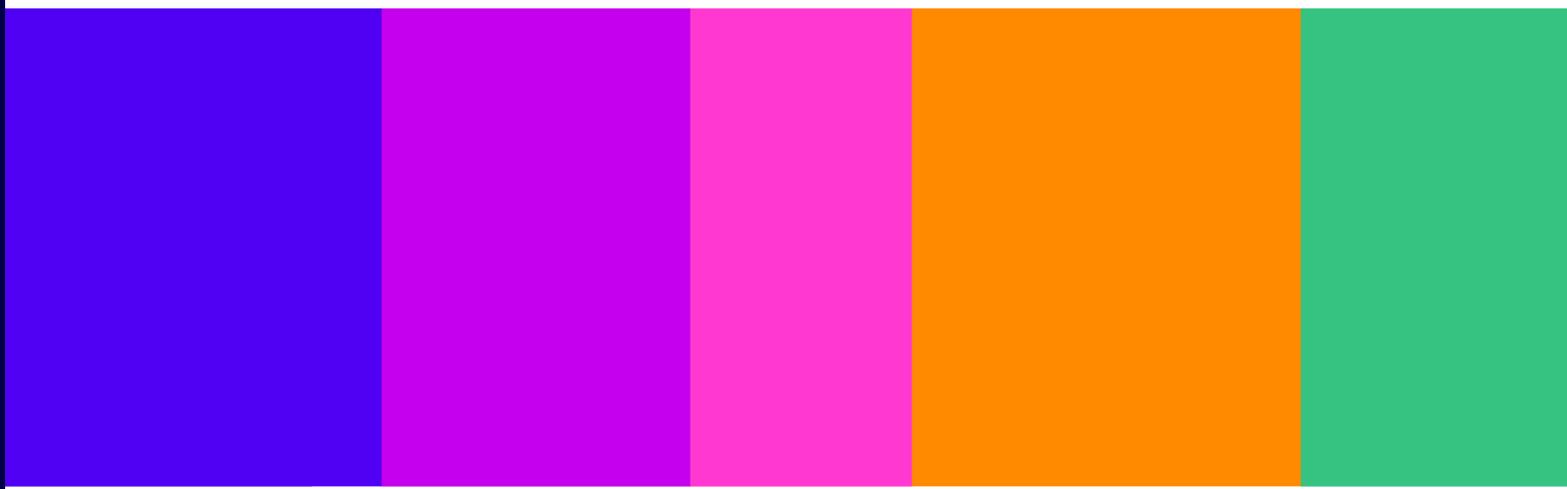


Enabling mmWave spectrum for new uses

Annexes 6-9: Draft Interface Requirements



Contents

Annex

A6	UK Interface Requirement (IR) 2110	3
A7	UK Interface Requirement (IR) 2111	7
A8	UK Interface Requirement (IR) 2104	11
A9	UK Interface Requirement (IR) 2103	18

A6 UK Interface Requirement (IR) 2110

Terrestrial systems capable of providing electronic communications services in the 26 GHz band in high density areas

References

ECC Decision (18)06 on the harmonised technical conditions for Mobile/Fixed Communications Networks (MFCN) in the band 24.25-27.5 GHz, as amended on 20 November 2020.

ETSI EN 301 908: IMT cellular networks; Harmonised Standard for access to radio spectrum (25 March 2022)

ECC Report 307 Toolbox for the most appropriate synchronisation regulatory framework including coexistence of MFCN in 24.25-27.5 GHz in unsynchronised and semi-synchronised mode. (6 March 2020).

ECC/REC/(20)01 ECC Recommendation of 6 March 2020 on guidelines to support the introduction of 5G while ensuring, in a proportionate way, the use of existing and planned FSS transmitting earth stations in the frequency band 24.65-25.25 GHz and the possibility for future deployment of these earth stations.

ECC/REC/(19)01 ECC Recommendation of 8 March 2019 on technical toolkit to support the introduction of 5G while ensuring, in a proportionate way, the use of existing and planned EESS/SRS receiving earth stations in the 26 GHz band and the possibility for future deployment of these earth stations.

CEPT Report 068 Report B from CEPT to the European Commission in response to the Mandate “to develop harmonised technical conditions for spectrum use in support of the introduction of next-generation (5G) terrestrial wireless systems in the Union” Harmonised technical conditions for the 24.25-27.5 GHz ('26 GHz') frequency band (6 July 2018).

Foreword

- 1.2 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.
- 1.3 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.
- 1.4 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).

- 1.5 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 26 GHz (25.1-27.5 GHz) band in high density areas.
- 1.6 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 26 GHz band.
- 1.7 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>.
- 1.8 Further information on this UK Radio Interface Requirement can be obtained from the technical enquiry contact given at the back of this document.

Minimum requirements for operation within the UK

- 1.9 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.
- 1.10 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 26 GHz band. It does not prescribe technical interpretation of the 'essential requirements' of Radio Equipment Regulations 2017 (SI 2017/1206).
- 1.11 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 26 GHz band in the UK. Table 3.1 contains 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 26 GHz band within high density areas of the UK.
- 1.12 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).
- 1.13 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 26 GHz band and with other radiocommunications services, whilst promoting enterprise, innovation and competition.
- 1.14 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 26 GHz band 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 25.1-27.5 GHz band

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)	25.1-27.5 GHz
4. Channelling	50, 100, 200, 400 & 800 MHz
5. Modulation / Occupied bandwidth	N/A
6. Direction / Separation	Time-division duplex (TDD)
7. Maximum Mean Transmit Power	<p>Base & repeater stations 36 dBm/ 200 MHz TRP</p> <p>Mobile/ Nomadic terminal stations: 23 dBm TRP</p> <p>Fixed or installed terminal stations: 23 dBm TRP</p>
8. Channel access and occupation rules	Licensee shall ensure that the Radio Equipment is operated in compliance with any Synchronisation Procedures as notified under the Licence
9. Authorisation regime	<p>WT Act licence required for base stations, repeaters and fixed installations.</p> <p>Network terminal 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>
10. Additional essential requirements	N/A
Informative (11 – 15)	
11. Frequency planning assumptions	When deploying Active Antenna System (AAS) outdoor base stations, Licensees shall ensure that each antenna is normally transmitting only with main beam pointing below the horizon and in addition the antenna shall have mechanical pointing below the horizon except when the base station is only receiving.
12. Planned changes	-
13. Reference	-
14. Remarks	The TRP is defined as the integral of the power transmitted in different directions over the entire radiation sphere.

Mandatory (1 – 10)

15. Notification Number (in respect of Northern Ireland) -

Additional performance parameters

Informative

1.15 None specified

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Document history

Version	Date	Changes
0.1	March 2023	Draft Published
1.0		Published

A7 UK Interface Requirement (IR) 2111

Terrestrial systems capable of providing electronic communications services in the 40 GHz band in high density areas

References

ECC/DEC/(22)06 ECC Decision of 18 November 2022 on harmonised technical conditions for Mobile/Fixed Communications Networks (MFCN) in the band 40.5-43.5 GHz.

ECC/REC/(22)01 ECC Recommendation of 18 November 2022 on guidelines to support the introduction of MFCN in 40.5-43.5 GHz while ensuring, in a proportionate way, the use of FSS receiving earth stations in the frequency band 40.5-42.5 GHz and the use of FSS transmitting earth stations in the frequency band 42.5-43.5 GHz and the possibility for future deployment of these earth stations.

CEPT Report 80, Report from CEPT to the European Commission in response to the Mandate “to develop least restrictive harmonised technical conditions suitable for next-generation (5G) terrestrial wireless systems for priority frequency bands above 24 GHz” Harmonised least restrictive technical conditions for the 40.5-43.5 GHz frequency band, Report approved on 18 November 2022 by the ECC.

Foreword

- 1.1 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.
- 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, 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.
- 1.3 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).
- 1.4 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 40 GHz (40.5-43.5 GHz) band in high density areas.
- 1.5 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 40 GHz band.

- 1.6 All UK Radio Interface Requirements will be published and will be made available free of charge from the Ofcom website at <http://ofcom.org.uk>.
- 1.7 Further information on this UK Radio Interface Requirement can be obtained from the technical enquiry contact given at the back of this document.

Minimum requirements for operation within the UK

- 1.8 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.
- 1.9 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 40 GHz band. It does not prescribe technical interpretation of the 'essential requirements' of Radio Equipment Regulations 2017 (SI 2017/1206).
- 1.10 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 40 GHz band in the UK. Table 3.1 contains 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 40 GHz band within high density areas of the UK.
- 1.11 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).
- 1.12 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 40 GHz band and with other radiocommunications services, whilst promoting enterprise, innovation and competition.
- 1.13 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 40 GHz band 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 40.5-43.5 GHz band

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)	40.5-43.5 GHz
4. Channelling	50, 100, 200, 400 & 800 MHz
5. Modulation / Occupied bandwidth	N/A
6. Direction / Separation	Time-division duplex (TDD)
7. Maximum Mean Transmit Power	<p>Base & repeater stations 36 dBm/ 200 MHz TRP</p> <p>Mobile/ Nomadic terminal stations: 23 dBm TRP</p> <p>Fixed or installed terminal stations: 23 dBm TRP</p>
8. Channel access and occupation rules	Licensee shall ensure that the Radio Equipment is operated in compliance with any Synchronisation Procedures as notified under the Licence
9. Authorisation regime	<p>WT Act licence required for base stations, repeaters and fixed installations.</p> <p>Network terminal 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>
10. Additional essential requirements	N/A
Informative (11 – 15)	
11. Frequency planning assumptions	When deploying Active Antenna System (AAS) outdoor base stations, Licensees transmitting in 42.5-43.5 GHz, shall ensure that each antenna is normally transmitting only with main beam pointing below the horizon and in addition the antenna shall have mechanical pointing below the horizon except when the base station is only receiving.
12. Planned changes	-
13. Reference	-
14. Remarks	The TRP is defined as the integral of the power transmitted in different directions over the entire radiation sphere.

Mandatory (1 – 10)

15. Notification Number (in respect of Northern Ireland) -

Additional performance parameters

Informative

1.14 None specified

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Document history

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0.1	March 2023	Draft Published
1.0		Published

A8 UK Interface Requirement (IR) 2104

Shared Access Medium Power 26 & 40 GHz

References

26 GHz

ECC Decision (18)06 on the harmonised technical conditions for Mobile/Fixed Communications Networks (MFCN) in the band 24.25-27.5 GHz, as amended on 20 November 2020.

ETSI EN 301 908: IMT cellular networks; Harmonised Standard for access to radio spectrum (25 March 2022)

ECC Report 307 Toolbox for the most appropriate synchronisation regulatory framework including coexistence of MFCN in 24.25-27.5 GHz in unsynchronised and semi-synchronised mode. (6 March 2020).

ECC/REC/(20)01 ECC Recommendation of 6 March 2020 on guidelines to support the introduction of 5G while ensuring, in a proportionate way, the use of existing and planned FSS transmitting earth stations in the frequency band 24.65-25.25 GHz and the possibility for future deployment of these earth stations.

ECC/REC/(19)01 ECC Recommendation of 8 March 2019 on technical toolkit to support the introduction of 5G while ensuring, in a proportionate way, the use of existing and planned EESS/SRS receiving earth stations in the 26 GHz band and the possibility for future deployment of these earth stations.

CEPT Report 068 Report B from CEPT to the European Commission in response to the Mandate “to develop harmonised technical conditions for spectrum use in support of the introduction of next-generation (5G) terrestrial wireless systems in the Union” Harmonised technical conditions for the 24.25-27.5 GHz ('26 GHz') frequency band (6 July 2018).

40 GHz

ECC/DEC/(22)06 ECC Decision of 18 November 2022 on harmonised technical conditions for Mobile/Fixed Communications Networks (MFCN) in the band 40.5-43.5 GHz.

ECC/REC/(22)01 ECC Recommendation of 18 November 2022 on guidelines to support the introduction of MFCN in 40.5-43.5 GHz while ensuring, in a proportionate way, the use of FSS receiving earth stations in the frequency band 40.5-42.5 GHz and the use of FSS transmitting earth stations in the frequency band 42.5-43.5 GHz and the possibility for future deployment of these earth stations.

CEPT Report 80, Report from CEPT to the European Commission in response to the Mandate “to develop least restrictive harmonised technical conditions suitable for next-generation (5G) terrestrial wireless systems for priority frequency bands above 24 GHz” Harmonised least restrictive technical conditions for the 40.5-43.5 GHz frequency band, Report approved on 18 November 2022 by the ECC.

Foreword

- 1.15 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.
- 1.16 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.
- 1.17 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).
- 1.18 The requirements given in the main body of this UK Radio Interface Requirement will apply to the licensing of medium power terrestrial systems capable of providing electronic communications services in the 1781.7-1785 MHz and 1876.7-1880 MHz, 2390-2400 MHz, 3.8-4.2 GHz, 24.45-27.5 GHz and 40.5-43.5 GHz bands (the “Shared Access Bands”).
- 1.19 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 medium power terrestrial systems capable of providing electronic communications services in the Shared Access bands.
- 1.20 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>.
- 1.21 Further information on this UK Radio Interface Requirement can be obtained from the technical enquiry contact given at the back of this document.

Minimum requirements for operation within the UK

- 1.22 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.
- 1.23 This UK Radio Interface Requirement gives a high level description of how the spectrum in the UK is used for technologies covered by the Shared Access Medium Power licence product in the Shared Access bands. It does not prescribe technical interpretation of the 'essential requirements' of Radio Equipment Regulations 2017 (SI 2017/1206).
- 1.24 This UK Radio Interface Requirement therefore stipulates the necessary equipment parameters for the authorisation of medium power terrestrial systems capable of providing electronic communications services in the Shared Access bands in the UK. Tables 3.1 to 3.5 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 Shared Access frequency bands within the UK.
- 1.25 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).
- 1.26 The technical parameters specified in the UK Radio Interface Requirement are applied to achieve the desired level of compatibility within the spectrum for medium power terrestrial systems capable of providing electronic communications services in the Shared Access bands and with other radiocommunications services, whilst promoting enterprise, innovation and competition.
- 1.27 This UK Radio Interface requirement provides the necessary technical information which facilitates access to the Shared Access 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 Shared Access 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 3.4: Minimum requirements for the use of Medium Power Shared Access equipment operating in the 24.45-27.5 GHz band

Mandatory (1 – 10)	
16. Radiocommunication Service	Fixed or Mobile Service
17. Application	TRA-ECS (Terrestrial radio applications capable of providing electronic communication services)
18. Frequency band(s)	24.45-27.5 GHz
19. Channelling	50, 100, 200, 400 & 800 MHz
20. Modulation / Occupied bandwidth	
21. Direction / Separation	Time-division duplex (TDD)
22. Maximum Mean Transmit Power	<p>Base & repeater stations: 36 dBm / 200 MHz TRP</p> <p>Mobile or nomadic terminal stations: 23 dBm TRP</p> <p>Fixed or installed terminal stations: 23 dBm TRP</p>
23. Channel access and occupation rules	Licensee shall ensure that the Radio Equipment is operated in compliance with any Synchronisation Procedures as notified under the Licence
24. Authorisation regime	<p>WT Act licence required for base station, repeaters and fixed installations.</p> <p>The use of mobile / nomadic terminal stations 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>
25. Additional essential requirements	None
Informative (11 – 15)	
26. Frequency planning assumptions	<p>Deployments in 24.45-25.05 GHz restricted to 3 outdoor base stations (sector antenna equates to a base station).</p> <p>When deploying Active Antenna System (AAS) outdoor base stations, Licensees shall ensure that each antenna is normally transmitting only with main beam pointing below the horizon and in addition the antenna shall have mechanical pointing below the horizon except when the base station is only receiving.</p>
27. Planned changes	-
28. Reference	-

Mandatory (1 – 10)	
29. Remarks	The TRP is defined as the integral of the power transmitted in different directions over the entire radiation sphere.
30. Notification Number (in respect of Northern Ireland)	-

Table 3.5: Minimum requirements for the use of Medium Power Shared Access equipment operating in the 40.5-43.5 GHz band

Mandatory (1 – 10)	
1. Radiocommunication Service	Fixed or Mobile Service
2. Application	TRA-ECS (Terrestrial radio applications capable of providing electronic communication services)
3. Frequency band(s)	40.5-43.5 GHz
4. Channelling	50, 100, 200, 400 & 800 MHz
5. Modulation / Occupied bandwidth	
6. Direction / Separation	Time-division duplex (TDD)
7. Maximum Mean Transmit Power	<p>Base & repeater stations: 36 dBm / 200 MHz TRP</p> <p>Mobile or nomadic terminal stations: 23 dBm TRP</p> <p>Fixed or installed terminal stations: 23 dBm TRP</p>
8. Channel access and occupation rules	Licensee shall ensure that the Radio Equipment is operated in compliance with any Synchronisation Procedures as notified under the Licence
9. Authorisation regime	WT Act licence for all equipment.
10. Additional essential requirements	None
Informative (11 – 15)	
11. Frequency planning assumptions	<p>Outdoor antennas limited to 10 metres height above ground.</p> <p>When deploying Active Antenna System (AAS) outdoor base stations, Licensees transmitting in 42.5-43.5 GHz, shall ensure that each antenna is normally transmitting only with main beam pointing below the horizon and in addition the antenna shall have mechanical pointing below the horizon except when the base station is only receiving.</p>
12. Planned changes	-

Mandatory (1 – 10)	
13. Reference	-
14. Remarks	The TRP is defined as the integral of the power transmitted in different directions over the entire radiation sphere.
15. Notification Number (in respect of Northern Ireland)	-

Additional performance parameters

Informative

1.28 None specified

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Document history

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0.1	25 July 2019	Draft Published
1.0	9 December 2019	Published
2.x	March 2023	Draft published
2.0	September 2023	Published

A9 UK Interface Requirement (IR) 2103

Shared Access Low Power 26 & 40 GHz

References

26 GHz

ECC Decision (18)06 on the harmonised technical conditions for Mobile/Fixed Communications Networks (MFCN) in the band 24.25-27.5 GHz, as amended on 20 November 2020.

ETSI EN 301 908: IMT cellular networks; Harmonised Standard for access to radio spectrum (25 March 2022)

ECC Report 307 Toolbox for the most appropriate synchronisation regulatory framework including coexistence of MFCN in 24.25-27.5 GHz in unsynchronised and semi-synchronised mode. (6 March 2020).

ECC/REC/(20)01 ECC Recommendation of 6 March 2020 on guidelines to support the introduction of 5G while ensuring, in a proportionate way, the use of existing and planned FSS transmitting earth stations in the frequency band 24.65-25.25 GHz and the possibility for future deployment of these earth stations.

ECC/REC/(19)01 ECC Recommendation of 8 March 2019 on technical toolkit to support the introduction of 5G while ensuring, in a proportionate way, the use of existing and planned EESS/SRS receiving earth stations in the 26 GHz band and the possibility for future deployment of these earth stations.

CEPT Report 068 Report B from CEPT to the European Commission in response to the Mandate “to develop harmonised technical conditions for spectrum use in support of the introduction of next-generation (5G) terrestrial wireless systems in the Union” Harmonised technical conditions for the 24.25-27.5 GHz ('26 GHz') frequency band (6 July 2018).

40 GHz

ECC/DEC/(22)06 ECC Decision of 18 November 2022 on harmonised technical conditions for Mobile/Fixed Communications Networks (MFCN) in the band 40.5-43.5 GHz.

ECC/REC/(22)01 ECC Recommendation of 18 November 2022 on guidelines to support the introduction of MFCN in 40.5-43.5 GHz while ensuring, in a proportionate way, the use of FSS receiving earth stations in the frequency band 40.5-42.5 GHz and the use of FSS transmitting earth stations in the frequency band 42.5-43.5 GHz and the possibility for future deployment of these earth stations.

CEPT Report 80, Report from CEPT to the European Commission in response to the Mandate “to develop least restrictive harmonised technical conditions suitable for next-generation (5G) terrestrial wireless systems for priority frequency bands above 24 GHz” Harmonised least restrictive technical conditions for the 40.5-43.5 GHz frequency band, Report approved on 18 November 2022 by the ECC.

Foreword

- 1.29 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.
- 1.30 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.
- 1.31 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).
- 1.32 The requirements given in the main body of this UK Radio Interface Requirement will apply to the licensing of low power terrestrial systems capable of providing electronic communications services in the 1781.7-1785 MHz and 1876.7-1880 MHz, 2390-2400 MHz, 3.8-4.2 GHz, 24.45-27.5 GHz and 40.5-43.5 GHz bands (the “Shared Access Bands”).
- 1.33 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 low power terrestrial systems capable of providing electronic communications services in the Shared Access bands.
- 1.34 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>.
- 1.35 Further information on this UK Radio Interface Requirement can be obtained from the technical enquiry contact given at the back of this document.

Minimum requirements for operation within the UK

- 1.36 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.
- 1.37 This UK Radio Interface Requirement gives a high level description of how the spectrum in the UK is used for technologies covered by the Shared Access Low Power licence product in the Shared Access bands. It does not prescribe technical interpretation of the 'essential requirements' of Radio Equipment Regulations 2017 (SI 2017/1206).
- 1.38 This UK Radio Interface Requirement therefore stipulates the necessary equipment parameters for the authorisation of low power terrestrial systems capable of providing electronic communications services in the Shared Access bands in the UK. Tables 3.1 to 3.5 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 Shared Access frequency bands within the UK.
- 1.39 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).
- 1.40 The technical parameters specified in the UK Radio Interface Requirement are applied to achieve the desired level of compatibility within the spectrum for low power terrestrial systems capable of providing electronic communications services in the Shared Access bands and with other radiocommunications services, whilst promoting enterprise, innovation and competition.
- 1.41 This UK Radio Interface requirement provides the necessary technical information which facilitates access to the Shared Access 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 Shared Access 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 3.4: Minimum requirements for the use of Low Power Shared Access equipment operating in the 24.45-27.5 GHz band

Mandatory (1 – 10)	
31. Radiocommunication Service	Fixed or Mobile Service
32. Application	TRA-ECS (Terrestrial radio applications capable of providing electronic communication services)
33. Frequency band(s)	24.45-27.5 GHz
34. Channelling	50, 100, 200, 400 & 800 MHz
35. Modulation / Occupied bandwidth	
36. Direction / Separation	Time-division duplex (TDD)
37. Maximum Mean Transmit Power	<p>Base & repeater stations: 25 dBm / 200 MHz TRP</p> <p>Mobile or nomadic terminal stations: 23 dBm TRP</p> <p>Fixed or installed terminal stations: 23 dBm TRP</p>
38. Channel access and occupation rules	Licensee shall ensure that the Radio Equipment is operated in compliance with any Synchronisation Procedures as notified under the Licence
39. Authorisation regime	<p>WT Act licence required for base station, repeaters and fixed installations.</p> <p>The use of mobile / nomadic terminal stations 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>
40. Additional essential requirements	None
Informative (11 – 15)	
41. Frequency planning assumptions	<p>Deployments in 24.45-25.05 GHz restricted to 3 outdoor base stations (sector antenna equates to a base station). Outdoor antennas limited to 10 metres height above ground.</p> <p>When deploying Active Antenna System (AAS) outdoor base stations, Licensees shall ensure that each antenna is normally transmitting only with main beam pointing below the horizon and in addition the antenna shall have mechanical pointing below the horizon except when the base station is only receiving.</p>
42. Planned changes	-

Mandatory (1 – 10)	
43. Reference	-
44. Remarks	The TRP is defined as the integral of the power transmitted in different directions over the entire radiation sphere.
45. Notification Number (in respect of Northern Ireland)	-

Table 3.5: Minimum requirements for the use of Low Power Shared Access equipment operating in the 40.5-43.5 GHz band

Mandatory (1 – 10)	
16. Radiocommunication Service	Fixed or Mobile Service
17. Application	TRA-ECS (Terrestrial radio applications capable of providing electronic communication services)
18. Frequency band(s)	40.5-43.5 GHz
19. Channelling	50, 100, 200, 400 & 800 MHz
20. Modulation / Occupied bandwidth	
21. Direction / Separation	Time-division duplex (TDD)
22. Maximum Mean Transmit Power	<p>Base & repeater stations: 25 dBm / 200 MHz TRP</p> <p>Mobile or nomadic terminal stations: 23 dBm TRP</p> <p>Fixed or installed terminal stations: 23 dBm TRP</p>
23. Channel access and occupation rules	Licensee shall ensure that the Radio Equipment is operated in compliance with any Synchronisation Procedures as notified under the Licence
24. Authorisation regime	<p>WT Act licence required for base station, repeaters and fixed installations.</p> <p>The use of mobile / nomadic terminal stations 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>
25. Additional essential requirements	None
Informative (11 – 15)	

Mandatory (1 – 10)	
26. Frequency planning assumptions	Outdoor antennas limited to 10 metres height above ground. When deploying Active Antenna System (AAS) outdoor base stations, Licensees transmitting in 42.5-43.5 GHz, shall ensure that each antenna is normally transmitting only with main beam pointing below the horizon and in addition the antenna shall have mechanical pointing below the horizon except when the base station is only receiving.
27. Planned changes	-
28. Reference	-
29. Remarks	The TRP is defined as the integral of the power transmitted in different directions over the entire radiation sphere.
30. Notification Number (in respect of Northern Ireland)	-

Additional performance parameters

Informative

1.42 None specified

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