

Exhibit A

Link Budgets and Coverage Maps

14-Jan-14

256ksps R1/2 HN INROUTE LINK BUDGET

02:30 PM

Satellite: SM5 Incl V

0.51m Remote in Detroit

7.6m hub in Detroit

BASELINE PARAMETERS		Value	Unit	SUMMARY					
				% Avail S/C Power Reqd/Crr				0.25 %	
				% Xponder Bandwidth Reqd/Crr				4.00 %	
				Clear Sky Link Margin				3.5 dB	
				Power Equivalent Bandwidth				0.09 MHz	
				Contract EIRP at reference contour				21.0 dBw	
				LINK PERFORMANCE		CI Sky	Up Fade	Dn Fade	Unit
CARRIER DATA	Carrier Info Rate	256	Kbps	Satellite SFD		-88.3	-88.3	-88.3	dBW/m2
	FEC Code Rate	0.500		Agg Input B.O.		10.0	10.0	10.0	dB
	Crr Symbol Rate	256	Ksps	Input Backoff/Crr		36.1	37.1	36.1	dB
	CI Sky Reqd Ebi/No	2.1	dB	Crr Flux Density		-124.4	-125.4	-124.4	dBW/m2
	No of bits/symbol	2.0	Bits	Gain of a Sq meter		44.5	44.5	44.5	dBi
	Demod BT Product	1.00		Uplink Path Losses		207.6	208.6	207.6	dB
	Spreading factor			Carrier Up EIRP		38.7	38.7	38.7	dBW
	Spread Bandwidth	1024	kHz	Satellite G/T		1.5	1.5	1.5	dB/K
SATELLITE DATA	Satellite	SM5 Incl V		C/N Uplink		1.1	0.1	1.1	dB
	Location	-114.9	WL	Saturation EIRP		53.7	53.7	53.7	dBW
	Hub EIRP Contour	53.7	dBW	Agg Output B.O.		5.0	5.0	5.0	dB
	Remote G/T Contour	1.5	dB/K	Output Backoff/Crr		31.1	32.1	31.1	dB
	Attn Setting	6.0	dB	Carrier Dn EIRP		22.6	21.6	22.6	dBW
	Xponder Gain	191.5	dB	Dnlink Path Losses		206.2	206.2	210.4	dB
	SFD	-88.3	dBW/m2	Rx Pointing Losses		0.4	0.4	0.4	dB
	Xponder Bandwidth	36.0	MHz	CI Sky E/S G/T		35.5	35.5	35.5	dB/K
	Agg Input BO	10.0	dB	Degradation in G/T		0.8	0.8	3.9	dB
	Agg Output BO	5.0	dB	C/N Downlink		19.3	18.3	12.0	dB
GROUND SEGMENT DATA	Uplink Frequency	14.2500	GHz	C/N Uplink		1.1	0.1	1.1	dB
	Dnlink Frequency	11.9500	GHz	C/N Downlink		19.3	18.3	12.0	dB
	Tx Antenna Dia	0.51	meters	C/I Intermod (S/C)		38.5	38.5	38.5	dB
	HPA Max Output Pwr	10.0	Watts	C/I Uplink Adj Sat		5.9	5.9	5.9	dB
	Tx Antenna Gain	33.7	dBi	C/I Downlink Adj Sat		16.9	16.9	16.9	dB
	Tx Pointing Losses	0.3	dB	C/I Xpol		17.4	17.4	18.0	dB
	Rx Antenna Dia	7.6	meters	C/I Adjacent Carrier		17.0	17.0	17.0	dB
	Rx Antenna Effcy	56	%	C/(Nu,d)		1.0	0.0	0.8	dB
	Rx Antenna Gain	57.1	dBi	C/(Nu,d,ims/c)		1.0	0.0	0.8	dB
	Rx Pointing Losses	0.4	dB	C/(Nu,d,im,i)Total		-0.4	-1.2	-0.6	dB
	Pre LNA Losses	0.2	dB	LINK MARGIN		3.5	2.8	3.3	dB
	LNA Noise Temp	80	K	Symbol Rate		256	256	256	ksps
Ant,etc Temp	45	K	FEC Code Rate		1/2	1/2	1/2		
CI Sky Noise Temp	125	K	Minimum Ebi/No		2.1	2.1	2.1	dB	
Rx Clr Sky G/T	35.5	dB/K	10*log(Rbt/Noise BW)		-3.0	-3.0	-3.0	dB	
RAIN MARGINS	Uplink Rain Attn	1.0	dB	Minimum Req'd C/N		-3.9	-3.9	-3.9	dB
	Dnlink Rain Attn	4.2	dB	RF Head Max Output Power				10.0	Watts
	Up Fade Pwr Cntrl	0.0	dB	Misc Feed Losses etc				4.7	
GEOGRAPHIC DATA	Target Link Availability E-E	99.0	%	Rx E/S Location				Detroit	
	Tx E/S Location	Detroit		Tx E/S Latitude				42.3	N
	Tx E/S Latitude	42.3	N	Tx E/S Longitude				-83.1	W
	Tx E/S Longitude	-83.1	W	Tx E/S Elev Angle				31.5	deg
	Tx E/S Elev Angle	31.5	deg	Rx E/S Location				Detroit	
	Rx E/S Location	Detroit		Rx E/S Latitude				42.3	N
	Rx E/S Latitude	42.3	N						

	Rx E/S Longitude	-83.1 W	EARTH STATION	E/S EIRP Req'd twds S/C (Note: req'd to achieve link margin)	36.2 dBW
	Rx E/S Elev Angle	31.5 deg			
ISOLATION	XPOL S/C Isolation	36.0 dB	HPA	Tx Pointing Losses	0.3 dB
	Tx E/S Isolation	35.0 dB		Max Clear Sky EIRP towards S/C	38.7 dBW
	DATA Rx E/S Isolation	35.0 dB		RF Head Output BO (CI Sky)	0.0 dB
MISC LOSSES	Uplink Free Sp Loss	207.2 dB			
	Dnlink Free Sp Loss	205.7 dB			
	Uplink Atmos Attn	0.4 dB			
	Dnlink Atmos Attn	0.5 dB			

14-Jan-14

512ksps R1/2 HN INROUTE LINK BUDGET

02:29 PM

Satellite: SM5 Incl V

0.51m Remote in Detroit

7.6m hub in Detroit

BASELINE PARAMETERS		Value	Unit	SUMMARY						
				% Avail S/C Power Req'd/Crr				0.28 %		
				% Xponder Bandwidth Req'd/Crr				4.00 %		
				Clear Sky Link Margin				1.0 dB		
				Power Equivalent Bandwidth				0.10 MHz		
				Contract EIRP at reference contour				21.5 dBw		
				LINK PERFORMANCE		CI Sky	Up Fade	Dn Fade	Unit	
				Satellite SFD	-88.8	-88.8	-88.8	dBW/m2		
				Agg Input B.O.	10.0	10.0	10.0	dB		
				Input Backoff/Crr	35.6	36.6	35.6	dB		
				Crr Flux Density	-124.4	-125.4	-124.4	dBW/m2		
				Gain of a Sq meter	44.5	44.5	44.5	dBi		
CARRIER	CI Sky Req'd Ebi/No	2.1	dB	UPLINK	Uplink Path Losses	207.6	208.6	207.6	dB	
DATA	No of bits/symbol	2.0	Bits	BUDGET	Carrier Up EIRP	38.7	38.7	38.7	dBW	
	Demod BT Product	1.00			Satellite G/T	2.0	2.0	2.0	dB/K	
	Spreading factor				C/N Uplink	1.6	0.6	1.6	dB	
	Spread Bandwidth	1024	kHz		Saturation EIRP	53.7	53.7	53.7	dBW	
	Crr Spacing Fctr	1.41	x Rs		Agg Output B.O.	5.0	5.0	5.0	dB	
	Carrier Spacing	1440	kHz		Output Backoff/Crr	30.6	31.6	30.6	dB	
SATELLITE	Satellite	SM5 Incl V		DOWNLINK	Carrier Dn EIRP	23.1	22.1	23.1	dBW	
	Location	-114.9	WL	BUDGET	Dnlink Path Losses	206.2	206.2	210.4	dB	
	Hub EIRP Contour	53.7	dBW		Rx Pointing Losses	0.4	0.4	0.4	dB	
	Remote G/T Contour	2.0	dB/K		CI Sky E/S G/T	35.5	35.5	35.5	dB/K	
	Attn Setting	6.0	dB		Degradation in G/T	0.8	0.8	3.9	dB	
DATA	Xponder Gain	192.0	dB		C/N Downlink	19.8	18.8	12.5	dB	
	SFD	-88.8	dBW/m2		C/N Uplink	1.6	0.6	1.6	dB	
	Xponder Bandwidth	36.0	MHz		C/N Downlink	19.8	18.8	12.5	dB	
	Agg Input BO	10.0	dB	COMPOSITE	C/I Intermod (S/C)	30.9	29.9	30.9	dB	
	Agg Output BO	5.0	dB	LINK	C/I Uplink Adj Sat	6.4	5.4	6.4	dB	
	Uplink Frequency	14.2500	GHz		C/I Downlink Adj Sat	17.4	16.4	17.4	dB	
	Dnlink Frequency	11.9500	GHz		C/I Xpol	17.9	16.9	15.5	dB	
					C/I Adjacent Carrier	17.0	16.0	17.0	dB	
					C/(Nu,d)	1.5	0.5	1.3	dB	
					C/(Nu,d,ims/c)	1.5	0.5	1.3	dB	
					C/(Nu,d,im,i)Total	0.1	-0.9	-0.2	dB	
					LINK MARGIN	1.0	0.0	0.7	dB	
GROUND	Tx Antenna Dia	0.51	meters		Symbol Rate	512	512	512	ksps	
SEGMENT	HPA Max Output Pwr	10.0	Watts		FEC Code Rate	1/2	1/2	1/2		
	Tx Antenna Gain	33.7	dBi		MODEM	Minimum Ebi/No	2.1	2.1	2.1	dB
	Tx Pointing Losses	0.3	dB			10*log(Rbt/Noise BW)	0.0	0.0	0.0	dB
DATA	Rx Antenna Dia	7.6	meters			Minimum Req'd C/N	-0.9	-0.9	-0.9	dB
	Rx Antenna Effcy	56	%			RF Head Max Output Power	10.0		Watts	
	Rx Antenna Gain	57.1	dBi			Misc Feed Losses etc	4.7			
	Rx Pointing Losses	0.4	dB							
	Pre LNA Losses	0.2	dB							
	LNA Noise Temp	80	K							
	Ant,etc Temp	45	K							
	CI Sky Noise Temp	125	K							
	Rx Clr Sky G/T	35.5	dB/K							
RAIN	Uplink Rain Attn	1.0	dB							
MARGINS	Dnlink Rain Attn	4.2	dB							
	Up Fade Pwr Cntrl	0.0	dB							
	Target Link Availability E-E	99.0	%							
SITE	Tx E/S Location	Detroit								
GEOGRAPHIC	Tx E/S Latitude	42.3 N								
DATA	Tx E/S Longitude	-83.1 W								
	Tx E/S Elev Angle	31.5 deg								
	Rx E/S Location	Detroit								
	Rx E/S Latitude	42.3 N								

Rx E/S Longitude	-83.1 W	EARTH	E/S EIRP Req'd twds S/C	38.7 dBW
Rx E/S Elev Angle	31.5 deg	STATION	(Note: req'd to achieve link margin)	
XPOL	S/C Isolation	HPA	Tx Pointing Losses	0.3 dB
ISOLATION	Tx E/S Isolation		Max Clear Sky EIRP towards S/C	38.7 dBW
DATA	Rx E/S Isolation		RF Head Output BO (CI Sky)	0.0 dB
MISC	Uplink Free Sp Loss			
LOSSES	Dnlink Free Sp Loss			
	Uplink Atmos Attn			
	Dnlink Atmos Attn			

1/14/2014

HughesNet LINK BUDGET

2:31 PM

Satellite: SM5 Incl V

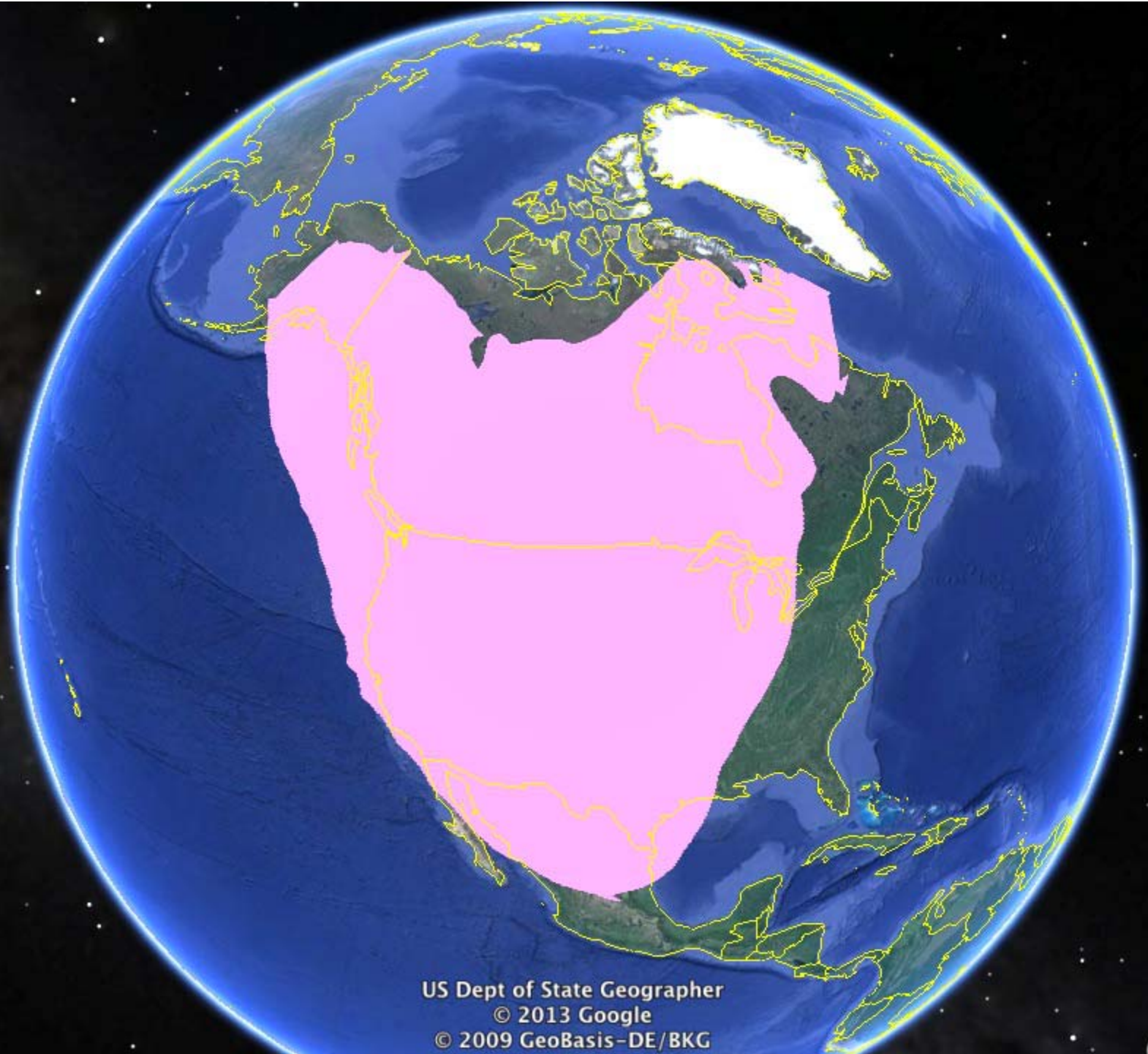
0.51 m Remote Located in Detroit

Crr EIRP Density = 12.8 dBW/4 KHz

BASELINE PARAMETERS		Value	Unit	SUMMARY					
				% Avail S/C Power Req'd/Crr		100.0	%		
				% Xponder Bandwidth Req'd/Crr		100.0	%		
				Clear Sky Link Margin		2.5	dB		
				Power Equivalent Bandwidth		36.0	MHz		
				EIRP at 52.1 dBW reference contour		51.6	dBw		
				LINK PERFORMANCE		Cl Sky	Up Fade	Dn Fade	Unit
CARRIER	Carrier Info Rate	29666	Kbps	Satellite SFD		-90.3	-90.3	-90.3	dBW/m2
	Net FEC Code Rate	0.500		Agg Input B.O.		3.0	3.0	3.0	dB
	Transmit Symbol Rate	30000	Ksps	Input Backoff/Crr		3.0	3.0	3.0	dB
CARRIER	Cl Sky Req'd Es/No	1.2	dB	Crr Flux Density		-93.3	-93.3	-93.3	dBW/m2
DATA	No of bits/symbol	2.0	Bits	UPLINK Gain of a Sq meter		44.5	44.5	44.5	dB
	Demod BT Product	1.00		BUDGET Uplink Path Losses		207.8	214.0	207.8	dB
	Crr Noise Bandwidth	30000	KHz	Carrier Up EIRP		69.4	75.6	69.4	dBW
	Carrier Spacing	36000	KHz	Satellite G/T		7.5	7.5	7.5	dB/K
SATELLITE	Satellite	SM5 Incl V		C/N Uplink		22.9	22.9	22.9	dB
	Location	-114.9	WL	EIRP Contour		49.0	49.0	49.0	dBW
	EIRP Contour at Remote	49.0	dBW	Agg Output B.O.		0.5	0.5	0.5	dB
	G/T Contour at Hub	7.5	dB/K	Output Backoff/Crr		0.5	0.5	0.5	dB
	Attn Setting	10.0	dB	Carrier Dn EIRP		48.5	48.5	48.5	dBW
SATELLITE	Xponder Gain	186.3	dB	DOWNLINK Dnlink Path Losses		206.0	206.0	206.3	dB
DATA	SFD	-90.3	dBW/m2	BUDGET Rx Pointing Losses		0.2	0.2	0.2	dB
	Xponder Bandwidth	36.0	MHz	Cl Sky E/S G/T		12.1	12.1	12.1	dB/K
	Agg Input BO	3.0	dB	Degradation in G/T		0.8	0.8	0.9	dB
	Agg Output BO	0.5	dB	C/N Downlink		7.4	7.4	6.9	dB
	Uplink Frequency	14.250	GHz	C/N Uplink		22.9	22.9	22.9	dB
	Dnlink Frequency	11.950	GHz	C/N Downlink		7.4	7.4	6.9	dB
GROUND	Tx Antenna Dia	7.6	meters	C/I Intermod (S/C)		99.0	99.0	99.0	dB
	HPA Max Output Pwr	250.0	Watts	C/I Uplink Adj Sat		16.5	16.5	16.5	dB
	Waveguide Losses	2.0	dB	C/I Dnlink Adj Sat		6.9	6.9	6.9	dB
	Tx Antenna Gain	59.3	dB	LINK C/I Xpol		18.4	16.6	18.4	dB
	Tx Pointing Losses	0.6	dB	C/I Intermod (E/S)		30.4	18.0	30.4	dB
	Max EIRP Toward S/C	80.7	dB	C/(Nu,d)		7.3	7.3	6.8	dB
GROUND	Rx Antenna Dia	0.51	meters	C/(Nu,d,ims/c)		7.3	7.3	6.8	dB
SEGMENT	Rx Antenna Gain	31.8	dB	C/(Nu,d,im,i)Total		3.7	3.5	3.5	dB
DATA	Rx Pointing Losses	0.2	dB	LINK MARGIN		2.5	2.3	2.3	dB
	Pre LNA Losses	0.3	dB	Modulation		QPSK	QPSK	QPSK	
	LNA Noise Temp	43	K	FEC Rate		1/2	1/2	1/2	
	Ant,etc Temp	28	K	Minimum Req'd Ebi/No		1.2	1.2	1.2	dB
	Cl Sky Noise Temp	71	K	MODEM 10*log(Rbt/Noise BW)		3.0	3.0	3.0	dB
	Rx Clr Sky G/T	12.1	dB/K	Minimum Req'd C/N		1.2	1.2	1.2	dB
RAIN	Uplink Rain Attn	6.2	dB	E/S EIRP/Crr Req'd (Cl Sky)		69.4	dBW		
MARGINS	Dnlink Rain Attn	0.3	dB	Tx Gain - Pointing Loss		58.7	dB		
	Up Fade Pwr Cntrl	6.2	dB	WAVEGUIDE Losses		2.0	dB		
	Target Link Availability E-E	99.0	%	STATION Tx Power Req'd/Cxr (clear sky)		12.7	dBW		
SITE	Tx E/S Location	Detroit							
	Tx E/S Latitude	42.3	N						
	Tx E/S Longitude	-83.1	W						
GEOGRAPHIC	Tx E/S Elev Angle	31	deg						
DATA	Rx E/S Location	Detroit							
	Rx E/S Latitude	42.3	N						

	Rx E/S Longitude	-83.1 W	HPA	18.5 watts
	Rx E/S Elev Angle	31.5 deg		
	XPOL S/C Isolation	36.0 dB	Uplink Power Control	6.2 dB
ISOLATION	Tx E/S Isolation	35.0 dB	TX Power Reqd/Cxr (full UPC)	18.9 dBW
DATA	Rx E/S Isolation	20.0 dB		77.4 watts
	Uplink Free Sp Loss	207.2 dB	Dnlink EIRP Dens @ Beam Peak (52.1 dBW)	12.8 dBW/4KHz
MISC	Dnlink Free Sp Loss	205.7 dB		
LOSSES	Uplink Atmos Attn	0.6 dB		
	Dnlink Atmos Attn	0.3 dB		

Coverage Contour of Satmex 5 Ku1 Beam without 35 degree skew:



US Dept of State Geographer

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Geo

Coverage Contour for Satmex 5 Ku1 with +/-35 degree skew lines:



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