Exhibit 2

§25.114(d) Information for "Telstar 18 VANTAGE" Satellite

A1. Introduction

This document has been prepared by Telesat International Limited (Telesat) and addresses the information required by §25.114(d) for the *Telstar 18 VANTAGE* satellite ("T18V") satellite. The information specified in paragraph (c) of that section has been provided in Schedule S and is not repeated in this document.

A2. §25.114(d)(1): General Description of the Overall System

The T18V satellite will replace the Telstar 18 (T18) satellite currently in operation at 138°E. T18V was launched from Cape Canaveral by SpaceX on September 9, 2018.[1]

T18V will provide a range of fixed-satellite services (FSS) to Australia & New Zealand, Southeast Asia, China, Japan, Mongolia, the Korean Peninsula and various Pacific Islands including Hawaii, Guam, and the islands along the Aleutian Arc in Alaska. This Technical Exhibit accompanies modification applications filed by Hawaii Pacific Teleport, L.P. (HPT) to add T18V as a point of communication for its C-band (E010016) and Ku-band (E030115) earth stations located in Kapolei, Hawaii. These HPT earth stations in Hawaii will be used as gateways to provide non-common carrier services between the U.S., on the one hand, and Asia, Australia and New Zealand, on the other hand, and in the case of E010016, for the provision of Telemetry, Tracking and Control (TT&C) for the satellite.

The services provided by T18V will include VSAT services and point-to-point communication links. The T18V satellite uses a combination of C-band and Ku-band regional beams, and Ku-band spot beams. The C-band payload on T18V replaces the C-band capacity on T18 and adds C-band frequencies. The Ku-band payload on T18V significantly expands the capacity and coverage relative to T18, including to areas such as Hawaii that are not covered by T18.

An overview of T18V's coverage is displayed in Figures 1-4 below. The C-band regional beam and several Ku-band regional beams serve the United States and its territories. Only

[1] Hawaii Pacific Teleport L.P.'s earth station license, E010016, authorizes communications with T18 in the following bands: 3700-4200 MHz; 5850-5925 MHz; and, 5925-6425 MHz. In addition, T18 is included on the Commission's Space Station Approval list for the following bands: 3625-4200 MHz; 5850-6687 MHz; and, 6689-6699 MHz.

the C-band beam, the Australia/New Zealand Ku-band beam and the North Pacific Ku-band beam will have coverage of Hawaii. The C-band beam and North Pacific Ku-band beam will also provide coverage of parts of Alaska, and the C-band beam and Australia/New Zealand Ku-band beam will cover Guam. T18V will not have coverage of other parts of the U.S.

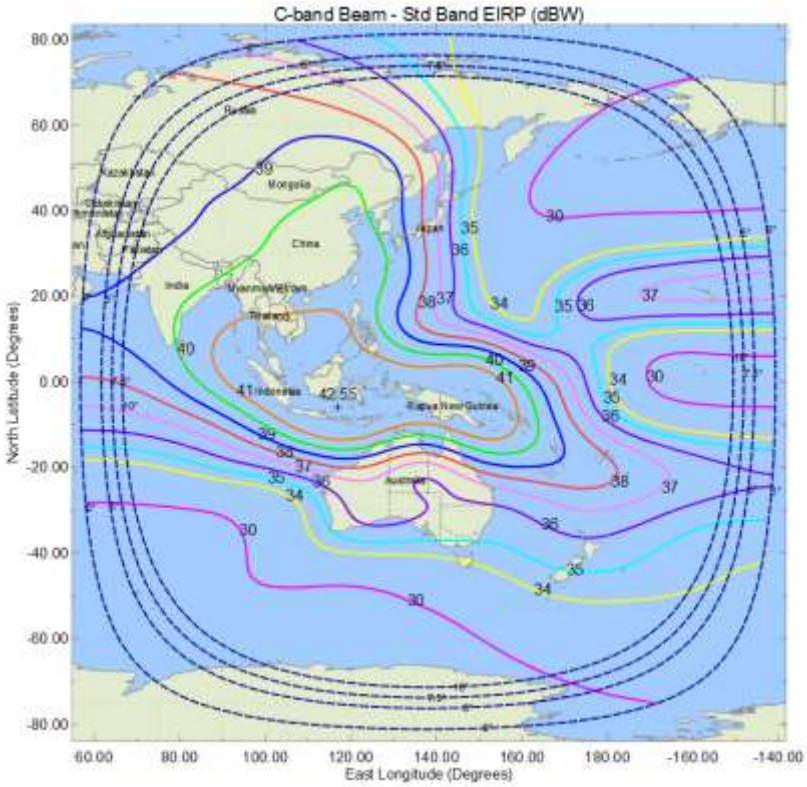

Figure 1: C-Band Coverage, Standard Band

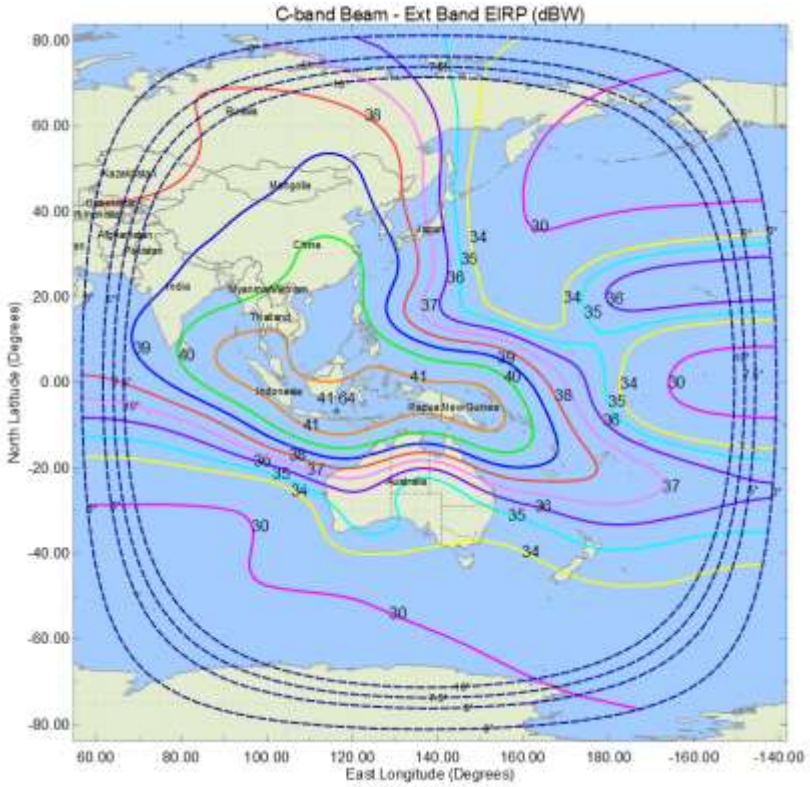

Figure 2: C-Band Coverage, Extended Band

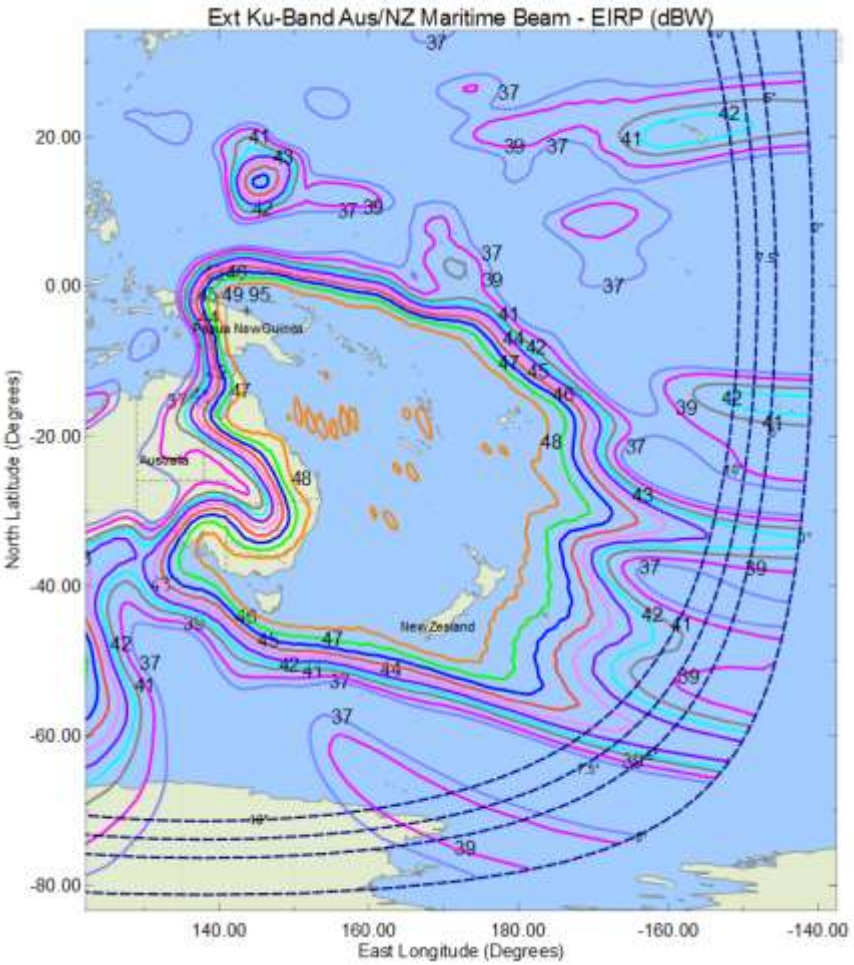

Figure 3: Ku-Band Coverage, Australia/New Zealand Beam

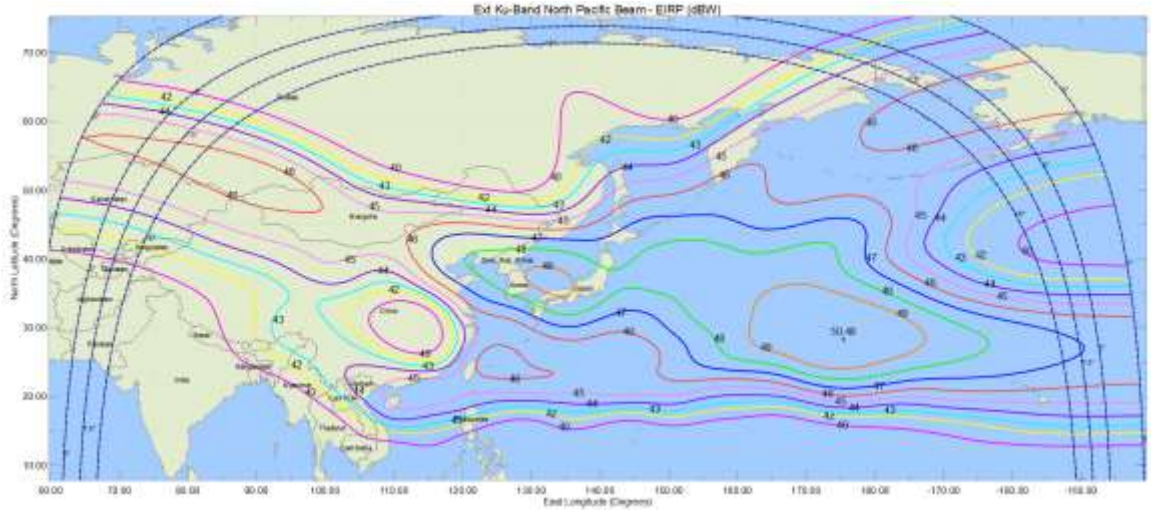

Figure 4: Ku-Band Coverage, North Pacific Beam

The frequency bands of T18V satellite for which FCC authorization is being sought are summarized in Table 1. (The T18V satellite also supports service links in the 3.400-3.700 GHz band, the 6.450-6.650 GHz band, the 12.250-12.750 GHz band and the 13.750-14.00 GHz band. Authority is not being sought to use these bands to provide service in the U.S.)

Table 1: Frequency bands of T18V

Lower Frequency Limit (GHz)	Upper Frequency Limit (GHz)	Downlink/Uplink	Note
3.6227	3.6233	Downlink	Telemetry only
3.6247	3.6253	Downlink	Telemetry only
3.7	4.2	Downlink	
5.85	5.925	Uplink	
5.925	6.425	Uplink	
6.425	6.4255	Uplink	Command only
6.6465	6.6475	Uplink	Command only
6.6485	6.6495	Uplink	Command only
11.45	11.7	Downlink	
14.0	14.251[2]	Uplink	

Consistent with footnote NG52 of the U.S. Table of Frequency Allocations, the downlink band 11.45–11.7 GHz will be used in the United States only for (i) international links, i.e., service between the United States and other countries, and (ii) transmission to earth stations on vessels (ESV), vehicle-mounted earth stations (VMES), and earth stations aboard aircrafts (ESAA). In the case of (ii), no protection shall be claimed from transmissions of non-Federal stations in the fixed service.[3]

As requested in §25.114(d)(1) an explanation of how the uplink frequency bands are connected to the downlink frequency bands is as follows:

- the uplink frequency band 5.85-6.425 GHz is connected to the downlink band 3.7-4.2 GHz;
- the uplink frequency band 14-14.251 GHz that is used over the U.S. territories as defined in Schedule S[4] is connected to the downlink band 11.45-11.7 GHz.

The polarization used for the C-Band and Ku-band communication signals is linear. Frequency reuse will be exploited through the use of orthogonal polarization and geographical isolation of the beams. All transponders will contain step attenuators which can be adjusted remotely by ground commands.

[2] The upper frequency limit will be 14.125 GHz, but the drop-down Schedule S memo goes up to 14.5 GHz.
[3] *See* 47 C.F.R. §2.106
[4] See fn 2.

The satellite TT&C operations will be performed from the two locations as listed below.

1) Hawaii Pacific Teleport
   91-340 Farrington Hwy
   Kaploei, Hawaii USA. 96707

2) APT Satellite Company Ltd.
   22 Dai Kwai Street
   Tai Po Industrial Estate
   Tai Po, NT,
   Hong Kong

The TT&C frequencies and polarization plan are provided in the Schedule S.

Satellite transmission on each transponder can be individually turned on and off by ground command signals, enabling cessation of emissions from the satellite, as required by §25.207[5] of the Commission's rules.

Analysis of the satellite antenna gain contours and the peak EIRP density verified that the PFD limits of §25.208[6] as well as the PFD limits of the ITU Radio Regulations, are met in all the operating frequency bands. Details are provided in Schedule S.

The information specified in §25.140(a)(3)[7],as required by §25.114(d)(7)[8], is presented below.[9]

The worst-case downlink EIRP densities for Std C/Ext C and Ext Ku band for T18V are presented in Table 2. As shown in the table, all the EIRP densities are within the allowable values.

Table 2: Satellite Downlink EIRP Density

Description	Unit	Std-C	Ext-C	Ext-Ku
Min Transponder BW	MHz	36	54	54
Max Transponder EIRP	dBW	42.3	42.0	50.0
EIRP Density	dBW/Hz	-33.3	-35.3	-27.4

[5] 47 C.F.R. §25.207
[6] 47 C.F.R. §25.208
[7] 47 C.F.R. §25.140(a)
[8] 47 C.R.R §25.114(d)
[9] See Section A7 for the information required by §25.140(a)(2).

EIRP Density	dBW/4Hz	2.8	0.7	8.7
EIRP Density Limit	dBW/4Hz	3	3	14
Margin	dB	0.2	2.3	5.3

The worst-case uplink EIRP densities for associated uplink operation in Std C/Ext C and Ext Ku band for T18V are presented in Table 3, 4 and 5. As shown in the tables, all the EIRP densities are within the allowable values.

Table 3: Satellite Uplink EIRP Density C and Ext C

C and Ext C			
EIRP density mask	**Angle**	**Ant Gain mask**	
dBW/4KHz		dBi	
26.3-25log(Θ)	$1.5^o \le \Theta \le 7^o$	29-25log(Θ)	
5.3	$7^o < \Theta \le 9.2^o$	29-25log(Θ)	
29.3-25log(Θ)	$9.2^o < \Theta \le 48^o$	29-25log(Θ)	
-12.7	$48^o < \Theta \le 180^o$	-10	
LB Ant PFD (dBW/Hz)		-51.7	**9.3m**
Ant PFD (dBW/4KHz)		**-15.7**	
Offset Angle	**Limit**	**U/L EIRP Density**	**Margin**
	dBW/4KHz	dBW/4KHz	dB
2	18.8	5.8	13.0
6.5	6.0	-7.0	13.0
8	5.3	-9.3	14.6
10	4.3	-11.7	16.0
50	-12.7	-25.7	13.0

Table 4: Satellite Uplink EIRP Density STD Ku

Std Ku			
EIRP density mask	**Angle**	**Ant Gain mask**	
dBW/4KHz		dBi	
15-25log(Θ)	$1.5^o \le \Theta \le 7^o$	29-25log(Θ)	
-6	$7^o < \Theta \le 9.2^o$	29-25log(Θ)	
18-25log(Θ)	$9.2^o < \Theta \le 19.1^o$	29-25log(Θ)	
-14	$19.1^o < \Theta \le 180^o$	-10	
LB Ant PFD (dBW/Hz)		-50.5	**6.3m ant**
Ant PFD (dBW/4KHz)		**-14.5**	
Offset Angle	**Limit**	**U/L EIRP Density**	**Margin**
	dBW/4KHz	dBW/4KHz	dB
2	7.5	7.0	0.5
6.5	-5.3	-5.8	0.5
8	-6	-8.1	2.1
10	-7.0	-10.5	3.5
50	-14	-24.5	10.5

Table 5: Satellite Uplink EIRP Density EXT Ku

Ext Ku			
EIRP density mask	**Angle**	**Ant Gain mask**	
dBW/4KHz		dBi	
15-25log(Θ)	$1.5^o \le \Theta \le 7^o$	29-25log(Θ)	
-6	$7^o < \Theta \le 9.2^o$	29-25log(Θ)	
18-25log(Θ)	$9.2^o < \Theta \le 48^o$	29-25log(Θ)	
-24	$48^o < \Theta \le 180^o$	-10	
LB Ant PFD (dBW/Hz)		-50.3	**6.3m ant**
Ant PFD (dBW/4KHz)		**-14.3**	
Offset Angle	**Limit**	**U/L EIRP Density**	**Margin**
	dBW/4KHz	dBW/4KHz	dB
2	7.5	7.2	0.3
6.5	-5.3	-5.6	0.3
8	-6	-7.9	1.9
10	-7.0	-10.3	3.3
50	-24	-24.3	0.3

A3. Space station antenna gain contours

The copol antenna gain contours for the beams of the T18V satellite have been provided in the GIMS database "GIMS_DB_T18V.mdb", which is submitted separately.

A4. §25.114(d)(6): Public interest considerations in support of grant

The legal narrative demonstrates that a grant is in the public interest.

A5. Link noise budgets

Typical link budgets are described in Table 6. Tables 7-17 provide the associated link budgets.

Table 6: Satellite downlink EIRP Density

Table	Teleport	Remote	Band
7	Kapolei	Malaysia	C STD
8	Kapolei	Malaysia	C EXT
9	Kapolei	Guam	Ku
10	Kapolei	Australia	Ku
11	Kapolei	Australia	Ku

Table 7: Typical link budget in standard C band

Name	FWD STD C band	RTN STD C band
Transponder BW [MHz]	36	36
TX ES Location	Hawaii Pacific Teleport/U.S.A.	KIJAL/Malaysia
RX ES Location	KIJAL/Malaysia	Hawaii Pacific Teleport/U.S.A.
Emission BW [MHz]	12	2.4
Modulation type	16APSK	16APSK
Information (bit) rate [Mbps]	28.96	6.06
FEC Rate	0.72	0.76
Uplink Center Frequency [MHz]	6025.00	6025.00
Uplink ES antenna diameter [m]	9.30	3.80
Effective Uplink PSD at Antenna Input Flange [dBW/Hz]	-51.70	-51.50
Uplink EIRP [dBW]	71.80	57.29
Uplink Atmospheric Loss [dB]	0.35	47.36
Uplink Free-Space Loss [dB]	200.08	199.44
Transponder G/T in Direction of Tx E/S [dB/K]	-6.00	0.65
Uplink Thermal C/N [dB]	23.77	23.77
Uplink C/I (ASI) [dB]	24.56	24.56
Uplink CCI (Xpol,Copol) C/I [dB]	30.01	30.02
Transponder HPA Intermodulation C/IM [dB]	18.23	18.23
Downlink Center Frequency (MHz)	3800.00	3800.00
Carrier Downlink EIRP (Towards Receive E/S) [dBW]	34.71	22.32
Carrier Downlink Power Density [dBW/Hz]	-34.99	-34.99
Downlink Free-Space Loss [dB]	195.43	196.08
Downlink Atmospheric Loss [dB]	0.10	28.02
RX ES antenna diameter [m]	3.80	9.30
Effective Rx E/S G/T [dB/K]	22.37	27.87
Downlink Thermal C/N [dB]	19.94	19.21
Downlink C/I (ASI) [dB]	17.24	18.73
Downlink CCI (Xpol,Copol) C/I [dB]	27.00	27.00
Overall Link C/(N+I) [dB]	12.61	12.92
Required C/(N+I) [dB]	11.21	11.61
Margin [dB]	1.40	1.30

Table 8: Typical link budget in extended C band

Name	FWD EXT C band	RTN EXT C band
Transponder BW [MHz]	72	72
TX ES Location	Hawaii Pacific Teleport/U.S.A.	KIJAL/Malaysia
RX ES Location	KIJAL/Malaysia	Hawaii Pacific Teleport/U.S.A.
Emission BW [MHz]	12	2.4
Modulation type	8PSK	16APSK
Information (bit) rate [Mbps]	21.77	5.08
FEC Rate	0.73	0.64
Uplink Center Frequency [MHz]	6466.00	6466.00
Uplink ES antenna diameter [m]	9.30	3.80
Effective Uplink PSD at Antenna Input Flange [dBW/Hz]	-52.80	-53.00
Uplink EIRP [dBW]	71.35	56.38
Uplink Atmospheric Loss [dB]	0.36	46.27
Uplink Free-Space Loss [dB]	200.70	200.05
Transponder G/T in Direction of Tx E/S [dB/K]	-6.55	0.56
Uplink Thermal C/N [dB]	22.15	22.15
Uplink C/I (ASI) [dB]	23.47	23.48
Uplink CCI (Xpol,Copol) C/I [dB]	32.00	32.00
Transponder HPA Intermodulation C/IM [dB]	18.23	18.23
Downlink Center Frequency (MHz)	3441.00	3441.00
Carrier Downlink EIRP (Towards Receive E/S) [dBW]	30.62	18.79
Carrier Downlink Power Density [dBW/Hz]	-39.02	-39.02
Downlink Free-Space Loss [dB]	194.57	195.22
Downlink Atmospheric Loss [dB]	0.10	23.99
RX ES antenna diameter [m]	3.80	9.30
Effective Rx E/S G/T [dB/K]	21.50	27.01
Downlink Thermal C/N [dB]	15.86	15.70
Downlink C/I (ASI) [dB]	12.29	14.35
Downlink CCI (Xpol,Copol) C/I [dB]	27.00	27.00
Overall Link C/(N+I) [dB]	9.46	10.37
Required C/(N+I) [dB]	8.41	9.35
Margin [dB]	1.05	1.02

Table 9: Typical link budget in Australia-New Zealand Ku band to Guam

Name	FWD ANZ EXT Ku band GUAM	RTN ANZ EXT Ku band GUAM
Transponder BW [MHz]	54	54
TX ES Location	Kapolei, HI/U.S.A.	Guam/U.S.A.
RX ES Location	Guam/U.S.A.	Kapolei, HI/U.S.A.
Emission BW [MHz]	12	2.4
Modulation type	16APSK	16APSK
Information (bit) rate [Mbps]	25.75	5.86
FEC Rate	0.64	0.73
Uplink Center Frequency [MHz]	14041.50	14041.50
Uplink ES antenna diameter [m]	6.30	2.40
Effective Uplink PSD at Antenna Input Flange [dBW/Hz]	-51.90	-48.30
Uplink EIRP [dBW]	75.57	63.80
Uplink Atmospheric Loss [dB]	0.70	47.52
Uplink Free-Space Loss [dB]	207.43	206.53
Transponder G/T in Direction of Tx E/S [dB/K]	-6.09	-2.51
Uplink Thermal C/N [dB]	19.64	19.65
Uplink C/I (ASI) [dB]	35.62	35.62
Uplink CCI (Xpol,Copol) C/I [dB]	22.18	22.18
Transponder HPA Intermodulation C/IM [dB]	16.47	16.47
Downlink Center Frequency (MHz)	11481.50	11481.50
Carrier Downlink EIRP (Towards Receive E/S) [dBW]	35.51	25.20
Carrier Downlink Power Density [dBW/Hz]	-30.42	-30.42
Downlink Free-Space Loss [dB]	204.78	205.68
Downlink Atmospheric Loss [dB]	0.16	32.59
RX ES antenna diameter [m]	2.40	6.30
Effective Rx E/S G/T [dB/K]	25.46	34.22
Downlink Thermal C/N [dB]	14.12	18.47
Downlink C/I (ASI) [dB]	36.74	40.57
Downlink CCI (Xpol,Copol) C/I [dB]	25.41	25.41
Overall Link C/(N+I) [dB]	10.88	12.45
Required C/(N+I) [dB]	9.97	10.97
Margin [dB]	0.92	1.47

Table 10: Typical link budget in Australia-New Zealand Ku band to Sydney

Name	FWD ANZ EXT Ku band SYD	RTN ANZ EXT Ku band SYD
Transponder BW [MHz]	54	54
TX ES Location	Kapolei, HI/U.S.A.	Sydney/Australia
RX ES Location	Sydney/Australia	Kapolei, HI/U.S.A.
Emission BW [MHz]	12	2.4
Modulation type	16APSK	16APSK
Information (bit) rate [Mbps]	25.75	5.86
FEC Rate	0.64	0.73
Uplink Center Frequency [MHz]	14041.50	14041.50
Uplink ES antenna diameter [m]	6.30	2.40
Effective Uplink PSD at Antenna Input Flange [dBW/Hz]	-51.90	-51.50
Uplink EIRP [dBW]	75.57	60.61
Uplink Atmospheric Loss [dB]	0.70	47.52
Uplink Free-Space Loss [dB]	207.43	206.81
Transponder G/T in Direction of Tx E/S [dB/K]	-6.09	1.01
Uplink Thermal C/N [dB]	19.64	19.64
Uplink C/I (ASI) [dB]	35.62	35.62
Uplink CCI (Xpol,Copol) C/I [dB]	22.18	22.18
Transponder HPA Intermodulation C/IM [dB]	16.47	16.47
Downlink Center Frequency (MHz)	11481.50	11481.50
Carrier Downlink EIRP (Towards Receive E/S) [dBW]	37.98	25.20
Carrier Downlink Power Density [dBW/Hz]	-30.42	-30.42
Downlink Free-Space Loss [dB]	205.06	205.68
Downlink Atmospheric Loss [dB]	0.21	32.59
RX ES antenna diameter [m]	2.40	6.30
Effective Rx E/S G/T [dB/K]	25.46	34.22
Downlink Thermal C/N [dB]	16.27	18.46
Downlink C/I (ASI) [dB]	38.87	40.57
Downlink CCI (Xpol,Copol) C/I [dB]	25.41	25.41
Overall Link C/(N+I) [dB]	11.78	12.44
Required C/(N+I) [dB]	9.97	10.97
Margin [dB]	1.81	1.47

Table 11: Typical link budget in North Pacific Ku band

Name	FWD NP EXT Ku band	RTN NP EXT Ku band
Transponder BW [MHz]	54	54
TX ES Location	Kapolei, HI/U.S.A.	Midway Atoll/U.S.A.
RX ES Location	Midway Atoll/U.S.A.	Kapolei, HI/U.S.A.
Emission BW [MHz]	12	2.4
Modulation type	16APSK	16APSK
Information (bit) rate [Mbps]	25.7480	6.0560
FEC Rate	0.6437	0.7570
Uplink Center Frequency [MHz]	14041.50	14041.50
Uplink ES antenna diameter [m]	6.3000	2.4000
Effective Uplink PSD at Antenna Input Flange [dBW/Hz]	-60.3000	-53.8000
Uplink EIRP [dBW]	67.2205	58.3389
Uplink Atmospheric Loss [dB]	0.7023	47.7408
Uplink Free-Space Loss [dB]	207.4326	207.1012
Transponder G/T in Direction of Tx E/S [dB/K]	0.9176	2.3428
Uplink Thermal C/N [dB]	18.3032	18.3032
Uplink C/I (ASI) [dB]	32.3408	32.3408
Uplink CCI (Xpol,Copol) C/I [dB]	23.6708	23.6708
Transponder HPA Intermodulation C/IM [dB]	16.4672	16.4672
Downlink Center Frequency (MHz)	11481.50	11481.50
Carrier Downlink EIRP (Towards Receive E/S) [dBW]	39.8336	29.3337
Carrier Downlink Power Density [dBW/Hz]	-29.3828	-29.3828
Downlink Free-Space Loss [dB]	205.3529	205.6843
Downlink Atmospheric Loss [dB]	0.2932	33.6275
RX ES antenna diameter [m]	2.4000	6.3000
Effective Rx E/S G/T [dB/K]	25.4555	34.2207
Downlink Thermal C/N [dB]	17.7430	22.5987
Downlink C/I (ASI) [dB]	31.9862	36.3507
Downlink CCI (Xpol,Copol) C/I [dB]	22.7572	22.7572
Overall Link C/(N+I) [dB]	11.8722	12.7359
Required C/(N+I) [dB]	9.9674	11.6116
Margin [dB]	1.9047	1.1244

A7. §25.114(d)(7): Information specified in §25.140(a)(2) (Interference analysis and the compatibility of the proposed system with respect to authorized space stations within two degrees of T18V)

Currently, the FCC database indicates that there are no US licensed satellites within two degrees of 138° EL with frequency bands that overlap with the T18V operating frequency bands.

However, there are three non FCC approved satellites within two degree of 138° EL:

- N-STAR at 136° EL in C and Ext-C band
- AM-3 at 140° EL in C and Ext-C band
- AM-5 at 140° EL in Ku and Ext-Ku band

The Tonga ITU networks under which T18V will operate have been coordinated with the Japanese and Russian ITU networks under which N-STAR, EXPRESS AM-3 and EXPRESS AM-5 operate.

A8. §25.114(d)(14): Description of the design and operational strategies that will be used to mitigate orbital debris

§25.114(d)(14)(i), Debris Release Assessment. The T18V satellite is designed so that during its normal operation it will release no debris. The spacecraft hardware of T18V is designed so that individual faults will not cause the loss of the entire spacecraft. All critical components (e.g., computers and control devices) are built within the structure and shielded from external influences. Items that are not built within the spacecraft nor shielded (e.g., antennas) are able to withstand impact. The spacecraft can be controlled through both the normal payload antennas and wide angle antennas. The likelihood of both being damaged during a small body collision is minimal. The wide angle antennas on this spacecraft are open waveguides that point towards the earth (there is one set on each side of the spacecraft and either set could be used to successfully de-orbit the spacecraft). These wide angle antennas would continue to operate even if struck and bent.

§25.114(d)(14)(ii), Accidental Explosion Assessment. Telesat has reviewed failure modes for all equipment to assess the possibility of an accidental explosion onboard the spacecraft. In order to ensure that the spacecraft does not explode on orbit, Telesat takes specific precautions. All batteries and fuel tanks are monitored for pressure or temperature variations. Alarms in the Satellite Control Center inform controllers of any variations. Additionally, long-term trending analysis is performed to monitor for any unexpected trends.

The batteries are operated utilizing the manufacturer's automatic recharging scheme. Doing so ensures that charging terminates normally without building up additional heat and pressure. As this process occurs wholly within the spacecraft, it also affords protection from command link failures (on the ground).

In order to ensure that the spacecraft has no explosive risk after it is successfully de-orbited, all stored energy sources onboard the spacecraft will be removed by venting the remaining propellant and venting the remaining helium pressurant. All propulsion lines and latch valves will be vented and left open. All battery chargers will be turned off and batteries will be left in a permanent discharge state. These steps will ensure that no buildup of energy can occur and therefore eliminate the risk of explosion in the years after the spacecraft is de-orbited.

§25.114(d)(14)(iii), Assessment Regarding Collision with Larger Debris and Other Space Stations. The T18V satellite will be operating at the 138° EL orbital location. Currently Telesat operates the Telstar 18 satellite at 138° EL. The Telstar 18 satellite has been operating at this orbital location since 2004 and Telesat has continuously monitored and minimized the probability of the space station becoming a source of debris due to collisions with large debris or other space stations. Telesat will use this same approach for T18V to minimize the probability of collisions with large debris.

Telesat will control Telstar T18V within the same orbital 'box' of 138° EL±0.05° as T18. Satellite maneuvers will be carefully managed to ensure that a safe flight profile is maintained at all times and that the risk of a physical collision is negligible.

In order to protect against collision with other orbiting objects, Telesat has a contract with MIT/Lincoln Labs to provide notification and high-precision orbits for drifter objects when close approaches with our operational satellites are projected. Processing of the notifications is fully automated to ensure efficient response should avoidance maneuver(s) be required to eliminate any threat of collision with a drifter object. For nearby operational satellites Telesat coordinates with operators directly and/or by providing ephemerides to the Space Data Center and the Joint Space Operations Center (JSpOC). The JSpOC also provides notifications to Telesat for any object they see approaching a Telesat satellite.

To further limit future potential for collision, Telesat will continue to monitor new satellite launches to ensure that future satellites do not present a danger to T18V. If a new satellite is located in the vicinity of T18V, Telesat will coordinate station keeping activities with the satellite operator to avoid any risk of collision.

§25.114(d)(14)(iv), Post-Mission Disposal Plans. At the end of life, the T18V satellite will be removed from its geostationary orbit at 138° EL and boosted to an orbit with a perigee altitude no less than 291 km above the geostationary orbit of 35786 km. This altitude is determined by using the FCC-recommended equation in §25.283(a) regarding end-of-life satellite disposal. The calculations for the T18V satellite are presented below:

$$\text{Minimum De-orbit Altitude} = 36021 \text{ km} + (1000 \times CR \times A/m)$$

Where:
CR = solar pressure radiation coefficient of the spacecraft = 1.20
A/m = area to mass ratio, in square meters per kilogram, of the spacecraft = 0.047
Resulting in:
Minimum De-orbit Altitude = 36021 km + (1000×1.20×0.047)
= 36077 km
(i.e. 291 km above the geostationary orbit of 35786 km)

The propellant needed to achieve the minimum de-orbit altitude is based on the delta-V required. Based on an estimated end-of-life mass of 3009 kg, and the delta-V required, approximately 2.5 kg of Xenon propellant will be reserved to ensure minimum de-orbit altitude is obtained or exceeded. Any remaining propellant will be consumed by further raising the orbit until depletion. Any residual propellants, both xenon and any remaining Oxidizer (N204) or Fuel (MMH), will be depleted either by depletion burns or venting, placing the propulsion system on the spacecraft in "safe" mode.

Propellant tracking is accomplished using a bookkeeping method as per industry standard. Using this method, the ground control station tracks the number of jet seconds utilized for station keeping, momentum control and other attitude control events. The amount of propellant used is determined from the number of jet seconds. This process is calibrated using data collected from thruster tests conducted on the ground. In addition, for each of the Xenon, Oxidizer and Fuel tanks, the propellant remaining can also be determined using the thermodynamic state parameters, a method referred to as the Pressure-Volume-Temperature (PVT) method. This method uses tank pressure and temperature information to determine the amount of propellant remaining. Combined with the bookkeeping method, the propellant remaining estimates are found to be accurate to within +/- 3 months of life on the spacecraft for Xenon and within +/- 10kg for Oxidizer and Fuel.

Propellant Gauging System (PGS) tests can be performed throughout the operational life on the Oxidizer and Fuel tanks. This test uses heaters and heat transfer curves to determine the actual fuel still aboard the spacecraft. As the amount of fuel in the tanks decreases, the accuracy of the test results increases. Therefore, operationally, the PGS tests will be performed as the satellite approaches its end of propellant life in order to verify bookkeeping results.

CERTIFICATION OF PERSON RESPONSIBLE FOR PREPARING ENGINEERING INFORMATION

I hereby certify that I am the technically qualified person responsible for preparation of the engineering information contained in this application, that I am familiar with Part 25 of the Commission's rules, that I have either prepared or reviewed the engineering information submitted in this application and that it is complete and accurate to the best of my knowledge and belief.

Richard Thommes
Communication Systems Engineer
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September 21, 2018

EXHIBIT 3

Approved by OMB 3060-0678
Estimated Burden: up to 80 hours
April 2016

Federal Communications Commission

(DRAFT COPY - Not for submission) Schedule S

312 File Number:

Filing Description

Question	Response
Description	The T18V satellite network will consist of a geostationary satellite at 138 EL and associated earth station facilities. Three of its wide regional beams serve the United States and its territories, incl. Hawaii, Guam, and the Aleutian Arc in Alaska.

Satellite Information

Question	Response
Select Orbit Type	GSO
Space Station or Satellite Network Name	Telstar 18 Vantage
Estimated Lifetime of Satellite(s) From Date of Launch	15 Years
Will the space station(s) operate on a Common Carrier basis?	No

Operating Frequency Bands (7)

Nature of service	Description	Frequency Band(s)	Mode Type
Fixed-Satellite Service		3600.0 MHz -3700.0 MHz	Transmit
Fixed-Satellite Service		3700.0 MHz -4200.0 MHz	Transmit
Fixed-Satellite Service		11450.0 MHz -11700.0 MHz	Transmit
Fixed-Satellite Service		5850.0 MHz -5925.0 MHz	Receive
Fixed-Satellite Service		5925.0 MHz -6425.0 MHz	Receive
Fixed-Satellite Service		6425.0 MHz -6725.0 MHz	Receive
Fixed-Satellite Service		14000.0 MHz -14500.0 MHz	Receive

Orbital Information For Geostationary Satellites

Section	Question	Response
Orbital Longitude Information	Orbital Longitude	138.0 degrees
	Hemisphere of Orbital Longitude	E
Longitudinal Tolerance or East /West Station-Keeping	Toward West	0.05 degrees
	Toward East	0.05 degrees
Inclination Excursion or North /South Station-Keeping Tolerance	Inclination Excursion or North /South Station-Keeping Tolerance	0.05 degrees
Antenna Axis Attitude Accuracy	Roll	0.05 degrees
	Pitch	0.05 degrees
	Yaw	0.05 degrees

Receiving Beams 1:

Question	Response
Beam ID	AN1R
Receive Beam Frequency	14014.5 MHz -14068.5 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	5.23 dB/K
Min. Saturation Flux Density	-98.23 dBW/m2
Max. Saturation Flux Density	-67.23 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam AN for both the Service Area and the Antenna Gain Data.

Receiving Beams 2:

Question	Response
Beam ID	01AR
Receive Beam Frequency	5853.0 MHz -5883.0 MHz

Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.0 dB/K
Min. Saturation Flux Density	-105.0 dBW/m2
Max. Saturation Flux Density	-74.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 3:

Question	Response
Beam ID	03AR
Receive Beam Frequency	5927.0 MHz -5963.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi

Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.08 dB/K
Min. Saturation Flux Density	-105.1 dBW/m2
Max. Saturation Flux Density	-74.1 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 4:

Question	Response
Beam ID	AN2R
Receive Beam Frequency	14075.5 MHz -14129.5 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	5.28 dB/K
Min. Saturation Flux Density	-98.28 dBW/m2
Max. Saturation Flux Density	-67.28 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam AN for both the Service Area and the Antenna Gain Data.

Receiving Beams 5:

Question	Response
Beam ID	AN3R
Receive Beam Frequency	14136.5 MHz -14190.5 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees

G/T at Max. Gain Point	5.32 dB/K
Min. Saturation Flux Density	-98.32 dBW/m2
Max. Saturation Flux Density	-67.32 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam AN for both the Service Area and the Antenna Gain Data.

Receiving Beams 6:

Question	Response
Beam ID	AN4R
Receive Beam Frequency	14197.5 MHz -14251.5 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	5.35 dB/K
Min. Saturation Flux Density	-98.35 dBW/m2

Max. Saturation Flux Density	-67.35 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam AN for both the Service Area and the Antenna Gain Data.

Receiving Beams 7:

Question	Response
Beam ID	01BR
Receive Beam Frequency	5852.0 MHz -5902.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	1.94 dB/K
Min. Saturation Flux Density	-104.9 dBW/m2
Max. Saturation Flux Density	-73.94 dBW/m2
Co- or Cross Polar Mode	C

Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 8:

Question	Response
Beam ID	02AR
Receive Beam Frequency	5887.0 MHz -5923.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	0.1 degrees
G/T at Max. Gain Point	2.06 dB/K
Min. Saturation Flux Density	-105.1 dBW/m2
Max. Saturation Flux Density	-74.1 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving

Beams 9:

Question	Response
Beam ID	03BR
Receive Beam Frequency	5947.0 MHz -5983.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.01 dB/K
Min. Saturation Flux Density	-105.0 dBW/m2
Max. Saturation Flux Density	-74.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 10:

Question	Response
Beam ID	04AR
Receive Beam Frequency	5967.0 MHz -6003.0 MHz

Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.07 dB/K
Min. Saturation Flux Density	-105.1 dBW/m2
Max. Saturation Flux Density	-74.1 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 11:

Question	Response
Beam ID	04BR
Receive Beam Frequency	5987.0 MHz -6023.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi

Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.02 dB/K
Min. Saturation Flux Density	-105.0 dBW/m2
Max. Saturation Flux Density	-74.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 12:

Question	Response
Beam ID	05AR
Receive Beam Frequency	6007.0 MHz -6043.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees

Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.09 dB/K
Min. Saturation Flux Density	-105.1 dBW/m2
Max. Saturation Flux Density	-74.1 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 13:

Question	Response
Beam ID	05BR
Receive Beam Frequency	6027.0 MHz -6063.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No

Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.0 dB/K
Min. Saturation Flux Density	-105.0 dBW/m2
Max. Saturation Flux Density	-74.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 14:

Question	Response
Beam ID	06AR
Receive Beam Frequency	6047.0 MHz -6083.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees

G/T at Max. Gain Point	2.08 dB/K
Min. Saturation Flux Density	-105.1 dBW/m2
Max. Saturation Flux Density	-74.1 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 15:

Question	Response
Beam ID	06BR
Receive Beam Frequency	6067.0 MHz -6103.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.0 dB/K
Min. Saturation Flux Density	-105.0 dBW/m2

Max. Saturation Flux Density	-74.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 16:

Question	Response
Beam ID	07AR
Receive Beam Frequency	6087.0 MHz -6123.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.1 dB/K
Min. Saturation Flux Density	-105.1 dBW/m2
Max. Saturation Flux Density	-74.1 dBW/m2
Co- or Cross Polar Mode	C

Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 17:

Question	Response
Beam ID	07BR
Receive Beam Frequency	6107.0 MHz -6143.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.02 dB/K
Min. Saturation Flux Density	-105.0 dBW/m2
Max. Saturation Flux Density	-74.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving

Beams 18:

Question	Response
Beam ID	08AR
Receive Beam Frequency	6127.0 MHz -6163.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.02 dB/K
Min. Saturation Flux Density	-105.0 dBW/m2
Max. Saturation Flux Density	-74.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 19:

Question	Response
Beam ID	08BR
Receive Beam Frequency	6147.0 MHz -6183.0 MHz

Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.02 dB/K
Min. Saturation Flux Density	-105.0 dBW/m2
Max. Saturation Flux Density	-74.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 20:

Question	Response
Beam ID	09AR
Receive Beam Frequency	6167.0 MHz -6203.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi

Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.07 dB/K
Min. Saturation Flux Density	-105.1 dBW/m2
Max. Saturation Flux Density	-74.1 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 21:

Question	Response
Beam ID	09BR
Receive Beam Frequency	6187.0 MHz -6223.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees

Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.07 dB/K
Min. Saturation Flux Density	-105.1 dBW/m2
Max. Saturation Flux Density	-74.1 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 22:

Question	Response
Beam ID	10AR
Receive Beam Frequency	6207.0 MHz -6243.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No

Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.19 dB/K
Min. Saturation Flux Density	-105.2 dBW/m2
Max. Saturation Flux Density	-74.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 23:

Question	Response
Beam ID	10BR
Receive Beam Frequency	6227.0 MHz -6263.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees

G/T at Max. Gain Point	2.11 dB/K
Min. Saturation Flux Density	-105.1 dBW/m2
Max. Saturation Flux Density	-74.1 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 24:

Question	Response
Beam ID	11AR
Receive Beam Frequency	6247.0 MHz -6283.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.23 dB/K
Min. Saturation Flux Density	-105.2 dBW/m2

Max. Saturation Flux Density	-74.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 25:

Question	Response
Beam ID	11BR
Receive Beam Frequency	6267.0 MHz -6303.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.14 dB/K
Min. Saturation Flux Density	-105.1 dBW/m2
Max. Saturation Flux Density	-74.1 dBW/m2
Co- or Cross Polar Mode	C

Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 26:

Question	Response
Beam ID	12AR
Receive Beam Frequency	6287.0 MHz -6323.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.24 dB/K
Min. Saturation Flux Density	-105.2 dBW/m2
Max. Saturation Flux Density	-74.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving

Beams 27:

Question	Response
Beam ID	12BR
Receive Beam Frequency	6307.0 MHz -6343.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.2 dB/K
Min. Saturation Flux Density	-105.2 dBW/m2
Max. Saturation Flux Density	-74.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 28:

Question	Response
Beam ID	13AR
Receive Beam Frequency	6327.0 MHz -6363.0 MHz

Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.27 dB/K
Min. Saturation Flux Density	-105.3 dBW/m2
Max. Saturation Flux Density	-74.3 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 29:

Question	Response
Beam ID	13BR
Receive Beam Frequency	6347.0 MHz -6383.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi

Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.23 dB/K
Min. Saturation Flux Density	-105.2 dBW/m2
Max. Saturation Flux Density	-74.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 30:

Question	Response
Beam ID	14AR
Receive Beam Frequency	6368.0 MHz -6418.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees

Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.22 dB/K
Min. Saturation Flux Density	-105.2 dBW/m2
Max. Saturation Flux Density	-74.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 31:

Question	Response
Beam ID	14BR
Receive Beam Frequency	6387.0 MHz -6423.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No

Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.21 dB/K
Min. Saturation Flux Density	-105.2 dBW/m2
Max. Saturation Flux Density	-74.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 32:

Question	Response
Beam ID	NP1R
Receive Beam Frequency	14014.5 MHz -14068.5 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	3.89 dB/K

Min. Saturation Flux Density	-98.9 dBW/m2
Max. Saturation Flux Density	-67.9 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam NP for both the Service Area and the Antenna Gain Data.

Receiving Beams 33:

Question	Response
Beam ID	NP2R
Receive Beam Frequency	14136.5 MHz -14190.5 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	3.92 dB/K
Min. Saturation Flux Density	-98.9 dBW/m2
Max. Saturation Flux Density	-67.9 dBW/m2

Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam NP for both the Service Area and the Antenna Gain Data.

Receiving Beams 34:

Question	Response
Beam ID	02BR
Receive Beam Frequency	5907.0 MHz -5925.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.01 dB/K
Min. Saturation Flux Density	-108.0 dBW/m2
Max. Saturation Flux Density	-77.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 35:

Question	Response
Beam ID	02bR
Receive Beam Frequency	5925.0 MHz -5943.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	2.01 dB/K
Min. Saturation Flux Density	-108.0 dBW/m2
Max. Saturation Flux Density	-77.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam C_STD for both the Service Area and the Antenna Gain Data.

Receiving Beams 36:

Question	Response
Beam ID	CM1

Receive Beam Frequency	6646.5 MHz -6647.5 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	0.1 degrees
G/T at Max. Gain Point	-19.0 dB/K
Min. Saturation Flux Density	-100.0 dBW/m2
Max. Saturation Flux Density	-80.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam CM1 for both the Service Area and the Antenna Gain Data.

Receiving Beams 37:

Question	Response
Beam ID	CM2
Receive Beam Frequency	6422.5 MHz -6423.5 MHz
Beam Type	Fixed
Polarization	V

Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	-19.3 dB/K
Min. Saturation Flux Density	-100.0 dBW/m2
Max. Saturation Flux Density	-80.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam CM2 for both the Service Area and the Antenna Gain Data.

Receiving Beams 38:

Question	Response
Beam ID	CM3
Receive Beam Frequency	6648.5 MHz -6649.5 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees

Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	-19.0 dB/K
Min. Saturation Flux Density	-100.0 dBW/m2
Max. Saturation Flux Density	-80.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam CM3 for both the Service Area and the Antenna Gain Data.

Receiving Beams 39:

Question	Response
Beam ID	CM4
Receive Beam Frequency	6424.7 MHz -6425.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees

G/T at Max. Gain Point	-19.4 dB/K
Min. Saturation Flux Density	-103.0 dBW/m2
Max. Saturation Flux Density	-83.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam CM4 for both the Service Area and the Antenna Gain Data.

Receiving Beams 40:

Question	Response
Beam ID	Cm4
Receive Beam Frequency	6425.0 MHz -6425.3 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	-19.4 dB/K
Min. Saturation Flux Density	-103.0 dBW/m2

Max. Saturation Flux Density	-83.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Receive Beam CM4 for both the Service Area and the Antenna Gain Data.

Receiving Channels (40)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
04AR	36.0	5985.0	Feeder Link
AN4R	54.0	14224.5	Feeder Link
AN2R	54.0	14102.5	Feeder Link
14BR	36.0	6405.0	Feeder Link
14AR	50.0	6393.0	Feeder Link
13BR	36.0	6365.0	Feeder Link
13AR	36.0	6345.0	Feeder Link
AN1R	54.0	14041.5	Feeder Link
12BR	36.0	6325.0	Feeder Link
11BR	36.0	6285.0	Feeder Link
11AR	36.0	6265.0	Feeder Link
09BR	36.0	6205.0	Feeder Link
09AR	36.0	6185.0	Feeder Link
08BR	36.0	6165.0	Feeder Link
03AR	36.0	5945.0	Feeder Link
02AR	36.0	5905.0	Feeder Link
01BR	50.0	5877.0	Feeder Link
04BR	36.0	6005.0	Feeder Link
06AR	36.0	6065.0	Feeder Link
10BR	36.0	6245.0	Feeder Link
10AR	36.0	6225.0	Feeder Link
01AR	30.0	5868.0	Feeder Link
AN3R	54.0	14163.5	Feeder Link
07AR	36.0	6105.0	Feeder Link

07BR	36.0	6125.0	Feeder Link
08AR	36.0	6145.0	Feeder Link
12AR	36.0	6305.0	Feeder Link
06BR	36.0	6085.0	Feeder Link
05AR	36.0	6025.0	Feeder Link
03BR	36.0	5965.0	Feeder Link
05BR	36.0	6045.0	Feeder Link
NP2R	54.0	14163.5	Feeder Link
NP1R	54.0	14041.5	Feeder Link
02bR	18.0	5934.0	Feeder Link
02BR	18.0	5916.0	Feeder Link
Cm4	0.3	6425.15	TT&C
CM4	0.3	6424.85	TT&C
CM3	1.0	6649.0	TT&C
CM2	1.0	6423.0	TT&C
CM1	1.0	6647.0	TT&C

Transmitting Beams 1:

Question	Response
Beam ID	AN1T
Transmit Beam Frequency	11454.5 MHz -11508.5 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-28.21 dBW/Hz
Max. Transmit EIRP	49.11 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam AN for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-154.2	-154.2	-154.2	-154.2	-154.2	-154.2

Transmitting Beams 2:

Question	Response
Beam ID	AN2T
Transmit Beam Frequency	11515.5 MHz -11569.5 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-28.14 dBW/Hz
Max. Transmit EIRP	49.18 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam AN for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-154.2	-154.2	-154.2	-154.2	-154.2	-154.2

Transmitting Beams 3:

Question	Response
Beam ID	AN3T
Transmit Beam Frequency	11576.5 MHz -11630.5 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-28.5 dBW/Hz
Max. Transmit EIRP	48.82 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam AN for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-154.5	-154.5	-154.5	-154.5	-154.5	-154.5

Transmitting Beams 4:

Question	Response
Beam ID	AN4T
Transmit Beam Frequency	11637.5 MHz -11691.5 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-28.58 dBW/Hz
Max. Transmit EIRP	48.74 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam AN for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-154.6	-154.6	-154.6	-154.6	-154.6	-154.6

Transmitting Beams 5:

Question	Response
Beam ID	03AT
Transmit Beam Frequency	3702.0 MHz -3738.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.44 dBW/Hz
Max. Transmit EIRP	42.12 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dBW/m^2 /BW):	* 5° - 10° (dBW/m^2 /BW):	* 10° - 15° (dBW/m^2 /BW):	* 15° - 20° (dBW/m^2 /BW):	* 20° - 25° (dBW/m^2 /BW):	* 25° - 90° (dBW/m^2 /BW):
4.0 kHz	-159.5	-159.5	-159.5	-159.5	-159.5	-159.5

Transmitting Beams 6:

Question	Response
Beam ID	03BT
Transmit Beam Frequency	3722.0 MHz -3758.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.36 dBW/Hz
Max. Transmit EIRP	42.2 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dBW/m^2 /BW):	* 5° - 10° (dBW/m^2 /BW):	* 10° - 15° (dBW/m^2 /BW):	* 15° - 20° (dBW/m^2 /BW):	* 20° - 25° (dBW/m^2 /BW):	* 25° - 90° (dBW/m^2 /BW):
4.0 kHz	-159.4	-159.4	-159.4	-159.4	-159.4	-159.4

Transmitting Beams 7:

Question	Response
Beam ID	04AT
Transmit Beam Frequency	3742.0 MHz -3778.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.38 dBW/Hz
Max. Transmit EIRP	42.18 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dBW/m^2 /BW):	* 5° - 10° (dBW/m^2 /BW):	* 10° - 15° (dBW/m^2 /BW):	* 15° - 20° (dBW/m^2 /BW):	* 20° - 25° (dBW/m^2 /BW):	* 25° - 90° (dBW/m^2 /BW):
4.0 kHz	-159.4	-159.4	-159.4	-159.4	-159.4	-159.4

Transmitting Beams 8:

Question	Response
Beam ID	04BT
Transmit Beam Frequency	3762.0 MHz -3798.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-32.26 dBW/Hz
Max. Transmit EIRP	42.3 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-159.3	-159.3	-159.3	-159.3	-159.3	-159.3

Transmitting Beams 9:

Question	Response
Beam ID	05AT
Transmit Beam Frequency	3782.0 MHz -3818.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.28 dBW/Hz
Max. Transmit EIRP	42.28 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dBW/m^2 /BW):	* 5° - 10° (dBW/m^2 /BW):	* 10° - 15° (dBW/m^2 /BW):	* 15° - 20° (dBW/m^2 /BW):	* 20° - 25° (dBW/m^2 /BW):	* 25° - 90° (dBW/m^2 /BW):
4.0 kHz	-159.3	-159.3	-159.3	-159.3	-159.3	-159.3

Transmitting Beams 10:

Question	Response
Beam ID	05BT
Transmit Beam Frequency	3802.0 MHz -3838.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.64 dBW/Hz
Max. Transmit EIRP	41.92 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dBW/m^2 /BW):	* 5° - 10° (dBW/m^2 /BW):	* 10° - 15° (dBW/m^2 /BW):	* 15° - 20° (dBW/m^2 /BW):	* 20° - 25° (dBW/m^2 /BW):	* 25° - 90° (dBW/m^2 /BW):
4.0 kHz	-159.7	-159.7	-159.7	-159.7	-159.7	-159.7

Transmitting Beams 11:

Question	Response
Beam ID	06AT
Transmit Beam Frequency	3822.0 MHz -3858.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.18 dBW/Hz
Max. Transmit EIRP	42.38 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-159.2	-159.2	-159.2	-159.2	-159.2	-159.2

Transmitting Beams 12:

Question	Response
Beam ID	06BT
Transmit Beam Frequency	3842.0 MHz -3878.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.52 dBW/Hz
Max. Transmit EIRP	42.04 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-159.6	-159.6	-159.6	-159.6	-159.6	-159.6

Transmitting Beams 13:

Question	Response
Beam ID	07AT
Transmit Beam Frequency	3862.0 MHz -3898.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.17 dBW/Hz
Max. Transmit EIRP	42.39 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-159.2	-159.2	-159.2	-159.2	-159.2	-159.2

Transmitting Beams 14:

Question	Response
Beam ID	07BT
Transmit Beam Frequency	3882.0 MHz -3918.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.51 dBW/Hz
Max. Transmit EIRP	42.05 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-159.6	-159.6	-159.6	-159.6	-159.6	-159.6

Transmitting Beams 15:

Question	Response
Beam ID	08AT
Transmit Beam Frequency	3902.0 MHz -3938.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.55 dBW/Hz
Max. Transmit EIRP	42.01 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dBW/m^2 /BW):	* 5° - 10° (dBW/m^2 /BW):	* 10° - 15° (dBW/m^2 /BW):	* 15° - 20° (dBW/m^2 /BW):	* 20° - 25° (dBW/m^2 /BW):	* 25° - 90° (dBW/m^2 /BW):
4.0 kHz	-159.6	-159.6	-159.6	-159.6	-159.6	-159.6

Transmitting Beams 16:

Question	Response
Beam ID	08BT
Transmit Beam Frequency	3922.0 MHz -3958.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.41 dBW/Hz
Max. Transmit EIRP	42.15 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-159.5	-159.5	-159.5	-159.5	-159.5	-159.5

Transmitting Beams 17:

Question	Response
Beam ID	09AT
Transmit Beam Frequency	3942.0 MHz -3978.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.54 dBW/Hz
Max. Transmit EIRP	42.02 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-159.6	-159.6	-159.6	-159.6	-159.6	-159.6

Transmitting Beams 18:

Question	Response
Beam ID	09BT
Transmit Beam Frequency	3962.0 MHz -3998.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.44 dBW/Hz
Max. Transmit EIRP	42.12 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-159.5	-159.5	-159.5	-159.5	-159.5	-159.5

Transmitting Beams 19:

Question	Response
Beam ID	10AT
Transmit Beam Frequency	3982.0 MHz -4018.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.42 dBW/Hz
Max. Transmit EIRP	42.14 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-159.5	-159.5	-159.5	-159.5	-159.5	-159.5

Transmitting Beams 20:

Question	Response
Beam ID	10BT
Transmit Beam Frequency	4002.0 MHz -4038.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.32 dBW/Hz
Max. Transmit EIRP	42.24 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-159.4	-159.4	-159.4	-159.4	-159.4	-159.4

Transmitting Beams 21:

Question	Response
Beam ID	11AT
Transmit Beam Frequency	4022.0 MHz -4058.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.37 dBW/Hz
Max. Transmit EIRP	42.19 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-159.4	-159.4	-159.4	-159.4	-159.4	-159.4

Transmitting Beams 22:

Question	Response
Beam ID	11BT
Transmit Beam Frequency	4042.0 MHz -4078.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.28 dBW/Hz
Max. Transmit EIRP	42.28 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-159.3	-159.3	-159.3	-159.3	-159.3	-159.3

Transmitting Beams 23:

Question	Response
Beam ID	12AT
Transmit Beam Frequency	4062.0 MHz -4098.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.27 dBW/Hz
Max. Transmit EIRP	42.29 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-159.3	-159.3	-159.3	-159.3	-159.3	-159.3

Transmitting Beams 24:

Question	Response
Beam ID	12BT
Transmit Beam Frequency	4082.0 MHz -4118.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.17 dBW/Hz
Max. Transmit EIRP	42.39 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-159.2	-159.2	-159.2	-159.2	-159.2	-159.2

Transmitting Beams 25:

Question	Response
Beam ID	13AT
Transmit Beam Frequency	4102.0 MHz -4138.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.28 dBW/Hz
Max. Transmit EIRP	42.28 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-159.3	-159.3	-159.3	-159.3	-159.3	-159.3

Transmitting Beams 26:

Question	Response
Beam ID	13BT
Transmit Beam Frequency	4122.0 MHz -4158.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.17 dBW/Hz
Max. Transmit EIRP	42.39 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-159.2	-159.2	-159.2	-159.2	-159.2	-159.2

Transmitting Beams 27:

Question	Response
Beam ID	14AT
Transmit Beam Frequency	4143.0 MHz -4193.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.56 dBW/Hz
Max. Transmit EIRP	43.43 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-159.6	-159.6	-159.6	-159.6	-159.6	-159.6

Transmitting Beams 28:

Question	Response
Beam ID	14BT
Transmit Beam Frequency	4162.0 MHz -4198.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.5 dBW/Hz
Max. Transmit EIRP	42.06 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam C_STD for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-159.6	-159.6	-159.6	-159.6	-159.6	-159.6

Transmitting Beams 29:

Question	Response
Beam ID	NP1
Transmit Beam Frequency	11454.5 MHz -11508.5 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-27.69 dBW/Hz
Max. Transmit EIRP	49.63 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam NP for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-153.7	-153.7	-153.7	-153.7	-153.7	-153.7

Transmitting Beams 30:

Question	Response
Beam ID	NP2
Transmit Beam Frequency	11576.5 MHz -11630.5 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-27.36 dBW/Hz
Max. Transmit EIRP	49.96 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam NP for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-153.4	-153.4	-153.4	-153.4	-153.4	-153.4

Transmitting Beams 31:

Question	Response
Beam ID	TM1
Transmit Beam Frequency	3624.7 MHz -3625.3 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-43.07 dBW/Hz
Max. Transmit EIRP	14.71 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam TM1 for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-169.1	-169.1	-169.1	-169.1	-169.1	-169.1

Transmitting Beams 32:

Question	Response
Beam ID	TM2
Transmit Beam Frequency	3624.7 MHz -3625.3 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-43.87 dBW/Hz
Max. Transmit EIRP	13.91 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam TM2 for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-169.9	-169.9	-169.9	-169.9	-169.9	-169.9

Transmitting Beams 33:

Question	Response
Beam ID	TM3
Transmit Beam Frequency	3622.7 MHz -3623.3 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-43.07 dBW/Hz
Max. Transmit EIRP	14.71 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam TM3 for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-169.1	-169.1	-169.1	-169.1	-169.1	-169.1

Transmitting Beams 34:

Question	Response
Beam ID	TM4
Transmit Beam Frequency	3622.7 MHz -3623.3 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-43.87 dBW/Hz
Max. Transmit EIRP	13.91 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam TM4 for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-169.9	-169.9	-169.9	-169.9	-169.9	-169.9

Transmitting Beams 35:

Question	Response
Beam ID	TM5
Transmit Beam Frequency	4198.7 MHz -4199.3 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-42.66 dBW/Hz
Max. Transmit EIRP	15.12 dBW
Co- or Cross Polar Mode	C
Service Area Description	In the attached GIMS file GIMS_DB_T18V.mdb, please see the Transmit Beam TM5 for both the Service Area and the Antenna Gain Data.

Max. Power Flux Density

* BW:	* 0° - 5° (dbW/m^2 /BW):	* 5° - 10° (dbW/m^2 /BW):	* 10° - 15° (dbW/m^2 /BW):	* 15° - 20° (dbW/m^2 /BW):	* 20° - 25° (dbW/m^2 /BW):	* 25° - 90° (dbW/m^2 /BW):
4.0 kHz	-168.7	-168.7	-168.7	-168.7	-168.7	-168.7

Transmitting Channels (35)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
TM1	0.6	3625.0	TT&C
06BT	36.0	3860.0	Service Link
06AT	36.0	3840.0	Service Link
05BT	36.0	3820.0	Service Link
AN3T	54.0	11603.5	Service Link
AN4T	54.0	11664.5	Service Link
04BT	36.0	3780.0	Service Link
04AT	36.0	3760.0	Service Link
03BT	36.0	3740.0	Service Link
AN1T	54.0	11481.5	Service Link
AN2T	54.0	11542.5	Service Link
14AT	50.0	4168.0	Service Link
13BT	36.0	4140.0	Service Link
13AT	36.0	4120.0	Service Link
09AT	36.0	3960.0	Service Link
09BT	36.0	3980.0	Service Link
10AT	36.0	4000.0	Service Link
10BT	36.0	4020.0	Service Link
11AT	36.0	4040.0	Service Link
11BT	36.0	4060.0	Service Link
12AT	36.0	4080.0	Service Link
12BT	36.0	4100.0	Service Link
08BT	36.0	3940.0	Service Link
08AT	36.0	3920.0	Service Link

07BT	36.0	3900.0	Service Link
07AT	36.0	3880.0	Service Link
TM4	0.6	3623.0	TT&C
TM3	0.6	3623.0	TT&C
TM2	0.6	3625.0	TT&C
NP1	54.0	11481.5	Service Link
03AT	36.0	3720.0	Service Link
14BT	36.0	4180.0	Service Link
05AT	36.0	3800.0	Service Link
TM5	0.6	4199.0	TT&C
NP2	54.0	11603.5	Service Link

Certification Questions

Question	Response
Are the applicable service area coverage requirements of 25.143(b)(2)(ii) and (iii), or 25.144(a)(3)(i), or 25.145(c)(1) and (2), or 25.146(i)(1) and (2), or 25.148(c), or 25.225 met?	Yes
Are the applicable frequency tolerances of 25.202(e) and out-of-band emission limits of 25.202(f)(1),(2), and (3) met?	Yes
Are the cessation of emissions requirements of 25.207 met?	Yes
Are the applicable power-flux-density limits of 25.208 met, and is the appropriate technical showing provided within the application?	Yes
For NGSO applications, are the applicable equivalent-power-flux-density limits of 25.208 met, and is the appropriate technical showing provided within the application?	N/A
Are the applicable full-frequency-reuse requirements of 25.210 met?	Yes
If the application is for a 17/24 GHz BSS space station, will it be operated at an offset location with full power and interference protection in accordance with 25.262(b)?	

Attachments

File Name	Beam	Field	Attachment Type	Description
GIMS_DB_T8V.mdb		Service Area Diagram	GIMS file (*.mdb)	
GIMS_DB_T8V.mdb		GSO Antenna Gain Contour Data	GIMS file (*.mdb)	