

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:  
STA to Add Satmex 5 Jan 2014

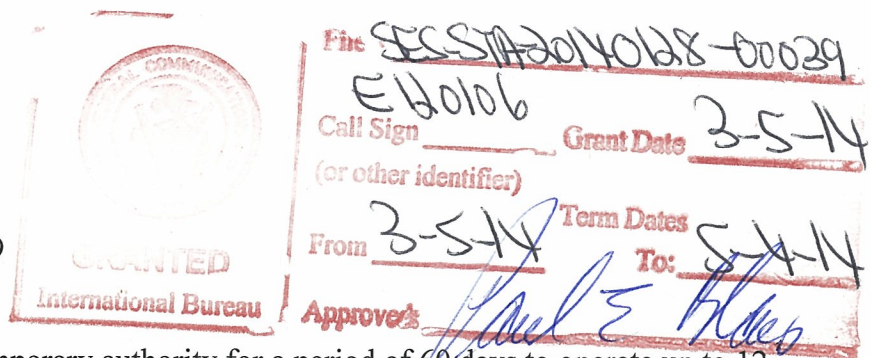
1. Applicant

<b>Name:</b>	Gogo LLC	<b>Phone Number:</b>	202-870-7220
<b>DBA Name:</b>		<b>Fax Number:</b>	
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<b>City:</b>	Washington	<b>State:</b>	DC
<b>Country:</b>	USA	<b>Zipcode:</b>	20015
<b>Attention:</b>	Mr William J Gordon		



File # SES-STA-20140128-00039  
 Call Sign F120106 Grant Date 3-5-14  
 (or other identifier)  
 Term Dates From 3-5-14 To: 5-1-14  
 Approved: *William J Gordon*

Applicant: Gogo LLC  
Call Sign: E120106  
File No.: STA-20140128-00039  
Special Temporary Authority



The image shows a red circular stamp from the International Bureau of the FCC with the word "GRANTED" in the center. To its right is a handwritten form with the following fields: "File" with "SEC STA 20140128-00039", "Call Sign" with "E120106", "Grant Date" with "3-5-14", "(or other identifier)", "From" with "3-5-14", "Term Dates" with "To: 5-1-14", and "Approver's" with a signature.

Gogo LLC is granted special temporary authority for a period of 60 days to operate up to 12 aeronautical terminals (0.24 meter AeroSat model HR6400) to communicate with Satmex 5 (Call Sign S2589) at the 114.9° W.L. orbital location using the 14.0-14.5 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 Gogo LLC's application and are subject to the following conditions:

1. Operation under this grant of special temporary authority must be on an unprotected and non-harmful interference basis, *i.e.*, while operating under this temporary authority Gogo LLC must not cause harmful interference to, and must not claim protection from interference caused to it by, any other lawfully operating radiocommunication system. Gogo LLC must cease operations immediately upon notification of such interference and must immediately inform the Commission, in writing, of such an event.

2. Operation pursuant to this authorization must be in compliance with the terms of Gogo LLC's coordination agreements with the National Science Foundation and the National Aeronautics and Space Administration pertaining to operation of aircraft earth stations in the Ku-Band.

3. Operation pursuant to this authorization outside the United States in the 14.0-14.5 GHz band must be in compliance with the provisions of Annex 1, Part C of Recommendation ITU-R M.1643, with respect to any radio astronomy station performing observations in the 14.47-14.5 GHz band.

4. 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 aircraft earth station must not operate in a manner that would produce predicted 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/(m<sup>2</sup> MHz)) for  $\text{THETA} \leq 40^\circ$ ;  $-112$  dB(W/(m<sup>2</sup> 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.

5. Operation pursuant to this authorization must conform to the terms of coordination agreements between the operator of Satmex 5 and operators of other Ku-band geostationary satellites within six angular degrees of Satmex 5. In the event that another GSO Fixed-Satellite Service (FSS) space station commences operation 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 Gogo LLC demonstrates that such operation will not cause harmful interference to the new co-frequency space station.

6. Gogo LLC must take all necessary measures to ensure that the operation authorized

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. 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](http://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.

7. Gogo LLC 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. Gogo LLC must submit a letter to be included in its license file with the name and telephone number of the point of contact prior to commencing operation.

8. Aircraft earth stations 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.

9. Aircraft earth stations 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.

10. Stations authorized herein must not be used to provide air traffic control communications.

11. For each ESAA transmitter Gogo LLC shall maintain records of the following data for each operating aircraft earth station (AES), 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 AES 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. Gogo LLC shall comply with any pertinent limits established by the International Telecommunication Union to protect other services allocated internationally.

14. In connection with the provision of service in any particular country, Gogo LLC is obliged to comply with the applicable laws, regulations, rules, and licensing procedures of that country.

15. Grant of this authorization is without prejudice to any determination that the Commission may make regarding pending applications. *E.g.* IBFS File Nos. SES-MFS-20131114-01015.

16. Any action taken or expense incurred as a result of operations pursuant to this special temporary authority is solely at Gogo LLC's risk.

17. 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.

<b>2. Contact</b>	
<b>Name:</b> Karis Hastings	<b>Phone Number:</b> 202-599-0975
<b>Company:</b> SatCom Law LLC	<b>Fax Number:</b>
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<b>City:</b> Washington	<b>State:</b> DC
<b>Country:</b> USA	<b>Zipcode:</b> 20004 -
<b>Attention:</b>	<b>Relationship:</b> 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 SESMFS201311401015 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 03/01/2014	
7. CityMobile	
8. Latitude (dd mm ss.s h) 0 0 0.0	



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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.**

## 12. Description

Gogo LLC (Gogo) respectfully requests special temporary authority to allow up to 12 ESAA terminals to communicate with Satmex 5 for coverage of North and South America. STA is sought pending action on Gogo's modification application, File No. SES-MFS-20131114-01015, which includes a request to add Satmex 5 as an authorized point of communication under Gogo's existing ESAA license, call sign E120106. See attached narrative.



## REQUEST FOR SPECIAL TEMPORARY AUTHORITY

Gogo LLC (“Gogo”), which holds a license to operate an earth station aboard aircraft (“ESAA”) network,<sup>1</sup> hereby requests special temporary authority (“STA”) for a period of 60 days commencing on or before March 1, 2014, to permit up to 12 Gogo ESAA terminals to communicate with the Mexican-licensed Satmex 5 spacecraft. Grant of the requested STA will serve the public interest by allowing Gogo to expand the service area of the Gogo ESAA network in response to customer demand for coverage of North and South America. Gogo seeks STA pending Commission action on Gogo’s application to modify its ESAA license, which includes a request to add Satmex 5 as an authorized point of communications.<sup>2</sup>

*Background:* Last May the Commission granted Gogo a blanket license authorizing it to operate up to 1000 Ku-band terminals with seven specified satellites for ESAA service in U.S. airspace, foreign airspace, and the airspace over international waters. That license was issued based on Gogo’s demonstration that its proposed network would enhance competition in the provision of in-flight broadband service to air travelers and airline crew members. Gogo also showed that its planned operations were fully consistent with technical standards designed to ensure protection of other authorized communications networks. The license issued to Gogo included detailed terms and conditions of operation embodying these standards.

In November Gogo applied to modify the Gogo ESAA License. The modification seeks to add four satellites as points of communication for the Gogo network, to update the technical parameters for operations with two satellites already authorized for use by Gogo, and to conform the terms and conditions of Gogo’s license to the rules and policies adopted in the Commission’s *ESAA Order*.<sup>3</sup>

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<sup>1</sup> See *Gogo LLC*, Call Sign E120106, File Nos. SES-LIC-20120619-00574, SES-AMD-20120731-00709 & SES-AFS-20121008-00902, granted May 1, 2013 (the “Gogo ESAA License”).

<sup>2</sup> See *Gogo LLC*, Call Sign E120106, File No. SES-MFS-20131114-01015 (the “Gogo Modification Application”). The Gogo Modification Application appeared on the Commission’s public notice of earth station applications accepted for filing on December 18, 2013. See Public Notice, Satellite Radio Applications Accepted for Filing, Report No. SES-01606 (Dec. 18, 2013) at 6. No comments were filed in response to the public notice.

Gogo subsequently filed an amendment to specify additional downlink frequency bands for other satellites included in the Gogo Modification Application, but the amendment does not affect Gogo’s proposed use of Satmex 5. See *Gogo LLC*, Call Sign E120106, File No. SES-AMD-20131226-01208.

<sup>3</sup> *Revisions to Parts 2 and 25 of the Commission’s Rules to Govern the Use of Earth Stations Aboard Aircraft Communicating with Fixed-Satellite Service Geostationary-Orbit Space Stations Operating in the 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz and 14-14.5 GHz*

*STA Request:* Pending action on the Gogo Modification Application, Gogo seeks STA to commence communications with Satmex 5. The Gogo Modification Application contains complete technical information regarding Gogo's proposed operations with this spacecraft, and Gogo incorporates that information by reference herein. As described in the modification, Gogo seeks to communicate with this satellite in conventional Ku-band spectrum, 14-14.5 GHz uplink and 11.7-12.2 GHz downlink.<sup>4</sup> Gogo proposes to use Satmex 5 for coverage of North and South America, including within U.S. airspace.<sup>5</sup>

Gogo emphasizes that the scope of this STA request is narrower than that of the pending Gogo Modification Application. Here, Gogo is only seeking authority to add Satmex 5 as an authorized point of communication for a small number of ESAA terminals. Gogo is otherwise prepared to operate consistently with the terms and conditions set forth in the existing Gogo ESAA License. In addition, Gogo is willing to operate pursuant to the STA on an unprotected, non-harmful interference basis.

Grant of the requested STA is consistent with Commission policy and will not adversely affect other authorized operations. Satmex 5 is on the Commission's Permitted Space Station List for operations in the conventional Ku-band.<sup>6</sup> Gogo has submitted letters confirming that its proposed ESAA operations have been coordinated with operators of the satellites within six degrees on either side of Satmex 5.<sup>7</sup> Gogo's operations with Satmex 5 will also conform to the terms of its agreements with the National Science Foundation and the National Aeronautics and Space Administration, as required by the Gogo ESAA License.<sup>8</sup> In addition, Gogo will comply with power flux density limits to protect terrestrial services outside the U.S.

The proposed STA will allow Gogo to implement a limited but important change in its ESAA network to respond to customer requirements pending action on the Gogo Modification Application. Authorized access to Satmex 5 will expand Gogo's operational capabilities. For example, Gogo equipment on aircraft traveling on routes between the U.S. and Asia must currently be turned off when the aircraft enters Canadian airspace. Grant of the requested STA will allow Gogo to use Satmex 5 to provide continuous operation on these important routes and

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*Frequency Bands*, Notice of Proposed Rulemaking and Report and Order, IB Docket Nos. 12-376 & 05-20, 27 FCC Rcd 16510 (2012) ("*ESAA Order*").

<sup>4</sup> See Gogo Modification Application, Annex 2.

<sup>5</sup> *Id.*, Narrative at 3-4 & Annex 2.

<sup>6</sup> See *Satélites Mexicanos, S.A. de C.V.*, Call Sign S2589, File Nos. SAT-PPL-20121218-00217 & SAT-APL-20130308-00028, grant-stamped May 31, 2013.

<sup>7</sup> Gogo Modification Application, Annex 3.

<sup>8</sup> *Id.*, Narrative at 4. See also Gogo ESAA License at 6, condition 90057.

will facilitate comprehensive testing of security and authentication protocols. As discussed above, the public notice period for the Gogo Modification Application has expired, and no party has opposed or otherwise commented on Gogo's request to add Satmex 5 as part of its ESAA network.

Gogo understands that any Commission grant of this STA will be without prejudice to the ultimate determination the Commission will make regarding the Gogo Modification Application. In addition, Gogo acknowledges that any action taken pursuant to a grant of the requested STA will be at Gogo's own risk.