

ANNEXURE – II

LINK BUDGET FORMAT

Satellite Name :
 Type of Service :
 Mode of transmission :
 Name of Tx. Earth Station :
 Name of Rx. Station/Hub :
 Link Type :

	SLANT RANGE CALCULATION	value	units				
	Satlat		deg				
	satlong		deg				
	eslat		deg				
	eslong		deg				
	Elevation range within service area		deg				
	height		Km				
	SLANTRANGE		Km				
SATELLITE LINK CALCULATION							
SATELLITE INFORMATION							
1	satellite type	INSAT/GSAT		UPLINK ANALYSIS		In Cl sky	with rain units
2	orbital location		deg	1	Uplink pathloss		dB
3	Satellite G/T		dB/K	2	Power at satellite antenna		dBW

4	SFD		dBW/m ²	3	Tx EIRP of E/X			dBW
5	Input Backoff		dB	4	Sat Ant Rx Gain/m ²			dB/m ²
6	Output Backoff		dB	5	PFD at input of Sat Ant			dBW/m ²
7	saturation EIRP		dBW	6	Input BO/carrier			dB
8	Transponder/Beam Bandwidth		MHz	7	Sat G/T			dB/deg.K
9	Uplink frequency		MHz	8	Uplink C/N0 Available			dB-Hz
10	Downlink frequency		MHz	9	Uplink C/N Available			dB
				10	Uplink PSD			dBW/Hz
11	Sat Tx Ant Gain		dB	11	U/L EIRP Density			dBW/40KHz
12	Sat Ant Rx Gain/m ²		dB/m ²		DOWNLINK ANALYSIS			
13	Transponder Gain		dB	1	Saturation EIRP			dBW
				2	Output BO			dB
				3	Output BO/carrier			dB
	LINK PARAMETERS			4	Carrier down EIRP			dBW
1	Carrier info rate		Kbps	5	Downlink path loss			dB
2	FEC*			6	CI sky G/T			dB/deg.K
3	Modulation			7	Degradation in G/T			dB
4	No of Bits / Symbol			8	Dn link C/N0 Available			dB-Hz
5	Transmission Rate		kbps	9	Dnlink C/N Available			dB
6	Spectral Efficiency factor			10	Dnlink PSD			dBW/Hz
7	Noise bandwidth factor							
8	Noise bandwidth		KHz		TOTAL LINK ANALYSIS	In CI sky	with rain	
9	Es/N0 Required			1	Uplink C/N Available			dB
10	Eb/N0 Required		dB	2	D/L C/N Available			dB
11	CI.Sky C/N0 Required		dB-Hz	3	C/IM E/S HPA			dB
12	CI.Sky C/N Required		dB	4	Co Channel Interference			
13	Link availability		%	5	C/I (Multibeam)			
	Tx.. STATION DETAILS			6	C/IM Transponder HPA			
1	Antenna Diameter		m	7	C/XPI (Uplink Earth Station)			
2	Tx. Ant. Efficiency		%	8	C/XPI (Downlink Earth Station)			
3	Tx. Gain		dB	9	Comp./N Available			dB
4	Tx. Ant. pointing Loss		dB	10	Required C/N			dB

				11	Link margin			dB
	TX E/S AMPLIFIER POWER SIZING							
1	Antenna Diameter		m					
2	Rx. Ant. Efficiency		%	1	Tx EIRP of E/S			dBW
3	Rx. Ant Gain		dB	2	Tx ant gain			dB
4	Rx. Ant. Pointing Loss		dB	3	Power at Tx ant input			dBW
5	Pre LNA losses		dB					
6	LNA Noise Temp		deg.k	4	Tx. amplr to ant. loss			dB
7	Ant Noise temp		deg.k	5	Power amplr op/carrier			Watts
8	Total Rx.Sys.NoiseTemp		deg.k	6	No of carriers			
9	Cl.Sky G/T		dB/deg.K		Total power output			Watts
	MISC. LOSSES							
					% TRANSPONDER UTILIZATION			
1	Tx. Rain Zone							
2	Rx. rain Zone			1	Power wise			%
3	Uplink Rain Attn.		dB	2	Occupied wise			%
4	Downlink Rain Attn.		dB	4	Allocated BW wise			%
5	Uplink Free Space Loss		dB					
6	Downlink Free Space Loss		dB	5	Power Equivalent BW			KHz
7	Uplink Atm. Attn.		dB	6	Allocated BW			KHz
8	Downlink Atm. Attn.		dB	7	Symbol Rate			Msp