz and 64-65 GHz, radio astronomy observations may be carried out under national arrangements.
5.556A	Use of the bands 54.25-56.9 GHz, 57-58.2 GHz and 59-59.3 GHz by the inter-satellite service is limited to satellites in the geostationary-satellite orbit. The single-entry power flux-density at all altitudes from 0 km to 1 000 km above the Earth' s surface produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, shall not exceed -147 dB(W/m 2 /100 MHz) for all angles of arrival.
5.557A	In the band 55.78-56.26 GHz, in order to protect stations in the Earth exploration-satellite service (passive), the maximum power density delivered by a transmitter to the antenna of a fixed service station is limited to –26 dB(W/MHz).
5.558	In the bands 55.78-58.2 GHz, 59-64 GHz, 66-71 GHz, 122.25-123 GHz, 130-134 GHz, 167-174.8 GHz and 191.8-200 GHz, stations in the aeronautical mobile service may be operated subject to not causing harmful interference to the inter-satellite service (see No. 5.43).
5.558A	Use of the band 56.9-57 GHz by inter-satellite systems is limited to links between satellites in geostationary-satellite orbit and to transmissions from non-geostationary satellites in high-Earth orbit to those in low-Earth orbit. For links between satellites in the geostationary-satellite orbit, the single entry power flux-density at all altitudes from 0 km to 1 000 km above the Earth's surface, for all conditions and for all methods of modulation, shall not exceed −147 dB(W/m2/100MHz) for all angles of arrival.
5.559	In the band 59-64 GHz, airborne radars in the radiolocation service may be operated subject to not causing harmful interference to the inter-satellite service (see No. 5.43).
5.559A	*SUPPRESSED*
5.560	In the band 78 - 79 GHz radars located on space stations may be operated on a primary basis in the earth exploration-satellite service and in the space research service.

RR-footnote	*Radio Regulation footnote text*
5.561	In the band 74-76 GHz, stations in the fixed, mobile and broadcasting services shall not cause harmful interference to stations of the fixed-satellite service or stations of the broadcasting-satellite service operating in accordance with the decisions of the appropriate frequency assignment planning conference for the broadcasting-satellite service.
5.561A	The 81-81.5 GHz band is also allocated to the amateur and amateur-satellite services on a secondary basis.
5.562	The use of the band 94 - 94.1 GHz by the earth exploration-satellite (active) and space research (active) services is limited to spaceborne cloud radars.
5.562A	Transmissions from space stations of the Earth exploration-satellite service (active) that are directed into the main beam of a radio astronomy antenna have the potential to damage some radio astronomy receivers. Space agencies operating the transmitters and the radio astronomy stations concerned should mutually plan their operations so as to avoid such occurrences to the maximum extent possible.
5.562B	Use of this allocation is limited to space-based radio astronomy only
5.562C	Use of the band 116-122.25 GHz by the inter-satellite service is limited to satellites in the geostationary satellite orbit. The single-entry power flux-density produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, at all altitudes from 0 km to 1 000 km above the Earth's surface and in the vicinity of all geostationary orbital positions occupied by passive sensors, shall not exceed –148 dB(W/(m2 . MHz)) for all angles of arrival.
5.562E	The allocation to the Earth exploration-satellite service (active) is limited to the band 133.5-134 GHz.
5.562F	In the band 155.5-158.5 GHz, the allocation to the Earth exploration-satellite (passive) and space research (passive) service shall terminate on 1 January 2018
5.562G	The date of entry into force of the allocation to the fixed and mobile services in the band 155.5-158.5 GHz shall be 1 January 2018.
5.562H	Use of the bands 174.8-182 GHz and 185-190 GHz by the inter-satellite service is limited to satellites in the geostationary-satellite orbit. The single-entry power flux-density produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, at all altitudes from 0 km to 1 000 km above the Earth's surface and in the vicinity of all geostationary orbital positions occupied by passive sensors, shall not exceed –144 dB(W/(m2 . MHz)) for all angles of arrival.
5.563A	In the bands 200-209 GHz, 235-238 GHz, 250-252 GHz and 265-275 GHz, ground-based passive atmospheric sensing is carried out to monitor atmospheric constituents.
5.563B	The band 237.9-238 GHz is also allocated to the Earth exploration-satellite service (active) and the space research service (active) for spaceborne cloud radars only.
5.565	The frequency band 275-1 000 GHz may be used by administrations for experimentation with, and development of, various active and passive services. In this band a need has been identified for the following spectral line measurements for passive services: - radio astronomy service: 275-323 GHz, 327-371 GHz, 388-424 GHz, 426-442 GHz, 453-510 GHz, 623-711 GHz, 795-909 GHz and 926-945 GHz; – Earth exploration-satellite service (passive) and space research service (passive): 275-277 GHz, 294-306 GHz, 316-334 GHz, 342-349 GHz, 363-365 GHz, 371-389 GHz, 416-434 GHz, 442-444 GHz, 496-506 GHz, 546-568 GHz, 624-629 GHz, 634-654 GHz, 659-661 GHz, 684-692 GHz, 730-732 GHz, 851-853 GHz and 951-956 GHz. Future research in this largely unexplored spectral region may yield additional spectral lines and continuum bands of interest to the passive services. Administrations are urged to take all practicable steps to protect these passive services from harmful interference until the date when the allocation table is established in the above-mentioned frequency band.



Annex 4 - Channelling Plans and Arrangements

(Annex 4A - BGD Plan No. 1)

Channelling plan in the frequency bands 146-147, 151-152, 164-166 and 170-172 MHz

F [0]- Group of Frequencies

[1005]=146.5625 MHz / [2005]= 150.6125 MHz
[1006]=146.5875 MHz / [2006]= 150.6375 MHz
[1007]=146.6125 MHz / [2007]= 150.6625 MHz
[1008]=146.6375 MHz / [2008]= 150.6875 MHz
[1056]=164.3875 MHz / [2056]= 170.8875 MHz
[1057]=164.4125 MHz / [2057]= 170.9125 MHz
[1058]=164.4375 MHz / [2058]= 170.9375 MHz
[1059]=164.4625 MHz / [2059]= 170.9625 MHz
[1060]=164.4875 MHz / [2060]= 170.9875 MHz
.....

F [1]- Group of Frequencies

[1009]=146.6625 MHz / [2009]= 151.7125 MHz
[1010]=146.6875 MHz / [2010]= 151.7375 MHz
[1011]=146.7125 MHz / [2011]= 151.7625 MHz
[1012]=146.7375 MHz / [2012]= 151.7875 MHz
[1061]=164.5125 MHz / [2061]= 171.0125 MHz
[1062]=164.5375 MHz / [2062]= 171.0375 MHz
[1063]=164.5625 MHz / [2063]= 171.0625 MHz
[1064]=164.5875 MHz / [2064]= 171.0875 MHz
[1065]=164.6125 MHz / [2065]= 171.1125 MHz
.....

F [2]- Group of Frequencies

[1013]=146.7625 MHz / [2013]= 151.8125 MHz
[1014]=146.7875 MHz / [2014]= 151.8375 MHz
[1015]=146.8125 MHz / [2015]= 151.8625 MHz
[1016]=146.8375 MHz / [2016]= 151.8875 MHz
[1066]=164.7375 MHz / [2066]= 171.1375 MHz
[1067]=164.6625 MHz / [2067]= 171.1625 MHz
[1068]=164.6875 MHz / [2068]= 171.1875 MHz
[1069]=164.7125 MHz / [2069]= 171.2125 MHz
[1070]=164.7375 MHz / [2070]= 171.2375 MHz
.....

F [3]- Group of Frequencies

[1017]=146.8625 MHz / [2017]= 151.9125 MHz
[1018]=146.8875 MHz / [2018]= 151.9375 MHz
[1019]=146.9125 MHz / [2019]= 151.9625 MHz
[1020]=146.9375 MHz / [2020]= 151.9875 MHz
[1071]=164.7675 MHz / [2071]= 171.2625 MHz
[1072]=164.7875 MHz / [2072]= 171.2875 MHz
[1073]=164.8125 MHz / [2073]= 171.3125 MHz

[1074]=164.8375 MHz / [2074]= 171.3375 MHz
[1075]=164.8625 MHz / [2075]= 171.3625 MHz
.....

F [4]- Group of Frequencies

[1021]=146.9625 MHz / [2021]= 152.0125 MHz
[1022]=146.9875 MHz / [2022]= 152.0375 MHz
[1023]=147.0125 MHz / [2023]= 152.0625 MHz
[1024]=147.0375 MHz / [2024]= 152.0875 MHz
[1076]=164.8875 MHz / [2076]= 171.3875 MHz
[1077]=164.9125 MHz / [2077]= 171.4125 MHz
[1078]=164.9375 MHz / [2078]= 171.4375 MHz
[1079]=164.9625 MHz / [2079]= 171.4625 MHz
[1080]=164.9875 MHz / [2080]= 172.4875 MHz
.....

F [5]- Group of Frequencies

[1025]=147.0625 MHz / [2025]= 152.1125 MHz
[1026]=147.0875 MHz / [2026]= 152.1375 MHz
[1027]=147.1125 MHz / [2027]= 152.1625 MHz
[1028]=147.1375 MHz / [2028]= 152.1875 MHz
[1081]=165.0125 MHz / [2081]= 171.5125 MHz
[1082]=165.0375 MHz / [2082]= 171.5375 MHz
[1083]=165.0625 MHz / [2083]= 171.5625 MHz
[1084]=165.0875 MHz / [2084]= 171.5875 MHz
[1085]=165.1125 MHz / [2085]= 171.6125 MHz
.....

F [6]- Group of Frequencies

[1029]=147.1625 MHz / [2029]= 152.2125 MHz
[1030]=147.1875 MHz / [2030]= 152.2375 MHz
[1031]=147.2125 MHz / [2031]= 152.2625 MHz
[1032]=147.2375 MHz / [2032]= 152.2875 MHz
[1086]=165.1375 MHz / [2086]= 171.6375 MHz
[1087]=165.1625 MHz / [2087]= 171.6625 MHz
[1088]=165.1875 MHz / [2088]= 171.6875 MHz
[1089]=165.2125 MHz / [2089]= 171.7125 MHz
[1030]=165.2375 MHz / [2090]= 171.7375 MHz
.....

F [7]- Group of Frequencies

[1033]=147.2625 MHz / [2033]= 152.3125 MHz
[1034]=147.2875 MHz / [2034]= 152.3375 MHz
[1035]=147.3125 MHz / [2035]= 152.3625 MHz
[1036]=147.3375 MHz / [2036]= 152.3875 MHz
[1091]=165.2825 MHz / [2091]= 171.7625 MHz
[1092]=165.2825 MHz / [2092]= 171.7875 MHz
[1093]=165.3125 MHz / [2093]= 171.8125 MHz
[1094]=165.3375 MHz / [2094]= 171.8375 MHz
[1095]=165.3625 MHz / [2095]= 171.8625 MHz
.....

F [8]- Group of Frequencies

[1037]=147.3625 MHz / [2037]= 152.4125 MHz
[1038]=147.3875 MHz / [2038]= 152.4375 MHz
[1039]=147.4125 MHz / [2039]= 152.4625 MHz
[1040]=147.4375 MHz / [2040]= 152.4875 MHz
[1096]=165.3875 MHz / [2096]= 171.8875 MHz
[1097]=165.4125 MHz / [2097]= 171.9125 MHz
[1098]=165.4375 MHz / [2098]= 171.9375 MHz
[1099]=165.4625 MHz / [2099]= 171.9625 MHz
[1100]=165.4875 MHz / [2100]= 171.9875 MHz

F [9]- Group of Frequencies

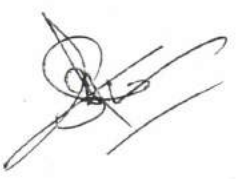
[1041]=147.4625 MHz / [2041]= 152.5125 MHz
[1042]=147.4875 MHz / [2042]= 152.5375 MHz
[1043]=147.5125 MHz / [2043]= 152.5625 MHz
[1044]=147.5375 MHz / [2044]= 152.5875 MHz
[1101]=165.5125 MHz / [2101]= 172.0125 MHz
[1102]=165.5375 MHz / [2102]= 172.0375 MHz
[1103]=165.5625 MHz / [2103]= 172.0625 MHz
[1104]=165.5875 MHz / [2104]= 172.0875 MHz
[1105]=165.6125 MHz / [2105]= 172.1125 MHz

F [10]- Group of Frequencies

[1045]=147.5625 MHz / [2045]= 152.6125 MHz
[1046]=147.5875 MHz / [2046]= 152.6375 MHz
[1047]=147.6125 MHz / [2047]= 152.6625 MHz
[1048]=147.6375 MHz / [2048]= 152.6875 MHz
[1106]=165.6375 MHz / [2106]= 172.1375 MHz
[1107]=165.6625 MHz / [2107]= 172.1625 MHz
[1108]=165.6875 MHz / [2108]= 172.1875 MHz
[1109]=165.7125 MHz / [2109]= 172.2112 MHz
[1110]=165.7375 MHz / [2110]= 172.2375 MHz

F [11]- Group of Frequencies

[1049]=147.6625 MHz / [2049]= 152.7125 MHz
[1050]=147.6875 MHz / [2050]= 152.7375 MHz
[1051]=147.7125 MHz / [2051]= 152.7625 MHz
[1052]=147.7375 MHz / [2052]= 152.7875 MHz
[1111]=165.7625 MHz / [2111]= 172.2625 MHz
[1112]=165.7875 MHz / [2112]= 172.2875 MHz
[1113]=165.8125 MHz / [2113]= 172.3125 MHz
[1114]=165.8375 MHz / [2114]= 172.3375 MHz
[1115]=165.8625 MHz / [2115]= 172.3625 MHz



F [12]- Group of Frequencies

[1053]=147.7625 MHz / [2053]= 152.8125 MHz
[1054]=147.7875 MHz / [2054]= 152.8375 MHz
[1055]=147.8125 MHz / [2055]= 152.8625 MHz
[1056]=147.8375 MHz / [2056]= 152.8875 MHz
[1116]=165.8875 MHz / [2116]= 172.3875 MHz
[1117]=165.9125 MHz / [2117]= 172.4125 MHz
[1118]=165.9375 MHz / [2118]= 172.4375 MHz
[1119]=165.9625 MHz / [2119]= 172.4625 MHz
[1120]=165.9875 MHz / [2120]= 172.4875 MHz
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F [13]- Group of Frequencies

[1057]=147.8625 MHz / [2057]= 152.9125 MHz
[1058]=147.8875 MHz / [2058]= 152.9375 MHz
[1059]=147.9125 MHz / [2059]= 152.9625 MHz
[1060]=147.9375 MHz / [2060]= 152.9875 MHz
[1121]=166.0125 MHz / [2121]= 172.5125 MHz
[1122]=166.0375 MHz / [2122]= 172.5375 MHz
[1123]=166.0625 MHz / [2123]= 172.5625 MHz
[1124]=166.0875 MHz / [2124]= 172.5875 MHz
[1125]=166.1125 MHz / [2125]= 172.6125 MHz
.....

Spare Frequencies

[1001]=146.4625 MHz / [2001]= 151.5125 MHz
[1002]=146.4875 MHz / [2002]= 151.5375 MHz
[1003]=146.5125 MHz / [2003]= 151.5625 MHz
[1004]=146.5375 MHz / [2004]= 151.5875 MHz
[1005]=146.5625 MHz / [2005]= 151.6125 MHz
[1006]=146.5875 MHz / [2006]= 151.6375 MHz
[1007]=146.6125 MHz / [2007]= 151.6625 MHz
[1008]=146.6375 MHz / [2008]= 151.6875 MHz
[1126]=166.1375 MHz / [2126]= 172.6375 MHz
[1127]=166.1625 MHz / [2127]= 172.6625 MHz
[1128]=166.1875 MHz / [2128]= 172.6875 MHz
[1129]=166.2125 MHz / [2129]= 172.7125 MHz
[1130]=166.2375 MHz / [2130]= 172.7375 MHz
[1131]=166.2625 MHz / [2131]= 172.7625 MHz
[1132]=166.2875 MHz / [2132]= 172.7875 MHz
[1133]=166.3125 MHz / [2133]= 172.8125 MHz
[1134]=166.3375 MHz / [2134]= 172.8375 MHz
[1135]=166.3625 MHz / [2135]= 172.8625 MHz
[1136]=166.3875 MHz / [2136]= 172.8875 MHz
[1137]=166.4125 MHz / [2137]= 172.9125 MHz
[1138]=166.4375 MHz / [2138]= 172.9375 MHz
[1139]=166.4625 MHz / [2139]= 172.9725 MHz
[1140]=166.4875 MHz / [2140]= 172.9875 MHz

(Annex 4B - BGD Plan No. 2)

Channelling plan in the frequency band 87 - 108 MHz allocated to FM Sound Broadcasting Service

Channel	Center Frequency (MHz)
1	87.2
2	87.6
3	88.0
4	88.4
5	88.8
6	89.2
7	89.6
8	90.0
9	90.4
10	90.8
11	91.2
12	91.6
13	92.0
14	92.4
15	92.8
16	93.2
17	93.6
18	94.0
19	94.4
20	94.8
21	95.2
22	95.6
23	96.0
24	96.4
25	96.8
26	97.2
27	97.6
28	98.0
29	98.4
30	98.8
31	99.2
32	99.6
33	100.0
34	100.4
35	100.8
36	101.2

Channel	Center Frequency (MHz)
37	101.6
38	102.0
39	102.4
40	102.8
41	103.2
42	103.6
43	104.0
44	104.4
45	104.8
46	105.2
47	105.6
48	106.0
49	106.4
50	106.8
51	107.2
52	107.6

Channelling plan in the frequency bands 174 - 230 MHz and 522 - 698 MHz allocated to TV Broadcasting Service

VHF Channel frequencies (MHz)

CH	Start Frequency	Center Frequency	End Frequency
5	174	**177.5**	181
6	181	**184.5**	188
7	188	**191.5**	195
8	195	**198.5**	202
9	202	**205.5**	209
10	209	**212.5**	216
11	216	**219.5**	223
12	223	**226.5**	230

UHF Channel frequencies (MHz)

CH	Start Frequency	Center Frequency	End Frequency
28	526	**530**	534
29	534	**538**	542
30	542	**546**	550
31	550	**554**	558
32	558	**562**	566
33	566	**570**	574
34	574	**578**	582
35	582	**586**	590
36	590	**594**	598
37	598	**602**	606
38	606	**610**	614
39	614	**618**	622
40	622	**626**	630
41	630	**634**	638
42	638	**642**	646
43	646	**650**	654
44	654	**658**	662
45	662	**666**	670
46	670	**674**	678
47	678	**682**	686
48	686	**690**	694

(Annex 4C - BGD Plan No. 3)

R.F. CHANNEL ARRANGEMENT FOR MOBILE RADIO TRUNKING SERVICE FOR THE FREQUENCY BAND 338 - 340 MHz AND 348 - 350 MHz.

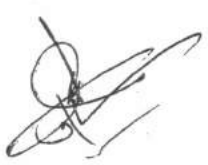
Block No.	Channel - Arrangement (338 - 340 MHz /348-350 MHz)				
1	1	33	65	97	129 ------- 1A
	9	41	73	105	137 ------- 1C
	17	49	81	113	145 ------- 1B
	25	57	89	121	153 ------- 1D
2	2	34	66	98	130 ------- 2A
	10	42	74	106	138 ------- 2C
	18	50	82	114	146 ------- 2B
	26	58	90	122	154 ------- 2D
3	3	35	67	99	131 ------- 3A
	11	43	75	107	139 ------- 3C
	19	51	83	115	147 ------- 3B
	27	59	91	123	155 ------- 3D
4	4	36	68	100	132 ------- 4A
	12	44	76	108	140 ------- 4C
	20	52	84	116	148 ------- 4B
	28	60	92	124	156 ------- 3D
5	5	37	69	101	133 ------- 5A
	13	45	77	109	141 ------- 5C
	21	53	85	117	149 ------- 5B
	29	61	93	125	157 ------- 5D
6	6	38	70	102	134 ------- 6A
	14	46	78	110	142 ------- 6C
	22	54	86	118	150 ------- 6B
	30	62	94	126	158 ------- 6D
7	7	39	71	103	135 ------- 7A
	15	47	79	111	143 ------- 7C
	23	55	87	119	151 ------- 7B
	31	63	95	127	159 ------- 7D
8	8	40	72	104	136 ------- 8A
	16	48	80	112	114 ------- 8C
	24	56	88	120	152 ------- 8B
	32	64	96	128	160 ------- 8D

Note: Each set of 5 frequency pairs shall be assigned in the Order of A then B then C then D.

R.F. CHANNELS (12.5 kHz Plan with 10 MHz Duplex Separation)

CHL.PAIR No.	BASE TRANSMIT (Freq. in kHz)	BASE RECEIVE (Freq. in kHz)
1	338006.25	348006.25
2	338018.75	348018.75
3	338031.25	348031.25
4	338043.75	348043.75
5	338056.25	348056.25
6	338068.75	348068.75
7	338081.25	348081.25
8	338093.75	348093.75
9	338106.25	348106.25
10	338118.75	348118.75
11	338131.25	348131.25
12	338143.75	348143.75
13	338156.25	348156.25
14	338168.75	348168.75
15	338181.25	348181.25
16	338193.75	348193.75
17	338206.25	348206.25
18	338218.75	348218.75
19	338231.25	348231.25
20	338243.75	348243.75
21	338256.25	348256.25
22	338268.75	348268.75
23	338281.25	348281.25
24	338293.75	348293.75
25	338306.25	348306.25
26	338318.75	348318.75
27	338331.25	348331.25
28	338343.75	348343.75
29	338356.25	348356.25
30	338368.75	348368.75
31	338381.25	348381.25
32	338393.75	348393.75
33	338406.25	348406.25
34	338418.75	348418.75
35	338431.25	348431.25
36	338443.75	348443.75
37	338456.25	348456.25
38	338468.75	348468.75
39	338481.25	348481.25
40	338493.75	348493.75
41	338506.25	348506.25
42	338518.75	348518.75
43	338531.25	348531.25
44	338543.75	348543.75
45	338556.25	348556.25
46	338568.75	348568.75
47	338581.25	348581.25
48	338593.75	348593.75
49	338606.25	348606.25
50	338618.75	348618.75
51	338631.25	348631.25
52	338643.75	348643.75
53	338656.25	348656.25
54	338668.75	348668.75
55	338681.25	348681.25
56	338693.75	348693.75
57	338706.25	348706.25
58	338718.75	348718.75
59	338731.25	348731.25
60	338743.75	348743.75
61	338756.25	348756.25
62	338768.75	348768.75
63	338781.25	348781.25
64	338793.75	348793.75
65	338806.25	348806.25
66	338818.75	348818.75
67	338831.25	348831.25
68	338843.75	348843.75

69	338856.25	348856.25
70	338868.75	348868.75
71	338881.25	348881.25
72	338893.75	348893.75
73	338906.25	348906.25
74	338918.75	348918.75
75	338931.25	348931.25
76	338943.75	348943.75
77	338956.25	348956.25
78	338968.75	348968.75
79	338981.25	348981.25
80	338993.75	348993.75
81	339006.25	349006.25
82	339018.75	349018.75
83	339031.25	349031.25
84	339043.75	349043.75
85	339056.25	349056.25
86	339068.75	349068.75
87	339081.25	349081.25
88	339093.75	349093.75
89	339106.25	349106.25
90	339118.75	349118.75
91	339131.25	349131.25
92	339143.75	349143.75
93	339156.25	349156.25
94	339168.75	349168.75
95	339181.25	349181.25
96	339193.75	349193.75
97	339206.25	349206.25
98	339218.75	349218.75
99	339231.25	349231.25
100	339243.75	349243.75
101	339256.25	349256.25
102	339268.75	349268.75
103	339281.25	349281.25
104	339293.75	349293.75
105	339306.25	349306.25
106	339318.75	349318.75
107	339331.25	349331.25
108	339343.75	349343.75
109	339356.25	349356.25
110	339368.75	349368.75
111	339381.25	349381.25
112	339393.75	349393.75
113	339406.25	349406.25
114	339418.75	349418.75
115	339431.25	349431.25
116	339443.75	349443.75
117	339456.25	349456.25
118	339468.75	349468.75
119	339481.25	349481.25
120	339493.75	349493.75
121	339506.25	349506.25
122	339518.75	349518.75
123	339531.25	349531.25
124	339543.75	349543.75
125	339556.25	349556.25
126	339568.75	349568.75
127	339581.25	349581.25
128	339593.75	349593.75
129	339606.25	349606.25
130	339618.75	349618.75
131	339631.25	349631.25
132	339643.75	349643.75
133	339656.25	349656.25
134	339668.75	349668.75
135	339681.25	349681.25
136	339693.75	349693.75
137	339706.25	349706.25
138	339718.75	349718.75
139	339731.25	349731.25
140	339743.75	349743.75
141	339756.25	349756.25
142	339768.75	349768.75
143	339781.25	349781.25



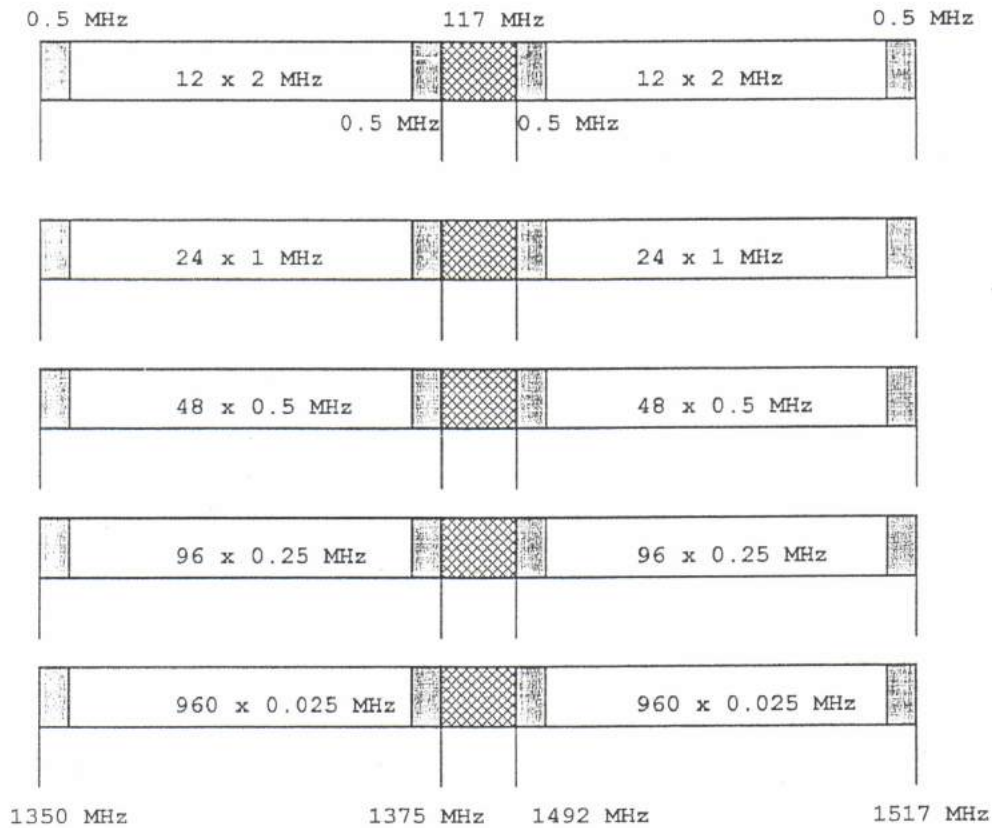
144	339793.75	349793.75
145	339806.25	349806.25
146	339818.75	349818.75
147	339831.25	349831.25
148	339843.75	349843.75
149	339856.25	349856.25
150	339868.75	349868.75
151	339881.25	349881.25
152	339893.75	349893.75
153	339906.25	349906.25
154	339918.75	349918.75
155	339931.25	349931.25
156	339943.75	349943.75
157	339956.25	349956.25
158	339968.75	349968.75
159	339981.25	349981.25
160	339993.75	349993.75

BGD PLAN No. 4 - ANNEX 4D

Frequency band 1350-1375 MHz paired with 1492-1517 MHz

Due to the fact that this band only offers 25 MHz of spectrum for each direction of transmission it will be limited to low capacity digital systems for point-to-point and point-to-multipoint systems. The basic pattern of the proposed channel arrangement is a symmetric 2 MHz raster which offers the maximum amount of possible channels. Further channel plans for the transmission of lower bit rates are derived from the basic pattern by means of subdivision.

The following detailed channel arrangement is proposed:



Let

fo be the centre frequency of **1433.5** MHz
fn be the centre frequency of the radio-frequency channel in the lower half of the band
fn' be the centre frequency of the radio-frequency channel in the upper half of the band
TX/RX separation = **142** MHz
Separation band = **117** MHz

then the frequencies of individual channels are expressed by the following relationships :

a) for systems with a carrier spacing of 2 MHz

lower half of the band: $fn = fo - 84 + 2n$
upper half of the band: $fn' = fo + 58 + 2n$ where $n = 1, \ldots 12$

b) for systems with a carrier spacing of 1 MHz

lower half of the band:	$fn = fo - 83.5 + 1n$	
upper half of the band:	$fn' = fo + 58.5 + 1n$	where n = 1, ... 24

c) for systems with a carrier spacing of 0.5 MHz

lower half of the band:	$fn = fo - 83.25 + 0.5n$	
upper half of the band:	$fn' = fo + 58.75 + 0.5n$	where n = 1, ... 48

d) for systems with a carrier spacing of 0.25 MHz

lower half of the band:	$fn = fo - 83.125 + 0.25n$	
upper half of the band:	$fn' = fo + 58.875 + 0.25n$	where n = 1, ... 96

e) for systems with a carrier spacing of 0.025 MHz

lower half of the band:	$fn = fo - 83.0125 + 0.025n$	
upper half of the band:	$fn' = fo + 58.9875 + 0.025n$	where n = 1, .. 960

For 75 kHz channel spacing use the 0.025 MHz formula restricted to n = 2, 5, 8, ...

f) for systems with a carrier spacing of 3.5 MHz derived from the 0.5 MHz channels by multiplication and with 2 MHz guard bands

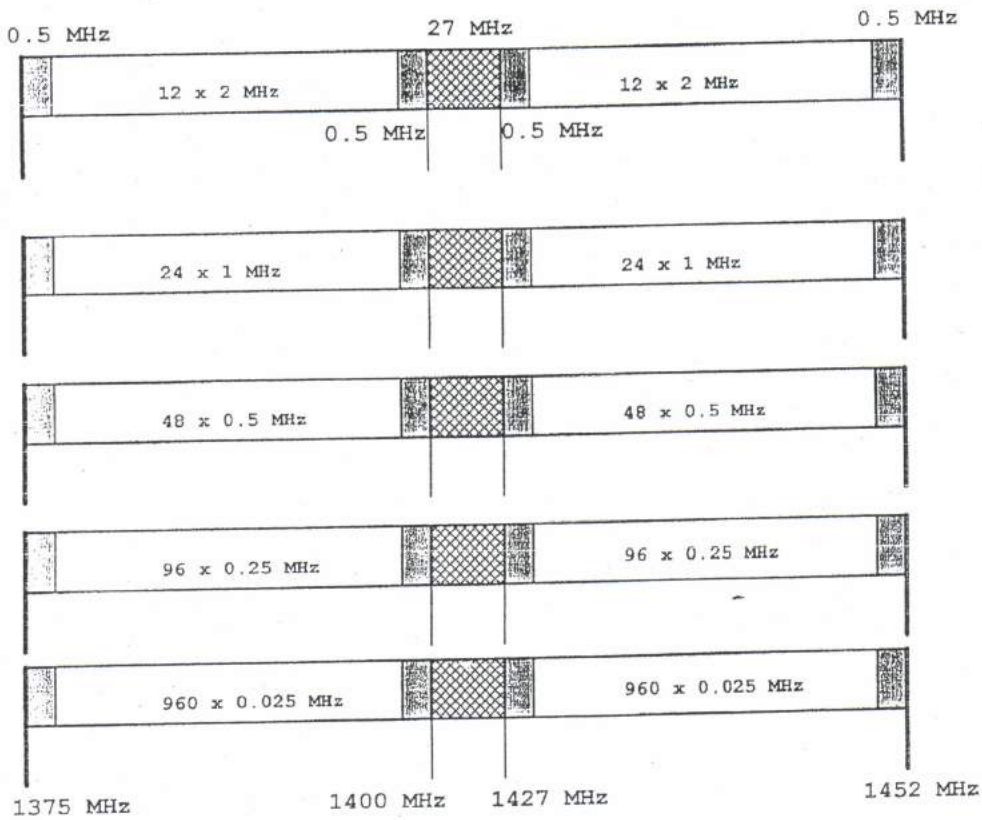
lower half of the band:	$fn = fo - 83.25 + 3.5n$	
upper half of the band:	$fn' = fo + 58.75 + 3.5n$	where n = 1, ... 6

BGD PLAN No. 5 - ANNEX 4E

Frequency band 1375-1400 MHz paired with 1427-1452 MHz

This band is comparable to band 1350-1375 MHz/1492-1517 MHz and therefore is used for the same kind of applications. Thus the channel arrangement has been developed on a similar basis.

The following detailed channel plan is proposed:



Let

fo be the centre frequency of **1413.5** MHz
fn be the centre frequency of the radio-frequency channel in the lower half of the band
fn' be the centre frequency of the radio-frequency channel in the upper half of the band
TX/RX separation = **52** MHz
Separation band = **27** MHz

then the frequencies of individual channels are expressed by the following relationships :

a) for systems with a carrier spacing of 2 MHz

lower half of the band: $fn = fo - 39 + 2n$
upper half of the band: $fn' = fo + 13 + 2n$ where $n = 1, \ldots 12$

b) for systems with a carrier spacing of 1 MHz

lower half of the band:	fn = fo - 38.5 + 1n	
upper half of the band:	fn' = fo + 13.5 + 1n	where n = 1, ... 24

c) for systems with a carrier spacing of 0.5 MHz

lower half of the band:	fn = fo - 38.25 + 0.5n	
upper half of the band:	fn' = fo + 13.75 + 0.5n	where n = 1, ... 48

d) for systems with a carrier spacing of 0.25 MHz

lower half of the band:	fn = fo - 38.125 + 0.25n	
upper half of the band:	fn' = fo + 13.875 + 0.25n	where n = 1, ... 96

e) for systems with a carrier spacing of 0.025 MHz

lower half of the band:	fn = fo - 38.0125 + 0.025n	
upper half of the band:	fn' = fo + 13.9875 + 0.025n	where n = 1, ... 960

For 75 kHz channel spacing use the 0.025 MHz formula restricted to n = 2, 5, 8 , ...

f) for systems with a carrier spacing of 3.5 MHz derived from the 0.5 MHz channels by multiplication and with 2 MHz guard bands

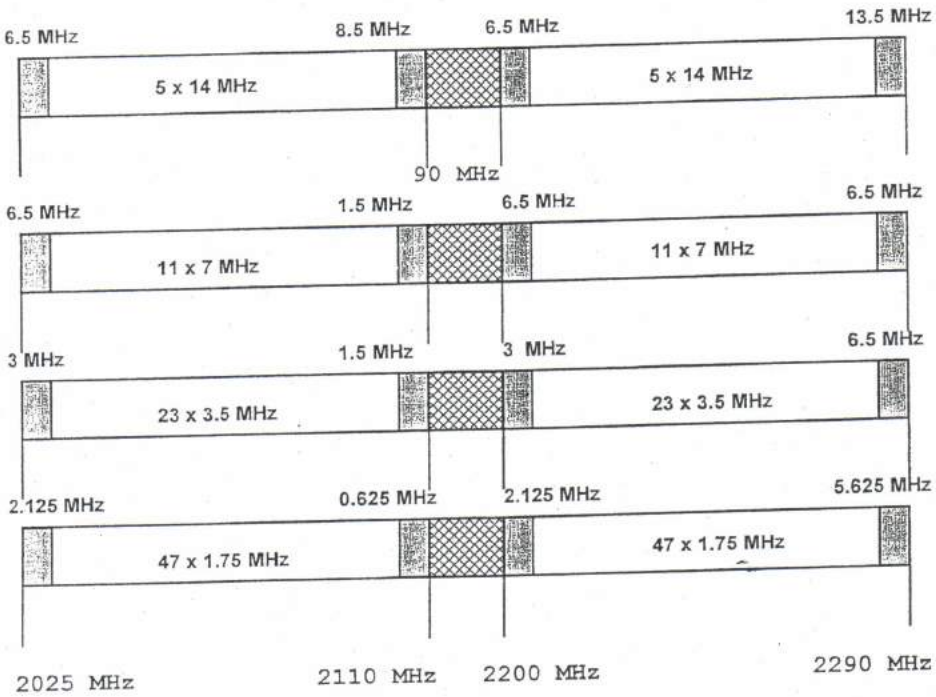
lower half of the band:	fn = fo - 38.25 + 3.5n	
upper half of the band:	fn' = fo + 13.75 + 3.5n	where n = 1, ... 6

BGD PLAN No. 6 - ANNEX 4F

Frequency band 2025-2110 MHz paired with 2200-2290 MHz

Future use of this band will be for some traditional multi-channel, multi-hop radio relay systems and also for modern access radio applications. It is therefore essential that the new channel plans allow sufficient flexibility to support a range of equipment capacities, modulation schemes and transmission techniques.

The following detailed channel plan is proposed.



Let

fo be the centre frequency of **2155** MHz
fn be the centre frequency of the radio-frequency channel in the lower half of the band
fn' be the centre frequency of the radio-frequency channel in the upper half of the band
TX/RX separation = **175** MHz
Separation band = 90 MHz

then the frequencies of individual channels are expressed by the following relationships:

a) for systems with a carrier spacing of 14 MHz

lower half of the band: $fn = fo - 130.5 + 14n$
upper half of the band: $fn' = fo + 44.5 + 14n$ where n = 1, ... 5

b) for systems with a carrier spacing of 7 MHz

lower half of the band:	$fn = fo - 127.0 + 7n$	
upper half of the band:	$fn' = fo + 48.0 + 7n$	where n = 1, ...11

c) for systems with a carrier spacing of 3.5 MHz

lower half of the band:	$fn = fo - 128.75 + 3.5n$	
upper half of the band:	$fn' = fo + 46.25 + 3.5n$	where n = 1, ... 23

d) for systems with a carrier spacing of 1.75 MHz

lower half of the band:	$fn = fo - 130.500 + 1.75n$	
upper half of the band:	$fn' = fo + 44.500 + 1.75n$	where n = 1, ... 47

BGD PLAN No. 7 - ANNEX 4G

PART 1

Harmonisation of the frequency range 3600 to 4200 MHz based on ITU-R Recommendation F.635 with 40 MHz and 20 MHz channels for medium and high capacity systems

An arrangement based on ITU-R Recommendation F.635 with 40 MHz channel spacing would provide a total of 7 "go" and 7 "return" channels.

Let f_0 (=3900 MHz) be the frequency of the centre of the band of frequencies occupied
f_n be the centre frequency of one radio frequency channel in the lower half of the band
f'_n be the centre frequency of one radio frequency channel in the upper half of the band,

then the frequencies in MHz of the individual channels are expressed by the following relationships:

40 MHz channel spacing.[2]

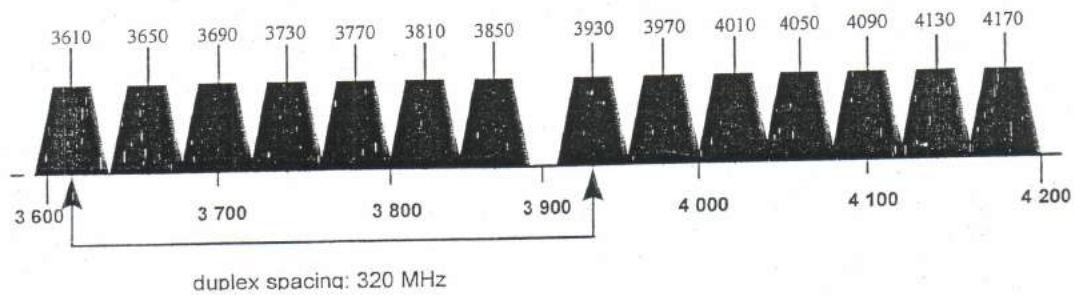
Lower half of the band: $f_n = (f_0 - 330 + 40\ n)$ MHz
Upper half of the band: $f'_n = (f_0 - 10 + 40\ n)$ MHz

where n= 1, 2, 3 ... 7

20 MHz channel spacing.[1]

Lower half of the band : $f_n = (f_0 - 320 + 20\ n)$ MHz
Upper half of the band : $f'_n = (f_0 + 20\ n)$ MHz

where n = 1, 2, 3 ... 14



[2] Channel 1 of the lower half of the band for both the 40 MHz and the 20 MHz channel arrangement requires co-ordination with spectrum usage below 3 600 MHz.

PART 2

Harmonisation of the frequency range 3600 to 4200 MHz based on ITU-R Recommendation F.635 with 30 MHz and 15 MHz channels for medium and high capacity systems

An arrangement based on ITU-R Recommendation F.635 with 30 MHz channel spacing would provide a total of 9 "go" and 9 "return" channels.

Let f_0 (=3900 MHz) be the frequency of the centre of the band of frequencies occupied
f_n be the centre frequency of one radio frequency channel in the lower half of the band
f'_n be the centre frequency of one radio frequency channel in the upper half of the band

then the frequencies in MHz of the individual channels are expressed by the following relationships:

30 MHz channel spacing

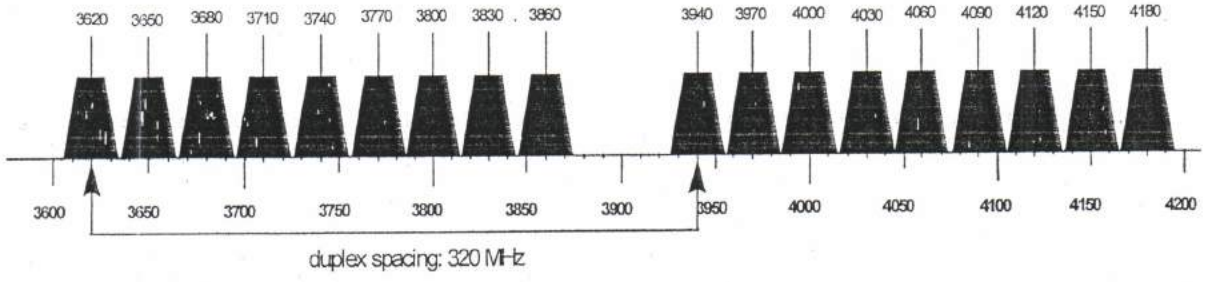
Lower half of the band: $f_n = (f_0 - 310 + 30\ n)$ MHz
Upper half of the band: $f'_n = (f_0 + 10 + 30\ n)$ MHz

where n = 1, 2, 3 ... 9

15 MHz channel spacing

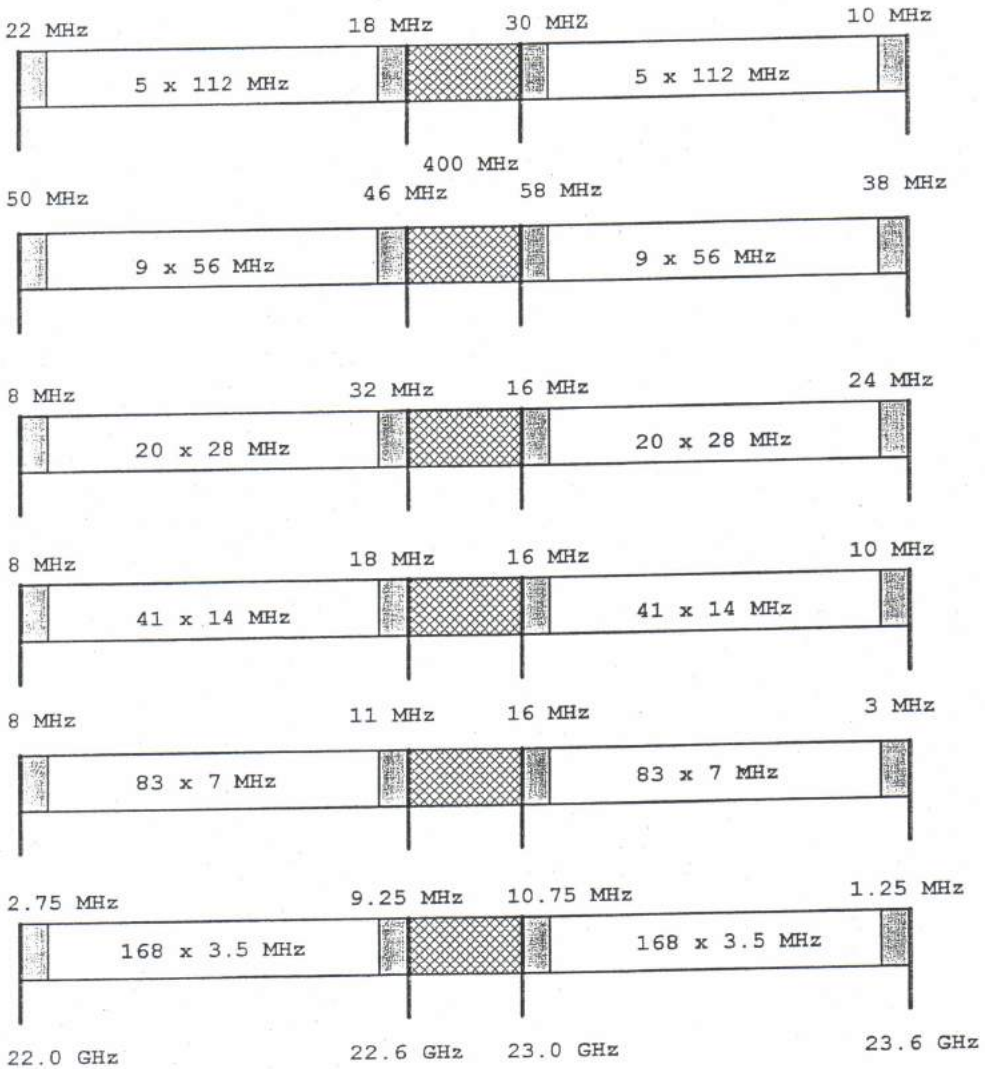
Lower half of the band: $f_n = (f_0 - 302.5 + 15\ n)$ MHz
Upper half of the band: $f'_n = (f_0 + 17.5 + 15\ n)$ MHz

where n = 1, 2, 3 ... 18



BGD PLAN No. 8 - ANNEX 4H

Frequency bands 22.0-22.6 / 23.0 - 23.6 GHz



Let

fo be the centre frequency of **21196** MHz
fn be the centre frequency of the radio-frequency channel in the lower half of the band
fn' be the centre frequency of the radio-frequency channel in the upper half of the band
TX/RX separation = **1008** MHz
Centre gap = **400** MHz

then the frequencies of individual channels are expressed by the following relationships :

a) for systems with a carrier spacing of 112 MHz

lower half of the band : $fn = fo + 770 + 112n$
upper half of the band : $fn' = fo + 1778 + 112n$ where n = 1, ... 5

b) for systems with a carrier spacing of 56 MHz

lower half of the band :	fn = fo + 826 + 56n	
upper half of the band :	fn' = fo + 1834+ 56n	where n = 1, ... 9

c) for systems with a carrier spacing of 28 MHz

lower half of the band :	fn = fo + 798 + 28n	
upper half of the band :	fn' = fo + 1806+ 28n	where n = 1 , ... 20

d) for systems with a carrier spacing of 14 MHz

lower half of the band :	fn = fo + 805 + 14n	
upper half of the band :	fn' = fo + 1813 + 14n	where n = 1 , ... 41

e) for systems with a carrier spacing of 7 MHz

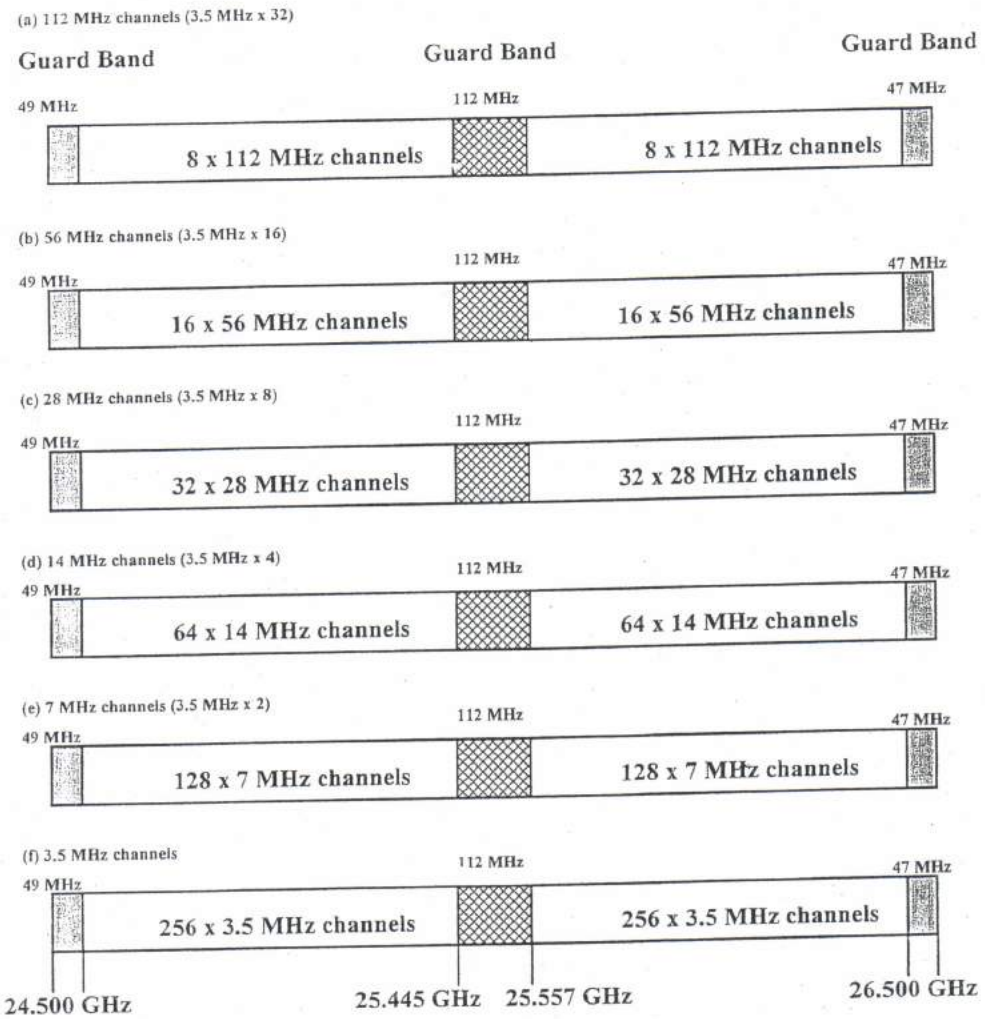
lower half of the band :	fn = fo + 808.5 + 7n	
upper half of the band :	fn' = fo + 1816.5 + 7n	where n = 1 , ... 83

f) for systems with a carrier spacing of 3.5 MHz

lower half of the band :	fn = fo + 805 + 3.5n	
upper half of the band :	fn' = fo + 1813 + 3.5n	where n = 1 , ...168

BGD PLAN No. 9 - ANNEX 4I

Frequency band 24.5 - 26.5 GHz



Let

fo be the centre frequency of **25501.0** MHz
fn be the centre frequency of the radio-frequency channel in the lower half of the band
fn' be the centre frequency of the radio-frequency channel in the upper half of the band
TX/RX separation = **1008** MHz
Centre gap = **112** MHz

then the frequencies of individual channels are expressed by the following relationships:

a) for systems with a carrier spacing of 112 MHz

lower half of the band: $fn = fo - 1008 + 112n$
upper half of the band: $fn' = fo - + 112n$ where $n = 1, \ldots 8$

b) for systems with a carrier spacing of 56 MHz

lower half of the band:	fn = fo - 980 + 56n	
upper half of the band:	fn' = fo + 28 + 56n	where n = 1, ... 16

c) for systems with a carrier spacing of 28 MHz

lower half of the band:	fn = fo - 966 + 28n	
upper half of the band:	fn' = fo + 42 + 28n	where n = 1, ... 32

d) for systems with a carrier spacing of 14 MHz

lower half of the band:	fn = fo - 959 + 14n	
upper half of the band:	fn' = fo + 49 + 14n	where n = 1 , ... 64

e) for systems with a carrier spacing of 7 MHz

lower half of the band:	fn = fo - 955.5 + 7n	
upper half of the band:	fn' = fo + 52.5 + 7n	where n = 1 , ... 128

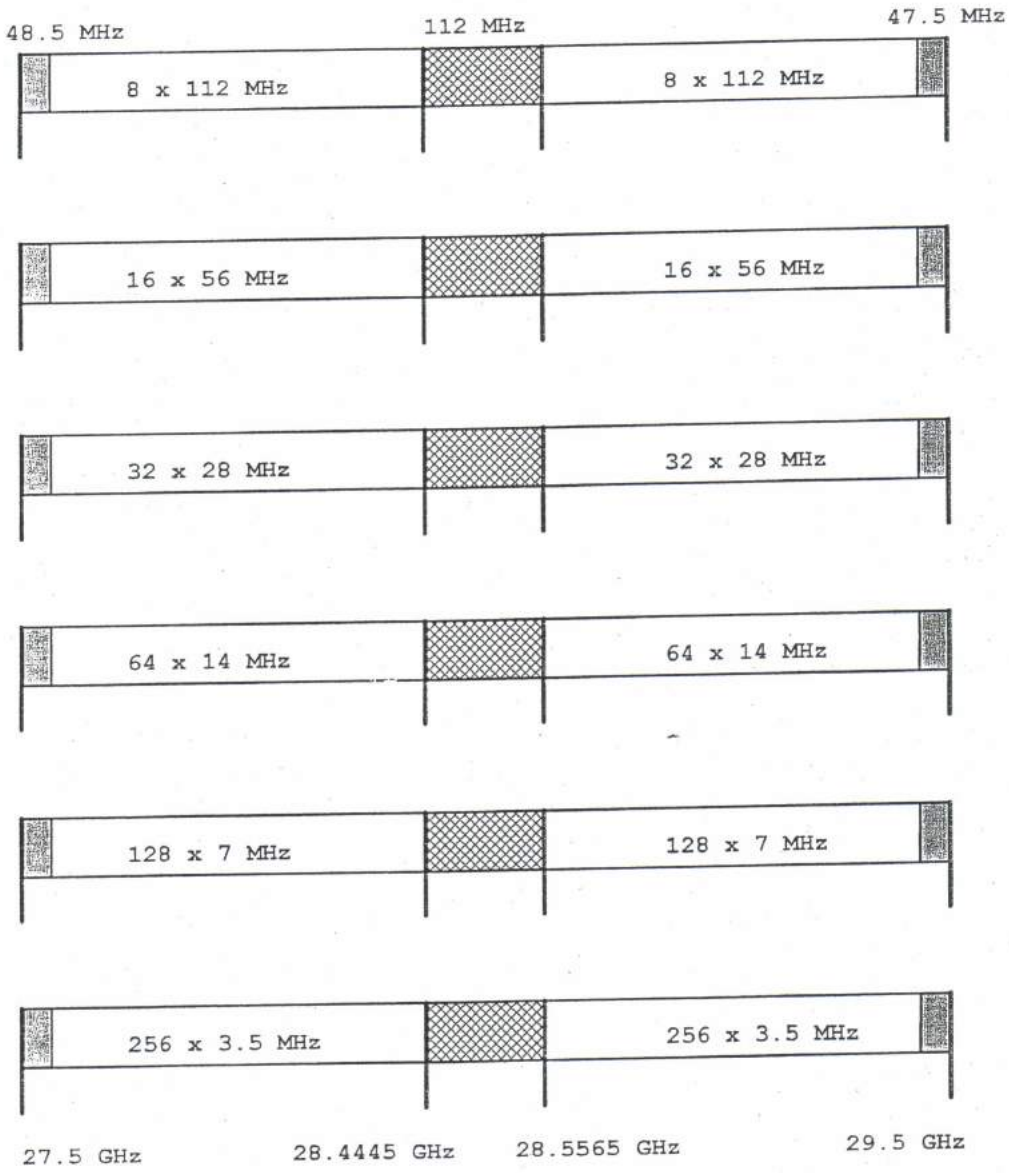
f) for systems with a carrier spacing of 3.5 MHz

lower half of the band:	fn = fo - 953.75 + 3.5n	
upper half of the band:	fn' = fo + 54.25 + 3.5n	where n = 1 , ... 256

The arrangement f) above uses frequencies spaced by 3.5 MHz but interleaved between the homogenous pattern with an offset of 1.75 MHz.

BGD PLAN No. 10 - ANNEX 4J

Frequency band 27.5 - 29.5 GHz



Let

fo be the centre frequency of **28500.5** MHz
fn be the centre frequency of the radio-frequency channel in the lower half of the band
fn' be the centre frequency of the radio-frequency channel in the upper half of the band
TX/RX separation = **1008** MHz
Centre cap = **112** MHz

then the frequencies of individual channels are expressed by the following relationships :

a) for systems with a carrier spacing of 112 MHz

lower half of the band:	fn = fo - 1008 + 112n	
upper half of the band:	fn' = fo + 112n	where n = 1, ... 8

b) for systems with a carrier spacing of 56 MHz

lower half of the band:	fn = fo - 980 + 56n	
upper half of the band:	fn' = fo + 28 + 56n	where n = 1 , ... 16

c) for systems with a carrier spacing of 28 MHz

lower half of the band:	fn = fo - 966 + 28n	
upper half of the band:	fn' = fo + 42 + 28n	where n = 1 , ... 32

d) for systems with a carrier spacing of 14 MHz

lower half of the band:	fn = fo - 959 + 14n	
upper half of the band:	fn' = fo + 49 + 14n	where n = 1 , ... 64

e) for systems with a carrier spacing of 7 MHz

lower half of the band:	fn = fo - 955.5 + 7n	
upper half of the band:	fn' = fo + 52.5 + 7n	where n = 1 , ... 128

f) for systems with a carrier spacing of 3.5 MHz

lower half of the band:	fn = fo - 953.75 + 3.5n	
upper half of the band:	fn' = fo + 54.25 + 3.5n	where n = 1 , ... 256

The arrangement f) above uses frequencies spaced by 3.5 MHz but interleaved between the homogenous pattern with an offset of 1.75 MHz

BGD PLAN No. 11 - ANNEX 4K

(A) Channel arrangement in the bands 31.0 – 31.3 and 31.5 – 31.8 GHz for TDD systems

The centre frequencies for channel separations of 3.5 MHz, 7 MHz, 14 MHz and 28 MHz shall be derived as follows:

Let f_r be the reference frequency of 31000 MHz or 31500 as appropriate,
f_n be the centre frequency of a radio-frequency channel in the band 31.0 – 31.3 GHz or 31.5 – 31.8 GHz ,

then the centre frequencies of individual channels are expressed by the following relationships:

a) for systems with a channel separation of 28 MHz:

$$f_n = f_r + 3 + 28\,n \text{ MHz}$$

where:
n = 1, 2, 3, ...9

b) for systems with a channel separation of 14 MHz:

$$f_n = f_r + 10 + 14\,n \text{ MHz}$$

where:
n = 1, 2, 3, ...18

c) for systems with a channel separation of 7 MHz:

$$f_n = f_r + 13.5 + 7\,n \text{ MHz}$$

where:
n = 1, 2, 3, ...36

d) for systems with a channel separation of 3.5 MHz:

$$f_n = f_r + 15.25 + 3.5n \text{ MHz}$$

where:
n = 1, 2, 3, ...72

Table A1[3]

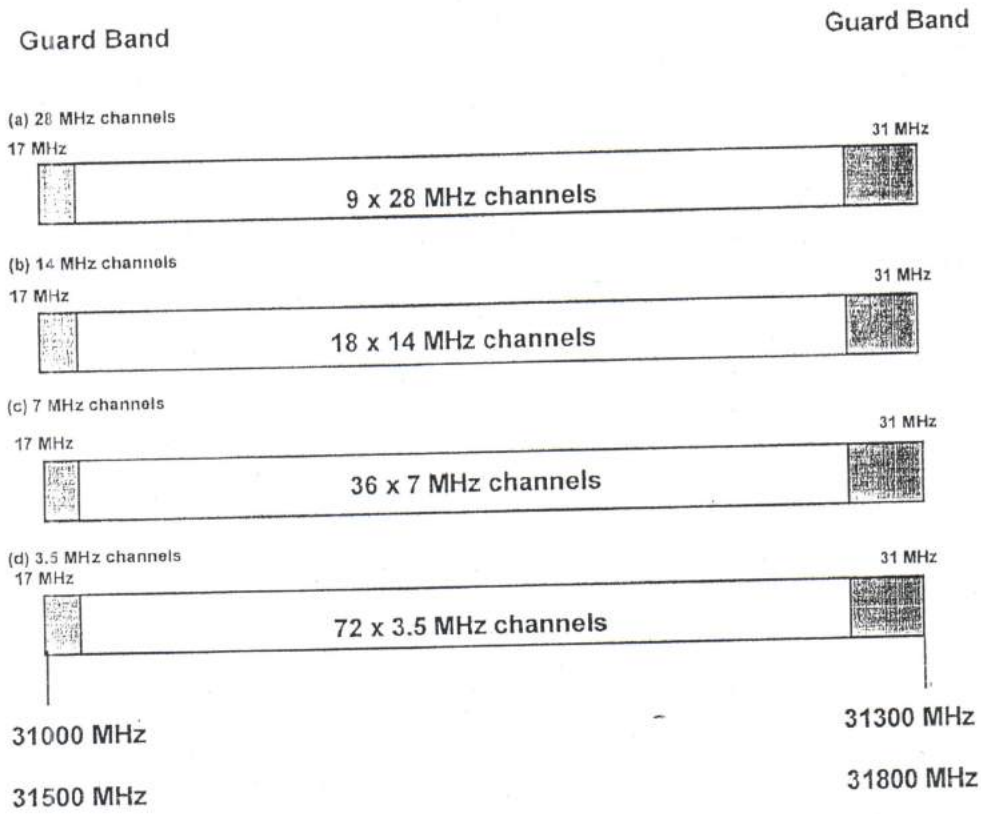
XS MHz	n	f1 MHz	fn MHz	Z1S MHz	Z2S MHz
28	1,...9	31031	31255	31	45
14	1,...18	31024	31262	24	38
7	1,...36	31020.5	31265.5	20.5	34.5
3.5	1,...72	31018.75	31267.25	18.75	32.75

XS Separation between centre frequencies of adjacent channels
Z1S Separation between the lower band edge and the centre frequency of the first channel
Z2S Separation between centre frequencies of the final channel and the upper band edge

[3] A similar table can be constructed for the band 31.5 – 31.8 GHz

Figure A1

Occupied spectrum: 31.0 to 31.3 GHz / 31.5 to 31.8 GHz Band for TDD systems



(B) Channel arrangement in the bands 31.0 – 31.3 GHz and 31.5 – 31.8 GHz for FDD systems

The centre frequencies for channel separations of 3.5 MHz, 7 MHz, 14 MHz and 28 MHz shall be derived as follows:

Let

f_r be the reference frequency of 31150 MHz or 31650 MHz as appropriate,

f_n be the centre frequency (MHz) of the radio-frequency channel in the lower half of the band,

f_n' be the centre frequency (MHz) of the radio-frequency channel in the upper half of the band,

Duplex spacing = 140 MHz,
Centre gap = 28 MHz.

then the frequencies (MHz) of individual channels are expressed by the following relationships:

a) for a channel separation of 28 MHz:

lower half of the band: $f_n = f_r - 147 + 28\,n$
upper half of the band: $f_n' = f_r - 7 + 28\,n$ where n = 1, 2, ... 4

b) for a channel separation of 14 MHz:

lower half of the band: $f_n = f_r - 140 + 14\,n$
upper half of the band: $f_n' = f_r + 0 + 14\,n$ where n = 1, 2, ... 8

c) for a channel separation of 7 MHz:

lower half of the band: $f_n = f_r - 136.5 + 7\,n$
upper half of the band: $f_n' = f_r + 3.5 + 7\,n$ where n = 1, 2, ... 16

d) for a channel separation of 3.5 MHz:

lower half of the band: $f_n = f_r - 134.75 + 3.5\,n$
upper half of the band: $f_n' = f_r + 5.25 + 3.5\,n$ where n = 1, 2, ... 32

Table B1[4]

Calculated parameters according to ITU-R Rec. 746

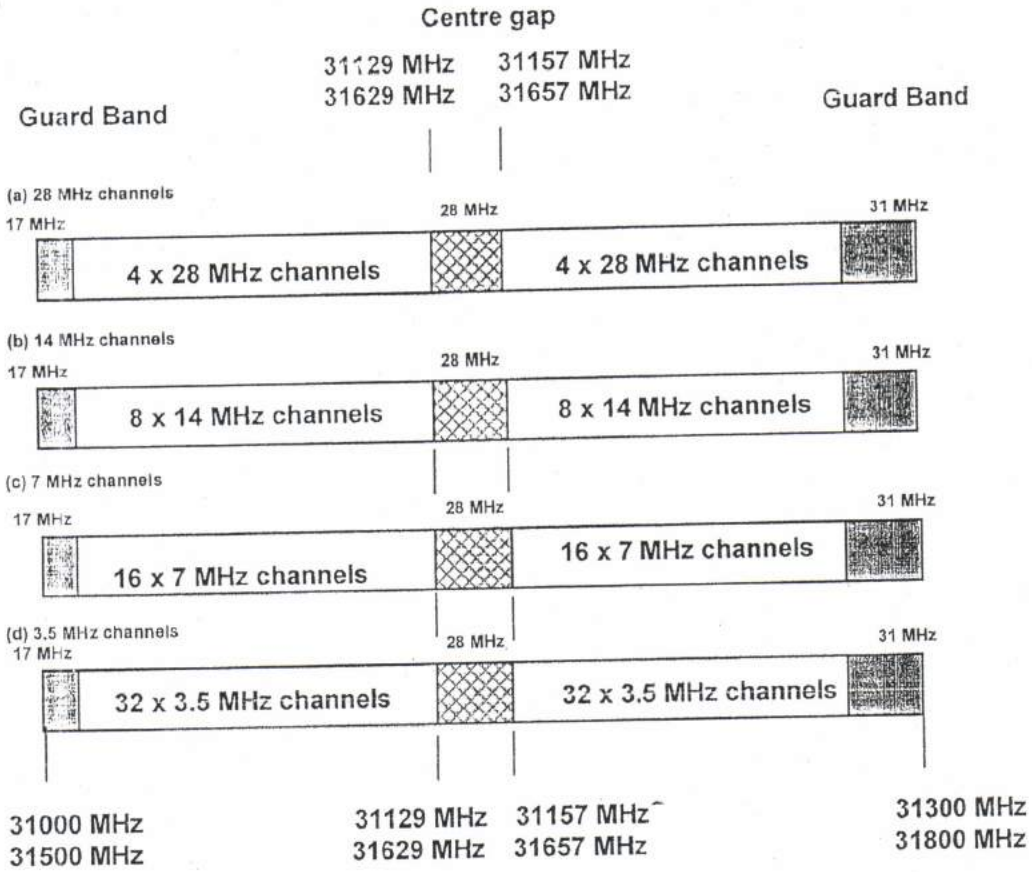
XS MHz	n	f_1 MHz	f_n MHz	f_1' MHz	f_n' MHz	ZS_1 MHz	ZS_2 MHz	YS MHz	DS MHz
28	1...4	31031	31115	31171	31255	31	45	56	140
14	1...8	31024	31122	31164	31262	24	38	42	140
7	1...16	31020.5	31125.5	31160.5	31265.5	20.5	34.5	35	140
3.5	1...32	31018.75	31127.25	31158.75	31267.25	18.75	32.75	31.5	140

XS Separation between centre frequencies of adjacent channels .
YS Separation between centre frequencies of the closest go and return channels
ZS_1 Separation between the lower band edge and the centre frequency of the lowest channel in the lower half of the band
ZS_2 Separation between centre frequency of the highest channel in the upper half of the band and the upper band edge
DS Duplex spacing ($f_n' - f_n$)

[4] A similar table can be constructed for the band 31.5 – 31.8 GHz

Figure B1

Occupied spectrum: 31.0 to 31.3 GHz / 31.5 to 31.8 GHz Band for FDD systems



BGD PLAN No. 12 - ANNEX 4L

PREFERRED CHANNEL ARRANGEMENT IN THE BAND 31.8 – 33.4 GHz

The centre frequencies for channel separations of 3.5 MHz, 7 MHz, 14 MHz, 28 MHz and 56 MHz shall be derived as follows:

Let

f_r be the reference frequency of 32599 MHz,

f_n be the centre frequency (MHz) of the radio-frequency channel in the lower half of the band,

f_n' be the centre frequency (MHz) of the radio-frequency channel in the upper half of the band,

Duplex spacing = 812 MHz,
Centre gap = 56 MHz for the 3.5, 7, 14 and 28 MHz channel separation,
140 MHz for the 56 MHz channel separation.

then the frequencies (MHz) of individual channels are expressed by the following relationships:

a) for channel separation of 56 MHz:

lower half of the band: $f_n = f_r - 756 + 56\,n$
upper half of the band: $f_n' = f_r + 56 + 56\,n$ where n = 1, 2, 3, ... 12

b) for a channel separation of 28 MHz:

lower half of the band: $f_n = f_r - 798 + 28\,n$
upper half of the band: $f_n' = f_r + 14 + 28\,n$ where n = 1, 2, 3, ... 27

c) for a channel separation of 14 MHz:

Lower half of the band: $f_n = f_r - 791 + 14\,n$
Upper half of the band: $f_n' = f_r + 21 + 14\,n$ where n = 1, 2, 3, ... 54

d) for a channel separation of 7 MHz:

Lower half of the band: $f_n = f_r - 787.5 + 7\,n$
Upper half of the band: $f_n' = f_r + 24.5 + 7\,n$ where n = 1, 2, 3, ... 108

e) for a channel separation of 3.5 MHz:

Lower half of the band: $f_n = f_r - 785.75 + 3.5\,n$
upper half of the band: $f_n' = f_r + 26.25 + 3.5\,n$ where n = 1, 2, 3, ... 216

XS MHz	n	f_1 MHz	f_n MHz	f_1' MHz	f_n' MHz	ZS_1 MHz	ZS_2 MHz	YS MHz	DS MHz
56	1...12	31899	32515	32711	33327	99	73	196	812
28	1...27	31829	32557	32641	33369	29	31	84	812
14	1...54	31822	32564	32634	33376	22	24	70	812
7	1...108	31818.5	32567.5	32630.5	33379.5	18.5	20.5	63	812
3.5	1...216	31816.75	32569.25	32628.75	33381.25	16.75	18.75	59.5	812

Table 1: Calculated parameters according to ITU-R Rec. 746

XS Separation between centre frequencies of adjacent channels

YS Separation between centre frequencies of the closest go and return channels

ZS_1 Separation between the lower band edge and the centre frequency of the lowest channel in the lower half of the band

ZS_2 Separation between centre frequency of the highest channel in the upper half of the band and the upper band edge

DS Duplex spacing ($f_n' - f_n$)

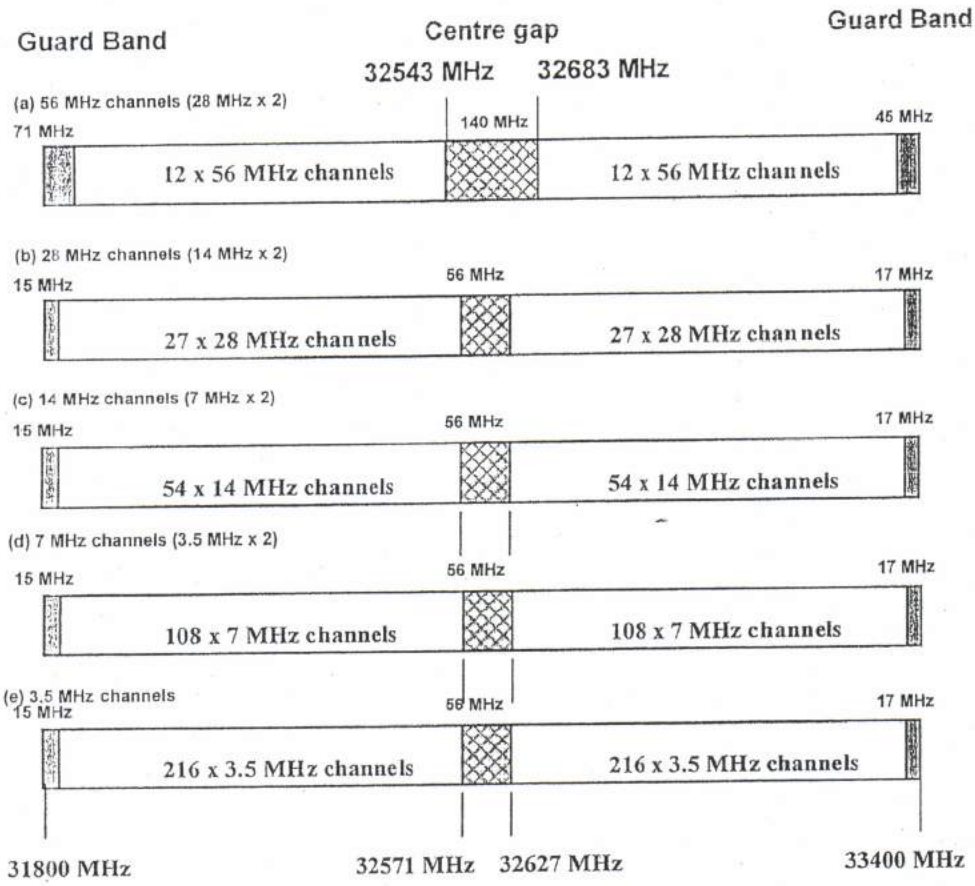


Figure 1: Occupied spectrum: 31.8 to 33.4 GHz Band

BGD PLAN No. 13 - ANNEX 4M

PREFERRED CHANNEL ARRANGEMENT IN THE BAND 48.5 – 50.2 GHz

The radio frequency channel arrangement for channel separations of 28 MHz, 14 MHz, 7 MHz and 3.5 MHz shall be derived as follows:

Let

fr be the reference frequency of 49350 MHz (14100 x 3.5 MHz),

fn be the centre frequency (MHz) of the radio-frequency channel in the lower half of the band,

fn' be the centre frequency (MHz) of the radio-frequency channel in the upper half of the band,

TX/RX separation = 884 MHz,

Band separation = 100 MHz,

then the frequencies (MHz) of individual channels are expressed by the following relationships:

a) for systems with a channel separation of 28 MHz:

lower half of the band: $fn = fr - 848 + 28\,n$

upper half of the band: $fn' = fr + 36 + 28\,n$ where n = 1, 2, 3, ... 28

b) for systems with a channel separation of 14 MHz:

lower half of the band: $fn = fr - 841 + 14\,n$

upper half of the band: $fn' = fr + 43 + 14\,n$ where n = 1, 2, 3, ... 56

c) for systems with a channel separation of 7 MHz:

lower half of the band: $fn = fr - 837.5 + 7\,n$

upper half of the band: $fn' = fr + 46.5 + 7\,n$ where n = 1, 2, 3, ... 112

d) for systems with a channel separation of 3.5 MHz:

lower half of the band: $fn = fr - 835.75 + 3.5\,n$

upper half of the band: $fn' = fr + 48.25 + 3.5\,n$ where n = 1, 2, 3, ... 224

Table 1

Calculated parameters according to ITU-R Rec. 746

XS MHz	n	f1 MHz	fn MHz	f'1 MHz	f'n MHz	Z1S MHz	Z2S MHz	YS MHz	DS MHz
28	1,...28	48530	49286	49414	50170	30	30	128	884
14	1,...56	48523	49293	49407	50177	23	23	114	884
7	1,...112	48519.5	49296.5	49403.5	50182.5	19.5	19.5	107	884
3.5	1,...224	48517.75	49298.25	49401.75	50182.25	17.75	17.75	103.5	884

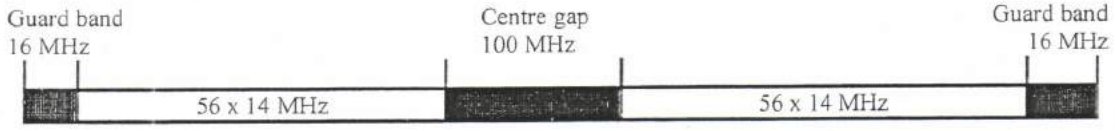
XS Separation between centre frequencies of adjacent channels
YS Separation between centre frequencies of the closest go and return channels
Z1S Separation between the lower band edge and the centre frequency of the first channel
Z2S Separation between centre frequencies of the final channel and the upper band edge
DS Duplex spacing (f'n - fn)

Table 2

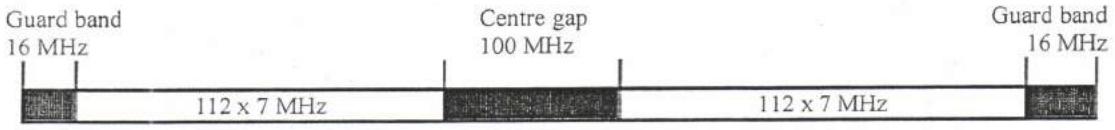
Occupied spectrum: 48.5 to 50.2 GHz Band

a) 28 MHz channels (3.5 MHz x 8)

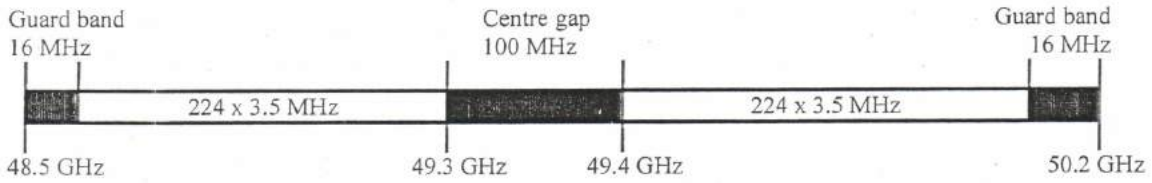
b) 14 MHz channels (3.5 MHz x 4)



c) 7 MHz channels (3.5 MHz x 2)



d) 3.5 MHz channels (3.5 MHz x 1)



BGD PLAN No. 14 - ANNEX 4N

RADIO-FREQUENCY CHANNEL ARRANGEMENT IN THE BAND 51.4 - 52.6 GHz

The radio frequency channel arrangement for channel separations of 56 MHz, 28 MHz 14 MHz, 7 MHz and 3.5 MHz shall be derived as follows:

Let

Fr be the reference frequency of 51412 MHz,

fn be the centre frequency (MHz) of the radio-frequency channel in the lower half of the band,

fn' be the centre frequency (MHz) of the radio-frequency channel in the upper half of the band,

TX/RX separation = 616 MHz,
Band separation = 112 MHz,

then the frequencies (MHz) of individual channels are expressed by the following relationships:

a) for systems with a channel separation of 56 MHz:

lower half of the band:	$fn = fr + 56\,n$	
upper half of the band:	$fn' = fr + 616 + 56\,n$	where n = 1, 2, ... 9

b) for systems with a channel separation of 28 MHz:

lower half of the band:	$fn = fr + 14 + 28\,n$	
upper half of the band:	$fn' = fr + 630 + 28\,n$	where n = 1, 2, 3, ... 18

c) for systems with a channel separation of 14 MHz:

lower half of the band:	$fn = fr + 21 + 14\,n$	
upper half of the band:	$fn' = fr + 637 + 14\,n$	where n = 1, 2, 3, ... 36

d) for systems with a channel separation of 7 MHz:

lower half of the band:	$fn = fr + 24.5 + 7\,n$	
upper half of the band:	$fn' = fr + 640.5 + 7\,n$	where n = 1, 2, 3, ... 72

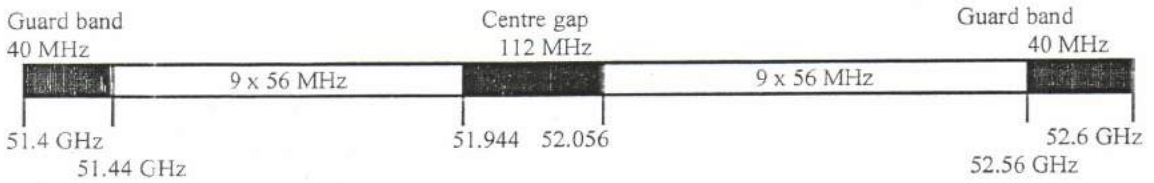
e) for systems with a channel separation of 3.5 MHz:

lower half of the band:	$fn = fr + 26.25 + 3.5\,n$	
upper half of the band:	$fn' = fr + 642.25 + 3.5\,n$	where n = 1, 2, 3, ... 144

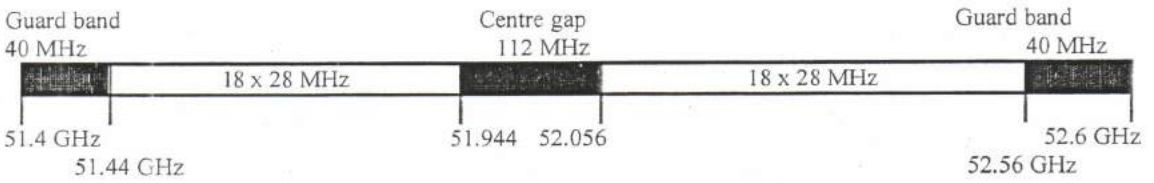
Figure 1

Occupied spectrum: 51.4 to 52.6 GHz Band

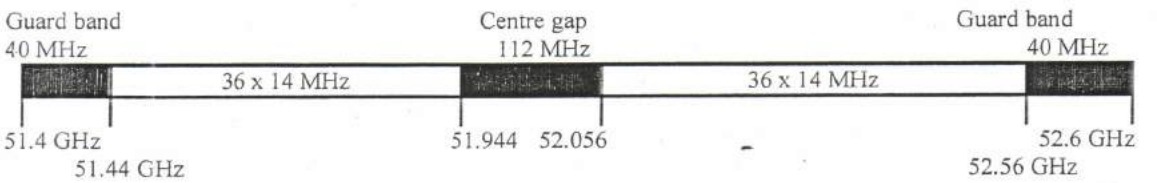
a) 56 MHz channels



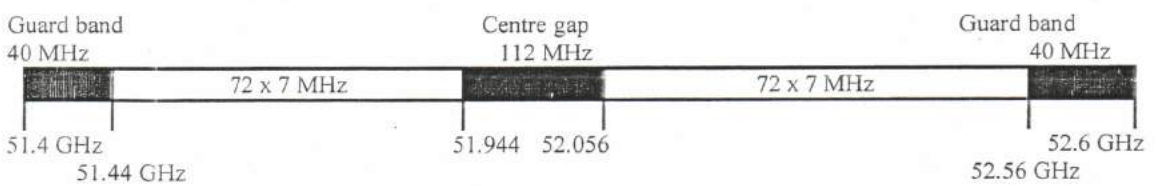
b) 28 MHz channels



c) 14 MHz channels



d) 7 MHz channels



e) 3.5 MHz channels

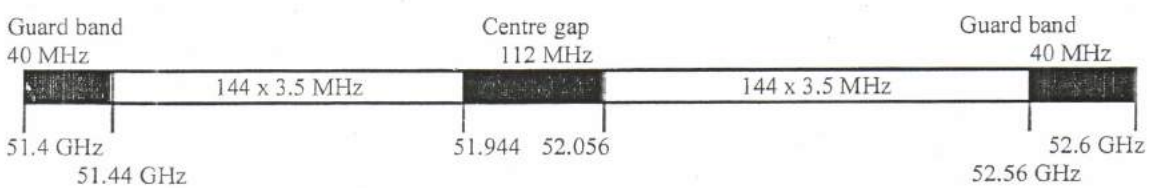


Table 1

Calculated parameters according to ITU-R Rec. 746

XS MHz	n	f1 MHz	fn MHz	f'1 MHz	f'n MHz	Z1S MHz	Z2S MHz	YS MHz	DS MHz
56	1,...9	51468	51916	52084	52532	68	68	168	616
28	1,...18	51454	51930	52070	52546	54	54	140	616
14	1,...36	51447	51937	52063	52553	47	47	126	616
7	1,...72	51443.5	51940.5	52059.5	52556.5	43.5	43.5	119	616
3.5	1,...144	51441.75	51942.25	52057.75	52558.25	41.75	41.75	115.5	616

XS Separation between centre frequencies of adjacent channels

YS Separation between centre frequencies of the closest go and return channels

Z1S Separation between the lower band edge and the centre frequency of the first channel

Z2S Separation between centre frequencies of the final channel and the upper band edge

DS Duplex spacing (f'n - fn)

BGD PLAN No. 15 - ANNEX 40

RADIO-FREQUENCY CHANNEL ARRANGEMENTS IN THE BAND 55.78 – 57.0 GHz FOR SYSTEMS USING TDD

Let f_r be the reference frequency of 55786 MHz,
f_n be the centre frequency of a radio-frequency channel in the band 55.78 – 57.0 GHz,

then the centre frequencies of individual channels are expressed by the following relationships:

for systems with a channel separation of 56 MHz:
$f_n = f_r + 28 + 56\ n$ MHz
where:
n = 1, 2, 3, ...20

b) for systems with a channel separation of 28 MHz:
$f_n = f_r + 42 + 28\ n$MHz
where:
n = 1, 2, 3, ...40

for systems with a channel separation of 14 MHz:
$f_n = f_r + 49 + 14\ n$ MHz
where:
n = 1, 2, 3, ...80

d) for systems with a channel separation of 7 MHz:
$f_n = f_r + 52.5 + 7\ n$ MHz
where:
n = 1, 2, 3, ...160

e) for systems with a channel separation of 3.5 MHz:
$f_n = f_r + 54.25 + 3.5n$ MHz
where:
n = 1, 2, 3, ...320

Table 1

Calculated parameters according to ITU-R Rec. 746

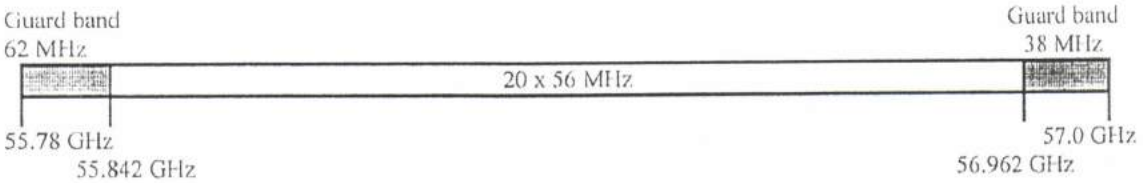
XS MHz	n	f1 MHz	fn MHz	Z1S MHz	Z2S MHz
56	1,...20	55870	56934	90	66
28	1,...40	55856	56948	76	52
14	1,...80	55849	56955	69	45
7	1,...160	55845.5	56958.5	65.5	41.5
3.5	1,...320	55843.75	56960.25	63.75	39.75

XS Separation between centre frequencies of adjacent channels
Z1S Separation between the lower band edge and the centre frequency of the first channel
Z2S Separation between centre frequencies of the final channel and the upper band edge

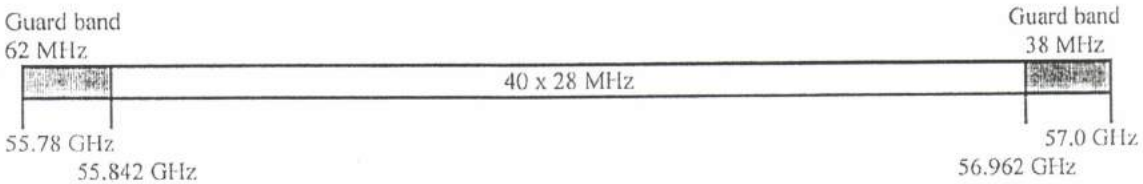
Figure 1

Occupied spectrum (TDD): 55.78 to 57 GHz Band

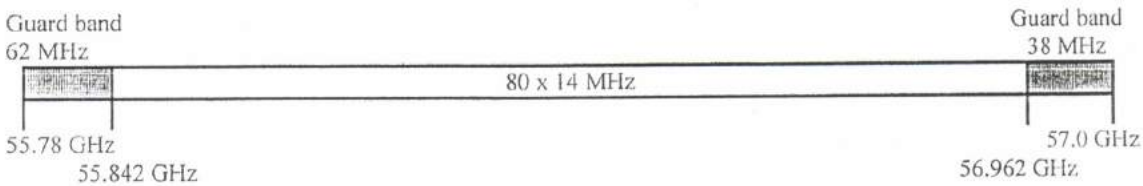
a) 56 MHz channels



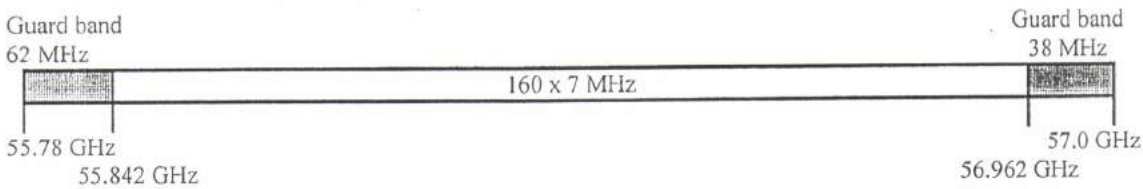
b) 28 MHz channels



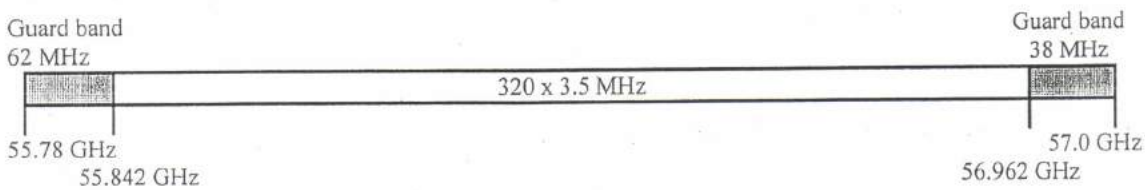
c) 14 MHz channels



c) 7 MHz channels



c) 3.5 MHz channels



Radio-frequency channel arrangement in the band 55.78 – 57 GHz for systems using FDD

The radio frequency channel arrangement for channel separations of 56 MHz, 28 MHz and 14 MHz shall be derived as follows:

Let

fr be the reference frequency of 55814 MHz,

fn be the centre frequency (MHz) of the radio-frequency channel in the lower half of the band,

fn' be the centre frequency (MHz) of the radio-frequency channel in the upper half of the band,

TX/RX separation = 616 MHz,
Band separation = 112 MHz,

then the frequencies (MHz) of individual channels are expressed by the following relationships:

for systems with a channel separation of 56 MHz:

lower half of the band:	$fn = fr + 56\,n$	
upper half of the band:	$fn' = fr + 616 + 56\,n$	where n = 1,2, … 9

for systems with a channel separation of 28 MHz:

lower half of the band:	$fn = fr + 14 + 28\,n$	
upper half of the band:	$fn' = fr + 630 + 28\,n$	where n = 1, 2, 3, … 18

for systems with a channel separation of 14 MHz:

lower half of the band:	$fn = fr + 21 + 14\,n$	
upper half of the band:	$fn' = fr + 637 + 14\,n$	where n = 1, 2, 3, … 36

for systems with a channel separation of 7 MHz:

lower half of the band:	$fn = fr + 24.5 + 7\,n$	
upper half of the band:	$fn' = fr + 640.5 + 7\,n$	where n = 1, 2, 3, … 72

for systems with a channel separation of 3.5 MHz:

lower half of the band:	$fn = fr + 26.25 + 3.5\,n$	
upper half of the band:	$fn' = fr + 642.25 + 3.5\,n$	where n = 1, 2, 3, … 144

Table 2

Calculated parameters according to ITU-R Rec. 746

XS MHz	n	f1 MHz	fn MHz	f'1 MHz	f'n MHz	Z1S MHz	Z2S MHz	YS MHz	DS MHz
56	1,...9	55870	56318	56486	56934	90	66	168	616
28	1,...18	55856	56332	56472	56948	76	52	140	616
14	1,...36	55849	56339	56465	56955	69	45	126	616
7	1,...72	55845.5	56342.5	56461.5	56958.5	65.5	41.5	119	616
3.5	1,...144	55843.75	56344.25	56459.75	56960.25	63.75	39.5	115.5	616

XS Separation between centre frequencies of adjacent channels

YS Separation between centre frequencies of the closest go and return channels

Z1S Separation between the lower band edge and the centre frequency of the first channel

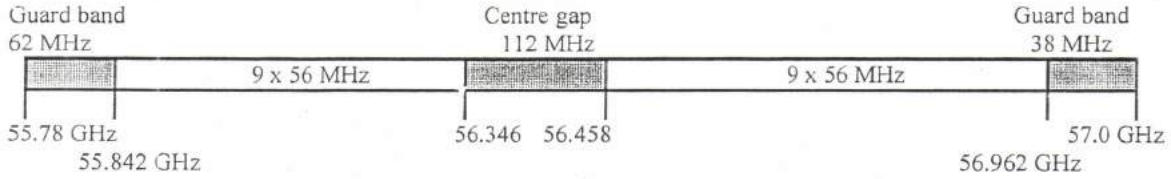
Z2S Separation between centre frequencies of the final channel and the upper band edge

DS Duplex spacing (f'n - fn)

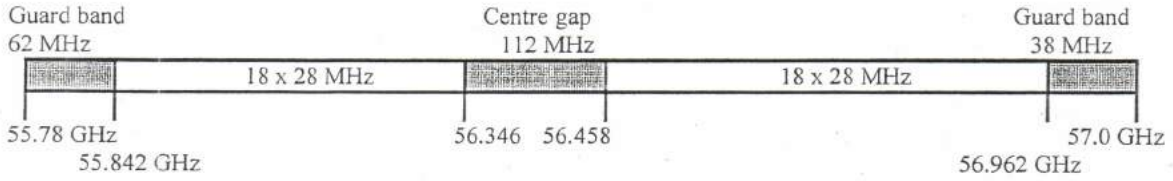
Figure 2

Occupied spectrum (FDD): 55.78 to 57 GHz Band

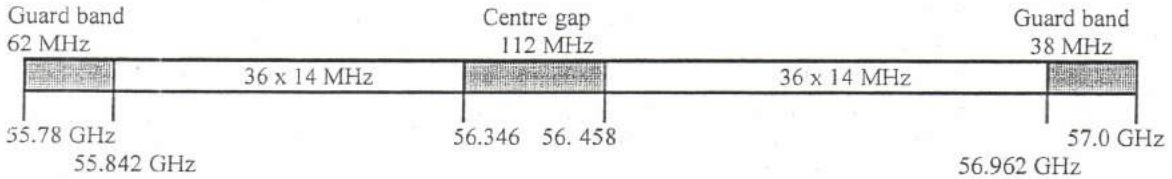
a) 56 MHz channels



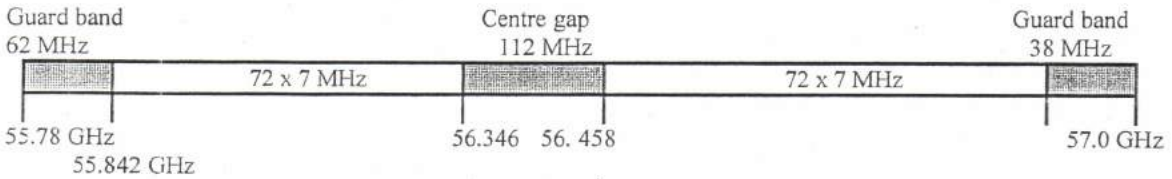
b) 28 MHz channels



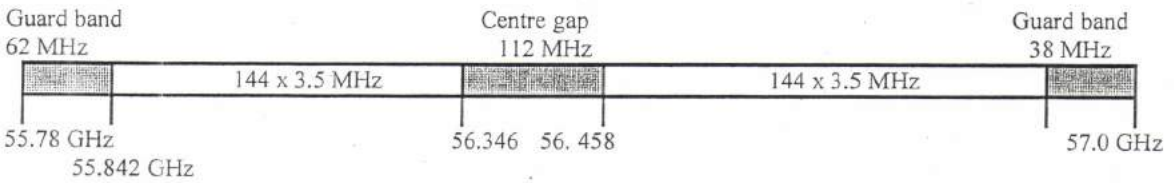
c) 14 MHz channels



c) 7 MHz channels



c) 14 MHz channels



BGD PLAN No. 16 - ANNEX 4P

RADIO-FREQUENCY CHANNEL ARRANGEMENTS IN THE BAND 57.0 – 59.0 GHz

Let f_r be the reference frequency of 56 950 MHz,
f_n be the centre frequency of a radio-frequency channel in the band 57.0 – 59.0 GHz,

then the centre frequencies of individual channels are expressed by the following relationships:

a) for systems with a channel separation of 100 MHz:

$$f_n = f_r + 100\ n \quad \text{MHz}$$

where:

n = 1, 2, 3, ...20

b) for systems with a channel separation of 50 MHz:

$$f_n = f_r + 25 + 50\ n \quad \text{MHz}$$

where:

n = 1, 2, 3, ...40

Table 1

Calculated parameters according to ITU-R Rec. 746

XS MHz	n	f1 MHz	fn MHz	Z1S MHz	Z2S MHz
50	1,...40	57025	58975	25	25
100	1,...20	57050	58950	50	50

XS Separation between centre frequencies of adjacent channels

Z1S Separation between the lower band edge and the centre frequency of the first channel

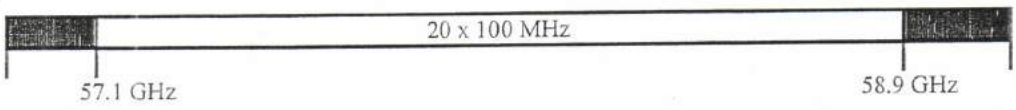
Z2S Separation between centre frequencies of the final channel and the upper band edge

Figure 1

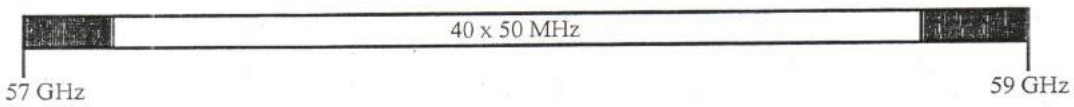
Occupied spectrum: 57 to 59 GHz Band

a) 100 MHz channels

*)



b) 50 MHz channels



*) channels within the frequency ranges 57.0 - 57.100 GHz and 58.900 – 59.0 GHz should not be used for traffic, until satisfactory coexistence studies with Fixed Service in adjacent bands are completed; these channels could be used for equipment alignment and propagation tests

Annex 5 – List of Abbreviations

Term	Definition
APT	Asia Pacific Telecommunity
BSS	Broadcasting Satellite Service
BTRC	Bangladesh Telecommunication Regulatory Commission
BTx	Base station transmit frequency (in a mobile radio system)
BWA	Broadband Wireless Access
CDMA	Code Division Multiple Access
CRS	Central Radio Station
DECT	Digital Enhanced Cordless Telecommunication System
DGPS	Differential Global Positioning System
DME	Distance Measuring Equipment
DMO	Direct Mode Operation
DSI	Detailed Spectrum Investigation
DVB-T	Terrestrial Digital Video Broadcasting
EESS	Earth Exploration-Satellite Service
EMC	Electro Magnetic Compatability
ENG	Electronic News Gathering
EPIRB	Emergency Position-Indicating Radiobeacon
E/S	Earth to space
FDD	Frequency Division Duplex
FM	Frequency Modulation
FSS	Fixed Satellite Service
FWA	Fixed Wireless Access
GMDSS	Global Maritime Distress and Safety System
GNSS	Global Navigation Satellite System
GSM	Global System for Mobile communications
GSM 900	Global System for Mobile communications (at 900 MHz)
GSM 1800	Global System for Mobile communications (at 1800 MHz)
HAPS	High Altitude Platform Systems
HDTV	High Definition Television
HF	High Frequency
IBCN	Integrated Broadband Communications Network
ICNIRP	International Commission on Non-Ionizing Radiation Protection
ILS	Instrument Landing System
IMT	International Mobile Telecommunications
ISM	Industrial, Scientific and Medical applications
ITU	International Telecommunications Union

LLR	Low Looking Radar
MLS	Microwave Landing System
MTx	Mobile station transmit frequency
MSI	Maritime Safety Information
MSS	Mobile Satellite Service
MWS	Multimedia Wireless Systems
NATO	North Atlantic Treaty Organisation
NGSO	Non-Geostationary Satellite Orbit
OB	Outside Broadcasting
OR	Off-Route
PAMR	Public Access Mobile Radio (PMR)
PMR	Professional Mobile Radio, Private Mobile Radio
PPDR	Public Protection and Disaster Relief
PSTN	Public Switched Telecommunications Network
R	Route
RA	Radio Astronomy
RFID	Radio Frequency Identification
RLAN	Radio Local Area Network
RR	Radio Regulations
RTTT	Road Transport & Traffic Telematics
S/E	Space to Earth
SAB	Services Ancillary to Broadcasting
SAP	Services Ancillary to Programming
SNG	Satellite News Gathering
S-PCS	Satellite Personal Communication System
SRD	Short Range Devices
SSR	Secondary Surveillance Radar
T-DAB	Terrestrial Digital Audio Broadcasting
TETRA	Terrestrial Trunked Radio
TS	Terminal Station
UHF	Ultra-High Frequency
VHF	Very High Frequency
VLBI	Very Long Baseline Interferometry (Radio Astronomy)
VOR	VHF Omni-directional Range
VTS	Vessel Traffic System (radar)
VSAT	Very Small Aperture Terminal
WARC	World Administrative Radio Conference
WLAN	Wireless Local Area Network
WLL	Wireless Local Loop
WRC	World Radiocommunication Conference