



MALTA COMMUNICATIONS AUTHORITY


Twenty-Sixth Schedule to Decision No. MCA/D-22-4662

Apparatus General Authorisation for Apparatus for Mobile Communication Services on Board Vessels (MCV services)

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Revision History of the Twenty-Sixth Schedule

Apparatus for mobile communications services on board vessels

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**This Schedule shall be read and construed as one with
Part I and Part II of Decision No. MCA/D/22-4662**

**Adopted pursuant to Article 30A of the
Electronic Communications (Regulation) Act (Cap. 399)
establishing the radiocommunications apparatus
general authorisation**

Article 1 – Applicability

- (1) This apparatus general authorisation applies to apparatus for mobile communication services on board vessels in the territorial seas of Malta.
- (2) This apparatus general authorisation also applies to apparatus for mobile communication services on board Maltese ships when visiting the territorial seas of other European Member States.

Article 2 – Interpretation

In this Schedule unless the context otherwise requires:

- (1) "Maltese ship" means a ship which is registered under Part II of the Merchant Shipping Act (Cap. 234 of the Laws of Malta);
- (2) "mobile communication services on board vessels" or "MCV services" means electronic communications service as defined in article 2 of the Act provided by an undertaking to enable persons on board a vessel to communicate via public communication networks using a system subject to article 3 of this Schedule without establishing direct connections with land-based networks;
- (3) "non-AAS" means non-Active Antenna System;
- (4) "the 900 MHz band" means the 880-915 MHz band for uplink (terminal transmit, base station receive) and 925-960 MHz band for downlink (base station transmit, terminal receive);
- (5) "the 1800 MHz band" means the 1710-1785 MHz band for uplink (terminal transmit, base station receive) and 1805-1880 MHz band for downlink (base station transmit, terminal receive);
- (6) "the paired terrestrial 2 GHz band" means the 1920-1980 MHz for uplink (terminal transmit, base station receive) and 2110-2170 MHz band for downlink (base station transmit, terminal receive);
- (7) "the paired 2.6 GHz 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);
- (8) "vessel base transceiver station" or "vessel-BS" means a mobile pico-cell located on a vessel and supporting mobile systems in compliance with the Annex to this Schedule.



Article 3 – Minimum technical parameters

The minimum technical parameters of apparatus for MCV services shall be those specified in the Annex to this Schedule.

Article 4 – Inspections

Without prejudice to the other provisions contained in this Decision, if an authorised officer has reasonable grounds to suspect that there is non-conformity with this Decision, he may at any time inspect any apparatus for MCV services at the expense of the undertaking in possession or in control of the apparatus in question.

Article 5 – Provision of MCV Services

Prior to operating any apparatus intended to provide MCV services, an undertaking shall obtain all approvals, authorisations or licences, however so described, as may be necessary at law.

**Annex to the Twenty-Sixth Schedule
Minimum Technical Parameters for Apparatus for
Mobile Communication Services on board Vessels**

Technical parameters for apparatus for 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. Frequency bands and systems allowed for MCV Services

System	Allowed frequency band
GSM complying with the GSM standards as published by ETSI, in particular EN 301 502 and EN 301 511, or equivalent specifications.	900 MHz band and 1800 MHz band
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.	Paired terrestrial 2 GHz band
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.	1800 MHz band and Paired 2.6 GHz band
5G NR non-AAS complying with the 5G NR standards, as published by ETSI, in particular EN 301 908-24 and EN 301 908-25, or equivalent specifications.	1800 MHz band and Paired 2.6 GHz band

2. Technical parameters

- (1) The conditions to be met by GSM systems operating in the 900 MHz and 1800 MHz bands providing MCV services in the territorial seas of the Member States, in order to avoid harmful interference to land-based mobile networks shall be the following:
 - (a) The apparatus providing MCV services shall not be used closer to 2 nautical miles¹ from the baseline, as defined in the United Nations Convention on the Law of the Sea;

¹ One nautical mile = 1,852 metres.

- (b) Only indoor vessel-BS antenna(s) shall be used between 2 and 12 nautical miles from the baseline; and
- (c) Limits to be set for mobile terminals when used on board a vessel and for vessel-BS:

Parameter	Description
Transmit power / power density	For mobile terminals used on board vessels and controlled by the vessel-BS in the 900 MHz band, the maximum radiated output power shall be set to: 5 dBm
	For mobile terminals used on board vessels and controlled by the vessel-BS in the 1800 MHz band, maximum radiated output power shall be set to: 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
Channel access and occupation rules	Techniques to mitigate interference that provide at least equivalent performance to the following mitigation factors based on GSM standards shall be used: <ul style="list-style-type: none"> - between 2 and 3 nautical miles from the baseline, the receiver sensitivity and the disconnection threshold (ACCMIN⁽¹⁾ and min RXLEV⁽²⁾ 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; - discontinuous transmission⁽³⁾ shall be activated in the MCV system uplink direction; - the timing advance⁽⁴⁾ value of the vessel-BS shall be set to the minimum.
<p>(1) ACCMIN (RX_LEV_ACCESS_MIN); as described in GSM standard ETSI TS 144 018.</p> <p>(2) RXLEV (RXLEV-FULL-SERVING-CELL); as described in GSM standard ETSI TS 148 008.</p> <p>(3) Discontinuous transmission, or DTX; as described in GSM standard ETSI TS 148 008.</p> <p>(4) Timing advance; as described in GSM standard ETSI TS 144 018.</p>	

- (2) The conditions to be met by UMTS systems operating in the paired terrestrial 2 GHz band providing MCV services in the territorial seas of the Member States, in order to avoid harmful interference to land-based mobile networks shall be the following:
- (a) The apparatus providing MCV services shall not be used closer to 2 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 2 and 12 nautical miles from the baseline;
 - (c) Only bandwidths up to 5 MHz (duplex) shall be used; and
 - (d) Limits to be set for mobile terminals when used on board a vessel and for vessel-BS:

Parameter	Description
Transmit power / power density	For mobile terminals transmitting in the 1920-1980 MHz band used on board vessels and controlled by the vessel-BS transmitting in the 2110-2170 MHz band, the maximum radiated output power shall be set to: 0 dBm/5 MHz
Emission on deck	The vessel-BS emission on deck shall be equal or below -102 dBm/5 MHz (Common Pilot Channel)
Channel access and occupation rules	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
Non-alignment with land networks	MCV carrier centre frequency shall not be aligned with land network carriers

- (3) The conditions to be met by LTE non-AAS systems operating in the 1800 MHz band and the paired 2.6 GHz band providing MCV services in the territorial seas of the Member States, in order to avoid harmful interference to land-based mobile networks shall be the following:
- (a) The apparatus providing MCV services shall not be used closer to 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 up to 5 MHz (duplex) shall be used per frequency band (i.e. the 1800 MHz and the paired 2.6 GHz band); and
 - (d) Limits to be set for mobile terminals when used on board a vessel and for vessel-BS:

Parameter	Description
Transmit power / power density	For mobile terminals used on board vessels and controlled by the vessel-BS in the 1800 MHz band and the paired 2.6 GHz band, the maximum radiated output power shall be set to: 0 dBm
Emission on deck	The vessel-BS emission on deck shall be equal or below -98 dBm/5 MHz (equivalent to -120 dBm/15 kHz)
Channel access and occupation rules	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)
	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 400 m
Non-alignment with land networks	The Radio Resource Control user inactivity release timer shall be set to 2 seconds
	MCV carrier centre frequency shall not be aligned with land network carriers

- (4) The following are the conditions to be met by 5G non-AAS systems operating in the 1800 MHz band and the paired 2.6 GHz band providing MCV services in the territorial seas of the Member States in order to avoid harmful interference to land-based mobile networks:
- (a) The apparatus providing MCV services shall not be used closer to 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 up to 5 MHz (duplex) shall be used per frequency band (i.e. the 1800 MHz and the paired 2.6 GHz band); and
 - (d) Limits to be set for mobile terminals when used on board a vessel and for vessel-BS:

Parameter	Description
Transmit power / power density	For mobile terminals used on board vessels and controlled by the vessel-BS in the 1800 MHz band and the paired 2.6 GHz band, the maximum radiated output power shall be set to: 0 dBm
Emission on deck	The vessel-BS emission on deck shall be equal or below -98 dBm/5 MHz (equivalent to -120 dBm/15 kHz) ⁽¹⁾
Channel access and occupation rules	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) ⁽¹⁾
	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 400 m ⁽²⁾
	The Radio Resource Control user inactivity release timer shall be set to 2 seconds

Parameter	Description
Non-alignment with land networks	MCV carrier centre frequency shall not be aligned with land network carriers
(1) For SSB channel bandwidth other than 15 kHz, a conversion factor of $10 \cdot \log(BW/15 \text{ kHz})$ shall be added. (2) The timing advance parameter has to be set according to the corresponding cell range.	