All enclosed data was taken at Transcept, Inc. except for 47CFR parts 2.1055, 15.207, and 15.209. The excepted parts were recorded in the labs of National Technical Services, Inc. (NTS). As the TransCell 1900TM is an intentional radiator, the more stringent 15.207 and 15.209 limits were adhered to. This data is found in 04-11-01 Transcept 36864-01C Rev. 1.PDF. To meet sizing requirements of three megabytes per file, the original NTS report has been divided into an “a”, “b”, and “c” section in this submittal.

FCC Requirements, 47 CFR Parts 24.235 and 24.238, Transcell 1900TM Testing

Part	Requirement	Test description	Results
24.235	The frequency stability shall be sufficient to ensure that the Fundamental emission stays within the authorized frequency block.	To augment results of testing against 47 CFR 2.1055, which verified this system's frequency stability over temperature and input voltage, RF plots have been taken of the 1 MHz span on either side of each operational band. Plots were taken using MAX HOLD on an HP8593E for a minimum of two minutes each measurement, with six full power output signals tuned as close to the band edge as the TIA-EIA-136 standard permits (see attachment 1 for specified channel range and PCS band frequencies). For a list of channels used in part 24.235 testing, see ***Figure 2***. See ***Figures 4 and 5*** for test setup and equipment list, respectively.	There was no fundamental outside the licensed PCS frequency bands, which are defined in ***Figure 1***. See ***Figures 8 through 19*** for band edge plots.
24.238	On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB. Transcell 1900TM: P=10W / carrier Limit = 53 dBc Calibrated analyzer limit = Display line level = P – (Test network loss) – (24.238 limit) = 40dBm – 38dB – 53 dB = **-51dBm @ 2 – 6 GHz** **-53dBm @ 6 – 12 GHz (Ave.)** **-58dBm @12 - 15 GHz (Ave.)** **-63dBm @15 – 20 GHz (Ave.)**	See ***Figures 4 and 5*** for test setup and equipment list, respectively. See ***Figures 21 to 28*** for plots of calibrated test setup RF loss, 1 to 18 GHz. Set 6 output carriers set to 40 dBm at antenna port. Since Transcell 1900TM is a multi-band system which operates in a single band at a time, measurements were made from 10 Hz to 22 GHz (encompassing tenth harmonic) for both the minimum and maximum frequencies in each of the individual PCS bands. Per 24.238c, system was tuned to the minimum channel interval of 9, or 270 kHz on center, and as close to each band edge as the TIA-EIA-136 standard allows. For a list of channels used in part 24.238 testing, see ***Figure 2***. Plots were taken using MAX HOLD on an HP8593E for a minimum of two minutes each measurement. Hard copy data taken at each individual PCS Band tuning is available on request. A sample sweep with the system tuned to PCS B-Band has been included in this report. See ***Figure 20***.	All signals outside the designated frequency block under test were attenuated more than 53 dBc. See ***Figure 20*** for a sample sweep with system tuned to B-Band. Nearest margin was measured at 4.1dB, in a 1 kHz resolution bandwidth, at 1970MHz (upper limit PCS band E, see ***Figure 15***). A minimum RBW of 340 Hz is valid under the 1 % ruling per 24.238b. See ***Figure 3*** for occupied bandwidth plot, modulated TDMA. The spectrum analyzer input was being overdriven, causing an analyzer spur around 950 MHz. Manually changing the analyzer's input attenuator changed the power level of the spur in the same manner, as shown in ***Figure 7***. Therefore, this analyzer spur is not produced by our system and can be omitted. See ***Figure 6*** for a complete 20 dB margin spur list by PCS band.

Figure 1: Valid PCS TDMA Channels as Specified by TIA/EIA-136

Table 2 Channel Numbers and Frequencies for 1900 MHz Operation

Band	Bandwidth (MHz)	Number of Channels	Boundary Channel Numbers	Transmitter Center Frequency (MHz)	
				Mobile	Base
Not Used		1	1	1850.010	1930.050
A	15	497	2	1850.040	1930.080
			498	1864.920	1944.960
A,D (Note 1)		1	499	1864.950	1944.990
A,D (Note 1)		1	500	1864.980	1945.020
A,D (Note 1)		1	501	1865.010	1945.050
D	5	164	502	1865.040	1945.080
			665	1869.930	1949.970
D,B (Note 1)		1	666	1869.960	1950.000
D,B (Note 1)		1	667	1869.990	1950.030
B	15	498	668	1870.020	1950.060
			1165	1884.930	1964.970
B,E (Note 1)		1	1166	1884.960	1965.000
B,E (Note 1)		1	1167	1884.990	1965.030
E	5	165	1168	1885.020	1965.060
			1332	1889.940	1969.980
E,F (Note 1)		1	1333	1889.970	1970.010
E,F (Note 1)		1	1334	1890.000	1970.040
F	5	164	1335	1890.030	1970.070
			1498	1894.920	1974.960
F,C (Note 1)		1	1499	1894.950	1974.990
F,C (Note 1)		1	1500	1894.980	1975.020
F,C (Note 1)		1	1501	1895.010	1975.050
C	15	497	1502	1895.040	1975.080
			1998	1909.920	1989.960
Not Used		1	1999	1909.950	1989.990

Note 1: This channel does not entirely fall into a single band (A,B,C,D,E, or F). A mobile station capable of operating in any of these bands or combination thereof shall also be able to operate on the associated border channel(s).

Figure 2: PCS Channels Used for Part 24 Testing.

A-band – low										
Channel	**IF (MHz)**	**2x**	**3x**	**4x**	**5x**	**6x**	**7x**	**8x**	**9x**	**10x**
2	1930.08	3860.16	5790.24	7720.32	9650.40	11580.48	13510.56	15440.64	17370.72	19300.80
11	1930.35	3860.70	5791.05	7721.40	9651.75	11582.10	13512.45	15442.80	17373.15	19303.50
20	1930.62	3861.24	5791.86	7722.48	9653.10	11583.72	13514.34	15444.96	17375.58	19306.20
29	1930.89	3861.78	5792.67	7723.56	9654.45	11585.34	13516.23	15447.12	17378.01	19308.90
38	1931.16	3862.32	5793.48	7724.64	9655.80	11586.96	13518.12	15449.28	17380.44	19311.60
47	1931.43	3862.86	5794.29	7725.72	9657.15	11588.58	13520.01	15451.44	17382.87	19314.30
A-band – High										
Channel	**IF (MHz)**	**2x**	**3x**	**4x**	**5x**	**6x**	**7x**	**8x**	**9x**	**10x**
453	1943.61	3887.22	5830.83	7774.44	9718.05	11661.66	13605.27	15548.88	17492.49	19436.10
462	1943.88	3887.76	5831.64	7775.52	9719.40	11663.28	13607.16	15551.04	17494.92	19438.80
471	1944.15	3888.30	5832.45	7776.60	9720.75	11664.90	13609.05	15553.20	17497.35	19441.50
480	1944.42	3888.84	5833.26	7777.68	9722.10	11666.52	13610.94	15555.36	17499.78	19444.20
489	1944.69	3889.38	5834.07	7778.76	9723.45	11668.14	13612.83	15557.52	17502.21	19446.90
498	1944.96	3889.92	5834.88	7779.84	9724.80	11669.76	13614.72	15559.68	17504.64	19449.60
D-band – low										
Channel	**IF (MHz)**	**2x**	**3x**	**4x**	**5x**	**6x**	**7x**	**8x**	**9x**	**10x**
502	1945.08	3890.16	5835.24	7780.32	9725.40	11670.48	13615.56	15560.64	17505.72	19450.80
511	1945.35	3890.70	5836.05	7781.40	9726.75	11672.10	13617.45	15562.80	17508.15	19453.50
520	1945.62	3891.24	5836.86	7782.48	9728.10	11673.72	13619.34	15564.96	17510.58	19456.20
529	1945.89	3891.78	5837.67	7783.56	9729.45	11675.34	13621.23	15567.12	17513.01	19458.90
538	1946.16	3892.32	5838.48	7784.64	9730.80	11676.96	13623.12	15569.28	17515.44	19461.60
547	1946.43	3892.86	5839.29	7785.72	9732.15	11678.58	13625.01	15571.44	17517.87	19464.30

Figure 2: PCS Channels Used for Part 24 Testing, Continued…

D-band – High										
Channel	**IF (MHz)**	**2x**	**3x**	**4x**	**5x**	**6x**	**7x**	**8x**	**9x**	**10x**
620	1948.62	3897.24	5845.86	7794.48	9743.10	11691.72	13640.34	15588.96	17537.58	19486.20
629	1948.89	3897.78	5846.67	7795.56	9744.45	11693.34	13642.23	15591.12	17540.01	19488.90
638	1949.16	3898.32	5847.48	7796.64	9745.80	11694.96	13644.12	15593.28	17542.44	19491.60
647	1949.43	3898.86	5848.29	7797.72	9747.15	11696.58	13646.01	15595.44	17544.87	19494.30
656	1949.70	3899.40	5849.10	7798.80	9748.50	11698.20	13647.90	15597.60	17547.30	19497.00
665	1949.97	3899.94	5849.91	7799.88	9749.85	11699.82	13649.79	15599.76	17549.73	19499.70
B-band – low										
Channel	**IF (MHz)**	**2x**	**3x**	**4x**	**5x**	**6x**	**7x**	**8x**	**9x**	**10x**
668	1950.06	3900.12	5850.18	7800.24	9750.30	11700.36	13650.42	15600.48	17550.54	19500.60
677	1950.33	3900.66	5850.99	7801.32	9751.65	11701.98	13652.31	15602.64	17552.97	19503.30
686	1950.60	3901.20	5851.80	7802.40	9753.00	11703.60	13654.20	15604.80	17555.40	19506.00
695	1950.87	3901.74	5852.61	7803.48	9754.35	11705.22	13656.09	15606.96	17557.83	19508.70
704	1951.14	3902.28	5853.42	7804.56	9755.70	11706.84	13657.98	15609.12	17560.26	19511.40
713	1951.41	3902.82	5854.23	7805.64	9757.05	11708.46	13659.87	15611.28	17562.69	19514.10
B-band - High										
Channel	**IF (MHz)**	**2x**	**3x**	**4x**	**5x**	**6x**	**7x**	**8x**	**9x**	**10x**
1120	1963.62	3927.24	5890.86	7854.48	9818.10	11781.72	13745.34	15708.96	17672.58	19636.20
1129	1963.89	3927.78	5891.67	7855.56	9819.45	11783.34	13747.23	15711.12	17675.01	19638.90
1138	1964.16	3928.32	5892.48	7856.64	9820.80	11784.96	13749.12	15713.28	17677.44	19641.60
1147	1964.43	3928.86	5893.29	7857.72	9822.15	11786.58	13751.01	15715.44	17679.87	19644.30
1156	1964.70	3929.40	5894.10	7858.80	9823.50	11788.20	13752.90	15717.60	17682.30	19647.00
1165	1964.97	3929.94	5894.91	7859.88	9824.85	11789.82	13754.79	15719.76	17684.73	19649.70

Figure 2: PCS Channels Used for Part 24 Testing, Continued…

E-band - low										
Channel	**IF (MHz)**	**2x**	**3x**	**4x**	**5x**	**6x**	**7x**	**8x**	**9x**	**10x**
1168	1965.06	3930.12	5895.18	7860.24	9825.30	11790.36	13755.42	15720.48	17685.54	19650.60
1177	1965.33	3930.66	5895.99	7861.32	9826.65	11791.98	13757.31	15722.64	17687.97	19653.30
1186	1965.60	3931.20	5896.80	7862.40	9828.00	11793.60	13759.20	15724.80	17690.40	19656.00
1195	1965.87	3931.74	5897.61	7863.48	9829.35	11795.22	13761.09	15726.96	17692.83	19658.70
1204	1966.14	3932.28	5898.42	7864.56	9830.70	11796.84	13762.98	15729.12	17695.26	19661.40
1213	1966.41	3932.82	5899.23	7865.64	9832.05	11798.46	13764.87	15731.28	17697.69	19664.10
E-band - High										
Channel	**IF (MHz)**	**2x**	**3x**	**4x**	**5x**	**6x**	**7x**	**8x**	**9x**	**10x**
1287	1968.63	3937.26	5905.89	7874.52	9843.15	11811.78	13780.41	15749.04	17717.67	19686.30
1296	1968.90	3937.80	5906.70	7875.60	9844.50	11813.40	13782.30	15751.20	17720.10	19689.00
1305	1969.17	3938.34	5907.51	7876.68	9845.85	11815.02	13784.19	15753.36	17722.53	19691.70
1314	1969.44	3938.88	5908.32	7877.76	9847.20	11816.64	13786.08	15755.52	17724.96	19694.40
1323	1969.71	3939.42	5909.13	7878.84	9848.55	11818.26	13787.97	15757.68	17727.39	19697.10
1332	1969.98	3939.96	5909.94	7879.92	9849.90	11819.88	13789.86	15759.84	17729.82	19699.80
F-band - low										
Channel	**IF (MHz)**	**2x**	**3x**	**4x**	**5x**	**6x**	**7x**	**8x**	**9x**	**10x**
1335	1970.07	3940.14	5910.21	7880.28	9850.35	11820.42	13790.49	15760.56	17730.63	19700.70
1344	1970.34	3940.68	5911.02	7881.36	9851.70	11822.04	13792.38	15762.72	17733.06	19703.40
1353	1970.61	3941.22	5911.83	7882.44	9853.05	11823.66	13794.27	15764.88	17735.49	19706.10
1362	1970.88	3941.76	5912.64	7883.52	9854.40	11825.28	13796.16	15767.04	17737.92	19708.80
1371	1971.15	3942.30	5913.45	7884.60	9855.75	11826.90	13798.05	15769.20	17740.35	19711.50
1380	1971.42	3942.84	5914.26	7885.68	9857.10	11828.52	13799.94	15771.36	17742.78	19714.20

Figure 2: PCS Channels Used for Part 24 Testing, Continued…

F-band - High										
Channel	**IF (MHz)**	**2x**	**3x**	**4x**	**5x**	**6x**	**7x**	**8x**	**9x**	**10x**
1453	1973.61	3947.22	5920.83	7894.44	9868.05	11841.66	13815.27	15788.88	17762.49	19736.10
1462	1973.88	3947.76	5921.64	7895.52	9869.40	11843.28	13817.16	15791.04	17764.92	19738.80
1471	1974.15	3948.30	5922.45	7896.60	9870.75	11844.90	13819.05	15793.20	17767.35	19741.50
1480	1974.42	3948.84	5923.26	7897.68	9872.10	11846.52	13820.94	15795.36	17769.78	19744.20
1489	1974.69	3949.38	5924.07	7898.76	9873.45	11848.14	13822.83	15797.52	17772.21	19746.90
1498	1974.96	3949.92	5924.88	7899.84	9874.80	11849.76	13824.72	15799.68	17774.64	19749.60
C-band - low										
Channel	**IF (MHz)**	**2x**	**3x**	**4x**	**5x**	**6x**	**7x**	**8x**	**9x**	**10x**
1502	1975.08	3950.16	5925.24	7900.32	9875.40	11850.48	13825.56	15800.64	17775.72	19750.80
1511	1975.35	3950.70	5926.05	7901.40	9876.75	11852.10	13827.45	15802.80	17778.15	19753.50
1520	1975.62	3951.24	5926.86	7902.48	9878.10	11853.72	13829.34	15804.96	17780.58	19756.20
1529	1975.89	3951.78	5927.67	7903.56	9879.45	11855.34	13831.23	15807.12	17783.01	19758.90
1538	1976.16	3952.32	5928.48	7904.64	9880.80	11856.96	13833.12	15809.28	17785.44	19761.60
1547	1976.43	3952.86	5929.29	7905.72	9882.15	11858.58	13835.01	15811.44	17787.87	19764.30
C-band - High										
Channel	**IF (MHz)**	**2x**	**3x**	**4x**	**5x**	**6x**	**7x**	**8x**	**9x**	**10x**
1953	1988.61	3977.22	5965.83	7954.44	9943.05	11931.66	13920.27	15908.88	17897.49	19886.10
1962	1988.88	3977.76	5966.64	7955.52	9944.40	11933.28	13922.16	15911.04	17899.92	19888.80
1971	1989.15	3978.30	5967.45	7956.60	9945.75	11934.90	13924.05	15913.20	17902.35	19891.50
1980	1989.42	3978.84	5968.26	7957.68	9947.10	11936.52	13925.94	15915.36	17904.78	19894.20
1989	1989.69	3979.38	5969.07	7958.76	9948.45	11938.14	13927.83	15917.52	17907.21	19896.90
1998	1989.96	3979.92	5969.88	7959.84	9949.80	11939.76	13929.72	15919.68	17909.64	19899.60

Figure 3: Occupied Bandwidth, Single TDMA Carrier.

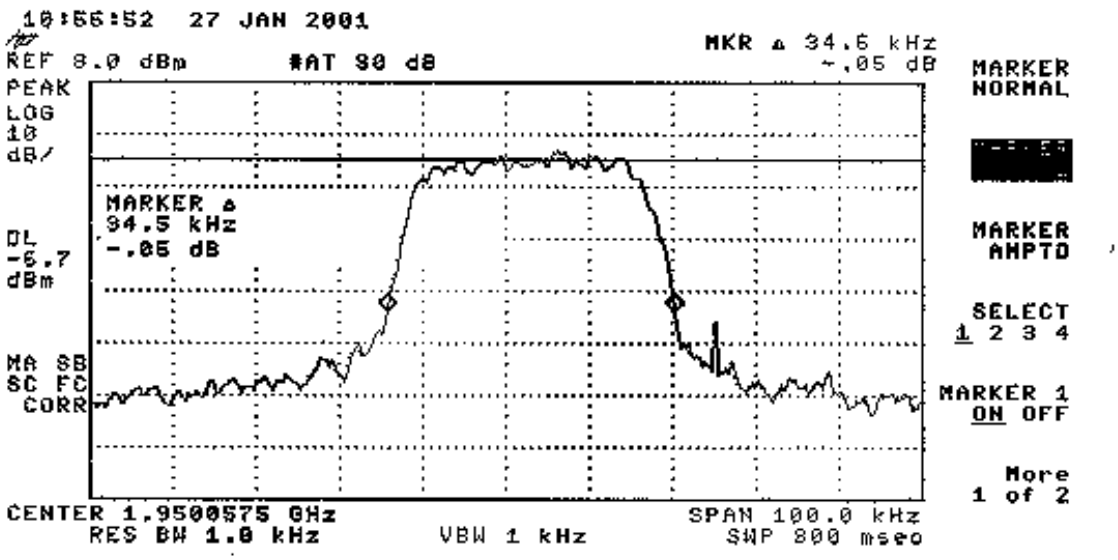


Figure 4: Test Setup.

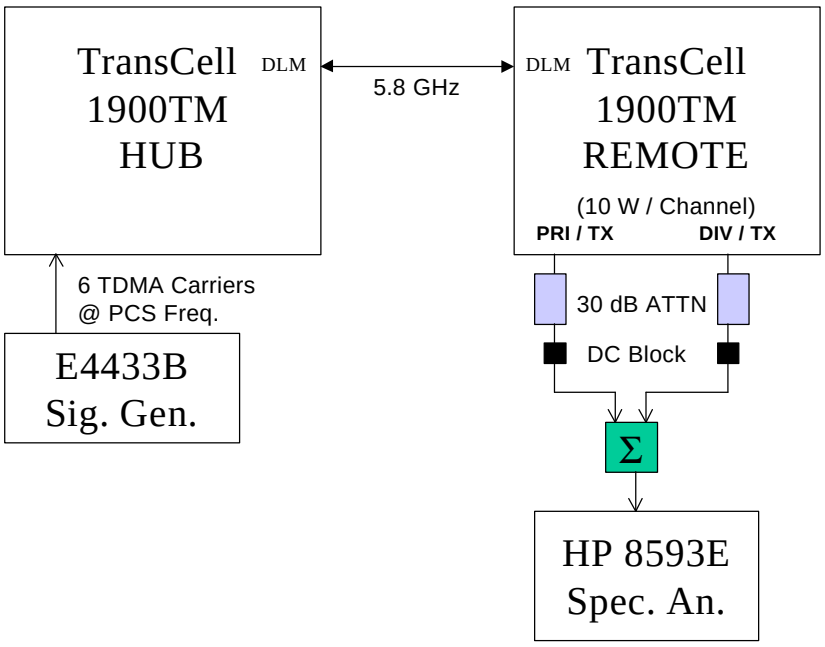


Figure 5: Equipment List.

Designator	Description	Serial Number	Cal Due Date
HP 8593E	Spectrum Analyzer	3337A00856	9/15/2001
HP 83620A	Synthesizer Sweeper	3420A02063	
E4433B	Signal generator	US38330296	12/8/2001
Inmet 8046	DC Block	N/A	N/A
Inmet 2N75W-30-296	75W 30 dB RF Attenuator	N/A	N/A
NARDA 4456-4	4 port high frequency splitter.	02740	N/A
TransCell 1900TM	Unit under test		N/A

Figure 6: Spurious Signals Within 73 dBc of Output Power (Limit + 20dB)

RF Output Tuning Configuration	Spur Frequency (MHz)	Spur level (dBc)	RBW (kHz)	Notes
PCS Band A, Low Edge	1929.13	68	10	
	1929.81	65	10	
	1929.94 to 1930	65 to 63	10	Noise pedestal increase at band edge.
	1969.5	67	1000	
PCS Band A, High Edge	1945.58	70	10	
PCS Band D, Low Edge	1944.81	64	10	
	1944.94 to 1950	66 to 63	10	Noise pedestal increase at band edge.
	1950.14	61	10	
	1950.68	64	10	
PCS Band D, High Edge	1944.16	67	10	
	1944.97	67	10	
	1950 to 1950.06	62 to 73	1	Noise pedestal increase at band edge.
	1950.24	63	1	
	1950.52	69	1	
	1950.78	72	1	
PCS Band B, Low Edge	1949.24	70	1	
	1949.26	68	1	
	1949.48	68	1	
	1949.52	70	1	
	1949.64	60	1	
	1949.79	66	1	
	1949.97 to 1950	73 to 70	1	Noise pedestal increase at band edge.
PCS Band B, High Edge	1965 to 1965.06	65 to 73	1	
	1965.24	67	1	
PCS Band E, Low Edge	1964.64	63	1	
	1964.79	65	1	
	1970.6	69	1	
PCS Band E, High Edge	1964.17	70	10	
	1964.72	70	10	
	1964.8	72	10	
	1970 to 1970.08	57 to 73	1	
	1970.54	60	1	
PCS Band F, Low Edge	1969.8	62	10	
	1969.83	62	10	
	1969.99	59	10	
	1975.16	68	10	
	1975.61	68	10	
PCS Band F, High Edge	1969.25	70	10	
	1969.74	68	10	
	1969.93	68	10	
	1975 to 1975.1	67 to 73	1	Noise pedestal increase at band edge.
	1975.23	67	1	
PCS C Band, Low Edge	1975.82	68	1	
	1975.95	66	1	
PCS C Band, High Edge	1974.25	61	10	
	1990 to 1990.08	66 to 73	1	Noise pedestal increase at band edge.

Figure 7: Analyzer Spur Near 950 MHz.

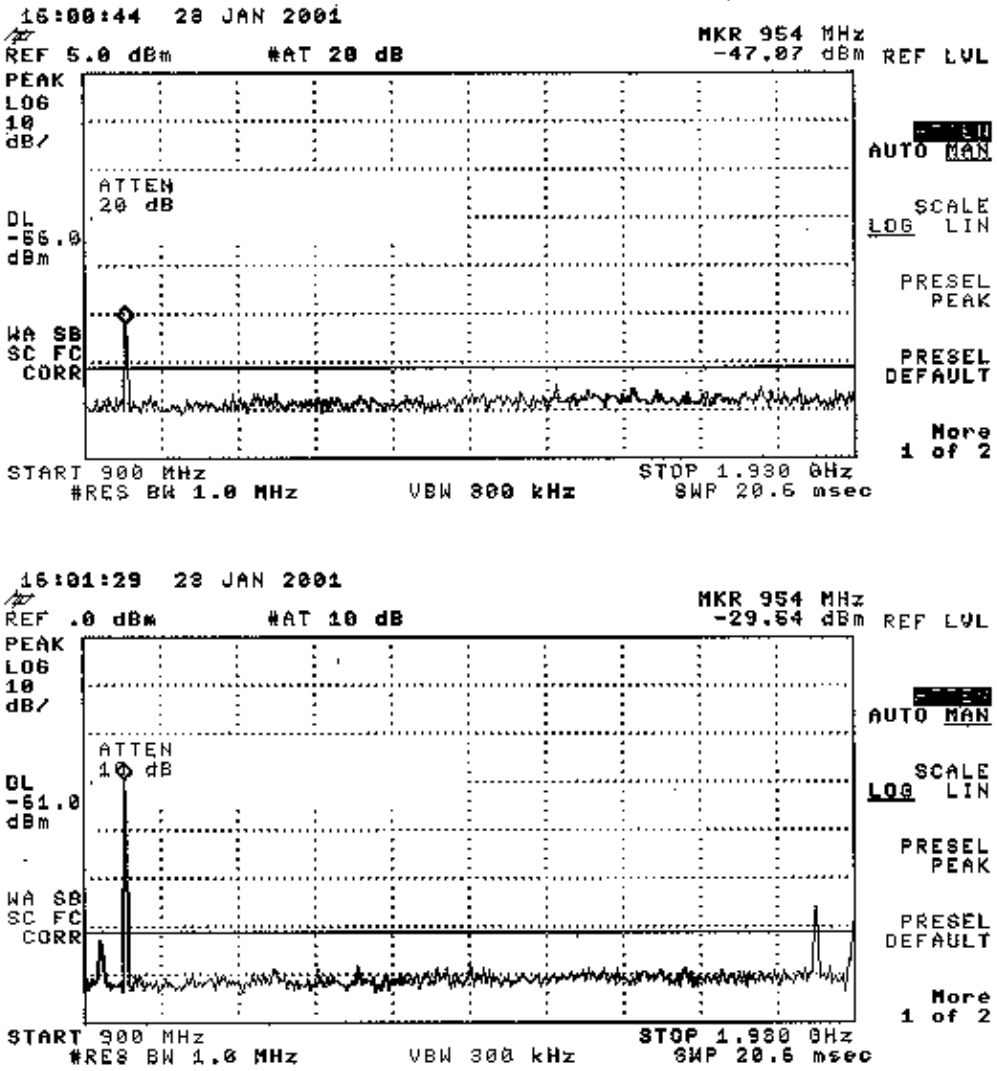
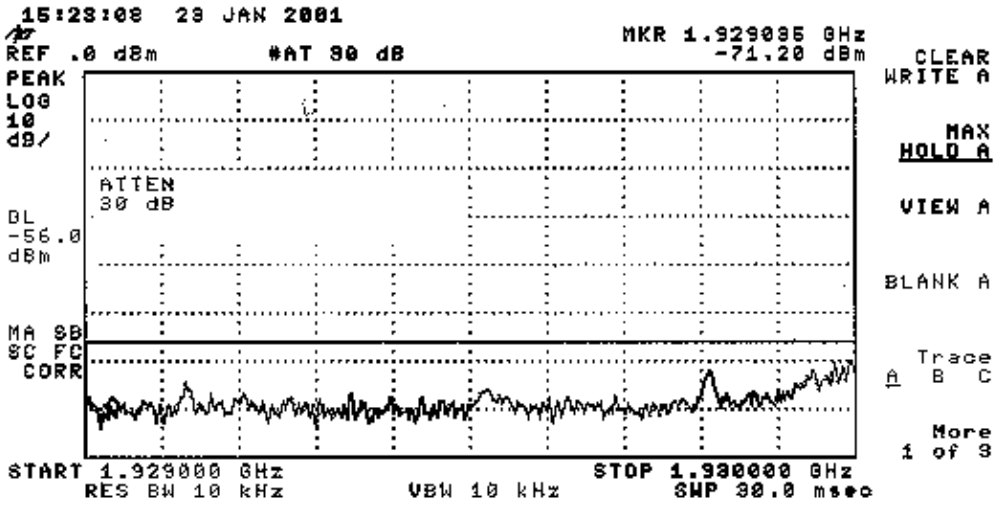
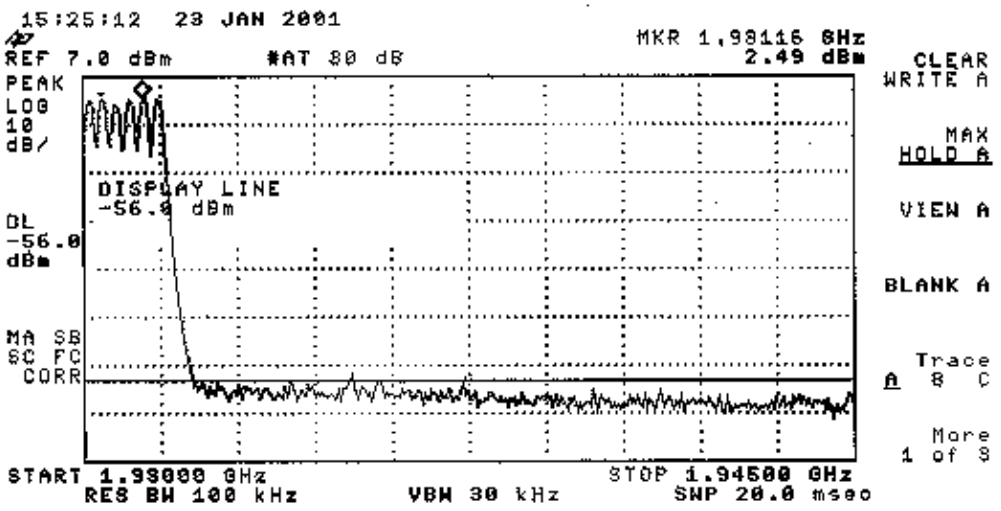


Figure 8: A-Band Low Tuning, Band Edge Plots.





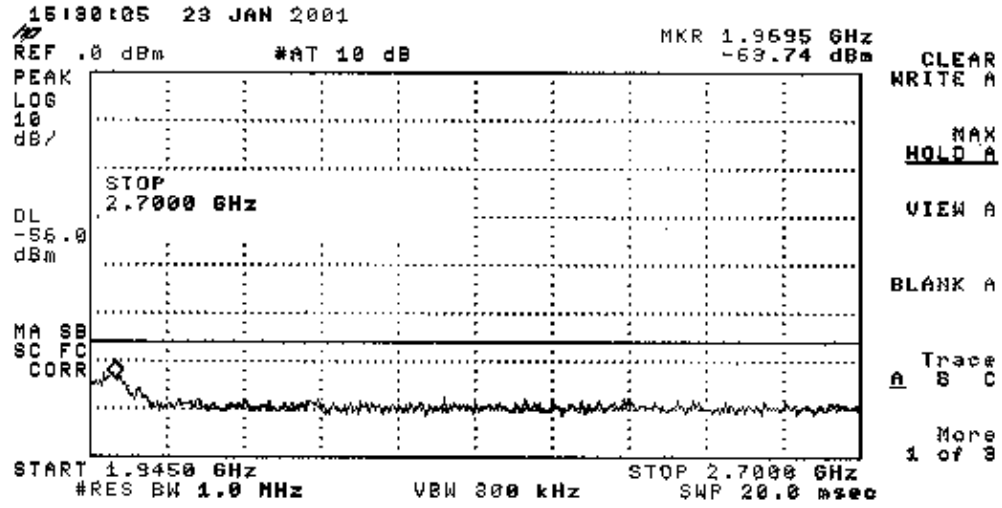


Figure 9: A-Band High Tuning, Band Edge Plots.

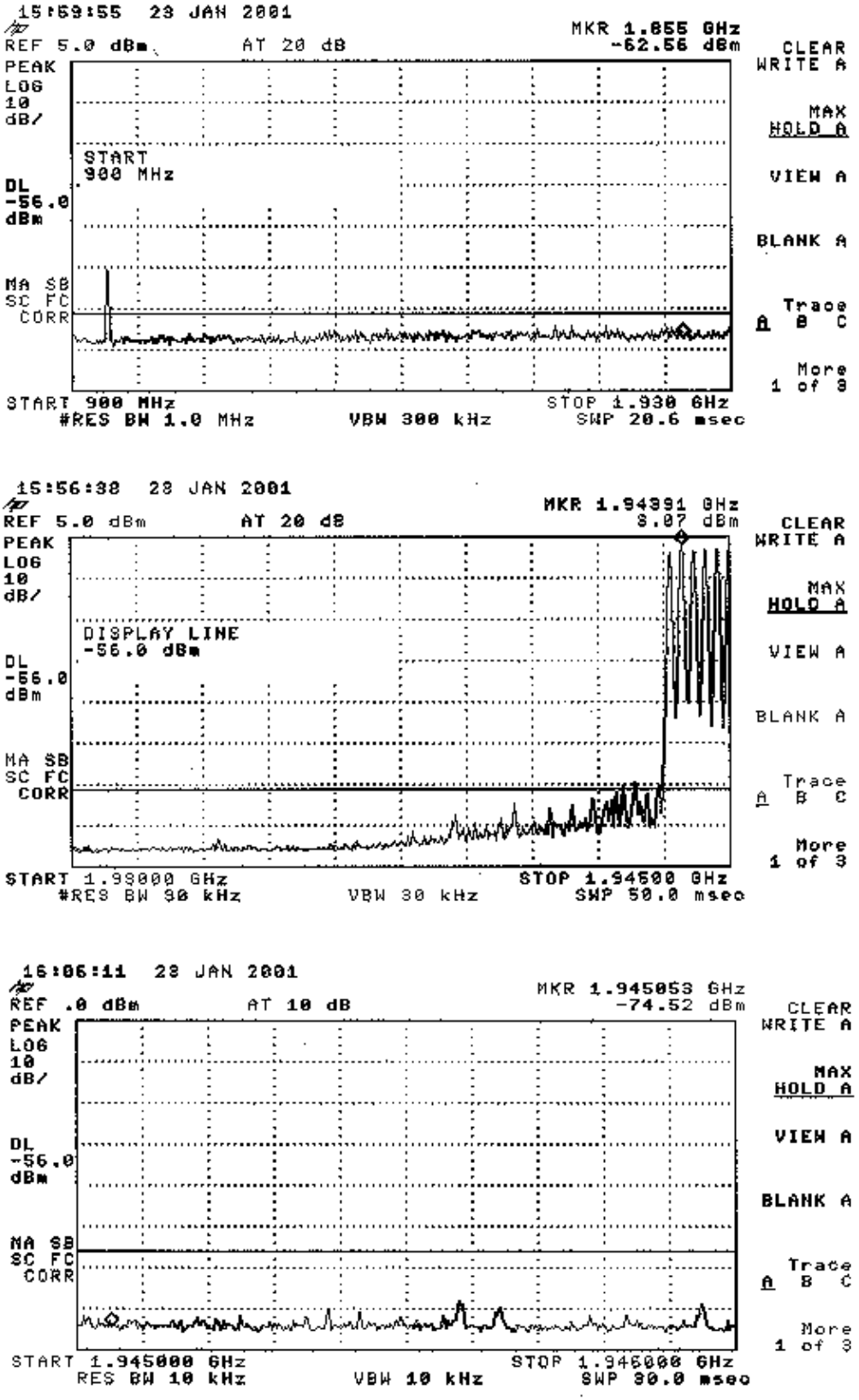


Figure 10: D-Band Low Tuning, Band Edge Plots.

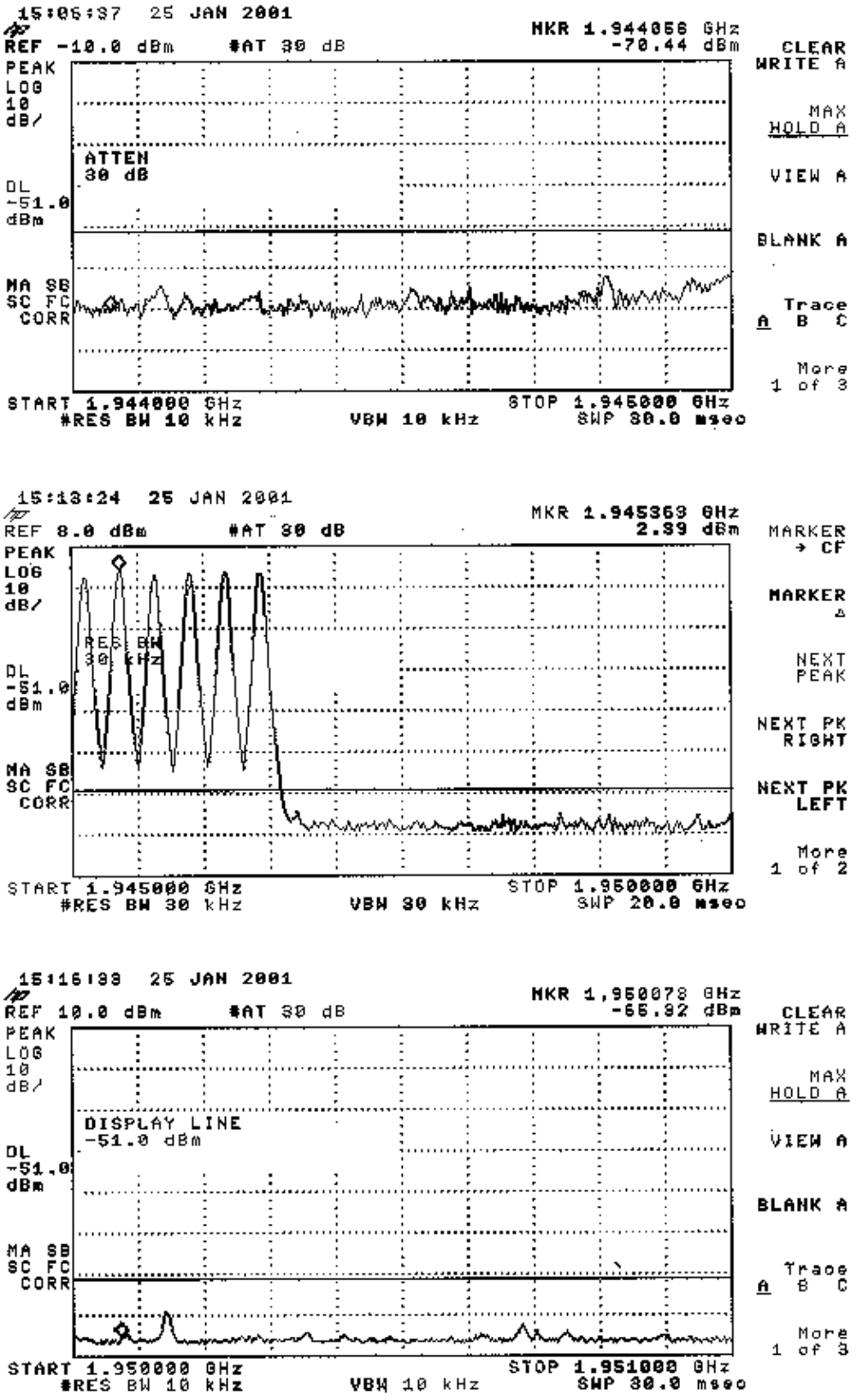


Figure 11: D-Band High Tuning, Band Edge Plots.

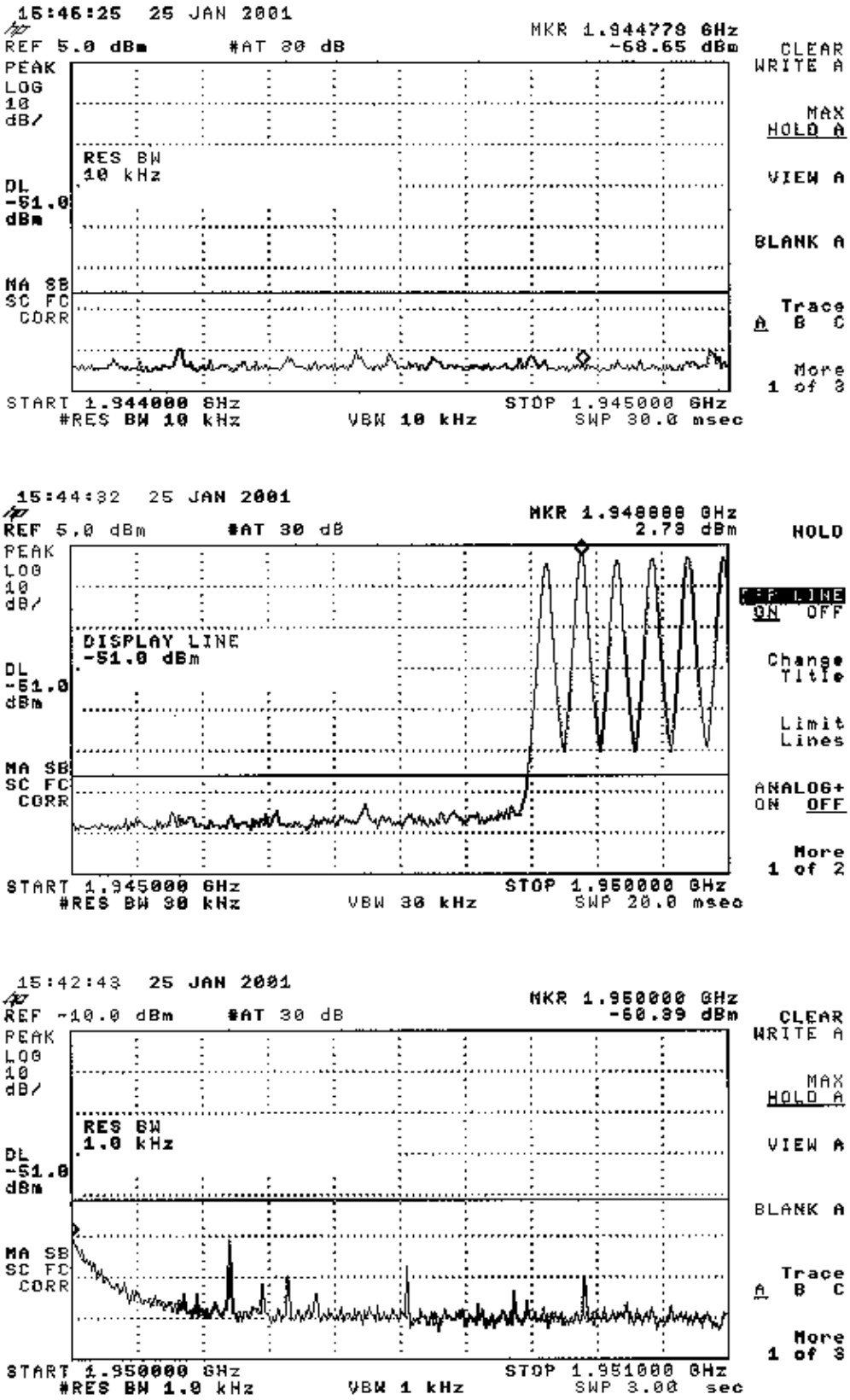


Figure 12: B-Band Low Tuning, Band Edge Plots.

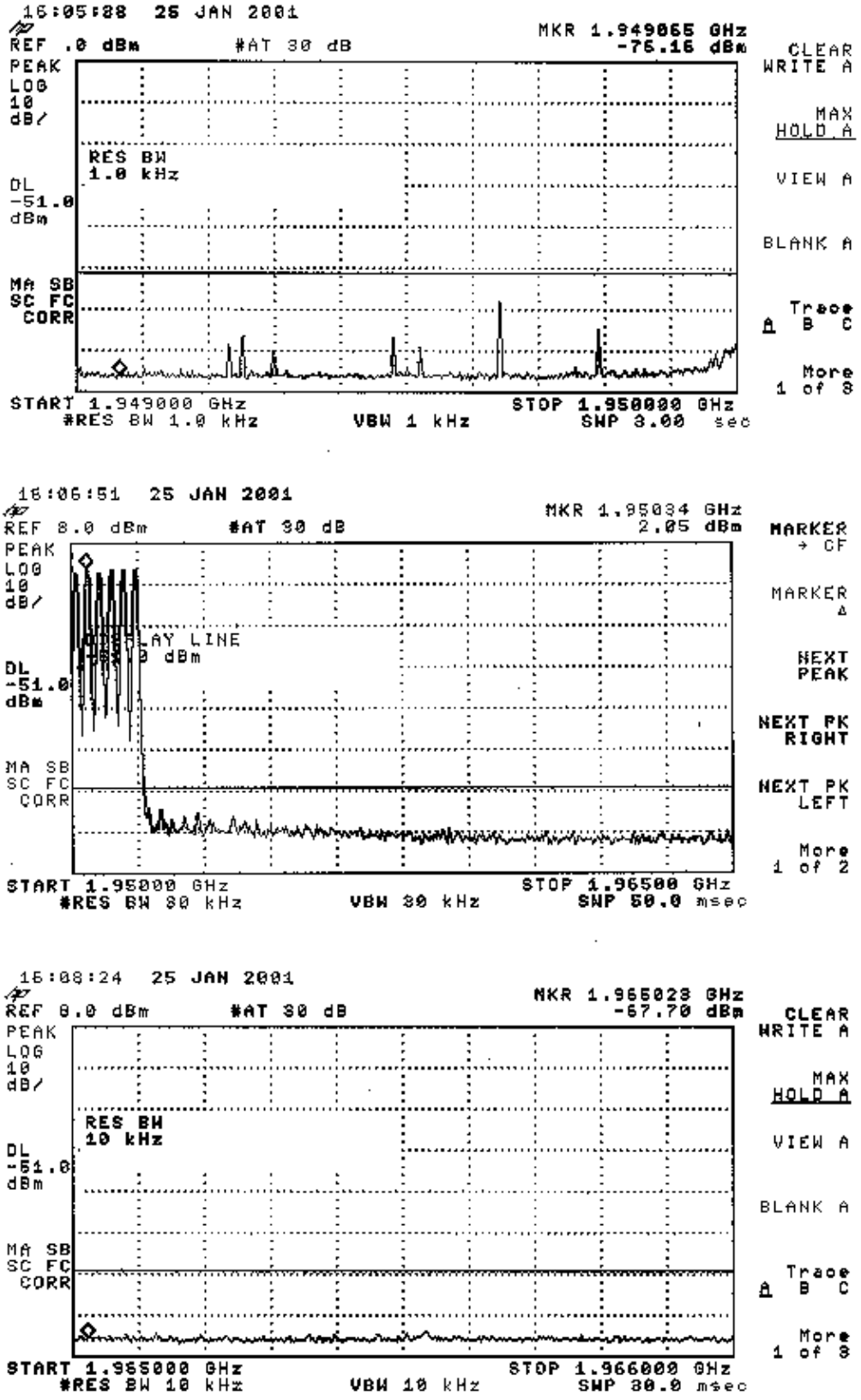
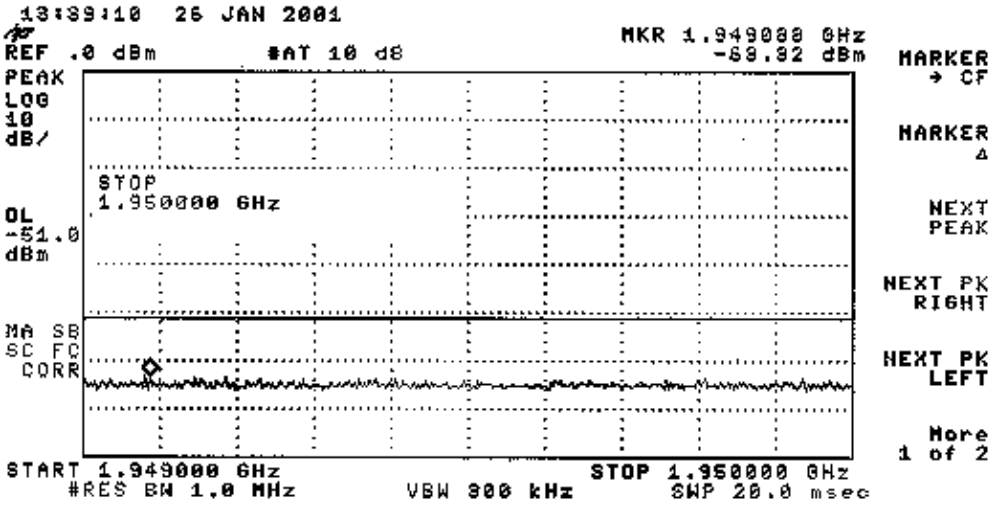
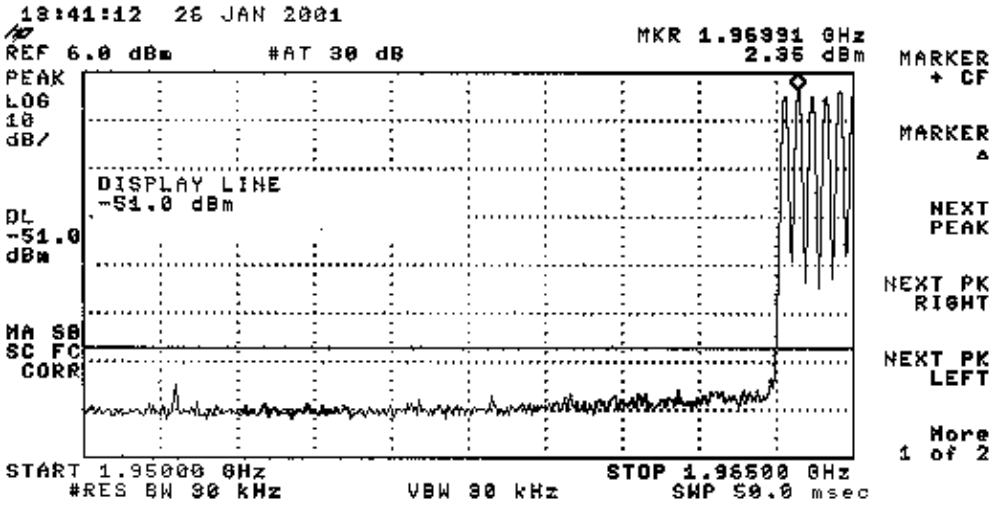


Figure 13: B-Band High Tuning, Band Edge Plots.





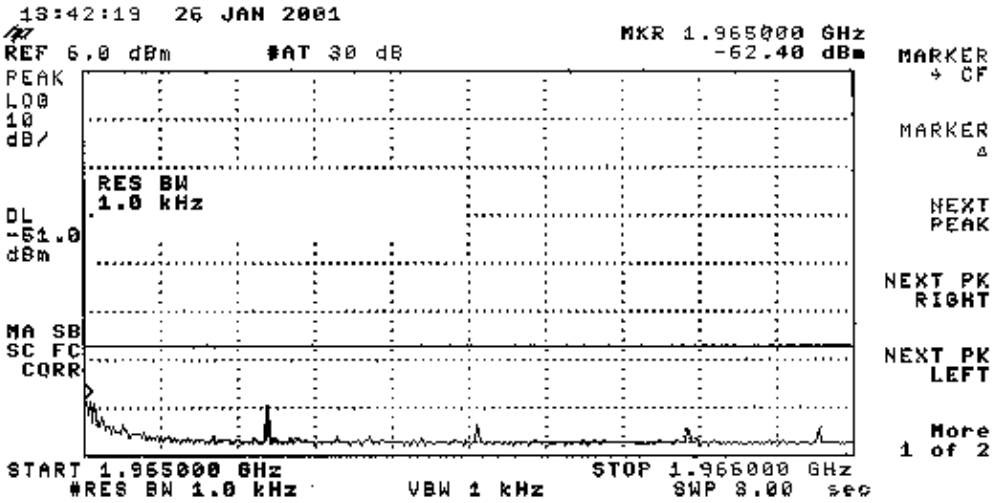


Figure 14: E-Band Low Tuning, Band Edge Plots.

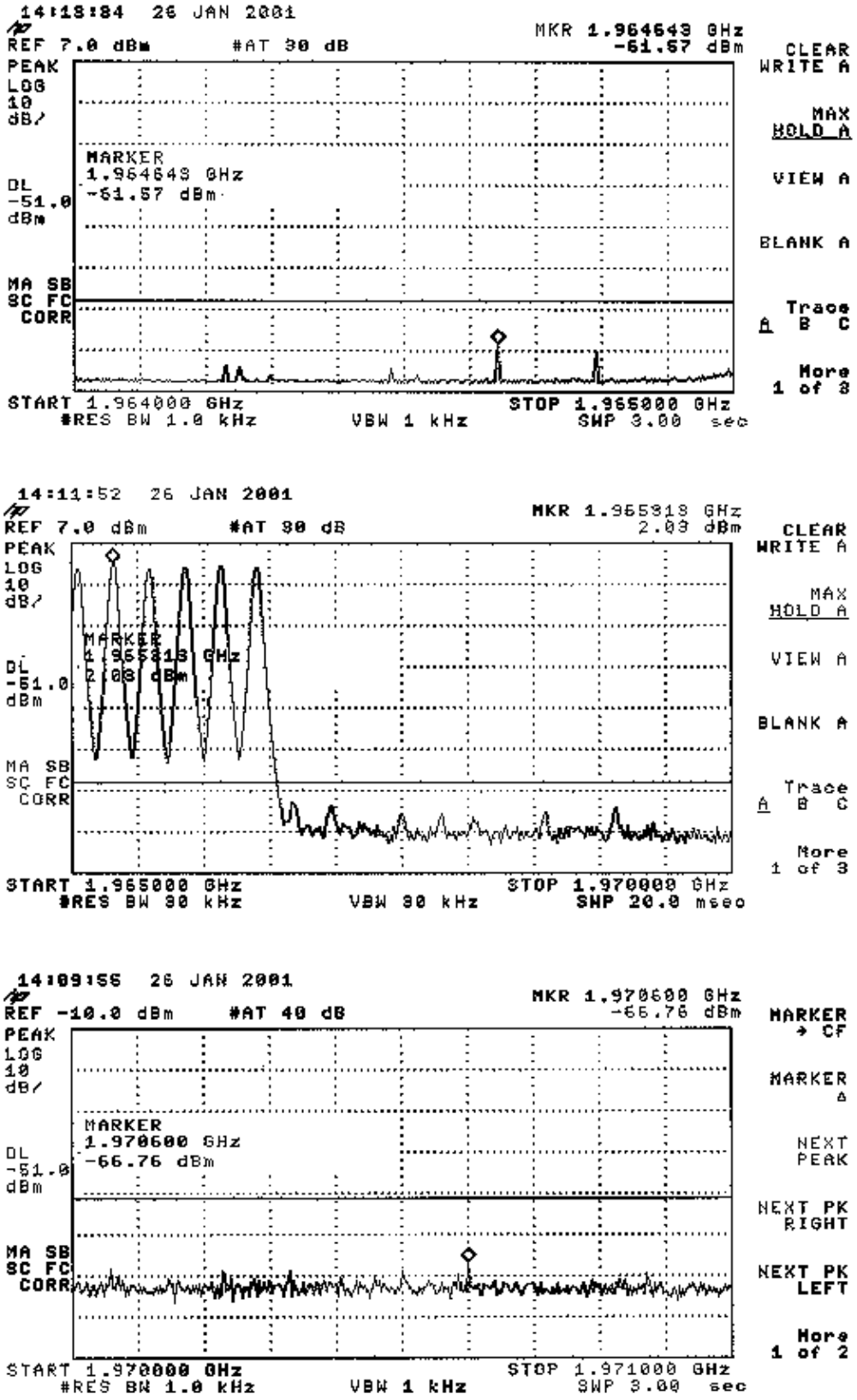
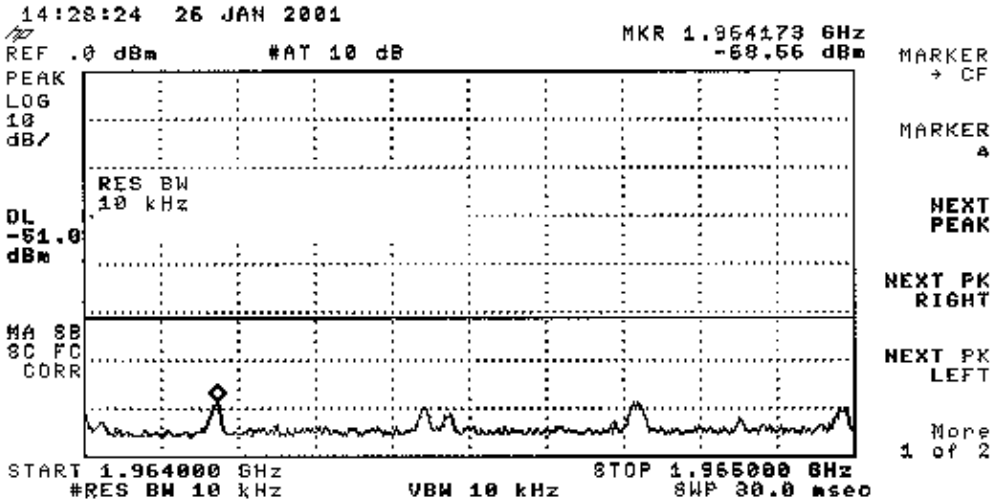
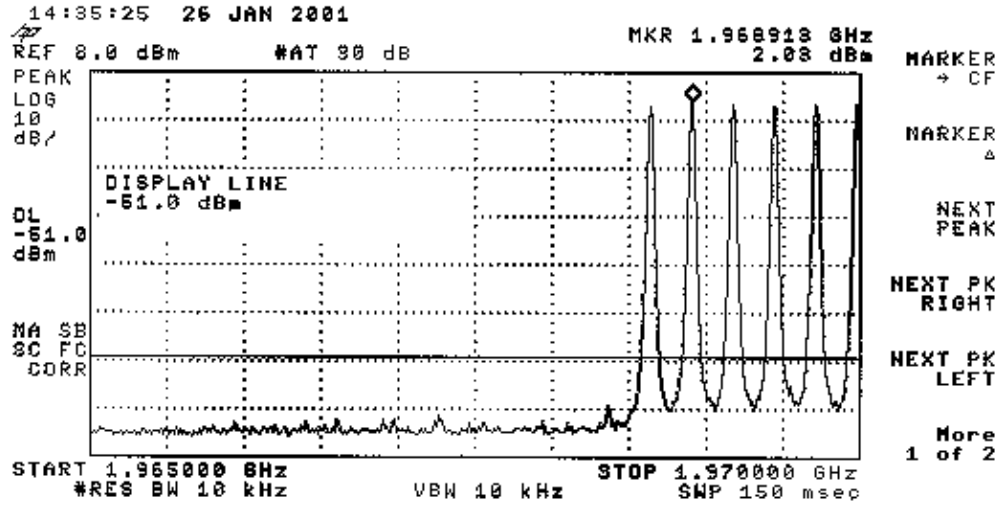


Figure 15: E-Band High Tuning, Band Edge Plots.





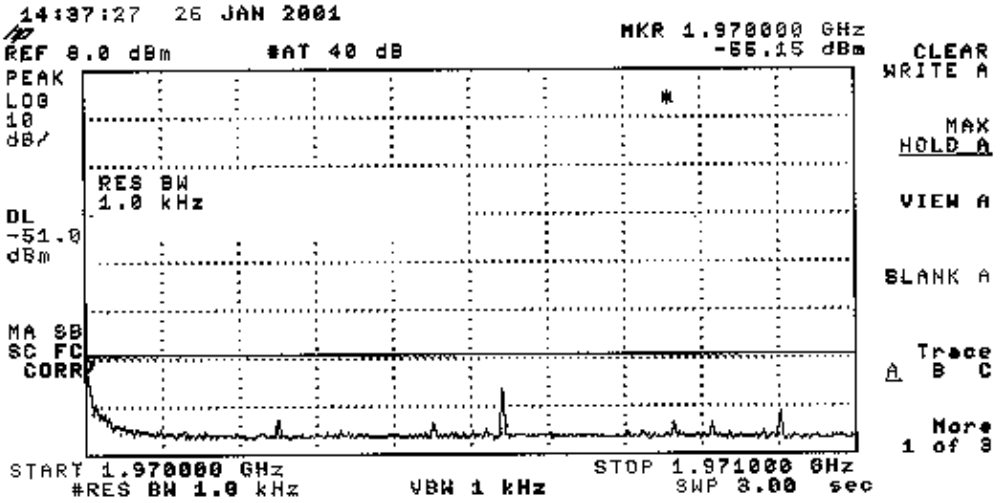


Figure 16: F-Band Low Tuning, Band Edge Plots.

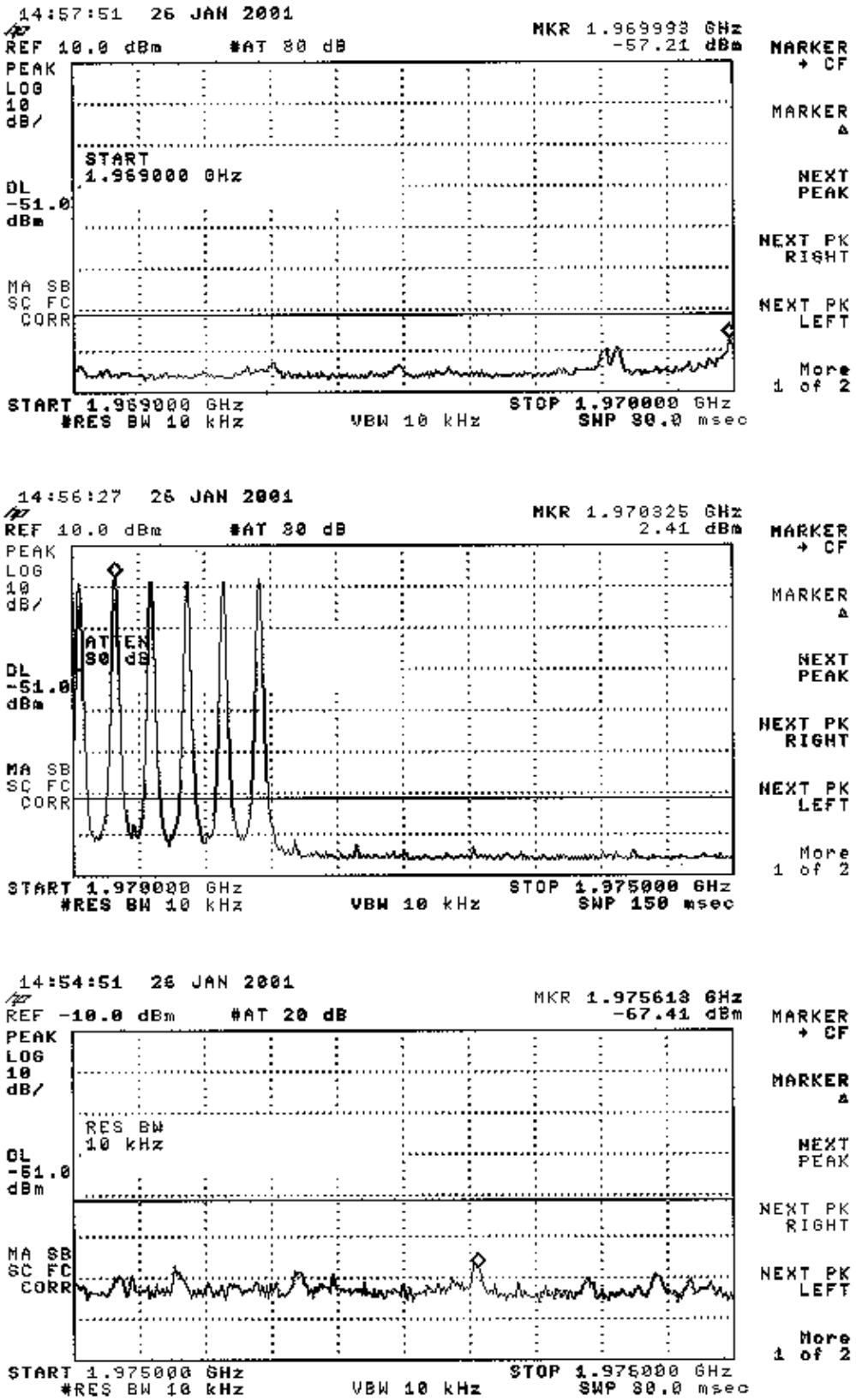


Figure 17: F-Band High Tuning, Band Edge Plots.

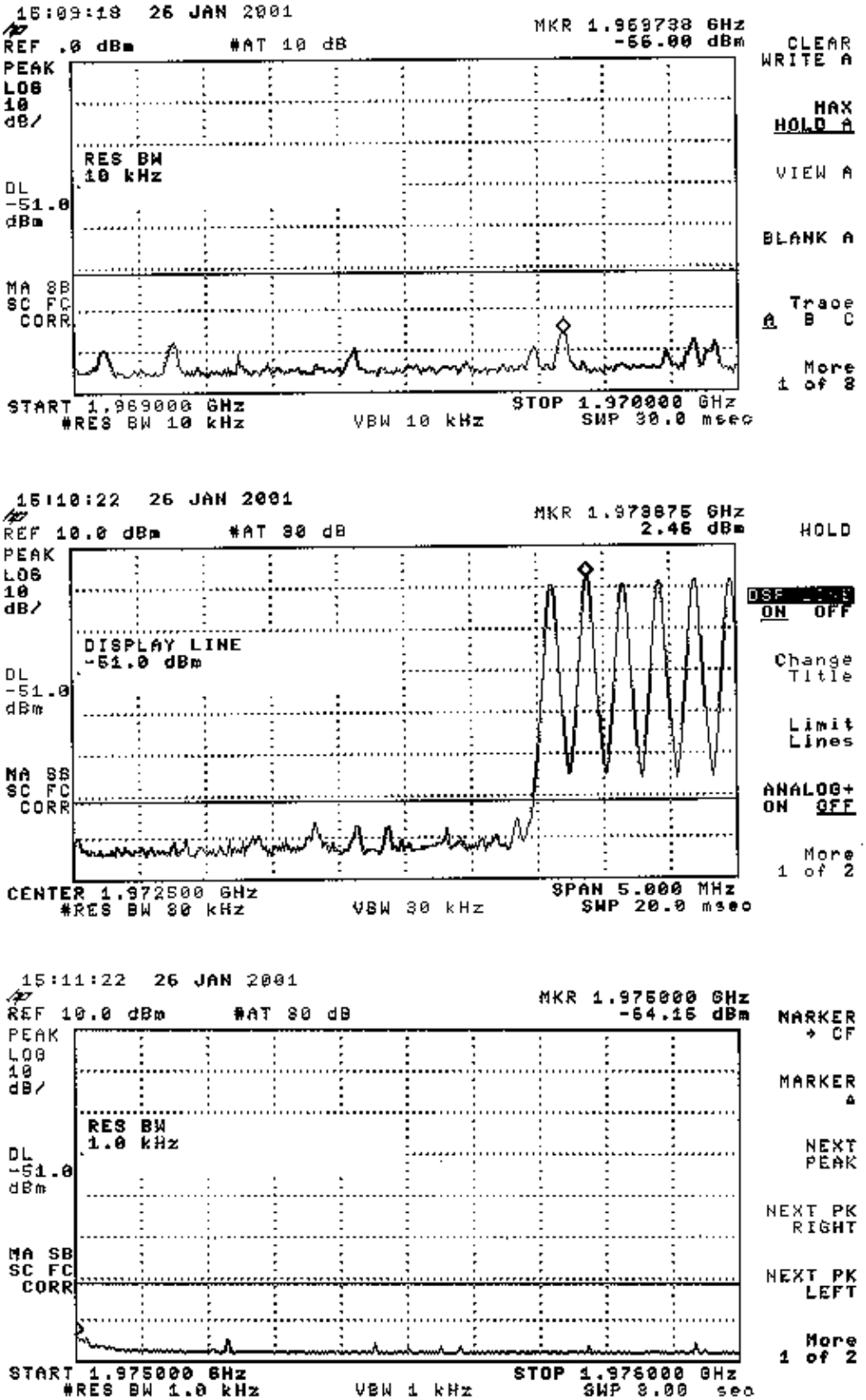


Figure 18: C-Band Low Tuning, Band Edge Plots.

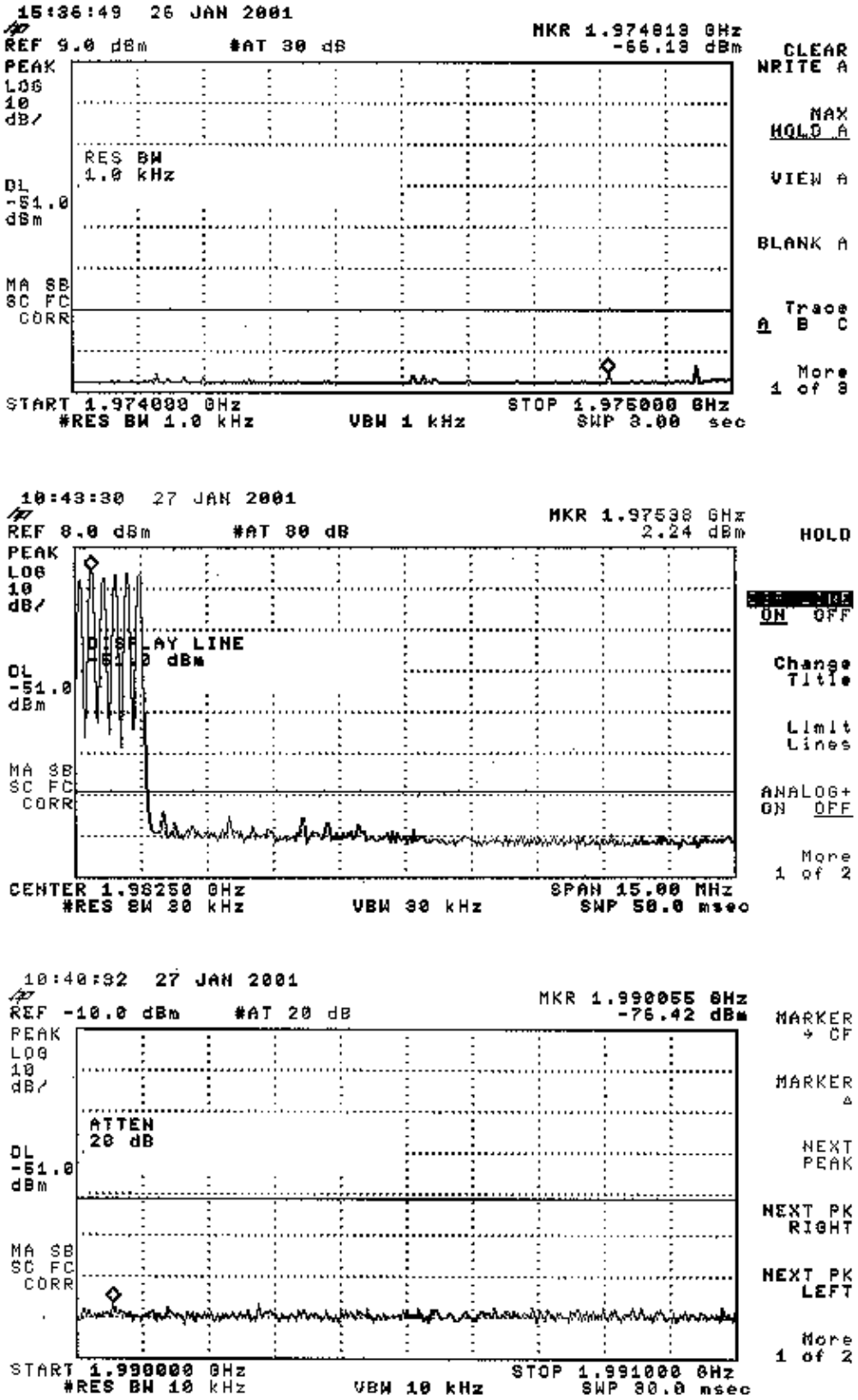


Figure 19: C-Band High Tuning, Band Edge Plots.

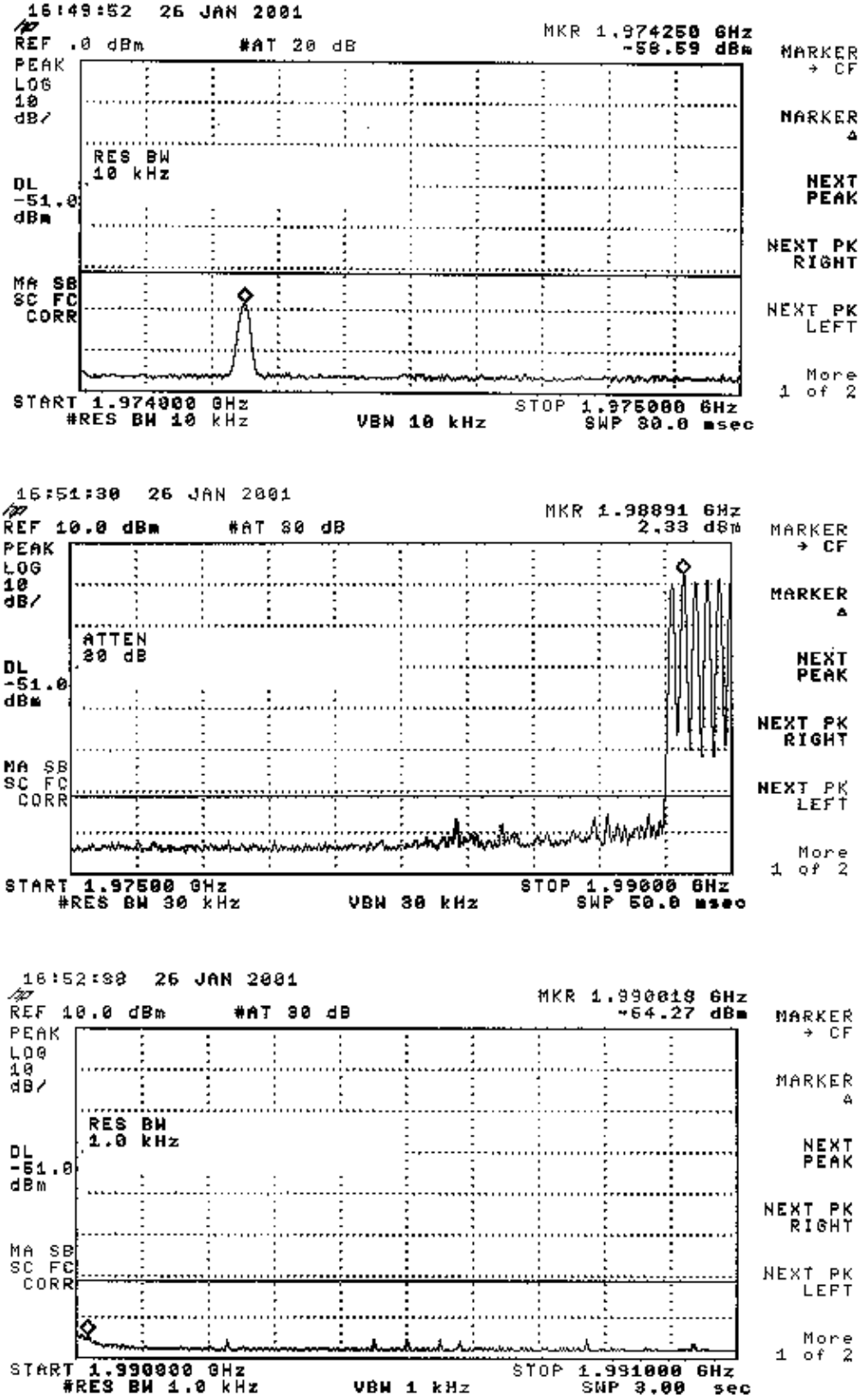


Figure 20: B-Band High Tuning, 10 Hz to 22 GHz.

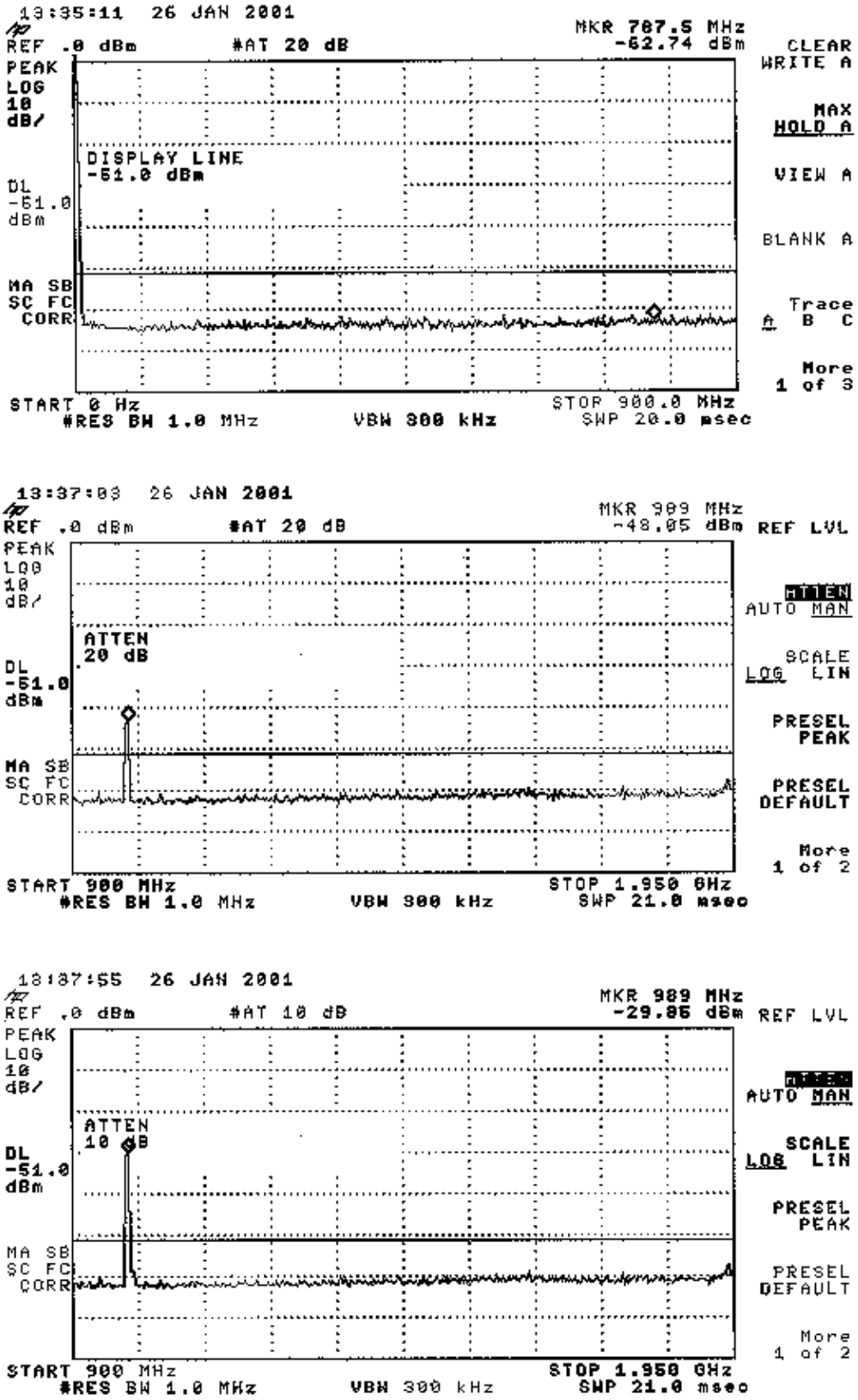
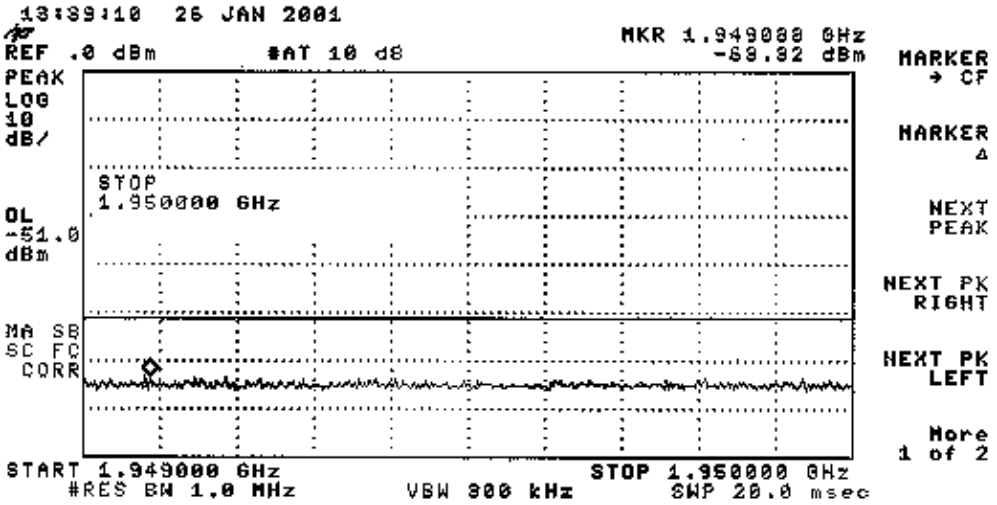
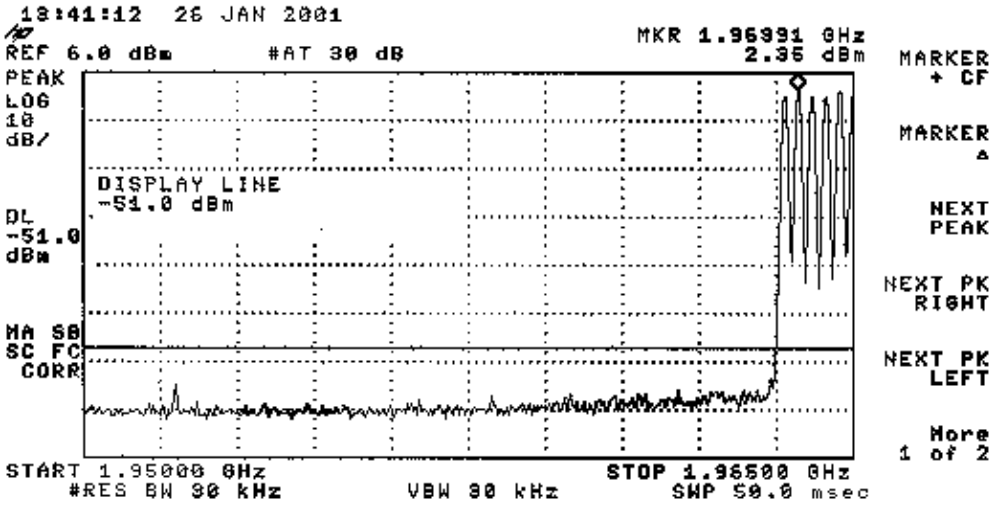


Figure 20: B-Band High Tuning, 10 Hz to 22 GHz (Continued).





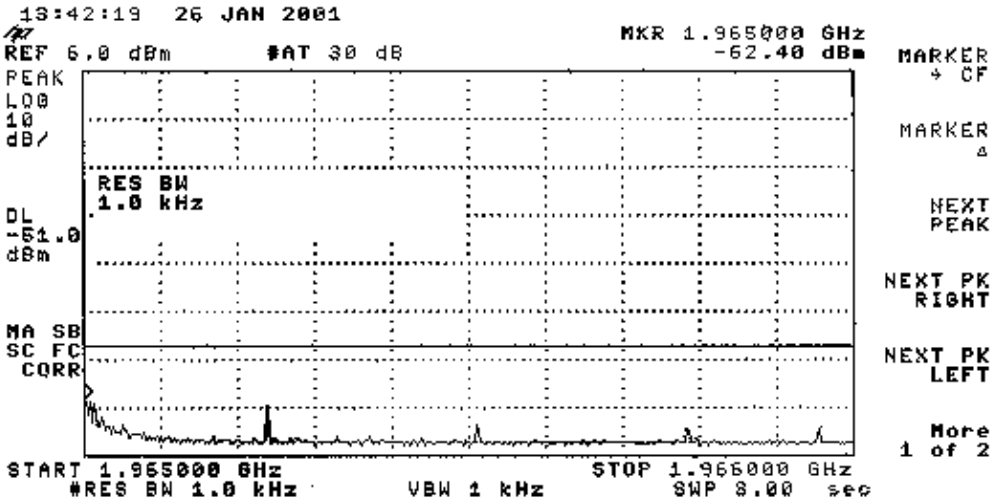
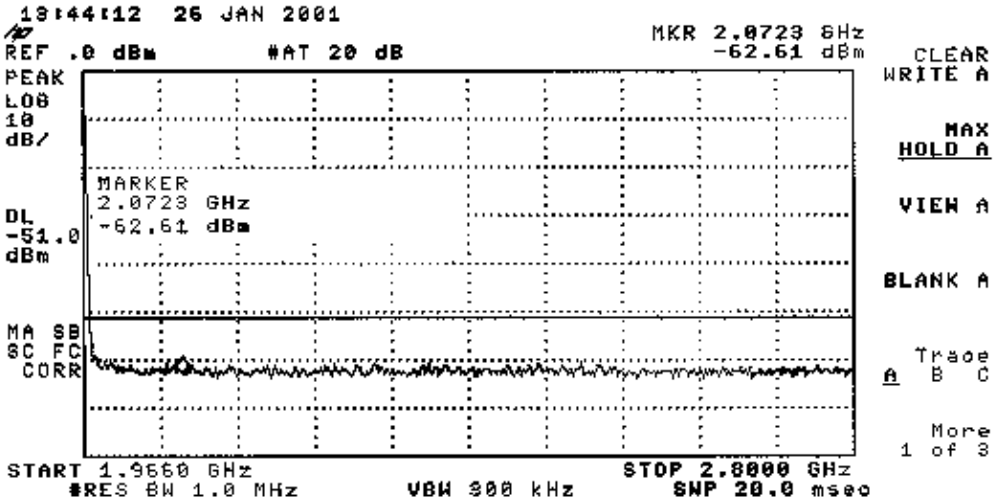
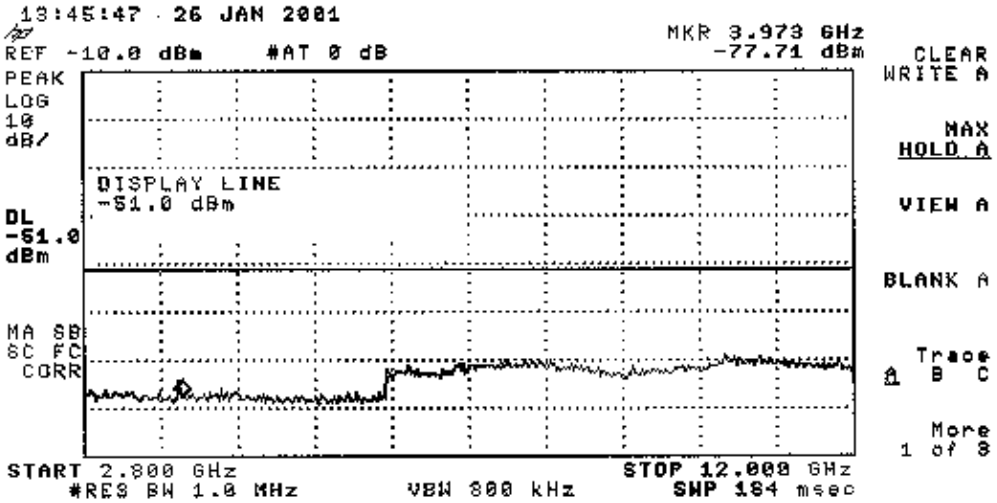


Figure 20: B-Band High Tuning, 10 Hz to 22 GHz (Continued).





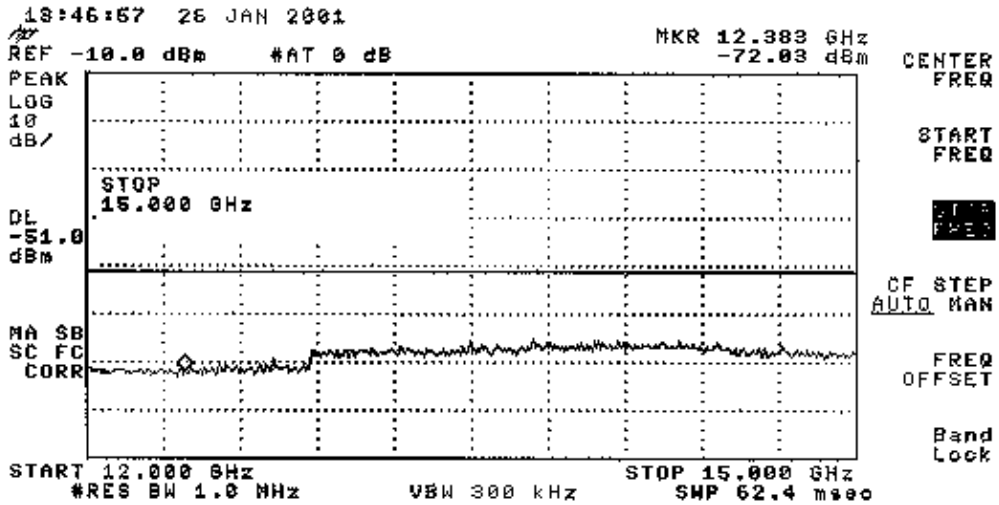
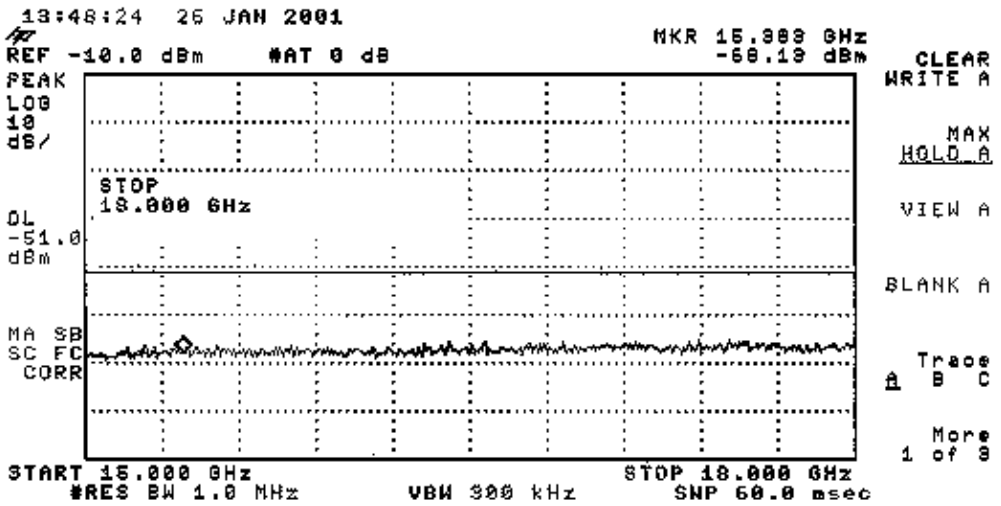
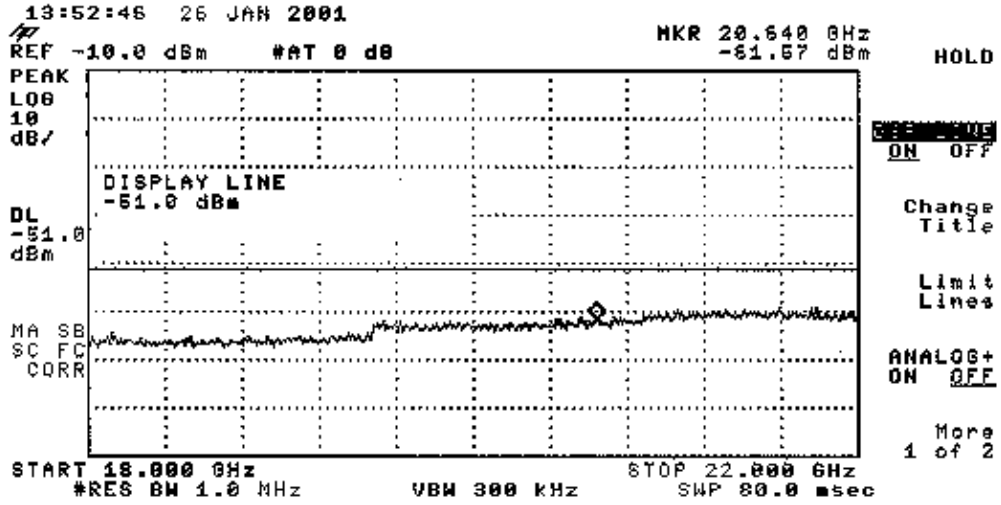
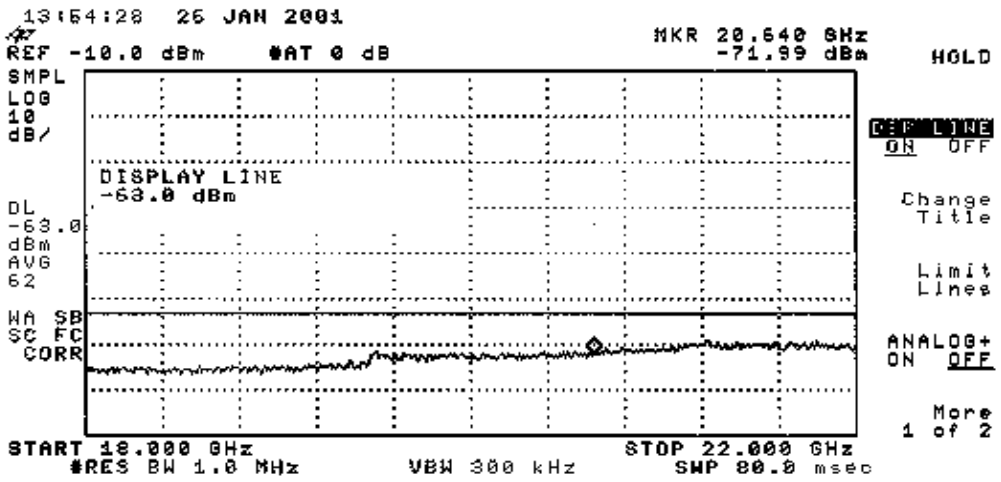


Figure 20: B-Band High Tuning, 10 Hz to 22 GHz (Continued).







This final plot made using an average measurement, with CW tones as output, to offset a decreasing analyzer dynamic range at 18 GHz coupled with increasing cable loss in this range. (DL = -63 dBm)

Figure 21: Measured Cable Loss of Test Setup, 1 GHz to 2.92 GHz.

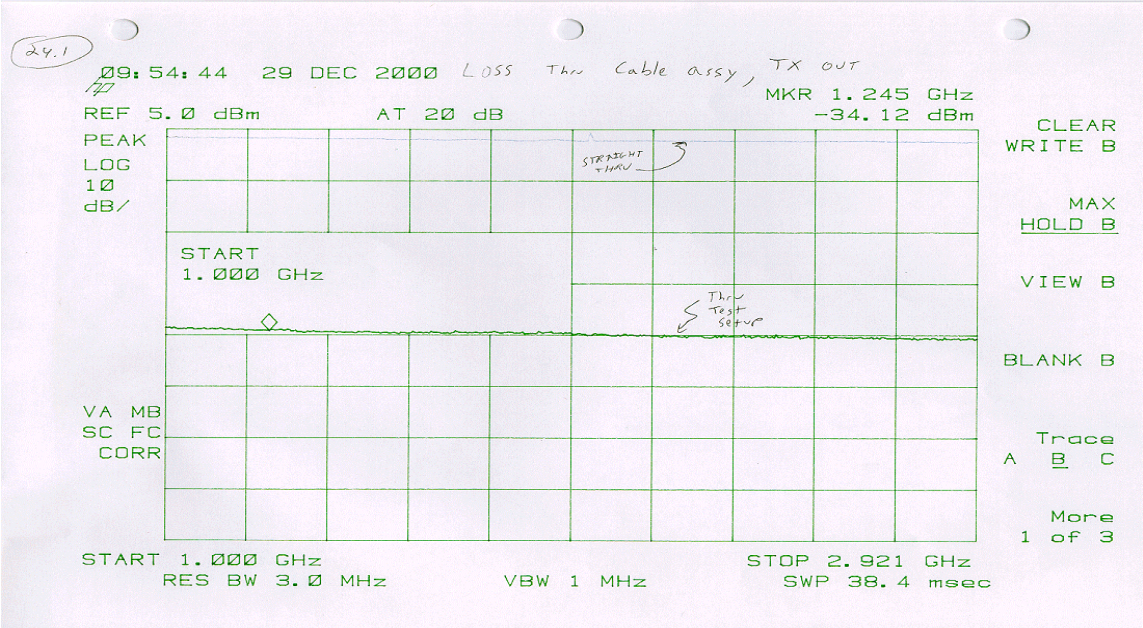


Figure 22: Measured Cable Loss of Test Setup, 2.68 GHz to 6.0 GHz.

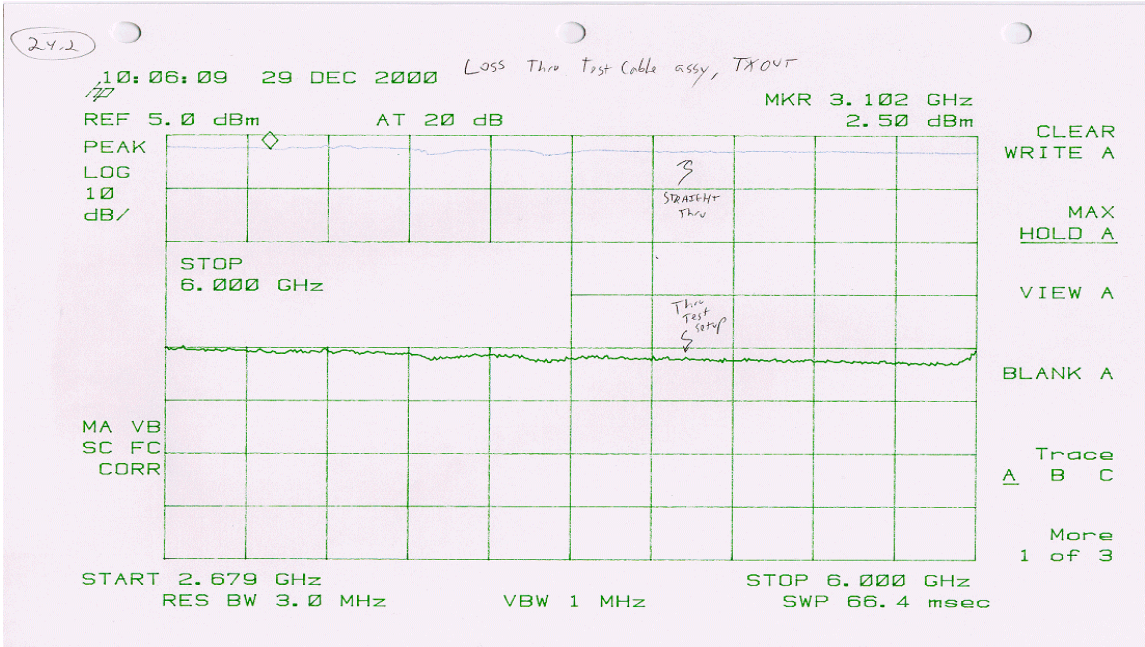


Figure 23: Measured Cable Loss of Test Setup, 6.0 GHz to 12.0 GHz.

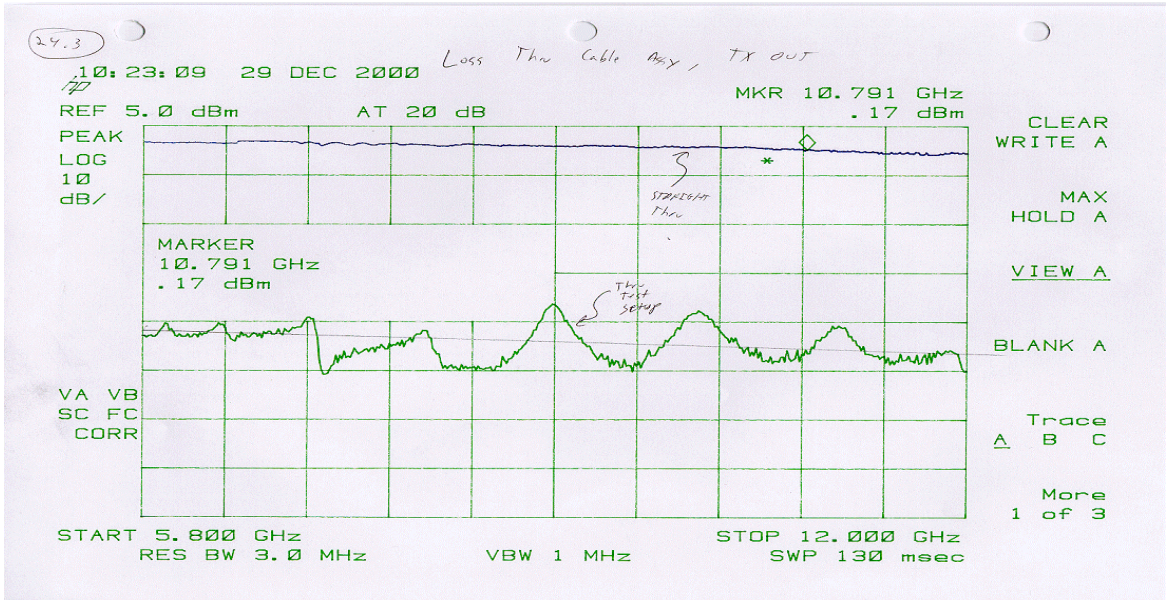


Figure 24: Measured Cable Loss of Test Setup, 12.0 GHz to 15.0 GHz.

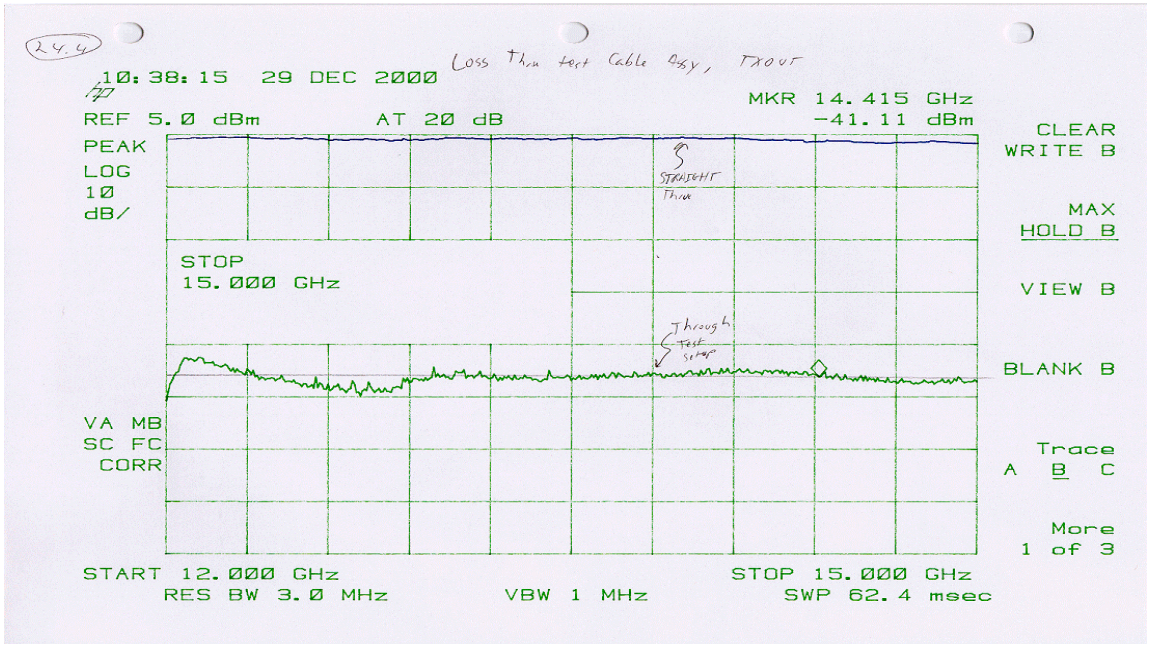


Figure 25: Measured Cable Loss of Test Setup, 15.0 GHz to 15.5 GHz.

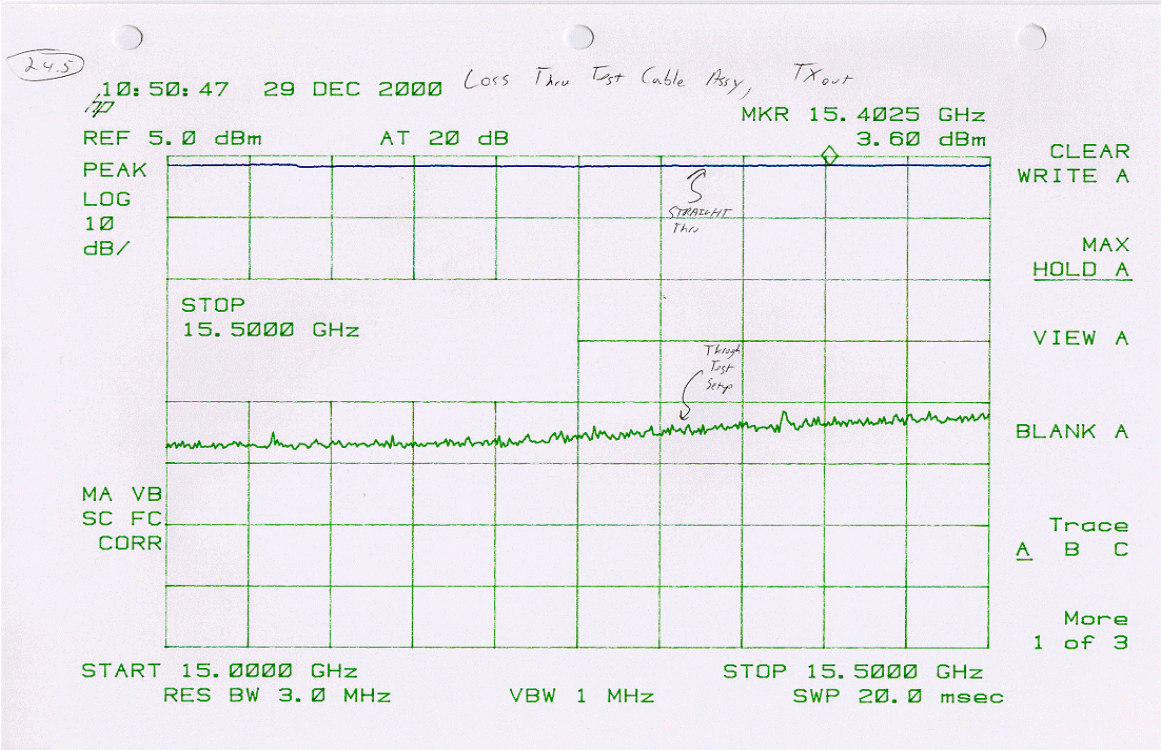


Figure 26: Measured Cable Loss of Test Setup, 15.5 GHz to 18 GHz.