

Exhibit 6

Test Report

Part 2

FCC Part 27

Spurious emissions at antenna terminals

Rule Part Number: 2.1051, 2.1049, 2.1057

Frequency Range = 9 kHz to 26.86 GHz

Attenuation (dB) below the power (W) supplied to the antenna transmission line

Attenuation = $43 + 10 \log P$, or 70 dBc, whichever is less stringent

Attenuation = $43 + 10 \log(2) = 46$ dBc 2 watt transmit level

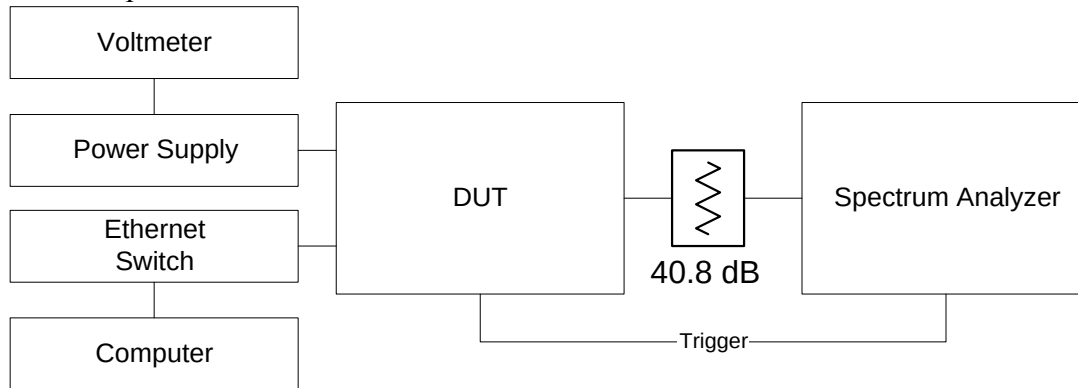
Standard: TIA-603-B
TIA Standard, Land Mobile FM or PM Communications Equipment, Measurement and Performance Standards

Test Procedure: The Orthogonal Frequency Division Multiplexing (OFDM) modulated Time Division Duplex (TDD) RF signal from the test unit is applied to a spectrum analyzer thru 40.8 dB of attenuation (coax and attenuators). The transmission is recorded from 9 kHz to 26.5 GHz. The transmitter is enabled in test mode with the attached computer. The RF loss of the attenuators and coax was measured and is included in the spectrum analyzer offset level. Measurements are performed at frequencies across the band, for each of the modulation formats available (4, 16, and 64-QAM) and channel bandwidths (5.5 MHz and 6 MHz). All measurements utilized 4-QAM modulation. One data plot from each channel bandwidth is included for tests below the BRS/EBS frequency band. All channels measured had the same spectral content. Each tested frequency is shown for emissions above the BRS/EBS frequency band.

Test Conditions: Frequencies =
5.5 MHz channel: 2504.75, 2565.25, 2626.75, and 2687.25 MHz
6.0 MHz channel: 2499, 2575, and 2621 MHz
Second harmonic of all test frequencies included, 3rd thru 10th harmonics of 2504.75 MHz (worst case value) included at end. All other frequencies had similar results.
Temperature = 25 °C
Supply Voltage = 13.8 Vdc to MSU

Spurious emissions at antenna terminals

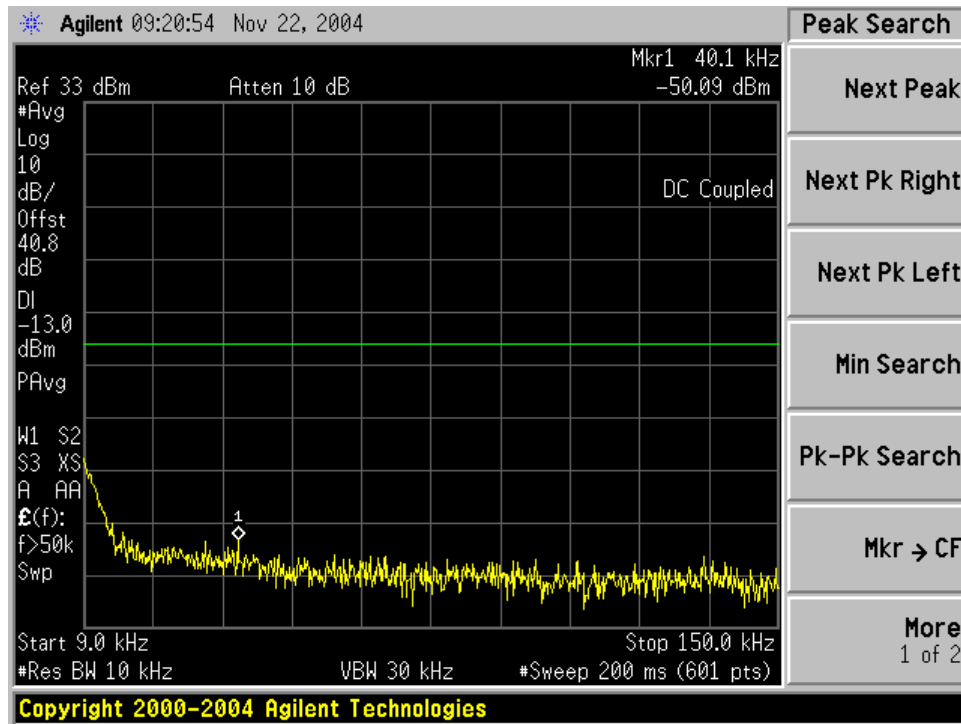
Test Setup



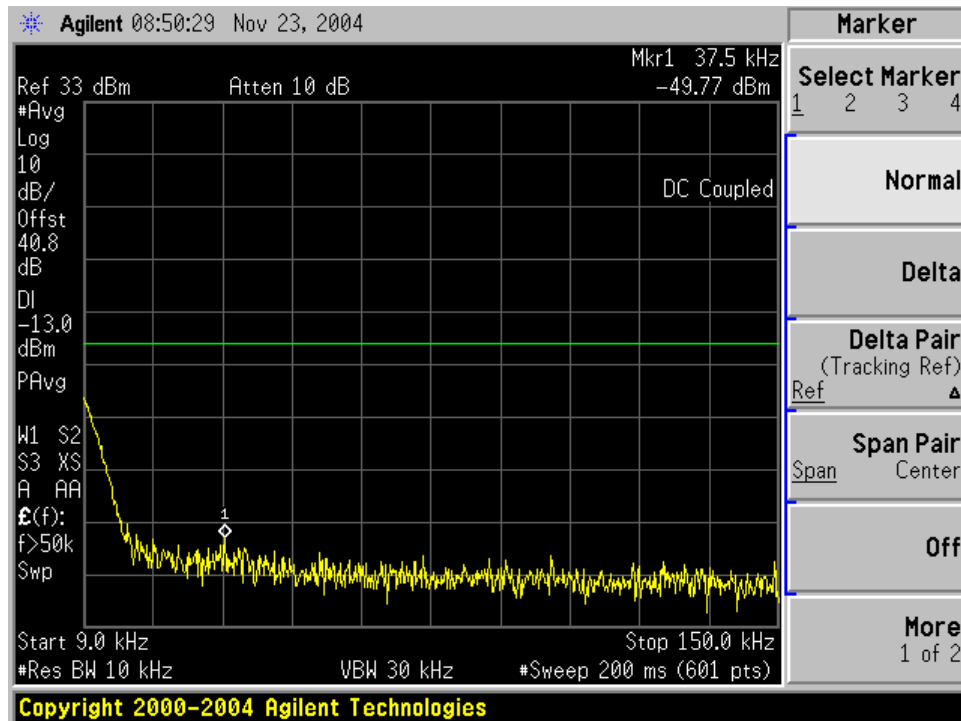
Test Equipment:

DUT	NextNet Wireless CPE (MSU-2510-A) # 0050-0300-4300924
Spectrum Analyzer	Agilent E4440A S/N: MY44022791 Calibrated on: 05/30/2004 Cal due: 05/30/2006
Attenuator(s) 10 dB 20 dB	Pasternak Corporation Model: PE7005-20 (20 dB) Model: PE7005-10 (10 dB) x2 Calibrated by user
Computer	Dell Inspiron 5000 Model: PPM S/N: 000832RM-12961-04R-0441
Ethernet Switch	D-Link Model: DSS-5+ 5 port 10/100Mbps S/N: B205335003175
Power Supply	Agilent E3615A S/N: KR01508898 Calibrated with voltmeter listed below.

Spurious emissions at antenna terminals

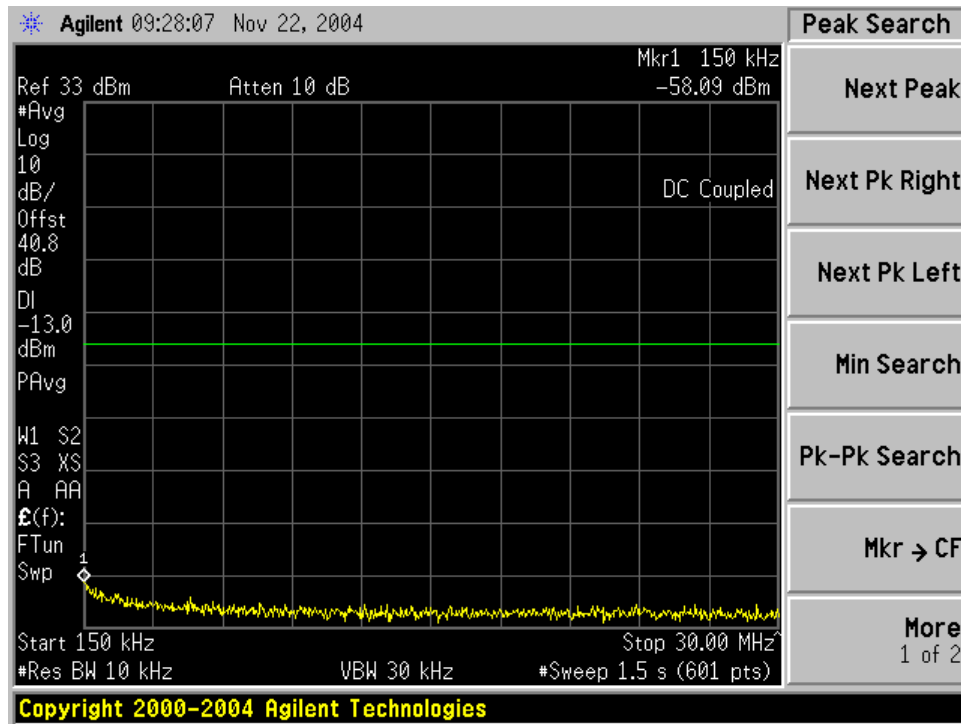


9 kHz – 150 kHz (2575 MHz / 6 MHz channel)

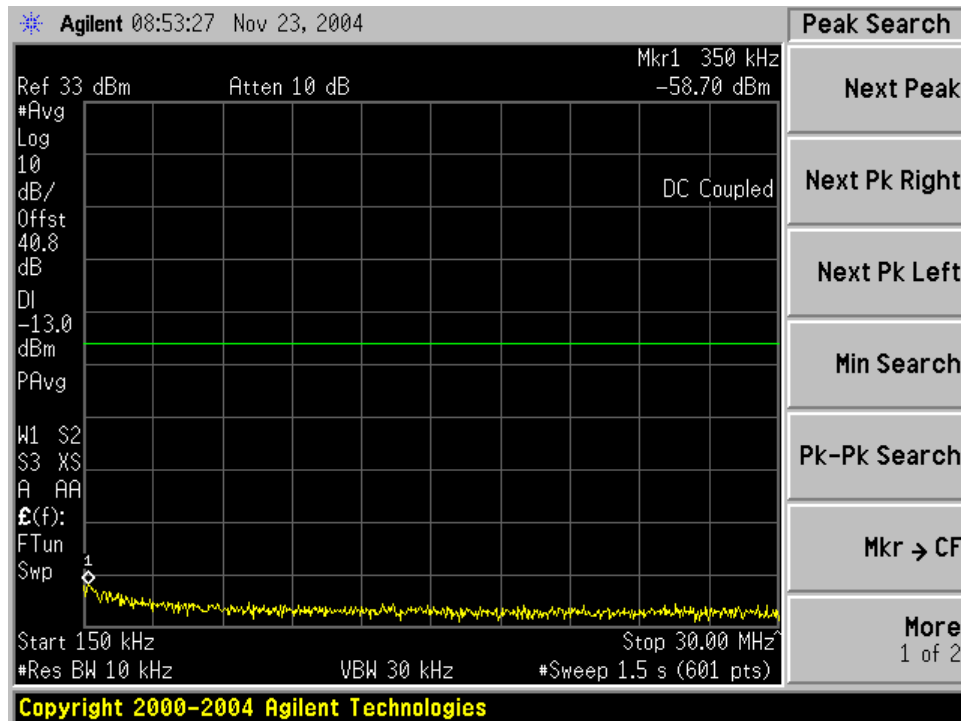


9 kHz – 150 kHz (2626.75 MHz / 5.5 MHz channel)

Spurious emissions at antenna terminals

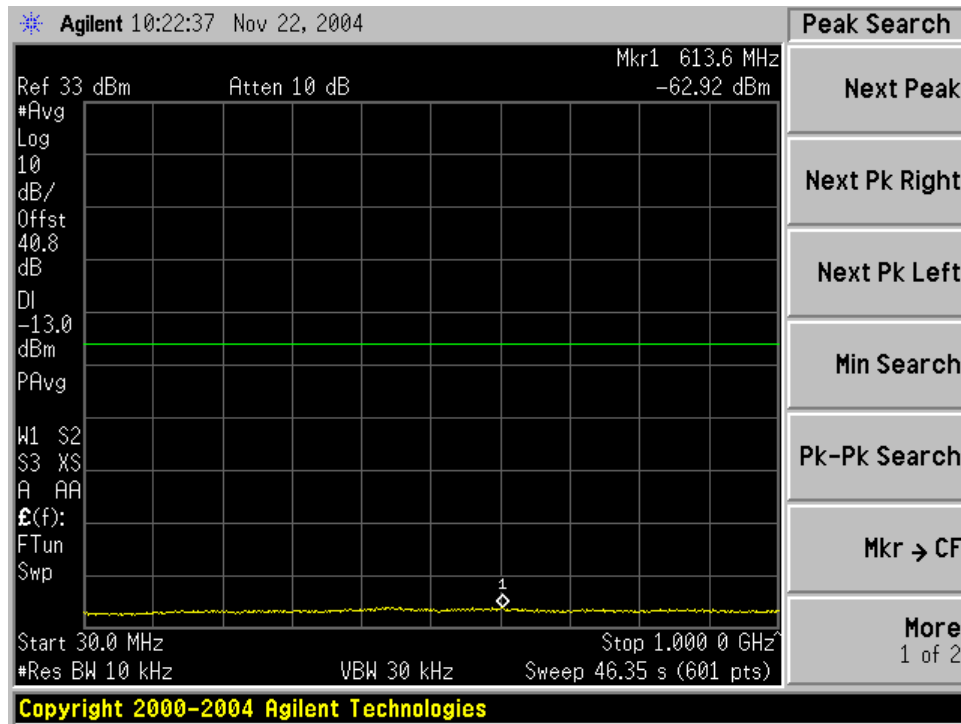


150 kHz – 30 MHz (2575 MHz / 6 MHz channel)

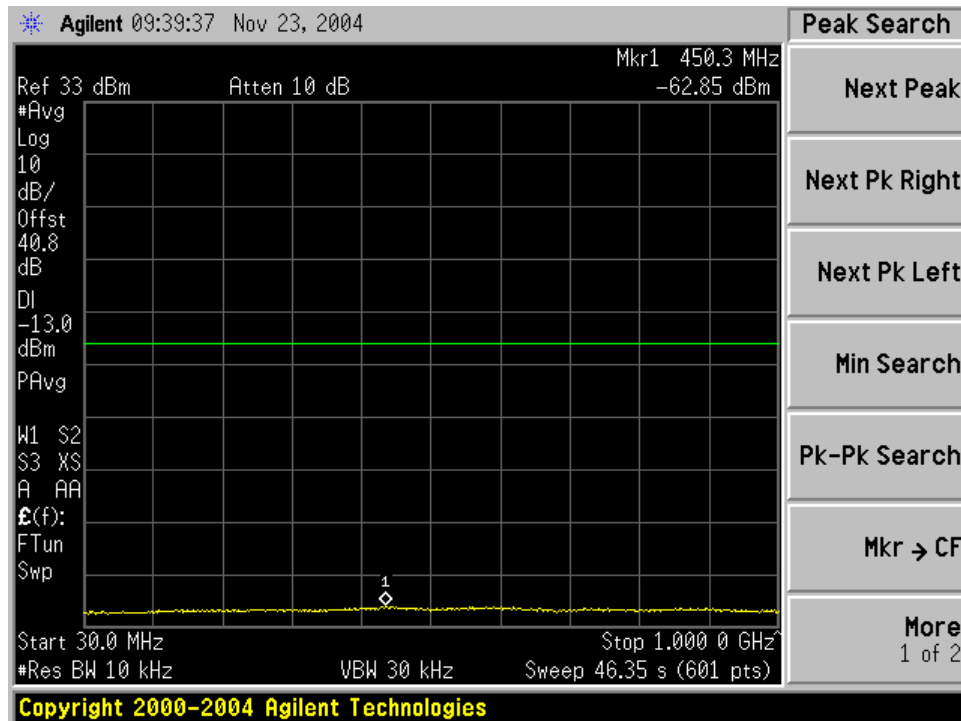


150 kHz – 30 MHz (2626.75 MHz / 5.5 MHz channel)

Spurious emissions at antenna terminals

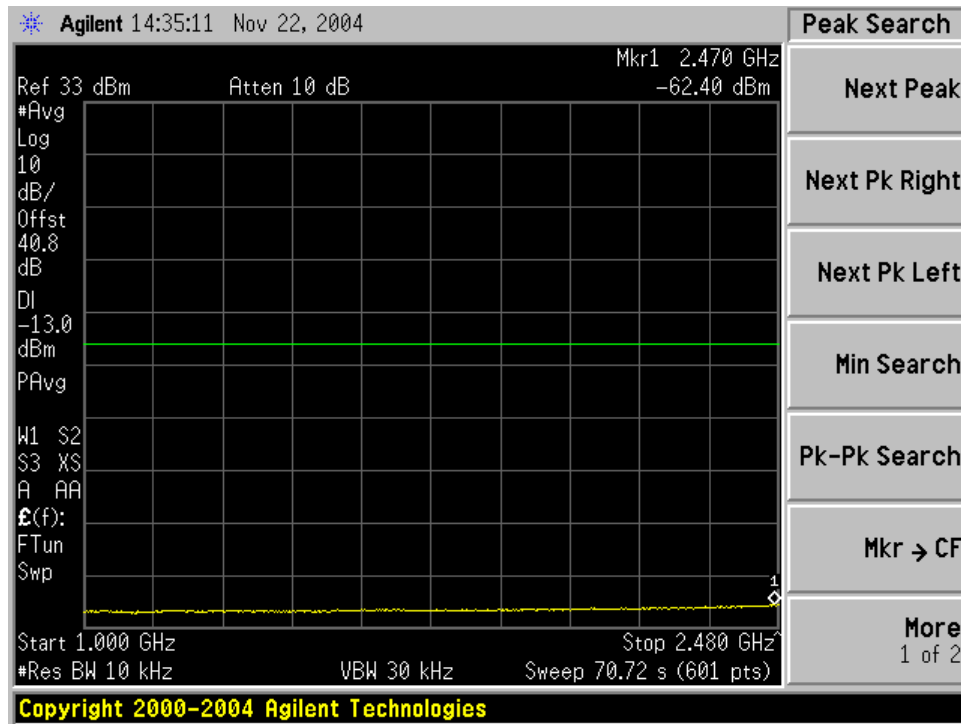


30 MHz – 1 GHz (2575 MHz / 6 MHz channel)

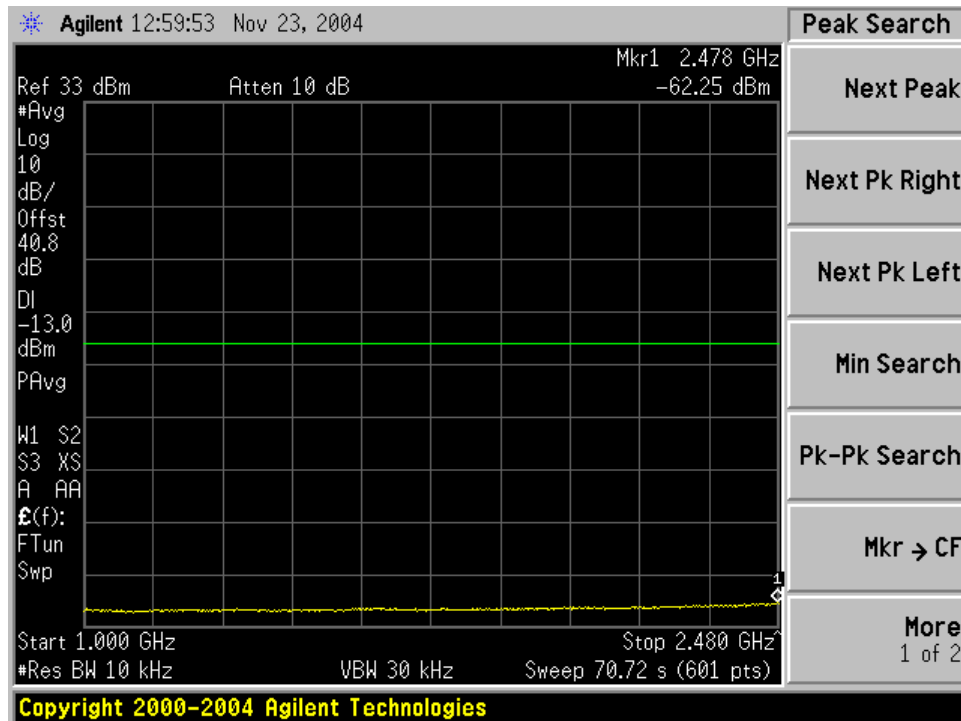


30 MHz – 1 GHz (2626.75 MHz / 5.5 MHz channel)

Spurious emissions at antenna terminals

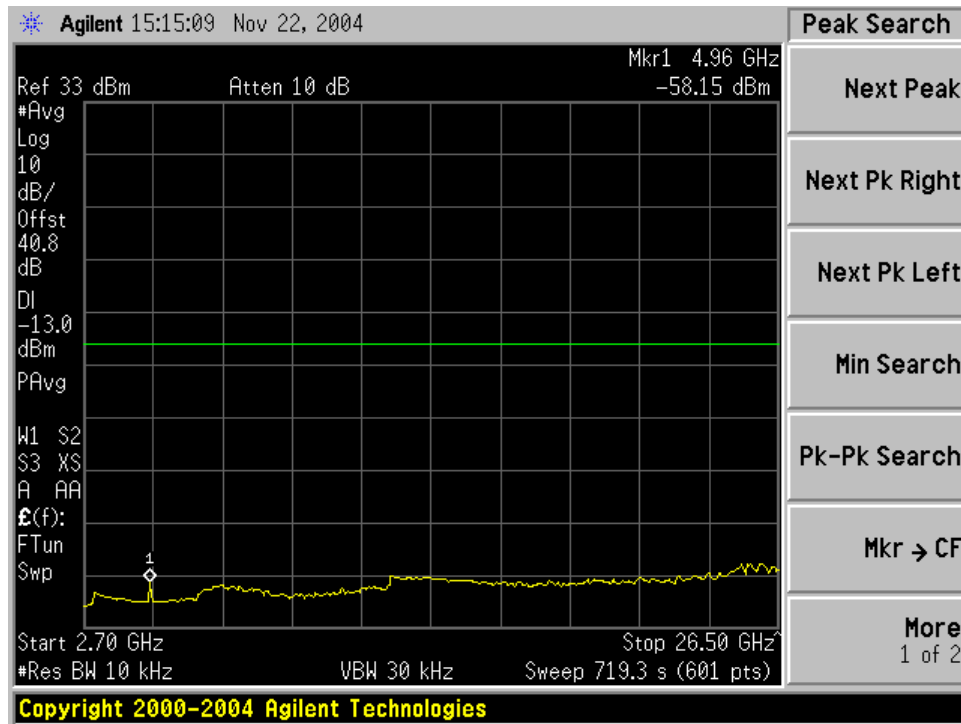


1 GHz – 2.48 GHz (2575 MHz / 6 MHz channel)

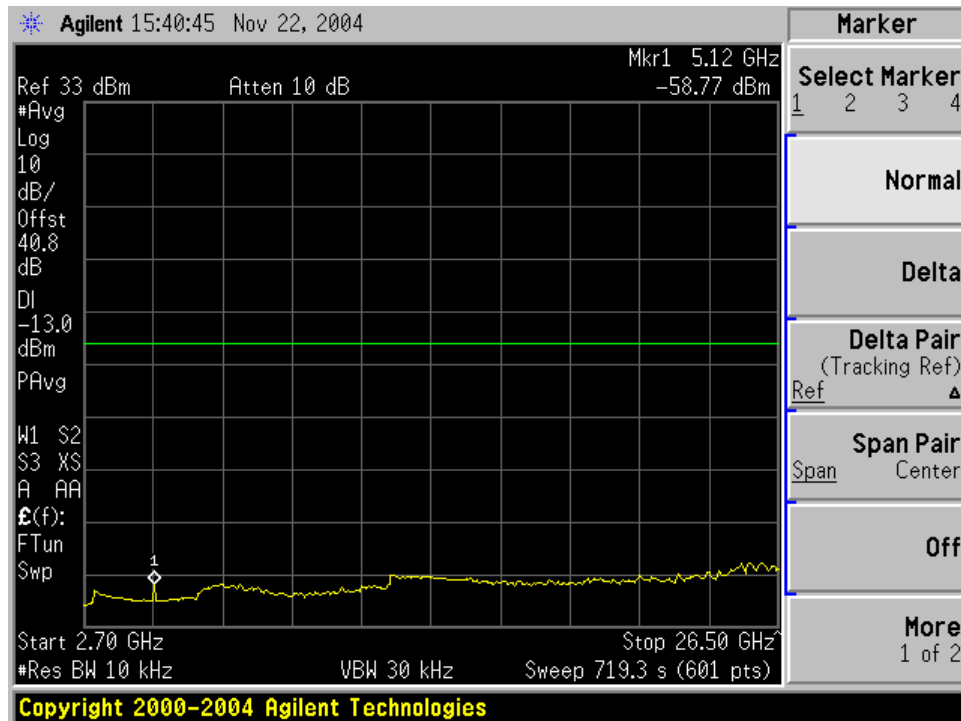


1 GHz – 2.48 GHz (2626.75 MHz / 5.5 MHz channel)

Spurious emissions at antenna terminals

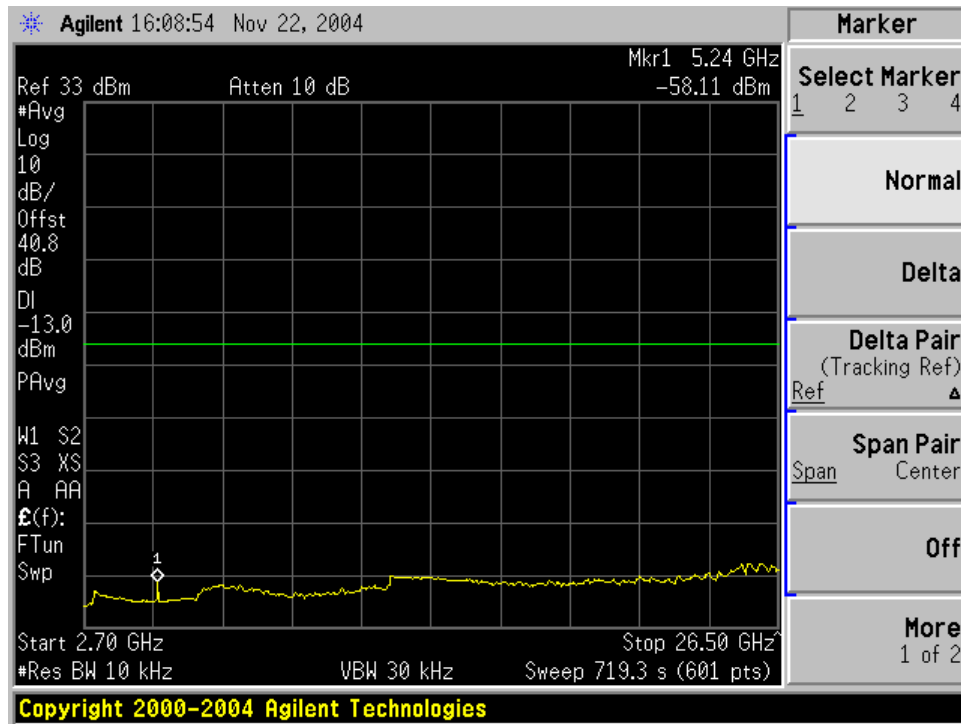


2.7 GHz – 26.5 GHz (2499 MHz / 6 MHz channel)



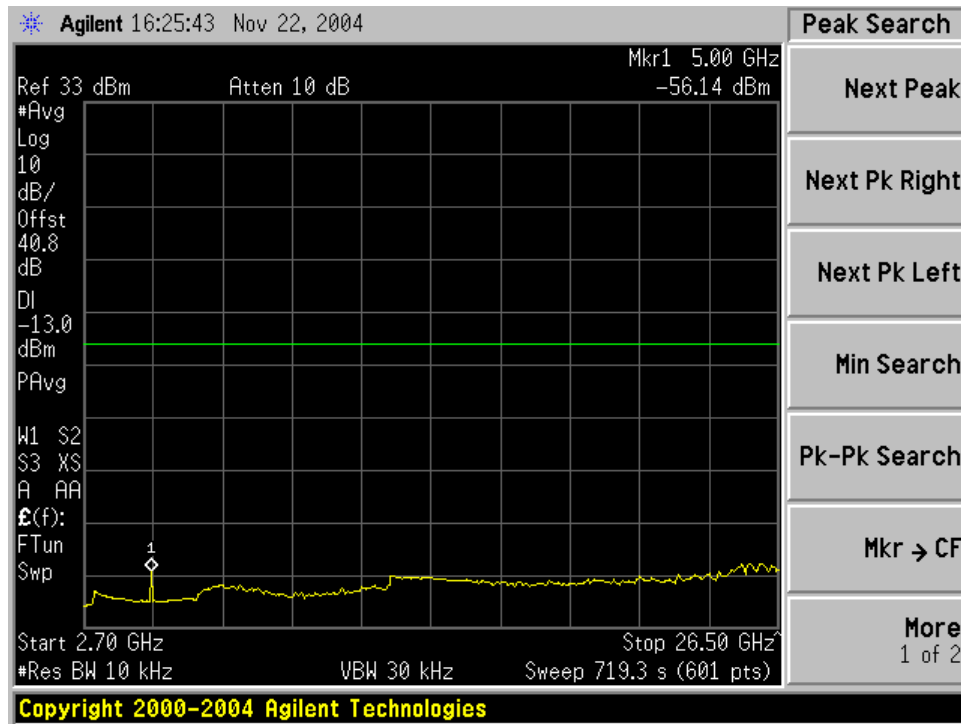
2.7 GHz – 26.5 GHz (2575 MHz / 6 MHz channel)

Spurious emissions at antenna terminals

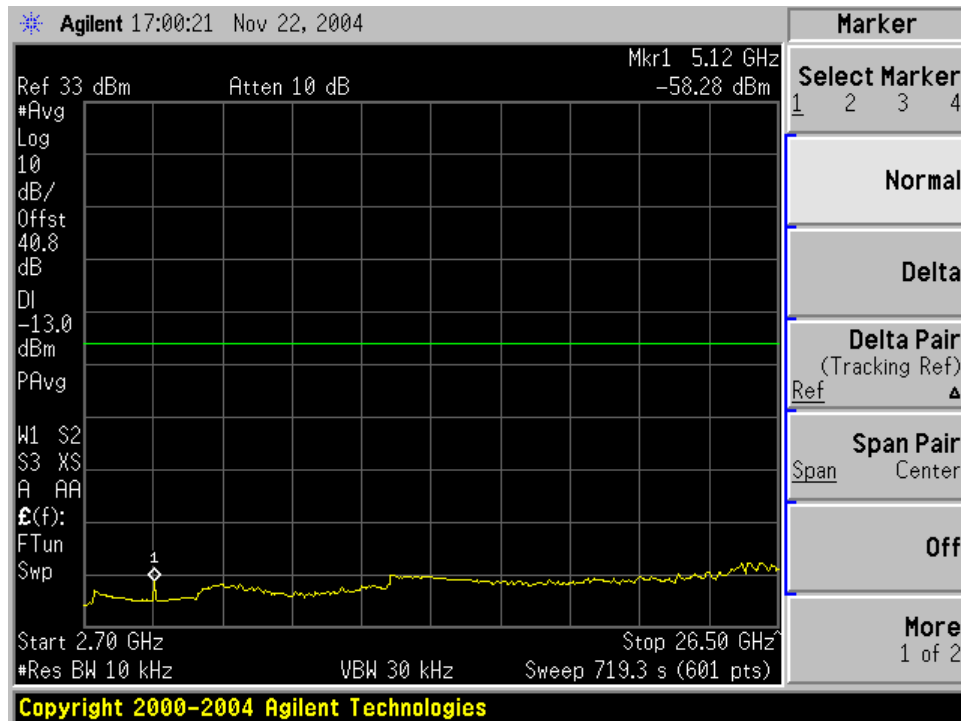


2.7 GHz – 26.5 GHz (2621 MHz / 6 MHz channel)

Spurious emissions at antenna terminals

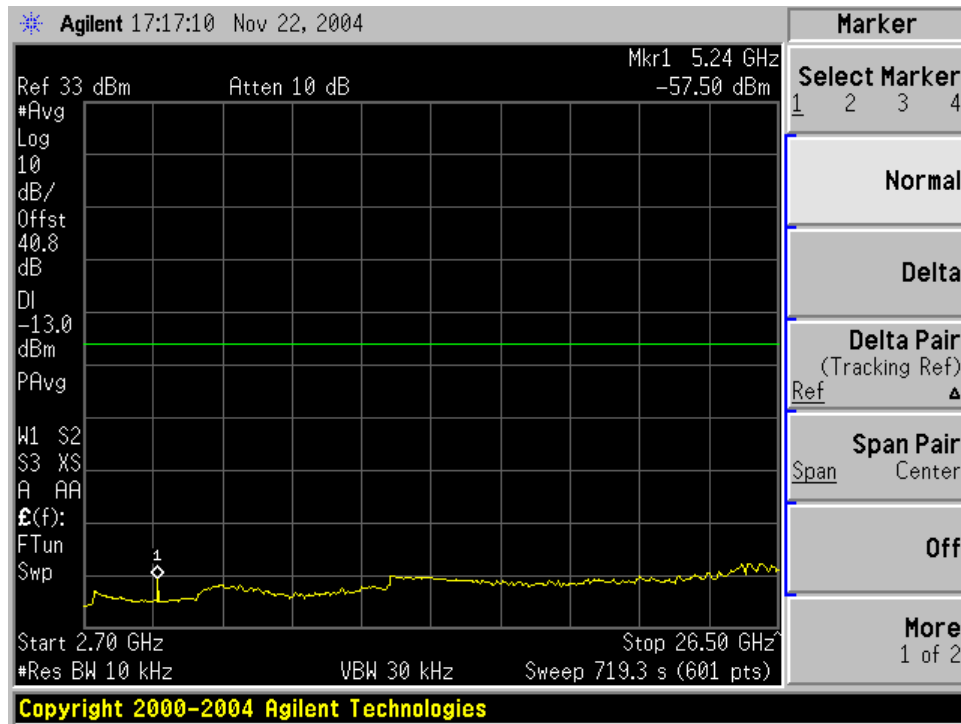


2.7 GHz – 26.5 GHz (2504.75 MHz / 5.5 MHz channel)

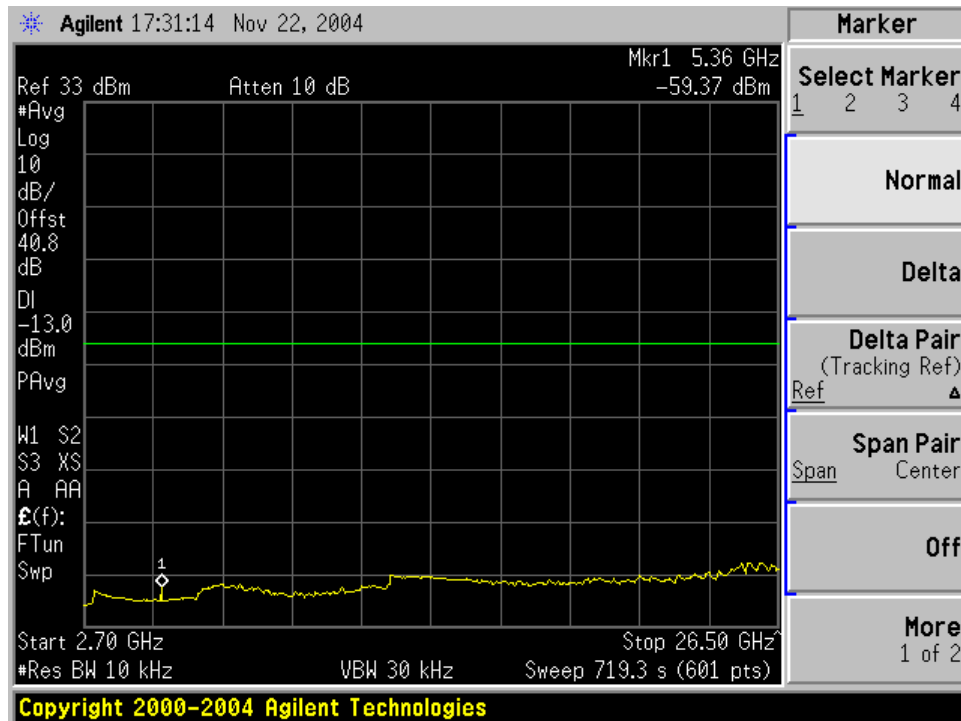


2.7 GHz – 26.5 GHz (2565.25 MHz / 5.5 MHz channel)

Spurious emissions at antenna terminals

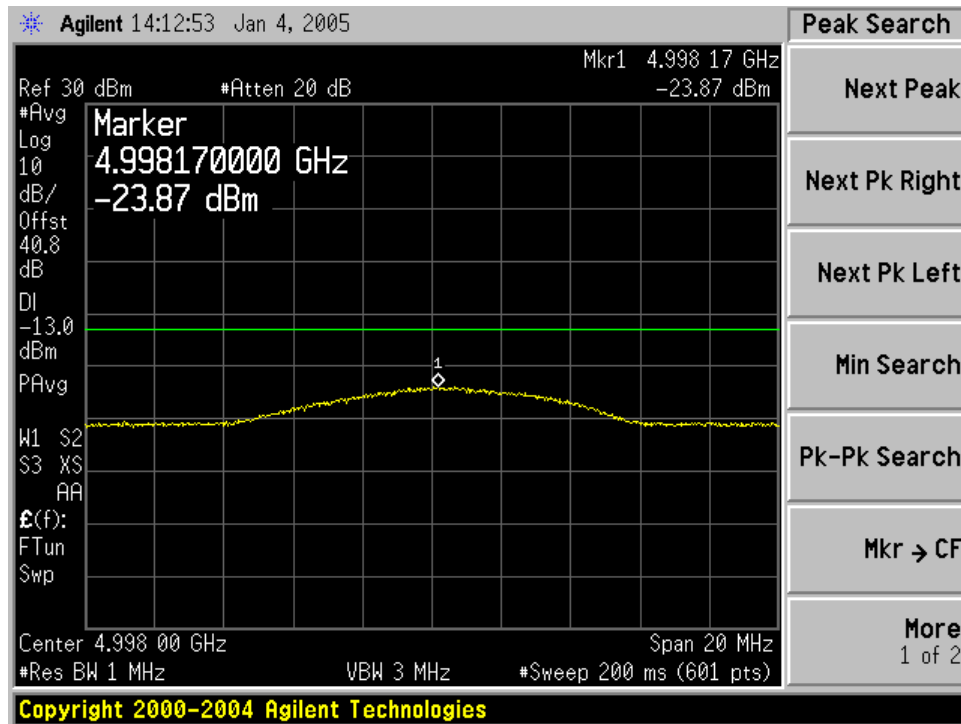


2.7 GHz – 26.5 GHz (2626.75 MHz / 5.5 MHz channel)

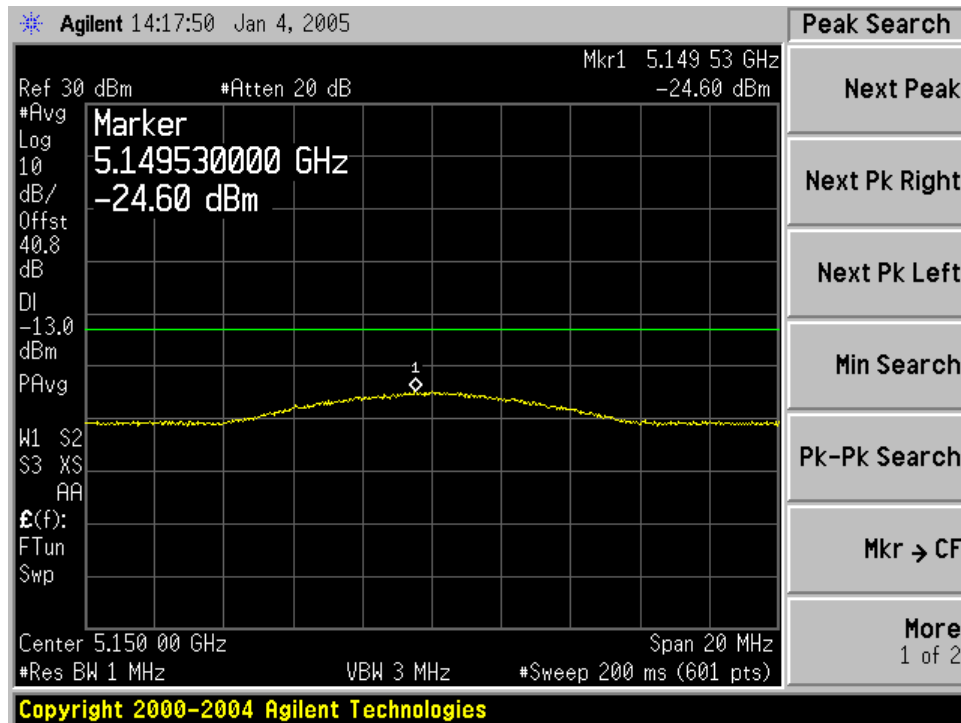


2.7 GHz – 26.5 GHz (2687.25 MHz / 5.5 MHz channel)

Spurious emissions at antenna terminals

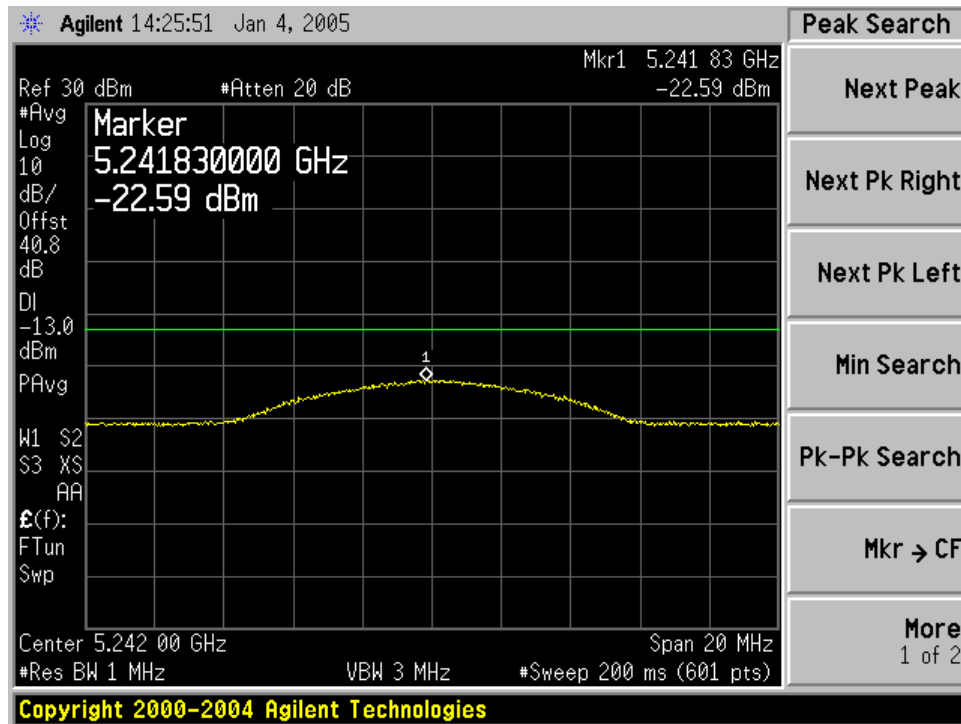


4.992 GHz – 5.38 GHz (2499 MHz / 6 MHz channel / 2nd harmonic)

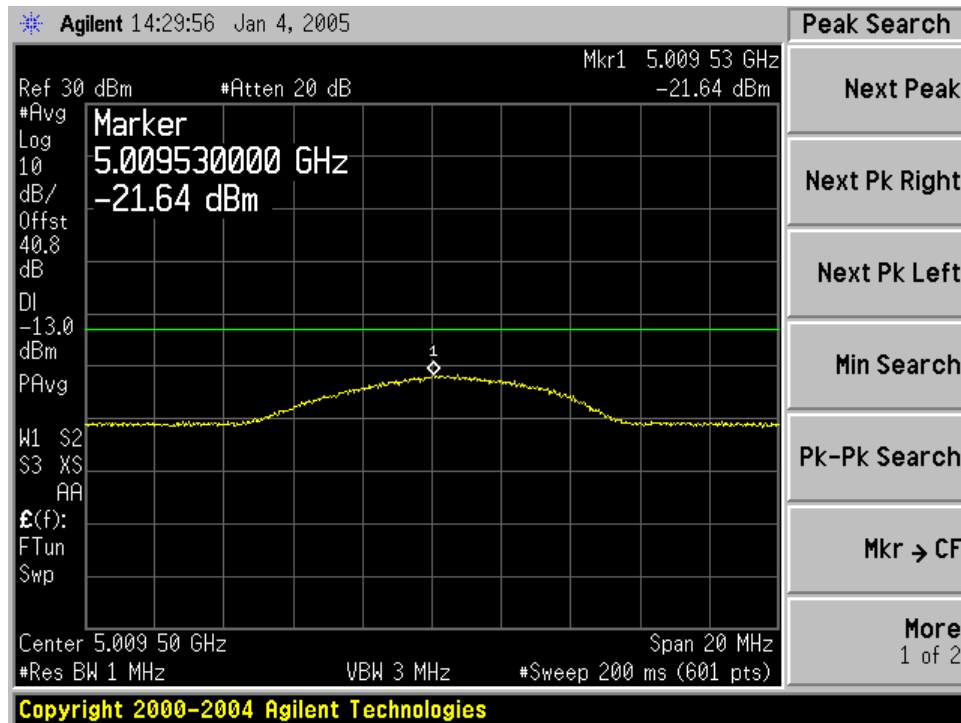


4.992 GHz – 5.38 GHz (2575 MHz / 6 MHz channel / 2nd harmonic)

Spurious emissions at antenna terminals

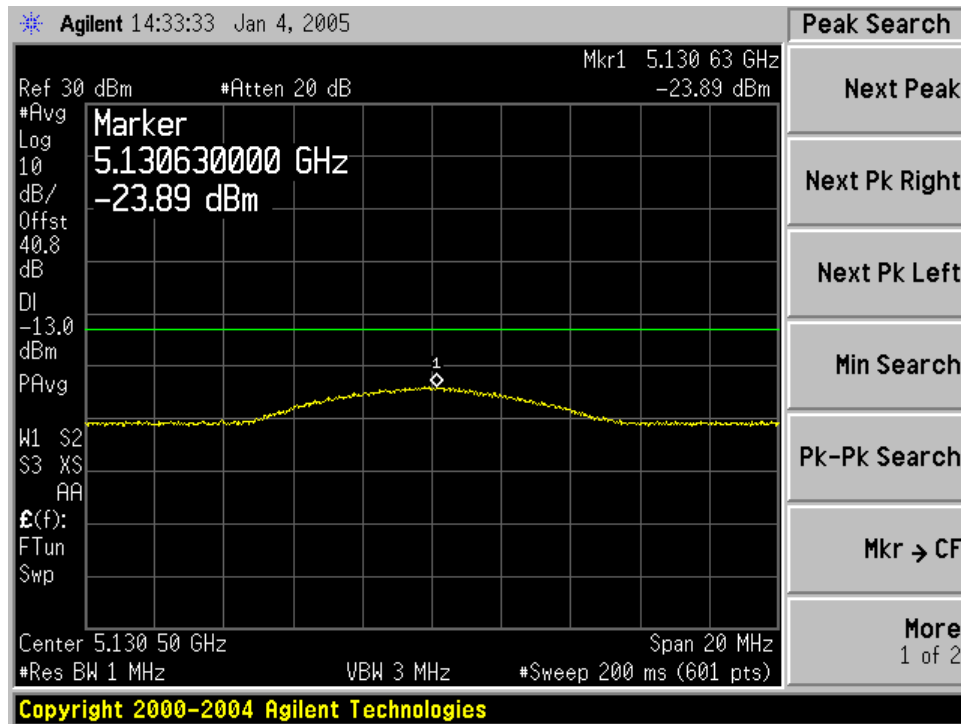


4.992 GHz – 5.38 GHz (2621 MHz / 6 MHz channel / 2nd harmonic)

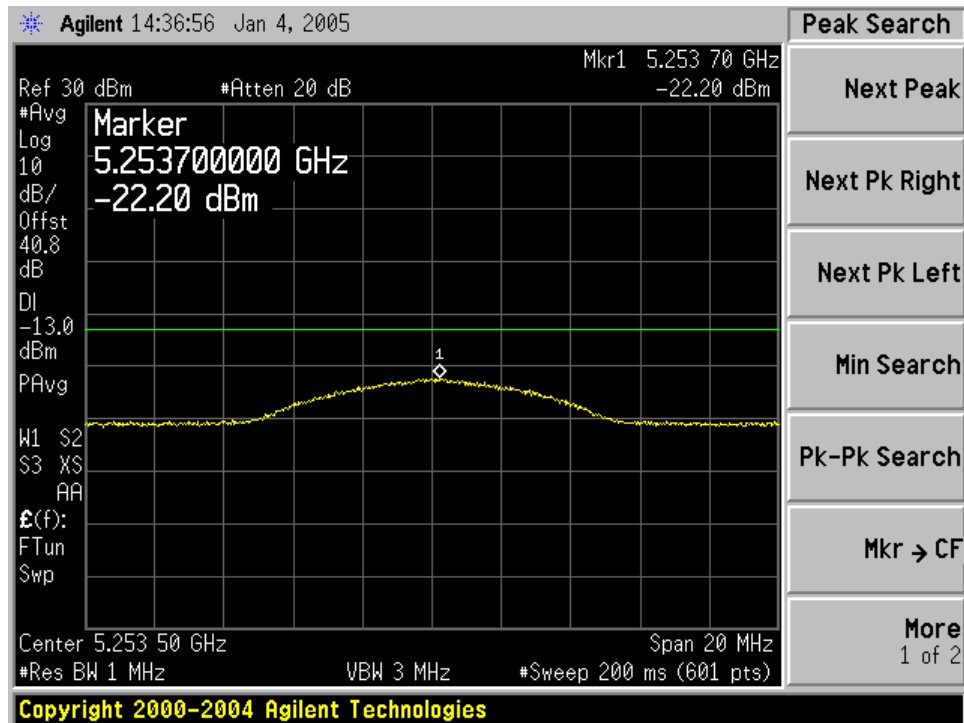


4.992 GHz – 5.38 GHz (2504.75 MHz / 5.5 MHz channel / 2nd harmonic)

Spurious emissions at antenna terminals

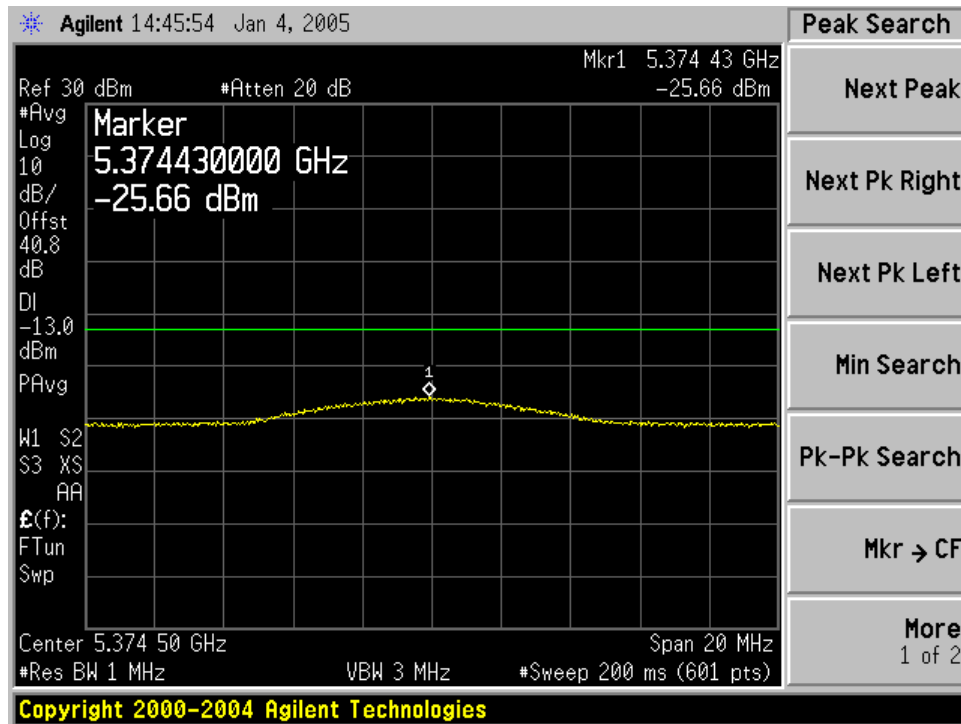


4.992 GHz – 5.38 GHz (2565.25 MHz / 5.5 MHz channel / 2nd harmonic)

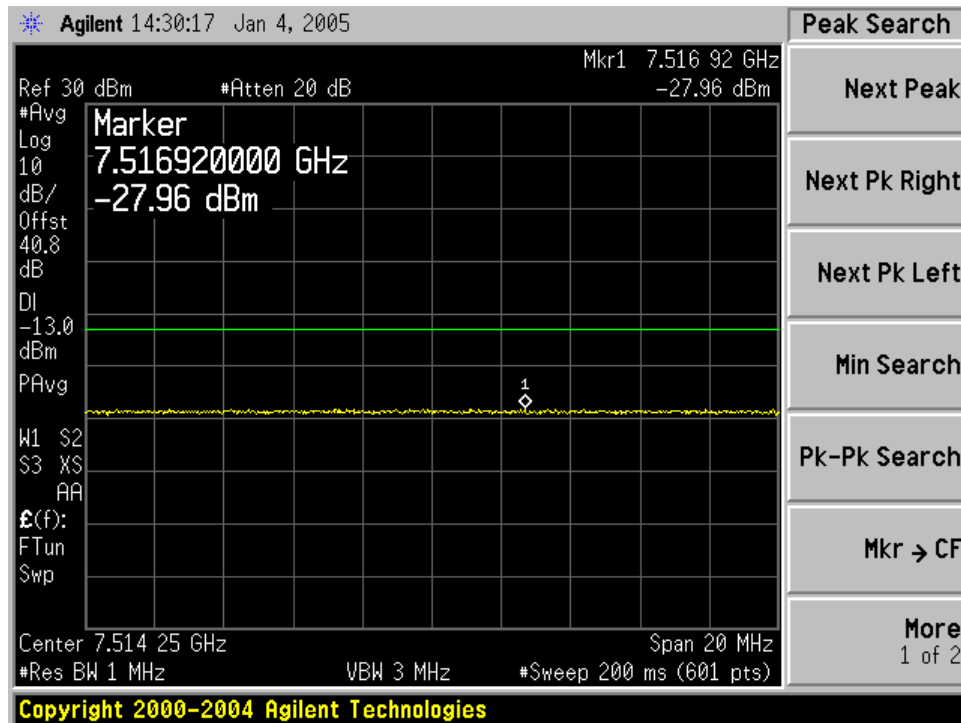


4.992 GHz – 5.38 GHz (2626.75 MHz / 5.5 MHz channel / 2nd harmonic)

Spurious emissions at antenna terminals

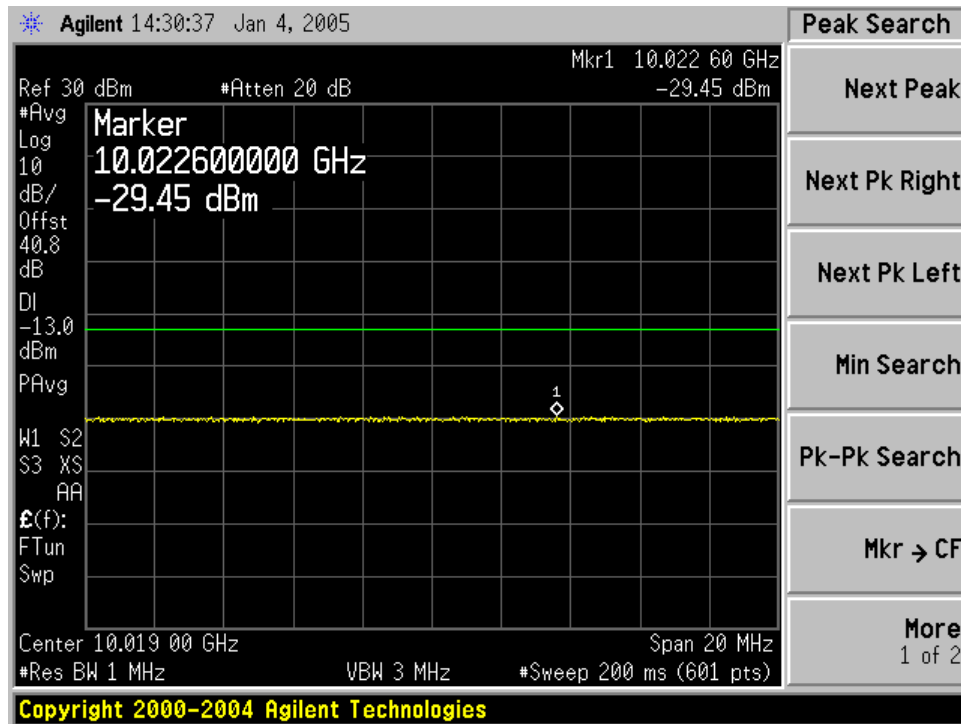


4.992 GHz – 5.38 GHz (2687.25 MHz / 5.5 MHz channel / 2nd harmonic)

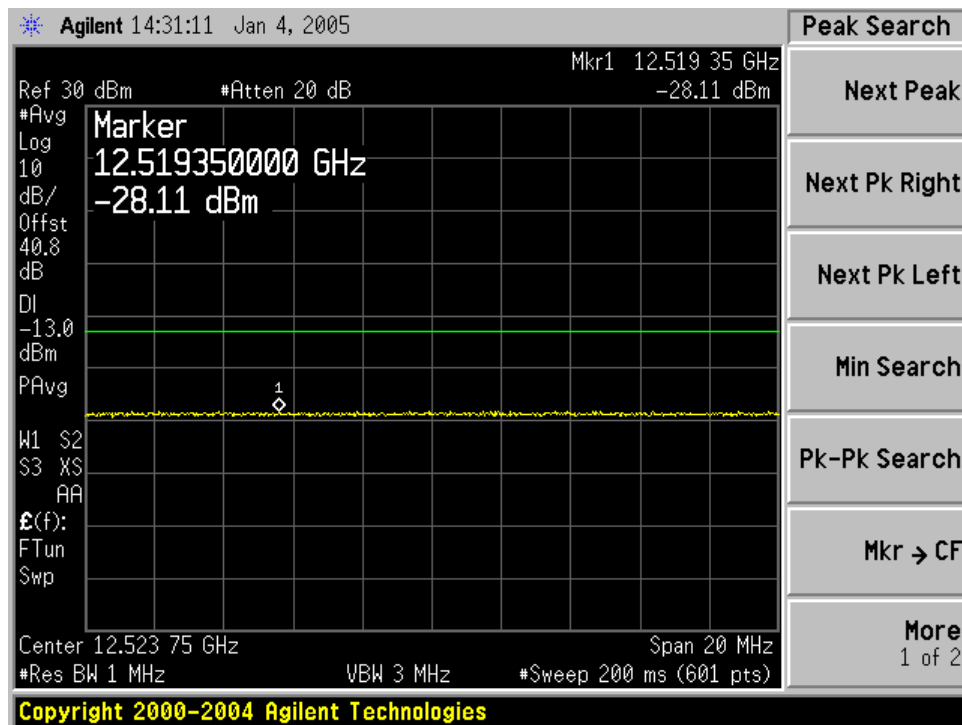


3rd harmonic of 2504.25 MHz

Spurious emissions at antenna terminals

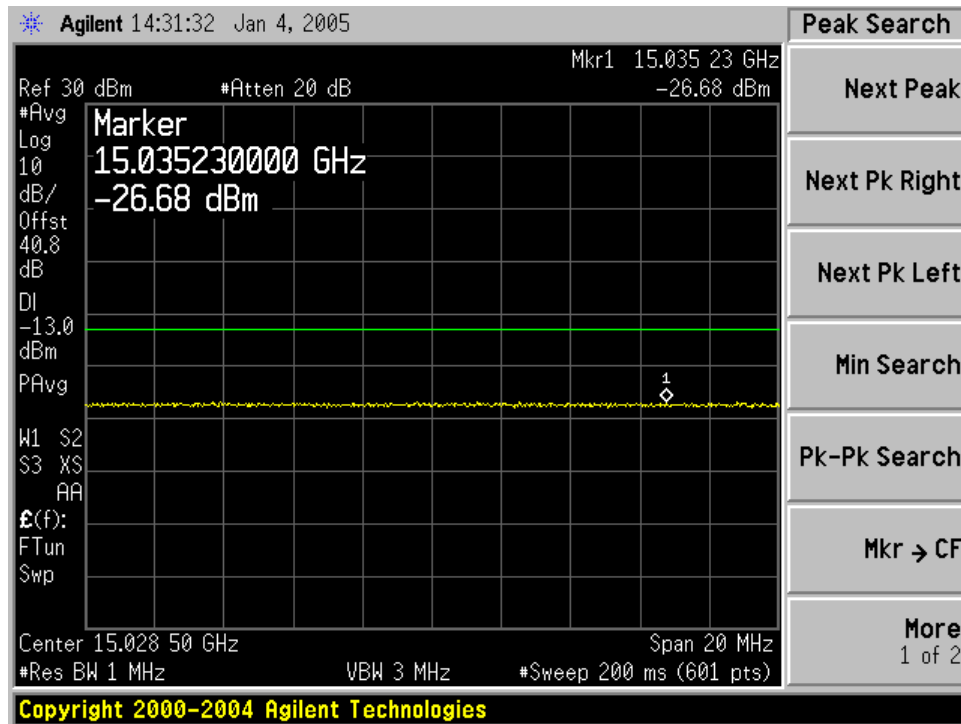


4th harmonic of 2504.25 MHz

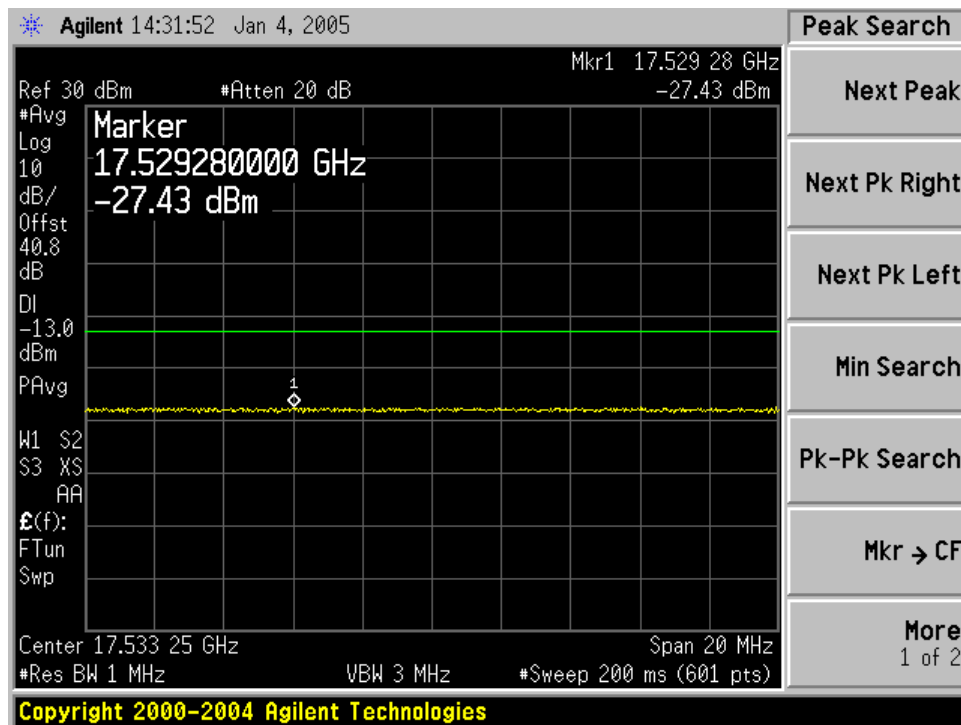


5th harmonic of 2504.25 MHz

Spurious emissions at antenna terminals

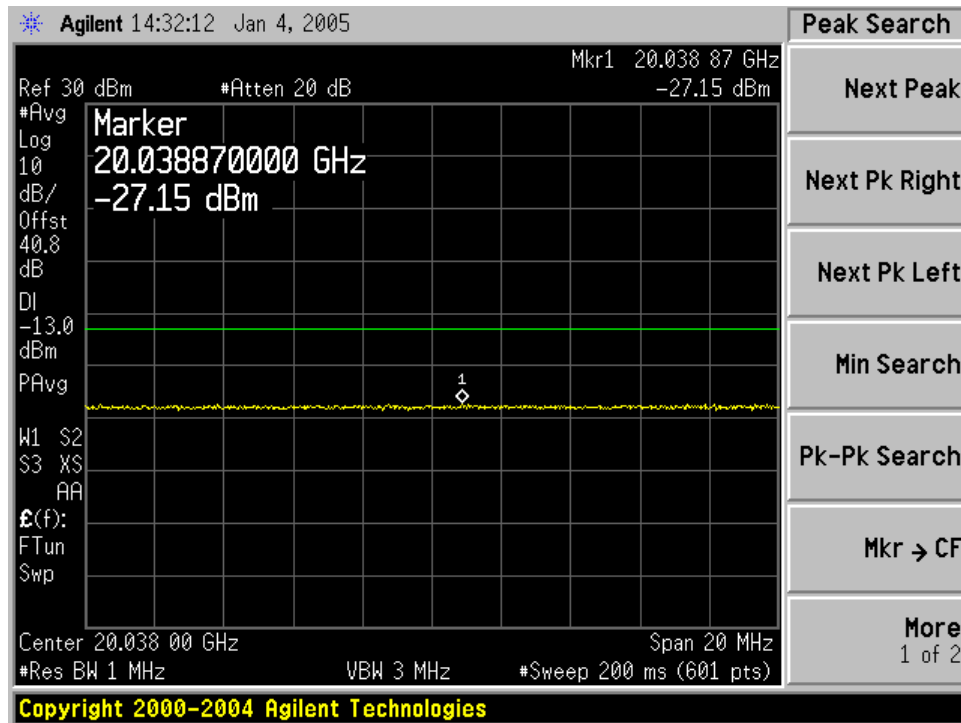


6th harmonic of 2504.25 MHz

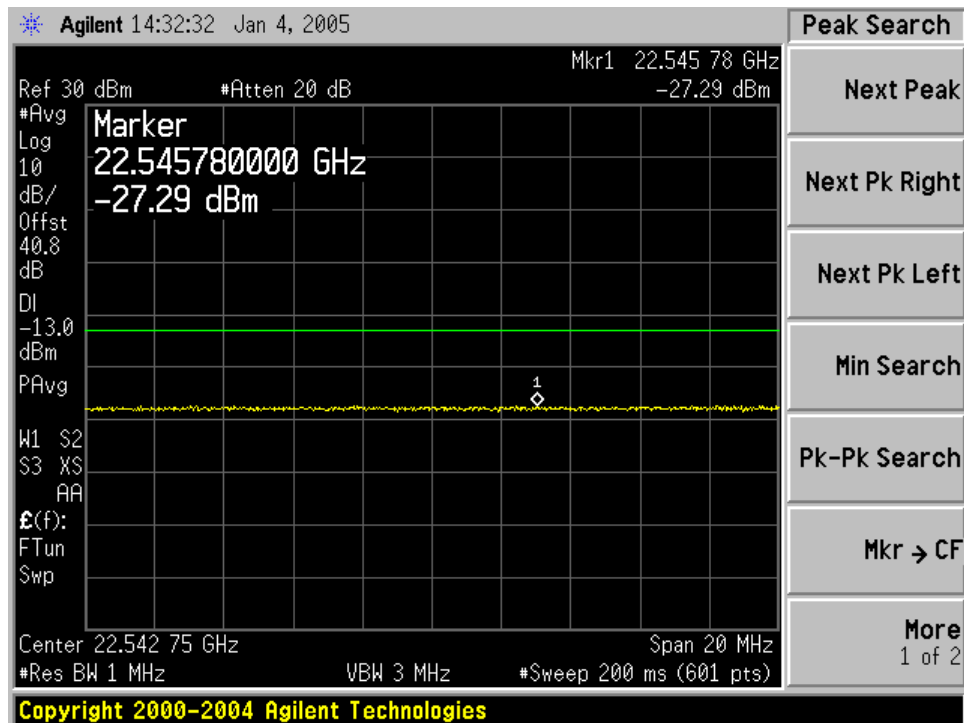


7th harmonic of 2504.25 MHz

Spurious emissions at antenna terminals

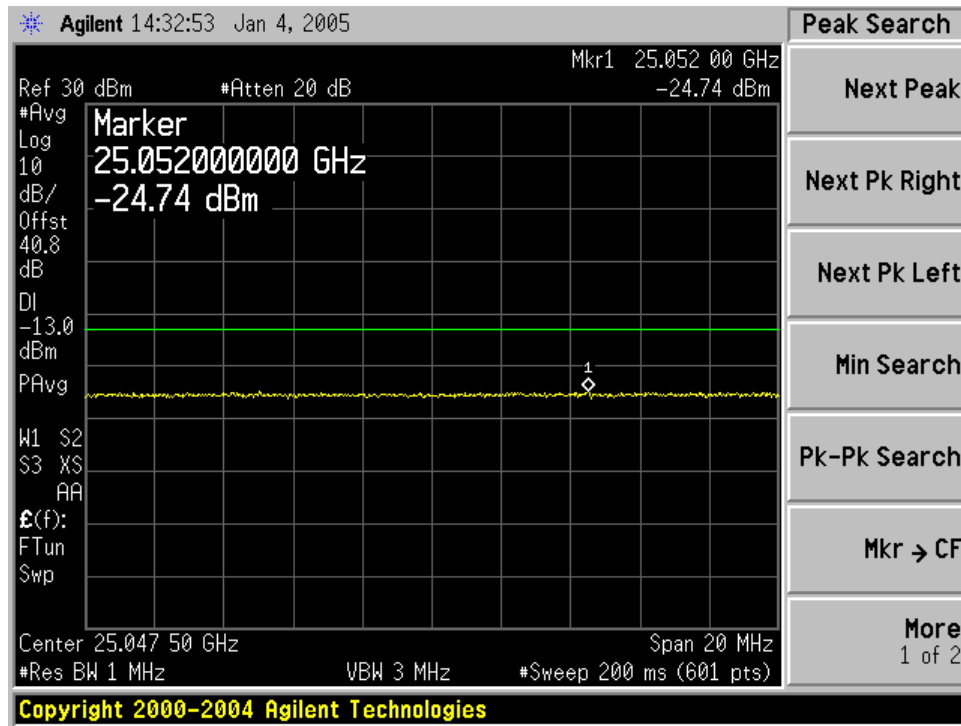


8th harmonic of 2504.25 MHz



9th harmonic of 2504.25 MHz

Spurious emissions at antenna terminals



10th harmonic of 2504.25 MHz

Field strength of spurious radiation

Rule Part Number: 2.1053, 2.1049, 2.1057

Frequency Range = 30 MHz to 26.86 GHz
Case Radiation Attenuation = $43+10\log P = -13$ dBm maximum

Standard: TIA-603-B
TIA Standard, Land Mobile FM or PM Communications
Equipment, Measurement and Performance Standards

Test Procedure: The field strength of spurious radiation was measured at an open area test site with the applicable measurement antennas, low noise amplifiers, and spectrum analyzers. Measurements were performed by TUV America located in Taylors Falls, Minnesota on December 3rd, 2004. Spurious signals were maximized for peak level by rotation of the test unit and elevation of the measurement antenna. Verification of compliance to the emissions limit was accomplished by antenna substitution.

Test Conditions: Frequency = 2499, 2626.75, 2687.25 MHz
Temperature = 25 °C
Supply Voltage = battery 12Vdc to MSU-2510-A

Test Equipment: NextNet Wireless, Inc.

DUT	NextNet Wireless CPE (MSU-2510-A) # 0050-0300-4300924
Load	Pasternak Corporation Model: PE7005-20 (20 dB) Calibrated by user
Computer	Dell Inspiron 5000 Model: PPM S/N: 000832RM-12961-04R-0441
Ethernet Switch	D-Link Model: DSS-5+ 5 port 10/100Mbps S/N: B205335003175
Power Supply	Automotive Battery



TEST RESULT SUMMARY

FCC PART 2.1053

MANUFACTURER'S NAME	NextNet Wireless, Incorporated
NAME OF EQUIPMENT	Expedience Mobile
TYPE OF EQUIPMENT	Mobile Non-Line-of-Sight wireless data link
MODEL NUMBER	900-0255-XXXX
MANUFACTURER'S ADDRESS	9555 James Avenue South, Suite 270 Bloomington MN 55431
TEST REPORT NUMBER	WC405495
TEST DATE	03 December 2004

According to testing performed at TÜV Product Service Inc, the above-mentioned unit is in compliance with the electromagnetic compatibility requirements defined in FCC Part 2.1053.

It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical characteristics. Any modifications necessary for compliance made during testing on the above mentioned date(s) must be implemented in all production units for compliance to be maintained.

TÜV Product Service Inc, as an independent testing laboratory, declares that the equipment tested as specified above conforms to the requirements of FCC Part 2.1053.

Date: 04 January 2005

A handwritten signature in black ink, appearing to read 'J C Sausen'.

A handwritten signature in black ink, appearing to read 'Thomas K. Swanson'.

Location: Taylors Falls MN
USA

J. C. Sausen
Tested By

T. K. Swanson
Technical Writer

Not Transferable



EMC EMISSION - TEST REPORT

Test Report File No. : **WC405495** Date of issue: 04 January 2005

Model / Serial No. : **900-0255-XXXX / Board #: 0050-0300-4300924**

Product Name : **Expedience Mobile**

Product Type : **Mobile Non-Line-of-Sight wireless data link**

Applicant : **NextNet Wireless, Incorporated**

Manufacturer : **NextNet Wireless, Incorporated**

License holder : **NextNet Wireless, Incorporated**

Address : **9555 James Avenue South, Suite 270**
: **Bloomington MN 55431**

Test Result : ☒ **Positive** ☐ **Negative**

Test Project Number :
Reference(s) : **WC405495**

Total pages including Appendices : **39**

TÜV Product Service Inc is a subcontractor to TÜV Product Service, GmbH according to the principles outlined in ISO/IEC Guide 25 and EN 45001.

TÜV Product Service Inc reports apply only to the specific samples tested under stated test conditions. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. TÜV Product Service Inc shall have no liability for any deductions, inferences or generalizations drawn by the client or others from TÜV Product Service Inc issued reports.

This report is the confidential property of the client. As a mutual protection to our clients, the public and ourselves, extracts from the test report shall not be reproduced except in full without our written approval. This report shall not be used by the client to claim product endorsement by NVLAP or any agency of the US government.

TÜV Product Service Inc and its professional staff hold government and professional organization certifications and are members of AAMI, ACIL, AEA, ANSI, IEEE, NVLAP, and VCCI

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TÜV PRODUCT SERVICE INC 19333 Wild Mountain Road Taylors Falls MN 55084-1758 Tel: 851 638 0297 Fax: 851 638 0298 Rev.No 1.0

NextNet Wireless, Inc
9555 James Ave. South Suite 270
Bloomington, MN 55431

01/05/2005



DIRECTORY - EMISSIONS

		Page(s)
A) Documentation		
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Test Regulations		<u>4</u>
Deviations from standard / Summary		<u>11</u>
Test-setups (Photos)		<u>12 - 13</u>
Test-setup (drawing)		<u>Appendix A</u>
B) Test data		
Conducted emissions	10/150 kHz - 30 MHz	<u>6, 10</u>
Radiated emissions	10 kHz - 30 MHz	<u>6, 10</u>
Radiated emissions	30 MHz - 1000 MHz	<u>7, 10</u>
Interference power	30 MHz - 300 MHz	<u>7, 10</u>
Equivalent Radiated emissions	1 GHz - 26 GHz	<u>8, 10</u>
C) Appendix A		
Test Data Sheets and Test Setup Drawing(s)		<u>A2 - A16</u>
D) Appendix B		
Constructional Data Form		<u>B2 - B8</u>
Product Information Form(s)		<u>N/A</u>
E) Appendix C		
Measurement Protocol		<u>C1 - C2</u>

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TÜV PRODUCT SERVICE INC 19333 Wild Mountain Road Taylors Falls MN 55084-1758 Tel: 851 638 0297 Fax: 851 638 0298 Rev.No 1.0



EMISSIONS TEST REGULATIONS :

The emissions tests were performed according to following regulations:

- | | | |
|---|---|------------------------------------|
| ☐ - EN 50081-1 / 1991 | ☐ - Group 1 | ☐ - Group 2 |
| ☐ - EN 55011 / 1991 | ☐ - Class A | ☐ - Class B |
| ☐ - EN 55013 / 1990 | | |
| ☐ - EN 55014 / 1987 | ☐ - Household appliances and similar | |
| | ☐ - Portable tools | |
| | ☐ - Semiconductor devices | |
| ☐ - EN 55014 / A2:1990 | | |
| ☐ - EN 55014 / 1993 | ☐ - Household appliances and similar | |
| | ☐ - Portable tools | |
| | ☐ - Semiconductor devices | |
| ☐ - EN 55015 / 1987 | | |
| ☐ - EN 55015 / A1:1990 | | |
| ☐ - EN 55015 / 1993 | | |
| ☐ - EN 55022 / 1987 | ☐ - Class A | ☐ - Class B |
| ☐ - EN 55022 / 1994 | ☐ - Class A | ☐ - Class B |
| ☐ - BS | | |
| ☐ - VCCI | ☐ - Class A | ☐ - Class B |
| ☐ - FCC Part 15 Subpart B | ☐ - Class A | ☐ - Class B |
| ☒ - FCC Part 2.1053 | | |
| ☐ - AS 3548 (1992) | ☐ - Class A | ☐ - Class B |
| ☐ - CISPR 11 (1990) | ☐ - Group 1 | ☐ - Group 2 |
| | ☐ - Class A | ☐ - Class B |
| ☐ - CISPR 22 (1993) | ☐ - Class A | ☐ - Class B |

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Environmental conditions in the lab:

	<u>Actual</u>
Temperature:	: 23 °C
Relative Humidity	: 30 %
Atmospheric pressure	: 99.0 kPa
Power supply system	: 12 VDC Battery

Sign Explanations:

- ☐ - not applicable
- ☒ - applicable



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TÜV PRODUCT SERVICE INC 19333 Wild Mountain Road Taylors Falls MN 55084-1758 Tel: 651 638 0297 Fax: 651 638 0298 Rev.No 1.0



Emissions Test Conditions: CONDUCTED EMISSIONS (Interference Voltage)

The *CONDUCTED EMISSIONS (INTERFERENCE VOLTAGE)* measurements were performed at the following test location:

☒ - Test not applicable

- ☐ - Wild River Lab Large Test Site (Open Area Test Site)
- ☐ - Wild River Lab Small Test Site (Open Area Test Site)
- ☐ - Oakwood Lab (Open Area Test Site)
- ☐ - Wild River Lab Screen Room
- ☐ - New Brighton Lab Shielded Room

Emissions Test Conditions: RADIATED EMISSIONS (Magnetic Field)

The *RADIATED EMISSIONS (MAGNETIC FIELD)* measurements were performed at the following test location:

☒ - Test not applicable

- ☐ - Wild River Lab Large Test Site (Open Area Test Site)
- ☐ - Wild River Lab Small Test Site (Open Area Test Site)
- ☐ - Oakwood Lab (Open Area Test Site)

at a test distance of :

- ☐ - 3 meters
- ☐ - 30 meters

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TÜV PRODUCT SERVICE INC 19333 Wild Mountain Road Taylors Falls MN 55084-1758 Tel: 651 638 0297 Fax: 651 638 0298 Rev.No 1.0



Emissions Test Conditions: RADIATED EMISSIONS (Electric Field)

The *RADIATED EMISSIONS (ELECTRIC FIELD)* measurements, in the frequency range of 30 MHz-1000 MHz, were tested in a horizontal and vertical polarization at the following test location:

☐ - Test not applicable

- - Wild River Lab Large Test Site (Open Area Test Site) – NSA measurements made 2-03, due 2-05.
- ☐ - Wild River Lab Small Test Site (Open Area Test Site)
- ☐ - Oakwood Lab (Open Area Test Site)

at a test distance of :

- - 3 meters
- ☐ - 10 meters
- ☐ - 30 meters

Test equipment used :

	TUV ID	Model Number	Manufacturer	Description	Serial Number	Cal Due
■ -	3204	EM-6917B	Electro-Metrics	Biconicallog Periodic	102	21-Oct-05
■ -	3809	8566B	Hewlett-Packard	Spectrum Analyzer	3026A19165	20-Jan-05
■ -	3810	85662A	Hewlett-Packard	Analyzer Display	3014A06698	20-Jan-05
■ -	2682	85650A	Hewlett-Packard	Quasi-Peak Adapter	2811A01127	14-Aug-05
■ -	3962	ZHL-1042J	Mini-Circuits	Preamplifier	D120403-2	Code B 09-Feb-05
■ -	3237	VHAP	Schwarzbeck	Dipole Antenna 30-300	177	N/A
■ -	2396	2520	Wavetek	Signal Generator	6271013	24-Aug-05

Cal Code B = Calibration verification performed internally.

Cal Code Y = Calibration not required when used with other calibrated equipment.

All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST) and is calibrated annually.

Emissions Test Conditions: INTERFERENCE POWER

The *INTERFERENCE POWER* measurements were performed by using the absorbing clamp on the mains and interface cables in the frequency range 30 MHz - 300 MHz at the following test location:

■ - Test not applicable

- ☐ - Wild River Lab Large Test Site (Open Area Test Site)
- ☐ - Wild River Lab Small Test Site (Open Area Test Site)
- ☐ - Oakwood Lab (Open Area Test Site)
- ☐ - Wild River Lab Screen Room
- ☐ - New Brighton Lab Shielded Room

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TÜV PRODUCT SERVICE INC

19333 Wild Mountain Road

Taylors Falls MN 55084-1758

Tel: 851 638 0297 Fax: 851 638 0298 Rev.No 1.0



Emissions Test Conditions: RADIATED EMISSIONS (Electric Field)

The *EQUIVALENT RADIATED EMISSIONS* measurements in the frequency range 1 GHz – 18 GHz were performed in a horizontal and vertical polarization at the following test location:

☐ - Test not applicable

- ☒ - Wild River Lab Large Test Site (Open Area Test Site)
- ☐ - Wild River Lab Small Test Site (Open Area Test Site)
- ☐ - Oakwood Lab (Open Area Test Site)
- ☐ - Wild River Lab Screen Room

at a test distance of:

- ☐ - 1 meters
- ☒ - 3 meters
- ☐ - 10 meters

Test equipment used :

	TUV ID	Model Number	Manufacturer	Description	Serial Number	Cal Due
■ -	3809	8566B	Hewlett-Packard	Spectrum Analyzer	3026A19165	20-Jan-05
■ -	3810	85662A	Hewlett-Packard	Analyzer Display	3014A06698	20-Jan-05
■ -	2682	85650A	Hewlett-Packard	Quasi-Peak Adapter	2811A01127	14-Aug-05
■ -	3957	SL18B4020	Phase One Microwave	Preamplifier 1 – 18 GHz	0001	Code B 17-Oct-05
■ -	2075	3115	Electro-Mechanics (EMCO)	Ridge Guide Ant. 1-18 GHz	9001-3275	24-Nov-05

Cal Code B = Calibration verification performed internally. Cal Code Y = Calibration not required when used with other calibrated equipment.

All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST) and is calibrated annually.

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TÜV PRODUCT SERVICE INC 19333 Wild Mountain Road Taylors Falls MN 55084-1758 Tel: 851 638 0297 Fax: 851 638 0298 Rev.No 1.0



Equipment Under Test (EUT) Test Operation Mode - Emission tests :

The device under test was operated under the following conditions during emissions testing:

- ☐ - Standby
- ☐ - Test program (H - Pattern)
- ☐ - Test program (color bar)
- ☐ - Test program (customer specific)
- ☐ - Practice operation
- ☐ - Normal Operating Mode
- ☒ - Mobile Customer Premise Equipment transmitter. Parts 2 and 27.
Mobile Customer Premise Equipment receive. Part 15. DOC compliance.

Configuration of the device under test:

- ☒ - See Constructional Data Form in Appendix B - Pages B2
- ☐ - See Product Information Form in Appendix B - beginning on Page B3

The following peripheral devices and interface cables were connected during the measurement:

- | | |
|--|----------------|
| ☐ - _____ | Type : _____ |
| ☐ - _____ | Type : _____ |
| ☐ - _____ | Type : _____ |
| ☐ - _____ | Type : _____ |
| ☐ - _____ | Type : _____ |
| ☐ - _____ | Type : _____ |
| ☐ - _____ | Type : _____ |
| ☐ - _____ | Type : _____ |
| ☒ - unshielded power cable | |
| ☒ - unshielded cables | |
| ☒ - shielded cables | MPS.No.: _____ |
| ☐ - customer specific cables | |
| ☐ - _____ | |
| ☐ - _____ | |

File No. WC405495, Page 8 of 13

TÜV PRODUCT SERVICE INC 19333 Wild Mountain Road Taylors Falls MN 55084-1758 Tel: 851 638 0297 Fax: 851 638 0298 Rev.No 1.0



Emission Test Results:

Conducted emissions 10/150 kHz - 30 MHz – FCC Part 15 Subpart B

The requirements are ☐ - MET ☐ - NOT MET ☐ - N/A
Minimum margin of compliance _____ dB at _____ kHz
Maximum margin of non-compliance _____ dB at _____ MHz
Remarks: _____

Radiated emissions (electric field) 30 MHz - 1000 MHz – FCC Part 15 Subpart B

The requirements are ☐ - MET ☐ - NOT MET ☐ - N/A
Minimum margin of compliance _____ dB at _____ MHz
Maximum margin of non-compliance _____ dB at _____ MHz
Remarks: _____

Equivalent Radiated emissions 1 GHz - 27 GHz – FCC Part 15 Subpart B

The requirements are ☐ - MET ☐ - NOT MET ☐ - N/A
Minimum margin of compliance _____ dB at _____ MHz
Maximum margin of non-compliance _____ dB at _____ MHz
Remarks: _____

Radiated emissions (electric field) 30 MHz - 1000 MHz – FCC Part 2.1053

The requirements are ☒ - MET ☐ - NOT MET
Minimum margin of compliance _____ dB at _____ MHz
Maximum margin of non-compliance _____ dB at _____ MHz
Remarks: _____

Radiated emissions (electric field) 1 GHz - 18 GHz – FCC Part 2.1053

The requirements are ☒ - MET ☐ - NOT MET
Minimum margin of compliance _____ dB at _____ MHz
Maximum margin of non-compliance _____ dB at _____ MHz
Remarks: _____

File No. WC405495, Page 9 of 13

TÜV PRODUCT SERVICE INC 19333 Wild Mountain Road Taylors Falls MN 55084-1758 Tel: 851 638 0297 Fax: 851 638 0298 Rev.No 1.0



DEVIATIONS FROM STANDARD:

None

GENERAL REMARKS:

SUMMARY:

The requirements according to the technical regulations are

☒ - met

☐ - **not** met.

The device under test does

☒ - fulfill the general approval requirements mentioned on page 3.

☐ - **not** fulfill the general approval requirements mentioned on page 3.

Testing Start Date: 03 December 2004

Testing End Date: 03 December 2004

- TÜV PRODUCT SERVICE INC -

A handwritten signature in black ink, appearing to read 'J. C. Sausen'.

Tested By:
J. C. Sausen

A handwritten signature in black ink, appearing to read 'Thomas K. Swanson'.

T. K. Swanson
Technical Writer

File No. WC405495, Page 10 of 13

TÜV PRODUCT SERVICE INC 19333 Wild Mountain Road Taylors Falls MN 55084-1758 Tel: 851 638 0297 Fax: 851 638 0298 Rev.No 1.0



Test-setup photo(s):
Conducted emission 10/150 kHz - 30 MHz

Not Applicable



File No. WC405495, Page 11 of 13

TÜV PRODUCT SERVICE INC 19333 Wild Mountain Road Taylors Falls MN 55084-1758 Tel: 651 638 0297 Fax: 651 638 0298 Rev.No 1.0



Test-setup photo(s):
Radiated emission 30 MHz - 18000 MHz

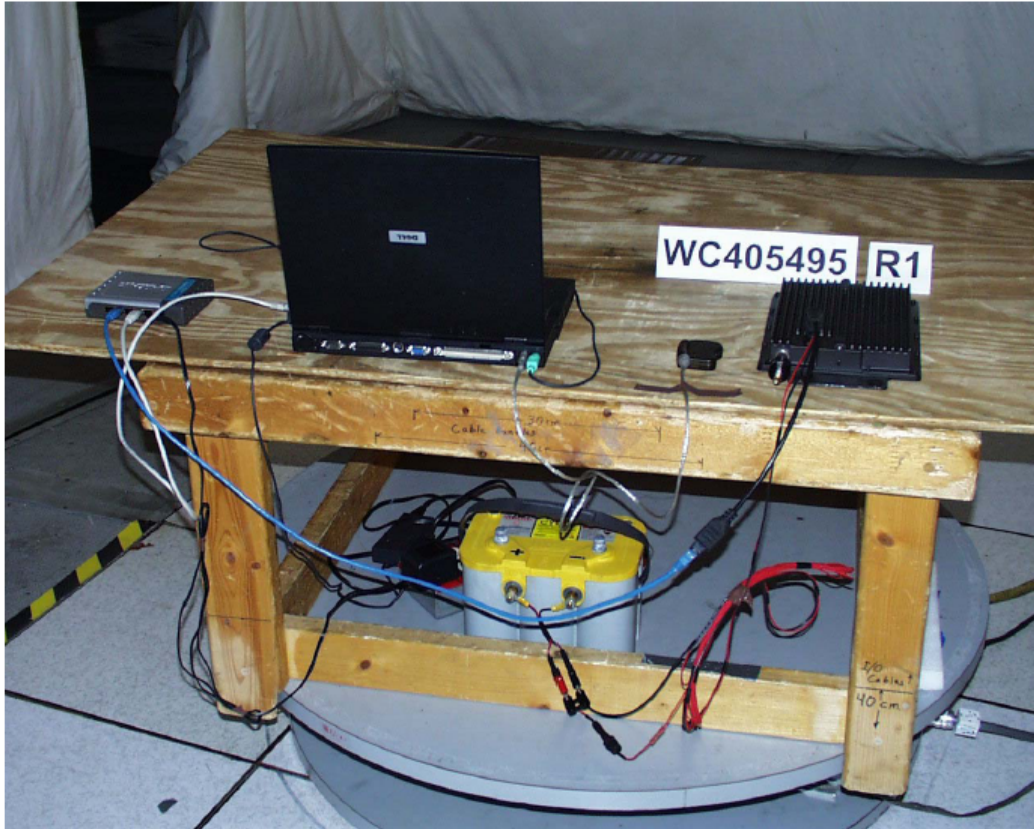


File No. WC405495, Page 12 of 13

TÜV PRODUCT SERVICE INC 19333 Wild Mountain Road Taylors Falls MN 55084-1758 Tel: 851 638 0297 Fax: 851 638 0298 Rev.No 1.0



Test-setup photo(s):
Radiated emission 30 MHz - 18000 MHz



File No. WC405495, Page 13 of 13

TÜV PRODUCT SERVICE INC 19333 Wild Mountain Road Taylors Falls MN 55084-1758 Tel: 851 638 0297 Fax: 851 638 0298 Rev.No 1.0



Appendix A

Test Data Sheets
and
Test Setup Drawing(s)



File No. WC405495, Page A1 of A16

TÜV PRODUCT SERVICE INC 19333 Wild Mountain Road Taylors Falls MN 55084-1758 Tel: 651 638 0297 Fax: 651 638 0298 Rev.No 1.0

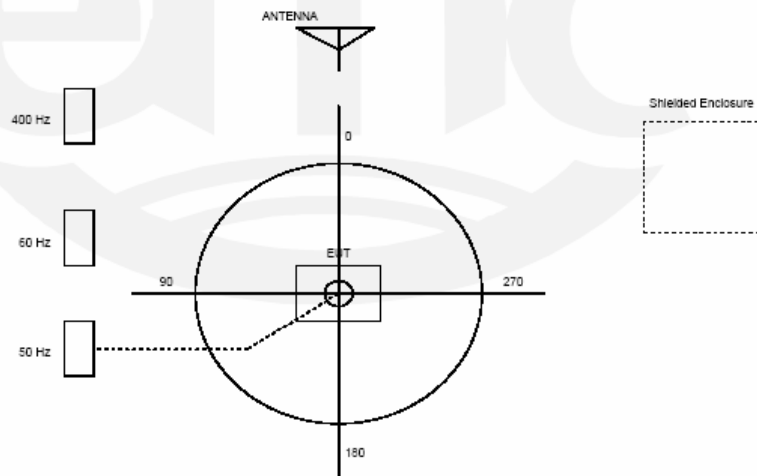


TEST SETUP FOR EMISSIONS TESTING

WILD RIVER LAB
Large Test Site

Notes:

1. Items shown in dotted lines are located on the floor below the test area. It is 5 meters vertically from the ground floor to the test area.
2. 50 Hz, 60 Hz, and 400 Hz are power panels for alternating current.
3. The antenna may be positioned horizontally 3, 10 or 30 meters from the center of the turntable.
4. The circle is a 6.7 meter diameter turntable.
5. A ground plane is in the plane of this sheet.
6. The test sample is shown in the azimuthal position representing zero degrees.



File No. WC405495, Page A2 of A16

TÜV PRODUCT SERVICE INC

19333 Wild Mountain Road

Taylors Falls MN 55084-1758

Tel: 851 638 0297

Fax: 851 638 0298

Rev.No 1.0

RADIATED EMISSIONS



Test Report #: WC405495 Run 1 Test Area: LTS

EUT Model #: MSU-2510-A Date: 12/3/2004

EUT Serial #: EUT Power: battery Temperature: 23.0 °C

Test Method: FCC B Air Pressure: 99.0 kPa

Customer: NextNet Rel. Humidity: 30.0 %

EUT Description: Mobile Customer trx / receiver unit

Notes: Transmitter into 50 Ohm load. 5.5 MHz channel bandwidth

Data File Name: 5495-1.dat Page: 1 of 9

List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	LIMIT (dBm)	DELTA2 FCC Pt 2.1053 (dBm)
66.29 MHz	46.7 Qp	0.7 / 10.04 / 25.89 / -96.83	-65.29	V / 1.00 / 0	-13	-52.29
66.464 MHz	47.05 Qp	0.7 / 9.99 / 25.89 / -96.83	-64.98	V / 1.00 / 0	-13	-51.98
32.215 MHz	41.6 Qp	0.44 / 19.76 / 25.9 / -96.83	-60.93	V / 1.00 / 0	-13	-47.93
79.232 MHz	42.8 Qp	0.79 / 7.72 / 25.8 / -96.83	-71.32	V / 1.00 / 0	-13	-58.32
85.523 MHz	40.35 Qp	0.8 / 7.27 / 25.8 / -96.83	-74.21	V / 1.00 / 0	-13	-61.21
132.542 MHz	47.2 Qp	1.0 / 8.38 / 26.09 / -96.83	-66.34	V / 1.00 / 0	-13	-53.34
132.938 MHz	48.3 Qp	1.0 / 8.37 / 26.09 / -96.83	-65.25	V / 1.00 / 0	-13	-52.25
151.994 MHz	66.5 Qp	1.0 / 9.14 / 25.9 / -96.83	-46.09	V / 1.00 / 0	-13	-33.09
165.644 MHz	50.95 Qp	1.05 / 8.71 / 26.03 / -96.83	-62.15	V / 1.00 / 0	-13	-49.15
166.208 MHz	52.1 Qp	1.05 / 8.73 / 26.03 / -96.83	-60.98	V / 1.00 / 0	-13	-47.98
166.01 MHz	53.05 Qp	1.05 / 8.72 / 26.03 / -96.83	-60.04	V / 1.00 / 0	-13	-47.04
179.319 MHz	52.5 Qp	1.1 / 9.4 / 26.14 / -96.83	-59.97	V / 1.00 / 0	-13	-46.97
180.363 MHz	54.05 Qp	1.1 / 9.48 / 26.15 / -96.83	-58.35	V / 1.00 / 0	-13	-45.35
180.609 MHz	53.75 Qp	1.1 / 9.5 / 26.15 / -96.83	-58.63	V / 1.00 / 0	-13	-45.63
195.423 MHz	46.55 Qp	1.19 / 10.88 / 26.27 / -96.83	-64.48	V / 1.00 / 0	-13	-51.48
199.245 MHz	51.95 Qp	1.2 / 10.72 / 26.29 / -96.83	-59.25	V / 1.00 / 0	-13	-46.25
253.325 MHz	60.8 Qp	1.36 / 12.16 / 26.34 / -96.83	-48.85	V / 1.00 / 0	-13	-35.85
303.991 MHz	64.4 Qp	1.5 / 13.33 / 26.6 / -96.83	-44.2	V / 1.00 / 0	-13	-31.2
354.657 MHz	48.15 Qp	1.6 / 14.8 / 26.67 / -96.83	-58.95	V / 1.00 / 0	-13	-45.95
202.665 MHz	52.2 Qp	1.2 / 10.55 / 26.3 / -96.83	-59.18	V / 1.00 / 0	-13	-46.18
228.807 MHz	50.55 Qp	1.3 / 10.99 / 26.3 / -96.83	-60.29	V / 1.00 / 0	-13	-47.29
456.508 MHz	32.6 Qp	1.81 / 16.58 / 26.89 / -96.83	-72.72	V / 1.00 / 0	-13	-59.72
274.108 MHz	36.4 Qp	1.48 / 12.22 / 26.45 / -96.83	-73.19	V / 1.00 / 0	-13	-60.19
497.793 MHz	47.95 Qp	1.9 / 17.33 / 27.07 / -96.83	-56.72	V / 1.00 / 0	-13	-43.72
373.345 MHz	50.1 Qp	1.62 / 15.1 / 26.6 / -96.83	-56.61	V / 1.00 / 0	-13	-43.61

Tested by: J. C. Sausen

Printed

Signature

Reviewed by: TKS

Printed

Signature

File No. WC405495, Page A3 of A16

RADIATED EMISSIONS



Test Report #:	WC405495 Run 1	Test Area:	LTS
EUT Model #:	MSU-2510-A	Date:	12/3/2004
EUT Serial #:		EUT Power:	battery
Test Method:	FCC B	Temperature:	23.0 °C
Customer:	NextNet	Air Pressure:	99.0 kPa
		Rel. Humidity:	30.0 %
EUT Description: Mobile Customer trx / receiver unit			
Notes: Transmitter into 50 Ohm load. 5.5 MHz channel bandwidth			
Data File Name:	5495-1.dat	Page:	2 of 9

List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	LIMIT (dBm)	DELTA2 FCC Pt 2.1053 (dBm)
393.205 MHz	45.95 Qp	1.7 / 15.85 / 26.67 / -96.83	-60.0	V / 1.00 / 0	-13	-47.0
400.016 MHz	39.55 Qp	1.7 / 16.07 / 26.7 / -96.83	-66.21	V / 1.00 / 0	-13	-53.21
405.5 MHz	36.55 Qp	1.7 / 16.01 / 26.72 / -96.83	-69.29	V / 1.00 / 0	-13	-56.29
24.575 MHz harmonics:						
344.057 MHz	36.55 Qp	1.6 / 14.66 / 26.7 / -96.83	-70.72	V / 1.00 / 0	-13	-57.72
368.632 MHz	42.9 Qp	1.6 / 14.96 / 26.62 / -96.83	-63.98	V / 1.00 / 0	-13	-50.98
393.207 MHz	46.2 Qp	1.7 / 15.85 / 26.67 / -96.83	-59.75	V / 1.00 / 0	-13	-46.75
417.782 MHz	40.6 Qp	1.7 / 16.13 / 26.76 / -96.83	-65.16	V / 1.00 / 0	-13	-52.16
442.357 MHz	37.15 Qp	1.77 / 16.16 / 26.84 / -96.83	-68.6	V / 1.00 / 0	-13	-55.6
466.932 MHz	38.3 Qp	1.84 / 16.6 / 26.95 / -96.83	-67.03	V / 1.00 / 0	-13	-54.03
491.507 MHz	35.05 Qp	1.9 / 17.07 / 27.09 / -96.83	-69.9	V / 1.00 / 0	-13	-56.9
516.082 MHz	34.45 Qp	1.9 / 17.99 / 26.97 / -96.83	-69.46	V / 1.00 / 0	-13	-56.46
540.657 MHz	32.05 Qp	1.96 / 18.4 / 26.93 / -96.83	-71.36	V / 1.00 / 0	-13	-58.36
884.707 MHz	33.15 Qp	2.57 / 22.25 / 26.7 / -96.83	-65.56	V / 1.00 / 0	-13	-52.56
374.976 MHz	37.25 Qp	1.63 / 15.15 / 26.61 / -96.83	-69.41	V / 1.00 / 0	-13	-56.41
380.916 MHz	39.4 Qp	1.65 / 15.29 / 26.63 / -96.83	-67.12	V / 1.00 / 0	-13	-54.12
390.882 MHz	36.45 Qp	1.69 / 15.69 / 26.67 / -96.83	-69.67	V / 1.00 / 0	-13	-56.67
45.0 MHz	36.0 Qp	0.6 / 15.64 / 25.9 / -96.83	-70.49	V / 1.00 / 0	-13	-57.49
135.0 MHz	43.6 Qp	1.0 / 8.31 / 26.07 / -96.83	-69.99	V / 1.00 / 0	-13	-56.99
180.0 MHz	51.6 Qp	1.1 / 9.45 / 26.15 / -96.83	-60.82	V / 1.00 / 0	-13	-47.82
225.0 MHz	43.85 Qp	1.29 / 10.88 / 26.3 / -96.83	-67.1	V / 1.00 / 0	-13	-54.1
269.046 MHz	51.15 Qp	1.45 / 12.27 / 26.43 / -96.83	-58.39	V / 1.00 / 0	-13	-45.39
270.996 MHz	50.75 Qp	1.46 / 12.25 / 26.44 / -96.83	-58.81	V / 1.00 / 0	-13	-45.81

Tested by: J. C. Sausen

Printed

J C Sausen

Signature

Reviewed by: TKS

Printed

Thomas K. Swanson

Signature

File No. WC405495, Page A4 of A16

RADIATED EMISSIONS



Test Report #: WC405495 Run 1 Test Area: LTS

EUT Model #: MSU- 2510-A Date: 12/3/2004

EUT Serial #: EUT Power: battery Temperature: 23.0 °C

Test Method: FCC B Air Pressure: 99.0 kPa

Customer: NextNet Rel. Humidity: 30.0 %

EUT Description: Mobile Customer trx / receiver unit

Notes: Transmitter into 50 Ohm load. 5.5 MHz channel bandwidth

Data File Name: 5495-1.dat Page: 3 of 9

List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	LIMIT (dBm)	DELTA2 FCC Pt 2.1053 (dBm)
314.202 MHz	39.65 Qp	1.5 / 13.64 / 26.65 / -96.83	-68.69	V / 1.00 / 0	-13	-55.69
315.702 MHz	39.55 Qp	1.5 / 13.68 / 26.66 / -96.83	-68.76	V / 1.00 / 0	-13	-55.76
358.944 MHz	31.45 Qp	1.6 / 14.82 / 26.66 / -96.83	-75.61	V / 1.00 / 0	-13	-62.61
250.0 MHz	45.5 Qp	1.34 / 11.86 / 26.32 / -96.83	-64.44	V / 1.00 / 0	-13	-51.44
300.0 MHz	45.2 Qp	1.5 / 13.21 / 26.58 / -96.83	-63.5	V / 1.00 / 0	-13	-50.5
375.0 MHz	37.25 Qp	1.63 / 15.15 / 26.61 / -96.83	-69.41	V / 1.00 / 0	-13	-56.41
400.0 MHz	39.25 Qp	1.7 / 16.07 / 26.7 / -96.83	-66.51	V / 1.00 / 0	-13	-53.51
500.0 MHz	37.65 Qp	1.9 / 17.46 / 27.06 / -96.83	-66.88	V / 1.00 / 0	-13	-53.88
600.0 MHz	33.2 Qp	2.1 / 18.86 / 27.17 / -96.83	-69.83	V / 1.00 / 0	-13	-56.83
625.0 MHz	32.2 Qp	2.1 / 19.6 / 27.11 / -96.83	-70.04	V / 1.00 / 0	-13	-57.04
132.542 MHz	53.15 Qp	1.0 / 8.38 / 26.09 / -96.83	-60.39	V / 1.00 / 90	-13	-47.39
132.938 MHz	52.65 Qp	1.0 / 8.37 / 26.09 / -96.83	-60.9	V / 1.00 / 90	-13	-47.9
165.644 MHz	53.35 Qp	1.05 / 8.71 / 26.03 / -96.83	-59.75	V / 1.00 / 90	-13	-46.75
166.01 MHz	56.15 Qp	1.05 / 8.72 / 26.03 / -96.83	-56.94	V / 1.00 / 90	-13	-43.94
166.208 MHz	55.05 Qp	1.05 / 8.73 / 26.03 / -96.83	-58.03	V / 1.00 / 90	-13	-45.03
202.665 MHz	59.3 Qp	1.2 / 10.55 / 26.3 / -96.83	-52.08	V / 1.00 / 90	-13	-39.08
202.665 MHz	59.3 Qp	1.2 / 10.55 / 26.3 / -96.83	-52.08	V / 1.00 / 90	-13	-39.08
250.0 MHz	48.25 Qp	1.34 / 11.86 / 26.32 / -96.83	-61.69	V / 1.00 / 90	-13	-48.69
253.325 MHz	66.1 Qp	1.36 / 12.16 / 26.34 / -96.83	-43.55	V / 1.00 / 90	-13	-30.55
269.046 MHz	57.7 Qp	1.45 / 12.27 / 26.43 / -96.83	-51.84	V / 1.00 / 90	-13	-38.84
270.996 MHz	56.3 Qp	1.46 / 12.25 / 26.44 / -96.83	-53.26	V / 1.00 / 90	-13	-40.26
300.0 MHz	46.05 Qp	1.5 / 13.21 / 26.58 / -96.83	-62.65	V / 1.00 / 90	-13	-49.65
344.057 MHz	41.9 Qp	1.6 / 14.66 / 26.7 / -96.83	-65.37	V / 1.00 / 90	-13	-52.37
354.657 MHz	54.75 Qp	1.6 / 14.8 / 26.67 / -96.83	-52.35	V / 1.00 / 90	-13	-39.35

Tested by: J. C. Sausen

Printed

Signature

Reviewed by: TKS

Printed

Signature

File No. WC405495, Page A5 of A16

RADIATED EMISSIONS



Test Report #:	WC405495 Run 1	Test Area:	LTS
EUT Model #:	MSU-2510-A	Date:	12/3/2004
EUT Serial #:		EUT Power:	battery
Test Method:	FCC B	Temperature:	23.0 °C
Customer:	NextNet	Air Pressure:	99.0 kPa
		Rel. Humidity:	30.0 %
EUT Description:	Mobile Customer trx / receiver unit		
Notes:	Transmitter into 50 Ohm load. 5.5 MHz channel bandwidth		
Data File Name:	5495-1.dat	Page:	4 of 9

List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	LIMIT (dBm)	DELTA2 FCC Pt 2.1053 (dBm)
358.944 MHz	37.45 Qp	1.6 / 14.82 / 26.66 / -96.83	-69.61	V / 1.00 / 90	-13	-56.61
368.632 MHz	44.85 Qp	1.6 / 14.96 / 26.62 / -96.83	-62.03	V / 1.00 / 90	-13	-49.03
368.632 MHz	44.75 Qp	1.6 / 14.96 / 26.62 / -96.83	-62.13	V / 1.00 / 90	-13	-49.13
375.0 MHz	43.35 Qp	1.63 / 15.15 / 26.61 / -96.83	-63.31	V / 1.00 / 90	-13	-50.31
390.882 MHz	38.8 Qp	1.69 / 15.69 / 26.67 / -96.83	-67.32	V / 1.00 / 90	-13	-54.32
390.882 MHz	38.85 Qp	1.69 / 15.69 / 26.67 / -96.83	-67.27	V / 1.00 / 90	-13	-54.27
393.207 MHz	47.7 Qp	1.7 / 15.85 / 26.67 / -96.83	-58.25	V / 1.00 / 90	-13	-45.25
405.5 MHz	40.25 Qp	1.7 / 16.01 / 26.72 / -96.83	-65.59	V / 1.00 / 90	-13	-52.59
442.357 MHz	40.7 Qp	1.77 / 16.16 / 26.84 / -96.83	-65.05	V / 1.00 / 90	-13	-52.05
500.0 MHz	42.0 Qp	1.9 / 17.46 / 27.06 / -96.83	-62.53	V / 1.00 / 90	-13	-49.53
134.568 MHz	49.95 Qp	1.0 / 8.32 / 26.07 / -96.83	-63.63	V / 1.00 / 180	-13	-50.63
165.644 MHz	53.65 Qp	1.05 / 8.71 / 26.03 / -96.83	-59.45	V / 1.00 / 180	-13	-46.45
202.665 MHz	62.5 Qp	1.2 / 10.55 / 26.3 / -96.83	-48.88	V / 1.00 / 180	-13	-35.88
253.325 MHz	69.1 Qp	1.36 / 12.16 / 26.34 / -96.83	-40.55	V / 1.00 / 180	-13	-27.55
269.046 MHz	60.15 Qp	1.45 / 12.27 / 26.43 / -96.83	-49.39	V / 1.00 / 180	-13	-36.39
270.996 MHz	59.85 Qp	1.46 / 12.25 / 26.44 / -96.83	-49.71	V / 1.00 / 180	-13	-36.71
300.0 MHz	48.8 Qp	1.5 / 13.21 / 26.58 / -96.83	-59.9	V / 1.00 / 180	-13	-46.9
400.016 MHz	47.05 Qp	1.7 / 16.07 / 26.7 / -96.83	-58.71	V / 1.00 / 180	-13	-45.71
165.644 MHz	55.9 Qp	1.05 / 8.71 / 26.03 / -96.83	-57.2	V / 1.00 / 270	-13	-44.2
166.01 MHz	57.55 Qp	1.05 / 8.72 / 26.03 / -96.83	-55.54	V / 1.00 / 270	-13	-42.54
166.208 MHz	56.55 Qp	1.05 / 8.73 / 26.03 / -96.83	-56.53	V / 1.00 / 270	-13	-43.53
202.665 MHz	62.5 Qp	1.2 / 10.55 / 26.3 / -96.83	-48.88	V / 1.00 / 270	-13	-35.88
228.807 MHz	46.95 Qp	1.3 / 10.99 / 26.3 / -96.83	-63.89	V / 1.00 / 270	-13	-50.89
250.0 MHz	48.9 Qp	1.34 / 11.86 / 26.32 / -96.83	-61.04	V / 1.00 / 270	-13	-48.04

Tested by: J. C. Sausen

Printed

J C Sausen

Signature

Reviewed by: TKS

Printed

Thomas K. Swanson

Signature

File No. WC405495, Page A6 of A16

RADIATED EMISSIONS



Test Report #:	WC405495 Run 1	Test Area:	LTS
EUT Model #:	MSU- 2510-A	Date:	12/3/2004
EUT Serial #:		EUT Power:	battery
Test Method:	FCC B	Temperature:	23.0 °C
Customer:	NextNet	Air Pressure:	99.0 kPa
		Rel. Humidity:	30.0 %
EUT Description: Mobile Customer trx / receiver unit			
Notes: Transmitter into 50 Ohm load. 5.5 MHz channel bandwidth			
Data File Name:	5495-1.dat	Page:	5 of 9

List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	LIMIT (dBm)	DELTA2 FCC Pt 2.1053 (dBm)
303.991 MHz	66.15 Qp	1.5 / 13.33 / 26.6 / -96.83	-42.45	V / 1.00 / 270	-13	-29.45
315.702 MHz	44.65 Qp	1.5 / 13.68 / 26.66 / -96.83	-63.66	V / 1.00 / 270	-13	-50.66
358.944 MHz	42.6 Qp	1.6 / 14.82 / 26.66 / -96.83	-64.46	V / 1.00 / 270	-13	-51.46
400.016 MHz	47.0 Qp	1.7 / 16.07 / 26.7 / -96.83	-58.76	V / 1.00 / 270	-13	-45.76
497.793 MHz	47.65 Qp	1.9 / 17.33 / 27.07 / -96.83	-57.02	V / 1.00 / 270	-13	-44.02
253 MHz maxed:						
253.325 MHz	70.85 Pk	1.36 / 12.16 / 26.34 / -96.83	-38.8	V / 1.00 / 170	-13	-25.8
66.29 MHz	49.5 Qp	0.7 / 10.04 / 25.89 / -96.83	-62.49	V / 1.00 / 170	-13	-49.49
135.0 MHz	46.95 Qp	1.0 / 8.31 / 26.07 / -96.83	-66.64	V / 1.00 / 170	-13	-53.64
179.319 MHz	53.2 Qp	1.1 / 9.4 / 26.14 / -96.83	-59.27	V / 1.00 / 170	-13	-46.27
180.363 MHz	54.95 Qp	1.1 / 9.48 / 26.15 / -96.83	-57.45	V / 1.00 / 170	-13	-44.45
180.609 MHz	55.3 Qp	1.1 / 9.5 / 26.15 / -96.83	-57.08	V / 1.00 / 170	-13	-44.08
270.996 MHz	60.25 Qp	1.46 / 12.25 / 26.44 / -96.83	-49.31	V / 1.00 / 170	-13	-36.31
303.991 MHz	67.9 Qp	1.5 / 13.33 / 26.6 / -96.83	-40.7	V / 1.00 / 170	-13	-27.7
303.991 MHz	69.75 Pk	1.5 / 13.33 / 26.6 / -96.83	-38.85	V / 1.00 / 170	-13	-25.85
152 MHz maxed:						
151.994 MHz	66.1 Pk	1.0 / 9.14 / 25.9 / -96.83	-46.49	V / 1.00 / 154	-13	-33.49
66.29 MHz	56.3 Pk	0.7 / 10.04 / 25.89 / -96.83	-55.69	V / 1.00 / 154	-13	-42.69
66.446 MHz	56.05 Pk	0.7 / 9.99 / 25.89 / -96.83	-55.98	V / 1.00 / 154	-13	-42.98
304.014 MHz	71.25 Pk	1.5 / 13.33 / 26.6 / -96.83	-37.35	V / 1.00 / 154	-13	-24.35
304 MHz maxed:						
304.014 MHz	71.55 Pk	1.5 / 13.33 / 26.6 / -96.83	-37.05	V / 1.00 / 147	-13	-24.05
151.994 MHz	65.65 Pk	1.0 / 9.14 / 25.9 / -96.83	-46.94	H / 1.00 / 147	-13	-33.94

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File No. WC405495, Page A7 of A16

RADIATED EMISSIONS



Test Report #:	WC405495 Run 1	Test Area:	LTS		
EUT Model #:	MSU- 2510-A	Date:	12/3/2004		
EUT Serial #:		EUT Power:	battery	Temperature:	23.0 °C
Test Method:	FCC B	Air Pressure:	99.0 kPa		
Customer:	NextNet	Rel. Humidity:	30.0 %		
EUT Description:	Mobile Customer trx / receiver unit				
Notes:	Transmitter into 50 Ohm load. 5.5 MHz channel bandwidth				
Data File Name:	5495-1.dat	Page:	6 of 9		

List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	LIMIT (dBm)	DELTA2 FCC Pt 2.1053 (dBm)
303.99 MHz	72.8 Pk	1.5 / 13.33 / 26.6 / -96.83	-35.8	H / 2.53 / 121	-13	-22.8
202.665 MHz	66.6 Pk	1.2 / 10.55 / 26.3 / -96.83	-44.78	H / 2.53 / 134	-13	-31.78

SUBSTITUTION PERFORMED.

The substitution antenna is used to replace the EUT for tests in which a transmitting parameter (i.e. frequency error, effective radiated power, spurious emissions and adjacent channel power) is being measured. The substitution antenna is connected to a calibrated signal generator. The frequency of the calibrated signal generator is set to the frequency of the highest emission component detected. The test antenna is raised and lowered through the specified range of height to ensure the maximum signal is received. The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the emission component was measured, corrected for any change of input attenuator setting of the measuring receiver. The input level to the substitution antenna is recorded as power level, corrected for any change of input attenuator setting of the measuring receiver.

Final dBm power level = Matched signal generator level - Cable loss + antenna gain.

Substitution performed at 253.3 MHz. All other spurious emission levels are based off of this substitution.

Final Level = 58.03 dBuV/m. Matches -30 dBm on signal generator. Cable loss is 2.6 dB. Antenna gain is -6.2 dB (TUV dipole antenna has a total gain of 3.79 dB minus 10 dB pad = -6.21 dB).

So final dBm power level = -30 - 2.6 + (-6.2) = -38.8 dBm

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File No. WC405495, Page A8 of A16

RADIATED EMISSIONS



Test Report #:	WC405495 Run 1	Test Area:	LTS
EUT Model #:	MSU- 2510-A	Date:	12/3/2004
EUT Serial #:		EUT Power:	battery
Test Method:	FCC B	Temperature:	23.0 °C
Customer:	NextNet	Air Pressure:	99.0 kPa
		Rel. Humidity:	30.0 %
EUT Description: Mobile Customer trx / receiver unit			
Notes: Transmitter into 50 Ohm load. 5.5 MHz channel bandwidth			
Data File Name:	5495-1.dat	Page:	7 of 9

Measurement summary for limit1: FCC Pt 2.1053 (-13dBm) (Qp)					
FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC Pt 2.1053 (-13dBm)
303.99 MHz	72.8 Pk	1.5 / 13.33 / 26.6 / -96.83	-35.8	H / 2.53 / 121	-22.8
253.325 MHz	70.85 Pk	1.36 / 12.16 / 26.34 / -96.83	-38.8	V / 1.00 / 170	-25.8
253.325 MHz	69.1 Qp	1.36 / 12.16 / 26.34 / -96.83	-40.55	V / 1.00 / 180	-27.55
303.991 MHz	67.9 Qp	1.5 / 13.33 / 26.6 / -96.83	-40.7	V / 1.00 / 170	-27.7
202.665 MHz	66.6 Pk	1.2 / 10.55 / 26.3 / -96.83	-44.78	H / 2.53 / 134	-31.78
151.994 MHz	66.5 Qp	1.0 / 9.14 / 25.9 / -96.83	-46.09	V / 1.00 / 0	-33.09
151.994 MHz	66.1 Pk	1.0 / 9.14 / 25.9 / -96.83	-46.49	V / 1.00 / 154	-33.49
202.665 MHz	62.5 Qp	1.2 / 10.55 / 26.3 / -96.83	-48.88	V / 1.00 / 180	-35.88
270.996 MHz	60.25 Qp	1.46 / 12.25 / 26.44 / -96.83	-49.31	V / 1.00 / 170	-36.31
269.046 MHz	60.15 Qp	1.45 / 12.27 / 26.43 / -96.83	-49.39	V / 1.00 / 180	-36.39
354.657 MHz	54.75 Qp	1.6 / 14.8 / 26.67 / -96.83	-52.35	V / 1.00 / 90	-39.35
166.01 MHz	57.55 Qp	1.05 / 8.72 / 26.03 / -96.83	-55.54	V / 1.00 / 270	-42.54
66.29 MHz	56.3 Pk	0.7 / 10.04 / 25.89 / -96.83	-55.69	V / 1.00 / 154	-42.69
66.446 MHz	56.05 Pk	0.7 / 9.99 / 25.89 / -96.83	-55.98	V / 1.00 / 154	-42.98
166.208 MHz	56.55 Qp	1.05 / 8.73 / 26.03 / -96.83	-56.53	V / 1.00 / 270	-43.53
373.345 MHz	50.1 Qp	1.62 / 15.1 / 26.6 / -96.83	-56.61	V / 1.00 / 0	-43.61
497.793 MHz	47.95 Qp	1.9 / 17.33 / 27.07 / -96.83	-56.72	V / 1.00 / 0	-43.72
180.609 MHz	55.3 Qp	1.1 / 9.5 / 26.15 / -96.83	-57.08	V / 1.00 / 170	-44.08
165.644 MHz	55.9 Qp	1.05 / 8.71 / 26.03 / -96.83	-57.2	V / 1.00 / 270	-44.2
180.363 MHz	54.95 Qp	1.1 / 9.48 / 26.15 / -96.83	-57.45	V / 1.00 / 170	-44.45
393.207 MHz	47.7 Qp	1.7 / 15.85 / 26.67 / -96.83	-58.25	V / 1.00 / 90	-45.25
400.016 MHz	47.05 Qp	1.7 / 16.07 / 26.7 / -96.83	-58.71	V / 1.00 / 180	-45.71
199.245 MHz	51.95 Qp	1.2 / 10.72 / 26.29 / -96.83	-59.25	V / 1.00 / 0	-46.25
179.319 MHz	53.2 Qp	1.1 / 9.4 / 26.14 / -96.83	-59.27	V / 1.00 / 170	-46.27
300.0 MHz	48.8 Qp	1.5 / 13.21 / 26.58 / -96.83	-59.9	V / 1.00 / 180	-46.9

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File No. WC405495, Page A9 of A16

RADIATED EMISSIONS



Test Report #:	WC405495 Run 1	Test Area:	LTS
EUT Model #:	MSU- 2510-A	Date:	12/3/2004
EUT Serial #:		EUT Power:	battery
Temperature:	23.0 °C	Air Pressure:	99.0 kPa
Test Method:	FCC B	Rel. Humidity:	30.0 %
Customer:	NextNet		
EUT Description:	Mobile Customer trx / receiver unit		
Notes:	Transmitter into 50 Ohm load. 5.5 MHz channel bandwidth		
Data File Name:	5495-1.dat	Page:	8 of 9

Measurement summary for limit1: FCC Pt 2.1053 (-13dBm) (Qp)					
FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC Pt 2.1053 (-13dBm)
228.807 MHz	50.55 Qp	1.3 / 10.99 / 26.3 / -96.83	-60.29	V / 1.00 / 0	-47.29
132.542 MHz	53.15 Qp	1.0 / 8.38 / 26.09 / -96.83	-60.39	V / 1.00 / 90	-47.39
180.0 MHz	51.6 Qp	1.1 / 9.45 / 26.15 / -96.83	-60.82	V / 1.00 / 0	-47.82
132.938 MHz	52.65 Qp	1.0 / 8.37 / 26.09 / -96.83	-60.9	V / 1.00 / 90	-47.9
32.215 MHz	41.6 Qp	0.44 / 19.76 / 25.9 / -96.83	-60.93	V / 1.00 / 0	-47.93
250.0 MHz	48.9 Qp	1.34 / 11.86 / 26.32 / -96.83	-61.04	V / 1.00 / 270	-48.04
368.632 MHz	44.85 Qp	1.6 / 14.96 / 26.62 / -96.83	-62.03	V / 1.00 / 90	-49.03
66.29 MHz	49.5 Qp	0.7 / 10.04 / 25.89 / -96.83	-62.49	V / 1.00 / 170	-49.49
500.0 MHz	42.0 Qp	1.9 / 17.46 / 27.06 / -96.83	-62.53	V / 1.00 / 90	-49.53
375.0 MHz	43.35 Qp	1.63 / 15.15 / 26.61 / -96.83	-63.31	V / 1.00 / 90	-50.31
134.568 MHz	49.95 Qp	1.0 / 8.32 / 26.07 / -96.83	-63.63	V / 1.00 / 180	-50.63
315.702 MHz	44.65 Qp	1.5 / 13.68 / 26.66 / -96.83	-63.66	V / 1.00 / 270	-50.66
358.944 MHz	42.6 Qp	1.6 / 14.82 / 26.66 / -96.83	-64.46	V / 1.00 / 270	-51.46
195.423 MHz	46.55 Qp	1.19 / 10.88 / 26.27 / -96.83	-64.48	V / 1.00 / 0	-51.48
66.464 MHz	47.05 Qp	0.7 / 9.99 / 25.89 / -96.83	-64.98	V / 1.00 / 0	-51.98
442.357 MHz	40.7 Qp	1.77 / 16.16 / 26.84 / -96.83	-65.05	V / 1.00 / 90	-52.05
417.782 MHz	40.6 Qp	1.7 / 16.13 / 26.76 / -96.83	-65.16	V / 1.00 / 0	-52.16
344.057 MHz	41.9 Qp	1.6 / 14.66 / 26.7 / -96.83	-65.37	V / 1.00 / 90	-52.37
884.707 MHz	33.15 Qp	2.57 / 22.25 / 26.7 / -96.83	-65.56	V / 1.00 / 0	-52.56
405.5 MHz	40.25 Qp	1.7 / 16.01 / 26.72 / -96.83	-65.59	V / 1.00 / 90	-52.59
135.0 MHz	46.95 Qp	1.0 / 8.31 / 26.07 / -96.83	-66.64	V / 1.00 / 170	-53.64
466.932 MHz	38.3 Qp	1.84 / 16.6 / 26.95 / -96.83	-67.03	V / 1.00 / 0	-54.03
225.0 MHz	43.85 Qp	1.29 / 10.88 / 26.3 / -96.83	-67.1	V / 1.00 / 0	-54.1
380.916 MHz	39.4 Qp	1.65 / 15.29 / 26.63 / -96.83	-67.12	V / 1.00 / 0	-54.12
390.882 MHz	38.85 Qp	1.69 / 15.69 / 26.67 / -96.83	-67.27	V / 1.00 / 90	-54.27
314.202 MHz	39.65 Qp	1.5 / 13.64 / 26.65 / -96.83	-68.69	V / 1.00 / 0	-55.69

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File No. WC405495, Page A10 of A16

RADIATED EMISSIONS



Test Report #: WC405495 Run 1 Test Area: LTS
EUT Model #: MSU- 2510-A Date: 12/3/2004
EUT Serial #: EUT Power: battery Temperature: 23.0 °C
Test Method: FCC B Air Pressure: 99.0 kPa
Customer: NextNet Rel. Humidity: 30.0 %
EUT Description: Mobile Customer trx / receiver unit
Notes: Transmitter into 50 Ohm load. 5.5 MHz channel bandwidth
Data File Name: 5495-1.dat Page: 9 of 9

Measurement summary for limit1: FCC Pt 2.1053 (-13dBm) (Qp)					
FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC Pt 2.1053 (-13dBm)
516.082 MHz	34.45 Qp	1.9 / 17.99 / 26.97 / -96.83	-69.46	V / 1.00 / 0	-56.46
600.0 MHz	33.2 Qp	2.1 / 18.86 / 27.17 / -96.83	-69.83	V / 1.00 / 0	-56.83
491.507 MHz	35.05 Qp	1.9 / 17.07 / 27.09 / -96.83	-69.9	V / 1.00 / 0	-56.9
625.0 MHz	32.2 Qp	2.1 / 19.6 / 27.11 / -96.83	-70.04	V / 1.00 / 0	-57.04
45.0 MHz	36.0 Qp	0.6 / 15.64 / 25.9 / -96.83	-70.49	V / 1.00 / 0	-57.49
79.232 MHz	42.8 Qp	0.79 / 7.72 / 25.8 / -96.83	-71.32	V / 1.00 / 0	-58.32
540.657 MHz	32.05 Qp	1.96 / 18.4 / 26.93 / -96.83	-71.36	V / 1.00 / 0	-58.36
456.508 MHz	32.6 Qp	1.81 / 16.58 / 26.89 / -96.83	-72.72	V / 1.00 / 0	-59.72
274.108 MHz	36.4 Qp	1.48 / 12.22 / 26.45 / -96.83	-73.19	V / 1.00 / 0	-60.19
85.523 MHz	40.35 Qp	0.8 / 7.27 / 25.8 / -96.83	-74.21	V / 1.00 / 0	-61.21

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File No. WC405495, Page A11 of A16

RADIATED EMISSIONS



Test Report #:	WC405495 Run 2	Test Area:	LTS
EUT Model #:	MSU-2510-A	Date:	12/3/2004
EUT Serial #:		EUT Power:	battery
Test Method:	FCC B	Temperature:	23.0 °C
Customer:	NextNet	Air Pressure:	99.0 kPa
		Rel. Humidity:	30.0 %
EUT Description: Mobile Customer trx / receiver unit			
Notes: Transmitter into 50 Ohm load. 6 MHz channel bandwidth			
Data File Name:	5495.dat	Page:	1 of 5

List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	LIMIT (dBm)	DELTA2 FCC Pt 2.1053 (dBm)
168 MHz maxed:						
168.0 MHz	68.15 Pk	1.07 / 8.8 / 26.05 / -96.83	-44.86	V / 1.00 / 336	-13	-31.86
195.975 MHz	61.7 Qp	1.19 / 10.88 / 26.27 / -96.83	-49.32	V / 1.00 / 336	-13	-36.32
195.975 MHz	63.35 Pk	1.19 / 10.88 / 26.27 / -96.83	-47.67	V / 1.00 / 336	-13	-34.67
240.003 MHz	51.9 Pk	1.3 / 11.32 / 26.3 / -96.83	-58.61	V / 1.00 / 336	-13	-45.61
279.993 MHz	63.1 Pk	1.5 / 12.36 / 26.48 / -96.83	-46.36	V / 1.00 / 336	-13	-33.36
307 MHz maxed:						
307.995 MHz	64.6 Pk	1.5 / 13.45 / 26.62 / -96.83	-43.9	V / 1.00 / 336	-13	-30.9
464.82 MHz	45.95 Pk	1.84 / 16.6 / 26.93 / -96.83	-59.37	V / 1.00 / 336	-13	-46.37
140.009 MHz	64.95 Pk	1.0 / 9.09 / 26.01 / -96.83	-47.8	V / 1.00 / 336	-13	-34.8
168.009 MHz	64.95 Pk	1.07 / 8.8 / 26.05 / -96.83	-48.06	V / 1.00 / 336	-13	-35.06
196.009 MHz	66.45 Pk	1.19 / 10.88 / 26.27 / -96.83	-44.58	V / 1.00 / 336	-13	-31.58
224.009 MHz	60.0 Pk	1.29 / 10.86 / 26.3 / -96.83	-50.98	V / 1.00 / 336	-13	-37.98
252.009 MHz	66.55 Pk	1.35 / 12.04 / 26.33 / -96.83	-43.21	V / 1.00 / 336	-13	-30.21
280.009 MHz	72.1 Pk	1.5 / 12.36 / 26.49 / -96.83	-37.36	V / 1.00 / 336	-13	-24.36
308.009 MHz	62.9 Pk	1.5 / 13.45 / 26.62 / -96.83	-45.6	V / 1.00 / 336	-13	-32.6
336.009 MHz	54.75 Pk	1.57 / 14.19 / 26.7 / -96.83	-53.02	V / 1.00 / 336	-13	-40.02
364.009 MHz	50.5 Pk	1.6 / 14.87 / 26.64 / -96.83	-56.49	V / 1.00 / 336	-13	-43.49
392.009 MHz	43.4 Pk	1.69 / 15.77 / 26.67 / -96.83	-62.64	V / 1.00 / 336	-13	-49.64
280 MHz maxed:						
280.009 MHz	71.4 Pk	1.5 / 12.36 / 26.49 / -96.83	-38.06	H / 1.00 / 201	-13	-25.06
196.009 MHz	67.25 Pk	1.19 / 10.88 / 26.27 / -96.83	-43.78	V / 2.00 / 205	-13	-30.78
5.254 GHz	61.45 Pk	6.65 / 33.75 / 44.41 / -96.83	-39.4	H / 2.10 / 263	-13	-26.4
7.8 GHz, rotated EUT 360 degrees. Varied antenna ht from 1 to 4 meters. No EUT emission detected above noise floor.						

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File No. WC405495, Page A12 of A16

RADIATED EMISSIONS



Test Report #:	WC405495 Run 2	Test Area:	LTS
EUT Model #:	MSU- 2510-A	Date:	12/3/2004
EUT Serial #:		EUT Power:	battery
Test Method:	FCC B	Temperature:	23.0 °C
Customer:	NextNet	Air Pressure:	99.0 kPa
		Rel. Humidity:	30.0 %
EUT Description:	Mobile Customer trx / receiver unit		
Notes:	Transmitter into 50 Ohm load. 6 MHz channel bandwidth		
Data File Name:	5495.dat	Page:	2 of 5

List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	LIMIT (dBm)	DELTA2 FCC Pt 2.1053 (dBm)
Noise floor measurement:						
7.88 GHz	36.9 Pk	8.29 / 36.83 / 44.36 / -96.83	-59.17	V / 2.10 / 263	-13	-46.17
10.507 GHz	34.55 Pk	9.92 / 37.98 / 44.49 / -96.83	-58.88	V / 1.00 / 0	-13	-45.88
13.134 GHz	36.35 Pk	10.83 / 40.12 / 43.87 / -96.83	-53.4	V / 1.00 / 0	-13	-40.4
15.761 GHz	36.45 Pk	11.96 / 37.79 / 43.41 / -96.83	-54.04	V / 1.00 / 0	-13	-41.04
5.23 GHz maxed:						
5.254 GHz	67.25 Pk	6.65 / 33.75 / 44.41 / -96.83	-33.6	V / 1.30 / 0	-13	-20.6
noise floor:						
7.88 GHz	34.95 Pk	8.29 / 36.83 / 44.36 / -96.83	-61.12	H / 1.00 / 0	-13	-48.12
10.507 GHz	36.9 Pk	9.92 / 37.98 / 44.49 / -96.83	-56.53	H / 1.00 / 0	-13	-43.53
13.134 GHz	37.75 Pk	10.83 / 40.12 / 43.87 / -96.83	-52.0	H / 1.00 / 0	-13	-39.0
2.499 GHz:						
4.998 GHz	66.05 Pk	6.5 / 33.39 / 44.56 / -96.83	-35.45	V / 1.25 / 0	-13	-22.45
noise floor:						
7.497 GHz	37.1 Pk	8.14 / 36.59 / 44.86 / -96.83	-59.86	V / 1.25 / 0	-13	-46.86
9.996 GHz	36.25 Pk	9.71 / 38.07 / 44.42 / -96.83	-57.23	V / 1.25 / 0	-13	-44.23
12.495 GHz	36.55 Pk	10.67 / 38.76 / 43.94 / -96.83	-54.79	V / 1.25 / 0	-13	-41.79
14.994 GHz	37.6 Pk	11.52 / 39.71 / 43.12 / -96.83	-51.12	V / 1.25 / 0	-13	-38.12
17.493 GHz	38.8 Pk	12.96 / 45.46 / 44.76 / -96.83	-44.38	V / 1.25 / 0	-13	-31.38
4.99 GHz maxed:						
4.998 GHz	45.3 Pk	6.5 / 33.39 / 44.56 / -96.83	-56.2	H / 1.58 / 0	-13	-43.2

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File No. WC405495, Page A13 of A16

RADIATED EMISSIONS



Test Report #: WC405495 Run 2 Test Area: LTS

EUT Model #: MSU- 2510-A Date: 12/3/2004

EUT Serial #: EUT Power: battery Temperature: 23.0 °C

Test Method: FCC B Air Pressure: 99.0 kPa

Customer: NextNet Rel. Humidity: 30.0 %

EUT Description: Mobile Customer trx / receiver unit

Notes: Transmitter into 50 Ohm load. 6 MHz channel bandwidth

Data File Name: 5495.dat Page: 3 of 5

List of measurements for run #: 2						
FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	LIMIT (dBm)	DELTA2 FCC Pt 2.1053 (dBm)
noise floor:						
5.254 GHz	34.5 Pk	6.65 / 33.75 / 44.41 / -96.83	-66.35	H / 1.58 / 0	-13	-53.35
7.753 GHz	36.9 Pk	8.24 / 36.75 / 44.52 / -96.83	-59.46	H / 1.58 / 0	-13	-46.46
10.252 GHz	37.6 Pk	9.82 / 38.02 / 44.46 / -96.83	-55.85	H / 1.58 / 0	-13	-42.85
12.751 GHz	36.35 Pk	10.76 / 39.25 / 43.97 / -96.83	-54.44	H / 1.58 / 0	-13	-41.44
15.25 GHz	36.75 Pk	11.67 / 38.75 / 43.22 / -96.83	-52.88	H / 1.58 / 0	-13	-39.88
17.749 GHz	38.8 Pk	13.23 / 46.47 / 44.88 / -96.83	-43.21	H / 1.58 / 0	-13	-30.21
2.68725 GHz						
5.375 GHz maxed:						
5.375 GHz	71.15 Pk	6.72 / 33.91 / 44.45 / -96.83	-29.49	V / 1.16 / 5	-13	-16.49
noise floor:						
8.063 GHz	36.7 Pk	8.53 / 36.96 / 44.19 / -96.83	-58.82	V / 1.16 / 5	-13	-45.82
10.75 GHz	45.75 Pk	9.98 / 38.14 / 44.47 / -96.83	-47.43	V / 1.16 / 5	-13	-34.43
13.437 GHz	48.55 Pk	10.86 / 40.99 / 43.57 / -96.83	-40.0	V / 1.16 / 5	-13	-27.0
16.125 GHz	46.4 Pk	12.1 / 38.13 / 43.62 / -96.83	-43.82	V / 1.16 / 5	-13	-30.82
5.374 GHz maxed:						
5.374 GHz	70.15 Pk	6.72 / 33.91 / 44.45 / -96.83	-30.5	H / 2.10 / 64	-13	-17.5

Tested by: J. C. Sausen

Printed

J C Sausen

Signature

Reviewed by: TKS

Printed

Thomas K. Swanson

Signature

File No. WC405495, Page A14 of A16

RADIATED EMISSIONS



Test Report #:	WC405495 Run 2	Test Area:	LTS
EUT Model #:	MSU- 2510-A	Date:	12/3/2004
EUT Serial #:		EUT Power:	battery
Test Method:	FCC B	Temperature:	23.0 °C
Customer:	NextNet	Air Pressure:	99.0 kPa
		Rel. Humidity:	30.0 %
EUT Description:	Mobile Customer trx / receiver unit		
Notes:	Transmitter into 50 Ohm load. 6 MHz channel bandwidth		
Data File Name:	5495.dat	Page:	4 of 5

Measurement summary for limit1: FCC Pt. 2.1053 (-13dBm) (Qp)					
FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC Pt. 2.1053 (-13dBm)
5.375 GHz	71.15 Pk	6.72 / 33.91 / 44.45 / -96.83	-29.49	V / 1.16 / 5	-16.49
5.374 GHz	70.15 Pk	6.72 / 33.91 / 44.45 / -96.83	-30.5	H / 2.10 / 64	-17.5
195.975 MHz	61.7 Qp	1.19 / 10.88 / 26.27 / -96.83	-49.32	V / 1.00 / 336	-36.32
168.0 MHz	68.15 Pk	1.07 / 8.8 / 26.05 / -96.83	-44.86	V / 1.00 / 336	-31.86
196.009 MHz	67.25 Pk	1.19 / 10.88 / 26.27 / -96.83	-43.78	V / 2.00 / 205	-30.78
240.003 MHz	51.9 Pk	1.3 / 11.32 / 26.3 / -96.83	-58.61	V / 1.00 / 336	-45.61
280.009 MHz	72.1 Pk	1.5 / 12.36 / 26.49 / -96.83	-37.36	V / 1.00 / 336	-24.36
307.995 MHz	64.6 Pk	1.5 / 13.45 / 26.62 / -96.83	-43.9	V / 1.00 / 336	-30.9
464.82 MHz	45.95 Pk	1.84 / 16.6 / 26.93 / -96.83	-59.37	V / 1.00 / 336	-46.37
140.009 MHz	64.95 Pk	1.0 / 9.09 / 26.01 / -96.83	-47.8	V / 1.00 / 336	-34.8
224.009 MHz	60.0 Pk	1.29 / 10.86 / 26.3 / -96.83	-50.98	V / 1.00 / 336	-37.98
252.009 MHz	66.55 Pk	1.35 / 12.04 / 26.33 / -96.83	-43.21	V / 1.00 / 336	-30.21
336.009 MHz	54.75 Pk	1.57 / 14.19 / 26.7 / -96.83	-53.02	V / 1.00 / 336	-40.02
364.009 MHz	50.5 Pk	1.6 / 14.87 / 26.64 / -96.83	-56.49	V / 1.00 / 336	-43.49
392.009 MHz	43.4 Pk	1.69 / 15.77 / 26.67 / -96.83	-62.64	V / 1.00 / 336	-49.64
5.254 GHz	67.25 Pk	6.65 / 33.75 / 44.41 / -96.83	-33.6	V / 1.30 / 0	-20.6
7.88 GHz	36.9 Pk	8.29 / 36.83 / 44.36 / -96.83	-59.17	V / 2.10 / 263	-46.17
10.507 GHz	36.9 Pk	9.92 / 37.98 / 44.49 / -96.83	-56.53	H / 1.00 / 0	-43.53
13.134 GHz	37.75 Pk	10.83 / 40.12 / 43.87 / -96.83	-52.0	H / 1.00 / 0	-39.0
15.761 GHz	36.45 Pk	11.96 / 37.79 / 43.41 / -96.83	-54.04	V / 1.00 / 0	-41.04
4.998 GHz	66.05 Pk	6.5 / 33.39 / 44.56 / -96.83	-35.45	V / 1.25 / 0	-22.45
7.497 GHz	37.1 Pk	8.14 / 36.59 / 44.86 / -96.83	-59.86	V / 1.25 / 0	-46.86
9.996 GHz	36.25 Pk	9.71 / 38.07 / 44.42 / -96.83	-57.23	V / 1.25 / 0	-44.23
12.495 GHz	36.55 Pk	10.67 / 38.76 / 43.94 / -96.83	-54.79	V / 1.25 / 0	-41.79

Tested by: J. C. Sausen

Printed

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Reviewed by: TKS

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Signature

File No. WC405495, Page A15 of A16

RADIATED EMISSIONS



Test Report #: WC405495 Run 2 Test Area: LTS
EUT Model #: MSU- 2510-A Date: 12/3/2004
EUT Serial #: EUT Power: battery Temperature: 23.0 °C
Test Method: FCC B Air Pressure: 99.0 kPa
Customer: NextNet Rel. Humidity: 30.0 %
EUT Description: Mobile Customer trx / receiver unit
Notes: Transmitter into 50 Ohm load. 6 MHz channel bandwidth
Data File Name: 5495.dat Page: 5 of 5

Measurement summary for limit1: FCC Pt. 2.1053 (-13dBm) (Qp)					
FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC Pt. 2.1053 (-13dBm)
14.994 GHz	37.6 Pk	11.52 / 39.71 / 43.12 / -96.83	-51.12	V / 1.25 / 0	-38.12
17.493 GHz	38.8 Pk	12.96 / 45.46 / 44.76 / -96.83	-44.38	V / 1.25 / 0	-31.38
7.753 GHz	36.9 Pk	8.24 / 36.75 / 44.52 / -96.83	-59.46	H / 1.58 / 0	-46.46
10.252 GHz	37.6 Pk	9.82 / 38.02 / 44.46 / -96.83	-55.85	H / 1.58 / 0	-42.85
12.751 GHz	36.35 Pk	10.76 / 39.25 / 43.97 / -96.83	-54.44	H / 1.58 / 0	-41.44
15.25 GHz	36.75 Pk	11.67 / 38.75 / 43.22 / -96.83	-52.88	H / 1.58 / 0	-39.88
17.749 GHz	38.8 Pk	13.23 / 46.47 / 44.88 / -96.83	-43.21	H / 1.58 / 0	-30.21
8.063 GHz	36.7 Pk	8.53 / 36.96 / 44.19 / -96.83	-58.82	V / 1.16 / 5	-45.82
10.75 GHz	45.75 Pk	9.98 / 38.14 / 44.47 / -96.83	-47.43	V / 1.16 / 5	-34.43
13.437 GHz	48.55 Pk	10.86 / 40.99 / 43.57 / -96.83	-40.0	V / 1.16 / 5	-27.0
16.125 GHz	46.4 Pk	12.1 / 38.13 / 43.62 / -96.83	-43.82	V / 1.16 / 5	-30.82

Tested by: J. C. Sausen

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Signature

Reviewed by: TKS

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File No. WC405495, Page A16 of A16



Appendix B

Constructional Data Form



File No. WC405495, Page B1 of B8

TÜV PRODUCT SERVICE INC 19333 Wild Mountain Road Taylors Falls MN 55084-1758 Tel: 651 638 0297 Fax: 651 638 0298 Rev.No 1.0

Form

EMC Test Plan and Constructional Data Form



PLEASE COMPLETE THIS DOCUMENT IN FULL, ENTERING N/A IF THE FIELD IS NOT APPLICABLE.

Applicant -- NOTE: This information will be input into your test report as shown below.
Press the F1 key at any time to get HELP for the current field selected.

Company: NextNet Wireless, Inc.
Address: 9555 James Avenue South
Suite 270
Bloomington, MN 55431
Contact: Tim Blom Position: Principal Engineer
Phone: 507-837-1057 x212 Fax: 507-837-1059
E-mail Address: blomt@nextnetwireless.com

General Equipment Description -- NOTE: This information will be input into your test report as shown below.

EUT Description: Mobile Non-Line-of-Sight wireless data link
EUT Name: Expedience Mobile
Model No.: 900-0255-XXXX Serial No.: Board #: 0050-0300-4300924
Product Options: none
Configurations to be tested: standard

Test Objective

- | | |
|--|--|
| ☐ EMC Directive 89/336/EEC (EMC) | ☒ FCC: Class ☐ A ☒ B Part <u>15</u> |
| Std: _____ | ☐ VCCI: Class ☐ A ☐ B |
| ☐ Machinery Directive 89/392/EEC (EMC) | ☐ BCIQ: Class ☐ A ☐ B |
| Std: _____ | ☒ Canada: Class ☐ A ☒ B |
| ☐ Medical Device Directive 93/42/EEC (EMC) | ☐ Australia: Class ☐ A ☐ B |
| Std: _____ | ☒ Other: <u>FCC Parts 2, 15, and 27</u> |
| ☐ Vehicle Directive 72/245/EEC (EMC) | |
| Std: _____ | |
| ☐ FDA Reviewers Guidance for Premarket Notification Submissions (EMC) | |

TÜV Product Service Certification Requested

- | | |
|--|---|
| ☐ Attestation of Conformity (AoC) | ☐ International EMC Mark (IEM) |
| ☐ Certificate of Conformity (CoC) | ☐ Compliance Document |
| Protection Class <u>(N/A for vehicles)</u> | ☐ Class I ☐ Class II ☐ Class III |

File No. WC405495, Page B2 of B8

NextNet Wireless, Inc
9555 James Ave. South Suite 270
Bloomington, MN 55431

01/05/2005

Form

EMC Test Plan and Constructional Data Form



(Press F1 when field is selected to show additional information on Protection Class.)

EUT Specifications and Requirements

Length: 12.75" Width: 7.75" Height: 1.5" Weight: 4.0 Lb
: _____

Power Requirements

Regulations require testing to be performed at typical power ratings in the countries of intended use. (i.e., European power is typically 230 VAC 50 Hz or 400 VAC 50 Hz, single and three phase, respectively)

Voltage: 12 VDC (If battery powered, make sure battery life is sufficient to complete testing.)

of Phases: 1

Current (Amps/phase(max)): 1.7 Current (Amps/phase(nominal)): .5

Other: ---

Other Special Requirements

Receiver and transmitter radiated emissions testing to be performed on ANSI C63.4-2001 clause 5.4 compliant site. Receiver radiated emissions measured with a quasi peak detector compliant to CISPR Publication 16. Transmitter radiated emissions measured per TIA-603-B procedure defined in clause 2.2.12. DOC radiated emissions performed per ANSI C63.4-2003 requirements for FCC Part 15 digital devices.

Typical Installation and/or Operating Environment

(ie. Hospital, Small Business, Industrial/Factory, etc.)
Mobile installation

EUT Power Cable

☐ Permanent OR ☒ Removable Length (in meters): 4
☐ Shielded OR ☐ Unshielded
☐ Not Applicable

File No. WC405495, Page B3 of B8

Form

EMC Test Plan and Constructional Data Form



EUT Interface Ports and Cables												
Interface				Shielding								
Type	Analog	Digital	Qty	Yes	No	Type	Termination	Connector Type	Port Termination	Length (in meters)	Removable	Permanent
<i>EXAMPLE:</i>	☐	☒	2	☒	☐			Metallized 9-pin D-Sub	Characteristic Impedance	6	☒	☐
RS232	☒	☐	1	☐	☒	Foil over braid twin pair	Coaxial	Circular	DC	4	☒	☐
12 VDC cable							--					
Ethernet cable	☐	☒	1	☐	☒	CAT-5	differential 100 ohm	Circular 8 pin to RJ-45	100 ohm	0	☒	☐
Antenna port	☒	☐	1	☒	☐	metal shell	coaxial 50 ohm	TNC	50	0	☐	☒
Antenna	☒	☐	1	☒	☐	Coax braid	antenna element	TNC	50	4	☒	☐
DC/Ethernet port	☒	☒	1	☐	☒	N/A		Circular	--/100 ohms	0	☐	☒
	☐	☐		☐	☐						☐	☐
	☐	☐		☐	☐						☐	☐
	☐	☐		☐	☐						☐	☐
	☐	☐		☐	☐						☐	☐
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	☐	☐		☐	☐						☐	☐
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	☐	☐		☐	☐						☐	☐

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Form

EMC Test Plan and Constructional Data Form



EUT Software.

Revision Level: 4.04

Description: Expedience software

EUT Operating Modes to be Tested -- list the operating modes to be used during test. It is recommended the equipment be tested while operating in a typical operation mode. FCC testing of personal computers and/or peripherals requires that a simple program generate a complete line of upper case H's. Provide a general description of all software, firmware, and PLD algorithms used in the equipment. List all code modules as described above, with the revision level used during testing. Consult with your TÜV Product Service Representative if additional assistance is required.

1. Mobile Customer Premise Equipment transmitter. Parts 2 and 27
2. Mobile Customer Premise Equipment receive. Part 15. DOC compliance
- 3.

EUT System Components -- List and describe all components which are part of the EUT. For FCC testing a minimum configuration is required. (ie. Mouse, Printer, Monitor, External Disk Drive, Motherboard, etc.)

Description	Model #	Serial #	FCC ID #
Mobile CPE transmitter / receiver	900-0255-XXXX	Board # 0050-0300-4300924	PHX-MSU2510A

File No. WC405495, Page B5 of B8

Form

EMC Test Plan and Constructional Data Form



Support Equipment -- List and describe all support equipment which is not part of the EUT. (i.e. peripherals, simulators, etc)			
Description	Model #	Serial #	FCC ID #
Dell laptop computer	PPM Inspiron 5500	000832RM-12961-03N-3073	N/A

Oscillator Frequencies			
Frequency	Derived Frequency	Component # / Location	Description of Use
78/200/1100 kHz	N	U1/U5/U6 - power supply section	Switch mode power supplies
20 MHz	N	Y902 / Synthesizer	Main TCXO
25 MHz	Y	U210 / Logic section	Ethernet Clock
45 MHz	Y	U210 / Logic section	Clock for ASIC to microprocessor data
6.333333 / 25.333333 / 38 / 152 MHz	Y	U210 / Logic section	NN Custom ASIC processing clocks (5.5 MHz channel)
7 / 28 / 42 / 168 MHz	Y	U210 / Logic section	NN Custom ASIC processing clocks (6 MHz channel)

Power Supply			
Manufacturer	Model #	Serial #	Type
N/A			☐ Switched-mode: (Frequency) _____ ☐ Linear ☒ Other: Battery
			☐ Switched-mode: (Frequency) _____ ☐ Linear ☐ Other: _____

Power Line Filters		
Manufacturer	Model #	Location in EUT
N/A		

File No. WC405495, Page B6 of B8

Form

EMC Test Plan and Constructional Data Form



Critical EMI Components (Capacitors, ferrites, etc.)

Description	Manufacturer	Part # or Value	Qty	Component # / Location

EMC Critical Detail -- Describe other EMC Design details used to reduce high frequency noise.

N/A

(PLEASE INSERT "ELECTRONIC SIGNATURE" BELOW IF POSSIBLE)

Authorization Signatures

/s/ Tim Blom

12/02/2004

Customer authorization to perform tests
according to this test plan.

Date

Test Plan/CDF Prepared By (please print)

Date

Reviewed by TÜV Product Service Associate

Date

File No. WC405495, Page B7 of B8

Form

EMC Block Diagram Form



System Configuration Block Diagram -- Provide a line drawing identifying the EUT, simulators, support equipment, I/O cables, power cables, and any other pertinent components to be used during testing. Use a dashed line to separate the equipment in the testing field versus equipment outside testing field.

**** Part 15 test setup for Mobile Customer Premise Equipment (CPE) for DOC compliance. ****

Test setup per ANSI C63.4-2003

**** Parts 2 an 27 test setup for BRS and EBS service rules ****

Test setup per TIA-603-B (2002)

Authorization Signatures

/s/ Tim Blom

12/02/2004

Customer authorization to perform tests
according to this test plan.

Date

Test Plan/CDF Prepared By (please print)

Date

Reviewed by TÜV Product Service Associate

Date

File No. WC405495, Page B8 of B8



Appendix C

MEASUREMENT PROTOCOL FOR FCC

GENERAL INFORMATION

Conducted and radiated emission testing is performed according to the procedures in TIA-603-B.

Measurement Uncertainty

The test system for conducted emissions is defined as the LISN, tuned receiver or spectrum analyzer, and coaxial cable. The test system for radiated emissions is defined as the antenna, the pre-amplifier, the spectrum analyzer and the coaxial cable. These test systems have a measurement uncertainty of ± 4.8 dB. The equipment comprising the test systems are calibrated on an annual basis.

Justification

The Equipment Under Test (EUT) is configured in a typical user arrangement in accordance with the manufacturer's instructions. A cable is connected to each available port and either terminated with a peripheral into its characteristic impedance or left unterminated. When appropriate, the cables are manually manipulated with respect to each other to obtain maximum emissions from the unit.

CONDUCTED EMISSIONS

The final level, expressed in dB μ V, is arrived at by taking the reading directly from the EMI receiver. This level is compared directly to the FCC limit. Conducted and radiated emission testing is performed according to the procedures in ANSI C.63.4-2001.

To convert between dB μ V and μ V, the following conversions apply:

$$\begin{aligned} \text{dB}\mu\text{V} &= 20(\log \mu\text{V}) \\ \mu\text{V} &= \text{Inverse log}(\text{dB}\mu\text{V}/20) \end{aligned}$$

RADIATED EMISSIONS

The final level, expressed in dB μ V/m, is arrived at by taking the reading from the spectrum analyzer (Level dB μ V), adding the antenna correction factor and cable loss factor (Factor dB) to it, then subtracting the preamp gain. This result then has the FCC limit subtracted from it to provide the Delta which gives the tabular data as shown in the data sheets in Attachment A.

Example:

FREQ (MHz)	LEVEL (dB μ V)	CABLE/ANT/PREAMP (dB)	FINAL (dB μ V/m)	POL/HGT/AZ (m) (deg)	DELTA1 FCC
60.80	42.5Qp	+ 1.2 + 10.9 - 25.5 =	29.1	V 1.0 0.0	-10.9

File No. WC405495, Page C1 of C2

TÜV PRODUCT SERVICE INC 19333 Wild Mountain Road Taylors Falls MN 55084-1758 Tel: 651 638 0297 Fax: 651 638 0298 Rev.No 1.0



DETAILS OF TEST PROCEDURES

General Standard Information

The test methods used comply with TIA-603-B.

Conducted Emissions

Conducted emissions on the 60 Hz power interface of the EUT are measured in the frequency range of 450 kHz to 30 MHz. The measurements are performed using a receiver, which has CISPR characteristic bandwidth and quasi-peak detection, and a Line Impedance Stabilization Network (LISN), with 50 Ω /50 μ H (CISPR 16) characteristics. Table top equipment is placed on a non-conducting table 80 centimeters above the floor and is positioned 40 centimeters from the vertical ground plane (wall) of the screen room. In some cases, a pre-scan using a spectrum analyzer is initially performed on the units comprising the system under test to locate the highest emissions. If the minimum passing margin appears to be less than 20 dB with a peak mode measurement, the emissions are re-measured using a tuned receiver or spectrum analyzer with quasi-peak and average detection and recorded on the data sheets.

Radiated Emissions

Radiated emissions from the EUT are measured in the frequency range of 30 to 18000 MHz using a spectrum analyzer and appropriate broadband linearly polarized antennas. Table top equipment is placed on a 1.0 X 1.5 meter non-conducting table 80 centimeters above the ground plane. Floor standing equipment is placed directly on the turntable/ground plane. Interface cables that are closer than 40 centimeters to the ground plane are bundled in the center in a serpentine fashion so they are at least 40 centimeters from the ground plane. Cables to simulators/testers (if used in this test) are routed through the center of the table and to a screen room located outside the test area. The antenna is positioned 3 meters horizontally from the EUT. To locate maximum emissions from the test sample the antenna is varied in height from 1 to 4 meters, measurement scans are made with both horizontal and vertical antenna polarizations and the EUT are rotated 360 degrees. The EUT is then replaced with a tuned dipole antenna (below 1 GHz) or horn antenna (above 1 GHz). The substitute antenna was placed in the same polarization as the test antenna. A signal generator was used to generate a signal level that matched the level measured from the EUT. The signal level minus the cable loss from the signal generator to the substitute antenna plus the substitute antenna gain equals the spurious power level.

SUBSTITUTION ANTENNA

The substitution antenna is used to replace the EUT for tests in which a transmitting parameter (i.e. frequency error, effective radiated power, spurious emissions and adjacent channel power) is being measured. The substitution antenna is connected to a calibrated signal generator. The frequency of the calibrated signal generator is set to the frequency of the emission component detected. The test antenna is raised and lowered through the specified range of height to ensure the maximum signal is received. The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the emission component was measured, corrected for any change of input attenuator setting of the measuring receiver. The input level to the substitution antenna is recorded as power level, corrected for any change of input attenuator setting of the measuring receiver.

File No. WC405495, Page C2 of C2

TÜV PRODUCT SERVICE INC

19333 Wild Mountain Road

Taylors Falls MN 55084-1758

Tel: 851 838 0297

Fax: 851 838 0298

Rev.No 1.0

Frequency Stability

FCC Rule Part(s):

2.1055 Measurements required: Frequency stability:

(a) The frequency stability shall be measured with variation of ambient temperature as follows: (1) From -30° to $+50^{\circ}$ centigrade for all equipment except that specified in paragraphs (a) (2) and (3) of this section.

(b) Frequency measurements shall be made at the extremes of the specified temperature range and at intervals of not more than 10° centigrade through the range. A period of time sufficient to stabilize all of the components of the oscillator circuit at each temperature level shall be allowed prior to frequency measurement. The short term transient effects on the frequency of the transmitter due to keying (except for broadcast transmitters) and any heating element cycling normally occurring at each ambient temperature level also shall be shown.

(d) The frequency stability shall be measured with variation of primary supply voltage as follows: (1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment. (3) The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided. Effects on frequency of transmitter keying (except for broadcast transmitters) and any heating element cycling at the nominal supply voltage and at each extreme also shall be shown.

27.54 Frequency Stability:

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

Frequency Stability

Standard:	TIA-603-B TIA Standard, Land Mobile FM or PM Communications Equipment, Measurement and Performance Standards
Test Procedure:	The frequency stability of the NextNet Wireless Mobile Subscriber Unit fundamental oscillator is derived from the on board 20 MHz TCXO. Since each radio channel operating frequency is synthesized and referenced to the 20 MHz TCXO, only one channel will be reported for frequency stability as all channels will have the same frequency characteristics. The emissions 1 MHz above and below the channel band were recorded to show compliance to the emission limit of 47CFR27.53(1)(3). The emission power 1 MHz above and below the channel edge was measured by utilizing the adjacent channel power function in the Agilent spectrum analyzer. In addition, the local oscillator signal that drives the transmit modulator was lightly coupled onto an RF probe and applied to a separate HP spectrum analyzer. The frequency of the RF VCO and transmitted signal was monitored and recorded for frequency changes due to temperature variation and input voltage.

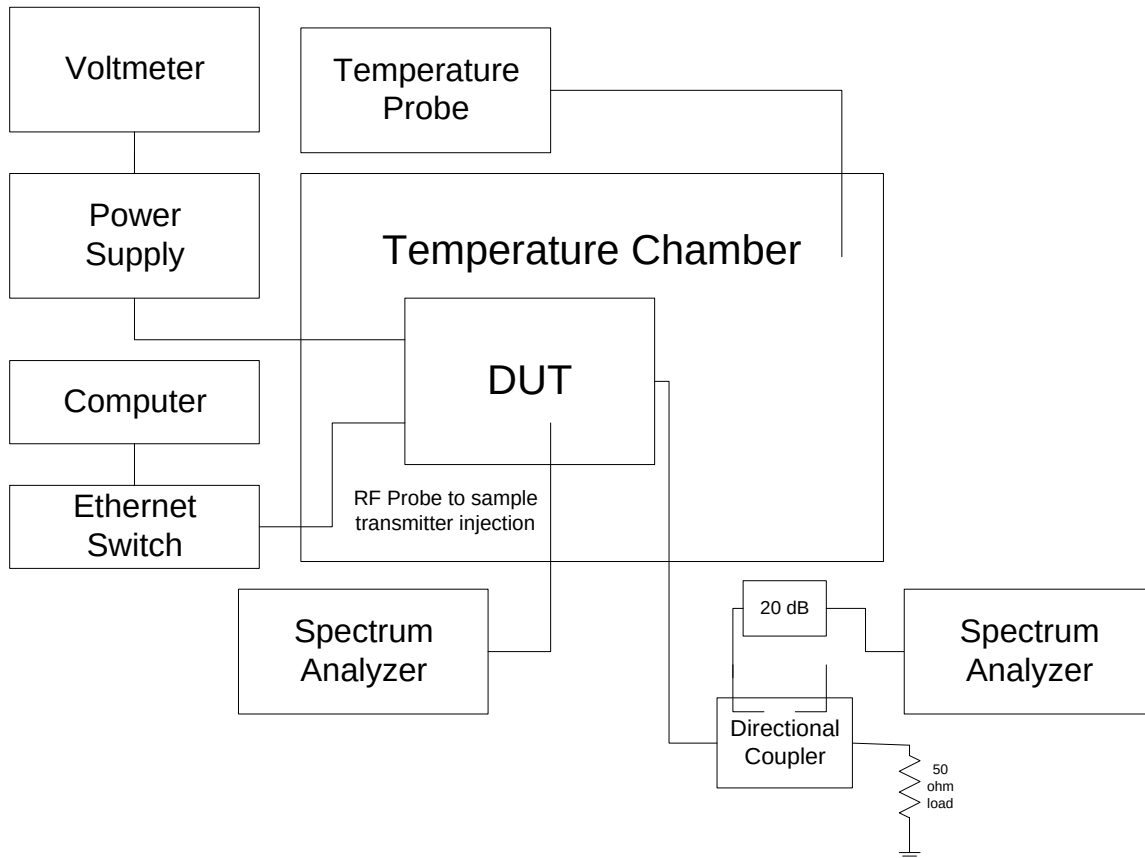
Frequency Stability

Test Equipment:

DUT	NextNet Wireless CPE (MSU-2510-A) # 0050-0300-4300924
Spectrum Analyzer	Agilent E4440A S/N: MY44022791 Calibrated on: 05/30/2004 Cal due: 05/30/2006
Spectrum Analyzer	Hewlett Packard HP8563E S/N: 3221A00143 Calibrated on: 10-16-2003 Cal Due: 10-16-2005
Attenuator 20 dB	Pasternak Corporation Model: PE7005-20 (20 dB) Calibrated by user
Computer	Dell Inspiron 5000 Model: PPM S/N: 000832RM-12961-04R-0441
Ethernet Switch	D-Link Model: DSS-5+ 5 port 10/100Mbps S/N: B205335003175
Power Supply	Agilent E3615A S/N: KR01508898 Calibrated with voltmeter listed below.
Voltmeter	HP 34401A S/N: 3146A23291 Calibrated on: 11-17-2004 Cal due: 11-17-2006
Directional Coupler	Narda 3043B-20 S/N: 20999 Calibrated by user
Temperature Chamber	Test Equity 1000 Series
Temperature Sensor	Fluke 89 IV True RMS Multimeter K-Type thermocouple

Frequency Stability

Test Set-Up:



Frequency Stability

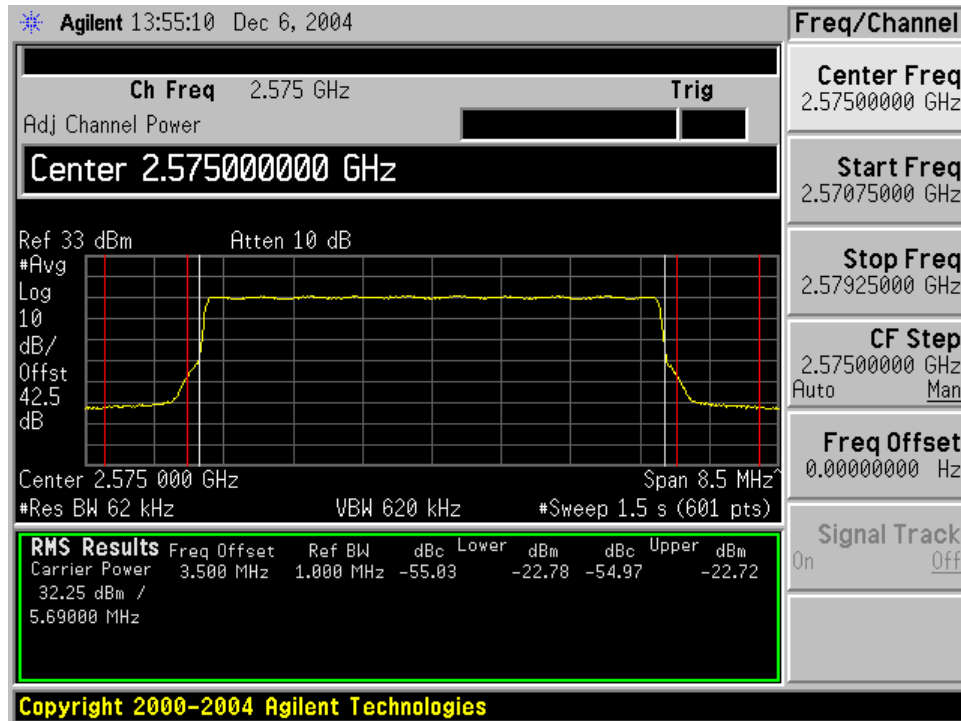
Test Conditions: Frequency = 2575 MHz
Supply Voltage: 13.8 Vdc
Temperature: -30° C to +60° C in 10° C increments

Test Results: Temperature Variation

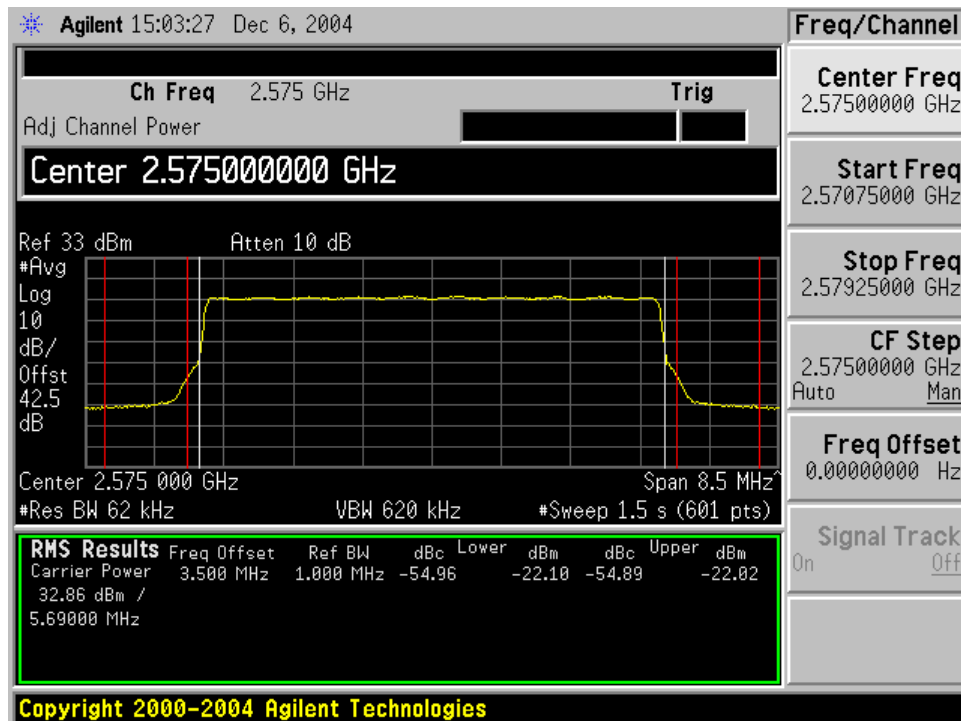
Main VCO Frequency Error				
Temp (°C)	Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
-30	2575000350	350	0.000014	0.136
-20	2574999710	-290	-0.000011	-0.113
-10	2574998950	-1050	-0.000041	-0.408
0	2574998610	-1390	-0.000054	-0.540
10	2574998180	-1820	-0.000071	-0.707
20	2574997250	-2750	-0.000107	-1.068
30	2574996550	-3450	-0.000134	-1.340
40	2574995780	-4220	-0.000164	-1.639
50	2574994850	-5150	-0.000200	-2.000
60	2574993980	-6020	-0.000234	-2.338

Adjacent Channel Power Method							
Temp ° C	Lower Adjacent 1 MHz Bin Power (dBm)	Upper Adjacent 1 MHz Bin Power (dBm)	Spec (dBm/MHz)	Lower Margin (dB)	Upper Margin (dB)	Result: Lower Adjacent 1 MHz Bin	Result: Upper Adjacent 1 MHz Bin
-30	-22.78	-22.72	-13	-9.78	-9.72	Complies	Complies
-20	-22.1	-22.02	-13	-9.1	-9.02	Complies	Complies
-10	-23	-23.55	-13	-10	-10.55	Complies	Complies
0	-22.7	-23.35	-13	-9.7	-10.35	Complies	Complies
10	-23.15	-23.6	-13	-10.15	-10.6	Complies	Complies
20	-22.87	-23.8	-13	-9.87	-10.8	Complies	Complies
30	-22.43	-23.38	-13	-9.43	-10.38	Complies	Complies
40	-21.27	-23.05	-13	-8.27	-10.05	Complies	Complies
50	-20.15	-22.28	-13	-7.15	-9.28	Complies	Complies
60	-21.48	-23.64	-13	-8.48	-10.64	Complies	Complies

Frequency Stability

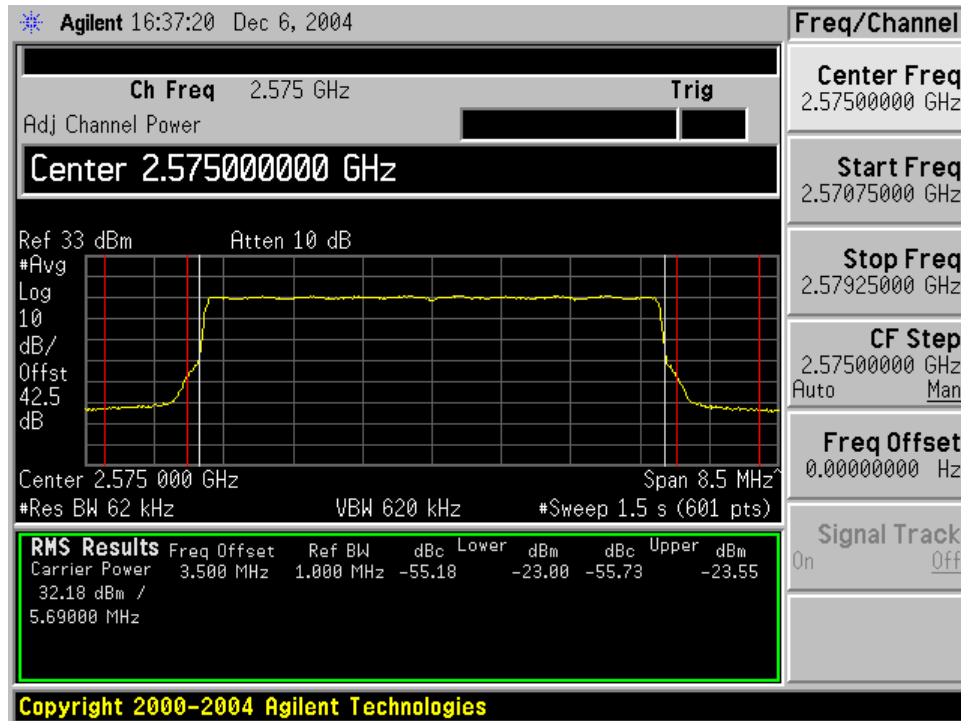


-30° C

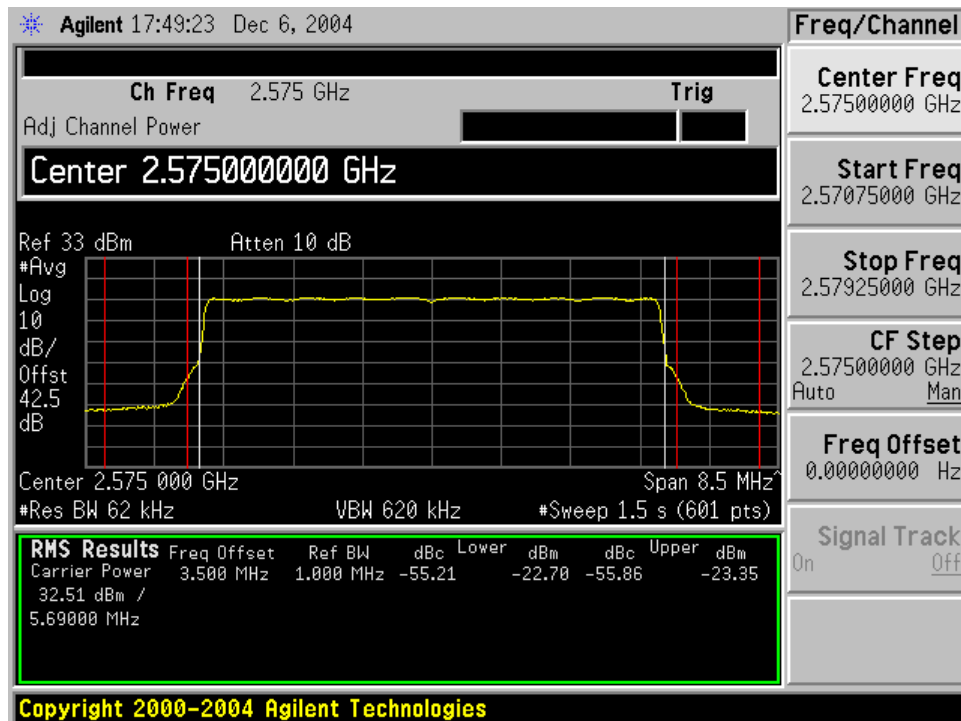


-20° C

Frequency Stability

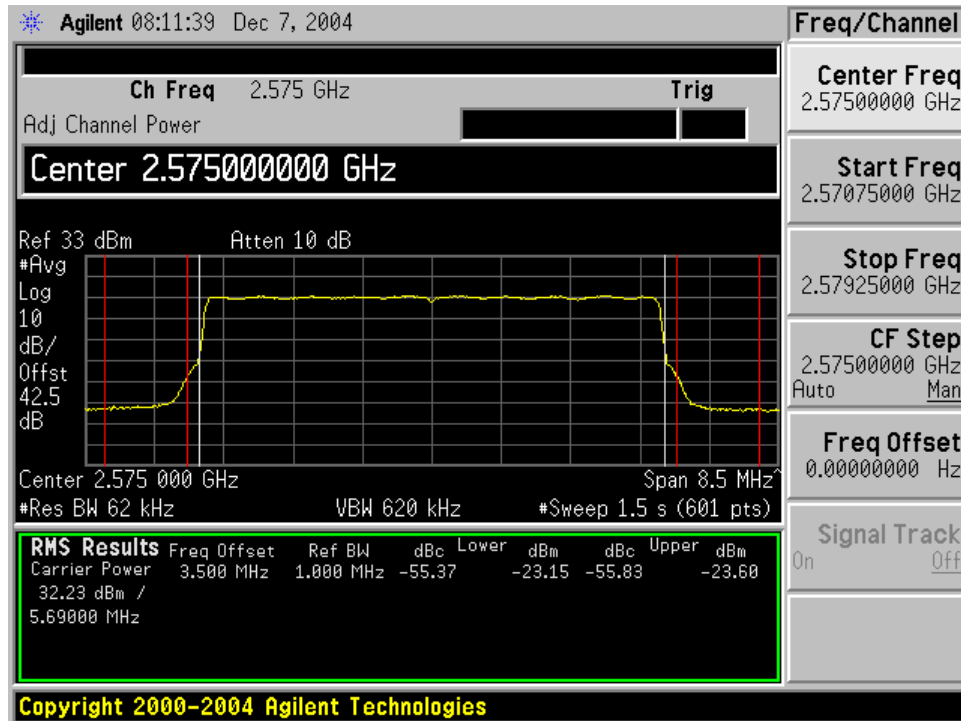


-10° C

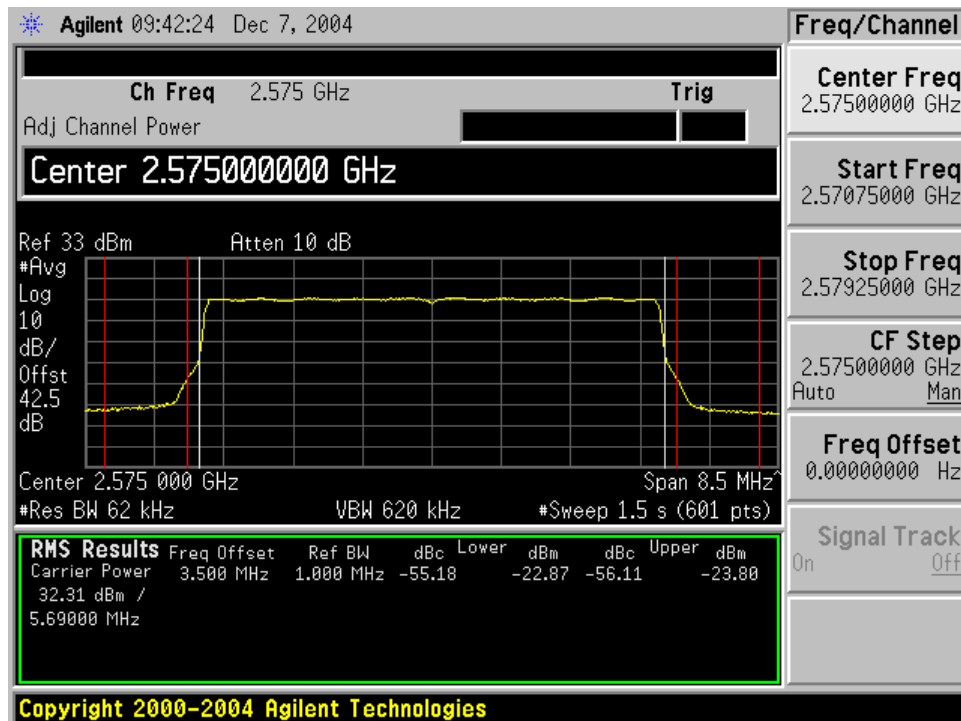


0° C

Frequency Stability

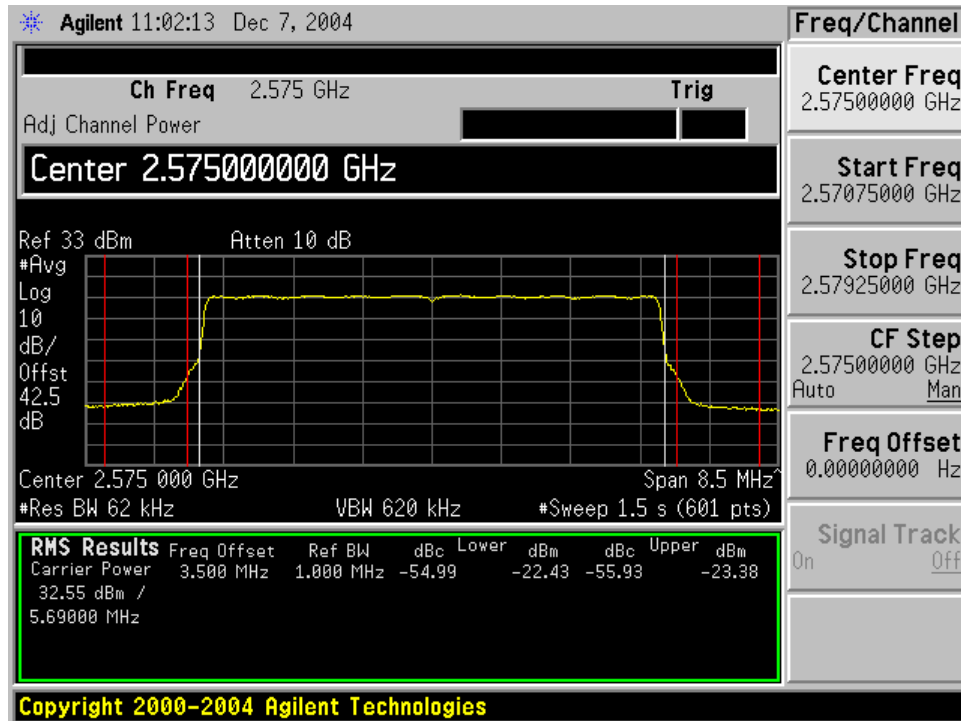


+10° C

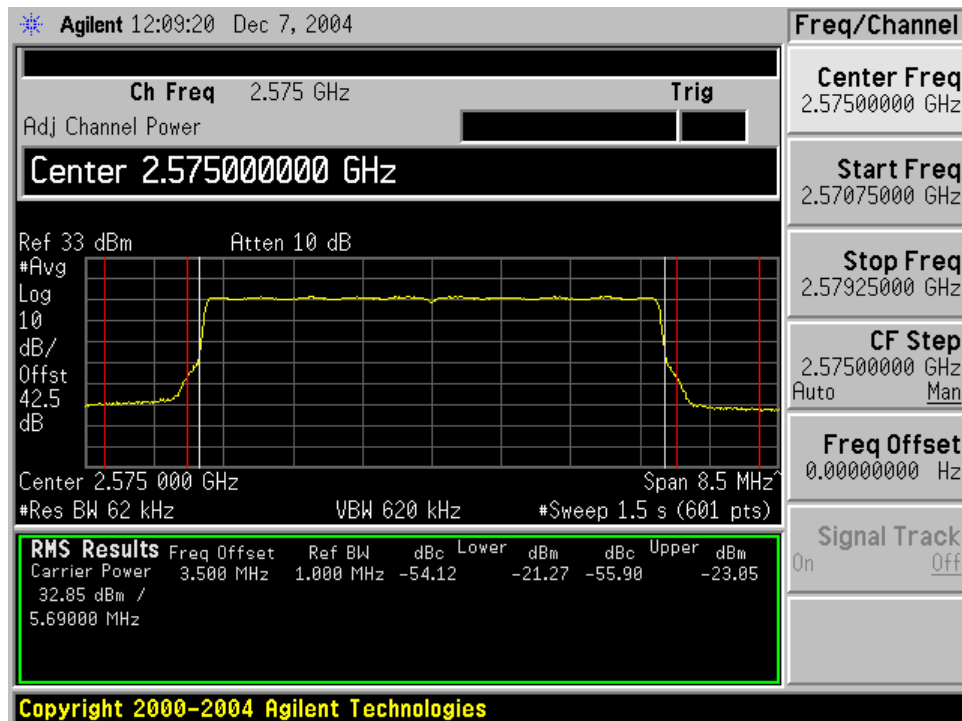


+20° C

Frequency Stability

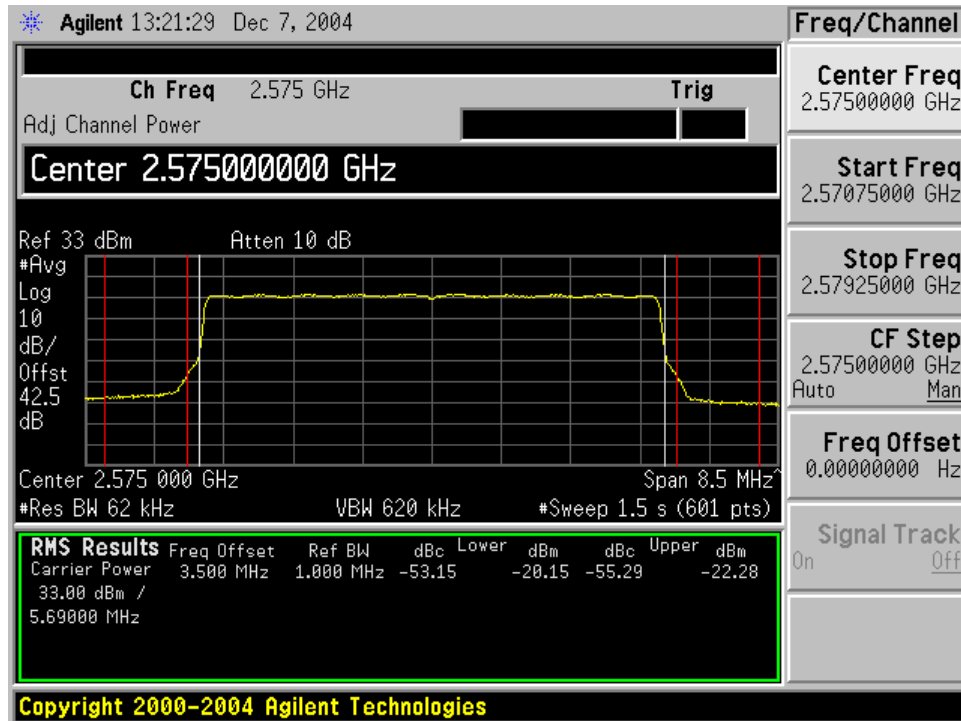


+30° C

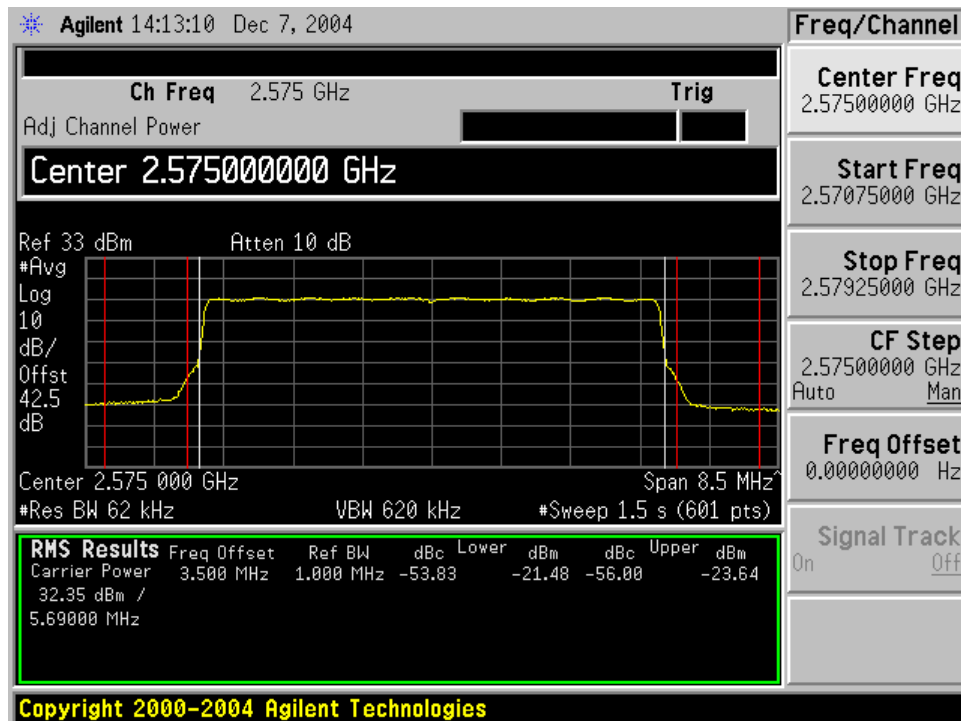


+40° C

Frequency Stability



+50° C



+60° C

Frequency Stability

Test Conditions: Frequency = 2575 MHz
Temperature = 20 °C

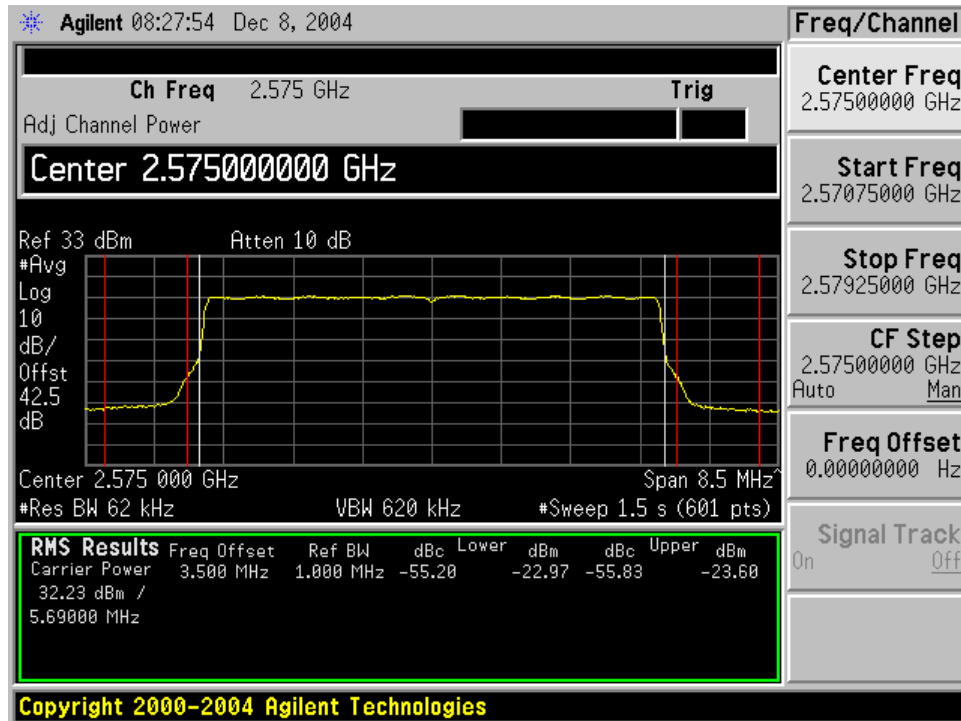
Test Results: Supply Voltage Variation

Source Input Voltage Specification: 13.8 Vdc nominal
Test Voltage Range = $0.85 * 13.8 = 11.73$ Vdc lower limit
 $1.15 * 13.8 = 15.87$ Vdc upper limit

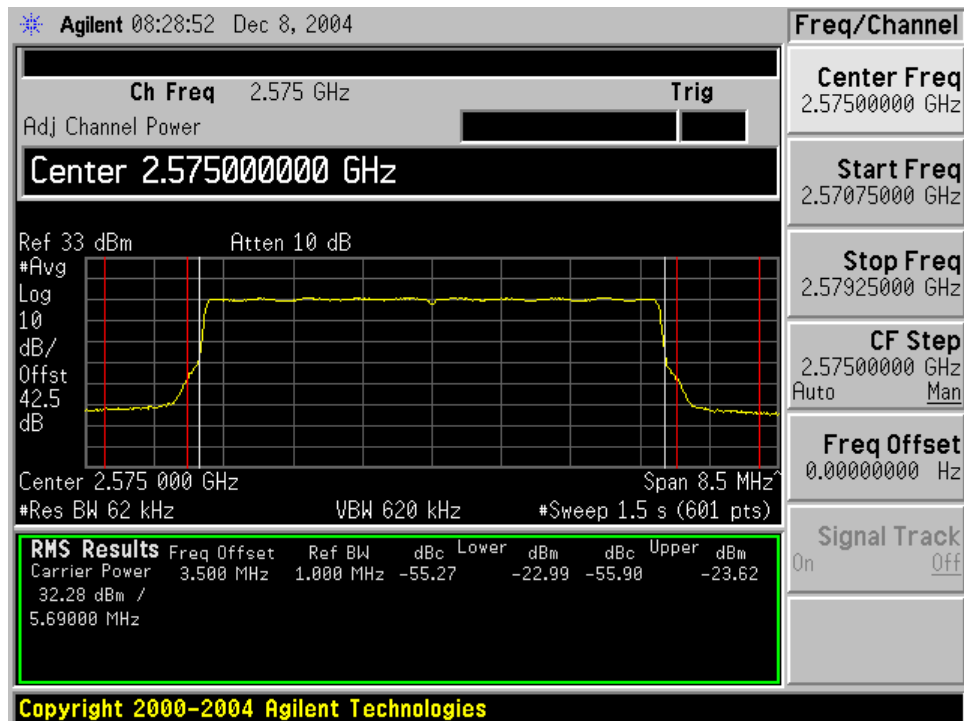
Main VCO Frequency Error				
Source Voltage (VDC)	Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
11.73	2574997180	-2820	-0.000110	-1.095
12.25	2574997180	-2820	-0.000110	-1.095
12.77	2574997180	-2820	-0.000110	-1.095
13.28	2574997180	-2820	-0.000110	-1.095
13.80	2574997180	-2820	-0.000110	-1.095
14.32	2574997150	-2850	-0.000111	-1.107
14.84	2574997150	-2850	-0.000111	-1.107
15.35	2574997150	-2850	-0.000111	-1.107
15.87	2574997150	-2850	-0.000111	-1.107

Adjacent Channel Power Method							
Source Voltage (Vdc)	Lower Adjacent 1 MHz Bin Power (dBm)	Upper Adjacent 1 MHz Bin Power (dBm)	Spec (dBm/MHz)	Lower Margin (dB)	Upper Margin (dB)	Result: Lower Adjacent 1 MHz Bin	Result: Upper Adjacent 1 MHz Bin
11.73	-22.97	-23.6	-13	-9.97	-10.6	Complies	Complies
13.8	-22.99	-23.62	-13	-9.99	-10.62	Complies	Complies
15.87	-23.01	-23.73	-13	-10.01	-10.73	Complies	Complies

Frequency Stability

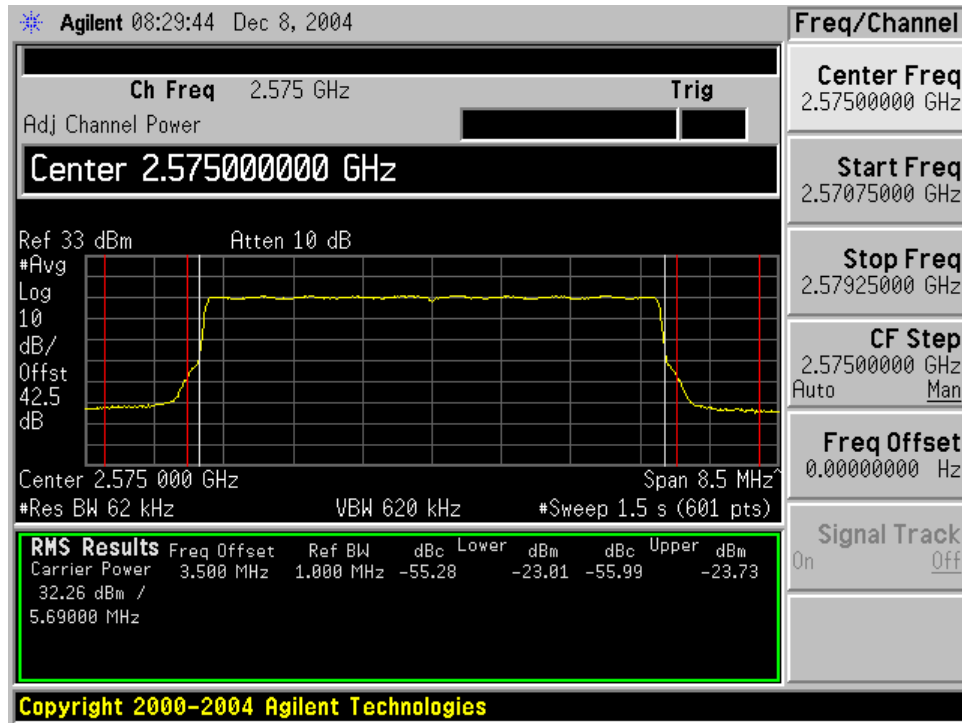


11.73 Vdc



13.8 Vdc

Frequency Stability



15.87 Vdc