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Czech Telecommunication Office

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P.O. Box 02, Prague 025, Postcode 225 02

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On the basis of public consultation 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 of the Act No. 500/2004 Coll., the Administrative Regulations, as amended, and on the basis of the decision of the Council of the Czech Telecommunications Office (hereinafter “the Office”) under Section 107(9)(b)(2) of the Act and in order to implement Sections 9 and 12 of the Act, the Office as the appropriate state administration body under Section 108(1)(b) of the Act hereby issues this Measure of General Nature

General Authorisation No. VO-R/1/12.2018-8 for the operation the users’ terminals of the radio networks of the electronic communications.

Article 1

Introductory provisions

The apparatus operating conditions ¹⁾, ²⁾ relating to the operation of transmitting radio equipment of the land mobile, fixed and satellite services constituting part of communication systems (hereinafter “terminal”) by natural and juristic persons in the electronic communications networks for which the operators received individual authorisations for the use of radio frequencies or are authorised in satellite networks by operators of these networks and are under the control of satellite system, are laid down in the Act and in this General Authorisation under Section 10(1) of the Act³⁾.

Article 2

Factual common conditions

The factual 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 are assigned the radio frequencies on the basis of the individual authorisation for the use of frequencies or which are authorised, in the case of satellite networks, by the operators of these networks and controlled by the satellite system.

¹⁾ Sections 73 and 74 of the Act.

²⁾ Summary of harmonised standards relating to the basic requirements determined by Directive No. 2014/53/EU and by Governmental Order No. 426/2016 Coll., on the assessment of conformity of radio equipment when delivered to the market, European Commission (EC) releases in their communications on website URL: <http://eur-lex.europa.eu>

³⁾ This General Authorisation proceeds from harmonization documents of European Commission and European Conference of Postal and Telecommunications Administrations (CEPT), listed in Annex 2.

(2) The terminals shall not be operated with additional high-frequency power amplifiers or as the converters of signal or in direct mode⁴⁾, they can communicate only with base stations of network operators indicated in paragraph 1, unless it is stated for the individual sub-bands otherwise.

(3) On condition that relevant individual authorisations for the use of radio frequencies were granted for the geographically delineated areas of the Czech Republic only, the terminals may be operated exclusively in these delineated areas.

(4) The terminals shall not cause harmful interference to the stations which use the radio frequencies on the basis of the individual authorisation within a primary radiocommunication service.

(5) The terminals can be neither electrically nor mechanically modified.

(6) The terminals shall not be used for interconnection of the networks of electronic communications⁵⁾.

Article 3

Factual conditions for broadband mobile and access networks terminals

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

Reference	Frequency sub-band – transmitting	Frequency sub-band – receiving	Further specification in paragraph:
<i>a</i>	410–419.8 MHz	420–429.8 MHz	2
<i>b</i>	450–460 MHz	460–470 MHz	2
<i>c1</i>	703–733 MHz	758–788 MHz	2
<i>c2</i>	832–862 MHz	791–821 MHz	2
<i>d</i>	880–915 MHz	925–960 MHz	2
<i>e</i>	1710–1785 MHz	1805–1880 MHz	2, 6, 8
<i>f</i>	1920–1980 MHz	2110–2170 MHz	2, 6, 8
<i>g1</i>	2500–2570 MHz	2620–2690 MHz	2
<i>g2</i>	2570–2620 MHz		2
<i>h1</i>	3410–3500 MHz	3510–3600 MHz	
<i>h2</i>	3580–3600 MHz	3480–3500 MHz	3
<i>i</i>	3600–3800 MHz		
<i>j1</i>	25.557–25.613 GHz	24.549–24.605 GHz	

⁴⁾ DMO – Direct Mode Operation; it is the mode in which terminals communicate amongst themselves without involvement of base station.

⁵⁾ Section 78, paragraphs 2 and 3 of the Act.

<i>j</i> ₂	25.627–25.683 GHz	24.619–24.675 GHz	
<i>j</i> ₃	25.697–25.753 GHz	24.689–24.745 GHz	
<i>k</i>	27.8285–27.9405 GHz		4
<i>l</i>	28.9485–29.2285 GHz	27.9405–28.2205 GHz	4

(2) The terminals in the sub-bands *a* up to *g*₂ which use channel spacing > 200 kHz can be operated with maximum radiated power of 1 W e.r.p. This value shall be respected in any combination of the output power of the terminal and used antenna. The terminals in the sub-bands *a*, *b*, *d*, *e* which use channel spacing ≤ 200 kHz shall be operated with maximum radiated power of 2 W e.r.p.

(3) In the sub-band *h*₂, the terminals IRT-2000⁶⁾ shall be only operated.

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

(5) While maintaining condition stated in article 2, paragraph 6, the terminals may also be used as stationary terminals, in-built or connected into different exchange offices, GSM gateways etc. or they may be connected to an external antenna.

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

(7) Also considered as terminals under this article are also the terminals authorized in CEPT member countries which acceded to 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 networks⁷⁾.

Article 4

Factual conditions for terminals of the land mobile networks using narrowband technology

(1) By means of the terminals, the 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 ⁸⁾
<i>b</i>	455.74–457.38 MHz	465.74–467.38 MHz	PMR/PAMR ⁹⁾

⁶⁾ Integrated Rural Telephony– radio access networks for connection of user to public telephone network.

⁷⁾ The list of countries which accepted these decisions, including further information is available on website URL: www.cept.org

⁸⁾ Abbreviation TETRA stands for Terrestrial Trunked Radio network.

⁹⁾ PMR – Private Mobile Radio, Private or company Mobile Radio networks and links; PAMR – Public Access Mobile Radio, PMR networks with the access point to the public networks.

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

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

Article 5

Factual conditions for terminals using for communication satellites

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

¹⁰⁾ Abbreviation e.i.r.p. stands for equivalent isotropically radiated power.

¹¹⁾ Abbreviation LEST terminals stands for satellite interactive terminals with low e.i.r.p., pursuant to the Decision ECC/DEC/(06)02, as stated in Annex 2.

¹²⁾ Abbreviation NGSO FSS terminals stands for the terminals of a fixed satellite network using the non-geostationary satellites, pursuant to the Decision ECC/DEC/(17)04, as stated in Annex 2.

			the overall e.i.r.p shall not exceed this value.	
			ESIM terminals ¹³⁾ – overall value a): 54.5 dBW.	9c, 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 ¹¹⁾ – a): 34 dBW. Other terminals – a): 60 dBW; in case of the operation with several carriers the overall e.i.r.p. shall not exceed this value.	8, 10, 14, 15

(2) The terminals can be operated in the direct mode operation¹⁴⁾ in the sub-band *c* only, where communication between the mobile earth station of the mobile-satellite service and one or more complementary ground stations at a specified fixed location, may be realised within the framework of the mobile-satellite service networks.

(3) The terminals operated in the sub-band *b1* shall not exceed levels of unwanted emissions stated 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 unwanted emissions is –70 dBW/MHz.

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

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

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

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

- a) that are the part of satellite networks of the aeronautical mobile-satellite service¹⁵⁾,
- b) that are the part of NGSO FSS¹²⁾ satellite networks in ensuring such operational conditions to maintain compatibility with other radiocommunication services allocated to this sub-band, including the fulfilment of conditions of the protection for aircraft¹⁶⁾,
- c) of ESIM¹³⁾ in ensuring such operational conditions to maintain compatibility with other radiocommunication services allocated in this sub-band.

¹³⁾ The terminals, pursuant to 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 which are in motion on Earth surface.

¹⁴⁾ Abbreviation DMO stands for Direct Mode Operation, i.e. direct mutual communication between the terminals.

¹⁵⁾ Abbreviation AES stands for Aircraft Earth Stations.

¹⁶⁾ See ECC Report 272.

(10) The terminals operated in the sub-bands *d1*, *d2* and *e4* can be operated in the vicinity of airports depending on their radiated power beyond these minimum distances from the boundary fences of these airports:

Min. distance	Max. e.i.r.p.
500 m	50 dBW
1800 m	55.3 dBW
2300 m	57 dBW
3500 m	60 dBW

(11) The terminals operated in the sub-band *d2* and in the range of 14.25–14.50 GHz of the sub-band *d3* shall not cause harmful interference to the fixed service stations; in the range 14.47–14.50 GHz the terminals in addition shall not cause harmful interference to the stations of the radio astronomy service¹⁷⁾.

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

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

(14) The ESOMP (NGSO)¹⁸⁾ terminals operated in the sub-bands *e1* up to *e4* shall meet following conditions:

- a) fulfilment EPFD¹⁹⁾ limit values due to the protection GSO FSS networks operated in the sub-band 27.5–28.6 GHz and 29.5–30.0 GHz²⁰⁾,
- b) compliance with coordination agreements²¹⁾ due to the protection FSS GSO and NGSO networks in the sub-band 28.6–29.1 GHz,
- c) max. e.i.r.p. of earth terminals operated in the within airport border 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) e.i.r.p. of terminals in TDMA networks is considered e.i.r.p., which takes into account duty cycle¹⁶⁾.

(15) The ESOMP (GSO)²²⁾ terminals operated in the sub-bands *e1* up to *e4* shall meet following conditions to protect aircraft²³⁾:

- a) max. e.i.r.p. of terminals installed on aircraft operated within airport border, including transmitting from earth surface is 58.4 dBW,
- b) max. e.i.r.p. earth terminals operated within airport border is 52.4 dBW,
- c) max. e.i.r.p. other terminals which are not included in conditions a) and b) or are operated out of airport borders is 60 dBW,

¹⁷⁾ The use of radio frequencies in these sub-bands is on a secondary basis – see chapter 5, items 5.23 up to 5.33 of the Annex to the Decree No. 105/2010 Coll., The Frequency Band Allocation Plan (National Table of Frequency Allocation).

¹⁸⁾ Earth stations on mobile platforms (ESOMP), using non-geostationary satellite systems, pursuant to the Decision ECC/DEC/(15)04, as stated in Annex 2.

¹⁹⁾ Abbreviation EPFD stands for Equivalent Power Flux Density.

²⁰⁾ See provision 22.5D of the Radio Regulations.

²¹⁾ See provision 9.11A of the Radio Regulations.

²²⁾ The Earth stations on mobile platforms (ESOMP) using geostationary satellite systems, pursuant to the Decision ECC/DEC/(13)01, as stated in Annex 2.

²³⁾ See the Decision ECC/DEC/(13)01, as stated in Annex 2.

d) e.i.r.p. of terminals in TDMA networks is considered e.i.r.p., which takes into account duty cycle¹⁶⁾).

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

Article 6

Factual conditions for terminals in the networks of the specific use

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

Ref.	Frequency sub-band – transmitting ²⁴⁾	Frequency sub-band – receiving ²⁴⁾	Max. radiated power of 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 ²⁵⁾
<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	GSM-R – DMO technology
<i>g2</i>	876.100–880.100 MHz	921.100–925.100 MHz			GSM-R technology

(2) The terminals in the sub-bands *a*, *a1*, *c1*, *d*, *f*, *g1*, *g2* can be only operated by natural or legal person who is holder of the valid authorisation for the operation of the railway transportation²⁶⁾ or natural person or legal person who carries out activities which are connected with support of the operation of the railways and the railway transport. The terminals in the sub-band *e* can be only operated by units of the integrated rescue system.

(3) The terminals can be operated in direct mode¹⁴⁾ only in the frequency range 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* have to use the call signs which are assigned to the particular terminals by the network operator from the set of the call signals granted to him by the Office.

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

²⁴⁾ The centre of frequency channels are mentioned.

²⁵⁾ The cellular trunked radio network for transmission of voice and data.

²⁶⁾ Section 24 and subsequently the Act No. 266/1994 Coll., on railways, as amended.

Article 7
Transitional provision

Also considered as a terminal complying with the Government Order No. 426/2016 Coll., on the assessment of conformity of radio equipment when delivered to the market is also 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, provided that such a terminal was placed to the market before 1 April 2003.

Article 8
Repealing provision

The General Authorisation No. VO-R/1/05.2017-2 for the operation of the users' terminals of the radio networks of the electronic communications of 31 May 2017 published in the Telecommunication Journal 8/2017 is cancelled.

Article 9
Effect

This General Authorisation comes into effect on 1 February 2019.

Explanatory memorandum

To implement Sections 9 and 12 of the Act, the Office issues General Authorisation No. VO-R/1/12.2018-8 for the operation users' terminals of radio networks of electronic communications hereinafter "the General Authorisation".

The General Authorisation is based on principles set down in the Act and also on the frequency plans and harmonisation objectives of the European Union. The General Authorisation replaces General Authorisation No. VO-R/1/05.2017-2, repealed by article 8 of this General Authorisation.

In Article 2, the factual conditions of the operation of terminals are presented which are specified in articles 3 up to 6 for particular types of the terminals and particular types of the networks where the terminals are operated. These conditions are based on harmonization documents of the European Commission and European Postal and Telecommunications Administrations Conference (CEPT) stated in Annex 2 as well as from requirements which result from the exercise of the radio spectrum management more precisely from requirements to ensure the undisturbed utilisation of radio spectrum.

In sense of the article 7 these regulations do not prevent the operation of the equipment which was placed on market before the General Authorisation entered into force. Articles 8 and 9 repeal former General Authorisation No. VO-R/1/05.2017-8 and set down the effect of the General Authorisation according to Section 124(2) of the Act. Annex 1 sets down other technical requirements for the operation of the terminals in MCA systems.

After the issue of the General Authorisation No. VO-R/1/05.2017-2, the Office amended some parts of the radio spectrum utilisation plan. Also certain decisions and recommendations

of CEPT and European Commission were amended. In order to implement these measures of general nature, decisions and recommendations and by reason of the exercise of the radio spectrum management, the Office carried out in comparison with existing General Authorisation No. VO-R/1/05.2017-2 presented in sense of Section 12 of the Act in this General Authorisation, following changes:

1. In Article 3(1), the sub-band *c1* was added which allows, after future assignment of the 700 MHz frequency band, on the basis of auction under preparation, to operate the terminals in this frequency band.

2. In Article 3(1), the sub-bands 1900–1920 MHz and 2010–2025 MHz were deleted in accordance with the termination of use of these sub-bands by UMTS systems.

3. In Article 5, the conditions for NGSO FSS and ESIM satellite terminals were added and the conditions for ESOMP terminals were specified.

4. The formal modifications were presented in order to ensure better orderliness of the General Authorisation; particularly the move of references from footnotes to Annex 2 on harmonization documents of European Commission and CEPT, in conformity with other General Authorisations, and the completion of references to the paragraphs of conditions with clarifications of the particular frequency sub-bands, to the tables in Articles 3 and 5.

On the basis of 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 9 November 2018 a draft of Measure of General Nature which issues General Authorisation No. VO-R/1/xx.2018-y for the operation of the users' terminals of the radio networks of the electronic communications, and the call for comments at the Discussion Site. The Office did not receive any comment during 1 month public consultation.

On behalf of the Council
of the Czech Telecommunication Office

Jaromir Novak

Chairman 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 the 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-NodeB²⁷⁾;
 - 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-NodeB²⁷⁾ provided that the maximal number of users shall not exceed 20.
4. The terminals are placed on the board of the aircraft registered in the Czech Republic.
5. The equivalent isotropically radiated power (e.i.r.p.) outside of the aircraft, coming from the terminal on the board of aircraft shall not exceed these values:

Height above ground [m]	Maximum e.i.r.p. outside of 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 for purpose to provide the MCA services fulfils following requirements:
 - a) the Network Control Unit (NCU) shall ensure that during the time when operation of MCA services in aircraft is allowed, the mobile terminals while receiving in the frequency bands listed in the table have not been able to attempt to do registration with these land mobile networks:

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

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

²⁷⁾ Aircraft NodeB – radio interface at board of the aircraft.

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 boards' NCU, on-boards' BTS or from on-board Ac-NodeB shall not exceed prescribed limits:

Height 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 flight regulations are not affected by this General Authorisation.

General Authorisation is based on the harmonisation documents:

1. European Commission documents

No.	Name	Article of General Authorisation and 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: h1, h2, i

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

No.	Name	Article of General Authorisation and sub-band
ECC/DEC/(04)06	Decision ECC of 19 March 2004 (amended on 9 December 2011) on availability of frequency bands for the introduction of Wide Band Digital Land Mobile PMR/PAMR in the 400 MHz and 800/900 MHz bands	3: a, b
ECC/DEC/(12)01	Decision ECC of 1 June 2012 (amended on 3 June 2015) on exemption from individual licensing and free circulation and use of terrestrial and satellite mobile terminals operating under the control of networks	3 5

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 2 November 2012), 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
ERC/REC/ 14-03	Recommendation of 28 May 1997 – Harmonised radio frequency channel arrangements and block allocations for low and medium capacity systems operated in the band 3400–3600 MHz	3: h1, h2
ECC/DEC/(11)06	Decision of 9 December 2011, amended 14 March 2014, on harmonised frequency arrangements for mobile / fixed communication networks (MFCN) operated in the bands 3400–3600 MHz and 3600–3800 MHz	3:h1, h2, i
ECC/DEC/(05)01	Decision of 18 March 2005, amended 8 March 2013, 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: k, l 5: e1, e2, e3
ERC/DEC/(99)06	Decision of 10 March 1999, amended on 27 July 2000, 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/(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 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 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) operating with GSO 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)05	Decision of 6 July 2018 on the harmonised use, exemption from individual licensing and free circulation and use of Earth Stations In-Motion (ESIM) operating with	5: d1, d2, d3

	NGSO FSS satellite systems in the frequency bands 10.7–12.75 GHz and 14.0–14.5 GHz	
ECC/DEC/(03)04	Decision of 17 October 2003 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 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/DEC/(13)01	Decision of 8 March 2013 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 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 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