

## 5 National Footnotes to the Table of Frequency Allocations

### NF0 (5350 - 5450 KHz)

The band 5350 – 5450KHz and the channel 5290KHz is allocated on secondary basis to radio amateurs under the Article 4.4 of the ITU Radio Regulations.

### NF1 (29.7 - 30 MHz)

This portion of the spectrum is allocated to the amateur service on a secondary basis for use during disaster exercises and emergency situations. This is in addition to the existing exclusive amateur band 28 - 29.7 MHz, which retains its primary status. The additional spectrum is used for single frequency mobile applications.

### NF2 (70 - 70.3 MHz)

This sub-band is allocated to the amateur service on a secondary basis in order to undertake experimental work on propagation. The channels 70.025 – 70.150 MHz are used for civil defence purposes.

### NF3 (148 - 150.05 MHz)

This frequency band was allocated internationally at WARC-92 for the mobile satellite service (MSS) in the Earth-to-space direction. The space-to-Earth link is provided at either 137 – 138 MHz or 400.15 - 401 MHz, depending on the satellite system.

### NF4 (161.875 - 173.875 MHz)

The frequency band is used for sonobouy in the maritime service. Assignments were previously not allowed within a distance of 200 km from the coast. It is generally agreed that there is scope for increased sharing even near the coast. Proper care will be taken in making assignments near the coast in this frequency band and frequency coordination is to be performed with existing services on case by case basis.

### NF5 (173.7 – 175.1 MHz)

This frequency band may be used for wireless microphones for services ancillary to Broadcasting (SAB) and services ancillary to programme (SAP) making. Use of wireless microphones must be co-ordinated and licensed.

### NF6 (336 - 366 MHz)

The frequency band 336 – 346 MHz, paired with the frequency band 356 – 366 MHz, is allocated to fixed services on a primary basis and is applicable for use by Fixed Wireless Access (FWA) systems. Within this frequency band, the sub-band 337 – 344 MHz paired with 357 – 364 MHz is to be used for WAS whereas the sub-band 344 – 346 MHz paired with 364 – 366 MHz is to be used for alarm monitoring and tracking services using DSSS. The band is also considered for use by the Unmanned Aerial Vehicle (UAV) including Remotely Piloted Aircraft System (RPAS) within the sub band 336-346 paired with 356-366 MHz. This spectrum is potentially very useful for providing electronic communications services, in particular in rural areas considering its excellent propagation conditions.

### NF7 (380 – 399.9 MHz)

The frequency band 380 – 399.9 MHz is allocated through ITU Resolution 646 (Rev.WRC-15) to Public Protection and Disaster Relief (PPDR) applications in line with ITU-R M.2015.

**NF8 (430 - 440 MHz)**

This frequency band is allocated to the amateur service in South Africa in line with ITU Region 1. The sub-band 433.05 - 434.79 MHz, however, is also designated as an ISM band in Region 1, subject to the special authorisation of the administration concerned (see RR 5.138). Furthermore, the sub-band 433.05 - 434.79 MHz can be used for non-specific short range devices on an unlicensed basis in accordance with the prescribed Regulations. The consequence of this is that the amateur service may not claim protection from (in-band) emissions from ISM equipment operating in the band, nor can ISM equipment and low power devices claim protection from amateur users operating in the band.

**NF8A (694 – 862 MHz)**

## Transitional Arrangements

The Authority resolved the following transitional arrangements for the right of use of spectrum in the frequency range 694 to 862 MHz:

- (i) That Broadcasting Spectrum Assignments for the frequency band above 694 MHz, in the affected areas as stipulated in the Terrestrial Broadcasting Frequency Plan (Notice No. 298 of 2013 in Government Gazette No. 36321 and Notice No. 801 of 2014 in Government Gazette 38005 or the latest version), are to be used subject to meeting the conformance requirements in line with the GE06 Plan and are to be phased out during the performance period.
- (ii) That broadcast transmissions and services ancillary to broadcasting for the frequency range 694 to 862 MHz are to be systematically switched off.
- (iii) That matters related to spectrum management geared at minimising and or preventing harmful interference during the transitional arrangement period, is to be managed by the Authority to achieve systematic implementation and seamless transition.
- (iv) That sharing and co-existence in the frequency range 694 to 862 MHz is to be implemented systematically through a Geographic separation of IMT Systems and Broadcasting Services in affected areas in accordance with the Terrestrial Broadcasting Frequency Plan 2013, Government Gazette 36321, read with the First Update to the Terrestrial Broadcasting Plan 2013 Government Gazette 38005<sup>12</sup> until the end of the migration from Analogue to Digital Terrestrial Television process.

**NF9 (IMT Frequency Bands - Terrestrial)**

The table below list all possible IMT frequency bands identified by the ITU, relevant ITU Radio Regulation footnote as well as the applicable ITU-R channel plan.

Band	Frequency band		RR FN	Channel Plan	WRC Resolution/s
450 MHz	450 – 470 MHz		5.286A A	Recommendation ITU-R M.1036	224 (Rev. WRC-15)

<sup>12</sup> The Multiplexes in the latest updated version of the Terrestrial Broadcasting Plan 2013 has been coordinated in terms of the GE06 Agreement and meets the conformance requirements of the Plan. The frequencies on this version have been successfully notified to the ITU-R Bureau and have been included in the Master International Frequency Register

700 MHz	694 – 790 MHz		5.312A and 5.317A	Recommendation ITU-R M.1036	224 (Rev.WRC-15) and 760 (WRC-15)
800 MHz	790 — 862 MHz		5.316B and 5.317A	Recommendation ITU-R M.1036 (A3)	224 (Rev. WRC-15) and 749 (Rev. WRC-15)
900 MHz	880 – 915 MHz // 925 – 960 MHz		5.317A	Recommendation ITU-R M.1036 (A2)	224 (Rev. WRC-15) and 749 (Rev. WRC-15)
1500 MHz	1 427-1 518 MHz		5.341A, 5.346, and 5.346A	Recommendation ITU-R M.1036 <sup>13</sup>	223 (Rev. WRC-15), 750 (Rev. WRC-15), and 761 (WRC-15)
1800 MHz	1710 – 1785 MHz // 1805 – 1880 MHz		5.384A	Recommendation ITU-R M.1036 (B2)	223 (Rev. WRC-15)
1900 MHz	1900 – 1920MHz		5.388	Recommendation ITU-R M.1036 (B4)	Resolution <b>212 (Rev.WRC-15)</b>
2100 MHz	1920 – 1980 MHz // 2110 – 2170 MHz		5.388	Recommendation ITU-R M.1036 (B1)	212 (Rev. WRC-07) and 223 (Rev. WRC-12)
2100 MHz (TDD)	1900 – 1920 MHz, 2010 – 2025 MHz		5.388	Recommendation ITU-R M.1036 (B1)	212 (Rev. WRC-07) and 223 (Rev. WRC-12)
2300 MHz	2300 – 2400 MHz		5.384A	Recommendation ITU-R M.1036 (E1)	223 (Rev. WRC-12)
2600 MHz	2500 – 2690 MHz		5.384A	Recommendation ITU-R M.1036 (C1)	223 (Rev. WRC-12)
3500 MHz	3300 – 3400 MHz		5.429B	Recommendation ITU-R M.1036 <sup>14</sup>	223 (Rev. WRC-15),
3.5 GHz	3400 – 3600 MHz		5.430A	Recommendation ITU-R M.1036 (F1)	NA

<sup>13</sup> Channelling arrangement for 1 427-1 518 MHz is under study at the ITU-R Working Party 5D

<sup>14</sup> Channelling arrangement for 3300 – 3400 MHz is under study at the ITU-R Working Party 5D

**NF10 (876 - 880 // 921 - 925 MHz)**

This frequency band is used by GSM-R systems.

**NF11 (915 - 921 MHz) – Suppressed****NF12 (1452 - 1492 MHz) – Suppressed****NF13 (1980 – 2010 MHz paired with 2170 – 2200 MHz)**

These frequency bands are allocated, amongst others, to both the mobile and mobile-satellite services and are also earmarked for the satellite component of IMT. Further, the implementation of IMT in the bands 1885-2025 MHz and 2110-2200 MHz is under study within ITU-R in accordance with Resolution **212 (Rev. WRC-15)**,

**NF14 (Channel arrangements for Fixed Services Systems)**

The table below list the main fixed services frequency bands and the applicable ITU-R Recommendation specifying the applicable frequency channel arrangement. Different channel spacing for each frequency band will allowed in accordance with the relevant ITU-R Recommendation. Sub-division of channels will also be allowed to cater for smaller bandwidth systems. Hop distances will be determined, amongst others, by propagation conditions. Sharing with services other than fixed services is indicated in the comments column.

Band	Band limits	Channel Plan	Comments
1-2GHz	1350 - 1375 MHz // 1492 – 1517 MHz 1375 – 1400 MHz // 1427 – 1452 MHz	ITU-R F.1242	
2 GHz	2025-2110 MHz // 2200-2285 MHz	ITU-R F.1098	
4 GHz	3600 – 4200 MHz	ITU-R F.635, Annex 1	Shared with FSS (downlink) (Note 1)
4.8 GHz	4400 – 5000 MHz	ITU-R F.1099, Annex 1	Government Services
Lower 6 GHz	5925 – 6425 MHz	ITU-R F.383	Shared with FSS (uplink) (Note 2)
Upper 6 GHz	6425 – 7110 MHz	ITU-R F.384	Shared with FSS (Note 3)
7 GHz (L7 + U7)	7110 – 7750 MHz	ITU-R F385, Annex 3	

Lower 8 GHz	7725 – 8275 MHz	ITU-R F.386, Annex 6	
Upper 8 GHz	8275 – 8500 MHz	ITU-R F.386, Annex 1	
10.5 GHz	10.15-10.3 GHz// 10.5-10.65 GHz	ITU-R F.1568, Annex 1	
11 GHz	10.7 – 11.7 GHz	ITU-R F.387	Shared with FSS (Note 4)
13 GHz	12.75 – 13.25 GHz	ITU-R F.497	
15 GHz	14.5 – 15.35 GHz	ITU-R F.636	
18 GHz	17.7 – 19.7 GHz	ITU-R F.595, Annex 1	
23 GHz	21.2-23.6 GHz or	ITU-R F.637, Annex 1	Shared with BSS (Note 5)
26 GHz	24.5 – 26.5 GHz	ITU-R F.748, Annex 1	Shared with EESS (Note 6)
28 GHz	27.5 – 29.5 GHz	ITU-R F.748-4, Annex 2	
32 GHz	31.8 – 33.4 GHz	ITU-R F.1520, Annex 1	
38 GHz	37.0 – 39.5 GHz	ITU-R F.749 Annex 1	
42 GHz	40.5 – 43.5 GHz	ITU-R F. 2005	
57 GHz	55.78 – 59 GHz	ITU-R F 1497	
80 GHz	71 – 76 GHz // 81 – 86 GHz	ITU-R F.2006	(Note 7)
94 GHz	92 – 94 GHz 94.1 – 95 GHz	ITU –R F. 2004	

**Note 1:** The band 3600 – 4200 MHz is used on a national basis for high capacity, core network telecommunication services under the fixed service using (for fixed services links generally over long hop lengths. The band 3625 – 4200 MHz, part of the C-band, is used extensively for FSS (space-to-Earth) applications. This band is shared between FS and FSS.

**Note 2:** In addition to deployment of fixed services links under the fixed services, the band 5850 – 6425 MHz, part of the C-band, is also used for FSS (Earth-to-space) applications on a shared basis with FS. The C-band is also used for satellite news gathering (SNG) operations, which will require frequency co-ordination with fixed links on a case-by-case basis. Users are encouraged to, as far as possible, use the Ku-band for SNG operations in South Africa in order to avoid the need for frequency coordination and the interference problems associated with C-band SNG operations. The band 5850 – 5926 MHz may also be used for temporary deployment for ENG and OB links under the mobile and fixed services respectively on a strictly coordinated basis.

**Note 3:** This band is used on a national basis for fixed services links under the fixed service. Fixed links are shared with NGSO MSS (space-to-Earth) feeder links and geo-stationary satellite orbit (GSO) FSS (Earth-to-space) systems on a strictly controlled and co-ordinated basis.

**Note 4:** This band is used on a national basis for fixed services links under the fixed service. The bands 10.95 – 11.2 GHz and 11.45 – 11.7 GHz are also shared with FSS (space-to-Earth) systems (typically VSAT/SNG and PTP links). The sub-bands 10.95 – 11.2 GHz and 11.45 – 11.7 GHz is also used DTH satellite broadcasting services on a secondary basis to the FS and FSS services.

**Note 5:** In addition to the fixed services, the band 21.2 – 23 GHz is also allocated to the BSS on a co-primary basis. In accordance with 5.530A, all fixed links must comply to the prescribed pfd limits at national borders, unless otherwise agreed with the administration concerned. In line with 5.530B, the band 21.2 – 23 GHz will not be used for mobile services in South Africa and fixed service deployments will be restricted to for fixed services links.

**Note 6:** An unmanned receive only earth station, forming part of the National Polar-Orbiting Operational Environmental Satellite System (NPOESS) is located in South Africa, and this system operates within the frequency band 25.5 to 27 GHz in the Earth Exploration Satellite (space-to-earth) service.

**Note 7:** The frequency bands 71 – 76 GHz paired with 81 – 86 GHz are allocated to the fixed services and is earmarked for very high capacity Broadband Fixed Wireless Systems over very short hop lengths. Radio frequency channel arrangements for fixed service systems operating in the bands 71-76 GHz and 81-86 GHz are according to the Radio Frequency Spectrum Regulations (GG. No.38641, 30 March 2015).

**NF15 (4400 – 5000 MHz)**

The frequency band 4400 – 5000 MHz is allocated to electronic news gathering (ENG) and outside broadcasting (OB) services under the mobile and fixed services respectively, and is shared with Government Services.

**NF16 (5725 – 5850 MHz)**

The band 5725 – 5875 MHz is designated as an ISM band through ITU-R footnote 5.150. In addition to ISM applications, the band 5725 – 5850 MHz is also available for fixed links on a license-exempt basis, provided adherence to the provisions indicated below. Type Approval of these systems is mandatory. See also Radio Frequency Spectrum Regulations (Annex B) (GG. No.38641, 30 March 2015).

(for additional requirements in using this band.

Frequency Range	Maximum Power	Modulation	Restrictions
5.725 – 5.850 GHz	1 watt peak e.i.r.p	Any modulation	No other restriction other than those related to the maximum power and the modulation scheme.
5.725 – 5.850 GHz	4 watt peak e.i.r.p	Frequency hopping or digital modulation only	No other restriction other than those related to the maximum power and the modulation scheme.
5.725 – 5.850 GHz	200 watt peak e.i.r.p with a max 1 watt peak transmitter power	Digital modulation only	<ul style="list-style-type: none"> <li>- Fixed Radio Link devices only</li> <li>- Peak power spectral density must not exceed 17dBm /MHz</li> </ul>

The Authority reserves the right to require users to change the frequency, reduce the power, or cease operations, where harmful interference is caused.

**NF17 (14.0 – 14.5 GHz)**

The frequency band 14.0 – 14.5 GHz, part of the Ku-band is used extensively for FSS (Earth-to-space) applications (VSAT/SNG/PTP links).

**NF18 (27.5 – 28.35 GHz)**

The frequency bands 27.5 – 28.35 GHz (base station to subscriber) and 31.000 – 31.300 MHz (subscriber to base station) are allocated to broadband service - local multipoint distribution services (LMDS) under the fixed service using a PTMP topology.