FCC TEST REPORT (PART 27)

REPORT NO.: RF991004E04
MODEL NO.: OX-250
FCC ID: W9V-OX250-GP
RECEIVED: Oct. 04, 2010
TESTED: Oct. 13 to 28, 2010
ISSUED: Nov. 09, 2010

APPLICANT: Green Packet Berhad, Taiwan

ADDRESS: 6F, NO. 21, LANE 583 RUEIGUANG RD, NEIHU DISTRICT TAIPEI CITY 11492

ISSUED BY : Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory

LAB ADDRESS : No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan

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1 CERTIFICATION

PRODUCT:	Outdoor WiMAX CPE
BRAND NAME:	Green Packet
MODEL NO.:	OX-250
APPLICANT:	Green Packet Berhad, Taiwan
TESTED:	Oct. 13 to 28, 2010
TEST SAMPLE:	ENGINEERING SAMPLE
TEST STANDARDS:	FCC 47 CFR Part 2
	FCC 47 CFR Part 27, Subpart C & M
	ANSI/TIA/EIA-603-C-2004

The above equipment (Model No.: OX-250) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Sunny Wen , **DATE:** Nov. 09, 2010
(Sunny Wen, Specialist)

TECHNICAL ACCEPTANCE : , **DATE:** Nov. 09, 2010
(Hank Chung, Deputy Manager)

APPROVED BY : , **DATE:** Nov. 09, 2010
(May Chen, Deputy Manager)

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 27 & Part 2			
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**	**REMARK**
2.1046 27.50(h)(2)	Maximum Peak Output Power Limit: max. 2 watts conducted peak power	PASS	Meet the requirement of limit.
2.1055 27.54	Frequency Stability Stay with the authorized bands of operation	PASS	Meet the requirement of limit.
2.1049 27.53(m)(6)	Emission Bandwidth	PASS	Meet the requirement of limit.
2.1051 27.53(m)(4)(6)	Band Edge Measurements	PASS	Meet the requirement of limit.
2.1051 27.53(m)(4)(6)	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 27.53(m)(4)(6)	Radiated Spurious Emissions	PASS	Meet the requirement of limit.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement	Value
Radiated emissions (30MHz-1GHz)	3.94 dB
Radiated emissions (1GHz -18GHz)	2.49 dB
Radiated emissions (18GHz -40GHz)	2.70 dB

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Outdoor WiMAX CPE
MODEL NO.	OX-250
FCC ID	W9V-OX250-GP
POWER SUPPLY	DC 48V from POE
MODULATION TECHNOLOGY	OFDMA
MODULATION	QPSK-1/2, -3/4, 16QAM-1/2, 3/4, 64QAM-1/2, -2/3, -3/4, -5/6
OPERATING FREQUENCY	5MHz: 2502.5MHz ~ 2687.5MHz 10MHz: 2505MHz ~ 2685MHz
CHANNEL BANDWIDTH	5MHz & 10MHz
MAX. CONDUCTED POWER	5MHz: 27.7dBm 10MHz: 27.5dBm
ANTENNA TYPE	Please see note 1
DATA CABLE	RJ45 cable (unshielded, 2.0m)
I/O PORTS	POE/Ethernet port x 1
ASSOCIATED DEVICES	POE

NOTE:

1. There is one antenna provided to this EUT, please refer to the following table:

Antenna Type	Antenna Connector	Antenna Gain (dBi)	Cable Length (mm)	Cable loss (dB)	Frequency range (MHz)	Diversity Function
Patch	MCX	14	185	NA	2500~2700	Dual polarization

2. The EUT could be supplied with the a POE as below table:

Brand :	PHIHONG
Model No.:	PSA16U-480(POE)
Input power :	100-240V, 50-60Hz, 0.4A AC input cable (shielded, 1.8m)
Output power :	48V, 0.32A

3. For the EUT Modulation type and coding rate. After pre-testing items of output power and spurious emissions, QPSK-1/2 was found to be 5MHz/10MHz worst case, and was selected for the final test configuration.

Up Link		Down Link	
Modulation	Coding rate	Modulation	Coding rate
QPSK	1/2	QPSK	1/2
	3/4		3/4
16QAM	1/2	16QAM	1/2
	3/4		3/4
64QAM	1/2	64QAM	1/2
	2/3		2/3
	3/4		3/4
	5/6		5/6

4. The EUT is 2 * 2 spatial MIMO without beam forming function.

5. The EUT embedded a firmware for testing that needs to control from Notebook computer to let EUT with different DL/UL ration.

6. The EUT supports a range of DL/UL ratios. The maximum DL:UL ratio will be set to 29:18 for 5MHz and 10MHz by software. This ratio was chosen because it is the agreed upon ratio used by carriers in the US. The max. UL consists of 18 symbols. The first 3 symbols are allocated for control symbols.

7. This device is measured using a DL:UL symbol ratio of 29:18, consisting of 15 traffic symbols and 3 inactive control symbols.

8. The above EUT information was declared by manufacturer and for more detailed feature descriptions, please refers to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

Three channels have been tested and presented.

CHANNEL BANDWIDTH: 5MHz

Low channel (L): 2502.5MHz.

Middle channel (M): 2600MHz.

High channel (H): 2687.5MHz.

CHANNEL BANDWIDTH: 10MHz

Low channel (L): 2505MHz.

Middle channel (M): 2600MHz.

High channel (H): 2685MHz.

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO							DESCRIPTION
	OP	FS	EB	CE	CSE	RE<1G	RE≥1G	
MODE 1	√	√	√	√	√	√	√	Channel Bandwidth: 5MHz
MODE 2	√	√	√	√	√	√	√	Channel Bandwidth: 10MHz

Where **OP:** Output power **FS:** Frequency stability

EB: Emission bandwidth **CE:** Channel edge

CSE: Conducted spurious emissions **RE<1G:** Radiated emission below 1GHz

RE≥1G: Radiated emission above 1GHz

OUTPUT POWER MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

TESTED MODE	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE
MODE 1	L, M, H	OFDMA	QPSK
MODE 2	L, M, H	OFDMA	QPSK

FREQUENCY STABILITY MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE
M	OFDMA	Unmodulation

EMISSION BANDWIDTH MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

TESTED MODE	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE
MODE 1	L, M, H	OFDMA	QPSK
MODE 2	L, M, H	OFDMA	QPSK

CHANNEL EDGE MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

TESTED MODE	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE
MODE 1	L, M, H	OFDMA	QPSK
MODE 2	L, M, H	OFDMA	QPSK

CONDUCTED SPURIOUS EMISSIONS MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

TESTED MODE	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE
MODE 1	L, M, H	OFDMA	QPSK
MODE 2	L, M, H	OFDMA	QPSK

RADIATED EMISSION MEASUREMENT (BELOW 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

TESTED MODE	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE
MODE 1	L	OFDMA	QPSK
MODE 2	H	OFDMA	QPSK

RADIATED EMISSION MEASUREMENT (ABOVE 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

TESTED MODE	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE
MODE 1	L, M, H	OFDMA	QPSK
MODE 2	L, M, H	OFDMA	QPSK

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 27, Subpart C & M

ANSI/TIA/EIA-603-C-2004

All test items have been performed and recorded as per the above standards.

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

3.4 DESCRIPTION OF SUPPORT UNITS

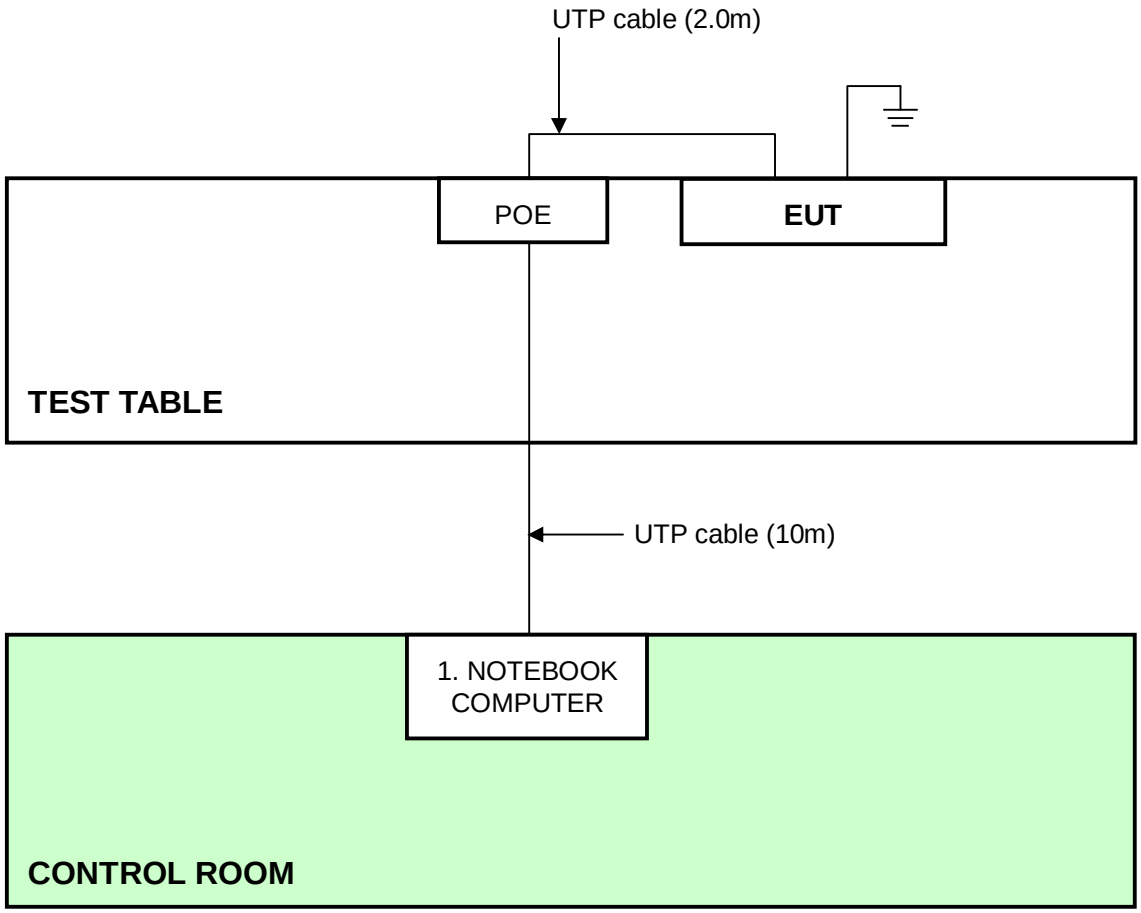
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP17L	CN-ONF743-48643-7AV-0124	FCC DoC

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	10 m UTP cable.

NOTE: All power cords of the above support units are non shielded (1.8m).

3.4.1 CONFIGURATION OF SYSTEM UNDER TEST



4 TEST TYPES AND RESULTS

4.1 OUTPUT POWER MEASUREMENT

4.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

The conducted peak output power shall be according to the specific rule Part 27.50(h)(2) that “Other User stations are limited to 2 watts and 27.50(i) specific that “Peak transmit power must be measure over any interval of continuous transmission using instrumentation calibration in terms of rms-equivalent voltage.”

4.1.2 TEST INSTRUMENTS

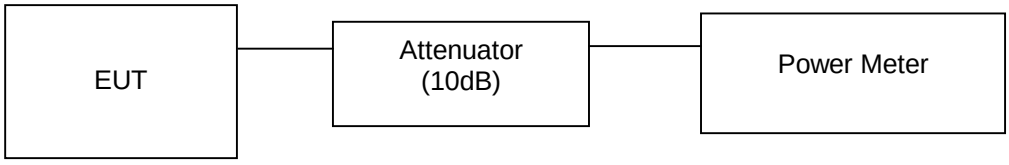
DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Anritsu Power Meter	ML2495A	0824006	May 04, 2010	May 03, 2011
JFW 10dB attenuation	50HF-010-SMA	N/A	NA	NA

NOTE:
The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.1.3 TEST PROCEDURES

The transmitter output was connected to power meter through an attenuator. The test result was measured and recorded.

4.1.4 TEST SETUP



4.1.5 EUT OPERATING CONDITIONS

1. Prepared other computer system (support unit 1) to act as communication partners and placed them outside of testing area.
2. The communication partners run test program “rfcalgui_cr.exe” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

4.1.6 TEST RESULTS

CHANNEL BANDWIDTH: 5MHz

INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	RMS
ENVIRONMENTAL CONDITIONS	20deg°C, 60%RH 1011hPa	**TESTED BY**	Phoenix Huang

CONDUCTED POWER					
CHANNEL	**FREQUENCY (MHz)**	**Chain 0 POWER OUTPUT (dBm)**	**Chain 1 POWER OUTPUT (dBm)**	**TOTAL POWER OUTPUT (mW)**	**TOTAL POWER OUTPUT (dBm)**
Low	2502.5	24.7	24.7	590.2	27.7
Middle	2600	24.5	24.3	551.0	27.4
High	2687.5	24.3	24.5	551.0	27.4

CHANNEL BANDWIDTH: 10MHz

INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	RMS
ENVIRONMENTAL CONDITIONS	20deg°C, 60%RH 1011hPa	**TESTED BY**	Phoenix Huang

CONDUCTED POWER					
CHANNEL	**FREQUENCY (MHz)**	**Chain 0 POWER OUTPUT (dBm)**	**Chain 1 POWER OUTPUT (dBm)**	**TOTAL POWER OUTPUT (mW)**	**TOTAL POWER OUTPUT (dBm)**
Low	2505	24.5	24.3	551.0	27.4
Middle	2600	24.6	24.4	563.8	27.5
High	2685	24.3	24.6	557.6	27.5

4.2 FREQUENCY STABILITY MEASUREMENT

4.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

According to the FCC part 2.1055 shall be tested the frequency stability. The rule is defined that" The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block." The test extreme voltage is according to the 2.1055(d)(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment and the extreme temperature rule is comply with specification from -30℃ ~ 50℃.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Sep. 08, 2010	Sep. 07, 2011
OVEN	MHU-225AU	911033	Dec. 17, 2009	Dec. 16, 2010
HUBER+SUHNER	SUCOFLEX104	222684/4	Oct. 30, 2009	Oct. 29, 2010
AC POWER SOURCE	6205	1140503	NA	NA

NOTE: 1. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to NML/ROC and NIST/USA.

4.2.3 TEST PROCEDURE

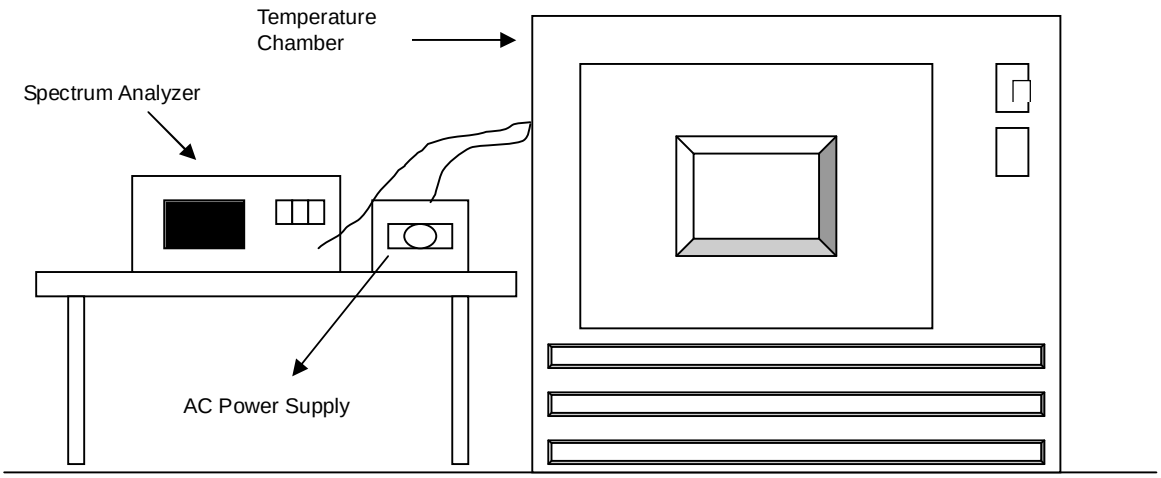
a. Power must be removed when changing from one temperature to another or one voltage to another voltage. Power warm up is at least 15 min and power applied should perform before recording frequency error.

b. EUT is connected the external power supply to control the AC input power. The various Volts from the minimum 102 Volts to 138 Volts. Each step shall be record the frequency error rate.

c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ during the measurement testing.

d. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

4.2.4 TEST SETUP



4.2.5 TEST RESULTS

MODE	Middle channel (2600MHz)	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg°C, 60%RH 1011hPa	**TESTED BY**	Phoenix Huang

AFC FREQUENCY ERROR VS. VOLTAGE								
VOLTAGE (Volts)	**0Minutes**		**2Minutes**		**5Minutes**		**10Minutes**	
	FREQUENCY (MHz)	**PPM (%)**	**FREQUENCY (MHz)**	**PPM (%)**	**FREQUENCY (MHz)**	**PPM (%)**	**FREQUENCY (MHz)**	**PPM (%)**
138	2600.0216	0.000831	2600.0214	0.000823	2600.0211	0.000812	2600.0208	0.000800
120	2600.0218	0.000838	2600.0217	0.000835	2600.0215	0.000827	2600.0204	0.000785
102	2600.0213	0.000819	2600.0216	0.000831	2600.0213	0.000819	2600.0205	0.000785

AFC FREQUENCY ERROR VS. TEMP								
TEMP (℃)	**0Minutes**		**2Minutes**		**5Minutes**		**10Minutes**	
	FREQUENCY (MHz)	**PPM (%)**	**FREQUENCY (MHz)**	**PPM (%)**	**FREQUENCY (MHz)**	**PPM (%)**	**FREQUENCY (MHz)**	**PPM (%)**
60	2600.0229	0.000881	2600.0229	0.000881	2600.0218	0.000838	2600.0226	0.000869
50	2600.0234	0.000900	2600.0233	0.000896	2600.0222	0.000854	2600.0219	0.000842
40	2600.0241	0.000927	2600.0242	0.000931	2600.0238	0.000915	2600.0228	0.000877
30	2600.0223	0.000858	2600.0225	0.000865	2600.0216	0.000831	2600.0217	0.000835
20	2600.0218	0.000838	2600.0217	0.000835	2600.0215	0.000827	2600.0204	0.000785
10	2600.0207	0.000796	2600.0199	0.000765	2600.0204	0.000785	2600.0207	0.000796
0	2600.0197	0.000758	2600.0196	0.000754	2600.0203	0.000781	2600.0197	0.000758
-10	2600.0195	0.000750	2600.0194	0.000746	2600.0205	0.000788	2600.0205	0.000788
-20	2600.0186	0.000715	2600.0184	0.000708	2600.0196	0.000754	2600.0194	0.000746
-30	2600.0164	0.000631	2600.0165	0.000635	2600.0191	0.000735	2600.0193	0.000742
-40	2600.0165	0.000635	2600.0168	0.000646	2600.0190	0.000731	2600.0196	0.000754

4.2.6 LIMITS OF EMISSION BANDWIDTH MEASUREMENT

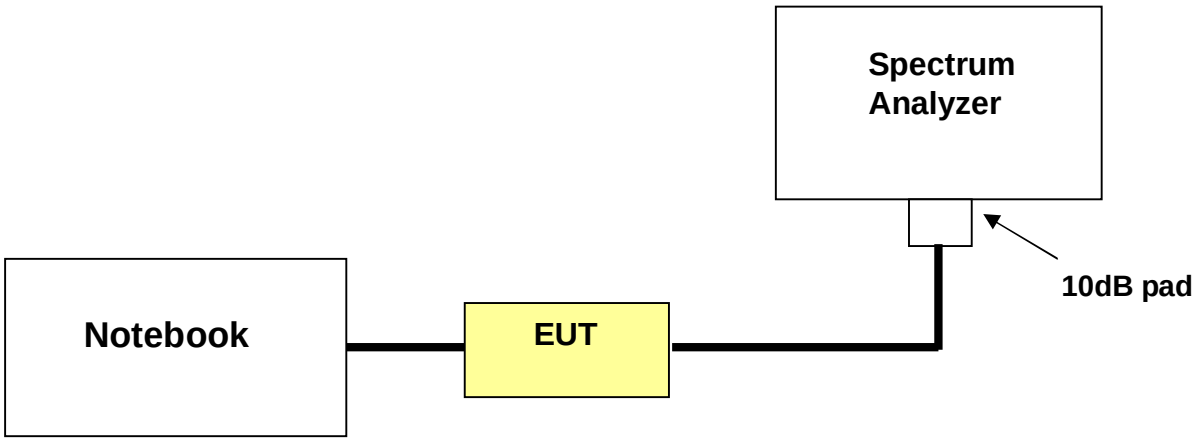
According to FCC 27.53(m)(6) specified that emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power.

4.2.7 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4446A	MY46180622	May 12, 2010	May 11, 2011
HUBER+SUHNER	SUCOFLEX104	222684/4	Oct. 30, 2009	Oct. 29, 2010
JFW 10dB attenuation	50HF-010-SMA	N/A	N/A	N/A

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.2.8 TEST SETUP



4.2.9 TEST PROCEDURES

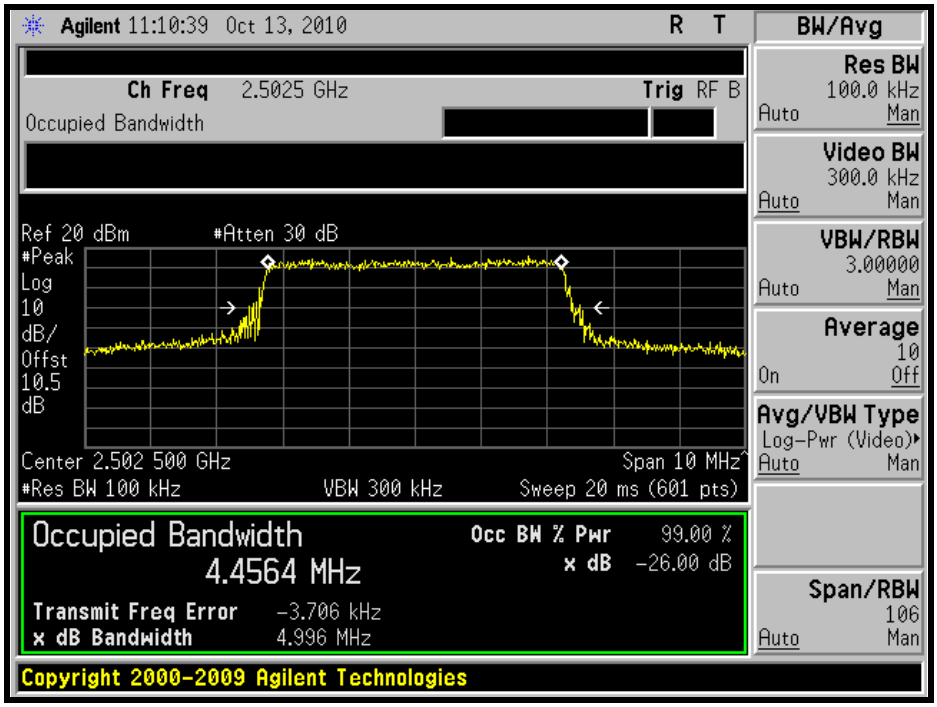
a. The Notebook controlled EUT to export rated output power under transmission mode and specific channel frequency. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 300kHz VBW. Measure the bandwidth at the －26 dBc levels with respect to the reference level.

4.2.10 TEST RESULTS

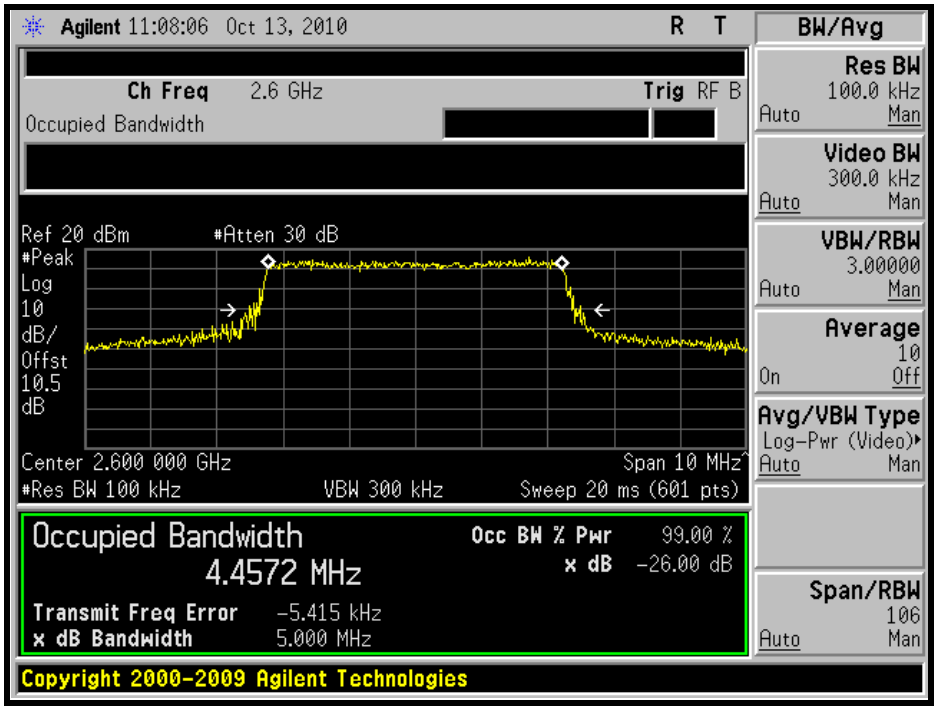
CHANNEL BANDWIDTH: 5MHz

FREQUENCY (MHz)	-26 dBc BANDWIDTH (MHz)
2502.5	4.99
2600	5.00
2687.5	4.99

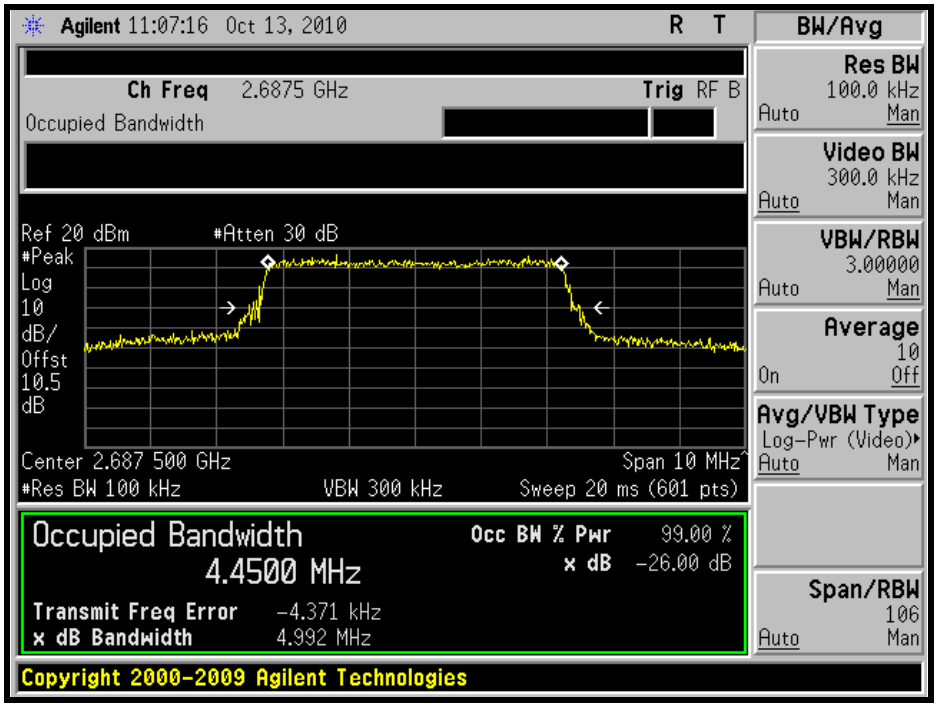
LOW CHANNEL



MIDDLE CHANNEL



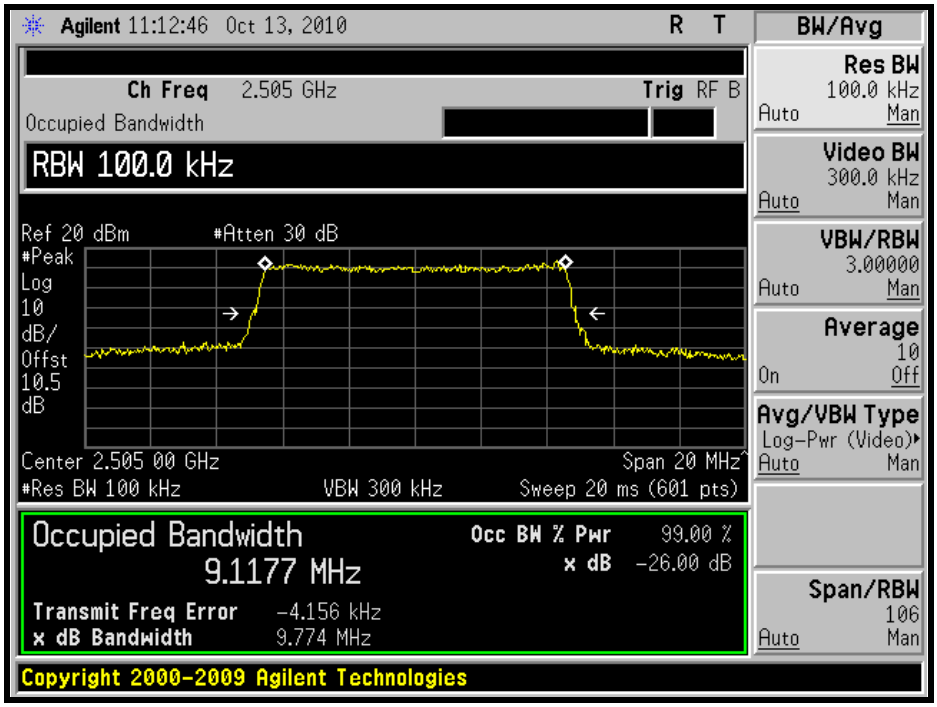
HIGH CHANNEL



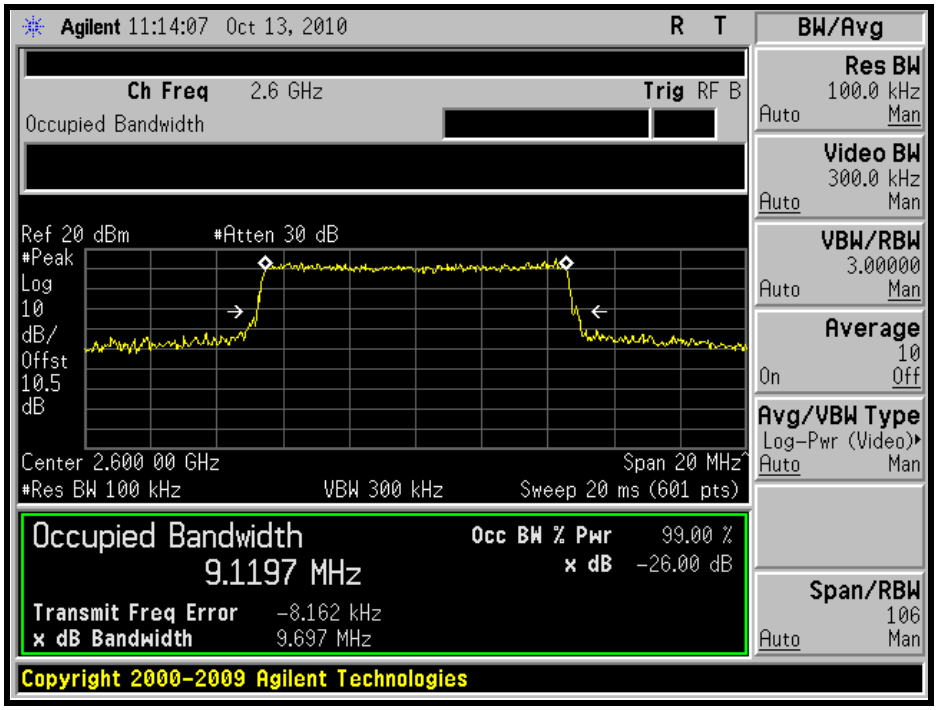
CHANNEL BANDWIDTH: 10MHz

FREQUENCY (MHz)	-26 dBc BANDWIDTH (MHz)
2505	9.77
2600	9.69
2685	9.55

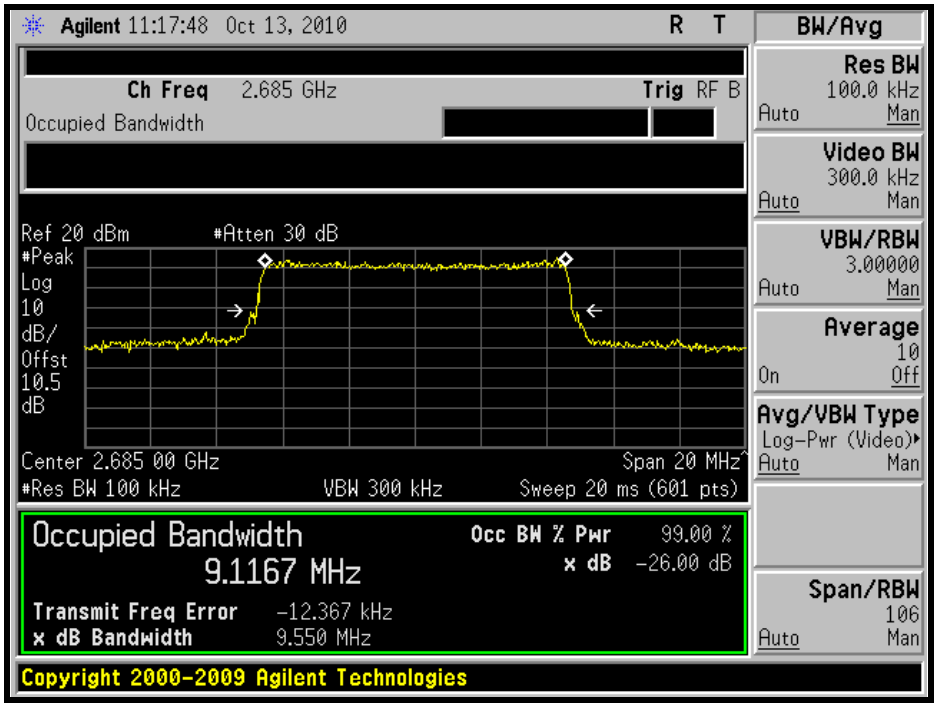
LOW CHANNEL



MIDDLE CHANNEL



HIGH CHANNEL



4.3 CHANNEL EDGE MEASUREMENT

4.3.1 LIMITS OF CHANNEL EDGE MEASUREMENT

According to FCC 27.53(m)(4) specified that power of any emission outside of the channel edge must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P)dB and 55 + 10 log (P) dB at 5.5 MHz from the channel edges. In the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4446A	MY46180622	May 12, 2010	May 11, 2011
HUBER+SUHNER	SUCOFLEX104	222684/4	Oct. 30, 2009	Oct. 29, 2010
JFW 10dB attenuation	50HF-010-SMA	NA	NA	NA

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.3.3 TEST SETUP

Same as Item 4.3.3

4.3.4 TEST PROCEDURES

a. The EUT was set up for the rated peak power. The power was measured with Spectrum Analyzer. All measurements were done at 3 channels: low, middle and high operational frequency range.

b. For Channel bandwidth: 5 MHz:

The center frequency of spectrum is the band edge frequency and span is 20MHz. RB of the spectrum is 51kHz and VB of the spectrum is 160kHz.

c. For Channel bandwidth: 10 MHz:

The center frequency of spectrum is the band edge frequency and span is 30MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz.

d. Record the max trace plot into the test report.

4.3.5 EUT OPERATING CONDITION

Same as item 4.1.5

4.3.6 TEST RESULTS

CHANNEL BANDWIDTH: 5MHz

LOW CHANNEL-LEFT

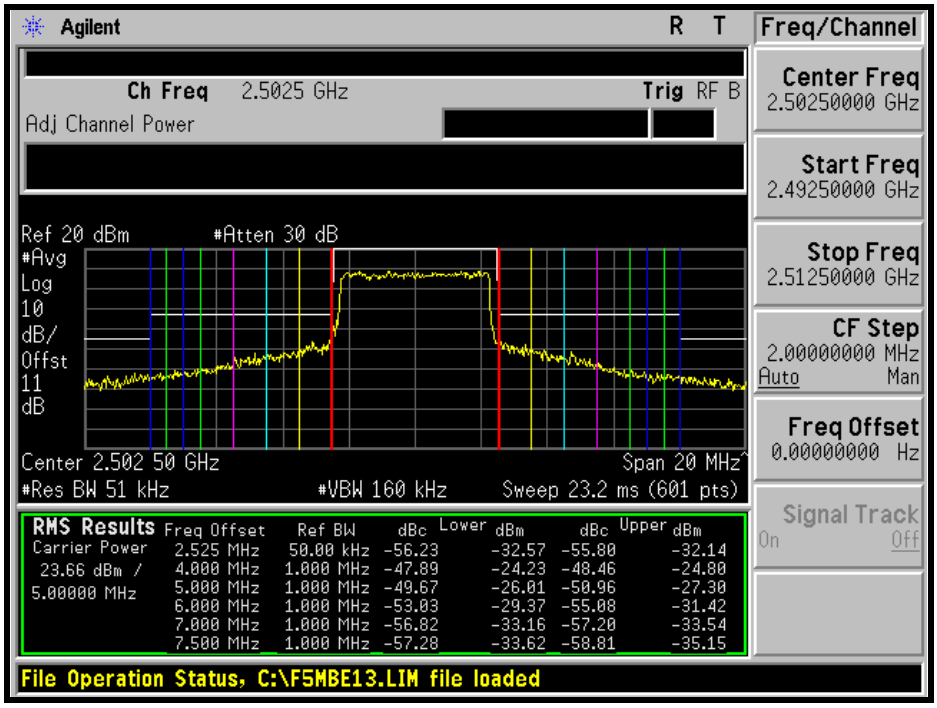
CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
2502.5	2499.974	-32.57	-32.84	0.001	-29.70	-13	PASS
	2498.5	-24.23	-25.00	0.007	-21.60	-13	PASS
	2497.5	-26.01	-26.27	0.005	-23.10	-13	PASS
	2496.5	-29.37	-29.40	0.002	-26.40	-13	PASS
	2495.5	-33.16	-33.12	0.001	-30.10	-13	PASS
	2495	-33.62	-34.80	0.001	-31.20	-13	PASS
	2494	-35.72	-36.47	0.000	-33.10	-13	PASS
	2493	-37.44	-37.91	0.000	-34.70	-13	PASS

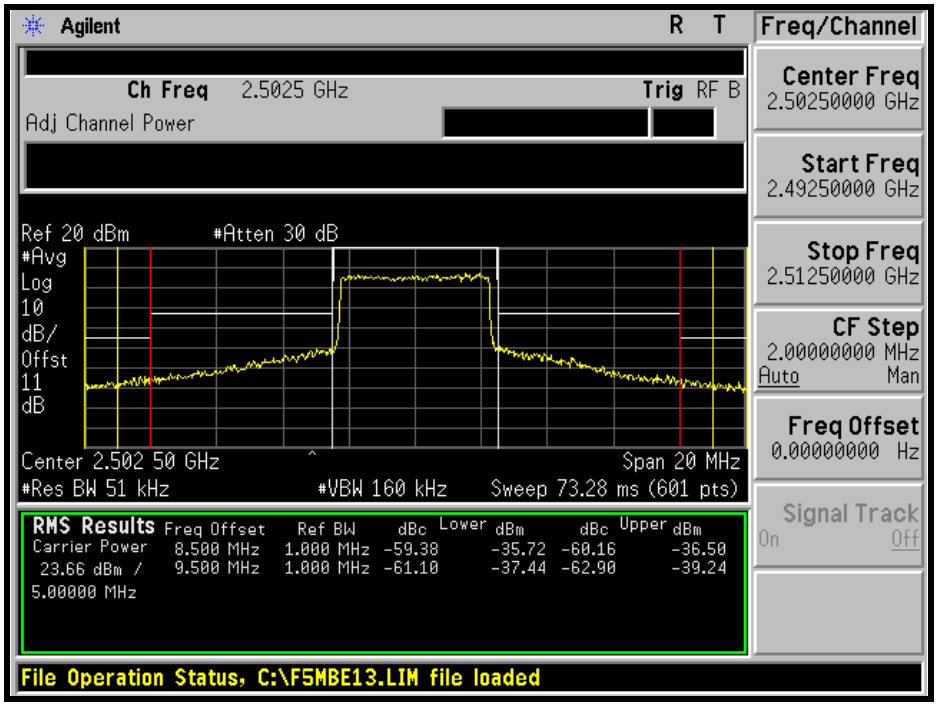
LOW CHANNEL-RIGHT

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
2502.5	2505.026	-32.14	-31.51	0.001	-28.80	-13	PASS
	2506.5	-24.80	-25.25	0.006	-22.00	-13	PASS
	2507.5	-27.30	-28.64	0.003	-24.90	-13	PASS
	2508.5	-31.42	-31.79	0.001	-28.60	-13	PASS
	2509.5	-33.54	-33.38	0.001	-30.40	-13	PASS
	2510	-35.15	-33.65	0.001	-31.30	-13	PASS
	2511	-36.50	-36.26	0.000	-33.40	-13	PASS
	2512	-39.24	-38.18	0.000	-35.70	-13	PASS

CHAIN 0

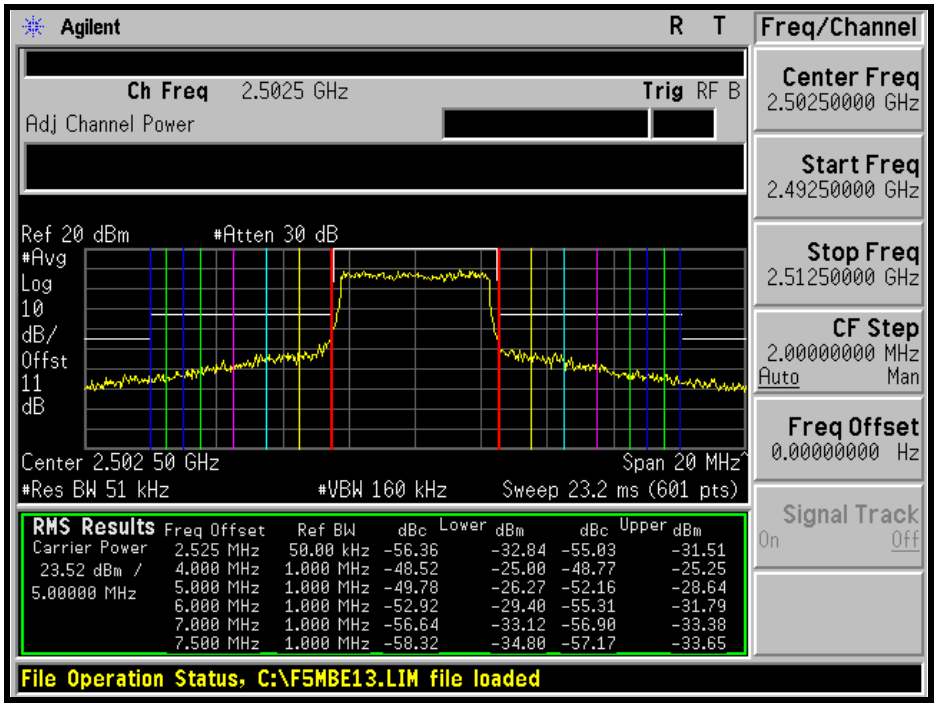
LOW CHANNEL

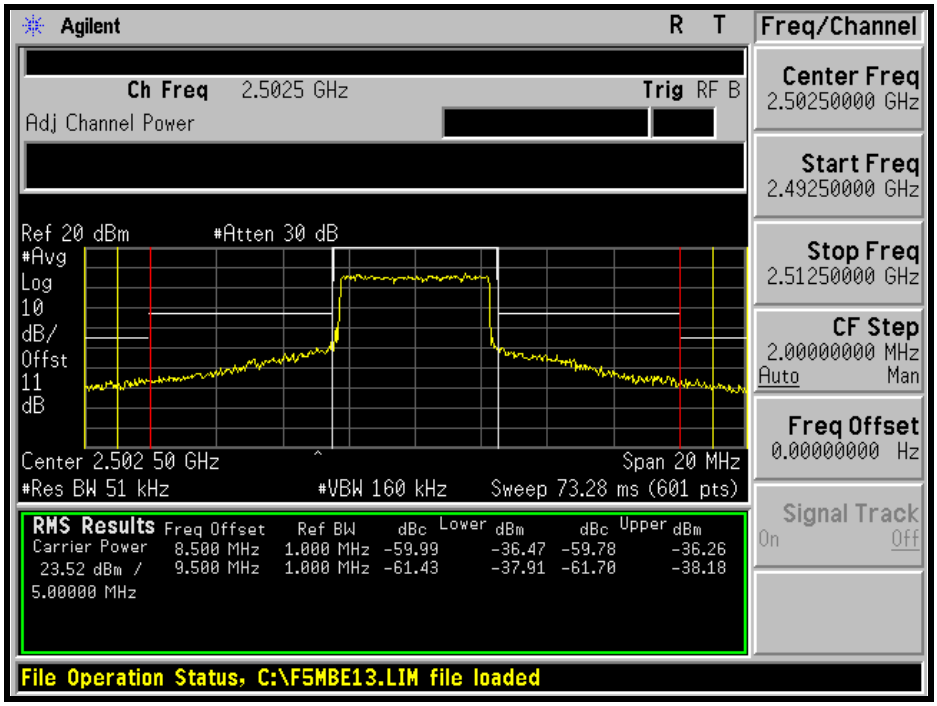




CHAIN 1

LOW CHANNEL





MIDDLE CHANNEL-LEFT

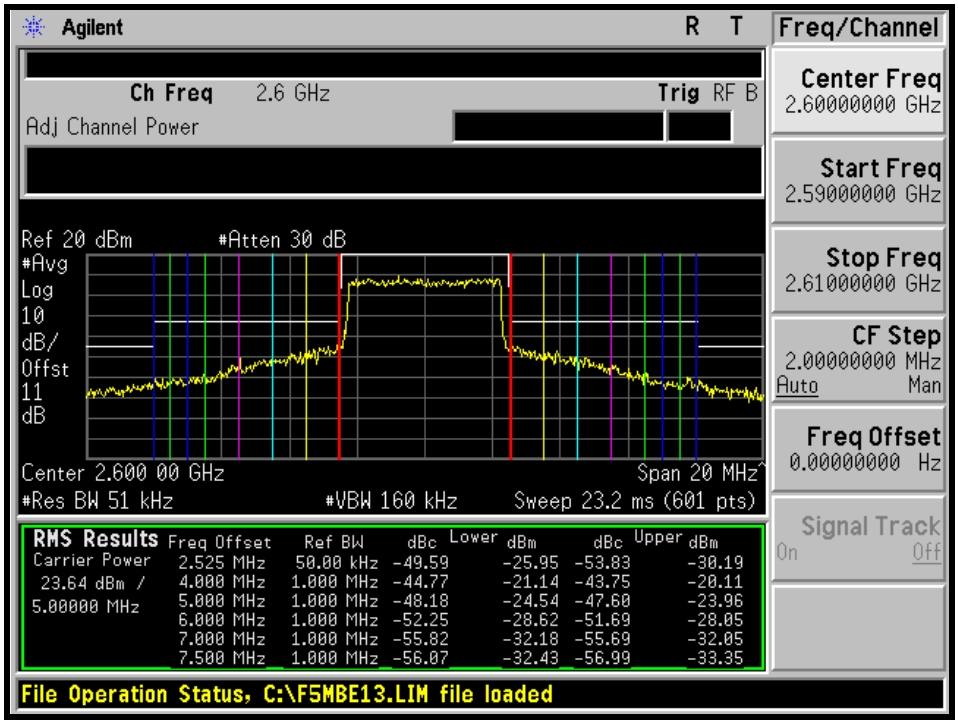
CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
2600	2597.474	-25.95	-26.75	0.005	-23.30	-13	PASS
	2596	-21.14	-22.62	0.013	-18.80	-13	PASS
	2595	-24.54	-25.31	0.006	-21.90	-13	PASS
	2594	-28.62	-28.23	0.003	-25.40	-13	PASS
	2593	-32.18	-31.16	0.001	-28.60	-13	PASS
	2592.5	-32.43	-32.97	0.001	-29.70	-13	PASS
	2591.5	-35.00	-35.60	0.001	-32.30	-13	PASS
	2590.5	-37.37	-37.84	0.000	-34.60	-13	PASS

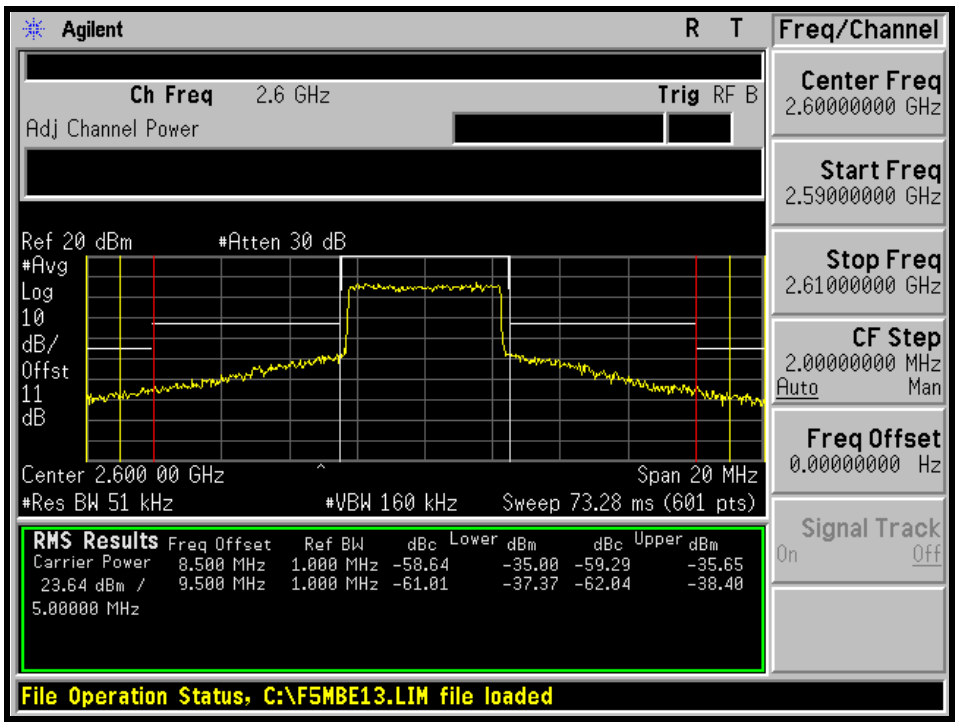
MIDDLE CHANNEL-RIGHT

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
2600	2602.526	-30.19	-28.32	0.002	-26.10	-13	PASS
	2604	-20.11	-21.25	0.017	-17.60	-13	PASS
	2605	-23.96	-23.79	0.008	-20.90	-13	PASS
	2606	-28.05	-29.60	0.003	-25.70	-13	PASS
	2607	-32.05	-32.55	0.001	-29.30	-13	PASS
	2607.5	-33.35	-33.44	0.001	-30.40	-13	PASS
	2608.5	-35.65	-36.50	0.000	-33.00	-13	PASS
	2609.5	-38.40	-38.59	0.000	-35.50	-13	PASS

CHAIN 0

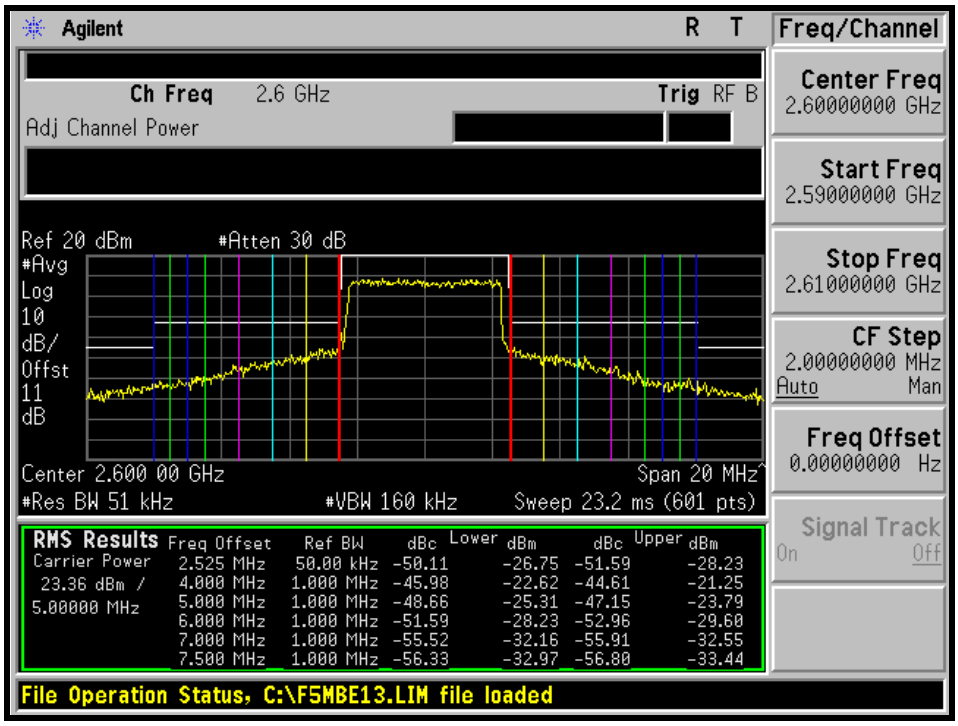
MIDDLE CHANNEL

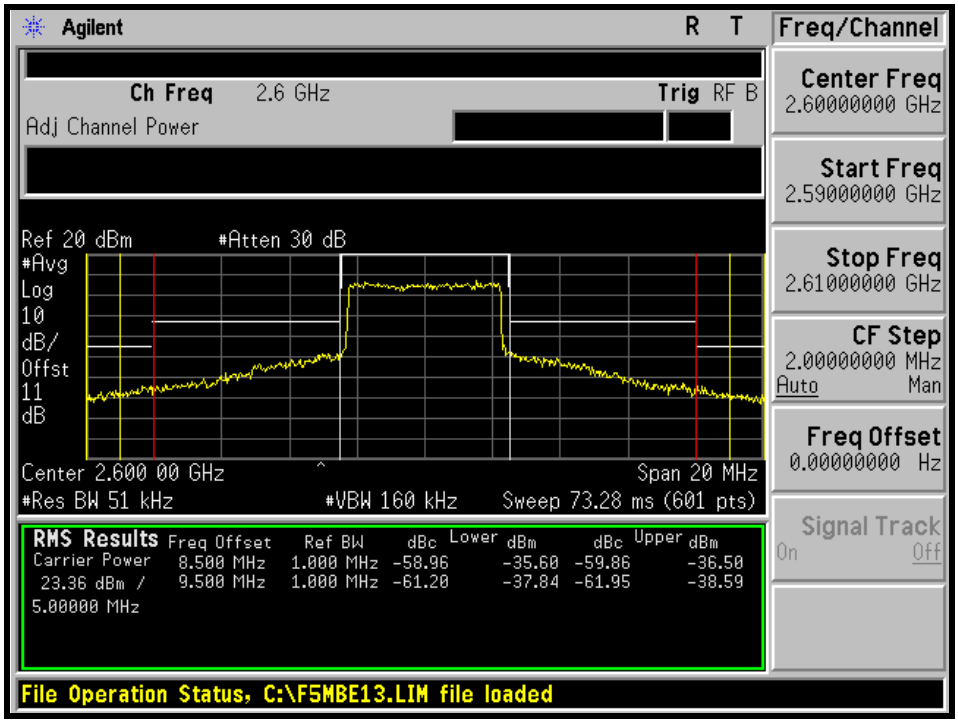




CHAIN 1

MIDDLE CHANNEL





HIGH CHANNEL-LEFT

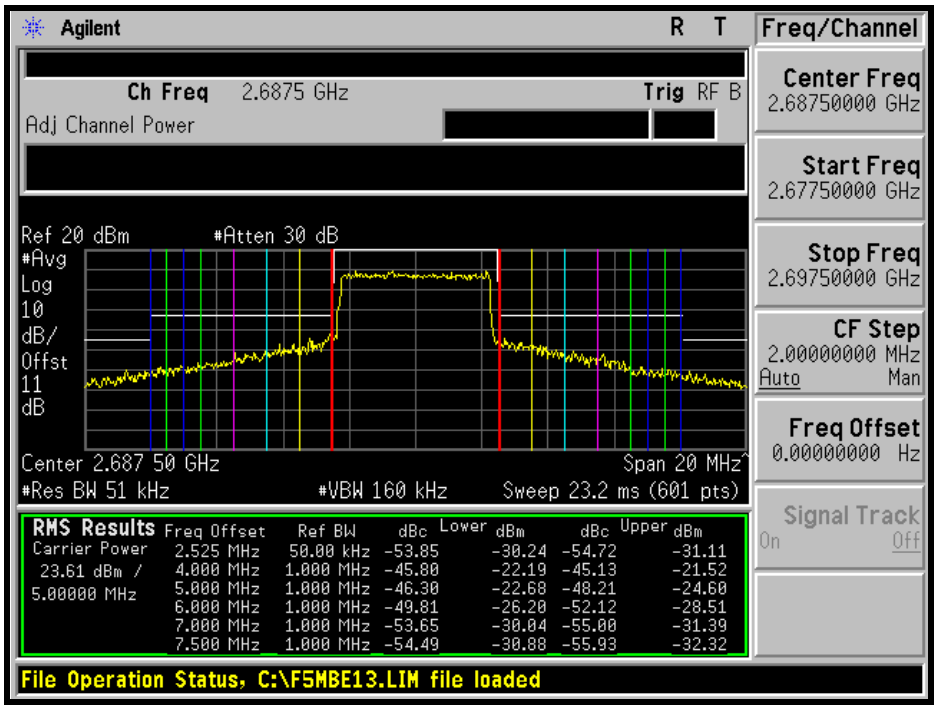
CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
2687.5	2684.974	-30.24	-25.13	0.004	-24.00	-13	PASS
	2683.5	-22.19	-22.23	0.012	-19.20	-13	PASS
	2682.5	-22.68	-25.32	0.008	-20.80	-13	PASS
	2681.5	-26.20	-27.91	0.004	-24.00	-13	PASS
	2680.5	-30.04	-30.61	0.002	-27.30	-13	PASS
	2680	-30.88	-31.16	0.002	-28.00	-13	PASS
	2679	-33.94	-34.92	0.001	-31.40	-13	PASS
	2678	-36.72	-36.23	0.000	-33.50	-13	PASS

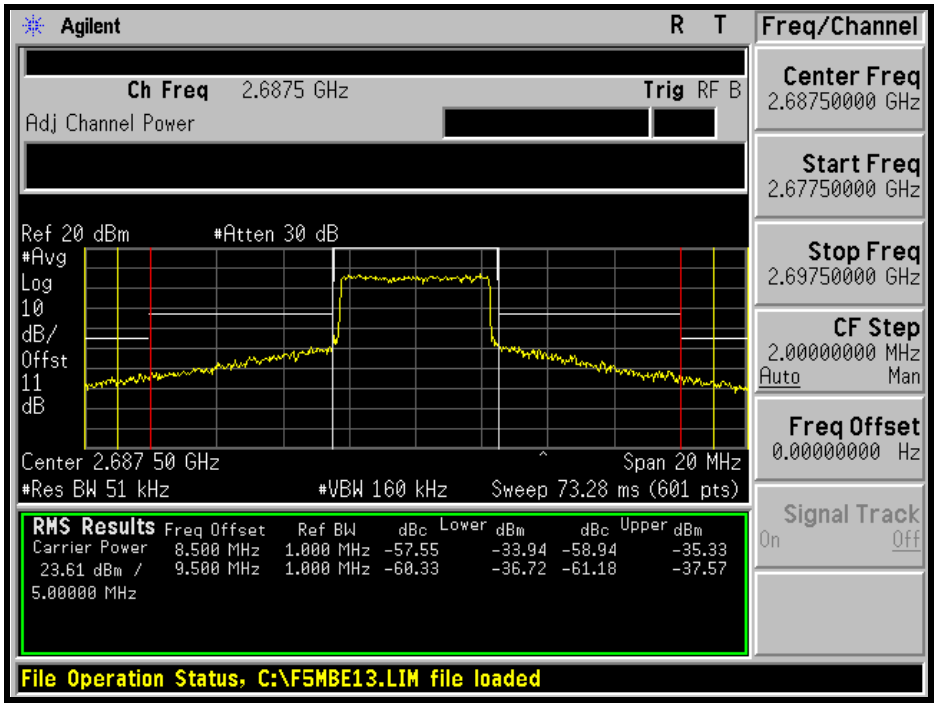
HIGH CHANNEL-RIGHT

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
2687.5	2690.026	-31.11	-31.03	0.002	-28.10	-13	PASS
	2691.5	-21.52	-22.62	0.013	-19.00	-13	PASS
	2692.5	-24.60	-25.38	0.006	-22.00	-13	PASS
	2693.5	-28.51	-27.87	0.003	-25.20	-13	PASS
	2694.5	-31.39	-32.03	0.001	-28.70	-13	PASS
	2695	-32.32	-32.42	0.001	-29.40	-13	PASS
	2696	-35.33	-34.60	0.001	-31.90	-13	PASS
	2697	-37.57	-36.97	0.000	-34.20	-13	PASS

CHAIN 0

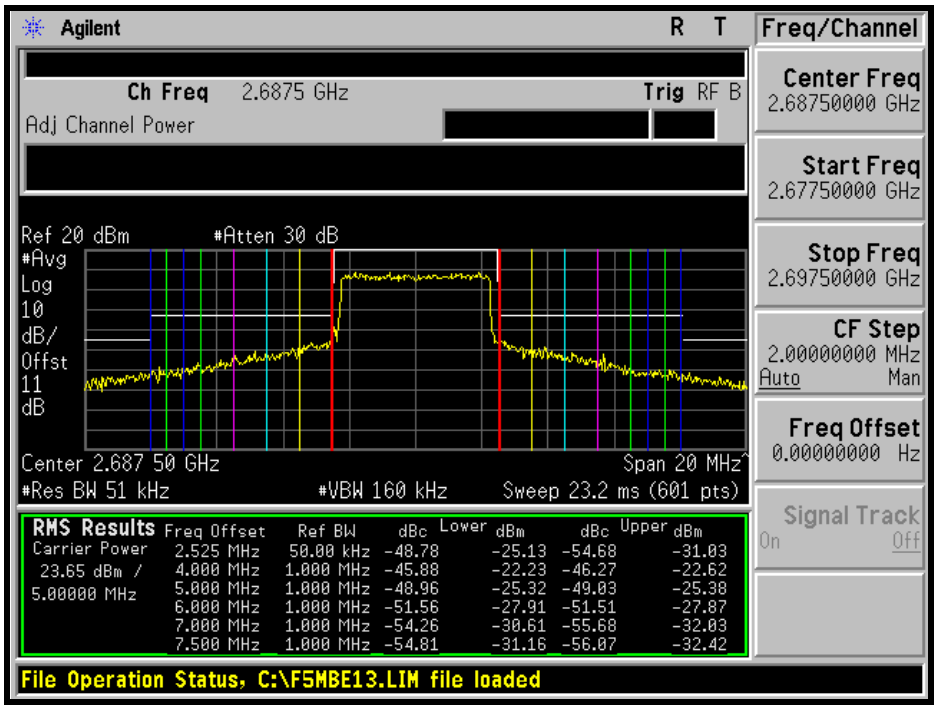
HIGH CHANNEL

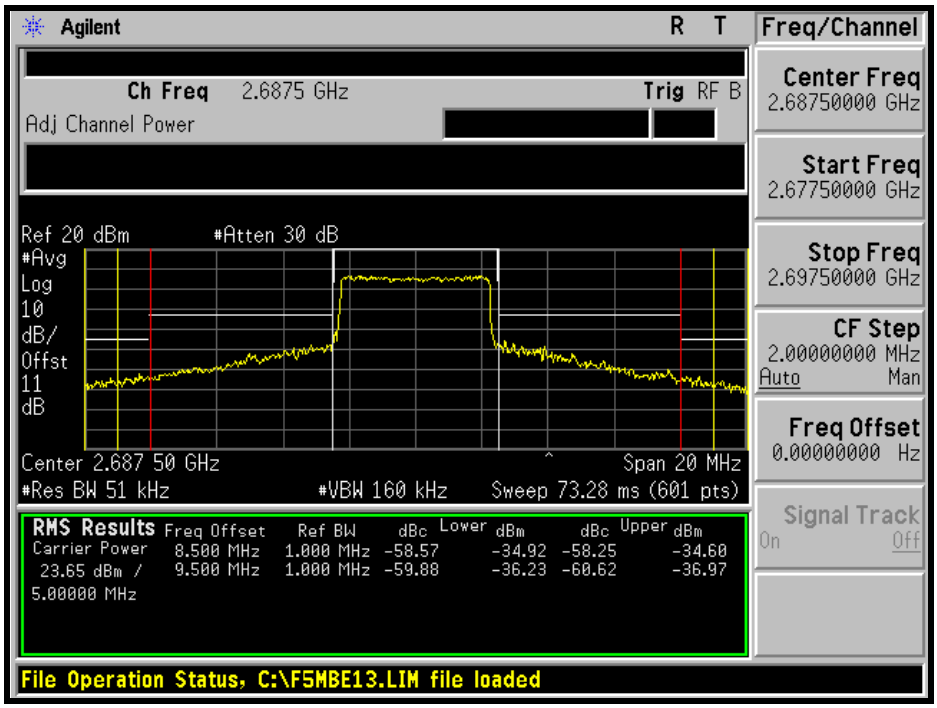




CHAIN 1

HIGH CHANNEL





CHANNEL BANDWIDTH: 10MHz

LOW CHANNEL-LEFT

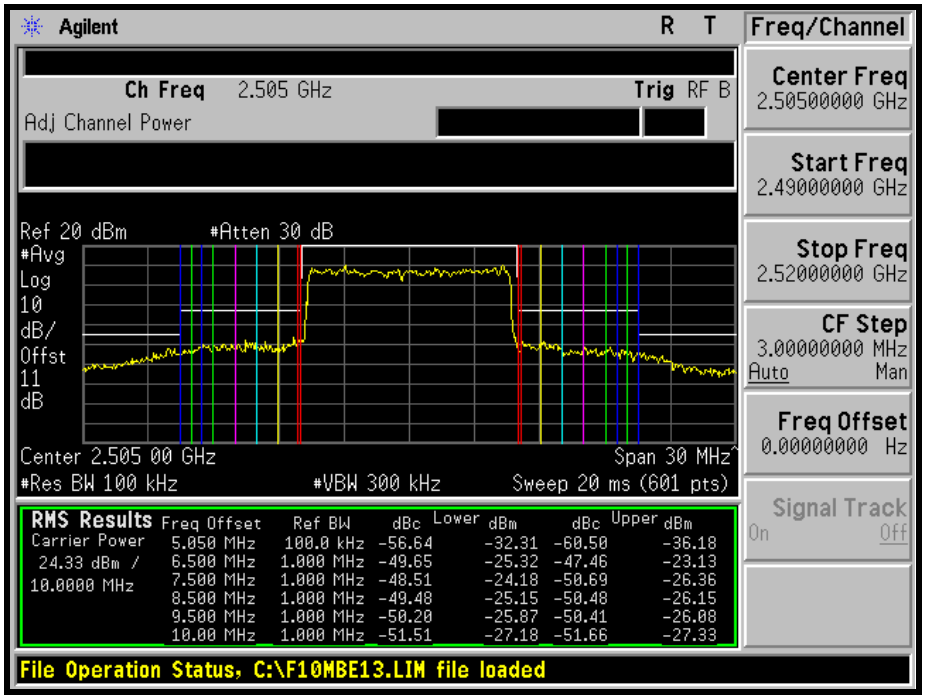
CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
2505	2499.95	-32.31	-32.33	0.001	-29.30	-13	PASS
	2498.5	-25.32	-25.71	0.006	-22.50	-13	PASS
	2497.5	-24.18	-25.81	0.006	-21.90	-13	PASS
	2496.5	-25.15	-25.47	0.006	-22.30	-13	PASS
	2495.5	-25.87	-25.61	0.005	-22.70	-13	PASS
	2495	-27.18	-26.00	0.004	-23.50	-13	PASS
	2494	-27.73	-28.00	0.003	-24.90	-13	PASS
	2493	-30.92	-30.64	0.002	-27.80	-13	PASS
	2492	-32.25	-33.08	0.001	-29.60	-13	PASS
	2491	-33.71	-34.10	0.001	-30.90	-13	PASS

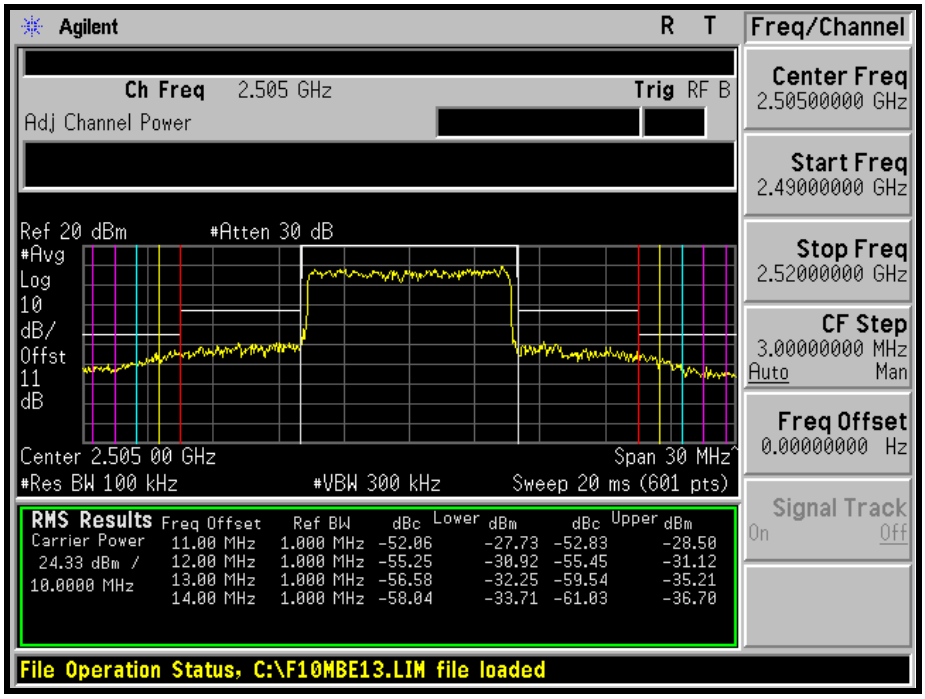
LOW CHANNEL-RIGHT

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
2505	2510.05	-36.18	-35.73	0.001	-32.90	-13	PASS
	2511.5	-23.13	-23.97	0.009	-20.50	-13	PASS
	2512.5	-26.36	-27.32	0.004	-23.80	-13	PASS
	2513.5	-26.15	-27.13	0.004	-23.60	-13	PASS
	2514.5	-26.08	-27.62	0.004	-23.80	-13	PASS
	2515	-27.33	-28.46	0.003	-24.80	-13	PASS
	2516	-28.50	-29.10	0.003	-25.80	-13	PASS
	2517	-31.12	-31.57	0.001	-28.30	-13	PASS
	2518	-35.21	-35.36	0.001	-32.30	-13	PASS
	2519	-36.70	-36.12	0.000	-33.40	-13	PASS

CHAIN 0

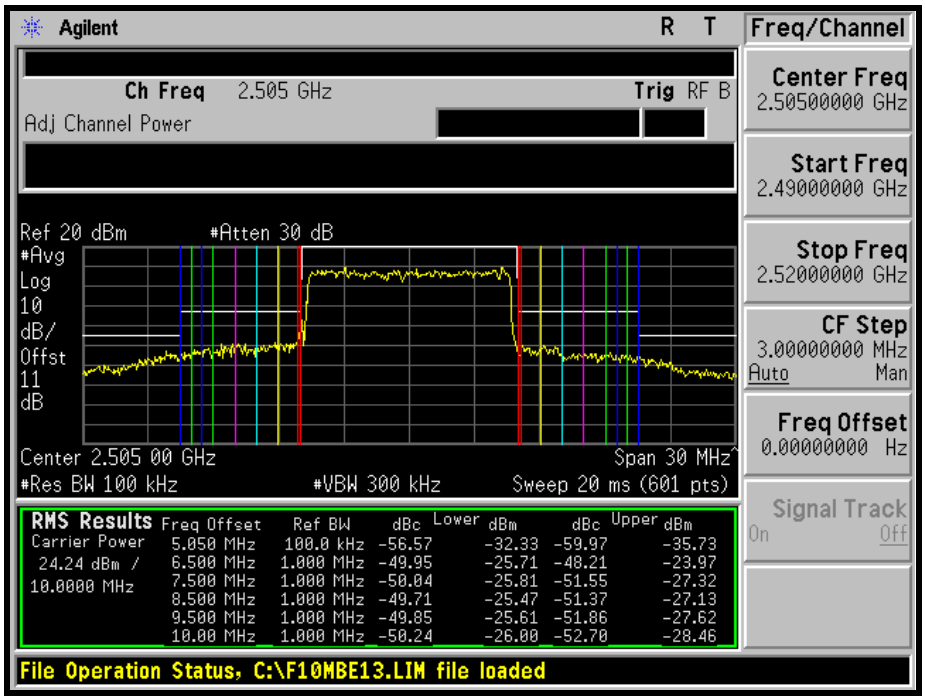
LOW CHANNEL

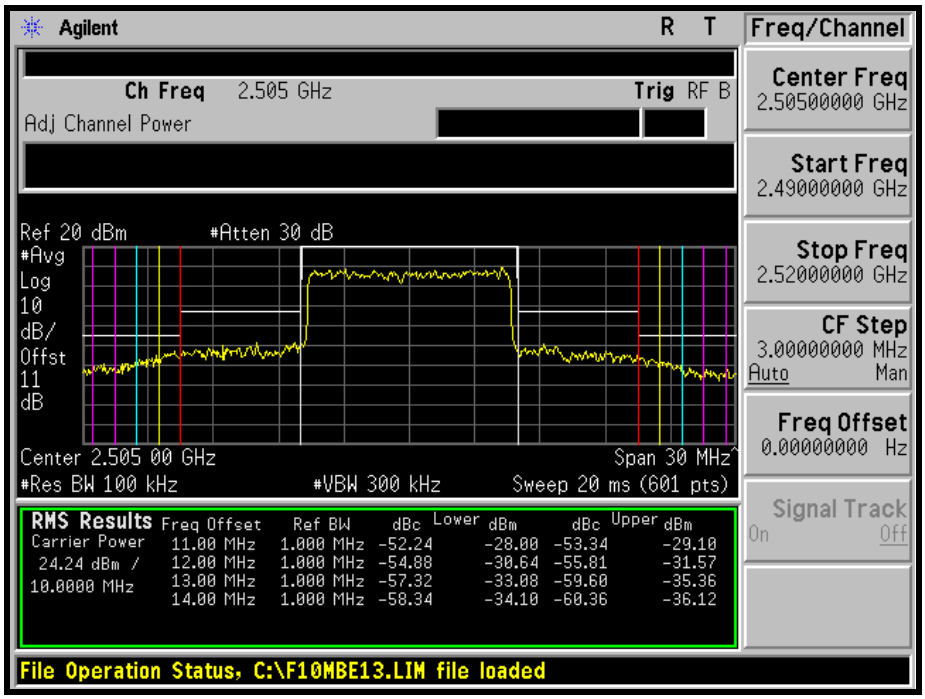




CHAIN 1

LOW CHANNEL





MIDDLE CHANNEL-LEFT

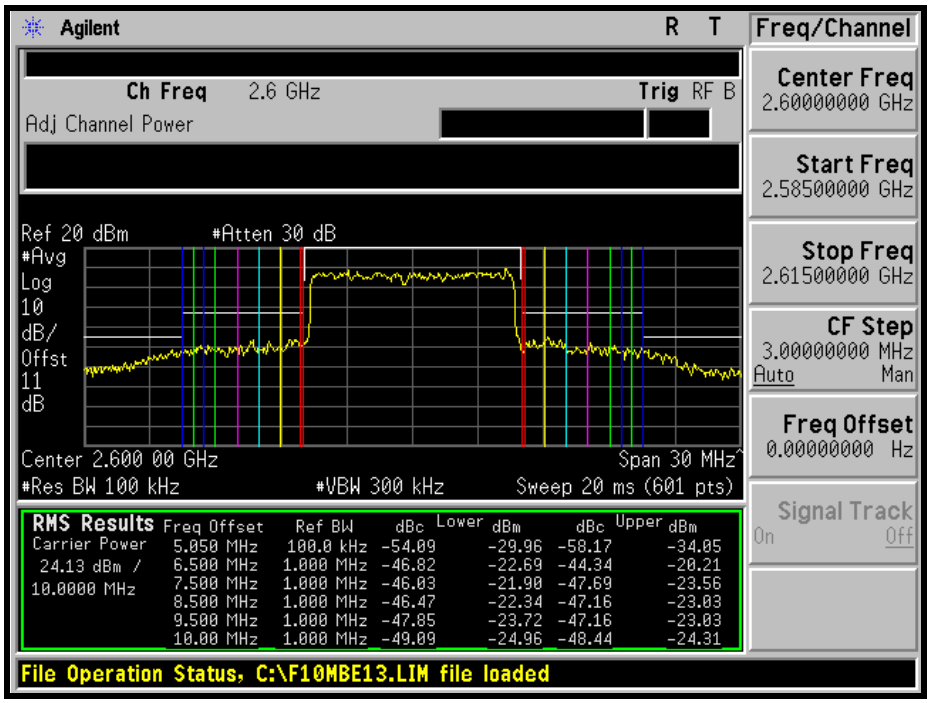
CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
2600	2594.95	-29.96	-32.73	0.002	-28.10	-13	PASS
	2593.5	-22.69	-23.53	0.010	-20.10	-13	PASS
	2592.5	-21.90	-23.19	0.011	-19.50	-13	PASS
	2591.5	-22.34	-24.65	0.009	-20.30	-13	PASS
	2590.5	-23.72	-24.87	0.008	-21.20	-13	PASS
	2590	-24.96	-26.20	0.006	-22.50	-13	PASS
	2589	-26.56	-26.78	0.004	-23.70	-13	PASS
	2588	-28.02	-28.77	0.003	-25.40	-13	PASS
	2587	-30.58	-31.61	0.002	-28.10	-13	PASS
	2586	-32.82	-32.98	0.001	-29.90	-13	PASS

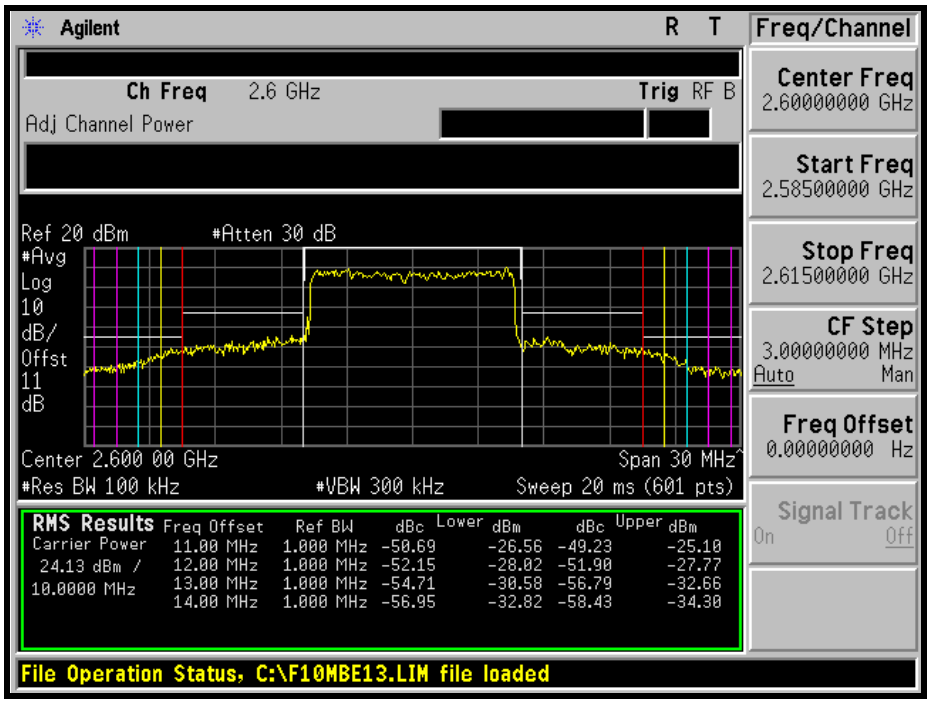
MIDDLE CHANNEL-RIGHT

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
2600	2605.05	-34.05	-36.23	0.001	-32.00	-13	PASS
	2606.5	-20.21	-23.12	0.014	-18.40	-13	PASS
	2607.5	-23.56	-26.44	0.007	-21.80	-13	PASS
	2608.5	-23.03	-26.07	0.007	-21.30	-13	PASS
	2609.5	-23.03	-26.79	0.007	-21.50	-13	PASS
	2610	-24.31	-27.58	0.005	-22.60	-13	PASS
	2611	-25.10	-25.80	0.006	-22.40	-13	PASS
	2612	-27.77	-28.68	0.003	-25.20	-13	PASS
	2613	-32.66	-33.43	0.001	-30.00	-13	PASS
	2614	-34.30	-34.48	0.001	-31.40	-13	PASS

CHAIN 0

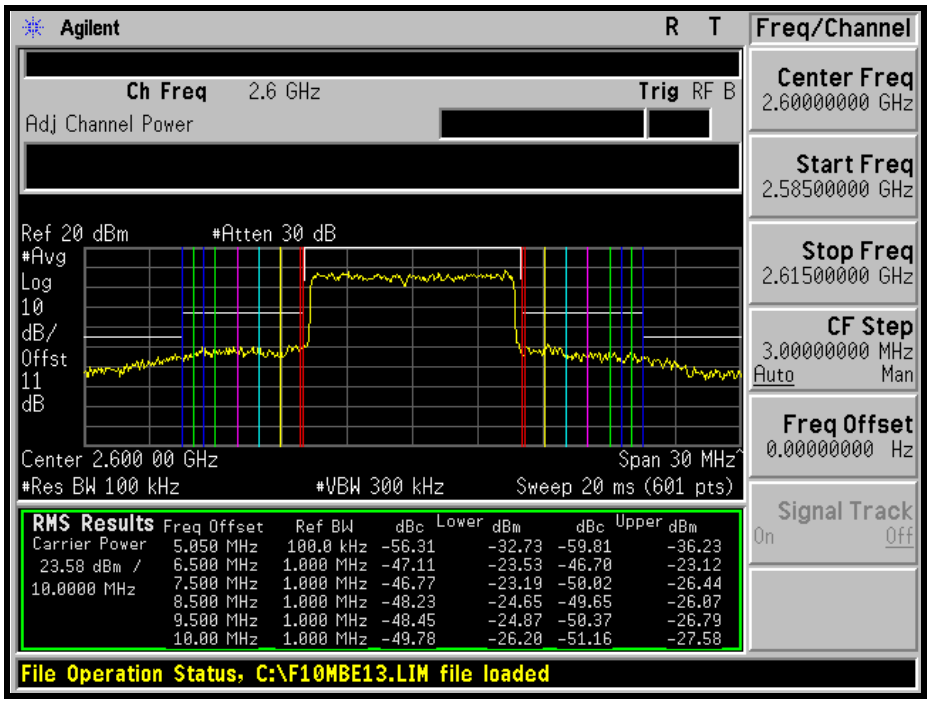
MIDDLE CHANNEL

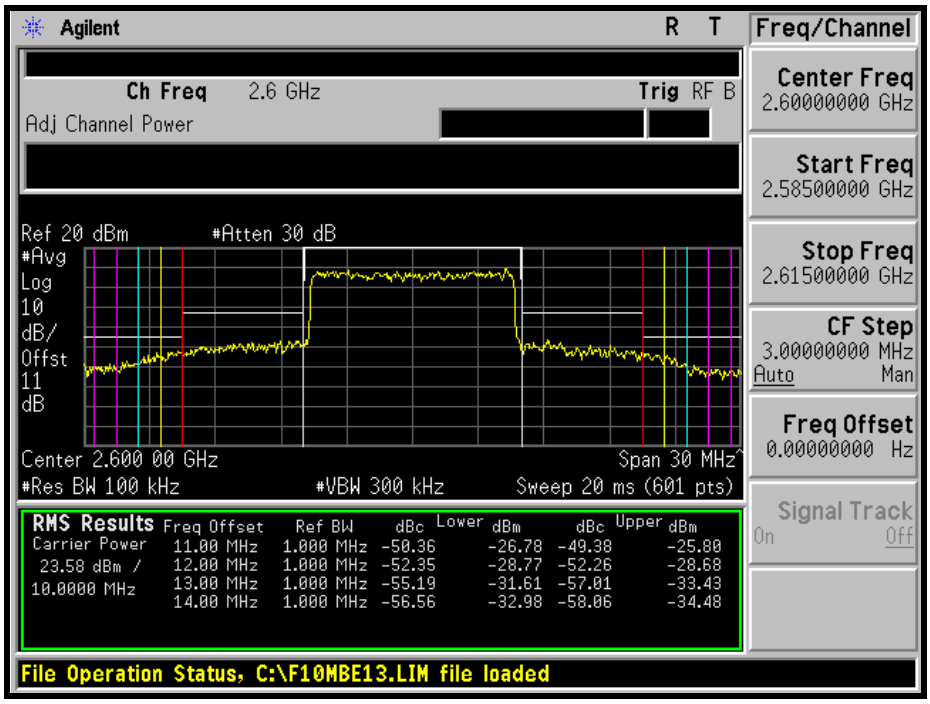




CHAIN 1

MIDDLE CHANNEL





HIGH CHANNEL-LEFT

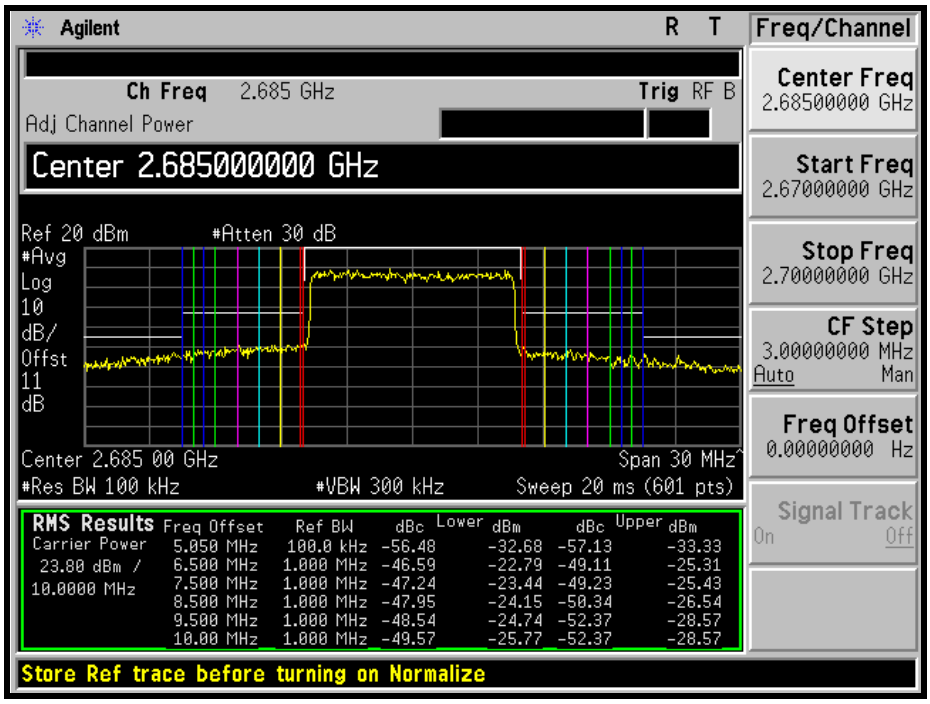
CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
2685	2679.95	-32.68	-32.36	0.001	-29.50	-13	PASS
	2678.5	-22.79	-22.93	0.010	-19.80	-13	PASS
	2677.5	-23.44	-23.49	0.009	-20.50	-13	PASS
	2676.5	-24.15	-24.86	0.007	-21.50	-13	PASS
	2675.5	-24.74	-24.91	0.007	-21.80	-13	PASS
	2675	-25.77	-25.89	0.005	-22.80	-13	PASS
	2674	-26.23	-27.02	0.004	-23.60	-13	PASS
	2673	-28.48	-28.00	0.003	-25.20	-13	PASS
	2672	-29.22	-29.81	0.002	-26.50	-13	PASS
	2671	-30.75	-31.22	0.002	-28.00	-13	PASS

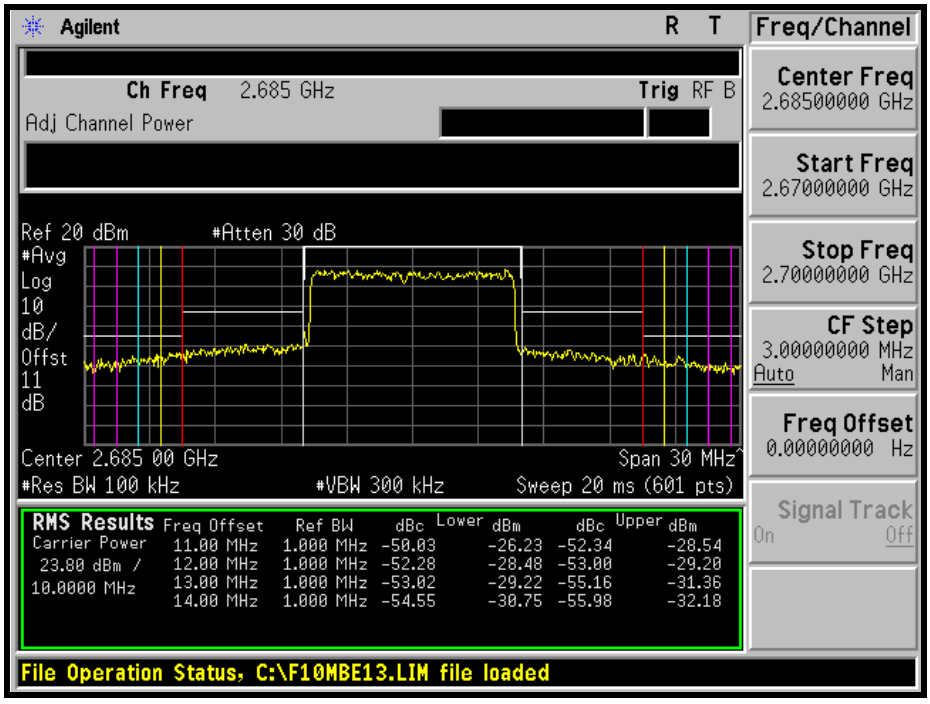
HIGH CHANNEL-RIGHT

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
2685	2690.05	-33.33	-32.21	0.001	-29.70	-13	PASS
	2691.5	-25.31	-24.39	0.007	-21.80	-13	PASS
	2692.5	-25.43	-25.52	0.006	-22.50	-13	PASS
	2693.5	-26.54	-26.19	0.005	-23.40	-13	PASS
	2694.5	-28.57	-28.48	0.003	-25.50	-13	PASS
	2695	-28.57	-27.72	0.003	-25.10	-13	PASS
	2696	-28.54	-28.15	0.003	-25.30	-13	PASS
	2697	-29.20	-28.56	0.003	-25.90	-13	PASS
	2698	-31.36	-31.04	0.002	-28.20	-13	PASS
	2699	-32.18	-31.65	0.001	-28.90	-13	PASS

CHAIN 0

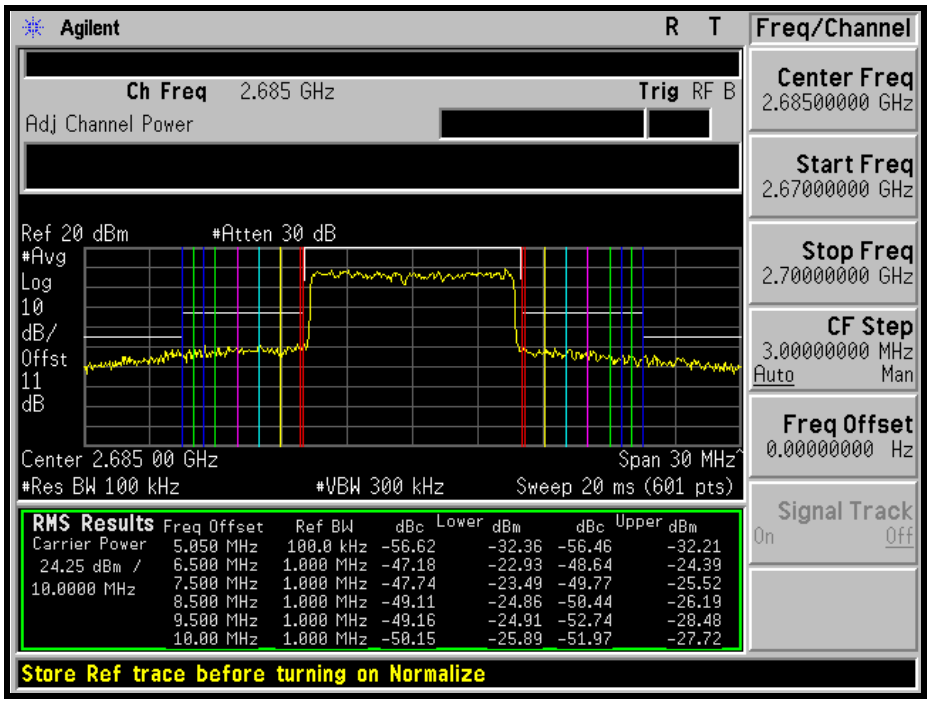
HIGH CHANNEL

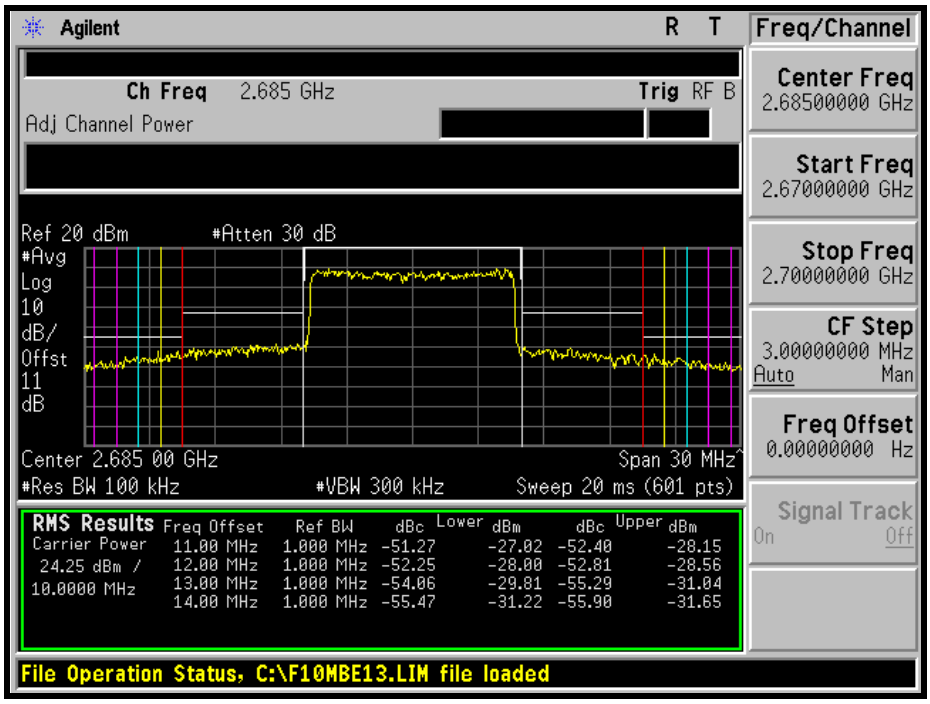




CHAIN 1

HIGH CHANNEL





4.4 CONDUCTED SPURIOUS EMISSIONS

4.4.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

In the FCC 27.53(m)(4), On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 +10 log (P)dB and 55 + 10 log (P) dB at 5.5 MHz from the channel edges.

4.4.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4446A	MY46180622	May 12, 2010	May 11, 2011
HUBER+SUHNER	SUCOFLEX104	22238114	Oct. 30, 2009	Oct. 29, 2010
JFW 10dB attenuation	50HF-010-SMA	N/A	N/A	N/A
Wainwright Instruments High Pass Filter	WHK3.1/18G-10SS	ZZ-010091	N/A	N/A

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

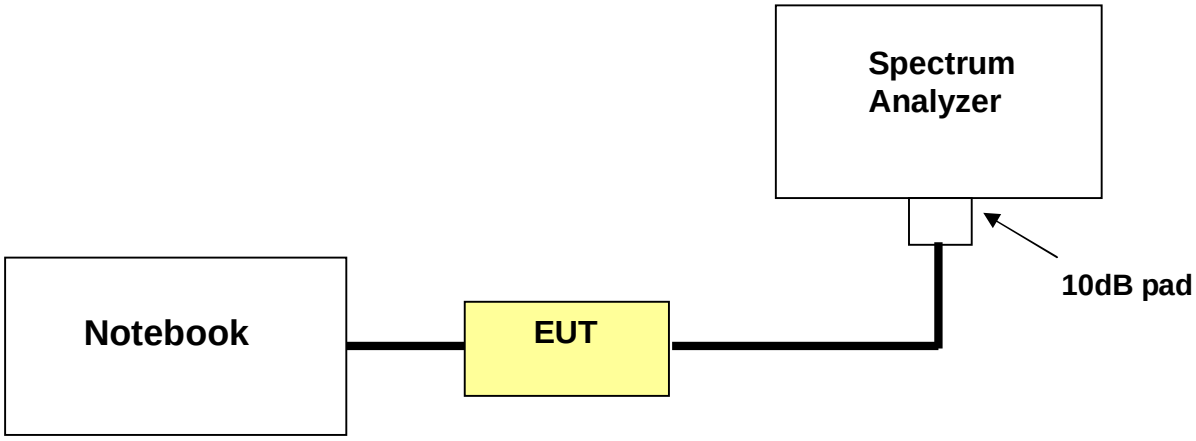
4.4.3 TEST PROCEDURE

a. The EUT was set up for the rated peak power. The power was measured with Spectrum Analyzer. All measurements were done at 3 channels: low, middle and high operational frequency range.

b. When the spectrum scanned from 30MHz to 3GHz, it shall be connected to the 10dB pad attenuated the carried frequency. The spectrum set RB = 1MHz, VB = 3MHz.

c. When the spectrum scanned from 3GHz to 26.5GHz, it shall be connected to the high pass filter attenuated the carried frequency. The spectrum set RB = 1MHz, VB = 3MHz.

4.4.4 TEST SETUP



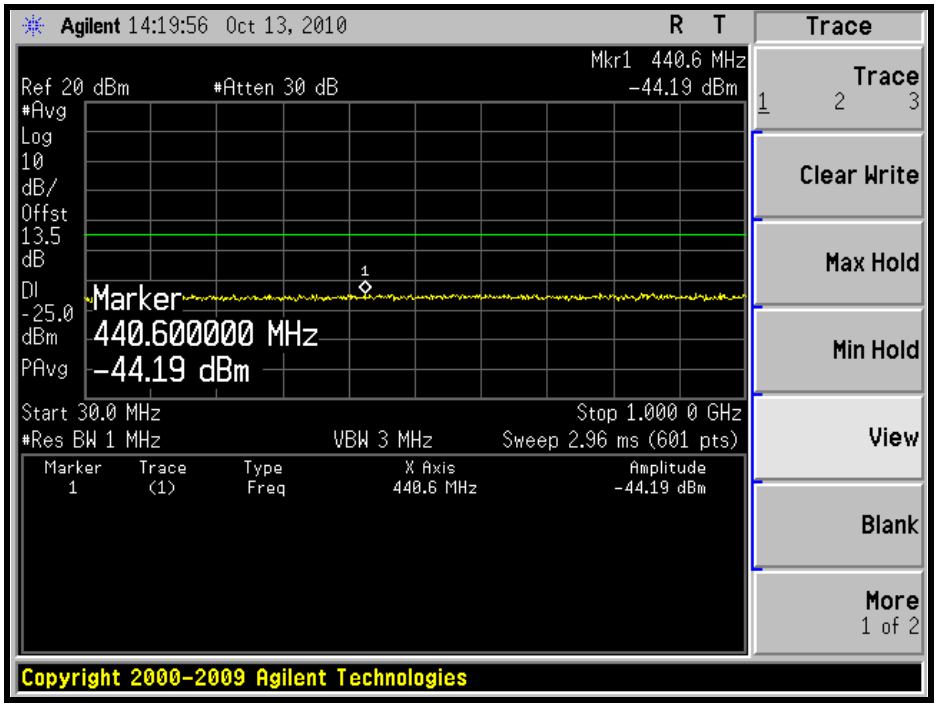
4.4.5 EUT OPERATING CONDITIONS

Same as item 4.1.5

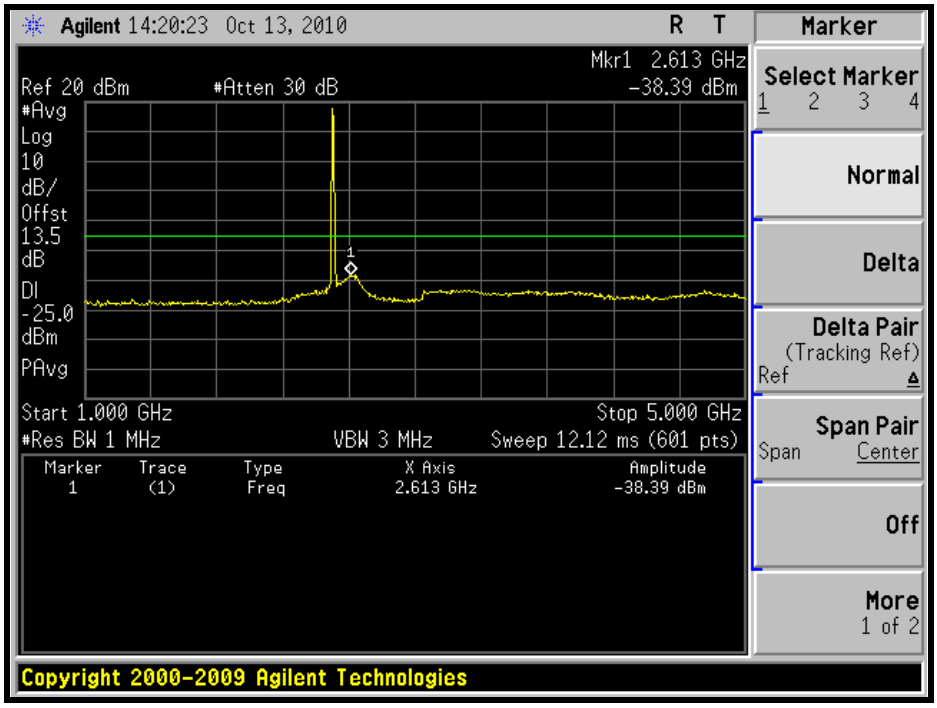
4.4.6 TEST RESULTS

CHANNEL BANDWIDTH: 5MHz

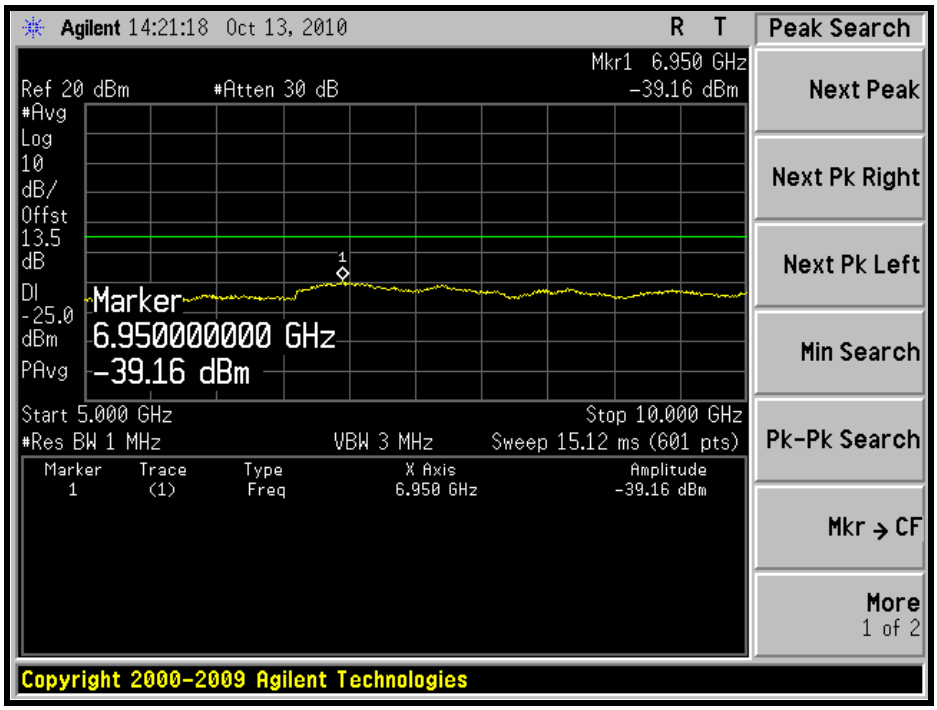
LOW CHANNEL: 30MHz ~ 1GHz:



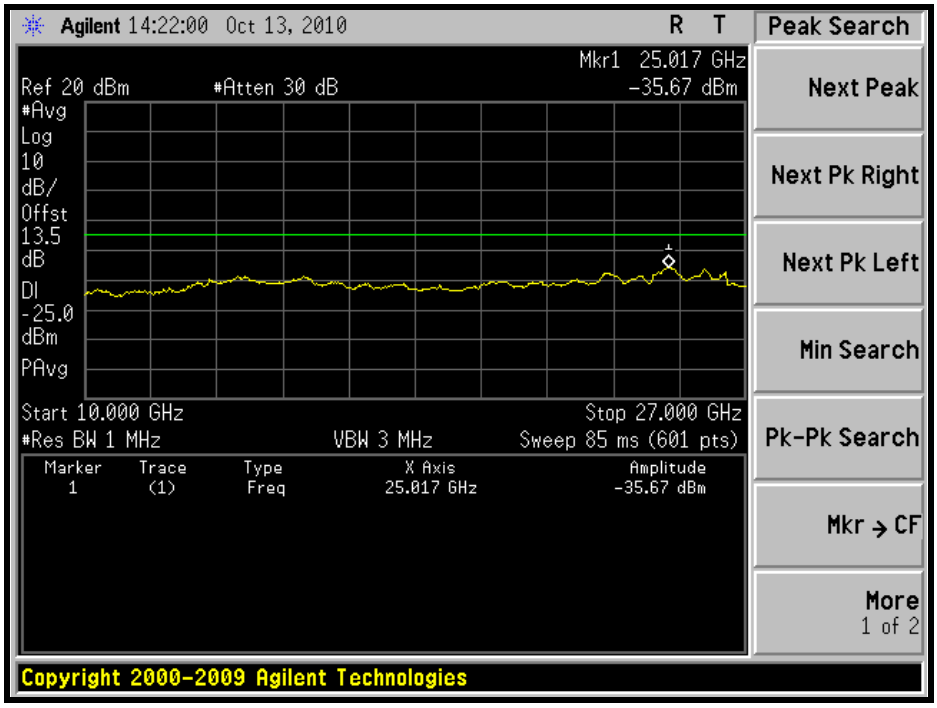
1GHz ~ 5GHz:



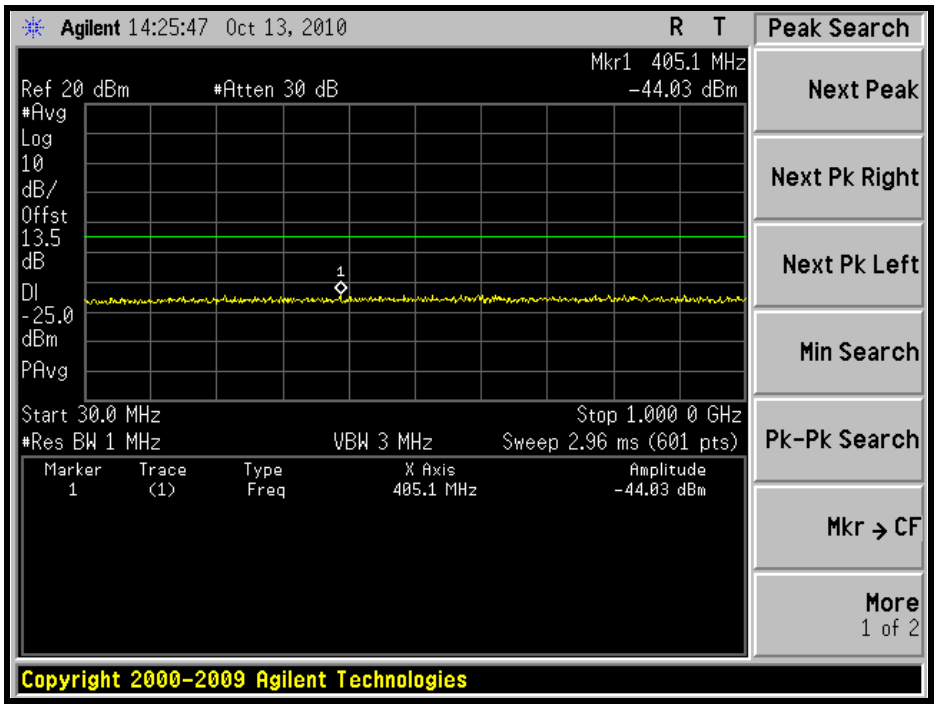
5GHz ~ 10GHz:



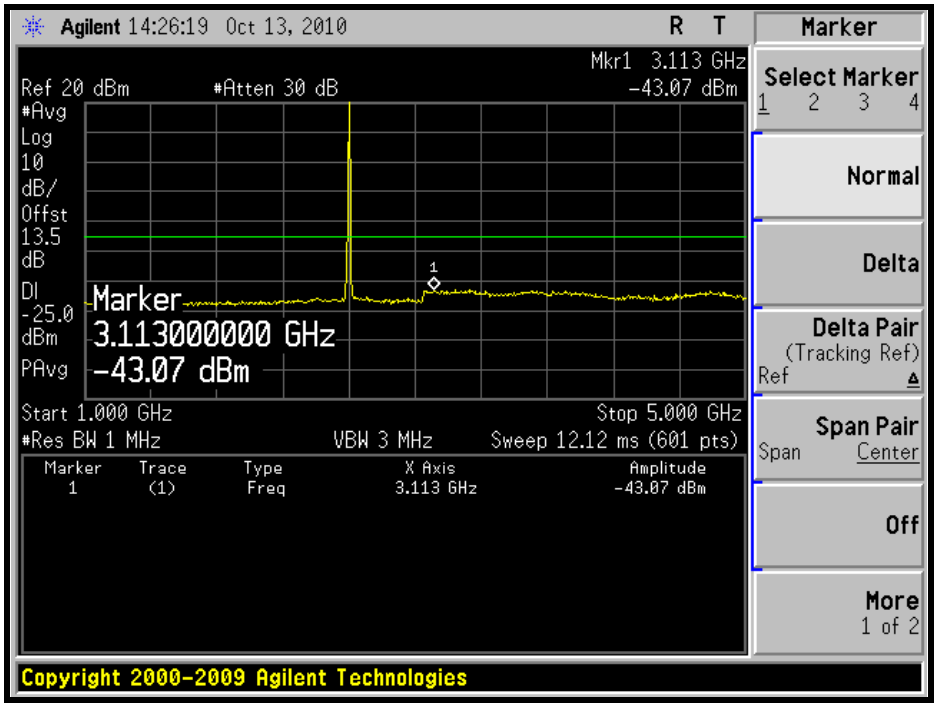
10GHz ~ 27GHz:



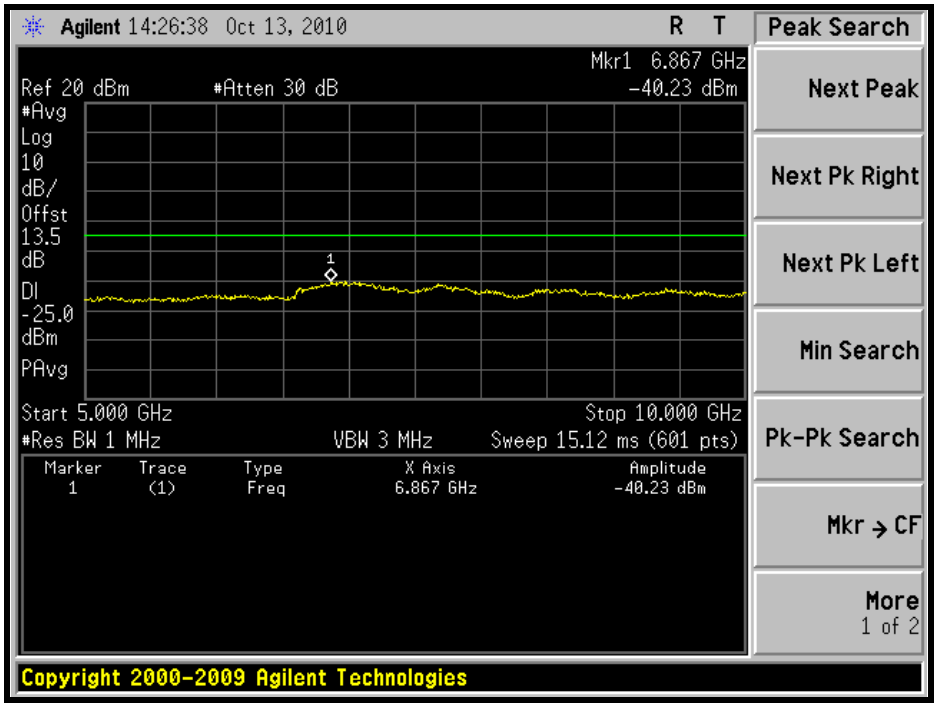
MIDDLE CHANNEL: 30MHz ~ 1GHz:



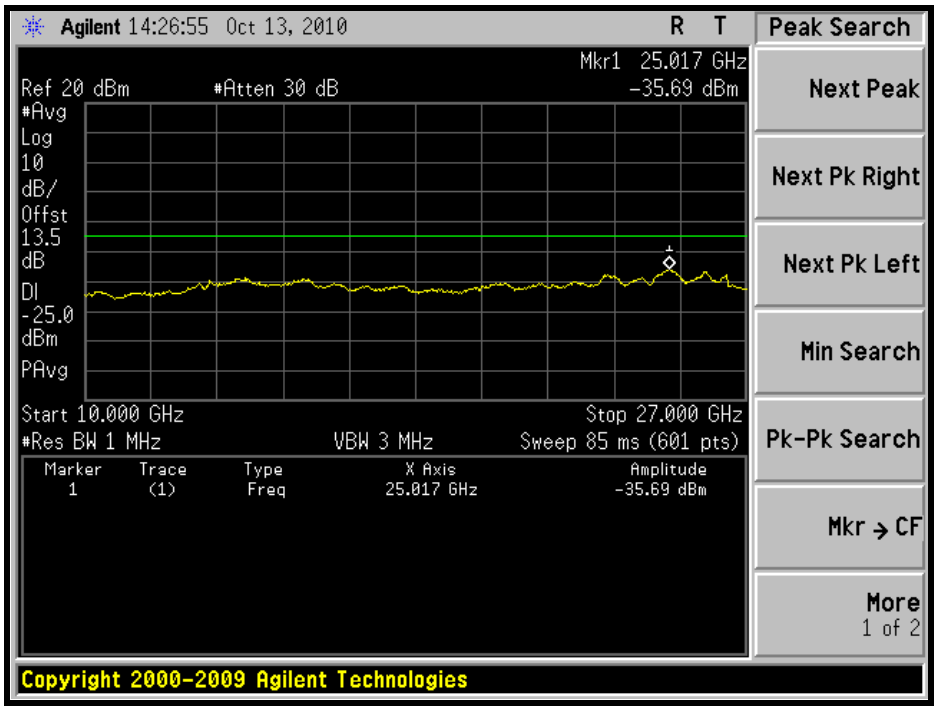
1GHz ~ 5GHz:



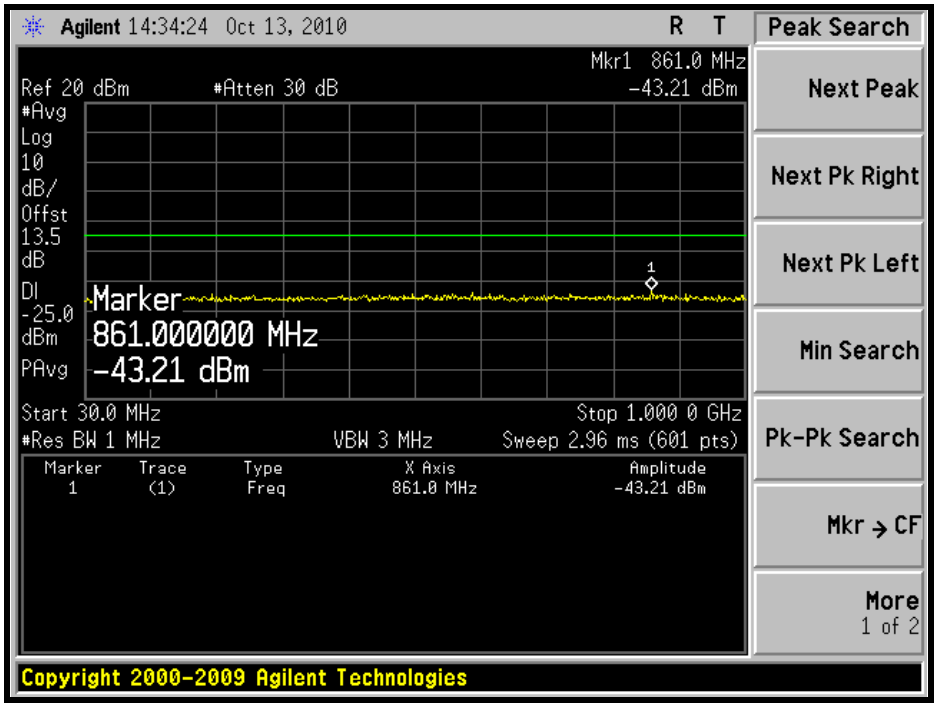
5GHz ~ 10GHz:



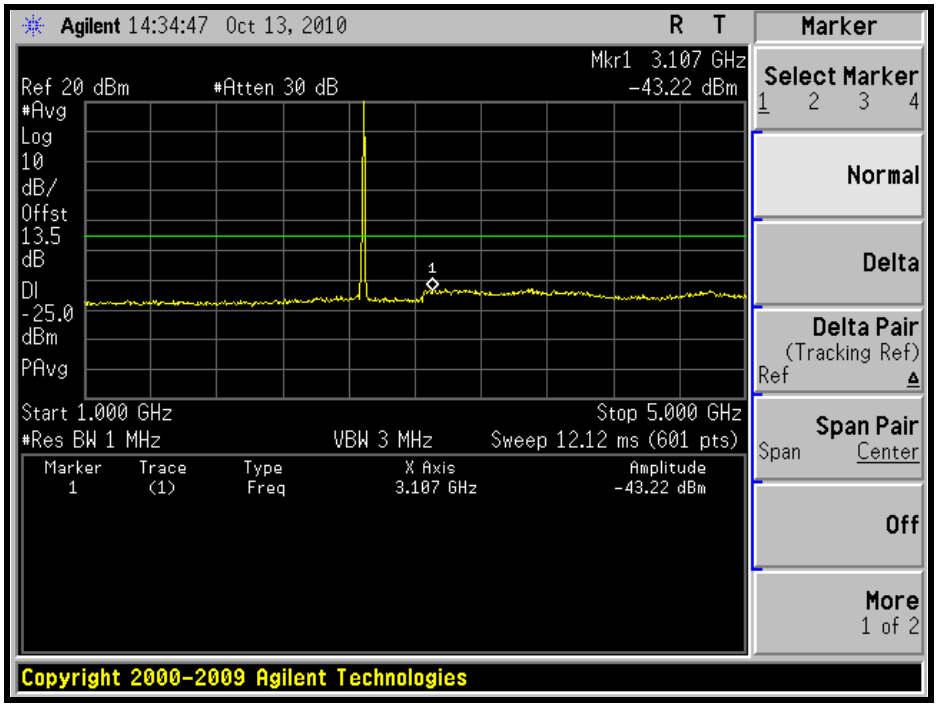
10GHz ~ 27GHz:



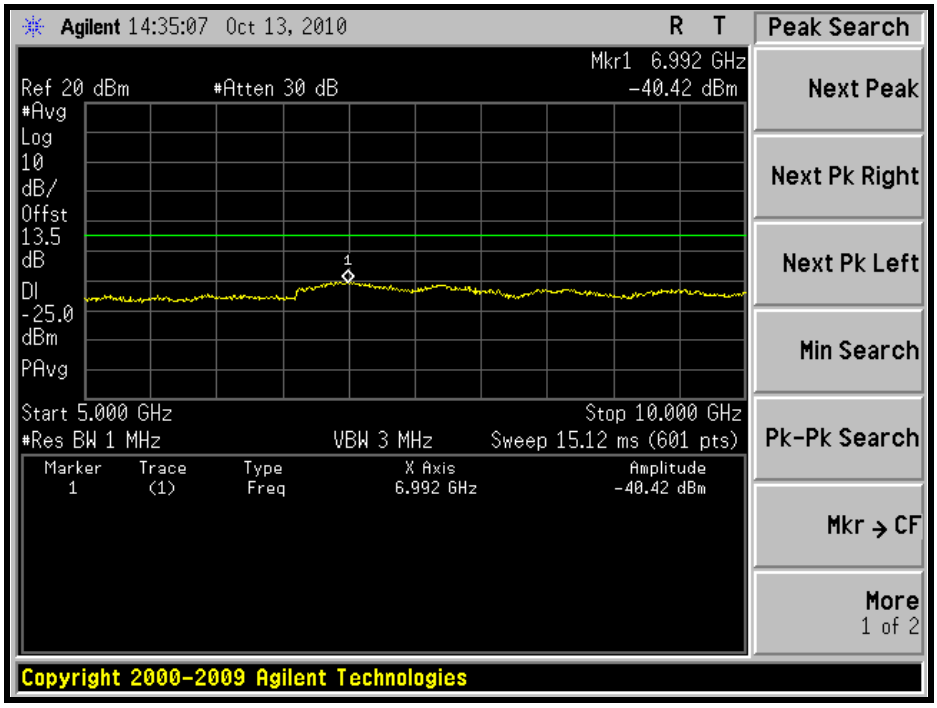
HIGH CHANNEL: 30MHz ~ 1GHz:



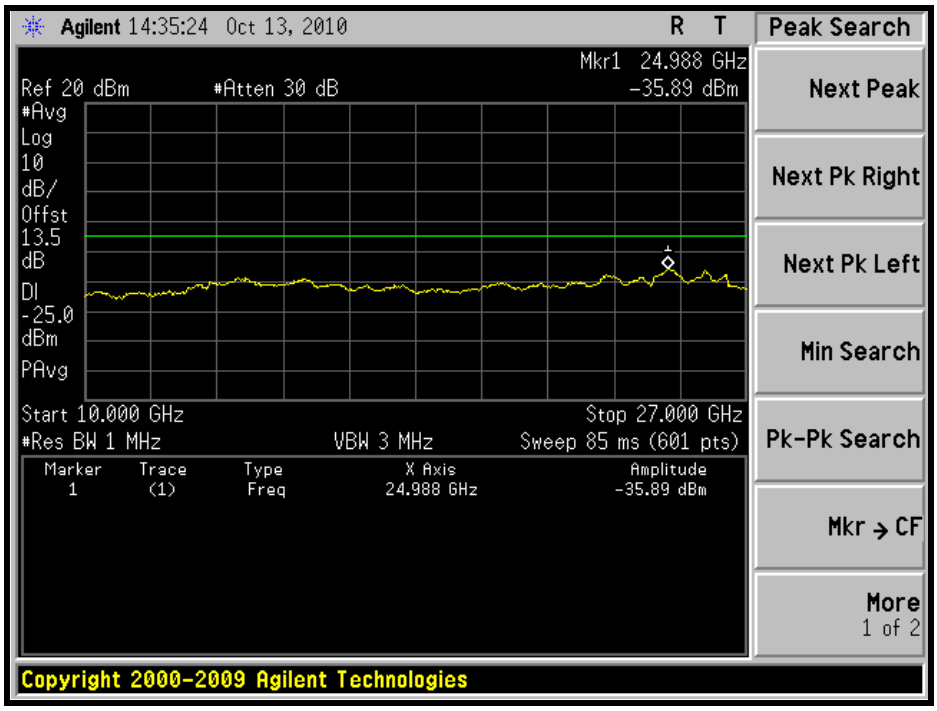
1GHz ~ 5GHz:



5GHz ~ 10GHz:

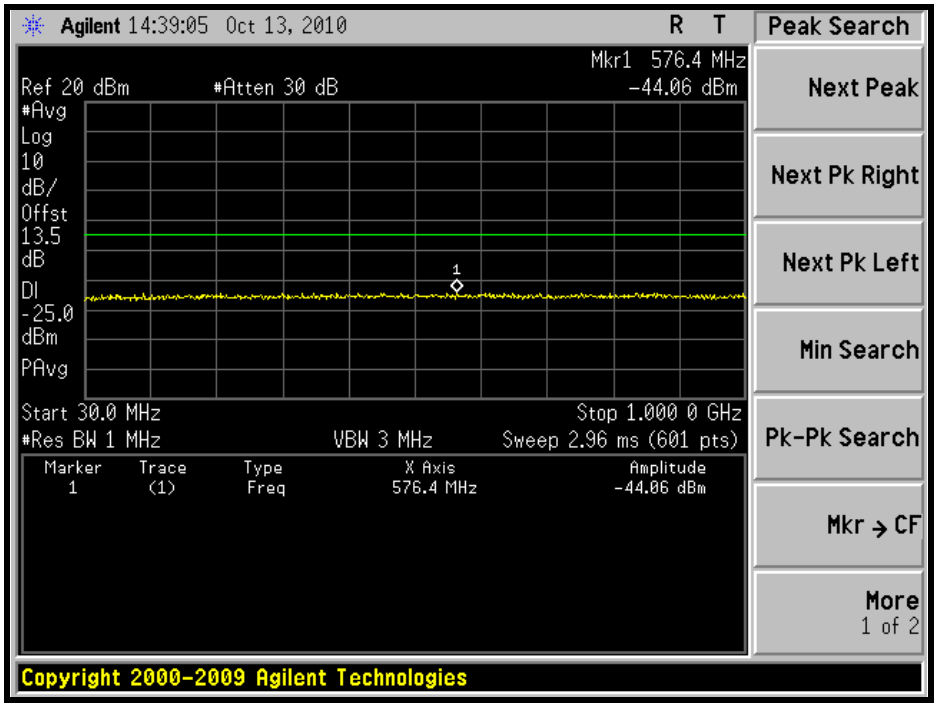


10GHz ~ 27GHz:

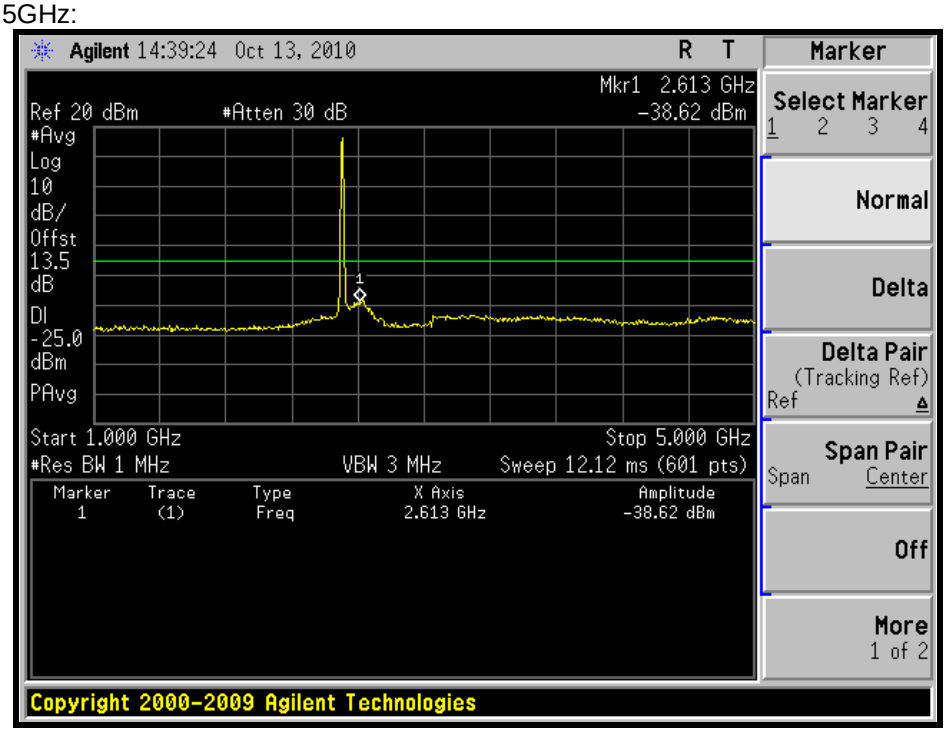


CHANNEL BANDWIDTH: 10MHz

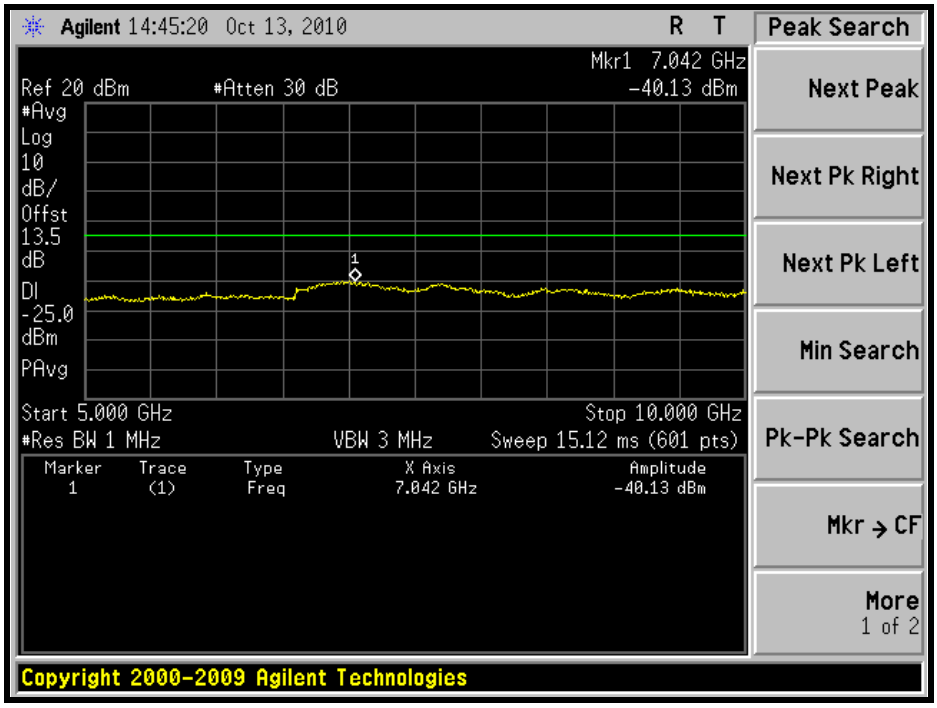
LOW CHANNEL: 30MHz ~ 1GHz:



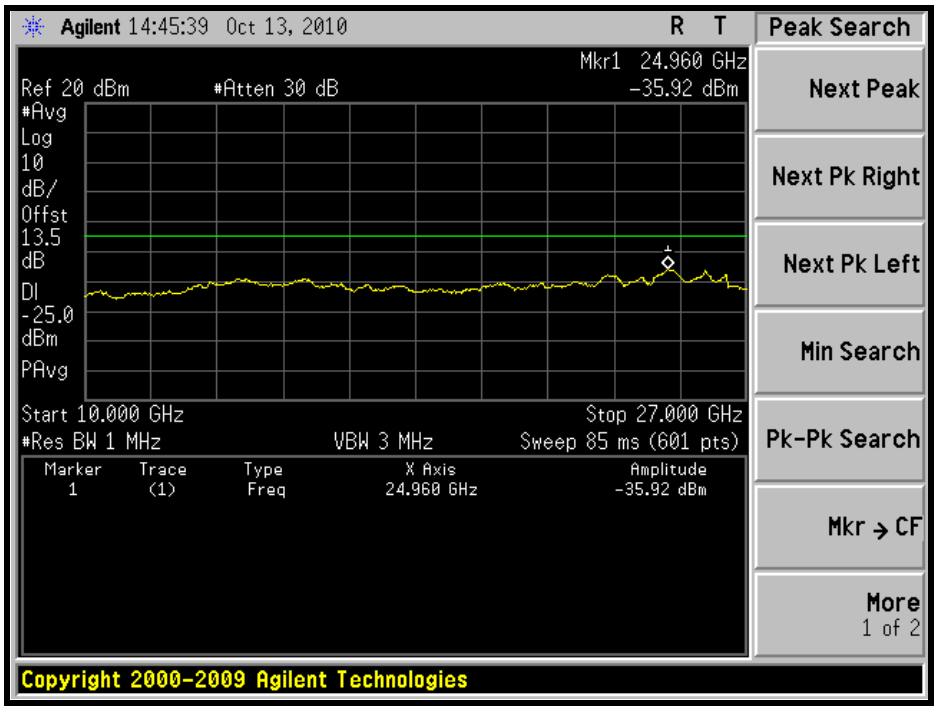
1GHz ~ 5GHz:



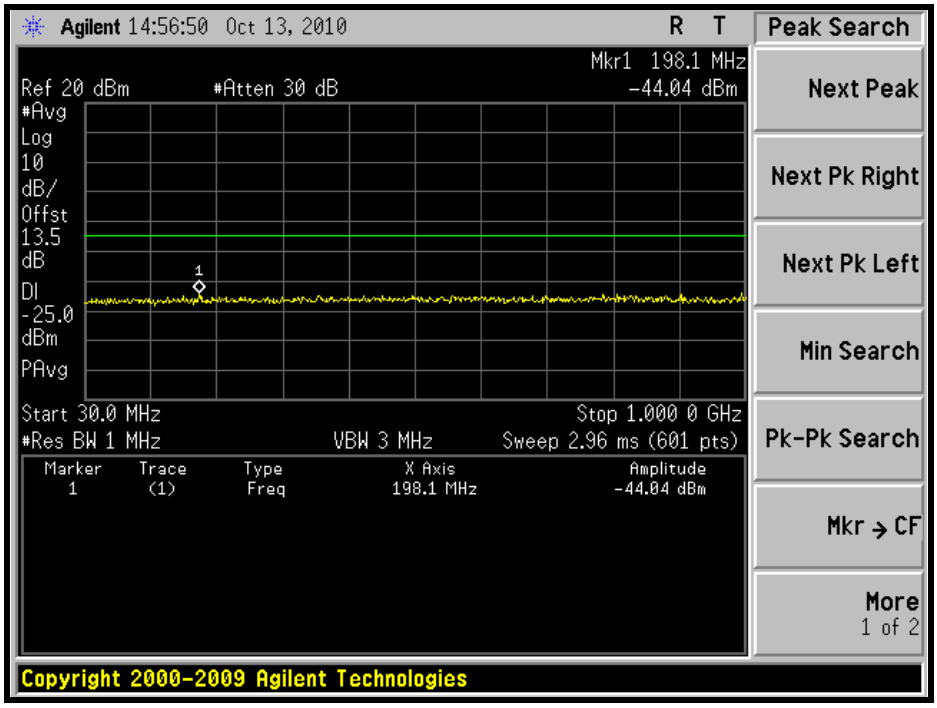
5GHz ~ 10GHz:



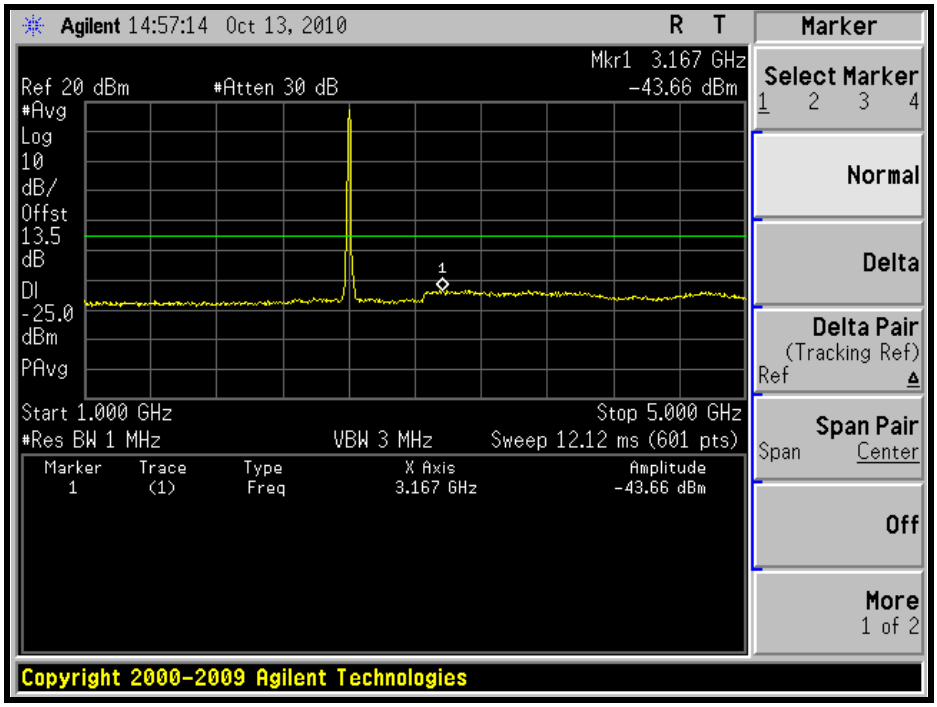
10GHz ~ 27GHz:



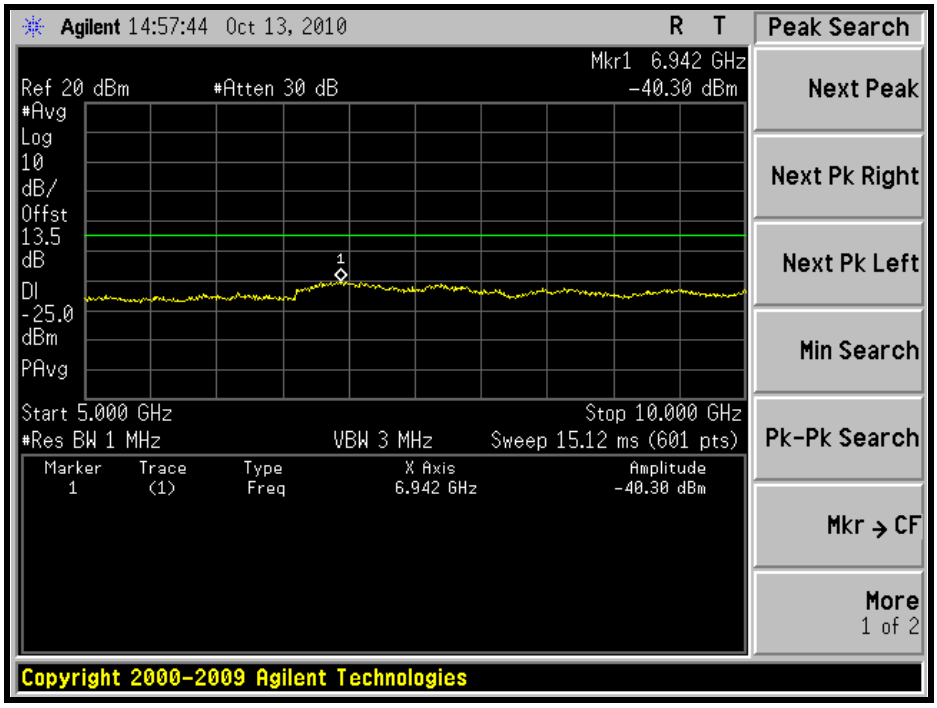
MIDDLE CHANNEL: 30MHz ~ 1GHz:



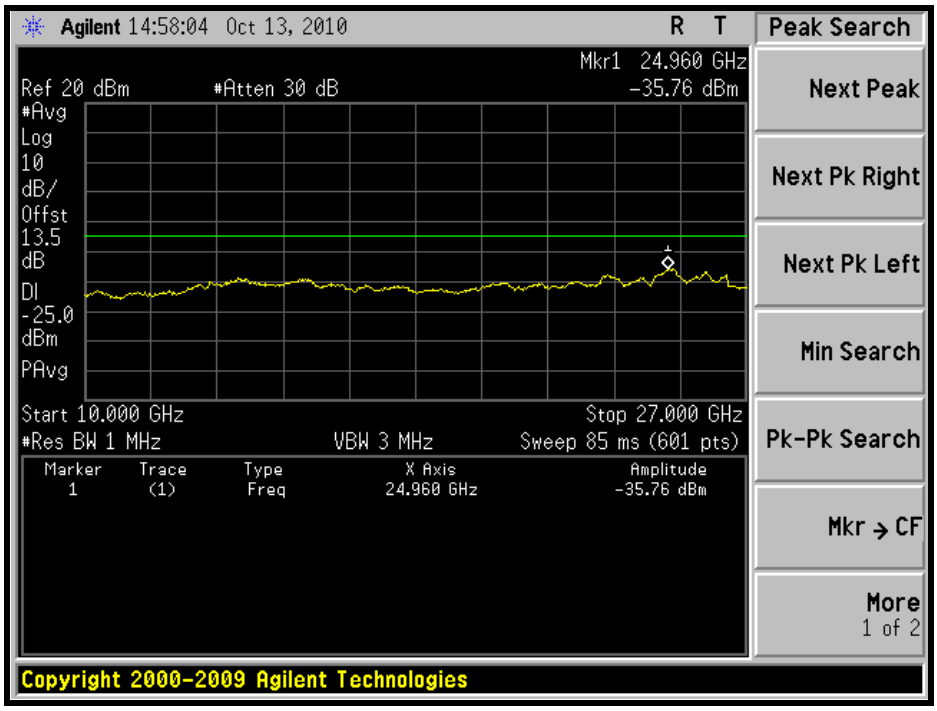
1GHz ~ 5GHz:



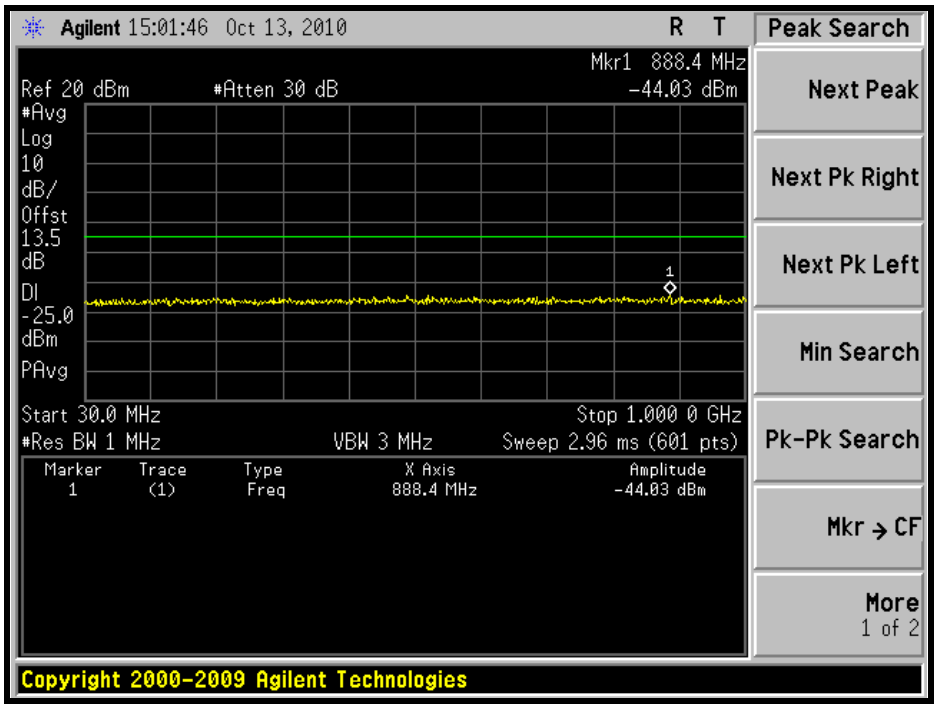
5GHz ~ 10GHz:



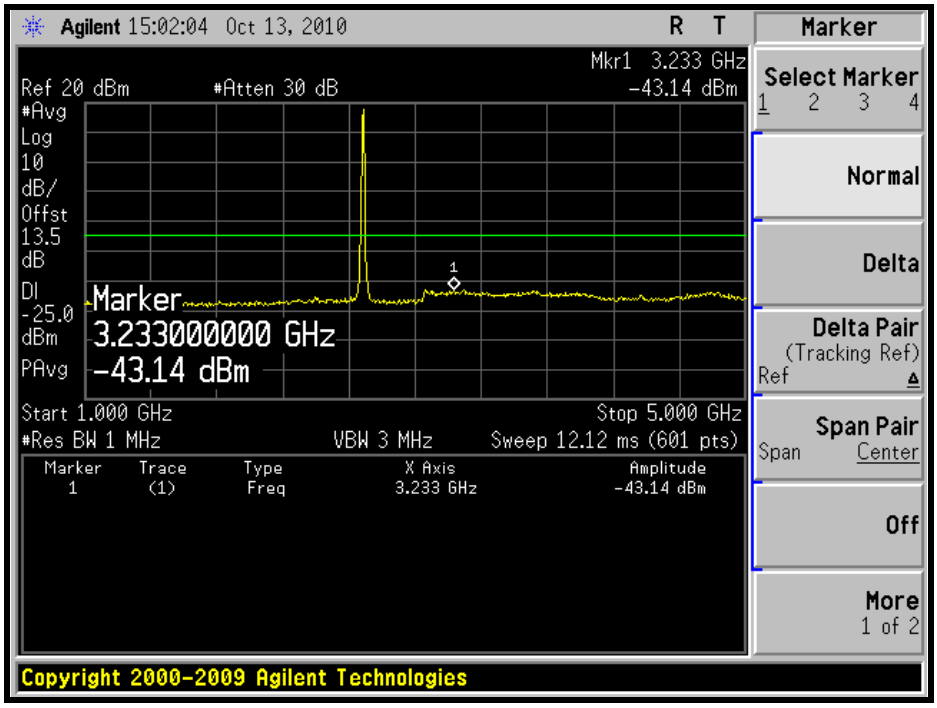
10GHz ~ 27GHz:



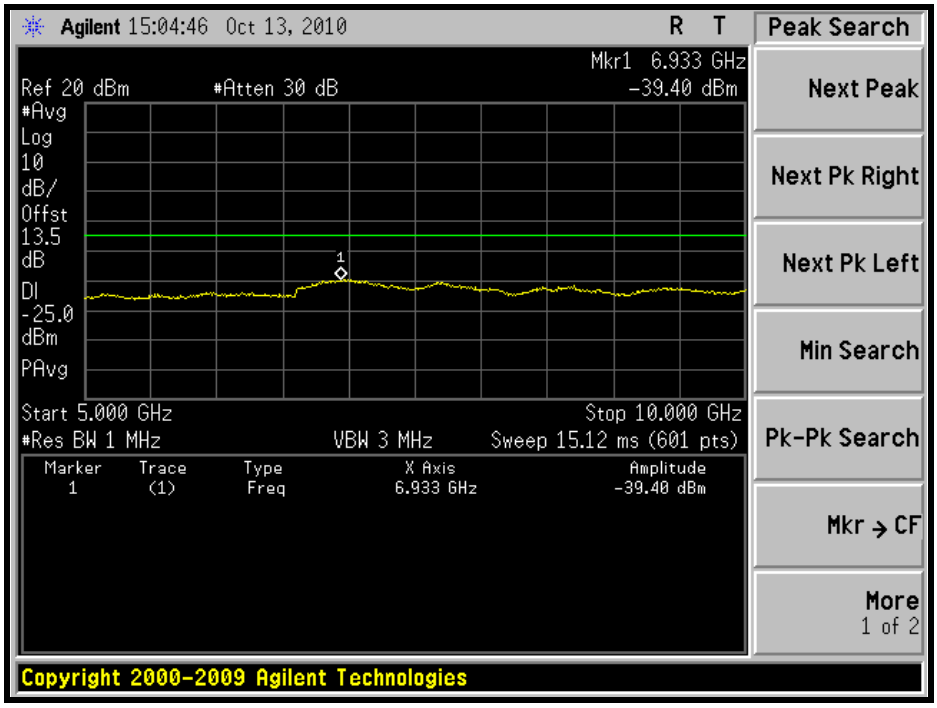
HIGH CHANNEL: 30MHz ~ 1GHz:



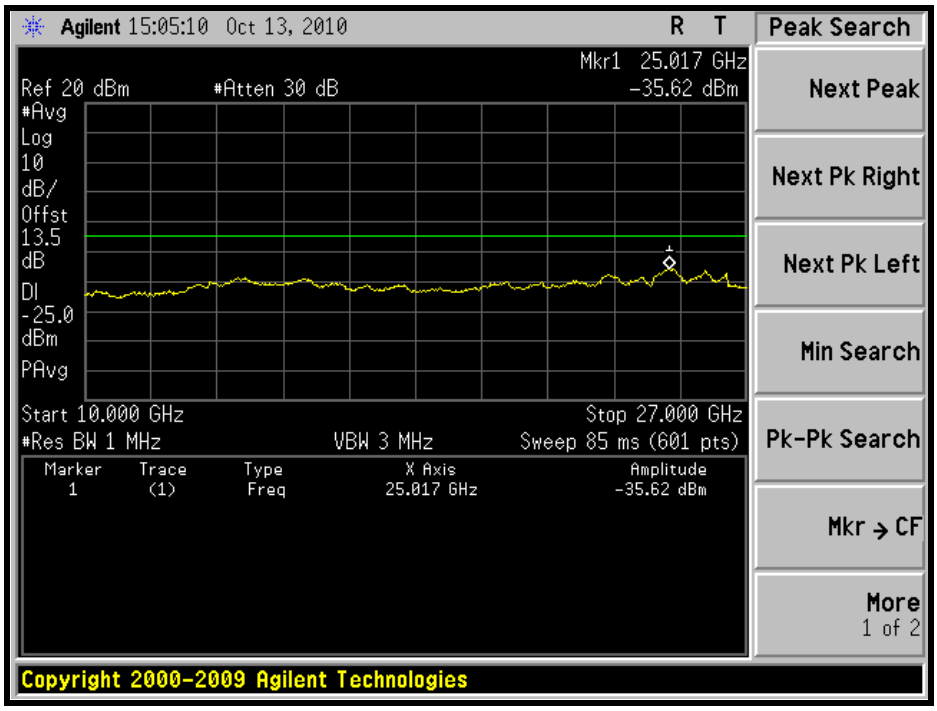
1GHz ~ 5GHz:



5GHz ~ 10GHz:



10GHz ~ 27GHz:



4.5 RADIATED EMISSION MEASUREMENT (BELOW 1GHz)

4.5.1 LIMITS OF RADIATED EMISSION MEASUREMENT

In the FCC 27.53(m) (2), On any frequency outside a licensee's frequency block the power of any emission shall be attenuated below the transmitter power (P) by at least 43 +10 log+10 log (P)dB from the channel edges.

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Spectrum Analyzer	FSP40	100036	Dec. 18, 2009	Dec. 17, 2010
Agilent PSA Spectrum Analyzer	E4446A	MY46180622	May 12 , 2010	May 11 , 2011
HP Pre_Amplifier	8449B	300801923	Nov. 02, 2009	Nov. 01, 2010
ROHDE & SCHWARZ Test Receiver	ESCS30	847124/029	Sep. 03, 2010	Sep. 02, 2011
SCHWARZBECK TRILOG Broadband Antenna	VULB 9168	138	Apr. 28, 2010	Apr. 27, 2011
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 18, 2009	Dec. 17, 2010
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 22, 2010	Jan. 21, 2011
RF Switches	EMH-011	1001	NA	NA
RF CABLE (Chaintek)	Sucoflex 104+ Sucoflex 106	RF104-101+R F106-101	Aug. 24, 2010	Aug. 23, 2011
RF Cable	8DFB	STCCAB-30M-1GHz	NA	NA
Software	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
CT Antenna Tower & Turn Table	NA	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna, preamplifier (model: 8449B) and Spectrum Analyzer (model: FSP40) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in Open Site No. C.
4. The FCC Site Registration No. is 656396.
5. The VCCI Site Registration No. is R-1626.
6. The CANADA Site Registration No. is IC 7450G-3.

4.5.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the receiving antenna, which was mounted on antenna tower and its position at 0.8 m above the ground.

c. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading and recorded the value.

d. The EUT is replaced by a horn antenna connected to a signal generator tuned to the frequency of emission.

e. The signal generator level has to be adjusted to have the same emission nature.

f. The radiated power can be calculated via the factor and antenna gain.

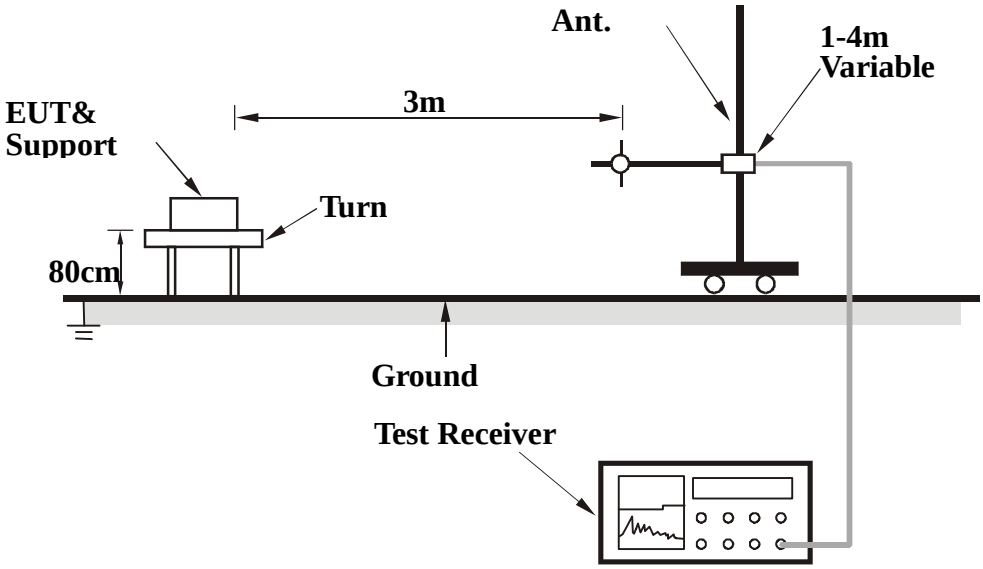
g. Repeat step a ~ f for horizontal polarization.

NOTE: The resolution bandwidth of spectrum analyzer is 1MHz and the video bandwidth is 3MHz.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.5.6 EUT OPERATING CONDITIONS

Same as item 4.1.5

4.5.7 TEST RESULTS

CHANNEL BANDWIDTH: 5MHz

MODE	low channel	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	20deg°C, 60%RH 1011hPa
TESTED BY	Phoenix Huang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M						
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBm)	S.G level (dBm)	C.F. (dB)	Power level (dBm)
1	134.5	27.3	-25	-65.45	-1.28	-66.72
2	145.6	28.1	-25	-64.23	-1.14	-65.37
3	166	27	-25	-62.88	0.17	-62.71
4	196	28.5	-25	-66.65	3.91	-62.74
5	216	25	-25	-70.44	4.13	-66.31
6	441	33.1	-25	-65.08	2.90	-62.18

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M						
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBm)	S.G level (dBm)	C.F. (dB)	Power level (dBm)
1	51.1	33.4	-25	-46.82	-9.50	-56.31
2	69.4	32	-25	-55.76	-4.85	-60.61
3	86.7	31.7	-25	-61.26	-1.39	-62.65
4	135.8	35.3	-25	-57.73	-1.28	-59.01
5	181.6	31.8	-25	-62.13	2.36	-59.77
6	228.3	29.5	-25	-66.31	3.72	-62.59

REMARKS: 1. Power Value(dBm)=S.G Power Value (dBm) + Correction Factor(dB)

CHANNEL BANDWIDTH: 10MHz

MODE	High channel	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	20deg°C, 60%RH 1011hPa
TESTED BY	Phoenix Huang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M						
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBm)	S.G level (dBm)	C.F. (dB)	Power level (dBm)
1	134.5	26.8	-25	-65.95	-1.28	-67.22
2	145.6	28.4	-25	-63.93	-1.14	-65.07
3	166	25.6	-25	-64.28	0.17	-64.11
4	196	28.6	-25	-66.55	3.91	-62.64
5	216	26.4	-25	-69.04	4.13	-64.91
6	441	34.2	-25	-63.98	2.90	-61.08

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M						
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBm)	S.G level (dBm)	C.F. (dB)	Power level (dBm)
1	51.1	32.8	-25	-47.42	-9.50	-56.91
2	69.4	32.3	-25	-55.46	-4.85	-60.31
3	86.7	31.7	-25	-61.26	-1.39	-62.65
4	135.8	35.7	-25	-57.33	-1.28	-58.61
5	181.6	30.5	-25	-63.43	2.36	-61.07
6	228.3	29.3	-25	-66.51	3.72	-62.79
7	433.1	35.7	-25	-62.42	2.98	-59.43

REMARKS: 1. Power Value(dBm)=S.G Power Value (dBm) + Correction Factor(dB)

4.6 RADIATED EMISSION MEASUREMENT (ABOVE 1GHz)

4.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

In the FCC 27.53(m) (2), On any frequency outside a licensee's frequency block the power of any emission shall be attenuated below the transmitter power (P) by at least 43 +10 log+10 log (P)dB from the channel edges.

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Spectrum Analyzer	FSP40	100036	Dec. 18, 2009	Dec. 17, 2010
Agilent PSA Spectrum Analyzer	E4446A	MY46180622	May 12 , 2010	May 11 , 2011
HP Pre_Amplifier	8449B	300801923	Nov. 02, 2009	Nov. 01, 2010
ROHDE & SCHWARZ Test Receiver	ESCS30	847124/029	Sep. 03, 2010	Sep. 02, 2011
SCHWARZBECK TRILOG Broadband Antenna	VULB 9168	138	Apr. 28, 2010	Apr. 27, 2011
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 18, 2009	Dec. 17, 2010
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 22, 2010	Jan. 21, 2011
RF Switches	EMH-011	1001	NA	NA
RF CABLE (Chaintek)	Sucoflex 104+ Sucoflex 106	RF104-101+RF106-101	Aug. 24, 2010	Aug. 23, 2011
RF Cable	8DFB	STCCAB-30M-1GHz	NA	NA
Software	ADT_Radiated_V7.6.15.9.2	NA	NA	NA
CT Antenna Tower & Turn Table	NA	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna, preamplifier (model: 8449B) and Spectrum Analyzer (model: FSP40) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in Open Site No. C.
4. The FCC Site Registration No. is 656396.
5. The VCCI Site Registration No. is R-1626.
6. The CANADA Site Registration No. is IC 7450G-3.

4.6.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the receiving antenna, which was mounted on antenna tower and its position at 0.8 m above the ground.

c. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading and recorded the value.

d. The EUT is replaced by a horn antenna connected to a signal generator tuned to the frequency of emission.

e. The signal generator level has to be adjusted to have the same emission nature.

f. The radiated power can be calculated via the factor and antenna gain.

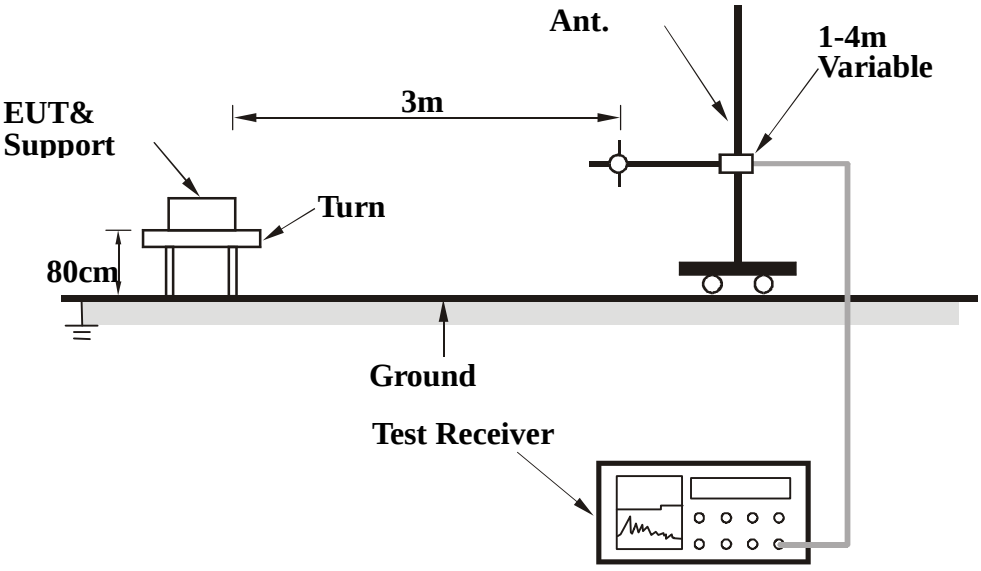
g. Repeat step a ~ f for horizontal polarization.

NOTE: The resolution bandwidth of spectrum analyzer is 1MHz and the video bandwidth is 3MHz.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.6.6 EUT OPERATING CONDITIONS

Same as item 4.1.5

4.6.7 TEST RESULTS

CHANNEL BANDWIDTH: 5MHz

MODE	Low channel	**FREQUENCY RANGE**	Above 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	20deg°C, 60%RH 1011hPa
TESTED BY	Phoenix Huang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M						
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBm)	S.G level (dBm)	C.F. (dB)	Power level (dBm)
1	5005	58.42	-25	-45.82	7.01	-38.81
2	7507.5	63.8	-25	-38.82	4.54	-34.28
3	10010	59.8	-25	-41.77	4.03	-37.74

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M						
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBm)	S.G level (dBm)	C.F. (dB)	Power level (dBm)
1	5005	60.83	-25	-43.41	7.01	-36.40
2	7507.5	66.5	-25	-36.12	4.54	-31.58
3	10010	59.6	-25	-41.97	4.03	-37.94

REMARKS: 1. Power Value(dBm)=S.G Power Value (dBm) + Correction Factor(dB)

MODE	Middle channel	**FREQUENCY RANGE**	Above 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	20deg°C, 60%RH 1011hPa
TESTED BY	Phoenix Huang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M						
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBm)	S.G level (dBm)	C.F. (dB)	Power level (dBm)
1	5200	61.8	-25	-42.73	7.05	-35.68
2	7800	61	-25	-41.62	4.29	-37.33
3	10400	61.2	-25	-40.81	3.66	-37.14

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M						
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBm)	S.G level (dBm)	C.F. (dB)	Power level (dBm)
1	5200	58.2	-25	-46.33	7.05	-39.28
2	7800	61.45	-25	-41.17	4.29	-36.88
3	10400	59.83	-25	-42.18	3.66	-38.51

REMARKS: 1. Power Value(dBm)=S.G Power Value (dBm) + Correction Factor(dB)

MODE	High channel	**FREQUENCY RANGE**	Above 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	20deg^{o}C, 60%RH 1011hPa
TESTED BY	Phoenix Huang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBm)	S.G level (dBm)	C.F. (dB)	Power level (dBm)
1	5375	64.52	-25	-40.27	7.09	-33.18
2	8062.5	64.2	-25	-38.42	4.13	-34.29
3	10750	60	-25	-41.84	3.33	-38.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBm)	S.G level (dBm)	C.F. (dB)	Power level (dBm)
1	5375	58.6	-25	-46.19	7.09	-39.10
2	8062.5	60.3	-25	-42.32	4.13	-38.19
3	10750	60.6	-25	-41.24	3.33	-37.90

REMARKS: 1. Power Value(dBm)=S.G Power Value (dBm) + Correction Factor(dB)

CHANNEL BANDWIDTH: 10MHz

MODE	Low channel	**FREQUENCY RANGE**	Above 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	20deg°C, 60%RH 1011hPa
TESTED BY	Phoenix Huang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M						
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBm)	S.G level (dBm)	C.F. (dB)	Power level (dBm)
1	5010	56.21	-25	-48.04	7.01	-41.02
2	7515	59.1	-25	-43.52	4.53	-38.99
3	10020	59.92	-25	-41.66	4.02	-37.64

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M						
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBm)	S.G level (dBm)	C.F. (dB)	Power level (dBm)
1	5010	57.9	-25	-46.35	7.01	-39.33
2	7515	62.8	-25	-39.82	4.53	-35.29
3	10020	59.74	-25	-41.84	4.02	-37.82

REMARKS: 1. Power Value(dBm)=S.G Power Value (dBm) + Correction Factor(dB)

MODE	Middle channel	**FREQUENCY RANGE**	Above 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	20deg°C, 60%RH 1011hPa
TESTED BY	Phoenix Huang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M						
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBm)	S.G level (dBm)	C.F. (dB)	Power level (dBm)
1	5200	59.3	-25	-45.23	7.05	-38.18
2	7800	59.1	-25	-43.52	4.29	-39.23
3	10400	60.24	-25	-41.77	3.66	-38.10

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M						
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBm)	S.G level (dBm)	C.F. (dB)	Power level (dBm)
1	5200	54.7	-25	-49.83	7.05	-42.78
2	7800	58.3	-25	-44.32	4.29	-40.03
3	10400	59.96	-25	-42.05	3.66	-38.38

REMARKS: 1. Power Value(dBm)=S.G Power Value (dBm) + Correction Factor(dB)

MODE	High channel	**FREQUENCY RANGE**	Above 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	20deg°C, 60%RH 1011hPa
TESTED BY	Phoenix Huang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M						
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBm)	S.G level (dBm)	C.F. (dB)	Power level (dBm)
1	5370	62.1	-25	-42.69	7.09	-35.59
2	8055	61.5	-25	-41.12	4.13	-36.99
3	10740	60.3	-25	-41.55	3.34	-38.21

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M						
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBm)	S.G level (dBm)	C.F. (dB)	Power level (dBm)
1	5370	56.7	-25	-48.09	7.09	-40.99
2	8055	57.35	-25	-45.27	4.13	-41.14
3	10740	60.65	-25	-41.20	3.34	-37.86

REMARKS: 1. Power Value(dBm)=S.G Power Value (dBm) + Correction Factor(dB)

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

6 INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025:

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5/phtml.
If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab:
Tel: 886-3-3183232
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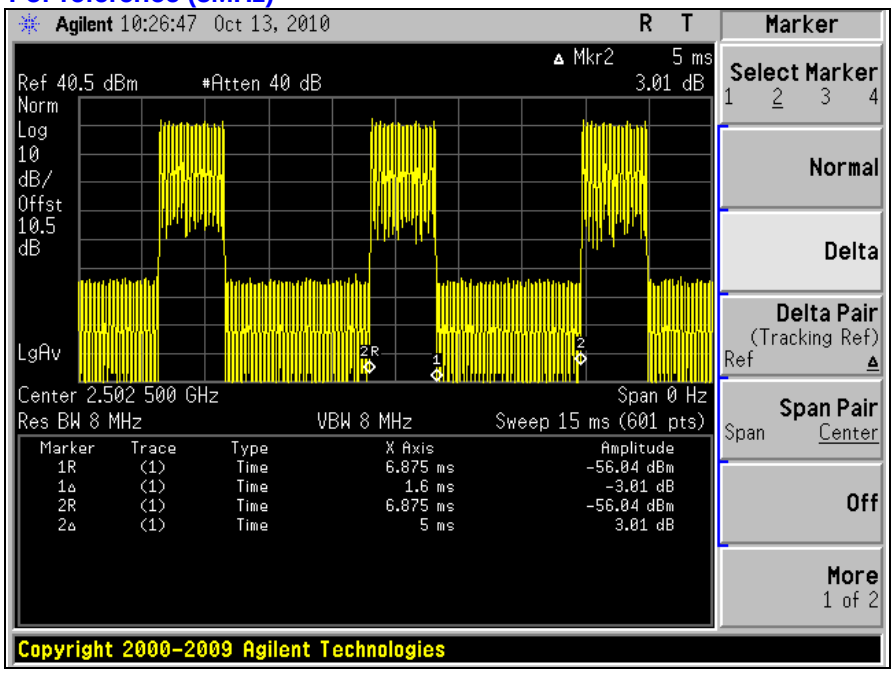
Email: service@adt.com.tw
Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.

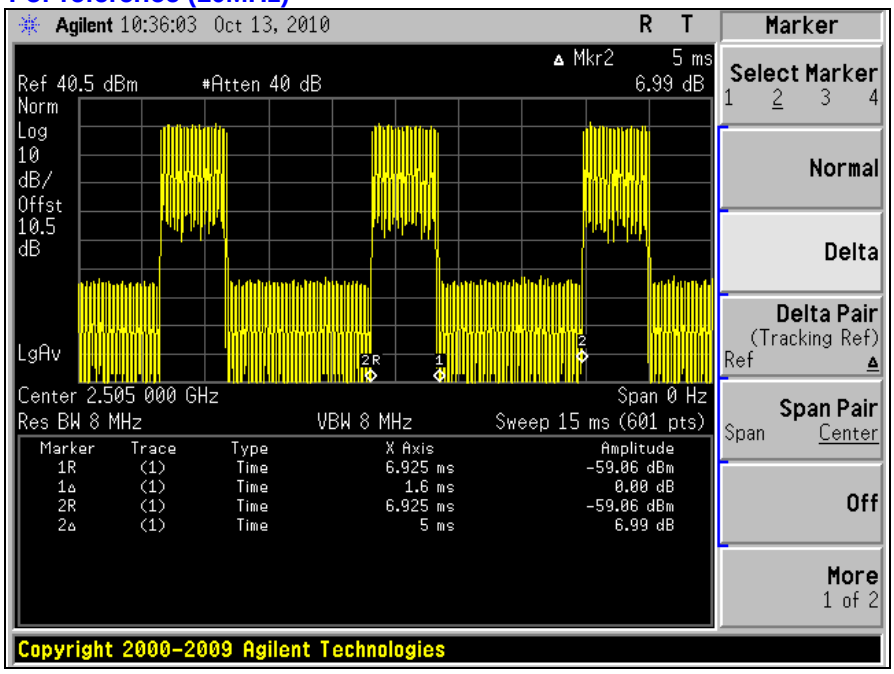
7 APPENDIX - A DL/UL RATION FOR TEST

For reference (5MHz)



Ratio = (1.6/5)*% = 32%

For reference (10MHz)



Ratio = (1.6/5)*% = 32%

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