



**UNITED STATES OF AMERICA  
FEDERAL COMMUNICATIONS COMMISSION  
RADIO STATION AUTHORIZATION**

Name: Comsat, Inc.

Call Sign: E050276

Authorization Type: Modification of License

File Number: SES-MOD-20151009-00694

Common Carrier

Grant date: 04/25/2016

Expiration Date: 06/14/2025



Nature of Service: Mobile Satellite Service

Class of Station: Mobile Earth Station

**A) Site Location(s)**

#	Site ID	Address	Latitude	Longitude	Elevation (Meters)	NAD	Special Provisions (Refer to Section H)
1)	Multiple	2600 TOWER OAKS BOULEVARD SUITE 700 ROCKVILLE, MONTGOMERY, MD 20852			0	83	

*Subject to the provisions of the Communications Act of 1934, The Communications Satellite Act of 1962, subsequent acts and treaties, and all present and future regulations made by this Commission, and further subject to the conditions and requirements set forth in this license, the grantee is authorized to construct, use and operate the radio facilities described below for radio communications for the term beginning June 14, 2010 (3 AM Eastern Standard Time) and ending June 14, 2025 (3 AM Eastern Standard Time) . The required date of completion of construction and commencement of operation is April 25, 2017 (3 AM Eastern Standard Time) . Grantee must file with the Commission a certification upon completion of construction and commencement of operation.*

**B) Particulars of Operations**

The General Provision 1010 applies to all receiving frequency bands.  
The General Provision 1900 applies to all transmitting frequency bands.  
For the text of these provisions, refer to Section H.

#	Frequency (MHz)	Polarization Code	Emission	Tx/Rx Mode	Max EIRP /Carrier (dBW)	Max EIRP Density /Carrier (dBW/4kHz)	Associated Antenna	Special Provisions (Refer to Section H)	Modulation/ Services
1)	1626.5000-1660.5000	R	200KG7W	Tx	11.00	-4.80	AddValue		Pi/4 QPSK BGAN
2)	1626.5000-1660.5000	R	25K0G7W	Tx	11.00	4.70	AddValue		Pi/4 QPSK Signaling
3)	1525.0000-1559.0000	R	200KG7W	Rx	0.00	0.00	AddValue		
4)	1525.0000-1559.0000	R	12K5G7W	Rx	0.00	0.00	AddValue		QPSK Signaling
5)	1525.0000-1559.0000	R	50K0G7W	Rx	0.00	0.00	AddValue		QPSK Signaling
6)	1626.5000-1660.5000	R	200KD7W	Tx	21.00	5.20	HNS		16-QAM BGAN
7)	1626.5000-1660.5000	R	50K0D7W	Tx	21.00	11.70	HNS		16-QAM Signaling
8)	1525.0000-1559.0000	R	200KD7W	Rx	0.00	0.00	HNS		16-QAM BGAN
9)	1525.0000-1559.0000	R	12K5G7W	Rx	0.00	0.00	HNS		QPSK Signaling



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10)	1525.0000-1559.0000	R	50K0D7W	Rx	0.00	0.00	HNS		16-QAM Signaling
11)	1626.5000-1660.5000	R	50K0D7W	Tx	16.10	6.80	HNS9202		
12)	1626.5000-1660.5000	R	200KD7W	Tx	16.10	0.30	HNS9202		16-QAM BGAN
13)	1525.0000-1559.0000	R	200KD7W	Rx	16.10	0.00	HNS9202		16-QAM
14)	1525.0000-1559.0000	R	12K5G7W	Rx	16.10	0.00	HNS9202		QPSK SIGNALING
15)	1525.0000-1559.0000	R	50K0D7W	Rx	16.10	0.00	HNS9202		16-QAM SIGNALING
16)	1626.5000-1660.5000	R	200KG7W	Tx	11.00	-4.80	Nera		Pi/4 QPSK BGAN
17)	1626.5000-1660.5000	R	25K0G7W	Tx	11.00	4.70	Nera		Pi/4 QPSK Signaling
18)	1525.0000-1559.0000	R	200KG7W	Rx	0.00	0.00	Nera		
19)	1525.0000-1559.0000	R	12K5G7W	Rx	0.00	0.00	Nera		QPSK Signaling
20)	1525.0000-1559.0000	R	50K0G7W	Rx	0.00	0.00	Nera		QPSK Signaling
21)	1626.5000-1660.5000	R	50K0D7W	Tx	16.10	6.80	T&T		
22)	1626.5000-1660.5000	R	200KD7W	Tx	16.10	0.30	T&T		16-QAM BGAN
23)	1525.0000-1559.0000	R	200KD7W	Rx	0.00	0.00	T&T		16-QAM BGAN
24)	1525.0000-1559.0000	R	12K5G7W	Rx	0.00	0.00	T&T		QPSK Signaling
25)	1525.0000-1559.0000	R	50K0D7W	Rx	0.00	0.00	T&T		16-QAM Signaling

**C) Frequency Coordination Limits**

#	Frequency Limits (MHz)	Satellite Arc (Deg. Long.)		Elevation (Degrees)		Azimuth (Degrees)		Max EIRP Density toward Horizon (dBW/4kHz)	Associated Antenna(s)
		East Limit	West Limit	East Limit	West Limit	East Limit	West Limit		
1)	1626.5000-1660.5000	52.7W	52.8W	05.0	05.0	000.0	360.0	4.7	AddValue
2)	1525.0000-1559.0000	52.7W	52.8W	05.0	05.0	000.0	360.0		AddValue
3)	1626.5000-1660.5000	52.7W	52.8W	05.0	05.0	000.0	360.0	4.7	Nera
4)	1525.0000-1559.0000	52.7W	52.8W	05.0	05.0	000.0	360.0		Nera



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		East Limit	West Limit	East Limit	West Limit	East Limit	West Limit		
5)	1626.5000-1660.5000	52.7W	52.8W	05.0	05.0	000.0	360.0	6.8	T&T
6)	1525.0000-1559.0000	52.7W	52.8W	05.0	05.0	000.0	360.0		T&T
7)	1626.5000-1660.5000	52.7W	52.8W	05.0	05.0	000.0	360.0	11.7	HNS
8)	1525.0000-1559.0000	52.7W	52.8W	05.0	05.0	000.0	360.0		HNS
9)	1626.0000-1660.5000	0.0W	360.0W	05.0	05.0	000.0	360.0	6.8	HNS9202
10)	1525.0000-1559.0000	0.0W	360.0W	05.0	05.0	000.0	360.0	0	HNS9202

**D) Points of Communications**

The following stations located in the Satellite orbits consistent with Sections B and C of this Entry:

- 1) Multiple to All Inmarsat satellites on "ISAT List" authorized to access U.S. in the L-Band

**E) Antenna Facilities**

Site ID	Antenna ID	Units	Diameter (meters)	Manufacturer	Model number	Site Elevation (Meters)	Max Antenna Height (Meters)	Special Provisions (Refer to Section H)
Multiple	AddValue	20000	0.2	AddValue	AddValue PUT	0	0 AGL/ 0 AMSL	167
Max Gains(s):		8.0 dBi @	1.6265 GHz	9.3 dBi @	1.5250 GHz			
Maximum total input power at antenna flange (Watts) =						2.00		
Maximum aggregate output EIRP for all carriers (dBW) =						11.00		
Multiple	HNS	0	0.35	Hughes Network Systems	HNS Briefcase	0	0 AGL/ 0 AMSL	167
Max Gains(s):		14.9 dBi @	1.6265 GHz	14.5 dBi @	1.5250 GHz			
Maximum total input power at antenna flange (Watts) =						4.07		
Maximum aggregate output EIRP for all carriers (dBW) =						21.00		
Multiple	HNS9202	20000	0.2	HUGHES	HNS 9202	0		
Max Gains(s):		12.2 dBi @	1.5250 GHz	13.2 dBi @	1.6265 GHz			
Maximum total input power at antenna flange (Watts) =						2.14		
Maximum aggregate output EIRP for all carriers (dBW) =						16.10		



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**E) Antenna Facilities**

Site ID	Antenna ID	Units	Diameter (meters)	Manufacturer	Model number	Site Elevation (Meters)	Max Antenna Height (Meters)	Special Provisions (Refer to Section H)
Multiple	Nera	0	0.125	Nera	Nera PUT	0	0 AGL/ 0 AMSL	167
Max Gains(s):		9.0 dBi @	1.6265 GHz	8.8 dBi @	1.5250 GHz			
Maximum total input power at antenna flange (Watts) =					1.59			
Maximum aggregate output EIRP for all carriers (dBW) =					11.00			
Multiple	T&T	0	0.21	Thrane and Thrane	T&T Lite	0	0 AGL/ 0 AMSL	167
Max Gains(s):		11.4 dBi @	1.6265 GHz	10.8 dBi @	1.5250 GHz			
Maximum total input power at antenna flange (Watts) =					2.95			
Maximum aggregate output EIRP for all carriers (dBW) =					16.10			

**F) Remote Control Point:**

Multiple	Gateway (LES): Fucino, Italy	Call Sign:
Multiple	Gateway (LES): Buruam, The Netherlands	Call Sign:

**G) Antenna Structure marking and lighting requirements:**

None unless otherwise specified under Special and General Provisions

**H) Special and General Provisions**

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

167 --- This authorization is limited to the total number of terminals listed in Section A of this license for this Site ID.

214 --- Authority IS GRANTED pursuant to Section 25.210(j) of the Commission's rules, to permit operations of earth stations with the Inmarsat 4F2 satellite, maintained at ±.10 degree of the 52.75° W.L., subject to the condition that this waiver and the operations it permits shall terminate in the event that a satellite is launched into a location such that its stationkeeping volume would overlap the Inmarsat 4F2 satellite's ± 0.10 degree stationkeeping volume, but would not overlap the Inmarsat 4F2 satellite's ±0.05° degree stationkeeping volume, unless Inmarsat has successfully coordinated its physical operations with those of the other spacecraft.

215 --- Operations via the Inmarsat 4F2 satellite using a north-south inclination of as much as three degrees ARE GRANTED, conditioned on operations of the 4F2 complying with the inclined orbit requirements set forth in Sections 25.280(b)(1)-(3) of the Commission's rules



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## H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

216 --- Operations in the 1544-1545/1645.5-1646.5 MHz frequency bands ARE LIMITED to distress and safety communications, in accordance with International Footnotes 5.356 and 5.375 of the ITU Radio Regulations.

263 --- Licensee shall coordinate with the National Science Foundation (NSF) in the 1660.0-1660.5 MHz band to ensure sharing of co-primary services.

1010 --- Applicable to all receiving frequency bands. Emission designator indicates the maximum bandwidth of received signal at associated station(s). Maximum EIRP and maximum EIRP density are not applicable to receive operations.

1900 --- Applicable to all transmitting frequency bands. Authority is granted to transmit any number of RF carriers with the specified parameters on any discrete frequencies within associated band in accordance with the other terms and conditions of this authorization, subject to any additional limitations that may be required to avoid unacceptable levels of inter-satellite interference.

2325 --- Antennas and all antenna supporting structures used under this authorization shall not exceed 20 feet in height.

2627 --- All services are interconnected to the Public Switched Network.

2916 --- Transmitter(s) must be turned off during antenna maintenance to ensure compliance with the FCC-specified safety guidelines for human exposure to radiofrequency radiation in the region between the antenna feed and the reflector. Appropriate measures must also be taken to restrict access to other regions in which the earth station's power flux density levels exceed the specified guidelines.

3848 --- The authorized frequency band(s) has (have) been cleared with the National Telecommunications and Information Administration.

5208 --- The licensee shall 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. Compliance can be accomplished in most cases by appropriate restrictions, such as fencing. 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.

5747 --- Licensee's mobile earth station terminals operating on board aircraft shall comply with all applicable Federal Aviation Administration and International Civil Aviation Organization (ICAO) rules and regulations and all other international agreements in force to which the United States is a party.

5748 --- Licensee's mobile earth station terminals operating on board maritime vessels shall comply with all applicable U.S. Coast Guard and International Maritime Organization (IMO) rules and regulations and all other international agreements in force to which the United States is a party.



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A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

- 5749 --- Licensee's mobile earth station terminals operating on board aircraft shall comply with the Section 87.147(d) of the Commission's Rules. See 47 C.F.R. Section 87.147(d).
- 5779 --- Upon completion of construction each licensee must file with the Commission a certification including the following information: name of the licensee, file number of the application, call sign of the antenna, date of the license and certification that construction of the facility as authorized has been completed, and that the station is operational including the date of commencement of service, and will remain operational during the license period unless the license is submitted for cancellation.
- 5851 --- In accordance with US Footnote 308, the operation of METs in the 1545-1558.5 and 1646.5-1660 MHz is on a secondary basis to U.S. AMS[R]S requirements of other U.S.-authorized MSS providers operating in the 1545-1559 and 1646.5-1660 MHz bands.
- 5875 --- Licensee's operation of the authorized METs is on a secondary basis to safety and distress communications of those stations operating in the Global Maritime Distress Satellite Service.
- 5880 --- Use of this facility to provide international service on a common carrier basis requires a separate authorization under Section 214 of the Communication Act of 1934, as amended.
- 5898 --- This authorization is subject to operation of Inmarsat under Section 648 of the ORBIT Act imposing restrictions on exclusive arrangements for the provision of satellite services between the United States and other countries.
- 5956 --- The authorized mobile earth terminals (METs) shall comply with the out-of-band emission limits set forth in Sections 25.202(f) and 25.216 of the Commission's rules. See 47 C.F.R. §§ 25.202(f) and 25.216; Out-of-Band Emission Orders, FCC 02-34 (rel. May 14, 2002), as amended by FCC-03-0283 (rel. November 18, 2003).
- 5957 --- Licensees must comply with the terms of any L-band operator-to-operator coordination agreement. In the absence of a continuing L-band operator-to-operator coordination agreement, operations of METs in the 1525-1559 and 1626.5-1660.5 MHz bands will be on a non-harmful interference basis until a future operator-to-operator agreement is concluded. In this instance, each licensee must notify the other operators in these frequency bands that it will be operating on a non-harmful interference basis. Each licensee must notify its customers that its operations are on a non-harmful interference basis.



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**B) This RADIO STATION AUTHORIZATION is granted subject to the additional conditions specified below:**

This authorization is issued on the grantee's representation that the statements contained in the application are true and that the undertakings described will be carried out in good faith.

This authorization shall not be construed in any manner as a finding by the Commission on the question of marking or lighting of the antenna system should future conditions require. The grantee expressly agrees to install such marking or lighting as the Commission may require under the provisions of Section 303(q) of the Communications Act. 47 U.S.C. § 303(q).

Neither this authorization nor the right granted by this authorization shall be assigned or otherwise transferred to any person, firm, company or corporation without the written consent of the Commission. This authorization is subject to the right of use or control by the government of the United States conferred by Section 706 of the Communications Act. 47 U.S.C. § 706. Operation of this station is governed by Part 25 of the Commission's Rules. 47 C.F.R. Part 25.

This authorization shall not vest in the licensee any right to operate this station nor any right in the use of the designated frequencies beyond the term of this license, nor in any other manner than authorized herein.

This authorization is issued on the grantee's representation that the station is in compliance with environmental requirements set forth in Section 1.1307 of the Commission's Rules. 47 C.F.R. § 1.1307.

This authorization is issued on the grantee's representation that the station is in compliance with the Federal Aviation Administration (FAA) requirements as set forth in Section 17.4 of the Commission's Rules. 47 C.F.R. § 17.4.

The following condition applies when this authorization permits construction of or modifies the construction permit of a radio station.

This authorization shall be automatically forfeited if the station is not ready for operation by the required date of completion of construction unless an application for modification of authorization to request additional time to complete construction is filed by that date, together with a showing that failure to complete construction by the required date was due to factors not under control of the grantee.

**Licensees are required to pay annual regulatory fees related to this authorization. The requirement to collect annual regulatory fees from regulatees is contained in Public Law 103-66, "The Omnibus Budget Reconciliation Act of 1993." These regulatory fees, which are likely to change each fiscal year, are used to offset costs associated with the Commission's enforcement, public service, international and policy and rulemaking activities. The Commission issues a Report and Order each year, setting the new regulatory fee rates. Receive only earth stations are exempt from payment of regulatory fees.**