

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of) RM-9740

Proceeding to Address)
Satellite Network)
Unwanted Emissions)

COMMENT FOR THE RECORD

16 December 1999

Many radio services have a growing concern with unwanted emissions from satellites because the emissions cover a large geographical area and are line of sight to receivers. I say this because of my years of experience contending with unwanted emissions while receiving radio signals ranging from a few hundred kilohertz to many Gigahertz. This experience includes 45 years of listening to short-wave broadcasts, 43 years of amateur radio activities, and 38 years as an engineer designing, building, operating and maintaining sensitive radio receivers operating in the frequency range from 25 MHz to 50 GHz.

Any changes to FCC Rule 25.202 must not in way increase the limiting levels for unwanted emissions, nor extend the spectral reach of the OOB limits. Furthermore, the Rule 25.202 must retain provisions to apply more stringent limits on OOB and spurious emissions in the satellite downlink bands which are adjacent to or nearby bands allocated to the passive radio services, especially to the highly vulnerable radio astronomy service.

Generic masks for limits on out-of-band (OOB) and spurious emissions are intended and may be adequate to prevent interference to potential victim receivers of other satellite networks and other services sharing the same band. However, if the application of "authorized bandwidth" or "necessary bandwidth" results in a wide bandwidth of OOB, the higher levels of permitted OOB emissions, relative to spurious emissions, could extend into operational receiving frequencies of sharing services and into adjacent and even nearby bands allocated to still other services. These higher levels could then cause interference to other services.

One of the other potential victim services is radio astronomy, which is especially vulnerable to unwanted emissions from adjacent, nearby and harmonically related bands. This vulnerability is apparent in the extremely low levels of detrimental interference thresholds given in Recommendation ITU-R RA.769.

Radio astronomy provides the tools of astrophysics to expand humankind's understanding of the Universe and our place in it. This quest is perhaps the oldest and most fundamental of human civilization. Revisions of FCC Rule 25.202 must not impair this quest by increasing the interfering fog in our radio window into the Universe.

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