



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

Name: Rockwell Collins Satellite Communications Systems, Inc.

Call Sign: E030197

Authorization Type: Modification of License

File Number: SES-MOD-20130709-00576

Non Common Carrier

Grant date: 08/21/2013

Expiration Date: 08/23/2019



Nature of Service: Fixed Satellite Service

Class of Station: Temporary Fixed Earth Station

A) Site Location(s)

#	Site ID	Address	Latitude	Longitude	Elevation (Meters)	Special Provisions NAD (Refer to Section H)
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1)	1	SWE-DISH IPT TITLE 111 VARIOUS,			83	
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Licensee certifies antenna(s) do not comply with Section 25.209. Please refer to Section E for special conditions placed upon antennas at this site.

2)	CCT90	VARIOUS,			83	
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Licensee certifies antenna(s) do not comply with Section 25.209. Please refer to Section E for special conditions placed upon antennas at this site.

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 August 23, 2004 (3 AM Eastern Standard Time) and ending August 23, 2019 (3 AM Eastern Standard Time). The required date of completion of construction and commencement of operation is August 21, 2014 (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)	14000.0000-14500.0000	OTHER	16M0G7W	Tx	54.10	22.40	CCT90 1-10		VARIOUS
2)	11700.0000-12200.0000	OTHER	16M0G7W	Rx			CCT90 1-10		VARIOUS
3)	11450.0000-11700.0000	OTHER	16M0G7W	Rx			CCT90 1-10		VARIOUS
4)	10950.0000-12750.0000	OTHER	16M0G7W	Rx			CCT90 1-10		VARIOUS
5)	14000.0000-14500.0000	OTHER	16M0G7W	Tx	49.40	22.40	S1		VARIOUS



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6)	14000.0000-14500.0000	H, V	2M04G7W	Tx	49.40	22.40	S1		COMPRESSED DIGITAL DATA AND VIDEO
7)	14000.0000-14500.0000	H, V	2M04G7W	Tx	49.40	22.40	S1		DIGITAL, VARIOUS FEC, VARIOUS DATA RATES, VARIOUS INFORMATION
8)	11700.0000-12200.0000	OTHER	16M0G7W	Rx			S1		VARIOUS
9)	11700.0000-12200.0000	H, V	2M04G7W	Rx			S1		COMPRESSED DIGITAL DATA AND VIDEO
10)	11700.0000-12200.0000	H, V	2M04G7W	Rx			S1		DIGITAL, VARIOUS FEC, VARIOUS DATA RATES, VARIOUS INFORMATION
11)	11450.0000-11700.0000	OTHER	16M0G7W	Rx			S1		VARIOUS
12)	11450.0000-11700.0000	H, V	2M04G7W	Rx			S1		COMPRESSED DIGITAL DATA AND VIDEO
13)	11450.0000-11700.0000	H, V	2M04G7W	Rx			S1		DIGITAL, VARIOUS FEC, VARIOUS DATA RATES, VARIOUS INFORMATION
14)	10950.0000-12750.0000	OTHER	16M0G7W	Rx			S1		VARIOUS
15)	10950.0000-11200.0000	H, V	2M04G7W	Rx			S1		COMPRESSED DIGITAL DATA AND VIDEO
16)	10950.0000-11200.0000	H, V	2M04G7W	Rx			S1		DIGITAL, VARIOUS FEC, VARIOUS DATA RATES, VARIOUS INFORMATION
17)	14000.0000-14500.0000	OTHER	16M0G7W	Tx	49.40	22.40	S2-4		VARIOUS
18)	14000.0000-14500.0000	H, V	2M04G7W	Tx	49.40	22.40	S2-4		DIGITAL, VARIOUS FEC DATA RATES
19)	14000.0000-14500.0000	H, V	2M04G7W	Tx	49.40	22.40	S2-4		COMPRESSED DIGITAL DATA AND VIDEO
20)	11700.0000-12200.0000	OTHER	16M0G7W	Rx			S2-4		VARIOUS
21)	11700.0000-12200.0000	H, V	2M04G7W	Rx			S2-4		DIGITAL, VARIOUS FEC DATA RATES
22)	11700.0000-12200.0000	H, V	2M04G7W	Rx			S2-4		COMPRESSED DIGITAL DATA AND VIDEO
23)	11450.0000-11700.0000	OTHER	16M0G7W	Rx			S2-4		VARIOUS



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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
24)	11450.0000-11700.0000	H, V	2M04G7W	Rx			S2-4		DIGITAL, VARIOUS FEC DATA RATES
25)	11450.0000-11700.0000	H, V	2M04G7W	Rx			S2-4		COMPRESSED DIGITAL DATA AND VIDEO
26)	10950.0000-12750.0000	OTHER	16M0G7W	Rx			S2-4		VARIOUS
27)	10950.0000-11200.0000	H, V	2M04G7W	Rx			S2-4		DIGITAL, VARIOUS FEC DATA RATES
28)	10950.0000-11200.0000	H, V	2M04G7W	Rx			S2-4		COMPRESSED DIGITAL DATA AND VIDEO

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)	14000.0000-14500.0000	15.0W	-143.0W	05.0	-05.0			-1.5	S1
2)	10950.0000-11200.0000	15.0W	-143.0W	05.0	-05.0				S1
3)	11700.0000-12200.0000	15.0W	-143.0W	05.0	-05.0				S1
4)	11450.0000-11700.0000	15.0W	-143.0W	05.0	-05.0				S1
5)	10950.0000-11200.0000	15.0W	-143.0W	05.0	-05.0				S2-4
6)	11450.0000-11700.0000	15.0W	-143.0W	05.0	-05.0				S2-4
7)	11700.0000-12200.0000	15.0W	-143.0W	05.0	-05.0				S2-4
8)	14000.0000-14500.0000	15.0W	-143.0W	05.0	-05.0			-1.5	S2-4

D) Points of Communications

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

- 1) 1 to GALAXY 3C (S2381) @ 95 W.L. (U.S.-licensed)
- 2) 1 to AMC-3 @ 87 degrees W.L. (U.S.-licensed domestic satellite)
- 3) 1 to PANAMSAT 1R (PAS-1R) @ 45.0 W.L. (U.S.-licensed domestic satellite)
- 4) 1 to TELSTAR 6 @ 93 degrees W.L. (U.S.-licensed domestic satellite)
- 5) 1 to AMC-5 (S2156) satellite located at 79 degrees W.L. (U.S.-licensed satellite)



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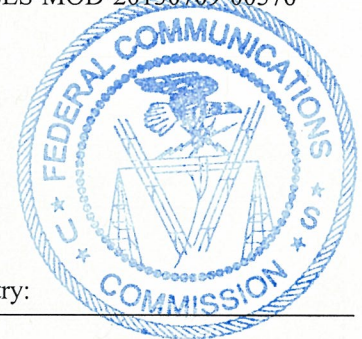
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D) Points of Communications

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

- 6) 1 to TELESTAR 11 (used to be ORION F1) @ 37.5 W.L. (U.S.-licensed)
- 7) 1 to SBS-6 satellite @ 74 DEG. W.L. (U.S.-licensed)
- 8) 1 to AMC-4 @ 101 degrees W.L. (U.S.-licensed domestic satellite)
- 9) 1 to GALAXY XI @ 91 W.L. (U.S.-licensed domestic satellite)
- 10) 1 to HORIZONS 1 @ 127 W.L. (Japan licensed)
- 11) 1 to AMC-6 (S2347) @ 72 degrees W.L. (U.S.-licensed satellite)
- 12) 1 to AMSC 1 satellite @ 103 degrees W.L. (U.S.-licensed domestic satellite)
- 13) 1 to IA-8 Intelsat Americas satellite @ 89 degrees W.L., of the INTELSAT system (U.S.-licensed)
- 14) 1 to GALAXY 10R satellite @ 123 W.L. (U.S.-licensed domestic satellite)
- 15) CCT90 to GALAXY XI @ 91 W.L. (U.S.-licensed domestic satellite)
- 16) CCT90 to TELESTAR 11 (used to be ORION F1) @ 37.5 W.L. (U.S.-licensed)
- 17) CCT90 to TELSTAR 6 @ 93 degrees W.L. (U.S.-licensed domestic satellite)
- 18) CCT90 to AMC-3 @ 87 degrees W.L. (U.S.-licensed domestic satellite)
- 19) CCT90 to GALAXY 10R satellite @ 123 W.L. (U.S.-licensed domestic satellite)
- 20) CCT90 to AMC 1 (S2445) @ 103 degrees W.L. (U.S.-licensed)
- 21) CCT90 to HORIZONS 1 @ 127 W.L. (Japan licensed)
- 22) CCT90 to AMC-4 @ 101 degrees W.L. (U.S.-licensed domestic satellite)
- 23) CCT90 to SBS-6 satellite @ 74 DEG. W.L. (U.S.-licensed)
- 24) CCT90 to AMC-5 (S2156) satellite located at 79 degrees W.L. (U.S.-licensed satellite)
- 25) CCT90 to PANAMSAT 1R (PAS-1R) @ 45.0 W.L. (U.S.-licensed domestic satellite)
- 26) CCT90 to GALAXY 3C (S2381) @ 95 W.L. (U.S.-licensed)
- 27) CCT90 to INTELSAT 8 @ 89 degrees satellites(s) of the INTELSAT system. (U.S.-licensed)
- 28) CCT90 to AMC-6 (S2347) @ 72 degrees W.L. (U.S.-licensed satellite)

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)
CCT90	CCT90 1-10	10	0.66	SWE-DISH	SUITCASE CCT90		1 AGL/ 1 AMSL	
Max Gains(s):		38.2 dBi @	12.2000 GHz	38.7 dBi @	14.2500 GHz			
Maximum total input power at antenna flange (Watts) =					40.00			
Maximum aggregate output EIRP for all carriers (dBW) =					54.70			



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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)
1	S1	1	0.66	SWE-DISH	XC90-66K			
Max Gains(s):			38.4 dBi @	14.2500 GHz	38.2 dBi @	12.2000 GHz		
Maximum total input power at antenna flange (Watts) =						12.60		
Maximum aggregate output EIRP for all carriers (dBW) =						49.40		
1	S2-4	3	0.66	SWE-DISH	XC90-66K		1 AGL/ 0 AMSL	
Max Gains(s):			38.2 dBi @	12.2000 GHz	38.4 dBi @	14.2500 GHz		
Maximum total input power at antenna flange (Watts) =						12.60		
Maximum aggregate output EIRP for all carriers (dBW) =						49.40		

F) Remote Control Point:

1 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:

- 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.
- 1212 --- This authorization is issued pursuant to and subject to the conditions and terms set forth in the Commission's Order released August 23, 2004 (DA 04-2607).
- 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.
- 2010 --- This authorization is issued pursuant to the Commission's Second Report and Order adopted June 16, 1972 (35 FCC 2d 844) and Memorandum, Opinion and Order adopted December 21, 1972 (38 FCC 2d 665) in Docket No. 16495 and is subject to the policies adopted in that proceeding.



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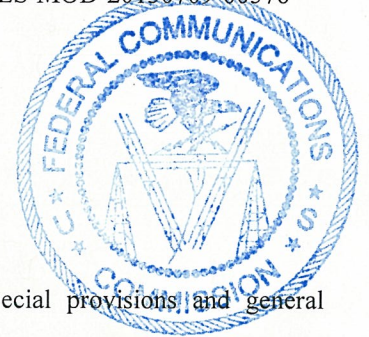
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H) Special and General Provisions

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

- 2810 --- The grantee shall maintain on file with the Commission's current list or plan of the precise frequencies in actual use at this station, specifying for each such frequency: the r.f. center frequency, polarization, emission designator, EIRP (dBW), EIRP density (dBW/4kHz), and receiving earth station(s). This list or plan may be submitted either on a station-by-station basis or on a system-wide basis, and shall be updated within seven days of any changes in frequency usage at this station. Temporary usage of frequencies for periods of less than seven days need not be notified to the Commission if accurate station records are maintained of the times and particulars of such temporary frequency usage.
- 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.
- 2938 --- 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 the facility as authorized has been completed, that each antenna facility has been tested and is within 2 dB of the pattern specified in Section 25.209 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.
- 3219 --- All existing transmitting facilities, operations and devices regulated by the Commission must be in compliance with the Commission's radiofrequency (RF) exposure guidelines, pursuant to Section 1.1307(b)(1) through (b)(3) of the Commission's rules, or if not in compliance, file an Environmental Assessment (EA) as specified in Section 1.1311. See 47 CFR § 1.1307 (b) (5).
- 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) 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.
- 5216 --- All operations shall be on a non-common carrier basis.



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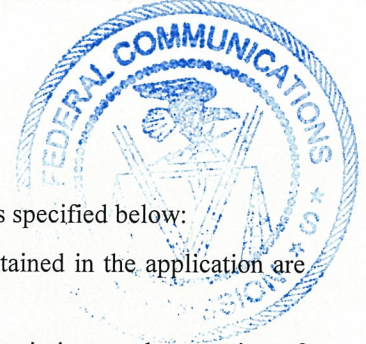
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B) This RADIO STATION AUTHORIZATION is granted subject to the additional conditions specified below:

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.