

Exhibit B

Link Budgets and Coverage Maps

3-Oct-12		256ksps R1/2 HN INROUTE LINK BUDGET						
04:08 PM		Satellite: IS19 NEP						
		0.51m Remote in Juneau			9.0m hub in Napa, CA			
BASELINE PARAMETERS				Value	Unit	SUMMARY		
CARRIER DATA	Carrier Info Rate	256	Kbps	% Avail S/C Power Req'd/Crr	0.13	%		
	FEC Code Rate	0.500		% Xponder Bandwidth Req'd/Crr	4.00	%		
	Crr Xmission Rate	256	Kbps	Clear Sky Link Margin	2.1	dB		
	Min Req'd Ebi/No	2.1	dB	Power Equivalent Bandwidth	0.05	MHz		
	No of bits/symbol	2.0	Bits	Contract EIRP at reference contour	16.6	dBw		
	Demod BT Product	1.00		LINK PERFORMANCE	CI Sky	Up Fade	Dn Fade	Unit
	Spreading factor	4.00		Satellite SFD	-89.1	-89.1	-89.1	dBW/m2
	Spread Bandwidth	1024	kHz	Agg Input B.O.	7.0	7.0	7.0	dB
	Crr Spacing Fctr	1.41	x Rs	Input Backoff/Crr	35.9	37.2	35.9	dB
	Carrier Spacing	1440	kHz	Crr Flux Density	-125.0	-126.3	-125.0	dBW/m2
SATELLITE DATA	Satellite	IS19 NEP	UPLINK	Gain of a Sq meter	44.5	44.5	44.5	dBi
	Location	166.0 EL	BUDGET	Uplink Path Losses	208.3	209.5	208.3	dB
	Hub EIRP Contour	47.4 dBW	Carrier Up EIRP	38.7	38.7	38.7	dBW	
	Remote G/T Contour	1.7 dB/K	Satellite G/T	1.7	1.7	1.7	dB/K	
	Attn Setting	0.0 dB	C/N Uplink	0.6	-0.6	0.6	dB	
	Xponder Gain	184.0 dB	Saturation EIRP	47.4	47.4	47.4	dBW	
	SFD	-89.1 dBW/m2	Agg Output B.O.	4.0	4.0	4.0	dB	
	Xponder Bandwidth	36.0 MHz	Output Backoff/Crr	32.9	34.2	32.9	dB	
	Agg Input BO	7.0 dB	Carrier Dn EIRP	14.5	13.2	14.5	dBW	
	Agg Output BO	4.0 dB	Dnlink Path Losses	207.0	207.0	213.1	dB	
GROUND SEGMENT DATA	Uplink Frequency	14.2500 GHz	BUDGET	Rx Pointing Losses	0.6	0.6	0.6	dB
	Dnlink Frequency	12.5020 GHz	CI Sky E/S G/T	37.6	37.6	37.6	dB/K	
	Tx Antenna Dia	0.51 meters	Degradation in G/T	0.0	0.0	4.1	dB	
	HPA Max Output Pwr	10.0 Watts	C/N Downlink	13.0	11.8	2.8	dB	
	Tx Antenna Gain	29.0 dBi	C/N Uplink	0.6	-0.6	0.6	dB	
	Tx Pointing Losses	0.3 dB	C/N Downlink	13.0	11.8	2.8	dB	
	Rx Antenna Dia	9.0 meters	C/I Intermod (S/C)	5.0	3.7	5.0	dB	
	Rx Antenna Effic	62 %	C/I Uplink Adj Sat	9.8	8.6	9.8	dB	
	Rx Antenna Gain	59.4 dBi	C/I Downlink Adj Sat	18.2	17.0	18.2	dB	
	Rx Pointing Losses	0.6 dB	C/I Xpol	8.5	7.2	2.1	dB	
RAIN MARGINS	Pre LNA Losses	0.1 dB	C/I Adjacent Carrier	17.0	15.8	17.0	dB	
	LNA Noise Temp	90 K	C/(Nu,d)	0.4	-0.8	-1.4	dB	
	Ant,etc Temp	50 K	C/(Nu,d,ims/c)	-0.9	-2.1	-2.3	dB	
	CI Sky Noise Temp	140 K	C/(Nu,d,im,i)Total	-1.8	-3.0	-3.9	dB	
	Rx Clr Sky G/T	37.6 dB/K	LINK MARGIN	2.1	0.9	0.0	dB	
	Uplink Rain Attn	1.2 dB	Minimum Ebi/No	2.1	dB			
	Dnlink Rain Attn	6.2 dB	Minimum Req'd Ebt/No	-0.9	dB			
	Target Link Availability	98.9 %	10*log(Rbt/Noise BW)	-3.0	dB			
	Tx E/S Location	Juneau	Minimum Req'd C/N	-3.9	dB			
	SITE GEOGRAPHIC DATA	Tx E/S Latitude	58.3 N	RF Head Max Output Power	10.0	Watts		
Tx E/S Longitude		-134.5 W	Misc Feed Losses etc	0.0				
Tx E/S Elev Angle		6.8 deg	E/S EIRP Req'd twds S/C	38.7	dBW			
Skew		28.0 deg	(Note: req'd to achieve link margin)					
Rx E/S Location		Napa, CA	Tx Pointing Losses	0.3	dB			
Rx E/S Latitude		38.2 N	Max EIRP Avail towards S/C	38.7	dBW			
Rx E/S Longitude		-122.3 W	RF Head Output BO (CI Sky)	0.0	dB			
Rx E/S Elev Angle		5.6 deg	Uplink Pwr Dens into Feed	-14.1	dBW/4kHz			
XPOL ISOLATION DATA		S/C Isolation	36.0 dB					
		Tx E/S Isolation	35.0 dB					
	Rx E/S Isolation	25.0 dB						
	MISC LOSSES	Uplnk Free Sp Loss	207.8 dB					
	Dnlink Free Sp Loss	206.7 dB						
	Uplink Atmos Attn	0.5 dB						
	Dnlink Atmos Attn	0.3 dB						

10/3/2012			HughesNet LINK BUDGET								
4:13 PM			Satellite: IS19 NEP								
			0.51 m Remote Located in Juneau		Skew = 28.0 deg						
			Crr EIRP Density = 10.5 dBW/4 KHz								
BASELINE PARAMETERS			Value	Unit	S U M M A R Y						
CARRIER	Carrier Info Rate		6667	Kbps	% Avail S/C Power Req'd/Crr		43.5 %				
	Net FEC Code Rate		0.667		% Xponder Bandwidth Req'd/Crr		17.5 %				
	Transmit Symbol Rate		5000	Kbps	Clear Sky Link Margin		2.2 dB				
	Min Req'd Ebi/No		2.1	dB	Power Equivalent Bandwidth		15.7 MHz				
					EIRP at 49.5 dBW reference contour		41.9 dBw				
					LINK PERFORMANCE		CI Sky	Up Fade	Dn Fade	Unit	
DATA	No of bits/symbol		2.0	Bits	Satellite SFD		-87.4	-87.4	-87.4	dBW/m2	
	Demod BT Product		1.00		Agg Input B.O.		7.0	7.0	7.0	dB	
	Crr Noise Bandwidth		5000	KHz	Input Backoff/Crr		11.4	11.4	11.4	dB	
	Carrier Spacing		6300	KHz	Crr Flux Density		-98.8	-98.8	-98.8	dBW/m2	
					UPLINK		Gain of a Sq meter	44.5	44.5	44.5	dB
					BUDGET		Uplink Path Losses	208.2	215.4	208.2	dB
SATELLITE	Satellite		IS19 NEP		Carrier Up EIRP		64.8	72.0	64.8	dBW	
	Location		166.0	EL	Satellite G/T		0.0	0.0	0.0	dB/K	
	EIRP Contour at Remote		49.1	dBW	C/N Uplink		18.3	18.3	18.3	dB	
	G/T Contour at Hub		0.0	dB/K	EIRP Contour		49.1	49.1	49.1	dBW	
	Attn Setting		0.0	dB	Agg Output B.O.		4.0	4.0	4.0	dB	
	Xponder Gain		184.0	dB	Output Backoff/Crr		7.6	7.6	7.6	dB	
DATA	SFD		-87.4	dBW/m2	Carrier Dn EIRP		40.7	40.7	41.5	dBW	
	Xponder Bandwidth		36.0	MHz	Dnlink Path Losses		207.0	207.0	208.0	dB	
	Agg Input BO		7.0	dB	BUDGET		Rx Pointing Losses	0.2	0.2	0.2	dB
	Agg Output BO		4.0	dB	CI Sky E/S G/T		11.8	11.8	11.8	dB/K	
	Uplink Frequency		14.250	GHz	Degradation in G/T		0.0	0.0	2.2	dB	
	Dnlink Frequency		12.502	GHz	C/N Downlink		6.9	6.9	4.5	dB	
GROUND	Tx Antenna Dia		9.0	meters	C/N Uplink		18.3	18.3	18.3	dB	
	HPA Max Output Pwr		750.0	Watts	C/N Downlink		6.9	6.9	4.5	dB	
					C/I Intermod (S/C)		22.6	22.6	22.6	dB	
					C/I Uplink Adj Sat		30.6	30.6	30.6	dB	
					C/I Dnlink Adj Sat		13.9	13.9	13.9	dB	
					C/I Xpol		18.4	14.5	18.2	dB	
SEGMENT	Tx Antenna Gain		60.5	dB	C/I Intermod (E/S)		32.4	18.0	32.4	dB	
	Tx Pointing Losses		0.8	dB	C/(Nu,d)		6.6	6.6	4.3	dB	
	Rx Antenna Dia		0.51	meters	C/(Nu,d,ims/c)		6.5	6.5	4.2	dB	
	Rx Antenna Gain		31.6	dB	C/(Nu,d,im,i) Total		5.5	5.0	3.6	dB	
	Rx Pointing Losses		0.2	dB	LINK MARGIN		2.2	1.7	0.3	dB	
	Pre LNA Losses		0.3	dB	MODEM		Minimum Req'd Ebi/No		2.1	dB	
DATA	LNA Noise Temp		43	K	Minimum Req'd Ebt/No			0.3	dB		
	Ant,etc Temp		28	K	10*log(Rbt/Noise BW)			3.0	dB		
	CI Sky Noise Temp		71	K	Minimum Req'd C/N			3.3	dB		
	Rx Clr Sky G/T		11.8	dB/K	E/S EIRP/Crr Req'd (CI Sky)			64.8	dBW		
					Tx Gain - Pointing Loss			59.7	dB		
					Tx IFL Losses			0.0	dB		
RAIN	Uplink Rain Attn		7.2	dB	Tx Power Req'd/Cxr (clear sky)			5.1	dBW		
	Dnlink Rain Attn		1.0	dB	HPA			3.3	watts		
	Up Fade Pwr Cntrl		7.2	dB	Uplink Power Control			7.2	dB		
	Link Availability		98.9	%	TX Power Req'd/Cxr (full UPC)			12.4	dBW		
								17.2	watts		
SITE	Tx E/S Location		Napa, CA	Dnlink EIRP Dens @ Beam Peak (49.5 dBW)			10.5	dBW/4KHz			
	Tx E/S Latitude		38.2	N							
	Tx E/S Longitude		-122.3	W							
	Tx E/S Elev Angle		5.6	deg							
GEOGRAPHIC	Rx E/S Location		Juneau								
	Rx E/S Latitude		58.3	N							
	Rx E/S Longitude		-134.5	W							
	Rx E/S Elev Angle		7	deg							
ISOLATION	S/C Isolation		36.0	dB							
	Tx E/S Isolation		35.0	dB							
	Rx E/S Isolation		20.0	dB							
MISC	Uplnk Free Sp Loss		207.8	dB							
	Dnlnk Free Sp Loss		206.6	dB							
	Uplink Atmos Attn		0.4	dB							
	Dnlink Atmos Attn		0.4	dB							

10/3/2012		HughesNet LINK BUDGET				
4:15 PM		Satellite:		IS19 NEP		
		0.51 m Remote Located in		Juneau Skew = 28.0 deg		
		Crr EIRP Density =		10.6 dBW/4 KHz		
BASELINE PARAMETERS		Value	Unit	S U M M A R Y		
CARRIER	Carrier Info Rate	30000	Kbps	% Avail S/C Power Req'd/Crr	100.0 %	
	Net FEC Code Rate	0.500		% Xponder Bandwidth Req'd/Crr	100.0 %	
	Transmit Symbol Rate	30000	Kbps	Clear Sky Link Margin	4.7 dB	
	Min Req'd Ebi/No	1.2	dB	Power Equivalent Bandwidth	36.0 MHz	
	No of bits/symbol	2.0	Bits	EIRP at 49.5 dBW reference contour	49.0 dBw	
	Demod BT Product	1.00				
	Crr Noise Bandwidth	30000	KHz			
SATELLITE	Carrier Spacing	36000	KHz	LINK PERFORMANCE		
	Satellite	IS19 NEP		CI Sky	Up Fade	Dn Fade Unit
	Location	166.0	EL	Satellite SFD	-87.4	-87.4 -87.4 dBW/m2
	EIRP Contour at Remote	49.1	dBW	Agg Input B.O.	3.0	3.0 3.0 dB
	G/T Contour at Hub	0.0	dB/K	Input Backoff/Crr	3.8	3.8 3.8 dB
	Attn Setting	0.0	dB	Crr Flux Density	-91.2	-91.2 -91.2 dBW/m2
	Xponder Gain	183.5	dB	UPLINK Gain of a Sq meter	44.5	44.5 44.5 dBi
GROUND SEGMENT	SFD	-87.4	dBW/m2	BUDGET Uplink Path Losses	208.2	215.4 208.2 dB
	Xponder Bandwidth	36.0	MHz	Carrier Up EIRP	72.4	79.7 72.4 dBW
	Agg Input BO	3.0	dB	Satellite G/T	0.0	0.0 0.0 dB/K
	Agg Output BO	0.5	dB	C/N Uplink	18.1	18.1 18.1 dB
	Uplink Frequency	14.250	GHz	EIRP Contour	49.1	49.1 49.1 dBW
	Dnlink Frequency	12.502	GHz	Agg Output B.O.	0.5	0.5 0.5 dB
				Output Backoff/Crr	0.5	0.5 0.5 dB
RAIN MARGINS	Tx Antenna Dia	9.0	meters	Carrier Dn EIRP	48.6	48.6 47.8 dBW
	HPA Max Output Pwr	750.0	Watts	Dnlink Path Losses	207.0	207.0 208.0 dB
				BUDGET Rx Pointing Losses	0.2	0.2 0.2 dB
	Tx Antenna Gain	60.5	dBi	CI Sky E/S G/T	11.8	11.8 11.8 dB/K
	Tx Pointing Losses	0.8	dB	Degradation in G/T	0.0	0.0 2.2 dB
	Rx Antenna Dia	0.51	meters	C/N Downlink	7.0	7.0 3.0 dB
	Rx Antenna Gain	31.6	dBi	C/N Uplink	18.1	18.1 18.1 dB
GEOGRAPHIC DATA	Pre LNA Losses	0.3	dB	C/N Downlink	7.0	7.0 3.0 dB
	LNA Noise Temp	43	K	C/I Intermod (S/C)	99.0	99.0 99.0 dB
	Ant,etc Temp	28	K	C/I Uplink Adj Sat	30.4	30.4 30.4 dB
	CI Sky Noise Temp	71	K	C/I Dnlink Adj Sat	15.6	15.6 15.6 dB
	Rx Clr Sky G/T	11.8	dB/K	C/I Xpol	18.4	14.5 18.2 dB
				C/I Intermod (E/S)	32.4	18.0 32.4 dB
				C/(Nu,d)	6.7	6.7 2.9 dB
ISOLATION	Uplink Rain Attn	7.2	dB	C/(Nu,d,ims/c)	6.7	6.7 2.9 dB
	Dnlink Rain Attn	1.0	dB	C/(Nu,d,im,i)Total	5.9	5.3 2.5 dB
	Up Fade Pwr Cntrl	7.2	dB	LINK MARGIN	4.7	4.1 1.3 dB
	Link Availability	98.9	%	MODEM Minimum Req'd Ebi/No		1.2 dB
				Minimum Req'd Ebt/No		-1.8 dB
				10*log(Rbt/Noise BW)		3.0 dB
				Minimum Req'd C/N		1.2 dB
MISC LOSSES	Tx E/S Location	Napa, CA	E/S EIRP/Crr Req'd (CI Sky)			72.4 dBW
	Tx E/S Latitude	38.2 N	Tx Gain - Pointing Loss			59.7 dB
	Tx E/S Longitude	-122.3 W	Tx IFL Losses			0.0 dB
	Tx E/S Elev Angle	5.6 deg	Tx Power Req'd/Cxr (clear sky)			12.8 dBW
	Rx E/S Location	Juneau	HPA			18.9 watts
	Rx E/S Latitude	58.3 N	Uplink Power Control			7.2 dB
	Rx E/S Longitude	-134.5 W	TX Power Req'd/Cxr (full UPC)			20.0 dBW
XPOL DATA	Rx E/S Elev Angle	7 deg				99.6 watts
	XPOL S/C Isolation	36.0 dB				
	Tx E/S Isolation	35.0 dB				
Dnlink EIRP Dens @ Beam Peak (49.5 dBW)	Rx E/S Isolation	20.0 dB				
	Uplink Free Sp Loss	207.8 dB				
	Dnlink Free Sp Loss	206.6 dB				
Uplink Atmos Attn	Uplink Atmos Attn	0.4 dB				
	Dnlink Atmos Attn	0.4 dB				

3-Oct-12			256ksps R1/2 HN INROUTE LINK BUDGET							
04:23 PM			Satellite: IS19 NWP							
			0.51m Remote in Vladivostok			9.0m hub in Napa, CA				
BASELINE PARAMETERS				Value	Unit	SUMMARY				
CARRIER DATA	Carrier Info Rate	256	Kbps	% Avail S/C Power Req'd/Crr			1.26	%		
	FEC Code Rate	0.500		% Xponder Bandwidth Req'd/Crr			4.00	%		
	Crr Xmission Rate	256	Kbps	Clear Sky Link Margin			5.0	dB		
	Min Req'd Ebi/No	2.1	dB	Power Equivalent Bandwidth			0.45	MHz		
	No of bits/symbol	2.0	Bits	Contract EIRP at reference contour			28.1	dBW		
	Demod BT Product	1.00		LINK PERFORMANCE		CI Sky	Up Fade	Dn Fade	Unit	
	Spreading factor	4.00		Satellite SFD	-100.2	-100.2	-100.2	dBW/m2		
	Spread Bandwidth	1024	kHz	Agg Input B.O.	5.3	5.3	5.3	dB		
	Crr Spacing Fctr	1.41	x Rs	Input Backoff/Crr	24.3	25.3	24.3	dB		
	Carrier Spacing	1440	kHz	Crr Flux Density	-124.5	-125.5	-124.5	dBW/m2		
SATELLITE DATA	Satellite	IS19 NWP	UPLINK	Uplink Path Losses	207.8	208.8	207.8	dB		
	Location	166.0 EL	BUDGET	Carrier Up EIRP	38.7	38.7	38.7	dBW		
	Hub EIRP Contour	45.1 dBW	Satellite G/T	2.5	2.5	2.5	dB/K			
	Remote G/T Contour	2.5 dB/K								
	Attn Setting	5.0 dB								
	Xponder Gain	191.1 dB	C/N Uplink	1.9	0.9	1.9	dB			
	SFD	-100.2 dBW/m2								
	Xponder Bandwidth	36.0 MHz	Saturation EIRP	45.1	45.1	45.1	dBW			
	Agg Input BO	5.3 dB	Agg Output B.O.	4.0	4.0	4.0	dB			
	Agg Output BO	4.0 dB	Output Backoff/Crr	23.0	24.0	23.0	dB			
GROUND SEGMENT DATA	Uplink Frequency	14.2500 GHz	Carrier Dn EIRP	22.1	21.1	22.1	dBW			
	Dnlink Frequency	12.5020 GHz	Dnlink Path Losses	207.0	207.0	212.5	dB			
	Tx Antenna Dia	0.51 meters	BUDGET	Rx Pointing Losses	0.6	0.6	0.6	dB		
	HPA Max Output Pwr	10.0 Watts	CI Sky E/S G/T	37.6	37.6	37.6	dB/K			
			Degradation in G/T	0.0	0.0	4.0	dB			
	Tx Antenna Gain	29.0 dBi	C/N Downlink	20.6	19.6	11.2	dB			
	Tx Pointing Losses	0.3 dB	C/N Uplink	1.9	0.9	1.9	dB			
	Rx Antenna Dia	9.0 meters	C/N Downlink	20.6	19.6	11.2	dB			
	Rx Antenna Effcy	62 %	C/I Intermod (S/C)	14.9	13.9	14.9	dB			
	Rx Antenna Gain	59.4 dBi	C/I Uplink Adj Sat	11.3	10.3	11.3	dB			
RAIN MARGINS	Rx Pointing Losses	0.6 dB	COMPOSITE LINK	C/I Downlink Adj Sat	29.7	28.7	29.7	dB		
	Pre LNA Losses	0.1 dB	C/I Xpol	20.0	19.0	14.3	dB			
	LNA Noise Temp	90 K	C/I Adjacent Carrier	17.0	16.0	17.0	dB			
	Ant,etc Temp	50 K	C/(Nu,d)	1.9	0.9	1.5	dB			
	CI Sky Noise Temp	140 K	C/(Nu,d,ims/c)	1.7	0.7	1.3	dB			
	Rx Clr Sky G/T	37.6 dB/K	C/(Nu,d,im,i)Total	1.0	0.0	0.5	dB			
	Uplink Rain Attn	1.0 dB	LINK MARGIN	5.0	4.0	4.5	dB			
	Dnlink Rain Attn	5.5 dB								
	Target Link Availability	98.9 %	MODEM	Minimum Ebi/No		2.1	dB			
	SITE GEOGRAPHIC DATA	Tx E/S Location	Vladivostok	Minimum Req'd Ebt/No		-0.9	dB			
Tx E/S Latitude		43.1 N	10*log(Rbt/Noise BW)		-3.0	dB				
Tx E/S Longitude		131.9 E	Minimum Req'd C/N		-3.9	dB				
Tx E/S Elev Angle		29.6 deg								
Skew		30.9 deg								
Rx E/S Location		Napa, CA	EARTH STATION	RF Head Max Output Power	10.0	Watts				
Rx E/S Latitude		38.2 N	Misc Feed Losses etc	0.0						
Rx E/S Longitude		-122.3 W	E/S EIRP Req'd twds S/C	34.7	dBW					
Rx E/S Elev Angle		5.6 deg	(Note: req'd to achieve link margin)							
ISOLATION		XPOL	S/C Isolation	36.0	dB					
	Tx E/S Isolation	35.0	dB							
	Rx E/S Isolation	25.0	dB							
LOSSES	Uplink Free Sp Loss	207.3	dB							
	Dnlink Free Sp Loss	206.7	dB							
	Uplink Atmos Attn	0.5	dB							
	Dnlink Atmos Attn	0.3	dB							
			Uplink Pwr Dens into Feed			-14.1	dBW/4kHz			

10/3/2012		HughesNet LINK BUDGET					
4:26 PM		Satellite:		IS19 NWP			
		0.51 m Remote Located in		Vladivostok Skew = 30.9 deg			
		Crr EIRP Density =		12.2 dBW/4 KHz			
BASELINE PARAMETERS		Value	Unit	S U M M A R Y			
CARRIER	Carrier Info Rate	40000	Kbps	% Avail S/C Power Req'd/Crr 100.0 %			
	Net FEC Code Rate	0.667		% Xponder Bandwidth Req'd/Crr 100.0 %			
	Transmit Symbol Rate	30000	Kbps	Clear Sky Link Margin 2.0 dB			
	Min Req'd Ebi/No	2.1	dB	Power Equivalent Bandwidth 36.0 MHz			
	No of bits/symbol	2.0	Bits	EIRP at 51.1 dBW reference contour 50.6 dBW			
	Demod BT Product	1.00		LINK PERFORMANCE CI Sky Up Fade Dn Fade Unit			
	Crr Noise Bandwidth	30000	KHz	Satellite SFD -88.2 -88.2 -88.2 dBW/m2			
Carrier Spacing	36000	KHz	Agg Input B.O. 3.0 3.0 3.0 dB				
SATELLITE	Satellite	IS19 NWP	UPLINK		Gain of a Sq meter 44.5 44.5 44.5 dBi		
	Location	166.0 EL	BUDGET		Uplink Path Losses 208.2 216.3 208.2 dB		
	EIRP Contour at Remote	47.8 dBW			Carrier Up EIRP 71.6 79.8 71.6 dBW		
	G/T Contour at Hub	0.5 dB/K			Satellite G/T 0.5 0.5 0.5 dB/K		
	Attn Setting	15.0 dB			C/N Uplink 17.8 17.8 17.8 dB		
	Xponder Gain	183.0 dB			EIRP Contour 47.8 47.8 47.8 dBW		
	SFD	-88.2 dBW/m2			Agg Output B.O. 0.5 0.5 0.5 dB		
	Xponder Bandwidth	36.0 MHz			Output Backoff/Crr 0.5 0.5 0.5 dB		
	Agg Input BO	3.0 dB			Carrier Dn EIRP 47.3 47.3 46.5 dBW		
	Agg Output BO	0.5 dB			Dnlink Path Losses 206.5 206.5 207.0 dB		
GROUND	Uplink Frequency	14.250 GHz	DOWNLINK		Rx Pointing Losses 0.2 0.2 0.2 dB		
	Dnlink Frequency	12.502 GHz	BUDGET		CI Sky E/S G/T 11.8 11.8 11.8 dB/K		
	Tx Antenna Dia	9.0 meters			Degradation in G/T 0.0 0.0 1.1 dB		
	HPA Max Output Pwr	750.0 Watts			C/N Downlink 6.2 6.2 3.9 dB		
	Tx Antenna Gain	60.5 dBi			C/N Uplink 17.8 17.8 17.8 dB		
	Tx Pointing Losses	0.8 dB			C/N Downlink 6.2 6.2 3.9 dB		
	Rx Antenna Dia	0.51 meters			C/I Intermod (S/C) 99.0 99.0 99.0 dB		
	Rx Antenna Gain	31.6 dBi			C/I Uplink Adj Sat 31.0 31.0 31.0 dB		
	Rx Pointing Losses	0.2 dB			C/I Dnlink Adj Sat 17.0 17.0 17.0 dB		
	Pre LNA Losses	0.3 dB			C/I Xpol 18.4 14.0 18.4 dB		
SEGMENT	LNA Noise Temp	43 K	COMPOSITE		C/I Intermod (E/S) 34.2 18.0 34.2 dB		
	Ant,etc Temp	28 K			C/(Nu,d) 5.9 5.9 3.7 dB		
	CI Sky Noise Temp	71 K			C/(Nu,d,ims/c) 5.9 5.9 3.7 dB		
	Rx Clr Sky G/T	11.8 dB/K			C/(Nu,d,im,i)Total 5.4 4.8 3.3 dB		
	Uplink Rain Attn	8.1 dB			LINK MARGIN 2.0 1.5 0.0 dB		
	Dnlink Rain Attn	0.4 dB			MODEM	Minimum Req'd Ebi/No 2.1 dB	
	Up Fade Pwr Cntrl	8.1 dB				Minimum Req'd Ebt/No 0.3 dB	
	Link Availability	98.9 %				10*log(Rbt/Noise BW) 3.0 dB	
	Tx E/S Location	Napa, CA				Minimum Req'd C/N 3.3 dB	
	Tx E/S Latitude	38.2 N				E/S EIRP/Crr Req'd (CI Sky) 71.6 dBW	
GEOGRAPHIC	Tx E/S Longitude	-122.3 W				Tx Gain - Pointing Loss 59.7 dB	
	Tx E/S Elev Angle	5.6 deg			EARTH	Tx IFL Losses 0.0 dB	
	Rx E/S Location	Vladivostok			STATION	Tx Power Req'd/Cxr (clear sky) 12.0 dBW	
	Rx E/S Latitude	43.1 N			HPA	15.7 watts	
	Rx E/S Longitude	131.9 E				Uplink Power Control 8.1 dB	
	Rx E/S Elev Angle	30 deg				TX Power Req'd/Cxr (full UPC) 20.1 dBW	
	XPOL	S/C Isolation	36.0 dB				101.7 watts
	ISOLATION	Tx E/S Isolation	35.0 dB				Dnlink EIRP Dens @ Beam Peak (51.1 dBW) 12.2 dBW/4KHz
		Rx E/S Isolation	20.0 dB				
	LOSSES	Uplnk Free Sp Loss	207.8 dB				
Dnlnk Free Sp Loss		206.1 dB					
Uplink Atmos Attn		0.4 dB					
	Dnlink Atmos Attn	0.4 dB					

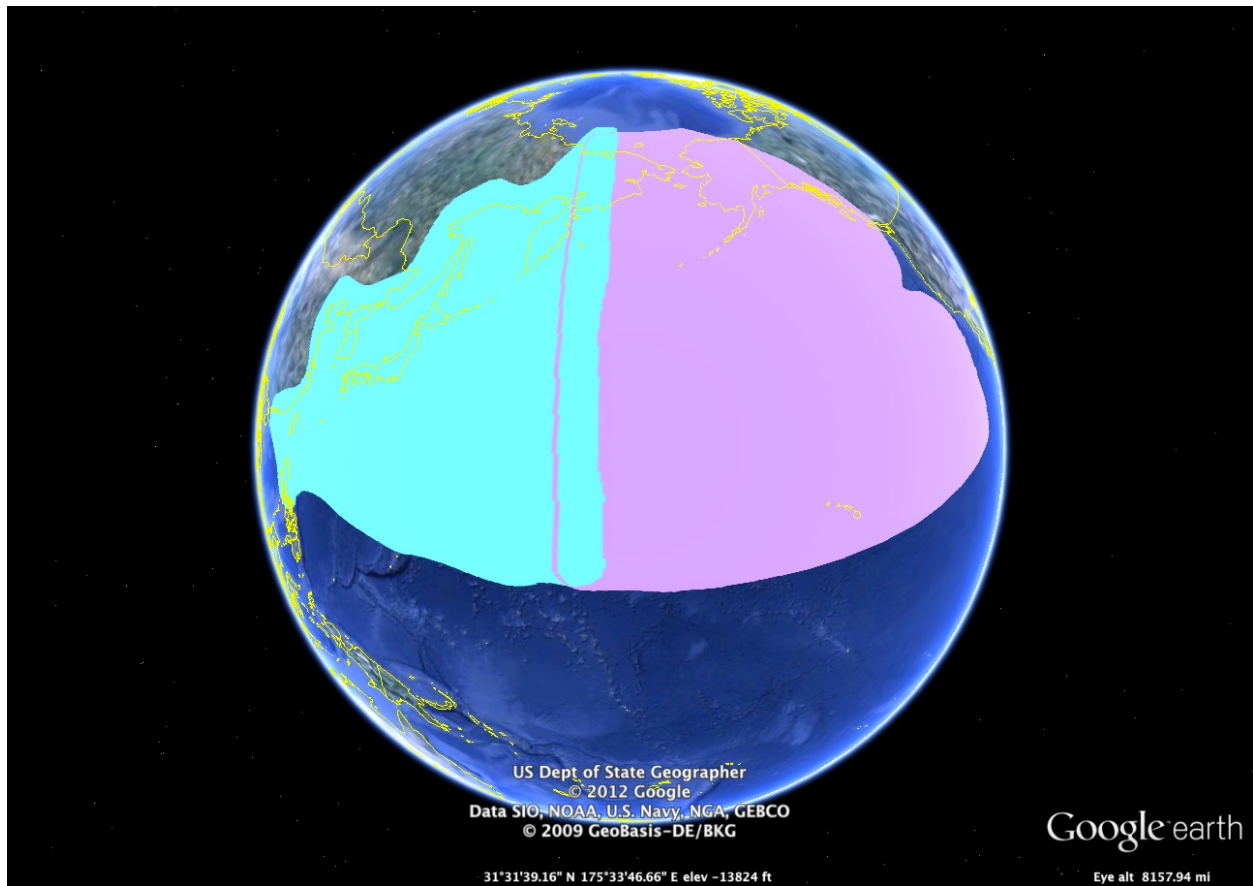


Figure 1: IS-19 Pacific Region Coverage

3-Oct-12		256ksp/s R1/2 HN INROUTE LINK BUDGET			
02:50 PM		Satellite: IS27 N. Atlantic			
		0.51m Remote in London		5.6m hub in Hagerstown	
BASELINE PARAMETERS		Value	Unit	SUMMARY	
CARRIER	Carrier Info Rate	256	Kbps	% Avail S/C Power Req'd/Crr	0.31 %
	FEC Code Rate	0.500		% Xponder Bandwidth Req'd/Crr	4.00 %
	Crr Xmission Rate	256	Kbps	Clear Sky Link Margin	3.2 dB
	Min Req'd Ebi/No	2.1	dB	Power Equivalent Bandwidth	0.1 MHz
	No of bits/symbol	2.0	Bits	Contract EIRP at reference contour	16.7 dBW
	Demod BT Product	1.00		LINK PERFORMANCE	
	Spreading factor	4.00		CI Sky	Up Fade Dn Fade Unit
	Spread Bandwidth	1024	kHz		
SATELLITE	Crr Spacing Fctr	1.41	x Rs	Satellite SFD	-94.5 -94.5 -94.5 dBW/m2
	Carrier Spacing	1440	kHz	Agg Input B.O.	5.3 5.3 5.3 dB
	Satellite	IS27 N. Atlantic		Input Backoff/Crr	30.4 31.4 30.4 dB
	Location	-55.5	WL	Crr Flux Density	-124.9 -125.9 -124.9 dBW/m2
	Hub EIRP Contour	45.0	dBW	Gain of a Sq meter	44.5 44.5 44.5 dBi
	Remote G/T Contour	2.5	dB/K	UPLINK Uplink Path Losses	208.1 209.1 208.1 dB
	Attn Setting	10.0	dB	BUDGET Carrier Up EIRP	38.7 38.7 38.7 dBW
	Xponder Gain	185.3	dB	Satellite G/T	2.5 2.5 2.5 dB/K
GROUND SEGMENT	SFD	-94.5	dBW/m2	C/N Uplink	1.6 0.6 1.6 dB
	Xponder Bandwidth	36.0	MHz	Saturation EIRP	45.0 45.0 45.0 dBW
	Agg Input BO	5.3	dB	Agg Output B.O.	4.0 4.0 4.0 dB
	Agg Output BO	4.0	dB	Output Backoff/Crr	29.1 30.1 29.1 dB
	Uplink Frequency	14.2500	GHz	Carrier Dn EIRP	15.9 14.9 15.9 dBW
	Dnlink Frequency	10.9500	GHz	DOWNLINK Dnlink Path Losses	205.1 205.1 208.1 dB
	Tx Antenna Dia	0.51	meters	BUDGET Rx Pointing Losses	0.2 0.2 0.2 dB
	HPA Max Output Pwr	10.0	Watts	CI Sky E/S G/T	32.4 32.4 32.4 dB/K
DATA	Tx Antenna Gain	29.0	dBi	Degradation in G/T	0.0 0.0 3.1 dB
	Tx Pointing Losses	0.3	dB	C/N Downlink	11.5 10.5 5.3 dB
	Rx Antenna Dia	5.6	meters	C/N Uplink	1.6 0.6 1.6 dB
	Rx Antenna Effcy	62	%	C/N Downlink	11.5 10.5 5.3 dB
	Rx Antenna Gain	54.1	dBi	C/I Intermod (S/C)	8.8 7.8 8.8 dB
	Rx Pointing Losses	0.2	dB	C/I Uplink Adj Sat	10.8 9.8 10.8 dB
	Pre LNA Losses	0.1	dB	COMPOSITE C/I Downlink Adj Sat	13.1 12.1 13.1 dB
	LNA Noise Temp	90	K	LINK C/I Xpol	8.6 7.6 7.5 dB
RAIN MARGINS	Ant,etc Temp	50	K	C/I Adjacent Carrier	17.0 16.0 17.0 dB
	CI Sky Noise Temp	140	K	C/(Nu,d)	1.1 0.1 0.0 dB
	Rx Clr Sky G/T	32.4	dB/K	C/(Nu,d,ims/c)	0.5 -0.5 -0.5 dB
	Uplink Rain Attn	1.0	dB	C/(Nu,d,im,i)Total	-0.8 -1.8 -1.6 dB
	Dnlink Rain Attn	3.0	dB	LINK MARGIN	3.2 2.2 2.3 dB
	Target Link Availability	99.0	%	Minimum Ebi/No	2.1 dB
	Tx E/S Location	London		MODEM Minimum Req'd Ebt/No	-0.9 dB
	Tx E/S Latitude	51.5	N	10*log(Rbt/Noise BW)	-3.0 dB
GEOGRAPHIC DATA	Tx E/S Longitude	-0.1	W	Minimum Req'd C/N	-3.9 dB
	Tx E/S Elev Angle	12.2	deg	RF Head Max Output Power	10.0 Watts
	Skew	33.2	deg	Misc Feed Losses etc	0.0
	Rx E/S Location	Hagerstown		E/S EIRP Req'd twds S/C	36.5 dBW
	Rx E/S Latitude	39.6	N	(Note: req'd to achieve link margin)	
	Rx E/S Longitude	-77.7	W	EARTH STATION Tx Pointing Losses	0.3 dB
	Rx E/S Elev Angle	38.7	deg	Max EIRP Avail towards S/C	38.7 dBW
				RF Head Output BO (CI Sky)	0.0 dB
ISOLATION DATA	S/C Isolation	36.0	dB	Uplink Pwr Dens into Feed	-14.1 dBW/4kHz
	Tx E/S Isolation	35.0	dB		
	Rx E/S Isolation	25.0	dB		
MISC LOSSES	Uplnk Free Sp Loss	207.6	dB		
	Dnlink Free Sp Loss	204.8	dB		
	Uplink Atmos Attn	0.5	dB		
	Dnlink Atmos Attn	0.3	dB		

10/3/2012		HughesNet LINK BUDGET			
3:31 PM		Satellite:		IS27 N. Atlantic	
		0.51 m Remote Located in		London	
		Crr EIRP Density =		9.4 dBW/4 KHz	
				Skew = 33.2 deg	
BASELINE PARAMETERS		Value	Unit	S U M M A R Y	
CARRIER	Carrier Info Rate	20000	Kbps	% Avail S/C Power Req'd/Crr	100.0 %
	Net FEC Code Rate	0.667		% Xponder Bandwidth Req'd/Crr	100.0 %
	Transmit Symbol Rate	15000	Kbps	Clear Sky Link Margin	1.1 dB
	Min Req'd Ebi/No	2.1	dB	Power Equivalent Bandwidth	36.0 MHz
	No of bits/symbol	2.0	Bits	EIRP at 45.8 dBW reference contour	45.3 dBW
	Demod BT Product	1.00			
	Crr Noise Bandwidth	15000	KHz		
SATELLITE	Carrier Spacing	36000	KHz		
	Satellite	IS27 N. Atlantic		LINK PERFORMANCE	CI Sky Up Fade Dn Fade Unit
	Location	-55.5 WL		Satellite SFD	-94.5 -94.5 -94.5 dBW/m2
	EIRP Contour at Remote	44.9 dBW		Agg Input B.O.	3.0 3.0 3.0 dB
	G/T Contour at Hub	2.5 dB/K		Input Backoff/Crr	3.3 3.3 3.3 dB
	Attn Setting	10.0 dB		Crr Flux Density	-97.8 -97.8 -97.8 dBW/m2
	Xponder Gain	186.3 dB		Gain of a Sq meter	44.4 44.4 44.4 dBi
GROUND SEGMENT	SFD	-94.5 dBW/m2		Uplink Path Losses	207.3 212.8 207.3 dB
	Xponder Bandwidth	36.0 MHz		Carrier Up EIRP	65.2 70.6 65.2 dBW
	Agg Input BO	3.0 dB		Satellite G/T	2.5 2.5 2.5 dB/K
	Agg Output BO	0.5 dB		C/N Uplink	17.2 17.2 17.2 dB
	Uplink Frequency	14.000 GHz		EIRP Contour	44.9 44.9 44.9 dBW
	Dnlink Frequency	11.450 GHz		Agg Output B.O.	0.5 0.5 0.5 dB
				Output Backoff/Crr	0.5 0.5 0.5 dB
RAIN MARGINS	Tx Antenna Dia	5.6 meters		Carrier Dn EIRP	44.4 44.4 44.1 dBW
	HPA Max Output Pwr	750.0 Watts		Dnlink Path Losses	206.1 206.1 206.5 dB
				Rx Pointing Losses	0.2 0.2 0.2 dB
				CI Sky E/S G/T	11.0 11.0 11.0 dB/K
				Degradation in G/T	0.0 0.0 1.0 dB
				C/N Downlink	6.0 6.0 4.3 dB
				C/N Uplink	17.2 17.2 17.2 dB
SITE GEOGRAPHIC DATA	Tx Antenna Gain	56.2 dBi		C/N Downlink	6.0 6.0 4.3 dB
	Tx Pointing Losses	0.3 dB		C/I Intermod (S/C)	99.0 99.0 99.0 dB
	Rx Antenna Dia	0.51 meters		C/I Uplink Adj Sat	20.4 20.4 20.4 dB
	Rx Antenna Gain	30.8 dBi		C/I Dnlink Adj Sat	12.1 12.1 12.1 dB
	Rx Pointing Losses	0.2 dB		C/I Xpol	18.4 17.5 18.3 dB
	Pre LNA Losses	0.3 dB		C/I Intermod (E/S)	29.0 18.0 29.0 dB
	LNA Noise Temp	43 K		C/(Nu,d)	5.6 5.6 4.1 dB
XPOL DATA	Ant,etc Temp	28 K		C/(Nu,d,ims/c)	5.6 5.6 4.1 dB
	CI Sky Noise Temp	71 K		C/(Nu,d,im,i)Total	4.4 4.2 3.2 dB
	Rx Clr Sky G/T	11.0 dB/K		LINK MARGIN	1.1 0.9 -0.1 dB
	Uplink Rain Attn	5.5 dB		Minimum Req'd Ebi/No	2.1 dB
	Dnlink Rain Attn	0.4 dB		Minimum Req'd Ebt/No	0.3 dB
	Up Fade Pwr Cntrl	5.5 dB		10*log(Rbt/Noise BW)	3.0 dB
	Link Availability	99.0 %		Minimum Req'd C/N	3.3 dB
ISOLATION	Tx E/S Location	Hagerstown		E/S EIRP/Crr Req'd (CI Sky)	65.2 dBW
	Tx E/S Latitude	39.6 N		Tx Gain - Pointing Loss	55.9 dB
	Tx E/S Longitude	-77.7 W		Tx IFL Losses	0.0 dB
	Tx E/S Elev Angle	38.7 deg		Tx Power Req'd/Cxr (clear sky)	9.2 dBW
	Rx E/S Location	London		HPA	8.4 watts
	Rx E/S Latitude	51.5 N		Uplink Power Control	5.5 dB
	Rx E/S Longitude	-0.1 W		TX Power Req'd/Cxr (full UPC)	14.7 dBW
LOSSES	Rx E/S Elev Angle	12 deg			29.6 watts
	S/C Isolation	36.0 dB			
	Tx E/S Isolation	35.0 dB			
	Rx E/S Isolation	20.0 dB			
	Uplink Free Sp Loss	206.9 dB			
	Dnlink Free Sp Loss	205.7 dB			
	Uplink Atmos Attn	0.4 dB			
MISC	Dnlink Atmos Attn	0.4 dB			
				Dnlink EIRP Dens @ Beam Peak (45.8 dBW)	
				9.4 dBW/4KHz	

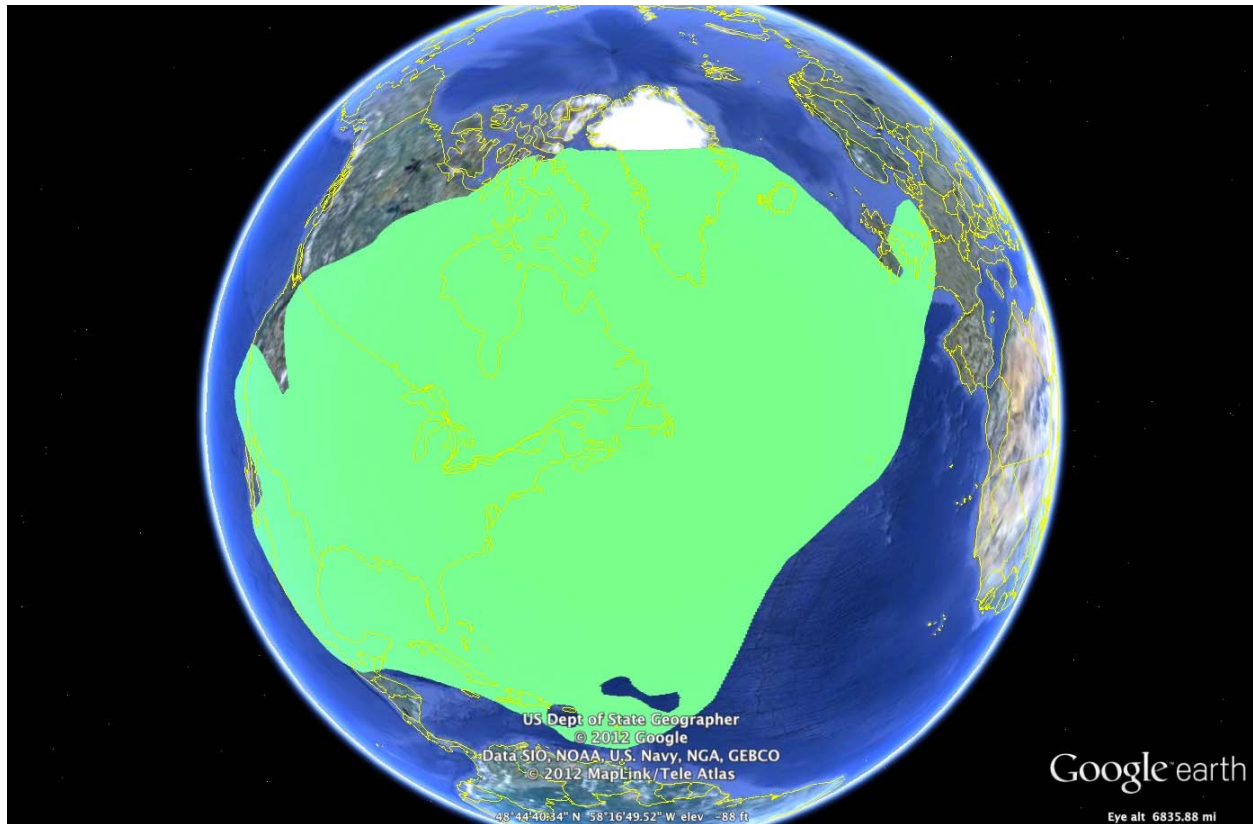


Figure 2: IS-27 Atlantic Region Coverage