

HISPASAT-LINK BUDGET DIGITAL SERVICES

REF. LINK
TRANSPONDER N°
SATELLITE

AMAZONAS-3
Clear Sky

Rain
up

Rain
down

GENERAL DATA

Transponder bandwidth(MHz)	54		
carrier type	outbound		
Modulation	8-PSK		
Information rate (Kb/s)	2048	OVERHEAD	15/16
FEC	2/3	Reed Solomon	67/73
bandwidth occupied (KHz)	1428.10		
BER	1.00E-07		
Eb/No (dB)	6.7	Nº portadoras	
Nº of carriers	32.00	32.41	10.07
IBO total (dB)	3.00		
OBO total (dB)	2.321		
C/I intermodulation	18.063		
Occupation factor	1.32		
availability (%)	99.80		
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)	5.89
EIRP E/T Tx.(dBW)	68.00

E/T Tx example

HPA (W)	132.00	
HPA-antena (dB) loss	0.20	ES off axis psd (dBW/Hz)
Ant. gain (dB)	46.99	-40.54
Ant. Diameter (m)	4.50	

Polarization discrim (dB)	35.00	
Accuracy polarization(°)	0.10	
% unavailability		0.08000
Rain atten.		0.46
Atmosp. Atten. loss (dB)	0.20	
aiming error loss (dB)	0.30	
sky loss (dB)	199.38	
D.F.P. (dBW/m2)	-102.03	-102.49
saturation D.F.P.in the BEAM CENTER (dBW/m2)	-89.00	
Back-off Input (dB)	13.03	13.49
Geogr. advantage (dB)	-7.00	
G/T satellite in the BEAM CENTER (dB/K)	-1.00	
C/N up (dB)	27.17	26.71
C/I cochannel up(dB)	24.89	24.43
C/(N+I) without other interf. satellites up) (dB)	20.83	20.36
psd Interference from satellite 2°(dBW/Hz)	-38.70	
C/I with other interf. Satellites 2° up (dB)	23.68	23.22
c/(N+I) with other interf. Satellites up (dB)	19.01	18.55
Xpolar Interference excess (dB)	3.0	

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rain
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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 (Km) Altitude	100.00		
Down Frequency (GHz)	3.66		SAT deirp (dBW/Hz)
EIRP satellite in the beam center (dBW)	41.00		-32.90
Back-off output (dB)	12.35	12.81	
Geogr. advantage (dB)	-5.00		
% unavailability			0.12000
Rain Atten.			0.15
Atmosp. Atten. loss (dB)	0.20		
aiming error loss (dB)	0.30		
sky loss (dB)	195.06		
G/T E/T Rx. (dB/K)	18.90		18.20
E/T Rx Example			
Ant. Gain(dB)	37.68		
antenna-receptor loss(dB)	0.20		
Tlna (°K)	40.00		
Ta (°K)	20.00		
Tsyst. (°K)	72.15		
Ant. Diameter (m)	2.39		

Polarization discrim.(dB)	25.00		
C/N down (dB)	14.04	13.58	13.19
C/I cochannel down(dB)	19.53	19.53	19.53
C/I channel adjacent (dB)	24.70	24.70	24.70
C/(N+I) without other interf. satellites down) (dB)	12.35	12.00	11.76
deirp Interference from satellite 2°(dBW/Hz)	-34.50		
C/I with other interf. Satellites 2° down (dB)	12.81	12.81	12.66
c/(N+I) with other interf. Satellites up (dB)	9.56	9.38	9.17
Xpolar Interference excess (dB)	2.3		

GLOBAL RESULTS

C/(N+I) without other interf. satellites TOTAL) (dB)	11.77	11.41	11.25
C/(N+I) with other interf. satellites Total (dB)	9.10	8.88	8.74
Excess margin (dB)	0.50	0.50	0.50
Eb/No available (interf nominal)(dB)	7.03	6.81	6.68
Eb/No request (dB)	6.70	6.70	6.70
Margin (nominal)(dB)	0.33	0.11	-0.02