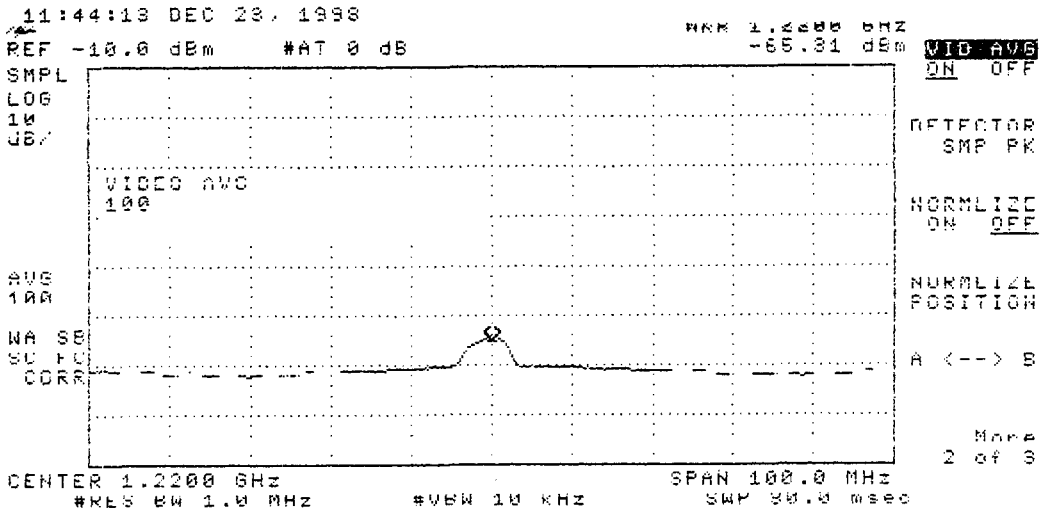
1. Site-4, Set-1, 12/23/98

2. Boom, Down

3. Reflection off of TxDOT, No Picture on T.V.

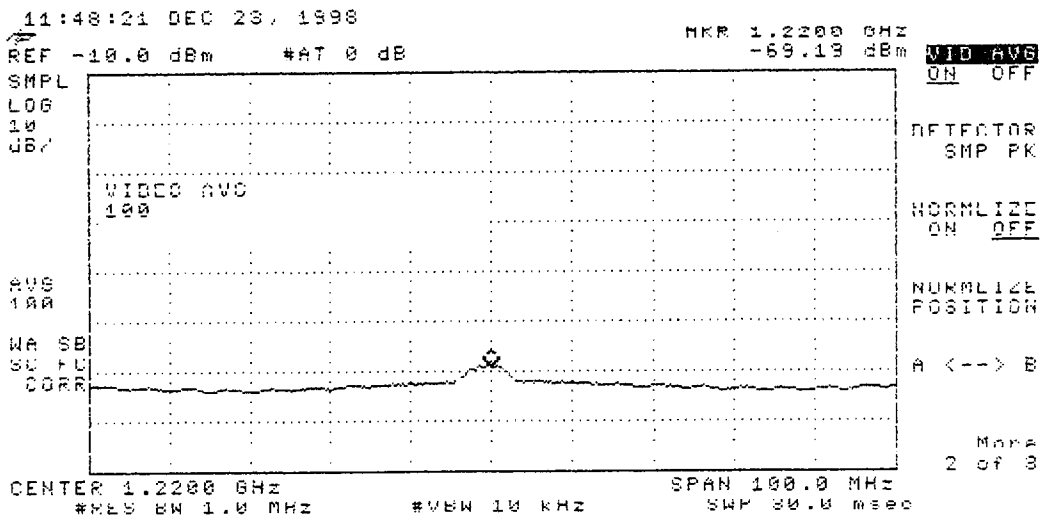
4. HP-8591E

Plot-4-R-B



1. Site-4, Set-1, 12/23/98
2. Boom Down, HP-8591E
3. Pointing at Embassy Suites
No Picture on T.V.

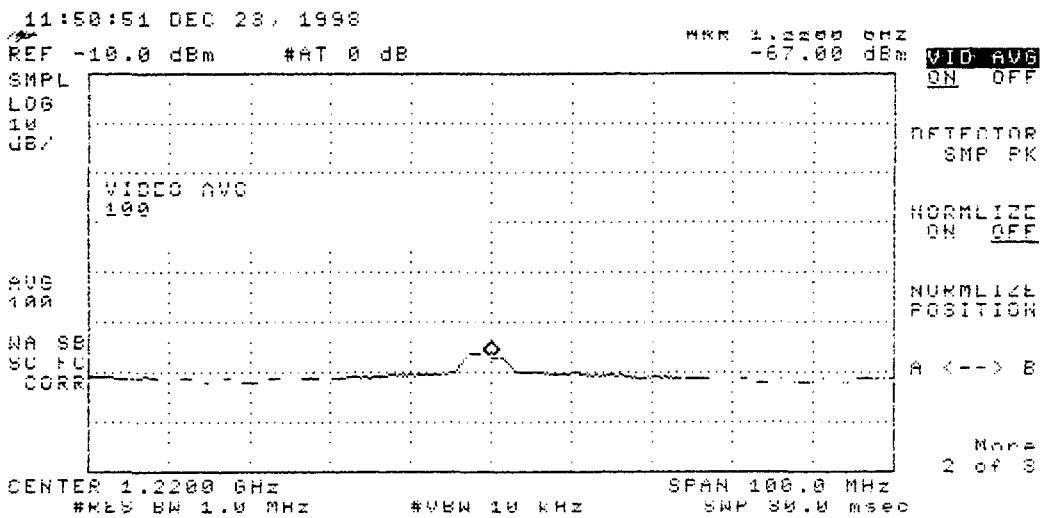
Plot-4-R-C



1. Pointing at Austin American Statesman
2. Site -4, Set-1, 12/23/98, Boom Down
3. HP-8591E

No Picture on T.V.

Plot-4-R-D



COMMENTS FROM SITE 4

Site 4 American-Statesman

a. Used pie pans to shield from NP Tx. Saw an increase of 5-6 pts. on TV meter, went from 79-85 (Estar)

b. Estar was pointing through some trees.

c. Have four reflection plots.

1. Reflection off of big white antenna to the left of site
2. Reflection off of TX DOT
3. Reflection off of Embassy Suites
4. Reflection off of American-Statesman

Northpoint Technology – DBS Compatiblilty Test – Austin Test Area

Jalisco's

Rx Site Data Log

Rx Site No. 5 p1
Set: 1 1

Re: Rx Condx Ref. No. 2 Date / Time: 12/22/98 3:50 CST

Re: Tx Condx Ref. No. 2 Operator: SMW

Data Measurements:

(1) On arrival -- - Position and deploy antenna platform (first at ground level).
- Position GPS Receiver and allow to average during site occupation.
- Obtain information for Rx Site Location Log.
- Point Precision Horn Antenna toward Tx (approx. direction).

(2) DBS Signal Interference Tests – DirecTV and EchoStar.

For each satellite case (one at a time), with Tx OFF, point DBS Antenna to the satellite and peak the signal strength. Observe the monitor for the prescribed TV channel (w/ appropriate DBS Rx) and assess signal quality. Turn Tx ON and observe the TV signal quality. Note any change in signal quality that is correlated with the Tx ON/OFF condition. Repeat Tx ON/OFF sequence as needed.

With the Spectrum Analyzer (SA), observe and record the Signal Power Spectrum and its peak value at the LNB output for the two Tx states (ON/OFF). Label the Spectrum Plots and mark them with an assigned ID code.

DirecTV – Tx OFF: OK? Y___ / N ___ Tx ON: OK? Y✓ / N___

Any behavior correlated with Tx ON/OFF ? Y___ / N___

Comments: _____.

Signal Power Spectrum – Tx ON: --Peak -- -58.63 dBm Plot ID Code 5-D.
Tx OFF: – Peak -- _____dBm Plot ID Code _____.
Comments: [illegible] _____.

EchoStar – Tx OFF: OK? Y___ / N ___ Tx ON: OK? Y___ / N___

Any behavior correlated with Tx ON/OFF ? Y___ / N___

Comments: _____.

Signal Power Spectrum – Tx ON: --Peak -- [illegible] dBm Plot ID Code _____.
Tx OFF: – Peak -- _____dBm Plot ID Code _____.
Comments: _____.

Rx Site Data Log

Rx Site No. 5 **p2**
Set: 1 1

(3) Northpoint Signal Quality Test –

With the Tx ON, point the DBS antenna toward the Tx , while using the NP Rx equipment, and peak the signal strength. Observe the monitor (w/ NP Rx equipment) and assess the signal quality.

NP Signal – OK? Y X / N___ Comments: _____.

(4) NP Rx Signal Level and Power Spectrum at Rx Site – LNB output --

With the DBS antenna on the NP Tx, and with the Tx ON, observe and record the Signal Power Spectrum and the peak level at the LNB output. Label the spectrum plot with an assigned ID Code.

Signal Power Spectrum -- Peak --63.51 dBm Plot ID Code -- S-N.

Comments: _____.

(5) Tx Signal Level and Power Spectrum at Rx Site – w/ Precision Ant. and SA.

Using the Precision Antenna and Test Set, observe and record the Tx Signal Power Spectrum and the peak value at the Rx site. Label the spectrum plot with an assigned ID Code.

Signal Power Spectrum -- Peak --_____ dBm Plot ID Code -- _____.

Comments: _____.

(6) When Rx Site measurements and tests are completed, read the GPS Receiver and record the position in the Rx Site Location Log. Prepare the equipment for movement to the next site.

Use the space below for added comments and notes. Attach extra pages if necessary.

Northpoint Technology – DBS Compatibility Test – Austin Test Area
Signal Strength Readings

Rx Site Data Log **Rx Site No.** 5

Set 1 1

Re: Condx Ref. No. 2 Date / Time 12/22/98 3:50 CST

Re: Condx Ref. No. 2 Operator: [illegible]

Direct T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	86	86	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	85.8
18	83	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	83.8
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	86.2

Estar T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	92.7
18	[illegible]	[illegible]	[illegible]	94	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	93.6
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	94.9

Notes:

Sat 1

Plot 5-D

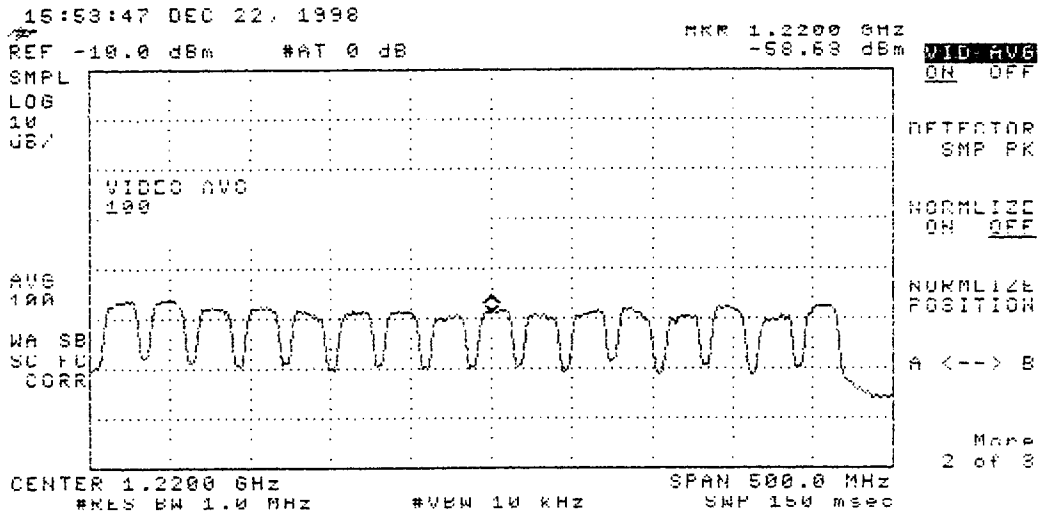
Sat 5

Beam: Down

Transponder: DirecTV

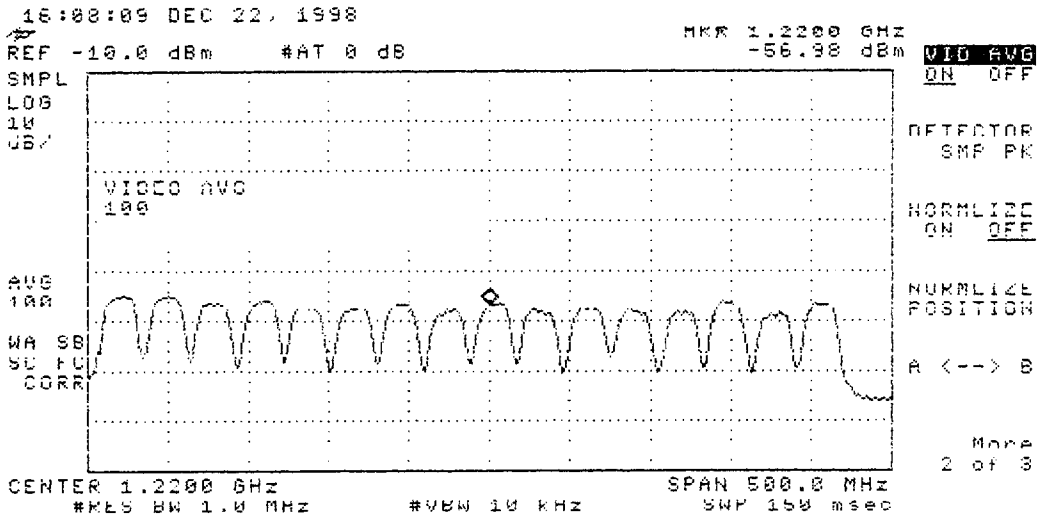
Date: 12-22-98

Sat: HP 8591E



Sec. 1
Sheet 5
Boom Down
Transmit Antenna
Date: 12-22-98
S.A.: 29 Step E

Plot 5-E



Plot 5 - N

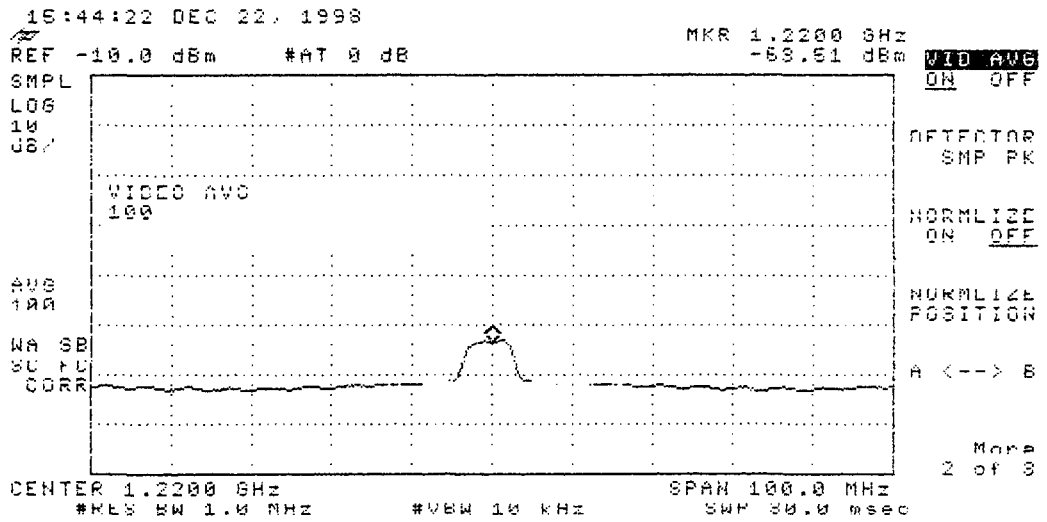
Site: 5

Boom: Down

Transmitter: No [illegible]

Date: [illegible] 98

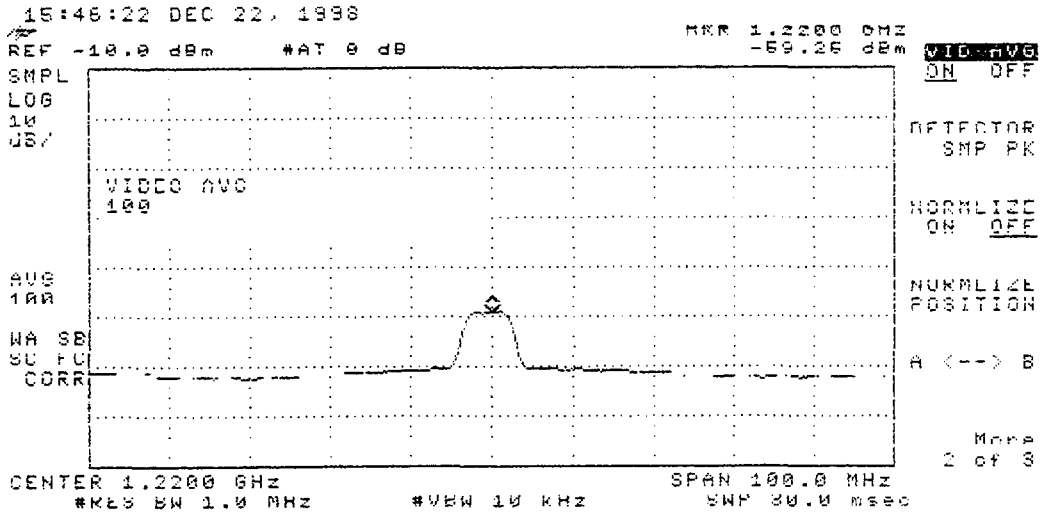
[illegible]



Bridge [illegible] [illegible] [illegible] [illegible] [illegible]

Pl. 5-R

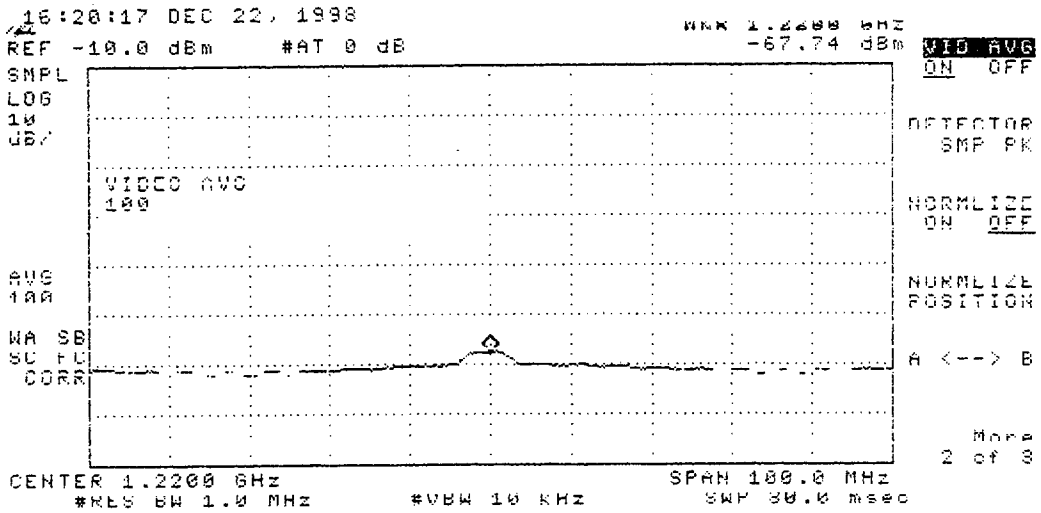
Set
Sig
Bore
Transmitter, Near
Reflection
Date 12-22-98
SA HP 8591E



Pointing towards parking garage o.a. Bore gun

Plot: BLAN
5-R-B

Set [illegible]
S[illegible]5
Beam [illegible]
[illegible] point
[illegible]
[illegible] 541 E



Printed at Dyn Texas Center
[illegible] Rat[illegible] Springs

Set: 1 plot: S-R-C

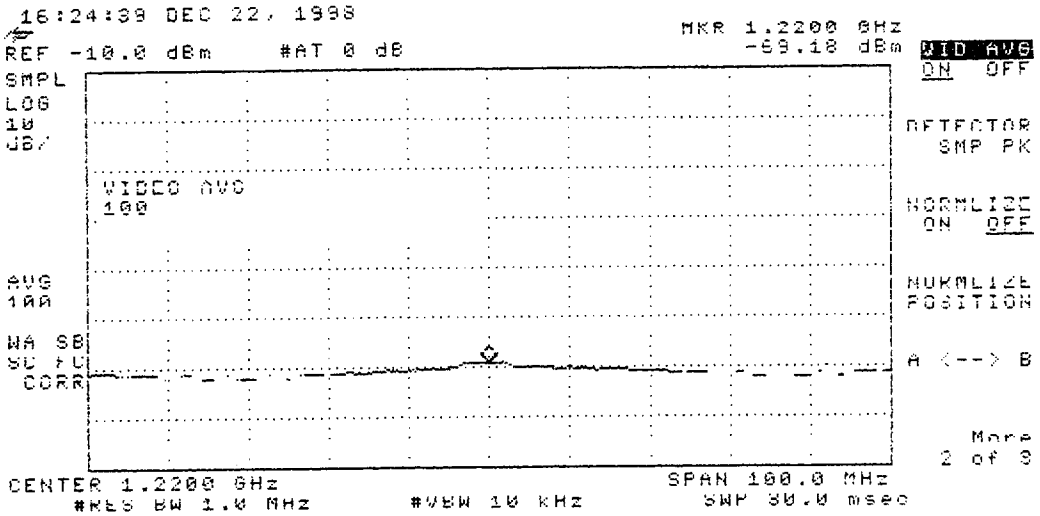
Site: 5

Boom: Down

Transmitter: No-Element

Date: 12-22-98

SA: HP 8566E



Pointed at Palmer Auditorium

COMMENTS FROM SITE 5

Site 5 Jalisco's

a. No change of DTV with pie pan
b. NP Tx. Is minutely obstructed by building
c. Have three reflection plots
    1. Reflection off of parking garage above benniguns
    2. Reflection off of One Texas Center (505 Barton Springs)
    3. Reflection off of Palmer Auditorium

Northpoint Technology – DBS Compatiblilty Test – Austin Test Area

Cesium

Rx Site Data Log

Rx Site No. 6 **p1**
Set: 1

Re: Rx Condx Ref. No. 2 Date / Time: 12/22/05 14:49 CST

Re: Tx Condx Ref. No. 2 Operator: John Dean

Data Measurements:

(1) On arrival --
- Position and deploy antenna platform (first at ground level).
- Position GPS Receiver and allow to average during site occupation.
- Obtain information for Rx Site Location Log.
- Point Precision Horn Antenna toward Tx (approx. direction).

(2) DBS Signal Interference Tests – DirecTV and EchoStar.

For each satellite case (one at a time), with Tx OFF, point DBS Antenna to the satellite and peak the signal strength. Observe the monitor for the prescribed TV channel (w/ appropriate DBS Rx) and assess signal quality. Turn Tx ON and observe the TV signal quality. Note any change in signal quality that is correlated with the Tx ON/OFF condition. Repeat Tx ON/OFF sequence as needed.

With the Spectrum Analyzer (SA), observe and record the Signal Power Spectrum and its peak value at the LNB output for the two Tx states (ON/OFF). Label the Spectrum Plots and mark them with an assigned ID code.

DirecTV – Tx OFF: OK? Y___ / N ___ Tx ON: OK? Y ✓ / N___

Any behavior correlated with Tx ON/OFF ? Y___ / N___

Comments: _____.

Signal Power Spectrum – Tx ON: --Peak -- -58.88 dBm Plot ID Code 6-D.
Tx OFF: – Peak -- _____dBm Plot ID Code _____.
Comments: _____.

EchoStar – Tx OFF: OK? Y___ / N ___ Tx ON: OK? Y ✓ / N___

Any behavior correlated with Tx ON/OFF ? Y___ / N___

Comments: _____.

Signal Power Spectrum – Tx ON: --Peak -- -57.87 dBm Plot ID Code 6-E.
Tx OFF: – Peak -- _____dBm Plot ID Code _____.
Comments: _____.

Northpoint Technology – DBS Compatiblilty Test – Austin Test Area

Rx Site Data Log

Rx Site No. 6 **p2**
Set: 1

(3) Northpoint Signal Quality Test –

With the Tx ON, point the DBS antenna toward the Tx , while using the NP Rx equipment, and peak the signal strength. Observe the monitor (w/ NP Rx equipment) and assess the signal quality.

NP Signal – OK? Y ✓ / N___ Comments: _____.

(4) NP Rx Signal Level and Power Spectrum at Rx Site – LNB output --

With the DBS antenna on the NP Tx, and with the Tx ON, observe and record the Signal Power Spectrum and the peak level at the LNB output. Label the spectrum plot with an assigned ID Code.

Signal Power Spectrum -- Peak -- -53.67 dBm Plot ID Code -- 6-N/-A

Comments: _____.

(5) Tx Signal Level and Power Spectrum at Rx Site – w/ Precision Ant. and SA.

Using the Precision Antenna and Test Set, observe and record the Tx Signal Power Spectrum and the peak value at the Rx site. Label the spectrum plot with an assigned ID Code.

Signal Power Spectrum -- Peak -- _____ dBm Plot ID Code -- _____.

Comments: _____.

(6) When Rx Site measurements and tests are completed, read the GPS Receiver and record the position in the Rx Site Location Log. Prepare the equipment for movement to the next site.

Use the space below for added comments and notes. Attach extra pages if necessary.

Metal gate & [illegible] of tree [illegible] [illegible] of
[illegible]

Northpoint Technology – DBS Compatibility Test – Austin Test Area
Signal Strength Readings

Rx Site Data Log **Rx Site No.** 6

Set 1 1

Re: Condx Ref. No. 2 Date / Time 12/27/98 3:18 CST

Re: Condx Ref. No. 2 Operator: [illegible]

Direct T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	80	80	80	80	82	79	81	81	80	80	80.3
18	78	78	78	79	79	76	80	80	77	79	78.4
20	82	81	81	82	82	80	80	80	80	82	81

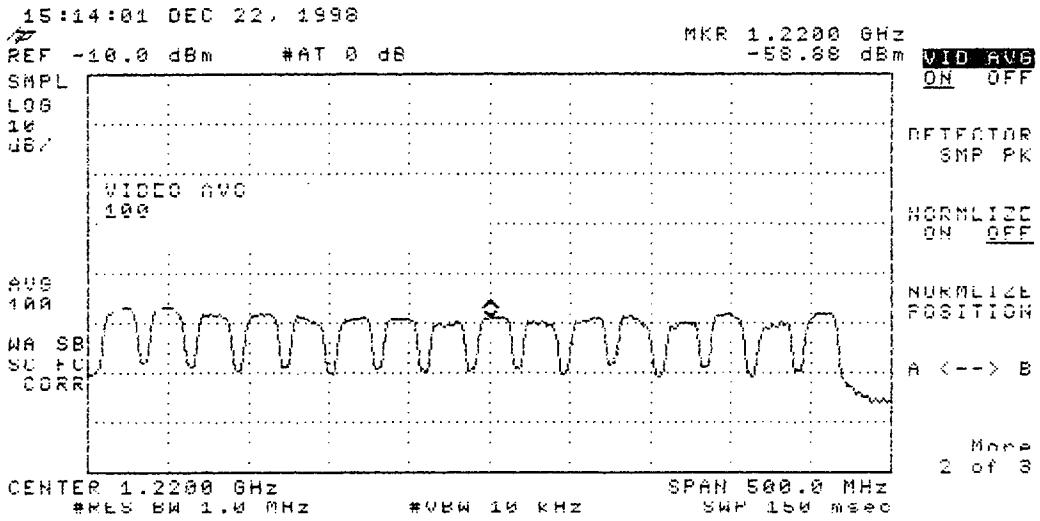
Estar T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	92	91	90	91	91	91	91	90	90	91	90.8
18	91	90	90	90	89	90	90	89	89	90	89.8
20	93	93	93	93	93	93	93	92	93	93	92.9

Notes: Cold, Windy, Over Cast.

Site: 6
Set: 1
Room Down
12/22/98
Transponder: ATV
Spectrum: 8591E

Plot 6-D



Set: 1 Plot: 6-E

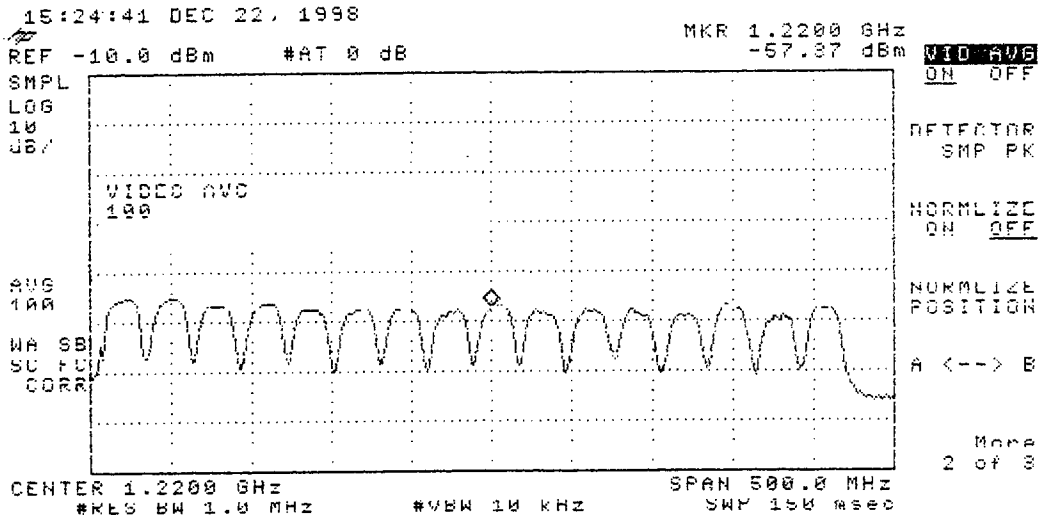
Site: 6

Boom: down

Date: 12-22-98

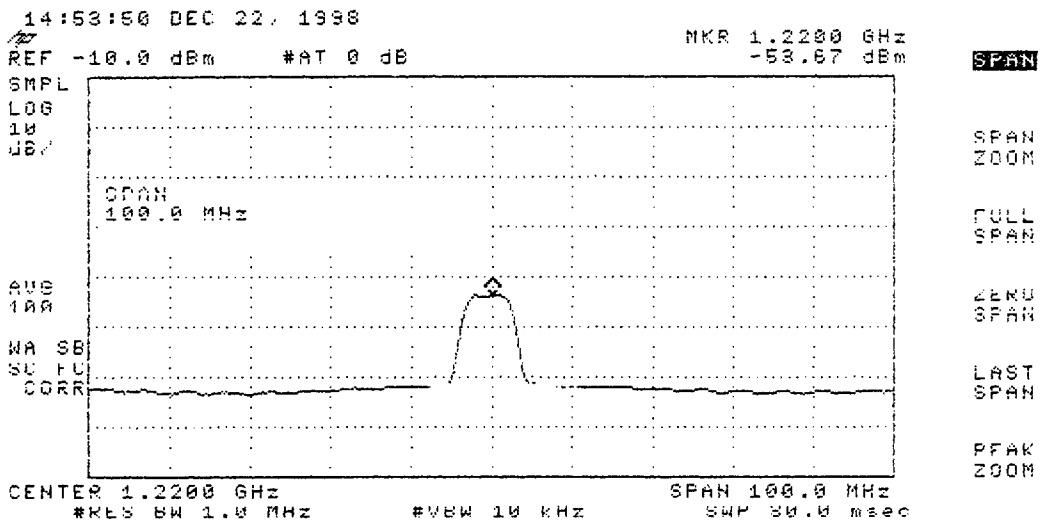
Transmitter: Echostar

S.A. HP 8591E



Set. 1
Site: 6
Room: Down
Computer: Northpoint
Date: 12-22-98
Spectrum Analyzer HP 8591E

Plot. 6-A1-A



plot 6-R-A

Site: 6

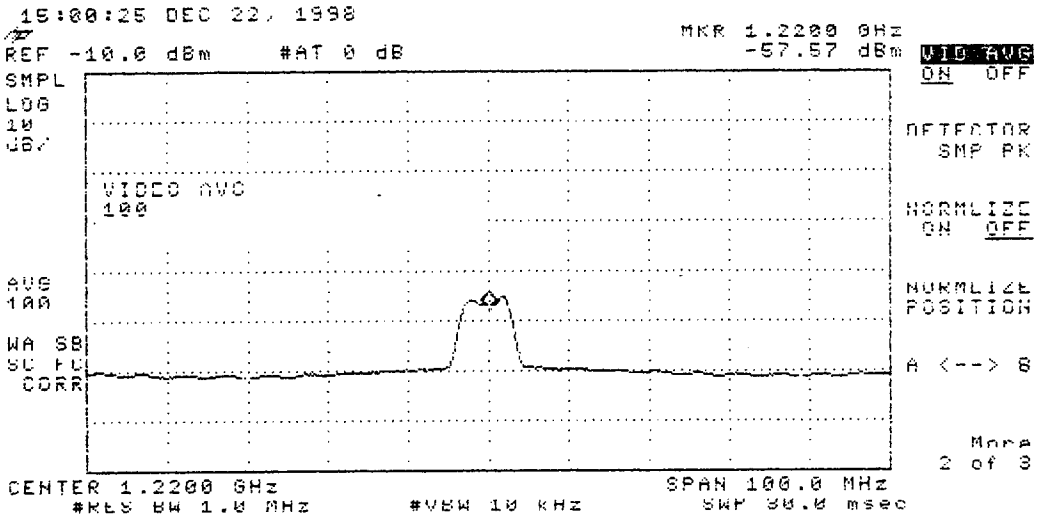
Board Band

Transmitter No. [illegible]

Date: 12-22-98

S.A. Up 8591E

Bldg 811 Boulder Springs Rd.
East Side of 15th



COMMENTS FROM SITE 6

Site 6 Coliseum

a. Metal pole and part of a tree obstructing view of transmitter
b. Have one reflection plot
    1. Reflection off of building (811 Barton Spring Rd. East side of building)

Northpoint Technology – DBS Compatiblilty Test – Austin Test Area

Rx Site Data Log

Palmer ⊗'

Rx Site No. 7 **p1**

Set: 1 / ___

Re: Rx Condx Ref. No. 2

Date / Time: 12/22/99 13 CST

Re: Tx Condx Ref. No. 2

Operator: [illegible]

Data Measurements:

(1) On arrival --
- Position and deploy antenna platform (first at ground level).
- Position GPS Receiver and allow to average during site occupation.
- Obtain information for Rx Site Location Log.
- Point Precision Horn Antenna toward Tx (approx. direction).

(2) DBS Signal Interference Tests – DirecTV and EchoStar.

For each satellite case (one at a time), with Tx OFF, point DBS Antenna to the satellite and peak the signal strength. Observe the monitor for the prescribed TV channel (w/ appropriate DBS Rx) and assess signal quality. Turn Tx ON and observe the TV signal quality. Note any change in signal quality that is correlated with the Tx ON/OFF condition. Repeat Tx ON/OFF sequence as needed.

With the Spectrum Analyzer (SA), observe and record the Signal Power Spectrum and its peak value at the LNB output for the two Tx states (ON/OFF). Label the Spectrum Plots and mark them with an assigned ID code.

DirecTV – Tx OFF: OK? Y___ / N ___ Tx ON: OK? Y ✓ / N___

Any behavior correlated with Tx ON/OFF ? Y___ / N___

Comments: _____.

Signal Power Spectrum – Tx ON: --Peak -- 59.72 dBm Plot ID Code 7-D.
Tx OFF: – Peak -- ____ dBm Plot ID Code _____.
Comments: _____.

EchoStar – Tx OFF: OK? Y___ / N ___ Tx ON: OK? Y ✓ / N___

Any behavior correlated with Tx ON/OFF ? Y___ / N___

Comments: _____.

Signal Power Spectrum – Tx ON: --Peak -- 59.21 dBm Plot ID Code 7-E.
Tx OFF: – Peak -- ____ dBm Plot ID Code _____.
Comments: _____.

Rx Site Data Log

Rx Site No. 7 **p2**
Set: 1 / ___

(3) Northpoint Signal Quality Test –

With the Tx ON, point the DBS antenna toward the Tx , while using the NP Rx equipment, and peak the signal strength. Observe the monitor (w/ NP Rx equipment) and assess the signal quality.

NP Signal – OK? Y ✓ / N___ Comments: _____.

(4) NP Rx Signal Level and Power Spectrum at Rx Site – LNB output --

With the DBS antenna on the NP Tx, and with the Tx ON, observe and record the Signal Power Spectrum and the peak level at the LNB output. Label the spectrum plot with an assigned ID Code.

Signal Power Spectrum -- Peak -- -34.56 dBm Plot ID Code -- 7-N.

Comments: _____.

(5) Tx Signal Level and Power Spectrum at Rx Site – w/ Precision Ant. and SA.

Using the Precision Antenna and Test Set, observe and record the Tx Signal Power Spectrum and the peak value at the Rx site. Label the spectrum plot with an assigned ID Code.

Signal Power Spectrum -- Peak -- _____ dBm Plot ID Code -- _____.

Comments: _____.

(6) When Rx Site measurements and tests are completed, read the GPS Receiver and record the position in the Rx Site Location Log. Prepare the equipment for movement to the next site.

Use the space below for added comments and notes. Attach extra pages if necessary.

Northpoint Technology – DBS Compatibility Test – Austin Test Area
Signal Strength Readings

Rx Site Data Log

Rx Site No. 7

Set 1 1

Re: Condx Ref. No. 2

Date / Time 12 / 22 / 98 12 : 00 CST

Re: Condx Ref. No. 2

Operator: JMB

Direct T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	80	80	80	80	79	79	80	80	80	80	79.8
18	73	73	73	75	74	74	74	71	71	74	73.2
20	8[illegible]	80	8[illegible]	8[illegible]	80	81	8[illegible]	8[illegible]	82	82	80.8

Estar T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	87	87	87	87	87	88	87	88	87	87	87.2
18	87	88	87	87	86	87	87	87	87	87	87
20	89	89	90	90	89	89	89	[illegible]	[illegible]	89	89.3

Notes: Overcast, very cold [illegible]