

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of:)
)
Promoting Investment in the 3550-3700 MHz) GN Docket No. 17-258
Band)
)

**COMMENTS OF
THE NATIONAL ASSOCIATION OF BROADCASTERS**

I. INTRODUCTION AND SUMMARY

The National Association of Broadcasters (NAB)¹ submits these comments in response to the Commission’s Notice of Proposed Rulemaking seeking comment on various proposed changes to the Commission’s rules governing Priority Access Licenses in the 3550-3700 MHz band (3.5 GHz band).² NAB’s comments are limited to the Commission’s proposal to relax its limits on out-of-band emissions from the 3.5 GHz band into the lower portion of the adjacent C-band. While NAB fully supports the Commission’s proposal to retain the -40 dBm/MHz conducted power limit above 3720 MHz, the NPRM’s proposals to allow additional emissions into the 3700-3720 MHz portion of the C-band lack a sound technical basis and would create increased and unacceptable interference into the C-band.

¹ The National Association of Broadcasters is a nonprofit trade association that advocates on behalf of free local radio and television stations and broadcast networks before Congress, the Federal Communications Commission and other federal agencies, and the courts.

² *Promoting Investment in the 3550-3700 MHz Band*, Notice of Proposed Rulemaking and Order Terminating Petitions, GN Docket No. 17-258, FCC 17-134 (Oct. 24, 2017) (NPRM).

II. THE COMMISSION SHOULD NOT RELAX OUT-OF-BAND EMISSIONS LIMITS

In its 2015 order, the Commission elected to rely solely on out-of-band emissions limits, rather than separation distances or a guard band, to protect downlink transmissions in the adjacent C-band. In a unanimous decision, the Commission rejected requests for more relaxed emissions limits, concluding that the rules it adopted would “promote effective coexistence of different users in the band” and that higher limits could come at the expense of “increased risk of interference to incumbent systems.”³ On reconsideration, the Commission again unanimously rejected arguments in favor of relaxed out-of-band emissions limits, stating, “[w]e continue to believe that the existing OOBE rules properly balance the need to protect operations in adjacent bands.”⁴

Now, for the third time in as many years, wireless interests seek to relax the out-of-band emissions limits the FCC has twice concluded are necessary to protect incumbent operations in adjacent bands. The sole justification for relaxing emissions limits is a desire to employ wider bandwidth channels without reducing power. This justification lacks technical merit. Simply put, the bandwidth of in-band signals should not affect the potential for interference to adjacent services. The desire for wider bandwidth channels does not change the laws of physics, or previous FCC findings, with respect to protection from harmful interference to operations in adjacent bands.

³ *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, Report and Order and Second Further Notice of Proposed Rulemaking, 30 FCC Rcd 3959, ¶¶ 184, 189 (2015) (First Report and Order).

⁴ *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, Order on Reconsideration and Second Report and Order, 31 FCC Rcd 5011, ¶ 91 (2016) (Second Report and Order).

Indeed, in rejecting similar proposals in 2016, the Commission correctly stated, “the technical rules required for effective coexistence between and among different users of the band do not change, **regardless of how much bandwidth is in use.**”⁵ Whatever the desires of operators in the 3.5 GHz band, the technical merits of the emissions limits required to project operations in adjacent bands do not depend on the bandwidth 3.5 GHz users prefer. Further, the Commission has already concluded that licensees in the 3.5 GHz band could meet the existing emissions limits using wider bandwidths and might be able to do so *without* reducing power if they use robust filters.⁶

The C-band is home to important incumbent operations. As NAB has stated in other proceedings, virtually every U.S. television and radio household relies on C-band satellite operations for content distribution in some manner. Hundreds of broadcast television stations and thousands of radio stations in the U.S. rely on Fixed Satellite Service (FSS) earth stations to receive network and other syndicated programming that these television and radio stations then transmit to viewers and listeners. C-band operations also distribute programming to several thousand cable, DBS and telecommunications service provider headends. In addition, transportable FSS uplink and downlink systems are used for thousands of live events that are broadcast each year. These systems are used to bring viewers coverage of live breaking news, sporting events, such as NFL and college football games and professional golf tournaments, and entertainment events such as the Academy Awards. The C-band is also used for the distribution of content to local radio stations.

⁵ *Id.* at ¶ 93 (emphasis added).

⁶ *Id.*

These operations should not be subject to increased interference based on the whims of 3.5 GHz users. Rather, the Commission should only adjust the existing out-of-band emissions limits based on detailed technical analysis demonstrating that alternative limits will remain sufficient to protect operations in adjacent bands. No such analysis has been provided. Indeed, both of the proposals the Commission sets forth would significantly increase the potential for harmful interference to operations in the lower portion of the C-band.

First, the Commission seeks comment on a Qualcomm proposal to extend the -13 dBm/MHz limit from 0 to 100 percent of the bandwidth of a channel, with a -25 dBm/MHz requirement beyond 100 percent of the bandwidth of the channel. Adoption of this proposal could lead to a 12 dB increase in permitted out-of-band emissions to the lower portion of the C-band. Second, the Commission seeks comment on a variation of this proposal, which would establish a more graduated reduction of emissions limits with an additional attenuation step. Adoption of this proposal could lead to a 5 dB increase in permitted emissions to the lower portion of the C-band.

The NPRM provides no technical analysis that would warrant adoption of either proposal. Rather, the NPRM seeks comment on an Ofcom study suggesting that out-of-band emissions may be lower than “worst case values.”⁷ In fact, the Commission’s existing rules are not based on “worst case values.” Rather, as the Commission made plain in affirming its rules in 2016, the existing rules are based on “real world deployment scenarios and operational conditions.”⁸ Moreover, the Ofcom study itself acknowledges the “increased

⁷ NPRM at ¶ 57.

⁸ Second Report and Order at ¶ 299.

emission leakage that accompanies increasing fundamental power [] due to the non-linear behavior of the power amplifier when it is driven into saturation.”⁹

Thus, in “real world” applications, the Ofcom study provides no basis for departing from the existing rules. Neither of the NPRM’s proposals would protect C-band operations to the same degree as the current rules. Adoption of either proposal would significantly increase the geographic area over which interference would occur and could effectively render the lower portion of the C-band unusable. The Commission should reject these proposals.

III. CONCLUSION

We urge the Commission to continue to balance opportunities for commercial operations in the 3.5 GHz band with the need to protect incumbent operations. Accordingly, the Commission should again reject efforts to loosen the out-of-band emissions limits the Commission has already twice found appropriate.

Respectfully submitted,

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⁹ *Id.*