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

Federal Communications Commission

312 File Number: **SATMOD2021102600135**

Filing Description

Question	Response
Description	SpaceLink NGSO Modification to Authorized System - S2982

Satellite Information

Question	Response
Select Orbit Type	NGSO
Space Station or Satellite Network Name	SpaceLink
Estimated Lifetime of Satellite(s) From Date of Launch	12 Years
Will the space station(s) operate on a Common Carrier basis?	No

Operating Frequency Bands (21)

Nature of service	Description	Frequency Band (s)	Mode Type
Fixed-Satellite Service		47200.0 MHz -50200.0 MHz	Receive
Fixed-Satellite Service		50400.0 MHz -51400.0 MHz	Receive
Fixed-Satellite Service		19700.0 MHz -19710.0 MHz	Transmit
Fixed-Satellite Service		37500.0 MHz -42000.0 MHz	Transmit
Other Satellite Service (please specify)	Inter-Satellite Service	22550.0 MHz -23180.0 MHz	Transmit
Other Satellite Service (please specify)	Inter-Satellite Service	23380.0 MHz -23550.0 MHz	Transmit
Other Satellite Service (please specify)	Inter-Satellite Service	25250.0 MHz -27500.0 MHz	Receive
Fixed-Satellite Service		20190.0 MHz -20200.0 MHz	Transmit
Fixed-Satellite Service		29500.0 MHz -29510.0 MHz	Receive
Fixed-Satellite Service		29990.0 MHz -30000.0 MHz	Receive
Other Satellite Service (please specify)	Inter-Satellite Service	54250.0 MHz -56900.0 MHz	Receive
Other Satellite Service (please specify)	Inter-Satellite Service	57000.0 MHz -58200.0 MHz	Transmit
Other Satellite Service (please specify)	Inter-Satellite Service	57000.0 MHz -58200.0 MHz	Receive
Other Satellite Service (please specify)	Inter-Satellite Service	65000.0 MHz -71000.0 MHz	Transmit
Other Satellite Service (please specify)	Inter-Satellite Service	65000.0 MHz -71000.0 MHz	Receive
Other Satellite Service (please specify)	Inter-Satellite Service	24450.0 MHz -24750.0 MHz	Transmit

Other Satellite Service (please specify)	Inter-Satellite Service	24450.0 MHz -24750.0 MHz	Receive
Other Satellite Service (please specify)	Inter-Satellite Service	22550.0 MHz -23550.0 MHz	Receive
Other Satellite Service (please specify)	Inter-Satellite Service	32300.0 MHz -33000.0 MHz	Transmit
Other Satellite Service (please specify)	Inter-Satellite Service	32300.0 MHz -33000.0 MHz	Receive
Other Satellite Service (please specify)	Inter-Satellite Service	54250.0 MHz -56900.0 MHz	Transmit

Orbital Information For Non-Geostationary Satellites

Question	Response
Total Number of Satellites in the active constellation	4
Orbit Epoch Date	01/01/2019
Celestrial Reference Body	Earth

Orbital Plane 1:

Question	Response
Number of Satellites in Plane	4
Inclination Angle	0.0 degrees
Right Ascension of Ascending Node	0.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	28721.4 seconds
Apogee	13892.0 km
Perigee	13892.0 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	0.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	270.0
2	0.0
3	90.0
4	180.0

Receiving Beams 1:

Question	Response
Beam ID	GRR0
Receive Beam Frequency	29500.0 MHz -29510.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	3.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-29.0 dB/K
Min. Saturation Flux Density	-76.7 dBW/m2
Max. Saturation Flux Density	-70.7 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "TT&C Service Area. pdf".

Receiving Beams 2:

Question	Response
Beam ID	GRL0
Receive Beam Frequency	29500.0 MHz -29510.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	3.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-29.0 dB/K
Min. Saturation Flux Density	-76.7 dBW/m2
Max. Saturation Flux Density	-70.7 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "TT&C Service Area. pdf".

Receiving Beams 3:

Question	Response
Beam ID	ARR4
Receive Beam Frequency	25250.0 MHz -27500.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	44.1 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	14.8 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-85.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "Advanced Service Area.pdf".

Receiving Beams 4:

Question	Response
Beam ID	ARL4
Receive Beam Frequency	25250.0 MHz -27500.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	44.1 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	14.8 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-85.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "Advanced Service Area.pdf".

Receiving Beams 5:

Question	Response
Beam ID	GRR2
Receive Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	48.4 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	17.6 dB/K
Min. Saturation Flux Density	-83.4 dBW/m2
Max. Saturation Flux Density	-77.4 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "Gateway Service Area.pdf".

Receiving Beams 6:

Question	Response
Beam ID	GRL2
Receive Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	48.4 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	17.6 dB/K
Min. Saturation Flux Density	-83.4 dBW/m2
Max. Saturation Flux Density	-77.4 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "Gateway Service Area.pdf".

Receiving Beams 7:

Question	Response

Beam ID	GRR1
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	48.4 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	17.6 dB/K
Min. Saturation Flux Density	-83.4 dBW/m2
Max. Saturation Flux Density	-77.4 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "Gateway Service Area. pdf".

Receiving Beams 8:

Question	Response
Beam ID	GRL1
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	48.4 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees

G/T at Max. Gain Point	17.6 dB/K
Min. Saturation Flux Density	-83.4 dBW/m2
Max. Saturation Flux Density	-77.4 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "Gateway Service Area.pdf".

Receiving Beams 9:

Question	Response
Beam ID	ARL1
Receive Beam Frequency	32300.0 MHz -32800.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	43.5 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	18.0 dB/K
Min. Saturation Flux Density	-101.3 dBW/m2
Max. Saturation Flux Density	-91.8 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "Advanced Service Aera.pdf"

Receiving Beams 10:

Question	Response
Beam ID	ARR1

Receive Beam Frequency	32300.0 MHz -32800.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	43.5 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	18.0 dB/K
Min. Saturation Flux Density	-101.3 dBW/m2
Max. Saturation Flux Density	-91.8 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "Advanced Service Aera.pdf"

Receiving Beams 11:

Question	Response
Beam ID	ARL2
Receive Beam Frequency	22550.0 MHz -22950.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	43.5 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	18.0 dB/K

Min. Saturation Flux Density	-101.3 dBW/m2
Max. Saturation Flux Density	-91.8 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "Advanced Service Aera.pdf"

Receiving Beams 12:

Question	Response
Beam ID	ARR2
Receive Beam Frequency	22550.0 MHz -22950.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	43.5 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	18.0 dB/K
Min. Saturation Flux Density	-101.3 dBW/m2
Max. Saturation Flux Density	-91.8 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "Advanced Service Aera.pdf"

Receiving Beams 13:

Question	Response
Beam ID	ARL3
Receive Beam Frequency	24450.0 MHz -24750.0 MHz

Beam Type	Steerable
Polarization	LHCP
Peak Gain	43.5 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	18.0 dB/K
Min. Saturation Flux Density	-101.3 dBW/m2
Max. Saturation Flux Density	-91.8 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "Advanced Service Area.pdf".

Receiving Beams 14:

Question	Response
Beam ID	ARR3
Receive Beam Frequency	24450.0 MHz -24750.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	43.5 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	18.0 dB/K
Min. Saturation Flux Density	-101.3 dBW/m2

Max. Saturation Flux Density	-91.8 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "Advanced Service Area.pdf".

Receiving Beams 15:

Question	Response
Beam ID	BRL1
Receive Beam Frequency	22950.0 MHz -23550.0 MHz
Beam Type	Fixed
Polarization	LHCP
Peak Gain	36.2 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	10.0 dB/K
Min. Saturation Flux Density	-119.7 dBW/m2
Max. Saturation Flux Density	-117.7 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "Base Service Area. pdf".

Receiving Beams 16:

Question	Response
Beam ID	BRR1
Receive Beam Frequency	22950.0 MHz -23550.0 MHz
Beam Type	Fixed

Polarization	RHCP
Peak Gain	36.2 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	10.0 dB/K
Min. Saturation Flux Density	-119.7 dBW/m2
Max. Saturation Flux Density	-117.7 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "Base Service Area. pdf".

Receiving Beams 17:

Question	Response
Beam ID	BRL2
Receive Beam Frequency	32850.0 MHz -33000.0 MHz
Beam Type	Fixed
Polarization	LHCP
Peak Gain	36.2 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	10.0 dB/K
Min. Saturation Flux Density	-119.7 dBW/m2
Max. Saturation Flux Density	-117.7 dBW/m2

Co- or Cross Polar Mode	C
Service Area Description	See file "Base Service Area. pdf".

Receiving Beams 18:

Question	Response
Beam ID	BRR2
Receive Beam Frequency	32850.0 MHz -33000.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	36.2 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	10.0 dB/K
Min. Saturation Flux Density	-119.7 dBW/m2
Max. Saturation Flux Density	-117.7 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "Base Service Area. pdf".

Receiving Beams 19:

Question	Response
Beam ID	RRL1
Receive Beam Frequency	65000.0 MHz -71000.0 MHz
Beam Type	Steerable
Polarization	LHCP

Peak Gain	63.6 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	31.3 dB/K
Min. Saturation Flux Density	-95.0 dBW/m2
Max. Saturation Flux Density	-94.7 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "Relay-Relay Service Area.pdf".

Receiving Beams 20:

Question	Response
Beam ID	RRR1
Receive Beam Frequency	65000.0 MHz -71000.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	63.6 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	31.3 dB/K
Min. Saturation Flux Density	-95.0 dBW/m2
Max. Saturation Flux Density	-94.7 dBW/m2
Co- or Cross Polar Mode	C

Service Area Description	See file "Relay-Relay Service Area.pdf".

Receiving Beams 21:

Question	Response
Beam ID	RRL2
Receive Beam Frequency	54250.0 MHz -56900.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	63.6 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	31.3 dB/K
Min. Saturation Flux Density	-95.0 dBW/m2
Max. Saturation Flux Density	-94.7 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "Relay-Relay Service Area.pdf".

Receiving Beams 22:

Question	Response
Beam ID	RRR2
Receive Beam Frequency	54250.0 MHz -56900.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	63.6 dBi

Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	31.3 dB/K
Min. Saturation Flux Density	-95.0 dBW/m2
Max. Saturation Flux Density	-94.7 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "Relay-Relay Service Area.pdf".

Receiving Beams 23:

Question	Response
Beam ID	RRL3
Receive Beam Frequency	57000.0 MHz -58200.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	63.6 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	31.3 dB/K
Min. Saturation Flux Density	-95.0 dBW/m2
Max. Saturation Flux Density	-94.7 dBW/m2
Co- or Cross Polar Mode	C

Service Area Description	See file "Relay-Relay Service Area.pdf".

Receiving Beams 24:

Question	Response
Beam ID	RRR3
Receive Beam Frequency	57000.0 MHz -58200.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	63.6 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	31.3 dB/K
Min. Saturation Flux Density	-95.0 dBW/m2
Max. Saturation Flux Density	-94.7 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "Relay-Relay Service Area.pdf".

Receiving Beams 25:

Question	Response
Beam ID	GRL3
Receive Beam Frequency	29990.0 MHz -30000.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	3.0 dBi

Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-29.0 dB/K
Min. Saturation Flux Density	-76.7 dBW/m2
Max. Saturation Flux Density	-70.7 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	See file "TTC Service Area. pdf"

Receiving Beams 26:

Question	Response
Beam ID	GRR3
Receive Beam Frequency	29990.0 MHz -30000.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	3.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-29.0 dB/K
Min. Saturation Flux Density	-76.7 dBW/m2
Max. Saturation Flux Density	-70.7 dBW/m2
Co- or Cross Polar Mode	C

Service Area Description	See file "TTC Service Area.pdf"

Receiving Channels (118)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
BRLD	18.75	32878.125	Service Link
BRLC	18.75	32859.375	Service Link
BRL6	50.0	23275.0	Service Link
BRL5	50.0	23225.0	Service Link
BRL4	50.0	23175.0	Service Link
GRR9	10.0	29995.0	TT&C
GRR8	500.0	51150.0	Feeder Link
GRR7	500.0	50650.0	Feeder Link
ARL3	150.0	22875.0	Service Link
ARL2	250.0	22675.0	Service Link
GRL0	10.0	29505.0	TT&C
CRR2	250.0	25625.0	Service Link
CRR3	250.0	25875.0	Service Link
CRR4	250.0	26125.0	Service Link
CRR5	250.0	26375.0	Service Link
CRR6	250.0	26625.0	Service Link
BRLA	50.0	23475.0	Service Link
BRR8	50.0	23375.0	Service Link
BRR9	50.0	23425.0	Service Link
RRL3	1245.0	65722.5	Service Link
BRR7	50.0	23325.0	Service Link
BRRA	50.0	23475.0	Service Link
BRRG	18.75	32934.375	Service Link
BRRH	18.75	32953.125	Service Link

BRRI	18.75	32971.875	Service Link
BRRJ	18.75	32990.625	Service Link
RRL4	1000.0	66850.0	Service Link
RRL5	1000.0	70000.0	Service Link
RRL6	450.0	70775.0	Service Link
RRL8	400.0	56700.0	TT&C
RRL9	5.0	55497.5	TT&C
RRLA	1245.0	54872.5	Service Link
RRR1	5.0	66347.5	TT&C
RRR0	100.0	65050.0	TT&C
CRR1	250.0	25375.0	Service Link
CRL9	250.0	27375.0	Service Link
ARL1	500.0	32550.0	Service Link
RRL2	50.0	70525.0	TT&C
BRR0	100.0	23000.0	TT&C
BRR5	50.0	23225.0	Service Link
CRL1	250.0	25375.0	Service Link
BRLG	18.75	32934.375	Service Link
CRL8	250.0	27125.0	Service Link
CRL7	250.0	26875.0	Service Link
CRL6	250.0	26625.0	Service Link
CRL5	250.0	26375.0	Service Link
CRL4	250.0	26125.0	Service Link
CRL3	250.0	25875.0	Service Link
CRL2	250.0	25625.0	Service Link
RRR2	50.0	70525.0	TT&C

BRRB	150.0	32925.0	Service Link
BRRC	18.75	32859.375	Service Link
BRR3	50.0	23125.0	Service Link
BRR2	50.0	23075.0	Service Link
BRRD	18.75	32878.125	Service Link
RRLE	450.0	57975.0	Service Link
RRLD	500.0	57250.0	Service Link
RRR5	1000.0	70000.0	Service Link
RRRB	1000.0	56000.0	Service Link
ARR1	500.0	32550.0	Service Link
ARL5	50.0	24725.0	Service Link
RRR7	2150.0	68425.0	Service Link
RRR6	450.0	70775.0	Service Link
BRL3	50.0	23125.0	Service Link
BRLE	18.75	32896.875	Service Link
BRLH	18.75	32953.125	Service Link
BRLI	18.75	32971.875	Service Link
BRLJ	18.75	32990.625	Service Link
BRR1	500.0	23300.0	Service Link
BRR4	50.0	23175.0	Service Link
BRRE	18.75	32896.875	Service Link
BRRF	18.75	32915.625	Service Link
RRL0	100.0	65050.0	TT&C
BRL7	50.0	23325.0	Service Link
BRL8	50.0	23375.0	Service Link
BRL9	50.0	23425.0	Service Link

BRLB	150.0	32925.0	Service Link
RRRE	450.0	57975.0	Service Link
GRR3	500.0	48450.0	Feeder Link
RRRC	250.0	57625.0	TT&C
RRRD	500.0	57250.0	Service Link
GRL9	10.0	29995.0	TT&C
GRL8	500.0	51150.0	Feeder Link
GRR6	500.0	49950.0	Feeder Link
CRR9	250.0	27375.0	Service Link
CRR8	250.0	27125.0	Service Link
CRR7	250.0	26875.0	Service Link
GRR2	500.0	47950.0	Feeder Link
BRR6	50.0	23275.0	Service Link
ARR5	50.0	24725.0	Service Link
ARR4	250.0	24575.0	Service Link
ARR3	150.0	22875.0	Service Link
ARR2	250.0	22675.0	Service Link
BRL0	100.0	23000.0	TT&C
GRR5	500.0	49450.0	Feeder Link
GRR4	500.0	48950.0	Feeder Link
ARL4	250.0	24575.0	Service Link
BRL1	500.0	23300.0	Service Link
BRL2	50.0	23075.0	Service Link
RRL1	5.0	66347.5	TT&C
RRL7	2150.0	68425.0	Service Link
RRLC	250.0	57625.0	TT&C

RRRA	1245.0	54872.5	Service Link
RRR9	5.0	55497.5	TT&C
RRR8	400.0	56700.0	TT&C
RRLB	1000.0	56000.0	Service Link
RRR4	1000.0	66850.0	Service Link
GRL7	500.0	50650.0	Feeder Link
GRR1	500.0	47450.0	Feeder Link
RRR3	1245.0	65722.5	Service Link
GRR0	10.0	29505.0	TT&C
GRL2	500.0	47950.0	Feeder Link
GRL3	500.0	48450.0	Feeder Link
GRL4	500.0	48950.0	Feeder Link
GRL5	500.0	49450.0	Feeder Link
GRL6	500.0	49950.0	Feeder Link
GRL1	500.0	47450.0	Feeder Link
BRLF	18.75	32915.625	Service Link

Transmitting Beams 1:

Question	Response
Beam ID	GTR0
Transmit Beam Frequency	19700.0 MHz -19710.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	3.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-50.0 dBW/Hz
Max. Transmit EIRP	0.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "TT&C Service Area. pdf".

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):
1.0 MHz	-156.4	-156.2	-155.9	-155.7	-155.5	-153.8

Transmitting Beams 2:

Question	Response
Beam ID	GTL0
Transmit Beam Frequency	19700.0 MHz -19710.0 MHz

Beam Type	Steerable
Polarization	LHCP
Peak Gain	3.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-50.0 dBW/Hz
Max. Transmit EIRP	0.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "TT&C Service Area. pdf".

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):
1.0 MHz	-156.4	-156.2	-155.9	-155.7	-155.5	-153.8

Transmitting Beams 3:

Question	Response
Beam ID	GTL1
Transmit Beam Frequency	37500.0 MHz -42000.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	46.8 dBi
Antenna Pointing Error	0.1 degrees

Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-33.9 dBW/Hz
Max. Transmit EIRP	62.6 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "Gateway Service Area.pdf".

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):
1.0 MHz	-132.0	-130.1	-129.8	-129.6	-129.4	-127.7

Transmitting Beams 4:

Question	Response
Beam ID	ATR2
Transmit Beam Frequency	22550.0 MHz -23180.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	43.0 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-18.7 dBW/Hz

Max. Transmit EIRP	59.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "Advanced Service Area.pdf".

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):
1.0 MHz	-115.1	-114.9	-114.6	-114.4	-114.2	-112.5

Transmitting Beams 5:

Question	Response
Beam ID	ATL2
Transmit Beam Frequency	22550.0 MHz -23180.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	43.0 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-18.7 dBW/Hz
Max. Transmit EIRP	59.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "Advanced Service Area.pdf".

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):
1.0 MHz	-115.1	-114.9	-114.6	-114.4	-114.2	-112.5

Transmitting Beams 6:

Question	Response
Beam ID	GTR1
Transmit Beam Frequency	37500.0 MHz -42000.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	46.8 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-33.9 dBW/Hz
Max. Transmit EIRP	62.6 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "Gateway Service Area. pdf".

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):

1.0 MHz	-132.0	-130.1	-129.8	-129.6	-129.4	-127.7

Transmitting Beams 7:

Question	Response
Beam ID	ATL3
Transmit Beam Frequency	24450.0 MHz -24750.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	43.5 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-32.9 dBW/Hz
Max. Transmit EIRP	54.1 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "Advanced Service Area.pdf".

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):
1.0 MHz	-128.3	-128.1	-127.9	-127.6	-127.4	-125.8

Transmitting Beams 8:

Question	Response

Beam ID	ATR3
Transmit Beam Frequency	24450.0 MHz -24750.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	43.5 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-32.9 dBW/Hz
Max. Transmit EIRP	54.1 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "Advanced Service Area.pdf".

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):
1.0 MHz	-128.3	-128.1	-127.1	-127.6	-127.4	-127.8

Transmitting Beams 9:

Question	Response
Beam ID	RTL3
Transmit Beam Frequency	57000.0 MHz -58200.0 MHz
Beam Type	Steerable
Polarization	LHCP

Peak Gain	59.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-24.9 dBW/Hz
Max. Transmit EIRP	66.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "Relay-Relay Service Area.pdf".

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):
1.0 MHz	-165.2	-165.2	-165.2	-165.3	-165.4	-165.7

Transmitting Beams 10:

Question	Response
Beam ID	RTR3
Transmit Beam Frequency	57000.0 MHz -58200.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	59.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-24.9 dBW/Hz
Max. Transmit EIRP	66.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "Relay-Relay Service Area.pdf".

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):
1.0 MHz	-165.2	-165.2	-165.2	-165.3	-165.4	-165.7

Transmitting Beams 11:

Question	Response
Beam ID	ATR1
Transmit Beam Frequency	32300.0 MHz -32800.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	43.5 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-32.9 dBW/Hz
Max. Transmit EIRP	54.1 dBW
Co- or Cross Polar Mode	C

Service Area Description	See file "Advanced Service Area.pdf".

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):
1.0 MHz	-127.1	-126.8	-126.6	-126.4	-126.1	-124.5

Transmitting Beams 12:

Question	Response
Beam ID	ATL1
Transmit Beam Frequency	32300.0 MHz -32800.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	43.5 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-32.9 dBW/Hz
Max. Transmit EIRP	54.1 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "Advanced Service Area.pdf".

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):
1.0 MHz	-128.3	-128.1	-127.9	-127.6	-127.4	-125.8

Transmitting Beams 13:

Question	Response
Beam ID	BTR2
Transmit Beam Frequency	32850.0 MHz -33000.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	38.7 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-22.5 dBW/Hz
Max. Transmit EIRP	51.2 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "Base Service Area. pdf".

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):
1.0 MHz	-121.9	-121.7	-121.4	-121.2	-121.0	-119.3

Transmitting Beams 14:

Question	Response
Beam ID	BTL2
Transmit Beam Frequency	32850.0 MHz -33000.0 MHz
Beam Type	Fixed
Polarization	LHCP
Peak Gain	38.7 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-22.5 dBW/Hz
Max. Transmit EIRP	51.2 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "Base Service Area. pdf".

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):
1.0 MHz	-121.9	-121.7	-121.4	-121.2	-121.0	-119.3

Transmitting Beams 15:

Question	Response
Beam ID	RTL1
Transmit Beam Frequency	65000.0 MHz -71000.0 MHz

Beam Type	Steerable
Polarization	LHCP
Peak Gain	59.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-24.9 dBW/Hz
Max. Transmit EIRP	66.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "Relay-Relay Service Area.pdf".

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):
1.0 MHz	-161.8	-161.7	-161.7	-161.8	-162.0	-162.3

Transmitting Beams 16:

Question	Response
Beam ID	RTL2
Transmit Beam Frequency	54250.0 MHz -56900.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	59.0 dBi
Antenna Pointing Error	0.1 degrees

Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-24.9 dBW/Hz
Max. Transmit EIRP	66.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "Relay-Relay Service Area.pdf".

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):
1.0 MHz	-161.8	-161.7	-161.7	-161.8	-162.0	-162.3

Transmitting Beams 17:

Question	Response
Beam ID	RTR1
Transmit Beam Frequency	65000.0 MHz -71000.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	59.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-24.9 dBW/Hz

Max. Transmit EIRP	66.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "Relay-Relay Service Area.pdf".

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):
1.0 MHz	-165.2	-165.2	-165.2	-165.3	-165.4	-165.7

Transmitting Beams 18:

Question	Response
Beam ID	RTR2
Transmit Beam Frequency	54250.0 MHz -56900.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	59.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-24.9 dBW/Hz
Max. Transmit EIRP	66.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "Relay-Relay Service Area.pdf".

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):
1.0 MHz	-165.2	-165.2	-165.2	-165.3	-165.4	-165.7

Transmitting Beams 19:

Question	Response
Beam ID	ATL4
Transmit Beam Frequency	23380.0 MHz -23550.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	43.0 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-18.7 dBW/Hz
Max. Transmit EIRP	59.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "Advanced Service Area.pdf".

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):

1.0 MHz	-115.1	-114.9	-114.6	-114.4	-114.2	-112.5

Transmitting Beams 20:

Question	Response
Beam ID	ATR4
Transmit Beam Frequency	23380.0 MHz -23550.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	43.0 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-18.7 dBW/Hz
Max. Transmit EIRP	59.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "Advanced Service Area.pdf".

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):
1.0 MHz	-115.1	-114.9	-114.6	-114.4	-114.2	-112.5

Transmitting Beams 21:

Question	Response

Beam ID	GTLA
Transmit Beam Frequency	20190.0 MHz -20200.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	3.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-50.0 dBW/Hz
Max. Transmit EIRP	0.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "TT&C Service Area. pdf"

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):
1.0 MHz	-156.4	-156.2	-155.9	-155.7	-155.5	-153.8

Transmitting Beams 22:

Question	Response
Beam ID	GTRA
Transmit Beam Frequency	20190.0 MHz -20200.0 MHz
Beam Type	Steerable
Polarization	RHCP

Peak Gain	3.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-50.0 dBW/Hz
Max. Transmit EIRP	0.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	See file "TT&C Service Area. pdf"

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):
1.0 MHz	-156.4	-156.2	-155.9	-155.7	-155.5	-153.8

Transmitting Channels (84)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
CTL3	130.0	23115.0	Service Link
GTR1	500.0	37750.0	Feeder Link
GTL1	500.0	37750.0	Feeder Link
ATR1	500.0	32550.0	Service Link
ATR5	50.0	24725.0	Service Link
GTL3	500.0	38750.0	Feeder Link
CTR1	250.0	22675.0	Service Link
BTLD	18.75	32878.125	Service Link
BTLH	18.75	32953.125	Service Link
BTLI	18.75	32971.875	Service Link
BTLJ	18.75	32990.625	Service Link
BTRB	150.0	32925.0	Service Link
BTRE	18.75	32896.875	Service Link
BTRH	18.75	32953.125	Service Link
BTRI	18.75	32971.875	Service Link
RTLC	250.0	57625.0	TT&C
RTLD	500.0	57250.0	Service Link
RTLE	450.0	57975.0	Service Link
RTR9	5.0	55497.5	TT&C
RTL3	1245.0	65722.5	Service Link
BTRJ	18.75	32990.625	Service Link
RTRE	450.0	57975.0	Service Link
RTR8	400.0	56700.0	TT&C
RTR6	450.0	70775.0	Service Link

GTR7	500.0	40750.0	Feeder Link
ATL5	50.0	24725.0	Service Link
ATL4	250.0	24575.0	Service Link
ATL1	500.0	32550.0	Service Link
GTR9	500.0	41750.0	Feeder Link
RTR7	2150.0	68425.0	Service Link
RTR3	1245.0	65722.5	Service Link
RTL4	1000.0	66850.0	Service Link
RTRB	1000.0	56000.0	Service Link
RTLB	1000.0	56000.0	Service Link
RTL9	5.0	55497.5	TT&C
RTL8	400.0	56700.0	TT&C
RTL2	50.0	70525.0	TT&C
RTR5	1000.0	70000.0	Service Link
BTRD	18.75	32878.125	Service Link
BTRC	18.75	32859.375	Service Link
BTLC	18.75	32859.375	Service Link
BTLB	150.0	32925.0	Service Link
CTL1	250.0	22675.0	Service Link
RTL5	1000.0	70000.0	Service Link
BTLE	18.75	32896.875	Service Link
BTLF	18.75	32915.625	Service Link
BTLG	18.75	32934.375	Service Link
CTL4	170.0	23465.0	Service Link
CTR4	170.0	23465.0	Service Link
CTR3	130.0	23115.0	Service Link

GTL0	10.0	19705.0	TT&C
GTRA	10.0	20195.0	TT&C
GTL7	500.0	40750.0	Feeder Link
GTL8	500.0	41250.0	Feeder Link
GTL9	500.0	41750.0	Feeder Link
ATR4	250.0	24575.0	Service Link
GTLA	10.0	20195.0	TT&C
GTL2	500.0	38250.0	Feeder Link
CTR2	250.0	22925.0	Service Link
GTR0	10.0	19705.0	TT&C
GTR6	500.0	40250.0	Feeder Link
GTL6	500.0	40250.0	Feeder Link
RTRD	500.0	57250.0	Service Link
RTL6	450.0	70775.0	Service Link
RTL7	2150.0	68425.0	Service Link
RTR4	1000.0	66850.0	Service Link
RTRA	1245.0	54872.5	Service Link
GTR8	500.0	41250.0	Feeder Link
RTRC	250.0	57625.0	TT&C
RTLA	1245.0	54872.5	Service Link
RTL1	5.0	66347.5	TT&C
BTRG	18.75	32934.375	Service Link
BTRF	18.75	32915.625	Service Link
RTL0	100.0	65050.0	TT&C
RTR1	5.0	66347.5	TT&C
RTR2	50.0	70525.0	TT&C

RTR0	100.0	65050.0	TT&C
GTR2	500.0	38250.0	Feeder Link
GTR3	500.0	38750.0	Feeder Link
GTR4	500.0	39250.0	Feeder Link
GTR5	500.0	39750.0	Feeder Link
GTL5	500.0	39750.0	Feeder Link
GTL4	500.0	39250.0	Feeder Link
CTL2	250.0	22925.0	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?	N/A
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?	Yes
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
ATL2.pdf	ATL2	NGSO Antenna Gain Data	PDF file (*.pdf)	
ATR2.pdf	ATR2	NGSO Antenna Gain Data	PDF file (*.pdf)	
GRL1.pdf	GRL1	NGSO Antenna Gain Data	PDF file (*.pdf)	
GRL2.pdf	GRL2	NGSO Antenna Gain Data	PDF file (*.pdf)	
GRL3.pdf	GRL3	NGSO Antenna Gain Data	PDF file (*.pdf)	
GRR0.pdf	GRR0	NGSO Antenna Gain Data	PDF file (*.pdf)	
GRR2.pdf	GRR2	NGSO Antenna Gain Data	PDF file (*.pdf)	
GRR3.pdf	GRR3	NGSO Antenna Gain Data	PDF file (*.pdf)	
GTL0.pdf	GTL0	NGSO Antenna Gain Data	PDF file (*.pdf)	

GTL1.pdf	GTL1	NGSO Antenna Gain Data	PDF file (*.pdf)
GTLA.pdf	GTLA	NGSO Antenna Gain Data	PDF file (*.pdf)
GTR0.pdf	GTR0	NGSO Antenna Gain Data	PDF file (*.pdf)
GTR1.pdf	GTR1	NGSO Antenna Gain Data	PDF file (*.pdf)
GTRA.pdf	GTRA	NGSO Antenna Gain Data	PDF file (*.pdf)
TT&C Service Area.pdf		NGSO Antenna Gain Data	PDF file (*.pdf)
ARL4.pdf	ARL4	NGSO Antenna Gain Data	PDF file (*.pdf)
ARR4.pdf	ARR4	NGSO Antenna Gain Data	PDF file (*.pdf)
ATL4.pdf	ATL4	NGSO Antenna Gain Data	PDF file (*.pdf)
ATR4.pdf	ATR4	NGSO Antenna Gain Data	PDF file (*.pdf)

Relay-Relay Service.pdf		Service Area Diagram	PDF file (*.pdf)	Each Crosslink, specified by beam name starting with "R," has an intersatellite service area connecting from one relay to another. There are three separate crosslink beams in all.
Advanced Service Area.pdf		Service Area Diagram	PDF file (*.pdf)	Each Advanced link, specified by beam name starting with "A," has an intersatellite service area covering the Earth disk and up to 10,000 km in altitude.
Base Service Area.pdf		Service Area Diagram	PDF file (*.pdf)	Each Base link, specified by beam name starting with "B," has an intersatellite service area covering the Earth disk and up to 1,500 km in altitude.
Gateway Service Area.pdf		Service Area Diagram	PDF file (*.pdf)	
GRR1.pdf	GRR1	NGSO Antenna Gain Data	PDF file (*.pdf)	
GRL0.pdf	GRL0	NGSO Antenna Gain Data	PDF file (*.pdf)	