6712-01

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 25

[IB Docket No. 13-213; FCC 16-181]

Terrestrial Use of the 2473-2495 MHz Band for Low-Power Mobile Broadband Networks; Amendments to Rules for the Ancillary Terrestrial Component of Mobile Satellite Service Systems

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: In this document, the Federal Communications Commission (Commission or FCC) modifies its rules on the operation of an Ancillary Terrestrial Component (ATC) for Mobile-Satellite Service (MSS) systems operating in the 2483.5-2495 MHz band. This action modifies, inter alia, existing rules related to "gating criteria" for ATC in the 2483.5-2495 MHz band to enable licensees to seek authorization to deploy a terrestrial low-power system using licensed MSS spectrum. This document will serve the public interest by expanding terrestrial use of the 2483.5-2495 MHz frequency band and establishing a framework that will enable Globalstar, Inc. (Globalstar), the sole MSS licensee in the band, to utilize its 11.5 megahertz of spectrum to deploy a terrestrial low-power network.

DATES: Effective **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, except for the amendments to §25.149, which contain information collection requirements that have not been approved by the Office of Management and Budget (OMB). The Commission will publish a document in the Federal Register announcing such OMB approval and the effective date of these rule amendments.

FOR FURTHER INFORMATION CONTACT: Stephen Duall, Satellite Division, International Bureau, at 202-418-1103 or via email at Stephen.Duall@fcc.gov. For information regarding the information collection requirements contained in this document, contact Cathy Williams, Office of Managing Director, at 202-418-2918 or via email at Cathy.Williams@fcc.gov.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Report and Order, FCC 16-181, adopted December 22, 2016. The full text of the Report and Order is available at https://apps.fcc.gov/edocs_public/attachmatch/FCC-16-181A1.pdf. It is also available for inspection and copying during business hours in the FCC Reference Information Center, Portals II, 445 12th Street SW., Room CY-A257, Washington, DC 20554. To request materials in accessible formats for people with disabilities, send an email to FCC504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (TTY).

Synopsis

Introduction. By this Report and Order (Order), the Commission adopts changes to its rules on the operation of an Ancillary Terrestrial Component (ATC) by licensees in certain Mobile-Satellite Service (MSS) spectrum. The Order modifies the gating criteria and other ATC rules to permit expanded terrestrial use of the 2483.5-2495 MHz frequency band and establishes a framework that will enable Globalstar, the sole MSS licensee at 2483.5-2495 MHz, to apply for a license to deploy a low-power terrestrial network in the band. This Order does not address Globalstar's additional request concerning the deployment of a high power terrestrial service in both the S-band (2483.5-2495 MHz) and L-band (1610-1617.775 MHz), nor does it address operations of low-power terrestrial networks in the 2473-2483.5 MHz band.

Background. In 2003, the Commission adopted rules for licensing and operating "ancillary terrestrial components" or ATCs in conjunction with MSS, including in the 2483.5-2495 MHz band, which enabled an MSS operator to request to modify its existing MSS license or grant of market access to obtain blanket authority for operation of ATC stations in the United States. The rules also established certain prerequisites, or "gating criteria," that MSS operators are required to meet in order to ensure that the provision of ATC would be ancillary to the provision of MSS.

In 2012, Globalstar petitioned for rulemaking seeking, among other things, change in the rules governing the use of the 2483.5-2495 MHz band in which its MSS system is licensed as well as use of the adjacent unlicensed spectrum from 2473-2483.5 MHz to allow operation of a terrestrial low-power

broadband network. The petition also sought revisions to the ATC gating criteria for greater flexibility in the band.

In November 2013, a Notice of Proposed Rulemaking was adopted that addressed Globalstar's proposal for a terrestrial low-power network at 2483.5-2495 MHz and 2473-2483.5 MHz Globalstar revised its proposal in November 2016, to specify operations of its low-power terrestrial system in just its licensed MSS spectrum at 2483.5-2495 MHz. Consistent with Globalstar's revised proposal, the Order does not address a number of issues discussed in the Notice that are specific to low-power terrestrial operations in the 2473-2483.5 MHz frequency band.

Part 25 Revisions

Permitting Use of the 2483.5-2495 MHz Band for Low-Power Terrestrial Networks. The Order concludes that low-power terrestrial networks in the 2483.5-2495 MHz frequency band, such as that proposed by Globalstar, are appropriately considered ancillary to licensed MSS operations and are subject to licensing as ATC under Part 25 rules. It also concludes that single-licensee control of both MSS and low-power terrestrial operations in the 2483.5-2495 MHz band is essential to effect coordination between the space and terrestrial operations and to ensure the continuation of MSS operations in the 2483.5-2495 MHz band.

Modified ATC Gating Requirements in the 2483.5-2495 MHz Band. Gating criteria are set forth in section 25.149 of the Commission's rules and must be met by MSS operators in order to offer ATC. Operators wishing to provide ATC must demonstrate the provision of "substantial satellite service" in the MSS (that is, the capability of providing continuous satellite service over the entire geographic area of satellite coverage required in the Commission's rules, maintenance of spare satellites to expeditiously replace satellites no longer in service, and commercial availability throughout the mandatory coverage area) and must also provide ATC service and MSS on an integrated basis.

The Order modifies the gating criteria rules in section 25.149 so that an MSS licensee wishing to provide ATC in the 2483.5-2495 MHz band must demonstrate that it is offering MSS service in the United States to the general public for a fee, but need not demonstrate that the satellite system meets the

coverage and replacement satellite requirements that apply to ATC in other frequency bands. The Order also relaxes the integrated services rule for ATC in the 2483.5-2495 MHz band. These modifications apply only to low-power ATC in the 2483.5-2495 MHz band and do not set a precedent for deployment of high power ATC systems.

Mode of Operations in the 2483.5-2495 MHz Band. The Order amends section 25.149(a)(1) of the Commission's rules to permit authorization of ATC in a non-forward-band mode of operations where the equipment deployed will meet the requirements for low-power ATC systems in the 2483.5-2495 MHz band.

Licensing of ATC in the 2483.5-2495 MHz Band. Before an MSS operator can provide low-power ATC in the 2483.5-2495 MHz band, it must apply for modification of its Part 25 license to include such authority. Modification applications must be filed using FCC Form 312, accompanied by the appropriate fee, and the applications must include specific information and certifications describing the ATC facilities, including that the terrestrial facilities will comply with the technical restrictions applicable to ATC licensees. Any equipment that will operate in the low-power terrestrial network will be subject to equipment certification by the Commission.

Technical Limits for Terrestrial Low-Power Equipment. The Order adopts the following restrictions in this band.

Total Transmit Power for terrestrial low-power equipment. The total transmit power for low-power ATC equipment operating in the 2483.5-2495 MHz band is codified under a new section 25.149(c)(4) of the Commission's rules. Total transmit power is not to exceed 1 watt with a peak equivalent isotropically radiated power of no more than 6 dBW (4 watts) with a minimum 6 dB bandwidth of 500 kilohertz and a maximum conducted power spectral density limit of 8 dBm/3 kHz.

Unwanted emissions limits above 2495 MHz. The Order requires unwanted emissions above 2495 MHz to be attenuated below the transmitter power (P) measured in watts by a factor of no less than 43 + 10 log (P) dB at the 2495 MHz channel edge, and 55 + 10 log (P) dB at X megahertz from this channel edge where X is the greater of 6 megahertz or the actual emissions bandwidth. ATC operators

must also continue to protect the operations of BRS Channel 1 against harmful interference. If a BRS station finds that it is receiving harmful interference from an ATC station, section 25.255 of Commission's rules requires that ATC station to resolve that interference. The Order also confirms the applicability of the technical limits and other requirements specified in sections 25.149(c)(4) and (g)(2)-(3) to the continuing operations of the low-power network. The Order concludes that, for determining compliance with the section 15.247(d) unwanted emissions limit outside the band of operation above 2495 MHz, the measurement bandwidth from section 25.254(d) applies (1 percent of the 26 dB emission), and the section 15.247(d) requirement (a measurement bandwidth of 100 kilohertz) does not apply.

Unwanted emission limit at the lower edge of Globalstar's planned frequency band. The Order adopts section 25.149(c)(4)(v), which establishes a revised unwanted emissions limit at the lower band edge at 2483.5 MHz. Emissions below 2483.5 MHz must be attenuated below the transmitter power (P) measured in watts by a factor of at least 40 + 10 log (P) dB at the channel edge at 2483.5 MHz, 43 + 10 log (P) dB at 5 MHz from the channel edge, and 55 + 10 log (P) dB at X MHz from the channel edge, where X is the greater of 6 MHz or the actual emission bandwidth. The Order also concludes that additional tests to determine the interference susceptibility of low-power unlicensed use transmissions in bands adjacent to 2483.5 MHz were unwarranted.

Part 15 Considerations

Continued Applicability of Part 15 Rules to Unlicensed Devices. The Order confirms the continued applicability of Part 15 of the Commission's rules to operations of unlicensed devices in the 2400-2483.5 MHz band, including sections 15.205, 15.209, 15.247, and 15.249. It also confirms that a licensee or operator of a terrestrial low-power system in the 2483.5-2495 MHz band may not consent to receive transmissions above 2483.5 MHz from equipment in unlicensed spectrum at 2400-2483.5 MHz in excess of the emissions otherwise permitted under sections 15.205, 15.209, and 15.249 of the Commission's rules.

Restricted Band Requirements for Non-Globalstar Devices to Use Wi-Fi Channels 12 and 13. The Order declines to relax the restricted band requirements to allow non-Globalstar Wi-Fi and

unlicensed devices to more fully utilize Wi-Fi Channels 12 and 13 because unlicensed operators using channels 12 and 13 would not be able to coordinate with Globalstar to prevent interference with MSS operations above 2483.5 MHz.

Proposed access for Part 15 devices to the 2483.5-2495 MHz band. The Order declines to permit operation of Part 15 unlicensed devices in the 2483.5-2495 MHz spectrum as requested by some commenters.

Operational Requirements for Terrestrial Low-Power Systems in the 2483.5-2495 MHz band. The Order adopts a new section 25.149(g)(2) that sets forth operational requirements for terrestrial low-power networks in the 2483.5-2495 MHz band. Such networks must utilize a Network Operating System (NOS) consisting of a network management system located at an operations center or centers. The NOS must have a point of contact available 24 hours a day, seven days a week with the technical capability to address and resolve interference issues, with contact information available publicly on the licensee's website. The NOS must have the capability to control the operation of all low-power transmitters so that it can address any interference concerns by whatever means necessary, including but not limited to reducing power or terminating operations at a particular location or installation.

The Order adopts a new section 25.149(g)(3), which states that licensees, namely Globalstar, are responsible for controlling operations of their low-power network access points through the NOS. Licensees are also responsible for implementing measures to control the availability of their network to user devices, and will be responsible for any other measures necessary to prevent unauthorized use of the 2483.5-2495 MHz band. All access points operating in the 2483.5-2495 MHz band must operate only if authorized by the NOS, and all client devices operating in the 2483.5-2495 MHz band must operate only if authorized by such access points.

Broadcast Auxiliary Service (BAS) Channels A8-A10. The Order concludes that no new rules are necessary to protect BAS systems at this time. It declines to require Globalstar to notify its customers located in markets where grandfathered TV BAS Channel A10 TV Pickup stations are located that the low-power ATC network may be subject to temporary interruption in the event of TV BAS operations.

Furthermore, it finds that relocation of BAS stations is not necessary to protect such stations from the operations of Globalstar's low-power terrestrial network.

Equipment Certification. The Order adopts a rule requiring that applications for equipment authorization of terrestrial low-power system equipment demonstrate compliance with 25.149(c)(4). Equipment manufacturers must certify all terrestrial low-power equipment under modified provisions in section 25.149 of the Commission's rules. The rules do not distinguish between low-power network access points and end user terminals or client devices, and require certification for all low-power network equipment. The Order declines to address all other proposals regarding equipment certification, including modifications to existing equipment certifications.

Free Access Points and Public Safety Considerations. The Order declines to incorporate as requirements in the Commission's rules the commitments Globalstar made to deploy up to 20,000 low-power ATC access points "free-of-charge in the nation's public and non-profit schools, community colleges and hospitals," as well as within federally declared disaster areas.

Procedural Matters

Paperwork Reduction Act of 1995. This Order contains new information collection requirements in section 25.149(c)(4) and (g)(2)-(3) of the revised rules subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. It will be submitted to the Office of Management and Budget (OMB) for review under section 3507(d) of the PRA. OMB, the general public, and other Federal agencies will be invited to comment on the new or modified information collection requirements contained in this proceeding in a separate Federal Register notice.

Pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, see 44 U.S.C. 3506(c)(4), we previously sought specific comment on how the Commission might further reduce the information collection burden for small business concerns with fewer than 25 employees. We received no comments on this issue. We have assessed the effects of the revisions adopted that might impose information collection burdens on small business concerns, and find that there will be no change in information collection for businesses with fewer than 25 employees. The information collection will

include no policy changes that might impose information collection burdens on small businesses with fewer than 25 employees.

Congressional Review Act. The Commission will send copies of this Order to Congress and the General Accountability Office pursuant to the Congressional Review Act, 5 U.S.C. 801(a)(1)(A), and will send a copy including the final regulatory flexibility analysis to the Chief Counsel for Advocacy of the Small Business Administration, in accordance with section 603(a) of the Regulatory Flexibility Act, 5 U.S.C. 601, et seq. (1981).

Final Regulatory Flexibility Analysis

As required by the Regulatory Flexibility Act of 1980, as amended (RFA), an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the Notice of Proposed Rulemaking (NPRM). The Commission sought written public comment on the proposals in the NPRM, including comment on the IRFA. No comments were received on the IRFA. This Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.

Need for, and Objectives of, the Proposed Rules. This Order adopts modified rules for the operation of the Ancillary Terrestrial Component (ATC) of the single Mobile-Satellite Service (MSS) system operating in the 2483.5-2500 MHz frequency band. The changes will allow Globalstar, Inc. (Globalstar) to apply for a modification of an existing Commission license to add authority to operate a low-power network. Under the rules adopted in this Order, Globalstar would be able to provide low-power ATC under certain technical restrictions. This Order makes necessary changes to and relieves Globalstar from certain requirements in Part 25 of the Commission's rules to provide for the operation of a low-power network in the 2483.5-2495 MHz band. The rules adopted include technical rules to limit unwanted emissions that could cause interference to other services operating above or below the 2483.5-2495 MHz band. In addition, the Order also specifies rules that will apply to the certification of equipment to operate with Globalstar's proposed low power network.

Summary of Significant Issues Raised by Public Comments in Response to the IRFA. No party filing comments in this proceeding responded to the IRFA, and no party filing comments in this

proceeding otherwise argued that the policies and rules proposed in this proceeding would have a significant economic impact on a substantial number of small entities. The Commission has, nonetheless, considered the potential impact of the rules proposed in the IRFA on small entities. On balance, the Commission believes that the economic impact on small entities will be positive rather than negative.

Response to Comments by the Chief Counsel for Advocacy of the Small Business Administration. Pursuant to the Small Business Jobs Act of 2010, which amended the RFA, the Commission is required to respond to any comments filed by the Chief Counsel for Advocacy of the Small Business Administration (SBA), and to provide a detailed statement of any change made to the proposed rules as a result of those comments. The Chief Counsel did not file any comments in response to the proposed rules in this proceeding.

Description and Estimate of the Number of Small Entities to Which the Rules May Apply. The RFA directs agencies to provide a description of, and, where feasible, an estimate of, the number of small entities that may be affected by the rules adopted herein. The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction." In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act. A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA). Below, we describe and estimate the number of small entity licensees that may be affected by the adopted rules.

Satellite Telecommunications and All Other Telecommunications. The rules adopted in this Order will affect some providers of satellite telecommunications services, if adopted. Satellite telecommunications service providers include satellite and earth station operators. Since 2007, the SBA has recognized two census categories for satellite telecommunications firms: “Satellite Telecommunications” and “Other Telecommunications.” Under the “Satellite Telecommunications” category, a business is considered small if it had $15 million or less in average annual receipts. Under the

"Other Telecommunications" category, a business is considered small if it had $25 million or less in average annual receipts.

The first category of Satellite Telecommunications "comprises establishments primarily engaged in providing point-to-point telecommunications services to other establishments in the telecommunications and broadcasting industries by forwarding and receiving communications signals via a system of satellites or reselling satellite telecommunications." For this category, Census Bureau data for 2007 show that there were a total of 512 satellite communications firms that operated for the entire year. Of this total, 464 firms had annual receipts of under $10 million, and 18 firms had receipts of $10 million to $24,999,999.

The second category of Other Telecommunications is comprised of entities "primarily engaged in providing specialized telecommunications services, such as satellite tracking, communications telemetry, and radar station operation. This industry also includes establishments primarily engaged in providing satellite terminal stations and associated facilities connected with one or more terrestrial systems and capable of transmitting telecommunications to, and receiving telecommunications from, satellite systems. Establishments providing Internet services or voice over Internet protocol (VoIP) services via client-supplied telecommunications connections are also included in this industry." For this category, Census Bureau data for 2007 show that there were a total of 2,383 firms that operated for the entire year. Of this total, 2,346 firms had annual receipts of under $25 million.

Our rule changes will only impact one Satellite Telecommunications Service Provider, Globalstar, Inc. (Globalstar). Globalstar reported $76.3 million in revenue in 2012. Regarding the use of the frequency bands that are the subject of this rulemaking, the applicable definition of small entity is the definition under the Small Business Administration (SBA) rules applicable to Satellite Telecommunications. Because the rule amendments affect only Globalstar, which cannot be described as a small entity, and no other satellite telecommunications service providers, we find that no substantial number of small entities is potentially affected by our actions.

Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing. The rules will pertain to manufacturers of communications devices. The appropriate small business size standard is that which the SBA has established for radio and television broadcasting and wireless communications equipment manufacturing. The Census Bureau defines this category as follows: "This industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment. Examples of products made by these establishments are: transmitting and receiving antennas, cable television equipment, GPS equipment, pagers, cellular phones, mobile communications equipment, and radio and television studio and broadcasting equipment." The SBA has developed a small business size standard for firms in this category, which is: all such firms having 750 or fewer employees. According to Census Bureau data for 2007, there were a total of 939 establishments in this category that operated for part or all of the entire year. Of this total, 784 had fewer than 500 employees and 155 had more than 100 employees. Thus, under this size standard, the majority of firms can be considered small.

We anticipate that the rules will apply to new equipment that will be manufactured.

Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements for Small Entities . The rule changes adopted in this Order will affect the reporting, recordkeeping, and other compliance requirements for small business equipment manufacturers who would provide the equipment to be used as part of the contemplated new system. All devices that will operate in the low-power terrestrial network will be subject to the certification procedures contained in Subpart J of Part 2 of the Commission's rules, including certifying compliance with the relevant rule parts. Parties responsible for equipment compliance will be required to demonstrate that an authorized access point device can only operate in the 2483.5-2495 MHz band when it is operating under the control of a Globalstar Network Operating Center and that a client device can only operate in the 2483.5-2495 MHz band when it is operating under the control of an authorized access point.

Steps Taken to Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered. The RFA requires an agency to describe any significant alternatives that it has

considered in developing its approach, which may include the following four alternatives (among others): "(1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance and reporting requirements under the rules for such small entities; (3) the use of performance rather than design standards; and (4) an exemption from coverage of the rule, or any part thereof, for such small entities."

The Commission is aware that some of the revisions may impact small entities. The NPRM sought comment from all interested parties, and small entities were encouraged to bring to the Commission's attention any specific concerns they may have with the proposals outlined in the NPRM. No commenters raised any specific concerns about the impact of the revisions on small entities.

This Order specifies the equipment certification approach for equipment that will be able to operate with the proposed low-power terrestrial network. We conclude that parties responsible for equipment compliance must demonstrate that an authorized access point device can only operate in the 2483.5-2495 MHz band when it is operating under the control of a Globalstar Network Operating System and that a client device can only operate in the 2483.5-2495 MHz band when it is operating under the control of an authorized access point. While this may have an impact on small entities seeking to certify equipment to operate with the Globalstar low-power terrestrial network, we believe this demonstration will have less of an impact on small entities than an alternative proposal in the NPRM that the responsible parties provide evidence of Globalstar's consent at the time of application.

Report to Congress. The Commission will send a copy of this Order, including this FRFA, in a report to be sent to Congress pursuant to the Congressional Review Act. In addition, the Commission will send a copy of this Order, including this FRFA, to the Chief Counsel for Advocacy of the SBA. A copy of this Order and FRFA (or summaries thereof) will also be published in the Federal Register.

Legal Basis. The action is authorized under sections 4(i), 7(a), 302(a), 303(c), 303(e), 303(f), 303(g), 303(j), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 157(a), 302(a), 303(c), 303(e), 303(f), 303(g), 303(j), and 303(r).

Ordering Clauses

Accordingly, IT IS ORDERED that, pursuant to sections 4(i), 7(a), 302(a), 303(c), 303(e), 303(f), 303(g), 303(j), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 157(a), 302(a), 303(c), 303(e), 303(f), 303(g), 303(j), and 303(r), that this Report and Order in IB Docket No. 13-213 is hereby adopted.

IT IS FURTHER ORDERED that the amendments of Part 25 of the Commission's rules set forth in Appendix A shall become effective **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, except that those rules and requirements which contain new or modified information collection requirements that require approval by the Office of Management and Budget under the Paperwork Reduction Act shall become effective after the Commission publishes a notice in the Federal Register announcing such approval and the relevant effective date.

IT IS FURTHER ORDERED that the International Bureau will issue a Public Notice announcing the effective date for all of the changes adopted in this Report and Order.

List of Subjects in 47 CFR Part 25

Ancillary terrestrial component, Communications equipment, Radio, Satellites.

FEDERAL COMMUNICATIONS COMMISSION.

Katura Howard,
Federal Register Liaison.
Office of the Secretary.

For the reasons discussed in the preamble, the Federal Communications Commission amends 47 CFR part 25 as follows:

PART 25 – SATELLITE COMMUNICATIONS

1. The authority citation for part 25 continues to read as follows:

Authority: Interprets or applies 47 U.S.C. 154, 301, 302, 303, 307, 309, 310, 319, 332, 605, and 721, unless otherwise noted.

2. Section 25.149 is amended by revising paragraph (a)(1), the note to paragraph (a)(1), paragraph (c)(3); adding paragraph (c)(4); revising paragraph (e); redesignating paragraph (g) as paragraph (h); and adding new paragraph (g) to read as follows:

§ 25.149 Application requirements for ancillary terrestrial components in the Mobile-Satellite Service networks operating in the 1.5/1.6 GHz and 1.6/2.4 GHz Mobile-Satellite Service.

(a) * * *

(1) ATC shall be deployed in the forward-band mode of operation whereby the ATC mobile terminals transmit in the MSS uplink bands and the ATC base stations transmit in the MSS downlink bands in portions of the 1626.5-1660.5 MHz/1525-1559 MHz bands (L-band) and the 1610-1626.5 MHz/2483.5-2500 MHz bands.

Note to paragraph (a)(1): An L-band MSS licensee is permitted to apply for ATC authorization based on a non-forward-band mode of operation provided it is able to demonstrate that the use of a non-forward-band mode of operation would produce no greater potential interference than that produced as a result of implementing the rules of this section. A 1.6/2.4 GHz band licensee is permitted to apply for ATC authorization on a non-forward-band mode of operation where the equipment deployed will meet the requirements of paragraph (c)(4) of this section.

* * * * *

(c) * * *

(3) Licensees and manufacturers are subject to the radiofrequency radiation exposure requirements specified in §§1.1307(b), 2.1091, and 2.1093 of this chapter, as appropriate. ATC base stations must

comply with the requirements specified in §1.1307(b) of this chapter for PCS base stations. ATC mobile stations must comply with the requirements specified for mobile and portable PCS transmitting devices in §1.1307(b) of this chapter. ATC mobile terminals must also comply with the requirements in §§2.1091 and 2.1093 of this chapter for Satellite Communications Services devices. Applications for equipment authorization of ATC mobile or portable devices operating under this section must contain a statement confirming compliance with these requirements for both fundamental emissions and unwanted emissions. Technical information showing the basis for this statement must be submitted to the Commission upon request.

(4) Applications for equipment authorization of terrestrial low-power system equipment that will operate in the 2483.5-2495 MHz band shall demonstrate the following:

(i) The transmitted signal is digitally modulated;

(ii) The 6 dB bandwidth is at least 500 kHz;

(iii) The maximum transmit power is no more than 1 W with a peak EIRP of no more than 6 dBW;

(iv) The maximum power spectral density conducted to the antenna is not greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission;

(v) Emissions below 2483.5 MHz are attenuated below the transmitter power (P) measured in watts by a factor of at least 40 + 10 log (P) dB at the channel edge at 2483.5 MHz, 43 + 10 log (P) dB at 5 MHz from the channel edge, and 55 + 10 log (P) dB at X MHz from the channel edge where X is the greater of 6 MHz or the actual emission bandwidth.

(vi) Emissions above 2495 MHz are attenuated below the transmitter power (P) measured in watts by a factor of at least 43 + 10 log (P) dB on all frequencies between the channel edge at 2495 MHz and X MHz from this channel edge and 55 + 10 log (P) dB on all frequencies more than X MHz from this channel edge, where X is the greater of 6 MHz or the actual emission bandwidth;

(vii) Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately above and adjacent to the 2495 MHz a resolution bandwidth of at least 1 percent of the emission bandwidth of

the fundamental emission of the transmitter may be employed. If 1 percent of the emission bandwidth of the fundamental emission is less than 1 MHz, the power measured must be integrated over the required measurement bandwidth of 1 MHz. A resolution bandwidth narrower than 1 MHz is permitted to improve measurement accuracy, provided the measured power is integrated over the full required measurement bandwidth (i.e., 1 MHz). The emission bandwidth of the fundamental emission of a transmitter is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. 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; and

Note to paragraph (c)(4): Systems meeting the requirements set forth in this section are deemed to have also met the requirements of §25.254(a) through (d). No further demonstration is needed for these systems with respect to §25.254(a)-(d).

* * * * *

(e) Except as provided for in paragraphs (f) and (g) of this section, no application for an ancillary terrestrial component shall be granted until the applicant has demonstrated actual compliance with the provisions of paragraph (b) of this section. Upon receipt of ATC authority, all ATC licensees shall ensure continued compliance with this section and §§25.253 or 25.254, as appropriate.

* * * * *

(g) *Special provisions for terrestrial low-power systems in the 2483.5-2495 MHz band*. (1) An operational MSS system that applies for authority to deploy ATC in the 2483.5-2495 MHz band for terrestrial low-power operations satisfying the equipment certification requirements of paragraph (c)(4) of this section is not required to demonstrate compliance with paragraph (b) of this section, except to demonstrate the commercial availability of MSS, without regard to coverage requirements.

(2) An ATC licensee seeking to modify its license to add authority to operate a terrestrial low-power network shall certify in its modification application that its operations will utilize a Network

Operating System (NOS), consisting of a network management system located at an operations center or centers. The NOS shall have the technical capability to address and resolve interference issues related to the licensee's network operations by reducing operational power; adjusting operational frequencies; shutting off operations; or any other appropriate means. The NOS shall also have the ability to resolve interference from the terrestrial low-power network to the licensee's MSS operations and to authorize access points to the network, which in turn may authorize access to the network by end-user devices. The NOS operations center shall have a point of contact in the United States available 24 hours a day, seven days a week, with a phone number and address made publicly-available by the licensee.

(3) All access points operating in the 2483.5-2495 MHz band shall only operate when authorized by the ATC licensee's NOS, and all client devices operating in the 2483.5-2495 MHz band shall only operate when under the control of such access points.

* * * * *

3. Section 25.254 is amended by adding paragraph (e) to read as follows:

§ 25.254 Special requirements for ancillary terrestrial components operating in the 1610-1626.5 MHz/2483.5-2500 MHz bands.

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(e) Licensees of terrestrial low-power systems operating in the 2483.5-2495 MHz band shall operate consistent with the technical limits and other requirements specified in §25.149(c)(4) and (g)(2)-(3).

[FR Doc. 2017-02027 Filed: 1/30/2017 8:45 am; Publication Date: 1/31/2017]