



**Czech Telecommunication Office**  
with headquarters at Sokolovská 219, Prague 9  
P.O. Box 02, Prague 025, Postcode 225 02

Prague, 1 June 2022  
Ref.: ČTÚ-16 019/2022-613

Based on the results of a public consultation held under Section 130 of the Act No. 127/2005 Coll., on electronic communications and on amendment to certain related acts (The Electronic Communications Act), as amended (hereinafter “the Act”) and under the Act No. 500/2004 Coll., the Administrative Procedure Code, as amended, and based the decision of the Council of the Czech Telecommunications Office (hereinafter “the Office”) under Section 107(9)(b)(2) of the Act and to implement Sections 9 and 12 of the Act, the Office as the competent administration body under Section 108(1)(b) of the Act hereby issues this Measure of General Nature

**General Authorisation No. VO-R/1/6.2022-6**  
**for the operation of users’ terminals of the radio networks**  
**of the electronic communications.**

Article 1  
**Introductory provisions**

The device operating conditions<sup>1,2)</sup> relating to the operation of transmitting radio equipment of the terrestrial mobile, fixed and satellite services, which are a part of communication systems (hereinafter “terminal”), by natural and legal persons in the electronic communications networks, for which the operators received individual authorisations for the use of radio frequencies, or which are authorised in satellite networks by operators of these networks and are controlled by the satellite system, are laid down in the Act and in this General Authorisation under Section 10(1) of the Act.<sup>3)</sup>

Article 2  
**Specific common conditions**

The specific conditions related to Section 10(1)(m) of the Act are as follows:

(1) The terminals may be operated without individual authorisation for the use of radio frequencies in the electronic communications networks of which operators were allocated with radio frequencies based on the individual authorisation for the use of frequencies, or, in case of satellite networks, which are authorised by the operators of these networks and controlled by the satellite system.

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<sup>1)</sup> Sections 73 and 74 of the Act.

<sup>2)</sup> Summary of harmonised standards relating to the basic requirements determined by Directive No. 2014/53/EU and by Government Order No. 426/2016 Coll., on the assessment of conformity of radio equipment when placed on the market, are being published by the European Commission (EC) on URL: <http://eur-lex.europa.eu>.

<sup>3)</sup> This General Authorisation is based on harmonization documents of the European Commission and European Conference of Postal and Telecommunications Administrations (CEPT) listed in Annex 2.

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(2) The terminals shall not be operated with additional high-frequency power amplifiers, or as the converters of signal, or in direct mode,<sup>4)</sup> therefore, they can communicate only with base stations of the network operators indicated in Paragraph 1, unless it is stated differently for the particular sub-bands.

(3) In case the relevant individual authorisations for the use of radio frequencies were granted for geographically defined areas of the Czech Republic only, the terminals shall be operated solely in these defined areas.

(4) The terminals shall not cause harmful interference to stations utilizing the radio frequencies based on an individual authorisation within a priority radiocommunication service.

(5) The terminals shall not be modified neither electrically, nor mechanically.

(6) The terminals shall not be used for interconnection of the networks of electronic communications.<sup>5)</sup>

### Article 3

#### Specific conditions for broadband mobile and access networks terminals

(1) By means of the terminals, radio frequencies may be used in these sub-bands of the radio spectrum:

Reference	Frequency sub-band – transmitting	Frequency sub-band – receiving	Further conditions:
<i>a</i>	410–419.8 MHz	420–429.8 MHz	see Paragraph 2
<i>b</i>	450–460 MHz	460–470 MHz	
<i>c1</i>	703–733 MHz	758–788 MHz	
<i>c2</i>	832–862 MHz	791–821 MHz	
<i>d</i>	880–915 MHz	925–960 MHz	
<i>e</i>	1710–1785 MHz	1805–1880 MHz	see Paragraphs 2, 5
<i>f</i>	1920–1980 MHz	2110–2170 MHz	
<i>g1</i>	2500–2570 MHz	2620–2690 MHz	see Paragraph 2
<i>g2</i>	2570–2620 MHz		
<i>h</i>	3400–3800 MHz		
<i>i</i>	26,5–27,5 GHz		
<i>j</i>	27.8285–27.9405 GHz		see Paragraph 3
<i>k</i>	28.9485–29.2285 GHz	27.9405–28.2205 GHz	only until 23 February 2025, see Paragraph 3

(2) The terminals in the sub-bands *a* to *g2*, which use channel bandwidth > 200 kHz, can be operated with a maximum radiated power of 1 W e.r.p. This value shall be respected

<sup>4)</sup> DMO – Direct Mode Operation; a mode in which terminals communicate amongst themselves without involvement of a base station.

<sup>5)</sup> Section 78(2) and (3) of the Act.

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in any combination of the terminal's output power and of the used antenna. The terminals in the sub-bands *a*, *b*, *d*, *e*, which use channel bandwidth  $\leq 200$  kHz, shall be operated with a maximum radiated power of 2 W e.r.p.

(3) In the sub-bands *j* and *k*, the terminals put into operation after 1 March 2011 shall use the automatic transmit power control.

(4) With respect to condition stated in Article 2(5), the terminals shall be also used as stationary terminals – in-built or connected into different central exchanges, GSM gateways, etc., or they may be connected to an external antenna.

(5) The networks intended for mobile communication services operation in an aircraft (MCA), operated aboard an aircraft, of which base stations, i.e. NCU (Network Control Unit) or BTS Node B as a part of the MCA equipment, were registered for operation in accordance with international requirements are also considered to be networks in bands 1800 MHz and 2100 MHz reserved for IMT systems, of which operators were granted individual authorisation for the use of radio frequencies and in which the terminal may be operated. Annex 1 sets down further technical requirements for operation of terminals in the MCA systems.

(6) Also the terminals permitted in CEPT member countries which joined the ERC Decision No. ERC/DEC/(95)01 of 1 December 1995, amended on 18 March 2005 and 14 March 2008, on the free circulation and use of certain radio equipment in CEPT member countries and No. ECC/DEC/(12)01 of 1 June 2012, amended on 3 July 2015, on exemption from individual licensing and free circulation and use of terrestrial and satellite mobile terminals operating under the control of networks<sup>6)</sup> are also considered as terminals under this Article.

#### Article 4

### **Specific conditions for terminals of the terrestrial mobile networks using narrowband technology**

(1) By means of the terminals, radio frequencies can be used in these sub-bands of the radio spectrum:

Reference	Frequency sub-band – transmitting	Frequency sub-band – receiving	Type of network
<i>a</i>	410.0–419.8 MHz	420.0–429.8 MHz	TETRA <sup>7)</sup>
<i>b</i>	455.74–457.38 MHz	465.74–467.38 MHz	PMR/PAMR <sup>8)</sup>

(2) The terminals can be operated with maximum radiated power of 10 W e.r.p.

(3) The maximum effective height of antenna of immobile terminals in the sub-band *b*, calculated using the method according to Recommendation ITU-R P.1546, shall not exceed 30 m.

<sup>6)</sup> The list of countries which accepted these decisions, including further information, is available on URL: [www.cept.org](http://www.cept.org)

<sup>7)</sup> Abbreviation TETRA stands for Terrestrial Trunked Radio network.

<sup>8)</sup> PMR – Private Mobile Radio, Private or company Mobile Radio networks and links; PAMR – Public Access Mobile Radio, PMR networks with access point to public networks.

Article 5

**Specific conditions for terminals used for satellite communication**

(1) By means of the terminals, radio frequencies can be used in these sub-bands of the radio spectrum:

Ref.	Frequency sub-band – transmitting (Earth-to-space)	Frequency sub-band – receiving (space-to-Earth)	a) max. e.i.r.p. <sup>9)</sup> b) max. spectral density e.i.r.p.	Further specification in Paragraph:
a	148.0–149.9 MHz	137–138 MHz	b): 10 dBW/4 kHz, duty cycle max. 1 %	
b1	1613.8–1626.5 MHz	–	a): 30 dBm, duty cycle max. 1 %	3
b2	1610–1615.035 MHz		<i>determined by satellite operator</i>	4
b3	1615.035–1621.185 MHz	1613.8–1626.5 MHz; 1525–1559 MHz; 2483.5–2500 MHz	b): –4 dBW/1.23 MHz	4
b4	1621.185–1626.5 MHz	1613.8–1626.5 MHz; 1525–1559 MHz; 2483.5–2500 MHz	a): 10 dBW	4, 5
b5	1626.5–1660.5 MHz		<i>determined by satellite operator</i>	6
b6	1670–1675 MHz		<i>determined by satellite operator</i>	7
c	1980–2010 MHz	2170–2200 MHz	<i>determined by satellite operator</i>	2
d0	12,75–13,25 GHz	10.70–12.75 GHz <sup>10)</sup>	on-board terminals <sup>11)</sup> a): 50 dBW	8, 12
d1	14.00–14.25 GHz		LEST terminals <sup>12)</sup> – a): 34 dBW. other terminals – a): 60 dBW; in case of operation with several carriers, the overall e.i.r.p. shall not exceed this value.	9, 12
d2	14.25–14.50 GHz		a): 50 dBW; maximum power supplied to the antenna is 3 dBW.	9, 11, 12
d3	14–14.50 GHz		AES <sup>13)</sup> terminals of the aeronautical mobile-satellite service – a): 50 dBW	10a, 11, 12

<sup>9)</sup> Abbreviation e.i.r.p. stands for equivalent isotropically radiated power.

<sup>10)</sup> For AES<sup>13)</sup> terminals, the frequency sub-band for receiving (downward aim) is 10,7–11,7 GHz and 12,5–12,75 GHz.

<sup>11)</sup> See the Decision ECC/DEC/(19)04 listed in Annex 2. The utilisation of the band 12,75–13,25 GHz by GSO FSS on-board terminals or NGSO FSS systems is under Annex 30B of the Radiocommunication Regulations. Also, in the case of NGSO FSS on-board terminals systems, the conditions are set in a footnote 5.441, provision 22.5D and Resolution 85 of the ITU Radiocommunication regulations.

<sup>12)</sup> LEST terminals are satellite interactive terminals with low e.i.r.p., pursuant to the Decision ECC/DEC/(06)02 listed in Annex 2.

<sup>13)</sup> AES terminals are satellite terminals operated in the satellite aeronautical mobile service, which fulfil the requirements set by Decision ECC/(05)11 listed in Annex 2 and relevant in harmonized standards.

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			NGSO FSS terminals <sup>14)</sup> – a): 60 dBW; in case of operation with several carriers, the overall e.i.r.p shall not exceed this value.	10b, 11, 12
			ESIM terminals <sup>15)</sup> – overall value a): 54.5 dBW.	10c, 11, 12
e1	27.5–27.8285 GHz	17.3–19.7 GHz	a): 60 dBW	13, 14, 15
e2	28.4445–28.9485 GHz			
e3	29.4525–29.5 GHz			
e4	29.50–30.00 GHz	10.70–12.75 GHz; 19.70–20.20 GHz	LEST terminals <sup>12)</sup> – a): 34 dBW. Other terminals – a): 60 dBW; in case of operation with several carriers, the overall e.i.r.p shall not exceed this value.	9, 14, 15

(2) The terminals shall be operated in direct mode<sup>16)</sup> in the sub-band *c* only, where communication between the mobile earth station of the mobile-satellite service and one or more complementary ground components at a specified fixed location may be realised within the mobile-satellite service networks.

(3) The terminals operated in the sub-band *b1* shall not exceed levels of undesirable radiation/emissions set in Recommendation ITU-R M.1343-1 in Table 1 of Annex 1.

(4) The terminals operated in the sub-bands *b2*, *b3* and *b4* shall not cause harmful interference to stations in the radioastronomy service.

(5) In the sub-band *b4*, the maximum level of undesirable radiation of the terminals is –70 dBW/MHz.

(6) In the sub-band *b5*, the frequencies in the range of 1645.5–1646.5 MHz/1544.0–1545.0 MHz can be used by terminals for emergency and security communication only.

(7) In the sub-band *b6*, the terminals shall not cause harmful interferences to the earth stations in the meteorological-satellite service, not even restrict their development.

(8) In the sub-band *d0*, solely on-board terminals can be operated, i.e. terrestrial stations located aboard aircrafts, which are part of GSO FSS satellite networks<sup>17)</sup> or NGSO FSS<sup>14)</sup> systems, with respect to conditions set by the relevant harmonized standard (especially the so-called *track and capture* algorithms, terminal-satellite connection, and termination of operation in case of interruption of this connection and keeping the relevant PDF limits on the Earth). These terminals must implement a function to automatically detect the inception of harmful interference toward other satellite GSO FSS networks, NGSO FSS systems, or fixed service stations, and in case of inception of such interference to immediately terminate their operation.

<sup>14)</sup> NGSO FSS terminals are the terminals of a fixed satellite network using the non-geostationary satellites, pursuant to the Decision ECC/DEC/(17)04 and ECC/DEC/(10)04 listed in Annex 2.

<sup>15)</sup> Terminals under the Decision ECC/DEC/(18)04 and ECC/DEC/(18)05, as stated in Annex 2, in communication with fixed satellite networks using both the geostationary and non-geostationary satellites typically placed on vehicles, trains suchlike, i.e. on objects moving on Earth surface.

<sup>16)</sup> Abbreviation DMO stands for Direct Mode Operation, i.e. direct mutual communication between terminals.

<sup>17)</sup> The GSO FSS terminals are fixed satellite network terminals using geostationary satellites based on the decision ECC/DEC/(19)04 listed in Annex 2.

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(9) In the sub-bands *d1*, *d2* and *e4*, only terminals that are a part of satellite networks of the fixed-satellite service, terrestrial mobile-satellite services, or the broadcasting-satellite service can be operated.

(10) In the sub-band *d3*, operation of following terminals is allowed:

- a) AES,<sup>13)</sup> given operation conditions ensuring that during transmission within an airport perimeter limits given by a minimal elevation angle as well as other conditions set by the relevant harmonized standard are kept;
- b) Terminals that are a part of NGSO FSS<sup>14)</sup> satellite networks given operation conditions to maintain compatibility with other radiocommunication services allocated to this sub-band, including the fulfilment of conditions of aircraft protection;<sup>18)</sup>
- c) ESIM<sup>15)</sup> given operation conditions to maintain compatibility with other radiocommunication services allocated in this sub-band.

(11) The terminals operated in the sub-band *d2* and in the sub-band *d3* shall not cause harmful interference to fixed service stations in the 14.5–15.35 GHz band; in addition, the terminals in the 14.47–14.50 GHz range shall not cause harmful interference to stations of the radio astronomy service.<sup>19)</sup>

(12) The terminals operated in the sub-bands *d0*, *d1*, *d2* and *d3* using radio frequencies from the 10.7–11.7 GHz range for reception shall not claim protection from harmful interference from stations of the fixed service.

(13) The terminals in the sub-bands *e1* to *e3* using radio frequencies from the 17.3–18.1 GHz range for reception shall not claim protection from harmful interference from feeder links operated in the broadcasting-satellite service and in the 17.7–19.7 GHz sub-band, the terminals shall not claim protection from stations operated in the fixed service.

(14) The ESOMP (NGSO)<sup>20)</sup> terminals operated in the sub-bands *e1* to *e4* shall meet the following conditions:

- a) Meeting the EPFD<sup>21)</sup> limit values due to the protection of GSO FSS networks operated in the sub-bands 27.5–28.6 GHz and 29.5–30.0 GHz;<sup>22)</sup>
- b) Compliance with coordination agreements<sup>23)</sup> due to the protection of FSS GSO and NGSO networks in the 28.6–29.1 GHz sub-band;
- c) Max. e.i.r.p. of earth terminals operated within airport borders is 52.4 dBW;
- d) Max. e.i.r.p. of earth terminals operated beyond airport borders is 70 dBW;
- e) Max. e.i.r.p. of terminals on vessels is limited to 70 dBW;
- f) The e.i.r.p. of terminals in TDMA networks is considered e.i.r.p. taking into account the duty cycle.<sup>18)</sup>

(15) The ESOMP (GSO)<sup>24)</sup> terminals operated in the sub-bands *e1* to *e4* shall meet the following conditions of aircraft protection:<sup>18,25)</sup>

- a) Max. e.i.r.p. of terminals installed aboard an aircraft operated within airport borders, including transmitting from Earth's surface is 58.4 dBW;
- b) Max. e.i.r.p. of earth terminals operated within airport borders is 52.4 dBW;

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<sup>18)</sup> See ECC Report 272.

<sup>19)</sup> The use of radio frequencies in these sub-bands is categorized as a secondary service – see chapter 5, items 5.23 to 5.33 of the Annex to Government Decree No. 105/2010 Coll., the Frequency Band Allocation Plan (National Table of Frequency Allocation).

<sup>20)</sup> Earth stations on mobile platforms (ESOMP), using non-geostationary satellite systems, pursuant to Decision ECC/DEC/(15)04 listed in Annex 2.

<sup>21)</sup> Abbreviation EPFD stands for Equivalent Power Flux Density.

<sup>22)</sup> See provision 22.5D of Radio Regulations.

<sup>23)</sup> See provision 9.11A of Radio Regulations.

<sup>24)</sup> Earth stations on mobile platforms (ESOMP) using geostationary satellite systems, pursuant to Decision ECC/DEC/(13)01 listed in Annex 2.

<sup>25)</sup> See Decision ECC/DEC/(13)01 listed in Annex 2.

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- c) Max. e.i.r.p. of other terminals not included in conditions a) and b) or are operated beyond airport borders is 60 dBW;
- d) E.i.r.p. of terminals in TDMA networks is considered e.i.r.p. taking into account the duty cycle.<sup>18)</sup>

(16) The satellite network operator is authorised to set additional requirements on technical parameters of terminals (i.e. radiated power, channel separation, type of modulation, capacity of transmission, etc.).

#### Article 6

#### **Specific conditions for terminals in the specific purpose networks**

(1) By means of the terminals, radio frequencies can be used in these sub-bands of the radio spectrum:

Ref.	Frequency sub-band – transmitting <sup>26)</sup>	Frequency sub-band – receiving <sup>26)</sup>	Max. radiated power of the terminal	Purpose	Comments
<i>a</i>	148.200–149.050 MHz	152.800–153.650 MHz	10 W e.r.p.	railway transport	
<i>a1</i>	148.200–149.050 MHz				
<i>c1</i>	152.800–153.650 MHz				
<i>e</i>	380.000–384.9875 MHz	390.000–394.9875 MHz	10 W e.r.p.	integrated rescue system	TETRAPOL technology <sup>27)</sup>
<i>f</i>	457.400–458.450 MHz	467.400–468.450 MHz	6 W e.r.p.	railway transport	
<i>g1</i>	876.0125 MHz, 876.025 MHz, 876.0375 MHz, 876.05 MHz, 876.0625 MHz			railway transport communication systems	GSM-R – DMO <sup>16)</sup> technology
<i>g2</i>	874.4–880 MHz	919.4–925 MHz			

(2) The terminals in the sub-bands *a*, *a1*, *c1*, *d*, *f*, *g1*, *g2* shall be operated only by a natural or legal person who is a holder of valid authorisation for the operation of railway transportation<sup>28)</sup> or a natural or legal person who carries out activities connected with securing the railways and the railway transport operation. The terminals in the sub-band *e* shall be operated only by bodies within the integrated rescue system.

(3) The terminals shall be operated in direct mode<sup>16)</sup> only in the frequency range of 380.0–380.3/390.0–390.3 MHz of the sub-band *e* and in the sub-band *g1*.

(4) The terminals operated in the sub-bands *a*, *a1*, *c1*, *f* must use call signs assigned to the individual terminals by the network operator from a set of call signals granted to him by the Office.

(5) The terminals operated in the sub-bands *g1* and *g2* may be also used as stationary, firmly built into different central exchanges, GSM gateways, etc. or they may be connected to an external antenna.

<sup>26)</sup> The mean frequencies of radio channels.

<sup>27)</sup> The cellular trunked radio network for voice and data transmission.

<sup>28)</sup> Section 24 and 25 of the Act No. 266/1994 Coll., on railways, as amended.

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Article 7

**Transitional provisions**

(1) A terminal, for which the Office decided about approval or recognition of the radio equipment type in accordance with Section 10 of the Act No. 151/2000 Coll., on Telecommunications and on Amendment to other Acts, as amended, is also considered a terminal complying with the Government Order No. 426/2016 Coll., on the assessment of conformity of radio equipment when placed on the market provided that such terminal was placed on the market before 1 April 2003.

(2) The utilisation of radio frequencies under Article 3(1), sub-band *k* (27.9405–28.2205/28.9485–29.2285 GHz) shall be terminated by the end of validity of individual authorisations for the use of radio frequencies for the particular base stations, but by 23 February 2025 at the latest.

Article 8

**Repealing provision**

This is to repeal the General Authorisation No. VO-R/1/12.2020-12 for the operation of the users' terminals of the radio networks of the electronic communications of 15 December 2020 published in Issue 12/2020 of the Telecommunication Bulletin.

Article 9

**Effect**

This General Authorisation comes into effect on 1 July 2022.



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## **Explanatory memorandum**

The Office issues the General Authorisation No. VO-R/1/6.2022-6 for the operation of users' terminals of radio networks of electronic communications, hereinafter "the General Authorisation," to implement Sections 9 and 12 of the Act.

The General Authorisation is based on principles set down in the Act and on the frequency plans and harmonisation targets of the European Union. The General Authorisation replaces the General Authorisation No. VO-R/1/12.2020-12, repealed by Article 8 of this General Authorisation.

In Article 2, the specific conditions common for the operation of terminals based on this General Authorisation are stated. In Articles 3 to 6, the Office sets other specific conditions for individual types of terminals and individual types of networks in which the terminals are operated. These conditions are based on harmonization documents of the European Commission and European Postal and Telecommunications Administrations Conference (CEPT) listed in Annex 2 as well as on requirements resulting from executing the radio spectrum management, more precisely on requirements to ensure undisturbed utilisation of radio spectrum.

Based on the transitional provision in the Article 7, the operation of equipment placed on the market before 1 April 2003 is allowed under conditions of this General Authorisation.

Articles 8 and 9 repeal former General Authorisation No. VO-R/1/12.2020-12 and set down the effect of the General Authorisation according to Section 124(2) of the Act. The Annex 1 sets down other technical requirements for the operation of the terminals in MCA systems.

After issuing the General Authorisation No. VO-R/1/12.2020-12, the European Commission issued the Commission Implementing Decision (EU) 2021/1730 of 28 September 2021 on the harmonised use of the paired frequency bands 874,4-880,0 MHz and 919,4-925,0 MHz and of the unpaired frequency band 1900-1910 MHz for Railway Mobile Radio. The Office further issued part No. PV-P/11/12.2021-16 of the radio spectrum utilisation plan for the 27.5–33.4 GHz frequency band (hereinafter "the RSUP") amending the conditions for the use of frequency sub-band 27.9405–28.2205/28.9485–29.2285 GHz. To implement the EU Decision mentioned above (except for 1900–1910 MHz band with implementation due 1 January 2025 and which was not yet implemented in the relevant part of the Radio Spectrum Utilisation Plan) and in compliance with the RSUP, the Office carried out following changes in this General Authorisation compared to the existing General Authorisation No. VO-R/1/12.2020-12, within the meaning of Section 12 of the Act:

1. In Article 6(1), the sub-band *g2* was extended from 876.1–880.1/921.1–925.1 MHz to 874.4–880.0/919.4–925 MHz and the footnote "GSM-R technology" was repealed.

2. In Article 6 (1), the determination of sub-bands *g1* and *g2* was specified for "railway transport communication systems".

3. In Article 3(1), the validity until 23 February 2025 was set for the sub-band *k* (27.9405–28.2205/28.9485–29.2285 GHz); This condition was stated also in the transitional provisions in Article 7(2).

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Based on the Section 130 of the Act and in accordance with the Czech Telecommunication Office's Rules for Conducting Consultations at the Discussion Site, the Office published on 7 April 2022 a draft of the Measure of General Nature which issues General Authorisation No. VO-R/1/xx.2022-y for the operation of the users' terminals of the

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radio networks of the electronic communications, and the call for comments at the Discussion Site. The Office did not receive within the public consultation any comments in a period of 30 days.

On behalf of the Council  
of the Czech Telecommunication Office

Hana Továrková

Chair of the Council  
of the Czech Telecommunication Office  
<signed>

**Technical requirements for the operation of the terminals in MCA systems**

1. The terminals shall be operated in the frequency bands 1710–1785/1805–1880 MHz for GSM 1800 and LTE 1800 (FDD) systems and 1920–1980/2110–2170 MHz for UMTS 2100 (FDD) systems.
2. The minimum height above ground for terminals in operation shall be 3000 meters.
3. The output power of the terminals is limited by means of the aircraft base station (BTS) at all stages of communications, including initial access:
  - a) For GSM mobile terminals at nominal level 0 dBm/200 kHz by means of the aircraft base station (BTS);
  - b) For LTE mobile terminals in the band 1800 MHz at nominal level 5 dBm/5 MHz by means of the on-board Ac-NodeB;<sup>29)</sup>
  - c) For UMTS mobile terminals in the band 2100 MHz at nominal level –6 dBm/3.84 MHz by means of the on-board Ac-NodeB<sup>27)</sup> while the maximal number of users shall not exceed 20.
4. The terminals are placed aboard of an aircraft registered in the Czech Republic.
5. The equivalent isotropically radiated power (e.i.r.p.) outside the aircraft, coming from the terminal aboard of the aircraft shall not exceed these values:

Height above ground [m]	Maximum e.i.r.p. outside the aircraft, coming from the mobile terminal:		
	GSM [dBm/200 kHz]	LTE [dBm/5 MHz]	UMTS [dBm/3.84 MHz]
3000	–3.3	1.7	3.1
4000	–1.1	3.9	5.6
5000	0.5	5	7
6000	1.8	5	7
7000	2.9	5	7
8000	3.8	5	7

6. The terminals shall not interfere with operation of radio devices of other radio spectrum users and they cannot claim protection from harmful interference caused by transmitting radio devices of other users.
7. The terminals can be only connected to the network which fulfils following requirements for the purpose of providing the MCA services:
  - a) The Network Control Unit (NCU) shall ensure that during the time when operation of MCA services aboard of the aircraft is allowed, the mobile terminals receiving in the frequency bands listed in the table were not able to attempt to register into these land mobile networks:

Frequency band [MHz]	Land systems
925–960	GSM, UMTS, LTE
2110–2170	UMTS, LTE

<sup>29)</sup> Aircraft NodeB – radio interface aboard of the aircraft.

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- b) The operators of MCA services may also decide whether NCU preventing the registration will be implemented in following frequency bands:

Frequency band [MHz]	Land systems
460–470	LTE
791–821	LTE
1 805–1 880	GSM, LTE
2 570–2 620	LTE
2 620–2 690	LTE

- c) The total equivalent isotropically radiated power (e.i.r.p.) outside of the aircraft coming from on-board NCU, on-board BTS, or from on-board Ac-NodeB shall not exceed the prescribed limits:

Altitude above ground [m]	Maximum e.i.r.p. of the system outside of aircraft [dBm/channel]		
	NCU	on-board BTS / on-board Ac-NodeB	on-board BTS / on-board Ac-NodeB / 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

8. The requirements resulting from legal aeronautical regulations are not affected by this General Authorisation.

The General Authorisation is based on the harmonisation documents:

1. European Commission documents

No.	Name	Article of the General Authorisation and the sub-band
(EU) 2017/899	Decision (EU) 2017/899 of the European Parliament and of the Council of 17 May 2017 on the use of the 470–790 MHz frequency band in the Union	3: c1
2010/267/EU	Commission Decision 2010/267 of 6 May 2010 on harmonized technical conditions of use in the 790-862 MHz frequency band for terrestrial systems capable of providing electronic communications services in the European Union	3: c2
2009/214/EC	Decision of the European Parliament and of the Council 2009/214/EC of 16 September 2009 amending Council Directive 87/372/EES on the frequency bands to be reserved for the coordinated introduction of public pan-European cellular digital land-based mobile communications in the Community	3: d, e
2011/251/EU	Commission Implementing Decision 2011/251/EC of 18 April 2011 amending Decision 2009/766/EC on the harmonisation of the 900 MHz and 1800 MHz frequency bands for terrestrial systems capable of providing pan-European electronic communications services in the Community	3: d, e
(EU) 2016/2317	Commission Implementing Decision 2016/2317/EU of 16 December 2016 amending Decision 2008/294/EC and Implementing Decision 2013/654/EU, in order to simplify the operation of mobile communications on board aircraft (MCA services) in the Union	3: e, f1
2008/477/EC	Commission Decision No. 2008/477/EC of 13 June 2008, on the harmonisation of the 2500–2690 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community	3: g1, g2
2008/411/EC	Commission Decision No. 2008/411/EC on the harmonisation of the 3400–3800 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community	3
(EU) 2020/590	Commission Implementing Decision of 24 April 2020 amending Decision (EU) 2019/784 as regards an update of relevant technical conditions applicable to the 24,25-27,5 GHz frequency band	3: i
(EU) 2021/1730	Commission Implementing Decision of 28 September 2021 on the harmonised use of the paired frequency bands 874,4-880,0 MHz and 919,4-925,0 MHz and of the unpaired frequency band 1900-1910 MHz for Railway Mobile Radio	6: q2

2. European Conference of Postal and Telecommunications Administrations (CEPT) documents

No.	Name	Article of the General Authorisation and the sub-band
ECC/DEC/(12)01	Decision ECC of 1 June 2012 (amended on 4 March 2022) on exemption from individual licensing and free	3 5

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	circulation and use of terrestrial and satellite mobile terminals operating under the control of networks	
ERC/DEC/(97)02	Decision on the extended frequency bands to be used for the GSM Digital Pan-European Communications System	3: d, e
Report CEPT No. 40	Report CEPT to the European Commission on the 900/1800 MHz bands – “Compatibility study for LTE and Wi-Max operating within the bands 800–915/925–960 MHz and 1710–1785/1805–1880 MHz (the bands 900/1800 MHz)”	3: d, e
ECC/DEC/(06)01	Decision of 24 March 2006, (amended 8 March 2019), on the harmonised utilisation of the bands 1920–1980 MHz and 2110–2170 MHz for mobile / fixed communications networks (MFCN) including terrestrial IMT systems	3: f1, f2
ECC/DEC/(11)06	Decision of 9 December 2011, amended 26 October 2018, on harmonised frequency arrangements for mobile / fixed communication networks (MFCN) operated in the bands 3400–3600 MHz and 3600–3800 MHz	3: h
ECC/DEC/(05)01	Decision of 18 March 2005, amended 8 March 2019, on the use of the band 27.5–29.5 GHz by the Fixed Service and uncoordinated Earth stations of the Fixed-Satellite Service (Earth-to-space)	3: j, k 5: e1, e2, e3
ERC/DEC/(99)06	Decision of 10 March 1999, amended on 4 March 2022, on the harmonised introduction of satellite personal communication systems operated in the bands below 1 GHz (S-PCS<1 GHz)	5: a
ECC/DEC/(09)04	Decision of 30 October 2009 on exemption from individual licensing and the free circulation and use of transmit-only mobile satellite terminals operating in the Mobile-Satellite Service allocations in the 1613.8–1626.5 MHz band	5: b1
ECC/DEC/(19)04	ECC Decision of 6 March 2020, amended on 28 May 2021, on the harmonised use of spectrum, free circulation and use of earth stations on-board aircraft operating with GSO FSS networks and NGSO FSS systems in the frequency bands 12.75-13.25 GHz (Earth-to-space) and 10.7-12.75 GHz (space-to-Earth)	5: d0
ECC/DEC/(06)02	Decision of 24 March 2006 on exemption from individual licensing of low e.i.r.p. satellite terminals (LEST) operating within the frequency bands 10.70–12.75 GHz or 19.70–20.20 GHz (space-to-Earth) and 14.00–14.25 GHz or 29.50–30.00 GHz (Earth-to-space)	5: d1, e4
ECC/DEC/(06)03	Decision of 24 March 2006, amended on 8 March 2019, on exemption from individual licensing of high e.i.r.p. satellite terminals (HEST) operating within the frequency bands 10.70–12.75 GHz or 19.70–20.20 GHz (space-to-Earth) and 14.00–14.25 GHz or 29.50–30.00 GHz (Earth-to-space)	5: d1, e4
ECC/DEC/(17)04	Decision of 30 June 2017 (amended on 5 November 2021) on the harmonised use and exemption from individual licensing of fixed earth stations operating with NGSO FSS satellite systems in the frequency bands 10.7–12.75 GHz and 14.0–14.5 GHz	5: d1, d2, d3
ECC/DEC/(18)04	Decision of 6 July 2018 on the harmonised use, exemption from individual licensing and free circulation and use of land-based Earth Stations In-Motion (ESIM)	5: d1, d2, d3

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	operating with GSO FSS satellite systems in the frequency bands 10.7–12.75 GHz and 14.0–14.5 GHz	
ECC/DEC/(18)05	Decision of 6 July 2018 (amended on 5 November 2021) on the harmonised use, exemption from individual licensing and free circulation and use of Earth Stations In-Motion (ESIM) operating with NGSO FSS satellite systems in the frequency bands 10.7–12.75 GHz and 14.0–14.5 GHz	5: d1, d2, d3
ECC/DEC/(03)04	Decision of 17 October 2003 (amended on 8 March 2019) on exemption from individual licensing of Very Small Aperture Terminals (VSAT) operating in the frequency bands 14.25–14.50 GHz (Earth-to-space) and 10.70–11.70 GHz (space-to-Earth)	5: d2
ECC/DEC/(05)11	Decision of 28 June 2005 (amended on 8 March 2019) on the free circulation and use of Aircraft Earth Stations (AES) in the frequency bands 14.00–14.50 GHz (Earth-to-space), 10.70–11.70 GHz (space-to-Earth) and 12.5–12.75 GHz (space-to-Earth)	5: d3
ECC Report No. 272	Earth Stations operating in the frequency bands 4-8 GHz, 12-18 GHz and 18-40 GHz in the vicinity of aircraft, January 2018	5: d3, e1 to e4
ECC/DEC/(13)01	Decision of 8 March 2013 (amended on 2 July 2021) on the harmonised use, free circulation and exemption from individual licensing of Earth Stations On Mobile Platforms (ESOMPs) within the frequency bands 17.3–20.2 GHz and 27.5–30.0 GHz	5: e1 up to e4
ECC/DEC/(15)04	Decision of 3 July 2015 (amended on 20 November 2020) on the harmonised use, free circulation and exemption from individual licensing of Land and Maritime Earth Stations On Mobile Platforms (ESOMPs) operating with NGSO FSS satellite systems in the frequency ranges 17.3–20.2 GHz, 27.5–29.1 GHz and 29.5–30.0 GHz	5: e1 up to e4
ECC/DEC/(08)05	Decision of 27 June 2008 (amended on 8 March 2019) on the harmonisation of frequency bands for the implementation of digital Public Protection and Disaster Relief (PPDR) narrow band and wide band radio applications in bands within the 380–470 MHz range	6: e1 up to e4