

**Exhibit B**

**Remote Terminal #2 (SAA) Link Budgets**

TECOM Antenna (SAA) 15 Degree (low) Skew Inbound Link Budget  
TECOM Antenna (SAA) 15 Degree (low) Skew Outbound Link Budget  
TECOM Antenna (SAA) 65 Degree (high) Skew Inbound Link Budget  
TECOM Antenna (SAA) 65 Degree (high) Skew Outbound Link Budget

**Remote Terminal #3 (GSAA) Link Budgets**

QEST Antenna (GSAA) 0 Degree (low) Skew Inbound Link Budget  
QEST Antenna (GSAA) 0 Degree (low) Skew Outbound Link Budget  
QEST Antenna (GSAA) 65 Degree (high) Skew Inbound Link Budget  
QEST Antenna (GSAA) 65 Degree (high) Skew Outbound Link Budget

**SES-10 Coverage Contour**

<b>Inroute Signal:</b>	QPSK 1/2
Uplink Frequency (MHz):	14250
Downlink Frequency (MHz):	12000
Baseband BW (MHz):	1.024
Spread BW (MHz):	1.024
Required C/N (dB):	2.1

## SAA Link Budget

Link Budget for satellite **SES-10** at **-67.0** degreesSkew operational limit: **15** degrees

<b>Outroute Signal:</b>	QPSK 5/6
Uplink Frequency (MHz):	14250
Downlink Frequency (MHz):	12000
Bandwidth (MHz):	30
Required C/N (dB):	5.4

<b>Inroute signal:</b>	<b>QPSK 1/2</b>	rate	<b>1.024</b>	<b>Mbps</b>	in bandwidth	<b>1.024</b>	<b>MHz</b>
<b>Outroute signal:</b>	<b>QPSK 5/6</b>	rate	<b>30</b>	<b>Mbps</b>	in bandwidth	<b>30</b>	<b>MHz</b>

<b>Satellite:</b>	SES-10
Longitude (deg East):	-67
Maximum Saturated Downlink EIRP (dBW):	53
G/T towards Remote (dB/K):	3.00
G/T towards NOC (dB/K):	3.60
G/T Degradation (dB):	0
Saturation Flux Density (dBW/m <sup>2</sup> ):	-97
Attenuation Setting (dB):	12
Saturated EIRP towards NOC (dBW):	51.9
Saturated EIRP towards Remote (dBW):	52.2
Max Authorized Downlink EIRP (dBW/Hz):	-22
Downlink EIRP backoff (dB):	<b>0.2288</b>
Adjusted Outroute EIRP to Remote (dBW):	<b>51.971</b>
Downlink EIRP Density to Remote (dBW/Hz):	<b>-22.80</b>
Downlink EIRP Inroute (dBW):	<b>18.04</b>

		<u>Lat</u>	<u>Long</u>
<b>Remote:</b>	San Juan	18.435	-66.004
<b>NOC:</b>	Steele Valley	33.758	-117.315

Inroute Path:Ideal LinkMispoint/  
Rain/  
Atmospheric  
LossesIntermod/  
Satellite/  
Cross-pol  
Interference

EIRP towards satellite (dBW)		41.30	40.30	40.30	
Uplink Path Loss (dB)		206.71	206.71	206.71	
Spreading Loss (dB)		-162.16	-162.16	-162.16	
Flux Density at Satellite (dBW/m <sup>2</sup> )		-120.86	-121.86	-121.86	
Uplink C/T (dB)		-162.41	-163.41	-163.41	
C/No (dB)		66.19	65.19	65.19	
Noise BW (dB-Hz)		60.10	60.10	60.10	
Interference (dB)		N/A	N/A	-14.51	
<b>Uplink C/N (dB)</b>		<b>6.09</b>	<b>5.09</b>	<b>4.62</b>	
<b>Remote:</b>	San Juan	Satellite downlink EIRP (dBW)	19.04	18.04	18.04
Latitude (deg North):	18.435	Downlink Path Loss (dB)	205.91	205.91	205.91
Longitude (deg East):	-66.004	Downlink C/T (dB)	-149.64	-152.64	-152.64
TX Antenna Gain (dBi):	28.80	C/No (dB)	78.96	75.96	75.96
TX Power (dBm):	42.5	Noise BW (dB-Hz)	60.10	60.10	60.10
TX Backoff (dB):	0	Interference (dB)	N/A	N/A	-18.19
Power into flange (dBW/4 kHz):	<b>-11.58</b>	<b>Downlink C/N (dB)</b>	<b>18.86</b>	<b>15.86</b>	<b>13.86</b>
RX G/T (dB/K):	11.70	Cumulative C/N (dB)	5.86	4.74	4.13
Antenna Mispoint (dB):	0.5	Necessary C/N (dB)	2.10	2.10	2.10
Rain Attenuation (dB):	0	<b>Cumulative Inroute Link Margin (dB)</b>	<b>3.76</b>	<b>2.64</b>	<b>2.03</b>
Atmospheric Attenuation (dB):	0.5				

**Inroute Uplink Interference**

Adjacent Channel Uplink (dB):	-30.0
Adjacent Satellite Uplink (dB):	-19.1
Cross-Pol Uplink (dB):	-19.1
Intermod Uplink (dB):	-20.0
Cumulative Interf. Uplink (dB):	<b>-14.51</b>

**SAA Link Budget**Link Budget for satellite **SES-10** at **-67.0** degreesSkew operational limit: **15** degrees**Outroute Downlink Interference**

Adjacent Channel Downlink (dB):	-30.0
Adjacent Satellite Downlink (dB):	-10.0
Cross-Pol Downlink (dB):	-20.0
Intermod Downlink (dB):	-20.0
Cumulative Interf. Downlink (dB):	<b>-9.17</b>

**NOC:**

Latitude (deg North):	33.758
Longitude (deg East):	-117.315
Antenna diameter (m):	9 m
RX Antenna Gain (dBi):	58.5
Antenna Noise Temp (K):	64
Antenna LNA Temp (K):	70
Total Noise Temp (K):	134
Antenna G/T (dB/K):	37.23
TX Antenna Gain (dBi):	60.1
Conducted TX Power to Antenna (dBW):	<b>13.92</b>
TX backoff (dB):	<b>0.2288</b>
Power into flange (dBW/ 4 kHz):	<b>-24.83</b>
Antenna mis-point (dB):	0.5
Rain Attenuation (dB):	1
Atmospheric Attenuation (dB):	0.5

**Inroute Downlink Interference**

Adjacent Channel Downlink (dB):	-30.0
Adjacent Satellite Downlink (dB):	-25.0
Cross-Pol Downlink (dB):	-20.0
Intermod Downlink (dB):	-30.0
Cumulative Interf. Downlink (dB):	<b>-18.19</b>

**Outroute Uplink Interference**

Adjacent Channel Uplink (dB):	-30.0
Adjacent Satellite Uplink (dB):	-30.0
Cross-Pol Uplink (dB):	-20.0
Intermod Uplink (dB):	-30.0
Cumulative Interf. Uplink (dB):	<b>-18.86</b>

**Outroute Path:****Ideal Link****Mispoint/  
Rain/  
Atmospheric  
Losses****Intermod/  
Satellite/  
Cross-pol  
Interference**

EIRP towards satellite (dBW)	74.02	73.52	73.52
Uplink Path Loss (dB)	207.40	207.40	207.40
Spreading Loss (dB)	-162.85	-162.85	-162.85
Flux Density at Satellite (dBW/m^2)	-88.83	-89.33	-89.33
Uplink C/T (dB)	-129.78	-130.28	-130.28
C/No (dB)	98.82	98.32	98.32
Noise BW (dB-Hz)	74.77	74.77	74.77
Interference (dB)	N/A	N/A	-18.86
<b>Uplink C/N (dB)</b>	<b>24.05</b>	<b>23.55</b>	<b>17.59</b>
Satellite downlink EIRP (dBW)	51.97	51.47	51.47
Downlink Path Loss (dB)	205.22	205.22	205.22
Downlink C/T (dB)	-141.55	-143.05	-143.05
C/No (dB)	12.28	10.78	10.78
Noise BW (dB-Hz)	74.77	74.77	74.77
Interference (dB)	N/A	N/A	-9.17
<b>Downlink C/N (dB)</b>	<b>12.28</b>	<b>10.78</b>	<b>6.89</b>
Cumulative C/N (dB)	12.00	10.56	6.54
Necessary C/N (dB)	5.4	5.4	5.4
<b>Cumulative Outroute Link Margin (dB)</b>	<b>6.60</b>	<b>5.16</b>	<b>1.14</b>

<b>Inroute Signal:</b>	QPSK 1/2
Uplink Frequency (MHz):	14250
Downlink Frequency (MHz):	12000
Baseband BW (MHz):	0.256
Spread BW (MHz):	1.024
Required C/N (dB):	2.1

## SAA Link Budget

Link Budget for satellite **SES-10** at **-67.0** degreesSkew operational limit: **65** degrees

<b>Outroute Signal:</b>	QPSK 5/6
Uplink Frequency (MHz):	14250
Downlink Frequency (MHz):	12000
Bandwidth (MHz):	30
Required C/N (dB):	5.4

<b>Inroute signal:</b>	<b>QPSK 1/2</b>	rate	<b>0.256</b>	<b>Mbps</b>	in bandwidth	<b>1.024</b>	<b>MHz</b>
<b>Outroute signal:</b>	<b>QPSK 5/6</b>	rate	<b>30</b>	<b>Mbps</b>	in bandwidth	<b>30</b>	<b>MHz</b>

<b>Satellite:</b>	SES-10
Longitude (deg East):	-67
Maximum Saturated Downlink EIRP (dBW):	53
G/T towards Remote (dB/K):	6.30
G/T towards NOC (dB/K):	3.60
G/T Degradation (dB):	0
Saturation Flux Density (dBW/m <sup>2</sup> ):	-97
Attenuation Setting (dB):	12
Saturated EIRP towards NOC (dBW):	51.9
Saturated EIRP towards Remote (dBW):	52.8
Max Authorized Downlink EIRP (dBw/Hz):	-22
Downlink EIRP backoff (dB):	<b>0.2288</b>
Adjusted Outroute EIRP to Remote (dBW):	<b>52.571</b>
Downlink EIRP Density to Remote (dBW/Hz):	<b>-22.20</b>
Downlink EIRP Inroute (dBW):	<b>13.08</b>

		<u>Lat</u>	<u>Long</u>
<b>Remote:</b>	Mexico City	19.434	-99.074
<b>NOC:</b>	Steele Valley	33.758	-117.315

Inroute Path:Ideal LinkMispoint/  
Rain/  
Atmospheric  
LossesIntermod/  
Satellite/  
Cross-pol  
Interference

EIRP towards satellite (dBW)		33.30	32.30	32.30
Uplink Path Loss (dB)		206.97	206.97	206.97
Spreading Loss (dB)		-162.42	-162.42	-162.42
Flux Density at Satellite (dBW/m <sup>2</sup> )		-129.12	-130.12	-130.12
Uplink C/T (dB)		-167.37	-168.37	-168.37
C/No (dB)		61.23	60.23	60.23
Noise BW (dB-Hz)		54.08	54.08	54.08
Interference (dB)		N/A	N/A	-10.59
<b>Uplink C/N (dB)</b>		<b>7.15</b>	<b>6.15</b>	<b>4.81</b>
<b>Remote:</b>	Mexico City			
Satellite downlink EIRP (dBW)		14.08	13.08	13.08
Downlink Path Loss (dB)		205.91	205.91	205.91
Downlink C/T (dB)		-154.60	-157.60	-157.60
C/No (dB)		74.01	71.01	71.01
Noise BW (dB-Hz)		54.08	54.08	54.08
Interference (dB)		N/A	N/A	-18.19
<b>Downlink C/N (dB)</b>		<b>19.92</b>	<b>16.92</b>	<b>14.50</b>
Cumulative C/N (dB)		6.93	5.80	4.37
Necessary C/N (dB)		2.10	2.10	2.10
<b>Cumulative Inroute Link Margin (dB)</b>		<b>4.83</b>	<b>3.70</b>	<b>2.27</b>

**Inroute Uplink Interference**

Adjacent Channel Uplink (dB):	-30.0
Adjacent Satellite Uplink (dB):	-14.2
Cross-Pol Uplink (dB):	-14.2
Intermod Uplink (dB):	-20.0
Cumulative Interf. Uplink (dB):	<b>-10.59</b>

**SAA Link Budget**

Link Budget for satellite **SES-10** at **-67.0** degrees

Skew operational limit: **65** degrees

**Outroute Downlink Interference**

Adjacent Channel Downlink (dB):	-30.0
Adjacent Satellite Downlink (dB):	-10.0
Cross-Pol Downlink (dB):	-20.0
Intermod Downlink (dB):	-20.0
Cumulative Interf. Downlink (dB):	<b>-9.17</b>

**NOC:**

Steele Valley

Latitude (deg North):	33.758
Longitude (deg East):	-117.315
Antenna diameter (m):	9 m
RX Antenna Gain (dBi):	58.5
Antenna Noise Temp (K):	64
Antenna LNA Temp (K):	70
Total Noise Temp (K):	134
Antenna G/T (dB/K):	37.23
TX Antenna Gain (dBi):	60.1
Conducted TX Power to Antenna (dBW):	<b>13.92</b>
TX backoff (dB):	<b>0.2288</b>
Power into flange (dBW/ 4 kHz):	<b>-24.83</b>
Antenna mis-point (dB):	0.5
Rain Attenuation (dB):	1
Atmospheric Attenuation (dB):	0.5

**Inroute Downlink Interference**

Adjacent Channel Downlink (dB):	-30.0
Adjacent Satellite Downlink (dB):	-25.0
Cross-Pol Downlink (dB):	-20.0
Intermod Downlink (dB):	-30.0
Cumulative Interf. Downlink (dB):	<b>-18.19</b>

**Outroute Uplink Interference**

Adjacent Channel Uplink (dB):	-30.0
Adjacent Satellite Uplink (dB):	-30.0
Cross-Pol Uplink (dB):	-20.0
Intermod Uplink (dB):	-30.0
Cumulative Interf. Uplink (dB):	<b>-18.86</b>

**Outroute Path:****Ideal Link****Mispoint/  
Rain/  
Atmospheric  
Losses****Intermod/  
Satellite/  
Cross-pol  
Interference**

EIRP towards satellite (dBW)	74.02	73.52	73.52
Uplink Path Loss (dB)	207.40	207.40	207.40
Spreading Loss (dB)	-162.85	-162.85	-162.85
Flux Density at Satellite (dBW/m^2)	-88.83	-89.33	-89.33
Uplink C/T (dB)	-129.78	-130.28	-130.28
C/No (dB)	98.82	98.32	98.32
Noise BW (dB-Hz)	74.77	74.77	74.77
Interference (dB)	N/A	N/A	-18.86
<b>Uplink C/N (dB)</b>	<b>24.05</b>	<b>23.55</b>	<b>17.59</b>
Satellite downlink EIRP (dBW)	52.57	52.07	52.07
Downlink Path Loss (dB)	205.48	205.48	205.48
Downlink C/T (dB)	-141.21	-142.71	-142.71
C/No (dB)	12.62	11.12	11.12
Noise BW (dB-Hz)	74.77	74.77	74.77
Interference (dB)	N/A	N/A	-9.17
<b>Downlink C/N (dB)</b>	<b>12.62</b>	<b>11.12</b>	<b>7.03</b>
Cumulative C/N (dB)	12.32	10.88	6.66
Necessary C/N (dB)	5.4	5.4	5.4
<b>Cumulative Outroute Link Margin (dB)</b>	<b>6.92</b>	<b>5.48</b>	<b>1.26</b>

**Inroute Signal:** QPSK 1/2  
 Uplink Frequency (MHz): 14250  
 Downlink Frequency (MHz): 12000  
 Baseband BW (MHz): 1.024  
 Spread BW (MHz): 1.024  
 Required C/N (dB): 2.1

**GSA Link Budget**

**Link Budget for satellite SES-10 at -67.0 degrees**

**Outroute Signal:** QPSK 5/6  
 Uplink Frequency (MHz): 14250  
 Downlink Frequency (MHz): 12000  
 Bandwidth (MHz): 30  
 Required C/N (dB): 5.4

**Effective Skew Value: 0 degrees**  
**Effective Elevation Value: 70 degrees**

**Inroute signal: QPSK 1/2** rate **1.024 Msps** in bandwidth **1.024 MHz**  
**Outroute signal: QPSK 5/6** rate **30 Msps** in bandwidth **30 MHz**

**Satellite:** SES-10  
 Longitude (deg East): -67  
 Maximum Saturated Downlink EIRP (dBW): 53  
 G/T towards Remote (dB/K): 2.50  
 G/T towards NOC (dB/K): 3.60  
 G/T Degradation (dB): 0  
 Saturation Flux Density (dBW/m^2): -97  
 Saturated EIRP towards NOC (dBW): 51.9  
 Saturated EIRP towards remote (dBW): 51.2  
 Attenuation Setting (dB): 12  
 Max Authorized Downlink EIRP (dBW/Hz): -22  
 Downlink EIRP backoff (dB): **0.229**  
 Adjusted Outroute EIRP to Remote (dBW): **50.97**  
 Downlink EIRP Density to Remote (dBW/Hz): **-23.80**  
 Downlink EIRP Inroute (dBW): **17.82**

**Remote:** Airborne **Lat** 18.97 **Long** -67  
**NOC:** Steele Valley 33.758 -117.315

**Inroute Path:**

**Ideal Link**

**Mispoint/  
Rain/  
Atmospheric  
Losses**

**Intermod/  
Satellite/  
Cross-pol  
Interference**

EIRP towards satellite (dBW)	41.58	40.58	40.58
Uplink Path Loss (dB)	206.72	206.72	206.72
Spreading Loss (dB)	-162.16	-162.16	-162.16
Flux Density at Satellite (dBW/m^2)	-120.58	-121.58	-121.58
Uplink C/T (dB)	-162.63	-163.63	-163.63
C/No (dB)	65.97	64.97	64.97
Noise BW (dB-Hz)	60.10	60.10	60.10
Interference (dB)	N/A	N/A	-14.36
<b>Uplink C/N (dB)</b>	<b>5.86</b>	<b>4.86</b>	<b>4.40</b>
Satellite downlink EIRP (dBW)	18.82	17.82	17.82
Downlink Path Loss (dB)	205.91	205.91	205.91
Downlink C/T (dB)	-149.86	-152.86	-152.86
C/No (dB)	78.74	75.74	75.74
Noise BW (dB-Hz)	60.10	60.10	60.10
Interference (dB)	N/A	N/A	-18.19
<b>Downlink C/N (dB)</b>	<b>18.64</b>	<b>15.64</b>	<b>13.72</b>

**Remote:** Airborne  
 Latitude (deg North): 18.97  
 Longitude (deg East): -67  
 Aperture TX Gain (dBi): 33.6  
 Cable, Skew Module, Radome Loss (dB): 5.7  
 Effective TX Antenna Gain (dBi): 27.90  
 TX Power (dBm): **43.68**  
 TX Backoff (dB): 0  
 Power into flange (dBW/4 kHz): **-15.60**  
 RX G/T (dB/K): 12.60  
 Antenna Mispoint (dB): 0.5  
 Rain Attenuation (dB): 0  
 Atmospheric Attenuation (dB): 0.5

Cumulative C/N (dB)	5.64	4.52	3.92
Necessary C/N (dB)	2.10	2.10	2.10
<b>Cumulative Inroute Link Margin (dB)</b>	<b>3.54</b>	<b>2.42</b>	<b>1.82</b>

**Inroute Uplink Interference**

Adjacent Channel Uplink (dB):	-30.0
Adjacent Satellite Uplink (dB):	-18.9
Cross-Pol Uplink (dB):	-18.9
Intermod Uplink (dB):	-20.0
Cumulative Interf. Uplink (dB):	<b>-14.36</b>

**GSAA Link Budget****Outroute Downlink Interference**

Adjacent Channel Downlink (dB):	-30.0
Adjacent Satellite Downlink (dB):	-10.0
Cross-Pol Downlink (dB):	-20.0
Intermod Downlink (dB):	-20.0
Cumulative Interf. Downlink (dB):	<b>-9.17</b>

Link Budget for satellite **SES-10** at **-67.0** degreesEffective Skew Value: **0** degreesEffective Elevation Value: **70** degrees**NOC:**

Steele Valley

Latitude (deg North):	33.758
Longitude (deg East):	-117.315
Antenna diameter (m):	9 m
RX Antenna Gain (dBi):	58.5
Antenna Noise Temp (K):	64
Antenna LNA Temp (K):	70
Total Noise Temp (K):	134
Antenna G/T (dB/K):	37.23
TX Antenna Gain (dBi):	60.1
Conducted TX power to Antenna (dBW):	13.92
Power into flange (dBW/ 4 kHz):	<b>-24.83</b>
Antenna mis-point (dB):	0.5
Rain Attenuation (dB):	1
Atmospheric Attenuation (dB):	0.5

**Inroute Downlink Interference**

Adjacent Channel Downlink (dB):	-30.0
Adjacent Satellite Downlink (dB):	-25.0
Cross-Pol Downlink (dB):	-20.0
Intermod Downlink (dB):	-30.0
Cumulative Interf. Downlink (dB):	<b>-18.19</b>

**Outroute Uplink Interference**

Adjacent Channel Uplink (dB):	-30.0
Adjacent Satellite Uplink (dB):	-30.0
Cross-Pol Uplink (dB):	-20.0
Intermod Uplink (dB):	-30.0
Cumulative Interf. Uplink (dB):	<b>-18.86</b>

**Outroute Path:****Ideal Link****Mispoint/  
Rain/  
Atmospheric  
Losses****Intermod/  
Satellite/  
Cross-pol  
Interference**

EIRP towards satellite (dBW)	74.02	73.52	73.52
Uplink Path Loss (dB)	207.40	207.40	207.40
Spreading Loss (dB)	-162.85	-162.85	-162.85
Flux Density at Satellite (dBW/m^2)	-88.83	-89.33	-89.33
Uplink C/T (dB)	-129.78	-130.28	-130.28
C/No (dB)	98.82	98.32	98.32
Noise BW (dB-Hz)	74.77	74.77	74.77
Interference (dB)	N/A	N/A	-18.86
<b>Uplink C/N (dB)</b>	<b>24.05</b>	<b>23.55</b>	<b>17.59</b>
Satellite downlink EIRP (dBW)	50.97	50.47	50.47
Downlink Path Loss (dB)	205.22	205.22	205.22
Downlink C/T (dB)	-141.65	-143.15	-143.15
C/No (dB)	12.18	10.68	10.68
Noise BW (dB-Hz)	74.77	74.77	74.77
Interference (dB)	N/A	N/A	-9.17
<b>Downlink C/N (dB)</b>	<b>12.18</b>	<b>10.68</b>	<b>6.85</b>
Cumulative C/N (dB)	11.90	10.46	6.50
Necessary C/N (dB)	5.4	5.4	5.4
<b>Cumulative Outroute Link Margin (dB)</b>	<b>6.50</b>	<b>5.06</b>	<b>1.10</b>

**Inroute Signal:** QPSK 1/2  
 Uplink Frequency (MHz): 14250  
 Downlink Frequency (MHz): 12000  
 Baseband BW (MHz): 0.256  
 Spread BW (MHz): 1.024  
 Required C/N (dB): 2.1

**GSA Link Budget**
**Link Budget for satellite SES-10 at -67.0 degrees**

**Outroute Signal:** QPSK 5/6  
 Uplink Frequency (MHz): 14250  
 Downlink Frequency (MHz): 12000  
 Bandwidth (MHz): 30  
 Required C/N (dB): 5.4

**Effective Skew Value: 65 degrees**  
**Effective Elevation Value: 50 degrees**

**Inroute signal: QPSK 1/2** rate **0.256 Msps** in bandwidth **1.024 MHz**  
**Outroute signal: QPSK 5/6** rate **30 Msps** in bandwidth **30 MHz**

**Satellite:** SES-10  
 Longitude (deg East): -67  
 Maximum Saturated Downlink EIRP (dBW): 53  
 G/T towards Remote (dB/K): 2.00  
 G/T towards NOC (dB/K): 3.60  
 G/T Degradation (dB): 0  
 Saturation Flux Density (dBW/m<sup>2</sup>): -97  
 Saturated EIRP towards NOC (dBW): 51.9  
 Saturated EIRP towards remote (dBW): 50  
 Attenuation Setting (dB): 12  
 Max Authorized Downlink EIRP (dBW/Hz): -22  
 Downlink EIRP backoff (dB): **0.229**  
 Adjusted Outroute EIRP to Remote (dBW): **49.77**  
 Downlink EIRP Density to Remote (dBW/Hz): **-25.00**  
 Downlink EIRP Inroute (dBW): **12.59**

**Remote:** Airborne **Lat** 15.347 **Long** -99.576  
**NOC:** Steele Valley 33.758 -117.315

**Remote:** Airborne  
 Latitude (deg North): 15.347  
 Longitude (deg East): -99.576  
 Aperture TX Gain (dBi): 33.6  
 Cable, Skew Module, Radome Loss (dB): 5.7  
 Effective TX Antenna Gain (dBi): 27.90  
 TX Power (dBm): **39.18**  
 TX Backoff (dB): 0  
 Power into flange (dBW/4 kHz): **-20.10**  
 RX G/T (dB/K): 12.60  
 Antenna Mispoint (dB): 0.5  
 Rain Attenuation (dB): 0  
 Atmospheric Attenuation (dB): 0.5

<u>Inroute Path:</u>	<u>Ideal Link</u>	<u>Mispoint/ Rain/ Atmospheric Losses</u>	<u>Intermod/ Satellite/ Cross-pol Interference</u>
EIRP towards satellite (dBW)	37.08	36.08	36.08
Uplink Path Loss (dB)	206.95	206.95	206.95
Spreading Loss (dB)	-162.40	-162.40	-162.40
Flux Density at Satellite (dBW/m <sup>2</sup> )	-125.31	-126.31	-126.31
Uplink C/T (dB)	-167.86	-168.86	-168.86
C/No (dB)	60.74	59.74	59.74
Noise BW (dB-Hz)	54.08	54.08	54.08
Interference (dB)	N/A	N/A	-10.15
<b>Uplink C/N (dB)</b>	<b>6.65</b>	<b>5.65</b>	<b>4.33</b>
Satellite downlink EIRP (dBW)	13.59	12.59	12.59
Downlink Path Loss (dB)	205.91	205.91	205.91
Downlink C/T (dB)	-155.09	-158.09	-158.09
C/No (dB)	73.51	70.51	70.51
Noise BW (dB-Hz)	54.08	54.08	54.08
Interference (dB)	N/A	N/A	-18.19
<b>Downlink C/N (dB)</b>	<b>19.43</b>	<b>16.43</b>	<b>14.21</b>
Cumulative C/N (dB)	6.43	5.31	3.91
Necessary C/N (dB)	2.10	2.10	2.10
<b>Cumulative Inroute Link Margin (dB)</b>	<b>4.33</b>	<b>3.21</b>	<b>1.81</b>



**Inroute Uplink Interference**

Adjacent Channel Uplink (dB):	-30.0
Adjacent Satellite Uplink (dB):	-13.7
Cross-Pol Uplink (dB):	-13.7
Intermod Uplink (dB):	-20.0
Cumulative Interf. Uplink (dB):	<b>-10.15</b>

**GSAA Link Budget****Outroute Downlink Interference**

Adjacent Channel Downlink (dB):	-30.0
Adjacent Satellite Downlink (dB):	-10.0
Cross-Pol Downlink (dB):	-20.0
Intermod Downlink (dB):	-20.0
Cumulative Interf. Downlink (dB):	<b>-9.17</b>

Link Budget for satellite **SES-10** at **-67.0** degreesEffective Skew Value: **65** degreesEffective Elevation Value: **50** degrees**NOC:**

Steele Valley

Latitude (deg North):	33.758
Longitude (deg East):	-117.315
Antenna diameter (m):	9 m
RX Antenna Gain (dBi):	58.5
Antenna Noise Temp (K):	64
Antenna LNA Temp (K):	70
Total Noise Temp (K):	134
Antenna G/T (dB/K):	37.23
TX Antenna Gain (dBi):	60.1
Conducted TX power to Antenna (dBW):	13.92
Power into flange (dBW/ 4 kHz):	<b>-24.83</b>
Antenna mis-point (dB):	0.5
Rain Attenuation (dB):	1
Atmospheric Attenuation (dB):	0.5

**Inroute Downlink Interference**

Adjacent Channel Downlink (dB):	-30.0
Adjacent Satellite Downlink (dB):	-25.0
Cross-Pol Downlink (dB):	-20.0
Intermod Downlink (dB):	-30.0
Cumulative Interf. Downlink (dB):	<b>-18.19</b>

**Outroute Uplink Interference**

Adjacent Channel Uplink (dB):	-30.0
Adjacent Satellite Uplink (dB):	-30.0
Cross-Pol Uplink (dB):	-20.0
Intermod Uplink (dB):	-30.0
Cumulative Interf. Uplink (dB):	<b>-18.86</b>

**Outroute Path:****Ideal Link****Mispoint/  
Rain/  
Atmospheric  
Losses****Intermod/  
Satellite/  
Cross-pol  
Interference**

EIRP towards satellite (dBW)	74.02	73.52	73.52
Uplink Path Loss (dB)	207.40	207.40	207.40
Spreading Loss (dB)	-162.85	-162.85	-162.85
Flux Density at Satellite (dBW/m^2)	-88.83	-89.33	-89.33
Uplink C/T (dB)	-129.78	-130.28	-130.28
C/No (dB)	98.82	98.32	98.32
Noise BW (dB-Hz)	74.77	74.77	74.77
Interference (dB)	N/A	N/A	-18.86
<b>Uplink C/N (dB)</b>	<b>24.05</b>	<b>23.55</b>	<b>17.59</b>
Satellite downlink EIRP (dBW)	49.77	49.27	49.27
Downlink Path Loss (dB)	205.45	205.45	205.45
Downlink C/T (dB)	-143.08	-144.58	-144.58
C/No (dB)	10.75	9.25	9.25
Noise BW (dB-Hz)	74.77	74.77	74.77
Interference (dB)	N/A	N/A	-9.17
<b>Downlink C/N (dB)</b>	<b>10.75</b>	<b>9.25</b>	<b>6.20</b>
Cumulative C/N (dB)	10.55	9.09	5.89
Necessary C/N (dB)	5.4	5.4	5.4
<b>Cumulative Outroute Link Margin (dB)</b>	<b>5.15</b>	<b>3.69</b>	<b>0.49</b>



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lat 23.479558° lon -91.819017° elev -7599 ft



Imagery Date: 12/13/2015

Eye alt 4234.51 mi