



SpectraLink 11 Mb/s NetLink Phone

Assy # 93-0162-04

11 Mb/s Jammer Margin Testing

(Revised to use peak power meter measurement)

Introduction

The FCC rules require testing of Processing Gain for our 11 Mb/s NetLink phones. The applicable rules are:

47 CFR Ch. I § 15.247

(e) The processing gain of a direct sequence system shall be at least 10 dB. The processing gain represents the improvement to the received signal-to-noise ratio, after filtering to the information bandwidth, from the spreading/despreading function. The processing gain may be determined using one of the following methods:

(1) As measured at the demodulated output of the receiver: the ratio in dB of the signal-to-noise ratio with the system spreading code turned off to the signal-to-noise ratio with the system spreading code turned on.

(2) As measured using the CW jamming margin method: a signal generator is stepped in 50 kHz increments across the passband of the system, recording at each point the generator level required to produce the recommended Bit Error Rate (BER). This level is the jammer level. The output power of the intentional radiator is measured at the same point. The jammer to signal ratio (J/S) is then calculated, discarding the worst 20% of the J/S data points. The lowest remaining J/S ratio is used to calculate the processing gain, as follows: $G_p = (S/N)_o + M_j + L_{sys}$, where G_p = processing gain of the system, $(S/N)_o$ = signal to noise ratio required for the chosen BER, M_j = J/S ratio, and L_{sys} = system losses. Note that total losses in a system, including intentional radiator and receiver, should be assumed to be no more than 2 dB.

The product is based on the Intersil Prism chipset which has been demonstrated to pass the FCC processing gain tests.

Procedure

The unit was tested according to procedure (2) (CW Jamming Margin Method). The block diagram of the test setup is shown in Figure 1.

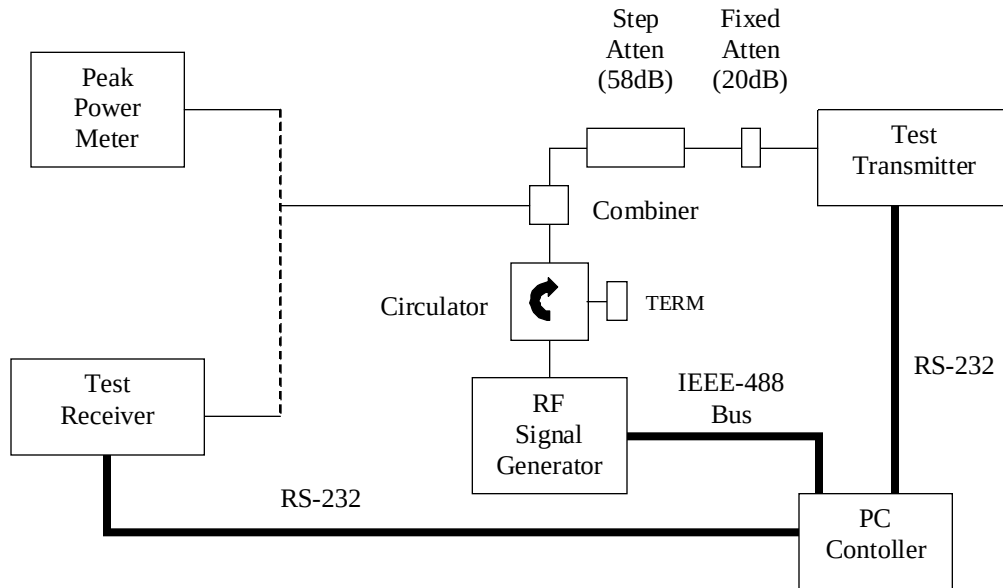


Fig. 1. Block Diagram of Test Setup

The Test Transmitter consists of an 11 Mb/s Netlink phone operating in a continuous packet transmit mode. The Test Receiver is an 11 Mb/s Netlink phone operating with special test code that reports received errors. A PC equipped with an IEEE-488 interface card was used to control both the RF Signal Generator (over the IEEE-488 interface) and the Netlink phones (over the RS-232 serial ports). The test code modes for the transmitter allowed for continuously transmitting a packet of information at a user specified rate (1, 2, 5.5 or 11 Mb/s). The step attenuator was adjusted to give approximately -62 dBm output power from the Test Transmitter at the Test Receiver. The test was performed on channel 6 (2437 MHz).

A special test routine was written for the PC to automate the collection of data. The routine went through each frequency offset across the band (± 8 MHz) and measured the jammer RF level required to generate $>3.3\%$ PER (see Appendix F). The jammer RF level was set to a resolution of 0.1 dB. The frequency and jammer RF level was written to a file for further processing in a spreadsheet.

The power meters were used in a separate calibration measurement to account for the additional losses caused by the jammer combining network and to determine the transmitter output power. This was later applied to the raw collected data in the spreadsheet.

And finally, the actual processing gain was calculated based on the formula:

$$G_p = \left(\frac{S}{N} \right)_o + M_j + L_{sys}$$

Where: G_p is the Processing Gain (in dB)
 $(S/N)_o$ is the required output Signal-to-Noise ratio for sensitivity (in dB)
 M_j is the Jammer-to-Signal ratio (in dB)
 L_{sys} is the allowed system implementation losses (in dB)
 Note: L_{sys} is limited to 2dB.

The $(S/N)_o$ value depends on the modulation rate that the test is run at. The values used for this test are:

1 Mb/s	10.3 dB
2 Mb/s	13.3 dB
5.5 Mb/s	13.7 dB
11 Mb/s	17.0 dB

These values are based on documents provided by Intersil with reference to their Prism chip set detailing required S/N values as well as justification of the coding gain present in 5.5 and 11 Mb/s mode.

References:

1. "Testing for compliance with FCC rules 15-247e", Carl Andren, Intersil Corporation, January 11, 2000
2. Intersil WLAN PC Card, Model No: HWB3163, FCC ID: OSZ3163B1, Engineering Test Report - Appendix B, November 17, 1999
3. FCC Processing Gain report of 2.4 GHz WLAN Access point, Intersil, Model ISL36356A-SB, FCC ID: OSZ36356A2

Test Equipment Used

Test Transmitter	SpectraLink 93-0162-04B S/N: 610030702
Test Receiver	SpectraLink 93-0162-04C S/N: 610030698
RF Signal Generator	HP E4421B
Power Combiner	MiniCircuits ZAPD-4
Circulator	Narda 4923 w/ SMA termination
Fixed Attenuator	MiniCircuits SAT-20
Step Attenuator	Kay 839
RMS Power Meter	HP EPM-441A w/ ECP-E18A Sensor

1

Summary of Results

Ch #6 @ 1 Mb/s

$$(S/N)_o = 10.3 \text{ dB}$$

$$M_j = -0.7 \text{ dB (at 20th percentile)}$$

$$L_{\text{sys}} = 2.0 \text{ dB}$$

$$G_p = 11.6 \text{ dB}$$

Ch #6 @ 2 Mb/s

$$(S/N)_o = 13.3 \text{ dB}$$

$$M_j = -4.8 \text{ dB (at 20th percentile)}$$

$$L_{\text{sys}} = 2.0 \text{ dB}$$

$$G_p = 10.5 \text{ dB}$$

Ch #6 @ 5.5 Mb/s

$$(S/N)_o = 13.7 \text{ dB}$$

$$M_j = -3.3 \text{ dB (at 20th percentile)}$$

$$L_{\text{sys}} = 2.0 \text{ dB}$$

$$G_p = 12.4 \text{ dB}$$

Ch #6 @ 11 Mb/s

$$(S/N)_o = 17.0 \text{ dB}$$

$$M_j = -7.9 \text{ dB (at 20th percentile)}$$

$$L_{\text{sys}} = 2.0 \text{ dB}$$

$$G_p = 11.1 \text{ dB}$$

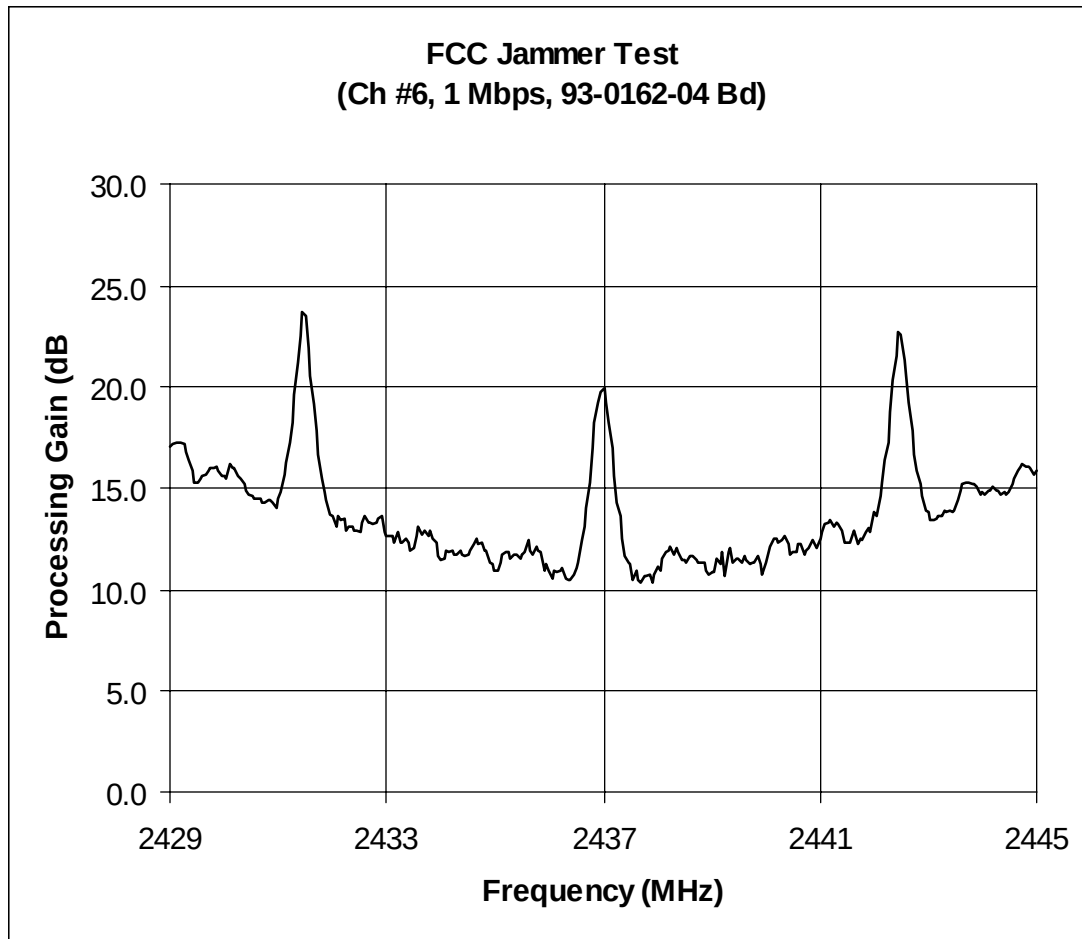
The unit passes the required 10 dB requirement for all four transmission rates.

Appendices

Appendix A: Measured Data Ch #6 1 Mb/s
Appendix B: Measured Data Ch #6 2 Mb/s
Appendix C: Measured Data Ch #6 5.5 Mb/s
Appendix D: Measured Data Ch #6 11 Mb/s
Appendix E: Calibration Measurement
Appendix F: Theoretical Processing Gain Information
Appendix G: Converting between Bit Error Rate and Packet Error Rate

Appendix A: Measured Data Ch #6 1 Mb/s

(S/N)_o = 10.3 dB
M_j = -0.7 dB @ 20th Percentile
L_{sys} = 2 dB
G_p = 11.6 dB



610030698, Auto, simplex measurement, 162-04 xmtr. 1Mb/s, Estimated BER s/w

Freq	XMIT RF Level	Raw S.G. RF Level	Corrected S.G. RF Level	M _j = J/S	G _p = (S/N) _o + M _j + L _{sys}
2429.000	-61.7	-52.2	-57.0	4.7	17.0
2429.050	-61.7	-52.1	-56.9	4.8	17.1
2429.100	-61.7	-52.0	-56.8	4.9	17.2
2429.150	-61.7	-52.0	-56.8	4.9	17.2
2429.200	-61.7	-52.0	-56.8	4.9	17.2

1

29 Oct 2001

5755 Central Ave.
Boulder, CO 80301

2429.250	-61.7	-52.1	-56.9	4.8	17.1
2429.300	-61.7	-52.5	-57.3	4.4	16.7
2429.350	-61.7	-52.9	-57.7	4.0	16.3
2429.400	-61.7	-53.4	-58.2	3.5	15.8
2429.450	-61.7	-53.9	-58.7	3.0	15.3
2429.500	-61.7	-53.9	-58.7	3.0	15.3
2429.550	-61.7	-53.7	-58.5	3.2	15.5
2429.600	-61.7	-53.6	-58.4	3.3	15.6
2429.650	-61.7	-53.5	-58.3	3.4	15.7
2429.700	-61.7	-53.4	-58.2	3.5	15.8
2429.750	-61.7	-53.3	-58.1	3.6	15.9
2429.800	-61.7	-53.3	-58.1	3.6	15.9
2429.850	-61.7	-53.2	-58.0	3.7	16.0
2429.900	-61.7	-53.4	-58.2	3.5	15.8
2429.950	-61.7	-53.6	-58.4	3.3	15.6
2430.000	-61.7	-53.6	-58.4	3.3	15.6
2430.050	-61.7	-53.7	-58.5	3.2	15.5
2430.100	-61.7	-53.1	-57.9	3.8	16.1
2430.150	-61.7	-53.3	-58.1	3.6	15.9
2430.200	-61.7	-53.3	-58.1	3.6	15.9
2430.250	-61.7	-53.6	-58.4	3.3	15.6
2430.300	-61.7	-53.7	-58.5	3.2	15.5
2430.350	-61.7	-54.0	-58.8	2.9	15.2
2430.400	-61.7	-54.3	-59.1	2.6	14.9
2430.450	-61.7	-54.5	-59.3	2.4	14.7
2430.500	-61.7	-54.6	-59.4	2.3	14.6
2430.550	-61.7	-54.7	-59.5	2.2	14.5
2430.600	-61.7	-54.7	-59.5	2.2	14.5
2430.650	-61.7	-54.7	-59.5	2.2	14.5
2430.700	-61.7	-54.9	-59.7	2.0	14.3
2430.750	-61.7	-54.9	-59.7	2.0	14.3
2430.800	-61.7	-54.8	-59.6	2.1	14.4
2430.850	-61.7	-54.8	-59.6	2.1	14.4
2430.900	-61.7	-54.9	-59.7	2.0	14.3
2430.950	-61.7	-55.2	-60.0	1.7	14.0
2431.000	-61.7	-54.7	-59.5	2.2	14.5
2431.050	-61.7	-54.4	-59.2	2.5	14.8
2431.100	-61.7	-53.5	-58.3	3.4	15.7
2431.150	-61.7	-53.0	-57.8	3.9	16.2
2431.200	-61.7	-52.0	-56.8	4.9	17.2
2431.250	-61.7	-51.0	-55.8	5.9	18.2
2431.300	-61.7	-49.6	-54.4	7.3	19.6
2431.350	-61.7	-48.0	-52.8	8.9	21.2
2431.400	-61.7	-46.7	-51.5	10.2	22.5
2431.450	-61.7	-45.6	-50.4	11.3	23.6
2431.500	-61.7	-45.8	-50.6	11.1	23.4
2431.550	-61.7	-47.3	-52.1	9.6	21.9
2431.600	-61.7	-48.7	-53.5	8.2	20.5
2431.650	-61.7	-50.1	-54.9	6.8	19.1
2431.700	-61.7	-51.4	-56.2	5.5	17.8
2431.750	-61.7	-52.6	-57.4	4.3	16.6
2431.800	-61.7	-53.7	-58.5	3.2	15.5

2431.850	-61.7	-54.4	-59.2	2.5	14.8
2431.900	-61.7	-54.8	-59.6	2.1	14.4
2431.950	-61.7	-55.5	-60.3	1.4	13.7
2432.000	-61.7	-55.6	-60.4	1.3	13.6
2432.050	-61.7	-56.1	-60.9	0.8	13.1
2432.100	-61.7	-55.6	-60.4	1.3	13.6
2432.150	-61.7	-55.8	-60.6	1.1	13.4
2432.200	-61.7	-55.7	-60.5	1.2	13.5
2432.250	-61.7	-56.3	-61.1	0.6	12.9
2432.300	-61.7	-56.1	-60.9	0.8	13.1
2432.350	-61.7	-56.1	-60.9	0.8	13.1
2432.400	-61.7	-56.3	-61.1	0.6	12.9
2432.450	-61.7	-56.3	-61.1	0.6	12.9
2432.500	-61.7	-56.4	-61.2	0.5	12.8
2432.550	-61.7	-55.9	-60.7	1.0	13.3
2432.600	-61.7	-55.6	-60.4	1.3	13.6
2432.650	-61.7	-55.9	-60.7	1.0	13.3
2432.700	-61.7	-55.9	-60.7	1.0	13.3
2432.750	-61.7	-56.0	-60.8	0.9	13.2
2432.800	-61.7	-55.9	-60.7	1.0	13.3
2432.850	-61.7	-55.7	-60.5	1.2	13.5
2432.900	-61.7	-55.6	-60.4	1.3	13.6
2432.950	-61.7	-56.4	-61.2	0.5	12.8
2433.000	-61.7	-56.6	-61.4	0.3	12.6
2433.050	-61.7	-56.6	-61.4	0.3	12.6
2433.100	-61.7	-56.6	-61.4	0.3	12.6
2433.150	-61.7	-56.9	-61.7	0.0	12.3
2433.200	-61.7	-56.4	-61.2	0.5	12.8
2433.250	-61.7	-56.9	-61.7	0.0	12.3
2433.300	-61.7	-56.9	-61.7	0.0	12.3
2433.350	-61.7	-56.7	-61.5	0.2	12.5
2433.400	-61.7	-56.9	-61.7	0.0	12.3
2433.450	-61.7	-57.3	-62.1	-0.4	11.9
2433.500	-61.7	-57.2	-62.0	-0.3	12.0
2433.550	-61.7	-56.6	-61.4	0.3	12.6
2433.600	-61.7	-56.1	-60.9	0.8	13.1
2433.650	-61.7	-56.5	-61.3	0.4	12.7
2433.700	-61.7	-56.3	-61.1	0.6	12.9
2433.750	-61.7	-56.6	-61.4	0.3	12.6
2433.800	-61.7	-56.3	-61.1	0.6	12.9
2433.850	-61.7	-56.7	-61.5	0.2	12.5
2433.900	-61.7	-56.9	-61.7	0.0	12.3
2433.950	-61.7	-57.6	-62.4	-0.7	11.6
2434.000	-61.7	-57.8	-62.6	-0.9	11.4
2434.050	-61.7	-57.7	-62.5	-0.8	11.5
2434.100	-61.7	-57.3	-62.1	-0.4	11.9
2434.150	-61.7	-57.4	-62.2	-0.5	11.8
2434.200	-61.7	-57.3	-62.1	-0.4	11.9
2434.250	-61.7	-57.5	-62.3	-0.6	11.7
2434.300	-61.7	-57.5	-62.3	-0.6	11.7
2434.350	-61.7	-57.3	-62.1	-0.4	11.9
2434.400	-61.7	-57.5	-62.3	-0.6	11.7

2434.450	-61.7	-57.6	-62.4	-0.7	11.6
2434.500	-61.7	-57.5	-62.3	-0.6	11.7
2434.550	-61.7	-57.3	-62.1	-0.4	11.9
2434.600	-61.7	-57.0	-61.8	-0.1	12.2
2434.650	-61.7	-56.7	-61.5	0.2	12.5
2434.700	-61.7	-57.0	-61.8	-0.1	12.2
2434.750	-61.7	-56.9	-61.7	0.0	12.3
2434.800	-61.7	-57.3	-62.1	-0.4	11.9
2434.850	-61.7	-57.3	-62.1	-0.4	11.9
2434.900	-61.7	-57.9	-62.7	-1.0	11.3
2434.950	-61.7	-58.0	-62.8	-1.1	11.2
2435.000	-61.7	-58.3	-63.1	-1.4	10.9
2435.050	-61.7	-58.3	-63.1	-1.4	10.9
2435.100	-61.7	-57.9	-62.7	-1.0	11.3
2435.150	-61.7	-57.5	-62.3	-0.6	11.7
2435.200	-61.7	-57.4	-62.2	-0.5	11.8
2435.250	-61.7	-57.4	-62.2	-0.5	11.8
2435.300	-61.7	-57.7	-62.5	-0.8	11.5
2435.350	-61.7	-57.5	-62.3	-0.6	11.7
2435.400	-61.7	-57.5	-62.3	-0.6	11.7
2435.450	-61.7	-57.7	-62.5	-0.8	11.5
2435.500	-61.7	-57.5	-62.3	-0.6	11.7
2435.550	-61.7	-57.4	-62.2	-0.5	11.8
2435.600	-61.7	-56.8	-61.6	0.1	12.4
2435.650	-61.7	-57.3	-62.1	-0.4	11.9
2435.700	-61.7	-57.5	-62.3	-0.6	11.7
2435.750	-61.7	-57.1	-61.9	-0.2	12.1
2435.800	-61.7	-57.3	-62.1	-0.4	11.9
2435.850	-61.7	-57.4	-62.2	-0.5	11.8
2435.900	-61.7	-58.3	-63.1	-1.4	10.9
2435.950	-61.7	-58.0	-62.8	-1.1	11.2
2436.000	-61.7	-58.3	-63.1	-1.4	10.9
2436.050	-61.7	-58.7	-63.5	-1.8	10.5
2436.100	-61.7	-58.3	-63.1	-1.4	10.9
2436.150	-61.7	-58.4	-63.2	-1.5	10.8
2436.200	-61.7	-58.3	-63.1	-1.4	10.9
2436.250	-61.7	-58.2	-63.0	-1.3	11.0
2436.300	-61.7	-58.7	-63.5	-1.8	10.5
2436.350	-61.7	-58.8	-63.6	-1.9	10.4
2436.400	-61.7	-58.8	-63.6	-1.9	10.4
2436.450	-61.7	-58.5	-63.3	-1.6	10.7
2436.500	-61.7	-58.2	-63.0	-1.3	11.0
2436.550	-61.7	-57.9	-62.7	-1.0	11.3
2436.600	-61.7	-56.8	-61.6	0.1	12.4
2436.650	-61.7	-56.1	-60.9	0.8	13.1
2436.700	-61.7	-55.2	-60.0	1.7	14.0
2436.750	-61.7	-53.9	-58.7	3.0	15.3
2436.800	-61.7	-52.3	-57.1	4.6	16.9
2436.850	-61.7	-51.0	-55.8	5.9	18.2
2436.900	-61.7	-50.0	-54.8	6.9	19.2
2436.950	-61.7	-49.5	-54.3	7.4	19.7
2437.000	-61.7	-49.3	-54.1	7.6	19.9

2437.050	-61.7	-50.0	-54.8	6.9	19.2
2437.100	-61.7	-51.0	-55.8	5.9	18.2
2437.150	-61.7	-52.3	-57.1	4.6	16.9
2437.200	-61.7	-53.6	-58.4	3.3	15.6
2437.250	-61.7	-54.9	-59.7	2.0	14.3
2437.300	-61.7	-55.6	-60.4	1.3	13.6
2437.350	-61.7	-56.7	-61.5	0.2	12.5
2437.400	-61.7	-57.6	-62.4	-0.7	11.6
2437.450	-61.7	-57.9	-62.7	-1.0	11.3
2437.500	-61.7	-58.0	-62.8	-1.1	11.2
2437.550	-61.7	-58.8	-63.6	-1.9	10.4
2437.600	-61.7	-58.3	-63.1	-1.4	10.9
2437.650	-61.7	-58.8	-63.6	-1.9	10.4
2437.700	-61.7	-58.9	-63.7	-2.0	10.3
2437.750	-61.7	-58.6	-63.4	-1.7	10.6
2437.800	-61.7	-58.6	-63.4	-1.7	10.6
2437.850	-61.7	-58.5	-63.3	-1.6	10.7
2437.900	-61.7	-58.9	-63.7	-2.0	10.3
2437.950	-61.7	-58.5	-63.3	-1.6	10.7
2438.000	-61.7	-58.1	-62.9	-1.2	11.1
2438.050	-61.7	-58.3	-63.1	-1.4	10.9
2438.100	-61.7	-57.7	-62.5	-0.8	11.5
2438.150	-61.7	-57.4	-62.2	-0.5	11.8
2438.200	-61.7	-57.3	-62.1	-0.4	11.9
2438.250	-61.7	-57.1	-61.9	-0.2	12.1
2438.300	-61.7	-57.5	-62.3	-0.6	11.7
2438.350	-61.7	-57.2	-62.0	-0.3	12.0
2438.400	-61.7	-57.4	-62.2	-0.5	11.8
2438.450	-61.7	-57.8	-62.6	-0.9	11.4
2438.500	-61.7	-57.8	-62.6	-0.9	11.4
2438.550	-61.7	-57.9	-62.7	-1.0	11.3
2438.600	-61.7	-57.6	-62.4	-0.7	11.6
2438.650	-61.7	-57.6	-62.4	-0.7	11.6
2438.700	-61.7	-57.8	-62.6	-0.9	11.4
2438.750	-61.7	-57.9	-62.7	-1.0	11.3
2438.800	-61.7	-57.9	-62.7	-1.0	11.3
2438.850	-61.7	-57.9	-62.7	-1.0	11.3
2438.900	-61.7	-58.3	-63.1	-1.4	10.9
2438.950	-61.7	-58.5	-63.3	-1.6	10.7
2439.000	-61.7	-58.4	-63.2	-1.5	10.8
2439.050	-61.7	-58.4	-63.2	-1.5	10.8
2439.100	-61.7	-57.7	-62.5	-0.8	11.5
2439.150	-61.7	-58.0	-62.8	-1.1	11.2
2439.200	-61.7	-57.4	-62.2	-0.5	11.8
2439.250	-61.7	-58.6	-63.4	-1.7	10.6
2439.300	-61.7	-57.4	-62.2	-0.5	11.8
2439.350	-61.7	-57.2	-62.0	-0.3	12.0
2439.400	-61.7	-57.9	-62.7	-1.0	11.3
2439.450	-61.7	-57.7	-62.5	-0.8	11.5
2439.500	-61.7	-57.7	-62.5	-0.8	11.5
2439.550	-61.7	-57.9	-62.7	-1.0	11.3
2439.600	-61.7	-57.6	-62.4	-0.7	11.6

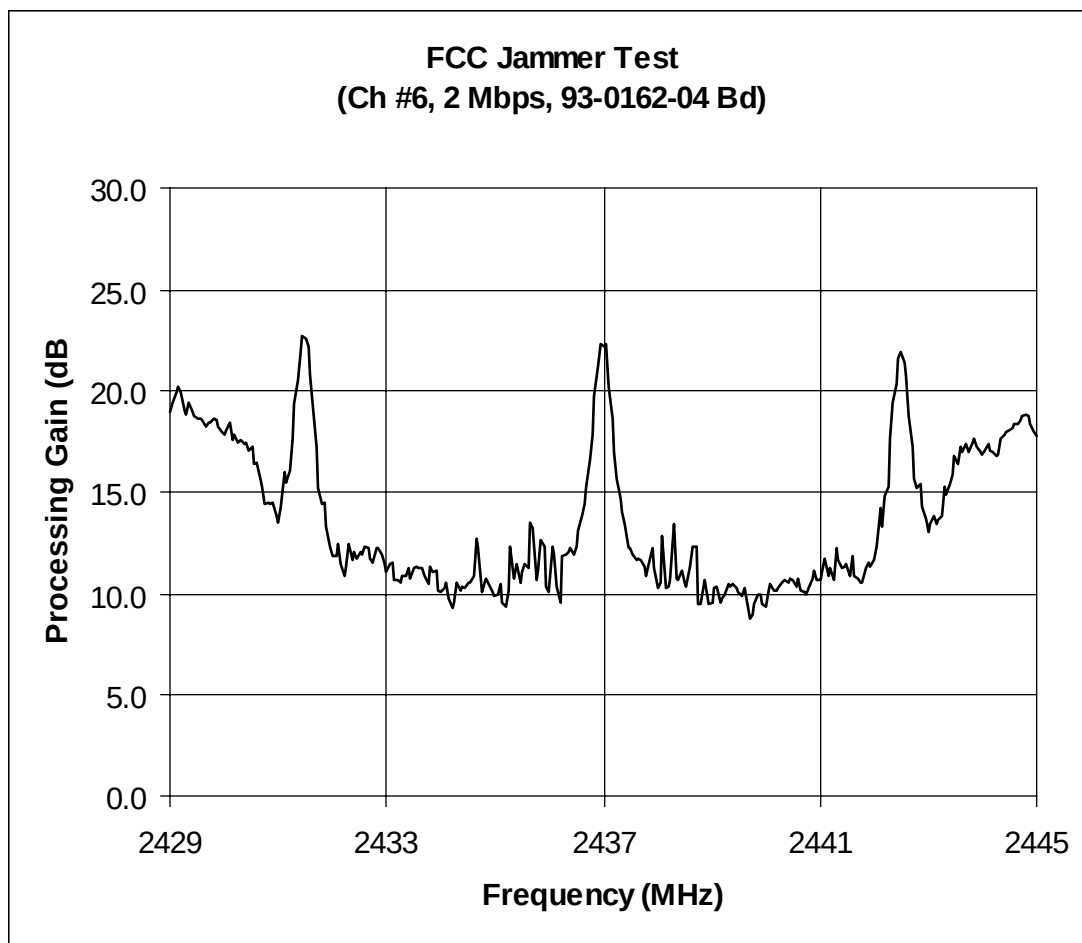
2439.650	-61.7	-57.8	-62.6	-0.9	11.4
2439.700	-61.7	-58.0	-62.8	-1.1	11.2
2439.750	-61.7	-57.9	-62.7	-1.0	11.3
2439.800	-61.7	-57.9	-62.7	-1.0	11.3
2439.850	-61.7	-57.6	-62.4	-0.7	11.6
2439.900	-61.7	-58.0	-62.8	-1.1	11.2
2439.950	-61.7	-58.5	-63.3	-1.6	10.7
2440.000	-61.7	-57.9	-62.7	-1.0	11.3
2440.050	-61.7	-57.4	-62.2	-0.5	11.8
2440.100	-61.7	-57.1	-61.9	-0.2	12.1
2440.150	-61.7	-56.7	-61.5	0.2	12.5
2440.200	-61.7	-56.7	-61.5	0.2	12.5
2440.250	-61.7	-56.9	-61.7	0.0	12.3
2440.300	-61.7	-56.8	-61.6	0.1	12.4
2440.350	-61.7	-56.6	-61.4	0.3	12.6
2440.400	-61.7	-57.0	-61.8	-0.1	12.2
2440.450	-61.7	-57.5	-62.3	-0.6	11.7
2440.500	-61.7	-57.4	-62.2	-0.5	11.8
2440.550	-61.7	-57.4	-62.2	-0.5	11.8
2440.600	-61.7	-57.0	-61.8	-0.1	12.2
2440.650	-61.7	-57.0	-61.8	-0.1	12.2
2440.700	-61.7	-57.5	-62.3	-0.6	11.7
2440.750	-61.7	-57.3	-62.1	-0.4	11.9
2440.800	-61.7	-57.2	-62.0	-0.3	12.0
2440.850	-61.7	-56.8	-61.6	0.1	12.4
2440.900	-61.7	-56.9	-61.7	0.0	12.3
2440.950	-61.7	-57.2	-62.0	-0.3	12.0
2441.000	-61.7	-56.7	-61.5	0.2	12.5
2441.050	-61.7	-56.4	-61.2	0.5	12.8
2441.100	-61.7	-56.0	-60.8	0.9	13.2
2441.150	-61.7	-55.9	-60.7	1.0	13.3
2441.200	-61.7	-55.8	-60.6	1.1	13.4
2441.250	-61.7	-56.1	-60.9	0.8	13.1
2441.300	-61.7	-55.9	-60.7	1.0	13.3
2441.350	-61.7	-56.0	-60.8	0.9	13.2
2441.400	-61.7	-56.3	-61.1	0.6	12.9
2441.450	-61.7	-56.9	-61.7	0.0	12.3
2441.500	-61.7	-56.9	-61.7	0.0	12.3
2441.550	-61.7	-56.9	-61.7	0.0	12.3
2441.600	-61.7	-56.5	-61.3	0.4	12.7
2441.650	-61.7	-56.3	-61.1	0.6	12.9
2441.700	-61.7	-57.0	-61.8	-0.1	12.2
2441.750	-61.7	-56.7	-61.5	0.2	12.5
2441.800	-61.7	-56.8	-61.6	0.1	12.4
2441.850	-61.7	-56.4	-61.2	0.5	12.8
2441.900	-61.7	-56.2	-61.0	0.7	13.0
2441.950	-61.7	-56.4	-61.2	0.5	12.8
2442.000	-61.7	-55.4	-60.2	1.5	13.8
2442.050	-61.7	-55.6	-60.4	1.3	13.6
2442.100	-61.7	-54.6	-59.4	2.3	14.6
2442.150	-61.7	-53.9	-58.7	3.0	15.3
2442.200	-61.7	-52.9	-57.7	4.0	16.3

2442.250	-61.7	-52.0	-56.8	4.9	17.2
2442.300	-61.7	-50.5	-55.3	6.4	18.7
2442.350	-61.7	-48.9	-53.7	8.0	20.3
2442.400	-61.7	-47.7	-52.5	9.2	21.5
2442.450	-61.7	-46.5	-51.3	10.4	22.7
2442.500	-61.7	-46.6	-51.4	10.3	22.6
2442.550	-61.7	-47.9	-52.7	9.0	21.3
2442.600	-61.7	-48.6	-53.4	8.3	20.6
2442.650	-61.7	-50.0	-54.8	6.9	19.2
2442.700	-61.7	-51.4	-56.2	5.5	17.8
2442.750	-61.7	-52.6	-57.4	4.3	16.6
2442.800	-61.7	-53.4	-58.2	3.5	15.8
2442.850	-61.7	-54.0	-58.8	2.9	15.2
2442.900	-61.7	-54.6	-59.4	2.3	14.6
2442.950	-61.7	-55.3	-60.1	1.6	13.9
2443.000	-61.7	-55.4	-60.2	1.5	13.8
2443.050	-61.7	-55.8	-60.6	1.1	13.4
2443.100	-61.7	-55.8	-60.6	1.1	13.4
2443.150	-61.7	-55.7	-60.5	1.2	13.5
2443.200	-61.7	-55.6	-60.4	1.3	13.6
2443.250	-61.7	-55.6	-60.4	1.3	13.6
2443.300	-61.7	-55.3	-60.1	1.6	13.9
2443.350	-61.7	-55.4	-60.2	1.5	13.8
2443.400	-61.7	-55.3	-60.1	1.6	13.9
2443.450	-61.7	-55.4	-60.2	1.5	13.8
2443.500	-61.7	-55.3	-60.1	1.6	13.9
2443.550	-61.7	-54.8	-59.6	2.1	14.4
2443.600	-61.7	-54.3	-59.1	2.6	14.9
2443.650	-61.7	-54.0	-58.8	2.9	15.2
2443.700	-61.7	-53.9	-58.7	3.0	15.3
2443.750	-61.7	-53.9	-58.7	3.0	15.3
2443.800	-61.7	-54.0	-58.8	2.9	15.2
2443.850	-61.7	-54.0	-58.8	2.9	15.2
2443.900	-61.7	-54.1	-58.9	2.8	15.1
2443.950	-61.7	-54.5	-59.3	2.4	14.7
2444.000	-61.7	-54.4	-59.2	2.5	14.8
2444.050	-61.7	-54.5	-59.3	2.4	14.7
2444.100	-61.7	-54.3	-59.1	2.6	14.9
2444.150	-61.7	-54.3	-59.1	2.6	14.9
2444.200	-61.7	-54.1	-58.9	2.8	15.1
2444.250	-61.7	-54.3	-59.1	2.6	14.9
2444.300	-61.7	-54.3	-59.1	2.6	14.9
2444.350	-61.7	-54.5	-59.3	2.4	14.7
2444.400	-61.7	-54.4	-59.2	2.5	14.8
2444.450	-61.7	-54.5	-59.3	2.4	14.7
2444.500	-61.7	-54.4	-59.2	2.5	14.8
2444.550	-61.7	-54.0	-58.8	2.9	15.2
2444.600	-61.7	-53.7	-58.5	3.2	15.5
2444.650	-61.7	-53.4	-58.2	3.5	15.8
2444.700	-61.7	-53.2	-58.0	3.7	16.0
2444.750	-61.7	-53.1	-57.9	3.8	16.1
2444.800	-61.7	-53.2	-58.0	3.7	16.0

2444.850	-61.7	-53.2	-58.0	3.7	16.0
2444.900	-61.7	-53.3	-58.1	3.6	15.9
2444.950	-61.7	-53.5	-58.3	3.4	15.7
2445.000	-61.7	-53.4	-58.2	3.5	15.8

Appendix B: Measured Data Ch #6 2 Mb/s

(S/N)_o = 13.3 dB
M_j = -4.8 dB @ 20th Percentile
L_{sys} = 2 dB
G_p = 10.5 dB



610030698, Auto, simplex measurement, 162-04 xmtr. 2Mb/s, Estimated BER s/w

Freq	XMIT RF Level	Raw S.G. RF Level	Corrected S.G. RF Level	M _j = J/S	G _p = (S/N) _o + M _j + L _{sys}
2429.000	-61.7	-53.3	-58.1	3.6	18.9
2429.050	-61.7	-52.8	-57.6	4.1	19.4
2429.100	-61.7	-52.3	-57.1	4.6	19.9
2429.150	-61.7	-52.0	-56.8	4.9	20.2
2429.200	-61.7	-52.3	-57.1	4.6	19.9

1

29 Oct 2001

5755 Central Ave.
Boulder, CO 80301

2429.250	-61.7	-53.2	-58.0	3.7	19.0
2429.300	-61.7	-53.4	-58.2	3.5	18.8
2429.350	-61.7	-52.8	-57.6	4.1	19.4
2429.400	-61.7	-53.3	-58.1	3.6	18.9
2429.450	-61.7	-53.5	-58.3	3.4	18.7
2429.500	-61.7	-53.6	-58.4	3.3	18.6
2429.550	-61.7	-53.6	-58.4	3.3	18.6
2429.600	-61.7	-53.7	-58.5	3.2	18.5
2429.650	-61.7	-54.0	-58.8	2.9	18.2
2429.700	-61.7	-53.8	-58.6	3.1	18.4
2429.750	-61.7	-53.8	-58.6	3.1	18.4
2429.800	-61.7	-53.6	-58.4	3.3	18.6
2429.850	-61.7	-53.7	-58.5	3.2	18.5
2429.900	-61.7	-54.0	-58.8	2.9	18.2
2429.950	-61.7	-54.3	-59.1	2.6	17.9
2430.000	-61.7	-54.4	-59.2	2.5	17.8
2430.050	-61.7	-54.2	-59.0	2.7	18.0
2430.100	-61.7	-53.8	-58.6	3.1	18.4
2430.150	-61.7	-54.7	-59.5	2.2	17.5
2430.200	-61.7	-54.4	-59.2	2.5	17.8
2430.250	-61.7	-54.8	-59.6	2.1	17.4
2430.300	-61.7	-54.7	-59.5	2.2	17.5
2430.350	-61.7	-54.9	-59.7	2.0	17.3
2430.400	-61.7	-54.8	-59.6	2.1	17.4
2430.450	-61.7	-55.2	-60.0	1.7	17.0
2430.500	-61.7	-55.0	-59.8	1.9	17.2
2430.550	-61.7	-55.9	-60.7	1.0	16.3
2430.600	-61.7	-55.8	-60.6	1.1	16.4
2430.650	-61.7	-56.6	-61.4	0.3	15.6
2430.700	-61.7	-56.9	-61.7	0.0	15.3
2430.750	-61.7	-57.8	-62.6	-0.9	14.4
2430.800	-61.7	-57.7	-62.5	-0.8	14.5
2430.850	-61.7	-57.8	-62.6	-0.9	14.4
2430.900	-61.7	-57.7	-62.5	-0.8	14.5
2430.950	-61.7	-58.4	-63.2	-1.5	13.8
2431.000	-61.7	-58.7	-63.5	-1.8	13.5
2431.050	-61.7	-58.0	-62.8	-1.1	14.2
2431.100	-61.7	-56.3	-61.1	0.6	15.9
2431.150	-61.7	-56.7	-61.5	0.2	15.5
2431.200	-61.7	-56.2	-61.0	0.7	16.0
2431.250	-61.7	-54.6	-59.4	2.3	17.6
2431.300	-61.7	-52.9	-57.7	4.0	19.3
2431.350	-61.7	-51.7	-56.5	5.2	20.5
2431.400	-61.7	-50.3	-55.1	6.6	21.9
2431.450	-61.7	-49.5	-54.3	7.4	22.7
2431.500	-61.7	-49.6	-54.4	7.3	22.6
2431.550	-61.7	-50.0	-54.8	6.9	22.2
2431.600	-61.7	-51.4	-56.2	5.5	20.8
2431.650	-61.7	-53.6	-58.4	3.3	18.6
2431.700	-61.7	-55.1	-59.9	1.8	17.1
2431.750	-61.7	-57.0	-61.8	-0.1	15.2
2431.800	-61.7	-57.8	-62.6	-0.9	14.4

2431.850	-61.7	-57.7	-62.5	-0.8	14.5
2431.900	-61.7	-58.9	-63.7	-2.0	13.3
2431.950	-61.7	-59.9	-64.7	-3.0	12.3
2432.000	-61.7	-60.4	-65.2	-3.5	11.8
2432.050	-61.7	-60.4	-65.2	-3.5	11.8
2432.100	-61.7	-59.8	-64.6	-2.9	12.4
2432.150	-61.7	-60.8	-65.6	-3.9	11.4
2432.200	-61.7	-61.4	-66.2	-4.5	10.8
2432.250	-61.7	-60.9	-65.7	-4.0	11.3
2432.300	-61.7	-59.8	-64.6	-2.9	12.4
2432.350	-61.7	-60.6	-65.4	-3.7	11.6
2432.400	-61.7	-60.2	-65.0	-3.3	12.0
2432.450	-61.7	-60.5	-65.3	-3.6	11.7
2432.500	-61.7	-60.2	-65.0	-3.3	12.0
2432.550	-61.7	-60.3	-65.1	-3.4	11.9
2432.600	-61.7	-59.9	-64.7	-3.0	12.3
2432.650	-61.7	-60.0	-64.8	-3.1	12.2
2432.700	-61.7	-60.5	-65.3	-3.6	11.7
2432.750	-61.7	-60.7	-65.5	-3.8	11.5
2432.800	-61.7	-60.0	-64.8	-3.1	12.2
2432.850	-61.7	-60.0	-64.8	-3.1	12.2
2432.900	-61.7	-60.3	-65.1	-3.4	11.9
2432.950	-61.7	-60.8	-65.6	-3.9	11.4
2433.000	-61.7	-61.2	-66.0	-4.3	11.0
2433.050	-61.7	-60.8	-65.6	-3.9	11.4
2433.100	-61.7	-60.7	-65.5	-3.8	11.5
2433.150	-61.7	-61.6	-66.4	-4.7	10.6
2433.200	-61.7	-61.6	-66.4	-4.7	10.6
2433.250	-61.7	-61.7	-66.5	-4.8	10.5
2433.300	-61.7	-61.4	-66.2	-4.5	10.8
2433.350	-61.7	-61.4	-66.2	-4.5	10.8
2433.400	-61.7	-61.0	-65.8	-4.1	11.2
2433.450	-61.7	-61.5	-66.3	-4.6	10.7
2433.500	-61.7	-61.0	-65.8	-4.1	11.2
2433.550	-61.7	-60.9	-65.7	-4.0	11.3
2433.600	-61.7	-61.0	-65.8	-4.1	11.2
2433.650	-61.7	-61.0	-65.8	-4.1	11.2
2433.700	-61.7	-61.4	-66.2	-4.5	10.8
2433.750	-61.7	-61.8	-66.6	-4.9	10.4
2433.800	-61.7	-60.9	-65.7	-4.0	11.3
2433.850	-61.7	-61.2	-66.0	-4.3	11.0
2433.900	-61.7	-61.1	-65.9	-4.2	11.1
2433.950	-61.7	-62.1	-66.9	-5.2	10.1
2434.000	-61.7	-62.2	-67.0	-5.3	10.0
2434.050	-61.7	-62.0	-66.8	-5.1	10.2
2434.100	-61.7	-61.7	-66.5	-4.8	10.5
2434.150	-61.7	-62.5	-67.3	-5.6	9.7
2434.200	-61.7	-63.0	-67.8	-6.1	9.2
2434.250	-61.7	-62.7	-67.5	-5.8	9.5
2434.300	-61.7	-61.7	-66.5	-4.8	10.5
2434.350	-61.7	-62.1	-66.9	-5.2	10.1
2434.400	-61.7	-61.9	-66.7	-5.0	10.3

2434.450	-61.7	-62.0	-66.8	-5.1	10.2
2434.500	-61.7	-61.7	-66.5	-4.8	10.5
2434.550	-61.7	-61.7	-66.5	-4.8	10.5
2434.600	-61.7	-61.4	-66.2	-4.5	10.8
2434.650	-61.7	-59.5	-64.3	-2.6	12.7
2434.700	-61.7	-60.0	-64.8	-3.1	12.2
2434.750	-61.7	-62.2	-67.0	-5.3	10.0
2434.800	-61.7	-61.7	-66.5	-4.8	10.5
2434.850	-61.7	-61.5	-66.3	-4.6	10.7
2434.900	-61.7	-61.9	-66.7	-5.0	10.3
2434.950	-61.7	-62.2	-67.0	-5.3	10.0
2435.000	-61.7	-62.4	-67.2	-5.5	9.8
2435.050	-61.7	-62.3	-67.1	-5.4	9.9
2435.100	-61.7	-61.8	-66.6	-4.9	10.4
2435.150	-61.7	-62.7	-67.5	-5.8	9.5
2435.200	-61.7	-62.9	-67.7	-6.0	9.3
2435.250	-61.7	-62.1	-66.9	-5.2	10.1
2435.300	-61.7	-59.9	-64.7	-3.0	12.3
2435.350	-61.7	-61.5	-66.3	-4.6	10.7
2435.400	-61.7	-60.8	-65.6	-3.9	11.4
2435.450	-61.7	-61.7	-66.5	-4.8	10.5
2435.500	-61.7	-61.2	-66.0	-4.3	11.0
2435.550	-61.7	-60.8	-65.6	-3.9	11.4
2435.600	-61.7	-61.0	-65.8	-4.1	11.2
2435.650	-61.7	-58.7	-63.5	-1.8	13.5
2435.700	-61.7	-59.0	-63.8	-2.1	13.2
2435.750	-61.7	-61.6	-66.4	-4.7	10.6
2435.800	-61.7	-61.1	-65.9	-4.2	11.1
2435.850	-61.7	-59.6	-64.4	-2.7	12.6
2435.900	-61.7	-59.9	-64.7	-3.0	12.3
2435.950	-61.7	-61.9	-66.7	-5.0	10.3
2436.000	-61.7	-62.2	-67.0	-5.3	10.0
2436.050	-61.7	-59.9	-64.7	-3.0	12.3
2436.100	-61.7	-60.3	-65.1	-3.4	11.9
2436.150	-61.7	-61.9	-66.7	-5.0	10.3
2436.200	-61.7	-62.7	-67.5	-5.8	9.5
2436.250	-61.7	-60.4	-65.2	-3.5	11.8
2436.300	-61.7	-60.3	-65.1	-3.4	11.9
2436.350	-61.7	-60.2	-65.0	-3.3	12.0
2436.400	-61.7	-60.0	-64.8	-3.1	12.2
2436.450	-61.7	-60.3	-65.1	-3.4	11.9
2436.500	-61.7	-59.9	-64.7	-3.0	12.3
2436.550	-61.7	-59.1	-63.9	-2.2	13.1
2436.600	-61.7	-58.4	-63.2	-1.5	13.8
2436.650	-61.7	-57.8	-62.6	-0.9	14.4
2436.700	-61.7	-57.0	-61.8	-0.1	15.2
2436.750	-61.7	-55.7	-60.5	1.2	16.5
2436.800	-61.7	-54.4	-59.2	2.5	17.8
2436.850	-61.7	-52.5	-57.3	4.4	19.7
2436.900	-61.7	-51.0	-55.8	5.9	21.2
2436.950	-61.7	-49.9	-54.7	7.0	22.3
2437.000	-61.7	-50.0	-54.8	6.9	22.2

2437.050	-61.7	-49.9	-54.7	7.0	22.3
2437.100	-61.7	-52.0	-56.8	4.9	20.2
2437.150	-61.7	-53.6	-58.4	3.3	18.6
2437.200	-61.7	-55.3	-60.1	1.6	16.9
2437.250	-61.7	-56.5	-61.3	0.4	15.7
2437.300	-61.7	-57.5	-62.3	-0.6	14.7
2437.350	-61.7	-58.2	-63.0	-1.3	14.0
2437.400	-61.7	-58.8	-63.6	-1.9	13.4
2437.450	-61.7	-60.0	-64.8	-3.1	12.2
2437.500	-61.7	-60.0	-64.8	-3.1	12.2
2437.550	-61.7	-60.3	-65.1	-3.4	11.9
2437.600	-61.7	-60.6	-65.4	-3.7	11.6
2437.650	-61.7	-60.5	-65.3	-3.6	11.7
2437.700	-61.7	-60.6	-65.4	-3.7	11.6
2437.750	-61.7	-60.9	-65.7	-4.0	11.3
2437.800	-61.7	-61.4	-66.2	-4.5	10.8
2437.850	-61.7	-60.5	-65.3	-3.6	11.7
2437.900	-61.7	-60.0	-64.8	-3.1	12.2
2437.950	-61.7	-61.0	-65.8	-4.1	11.2
2438.000	-61.7	-62.0	-66.8	-5.1	10.2
2438.050	-61.7	-61.7	-66.5	-4.8	10.5
2438.100	-61.7	-59.4	-64.2	-2.5	12.8
2438.150	-61.7	-62.0	-66.8	-5.1	10.2
2438.200	-61.7	-61.9	-66.7	-5.0	10.3
2438.250	-61.7	-61.6	-66.4	-4.7	10.6
2438.300	-61.7	-58.8	-63.6	-1.9	13.4
2438.350	-61.7	-61.5	-66.3	-4.6	10.7
2438.400	-61.7	-61.6	-66.4	-4.7	10.6
2438.450	-61.7	-61.1	-65.9	-4.2	11.1
2438.500	-61.7	-61.7	-66.5	-4.8	10.5
2438.550	-61.7	-61.9	-66.7	-5.0	10.3
2438.600	-61.7	-60.9	-65.7	-4.0	11.3
2438.650	-61.7	-59.9	-64.7	-3.0	12.3
2438.700	-61.7	-59.9	-64.7	-3.0	12.3
2438.750	-61.7	-62.8	-67.6	-5.9	9.4
2438.800	-61.7	-62.8	-67.6	-5.9	9.4
2438.850	-61.7	-61.6	-66.4	-4.7	10.6
2438.900	-61.7	-62.0	-66.8	-5.1	10.2
2438.950	-61.7	-62.8	-67.6	-5.9	9.4
2439.000	-61.7	-62.7	-67.5	-5.8	9.5
2439.050	-61.7	-62.0	-66.8	-5.1	10.2
2439.100	-61.7	-61.9	-66.7	-5.0	10.3
2439.150	-61.7	-62.7	-67.5	-5.8	9.5
2439.200	-61.7	-62.5	-67.3	-5.6	9.7
2439.250	-61.7	-62.3	-67.1	-5.4	9.9
2439.300	-61.7	-61.8	-66.6	-4.9	10.4
2439.350	-61.7	-61.9	-66.7	-5.0	10.3
2439.400	-61.7	-61.8	-66.6	-4.9	10.4
2439.450	-61.7	-62.0	-66.8	-5.1	10.2
2439.500	-61.7	-62.2	-67.0	-5.3	10.0
2439.550	-61.7	-62.4	-67.2	-5.5	9.8
2439.600	-61.7	-62.0	-66.8	-5.1	10.2

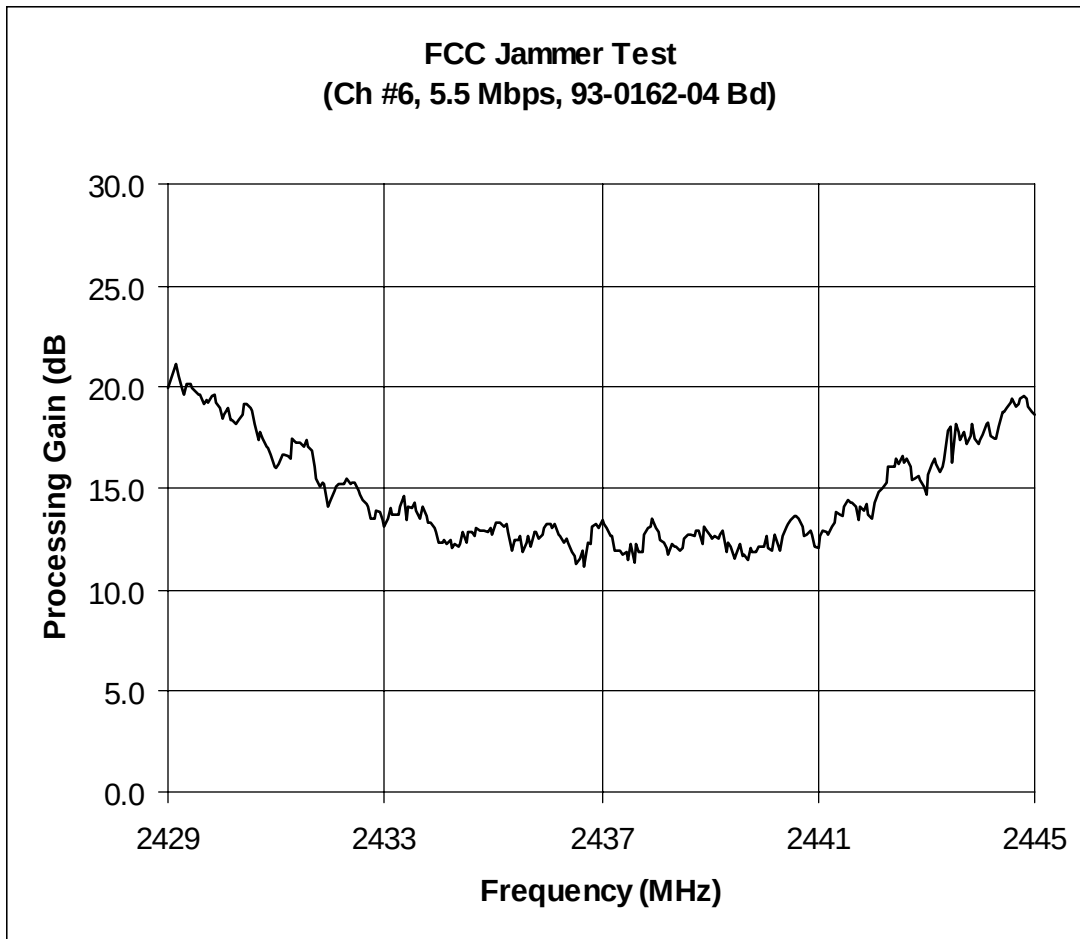
2439.650	-61.7	-62.4	-67.2	-5.5	9.8
2439.700	-61.7	-63.5	-68.3	-6.6	8.7
2439.750	-61.7	-63.3	-68.1	-6.4	8.9
2439.800	-61.7	-62.8	-67.6	-5.9	9.4
2439.850	-61.7	-62.3	-67.1	-5.4	9.9
2439.900	-61.7	-62.3	-67.1	-5.4	9.9
2439.950	-61.7	-62.8	-67.6	-5.9	9.4
2440.000	-61.7	-62.9	-67.7	-6.0	9.3
2440.050	-61.7	-62.1	-66.9	-5.2	10.1
2440.100	-61.7	-61.8	-66.6	-4.9	10.4
2440.150	-61.7	-62.1	-66.9	-5.2	10.1
2440.200	-61.7	-62.1	-66.9	-5.2	10.1
2440.250	-61.7	-62.0	-66.8	-5.1	10.2
2440.300	-61.7	-61.7	-66.5	-4.8	10.5
2440.350	-61.7	-61.6	-66.4	-4.7	10.6
2440.400	-61.7	-61.7	-66.5	-4.8	10.5
2440.450	-61.7	-61.5	-66.3	-4.6	10.7
2440.500	-61.7	-61.6	-66.4	-4.7	10.6
2440.550	-61.7	-61.9	-66.7	-5.0	10.3
2440.600	-61.7	-61.5	-66.3	-4.6	10.7
2440.650	-61.7	-62.1	-66.9	-5.2	10.1
2440.700	-61.7	-62.2	-67.0	-5.3	10.0
2440.750	-61.7	-62.3	-67.1	-5.4	9.9
2440.800	-61.7	-62.0	-66.8	-5.1	10.2
2440.850	-61.7	-61.5	-66.3	-4.6	10.7
2440.900	-61.7	-61.1	-65.9	-4.2	11.1
2440.950	-61.7	-61.6	-66.4	-4.7	10.6
2441.000	-61.7	-61.6	-66.4	-4.7	10.6
2441.050	-61.7	-61.2	-66.0	-4.3	11.0
2441.100	-61.7	-60.5	-65.3	-3.6	11.7
2441.150	-61.7	-61.4	-66.2	-4.5	10.8
2441.200	-61.7	-61.0	-65.8	-4.1	11.2
2441.250	-61.7	-61.6	-66.4	-4.7	10.6
2441.300	-61.7	-60.0	-64.8	-3.1	12.2
2441.350	-61.7	-60.6	-65.4	-3.7	11.6
2441.400	-61.7	-61.0	-65.8	-4.1	11.2
2441.450	-61.7	-60.9	-65.7	-4.0	11.3
2441.500	-61.7	-60.8	-65.6	-3.9	11.4
2441.550	-61.7	-61.4	-66.2	-4.5	10.8
2441.600	-61.7	-60.4	-65.2	-3.5	11.8
2441.650	-61.7	-61.4	-66.2	-4.5	10.8
2441.700	-61.7	-61.5	-66.3	-4.6	10.7
2441.750	-61.7	-61.7	-66.5	-4.8	10.5
2441.800	-61.7	-61.7	-66.5	-4.8	10.5
2441.850	-61.7	-61.0	-65.8	-4.1	11.2
2441.900	-61.7	-60.7	-65.5	-3.8	11.5
2441.950	-61.7	-60.9	-65.7	-4.0	11.3
2442.000	-61.7	-60.6	-65.4	-3.7	11.6
2442.050	-61.7	-59.9	-64.7	-3.0	12.3
2442.100	-61.7	-58.0	-62.8	-1.1	14.2
2442.150	-61.7	-58.9	-63.7	-2.0	13.3
2442.200	-61.7	-57.4	-62.2	-0.5	14.8

2442.250	-61.7	-56.9	-61.7	0.0	15.3
2442.300	-61.7	-54.6	-59.4	2.3	17.6
2442.350	-61.7	-52.8	-57.6	4.1	19.4
2442.400	-61.7	-51.9	-56.7	5.0	20.3
2442.450	-61.7	-50.6	-55.4	6.3	21.6
2442.500	-61.7	-50.3	-55.1	6.6	21.9
2442.550	-61.7	-50.8	-55.6	6.1	21.4
2442.600	-61.7	-51.5	-56.3	5.4	20.7
2442.650	-61.7	-53.5	-58.3	3.4	18.7
2442.700	-61.7	-55.0	-59.8	1.9	17.2
2442.750	-61.7	-56.5	-61.3	0.4	15.7
2442.800	-61.7	-57.0	-61.8	-0.1	15.2
2442.850	-61.7	-56.8	-61.6	0.1	15.4
2442.900	-61.7	-57.9	-62.7	-1.0	14.3
2442.950	-61.7	-58.5	-63.3	-1.6	13.7
2443.000	-61.7	-59.2	-64.0	-2.3	13.0
2443.050	-61.7	-58.8	-63.6	-1.9	13.4
2443.100	-61.7	-58.4	-63.2	-1.5	13.8
2443.150	-61.7	-58.8	-63.6	-1.9	13.4
2443.200	-61.7	-58.6	-63.4	-1.7	13.6
2443.250	-61.7	-58.4	-63.2	-1.5	13.8
2443.300	-61.7	-56.9	-61.7	0.0	15.3
2443.350	-61.7	-57.3	-62.1	-0.4	14.9
2443.400	-61.7	-56.8	-61.6	0.1	15.4
2443.450	-61.7	-56.4	-61.2	0.5	15.8
2443.500	-61.7	-55.5	-60.3	1.4	16.7
2443.550	-61.7	-55.9	-60.7	1.0	16.3
2443.600	-61.7	-55.0	-59.8	1.9	17.2
2443.650	-61.7	-55.3	-60.1	1.6	16.9
2443.700	-61.7	-54.9	-59.7	2.0	17.3
2443.750	-61.7	-55.3	-60.1	1.6	16.9
2443.800	-61.7	-54.8	-59.6	2.1	17.4
2443.850	-61.7	-54.6	-59.4	2.3	17.6
2443.900	-61.7	-55.0	-59.8	1.9	17.2
2443.950	-61.7	-55.3	-60.1	1.6	16.9
2444.000	-61.7	-55.4	-60.2	1.5	16.8
2444.050	-61.7	-55.2	-60.0	1.7	17.0
2444.100	-61.7	-54.9	-59.7	2.0	17.3
2444.150	-61.7	-55.2	-60.0	1.7	17.0
2444.200	-61.7	-55.3	-60.1	1.6	16.9
2444.250	-61.7	-55.5	-60.3	1.4	16.7
2444.300	-61.7	-55.4	-60.2	1.5	16.8
2444.350	-61.7	-54.6	-59.4	2.3	17.6
2444.400	-61.7	-54.4	-59.2	2.5	17.8
2444.450	-61.7	-54.3	-59.1	2.6	17.9
2444.500	-61.7	-54.2	-59.0	2.7	18.0
2444.550	-61.7	-54.1	-58.9	2.8	18.1
2444.600	-61.7	-53.9	-58.7	3.0	18.3
2444.650	-61.7	-53.9	-58.7	3.0	18.3
2444.700	-61.7	-53.7	-58.5	3.2	18.5
2444.750	-61.7	-53.5	-58.3	3.4	18.7
2444.800	-61.7	-53.4	-58.2	3.5	18.8

2444.850	-61.7	-53.5	-58.3	3.4	18.7
2444.900	-61.7	-53.9	-58.7	3.0	18.3
2444.950	-61.7	-54.3	-59.1	2.6	17.9
2445.000	-61.7	-54.5	-59.3	2.4	17.7

Appendix C: Measured Data Ch #6 5.5 Mb/s

(S/N)_o = 13.7 dB
M_j = -3.3 dB @ 20th Percentile
L_{sys} = 2 dB
G_p = 12.4 dB



610030698, Auto, simplex measurement, 162-04 xmtr. 5.5Mb/s, Estimated BER s/w

Freq	XMIT RF Level	Raw S.G. RF Level	Corrected S.G. RF Level	Mj = J/S	Gp = (S/N) _o + Mj + L _{sys}
2429.000	-62.2	-53.2	-58.0	4.2	19.9
2429.050	-62.2	-52.8	-57.6	4.6	20.3
2429.100	-62.2	-52.2	-57.0	5.2	20.9
2429.150	-62.2	-52.0	-56.8	5.4	21.1
2429.200	-62.2	-52.6	-57.4	4.8	20.5

1

29 Oct 2001

5755 Central Ave.
Boulder, CO 80301

2429.250	-62.2	-53.3	-58.1	4.1	19.8
2429.300	-62.2	-53.5	-58.3	3.9	19.6
2429.350	-62.2	-53.0	-57.8	4.4	20.1
2429.400	-62.2	-53.0	-57.8	4.4	20.1
2429.450	-62.2	-53.2	-58.0	4.2	19.9
2429.500	-62.2	-53.4	-58.2	4.0	19.7
2429.550	-62.2	-53.5	-58.3	3.9	19.6
2429.600	-62.2	-53.5	-58.3	3.9	19.6
2429.650	-62.2	-54.0	-58.8	3.4	19.1
2429.700	-62.2	-53.8	-58.6	3.6	19.3
2429.750	-62.2	-53.9	-58.7	3.5	19.2
2429.800	-62.2	-53.6	-58.4	3.8	19.5
2429.850	-62.2	-53.5	-58.3	3.9	19.6
2429.900	-62.2	-53.9	-58.7	3.5	19.2
2429.950	-62.2	-54.2	-59.0	3.2	18.9
2430.000	-62.2	-54.7	-59.5	2.7	18.4
2430.050	-62.2	-54.5	-59.3	2.9	18.6
2430.100	-62.2	-54.2	-59.0	3.2	18.9
2430.150	-62.2	-54.8	-59.6	2.6	18.3
2430.200	-62.2	-54.8	-59.6	2.6	18.3
2430.250	-62.2	-55.0	-59.8	2.4	18.1
2430.300	-62.2	-54.8	-59.6	2.6	18.3
2430.350	-62.2	-54.5	-59.3	2.9	18.6
2430.400	-62.2	-54.0	-58.8	3.4	19.1
2430.450	-62.2	-54.0	-58.8	3.4	19.1
2430.500	-62.2	-54.2	-59.0	3.2	18.9
2430.550	-62.2	-54.3	-59.1	3.1	18.8
2430.600	-62.2	-55.0	-59.8	2.4	18.1
2430.650	-62.2	-55.7	-60.5	1.7	17.4
2430.700	-62.2	-55.3	-60.1	2.1	17.8
2430.750	-62.2	-55.6	-60.4	1.8	17.5
2430.800	-62.2	-56.0	-60.8	1.4	17.1
2430.850	-62.2	-56.1	-60.9	1.3	17.0
2430.900	-62.2	-56.4	-61.2	1.0	16.7
2430.950	-62.2	-57.0	-61.8	0.4	16.1
2431.000	-62.2	-57.1	-61.9	0.3	16.0
2431.050	-62.2	-56.9	-61.7	0.5	16.2
2431.100	-62.2	-56.4	-61.2	1.0	16.7
2431.150	-62.2	-56.4	-61.2	1.0	16.7
2431.200	-62.2	-56.5	-61.3	0.9	16.6
2431.250	-62.2	-56.6	-61.4	0.8	16.5
2431.300	-62.2	-55.6	-60.4	1.8	17.5
2431.350	-62.2	-55.8	-60.6	1.6	17.3
2431.400	-62.2	-55.8	-60.6	1.6	17.3
2431.450	-62.2	-55.8	-60.6	1.6	17.3
2431.500	-62.2	-56.0	-60.8	1.4	17.1
2431.550	-62.2	-55.7	-60.5	1.7	17.4
2431.600	-62.2	-56.0	-60.8	1.4	17.1
2431.650	-62.2	-56.2	-61.0	1.2	16.9
2431.700	-62.2	-57.0	-61.8	0.4	16.1
2431.750	-62.2	-57.6	-62.4	-0.2	15.5
2431.800	-62.2	-58.0	-62.8	-0.6	15.1

2431.850	-62.2	-57.8	-62.6	-0.4	15.3
2431.900	-62.2	-57.9	-62.7	-0.5	15.2
2431.950	-62.2	-59.0	-63.8	-1.6	14.1
2432.000	-62.2	-58.7	-63.5	-1.3	14.4
2432.050	-62.2	-58.2	-63.0	-0.8	14.9
2432.100	-62.2	-58.0	-62.8	-0.6	15.1
2432.150	-62.2	-57.9	-62.7	-0.5	15.2
2432.200	-62.2	-57.9	-62.7	-0.5	15.2
2432.250	-62.2	-57.9	-62.7	-0.5	15.2
2432.300	-62.2	-57.6	-62.4	-0.2	15.5
2432.350	-62.2	-57.9	-62.7	-0.5	15.2
2432.400	-62.2	-57.8	-62.6	-0.4	15.3
2432.450	-62.2	-57.8	-62.6	-0.4	15.3
2432.500	-62.2	-58.2	-63.0	-0.8	14.9
2432.550	-62.2	-58.4	-63.2	-1.0	14.7
2432.600	-62.2	-58.7	-63.5	-1.3	14.4
2432.650	-62.2	-58.9	-63.7	-1.5	14.2
2432.700	-62.2	-59.0	-63.8	-1.6	14.1
2432.750	-62.2	-59.6	-64.4	-2.2	13.5
2432.800	-62.2	-59.6	-64.4	-2.2	13.5
2432.850	-62.2	-59.2	-64.0	-1.8	13.9
2432.900	-62.2	-59.3	-64.1	-1.9	13.8
2432.950	-62.2	-59.7	-64.5	-2.3	13.4
2433.000	-62.2	-60.0	-64.8	-2.6	13.1
2433.050	-62.2	-59.6	-64.4	-2.2	13.5
2433.100	-62.2	-59.1	-63.9	-1.7	14.0
2433.150	-62.2	-59.4	-64.2	-2.0	13.7
2433.200	-62.2	-59.4	-64.2	-2.0	13.7
2433.250	-62.2	-59.4	-64.2	-2.0	13.7
2433.300	-62.2	-59.0	-63.8	-1.6	14.1
2433.350	-62.2	-58.5	-63.3	-1.1	14.6
2433.400	-62.2	-59.7	-64.5	-2.3	13.4
2433.450	-62.2	-59.0	-63.8	-1.6	14.1
2433.500	-62.2	-59.1	-63.9	-1.7	14.0
2433.550	-62.2	-58.8	-63.6	-1.4	14.3
2433.600	-62.2	-59.2	-64.0	-1.8	13.9
2433.650	-62.2	-59.6	-64.4	-2.2	13.5
2433.700	-62.2	-59.0	-63.8	-1.6	14.1
2433.750	-62.2	-59.5	-64.3	-2.1	13.6
2433.800	-62.2	-59.8	-64.6	-2.4	13.3
2433.850	-62.2	-59.8	-64.6	-2.4	13.3
2433.900	-62.2	-60.1	-64.9	-2.7	13.0
2433.950	-62.2	-60.3	-65.1	-2.9	12.8
2434.000	-62.2	-60.8	-65.6	-3.4	12.3
2434.050	-62.2	-60.8	-65.6	-3.4	12.3
2434.100	-62.2	-60.7	-65.5	-3.3	12.4
2434.150	-62.2	-60.9	-65.7	-3.5	12.2
2434.200	-62.2	-60.7	-65.5	-3.3	12.4
2434.250	-62.2	-61.1	-65.9	-3.7	12.0
2434.300	-62.2	-60.9	-65.7	-3.5	12.2
2434.350	-62.2	-61.0	-65.8	-3.6	12.1
2434.400	-62.2	-60.9	-65.7	-3.5	12.2

2434.450	-62.2	-60.3	-65.1	-2.9	12.8
2434.500	-62.2	-60.8	-65.6	-3.4	12.3
2434.550	-62.2	-60.3	-65.1	-2.9	12.8
2434.600	-62.2	-60.3	-65.1	-2.9	12.8
2434.650	-62.2	-60.5	-65.3	-3.1	12.6
2434.700	-62.2	-60.1	-64.9	-2.7	13.0
2434.750	-62.2	-60.2	-65.0	-2.8	12.9
2434.800	-62.2	-60.2	-65.0	-2.8	12.9
2434.850	-62.2	-60.2	-65.0	-2.8	12.9
2434.900	-62.2	-60.3	-65.1	-2.9	12.8
2434.950	-62.2	-60.1	-64.9	-2.7	13.0
2435.000	-62.2	-60.4	-65.2	-3.0	12.7
2435.050	-62.2	-59.8	-64.6	-2.4	13.3
2435.100	-62.2	-59.8	-64.6	-2.4	13.3
2435.150	-62.2	-59.8	-64.6	-2.4	13.3
2435.200	-62.2	-60.0	-64.8	-2.6	13.1
2435.250	-62.2	-59.9	-64.7	-2.5	13.2
2435.300	-62.2	-60.3	-65.1	-2.9	12.8
2435.350	-62.2	-61.2	-66.0	-3.8	11.9
2435.400	-62.2	-60.7	-65.5	-3.3	12.4
2435.450	-62.2	-60.7	-65.5	-3.3	12.4
2435.500	-62.2	-60.5	-65.3	-3.1	12.6
2435.550	-62.2	-61.3	-66.1	-3.9	11.8
2435.600	-62.2	-60.8	-65.6	-3.4	12.3
2435.650	-62.2	-60.5	-65.3	-3.1	12.6
2435.700	-62.2	-61.0	-65.8	-3.6	12.1
2435.750	-62.2	-60.3	-65.1	-2.9	12.8
2435.800	-62.2	-60.3	-65.1	-2.9	12.8
2435.850	-62.2	-60.6	-65.4	-3.2	12.5
2435.900	-62.2	-60.4	-65.2	-3.0	12.7
2435.950	-62.2	-60.1	-64.9	-2.7	13.0
2436.000	-62.2	-59.9	-64.7	-2.5	13.2
2436.050	-62.2	-59.9	-64.7	-2.5	13.2
2436.100	-62.2	-60.1	-64.9	-2.7	13.0
2436.150	-62.2	-59.9	-64.7	-2.5	13.2
2436.200	-62.2	-60.4	-65.2	-3.0	12.7
2436.250	-62.2	-60.5	-65.3	-3.1	12.6
2436.300	-62.2	-60.8	-65.6	-3.4	12.3
2436.350	-62.2	-60.6	-65.4	-3.2	12.5
2436.400	-62.2	-60.8	-65.6	-3.4	12.3
2436.450	-62.2	-61.3	-66.1	-3.9	11.8
2436.500	-62.2	-61.5	-66.3	-4.1	11.6
2436.550	-62.2	-61.9	-66.7	-4.5	11.2
2436.600	-62.2	-61.6	-66.4	-4.2	11.5
2436.650	-62.2	-61.2	-66.0	-3.8	11.9
2436.700	-62.2	-62.0	-66.8	-4.6	11.1
2436.750	-62.2	-60.8	-65.6	-3.4	12.3
2436.800	-62.2	-60.9	-65.7	-3.5	12.2
2436.850	-62.2	-60.0	-64.8	-2.6	13.1
2436.900	-62.2	-59.9	-64.7	-2.5	13.2
2436.950	-62.2	-60.1	-64.9	-2.7	13.0
2437.000	-62.2	-59.7	-64.5	-2.3	13.4

2437.050	-62.2	-59.9	-64.7	-2.5	13.2
2437.100	-62.2	-60.1	-64.9	-2.7	13.0
2437.150	-62.2	-60.5	-65.3	-3.1	12.6
2437.200	-62.2	-60.5	-65.3	-3.1	12.6
2437.250	-62.2	-61.2	-66.0	-3.8	11.9
2437.300	-62.2	-61.2	-66.0	-3.8	11.9
2437.350	-62.2	-61.2	-66.0	-3.8	11.9
2437.400	-62.2	-61.4	-66.2	-4.0	11.7
2437.450	-62.2	-61.3	-66.1	-3.9	11.8
2437.500	-62.2	-61.7	-66.5	-4.3	11.4
2437.550	-62.2	-60.9	-65.7	-3.5	12.2
2437.600	-62.2	-61.8	-66.6	-4.4	11.3
2437.650	-62.2	-60.9	-65.7	-3.5	12.2
2437.700	-62.2	-61.3	-66.1	-3.9	11.8
2437.750	-62.2	-61.3	-66.1	-3.9	11.8
2437.800	-62.2	-60.4	-65.2	-3.0	12.7
2437.850	-62.2	-60.1	-64.9	-2.7	13.0
2437.900	-62.2	-60.0	-64.8	-2.6	13.1
2437.950	-62.2	-59.6	-64.4	-2.2	13.5
2438.000	-62.2	-60.1	-64.9	-2.7	13.0
2438.050	-62.2	-60.3	-65.1	-2.9	12.8
2438.100	-62.2	-60.7	-65.5	-3.3	12.4
2438.150	-62.2	-60.8	-65.6	-3.4	12.3
2438.200	-62.2	-61.1	-65.9	-3.7	12.0
2438.250	-62.2	-61.4	-66.2	-4.0	11.7
2438.300	-62.2	-60.9	-65.7	-3.5	12.2
2438.350	-62.2	-61.0	-65.8	-3.6	12.1
2438.400	-62.2	-61.0	-65.8	-3.6	12.1
2438.450	-62.2	-61.2	-66.0	-3.8	11.9
2438.500	-62.2	-61.1	-65.9	-3.7	12.0
2438.550	-62.2	-60.6	-65.4	-3.2	12.5
2438.600	-62.2	-60.4	-65.2	-3.0	12.7
2438.650	-62.2	-60.4	-65.2	-3.0	12.7
2438.700	-62.2	-60.5	-65.3	-3.1	12.6
2438.750	-62.2	-60.2	-65.0	-2.8	12.9
2438.800	-62.2	-60.2	-65.0	-2.8	12.9
2438.850	-62.2	-60.9	-65.7	-3.5	12.2
2438.900	-62.2	-60.0	-64.8	-2.6	13.1
2438.950	-62.2	-60.2	-65.0	-2.8	12.9
2439.000	-62.2	-60.5	-65.3	-3.1	12.6
2439.050	-62.2	-60.6	-65.4	-3.2	12.5
2439.100	-62.2	-60.5	-65.3	-3.1	12.6
2439.150	-62.2	-60.6	-65.4	-3.2	12.5
2439.200	-62.2	-60.4	-65.2	-3.0	12.7
2439.250	-62.2	-60.2	-65.0	-2.8	12.9
2439.300	-62.2	-61.3	-66.1	-3.9	11.8
2439.350	-62.2	-60.8	-65.6	-3.4	12.3
2439.400	-62.2	-61.0	-65.8	-3.6	12.1
2439.450	-62.2	-61.6	-66.4	-4.2	11.5
2439.500	-62.2	-61.4	-66.2	-4.0	11.7
2439.550	-62.2	-60.9	-65.7	-3.5	12.2
2439.600	-62.2	-61.5	-66.3	-4.1	11.6

2439.650	-62.2	-61.4	-66.2	-4.0	11.7
2439.700	-62.2	-61.7	-66.5	-4.3	11.4
2439.750	-62.2	-61.1	-65.9	-3.7	12.0
2439.800	-62.2	-61.3	-66.1	-3.9	11.8
2439.850	-62.2	-61.3	-66.1	-3.9	11.8
2439.900	-62.2	-61.0	-65.8	-3.6	12.1
2439.950	-62.2	-61.0	-65.8	-3.6	12.1
2440.000	-62.2	-61.0	-65.8	-3.6	12.1
2440.050	-62.2	-60.5	-65.3	-3.1	12.6
2440.100	-62.2	-61.1	-65.9	-3.7	12.0
2440.150	-62.2	-61.2	-66.0	-3.8	11.9
2440.200	-62.2	-60.4	-65.2	-3.0	12.7
2440.250	-62.2	-60.6	-65.4	-3.2	12.5
2440.300	-62.2	-61.2	-66.0	-3.8	11.9
2440.350	-62.2	-60.5	-65.3	-3.1	12.6
2440.400	-62.2	-60.0	-64.8	-2.6	13.1
2440.450	-62.2	-59.9	-64.7	-2.5	13.2
2440.500	-62.2	-59.7	-64.5	-2.3	13.4
2440.550	-62.2	-59.5	-64.3	-2.1	13.6
2440.600	-62.2	-59.5	-64.3	-2.1	13.6
2440.650	-62.2	-59.6	-64.4	-2.2	13.5
2440.700	-62.2	-60.0	-64.8	-2.6	13.1
2440.750	-62.2	-60.5	-65.3	-3.1	12.6
2440.800	-62.2	-60.4	-65.2	-3.0	12.7
2440.850	-62.2	-60.2	-65.0	-2.8	12.9
2440.900	-62.2	-60.4	-65.2	-3.0	12.7
2440.950	-62.2	-61.0	-65.8	-3.6	12.1
2441.000	-62.2	-61.1	-65.9	-3.7	12.0
2441.050	-62.2	-60.5	-65.3	-3.1	12.6
2441.100	-62.2	-60.2	-65.0	-2.8	12.9
2441.150	-62.2	-60.3	-65.1	-2.9	12.8
2441.200	-62.2	-60.4	-65.2	-3.0	12.7
2441.250	-62.2	-60.0	-64.8	-2.6	13.1
2441.300	-62.2	-59.8	-64.6	-2.4	13.3
2441.350	-62.2	-59.3	-64.1	-1.9	13.8
2441.400	-62.2	-59.4	-64.2	-2.0	13.7
2441.450	-62.2	-59.5	-64.3	-2.1	13.6
2441.500	-62.2	-59.0	-63.8	-1.6	14.1
2441.550	-62.2	-58.7	-63.5	-1.3	14.4
2441.600	-62.2	-58.8	-63.6	-1.4	14.3
2441.650	-62.2	-58.8	-63.6	-1.4	14.3
2441.700	-62.2	-59.0	-63.8	-1.6	14.1
2441.750	-62.2	-59.7	-64.5	-2.3	13.4
2441.800	-62.2	-59.0	-63.8	-1.6	14.1
2441.850	-62.2	-59.2	-64.0	-1.8	13.9
2441.900	-62.2	-58.9	-63.7	-1.5	14.2
2441.950	-62.2	-59.4	-64.2	-2.0	13.7
2442.000	-62.2	-59.6	-64.4	-2.2	13.5
2442.050	-62.2	-58.8	-63.6	-1.4	14.3
2442.100	-62.2	-58.3	-63.1	-0.9	14.8
2442.150	-62.2	-58.2	-63.0	-0.8	14.9
2442.200	-62.2	-58.1	-62.9	-0.7	15.0

2442.250	-62.2	-57.8	-62.6	-0.4	15.3
2442.300	-62.2	-57.0	-61.8	0.4	16.1
2442.350	-62.2	-57.0	-61.8	0.4	16.1
2442.400	-62.2	-57.0	-61.8	0.4	16.1
2442.450	-62.2	-56.6	-61.4	0.8	16.5
2442.500	-62.2	-56.9	-61.7	0.5	16.2
2442.550	-62.2	-56.5	-61.3	0.9	16.6
2442.600	-62.2	-56.8	-61.6	0.6	16.3
2442.650	-62.2	-56.6	-61.4	0.8	16.5
2442.700	-62.2	-57.0	-61.8	0.4	16.1
2442.750	-62.2	-57.7	-62.5	-0.3	15.4
2442.800	-62.2	-57.6	-62.4	-0.2	15.5
2442.850	-62.2	-57.5	-62.3	-0.1	15.6
2442.900	-62.2	-57.7	-62.5	-0.3	15.4
2442.950	-62.2	-58.0	-62.8	-0.6	15.1
2443.000	-62.2	-58.4	-63.2	-1.0	14.7
2443.050	-62.2	-57.4	-62.2	0.0	15.7
2443.100	-62.2	-56.9	-61.7	0.5	16.2
2443.150	-62.2	-56.6	-61.4	0.8	16.5
2443.200	-62.2	-56.9	-61.7	0.5	16.2
2443.250	-62.2	-57.3	-62.1	0.1	15.8
2443.300	-62.2	-57.0	-61.8	0.4	16.1
2443.350	-62.2	-56.7	-61.5	0.7	16.4
2443.400	-62.2	-55.2	-60.0	2.2	17.9
2443.450	-62.2	-55.1	-59.9	2.3	18.0
2443.500	-62.2	-56.8	-61.6	0.6	16.3
2443.550	-62.2	-55.0	-59.8	2.4	18.1
2443.600	-62.2	-55.3	-60.1	2.1	17.8
2443.650	-62.2	-55.7	-60.5	1.7	17.4
2443.700	-62.2	-55.3	-60.1	2.1	17.8
2443.750	-62.2	-55.9	-60.7	1.5	17.2
2443.800	-62.2	-55.5	-60.3	1.9	17.6
2443.850	-62.2	-55.0	-59.8	2.4	18.1
2443.900	-62.2	-55.6	-60.4	1.8	17.5
2443.950	-62.2	-55.9	-60.7	1.5	17.2
2444.000	-62.2	-55.7	-60.5	1.7	17.4
2444.050	-62.2	-55.4	-60.2	2.0	17.7
2444.100	-62.2	-55.0	-59.8	2.4	18.1
2444.150	-62.2	-54.9	-59.7	2.5	18.2
2444.200	-62.2	-55.5	-60.3	1.9	17.6
2444.250	-62.2	-55.6	-60.4	1.8	17.5
2444.300	-62.2	-55.6	-60.4	1.8	17.5
2444.350	-62.2	-55.1	-59.9	2.3	18.0
2444.400	-62.2	-54.4	-59.2	3.0	18.7
2444.450	-62.2	-54.4	-59.2	3.0	18.7
2444.500	-62.2	-54.2	-59.0	3.2	18.9
2444.550	-62.2	-53.9	-58.7	3.5	19.2
2444.600	-62.2	-53.7	-58.5	3.7	19.4
2444.650	-62.2	-54.1	-58.9	3.3	19.0
2444.700	-62.2	-54.0	-58.8	3.4	19.1
2444.750	-62.2	-53.7	-58.5	3.7	19.4
2444.800	-62.2	-53.6	-58.4	3.8	19.5

1

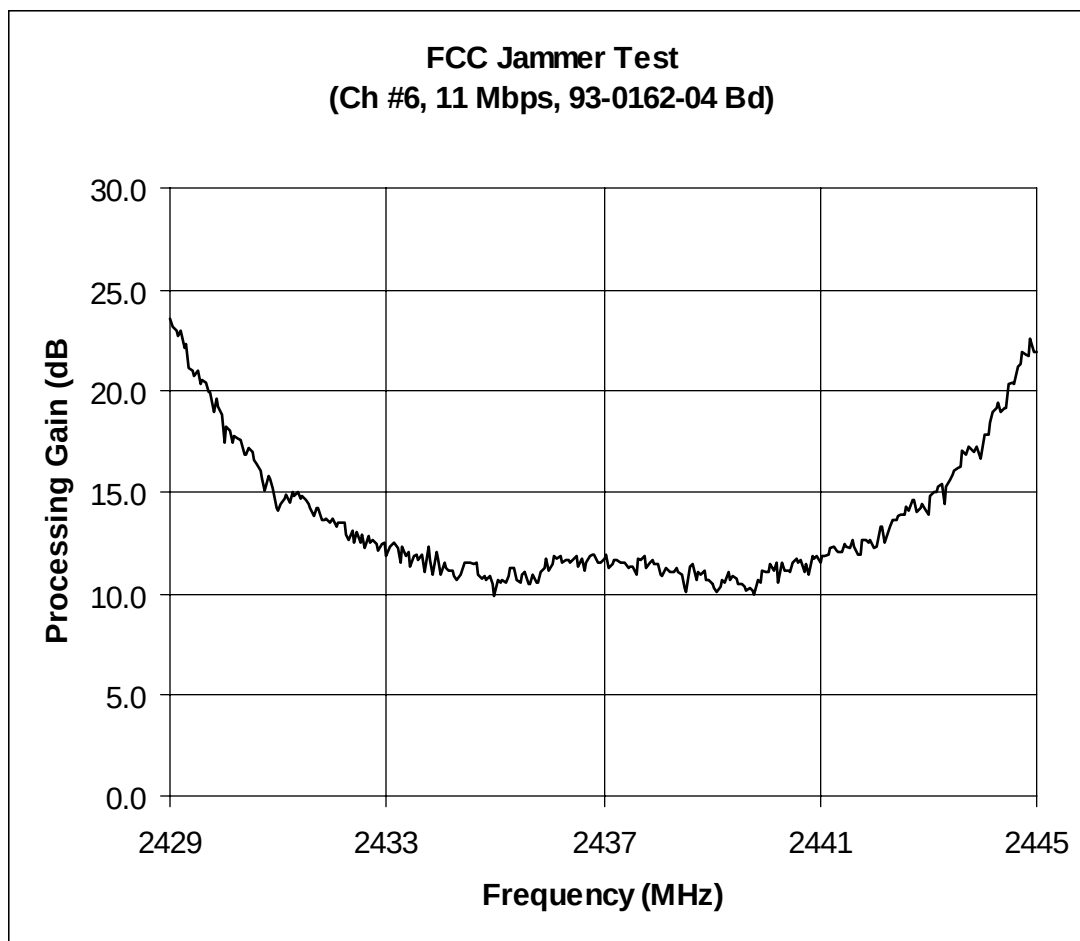
5755 Central Ave.
Boulder, CO 80301

29 Oct 2001

2444.850	-62.2	-53.7	-58.5	3.7	19.4
2444.900	-62.2	-54.1	-58.9	3.3	19.0
2444.950	-62.2	-54.4	-59.2	3.0	18.7
2445.000	-62.2	-54.5	-59.3	2.9	18.6

Appendix D: Measured Data Ch #6 11 Mb/s

$(S/N)_o = 17.0$ dB
 $M_j = -7.9$ dB @ 20th Percentile
 $L_{sys} = 2$ dB
 $G_p = 11.1$ dB



610030698, Auto, simplex measurement, 162-04 xmtr. 11Mb/s, Estimated BER s/w

Freq	XMIT RF Level	Raw S.G. RF Level	Corrected S.G. RF Level	$M_j = J/S$	$G_p = (S/N)_o + M_j + L_{sys}$
2429.000	-61.7	-52.3	-57.1	4.6	23.6
2429.050	-61.7	-52.7	-57.5	4.2	23.2
2429.100	-61.7	-52.9	-57.7	4.0	23.0
2429.150	-61.7	-53.2	-58.0	3.7	22.7
2429.200	-61.7	-52.9	-57.7	4.0	23.0

1

29 Oct 2001

5755 Central Ave.
Boulder, CO 80301

2429.250	-61.7	-53.8	-58.6	3.1	22.1
2429.300	-61.7	-53.6	-58.4	3.3	22.3
2429.350	-61.7	-54.8	-59.6	2.1	21.1
2429.400	-61.7	-54.9	-59.7	2.0	21.0
2429.450	-61.7	-55.2	-60.0	1.7	20.7
2429.500	-61.7	-54.9	-59.7	2.0	21.0
2429.550	-61.7	-55.6	-60.4	1.3	20.3
2429.600	-61.7	-55.4	-60.2	1.5	20.5
2429.650	-61.7	-55.5	-60.3	1.4	20.4
2429.700	-61.7	-55.9	-60.7	1.0	20.0
2429.750	-61.7	-55.9	-60.7	1.0	20.0
2429.800	-61.7	-56.9	-61.7	0.0	19.0
2429.850	-61.7	-56.2	-61.0	0.7	19.7
2429.900	-61.7	-56.6	-61.4	0.3	19.3
2429.950	-61.7	-57.0	-61.8	-0.1	18.9
2430.000	-61.7	-58.4	-63.2	-1.5	17.5
2430.050	-61.7	-57.6	-62.4	-0.7	18.3
2430.100	-61.7	-57.8	-62.6	-0.9	18.1
2430.150	-61.7	-58.4	-63.2	-1.5	17.5
2430.200	-61.7	-58.1	-62.9	-1.2	17.8
2430.250	-61.7	-58.2	-63.0	-1.3	17.7
2430.300	-61.7	-58.3	-63.1	-1.4	17.6
2430.350	-61.7	-59.0	-63.8	-2.1	16.9
2430.400	-61.7	-59.0	-63.8	-2.1	16.9
2430.450	-61.7	-58.7	-63.5	-1.8	17.2
2430.500	-61.7	-58.9	-63.7	-2.0	17.0
2430.550	-61.7	-59.3	-64.1	-2.4	16.6
2430.600	-61.7	-59.5	-64.3	-2.6	16.4
2430.650	-61.7	-59.8	-64.6	-2.9	16.1
2430.700	-61.7	-60.2	-65.0	-3.3	15.7
2430.750	-61.7	-60.8	-65.6	-3.9	15.1
2430.800	-61.7	-60.1	-64.9	-3.2	15.8
2430.850	-61.7	-60.2	-65.0	-3.3	15.7
2430.900	-61.7	-60.7	-65.5	-3.8	15.2
2430.950	-61.7	-61.7	-66.5	-4.8	14.2
2431.000	-61.7	-61.8	-66.6	-4.9	14.1
2431.050	-61.7	-61.5	-66.3	-4.6	14.4
2431.100	-61.7	-61.2	-66.0	-4.3	14.7
2431.150	-61.7	-61.0	-65.8	-4.1	14.9
2431.200	-61.7	-61.4	-66.2	-4.5	14.5
2431.250	-61.7	-60.9	-65.7	-4.0	15.0
2431.300	-61.7	-61.1	-65.9	-4.2	14.8
2431.350	-61.7	-60.9	-65.7	-4.0	15.0
2431.400	-61.7	-61.2	-66.0	-4.3	14.7
2431.450	-61.7	-61.1	-65.9	-4.2	14.8
2431.500	-61.7	-61.3	-66.1	-4.4	14.6
2431.550	-61.7	-61.5	-66.3	-4.6	14.4
2431.600	-61.7	-61.7	-66.5	-4.8	14.2
2431.650	-61.7	-62.1	-66.9	-5.2	13.8
2431.700	-61.7	-61.7	-66.5	-4.8	14.2
2431.750	-61.7	-61.7	-66.5	-4.8	14.2
2431.800	-61.7	-62.3	-67.1	-5.4	13.6

l

5755 Central Ave.
Boulder, CO 80301

29 Oct 2001

2431.850	-61.7	-62.3	-67.1	-5.4	13.6
2431.900	-61.7	-62.2	-67.0	-5.3	13.7
2431.950	-61.7	-62.4	-67.2	-5.5	13.5
2432.000	-61.7	-62.2	-67.0	-5.3	13.7
2432.050	-61.7	-62.6	-67.4	-5.7	13.3
2432.100	-61.7	-62.4	-67.2	-5.5	13.5
2432.150	-61.7	-62.4	-67.2	-5.5	13.5
2432.200	-61.7	-62.4	-67.2	-5.5	13.5
2432.250	-61.7	-63.0	-67.8	-6.1	12.9
2432.300	-61.7	-63.2	-68.0	-6.3	12.7
2432.350	-61.7	-62.8	-67.6	-5.9	13.1
2432.400	-61.7	-63.3	-68.1	-6.4	12.6
2432.450	-61.7	-62.9	-67.7	-6.0	13.0
2432.500	-61.7	-63.3	-68.1	-6.4	12.6
2432.550	-61.7	-63.0	-67.8	-6.1	12.9
2432.600	-61.7	-63.6	-68.4	-6.7	12.3
2432.650	-61.7	-63.1	-67.9	-6.2	12.8
2432.700	-61.7	-63.3	-68.1	-6.4	12.6
2432.750	-61.7	-63.2	-68.0	-6.3	12.7
2432.800	-61.7	-63.4	-68.2	-6.5	12.5
2432.850	-61.7	-63.7	-68.5	-6.8	12.2
2432.900	-61.7	-63.4	-68.2	-6.5	12.5
2432.950	-61.7	-63.3	-68.1	-6.4	12.6
2433.000	-61.7	-64.0	-68.8	-7.1	11.9
2433.050	-61.7	-63.5	-68.3	-6.6	12.4
2433.100	-61.7	-63.4	-68.2	-6.5	12.5
2433.150	-61.7	-63.3	-68.1	-6.4	12.6
2433.200	-61.7	-63.6	-68.4	-6.7	12.3
2433.250	-61.7	-64.3	-69.1	-7.4	11.6
2433.300	-61.7	-63.5	-68.3	-6.6	12.4
2433.350	-61.7	-64.0	-68.8	-7.1	11.9
2433.400	-61.7	-63.8	-68.6	-6.9	12.1
2433.450	-61.7	-64.5	-69.3	-7.6	11.4
2433.500	-61.7	-64.0	-68.8	-7.1	11.9
2433.550	-61.7	-63.9	-68.7	-7.0	12.0
2433.600	-61.7	-64.2	-69.0	-7.3	11.7
2433.650	-61.7	-63.9	-68.7	-7.0	12.0
2433.700	-61.7	-64.8	-69.6	-7.9	11.1
2433.750	-61.7	-63.5	-68.3	-6.6	12.4
2433.800	-61.7	-64.2	-69.0	-7.3	11.7
2433.850	-61.7	-64.9	-69.7	-8.0	11.0
2433.900	-61.7	-63.8	-68.6	-6.9	12.1
2433.950	-61.7	-64.1	-68.9	-7.2	11.8
2434.000	-61.7	-64.9	-69.7	-8.0	11.0
2434.050	-61.7	-64.3	-69.1	-7.4	11.6
2434.100	-61.7	-64.6	-69.4	-7.7	11.3
2434.150	-61.7	-64.7	-69.5	-7.8	11.2
2434.200	-61.7	-64.7	-69.5	-7.8	11.2
2434.250	-61.7	-65.0	-69.8	-8.1	10.9
2434.300	-61.7	-65.2	-70.0	-8.3	10.7
2434.350	-61.7	-64.9	-69.7	-8.0	11.0
2434.400	-61.7	-64.7	-69.5	-7.8	11.2

l

5755 Central Ave.
Boulder, CO 80301

29 Oct 2001

2434.450	-61.7	-64.3	-69.1	-7.4	11.6
2434.500	-61.7	-64.3	-69.1	-7.4	11.6
2434.550	-61.7	-64.3	-69.1	-7.4	11.6
2434.600	-61.7	-64.4	-69.2	-7.5	11.5
2434.650	-61.7	-64.3	-69.1	-7.4	11.6
2434.700	-61.7	-64.9	-69.7	-8.0	11.0
2434.750	-61.7	-65.1	-69.9	-8.2	10.8
2434.800	-61.7	-65.0	-69.8	-8.1	10.9
2434.850	-61.7	-65.2	-70.0	-8.3	10.7
2434.900	-61.7	-65.0	-69.8	-8.1	10.9
2434.950	-61.7	-65.4	-70.2	-8.5	10.5
2435.000	-61.7	-66.0	-70.8	-9.1	9.9
2435.050	-61.7	-65.2	-70.0	-8.3	10.7
2435.100	-61.7	-65.3	-70.1	-8.4	10.6
2435.150	-61.7	-65.2	-70.0	-8.3	10.7
2435.200	-61.7	-65.3	-70.1	-8.4	10.6
2435.250	-61.7	-65.0	-69.8	-8.1	10.9
2435.300	-61.7	-64.6	-69.4	-7.7	11.3
2435.350	-61.7	-64.6	-69.4	-7.7	11.3
2435.400	-61.7	-65.2	-70.0	-8.3	10.7
2435.450	-61.7	-65.3	-70.1	-8.4	10.6
2435.500	-61.7	-64.9	-69.7	-8.0	11.0
2435.550	-61.7	-64.8	-69.6	-7.9	11.1
2435.600	-61.7	-65.4	-70.2	-8.5	10.5
2435.650	-61.7	-65.4	-70.2	-8.5	10.5
2435.700	-61.7	-64.9	-69.7	-8.0	11.0
2435.750	-61.7	-65.3	-70.1	-8.4	10.6
2435.800	-61.7	-65.3	-70.1	-8.4	10.6
2435.850	-61.7	-64.8	-69.6	-7.9	11.1
2435.900	-61.7	-64.6	-69.4	-7.7	11.3
2435.950	-61.7	-64.1	-68.9	-7.2	11.8
2436.000	-61.7	-64.7	-69.5	-7.8	11.2
2436.050	-61.7	-64.4	-69.2	-7.5	11.5
2436.100	-61.7	-64.0	-68.8	-7.1	11.9
2436.150	-61.7	-64.1	-68.9	-7.2	11.8
2436.200	-61.7	-64.0	-68.8	-7.1	11.9
2436.250	-61.7	-64.3	-69.1	-7.4	11.6
2436.300	-61.7	-64.2	-69.0	-7.3	11.7
2436.350	-61.7	-64.2	-69.0	-7.3	11.7
2436.400	-61.7	-64.3	-69.1	-7.4	11.6
2436.450	-61.7	-64.1	-68.9	-7.2	11.8
2436.500	-61.7	-64.0	-68.8	-7.1	11.9
2436.550	-61.7	-64.5	-69.3	-7.6	11.4
2436.600	-61.7	-64.1	-68.9	-7.2	11.8
2436.650	-61.7	-64.7	-69.5	-7.8	11.2
2436.700	-61.7	-64.3	-69.1	-7.4	11.6
2436.750	-61.7	-64.0	-68.8	-7.1	11.9
2436.800	-61.7	-63.9	-68.7	-7.0	12.0
2436.850	-61.7	-63.9	-68.7	-7.0	12.0
2436.900	-61.7	-64.3	-69.1	-7.4	11.6
2436.950	-61.7	-64.3	-69.1	-7.4	11.6
2437.000	-61.7	-64.1	-68.9	-7.2	11.8

l

5755 Central Ave.
Boulder, CO 80301

29 Oct 2001

2437.050	-61.7	-63.9	-68.7	-7.0	12.0
2437.100	-61.7	-64.6	-69.4	-7.7	11.3
2437.150	-61.7	-64.4	-69.2	-7.5	11.5
2437.200	-61.7	-64.2	-69.0	-7.3	11.7
2437.250	-61.7	-64.2	-69.0	-7.3	11.7
2437.300	-61.7	-64.3	-69.1	-7.4	11.6
2437.350	-61.7	-64.3	-69.1	-7.4	11.6
2437.400	-61.7	-64.3	-69.1	-7.4	11.6
2437.450	-61.7	-64.6	-69.4	-7.7	11.3
2437.500	-61.7	-64.5	-69.3	-7.6	11.4
2437.550	-61.7	-64.5	-69.3	-7.6	11.4
2437.600	-61.7	-64.9	-69.7	-8.0	11.0
2437.650	-61.7	-64.1	-68.9	-7.2	11.8
2437.700	-61.7	-64.2	-69.0	-7.3	11.7
2437.750	-61.7	-64.0	-68.8	-7.1	11.9
2437.800	-61.7	-64.6	-69.4	-7.7	11.3
2437.850	-61.7	-64.3	-69.1	-7.4	11.6
2437.900	-61.7	-64.2	-69.0	-7.3	11.7
2437.950	-61.7	-64.4	-69.2	-7.5	11.5
2438.000	-61.7	-64.4	-69.2	-7.5	11.5
2438.050	-61.7	-64.9	-69.7	-8.0	11.0
2438.100	-61.7	-65.0	-69.8	-8.1	10.9
2438.150	-61.7	-64.6	-69.4	-7.7	11.3
2438.200	-61.7	-64.7	-69.5	-7.8	11.2
2438.250	-61.7	-64.8	-69.6	-7.9	11.1
2438.300	-61.7	-64.8	-69.6	-7.9	11.1
2438.350	-61.7	-64.6	-69.4	-7.7	11.3
2438.400	-61.7	-64.8	-69.6	-7.9	11.1
2438.450	-61.7	-64.9	-69.7	-8.0	11.0
2438.500	-61.7	-65.6	-70.4	-8.7	10.3
2438.550	-61.7	-65.8	-70.6	-8.9	10.1
2438.600	-61.7	-64.5	-69.3	-7.6	11.4
2438.650	-61.7	-64.4	-69.2	-7.5	11.5
2438.700	-61.7	-65.2	-70.0	-8.3	10.7
2438.750	-61.7	-64.8	-69.6	-7.9	11.1
2438.800	-61.7	-64.9	-69.7	-8.0	11.0
2438.850	-61.7	-64.7	-69.5	-7.8	11.2
2438.900	-61.7	-65.2	-70.0	-8.3	10.7
2438.950	-61.7	-65.2	-70.0	-8.3	10.7
2439.000	-61.7	-65.4	-70.2	-8.5	10.5
2439.050	-61.7	-65.6	-70.4	-8.7	10.3
2439.100	-61.7	-65.8	-70.6	-8.9	10.1
2439.150	-61.7	-65.5	-70.3	-8.6	10.4
2439.200	-61.7	-65.2	-70.0	-8.3	10.7
2439.250	-61.7	-65.3	-70.1	-8.4	10.6
2439.300	-61.7	-64.8	-69.6	-7.9	11.1
2439.350	-61.7	-65.2	-70.0	-8.3	10.7
2439.400	-61.7	-65.0	-69.8	-8.1	10.9
2439.450	-61.7	-65.1	-69.9	-8.2	10.8
2439.500	-61.7	-65.4	-70.2	-8.5	10.5
2439.550	-61.7	-65.4	-70.2	-8.5	10.5
2439.600	-61.7	-65.5	-70.3	-8.6	10.4

l

5755 Central Ave.
Boulder, CO 80301

29 Oct 2001

2439.650	-61.7	-65.7	-70.5	-8.8	10.2
2439.700	-61.7	-65.6	-70.4	-8.7	10.3
2439.750	-61.7	-65.7	-70.5	-8.8	10.2
2439.800	-61.7	-65.9	-70.7	-9.0	10.0
2439.850	-61.7	-65.2	-70.0	-8.3	10.7
2439.900	-61.7	-65.3	-70.1	-8.4	10.6
2439.950	-61.7	-64.7	-69.5	-7.8	11.2
2440.000	-61.7	-64.8	-69.6	-7.9	11.1
2440.050	-61.7	-64.8	-69.6	-7.9	11.1
2440.100	-61.7	-64.4	-69.2	-7.5	11.5
2440.150	-61.7	-64.7	-69.5	-7.8	11.2
2440.200	-61.7	-64.3	-69.1	-7.4	11.6
2440.250	-61.7	-65.3	-70.1	-8.4	10.6
2440.300	-61.7	-64.3	-69.1	-7.4	11.6
2440.350	-61.7	-64.7	-69.5	-7.8	11.2
2440.400	-61.7	-64.7	-69.5	-7.8	11.2
2440.450	-61.7	-64.8	-69.6	-7.9	11.1
2440.500	-61.7	-64.3	-69.1	-7.4	11.6
2440.550	-61.7	-64.1	-68.9	-7.2	11.8
2440.600	-61.7	-64.3	-69.1	-7.4	11.6
2440.650	-61.7	-64.2	-69.0	-7.3	11.7
2440.700	-61.7	-64.8	-69.6	-7.9	11.1
2440.750	-61.7	-64.4	-69.2	-7.5	11.5
2440.800	-61.7	-64.9	-69.7	-8.0	11.0
2440.850	-61.7	-64.0	-68.8	-7.1	11.9
2440.900	-61.7	-64.1	-68.9	-7.2	11.8
2440.950	-61.7	-64.0	-68.8	-7.1	11.9
2441.000	-61.7	-64.3	-69.1	-7.4	11.6
2441.050	-61.7	-64.0	-68.8	-7.1	11.9
2441.100	-61.7	-64.0	-68.8	-7.1	11.9
2441.150	-61.7	-63.9	-68.7	-7.0	12.0
2441.200	-61.7	-63.6	-68.4	-6.7	12.3
2441.250	-61.7	-63.5	-68.3	-6.6	12.4
2441.300	-61.7	-63.7	-68.5	-6.8	12.2
2441.350	-61.7	-63.8	-68.6	-6.9	12.1
2441.400	-61.7	-63.8	-68.6	-6.9	12.1
2441.450	-61.7	-63.4	-68.2	-6.5	12.5
2441.500	-61.7	-63.5	-68.3	-6.6	12.4
2441.550	-61.7	-63.6	-68.4	-6.7	12.3
2441.600	-61.7	-63.2	-68.0	-6.3	12.7
2441.650	-61.7	-63.5	-68.3	-6.6	12.4
2441.700	-61.7	-63.9	-68.7	-7.0	12.0
2441.750	-61.7	-63.9	-68.7	-7.0	12.0
2441.800	-61.7	-63.2	-68.0	-6.3	12.7
2441.850	-61.7	-63.2	-68.0	-6.3	12.7
2441.900	-61.7	-63.3	-68.1	-6.4	12.6
2441.950	-61.7	-63.2	-68.0	-6.3	12.7
2442.000	-61.7	-63.6	-68.4	-6.7	12.3
2442.050	-61.7	-63.5	-68.3	-6.6	12.4
2442.100	-61.7	-62.6	-67.4	-5.7	13.3
2442.150	-61.7	-62.6	-67.4	-5.7	13.3
2442.200	-61.7	-63.3	-68.1	-6.4	12.6

l

5755 Central Ave.
Boulder, CO 80301

29 Oct 2001

2442.250	-61.7	-62.8	-67.6	-5.9	13.1
2442.300	-61.7	-62.6	-67.4	-5.7	13.3
2442.350	-61.7	-62.3	-67.1	-5.4	13.6
2442.400	-61.7	-62.3	-67.1	-5.4	13.6
2442.450	-61.7	-62.1	-66.9	-5.2	13.8
2442.500	-61.7	-62.0	-66.8	-5.1	13.9
2442.550	-61.7	-62.0	-66.8	-5.1	13.9
2442.600	-61.7	-61.6	-66.4	-4.7	14.3
2442.650	-61.7	-61.8	-66.6	-4.9	14.1
2442.700	-61.7	-61.3	-66.1	-4.4	14.6
2442.750	-61.7	-61.3	-66.1	-4.4	14.6
2442.800	-61.7	-61.9	-66.7	-5.0	14.0
2442.850	-61.7	-61.7	-66.5	-4.8	14.2
2442.900	-61.7	-61.5	-66.3	-4.6	14.4
2442.950	-61.7	-61.8	-66.6	-4.9	14.1
2443.000	-61.7	-62.0	-66.8	-5.1	13.9
2443.050	-61.7	-61.1	-65.9	-4.2	14.8
2443.100	-61.7	-60.9	-65.7	-4.0	15.0
2443.150	-61.7	-60.9	-65.7	-4.0	15.0
2443.200	-61.7	-60.6	-65.4	-3.7	15.3
2443.250	-61.7	-60.5	-65.3	-3.6	15.4
2443.300	-61.7	-61.5	-66.3	-4.6	14.4
2443.350	-61.7	-60.6	-65.4	-3.7	15.3
2443.400	-61.7	-60.3	-65.1	-3.4	15.6
2443.450	-61.7	-60.0	-64.8	-3.1	15.9
2443.500	-61.7	-59.8	-64.6	-2.9	16.1
2443.550	-61.7	-59.7	-64.5	-2.8	16.2
2443.600	-61.7	-59.6	-64.4	-2.7	16.3
2443.650	-61.7	-58.8	-63.6	-1.9	17.1
2443.700	-61.7	-59.0	-63.8	-2.1	16.9
2443.750	-61.7	-58.6	-63.4	-1.7	17.3
2443.800	-61.7	-58.8	-63.6	-1.9	17.1
2443.850	-61.7	-58.9	-63.7	-2.0	17.0
2443.900	-61.7	-58.6	-63.4	-1.7	17.3
2443.950	-61.7	-59.2	-64.0	-2.3	16.7
2444.000	-61.7	-58.8	-63.6	-1.9	17.1
2444.050	-61.7	-58.0	-62.8	-1.1	17.9
2444.100	-61.7	-58.0	-62.8	-1.1	17.9
2444.150	-61.7	-57.4	-62.2	-0.5	18.5
2444.200	-61.7	-56.9	-61.7	0.0	19.0
2444.250	-61.7	-56.7	-61.5	0.2	19.2
2444.300	-61.7	-56.4	-61.2	0.5	19.5
2444.350	-61.7	-56.9	-61.7	0.0	19.0
2444.400	-61.7	-56.7	-61.5	0.2	19.2
2444.450	-61.7	-56.7	-61.5	0.2	19.2
2444.500	-61.7	-55.6	-60.4	1.3	20.3
2444.550	-61.7	-55.5	-60.3	1.4	20.4
2444.600	-61.7	-55.6	-60.4	1.3	20.3
2444.650	-61.7	-54.7	-59.5	2.2	21.2
2444.700	-61.7	-54.6	-59.4	2.3	21.3
2444.750	-61.7	-54.0	-58.8	2.9	21.9
2444.800	-61.7	-54.1	-58.9	2.8	21.8

l

5755 Central Ave.
Boulder, CO 80301

29 Oct 2001

2444.850	-61.7	-54.2	-59.0	2.7	21.7
2444.900	-61.7	-53.3	-58.1	3.6	22.6
2444.950	-61.7	-54.0	-58.8	2.9	21.9
2445.000	-61.7	-54.0	-58.8	2.9	21.9

Appendix E: Calibration Measurement

Step Attenuator

Setting	Power
0 dB	-6.67 dBm
58 dB	-64.48 dBm
Atten =	57.81 dB

The peak power meter doesn't go low enough to directly read power at the DUT. So measure the attenuator loss at the "58dB" setting using a CW signal and the RMS power meter.

Test Transmitter

Rate	Peak Output Power	Peak Power at DUT*	* Includes the step attenuator loss calculated above.
1 Mb/s	-3.91 dBm	-61.7 dBm	
2 Mb/s	-3.91 dBm	-61.7 dBm	
5.5 Mb/s	-4.38 dBm	-62.2 dBm	
11 Mb/s	-3.85 dBm	-61.7 dBm	

RF Signal Generator

Generator Level =	0.0 dBm	SG Programmed Level
Measured Level =	-4.78 dBm	SG Power at the DUT

Cal Factor = -4.78 This relates the SG "set level" to an actual power at the DUT.

Appendix F: Theoretical Processing Gain Information

Bit Rate (Mb/s)	Symbol Rate (MS/s)	Chip Rate (MC/s)	Chips/Symbol	CCK Modulation Coding Gain* (dB)	Processing Gain** (dB)
1	1	11	11	N/A	10.4
2	1	11	11	N/A	10.4
5.5	1.375	11	8	1.6	10.6
11	1.375	11	8	1.6	10.6

* CCK Modulation (used at 5.5 and 11Mb/s) provides a Coding Gain of 1.6dB.

Ref: AN9820.1, "A Condensed Review of Spread Spectrum Techniques for ISM Band Systems", Intersil Corporation, 2000, p.12

** Theoretical Processing Gain Calculation

1 & 2Mb/s rates : $10 \cdot \log(\text{Chips/Symbol})$

$10 \cdot \log(11) = 10.4\text{dB}$

5.5 & 11Mb/s rates : $10 \cdot \log(\text{Chips/Symbol}) + \text{Coding Gain}$

$10 \cdot \log(8) + 1.6\text{dB} = 9.0\text{dB} + 1.6\text{dB} = 10.6\text{dB}$

Appendix G: Converting between Bit Error Rate and Packet Error Rate

The Intersil (S/N)_o values used in this test are based on a Bit Error Rate (BER) value of 10^{-5} . To determine the Packet Error Rate (PER) which would result from this BER, the following is used:

PER	probability of a packet being in error
1-PER	probability of the packet being correct
BER	probability of a bit being in error
1-BER	probability of the bit being correct
$(1-BER)^n$	probability of all n bits in the packet being correct

Set the two equations for the packet being correct equal to one another, and solve for the PER:

$$1-PER = (1-BER)^n \Rightarrow PER = 1-(1-BER)^n$$

For the packets used in test code, the packet size is 3312 bits. So for a BER of 10^{-5} , the PER is approximately:

$$PER = 1-(1-10^{-5})^{3312} \cong 3.3\%$$