

AMTA submission to the ACMA 3.4 GHz and 3.6 GHz band spectrum licence technical framework Consultation paper

18 June 2018

Introduction

The Australian Mobile Telecommunications Association (AMTA) welcomes the opportunity to provide feedback to the ACMA regarding the *3.4 GHz and 3.6 GHz band spectrum licence technical framework Consultation paper* (the consultation paper). The issues of most concern to the ACMA are given priority in the body of this letter; other views which have possibly already been identified or addressed by the ACMA are included for information in the Attachment.

In this letter, AMTA wishes to stress that:

- The mandated synchronisation requirements should not include a downlink/uplink ratio of 1:1, even for temporary arrangements (as proposed under sub-option 1b).
- In the case that interference arises, the purported interferer should not have to synchronise immediately; there should be a minimum *synchronisation period* within which to seek alternative arrangements and/or implement synchronisation.

These positions are elaborated on further below.

Opposition to 1:1 downlink/uplink ratio

AMTA does not agree with any mandated requirement to align with a downlink/uplink ratio of 1:1. The ACMA has indicated that only one respondent is in favour of 1:1. Noting that the synchronisation requirement is only enacted in cases of interference, in these cases the existing 3.4 GHz licensee can modify the frame structure parameters to align with the proposed 3.6 GHz synchronisation requirements to address the interference on a case-by-case basis. It should be noted that the prospective 3.6 GHz licensees in favour of a 3:1 downlink/uplink ratio are also 3.4 GHz licensees, and so it does not seem intuitive for the majority to have to cede to the minority in regards to this particular disagreement. Having to implement a 1:1 downlink-uplink ratio only to move back to a more appropriate, mandated ratio down the track is excessively onerous and represents a 'worst-case' outcome.

Additional AMTA views on synchronisation

At a high level, AMTA accepts that a baseline device synchronisation requirement serves as a fall-back requirement if agreement is not possible, and can serve to incentivise adjacent-block licensees to reach agreement. We strongly support the freedom for licensees to negotiate alternative arrangements and mitigation measures on a case-by-case basis.

Our position on the synchronisation requirement, and how it is invoked, is as follows:



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When to synchronise

AMTA proposes the inclusion of guidance on the timeframes surrounding the synchronisation requirement. As it currently reads, the licensee is required to synchronise immediately as soon as interference occurs. We believe that there should be a period of time granted to the interfering licensee to implement the synchronisation. Of course, at any time, licensees are free to arrive at an agreed arrangement or mitigation method.

How to synchronise

- Start-of-frame synchronisation or CEPT semi-synchronisation is the minimum requirement for flexibility in resolution of co- and adjacent-channel interference, and should be maintained in the synchronisation requirement.
- There should be flexibility for this to be on a site/cell-specific basis to address interference rather than network-wide synchronisation applying. AMTA notes the absence of a requirement to synchronise the entire network means that site/cell-specific synchronisation is not precluded, but we want to make this point clear in our response.

For any questions in relation to this submission please contact Juan Pablo Casetta, Open Spectrum Pty Ltd representing AMTA, at juanpablo@openspec.com.au or 0402 565 574.

Attachment

Draft Spectrum licence

Stricter emission limit in 3100-3380 MHz

To avoid compromising the benefits associated with equipment economies of scale, AMTA prefers avoiding the need for Australian-specific equipment, and as such proposes adoption of unwanted emission levels below the 3.4 GHz band that are in-line with 3GPP:

- Set the frequency boundary of the spurious domain to 3360 MHz; i.e. 40 MHz below the operating band as per 3GPP TS 38.104; as a compromise can consider the operating band to be 3400 MHz instead of 3300 MHz.
- Set the total radiated power limit to -30 dBm/MHz as per 3GPP TS 38.104.

Note: that this is proposed change to Table 6—*Radiocommunications transmitter unwanted emission limits for registered devices*—and no change is proposed to the core condition 9(c) (i.e. keep the 9 dB scaling factor for AAS as-is).

We believe that flexibility should be maximised, and that, for particular instances and locations where interference potential is greater, this can be managed between the Department of Defence and spectrum licensees to avoid harmful interference occurring in practice.

Editorial corrections

- Core condition 5(1): This should read “other than a transmitter that is ~~not~~ exempt from the registration requirement...”.
- Core condition 11: Correct reference: “core conditions ~~1112~~ to 14”.
- Core condition 12: Correct reference: “core condition ~~1011~~”.
- Core condition 13: Correct reference: “core condition ~~1314~~”.

RAG—Managing Interference from Spectrum Licensed Transmitters

Fixed-Satellite Services (FSS)

AMTA does not agree with the proposed modification to Note 2 (in Part 4.3(3) in the Tx RAG). The Earth station filter characteristics are only relevant to the receiver overload criterion in the proposed Part 4.3(4). The Earth station filter characteristics have no impact on the unwanted emissions falling within the Earth station’s passband. AMTA recommends reverting to the original text of Note 2.

AMTA agrees with the step to adopt the FCC earth station filter—especially to address the 0 dB rejection over the first 15 MHz—but doesn’t see a need for the filter to become *less* stringent than what was in the existing Tx RAG. That said, AMTA recommends Table 1 be modified as follows:

- 45.5 dB rejection between 50 and 110 MHz; and
- correction to the rejection for frequency offset < 150 MHz

Frequency offset (MHz) from the lower or upper frequency on the earth receive station licence	Rejection (dB)
< 50	$0.5 + 0.6 * f_{\text{offset}} \text{ (MHz)}$
< 110	45.5
< 150	$30.5 + 0.25 * (f_{\text{offset}} \text{ (MHz)} - 50)$
< 200	55.5

Frequency offset (MHz) from the lower or upper frequency on the earth receive station licence	Rejection (dB)
200	70

Table 1: Minimum frequency response of earth receive station's RF filter

With regard to the proposed new notification requirement in Part 4.3(45), AMTA proposes a minor change for clarity:

This is intended to give notice to the affected FSS licensee to ensure they have installed an RF filter with the relevant characteristics from Table 1 to their front end of their earth station receiver.