
Interface Requirement 2109

Terrestrial systems capable of providing electronic communications services in the 900 MHz and 1800 MHz bands

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1. References

ECC Report 297: “Analysis of the suitability and update of the regulatory technical conditions for 5G MFCN and AAS operation in the 900 MHz and 1800 MHz bands”, March 2019

CEPT Report 80: “Report from CEPT to the European Commission in response to the Mandate “to review the harmonised technical conditions for certain EU-harmonised frequency bands and to develop least restrictive harmonised technical conditions suitable for next-generation (5G) terrestrial wireless systems” Report B: Channelling arrangements and least restrictive technical conditions suitable for ECS including 5G terrestrial wireless systems in the 900 MHz and 1800 MHz frequency bands, in compliance with the principles of technology and service neutrality, July 2021

Commission Implementing Decision (EU) 2022/173 of 7 February 2022 on the harmonisation of the 900 MHz and 1 800 MHz frequency bands for terrestrial systems capable of providing electronic communications services in the Union and repealing Decision 2009/766/EC

ECC Decision (06)13 of 1 December 2006 on harmonised technical conditions for mobile/fixed communications networks (MFCN) including terrestrial IMT systems, other than GSM and EC-GSM IoT, in the bands 880-915/925-960 MHz and 1710-1785/1805-1880 MHz, amended on 4 March 2022

EN 301 908: IMT cellular networks; Harmonised EN covering the essential requirements of article 3.2 of the Radio Equipment Directive (Directive 2014/53/EU).

2. Foreword

- 2.1 This UK Interface Requirement contains the requirements for the licensing and use of terrestrial systems capable of providing electronic communications services in the specified frequency bands.
- 2.2 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, in order to be installed or used in the UK, the equipment must meet the minimum requirements specified in this UK Interface Requirement for the stated equipment types and for the stated frequency bands.
- 2.3 Nothing in this UK Interface Requirement shall preclude equipment from being placed on the market in the UK that complies with the 'essential requirements' specified in Radio Equipment Regulations 2017 (SI 2017/1206).
- 2.4 The requirements given in the main body of this UK Radio Interface Requirement will apply to the licensing of terrestrial systems capable of providing electronic communications services in the 900 MHz (880.1-914.9 MHz / 925-959.9 MHz) and 1800 MHz (1710.1-1785 MHz / 1805.1-1880 MHz) bands.
- 2.5 This UK Radio Interface Requirement will be revised as necessary, for example to follow:
 - a) current technology developments for reasons related to the effective and appropriate use of the spectrum in particular maximising spectrum utilisation; and
 - b) changes to the available spectrum allocated for terrestrial systems capable of providing electronic communications services in the 900 MHz and 1800 MHz bands.
- 2.6 All UK Radio Interface Requirements will be published and will be made available free of charge from the Ofcom website at <http://www.ofcom.org.uk>.
- 2.7 Further information on this UK Radio Interface Requirement can be obtained from the technical enquiry contact given at the back of this document.

3. Minimum requirements for operation within the UK

- 3.1 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.
- 3.2 This UK Radio Interface Requirement gives a high-level description of how the spectrum in the UK is used for electronic communications services in the 900 MHz and 1800 MHz bands. It does not prescribe technical interpretation of the 'essential requirements' of Radio Equipment Regulations 2017 (SI 2017/1206).
- 3.3 This UK Radio Interface Requirement therefore stipulates the necessary equipment parameters for the authorisation of terrestrial systems capable of providing electronic communications services in the 900 MHz and 1800 MHz bands in the UK. Tables 3.1 to 3.2 contain the relevant equipment parameters. These taken together with the 'essential requirements' detailed in the Radio Equipment Regulations 2017 (SI 2017/1206) constitute the minimum requirements for terrestrial systems capable of providing electronic communications services in the 900 MHz and 1800 MHz bands within the UK.
- 3.4 Nothing in this UK Interface Requirement shall preclude equipment from being placed on the market in the UK that complies with the 'essential requirements' specified in Radio Equipment Regulations 2017 (SI 2017/1206).
- 3.5 The technical parameters specified in the UK Radio Interface Requirement are applied to achieve the desired level of compatibility within the spectrum for terrestrial systems capable of providing electronic communications services in the 900 MHz and 1800 MHz bands and with other radiocommunications services, whilst promoting enterprise, innovation and competition.
- 3.6 This UK Radio Interface requirement provides the necessary technical information which facilitates access to spectrum by making clear the assumptions that are made in planning the use of the spectrum for terrestrial systems capable of providing electronic communications services in the 900 MHz and 1800 MHz bands 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 (SI 2017/1206). Any specified parameters within this document are for the purpose of identifying product options and not as a national de facto product requirement.

Table 3.1: Minimum requirements for the use of: terrestrial systems capable of providing electronic communications services operating in the 880 to 915 MHz and 1710 to 1785 MHz bands

| Mandatory (1 – 10) | | | | | | | |
|--|--|-----------------------|----------------------------|------------------------|--------|------------------------|--------|
| 1. Radiocommunication Service | Mobile or Fixed service | | | | | | |
| 2. Application | TRA-ECS (Terrestrial radio applications capable of providing electronic communication services) | | | | | | |
| 3. Frequency band(s) | 880.1 MHz to 914.9 MHz 1710.1 MHz to 1785 MHz | | | | | | |
| 4. Channelling | N/A | | | | | | |
| 5. Modulation / Occupied bandwidth | N/A | | | | | | |
| 6. Direction / Separation | <p>Mobile transmit</p> <p>Repeater transmit/receive</p> <p><u>Uplink / downlink separation</u></p> <table border="1"> <thead> <tr> <th>Uplink Frequency Band</th> <th>Uplink/Downlink Separation</th> </tr> </thead> <tbody> <tr> <td>880.1 MHz to 914.9 MHz</td> <td>45 MHz</td> </tr> <tr> <td>1710.1 MHz to 1785 MHz</td> <td>95 MHz</td> </tr> </tbody> </table> | Uplink Frequency Band | Uplink/Downlink Separation | 880.1 MHz to 914.9 MHz | 45 MHz | 1710.1 MHz to 1785 MHz | 95 MHz |
| Uplink Frequency Band | Uplink/Downlink Separation | | | | | | |
| 880.1 MHz to 914.9 MHz | 45 MHz | | | | | | |
| 1710.1 MHz to 1785 MHz | 95 MHz | | | | | | |
| 7. Maximum Mean Transmit Power | <p>Mobile or nomadic terminal stations or repeaters*: 25 dBm TRP per device</p> <p>Fixed or installed terminal stations or repeaters*: 25 dBm EIRP per device</p> <p>* The maximum mean power relates to the EIRP or TRP of a specific piece of Radio Equipment irrespective of the number of transmit antennas. It is recognised that a possible tolerance of up to +2 dB is included in this value, to take account of operation under extreme environmental conditions and production spread. This value does not include test tolerance.</p> | | | | | | |
| 8. Channel access and occupation rules | N/A | | | | | | |
| 9. Authorisation regime | <p>Network user equipment meeting the minimum requirements outlined in this Interface Requirement is exempt from licensing provided that it meets the requirements of the relevant exemption regulations</p> <p>Repeaters meeting the minimum requirements outlined <i>Wireless Telegraphy (Mobile Repeater) (Exemption) Regulations 2022</i> are exempt from licensing provided that it meets the requirements</p> | | | | | | |

| | |
|--|--|
| | of the relevant exemption regulations. All other repeaters require a WT Act licence. |
| 10. Additional essential requirements | N/A |
| Informative (11 – 15) | |
| 11. Frequency planning assumptions | EU Decision 2022/173/EU ECC Decision (06)13 CEPT Report 80 |
| 12. Planned changes | N/A |
| 13. Reference | ETSI EN 301 908 |
| 14. Remarks | N/A |
| 15. Notification Number (in respect of Northern Ireland) | N/A |

Table 3.2: Minimum requirements for the use of: terrestrial systems capable of providing electronic communications services operating in the 925 to 959.9 MHz and 1805.1 to 1880 MHz bands

| Mandatory (1 – 10) | | | | | | | |
|--|--|-------------------------|----------------------------|----------------------|--------|------------------------|--------|
| 1. Radiocommunication Service | Mobile or Fixed service | | | | | | |
| 2. Application | TRA-ECS (Terrestrial radio applications capable of providing electronic communication services) | | | | | | |
| 3. Frequency band(s) | 925 to 959.9 MHz 1805.1 to 1880 MHz | | | | | | |
| 4. Channelling | N/A | | | | | | |
| 5. Modulation / Occupied bandwidth | N/A | | | | | | |
| 6. Direction / Separation | <p>Base station transmit</p> <p>Repeater transmit/receive</p> <p><u>Uplink / downlink separation</u></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Downlink Frequency Band</th> <th style="text-align: center;">Uplink/Downlink Separation</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">925 MHz to 959.9 MHz</td> <td style="text-align: center;">45 MHz</td> </tr> <tr> <td style="text-align: center;">1805.1 MHz to 1880 MHz</td> <td style="text-align: center;">95 MHz</td> </tr> </tbody> </table> | Downlink Frequency Band | Uplink/Downlink Separation | 925 MHz to 959.9 MHz | 45 MHz | 1805.1 MHz to 1880 MHz | 95 MHz |
| Downlink Frequency Band | Uplink/Downlink Separation | | | | | | |
| 925 MHz to 959.9 MHz | 45 MHz | | | | | | |
| 1805.1 MHz to 1880 MHz | 95 MHz | | | | | | |
| 7. Maximum Mean Transmit Power / Power Density | <p>Narrowband terrestrial ECS system non-AAS base stations or repeaters: 62 dBm / 200 kHz EIRP per antenna</p> <p>Broadband terrestrial ECS system non-AAS base stations or repeaters: 65 dBm / 5 MHz EIRP per antenna</p> <p>Broadband terrestrial ECS system AAS base stations or repeaters*: 50 dBm / 5 MHz TRP per cell</p> <p>* Deployment of AAS base stations (or repeaters) is only licensed for use in the 1800 MHz band (1805.1-1880 MHz)</p> | | | | | | |
| 8. Channel access and occupation rules | N/A | | | | | | |
| 9. Authorisation regime | <p>WT Act licence required.</p> <p>Repeaters meeting the minimum requirements outlined <i>Wireless Telegraphy (Mobile Repeater) (Exemption) Regulations 2022</i> are exempt from licensing provided that it meets the requirements of the relevant exemption regulations.</p> | | | | | | |

10. Additional essential requirements N/A

Informative (11 – 15)

11. Frequency planning assumptions EU Decision 2022/173/EU
ECC Decision (06)13
CEPT Report 80

12. Planned changes N/A

13. Reference ETSI EN 301 908

14. Remarks Not all frequencies within this range are available for licensing. Ofcom may impose additional restrictions on the maximum power used for specific frequencies and locations.

15. Notification Number (in respect of Northern Ireland) N/A

4. Additional performance parameters

None specified

5. Contact details

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6. Document history

| Version | Date | Changes |
|---------|--------------|------------------|
| | October 2022 | First issue date |
| | | |