

**HISPASAT-LINK BUDGET  
DIGITAL SERVICES**

CARRIER Nº 3

**REF. LINK  
TRANSPONDER Nº  
SATELLITE**

AMAZONAS-2  
Clear Sky      Rain up      Rain down

**GENERAL DATA**

Transponder bandwidth(MHz)	36		
carrier type	outbound		
Modulation	8-psk		
Information rate (Kb/s)	11300	OVERHEAD	15/16
FEC	2/3	Reed Solomon	67/73
bandwidth occupied (KHz)	7879.64		
BER	1.00E-07		
Eb/No (dB)	5.5	Nº portadoras	
LINEALIZADOR (0=NO, 1=SI)	0	<b>BW</b>	<b>POT</b>
Nº of carriers	3.00	3.92	5.66
IBO total (dB)	8.00		
OBO total (dB)	3.924		
C/I intermodulation	16.774		
Occupation factor	1.32		
availability (%)	99.50		
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
<b>EIRP E/T Tx.(dBW)</b>	<b>65.50</b>

**E/T Tx example**

HPA (W)	42.88	
HPA-antena (dB) loss	0.20	ES off axis psd (dBW/Hz)
Ant. gain (dB)	49.38	-52.84
Ant. Diameter (m)	2.40	

Polarization discrim (dB)	30.00	
Accuracy polarization(°)	0.10	
% unavailability		0.14000
Rain atten.		2.96
Atmosp. Atten. loss (dB)	0.20	
aiming error loss (dB)	0.30	
sky loss (dB)	206.90	
D.F.P. (dBW/m2)	-99.53	-102.49
saturation D.F.P.in the BEAM CENTER (dBW/m2)	-84.00	
Back-off Input (dB)	15.53	18.49
Geogr. advantage (dB)	-2.00	
G/T satellite in the BEAM CENTER (dB/K)	6.70	
C/N up (dB)	22.43	19.48
C/I cochannel up(dB)	22.34	19.38
C/(N+I without other interf. satellites up) (dB)	16.74	13.78
psd Interference from satellite 2º(dBW/Hz)	-50.00	
C/I with other interf. Satellites 2º up (dB)	25.06	22.10
c/(N+I) with other interf. Satellites up (dB)	16.14	13.19
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		-30.42
Back-off output (dB)	11.45	14.41	
Geogr. advantage (dB)	-2.00		
% unavailability			0.36000
Rain Atten.			2.19
Atmosp. Atten. loss (dB)	0.20		
aiming error loss (dB)	0.30		
sky loss (dB)	205.37		
<b>G/T E/T Rx. (dB/K)</b>	<b>26.50</b>		22.47

**E/T Rx Example**

Ant. Gain(dB)	45.12
antenna-receptor loss(dB)	0.10
Tina (°K)	45.00
Ta (°K)	20.00
Tsyst. (°K)	71.15
Ant. Diameter (m)	1.72

Polarization discrim.(dB)	25.00		
C/N down (dB)	16.81	13.85	10.59
C/I cochannel down(dB)	17.93	17.93	17.93
C/I channel adjacent (dB)	24.70	24.70	24.70
C/(N+I without other interf. satellites down) (dB)	11.81	9.54	8.78
deirp Interference from satellite 2º(dBW/Hz)	-30.00		
C/I with other interf. Satellites 2º down (dB)	21.23	21.23	19.04
c/(N+I) with other interf. Satellites up (dB)	11.34	9.26	8.39
Xpolar Interference excess (dB)	3.9		

**GLOBAL RESULTS**

C/(N+I without other interf. satellites TOTAL) (dB)	10.60	8.15	8.14
C/(N+I with other interf. satellites) Total (dB)	10.10	7.78	7.72
Excess margin (dB)	0.50	0.50	0.50
Eb/No available (interf nominal)(dB)	8.03	5.71	5.65
Eb/No request (dB)	5.50	5.50	5.50
Margin (nominal)(dB)	2.53	0.21	0.15