Radiocommunications (Unacceptable Levels of Interference – 3.4 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: 9 December 2021

James Cameron
[signed]
Member

Chris Jose
[signed]
Member/~~General Manager~~

Australian Communications and Media Authority

1 Name

This is the *Radiocommunications (Unacceptable Levels of Interference – 3.4 GHz Band) 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.

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Schedule 1

Radiocommunications (Unacceptable Levels of Interference – 3.4 GHz Band) Determination 2015 (F2015L00727)

1 Subsection 5(1), definition of *3.4 GHz band*

Repeal the definition, substitute:

3.4 GHz band means the 3400 MHz to 3700 MHz frequency band.

2 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*.

3 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.

4 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.

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.

5 Subsection 5(1), definition of *Recommendation ITU-R P.526-13*

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.

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

6 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.

7 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.

8 Paragraph 9(1)(b)

Repeal the paragraph, substitute:

(b) subject to subsections (2), (3), (4) and (5) – any part of the device boundary of the transmitter lies outside of the geographic area of the licence; or

9 Subparagraph 9(4)(b)(ii)

Omit "as defined by Geoscience Australia".

10 Subsection 9(4) (notes at the end)

Repeal the notes.

11 After subsection 9(4)

Insert:

(5) A level of interference mentioned in paragraph 9(1)(b) is not unacceptable in relation to a part of the device boundary that:

(a) lies outside the geographic area of the licence; and

(b) lies inside an urban area specified in Schedule 5; and

(c) relates to the operation of a radiocommunications transmitter with an occupied bandwidth contained within the 3400-3475 MHz frequency range; and

(d) is connected to a radial that is mentioned in Part 1 of Schedule 2.

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

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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 3.4 GHz band spectrum licence – see subsection 69(2) of the Act. Accordingly, these transmitters are not required to meet the device boundary criterion specified in this Determination.

12 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 3.4 GHz band before the commencement of this section (***relevant transmitter***), this section applies in relation to that transmitter.

(2) Subject to subsection (3), 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, and previous versions of this Determination, can be obtained, free of charge, from the Federal Register of Legislation: www.legislation.gov.au.

(3) For the purposes of subsection 145(4) of the Act, if:

(a) after the commencement of this section, both:

(i) a detail of a relevant transmitter changes (***relevant change***); and

(ii) the change to the detail is recorded in the Register; and

(b) the distance of the new device boundary of the relevant transmitter is, on each radial mentioned in Part 1 of Schedule 2, equal to or less than the distance of the old device boundary of the relevant transmitter on that radial; and

(c) but for the effect of this subsection, a level of interference caused by the relevant transmitter, immediately after the change time, would be unacceptable;

the level of interference caused by the relevant transmitter, immediately after the change time, is not unacceptable because of the relevant change.

(4) In subsection (3):

change time, for a relevant transmitter, means the time the relevant change is recorded in the Register.

new device boundary, of a relevant transmitter, means the device boundary of the transmitter established immediately after the change time, in accordance with this Determination as in force at the change time.

old device boundary, of a relevant transmitter, means the device boundary of the transmitter established immediately before the change time, in accordance with this Determination as in force at the registration time.

registration time, for a relevant transmitter, means the time the transmitter was included in the Register.

13 Schedule 2, heading

Omit "(subsections 5(1), 9(1) and (2), and section 10)", substitute "(subsections 5(1), 9(1), 9(2), 9(3), 9(4) and 9(5), section 10, and subsection 11(3))".

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14 Schedule 2, Part 1, item 1, Step 1

Omit "250 metre", substitute "100 metre".

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

Omit "432", substitute "1010".

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

Omit "432", substitute "1010".

17 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.

18 Schedule 2, Part 2, item 1, definition of *LOP*

Repeal the definition, substitute:

LOP	is the level of protection. For radiocommunications transmitters with AAS, the *LOP* is -90 dBm per MHz. For radiocommunications transmitters without AAS, the *LOP* is –98 dBm per MHz;

19 Schedule 2, Part 3, item 1

Repeal the item, substitute:

1. Subject to this Part 3, the ***propagation loss*** (or $\boldsymbol{PL(l_{mn},L_{mn})}$), 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; or
   (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.

20 Schedule 2, Part 3, item 2

Omit "Recommendation ITU-R P.526-13", substitute "Recommendation ITU-R P.526-15".

21 Schedule 2, Part 3, item 3

Omit "Recommendation ITU-R P.526-13", substitute "Recommendation ITU-R P.526-15".

22 Schedule 2, Part 3, item 3

Omit "the DEM-9S at 250 metre increments", substitute "the DEM-3S at 100 metre increments".

23 Schedule 2, Part 3, after item 3

Insert:

4. In implementing the method in section 3.2 of Recommendation ITU-R P.2108-0:
   (a) the percentage of locations is set at 0.08% and the correction is applied at only one end of the path; and

(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.

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

Omit "DEM-9S", substitute "DEM-3S".

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

Omit "DEM-9S", substitute "DEM-3S" (all occurrences).

26 Schedule 3, Part 2, item 2 (including the note)

Repeal the item, substitute:

2. 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.

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

Omit "m=1000 m", substitute "m=200 m".

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

Omit "m=500 m", substitute "m=100 m".

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

Omit "(m×250 metres)", substitute "(m×100 metres)".

30 After Schedule 4

Insert:

Schedule 5 Urban areas

(subsection 9(5))

Description of urban areas

1. Urban areas are the areas named in Column 1 of the table below.
2. An urban area consists of the aggregation of block areas referenced by the HCIS identifiers used to describe it which are specified in the corresponding Column 2 of the table below.

Column 1 Name	Column 2 HCIS Identifiers
Adelaide	IW3N, IW3O4, IW3O5, IW3O7, IW3O8, IW6B1, IW6B2, IW6B3, IW6B5, IW6B6
Brisbane	NT9B, NT9C, NT9D, NT9E, NT9F, NT9G, NT9H, NT9K, NT9L, NT8H3, NT8L2, NT8L3, NT8L5, NT8L6, NT8L8, NT8L9, NT9A6, NT9A7, NT9A8, NT9A9, NT9I1, NT9I2, NT9I3, NT9I4, NT9I5, NT9I6, NT9J1, NT9J2, NT9J3, NT9J4, NT9J5, NT9J6, NT9J9, NT9N5, NT9N6, NT9N8, NT9N9, NT9O4, NT9O7, NU3B2, NU3B3, NU3C1, NU3C4
Canberra	MW4D, MW4H, MW5A, MW5B, MW5E, MW5F, MW2M5, MW2M6, MW2M7, MW2M8, MW2M9, MW2N4, MW2N5, MW2N7, MW2N8, MW2N9, MW4L1, MW4L2, MW4L3, MW4L5, MW4L6, MW5I1, MW5I2, MW5I3, MW5I4, MW5I5, MW5I6, MW5J1, MW5J2, MW5J4, MW5J5
Melbourne	KX3P, KX3L6, KX3L7, KX3L8, KX3L9, KX6D1, KX6D2, KX6D3, KX6D5, KX6D6, LX1M, LX1I7, LX1N4, LX4A1, LX4A2, LX4A3, LX4A4, LX4A5, LX4B1
Perth	BV1M, BV1N, BV1O, BV4A, BV4B, BV4C, BV1L5, BV1L8, BV1P1, BV1P2, BV1P4, BV1P5, BV1P7, BV1P8, BV4D1, BV4D2, BV4E1, BV4E2, BV4E3, BV4F1, BV4F2, BV4F3, BV4G1, BV4G2, BV1P9, BV4D3, BV4D4, BV4G3
Sydney	NV7G, NV7H, NV7J, NV7K, NV7L, NV7M, NV7N, NV7O, NV7P, NW1A, NW1B, NW1C, NW1D, NW1E, NW1F, NW1G, NW1H, MV9P2, MV9P3, MV9P5, MV9P6, MV9P7, MV9P8, MV9P9, MW3D1, MW3D2, MW3D3, MW3D5, MW3D6, MW3D8, MW3D9, MW3H2, MW3H3, MW3H5, MW3H6, MW3H9, MW3L2, MW3L3, NV4O7, NV4O8, NV4O9, NV4P7, NV7F6, NV7F8, NV7F9, NV7I6, NV7I8, NV7I9, NW1I1, NW1I2, NW1I3, NW1J1, NW1J2, NW1J3, NW1K1, NW1K2, NW1K3, NW1L1, NW1L2, NW1L3

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