Project Marisat UHF 25 kHz				File:	Marisat 25K_A
TRANSMIT EARTH STATION			RECEIVE EARTH STATION		
Code/Standard	Mobile		Code/Standard	Mobile	
Name/Location	Ship Board		Name/Location	Ship Board	
SATELLITE					
Type	Marisat F2		Transponder	A (25 kHz	
Location	326.1 E		Gain step		
Maximum Possible Allotment			0.025	MHz	
Actual Full Transponder Bandwidth			0.025	MHz	
CARRIER					
Info data rate	2.4	kbit/s	Type		
FEC Inner	0.5760	(1=None)	Availability		%
FEC Outer R/S	1.0000	(1=None)	Modulation	BPSK	
Overhead	0.0000	% (0 = None)			
Uplink satellite G/T b.e.			-18.0	dB/K	Full Transponder
Downlink satellite saturation EIRP b.e.			23.0	dBW	Full Transponder
Transponder operating point total IBO			0.0	dB	
Transponder operating point OBO			0.0	dB	
Number of Carriers at this point			Single	Carriers	
Xpndr IM Noise density b.e.			-99.00	dBW/Hz	
Co-channel interference 'X' value			16.8	dB	
Uplink Other UHF users Noise density b.e.			-31.80	dBW/Hz	
Receive E/S actual G/T			-27.00	dB/K @	0.25415 MHz
Uplink tracking error allowance			1.0	dB	
Downlink tracking error allowance			1.0	dB	
G/T Degradation due to Downlink Rain Fade			0.0	dB	
Uplink margin allowance			0.0	dB	
Downlink margin allowance			0.0	dB	
BE Uplink Flux Pattern Advantage			0.00	dB	
BE Uplink G/T Pattern Advantage			0.00	dB	
BE Downlink Pattern Advantage			0.00	dB	
Uplink path loss			174.54	dB @	0.30775 MHz
Downlink path loss			172.87	dB @	0.25415 MHz
Uplink carrier frequency			0.308	MHz	
Downlink carrier frequency			0.254	MHz	

Minimum Clear Sky Requirements

Nominal Info+OH Eb/No	13.5	dB
Nominal B.E.P.	1.00E-05	%

COMSAT General MARISAT F2 LINK BUDGET

Project Marisat UHF 25 kHz

Summary of link noise contributions

C/No Uplink Thermal	58.1	dB/Hz	24.3	Eb/No	Uplink Thermal
C/No Uplink Other UHF users	53.8	dB/Hz	20.0	Eb/No	Uplink Other UHF users
C/No Uplink	52.4	dB/Hz	18.6	Eb/No	Uplink
C/No DownLink X-pol & ASI	53.8	dB/Hz	20.0	Eb/No	DownLink X-pol & ASI
C/No Down Thermal	50.7	dB/Hz	16.9	Eb/No	Down Thermal
C/No Down link	49.0	dB/Hz	15.2	Eb/No	Down link

C/No Link	47.4	dB/Hz	13.6	Eb/No	Link

Link Budget Details

Parameter		Units
Transmit EIRP	23.00	dBW
Transmit E/S tracking error	1.0	dB
Uplink margin	0.0	dB
Uplink path loss	174.5	dB
Uplink B.E. Flux Pattern Advantage	0.0	dB
Gain 1 m2	-48.8	dB/m2
Uplink B.E. carrier flux density	-201.3	dBW/m2
Downlink saturated B.E. EIRP	23.0	dBW
C/T AND C/N CALCULATIONS:		
Transmit EIRP	23.0	dBW
Transmit E/S tracking error	1.0	dB
Uplink margin	0.0	dB
Uplink path loss	174.5	dB
Uplink B.E. G/T Pattern Advantage	0.0	dB
Satellite B.E. G/T	-18.0	dB/K
C/T)up Thermal	-170.5	dBW/K
C/T) Uplink Other UHF users	-174.8	dBW/K
C/T)up	-176.2	dBW/K
Downlink B.E. EIRP .	23.0	dBW
Receive E/S tracking error	1.0	dB
Downlink margin	0.0	dB
Downlink path loss	172.9	dB
Downlink B.E. Pattern Advantage	0.0	dB
Receive E/S G/T	-27.0	dB/K
C/T)dn Thermal	-177.9	dBW/K
C/T) DownLink X-pol & ASI	-174.8	dBW/K
C/T)t Down Link	-179.6	dBW/K
C/T)t Link	-181.2	dBW/K
Boltzmann's constant	-228.6	dBW/Hz-K
C/No Link	47.4	dB/Hz
Tx Rate	4.2	
Symbol Rate	4.2	kbps
Occupied BW (1.2 Sym)	5.0	kHz
10 log (occupied BW)	37.0	dB-Hz
C/N	10.4	dB
Information rate Eb/No	13.6	dB
Transmission rate Eb/No	11.2	dB
Co/No	11.2	dB
Spectrum Analyser (Co+No)/No	11.5	dB