

CONUS Beam: 8PSK rate 2/3

DATA RATE	38333.96	kbits
NUMBER OF PHASES	8	
LDPC	2 / 3	
SPECTRAL EFFICIENCY	1.916698	
REQUIRED Eb/No	4.40	dB
IF BANDWIDTH	20000.0	KHz
C/N REQUIRED	7.20	dB
Faded System Margin	0.3	dB
Antenna Efficiency	63.00%	
Spacing Factor	1.2	
Required Bandwidth	24.000	MHz
Allocated Bandwidth	24.000	MHz
Transponder SCPC IBO	0.0	dB
Transponder SCPC OBO	0.0	dB
Carrier IBO	0.00	dB
Carrier OBO	0.00	dB

sat	BSS129
xprdr	CONUS
loc	-129.0

UPLINK SITE	-99.00 dBW/m2
UPLINK SFD	
ATTENUATOR	10.0 dB
UPLINK G/T	5.00 dB/K
UPLINK FREQ	17300.00 MHz
DOWNLINK FREQ	12200.00 MHz
UPLINK EIRP	73.5 dBW
Uncompensated U/L Fade	0.0 dB
UPLINK C/N+I	24.0 dB

Adjacent satellite C/I	20
	99.0

Transponder Bandwidth	24.0 MHz
Required Bandwidth	100.00 %
Allocated Bandwidth	100.00 %
Carrier Allocated Power	100.00 %

	ANT	ES	ANT	Assumed	MINIMUM	XPDR		CLEAR-SKY	MARGIN
RECEIVE SITE	DIA	Tsys	G/T	C/I	C/N	SAT	CXR	DOWNLINK	TO
	(m)	(K)	(dB/K)	(dB)	DOWN	EIRP	EIRP	C/N	MIN C/Ndn
ATLANTA GA	0.50	105.0	13.6	20.0	7.9	55.80	55.80	19.0	11.2
PHOENIX AZ	0.50	105.0	13.6	20.0	7.9	51.50	51.50	15.1	7.2
LOS ANGELES CA	0.50	105.0	13.6	20.0	7.9	51.10	51.10	14.7	6.8
SAN FRANCISCO CA	0.50	105.0	13.6	20.0	7.9	52.80	52.80	16.3	8.5
DENVER CO	0.50	105.0	13.6	20.0	7.9	51.40	51.40	14.8	7.0
CHICAGO IL	0.50	105.0	13.6	20.0	7.9	53.70	53.70	16.9	9.0
SEATTLE WA	0.50	105.0	13.6	20.0	7.9	52.70	52.70	16.1	8.2
MIAMI	0.50	105.0	13.6	20.0	7.9	57.90	57.90	21.2	13.0

Link Budget:

South East Spot Beams: QPSK, Turbo Rate 5/6

DATA RATE	31698.48	kbps	sat	BSS129	UPLINK SITE				
NUMBER OF PHASES	4		xpdr	1	UPLINK SFD	-99.00 dBW/m2			
LDPC	5	6	loc	-129.0	ATTENUATOR	10.0 dB			
SPECTRAL EFFICIENCY	1.584924				UPLINK G/T	5.00 dB/K			
REQUIRED Eb/No	3.70	dB			UPLINK FREQ	17300.00 MHz			
IF BANDWIDTH	20000.0	kHz			DOWNLINK FREQ	12200.00 MHz			
C/N REQUIRED	5.70	dB			UPLINK EIRP	73.5 dBW			
Faded System Margin	0.3	dB			Uncompensated U/L Fade	0.0 dB			
Antenna Efficiency	63.00%				UPLINK C/N	25.1 dB			
Spacing Factor	1.2								
Required Bandwidth	24.000	MHz			Transponder Bandwidth	24.0 MHz			
Allocated Bandwidth	24.000	MHz			Required Bandwidth	100.00 %			
Transponder SCPC IBO	0.0	dB			Allocated Bandwidth	100.00 %			
Transponder SCPC OBO	0.0	dB			Carrier Allocated Power	100.00 %			
Carrier IBO	0.00	dB							
Carrier OBO	0.00	dB							
0.45									
RECEIVE SITE	ANT	ES	ANT	Assumed	MINIMUM	XPDR		CLEAR-SKY	MARGIN
	DIA	Tsys	G/T	C/I	C/N	SAT	CXR	DOWNLINK	TO
	(m)	(K)	(dB/K)	(dB)	DOWN	EIRP	EIRP	C/N	MIN C/Ndn
					(dB)	(dBW)	(dBW)	(dB)	(dB)
TAMPA FL	0.50	105.0	13.6	12.9	7.1	56.30	56.30	19.5	12.5
ST PETERSBURG FL	0.50	105.0	13.6	12.9	7.1	56.30	56.30	19.6	12.5
SARASOTA FL	0.50	105.0	13.6	12.9	7.1	56.30	56.30	19.6	12.5
CHARLESTON SC	0.50	105.0	13.6	12.9	7.1	56.30	56.30	19.5	12.4
NEW ORLEANS LA	0.50	105.0	13.6	12.9	7.1	56.30	56.30	19.6	12.6
HOUSTON TX	0.50	105.0	13.6	12.9	7.1	56.30	56.30	19.7	12.7

Link Budget:

All other Spot Beams: 8PSK, Turbo Rate 2/3

DATA RATE	38333.96	kbps	sat	BSS129	UPLINK SITE	
NUMBER OF PHASES	8		xpdr	Spot Beams exl SE	UPLINK SFD	-99.00 dBW/m2
LDPC	2/3		loc	-129.0	ATTENUATOR	10.0 dB
SPECTRAL EFFICIENCY	1.916698				UPLINK G/T	5.00 dB/K
REQUIRED Eb/No	4.40	dB			UPLINK FREQ	17300.00 MHz
IF BANDWIDTH	20000.0	kHz			DOWNLINK FREQ	12200.00 MHz
C/N REQUIRED	7.20	dB			UPLINK EIRP	73.5 dBW
Faded System Margin	0.3	dB			Uncompensated U/L Fade	0.0 dB
Antenna Efficiency	63.00%				UPLINK C/N+I	24.0 dB
Spacing Factor	1.2				Adjacent satellite C/I	20
Required Bandwidth	24.000	MHz			Spot beam C/I	13.5
Allocated Bandwidth	24.000	MHz				
Transponder SCPC IBO	0.0	dB			Transponder Bandwidth	24.0 MHz
Transponder SCPC OBO	0.0	dB			Required Bandwidth	100.00 %
Carrier IBO	0.00	dB			Allocated Bandwidth	100.00 %
Carrier OBO	0.00	dB			Carrier Allocated Power	100.00 %

RECEIVE SITE	ANT DIA (m)	ES Tsyst (K)	ANT G/T (dB/K)	Assumed C/I (dB)	MINIMUM C/N DOWN (dB)	XPDR SAT EIRP (dBW)	CXR EIRP (dBW)	CLEAR-SKY DOWNLINK C/N (dB)	MARGIN TO MIN C/Ndn (dB)
HONOLULU HI	0.50	120.0	13.5	12.6	9.2	51.00	51.00	14.6	5.4
SAN ANTONIO TX	0.50	105.0	13.6	12.6	9.2	53.60	53.60	17.1	7.8
ATLANTA GA	0.50	105.0	13.6	12.6	9.2	55.00	55.00	18.2	9.0
NASHVILLE TN	0.50	105.0	13.6	12.6	9.2	55.00	55.00	18.2	9.0
EL PASO TX	0.50	105.0	13.6	12.6	9.2	50.10	50.10	13.6	4.4
LAS CRUCES NM	0.50	105.0	13.6	12.6	9.2	50.00	50.00	13.5	4.3
SHREVEPORT LA	0.50	105.0	13.6	12.6	9.2	56.30	56.30	19.7	10.4
PHOENIX AZ	0.50	105.0	13.6	12.6	9.2	50.40	50.40	14.0	4.7
PRESCOTT AZ	0.50	105.0	13.6	12.6	9.2	50.00	50.00	13.6	4.3
OKLAHOMA CITY OK	0.50	105.0	13.6	12.6	9.2	53.10	53.10	16.5	7.3
LOS ANGELES CA	0.50	105.0	13.6	12.6	9.2	50.00	50.00	13.6	4.4
WASHINGTON DC	0.50	105.0	13.6	12.6	9.2	54.80	54.80	17.9	8.6
HAGERSTOWN MD	0.50	105.0	13.6	12.6	9.2	54.80	54.80	17.9	8.6
ST LOUIS MO	0.50	105.0	13.6	12.6	9.2	53.80	53.80	17.1	7.8
SAN FRANCISCO CA	0.50	105.0	13.6	12.6	9.2	50.50	50.50	14.0	4.8
OAKLAND CA	0.50	105.0	13.6	12.6	9.2	50.50	50.50	14.0	4.8
SAN JOSE CA	0.50	105.0	13.6	12.6	9.2	50.30	50.30	13.9	4.6
DENVER CO	0.50	105.0	13.6	12.6	9.2	50.30	50.30	13.7	4.5
SALT LAKE CITY UT	0.50	105.0	13.6	12.6	9.2	49.10	49.10	12.5	3.3
CLEVELAND OH	0.50	105.0	13.6	12.6	9.2	53.80	53.80	16.9	7.7
AKRON OH	0.50	105.0	13.6	12.6	9.2	53.80	53.80	16.9	7.7
CANTON OH	0.50	105.0	13.6	12.6	9.2	54.30	54.30	17.4	8.2
CHICAGO IL	0.50	105.0	13.6	12.6	9.2	53.40	53.40	16.6	7.3
BOISE ID	0.50	105.0	13.6	12.6	9.2	49.50	49.50	12.9	3.7
MARQUETTE MI	0.50	105.0	13.6	12.6	9.2	52.70	52.70	15.8	6.6
MINNEAPOLIS MN	0.50	105.0	13.6	12.6	9.2	53.20	53.20	16.4	7.2
ST PAUL MN	0.50	105.0	13.6	12.6	9.2	53.20	53.20	16.4	7.2
SEATTLE WA	0.50	105.0	13.6	12.6	9.2	51.00	51.00	14.4	5.1
TACOMA WA	0.50	105.0	13.6	12.6	9.2	51.00	51.00	14.4	5.1
PORTLAND OR	0.50	105.0	13.6	12.6	9.2	51.00	51.00	14.4	5.2
GREAT FALLS MT	0.50	105.0	13.6	12.6	9.2	49.50	49.50	12.8	3.6
MINOT ND	0.50	105.0	13.6	12.6	9.2	52.10	52.10	15.3	6.1
BISMARCK ND	0.50	105.0	13.6	12.6	9.2	52.00	52.00	15.3	6.0
DICKINSON ND	0.50	105.0	13.6	12.6	9.2	52.00	52.00	15.3	6.0
ANCHORAGE AK	0.50	105.0	13.6	12.6	9.2	51.70	51.70	14.7	5.5
CORPUS CHRISTI TX	0.50	105.0	13.6	12.6	9.2	53.80	53.80	17.3	8.1
LUBBOCK TX	0.50	105.0	13.6	12.6	9.2	50.40	50.40	13.9	4.6
BAKERSFIELD CA	0.50	105.0	13.6	12.6	9.2	50.00	50.00	13.6	4.3
INDIANAPOLIS IA	0.50	105.0	13.6	12.6	9.2	53.90	53.90	17.2	7.9
TOPEKA KS	0.50	105.0	13.6	12.6	9.2	53.00	53.00	16.3	7.1
SIOUX FALLS SD	0.50	105.0	13.6	12.6	9.2	53.00	53.00	16.3	7.0
EUGENE OR	0.50	105.0	13.6	12.6	9.2	50.00	50.00	13.4	4.2
IDAHO FALLS ID	0.50	105.0	13.6	12.6	9.2	49.80	49.80	13.2	4.0
FARGO ND	0.50	105.0	13.6	12.6	9.2	52.10	52.10	15.3	6.1
SPOKANE WA	0.50	105.0	13.6	12.6	9.2	50.40	50.40	13.7	4.5