Test Point G2

Date: 1994 June 06 Address of Location: 109 Leanna Ct, Boiling Springs
Plant Location: Coaxial Plant Trunk Cascade: 28 LE Cascade: 1

FIELD TEST RESULTS

1. Local NTSC Direct: Impairments: 3 Level: -31.2 dBm
   Comments on quality and impairments: noise

2. Off-air NTSC Direct: Impairments: 3- Level: -31.4 dBm
   Comments on quality and impairments: noise & moiré beat

3. Off-air NTSC HIAB: Impairments: 2+ Level: -34.0 dBm
   Comments on quality and impairments: noise & moiré beat

4. Local NTSC HIAB: Impairments: 3 Level: -33.7 dBm
   Comments on quality and impairments: noise

5. NTSC Carrier Levels:

Lower Visual:	-31.1 dBm	Lower Aural :	-47.7 dBm	Ratio: 16.6 dB
Test Visual:	-31.3 dBm	Test Aural:	-47.1 dBm	Ratio: 15.8 dB
Upper Visual:	-31.8 dBm	Upper Aural:	-47.7 dBm	Ratio: 15.9 dB

6. NTSC Carrier Level: -8.4 dBm (after amplifier and filter)
   Highest Inband Spurious: -53.3 dBm @ 194.79 MHz
   CTB Level: -71.7 dBm
   Noise Floor: -70.7 dBm (100 kHz BW)

7. Direct Inband Response: 2.5 dB P-V Delay: 235 nsec Total System: 4 dB P-V

8. HIAB Inband Response: 0.8 dB P-V Delay: 68 nsec

9. Direct Connection ATV BER (Rx power -37.4 dBm):
   Ch A: 0 0 0
   Ch B: 0 0 0
   Signal Power: -23.5 dBm Noise Power: -59.5 dBm S/N: 36.0 dB

   BER With noise added to threshold:
   Ch A: 4.87×10^{-7} 9.19×10^{-7} 7.03×10^{-7}
   Ch B: 1.78×10^{-6} 1.14×10^{-6} 1.86×10^{-6}
   Signal Power: -23.5 dBm Noise Power: -52.0 dBm S/N: 28.5 dB

   Margin S/N_1 - S/N_2: 7.5 dB

10. Signal through House-in-a-Box BER (Rx power -40.1 dBm):
    Ch A: 0 0 0
    Ch B: 0 0 0
    Signal Power: -26.3 dBm Noise Power: -61.3 dBm S/N: 35.0 dB

    BER With noise added to threshold:
    Ch A: 3.76×10^{-7} 4.13×10^{-7} 5.75×10^{-7}
    Ch B: 7.94×10^{-7} 3.62×10^{-7} 6.18×10^{-7}
    Signal Power: -26.3 dBm Noise Power: -54.7 dBm S/N: 28.4 dB

    Margin S/N_1 - S/N_2: 6.6 dB

Test Point G3

Date: 1994 June 06 Address of Location: Corner Jones Road & Wingate Acres, Latimore
Cable Location: Underground Trunk Cascade: 25 LE Cascade: 2

FIELD TEST RESULTS

1. Local NTSC Direct: Impairments: 3+ Level: -35.5 dBm
   Comments on quality and impairments: noise & slight beat

2. Off-air NTSC Direct: Impairments: 2+ Level: -35.7 dBm
   Comments on quality and impairments: noise & moiré (noise level changes)

3. Off-air NTSC HIAB: Impairments: 2 Level: -38.4 dBm
   Comments on quality and impairments: noise & beat

4. Local NTSC HIAB: Impairments: 3- Level: -38.1 dBm
   Comments on quality and impairments: noise & beats

5. NTSC Carrier Levels:

Lower Visual:	-35.1 dBm	Lower Aural :	-51.1 dBm	Ratio: 16.1 dB
Test Visual:	-35.6 dBm	Test Aural:	-50.0 dBm	Ratio: 14.5 dB
Upper Visual:	-37.1 dBm	Upper Aural:	-52.8 dBm	Ratio: 15.7 dB

6. NTSC Carrier Level: -8.6 dBm (after amplifier and filter)
   Highest Inband Spurious: -52.8 dBm @ 194.730 MHz
   CTB Level: -65.2 dBm
   Noise Floor: -71.4 dBm (100 kHz BW)

7. Direct Inband Response: N/A Delay: 100 nsec Total System: 5 dB P-V

8. HIAB Inband Response: 1.6 dB P-V Delay: 180 nsec

9. Direct Connection ATV BER (Rx power -41.6 dBm):
   Ch A: 0 0 0
   Ch B: 0 0 0
   Signal Power: -22.8 dBm Noise Power: -57.3 dBm S/N: 34.5 dB

   BER With noise added to threshold:
   Ch A: 5.30×10^{-7} 5.81×10^{-7} 6.34×10^{-7}
   Ch B: 8.36×10^{-7} 9.22×10^{-7} 1.24×10^{-6}
   Signal Power: -22.8 dBm Noise Power: -51.2 dBm S/N: 28.4 dB

   Margin S/N_1 - S/N_2: 6.1 dB

10. Signal through House-in-a-Box BER (Rx power -44.5 dBm):
    Ch A: 0 0 0
    Ch B: 0 0 0
    Signal Power: -25.4 dBm Noise Power: -61.1 dBm S/N: 35.7 dB

    BER With noise added to threshold:
    Ch A: 8.66×10^{-7} 7.91×10^{-7} 6.82×10^{-7}
    Ch B: 8.63×10^{-7} 6.07×10^{-7} 9.03×10^{-7}
    Signal Power: -25.4 dBm Noise Power: -54.3 dBm S/N: 28.9 dB

    Margin S/N_1 - S/N_2: 6.8 dB

Test Point G4

Date: 1994 June 06 Address of Location: 5330 7 Pines Road, Casar
Cable Location: Underground Trunk Cascade: 47 LE Cascade: 1

1. Local NTSC Direct: Impairments: 3 Level: - 31.7 dBm
   Comments on quality and impairments: noise

2. Off-air NTSC Direct: Impairments: 2+ Level: -31.3 dBm
   Comments on quality and impairments: noise & beats

3. Off-air NTSC HIAB: Impairments: 2 Level: -33.8 dBm
   Comments on quality and impairments: noise & beats

4. Local NTSC HIAB Impairments: 3- Level: -33.7 dBm
   Comments on quality and impairments: noise & beats

5. NTSC Carrier Levels:

Lower Visual:	-34.8 dBm	Lower Aural :	51.1 dBm	Ratio: 16.4 dB
Test Visual:	-34.4 dBm	Test Aural:	-49.4 dBm	Ratio: 15.0 dB
Upper Visual:	-34.2 dBm	Upper Aural:	-50.3 dBm	Ratio: 16.0 dB

6. NTSC Carrier Level: - 7.0 dBm (after amplifier and filter)
   Highest Inband Spurious: -46.1 dBm @ 194.535 MHz
   CTB Level: -68.6 dBm
   Noise Floor: -67.2 dBm (100 kHz BW)

7. Direct Inband Response 0.6 dB P-V Delay: 165 nsec Total System: 2 dB P-V

8. HIAB Inband Response. 0.5 dB P-V Delay: 95 nsec

9. Direct Connection ATV BER (Rx power -37.8 dBm):
   Ch A: 0 0 0
   Ch B: 0 0 0
   Signal Power: -23.8 dBm Noise Power: -58.9 dBm S/N: 35.1 dB

   BER With noise added to threshold:
   Ch A: 1.33×10^{-6} 1.43×10^{-6} 1.35×10^{-6}
   Ch B: 1.85×10^{-6} 2.79×10^{-6} 2.06×10^{-6}
   Signal Power: -23.8 dBm Noise Power: -52.4 dBm S/N: 28.6 dB

   Margin S/N_1 - S/N_2: 6.5 dB

10. Signal through House-in-a-Box BER (Rx power -40.2 dBm):
    Ch A: 1.05×10^{-6} 0 0 Note: Errors occurred during lightning strike
    Ch B: 0 0 0
    Signal Power: -26.5 dBm Noise Power: -60.8 dBm S/N: 34.3 dB

    BER With noise added to threshold:
    Ch A: 1.10×10^{-6} 1.24×10^{-6} 1.36×10^{-6}
    Ch B: 1.12×10^{-6} 1.32×10^{-6} 8.04×10^{-7}
    Signal Power: -26.5 dBm Noise Power: -54.9 dBm S/N: 28.4 dB

    Margin S/N_1 - S/N_2: 5.9 dB

Test Point G5

Date: 1994 June 07 | Address of Location: 102 Brookwood Drive, Grover
Cable Location: Underground | Trunk Cascade: 31 | LE Cascade: 0

FIELD TEST RESULTS

1. Local NTSC Direct: Impairments: 3+ Level: -42.6 dBm
   Comments on quality and impairments: noise

2. Off-air NTSC Direct: Impairments: 2 Level: -42.7 dBm
   Comments on quality and impairments: noise & moiré

3. Off-air NTSC HIAB: Impairments: 2- Level: -45.3 dBm
   Comments on quality and impairments: noise & moiré

4. Local NTSC HIAB: Impairments: 2+ Level: -45.3 dBm
   Comments on quality and impairments: noise & diagonal beat

5. NTSC Carrier Levels:

Lower Visual:	-41.8 dBm	Lower Aural :	-58.5 dBm	Ratio: 16.7 dB
Test Visual:	-42.9 dBm	Test Aural:	-58.4 dBm	Ratio: 15.6 dB
Upper Visual:	-43.2 dBm	Upper Aural:	-59.9 dBm	Ratio: 16.6 dB

6. NTSC Carrier Level: -8.94 dBm (after amplifier and filter)
   Highest Inband Spurious: -53.8 dBm @ 194.91 MHz
   CTB Level: -74.5 dBm
   Noise Floor: -72.3 dBm (100 kHz BW)

7. Direct Inband Response: 1.4 dB P-V Delay: 55 nsec Total System: 5 dB P-V

8. HIAB Inband Response: 0.6 dB P-V Delay: 65 nsec

9. Direct Connection ATV BER (Rx power -49.2 dBm):
   Ch A: 0 0 0
   Ch B: 0 0 0
   Signal Power: -26.3 dBm Noise Power: -63.3 dBm S/N: 37.0 dB

   BER With noise added to threshold:
   Ch A: 7.72×10^{-7} 8.92×10^{-7} 5.22×10^{-7}
   Ch B: 1.89×10^{-6} 1.32×10^{-6} 1.01×10^{-6}
   Signal Power: -26.3 dBm Noise Power: -55.4 dBm S/N: 29.1 dB

   Margin S/N_1 - S/N_2: 7.9 dB

10. Signal through House-in-a-Box BER (Rx power -50.3 dBm):
    Ch A: 0 0 0
    Ch B: 0 0 0
    Signal Power: -28.5 dBm Noise Power: -64.7 dBm S/N: 36.2 dB

    BER With noise added to threshold:
    Ch A: 1.97×10^{-7} 2.60×10^{-7} 1.30×10^{-7}
    Ch B: 5.73×10^{-7} 6.71×10^{-7} 2.20×10^{-7}
    Signal Power: -28.5 dBm Noise Power: -58.0 dBm S/N: 29.5 dB

    Margin S/N_1 - S/N_2: 6.7 dB

APPENDIX 8

Charlotte

General System Information

Total Subscribers: 102,000	Miles of Plant: 1,441	Percent Underground: 35
System Bandwidth: 50 - 330 MHz	Frequency Plan: STD	Highest Freq. Used: 348 MHz
Test Channel: 45	Lower Channel: scrambled	Upper Channel: none
Trunk Amp Mfr.: Sylvania Magnavox	High Power Hughes AML	
Line Extender Mfr.: Sylvania Magnavox		
Trunk Cable: .750"	Cable Manufacturer: Times	Age: 1 - 30 years
Distribution Cable: .500"	Cable Manufacturer: Times	Age: 1 - 30 years
Cable Tap & Passives Mfr.: assorted		
Channel 53 ATV Rx Level: -40 dBm (~ 15 dB of Margin)		
Rx Site: 7.0 miles from transmitter site		
Tests Performed by: G. Hovland - CableLabs and G. Sgrignoli - Zenith		
Director: Brian James, CableLabs		

Test Point H1

Date: 1994 June 08 Address of Location: Head end 1500 N. Sharon Amnity
Cable Location: Headend test point, Coaxial Plant Trunk Cascade: 0 LE Cascade: 0

FIELD TEST RESULTS

1. Local NTSC Direct: Impairments: 4+ Level: -36.5 dBm
   Comments on quality and impairments:

2. Off-air NTSC Direct: Impairments: 4 Level: -36.7 dBm
   Comments on quality and impairments:

3. Off-air NTSC HIAB: Impairments: 4 Level: -41.1 dBm
   Comments on quality and impairments: noise

4. Local NTSC HIAB: Impairments: 4 Level: -41.0 dBm
   Comments on quality and impairments:

5. NTSC Carrier Levels:

2nd Lower Visual:	-37.2 dBm	2nd Lower Aural :	-54.2 dBm	2nd Ratio: 16.9 dB
Lower Visual:	-41.1 dBm	Lower Aural :	-53.5 dBm	Ratio: 12.4 dB
Test Visual:	-36.7 dBm	Test Aural:	-51.7 dBm	Ratio: 15.0 dB

6. NTSC Carrier Level: -5.0 dBm (after amplifier and filter)
   Highest Inband Spurious: -63.3 dBm @ 351.465 MHz
   CTB Level: -61.7 dBm
   Noise Floor: -80.7 dBm (100 kHz BW)

7. Direct Inband Response: 0.5 dB P-V Delay: xx nsec Total System: 1 dB P-V

8. HIAB Inband Response: 0.6 dB P-V Delay: xx nsec

9. Direct Connection ATV BER (Rx power -42.4 dBm):
   Ch A: 0 0 0
   Ch B: 0 0 0
   Signal Power: -20.9 dBm Noise Power: -71.0 dBm S/N: 50.1 dB

   BER With noise added to threshold:
   Ch A: 2.15×10^{-6} 1.89×10^{-6} 1.87×10^{-6}
   Ch B: 1.86×10^{-6} 1.80×10^{-6} 2.24×10^{-6}
   Signal Power: -20.9 dBm Noise Power: -49.6 dBm S/N: 28.7 dB

   Margin S/N_1 - S/N_2: 21.4 dB

10. Signal through House-in-a-Box BER (Rx power -47.0 dBm):
    Ch A: 0 0 0
    Ch B: 0 0 0
    Signal Power: -25.5 dBm Noise Power: -69.6 dBm S/N: 44.1 dB

    BER With noise added to threshold:
    Ch A: 7.16×10^{-7} 7.70×10^{-7} 8.36×10^{-7}
    Ch B: 6.90×10^{-7} 6.84×10^{-7} 7.94×10^{-7}
    Signal Power: -25.5 dBm Noise Power: -54.2 dBm S/N: 28.7 dB

    Margin S/N_1 - S/N_2: 15.4 dB

Test Point H2

Date: 1994 June 08 Address of Location: Headend AML 1500 N. Sharon Amnity Rd., Charlotte
Cable Location: High power AML Test Point

FIELD TEST RESULTS

1. Local NTSC Direct: Impairments: 4 Level: -39.2 dBm
   Comments on quality and impairments:

2. Off-air NTSC Direct: Impairments: 3- Level: -39.5 dBm
   Comments on quality and impairments: noise

3. Off-air NTSC HIAB: Impairments: 2+ Level: -44.3 dBm
   Comments on quality and impairments: noise

4. Local NTSC HIAB Impairments: 4- Level: -44.5 dBm
   Comments on quality and impairments:

5. NTSC Carrier Levels:

2nd Lower Visual:	-40.8 dBm	2nd Lower Aural :	-57.6 dBm	2nd Ratio: 16.8 dB
Lower Visual:	-44.3 dBm	Lower Aural :	-58.3 dBm	Ratio: 14.0 dB
Test Visual:	-39.1 dBm	Test Aural	-55.6 dBm	Ratio: 16.5 dB

6. NTSC Carrier Level: -7.8 dBm (after amplifier and filter)
   Highest Inband Spurious: -46.7 dBm @ 350.010 MHz
   CTB Level: -67.6 dBm
   Noise Floor: -64.8 dBm (100 kHz BW)

7. Direct Inband Response: 0.8 dB P-V Delay: xx nsec Total System: 2 dB P-V

8. HIAB Inband Response: 1.0 dB P-V Delay: xx nsec

9. Direct Connection ATV BER (Rx power -44.5 dBm):
   Ch A: 0 0 0
   Ch B: 0 0 0
   Signal Power: -23.5 dBm Noise Power: -68.3 dBm S/N: 44.8 dB

   BER With noise added to threshold:
   Ch A: 7.24×10^{-7} 0 0
   Ch B: 0 0 0
   Signal Power: -23.5 dBm Noise Power: -54.3 dBm S/N: 30.8 dB

   Margin S/N_1 - S/N_2: 14.0 dB

10. Signal through House-in-a-Box BER (Rx power -49.9 dBm):
    Ch A: 0 0 0
    Ch B: 0 0 0
    Signal Power: -27.9 dBm Noise Power: -68.7 dBm S/N: 40.8 dB

    BER With noise added to threshold:
    Ch A: 1.42×10^{-6} 1.41×10^{-6} 1.63×10^{-6}
    Ch B: 1.92×10^{-6} 1.72×10^{-6} 1.23×10^{-6}
    Signal Power: -27.9 dBm Noise Power: -59.9 dBm S/N: 32.0 dB

    Margin S/N_1 - S/N_2: 8.8 dB

Test Point H3

Date: 1994 June 08 Address of Location: 122 Rothmore St., Charlotte
Cable Location: Coaxial Plant Trunk Cascade: 30 LE Cascade: 1

FIELD TEST RESULTS

1. Local NTSC Direct: Impairments: 3+ Level: -51.0 dBm
   Comments on quality and impairments: noise

2. Off-air NTSC Direct: Impairments: 2 Level: -50.6 dBm
   Comments on quality and impairments: noise, chroma noise & moiré

3. Off-air NTSC HIAB: Impairments: 2 Level: -55.3 dBm
   Comments on quality and impairments: noise, chroma noise & moiré

4. Local NTSC HIAB: Impairments: 3 Level: -54.6 dBm
   Comments on quality and impairments: noise

5. NTSC Carrier Levels:

2nd Lower Visual:	-48.0 dBm	2nd Lower Aural :	-66.8 dBm	2nd Ratio: 18.8 dB
Lower Visual:	-54.2 dBm	Lower Aural :	-69.3 dBm	Ratio: 15.1 dB
Test Visual:	-50.7 dBm	Test Aural:	-66.0 dBm	Ratio: 15.2 dB

6. NTSC Carrier Level: -17.7 dBm (after amplifier and filter)
   Highest Inband Spurious: -60.1 dBm @ 351.195 MHz
   CTB Level: -80.8 dBm
   Noise Floor: -77.9 dBm (100 kHz BW)

7. Direct Inband Response: 1.0 dB P-V Delay: xx nsec Total System: 3 dB P-V

8. HIAB Inband Response: 0.9 dB P-V Delay: xx nsec

9. Direct Connection ATV BER (Rx power -59.3 dBm):
   Ch A: 0 0 0
   Ch B: 0 0 0
   Signal Power: -26.9 dBm Noise Power: -58.8 dBm S/N: 31.9 dB

   BER With noise added to threshold:
   Ch A: 5.09×10^{-7} 1.38×10^{-6} 7.32×10^{-7}
   Ch B: 3.97×10^{-7} 2.80×10^{-7} 4.00×10^{-8}
   Signal Power: -26.9 dBm Noise Power: -56.6 dBm S/N: 29.7 dB

   Margin S/N_1 - S/N_2: 2.2 dB

10. Signal through House-in-a-Box BER (Rx power -62.6 dBm):
    Ch A: 0 0 0
    Ch B: 0 0 0
    Signal Power: -30.7 dBm Noise Power: -59.0 dBm S/N: 28.3 dB

    Signal was below threshold and no measurements could be made. Excessive roll-off of signal due to its being beyond the nominal bandwidth of the system.

Test Point H4

Date: 1994 June 08 Address of Location: 1109 Manchester Lane, Charlotte
Cable Location: Coaxial Plant Trunk Cascade: 29 LE Cascade: 1

FIELD TEST RESULTS

1. Local NTSC Direct: Impairments: 4- Level: -45.7 dBm
   Comments on quality and impairments: noise

2. Off-air NTSC Direct: Impairments: 2+ Level: -45.7 dBm
   Comments on quality and impairments: noise & high frequency beats

3. Off-air NTSC HIAB: Impairments: 2 Level: -49.2 dBm
   Comments on quality and impairments: noise & high frequency beats

4. Local NTSC HIAB: Impairments: 3+ Level: -49.3 dBm
   Comments on quality and impairments: noise

5. NTSC Carrier Levels:

2nd Lower Visual:	-44.0 dBm	2nd Lower Aural :	-62.6 dBm	2nd Ratio: 18.6 dB
Lower Visual:	-50.7 dBm	Lower Aural :	-62.6 dBm	Ratio: 11.8 dB
Test Visual:	-45.0 dBm	Test Aural:	-61.1 dBm	Ratio: 16.6 dB

6. NTSC Carrier Level: -14.9 dBm (after amplifier and filter)
   Highest Inband Spurious: -57.36 dBm @ 350.52 MHz
   CTB Level: -76.0 dBm
   Noise Floor: -75.1 dBm (100 kHz BW)

7. Direct Inband Response: 1.8 dB P-V Delay: xx nsec Total System: 5 dB P-V

8. HIAB Inband Response: 1.8 dB P-V Delay: xx nsec

9. Direct Connection ATV BER (Rx power -52.7 dBm):
   Ch A: 0 0 0
   Ch B: 0 0 0
   Signal Power: -20.0 dBm Noise Power: -55.1 dBm S/N: 35.1 dB

   BER With noise added to threshold:
   Ch A: 1.6×10^{-7} 5.57×10^{-7} 5.10×10^{-8}
   Ch B: 0 3.70×10^{-8} 2.69×10^{-7}
   Signal Power: -20.0 dBm Noise Power: -49.8 dBm S/N: 29.8 dB

   Margin S/N_1 - S/N_2: 5.3 dB

10. Signal through House-in-a-Box BER (Rx power -56.9 dBm):
    Ch A: 0 0 0
    Ch B: 0 0 0
    Signal Power: -25.3 dBm Noise Power: -57.5 dBm S/N: 32.2 dB

    BER With noise added to threshold:
    Ch A: 3.14×10^{-7} 1.10×10^{-7} 0
    Ch B: 2.82×10^{-7} 1.30×10^{-7} 5.3×10^{-7}
    Signal Power: -25.3 dBm Noise Power: -54.7 dBm S/N: 29.4 dB

    Margin S/N_1 - S/N_2: 2.8 dB

Test Point H5

Date: 1994 June 08 Address of Location: 608 Mathews St. Extension, Mathews
Cable Location: Aerial Trunk Cascade: 30 LE Cascade: 1

FIELD TEST RESULTS

1. Local NTSC Direct: Impairments: 3- Level: -45.0 dBm
   Comments on quality and impairments: noise & slight high frequency beat

2. Off-air NTSC Direct: Impairments: 3- Level: -45.0 dBm
   Comments on quality and impairments: noise & moiré

3. Off-air NTSC HIAB: Impairments: 2 Level: -49.5 dBm
   Comments on quality and impairments: noise, chroma noise, moiré & slight high frequency beat

4. Local NTSC HIAB: Impairments: 3- Level: -49.0 dBm
   Comments on quality and impairments: noise & high frequency beat

5. NTSC Carrier Levels:

2nd Lower Visual:	-43.0 dBm	2nd Lower Aural :	-61.1 dBm	2nd Ratio: 18.1 dB
Lower Visual:	-47.0 dBm	Lower Aural :	-62.1 dBm	Ratio: 15.0 dB
Test Visual:	-44.6 dBm	Test Aural:	-60.1 dBm	Ratio: 15.5 dB

6. NTSC Carrier Level: -14.2 dBm (after amplifier and filter)
   Highest Inband Spurious: -53.6 dBm @ 350.505 MHz
   CTB Level: -70.1 dBm
   Noise Floor: -73.5 dBm (100 kHz BW)

7. Direct Inband Response: 1.0 dB P-V Delay: xx nsec Total System: 3 dB P-V

8. HIAB Inband Response: 1.8 dB P-V Delay: xx nsec

9. Direct Connection ATV BER (Rx power -50.3 dBm):
   Ch A: 0 0 0
   Ch B: 0 0 0
   Signal Power: -18.6 dBm Noise Power: -52.4 dBm S/N: 33.8 dB

   BER With noise added to threshold:
   Ch A: 4.5×10^{-8} 0 1.19×10^{-6}
   Ch B: 0 1.0×10^{-7} 4.93×10^{-7}
   Signal Power: -18.6 dBm Noise Power: -48.1 dBm S/N: 29.5 dB

   Margin S/N_1 - S/N_2: 4.3 dB

10. Signal through House-in-a-Box BER (Rx power -55.5 dBm):
    Ch A: 0 0 0
    Ch B: 0 0 0
    Signal Power: -22.2 dBm Noise Power: -55.3 dBm S/N: 33.1 dB

    BER With noise added to threshold:
    Ch A: 5.86×10^{-7} 1.05×10^{-6} 8.74×10^{-7}
    Ch B: 5.30×10^{-8} 7.38×10^{-7} 4.80×10^{-8}
    Signal Power: -22.2 dBm Noise Power: -52.0 dBm S/N: 29.8 dB

    Margin S/N_1 - S/N_2: 3.3 dB

Test Point H6

Date: 1994 June 09 Address of Location: 1644 Meyers Park Drive, Charlotte
Cable Location: Underground Trunk Cascade: 15 LE Cascade: 1

FIELD TEST RESULTS

1. Local NTSC Direct: Impairments: 3- Level: -50.7 dBm
   Comments on quality and impairments: noise high frequency beat

2. Off-air NTSC Direct: Impairments: 3- Level: -50.6 dBm
   Comments on quality and impairments: noise, chroma noise & high frequency beat

3. Off-air NTSC HIAB: Impairments: 2+ Level: -54.9 dBm
   Comments on quality and impairments: noise, chroma noise & high frequency beat

4. Local NTSC HIAB: Impairments: 3- Level: -54.9 dBm
   Comments on quality and impairments: noise & high frequency beat

5. NTSC Carrier Levels:

2nd Lower Visual:	-50.0 dBm	2nd Lower Aural :	-69.4 dBm	2nd Ratio: 19.5 dB
Lower Visual:	-55.6 dBm	Lower Aural :	-67.2 dBm	Ratio: 11.6 dB
Test Visual:	-50.4 dBm	Test Aural:	-66.1 dBm	Ratio: 15.7 dB

6. NTSC Carrier Level: -18.5 dBm (after amplifier and filter)
   Highest Inband Spurious: -62.4 dBm @ 350.46 MHz
   CTB Level: -81.3 dBm
   Noise Floor: -80.9 dBm (100 kHz BW)

7. Direct Inband Response: 1.8 dB P-V Delay: 105 nsec Total System: 2 dB P-V

8. HIAB Inband Response: 2.2 dB P-V Delay: 102 nsec

9. Direct Connection ATV BER (Rx power -57.4 dBm):
   Ch A: 0 0 0
   Ch B: 0 0 0
   Signal Power: -25.0 dBm Noise Power: -60.6 dBm S/N: 35.6 dB

   BER With noise added to threshold:
   Ch A: 2.47×10^{-6} 9.80×10^{-7} 7.16×10^{-7}
   Ch B: 2.17×10^{-6} 2.39×10^{-6} 6.79×10^{-7}
   Signal Power: -25.0 dBm Noise Power: -54.8 dBm S/N: 29.8 dB

   Margin S/N_1 - S/N_2: 5.8 dB

10. Signal through House-in-a-Box BER (Rx power -63.1 dBm):
    Ch A: 1.00×10^{-7} 1.10×10^{-7} 3.20×10^{-8}
    Ch B: 8.00×10^{-8} 2.00×10^{-7} 7.20×10^{-8}
    Signal Power: -29.7 dBm Noise Power: -59.5 dBm S/N: 29.8 dB

    BER With noise added to threshold:
    Ch A: 1.05×10^{-6} 9.91×10^{-7} 2.70×10^{-7}
    Ch B: 2.18×10^{-6} 1.80×10^{-6} 1.14×10^{-6}
    Signal Power: -29.7 dBm Noise Power: -59.3 dBm S/N: 29.6 dB

    Margin S/N_1 - S/N_2: 0.2 dB

Test Point H7

Date: 1994 June 09 | Address of Location: 4019 Aweet Grass St., Charlotte
Cable Location: Underground | Trunk Cascade: 20 | LE Cascade: 1

FIELD TEST RESULTS

1. Local NTSC Direct: Impairments: 3+ Level: -45.5 dBm
   Comments on quality and impairments: noise

2. Off-air NTSC Direct: Impairments: 2+ Level: -45.9 dBm
   Comments on quality and impairments: noise, moiré, beat and chroma noise

3. Off-air NTSC HIAB: Impairments: 2 Level: -50.1 dBm
   Comments on quality and impairments: noise

4. Local NTSC HIAB: Impairments: 3- Level: -50.4 dBm
   Comments on quality and impairments: noise & high frequency beat

5. NTSC Carrier Levels:

2nd Lower Visual:	-43.8 dBm	2nd Lower Aural :	-61.2 dBm	2nd Ratio: 17.5 dB
Lower Visual:	- 49.0 dBm	Lower Aural :	-64.3 dBm	Ratio: 15.3 dB
Test Visual:	-45.2 dBm	Test Aural:	-63.9 dBm	Ratio: 18.7 dB

6. NTSC Carrier Level: -13.6 dBm (after amplifier and filter)
   Highest Inband Spurious: -55.8 dBm @ 350.52 MHz
   CTB Level: -71.9 dBm
   Noise Floor: -75.2 dBm (100 kHz BW)

7. Direct Inband Response: 5.0 dB P-V Delay: 180 nsec Total System: 3 dB P-V

8. HIAB Inband Response: 5.0 dB P-V Delay: 180 nsec

9. Direct Connection ATV BER (Rx power -53.1 dBm):

Ch A:	0	0	0
Ch B:	0	0	0

   Signal Power: -20.2 dBm Noise Power: -55.1 dBm S/N: 34.9 dB

   BER With noise added to threshold:

Ch A:	1.65×10^{-6}	2.84×10^{-6}	7.08×10^{-7}
Ch B:	5.17×10^{-7}	2.50×10^{-7}	7.67×10^{-7}

   Signal Power: -20.2 dBm Noise Power: -51.5 dBm S/N: 31.3 dB

   Margin S/N_1 - S/N_2: 3.6 dB

10. Signal through House-in-a-Box BER (Rx power -57.0 dBm):

Ch A:	0	0	1.40×10^{-7}
Ch B:	0	7.50×10^{-8}	3.70×10^{-8}

   Signal Power: -24.6 dBm Noise Power: -57.4 dBm S/N: 32.8 dB

   BER With noise added to threshold:

Ch A:	6.92×10^{-7}	1.10×10^{-6}	5.81×10^{-7}
Ch B:	6.82×10^{-7}	5.35×10^{-7}	5.30×10^{-7}

   Signal Power: -24.6 dBm Noise Power: -56.2 dBm S/N: 31.6 dB

   Margin S/N_1 - S/N_2: 1.2 dB

Test Point H8

Date: 1994 June 09 Address of Location: 3114 Cambridge Ave.
Cable Location: Aerial, AML 4.6 mile link Trunk Cascade: 11 LE Cascade: 1

FIELD TEST RESULTS

1. Local NTSC Direct: Impairments: 3 Level: -49.0 dBm
   Comments on quality and impairments: noise

2. Off-air NTSC Direct: not measured

3. Off-air NTSC HIAB: not measured

4. Local NTSC HIAB: Impairments: 3- Level: -53.3 dBm
   Comments on quality and impairments: noise

5. NTSC Carrier Levels:

2nd Lower Visual:	-48.8 dBm	2nd Lower Aural :	-65.1 dBm	2nd Ratio: 16.3 dB
Lower Visual:	-52.8 dBm	Lower Aural :	-66.7 dBm	Ratio: 13.9 dB
Test Visual:	-48.6 dBm	Test Aural:	-67.4 dBm	Ratio: 18.8 dB

6. NTSC Carrier Level: -17.4 dBm (after amplifier and filter)
   Highest Inband Spurious: -60.1 dBm @ 350.490 MHz
   CTB Level: -81.6 dBm
   Noise Floor: -78.6 dBm (100 kHz BW)

7. Direct Inband Response: 4.8 dB P-V Delay: 85 nsec Total System: 7 dB P-V

8. HIAB Inband Response: 5.0 dB P-V Delay: 125 nsec

9. Direct Connection ATV BER (Rx power -54.7 dBm):
   Ch A: 0 0 0
   Ch B: 0 0 0
   Signal Power: -22.6 dBm Noise Power: -57.7 dBm S/N: 35.1 dB

   BER With noise added to threshold:
   Ch A: 2.54×10^{-6} 2.34×10^{-6} 1.45×10^{-6}
   Ch B: 1.11×10^{-6} 1.44×10^{-6} 2.10×10^{-6}
   Signal Power: -22.6 dBm Noise Power: -53.9 dBm S/N: 31.3 dB

   Margin S/N_1 - S/N_2: 3.8 dB

10. Signal through House-in-a-Box BER (Rx power -59.6 dBm):
    Ch A: 2.12×10^{-6} 1.59×10^{-6} 9.38×10^{-7}
    Ch B: 1.33×10^{-6} 1.17×10^{-6} 1.53×10^{-6}
    Added a post amp ahead of the receiver to increase the input into the receiver so measurements could be made.
    Signal Power: -37.4 dBm Noise Power: -68.7 dBm S/N: 31.3 dB

    BER With noise added to threshold:
    Ch A: 1.86×10^{-6} 7.86×10^{-7} 6.90×10^{-7}
    Ch B: 8.20×10^{-7} 2.10×10^{-6} 1.88×10^{-6}
    Signal Power: -37.4 dBm Noise Power: -67.7 dBm S/N: 30.3 dB

    Margin S/N_1 - S/N_2: 1.0 dB

Test Point H9

Date: 1994 June 09 Address of Location: 347 E. Peterson St., Charlotte
Cable Location: Aerial, AML, 4.6 mile link Trunk Cascade: 15 LE Cascade: 1

FIELD TEST RESULTS

1. Local NTSC Direct: Impairments: 3 Level: -42.6 dBm
   Comments on quality and impairments: noise & noise

2. Off-air NTSC Direct: Impairments: 3- Level: -42.3 dBm
   Comments on quality and impairments: noise, moiré & chroma noise

3. Off-air NTSC HIAB: Impairments: 2+ Level: -47.2 dBm
   Comments on quality and impairments: noise

4. Local NTSC HIAB: Impairments: 3- Level: -47.0 dBm
   Comments on quality and impairments: noise & high frequency beat

5. NTSC Carrier Levels:

2nd Lower Visual:	-40.9 dBm	2nd Lower Aural :	-57.7 dBm	2nd Ratio: 16.8 dB
Lower Visual:	-46.6 dBm	Lower Aural :	-61.6 dBm	Ratio: 15.0 dB
Test Visual:	-42.6 dBm	Test Aural:	-61.6 dBm	Ratio: 19.1 dB

6. NTSC Carrier Level: -10.0 dBm (after amplifier and filter)
   Highest Inband Spurious: -54.6 dBm @ 350.460 MHz
   CTB Level: -71.0 dBm
   Noise Floor: -73.0 dBm (100 kHz BW)

7. Direct Inband Response: 5.0 dB P-V Delay: 90 nsec Total System: 5 dB P-V

8. HIAB Inband Response: 3.0 dB P-V Delay: xx nsec

9. Direct Connection ATV BER (Rx power -48.3 dBm):
   Ch A: 0 0 0
   Ch B: 0 0 0
   Signal Power: -21.0 dBm Noise Power: -57.6 dBm S/N: 36.6 dB

   BER With noise added to threshold:
   Ch A: 5.17×10^{-7} 1.94×10^{-6} 6.98×10^{-7}
   Ch B: 5.33×10^{-7} 5.25×10^{-7} 5.67×10^{-7}
   Signal Power: -21.0 dBm Noise Power: -51.7 dBm S/N: 30.7 dB

   Margin S/N_1 - S/N_2: 5.9 dB

10. Signal through House-in-a-Box BER (Rx power -53.5 dBm):
    Ch A: 0 0 0
    Ch B: 0 0 0
    Signal Power: -25.9 dBm Noise Power: -60.5 dBm S/N: 34.6 dB

    BER With noise added to threshold:
    Ch A: 7.03×10^{-7} 7.91×10^{-7} 1.94×10^{-6}
    Ch B: 3.76×10^{-7} 7.30×10^{-7} 5.75×10^{-7}
    Signal Power: -25.9 dBm Noise Power: -57.0 dBm S/N: 31.1 dB

    Margin S/N_1 - S/N_2: 3.5 dB

Test Point H10

Date: 1994 June 10 | Address of Location: 269 Shore Line
Cable Location: Aerial, AML 7.9 Mile Link | Trunk Cascade: 13 | LE Cascade: 1

FIELD TEST RESULTS

1. Local NTSC Direct: Impairments: 3+ Level: -39.1 dBm
   Comments on quality and impairments: noise & noise

2. Off-air NTSC Direct: Impairments: 2+ Level: -39.1 dBm
   Comments on quality and impairments: noise, moiré & chroma noise

3. Off-air NTSC HIAB: Impairments: 2+ Level: -43.6 dBm
   Comments on quality and impairments: noise

4. Local NTSC HIAB: Impairments: 3 Level: -43.5 dBm
   Comments on quality and impairments: noise & high frequency beat

5. NTSC Carrier Levels:

2nd Lower Visual:	-37.1 dBm	2nd Lower Aural :	-54.4 dBm	Ratio:	17.3 dB
Lower Visual:	-42.7 dBm	Lower Aural :	-58.4 dBm	Ratio:	15.6 dB
Test Visual:	-39.2 dBm	Test Aural:	-56.8 dBm	Ratio:	7.6 dB

6. NTSC Carrier Level: -7.5 dBm (after amplifier and filter)
   Highest Inband Spurious: -53.7 dBm @ 350.51 MHz
   CTB Level: -71.46 dBm
   Noise Floor: -72.84 dBm (100 kHz BW)

7. Direct Inband Response: 4.0 dB P-V Delay: 85 nsec Total S n: 4 dB P-V

8. HIAB Inband Response: 9.4 dB P-V Delay: 190 nsec

9. Direct Connection ATV BER (Rx power -45.8 dBm):
   Ch A: 0 0 0
   Ch B: 0 0 0
   Signal Power: -13.7 dBm Noise Power: -52.9 dBm S/N: 39.2 dB

   BER With noise added to threshold:
   Ch A: 4.31×10^{-7} 4.05×10^{-7} 4.29×10^{-7}
   Ch B: 0 0 0
   Signal Power: -13.7 dBm Noise Power: -43.9 dBm S/N: 30.2 dB

   Margin S/N_1 - S/N_2: 9.0 dB

10. Signal through House-in-a-Box BER (Rx power -xx dBm):
    -Not measured due to headend power failure