

NARRATIVE STATEMENT

Pursuant to Section 5.3 and Section 5.61 of the Commission’s rules, 47 C.F.R. §§ 5.3, 5.61, LightSquared Subsidiary LLC, Debtor-in-Possession (“LightSquared”) respectfully requests special temporary authority (“STA”) for a four-month period, commencing as soon as possible, for the purpose of ascertaining (i) the technical compatibility of fixed commercial wireless base stations in the 1675-1680 MHz band with existing spectrum operations in and around that frequency range, and (ii) the technical compatibility of radiosonde operations in the 400.15-406 MHz band with existing spectrum operations in and around that frequency range.

1. Applicant’s Name, Address, and FCC Registration Number (“FRN”).

LightSquared Subsidiary LLC, Debtor-in-Possession
10802 Parkridge Boulevard
Reston, VA 20191
FRN: 0021783881

2. Description of Operations and Purpose of Assessment.

LightSquared is a satellite service provider in the L Band, and also holds Commission authority to conduct certain 4G LTE terrestrial wireless operations in that spectrum. LightSquared has proposed to conduct a portion of those terrestrial operations in the 1670-1680 MHz band.¹

LightSquared currently has authority to use the 1670-1675 MHz band for terrestrial operations nationwide. The 1675-1680 MHz band, however, currently is allocated on a primary basis for both non-Federal and Federal use by Meteorological Aids (*e.g.* radiosondes) and the Meteorological-Satellite Service (*e.g.*, MetSats, like the GOES system). Continued use of this band by radiosondes may not be compatible with the expected operation of the new GOES-R satellite system that is expected to be deployed in the next few years.²

¹ LightSquared’s September 28, 2012 license modification applications (the “License Modification Applications”) provide a comprehensive solution to the issues that have precluded the deployment of its terrestrial wireless network, and include a proposal to permanently relinquish its authority to conduct terrestrial downlinks in the L Band at 1545-1555 MHz and, in lieu thereof, conduct them at 1670-1680 MHz. *See* IBFS File Nos. SAT-MOD-20120928-00160, SAT-MOD-20120928-00161, and SES-MOD-20121001-00872; *see also* *Public Notice: FCC Invites Comment on LightSquared Request to Modify its ATC Authorization*, DA 12-1863, IB Docket No. 12-340 (Nov. 16, 2012).

² *See* International Telecommunication Union and World Meteorological Organization, *Handbook Use of Radio Spectrum for Meteorology: Weather, Water and Climate Monitoring and Prediction*, at 30 (2008 ed.) (“Co-channel MetAids and MetSat operations are not compatible and significant band segmentation has already occurred. MetAids cause significant levels of interference to the MetSat ground stations.”).

The proposed assessment will examine the technical feasibility of operating fixed commercial wireless base stations at 1675-1680 MHz, with or without also relocating radiosonde operations in the U.S. from 1675-1680 MHz to 400.15-406 MHz (which is internationally harmonized for radiosonde operations). This assessment will take into account existing spectrum operations in and around those frequency ranges, and ascertain commercial operating parameters that are needed to protect critical federal operations, including the continued, uninterrupted nature of NOAA's vital meteorological mission.

The proposed assessment will involve the procurement, deployment and operation of terrestrial radio transmitters at fixed locations in the 1675-1680 MHz band (and also in the 1670-1675 MHz band to which LightSquared already has leased spectrum rights). LightSquared will coordinate the deployment and operation of those radio transmitters at those locations in advance with the FCC and NTIA, as may be required, including the frequencies and power levels used.

The proposed assessment also may involve the procurement, deployment and operation of radiosonde transmitters in the atmosphere in the 400.15-406 MHz band. LightSquared similarly will coordinate the deployment and operation of those radiosondes in advance with the FCC and NTIA, as may be required, including the frequencies and power levels used.

LightSquared will bear the cost of procuring, deploying and operating this equipment, and of contracting for conducting the proposed assessment through an entity that is acceptable to NTIA and NOAA.

LightSquared will (i) work in cooperation with the FCC, NTIA, NOAA, and other interested federal agencies to develop specific assessment plans, including identifying the specific locations for the deployment of terrestrial radios and the salient operating parameters, (ii) allow representatives of those federal agencies to observe and participate in the assessment, and (iii) make any reports available to those federal agencies.

3. Public Interest Basis for STA.

Timely grant of STA would enable LightSquared to commence the assessment as soon as possible, and thus gather data that can be used to advance a number of important policy goals.

The 1675-1680 MHz band is part of the spectrum that (i) NTIA (in consultation with the FCC) already has identified as potentially available for wireless broadband use, and as warranting further evaluation,³ and (ii) LightSquared has proposed as part of the License Modification Applications to use for its fixed wireless base stations (in lieu of the 1545-1555 MHz portion of the L Band). See *LightSquared Subsidiary LLC Request for Relief from Build-Out Conditions*,

³ U.S. Department of Commerce, *Plan and Timetable to Make Available 500 Megahertz of Spectrum for Wireless Broadband*, at 6-7 (Oct. 2010).

DA 12-2051, IB Docket No. 12-296, at ¶¶ 12, 13 (2012) (“[W]e find that it is in the public interest to provide for an orderly deliberative process in which LightSquared will have the opportunity to explore solutions to GPS interference concerns”).

Moreover, grant of this STA will enable the gathering of data that will facilitate the modification of current radiosonde operations in and around the 1675-1680 MHz band that is required by the “downshift” of a portion of the GOES-R satellite downlink channels.⁴ Additionally, it will facilitate an assessment of the cost of potentially relocating radiosondes to the 400 MHz band, which would then inform an eventual determination of an appropriate vehicle for meeting these costs.

For these reasons, expeditious grant of this STA would serve the public interest, convenience, and necessity by enabling LightSquared to gather on timely basis data that will facilitate the assessment of these types of issues by the FCC, NTIA, and other federal agencies. *See* 47 C.F.R. § 5.61(a).

4. Dates of Operation.

LightSquared requests STA for four months, commencing as soon as possible.⁵ LightSquared anticipates the proposed assessment will take from two to four months.

5. Classes of Stations.

LightSquared proposes to operate (i) wireless base stations at fixed terrestrial locations in the 1675-1680 MHz band (and also in the 1670-1675 MHz band to which LightSquared has leased spectrum rights), and (ii) radiosondes in the atmosphere in the 400.15-406 MHz band.

6. Location of Proposed Operations.

LightSquared requests authority to conduct the proposed assessment throughout the continental United States. As noted above, LightSquared will coordinate the deployment and operation of its RF transmitters in advance with the FCC and NTIA, as may be required.

The terrestrial radios currently are expected to be located within a 6 to 25 km radius of Wallops Island, VA and Suitland, MD, at sites with the following characteristics:

⁴ U.S. Department of Commerce, *An Assessment of the Near-Term Viability of Accommodating Wireless Broadband Systems in the 1675-1710 MHz, 1755-1780 MHz, 3500-3650 MHz, and 4200-4220 MHz, 4380-4400 MHz Bands*, at 1-6 (Oct. 2010).

⁵ Because the STA Application Form requires an applicant to specify a “start date” and an “end date” for the requested authorization, LightSquared has done so. However, LightSquared recognizes that the Commission may not have processed the application fully by the specified “start date.” As discussed above, LightSquared simply seeks STA for four months, commencing as soon as possible.

LightSquared Subsidiary LLC, Debtor-in-Possession
 Experimental STA Request
 Exhibit 1

Site ID	Lat (°N)	Long (°E)	Ground Elev. AMSL (feet)	Antenna Height AGL (feet)	No. of Sectors	Average Radius (km)	Azimuths (degrees)	City
LSSX061858	38.9314	-76.6736	245	153	1	2-3	135	Suitland
LSSX062798	39.0448	-76.8512	365	125	1	2-3	185	Suitland
LSSX056198	37.9872	-75.4584	221	189	1	2-3	190	Wallops
LSSX055953	37.9397	-75.5418	311.77	275	1	2-3	105	Wallops

Two sites for each such geographic area have been selected for contingency purposes. Additional assessments may be needed in other geographic areas as well, subject to coordination with the FCC, NTIA, NOAA, and other interested federal agencies.

For each location of a terrestrial radio, LightSquared will provide a “Stop Buzzer” name and phone number for that specific location as part of the federal coordination process.

LightSquared will cease operations of any particular activity if the FCC or NTIA (or another designated agency) provides LightSquared with notice of suspected interference and will not recommence that such activity until the FCC authorizes the recommencement of that activity.

7. Equipment To Be Used.

LightSquared will employ reliable methods to simulate 4G LTE wireless base station emissions operating in the 1675-1680 MHz band, including assembling the required signal generators, high powered amplifiers, RF transmit filters and the necessary antennas (*e.g.*, Argus HPX308R, TongYu TDJ151717DE-65, Agilent 4438C, ComTech ARD88259-50). In the 400.15-406 MHz band, LightSquared will make use of Sippican Mark II Microsonde radiosondes and associated telemetry equipment, and potentially also will make use of radiosonde equipment manufactured by Vaisala. As part of the coordination process with the FCC, NTIA, and other agencies, LightSquared will make available the technical specifications of all RF equipment used in its assessment under this STA.

8. Frequencies Desired.

LightSquared requests operating authority at 1675-1680 MHz (for fixed base station operations), and at 400.15-406 MHz for radiosondes.

9. Power Levels.

For the 1675-1680 MHz band: 1585 W is the maximum transmitter power output including antenna gain.

For the 400.15-406 MHz band: 380 mW is the maximum transmitter power output including antenna gain. Devices will be compliant with ITU RS.1165-2 for Type B digital transmitters and thus transmit power will typically be less than the quoted maximum.

10. Type of Emission, Modulation, and Bandwidth.

In the 1.6 GHz band, LightSquared will operate with the following emission types, modulations, and associated bandwidths:

<u>Type of Emission</u>	<u>Modulation</u>	<u>Bandwidth</u>
5M00W7D	QPSK	5 MHz
5M00W7D	16-QAM	5 MHz
5M00W7D	64-QAM	5 MHz
10M0W7D	QPSK	10 MHz
10M0W7D	16-QAM	10 MHz
10M0W7D	64-QAM	10 MHz

In the 400.15-406 MHz band, LightSquared will operate with the following emission type, modulation, and associated bandwidth:

<u>Type of Emission</u>	<u>Modulation</u>	<u>Bandwidth</u>
200KF1D	FSK	200 kHz

LightSquared has specified the emission designator and calculated the necessary bandwidth in accordance with Sections 2.201 and 2.202 of the Commission's rules.

11. Other Frequency Requirements/Equipment Specifications.

- Signal duty cycle: 100% loading
- Tone spacing of multiple tones are used with 15 kHz subcarrier spacing
- Antenna polarization: +/- 45 degrees cross pole
- Main beam antenna gain: 17 dBi
- Number of base station sectors: 1
- Typical radius: 2-3 km

LightSquared's operations in the 1675-1680 MHz band will utilize directional antennas with the following characteristics:

- Width of the beam in degrees at the half-power point: 65°H, 7.5°V
- Orientation in horizontal plane: Varies per transmitter site, see Section 7, above, for antenna azimuth information.
- Orientation in vertical plane: 3° mechanical down-tilt

12. Overall Height of Antenna(s) Above Ground.

Base station heights will be lower than 200 meters and may be placed at existing LightSquared or industry partner base station locations to facilitate compliance with FAA requirements.

Radiosondes will be operated in the atmosphere, at heights of approximately 3-100,000 feet.

13. Contact Information.

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