

Exhibit 6

Test Report

Part 2

FCC Part 27

EXHIBIT 6, PART 2
TABLE OF CONTENTS

SPURIOUS EMISSIONS AT ANTENNA TERMINALS..... 3
 Spurious Emissions At Antenna Terminals Spectrum Analyzer Plots (2W)6
 Spurious Emissions At Antenna Terminals Spectrum Analyzer Plots (5W) ...22

FIELD STRENGTH OF SPURIOUS RADIATION..... 32
 TUV Test Report33

FREQUENCY STABILITY TEST 58
 Frequency Stability Temperature Variation Test Results.....60
 Freq. Stability Temperature Variation Spectrum Analyzer Plots (2-Watt)61
 Freq. Stability Temperature Variation Spectrum Analyzer Plots (5-Watt)66
 Frequency Stability Supply Voltage Variation Test Results71
 Frequency Stability Voltage Variation Spectrum Analyzer Plots (2-Watt)72
 Frequency Stability Voltage Variation Spectrum Analyzer Plots (5-Watt)74

Spurious Emissions At Antenna Terminals

Rule Part Number: 2.1051, 2.1049, 2.1057

Frequency Range = 9 kHz to 26.50 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

Attenuation = $43 + 10 \log(5) = 50$ dBc 5 watt transmit level
(both equate to absolute level of -13 dBm)

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 30.8 dB of attenuation (coax and attenuators), or through an attenuator, notch filter and coax that was calibrated for RF loss at each harmonic frequency being tested. 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 for the specific measurement being recorded. Measurements are performed at frequencies across the band and channel bandwidths (5.5 MHz and 6 MHz). All measurements utilized 4-QAM modulation.

For 2-watt tests, one data plot from each channel bandwidth is included for measurements below the BRS/EBS frequency band. All other channels measured had similar-looking spectral plots. For tests above the BRS/EBS frequency (2.7-26.5 GHz), plots for all channels are included. For 5-watt tests, a similar scheme was used except that with the tests below the BRS/EBS frequency band, one channel is shown at a bandwidth of 6 MHz. All the other channels had similar-looking plots.

For harmonic tests, plots are shown for the second harmonic of all test channels. Then the channel with the worst case second harmonic was chosen to show compliance for harmonics three to ten. The other channels tested have similar or lower harmonic levels.

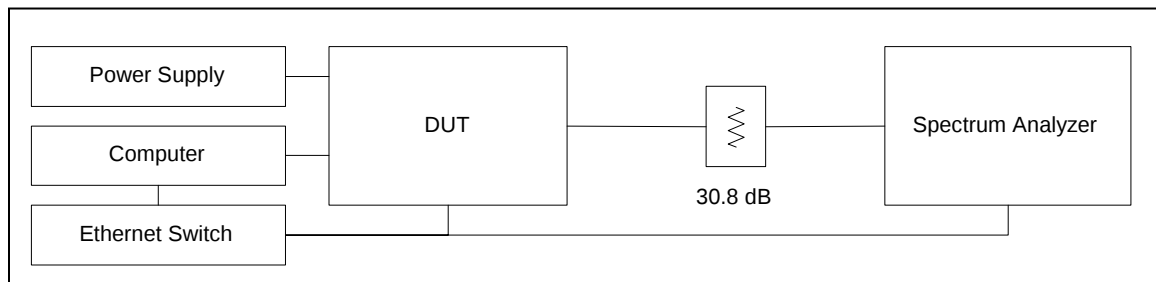
Test Conditions: 2-Watt Frequencies =
 5.5 MHz channels: 2504.75, 2565.25, 2626.75, and 2687.25
 MHz
 6.0 MHz channels: 2499, 2575, and 2621 MHz

5-Watt Frequencies = 2503, 2593, and 2683 MHz

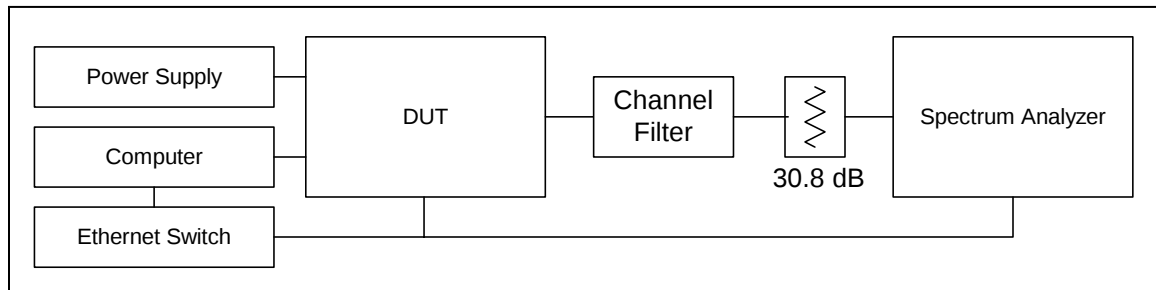
Temperature = 25 °C

Supply Voltage = 48.0 VDC nominal to the DUT

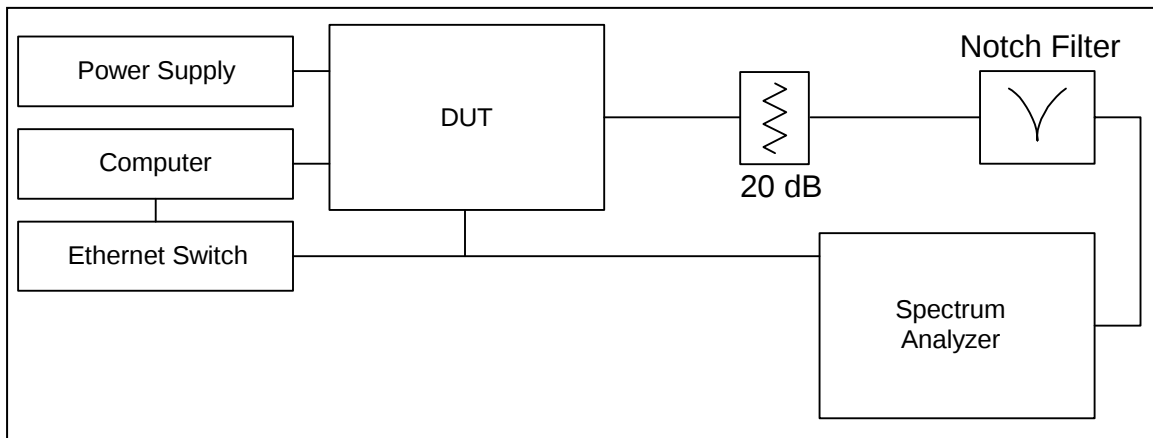
Test Results: Passes conducted emissions from 9 kHz to 26.86 MHz.



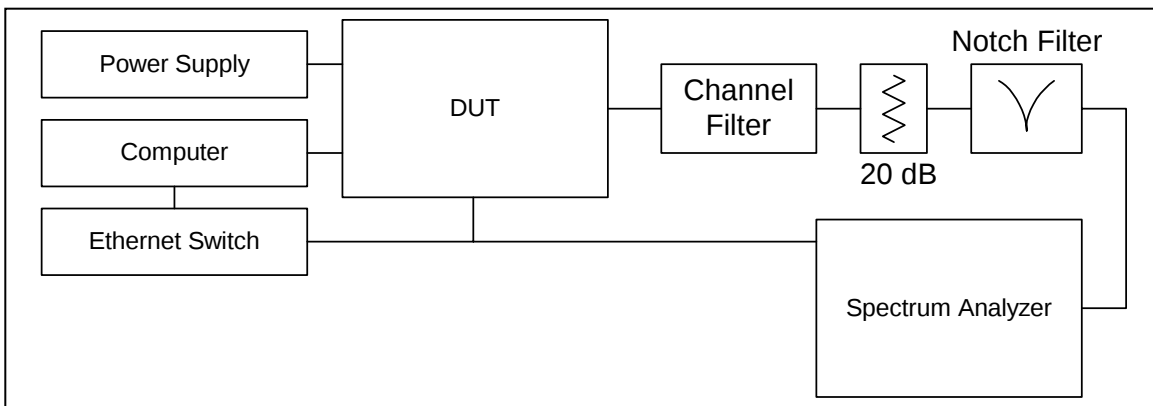
Spurious Emissions 2W Test Setup



Spurious Emissions 5W Test Setup

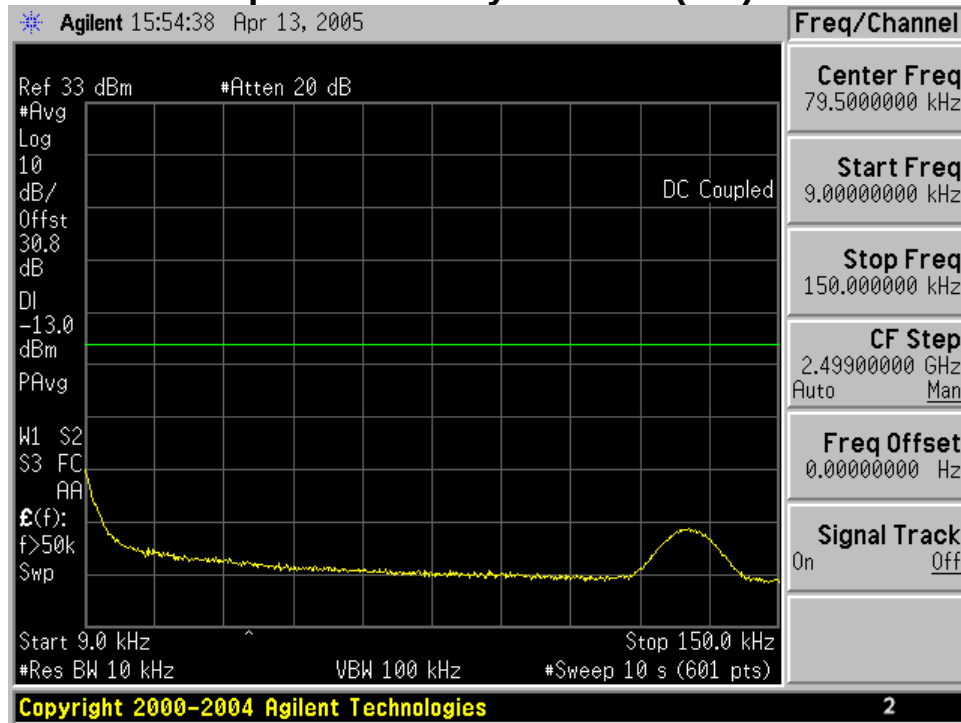


Harmonic Emissions 2W Test Setup

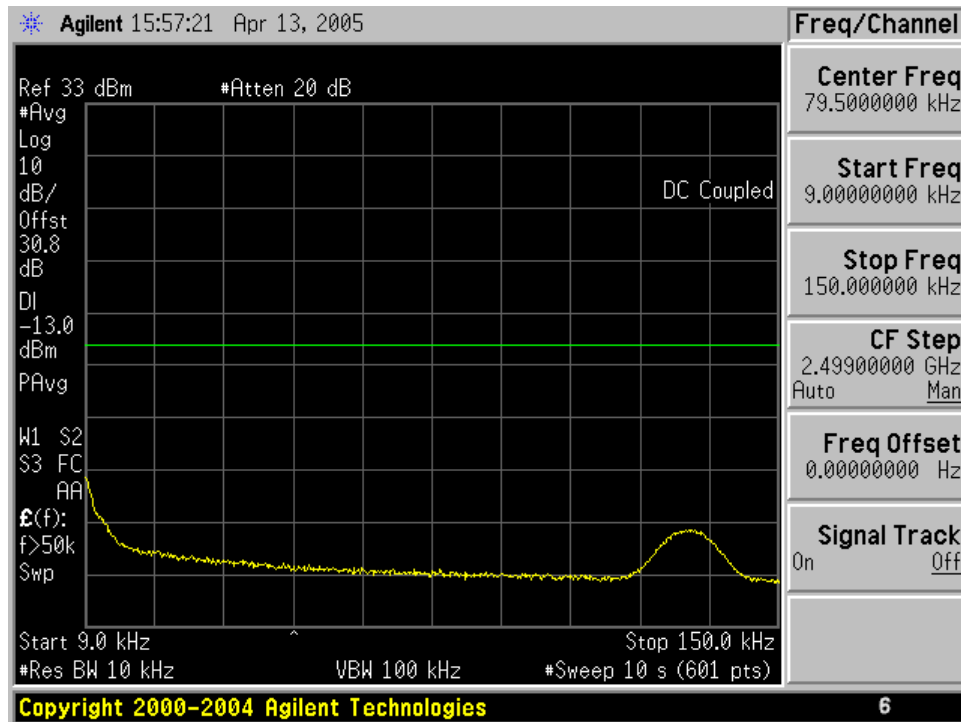


Harmonic Emissions 5W Test Setup

Spurious Emissions At Antenna Terminals Spectrum Analyzer Plots (2W)

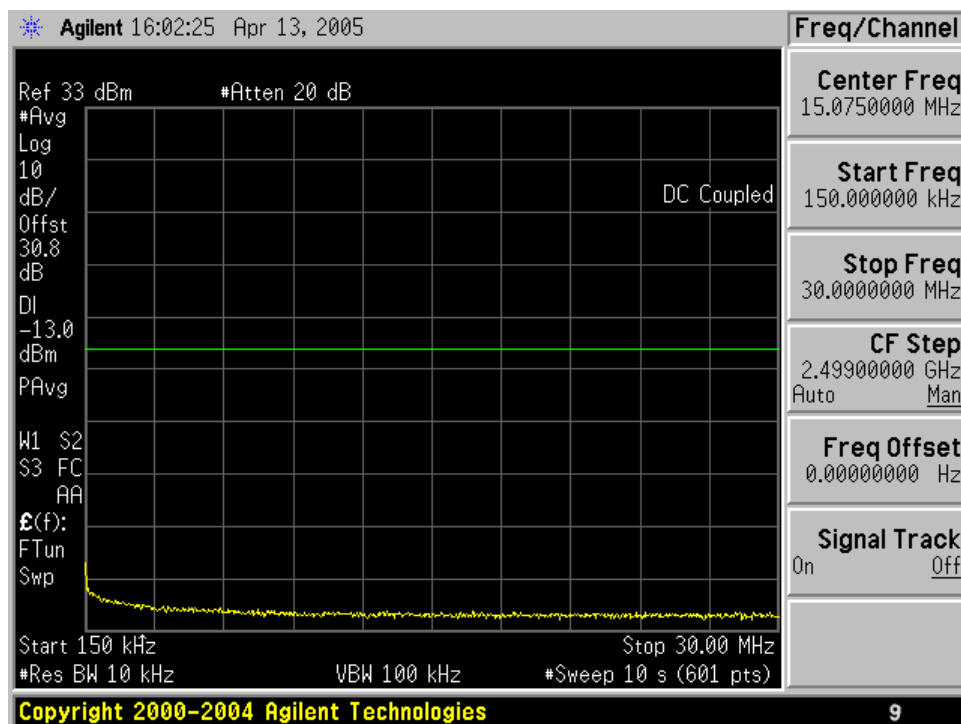


9 kHz – 150 kHz (2575 MHz / 6 MHz channel)

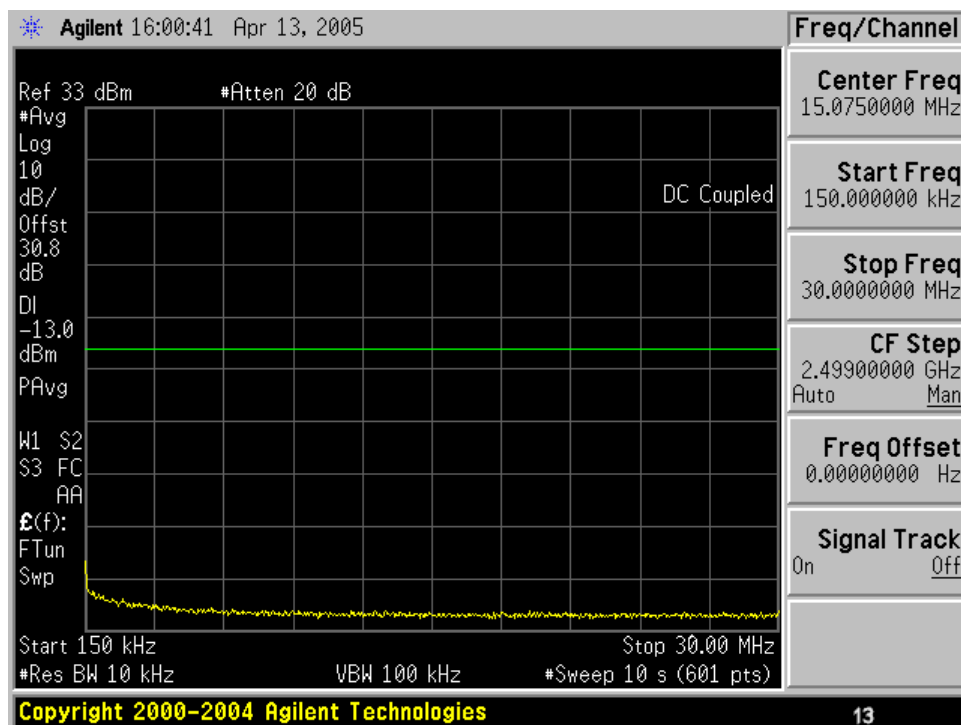


9 kHz – 150 kHz (2626.75 MHz / 5.5 MHz channel)

Spurious Emissions At Antenna Terminals (2W)

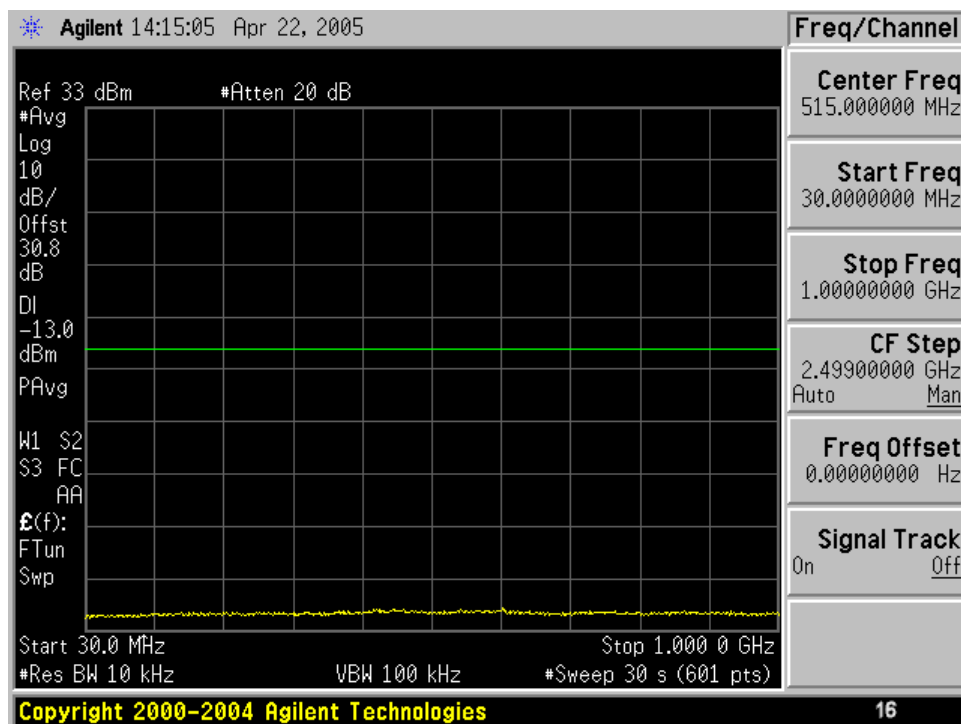


150 kHz – 30 MHz (2575 MHz / 6 MHz channel)

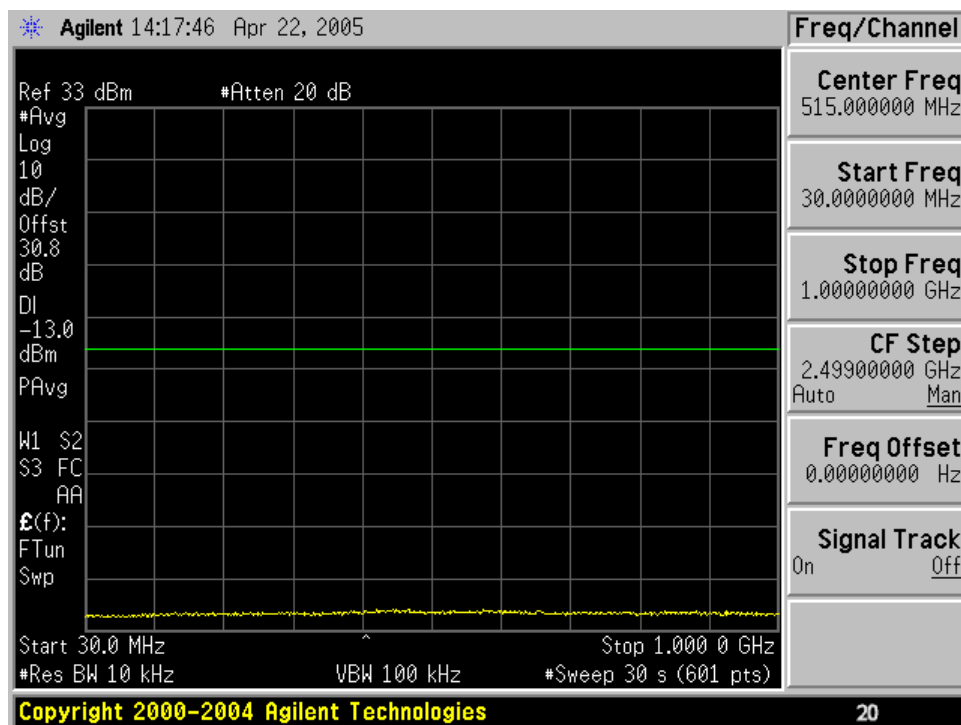


150 kHz – 30 MHz (2626.75 MHz / 5.5 MHz channel)

Spurious Emissions At Antenna Terminals (2W)

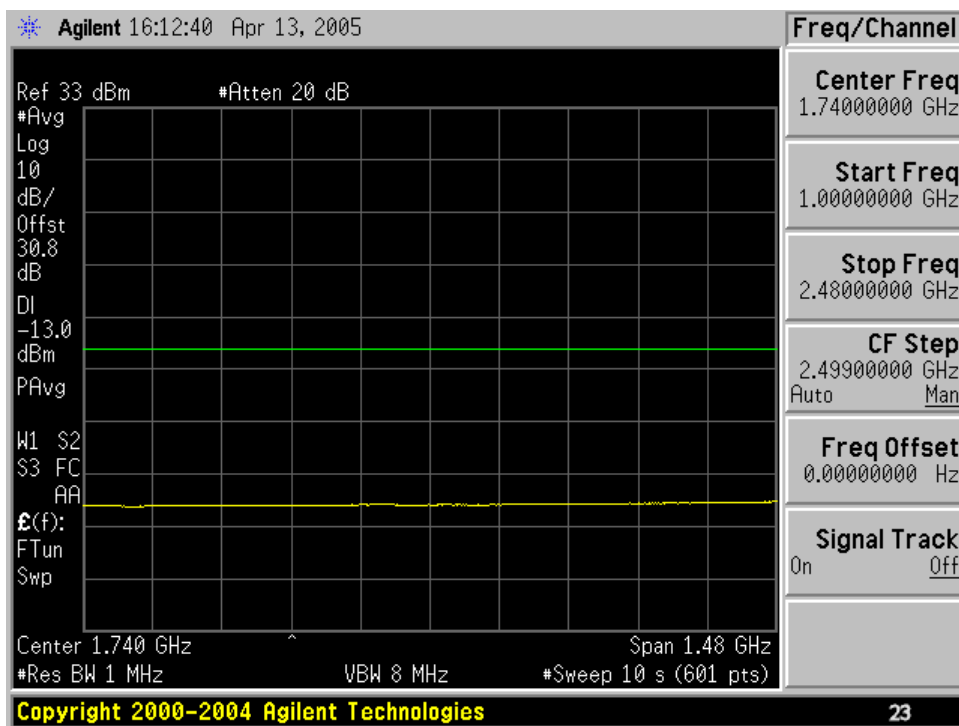


30 MHz – 1 GHz (2575 MHz / 6 MHz channel)

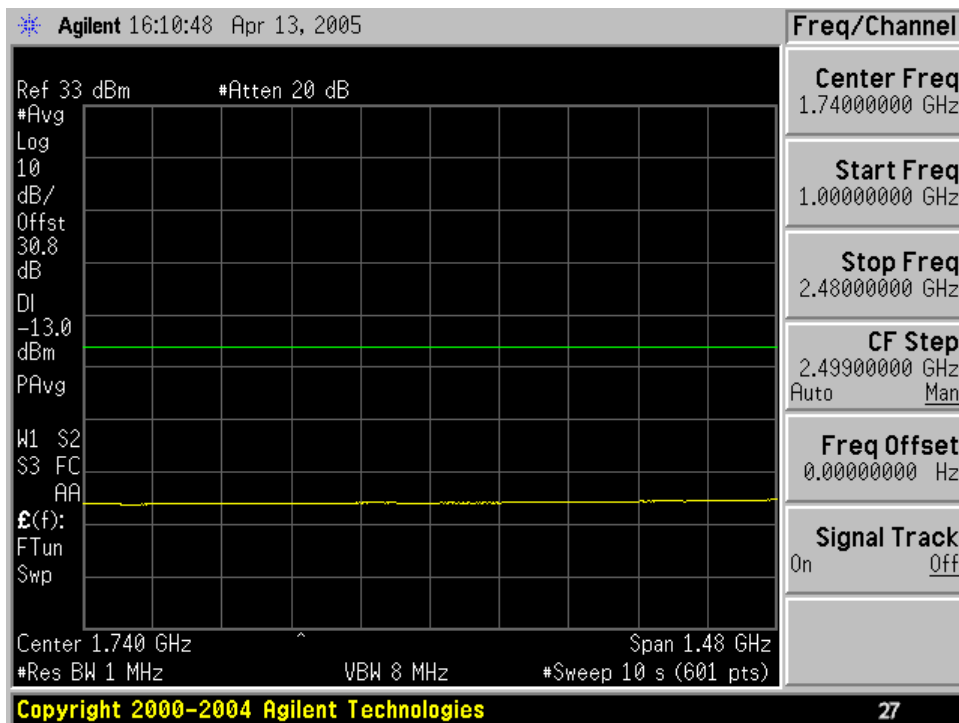


30 MHz – 1 GHz (2626.75 MHz / 5.5 MHz channel)

Spurious Emissions At Antenna Terminals (2W)

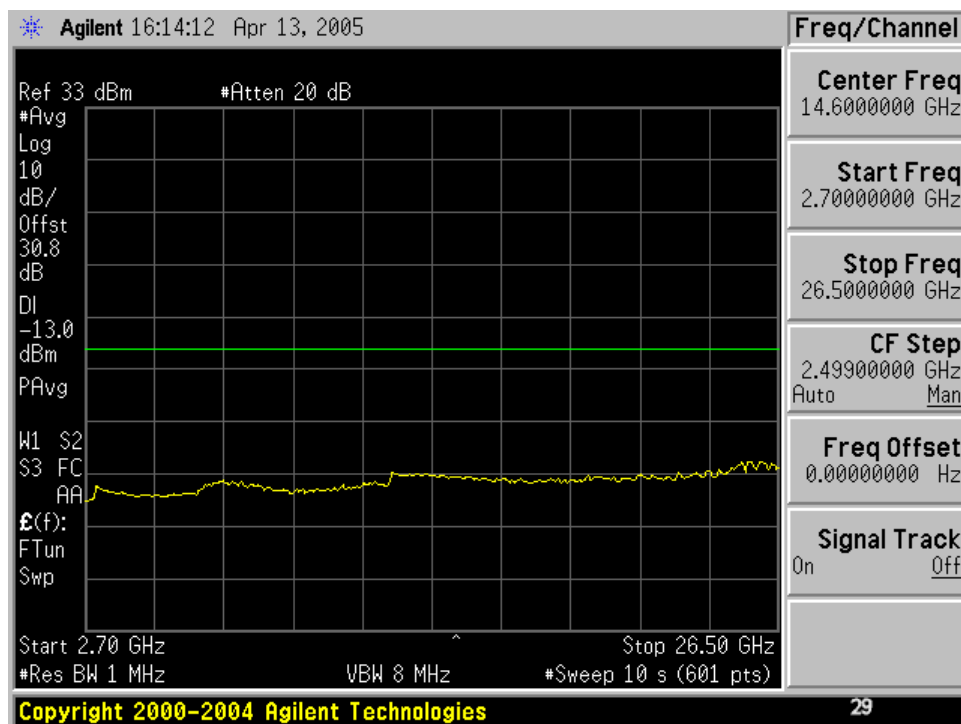


1 GHz – 2.48 GHz (2575 MHz / 6 MHz channel)

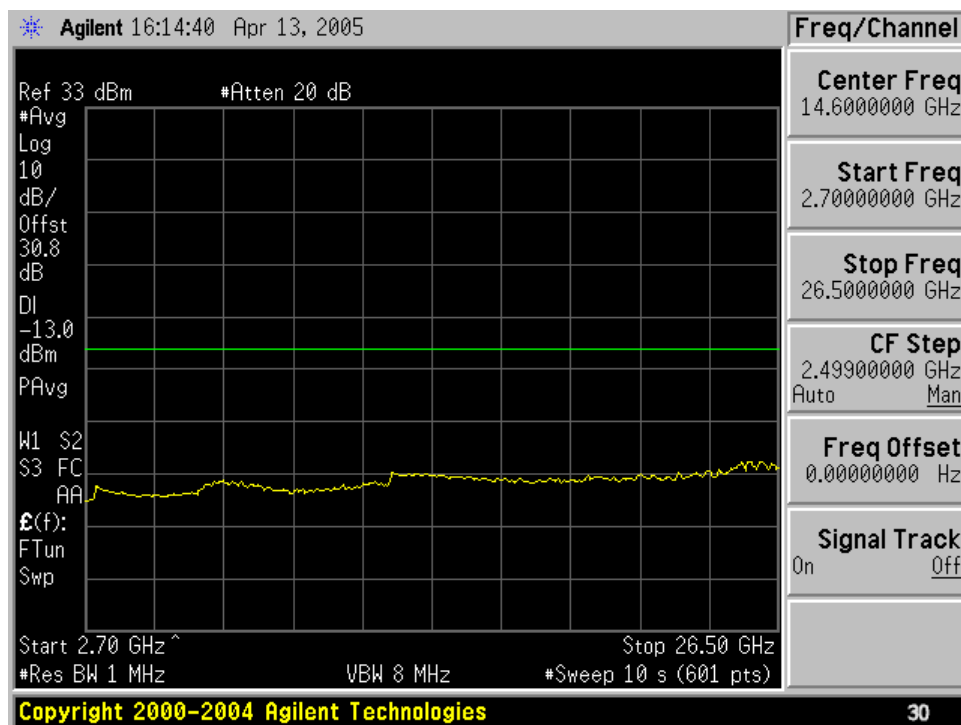


1 GHz – 2.48 GHz (2626.75 MHz / 5.5 MHz channel)

Spurious Emissions At Antenna Terminals (2W)

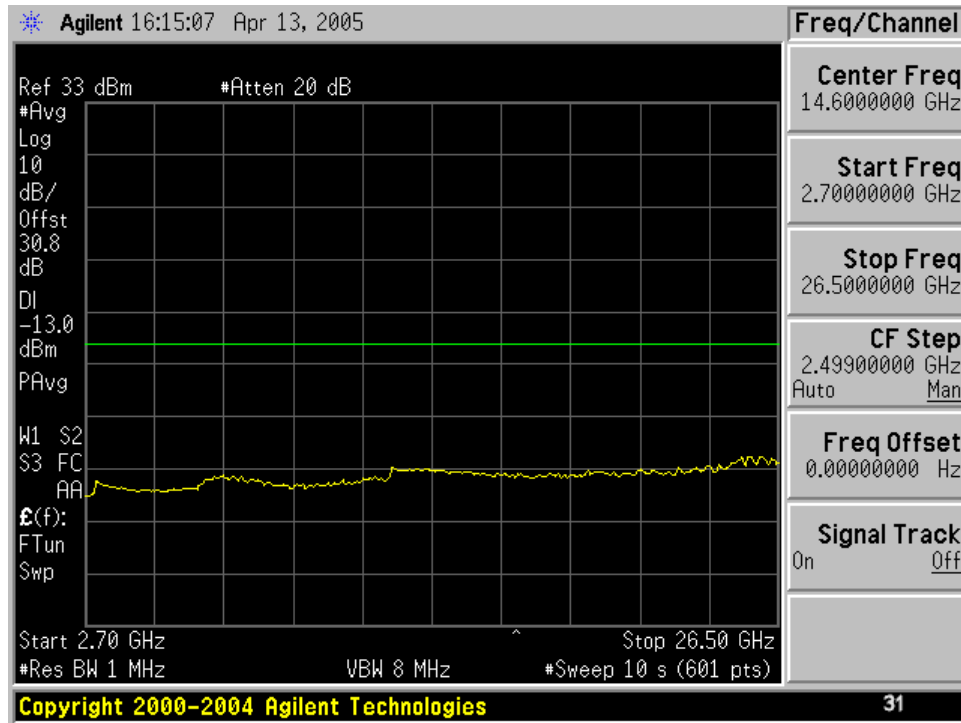


2.7 GHz – 26.5 GHz (2499 MHz / 6 MHz channel)



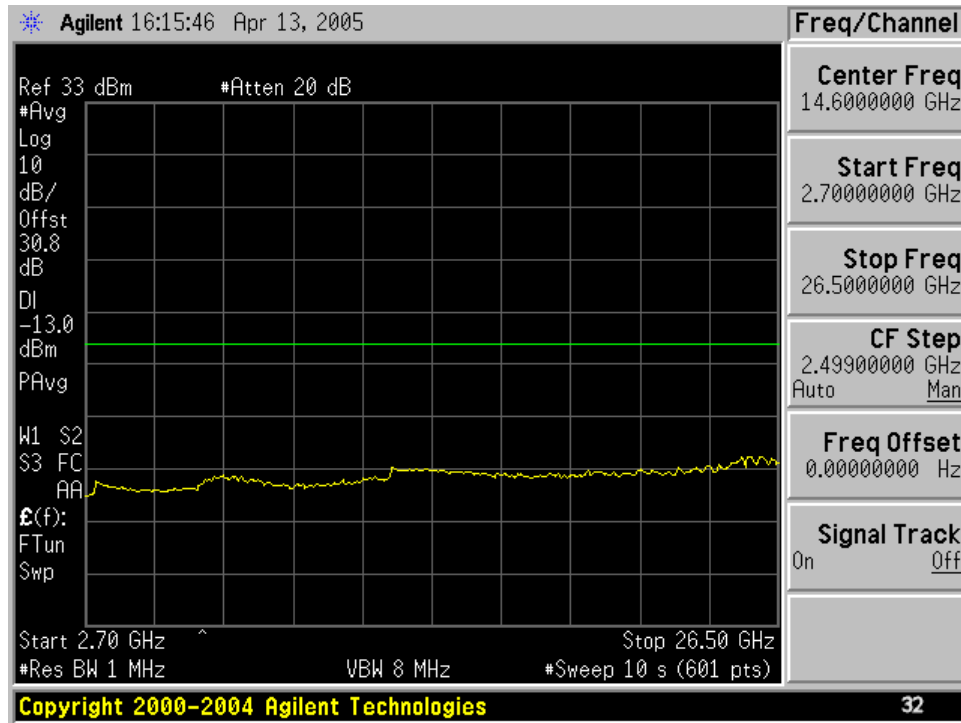
2.7 GHz – 26.5 GHz (2575 MHz / 6 MHz channel)

Spurious Emissions At Antenna Terminals (2W)

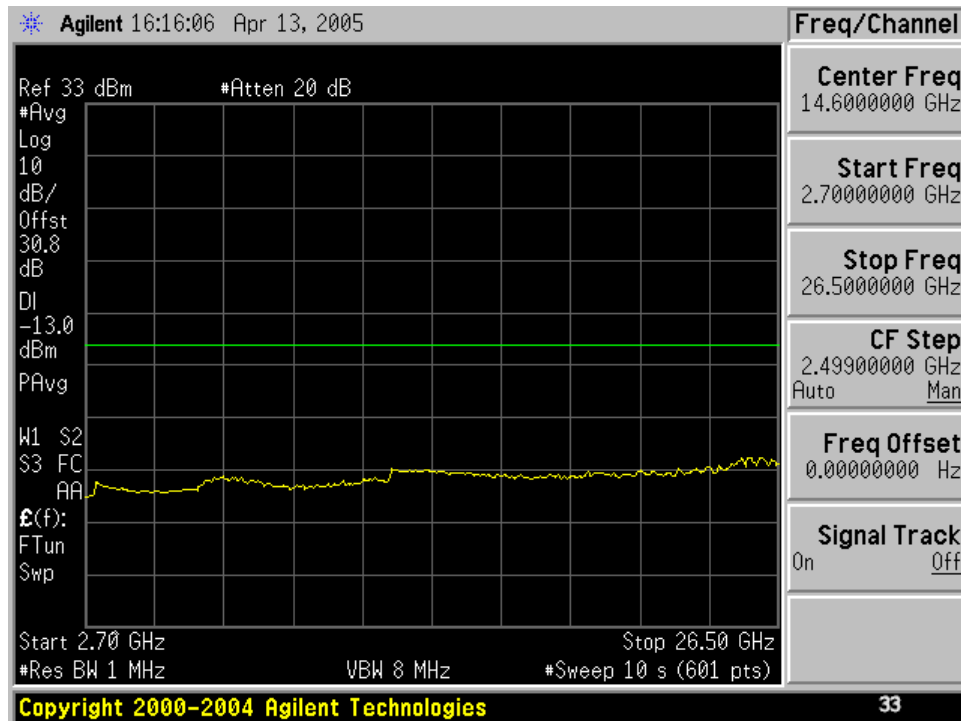


2.7 GHz – 26.5 GHz (2621 MHz / 6 MHz channel)

Spurious Emissions At Antenna Terminals (2W)

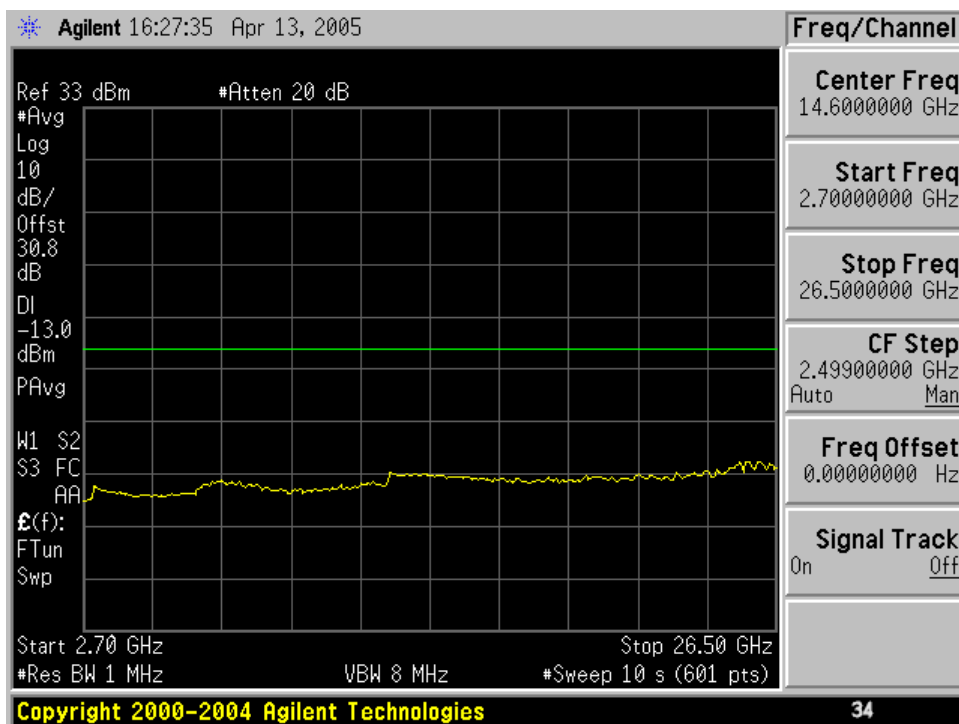


2.7 GHz – 26.5 GHz (2504.75 MHz / 5.5 MHz channel)

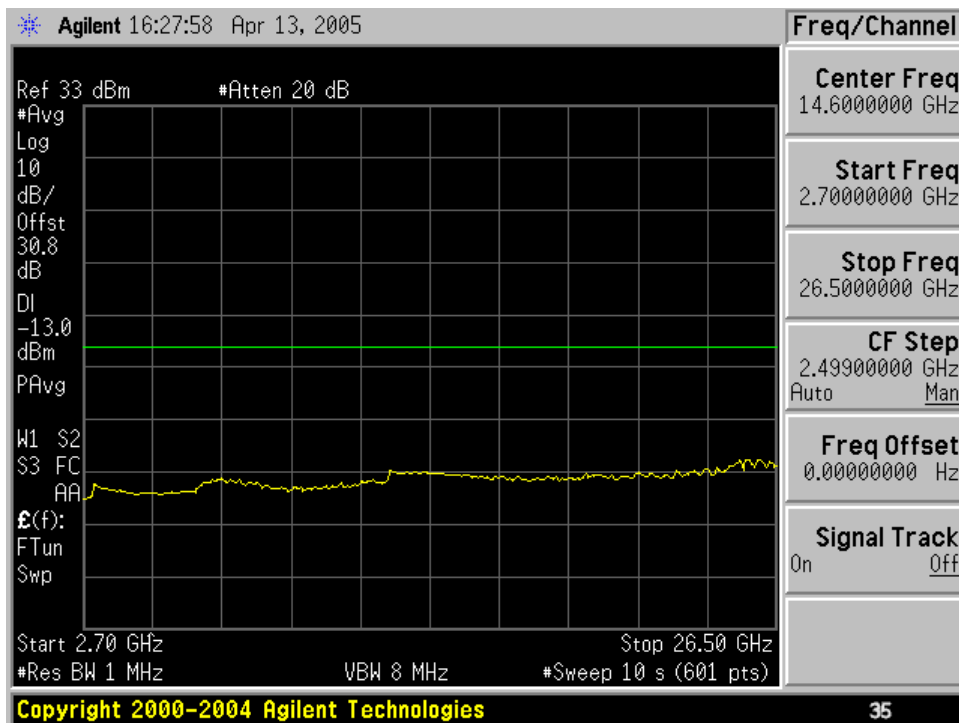


2.7 GHz – 26.5 GHz (2565.25 MHz / 5.5 MHz channel)

Spurious Emissions At Antenna Terminals (2W)

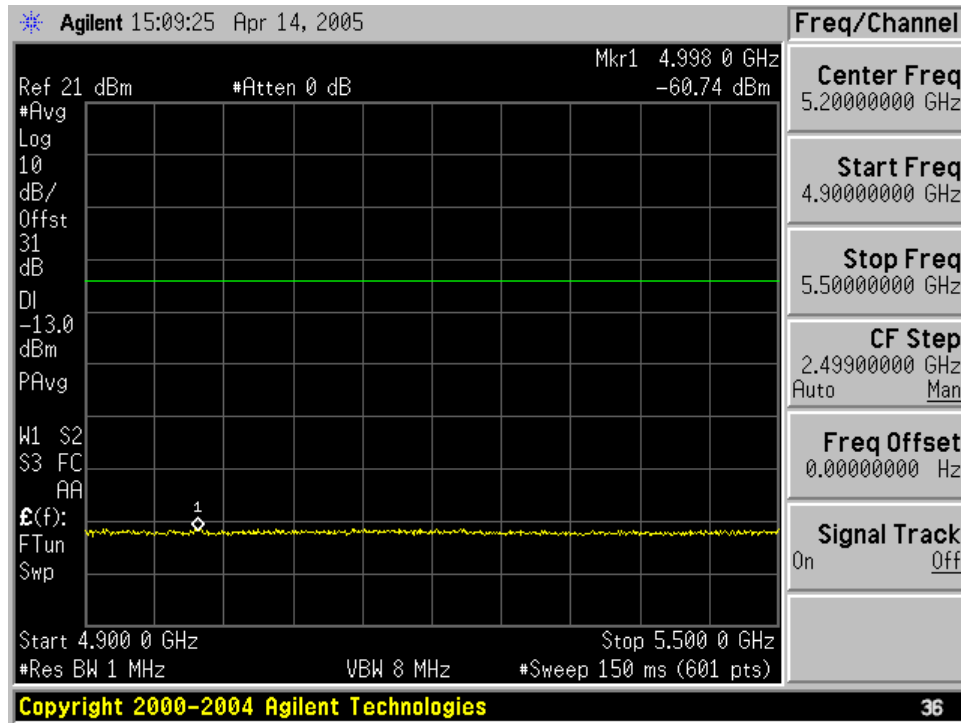


2.7 GHz – 26.5 GHz (2626.75 MHz / 5.5 MHz channel)

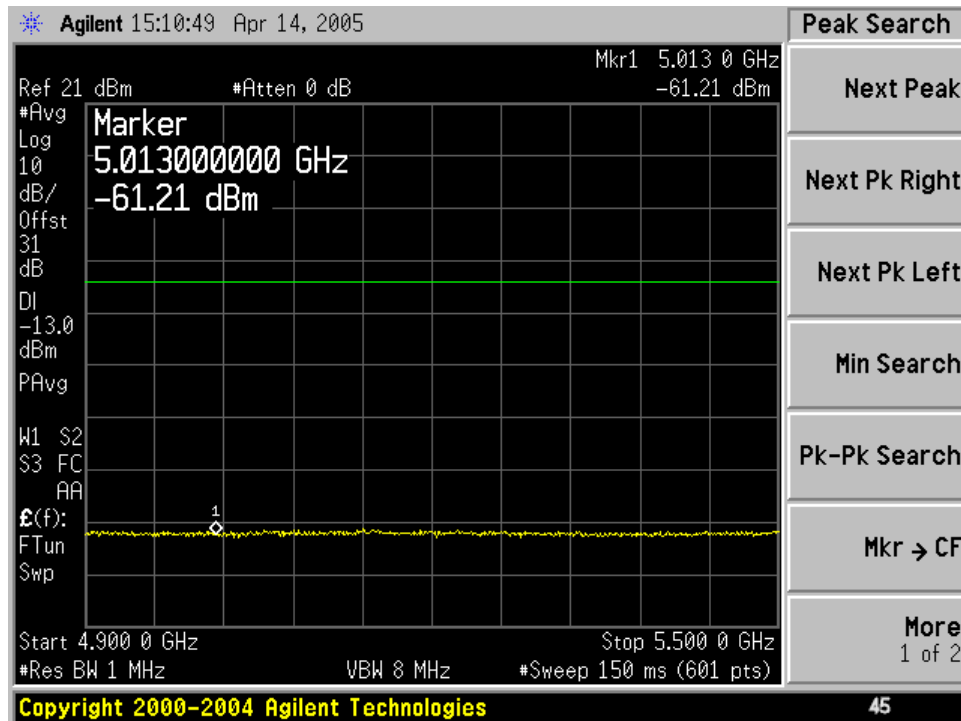


2.7 GHz – 26.5 GHz (2687.25 MHz / 5.5 MHz channel)

Second Harmonic Emissions At Antenna Terminals (2W)

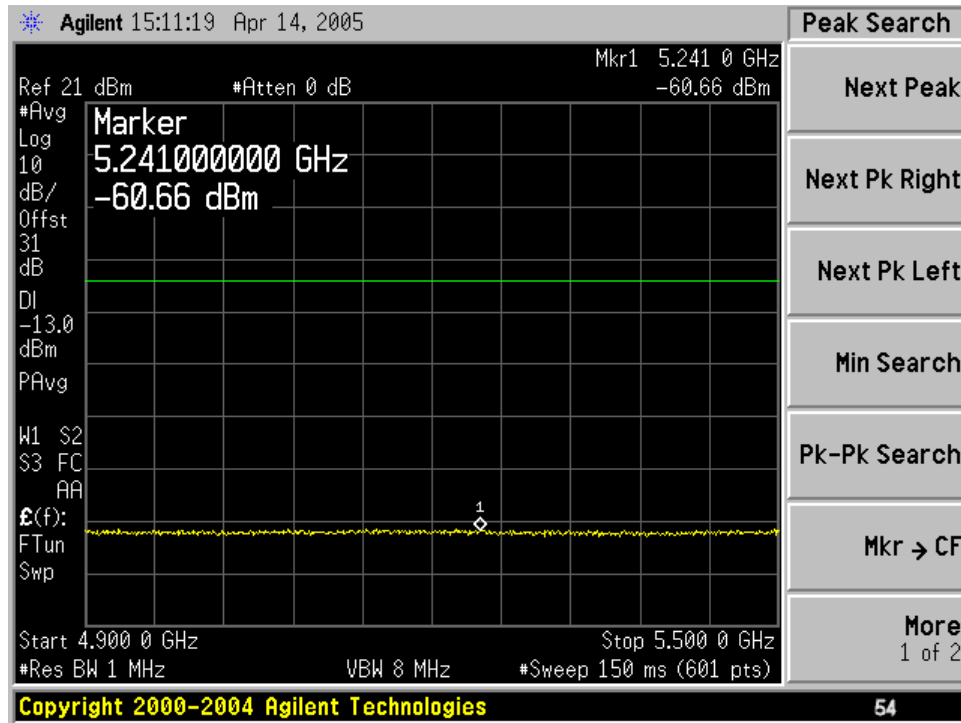


4.992 GHz – 5.38 GHz (2499 MHz / 6 MHz channel / 2nd harmonic)

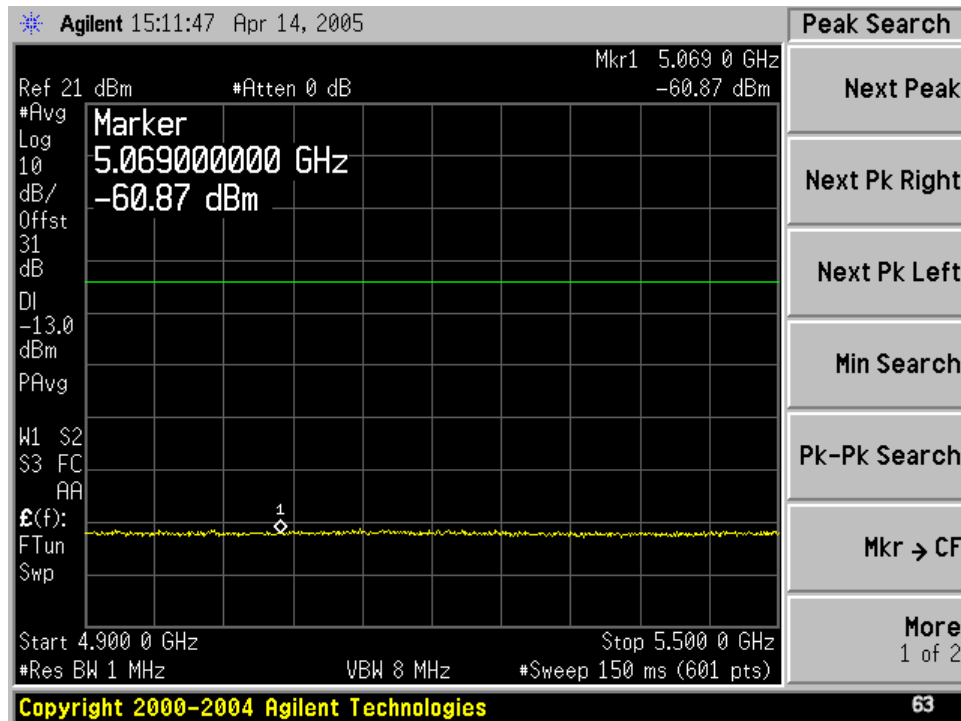


4.992 GHz – 5.38 GHz (2575 MHz / 6 MHz channel / 2nd harmonic)

Second Harmonic Emissions At Antenna Terminals (2W)

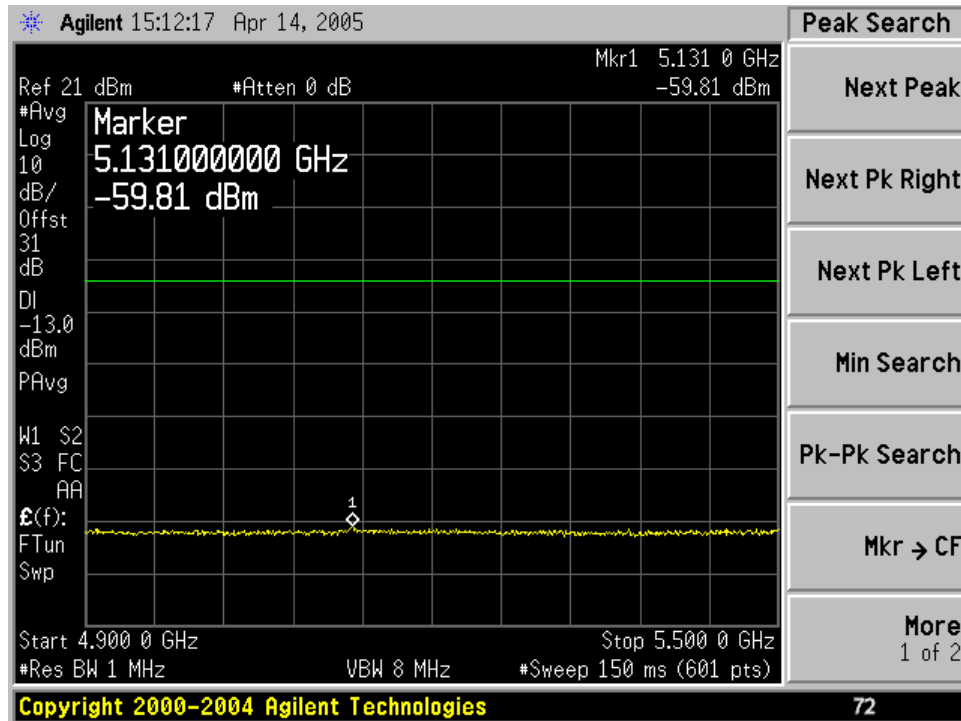


4.992 GHz – 5.38 GHz (2621 MHz / 6 MHz channel / 2nd harmonic)

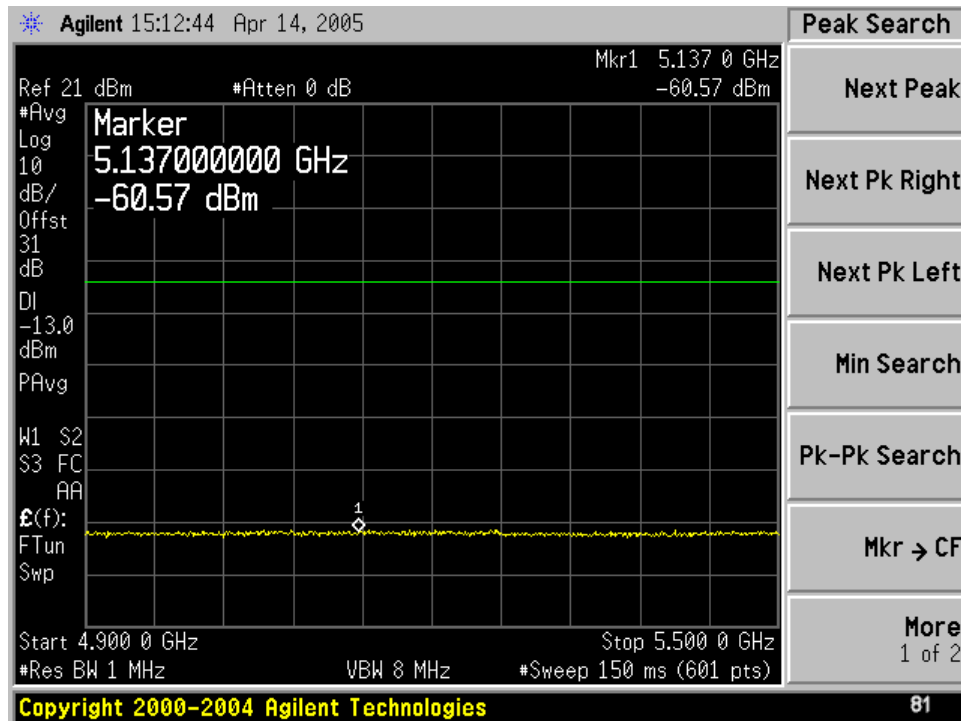


4.992 GHz – 5.38 GHz (2504.75 MHz / 5.5 MHz channel / 2nd harmonic)

Second Harmonic Emissions At Antenna Terminals (2W)

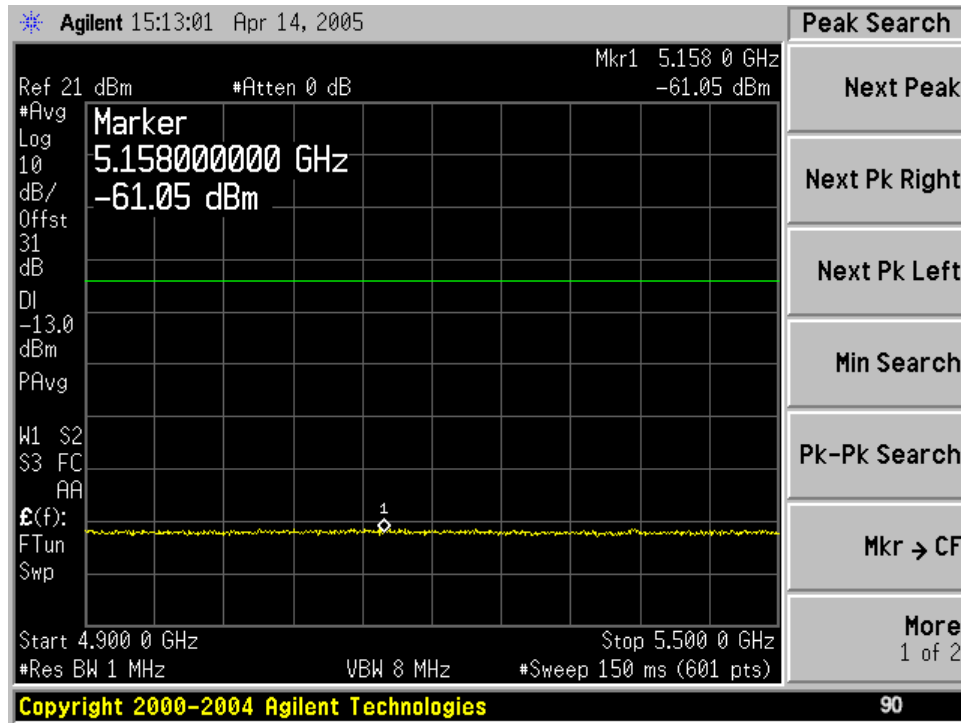


4.992 GHz – 5.38 GHz (2565.25 MHz / 5.5 MHz channel / 2nd harmonic)



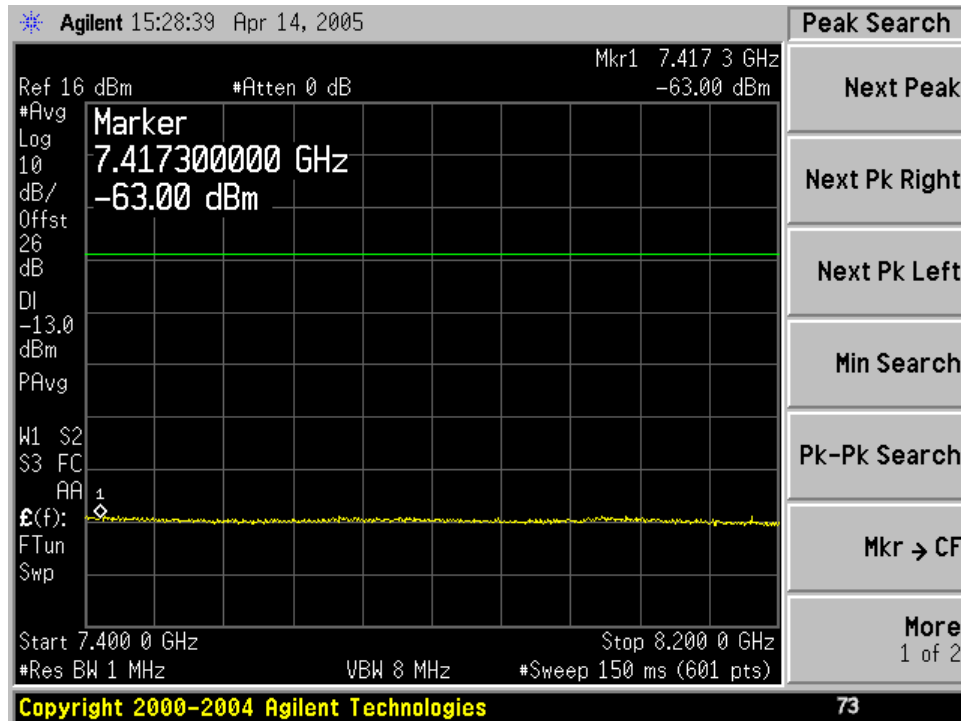
4.992 GHz – 5.38 GHz (2626.75 MHz / 5.5 MHz channel / 2nd harmonic)

Second Harmonic Emissions At Antenna Terminals (2W)

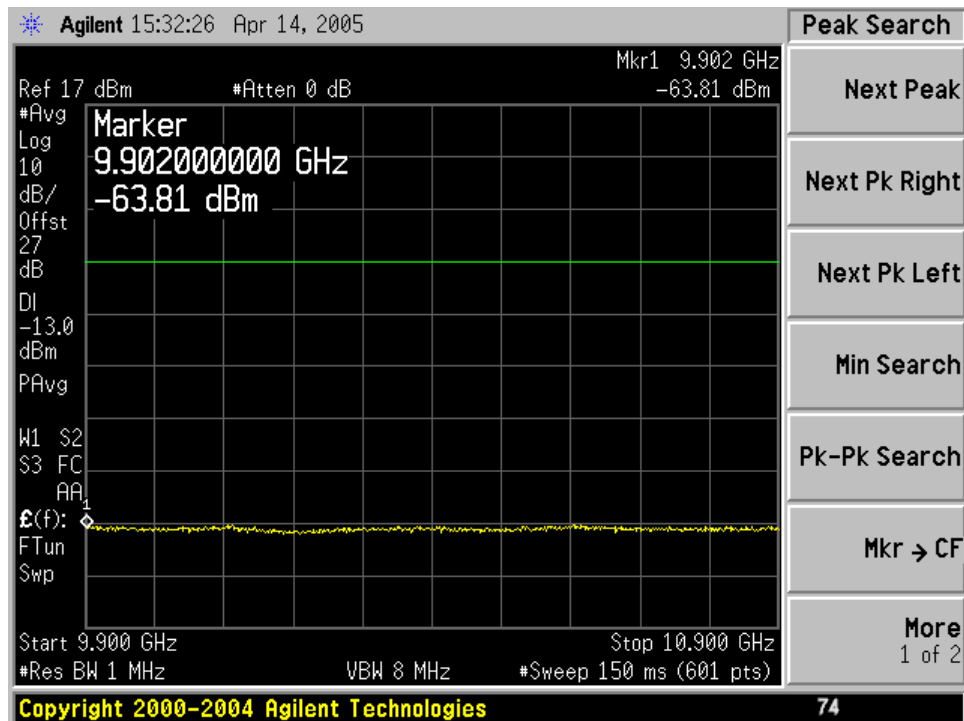


4.992 GHz – 5.38 GHz (2687.25 MHz / 5.5 MHz channel / 2nd harmonic)

Harmonic 3-8 Emissions At Antenna Terminals (2W)

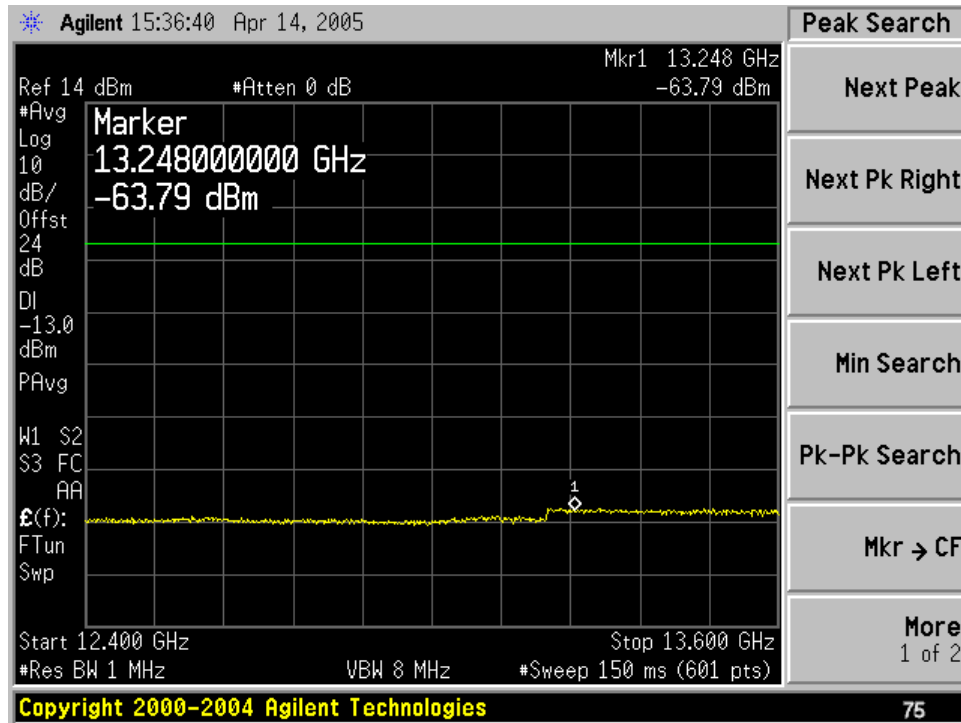


3rd harmonic of 2565.25 MHz

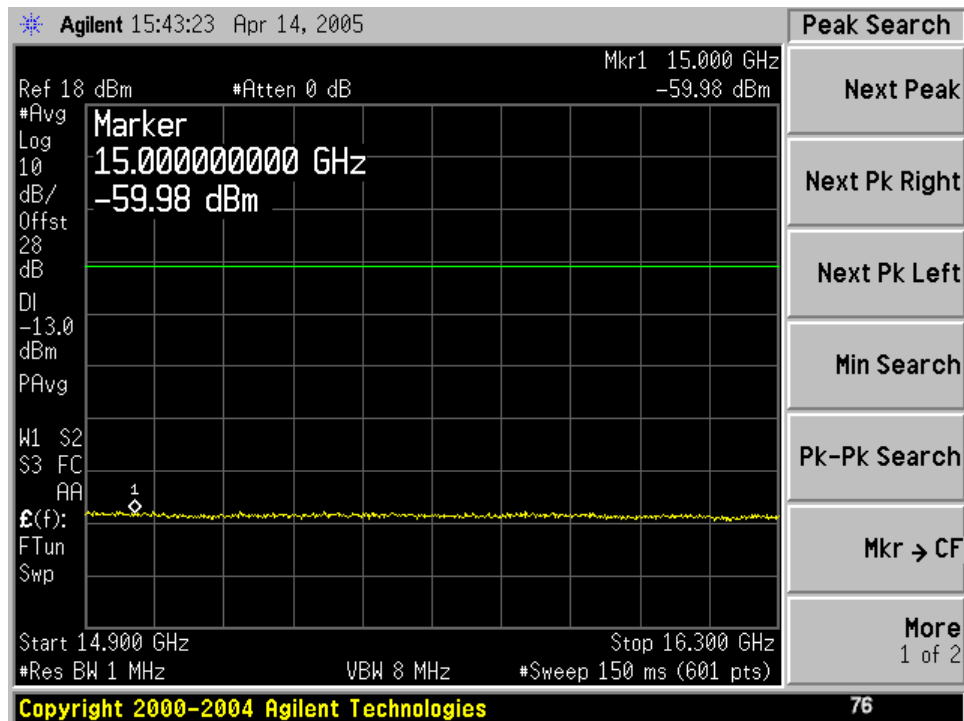


4th harmonic of 2565.25 MHz

Harmonic 3-8 Emissions At Antenna Terminals (2W)

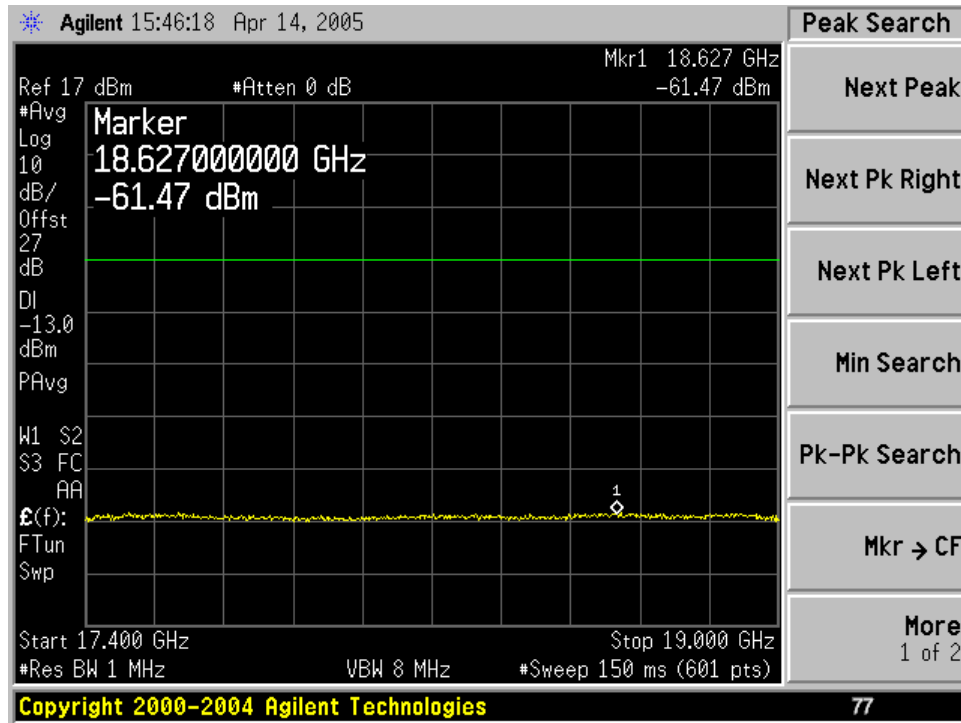


5th harmonic of 2565.25 MHz

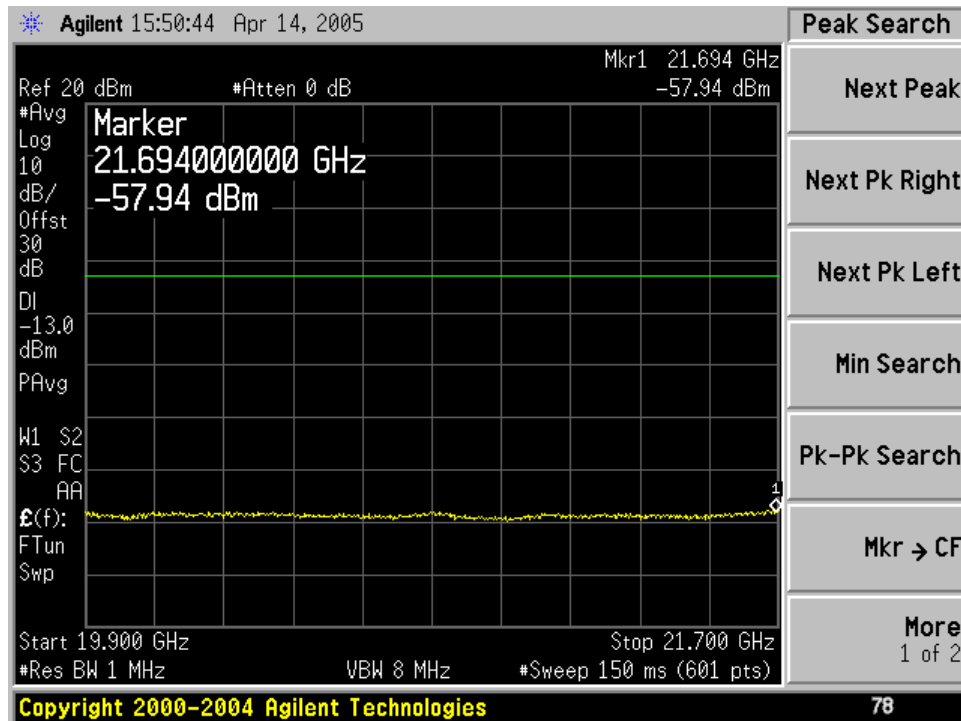


6th harmonic of 2565.25 MHz

Harmonic 3-8 Emissions At Antenna Terminals (2W)

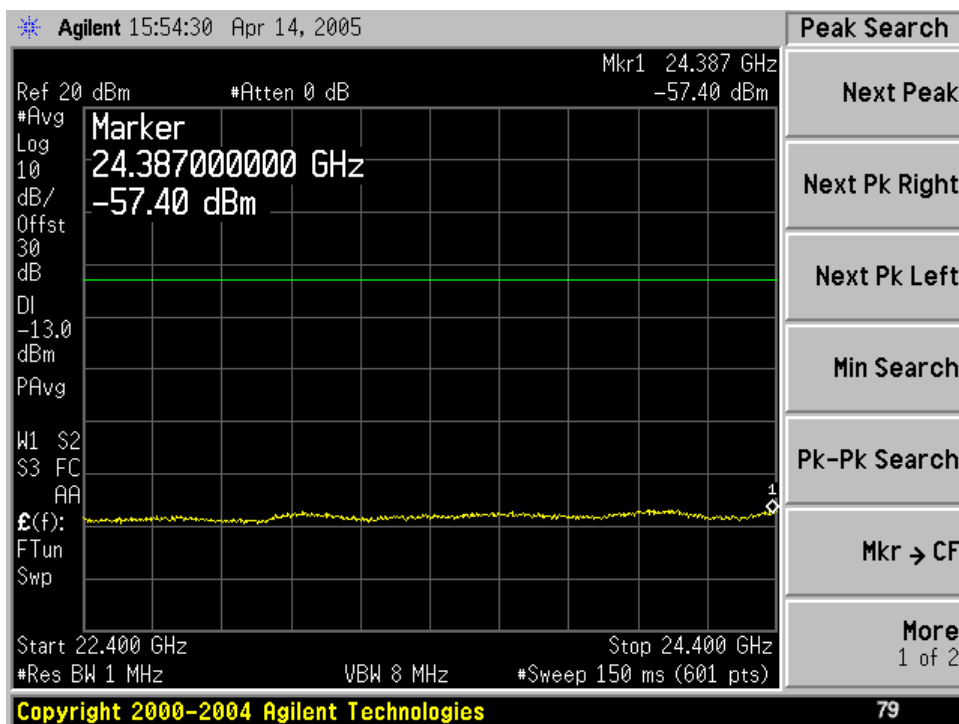


7th harmonic of 2565.25 MHz

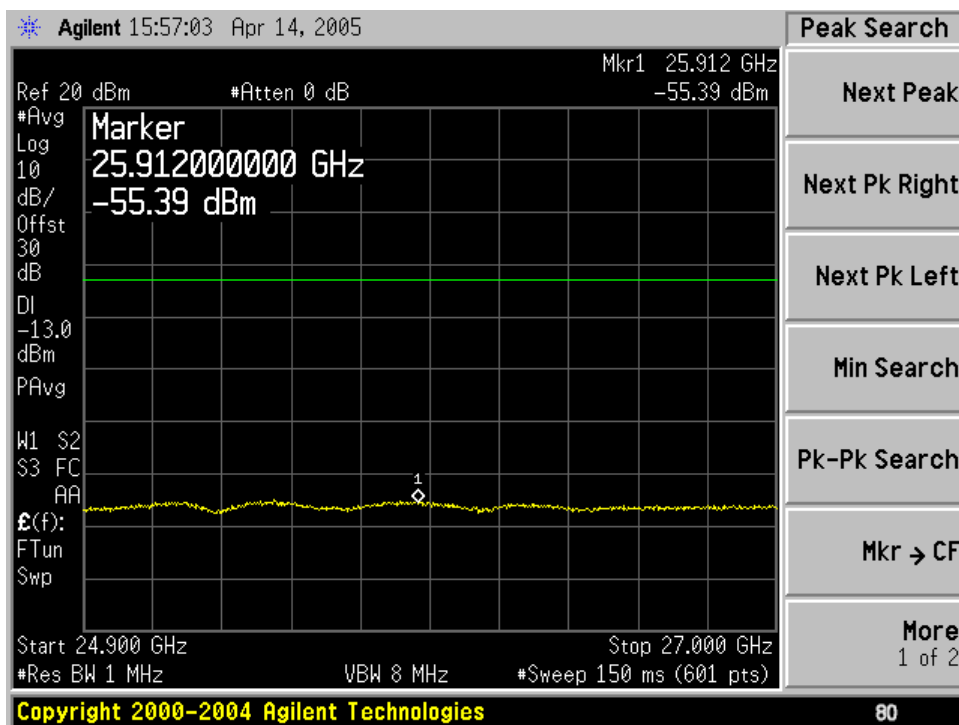


8th harmonic of 2565.25 MHz

Harmonic 3-8 Emissions At Antenna Terminals (2W)

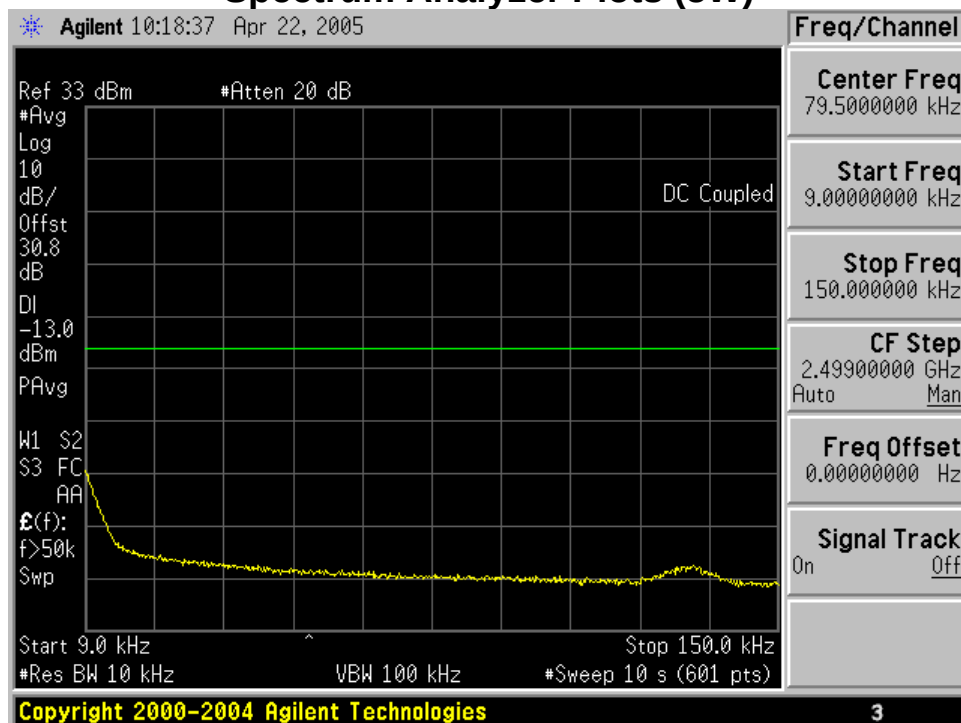


9th harmonic of 2565.25 MHz

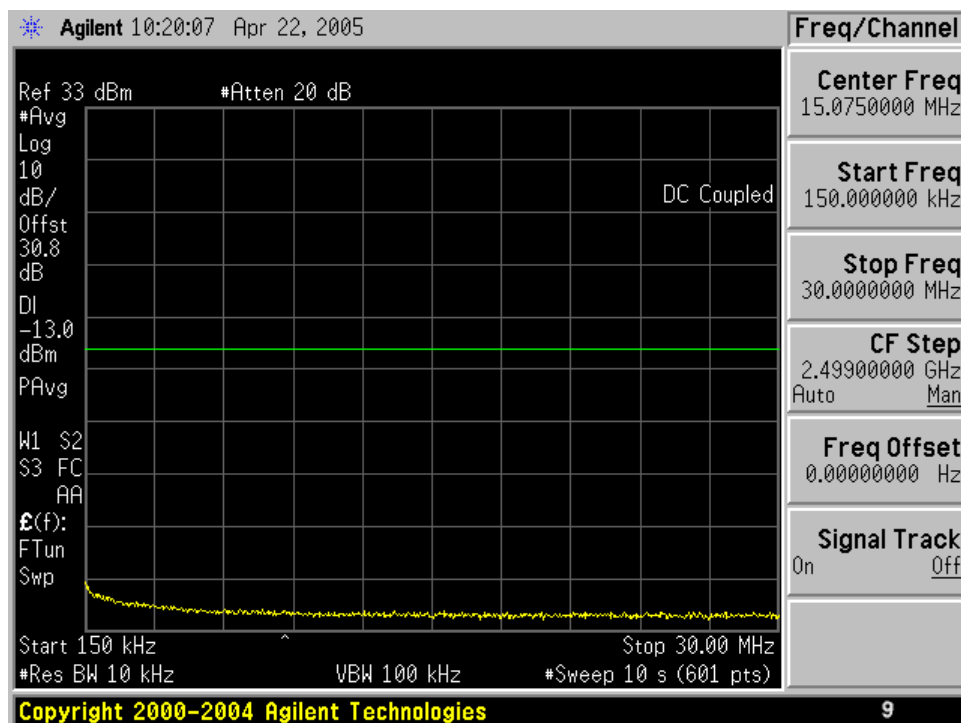


10th harmonic of 2565.25 MHz

Spurious Emissions At Antenna Terminals Spectrum Analyzer Plots (5W)

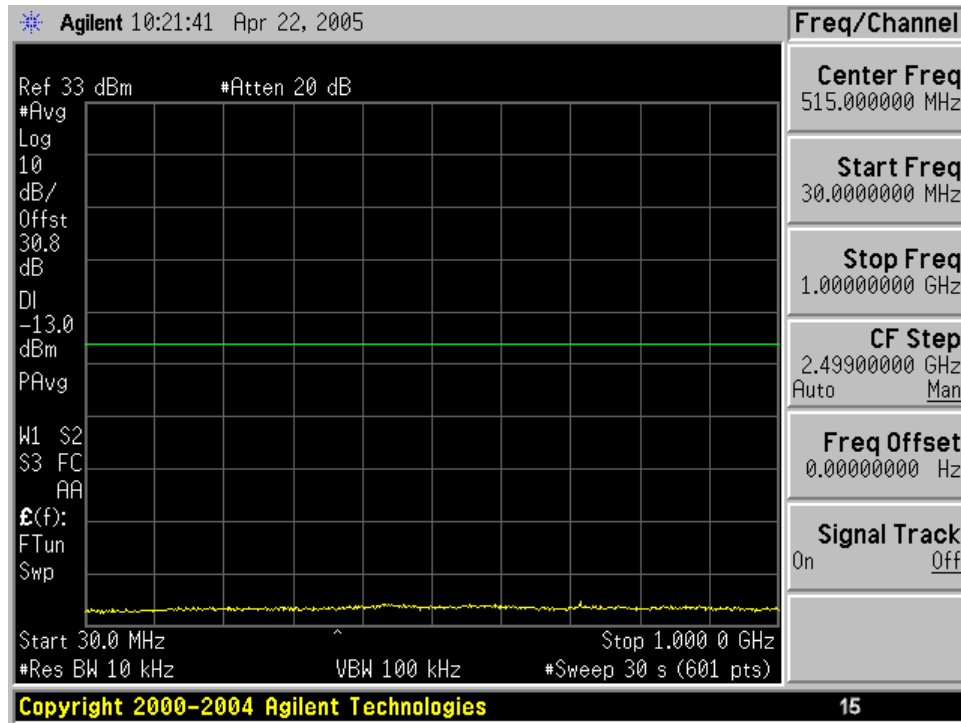


9 kHz – 150 kHz (2683 MHz / 6 MHz channel)

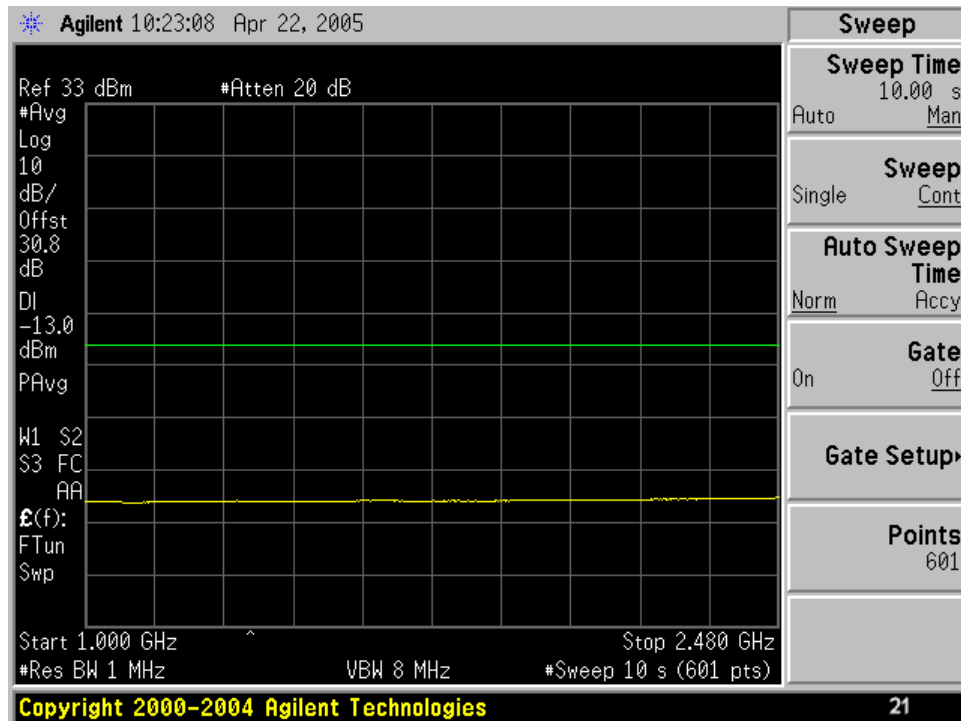


150 kHz – 30 MHz (2683 MHz / 6 MHz channel)

Spurious Emissions At Antenna Terminals (5W)

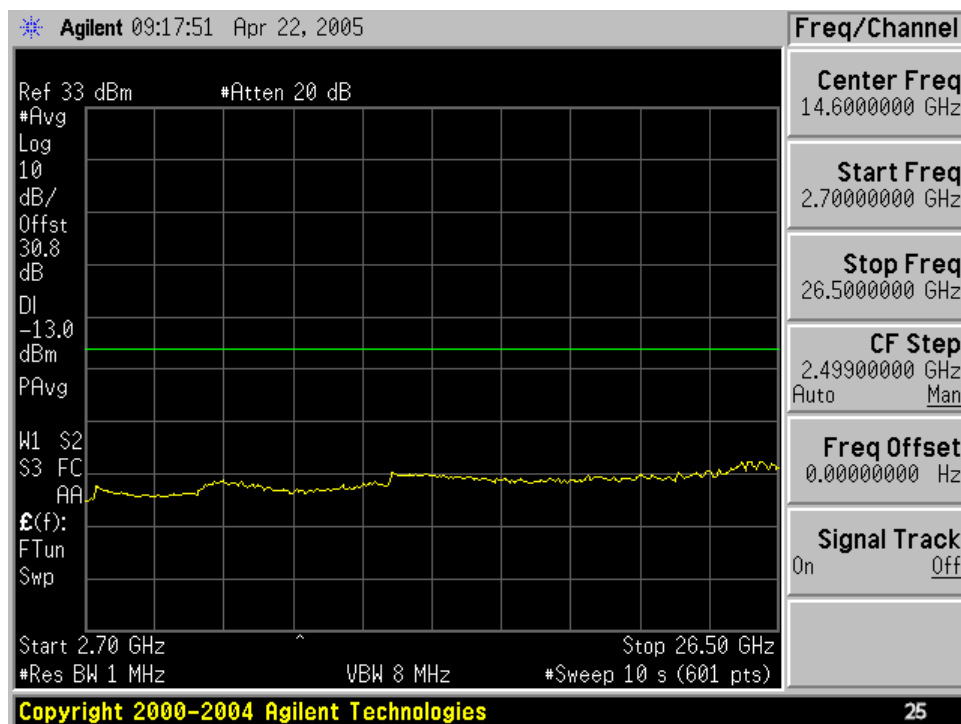


30 MHz – 1 GHz (2683 MHz / 6 MHz channel)

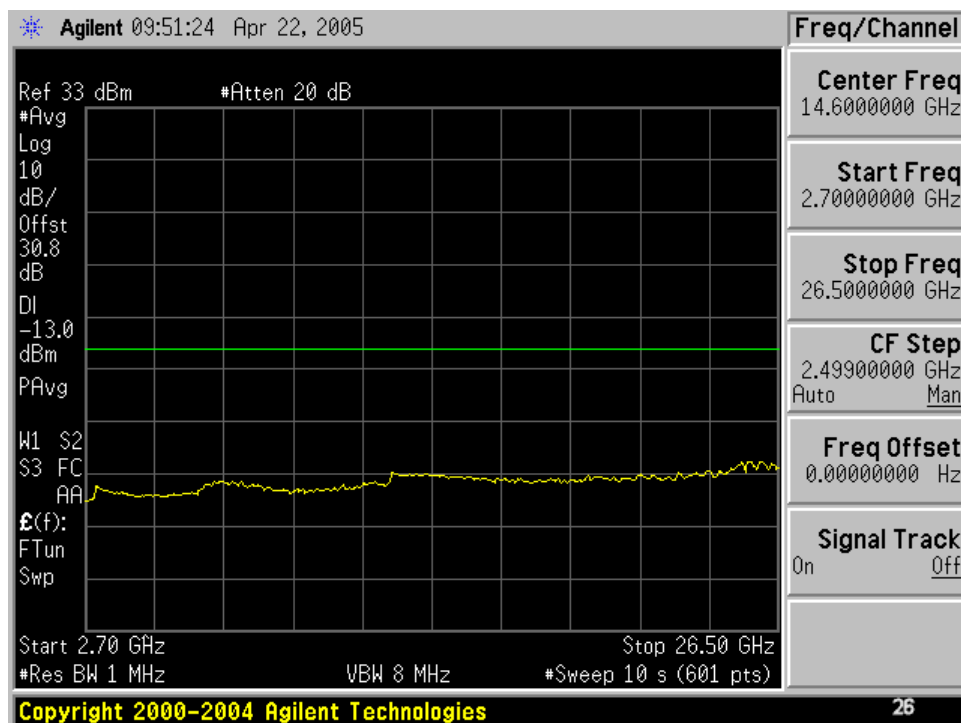


1 GHz – 2.48 GHz (2683 MHz / 6 MHz channel)

Spurious Emissions At Antenna Terminals (5W)

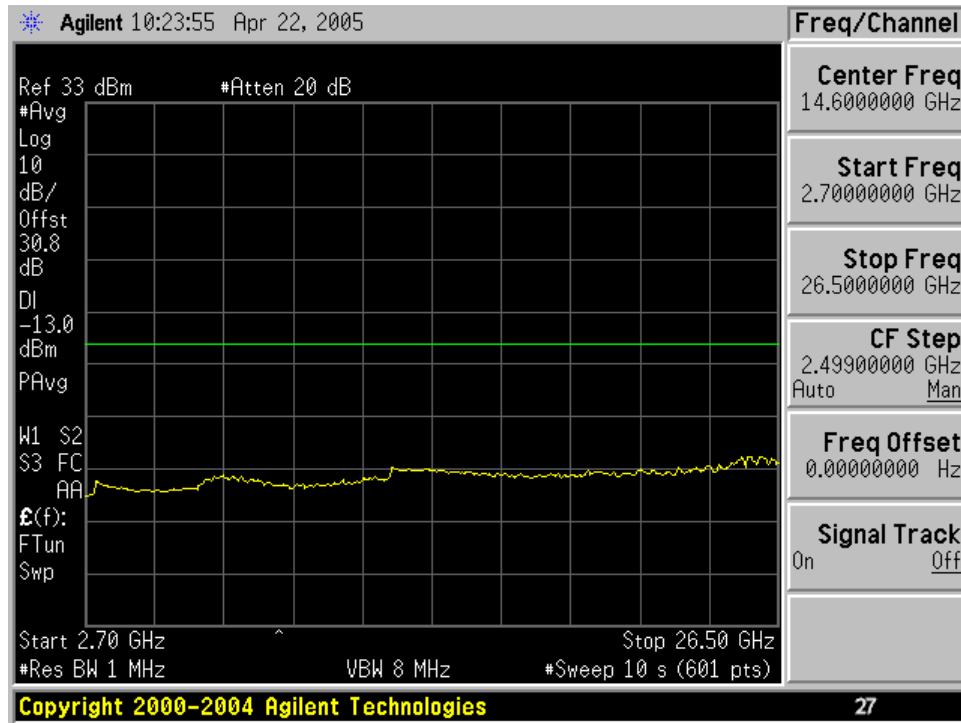


2.7 GHz – 26.5 GHz (2503 MHz / 6 MHz channel)



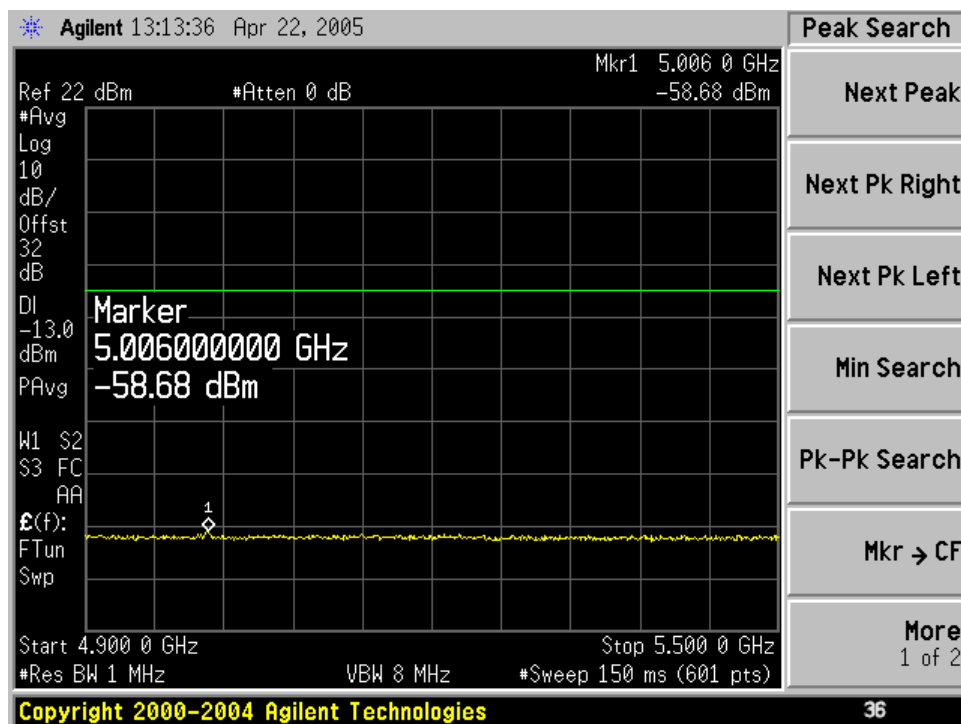
2.7 GHz – 26.5 GHz (2593 MHz / 6 MHz channel)

Spurious Emissions At Antenna Terminals (5W)

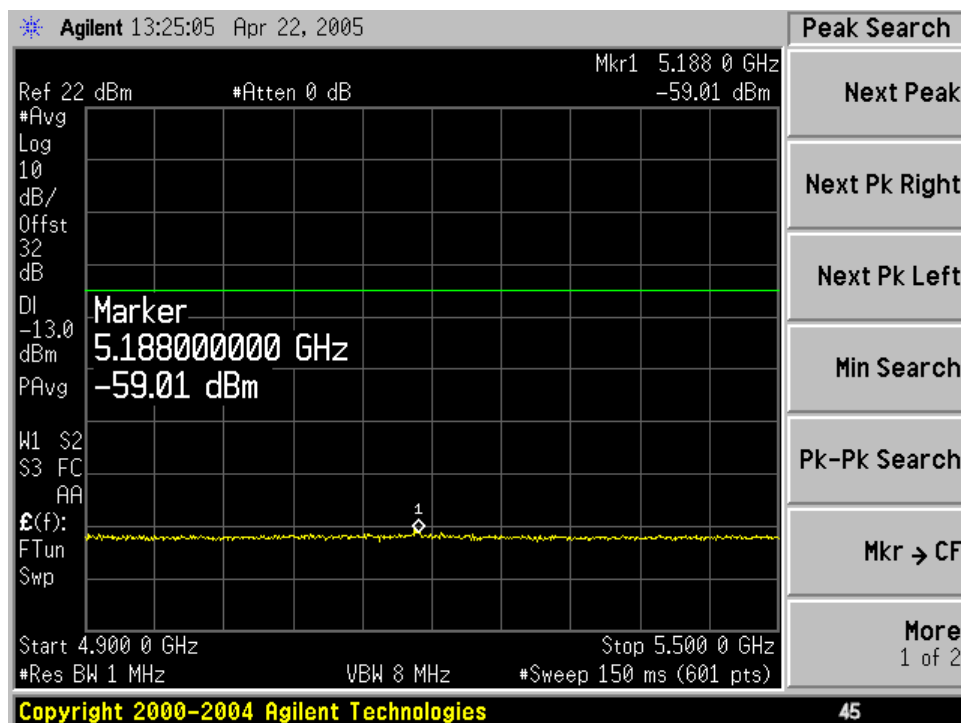


2.7 GHz – 26.5 GHz (2683 MHz / 6 MHz channel)

Second Harmonic Emissions At Antenna Terminals (5W)

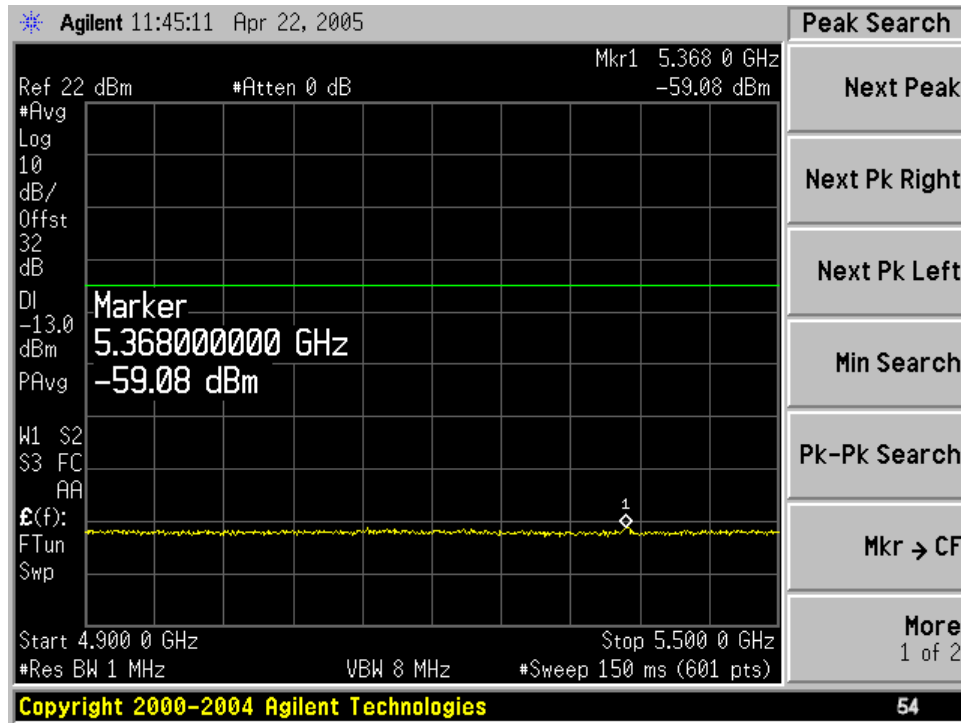


4.992 GHz – 5.38 GHz (2503 MHz / 6 MHz channel / 2nd harmonic)



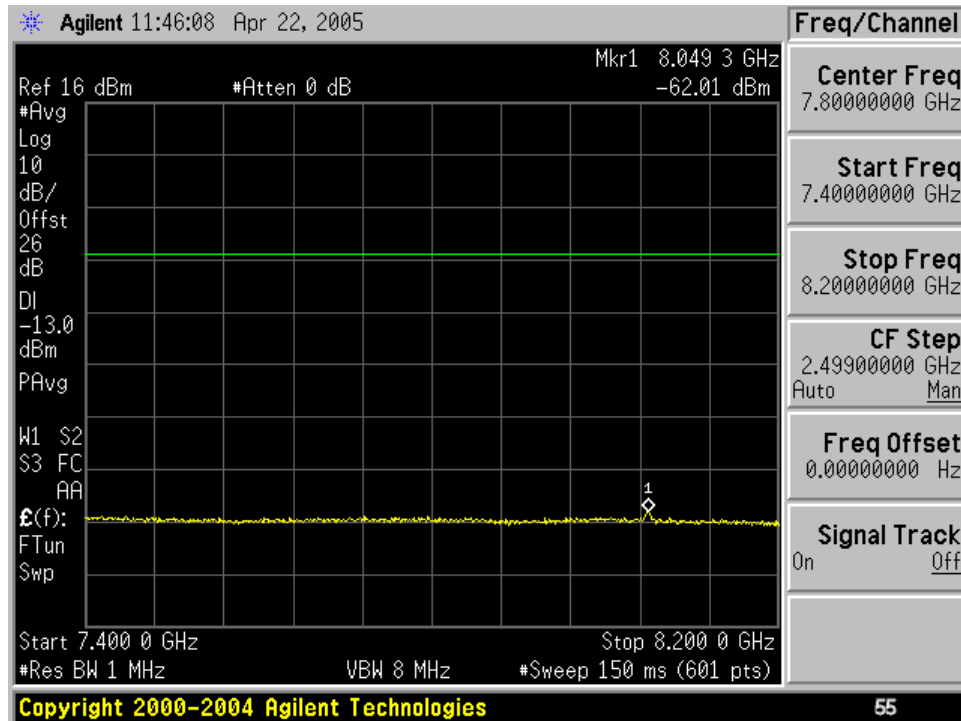
4.992 GHz – 5.38 GHz (2593 MHz / 6 MHz channel / 2nd harmonic)

Second Harmonic Emissions At Antenna Terminals (5W)

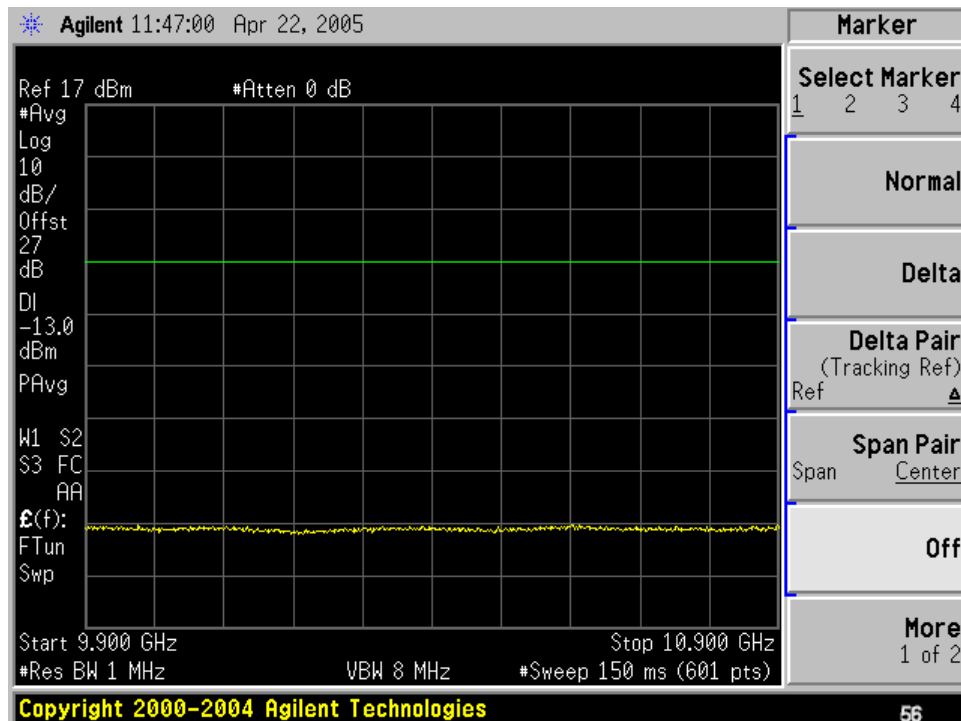


4.992 GHz – 5.38 GHz (2683 MHz / 6 MHz channel / 2nd harmonic)

Harmonic 3, 4 Emissions At Antenna Terminals (5W)

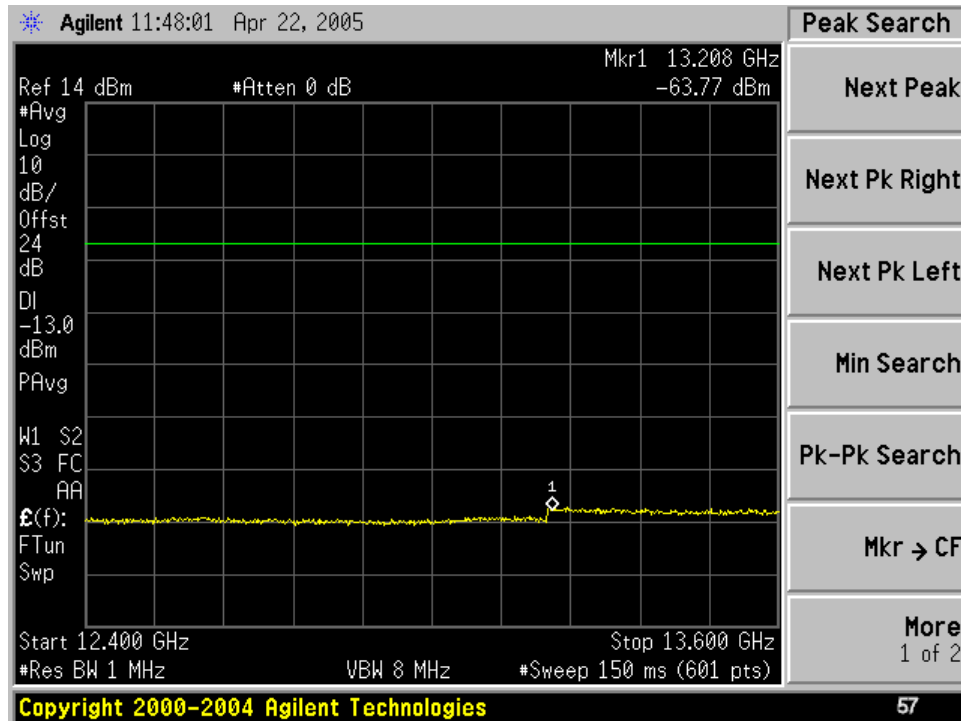


3rd harmonic of 2683 MHz

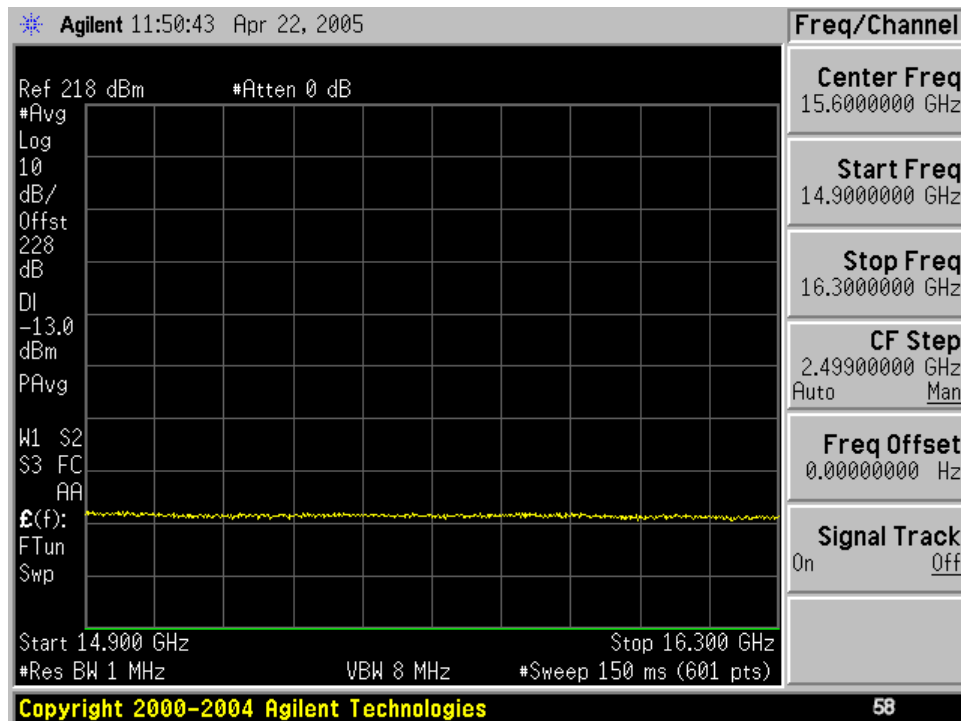


4th harmonic of 2683 MHz

Harmonic 5, 6 Emissions At Antenna Terminals (5W)

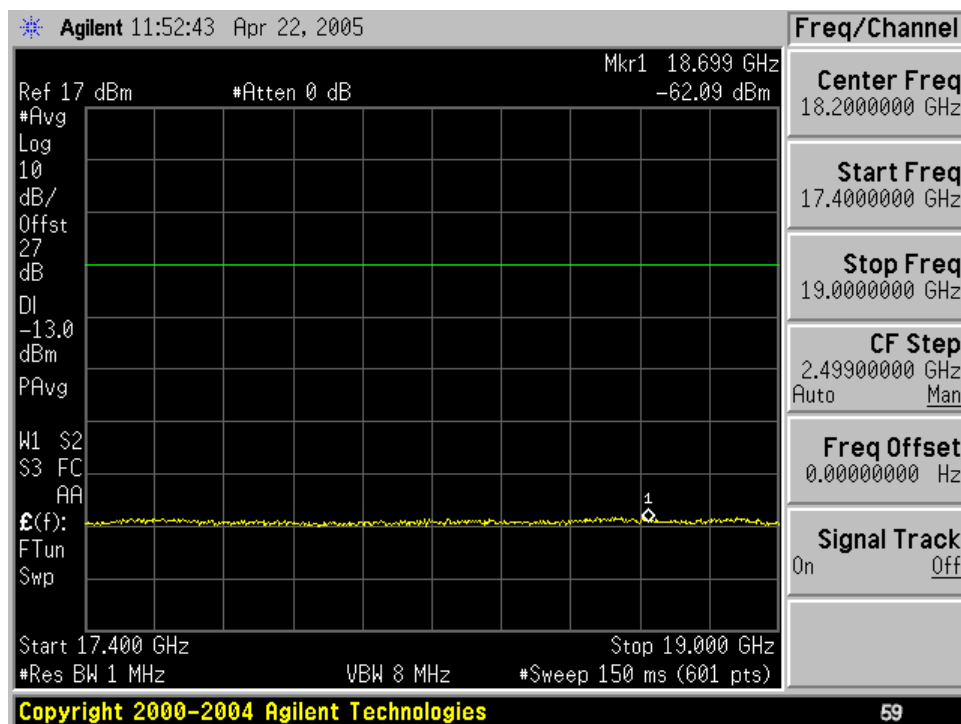


5th harmonic of 2565.25 MHz

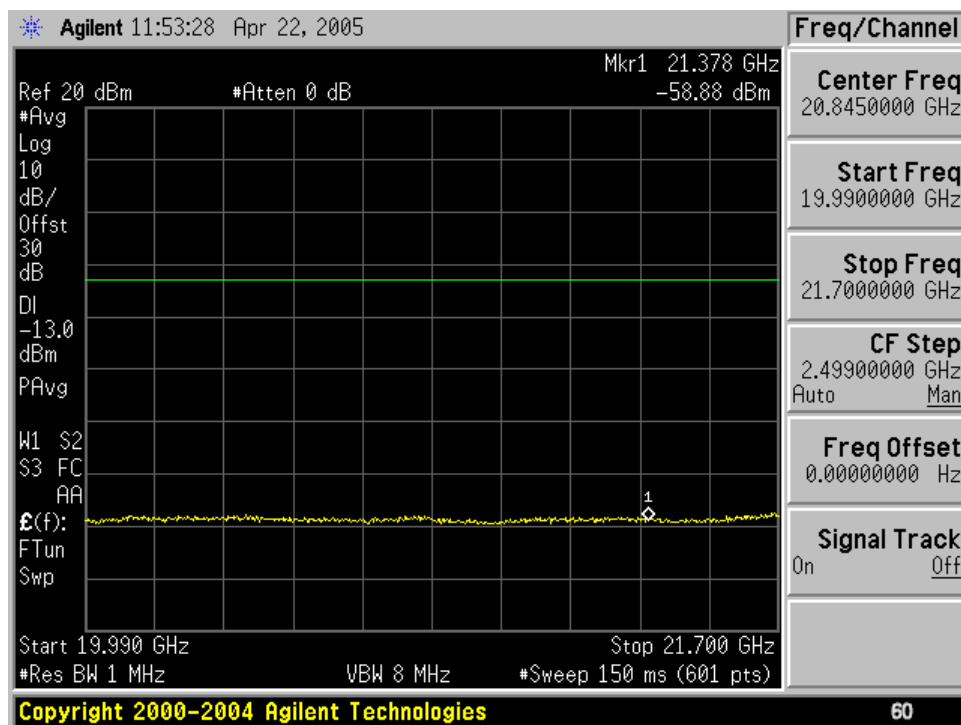


6th harmonic of 2683 MHz

Harmonic 7, 8 Emissions At Antenna Terminals (5W)

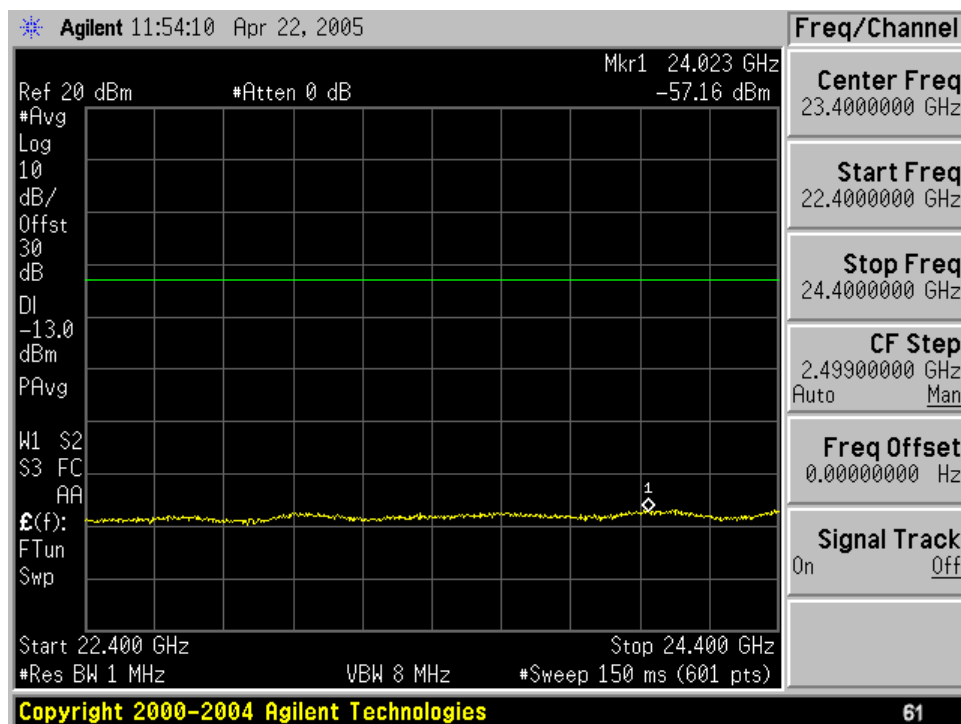


7th harmonic of 2565.25 MHz

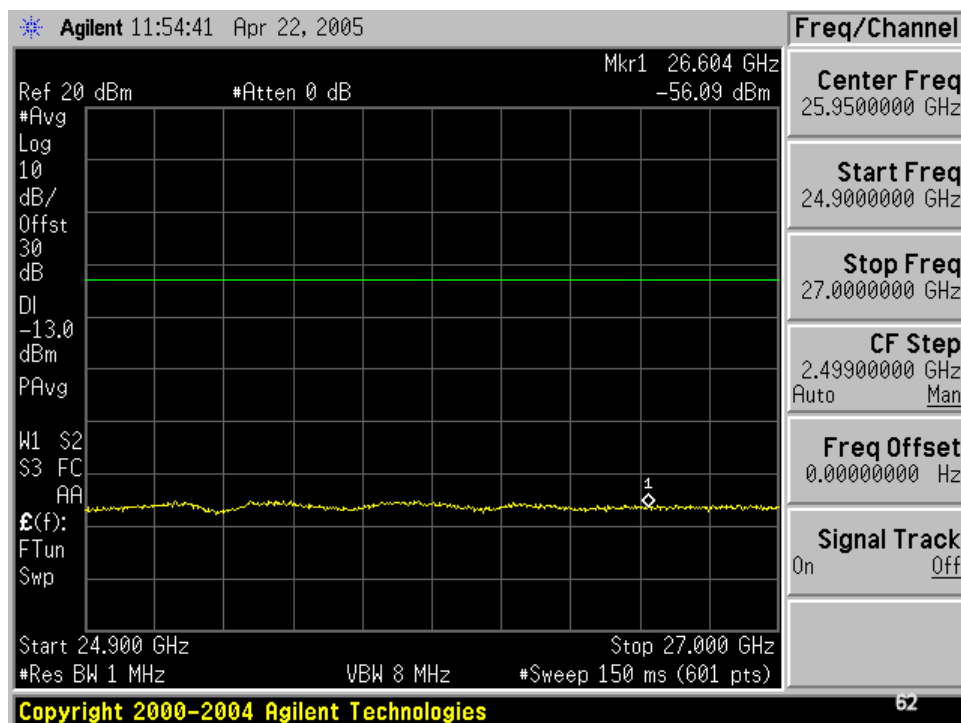


8th harmonic of 2683 MHz

Harmonic 9, 10 Emissions At Antenna Terminals (5W)



9th harmonic of 2683 MHz



10th harmonic of 2683 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

Standards: TIA-603-B

TIA Standard, Land Mobile FM or PM Communications
Equipment, Measurement and Performance Standards

ANSI C63.4-2001 clause 5.4 Radiated Emissions Tests.
American National Standard for Methods of Measurement of
Radio-Noise Emissions from Low-Voltage Electrical and
Electronic Equipment in the Range of 9 kHz to 40 GHz.

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. This test was performed with the transmitter connected to the integral antenna. Measurements were performed by TUV America located in Taylors Falls, Minnesota on April 6, 2005. 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. The TUV report indicates that the tested unit was a model number BTS-2500-F, this was an error in the data sheet sent to TUV, the actual tested product was a BTS-2500-C.

Test Conditions: Frequency = 2499, 2626.75, 2687.25 MHz
Temperature = 25 °C
Supply Voltage = 48.0 VDC nominal

Test Results: Passes Field Strength of Spurious Radiation

TUV Test Report



TEST RESULT SUMMARY

FCC PART 15 SUBPART B, Class A Limit FCC PART 2.1053

MANUFACTURER'S NAME	NextNet Wireless, Incorporated
NAME OF EQUIPMENT	Expedience 2.5-2.7 GHz Base Station
TYPE OF EQUIPMENT	BRS/EBS Base Site Transceiver
MODEL NUMBER	900-0350-XXXX
MANUFACTURER'S ADDRESS	9555 James Avenue South, Suite 270 Bloomington MN 55431
TEST REPORT NUMBER	WC501665
TEST DATE	06 April 2005

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 15 and 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 15 and FCC Part 2.1053.

Date: 12 April 2005

Location: Taylors Falls MN
USA

A handwritten signature in black ink, appearing to read "R. M. Johnson".

R. M. Johnson
Tested By

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

T. K. Swanson
Technical Writer

Not Transferable



EMC EMISSION - TEST REPORT

Test Report File No. : **WC501665** Date of issue: 12 April 2005

Model No. : **900-0350-XXXX**

Product Name : Expedience 2.5-2.7 GHz Base Station

Product Type : BRS/EBS Base Site Transceiver

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) : **WC501665**

Total pages including
Appendices : 42

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

File No. WC501665, Page 1 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



DIRECTORY - EMISSIONS

		Page(s)
A) Documentation		
Test report		1 - 11
Directory		2
Test Regulations		3
Deviations from standard / Summary		10
Test-setups (Photos)		11 - 13
Test-setup (drawing)		Appendix A
B) Test data		
Conducted emissions	10/150 kHz - 30 MHz	5, 9
Radiated emissions	10 kHz - 30 MHz	5, 9
Radiated emissions	30 MHz - 1000 MHz	6, 9
Interference power	30 MHz - 300 MHz	6, 9
Equivalent Radiated emissions	1 GHz - 26 GHz	7, 9
C) Appendix A		
Test Data Sheets and Test Setup Drawing(s)		A2 – A19
D) Appendix B		
Constructional Data Form		B2 – B8
Product Information Form(s)		N/A
E) Appendix C		
Measurement Protocol		C1 - C2

File No. WC501665, Page 2 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



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 | ☐ - Household appliances and similar | |
| ☐ - EN 55014 / 1987 | ☐ - Portable tools | |
| | ☐ - Semiconductor devices | |
| ☐ - EN 55014 / A2:1990 | ☐ - Household appliances and similar | |
| ☐ - EN 55014 / 1993 | ☐ - 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 |

File No. WC501665, Page 3 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



Environmental conditions in the lab:

	<u>Actual</u>
Temperature:	: 21 °C
Relative Humidity	: 29 %
Atmospheric pressure	: 98.0 kPa
Power supply system	: 115 VAC / 60 Hz / 1-phase

Sign Explanations:

- ☐ - not applicable
- ☒ - applicable

File No. WC501665, Page 4 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



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

Test equipment used :

TUV ID	Model Number	Manufacturer	Description	Serial Number	Cal Due
■ - 2416	3825/2	Electro-Mechanics (EMCO)	50 Ω LISN	8812-1437	Code B 05-Jan-06
■ - 3800	ESCS 30	Rhode & Schwarz	EMI Receiver	100312	18-Jan-06

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: 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

File No. WC501665, Page 5 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



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 8-04, due 8-06.
- ☐ - 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	Biconicalog Periodic	102	21-Oct-05
■ - 2682	85650A	Hewlett-Packard	Quasi-Peak Adapter	2811A01127	14-Aug-05
■ - 2689	8566B	Hewlett-Packard	Spectrum Analyzer	2416A00321	31-Jan-06
■ - 2674	85662A	Hewlett-Packard	Analyzer Display	2050A02007	31-Jan-06
■ - 2670	8447D	Electro-Mechanics (EMCO)	Preamplifier	2443A03954	Code B 17-Oct-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

File No. WC501665, Page 6 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



Emissions Test Conditions: RADIATED EMISSIONS (Electric Field)

The *EQUIVALENT RADIATED EMISSIONS* measurements in the frequency range 1 GHz – 26 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
■	2682	85650A	Hewlett-Packard	Quasi-Peak Adapter	2811A01127	14-Aug-05
■	2689	8566B	Hewlett-Packard	Spectrum Analyzer	2416A00321	31-Jan-06
■	2674	85662A	Hewlett-Packard	Analyzer Display	2050A02007	31-Jan-06
■	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.

File No. WC501665, Page 7 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



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
- ☒ - 1. Base station transmitter. Parts 2 and 27 radiated emissions from 30 MHz to 26.7 GHz per TIA-603B procedures.
2. Base station receiver. Part 15B radiated emissions from 30 MHz to 13.45 GHz per ANSI C63.4-2003 procedures.
3. Base station power supply conducted limits per ANSI C63.4-2003 procedures.

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. WC501665, Page 8 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



Emission Test Results:

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

The requirements are ☒ - MET ☐ - NOT MET
Minimum margin of compliance 3 dB at 23.2 MHz
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
Minimum margin of compliance 5 dB at 86.3 MHz
Maximum margin of non-compliance dB at MHz
Remarks:

Equivalent Radiated emissions 1 GHz - 13 GHz – FCC Part 15 Subpart B

The requirements are ☒ - MET ☐ - NOT MET
Minimum margin of compliance >10 dB at MHz
Maximum margin of non-compliance dB at MHz
Remarks: No emissions detected above the noise level of the measuring system.

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

The requirements are ☒ - MET ☐ - NOT MET
Minimum margin of compliance 32 dB at 85.7 MHz
Maximum margin of non-compliance dB at MHz
Remarks:

Radiated emissions (electric field) 1 GHz - 27 GHz – FCC Part 2.1053

The requirements are ☒ - MET ☐ - NOT MET
Minimum margin of compliance 29 dB at 5150.0 MHz
Maximum margin of non-compliance dB at MHz
Remarks:

File No. WC501665, Page 9 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



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: 06 April 2005

Testing End Date: 06 April 2005

- TÜV PRODUCT SERVICE INC -

A handwritten signature in black ink, appearing to read "R. M. Johnson".

Tested By:
R. M. Johnson

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

T. K. Swanson
Technical Writer

File No. WC501665, Page 10 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 - 26000 MHz



File No. WC501665, Page 12 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 - 26000 MHz



File No. WC501665, Page 13 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



Appendix A

Test Data Sheets
and
Test Setup Drawing(s)

File No. WC501665, Page A1 of A19

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

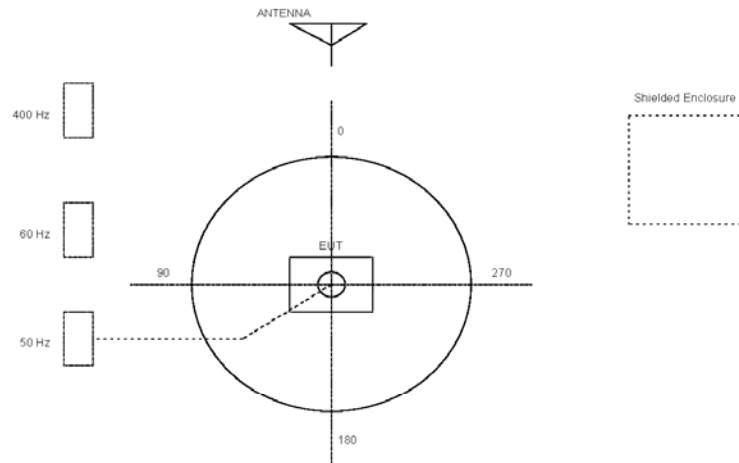


TEST SETUP FOR EMISSIONS TESTING

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. WC501665, Page A2 of A19

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

RADIATED EMISSIONS



Test Report #: WC501665 Run 3 Test Area: LTS
 EUT Model #: BTS-2500-F Date: 4/6/2005
 EUT Serial #: 14798 EUT Power: 60Hz/110VAC Temperature: 21.0 °C
 Test Method: FCC 2.1053 Air Pressure: 98.0 kPa
 Customer: NEXTNET WIRELESS Rel. Humidity: 29.0 %
 EUT Description: BASE STATION
 Notes:
 Data File Name: 1665.dat Page: 1 of 7

List of measurements for run #: 3

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / Substitution Factor (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA1 -13 dBm < 1GHz	DELTA2 -13 dBm > 1 GHz
------	-----------------	---	----------------	----------------------------	-----------------------------	------------------------------

A substitution measurement was performed for the highest spurious emission (85.7 MHz), as described on page C2 of the test report, using a signal generator, a cable, and a dipole antenna.

The cable between the signal generator and dipole antenna has a loss of 1.2 dB at 85.7 MHz. The Schwarzbeck dipole antenna has an additional 1.64 dB of gain over the 2.15 dB gain of a standard dipole. The Schwarzbeck dipole also has a 10 dB input attenuator. So the final or total gain of the dipole is 1.64 dB plus 2.15 dB minus 10 dB = -6.21 dB.

The signal generator level was set to -38 dBm in order to match the measured EUT emission level of 52.2 dBuV/m. The signal generator level minus the cable loss from the signal generator to the substitute antenna plus the substitute antenna gain equals the spurious power level.
 $-38 \text{ dBm} - (1.2) + (-6.21) = -45.4 \text{ final dBm power level at } 85.7 \text{ MHz.}$

The difference between the final dBm substitution level (-45.4) and the final measured dBuV/m level (52.2) equals 97.6 dB and is used as a substitution factor to convert dBuV/m to dBm for spurious emissions in the frequency range of 30 MHz to 6 GHz.

Tested by: RMJ

Printed

Signature

Reviewed by: TKS

Printed

Signature

File No. WC501665 Rev A, Page A13 of A19

RADIATED EMISSIONS



Test Report #: WC501665 Run 3 Test Area: LTS
EUT Model #: BTS-2500-F Date: 4/6/2005
EUT Serial #: 14798 EUT Power: 60Hz/110VAC Temperature: 21.0 °C
Test Method: FCC 2.1053 Air Pressure: 98.0 kPa
Customer: NEXTNET WIRELESS Rel. Humidity: 29.0 %
EUT Description: BASE STATION

Notes:

Data File Name: 1665.dat

Page: 1 of 7

List of measurements for run #: 3

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / Substitution Factor (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA1 -13 dBm < 1GHz	DELTA2 -13 dBm > 1 GHz
LOW CHANNEL (2499MHz) 6MHz BANDWIDTH						
30.441 MHz	44.9 Qp	0.43 / 20.22 / 27.39 / -97.6	-59.45	V / 1.00 / 0	-46.45	n/a
51.039 MHz	50.8 Qp	0.6 / 13.88 / 27.05 / -97.6	-59.37	V / 1.00 / 0	-46.37	n/a
51.945 MHz	49.7 Qp	0.6 / 13.62 / 27.02 / -97.6	-60.7	V / 1.00 / 0	-47.7	n/a
63.303 MHz	52.1 Qp	0.66 / 10.71 / 27.0 / -97.6	-61.13	V / 1.00 / 0	-48.13	n/a
85.773 MHz	63.9 Qp	0.8 / 7.31 / 26.9 / -97.6	-52.49	V / 1.00 / 0	-39.49	n/a
108.47 MHz	57.95 Qp	0.84 / 9.3 / 27.04 / -97.6	-56.55	V / 1.00 / 0	-43.55	n/a
124.994 MHz	45.9 Qp	0.94 / 8.62 / 27.06 / -97.6	-69.19	V / 1.00 / 0	-56.19	n/a
130.16 MHz	46.9 Qp	1.0 / 8.45 / 27.0 / -97.6	-68.25	V / 1.00 / 0	-55.25	n/a
196.0 MHz	41.35 Qp	1.19 / 10.88 / 27.1 / -97.6	-71.27	V / 1.00 / 0	-58.27	n/a
214.129 MHz	46.3 Qp	1.22 / 10.65 / 27.12 / -97.6	-66.55	V / 1.00 / 0	-53.55	n/a
475.988 MHz	34.05 Qp	1.87 / 16.78 / 27.9 / -97.6	-72.8	V / 1.00 / 0	-59.8	n/a
500.018 MHz	33.9 Qp	1.9 / 17.46 / 27.94 / -97.6	-72.28	V / 1.00 / 0	-59.28	n/a
503.978 MHz	33.9 Qp	1.9 / 17.7 / 27.95 / -97.6	-72.05	V / 1.00 / 0	-59.05	n/a
643.988 MHz	31.25 Qp	2.12 / 19.34 / 28.17 / -97.6	-73.07	V / 1.00 / 0	-60.07	n/a
699.993 MHz	33.55 Qp	2.3 / 20.33 / 27.93 / -97.6	-69.35	V / 1.00 / 0	-56.35	n/a
30.441 MHz	47.95 Qp	0.43 / 20.22 / 27.39 / -97.6	-56.4	V / 1.00 / 90	-43.4	n/a
130.16 MHz	48.7 Qp	1.0 / 8.45 / 27.0 / -97.6	-66.45	V / 1.00 / 90	-53.45	n/a
643.988 MHz	35.0 Qp	2.12 / 19.34 / 28.17 / -97.6	-69.32	V / 1.00 / 90	-56.32	n/a
699.993 MHz	41.0 Qp	2.3 / 20.33 / 27.93 / -97.6	-61.9	V / 1.00 / 90	-48.9	n/a
756.003 MHz	33.95 Qp	2.34 / 21.2 / 27.92 / -97.6	-68.03	V / 1.00 / 90	-55.03	n/a
51.603 MHz	49.4 Qp	0.6 / 13.72 / 27.03 / -97.6	-60.91	V / 1.00 / 270	-47.91	n/a
140.75 MHz	45.55 Qp	1.0 / 9.22 / 26.99 / -97.6	-68.82	V / 1.00 / 270	-55.82	n/a

Tested by: RMJ

Printed

[Signature]

Signature

Reviewed by: TKS

Printed

[Signature]

Signature

File No. WC501665, Page A13 of A19

RADIATED EMISSIONS



Test Report #: WC501665 Run 3 Test Area: LTS
EUT Model #: BTS-2500-F Date: 4/6/2005
EUT Serial #: 14798 EUT Power: 60Hz/110VAC Temperature: 21.0 °C
Test Method: FCC 2.1053 Air Pressure: 98.0 kPa
Customer: NEXTNET WIRELESS Rel. Humidity: 29.0 %
EUT Description: BASE STATION

Notes:

Data File Name: 1665.dat

Page: 2 of 7

List of measurements for run #: 3						
FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / Substitution Factor (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA1 -13 dBm < 1GHz	DELTA2 -13 dBm > 1 GHz
130.16 MHz	49.55 Qp	1.0 / 8.45 / 27.0 / -97.6	-65.6	V / 1.00 / 315	-52.6	n/a
643.988 MHz	35.7 Qp	2.12 / 19.34 / 28.17 / -97.6	-68.62	V / 1.00 / 315	-55.62	n/a
85.773 MHz	65.6 Qp	0.8 / 7.31 / 26.9 / -97.6	-50.79	V / 1.00 / 45	-37.79	n/a
475.988 MHz	35.2 Qp	1.87 / 16.78 / 27.9 / -97.6	-71.65	V / 1.00 / 45	-58.65	n/a
500.018 MHz	37.75 Qp	1.9 / 17.46 / 27.94 / -97.6	-68.43	V / 1.00 / 45	-55.43	n/a
503.978 MHz	35.1 Qp	1.9 / 17.7 / 27.95 / -97.6	-70.85	V / 1.00 / 45	-57.85	n/a
643.988 MHz	36.4 Qp	2.12 / 19.34 / 28.17 / -97.6	-67.92	V / 1.00 / 45	-54.92	n/a
475.988 MHz	38.3 Qp	1.87 / 16.78 / 27.9 / -97.6	-68.55	V / 1.00 / 135	-55.55	n/a
500.018 MHz	40.6 Qp	1.9 / 17.46 / 27.94 / -97.6	-65.58	V / 1.00 / 135	-52.58	n/a
503.978 MHz	36.75 Qp	1.9 / 17.7 / 27.95 / -97.6	-69.2	V / 1.00 / 135	-56.2	n/a
130.16 MHz	51.2 Qp	1.0 / 8.45 / 27.0 / -97.6	-63.95	V / 1.00 / 225	-50.95	n/a
643.988 MHz	38.75 Qp	2.12 / 19.34 / 28.17 / -97.6	-65.57	V / 1.00 / 225	-52.57	n/a
MAXIMIZED.						
85.773 MHz	70.8 Qp	0.8 / 7.31 / 26.9 / -97.6	-45.59	V / 1.00 / 37	-32.59	n/a
NO NEW OR HIGHER EMISSIONS FOUND WITH HORIZONTAL POLARIZATION AT ALL AZIMUTHS 1 - 4 METERS.						
HIGH CHANNEL (22687.MHz)						
430.663 MHz	39.75 Qp	1.73 / 16.25 / 27.9 / -97.6	-67.77	V / 1.00 / 0	-54.77	n/a
455.998 MHz	33.25 Qp	1.81 / 16.57 / 27.9 / -97.6	-73.87	V / 1.00 / 0	-60.87	n/a
380.0 MHz	32.05 Qp	1.65 / 15.27 / 27.69 / -97.6	-76.33	V / 1.00 / 90	-63.33	n/a

Tested by: RMJ

Printed

Signature

Reviewed by: TKS

Printed

Signature

File No. WC501665, Page A14 of A19

RADIATED EMISSIONS



Test Report #: WC501665 Run 3 Test Area: LTS
EUT Model #: BTS-2500-F Date: 4/6/2005
EUT Serial #: 14798 EUT Power: 60Hz/110VAC Temperature: 21.0 °C
Test Method: FCC 2.1053 Air Pressure: 98.0 kPa
Customer: NEXTNET WIRELESS Rel. Humidity: 29.0 %
EUT Description: BASE STATION

Notes:

Data File Name: 1665.dat

Page: 3 of 7

List of measurements for run #: 3						
FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / Substitution Factor (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA1 -13 dBm < 1GHz	DELTA2 -13 dBm > 1 GHz
400.005 MHz	31.5 Qp	1.7 / 16.07 / 27.82 / -97.6	-76.15	V / 1.00 / 90	-63.15	n/a
624.976 MHz	35.65 Qp	2.1 / 19.6 / 28.16 / -97.6	-68.41	V / 1.00 / 90	-55.41	n/a
633.298 MHz	35.2 Qp	2.1 / 19.49 / 28.18 / -97.6	-68.99	V / 1.00 / 90	-55.99	n/a
684.004 MHz	39.6 Qp	2.29 / 20.23 / 27.91 / -97.6	-63.39	V / 1.00 / 90	-50.39	n/a
734.663 MHz	31.6 Qp	2.3 / 21.06 / 28.0 / -97.6	-70.64	V / 1.00 / 90	-57.64	n/a
506.651 MHz	33.35 Qp	1.9 / 17.86 / 27.96 / -97.6	-72.45	V / 1.00 / 180	-59.45	n/a
124.994 MHz	48.95 Qp	0.94 / 8.62 / 27.06 / -97.6	-66.14	V / 1.00 / 270	-53.14	n/a
506.651 MHz	34.7 Qp	1.9 / 17.86 / 27.96 / -97.6	-71.1	V / 1.00 / 270	-58.1	n/a
253.327 MHz	42.45 Qp	1.36 / 12.16 / 27.2 / -97.6	-68.83	V / 1.00 / 270	-55.83	n/a
253.327 MHz	47.4 Qp	1.36 / 12.16 / 27.2 / -97.6	-63.88	H / 1.00 / 270	-50.88	n/a
380.0 MHz	35.15 Qp	1.65 / 15.27 / 27.69 / -97.6	-73.23	H / 1.00 / 270	-60.23	n/a
455.998 MHz	35.6 Qp	1.81 / 16.57 / 27.9 / -97.6	-71.52	H / 1.00 / 270	-58.52	n/a
380.0 MHz	38.0 Qp	1.65 / 15.27 / 27.69 / -97.6	-70.38	H / 1.00 / 180	-57.38	n/a
253.327 MHz	50.5 Qp	1.36 / 12.16 / 27.2 / -97.6	-60.78	H / 1.00 / 90	-47.78	n/a
380.0 MHz	43.2 Qp	1.65 / 15.27 / 27.69 / -97.6	-65.18	H / 1.00 / 90	-52.18	n/a
430.663 MHz	43.8 Qp	1.73 / 16.25 / 27.9 / -97.6	-63.72	H / 1.00 / 90	-50.72	n/a
196.0 MHz	43.15 Qp	1.19 / 10.88 / 27.1 / -97.6	-69.47	H / 1.00 / 0	-56.47	n/a
506.651 MHz	36.35 Qp	1.9 / 17.86 / 27.96 / -97.6	-69.45	H / 1.00 / 0	-56.45	n/a
MAXIMIZED						

Tested by: RMJ

Printed

Robert M. Johnson

Signature

Reviewed by: TKS

Printed

Thomas K. Swanson

Signature

File No. WC501665, Page A15 of A19

RADIATED EMISSIONS



Test Report #: WC501665 Run 3 Test Area: LTS
EUT Model #: BTS-2500-F Date: 4/6/2005
EUT Serial #: 14798 EUT Power: 60Hz/110VAC Temperature: 21.0 °C
Test Method: FCC 2.1053 Air Pressure: 98.0 kPa
Customer: NEXTNET WIRELESS Rel. Humidity: 29.0 %
EUT Description: BASE STATION

Notes:

Data File Name: 1665.dat

Page: 4 of 7

List of measurements for run #: 3						
FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / Substitution Factor (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA1 -13 dBm < 1GHz	DELTA2 -13 dBm > 1 GHz
684.004 MHz	40.65 Qp	2.29 / 20.23 / 27.91 / -97.6	-62.34	V / 1.00 / 80	-49.34	n/a
684.004 MHz	43.85 Qp	2.29 / 20.23 / 27.91 / -97.6	-59.14	H / 1.00 / 140	-46.14	n/a
SCAN COMPLETE 30-1000 MHZ, 1-4 METERS V/H, 360 DEGREES.						
5.375 GHz	43.59 Av	6.72 / 33.88 / 44.78 / -97.6	-58.18	H / 1.00 / 180	n/a	-45.18
MAXIMIZED.						
5.375 GHz	55.64 Av	6.72 / 33.88 / 44.78 / -97.6	-46.13	H / 1.27 / 204	n/a	-33.13
MIDDLE CHANNEL (2575MHz) 6MHz BANDWIDTH						
5.15 GHz	40.99 Av	6.59 / 33.53 / 44.65 / -97.6	-61.13	V / 1.00 / 0	n/a	-48.13
MAXIMIZED.						
5.15 GHz	50.65 Av	6.59 / 33.53 / 44.65 / -97.6	-51.47	V / 1.00 / 288	n/a	-38.47
5.15 GHz	59.95 Pk	6.59 / 33.53 / 44.65 / -97.6	-42.17	V / 1.00 / 288	n/a	-29.17*
* above denotes a peak measurement compared to average limit.						
LOW CHANNEL (2499) 6MHz BANDWIDTH						
MAXIMIZED.						
4.998 GHz	57.29 Av	6.5 / 33.29 / 44.64 / -97.6	-45.16	V / 1.00 / 176	n/a	-32.16

Tested by: RMJ

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Robert M. Johnson

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File No. WC501665, Page A16 of A19

RADIATED EMISSIONS



Test Report #: WC501665 Run 3 Test Area: LTS

EUT Model #: BTS-2500-F Date: 4/6/2005

EUT Serial #: 14798 EUT Power: 60Hz/110VAC Temperature: 21.0 °C

Test Method: FCC 2.1053 Air Pressure: 98.0 kPa

Customer: NEXTNET WIRELESS Rel. Humidity: 29.0 %

EUT Description: BASE STATION

Notes:

Data File Name: 1665.dat Page: 5 of 7

Measurement summary for limit1: -13 dBm < 1GHz (Qp)					
FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / Substitution Factor (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA1 -13 dBm < 1GHz
85.773 MHz	70.8 Qp	0.8 / 7.31 / 26.9 / -97.6	-45.59	V / 1.00 / 37	-32.59
30.441 MHz	47.95 Qp	0.43 / 20.22 / 27.39 / -97.6	-56.4	V / 1.00 / 90	-43.4
108.47 MHz	57.95 Qp	0.84 / 9.3 / 27.04 / -97.6	-56.55	V / 1.00 / 0	-43.55
684.004 MHz	43.85 Qp	2.29 / 20.23 / 27.91 / -97.6	-59.14	H / 1.00 / 140	-46.14
51.039 MHz	50.8 Qp	0.6 / 13.88 / 27.05 / -97.6	-59.37	V / 1.00 / 0	-46.37
51.945 MHz	49.7 Qp	0.6 / 13.62 / 27.02 / -97.6	-60.7	V / 1.00 / 0	-47.7
253.327 MHz	50.5 Qp	1.36 / 12.16 / 27.2 / -97.6	-60.78	H / 1.00 / 90	-47.78
51.603 MHz	49.4 Qp	0.6 / 13.72 / 27.03 / -97.6	-60.91	V / 1.00 / 270	-47.91
63.303 MHz	52.1 Qp	0.66 / 10.71 / 27.0 / -97.6	-61.13	V / 1.00 / 0	-48.13
699.993 MHz	41.0 Qp	2.3 / 20.33 / 27.93 / -97.6	-61.9	V / 1.00 / 90	-48.9
430.663 MHz	43.8 Qp	1.73 / 16.25 / 27.9 / -97.6	-63.72	H / 1.00 / 90	-50.72
130.16 MHz	51.2 Qp	1.0 / 8.45 / 27.0 / -97.6	-63.95	V / 1.00 / 225	-50.95
380.0 MHz	43.2 Qp	1.65 / 15.27 / 27.69 / -97.6	-65.18	H / 1.00 / 90	-52.18
643.988 MHz	38.75 Qp	2.12 / 19.34 / 28.17 / -97.6	-65.57	V / 1.00 / 225	-52.57
500.018 MHz	40.6 Qp	1.9 / 17.46 / 27.94 / -97.6	-65.58	V / 1.00 / 135	-52.58
124.994 MHz	48.95 Qp	0.94 / 8.62 / 27.06 / -97.6	-66.14	V / 1.00 / 270	-53.14
214.129 MHz	46.3 Qp	1.22 / 10.65 / 27.12 / -97.6	-66.55	V / 1.00 / 0	-53.55
756.003 MHz	33.95 Qp	2.34 / 21.2 / 27.92 / -97.6	-68.03	V / 1.00 / 90	-55.03
624.976 MHz	35.65 Qp	2.1 / 19.6 / 28.16 / -97.6	-68.41	V / 1.00 / 90	-55.41
475.988 MHz	38.3 Qp	1.87 / 16.78 / 27.9 / -97.6	-68.55	V / 1.00 / 135	-55.55
140.75 MHz	45.55 Qp	1.0 / 9.22 / 26.99 / -97.6	-68.82	V / 1.00 / 270	-55.82
633.298 MHz	35.2 Qp	2.1 / 19.49 / 28.18 / -97.6	-68.99	V / 1.00 / 90	-55.99
503.978 MHz	36.75 Qp	1.9 / 17.7 / 27.95 / -97.6	-69.2	V / 1.00 / 135	-56.2
506.651 MHz	36.35 Qp	1.9 / 17.86 / 27.96 / -97.6	-69.45	H / 1.00 / 0	-56.45
196.0 MHz	43.15 Qp	1.19 / 10.88 / 27.1 / -97.6	-69.47	H / 1.00 / 0	-56.47

Tested by: RMJ

Printed Signature

Reviewed by: TKS

Printed Signature

File No. WC501665, Page A17 of A19

RADIATED EMISSIONS



Test Report #: WC501665 Run 3 Test Area: LTS

EUT Model #: BTS-2500-F Date: 4/6/2005

EUT Serial #: 14798 EUT Power: 60Hz/110VAC Temperature: 21.0 °C

Test Method: FCC 2.1053 Air Pressure: 98.0 kPa

Customer: NEXTNET WIRELESS Rel. Humidity: 29.0 %

EUT Description: BASE STATION

Notes:

Data File Name: 1665.dat Page: 6 of 7

Measurement summary for limit1: -13 dBm < 1GHz (Qp)					
FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / Substitution Factor (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA1 -13 dBm < 1GHz
734.663 MHz	31.6 Qp	2.3 / 21.06 / 28.0 / -97.6	-70.64	V / 1.00 / 90	-57.64
455.998 MHz	35.6 Qp	1.81 / 16.57 / 27.9 / -97.6	-71.52	H / 1.00 / 270	-58.52
400.005 MHz	31.5 Qp	1.7 / 16.07 / 27.82 / -97.6	-76.15	V / 1.00 / 90	-63.15

Tested by: RMJ

Printed: _____ Signature: *RMJ*

Reviewed by: TKS

Printed: _____ Signature: *Thomas K. Swanson*

File No. WC501665, Page A18 of A19

RADIATED EMISSIONS



Test Report #: WC501665 Run 3 Test Area: LTS
EUT Model #: BTS-2500-F Date: 4/6/2005
EUT Serial #: 14798 EUT Power: 60Hz/110VAC Temperature: 21.0 °C
Test Method: FCC 2.1053 Air Pressure: 98.0 kPa
Customer: NEXTNET WIRELESS Rel. Humidity: 29.0 %
EUT Description: BASE STATION
Notes:
Data File Name: 1665.dat Page: 7 of 7

Measurement summary for limit2: -13 dBm > 1 GHz (Av)					
FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / Substitution Factor (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA2 -13 dBm > 1 GHz
4.998 GHz	57.29 Av	6.5 / 33.29 / 44.64 / -97.6	-45.16	V / 1.00 / 176	-32.16
5.375 GHz	55.64 Av	6.72 / 33.88 / 44.78 / -97.6	-46.13	H / 1.27 / 204	-33.13
5.15 GHz	50.65 Av	6.59 / 33.53 / 44.65 / -97.6	-51.47	V / 1.00 / 288	-38.47
5.15 GHz	59.95 Pk	6.59 / 33.53 / 44.65 / -97.6	-42.17	V / 1.00 / 288	-29.17*

* Denotes a peak measurement compared to average limit.

Tested by: RMJ

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Signature

Reviewed by: TKS

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Signature

File No. WC501665, Page A19 of A19



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:

$$\text{dB}\mu\text{V} = 20(\log \mu\text{V})$$

$$\mu\text{V} = \text{Inverse log}(\text{dB}\mu\text{V}/20)$$

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)	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. WC501665, 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 26000 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. WC501665, Page C2 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

Frequency Stability Test

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.

Standard:

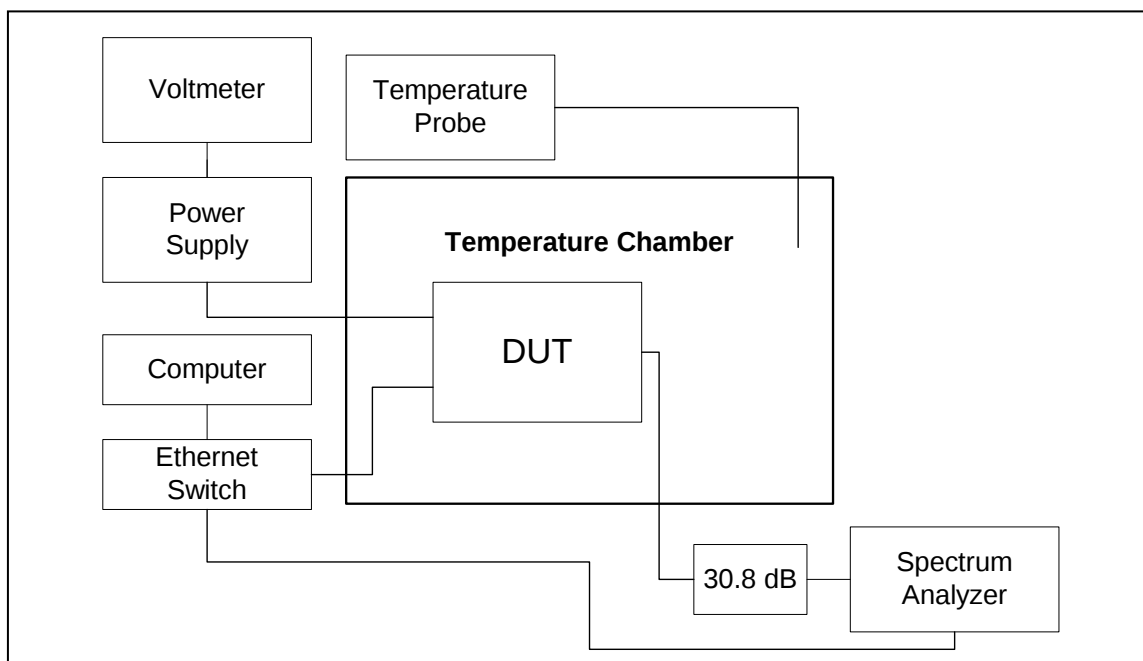
47CFR27.53(l)(3)

Test Procedure:

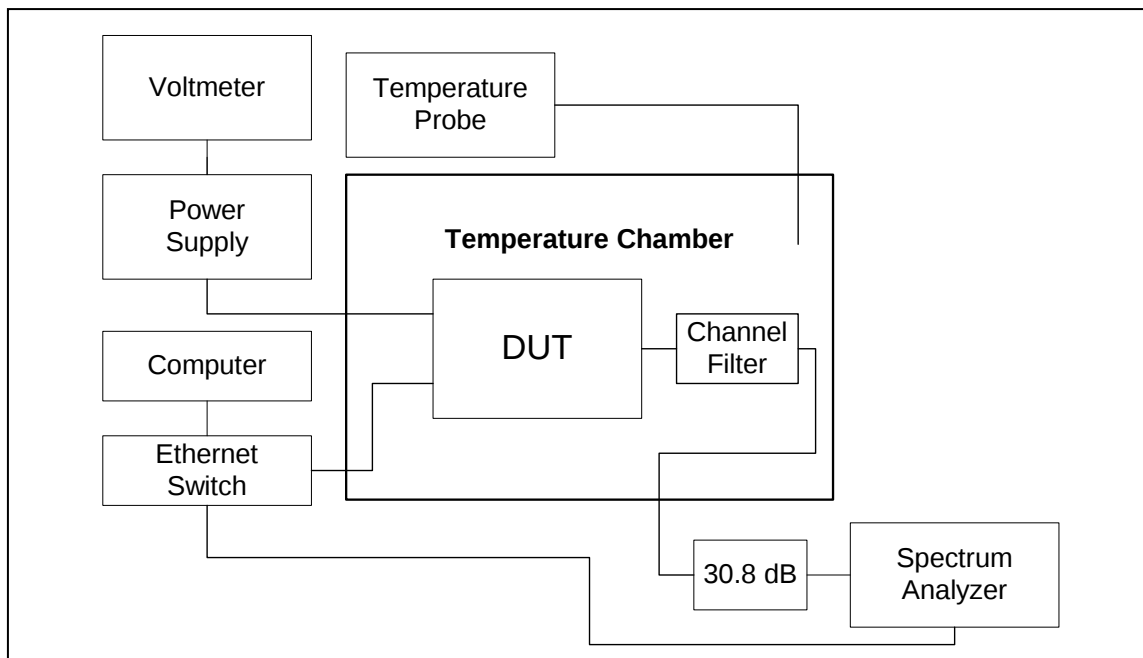
The frequency stability of the NextNet Wireless Mobile Subscriber Unit fundamental oscillator is derived from the on board 20 MHz TCXO. Since each radio channel operating frequency is synthesized and referenced to the 20 MHz TCXO, only one channel will be reported for frequency stability as all channels 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(l)(3). The emission power 1 MHz above and below the channel edge was measured by utilizing the adjacent channel power function in the spectrum analyzer. The transmitted signal was recorded for frequency changes due to temperature variation and input voltage.

Test Set-Up:



Frequency Stability 2W Test Setup



Frequency Stability 5W Test Setup

Frequency Stability Temperature Variation Test Results

Test Conditions: Frequency = 2575 MHz
Supply Voltage: 48.0 VDC Nominal
Temperature: -30° C to +50° C in 10° C increments

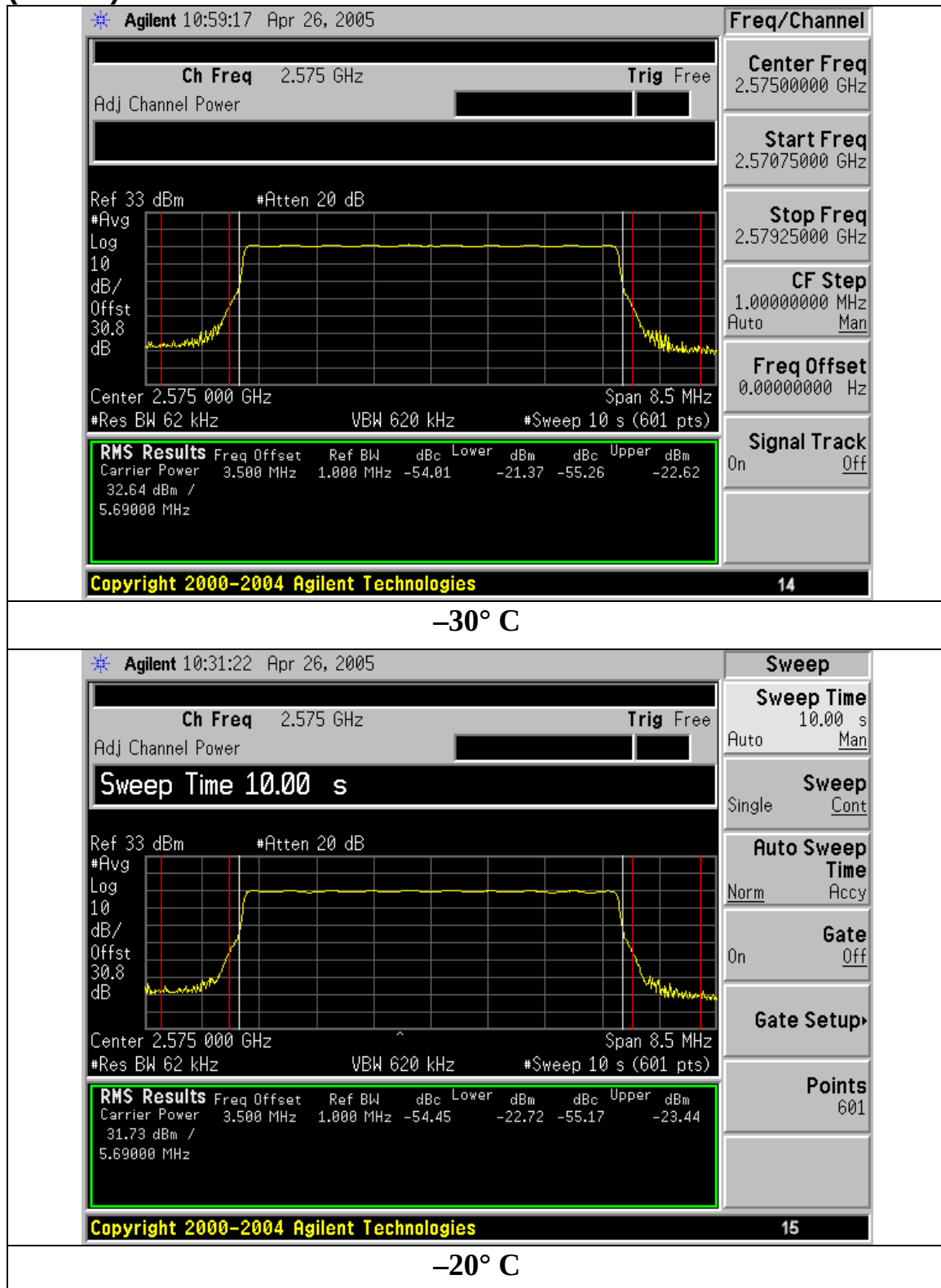
Test Results: Passed Temperature Variation 2-Watt Channels

Adjacent Channel Power Method (2575 MHz)							
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	-21.37	-22.62	-13	-8.37	-9.62	Complies	Complies
-20	-22.72	-23.44	-13	-9.72	-10.44	Complies	Complies
-10	-21.83	-22.06	-13	-8.83	-9.06	Complies	Complies
0	-21.98	-22.45	-13	-8.98	-9.45	Complies	Complies
10	-21.62	-21.38	-13	-8.62	-8.38	Complies	Complies
20	-21.26	-21.75	-13	-8.26	-8.75	Complies	Complies
30	-21.60	-21.43	-13	-8.60	-8.43	Complies	Complies
40	-21.50	-22.66	-13	-8.50	-9.66	Complies	Complies
50	-20.94	-21.95	-13	-7.94	-8.95	Complies	Complies

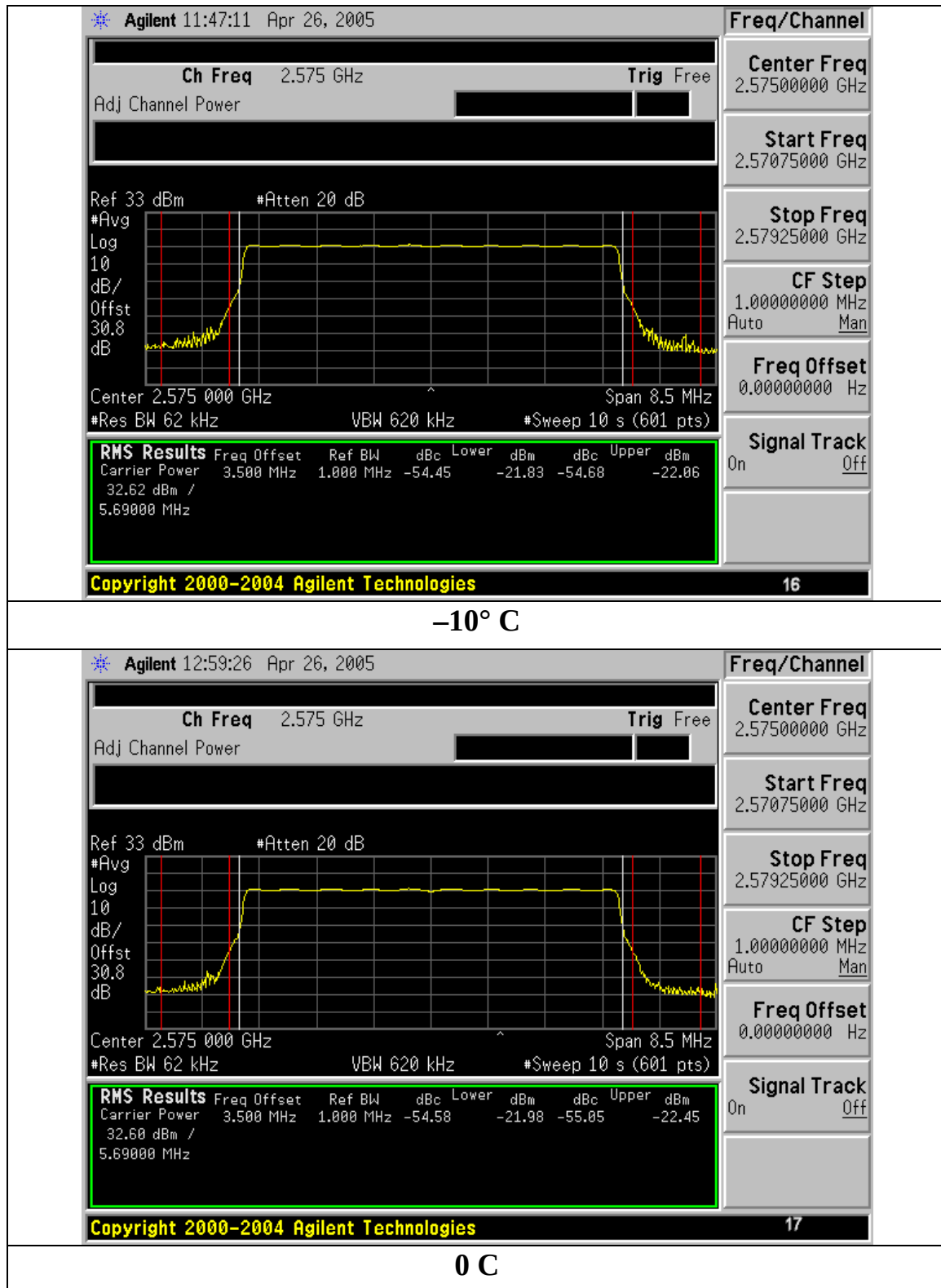
Test Results: Passed Temperature Variation 5-Watt Channels

Adjacent Channel Power Method (2683 MHz)							
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	-18.83	-13.12	-13	-5.83	-.12	Complies	Complies
-20	-21.20	-15.21	-13	-8.20	-2.21	Complies	Complies
-10	-20.01	-13.07	-13	-7.01	-.07	Complies	Complies
0	-22.16	-16.29	-13	-9.16	-3.29	Complies	Complies
10	-20.56	-15.70	-13	-7.56	-2.70	Complies	Complies
20	-17.11	-13.19	-13	-4.11	-.19	Complies	Complies
30	-18.61	-17.01	-13	-5.61	-4.01	Complies	Complies
40	-16.66	-16.61	-13	-3.66	-3.61	Complies	Complies
50	-15.03	-16.29	-13	-2.03	-3.29	Complies	Complies

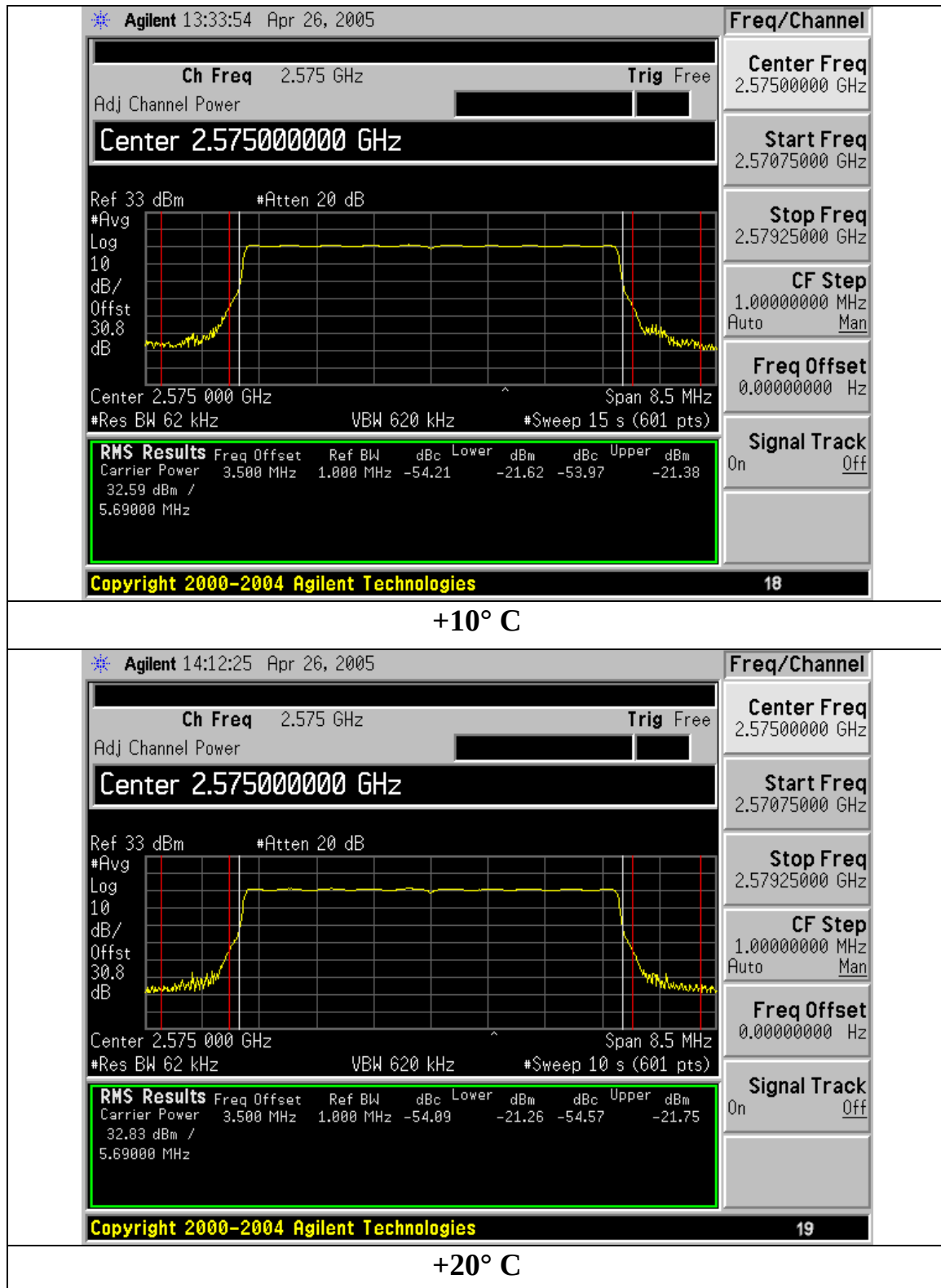
Freq. Stability Temperature Variation Spectrum Analyzer Plots (2-Watt)



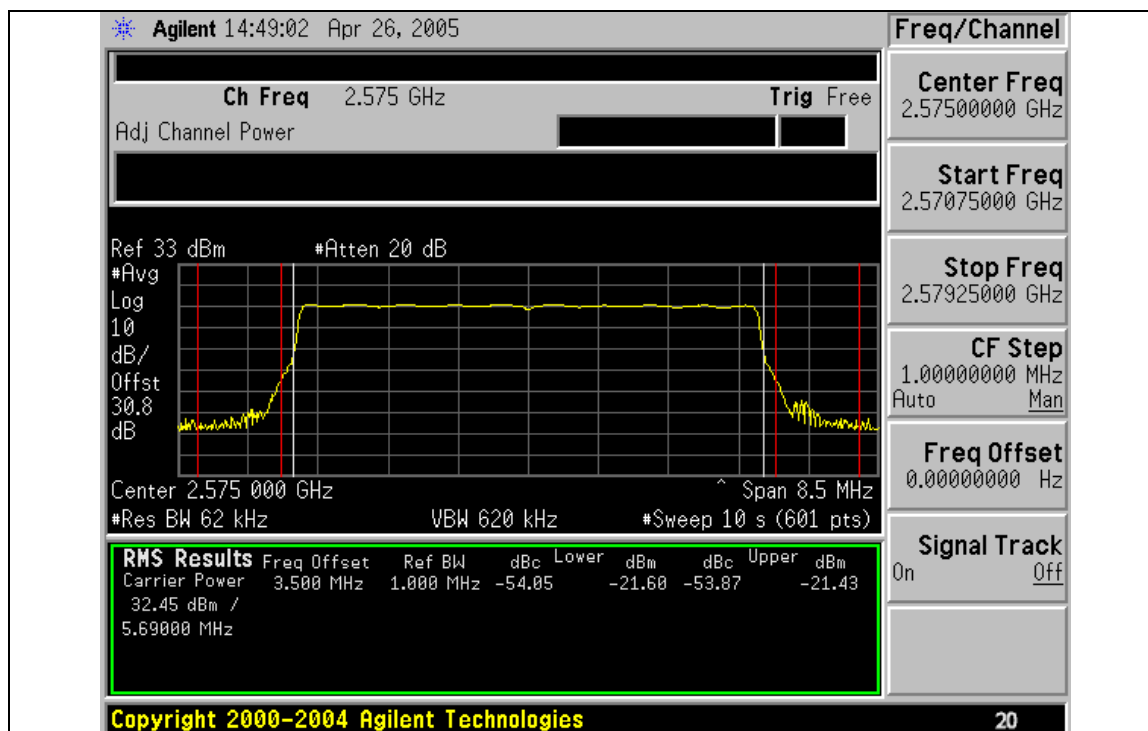
2-Watt Frequency Stability (Cont'd)



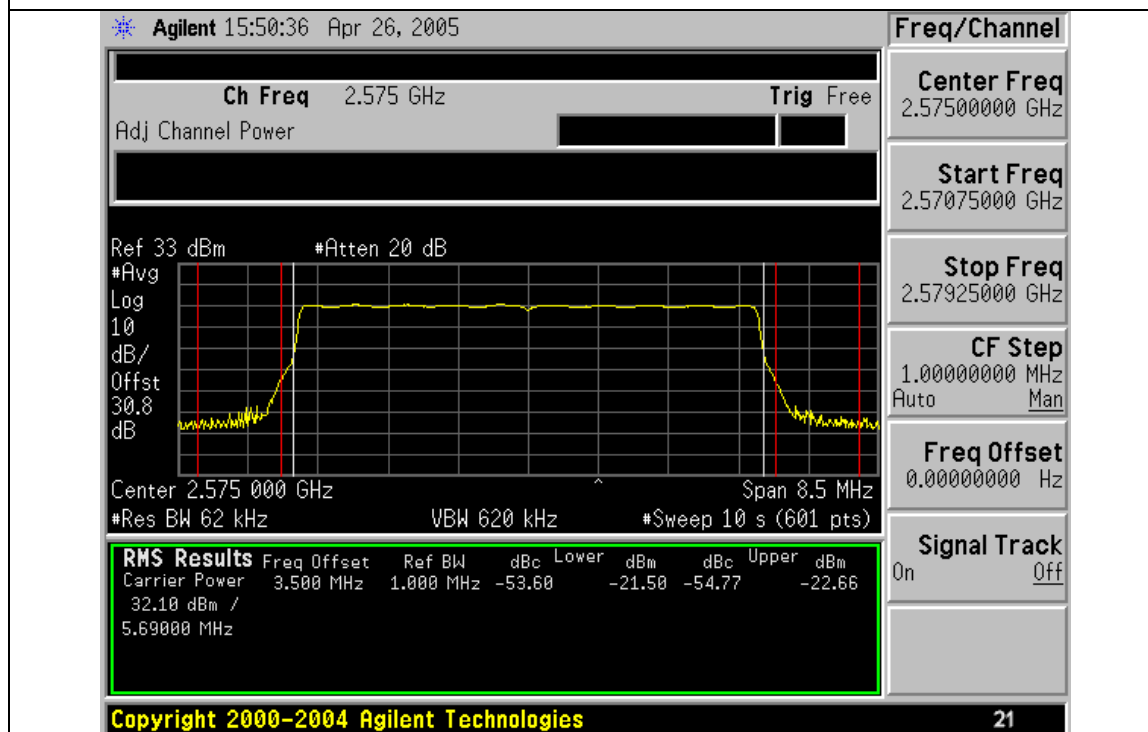
2-Watt Frequency Stability (Cont'd)



2-Watt Frequency Stability (Cont'd)

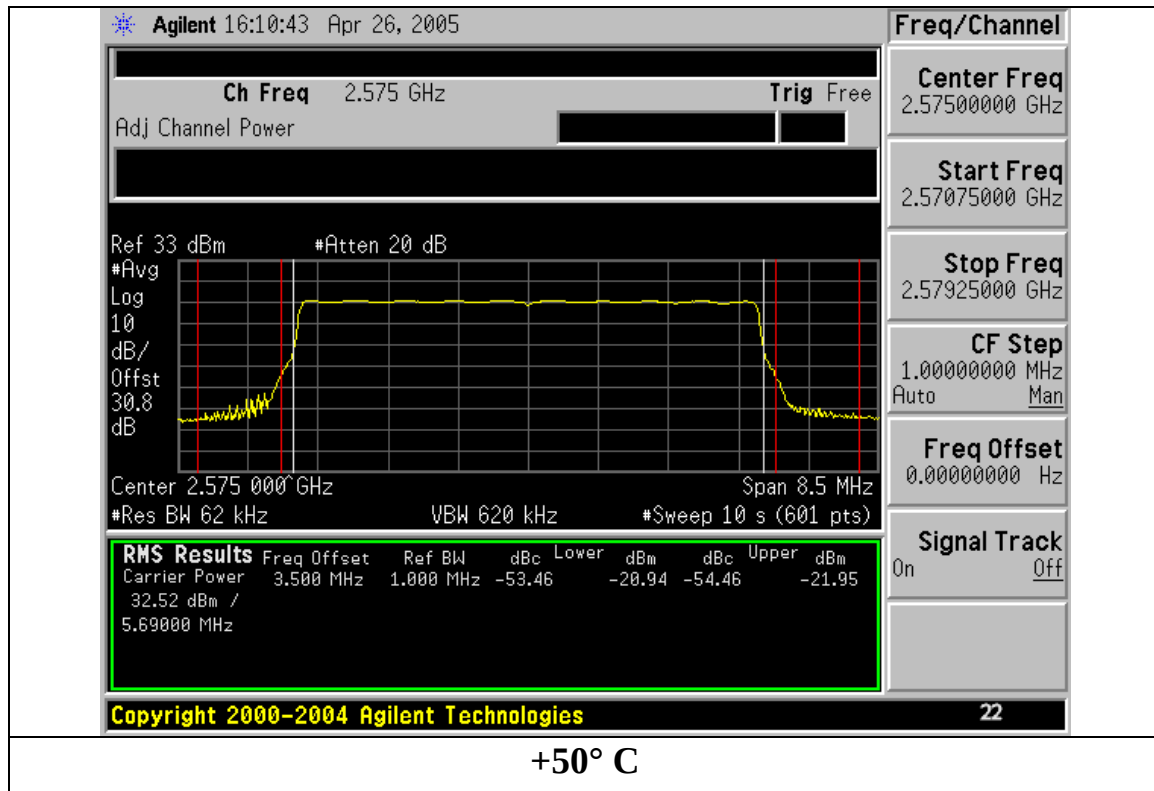


+30° C



+40° C

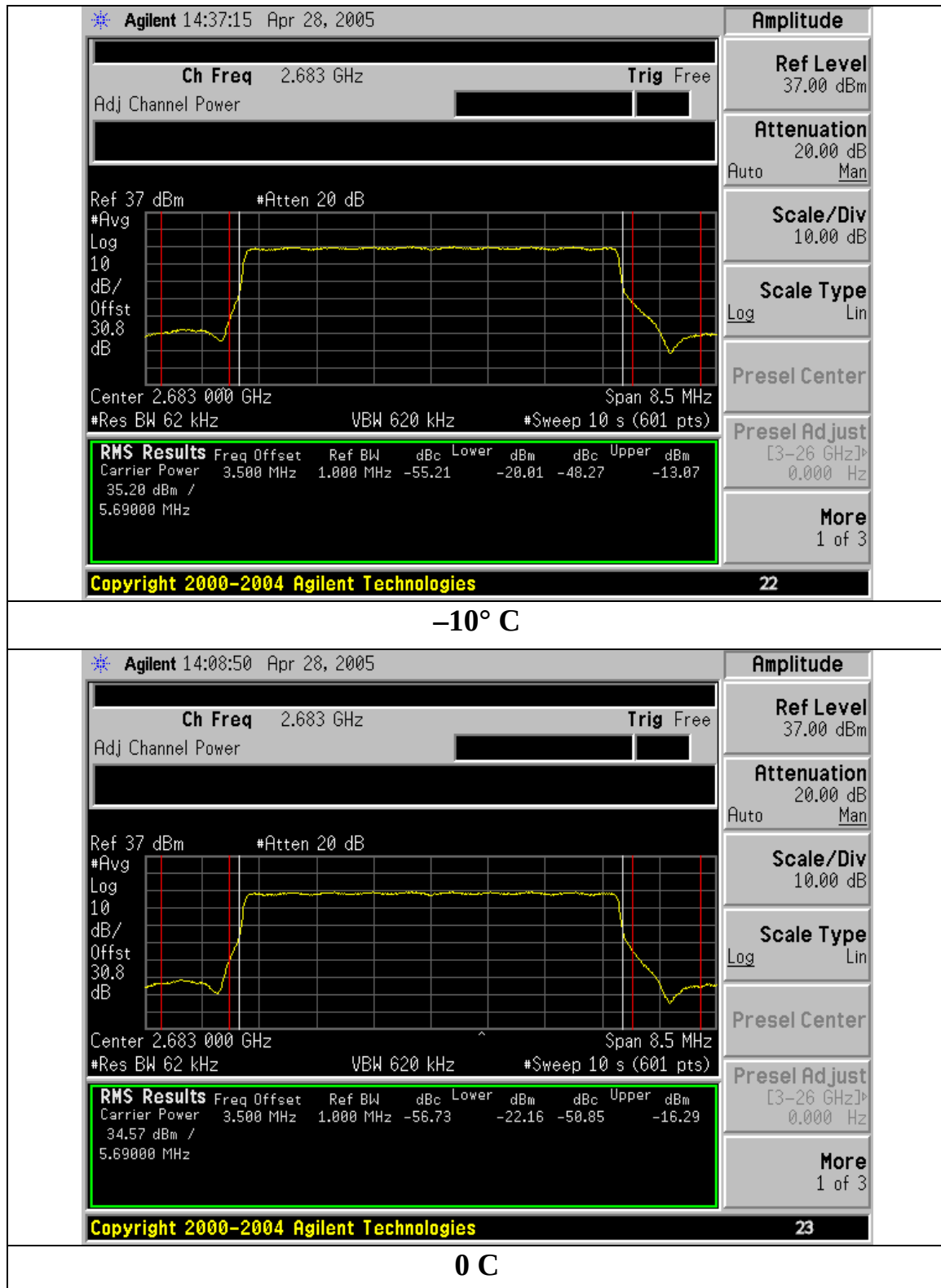
2-Watt Frequency Stability (Cont'd)



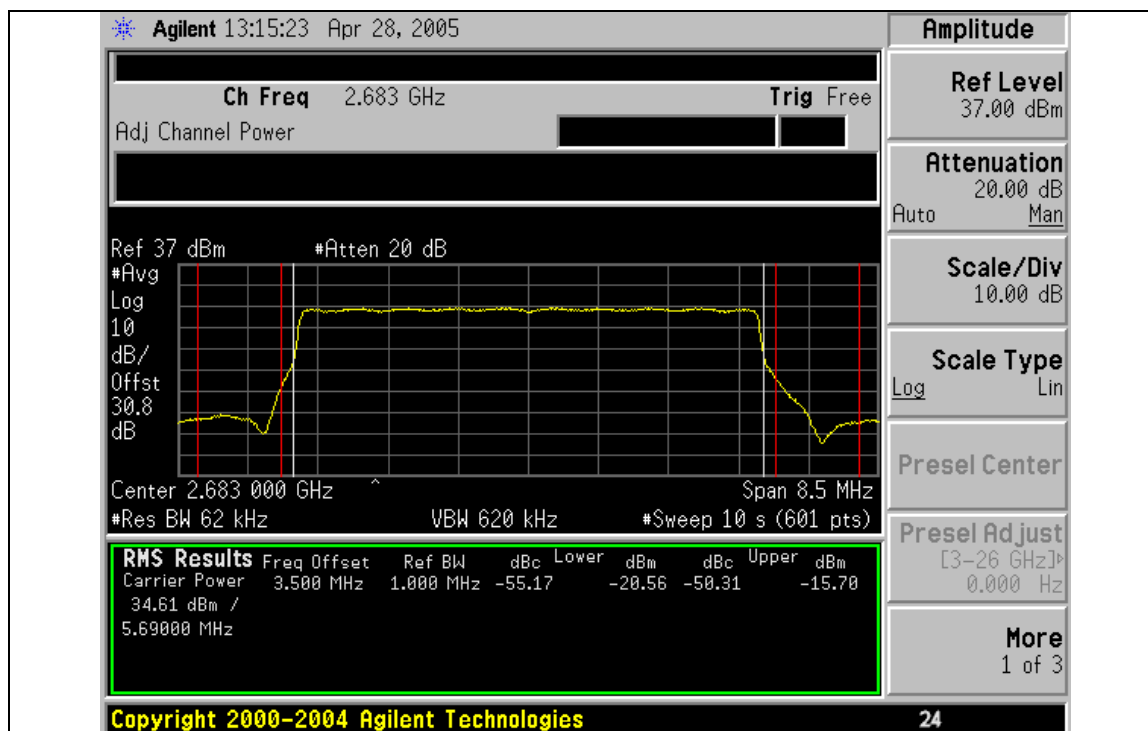
Freq. Stability Temperature Variation Spectrum Analyzer Plots (5-Watt)



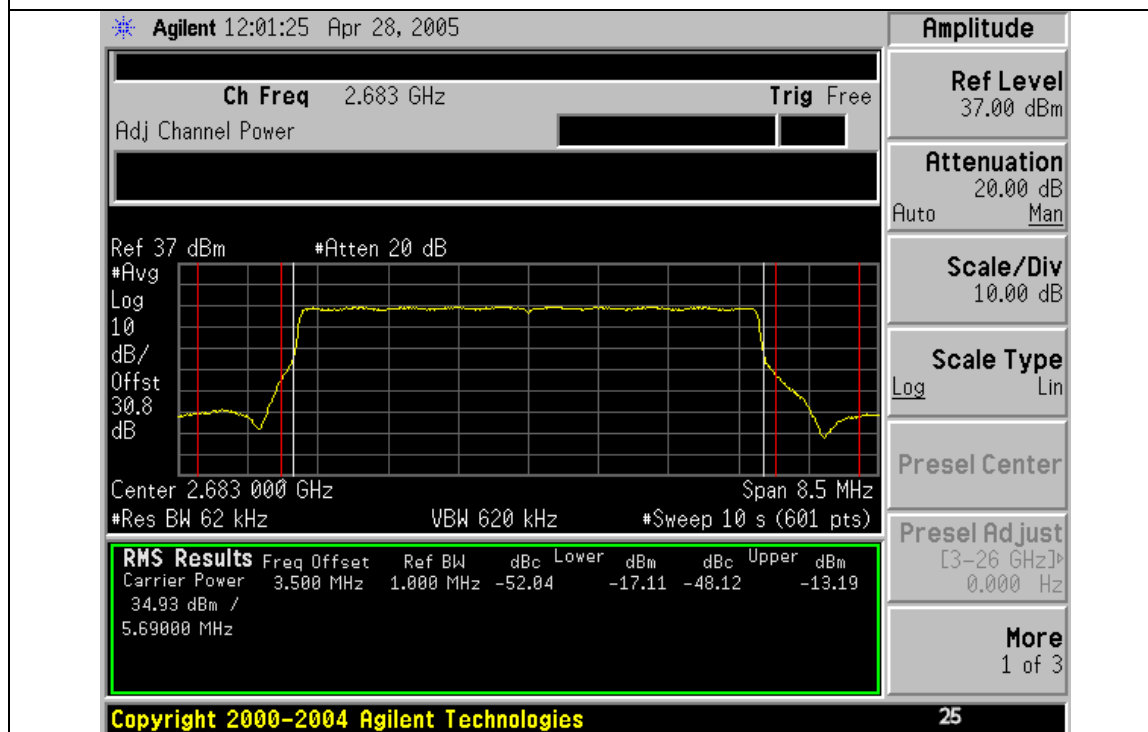
5-Watt Frequency Stability (Cont'd)



5-Watt Frequency Stability (Cont'd)

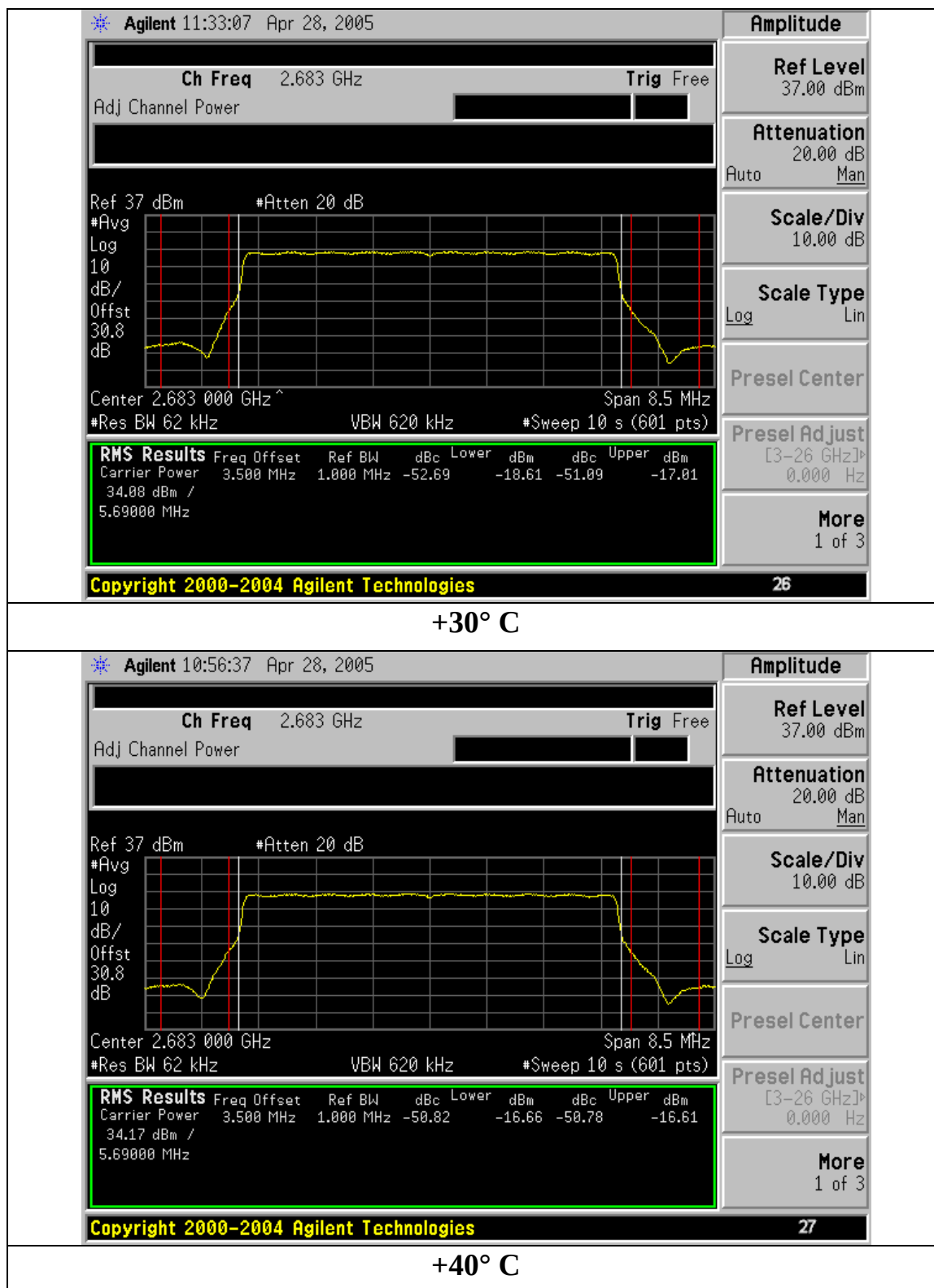


+10° C

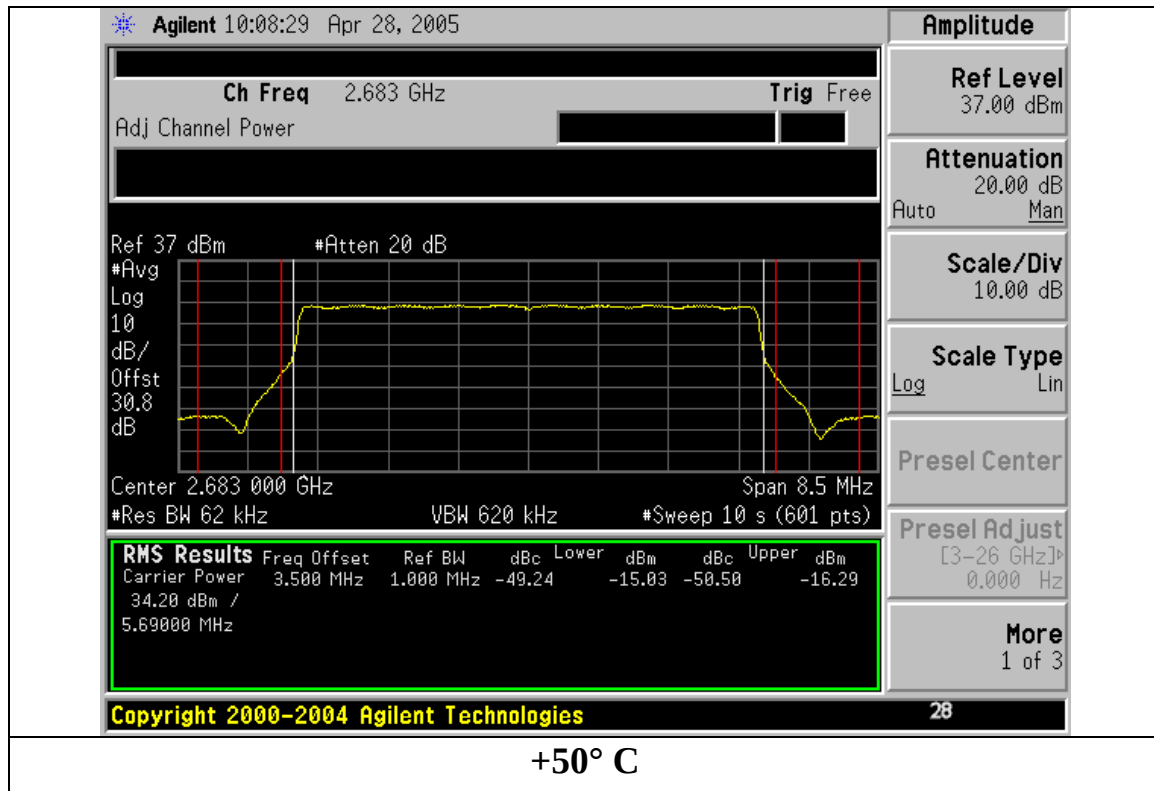


+20° C

5-Watt Frequency Stability (Cont'd)



5-Watt Frequency Stability (Cont'd)



Frequency Stability Supply Voltage Variation Test Results

Test Conditions: Frequency = 2575 MHz (2W Channels)
Frequency = 2683 MHz (5W Channels)
Temperature = 20 °C

Supply Voltage Variation

Source Input Voltage Specification: 48.0 VDC nominal
Test Voltage Range = $0.85 \times 48.0 = 40.8$ VDC lower limit
 $1.15 \times 48.0 = 55.2$ VDC upper limit

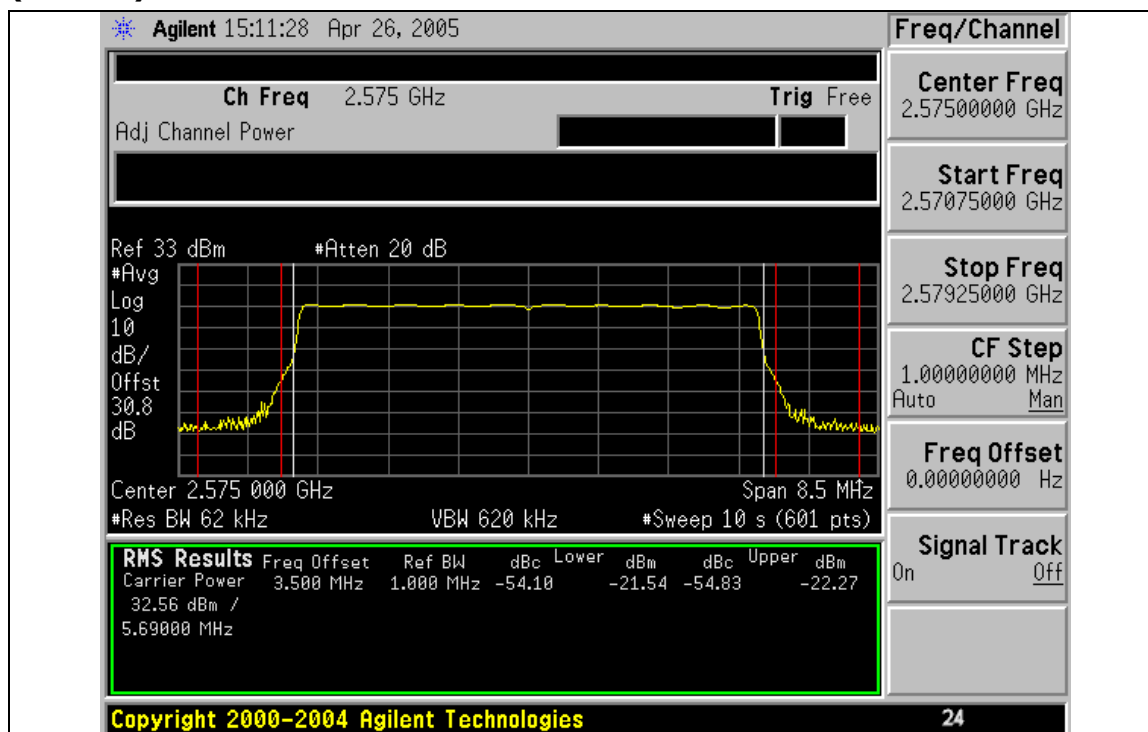
Test Results: Pass Temperature Stability, Supply Voltage Variation
(2W Channels)

Adjacent Channel Power Method 20° C (2575 MHz)							
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
40.8	-21.54	-22.27	-13	-8.54	-9.27	Complies	Complies
48	-21.41	-21.77	-13	-8.41	-8.77	Complies	Complies
55.2	-21.65	-21.94	-13	-8.65	-8.94	Complies	Complies

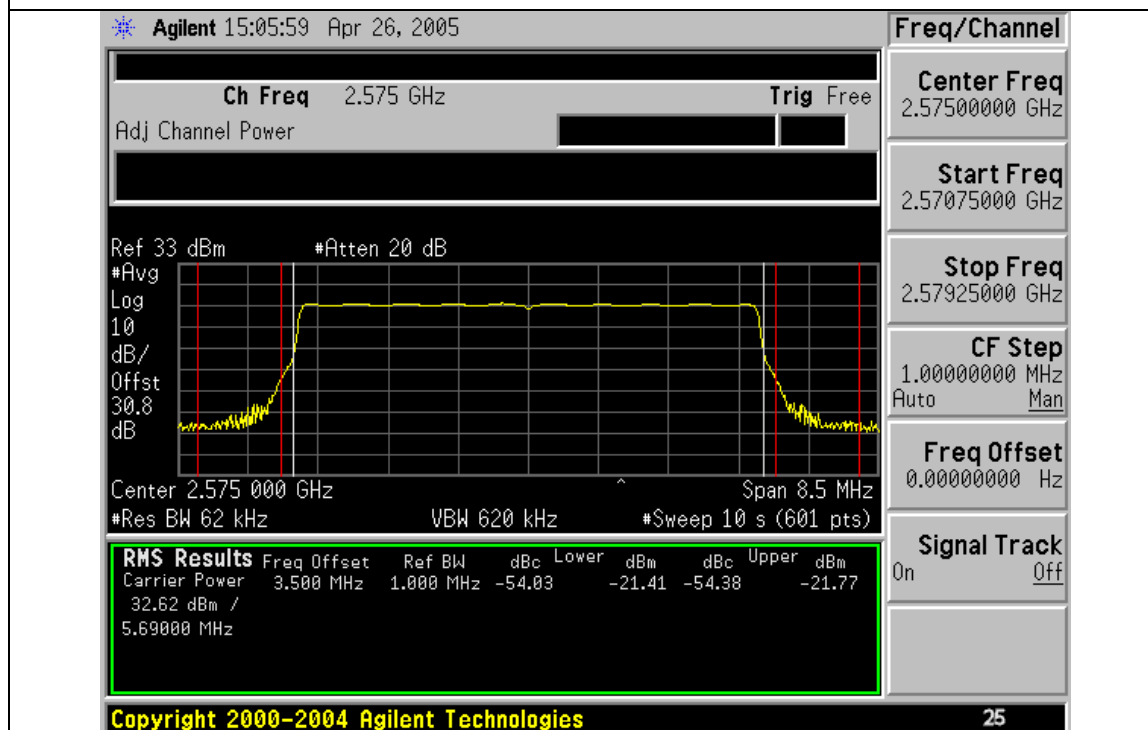
Test Results: Pass Temperature Stability, Supply Voltage Variation
(5W Channels)

Adjacent Channel Power Method 20° C (2.6830 GHz)							
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
40.8	-15.85	-14.95	-13	-2.85	-1.95	Complies	Complies
48	-15.29	-14.58	-13	-2.29	-1.58	Complies	Complies
55.2	-15.73	-14.91	-13	-2.73	-1.91	Complies	Complies

Frequency Stability Voltage Variation Spectrum Analyzer Plots (2-Watt)

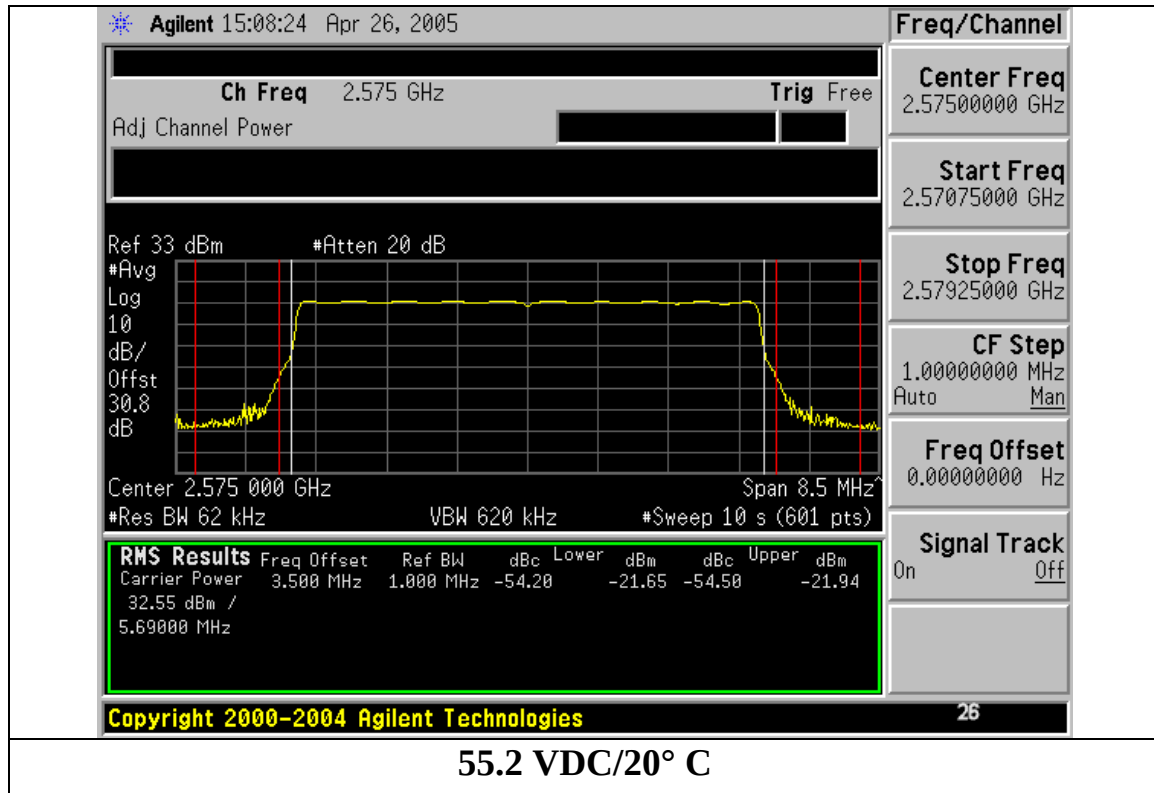


40.8 VDC/20° C

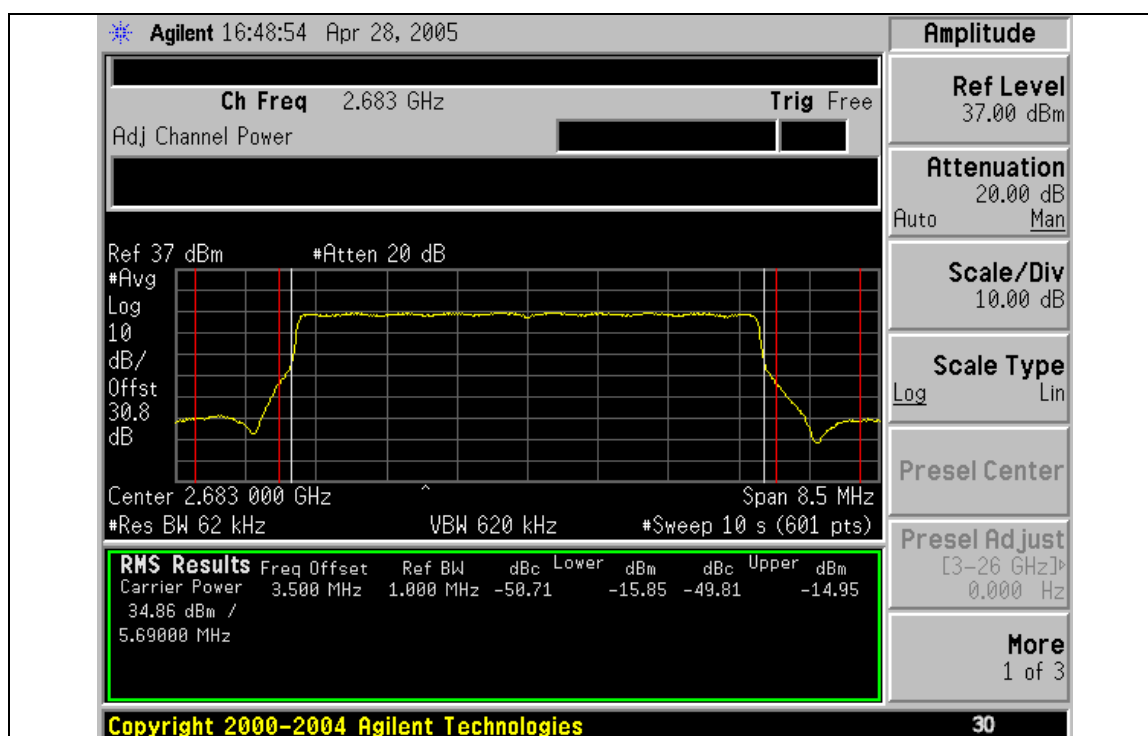


48.0 VDC/20° C

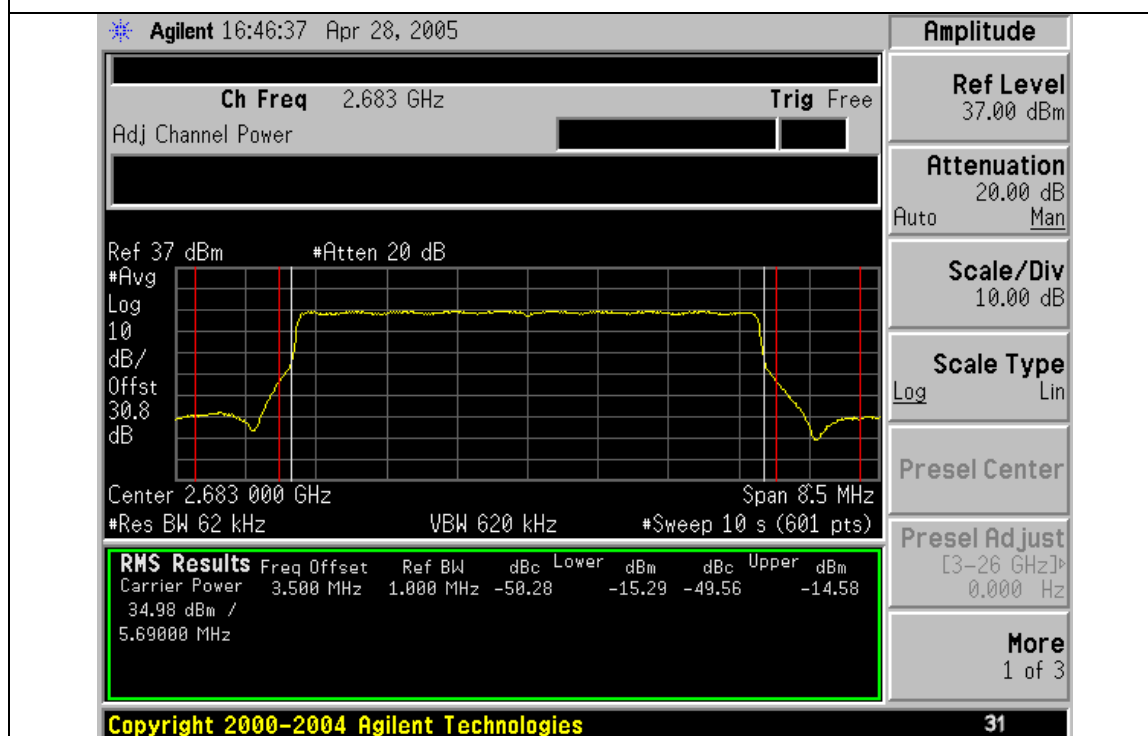
2-Watt Voltage Variation Frequency Stability (Cont'd)



Frequency Stability Voltage Variation Spectrum Analyzer Plots (5-Watt)



40.8 VDC/20° C



48.0 VDC/20° C

5-Watt Voltage Variation Frequency Stability (Cont'd)

