



Radiocommunications (Unacceptable Levels of Interference – 2.3 GHz Band) Amendment Determination 2021 (No. 1)

The Australian Communications and Media Authority makes the following determination under subsection 145(4) of the *Radiocommunications Act 1992*.

Dated: 22 March 2021

Creina Chapman
[signed]
Member

Brendan Byrne
[signed]
~~Member~~/General Manager

Australian Communications and Media Authority

1 Name

This is the *Radiocommunications (Unacceptable Levels of Interference) Amendment Determination 2021 (No. 1)*.

2 Commencement

This instrument commences at the start of the day after the day it is registered on the Federal Register of Legislation.

Note: The Federal Register of Legislation may be accessed free of charge at www.legislation.gov.au.

3 Authority

This instrument is made under subsection 145(4) of the *Radiocommunications Act 1992*.

4 Amendments

The instrument that is specified in Schedule 1 is amended as set out in the applicable items in that Schedule.

Schedule 1—Amendments

Radiocommunications (Unacceptable Levels of Interference – 2.3 GHz Band) Determination 2013 (F2013L02155)

1 Subsection 5(1)

Insert:

active antenna system or *AAS* means a base station antenna system where the amplitude and/or phase between antenna elements is continually adjusted, resulting in an antenna pattern that varies in response to short term changes in the radio environment.

Australian territorial sea baseline means the baseline from which the breadth of the territorial sea, or any part of the territorial sea, is to be measured under section 7 of the *Seas and Submerged Lands Act 1973*.

2 Subsection 5(1), definitions of *DEM-9S* and *DEM-9S cell*

Repeal the definitions, substitute:

DEM-3S means the dataset:

- (a) with the citation “Gallant, J., Wilson, N., Tickle, P.K., Dowling, T., Read A. 2009. 3 Second SRTM Derived Digital Elevation Model (DEM) Version 1.0. Record 1.0. Geoscience Australia, Canberra”; and
- (b) given the persistent identifier <http://pid.geoscience.gov.au/dataset/ga/69888>;

containing modelled terrain height information for Australia, published by Geoscience Australia.

Note: Copies of DEM-3S can be obtained, free of charge, using the persistent identifier. More information about DEM-3S can be obtained from the Geoscience Australia website: www.ga.gov.au.

DEM-3S cell means an individual height element of the DEM-3S.

3 Subsection 5(1)

Insert:

group of radiocommunications receivers has the meaning given by section 8.

group of radiocommunications transmitters has the meaning given by section 7.

HCIS identifier means an identifier used to describe a geographic area in the HCIS.

hierarchical cell identification scheme or *HCIS* means the cell grouping hierarchy scheme used to describe areas in the Australian Spectrum Map Grid.

Recommendation ITU-R P.525-4 means the ITU-R Recommendation “P.525-4 Calculation of free-space attenuation” published by the ITU.

Note: Copies of Recommendation ITU-R P.525-4 can be obtained, free of charge, from the ITU website: www.itu.int.

4 Subsection 5(1), definition of *Recommendation ITU-R P.526-12*

Repeal the definition, substitute:

Recommendation ITU-R P.526-15 means the ITU-R Recommendation “P.526-15 Propagation by diffraction” published by the ITU.

Note: Copies of Recommendation ITU-R P.526-15 can be obtained, free of charge, from the ITU website: www.itu.int.

5 Subsection 5(1)

Insert:

Recommendation ITU-R P.2108-0 means the ITU-R Recommendation “P.2108-0 Prediction of clutter loss” published by the ITU.

Note: Copies of Recommendation ITU-R P.2108-0 can be obtained, free of charge, from the ITU website: www.itu.int.

total radiated power, in relation to a radiocommunications transmitter, means the integral of the power transmitted in different directions over the entire radiation sphere. It is measured considering the combination of all radiating elements on an antenna panel or individual device.

6 After section 5

Insert:

5A References to other instruments

In this Determination, unless the contrary intention appears:

- (a) a reference to any other legislative instrument is a reference to that other legislative instrument as in force from time to time; and
- (b) a reference to any other kind of instrument or writing is a reference to that other instrument or writing as in force or in existence from time to time.

Note 1: For references to Commonwealth Acts, see section 10 of the *Acts Interpretation Act 1901*; and see also subsection 13(1) of the *Legislation Act 2003* for the application of the *Acts Interpretation Act 1901* to legislative instruments.

Note 2: All Commonwealth Acts and legislative instruments are registered on the Federal Register of Legislation.

Note 3: See section 314A of the Act.

7 Paragraph 9(1)(b)

Repeal the paragraph, substitute:

- (b) subject to subsection (2) and (3) – any part of the device boundary of the transmitter lies outside of the geographic area of the licence; or

8 Subsection 9(2)

Repeal the subsection, including the note, substitute:

- (2) Paragraph (1)(b) does not apply in relation to a part of the device boundary that:
 - (a) lies outside the boundary of the ASMG; and
 - (b) is connected to a radial that:
 - (i) is mentioned in Part 1 of Schedule 2; and

- (ii) does not cross over the geographic area of another spectrum licence in the 2.3 GHz band.
- (3) Paragraph (1)(b) does not apply in relation to a part of the device boundary that:
 - (a) lies outside the geographic area of the licence; and
 - (b) is connected to a radial that:
 - (i) is mentioned in Part 1 of Schedule 2; and
 - (ii) does not cross over the land outside the geographic area of the licence that is permanently above the Australian territorial sea baseline; and
 - (iii) does not cross over an area within any of the following HCIS identifiers: IW3E, IW3I, IW3M, IW6A, IW6E, KX9, LX7, LX8, LX9.

Note: In subparagraph (3)(b)(iii), the HCIS identifiers beginning with IW cover an area near Adelaide, and the HCIS identifiers beginning with KX and LX cover an area in Bass Strait.

- (4) This section does not apply in relation to a radiocommunications transmitter to which section 11 applies.

Note: Subsection 145(1) of the Act provides that the ACMA may refuse to include in the Register details of a radiocommunications transmitter if the ACMA is satisfied that operation of the transmitter could cause an unacceptable level of interference to the operation of other radiocommunications devices. However, some radiocommunications transmitters are exempt from the requirement to be registered in the Register under a 2.3 GHz band spectrum licence – see subsection 69(2) of the Act. Accordingly, these transmitters are not required to meet the device boundary criteria specified in this Determination.

9 After section 10

Insert:

11 Transition – radiocommunications transmitter registered before commencement of this section

- (1) If a radiocommunications transmitter was included in the Register in relation to a spectrum licence in the 2.3 GHz band before the commencement of this section (*relevant transmitter*), this section applies in relation to that transmitter.
- (2) For the purposes of subsection 145(4) of the Act, a level of interference caused by a relevant transmitter is unacceptable if it would have been unacceptable under this Determination as in force at the time the relevant transmitter was included in the Register.

Note: This Determination is available, free of charge, from the Federal Register of Legislation: www.legislation.gov.au.

10 Schedule 2, Part 1, item 1, Step 1

Omit “500 metre”, substitute “100 metre”

10A Schedule 2, heading

Omit “(subsections 5 (1), 9 (1) and (2) and section 10)”, substitute “(subsections 5(1), 9(1), 9(2) and 9(3) and section 10)”

11 Schedule 2, Part 1, item 1, Step 1, paragraph (a)

Omit “202”, substitute “1010”

12 Schedule 2, Part 1, item 1, Step 2, paragraph (b)

Omit “202”, substitute “1010”

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13 Schedule 2, Part 1, at the end of item 2

Add:

Note: σ_n is the bearing of the n^{th} -degree radial for the group of radiocommunications transmitters.

14 Schedule 2, Part 2, item 1, after the definition of RP

Insert:

Note: For a device with an active antenna system, the RP at bearing σ_n is defined as the sum of the gain of the antenna towards the horizontal plane and towards azimuth σ_n (dB) and the total radiated power (dBm). This allowance is based on the assumption that beam pointing angles and/or power can be controlled dynamically to ensure RP is not exceeded.

15 Schedule 2, Part 2, item 1, definition of LOP

Repeal the definition, substitute:

LOP is the level of protection. For radiocommunications transmitters that incorporate an active antenna system, the *LOP* is -91.5 dBm per 5 MHz. For radiocommunications transmitters without AAS, the *LOP* is -99.5 dBm per 5 MHz;

16 Schedule 2, Part 3, item 1

Repeal the item, substitute:

1. Subject to this Part 3, the *propagation loss* (or *PL*(l_{mn} , L_{mn})), for a radiocommunications transmitter, of the m^{th} increment on the n^{th} radial is calculated using:
 - (a) for a transmitter connected to an antenna which is located greater than 6 metres above ground level – the method and parameters defined in section 2.2 of Recommendation ITU-R P.525-4 and in section 4.5.2 of Recommendation ITU-R P.526-15;
 - (b) for a transmitter connected to an antenna which is located at or below 6 metres above ground level – the method and parameters defined in section 2.2 of Recommendation ITU-R P.525-4, in section 4.5.2 of Recommendation ITU-R P.526-15 and in section 3.2 of Recommendation ITU-R P.2108-0.

17 Schedule 2, Part 3, item 2

Omit “Recommendation ITU-R P.526-12”, substitute “Recommendation ITU-R P.526.15”

18 Schedule 2, Part 3, item 3

Omit “Recommendation ITU-R P.526-12”, substitute “Recommendation ITU-R P.526.15”

19 Schedule 2, Part 3, item 3

Omit “the DEM-9S at 500 metre increments”, substitute “the DEM-3S at 100 metre increments”

20 Schedule 2, Part 3, item 4

Repeal the item, substitute:

4. In implementing the method in section 3.2 of Recommendation ITU-R P.2108-0:

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- (a) the percentage of locations is set at 0.08% and the correction is applied at only one end of the path;
- (b) if the loss calculated using the method in section 3.2 of Recommendation ITU-R P.2108-0 is less than 0 dB, the calculated loss value is replaced with 0 dB; and
- (c) if the loss calculated using the method in section 3.2 of Recommendation ITU-R P.2108-0 is greater than 8 dB, the calculated loss value is replaced with 8 dB.

21 Schedule 3, Part 2, item 1, Step 2

Omit “DEM-9S”, substitute “DEM-3S”

22 Schedule 3, Part 2, item 1, Step 3

Omit “DEM-9S”, substitute “DEM-3S” (all occurrences)

23 Schedule 3, Part 2, item 2

Repeat the item, substitute:

If the seconds component of (*lmn*, *Lmn*), plus 1.5, has a modulus of zero when divided by 3, then the corresponding DEM-3S cell, for the purposes Step 2 in item 1, is the adjacent DEM-3S cell with the minimum height.

24 Schedule 3, Part 2, item 2, note to the item

Repeat the note, substitute:

Note Additional information for the case where (*lmn*, *Lmn*) corresponds to a DEM-3S cell boundary is provided in the document titled ‘*Digital Elevation Model Interpretation*’ available for free on the ACMA website: www.acma.gov.au.

25 Schedule 3, Part 2, item 2, Diagram 1

Omit “m=1000 m”, substitute “m=200 m”

26 Schedule 3, Part 2, item 2, Diagram 1

Omit “m=500 m”, substitute “m=100 m”

27 Schedule 3, Part 3, item 1, definition of *d*

Omit “(m×500 metres)”, substitute “(m×100 metres)”