FCC 312 Schedule S	FEDERAL COMMUNICATIONS COMMISSION SATELLITE SPACE STATION AUTHORIZATIONS (Technical and Operational Description)	Page 1: General, Frequency Bands, and GSO Orbit

S1. GENERAL INFORMATION Complete for all satellite applications.

a. Space Station or Satellite Network Name:		e. Estimated Date of Placement into Service:	i Will the space station(s) operate on a Common Carrier Basis:
QUETZSAT-1		10/7/2011	N
b. Construction Commencement Date:		f. Estimated Lifetime of Satellite(s):	j. Number of transponders offered on a common carrier basis:
2/4/2009		15 Years	0
c. Construction Completion Date:		g. Total Number of Transponders:	k. Total Common Carrier Transponder Bandwidth:
7/12/2011		32	0 MHz
d1. Est Launch Date Begin:	d2. Est Launch Date End:	h. Total Transponder Bandwidth (no. transponders x Bandwidth)	l. Orbit Type: Mark all boxes that apply:
8/1/2011	8/31/2011	768 MHz	[X] 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)		
17300	M	17800	M	R	Feeder Link for Broadcasting Satellite Service in FSS
12200	M	12700	M	T	Broadcasting Satellite Service - Video

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W):	b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection:
77 W			Licensed by the Mexican Administration at this orbital location
Longitudinal Tolerance or E/W Station-Keeping: d. Toward West: 0.05 Degrees e. Toward East: 0.05 Degrees	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 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:

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

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

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.
NA	S		CONUS, Puerto Rico, Mexico, Central America
CHEYENNE	S		Area around Cheyenne, WY
GILBERT	S		Area around Gilbert, AZ
MEX	S		Area around Mexico City
GLOBAL	S		Visible Earth

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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 Isolation (dB)	(h) Polarization Switchable? (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 Noice 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
RRC	R	44.9	41.9	0.12	0.2	27	N		CHEYENN				1549	13	-105.8	21	1
RRG	R	44.7	41.7	0.12	0.2	27	N		GILBERT				1542	12.8	-105.6	21	1
RRM	R	43.2	40.2	0.12	0.2	27	N		MEX				2296	9.6	-102.4	21	1
RLC	R	44.9	41.9	0.12	0.2	27	N		CHEYENN				1762	12.4	-105.2	21	1
RLG	R	44.6	41.6	0.12	0.2	27	N		GILBERT				1774	12.2	-105	21	1
RLM	R	43.2	40.2	0.12	0.2	27	N		MEX				2523	9.2	-102	21	1
TEL	T	35.7	25.7	0.12	0.2	27	N		NA	2.5	155	57.6					
TER	T	35.6	25.6	0.12	0.2	27	N		NA	2.5	155	57.5					
TWL	T	35.6	25.6	0.12	0.2	27	N		NA	2.5	155	57.5					
TWR	T	35.5	25.5	0.12	0.2	27	N		NA	2.5	155	57.4					
TCO	R	3	-2.5	0.12	0.2	30	Y		MEX				4467	-33.5	-90		
TMO	T	35.5	29.5	0.12	0.2	27	Y		MEX	7.6	0.1	24.4					

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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
RRC	R	C	-77		uplink_Ch_R_RRC.gx					
RRG	R	C	-77		uplink_Gi_R_RRG.gxt					
RRM	R	C	-77		uplink_Mx_R_RRM.gx					
RLC	R	C	-77		uplink_Ch_L_RLC.gxt					
RLG	R	C	-77		uplink_Gi_L_RLG.gxt					
RLM	R	C	-77		uplink_MX_L_RLM.gx					
TEL	T	C	-77		Downlink_16_TEL.gxt					
TER	T	C	-77		Downlink_17_TER.gxt					
TWL	T	C	-77		Downlink_18_TWL.gx					
TWR	T	C	-77		Downlink_15_TWR.gx					
TMO	T	C	-77							

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S9. SPACE STATION CHANNELS For each frequency channel 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)
RO1	24000	R	17324.0	R	C
R02	24000	R	17338.58	L	C
R03	24000	R	17353.16	R	C
R04	24000	R	17367.74	L	C
R05	24000	R	17382.32	R	C
R06	24000	R	17396.90	L	C
R07	24000	R	17411.48	R	C
R08	24000	R	17426.06	L	C
R09	24000	R	17440.64	R	C
R10	24000	R	17455.22	L	C
R11	24000	R	17469.80	R	C
R12	24000	R	17484.38	L	C
R13	24000	R	17498.96	R	C
R14	24000	R	17513.54	L	C
R15	24000	R	17528.12	R	C
R16	24000	R	17542.70	L	C
R17	24000	R	17557.28	R	C
R18	24000	R	17571.86	L	C
R19	24000	R	17586.44	R	C
R20	24000	R	17601.02	L	C
R21	24000	R	17615.60	R	C
R22	24000	R	17630.18	L	C
R23	24000	R	17644.76	R	C
R24	24000	R	17659.34	L	C
R25	24000	R	17673.92	R	C
R26	24000	R	17688.50	L	C
R27	24000	R	17703.08	R	C
R28	24000	R	17717.66	L	C
R29	24000	R	17732.24	R	C
R30	24000	R	17746.82	L	C

S10. SPACE STATION TRANSPONDERS For each transponder provide:

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
CMDA		CMD1	TCO		
CMDB		CMD2	TCO		
TLMA				TLM1	TMO
TLMB				TLM2	TMO
TLMC				TLM3	TMO
TLMD				TLM4	TMO
C01	114.5	RO1	RRC	T01	TER
C02	113.9	R02	RLC	T02	TWL
CO3	114.5	R03	RRC	T03	TWR
C04	113.9	R04	RLC	T04	TEL
C05	114.5	R05	RRC	T05	TER
C06	113.9	R06	RLC	T06	TWL
C07	114.5	R07	RRC	T07	TWR
C08	113.9	R08	RLC	T08	TEL
C09	114.5	R09	RRC	T09	TER
C10	113.9	R10	RLC	T10	TWL
C11	114.5	R11	RRC	T11	TWR
C12	113.9	R12	RLC	T12	TEL
C13	114.5	R13	RRC	T13	TER
C14	113.9	R14	RLC	T14	TWL
C15	114.5	R15	RRC	T15	TWR
C16	113.9	R16	RLC	T16	TEL
C17	114.5	R17	RRC	T17	TER
C18	113.9	R18	RLC	T18	TWL
C19	114.5	R19	RRC	T19	TWR
C20	113.9	R20	RLC	T20	TEL
C21	114.5	R21	RRC	T21	TER
C22	113.9	R22	RLC	T22	TWL
C23	114.5	R23	RRC	T23	TWR
C24	113.9	R24	RLC	T24	TEL

R31	24000	R	17761.40	R	C
R32	24000	R	17775.98	L	C
T01	24000	T	12224.00	R	C
T02	24000	T	12238.58	L	C
T03	24000	T	12253.16	R	C
T04	24000	T	12267.74	L	C
T05	24000	T	12282.32	R	C
T06	24000	T	12296.90	L	C
T07	24000	T	12311.48	R	C
T08	24000	T	12326.06	L	C
T09	24000	T	12340.64	R	C
T10	24000	T	12355.22	L	C
T11	24000	T	12369.80	R	C
T12	24000	T	12384.38	L	C
T13	24000	T	12398.96	R	C
T14	24000	T	12413.54	L	C
T15	24000	T	12428.12	R	C
T16	24000	T	12442.70	L	C
T17	24000	T	12457.28	R	C
T18	24000	T	12471.86	L	C
T19	24000	T	12486.44	R	C
T20	24000	T	12501.02	L	C
T21	24000	T	12515.60	R	C
T22	24000	T	12530.18	L	C
T23	24000	T	12544.76	R	C
T24	24000	T	12559.34	L	C
T25	24000	T	12573.92	R	C
T26	24000	T	12588.50	L	C
T27	24000	T	12603.08	R	C
T28	24000	T	12617.66	L	C
T29	24000	T	12632.24	R	C
T30	24000	T	12646.82	L	C
T31	24000	T	12661.40	R	C
T32	24000	T	12675.98	L	C
CMD1	1000	R	17797.0	R	T
CMD2	1000	R	17793.0	R	T
TLM1	250	T	12694.5	R	T
TLM2	250	T	12698.5	R	T
TLM3	250	T	12692	R	T

C25	114.5	R25	RRC	T25	TEL
C26	113.9	R26	RLC	T26	TWL
C27	114.5	R27	RRC	T27	TWR
C28	113.9	R28	RLC	T28	TEL
C29	114.5	R29	RRC	T29	TER
C30	113.9	R30	RLC	T30	TWL
C31	114.5	R31	RRC	T31	TWR
C32	113.9	R32	RLC	T32	TEL
G01	114.3	RO1	RRG	T01	TER
G02	113.7	R02	RLG	T02	TWL
G03	114.3	R03	RRG	T03	TWR
G04	113.7	R04	RLG	T04	TEL
G05	114.3	R05	RRG	T05	TER
G06	113.7	R06	RLG	T06	TWL
G07	114.3	R07	RRG	T07	TWR
G08	113.7	R08	RLG	T08	TEL
G09	114.3	R09	RRG	T09	TER
G10	113.7	R10	RLG	T10	TWL
G11	114.3	R11	RRG	T11	TWR
G12	113.7	R12	RLG	T12	TEL
G13	114.3	R13	RRG	T13	TER
G14	113.7	R14	RLG	T14	TWL
G15	114.3	R15	RRG	T15	TWR
G16	113.7	R16	RLG	T16	TEL
G17	114.3	R17	RRG	T17	TER
G18	113.7	R18	RLG	T18	TWL
G19	114.3	R19	RRG	T19	TWR
G20	113.7	R20	RLG	T20	TEL
G21	114.3	R21	RRG	T21	TER
G22	113.7	R22	RLG	T22	TWL
G23	114.3	R23	RRG	T23	TWR
G24	113.7	R24	RLG	T24	TEL
G25	114.3	R25	RRG	T25	TEL
G26	113.7	R26	RLG	T26	TWL
G27	114.3	R27	RRG	T27	TWR
G28	113.7	R28	RLG	T28	TEL
G29	114.3	R29	RRG	T29	TER
G30	113.7	R30	RLG	T30	TWL
G31	114.3	R31	RRG	T31	TWR

TLM4	250	T	12693	R	T

G32	113.7	R32	RLG	T32	TEL
M01	111.1	RO1	RRM	T01	TER
M02	110.7	R02	RLM	T02	TWL
M03	111.1	R03	RRM	T03	TWR
M04	110.7	R04	RLM	T04	TWR
M05	111.1	R05	RRM	T05	TER
M06	110.7	R06	RLM	T06	TWL
M07	111.1	R07	RRM	T07	TWR
M08	110.7	R08	RLM	T08	TEL
M09	111.1	R09	RRM	T09	TER
M10	110.7	R10	RLM	T10	TWL
M11	111.1	R11	RRM	T11	TWR
M12	110.7	R12	RLM	T12	TEL
M13	111.1	R13	RRM	T13	TER
M14	110.7	R14	RLM	T14	TWL
M15	111.1	R15	RRM	T15	TWR
M16	110.7	R16	RLM	T16	TEL
M17	111.1	R17	RRM	T17	TER
M18	110.7	R18	RLM	T18	TWL
M19	111.1	R19	RRM	T19	TWR
M20	110.7	R20	RLM	T20	TEL
M21	111.1	R21	RRM	T21	TER
M22	110.7	R22	RLM	T22	TWL
M23	111.1	R23	RRM	T23	TWR
M24	110.7	R24	RLM	T24	TEL
M25	111.1	R25	RRM	T25	TEL
M26	110.7	R26	RLM	T26	TWL
M27	111.1	R27	RRM	T27	TWR
M28	110.7	R28	RLM	T28	TEL
M29	111.1	R29	RRM	T29	TER
M30	110.7	R30	RLM	T30	TWL
M31	111.1	R31	RRM	T31	TWR
M32	110.7	R32	RLM	T32	TEL

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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)
QPSK1	24M0G7W	24000	4	26667	0.67		3.7	20
QPSK2	25M8G7W	25800	4	35833	0.83		5.7	20
QPSK3	27M0G7W	27000	4	37500	0.83		5.7	20
8PSK1	25M8G7W	25800	8	43000	0.67		7.2	20
8PSK2	25M8G7W	25800	8	48375	0.75		8	20
8PSK3	25M8G7W	25800	8	51600	0.8		8.5	20

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S12. ANALOG MODULATION PARAMETERS For each analog emission provide:

(a) Analog Mod. ID	(b) Emission Designator	(c) Assigned Bandwidth (kHz)	(d) Signal Type	(e) Channels per Carrier	Multi-channel Telephony				(j) Video Standard NTSC, PAL, etc.	(k) Video Noise-Weighting (dB)	(l) Video and SCPC/FM Modulation Index	(m) SCPC/FM Compander, Preemphasis, and Noise Weighting (dB)	(n) Total C/N Performance Objective (dB)	(o) Single Entry C/I Objective (dB)
					(f) Ave. Companded Talker Level (dBm0)	(g) Bottom Baseband Freq. (MHz)	(h) Top Baseband Freq. (MHz)	(i) RMS Modulation Index						
CMD	1M00F2D	1000		1									10	22
TLM	500KF2D	500		1									5	22

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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)			
(a) Start	(b) End	(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/m2/Hz)	(o)Assoc. Stn Rec. G/T (dB/K)
									(j) Min.	(k) Max.	(l) Min.	(m) Max.		
C01	M32	QPSK1		1		Link budgeta co		65	5	15	47.6	57.6		13.5
C01	M32	QPSK2		1		Link budgeta co		65	5	15	47.6	57.6		13.5
C01	M32	QPSK3		1		Link budgeta co		65	5	15	47.6	57.6		13.5
C01	M32	8PSK1		1		Link budgeta co		65	5	15	47.6	57.6		13.5
C01	M32	8PSK2		1		Link budgeta co		65	5	15	47.6	57.6		13.5
C01	M32	8PSK3		1		Link budgeta co		65	5	15	47.6	57.6		13.5
CMDA	CMDB		CMD	1		Link budgtes T		64	19	37				-33.5
TLMA	TLMD		TLM	1		Link budgtes T					10.5	24.4		38.1

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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: Primary			
S14b. City: Mexico City	S14c. County:	S14d. State/Country DF	S14e. Zip Code: 11510
S14f. Telephone Number: 52-55-5093-9615	S14g. Call Sign of Control Station (if appropriate):		

Remote Control (TT C) Location(s):

S14a: Street Address: Additional Facility			
S14b. City: Gilbert	S14c. County: Maricopa County	S14d. State/Country AZ	S14e. Zip Code: 85233
S14f. Telephone Number: 480-558-2778	S14g. Call Sign of Control Station (if appropriate):		

Remote Control (TT C) Location(s):

S14a: Street Address: Backup			
S14b. City: Chihuahua	S14c. County:	S14d. State/Country CH	S14e. Zip Code: 31170
S14f. Telephone Number: 52-61-4439-3141	S14g. Call Sign of Control Station (if appropriate):		

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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a: Mass of spacecraft without fuel (kg): 2346	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 3146		
S15c. Mass of spacecraft and fuel at launch (kg): 5492	S15f. Length (m): 32.4	S15i. Payload: 0.932
S15d. Mass of fuel, in orbit, at beginning of life (kg): 1248.6	S15g. Width (m): 7.3	S15j. Bus: 0.88
S15e. Deployed Area of Solar Array (square meters): 32.4	S15h. Height (m): 7	S15k. Total: 0.823

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): 13853	(f): 13853	(k): 13853	(p): 13853
Bus (Watts):	(b): 3265	(g): 1730	(l): 3265	(q): 1730
Total (Watts):	(c): 17118	(h): 15583	(m) 17118	(r): 15583
Solar Array (Watts):	(d): 21209	(i): 19010	(n): 19079	(s): 17286
Depth of Battery Discharge (%):	(e) 69.2 %	(j) 69.2 %	(o) 69.2 %	(t) 69.2 %

S17. CERTIFICATIONS:

a. Are the power flux density limits of § 25.208 met?:	[ ] YES	[ ] NO	[X] 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	[X] 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?	[X] 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.