

INMARSAT-KA Telemetry Link Budget

Parameter	Unit	Ka band	C band					
		On-Station	OSBU (Emergency)			Transfer Orbit		
			Bicone	Fwd Pipe	Aft Pipe	Bicone	Fwd Pipe	Aft Pipe
Frequency	GHz	19.7005, 19.7025	4.1990, 4.1995	4.1990, 4.1995	4.1990, 4.1995	4.1990, 4.1995	4.1990, 4.1995	4.1990, 4.1995
Polarization		C	V	LHCP	LHCP	V	LHCP	LHCP
S/C EIRP (Edge)	dBW	23.8	3.5	4.4	5.9	3.5	4.4	5.9
Ground Station G/T (minimum)	dB/K	39	31.5	31.5	31.5	31.5	31.5	31.5
Received C/No	dB Hz	79.1	63.2	67	68.5	58.3	62.1	63.6
Required C/No (Single mode)	dB-Hz	50.6	45.9	45.9	45.9	45.9	45.9	45.9
Required C/No (SIMO mode)	dB-Hz	54.6	49.5	49.5	49.5	49.5	49.5	49.5
C/No Margin* (Single mode)	dB	24.4	17.3	21.1	22.6	12.4	16.3	17.8
C/No Margin* (SIMO mode)	dB	20.4	13.7	17.5	19	8.8	12.6	14.1
Required Link Margin over Clear Sky	dB	10	3	3	3	3	3	3
Link Margin (Single Mode)	dB	14.4	14.3	18.1	19.6	9.4	13.3	14.8
Link Margin (SIMO Mode)	dB	10.4	10.7	14.5	16	5.8	9.6	11.1

Note:

OSBU = On-station Backup

Supersynchronous orbit for Transfer Orbit (assumed 5 degree elevation angle & Supersync altitude of 65000km)

SIMO = Simultaneous telemetry & ranging mode; Single = telemetry only or ranging only