

**HISPASAT-LINK BUDGET
DIGITAL SERVICES**

CARRIER N° 2

**REF. LINK
TRANSPONDER N°
SATELLITE**

AMAZONAS-2
Clear Sky Rain up Rain down

GENERAL DATA

Transponder bandwidth(MHz)	36		
carrier type	outbound		
Modulation	QPSK		
Information rate (Kb/s)	38010	OVERHEAD	1
FEC	3/4	Reed Solomon	47/51
bandwidth occupied (KHz)	32995.91		
BER	1.00E-07		
Eb/No (dB)	5.5	N° portadoras	
LINEALIZADOR (0=NO, 1=SI)	1	BW	POT
N° of carriers	1.00	0.94	1.60
IBO total (dB)	6.00		
OBO total (dB)	4.309		
C/I intermodulation	22.376		
Occupation factor	1.32		
availability (%)	99.70		
satellite longitude	-61		

UPLINK

E/T Tx Name	new York
E/T Tx (degrees E) Longitude	-74.00
E/T Tx (degrees N) latitude	40.75
E/T Tx (m) Altitude	100.00
Uplink Frequency (GHz)	14.00
EIRP E/T Tx.(dBW)	73.00

E/T Tx example

HPA (W)	101.45	
HPA-antena (dB) loss	0.20	ES off axis psd (dBW/Hz)
Ant. gain (dB)	53.14	-55.32
Ant. Diameter (m)	3.70	

Polarization discrim (dB)	30.00	
Accuracy polarization(°)	0.10	
% unavailability		0.05000
Rain atten.		5.14
Atmosp. Atten. loss (dB)	0.20	
aiming error loss (dB)	0.30	
sky loss (dB)	206.90	
D.F.P. (dBW/m2)	-92.03	-97.17
saturation D.F.P.in the BEAM CENTER (dBW/m2)	-84.00	
Back-off Input (dB)	8.03	13.17
Geogr. advantage (dB)	-2.00	
G/T satellite in the BEAM CENTER (dB/K)	6.70	
C/N up (dB)	23.71	18.57
C/I cochannel up(dB)	22.34	17.20
C/(N+I without other interf. satellites up) (dB)	17.63	12.49
psd Interference from satellite 2°(dBW/Hz)	-50.00	
C/I with other interf. Satellites 2° up (dB)	26.34	21.20
c/(N+) with other interf. Satellites up (dB)	17.08	11.94
Xpolar Interference excess (dB)	3.0	

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DOWNLINK

E/T Rx Name	MIAMI		
E/T Rx (degrees E) Longitude	-80.18		
E/T Rx (degrees N) Latitude	25.77		
E/T Rx (m) Altitude	100.00		
Down Frequency (GHz)	12.00		SAT deirp (dBW/Hz)
EIRP satellite in the beam center (dBW)	50.00		-31.52
Back-off output (dB)	6.34	11.48	
Geogr. advantage (dB)	-2.00		
% unavailability			0.25000
Rain Atten.			2.76
Atmosp. Atten. loss (dB)	0.20		
aiming error loss (dB)	0.30		
sky loss (dB)	205.37		
G/T E/T Rx. (dB/K)	26.00		21.52

E/T Rx Example

Ant. Gain(dB)	44.62
antenna-receptor loss(dB)	0.10
Tina (°K)	45.00
Ta (°K)	20.00
Tsyst. (°K)	71.15
Ant. Diameter (m)	1.62

Polarization discrim.(dB)	25.00		
C/N down (dB)	15.20	10.06	7.97
C/I cochannel down(dB)	17.55	17.55	17.55
C/I channel adjacent (dB)	24.70	24.70	24.70
C/(N+I without other interf. satellites down) (dB)	12.20	8.26	7.22
deirp Interference from satellite 2°(dBW/Hz)	-30.00		
C/I with other interf. Satellites 2° down (dB)	19.62	19.62	16.87
c/(N+) with other interf. Satellites up (dB)	11.48	7.96	6.77
Xpolar Interference excess (dB)	4.3		

GLOBAL RESULTS

C/(N+I without other interf. satellites TOTAL) (dB)	11.11	6.87	6.84
C/(N+I with other interf. satellites) Total (dB)	10.42	6.50	6.38
Excess margin (dB)	0.50	0.50	0.50
Eb/No available (interf nominal)(dB)	9.31	5.38	5.27
Eb/No request (dB)	5.50	5.50	5.50
Margin (nominal)(dB)	3.81	-0.12	-0.23