

RADIO STATION AUTHORIZATION

Name: Telesat Call Sign: E050321

Authorization Type: Renewal of License File Number: SES-RWL-20201006-01093

Non Common Carrier Grant date: 10/07/2020 Expiration Date: 12/28/2035

Nature of Service: Fixed Satellite Service

Class of Station: VSAT Network

A) Site Location(s)

# Site ID	Address	Latitude	Longitude	Elevation (Meters)	NAD	Special Provisions (Refer to Section H)
1) REMOTE10	CONUS 5,000 (1.8 METER ANTENNAS) CONUS,				NA	
	Licensee certifies antenna(s)	comply with	gain patterns	specified in	Section	25.209
2) REMOTE11	CONUS 2,000 (2.4 METER ANTENNAS) CONUS,				NA	
	Licensee certifies antenna(s)	comply with	gain patterns	specified in	Section	25.209
3) REMOTE12	CONUS 2,000 (2.4 METER ANTENNAS) CONUS,				NA	
	Licensee certifies antenna(s)	comply with	gain patterns	specified in	Section	25.209
4) REMOTE13	CONUS 2000 (2.4 METER ANTENNAS) CONUS,				NA	
	Licensee certifies antenna(s)	comply with	gain patterns	specified in	Section	25.209
5) REMOTE8	CONUS 5,000 (1.8 METER ANTENNAS) CONUS,				NA	
	Licensee certifies antenna(s)	comply with	gain patterns	specified in	Section	25.209
6) REMOTE9	CONUS 5,000 (1.8 METER ANTENNAS) CONUS,				NA	
	Licensee certifies antenna(s)	comply with	gain patterns	specified in	Section	25.209



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A) Site Location(s)

#	Site ID	Address	Latit	ude	L	ongitude	Elevati (Mete		NAD	Special Provisions (Refer to Section H)
7)	Remote1	CONUS 5,000 (1.8 meter antennas) CONUS,					0		NA	
		Licensee certifies antenna(s)	comply	with	gain	patterns	specified	in	Section	25.209
8)	Remote2	CONUS 5,000 (1.8 meter antennas) CONUS,					0		NA	
		Licensee certifies antenna(s)	comply	with	gain	patterns	specified	in	Section	25.209
9)	Remote3	CONUS 5,000 (1.2 meter antennas) CONUS,					0		NA	
		Licensee certifies antenna(s)	comply	with	gain	patterns	specified	in	Section	25.209
10)	Remote4	CONUS 5,000 (2.4 meter antennas) CONUS,					0		NA	
		Licensee certifies antenna(s)	comply	with	gain	patterns	specified	in	Section	25.209
11)	Remote5	CONUS 5,000 (1.2 meter antennas) CONUS,					0		NA	
		Licensee certifies antenna(s)	comply	with	gain	patterns	specified	in	Section	25.209
12)	Remote6	CONUS 5,000 (2.4 meter antennas) CONUS,					0		NA	
		Licensee certifies antenna(s)	comply	with	gain	patterns	specified	in	Section	25.209
13)	Remote7	CONUS 5,000 (.98 meter antennas)					0		NA	
		Licensee certifies antenna(s)	comply	with	gain	patterns	specified	in	Section	25.209



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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 December 28, 2020 (3 AM Eastern Standard Time) and ending December 28, 2035 (3 AM Eastern Standard Time). The required date of completion of construction and commencement of operation is 00/00/0000. Grantee must file with the Commission a certification upon completion of construction and commencement of operation.

B) Particulars of Operations

For the text of these provisions, refer to Section H.

The General Provision 1010 applies to all receiving frequency bands. The General Provision 1900 applies to all transmitting frequency bands.

For the	Frequency	Polarizatio	on	Tx/Rx		Max EIRP Density /Carrier	Associated	Special Provisions (Refer to	Modulation/	
	(MHz)	Code	Emission	Mode	(dBW)	(dBW/4kHz)	Antenna	Section H)	Services	
1) 14	000.0000-14500.0000	H, V	614KG7D	Tx	49.50	27.64	REMOTE10		DIGITAL DATA	
2) 11	700.0000-12200.0000	H,V	36M0F9W	Rx			REMOTE10		DIGITAL DATA	
3) 140	000.0000-14500.0000	H,V	154KG7D	Tx	49.20	33.36	REMOTE11		DIGITAL DATA	
4) 11	700.0000-12200.0000	H,V	307KG7D	Rx			REMOTE11		DIGITAL DATA	
5) 140	000.0000-14500.0000	H,V	307KG7D	Tx	52.00	33.15	REMOTE12		DIGITAL DATA	
6) 11	700.0000-12200.0000	H,V	1M23G7D	Rx			REMOTE12		DIGITAL DATA	
7) 140	000.0000-14500.0000	H,V	614KG7D	Tx	52.20	30.34	REMOTE13		DIGITAL DATA	
8) 11	700.0000-12200.0000	H,V	36M0F9W	Rx			REMOTE13		DIGITAL DATA	
9) 140	000.0000-14500.0000	H,V	154KG7D	Tx	46.50	30.66	REMOTE8		DIGITAL DATA	
10) 11	700.0000-12200.0000	H,V	307KG7D	Rx			REMOTE8		DIGITAL DATA	
11) 140	000.0000-14500.0000	H,V	307KG7D	Tx	49.50	30.65	REMOTE9		DIGITAL DATA	
12) 11	700.0000-12200.0000	H,V	1M23G7D	Rx			REMOTE9		DIGITAL DATA	
13) 140	000.0000-14500.0000	H,V	1M20G7W	Tx	53.70	28.93	Remote1		QPSK, voice, da	ta, image
14) 11	700.0000-12200.0000	H,V	795KG7W	Rx	0.00	0.00	Remote1		QPSK, voice, da	ta, image
15) 140	000.0000-14500.0000	H,V	194KG7W	Tx	46.50	30.44	Remote2		MSK, digital da	ta
16) 11	700.0000-12200.0000	H,V	12M0G7W	Rx	0.00	0.00	Remote2		QPSK, digital d	ata
17) 140	000.0000-14500.0000	H,V	194KG7W	Tx	43.20	27.14	Remote3		MSK, digital da	ta
18) 11	700.0000-12200.0000	H,V	12M0G7W	Rx	0.00	0.00	Remote3		QPSK, digital d	ata



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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.

For th	e text of these provisions, refe	er to Section H	•		Max EIRP	Max EIRP Density		Special Provisions			
#	Frequency (MHz)	Polarization Code	n Emission	Tx/Rx Mode	/Carrier	/Carrier (dBW/4kHz)	Associated Antenna	(Refer to Section H)	Modulation/ Services		_
19) 14	1000.0000-14500.0000	H, V	1M20G7W	Tx	56.50	31.73	Remote4		QPSK, voice,	data,	image
20) 1	700.0000-12200.0000	H,V	795KG7W	Rx	0.00	0.00	Remote4		QPSK, voice,	data,	image
21) 1	1000.0000-14500.0000	H,V	597KG7W	Tx	47.80	26.07	Remote5		QPSK, voice,	data,	image
22) 13	1700.0000-12200.0000	H,V	795KG7W	Rx	0.00	0.00	Remote5		QPSK, voice,	data,	image
23) 1	1000.0000-14500.0000	H,V	194KG7W	Tx	49.20	32.35	Remote6		MSK, digital	data	
24) 13	1700.0000-12200.0000	H,V	12M0G7W	Rx	0.00	0.00	Remote6		QPSK, digital	l data	
25) ₁	1000.0000-14500.0000	H,V	194KG7W	Tx	41.30	24.45	Remote7		MSK, digital	data	
26) 13	1700.0000-12200.0000	H,V	12M0G7W	Rx	0.00	0.00	Remote7		QPSK, digital	l data	

C) Frequency Coordination Limits

#	Frequency Limits (MHz)	Satellite Arc (Deg. Long.) East West Limit Limit	Elevation (Degrees) East West Limit Limit	Azimuth (Degrees) East West Limit Limit		Associated Antenna(s)
	14000.0000-14500.0000	60.0W-143.0W	05.0-05.0	000.0-000.0	-5.2	
1)						Remote1
2)	11700.0000-12200.0000	60.0W-143.0W	05.0-05.0	000.0-000.0	0	Remote1
3)	11700.0000-12200.0000	60.0W-143.0W	05.0-05.0	000.0-000.0	0	Remote2
4)	14000.0000-14500.0000	60.0W-143.0W	05.0-05.0	000.0-000.0	-4.5	Remote2
5)	14000.0000-14500.0000	60.0W-143.0W	05.0-05.0	000.0-000.0	-4.5	Remote3
6)	11700.0000-12200.0000	60.0W-143.0W	05.0-05.0	000.0-000.0	0	Remote3
7)	11700.0000-12200.0000	60.0W-143.0W	05.0-05.0	000.0-000.0	0	Remote7
8)	14000.0000-14500.0000	60.0W-143.0W	05.0-05.0	000.0-000.0	-4.5	Remote7
9)	11700.0000-12200.0000	60.0W-143.0W	05.0-05.0	000.0-000.0	0	Remote4
10)	14000.0000-14500.0000	60.0W-143.0W	05.0-05.0	000.0-000.0	-5.2	Remote4
11)	14000.0000-14500.0000	60.0W-143.0W	05.0-05.0	000.0-000.0	-3.9	REMOTE8
12)	11700.0000-12200.0000	60.0W-143.0W	05.0-05.0	000.0-000.0	0	REMOTE8
13)	14000.0000-14500.0000	60.0W-143.0W	05.0-05.0	000.0-000.0	-4	REMOTE9
14)	11700.0000-12200.0000	60.0W-143.0W	05.0-05.0	000.0-000.0	0	REMOTE9
15)	14000.0000-14500.0000	60.0W-143.0W	05.0-05.0	000.0-000.0	-7	REMOTE10

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C) Frequency Coordination Limits

# (MHz) Limit Limit Limit Limit Limit (dBW/4kHz)	MOTE10
16) 11700.0000-12200.0000 60.0W-143.0W 05.0-05.0 000.0-000.0 0 REM	
17) 14000.0000-14500.0000 60.0W-143.0W 05.0-05.0 000.0-000.0 -3.9 REM	MOTE11
18) 11700.0000-12200.0000 60.0W-143.0W 05.0-05.0 000.0-000.0 0 REM	MOTE11
19) 14000.0000-14500.0000 60.0W-143.0W 05.0-05.0 000.0-000.0 -4.2 REM	MOTE12
20) 11700.0000-12200.0000 60.0W-143.0W 05.0-05.0 000.0-000.0 0 REM	MOTE12
21) 14000.0000-14500.0000 60.0W-143.0W 05.0-05.0 000.0-000.0 -7 REM	MOTE13
22) 11700.0000-12200.0000 60.0W-143.0W 05.0-05.0 000.0-000.0 0 REM	MOTE13
23) 11700.0000-12200.0000 60.0W-143.0W 05.0-05.0 000.0-000.0 0 Rem	mote5
24) 14000.0000-14500.0000 60.0W-143.0W 05.0-05.0 000.0-000.0 -4.9 Rem	mote5
25) 11700.0000-12200.0000 60.0W-143.0W 05.0-05.0 000.0-000.0 0 Rem	mote6
26) 14000.0000-14500.0000 60.0W-143.0W 05.0-05.0 000.0-000.0 -4.5 Rem	mote6

D) Points of Communications

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

- 1) Remote1 to Permitted Space Station List
- 2) Remote2 to Permitted Space Station List
- 3) Remote3 to Permitted Space Station List
- 4) Remote7 to Permitted Space Station List
- 5) Remote4 to Permitted Space Station List
- 6) REMOTE8 to Permitted Space Station List
- 7) REMOTE9 to Permitted Space Station List
- 8) REMOTE10 to Permitted Space Station List
- 9) REMOTE11 to Permitted Space Station List
- 10) REMOTE12 to Permitted Space Station List
- 11) REMOTE13 to Permitted Space Station List
- 12) Remote5 to Permitted Space Station List
- 13) Remote6 to Permitted Space Station List

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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)
REMOTE10	REMOTE10	5000	1.8	PRODELIN	1184		0 AGL/ 0 AMSL	
Max	-	power	at antenn	11.9500 GHz a flange (Watts) ll carriers (dBW	= 2.00	500 GHz		
REMOTE11	REMOTE11	2000	2.4	PRODELIN	1244		0 AGL/ 0 AMSL	
Max	-	power	at antenn	11.9500 GHz a flange (Watts) ll carriers (dBW	= 1.00	500 GHz		
REMOTE12	REMOTE12	2000	2.4	PRODELIN	1244		0 AGL/ 0 AMSL	
Max	-	power	at antenn	11.9500 GHz a flange (Watts) ll carriers (dBW		500 GHz		
REMOTE13	REMOTE13	2000	2.4	PRODELIN	1244		0 AGL/ 0 AMSL	
Max	=	power	at antenn	11.9500 GHz a flange (Watts) ll carriers (dBW		500 GHz		
REMOTE8	REMOTE8	5000	1.8	PRODELIN	1184		0 AGL/ 0 AMSL	
Max	-	power	at antenn	11.9500 GHz a flange (Watts) ll carriers (dBW		500 GHz		
REMOTE9	REMOTE9	5000	1.8	PRODELIN	1184		0 AGL/ 0 AMSL	
Max	-	power	at antenn	11.9500 GHz a flange (Watts) ll carriers (dBW		500 GHz		



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E) Antenna Facilities

Site ID		Antenna ID	Units	Diameter (meters)	Manufacturer	Model numb	Site Elevation (Meters)	Max Antenna Height (Meters)	Special Provisions (Refer to Section H)
Remote	1 F	Remote1	5000	1.8	Prodelin	1184	0	0 AGL/ 0 AMSL	
		otal input	power	at antenna	14.2500 GHz a flange (Watts) ll carriers (dBW)	= 5.25	.9500 GHz		
Remote	2 F	Remote2	5000	1.8	Prodelin	1184	0	0 AGL/ 0 AMSL	
		otal input	power	at antenna	ll.9500 GHz a flange (Watts) ll carriers (dBW)	1.00	.2500 GHz		
Remote	3 F	Remote3	5000	1.2	Prodelin	1123	0	0 AGL/ 0 AMSL	
		otal input	power	at antenna	14.2500 GHz a flange (Watts) ll carriers (dBW)	1.00	.9500 GHz		
Remote	4 F	Remote4	5000	2.4	Channel Maste	r 243	0	0 AGL/ 0 AMSL	
		otal input	power	at antenna	ll.9500 GHz a flange (Watts) ll carriers (dBW)				
Remote	5 F	Remote5	5000	1.2	Channel Maste	r 123	0	0 AGL/ 0 AMSL	
		otal input	power	at antenna	l4.2500 GHz a flange (Watts) ll carriers (dBW)	= 2.82			
Remote	6 F	Remote6	5000	2.4	Prodelin	1244	0	0 AGL/ 0 AMSL	
		otal input	power	at antenna	l4.2500 GHz a flange (Watts) ll carriers (dBW)	1.00	.9500 GHz		



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E) Antenna Facilities

	Site ID	Antenna ID	Units	Diameter (meters)	Manufacturer	Model number	Site Elevation (Meters)	Max Antenna Height (Meters)	Provisions (Refer to Section H)
Remo	te7	Remote7	5000	0.98	Prodelin	1981	0	0 AGL/ 0 AMSL	
	Max Ga	ins(s):	41.3	dBi @	14.2500 GHz	39.8 dBi @ 11.9	500 GHz		
	Maximu	m total inpu	t power	at anten	na flange (Watts)	= 1.00			
	Maximu	m aggregate	output :	EIRP for	all carriers (dBW) = 41.30			

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:
 - 4 --- Licensee must ensure that a current listing of the name, title, mailing address, email address, and telephone number of the responsible point of contact are on file at the FCC. Any changes must be filed electronically in the International Bureau Filing System (MyIBFS) using the "Pleadings and Comments" link on the MyIBFS homepage within 10 days of the change.
 - 8 --- Licensee must notify the Commission when all earth stations operating under this authorization are no longer operational or when they have not been used to provide any service during any 6-month operation.
- 90398 --- Changes to previously authorized transmitting facilities, operations and devices regulated by the Commission that may have significant environmental impact, and are not excluded by §1.1306, require the preparation of an Environmental Assessment (EA) by the licensee. (See 47 C.F.R. §§1.1307, 1.1308 and 1.1311)
- 90399 --- The licensee shall, at all times, take all necessary measures to ensure that operation of this (these) authorized earth station(s) 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. Physical 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.
- 90405 --- Operations with PERMITTED LIST satellite must comply with §25.212 levels and operations above these levels must coordinate with satellite operators prior to operations.



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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:

900407 --- The Permitted Space Station List (Permitted List) is a list of all geostationary space stations providing fixed-satellite service pursuant to a Commission license or grant of U.S. market access. The Permitted List currently includes the following frequency bands per §25.103 and §25.115(k)(1):

3600-4200 MHz (space-to-Earth)

5850-6725 MHz (Earth-to-space)

10.95-11.2 GHz (space-to-Earth)

11.45-12.2 GHz (space-to-Earth)

13.75-14.5 GHz (Earth-to-space)

18.3-18.8 GHz (space-to-Earth) 19.7-20.2 GHz (space-to-Earth)

24.75-25.25 GHz (Earth-to-space)

28.35-28.6 GHz (Earth-to-space)

29.25-30.0 GHz (Earth-to-space).

Earth stations with "Permitted List" designated as a point of communication may access any space station on the Permitted List, provided the operations comply with the applicable "routine" uplink and downlink limits, are within the specific frequency bands authorized in the earth station license, have completed coordination with terrestrial stations pursuant to §25.203, and otherwise comply with all terms and conditions of both the earth station license and the space station grant.

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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 does not meet each required construction deadline by the required date of completion unless, before such date(s), a specific application is timely filed to request an extension of the construction deadline(s), supported with good cause why that failure to construct 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 regulates 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.

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