

L.N. of 2017

**ELECTRONIC COMMUNICATIONS (REGULATION) ACT**  
**(CAP. 399)**

**General Authorisations (Radiocommunications Apparatus) (Amendment) Regulations, 2017**

IN exercise of the powers conferred by articles 34 and 47 of the Electronic Communications (Regulation) Act, the Prime Minister, has made the following regulations:-

1. The title of these regulations is the General Authorisations (Radiocommunications Apparatus) (Amendment) Regulations, 2017, and they shall be read and construed as one with the General Authorisations (Radiocommunications Apparatus) Regulations, 2008 hereinafter referred to as “the principal regulations”.

Citation.  
S.L. 399.40

2. The arrangement to the Regulations shall be amended as follows:

Amends the  
Arrangement of  
the principal  
regulations.

(a) for the words “FIRST SCHEDULE - General Authorisation for Maritime VHF and EPIRB Ship Stations” shall be substituted with the words “FIRST SCHEDULE - General Authorisation for VHF Maritime Apparatus”;

(b) for the words “SECOND SCHEDULE - General Authorisation for Wireless Access Systems” shall be substituted with the words “SECOND SCHEDULE - General Authorisation for Wideband Data Transmission Systems”;

(c) for the words “SEVENTH SCHEDULE - General Authorisation for Wireless Alarm Systems” shall be substituted with the words “SEVENTH SCHEDULE - General Authorisation for Low duty cycle /high reliability devices”;

(d) for the words “EIGHTH SCHEDULE - General Authorisation for Wireless Audio Systems” shall be substituted with the words “EIGHTH SCHEDULE - General Authorisation for High duty cycle/continuous transmission devices”;

(e) for the words “SEVENTEENTH SCHEDULE - General Authorisation for Earth Stations on Mobile Platforms” shall be substituted with the words “SEVENTEENTH SCHEDULE - General Authorisation for Earth Stations on Mobile Platforms operating with Geostationary Satellite Networks”;

(f) immediately after the item “THIRTY-SECOND - SCHEDULE General Authorisation for Apparatus for Mobile Communication Services on board vessels”, the following two new items shall be added:

“THIRTY-THIRD SCHEDULE - General Authorisation for Radiobeacons

THIRTY-FOURTH SCHEDULE - General Authorisation for Land and Maritime Earth Stations on Mobile Platforms operating with Non-Geostationary Satellite Networks”.

3. Regulation 2 of the principal regulations shall be amended as follows:

Amends regulation 2 of the principal regulations.

(a) Immediately after the definition of “the Community” the following new definition shall be added:

“ “detachable antenna” means an antenna fixed to the radiocommunications apparatus by means of an antenna connector and detachable by the user of that apparatus;”;

(b) The definition of “Directive 1999/5/EC” shall be substituted by the following:

“ “Directive 2014/53/EU” means Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC;”;

(c) Immediately after the definition of “equivalent isotropically radiated power” or “e.i.r.p.” the following new definition shall be added:

“ “fixed-satellite service” or “FSS” shall have the same definition as in the National Radio Frequency Plan;”;

(d) The definition of “R&TTE Regulations” shall be deleted.

(e) Immediately after the definition of “person” the following new definition shall be added:

“S.L.427.41 “Radio Equipment Regulations” means the Radio Equipment Regulations;”;

(f) immediately after the definition of “indoor use” the following new definition shall be added:

“ “integral antenna” means an antenna that is permanently fixed to the radiocommunications apparatus and not detachable by the user of that apparatus;”;

(g) immediately after the definition of “the Minister” the following new definition shall be added:

“ “MMSI” means maritime mobile service identity and is a unique 9-digit identifier assigned by the Transport Malta or by any other competent authority;”;

(h) immediately after the definition of “mobile satellite service” the following new definition shall be added:

“ “network access point” is a fixed terrestrial short range device in a data network that acts as a connection point for the other short range devices in the data network to service platforms located outside of that data network;”;

(i) immediately after the definition of “RF worker” the following new definitions shall be added:

“ “ship” shall have the same meaning as in the Merchant Shipping Act; Cap. 234.

“SOLAS Convention” shall have the same meaning as in the Tonnage Regulations; S.L.234.19.

“Territorial water” or “Territorial sea” shall have the same meaning as defined in regulation 3 of the Territorial Waters and Contiguous Zone Act;” Cap. 226.

(j) immediately after the definition of “transmit power control” or “TPC” the following new definition shall be added:

“ “Transport Malta” means the Authority for Transport in Malta;” Cap. 499.

4. Regulation 8 of the principal regulations shall be deleted. Deletes regulation 8 of the principal regulations.

5. The First Schedule of the principal regulations shall be substituted with the following: Amends the First Schedule to the principal regulations.

#### “FIRST SCHEDULE

##### (Regulation 3)

#### General Authorisation for VHF Maritime Apparatus

1. This General Authorisation applies to any person installing or using VHF Maritime Apparatus or any apparatus intended to be used as a component part of that apparatus on board a ship registered under the Merchant Shipping Act and, or the Fisheries Conservation and Management Act with the exception of apparatus installed permanently on ships which fall within the scope of the SOLAS Convention. Applicability of First Schedule. Cap. 234, Cap. 425.

2. In this Schedule unless the context otherwise requires: Interpretation.

“AIS” means automatic identification system;

“competent authority” means the Authority or Transport Malta or any other public entity as the Authority may consider appropriate;

"Department of Fisheries" means the competent authority responsible for fisheries in Malta;

"digital selective calling" or "DSC" means a technique using digital codes which enables a radio station to establish contact with, and transfer information to, another station or group of stations, and complying with the relevant recommendations of the International Telecommunication Union (ITU) radio-communications sector;

"private frequency" means a frequency which has been assigned on an exclusive or shared basis to an individual or company and which frequency is not in accordance with the VHF frequencies;

"ITU-R M.1084" means the most recent version of Recommendation M.1084 of the ITU providing interim solutions for improved efficiency in the use of the band 156-174 MHz by stations in the maritime mobile service;

"ITU-R M.1842" means the most recent version of Recommendation M.1842 of the ITU describing the characteristics of VHF radio systems and equipment used for the exchange of data and electronic mail in the maritime mobile service RR Appendix 18 channels;

"ITU-R M.2092" means the most recent version of Recommendation M.2092 of the ITU providing the technical characteristics for a VHF data exchange system in the VHF maritime mobile band;

"safety" means the transmission of an important navigational or meteorological warning by means of the VHF maritime apparatus;

"SRC" means a short range certificate issued to candidates passing an examination described in CEPT/ERC/Recommendation 31-04;

"unique identification number" means a unique 9-digit identifier for a DSC enabled VHF maritime handheld apparatus;

"VHF frequencies" means the radio frequencies described in the Annex to the First Schedule;

"VHF maritime handheld apparatus" means VHF maritime apparatus either fitted with an antenna connector or an integral antenna, or both, to be carried on a person or held in the hand;

"VHF maritime apparatus" means radiocommunications apparatus that is intended to be installed and/or used from on board a ship, which apparatus is capable to transmit and receive communications on the VHF frequencies;

3. (1) Without prejudice to regulation 7 hereof, VHF maritime apparatus having a detachable antenna shall only be installed and, or used from on board a ship. Location of use.

(2) VHF maritime apparatus having an integral antenna shall only be used from on board a ship.

(3) VHF maritime handheld apparatus shall only be used from on board a ship.

4. (1) Except in the case of search and rescue communications and communications relating to the safety of navigation, a person shall not operate VHF Qualifications to operate VHF

maritime apparatus unless that person:

maritime  
apparatus.

- (a) is qualified to operate such apparatus, or
- (b) is operating such apparatus under the supervision of a person who is qualified to operate that apparatus.

(2) A person is qualified to operate VHF maritime apparatus if he holds, as a minimum, an SRC, or holds a qualification recognised by Transport Malta as being equivalent to an SRC:

Provided that any such certificate or qualification shall be available for inspection on the demand of any authorized officer at all times when the VHF maritime apparatus is installed or used on board a ship.

5. Any person under whose name a ship is registered with Transport Malta or with the Department of Fisheries, shall be responsible for any VHF maritime apparatus found to be installed or used on board that ship.

Responsibility  
for VHF  
maritime  
apparatus.

6. (1) Any person enjoying a general authorisation in accordance with this Schedule shall ensure that any ship from where VHF maritime apparatus is installed or used, is assigned a call sign by the competent authority, which call sign shall only be used on the ship on which it is registered.

Call signs.

(2) The call sign shall remain with the ship for the duration of its life regardless of changes of ownership or of ship name.

(3) Any assigned call sign is not transferable between ships.

(4) A person operating VHF maritime apparatus shall use the call sign assigned to the ship from which the VHF maritime apparatus is being operated at the start of each transmission, or series of transmissions.

7. (1) Any person enjoying a general authorisation in accordance with this Schedule shall ensure that the ship from where DSC enabled VHF maritime apparatus is installed or used, is assigned an MMSI by the competent authority:

MMSI.

Provided that such a person shall also ensure that the VHF maritime apparatus is duly programmed with the assigned MMSI:

Provided further that the DSC enabled VHF maritime apparatus programmed with the assigned MMSI shall only be used from on board the ship associated with the same MMSI:

Provided further that a person transferring or relocating, however so described, a DSC enabled VHF maritime apparatus from one ship to another, shall seek the approval of the competent authority prior to installing and, or using the DSC enabled VHF maritime apparatus on that other ship.

(2) The provisions of paragraph (1) shall not apply if the DSC enabled VHF maritime apparatus is a VHF maritime handheld apparatus.

(3) An assigned MMSI is not transferable between ships.

(4) The MMSI assigned by the competent authority shall not be

programmed into DSC enabled VHF maritime handheld apparatus.

8. (1) A DSC enabled VHF maritime handheld apparatus shall have an internal global navigation satellite system.

Additional conditions for VHF maritime handheld apparatus.

(2) Any person enjoying a general authorisation under this Schedule shall ensure that a DSC enabled VHF maritime handheld apparatus is assigned with a unique identification number by the competent authority:

Provided that such a person shall also ensure that the assigned unique identification number is programmed into the DSC enabled VHF maritime handheld apparatus.

(3) A person transferring the ownership of a DSC enabled VHF maritime handheld apparatus shall inform the competent authority about any such transfer prior to effecting such transfer for the purpose of updating the details relating to the unique identification number.

9. (1) Without prejudice to any other requirements at law a person shall, whether within or outside territorial waters, only operate the VHF maritime apparatus in accordance with the provisions of the Radio Regulations.

Mode of operation and technical conditions.

(2) VHF maritime apparatus operating in territorial waters shall operate only on the VHF frequencies and shall not use any other frequency and, or channel, however so described:

Provided that a person who has been assigned a private frequency may also operate a VHF maritime apparatus covered by this General Authorisation on that frequency:

Cap. 35.

Provided further that a person who has been assigned a private frequency shall pay any applicable fees under the Fees Ordinance or any other applicable law in force.

(3) VHF maritime apparatus operating outside territorial waters shall only use those radio frequencies or channels, however so described, which are allowed to be used in those waters and shall observe any terms, conditions or limitations which could be applicable in the same waters.

(4) VHF maritime apparatus must, as a minimum, be able to send and receive radiotelephony communications on:

- (a) the distress, safety and calling frequency 156.800 MHz (channel 16);
- (b) the primary intership frequency 156.300 MHz (channel 06);
- (c) the intership navigation safety frequency 156.650 MHz (channel 13); and
- (d) all the frequencies necessary for their service.

(5) In addition to the radio frequencies or channels, however so described, listed in paragraph (4) hereof, DSC enabled VHF maritime apparatus must also be able to send and receive emissions on the frequency 156.525 MHz (Channel 70).

(6) Without prejudice to the transmit power restrictions which are established in the Annex to this Schedule, the transmit carrier power level of VHF

maritime apparatus shall not exceed 25 Watts:

Provided that whenever possible, the VHF maritime apparatus shall be set to operate on the low transmit power mode of operation:

Provided further that the VHF maritime apparatus shall not be connected in any manner with amplifiers intended to increase the transmit carrier power level.

(7) In using VHF maritime apparatus a person shall abide with any instructions, however so described, related to communications which could be given by the local authorities responsible for the safety of navigation and search and rescue.

10. (1) A person shall ensure that the VHF maritime apparatus is used minimally to reduce frequency occupancy:

Distress and safety-related communications.

Provided that in using the said apparatus the person shall ensure that priority is at all times given to distress and safety related communications.

(2) In order to facilitate the reception of distress calls and traffic, all transmissions on 156.800 MHz (Channel 16) shall be kept to a minimum and shall not exceed one minute.

(3) Before transmitting on the frequency 156.800 MHz (Channel 16) a person shall listen on this frequency for a reasonable time to make sure that no distress traffic is being sent.

(4) All persons shall accept, with absolute priority and in all instances, distress calls and messages regardless of their origin, and shall reply in the same manner to such messages immediately taking such action in regard thereto as may be required.

ANNEX TO THE FIRST SCHEDULE

(Paragraph 9 of the First Schedule)

Table of the VHF Frequencies

Channel designator	Notes	Transmitting frequencies (MHz)		Inter-ship	Port operations and ship movement		Public correspondence
		From ship stations	From coast stations		Single frequency	Two frequency	
60	<i>m)</i>	156.025	160.625		x	x	x
01	<i>m)</i>	156.050	160.650		x	x	x
61	<i>m)</i>	156.075	160.675		x	x	x
02	<i>m)</i>	156.100	160.700		x	x	x
62	<i>m)</i>	156.125	160.725		x	x	x
03	<i>m)</i>	156.150	160.750		x	x	x

Channel designator	Notes	Transmitting frequencies (MHz)		Inter-ship	Port operations and ship movement		Public correspondence
		From ship stations	From coast stations		Single frequency	Two frequency	
63	<i>m)</i>	156.175	160.775		x	x	x
04	<i>m)</i>	156.200	160.800		x	x	x
64	<i>m)</i>	156.225	160.825		x	x	x
05	<i>m)</i>	156.250	160.850		x	x	x
65	<i>m)</i>	156.275	160.875		x	x	x
06	<i>f)</i>	156.300		x			
2006	<i>r)</i>	160.900	160.900				
66	<i>m)</i>	156.325	160.925		x	x	x
07	<i>m)</i>	156.350	160.950		x	x	x
67	<i>h)</i>	156.375	156.375	x	x		
08		156.400		x			
68		156.425	156.425		x		
09		156.450	156.450	x	x		
69		156.475	156.475	x	x		
10	<i>h), q)</i>	156.500	156.500	x	x		
70	<i>f), j)</i>	156.525	156.525	Digital selective calling for distress, safety and calling			
11	<i>q)</i>	156.550	156.550		x		
71		156.575	156.575		x		
12		156.600	156.600		x		
72		156.625		x			
13	<i>k)</i>	156.650	156.650	x	x		
73	<i>h)</i>	156.675	156.675	x	x		
14		156.700	156.700		x		
74		156.725	156.725		x		
15	<i>g)</i>	156.750	156.750	x	x		
75	<i>n), s)</i>	156.775	156.775		x		
16	<i>f)</i>	156.800	156.800	DISTRESS, SAFETY AND CALLING			
76	<i>n), s)</i>	156.825	156.825		x		
17	<i>g)</i>	156.850	156.850	x	x		
77		156.875		x			
18	<i>m)</i>	156.900	161.500		x	x	x
78	<i>m)</i>	156.925	161.525		x	x	x
1078		156.925	156.925		x		
2078	<i>mm)</i>		161.525		x		
19	<i>m)</i>	156.950	161.550		x	x	x
1019		156.950	156.950		x		
2019	<i>mm)</i>		161.550		x		
79	<i>m)</i>	156.975	161.575		x	x	x
1079		156.975	156.975		x		
2079	<i>mm)</i>		161.575		x		
20	<i>m)</i>	157.000	161.600		x	x	x
1020		157.000	157.000		x		
2020	<i>mm)</i>		161.600		x		
80	<i>y)</i>	157.025	161.625		x	x	x
21	<i>y)</i>	157.050	161.650		x	x	x



Channel designator	Notes	Transmitting frequencies (MHz)		Inter-ship	Port operations and ship movement		Public correspondence
		From ship stations	From coast stations		Single frequency	Two frequency	
81	y)	157.075	161.675		x	x	x
22	y)	157.100	161.700		x	x	x
82	y)	157.125	161.725		x	x	x
23	y)	157.150	161.750		x	x	x
83	y)	157.175	161.775		x	x	x
24	w), xx)	157.200	161.800		x	x	x
1024	w), xx)	157.200					
2024	w), xx)	161.800	161.800	x (digital only)			
84	w), xx)	157.225	161.825		x	x	x
1084	w), xx)	157.225					
2084	w), xx)	161.825	161.825	x (digital only)			
25	w), xx)	157.250	161.850		x	x	x
1025	w), xx)	157.250					
2025	w), xx)	161.850	161.850	x (digital only)			
85	w), xx)	157.275	161.875		x	x	x
1085	w), xx)	157.275					
2085	w), xx)	161.875	161.875	x (digital only)			
26	w)	157.300	161.900		x	x	x
1026	w)	157.300					
2026	w)		161.900				
86	w)	157.325	161.925		x	x	x
1086	w)	157.325					
2086	w)		161.925				
27	z)	157.350	161.950			x	x
1027	z), zz)	157.350	157.350		x		
2027*	z)	161.950	161.950				
87	z), zz)	157.375	157.375		x		
28	z)	157.400	162.000			x	x
1028	z), zz)	157.400	157.400		x		
2028*	z)	162.000	162.000				
88	z), zz)	157.425	157.425		x		
AIS 1	f), l), p)	161.975	161.975				
AIS 2	f), l), p)	162.025	162.025				

\*) From 1 January 2019, channel 2027 will be designated as ASM 1 and channel 2028 will be designated as ASM 2.

### Specific provisions:

- f) The frequencies 156.300 MHz (channel 06), 156.525 MHz (channel 70), 156.800 MHz (channel 16), 161.975 MHz (AIS 1) and 162.025 MHz (AIS 2) may also be used by aircraft stations for the purpose of search and rescue operations and other safety-related communication.
- g) In territorial waters, channels 15 and 17 may also be used for on board communications provided the effective radiated power does not exceed 1 W.

- h)* If so required, channels 10, 67 and 73 may also be used for communication between ship stations, aircraft stations and participating land stations engaged in coordinated search and rescue and anti-pollution operations in local areas.
- j)* Channel 70 is to be used exclusively for digital selective calling for distress, safety and calling.
- k)* Channel 13 is designated for use on a worldwide basis as a navigation safety communication channel, primarily for intership navigation safety communications.
- l)* Channels AIS 1 and AIS 2 are used for an automatic identification system (AIS) capable of providing worldwide operation.
- m)* These channels may be operated as single frequency channels subject to compliance with the following conditions:
- The lower frequency portion of these channels may be operated as single frequency channels by ship and coast stations.
  - Transmission using the upper frequency portion of these channels is limited to coast stations.
  - The upper frequency portion of these channels may be used by ship stations for transmission. All precautions should be taken to avoid harmful interference to Channels AIS 1, AIS 2, 2027 and 2028.
- mm)* Transmission on these channels is limited to coast stations. These channels may also be used by ship stations for transmission. All precautions should be taken to avoid harmful interference to Channels AIS 1, AIS 2, 2027, 2028.
- n)* With the exception of AIS, the use of Channels 75 and 76 should be restricted to navigation-related communications only and all precautions should be taken to avoid harmful interference to channel 16, by limiting the output power to 1 W.
- p)* Channels AIS 1 and AIS 2 may be used by the mobile-satellite service (Earth-to-space) for the reception of AIS transmissions from ships.
- q)* When using Channels 10 and 11, all precautions should be taken to avoid harmful interference to Channel 70.
- r)* This frequency is reserved for experimental use for future applications or systems.
- s)* Channels 75 and 76 are also allocated to the mobile-satellite service (Earth-to-space) for the reception of long-range AIS broadcast messages from ships (Message 27).
- w)* The frequency bands 157.200-157.325 MHz and 161.800-161.925 MHz (corresponding to Channels: 24, 84, 25, 85, 26 and 86) are earmarked for the utilization of the VHF Data Exchange System (VDES) described in ITU-R M.2092 as from a date to be established by the Authority, which date and any relevant attendant information shall be published by the Authority on its website. These frequency bands may also be used for analogue modulation described ITU-R M.1084 subject to not causing harmful interference to nor claiming protection from other stations in the maritime mobile service using digitally modulated emissions.
- xx)* As from a date to be established by the Authority which date shall be published on its website, the Channels 24, 84, 25 and 85 may be merged in order to form a unique duplex channel with a

bandwidth of 100 kHz in order to operate the VHF Data Exchange System (VDES) terrestrial component described in ITU-R M.2092.

- y) These channels may be operated as single or duplex frequency channels.
- z) From 1 January 2019, these channels are each split into two simplex channels. The Channels 2027 and 2028 designated as ASM 1 and ASM 2 are used for application specific messages (ASM) as described in ITU-R M.2092.
- zz) From 1 January 2019, Channels 1027, 1028, 87 and 88 are to be used as single frequency analogue channels for port operation and ship movement.

**Additional Specific Provisions:**

- aa) Channel 09 - Pilotage and mooring (MMP) and pilot launch.
- ab) Channels 10, 68 and 74 - Towage (tug working channels).
- ac) Channel 11 - Navigational warnings / weather broadcasts.
- ad) Channel 12 - Valletta port control.
- ae) Channel 13 - Terminals / Marinas.
- af) Channel 14 - Marsaxlokk port control.
- ag) Channel 20 - Navigational assistance / special instructions to a specific ship.
- ah) Channel 22 - Emergency operations / oil pollution, etc.
- ai) Channel 69 - Malta Vessel Traffic System.”.

6. The Second Schedule of the principal regulations shall be substituted with the following:

Amends the Second Schedule of the principal regulations.

“SECOND SCHEDULE  
(Regulation 3)

General Authorisation for Wideband Data Transmission Systems

1. This General Authorisation applies to any person installing or using a wideband data transmission system or any apparatus intended to be used as a component part of that system.

Applicability of Second Schedule.

2. In this Schedule unless the context otherwise requires:

Interpretation.

“EN 301 893” means the harmonised European standard for 5 GHz wireless access systems including radio local area network equipment covering the essential requirements of article 3.2 of Directive 2014/53/EU;

“wideband data transmission system” means radiocommunications apparatus that use wideband modulation techniques to access the spectrum, including wireless access systems such as radio local area networks;

3. (1) The minimum technical parameters of wideband data transmission systems shall be those specified in the Annex to this Schedule. Minimum technical parameters.

(2) Any person enjoying this general authorisation may have in his possession or under his control a wideband data transmission system, but with technical parameters different from those specified in the Annex to this Schedule:

Provided that in operating such wideband data transmission systems the person enjoying this general authorisation shall ensure compliance with the technical parameters specified in the Annex to this Schedule.

### ANNEX TO THE SECOND SCHEDULE

(Paragraph 3 of the Second Schedule)

#### Minimum Technical Parameters of Wideband Data Transmission Systems

Frequency Band	Transmit power limit / power density limit	Additional parameters	Other usage restrictions
863-868 MHz	25mW e.r.p	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 2014/53/EU must be used.  Bandwidth: $\leq 1$ MHz  Duty cycle: $\leq 10\%$ for network access points  Duty cycle: $\leq 2.8\%$ otherwise	This set of usage conditions is only available for wideband SRDs in data networks
2400-2483.5 MHz	100 mW e.i.r.p. 100 mW/100 kHz e.i.r.p. density applies when frequency hopping modulation is used. 10 mW/MHz e.i.r.p. density applies when other types of modulation are used.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 2014/53/EU must be used.	
5150-5250 MHz	200 mW mean e.i.r.p. 10 mW/MHz e.i.r.p. density in any 1 MHz band.		Indoor use only.

Frequency Band	Transmit power limit / power density limit	Additional parameters	Other usage restrictions
5250-5350 MHz	200 mW mean e.i.r.p. 10 mW/MHz e.i.r.p. density in any 1 MHz band.	Transmitter power control (TPC) shall be employed to provide, on average, a mitigation factor of at least 3 dB on the maximum permitted transmit power of the system. If TPC is not in use, the maximum permitted transmit power and maximum permitted power density limits shall be reduced by 3 dB.	Indoor use only.
5470-5725 MHz	1 W mean e.i.r.p. 50 mW/MHz e.i.r.p. density in any 1 MHz band.	Systems shall use mitigation techniques that give at least the same protection as the detection, operational and response requirements described in EN 301 893 to ensure compatible operation with radiodetermination systems. Such mitigation techniques shall equalise the probability of selecting a specific channel for all available channels so as to ensure, on average, a near-uniform spread of the spectrum loading.	
57.0-66.0 GHz	40 dBm mean e.i.r.p. 13 dBm/MHz e.i.r.p. density.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 2014/53/EU must be used.	Fixed outdoor installations are excluded.

7. The Annex to the Fourth Schedule of the principal regulations shall be amended as follows:

Amends the Fourth Schedule of the principal regulations.

- a) The words “R&TTE Regulations” shall be substituted with the words “Directive 2014/53/EU”.
- b) The text “Video applications are excluded” listed in the field “Other usage parameters” of frequency band 40.66-40.7 MHz, shall be deleted.
- c) The text “Analogue audio applications other than voice are excluded” and “Analogue video applications are excluded” listed in the field “Other usage parameters” of frequency band 863-865 MHz, shall be deleted.
- d) The frequency band 122-123 GHz, shall be substituted with the following two new entries:

Frequency band	Transmit power limit/ field strength limit / power density limit	Additional parameters	Other usage parameters
122-122.25 GHz	10 dBm e.i.r.p./ 250 MHz and - 48 dBm/MHz at 30° elevation		
122.25-123 GHz	100 mW e.i.r.p.		

“

8. The Sixth Schedule of the principal regulations shall be amended as follows:

- (a) paragraph 3 thereof shall be deleted;
- (b) paragraphs 4 and 5 thereof shall be renumbered as paragraphs 3 and 4, and
- (c) in the Annex thereof, for the words “Paragraph 4 of the Sixth Schedule” there shall be substituted the words “Paragraph 3 of the Sixth Schedule”.

Amends the Sixth Schedule of the principal regulations.

9. The Seventh Schedule of the principal regulations shall be substituted with the following:

Amends the Seventh Schedule of the principal regulations.

**“SEVENTH SCHEDULE  
(Regulation 3)**

**General Authorisation for Low duty cycle /high reliability devices**

1. This General Authorisation applies to any person installing or using Low duty cycle /high reliability devices or any apparatus intended to be used as a component part of these devices.

2. In this Schedule:

“low duty cycle/high reliability devices” means radiocommunications apparatus that rely on low overall spectrum utilisation and low duty cycle spectrum access rules to ensure highly reliable spectrum access and transmissions in shared bands, which include alarm systems that use radiocommunication for indicating an alert condition at a distant location and social alarms systems that allow reliable communication for a person in distress;

“alarms” means radiocommunications apparatus for indicating an alert to a system or a person, as a main functionality, at a distant location;

“social alarms” means radiocommunications apparatus that allow reliable communication for a person in distress.

3. The minimum technical parameters of Low duty cycle /high reliability devices shall be those specified in the Annex to this Schedule.

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ANNEX TO THE SEVENTH SCHEDULE

(Paragraph 3 of the Seventh Schedule)

Minimum Technical Parameters for Low duty cycle /high reliability devices

Frequency band	Transmit power limit/ field strength limit / power density limit	Additional parameters	Other usage parameters
868.6-868.7 MHz	10 mW e.r.p.	Channel spacing: 25 kHz.  The whole frequency band may also be used as a single channel for high-speed data transmission.  Duty cycle limit: 1.0%	This set of usage conditions is only available to alarms.
869.2-869.25 MHz	10 mW e.r.p.	Channel spacing: 25 kHz.  Duty cycle limit: 0.1%	This set of usage conditions is only available to social alarms.
869.25-869.3 MHz	10 mW e.r.p.	Channel spacing: 25 kHz.  Duty cycle limit: 0.1%	This set of usage conditions is only available to alarms.
869.3-869.4 MHz	10 mW e.r.p.	Channel spacing: 25 kHz.  Duty cycle limit: 1%	This set of usage conditions is only available to alarms.
869.65-869.7 MHz	25 mW e.r.p.	Channel spacing: 25 kHz.  Duty cycle limit: 10%	This set of usage conditions is only available to alarms.

10. The Eighth Schedule of the principal regulations shall be substituted with the following:

Amends the Eighth Schedule of the principal regulations.

“EIGHTH SCHEDULE

(Regulation 3)

General Authorisation for High duty cycle/continuous transmission devices

1. This General Authorisation applies to any person installing or using high duty cycle/continuous transmission devices or any apparatus intended to be used as a component part of these devices.

2. In this Schedule:

“high duty cycle/continuous transmission devices” means radiocommunications apparatus that rely on low latency and high duty cycle transmissions, which includes devices for personal wireless audio and multimedia streaming systems used for combined audio/video transmissions and audio/video sync signals, mobile phones, automotive or home entertainment system, wireless microphones, cordless loudspeakers, cordless headphones, radio devices carried on a person, assistive listening devices, in-ear monitoring, wireless microphones for use at concerts or other stage productions, and low power analogue FM transmitters.

3. The minimum technical parameters of high duty cycle/continuous transmission devices shall be those specified in the Annex to this Schedule.

ANNEX TO THE EIGHTH SCHEDULE

(Paragraph 3 of the Eighth Schedule)

Minimum Technical Parameters of High duty cycle/continuous transmission devices

Frequency band	Transmit power limit/ field strength limit / power density limit	Additional parameters	Other usage parameters
87.5-108 MHz	50 nW e.r.p.	Channel spacing: up to 200 kHz.	This set of usage conditions is only available to wireless audio and multimedia streaming transmitters with analogue frequency modulation (FM).
863-865 MHz	10 mW e.r.p.		This set of usage conditions is only available to wireless audio and multimedia streaming devices.

11. The Tenth Schedule of the of the principal regulations shall be substituted with the following:

Amends the Tenth Schedule of the principal regulations.

“TENTH SCHEDULE

(Regulation 3)

General Authorisation for PMR 446 Radiocommunications Apparatus

1. This Schedule applies to any person installing or using PMR 446 radiocommunications apparatus or any apparatus intended to be used as a component of that apparatus.

Applicability of Tenth Schedule.

2. In this Schedule unless the context otherwise requires:

Interpretation.

“PMR 446 radiocommunications apparatus” means hand portable radiocommunications apparatus that uses integral antennas



only in order to maximise sharing and minimise interference.

3. (1) PMR 446 radiocommunications apparatus shall operate in peer-to-peer mode and shall not be used as part of an infrastructure network or as a repeater. Minimum technical parameters and limitations.

(2) The minimum technical parameters of PMR 446 radiocommunications apparatus shall be those specified in the Annex to this Schedule.

## ANNEX TO THE TENTH SCHEDULE

(Paragraph 3 of the Tenth Schedule)

### Minimum Technical Parameters of PMR 446 radiocommunications apparatus

Frequency band	Transmit power limit/ field strength limit / power density limit	Other usage parameters
446-446.2 MHz	500 mW e.r.p.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 2014/53/EU must be used.

12. The Eleventh Schedule to the principal regulations shall be amended as follows:

Amends the Eleventh Schedule of the principal regulations.

(a) in paragraph 2 thereof, the definition of “ETSI EN 302 435” shall be substituted by the following:

“ “ETSI EN 302 065-4” means Short Range Devices (SRD) using Ultra Wide Band technology (UWB); Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU; Part 4: Material Sensing devices using UWB technology below 10,6 GHz;”;

(b) in paragraph 2 thereof, the definition of “total radiated power spectral density” shall be substituted by the following:

“ “total power spectral density” means the average of the mean power spectral density values measured over a sphere around the measurement scenario with a resolution of at least 15 degree. The detailed measuring setup is contained within ETSI EN 302 065-4;”;

(c) in the Annex thereof, the following shall immediately be added at the end of the Annex:

“5. Material sensing devices using UWB technology

5.1 Material sensing devices

Material sensing devices permitted under this Schedule shall fulfil the following requirements:

- *Fixed installation (application A)*
  - The transmitter has to switch off if the machine is not running, “running sensor”;
  - The transmitter shall implement a TPC with a dynamic range of 10 dB, as described in the harmonised standard ETSI EN 302 065-4 for material sensing devices;
  - The transmitter shall be attached to a fixed installation.
  
- *Non-fixed installation (application B)*
  - Transmitter-on only if manually operated with a non-locking switch (e.g. it may be a sensor for the presence of the operators hand) plus being in contact or close proximity to the investigated material and the emissions being directed into the direction of the object (e.g. measured by a proximity sensor or imposed by the mechanical design);
  - The transmitter has to switch off if the machine is not running, “running sensor”.

Emissions radiating from material sensing devices permitted under this decision shall be kept to a minimum and in any case not exceed the e.i.r.p. density limits within the following Table. The compliance with the limits of the following Table for non-fixed installations (application B) has to be ensured with the device on a representative structure of the investigated material (e.g. representative wall as defined in ETSI EN 302 065-4).

Frequency range	Fixed installations (Application A)		Non-fixed installations (Application B) Maximum mean power spectral density (e.i.r.p)
	Maximum mean power spectral density (e.i.r.p)	Maximum mean power spectral density (e.i.r.p) in the horizontal plane (-20° to 30° elevation)	
Below 1.73 GHz	-85 dBm/MHz		-85 dBm/MHz
1.73 to 2.2 GHz	-65 dBm/MHz	-70 dBm /MHz	-70 dBm/MHz
2.2 to 2.5 GHz	-50 dBm/MHz		-50 dBm/MHz
2.5 to 2.69 GHz	-65 dBm/MHz <sup>1</sup>	-70dBm/MHz	-65 dBm/MHz <sup>1 and 2</sup>
2.69 to 2.7 GHz	-55 dBm/MHz	-75 dBm/MHz	-70 dBm/MHz <sup>3</sup>
2.7 to 2.9 GHz	-50 dBm/MHz	-70 dBm/MHz	-70 dBm/MHz
2.9 to 3.4 GHz	-50 dBm/MHz	-70 dBm/MHz	-70 dBm/MHz <sup>1</sup>
3.4 to 3.8 GHz	-50 dBm/MHz	-70 dBm/MHz	-50 dBm/MHz <sup>2 and 3</sup>
3.8 to 4.8 GHz	-50 dBm/MHz		-50 dBm/MHz
4.8 to 5 GHz	-55 dBm/MHz	- 75 dBm/MHz	-55 dBm/MHz <sup>2 and 3</sup>
5 to 5.25 GHz	-50 dBm/MHz		-50 dBm/MHz
5.25 to 5.35 GHz	-50 dBm/MHz	- 60 dBm/MHz	-60 dBm/MHz
5.35 to 5.6 GHz	-50 dBm/MHz		-50 dBm/MHz
5.6 to 5.65 GHz	-50 dBm/MHz	-65 dBm/MHz	-65 dBm/MHz
5.65 to 5.725 GHz	-50 dBm/MHz	-60 dBm/MHz	-60 dBm/MHz
5.725 to 8.5 GHz	-50 dBm/MHz		-50 dBm/MHz
8.5 to 10.6 GHz	-65 dBm/MHz		-65 dBm/MHz
Above 10.6 GHz	-85 dBm/MHz		-85 dBm/MHz

The peak power (in dBm) measured in a bandwidth of 50 MHz shall be less than a limit that is obtained by adding a conversion factor (25 dB) to the ‘maximum mean power spectral density’ (in dBm/MHz) limit.

<sup>1</sup> Devices using a Listen Before Talk (LBT) mechanism, as described in the harmonised standard ETSI EN 302 065-4, are permitted to operate in frequency ranges 2.5 to 2.69 and 2.9 to 3.4 GHz with a maximum mean power spectral density of -50 dBm/MHz.

<sup>2</sup> To protect the radio services, non-fixed installations (application B) must fulfil the following requirement for total radiated power spectral density:

- a) In the frequency ranges 2.5 to 2.69 GHz and 4.8 to 5 GHz, the total radiated power spectral density has to be 10 dB below the maximum mean power spectral density;
- b) In the frequency ranges 3.4 to 3.8 GHz, the total radiated power spectral density has to be 5dB below the maximum mean power spectral density.

<sup>3</sup> Limitation of the Duty Cycle to 10% per second.

## 5.2 Building material analysis devices (BMA)

1. BMA devices permitted under this Schedule shall fulfil the following requirements:

- a) transmitter-on only if manually operated with a non-locking switch plus being in contact or close proximity to the investigated material and the emissions being directed into the direction of the object;
  - b) the BMA transmitter has to switch-off after max 10s without movement;
  - c) the total radiated power spectral density has to be 5 dB below the maximum mean power spectral density limits in the table below.
2. Emissions radiating from BMA devices shall be kept to a minimum and in any case not exceed the maximum power limits within the table below with the BMA device on a representative wall as defined within ETSI EN 302 065-4.

<b>Technical requirements</b>		
<b>Frequency range</b>	<b>Maximum mean power spectral density (e.i.r.p)</b>	<b>Maximum peak power (e.i.r.p) (defined in 50 MHz)</b>
Below 1.73 GHz	-85 dBm/MHz <sup>1</sup>	-45 dBm
1.73 to 2.2 GHz	-65 dBm/MHz	-25 dBm
2.2 to 2.5 GHz	-50 dBm/MHz	-10 dBm
2.5 to 2.69 GHz	-65 dBm/MHz <sup>1</sup>	-25 dBm
2.69 to 2.7 GHz	-55 dBm/MHz <sup>2</sup>	-15 dBm
2.7 to 3.4 GHz	-70 dBm/MHz <sup>1</sup>	-30 dBm
3.4 to 4.8 GHz	-50 dBm/MHz	-10 dBm
4.8 to 5 GHz	-55 dBm/MHz <sup>2</sup>	-15 dBm
5 to 8.5 GHz	-50 dBm/MHz	-10 dBm
Above 8.5 GHz	-85 dBm/MHz	-45 dBm

- <sup>1</sup> Devices using a Listen Before Talk (LBT) mechanism described in the harmonised standard ETSI EN 302 065-4 are permitted to operate in frequency range 1.215 to 1.73 GHz with a maximum mean power spectral density of – 70 dBm/MHz and in the frequency ranges 2.5 to 2.69 and 2.7 to 3.4 GHz with a maximum mean power spectral density of -50 dBm/MHz.
- <sup>2</sup> To protect the Radio Astronomy Service (RAS) bands 2.69 to 2.7 GHz and 4.8 to 5 GHz, the total radiated power spectral density has to be below -65 dBm/MHz.”.

- 13.** The Annex of the Twelfth Schedule shall be substituted with the following: Amends the Twelfth Schedule of the principal regulations.

“ANNEX TO THE TWELFTH SCHEDULE

(Paragraph 3 of the Twelfth Schedule)

Minimum Technical Parameters of RFID

Frequency band	Transmit power limit/ field strength limit / power density limit	Additional parameters	Other usage parameters
400-600 kHz	-8 dB $\mu$ A/m at 10 meters		
13553-13567 kHz	60 dB $\mu$ A/m at 10 meters	The transmission mask and antenna requirements for all combined frequency segments have to provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 2014/53/EU.	
865-868 MHz	2 W e.r.p. Interrogator transmissions at 2 W e.r.p. are only permitted within the four channels centred at 865.7 MHz, 866.3 MHz, 866.9 MHz and 867.5 MHz; each with a maximum bandwidth of 200 kHz.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 2014/53/EU must be used.	
2446.0-2454.0	500 mW e.i.r.p.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 2014/53/EU must be used.	
2446.0-2454.0	>500 mW to 4 W e.i.r.p.	Duty cycle limit: 15% in any 200 ms period.	Restricted to be used inside the boundaries of a building.

- 14.** The Annex to the Thirteenth Schedule of the principal regulations shall be substituted with the following: Amends the Thirteenth Schedule of the principal regulations.

“ANNEX TO THE THIRTEENTH SCHEDULE

(Paragraph 3 of the Thirteenth Schedule)

Minimum Technical Parameters of Radiocommunications apparatus for tracking, tracing and data acquisition

Frequency band	Transmit power limit/	Additional parameters	Other usage parameters
169.4-169.475 MHz	500 mW e.i.r.p.	Channel spacing: ≤50 kHz.  Duty cycle limit: 10%.	This set of usage conditions is only available to metering devices.
2483.5-2500 MHz	1 mW e.i.r.p.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 2014/53/EU must be used.  Modulation bandwidth: ≤ 3 MHz.  Duty cycle limit: ≤ 10%.	The set of usage conditions is only available for medical body area network systems for indoor use within healthcare facilities.
2483.5-2500 MHz	10 mW e.i.r.p.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 2014/53/EU must be used.  Modulation bandwidth: ≤ 3 MHz.  Duty cycle limit: ≤ 2%.	The set of usage conditions is only available for medical body area network systems for indoor use within a person's home.

**15.** The Fourteenth Schedule to the principal regulations shall be amended as follows:

- (a) sub-paragraph (3) of paragraph 4 thereof shall be deleted;
- (b) The Annex to the Fourteenth Schedule shall be substituted with the following:

Amends the Fourteenth Schedule of the principal regulations.

“ANNEX TO THE FOURTEENTH SCHEDULE

(Paragraph 4 of the Fourteenth Schedule)

**1. Frequency bands and systems allowed for MCA Services**

Table 1

<b>Type</b>	<b>Frequency</b>	<b>System</b>
GSM 1 800	1710-1785 MHz (uplink) 1805-1880 MHz (downlink)	GSM complying with the GSM Standards as published by ETSI, in particular EN 301 502, EN 301 511 and EN 302 480, or equivalent specifications.
UMTS 2 100 (FDD)	1920-1980 MHz (uplink) 2110-2170 MHz (downlink)	UMTS complying with the UMTS Standards as published by ETSI, in particular EN 301 908-1, EN 301 908-2, EN 301 908-3 and EN 301 908-11, or equivalent specifications.
LTE 1 800 (FDD)	1710-1785 MHz (uplink) 1805-1880 MHz (downlink)	LTE complying with LTE Standards, as published by ETSI, in particular EN 301 908-1, EN 301 908-13, EN 301 908-14, and EN 301 908-15, or equivalent specifications.

**2. Prevention of connection of mobile terminals to ground networks**

Mobile terminals receiving within the frequency bands listed in Table 2 must be prevented from attempting to register with UMTS mobile networks on the ground:

- by the inclusion, in the Apparatus for Mobile Communication Services on Aircraft, of an NCU, which raises the noise floor inside the cabin in mobile receive bands, and/or;
- by aircraft fuselage shielding to further attenuate the signal entering and leaving the fuselage.

Table 2

<b>Frequency bands (MHz)</b>	<b>Systems on the ground</b>
925-960 MHz	UMTS (and GSM, LTE)
2110-2170 MHz	UMTS (and LTE)

A person enjoying a general authorisation in accordance with this Schedule may also decide to implement an NCU in the other frequency bands listed in Table 3.

Table 3

Frequency bands (MHz)	Systems on the ground
460-470 MHz	LTE
791-821 MHz	LTE
1805-1880 MHz	LTE and GSM
2620-2690 MHz	LTE
2570-2620 MHz	LTE

### 3. Technical parameters

#### (a) Equivalent isotropic radiated power (e.i.r.p.), outside the aircraft, from the NCU/aircraft BTS/aircraft Node B

Table 4

The total e.i.r.p., outside the aircraft, from the NCU/aircraft BTS/aircraft Node B must not exceed:

Height above ground (m)	Maximum e.i.r.p. of the System outside the aircraft in dBm/channel		
	NCU	Aircraft BTS/ Aircraft Node B	Aircraft BTS/Aircraft Node B and NCU
	Band: 900 MHz	Band: 1800 MHz	Band: 2100 MHz
	Channel Bandwidth= 3.84 MHz	Channel Bandwidth= 200 kHz	Channel Bandwidth= 3.84 MHz
3000	-6.2	-13.0	1.0
4000	-3.7	-10.5	3.5
5000	-1.7	-8.5	5.4
6000	-0.1	-6.9	7.0
7000	1.2	-5.6	8.3
8000	2.3	-4.4	9.5

#### (b) Equivalent isotropic radiated power (e.i.r.p.), outside the aircraft, from the on board terminal

Table 5

The e.i.r.p., outside the aircraft, from the mobile terminal must not exceed:

Height above ground (m)	Maximum e.i.r.p., outside the aircraft, from the GSM mobile terminal in dBm/200 kHz	Maximum e.i.r.p., outside the aircraft, from the LTE mobile terminal in dBm/5 MHz	Maximum e.i.r.p., outside the aircraft, from the UMTS mobile terminal in dBm/3.84 MHz
	GSM 1800 MHz	LTE 1800 MHz	UMTS 2100 MHz
3000	-3.3	1.7	3.1
4000	-1.1	3.9	5.6
5000	0.5	5	7



Height above ground (m)	Maximum e.i.r.p., outside the aircraft, from the GSM mobile terminal in dBm/200 kHz	Maximum e.i.r.p., outside the aircraft, from the LTE mobile terminal in dBm/5 MHz	Maximum e.i.r.p., outside the aircraft, from the UMTS mobile terminal in dBm/3.84 MHz
	GSM 1800 MHz	LTE 1800 MHz	UMTS 2100 MHz
6000	1.8	5	7
7000	2.9	5	7
8000	3.8	5	7

When a person enjoying a general authorisation in accordance with this Schedule decides to implement an NCU in the frequency bands listed in Table 3, the maximum values indicated in Table 6 apply for the total e.i.r.p. outside the aircraft, from the NCU/aircraft BTS/aircraft Node B, in conjunction with the values mentioned in Table 4.

Table 6

Height above ground (m)	Maximum e.i.r.p. outside the aircraft, from the NCU/aircraft BTS /aircraft Node B			
	460-470 MHz	791-821 MHz	1805-1880 MHz	2570-2690 MHz
	dBm/1.25 MHz	dBm/10 MHz	dBm/200 kHz	dBm/4.75 MHz
3000	-17.0	-0.87	-13.0	1.9
4000	-14.5	1.63	-10.5	4.4
5000	-12.6	3.57	-8.5	6.3
6000	-11.0	5.15	-6.9	7.9
7000	-9.6	6.49	-5.6	9.3
8000	-8.5	7.65	-4.4	10.4

**(c) Operational requirements**

- I. The minimum height above ground for any transmission from Apparatus for Mobile Communications Services on Aircraft in operation must be 3000 metres.
- II. The aircraft BTS, while in operation, must limit the transmit power of all *GSM* mobile terminals transmitting in the 1800 MHz band to a nominal value of 0 dBm/200 kHz at all stages of communication, including initial access.
- III. The aircraft Node B, while in operation, must limit the transmit power of all *LTE* mobile terminals transmitting in the 1800 MHz band to a nominal value of 5 dBm/5 MHz at all stages of communication.
- IV. The aircraft Node B, while in operation, must limit the transmit power of all *UMTS* mobile terminals transmitting in the 2100 MHz band to a nominal value of -6 dBm/3.84 MHz at all stages of communication and the maximum number of users should not exceed 20.”.

16. In the Annex to the Fifteenth Schedule there shall be added the following new row under the row for the frequency band “169.4875-169.5875 MHz”:

Amends the Fifteenth Schedule of the principal regulations.

“

Frequency band	Transmit power limit/	Additional parameters	Other usage parameters
173.965-216 MHz	10 mW e.r.p.	<p>Channel spacing: 50 kHz maximum.</p> <p>A threshold of 35 dB<math>\mu</math>V/m is required to ensure the protection of a digital audio broadcasting (DAB) receiver located at 1.5 m from the assistive listening apparatus, subject to DAB signal strength measurements taken around the assistive listening apparatus operating site. The assistive listening apparatus should operate under all circumstances at least 300 kHz away from the channel edge of an occupied DAB channel.</p> <p>Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 2014/53/EU must be used.</p>	

**17.** In the Annex to the Sixteenth Schedule, for the words “Directive 1999/5/EC” wherever these words occur they shall be substituted with the words “Directive 2014/53/EU”.

Amends the Sixteenth Schedule of the principal regulations.

**18.** The Seventeenth Schedule to the principal regulations shall be amended as follows:

Amends the Seventeenth Schedule of the principal regulations.

(a) the title “General Authorisation for Earth Stations on Mobile Platforms” shall be substituted with the title “General Authorisation for Earth Stations on Mobile Platforms operating with Geostationary Satellite Networks”;

(b) in paragraph 1 thereof, immediately after the words “Earth Stations on Mobile Platforms” there shall be added the following words “operating with geostationary satellite networks”;

(c) in paragraph 2 thereof, the definition of “fixed-satellite service” shall be deleted;

(d) the title of the Annex thereof, shall be substituted with the words “General Authorisation for Earth Stations on Mobile Platforms operating with

Geostationary Satellite Networks”;

(e) in paragraph 5 of the Annex thereof, the words “R&TTE Regulations” shall be substituted with the words “Directive 2014/53/EU”.

19. In the Annex to the Eighteenth Schedule, the words “R&TTE Regulations” shall be substituted with the words “Directive 2014/53/EU”.

Amends the Eighteenth Schedule of the principal regulations.

20. The Annex to the Nineteenth Schedule of the principal regulations shall be amended as follows:

Amends the Nineteenth Schedule of the principal regulations.

a) The words “R&TTE Regulations” wherever these words occur they shall be substituted with the words “Directive 2014/53/EU”;

b) In the table thereof, the row for the frequency band “2483.5-2500 MHz” shall be substituted with the following:

Frequency band	Transmit power limit/	Additional parameters	Other usage parameters
2483.5-2500 MHz	10 mW e.i.r.p.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 2014/53/EU must be used.  Channel spacing: 1 MHz. The whole frequency band may also be used dynamically as a single channel for high-speed data transmissions.  Duty cycle limit: 10%.	This set of usage conditions is only available to active implantable medical devices.  Peripheral master units are for indoor use only.

21. In the Twenty-First Schedule to the principal regulations the definition of “ETSI EN 301 428” shall be substituted by the following:

Amends the Twenty-First Schedule of the principal regulations.

“ “ETSI EN 301 428” means Satellite Earth Stations and Systems (SES); Harmonised Standard for Very Small Aperture Terminal (VSAT); Transmit-only, transmit/receive or receive-only satellite earth stations operating in the 11/12/14 GHz frequency bands covering the essential requirements of article 3.2 of Directive 2014/53/EU;”.

22. The Twenty-Fourth Schedule to the principal regulations shall be amended as follows:

Amends the Twenty-Fourth Schedule of the principal regulations.

(a) The definition of “EN 302 186” shall be substituted by the following:

“ “ETSI EN 302 186” means Satellite Earth Stations and Systems (SES);

Harmonised Standard for satellite mobile Aircraft Earth Stations (AESs) operating in the 11/12/14 GHz frequency bands covering the essential requirements of Article 3.2 of the Directive 2014/53/EU;”;

- (b) Immediately after sub-paragraph (2) of paragraph 4 to the Twenty-Fourth Schedule of the principal regulations, there should be added the following new sub-paragraph:

“ (3) The operation of an Aircraft earth station on the ground, may be subject to any condition or limitation, however so described, which could be imposed by the Authority or the competent authority responsible for the aviation sector.”.

23. The Twenty-Fifth Schedule to the principal regulations shall be amended as follows:

Amends the Twenty-fifth Schedule of the principal regulations.

- (a) immediately after sub-paragraph (3) of paragraph 4 thereof there shall be added the following new sub-paragraphs;

“ (4) In cases where the Earth station on board vessels operates in the 5925 - 6425 MHz band and where the same Earth station is installed on a vessel which is located at a distance which is less than 300 km from the low water mark of a country, the person operating the same Earth station shall seek the prior approval of the competent authorities of that country prior operating the Earth station on board vessels from that location:

Provided that the Earth station on board vessels shall cease its transmissions in the event that a country experiences harmful interference caused by the Earth station on board vessel.

(5) In cases where the Earth station on board vessels operates in the 14.0 - 14.5 GHz band and where the same Earth station is installed on a vessel which is located at a distance which is less than 125 km from the low water mark of a country, the person operating the Earth station on board vessels shall seek the prior approval of the competent authorities of that country prior operating the Earth station on board vessels from that location:

Provided that the Earth station on board vessels shall cease its transmissions in the event that a country experiences harmful interference caused by the Earth station on board vessels.”;

- (b) in table (a) “ESV operating in the 4/6 GHz frequency bands” of the Annex thereof, the number “17 dBW” shall be substituted with the number “17 dBW/MHz”;
- (c) in table (b) “ESV operating in the 11/12/14 GHz frequency bands” of the Annex thereof, the number “12.5 dBW” shall be substituted with the number “12.5 dBW/MHz”;

24. The Annex to the Twenty-Sixth Schedule, shall be amended as follows:

Amends the Twenty-Sixth

(a) for the words “R&TTE Regulations” there shall be substituted with the words “Directive 2014/53/EU”;

(b) in the table thereof, the text for the frequency band “5795-5805 MHz” shall be substituted with the text “5795-5815 MHz”;

(c) in the table thereof, there shall be added the following new row after the frequency band “76-77 GHz”:

“

Frequency band	Transmit power limit/ field strength limit / power density limit	Additional parameters	Other usage parameters
76-77 GHz	30 dBm peak e.i.r.p. and  3dBm/MHz average power spectral density	Duty cycle limit ≤ 56 %/s	This set of usage conditions is only available to obstacle detection systems for rotorcraft use.

“

**25.** The Twenty-Seventh Schedule of the principal regulations shall be amended as follows:

Amends the Twenty-Seventh Schedule of the principal regulations.

- (a) paragraph 4 thereof shall be deleted; and
- (b) paragraphs 5 and 6 thereof shall be renumbered as paragraphs 4 and 5.

**26.** Sub-paragraph (1) of paragraph 3 of the Twenty-Ninth Schedule of the principal regulations shall be substituted by the following new paragraph:

Amends the Twenty-Ninth Schedule of the principal regulations.

“Limitations 3. (1) A dealer shall only program those radio frequencies or channels, however so described, which were assigned by the Authority in writing to a person following receipt of a written request for the assignment of a radio frequency or channel:

Provided that in programing the apparatus with the said radio frequencies or channels, however so described, the dealer shall also observe any technical conditions or limitations, however so described, which the Authority could impose when assigning the same radio frequencies or channels:

Provided further that the programming in apparatus of radio frequencies or channels, however so described, other than those assigned in writing by the Authority shall be considered to be a breach to the Act.”.

**27.** The Thirty-First Schedule of the principal regulations shall be amended as follows:

Amends the Thirty-first Schedule of the principal regulations.

- (a) paragraph 4 thereof shall be deleted;

- (b) paragraph 5 thereof shall be renumbered as paragraph 4;
- (c) paragraph 5 as renumbered shall be substituted with the following:

“4. (1) The use of wireless audio PMSE apparatus on the frequency range of operation between 694 MHz and 790 MHz is not permitted after 31 December 2020.

(2) The Authority may, in accordance with the provision of article 27 of the Act, after publishing a notice in its official website, impose additional limitations regarding the use of wireless audio PMSE apparatus in the frequency range of operation between 470 MHz and 782 MHz:

Provided that such notice shall be published at least 60 days prior to imposing such additional limitations:

Provided further that such additional limitations may also relate to the restriction of sub-bands within the same frequency range of operation by wireless audio PMSE apparatus.

(3) Any person who intends to use wireless audio PMSE apparatus on the frequency range of operation between 823 MHz and 832 MHz shall provide to the Authority his contact information. This information may be used by the Authority in cases relating to harmful interference.”; and

- (d) the Table under “A1. Minimum Technical Parameters for Wireless Audio PMSE apparatus” shall be substituted with the following new table:

“

Frequency Band	Transmit power limit	Additional parameters	Other usage parameters
29.7-34.9 MHz	30 mW e.r.p.	Channel spacing (maximum): 50 kHz	
37.5-40.98 MHz	30 mW e.r.p.	Channel spacing (maximum): 50 kHz	
470-526 MHz 534-550 MHz 558-566 MHz 574-582 MHz 590-606 MHz 614-646 MHz 654-662 MHz 670-750 MHz 758-766 MHz 774-782 MHz	50 mW e.r.p.		Refer to sub-paragraph 4(1), 4(2).
823-832 MHz	Refer to A2 below		Refer to sub-paragraph 4(3).
863-865 MHz	10 mW e.r.p.		

Frequency Band	Transmit power limit	Additional parameters	Other usage parameters
1785-1805 MHz	Refer to A3 below		

28. The Thirty-Second Schedule of the principal regulations shall be amended as follows:

Amends the Thirty-Second Schedule of the principal regulations.

(a) Paragraph 2 thereof shall be amended as follows:

(i) the definition of “mobile communication services on board vessels” or “MCV services” shall be substituted by the following:

“Cap. 399. “mobile communication services on board vessels” or “MCV services” means electronic communications service as defined in article 2 of the Electronic Communications (Regulation) Act provided by an undertaking to enable persons on board a vessel to communicate via public communication networks using a system subject to paragraph 3 hereto without establishing direct connections with land-based networks;”;

(ii) the definition of “vessel base transceiver station” or “vessel-BS” shall be substituted by the following:

“ “vessel base transceiver station” or “vessel-BS” means a mobile pico-cell located on a vessel and supporting GSM, LTE or UMTS services in compliance with the Annex to this Schedule;”;

(iii) immediately after the definition of “baseline”, the following new definition shall be added:

“ “Decision 2011/251/EU” means Commission Implementing Decision of 18 April 2011 amending Decision 2009/766/EC on the harmonisation of the 900 MHz and 1 800 MHz frequency bands for terrestrial systems capable of providing pan-European electronic communications services in the Community (2011/251/EU);”

(iv) immediately after the definition of “the 1800 MHz band”, the following new definitions shall be added:

“ “the 1900/2100 MHz bands” means the 1920-1980 MHz for uplink (terminal transmit, base station receive) and 2110-2170 MHz band for downlink (base station transmit, terminal receive);

“the 2600 MHz band” means the 2500-2570 MHz for uplink (terminal transmit, base station receive) and 2620-2690 MHz band for downlink (base station transmit, terminal receive);”;

(v) the definition of “territorial waters” or “territorial sea” shall be deleted;

(vi) immediately after the definition of “GSM system”, the following new definitions shall be added:

“ “LTE system” means an electronic communications network as defined in Decision 2011/251/EU;

“UMTS system” means an electronic communications network as defined in Decision 2011/251/EU;” and

(b) the Annex to the Thirty-Second Schedule shall be substituted with the following:

“ANNEX TO THE THIRTY-SECOND SCHEDULE

(Paragraph 3 of the Thirty-Second Schedule)

Minimum Technical Parameters for Mobile Communication  
Services On Board Vessels

**Conditions to be met by a system providing MCV services in the territorial seas of the Member States of the European Union, in order to avoid harmful interference to land-based mobile networks**

(1) Conditions to be met by GSM systems operating in the 900 MHz band and 1800 MHz band providing MCV services in the territorial seas of the Member States, in order to avoid harmful interference to land-based mobile networks

The following conditions shall apply:

- (a) The system providing MCV services shall not be used closer than 2 nautical miles<sup>1</sup> from the baseline, as defined in the United Nations Convention on the Law of the Sea;
- (b) Only indoor vessel-BS antenna(s) shall be used between 2 and 12 nautical miles from the baseline;
- (c) Limits to be set for mobile terminals when used on board vessel and for vessel-BS:

Parameter	Description
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<sup>1</sup> One nautical mile = 1852 metres



<b>Transmit power / power density</b>	For mobile terminals used on board vessels and controlled by the vessel-BS in the 900 MHz band, maximum radiated output power: 5 dBm
	For mobile terminals used on board vessels and controlled by the vessel-BS in the 1800 MHz band, maximum radiated output power: 0 dBm
	For base stations on board vessels, the maximum power density measured in external areas of the vessel, with reference to a 0 dBi measurement antenna gain: -80 dBm/200 kHz
<b>Channel access and occupation rules</b>	<p>Techniques to mitigate interference that provide at least equivalent performance to the following mitigation factors based on GSM standards shall be used:</p> <ul style="list-style-type: none"> <li>- between 2 and 3 nautical miles from the baseline, the receiver sensitivity and the disconnection threshold (ACCMIN<sup>2</sup> and min RXLEV<sup>3</sup> level) of the mobile terminal used on board vessel shall be equal to or higher than 70 dBm/200 kHz and between 3 and 12 nautical miles from the baseline equal to or higher than 75 dBm/200 kHz;</li> <li>- discontinuous transmission<sup>4</sup> shall be activated in the MCV system uplink direction;</li> <li>- the timing advance<sup>5</sup> value of the vessel-BS shall be set to the minimum.</li> </ul>

- (2) Conditions to be met by UMTS systems in the 1900/2100 MHz bands providing MCV services in the territorial seas of the Member States, in order to avoid harmful interference to land-based mobile networks

The following conditions shall apply:

- (a) the system providing MCV services shall not be used closer than two nautical miles from the baseline, as defined in the United Nations Convention on the Law of the Sea;
- (b) only indoor vessel-BS antenna(s) shall be used between two and twelve nautical miles from the baseline;
- (c) only bandwidth up to 5 MHz (duplex) can be used;

<sup>2</sup> ACCMIN (RX\_LEV\_ACCESS\_MIN); as described in GSM standard ETSI TS 144 018

<sup>3</sup> RXLEV (RXLEV-FULL-SERVING-CELL); as described in GSM standard ETSI TS 148 008

<sup>4</sup> Discontinuous transmission, or DTX; as described in GSM standard ETSI TS 148 008

<sup>5</sup> Timing advance; as described in GSM standard ETSI TS 144 018

- (d) limits to be set for mobile terminals when used on board vessel and for vessel-BS:

<b>Parameter</b>	<b>Description</b>
<b>Transmit power / power density</b>	For mobile terminals transmitting in the 1900 MHz band used on board vessels and controlled by the vessel-BS transmitting in the 2100 MHz band, maximum radiated output power:  0 dBm / 5 MHz
<b>Emissions on deck</b>	The vessel-BS emission on deck shall be equal or below -102 dBm / 5 MHz (Common Pilot Channel)
<b>Channel access and occupation rules</b>	Between 2 and 12 nautical miles from the baseline, the quality criteria (minimum required received signal level in the cell) shall be equal to or higher than:  -87 dBm / 5 MHz
	The Public Land Mobile Network selection timer shall be set to 10 minutes
	The timing advance parameter shall be set according to a cell range for the MCV distributed antenna system equal to 600 m
	The Radio Resource Control user inactivity release timer shall be set to 2 seconds
<b>Non alignment with land networks</b>	MCV carrier centre frequency shall not be aligned with land network carriers

- (3) Conditions to be met by LTE systems in the 1800 MHz band and 2600 MHz band providing MCV services in the territorial seas of the Member States, in order to avoid harmful interference to land-based mobile networks

The following conditions shall apply:

- (a) The system providing MCV services shall not be used closer than 4 nautical miles from the baseline, as defined in the United Nations Convention on the Law of the Sea;
- (b) Only indoor vessel-BS antenna(s) shall be used between 4 and 12 nautical miles from the baseline;
- (c) Only a bandwidth of up to 5 MHz (duplex) can be used per frequency band (1800 MHz and 2600 MHz);
- (d) Limits to be set for mobile terminals when used on board vessel and for vessel-BS:

<b>Parameter</b>	<b>Description</b>
<b>Transmit power / power density</b>	For mobile terminals used on board vessels and controlled by the vessel-BS in the 1 800 MHz band and 2600 MHz band, maximum radiated output power: 0 dBm
<b>Emissions on deck</b>	The vessel-BS emission on deck shall be equal or below -98 dBm / 5 MHz (equivalent to -120 dBm / 15 kHz)
<b>Channel access and occupation rules</b>	Between 4 and 12 nautical miles from the baseline, the quality criteria (minimum required received signal level in the cell) shall be equal to or higher than -83 dBm / 5 MHz (equivalent to -105 dBm / 15 kHz)
	Public Land Mobile Network selection timer shall be set to 10 minutes
	The timing advance parameter shall be set according to a cell range for the MCV distributed antenna system equal to 400 m
	Radio Resource Control user inactivity release timer shall be set to 2 seconds
<b>Non alignment with land networks</b>	MCV carrier centre frequency shall not be aligned with land network carriers

29. Immediately after the Thirty-Second Schedule to the principal regulations, there shall be added the following new Schedules:

Adds new Thirty-Third and Thirty-Fourth Schedules to the principal regulations.

“THIRTY-THIRD SCHEDULE

(Regulation 3)

General Authorisation for Radiobeacons

1. This General Authorisation applies to any person installing or using certain types of Radiobeacons or any apparatus intended to be used as a component part of that apparatus.

Applicability of Thirty-Third Schedule.

2. In this Schedule unless the context otherwise requires:

Interpretation.

“COSPAS-SARSAT” means an international satellite-based search and rescue distress alert detection and information distribution

system;

“EPIRB” means Emergency Position-Indicating Radio Beacon;

“homing device” means a beacon primarily intended for homing by aircraft;

“IBRD” means the International Beacon Registration Database maintained by COSPAS-SARSAT that is available at internet address <https://www.406registration.com/> or any other address as could be determined by COSPAS-SARSAT;

“PLB” means Personal Locator Beacon;

“radiobeacons” means radiocommunications apparatus such as an EPIRB or PLB, the emissions of which are intended to facilitate search and rescue operations;

“Rescue Coordination Centre” means the Armed Forces of Malta or any other entity which could be responsible for the coordination of maritime search and rescue operations; and

“Standard Location Protocol” is a means to identify a PLB using a unique serial number allocated by the PLB manufacturer accompanied with the COSPAS-SARSAT PLB type approval certificate number.

3. (1) Without prejudice to paragraph 1 of this Schedule, this general authorisation does not apply to EPIRBs installed permanently on ships which fall within the scope of the SOLAS Convention.

Conditions applicable to EPIRB.

(2) EPIRBs shall be capable to operate on the 406.0 to 406.1 MHz frequency band and shall be provided with a homing device operating on 121.5 MHz.

(3) EPIRBs shall be registered with Transport Malta or with any other competent authority as the Authority may consider appropriate in the circumstances.

(4) Any person enjoying a general authorisation in accordance with this Schedule shall ensure that the ship from where the EPIRB may be activated or used, however so described, is assigned an MMSI by the competent authority:

Provided that such a person shall also ensure that the EPIRB is duly programmed with the assigned MMSI:

(5) Without prejudice to paragraph 5 hereof, a person shall only activate or use, however so described, an EPIRB from on board a ship:

Provided further that the EPIRB programmed with the assigned MMSI shall only be activated or used on board the ship associated with the same MMSI:

Provided further that a person transferring or relocating, however so described, an EPIRB from one ship to another, shall seek the approval of the competent authority prior to installing the EPIRB on that other ship.

(6) An assigned MMSI is not transferable between ships.

4. (1) PLBs shall be capable to operate on the 406.0 to 406.1 MHz frequency band and shall be provided with a homing device operating on 121.5 MHz.

Conditions applicable to PLB.

(2) PLBs shall have an internal global navigation satellite system.

(3) Without prejudice to paragraph 5 hereof, PLBs shall only be activated from on board a ship or aircraft.

(4) Any person enjoying a general authorisation in accordance with this Schedule shall ensure that any PLB that is in his possession or under his control is duly registered in the IBRD:

Provided that a PLB shall not be carried on board a ship or aircraft unless the PLB is registered in the IBRD:

Provided further that such a person shall ensure that the details registered in the IBRD are accurate at all times and updated immediately if and whenever necessary.

(5) Any person enjoying a general authorisation in accordance with this Schedule shall ensure that any PLB that is in his possession or under his control shall be coded with the standard location protocol and programmed with maritime identification digit 256:

Provided that the programming of a PLB with an MMSI is prohibited.

(6) PLBs installed on a foreign registered ship or foreign registered aircraft whilst such ship or aircraft is in Malta shall observe the technical and operational terms, conditions and limitations, however so described, of these regulations.

(7) Any person enjoying a general authorisation in accordance with this Schedule shall ensure that any PLB that is carried on board a locally registered ship or aircraft whilst such ship or aircraft is located outside Malta shall observe the terms, conditions and limitations, however so described, that could apply in the area or location, however so described, where the ship or aircraft is positioned.

5. (1) Radiobeacons shall only be activated or used, however so described, for distress alerting:

Common conditions applicable to radiobeacons.

Provided that radiobeacons shall only be considered as a secondary means of distress alerting:

Provided further that if for any reason a radiobeacon is activated or used, however so described, inadvertently, the person noticing such activation or use shall immediately notify the Rescue Coordination Centre to cancel the distress alert.

(2) Any person enjoying a general authorisation in accordance with this Schedule shall ensure that prior to the disposal of a radiobeacon, the battery of the said radiobeacon is removed and the radiobeacon made inoperative.

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THIRTY-FOURTH SCHEDULE

(Regulation 3)

General Authorisation for Land and Maritime Earth Stations on Mobile Platforms (ESOMPs)  
operating with Non-Geostationary Satellite Networks

1. This Schedule applies to any person installing or using apparatus for Land and Maritime Earth Stations on Mobile Platforms operating with Non-Geostationary Satellite Networks or any apparatus intended to be used as a component part of that apparatus. Applicability of Thirty-Fourth Schedule.

2. In this Schedule: Interpretation.

“CEPT countries” means the countries or administrations that are members of the European Conference of Postal and Telecommunications Administrations;

"earth stations on mobile platforms" or "ESOMPs" means terminals with small directional antennas tracking the satellites for the provision of wireless broadband communication services, operating in non-geostationary satellite networks, from mobile platforms;

“ECC Report 066” means the report developed by the Electronic Communications Committee of CEPT on the protection of aircraft from satellite earth stations operating on the ground in the vicinity of airfields;

“epfd” means equivalent power flux-density;

"mobile platform" means a ship or land vehicle or may be a transportable device used in motion or at temporary halts;

“network control facility” or “NCF” means set of functional entities that, at system level, monitor and control the correct operation of the ESOMP and, if appropriate, all of the ESOMPs in a network; and

“pfd” means power flux-density.

3. (1) ESOMPs which are not installed or used in Malta shall observe any terms, conditions or limitations which could be applicable in the area or country, however so described, in which they are installed or used. Limitations.

(2) ESOMPs shall not be installed on aircraft.

4. (1) Unless otherwise specified in the National Frequency Plan, ESOMPs shall operate in the following frequency bands: Minimum technical parameters.

(a) 19.7-20.2 GHz (space-to-Earth) and 29.5-30 GHz (Earth-to-space);

(b) 17.3-19.7 GHz (space-to-Earth), 27.5-27.8285 GHz (Earth-to-space) and 28.4445-28.8365 GHz (Earth-to-space); and

(c) 28.8365-28.9485 GHz (space-to-Earth).

(2) ESOMPs shall operate under the control of a network control

facility.

(3) The minimum technical parameters of ESOMPs shall be those specified in the Annex to this Schedule.

## ANNEX TO THE THIRTY-FOURTH SCHEDULE

(Paragraph 4 of the Thirty-Fourth Schedule)

Minimum Technical Parameters for Land and Maritime Earth Stations on Mobile Platforms operating with Non-Geostationary Satellite Networks

### **A. Technical and operational requirements for ESOMPs operating within the frequency bands 17.3-20.2 GHz and 27.5-29.1 GHz and 29.5-30.0 GHz**

ESOMPs operating within the frequency bands 17.3-20.2 GHz and 27.5-29.1 GHz and 29.5-30.0 GHz shall comply with the following technical and operational requirements:

1. The protection of geostationary FSS networks operating in 27.5-28.6 GHz and 29.5-30.0 GHz from ESOMPs operating in non-geostationary systems shall be achieved by complying with the efd limits stipulated in No. 22.5D of the Radio Regulations. The protection of FSS geostationary networks and FSS non-geostationary systems operating in 28.6-29.1 GHz shall be on the basis of relevant coordination agreements reached between administrations and operators in accordance with No. 9.11A of the Radio Regulations.
2. The design, coordination and operation of ESOMPs shall take into account the following factors to the extent that they ensure compliance with the conditions specified in no. 1 above:
  - a) antenna mis-pointing;
  - b) variations in the antenna pattern;
  - c) variations in the transmit e.i.r.p
3. ESOMPs that use closed-loop tracking of the satellite signal shall employ an algorithm that is resistant to capturing and tracking signals from nearby satellite. ESOMPs shall immediately inhibit transmissions when they detect that unintended satellite tracking has happened or is about to happen.
4. ESOMPs shall be self-monitoring and should a fault which can cause harmful interference to FSS or terrestrial networks be detected, the ESOMPs must automatically cease its transmissions.
5. ESOMPs shall be in conformance with the Harmonised European Standard EN 303 979, "Satellite Earth Stations and Systems (SES); Harmonised European standard for Earth Stations on Mobile Platforms (ESOMPs) transmitting towards satellites in non-geostationary orbit in the 27.5-29.1 GHz and 29.5-30.0 GHz frequency bands covering the essential requirements of article 3.2 of Directive 2014/53/EU".

### **B. Additional technical and operational requirements for ESOMPs operating within the frequency bands 17.3-19.7 GHz and 27.5-29.1 GHz**

ESOMPs operating within the frequency bands 17.3-19.7 GHz and 27.5-29.1 GHz must comply (in addition to A above) with the following technical and operational requirements:

1. In the territory of any country, the off-axis<sup>1</sup> e.i.r.p. spectral density radiated by any ESOMP into the fixed service bands (i.e. 27.8285-28.4445 GHz, 28.8365-28.9485 GHz (where applicable) and 28.9485-29.1 GHz) shall be limited to -35 dBW/MHz. This limit shall, in any case, be met by ESOMPs on land, on territorial sea or on internal waters, at a direction of 3 degrees or less above the local horizontal plane at the ESOMPs terminal.
2. In the territory of any country, ESOMPs shall not have their transmit occupied band edges closer than 10 MHz from the edges of the bands identified by that country for the fixed service operation.
3. The antenna elevation angle shall be higher than 3 degrees.
4. In the band 28.8365-28.9485 GHz, the pfd threshold values in paragraph 6 shall apply to the territory of any country which authorises systems in the fixed service in this band and shall not be exceeded, unless prior agreement has been given by the concerned country(ies) to exceed these values.
5. In the bands 27.8285-28.4445 GHz and 28.9485-29.1 GHz, the pfd threshold values given in paragraph 6 shall apply to the territory of all CEPT countries and shall not be exceeded, unless prior agreement has been given by the concerned country(ies) to exceed these values.
6. For ESOMPs installed on vessels, the pfd threshold value is -109 dB(W/m<sup>2</sup>) in a reference bandwidth of 14 MHz at a height of 20 metres above mean sea level at the low-water mark of the territory of the countries defined in paragraphs 4 and 5 above<sup>2</sup>.
7. For ensuring compliance with the above pfd provisions ESOMPs shall have self-monitoring functions and automatic mechanisms (locally, or under the control of the NCF) to reduce its e.i.r.p. or cease transmissions.
8. National limitations applicable to uncoordinated FSS earth stations to avoid cross-border interference to fixed or mobile services in the same band in an adjacent country shall apply to land based ESOMPs and ESOMPs operating on territorial sea and on inland waterways in the same country as the uncoordinated FSS earth stations.

**C. Protection of Aircraft from ESOMPs from ESOMPs operating on the Earth's surface in the vicinity of an airfield**

1. The coordination zone comprises the area within the airfield boundary fence in addition to an area outside the boundary fence. The coordination area is dependent on the e.i.r.p. and orbital characteristics of the non-geostationary orbit system.
2. Table 1 lists the coordination areas to be used for the protection of aircrafts in the vicinity of airfields from ESOMPs for which the coordination areas have not been determined using the methodology given in ECC Report 066.

ESOMPs e.i.r.p.	>40 dBW	50 dBW	>55 dBW	>60 dBW
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<sup>1</sup> Off-axis refers to angles greater than 7° from the axis of the main beam or to angles greater than the declared minimum elevation angle of the ESOMPs, whichever is lower.

<sup>2</sup> The pfd value above is not defined as under “free-space” conditions. The percentage of time that should be used in the propagation model when assessing compliance with this PFD threshold should be 0.007%.



Note: These coordination areas are not dependent on the latitude of the ESOMPs	Coordination Area	Coordination Area	Coordination Area	Coordination Area
	500 m to 1500 m	1500 m to 3000 m	3000 m to 6000 m	6000 m and beyond

The coordination areas given in Table 1 have been derived for the following:

- a) a field strength criterion at the aircraft of 20 V/m
  - b) maximum elevation angle of the earth station antenna of non-geostationary ESOMPs equal to 90°
  - c) earth station antenna height (H) is 0 m
  - d) glide path angle ( $\alpha$ ) is at 3°
3. Table 2 lists the coordination areas to be used for the protection of aircrafts in the vicinity of airfields from ESOMPs of a non-geostationary system called O3b having the following characteristics:

Description of the orbit: equatorial plane at an altitude of 8062 km  
e.i.r.p. of ESOMPs: maximum e.i.r.p. of 70 dBW (under rain fade conditions)  
Nominal e.i.r.p. 60.6 dBW  
e.i.r.p. under clear sky conditions 61.9 dBW

ESOMPs	>40 dBW	>45 dBW	>50 dBW	>55 dBW	>60 dBW	>61 dBW	>62 dBW	>68 dBW
e.i.r.p. range	>45 dBW	>50 dBW	>55 dBW	>60 dBW	>61 dBW	>62 dBW	>68 dBW	>70 dBW
ESOMPs Latitude	Coordination Area	Coordination Area	Coordination Area	Coordination Area	Coordination Area	Coordination Area	Coordination Area	Coordination Area
>50°N	288 m	511 m	909 m	1614 m	1814 m	2036 m	4062 m	5113 m
45°-50°	378 m	673 m	1197 m	2128 m	2388 m	2679 m	5346 m	6730 m
40°-50°N	465 m	827 m	1471 m	2616 m	2936 m	3294 m	6572 m	8274 m
35°-40°N	547 m	973 m	1730 m	3076 m	3451 m	3872 m	7726 m	9726 m
30°-35°N	646 m	1149 m	2044 m	3635 m	4079 m	4576 m	9131 m	11495 m