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EX PARTE OR LATE FILED

May 22, 1998

Magalie Roman Salas
Secretary
Federal Communications Commission
1919 M Street, N.W.
Room 222
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

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Re: Amendment of Parts 21 and 74 To Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees To Engage In Fixed Two-Way Transmissions -- MM Docket No. 97-217 and RM-9060: NOTICE OF EX PARTE COMMUNICATION

Dear Ms. Salas:

On May 20-22, 1998, George Harter, III of Hardin & Associates, Inc. and S. Merrill Weiss of The Merrill Weiss Group engaged in telephone conversations on behalf of the group of over 110 participants in the wireless cable industry that submitted the petition for rulemaking that commenced this proceeding (the "Petitioners") with Keith Larson, Assistant Chief (Engineering) of the Mass Media Bureau, and Joseph Johnson of the Bureau's staff to discuss several of the issues raised by the *Notice of Proposed Rulemaking* ("*NPRM*") in this proceeding.

The substance of the discussion involved editorial revisions to the rules proposed in the *NPRM* and the revisions to those proposed rules previously filed on behalf of the Petitioners designed to clarify those rules and internally conform them. The participants also discussed the need to add to the proposed rules provisions for protection of response station hubs from adjacent channel interference and to provide protection against interference due to block downconverter overload resulting from low-power booster stations (although no such protection exists under the current rules and there have been no reported instances of such interference occuring). In order to assist the staff in addressing these issues, the Petitioners have drafted proposed revisions to the rules. Enclosed are a revised version of Appendix C to the *NPRM*, which incorporates the Petitioners' suggestions, along with a copy of the revised version Appendix C red-lined against the version that originally accompanied the *NPRM* and a copy of the revised version of Appendix C red-lined against the version that was filed by the Petitioners on May 15, 1998. The proposed revisions reflect the proposals advanced by the Petitioners' representatives during the discussions.

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In addition, the participants discussed the Petitioners' recent revisions to the proposed uniform methodology for predicting interference to and from response station hubs. Finally, the representatives of the Petitioners emphasized the need for routine Commission licensing of QPSK and CDMA facilities and explained the testing that was conducted to provide the Commission with data similar to that which led to the routine authorization of QAM and VSB.

Please contact the undersigned should you have any questions regarding this *ex parte* presentation.

Respectfully submitted,

Paul J. Sinderbrand

Counsel to the Petitioners

Enclosures

cc: Keith Larson
Joseph Johnson (via e-mail)
Michael Jacobs

APPENDIX C

Parts 1, 21 and 74 of Title 47 of the Code of Federal Regulations are proposed to be amended as follows:

PART 1 - PRACTICE AND PROCEDURE

1. Section 1.1307 is amended by adding the following language directly following the reference to MDS stations:

MDS licensees are required to attach a label to subscriber transceiver or transverter antennas that (1) provides adequate notice regarding potential radio frequency safety hazards, *e.g.*, information regarding the safe minimum separation distance required between users and transceiver antennas; and (2) references the applicable FCC-adopted limits for radio frequency exposure specified in §1.1310 of this chapter.

1a. Section 1.1307 likewise is amended by adding the following language directly following the reference to Part 74, Subpart I stations:

ITFS licensees are required to attach a label to subscriber transceiver or transverter antennas that (1) provides adequate notice regarding potential radio frequency safety hazards, *e.g.*, information regarding the safe minimum separation distance required between users and transceiver antennas; and (2) references the applicable FCC-adopted limits for radio frequency exposure specified in §1.1310 of this chapter.

PART 21 - DOMESTIC PUBLIC FIXED RADIO SERVICES

2. The authority citation for Part 21 continues to read as follows:

Authority: 47 U.S.C. 154, 303, 334.

3. Section 21.2 is amended by revising the definitions of "Multipoint distribution service," "Multipoint distribution service response station" and "Signal Booster Station" and by adding definitions for "Booster Service Area ", "Response Station Hub License ", "Response Station Hub" and "Sectorization" to read as follows:

§21.2 Definitions.

* * * * *

Booster Service Area. A geographic area to be designated by an applicant for a booster station, within which the booster station shall be entitled to protection against interference as set forth in this Part. The booster service area must be specified by the applicant so as to not overlap the booster service area of any other booster authorized to or proposed by the applicant. However, a booster

station may provide service to receive sites outside of its booster service area, at the licensee's risk of interference.

* * * * *

Multipoint Distribution Service (MDS). A domestic public radio service rendered on microwave frequencies from one or more a fixed stations transmitting to multiple receiving facilities located at fixed points and/or from multiple Multipoint Distribution Service response stations transmitting to response station hubs.

Multipoint Distribution Service response station. A fixed station operated by an MDS licensee, the lessee of MDS channel capacity or a subscriber of either to communicate with a response station hub or associated MDS station. A response station under this part may share facilities with other MDS response stations and/or one or more Instructional Television Fixed Service (ITFS) response stations authorized pursuant to §74.939.

* * * * *

Response Station Hub. A fixed facility licensed for use in accordance with §21.909 that is operated by an MDS licensee or the lessee of an MDS facility for the reception of information transmitted by one or more MDS response stations. A response station hub licensed under this part may share facilities with other MDS response station hubs, ITFS response station hubs authorized pursuant to §74.939, MDS signal booster stations and/or ITFS signal booster stations.

Response Station Hub License. A blanket license authorizing the operation of a single response station hub at a specific location and the simultaneous operation of a limited number of associated response stations of one or more classes at unspecified locations within one or more regions of the response service area.

* * * * *

Sectorization. The use of an antenna system at an MDS station, booster station and/or response station hub that is capable of simultaneously transmitting multiple signals over the same frequencies to different portions of the service area and/or simultaneously receiving multiple signals over the same frequencies from different portions of the service area.

Signal Booster Station. An MDS station licensed for use in accordance with §21.913 that operates on one or more MDS channels. Signal booster stations are intended to augment service as part of a distributed transmission system where signal booster stations retransmit the signals of one or more MDS stations and/or originate transmissions on MDS channels. A signal booster station licensed under this part may share facilities with other MDS signal booster stations, ITFS signal booster stations authorized pursuant to §74.985, MDS response station hubs and/or ITFS response station hubs.

* * * * *

4. Section 21.27 is revised by adding a new subsection (d) to read as follows:

§21.27 Public notice period.

* * * * *

(d) Effective as of [date of adoption of new rules], there shall be one one-week window at such time as the Commission shall announce by public notice for the filing of applications for booster stations and response station hub licenses, during which all applications shall be deemed to have been filed as of the same day for purposes of §§21.909 and 21.913. Following the publication of a public notice announcing the tendering for filing of applications submitted during that window, applicants shall have a period of sixty (60) days to amend their applications, provided such amendments do not result in any increase in interference to any previously proposed or authorized station (including facilities proposed during the window) absent consent of the applicant for or licensee of the station that would receive such interference. At the conclusion of that sixty (60) day period, the Commission shall publish a public notice announcing the acceptance for filing of all applications submitted during the initial window, including those amended during the sixty (60) day period. All petitions to deny applications filed during the one-week window must be filed within sixty (60) days of such second public notice. On the sixty- first (61st) day after the publication of such second public notice, applications for new or modified response station hub and booster station licenses may be filed and will be processed in accordance with the provisions of §§ 21.909 and 21.913.

5. In Section 21.30, paragraph (a)(4) is revised to read as follows:

§21.30 Opposition to applications.

(a) * * *

* * * * *

(4) except as provided in §21.901(d)(1) regarding Instructional Television Fixed Service licensees, in §21.909 regarding MDS response station hubs and in §21.913 regarding MDS booster stations, be filed within thirty (30) days after the date of public notice announcing the acceptance for filing of any such application or major amendment thereto, or identifying the tentative selectee of a random selection proceeding in the Multichannel Multipoint Distribution Service or for Multipoint Distribution Service H-channel stations (unless the Commission otherwise extends the filing deadline); and

* * * * *

6. In Section 21.42, paragraph (c) is revised to read as follows:

§21.42 Certain modifications not requiring prior authorization.

* * * * *

(c) Modifications that may be made without prior authorization under paragraph (b) of this section are:

* * * * *

(9) A change to a sectorized antenna system comprising an array of directional antennas, provided that such system does not change polarization or result in an increase in radiated power by more than one dB in any direction.

7. In Section 21.101(a), note 2 is revised to read as follows:

§21.101 Frequency tolerance.

(a) * * *

[2]Beginning November 1, 1991, equipment authorized to be operated in the frequency bands 2150-2162 MHz, 2596-2644 MHz, 2650-2656 MHz, 2662-2668 MHz, and 2674-2680 MHz for use in the Multipoint Distribution Service shall maintain a frequency tolerance within ±1 kHz of the assigned frequency. MDS booster stations authorized pursuant to §21.913(b) shall maintain a frequency tolerance within ±1 kHz of the assigned frequencies. MDS booster stations authorized pursuant to §21.913(e) and MDS response stations authorized pursuant to §21.909 shall employ transmitters with sufficient frequency stability to ensure that the emission stays within the authorized frequency block.

* * * * *

8. In Section 21.118, paragraph (c) is revised to read as follows:

§21.118 Transmitter construction and installation.

* * * * *

(c) Each transmitter employed in these services shall be equipped with an appropriately labeled pilot lamp or meter which will provide continuous visual indication at the transmitter when its control circuits have been placed in a condition to activate the transmitter. Such requirement will not be applicable to MDS response stations or MDS booster stations authorized pursuant to § 21.913(e). In addition, facilities shall be provided at each transmitter to permit the transmitter to be turned on and off independently of any remote control circuits associated therewith.

* * * * *

9. Section 21.201 is revised to read as follows:

§21.201 Posting of station authorization information.

Each licensee shall post at the station, the booster station authorized pursuant to §21.913(b) or the MDS response station hub the name, address and telephone number of the custodian of the station license or other authorization if such license or authorization is not maintained at the station or response station hub. Each authorized operator of an MDS booster station authorized pursuant to §21.913(e) shall post at the booster station the name, address and telephone number of the custodian of the notification filed pursuant to §21.913(e) if such notification is not maintained at the station.

10. In Section 21.901, paragraphs (a), (b) and (d) are revised, and new paragraph (g) is added, to read as follows:

§21.901 Frequencies.

(a) Frequencies in the bands 2150-2162 MHz, 2596-2644 MHz, 2650-2656 MHz, 2662-2668 MHz, 2674-2680 MHz and 2686-2690 MHz are available for assignment to fixed stations in this service. Frequencies in the band 2150-2160 MHz are shared with nonbroadcast omnidirectional radio systems licensed under other parts of the Commission's Rules, and frequencies in the band 2160-2162 MHz are shared with directional radio systems authorized in other common carrier services. Frequencies in the 2596-2644 MHz band are shared with Instructional Television Fixed Service stations licensed under Part 74 of the Commission's Rules. Channels H4e, H4m, H4f and H4n, listed in §74.939(i) of this chapter, are assigned to fixed stations in the 2596-2620 band, and are shared with Instructional Television Fixed Service Stations licensed under Part 74 of the Commission's Rules to operate in this band; grandfathered channels H4u, H4cc, H4v and H4dd, listed in §74.939(i) of this chapter, are licensed under Part 21 or Part 74 of the Commission's Rules, as applicable.

(b) Applicants may be assigned a channel(s) according to one of the following frequency plans:

(1) At 2150-2156 MHz (designated as Channel 1), or

(2) At 2156-2162 MHz (designated as Channel 2), or

(3) At 2156-2160 MHz (designated as Channel 2A), or

(4) At 2596-2602 MHz, 2608-2614 MHz, 2620-2626 MHz, and 2632-2638 MHz (designated as Channels E1, E2, E3 and E4, respectively, with the four channels to be designated the E-group channels), and Channels H4e and H4m listed in §74.939(i),[1] or

(5) At 2602-2608 MHz, 2614-2620 MHz, 2626-2632 MHz and 2638-2644 MHz (designated as Channels F1, F2, F3 and F4, respectively, with the four channels to be designated the F-group channels), and Channels H4f and H4n, listed in §74.939(i),[1] or

(6) At 2650-2656 MHz, 2662-2668 MHz and 2674-2680 MHz (designated as Channels H1, H2 and H3, respectively, with the three channels to be designated the H-group channels).[1]

* * * * *

(d) Frequencies in the band 2500-2686 MHz and associated 125 kHz channels listed in Section 74.939(i) will be assigned only in accordance with the following conditions.

(1) The Commission shall require that an ITFS station retune to other ITFS or MDS channels in the 2500-2686 MHz band upon application filed by another ITFS or MDS licensee with facilities in the same market, where the requesting party agrees to bear the costs of the retuning of the transmission and any installed receive facilities and demonstrates that the retuned facilities will be comparable to the licensed facilities.

(i) Prior to submitting an application pursuant to paragraph (d)(1), the applicant must provide the licensee with written notice requesting that the licensee retune to other channels in the 2.5 GHz band, agreeing to pay all costs associated with such retuning and demonstrating that comprable facilities are available.

(ii) Service of the notice provided for in subparagraph (i) shall commence a period during which the parties can negotiate voluntary arrangements for retuning. At any time more than thirty (30) days after service of the notice, either party may terminate negotiations. If the negotiations lead to a voluntary agreement, the licensee shall then file an application with the Commission proposing to voluntarily change to other channels, which application will be treated like any other major modification application. If the negotiations are terminated without an agreement being reached, the proponent of the retuning proposal can then refer it to the Commission for resolution by submitting an application in the name of the licensee proposing a change in channels along with any other contingent applications necessary to effectuate the returning (such as a proposal by another licensee to retune its channels to make channels available for the proposed mandatory retuning). Notwithstanding any other provisions of this Part, applications filed in connection with a voluntary or Commission-coordinated retuning should be accepted at any time and cut-off from competing applications as of the close of business on the day of filing. However, in order to afford the Commission an opportunity to determine whether comparable facilities are available before a request for a Commission-coordinated retuning can be granted, applications filed by the proponent of retuning without the licensee's consent should not be eligible for an processing pursuant to [insert citation to provision for automatic or expedited granting of applications].

(iii) For purposes of this paragraph (d)(1), comparable facilities will be deemed available where it is possible for the existing facility to retune to other channels in the 2500-2686 MHz band while still receiving at least a 45 dB desired-to-undesired ("D/U") signal ratio from co-channel operations and a 0 dB D/U signal ratio from adjacent channel operations at registered ITFS receive sites and any protected service area. In those cases where the existing facility receives a lower D/U signal ratio at one or more locations, comparable facilities shall be deemed available where it is possible for the retuned facility to provide no lesser D/U signal ratio at those locations. In determining whether comparable facilities can be achieved, the requesting party may propose receive antenna upgrades and the replacement of pre-May 26, 1983 downconverters pursuant to §74.903(a).

* * * * *

(g) Frequencies in the bands 2150-2162 MHz, 2596-2644 MHz, 2650-2656 MHz, 2662-2668 MHz and 2674-2680 MHz are available for point-to-multipoint use and/or for communications between MDS response stations and response station hubs when authorized in accordance with the provisions of §21.909, provided that such frequencies may be employed for MDS response stations only when transmitting using digital modulation.

NOTES:
[1]No 125 kHz channels are provided for Channels E3, E4, F3, F4, H1, H2 and H3, except for those grandfathered for Channels E3, E4, F3 and F4.

11. Section §21.902 is revised by adding a new paragraph (l) to read as follows:

§21.902 Frequency interference.

* * * * *

(l) Special rules relating to response station hubs and booster service areas are set forth in §§21.909, 21.913, 74.939 and 74.985. To the extent those specific rules are inconsistent with any rules set forth above, those specific rules shall control.

12. In Section 21.903, paragraph (a) is revised to read as follows:

§21.903 Purpose and permissible service.

(a) Multipoint Distribution Service channels are available for transmissions from MDS stations and associated MDS signal booster stations to receive locations, and from MDS response stations to response station hubs. When service is provided on a common carrier basis, subscriber supplied information is transmitted to points designated by the subscriber. When service is provided on a non-common carrier basis, transmissions may include information originated by persons other than the licensee, licensee-manipulated information supplied by other persons, or information originated by the licensee. Point-to-point radio return links from a subscriber's location to a MDS operator's facilities may also be authorized in the 18,580 through 18,820 MHz and 18,920 through 19,160 MHz bands. Rules governing such operation are contained in Subpart I of Part 101 of this chapter, the Point-to-Point Microwave Radio Service.

* * * * *

13. Section 21.904 is revised to read as follows:

§21.904 Transmitter power.

(a) The maximum equivalent isotropically radiated power (EIRP) of a primary or booster station in this service shall not exceed 2000 watts (33 dBW) per 6 MHz channel, except as provided in paragraph (b) of this section.

(b) If a primary or booster station sectorizes or otherwise uses one or more transmitting antennas with a non-omnidirectional horizontal plane radiation pattern, the maximum equivalent isotropically radiated power (EIRP) per 6 MHz channel in dBW in a given direction shall be determined by the following formula:

$$EIRP = 33 \text{ dBW} + 10 \log (360/\text{beamwidth}) \text{ [where } 10 \log (360/\text{beamwidth}) < 6 \text{ dB]}.$$

Beamwidth is the total horizontal plane beamwidth of the individual transmitting antenna for the station or any sector measured at the half-power points.

(c) An increase in station transmitter power, above currently-authorized or previously proposed values, to the maximum values provided in paragraphs (a) and (b) of this section, may be authorized, if the requested power increase would not cause harmful interference to any authorized or previously proposed co-channel or adjacent-channel station entitled to interference protection under the Commission's rules or if an applicant demonstrates that:

(1) A station, that must be protected from interference, potentially could suffer interference that would be eliminated by increasing the power of the interfered-with station; and

(2) The interfered-with station may increase its own power consistent with the rules and without causing interference to any MDS booster station or response station hub which operates as part of the same coordinated system as the interfered-with station; and

(3) The applicant requesting authorization of a power increase agrees to pay all expenses associated with the increase in power to the interfered-with station.

* * * * *

14. In Section 21.905, paragraph (b) is revised to read as follows:

§21.905 Emissions and bandwidth.

* * * * *

(b) For purposes other than standard analog television transmission, quadrature amplitude modulation, digital vestigial sideband modulation, quadrature phase shift key modulation and code division multiple access may also be employed, subject to compliance with the policies set forth in the *Declaratory Ruling and Order*, 11 FCC Rcd 18839 (1996). The licensee may subchannelize its authorized bandwidth, provided that digital modulation is employed and the aggregate power does not exceed the authorized power for the channel, and may utilize all or a portion of its authorized bandwidth for MDS response stations authorized pursuant to §21.909. The licensee may also, jointly with affected adjacent channel licensees, transmit utilizing bandwidth in excess of its authorized frequencies, provided that digital modulation is employed, all power spectral density requirements set forth in this Part are met and the out-of-band emissions restrictions set forth in §21.908 are met at the edges of the channels employed.

* * * * *

15. In Section 21.906, paragraphs (a) and (d) is revised to read as follows:

§21.906 Antennas.

(a) Transmitting antennas shall be omnidirectional, except that a directional antenna with a main beam sufficiently broad to provide adequate service may be used either to avoid possible interference with other users in the frequency band, or to provide coverage more consistent with distribution of potential receiving points. In lieu of an omnidirectional antenna, a station may employ an array of directional antennas in order to reuse spectrum efficiently. When an applicant proposes to employ a directional antenna, or a licensee notifies the Commission pursuant to §21.42 of the installation of a sectorized antenna system, the applicant shall provide the Commission with information regarding the orientation of the directional antenna(s), expressed in degree of azimuth, with respect to true north, and the make and model of such antenna(s).

* * * * *

(d) Directive receiving antennas shall be used at all points other than response station hubs and shall be elevated no higher than necessary to assure adequate service. Receiving antenna height shall not exceed the height criteria of Part 17 of this chapter, unless authorization for use of a specific maximum antenna height (above ground and above mean sea level) for each location has been obtained from the Commission prior to the erection of the antenna. Requests for such authorization shall show the inclusive dates of the proposed operation. (See Part 17 of this chapter concerning the construction, marking and lighting of antenna structures.)

16. Section 21.907 is deleted in its entirety.

17. In Section 21.908, the title is revised, current paragraphs (a), (c), (d) and (e) are deleted, current paragraph (b) is redesignated as paragraph (a), and new paragraphs (b), (c) and (d) are added to read as follows:

§21.908 Transmitting equipment.

(a) On or after November 1, 1991, the maximum out-of-band power of a transmitter or of a booster transmitting on a single channel with an effective isotropic radiated power in excess of -9 dBW employing analog modulation shall be attenuated at the channel edges by at least 38 dB relative to the peak visual carrier, then linearly sloping from that level to at least 60 dB of attenuation at 1 MHz below the lower band edge and 0.5 MHz above the upper band edge, and attenuated at least 60 dB at all other frequencies. The maximum out-of-band power of a transmitter or of a booster transmitting on a single channel or a portion thereof with an effective isotropic radiated power in excess of -9 dBW employing digital modulation shall be attenuated at the licensed channel edges at least 25 dB relative to the licensed average power level (or, when subchannels are used, the appropriately adjusted value based upon the ratio of the channel-to- subchannel bandwidths), then attenuated along a linear slope from that level to at least 40 dB at 250 kHz above or below the

nearest channel edge, then attenuated along a linear slope from that level to at least 60 dB at 3 MHz above the upper and below the lower licensed channel edges, and attenuated at least 60 dB at all other frequencies. Notwithstanding the foregoing, in situations where a booster station transmits, or where adjacent channel licensees jointly transmit, a single signal over more than one contiguous channel utilizing digital modulation with an effective isotropic radiated power in excess of -9 dBW (or, when subchannels or superchannels are used, the appropriately adjusted value based upon the ratio of 6 MHz to the subchannel or superchannel bandwidth), the maximum out-of-band power shall be attenuated at the channel edges of those combined channels at least 25 dB relative to the power level of each channel, then attenuated along a linear slope from that level to at least 40 dB at 250 kHz above or below the channel edges of those combined channels, then attenuated along a linear slope from that level to at least 60 dB at 3 MHz above the upper and below the lower edges of those combined channels, and attenuated at least 60 dB attenuation at all other frequencies. However, should harmful interference occur as a result of emissions outside the assigned channel, additional attenuation may be required. A transmitter licensed prior to November 1, 1991, that remains at the station site initially licensed, and does not comply with this subsection, may continue to be used for its life if it does not cause harmful interference to the operation of any other licensee. Any non-conforming transmitter replaced after November 1, 1991, must be replaced by a transmitter meeting the requirements of this subsection.

(b) A booster transmitting on multiple contiguous or non-contiguous channels carrying separate signals (a "broadband" booster) with an effective isotropic radiated power in excess of -9 dBW per 6 MHz channel and employing analog, digital or a combination of these modulations shall have the following characteristics:

(1) For broadband boosters operating in the frequency range of 2.150-2.160/2 GHz, the maximum out-of-band power shall be attenuated at the upper and lower channel edges forming the band edges by at least 25 dB relative to the licensed analog peak visual carrier or digital average power level (or, when subchannels are used, the appropriately adjusted value based on upon the ratio of the channel-to-subchannel bandwidths), then linearly sloping from that level to at least 40 dB of attenuation at 0.25 MHz above and below the band edges, then linearly sloping from that level to at least 60 dB of attenuation at 3.0 MHz above and below the band edges, and attenuated at least 60 dB at all other frequencies.

(2) For broadband boosters operating in the frequency range of 2.500-2.690 GHz, the maximum out-of-band power shall be attenuated at the upper and lower channel edges forming the band edges by at least 25 dB relative to the licensed analog peak visual carrier or digital average power level (or, when subchannels are used, the appropriately adjusted value based on upon the ratio of the channel-to-subchannel bandwidths), then linearly sloping from that level to at least 40 dB of attenuation at 0.25 MHz above and below the band edges, then linearly sloping from that level to at least 50 dB of attenuation at 3.0 MHz above and below the band edges, then linearly sloping from that level to at least 60 dB of attenuation at 20 MHz above and below the band edges, and attenuated at least 60 dB at all other frequencies.

(3) Within unoccupied channels in the frequency range of 2.500-2.690 GHz, the maximum out-of-band power shall be attenuated at the upper and lower channel edges of an unoccupied

channel by at least 25 dB relative to the licensed analog peak visual carrier power level or digital average power level of the occupied channels (or, when subchannels are used, the appropriately adjusted value based on upon the ratio of the channel-to-subchannel bandwidths), then linearly sloping from that level to at least 40 dB of attenuation at 0.25 MHz above and below the occupied channel edges, then linearly sloping from that level to at least 50 dB of attenuation at 3.0 MHz above and below the occupied channel edges, and attenuated at least 50 dB at all other unoccupied frequencies.

(c) Boosters operating with an effective isotropic radiated power less than -9 dBW per 6 MHz channel shall have no particular out-of-band power attenuation requirement, except that if they cause harmful interference, their operation shall be terminated within 2 hours of notification by the Commission until the interference can be cured.

(d) The maximum out-of-band power of a response station using all or part of a 6 MHz channel and employing digital modulation shall be attenuated at the 6 MHz channel edges at least 38 dB relative to the maximum authorized power level of the response station, then attenuated along a linear slope from that level to at least 60 dB at 3 MHz above the upper and below the lower channel edge, and attenuated at least 60 dB at all other frequencies. Notwithstanding the foregoing, in situations where response stations transmit over more than one contiguous 6 MHz channel utilizing digital modulation, the maximum out-of-band power shall be attenuated at the channel edges of those combined channels at least 38 dB relative to the maximum authorized power level of the response station, then attenuated along a linear slope from that level to at least 60 dB at 3 MHz above the upper and below the lower edges of those combined channels, and attenuated at least 60 dB attenuation at all other frequencies. Notwithstanding any provision hereof, should harmful interference occur as a result of emissions outside the assigned channel, additional attenuation may be required.

Note 1. Note 1. In measuring compliance with the out-of-band emissions limitations, the licensee shall employ one of two methods -- absolute power measurement of the average signal power with one instrument with measurement of the spectral attenuation on a separate instrument, or relative measurement of both the average power and the spectral attenuation on a single instrument. The appropriate one of the two following formulas shall be used in each instance:

For absolute power measurements:

$$\textit{Attenuation in dB (below channel power)} = A + 10 \log\left(C_{BW} / R_{Bw}\right)$$

For relative power measurements:

$$\textit{Attenuation in dB (below flat top)} = A + 10\log\left(R_{BW1} / R_{BW2}\right)$$

Where:

A= Attenuation specified for spectral point (e.g., 35, 38, 60 dB)
C_{BW} *= Channel bandwidth (for absolute power measurements)*
R_{BW} *= Resolution bandwidth (for absolute power measurements)*

R_{BW1} = *Resolution bandwidth for flat top measurement (relative)*
R_{BW2} = *Resolution bandwidth for spectral point measurement (relative)*

The formula for absolute power measurements is to be used when the average signal power is found using a separate instrument such as a power meter; the formula gives the amount by which the measured power value is to be attenuated to find the absolute power value to be used on the spectrum analyzer or equivalent instrument at the spectral point of concern. The formula for relative power measurements is to be used when the average signal power is found using the same instrument as used to measure the attenuation at the specified spectral points and allows different resolution bandwidths to be applied to the two parts of the measurement; the formula gives the required amplitude separation (in dB) between the flat top of the (digital) signal and the point of concern.

18. In Section 21.909, paragraphs (a), (b) and (c) are revised and new paragraphs (d), (e), (f), (g), (h), (i), (j), (k), (l) and (m) are added to read as follows:

§21.909 MDS response stations.

(a) An MDS response station is authorized to provide communication by voice, video and/or data signals with its associated MDS response station hub. An MDS response station may be operated only by the licensee of the MDS response station hub, by any lessee of the MDS response station hub, or by a subscriber of either. The specified frequency channel may be subdivided to provide a distinct operating frequency for each of more than one response station. An MDS response station may also transmit utilizing bandwidth in excess of that authorized to the licensee jointly with affected adjacent channel licensees, provided that digital modulation is employed, all power spectral density requirements set forth in this Part are met and the out-of-band emissions restrictions set forth in §21.908(b) are met at the edges of the channels employed. When a 125 kHz channel is employed for communications to a response station hub, the specific channel which may be used by the response station is determined by the channel assigned to the licensee of the MDS station, in accordance with §74.939(i).

(b) MDS response stations that utilize the bands 2150-2162 MHz, 2596-2644 MHz, 2650-2656 MHz, 2662-2668 MHz and 2674-2680 MHz or the 125 kHz channels may be installed and operated without an individual license to communicate with a response station hub authorized under a response station hub license, provided that the conditions set forth in §21.909(f) are complied with and that MDS response stations operating in the bands 2150-2162 MHz, 2596-2644 MHz, 2650-2656 MHz, 2662-2668 MHz and 2674-2680 MHz employ only digital modulation with uniform power spectral density.

(c) An application for a response station hub license shall be filed on FCC Form 304 and shall in addition to the requirements of that form, include the following:

(1) The geographic coordinates, street address, and the height of the center line of the reception antenna(s) above mean sea level for the proposed response station hub; and

(2) A specification of:

(i) the response service area in which the applicant or its lessee proposes to install MDS response stations to communicate with the response station hub, any regions into which the response service area will be subdivided for purposes of interference analysis, and any regional classes of response station characteristics which will be used to define the operating parameters of groups of response stations within each region for purposes of interference analysis, including:

(A) the maximum height above ground level of the transmission antenna that will be employed by any response station in the regional class and that will be used in interference analyses without the receipt of additional, site- specific authorization; and

(B) the maximum equivalent isotropic radiated power (EIRP) that will be employed by any response station in the regional class and that will be used in interference analyses; and

(C) any sectorization that will be employed, including the polarization to be employed by response stations in each sector and the geographic orientation of the sector boundaries, and that will be used in interference analyses; and

(D) the combined worst-case outer envelope plot of the patterns of all models of response station transmission antennas that will be employed by any response station in the regional class to be used in interference analyses; and

(E) the maximum number of response stations that will be operated simultaneously in each region using the characteristics of each regional class applicable to each region.

(ii) the channel plan (including any guardbands at the edges of the channel) to be used by MDS response stations in communicating with each response station hub, including a statement as to whether the applicant will employ the same frequencies on which response stations will transmit to also transmit on a point-to-multipoint basis from an MDS station or MDS booster station; and

(3) A demonstration that:

(i) The proposed response station hub is within a protected service area to which the applicant is entitled either (i) by virtue of its being the licensee of an incumbent MDS station whose channels are being converted for MDS response station use, or (ii) by virtue of its holding a Basic Trading Area or Partitioned Service Area authorization. In the case of an application for response stations to utilize one or more of the 125 kHz response channels, such demonstration shall establish that the response service area is within the protected service area of the station authorized to utilize the associated channel E1, E2, F1 or F2; and

(ii) The entire proposed response service area is within a protected service area to which the applicant is entitled either (i) by virtue of its being the licensee of an incumbent MDS station whose channels are being converted for MDS response station use, or (ii) by virtue of its

holding a Basic Trading Area or Partitioned Service Area authorization. In the alternative, the applicant may demonstrate that the licensee entitled to any protected service area which is overlapped by the proposed response service area has consented to such overlap. In the case of an application for response stations to utilize one or more of the 125 kHz response channels, such demonstration shall establish that the response service area is entirely within the protected service area of the station authorized to utilize the associated channel E1, E2, F1 or F2, or, in the alternative, that the licensee entitled to any cochannel protected service area which is overlapped by the proposed response service area has consented to such overlap; and

(iii) The combined signals of all simultaneously operating MDS response stations within all response service areas and oriented to transmit towards their respective response station hubs, and all cochannel MDS stations and booster stations licensed to or applied for by the applicant will not generate a power flux density in excess of -73 dBW/m² (or the pro rata power spectral density equivalent based on the bandwidth actually employed in those cases where less than a 6 MHz channel is to be employed (e.g., -89.8 dBW/m² for 125 kHz channels or subchannels)) outside the boundaries of the applicant s protected service area, except to the extent that consents have been granted pursuant to §21.909(b)(3)(B) to an extension of the response service area beyond the boundaries of the protected service area; and

(iv) The combined signals of all simultaneously operating MDS response stations within all response service areas and oriented to transmit towards their respective response station hubs and all cochannel MDS stations and booster stations licensed to or applied for by the applicant will result in a desired to undesired signal ratio of at least 45 dB (or the appropriately adjusted value based upon the ratio of the channel-to-subchannel bandwidths) (i) within the protected service area of any authorized or previously proposed cochannel incumbent MDS or ITFS station with a 56.33 km (35 miles) protected service area with center coordinates located within 160.94 km (100 miles) of the proposed response station hub, (ii) within the booster service area of any cochannel booster station entitled to such protection pursuant to §§21.913(f) or 74.985(f) and located within 160.94 km (100 miles) of the proposed response station hub, or (iii) at any cochannel response station hub entitled to such protection pursuant to §§21.909(h) or 74.939(g) and located within 160.94 km (100 miles) of the proposed response station hub, or, in the alternative, that the licensee of or applicant for such cochannel station or hub consents to the application; and

(v) The combined signals of all simultaneously operating MDS response stations within all response service areas and oriented to transmit towards their respective response station hubs and all cochannel MDS stations and booster stations licensed to or applied for by the applicant will result in a desired to undesired signal ratio of at least 0 dB (or the appropriately adjusted value based upon the ratio of the channel to subchannel bandwidths) (i) within the protected service area of any authorized or previously proposed adjacent channel incumbent MDS or ITFS station with a 56.33 km (35 miles) protected service area with center coordinates located within 160.94 km (100 miles) of the proposed response station hub, (ii) within the booster service area of any adjacent channel booster station entitled to such protection pursuant to §§21.913(f) or 74.985(f) and located within 160.94 km (100 miles) of the proposed response station hub, or (iii) at any adjacent channel response station hub entitled to such protection pursuant to §§21.909(h) or 74.939(g) and located

within 160.94 km (100 miles) of the proposed response station hub, or, in the alternative, that the licensee of or applicant for such adjacent channel station or hub consents to the application; and

(vi) The combined signals of all simultaneously operating MDS response stations within all response service areas and oriented to transmit towards their respective response station hubs and all cochannel MDS stations and booster stations licensed to or applied for by the applicant will result in a desired to undesired signal ratio of at least 45 dB (or the appropriately adjusted value based upon the ratio of the channel to subchannel bandwidths) at any registered receive site of any authorized or previously-proposed cochannel ITFS station or booster station, or at any ITFS response station hub, located within 113 km (70 miles) of the proposed response station hub, or, in the alternative, that the licensee of or applicant for such cochannel station or hub consents to the application; and

(vii) The combined signals of all simultaneously operating MDS response stations within all response service areas and oriented to transmit towards their respective response station hubs and all cochannel MDS stations and booster stations licensed to or applied for by the applicant will result in a desired to undesired signal ratio of at least 0 dB (or the appropriately adjusted value based upon the ratio of the channel to subchannel bandwidths) at any registered receive site of any authorized or previously-proposed adjacent channel ITFS station or booster station, or at any ITFS response station hub, located within 113 km (70 miles) of the proposed response station hub, or, in the alternative, that the licensee of or applicant for such adjacent channel station or hub consents to the application.

(4) A certification that the application has been served upon

(i) the licensee of any station (including any booster station or response station hub) with a protected service area which is overlapped by the proposed response service area;

(ii) the holder of any authorization (including any booster station or response station hub license) with a protected service area that adjoins the applicant s protected service area;

(iii) every licensee of or applicant for (a) any authorized or previously proposed incumbent MDS or ITFS station with a 56.33 km (35 miles) protected service area with center coordinates located within 160.94 km (100 miles) of the proposed response station hub, or (b) any associated booster station or response station hub authorized to the holder of a license for a facility described in (a); and

(iv) every licensee of or applicant for any authorized or previously proposed ITFS station (including any booster station or response station hub) located within 113 km (70 miles) of the proposed response station hub.

(d) Notwithstanding the provisions of §21.901(d)(4) and except as set forth in §21.27(d), applications for response station hub licenses may be filed at any time. Notwithstanding any other provision of Part 21 (including §21.31), applications for response station hub licenses meeting the requirements of §21.909(c) shall cut-off applications that are filed on a subsequent day for facilities

that would cause harmful electromagnetic interference to the proposed response station hubs. A response station hub shall not be entitled to protection from interference caused by facilities proposed on or prior to the day the application for the response station hub license is filed. Response stations shall not be required to protect from interference facilities proposed on or after the day the application for the response station hub license is filed.

(e) Notwithstanding the provisions of §21.30(b)(4) and except as set forth in §21.27(d), any petition to deny an application for a response station hub license shall be filed no later than the sixtieth (60th) day after the date of public notice announcing the filing of such application or major amendment thereto.

(f) An MDS response station hub license shall be conditioned upon compliance with the following:

(1) No MDS response station shall be located beyond the response service area of the response station hub with which it communicates; and

(2) No MDS response station shall operate with a transmitter output power in excess of 2 watts; and

(3) No MDS response station shall operate with an EIRP in excess of that specified in the application for the response station hub pursuant to §21.909(c)(2)(i)(B) for the particular regional class of characteristics with which the response station is associated, and such response station shall not operate at an excess of 33 dBW EIRP (or, when subchannels or superchannels are used, the appropriately adjusted value based upon the ratio of 6 MHz to the subchannel or superchannel bandwidth) without a demonstration that no interference shall occur from that facility operating at a higher power level; and

(4) Each MDS response station shall employ a transmission antenna oriented towards the response station hub with which the MDS response station communicates, and such antenna shall be no less directional than the worst case outer envelope pattern specified in the application for the response station hub pursuant to §21.909(c)(2)(i)(D) for the regional class of characteristics with which the response station is associated; and

(5) The combined out-of-band emissions of all response stations using all or part of one or multiple contiguous 6 MHz channels and employing digital modulation shall comply with §21.908(g). The combined out-of-band emissions of all response stations using all or part of one or multiple contiguous 125 kHz channels shall comply with §21.909(i). However, should harmful interference occur as a result of emissions outside the assigned channel, additional attenuation may be required; and

(6) The response stations transmitting simultaneously at any time within any given region of the response service area utilized for purposes of analyzing the potential for interference by response stations shall conform to the numerical limits for each class of response station proposed in the application for the response station hub license. Notwithstanding the foregoing, the licensee of a response station hub license may alter the number of response stations of any class operated

simultaneously in a given region without prior Commission authorization, provided that the licensee first notifies the Commission of the altered number of response stations of such class(es) to be operated simultaneously in such region, provides the Commission with an analysis establishing that such alteration will not result in any increase in electrical interference to any existing or proposed MDS or ITFS station, booster station or response station hub or to any MDS Basic Trading Area or Partitioned Service Area authorization holder entitled to protection pursuant to §21.909(c)(3), or that the applicant or licensee of such facility has consented to such interference, and serves a copy of such notification and analysis upon each party entitled to be served pursuant to §21.909(c)(4); and

(7) The height employed at any location shall not exceed the criteria set forth in §17.7 of this chapter.

(8) In the event any MDS or ITFS receive site suffers interference due to block downconverter overload, the licensee of each response station hub with a response service area within five miles of such receive site shall cooperate in good faith to expeditiously identify the source of the interference. Each licensee of a response station hub with an associated response station contributing to such interference shall bear the joint and several obligation to promptly remedy all interference resulting from block downconverter overload at any ITFS receive site registered prior to the submission of the application for the response station hub license or at any receive site within an MDS or ITFS protected service area applied for prior to the submission of the application for the response station hub license, regardless of whether the receive site suffering the interference was constructed prior to or after the construction of the response station(s) causing the downconverter overload; provided, however, that the licensee of the registered ITFS receive site or the MDS or ITFS protected service area must cooperate fully and in good faith with efforts by the response station hub licensee to prevent interference before constructing response stations and/or to remedy interference that may occur. In the event that more than one response station hub and/or signal booster station licensee contributes to block downconverter interference at a MDS or ITFS receive site, the licensees of the contributing signal booster and/or response stations hubs shall cooperate in good faith to promptly remedy the interference; provided, however, that any licensee satisfying its joint and several obligation to remedy all such interference shall be entitled to financial contribution from the other(s) in proportion to their contribution to the interference.

(g) The response channels associated with Channels E3, E4, F3, F4, H1, H2 and H3 are allocated to the private operational-fixed service (Part 101).

(h) (1) An applicant for any new or modified MDS or ITFS station (including any booster station or response station hub) shall be required to demonstrate interference protection to a response station hub within 160.94 km (100 miles) of the proposed facilities. In lieu of the interference protection requirements set forth in §§21.902, 21.938(b)(2) and 74.903, such demonstration shall establish that the proposed facility will not increase the accumulated power of the undesired signals (measured at the output of the reception antenna) generated by the proposed facility and any associated primary stations, booster stations or response stations at the response station hub receiver for any sector. In lieu of the foregoing, an applicant for a new MDS or ITFS primary station license or for a new or modified response station hub or booster license may demonstrate that the new facility will not increase the noise floor at a reception antenna of the response station hub by more than 1 dB for co-

channel signals and 35 dB for adjacent channel signals, provided that the entity submitting the application may only invoke this alternative once per response station hub reception antenna.

(2) Commencing upon the filing of an application for an MDS response station hub license and until such time as the application is dismissed or denied or, if the application is granted, a certificate of completion of construction is filed, the incumbent MDS station whose channels are being utilized shall be entitled both to interference protection pursuant to §§21.902(b)(3) and (4) and 21.938(b)(2) and to protection of the response station hub pursuant to the preceding subparagraph. Unless the application for the response station hub license specifies that the same frequencies also will be employed for digital and/or analog point-to-multipoint transmissions by MDS stations and/or MDS booster stations, upon the filing of a certificate of completion of construction for an MDS response station hub where the channels of an incumbent MDS station are being utilized as response station transmit frequencies, the incumbent MDS station whose channels are being utilized for response station transmissions shall no longer be entitled to interference protection pursuant to §§21.902(b)(3) and (4) and 21.938(b)(2) within the response service area with regard to any portion of any 6 MHz channel employed solely for response station communications. Upon the certification of completion of construction of an MDS response station hub where the channels of an incumbent MDS station are being utilized and the application for the response station hub license specifies that the same frequencies will be employed for point-to-multipoint transmissions, the incumbent MDS station whose channels are being utilized shall be entitled both to interference protection pursuant to §§21.902(b)(3) and (4) and 21.938(b)(2) and to protection of the response station hub pursuant to the preceding provisions of this subsection.

(i) 125 kHz wide response channels shall be subject to the following requirements: The 125 kHz wide channel shall be centered at the assigned frequency. If amplitude modulation is used, the carrier shall not be modulated in excess of 100%. If frequency modulation is used, the deviation shall not exceed ± 25 kHz. Any emissions outside the channel shall be attenuated at the channel edges at least 35 dB below peak output power when analog modulation is employed or 35 dB below average output power when digital modulation is employed (or, when subchannels are used, the appropriately adjusted value based upon the ratio of the channel-to-subchannel bandwidths). Any emissions more than 125 kHz from either channel edge, including harmonics, shall be attenuated at least 60 dB below peak output power when analog modulation is employed, or at least 60 dB below average output power when digital modulation is employed (or, when subchannels are used, the appropriately adjusted value based upon the ratio of the channel-to-subchannel bandwidths). Notwithstanding the foregoing, in situations where adjacent channel licensees jointly transmit over more than one contiguous channel utilizing digital modulation, the maximum out-of-band power shall be attenuated at the edges of those combined channels at least 35 dB relative to the licensed average power level of each channel. Emissions more than 125 kHz from either edge of the combined channels, including harmonics, shall be attenuated at least 60 dB below peak analog power or average digital power of each channel, as appropriate. Different types of emissions may be authorized for use on 125 kHz wide channels if the applicant describes fully the modulation and bandwidth desired, and demonstrates that the modulation selected will cause no more interference than is permitted under this subsection. Greater attenuation may be required if interference is caused by out-of-channel emissions.

(j) The transmitter of a response station may be operated unattended. The overall performance of the response station transmitter shall be checked as often as necessary to ensure that it is functioning in accordance with the requirements of the Commission's rules. The licensee of a response station hub is responsible for the proper operation of associated response station transmitters at all times. The transmitters shall be installed and protected in such manner as to prevent tampering or operation by unauthorized persons.

(k) The transmitting apparatus employed at MDS response stations shall have received type certification.

(l) An MDS response station shall be operated only when engaged in communication with its associated MDS response station hub or MDS station, or for necessary equipment or system tests and adjustments. Radiation of an unmodulated carrier and other unnecessary transmissions are forbidden.

Note 1: Interference calculations required under this rule shall be performed in accordance with Method For Predicting Accumulated Signal Power From a Multiplicity of Statistically-located Transmitters as published as Appendix __ to the [cite to the Report and Order adopting proposed rules].

Note 2: Compliance with the out-of-band emissions limitations shall be established in accordance with Note 1 to Section 21.908.

19. Section 21.913 is revised in its entirety to read as follows:

§21.913 Signal booster stations.

(a) An MDS booster station may reuse channels to repeat the signals of MDS stations or for the origination of signals on MDS channels. No booster station may be authorized for the reuse of channels authorized to an MDS station without the written consent of the licensee of the station whose channels are reused, and such consent must be included with the booster station application. The aggregate power flux density generated by an MDS station and all associated signal booster stations and all simultaneously operating co-channel response stations may not exceed -73 dBW/m^2 (or, when subchannels are used, the appropriately adjusted value based upon the ratio of the channel-to-subchannel bandwidths) at or beyond the boundaries of the protected service area of any MDS station whose channel is being reused, as measured at locations for which there is an unobstructed signal path, unless the consent of the adjoining cochannel protected service area licensee is obtained.

(b) Eligibility for a license for an MDS booster station that has a maximum power level in excess of -9 dBW EIRP (or, when subchannels or superchannels are used, the appropriately adjusted value based upon the ratio of 6 MHz to the subchannel or superchannel bandwidth) (a "high-power MDS signal booster") shall be restricted to an MDS licensee or conditional licensee. A high-power MDS signal booster may operate only on one or more MDS channels that are licensed to the licensee of the MDS booster station. Authority to operate a high-power MDS signal booster station may be

secured by submitting an application on FCC Form 304 and including, in addition to the requirements of that form;

(1) A demonstration that the proposed booster station site is within the protected service area, as defined in §§21.902(d), 21.933 and 74.903(d), of every incumbent MDS or ITFS stations whose channels are to be reused; and

(2) A study which demonstrates that the aggregate power flux density of the MDS station and all associated booster stations and simultaneously operating co-channel response stations licensed to or applied for by the applicant, measured at or beyond the boundary of the protected service areas of the MDS station whose channels are to be reused, does not exceed -73.0 dBW/m^2 (or, when subchannels are used, the appropriately adjusted value based upon the ratio of the channel-to-subchannel bandwidths) at locations for which there is an unobstructed signal path unless the consent of the adjoining protected service area licensee has been obtained; and

(3) In lieu of the requirements of §§21.902(c) and (i), a study which demonstrates that the proposed booster station will cause no harmful interference to co-channel and adjacent-channel existing or previously-proposed ITFS and MDS stations with protected service area center coordinates as specified in §21.902(d) or, in the case of ITFS stations without protected service areas, transmitters, within 160.9 kilometers (100 miles) of the proposed booster station's transmitter site, or any ITFS or MDS response station hubs or booster stations within 160.94 kilometers (100 miles) of the proposed booster station s transmitter site. Such study shall consider the undesired signal levels generated by the proposed signal booster station, the primary station, all other licensed or previously proposed associated booster stations, and all simultaneously operating cochannel response stations licensed to or applied for by the applicant. In the alternative, a statement from the MDS or ITFS permittee, licensee or conditional licensee stating that it does not object to operation of the MDS signal booster station may be submitted; and

(4) A written consent statement of the licensee of each MDS and ITFS station whose channel is reused; and

(5) A description of the booster service area; and

(6) A demonstration either

(i) that the booster service area is entirely within the protected service area to which each licensee of a station whose channels are being reused is entitled either

(A) by virtue of its being the licensee of an incumbent MDS station whose channels are being converted for MDS response station use, or

(B) by virtue of its holding a Basic Trading Area or Partitioned Service Area authorization; or

(ii) that the licensee entitled to any protected service area which is overlapped by the proposed booster service area has consented to such overlap; and

(7) A demonstration that the proposed booster service area can be substantially served by the proposed booster without interference; and

(8) A certification that copies of the materials set forth in this §21.913(b) have been served upon the licensee, conditional licensee or permittee of each station (including each response station hub and booster station) required to be studied pursuant to §21.913(b)(3) and the holder of any Basic Trading Area or Partitioned Service Area authorization adjoining the proposed booster service area.

(c) Notwithstanding the provisions of §21.901(d)(4) and except as provided in §21.27(d), applications for high-power MDS signal booster station authorizations may be filed at any time. Notwithstanding any other provision of Part 21 (including §21.31), applications for high-power MDS signal booster stations authorizations meeting the requirements of §21.913(b) shall cut-off applications that are filed on a subsequent day for facilities that would cause harmful electromagnetic interference to the proposed booster stations.

(d) Notwithstanding the provisions of §21.30(b)(4), any petition to deny an application for a high power MDS signal booster station authorization shall be filed no later than the sixtieth (60th) day after the date of public notice announcing the filing of such application or major amendment thereto.

(e) Eligibility for a license for an MDS booster station that has a maximum power level of -9 dBW EIRP (or, when subchannels or superchannels are used, the appropriately adjusted value based upon the ratio of 6 MHz to the subchannel or superchannel bandwidth) ("low-power MDS signal booster station") shall be restricted to an MDS licensee or conditional licensee or to a third party with a fully-executed lease or consent agreement with an MDS conditional licensee or licensee. A low-power MDS signal booster station may operate only on one or more MDS channels that are licensed to or leased by the licensee of the MDS booster station. An eligible party may install and commence operation of a low-power MDS signal booster station, subject to the condition that for sixty (60) days after installation, no objection or petition to deny is filed by an authorized co-channel or adjacent-channel ITFS or MDS station with a transmitter within 8.0 kilometers (5 miles) of the coordinates of the signal booster. An eligible party seeking to install a low-power MDS signal booster under this rule must, within 48 hours after installation, submit

(1) a description of the signal booster technical specifications (including an antenna envelope plot or, if the envelope plot is on file with the Commission, the make and model of the antenna, antenna gain and azimuth), the coordinates of the booster, the height of the center of radiation above mean sea level, the street address of the signal booster and a description of the booster service area,

(2) a demonstration that the booster service area is entirely within the protected service area to which each licensee of a station whose channels are being reused is entitled either

(i) by virtue of its being the licensee of an incumbent MDS station whose channels are being converted for MDS response station use, or

(ii) by virtue of its holding a Basic Trading Area or Partitioned Service Area authorization, or, in the alternative, that the licensee entitled to any protected service area which is overlapped by the proposed booster service area has consented to such overlap; and a demonstration that the proposed booster service area can be served by the proposed booster without interference;

(3) either a certification that no Federal Aviation Administration determination of No Hazard to Air Navigation is required under Part 17 of this chapter or, if such determination is required, either:

(i) a statement of the FCC Antenna Structure Registration Number; or

(ii) if an FCC Antenna Structure Registration Number has not been assigned for the antenna structure, the filer must indicate the date the application by the antenna structure owner to registered the antenna structure was filed with the FCC in accordance with Part 17 of this chapter. and

(4) a certification that:

(i) The maximum power level of the signal booster transmitter does not exceed -9 dBW EIRP (or, when subchannels or superchannels are used, the appropriately adjusted value based upon the ratio of 6 MHz to the subchannel or superchannel bandwidth); and

(ii) No registered receiver of an ITFS E or F channel station, constructed prior to May 26, 1983, is located within a 1.61 km (1 mile) radius of the coordinates of the booster, or in the alternative, that a consent statement has been obtained from the affected ITFS licensee; and

(iii) No environmental assessment location as defined at §1.1307 of this chapter is affected by installation and/or operation of the signal booster; and

(iv) Each MDS and/or ITFS station licensee (including the licensees of booster stations and response station hubs) with protected service areas or registered receivers within a 8.0 km (5 mile) radius of the coordinates of the booster has been given notice of its installation; and

(v) Consent has been obtained from each MDS station licensee whose signal is reused by the signal booster; and

(vi) The signal booster site is within the protected service area of the MDS stations whose channels are to be reused, and

(vii) The aggregate power flux density of the MDS stations to be reused and their associated booster stations and simultaneously operating co-channel response stations licensed to or applied for by the applicant, measured at or beyond the boundary of the protected service areas of the MDS stations to be reused, does not exceed -73.0 dBW/m^2 (or, when subchannels are used, the appropriately adjusted value based upon the ratio of the channel-to-subchannel bandwidths) at locations for which there is an unobstructed signal path; and,

(viii) The MDS booster station filer understands and agrees that in the event harmful interference is claimed by the filing of an objection or petition to deny, the licensee must terminate operation within two (2) hours of written notification by the Commission, and must not recommence operation until receipt of written authorization to do so by the Commission.

(f) An applicant for any new or modified MDS or ITFS station (including a response station hub license or a booster station) shall demonstrate compliance with the desired to undesired signal ratio protected service area protection requirements set forth in §§21.902, 21.938 and 74.903 with respect to the portion of any previously proposed or authorized booster service area that is within the protected service area of a primary incumbent MDS station by using the transmission parameters of the MDS booster station (including EIRP, polarization(s) and antenna height) with respect to those channels authorized to an incumbent MDS station that are being reused. Upon the filing of a certification of completion of construction for an MDS booster station applied for pursuant to §21.913(b) or upon the filing of an MDS booster station notification pursuant to §21.913(e), each incumbent MDS station whose channels are being reused by the MDS signal booster shall no longer be entitled to interference protection pursuant to §§21.902(b)(3) and (4), 21.938(b)(2) and (3) and 74.903 within the booster service area based on the transmission parameters of the incumbent MDS station whose channels are being reused. A booster station shall not be entitled to protection from interference caused by facilities proposed on or prior to the day the application or notification for the booster station is filed. Booster stations shall not be required to protect from interference facilities proposed on or after the day the application or notification for the booster station is filed.

(g) In the event any MDS or ITFS receive site suffers interference due to block downconverter overload, the licensee of each signal booster station within five miles of such receive site shall cooperate in good faith to expeditiously identify the source of the interference. Each licensee of a signal booster station contributing to such interference shall bear the joint and several obligation to promptly remedy all interference resulting from block downconverter overload at any ITFS receive site registered prior to the submission of the application or notification for the signal booster station or at any receive site within an MDS or ITFS protected service area applied for prior to the submission of the application or notification for the signal booster station, regardless of whether the receive site suffering the interference was constructed prior to or after the construction of the signal booster station(s) causing the downconverter overload; provided, however, that the licensee of the registered ITFS receive site or the MDS or ITFS protected service area must cooperate fully and in good faith with efforts by the signal booster station licensee to prevent interference before constructing the signal booster station and/or to remedy interference that may occur. In the event that more than one response station hub and/or signal booster station licensee contributes to block downconverter interference at a MDS or ITFS receive site, the licensees of the contributing signal booster and/or response stations hubs shall cooperate in good faith to promptly remedy the interference; provided, however, that any licensee satisfying its joint and several obligation to remedy all such interference shall be entitled to financial contribution from the other(s) in proportion to their contribution to the interference.

20. In Section 21.925, paragraph (b) is revised to read as follows:

§21.925 Applications for BTA authorizations and MDS station licenses.