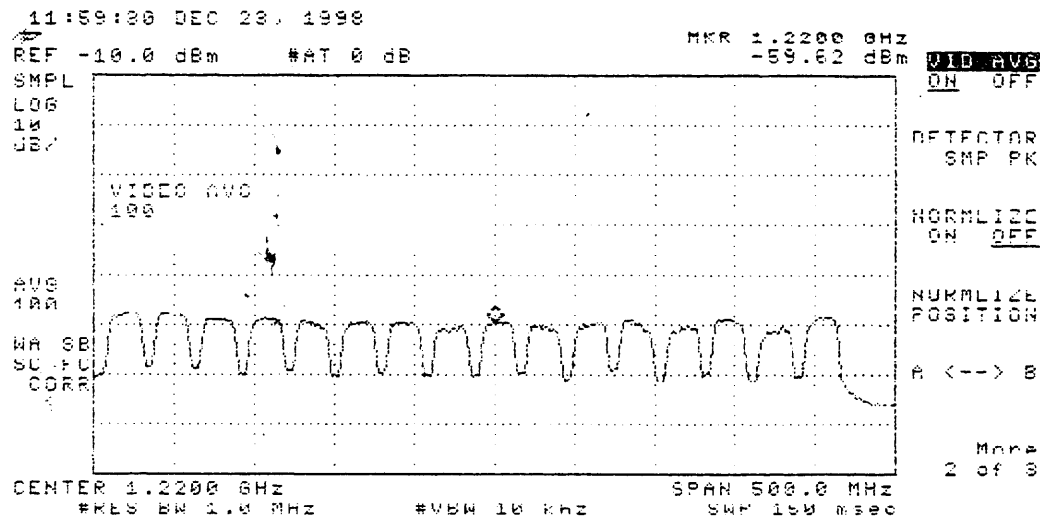


1. Site-4, Set-1, 12/23/98

2. DTV, Boom Down

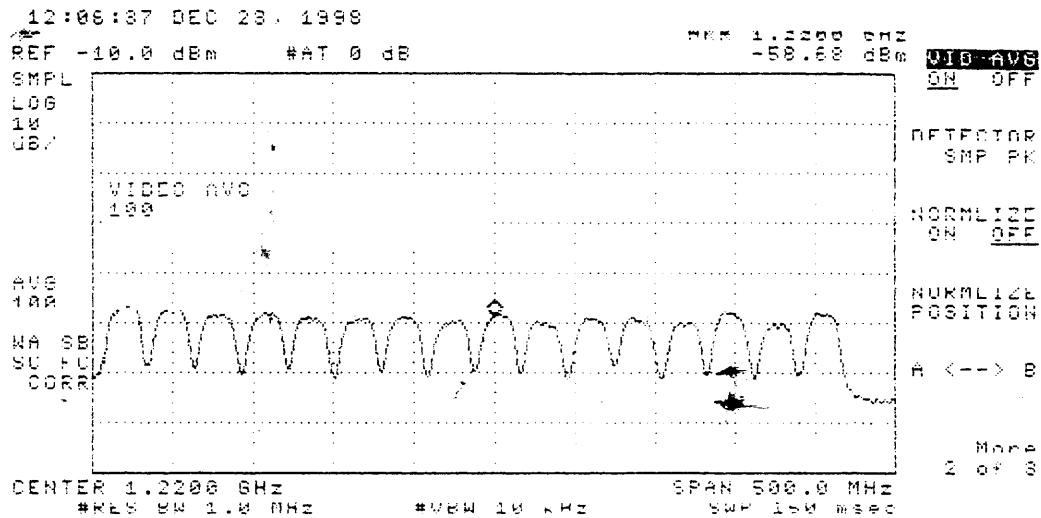
3. H.P. 8591E

Plot-4-D



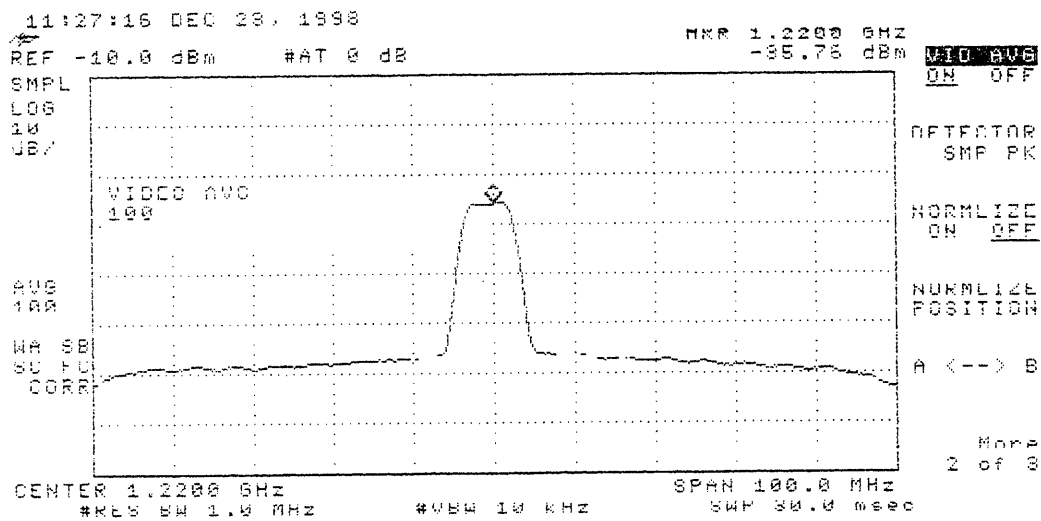
1. Site -4, Set-1, 12/23/98
2. Ester, Boom Down
3. Was point through a tree
4. H.P 8591E

Plot 4-E



1. Site - 4, Set - 6, 12/23/98
2. NP up Dish, Boom Down
3. HP-8591E

Plot - 4-N



Re: - 26

... 556
Engineer's Computation Pad



NP 4

Small
chips

DISS. 234

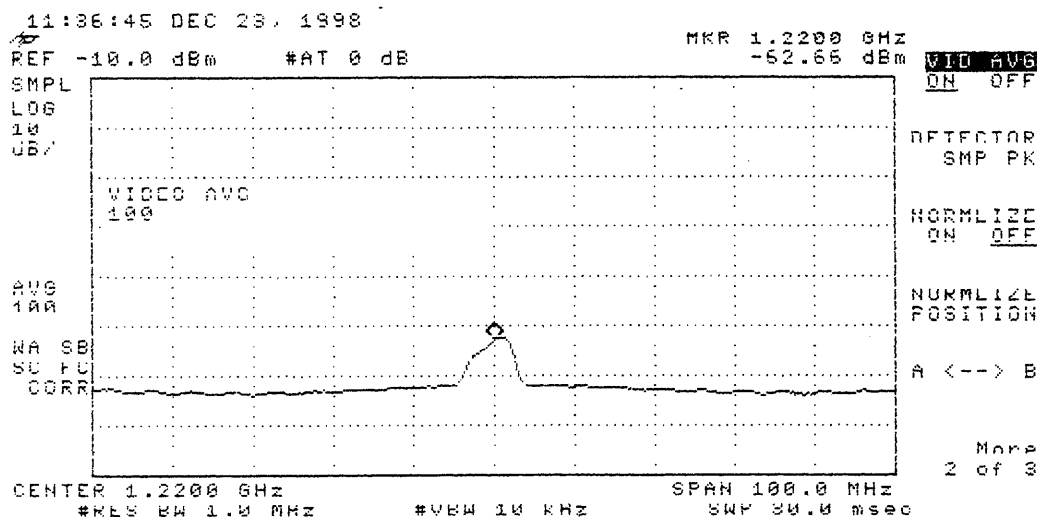
15.

Tx1Dot

7

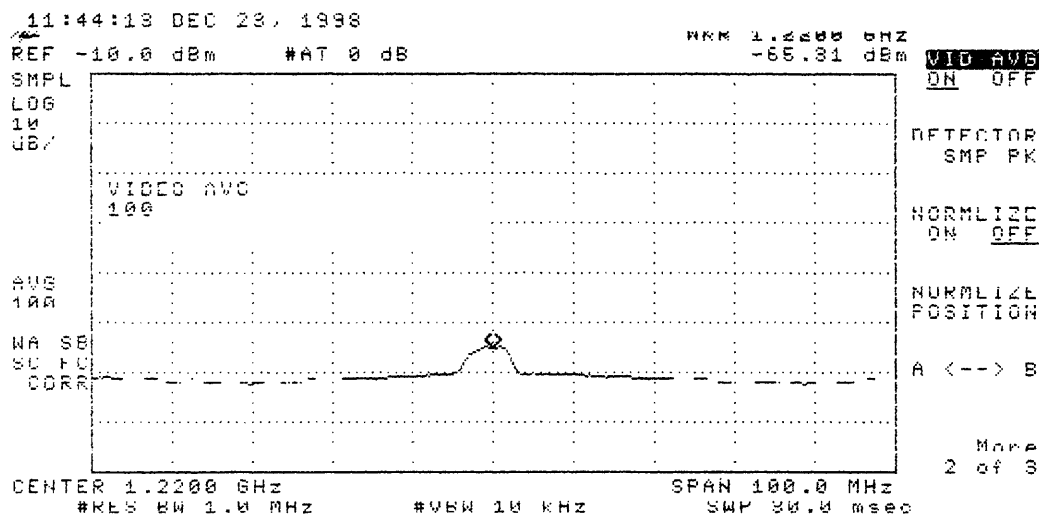
1. Site -4, Set-1, 12/23/98
2. Boom Down,
3. Reflection of R.P., pointing at Big White Ant. to left of Van.
4. Good Picture on screen.
5. HP-8591E

Plot - 4-R-A



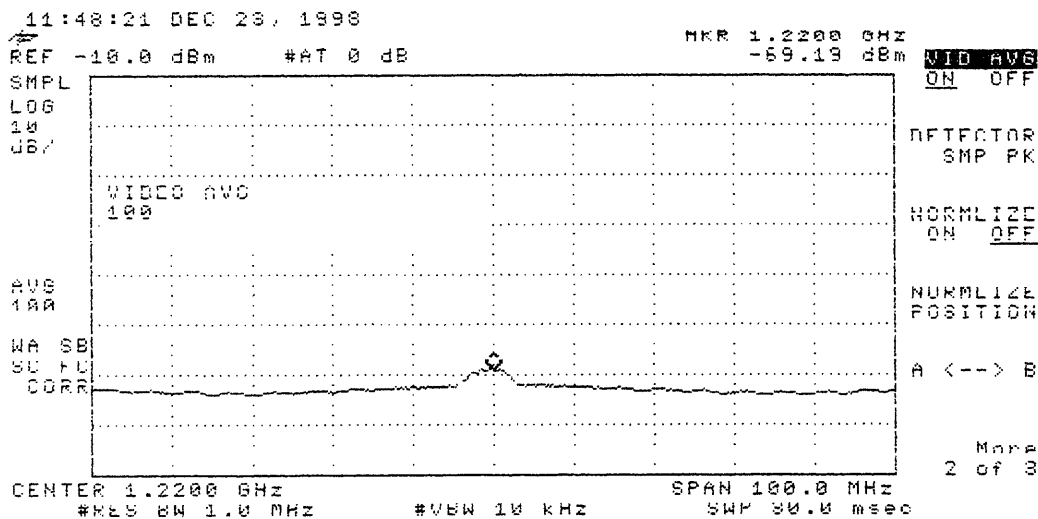
1. Site- 4, Set, -1, 12/23/98
2. Boom, Down
3. Reflection offset TXDOT, No Picture on T.V.
4. HP-8591E

Plot - 4-R-B



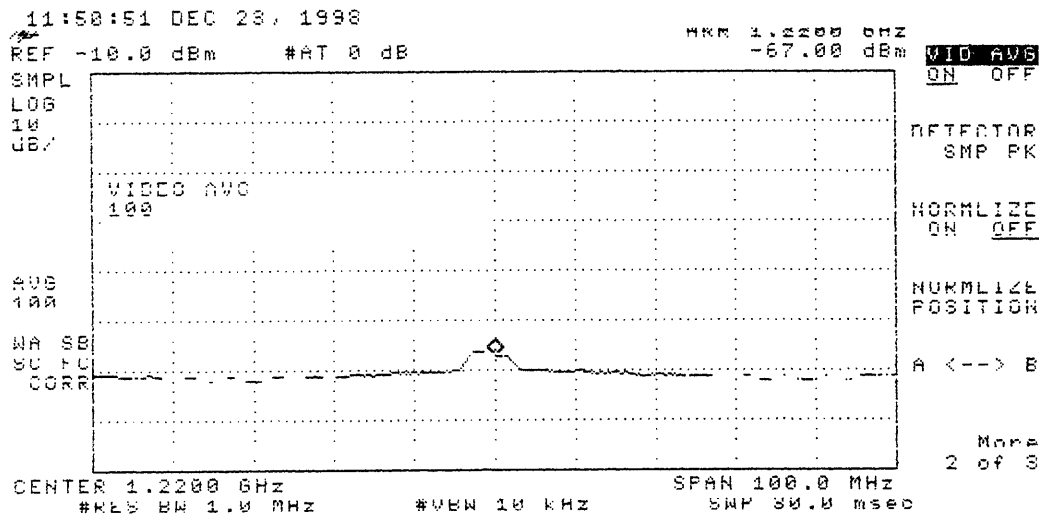
1. Site-4, Set-1, 12/23/98
2. Boom Down, HP-8591E
3. Pointing at Embassy Suites
No Picture on T.V.

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 Compatibility 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: LMVH

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 -- -56.63 dBm Plot ID Code S-D
Tx OFF: -- Peak -- _____ dBm Plot ID Code _____

Comments: no change w/ sat power

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 -- -55.00 dBm Plot ID Code _____
Tx OFF: -- Peak -- _____ dBm Plot ID Code _____

Comments: _____

Northpoint Technology – DBS Compatibility Test – Austin Test Area

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:

J-12

Direct T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	86	86	86	86	85	85	86	86	86	86	85.8
18	83	84	84	83	83	84	84	84	84	83	83.8
20	87	86	86	86	86	87	87	87	87	87	86.2

Estar T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	92	93	93	93	93	93	93	93	93	92	92.7
18	93	94	93	94	93	94	94	94	93	94	93.6
20	94	94	94	94	94	94	94	94	94	94	94.9

Notes:

Ser 1

Plot: S-D

Ser 5

Beam: Down

Trans: 400 Dm/Tv

Time: 2-72-98

S.F. : -P 8591E

15:53:47 DEC 22, 1998

REF -10.0 dBm #AT 0 dB

MKR 1.2200 GHz
-58.63 dBm

VID AVG
ON OFF

SMPL
LOG
10
GB/

DETECTOR
SMP PK

VIDEO AVG
100

NORMLIZE
ON OFF

AVG
100

NORMLIZE
POSITION

WA SB
SU TC
CORR

A <--> B

CENTER 1.2200 GHz

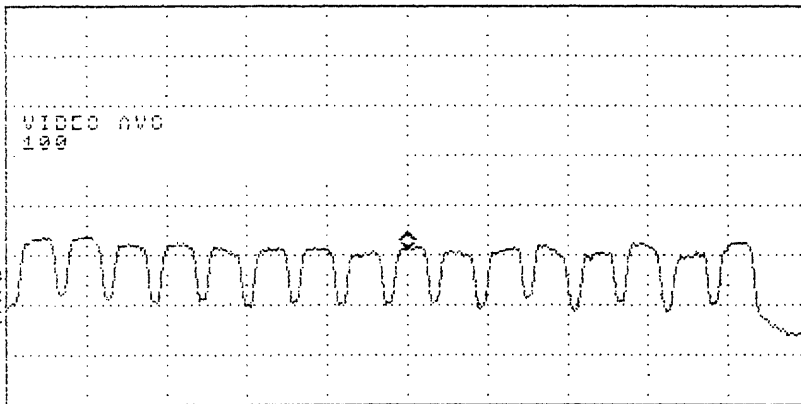
#RES BW 1.0 MHz

#VBW 10 KHz

SPAN 500.0 MHz

SMP 150 msec

Page
2 of 3



Sec 1

Plot S-E

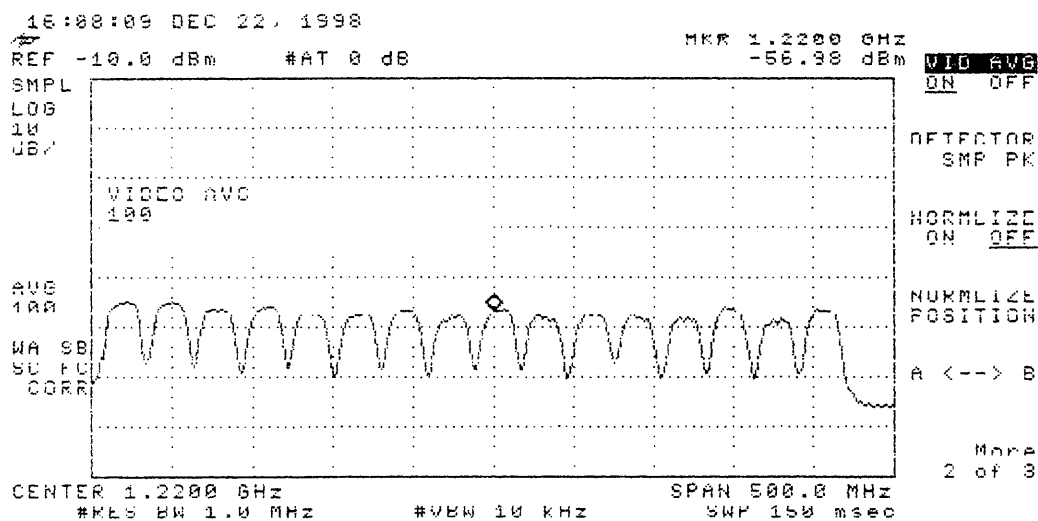
Signal

Boom Down

Power to Receiver

Date 12-22-08

SAL 47 8591 E



plus - N

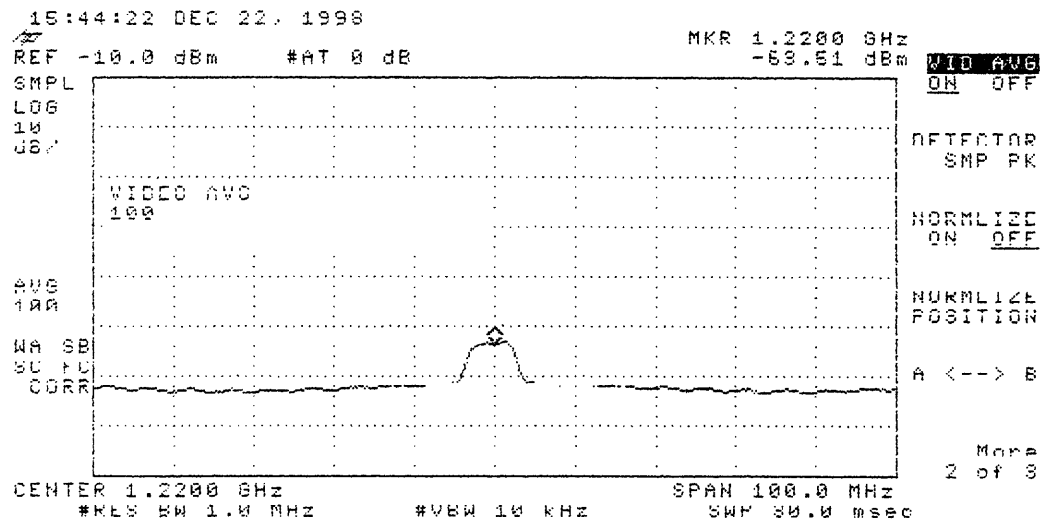
Sat. 5

Boon View

Transmitted No. 98

Date 12-22-98

500 kHz 8.97 F



Building ministry consisting of 1000-40.

Plat 5-R

Set 1

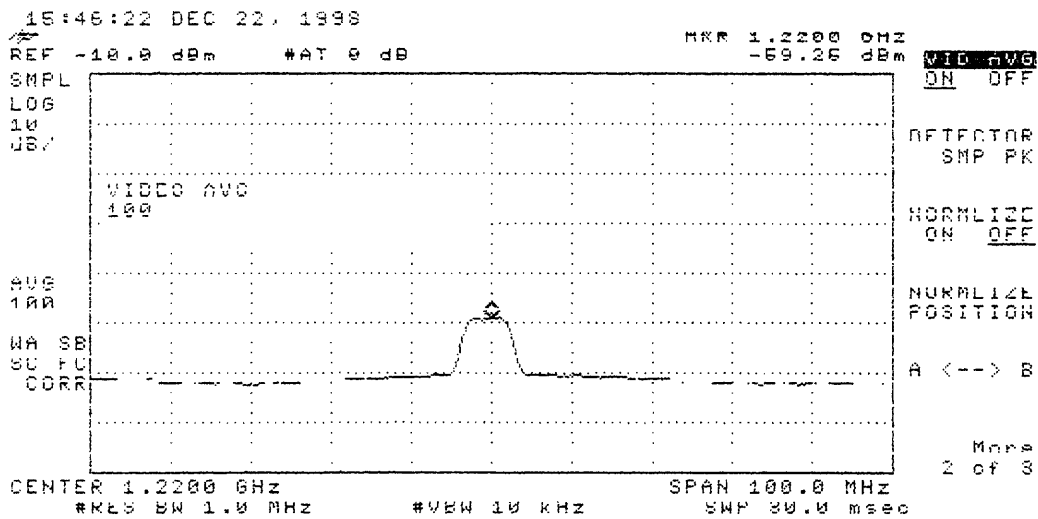
Site 5

Bosch Power

Transmitter: Motorola
Reflection

Date: 12-22-98

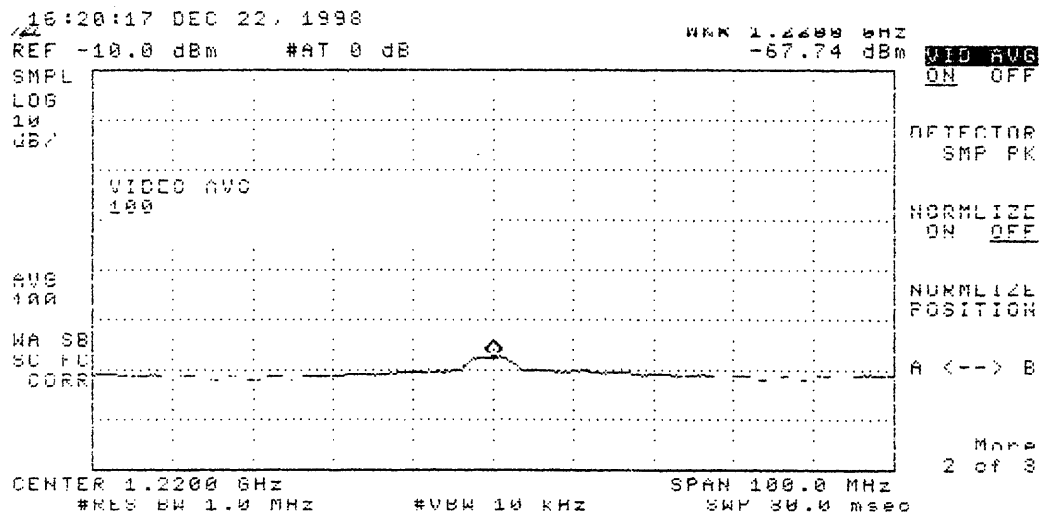
SA HP 8591E



Driving towards parking garage along Boulevard

Set 1
 Step 5
 Beam 10m
 Targeted Point-point
 Date 12-22-98
 SGT 591E

Plot: BLAN
 5-R-B



Pointed at Duc Texas Center
 SGT 591E

Set 1

plot: S-R-C

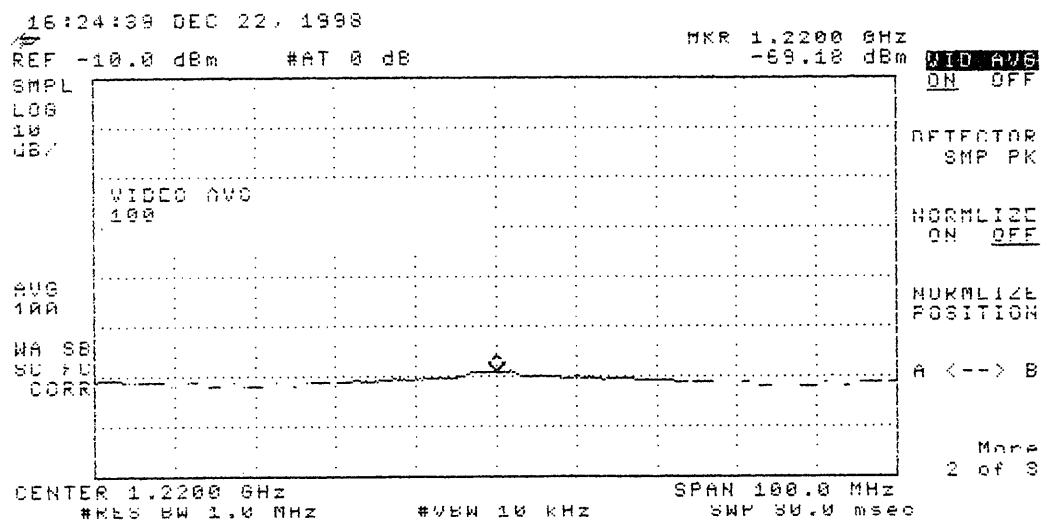
Site: 5

Boom: Down

Transmitter: A - by hand

Date: 12-22-98

SAT: HP 801E



Pointed at Palmer Addition

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 Compatibility Test – Austin Test Area

Coisium

Rx Site Data Log

Rx Site No.

6

p1

Set:

1

Re: Rx Condx Ref. No.

2

Date / Time:

12/24/98 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 -- -57.88 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 Compatibility 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 -- 6-11-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 pole & corner of tree obstruct view of
horizon

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

12/27/93 3:18 PM CST

Re: Condx Ref. No.

2

Operator:

Jim

Direct T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	80	80	80	80	82	78	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

Plot 6-D

Set: 1

Norm Down

12/98

transponder: ATV

Spectrum: 8591E

15:14:01 DEC 22, 1998

REF -10.0 dBm #AT 0 dB

MR 1.2200 GHz
-58.88 dBm

VID AVG
ON OFF

SMPL
LOG
10
dB

DETECTOR
SMP PK

VIDEO AVG
100

NORMLIZE
ON OFF

AUS
100

NORMLIZE
POSITION

WA SB
SC PU
CORR

A <--> B

More
2 of 3

CENTER 1.2200 GHz

#RES BW 1.0 MHz

#VBW 10 kHz

SPAN 500.0 MHz

SMP 150 msec

Set: 1 Plot: 6-E

Site: 6

Boon: down

Date: 12-22-98

Transmitted Echoes:

S.A. HR 8591E

15:24:41 DEC 22, 1998

REF -10.0 dBm #AT 0 dB

MKR 1.2200 GHz
-57.87 dBm

SMPL
LOG
10
dB/

VIDEO AVG
100

AVG
100

WA SB
SC FCD
CORR

VID AVG
ON OFF

DETECTOR
SMP PK

NORMLIZE
ON OFF

NORMLIZE
POSITION

A <--> B

More
2 of 3

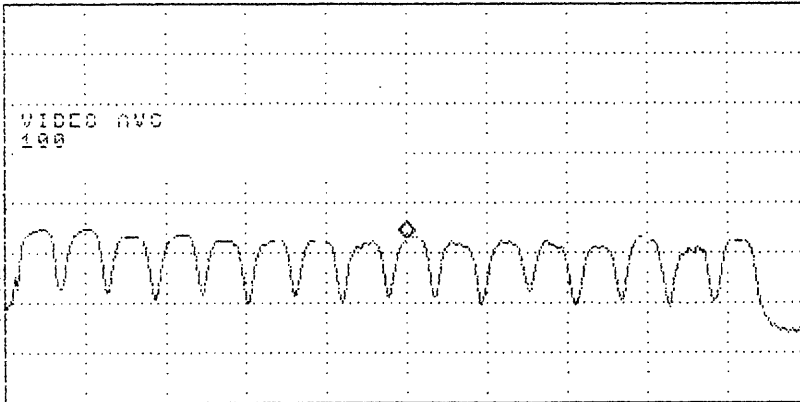
CENTER 1.2200 GHz

#RES BW 1.0 MHz

#VBW 10 KHz

SPAN 500.0 MHz

SWP 150 msec



Set. 1

Site: 6

cont. Down

center: North point

Date: 12-22-98

Spectrum Analyzer 4P 8591E

Plot. ~~TA~~ 6-A1-A

14:53:50 DEC 22, 1998

REF -10.0 dBm #AT 0 dB

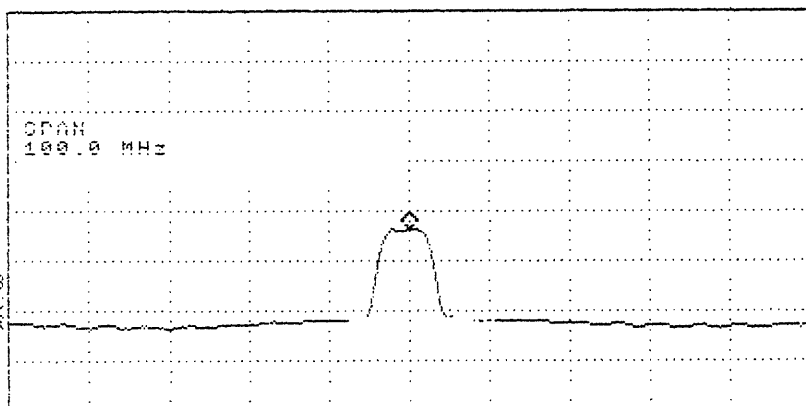
MKR 1.2200 GHz
-53.67 dBm

SMPL
LOG
10
dB

SPAN
100.0 MHz

AUS
100

WA SB
SU FU
CORR



CENTER 1.2200 GHz

#RES BW 1.0 MHz

#VBW 10 KHZ

SPAN 100.0 MHz

SWP 30.0 msec

SPAN

SPAN
ZOOM

FULL
SPAN

ZERO
SPAN

LAST
SPAN

PFAK
ZOOM

See: plot 6-R-A

Site: 6

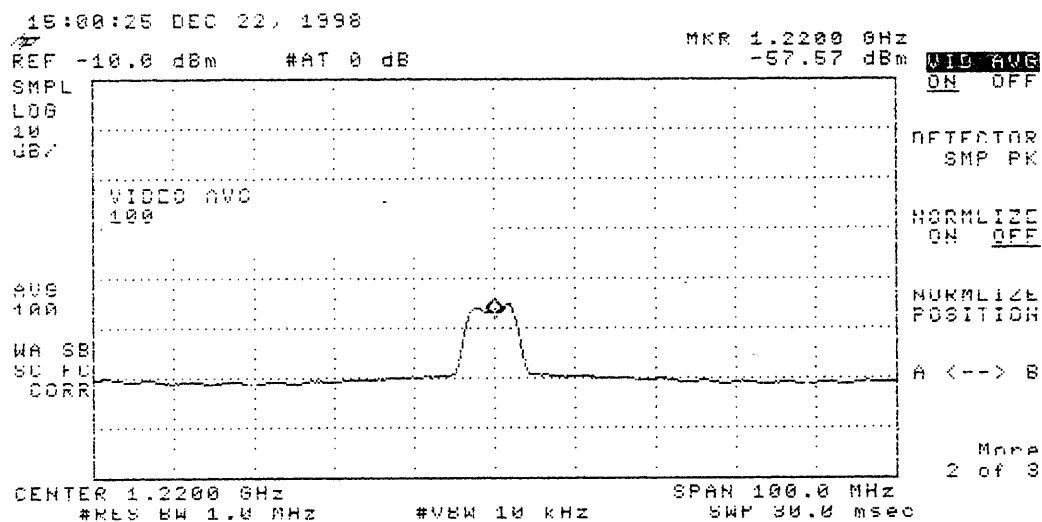
Mount: Down

Transmitter: No. 2, 2nd

Date: 12-22-98

S.A. HP 8591E

Bldg 811 Brown 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 Compatibility Test – Austin Test Area

Rx Site Data Log

Palmer

Rx Site No.

7

p1

Set:

1/1

Re: Rx Condx Ref. No.

2

Date / Time:

12/12/98 1:30 CST

Re: Tx Condx Ref. No.

2

Operator:

J. D.

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: _____

Northpoint Technology – DBS Compatiblilty Test – Austin Test Area

Rx Site Data Log

Rx Site No. 7 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 -- -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 11

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	80	80	80	80	80	81	81	81	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	89	90	89	89.3

Notes:

Overcast, very cold temp in site