TEST REPORT

Report Number: 30408641
Project Number: 3040864 & 3030973
June 10, 2003

Testing performed on the

Wireless Outdoor Remote Unit
Model: BRU-100
FCC ID: QONBRU100

to

FCC Part 27

for

BeamReach Networks

Test Performed by:	**Test Authorized by:**
Intertek Testing Services	BeamReach Networks
1365 Adams Court	755 North Mathilda Avenue
Menlo Park, CA 94025	Sunnyvale, CA 94086

Prepared by: _____ Date: 6/10/03
Arkadi Kaplan

Reviewed by: _____ Date: 6/17/03
David Chernomordik

TABLE OF CONTENTS

1.0 Summary of Tests

FCC ID: QONBRU100
Model No.: BRU-100

FCC RULE	DESCRIPTION OF TEST	RESULTS
2.1046	RF Power Output	Complies
27.50	Effective Radiated Power	Complies
2.1049	Occupied Bandwidth	Complies
2.1051, 27.53	Spurious Emissions at Antenna Terminals	Complies
2.1053, 27.53	Field Strength of Spurious Radiation	Complies
15.207	Line Conducted Emissions	Complies
2.1055	Frequency Stability vs. Temperature	Complies
2.1055	Frequency Stability vs. Voltage	Complies

Date of Test: March 6 to April 11, 2003

2.0 General Description

2.1 Product Description

The BRU-100 is a wireless Outdoor Remote Unit (ORU) that provides the subscriber termination point for a broadband wireless data system.

Overview of BeamReach Wireless Outdoor Remote Unit

Applicant: **Address:** **Telephone:** **Fax:** **Contact Person:**	BeamReach Networks 755 North Mathilda Avenue Sunnyvale, CA 94086 408/869-8707 408/869-8900 Mr. Tony Tokuno
Trade Name & Model No.	BeamReach / BRU-100
FCC Identifier	QONBRU100
Use of Product	Wireless Internet Data Transceiver
Rated RF Output Power	7 W peak
Type of Transmission	Digital data, TDD
Type of Modulation, Emission Designator	OFDM, 2M50D7D
Bit Rate	1.2 Mbps Tx, 1.5 Mbps Rx
The dc voltage applied to and current into the several elements of the final RF amplifying device	Voltage: 11 V Current: 1.75 A
Frequency Range	Three paired channels in WCS Block A: 2305-2310 MHz and 2350-2355 MHz or Three paired channels in WCS Block B: 2310-2315 MHz and 2355-2360 MHz Paired channels, 1 each in lower and upper bands sequentially in frequency
Max. Number of Tuning Channels	6 pairs, 12 total channels: 3 pairs each in WCS block A lower and upper 3 pairs each in WCS block B lower and upper
Antenna(s) & Gain	18 dBi
Detachable Antenna?	No
Receiver L.O. Frequency	1956.25 to 2008.75 MHz
External Input	Digital Data

A production version of the EUT was received on March 5, 2003 in good operating condition.

2.2 Related Submittal(s) Grants

None.

2.3 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is site 1 (10-m semi-anechoic chamber). This test facility and site measurement data have been fully placed on file with the FCC and NVLAP accredited.

3.0 System Test Configuration

3.1 Support Equipment

Item #	Description	Model No.	Serial No.
1	Agilent ESG Vector Signal Generator	E4438C	MY41000110
2	Agilent Spectrum Analyzer	8562E	3943A01249
3	BeamReach Remote, Antenna and Housing Only for BRU-100, no Electronics	N/A	N/A
4	Silicon Microsystems Generic IBM Compatible PC	No Model Number (Pentium 2, 266 MHz)	No Serial Number
5	Mini-Circuits 3-dB Signal Spliter	15542	N/A
6	6-foot Tri-pod Antenna Stands (2)	N/A	N/A

3.2 Block Diagram of Test Setup

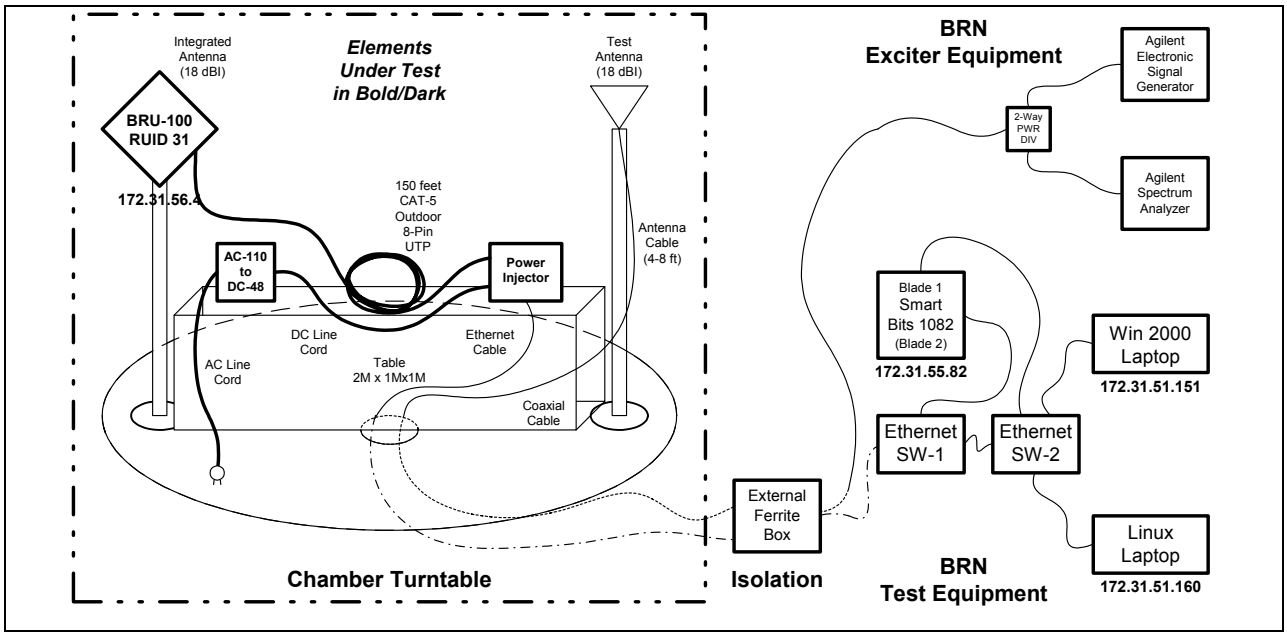


Figure 1. BRU-100, Part 2.1053 and Part 15.109 radiated emissions tests set-up

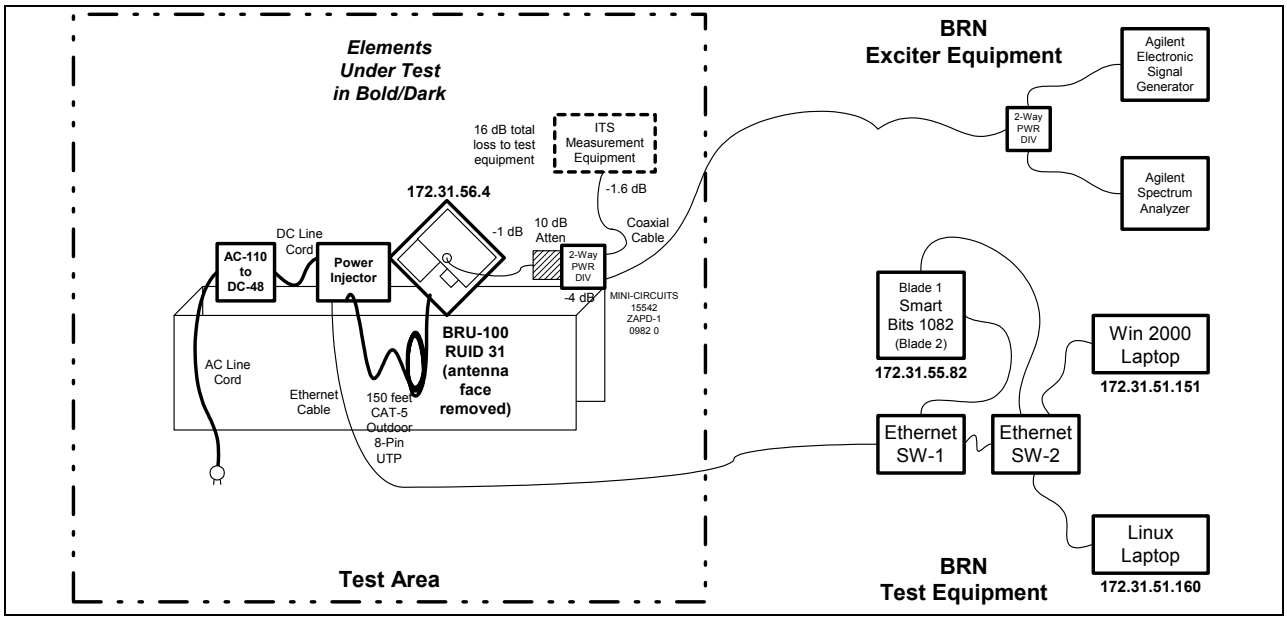


Figure 2. BRU-100, Part 2.1051 antenna conduction emission test set-up

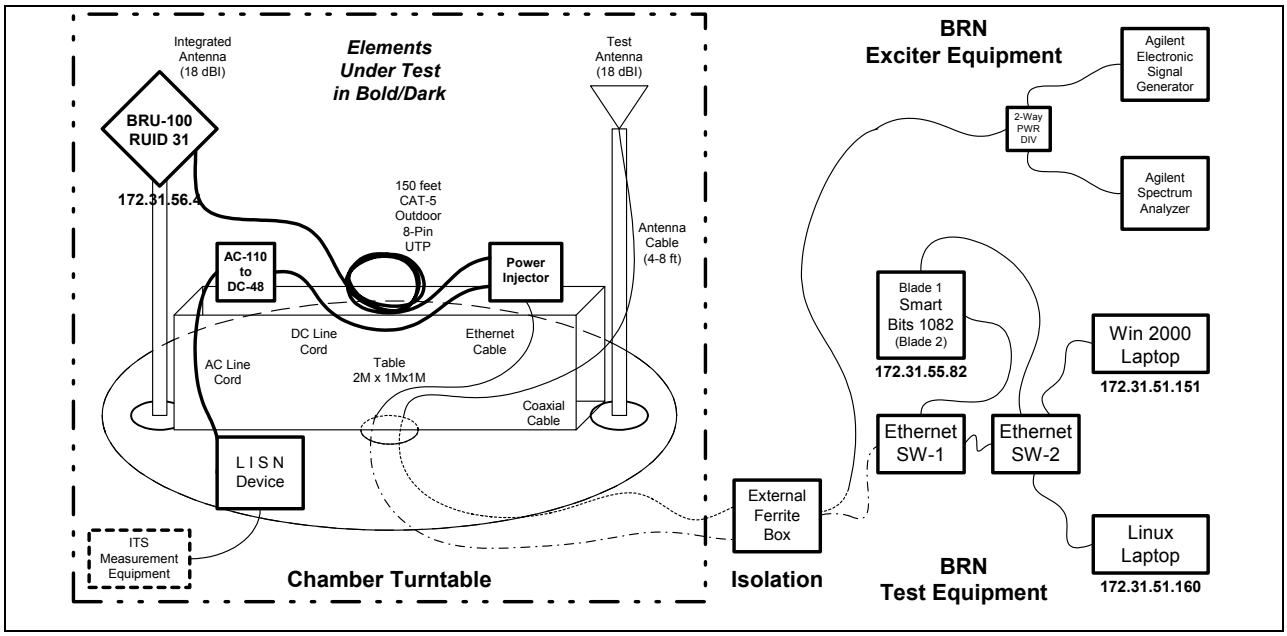


Figure 3. BRU-100, AC-Line conducted emissions test set-up

4.0 RF Power Output, Radiated Power

FCC 2.1046, 27.50

4.1 Requirements

Fixed Stations transmitting are limited to 2000 Watts peak EIRP.

4.2 Test Procedure

The transmitter output was connected to a calibrated coaxial attenuator, the other end of which was connected to a peak power meter. Transmitter output was read off the power meter in Watts.

4.3 Test Results

Band	Operating center frequencies	Conducted Peak Power *, Watt	Peak EIRP **, Watt
Sub Band A1	2306.25 and 2351.25 MHz	6.8	429.1
Sub Band A3	2308.75 and 2353.75 MHz	6.7	422.7
Sub Band B1	2311.25 and 2356.25 MHz	6.7	422.7
Sub Band B3	2313.75 and 2358.75 MHz	6.7	422.7

* Total Power for lower and upper channels,

** EIRP = P × G, where G is a numerical antenna gain (equal 63.1 or 18 dBi)

Results: Complies

5.0 Occupied Bandwidth

FCC 2.1049

5.1 Test Procedure

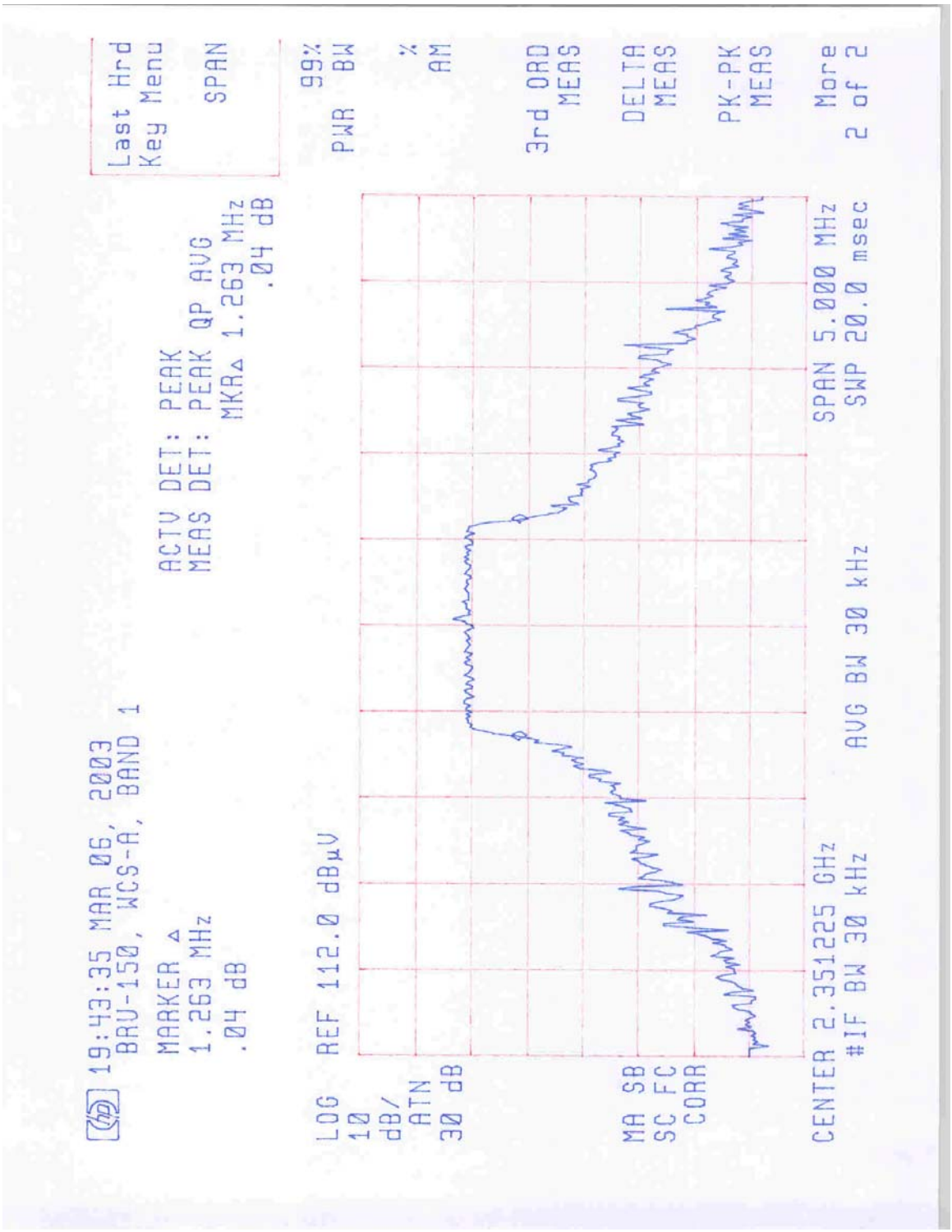
The antenna was disconnected from the transmitter and the short cable was connected to the transmitter RF output.

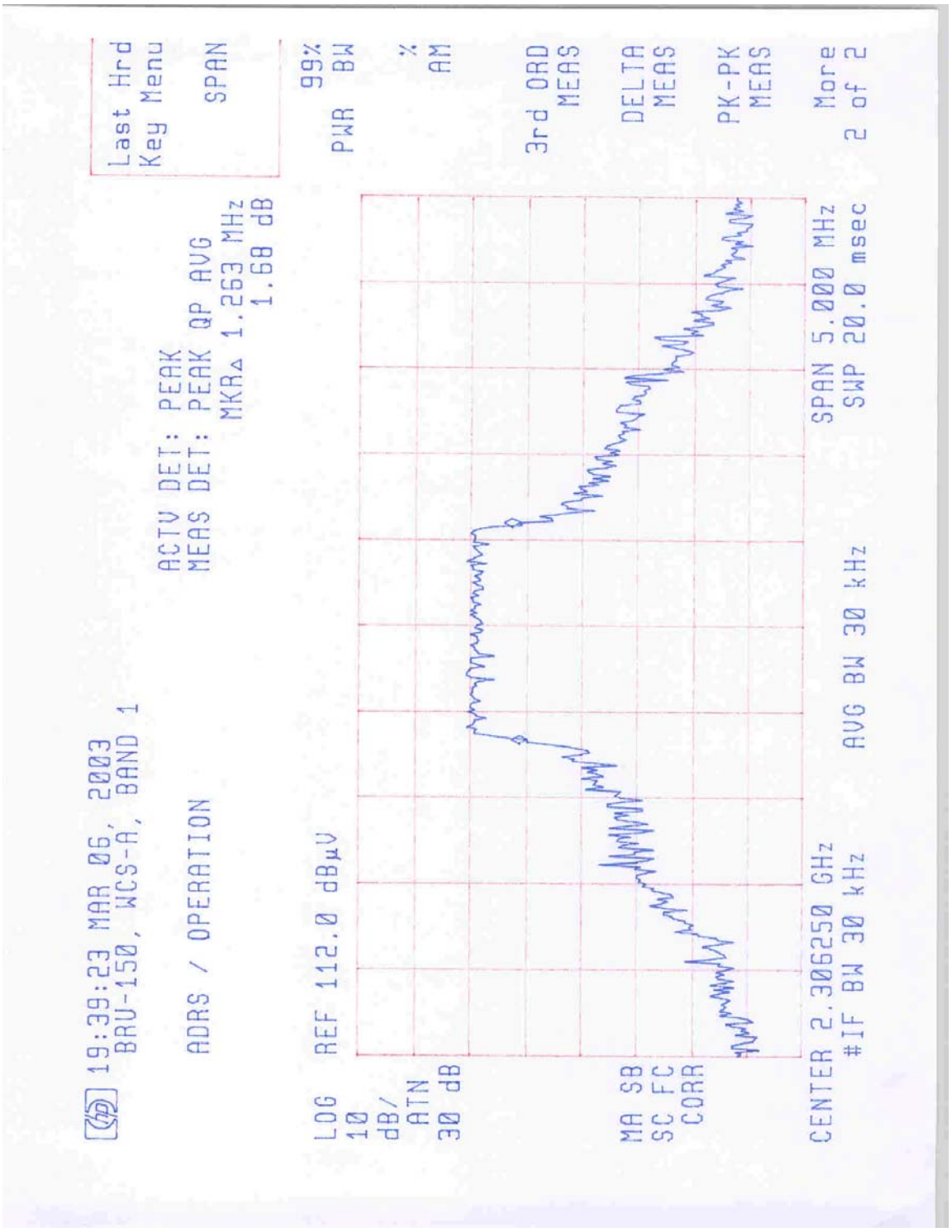
The RF output was connected to the input of the spectrum analyzer through sufficient attenuation.

The resolution bandwidth of the spectrum analyzer was set up to 30 kHz and the 99% power bandwidth of the transmitting signal was recorded.

5.2 Test Results

The 99% power bandwidth was found as 1.26 MHz (see the plot on the next page). The necessary bandwidth is actually 2.5 MHz, including both the 1.25 MHz lower channel and the 1.25 MHz upper channel. Therefore, emission designator is defined as 2M50D7D.


19:43:35 MAR 06, 2003
BRU-150, WCS-A, BAND 1
MARKER Δ
1.263 MHz
.04 dB
ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKRΔ 1.263 MHz
.04 dB
Last Hrd Key Menu
SPAN
99% PWR BW
% AM
3rd ORD MEAS
DELTA MEAS
PK-PK MEAS
More 2 of 2
LOG REF 112.0 dBµV
10 dB/
ATN 30 dB
MA SB
SC FC
CORR
CENTER 2.351225 GHz
#IF BW 30 kHz
AVG BW 30 kHz
SPAN 5.000 MHz
SWP 20.0 msec


19:39:23 MAR 06, 2003
BRU-150, WCS-A, BAND 1
ADRS / OPERATION
ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKRΔ 1.263 MHz
1.68 dB
Last Hrd Key Menu
SPAN
99% PWR BW
% AM
3rd ORD MEAS
DELTA MEAS
PK-PK MEAS
More 2 of 2
LOG REF 112.0 dBµV
10 dB/
ATN 30 dB
MA SB
SC FC
CORR
CENTER 2.306250 GHz
#IF BW 30 kHz
AVG BW 30 kHz
SPAN 5.000 MHz
SWP 20.0 msec

6.0 Spurious Emissions at Antenna Terminal

FCC 2.1051, 27.53

6.1 Requirements

For operations in the bands 2305-2320 MHz and 2345-2360 MHz, the power of any emission outside the licensee's bands of operation shall be attenuated below the transmitter power (P in Watts) within the licensed band(s), by the following amounts:

≥ 70 + 10Log(P) on all frequencies below 2300 MHz
≥ 43 + 10Log(P) on all frequencies between 2300 and 2320 MHz, that are outside the licensed band
≥ 80 + 10Log(P) on all frequencies between 2320 and 2345 MHz
≥ 43 + 10Log(P) on all frequencies between 2345 and 2370 MHz, that are outside the licensed band
≥ 70 + 10Log(P) on all frequencies above 2370 MHz

6.2 Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set 1 MHz. Sufficient scans were taken to show the out-of- band emissions if any up to 10th harmonic.

The limits for attenuation of out-of-band and spurious emissions written above can be converted to the emission limit as following:

-40 dBm on all frequencies below 2300 MHz
-13 dBm on all frequencies between 2300 and 2320 MHz, that are outside the licensed band
-50 dBm on all frequencies between 2320 and 2345 MHz
-13 dBm on all frequencies between 2345 and 2370 MHz, that are outside the licensed band
-40 dBm on all frequencies above 2370 MHz

For frequencies above 1 GHz, average value of spurious (out-of-band) emissions was measured using the spectrum analyzer resolution bandwidth of 1 MHz and sampling averaging in linear mode.

6.3 Test Results

Results: Complies by 2.5 dB

Refer to the plots in Appendix A.

7.0 Field Strength of Spurious Radiation

FCC 2.1053, 27.53

7.1 Requirements

The same limits for spurious emission attenuation, as written in section 5.1, are applied. Therefore, the same limits (see sec 5.2) for radiated power are applicable.

7.2 Test Procedure

The transmitter was placed on a turntable. The measurement antenna was placed at a distance of 3 m (or 1 m for frequencies above 10 GHz) from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT.

The test was performed by the substitution method unless the field strength is too low, more than 20 dB below the corresponding radiated power limit. For the spurious emissions (harmonics) the radiated power limit is –40 dBm which corresponds (approximately) to 55.3 dB(μV/m) at 3m distance. Therefore, the measurements by substitution method is performed on the frequencies where the field strength is below 35.3 dB(μV/m) at 3m or 45.3 dB(μV/m) at 1m.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

7.3 Test Result

For the Field Strength of harmonics, see the test data in Appendix 1. As can be seen, the Field Strength exceed 35.3 dB(μV/m) at 3m for frequencies above 9.5 GHz. Therefore, only for frequencies below 9.5 GHz the EIRP measurements by the substitution method were performed.

EIRP
(Measured by Substitution Method)

Sub Band A1, Band 3/39

Frequency GHz	Spectrum Analyzer Reading (from EUT) dB(μV)	Sig. Generator Power required for the same SA Reading dBm	Transmitting Antenna Gain dBi	Equivalent Isotropically Radiated Power (EIRP) dBm	EIRP Limit dBm	Margin dB
3.913	33.0	-67.4	9.6	-57.8	-40.0	-17.8
4.003	32.7	-69.2	9.6	-59.6	-40.0	-19.6
4.613	38.7	-61.5	10.5	-51.0	-40.0	-11.0
4.703	36.0	-69.6	10.4	-59.2	-40.0	-19.2
5.869	24.5	-73.3	10.8	-62.5	-40.0	-22.5
6.004	28.3	-69.4	11.3	-58.1	-40.0	-18.1
6.919	29.2	-60.9	10.3	-50.6	-40.0	-10.6
7.054	30.0	-67.8	10.3	-57.5	-40.0	-17.5
7.825	28.3	-69.6	10.8	-58.8	-40.0	-18.8
8.005	30.7	-66.3	9.4	-56.9	-40.0	-16.9
9.225	31.2	-72.5	10.9	-61.6	-40.0	-21.6
9.405	34.5	-71.4	11.0	-60.4	-40.0	-20.4

Sub Band A3, Band 5/41

Frequency GHz	Spectrum Analyzer Reading (from EUT) dB(μV)	Sig. Generator Power required for the same SA Reading dBm	Transmitting Antenna Gain dBi	Equivalent Isotropically Radiated Power (EIRP) dBm	EIRP Limit dBm	Margin dB
4.618	35.0	-66.9	10.5	-56.4	-40.0	-16.4
4.663	43.8	-56.4	10.4	-46.0	-40.0	-6.0
4.708	34.7	-55.2	10.8	-54.4	-40.0	-14.4
5.876	26.5	-71.7	11.3	-60.4	-40.0	-20.4
6.011	26.0	-71.6	11.3	-60.3	-40.0	-20.3
7.061	26.1	-69.3	10.3	-59.0	-40.0	-19.0
7.835	26.7	-67.9	9.7	-60.2	-40.0	-20.2
9.235	31.3	-72.2	10.6	-61.6	-40.0	-21.6
9.325	39.0	-65.5	10.7	-54.8	-40.0	-14.8
9.415	31.0	-66.9	11.2	-55.7	-40.0	-15.7

Sub Band B1, Band 7/43

Frequency GHz	Spectrum Analyzer Reading (from EUT) dB(μV)	Sig. Generator Power required for the same SA Reading dBm	Transmitting Antenna Gain dBi	Equivalent Isotropically Radiated Power (EIRP) dBm	EIRP Limit dBm	Margin dB
3.923	31.2	-69.8	9.6	-60.2	-40.0	-20.2
4.623	34.7	-66.1	10.5	-55.6	-40.0	-15.6
4.668	45.0	-55.0	10.4	-44.6	-40.0	-4.6
4.723	32.7	-67.3	10.8	-56.5	-40.0	-16.5
7.845	29.2	-66.2	10.2	-56.0	-40.0	-16.0
8.025	27.7	-67.7	9.4	-58.3	-40.0	-18.3
9.245	32.0	-65.2	10.8	-54.4	-40.0	-14.4
9.335	34.0	-62.9	10.8	-52.1	-40.0	-12.1
9.425	27.4	-70.3	11.3	-59.0	-40.0	-19.0

Sub Band B3, Band 9/45

Frequency GHz	Spectrum Analyzer Reading (from EUT) dB(μV)	Sig. Generator Power required for the same SA Reading dBm	Transmitting Antenna Gain dBi	Equivalent Isotropically Radiated Power (EIRP) dBm	EIRP Limit dBm	Margin dB
4.628	36.7	-63.9	10.4	-53.5	-40.0	-13.5
4.673	38.7	-61.4	10.4	-51.0	-40.0	-11.0
4.718	34.7	-64.8	10.4	-54.4	-40.0	-14.4
7.076	26.0	-69.4	10.3	-59.1	-40.0	-19.1
7.855	27.3	-69.1	9.6	-59.5	-40.0	-19.5
8.035	28.3	-69.2	9.4	-59.8	-40.0	-19.8
9.255	33.2	-63.7	10.9	-52.8	-40.0	-12.8
9.346	35.8	-61.2	11.0	-50.2	-40.0	-10.2
9.435	29.1	-69.0	11.3	-57.7	-40.0	-17.7

Note: EIRP was calculated by adding the antenna gain (in dBi) of the substitution antenna to the Signal Generator Power (in dBm).

Results: Complies by 4.6 dB

8.0 Line Conducted Emissions

FCC § 15.207

8.1 Test Procedure

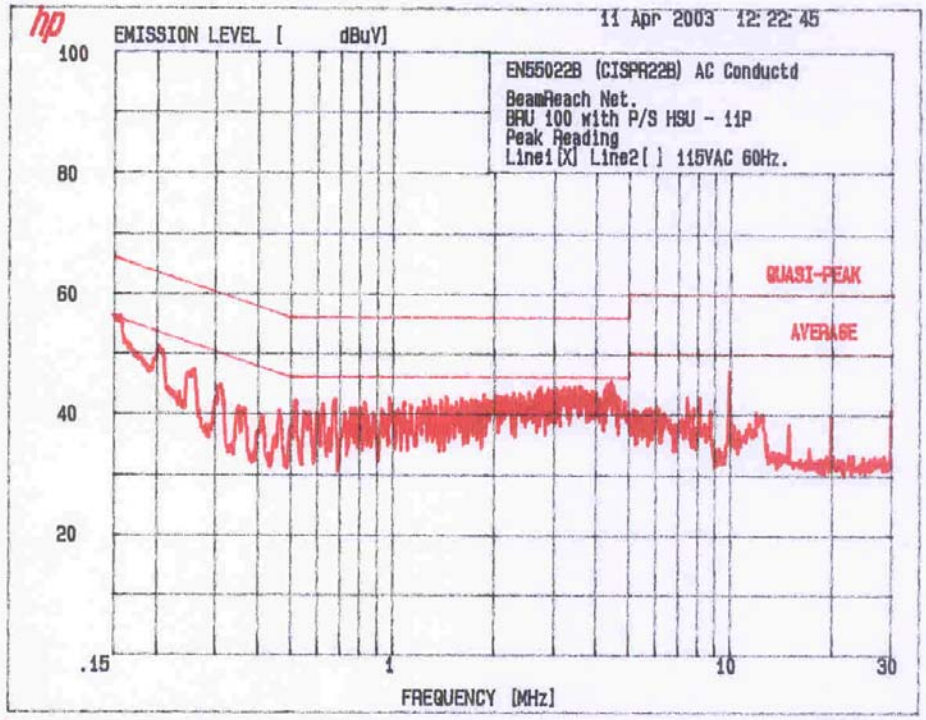
AC line conducted emission test was performed according the ANSI C63.4 standard. The EUT was connected to AC Line through the LISN.

A CISPR 22 test procedure and limits were used. A complete scan from 0.15 - 30 MHz was made with spectrum analyzer resolution bandwidth of 9 kHz. At frequencies where peak reading was close or exceed the quasi-peak or average limits, quasi-peak and/or average readings were taken.

8.2 Test Results

For the test result, see attached plots.

Results: Complies by 3.2 dB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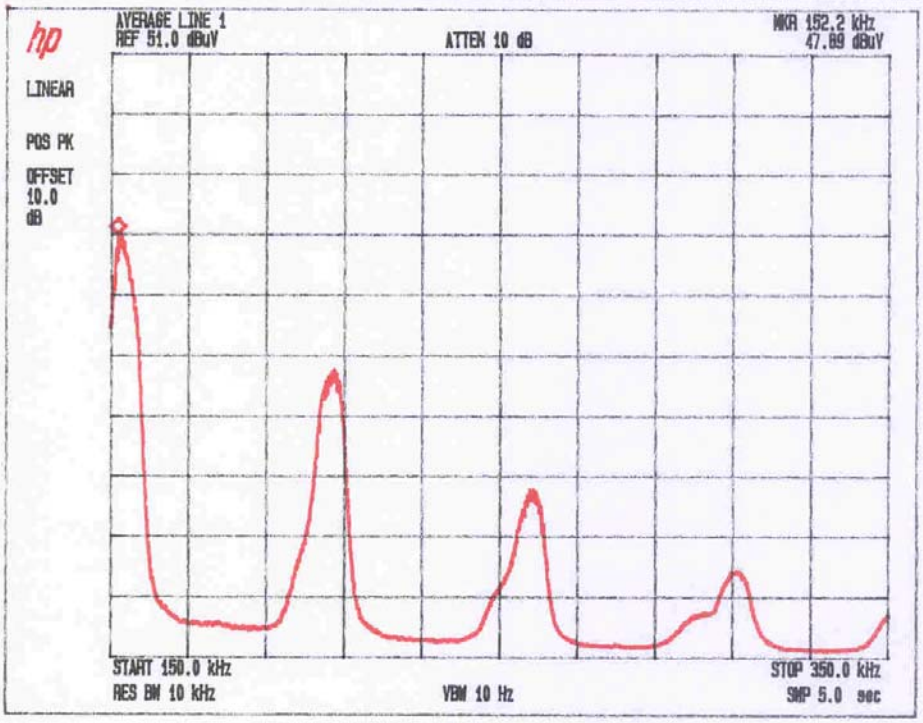
EN55022B (CISPR22B) AC Conductd
BeamReach Net.
BRU 100 with P/S HSU - 11P
Peak Reading
Line1[X] Line2[ ] 115VAC 60Hz.
QUASI-PEAK
AVERAGE
100
80
60
40
20
.15
1
10
30
FREQUENCY [MHz]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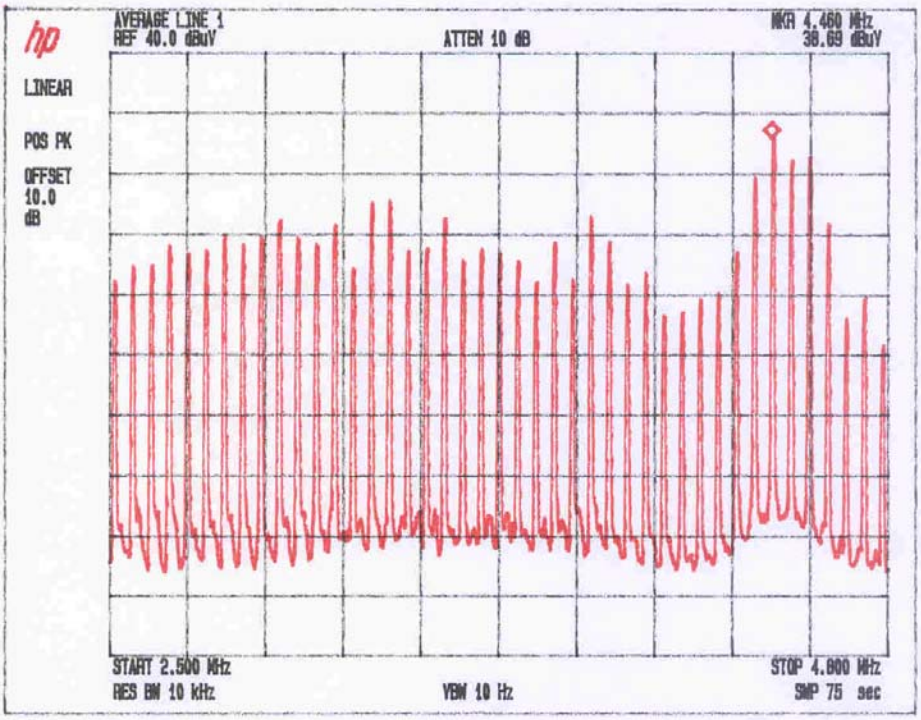
VBW 10 Hz
STOP 350.0 kHz
SWP 5.0 sec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ATTEN 10 dB
MKR 4.460 MHz
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OFFSET
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dB
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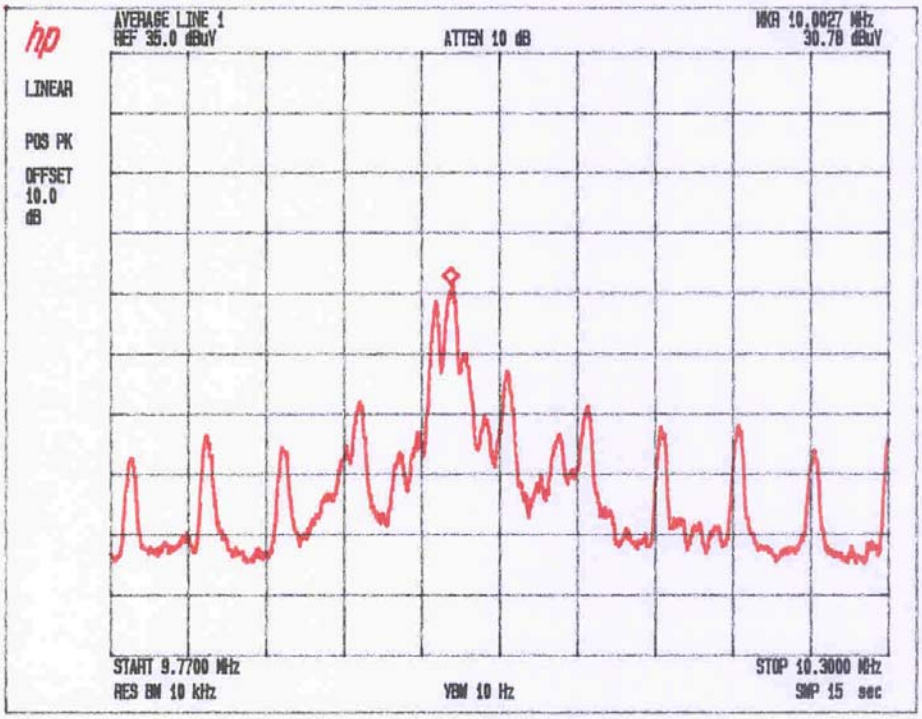
RES BW 10 kHz
VBW 10 Hz
STOP 4.800 MHz
SWP 75 sec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MKR 10.0027 MHz
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OFFSET
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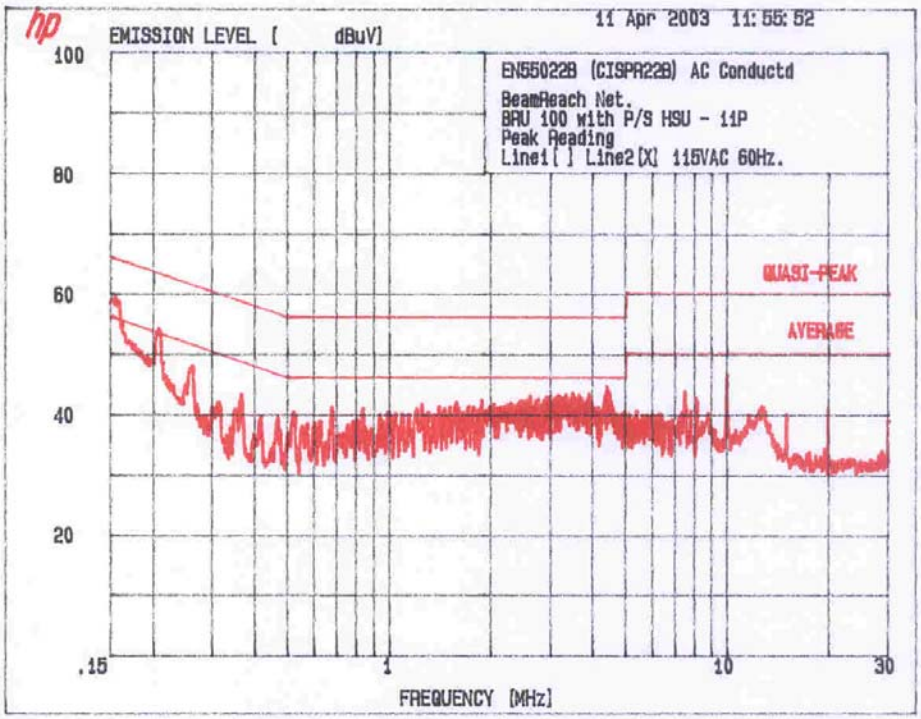
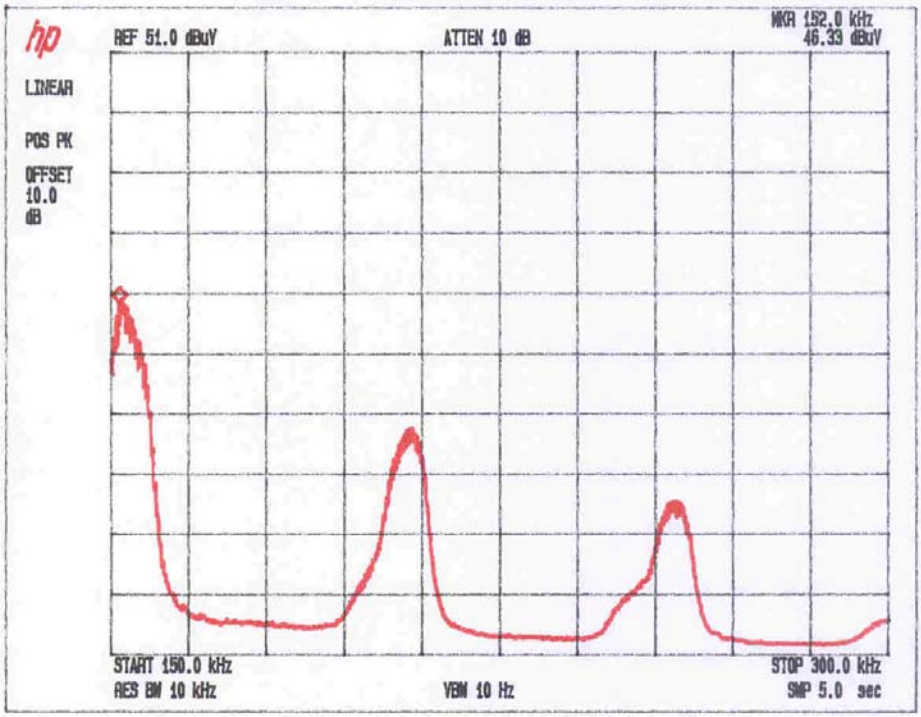
dB
START 9.7700 MHz
RES BW 10 kHz
VBW 10 Hz
STOP 10.3000 MHz
SWP 15 sec


EMISSION LEVEL [dBuV]
11 Apr 2003 11:55:52
EN55022B (CISPR22B) AC Conductd
BeamReach Net.
BRU 100 with P/S HSU - 11P
Peak Reading
Line1[ ] Line2[X] 115VAC 60Hz.
QUASI-PEAK
AVERAGE
100
80
60
40
20
.15
1
10
30
FREQUENCY [MHz]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dB
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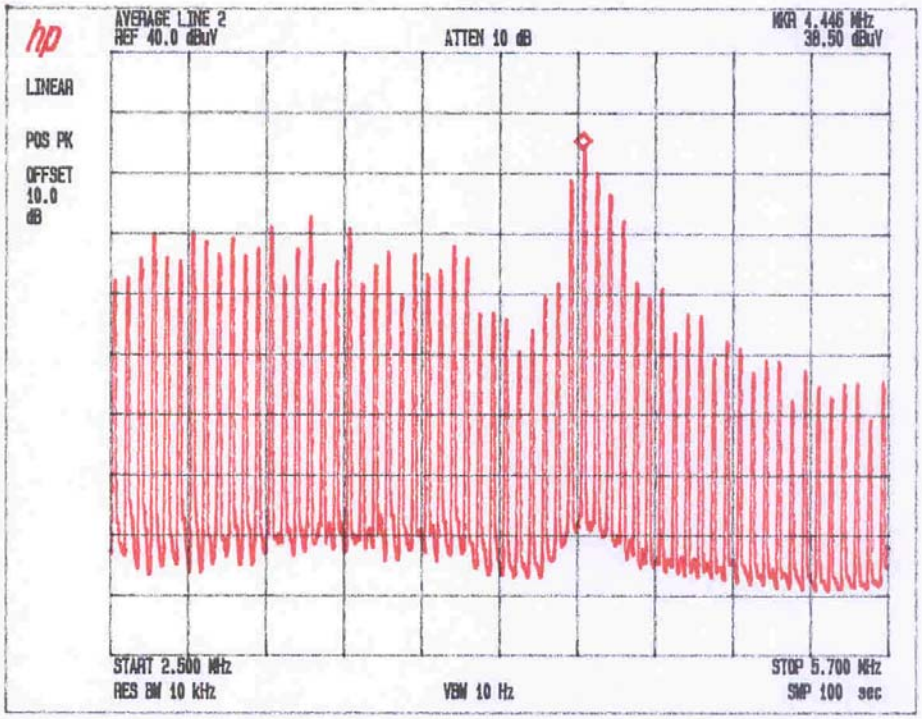
RES BW 10 kHz
VBW 10 Hz
STOP 300.0 kHz
SWP 5.0 sec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ATTEN 10 dB
MKR 4.446 MHz
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LINEAR
POS PK
OFFSET
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dB
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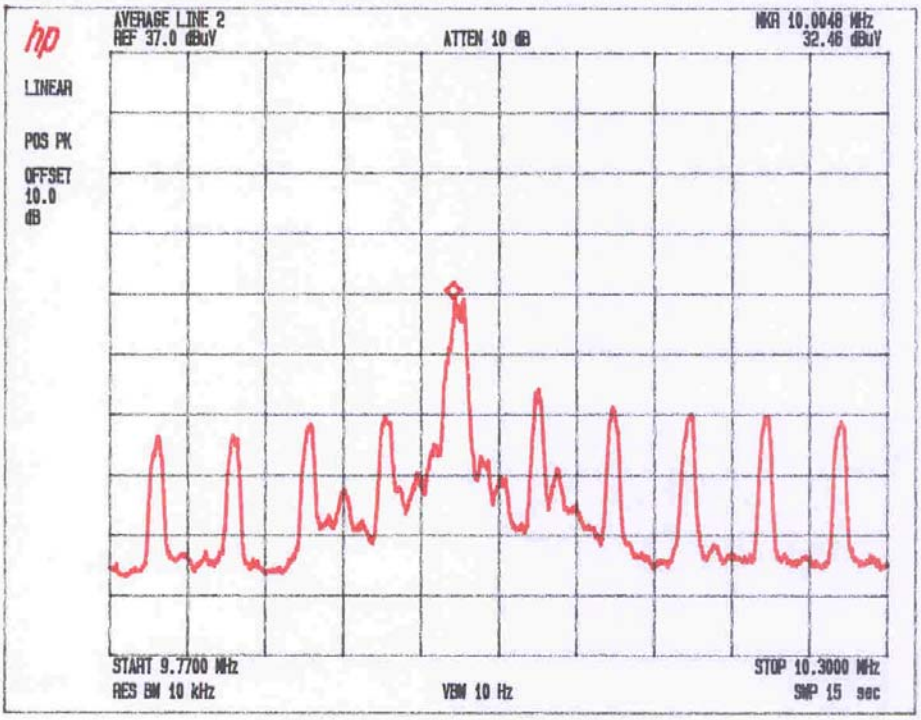
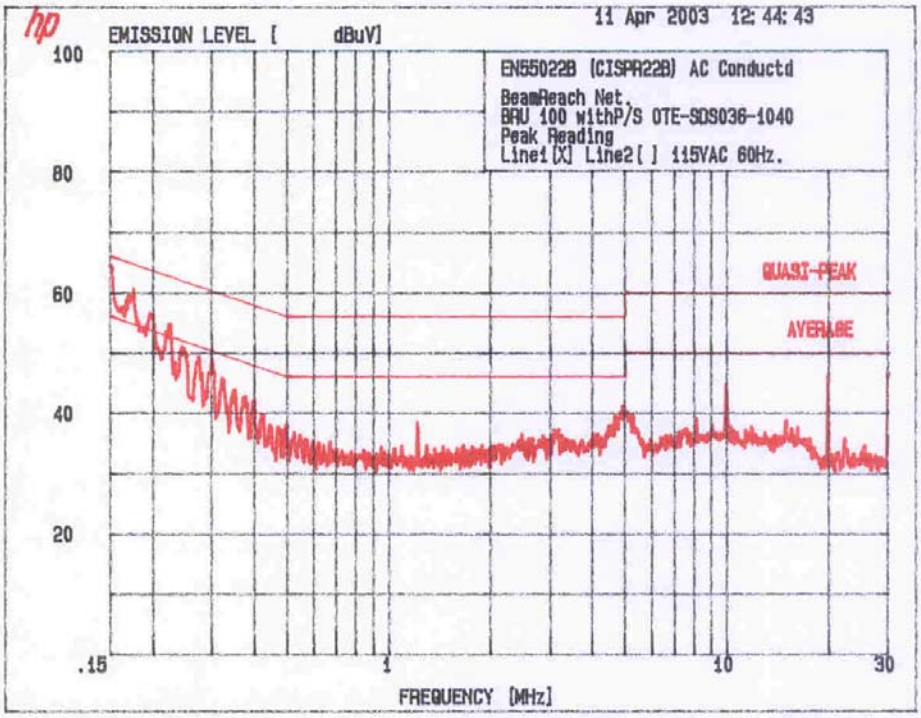
RES BW 10 kHz
VBW 10 Hz
STOP 5.700 MHz
SWP 100 sec


AVERAGE LINE 2
REF 37.0 dBuV
ATTEN 10 dB
MKR 10.0048 MHz
32.46 dBuV
LINEAR
POS PK
OFFSET
10.0
dB
START 9.7700 MHz
RES BW 10 kHz
VBW 10 Hz
STOP 10.3000 MHz
SWP 15 sec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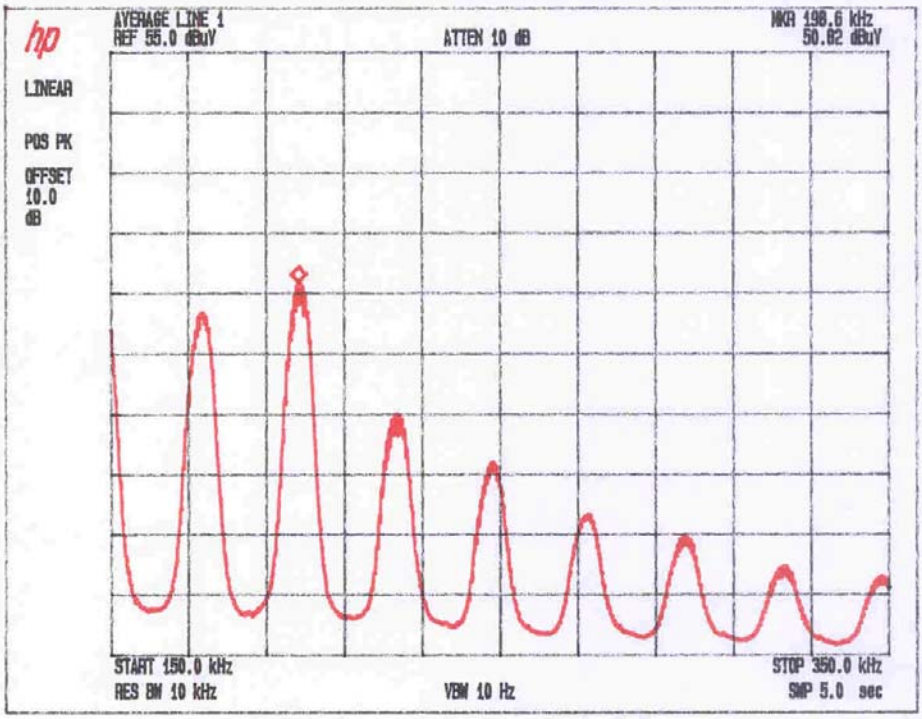
11 Apr 2003 12:44:43
EN55022B (CISPR22B) AC Conductd
BeamReach Net.
BRU 100 withP/S OTE-SDS036-1040
Peak Reading
Line1[X] Line2[ ] 115VAC 60Hz.
QUASI-PEAK
AVERAGE
100
80
60
40
20
.15
1
10
30
FREQUENCY [MHz]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50.62 dBuV
LINEAR
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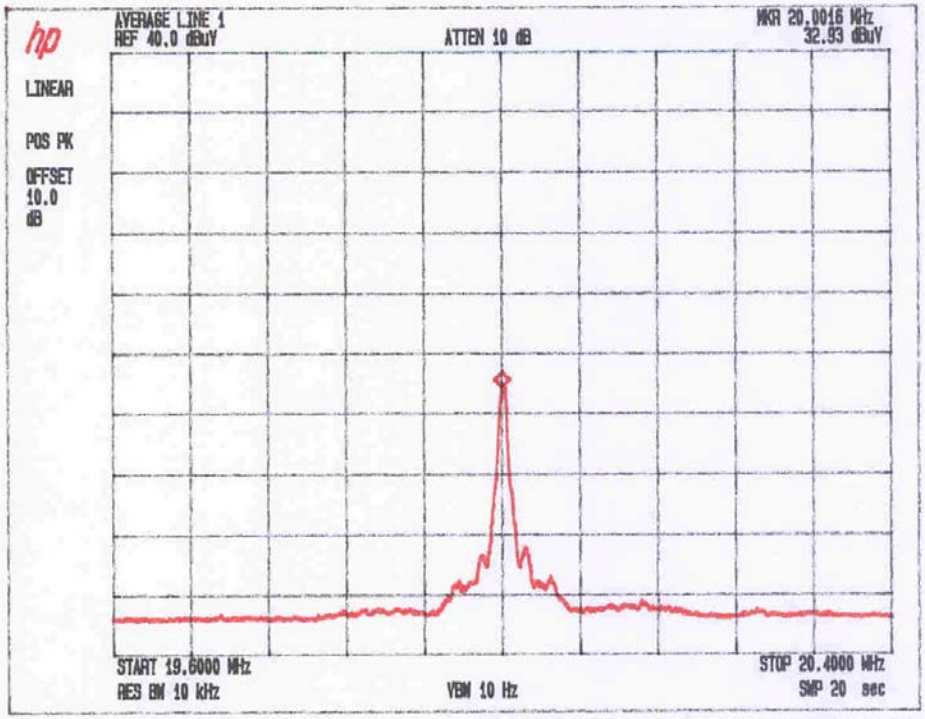
OFFSET
10.0
dB
START 150.0 kHz
RES BW 10 kHz
VBW 10 Hz
STOP 350.0 kHz
SWP 5.0 sec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ATTEN 10 dB
MKR 20.0016 MHz
32.93 dBuV
LINEAR
POS PK
OFFSET
10.0
dB
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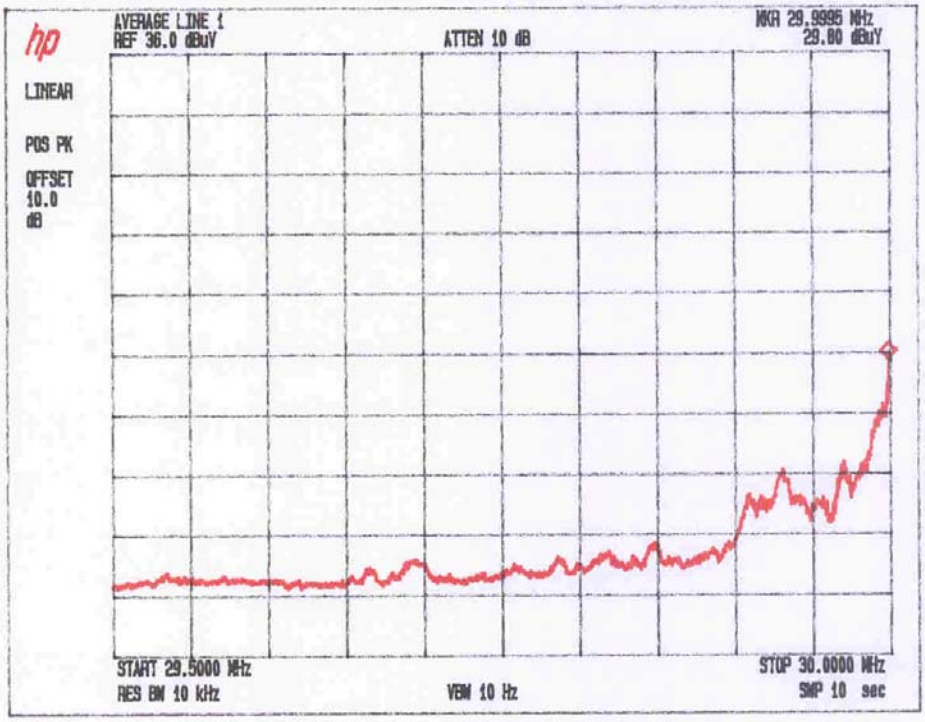
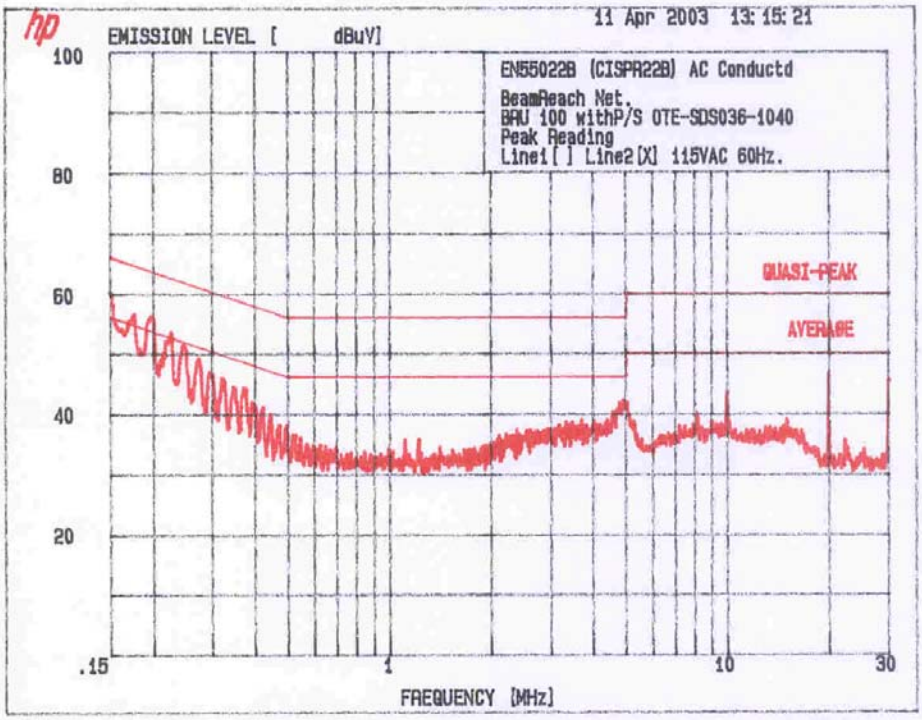
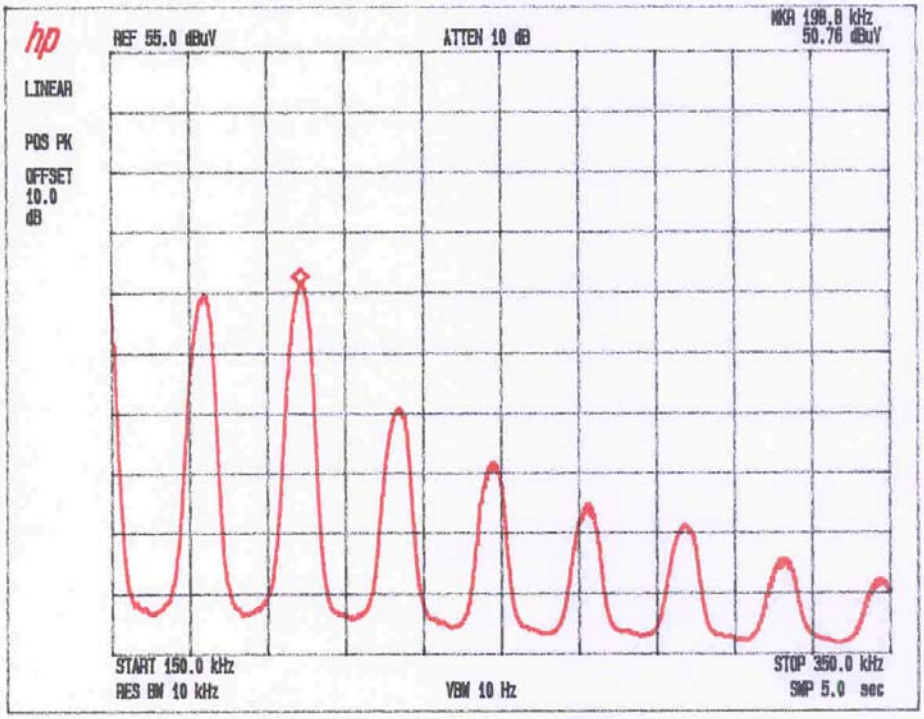
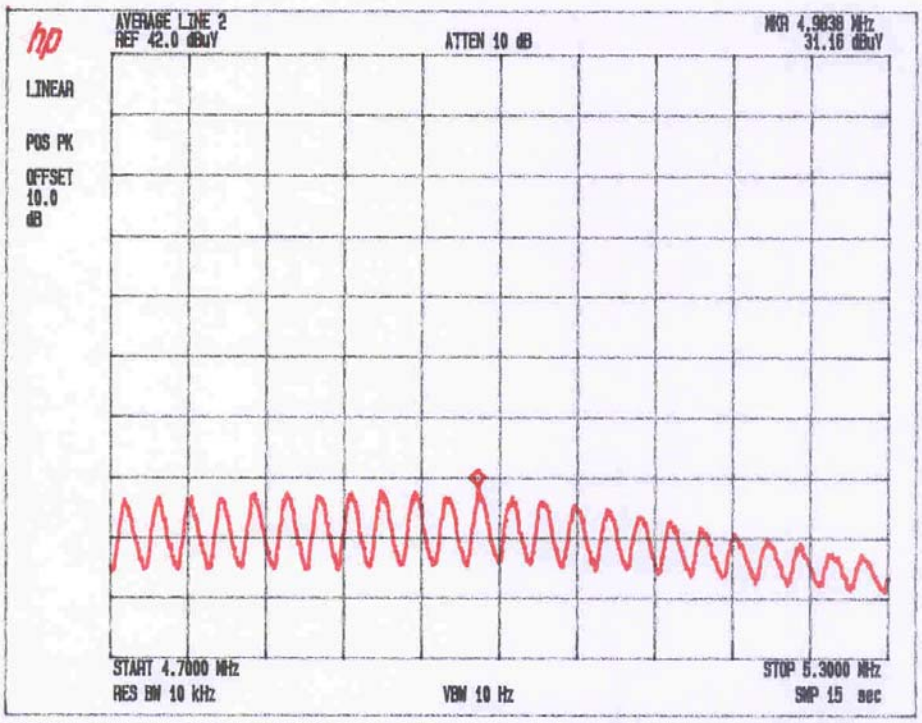
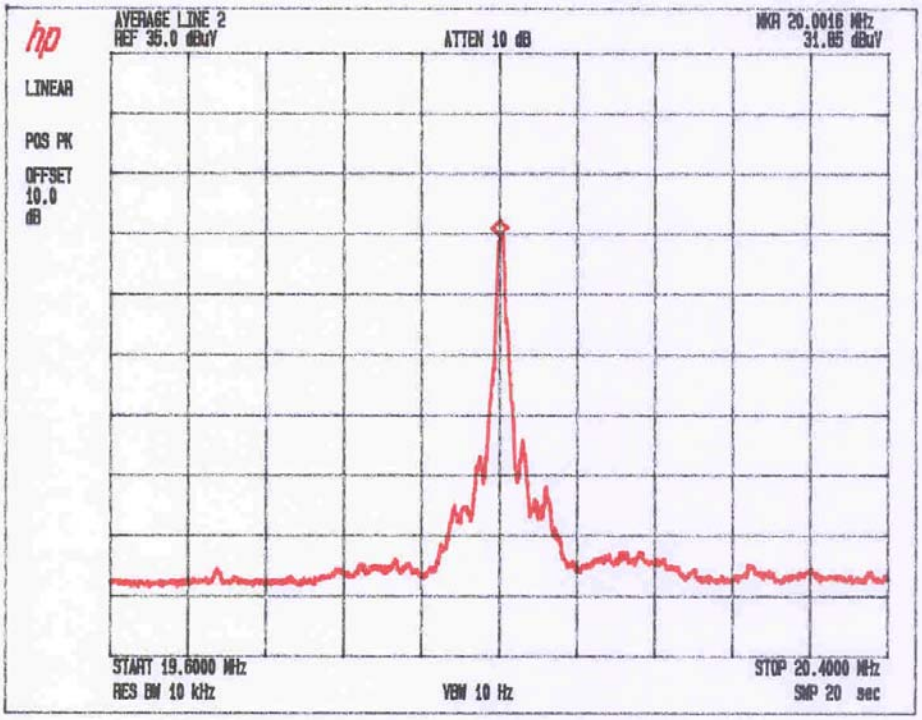
RES BW 10 kHz
VBW 10 Hz
STOP 20.4000 MHz
SWP 20 sec

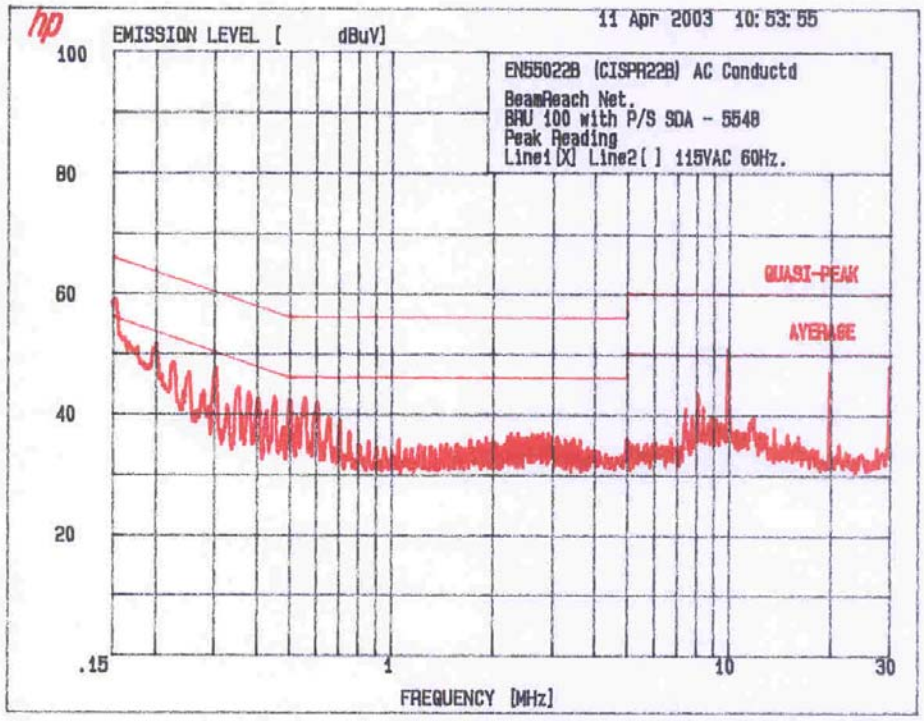

AVERAGE LINE 1
REF 36.0 dBuV
ATTEN 10 dB
MKR 29.9995 MHz
29.80 dBuV
LINEAR
POS PK
OFFSET
10.0
dB
START 29.5000 MHz
RES BW 10 kHz
VBW 10 Hz
STOP 30.0000 MHz
SWP 10 sec

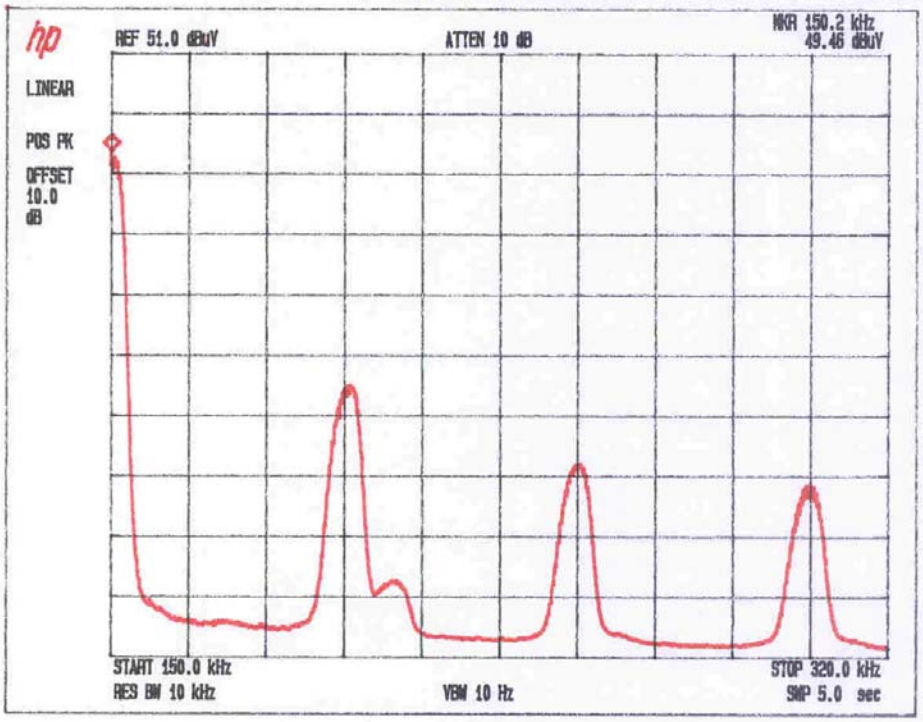

hp
EMISSION LEVEL [dBuV]
11 Apr 2003 13:15:21
EN55022B (CISPR22B) AC Conductd
BeamReach Net.
BRU 100 withP/S OTE-SDS036-1040
Peak Reading
Line1[ ] Line2[X] 115VAC 60Hz.
QUASI-PEAK
AVERAGE
100
80
60
40
20
.15
1
10
30
FREQUENCY [MHz]

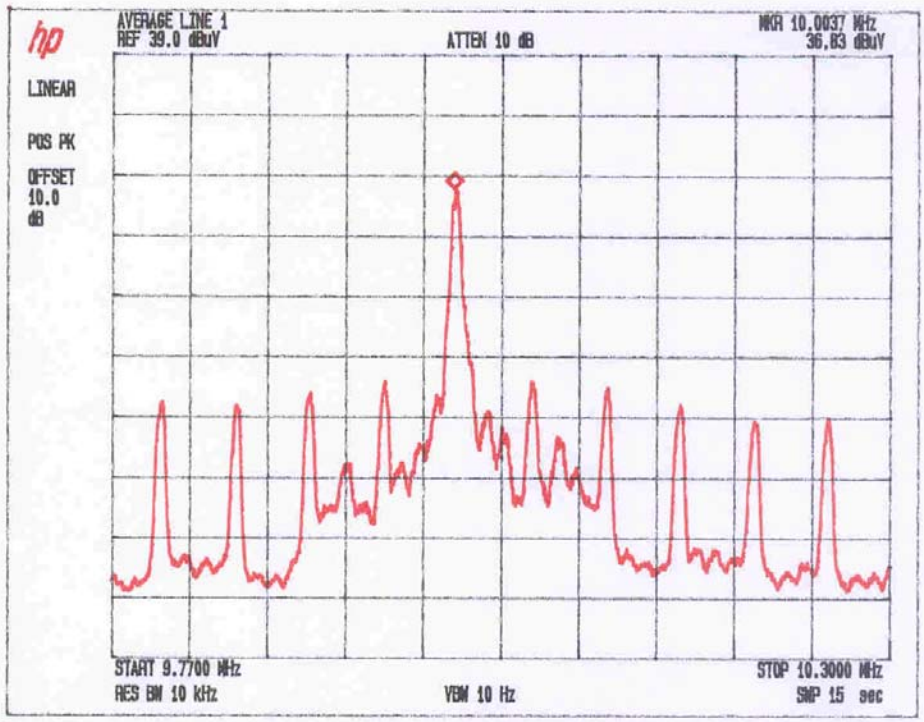

hp
REF 55.0 dBuV
ATTEN 10 dB
MKR 198.8 kHz
50.76 dBuV
LINEAR
POS PK
OFFSET
10.0
dB
START 150.0 kHz
RES BW 10 kHz
VBW 10 Hz
STOP 350.0 kHz
SWP 5.0 sec

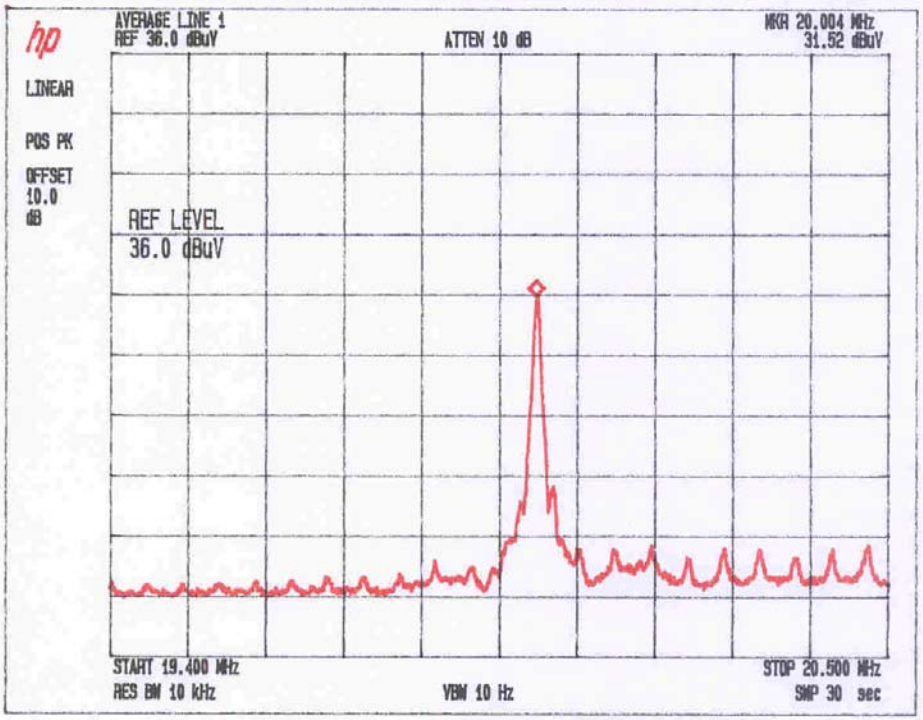

AVERAGE LINE 2
REF 42.0 dBuV
ATTEN 10 dB
MKR 4.9038 MHz
31.16 dBuV
LINEAR
POS PK
OFFSET
10.0
dB
START 4.7000 MHz
RES BW 10 kHz
VBW 10 Hz
STOP 5.3000 MHz
SWP 15 sec

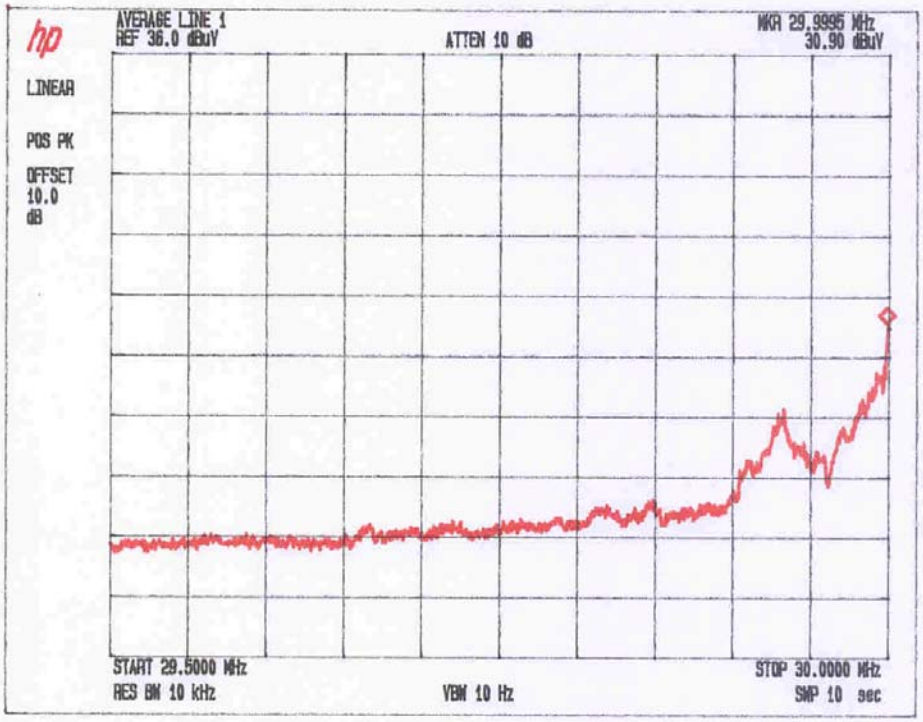

AVERAGE LINE 2
REF 35.0 dBuV
ATTEN 10 dB
MKR 20.0016 MHz
31.85 dBuV
LINEAR
POS PK
OFFSET
10.0
dB
START 19.6000 MHz
RES BW 10 kHz
VBW 10 Hz
STOP 20.4000 MHz
SWP 20 sec

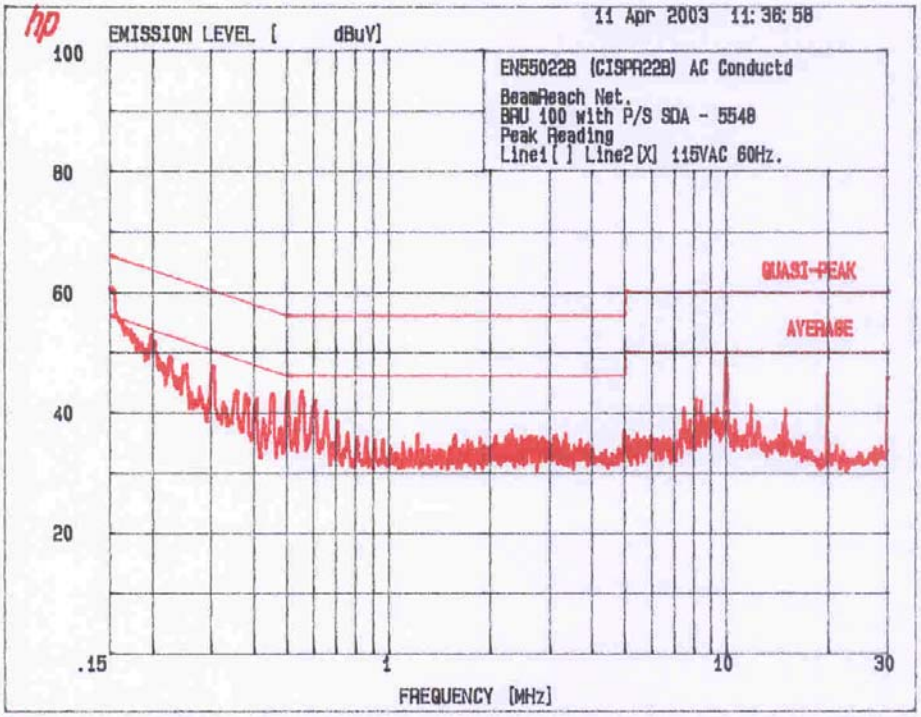

EMISSION LEVEL [dBuV]
11 Apr 2003 10:53:55
EN55022B (CISPR22B) AC Conductd
BeamReach Net.
BRU 100 with P/S SDA - 5548
Peak Reading
Line1 [X] Line2 [ ] 115VAC 60Hz.
QUASI-PEAK
AVERAGE
100
80
60
40
20
.15
1
10
30
FREQUENCY [MHz]

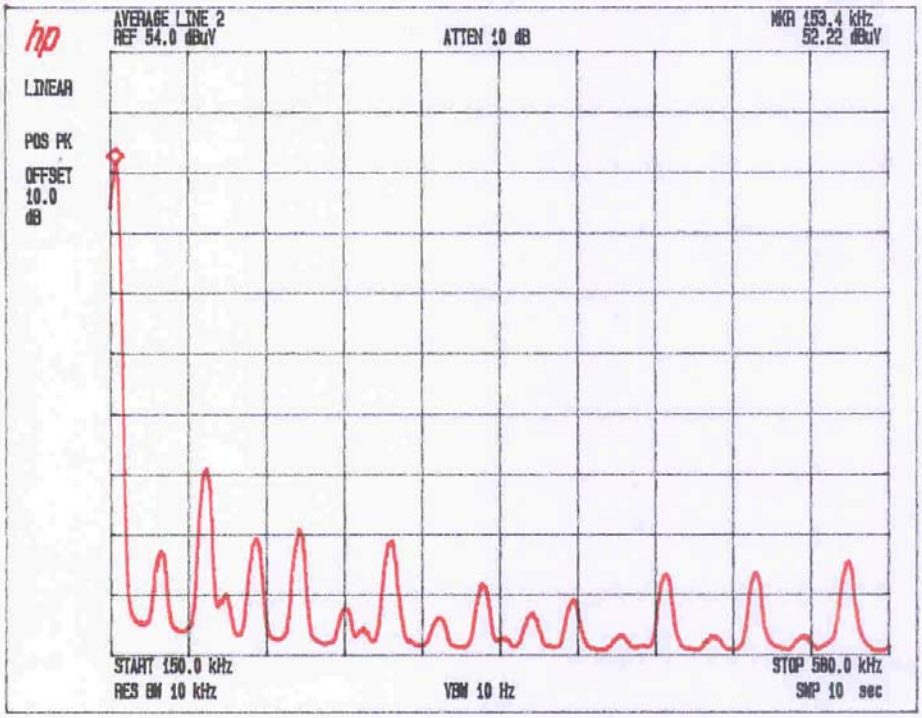

REF 51.0 dBuV
ATTEN 10 dB
MKR 150.2 kHz
49.46 dBuV
LINEAR
POS PK
OFFSET
10.0
dB
START 150.0 kHz
RES BW 10 kHz
VBW 10 Hz
STOP 320.0 kHz
SWP 5.0 sec

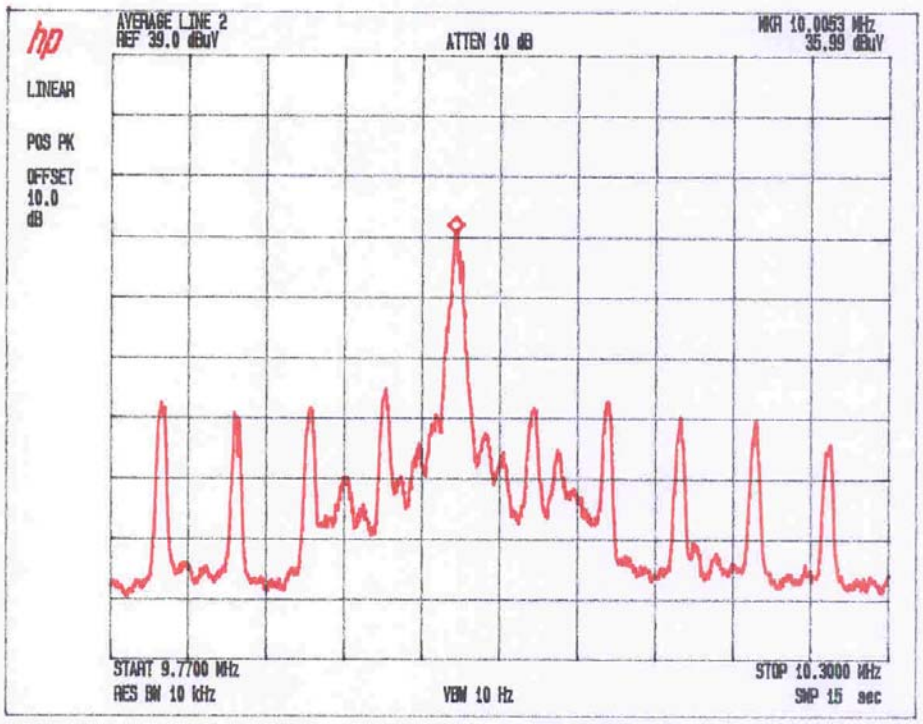

AVERAGE LINE 1
REF 39.0 dBuV
ATTEN 10 dB
MKR 10.0037 MHz
36.83 dBuV
LINEAR
POS PK
OFFSET
10.0
dB
START 9.7700 MHz
RES BW 10 kHz
VBW 10 Hz
STOP 10.3000 MHz
SWP 15 sec

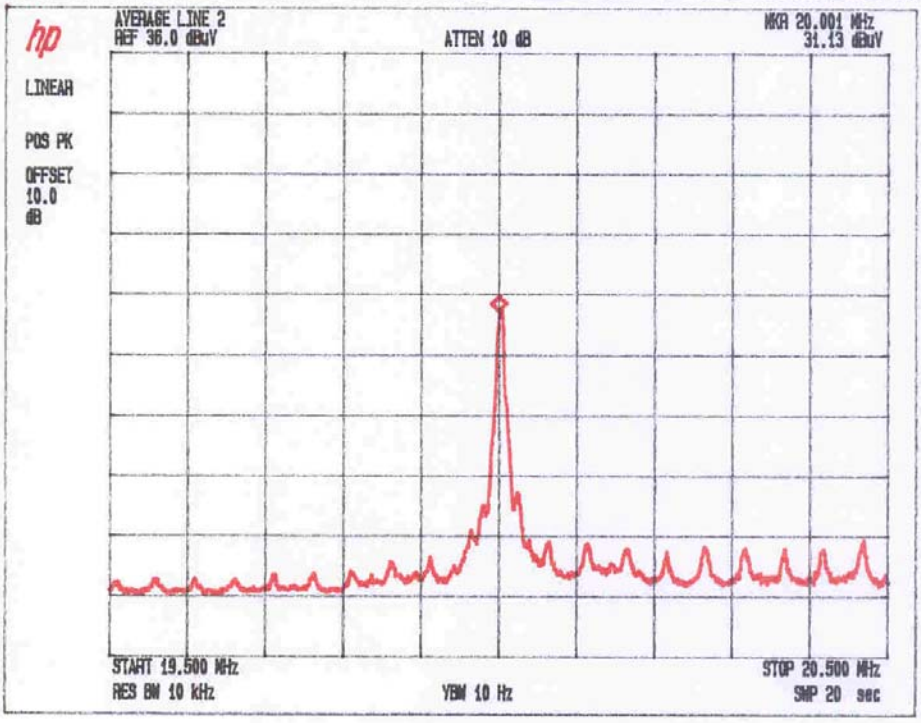

AVERAGE LINE 1
REF 36.0 dBuV
ATTEN 10 dB
MKR 20.004 MHz
31.52 dBuV
LINEAR
POS PK
OFFSET
10.0
dB
REF LEVEL
36.0 dBuV
START 19.400 MHz
RES BW 10 kHz
VBW 10 Hz
STOP 20.500 MHz
SWP 30 sec


AVERAGE LINE 1
REF 36.0 dBuV
ATTEN 10 dB
MKR 29.9995 MHz
30.90 dBuV
LINEAR
POS PK
OFFSET
10.0
dB
START 29.5000 MHz
RES BW 10 kHz
VBW 10 Hz
STOP 30.0000 MHz
SWP 10 sec


EMISSION LEVEL [dBuV]
11 Apr 2003 11:36:58
EN55022B (CISPR22B) AC Conductd
BeamReach Net.
BRU 100 with P/S SDA - 5548
Peak Reading
Line1[ ] Line2[X] 115VAC 60Hz.
QUASI-PEAK
AVERAGE
100
80
60
40
20
.15
1
10
30
FREQUENCY [MHz]


AVERAGE LINE 2
REF 54.0 dBuV
ATTEN 10 dB
MKR 153.4 kHz
52.22 dBuV
LINEAR
POS PK
OFFSET
10.0
dB
START 150.0 kHz
RES BW 10 kHz
VBW 10 Hz
STOP 500.0 kHz
SWP 10 sec


AVERAGE LINE 2
REF 39.0 dBuV
ATTEN 10 dB
MKR 10.0053 MHz
35.99 dBuV
LINEAR
POS PK
OFFSET
10.0
dB
START 9.7700 MHz
RES BW 10 kHz
VBW 10 Hz
STOP 10.3000 MHz
SWP 15 sec


AVERAGE LINE 2
REF 36.0 dBuV
ATTEN 10 dB
MKR 20.001 MHz
31.13 dBuV
LINEAR
POS PK
OFFSET
10.0
dB
START 19.500 MHz
RES BW 10 kHz
VBW 10 Hz
STOP 20.500 MHz
SWP 20 sec

9.0 Frequency Stability vs Temperature and Voltage

FCC 2.1055

9.1 Test Procedure

The equipment under test was connected to AC power line and the RF output was connected to a frequency counter via feedthrough attenuators. The EUT was placed inside the temperature chamber. The power leads, RF output cable, exited the chamber through an opening.

After the temperature stabilized for approximately 20 minutes, the frequency of the output signal was recorded from the counter.

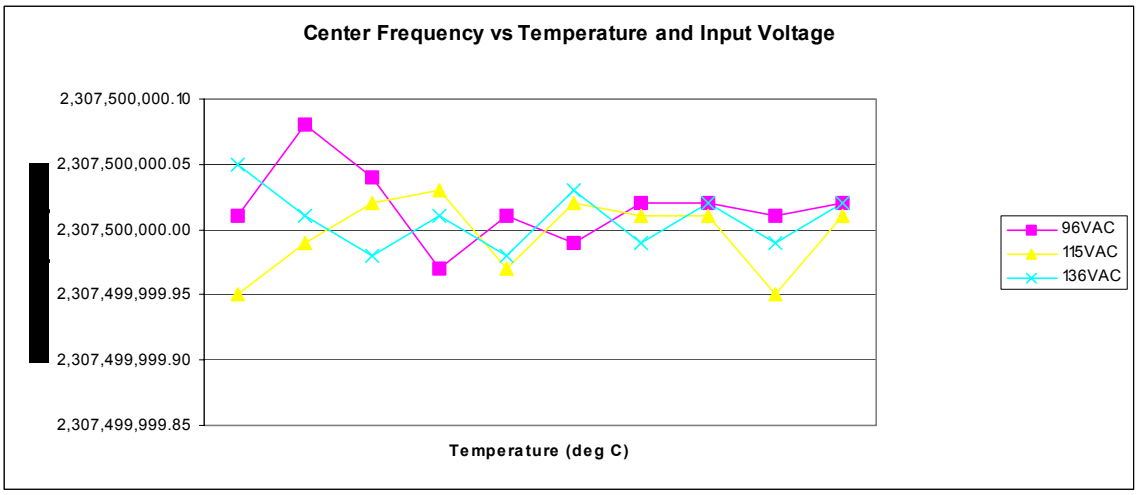
The frequency of the transmitter was measured for temperature range from –30°C to +60°C and voltage range from 115% of the nominal value and for 85% of the nominal value.

9.2 Test Results

Refer to the test data and graph below.

Reference Frequency: 2307500000 Hz

Temp	Error at 96VAC, (Hz)	Error at 115VAC, (Hz)	Error at 136VAC, (Hz)
-30	0.01	-0.05	0.05
-20	0.08	-0.01	0.01
-10	0.04	0.02	-0.02
0	-0.03	0.03	0.01
10	0.01	-0.03	-0.02
20	-0.01	0.02	0.03
30	0.02	0.01	-0.01
40	0.02	0.01	0.02
50	0.01	-0.05	-0.01
60	0.02	0.01	0.02



Results: The maximum error is 0.08 Hz

10.0 List of Test Equipment

Equipment	Manufacturer	Model/Type	Serial #	Cal Int	Cal Due
BI-Log Antenna	EMCO	3143	9509-1160	12	9/19/03
Pre-Amplifier	Sonoma Inst.	310	185634	12	10/30/03
RF Filter Section	Hewlett Packard	85460A	3448A00267	12	7/16/03
EMI Receiver	Hewlett Packard	8546A	3710A00373	12	7/16/03
Spectrum Analyzer	Hewlett Packard	8565E	-	12	5/27/04
Double-ridged Horn Antenna	EMCO	3115	8812-3049	12	4/03/04
Double-ridged Horn Antenna	EMCO	3115	9170-3712	12	6/02/03
Horn Antenna	EMCO	3160-09	ITS51	#	#
Signal Generator	Hewlett Packard	83732A	3222A00119	12	3/04/04
Pre-Amplifier	ITS	ITSPA-1	44156	12	5/16/03
Pre-Amplifier	Miteq	AMF-4D-001180-24-10P	799159	12	9/06/03
Pre-amplifier	CTT	ACO/400	47526	12	5/28/03
Power Meter	Hewlett Packard	8900D	3607U00673	12	7/08/03
Spectrum Analyzer w/8650 QP Adapter	Hewlett Packard	8568B	1912A0053 2521A01021	12	11/20/03
LISN	FCC	FCC-LISN-50-50-M-H	2012	12	1/23/04
Pulse Limiter	Hewlett Packard	11947A	2820A00184	12	9/3/03

No calibration required

11.0 Document History

Revision/ Job Number	Writer Initials	Date	Change
1.0 / 3040864 and 3030973	DC	June 10, 2003	Original document

12.0 Appendix A

Sub band A1 (operating center frequencies: 2306.25 and 2351.25 MHz)

Plot Number	Description
1.1	Scan 10 MHz – 1 GHz
1.2	Scan 1 GHz – 2.300 GHz
1.3	Scan 2.300 GHz – 2.310 GHz
1.4	Scan 2.315 GHz – 2.320 GHz
1.5	Scan 2.320 GHz – 2.345 GHz
1.6	Scan 2.450 GHz – 2.355 GHz
1.7	Scan 2.360 GHz – 2.370 GHz
1.8	Scan 2.370 GHz – 6.4 GHz
1.9	Scan 6.4 GHz – 24 GHz

Sub band A3 (operating center frequencies: 2308.75 and 2353.75 MHz)

Plot Number	Description
2.1	Scan 10 MHz – 1 GHz
2.2	Scan 1 GHz – 2.300 GHz
2.3	Scan 2.300 GHz – 2.310 GHz
2.4	Scan 2.315 GHz – 2.320 GHz
2.5	Scan 2.320 GHz – 2.345 GHz
2.6	Scan 2.450 GHz – 2.355 GHz
2.7	Scan 2.360 GHz – 2.370 GHz
2.8	Scan 2.370 GHz – 6.4 GHz
2.9	Scan 6.4 GHz – 24 GHz

Sub band B1 (operating center frequencies: 2311.25 and 2356.25 MHz)

Plot Number	Description
3.1	Scan 10 MHz – 1 GHz
3.2	Scan 1 GHz – 2.300 GHz
3.3	Scan 2.300 GHz – 2.310 GHz
3.4	Scan 2.315 GHz – 2.320 GHz
3.5	Scan 2.320 GHz – 2.345 GHz
3.6	Scan 2.450 GHz – 2.355 GHz
3.7	Scan 2.360 GHz – 2.370 GHz
3.8	Scan 2.370 GHz – 6.4 GHz
3.9	Scan 6.4 GHz – 24 GHz

Sub band B3 (operating center frequencies: 2313.75 and 2358.75 MHz)

Plot Number	Description
3.1	Scan 10 MHz – 1 GHz
3.2	Scan 1 GHz – 2.300 GHz
3.3	Scan 2.300 GHz – 2.310 GHz
3.4	Scan 2.315 GHz – 2.320 GHz
3.5	Scan 2.320 GHz – 2.345 GHz
3.6	Scan 2.450 GHz – 2.355 GHz
3.7	Scan 2.360 GHz – 2.370 GHz
3.8	Scan 2.370 GHz – 6.4 GHz
3.9	Scan 6.4 GHz – 24 GHz