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Report for Emissions Testing of Model 80521 Wireless Net Extender
FCC ID: RA30009260233
In accordance with FCC Part 15, Subpart C (2000)

Test Personnel: David Raynes, James MacKay

Prepared for: Nyko Technologies Inc.
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David Raynes
Senior EMC Technologist
Electronics Test Centre (Airdrie)
Authorized Signatory

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1.0 INTRODUCTION

1.1 SCOPE

The purpose of this report is to present the findings and results of compliance testing performed in accordance with CFR Title 47 FCC Part 15, Subpart C, Intentional Radiators.

1.2 APPLICANT

This test report has been prepared for Nyko Technologies Inc., located in Los Angeles, California, USA.

1.3 APPLICABILITY

All test procedures, limits, and results defined in this document apply to the Nyko Technologies Inc. Model 80521 Wireless Net Extender unit, code-named GEEK during the tests, referred to herein as the Equipment Under Test (EUT).

The results contained in this report relate only to the item tested.

This report does not imply product endorsement by A2LA, NVLAP, or the Canadian or US governments.

1.4 TEST SAMPLE DESCRIPTION

The test sample provided for testing was a Model 80521 Wireless Net Extender:

Product Type:	Wireless Net Extender
Model Number:	80251
Serial Number:	n/a
Cables:	UTP LAN cables
Power Requirements:	115 VAC, 60 Hz
Peripheral Equipment:	Any 10BaseT Ethernet equipment with RJ45 connector

More detailed information is provided by Nyko Technologies Inc. in Appendix A.

1.5 GENERAL TEST CONDITIONS AND ASSUMPTIONS

The EUT was set up and exercised using the configurations, modes of operation and arrangements defined in this report only. All inputs and outputs to and from other equipment associated with the EUT were adequately simulated.

Where relevant, the EUT was only tested using the monitoring methods and test criteria defined in this report.

Environmental conditions are recorded for each test.

1.6 SCOPE OF TESTING

Testing was performed in accordance with FCC Part 15 Subpart C (2000), and ANSI C63.4 (2000).

1.6.1 VARIATIONS IN TEST METHODS

There were no variations from the test procedures outlined above.

1.6.2 MARGINAL EMISSIONS MEASUREMENTS

As noted in Section 4, some emissions were measured to be within -6 dB of the specified limit.

1.6.3 TEST SAMPLE CONFIGURATION & MODIFICATIONS

The Base unit was selected for testing, as being the more complex unit of the pair. The Remote version of this device only has one Ethernet connection, versus two for the Base. During emissions testing, the test sample was being pinged via Ethernet cable, from a host computer located outside the test chamber.

During testing for Radiated Emissions, the test sample was positioned as in normal use, oriented with the integral antenna facing the receiving antenna when the turntable was at 0º of azimuth. The plastic cover was left uninstalled during these tests, in order to facilitate connection to a programming module which was temporarily connected to an internal header for changing Tx channels.

No EUT modifications were performed in order to meet the specifications.

2.0 ABBREVIATIONS

AP -Average Peak
CE -Conducted Emissions
E -Field - Electric Field
H -Field - Magnetic Field
N/T -Not Tested
N/A -Not Applicable
PK -Peak
QP -Quasi Peak
RE -Radiated Emissions

3.0 MEASUREMENT UNCERTAINTY

For Radiated E-Field Emissions and Conducted Emissions, the uncertainties in the measurements were calculated using the methods outlined in the NAMAS document, NIS81: May 1984.

Frequency	= ± 1 kHz
Amplitude (RE)	= ± 4.01 dB
Amplitude (CE)	= ± 3.25 dB

4.0 TEST CONCLUSION

The EUT was subjected to the following tests. Compliance status is reported as **PASS** or **FAIL**. Test conditions that are not applicable to the EUT are marked **n/a**. If testing was not performed at this time, the appropriate field is marked **n/t**.

The following table summarizes the test results in terms of the specification and class or level applied, the unique test sample identification, the EUT modification state, and configuration as applicable.

TEST CASE	TEST TYPE	SPECIFICATION	TEST SAMPLE	MOD. STATE	CONFIGURATION	RESULT
§4.1	Conducted Emissions at AC lines	FCC Part 15.107 and 15.207	Model 80521 Wireless Net Extender	nil	See § 1.6.3	**PASS**
§4.2a	Radiated Emissions (Rx Mode)	FCC Part 15.109	Model 80521 Wireless Net Extender	nil	See § 1.6.3	**PASS**
§4.2b	Radiated Emissions (Tx Mode)	FCC Parts 15.205, 15.209 and 15.249	Model 80521 Wireless Net Extender	nil	See § 1.6.3	**PASS**

STATEMENT OF COMPLIANCE

The client equipment referred to in this report was found to comply with the requirements as stated above.

4.1 CONDUCTED EMISSIONS ON AC POWER LINES

Test Lab: Electronics Test Centre (Airdrie) Test Personnel: David Raynes Test Date: 12 August 2003	Product: Model 80521 Wireless Net Extender
Test Result, Model 80521 Wireless Net Extender: **PASS**	
Objectives/Criteria The Conducted emissions produced by a system or sub-system shall not exceed the limits for the specifications as stated. **Emission levels should meet the requirements with a margin of 6dB**. Temperature = 19 °C Humidity = 37 %	Specification: Frequency (MHz) QP Avg 0.150 - 0.50 66 – 56 56 - 46 0.50 – 5.0 56 46 5 – 30 60 50 Units of measurement are dBµV.
There were no emissions measured within -10 dB of the specified limit. Refer to the test data plots for more detail.	

Conducted Emissions Data:

The emissions data is presented in tabular form, showing the uncorrected spectrum analyzer reading, the type of detector, the correction factors applied, the net result, the value(s) of up to 4 limits at the frequency measured, and the margin between the result and the limit(s).

For example:

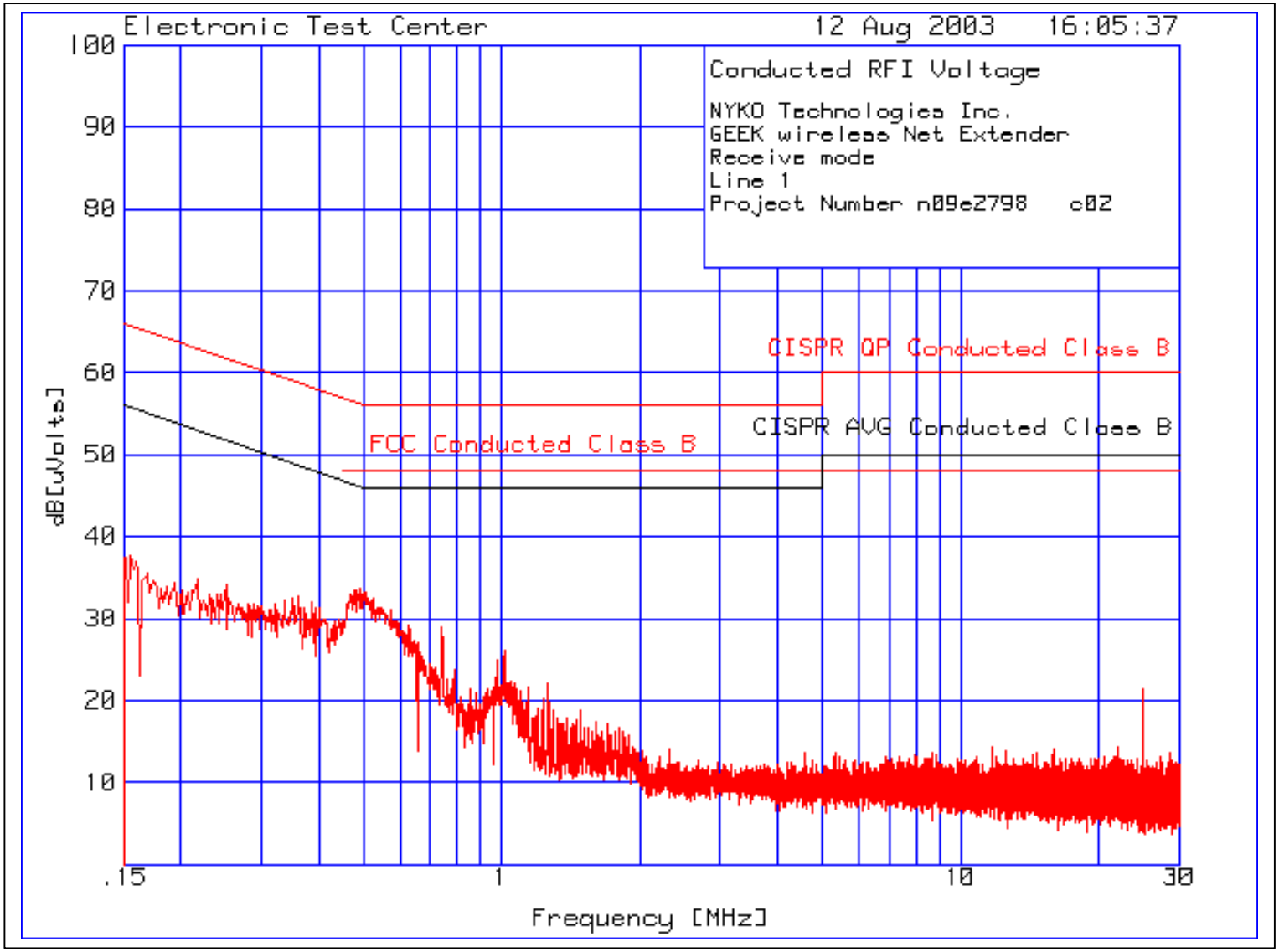
```
Test    Meter  Gain/Loss Transducer Level Limit:1     2     3     4
Frequency Reading  Factor    Factor    [dB(uVolts)]
  [MHz]   [dB(uV)]  [dB]      [dB]
=============================================================================
L1
.3052      35.6 pk   10       1.1      46.7   66      79     50.1   60.1
                               Margin [dB]  -19.3   -32.3  -3.4   -13.4
```

L1		This reading was taken on Line 1
Test Frequency [MHz}	.3052	Test Frequency f = 0.3052 MHz (305.2 kHz)
Meter Reading [dB (uV)]	35.6 pk	The reading with Peak detector
Gain/Loss Factor [dB]	10	Net correction for preamp gain & cable loss
Transducer Factor [dB]	1.1	Correction for LISN loss
Level [dB (uVolts)]	46.7	Corrected value for voltage measurement
Limit: 1	66	The value of Limit 1 at 0.3052 MHz
Margin [dB]	-19.3	The measured voltage is 19.3 dB below Limit 1
Limit: 2	79	The value of Limit 2 at 0.3052 MHz
Margin [dB]	-32.3	The measured voltage is 32.3 dB below Limit 2
Limit: 3	50.1	The value of Limit 3 at 0.3052 MHz
Margin [dB]	- 3.4	The measured voltage is 3.4 dB below Limit 3
Limit: 4	60.4	The value of Limit 4 at 0.3052 MHz
Margin [dB]	-13.4	The measured voltage is 13.4 dB below Limit 4

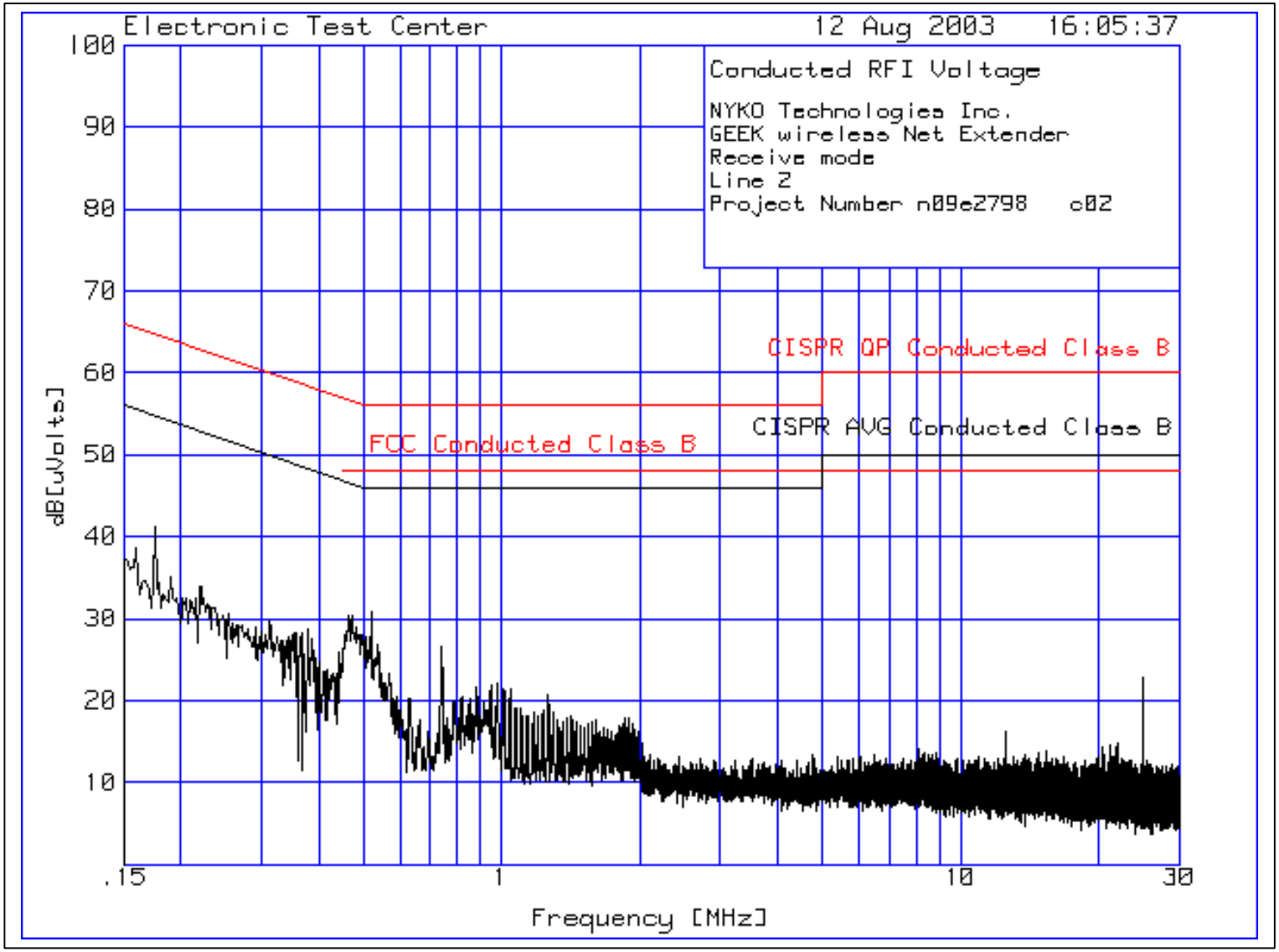
Meter Reading in dBuV + Gain/Loss Factor in dB + Transducer Factor in dB = Corrected Voltage

Note: When a preamp is used, the resulting gain is compensated.

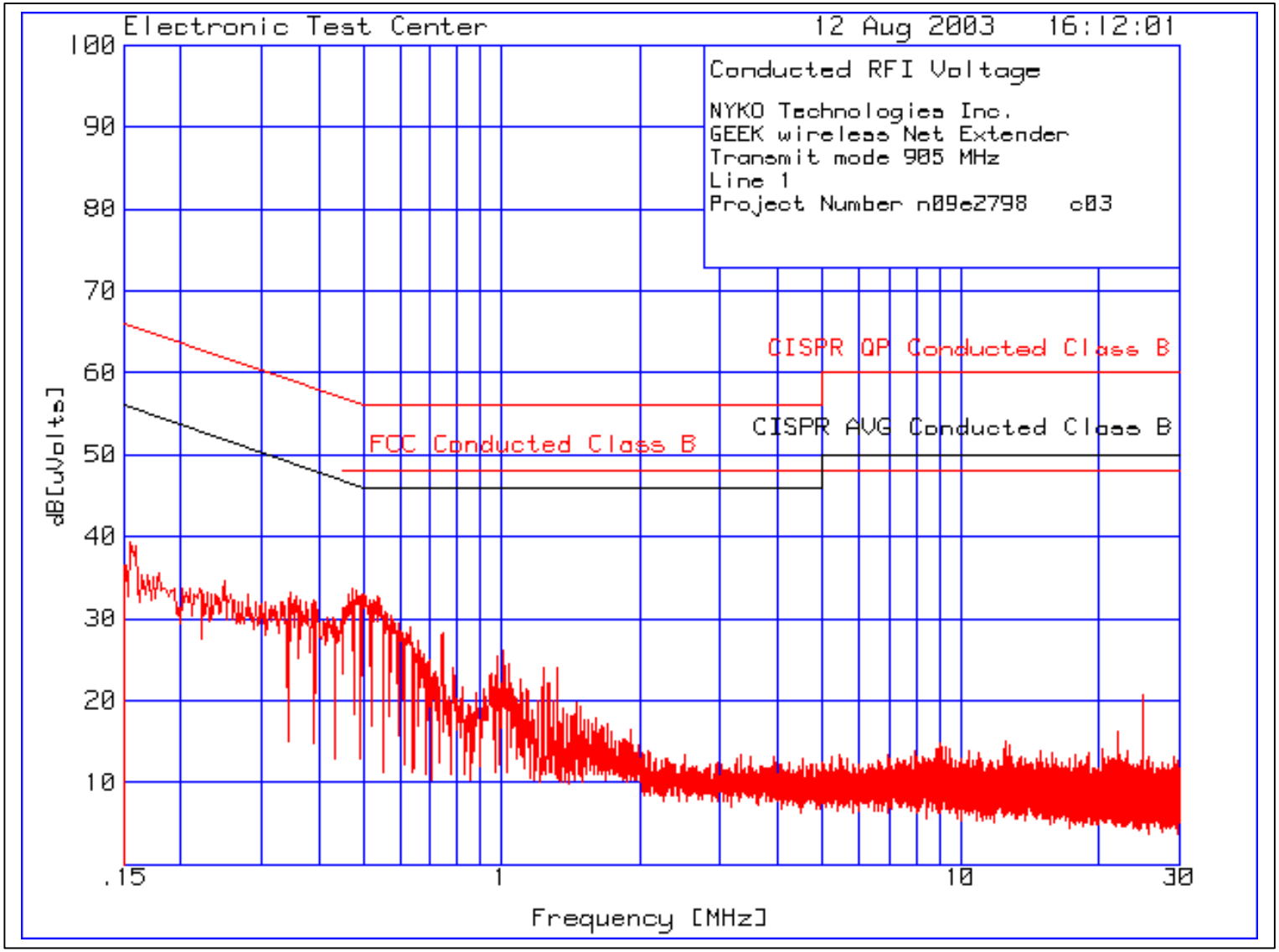
Plot of Conducted Emissions on AC Power Lines: Receive Mode



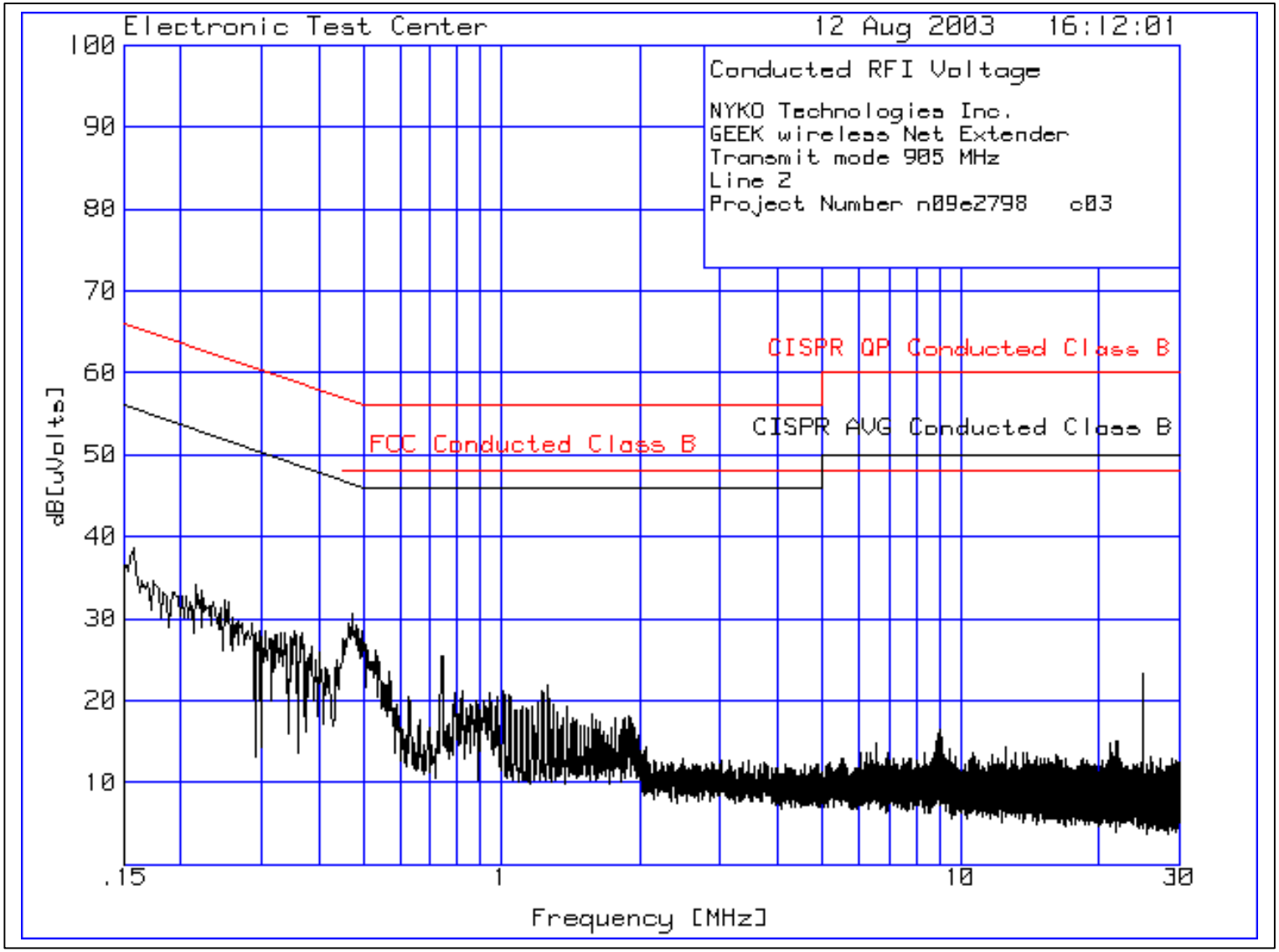
Plot of Conducted Emissions on AC Power Lines: Receive Mode



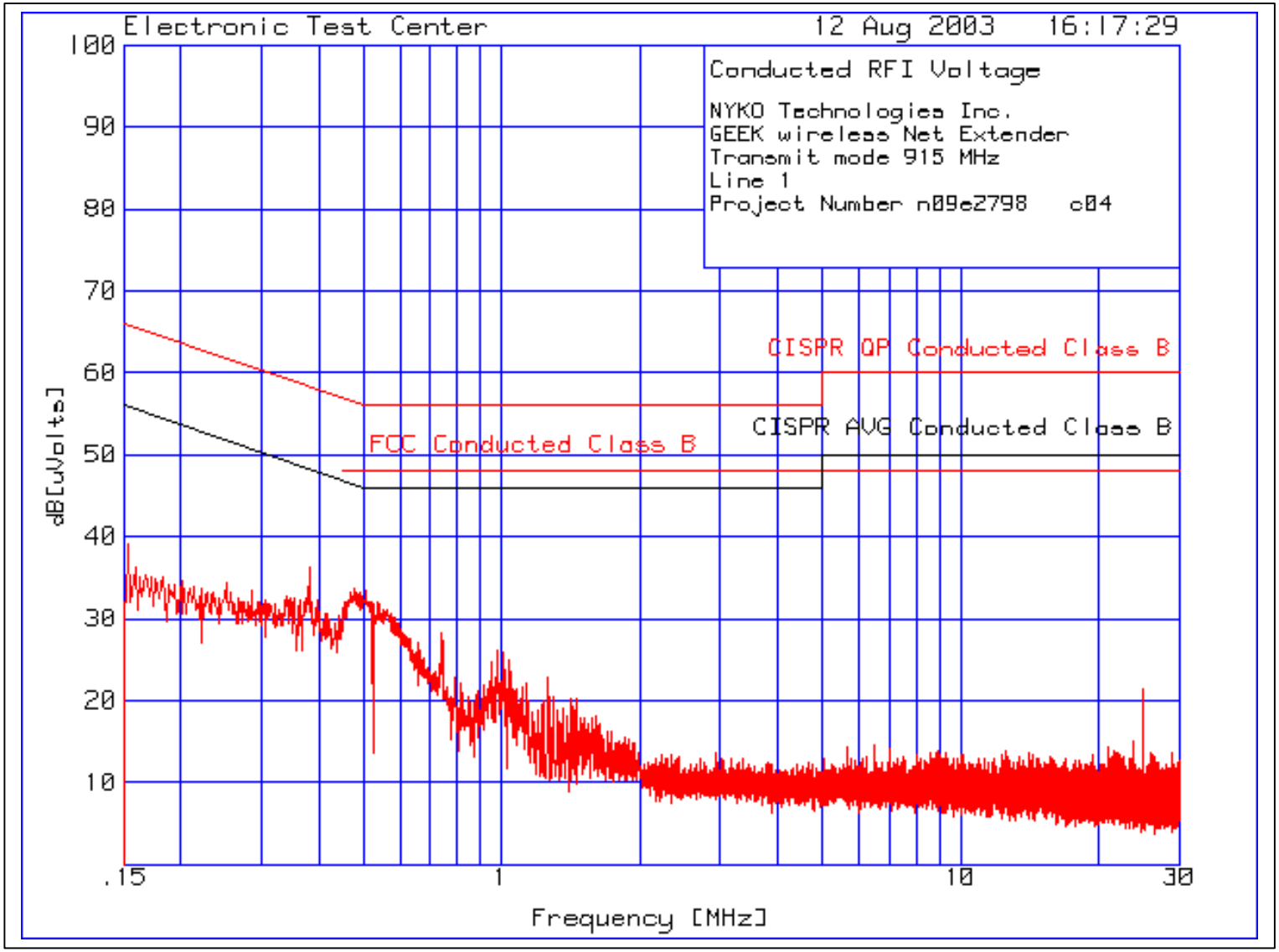
Plot of Conducted Emissions on AC Power Lines: Transmit @ 905 MHz



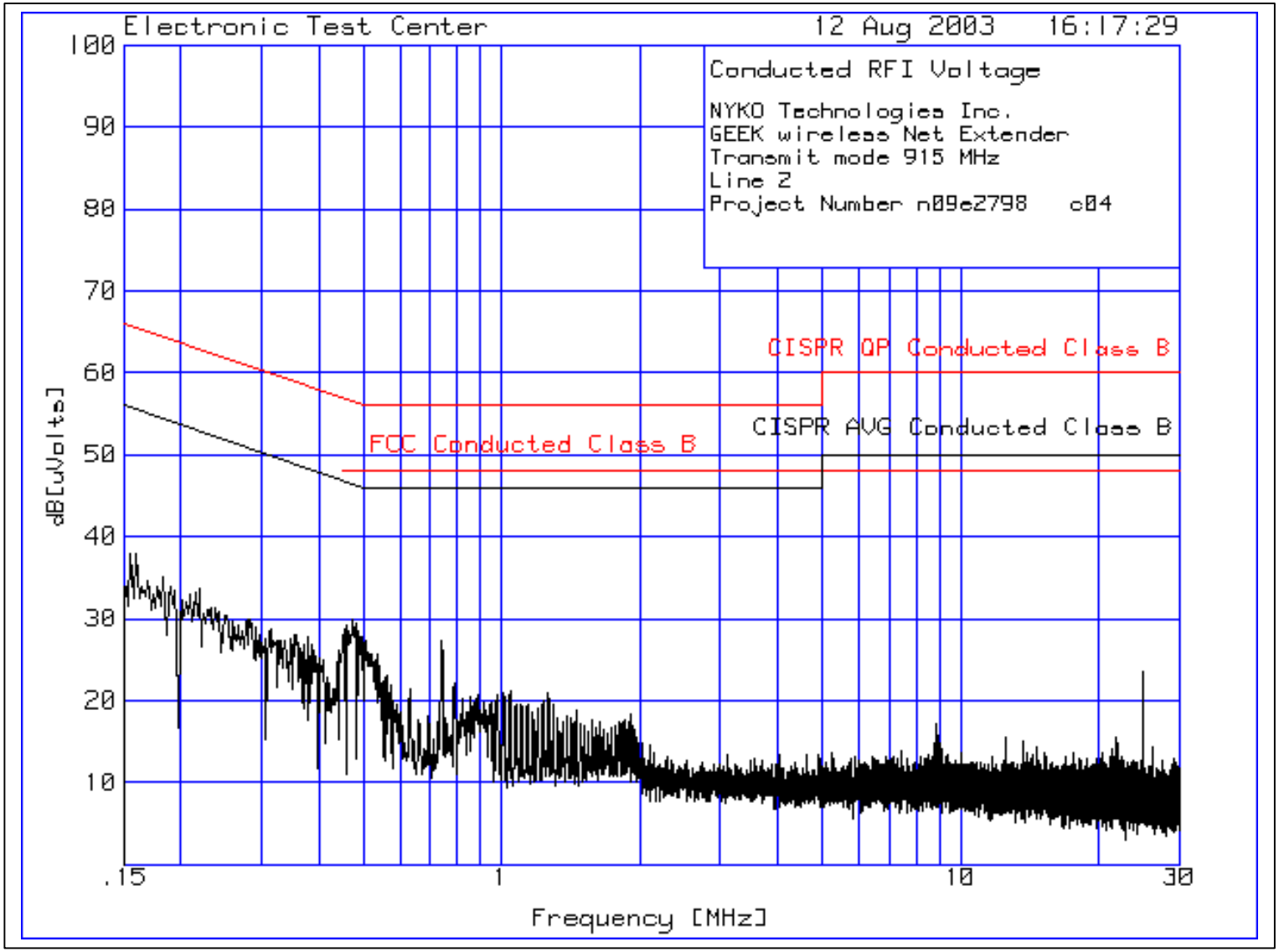
Plot of Conducted Emissions on AC Power Lines: Transmit @ 905 MHz



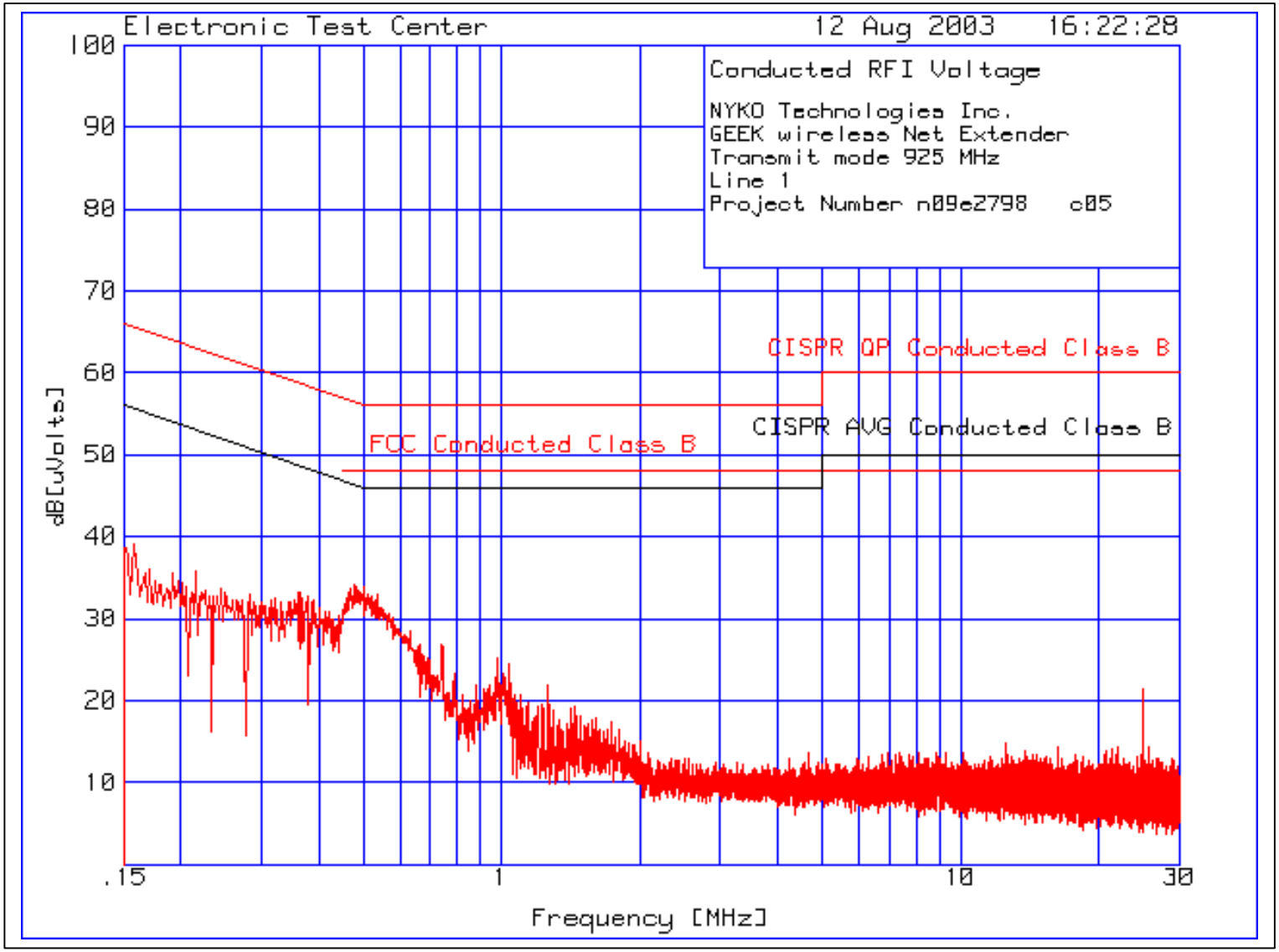
Plot of Conducted Emissions on AC Power Lines: Transmit @ 915 MHz



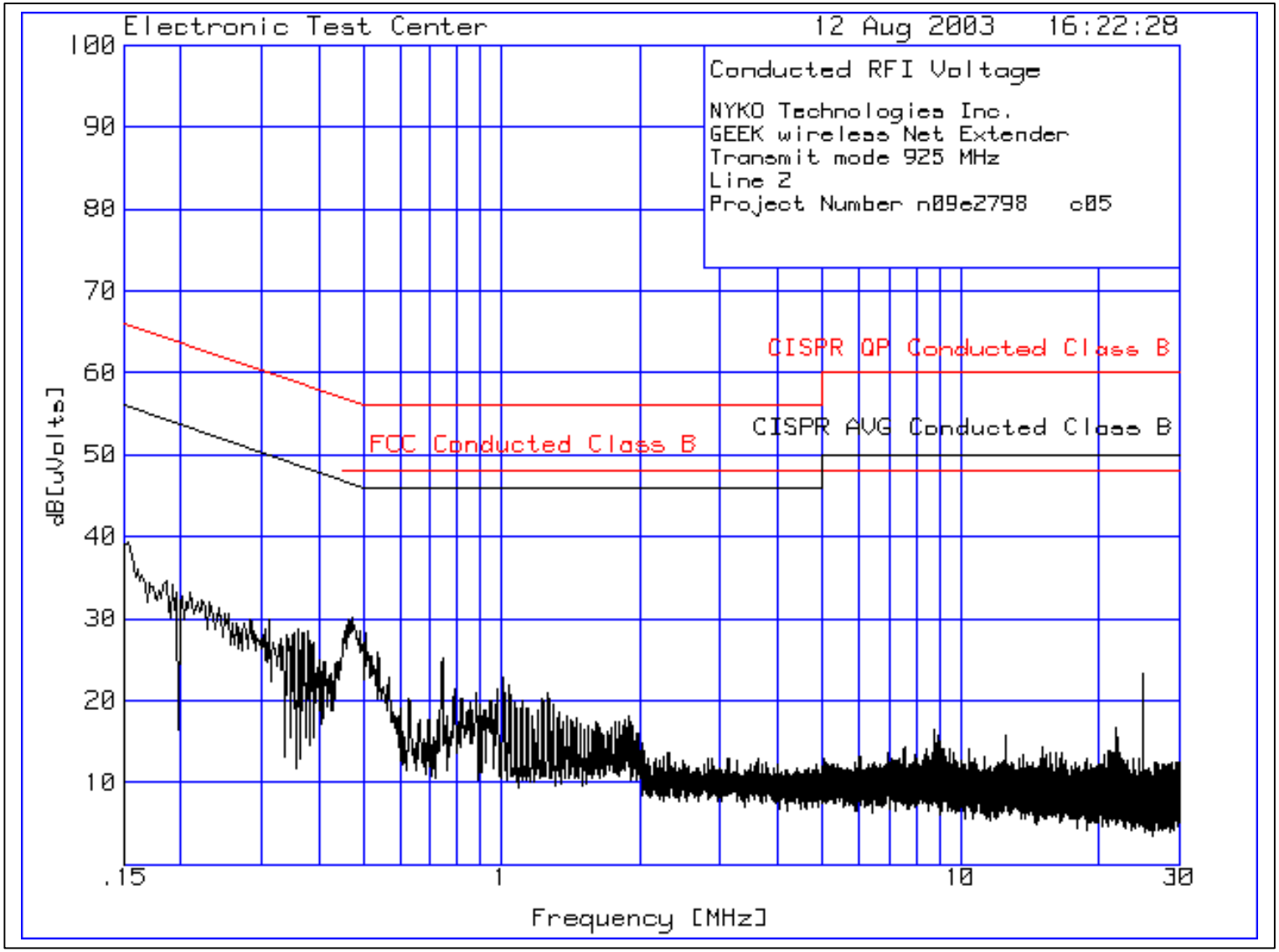
Plot of Conducted Emissions on AC Power Lines: Transmit @ 915 MHz



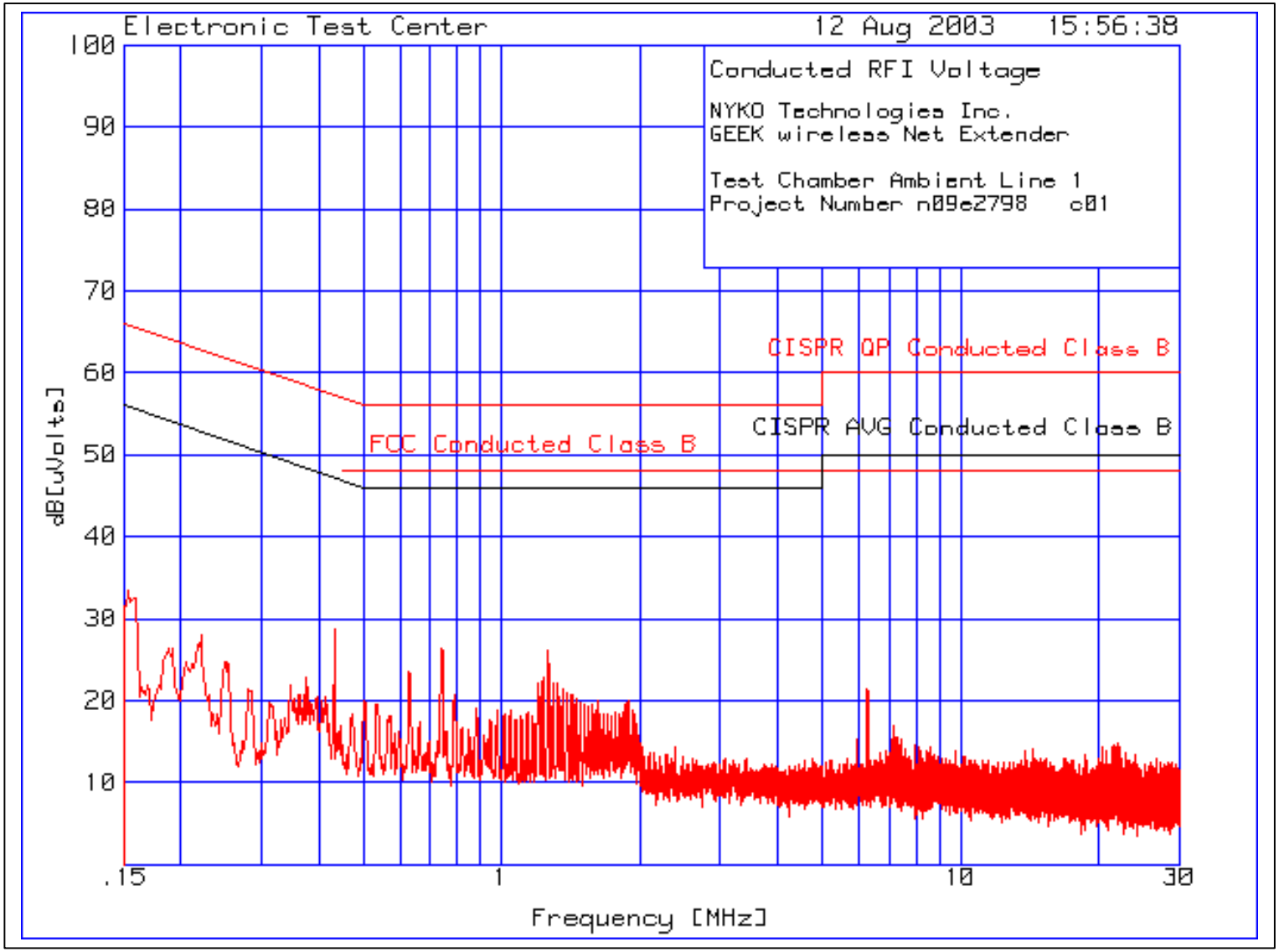
Plot of Conducted Emissions on AC Power Lines: Transmit @ 925 MHz



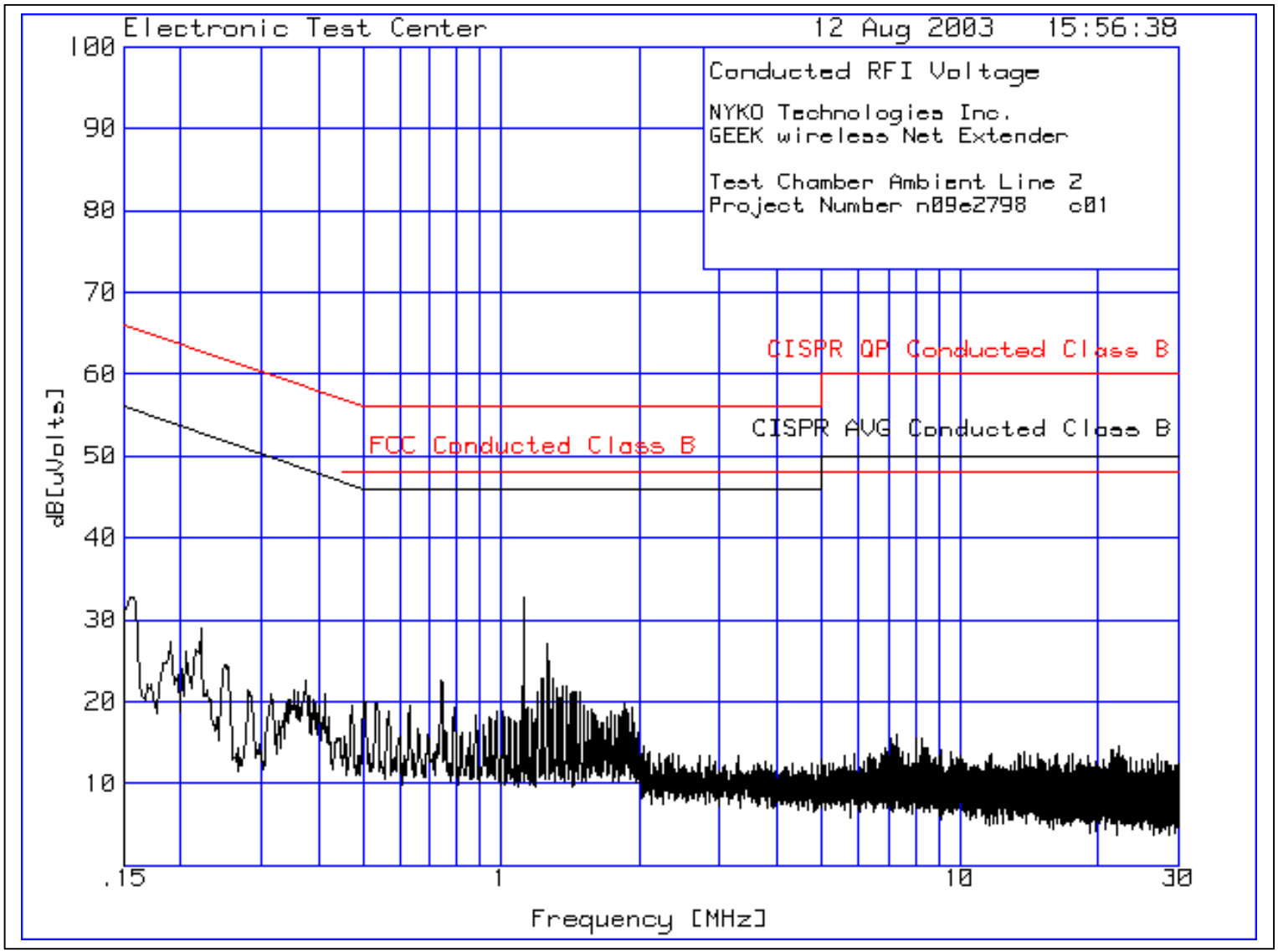
Plot of Conducted Emissions on AC Power Lines: Transmit @ 925 MHz



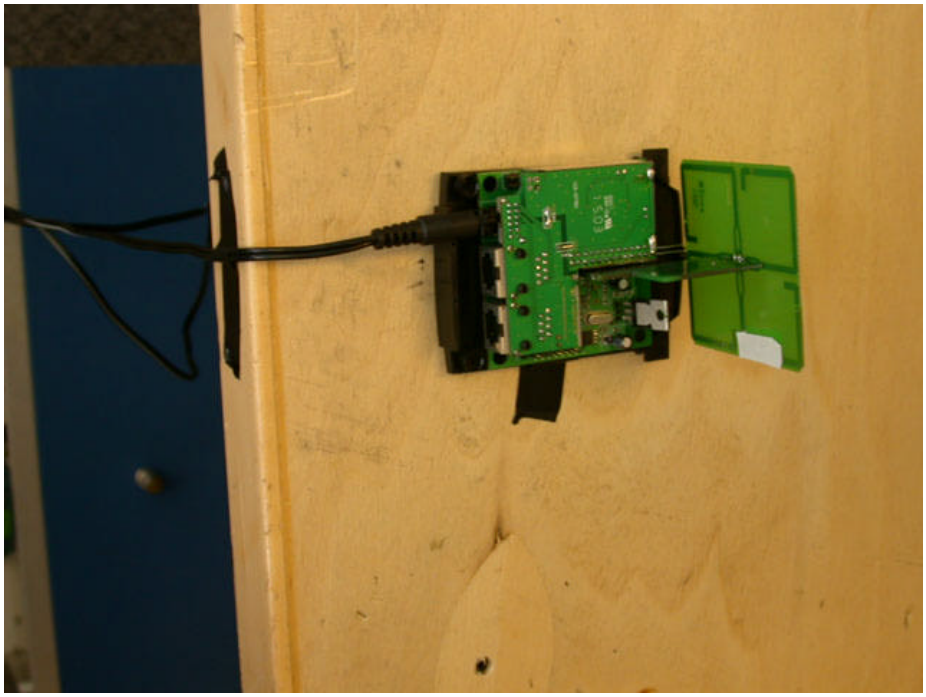
Plot of Conducted Emissions Test Chamber Ambient on AC Power Lines:



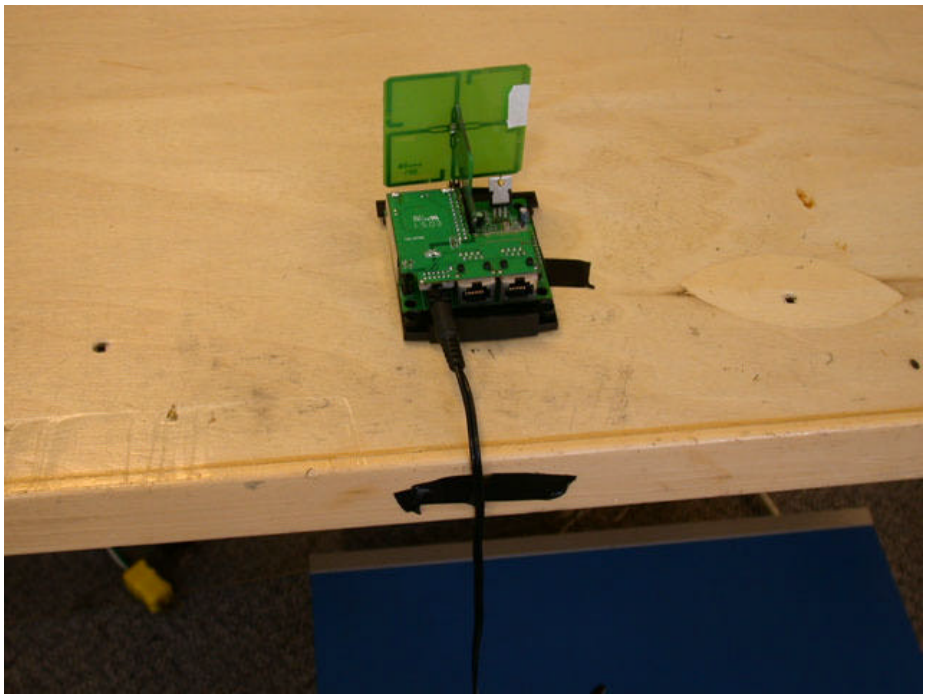
Plot of Conducted Emissions Test Chamber Ambient on AC Power Lines::



Picture of Conducted Emissions on AC Power Lines test setup:



Picture of Conducted Emissions on AC Power Lines test setup:



4.3 RADIATED EMISSIONS INCLUDING RESTRICTED BANDS OF OPERATION

4.3a Receive Mode

Test Lab: MPB Technologies Inc. Airdrie Test Personnel: James MacKay Test Date: 29 July 2003	Product: Model 80521 Wireless Net Extender
Test Result, Model 80521 Wireless Net Extender: **PASS**	
Objectives/Criteria The Radiated E-Field emissions produced by a system or sub-system, measured at a distance of 3m from the EUT, shall not exceed the limits for the specifications as stated. **Emission levels should meet the requirements with a margin of 6dB.** The EUT was assessed against the requirements of 15.109. Temperature = 19 °C Humidity = 37 %	Specification: FCC Part 15.109 Frequency Class A Class B [MHz] QP @ 3m QP @ 3m 30 – 88 49.54 40.00 88 – 216 53.98 43.52 216 – 960 56.90 46.02 above 960 60.00 53.98

Vertical:			**Horizontal:**		
Frequency [MHz]	Field Strength [dBμV/m]	Delta [dB from limit]	Frequency [MHz]	Field Strength [dBμV/m]	Delta [dB from limit]
			750.0320	44.07	-1.95
			750.0363	43.89	-2.13
			750.0286	43.77	-2.25
			475.0306	40.57	-5.45
			700.0350	40.51	-5.51
			600.0538	39.97	-6.05

There were no more emissions measured within -6 dB of the specified limit.
Refer to the test data and plots for more detail.

Radiated Emissions Data:

The emissions data is presented in tabular form, showing the uncorrected spectrum analyzer reading, the correction factors applied, the net result, the value(s) of up to 4 limits at the frequency measured, and the margin between the result and the limit(s).

For example:

```
Test    Meter  Gain/Loss Transducer Level Limit:1     2     3     4
Frequency Reading  Factor    Factor    [dB(uVolts)]
  [MHz]   [dB(uV)]  [dB]      [dB]
=============================================================================
94.0036    37.1 qp   2.2      8.5      47.8   54      43.5   50.5   40.5
Azimuth: 156  Height:113 Vert    Margin [dB]  -6.2    4.3    -2.7   7.3
```

Test Frequency [MHz}	94.0036	Test Frequency f = 94.0036 MHz
Meter Reading [dB (uV)]	37.1 qp	The reading with Quasi-Peak detector
Gain/Loss Factor [dB]	2.2	Net correction for preamp gain & cable loss
Transducer Factor [dB]	8.5	Correction for antenna loss
Level [dB (uVolts)]	47.8	Corrected value for field strength
Limit: 1	54	The value of Limit 1 at 94.0036 MHz
Margin [dB]	-6.2	The field strength is 6.2 dB below Limit 1
Limit: 2	43.5	The value of Limit 2 at 94.0036 MHz
Margin [dB]	4.3	The field strength is 4.3 dB above Limit 2
Limit: 3	50.5	The value of Limit 3 at 94.0036 MHz
Margin [dB]	-2.7	The field strength is 2.7 dB below Limit 3
Limit: 4	40.5	The value of Limit 4 at 94.0036 MHz
Margin [dB]	7.3	The field strength is 7.3 dB above Limit 4

Meter Reading in dBuV + Gain/Loss Factor in dB + Transducer Factor in dB = Corrected Field Strength

Note: When a preamp is used, the resulting gain is compensated.

NYKO Technologies Inc.

GEEK Wireless Net extender
Receive mode
Project number # n09e2798

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Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1	2	3	4
224.9434	9.86 qp	10.16	12.2	32.22	56.9	50	46.02	40.46
Azimuth: 88	Height:149 Horz			Margin [dB]:	-24.68	-17.78	-13.8	-8.24
299.9465	8.31 qp	10.69	14.3	33.3	56.9	57	46.02	47.46
Azimuth: 176	Height:99 Horz			Margin [dB]:	-23.6	-23.7	-12.72	-14.16
350.0349	11.36 qp	11.07	15.3	37.73	56.9	57	46.02	47.46
Azimuth: 318	Height:101 Horz			Margin [dB]:	-19.17	-19.27	-8.29	-9.73
400.0289	12.31 qp	11.53	16	39.84	56.9	57	46.02	47.46
Azimuth: 358	Height:101 Horz			Margin [dB]:	-17.06	-17.16	-6.18	-7.62
475.0306	10.51 qp	11.86	18.2	40.57	56.9	57	46.02	47.46
Azimuth: 358	Height:100 Horz			Margin [dB]:	-16.33	-16.43	-5.45	-6.89
500.0384	7.4 qp	12.15	18.2	37.75	56.9	57	46.02	47.46
Azimuth: 359	Height:230 Horz			Margin [dB]:	-19.15	-19.25	-8.27	-9.71
600.0538	7.16 qp	12.71	20.1	39.97	56.9	57	46.02	47.46
Azimuth: 359	Height:185 Horz			Margin [dB]:	-16.93	-17.03	-6.05	-7.49
700.035	6.79 qp	13.22	20.5	40.51	56.9	57	46.02	47.46
Azimuth: 164	Height:126 Horz			Margin [dB]:	-16.39	-16.49	-5.51	-6.95
750.0322	9.2 qp	13.37	21.5	44.07	56.9	57	46.02	47.46
Azimuth: 151	Height:116 Horz			Margin [dB]:	-12.83	-12.93	-1.95	-3.39
750.0363	9.02 qp	13.37	21.5	43.89	56.9	57	46.02	47.46
Azimuth: 153	Height:117 Horz			Margin [dB]:	-13.01	-13.11	-2.13	-3.57
750.0286	8.9 qp	13.37	21.5	43.77	56.9	57	46.02	47.46
Azimuth: 301	Height:121 Horz			Margin [dB]:	-13.13	-13.23	-2.25	-3.69
475.0278	7.55 qp	11.86	16.9	36.31	56.9	57	46.02	47.46
Azimuth: 66	Height:104 Vert			Margin [dB]:	-20.59	-20.69	-9.71	-11.15
550.0247	8.25 qp	12.18	18.2	38.63	56.9	57	46.02	47.46
Azimuth: 7	Height:105 Vert			Margin [dB]:	-18.27	-18.37	-7.39	-8.83
600.0293	7 qp	12.71	18.7	38.41	56.9	57	46.02	47.46
Azimuth: 6	Height:101 Vert			Margin [dB]:	-18.49	-18.59	-7.61	-9.05

LIMIT 1: FCC Part 15 Class A 3m
LIMIT 2: CISPR Class A 3m
LIMIT 3: FCC Class B 3m (Part 15.109) Ü
LIMIT 4: CISPR Class B 3m

qp ⇒ Quasi-Peak detector

NYKO Technologies Inc.

GEEK Wireless Net extender
Receive mode
Project number # n09e2798 ß

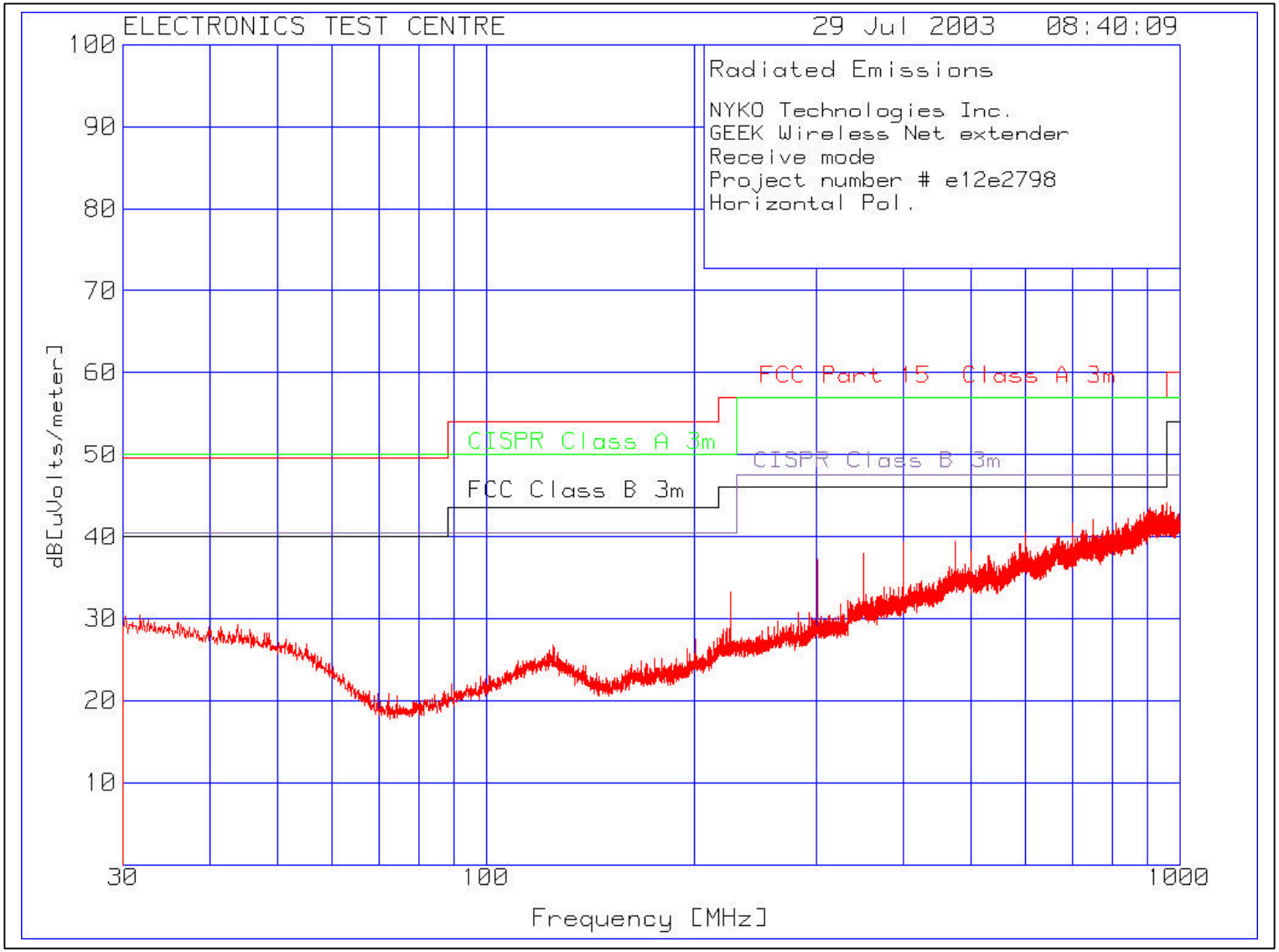
Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1	2
Range: 1000 - 2000MHz						
1812.582	41.2 av	-41.81	28.4	27.79	60	53.98
Azimuth: 134	Height:102 Horz		Margin [dB]:		-32.21	-26.19
Range: 1000 - 2000MHz						
1812.79	32.77 av	-41.81	28.4	19.36	60	53.98
Azimuth: 185	Height:104 Vert		Margin [dB]:		-40.64	-34.62

LIMIT 1: FCC Part 15 Class A 3m

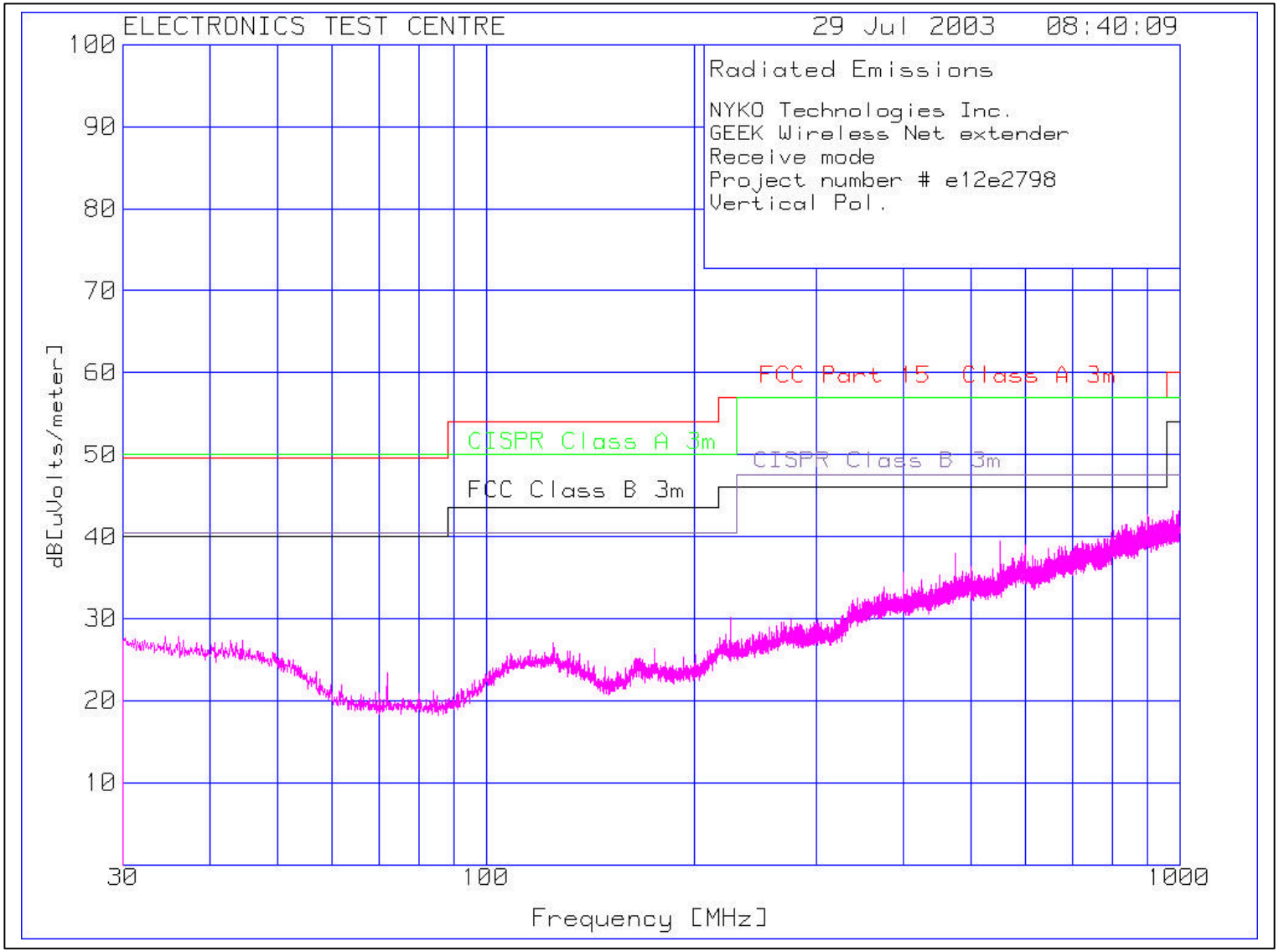
LIMIT 2: FCC Part 15 Class B 3m (Part 15.109) Ü

av ⇒ Average detector

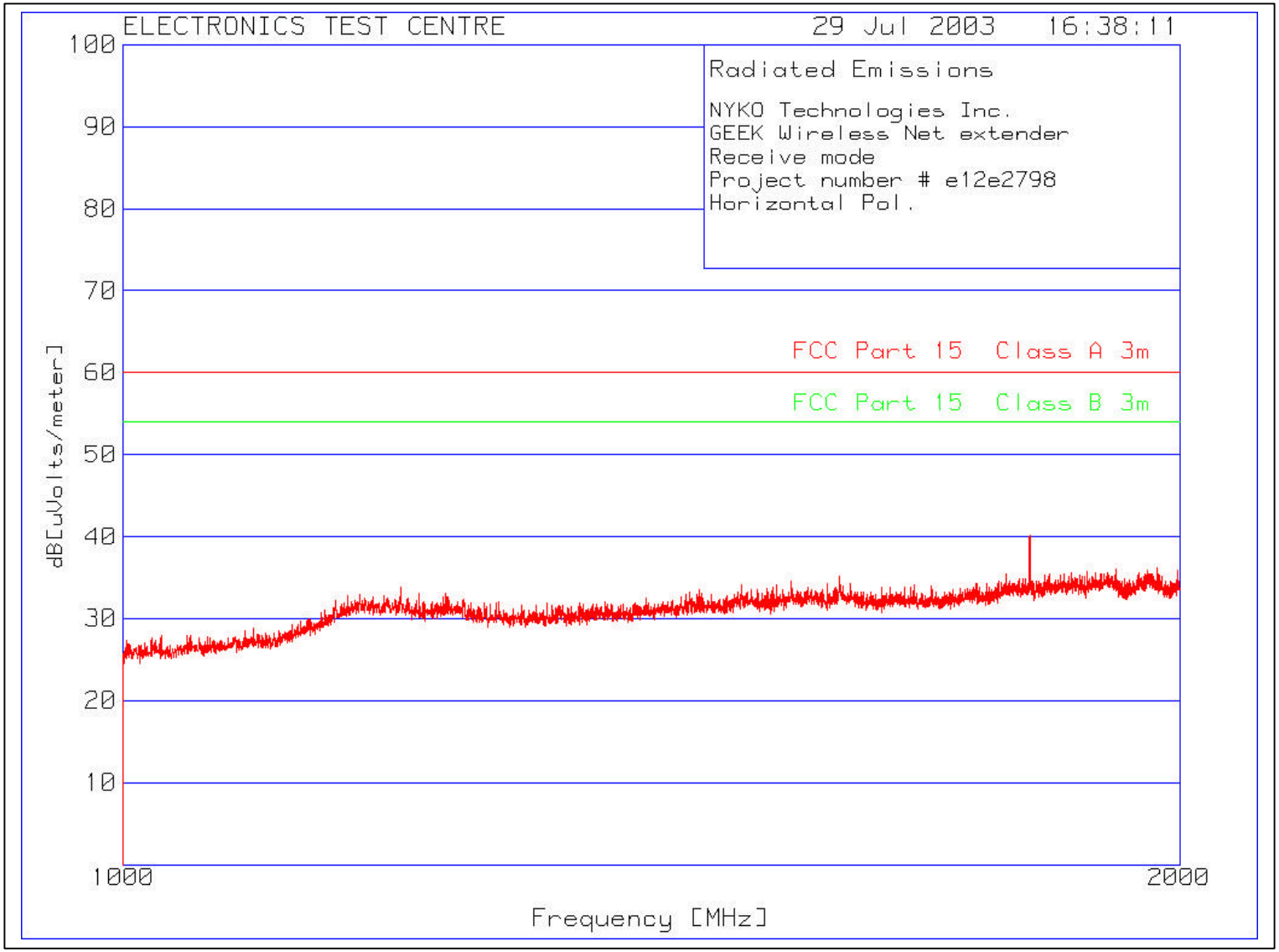
Plot of Radiated Emissions:



Plot of Radiated Emissions:



Plot of Radiated Emissions:



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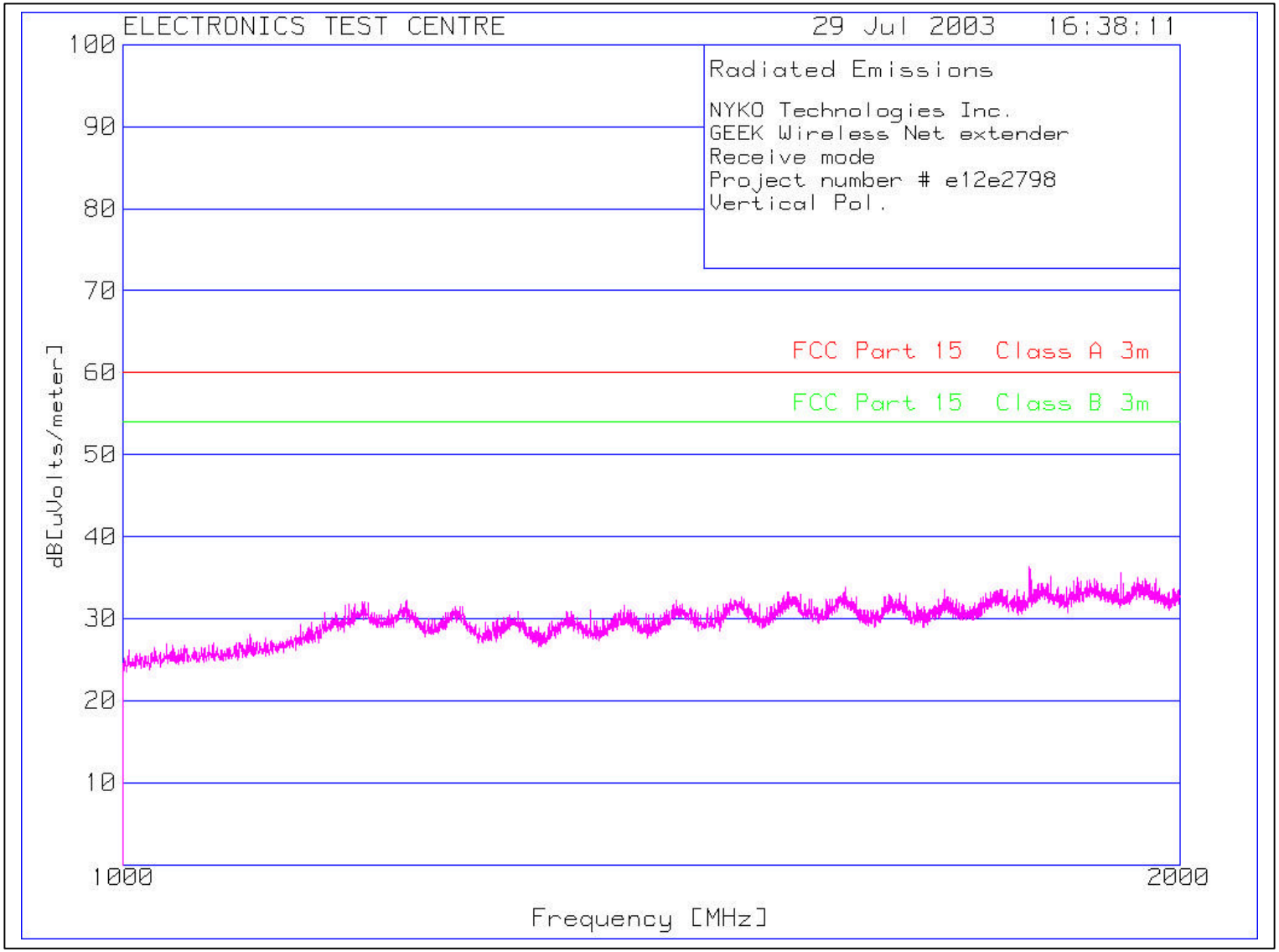
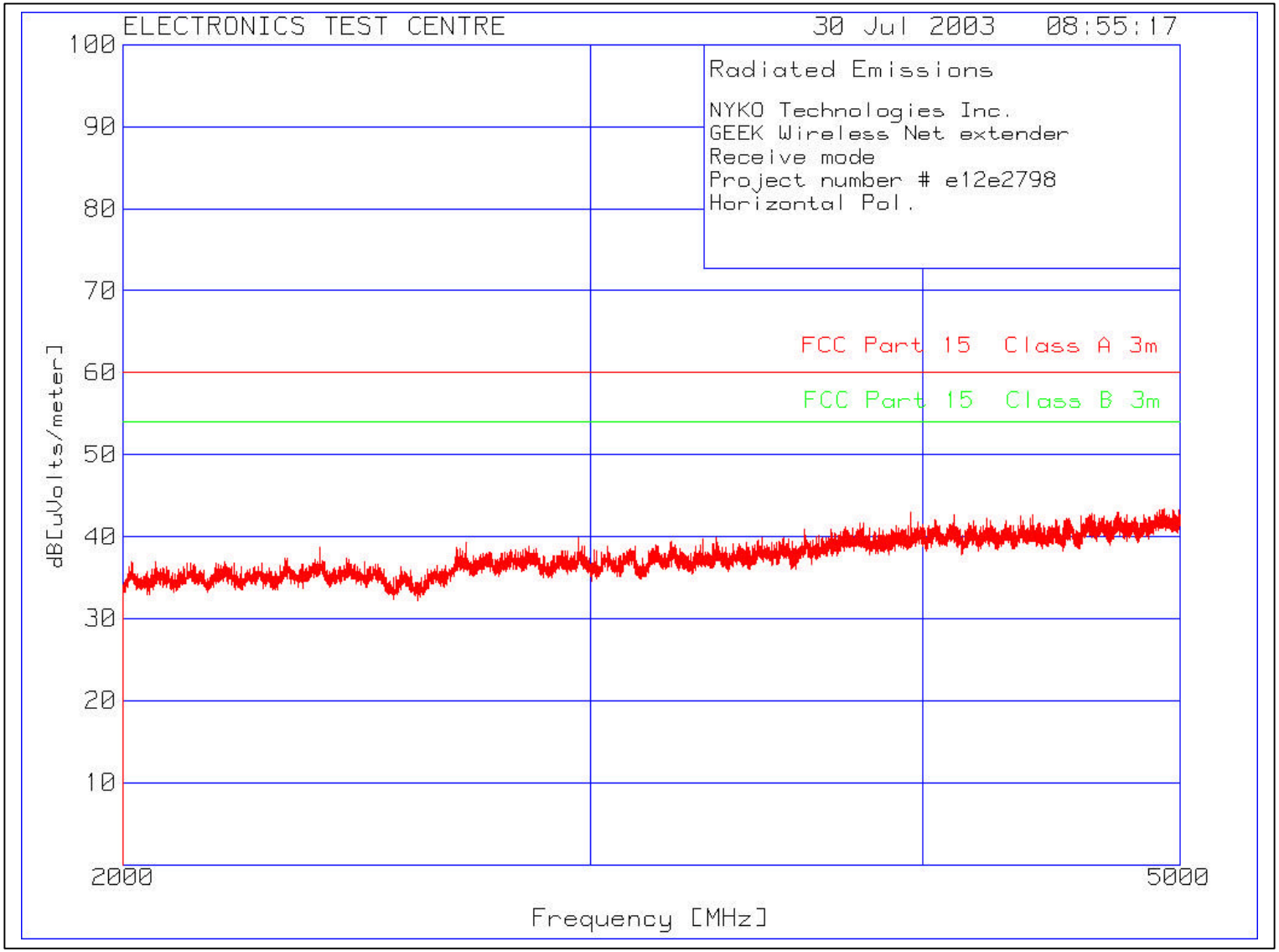
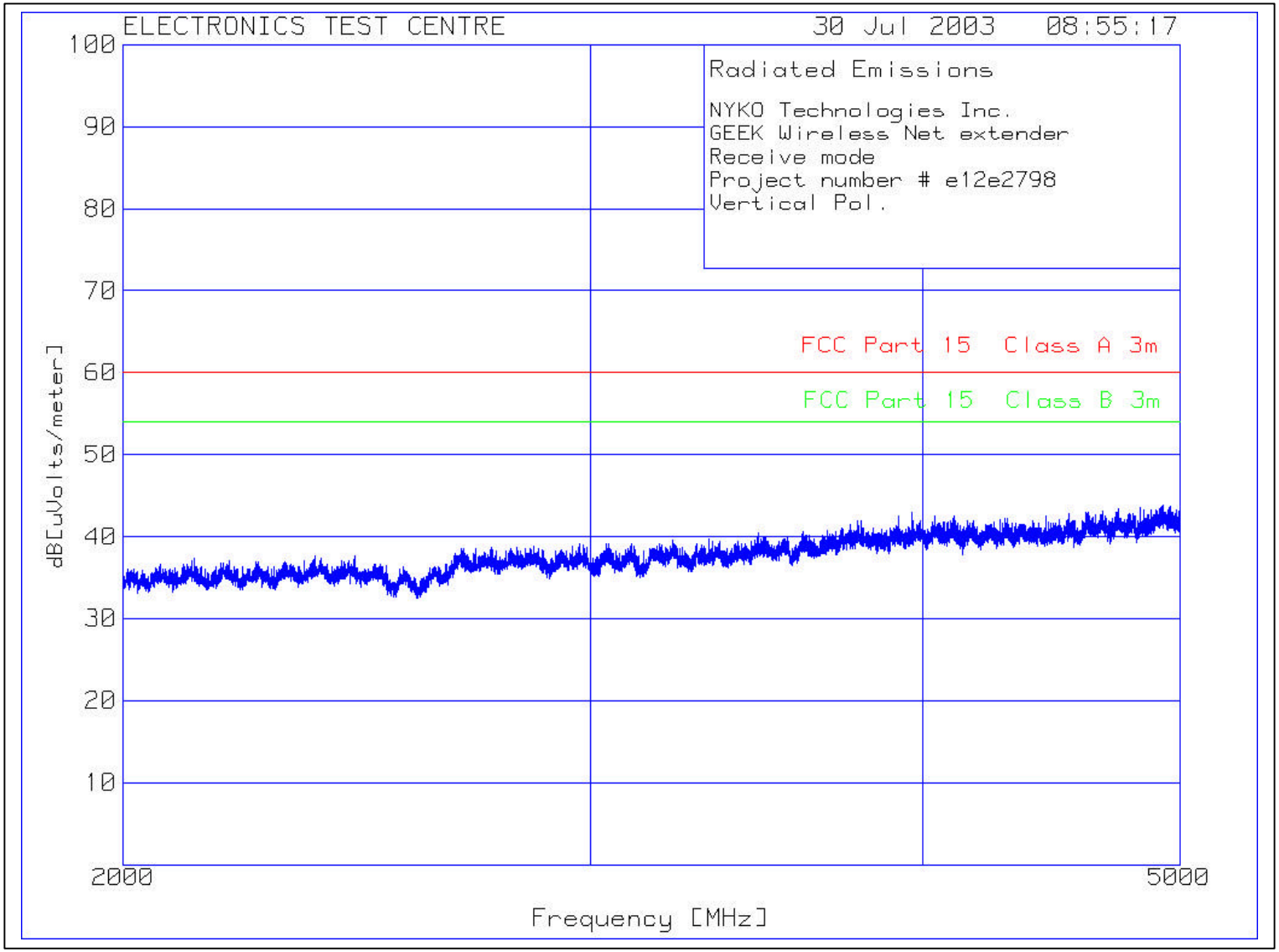


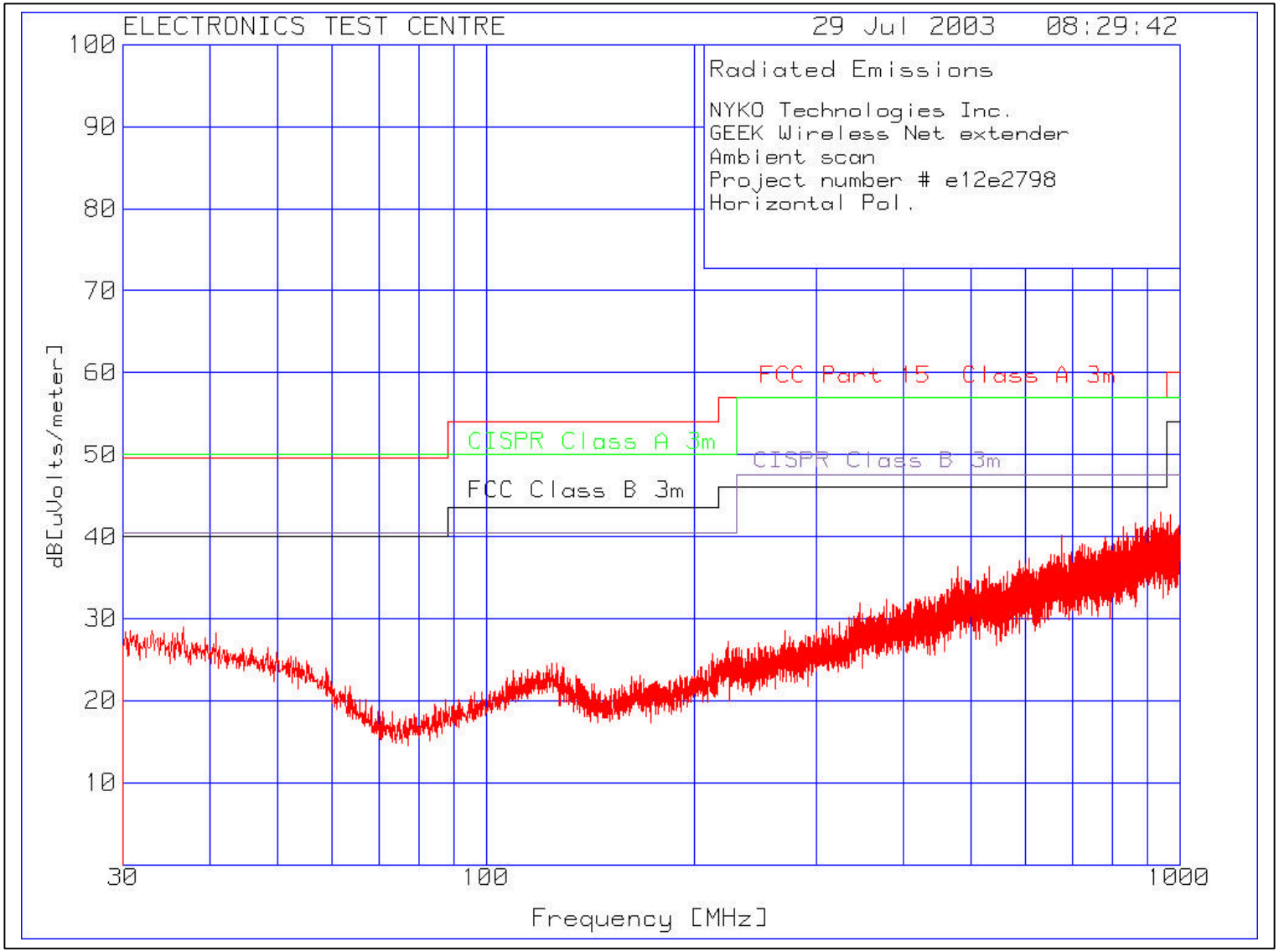
Plot of Radiated Emissions:



Plot of Radiated Emissions:



Plot of Radiated Emissions Test Chamber Ambient:



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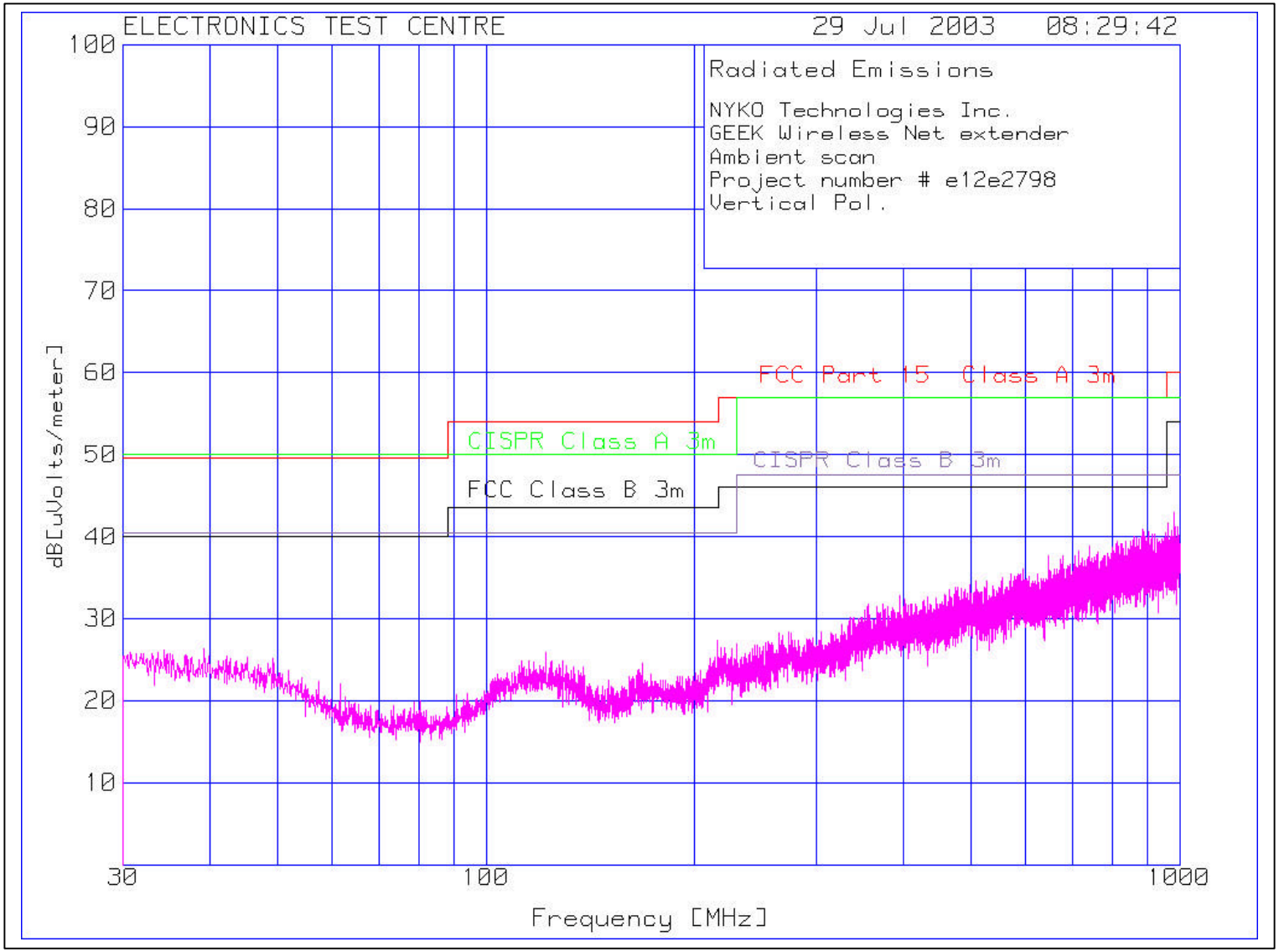

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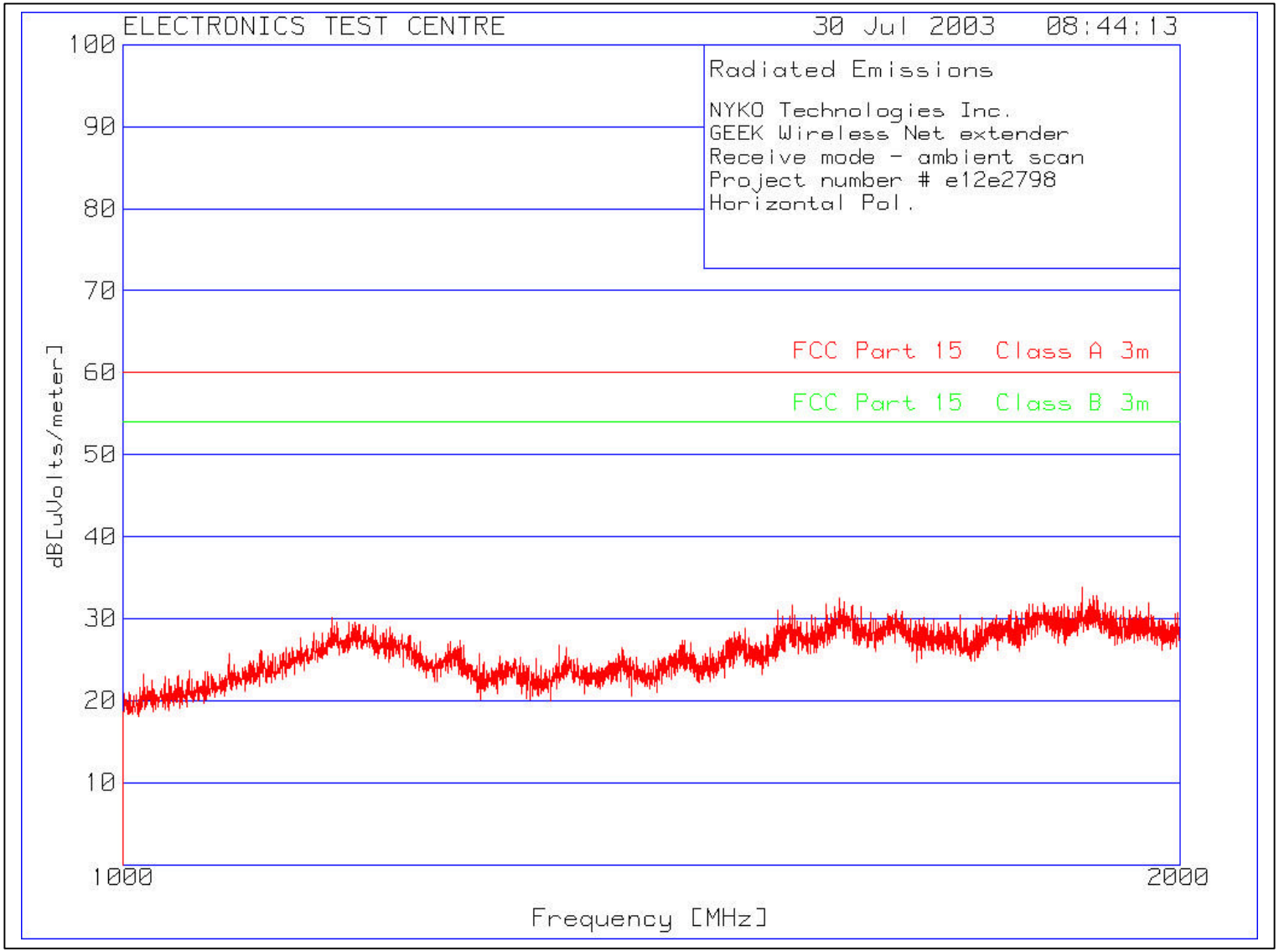

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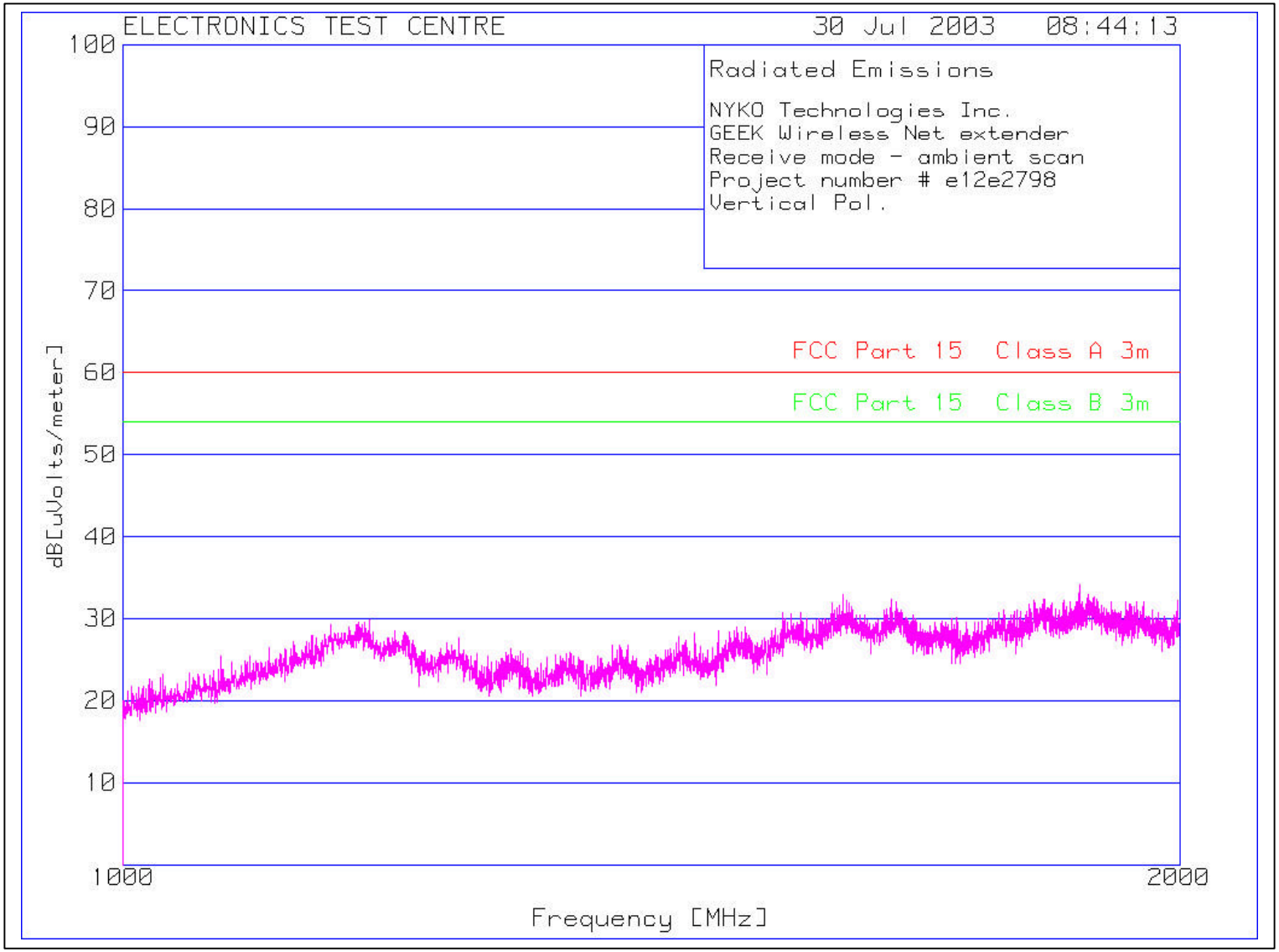
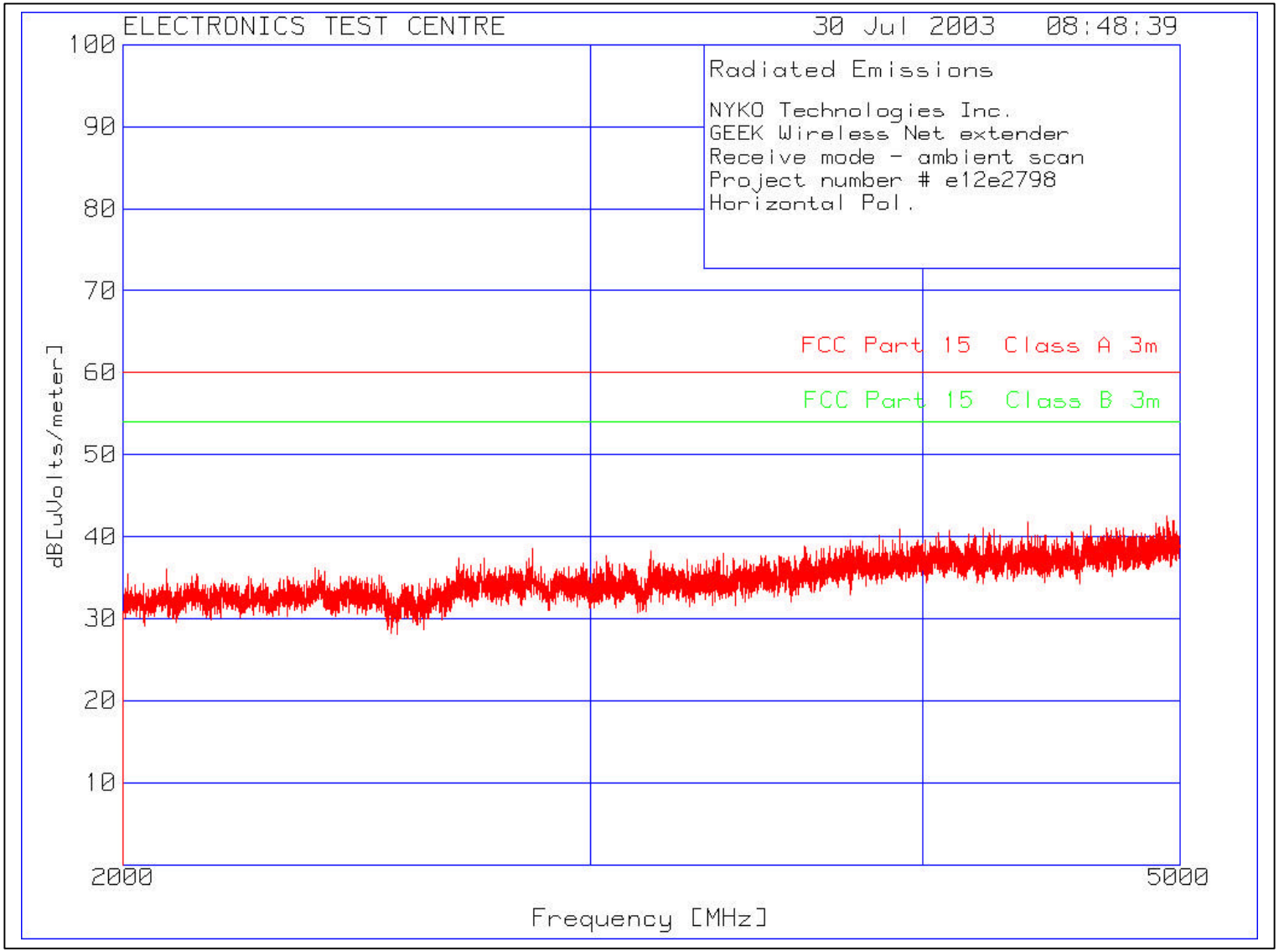
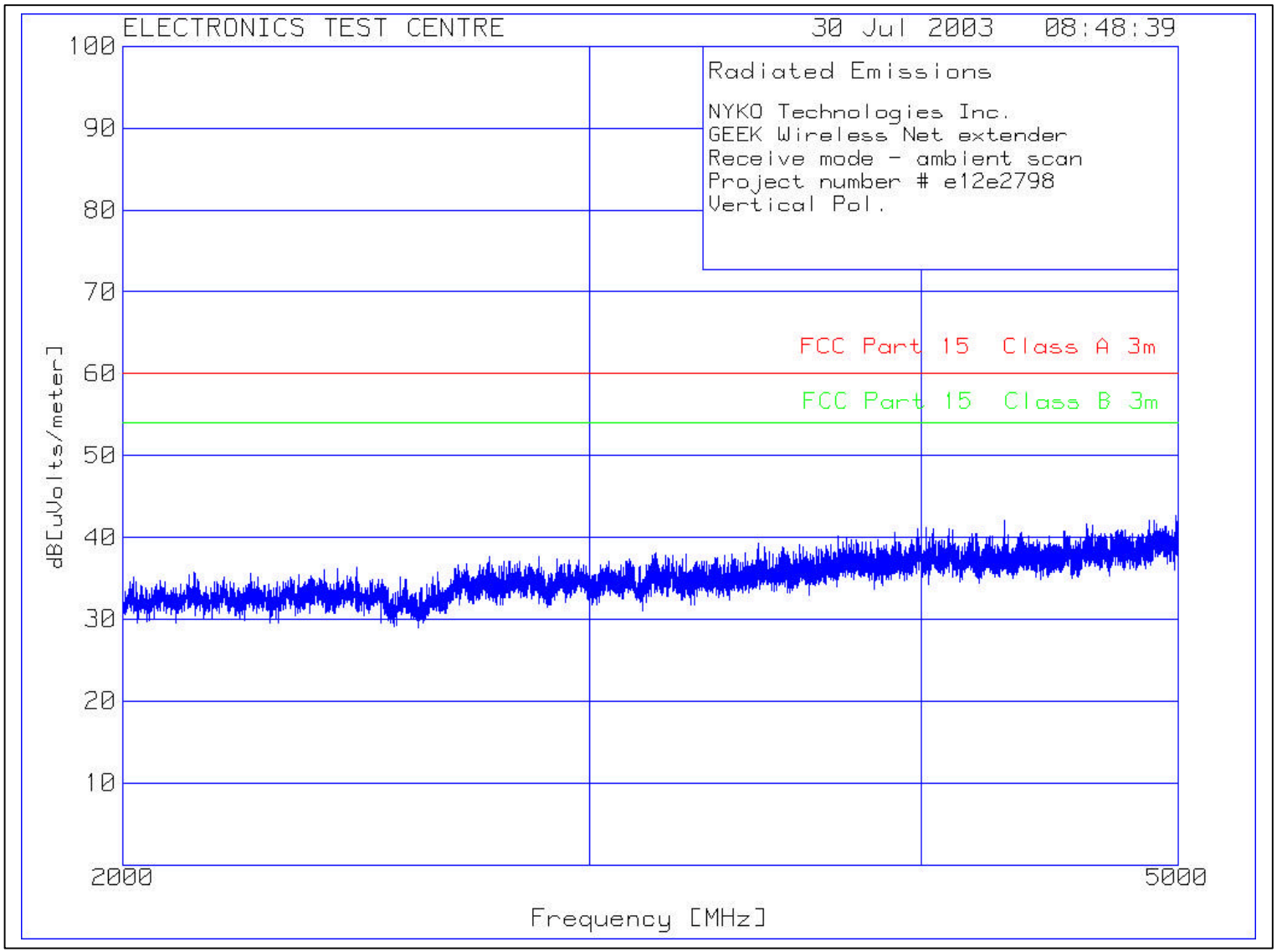


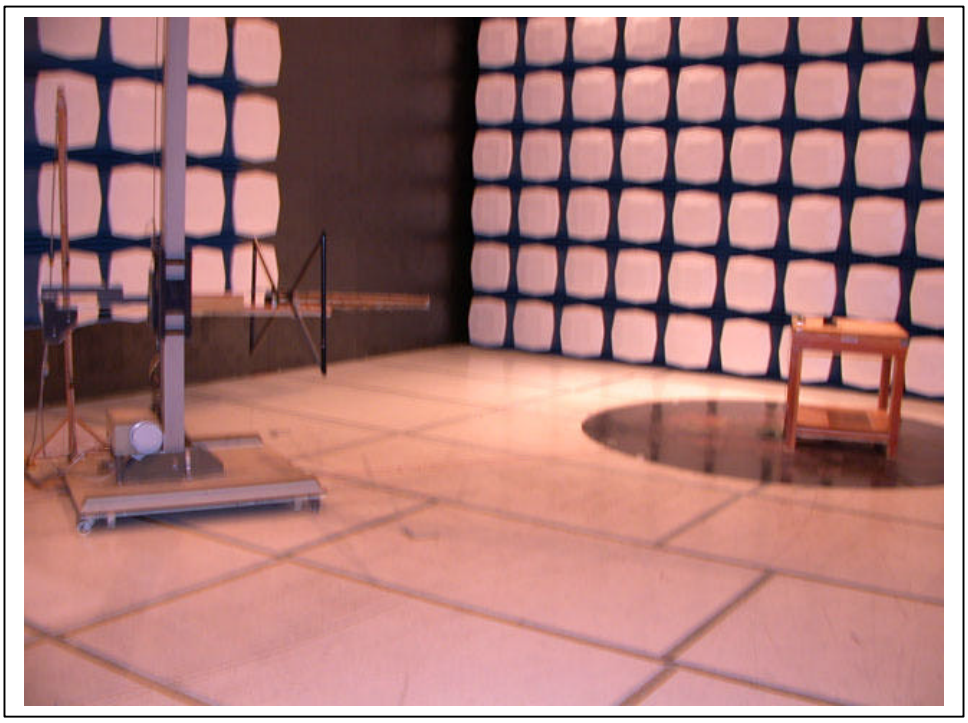
Plot of Radiated Emissions Test Chamber Ambient:



Plot of Radiated Emissions Test Chamber Ambient:



Picture of Radiated Emissions test setup:



Picture of Radiated Emissions test setup:

Picture of Radiated Emissions test setup:

4.3b Transmit Mode

Test Lab: MPB Technologies Inc. Airdrie Test Personnel: David Raynes Dates: 28 July to 7 August 2003	Product: Model 80521 Wireless Net Extender
Test Result, Model 80521 Wireless Net Extender: **PASS**	
Objectives/Criteria The Radiated E-Field emissions produced by EUT, measured at a distance of 3m, shall not exceed these limits within the restricted bands of operation. Any emissions lying outside these bands shall be at least 50 dB down from the level of the fundamental. Attenuation below the limits of 15.209 is not required. Note: See the table below for the Restricted Bands of Operation per Part 15.205 As shown in Sec. 15.35(b), for frequencies above 1000 MHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.	Specification: FCC Part 15.209 Frequency [MHz] — Limit (QP @ 3m) [dBµV/m] .009 – 0.490 — 88.5 – 53.8 .490 – 1.7 — 53.8 – 43 1.7 – 30 — 49.50 30 – 88 — 40.00 88 – 216 — 43.52 216 – 960 — 46.02 above 960 — 53.98 **Emission levels should meet the requirements with a margin of 6dB.**

Restricted Bands of Operation per Part 15.205:

MHz	MHz	MHz	MHz	MHz	GHz	GHz
0.0900000 – 0.1100000	8.2910000 - 8.2940000	16.804250 - 16.804750	162.01250 - 167.17000 *	1660.0000 – 1710.0000	3.6000000 – 4.4000000	14.470000 – 14.500000
0.4950000 - 0.5050000 *	8.3620000 - 8.3660000	25.500000 - 25.670000	167.72000 - 173.20000 *	1718.8000 – 1722.2000	4.5000000 – 5.1500000	15.350000 – 16.200000
2.1735000 - 2.1905000	8.3762500 - 8.3867500	37.500000 - 38.250000	240.00000 – 285.00000	2200.0000 – 2300.0000	5.3500000 – 5.4600000	17.700000 – 21.400000
4.1250000 - 4.1280000	8.4142500 - 8.4147500	73.000000 - 74.600000	322.00000 - 335.40000	2310.0000 – 2390.0000	7.2500000 – 7.7500000	22.010000 – 23.120000
4.1772500 - 4.1777500	12.290000 - 12.293000	74.800000 - 75.200000	399.90000 – 410.00000	2483.5000 – 2500.0000 *	8.0250000 – 8.5000000	23.600000 – 24.000000
4.2072500 - 4.2077500	12.519750 - 12.520250	108.00000 - 121.94000 **	608.00000 – 614.00000	2655.0000 – 2900.0000	9.0000000 – 9.2000000	31.200000 – 31.800000
5.6770000 - 5.6830000	12.576750 - 12.577250	123.00000 - 138.00000 **	960.00000 – 1240.0000 ***	3260..0000 – 3267.0000	9.3000000 – 9.5000000	36.430000 – 36.500000
6.2150000 - 6.2180000	13.360000 - 13.410000	149.90000 - 150.05000 *	1300.0000 – 1427.0000 ***	3332.0000 – 3339.0000	10.600000 – 12.700000	Above 38.600000
6.2677500 - 6.2682500	16.420000 - 16.423000	156.52475- 156.52525	1435.0000 – 1626.5000	3345.8000 – 3358.0000	13.250000 – 13.400000	
6.3117500 - 6.3122500	16.694750 - 16.695250	156.70000 - 156.90000	1645.5000 – 1646.5000	3500.0000 – 3600.0000 ****		

* US only ** Canada 108 – 138 MHz *** Canada 960 – 1427 MHz **** Canada only

Radiated Emissions Data:

nominal f_c (MHz)	**f** (MHz)	Field Strength (dBμV/m) peak	Limit (dBμV/m) Average	Delta (dB)	Antenna Polarization	Antenna Height (cm)	Azimuth (Degrees)
905	905.0351	82.88	93.98	-11.10	H	156	1
	905.2355	82.08	93.98	-11.90	V	109	75
	1809.6080	38.56	53.98	-15.42	H	100	181
	1809.6160	37.96	53.98	-16.02	V	101	176
	1811.1730	37.77	53.98	-16.21	H	100	181
	1811.2100	39.37	53.98	-14.61	V	100	176
	2714.2820	40.60	53.98	-13.38	V	133	23
	2714.4710	36.50	53.98	-17.48	H	223	293
	2716.7770	41.36	53.98	-12.62	V	133	23
	2716.7800	36.86	53.98	-15.12	H	223	293
	3620 *	≤ 33.29	53.98	≥ -20.69	H	100	0
	3620 *	≤ 33.29	53.98	≥ -20.69	V	100	0
	4525 *	≤ 33.76	53.98	≥ -20.22	H	100	0
	4525 *	≤ 33.76	53.98	≥ -20.22	V	100	0
	5430 *	≤ 35.76	53.98	≥ -18.22	H	100	0
	5430 *	≤ 35.76	53.98	≥ -18.22	V	100	0
	6335 *	≤ 36.47	53.98	≥ -17.51	H	100	0
	6335 *	≤ 36.47	53.98	≥ -17.51	V	100	0
	7240 *	≤ 37.92	53.98	≥ -16.06	H	100	0
	7240 *	≤ 37.92	53.98	≥ -16.06	V	100	0
	8145 *	≤ 37.52	53.98	≥ -16.46	H	100	0
	8145 *	≤ 37.52	53.98	≥ -16.46	V	100	0
	9050 *	≤ 39.58	53.98	≥ -14.40	H	100	0
	9050 *	≤ 39.52	53.98	≥ -14.40	V	100	0

* Emissions at these frequencies were at, or below the measurement system noise floor.

Radiated Emissions Data:

nominal f_c (MHz)	**f** (MHz)	Field Strength (dBµV/m) peak	Limit (dBµV/m) Average	Delta (dB)	Antenna Polarization	Antenna Height (cm)	Azimuth (Degrees)
915	914.9200	83.45	93.98	-10.53	H	161	42
	914.9280	82.45	93.98	-11.53	V	125	37
	1829.4030	35.68	53.98	-18.30	H	100	185
	1829.4040	36.58	53.98	-17.40	V	100	179
	1831.0020	35.91	53.98	-18.07	H	100	185
	1831.0040	37.71	53.98	-16.27	V	100	179
	2743.7200	33.99	53.98	-19.99	H	153	62
	2743.7530	38.99	53.98	-14.99	V	100	187
	2746.7630	41.17	53.98	-12.81	V	100	187
	2746.7660	37.87	53.98	-16.11	H	153	62
	3660 *	≤ 20.16	53.98	≥ -33.82	H	100	0
	3660 *	≤ 18.66	53.98	≥ -35.32	V	100	0
	4575 *	≤ 24.87	53.98	≥ -29.11	H	100	0
	4575 *	≤ 18.57	53.98	≥ -35.41	V	100	0
	5490 *	≤ 25.88	53.98	≥ -28.10	H	100	0
	5490 *	≤ 20.18	53.98	≥ -33.80	V	100	0
	6405 *	≤ 29.62	53.98	≥ -24.36	H	100	0
	6405 *	≤ 30.12	53.98	≥ -23.86	V	100	0
	7320 *	≤ 29.74	53.98	≥ -24.24	H	100	0
	7320 *	≤ 31.94	53.98	≥ -22.04	V	100	0
	8235 *	≤ 33.12	53.98	≥ -20.86	H	100	0
	8235 *	≤ 34.62	53.98	≥ -19.36	V	100	0
	9150 *	≤ 39.05	53.98	≥ -14.93	H	100	0
	9150 *	≤ 39.65	53.98	≥ -14.33	V	100	0
* Emissions at these frequencies were at, or below the measurement system noise floor.							

Radiated Emissions Data:

nominal f_c (MHz)	**f** (MHz)	Field Strength (dBµV/m) peak	Limit (dBµV/m) Average	Delta (dB)	Antenna Polarization	Antenna Height (cm)	Azimuth (Degrees)
925	924.8240	86.00	93.98	-7.98	H	234	0
	924.8230	80.79	93.98	-13.19	V	128	343
	1849.1800	38.03	53.98	-15.95	V	100	178
	1849.2080	36.33	53.98	-17.65	H	132	145
	1850.7920	39.54	53.98	-14.44	V	100	178
	1850.8010	37.44	53.98	-16.54	H	132	145
	2773.3730	38.02	53.98	-15.96	V	187	188
	2773.3780	34.12	53.98	-19.86	H	265	294
	2776.446	36.40	53.98	-17.58	H	265	294
	2776.4550	40.00	53.98	-13.98	V	187	188
	3700 *	≤ 15.56	53.98	≥ -38.42	H	100	0
	3700 *	≤ 18.56	53.98	≥ -35.42	V	100	0
	4625 *	≤ 15.28	53.98	≥ -38.70	H	100	0
	4625 *	≤ 19.28	53.98	≥ -34.70	V	100	0
	5550 *	≤ 20.03	53.98	≥ -33.95	H	100	0
	5550 *	≤ 22.23	53.98	≥ -31.75	V	100	0
	6475 *	≤ 28.72	53.98	≥ -25.26	H	100	0
	6475 *	≤ 28.42	53.98	≥ -25.56	V	100	0
	7400 *	≤ 33.87	53.98	≥ -20.11	H	100	0
	7400 *	≤ 29.57	53.98	≥ -24.41	V	100	0
	8325 *	≤ 36.92	53.98	≥ -17.06	H	100	0
	8325 *	≤ 33.82	53.98	≥ -20.16	V	100	0
	9250 *	≤ 39.66	53.98	≥ -14.32	H	100	0
	9250 *	≤ 39.26	53.98	≥ -14.72	V	100	0
* Emissions at these frequencies were at, or below the measurement system noise floor.							

5.0 TEST FACILITY

5.1 LOCATION

The EUT was tested for Electromagnetic Compatibility at the Electronics Test Centre, located in Airdrie, Alberta, Canada.

The RF Anechoic Chamber (RFAC) is identified as Chamber 1, located in the main building complex at the Electronics Test Centre. Its usable working space measures 10.6 m long x 7.3 m wide x 6.5 m high.

This test site is listed with the FCC under Registration Number 99541. Measurements taken at this site are accepted by Industry Canada per file number IC 2046-1.

The floor, walls and ceiling consist of annealed steel panels. The walls and ceiling are covered with ferrite tile, augmented by RF absorbant foam material on the end wall nearest the turntable, and on the adjacent walls and the ceiling. The chamber floor supports a 15 cm high internal floor, constructed of annealed steel panels, that forms the ground plane, and is bonded to the chamber walls.

The 3-m diameter turntable is flush-mounted with the floor. A sub-floor cable-way is provided to route cables between the turntable pit and EUT support equipment. Cables reach the EUT through an opening in the centre of the turntable.

Test instrumentation and EUT support equipment is located in two shielded vestibules located at the side of the main room. Cables are routed through bulkhead panels between the rooms as required. Power feeds are routed into the main room and vestibules through line filters providing at least 100 dB of attenuation between 10 kHz and 10 GHz.

5.2 GROUNDING PLAN

The EUT was located on a wooden table 80 cm above the ground plane.

In accordance with Nyko Technologies Inc. specifications, the EUT was not grounded.

5.3 POWER

AC power was supplied via Underwriter's Laboratories ULW100-69, 100 dB, 100 Ampere wall mounted filters. Bonding to ground is implemented at the chamber wall.

5.4 EMISSIONS PROFILE

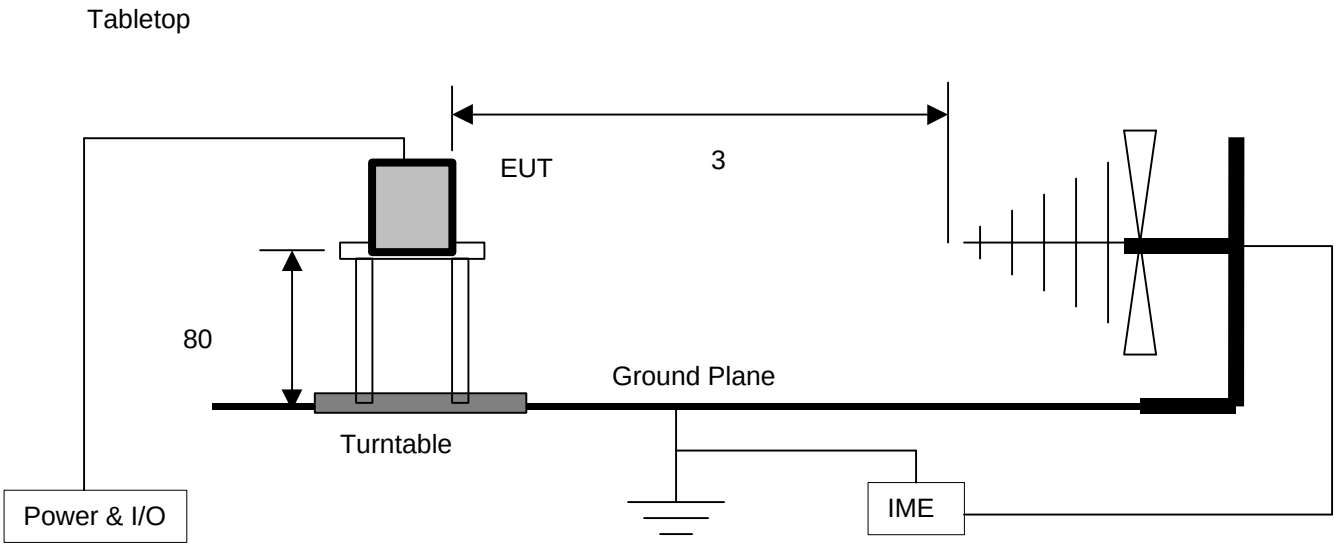
Ambient conducted and radiated electromagnetic emission profiles were generated throughout the tests and are included in the test data.

5.5 TEST CONFIGURATION

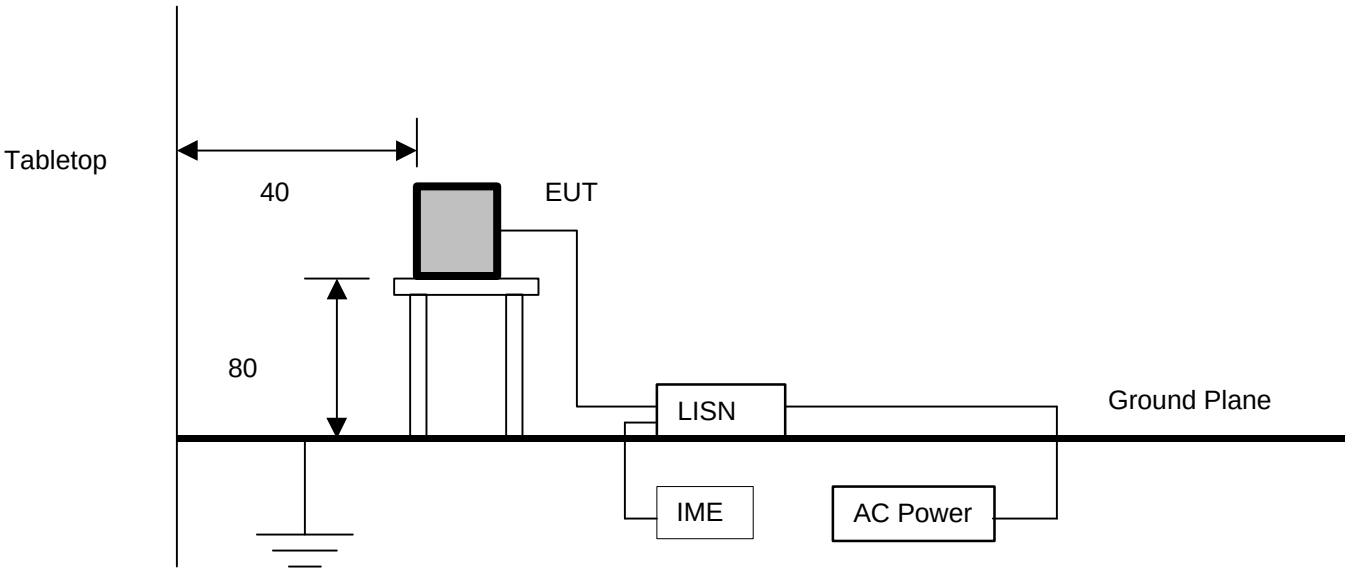
5.5.1 Tabletop Equipment

The following diagrams illustrate the configuration of the EUT test and measurement equipment for Radiated and Conducted Emissions Testing of tabletop equipment.

Radiated Emissions



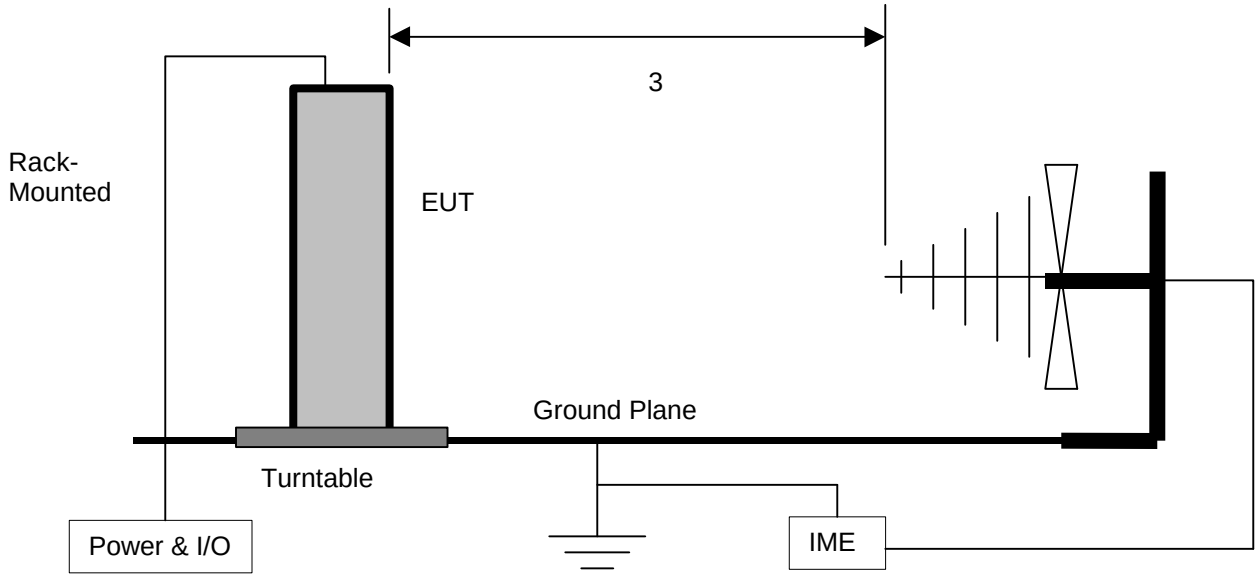
Conducted Emissions



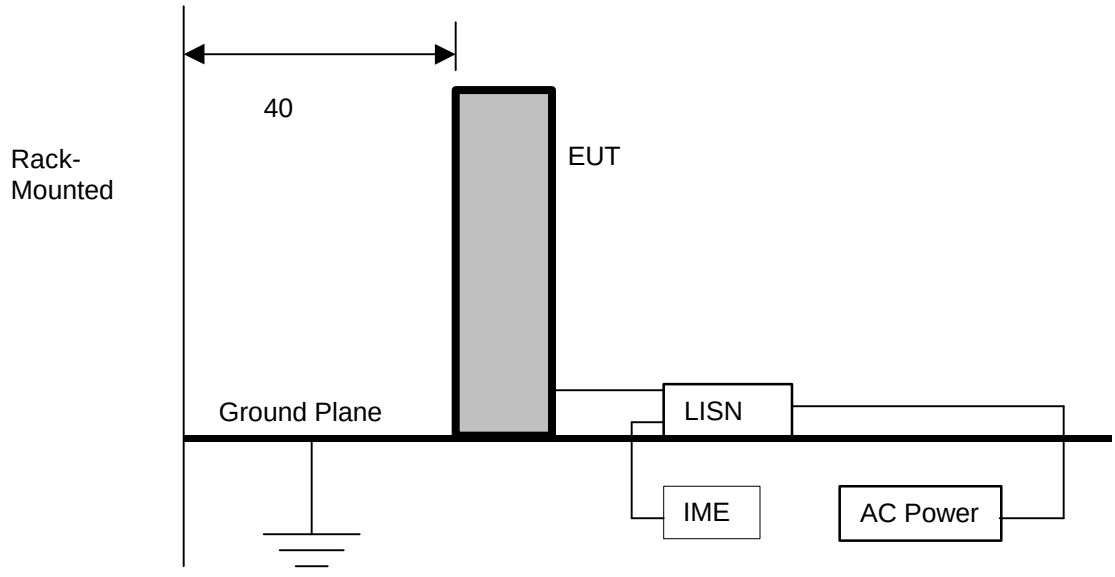
5.5.2 Rack Mount

The following diagrams illustrate the configuration of the EUT test and measurement equipment for Radiated and Conducted Emissions Testing of rack mounted equipment.

Radiated Emissions



Conducted Emissions



6.0 TEST EQUIPMENT

The following equipment was used for this procedure. All measurement devices are calibrated annually, traceable to NIST.

6.1 RADIATED EMISSIONS

a) Spectrum Analyzer with RF Preselector
b) CISPR Quasi-peak Adapter
c) Power Isolation Transformers
d) Biconilog antenna (20 MHz to 2 GHz)
e) Antenna mast positioner, and controller
f) Flush-mounted turntable, and controller
g) Personal Computer and EMC software

6.2 CONDUCTED EMISSIONS

a) Spectrum Analyzer with RF Preselector
b) Line Impedance Stabilization Network, 50 μH
c) CISPR Quasi-peak Adapter
d) Isolation Transformer
e) Personal Computer and EMC software

6.3 CALIBRATION

All measurement instrumentation conforms to ANSI C63.2. Calibration is maintained in accordance with manufacturer recommendations. Each measurement device is labeled with its ETC asset number and calibration due date.

6.3.1 CALIBRATION ACCURACY

Test equipment used to provide quantitative measurements are calibrated with standards traceable to the National Research Council, National Institute of Standards and Technology or other national standards. Instrumentation systems for emissions measurements have the following accuracies:

Frequency = ± 1 kHz
Amplitude (RE) = ± 4.01 dB
Amplitude (CE) = ± 3.25 dB

6.3.2 TEST EQUIPMENT DESCRIPTION

The equipment used in the tests was selected from the following list.

Instrument	Manufacturer	Model No.	Asset No.	Calibration Due
Spectrum Analyzer	Hewlett Packard	8566B	9565	13 November 2003
Spectrum Analyzer	Hewlett Packard	8566B	9168	10 December 2003
RF Preselector	Hewlett Packard	85685A	9728	30 July 2004
RF Preselector	Hewlett Packard	85685A	9563	14 August 2004
Quasi-Peak Adapter	Hewlett Packard	85650A	4411	30 July 2004
Quasi-Peak Adapter	Hewlett Packard	85650A	9243	7 August 2004
Line Impedance Stabilization Network	EMCO	3825/2r	9331	2 November 2003
Line Impedance Stabilization Network	EMCO	3825/2r	9259	2 November 2003
Biconilog Antenna	ARA	Lpb-2520/A	4318	2 August 2004
Dual Ridged Guide Antenna	EMCO	3115	9588	2 August 2004
Low Noise Amplifier	MITEQ	JS43-01001800-21-5P	4354	3 November 2003

Appendix A

Model 80521 Wireless Net Extender

Test Sample Description

(from data provided by Nyko Technologies Inc.)

Product Application	**Product Category**	
Commercial ✓ Military o	Telecommunications o Information Technology ✓ Surface Transportation o	Aerospace o Test & Measurement o Other o _____
Product Name	Wireless Net Extender	
Part/Model No.	80521	
Serial Number	N/A	
Power Requirements: **(Voltage, AC/DC, Hz, Current)**	Input: 120VAC, 60Hz 4.5W AC Adaptor Output: DC 4V 300mA	
Typical Installation Instructions or Configuration	The Base Unit is connected to an ADSL modem and the Remote Unit is connected to a gaming console or computer. Since the Wireless Net Extender is essentially a wireless Ethernet cable other configurations are possible.	
Ground Connection **(in addition to power cord)**	None	
Internally Generated Frequencies	50.000 MHz, 25.000 MHz, and 12.500 MHz	
Peripheral Support Equipment	Any 10Base-T equipment.	
Description and number of interconnecting Leads & Cables	Base Unit: One connection to the power adaptor. One connection to an Ethernet device. Another connection is available if the Pass-Through feature is required for another Ethernet device. Remote Unit: One connection to the power adaptor. One connection to an Ethernet device.	
Brief Functional Description	Wireless Ethernet cable.	