



# Radio TechCheck



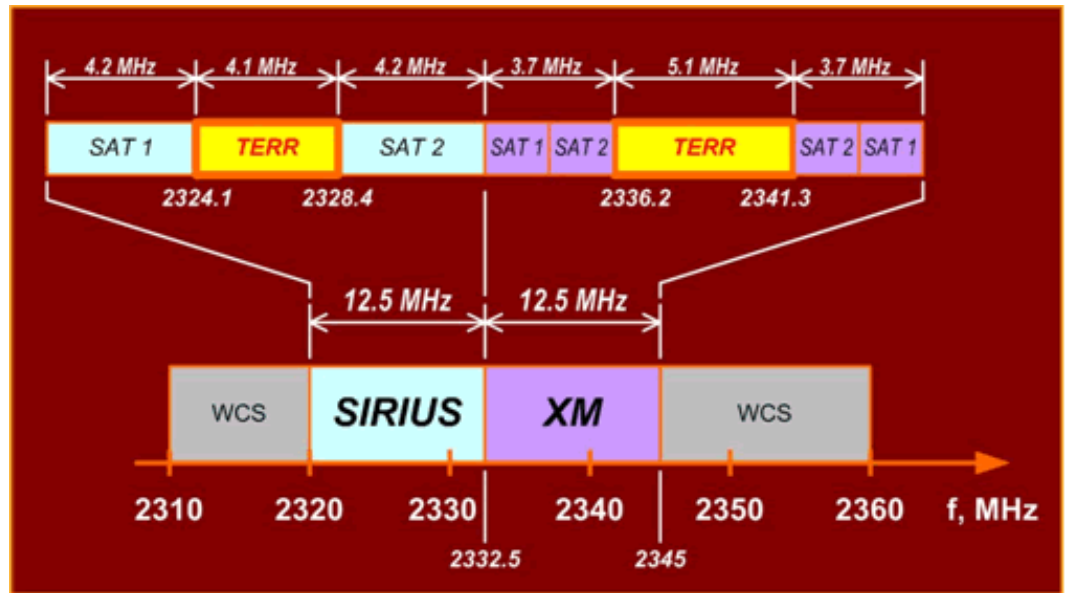
The Weekly NAB Newsletter for Radio Broadcast Engineers

January 7, 2008

## SDARS Terrestrial Repeaters Subject of FCC FNPRM

XM and Sirius, the two U.S. Satellite Digital Audio Radio Service (SDARS) providers, utilize hundreds of terrestrial repeaters all across the country to complement delivery of their satellite signals to listeners' receivers. Late last month the FCC issued a *Second Further Notice of Proposed Rulemaking* (in IB Docket No. 95-91) seeking additional comment on the appropriate rules and policies for licensing of these terrestrial repeaters, and a number of the questions being asked here relate to exactly where and how these repeaters may be used.

Each service provider has set aside roughly one-third of their spectrum for the exclusive use of terrestrial repeaters as shown in the figure (repeater frequency bands in yellow, labeled TERR). Questions regarding the use of repeaters were first raised by the Commission in a 1997 Further Notice acknowledging the use of repeaters "...in urban canyons and other areas where satellite signal reception would be difficult," and proposed authorizing deployment of repeaters "on an 'as-needed' basis in order to meet service requirements." The 1997 Further Notice also sought comment on how to "...ensure that any use of SDARS repeaters remains complementary to the satellite service," as well as on the Commission's tentative conclusion to prohibit the use of SDARS repeaters to transmit locally originated programming.



Since the inception of SDARS services in 2001, all terrestrial repeaters have been operating under Special Temporary Authority (STA). This is due primarily to the fact that the SDARS providers and their spectral neighbors in the Wireless Communications Service (WCS) band have been unable to agree on interference protection criteria, and consequently the Commission has been unable to establish final rules. Deployment of these repeaters has at times been controversial. NAB, in a July 2007 filing with the Commission, noted that, in constructing its network of repeaters, "XM has engaged in what is perhaps the most widespread violation of Commission technical rules by a major licensee in the history of the Commission," noting that XM's own submissions indicate that more than 40 percent of its nearly 800 repeaters were operating illegally, and further noting that Sirius has engaged in analogous, although less extensive, violations (the full text of NAB's filing may be viewed [here](#)). Also in 2007, NAB and others argued against a Petition filed by Sirius to deploy repeaters in Alaska and Hawaii since Sirius does not provide satellite service in these states (NAB's Petition may be viewed [here](#)).

A large portion of the just-released *FNPRM* deals with the interference protection criteria issues between the SDARS and WCS licensees; of greater interest to radio broadcasters are the sections dealing with where and how repeaters should be allowed to operate, in particular:

- **Non-S band repeater feeds:** Sirius has proposed feeding terrestrial repeaters using a "VSAT" network operating in the Ku band (12-14 GHz) rather than with the actual SDARS S band signal. NAB has opposed the use of non-SDARS

licensed satellites to feed repeaters, arguing that the elimination of a requirement that repeaters be fed from a SDARS satellite paves the way for terrestrial repeaters to act independently from the satellite-based network. Accordingly, NAB has previously asked the Commission to adopt a rule requiring SDARS repeaters to be fed only from the same satellite signal that is used by subscribers and to expressly prohibit all other means of signal delivery to SDARS repeaters;

- **Stand-alone operation:** as previously mentioned, Sirius has filed to operate terrestrial repeaters in Alaska and Hawaii; NAB and the broadcasters' associations of Alaska and Hawaii have petitioned to deny this STA request, arguing that these repeaters would not be complementary to a satellite service, but rather would be stand-alone terrestrial facilities. The Commission is seeking comment on whether it is appropriate, as a general principle, to adopt rules governing the ability of SDARS licensees to deploy repeaters in geographic areas not within the service footprint of SDARS satellites;

- **Local program origination from repeaters:** in 2001 specific language was proposed stating that SDARS repeaters would be limited to transmitting "the complete programming, and only that programming, that is also transmitted by an authorized DARS satellite and in such a way that the satellite signal and the SDARS repeater signal are received nearly simultaneously by SDARS subscriber receivers." The Commission is seeking to update the record on the appropriate standard to be adopted in this area.

The full text of this FNPRM is available on the FCC web page at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-07-215A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-07-215A1.pdf). Comment and reply comment deadlines will be established when the FNPRM is published in the Federal Register and will be announced in a future *Radio TechCheck*.

## NAB Seeks Nominations for 2008 Engineering Achievement Awards

NAB is looking for nominees to consider for the prestigious NAB Engineering Achievement awards. Separate awards will be given for achievements in radio and television at the Technology Luncheon at the NAB Show on April 16, 2008 in Las Vegas, Nevada. The qualifications for nominating someone and the nomination form are downloadable on [NAB's technology resources Webpage](#). You may also request a nomination form by calling NAB Science & Technology at (202) 429-5346. The deadline for nominations is January 15, 2008.

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