

4, 300j-9, 1857 *et seq.*, 6901-6992k, 7401-7671q, 7542, 9601-9657, 11023, 11048.

2. In § 9.1, the table is amended by adding an entry under the indicated heading to read as follows:

§ 9.1 OMB approvals under the Paperwork Reduction Act.

* * * * *

40 CFR citation	OMB control No.
* * *	* *
Criteria for Municipal Solid Waste Landfills	
Part 258	2050-0122
* * *	* *

[FR Doc. 97-8819 Filed 4-4-97; 8:45 am]

BILLING CODE 6560-50-P

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 27

[GN Docket No. 96-228; FCC 97-112]

The Wireless Communications Service ("WCS")

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: On March 31, 1997, the Federal Communications Commission ("Commission") adopted a Memorandum Opinion and Order amending certain rules pertaining to Wireless Communications Service ("WCS") operations in the 2305-2320 and 2345-2360 MHz bands. These amendments are being made in response to certain petitions for reconsideration of the Report and Order in this proceeding which established rules and policies for WCS. The effect of this action is to make minor amendments to the power and out-of-band emission limits imposed on WCS operations.

EFFECTIVE DATE: April 7, 1997.

FOR FURTHER INFORMATION CONTACT: Josh Roland, Wireless Telecommunications Bureau, (202) 418-0660, or Tom Mooring, Office of Engineering and Technology, (202) 418-2450.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Memorandum Opinion and Order in GN Docket No. 96-228. The complete Memorandum Opinion and Order is available for inspection and copying during normal business hours in the FCC Reference Center (Room 239), 1919

M Street, N.W., Washington, D.C., and also may be purchased from the Commission's copy contractor, International Transcription Service, (202) 857-3800, 2100 M Street, N.W., Washington, D.C. 20037. The complete Memorandum Opinion and Order is also available on the Commission's Internet home page (<http://www.fcc.gov>)

Summary of the Memorandum Opinion and Order

1. The Omnibus Consolidated Appropriations Act, 1997, Public Law 104-208, 110 Stat. 3009 (1996) ("Appropriations Act") directed the Commission to reallocate the use of frequencies at 2305-2320 megahertz and 2345-2360 megahertz to wireless services that are consistent with international agreements concerning spectrum allocations, and to assign the use of such frequencies by competitive bidding pursuant to Section 309(j) of the Communications Act of 1934. In making these bands of frequencies available for competitive bidding, the Commission was directed to seek to promote the most efficient use of the spectrum and to commence the competitive bidding for the assignment of these frequencies no later than April 15, 1997.

2. On February 19, 1997, the Commission adopted a *Report and Order* in this proceeding establishing the Wireless Communications Service ("WCS"). See *Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service ("WCS")*, GN Docket No. 96-228, *Report and Order*, FCC 97-50, 62 FR 9636 (March 3, 1997). ("Report and Order"). Specifically, the Commission allocated the 2305-2320 MHz and 2345-2360 MHz bands to the fixed, mobile, and radiolocation services on a primary basis and maintained the primary allocation for the broadcasting-satellite service (sound) in the 2310-2320 MHz and 2345-2360 MHz bands. WCS licensees will be permitted to provide any of these services. The Commission did not adopt any limitations on transmitter power, except to require that the equipment comply with our radiofrequency ("RF") safety program. The Commission also declined to impose any technical restrictions on WCS licensees aimed at protecting the multipoint distribution service and the instructional television fixed service ("MDS/ITFS") reception because, based on the record before the Commission at that time, the Commission was not persuaded that the operation of WCS facilities would irreparably harm the MDS and ITFS services. The Commission also noted that MDS/ITFS

block downconverters traditionally have employed an inexpensive design that has minimal frequency selectivity, and observed that the industry appears to be converting to newer, more robustly designed downconverters that would not receive WCS signals. The Commission concluded that it would be imprudent to adopt a requirement for WCS licensees to protect MDS/ITFS operations before having a more complete understanding of the nature and extent of problems that may actually arise.

3. Also in the *Report and Order*, in order to protect satellite digital audio radio service ("Satellite DARS" or "DARS") operations in the 2320-2345 MHz band, the Commission adopted stringent out-of-band emission limits that it believed would, at least in the foreseeable future, make mobile operations in WCS spectrum technologically infeasible. Specifically, all emissions into the 2320-2345 MHz band from fixed WCS transmitters must be attenuated below the transmitter output power ("p") by at least 80 + 10 log (p) dB and all emissions from mobile WCS transmitters must be attenuated below p by at least 110 + 10 log (p) dB.

4. On March 10, 1997, the Wireless Cable Association International, Inc. ("WCA") filed an Emergency Motion for Stay and a Petition for Expedited Reconsideration of the *Report and Order*. Concurrent with the adoption of this *Memorandum Opinion and Order*, the Commission is denying WCA's Emergency Motion for Stay, ruling that the Appropriations Act does not afford the Commission the authority to defer the commencement date of the WCS auction. On March 11, 1997, the PACS Providers Forum and DigiVox Corporation ("PPF/DigiVox") jointly filed a Petition for Expedited Reconsideration of the *Report and Order*. On March 13, 1997, the Wireless Telecommunications Bureau placed the petitions on public notice and established an expedited pleading cycle. By this *Memorandum Opinion and Order*, the Commission amends certain aspects of its rules governing the WCS in response to these two petitions for reconsideration.

5. Specifically, based on a better understanding of the potential for WCS operations to interfere with MDS/ITFS reception, the Commission is specifying limits on WCS operating power and is requiring that, for a limited time, WCS licensees assume responsibility under certain circumstances for interference they may cause to MDS/ITFS operations. The Commission also is requiring WCS licensees to provide advance notification to nearby MDS/

ITFS licensees of certain technical parameters and is encouraging voluntary coordination among affected licensees. Additionally, though reaffirming the original out-of-band emission limits as generally appropriate across the broad range of flexible WCS systems and uses, the Commission is adopting an alternative, less stringent out-of-band emission limit for portable WCS transmitters in the 2305–2315 MHz band (the lower portions of Blocks A and B) that meet specific power, duty cycle and other technical restrictions. The Commission believes that providing WCS applicants and licensees with this additional design choice will facilitate certain potentially beneficial uses of WCS spectrum that may not otherwise be feasible, or would incur unnecessary higher costs, under the general, more stringent out-of-band emission limits. The Commission wishes to caution prospective WCS licensees, however, to consider carefully whether their anticipated uses and business plans can be successfully implemented under the additional technical and operational restrictions necessary to qualify for the less stringent out-of-band emission limit. In particular, wide area, full mobility systems and services such as those being provided or anticipated in the cellular and PCS bands are likely to be of questionable feasibility under either the alternative restrictions or the general out-of-band emission limits.

WCS Interference to MDS/ITFS

6. MDS and ITFS operate in the 2150–2162 and 2500–2690 MHz bands. Nonetheless, MDS/ITFS downconverters have minimal frequency selectivity and, thus, some models are designed to operate throughout the entire 2.1–2.7 GHz band. In the *Report and Order*, the Commission stated that the digital downconverters to which the MDS/ITFS industry are expected to convert over the next several years are expected to be better designed and not subject to overloading from WCS signals. Nonetheless, in order to better understand the interference concerns of the MDS/ITFS industry, staff from the Commission's Office of Engineering and Technology obtained block diagrams from Pacific Monolithics, a manufacturer of MDS/ITFS equipment, for three of their MDS downconverters. All have similar construction and, according to Hardin Associates, the firm which prepared an Engineering Statement in support of the WCA petition, the downconverter construction for all the major manufacturers is essentially identical. The interference issues raised by the

WCA petition relate to the possibility that WCS signals could overload the Low Noise Amplifier ("LNA") input stage of this equipment. This stage is directly fed by the receive antenna and thus has little or no isolation. Between the receive antenna and the LNA, this equipment does not employ any filtering related to the block of frequencies between 2162 MHz and 2500 MHz. Interference protection from the WCS service to the MDS downconverter would have to be provided at this point to prevent signal overload of the LNA. This could be accomplished by trapping out the WCS signal in the 2305–2360 MHz band or by moving the RF diplexer from the output of the LNA to the input of the LNA. The MDS industry is currently designing equipment to protect against interference caused by high input power from PCS operations in the 1850–1990 MHz band, and it seems reasonable that the industry could also design these downconverters to protect against interference from WCS equipment operating with similar high power levels. The Commission estimates that such a filter is likely to cost about \$5 to \$10 per unit. The Commission believes, however, that filters could not be economically installed in existing units due to the design and construction of these downconverters. A MDS/ITFS subscriber receiving interference would thus have to have the entire unit replaced at a substantially higher unit cost. The Commission notes that MDS/ITFS interference issues have been raised in a petition to deny filed against a number of applications for broadband PCS licensees in the D, E and F blocks. The Commission wishes to make clear that its resolution of MDS/ITFS interference issues with respect to WCS is based solely on the totality of the circumstances presented here.

7. After careful consideration of this issue, the Commission finds that the public interest would be best served by setting limits on WCS operating power. The Commission will therefore restrict WCS fixed, land and radiolocation land stations to 2,000 watts peak EIRP and WCS mobile and radiolocation mobile stations to 20 watts EIRP. Setting maximum power limits on WCS operations will provide MDS/ITFS equipment manufacturers and service providers with the necessary certainty regarding the potential WCS environment to enable them to design and purchase more robust receiving installations, including better designed downconverters. The Commission does not, however, wish to unnecessarily limit the service offerings that can be

provided using WCS spectrum, and therefore does not adopt the 20 watt EIRP power limit suggested by WCA. Instead, as more fully discussed below, the Commission will assign to WCS licensees certain responsibilities to cure actual interference to existing and soon-to-be-installed MDS/ITFS downconverters. With respect to the power limits we are setting, the Commission believes it is unlikely that, in the foreseeable future, any potential WCS operator would consider employing power levels greater than these limits given the considerable economic cost of developing high power transmitters that would comply with the stringent out-of-band emission limits adopted in this proceeding. The Commission also observes that the maximum EIRP of a transmitter station in the MDS and ITFS services with an omnidirectional antenna is limited to 2,000 watts (33 dBW), and that wireless cable service is a potential use for WCS spectrum. In addition, the Commission notes that WCA has concluded that 20 watts EIRP will not cause destructive interference to MDS/ITFS reception. Thus, WCS mobile stations, to the extent mobile services are or become technologically feasible, should be able to operate ubiquitously without substantial risk of interference to MDS/ITFS reception.

8. The Commission agrees with WCA that MDS/ITFS equipment that was designed to operate in a pre-WCS environment should be afforded some degree of protection from interference. The introduction of possibly a large number of transmitters in WCS spectrum will increase the potential for interference to existing MDS/ITFS receivers that were designed with different expectations about the extent and nature of use of nearby bands. Given sufficient notice and time to adjust to allocation changes in nearby bands, licensees might be expected to mitigate interference costs by voluntarily introducing better, more selective receivers in new installations and in the normal replacement of older receivers. Such a response has not been possible in this instance, however, because of the accelerated rule making and licensing procedures that are required for WCS under the Appropriations Act. Considering these circumstances, and that the WCS auction has not yet occurred, the Commission believes it is appropriate and equitable to shift to WCS licensees some of the cost and responsibility for remedying interference to MDS/ITFS operations.

9. Nonetheless, the Commission also believes that the MDS/ITFS industry

should be encouraged to employ equipment in the future which will not require undue power restrictions on users of nearby spectrum. To balance these objectives, the Commission is establishing an interference protection rule for MDS/ITFS receivers, based on aspects of the existing FM blanketing rule. See 47 CFR 73.318. Specifically, WCS licensees will bear full financial obligation to remedy interference to MDS/ITFS block downconverters if all of the following conditions are met: (1) The complaint of interference is received by the WCS licensee prior to February 20, 2002; (2) the MDS/ITFS downconverter was installed prior to August 20, 1998; (3) the WCS operation transmits at 50 or more watts peak EIRP; (4) the MDS/ITFS downconverter is located within a WCS transmitter's power flux density contour of -34 dBW/m²; and (5) the MDS/ITFS customer or licensee has informed the WCS licensee of the interference within one year from the initial operation of the WCS transmitter or within one year from any subsequent power increase at the WCS station. If the WCS licensee cannot otherwise promptly eliminate interference caused to MDS/ITFS reception, then that licensee would be required to cease operations from the offending WCS facility. In addition to this blanketing-type rule, the Commission will require WCS licensees, at least 30 days before commencing operations from any new WCS transmission site or with increased power from any existing WCS transmission site, to notify all MDS/ITFS licensees in or through whose licensed service areas they intend to operate of the technical parameters of the WCS transmission facility. The Commission emphasizes, however, that WCS licensees have no obligation to remedy interference unless all of the conditions are met. If the WCS licensees and the MDS and ITFS licensees coordinate voluntarily, the Commission believes that WCS fixed and land stations can generally be located in a manner to avoid causing interference to MDS/ITFS receivers. The Commission expects the WCS and MDS/ITFS licensees to coordinate voluntarily and in good faith to avoid interference problems and to allow the greatest operational flexibility in each other's operations.

10. The Commission believes that the above approach appropriately apportions the burdens and incentives between the WCS and MDS/ITFS licensees. WCS licensees will have an incentive to coordinate voluntarily with the MDS/ITFS industry in order to

prevent interference problems from occurring, and the 30-day notification requirement will afford MDS/ITFS licensees an opportunity to alert their subscribers to the potential for interference and explain what to do in the event it occurs. In turn, MDS/ITFS licensees will have an incentive to develop and use better technology for new receiving installations. The MDS/ITFS industry will have 18 months from the release date of the *Report and Order* in this proceeding to deplete inventories of existing equipment and to design more robust replacement equipment, and WCS licensees will be obligated for five years to remedy actual interference. Beyond that time, it is reasonable to expect the MDS/ITFS industry to bear full financial responsibility for any necessary equipment replacement costs. Further, we believe that basing MDS/ITFS protection on a power flux density contour rather than a restrictive power limitation serves the public interest. This approach will provide WCS licensees with greater flexibility to design and implement new wireless services. WCS licensees operating at power levels higher than 50 watts will have a larger zone within which they will be obligated to remedy interference to MDS/ITFS downconverters, but they will be able to make that choice given the particular characteristics of the market in which they will operate. From its experience in addressing technically analogous issues of blanketing interference caused by FM broadcast transmitters, the Commission believes that the "technological fixes" contemplated by the blanketing-type rule coupled with the 30-day notification requirement will adequately protect MDS/ITFS operations and yet allow WCS substantially greater operational flexibility than would be possible under the power limit approach suggested by the petitioner. The Commission therefore concludes that the approach it adopts here to address concerns about WCS signal overloading of MDS/ITFS downconverters will best serve the overall public interest.

WCS Out-of-Band Emission Limits

11. The Commission has dedicated considerable staff engineering expertise and resources to evaluate the proposal set forth by PPF/DigiVox and finds that it is appropriate to adjust the WCS out-of-band limits for systems that comply with certain parameters. Accordingly, the Commission will permit WCS systems that operate in accordance with the specific parameters set forth below to reduce their portable unit emissions into the 2320–2345 MHz band by a

factor not less than $93 + 10 \log(p)$ dB, where p is the transmitter power in watts. While this is considerably more permissive than the limit for WCS mobile operations that the Commission adopted in the *Report and Order*, the Commission believes that the specific operating parameters set forth by PPF/DigiVox will limit the potential for such a system to interfere with DARS to a reasonable level generally equivalent to that provided by the stricter limits for more general WCS operations.

12. In authorizing DARS, it was the Commission's desire to ensure a high quality radio service. However, a desire for an interference-free radio service must be balanced with the need to provide reasonable operating parameters for adjacent services. Accordingly, the Commission's intention in determining out-of-band emission limits for WCS into the spectrum used by DARS has been to limit the potential for interference to a reasonable level—not to provide a pure, interference-free environment. In determining the out-of-band emission limits adopted in the *Report and Order* the Commission had to take into consideration the wide flexibility that the Commission providing WCS licensees to provide any services consistent with the Table of Frequency Allocations. Because the Commission is unable to determine the specific operating parameters of a WCS service until the service is actually implemented, the Commission found it appropriate to adopt limits that take into account any possible system configuration. Such limits are necessary to ensure the viability of Satellite DARS, which will operate with very low signal levels at the receive antennas, in a frequency band adjacent to a terrestrial service that will likely employ much higher powers and whose transmitters may be in the immediate vicinity of a DARS receiver. Accordingly, the Commission affirms its decision generally to require WCS operations to reduce their emissions in the 2320–2345 MHz band by not less than $80 + 10 \log(p)$ dB for fixed, land, and radiolocation land station transmissions and $110 + 10 \log(p)$ dB for mobile and radiolocation mobile station transmissions, where p is the transmitter power in watts. The Commission is, however, clarifying that the out-of-band emission limits specified in the *Report and Order* for "fixed operations" pertain to transmissions from fixed, land, and radiolocation land stations and that the emission limits specified for "mobile operations" pertain to transmissions from mobile and radiolocation mobile stations.

13. The Commission recognizes, however, that it is possible to provide a reasonable level of protection to DARS by taking into account a specific WCS system, although it may exceed the out-of-band emission limits adopted in the *Report and Order*. A specific system configuration may have certain attributes that were not taken into account when developing the general emission limits but which reduce its potential to interfere with DARS. For instance, a system may have reduced gain in the direction of Satellite DARS receiver, or the probability of the transmitters of a certain type of WCS system being close enough to interfere with Satellite DARS systems may be very low. PPF/DigiVox has provided a specific set of operating parameters that the Commission can take into account in its analysis of potential interference to DARS. By taking these specific parameters into account, the Commission believes that it is possible for a system to operate with less stringent out-of-band limits than those originally adopted.

14. The system described by PPF/DigiVox is a low power, low mobility portable system that will provide voice and data service from fixed and portable units. No vehicle mounted units would be permitted. In reaching its decision to reduce the out-of-band limits for WCS systems that operate in a manner consistent with that described by PPF/DigiVox, the Commission takes into account both the technical and operational factors specific to the interaction of this specific system and a DARS system. One of the greatest difficulties in performing this type of analysis, however, is the fact that neither system has yet been deployed. Accordingly, the Commission's analysis must take into consideration what it believes to be realistic assumptions about system equipment and operations. While the Commission based its analysis on the record of the proceeding, it recognizes that there is some uncertainty inherent in trying to evaluate two systems that have not yet been deployed and for which equipment designs are not yet final. The Commission also recognizes that the 2320–2345 MHz frequency band is the only spectrum specifically available for provision of Satellite DARS in the United States. Accordingly, if Satellite DARS in this spectrum is subject to excessive interference, the service will not be successful and the American public will not benefit from the service. In contrast, PACS can be provided in other spectrum currently available for use by services including cellular and

PCS. Thus, should the potential for WCS operations to interfere with DARS prove to be greater when the systems are implemented than the Commission's analysis indicates, the Commission would of course revisit this issue and make appropriate adjustments. Specifically, parties should note that per 47 CFR 27.53(c), when emissions outside of the authorized bandwidth cause harmful interference, the Commission may, at its discretion, require greater attenuation than that specified in the Rules.

15. PPF/DigiVox questions some of the technical parameters of the DARS system. One area of contention is the Satellite DARS receiver noise temperature used in the analysis. Primosphere used a 200 Kelvin noise temperature in its analysis, which is greater than the 120 Kelvin noise temperature proposed in its application. PPF/DigiVox contends that 370 Kelvins is more realistic. Based on the type of antenna proposed for DARS use and the need for cost effective equipment, the Commission believes that a receiver noise temperature of 250 Kelvins is realistic and that is what the Commission's calculations are based upon.

16. PPF/DigiVox contends that a rise in noise floor from a single interferer of 2 dB should be allowed, rather than the 0.2 dB rise considered by Primosphere. Considering the limited power that the satellite systems will be able to operate with and the potential for a DARS receiver to be affected by more than one interfering source, whether it is another WCS transmitter, out-of-band emissions from another source, or signal blockage, the Commission believes that a 2 dB allowable rise is too great a contribution from a single source. The Commission also, however, believes that a 0.2 dB allowable rise is overly conservative. Accordingly, the Commission has based its calculations on a 1.0 dB allowable rise, which corresponds to a 25% rise in receiver noise. These values are consistent with those used in determining the out-of-band limits adopted in the *Report and Order*.

17. In determining the potential for interference from its portable units, PPF/DigiVox takes into account a number of factors. These include the duty cycle of the WCS handset, the antenna pattern of a Satellite DARS antenna, isolation due to differences in polarization between DARS and WCS, and losses due to the proximity of a WCS portable unit to the head of the user. Users of portable units for the system described by PPF/DigiVox will generally be to the side and, in many instances, slightly below the roof of an

automobile. The Commission therefore agrees with PPF/DigiVox that the antenna pattern can be taken into account in performing an interference analysis. While antenna patterns can vary greatly, thereby affecting the strength of the undesired signal into the DARS receiver, the Commission believes that the values proposed by DigiVox are reasonable. The Commission also agrees that the isolation realized between the circularly polarized DARS signal and the linearly polarized WCS operations can be taken into consideration. The Commission disagrees, however, with the contention that the out-of-band limits should be reduced by 9 dB due to the duty cycle of the WCS handset. Because the symbol time used by DARS is shorter than the WCS burst of 312 microsecond, the DARS data will be disrupted by the WCS operations. While it may be possible for the DARS operators to employ error correction techniques that take into account the limited duty cycle of the WCS operations, any reduction in interference potential does not correlate directly to the reduction in power claimed by PPF/DigiVox. The Commission does believe, however, that DARS operators will be able to use the duty cycle to their advantage and are therefore requiring WCS operations to employ a 12.5% duty cycle in order to qualify for the reduced out-of-band emission limits. Finally, the Commission does not agree that any isolation can be assumed for energy absorbed by the human head. As Primosphere points out (pg. 7), the subscriber's head often will not be positioned between the WCS transmitter and the Satellite DARS receiver and, in some positions, may add to, rather than subtract from, undesired radiation. No statistical information was provided as to the probability of head loss occurring, or of its magnitude at those times. Due to the mobility of the hand-held units, it is highly unlikely that head loss is always present.

18. In its analysis, PPF/DigiVox assumes a separation of 12 feet between the WCS user and the DARS receiver. The Commission has reviewed the statistical analysis provided in support of this assumption and, while the Commission does not necessarily agree with all aspects of the analysis, 12 feet is a reasonable distance to assume in evaluating the potential interaction of DARS listeners and users of portable WCS operations as described by PPF/DigiVox. While the Commission believes that there will be interference to the DARS service from these WCS operations, the Commission believes

that actual instances of interference will be sufficiently limited as to not unduly jeopardize the commercial viability of DARS. Based on this analysis, the Commission finds it reasonable to allow portable WCS units that meet the criteria described in paragraph 16 to reduce their emission into the 2320–2345 MHz band by only $93 + 10 \log(p)$ dB.

19. PPF/DigiVox has also requested that the Commission relax the out-of-band limits for base stations used in the type of system they describe. PPF/DigiVox bases its argument on the relative gain of the WCS antenna with respect to the position of the DARS receiver. As pointed out by Primosphere, depending on the exact antenna employed by the WCS station, the greatest potential for interference is not directly under the antenna as claimed by PPF/DigiVox. Although the path loss does increase as the DARS receiver moves away from the WCS base station, the gain of the WCS antenna will also increase. It is not possible to determine the precise relationship between these two factors without knowing the gain pattern for the specific antenna to be employed. In addition, if the Commission made such an adjustment, the Commission would have to require that any WCS licensee operating under the reduced emission limits use an antenna meeting those characteristics. The Commission also notes that in its evaluation, PPF/DigiVox considered a separation of 24 feet between its base station and a DARS receiver directly underneath. The system described by PPF/DigiVox may employ antennas mounted as low as 25 feet. If a DARS antenna is mounted on the roof of a vehicle it will be closer than 24 feet to the WCS antenna, resulting in reduced path loss. Accordingly, fixed WCS stations will continue to be required to reduce their emissions into the 2320–2345 MHz band by $80 + 10 \log(p)$ dB.

20. For the reasons discussed above, the Commission is permitting WCS Block A and B licensees to employ portable devices (defined for the purposes of this decision as transmitters designed to be used within 20 centimeters of the body of the user) that transmit in the 2305–2315 MHz band only to attenuate all emissions into the 2320–2345 MHz band by a factor of not less than $93 + 10 \log(p)$ dB and to employ base stations that transmit in the 2350–2360 MHz band only to attenuate all emissions into the 2320–2345 MHz band by a factor of not less than $80 + 10 \log(p)$ dB. These less stringent out-of-band emission limits may be used only if the average portable transmit

power is limited to 25 mW, the peak portable transmit power is limited to 200 mW, the portable devices employ means to limit the power to the minimum necessary for successful communications, the portable devices have a duty cycle of 12.5% or less, and the portable devices use time division multiple access ("TDMA") technology. In addition, the Commission prohibits the installation of vehicle-mounted units, requires that transmitting antennas employ linear polarization or another polarization that provides equivalent or better discrimination with respect to a Satellite DARS antenna, requires that the average base station transmit output power be limited to 800 mW, and requires that base station antennas be located at a height of at least 8 meters (26.25 feet) above ground.

21. Accordingly, *it is ordered*, that Part 27 of the Commission's Rules is amended, as set forth below, and that, in accordance with the Omnibus Consolidated Appropriations Act, 1997, Public Law 104–208, 110 Stat. 3009 (1996), these Rules shall be effective immediately upon publication in the **Federal Register**. This action is taken pursuant to Sections 4(i), 7(a), 303(c), 303(f), 303(g), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. Sections 154(i), 157(a), 303(c), 303(f), 303(g), and 303(r) and the Omnibus Consolidated Appropriations Act, 1997, Public Law 104–208, 110 Stat. 3009 (1996).

Furthermore, *it is ordered*, that the petitions for reconsideration are granted, to the extent described above and denied in all other respects.

List of Subjects in 47 CFR Part 27

Radio.

Federal Communications Commission.

William F. Caton,

Acting Secretary.

Rule Changes

Part 27 of title 47 of the Code of Federal Regulations is amended as follows:

PART 27—WIRELESS COMMUNICATIONS SERVICE

1. The authority citation for part 27 continues to read as follows:

Authority: 47 U.S.C. 154, 301, 302, 303, 307, 309, and 332.

2. Section 27.4 is amended by adding the definitions for Base Station, Portable Device, Radiolocation Land Station, Radiolocation Mobile Station, Time Division Multiple Access, and Time Division Multiplexing in alphabetical order to read as follows:

§ 27.4 Terms and definitions.

* * * * *

Base station. A land station in the land mobile service.

* * * * *

Portable device. Transmitters designed to be used within 20 centimeters of the body of the user.

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Radiolocation land station. A station in the radiolocation service not intended to be used while in motion.

Radiolocation mobile station. A station in the radiolocation service intended to be used while in motion or during halts at unspecified points.

* * * * *

Time division multiple access (TDMA). A multiple access technique whereby users share a transmission medium by being assigned and using (one-at-a-time) for a limited number of time division multiplexed channels; implies that several transmitters use one channel for sending several bit streams.

Time division multiplexing (TDM). A multiplexing technique whereby two or more channels are derived from a transmission medium by dividing access to the medium into sequential intervals. Each channel has access to the entire bandwidth of the medium during its interval. This implies that one transmitter uses one channel to send several bit streams of information.

* * * * *

3. Section 27.50 is added to subpart C to read as follows:

§ 27.50 Power limits.

(a) Fixed, land, and radiolocation land stations transmitting in the 2305–2320 MHz and 2345–2360 MHz bands are limited to 2000 watts peak equivalent isotropically radiated power (EIRP).

(b) Mobile and radiolocation mobile stations transmitting in the 2305–2320 MHz and 2345–2360 MHz bands are limited to 20 watts EIRP peak power.

(c) Peak transmit power shall be measured over any interval of continuous transmission using instrumentation calibrated in terms of rms-equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, *etc.*, so as to obtain a true peak measurement for the emission in question over the full bandwidth of the channel.

4. Section 27.53 is revised to read as follows:

§ 27.53 Emission limits.

(a) The power of any emission outside the licensee's frequency band(s) of

operation shall be attenuated below the transmitter power (p) within the licensed band(s) of operation, measured in watts, by the following amounts:

(1) *For fixed, land, and radiolocation land stations:* By a factor not less than $80 + 10 \log(p)$ dB on all frequencies between 2320 and 2345 MHz;

(2) *For mobile and radiolocation mobile stations:* By a factor not less than $110 + 10 \log(p)$ dB on all frequencies between 2320 and 2345 MHz;

(3) *For fixed, land, mobile, radiolocation land and radiolocation mobile stations:* By a factor not less than $70 + 10 \log(p)$ dB on all frequencies below 2300 MHz and on all frequencies above 2370 MHz; and not less than $43 + 10 \log(p)$ dB on all frequencies between 2300 and 2320 MHz and on all frequencies between 2345 and 2370 MHz that are outside the licensed bands of operation;

(4) Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or less, but at least one percent of the emission bandwidth of the fundamental emission of the transmitter, provided the measured energy is integrated over a 1 MHz bandwidth;

(5) In complying with the requirements in § 27.53(a)(1) and § 27.53(a)(2), WCS equipment that uses opposite sense circular polarization from that used by Satellite DARS systems in the 2320–2345 MHz band shall be permitted an allowance of 10 dB;

(6) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the edges, both upper and lower, of the licensee's bands of operation as the design permits;

(7) The measurements of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power;

(8) Waiver requests of any of the out-of-band emission limits in paragraphs (a)(1) through (a)(7) of this section shall be entertained only if interference protection equivalent to that afforded by the limits is shown;

(9) In the 2305–2315 MHz band, if portable devices comply with all of the following requirements, then paragraph (a)(2) of this section shall not apply to portable devices, which instead shall attenuate all emissions into the 2320–2345 MHz band by a factor of not less than $93 + 10 \log(p)$ dB:

(i) The portable device has a duty cycle of 12.5% or less, with at most a 312.5 microsecond pulse every 2.5 milliseconds;

(ii) The portable device must employ time division multiple access (TDMA) technology;

(iii) The nominal peak transmit output power of the portable device is no more than 200 milliwatts (25 milliwatts average power);

(iv) The portable device operates with the minimum power necessary for successful communications;

(v) The nominal average base station transmit output power is no more than 800 milliwatts when the base station antennas is located at a height of at least 8 meters (26.25 feet) above the ground;

(vi) Only fixed and portable devices and services may be provided: vehicle-mounted units are not permitted; and (vii) Transmitting antennas shall employ linear polarization or another polarization that provides equivalent of better discrimination with respect to a DARS antenna;

(10) The out-of-band emissions limits in paragraphs (a)(1) through (a)(9) of this section may be modified by the private contractual agreement of all affected licensees, who shall maintain a copy of the agreement in their station files and disclose it to prospective assignees or transferees and, upon request, to the Commission.

(b) *For WCS Satellite DARS operations:* The limits set forth in § 25.202(f) of this chapter shall apply, except that Satellite DARS operations shall be limited to a maximum power flux density of -197 dBW/m²/4 kHz in the 2370–2390 MHz band at Arecibo, Puerto Rico.

(c) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

5. Section 27.58 is added to read as follows:

§ 27.58 Interference to MDS/ITFS receivers.

(a) WCS licensees shall bear full financial obligation to remedy interference to MDS/ITFS block downconverters if all of the following conditions are met:

(1) The complaint is received by the WCS licensee prior to February 20, 2002;

(2) The MDS/ITFS downconverter was installed prior to August 20, 1998;

(3) The WCS fixed or land station transmits at 50 or more watts peak EIRP;

(4) The MDS/ITFS downconverter is located within a WCS transmitter's free space power flux density contour of -34 dBW/m²; and

(5) The MDS/ITFS customer or licensee has informed the WCS licensee of the interference within one year from

the initial operation of the WCS transmitter or within one year from any subsequent power increase at the WCS station.

(b) Resolution of complaints shall be at no cost to the complainant.

(c) Two or more WCS licensees collocating their antennas on the same tower shall assume shared responsibility for remedying interference complaints within the area determined by paragraph (a)(4) of this section unless an offending station can be readily determined and then that station shall assume full financial responsibility.

(d) If the WCS licensee cannot otherwise eliminate interference caused to MDS/ITFS reception, then that licensee must cease operations from the offending WCS facility.

(e) At least 30 days prior to commencing operations from any new WCS transmission site or with increased power from any existing WCS transmission site, a WCS licensee shall notify all MDS/ITFS licensees in or through whose licensed service areas they intend to operate of the technical parameters of the WCS transmission facility. WCS and MDS/ITFS licensees are expected to coordinate voluntarily and in good faith to avoid interference problems and to allow the greatest operational flexibility in each other's operations.

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DEPARTMENT OF TRANSPORTATION

Office of the Secretary

49 CFR Part 1

[OST Docket No. 1; Amdt. 1-285]

Organization and Delegation of Powers and Duties; Delegation to the Director, Transportation Administrative Service Center

AGENCY: Office of the Secretary, DOT.

ACTION: Final rule.

SUMMARY: The Secretary of Transportation rescinds the authority of the Assistant Secretary for Administration to operate the Working Capital Fund, as found in 49 CFR 1.59(d). The authority to operate the Working Capital Fund is hereby delegated to the Director, Transportation Administrative Service Center (TASC). This requires a change to the Code of Federal Regulations (CFR).

EFFECTIVE DATES: This rule is effective April 7, 1997.