

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
(Technical and Operational Description)

S1. GENERAL INFORMATION Complete for all satellite applications.

a. Space Station or Satellite Network Name: ANIK-F3		e. Estimated Date of Placement into Service: 9/1/2006	i. Will the space station(s) operate on a Common Carrier Basis: N
b. Construction Commencement Date:		f. Estimated Lifetime of Satellite(s): 15 Years	j. Number of transponders offered on a common carrier basis: 0
c. Construction Completion Date:		g. Total Number of Transponders: 32	k. Total Common Carrier Transponder Bandwidth: 0 MHz
d1. Est Launch Date Begin:	d2. Est Launch Date End:	h. Total Transponder Bandwidth (no. transponders x Bandwidth) 864 MHz	l. Orbit Type: Mark all boxes that apply: ☒ GSO ☐ NGSO

S2. OPERATING FREQUENCY BANDS Identify the frequency range and transmit/receive mode for all frequency bands in which this station will oper
Also indicate the nature of service(s) for each frequency band.

Frequency Band Limits				e. T/R Mode	f. Nature of Service(s): List all that apply to this band
Lower Frequency (Hz)		Upper Frequency (Hz)			
a. Numeric	b. Unit (K/M/G)	c. Numeric	d. Unit (K/M/G)		
14	G	14.5	G	R	Fixed Satellite Service
11.7	G	12.2	G	T	Direct to Home in the Fixed Fixed Satellite Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W): 118.7 W		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection: Telesat Canada has authorization from Industry Canada to operate the satellite at 118.7 °W.L. Th e orbital location is consistent with the Trilateral Agreement reached between Canada, Mexico and the United States of America in 1988.
Longitudinal Tolerance or E/W Station-Keeping:		f. Inclination Excursion or N/S Station-Keeping Tolerance:	Range of orbital are in which adequate service can be provided (Optional):	
d. Toward West:	0.05 Degrees		g. Westernmost:	
e. Toward East:	0.05 Degrees	0.05 Degrees	h. Easternmost:	
i. Reason for service are selection (Optional):				

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Page 2: NGSO Orbits

S4. ORBITAL INFORMATION FOR NON-GEOSTATIONARY SATELLITES ONLY

S4a. Total Number of Satellites in Network or System:

S4c. Celestial Reference Body (Earth, Sun, Moon, etc.):

S4b. Total Number of Orbital Planes in Network or System:

S4d. Orbit Epoch Date:

For each Orbital Plane Provide:

(e) Orbital Plane No.	(f) No. of Satellites in Plane	(g) Inclination Angle (degrees)	(h) Orbital Period (Seconds)	(i) Apogee (km)	(j) Perigee (km)	(k) Right Ascension of the Ascending Node (Deg.)	(l) Argument of Perigee (Degrees)	Active Service Arc Range (Degrees)		
								(m) Begin Angle	(n) End Angle	(o) Other

S5. INITIAL SATELLITE PHASE ANGLE For each satellite in each orbital plane, provide the initial phase angle.

(a) Orbital Plane No.	(b) Satellite Number	(c) Initial Phase Angle (Degrees)
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NO NGSO DATA FILED

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Page 3: Service Areas

S6. SERVICE AREA CHARACTERISTICS for each service area provide:

(a) Service Area ID	(b) Type of Associated Station (Earth or Space)	(c) Service Area Diagram File Name (GXT File)	(d) Service Area Description. Provide list of geographic areas (state postal codes or ITU 3-ltr codes), satellites or Figure No. of Service Area Diagram.
SATX	S		CONUS, Alaska, Hawaii, Puerto Rico
SARX	E		CONUS, Canada

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Page 4: Antenna Beams

S7. SPACE STATION ANTENNA BEAM CHARACTERISTICS For each antenna beam provide:

(a) Beam ID	(b) T/R Mode	Isotropic Antenna Gain		(e) Pointing Error (Degrees)	(f) Rotational Error (Degrees)	(g) Min. Cross- Polar Iso- lation (dB)	(h) Polar- ization Switch- able? (Y/N)	(i) Polarization Alignment Rel. Equatorial Plane (Degrees)	(j) Service Area ID	Transmit			Receive				
		(c) Peak (dBi)	(d) Edge (dBi)							(k) Input Losses (dB)	(l) Effective Output Power (W)	(m) Max. EIRP (dBW)	(n) System Noise Temp (k)	(o) G/T Max. Gain Pt. (db/K)	(p) Min. Saturation Flux Density (dBW/m2)	Input Attenuator (dB)	
																(q) Max. Value	(r) Step Size
TXR	T	33.7	28.7	0.13		30	N		SATX	1.8	85.9	53					
TXLC	T	33.7	28.7	0.13		30	N		SATX	1.8	85.9	53					
RXH	R	32.7	28.7	0.13		30	N		SARX				825	3.5	-100.5	20	1
RXV	R	32.7	23.7	0.13		30	N		SARX				825	3.5	-100.5	20	1

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Page 5: Beam Diagrams

S8. ANTENNA BEAM DIAGRAMS For each beam pattern provide the reference to the graphic image and numerical data:
Also provide the power flux density levels in each beam that result from the emission with the highest power flux density.

(a) Beam ID	(b) T/R Mode	(c) Co-or Cross Polar Mode ("C" or" X")	(d) GSO Ref. Orbital Longitude (Deg. E/W)	(e) NGSO Antenna Gain Contour Description (Figure/Table/ Exhibit)	(f) GSO Antenna Gain Contour Data (GXT File)	Max. Power Flux Density (dBW/M2/Hz)				
						At Angle of Arrival above horizontal (for emission with highest PFD)				
						(g) 5 Deg	(h) 10 Deg	(i) 15 Deg	(j) 20 Deg	(k) 25 Deg
TXR	T	C	-118		TXRC.gxt					
TXLC	T	C	-118		TXLC.gxt					
RXH	R	C	-118		RXHP.gxt					
RXV	R	C	-118		RXVP.gxt					

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Page 6: Channels and Transponders

S9. SPACE STATION CHANNELS For each frequency channel provide: **S10. SPACE STATION TRANSPONDERS** For each transponder provide:

(a) Channel No.	(B) Assigned Bandwidth (kHz)	(c) T/R Mode	(d) Center Frequency (MHz)	(e) Polarization (H, V, L, R)	(f) TTC or Comm Channel (T or C)
UH001	27000	R	14014.75	H	C
UH003	27000	R	14045.25	H	C
UH005	27000	R	14075.75	H	C
UH007	27000	R	14106.25	H	C
UH009	27000	R	14136.75	H	C
UH011	27000	R	14167.25	H	C
UH013	27000	R	14197.75	H	C
UH015	27000	R	14228.25	H	C
UH017	27000	R	14258.75	H	C
UH019	27000	R	14289.25	H	C
UH021	27000	R	14319.75	H	C
UH023	27000	R	14350.25	H	C
UH025	27000	R	14380.75	H	C
UH027	27000	R	14411.25	H	C
UH029	27000	R	14441.75	H	C
UH031	27000	R	14472.25	H	C
UV002	27000	R	14027.75	V	C
UV004	27000	R	14058.25	V	C
UV006	27000	R	14088.75	V	C
UV008	27000	R	14119.25	V	C
UV010	27000	R	14149.75	V	C
UV012	27000	R	14180.25	V	C
UV014	27000	R	14210.75	V	C
UV016	27000	R	14241.25	V	C
UV018	27000	R	14271.75	V	C
UV020	27000	R	14302.25	V	C
UV022	27000	R	14332.75	V	C
UV024	27000	R	14363.25	V	C
UV026	27000	R	14393.75	V	C
UV028	27000	R	14424.25	V	C

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
T0001	132.3	UH001	RXHP	DR001	TXRC
T0003	132.3	UH003	RXHP	DR003	TXRC
T0005	132.3	UH005	RXHP	DR005	TXRC
T0007	132.3	UH007	RXHP	DR007	TXRC
T0009	132.3	UH009	RXHP	DR009	TXRC
T0011	132.3	UH011	RXHP	DR011	TXRC
T0013	132.3	UH013	RXHP	DR013	TXRC
T0015	132.3	UH015	RXHP	DR015	TXRC
T0017	132.3	UH017	RXHP	DR017	TXRC
T0019	132.3	UH019	RXHP	DR019	TXRC
T0021	132.3	UH021	RXHP	DR021	TXRC
T0023	132.3	UH023	RXHP	DR023	TXRC
T0025	132.3	UH025	RXHP	DR025	TXRC
T0027	132.3	UH027	RXHP	DR027	TXRC
T0029	132.3	UH029	RXHP	DR029	TXRC
T0031	132.3	UH031	RXHP	DR031	TXRC
T0002	132.3	UV002	RXVP	DL002	TXLC
T0004	132.3	UV004	RXVP	DL004	TXLC
T0006	132.3	UV006	RXVP	DL006	TXLC
T0008	132.3	UV008	RXVP	DL008	TXLC
T0010	132.3	UV010	RXVP	DL010	TXLC
T0012	132.3	UV012	RXVP	DL012	TXLC
T0014	132.3	UV014	RXVP	DL014	TXLC
T0016	132.3	UV016	RXVP	DL016	TXLC
T0018	132.3	UV018	RXVP	DL018	TXLC
T0020	132.3	UV020	RXVP	DL020	TXLC
T0022	132.3	UV022	RXVP	DL022	TXLC
T0024	132.3	UV024	RXVP	DL024	TXLC
T0026	132.3	UV026	RXVP	DL026	TXLC
T0028	132.3	UV028	RXVP	DL028	TXLC

UV030	27000	R	14454.75	V	C
UV032	27000	R	14485.25	V	C
DR001	27000	T	11714.75	R	C
DR003	27000	T	11745.25	R	C
DR005	27000	T	11775.75	R	C
DR007	27000	T	11806.25	R	C
DR009	27000	T	11836.75	R	C
DR011	27000	T	11867.25	R	C
DR013	27000	T	11897.75	R	C
DR015	27000	T	11928.25	R	C
DR017	27000	T	11958.75	R	C
DR019	27000	T	11989.25	R	C
DR021	27000	T	12019.75	R	C
DR023	27000	T	12050.25	R	C
DR025	27000	T	12080.75	R	C
DR027	27000	T	12111.25	R	C
DR029	27000	T	12141.75	R	C
DR031	27000	T	12172.25	R	C
DL002	27000	T	11727.75	L	C
DL004	27000	T	11758.25	L	C
DL006	27000	T	11788.75	L	C
DL008	27000	T	11819.25	L	C
DL010	27000	T	11849.75	L	C
DL012	27000	T	11880.25	L	C
DL014	27000	T	11910.75	L	C
DL016	27000	T	11941.25	L	C
DL018	27000	T	11971.75	L	C
DL020	27000	T	12002.25	L	C
DL022	27000	T	12032.75	L	C
DL024	27000	T	12063.25	L	C
DL026	27000	T	12093.75	L	C
DL028	27000	T	12124.25	L	C
DL030	27000	T	12154.75	L	C
DL032	27000	T	12185.25	L	C
TC1	1300	R	14496	H	T
TC2	1300	R	14498	H	T
TM1	300	T	11701.75	H	T
TM2	300	T	11701.75	R	T
TM3	300	T	11702.25	H	T

T0030	132.3	UV030	RXVP	DL030	TXLC
T0032	132.3	UV032	RXVP	DL032	TXLC

TM4	300	T	11702.25	R	T
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Page 7: Digital Modulation

S11. DIGITAL MODULATION PARAMETERS For each digital emission provide:

(a) Digital Mod. ID	(b) Emission Designator	(c) Assigned Bandwidth (kHz)	(d) No. of Phases	(e) Uncoded Data Rate (kbps)	(f) FEC Error Correction Coding Rate	(g) CDMA Processing Gain (dB)	(h) Total C/N Performance Objective (dB)	(i) Single Entry C/I Objective (dB)
D1	24M0G7W	24000	4	27647	0.75		6.1	18.3

Page 8: Analog Modulation

[illegible]

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Page 9: Typical Emissions

S13. TYPICAL EMISSIONS For each planned type of emission provide:

Associated Transponder ID Range		Modulation ID		(e) Carriers per Transponder	(f) Carrier Spacing (kHz)	(g) Noise Budget Reference (Table No.)	(h) Energy Dispersal Bandwidth (kHz)	Receive Band (Assoc. Transmit Stn)			Transmit Band (This Space Station)			
		(c) Digital (Table S11)	(d) Analog (Table S12)					(i) Assoc. Stn. Max. Antenna Gain (dBi)	Assoc. Station Transmit Power (dBW)		EIRP (dBW)		(n) Max. Power Flux Density (dBW/m ² /Hz)	(o) Assoc. Stn Rec. G/T (dB/K)
(a) Start	(b) End								(j) Min.	(k) Max.	(l) Min.	(m) Max.		
T0001	T0032	D1		1		LB1.doc	0	36.3	5	23.2	48	53	-146.3	15.1

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Page 10: TT and C

S14. Is the space station(s) controlled and monitored remotely? If Yes, provide the location and telephone number of the TT and C control point(s): Yes

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**Page 11:
Characteristics and
Certifications**

S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a. Mass of spacecraft without fuel (kg): 2280	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 2465		
S15c. Mass of spacecraft and fuel at launch (kg): 4745	S15f. Length (m): 36.2	S15i. Payload: 0.9248
S15d. Mass of fuel, in orbit, at beginning of life (kg): 900	S15g. Width (m): 8.2	S15j. Bus: 0.8615
S15e. Deployed Area of Solar Array (square meters): 68.9	S15h. Height (m): 5.4	S15k. Total: 0.7967

S16. SPACECRAFT ELECTRICAL CHARACTERISTICS:

Spacecraft Subsystem	Electrical Power (Watts) At Beginning of Life		Electrical Power (Watts) At End of Life	
	At Equinox	At Solstice	At Equinox	At Solstice
Payload (Watts):	(a): 6855	(f): 6855	(k): 6855	(p): 6855
Bus (Watts):	(b): 605	(g): 456	(l): 605	(q): 456
Total (Watts):	(c): 7460	(h): 7311	(m): 7460	(r): 7311
Solar Array (Watts):	(d): 13476	(i): 11684	(n): 11946	(s): 10401
Depth of Battery Discharge (%):	(e) 79.7 %	(j) %	(o) 79.7 %	(t) %

S17. CERTIFICATIONS:

a. Are the power flux density limits of § 25.208 met?	☐ YES	☐ NO	☒ N/A
b. Are the appropriate service area coverage requirements of § 25.143(b)(ii) and (iii), or § 25.145(c)(1) and (2) met?	☐ YES	☐ NO	☒ N/A
c. Are the frequency tolerances of § 25.202(e) and the out-of-band emission limits of § 25.202(f)(1), (2) and (3) met?	☒ YES	☐ NO	☐ N/A

In addition to the information required in this Form, the space station applicant is required to provide all the information specified in Section 25.114 of the Commission's rules, 47 C.F.R. § 25.114.