MALTA COMMUNICATIONS AUTHORITY

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

Apparatus General Authorisation for Earth Stations In-Motion (ESIM) Operating with Non-Geostationary Satellite Systems in the Frequency Bands 10.7-12.75 GHz and 14.0-14.5 GHz

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Revision History of the Thirty-Sixth Schedule

Earth stations in-motion (ESIM) operating with non-geostationary satellite systems in the frequency bands 10.7-12.75 GHz and 14.0-14.5 GHz

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 any person installing or using an earth station in-motion operating with non-geostationary satellite systems in the frequency bands 10.7-12.75 GHz and 14.0-14.5 GHz or any apparatus intended to be used as a component part of that apparatus.

Article 2 – Interpretation

In this Schedule unless the context otherwise requires:

(1) “earth station in-motion” or “ESIM” means an earth station that is used while in motion for land, maritime and aeronautical applications;

(2) "earth stations" shall have the same meaning as in the Radio Regulations;

(3) “mobile platform" means a ship, aircraft or land vehicle or may be transportable used in motion or at temporary halts;

(4) "network control facility" or "NCF" refers to a set of functional entities that, at system level, monitor and control the correct operation of the ESOMP and, if appropriate, all of the ESOMPs in a network; and

(5) “PFD” means power flux density.

Article 3 – Limitations

The use of ESIM installed on a mobile platform registered in Malta from another country shall be subject to compliance with any terms, conditions or limitations which could be applicable in that country.

Article 4 – Minimum technical parameters

(1) Unless otherwise specified in the National Frequency Plan, an ESIM shall operate with non-geostationary satellites as part of the fixed-satellite service within the 10.70-12.75 GHz (space-to-Earth) and 14.00-14.50 GHz (Earth-to-space) frequency bands.

(2) An ESIM shall operate under the control of a network control facility.

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

Annex to the Thirty-Sixth Schedule
Minimum Technical Parameters for ESIM Operating with Non-Geostationary Satellite Systems in the Frequency Ranges 10.7-12.75 GHz and 14.0-14.5 GHz

ESIM operating with non-geostationary satellite systems in the frequency bands 10.7-12.75 GHz and 14.0-14.5 GHz shall comply with the following technical and operational requirements:

1. The design, coordination and operation of the land based ESIM shall take into account the following factors:

    a) antenna mis-pointing;

    b) variations in the antenna pattern; and

    c) variations in the transmit e.i.r.p.

2. ESIM that use closed-loop tracking of the satellite signal shall employ an algorithm that is resistant to capturing and tracking adjacent satellite signals. The earth stations shall immediately cease transmissions when they detect that unintended satellite tracking has happened or is about to happen.

3. Techniques to access spectrum and mitigate interference that provide an appropriate level of performance to comply with the essential requirements of Directive 2014/53/EU of the European Parliament and of the Council shall be used. If relevant techniques are described in harmonised standards or parts thereof the references of which have been published in the *Official Journal* of the European Union in accordance with Directive 2014/53/EU, performance at least equivalent to the performance level associated with those techniques shall be ensured.

4. The total e.i.r.p. of ESIM shall not exceed 54.5 dBW. When an antenna is coupled to more than one transmitter or a transmitter provides more than one carrier (multi-carrier operation), this e.i.r.p. level is the sum of all simultaneous emissions from the antenna on the main lobe.

5. In the band 14.25-14.5 GHz, the PFD threshold values in paragraphs 6, 7 and 8 shall apply to the territory of any country which authorises systems within the fixed service in this band and shall not be exceeded.

6. ESIM installed on aircraft the PFD values on the Earth's surface ground are the following:

-122	dB(W/(m²/MHz))	*for*		θ ≤	5°
-127 + θ	dB(W/(m²/MHz))	*for*	5°	< θ ≤	40°
-87	dB(W/(m²/MHz))	*for*	40°	< θ ≤	90°

where θ is the angle of arrival of the radio-frequency wave (degrees over the horizon).

7. For ESIM installed on vessels, the PFD threshold value is -116 dB(W/(m²/MHz)) at a height of 80 metres above mean sea level at the low-water mark of the territory of a country in paragraph 5 above.

8. For land based ESIM, a PFD limit of -116 dB(W/(m²/MHz)) at 30 metres height above ground of the territory of the country in paragraph 5 above.

9. In the band 14.47-14.5 GHz, ESIM installed on aircraft are required to cease emissions when in visibility of a radio astronomy station performing observations in this band.

10. In the band 14.47-14.5 GHz, the PFD threshold values in paragraphs 11 and 12 shall not be exceeded.

11. For ESIM installed on vessels, the PFD threshold value at the observatory of -169 (dB(W/m²/150 kHz)), not to be exceeded more than 2% of the time.

12. For land based ESIM, the PFD threshold value at the observatory of -169 (dB(W/m²/150 kHz)), not to be exceeded more than 2% of the time.

13. For ensuring compliance with the above PFD provisions ESIM shall have self-monitoring functions and automatic mechanisms (locally, or under the control of the NCF) to reduce its e.i.r.p. or cease transmissions.