

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

Rx Site Data Log

Rx Site No. 20

Set 1.1

Re: Condx Ref. No. 2

Date / Time 12/30/98 11:45 CST

Re: Condx Ref. No. 2

Operator: MCH

Direct T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	83	82	82	83	83	82	80	80	83	80	81.8
18	80	81	79	80	78	81	80	79	80	81	79.9
20	81	81	82	82	80	80	80	80	80	80	80.6

Estar T.V. Signal Strength Readings

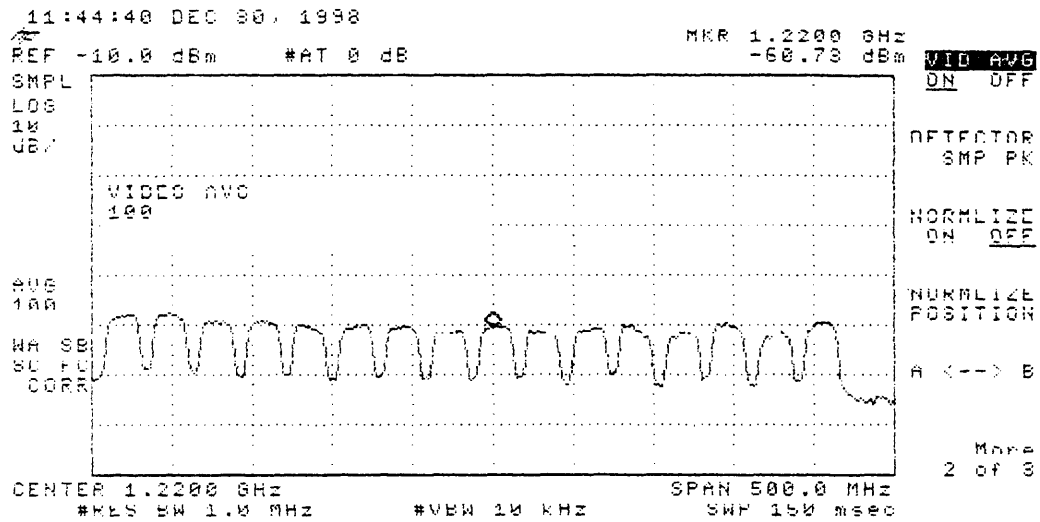
Tsp No	Signal Strength Readings										Avg
16	89	89	88	89	89	89	89	88	89	89	88.8
18	89	89	89	89	89	89	88	88	89	89	88.8
20	91	91	91	91	91	91	91	91	90	90	90.8

Notes: Clear, 65°

1. DTV, 12/30/98, Site-20

2. Boom at 33'

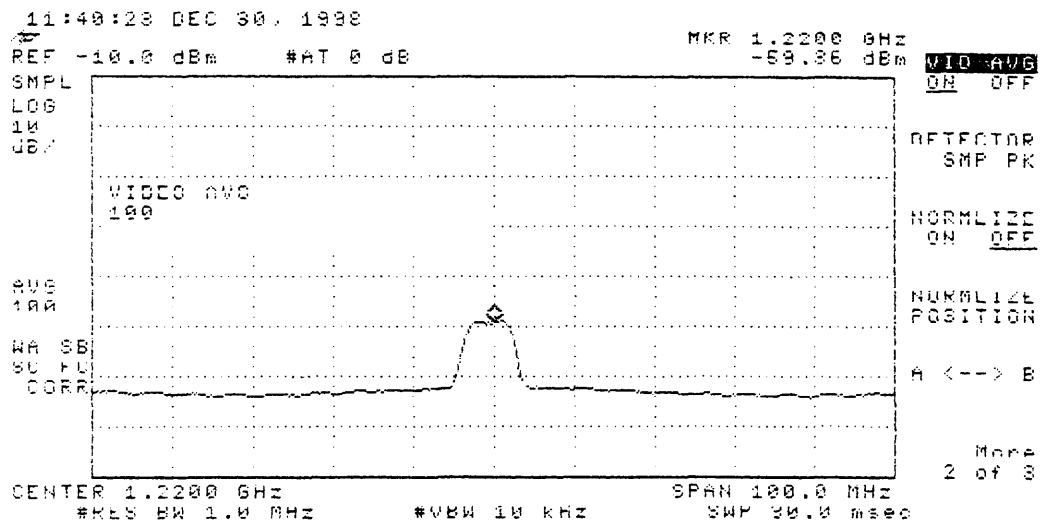
Plot - 20-D



1, Site-20, 12/30/98, N.P. Tx

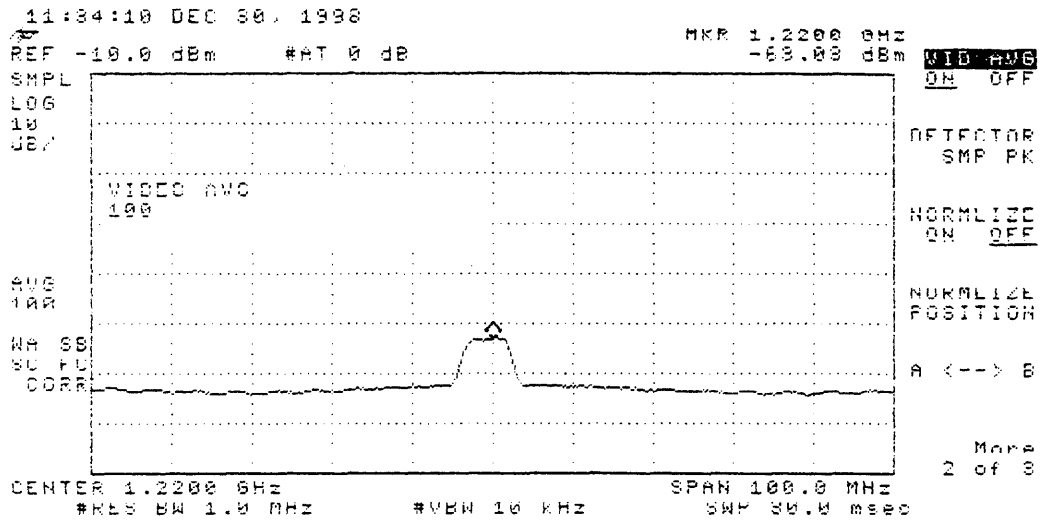
2 Boom at 33'

Plot - 20-N



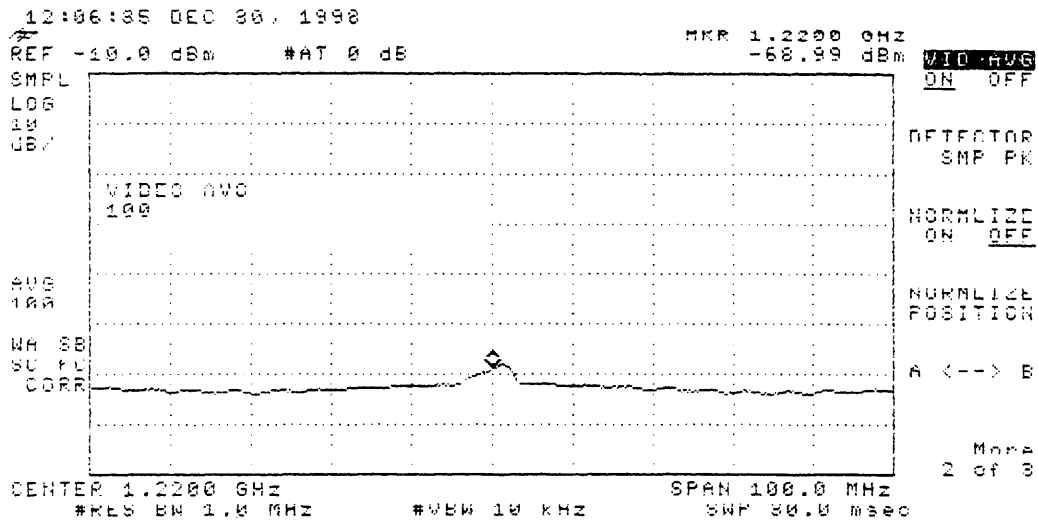
1. Site-20, 12/30/98, Picture good on TV.
2. Boom at 23', N.P. Tx
3. Used to get over some tree's in the path way.

P/0+-20-N-1



1. Site-20, 12/30/98, N.P. Tx
2. Reflection off of Texas one Bld.
one with the Armadillo, by Barton Spring Rd.
3. Boon Down

Plot-20-N-R



COMMENTS FROM SITE 20

Site 20 Fiesta Shores

- a. Have one plot of spikes in it, DTV**
- b. Have three NP plots at different boom levels**
- c. Have one reflection plot**
 - 1. Reflection off of Texas one building, by Barton Springs Rd.**

Northpoint Technology – DBS Compatiblilty Test – Austin Test Area

Rx Site Data Log

Summit

Rx Site No. 21 p1
Set: 11

Re: Rx Condx Ref. No. 2 Date / Time: 12/30/98 2:40 CST
Re: Tx Condx Ref. No. 2 Operator: MLH

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~~X~~/N___

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

Comments: _____

Signal Power Spectrum – Tx ON: --Peak -- 59.80 dBm Plot ID Code 21-D
Tx OFF: – Peak -- _____ dBm Plot ID Code _____

Comments: _____

EchoStar – Tx OFF: OK? Y___ / N___ Tx ON: OK? Y~~X~~/N___

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

Comments: _____

Signal Power Spectrum – Tx ON: --Peak -- 59.72 dBm Plot ID Code 21-E
Tx OFF: – Peak -- _____ dBm Plot ID Code _____

Comments: _____

Northpoint Technology – DBS Compatibility Test – Austin Test Area

Rx Site Data Log

Summit

Rx Site No.

21

p2

Set:

11

(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 -- -50.86 dBm Plot ID Code -- 21-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. 21

Set 1-1

Re: Condx Ref. No. 2

Date / Time 12/30/98 2:10 CST

Re: Condx Ref. No. 2

Operator: MUK

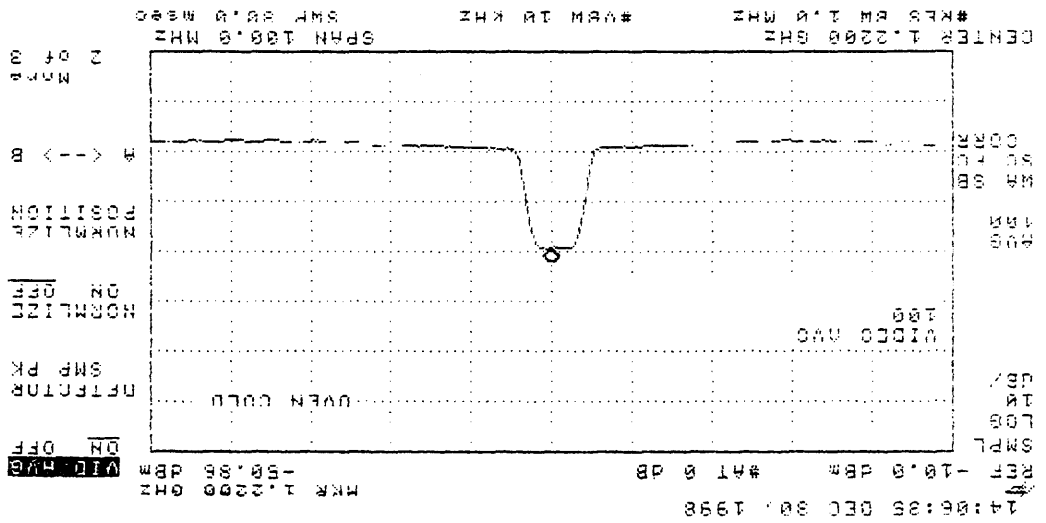
Direct T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	86	85	86	85	86	85	86	85	86	86	85.6
18	83	85	85	84	85	83	85	84	86	84	84.4
20	86	86	86	86	86	86	86	86	87	86	86.1

Estar T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	89	90	90	89	89	89	90	89	89	90	89.4
18	89	88	89	88	89	89	88	89	87	88	88.4
20	91	91	91	91	92	92	91	91	92	91	91.3

Notes: Clear, 65°-70°



plg-21-N

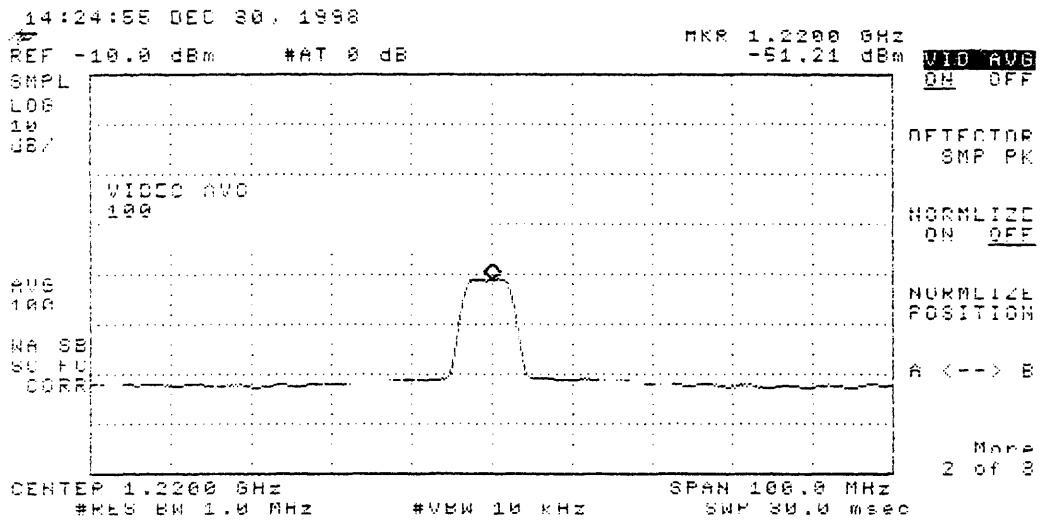
Picture Good on TV, Room Down

1. N.P. Site-21, 12/30/98

1, Site-21, Special graph. Boom Down
12/30/98. Picture Good on T.V.

2. When Boom is up in the leaves, Signal
goes away. $\approx 10'$

Plot 21-N-S



COMMENTS FROM SITE 21

Site 21 Summit

- a. When boom is up ~ 10', in the leaves, signal goes away

Northpoint Technology – DBS Compatibililty Test – Austin Test Area

Rx Site Data Log

4th & San Antonio

Rx Site No. 22

p1

Set: 11

Re: Rx Condx Ref. No. 2

Date / Time: 12/30/98 3:04 CST

Re: Tx Condx Ref. No. 2

Operator: MUK

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~~X~~ / N___

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

Comments: _____

Signal Power Spectrum – Tx ON: --Peak -- -61.85dBm Plot ID Code 22-D
Tx OFF: – Peak -- _____dBm Plot ID Code _____

Comments: _____

EchoStar – Tx OFF: OK? Y___ / N___ Tx ON: OK? Y~~X~~ / N___

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

Comments: _____

Signal Power Spectrum – Tx ON: --Peak -- -59.62dBm Plot ID Code 22-E
Tx OFF: – Peak -- _____dBm Plot ID Code _____

Comments: _____

Northpoint Technology – DBS Compatiblilty Test – Austin Test Area

Rx Site Data Log

Rx Site No. 22 p2
Set: 11

(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 -- 48.20 dBm Plot ID Code -- 22-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. 22

Set 1/1

Re: Condx Ref. No. 2

Date / Time 12/30/98 3:10 CST

Re: Condx Ref. No. 2

Operator: SMWIK

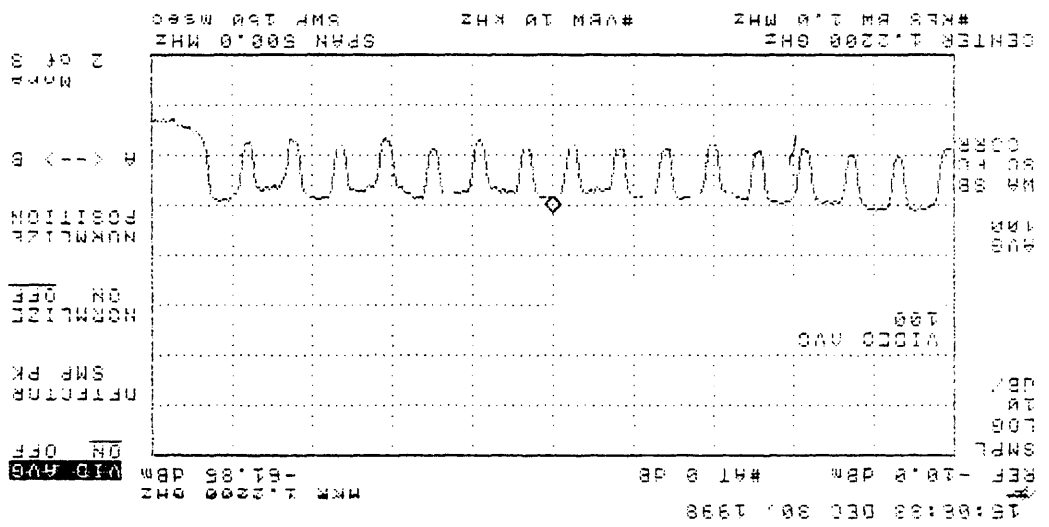
Direct T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	78	79	79	77	78	78	77	79	79	77	78.1
18	77	76	76	71	74	76	76	74	74	77	75.4
20	79	78	77	77	78	78	78	79	79	80	78.3

Estar T.V. Signal Strength Readings

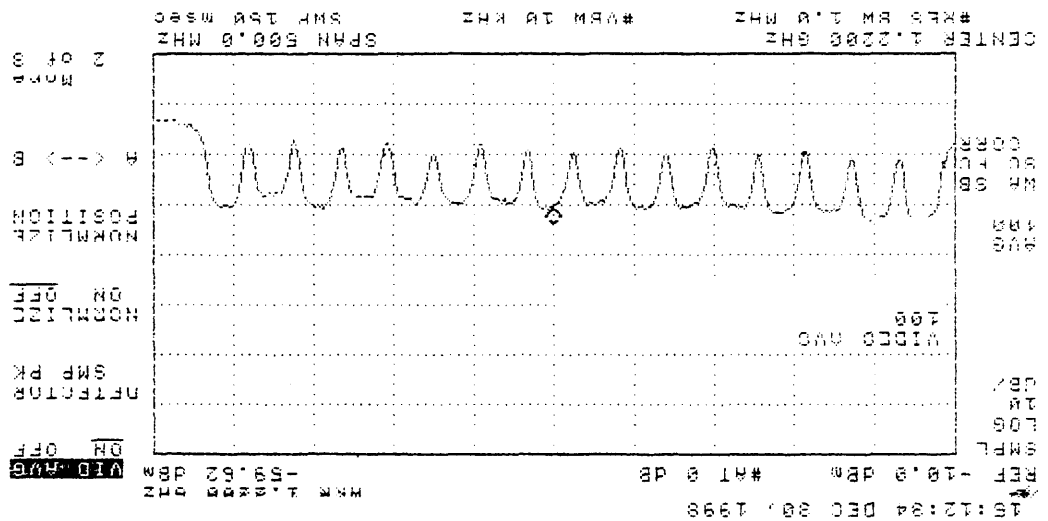
Tsp No	Signal Strength Readings										Avg
16	88	87	88	88	88	89	87	88	89	87	88.1
18	88	87	88	88	88	89	88	89	88	89	88.2
20	90	90	89	90	89	90	90	89	90	91	89.8

Notes: Estar Point + through + Power lines + Bld.



Plot-22-b

1. PTV, 12/30/98, Site-22
 Boom Down

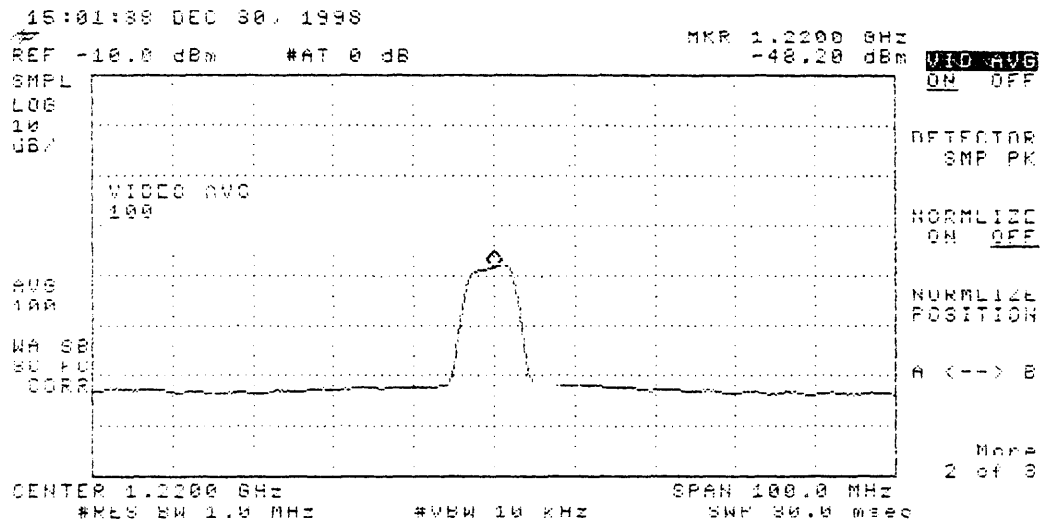


Plot 22-E

*1. Estqr, 12/30/98, Site-22
boom down*

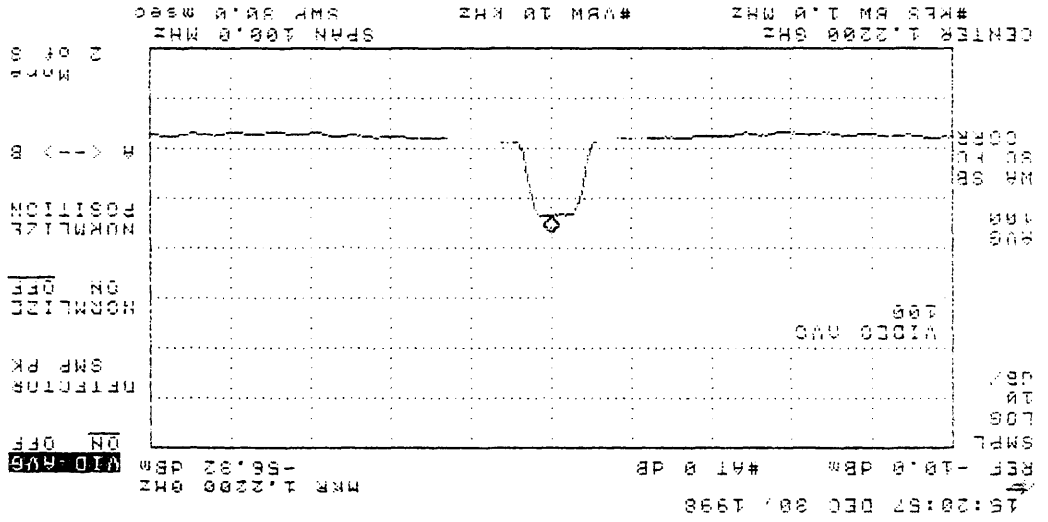
I. N. P., 12/30/98, Site-22
Boom Down

Plot 22-N



1. N.P. Reflection Site-22
 Picture Good on T.V.
 Fronting at White & Broze Rd.
 Boom Down

Plot 22-N-R



COMMENTS FROM SITE 22

Site 22 4th and SanAntonio

- a. Estar pointing through power lines and a building
- b. Have one plot of reflection
 1. Reflection is off of white and bronze building

Northpoint Technology – DBS Compatibility Test – Austin Test Area

Rx Site Data Log

7 + Guadalupe

Rx Site No.

23

p1

Set:

11

Re: Rx Condx Ref. No.

2

Date / Time:

12/30/98 3:53 CST

Re: Tx Condx Ref. No.

2

Operator:

MWH

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~~X~~/ N___

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

Comments: _____

Signal Power Spectrum – Tx ON: --Peak -- -60.34 dBm Plot ID Code 23-D
 Tx OFF: – Peak -- _____ dBm Plot ID Code _____

Comments: _____

EchoStar – Tx OFF: OK? Y___ / N___ Tx ON: OK? Y~~X~~/ N___

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

Comments: _____

Signal Power Spectrum -- Tx ON: --Peak -- -58.96 dBm Plot ID Code 23-E
 Tx OFF: – Peak -- _____ dBm Plot ID Code _____

Comments: _____

Northpoint Technology – DBS Compatiblilty Test – Austin Test Area

Rx Site Data Log

Rx Site No.

23

p2

Set:

11

(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 -- -50.37 dBm Plot ID Code -- 23-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.

1

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

Rx Site Data Log

Rx Site No. 23

Set 1-1

Re: Condx Ref. No. 2

Date / Time 12/30/98 3:55 CST

Re: Condx Ref. No. 2

Operator: SMWH

Direct T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	85	85	86	86	86	85	86	86	85	86	85.6
18	85	85	85	86	84	85	85	86	85	86	85.2
20	87	87	86	86	85	87	86	86	87	86	86.3

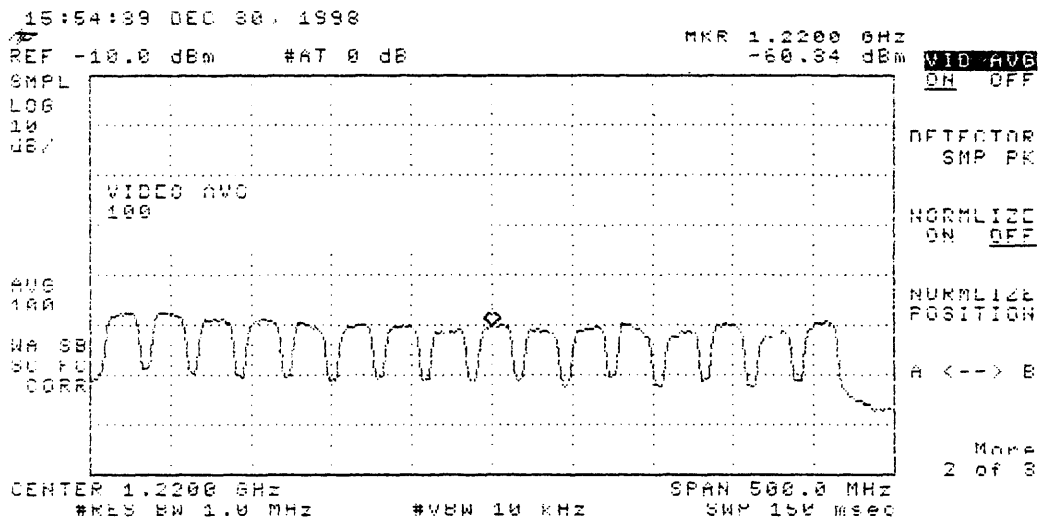
Estar T.V. Signal Strength Readings

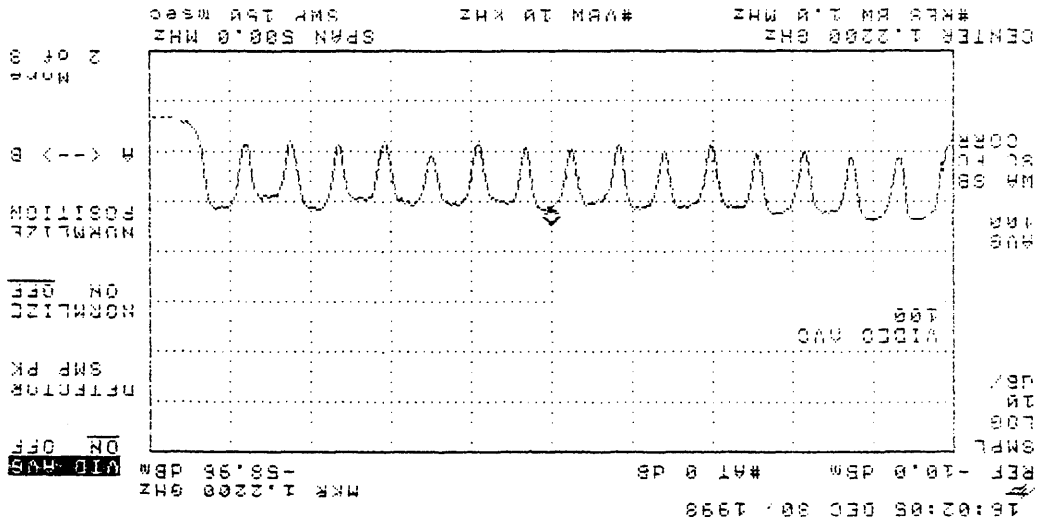
Tsp No	Signal Strength Readings										Avg
16	91	91	92	91	92	91	91	92	93	91	91.5
18	90	89	90	89	90	89	89	89	90	89	89.4
20	94	93	94	95	95	94	94	95	94	93	94.1

Notes: Clear - 65° - 70°

1. DTV, 12/30/98, Site-23, Boom Down

Plot-23-D





Plot-23-E

1. Estar, 12/30/98, Site-23, Boom Down