

---

## UK Interface Requirement 2093

### ~~Earth Stations on Mobile Platforms~~ Earth Stations in Motion

---

Publication Date: January 2018

Date Amended: ~~June 2021~~ X 2023

# Contents

---

## Section

1. Foreword	3
2. Minimum requirements for operation within the UK	4
3. Additional performance parameters	8
4. References	9
5. Contact details	10
6. Document history	11

# 1. Foreword

- 1.1 The Radio Equipment Regulations 2017 (SI 2017/1206) set out the obligations on economic operators for placing radio equipment on the market. This UK Interface Requirement contains the requirements for ~~contains the requirements for~~ the authorisation and use of ~~Earth Stations in Motion (ESIMs) aircraft and ship mounted Earth Stations on Mobile Platforms (ESOMPs) and the licence exemption of land based ESOMPs~~ in the specified frequency bands.
- 1.2 It is required by the Wireless Telegraphy Act 2006 that no radio equipment is installed or used in the UK except under the authority of a licence granted by or otherwise exempted by regulations made by Ofcom. It is a condition of such a licence or exemption regulations as appropriate that the equipment must meet the minimum requirements specified in this UK Interface Requirement for the stated equipment types and for the stated frequency bands.
- 1.3 The requirements given in the main body of this UK Radio Interface Requirement ~~will~~ apply to the ~~authorisation of ESIMs licensing of aircraft and ship mounted ESOMPs and the licence exemption of land based ESOMPs.~~
- 1.4 This UK Radio Interface Requirement will be revised as necessary, for example to follow:
- i) current technology developments for reasons related to the effective and appropriate use of the spectrum in particular maximising spectrum utilisation; and
  - ii) changes to the available spectrum allocated for ~~ESIMs~~ESOMPs.
- 1.5 All UK Radio Interface Requirements will be published and will be made available free of charge from the Ofcom website.
- 1.6 Further information on this UK Radio Interface Requirement can be obtained from the technical enquiry contact given at the back of this document.

## 2. Minimum requirements for operation within the UK

- 2.1 The minimum requirements in this document are made for reasons related to the effective and appropriate use of the radio spectrum, in particular, maximising spectrum utilisation.
- 2.2 This UK Radio Interface Requirement gives a high level description of how the spectrum in the UK is used for Earth Stations ~~in Motion (ESIMs) on Mobile Platforms (ESOMPs)~~. It does not prescribe technical interpretation of the ‘essential requirements’ of the Radio Equipment Regulations 2017.
- 2.3 This UK Radio Interface Requirement therefore stipulates the necessary equipment parameters for the ~~authorisation of ESIMs licensing of and use of aircraft and ship mounted ESOMPs and the licence exemption of land based ESOMPs~~ in the UK. Tables 2.1 and 2.2 contain the relevant equipment parameters. These together with the ‘essential requirements’ detailed in Regulation 6 of Radio Equipment Regulations 2017 constitute the minimum equipment requirements for ~~ESIMs~~ within the UK.
- 2.4 The technical parameters specified in the UK Radio Interface Requirement are applied to achieve the desired level of compatibility within the ~~spectrum for ESIMs~~ESOMPs and with other radiocommunications services, whilst promoting enterprise, innovation and competition.
- 2.5 This UK Radio Interface ~~R~~Requirement provides the necessary technical information which facilitates access to the ~~ESIMs~~ESOMPs spectrum by making clear the assumptions that are made in planning the use of ~~ESIMs~~ESOMPs in the UK. It is not the intention of this UK Radio Interface Requirement to duplicate or impose any additional ‘essential requirements’ of the Radio Equipment Regulations 2017 on products. Any specified parameters within this document are for the purpose of identifying product options and not as a national de facto product requirement.

**Table 2.1: Minimum requirements for the use of Earth Stations **in Motion** ~~on Mobile Platforms~~ (**ESIMs** ~~ESOMPs~~) transmitting to satellites in **Geostationary** orbit**

<b>Mandatory (1-11)</b>		
<b>1</b>	Radiocommunication Service	Fixed-Satellite Service
<b>2</b>	Application	Earth Stations <b>in Motion (ESIMs)</b> <del>on Mobile Platforms (ESOMPs)</del>
<b>3</b>	Frequency band	27.5 – 27.8185 GHz, 28.4545 – 28.8265 GHz and 29.4625 – 30 GHz for operation in UK territory.  27.5 – 30 GHz for operation outside UK territory.
<b>4</b>	Channelling	-
<b>5</b>	Modulation/Occupied bandwidth	-
<b>6</b>	Direction/Separation	-
<b>7</b>	Transmit power/Power density	e.i.r.p from a single terminal $\leq 55$ dBW <sup>1</sup>
<b>8</b>	Channel access and occupation rules	-
<b>9</b>	Authorisation regime	Licence exempt – for land-based <b>ESIMs</b> <del>ESOMPs</del> .  Licensed – for <b>ESIMs</b> <del>ESOMPs</del> mounted on aircraft or ships.
<b>10</b>	Additional essential requirements	<b>Operation with geostationary satellites</b>
<b>Informative (11-15)</b>		
<b>11</b>	Frequency planning assumptions	Use of 17.3 – 20.2 GHz for reception is unprotected.
<b>12</b>	Planned changes	-
<b>13</b>	Reference	ETSI EN 303 978 <b>v1.1.2</b>
<b>14</b>	Notification	2016/227/UK
<b>15</b>	Remarks	<b>Note 1:</b> Unless otherwise agreed through bilateral coordination of satellite networks, the limits on off-axis e.i.r.p. emission density within the band specified in section 4.2.3 of ETSI EN 303 978 <b>v1.1.2</b> may be used to ensure that transmissions from <b>ESIMs</b> <del>ESOMPs</del> protect other satellite networks.  <b>Note 2:</b> The limitations on power flux density (pfd) contained in ECC Decision (13)01 may be used to ensure that transmissions from aircraft and ship

---

<sup>1</sup> The elevation angle of the antenna shall be higher than 3 degrees.

		mounted <b>ESIMs</b> <del>ESOMPs</del> protect terrestrial services, where appropriate.  <b>Note 3: Operation with non-geostationary satellites requires a licence.</b>
--	--	---

**Table 2.2: Minimum requirements for the use of Earth Stations in Motion (ESIMs) ~~on Mobile Platforms (ESOMPs)~~ transmitting to satellites in Non-geostationary orbit**

<b>Mandatory (1-11)</b>		
<b>1</b>	Radiocommunication Service	Fixed-Satellite Service
<b>2</b>	Application	Earth Stations <b>in Motion (ESIMs)</b> <del>on Mobile Platforms (ESOMPs)</del>
<b>3</b>	Frequency band	27.5 – 27.8185 GHz, 28.4545 – 28.8265 GHz and 29.5 – 30 GHz for operation in UK territory.  27.5 – 29.1 GHz and 29.5 – 30 GHz for operation outside UK territory.
<b>4</b>	Channelling	-
<b>5</b>	Modulation/Occupied bandwidth	-
<b>6</b>	Direction/Separation	-
<b>7</b>	Transmit power/Power density	e.i.r.p from a single terminal $\leq 55$ dBW <sup>2</sup>
<b>8</b>	Channel access and occupation rules	-
<b>9</b>	Authorisation regime	<del>Licence exempt – for land-based ESOMPs.</del>  Licensed – for <b>land-based and ship mounted ESIMs</b> <del>ESOMPs mounted on ships.</del>  <b>For aircraft mounted ESIMs – see Note 3</b>
<b>10</b>	Additional essential requirements	<b>Operation with non-geostationary satellites</b>
<b>Informative (11-15)</b>		
<b>11</b>	Frequency planning assumptions	Use of 17.3 – 20.2 GHz for reception is unprotected.
<b>12</b>	Planned changes	-
<b>13</b>	Reference	ETSI EN 303 979
<b>14</b>	Notification Number	2016/227/UK
<b>15</b>	Remarks	<b>Note 1:</b> The earth stations operating with non-geostationary satellites shall ensure compliance

<sup>2</sup> The elevation angle of the antenna shall be higher than 3 degrees.

with the equivalent power flux-density limitations specified in Article 22 of the ITU Radio Regulations.

**Note 2:** The limitations on power flux density (pfd) contained in ECC Decision (15)04 may be used to ensure that transmissions from ship mounted ~~ESIMs~~ESOMPs protect terrestrial services, where appropriate.

**Note 3: Aircraft mounted ESIMs operating with non-geostationary satellites are not currently authorised.**

## 3. Additional performance parameters

### (informative)

3.1 None specified

## 4. References

	Reference	Reference description
[1]	ETSI EN 303 978 <b>V2.1.2</b> <del>V1.1.2</del>	Satellite Earth Stations and Systems (SES); Harmonized <b>Standard EN</b> for Earth Stations on Mobile Platforms (ESOMP) transmitting towards satellites in geostationary orbit in the 27,5 GHz to 30,0 GHz frequency bands covering the essential requirements of article 3.2 of the <del>Radio Equipment Directive</del> (Directive 2014/53/EU).
[2]	EN 303 979 <b>V2.1.2</b>	Satellite Earth Stations and Systems (SES); Harmonized <b>Standard EN</b> for Earth Stations on Mobile Platforms (ESOMP) transmitting towards satellites in non-geostationary orbit in the 27,5 GHz to 29,1 GHz and 29,5 GHz to 30,0 GHz frequency bands covering the essential requirements of article 3.2 of the Directive 2014/53/EU.
[3]	ECC Decision (13)01	<b>ECC Decision of 8 March 2013 on the</b> <del>The</del> harmonized 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
[4]	ECC Decision (15)04	<b>ECC Decision of 3 July 2015 on the</b> <del>The</del> harmonized use, free circulation and exemption from individual licensing of Land and Maritime <b>and Aeronautical</b> 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. Contact details

**Ofcom Spectrum Licensing, PO Box 1285 Warrington, WA1 9GL**

- Tel: 020 7981 3131
- Fax: 020 7981 3235

- Email: [spectrum.licensing@ofcom.org.uk](mailto:spectrum.licensing@ofcom.org.uk)

- Website: <http://www.ofcom.org.uk>

**Technical queries, Spectrum Group, Ofcom, Riverside House 2a Southwark  
Bridge Road, London, SE1 9HA**

- Tel: 020 7981 3154
- Fax: 020 7981 3208

- Email: [James.Richardson@Ofcom.org.uk](mailto:James.Richardson@Ofcom.org.uk)

## 6. Document history

Version	Date	Changes
0.1	14 August 2013	Draft published
1.0	February 2014	Document published
2.0	January 2018	Includes non-geostationary use Replaced R&TTE Directive 1999/5/EC and Directive 98/34/EC with Radio Equipment Directive (Directive 2014/53/EU) and Directive (EU) 2015/1535 respectively.
2.1	June 2021	Format update
<b>3.0</b>	<b>TBD</b>	<b>Revised to make licence exemption apply only to ESIM terminals that operate with geostationary satellites.</b>