



MALTA COMMUNICATIONS AUTHORITY


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

Apparatus General Authorisation for Apparatus for Mobile Communications Services on Aircraft

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 (+356) 2133 6840  info@mca.org.mt  www.mca.org.mt

 Valletta Waterfront, Pinto Wharf, Floriana FRN1913, Malta

Revision History of the Twenty-Fifth Schedule

Apparatus for mobile communications services on aircraft

Date	Comments
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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

This apparatus general authorisation applies to apparatus for mobile communications services on aircraft which is described in Table 1 of the Annex to this Schedule.

Article 2 – Interpretation

In this Schedule unless the context otherwise requires:

- (1) "Aircraft base station " or "aircraft BS" means one or more mobile communication stations located in the aircraft supporting the frequency bands and systems specified in Table 1 of the Annex to this Schedule;
- (2) "Apparatus for Mobile Communications Services on Aircraft" means apparatus for radiocommunications, providing mobile communication services on aircraft;
- (3) "EN 302 480" means the harmonised European standard with number EN 302 480 for Mobile Communication On Board Aircraft (MCOBA) systems; harmonised Standard for access to radio spectrum;
- (4) "EN 301 502" means the harmonised European standard with number EN 301 502 for the Global System for mobile communications (GSM); Base Station (BS) equipment; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU;
- (5) "EN 301 511" means the harmonised standard with number EN 301 511 for the Global System for Mobile communications (GSM); Mobile Stations (MS) equipment; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU;
- (6) "EN 301 908-1" means the harmonised European standard with number EN 301 908-1 for access to radio spectrum; Part 1: Introduction and common requirements Release 15;
- (7) "EN 301 908-2" means the harmonised European standard with number EN 301 908-2 for IMT cellular networks; Harmonised Standard for access to radio spectrum; Part 2: CDMA Direct Spread (UTRA FDD) User Equipment (UE);
- (8) "EN 301 908-3" means the harmonised European standard with number EN 301 908-3 for IMT cellular networks; Harmonised Standard for access to radio spectrum; Part 3: CDMA Direct Spread (UTRA FDD) Base Stations (BS);
- (9) "EN 301 908-13" means the harmonised European standard with number EN 301 908-13 for IMT cellular networks; Harmonised Standard for access to radio spectrum; Part 13: Evolved Universal Terrestrial Radio Access (E-UTRA) User Equipment (UE);

- (10) "EN 301 908-14" means the harmonised European standard with number EN 301 908-14; IMT cellular networks; Harmonised Standard for access to radio spectrum; Part 14: Evolved Universal Terrestrial Radio Access (E-UTRA) Base Stations (BS) Release 15;
- (11) "EN 301 908-15" means the harmonised European standard with number EN 301 908-15; IMT cellular networks; Harmonised Standard for access to radio spectrum; Part 15: Evolved Universal Terrestrial Radio Access (E-UTRA FDD) Repeaters;
- (12) "EN 301 908-24" means the harmonised European standard with number EN 301 908-24; IMT cellular networks; Harmonised Standard for access to radio spectrum; Part 24: New Radio (NR) Base Stations (BS) Release 15;
- (13) "EN 301 908-25" means the harmonised European standard with number EN 301 908-25; IMT cellular networks; Harmonised Standard for access to radio spectrum; Part 25: New Radio (NR) User Equipment (UE);
- (14) "Mobile Communications Services on Aircraft" or "MCA Services" means an electronic communication service as defined in Article 2 of the Electronic Communications (Regulation) Act (Cap. 399 of the Laws of Malta) provided by an undertaking to enable airline passengers to use public communication networks during the flight without establishing direct connections with terrestrial mobile networks; and
- (15) "Network Control Unit" or "NCU" means equipment located in the aircraft which prevents direct connection of the on board mobile terminals with the terrestrially based mobile networks listed in Table 2 of the Annex to this Schedule.

Article 3 – Jurisdiction

This Schedule only applies within the jurisdiction of Malta and its airspace and is subject to any approval of EASA as may from time to time be applicable in relation to apparatus, in flight operation and the use of mobile terminals.

Article 4 – Minimum technical parameters

- (1) Apparatus for Mobile Communication Services on Aircraft shall operate on the frequency bands and it shall be compliant with the standards or equivalent specifications, listed in Table 1 of the Annex to this Schedule.
- (2) The minimum technical parameters of Apparatus for Mobile Communication Services on Aircraft shall be those specified in the Annex to this Schedule.

Article 5 – Minimum technical parameters

- (1) Transmissions from Apparatus for Mobile Communication Services on Aircraft are only allowed when the aircraft is at the height specified in the Annex to this Schedule.
- (2) MCA Services may be provided only if they fulfil air safety requirements in accordance with the appropriate airworthiness certification and other relevant aeronautical requirements.

Article 6 – Minimum technical parameters

- (1) The operation of apparatus for Mobile Communications on Aircraft shall be immediately terminated should any malfunction occur.
- (2) Malfunctioning apparatus for Mobile Communications on Aircraft shall be disabled for the remainder of the flight and may not be used again until it is fully certified by the competent authorities as being in conformity with this Decision, and is operating correctly.

Article 7 – 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 Mobile Communication Services on Aircraft at the expense of the person or undertaking in possession or in control of the apparatus in question.

Article 8 – Provision of MCA Services

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

**Annex to the Twenty-Fifth Schedule
Minimum Technical Parameters for Apparatus for
Mobile Communication Services on Aircraft**

1. Frequency bands and systems allowed for MCA Services

Type	Frequency	System
GSM 1800	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 2100 (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 1800 (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.
5G NR non-AAS	1710-1785 MHz (uplink) 1805-1880 MHz (downlink)	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.

Table 1

2. Prevention of connection of mobile terminals to ground networks

(a) *Until 1 January 2026, mobile terminals receiving within the frequency bands and systems 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.

Frequency bands	Systems on the ground
925-960 MHz	UMTS
2110-2170 MHz	UMTS

Table 2

After this date, a person enjoying an apparatus general authorisation in accordance with this Schedule may decide to continue implementing an NCU in the frequency bands and systems listed in Table 2.

- (b) ***In addition to the provisions in paragraph a), a person enjoying an apparatus general authorisation in accordance with this Schedule may decide to implement an NCU for terrestrial systems providing electronic communications services in the frequency bands listed in Table 3.***

Frequency bands
460-470 MHz
791-821 MHz
925-960 MHz
1805-1880 MHz
2110-2170 MHz
2620-2690 MHz
2570-2620 MHz

Table 3

2. Technical parameters

- (a) ***Equivalent isotropic radiated power (e.i.r.p.) limits, outside the aircraft, resulting from the NCU/aircraft BS***

Height above ground (m)	Maximum e.i.r.p. outside the aircraft in dBm/(channel bandwidth)			
	NCU ⁽¹⁾	Aircraft GSM and LTE BS	Aircraft 5G NR non-AAS BS	Aircraft UMTS BS and NCU
	Band: 900 MHz	Band: 1800 MHz	Band: 1800MHz	Band: 2100 MHz
	Channel Bandwidth = 3.84 MHz	Channel Bandwidth = 200 kHz ⁽²⁾	Channel Bandwidth = 5 MHz ⁽³⁾	Channel Bandwidth = 3.84 MHz
3000	-6.2	-13.0	10	1.0
4000	-3.7	-10.5	13	3.5
5000	-1.7	-8.5	15	5.4
6000	-0.1	-6.9	16	7.0
7000	1.2	-5.6	18	8.3
8000	2.3	-4.4	19	9.5

⁽¹⁾ The aircraft BS is not in operation at 900 MHz, however, an NCU is needed to prevent terminals using other MCA channels from connecting to the 900 MHz UMTS terrestrial networks.

- (2) For channel bandwidth other than 200 kHz, a correction, calculated by the formula $10 \times \log_{10} (\text{channel bandwidth}/(200 \text{ kHz}))$ dB, shall be added to the e.i.r.p. values.
- (3) For channel bandwidth other than 5 MHz, a correction, calculated by the formula $10 \times \log_{10} (\text{channel bandwidth}/(5 \text{ MHz}))$ dB, shall be added to the e.i.r.p. values.

Table 4

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

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 ⁽¹⁾	Maximum e.i.r.p., outside the aircraft, from the LTE and 5G NR mobile terminal in dBm/5 MHz _(2,3,4)	Maximum e.i.r.p., outside the aircraft, from the UMTS mobile terminal in dBm/3.84 MHz
	GSM 1800 MHz	LTE 1800 MHz	LTE and 5G NR 1800 MHz	UMTS 2100 MHz
3000	-3.3	1.7	0	3.1
4000	-1.1	3.9	2	5.6
5000	0.5	5	4	7
6000	1.8	5	6	7
7000	2.9	5	7	7
8000	3.8	5	8	7

(1) These conditions apply to the operation of Apparatus for Mobile Communications Services on Aircraft installed until 31 December 2022.

(2) These conditions apply to the operation of Apparatus for Mobile Communications Services on Aircraft installed after 31 December 2022.

(3) For channel bandwidth other than 5 MHz, a correction, calculated by the formula $10 \times \log_{10} (\text{channel bandwidth}/5 \text{ MHz})$ dB, shall be added to the e.i.r.p. values.

(4) The e.i.r.p. is specified per channel regardless of the used channel bandwidth due to the fact that multiple mobile terminals could be operated.

Table 5

(c) e.i.r.p. limits outside the aircraft, resulting from the NCU, in other relevant frequency bands

When a person enjoying a general authorisation in accordance with this Schedule decides to use an NCU to prevent mobile terminals from attempting to register with non UMTS mobile networks on the ground 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, resulting from the NCU, in conjunction with the values mentioned in Table 4.

Height above ground (m)	Maximum e.i.r.p. outside the aircraft, resulting from the NCU			
	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

Table 6

(d) 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 BS, 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 BS, 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 BS, 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.
- V. The aircraft BS, while in operation, must limit the transmit power of all *5G NR* mobile terminals transmitting in the 1800 MHz band to a nominal value of 5 dBm/channel at all stages of communication, including initial access.