

**S1. GENERAL INFORMATION** Complete for all satellite applications.

a. Space Station or Satellite Network Name: ANIK F2		e. Estimated Date of Placement into Service: 10/31/2004		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: 53		k. Total Common Carrier Transponder Bandwidth: 0 MHz	
d1. Est Launch Date Begin: 7/17/2004	d2. Est Launch Date End:	h. Total Transponder Bandwidth (no. transponders x Bandwidth) 5632 MHz		i. Orbit Type: Mark all boxes that apply: <input checked="" type="checkbox"/> GSO <input type="checkbox"/> 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)		
18.3	G	18.8	G	T	Fixed Satellite Service
19.7	G	20.2	G	T	Fixed Satellite Service
28.35	G	28.6	G	R	Fixed Satellite Service
29.25	G	30	G	R	Fixed Satellite Service

**S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:**

a. Nominal Orbital Longitude (Degrees E/W): 111.1 W		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection:  The authority to operate Ka-band at 111.1 W.L. was granted by Canadian Administration to Telesat Canada on June 23, 1999. Under this application, we are seeking authorization to provide services to the US territories in the identified bands. Anik F2 will be replacing Anik E2-R satellite system.	
Longitudinal Tolerance or E/W Station-Keeping:		f. Inclination Excursion or N/S Station-Keeping Tolerance:  0.05 Degrees	Range of orbital are in which adequate service can be provided (Optional):  Degrees      E/W		
d. Toward West:      0.05 Degrees	e. Toward East:      0.05 Degrees		g. Westernmost: h. Easternmost:		
i. Reason for service are selection (Optional):					

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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 intital phase angle.

(a) Orbital Plane No.	(b) Satellite Number	(c) Initial Phase Angle (Degrees)

**NO NGSO DATA FILED**

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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.
1	S		Throughout CONUS and Canada

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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			Input Attenuator (dB)	
										(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)	(q) Max. Value	(r) Step Size
		(c) Peak (dBi)	(d) Edge (dBi)														
5	R	46.5	42	0.07		30	N		1				510	19.5	-104.5	17	1
5	T	46.5	42	0.07			N		1	2	19.5	64					
9	R	46.5	42	0.07		30	N		1				510	19.5	-104.5	17	1
9	T	46.5	42	0.07			N		1	2	19.5	64					
24	R	46.5	42	0.07		30	N		1				510	19.5	-104.5	17	1
24	T	46.5	42	0.07			N		1	2	19.5	64					
28	R	46.5	42	0.07		30	N		1				510	19.5	-104.5	17	1
28	T	46.5	42	0.07			N		1	2	19.5	64					
30	R	46.5	42	0.07		30	N		1				510	19.5	-104.5	17	1
30	T	46.5	42	0.07			N		1	2	19.5	64					
44	R	46.5	42	0.07		30	N		1				510	19.5	-104.5	17	1
44	T	46.5	42	0.07			N		1	2	19.5	64					
14	R	46.5	42	0.07		30	N		1				510	19.5	-112.5	17	1
14	T	46.5	42	0.07			N		1	5	16.5	61					
45	R	46.5	42	0.07		30	N		1				510	19.5	-112.5	17	1
45	T	46.5	42	0.07			N		1	2	19.5	64					

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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
5	R	C	-111.1		F2_Beam5_Rx.gxt					
5	T	C	-111.1		F2_Beam5_Tx.gxt	-142.9	-141.8	-138.8	-132.9	-129.3
9	R	C	-111.1		F2_Beam9_Rx.gxt					
9	T	C	-111.1		F2_Beam9_Tx.gxt	-148.1	-148.1	-138.1	-132.1	-129.3
24	R	C	-111.1		F2_Beam24_Rx.gxt					
24	T	C	-111.1		F2_Beam24_Tx.gxt	-149	-149	-149	-149	-129
28	R	C	-111.1		F2_Beam28_Rx.gxt					
28	T	C	-111.1		F2_Beam28_Tx.gxt	-142.1	-142.1	-142.1	-140.3	-129.2
30	R	C	-111.1		F2_Beam30_Rx.gxt					
30	T	C	-111.1		F2_Beam30_Tx.gxt	-148.9	-148.9	-148.9	-148.9	-128.9
44	R	C	-111.1		F2_Beam44_Rx.gxt					
44	T	C	-111.1		F2_Beam44_Tx.gxt	-148.8	-148.8	-148.8	-148.8	-128.8
14	R	C	-111.1		F2_Beam14_Rx.gxt					
14	T	C	-111.1		F2_Beam14_Tx.gxt	-139.1	-139.1	-139.1	-139.1	-119.1
45	R	C	-111.1		F2_Beam45_Rx.gxt					
45	T	C	-111.1		F2_Beam45_Tx.gxt	-142	-142	-142	-142	-122

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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)
F1	56000	R	28382	L	C
F1	56000	T	19732	L	C
F2	56000	R	28444	L	C
F2	56000	T	19794	L	C
F3	56000	R	28506	L	C
F3	56000	T	19856	L	C
F4	56000	R	28568	L	C
F4	56000	T	19918	L	C
F5	56000	R	29282	L	C
F5	56000	T	19982	L	C
F6	56000	R	29344	L	C
F6	56000	T	20044	L	C
F7	56000	R	29406	L	C
F7	56000	T	20106	L	C
F8	56000	R	29468	L	C
F8	56000	T	20168	L	C
R1	36000	R	29525	R	C
R2	36000	R	29566	R	C
R3	36000	R	29607	R	C
R4	36000	R	29648	R	C
R5	36000	R	29689	R	C
R6	36000	R	29730	R	C
R7	36000	R	29771	R	C
R8	36000	R	29812	R	C
R9	36000	R	29853	R	C
R10	36000	R	29894	R	C
R11	36000	R	29935	R	C
R12	36000	R	29976	R	C
R500	500000	T	18525	R	C

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
T1	115	F8	5	F8	5
T2	115	F7	9	F7	9
T3	115	F4	24	F4	24
T4	115	F3	44	F3	44
T5	115	F5	28	F5	28
T6	115	F4	30	F4	30
T7	115	F3	30	F3	14
T8	115	F8	44	F8	45
T9	132	R4	5	R500	5
T10	132	R4	14	R500	30
T11	132	R11	45	R500	44

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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)
1	25M2G7W	25200	4	19740	0.5		5.2	17.4
2	1M60G7W	1600	4	1280	0.5		5.6	17.8





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

Associated Transponder ID Range (a) Start    (b) End		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) (j) Min.    (k) Max.		EIRP (dBW) (l) Min.    (m) Max.		(n) Max. Power Flux Density (dBW/m <sup>2</sup> /Hz)	(o) Assoc. Stn Rec. G/T (dB/K)
T1	T8	1		2	28000			65.6	-3.1	13.9	60.5	77.5	-118.8	17.5
T9	T11	2		21	1700			44.6	4.5	4.5	47.1	47.1	-128.8	37.7

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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

**Remote Control (TT C) Location(s):**

S14a: Street Address: 133438 Allan Park Road			
S14b. City: Allan Park	S14c. County:	S14d. State/Country ON	S14e. Zip Code: N4N3B8
S14f. Telephone Number: 519-371-7490		S14g. Call Sign of Control Station (if appropriate):	

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**S15. SPACECRAFT PHYSICAL CHARACTERISTICS:**

S15a. Mass of spacecraft without fuel (kg): 3508	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 2139		
S15c. Mass of spacecraft and fuel at launch (kg): 5948	S15f. Length (m): 47.9	S15i. Payload: 0.768
S15d. Mass of fuel, in orbit, at beginning of life (kg): 316	S15g. Width (m): 8.2	S15j. Bus: 0.895
S15e. Deployed Area of Solar Array (square meters): 60	S15h. Height (m): 7.3	S15k. Total: 0.685

**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): 13900	(f): 13900	(k): 13100	(p): 13100
Bus (Watts):	(b): 3060	(g): 2140	(l): 3050	(q): 2130
Total (Watts):	(c): 16960	(h): 16040	(m): 16150	(r): 15230
Solar Array (Watts):	(d): 18770	(i): 16370	(n): 17130	(s): 15510
Depth of Battery Discharge (%):	(e) 80.2 %	(j) 17 %	(o) 75.7 %	(t) 17.3 %

**S17. CERTIFICATIONS:**

a. Are the power flux density limits of § 25.208 met?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> 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?	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input checked="" type="checkbox"/> 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?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> 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.**