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Friday 15 June 2018

Ref: 3.4 GHz and 3.6 GHz band spectrum licence technical framework

Dear Sir/Madam

Thank you for the opportunity to comment on the ACMA's draft 3.4 GHz and 3.6 GHz band spectrum licence technical framework.

As previously noted, in-principle Foxtel supports moving the 3.6 GHz band to MBB use to facilitate a 5G rollout. However, Foxtel has some concerns regarding the extent to which the proposed technical framework will provide adequate protection of licenced C-Band earth stations in the adjacent 3.7 to 4.2 GHz band.

Radiocommunications Advisory Guidelines (RAGs)

Foxtel is concerned that there is a significant discrepancy between the existing Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters - 3.4 GHz Band) 2015 (and RALI MS39) and the proposed Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters 3.4 GHz Options 1 and 2. We note that the C-Band Filter response characteristic has been changed to the extent that a filter with the proposed response specified is unlikely to be practical. We note that the table in the existing RAG (and RALI MS 39) is as follows:-

Frequency offset from lower edge of Earth station receiver (MHz)	Rejection (dB)
< 25	0
< 50	15
< 150	45
< 200	50
≥ 200	70

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

Whereas the draft RAG has been changed to:-

Frequency offset (MHz)from the lower or upper frequency on the earth receive station licence	Rejection (dB)
< 50	$0.5 + 0.6 \cdot f_{\text{offset}}(\text{MHz})$
< 150	$30.5 + 0.25 \cdot f_{\text{offset}}(\text{MHz})$
< 200	55.5
≥ 200	70

Table 2: Minimum frequency response of Earth receive station's RF filter

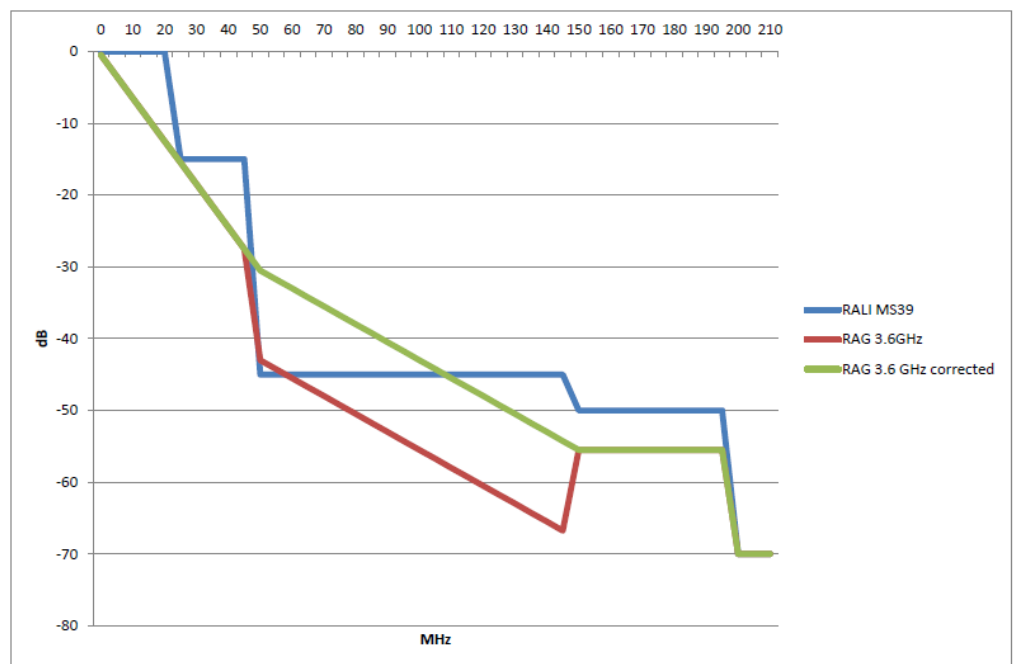
A plot of this response characteristic is shown below and indicates there may be an error in the new proposed filter characteristic.

A corrected version of the table may be:-

Frequency offset (MHz)from the lower or upper frequency on the earth receive station licence	Rejection (dB)
< 50	$0.5 + 0.6 \cdot f_{\text{offset}}(\text{MHz})$
< 150	$30.5 + (0.25 \cdot f_{\text{offset}} - 50)(\text{MHz})$
< 200	55.5
≥ 200	70

Table 3: Minimum frequency response of Earth receive station's RF filter

Comparison of Filter responses plot:-



In any case we submit the original table presents a more practical filter response characteristic noting the difficulty in achieving the steep initial drop off required by the proposed filter response, in a practical filter.

We also note the change in wording from “Frequency offset from lower edge of Earth station receiver (MHz)” to “Frequency offset (MHz) from the lower or upper frequency on the earth station receive station licence.” The basis for this new wording (“lower or upper”) is unclear, and we submit the existing wording be retained.

We are also concerned that it is not practical to have a filter specific to a particular receive licence frequency because:

- These filters are generally off the shelf for the whole band (either 3.7 to 4.2 GHz or 3.8 to 4.2 GHz), and

- b) One dish may be receiving several different signals within the 3.7 to 4.2 GHz band, therefore the filter is only applicable to the lowest received channel frequency.

Because of the issues identified above with the new proposed filter characteristic table Foxtel submits there is no justifiable reason for change. We submit that there should be no change from the previously acceptable RAG and RALI MS39 in this regard. We hold strong concerns that the proposed changes would allow an unacceptable risk of interference.

Communications Alliance submission

Foxtel notes that the submission by Communications Alliance and supports that submission.

If you have any queries or would like to discuss the issues raised in this submission, please contact Holly Brimble, Policy and Regulatory Manager (Holly.Brimble@foxtel.com.au).

Yours sincerely

A handwritten signature in black ink, appearing to read 'Holly Brimble', with a large loop at the end.

Holly Brimble
Policy and Regulatory Manager

