

Approved by OMB
3060-0678

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:
STA Extension Request for AMC-2 (80.85 WL) - May 2015

1. Applicant

Name:	Row 44 Inc.	Phone Number:	818-706-3111
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Attention:	Mr Simon McLellan		

SES-STA20150520-00300

File # E080100 Grant Date 5-28-15

Call Sign (or other identifier) From 5-28-15 To 7-27-15

Term Dates

Approved: *[Signature]*

GRANTED
International Bureau



Applicant: Row 44, Inc.
Call Sign: E080100
File No.: SES-STA-20150520-00300

Special Temporary Authority (STA)

Row 44, Inc. is granted extension of special temporary authority for a period of 60 days to operate up to 100 Earth Station Aboard Aircraft (ESAA) terminals (0.62 meter TECOM Ku-Stream antenna) to communicate with AMC-2 (Call Sign S2134) at the 80.85° W.L. orbital location using the 14.2-14.47 GHz (Earth-to-space) and 11.7-12.2 GHz (space-to-Earth) frequency bands. Operations must be in accordance with the technical specifications contained in Row 44, Inc.'s application and are subject to the following conditions:

1. Operations under this grant of special temporary authority must be on an un-protected, non-harmful interference basis, i.e., while operating under this temporary authority Row 44, Inc. must not cause harmful interference to, and must not claim protection from interference caused to it by, any other lawfully operating radiocommunication system. Row 44, Inc. must cease operations immediately upon notification of such interference and must immediately inform the Commission, in writing, of such an event.
2. ESAA operations in the 14.2-14.47 GHz band shall not exceed the EIRP density limits specified in the current earth station authorization, Call Sign E080100, IBFS File No. SES-MOD-20121023-00963. We note that this grant does not authorize any higher power density levels as requested in SES-MFS-20150318-00164.
3. When operating in international airspace within line-of-sight of the territory of a foreign administration where Fixed Service networks have a primary allocation in the 14.0-14.5 GHz band, an ESAA terminal must not produce ground-level power flux density (pfd) in such territory in excess of the following values unless the foreign administration has imposed other conditions for protecting its FS stations: $-132 + 0.5 \times \text{THETA}$ dB(W/(m² MHz)) for $\text{THETA} \leq 40^\circ$; -112 dB(W/(m² MHz)) for $40^\circ < \text{THETA} \leq 90^\circ$. Where: THETA is the angle of arrival of the radio-frequency wave in degrees above the horizontal, and the aforementioned limits relate to the pfd and angles of arrival that would be obtained under free space propagation conditions.
4. Operations pursuant to this authorization must conform with the terms of coordination agreements between the operator of AMC-2 and operators of other Ku-band geostationary satellites within six angular degrees of AMC-2. In the event that another GSO Fixed-Satellite Service (FSS) space station commences operations in the 14.0-14.5 GHz band at a location within six degrees of any of these space stations, aircraft earth stations operating pursuant to this temporary authority shall cease transmitting to that space station unless and until such operation has been coordinated with the new space station's operator or Row 44, Inc. demonstrates that such operation will not cause interference to the new co-frequency space station.
5. Row 44, Inc. must take all necessary measures to ensure that the antenna does not create potential exposure of humans to radiofrequency radiation in excess of the FCC exposure limits defined in 47 CFR §§ 1.1307(b) and 1.1310 wherever such exposures might occur. Measures must be taken to ensure compliance with limits for both occupational controlled exposure and for general population/uncontrolled exposure, as defined in these rule sections. Requirements for restrictions can

be determined by predictions based on calculations, modeling or by field measurements. The FCC's OET Bulletin 65 (available on-line at www.fcc.gov/oet/rfsafety) provides information on predicting exposure levels and on methods for ensuring compliance, including the use of warning and alerting signs and protective equipment for workers. The licensee shall ensure installation of terminals on aircraft by qualified installers who have an understanding of the antenna's radiation environment and the measures best suited to maximize protection of the general public and persons operating the aircraft and equipment. A terminal exhibiting radiation exposure levels exceeding 1.0 mW/cm² in accessible areas, such as at the exterior surface of the radome, shall have a label attached to the surface of the terminal warning about the radiation hazard and shall include thereon a diagram showing the regions around the terminal where the radiation levels could exceed 1.0 mW/cm².

6. Row 44, Inc. must maintain a U.S. point of contact available 24 hours per day, seven days per week, with the authority and ability to terminate operations authorized herein. The licensee shall have available, at all times, the technical personnel necessary to perform supervision of remote station operations.

7. ESAA terminals authorized herein must employ a tracking algorithm that is resistant to capturing and tracking adjacent satellite signals, and each station must be capable of inhibiting its own transmission in the event it detects unintended satellite tracking.

8. ESAA terminals authorized herein must be monitored and controlled by a ground-based network control and monitoring center. Such stations must be able to receive "enable transmission" and "disable transmission" commands from the network control center and must cease transmission immediately after receiving a "parameter change" command until receiving an "enable transmission" command from the network control center. The network control center must monitor operation of each aircraft earth station to determine if it is malfunctioning, and each aircraft earth station must self-monitor and automatically cease transmission on detecting an operational fault that could cause harmful interference to a fixed-satellite service network.

9. ESAA terminals authorized herein must not be used to provide air traffic control communications.

10. Operation in the territory or airspace of any country other than the United States must be in compliance with the applicable laws, regulations, and licensing procedures of that country, as well as with the conditions of this authorization.

11. For each ESAA transmitter, Row 44, Inc. must maintain records of the following data for each operating ESAA terminal, a record of the aircraft location (i.e., latitude/longitude/altitude), transmit frequency, channel bandwidth and satellite used shall be time annotated and maintained for a period of not less than one year. Records shall be recorded at time intervals no greater than one (1) minute while the ESAA terminal is transmitting. The ESAA operator shall make this data available, in the form of a comma delimited electronic spreadsheet, within 24 hours of a request from the Commission, NTIA, or a frequency coordinator for purposes of resolving harmful interference events. A description of the units (i.e., degrees, minutes, MHz ...) in which the records values are recorded will be supplied along with the records.

12. Antenna elevation for all operations must be at least 5 degrees above the geographic horizon while the aircraft is on the ground.

- 13. Row 44, Inc. must comply with any pertinent limits established by the International Telecommunication Union to protect other services allocated internationally.
- 14. Grant of this authorization is without prejudice to any determination that the Commission may make regarding pending applications or future requests for special temporary authority. E.g. IBFS File No. SES-MFS-20150318-00164.
- 15. Any action taken or expense incurred as a result of operations pursuant to this special temporary authority is solely at Row 44, Inc.'s risk.
- 16. Operations during May 24, 2015 to the date of this grant were authorized pursuant to Section 1.62 of the Commission's rules 47 C.F.R. §1.62.

This action is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective immediately. Petitions for reconsideration under Section 1.106 or applications for review under Sections 1.115 of the Commission's rules, 47 C.F.R. §§ 1.106, 1.115, may be filed within thirty days of the date of the public notice indicating that this action was taken.

 GRANTED International Bureau	File # SES-STA-20150520-00300
	Call Sign E 080100 Grant Date 5-28-15
	(or other identifier)
	From 5-28-15 Term Dates To 7-27-15
	Approver Paul E. Glass

2. Contact	
Name: David S. Keir	Phone Number: 202-429-8970
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Street: 2000 K Street, NW Suite 600	E-Mail: dkeir@lermansenter.com
City: Washington	State: DC
Country: USA	Zipcode: 20006 - 1809
Attention:	Relationship: Legal Counsel
(If your application is related to an application filed with the Commission, enter either the file number or the IB Submission ID of the related application. Please enter only one.)	
3. Reference File Number SESMFS2015031800164 or Submission ID	
4a. Is a fee submitted with this application?	
<input checked="" type="radio"/> If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114).	
<input type="radio"/> Governmental Entity <input type="radio"/> Noncommercial educational licensee	
<input type="radio"/> Other (please explain):	
4b. Fee Classification CGB – Mobile Satellite Earth Stations	
5. Type Request	
<input checked="" type="radio"/> Use Prior to Grant <input type="radio"/> Change Station Location <input type="radio"/> Other	
6. Requested Use Prior Date 05/25/2015	
7. City	
8. Latitude (dd mm ss.s h) 0 0 0.0 N	

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THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, PUBLIC LAW 104-13, OCTOBER 1, 1995, 44 U.S.C. SECTION 3507.

EXPLANATORY STATEMENT

Row 44, Inc. hereby requests extension of Special Temporary Authority (“STA”) for an additional period of sixty (60) days to permit it to operate its licensed Ku-band network of Earth Stations Aboard Aircraft (“ESAA”) (Call Sign E080100) using the AMC-2 satellite at 80.85° W.L. as a point of communication. On March 24, 2015, Row 44 was granted authority pursuant to Section 25.120(b) of the FCC’s Rules for an initial 60-day period commencing March 25, 2015 to operate using AMC-2 while its underlying modification application (File No. SES-MFS-20150318-00064) for this and other authority remains pending. *See* File No. SES-STA-20150319-00172. The current STA limits service on AMC-2 to a maximum of fifty (50) earth stations during the period ending May 24, 2015. Row 44’s STA operations otherwise remain consistent with all terms and conditions of its current license, and are limited to conventional Ku-band capacity frequencies at 11.7 to 12.2 GHz (downlink) and 14.0 to 14.5 GHz (uplink), as proposed in the pending Modification Application.

Row 44 has been operating successfully using the AMC-2 capacity for nearly two months with no reported adverse effect on other authorized operations. This additional capacity has been particularly important for the company’s operations because of increasing passenger demand for in-flight entertainment and Internet access at a time when other capacity options are limited. Grant of an additional 60-day STA period is therefore critical to maintain service availability, and will affirmatively serve the public interest by helping to meet airline passenger demand for connectivity.

In light of current service demands, Row 44 also requests that the 50 unit limit on antennas communicating via AMC-2 be increased to 100 units, allowing it greater operational flexibility in the provision of its service. Although it is unlikely that this higher number of units would need to access AMC-2 during normal operations, Row 44 seeks the added flexibility in order to avoid capacity constraints during peak system use. The requested increase in the number of terminals permitted to use AMC-2 will not increase the potential for interference because antennas in use are individually assigned frequencies, and only one terminal will transmit at any given time and frequency regardless of the total number of terminals authorized. Such a modest expansion of an STA is consistent with Commission precedent for the ESAA application of FSS. *See, e.g.*, Panasonic Avionics Corporation, File No. SES-STA-20130516-00395 (grant stamp, July 24, 2013) (extending STA for a 60-day period and increasing the number of authorized ESAA antennas from 20 to 100).

Row 44 acknowledges that favorable FCC action on this STA request would be without prejudice to the ultimate determination the FCC will make regarding the pending modification application (File No. SES-MFS-20150318-00064). In addition, Row 44 acknowledges that any action taken pursuant to a grant of the requested STA will continue to be at its own risk.