FCC ID: PHX-MMDS-CPE6 Page 1 of 43

# Exhibit 6

# **Text Report**

NextNet Wireless, Inc

12/05/2003

9555 James Ave. South Suite 270 Bloomington, MN 55431

# **RF Power Output**

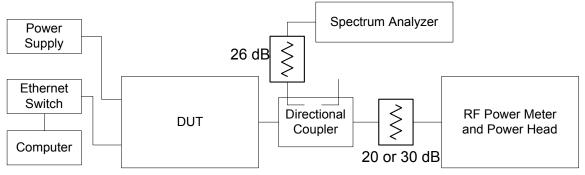
Rule Part Number:	2.1046, 21.909(g)(2), 21.909(n), 74.939(g)(2), 74.939(p) Tx Power < 2 watts EIRP < 18 dBW
Test Procedure:	The RF output power is measured with a power meter. The RF output is applied to an attenuator that is connected to the power sensor of the power meter. The transmitter is enabled in test mode with the attached computer. Measurements are performed for each of the modulation formats available, 4 QAM, 16 QAM, and 64 QAM.
Test Conditions:	Frequency = 2503, 2593, 2683 MHz Temperature = $25^{\circ}C$ Supply Voltage = 120 Vac / 60 Hz

Test Equipment:

DIAL	
DVM	Fluke 87 III
	Calibration not required
Spectrum Analyzer	Rohde&Schwarz
	Model: FSEA
	S/N: DE24511
	Cal Date: 06-02-2003
	Cal Due: 06-02-2005
Power Meter	Agilent E4418B
	S/N: GB41299360
	Cal Date: 08-28-2002
	Due Date: 08-28-2004
Power Head	HP8481A
	S/N: 1550A08915
	Cal date: 05-15-2003
	Due Date: 05-15-2005
Directional Coupler	Dual Directional Coupler
	Model: Narda 3022
	S/N: 01231
Attenuators	Pasternak Corporation
(6, 10 and 20dB)	Model: PE7005-6 (6 dB)
	Model: PE7005-10 (10 dB)
	Model: PE7005-20 (20 dB)
	Calibration not required

Computer	Dell Inspiron 5000 Model: PPM
	S/N: 000832RM-12961-03N-3073
Ethernet Switch	D-Link
	Model: DSS-5+
	5 port 10/100Mbps
	S/N: B205335003051
Power Supply	FRIWO
	Model: SDA5516G

Test Set-Up:



Test Results: 14

14.29 % transmit duty cycle

Tx Power:

Minimum Power setting						
	4 QAM		16 QAM		64 QAM	
Freq (MHz)	(dBm)	(Watts)	(dBm)	(Watts)	(dBm)	(Watts)
2503	-0.08	0.00098	-0.06	0.00099	-0.11	0.00097
2593	0.11	0.00103	0.12	0.00103	0.11	0.00103
2683	-0.20	0.00095	-0.22	0.00095	-0.29	0.00094

Maximum Power setting							
	4 (	4 QAM		16 QAM		64 QAM	
Freq (MHz)	(dBm)	(Watts)	(dBm)	(Watts)	(dBm)	(Watts)	
2503	32.23	1.67109	32.36	1.72187	32.31	1.70216	
2593	32.94	1.96789	32.87	1.93642	32.87	1.93642	
2683	32.01	1.58855	31.99	1.58125	32.00	1.58489	

Pass Tx power at antenna connector (< 2 watts)

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

## **RF Power Output**

Test Conclusions:

	Vertically Polarized Antenna
	RF Power Output = 33 dBm
	Vertical Antenna Gain = 13 dBi
	Transmitted Power = RF Power + Isotropic Antenna Gain
	Transmitted Power = $33 + 13 = 46$ dBim
	Transmitted Power = $10*\log(2W)+13$ dBi = $16$ dBiW < $18$ dBiW
Pass:	Transmitted Power Output Requirement for Vertically Polarized Antenna for user installation
	Horizontally Polarized Antenna
	RF Power Output = 33 dBm
	Horizontal Antenna Gain = 12.5 dBi
	Transmitted Power = RF Power + Isotropic Antenna Gain
	Transmitted Power = $33 + 12.5 = 45.5$ dBim

Transmitted Power =  $10*\log(2W)+12.5$ dBi = 15.5 dBiW < 18 dBiW

Pass: Transmitted Power Output Requirement for Horizontally Polarized Antenna for user installation

## **Modulation Characteristics**

Rule Parts:

2.1047(d), 21.905(b), 21.908(d), 21.908(e), 74.936(a), 74.936(f)

Modulation Characteristics = OFDM

21.905(b) Quadrature amplitude modulation (QAM), digital vestigial sideband modulation (VSB), quadrature phase shift key modulation (QPSK), code division multiple access (CDMA), and orthogonal frequency division multiplex (OFDM) emissions may be employed, subject to compliance with the policies set forth in the Declaratory Ruling and Order, 11 FCC Rcd 18839 (1996). Use of OFDM also is subject to the subsequent Declaratory Ruling and Order, DA 99-554 (Mass Med. Bur. rel. Mar. 19, 1999).

21.908(d) The maximum out-of-band power of an MDS response station using all or part of a 6 MHz channel, employing digital modulation and transmitting with an EIRP greater than -6 dBW per 6 MHz channel shall be attenuated (as measured in accordance with paragraph (e) of this section) at the 6 MHz channel edges at least 25 dB relative to the average 6 MHz channel power level, then attenuated along a linear slope to at least 40 dB at 250 kHz beyond the nearest channel edge, then attenuated along a linear slope from that level to at least 60 dB at 3 MHz above the upper and below the lower licensed channel edges, and attenuated at least 60 dB at all other frequencies.

21.908(e) In measuring compliance with the out-of-band emissions limitations, the licensee shall employ one of two methods in each instance: (1) absolute power measurement of the average signal power with one instrument, with measurement of the spectral attenuation on a separate instrument; or (2) relative measurement of both the average power and the spectral attenuation on a single instrument. The formula for absolute power measurements is to be used when the average signal power is found using a separate instrument, such as a power meter; the formula gives the amount by which the measured power value is to be attenuated to find the absolute power value to be used on the spectrum analyzer or equivalent instrument at the spectral point of concern. The formula for relative power measurements is to be used when the average signal power is found using the same instrument as used to measure the attenuation at the specified spectral points, and allows different resolution bandwidths to be applied to the two parts of the measurement; the formula gives the required amplitude separation (in dB) between the flat top of the (digital) signal and the point of concern.

## **Modulation Characteristics**

For absolute power measurements: Attenuation in dB (below channel power) =  $A + 10\log (CBW / RBw)$ For relative power measurements: Attenuation in dB (below flat top) =  $A + 10\log (RBW1 / RBW2)$ Where: A = Attenuation specified for spectral point (e.g., 25, 35, 40, 60 dB) CBW = Channel bandwidth (for absolute power measurements) RBW = Resolution bandwidth (for absolute power measurements) RBW1 = Resolution bandwidth for flat top measurement (relative) RBW2 = Resolution bandwidth for spectral point measurement (relative)

74.936(a) An ITFS station may employ amplitude modulation (C3F) for the transmission of the visual signal and frequency modulation (F3E) or (G3E) for the transmission of the aural signal when transmitting a standard analog television signal. Quadrature amplitude modulation (QAM), digital vestigial sideband modulation (VSB), quadrature phase shift key modulation (QPSK), code division multiple access (CDMA) and orthogonal frequency division multiplex (OFDM) emissions may be employed, subject to compliance with the policies set forth in the *Declaratory Ruling and Order*, 11 FCC Rcd 18839 (1996). Use of OFDM also is subject to the subsequently *Digital Declaratory Ruling and Order*, DA 99-554 (Mass Med. Bur. rel. Mar. 19, 1999).

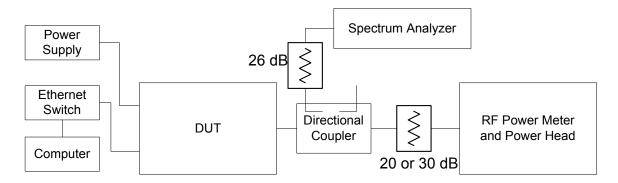
74.936(f) The maximum out-of-band power of an ITFS response station using all or part of a 6 MHz channel, employing digital modulation and transmitting with an EIRP greater than -6 dBW per 6 MHz channel shall be attenuated (as measured in accordance with §21.908(e)) at the 6 MHz channel edges at least 25 dB relative to the average 6 MHz channel power level, then attenuated along a linear slope to at least 40 dB at 250 kHz beyond the nearest channel edge, then attenuated along a linear slope from that level to at least 60 dB at 3 MHz above the upper and below the lower licensed channel edges, and attenuated at least 60 dB at all other frequencies. The maximum out-of-band power of an ITFS response station using all or part of a 6 MHz channel, employing digital modulation and transmitting with an EIRP no greater than -6 dBW per 6 MHz channel shall be attenuated (as measured in accordance with §21.908(e)) at the channel edges at least 25 dB relative to the average 6 MHz channel transmitter output power level (P), then attenuated along a linear slope to at least 40 dB or 33+10log(P) dB, whichever is the lesser attenuation, at 250 kHz beyond the nearest channel edge, then attenuated along a linear slope from that level to at least 60 dB or 43+10log(P) dB, whichever is the lesser attenuation, at 3 MHz above the upper and below the lower licensed channel edges, and attenuated at least 60 dB or 43+10log(P) dB, whichever is the lesser attenuation, at all other frequencies.

# **Modulation Characteristics**

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. The Spectrum Analyzer is time gated, with zero delay, to capture the transmission during the burst. An RMS detector is used to measure the average power of the transmission. The resolution bandwidth of the flat top measurement is equal to the resolution bandwidth of the spectral point measurement thereby setting the 10log (RBW1 / RBW2) = 0 for the relative power measurement method. The transmitter is enabled in test mode with the attached computer. Measurements are performed for each of the modulation formats available, 4 QAM, 16 QAM, and 64 QAM.
Test Conditions:	Frequencies = 2503, 2593, 2683 MHz Temperature = $25^{\circ}C$ Supply Voltage = 120 Vac / 60 Hz

## **Modulation Characteristics**

Test Set-Up:



Test Equipment:

DVM	Fluke 87 III
	Calibration not required
Spectrum Analyzer	Rohde&Schwarz
~F · · · · · · · · · · · · · · · · · · ·	Model: FSEA
	S/N: DE24511
	Cal Date: 06-02-2003
	Cal Due: 06-02-2005
Directional Coupler	Dual Directional Coupler
1	Model: Narda 3022
	S/N: 01231
Attenuators	Pasternak Corporation
(6, 10 and 20dB)	Model: PE7005-6 (6 dB)
	Model: PE7005-10 (10 dB)
	Model: PE7005-20 (20 dB)
	Calibration not required
Computer	Dell Inspiron 5000
	Model: PPM
	S/N: 000832RM-12961-03N-3073
Ethernet Switch	D-Link
	Model: DSS-5+
	5 port 10/100Mbps
	S/N: B205335003051
Power Supply	FRIWO
	Model: SDA5516G

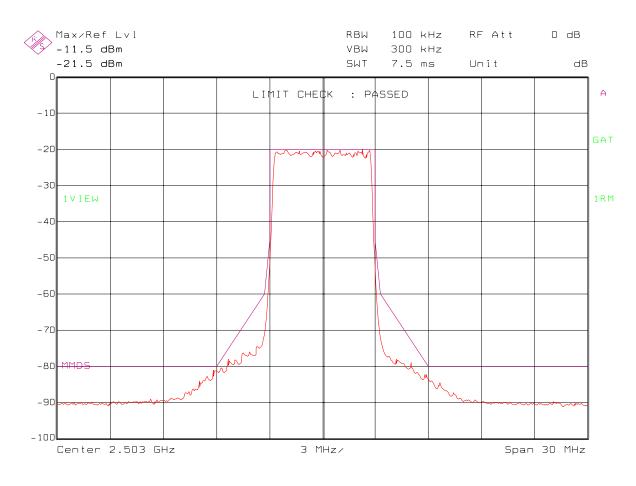
FCC ID: PHX-MMDS-CPE6 Page 9 of 43

#### Exhibit 6 Test Report

#### **Modulation Characteristics**

Test Results:

Channel 1, 2503 MHz 33dBm / 2W 4 QAM



Date: 04.NOV.2003 15:34:49

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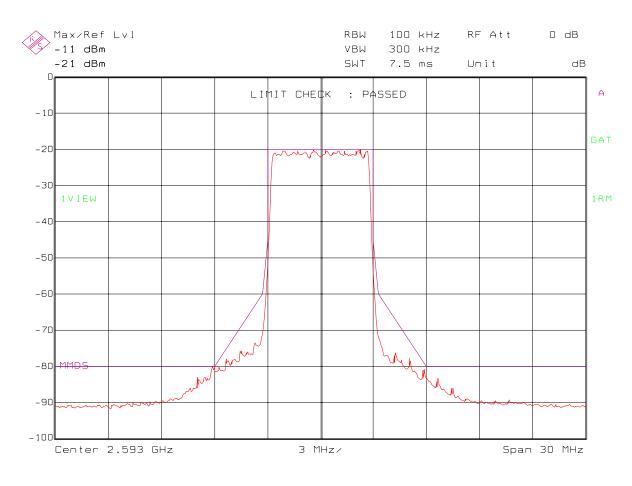
FCC ID: PHX-MMDS-CPE6 Page 10 of 43

#### Exhibit 6 Test Report

### **Modulation Characteristics**

Test Results: Chan 33dB

Channel 16, 2593 MHz 33dBm / 2W 4 QAM



Date: 04.NOV.2003 15:42:25

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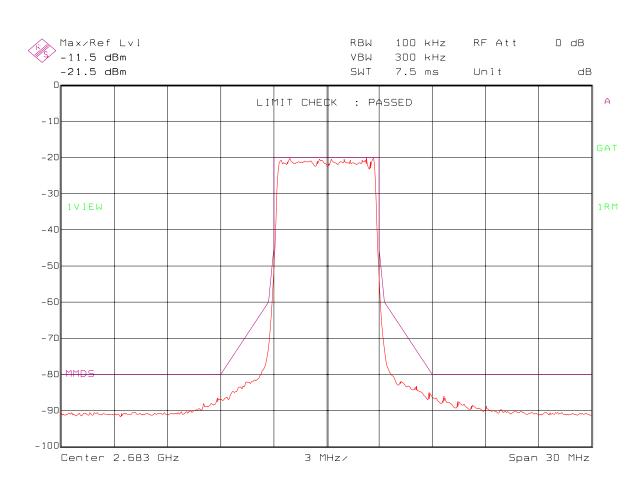
FCC ID: PHX-MMDS-CPE6 Page 11 of 43

#### Exhibit 6 Test Report

#### **Modulation Characteristics**

Test Results:

Channel 31, 2683 MHz 33dBm / 2W 4 QAM



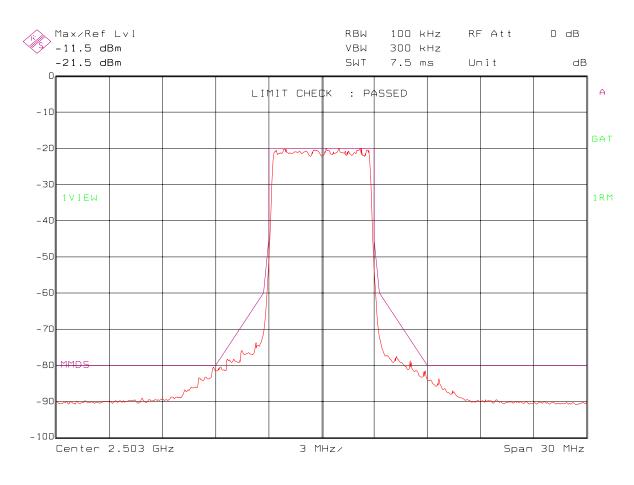
Date: 04.NOV.2003 15:46:17

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#### **Modulation Characteristics**

Test Results: Cha 33dl

Channel 1, 2503 MHz 33dBm / 2W 16 QAM

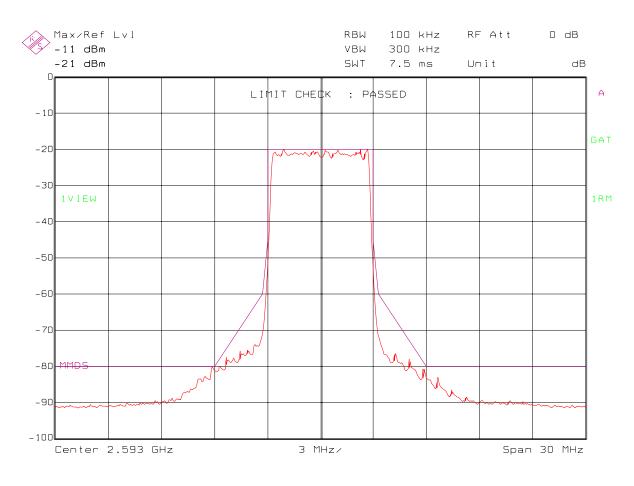


Date: 04.NOV.2003 15:36:04

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#### **Modulation Characteristics**

Test Results: Channel 16, 2593 MHz 33dBm / 2W 16 QAM



Date: 04.NOV.2003 15:41:22

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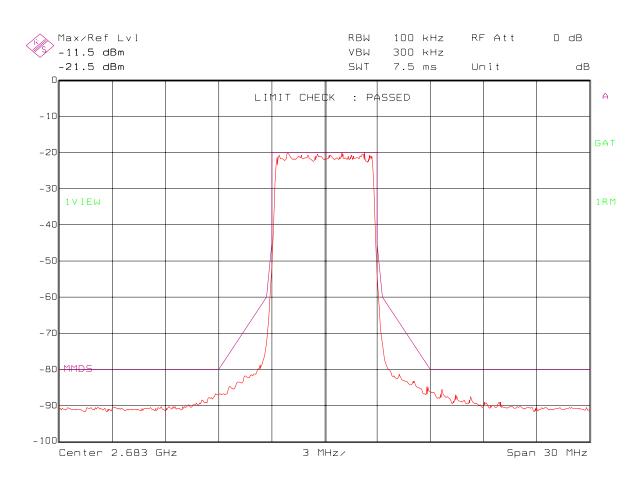
FCC ID: PHX-MMDS-CPE6 Page 14 of 43

#### Exhibit 6 Test Report

### **Modulation Characteristics**

Test Results: Channel 3 33dBm / 2

Channel 31, 2683 MHz 33dBm / 2W 16 QAM



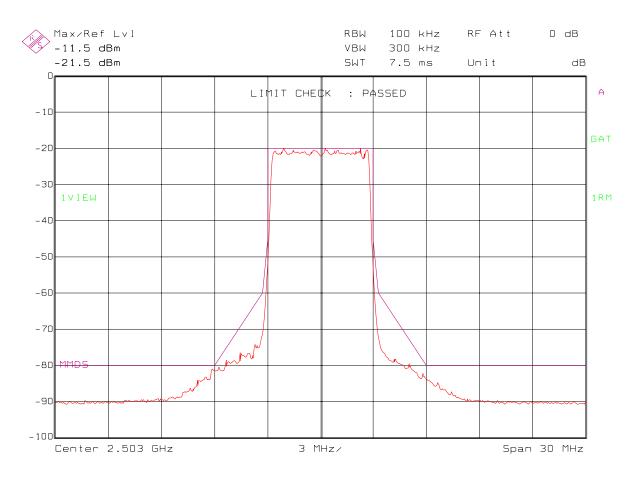


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#### **Modulation Characteristics**

Test Results: Chann 33dBi

Channel 1, 2503 MHz 33dBm / 2W 64 QAM

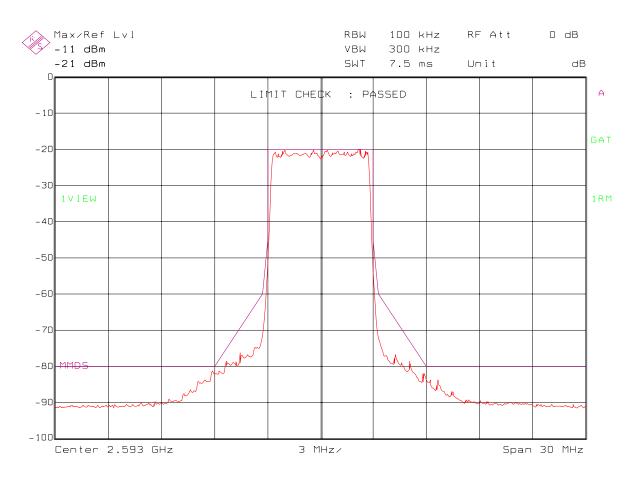


Date: 04.NOV.2003 15:37:33

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#### **Modulation Characteristics**

Test Results: Channel 16, 2593 MHz 33dBm / 2W 64 QAM

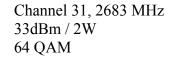


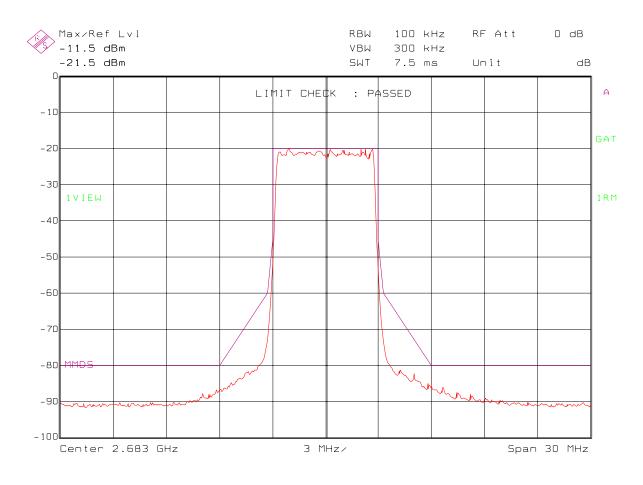
Date: 04.NOV.2003 15:39:25

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#### **Modulation Characteristics**

Test Results: Channel 31, 2 33dBm / 2W 64 OAM





Date: 04.NOV.2003 15:48:13

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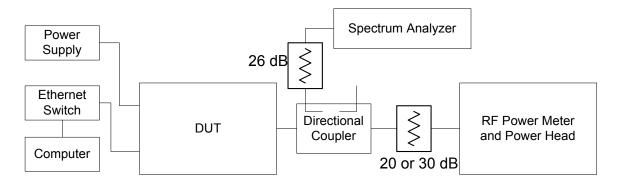
Rule Part Number:	2.1049(h), 21.105
	Each authorization issued pursuant to these rules will show, as the emission designator, a symbol representing the class of emission which shall be prefixed by a number specifying the necessary bandwidth. This figure does not necessarily indicate the bandwidth actually occupied by the emission at any instant. In those cases where part 2 of this chapter does not provide a formula for the computation of the necessary bandwidth, the occupied bandwidth may be used in the emission designator.
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. The Spectrum Analyzer is time gated, with zero delay, to capture the transmission during the burst. The occupied bandwidth of the test unit is recorded by measuring the 99% modulation bandwidth with the built in measurement function in the spectrum analyzer. The transmitter is enabled in test mode with the attached computer. Measurements are performed for each of the modulation formats available, 4 QAM, 16 QAM, and 64 QAM.
Test Conditions:	Frequency = 2503, 2593, 2683 MHz Temperature = $25^{\circ}$ C Supply Voltage = 120 Vac / 60 Hz

Test Results Summary:

99 % Occupied Bandwidth

(MHz)		Modulation Type	
Channel	4 QAM	16 QAM	64 QAM
1	5.51603206	5.51603206	5.53106212
16	5.50100200	5.53106212	5.51603206
31	5.50100200	5.51603206	5.51603206

Test Set-Up:

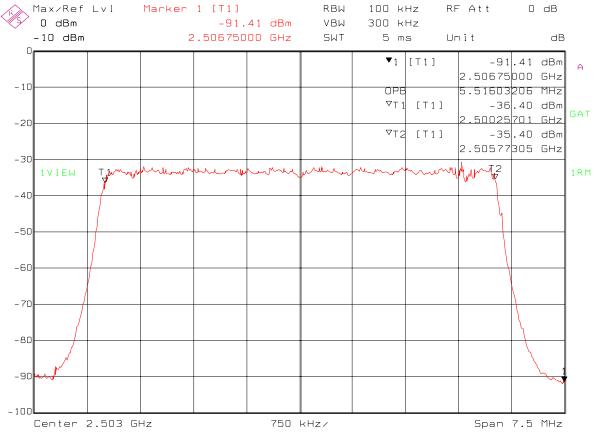


Test Equipment:

DVM	Fluke 87 III
	Calibration not required
Spectrum Analyzer	Rohde&Schwarz
	Model: FSEA
	S/N: DE24511
	Cal Date: 06-02-2003
	Cal Due: 06-02-2005
Directional Coupler	Dual Directional Coupler
_	Model: Narda 3022
	S/N: 01231
Attenuators (30dB)	Pasternak Corporation
	Model: PE7005-10 (10 dB)
	Model: PE7005-20 (20 dB)
	Calibration not required
Computer	Dell Inspiron 5000
	Model: PPM
	S/N: 000832RM-12961-03N-3073
Ethernet Switch	D-Link
	Model: DSS-5+
	5 port 10/100Mbps
	S/N: B205335003051
Power Supply	FRIWO
	Model: SDA5516G

Test Results: Channel 1 4 OAM

4 QAM

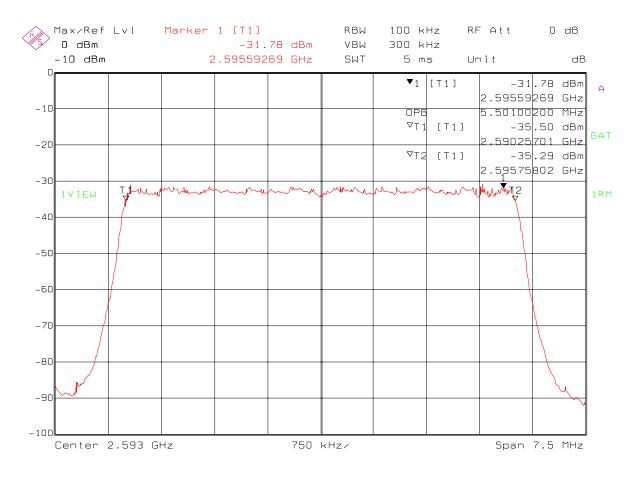


Date: 04.NOV.2003 15:52:17

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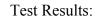
Test Results:

Channel 16 4 QAM

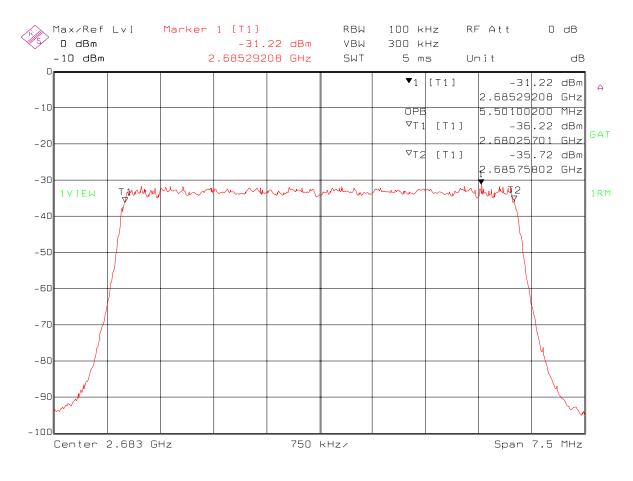


#### Date: 04.NOV.2003 15:59:34

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Channel 31 4 QAM

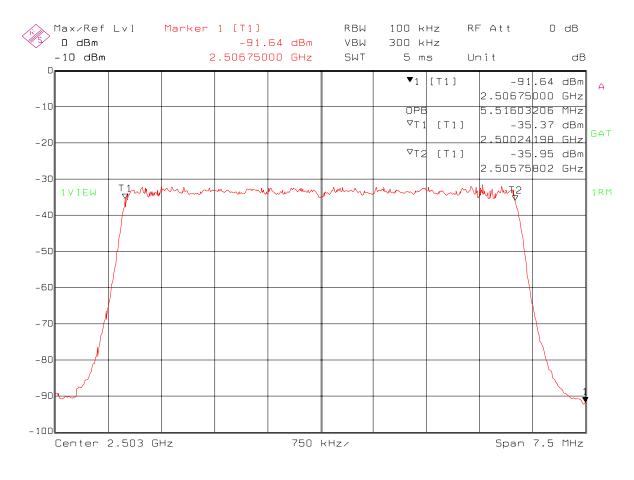




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Test Results:

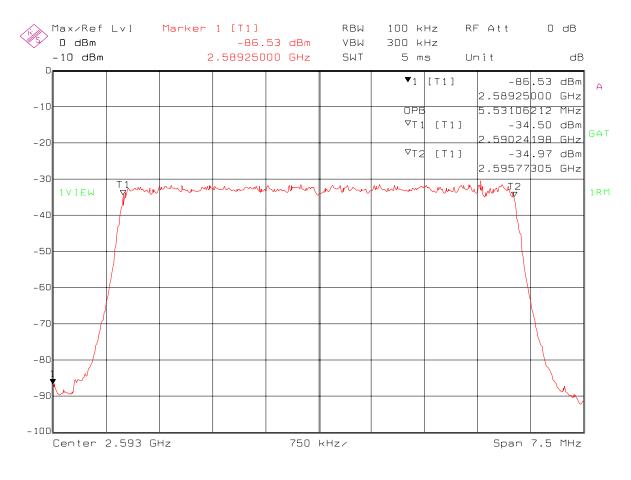
Channel 1 16 QAM



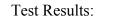


Test Results:

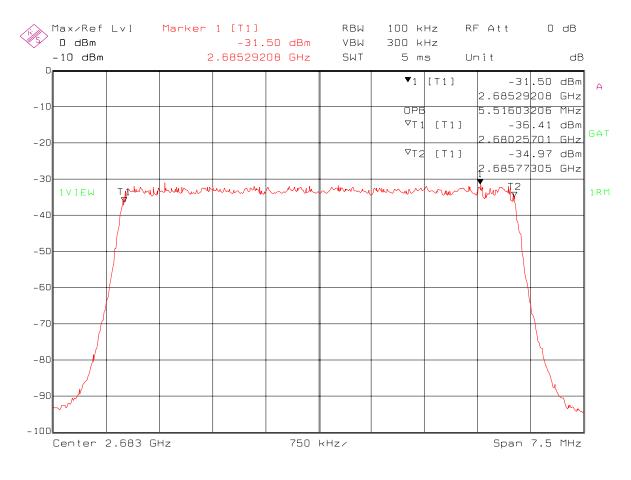
Channel 16 16 QAM







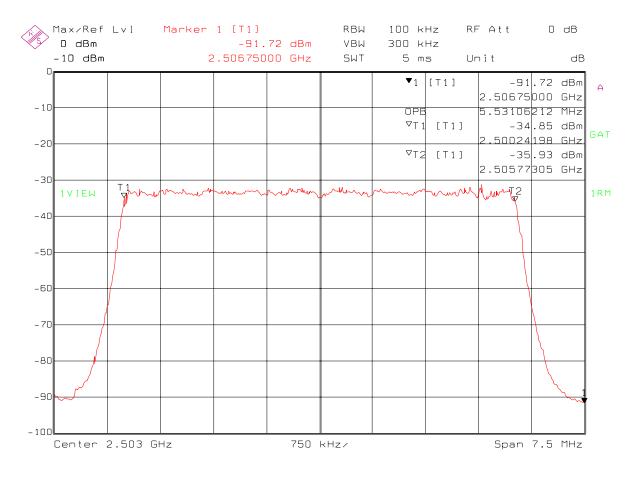
Channel 31 16 QAM





Test Results:

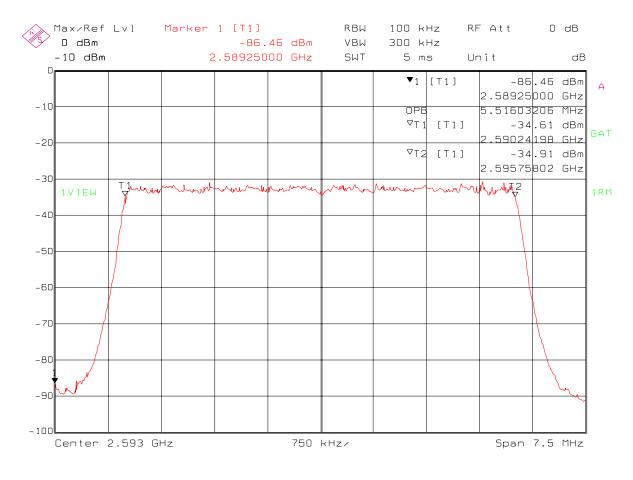
Channel 1 64 QAM



Date: 04.NOV.2003 15:56:11

Test Results:

Channel 16 64 QAM



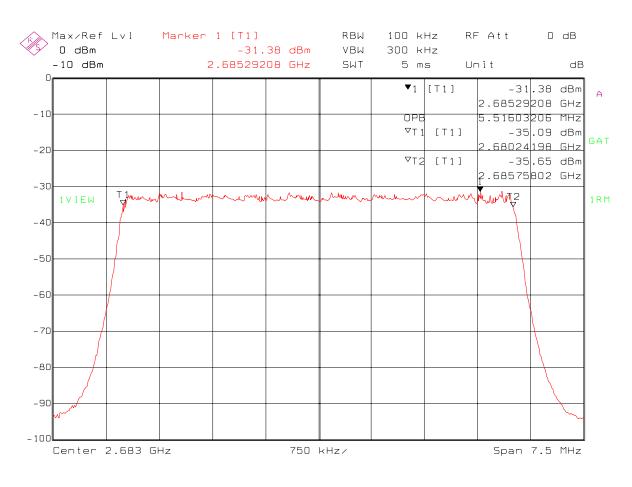
#### Date: 04.NOV.2003 15:57:09

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#### **Occupied Bandwidth**

Test Results: Channel 31 64 QAM



Date: 04.NOV.2003 15:49:39

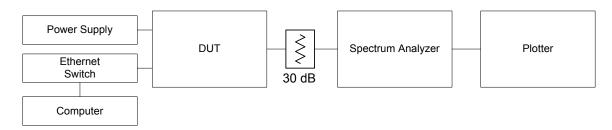
NextNet Wireless, Inc 9555 James Ave. South Suite 270 Bloomington, MN 55431

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
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 dB of attenuation. The transmission is recorded from 9 kHz to 26.5 GHz. The transmitter is enabled in test mode with the attached computer.
Test Conditions:	Frequency = 2593 MHz Temperature = $22^{\circ}C$ Supply Voltage = 120 Vac / 60 Hz

Test Equipment: CPE

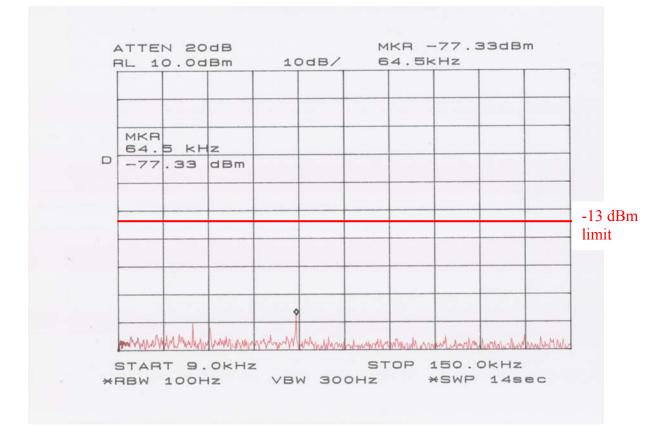
Attenuator(s)	Pasternak Corporation			
Attenuator(s)	1			
	Model: PE7005-10 (10 dB)			
	Model: PE7005-20 (20 dB)			
	Calibration not required			
Spectrum Analyzer	Hewlett Packard			
	HP8563E			
	S/N: 3221A00143			
	Cal Date: 10-16-2003			
	Cal Due: 10-16-2005			
Computer	Dell Inspiron 5000			
	Model: PPM			
	S/N: 000832RM-12961-03N-3073			
Ethernet Switch	D-Link			
	Model: DSS-5+			
	5 port 10/100Mbps			
	S/N: B205335003051			
Power Supply	FRIWO			
	Model: SDA5516G			

Test Setup



Test Results: The spectral measurement from 9 kHz to 150 kHz resulted in one observed spurious signal that is internal to the spectrum analyzer.

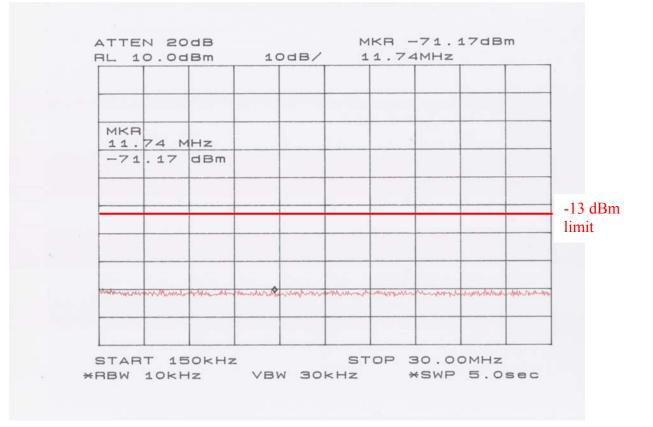
Channel 16, 2593 MHz (33 dBm / 2 Watts) 9 KHz – 150 KHz



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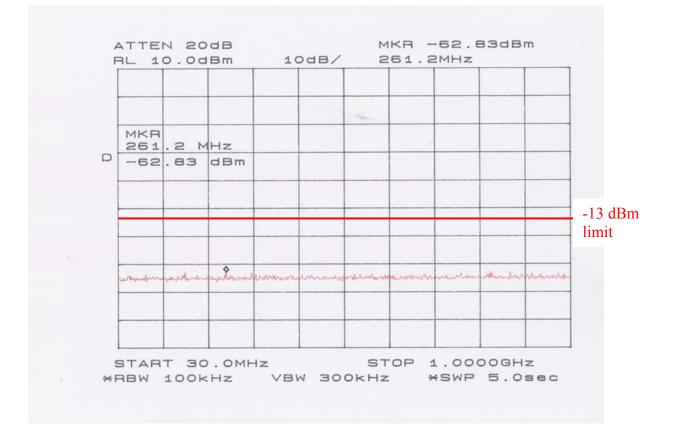
Test Results: The spectral measurement from 150 kHz to 30 MHz resulted in no observed spurious signals.

Channel 16, 2593 MHz (33 dBm / 2 Watts) 150 KHz – 30 MHz



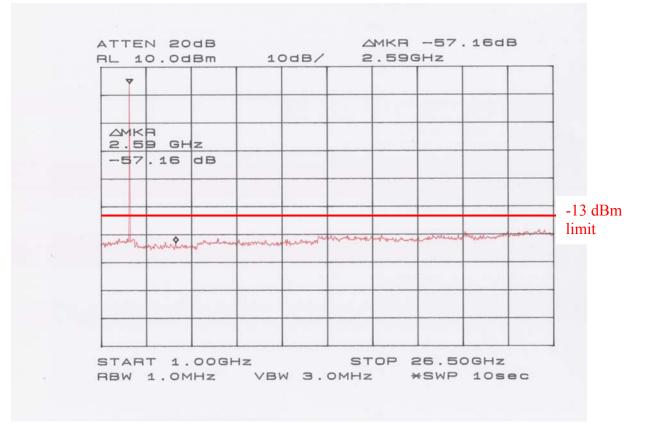
Test Results: The spectral measurement from 30 MHz to 1 GHz resulted in no observed spurious signals.

Channel 16, 2593 MHz (33 dBm / 2 Watts) 30 MHz – 1 GHz



Test Results: The spectral measurement from 1 GHz to 26.5 GHz resulted in no observed spurious signals.

Channel 16, 2593 MHz (33 dBm / 2 Watts) 1 GHz – 26.5 GHz



# 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+10logP = -13 dBm maximum
Test Procedure:	The field strength of spurious radiation was measured at an open area test site with applicable measurement antennas, low noise amplifiers, and spectrum analyzers. Measurements were performed by TUV Product Service Inc – Taylors Falls on Oct 27, 2003. 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. Identified spurious signals between 30 MHz and 1000 MHz are measured with a 120 kHz/6 dB bandwidth and quasi-peak detection. Spurious signals above 1000 MHz are measured with a 1 MHz/6 dB bandwidth and peak detection.
Test Conditions:	Channel 16 Frequency = 2593 MHz Temperature = 25°C Supply Voltage = 120 Vac / 60 Hz

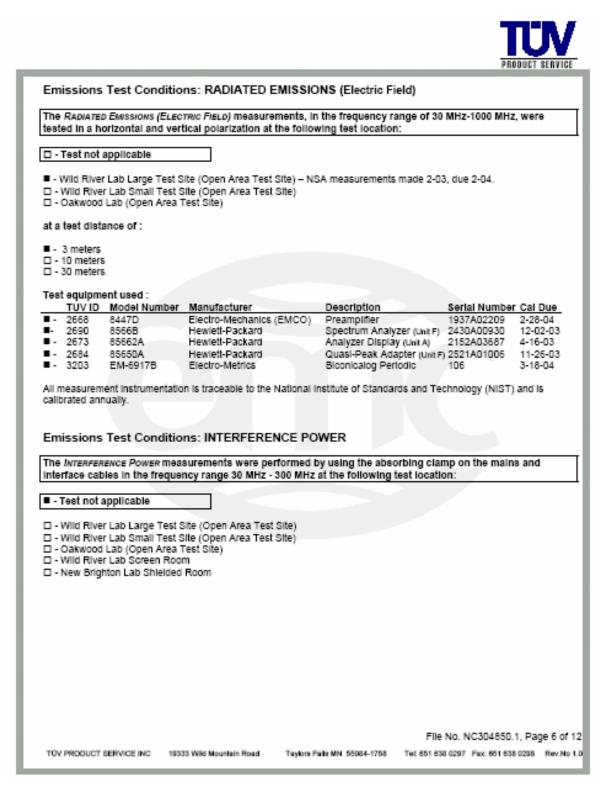
Test Equipment: NextNet Wireless, Inc.

Computer	Dell Inspiron 5000
-	Model: PPM
	S/N: 000832RM-12961-03N-3073
Ethernet Switch	D-Link
	Model: DSS-5+
	5 port 10/100Mbps
	S/N: B205335003051
Power Supply	FRIWO
	Model: SDA5516G
Transmitter Load	Pasternack
	PE7005-20
	PE7005-10
	Calibration not required

#### Field strength of spurious radiation

Test Equipment:

**TUV Product Services** 



TI'R/

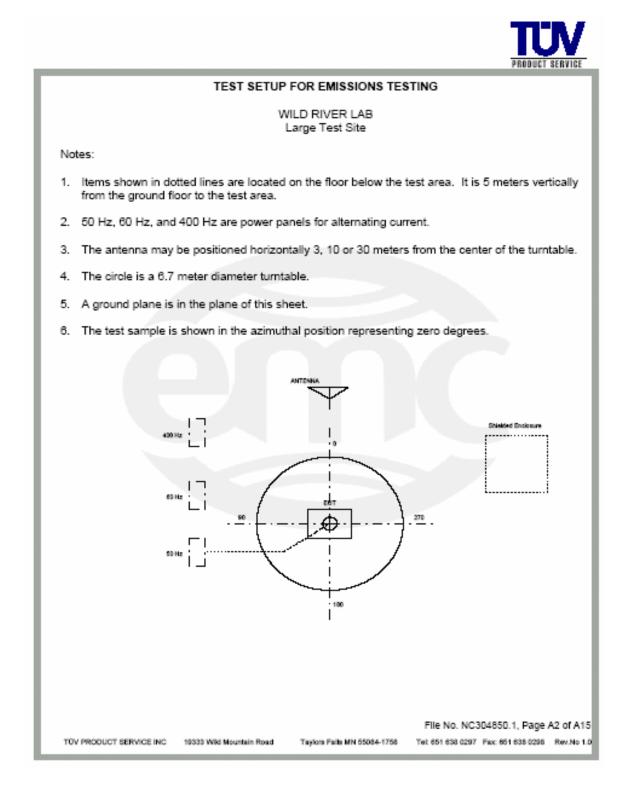
# Field strength of spurious radiation

Test Equipment: TUV Product Services

					PRO	DUCT SERVICE
Emissions T	est Conditio	ns: RADIATED EN	IISSIONS (Electric F	ield)		
The Equivalent horizontal and	<i>r Rackated Ewis</i> vertical polariz	sions measurements ation at the following	in the frequency range test location:	1 GHz - 26	GHz were perfo	ormed in a
🗆 - Test not ap	plicable					
<ul> <li>Wild River Li</li> <li>Wild River Li</li> <li>Oakwood Li</li> <li>Oakwood Li</li> <li>Wild River Li</li> </ul>	.ab Small Test S ab (Open Area T		te) te)			
at a test distan	ce of:					
□ - 1 meters ■ - 3 meters						
- 10 meters						
	tused : Model Number ICAD18-504	Manufacturer JCA Technology	Description		Serial Number	Cal Due 8-15-04
■ - 2673 8 ■ - 2684 8 ■ - 3203 E ■ - 2075 3 ■ - 3957 5	15650A EM-6917B 1115 SL18B4020 It instrumentation	Hewlett-Packard Hewlett-Packard Hewlett-Packard Electro-Metrics Electro-Mechanics (E Phase One Microway		yzer (Unit F) ay (Unit A) lapter (Unit F) rlodic nt. 1-18 GHz – 18 GHz	2430A00930 2152A03687 2521A01006 106 9001-3275 0001	11-26-03 3-18-04 11-13-03 9-23-04
TOV PRODUCT SE	RVICE INC 1933	3 Wild Mountain Road	Taylora Faile MN 55084-1758		No. NC304850.1 0297 Fex: 651 638	-

### Field strength of spurious radiation

#### Test Setup: TUV Product Services



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# Field strength of spurious radiation

RADIATED	EMISSIONS
	Emilooloito



Test Report #:	NC304850 Run 8	Test Area:	LTS				
EUT Model #:	CPE6	Date:	10/24/03				
EUT Serial #:		EUT Power:	60HZ/110VAC	Temperat	ture:	22.0	°C
Test Method:	FCC PART 2			Air Press	sure:	70.0	kPa
Customer:	NEXTNET WIRELESS			Rel. Humi	dity:	97.0	%
EUT Description:	WIRELESS ETHERNET TRANSMIT	TER					
Notes:							
Data File Name:	4850.dat				Page:	3 of	3

Measurement summary for limit1:						
FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	FINAL dBm	DELTA From Limit (-13 dBm)
195.979 MHz	54.56 Qp	1.19 / 10.96 / 25.1 / 0.0	41.62	V / 1.20 / 185	-52.3	-39.3
62.71 MHz	47.2 Qp	0.7 / 11.0 / 25.2 / 0.0	33.7	V / 1.00 / 0	-60.2	-47.2
58.5 MHz	45.65 Qp	0.65 / 12.2 / 25.15 / 0.0	33.35	V/1.00/0	-60.6	-47.6
335.971 MHz	45.45 Qp	1.67 / 14.3 / 24.6 / 0.0	36.82	H / 1.00 / 280	-57.1	-44.1
199.981 MHz	43.8 Qp	1.2 / 11.09 / 25.08 / 0.0	31.01	V / 1.00 / 0	-62.9	-49.9
185.171 MHz	45.1 Qp	1.11/9.63/25.1/0.0	30.74	V / 1.00 / 270	-63.2	-50.2
5.188 GHz	30.38 Av	7.17/35.2/27.11/0.0	45.64	V / 1.00 / 155	-48.3	-35.3
5.188 GHz	49.45 Pk	7.17 / 35.2 / 27.11 / 0.0	64.71	V / 1.00 / 155	-29.2	-16.2

Tested by:

Paul M. Johnson

Signature

Thomas K.

Reviewed

by:

Printed

Printed

TKS

RMJ

Signature

anon

File No. NC304850.1, Page A15 of A15

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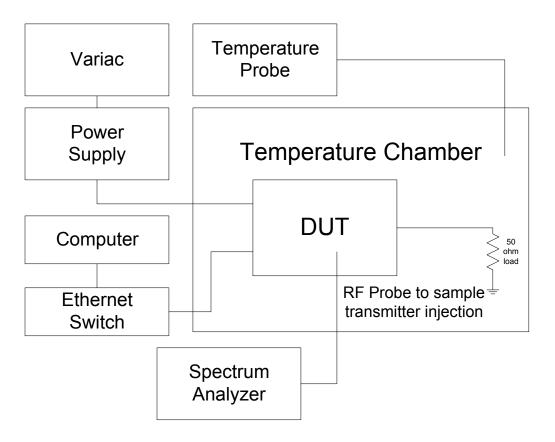
# **Frequency Stability**

Rule Part Number:	2.1055, 21.101(a), 74.961(a)		
	Stability Requirements: 0.001 % or 10 ppm		
Test Procedure:	The local oscillator signal that drives the transmit modulator was lightly coupled onto an RF probe and applied to a spectrum analyzer. The frequency of the RF VCO was monitored and recorded for changes due to temperature change and input voltage.		
Test Conditions:	Standard Test Conditions		
Test Equipment:	СРЕ		

DVM	Fluke 87 III
	Calibration not required
Spectrum Analyzer	Hewlett Packard
	HP8563E
	S/N: 3221A00143
	Cal Date: 10-16-2003
	Cal Due: 10-16-2005
Temperature Chamber	Test Equity
	1000 Series
	Calibration not required
Temperature Sensor	Fluke 89 IV True RMS Multimeter
	K-Type thermocouple
	Calibration not required
Computer	Dell Inspiron 5000
	Model: PPM
	S/N: 000832RM-12961-03N-3073
Ethernet Switch	D-Link
	Model: DSS-5+
	5 port 10/100Mbps
	S/N: B205335003051
Power Supply	FRIWO
	Model: SDA5516G
Variac	Lafeyette Radio Electronics Corp.
	NO. TR-115

## **Frequency Stability**

Test Set-Up:



## **Frequency Stability**

Test Conditions: Frequency = 2593 MHz Supply Voltage = 120 Vac / 60 Hz

2.1055(a) The frequency stability shall be measured with variation of ambient temperature as follows:
(1) From -30° to +50° centigrade for all equipment except that specified in paragraphs (a) (2) and (3) of this section.
2.1055(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.

Test Results: Temperature Variation

		Frequency	Frequency	Frequency
Temperature	Frequency	Error	Error	Error
(°C)	(Hz)	(Hz)	(%)	(ppm)
-30	2593002100	2100	0.000081	0.810
-20	2593004330	4330	0.000167	1.670
-10	2593004450	4450	0.000172	1.716
0	2593003770	3770	0.000145	1.454
10	2593002900	2900	0.000112	1.118
20	2593001608	1608	0.000062	0.620
25	2593001870	1870	0.000072	0.721
30	2593001770	1770	0.000068	0.683
40	2593001650	1650	0.000064	0.636
50	2593002050	2050	0.000079	0.791
60	2593003050	3050	0.000118	1.176

# **Frequency Stability**

Test Conditions:	Frequency = $2593 \text{ MHz}$ Temperature = $20^{\circ}\text{C}$
	<ul><li>(d) The frequency stability shall be measured with variation of primary supply voltage as follows:</li><li>(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.</li></ul>
Test Results:	Supply Voltage Variation
	Source Input

Voltage Specification: 120 Vac / 60 Hz

Source		Frequency	Frequency	Frequency
Voltage	Frequency	Error	Error	Error
(VAC)	(Hz)	(Hz)	(%)	(ppm)
102.0	2593001688	1688	0.000065	0.651
106.5	2593001688	1688	0.000065	0.651
111.0	2593001688	1688	0.000065	0.651
115.5	2593001688	1688	0.000065	0.651
120.0	2593001688	1688	0.000065	0.651
124.5	2593001688	1688	0.000065	0.651
129.0	2593001679	1679	0.000065	0.648
133.5	2593001679	1679	0.000065	0.648
138.0	2593001679	1679	0.000065	0.648