MET Laboratories, Inc. ***Safety Certification - EMI - Telecom Environmental Simulation***
33439 WESTERN AVENUE ! UNION CITY, CALIFORNIA 94587-3201 ! PHONE (510) 489-6300 ! FAX (510) 489-6372

June 22, 2007

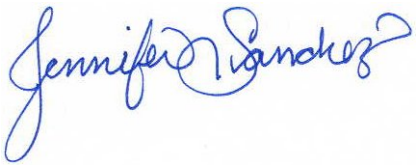
SkyPilot Networks
2055 Laurelwood Road, 2nd Fl
Santa Clara, CA 95054

Dear Bill Olsen,

Enclosed is the EMC test report for compliance testing of the SkyPilot Networks, RV7-SD1085 as tested to the requirements of Title 47 of the CFR, Ch. 1 (10-1-06 ed.), Title 47 of the CFR, Part 15.407, Subpart E & RSS-210 Issue 6, September 2005 for Intentional Radiators.

Thank you for using the services of MET Laboratories, Inc. If you have any questions regarding these results or if MET can be of further service to you, please feel free to contact me.

Sincerely yours,
MET LABORATORIES, INC.



Jennifer Sanchez
Documentation Department

Reference: (\SkyPilot Networks\EMCS80168-FCC407_REV1)

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Electromagnetic Compatibility Criteria
Test Report

for the

SkyPilot Networks
Model RV7-SD1085

Tested under
the FCC & Industry Canada Certification Rules
contained in
15.407, Subpart E & RSS-210, Issue 6, September 2005
for Intentional Radiators

MET Report: EMCS80168-FCC407_REV1

June 22, 2007

Prepared For:

SkyPilot Networks
2055 Laurelwood Road, 2nd Fl
Santa Clara, CA 95054

Prepared By:
MET Laboratories, Inc.
4855 Patrick Henry Dr., Building 6
Santa Clara, CA 95054

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Shawn McMillen, Project Engineer
Electromagnetic Compatibility Lab

Jennifer Sanchez
Documentation Department

Engineering Statement: The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of Part 15.407, Subpart E of the FCC Rules & RSS-210, Issue 6, September 2005 of the Industry Canada Rules under normal use and maintenance.

Tony Permsombut, Manager
Electromagnetic Compatibility Lab

Report Status Sheet

Revision	Report Date	Reason for Revision
∅	June 12, 2007	Initial Issue.
1	June 22, 2007	Change FCC ID and UPN Numbers

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List of Terms and Abbreviations

AC	**A**lternating **C**urrent
ACF	**A**ntenna **C**orrection **F**actor
Cal	**Cal**ibration
d	**M**easurement **D**istance
dB	**D**eci**b**els
dBµA	**D**eci**b**els above one **micro**amp
dBµV	**D**eci**b**els above one **micro**volt
dBµA/m	**D**eci**b**els above one **micro**amp **per m**eter
dBµV/m	**D**eci**b**els above one **micro**volt **per m**eter
DC	**D**irect **C**urrent µ
E	**E**lectric Field
DSL	**D**igital **S**ubscriber **L**ine
ESD	**E**lectro**s**tatic **D**ischarge
EUT	**E**quipment **U**nder **T**est
f	**F**requency
FCC	**F**ederal **C**ommunications **C**ommission
GRP	**G**round **R**eference **P**lane
H	Magnetic Field
HCP	**H**orizontal **C**oupling **P**lane
Hz	**H**er**z**
IEC	**I**nternational **E**lectrotechnical **C**ommission
kHz	**k**ilo**h**er**z**
kPa	**k**ilo**pa**scal
kV	**k**ilo**v**olt
LISN	**L**ine **I**mpedance **S**tabilization **N**etwork
MHz	**M**ega**h**ertz
µ**H**	**microh**enry
µ	**microf**arad
µ**s**	**micros**econds
PRF	**P**ulse **R**epetition **F**requency
RF	**R**adio **F**requency
RMS	**R**oot-**M**ean-**S**quare
TWT	**T**raveling **W**ave **T**ube
V/m	**V**olts **per m**eter
VCP	**V**ertical **C**oupling **P**lane

I. Executive Summary

A. Purpose of Test

An EMC evaluation was performed to determine compliance of the SkyPilot Networks RV7-SD1085, with the requirements of Part 15, §15.407. All references are to the most current version of Title 47 of the Code of Federal Regulations in effect. In accordance with §2.1033, the following data is presented in support of the Certification of the RV7-SD1085. SkyPilot Networks should retain a copy of this document which should be kept on file for at least two years after the manufacturing of the RV7-SD1085, has been permanently discontinued.

B. Executive Summary

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, §15.407, in accordance with SkyPilot Networks, purchase order number 5472. All tests were conducted using measurement procedure ANSI C63.4-2003.

Reference	RSS-210 and RSS-GEN	Description	Results
15.403 (c)	A8.2	26dB Occupied Bandwidth	Compliant
15.407 (a)(1), (2), (3)	A9.2(3)	Conducted Transmitter Output Power	Compliant
15.407 (a)(1), (2), (3), (5)	A9.2(3)	Power Spectral Density	Compliant
15.407 (a)(6)	A9.2(3)	Peak Excursion	Compliant
15.407 (b)(1), (2), (5), (6)	A9.3(4)	Undesirable Emissions	Compliant
15.205/15.209	2.2	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Compliant
15.109	7.3	Radiated Spurious Emissions	Compliant
15.207	7.2.2	AC Conducted Emissions 150kHz – 30MHz	NA

Table 1 Executive Summary of EMC Part 15.407 ComplianceTesting

II. Equipment Configuration

A. Overview

MET Laboratories, Inc. was contracted by SkyPilot Networks to perform testing on the RV7-SD1085, under SkyPilot Networks's purchase order number 5472.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the SkyPilot Networks RV7-SD1085.

The results obtained relate only to the item(s) tested.

Model(s) Tested:	RV7-SD1085	
Model(s) Covered:	RV7-SD1085	
EUT Specifications:	Primary Power: 24VDC	
	FCC ID: RV7-SD1085 IC: 5550A-SD1085	
	Type of Modulations:	OFDM
	Emission Designators:	FCC: 21M2D7D IC: 16M5D7D
	Equipment Code:	NII
	Peak RF Output Power:	UNII-2 Lower band: 12.35dBm (0.017W) UNII-2 Higher band: 12.64dBm (0.018W)
	EUT Frequency Ranges:	5250 – 5350MHz, 5475 – 5725MHz
Analysis:	The results obtained relate only to the item(s) tested.	
Environmental Test Conditions:	Temperature: 15-35º C	
	Relative Humidity: 30-60%	
	Barometric Pressure: 860-1060 mbar	
Evaluated by:	Shawn McMillen	
Date(s):	June 22, 2007	

B. References

CFR 47, Part 15, Subpart B	Electromagnetic Compatibility: Criteria for Radio Frequency Devices
CFR 47, Part 15, Subpart E	Unlicensed National Information Infrastructure Devices (UNII)
ANSI C63.4:2003	Methods and Measurements of Radio-Noise Emissions from Low-Voltage Electrical And Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI/NCSL Z540-1-1994	Calibration Laboratories and Measuring and Test Equipment - General Requirements
ANSI/ISO/IEC 17025:2000	General Requirements for the Competence of Testing and Calibration Laboratories

C. Test Site

All testing was performed at MET Laboratories, Inc., 4855 Patrick Henry Drive, Building 6, Santa Clara, California 95054. All equipment used in making physical determinations is accurate and bears recent traceability to the National Institute of Standards and Technology.

Radiated Emissions measurements were performed in a 10 meter semi-anechoic chamber (equivalent to an Open Area Test Site). In accordance with §2.948(a)(3), a complete site description is contained at MET Laboratories. In accordance with §2.948(d), MET Laboratories has been accredited by A2LA (Certificate Number 591.02).

D. Description of Test Sample

The SkyPilot Networks RV7-SD1085, is an unique integrated solution that provides both long-range Mesh Backhaul capability (see SkyExtender Dual-Band datasheet for more information).

Photograph 1. SkyPilot Networks RV7-SD1085

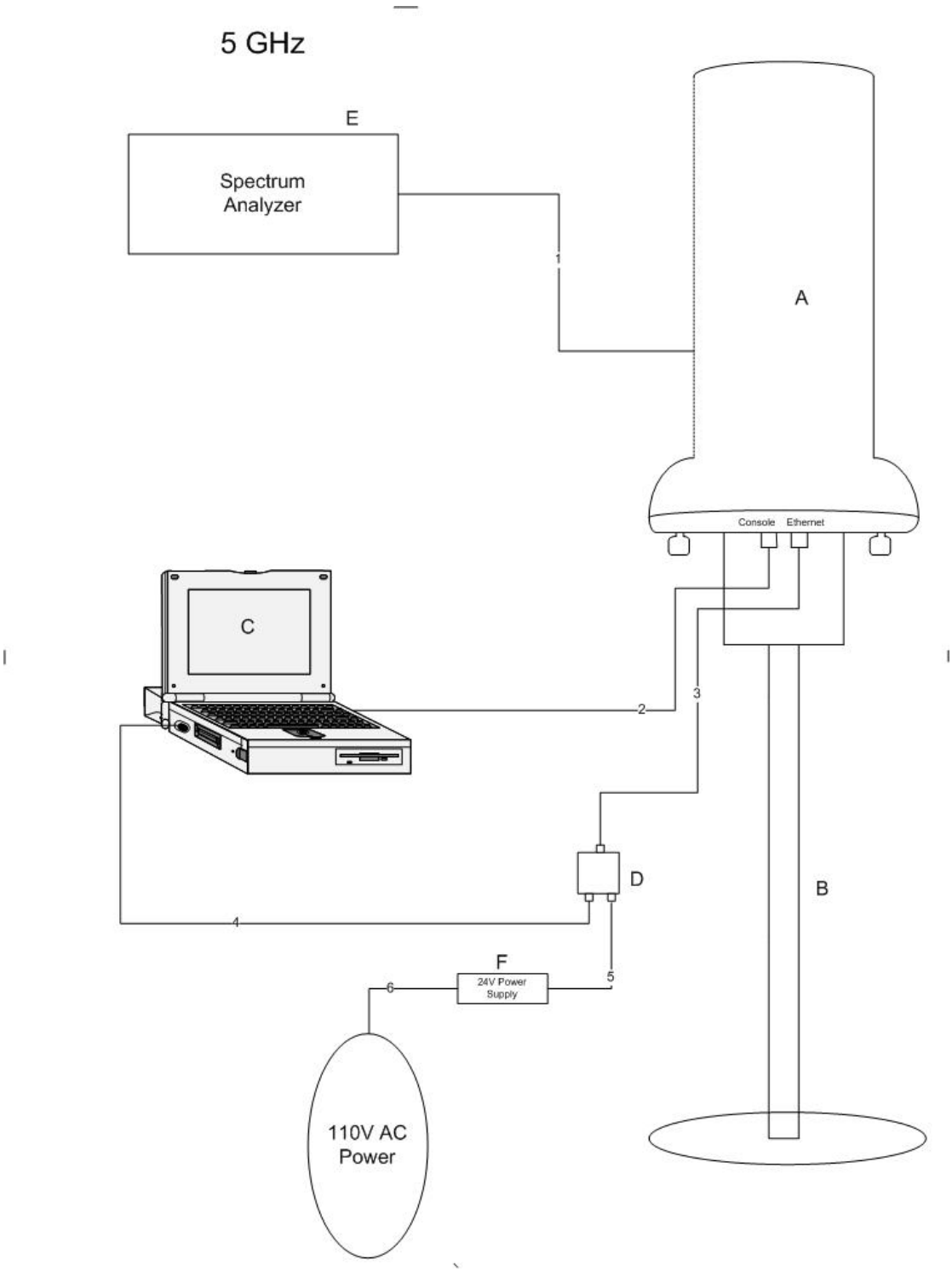


Figure 1. Block Diagram of Test Configuration

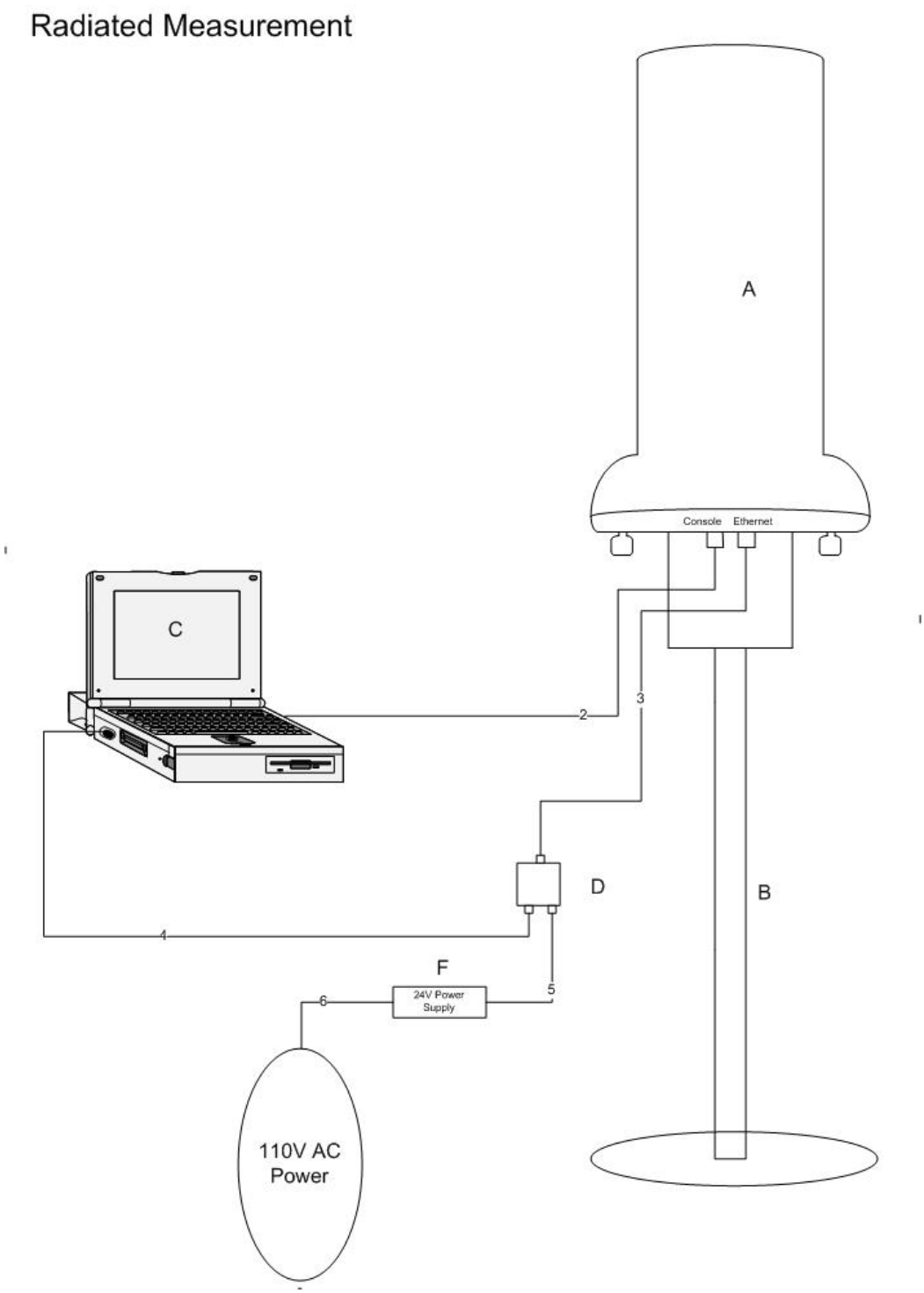


Figure 2. Block Diagram of Test Configuration (Radiated Measurement)

E. Equipment Configuration

The EUT was set up as outlined in Figure 1 and Figure 2, Block Diagram of Test Setup. All cards, racks, etc., incorporated as part of the EUT is included in the following list.

Ref. ID	Name / Description	Model Number	Serial Number
A	SkyExtender DualBand	710-001212-041	F20787027

Table 2. Equipment Configuration

F. Support Equipment

RV7-SD1085 supplied support equipment necessary for the operation and testing of the RV7-SD1085. All support equipment supplied is listed in the following Support Equipment List.

Ref. ID	Name / Description	Manufacturer	Model Number
B	Stand	-	SKYWHI-03-010
C	Laptop	IBM	T43
D	Ethernet power adapter	-	640-0009-01
E	Spectrum Analyzer	Agilent	E4407B
F	Power Converter	CVI INC	3A-621DN24

Table 3. Support Equipment

* The 'Customer Supplied Calibration Data' column will be marked as either not applicable, not available, or will contain the calibration date supplied by the customer.
** The AC/DC Adapter was use to power the EUT for testing purpose only, will not be sold with radio.

G. Ports and Cabling Information

Ref. ID	Port name on EUT	Cable Description or reason for no cable	Qty.	Length (m)	Shielded (Yes/No)	Termination Box ID & Port ID
Conducted Measurements						
1	A (Inside the cover), Coax	Coaxial	1	2	no	Spectrum Analyzer
2	A, Console	Ethernet-USB Serial	1	1.5	Yes	C
3	A, Frame Lock	Ethernet	1	2	Yes	D, Frame Lock
4	D, Computer	Frame Lock	1		Yes	C
5	D, Power	AC Power	1	1	no	F
6	F ,Power Converter	AC Power	1	1	no	110V AC Power Supply

Table 4. Ports and Cabling Information, Conducted Measurements

Ref. ID	Port name on EUT	Cable Description or reason for no cable	Qty.	Length (m)	Shielded (Yes/No)	Termination Box ID & Port ID
Radiated Measurements						
2	A, Console	Ethernet-USB Serial	1	1.5	Yes	C
3	A, Frame Lock	Ethernet	1	2	Yes	D, Frame Lock
4	D, Computer	Frame Lock	1		Yes	C
5	D, Power	AC Power	1	1	no	F
6	F ,Power Converter	AC Power	1	1	no	110V AC Power Supply

Table 5. Ports and Cabling Information, Radiated Measurement

H. Mode of Operation

5GHz Mesh Backhaul.

I. Method of Monitoring EUT Operation

Ping EUT through either the wired Ethernet port (RJ-45) or the WiFi link.

J. Modifications

a) Modifications to EUT

No modifications were made to the EUT.

b) Modifications to Test Standard

No modifications were made to the test standard.

K. Disposition of EUT

The test sample including all support equipment submitted to the Electro-Magnetic Compatibility Lab for testing was returned to SkyPilot Networks upon completion of testing.

III. Electromagnetic Compatibility Criteria for Intentional Radiators

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.203 Antenna Requirement

Test Requirement: **§ 15.203:** An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

The structure and application of the EUT were analyzed to determine compliance with Section 15.203 of the Rules. Section 15.203 states that the subject device must meet at least one of the following criteria:

a.) Antenna must be permanently attached to the unit.

b.) Antenna must use a unique type of connector to attach to the EUT.

c.) Unit must be professionally installed. Installer shall be responsible for verifying that the correct antenna is employed with the unit.

Results: The EUT as tested meets the criteria of this rule by virtue of having professionally installed. The EUT is therefore compliant with §15.203.

Gain	Manufacturer
17dBi	Skypilot

Test Engineer(s): Shawn McMillen

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.207 Conducted Emissions Limits

Test Requirement(s): **§ 15.207 (a):** For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 Σ line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency range (MHz)	§ 15.207(a), Conducted Limit (dBμV)	
	Quasi-Peak	Average
* 0.15- 0.45	66 - 56	56 - 46
0.45 - 0.5	56	46
0.5 - 30	60	50

Table 6. Conducted Limits for Intentional Radiators from FCC Part 15 § 15.207(a)

Test Procedure: The EUT is a stand alone equipment located inside a semi-anechoic chamber. The EUT was situated such that the back of the EUT was 0.4 m from one wall of the vertical ground plane, and the remaining sides of the EUT were no closer than 0.8 m from any other conductive surface. The EUT was powered from a 50 Ω/50 μH Line Impedance Stabilization Network (LISN). The EMC receiver scanned the frequency range from 150 kHz to 30 MHz. Conducted Emissions measurements were made in accordance with *ANSI C63.4-1992 "Methods and Measurements of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40 GHz"*. The measurements were performed over the frequency range of 0.15 MHz to 30 MHz using a 50 Ω/50 μH LISN as the input transducer to an EMC/field intensity meter.

Test Results: The EUT was found compliant with the requirement(s) of this section. Measured emissions were below applicable limits.

Test Engineer(s): Billy Kwan

Test Date(s): March 9, 2007

Conducted Emissions - Voltage, AC Power, (110 VAC, 60 Hz)

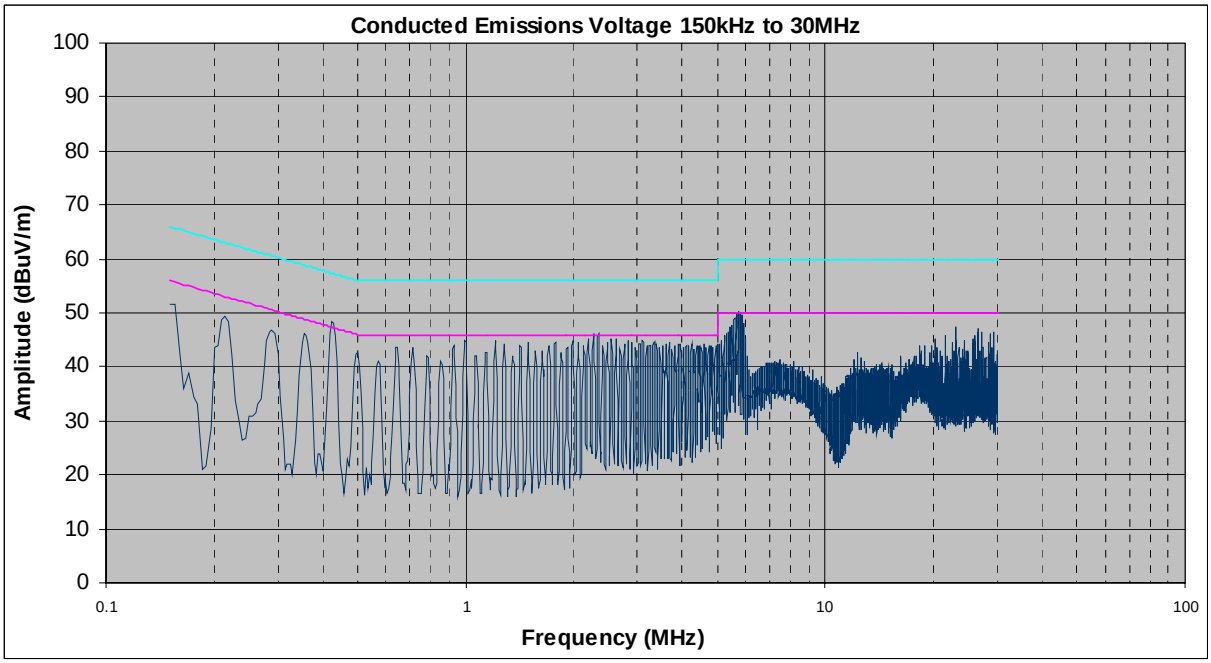
FREQ. (MHz)	Corrected Amplitude (dBuV) QP	Limit (dBuV) QP	Results QP	Margin (dB) QP	Corrected Amplitude (dBuV) AVG	Limit (dBuV) AVG	Results AVG	Margin (dB) AVG
0.423	47.5	57.39	PASS	-9.89	43.32	47.39	PASS	-4.07
0.916	43.3	56	PASS	-12.7	40.94	46	PASS	-5.06
6.067	41.29	60	PASS	-18.71	33.37	50	PASS	-16.63

Table 7. Conducted Emissions Test Results, Phase Line

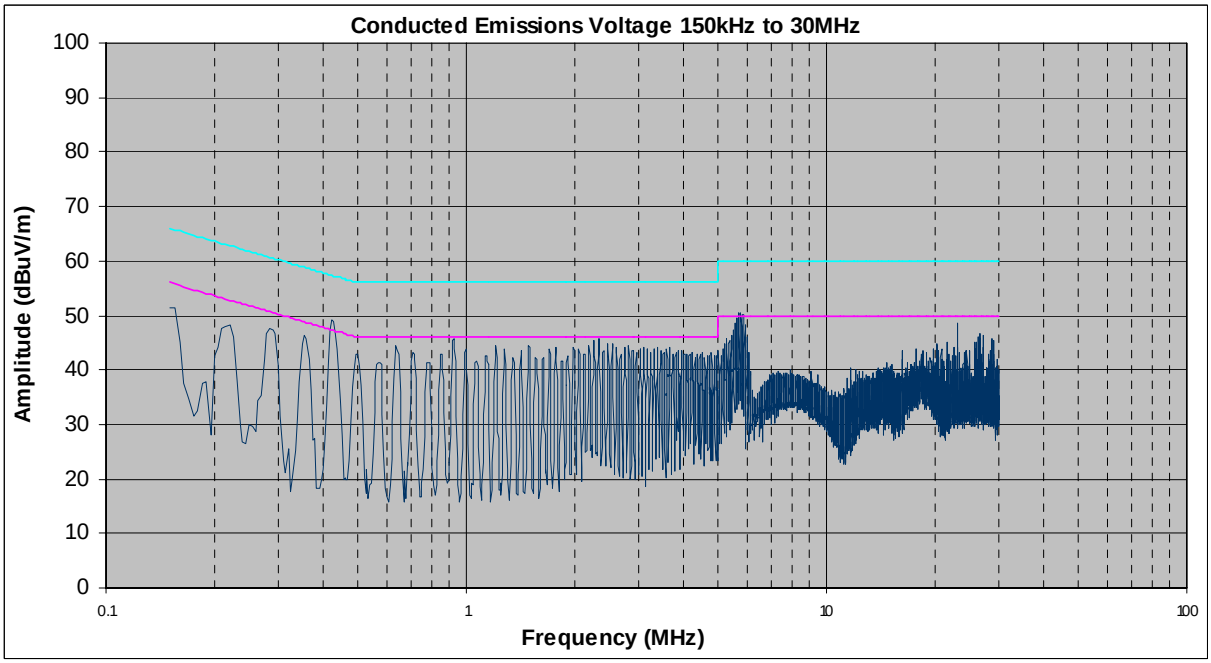
FREQ. (MHz)	Corrected Amplitude (dBuV) QP	Limit (dBuV) QP	Results QP	Margin (dB) QP	Corrected Amplitude (dBuV) AVG	Limit (dBuV) AVG	Results AVG	Margin (dB) AVG
0.423	47.51	57.39	PASS	-9.88	42.55	47.39	PASS	-4.84
0.916	42.31	56	PASS	-13.69	39.05	46	PASS	-6.95
6.065	39.99	60	PASS	-20.01	32.61	50	PASS	-17.39

Table 8. Conducted Emissions Test Results, Neutral Line

Conducted Emissions - Voltage, AC Power, (110 VAC, 60 Hz)



Plot 1. Conducted Emissions, Phase Line Plot



Plot 2. Conducted Emissions, Neutral Line Plot

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15. 403(c) 26dB Bandwidth

Test Requirements: **§ 15.403 (c):** Operation under the provisions of this section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:

Test Procedure: The transmitter was set to the mid channel at the highest output power and connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured with the spectrum analyzer using a RBW approximately equal to 1% of the total emission bandwidth, VBW > RBW. The 26 dB Bandwidth was measured and recorded. The measurements were repeated at the low and high channels.

Test Results Equipment complies with § 15.407 (c). The 26 dB Bandwidth was determined from the plots on the following pages.

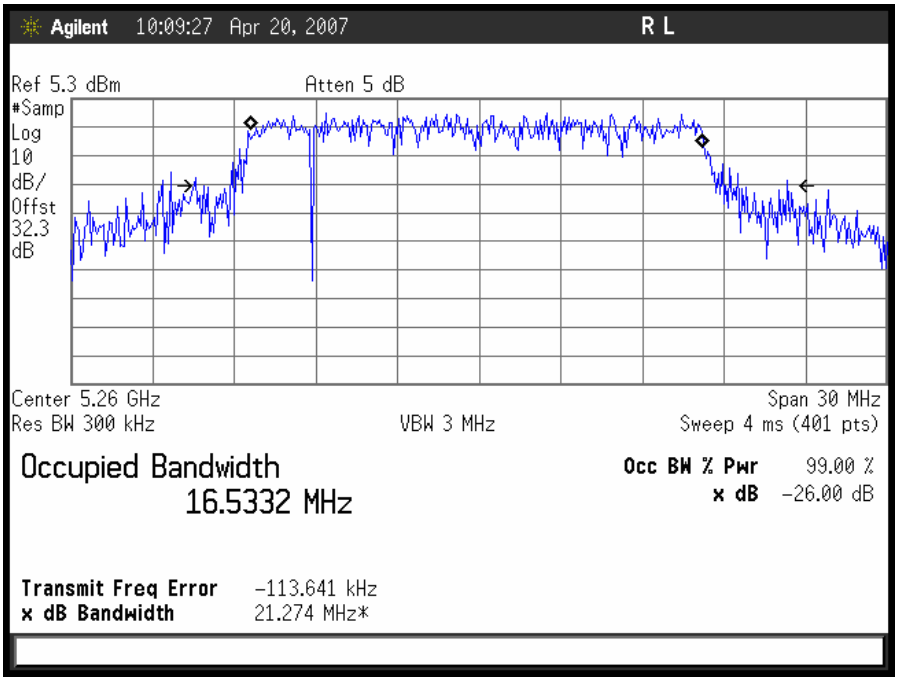
UNII-2 Lower Band			
Carrier Channel	**Frequency (MHz)**	**Measured 26 dB Bandwidth (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5260	21.27	16.53
High	5320	19.50	16.57

UNII-2 Upper Band			
Carrier Channel	**Frequency (MHz)**	**Measured 26 dB Bandwidth (MHz)**	**Measured 99% Bandwidth (MHz)**
Low	5500	19.97	16.48
Mid	5600	21.28	16.52
High	5700	20.57	16.48

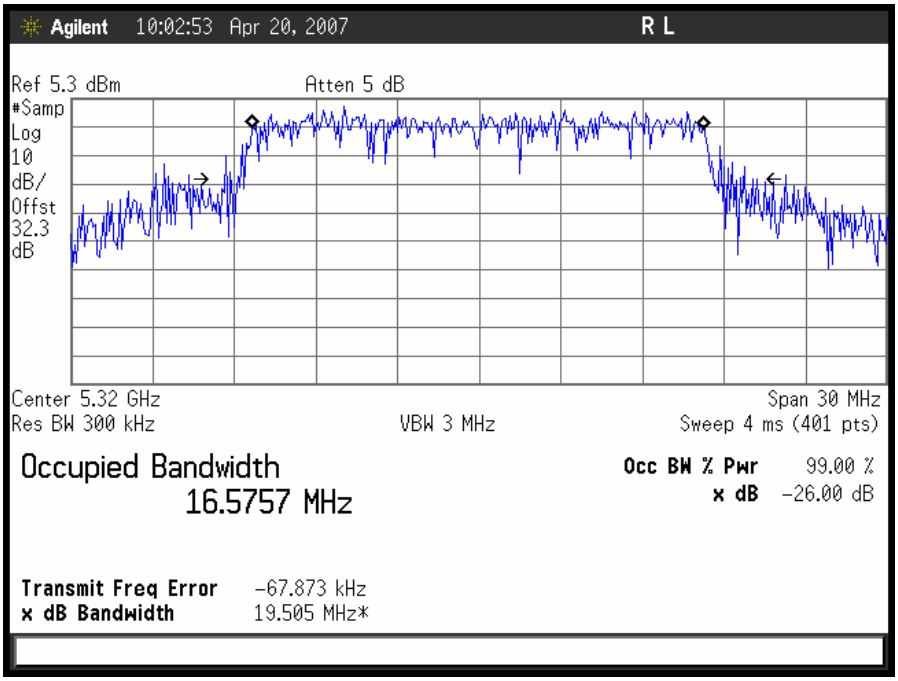
Test Engineer(s): Shawn McMillen

Test Date(s): April 20, 2007

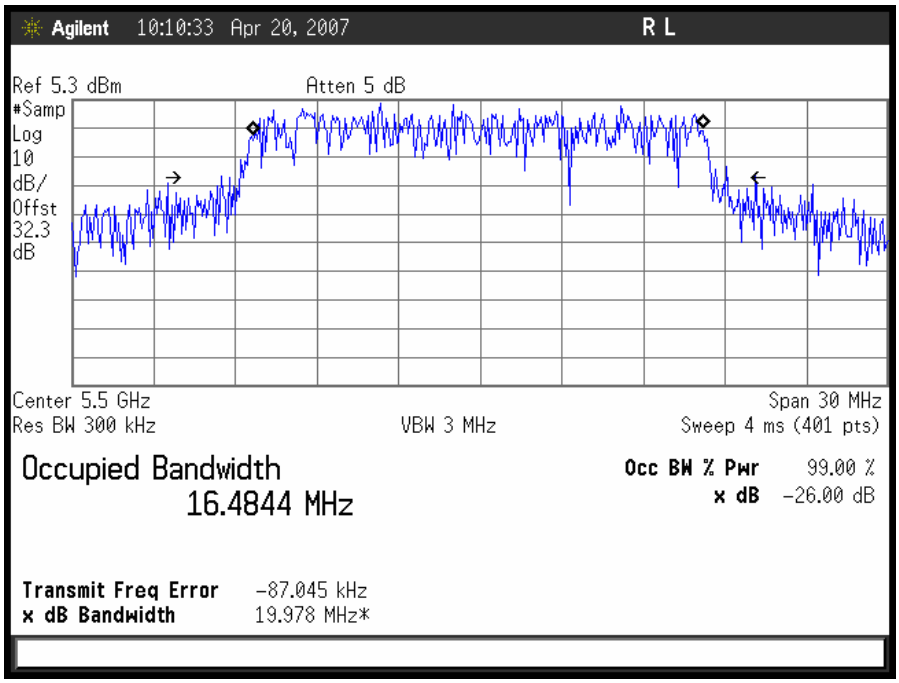
Electromagnetic Compatibility Criteria for Intentional Radiators



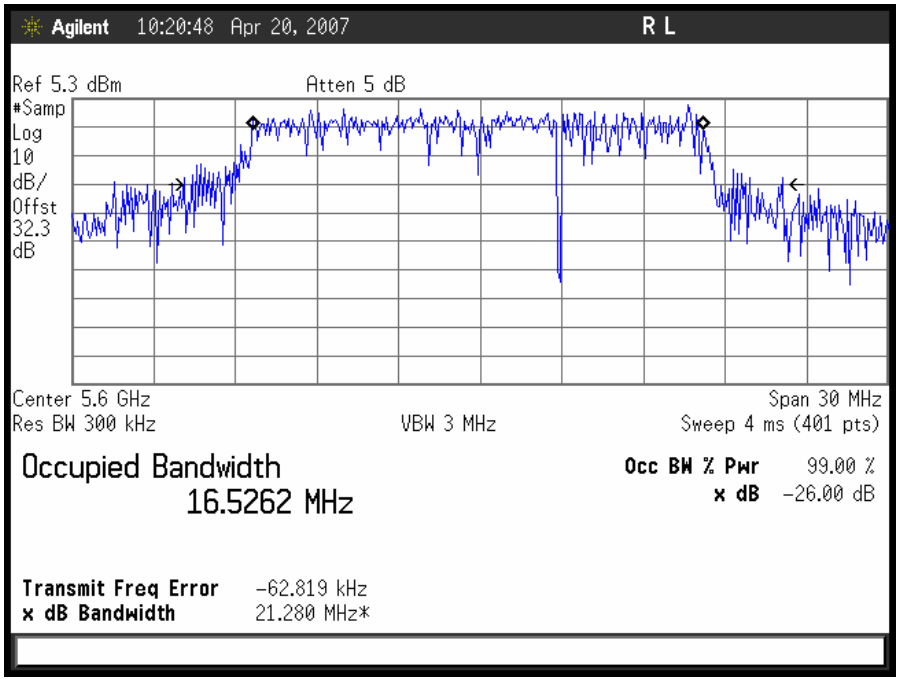
Plot 3. UNII-2 Low Band Low Ch Occupied Band Width, 5260MHz



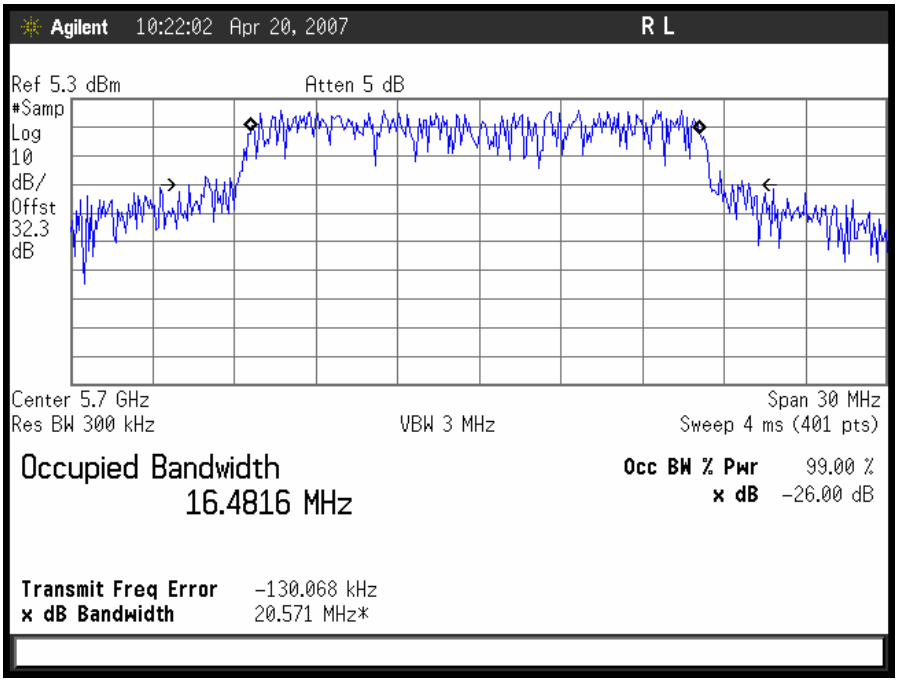
Plot 4. UNII-2 Low Band High Ch Occupied Band Width, 5320MHz



Plot 5. UNII-2 High Band Low Ch Occupied Band Width, 5500MHz



Plot 6. UNII-2 High Band Mid Ch Occupied Band Width, 5600MHz



Plot 7. UNII-2 High Band High Ch Occupied Band Width, 5700MHz

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15. 407(a) (1), (2) RF Power Output

Test Requirements: **§15.407(a) (1), (2):** The maximum output power of the intentional radiator shall not exceed the following:

Digital Transmission Systems (MHz)	Output Limit (mW)
5250-5350	250
5470-5725	250

Table 9. Output Power Requirements from §15.407

§15.407(a) (2): For the band 5.25-5.35GHz & 5.47-5.725GHz the peak transmit power over the frequency band of operation shall not exceed the lesser of 250mW or 11dBm + 10logB, where B is the 26-dB emission bandwidth in MHz.

Test Procedure: Method #1 of the Public Notice DA-02-2138 was used to measure the Peak Output Power. The EUT was measured at the low, mid and high channels at a data rate which gave the highest output power level.

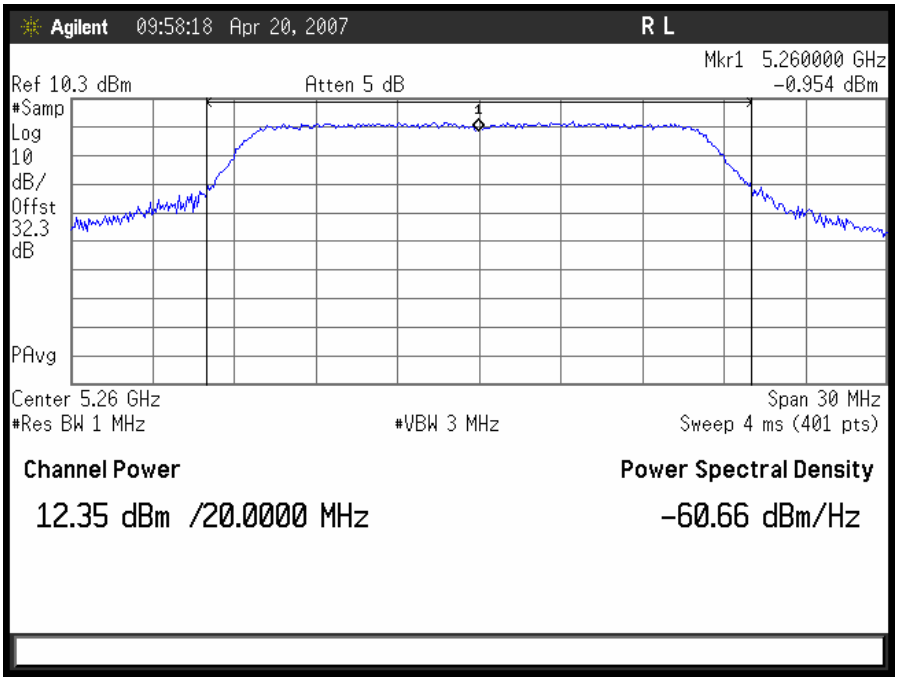
Test Engineer(s): Shawn McMillen

Test Date(s): April 20, 2007

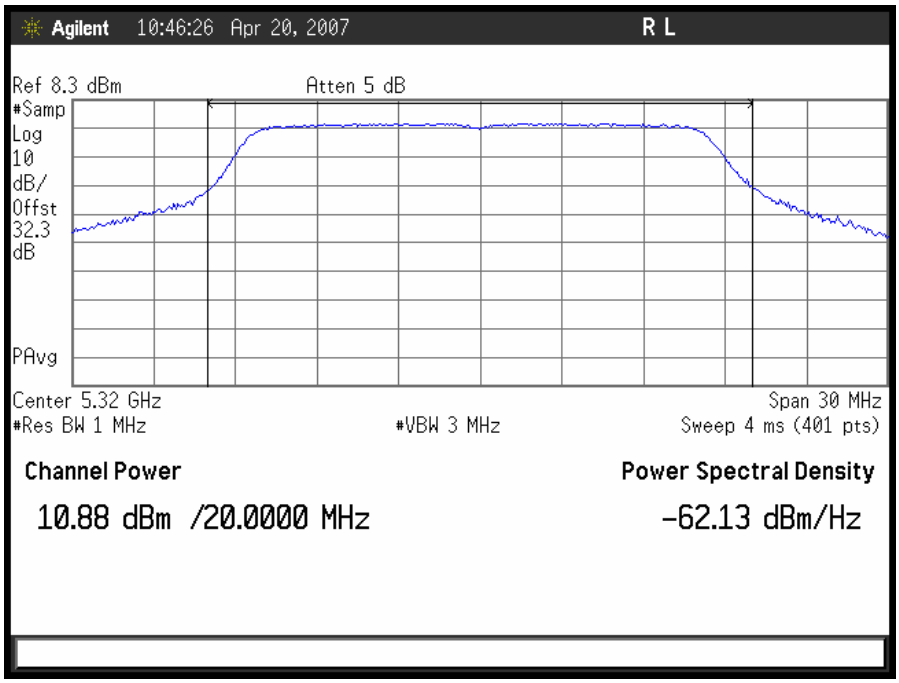
Test Results: Equipment complies with the Peak Power Output limits of **§ 15.401(a) (2)**

UNII-2	
Frequency (MHz)	**Measured Peak Output Power dBm**
5260	12.35
5320	10.88

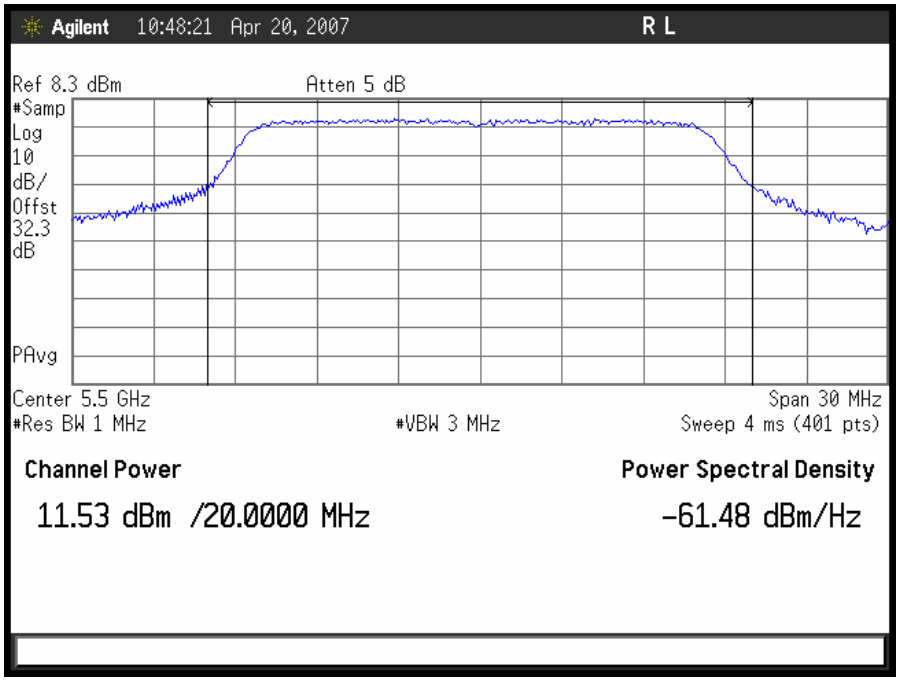
UNII-2	
Frequency (MHz)	**Measured Peak Output Power dBm**
5500	11.53
5600	12.64
5700	11.44



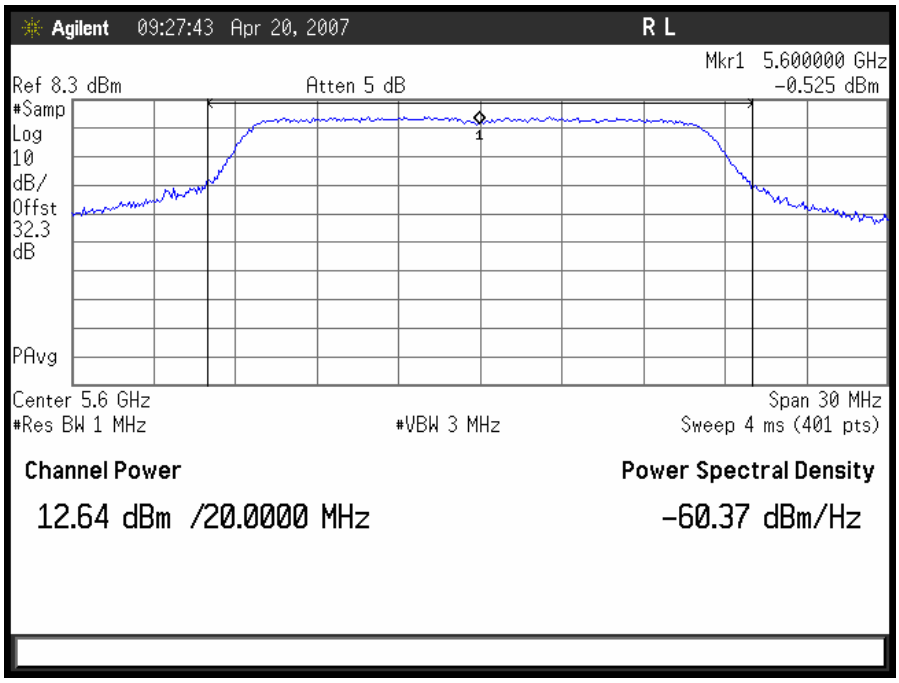
Plot 8. UNII-2 Lower Band, Low Channel, 5260MHz



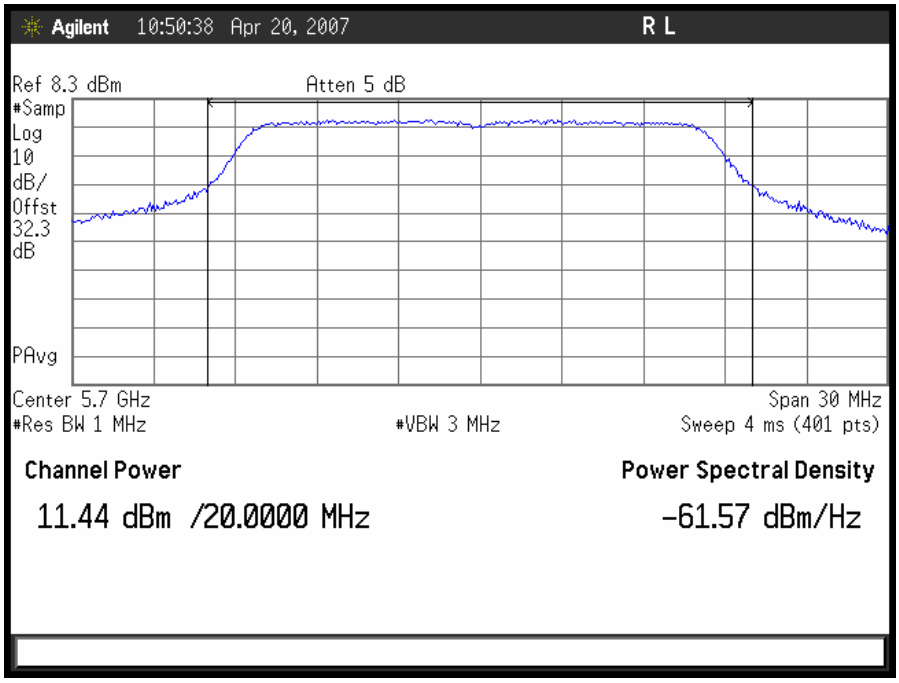
Plot 9. UNII-2 Lower Band, High Channel, 5320MHz



Plot 10. UNII-2 Higher Band, Low Channel, 5500MHz



Plot 11. UNII-2 Higher Band, Mid Channel, 5600MHz



Plot 12. UNII-2 Higher Band, High Channel, 5700MHz

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.407(a) Peak Power Output and RF Exposure

RF Exposure Requirements: **§1.1307(b)(1) and §1.1307(b)(2):** Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines.

RF Radiation Exposure Limit: **§1.1310:** As specified in this section, the Maximum Permissible Exposure (MPE) Limit shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in Sec. 1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of Sec. 2.1093 of this chapter.

MPE Limit Calculation: EUT's operating frequencies @ 5250 – 5350 MHz, 5470 – 5725 MHz, highest conducted power = 12.64dBm (peak) therefore, **Limit for Uncontrolled exposure: 1 mW/cm^2 or 10 W/m^2**

EUT maximum antenna gain = 17 dBi.

Equation from page 18 of OET 65, Edition 97-01

$$S = PG / 4\pi R^2 \quad \text{or} \quad R = \sqrt{PG / 4\pi S}$$

where, S = Power Density (1 mW/cm^2)
P = Power Input to antenna (18.36mW)
G = Antenna Gain (50.11 numeric)

S = (18.36*50.11/4*3.14*202)= (920.01/5024) = 0.18 mW/cm2

.

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.407(a)(1), (a)(2) Peak Power Spectral Density

Test Requirements: **§ 15.407(a)(2):** For digitally modulated systems, the conducted peak power spectral density from the intentional radiator to the antenna shall not be greater than 11dBm/MHz in the frequency band 5.25-5.35GHz & 5.47-5.725GHz.

Test Procedure: The transmitter was connected directly to a Spectrum Analyzer through a directional coupler. The power was monitored at the coupler port with a Power Meter capable of measuring peak and average RF power. The power level was set to the maximum level on the EUT. The RBW was set to 1MHz and the VBW was set to 3MHz. The method of measurement #2 from the FCC Public Notice DA 02-2138 was used.

Test Results: Equipment complies with the peak power spectral density limits of **§ 15.407(a)(2).** The peak power spectral density was determined from plots on the following page(s).

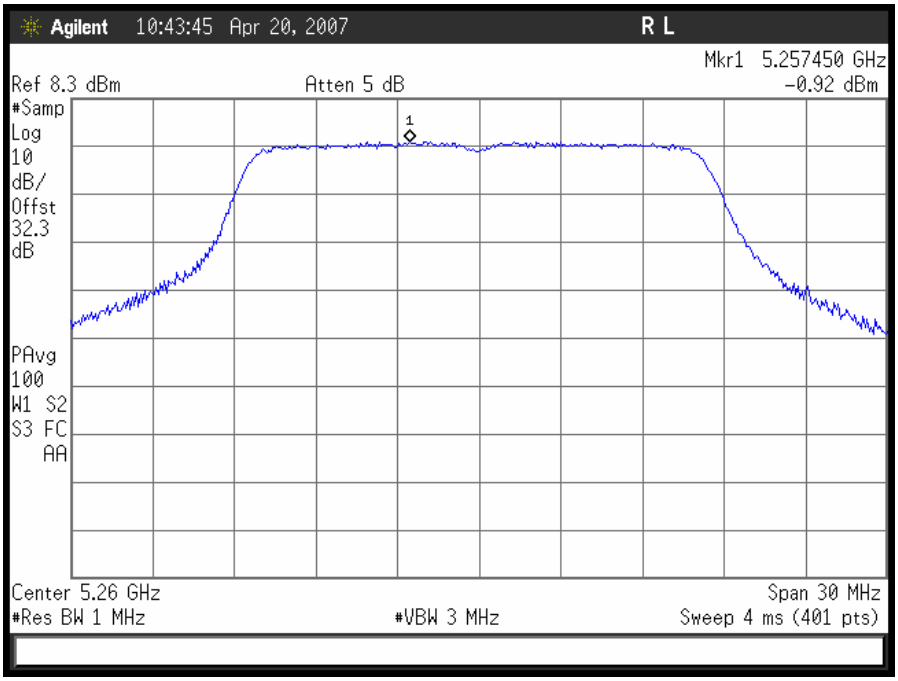
UNII-2 Lower Band				
Carrier Channel	**Frequency (MHz)**	**Measured PPSD (dBm)**	**Limit (dBm)**	**Margin (dB)**
Low	5260	-0.920	11	11.920
High	5320	-0.529	11	11.529

UNII-2 Higher Band				
Carrier Channel	**Frequency (MHz)**	**Measured PPSD (dBm)**	**Limit (dBm)**	**Margin (dB)**
Low	5500	-0.214	11	11.214
Mid	5600	-0.077	11	11.077
High	5700	-0.618	11	11.618

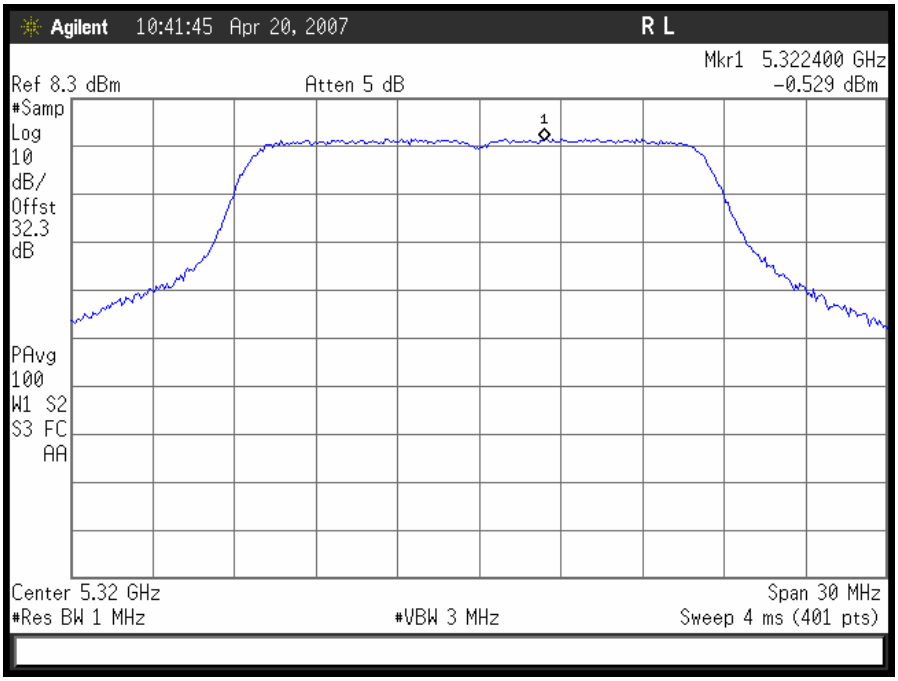
Test Engineer(s): Shawn McMillen

Test Date(s): April 20, 2007

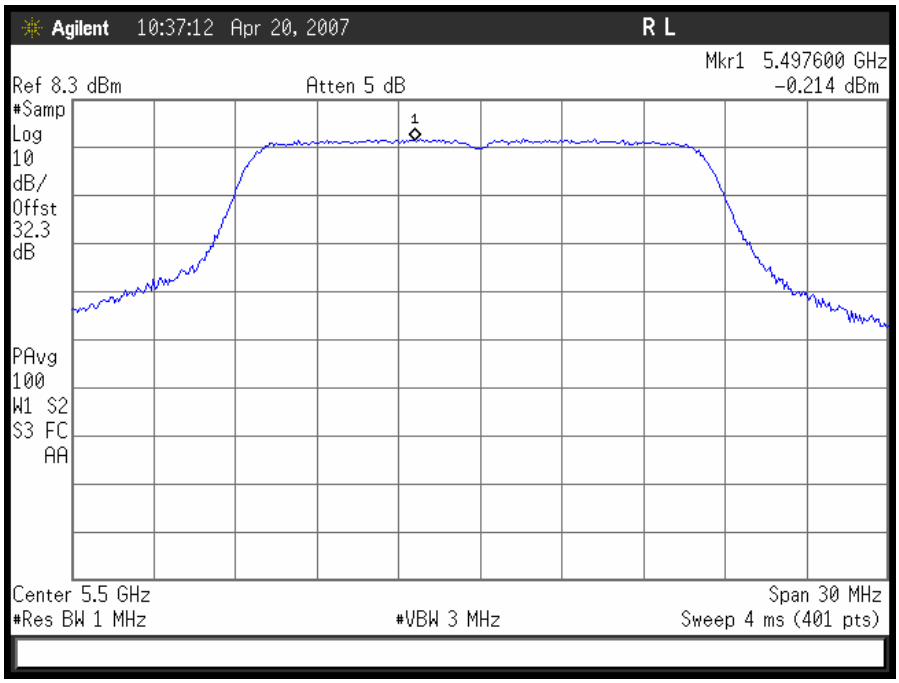
Electromagnetic Compatibility Criteria for Intentional Radiators



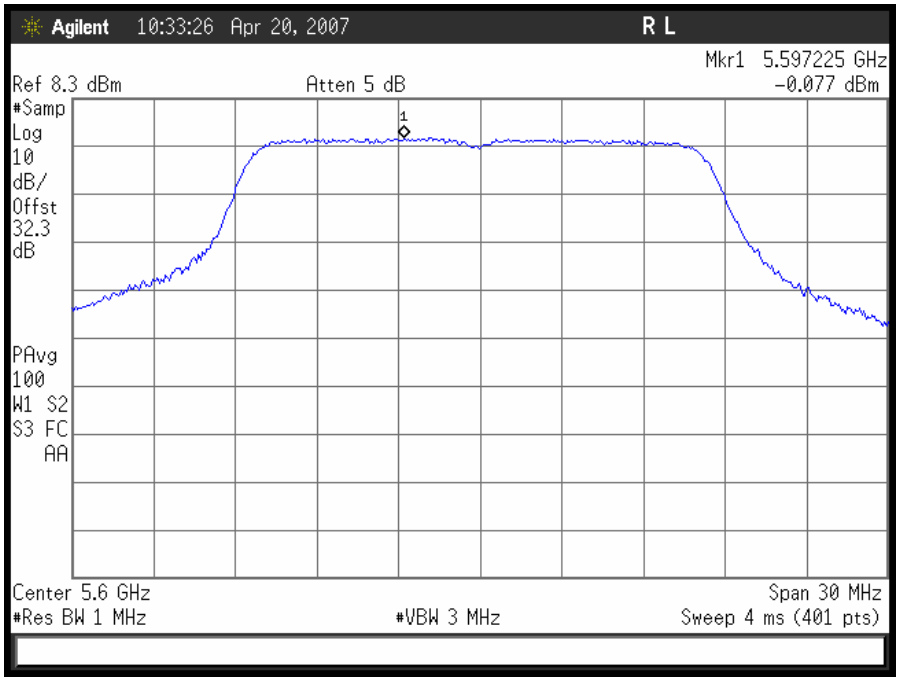
Plot 13. UNII-2 Low Band Low Ch Peak Power Spectral Density, 5260MHz



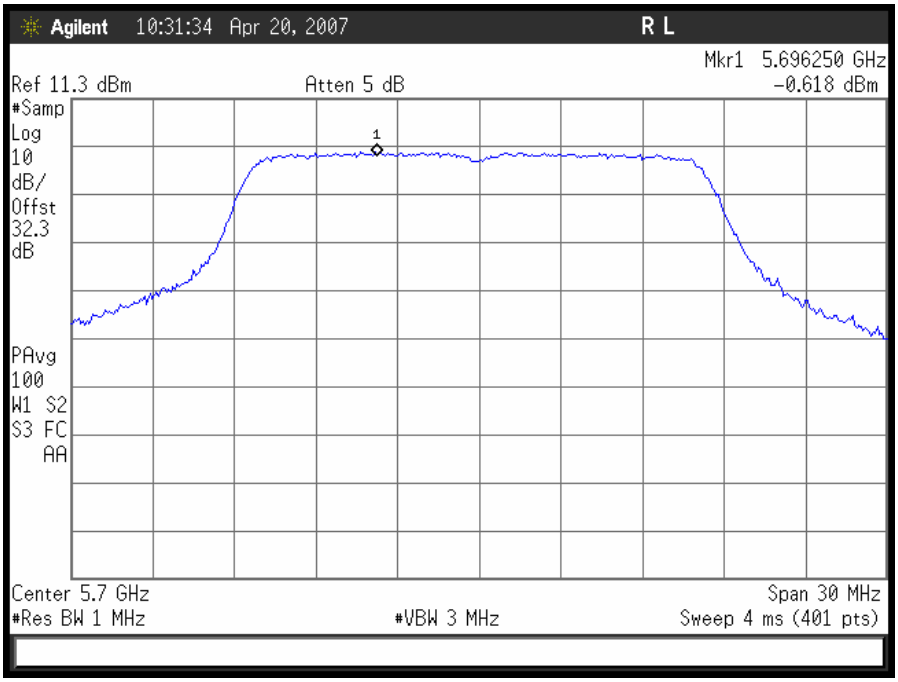
Plot 14. UNII-2 Low Band High Ch Peak Power Spectral Density, 5320MHz



Plot 15. UNII-2 High Band Low Ch Peak Power Spectral Density, 5500MHz



Plot 16. UNII-2 High Band Mid Ch Peak Power Spectral Density, 5600MHz



Plot 17. UNII-2 High Band High Ch Peak Power Spectral Density, 5700MHz

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.407(a)(6) Peak Excursion Ratio

Test Requirements: **§ 15.407(a)(6):** For digitally modulated systems, the peak excursion of the modulation envelope to the peak transmit power shall not exceed 13dB across any 1MHz bandwidth of the emission bandwidth whichever is less.

Test Procedure: The method of measurement #2 from the FCC Public Notice CA 02-2138 was used. The EUT was connected directly to the spectrum analyzer through cabling and attenuation. The 1st trace on the spectrum analyzer was set to RBW=1MHz, VBW=3MHz. The peak detector mode was used and the trace max held. The 2nd trace on the spectrum analyzer was set to a RBW=1MHz, VBW= 3MHz and power averaging.

The Peak Excursion Ratio was determined from the difference between the maximum found in each trace.

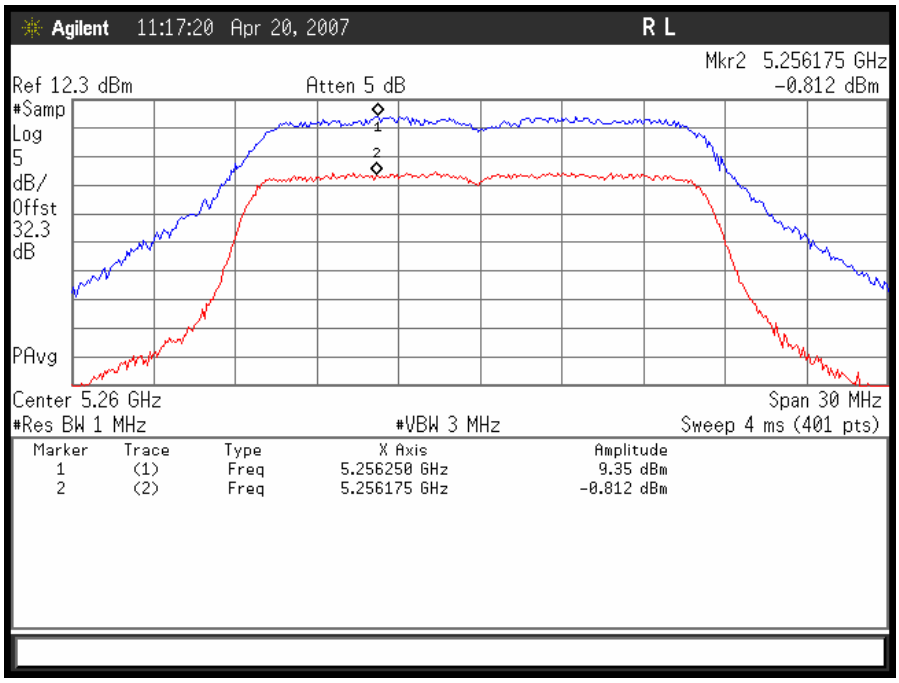
Test Results: Equipment complies with the peak excursion ratio limits of **§ 15.407(a)(6).** The peak excursion ratio was determined from plots on the following page(s).

UNII-2 Lower Band				
Carrier Channel	**Frequency (MHz)**	**Excursion Ratio (dBm)**	**Limit (dBm)**	**Margin (dB)**
Low	5260	-0.812	13	13.812
High	5320	-0.957	13	13.957

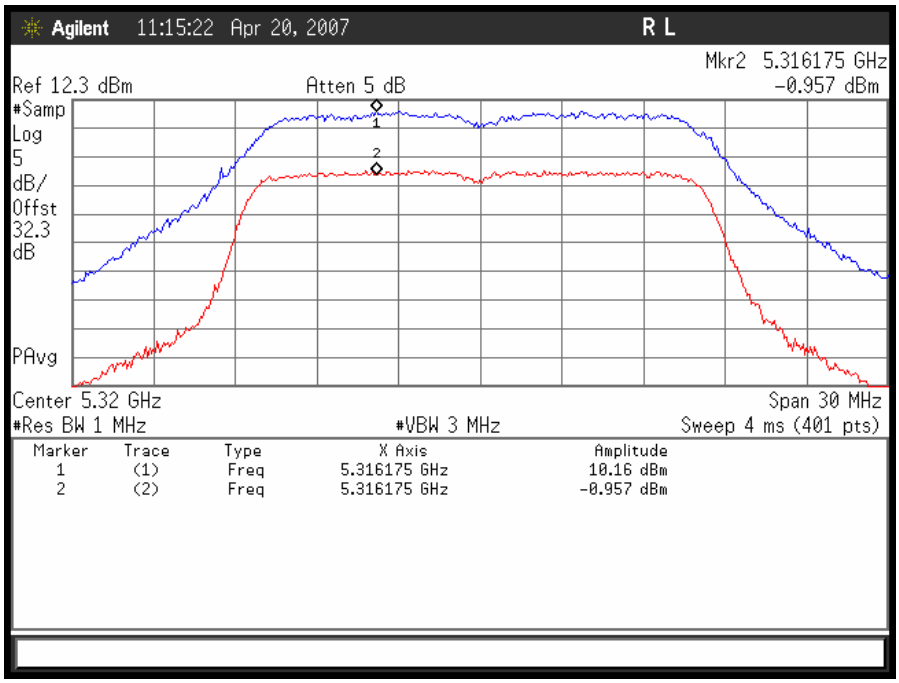
UNII-2 High Band				
Carrier Channel	**Frequency (MHz)**	**Excursion Ratio (dBm)**	**Limit (dBm)**	**Margin (dB)**
Low	5500	0.141	13	12.859
Mid	5600	0.062	13	12.938
High	5700	-0.333	13	13.333

Test Engineer(s): Shawn McMillen

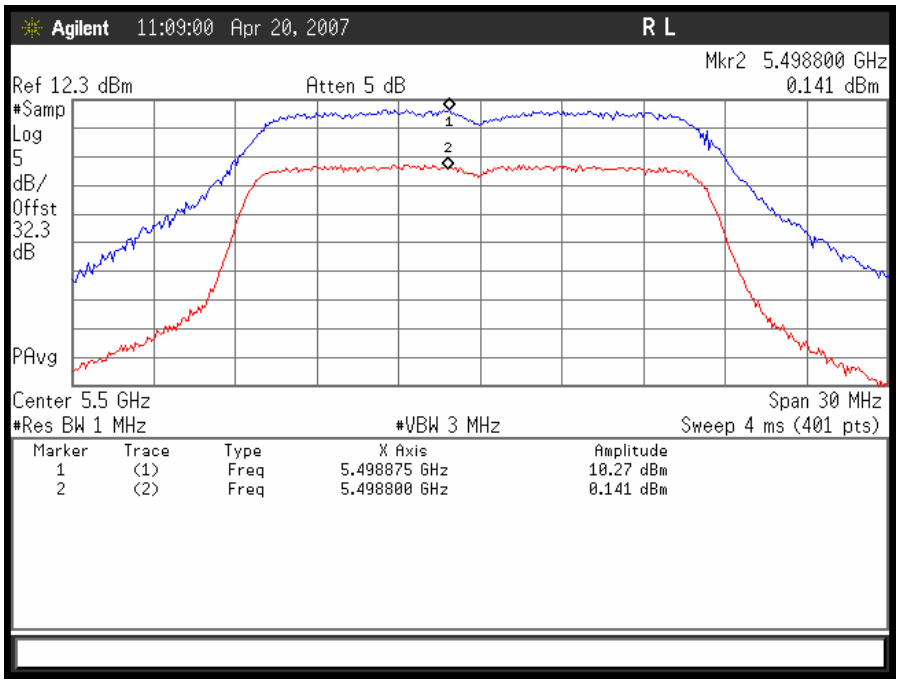
Test Date(s): April 20, 2007



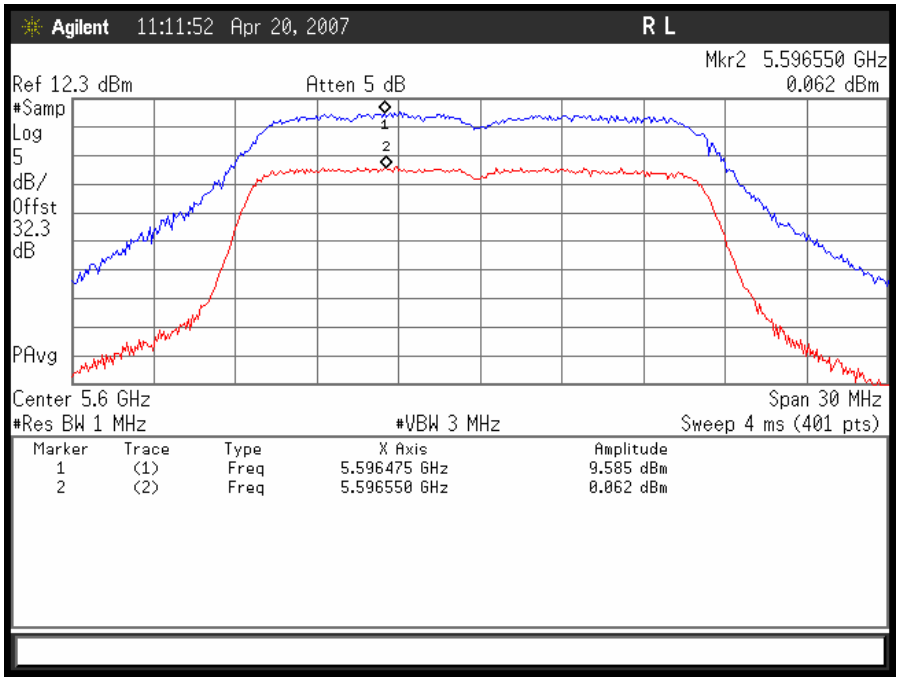
Plot 18. Peak Excursion Ratio for Low Band Low Ch, 5260MHz



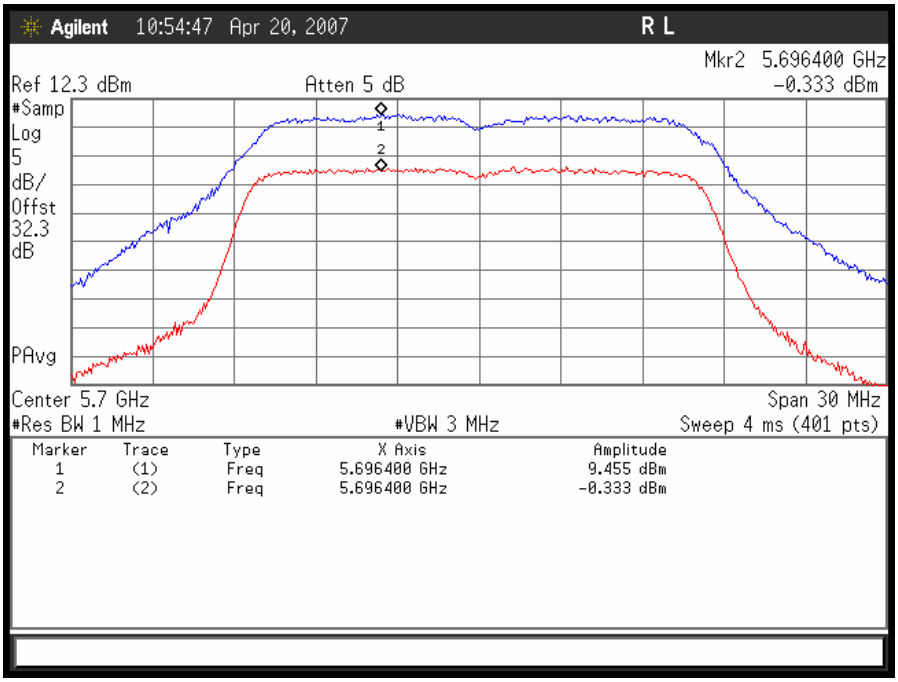
Plot 19. Peak Excursion Ratio for Low Band High Ch, 5320MHz



Plot 20. Peak Excursion Ratio for High Band Low Ch, 5500MHz



Plot 21. Peak Excursion Ratio for High Band Mid Ch, 5600MHz



Plot 22. Peak Excursion Ratio for High Band High Ch, 5700MHz

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.407(b)(1),(2), (5), (6) Undesirable Emissions

Test Requirements: **§ 15.407(b)(1),(2), (5), (6)**; **Restricted band (5350-5460MHz)** with 5320MHz carrier-Peak Measurement **§15.205:** Emissions outside the frequency band.

§ 15.407(b)(1): In any 1MHz bandwidth outside the frequency band 5.15-5.25GHz in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power shall not exceed -27dBm.

§ 15.407(b)(2): In any 1MHz bandwidth outside the frequency band 5.25-5.35GHz in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power shall not exceed -27dBm.

§ 15.407(b)(6): Radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a).

§15.205(a): Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090–0.110----------	16.42–16.423	399.9–410	4.5–5.15
[1] 0.495–0.505----------	16.69475–16.69525	608–614	5.35–5.46
2.1735–2.1905----------	16.80425–16.80475	960–1240	7.25–7.75
4.125–4.128----------	25.5–25.67	1300–1427	8.025–8.5
4.17725–4.17775----------	37.5–38.25	1435–1626.5	9.0–9.2
4.20725–4.20775----------	73–74.6	1645.5–1646.5	9.3–9.5
6.215–6.218----------	74.8–75.2	1660–1710	10.6–12.7
6.26775–6.26825----------	108–121.94	1718.8–1722.2	13.25–13.4
6.31175–6.31225----------	123–138	2200–2300	14.47–14.5
8.291–8.294----------	149.9–150.05	2310–2390	15.35–16.2
8.362–8.366----------	156.52475–156.52525	2483.5–2500	17.7–21.4
8.37625–8.38675----------	156.7–156.9	2655–2900	22.01–23.12
8.41425–8.41475----------	162.0125–167.17	3260–3267	23.6–24.0
12.29–12.293----------	167.72–173.2	3332–3339	31.2–31.8
12.51975–12.52025----------	240–285	3345.8–3358 36.	43–36.5
12.57675–12.57725----------	322–335.4	3600–4400	([2])

Table 10. Restricted Bands of Operation

Test Engineer(s): Shawn McMillen

Test Date(s): April 23, 2007

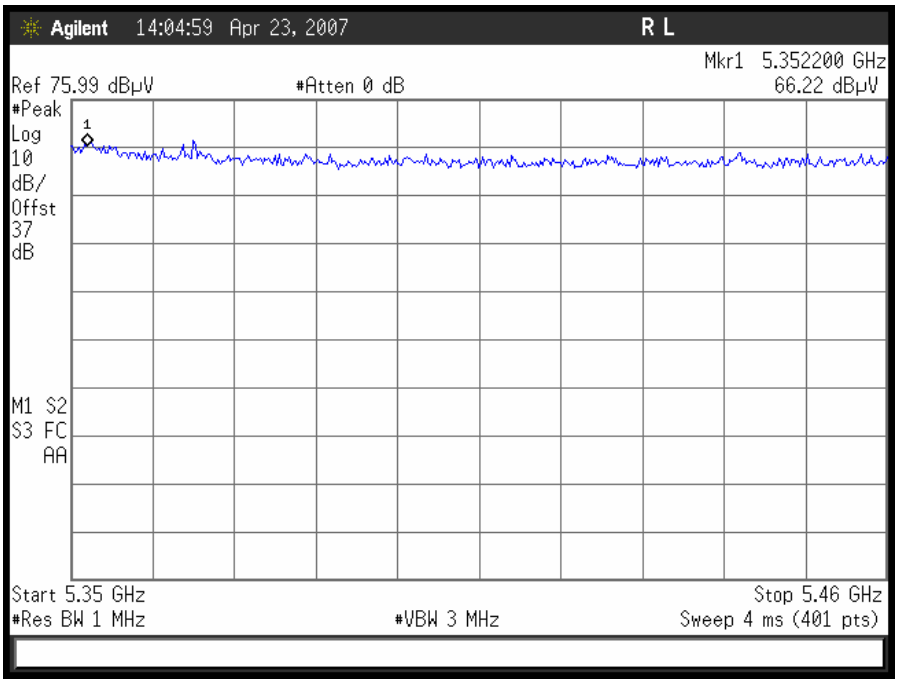
Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.407(b)(1): Harmonic Emissions Requirements – Radiated UNII-2 Lower Band

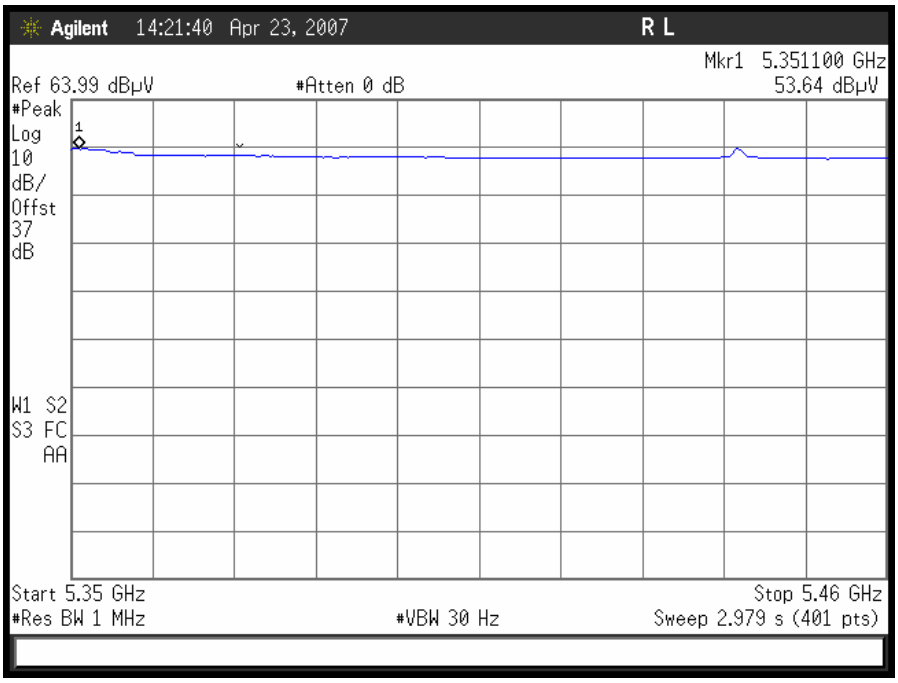
Frequency (MHz)	Receive Antenna Polarity (H/V)	Uncorrected Field strength (dBµV)@ 3m	Preamp (dB)	Antenna Factor (dB)	Cable Loss (dB)	Distance Correction Factor (dB)	Corrected Field Strength @ 3m (dBµV)	Limit @ 3m (dBµV)	Margin (dB)	Measurement Type
10520	V	42.8	35.2	38.1	6.7	0	52.4	74	-21.6	Peak
15780	V	39.7	34.3	38.3	7.8	0	51.5	74	-22.5	Peak
15780	V	30.4	34.3	38.3	7.8	0	42.2	54	-11.8	Average
Low Channel 5260MHz										
Frequency (MHz)	**Receive Antenna Polarity (H/V)**	**Uncorrected Field strength (dBµV)@ 3m**	**Preamp (dB)**	**Antenna Factor (dB)**	**Cable Loss (dB)**	**Distance Correction Factor (dB)**	**Corrected Field Strength @ 3m (dBµV)**	**Limit @ 3m (dBµV)**	**Margin (dB)**	**Measurement Type**
10640	V	44.6	35.2	38.1	6.7	0	54.2	74	-19.8	Peak
10640	V	29.5	35.2	38.1	6.7	0	39.1	54	-14.9	Average
15960	V	38.2	34.3	38.3	7.8	0	50.0	74	-24.0	Peak
15960	V	30.5	34.3	38.3	7.8	0	42.3	54	-11.7	Average
High Channel 5320MHz										

Notes: All other emissions were measured at the noise floor of the spectrum analyzer

The limit of 74dBµV for non-restriced bands is tighter than the -27dBm/MHz requirment for out of band emissions. As a result the tighter limit was applied.



Plot 23. Restricted band (5350-5460MHz) with 5320MHz carrier-Peak Measurement



Plot 24. Restricted band (5350-5460MHz) with 5320MHz carrier-Average Measurement

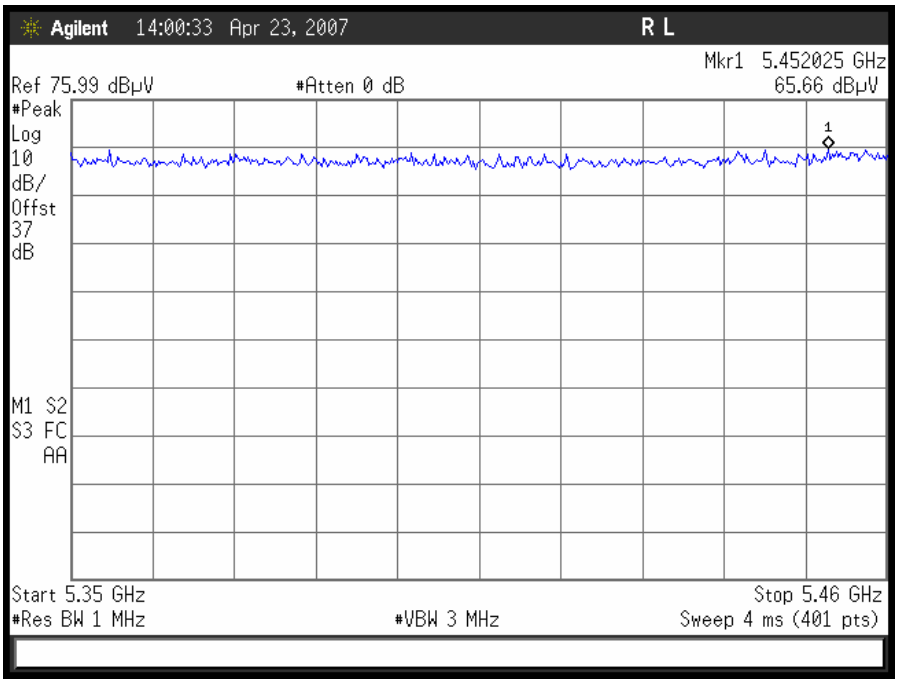
Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.407(b)(2): Harmonic Emissions Requirements – Radiated UNII-2 Upper Band

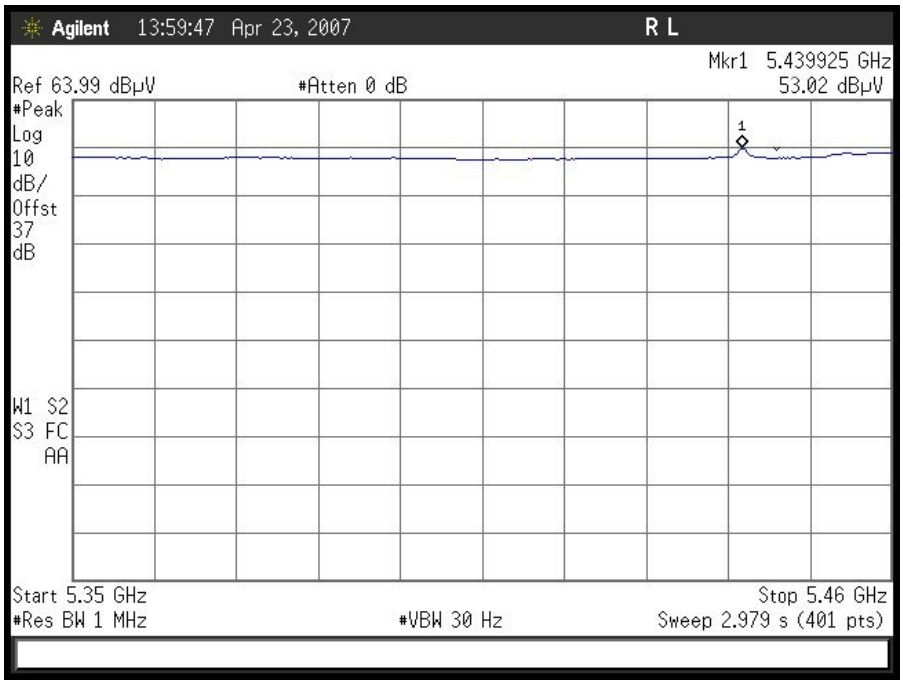
Frequency (MHz)	Receive Antenna Polarity (H/V)	Uncorrected Field strength (dBµV)@ 3m	Preamp (dB)	Antenna Factor (dB)	Cable Loss (dB)	Distance Correction Factor (dB)	Corrected Field Strength @ 3m (dBµV)	Limit @ 3m (dBµV)	Margin (dB)	Measurement Type
11000	V	51.2	35.2	38.1	6.7	0	60.8	74	-13.2	Peak
16500	V	40.5	34.3	38.3	7.8	0	52.3	74	-21.7	Peak
Low Channel 5500MHz										
Frequency (MHz)	**Receive Antenna Polarity (H/V)**	**Uncorrected Field strength (dBµV)@ 3m**	**Preamp (dB)**	**Antenna Factor (dB)**	**Cable Loss (dB)**	**Distance Correction Factor (dB)**	**Corrected Field Strength @ 3m (dBµV)**	**Limit @ 3m (dBµV)**	**Margin (dB)**	**Measurement Type**
11200	V	49.8	35.2	38.1	6.7	0	59.4	74	-14.6	Peak
11200	V	30.6	35.2	38.1	6.7	0	40.2	54	-13.8	Average
16800	V	52.1	34.3	38.3	7.8	0	63.9	74	-10.1	Peak
Mid Channel 5600MHz										
Frequency (MHz)	**Receive Antenna Polarity (H/V)**	**Uncorrected Field strength (dBµV)@ 3m**	**Preamp (dB)**	**Antenna Factor (dB)**	**Cable Loss (dB)**	**Distance Correction Factor (dB)**	**Corrected Field Strength @ 3m (dBµV)**	**Limit @ 3m (dBµV)**	**Margin (dB)**	**Measurement Type**
11400	V	50.1	35.2	38.1	6.7	0	59.7	74	-14.3	Peak
17100	V	43.1	34.3	38.3	7.8	0	54.9	74	-19.1	Peak
17100	V	33.6	34.3	38.3	7.8	0	45.4	54	-8.6	Average
High Channel 5700MHz										

Note: All other emissions were measured at the noise floor of the spectrum analyzer

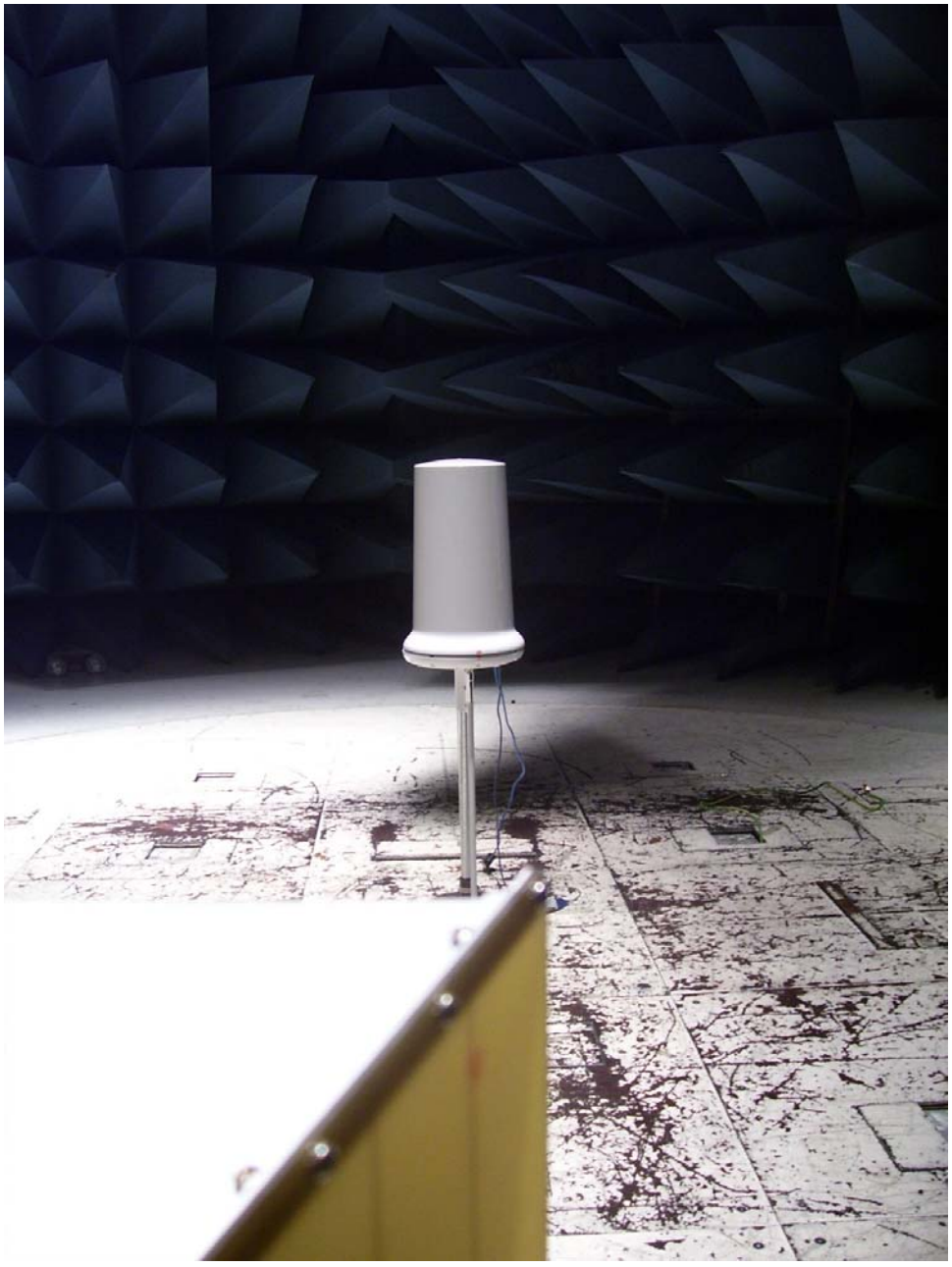
The limit of 74dBµV for non-restriced bands is tighter than the -27dBm/MHz requirment for out of band emissions. As a result the tighter limit was applied.



Plot 25. Restricted band (5350-5460MHz) with 5500MHz carrier-Peak Measurement



Plot 26. Restricted band (5350-5460MHz) with 5500MHz carrier-Average Measurement



Photograph 2. Test Equipment and setup for various Radiated Measurements

IV. Test Equipment

Test Equipment

Calibrated test equipment utilized during testing was maintained in a current state of calibration per the requirements of ANSI/NCSL Z540-1-1994 and ANSI/ISO/IEC 17025:2000.

MET Asset #	Equipment	Manufacturer	Model	Last Cal Date	Cal Due Date
1S2421	EMI RECEIVER	ROHDE&SCHWARZ	ESIB 7	3/23/2007	3/23/2008
1S2184	BILOG ANTENNA	CHASE	CBL6112A	1/3/2007	1/3/2008
1S2121	PRE-AMPLIFIER	HEWLETT PACKARD	8449B	11/28/2006	11/28/2007
1S2198	ANTENNA, HORN	EMCO	3115	8/17/2006	8/17/2007
1S2202	ANTENNA, HORN, 1 METER	EMCO	3116	4/10/2007	4/10/2010
N/A	HIGH PASS FILTER	MICRO-TRONICS	HPM13146	SEE NOTE	
1S2263	CHAMBER, 10 METER	RANTEC	N2-14	8/15/2006	8/15/2007
1S2034	COUPLER, DIRECTIONAL 1-20 GHz	KRYTAR	101020020	SEE NOTE	
1S2041	COUPLER, BI DIRECTIONALCOAXIAL	NARDA	N/A	SEE NOTE	
1S2460	Analyzer, Spectrum 9 kHz-40GHz	Agilent	E4407B	07/06/2005	07/06/2008
1S2430	WIDEBAND POWER METER	ANRITSU COMPANY	ML2488A	3/12/2007	3/12/2008
1S2432	WIDEBAND POWER SENSOR	ANRITSU COMPANY	MA2491A	3/12/2007	3/12/2008
1S2128	Harmonic Mixer	Hewlett Packard	11970A	10/26/2006	10/26/2009
1S2129	Harmonic Mixer	Hewlett Packard	11970K	10/26/2006	10/26/2009

Note: Functionally tested equipment is verified using calibrated instrumentation at the time of testing.

V. Exhibit A

Waveform Num = 1
Num of Bursts = 15
Burst Interval (us) = 800000.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	615088									
1		3	5.0	70	1021	1854	1143	615088	0	799999
	754769									
2		1	10.0	54	1512	0	0	1373875	800000	1599999
	568757									
3		3	19.0	73	1561	1300	1206	1944144	1600000	2399999
	951018									
4		3	7.0	55	1137	1738	1801	2899229	2400000	3199999
	391908									
5		2	20.0	74	1513	1277	0	3295813	3200000	3999999
	1256646									
6		1	7.0	87	1393	0	0	4555249	4000000	4799999
	638249									
7		1	16.0	51	1330	0	0	5194891	4800000	5599999
	1070633									
8		3	13.0	88	1745	1178	1129	6266854	5600000	6399999
	245484									
9		3	6.0	59	1548	1799	1849	6516390	6400000	7199999
	879737									
10		1	17.0	58	1180	0	0	7401323	7200000	7999999
	1064922									
11		3	16.0	70	1584	1064	1965	8467425	8000000	8799999
	910785									
12		3	6.0	89	1401	1409	1955	9382823	8800000	9599999
	413161									
13		3	17.0	51	1747	1045	1941	9800749	9600000	10399999
	940758									
14		1	8.0	86	1310	0	0	10746240	10400000	11199999
	1132732									
15		2	15.0	67	1065	1273	0	11880282	11200000	11999999

Total number of pulses in waveform = 33

Waveform Num = 2
Num of Bursts = 15
Burst Interval (us) = 800000.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	710254									
1		2	10.0	87	1633	1054	0	710254	0	799999
	227991									
2		2	19.0	71	1822	1662	0	940932	800000	1599999
	747388									
3		2	19.0	72	1879	1556	0	1691804	1600000	2399999
	764338									
4		3	11.0	100	1728	1321	1016	2459577	2400000	3199999
	947925									
5		1	17.0	58	1264	0	0	3411567	3200000	3999999
	1023147									
6		2	9.0	54	1433	1309	0	4435978	4000000	4799999
	990041									
7		1	9.0	71	1733	0	0	5428761	4800000	5599999
	766359									
8		1	6.0	83	1002	0	0	6196853	5600000	6399999
	724360									
9		3	14.0	84	1092	1389	1512	6922215	6400000	7199999
	1036045									
10		3	15.0	56	1627	1759	1989	7962253	7200000	7999999
	252034									
11		1	20.0	94	1117	0	0	8219662	8000000	8799999
	1081763									
12		1	11.0	68	1288	0	0	9302542	8800000	9599999
	344432									
13		1	15.0	93	1840	0	0	9648262	9600000	10399999
	1515737									
14		2	8.0	99	1905	1626	0	11165839	10400000	11199999
	82034									
15		3	18.0	50	1738	1103	1375	11251404	11200000	11999999

Total number of pulses in waveform = 28

Waveform Num = 3
Num of Bursts = 15
Burst Interval (us) = 800000.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	707021									
1		3	17.0	61	1542	1740	1646	707021	0	799999
	782682									
2		2	5.0	76	1865	1646	0	1494631	800000	1599999
	225237									
3		1	13.0	52	1735	0	0	1723379	1600000	2399999
	942959									
4		3	20.0	54	1506	1582	1751	2668073	2400000	3199999
	980337									
5		1	11.0	55	1299	0	0	3653249	3200000	3999999
	470885									
6		1	7.0	72	1383	0	0	4125433	4000000	4799999
	892053									
7		2	16.0	70	1722	1152	0	5018869	4800000	5599999
	922431									
8		2	18.0	60	1207	1640	0	5944174	5600000	6399999
	1030756									
9		3	13.0	85	1695	1759	1220	6977777	6400000	7199999
	548117									
10		3	17.0	60	1924	1082	1464	7530568	7200000	7999999
	1190980									
11		2	6.0	74	1719	1731	0	8726018	8000000	8799999
	848000									
12		2	7.0	78	1549	1098	0	9577468	8800000	9599999
	172722									
13		1	11.0	90	1405	0	0	9752837	9600000	10399999
	796298									
14		3	11.0	92	1516	1088	1749	10550540	10400000	11199999
	1265380									
15		2	7.0	75	1616	1089	0	11820273	11200000	11999999

Total number of pulses in waveform = 31

Waveform Num = 4
Num of Bursts = 19
Burst Interval (us) = 631579.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	28259									
1		2	6.0	78	1585	1954	0	28259	0	631578
	1050703									
2		1	15.0	81	1827	0	0	1082501	631579	1263157
	760890									
3		2	11.0	57	1328	1034	0	1845218	1263158	1894736
	276990									
4		3	8.0	67	1017	1745	1730	2124570	1894737	2526315
	632063									
5		2	17.0	90	1359	1633	0	2761125	2526316	3157894
	728107									
6		1	19.0	77	1354	0	0	3492224	3157895	3789473
	627174									
7		2	19.0	98	1496	1769	0	4120752	3789474	4421052
	496300									
8		1	11.0	51	1061	0	0	4620317	4421053	5052631
	504657									
9		1	10.0	58	1186	0	0	5126035	5052632	5684210
	1127572									
10		3	14.0	62	1018	1125	1795	6254793	5684211	6315789
	571368									
11		1	10.0	84	1367	0	0	6830099	6315790	6947368
	569388									
12		2	12.0	100	1112	1827	0	7400854	6947369	7578947
	423133									
13		2	12.0	64	1451	1501	0	7826926	7578948	8210526
	657972									
14		3	6.0	88	1478	1935	1123	8487850	8210527	8842105
	780561									
15		1	18.0	77	1509	0	0	9272947	8842106	9473684
	449260									
16		1	18.0	64	1568	0	0	9723716	9473685	10105263
	479265									
17		1	9.0	87	1210	0	0	10204549	10105264	10736842
	941108									
18		1	20.0	78	1721	0	0	11146867	10736843	11368421

	376361								
19		2	9.0	57	1880	1716	0	11524949	11368422	12000000

Total number of pulses in waveform = 32

Waveform Num = 5
Num of Bursts = 20
Burst Interval (us) = 600000.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	387066									
1		2	19.0	92	1130	1064	0	387066	0	599999
	285662									
2		3	15.0	72	1550	1045	1499	674922	600000	1199999
	909671									
3		2	14.0	61	1919	1170	0	1588687	1200000	1799999
	496624									
4		3	19.0	74	1883	1855	1227	2088400	1800000	2399999
	796255									
5		1	11.0	81	1247	0	0	2889620	2400000	2999999
	502868									
6		2	15.0	95	1995	1273	0	3393735	3000000	3599999
	472777									
7		1	15.0	57	1245	0	0	3869780	3600000	4199999
	857811									
8		2	8.0	97	1637	1604	0	4728836	4200000	4799999
	597622									
9		1	18.0	84	1006	0	0	5329699	4800000	5399999
	342657									
10		1	6.0	64	1292	0	0	5673362	5400000	5999999
	725245									
11		1	5.0	62	1878	0	0	6399899	6000000	6599999
	316939									
12		1	11.0	86	1761	0	0	6718716	6600000	7199999
	999008									
13		3	18.0	92	1351	1435	1831	7719485	7200000	7799999
	340362									
14		2	13.0	91	1944	1410	0	8064464	7800000	8399999
	736012									
15		3	11.0	60	1202	1483	1763	8803830	8400000	8999999
	723545									
16		2	8.0	69	1775	1839	0	9531823	9000000	9599999
	244732									
17		2	9.0	63	1689	1579	0	9780169	9600000	10199999
	887140									
18		3	8.0	57	1070	1608	1632	10670577	10200000	10799999
	297956									
19		1	16.0	56	1496	0	0	10972843	10800000	11399999
	704491									
20		1	7.0	61	1919	0	0	11678830	11400000	11999999

Total number of pulses in waveform = 37

Waveform Num = 6
Num of Bursts = 19
Burst Interval (us) = 631579.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	328920									
1		3	20.0	80	1521	1567	1034	328920	0	631578
	724676									
2		3	14.0	58	1463	1286	1876	1057718	631579	1263157
	424767									
3		3	19.0	99	1294	1432	1494	1487110	1263158	1894736
	700880									
4		1	8.0	62	1106	0	0	2192210	1894737	2526315
	759935									
5		1	13.0	71	1795	0	0	2953251	2526316	3157894
	281210									
6		3	10.0	68	1261	1357	1672	3236256	3157895	3789473
	1034031									
7		2	16.0	73	1003	1796	0	4274577	3789474	4421052
	667230									
8		2	13.0	56	1041	1745	0	4944606	4421053	5052631
	163576									
9		3	13.0	54	1963	1040	1301	5110968	5052632	5684210
	855815									
10		1	18.0	89	1562	0	0	5971087	5684211	6315789
	928003									
11		2	13.0	50	1801	1081	0	6900652	6315790	6947368
	452762									

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12                1         12.0     92     1802     0         0          7356296    6947369       7578947
        417113
13                2         8.0      100    1117     1405      0          7775211    7578948       8210526
        701510
14                2         12.0     73     1790     1915      0          8479243    8210527       8842105
        898424
15                3         13.0     68     1705     1001      1317       9381372    8842106       9473684
        708833
16                2         7.0      96     1971     1620      0          10094228   9473685       10105263
        88764
17                3         14.0     75     1727     1782      1863       10186583   10105264      10736842
        711572
18                3         19.0     63     1638     1278      1000       10903527   10736843      11368421
        830810
19                3         8.0      70     1060     1248      1472       11738253   11368422      12000000
Total number of pulses in waveform =  43

Waveform Num =    7
Num of Bursts =  19
Burst Interval (us) =   631579.0

Burst  Off Time   #         Chirp    PW     Pulse 1  Pulse 2  Pulse 3    Start Loc  Start Burst   End Burst
#      (us)       Pulses    (MHz)    (us)   Pri(us)  Pri(us)  Pri(us)    (us)       Interval(us)  Interval(us)
        401401
1                 1         15.0     64     1451     0         0          401401     0             631578
        689834
2                 3         10.0     79     1423     1638      1331       1092686    631579        1263157
        586508
3                 2         18.0     54     1891     1324      0          1683586    1263158       1894736
        327373
4                 1         6.0      54     1990     0         0          2014174    1894737       2526315
        629621
5                 3         6.0      90     1205     1801      1957       2645785    2526316       3157894
        686816
6                 2         12.0     85     1079     1882      0          3337564    3157895       3789473
        523156
7                 2         13.0     67     1027     1529      0          3863681    3789474       4421052
        1069649
8                 3         13.0     52     1056     1268      1201       4935886    4421053       5052631
        244893
9                 2         18.0     86     1048     1517      0          5184304    5052632       5684210
        1120657
10                1         20.0     96     1239     0         0          6307526    5684211       6315789
        72498
11                3         13.0     64     1735     1493      1937       6381263    6315790       6947368
        903336
12                1         13.0     86     1420     0         0          7289764    6947369       7578947
        689556
13                2         11.0     69     1001     1062      0          7980740    7578948       8210526
        389576
14                1         5.0      77     1762     0         0          8372379    8210527       8842105
        704483
15                3         5.0      65     1810     1421      1143       9078624    8842106       9473684
        1002394
16                2         16.0     65     1815     1143      0          10085392   9473685       10105263
        408268
17                1         19.0     55     1894     0         0          10496618   10105264      10736842
        442777
18                1         12.0     78     1405     0         0          10941289   10736843      11368421
        629275
19                1         16.0     65     1843     0         0          11571969   11368422      12000000
Total number of pulses in waveform =  35

Waveform Num =    8
Num of Bursts =  19
Burst Interval (us) =   631579.0

Burst  Off Time   #         Chirp    PW     Pulse 1  Pulse 2  Pulse 3    Start Loc  Start Burst   End Burst
#      (us)       Pulses    (MHz)    (us)   Pri(us)  Pri(us)  Pri(us)    (us)       Interval(us)  Interval(us)
        73157
1                 1         11.0     54     1333     0         0          73157      0             631578
        861497
2                 1         20.0     78     1698     0         0          935987     631579        1263157
        795507
3                 3         17.0     74     1464     1196      1675       1733192    1263158       1894736
        260634
4                 3         5.0      61     1439     1415      1529       1998161    1894737       2526315
        968825
5                 3         19.0     72     1202     1307      1769       2971369    2526316       3157894
        478047
6                 1         9.0      75     1089     0         0          3453694    3157895       3789473
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	594773								
7		2	8.0	99	1692	1189	0	4049556	3789474	4421052
	961207								
8		1	6.0	82	1823	0	0	5013644	4421053	5052631
	519465								
9		1	5.0	98	1934	0	0	5534932	5052632	5684210
	232784								
10		1	19.0	79	1981	0	0	5769650	5684211	6315789
	625900								
11		2	15.0	90	1494	1276	0	6397531	6315790	6947368
	992430								
12		2	5.0	86	1231	1383	0	7392731	6947369	7578947
	708498								
13		3	13.0	50	1531	1946	1247	8103843	7578948	8210526
	207553								
14		3	10.0	62	1168	1176	1042	8316120	8210527	8842105
	601651								
15		3	18.0	93	1402	1492	1054	8921157	8842106	9473684
	872850								
16		2	8.0	59	1547	1944	0	9797955	9473685	10105263
	720879								
17		3	17.0	67	1599	1812	1796	10522325	10105264	10736842
	663253								
18		2	18.0	90	1997	1750	0	11190785	10736843	11368421
	792401								
19		3	19.0	55	1909	1595	1780	11986933	11368422	12000000

Total number of pulses in waveform = 40

Waveform Num = 9
Num of Bursts = 19
Burst Interval (us) = 631579.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	415671									
1		1	9.0	83	1758	0	0	415671	0	631578
	266411									
2		2	10.0	55	1215	1921	0	683840	631579	1263157
	612069									
3		3	8.0	87	1591	1001	1364	1299045	1263158	1894736
	1106929									
4		3	11.0	87	1515	1186	1123	2409930	1894737	2526315
	464304									
5		1	6.0	99	1693	0	0	2878058	2526316	3157894
	663512									
6		3	20.0	75	1822	1118	1807	3543263	3157895	3789473
	396490									
7		3	10.0	82	1390	1764	1531	3944500	3789474	4421052
	711529									
8		3	16.0	78	1299	1986	1914	4660714	4421053	5052631
	543750									
9		1	8.0	99	1246	0	0	5209663	5052632	5684210
	503196									
10		1	17.0	54	1833	0	0	5714105	5684211	6315789
	1074510									
11		3	9.0	77	1144	1146	1542	6790448	6315790	6947368
	278710									
12		1	13.0	88	1834	0	0	7072990	6947369	7578947
	888975									
13		1	19.0	51	1477	0	0	7963799	7578948	8210526
	815254									
14		2	15.0	91	1822	1543	0	8780530	8210527	8842105
	216862									
15		2	5.0	71	1619	1520	0	9000757	8842106	9473684
	606778									
16		2	9.0	98	1181	1984	0	9610674	9473685	10105263
	938747									
17		3	8.0	67	1672	1823	1953	10552586	10105264	10736842
	441776									
18		1	17.0	79	1093	0	0	10999810	10736843	11368421
	479022									
19		2	9.0	83	1297	1563	0	11479925	11368422	12000000

Total number of pulses in waveform = 38

Waveform Num = 10
Num of Bursts = 17
Burst Interval (us) = 705882.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	697265									
1		2	9.0	54	1654	1834	0	697265	0	705881
	406410									
2		3	15.0	81	1497	1728	1022	1107163	705882	1411763
	460732									
3		3	12.0	85	1535	1856	1849	1572142	1411764	2117645
	1127274									
4		2	20.0	54	1709	1154	0	2704656	2117646	2823527
	237714									
5		3	7.0	66	1687	1005	1792	2945233	2823528	3529409
	1017343									
6		1	16.0	50	1622	0	0	3967060	3529410	4235291
	384523									
7		3	10.0	69	1418	1493	1659	4353205	4235292	4941173
	718316									
8		3	9.0	61	1630	1707	1978	5076091	4941174	5647055
	920006									
9		3	17.0	61	1902	1325	1873	6001412	5647056	6352937
	615965									
10		1	14.0	53	1518	0	0	6622477	6352938	7058819
	942903									
11		1	10.0	92	1097	0	0	7566898	7058820	7764701
	618993									
12		1	15.0	79	1685	0	0	8186988	7764702	8470583
	425033									
13		3	20.0	66	1310	1661	1137	8613706	8470584	9176465
	619571									
14		3	11.0	63	1371	1956	1918	9237385	9176466	9882347
	1282916									
15		1	14.0	55	1229	0	0	10525546	9882348	10588229
	624610									
16		1	10.0	64	1102	0	0	11151385	10588230	11294111
	646039									
17		2	8.0	97	1722	1460	0	11798526	11294112	11999993

Total number of pulses in waveform = 36

Waveform Num = 11
Num of Bursts = 13
Burst Interval (us) = 923077.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	513210									
1		3	8.0	71	1076	1314	1427	513210	0	923076
	1120481									
2		3	12.0	74	1764	1507	1764	1637508	923077	1846153
	1112263									
3		2	15.0	51	1812	1552	0	2754806	1846154	2769230
	734310									
4		3	8.0	54	1541	1148	1028	3492480	2769231	3692307
	766257									
5		1	19.0	97	1758	0	0	4262454	3692308	4615384
	1269607									
6		1	9.0	74	1754	0	0	5533819	4615385	5538461
	328325									
7		1	5.0	86	1900	0	0	5863898	5538462	6461538
	1344576									
8		3	12.0	60	1840	1446	1098	7210374	6461539	7384615
	974955									
9		2	5.0	92	1721	1286	0	8189713	7384616	8307692
	961957									
10		3	15.0	92	1775	1794	1330	9154677	8307693	9230769
	617596									
11		2	18.0	89	1282	1996	0	9777172	9230770	10153846
	913033									
12		1	6.0	63	1694	0	0	10693483	10153847	11076923
	798126									
13		2	10.0	57	1256	1267	0	11493303	11076924	12000000

Total number of pulses in waveform = 27

Waveform Num = 12
Num of Bursts = 17
Burst Interval (us) = 705882.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	215351									
1		3	18.0	77	1229	1570	1285	215351	0	705881
	898801									
2		3	12.0	79	1977	1072	1406	1118236	705882	1411763
	297827									
3		2	5.0	85	1025	1865	0	1420518	1411764	2117645
	1295482									
4		3	19.0	68	1739	1080	1334	2718890	2117646	2823527
	183818									
5		1	12.0	58	1543	0	0	2906861	2823528	3529409
	973215									
6		2	8.0	79	1453	1143	0	3881619	3529410	4235291
	483380									
7		2	20.0	100	1729	1543	0	4367595	4235292	4941173
	738521									
8		2	11.0	83	1498	1893	0	5109388	4941174	5647055
	769337									
9		3	13.0	59	1478	1428	1827	5882116	5647056	6352937
	1090048									
10		3	20.0	81	1494	1767	1668	6976897	6352938	7058819
	266240									
11		3	20.0	82	1496	1489	1359	7248066	7058820	7764701
	807004									
12		2	19.0	89	1182	1102	0	8059414	7764702	8470583
	962014									
13		3	15.0	59	1201	1742	1373	9023712	8470584	9176465
	626491									
14		1	12.0	67	1790	0	0	9654519	9176466	9882347
	887121									
15		2	8.0	80	1479	1353	0	10543430	9882348	10588229
	664705									
16		2	16.0	89	1230	1776	0	11210967	10588230	11294111
	568169									
17		1	8.0	63	1674	0	0	11782142	11294112	11999993

Total number of pulses in waveform = 38

Waveform Num = 13
Num of Bursts = 14
Burst Interval (us) = 857143.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	640519									
1		1	13.0	83	1224	0	0	640519	0	857142
	557472									
2		2	18.0	74	1816	1202	0	1199215	857143	1714285
	1302975									
3		1	19.0	71	1675	0	0	2505208	1714286	2571428
	733606									
4		1	15.0	97	1864	0	0	3240489	2571429	3428571
	615636									
5		1	9.0	96	1180	0	0	3857989	3428572	4285714
	693654									
6		3	19.0	71	1090	1453	1770	4552823	4285715	5142857
	1226518									
7		2	18.0	50	1908	1159	0	5783654	5142858	6000000
	759908									
8		2	13.0	96	1815	1628	0	6546629	6000001	6857143
	1050412									
9		3	7.0	55	1803	1914	1995	7600484	6857144	7714286
	866505									
10		1	13.0	85	1758	0	0	8472701	7714287	8571429
	611071									
11		3	11.0	83	1986	1096	1522	9085530	8571430	9428572
	431847									
12		1	9.0	54	1844	0	0	9521981	9428573	10285715
	1463767									
13		1	11.0	50	1839	0	0	10987592	10285716	11142858
	490531									
14		2	16.0	60	1432	1484	0	11479962	11142859	12000001

Total number of pulses in waveform = 24

Waveform Num = 14
Num of Bursts = 11
Burst Interval (us) = 1090909.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	1078713									
1		1	20.0	72	1196	0	0	1078713	0	1090908
	609002									
2		3	7.0	54	1969	1922	1180	1688911	1090909	2181817
	1488466									
3		2	5.0	71	1235	1357	0	3182448	2181818	3272726
	1157276									
4		1	8.0	82	1751	0	0	4342316	3272727	4363635
	725164									
5		3	16.0	78	1042	1043	1912	5069231	4363636	5454544
	437373									
6		2	15.0	93	1676	1595	0	5510601	5454545	6545453
	1108876									
7		3	9.0	53	1063	1873	1256	6622748	6545454	7636362
	1875186									
8		2	15.0	64	1624	1300	0	8502126	7636363	8727271
	346699									
9		2	20.0	90	1718	1149	0	8851749	8727272	9818180
	1859185									
10		3	12.0	53	1058	1315	1513	10713801	9818181	10909089
	257147									
11		2	13.0	72	1233	1005	0	10974834	10909090	11999998

Total number of pulses in waveform = 24

Waveform Num = 15
Num of Bursts = 16
Burst Interval (us) = 750000.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	146940									
1		2	19.0	76	1639	1596	0	146940	0	749999
	1267167									
2		3	14.0	91	1500	1136	1505	1417342	750000	1499999
	803473									
3		1	11.0	94	1943	0	0	2224956	1500000	2249999
	748637									
4		1	11.0	57	1787	0	0	2975536	2250000	2999999
	152427									
5		3	15.0	52	1365	1962	1144	3129750	3000000	3749999
	1092583									
6		2	12.0	91	1523	1563	0	4226804	3750000	4499999
	1003569									
7		2	19.0	88	1589	1059	0	5233459	4500000	5249999
	448233									
8		3	11.0	58	1969	1433	1921	5684340	5250000	5999999
	818097									
9		1	15.0	94	1007	0	0	6507760	6000000	6749999
	619867									
10		2	10.0	51	1227	1072	0	7128634	6750000	7499999
	427316									
11		1	11.0	86	1362	0	0	7558249	7500000	8249999
	1045036									
12		1	17.0	61	1182	0	0	8604647	8250000	8999999
	938858									
13		3	20.0	71	1761	1204	1662	9544687	9000000	9749999
	842972									
14		1	5.0	60	1769	0	0	10392286	9750000	10499999
	830542									
15		2	10.0	53	1621	1474	0	11224597	10500000	11249999
	202657									
16		2	6.0	97	1104	1904	0	11430349	11250000	11999999

Total number of pulses in waveform = 30

Waveform Num = 16
Num of Bursts = 10
Burst Interval (us) = 1200000.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	765123									
1		2	19.0	58	1815	1192	0	765123	0	1199999
	432544									
2		2	7.0	57	1293	1215	0	1200674	1200000	2399999
	2196138									
3		2	16.0	75	1409	1014	0	3399320	2400000	3599999
	770933									
4		1	20.0	86	1414	0	0	4172676	3600000	4799999
	1691640									
5		3	8.0	89	1807	1221	1206	5865730	4800000	5999999
	419868									
6		1	18.0	66	1370	0	0	6289832	6000000	7199999
	1938358									
7		3	19.0	71	1395	1337	1434	8229560	7200000	8399999
	1113215									
8		1	18.0	80	1093	0	0	9346941	8400000	9599999
	620147									
9		3	9.0	85	1697	1187	1728	9968181	9600000	10799999
	1826463									
10		3	9.0	54	1979	1907	1782	11799256	10800000	11999999

Total number of pulses in waveform = 21

Waveform Num = 17
Num of Bursts = 18
Burst Interval (us) = 666667.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	254088									
1		3	11.0	73	1660	1352	1688	254088	0	666666
	431189									
2		3	9.0	53	1952	1139	1022	689977	666667	1333333
	1008349									
3		2	8.0	69	1123	1631	0	1702439	1333334	2000000
	625258									
4		1	14.0	62	1479	0	0	2330451	2000001	2666667
	797682									
5		1	19.0	59	1731	0	0	3129612	2666668	3333334
	709896									
6		1	8.0	61	1562	0	0	3841239	3333335	4000001
	808784									
7		2	9.0	65	1324	1234	0	4651585	4000002	4666668
	669931									
8		1	14.0	86	1098	0	0	5324074	4666669	5333335
	486797									
9		3	13.0	63	1114	1141	1825	5811969	5333336	6000002
	840386									
10		3	18.0	54	1489	1566	1923	6656435	6000003	6666669
	116547									
11		2	13.0	68	1973	1297	0	6777960	6666670	7333336
	1197962									
12		2	11.0	55	1826	1882	0	7979192	7333337	8000003
	488157									
13		3	16.0	86	1294	1358	1906	8471057	8000004	8666670
	618259									
14		3	11.0	97	1885	1178	1169	9093874	8666671	9333337
	422894									
15		3	15.0	76	1526	1034	1221	9521000	9333338	10000004
	698674									
16		2	11.0	54	1840	1214	0	10223455	10000005	10666671
	938473									
17		3	8.0	62	1698	1724	1429	11164982	10666672	11333338
	764868									
18		2	20.0	79	1803	1173	0	11934701	11333339	12000005

Total number of pulses in waveform = 40

Waveform Num = 18
Num of Bursts = 10
Burst Interval (us) = 1200000.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	1048152									
1		1	19.0	61	1500	0	0	1048152	0	1199999
	781632									
2		3	9.0	69	1160	1034	1223	1831284	1200000	2399999
	1542087									
3		3	5.0	86	1976	1004	1782	3376788	2400000	3599999
	541496									
4		3	10.0	67	1258	1278	1634	3923046	3600000	4799999
	1748653									
5		2	12.0	52	1839	1325	0	5675869	4800000	5999999
	1284693									
6		3	7.0	54	1244	1633	1163	6963726	6000000	7199999
	296101									
7		2	5.0	95	1685	1991	0	7263867	7200000	8399999
	2092835									
8		1	13.0	93	1175	0	0	9360378	8400000	9599999
	1377209									
9		2	14.0	99	1999	1473	0	10738762	9600000	10799999
	911060									
10		2	5.0	79	1113	1029	0	11653294	10800000	11999999

Total number of pulses in waveform = 22

Waveform Num = 19
Num of Bursts = 12
Burst Interval (us) = 1000000.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	394547									
1		3	15.0	98	1027	1912	1825	394547	0	999999
	1228333									
2		2	5.0	99	1243	1324	0	1627644	1000000	1999999
	413705									
3		3	11.0	68	1025	1121	1595	2043916	2000000	2999999
	1188355									
4		2	18.0	64	1257	1848	0	3236012	3000000	3999999
	1657747									
5		1	12.0	67	1200	0	0	4896864	4000000	4999999
	546271									
6		1	17.0	72	1563	0	0	5444335	5000000	5999999
	1444001									
7		1	6.0	89	1679	0	0	6889899	6000000	6999999
	648447									
8		2	10.0	70	1918	1864	0	7540025	7000000	7999999
	1403896									
9		3	11.0	97	1417	1716	1391	8947703	8000000	8999999
	360678									
10		1	13.0	73	1882	0	0	9312905	9000000	9999999
	1492623									
11		1	13.0	51	1109	0	0	10807410	10000000	10999999
	535794									
12		2	18.0	84	1477	1732	0	11344313	11000000	11999999

Total number of pulses in waveform = 22

Waveform Num = 20
Num of Bursts = 8
Burst Interval (us) = 1500000.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	604232									
1		3	9.0	74	1311	1821	1786	604232	0	1499999
	1837908									
2		3	17.0	55	1250	1148	1154	2447058	1500000	2999999
	1131094									
3		1	7.0	92	1689	0	0	3581704	3000000	4499999
	1524126									
4		3	18.0	66	1566	1708	1936	5107519	4500000	5999999
	894061									
5		1	17.0	73	1146	0	0	6006790	6000000	7499999
	1977171									
6		2	15.0	84	1792	1057	0	7985107	7500000	8999999
	2173727									
7		1	5.0	64	1570	0	0	10161683	9000000	10499999

	459823								
8		3	18.0	71	1707	1823	1370	10623076	10500000	11999999

Total number of pulses in waveform = 17

Waveform Num = 21
Num of Bursts = 15
Burst Interval (us) = 800000.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	55298									
1		1	17.0	85	1800	0	0	55298	0	799999
	871865									
2		2	8.0	78	1651	1485	0	928963	800000	1599999
	1168306									
3		3	5.0	72	1380	1524	1687	2100405	1600000	2399999
	776730									
4		1	17.0	84	1146	0	0	2881726	2400000	3199999
	1099146									
5		2	14.0	66	1519	1796	0	3982018	3200000	3999999
	19657									
6		1	11.0	89	1250	0	0	4004990	4000000	4799999
	1338789									
7		2	8.0	54	1144	1078	0	5345029	4800000	5599999
	796800									
8		1	15.0	78	1084	0	0	6144051	5600000	6399999
	482825									
9		2	6.0	98	1860	1640	0	6627960	6400000	7199999
	959633									
10		1	16.0	91	1069	0	0	7591093	7200000	7999999
	1122186									
11		2	11.0	68	1128	1737	0	8714348	8000000	8799999
	453374									
12		1	20.0	82	1691	0	0	9170587	8800000	9599999
	721410									
13		1	15.0	99	1205	0	0	9893688	9600000	10399999
	1190636									
14		1	20.0	98	1028	0	0	11085529	10400000	11199999
	666283									
15		2	9.0	65	1845	1822	0	11752840	11200000	11999999

Total number of pulses in waveform = 23

Waveform Num = 22
Num of Bursts = 18
Burst Interval (us) = 666667.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	224679									
1		3	9.0	63	1099	1153	1482	224679	0	666666
	511932									
2		3	8.0	53	1657	1627	1196	740345	666667	1333333
	995724									
3		3	18.0	64	1972	1416	1564	1740549	1333334	2000000
	409602									
4		3	8.0	78	1663	1295	1222	2155103	2000001	2666667
	698265									
5		1	7.0	73	1961	0	0	2857548	2666668	3333334
	979815									
6		1	11.0	82	1559	0	0	3839324	3333335	4000001
	395978									
7		1	14.0	53	1489	0	0	4236861	4000002	4666668
	487652									
8		1	19.0	100	1316	0	0	4726002	4666669	5333335
	677686									
9		2	9.0	69	1165	1738	0	5405004	5333336	6000002
	937565									
10		1	7.0	63	1488	0	0	6345472	6000003	6666669
	792344									
11		3	17.0	53	1977	1867	1151	7139304	6666670	7333336
	445268									
12		1	6.0	60	1107	0	0	7589567	7333337	8000003
	922764									
13		1	19.0	87	1451	0	0	8513438	8000004	8666670
	309462									
14		3	16.0	52	1259	1067	1574	8824351	8666671	9333337
	568120									
15		3	9.0	77	1901	1106	1547	9396371	9333338	10000004
	805993									
16		2	6.0	60	1747	1084	0	10206918	10000005	10666671
	464736									

17	1	19.0	86	1196	0	0	10674485	10666672	11333338
985752									
18	3	20.0	74	1700	1397	1832	11661433	11333339	12000005

Total number of pulses in waveform = 36

Waveform Num = 23
Num of Bursts = 12
Burst Interval (us) = 1000000.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	718784									
1		2	8.0	76	1121	1730	0	718784	0	999999
	1033052									
2		2	13.0	56	1971	1071	0	1754687	1000000	1999999
	737937									
3		2	14.0	99	1821	1247	0	2495666	2000000	2999999
	795305									
4		3	18.0	71	1363	1363	1434	3294039	3000000	3999999
	1454086									
5		3	6.0	59	1015	1606	1786	4752285	4000000	4999999
	393413									
6		3	20.0	78	1439	1926	1397	5150105	5000000	5999999
	1383164									
7		3	8.0	51	1065	1662	1310	6538031	6000000	6999999
	1100372									
8		1	13.0	74	1933	0	0	7642440	7000000	7999999
	985414									
9		1	16.0	95	1767	0	0	8629787	8000000	8999999
	747530									
10		3	8.0	57	1119	1862	1832	9379084	9000000	9999999
	656671									
11		3	7.0	78	1060	1446	1783	10040568	10000000	10999999
	1264588									
12		3	17.0	75	1618	1792	1657	11309445	11000000	11999999

Total number of pulses in waveform = 29

Waveform Num = 24
Num of Bursts = 16
Burst Interval (us) = 750000.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	732866									
1		3	15.0	99	1074	1549	1844	732866	0	749999
	678749									
2		3	12.0	92	1410	1260	1951	1416082	750000	1499999
	807334									
3		1	6.0	72	1681	0	0	2228037	1500000	2249999
	653108									
4		1	15.0	52	1537	0	0	2882826	2250000	2999999
	343215									
5		1	12.0	58	1581	0	0	3227578	3000000	3749999
	841770									
6		1	15.0	68	1993	0	0	4070929	3750000	4499999
	1136676									
7		3	12.0	57	1927	1850	1808	5209598	4500000	5249999
	510397									
8		3	11.0	89	1006	1865	1854	5725580	5250000	5999999
	897610									
9		1	11.0	99	1504	0	0	6627915	6000000	6749999
	753287									
10		2	18.0	70	1946	1211	0	7382706	6750000	7499999
	748156									
11		2	14.0	85	1831	1304	0	8134019	7500000	8249999
	636097									
12		3	6.0	87	1060	1837	1686	8773251	8250000	8999999
	280392									
13		1	19.0	51	1268	0	0	9058226	9000000	9749999
	1194116									
14		3	10.0	85	1419	1594	1172	10253610	9750000	10499999
	847898									
15		3	7.0	65	1372	1680	1476	11105693	10500000	11249999
	217813									
16		2	16.0	85	1675	1589	0	11328034	11250000	11999999

Total number of pulses in waveform = 33

Waveform Num = 25
Num of Bursts = 17
Burst Interval (us) = 705882.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	456773									
1		3	12.0	80	1408	1640	1436	456773	0	705881
	458319									
2		1	16.0	60	1373	0	0	919576	705882	1411763
	551564									
3		1	14.0	75	1975	0	0	1472513	1411764	2117645
	1082850									
4		2	12.0	65	1463	1877	0	2557338	2117646	2823527
	752810									
5		2	15.0	63	1046	1006	0	3313488	2823528	3529409
	368548									
6		2	14.0	88	1124	1028	0	3684088	3529410	4235291
	1006284									
7		1	11.0	56	1793	0	0	4692524	4235292	4941173
	555113									
8		1	12.0	53	1755	0	0	5249430	4941174	5647055
	821813									
9		2	14.0	85	1612	1646	0	6072998	5647056	6352937
	425888									
10		1	15.0	63	1089	0	0	6502144	6352938	7058819
	849927									
11		2	17.0	79	1854	1995	0	7353160	7058820	7764701
	429621									
12		3	15.0	64	1841	1485	1093	7786630	7764702	8470583
	809720									
13		2	6.0	74	1116	1965	0	8600769	8470584	9176465
	1007684									
14		3	18.0	92	1163	1474	1792	9611534	9176466	9882347
	743444									
15		2	20.0	67	1592	1461	0	10359407	9882348	10588229
	567944									
16		2	13.0	79	1082	1246	0	10930404	10588230	11294111
	973114									
17		3	18.0	94	1828	1225	1833	11905846	11294112	11999993

Total number of pulses in waveform = 33

Waveform Num = 26
Num of Bursts = 16
Burst Interval (us) = 750000.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	637047									
1		3	11.0	75	1122	1339	1111	637047	0	749999
	637722									
2		3	7.0	90	1005	1222	1611	1278341	750000	1499999
	486118									
3		3	17.0	62	1675	1728	1725	1768297	1500000	2249999
	623685									
4		1	12.0	50	1061	0	0	2397110	2250000	2999999
	904483									
5		1	15.0	81	1848	0	0	3302654	3000000	3749999
	551907									
6		3	8.0	54	1595	1766	1308	3856409	3750000	4499999
	950771									
7		2	14.0	50	1538	1701	0	4811849	4500000	5249999
	679660									
8		1	15.0	96	1396	0	0	5494748	5250000	5999999
	846878									
9		3	14.0	79	1505	1557	1323	6343022	6000000	6749999
	441210									
10		3	5.0	91	1148	1268	1365	6788617	6750000	7499999
	1027539									
11		1	16.0	76	1574	0	0	7819937	7500000	8249999
	924940									
12		3	6.0	89	1886	1938	1794	8746451	8250000	8999999
	310603									
13		2	20.0	60	1686	1609	0	9062672	9000000	9749999
	942009									
14		2	8.0	72	1524	1786	0	10007976	9750000	10499999
	826489									
15		3	18.0	55	1584	1504	1120	10837775	10500000	11249999
	1019412									
16		3	12.0	87	1062	1325	1878	11861395	11250000	11999999

Total number of pulses in waveform = 37

Waveform Num = 27
Num of Bursts = 16
Burst Interval (us) = 750000.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	363804									
1		2	6.0	78	1313	1066	0	363804	0	749999
	527689									
2		3	15.0	53	1752	1426	1239	893872	750000	1499999
	739904									
3		3	16.0	78	1174	1204	1857	1638193	1500000	2249999
	883527									
4		3	10.0	59	1855	1496	1911	2525955	2250000	2999999
	501777									
5		1	6.0	58	1234	0	0	3032994	3000000	3749999
	941625									
6		2	11.0	66	1938	1497	0	3975853	3750000	4499999
	778181									
7		1	18.0	84	1461	0	0	4757469	4500000	5249999
	571701									
8		3	8.0	78	1193	1001	1130	5330631	5250000	5999999
	1373286									
9		2	17.0	84	1012	1138	0	6707241	6000000	6749999
	757243									
10		3	13.0	61	1845	1562	1504	7466634	6750000	7499999
	354492									
11		1	16.0	75	1198	0	0	7826037	7500000	8249999
	859259									
12		3	12.0	62	1353	1664	1891	8686494	8250000	8999999
	789786									
13		2	15.0	64	1852	1483	0	9481188	9000000	9749999
	582140									
14		1	9.0	70	1367	0	0	10066663	9750000	10499999
	989875									
15		1	8.0	89	1954	0	0	11057905	10500000	11249999
	256888									
16		2	16.0	84	1225	1981	0	11316747	11250000	11999999

Total number of pulses in waveform = 33

Waveform Num = 28
Num of Bursts = 9
Burst Interval (us) = 1333333.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	428788									
1		3	11.0	74	1015	1724	1153	428788	0	1333332
	1106868									
2		2	15.0	66	1567	1887	0	1539548	1333333	2666665
	2383956									
3		3	13.0	87	1408	1486	1921	3926958	2666666	3999998
	501771									
4		1	13.0	94	1647	0	0	4433544	3999999	5333331
	1159001									
5		3	19.0	75	1203	1103	1819	5594192	5333332	6666664
	1068874									
6		3	11.0	98	1528	1818	1872	6667191	6666665	7999997
	2512859									
7		1	7.0	62	1594	0	0	9185268	7999998	9333330
	608290									
8		1	19.0	76	1873	0	0	9795152	9333331	10666663
	1963287									
9		3	9.0	84	1319	1906	1402	11760312	10666664	11999996

Total number of pulses in waveform = 20

Waveform Num = 29
Num of Bursts = 12
Burst Interval (us) = 1000000.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	367458									
1		1	19.0	93	1053	0	0	367458	0	999999
	899815									
2		2	20.0	67	1598	1366	0	1268326	1000000	1999999
	1117157									
3		1	12.0	91	1293	0	0	2388447	2000000	2999999
	705752									
4		3	19.0	96	1830	1090	1417	3095492	3000000	3999999
	944880									
5		2	13.0	80	1822	1442	0	4044709	4000000	4999999
	1903633									
6		1	13.0	60	1357	0	0	5951606	5000000	5999999
	298327									
7		3	7.0	79	1379	1919	1025	6251290	6000000	6999999
	806532									
8		3	8.0	98	1797	1571	1108	7062145	7000000	7999999
	1367662									
9		1	10.0	58	1080	0	0	8434283	8000000	8999999
	1417936									
10		3	19.0	89	1479	1494	1951	9853299	9000000	9999999
	806589									
11		3	16.0	51	1456	1839	1059	10664812	10000000	10999999
	389128									
12		1	20.0	61	1230	0	0	11058294	11000000	11999999

Total number of pulses in waveform = 24

Waveform Num = 30
Num of Bursts = 15
Burst Interval (us) = 800000.0

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
	599701									
1		2	20.0	64	1803	1584	0	599701	0	799999
	824686									
2		3	15.0	72	1534	1995	1179	1427774	800000	1599999
	934432									
3		2	20.0	76	1890	1173	0	2366914	1600000	2399999
	333580									
4		3	20.0	71	1000	1968	1425	2703557	2400000	3199999
	847474									
5		1	8.0	87	1699	0	0	3555424	3200000	3999999
	991809									
6		3	18.0	80	1142	1989	1603	4548932	4000000	4799999
	878829									
7		3	10.0	87	1151	1691	1985	5432495	4800000	5599999
	682298									
8		3	9.0	86	1251	1935	1713	6119620	5600000	6399999
	780914									
9		1	5.0	87	1054	0	0	6905433	6400000	7199999
	576262									
10		1	18.0	50	1604	0	0	7482749	7200000	7999999
	608308									
11		1	5.0	68	1045	0	0	8092661	8000000	8799999
	709361									
12		3	15.0	69	2000	1479	1299	8803067	8800000	9599999
	1187776									
13		2	16.0	94	1053	1176	0	9995621	9600000	10399999
	654274									
14		2	16.0	99	1985	1424	0	10652124	10400000	11199999
	1088847									
15		2	17.0	75	1878	1196	0	11744380	11200000	11999999

Total number of pulses in waveform = 32

VI. Certification & User's Manual Information

Certification & User's Manual Information

A. Certification Information

The following is extracted from Title 47 of the Code of Federal Regulations, Part 2, Subpart I — Marketing of Radio frequency devices:

§ 2.801 Radio-frequency device defined.

As used in this part, a radio-frequency device is any device which in its operation is capable of Emitting radio-frequency energy by radiation, conduction, or other means. Radio- frequency devices include, but are not limited to:

(a) The various types of radio communication transmitting devices described throughout this chapter.

(b) The incidental, unintentional and intentional radiators defined in Part 15 of this chapter.

(c) The industrial, scientific, and medical equipment described in Part 18 of this chapter.

(d) Any part or component thereof which in use emits radio-frequency energy by radiation, conduction, or other means.

§ 2.803 Marketing of radio frequency devices prior to equipment authorization.

(a) Except as provided elsewhere in this chapter, no person shall sell or lease, or offer for sale or lease (including advertising for sale or lease), or import, ship or distribute for the purpose of selling or leasing or offering for sale or lease, any radio frequency device unless:

(1) In the case of a device subject to certification, such device has been authorized by the Commission in accordance with the rules in this chapter and is properly identified and labeled as required by §2.925 and other relevant sections in this chapter; or

(2) In the case of a device that is not required to have a grant of equipment authorization issued by the Commission, but which must comply with the specified technical standards prior to use, such device also complies with all applicable administrative (including verification of the equipment or authorization under a Declaration of Conformity, where required), technical, labeling and identification requirements specified in this chapter.

(d) Notwithstanding the provisions of paragraph (a) of this section, the offer for sale solely to business, commercial, industrial, scientific or medical users (but not an offer for sale to other parties or to end users located in a residential environment) of a radio frequency device that is in the conceptual, developmental, design or pre-production stage is permitted prior to equipment authorization or, for devices not subject to the equipment authorization requirements, prior to a determination of compliance with the applicable technical requirements *provided* that the prospective buyer is advised in writing at the time of the offer for sale that the equipment is subject to the FCC rules and that the equipment will comply with the appropriate rules before delivery to the buyer or to centers of distribution.

(e)(1) Notwithstanding the provisions of paragraph (a) of this section, prior to equipment authorization or determination of compliance with the applicable technical requirements any radio frequency device may be operated, but not marketed, for the following purposes and under the following conditions:

(i) Compliance testing;

(ii) Demonstrations at a trade show provided the notice contained in paragraph (c) of this section is displayed in a conspicuous location on, or immediately adjacent to, the device;

(iii) Demonstrations at an exhibition conducted at a business, commercial, industrial, scientific or medical location, but excluding locations in a residential environment, provided the notice contained in paragraphs (c) or (d) of this section, as appropriate, is displayed in a conspicuous location on, or immediately adjacent to, the device;

(iv) Evaluation of product performance and determination of customer acceptability, provided such operation takes place at the manufacturer's facilities during developmental, design or pre-production states; or

(v) Evaluation of product performance and determination of customer acceptability where customer acceptability of a radio frequency device cannot be determined at the manufacturer's facilities because of size or unique capability of the device, provided the device is operated at a business, commercial, industrial, scientific or medical user's site, but not at a residential site, during the development, design or pre-production stages.

(e)(2) For the purpose of paragraphs (e)(1)(iv) and (e)(1)(v) of this section, the term *manufacturer's facilities* includes the facilities of the party responsible for compliance with the regulations and the manufacturer's premises, as well as the facilities of other entities working under the authorization of the responsible party in connection with the development and manufacture, but not the marketing, of the equipment.

(f) For radio frequency devices subject to verification and sold solely to business, commercial, industrial, scientific and medical users (excluding products sold to other parties or for operation in a residential environment), parties responsible for verification of the devices shall have the option of ensuring compliance with the applicable technical specifications of this chapter at each end user's location after installation, provided that the purchase or lease agreement includes a proviso that such a determination of compliance be made and is the responsibility of the party responsible for verification of the equipment.

Certification & User's Manual Information

The following is extracted from Title 47 of the Code of Federal Regulations, Part 2, Subpart J — Equipment Authorization Procedures:

§ 2.901 Basis and Purpose

(a) In order to carry out its responsibilities under the Communications Act and the various treaties and international regulations, and in order to promote efficient use of the radio spectrum, the Commission has developed technical standards for radio frequency equipment and parts or components thereof. The technical standards applicable to individual types of equipment are found in that part of the rules governing the service wherein the equipment is to be operated.[1] *In addition to the technical standards provided, the rules governing the service may require that such equipment be verified by the manufacturer or importer*, be authorized under a Declaration of Conformity, or receive an equipment authorization from the Commission by one of the following procedures: certification or registration.

(b) The following sections describe the verification procedure, the procedure for a Declaration of Conformity, and the procedures to be followed in obtaining certification from the Commission and the conditions attendant to such a grant.

§ 2.907 Certification.

(a) Certification is an equipment authorization issued by the Commission, based on representation and test data submitted by the applicant.

(b) Certification attaches to all units subsequently marketed by the grantee which are identical (see Section 2.908) to the sample tested except for permissive changes or other variations authorized by the Commission pursuant to Section 2.1043.

[1] In this case, the equipment is subject to the rules of Part 15. More specifically, the equipment falls under Subpart B (of Part 15), which deals with unintentional radiators.

Certification & User's Manual Information

§ 2.948 Description of measurement facilities.

(a) Each party making measurements of equipment that is subject to an equipment authorization under Part 15 or Part 18 of this chapter, regardless of whether the measurements are filed with the Commission or kept on file by the party responsible for compliance of equipment marketed within the U.S. or its possessions, shall compile a description of the measurement facilities employed.

(1) If the measured equipment is subject to the verification procedure, the description of the measurement facilities shall be retained by the party responsible for verification of the equipment.

(i) If the equipment is verified through measurements performed by an independent laboratory, it is acceptable for the party responsible for verification of the equipment to rely upon the description of the measurement facilities retained by or placed on file with the Commission by that laboratory. In this situation, the party responsible for the verification of the equipment is not required to retain a duplicate copy of the description of the measurement facilities.

(ii) If the equipment is verified based on measurements performed at the installation site of the equipment, no specific site calibration data is required. It is acceptable to retain the description of the measurement facilities at the site at which the measurements were performed.

(2) If the equipment is to be authorized by the Commission under the certification procedure, the description of the measurement facilities shall be filed with the Commission's Laboratory in Columbia, Maryland. The data describing the measurement facilities need only be filed once but must be updated as changes are made to the measurement facilities or as otherwise described in this section. At least every three years, the organization responsible for filing the data with the Commission shall certify that the data on file is current.

Certification & User's Manual Information

Label and User's Manual Information

The following is extracted from Title 47 of the Code of Federal Regulations, Part 15, Subpart A — General:

§ 15.19 Labeling requirements.

(a) In addition to the requirements in Part 2 of this chapter, a device subject to certification or verification shall be labeled as follows:

(1) Receivers associated with the operation of a licensed radio service, e.g., FM broadcast under Part 73 of this chapter, land mobile operation under Part 90, etc., shall bear the following statement in a conspicuous location on the device:

This device complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

(2) A stand-alone cable input selector switch, shall bear the following statement in a conspicuous location on the device:

This device is verified to comply with Part 15 of the FCC Rules for use with cable television service.

(3) All other devices shall bear the following statement in a conspicuous location on the device:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

(4) Where a device is constructed in two or more sections connected by wires and marketed together, the statement specified under paragraph (a) of this section is required to be affixed only to the main control unit.

(5) When the device is so small or for such use that it is not practicable to place the statement specified under paragraph (a) of this section on it, the information required by this paragraph shall be placed in a prominent location in the instruction manual or pamphlet supplied to the user or, alternatively, shall be placed on the container in which the device is marketed. However, the FCC identifier or the unique identifier, as appropriate, must be displayed on the device.

§ 15.21 Information to user.

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Verification & User's Manual Information

The following is extracted from Title 47 of the Code of Federal Regulations, Part 15, Subpart B — Unintentional Radiators:

§ 15.105 Information to the user.

(a) For a Class A digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at own expense.

(b) For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

– Reorient or relocate the receiving antenna.

– Increase the separation between the equipment and receiver.

– Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

– Consult the dealer or an experienced radio/TV technician for help.

ICES-003 Procedural & Labeling Requirements

From the Industry Canada Electromagnetic Compatibility Advisory Bulletin entitled, "Implementation and Interpretation of the Interference-Causing Equipment Standard for Digital Apparatus, ICES-003" (EMCAB-3, Issue 2, July 1995):

> "At present, CISPR 22: 2002 and ICES technical requirements are essentially equivalent. Therefore, if you have CISPR 22: 2002 approval by meeting CISPR Publication 22, the only additional requirements are: to attach a note to the report of the test results for compliance, indicating that these results are deemed satisfactory evidence of compliance with ICES-003 of the Canadian Interference-Causing Equipment Regulations; to maintain these records on file for the requisite five year period; and to provide the device with a notice of compliance in accordance with ICES-003."

Procedural Requirements:

According to Industry Canada's Interference Causing Equipment Standard for Digital Apparatus ICES-003 Issue 4, February 2004:

Section 6.1: A record of the measurements and results, showing the date that the measurements were completed, shall be retained by the manufacturer or importer for a period of at least five years from the date shown in the record and made available for examination on the request of the Minister.

Section 6.2: A written notice indicating compliance must accompany each unit of digital apparatus to the end user. The notice shall be in the form of a label that is affixed to the apparatus. Where because of insufficient space or other constraints it is not feasible to affix a label to the apparatus, the notice may be in the form of a statement in the user's manual.

Labeling Requirements:

The suggested text for the notice, in English and in French, is provided below, from the Annex of ICES-003:

> This Class [2] digital apparatus complies with Canadian ICES-003.
>
> Cet appareil numérique de la classe [1] est conforme à la norme NMB-003 du Canada.

[2] Insert either A or B but not both as appropriate for the equipment requirements.

End of Report

