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FCC TEST REPORT (WLAN - 15.247)

REPORT NO.: RF990809E03-1 R2

MODEL NO.: MC9190

FCC ID: UZ7MC9190

RECEIVED: Aug. 09, 2010

TESTED: Aug. 11 to 26, 2010 & Sep. 30 to Nov. 17, 2010

ISSUED: Dec. 13, 2010

APPLICANT: Motorola Inc.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
Original release	NA	Dec. 01, 2010
RF990809E03-1 R1	<ol style="list-style-type: none">1. Add addition note at item 4.3.3, 4.4.3, 4.5.3, 4.6.3, 5.3.3, 5.4.3, 5.5.3 & 5.6.3.2. For Antenna Port Conducted Measurement: Add plots of all tested channels.3. For maximum peak output power: Add supplement note of channel 12 and 13.	Dec. 08, 2010
RF990809E03-1 R2	<ol style="list-style-type: none">1. Add standard : ANSI C63.10-20092. Modified note of item 4.3.3, 4.4.3, 4.5.3, 4.6.3, 5.3.3, 5.4.3, 5.5.3 & 5.6.3.3. Modified the test sample of item 1: From ENGINEERING SAMPLE to MASS PRODUCTION	Dec. 13, 2010



1. CERTIFICATION

PRODUCT: Mobile Computer

BRAND: MOTOROLA

MODEL NO.: MC9190

TEST SAMPLE: MASS PRODUCTION

TESTED: Aug. 11 to 26, 2010 & Sep. 30 to Nov. 17, 2010

APPLICANT: Motorola Inc.

STANDARDS: FCC Part 15, Subpart C (Section 15.247)

ANSI C63.4-2003

ANSI C63.10-2009

The above equipment (Model: MC9190) 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.

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(Sunny Wen, Specialist)

**TECHNICAL
ACCEPTANCE** : Hank Chung , **DATE:** Dec 13, 2010
(Hank Chung, Deputy Manager)

APPROVED BY : May Chen , **DATE:** Dec 13, 2010
(May Chen, Deputy Manager)



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2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

For 802.11b & g, 2412~2472MHz Band

APPLIED STANDARD: FCC Part 15, Subpart C (Section 15.247)			
Standard Section	Test Type and Limit	Result	Remark
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -13.88dB at 0.201MHz
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit.
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit.
15.247(d)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -3.05dB at 74.60MHz
15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(d)	Conducted Out-Band Emission Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is IPX connector.



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For 802.11a, 5725~5850MHz Band

APPLIED STANDARD: FCC Part 15, Subpart C (Section 15.247)			
Standard Section	Test Type and Limit	Result	Remark
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -13.88dB at 0.201MHz
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit.
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit.
15.247(d)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -3.22dB at 74.60MHz
15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(d)	Conducted Out-Band Emission Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is IPX connector.

NOTE:

1. The EUT was operating in 2400 ~ 2483.5MHz, 5.15~5.35GHz, 5.47~5.725GHz and 5.725~5.850GHz frequencies band. This report was recorded the RF parameters including 2400 ~ 2483.5MHz and 5.725~5.850GHz. For the 5.15~5.35GHz and 5.47~5.725GHz RF parameters was recorded in another test report.



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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
Conducted emissions	2.45 dB
Radiated emissions (30MHz-1GHz)	3.94 dB
Radiated emissions (1GHz -18GHz)	2.49 dB
Radiated emissions (18GHz -40GHz)	2.70 dB



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3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Mobile Computer
MODEL NO.	MC9190
FCC ID	UZ7MC9190
POWER SUPPLY	DC 7.4V from battery, DC 12V to cradle or DC 12V to connection adapter
MODULATION TYPE	for WLAN : CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM for Bluetooth : GFSK,π/4-DQPSK, 8DPSK
MODULATION TECHNOLOGY	for WLAN :DSSS, OFDM for Bluetooth : FHSS
TRANSFER RATE	for WLAN : 802.11b: 11 / 5.5 / 2 / 1Mbps 802.11a/g: 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6Mbps for Bluetooth : DH 1, DH 3, DH 5 +EDR
FREQUENCY RANGE	for WLAN 15.407: 802.11a: 5.18 ~ 5.24GHz, 5.26 ~ 5.32GHz, 5.50 ~ 5.7GHz for WLAN 15.247: 802.11b & 802.11g: 2.412 ~ 2.472GHz 802.11a: 5.745 ~ 5.825GHz for Bluetooth : 2.402GHz ~ 2.48GHz
NUMBER OF CHANNEL	for WLAN 15.407: 19 for 802.11a, for WLAN 15.247(2.4GHz) 13 for 802.11b, 802.11g, for WLAN 15.247(5GHz) 5 for 802.11a for Bluetooth : 79



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CHANNEL SPACING	for WLAN : 802.11b/g: 5MHz 802.11a: 20MHz for Bluetooth : 1 MHz
MAXIMUM OUTPUT POWER	for WLAN 15.407 802.11a: 27.5mW for WLAN 15.247(2.4GHz) 802.11b: 41.7mW 802.11g: 147.9mW for WLAN 15.247(5GHz) 802.11a: 131.8mW for Bluetooth : GFSK: 3.7 mW $\pi/4$ – DQPSK: 2.2 mW 8DPSK: 2.5 mW
ANTENNA TYPE	Please see note 2
ANTENNA CONNECTOR	Please see note 2
DATA CABLE	RS232 cable x 1 (Part No.: 25-62164-01R) USB cable x 1 (Part No.: 25-62166-01R)
I/O PORTS	Audio port x 1, SD slot port x 1
ASSOCIATED DEVICES	Battery x 1 (Part No.: 21-65587-03) Cable adapters (Part No.: ADP9000-100R, ADP9000-110R) Holster (Part No.: SG-MC9121112-01R) Heated boot (Part No.: SG-MC9024242-01R) Snap on Mag Stripe Reader (Part No.: MSR9001-100R) Modem Module - Dongle (Part No.: MDM9000-100R) Headsets (Part No.: 50-11300-050R, RCH50)

NOTE:

1. There are Bluetooth technology (BT2.1+EDR) and WLAN technology used for the EUT. <the Bluetooth test data please refer "RF990809E03-3">



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2. There are three antennas provided to this EUT, please refer to the following table:

WLAN								
No.	Brand	Model No.	Antenna Type	Gain (dBi)	Connector Type	Frequency range (MHz)	Cable Loss (dB)	Cable Length
1	WhaYu	Main (Tx & Rx)	PIFA	4.34 (2.4G) 5.54 (5G)	IPX	2400~2500 4900~5850	0.1	35mm
2	WhaYu	Aux (Rx only)	PIFA	3.83 (2.4G) 5.51 (5G)	IPX	2400~2500 4900~5850	0.24	85mm
Bluetooth								
No.	Brand	Model	Antenna Type	Gain (dBi)	Connector Type	Frequency range (MHz)		
1	TY	AH104F2650S1-T	Chip	-3.73	SMT	2400~2500		

3. The EUT configuration list:

	EUT_1	EUT_2	EUT_3	EUT_4	EUT_5	EUT_6
OS	WM6.5	WM6.5	WM6.5	WM6.5	WM6.5	WM6.5
CPU	806MHz	806MHz	806MHz	806MHz	806MHz	806MHz
RAM	256MB	256MB	256MB	256MB	256MB	256MB
Flash	1G	1G	1G	1G	1G	1G
Keypad	28/43/53keys	28/43/53keys	28/43/53keys	28/43/53keys	28/43/53keys	28/43/53keys
Battery	SYMBOL	SYMBOL	SYMBOL	SYMBOL	SYMBOL	SYMBOL
Scan	SE960	-	SE1524	-	-	-
Imager	-	SE4500-STD	-	SE4600-LR	SE4500-DL	SE4500-DPM
WLAN (a/b/g)	V	V	V	V	V	V
BT	V	V	V	V	V	V

The above configurations are available also with CR (Condensation Resistant).

The worst case is determined to be as **EUT_3** (53keys), base on the investigation by measuring radiation emission and its data was recorded in this report.



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4. The EUT could be supplied with a Cradle, power adapter and battery as below table:

Cradle 1 (1-slot, not for sale together)	
Brand:	SYMBOL
Model No.:	CRD9000-1000
Part No.:	CRD9000-1001SR
Input power :	+12V ----- 9A
I/O Ports:	USB Port x 1 RS232 Port x 1
Associated Devices	USB cable (Part No.:25-64396-01R) RS232 cable (Part No.:25-63852-01R) Adapter x 2 (Adapter 1: Part No.: 50-14000-148R) (Adapter 2: Part No.: PWRS-14000-148R)
Cradle 2 (4-slot, not for sale together)	
Brand:	SYMBOL
Model No.:	CHS9000-4000C
Part No.:	CHS9000-4001CR
Input power :	+12V ----- 4A
Associated Devices	US AC line cord (Part No.: 23844-00-00R) DC Line Cord for Four Slot Cradles (Part No.: 50-16002-029) Adapter x 2 (Adapter 3: Part No.: 50-14000-241R) (Adapter 4: Part No.: PWRS-14000-241R)
Cradle 3 (4-slot, not for sale together)	
Brand:	SYMBOL
Model No.:	CRD9000-4000E
Part No.:	CRD9000-4001ER
Input power :	+12V ----- 4A
I/O Ports:	Ethernet Port x 1
Associated Devices	US AC line cord (Part No.: 23844-00-00R) DC Line Cord for Four Slot Cradles (Part No.: 50-16002-029) Adapter x 2 (Adapter 3: Part No.: 50-14000-241R) (Adapter 4: Part No.: PWRS-14000-241R)



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Adapter 1 (not for sale together)

Brand:	HIPRO
Model No.:	HP-O2040D43
Part No.:	50-14000-148R
Input power :	100-240V, 50-60Hz, 1.5A
Output power :	+12V ----- 3.33A DC output cable (unshielded, 1.8m with one core)

Adapter 2 (not for sale together)

Brand:	HIPRO
Model No.:	HP-A0502R3D
Part No.:	PWRS-14000-148R
Input power :	100-240V, 50-60Hz, 2.4A
Output power	+12V ----- 4.16A DC output cable (unshielded, 1.8m with one core)

Adapter 3 (only for Cradle 2, 3 use, not for sale together)

Brand:	Motorola
Model No.:	50-14000-241R ver1 (level IV)
Input power :	100-240V, 50-60Hz, 3A
Output power :	+12V ----- 9A DC output cable (Part No.: 25-72614-01R)

Adapter 4 (only for Cradle 2, 3 use, not for sale together)

Brand:	MOTOROLA
Model No.:	50-14000-241R ver2 (level V, p/n PWRS-14000-241R)
Input power :	100-240V, 50-60Hz, 3A
Output power	+12V ----- 9A DC output cable (Part No.: 25-72614-01R)

Battery

Brand:	SYMBOL
Part No.:	21-65587-03
Rating:	7.4V, 2200mAh, 16.3Wh



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5. The EUT was pre-tested in chamber under following test modes :

Pre-test Mode	Description
Mode A	X-Y plane: EUT_4 + Battery (21-65587-03) + Keypad: 53keys + ADP9000-100R connection adapter + 50-14000-148R PSU with its DC cord
Mode B	X-Y plane: EUT_4 + Battery (21-65587-03) + Keypad: 43keys + ADP9000-100R connection adapter + 50-14000-148R PSU with its DC cord
Mode C	X-Y plane: EUT_4 + Battery (21-65587-03) + Keypad: 24keys + ADP9000-100R connection adapter + 50-14000-148R PSU with its DC cord
Mode D	X-Y plane: EUT_2 + Battery (21-65587-03) + Keypad: 53keys + ADP9000-100R connection adapter + 50-14000-148R PSU with its DC cord
Mode E	X-Y plane: EUT_3 + Battery (21-65587-03) + Keypad: 53keys + ADP9000-100R connection adapter + 50-14000-148R PSU with its DC cord
Mode F	X-Y plane: EUT_1 + Battery (21-65587-03) + Keypad: 53keys + ADP9000-100R connection adapter + 50-14000-148R PSU with its DC cord
Mode G	X-Y plane: EUT_5 + Battery (21-65587-03) + Keypad: 53keys + ADP9000-100R connection adapter + 50-14000-148R PSU with its DC cord
Mode H	X-Y plane: EUT_6 + Battery (21-65587-03) + Keypad: 53keys + ADP9000-100R connection adapter + 50-14000-148R PSU with its DC cord
Mode I	X-Y plane: EUT_3 + Battery (21-65587-03) + Keypad: 53keys + MSR9001-100R snap on Mag strip reader + 50-14000-148R PSU with its DC cord
Mode J	X-Y plane: EUT_3 + Battery (21-65587-03) + Keypad: 53keys + MDM9001-C010R + 50-14000-148R PSU with its DC cord
Mode K	X-Y plane: EUT_3 + Battery (21-65587-03) + Keypad: 53keys
Mode L	EUT_3 + Battery (21-65587-03) + Keypad: 53keys + CRD9000-1001SR cradle + 50-14000-148R PSU with its DC cord
Mode M	EUT_3 + Battery (21-65587-03) + Keypad: 53keys + CHS9000-4001CR + 50-14000-241R DC Line cord



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Pre-test Mode	Description
Mode N	EUT_3 + Battery (21-65587-03) + Keypad: 53keys + ADP9000-100R connection adapter + PWRS-14000-148R PSU with its DC cord
Mode O	EUT_3 + Battery (21-65587-03) + Keypad: 53keys + CRD9000-1001SR cradle + PWRS-14000-148R PSU with its DC cord
Mode P	EUT_3 + Battery (21-65587-03) + Keypad: 53keys + CRD9000-4001ER + PWRS-14000-241R DC Line cord
Mode Q	EUT_3 + Battery (21-65587-03) + Keypad: 53keys + MDM9000-100R + PWRS-14000-148R PSU with its DC cord
Mode R	X-Z plane: EUT_3 + Battery (21-65587-03) + Keypad: 53keys + ADP9000-100R connection adapter + 50-14000-148R PSU with its DC cord
Mode S	Y-Z plane: EUT_3 + Battery (21-65587-03) + Keypad: 53keys + ADP9000-100R connection adapter + 50-14000-148R PSU with its DC cord

The worse spurious emission (Below 1GHz) was found in **Mode P**. And the spurious emission (Above 1GHz) was found in **Mode S**. Therefore only the test data of the modes were recorded in this report.

6. The EUT operates in both the 5GHz and 2.4GHz Bands and compatibility with 802.11a, 802.11b, 802.11g and Bluetooth technology.
7. The above EUT information was declared by the manufacturer and for more detailed feature descriptions, please refer to the manufacturer's specifications or User's Manual.



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3.2 DESCRIPTION OF TEST MODES

Operated in 2400 ~ 2483.5MHz band:

Thirteen channels are provided for 802.11b, 802.11g:

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412MHz	8	2447MHz
2	2417MHz	9	2452MHz
3	2422MHz	10	2457MHz
4	2427MHz	11	2462MHz
5	2432MHz	12	2467MHz
6	2437MHz	13	2472MHz
7	2442MHz		

Operated in 5725 ~ 5850MHz band:

Five channels are provided for 802.11a:

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745 MHz	161	5805 MHz
153	5765 MHz	165	5825 MHz
157	5785 MHz		



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3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	PLC	RE < 1G	RE ³ 1G	APCM	
A	√		√	√	Y-Z plane: EUT_3 + Battery (21-65587-03) + Keypad: 53keys + ADP9000-100R connection adapter + 50-14000-148R PSU with its DC cord
B	√				Y-Z plane: EUT_3 + Battery (21-65587-03) + Keypad: 53keys + MSR9001-100R snap on Mag strip reader + 50-14000-148R PSU with its DC cord
C	√				Y-Z plane: EUT_3 + Battery (21-65587-03) + Keypad: 53keys + MDM9001-C010R + 50-14000-148R PSU with its DC cord
D	√				EUT_3 + Battery (21-65587-03) + Keypad: 53keys + CRD9000-1001SR cradle + 50-14000-148R PSU with its DC cord
E	√				EUT_3 + Battery (21-65587-03) + Keypad: 53keys + CHS9000-4001CR + 50-14000-241R PSU with its DC cord
F	√				Y-Z plane: EUT_3 + Battery (21-65587-03) + Keypad: 53keys + ADP9000-100R connection adapter + PWRS-14000-148R PSU with its DC cord
G	√				Y-Z plane: EUT_3 + Battery (21-65587-03) + Keypad: 53keys + MSR9001-100R snap on Mag strip reader + PWRS-14000-148R PSU with its DC cord
H	√				Y-Z plane: EUT_3 + Battery (21-65587-03) + Keypad: 53keys + MDM9001-C010R + PWRS-14000-148R PSU with its DC cord
I	√				EUT_3 + Battery (21-65587-03) + Keypad: 53keys + CRD9000-1001SR cradle + PWRS-14000-148R PSU with its DC cord
J	√	√			EUT_3 + Battery (21-65587-03) + Keypad: 53keys + CRD9000-4001ER + PWRS-14000-241R PSU with its DC cord

Where **PLC**: Power Line Conducted Emission**RE < 1G**: Radiated Emission below 1GHz**RE ³ 1G**: Radiated Emission above 1GHz**APCM**: Antenna Port Conducted Measurement



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POWER LINE CONDUCTED EMISSION TEST:

- 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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	CONFIGURE MODE
WORSE CHANNEL	-	-	-	-	-	A ~ J

RADIATED EMISSION TEST (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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	CONFIGURE MODE
802.11g	1 to 13	6	OFDM	BPSK	6	J
802.11a	149 to 165	157	OFDM	BPSK	6	J

RADIATED EMISSION TEST (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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	CONFIGURE MODE
802.11b	1 to 13	1, 6, 11, 12, 13	DSSS	DBPSK	1	A
802.11g	1 to 13	1, 6, 11, 12, 13	OFDM	BPSK	6	A
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6	A



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CONDUCTED OUT-BAND EMISSION 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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	CONFIGURE MODE
802.11b	1 to 13	1, 11, 12, 13	DSSS	DBPSK	1	A
802.11g	1 to 13	1, 11, 12, 13	OFDM	BPSK	6	A
802.11a	149 to 165	149, 165	OFDM	BPSK	6	A

ANTENNA PORT CONDUCTED MEASUREMENT:

- This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- 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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	CONFIGURE MODE
802.11b	1 to 13	1, 6, 11, 12, 13	DSSS	DBPSK	1	A
802.11g	1 to 13	1, 6, 11, 12, 13	OFDM	BPSK	6	A
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6	A

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE ³ 1G	25deg. C, 66%RH, 1013 hPa	120Vac, 60Hz	Duke Tseng Phoenix Huang
RE<1G	22deg. C, 63%RH, 1013 hPa	120Vac, 60Hz	Wen Yu
PLC	26deg. C, 68%RH, 1013 hPa	120Vac, 60Hz	Moris Lin / Timmy Hu
APCM	23deg. C, 60%RH, 1013 hPa	120Vac, 60Hz	Phoenix Huang



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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 Part 15, Subpart C. (15.247)

ANSI C63.4-2003

ANSI C63.10-2009

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

NOTE: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.



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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.

Conducted test mode A~B, F~G / Radiated emission (above 1GHz) / Other test items					
No.	Product	Brand	Model No.	Serial No.	FCC ID
1	HEADSET	MOTOROLA	RCH50	NA	NA
2	CONNECTION 1	SYMBOL	P/N:ADP9000-100R	NA	NA
3	NOTEBOOK COMPUTER (for conducted test)	DELL	PP27L	7YLB32S	FCC DOC
	NOTEBOOK COMPUTER (for other test items)			CN-0XM006-486 43-86L-4472	QDS-BRCM1019
4	CONNECTION 3	SYMBOL	P/N:MSR9001-100R	NA	NA
5	iPod	APPLE	A1199	YM712NHUVQ5	FCC DoC

No.	Signal cable description
1	0.9 m wrapped unshielded wire, terminated via drain wire, with 3.5 mm phone plug, w/o core.
2	NA
3	1.8 m foil shielded wire, RS232 to USB connector, w/o core.
4	NA
5	1.0 m shielded cable, terminated with USB connector, w/o core.

Conducted test mode C & H					
No.	Product	Brand	Model No.	Serial No.	FCC ID
6	HEADSET	MOTOROLA	RCH50	NA	NA
7	TELEPHONE	WONDER	WD-303	6C17FA00681	NA
8	CONNECTION 2	SYMBOL	P/N:MDM9001-C010R	NA	NA

No.	Signal cable description
6	0.9 m wrapped unshielded wire, terminated via drain wire, with 3.5 mm phone plug, w/o core.
7	1.6 m unshielded cable, RJ11 connector, w/o core.
8	NA



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Conducted test mode D

No.	Product	Brand	Model No.	Serial No.	FCC ID
9	PERSONAL COMPUTER	DELL	DCSM	G84QL1S	FCC DoC
10	MONITOR	DELL	E2210Hc	CN-OG337R-6418 0-97S-OQDS	FCC DoC
11	PRINTER	EPSON	LQ-300+	DCGY017097	FCC DoC
12	MODEM	ACEEX	1414	0206026775	IFAXDM1414
13	KEYBOARD	DELL	SK-8115	CN-0J4635-71616-53A-0CH2	FCC DoC
14	MOUSE	DELL	MO71KC	345011086	FCC DoC
15	HEADSET	MOTOROLA	RCH50	NA	NA

Conducted test mode I

No.	Product	Brand	Model No.	Serial No.	FCC ID
9	PERSONAL COMPUTER	DELL	DCSCMF	9KKB32S	FCC DoC
10	MONITOR	DELL	E2210Hc	CN-OG337R-6418 0-97S-OQDS	FCC DoC
11	PRINTER	EPSON	LQ-300+II	G88Y074083	FCC DoC
12	MODEM	ACEEX	1414	0206026778	IFAXDM1414
13	KEYBOARD	DELL	SK-8115	MY-0DJ325-71619-99B-0476	FCC DoC
14	MOUSE	DELL	MOC5UO	I1401LVG	FCC DoC
15	HEADSET	MOTOROLA	RCH50	NA	NA

No. Signal cable description

9	NA
10	1.8 m braid shielded wire, terminated with VGA connector via metallic frame, with two cores
11	1.8 m braid shielded wire, terminated with DB25 and USB connector via metallic frame, w/o core
12	1.2 m braid shielded wire, terminated with DB25 and DB9 connector via metallic frame, w/o core.
13	1.9 m foil shielded wire, USB connector, w/o core.
14	1.8 m foil shielded wire, USB connector, w/o core.
15	0.9 m wrapped unshielded wire, terminated via drain wire, with 3.5 mm phone plug, w/o core.



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Conducted test mode J / radiated emission (below 1GHz)

No.	Product	Brand	Model No.	Serial No.	FCC ID
16	DSL Wireless Router	ABOCOM	WR224GR	060500749P	FCC
17	NOTEBOOK COMPUTER	DELL	PP21L	CN-0GD366-70166-5 B3-09ZX	QDS-BRCM1016

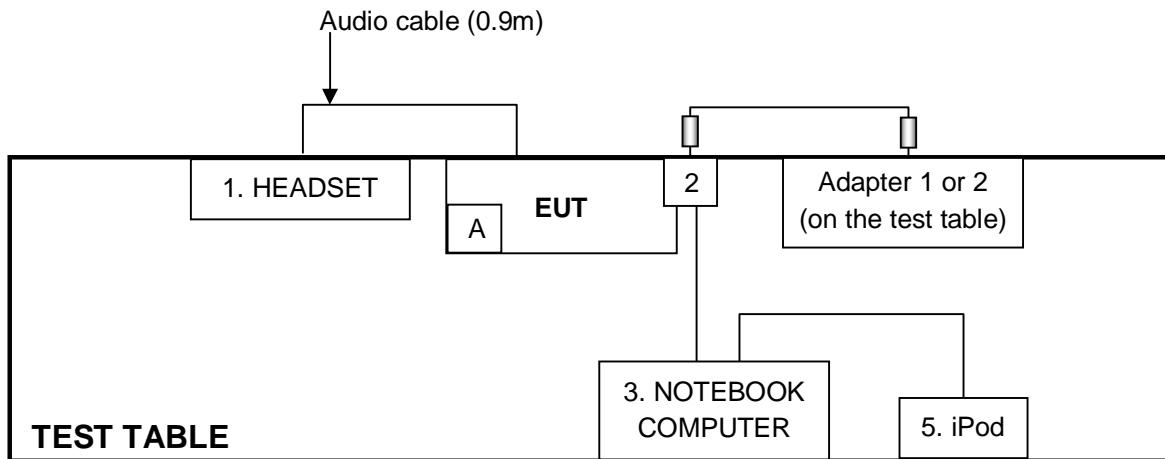
No. Signal cable description

16	10 m UTP cable.
17	3.0 m UTP cable.

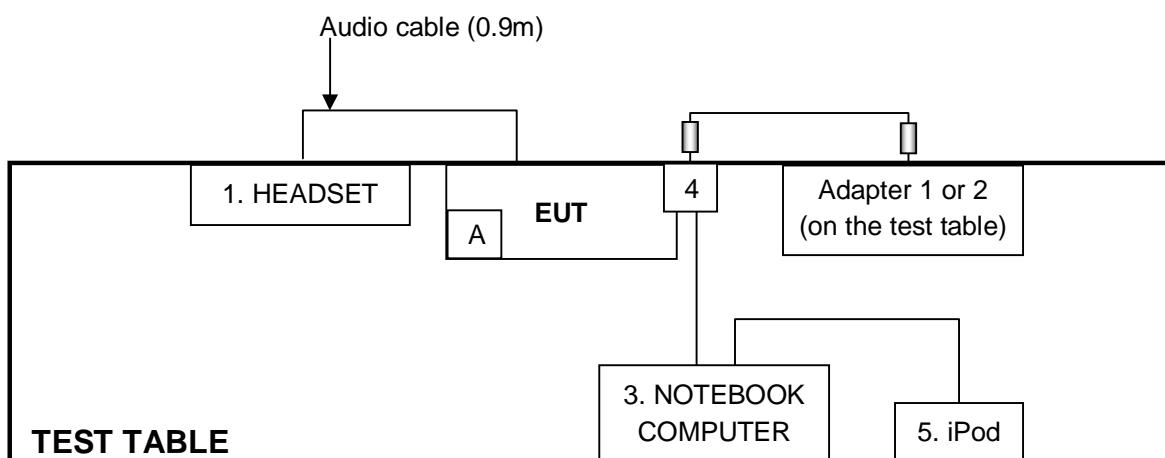
Note: 1. All power cords of the above support units are unshielded (1.8m).

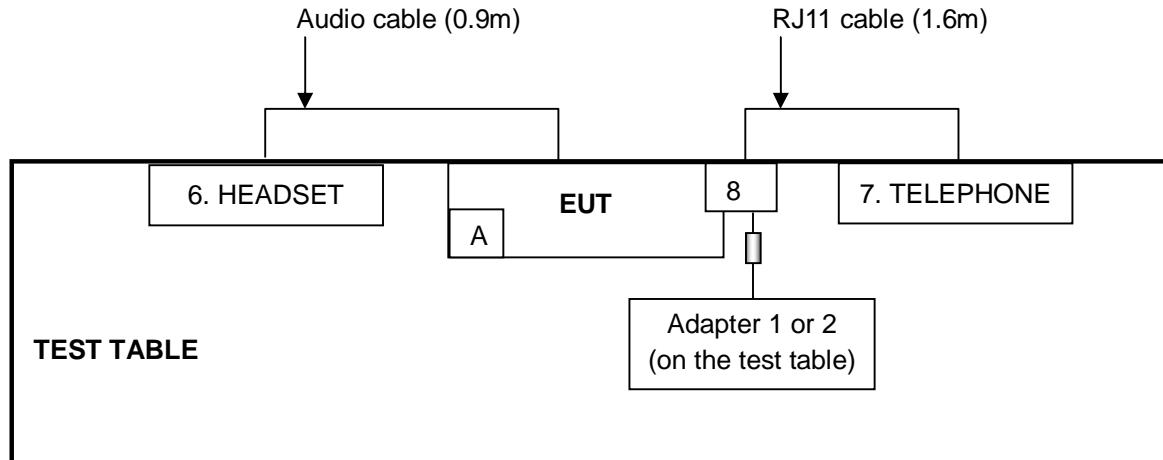
3.5 CONFIGURATION OF SYSTEM UNDER TEST

For conducted test mode A & F / radiated emission (above 1GHz) / other test items:



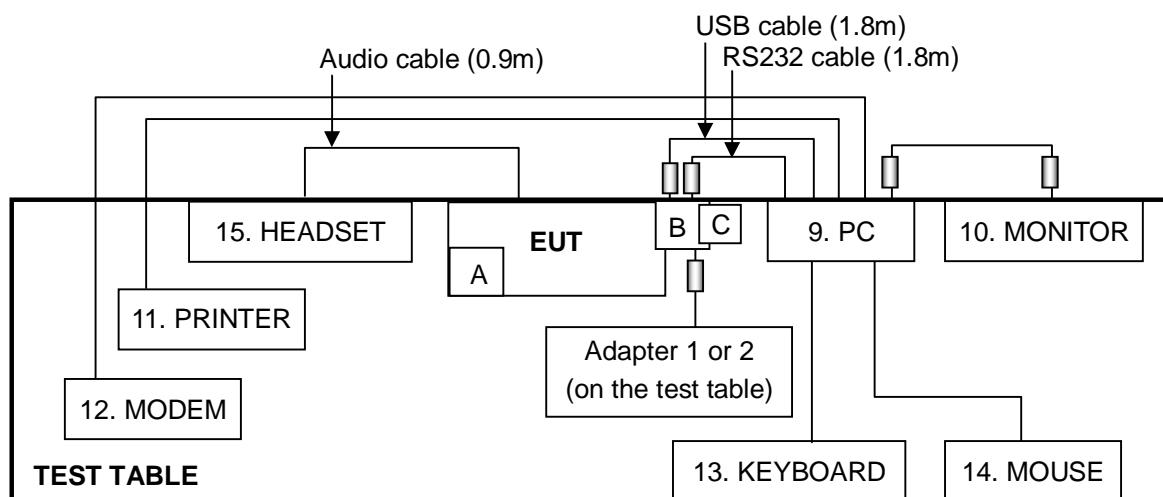
For conducted test mode B & G:



For conducted test mode C & H:


NOTE: 1. Item A is the SD Card.

2. Item 8 is the Connection 2.

For conducted test mode D & I:


NOTE: 1. Item A is the SD Card.

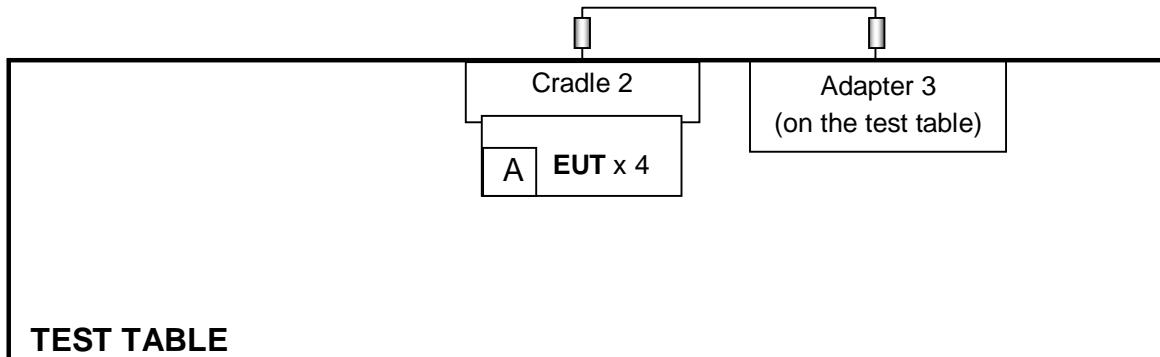
2. Item B is the Cradle 1.

3. Item C is the battery.



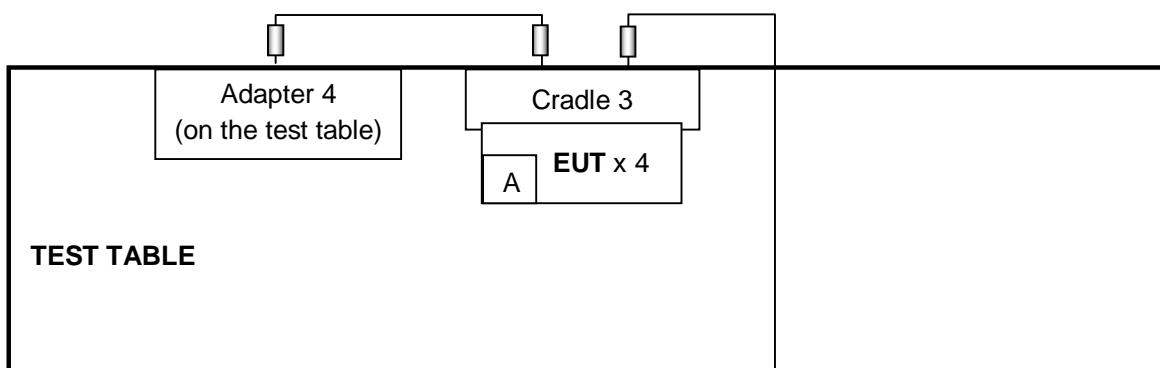
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For conducted test mode E:

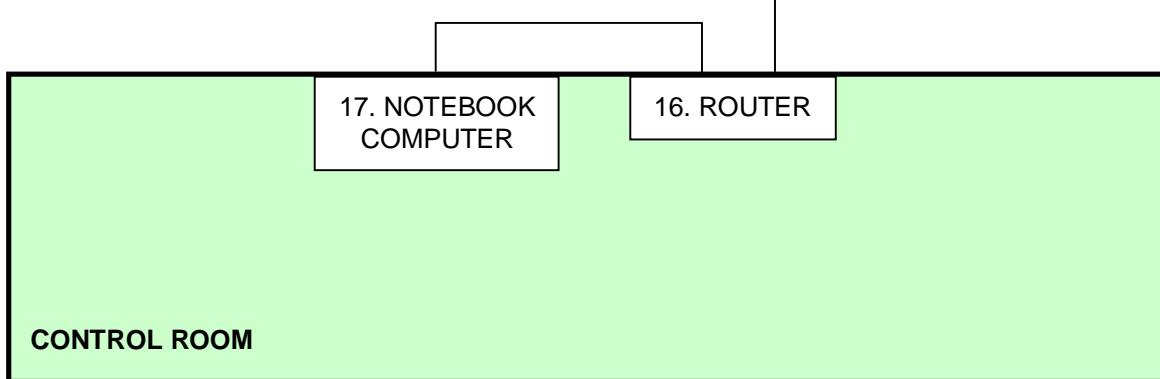


NOTE: 1. Item A is the SD Card.

For conducted test mode J / radiated emission (below 1GHz) test:



UTP cable (10m) →



NOTE: 1. Item A is the SD Card.



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4. TEST TYPES AND RESULTS (802.11b & g, 2400 ~ 2483.5MHz Band)

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
0.15-0.5 0.5-5 5-30	Quasi-peak	Average
	66 to 56	56 to 46
	56	46
	60	50

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.1.2 TEST INSTRUMENTS

For test mode A~E, tested date: Aug. 12~26

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Mar. 09, 2010	Mar. 08, 2011
Line-Impedance Stabilization Network (for EUT)	NSLK 8127	8127-522	Sep. 23, 2009	Sep. 22, 2010
Line-Impedance Stabilization Network (for Peripheral)	ESH3-Z5	848773/004	Oct. 26, 2009	Oct. 25, 2010
RF Cable (JYEBAO)	5DFB	COBCAB-001	Nov. 24, 2009	Nov. 23, 2010
50 ohms Terminator	50	3	Oct. 28, 2009	Oct. 27, 2010
Software	BV ADT_Cond_V7.3.7	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 test was performed in Shielded Room No. C.
3. The VCCI Con C Registration No. is C-3611.



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For test mode F~H, tested date: Sep. 30

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Mar. 09, 2010	Mar. 08, 2011
Line-Impedance Stabilization Network (for EUT)	NSLK 8127	8127-522	Sep. 08, 2010	Sep. 07, 2011
Line-Impedance Stabilization Network (for Peripheral)	ESH3-Z5	848773/004	Oct. 26, 2009	Oct. 25, 2010
RF Cable (JYEBAO)	5DFB	COCCAB-002	Aug. 30, 2010	Aug. 29, 2011
50 ohms Terminator	50	3	Oct. 28, 2009	Oct. 27, 2010
Software	BV ADT_Cond_V7.3.7	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 test was performed in Shielded Room No. C.
3. The VCCI Con C Registration No. is C-3611.

For test mode I~J, tested date: Sep. 30

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	100287	Mar. 01, 2010	Feb. 28, 2011
Line-Impedance Stabilization Network (for EUT)	NSLK 8127	8127-523	Sep. 17, 2010	Sep. 16, 2011
Line-Impedance Stabilization Network (for Peripheral)	ENV-216	100072	June 11, 2010	June 10, 2011
RF Cable (JYEBAO)	5DFB	COACAB-001	Dec. 14, 2009	Dec. 13, 2010
50 ohms Terminator	50	3	Oct. 28, 2009	Oct. 27, 2010
Software	BV ADT_Cond_V7.3.7	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 test was performed in Shielded Room No. A.
3. The VCCI Con A Registration No. is C-817.



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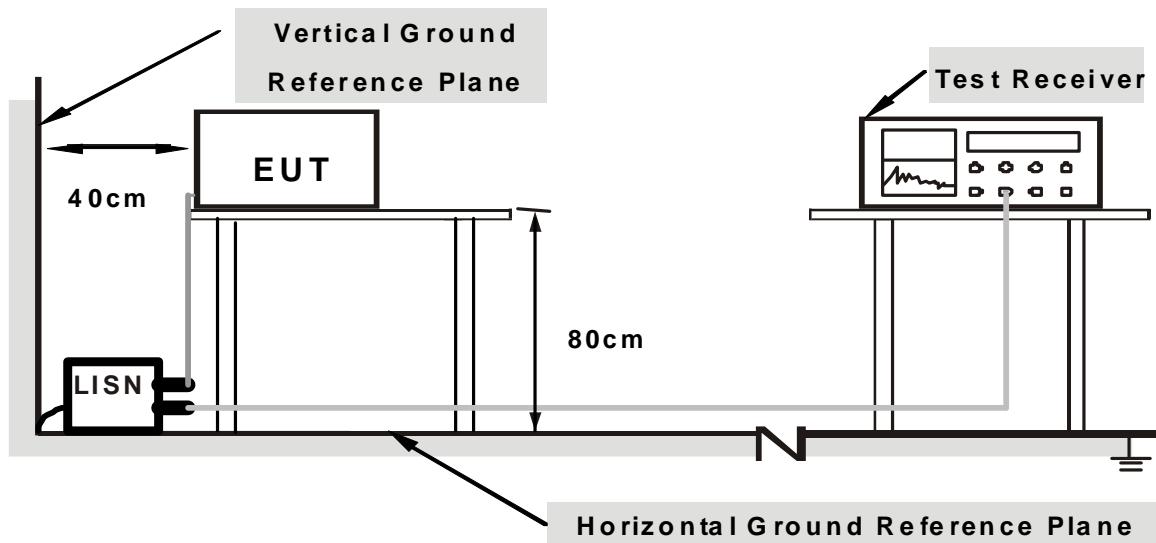
4.1.3 TEST PROCEDURES

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) were not recorded.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

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

4.1.6 EUT OPERATING CONDITIONS

- a. Turn on the power of EUT.
- b. The EUT run test program “CEcTxRx.exe” to enable EUT under transmission / receiver condition continuously at specific channel frequency.

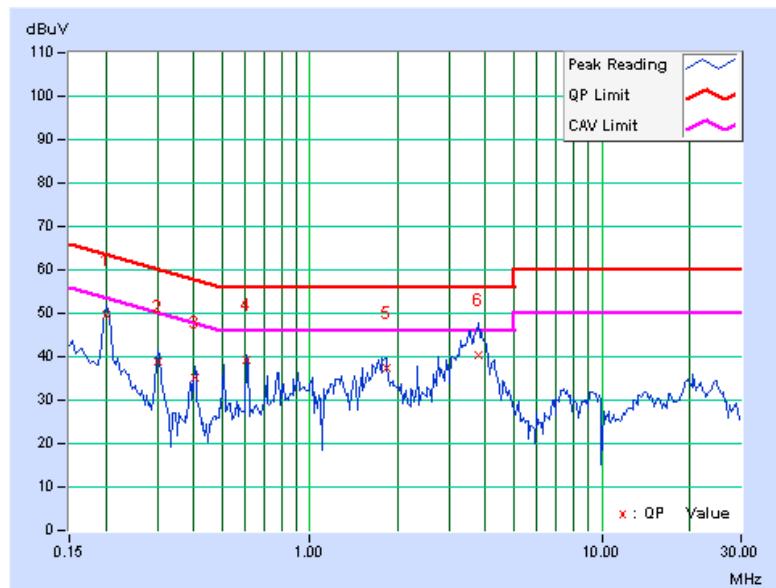
4.1.7 TEST RESULTS (MODE A)

PHASE	Line (L)		6dB BANDWIDTH		9 kHz	
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.201	0.05	49.51	-	49.56	-	63.58	53.58	-14.02	-
2	0.302	0.06	38.97	-	39.03	-	60.18	50.18	-21.15	-
3	0.404	0.06	35.18	-	35.24	-	57.77	47.77	-22.53	-
4	0.607	0.07	39.24	-	39.31	-	56.00	46.00	-16.69	-
5	1.824	0.12	37.14	-	37.26	-	56.00	46.00	-18.74	-
6	3.770	0.18	40.03	-	40.21	-	56.00	46.00	-15.79	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





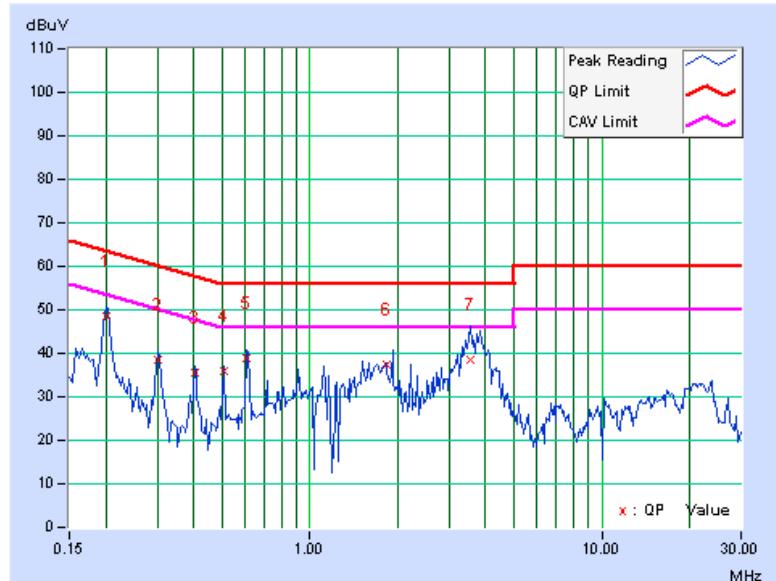
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PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	Factor	[dB (uV)]	[dB (uV)]	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	(dB)
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.201	0.06	48.58	-	48.64	-	63.58	53.58	-14.94	-
2	0.302	0.07	38.47	-	38.54	-	60.18	50.18	-21.64	-
3	0.404	0.07	35.50	-	35.57	-	57.77	47.77	-22.20	-
4	0.505	0.08	35.67	-	35.75	-	56.00	46.00	-20.25	-
5	0.607	0.08	39.80	-	38.98	-	56.00	46.00	-17.02	-
6	1.824	0.13	37.28	-	37.41	-	56.00	46.00	-18.59	-
7	3.540	0.19	38.44	-	38.63	-	56.00	46.00	-17.37	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



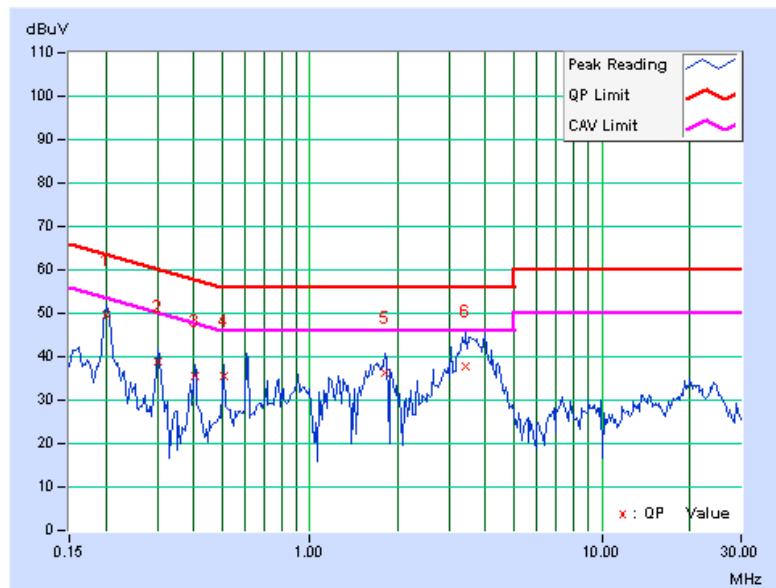
4.1.8 TEST RESULTS (MODE B)

PHASE		Line (L)		6dB BANDWIDTH		9 kHz	
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]
1	0.201	0.05	49.65	-	49.70	-	63.58	53.58	-13.88	-
2	0.302	0.06	38.99	-	39.05	-	60.18	50.18	-21.13	-
3	0.404	0.06	35.36	-	35.42	-	57.77	47.77	-22.35	-
4	0.505	0.07	35.61	-	35.68	-	56.00	46.00	-20.32	-
5	1.820	0.12	36.15	-	36.27	-	56.00	46.00	-19.73	-
6	3.438	0.17	37.78	-	37.95	-	56.00	46.00	-18.05	-

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





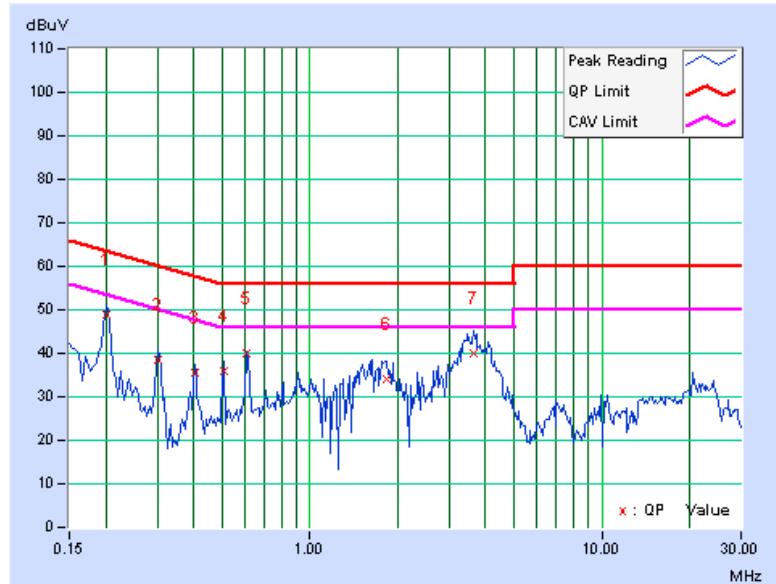
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PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	Factor	[dB (uV)]	[dB (uV)]	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	(dB)
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.201	0.06	48.66	-	48.72	-	63.58	53.58	-14.86	-
2	0.302	0.07	38.53	-	38.60	-	60.18	50.18	-21.58	-
3	0.404	0.07	35.44	-	35.51	-	57.77	47.77	-22.26	-
4	0.505	0.08	35.87	-	35.95	-	56.00	46.00	-20.05	-
5	0.607	0.08	39.92	-	40.00	-	56.00	46.00	-16.00	-
6	1.832	0.13	33.77	-	33.90	-	56.00	46.00	-22.10	-
7	3.645	0.19	39.93	-	40.12	-	56.00	46.00	-15.88	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



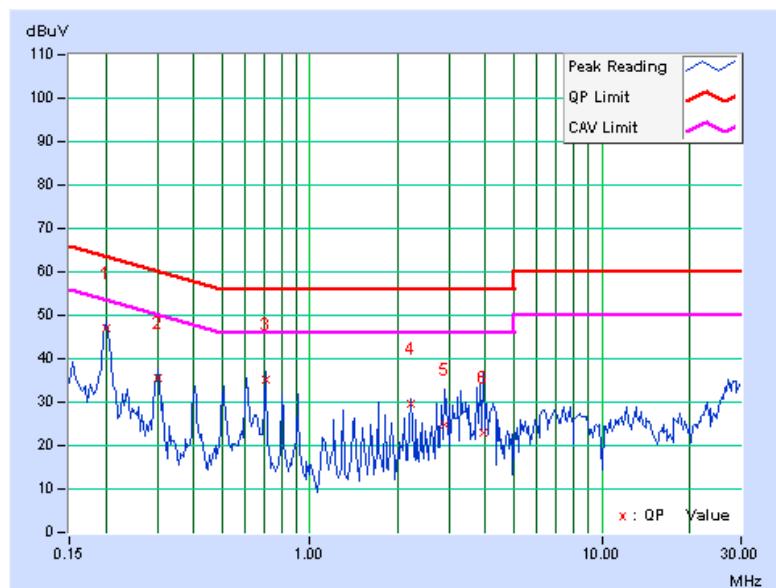
4.1.9 TEST RESULTS (MODE C)

PHASE	Line (L)	6dB BANDWIDTH		9 kHz	
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	(dB)	
1	0.201	0.05	47.10	-	47.15	-	63.58	53.58	-16.43	-
2	0.302	0.06	35.39	-	35.45	-	60.18	50.18	-24.73	-
3	0.705	0.08	35.19	-	35.27	-	56.00	46.00	-20.73	-
4	2.215	0.14	29.33	-	29.47	-	56.00	46.00	-26.53	-
5	2.910	0.16	24.51	-	24.67	-	56.00	46.00	-31.33	-
6	3.930	0.19	22.63	-	22.82	-	56.00	46.00	-33.18	-

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





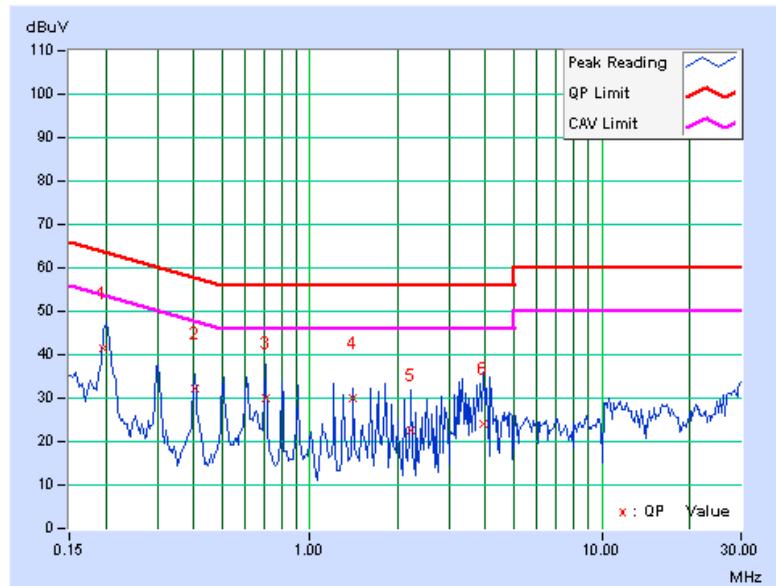
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PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.197	0.06	41.24	-	41.30	-	63.74	53.74	-22.44	-
2	0.404	0.07	32.23	-	32.30	-	57.77	47.77	-25.47	-
3	0.709	0.09	29.79	-	29.88	-	56.00	46.00	-26.12	-
4	1.410	0.12	29.94	-	30.06	-	56.00	46.00	-25.94	-
5	2.215	0.15	22.47	-	22.62	-	56.00	46.00	-33.38	-
6	3.922	0.20	23.87	-	24.07	-	56.00	46.00	-31.93	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





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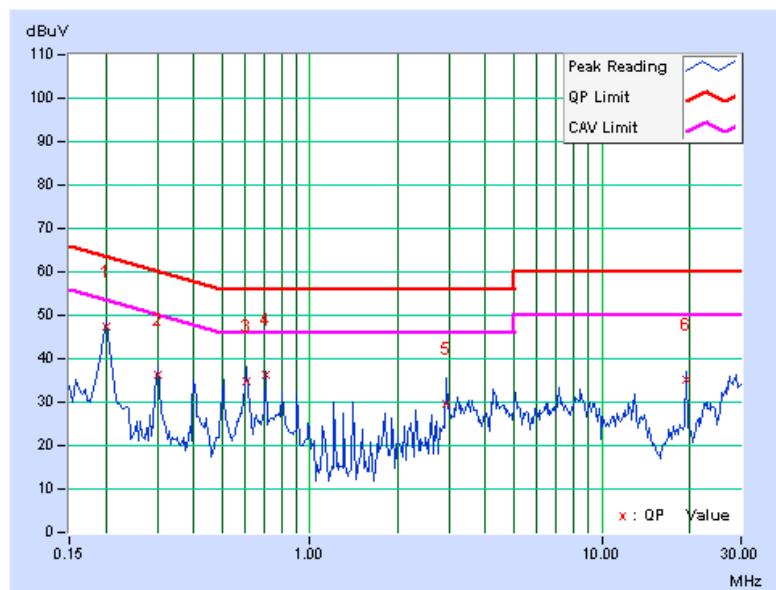
4.1.10 TEST RESULTS (MODE D)

PHASE	Line (L)	6dB BANDWIDTH		9 kHz	
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.201	0.05	47.24	-	47.29	-	63.58	53.58	-16.29	-
2	0.302	0.06	36.21	-	36.27	-	60.18	50.18	-23.91	-
3	0.603	0.07	34.67	-	34.74	-	56.00	46.00	-21.26	-
4	0.705	0.08	36.14	-	36.22	-	56.00	46.00	-19.78	-
5	2.922	0.16	29.62	-	29.78	-	56.00	46.00	-26.22	-
6	19.500	0.50	34.81	-	35.31	-	60.00	50.00	-24.69	-

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





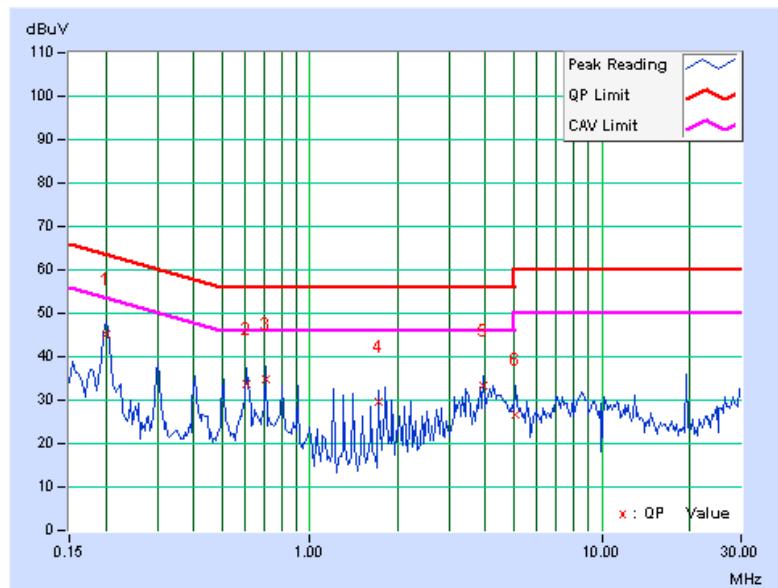
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PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	[dB (uV)] Q.P.	[dB (uV)] AV.	[dB (uV)] Q.P.	[dB (uV)] AV.	[dB (uV)] Q.P.	[dB (uV)] AV.	[dB] Q.P.	[dB] AV.
1	0.201	0.06	45.19	-	45.25	-	63.58	53.58	-18.33	-
2	0.607	0.08	33.44	-	33.52	-	56.00	46.00	-22.48	-
3	0.705	0.09	34.77	-	34.86	-	56.00	46.00	-21.14	-
4	1.711	0.13	29.38	-	29.51	-	56.00	46.00	-26.49	-
5	3.926	0.20	33.00	-	33.20	-	56.00	46.00	-22.80	-
6	5.063	0.23	26.27	-	26.50	-	60.00	50.00	-33.50	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



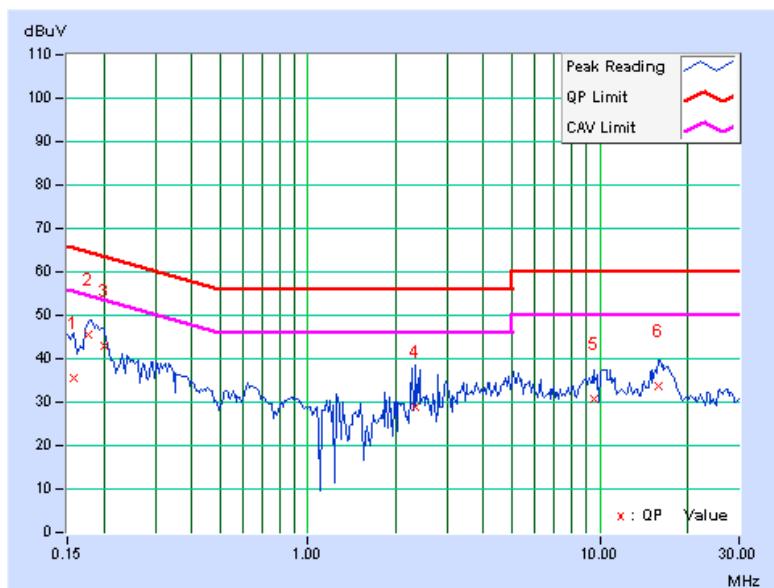
4.1.11 TEST RESULTS (MODE E)

PHASE	Line (L)	6dB BANDWIDTH		9 kHz	
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.158	0.05	35.61	-	35.66	-	65.58	55.58	-29.91	-
2	0.177	0.05	45.33	-	45.38	-	64.61	54.61	-19.23	-
3	0.201	0.05	42.92	-	42.97	-	63.58	53.58	-20.61	-
4	2.336	0.14	28.64	-	28.78	-	56.00	46.00	-27.22	-
5	9.508	0.34	30.44	-	30.78	-	60.00	50.00	-29.22	-
6	15.840	0.44	33.09	-	33.53	-	60.00	50.00	-26.47	-

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





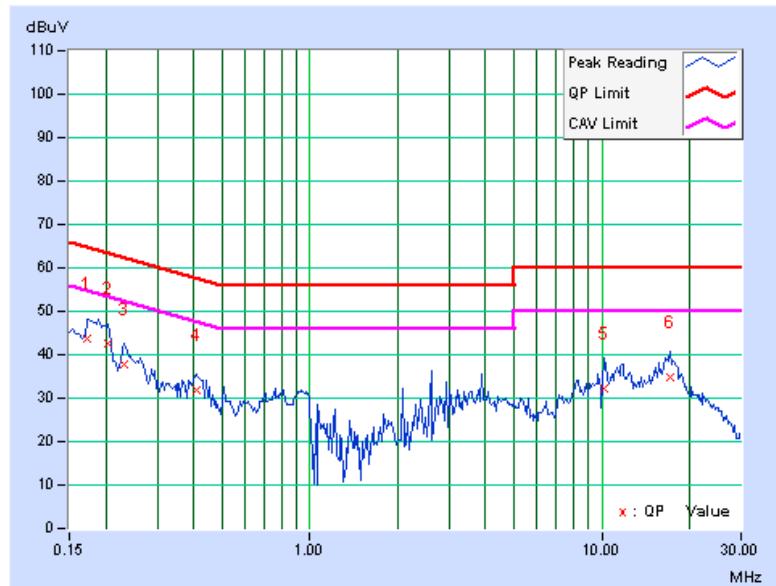
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PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.173	0.06	43.61	-	43.67	-	64.79	54.79	-21.12	-
2	0.205	0.06	42.53	-	42.59	-	63.42	53.42	-20.83	-
3	0.232	0.06	37.73	-	37.79	-	62.38	52.38	-24.59	-
4	0.408	0.07	31.69	-	31.76	-	57.69	47.69	-25.93	-
5	10.207	0.36	31.70	-	32.06	-	60.00	50.00	-27.94	-
6	17.137	0.47	34.39	-	34.86	-	60.00	50.00	-25.14	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



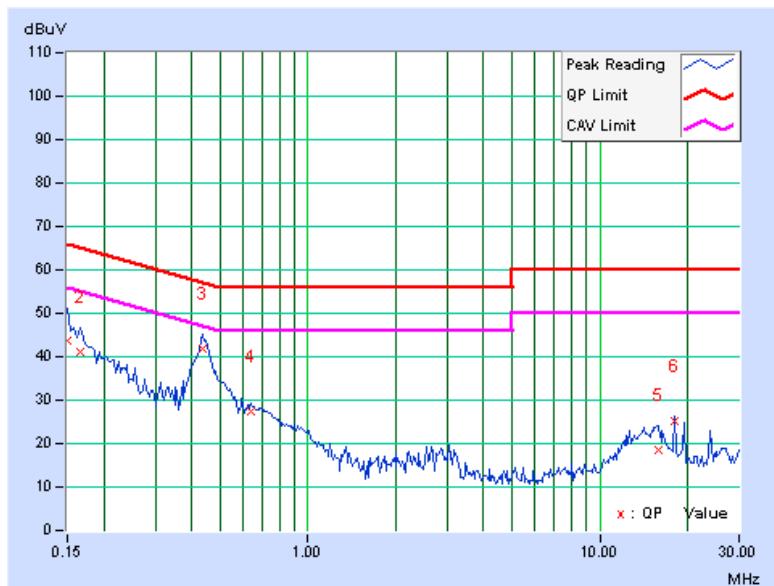
4.1.12 TEST RESULTS (MODE F)

PHASE	Line (L)		6dB BANDWIDTH		9 kHz	
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.04	43.71	-	43.75	-	66.00	56.00	-22.25	-
2	0.166	0.04	41.25	-	41.29	-	65.17	55.17	-23.88	-
3	0.435	0.05	41.96	-	42.01	-	57.15	47.15	-15.14	-
4	0.642	0.07	27.35	-	27.42	-	56.00	46.00	-28.58	-
5	15.828	0.53	17.94	-	18.47	-	60.00	50.00	-41.53	-
6	18.027	0.54	24.49	-	25.03	-	60.00	50.00	-34.97	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





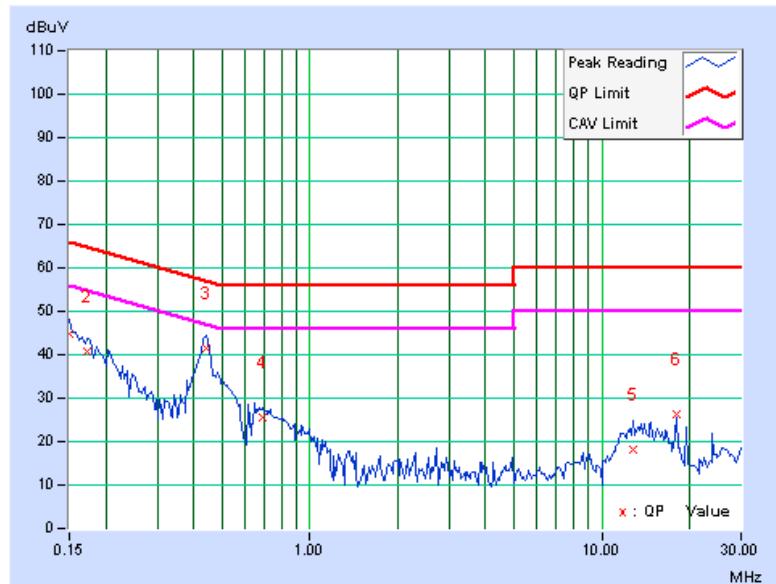
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PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	(dB)	
1	0.150	0.05	44.76	-	44.81	-	66.00	56.00	-21.19	-
2	0.173	0.05	40.79	-	40.84	-	64.79	54.79	-23.95	-
3	0.443	0.06	41.26	-	41.32	-	57.01	47.01	-15.68	-
4	0.689	0.08	25.61	-	25.69	-	56.00	46.00	-30.31	-
5	12.797	0.42	17.86	-	18.28	-	60.00	50.00	-41.72	-
6	18.031	0.55	25.82	-	26.37	-	60.00	50.00	-33.63	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



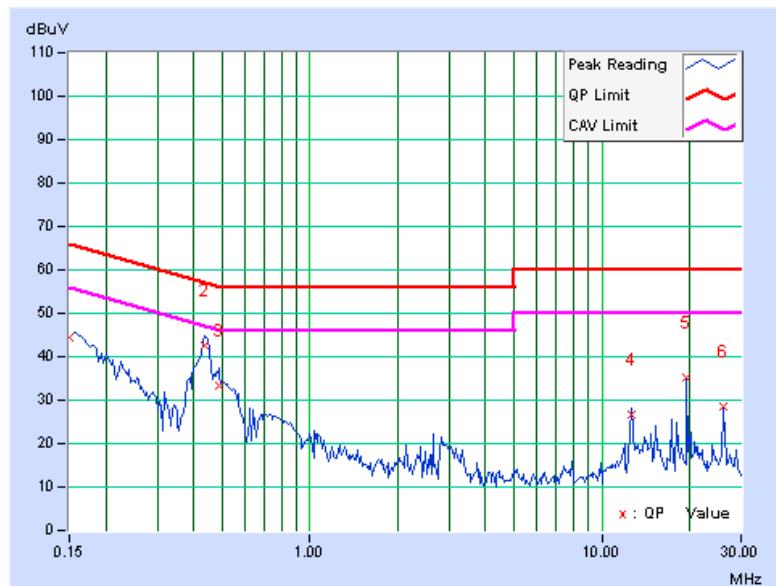
4.1.13 TEST RESULTS (MODE G)

PHASE	Line (L)	6dB BANDWIDTH		9 kHz	
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.04	44.52	-	44.56	-	66.00	56.00	-21.44	-
2	0.435	0.05	42.68	-	42.73	-	57.15	47.15	-14.42	-
3	0.486	0.06	33.10	-	33.16	-	56.24	46.24	-23.08	-
4	12.629	0.40	29.86	-	30.26	-	60.00	50.00	-29.74	-
5	19.500	0.54	34.72	-	35.26	-	60.00	50.00	-24.74	-
6	26.000	0.80	27.84	-	28.64	-	60.00	50.00	-31.36	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





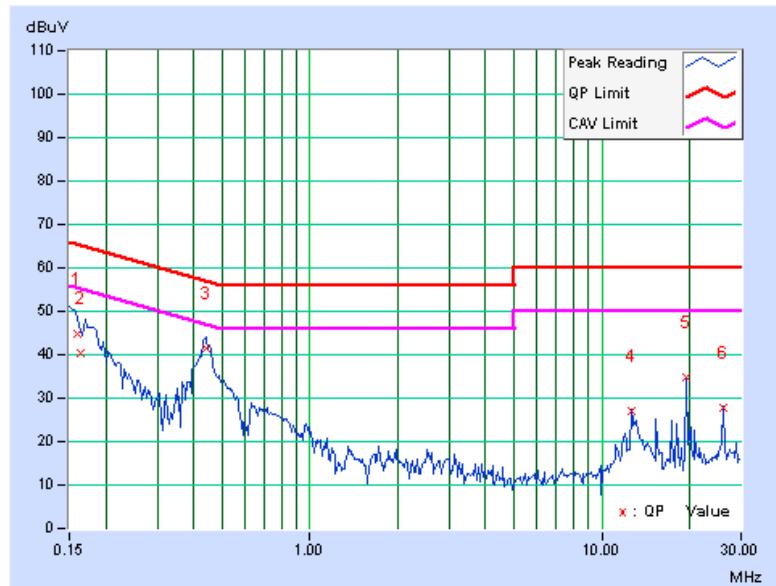
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PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	[dB (uV)] Q.P.	[dB (uV)] AV.	[dB (uV)] Q.P.	[dB (uV)] AV.	[dB (uV)] Q.P.	[dB (uV)] AV.	[dB] Q.P.	[dB] AV.
1	0.160	0.05	44.86	-	44.91	-	65.46	55.46	-20.55	-
2	0.165	0.05	40.35	-	40.40	-	65.22	55.22	-24.82	-
3	0.442	0.06	41.35	-	41.41	-	57.02	47.02	-15.60	-
4	12.615	0.41	26.55	-	26.96	-	60.00	50.00	-33.04	-
5	19.500	0.55	34.28	-	34.83	-	60.00	50.00	-25.17	-
6	26.000	0.81	27.15	-	27.96	-	60.00	50.00	-32.04	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



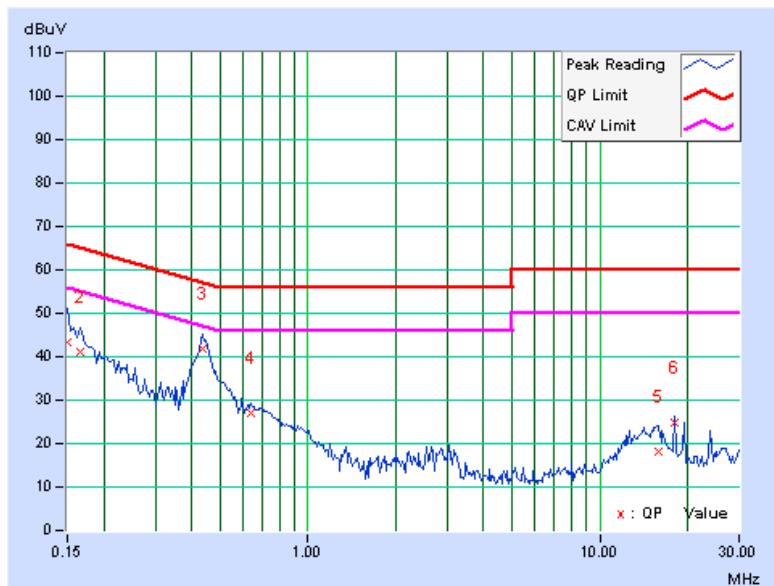
4.1.14 TEST RESULTS (MODE H)

PHASE	Line (L)	6dB BANDWIDTH		9 kHz	
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.04	43.25	-	43.29	-	66.00	56.00	-22.71	-
2	0.166	0.04	41.12	-	41.16	-	65.18	55.18	-24.02	-
3	0.435	0.05	41.75	-	41.80	-	57.15	47.15	-15.35	-
4	0.642	0.07	27.05	-	27.12	-	56.00	46.00	-28.88	-
5	15.828	0.53	17.54	-	18.07	-	60.00	50.00	-41.93	-
6	18.027	0.54	24.22	-	24.76	-	60.00	50.00	-35.24	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.

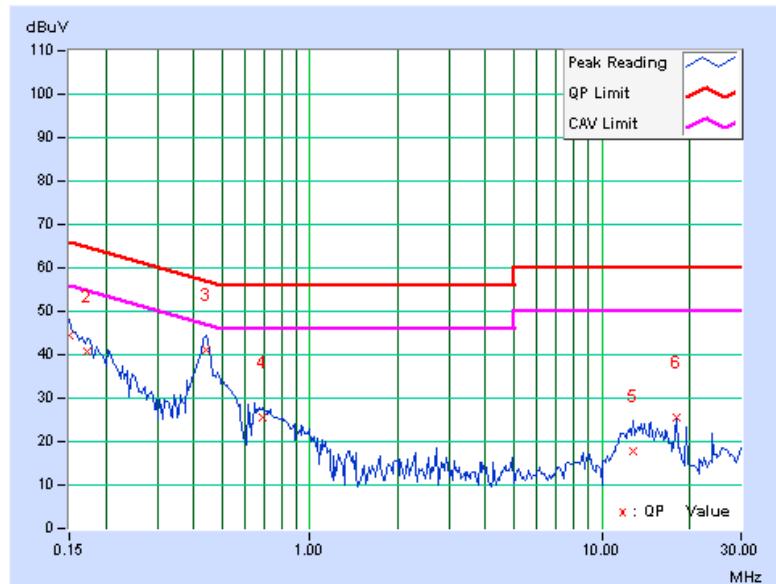


PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	(dB)	(dB)
1	0.150	0.05	44.32	-	44.37	-	66.00	56.00	-21.63	-
2	0.173	0.05	40.52	-	40.57	-	64.79	54.79	-24.22	-
3	0.443	0.06	41.15	-	41.21	-	57.01	47.01	-15.79	-
4	0.689	0.08	25.32	-	25.40	-	56.00	46.00	-30.60	-
5	12.797	0.42	17.25	-	17.67	-	60.00	50.00	-42.33	-
6	18.031	0.55	25.15	-	25.70	-	60.00	50.00	-34.30	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



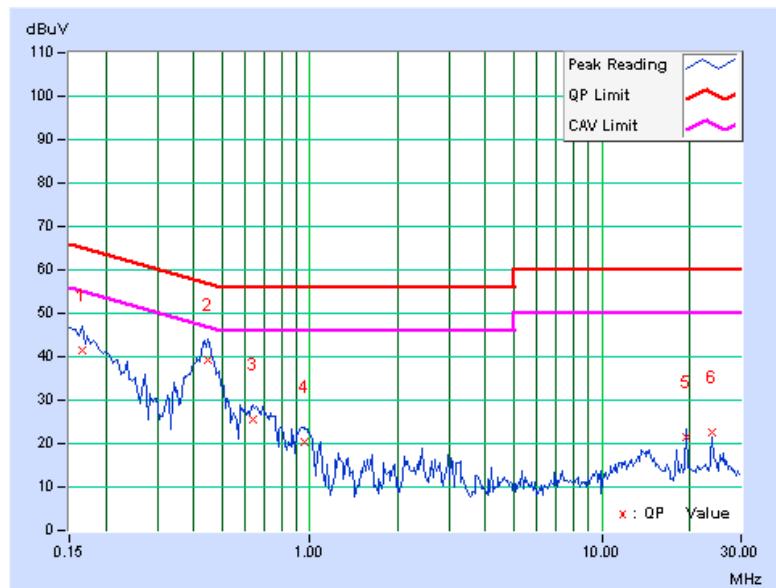
4.1.15 TEST RESULTS (MODE I)

PHASE	Line (L)		6dB BANDWIDTH		9 kHz	
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.166	0.04	41.55	-	41.59	-	65.18	55.18	-23.59	-
2	0.447	0.05	39.24	-	39.29	-	56.93	46.93	-17.64	-
3	0.642	0.07	25.57	-	25.64	-	56.00	46.00	-30.36	-
4	0.955	0.10	20.31	-	20.41	-	56.00	46.00	-35.59	-
5	19.500	0.54	21.12	-	21.66	-	60.00	50.00	-38.34	-
6	24.016	0.70	22.03	-	22.73	-	60.00	50.00	-37.27	-

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





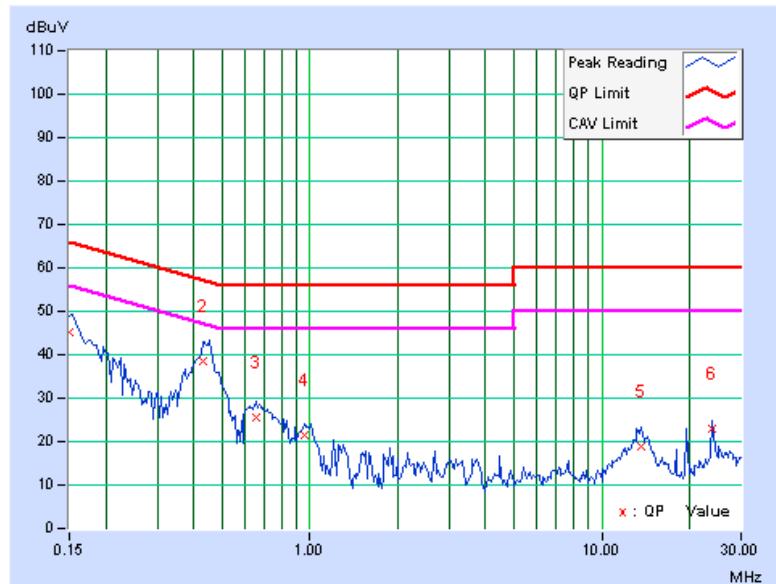
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PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.05	45.21	-	45.26	-	66.00	56.00	-20.74	-
2	0.431	0.06	38.42	-	38.48	-	57.23	47.23	-18.75	-
3	0.658	0.08	25.63	-	25.71	-	56.00	46.00	-30.29	-
4	0.955	0.11	21.55	-	21.66	-	56.00	46.00	-34.34	-
5	13.586	0.46	18.25	-	18.71	-	60.00	50.00	-41.29	-
6	24.016	0.71	22.35	-	23.06	-	60.00	50.00	-36.94	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





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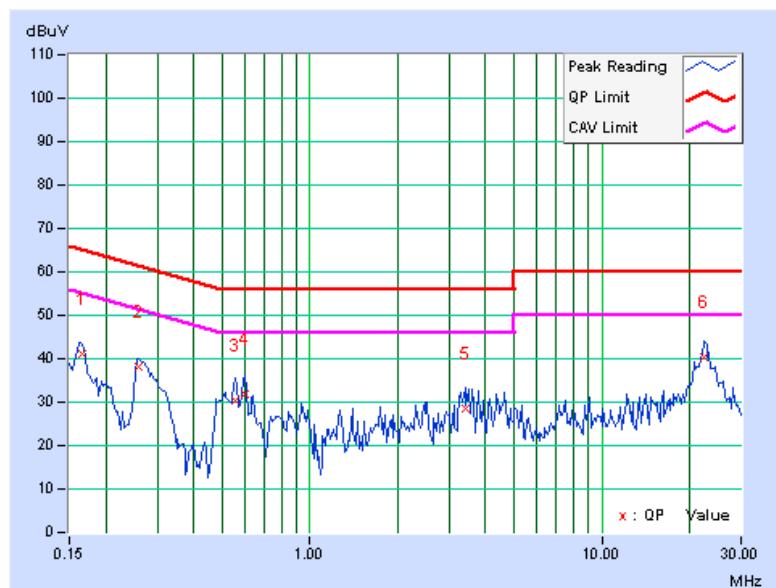
4.1.16 TEST RESULTS (MODE J)

PHASE	Line (L)	6dB BANDWIDTH	9 kHz
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.166	0.04	41.25	-	41.29	-	65.18	55.18	-23.89	-
2	0.259	0.04	38.12	-	38.16	-	61.45	51.45	-23.29	-
3	0.556	0.06	30.35	-	30.41	-	56.00	46.00	-25.59	-
4	0.599	0.07	31.67	-	31.74	-	56.00	46.00	-24.26	-
5	3.398	0.13	28.22	-	28.35	-	56.00	46.00	-27.65	-
6	22.508	0.64	39.65	-	40.29	-	60.00	50.00	-19.71	-

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





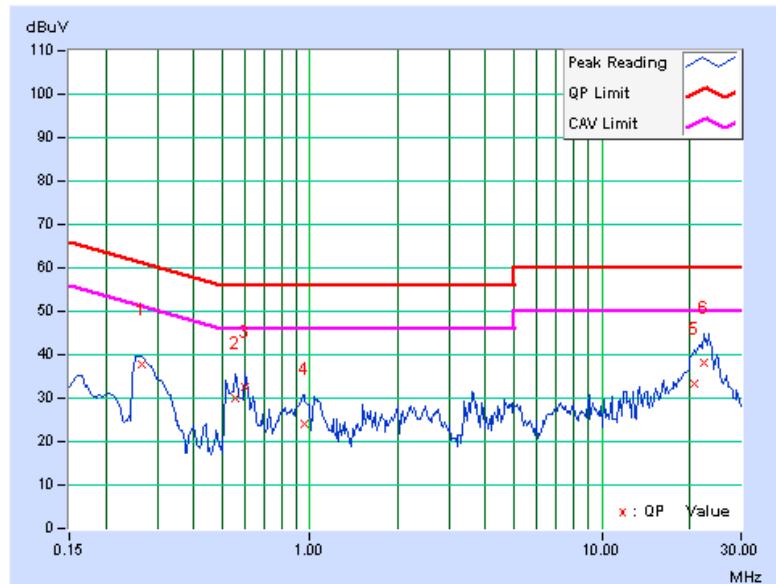
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PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.267	0.05	37.68	-	37.73	-	61.20	51.20	-23.47	-
2	0.556	0.07	30.11	-	30.18	-	56.00	46.00	-25.82	-
3	0.599	0.08	32.62	-	32.70	-	56.00	46.00	-23.30	-
4	0.955	0.11	24.08	-	24.19	-	56.00	46.00	-31.81	-
5	20.859	0.58	32.65	-	33.23	-	60.00	50.00	-26.77	-
6	22.266	0.64	37.54	-	38.18	-	60.00	50.00	-21.82	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dB_uV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.
4. Section 15.205 restricted bands of operation shall compliance with the limits in Section 15.209.



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4.2.2 TEST INSTRUMENTS

For below 1GHz test, tested date: Nov. 17

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. 01, 2010	Oct. 31, 2011
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
R&S Loop Antenna	HFH2-Z2	100070	Feb. 03, 2010	Feb. 02, 2012
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.



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Above 1GHz test, tested date: Aug. 11~24

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	Aug. 28, 2009	Aug. 27, 2010
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
R&S Loop Antenna	HFH2-Z2	100070	Feb. 03, 2010	Feb. 02, 2011
RF Switches	EMH-011	1001	NA	NA
RF CABLE (Chaintek)	Sucoflex 106	28077	Aug. 14, 2010	Aug. 13, 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.



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4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

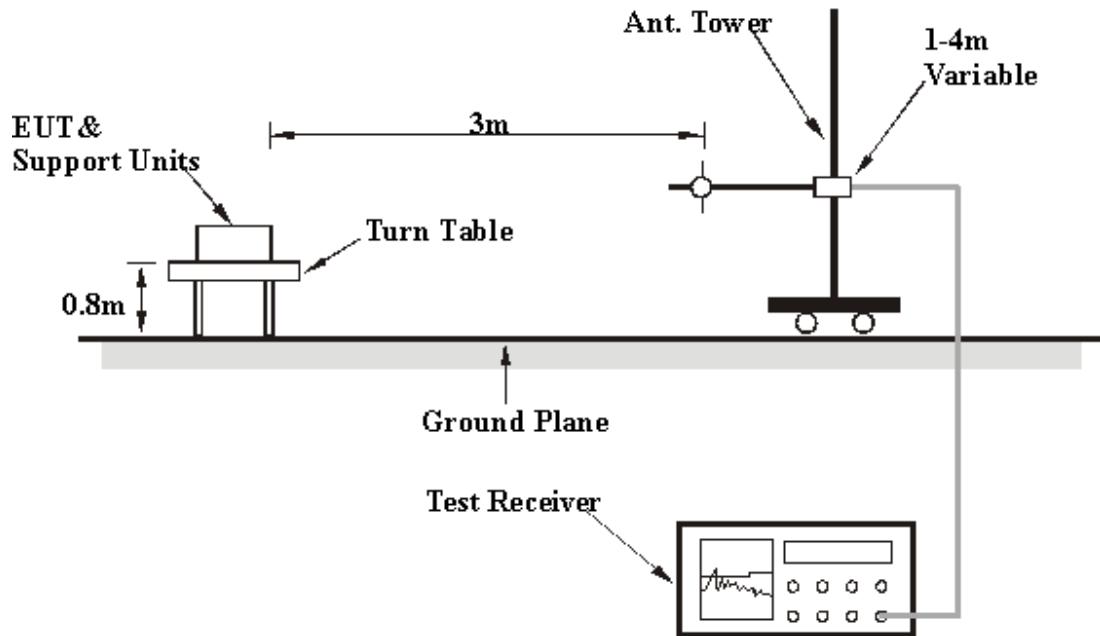
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITIONS

Same as the 4.1.6



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4.2.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA : 802.11g OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		Channel 6		FREQUENCY RANGE
INPUT POWER (SYSTEM)		120Vac, 60Hz		DETECTOR FUNCTION
ENVIRONMENTAL CONDITIONS		22deg. C, 63%RH 1013 hPa		TESTED BY
				Wen Yu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	125.03	36.74 QP	43.50	-6.76	1.55 H	215	23.87	12.87
2	144.00	37.91 QP	43.50	-5.59	1.45 H	125	23.37	14.54
3	223.35	36.57 QP	46.00	-9.43	1.32 H	251	24.40	12.17
4	250.00	41.59 QP	46.00	-4.41	1.15 H	322	28.02	13.57
5	375.00	40.35 QP	46.00	-5.65	1.11 H	150	22.80	17.55
6	500.00	40.92 QP	46.00	-5.08	1.02 H	52	20.16	20.76
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	74.60	36.95 QP	40.00	-3.05	1.00 V	52	26.03	10.92
2	113.11	34.69 QP	43.50	-8.81	1.00 V	268	23.55	11.14
3	143.24	36.25 QP	43.50	-7.25	1.00 V	264	21.65	14.60
4	250.00	40.26 QP	46.00	-5.74	1.00 V	169	26.69	13.57
5	600.00	42.66 QP	46.00	-3.34	1.32 V	15	19.39	23.27
6	1000.00	42.32 QP	54.00	-11.68	1.48 V	26	13.71	28.61

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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ABOVE 1GHz WORST-CASE DATA

802.11b DSSS MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		Channel 1		FREQUENCY RANGE 1 ~ 25GHz
INPUT POWER (SYSTEM)		120Vac, 60Hz		DETECTOR FUNCTION Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS		25deg. C, 66%RH 1013 hPa		TESTED BY Duke Tseng

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2389.33	65.6 PK	74.0	-8.4	1.10 H	20	35.54	30.06
2	2389.33	45.3 AV	54.0	-8.7	1.10 H	20	15.24	30.06
3	*2412.00	106.4 PK			1.10 H	88	76.25	30.15
4	*2412.00	103.0 AV			1.10 H	88	72.85	30.15
5	4824.00	52.0 PK	74.0	-22.0	1.47 H	253	16.57	35.43
6	4824.00	46.2 AV	54.0	-7.8	1.47 H	253	10.77	35.43

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2389.47	62.2 PK	74.0	-11.8	1.13 V	284	32.14	30.06
2	2389.47	43.2 AV	54.0	-10.8	1.13 V	284	13.14	30.06
3	*2412.00	98.0 PK			1.13 V	349	67.85	30.15
4	*2412.00	95.2 AV			1.13 V	349	65.05	30.15
5	4824.00	55.1 PK	74.0	-18.9	1.31 V	278	19.67	35.43
6	4824.00	49.3 AV	54.0	-4.7	1.31 V	278	13.87	35.43

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “*”: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		Channel 6		FREQUENCY RANGE 1 ~ 25GHz
INPUT POWER (SYSTEM)		120Vac, 60Hz		DETECTOR FUNCTION Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS		25deg. C, 66%RH 1013 hPa		TESTED BY Duke Tseng

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	104.6 PK			1.01 H	6	74.36	30.24
2	*2437.00	102.0 AV			1.01 H	6	71.76	30.24
3	4874.00	47.2 PK	74.0	-26.8	1.46 H	246	11.68	35.52
4	4874.00	39.4 AV	54.0	-14.6	1.46 H	246	3.88	35.52
5	7311.00	48.7 PK	74.0	-25.3	1.00 H	20	6.74	41.96
6	7311.00	36.7 AV	54.0	-17.3	1.00 H	20	-5.26	41.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	96.9 PK			1.14 V	294	66.66	30.24
2	*2437.00	94.1 AV			1.14 V	294	63.86	30.24
3	4874.00	52.0 PK	74.0	-22.0	1.29 V	270	16.48	35.52
4	4874.00	42.4 AV	54.0	-11.6	1.29 V	270	6.88	35.52
5	7311.00	48.5 PK	74.0	-25.5	1.00 V	5	6.54	41.96
6	7311.00	36.7 AV	54.0	-17.3	1.00 V	5	-5.26	41.96

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “*”: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		Channel 11		FREQUENCY RANGE 1 ~ 25GHz
INPUT POWER (SYSTEM)		120Vac, 60Hz		DETECTOR FUNCTION Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS		25deg. C, 66%RH 1013 hPa		TESTED BY Duke Tseng

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	105.4 PK			1.02 H	5	75.06	30.34
2	*2462.00	102.3 AV			1.02 H	5	71.96	30.34
3	2483.50	70.8 PK	74.0	-3.2	1.02 H	5	40.37	30.43
4	2483.50	46.2 AV	54.0	-7.8	1.02 H	5	15.77	30.43
5	4924.00	47.8 PK	74.0	-26.2	1.28 H	279	12.18	35.62
6	4924.00	32.6 AV	54.0	-21.4	1.28 H	279	-3.02	35.62
7	7386.00	49.9 PK	74.0	-24.1	1.32 H	151	7.80	42.10
8	7386.00	37.1 AV	54.0	-16.9	1.32 H	151	-5.00	42.10

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	96.9 PK			1.12 V	295	66.56	30.34
2	*2462.00	94.0 AV			1.12 V	295	63.66	30.34
3	2483.53	59.7 PK	74.0	-14.3	1.13 V	294	29.27	30.43
4	2483.53	42.6 AV	54.0	-11.4	1.13 V	294	12.17	30.43
5	4924.00	53.6 PK	74.0	-20.4	1.24 V	304	17.98	35.62
6	4924.00	34.3 AV	54.0	-19.7	1.24 V	304	-1.32	35.62
7	7386.00	50.5 PK	74.0	-23.5	1.74 V	55	8.40	42.10
8	7386.00	37.0 AV	54.0	-17.0	1.74 V	55	-5.10	42.10

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “*”: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		Channel 12		FREQUENCY RANGE 1 ~ 25GHz
INPUT POWER (SYSTEM)		120Vac, 60Hz		DETECTOR FUNCTION Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS		25deg. C, 66%RH 1013 hPa		TESTED BY Duke Tseng

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2467.00	93.2 PK			1.02 H	4	62.84	30.36
2	*2467.00	90.3 AV			1.02 H	4	59.94	30.36
3	2483.50	65.6 PK	74.0	-8.4	1.02 H	4	35.17	30.43
4	2483.50	41.9 AV	54.0	-12.1	1.02 H	4	11.47	30.43
5	4937.00	43.1 PK	74.0	-30.9	1.32 H	270	7.46	35.64
6	4937.00	30.9 AV	54.0	-23.1	1.32 H	270	-4.74	35.64
7	7401.00	50.6 PK	74.0	-23.4	1.30 H	327	8.47	42.13
8	7401.00	37.3 AV	54.0	-16.7	1.30 H	327	-4.83	42.13

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2467.00	84.7 PK			1.16 V	0	54.34	30.36
2	*2467.00	81.9 AV			1.16 V	0	51.54	30.36
3	2483.50	57.7 PK	74.0	-16.3	1.16 V	2	27.27	30.43
4	2483.50	41.4 AV	54.0	-12.6	1.16 V	2	10.97	30.43
5	4937.00	43.5 PK	74.0	-30.5	1.30 V	313	7.86	35.64
6	4937.00	31.2 AV	54.0	-22.8	1.30 V	313	-4.44	35.64
7	7401.00	50.2 PK	74.0	-23.8	1.55 V	60	8.07	42.13
8	7401.00	37.1 AV	54.0	-16.9	1.55 V	60	-5.03	42.13

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “*”: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		Channel 13		FREQUENCY RANGE 1 ~ 25GHz
INPUT POWER (SYSTEM)		120Vac, 60Hz		DETECTOR FUNCTION Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS		25deg. C, 66%RH 1013 hPa		TESTED BY Duke Tseng

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2472.00	91.7 PK			1.02 H	1	61.32	30.38
2	*2472.00	88.5 AV			1.02 H	1	58.12	30.38
3	2483.50	68.4 PK	74.0	-5.6	1.04 H	1	37.97	30.43
4	2483.50	46.5 AV	54.0	-7.5	1.04 H	1	16.07	30.43
5	4944.00	43.2 PK	74.0	-30.8	1.30 H	277	7.55	35.65
6	4944.00	30.9 AV	54.0	-23.1	1.30 H	277	-4.73	35.65
7	7416.00	50.2 PK	74.0	-23.8	1.29 H	311	8.04	42.16
8	7416.00	37.1 AV	54.0	-16.9	1.29 H	311	-5.06	42.16

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2472.00	85.3 PK			1.16 V	349	54.92	30.38
2	*2472.00	80.8 AV			1.16 V	349	50.42	30.38
3	2483.53	60.5 PK	74.0	-13.5	1.17 V	348	30.07	30.43
4	2483.53	42.3 AV	54.0	-11.7	1.17 V	348	11.87	30.43
5	4944.00	43.5 PK	74.0	-30.5	1.29 V	314	7.85	35.65
6	4944.00	31.0 AV	54.0	-23.0	1.29 V	314	-4.65	35.65
7	7416.00	50.1 PK	74.0	-23.9	1.43 V	105	7.94	42.16
8	7416.00	37.0 AV	54.0	-17.0	1.43 V	105	-5.16	42.16

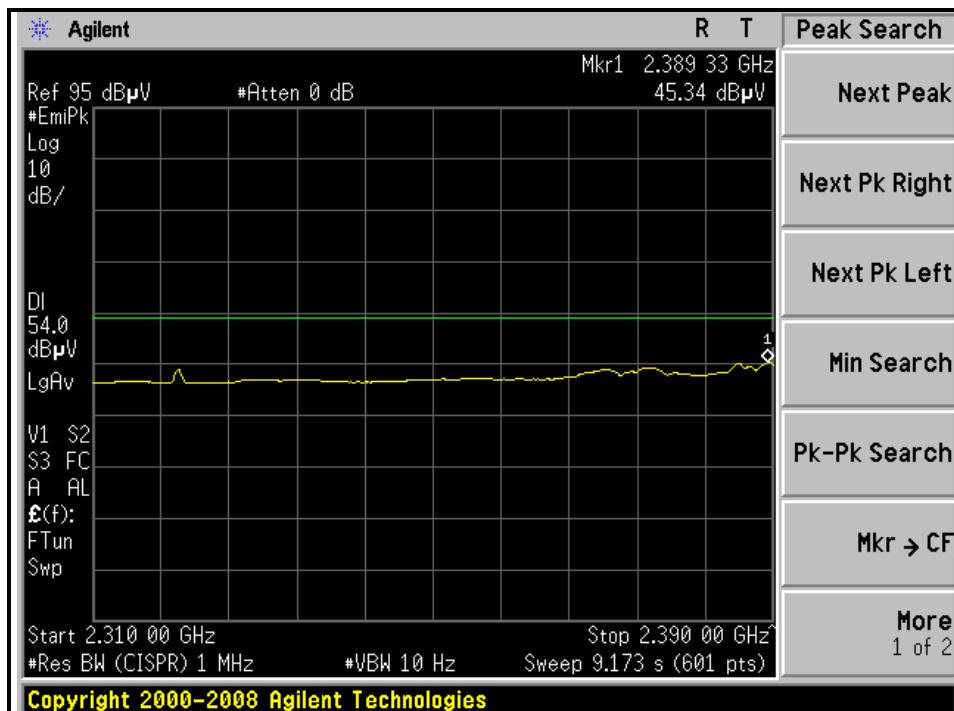
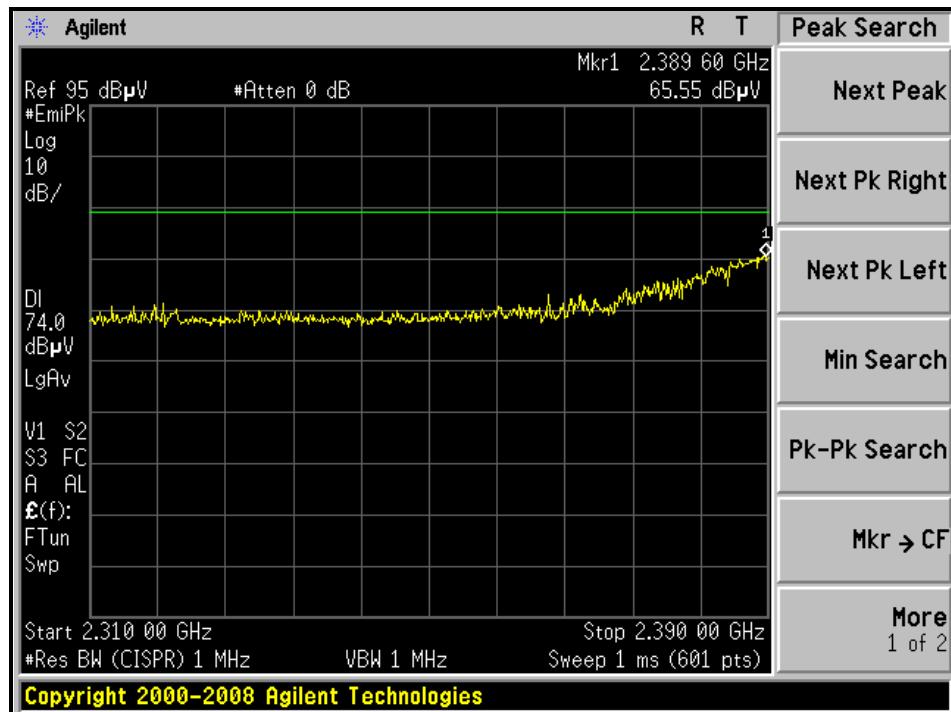
REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “*”: Fundamental frequency.



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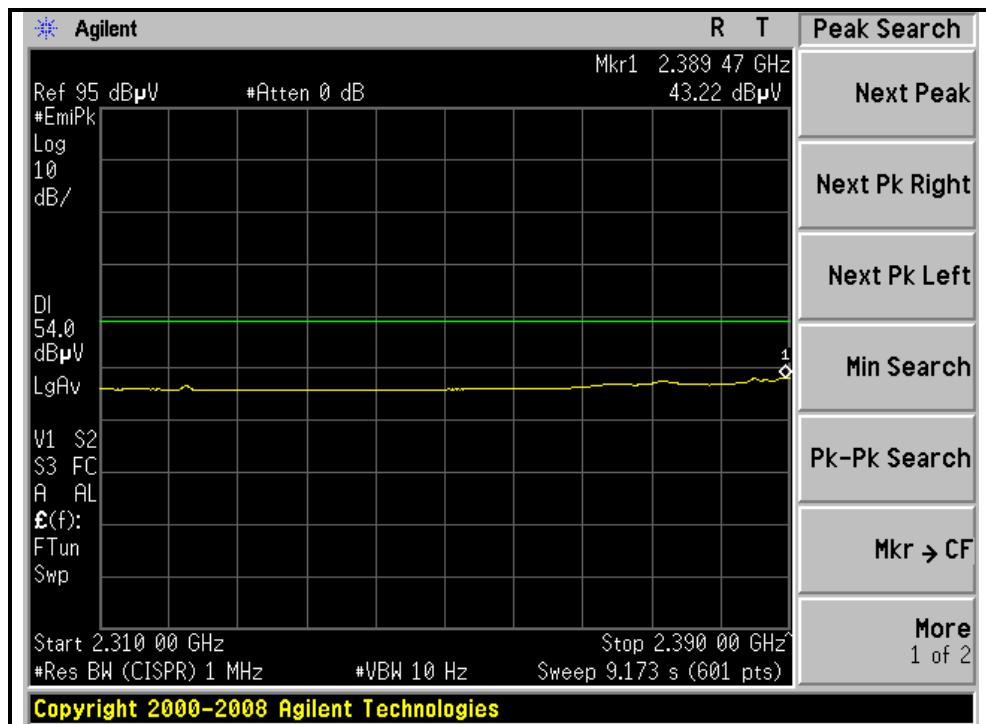
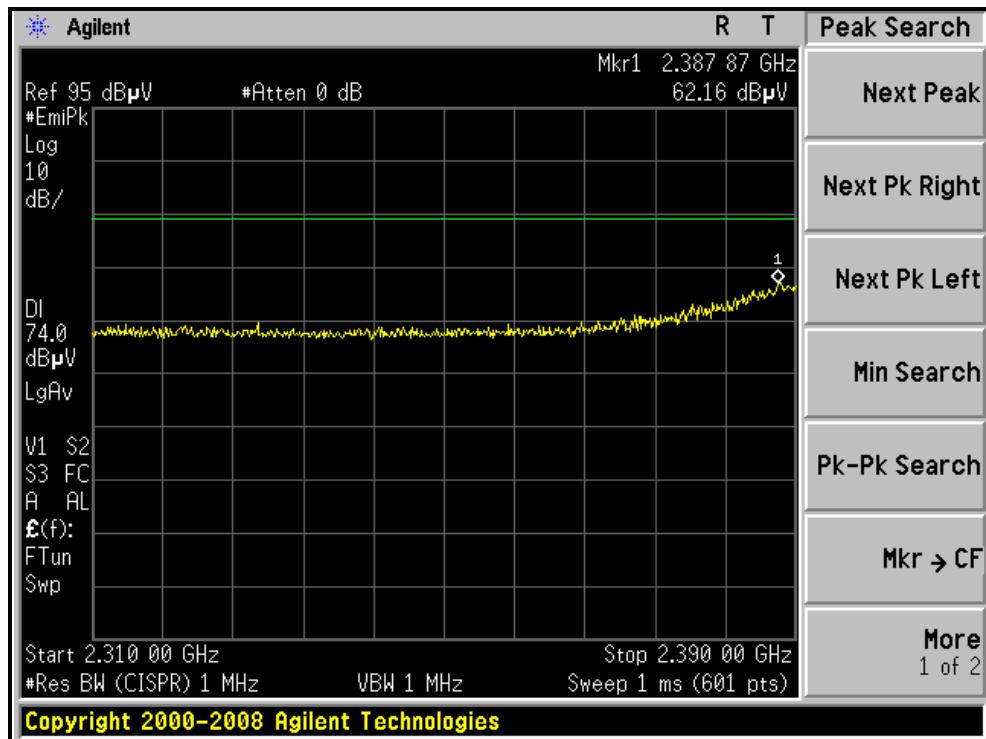
RESTRICTED BANDEDGE (802.11b MODE,CH1, HORIZONTAL)





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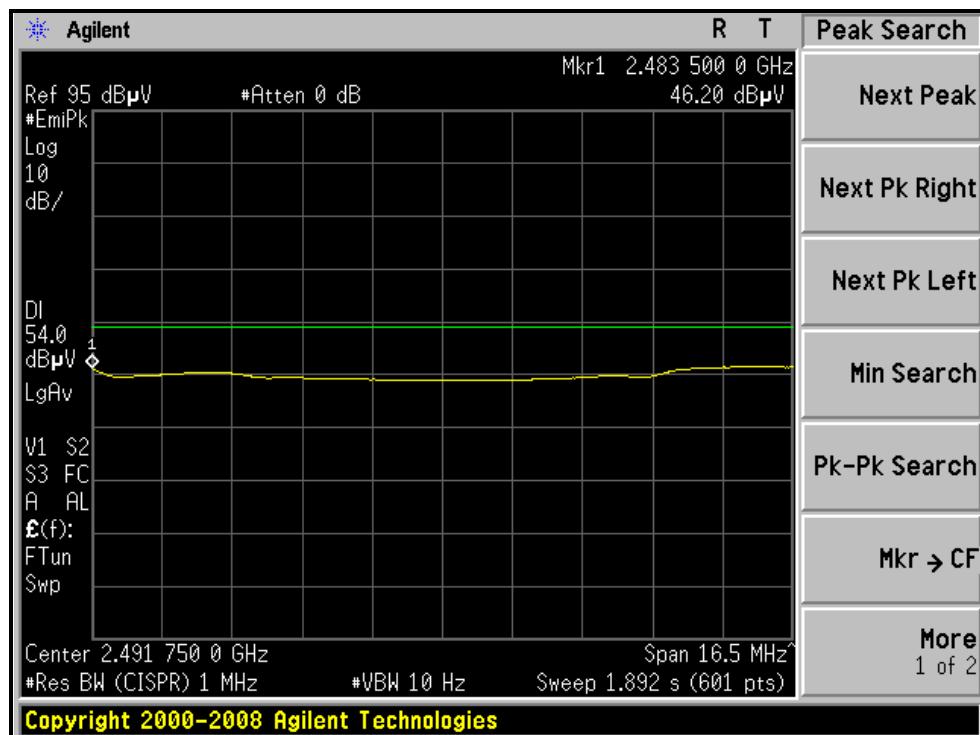
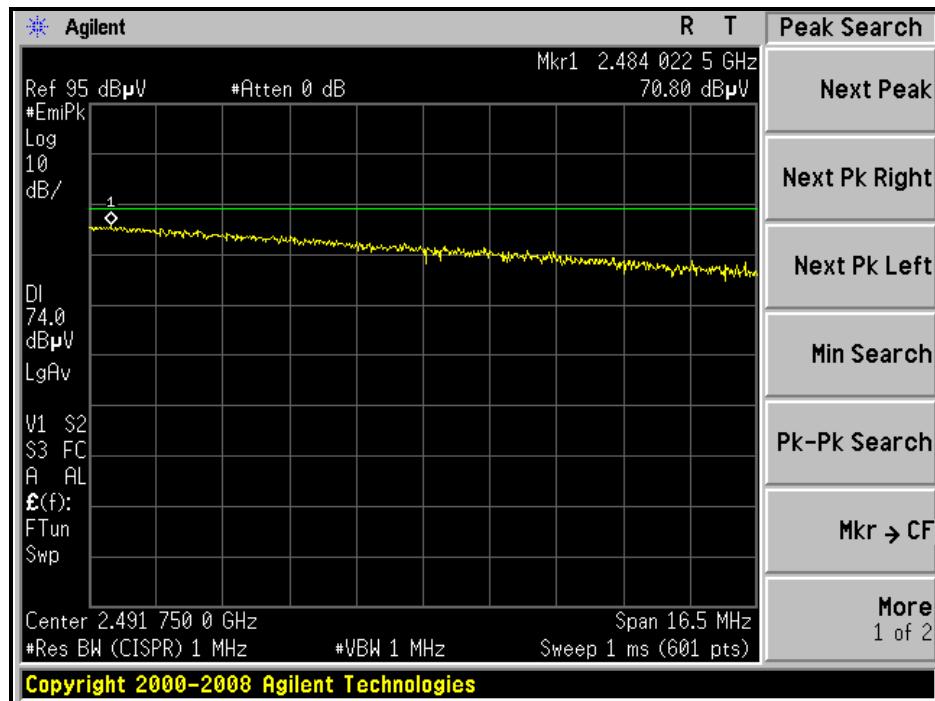
RESTRICTED BANDEDGE (802.11b MODE,CH1, VERTICAL)





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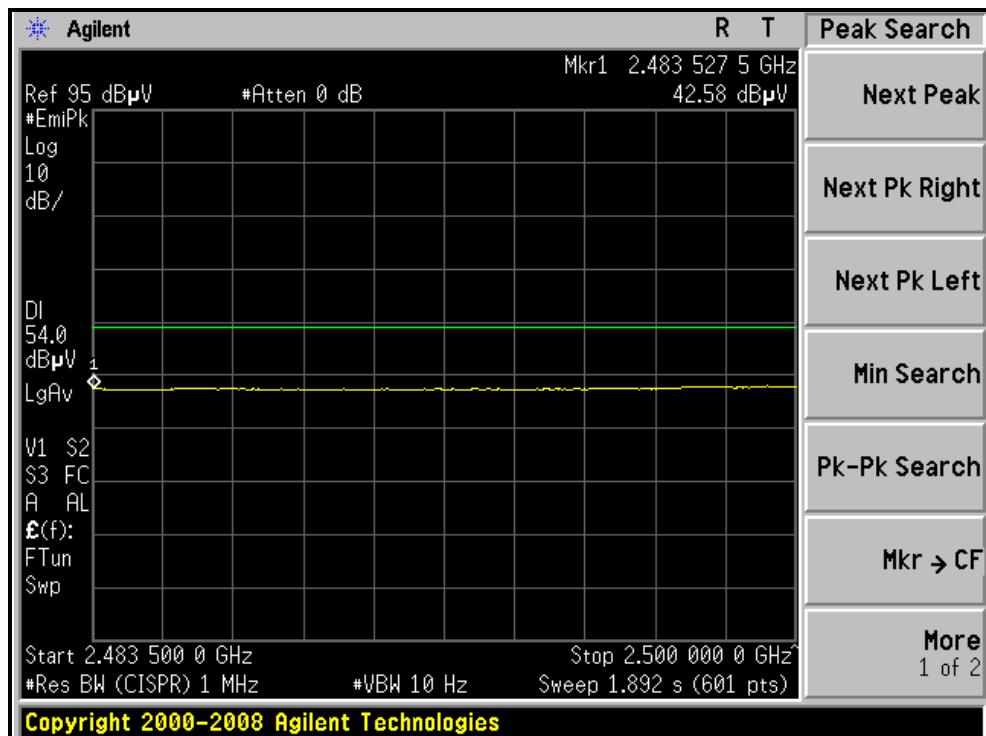
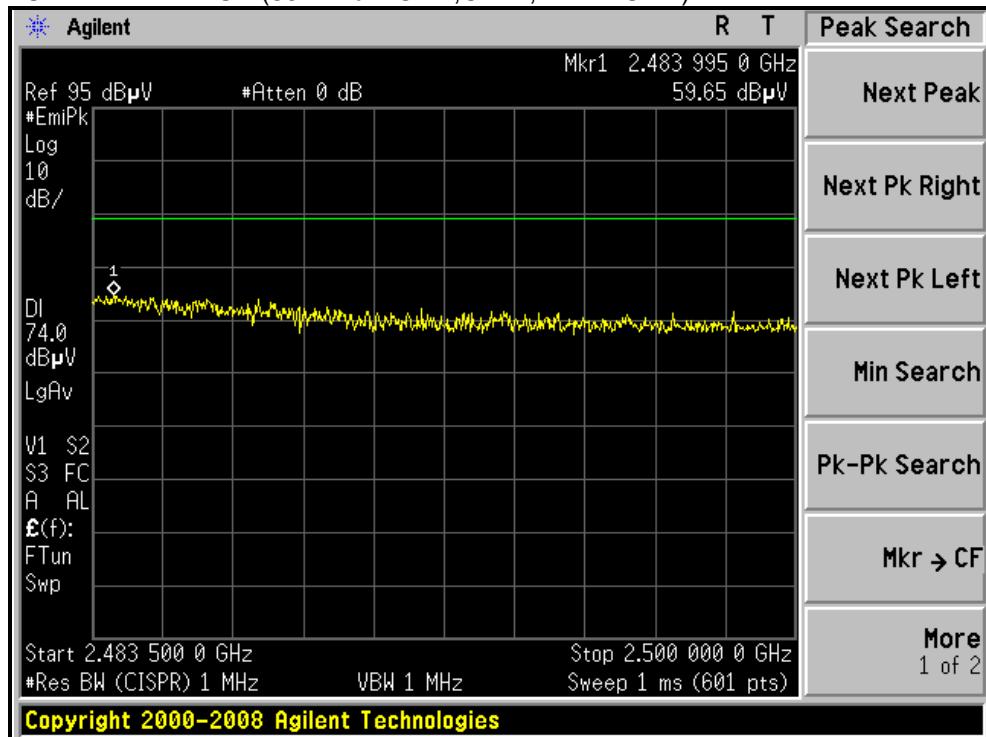
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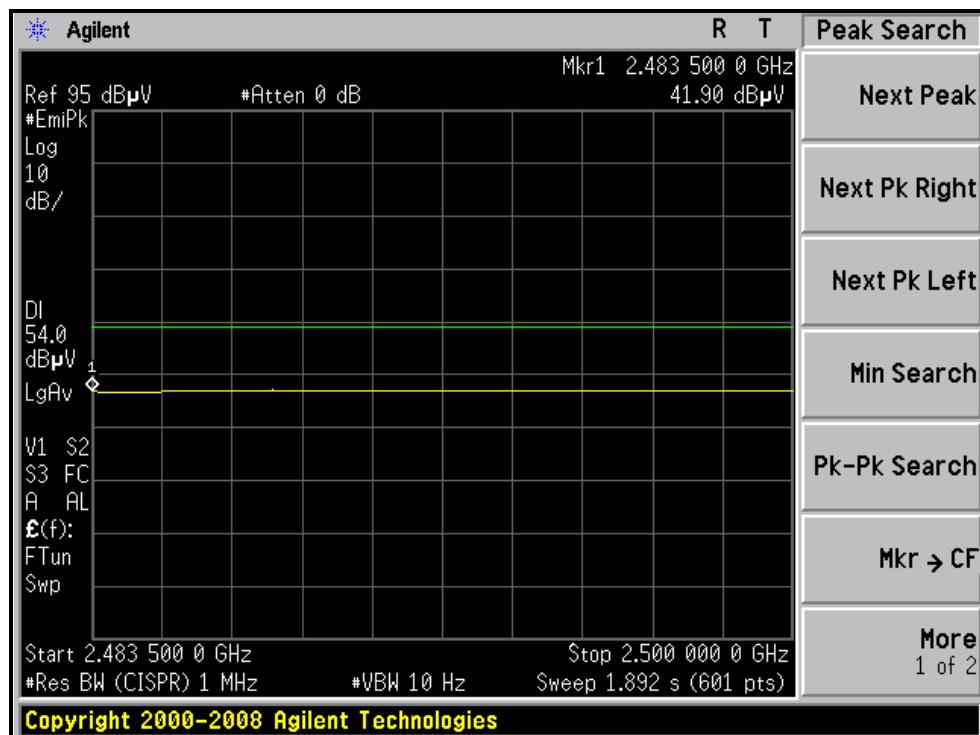
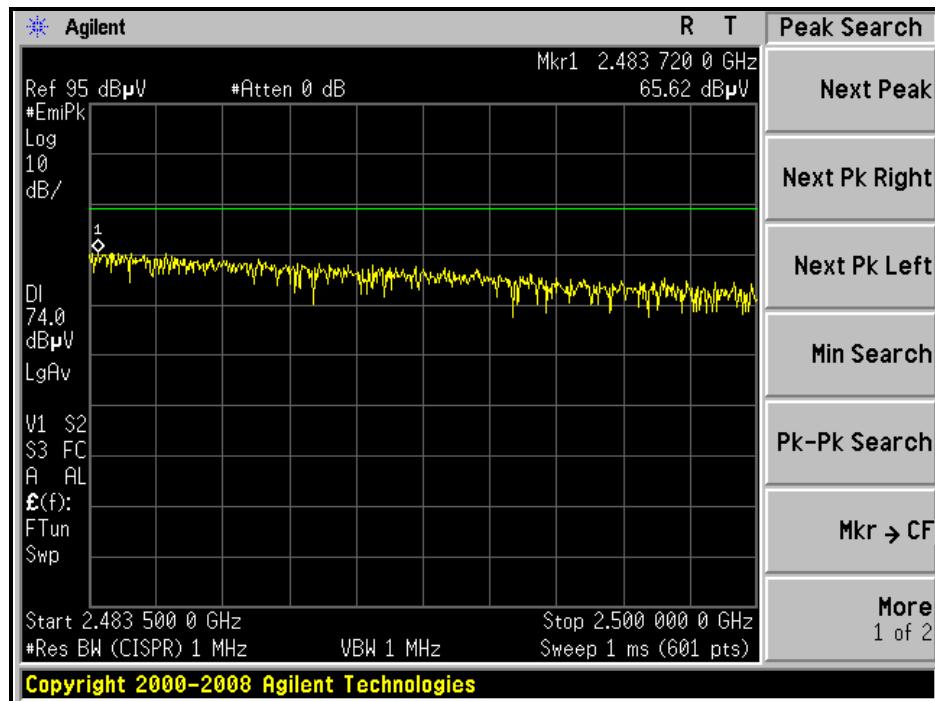
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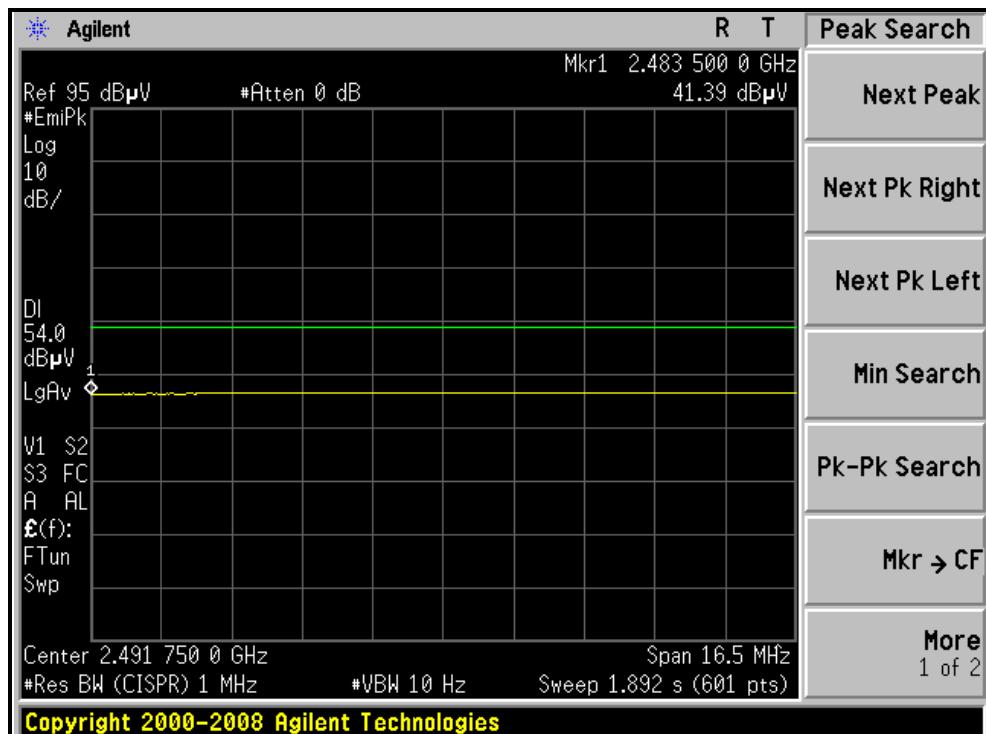
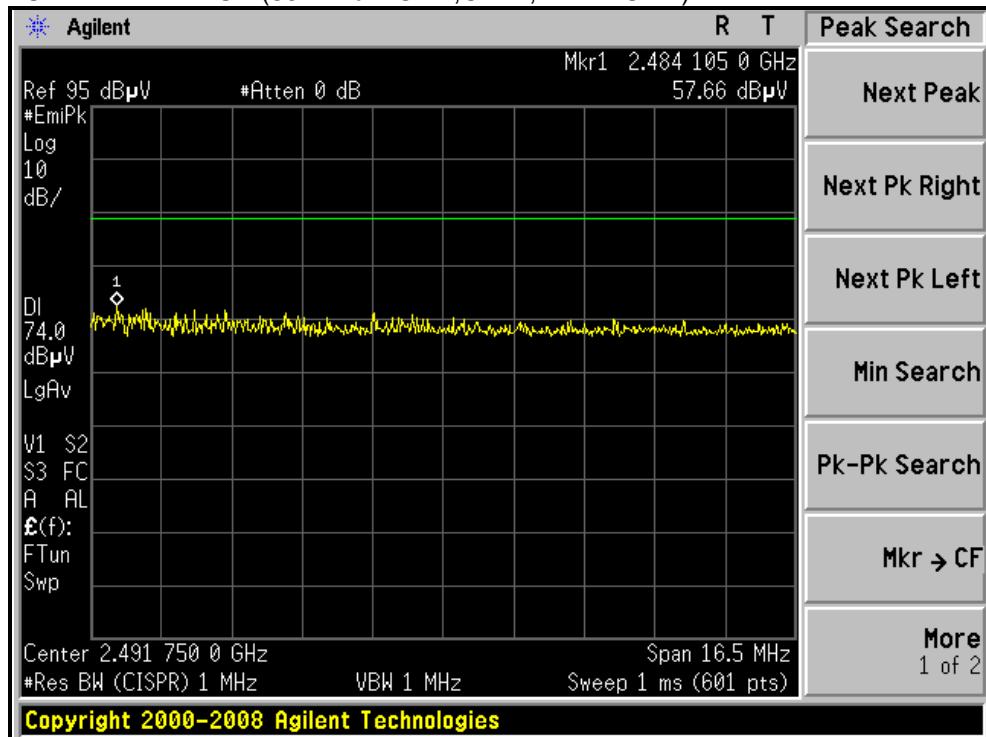
RESTRICTED BANDEDGE (802.11b MODE,CH12, HORIZONTAL)





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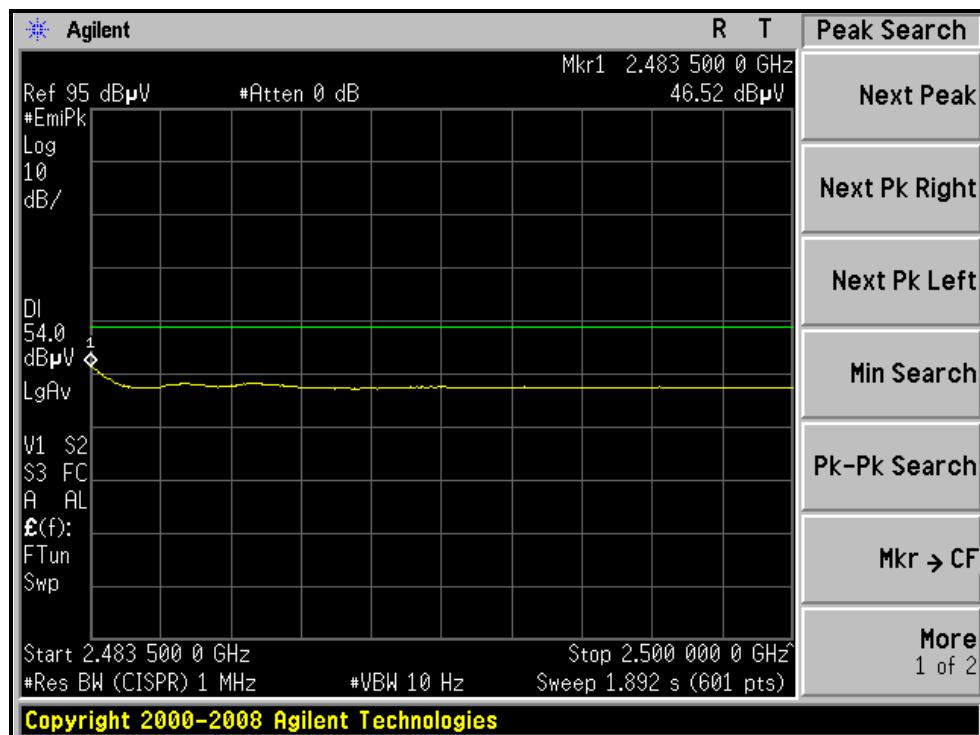
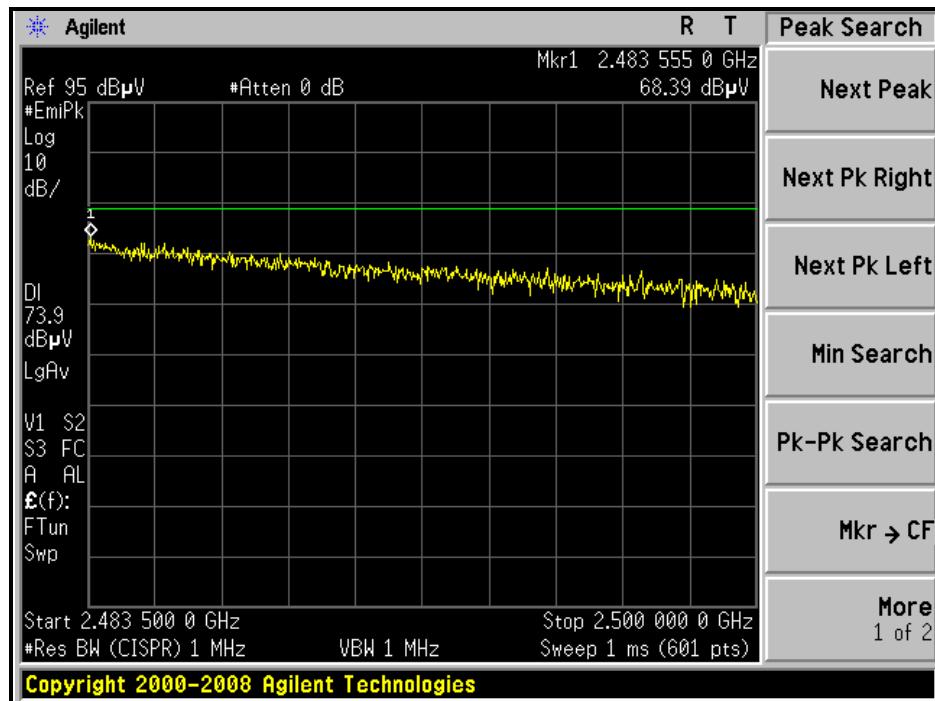
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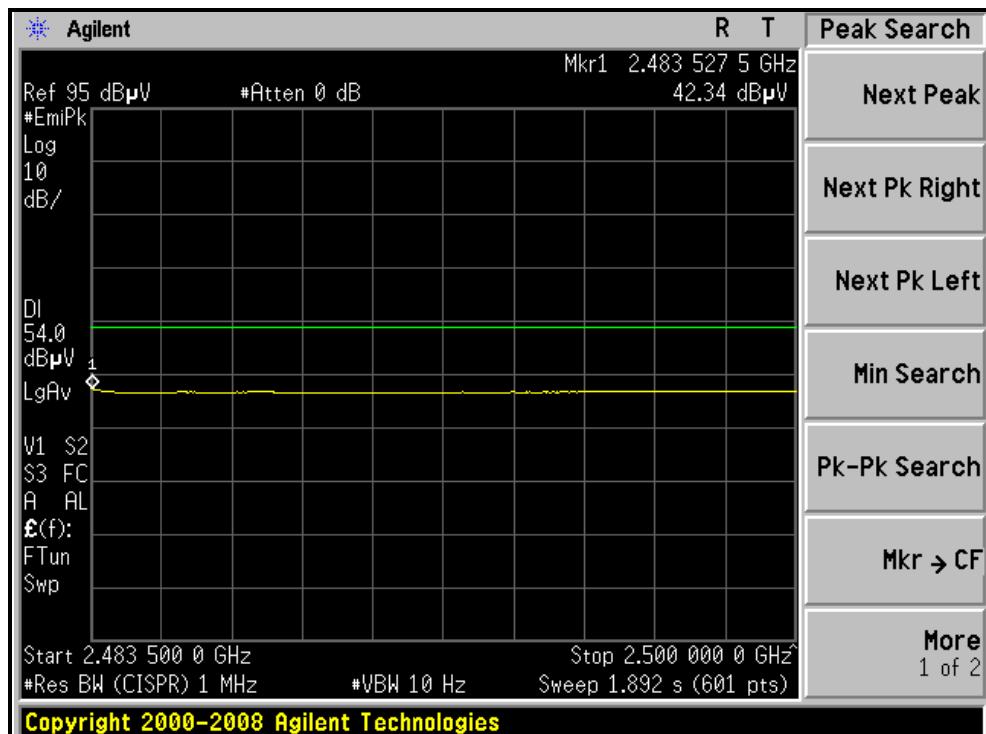
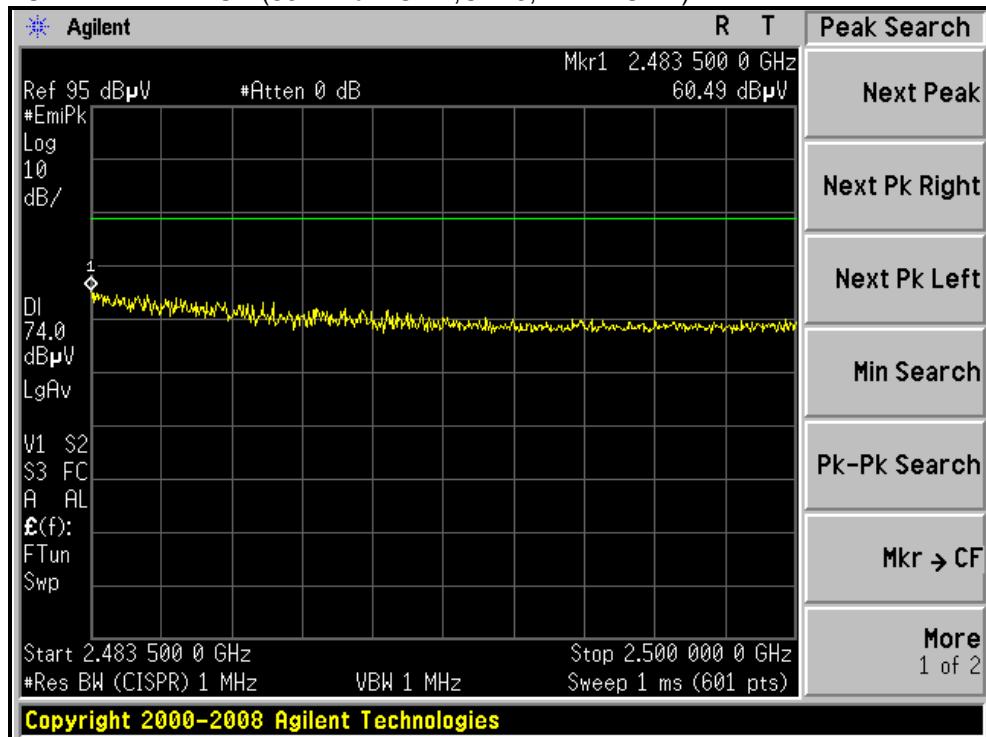
RESTRICTED BANDEDGE (802.11b MODE,CH13, HORIZONTAL)





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RESTRICTED BANDEDGE (802.11b MODE,CH13, VERTICAL)





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802.11g OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		FREQUENCY RANGE		1 ~ 25GHz
INPUT POWER (SYSTEM)		DETECTOR FUNCTION		Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS		TESTED BY		Duke Tseng

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.3 PK	74.0	-5.7	1.32 H	77	38.24	30.06
2	2390.00	47.9 AV	54.0	-6.1	1.32 H	77	17.84	30.06
3	*2412.00	105.9 PK			1.13 H	87	75.75	30.15
4	*2412.00	96.1 AV			1.13 H	87	65.95	30.15
5	4824.00	50.4 PK	74.0	-23.6	2.78 H	250	14.97	35.43
6	4824.00	32.3 AV	54.0	-21.7	2.78 H	250	-3.13	35.43
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	64.0 PK	74.0	-10.0	1.12 V	285	33.94	30.06
2	2390.00	44.7 AV	54.0	-9.3	1.12 V	285	14.64	30.06
3	*2412.00	98.2 PK			1.11 V	284	68.05	30.15
4	*2412.00	88.7 AV			1.11 V	284	58.55	30.15
5	4824.00	53.2 PK	74.0	-20.8	1.19 V	331	17.77	35.43
6	4824.00	34.5 AV	54.0	-19.5	1.19 V	331	-0.93	35.43

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “*”: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		Channel 6		FREQUENCY RANGE 1 ~ 25GHz
INPUT POWER (SYSTEM)		120Vac, 60Hz		DETECTOR FUNCTION Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS		25deg. C, 66%RH 1013 hPa		TESTED BY Duke Tseng

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	109.0 PK			1.30 H	9	78.76	30.24
2	*2437.00	99.6 AV			1.30 H	9	69.36	30.24
3	4874.00	53.3 PK	74.0	-20.7	1.71 H	258	17.78	35.52
4	4874.00	39.1 AV	54.0	-14.9	1.71 H	258	3.58	35.52
5	7311.00	50.5 PK	74.0	-23.5	1.47 H	46	8.54	41.96
6	7311.00	37.7 AV	54.0	-16.3	1.47 H	46	-4.26	41.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	101.2 PK			1.09 V	284	70.96	30.24
2	*2437.00	91.4 AV			1.09 V	284	61.16	30.24
3	4874.00	56.6 PK	74.0	-17.4	1.18 V	330	21.08	35.52
4	4874.00	41.5 AV	54.0	-12.5	1.18 V	330	5.98	35.52
5	7311.00	50.6 PK	74.0	-23.4	1.57 V	47	8.64	41.96
6	7311.00	37.4 AV	54.0	-16.6	1.57 V	47	-4.56	41.96

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “*”: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		Channel 11		FREQUENCY RANGE 1 ~ 25GHz
INPUT POWER (SYSTEM)		120Vac, 60Hz		DETECTOR FUNCTION Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS		25deg. C, 66%RH 1013 hPa		TESTED BY Duke Tseng

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	105.8 PK			1.00 H	5	75.46	30.34
2	*2462.00	95.9 AV			1.00 H	5	65.56	30.34
3	2483.50	68.3 PK	74.0	-5.7	1.03 H	1	37.87	30.43
4	2483.50	49.1 AV	54.0	-4.9	1.03 H	1	18.67	30.43
5	4924.00	53.4 PK	74.0	-20.6	1.66 H	259	17.78	35.62
6	4924.00	39.0 AV	54.0	-15.0	1.66 H	259	3.38	35.62
7	7386.00	50.6 PK	74.0	-23.4	1.44 H	72	8.50	42.10
8	7386.00	37.5 AV	54.0	-16.5	1.44 H	72	-4.60	42.10

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	97.0 PK			1.11 V	292	66.66	30.34
2	*2462.00	88.0 AV			1.11 V	292	57.66	30.34
3	2483.53	59.0 PK	74.0	-15.0	1.11 V	358	28.57	30.43
4	2483.53	43.3 AV	54.0	-10.7	1.11 V	358	12.87	30.43
5	4924.00	42.7 PK	74.0	-31.3	1.66 V	182	7.08	35.62
6	4924.00	31.2 AV	54.0	-22.8	1.66 V	182	-4.42	35.62
7	7386.00	50.3 PK	74.0	-23.7	1.09 V	114	8.20	42.10
8	7386.00	37.2 AV	54.0	-16.8	1.09 V	114	-4.90	42.10

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “*”: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		FREQUENCY RANGE		1 ~ 25GHz
INPUT POWER (SYSTEM)		DETECTOR FUNCTION		Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS		TESTED BY		Duke Tseng

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2467.00	95.1 PK			1.01 H	13	64.74	30.36
2	*2467.00	85.5 AV			1.01 H	13	55.14	30.36
3	2483.50	65.5 PK	74.0	-8.5	1.01 H	16	35.07	30.43
4	2483.50	42.9 AV	54.0	-11.1	1.01 H	16	12.47	30.43
5	4904.00	43.1 PK	74.0	-30.9	1.23 H	268	7.52	35.58
6	4904.00	30.8 AV	54.0	-23.2	1.23 H	268	-4.78	35.58
7	7401.00	50.2 PK	74.0	-23.8	1.29 H	234	8.07	42.13
8	7401.00	37.2 AV	54.0	-16.8	1.29 H	234	-4.93	42.13

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2467.00	85.0 PK			1.76 V	103	54.64	30.36
2	*2467.00	74.7 AV			1.76 V	103	44.34	30.36
3	2483.50	55.9 PK	74.0	-18.1	1.76 V	103	25.47	30.43
4	2483.50	41.6 AV	54.0	-12.4	1.76 V	103	11.17	30.43
5	4934.00	43.2 PK	74.0	-30.8	1.31 V	307	7.56	35.64
6	4934.00	30.9 AV	54.0	-23.1	1.31 V	307	-4.74	35.64
7	7401.00	50.4 PK	74.0	-23.6	1.42 V	114	8.27	42.13
8	7401.00	37.1 AV	54.0	-16.9	1.42 V	114	-5.03	42.13

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “*”: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		FREQUENCY RANGE		1 ~ 25GHz
INPUT POWER (SYSTEM)		DETECTOR FUNCTION		Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS		TESTED BY		Duke Tseng

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2472.00	95.5 PK			1.01 H	15	65.12	30.38
2	*2472.00	85.5 AV			1.01 H	15	55.12	30.38
3	2483.83	67.8 PK	74.0	-6.2	1.04 H	0	37.37	30.43
4	2483.83	48.0 AV	54.0	-6.0	1.04 H	0	17.57	30.43
5	4944.00	43.2 PK	74.0	-30.8	1.33 H	270	7.55	35.65
6	4944.00	31.0 AV	54.0	-23.0	1.33 H	270	-4.65	35.65
7	7416.00	50.3 PK	74.0	-23.7	1.28 H	231	8.14	42.16
8	7416.00	37.3 AV	54.0	-16.7	1.28 H	231	-4.86	42.16

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2472.00	85.0 PK			1.48 V	104	54.62	30.38
2	*2472.00	75.1 AV			1.48 V	104	44.72	30.38
3	2483.75	57.0 PK	74.0	-17.0	1.48 V	104	26.57	30.43
4	2483.75	42.2 AV	54.0	-11.8	1.48 V	104	11.77	30.43
5	4944.00	43.3 PK	74.0	-30.7	1.22 V	311	7.65	35.65
6	4944.00	31.1 AV	54.0	-22.9	1.22 V	311	-4.55	35.65
7	7416.00	50.5 PK	74.0	-23.5	1.44 V	109	8.34	42.16
8	7416.00	37.2 AV	54.0	-16.8	1.44 V	109	-4.96	42.16

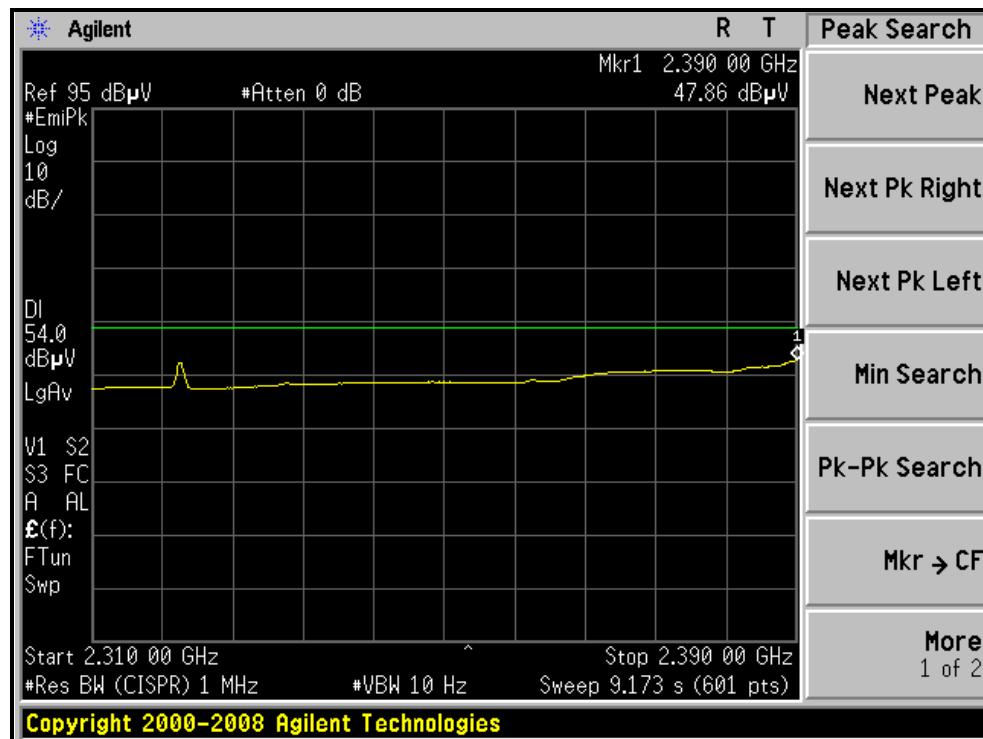
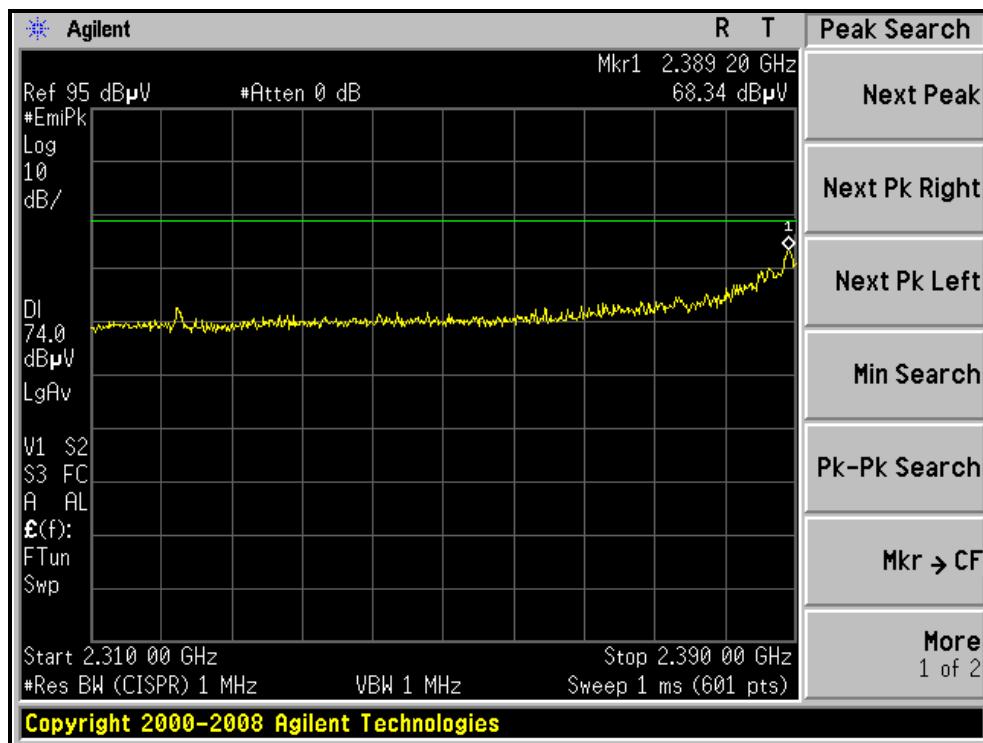
REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “*”: Fundamental frequency.



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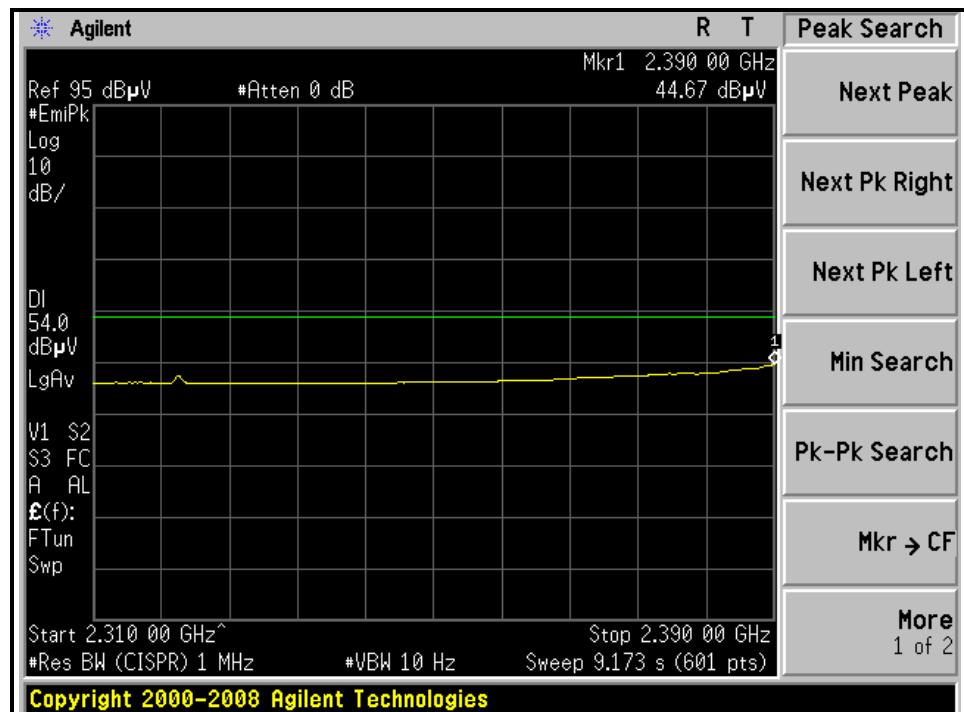
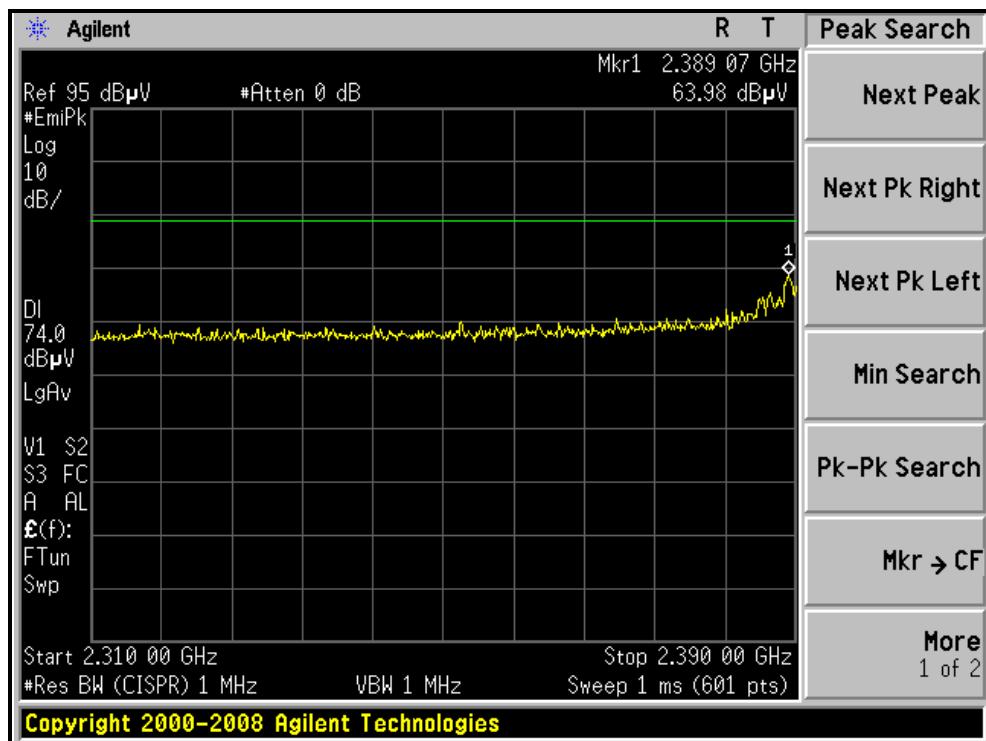
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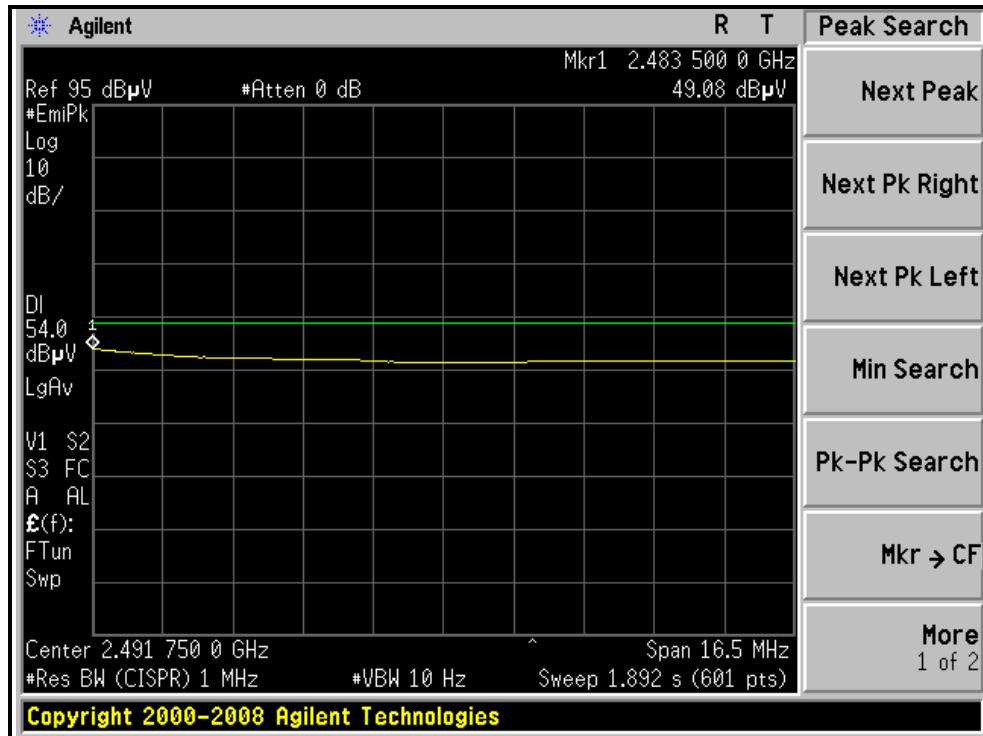
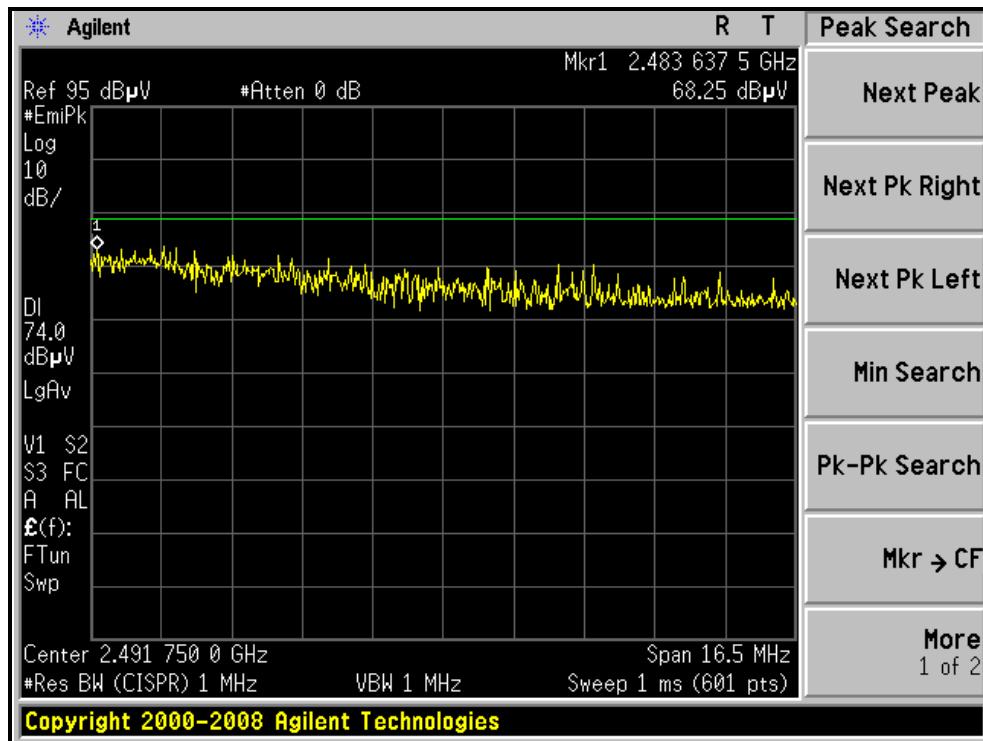
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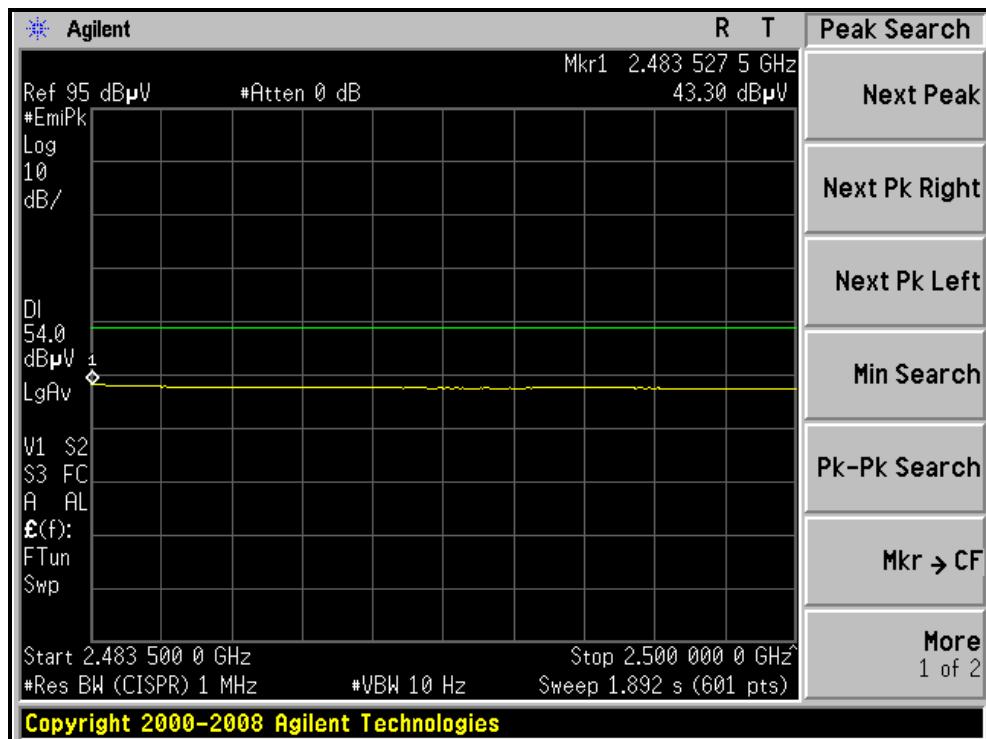
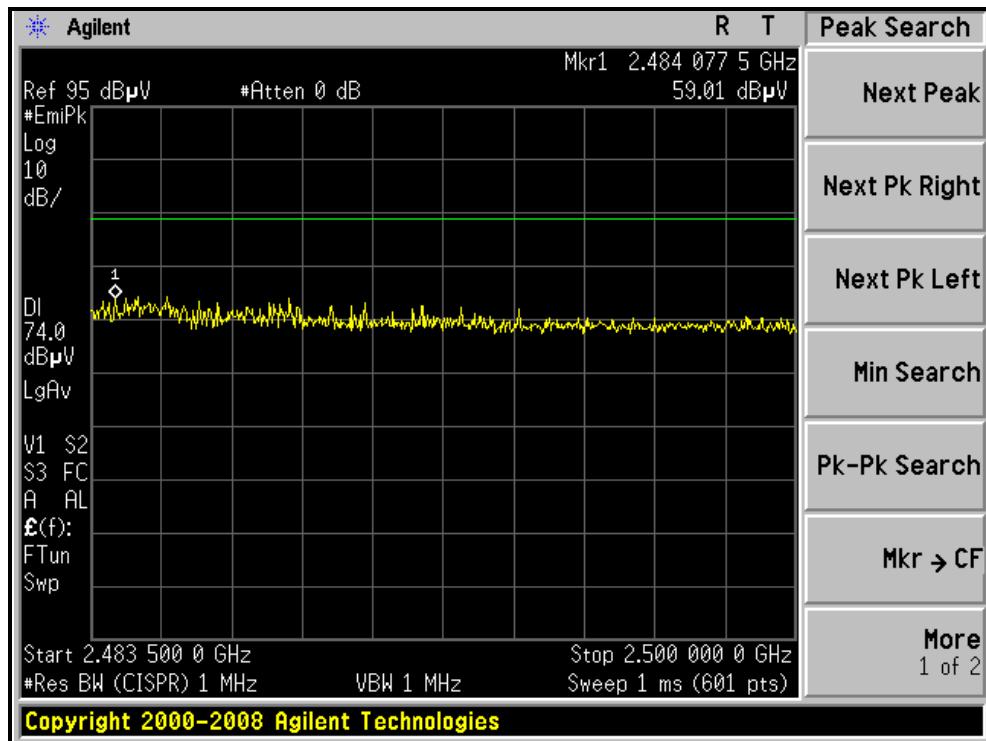
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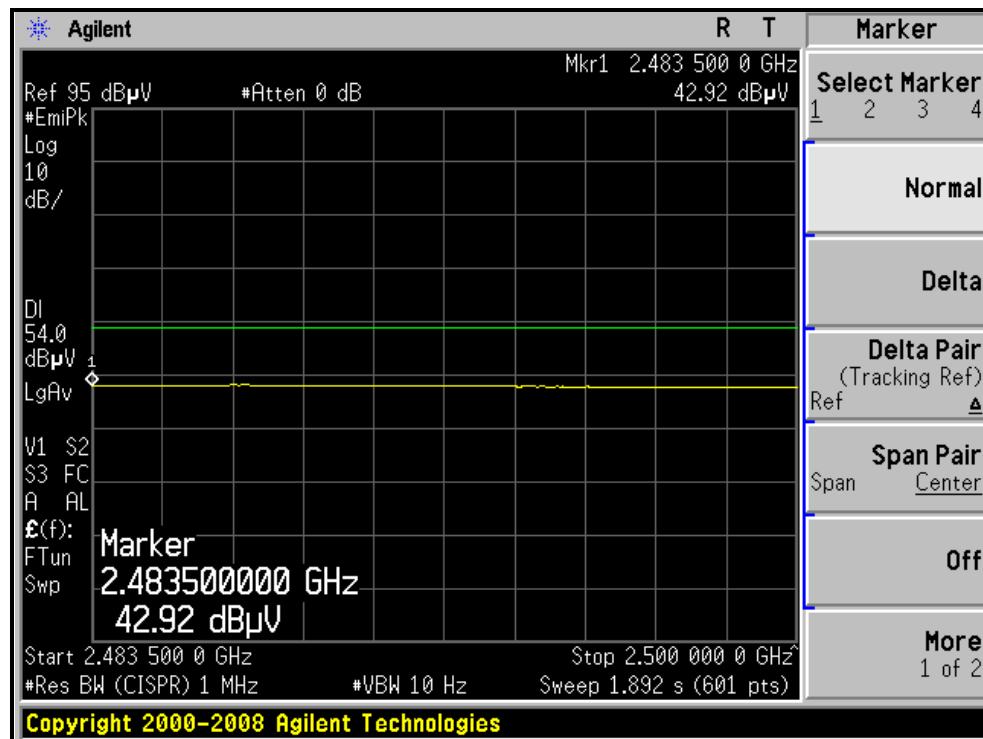
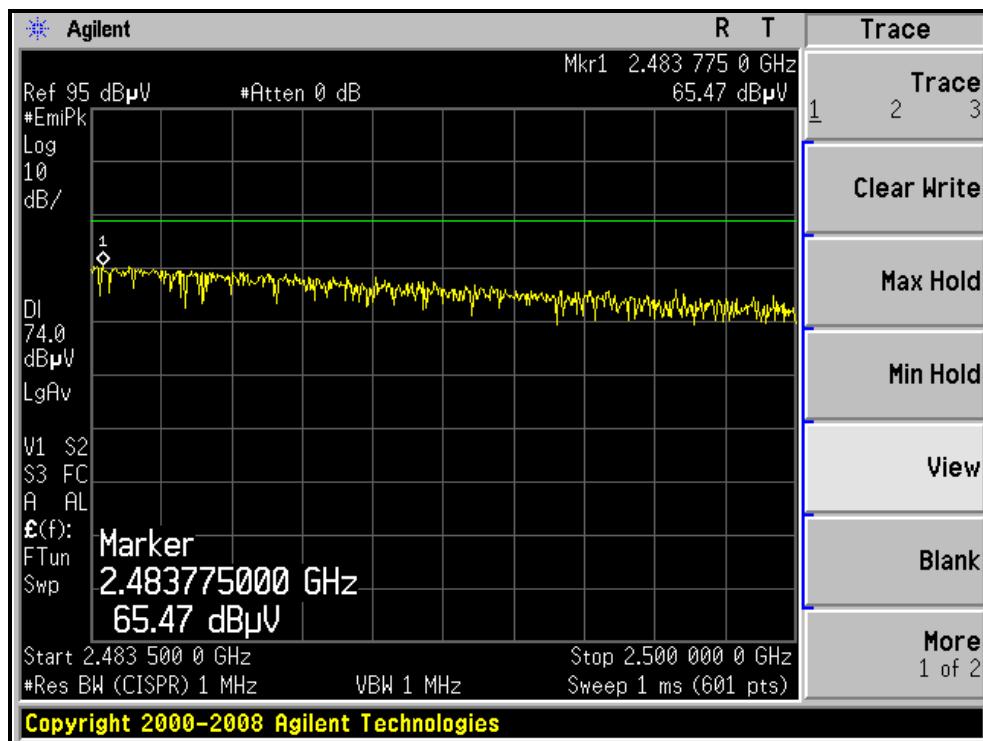
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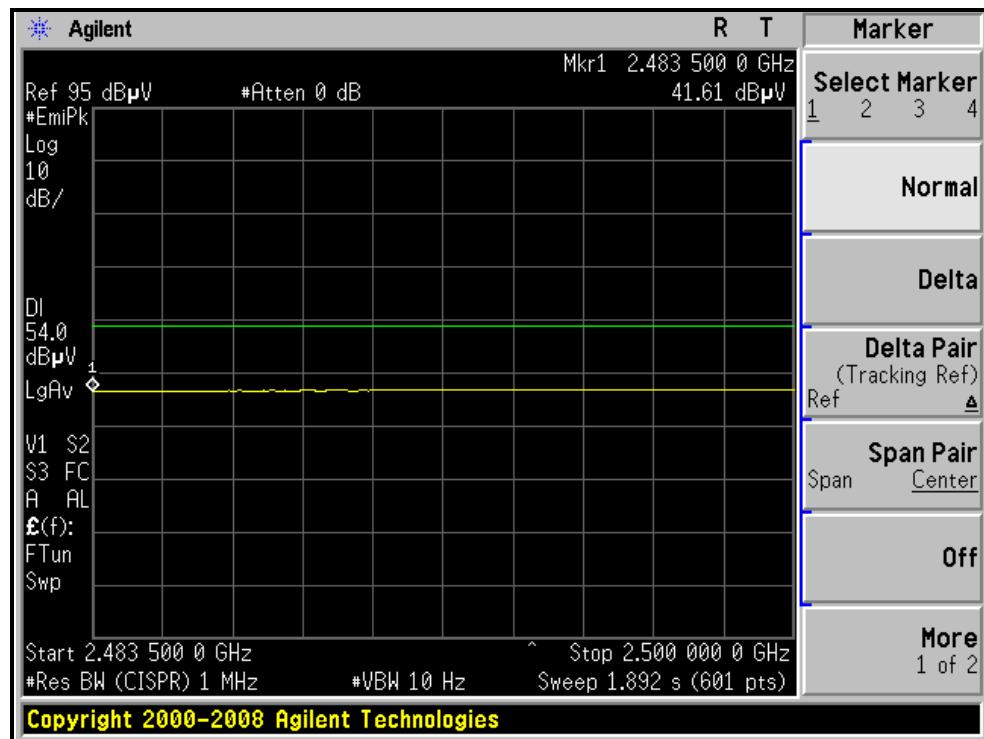
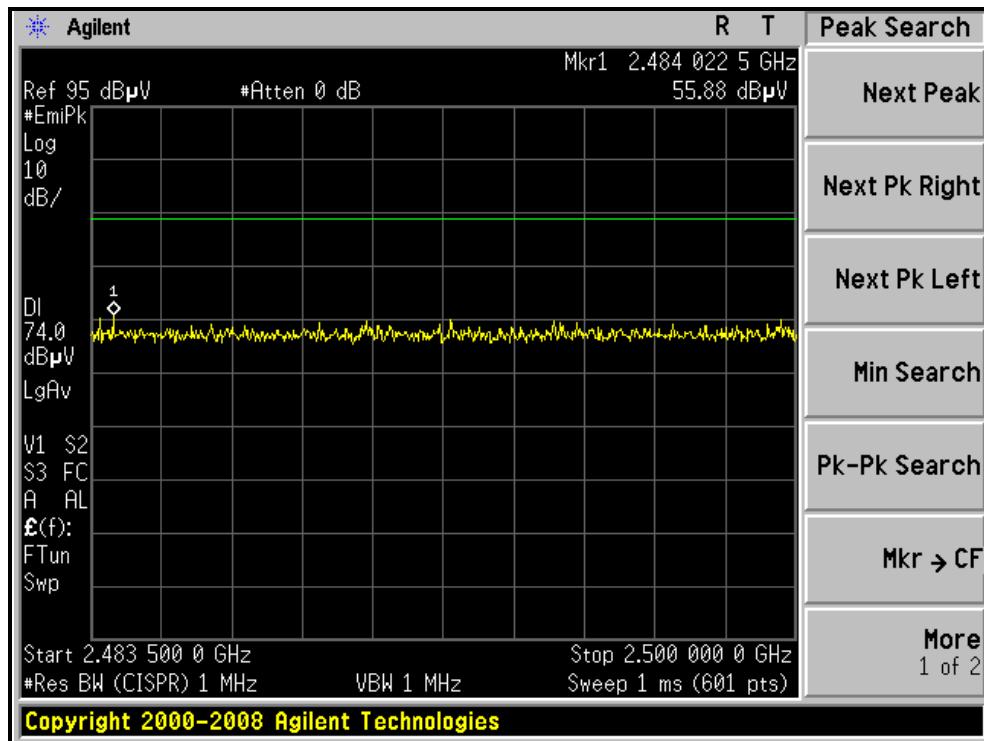
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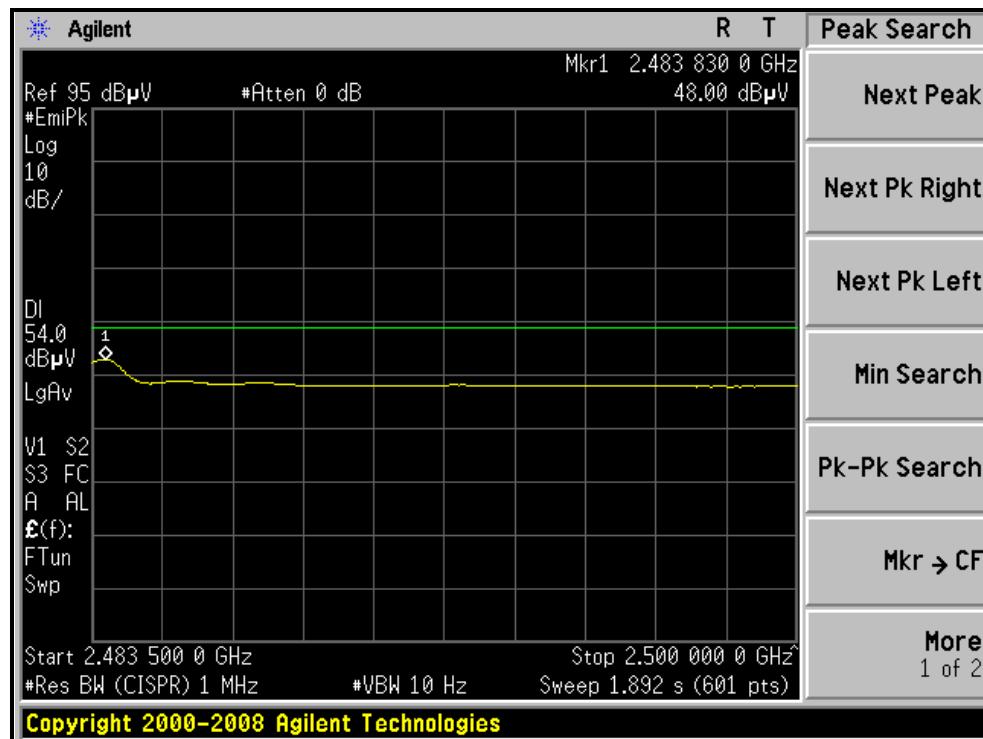
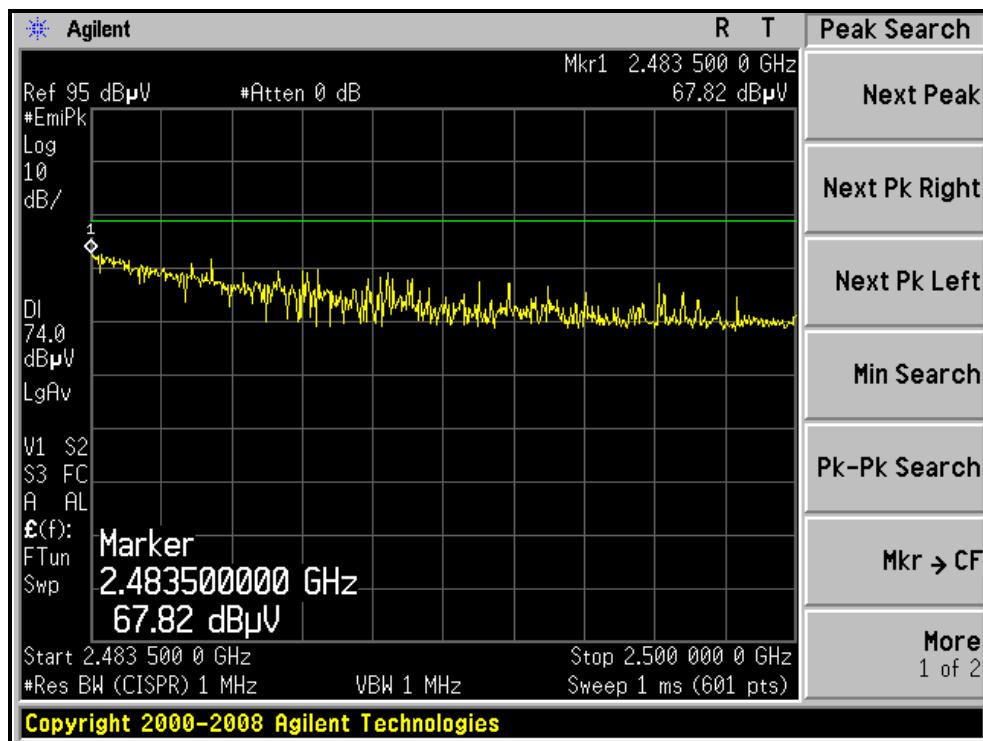
RESTRICTED BANDEDGE (802.11g MODE,CH12, VERTICAL)





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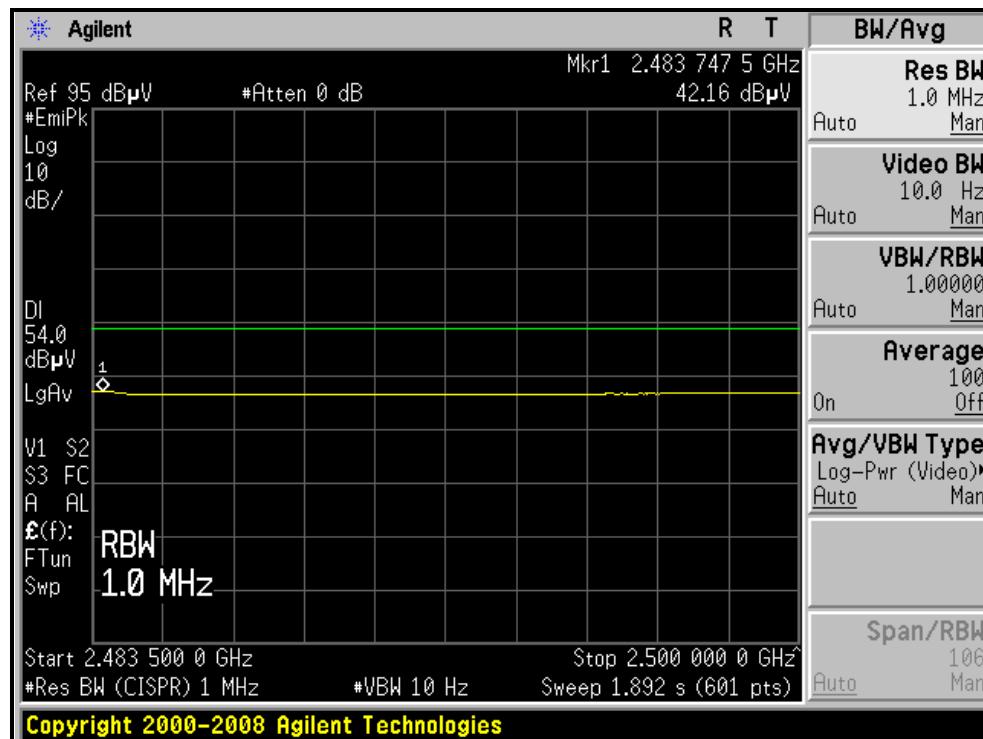
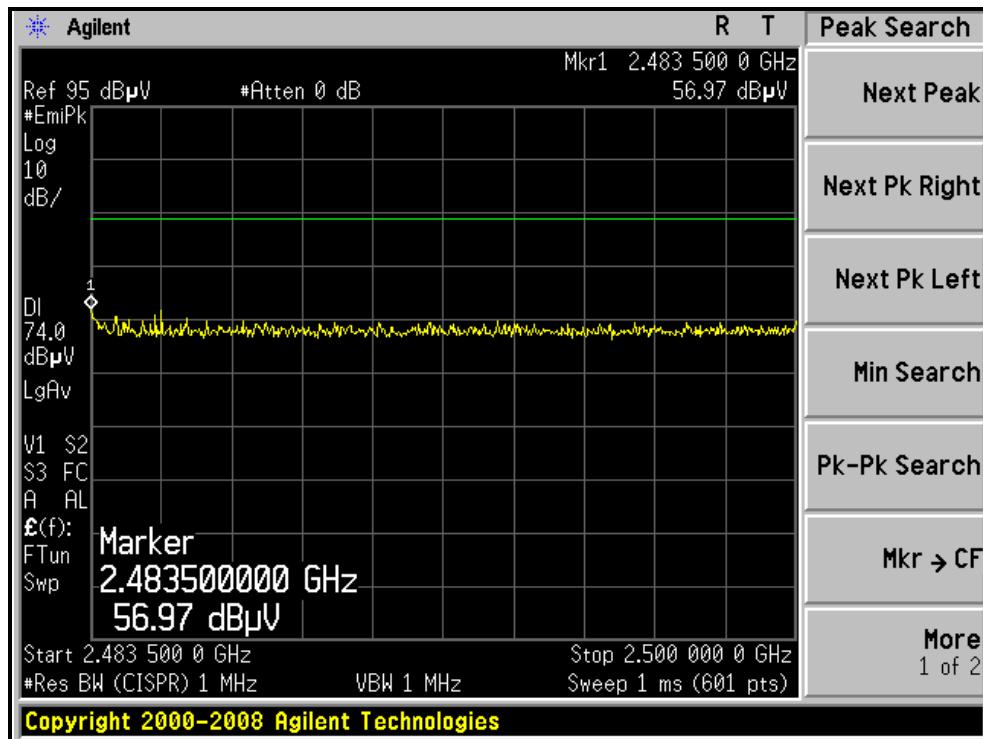
RESTRICTED BANDEDGE (802.11g MODE,CH13, HORIZONTAL)





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RESTRICTED BANDEDGE (802.11g MODE,CH13, VERTICAL)





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4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 18, 2009	Dec. 17, 2010

NOTE:

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

4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 100kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

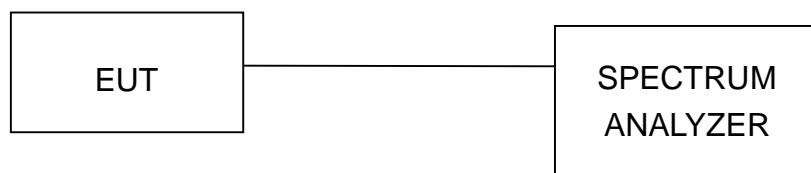
NOTE:

The EUT was setup to ANSI C63.4, tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.



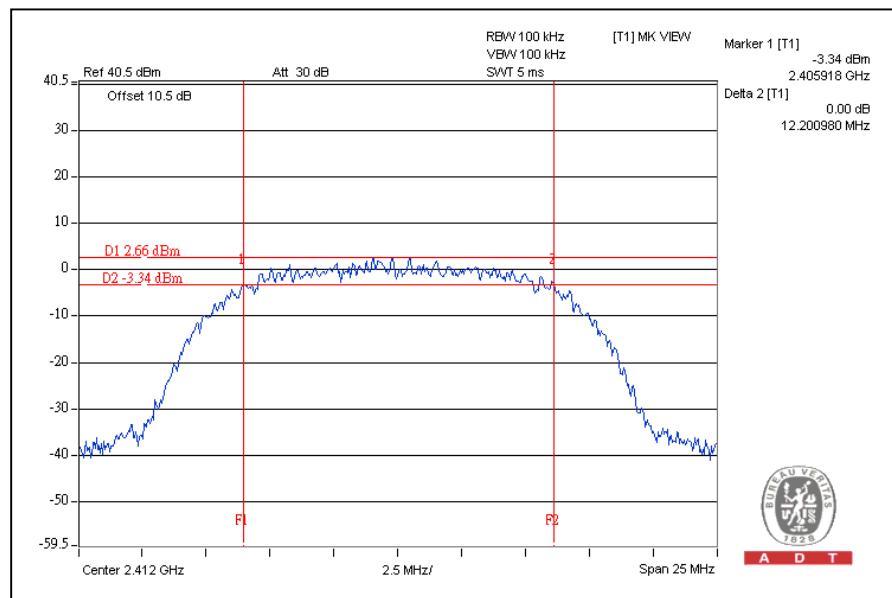
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4.3.7 TEST RESULTS

802.11b DSSS MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	12.20	0.5	PASS
6	2437	11.62	0.5	PASS
11	2462	11.60	0.5	PASS
12	2467	11.21	0.5	PASS
13	2472	11.59	0.5	PASS

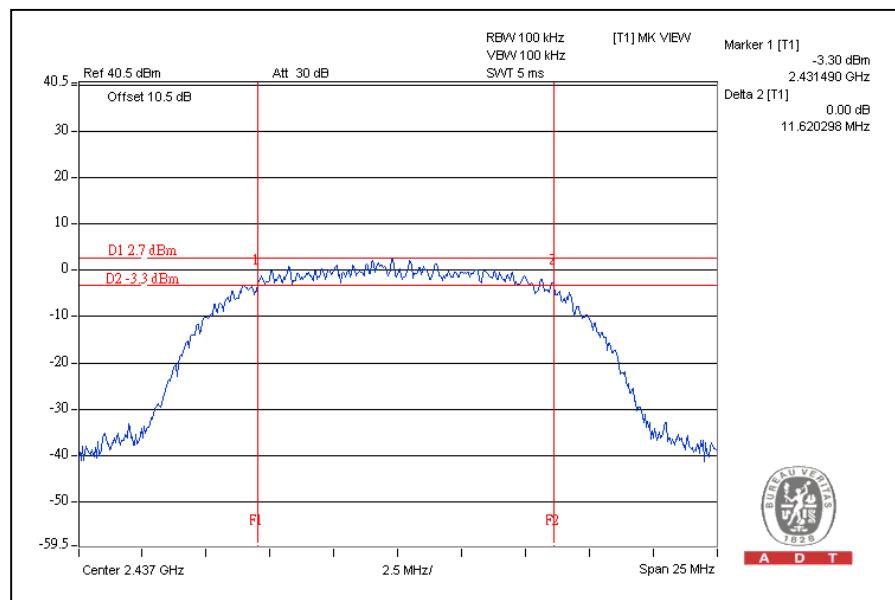
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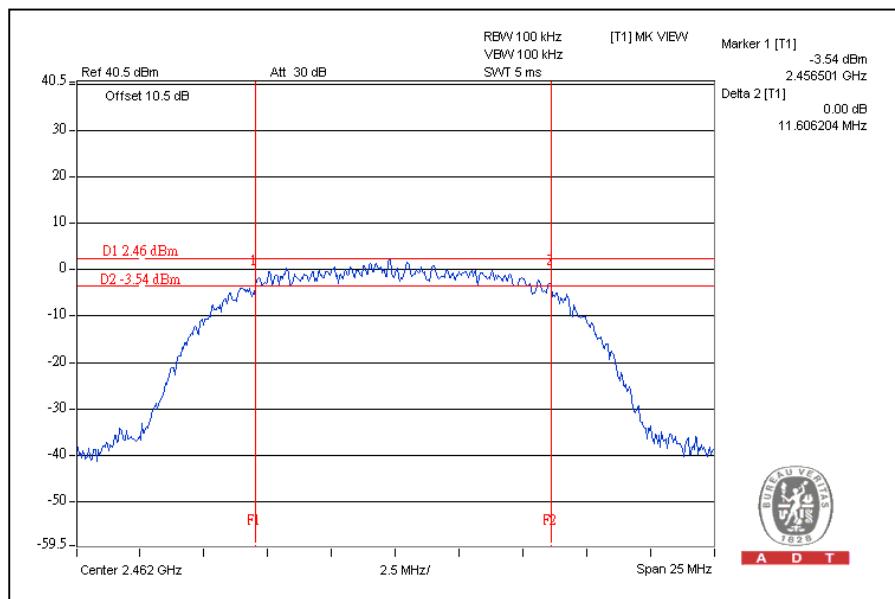


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CH6



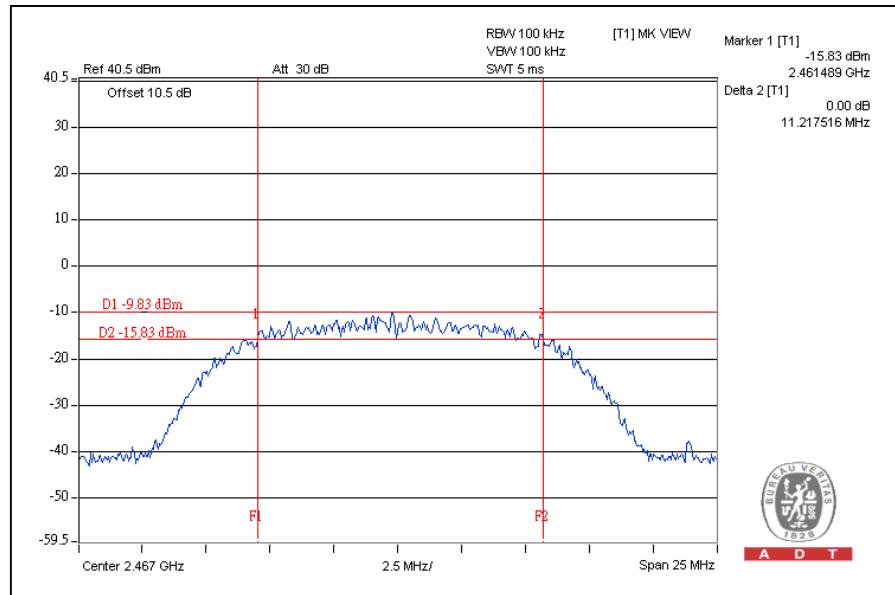
CH11



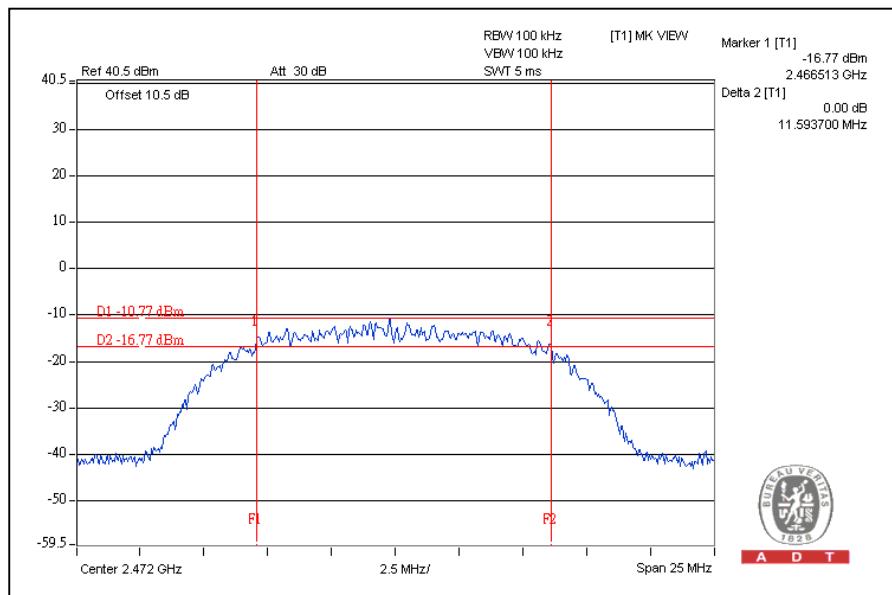


A D T

CH12



CH13



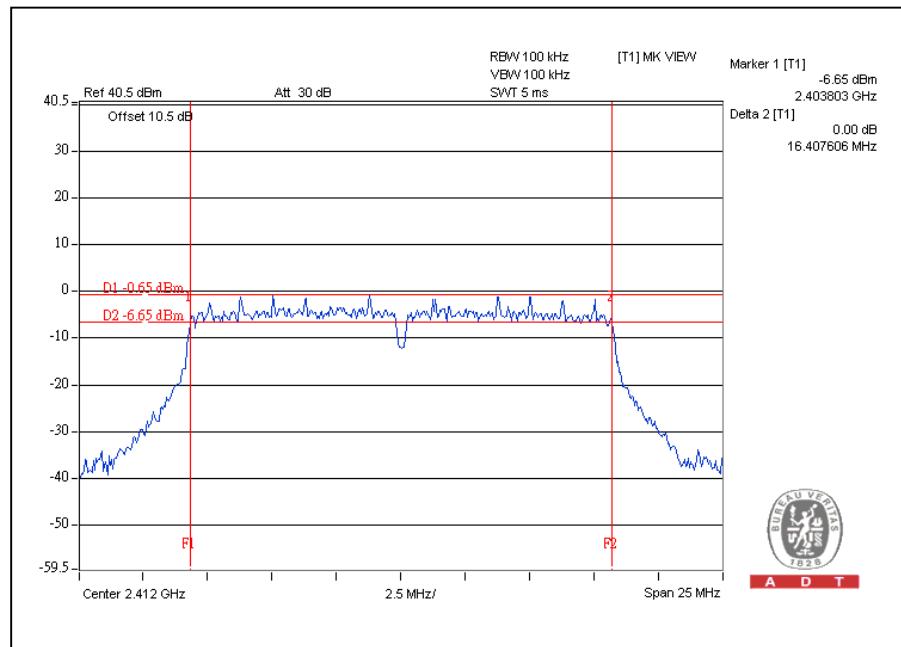


A D T

802.11g OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.40	0.5	PASS
6	2437	16.35	0.5	PASS
11	2462	16.40	0.5	PASS
12	2467	16.35	0.5	PASS
13	2472	16.37	0.5	PASS

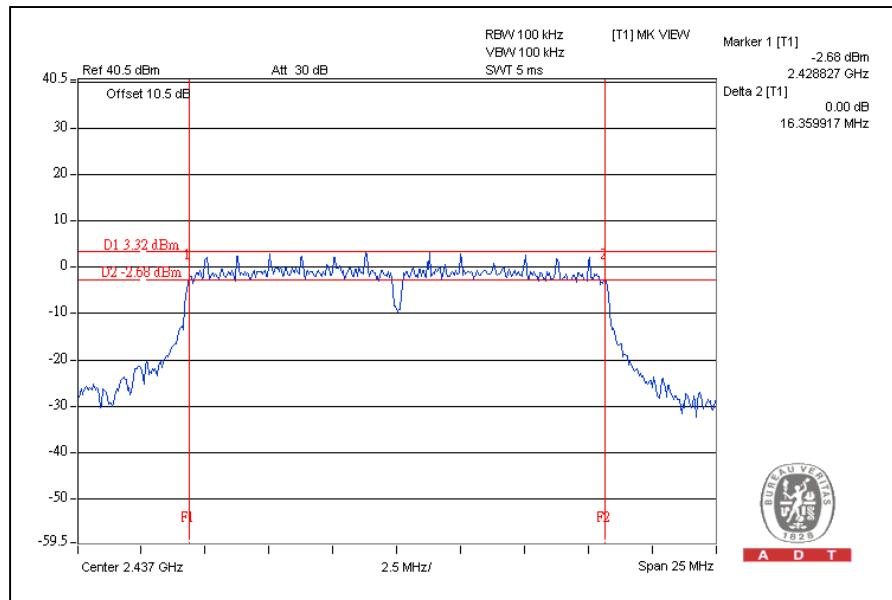
CH1



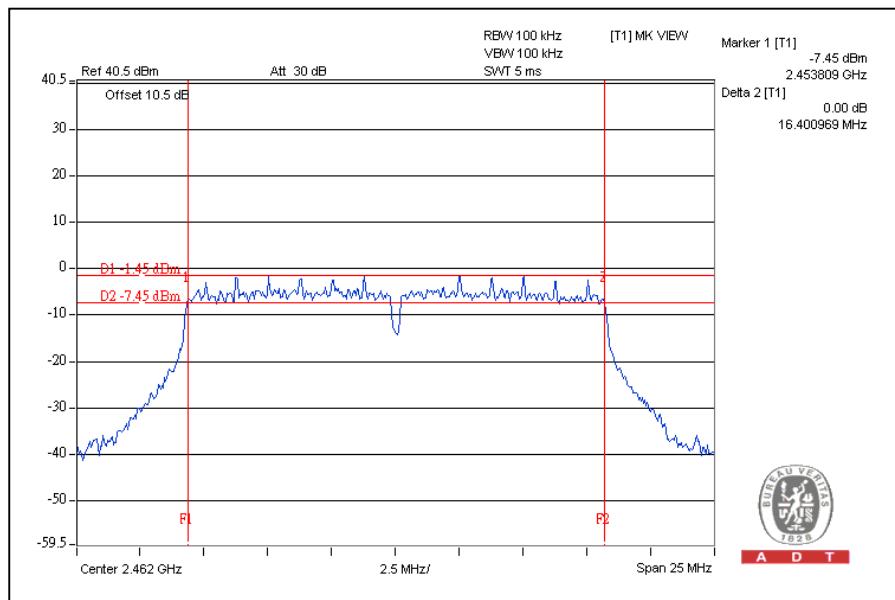


A D T

CH6



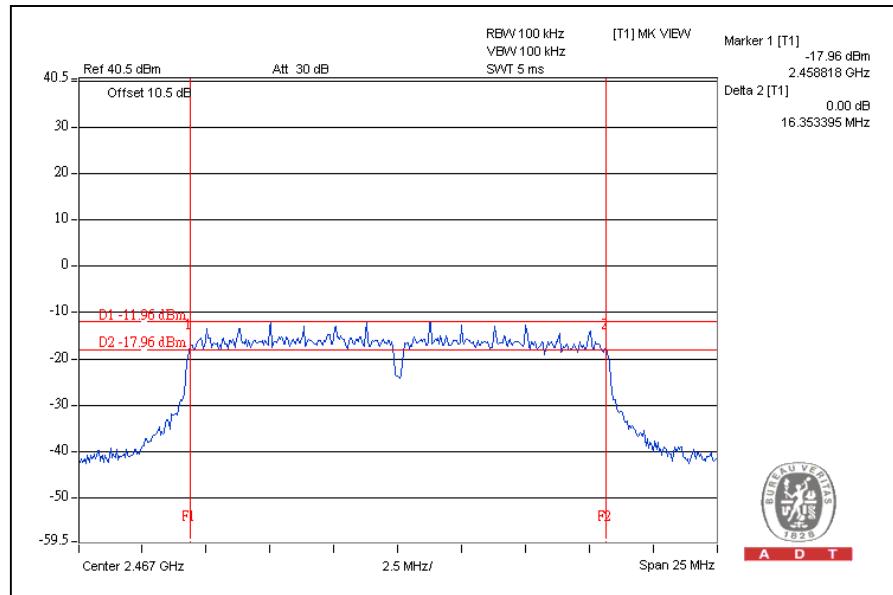
CH11



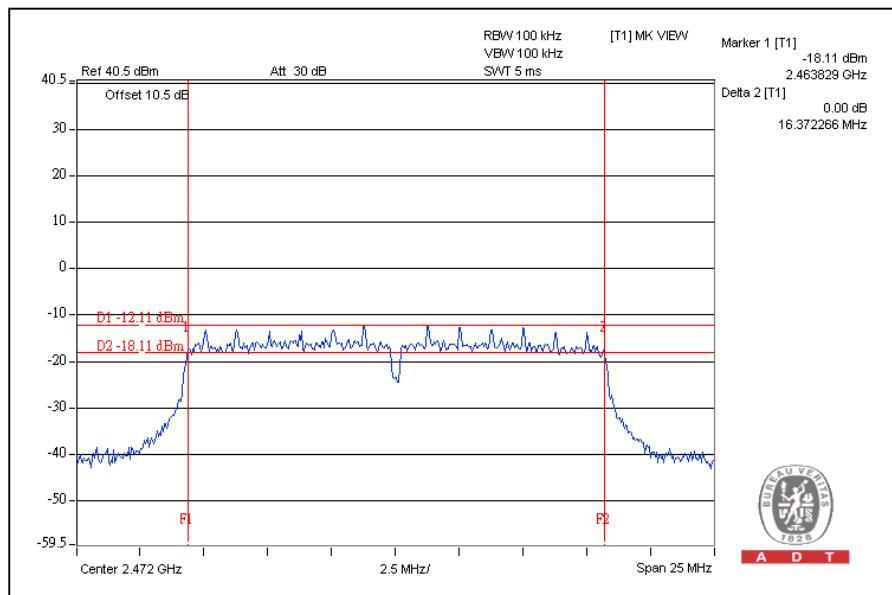


A D T

CH12



CH13





4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Anritsu Power Meter	ML2495A	0824006	May 04, 2010	May 03, 2011
Pulse Power Sensor	MA2411B	0738172	May 04, 2010	May 03, 2011

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 PROCEDURES

1. The transmitter output was connected to the power meter through an attenuator; the bandwidth of the fundamental frequency was measured with the power meter.
2. Record the power level.

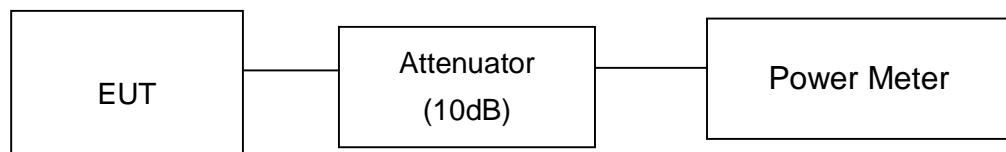
NOTE:

The EUT was setup to ANSI C63.4, tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6



A D T

4.4.7 TEST RESULTS

802.11b DSSS MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	40.7	16.1	30	PASS
6	2437	41.7	16.2	30	PASS
11	2462	39.8	16.0	30	PASS
12	2467	1.9	2.8	30	PASS
13	2472	1.4	1.5	30	PASS

802.11g OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	109.6	20.4	30	PASS
6	2437	147.9	21.7	30	PASS
11	2462	104.7	20.2	30	PASS
12	2467	7.8	8.9	30	PASS
13	2472	7.6	8.8	30	PASS

Note:

1. The channels 12 and 13 have been reduced power to meet band-edge and other requirement.
2. The power was fixed by firmware and end user cannot change or increase these power level thus possibly causing EMC failures.



A D T

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 18, 2009	Dec. 17, 2010

NOTE:

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

4.5.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

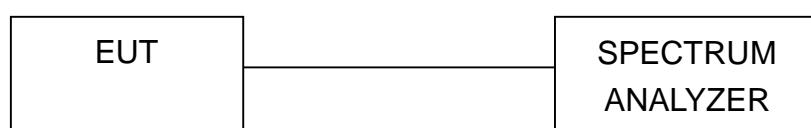
NOTE:

The EUT was setup to ANSI C63.4, tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6



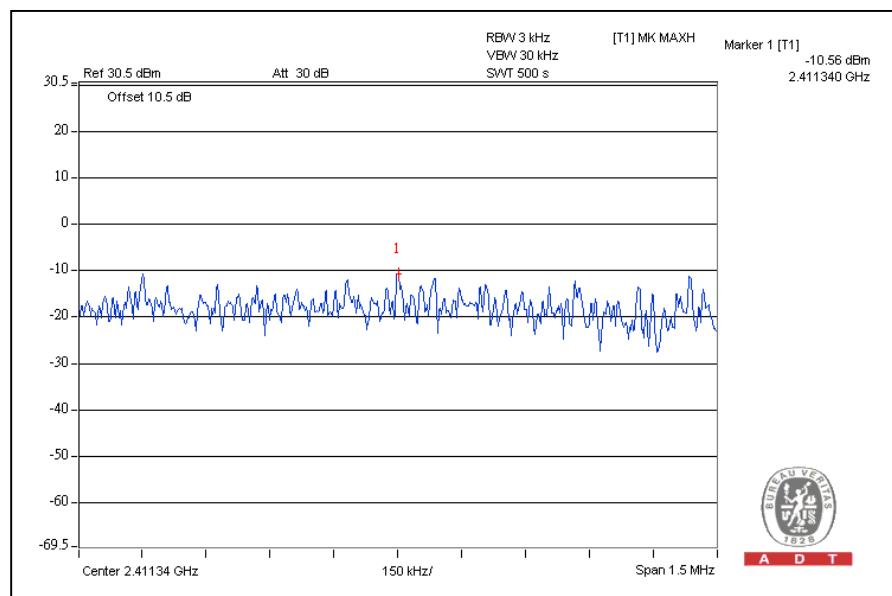
A D T

4.5.7 TEST RESULTS

802.11b DSSS MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-10.6	8	PASS
6	2437	-10.9	8	PASS
11	2462	-11.3	8	PASS
12	2467	-23.6	8	PASS
13	2472	-24.8	8	PASS

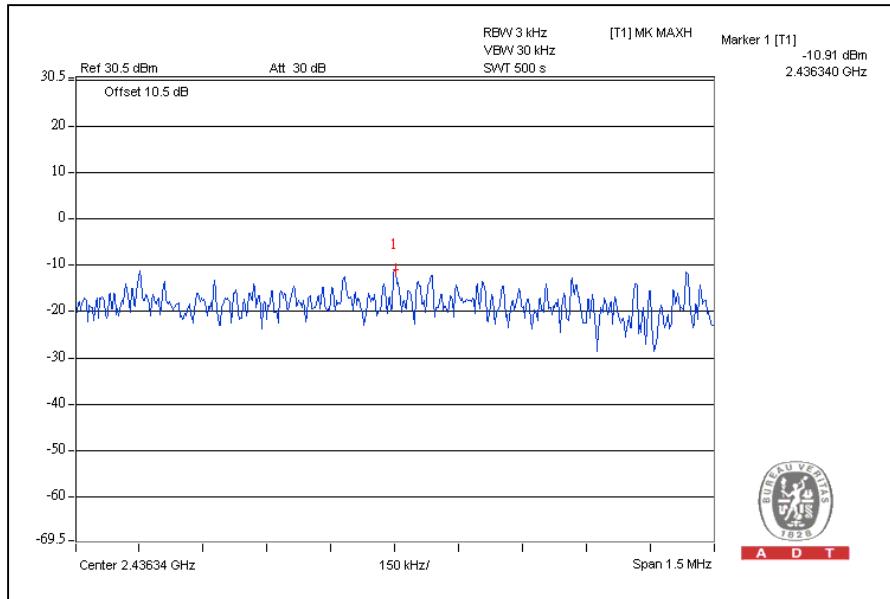
CH1



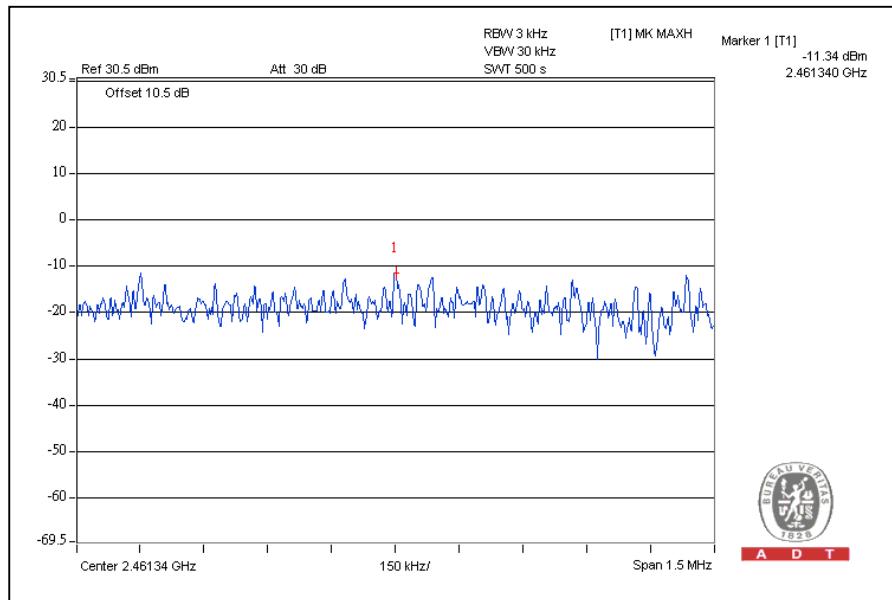


A D T

CH6



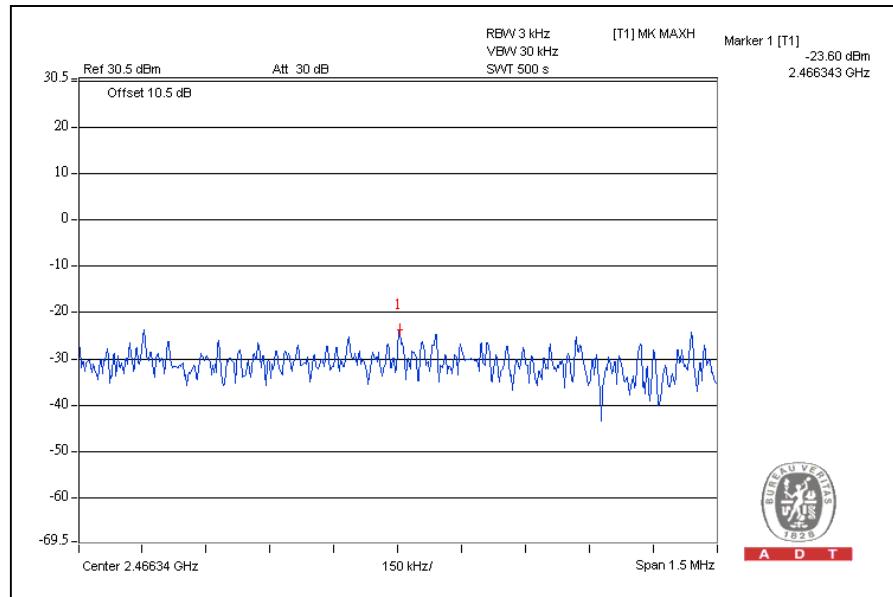
CH11



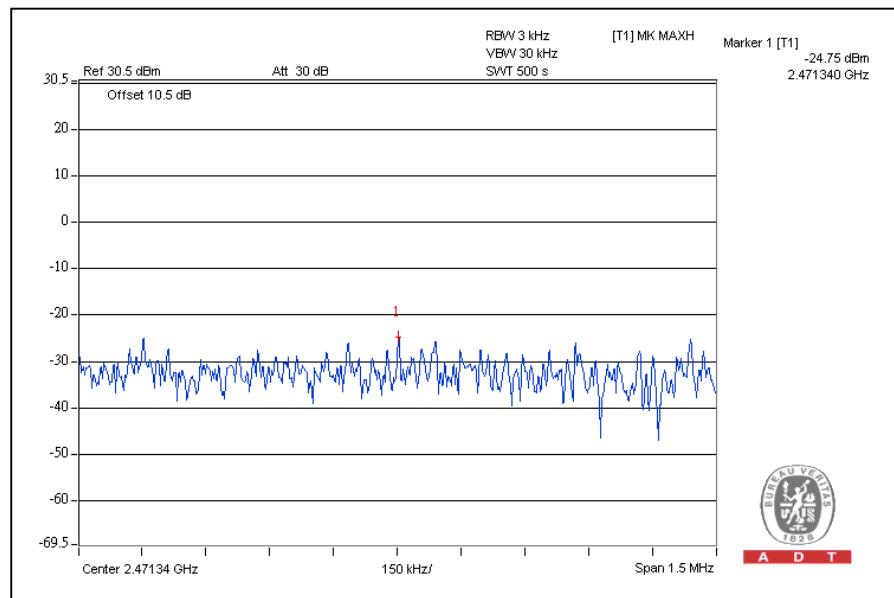


A D T

CH12



CH13



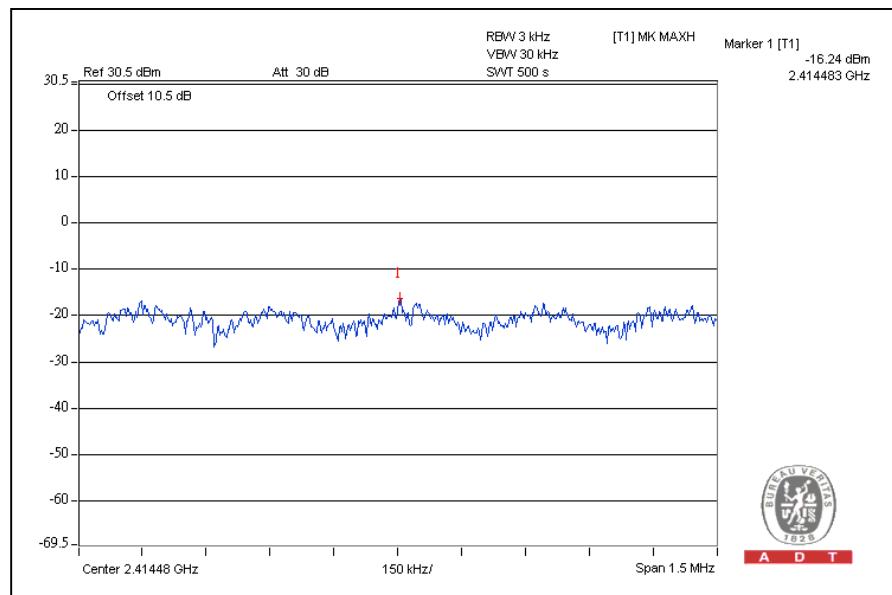


A D T

802.11g OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-16.2	8	PASS
6	2437	-12.6	8	PASS
11	2462	-17.0	8	PASS
12	2467	-28.1	8	PASS
13	2472	-27.8	8	PASS

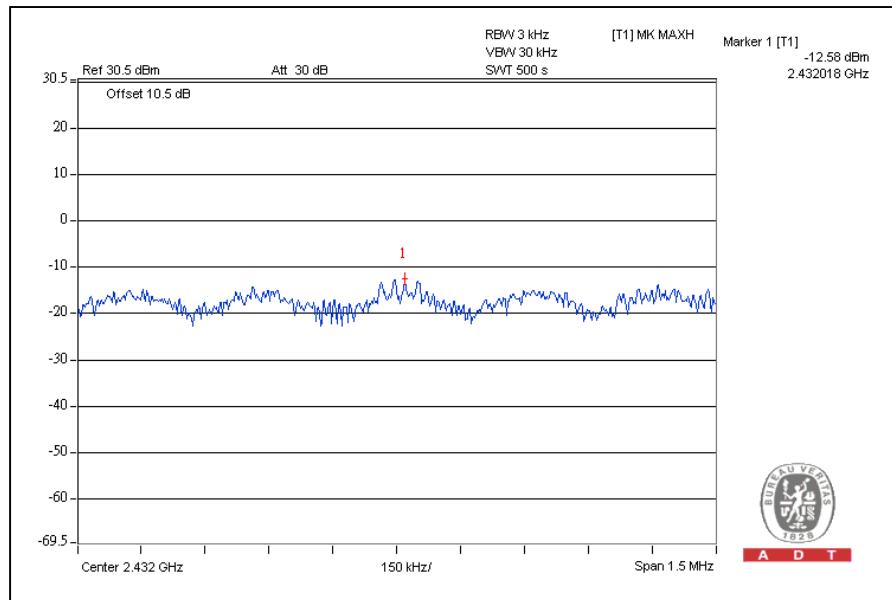
CH1



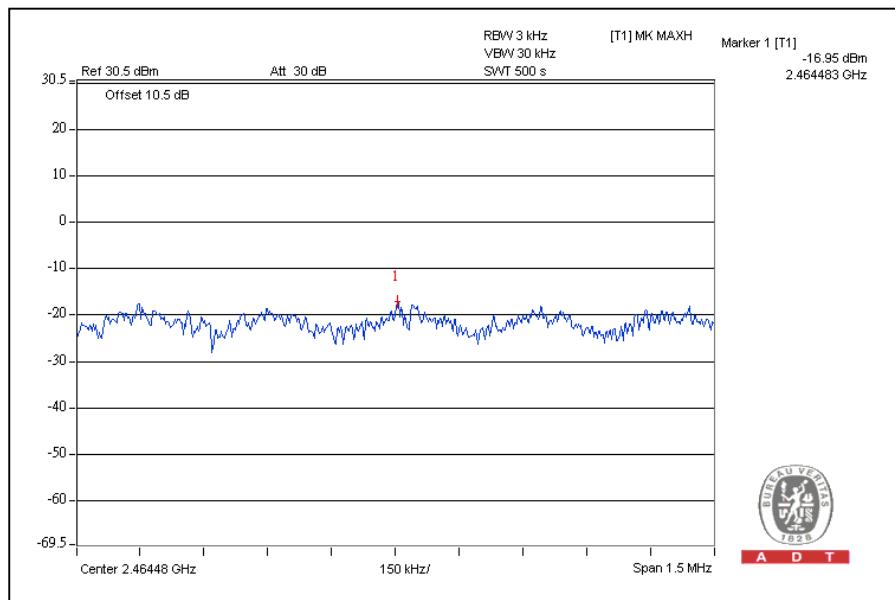


A D T

CH6



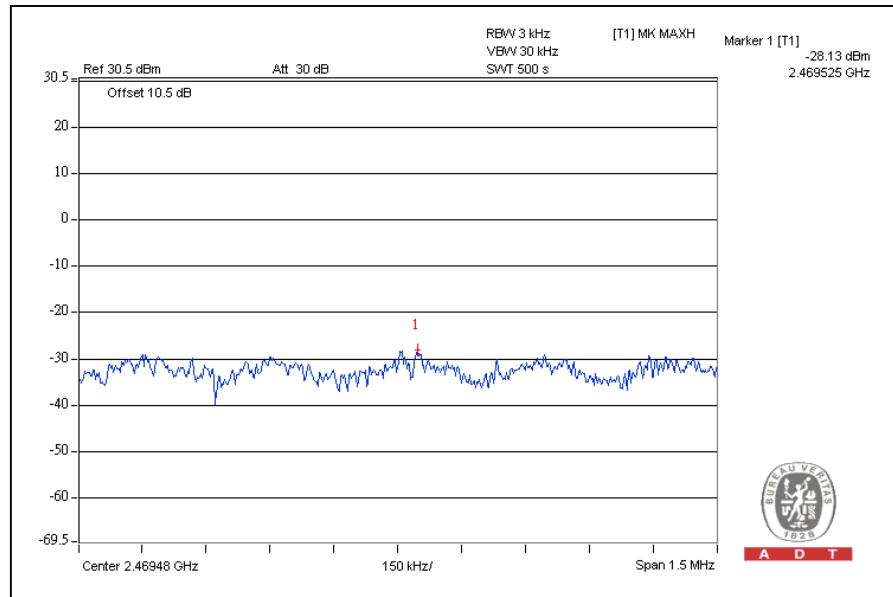
CH11



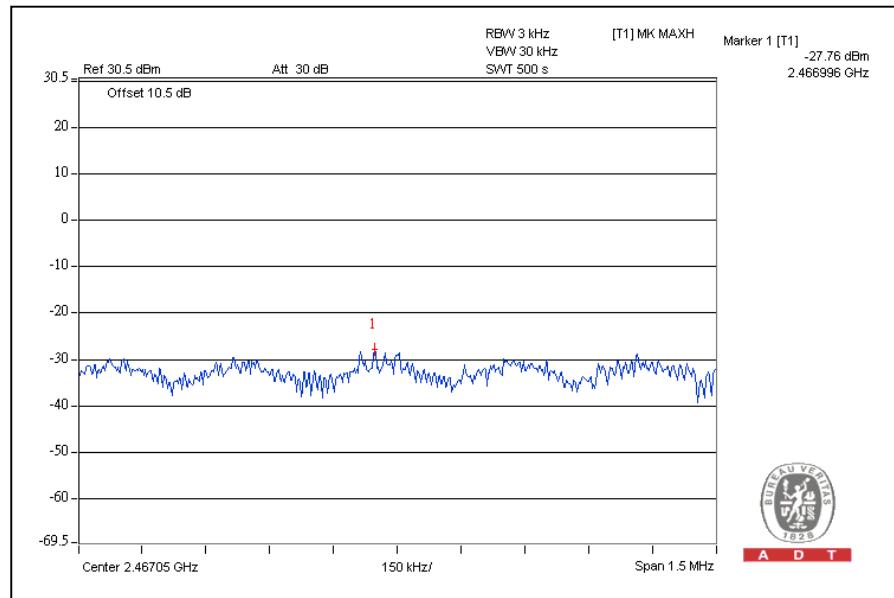


A D T

CH12



CH13





A D T

4.6 CONDUCTED OUT-BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT

Below -20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Dec. 18, 2009	Dec. 17, 2010

NOTE:

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

4.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low loss cable. Set RBW of spectrum analyzer to 100kHz and VBW of spectrum analyzer to 300kHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

The spectrum plots (RBW = 100kHz , VBW = 300kHz) are attached on the following pages.

NOTE:

The EUT was setup to ANSI C63.4, tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6

4.6.6 TEST RESULTS

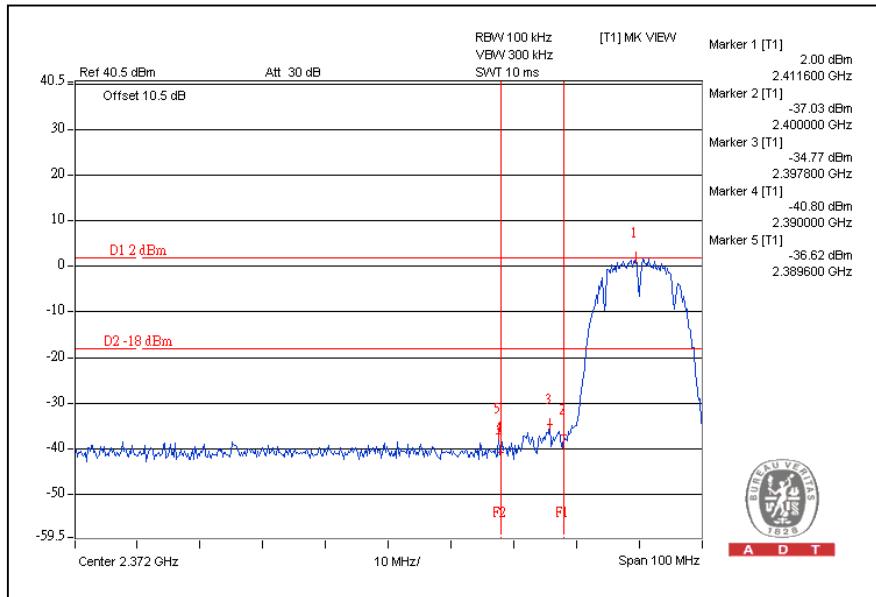
The spectrum plots are attached on the following images. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).



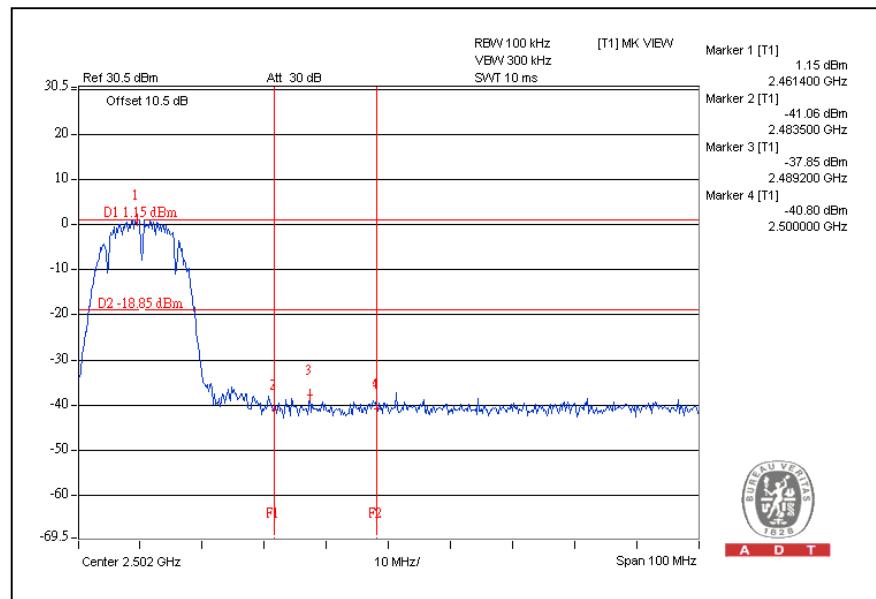
A D T

802.11b DSSS MODULATION:

CH1



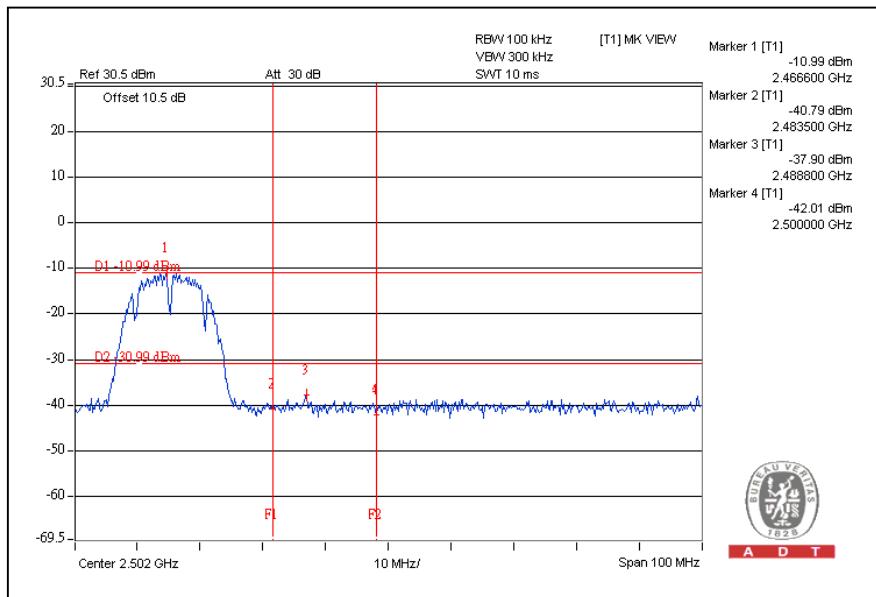
CH11



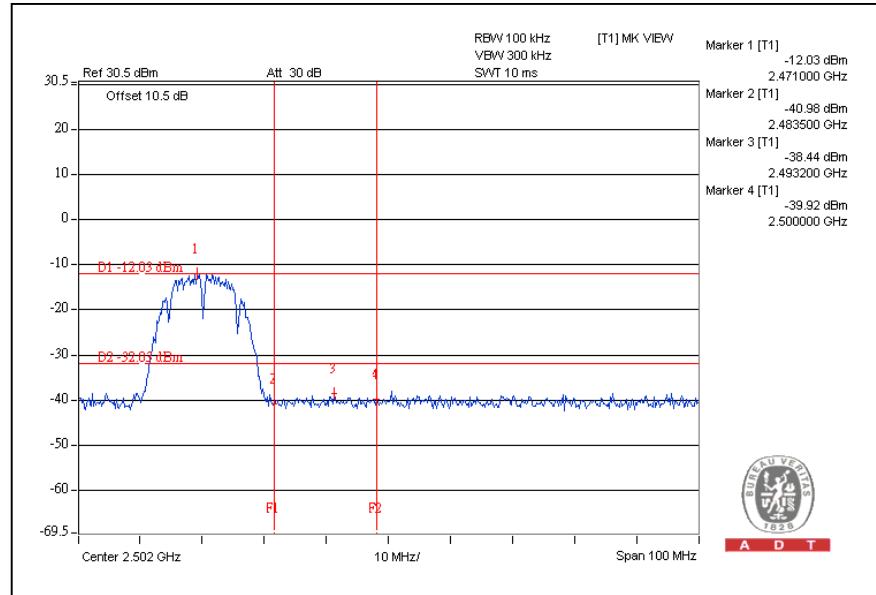


A D T

CH12



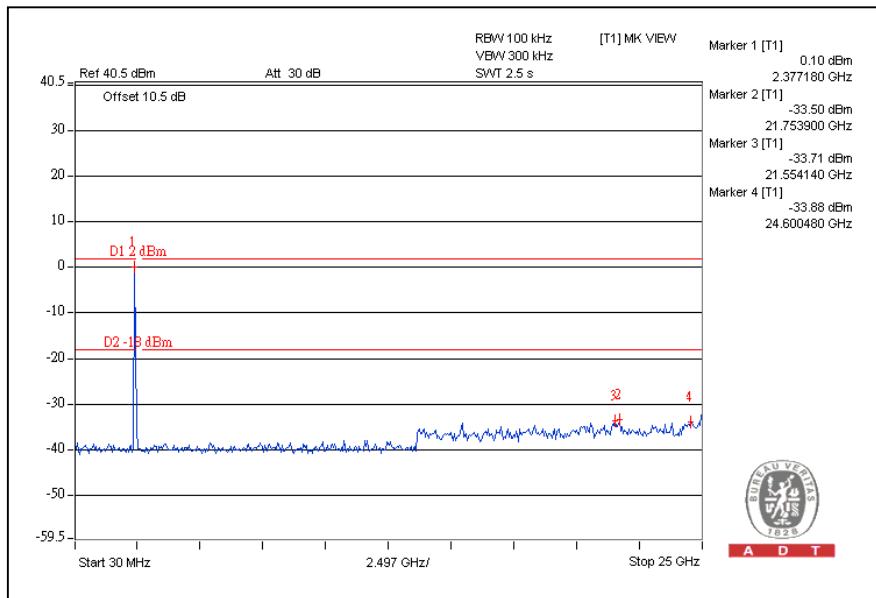
CH13



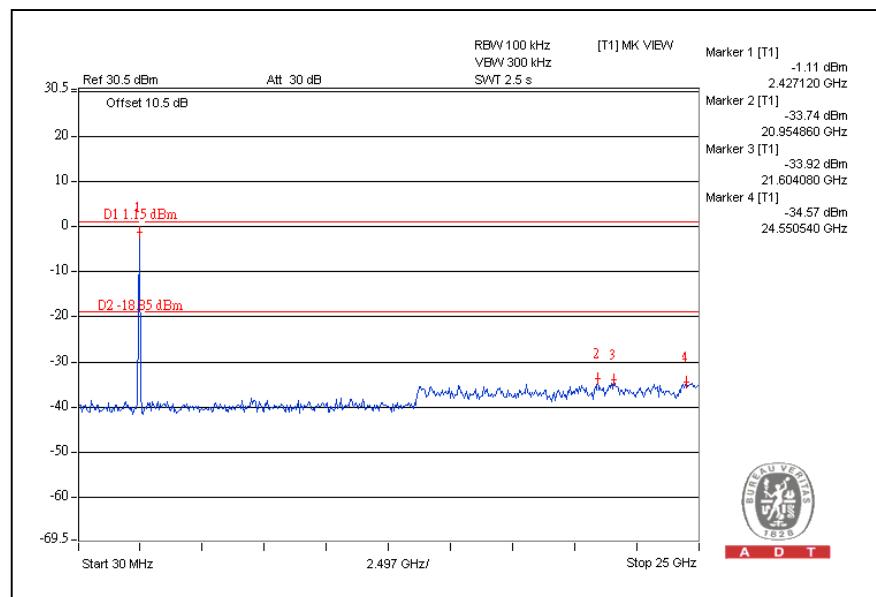


A D T

CH1



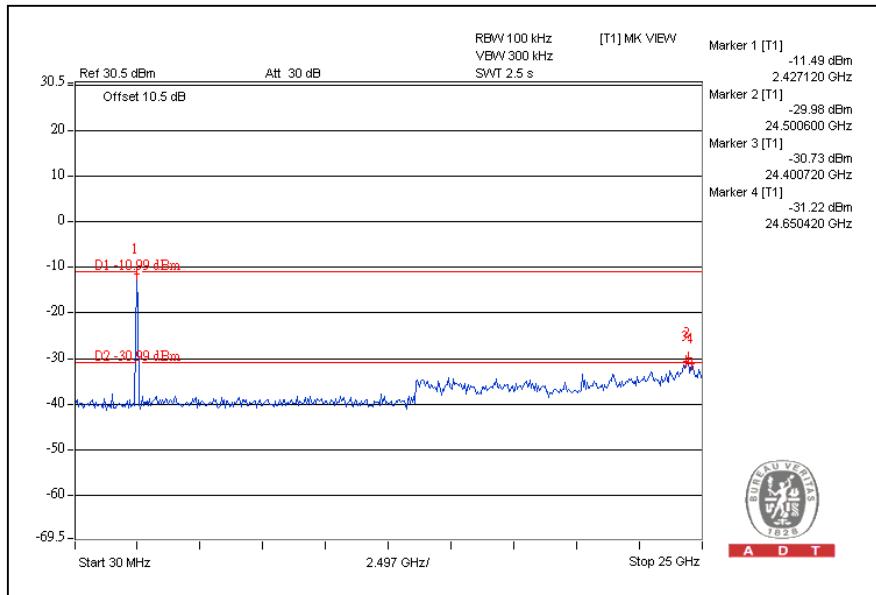
CH11



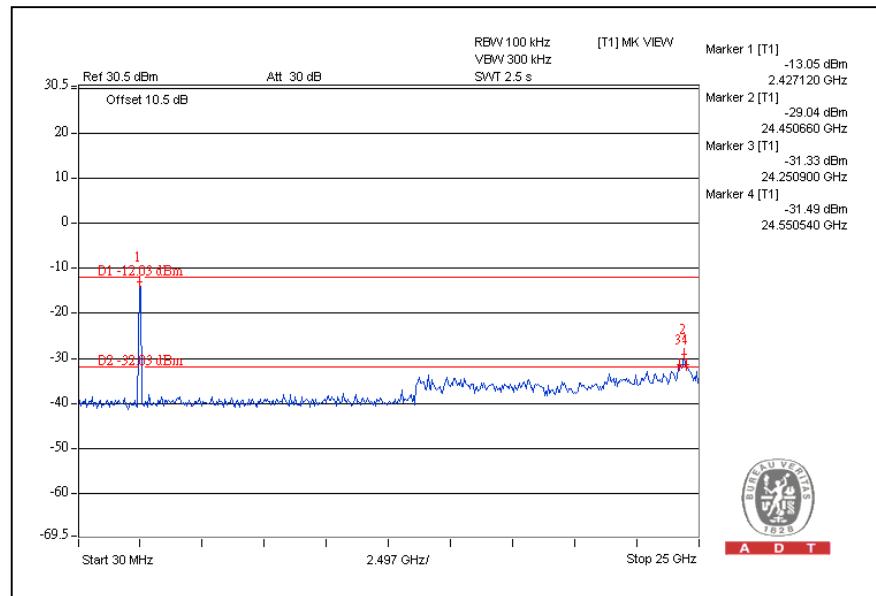


A D T

CH12



CH13

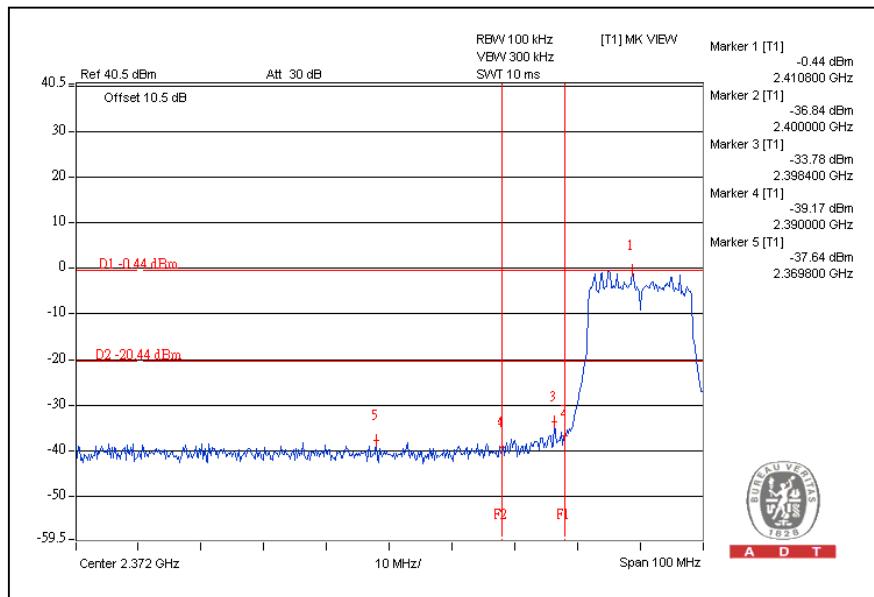




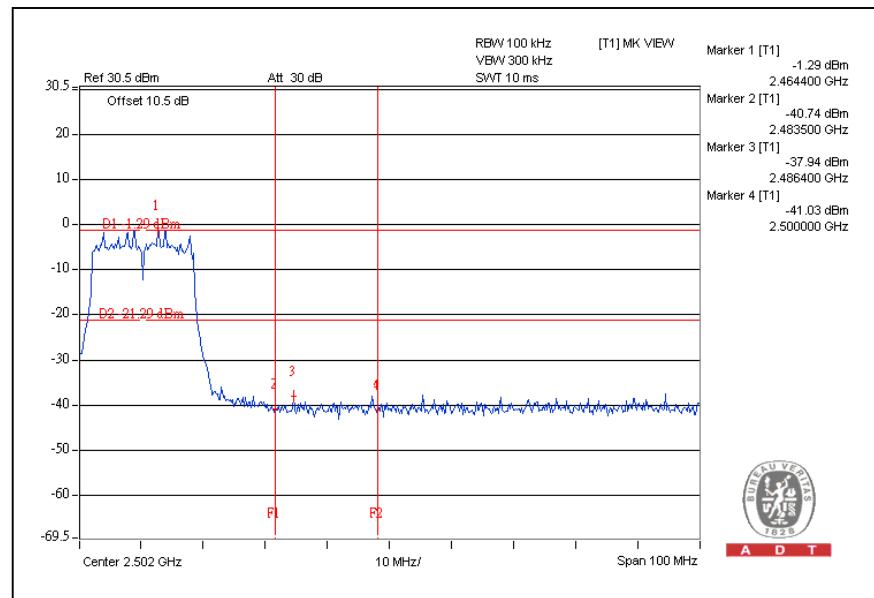
A D T

802.11g OFDM MODULATION:

CH1



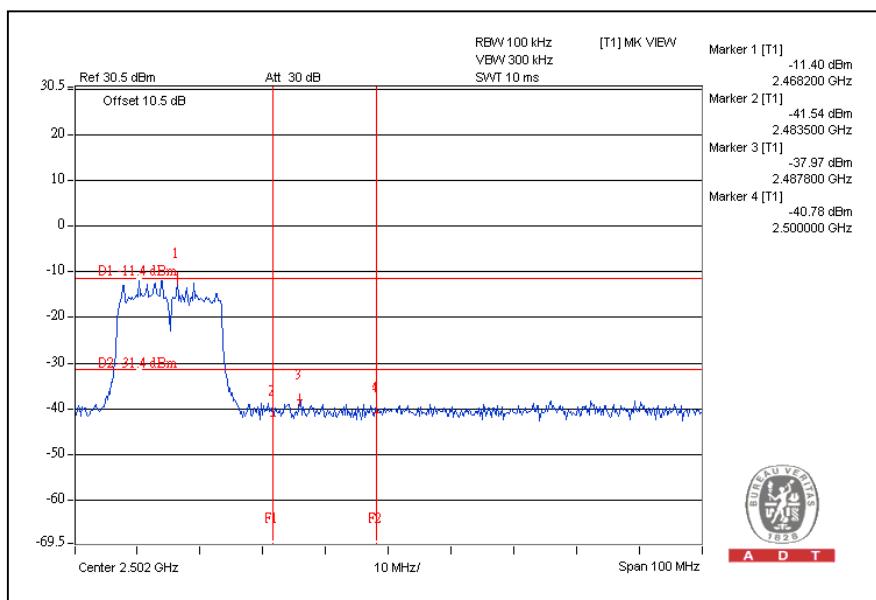
CH11



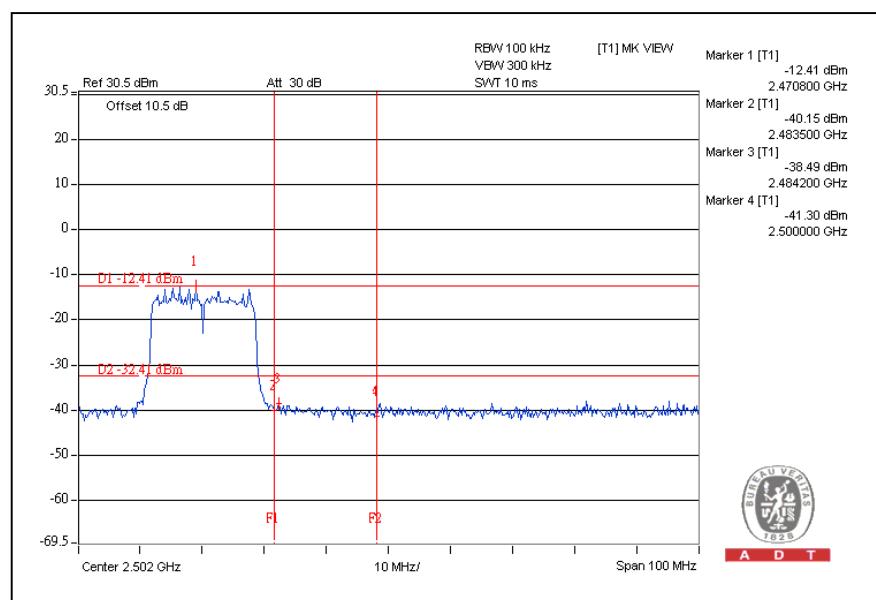


A D T

CH12



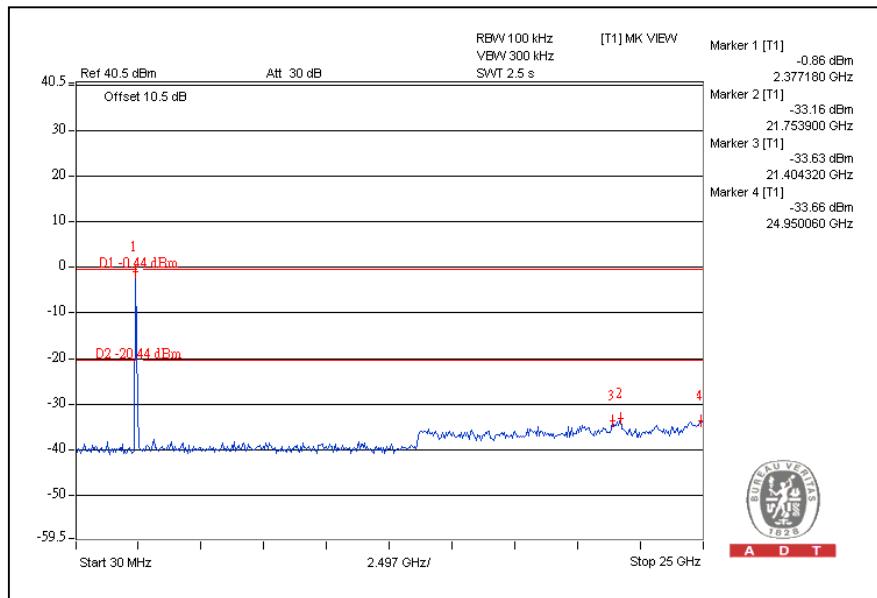
CH13



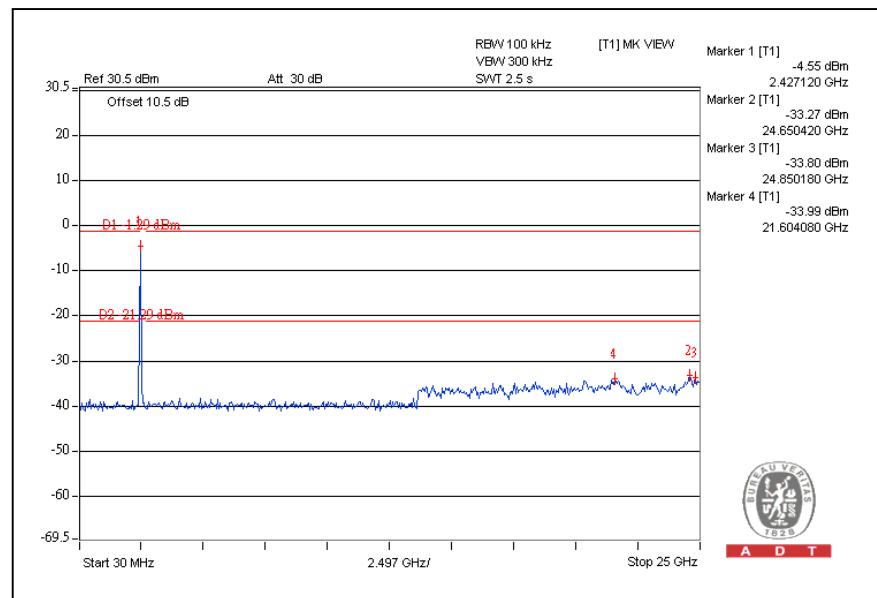


A D T

CH1



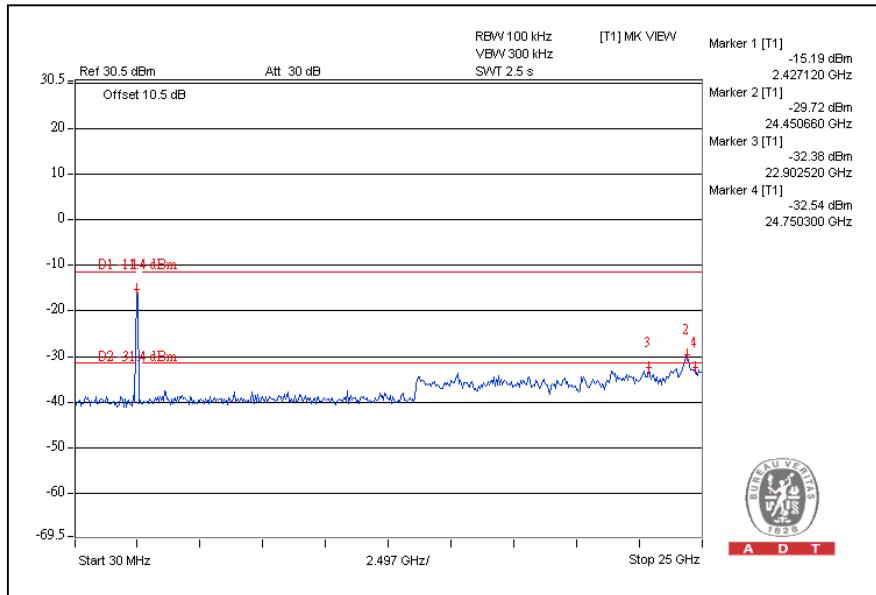
CH11



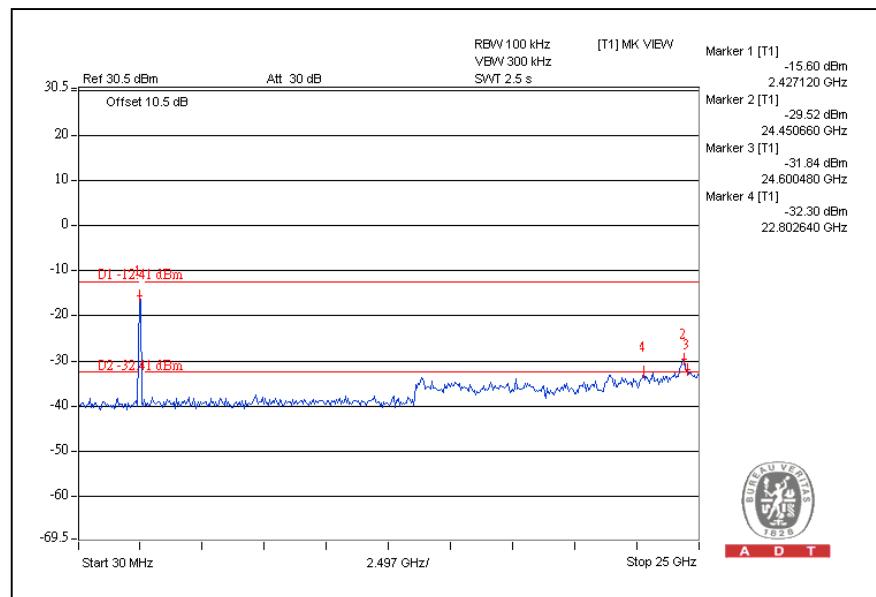


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CH12



CH13





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5. TEST TYPES AND RESULTS (802.11a, 5725~5850MHz Band)

5.1 CONDUCTED EMISSION MEASUREMENT

5.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

NOTE: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

5.1.2 TEST INSTRUMENTS

For test mode A~E, tested date: Aug. 12~26

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Mar. 09, 2010	Mar. 08, 2011
Line-Impedance Stabilization Network (for EUT)	NSLK 8127	8127-522	Sep. 23, 2009	Sep. 22, 2010
Line-Impedance Stabilization Network (for Peripheral)	ESH3-Z5	848773/004	Oct. 26, 2009	Oct. 25, 2010
RF Cable (JYEBAO)	5DFB	COBCAB-001	Nov. 24, 2009	Nov. 23, 2010
50 ohms Terminator	50	3	Oct. 28, 2009	Oct. 27, 2010
Software	BV ADT_Cond_V7.3.7	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 test was performed in Shielded Room No. C.
3. The VCCI Con C Registration No. is C-3611.



A D T

For test mode F~H, tested date: Sep. 30

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Mar. 09, 2010	Mar. 08, 2011
Line-Impedance Stabilization Network (for EUT)	NSLK 8127	8127-522	Sep. 08, 2010	Sep. 07, 2011
Line-Impedance Stabilization Network (for Peripheral)	ESH3-Z5	848773/004	Oct. 26, 2009	Oct. 25, 2010
RF Cable (JYEBAO)	5DFB	COCCAB-002	Aug. 30, 2010	Aug. 29, 2011
50 ohms Terminator	50	3	Oct. 28, 2009	Oct. 27, 2010
Software	BV ADT_Cond_V7.3.7	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 test was performed in Shielded Room No. C.
- 3 The VCCI Con C Registration No. is C-3611.

For test mode I~J, tested date: Sep. 30

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	100287	Mar. 01, 2010	Feb. 28, 2011
Line-Impedance Stabilization Network (for EUT)	NSLK 8127	8127-523	Sep. 17, 2010	Sep. 16, 2011
Line-Impedance Stabilization Network (for Peripheral)	ENV-216	100072	June 11, 2010	June 10, 2011
RF Cable (JYEBAO)	5DFB	COACAB-001	Dec. 14, 2009	Dec. 13, 2010
50 ohms Terminator	50	3	Oct. 28, 2009	Oct. 27, 2010
Software	BV ADT_Cond_V7.3.7	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 test was performed in Shielded Room No. A.
- 3 The VCCI Con A Registration No. is C-817.



A D T

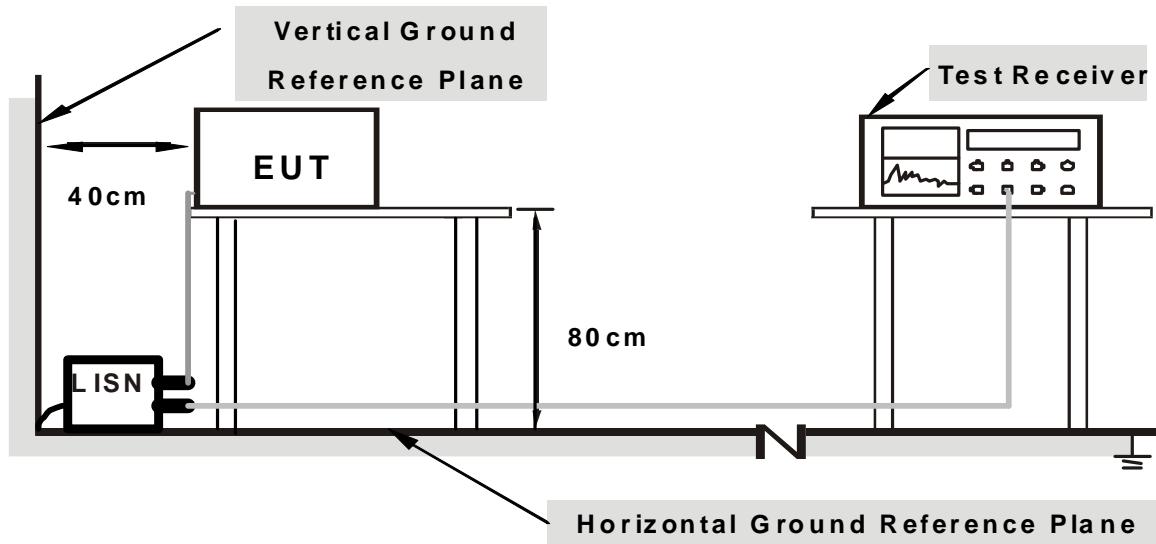
5.1.3 TEST PROCEDURES

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit – 20dB) were not recorded.

5.1.4 DEVIATION FROM TEST STANDARD

No deviation

5.1.5 TEST SETUP



Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

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

5.1.6 EUT OPERATING CONDITIONS

Same as the 4.1.6

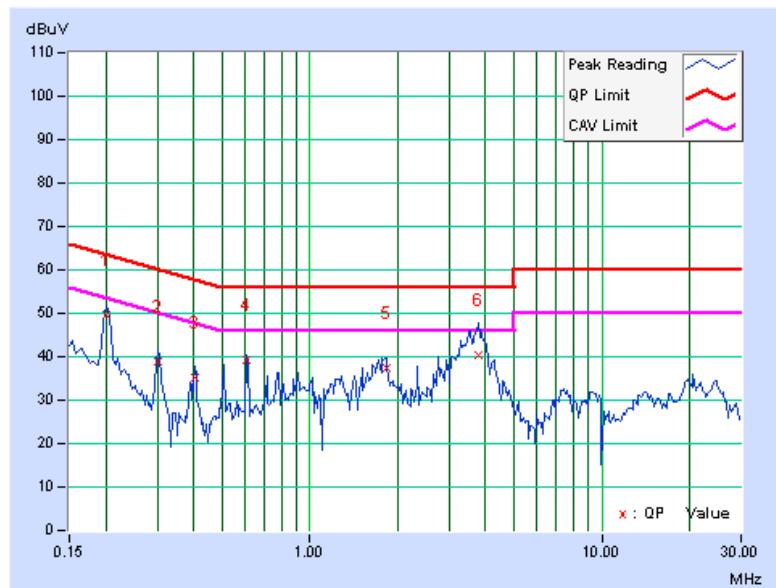
5.1.7 TEST RESULTS (MODE A)

PHASE	Line (L)		6dB BANDWIDTH		9 kHz	
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.201	0.05	49.51	-	49.56	-	63.58	53.58	-14.02	-
2	0.302	0.06	38.97	-	39.03	-	60.18	50.18	-21.15	-
3	0.404	0.06	35.18	-	35.24	-	57.77	47.77	-22.53	-
4	0.607	0.07	39.24	-	39.31	-	56.00	46.00	-16.69	-
5	1.824	0.12	37.14	-	37.26	-	56.00	46.00	-18.74	-
6	3.770	0.18	40.03	-	40.21	-	56.00	46.00	-15.79	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





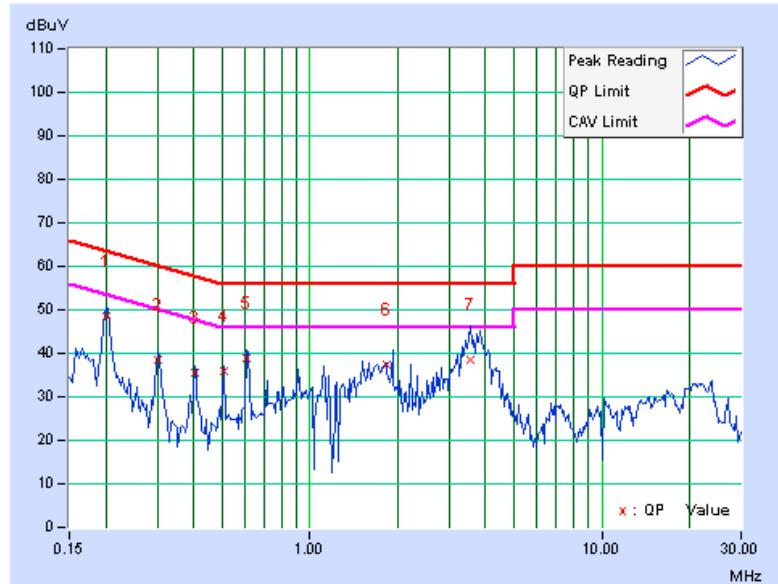
A D T

PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	Factor	[dB (uV)]	[dB (uV)]	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	(dB)
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.201	0.06	48.58	-	48.64	-	63.58	53.58	-14.94	-
2	0.302	0.07	38.47	-	38.54	-	60.18	50.18	-21.64	-
3	0.404	0.07	35.50	-	35.57	-	57.77	47.77	-22.20	-
4	0.505	0.08	35.67	-	35.75	-	56.00	46.00	-20.25	-
5	0.607	0.08	39.80	-	38.98	-	56.00	46.00	-17.02	-
6	1.824	0.13	37.28	-	37.41	-	56.00	46.00	-18.59	-
7	3.540	0.19	38.44	-	38.63	-	56.00	46.00	-17.37	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





A D T

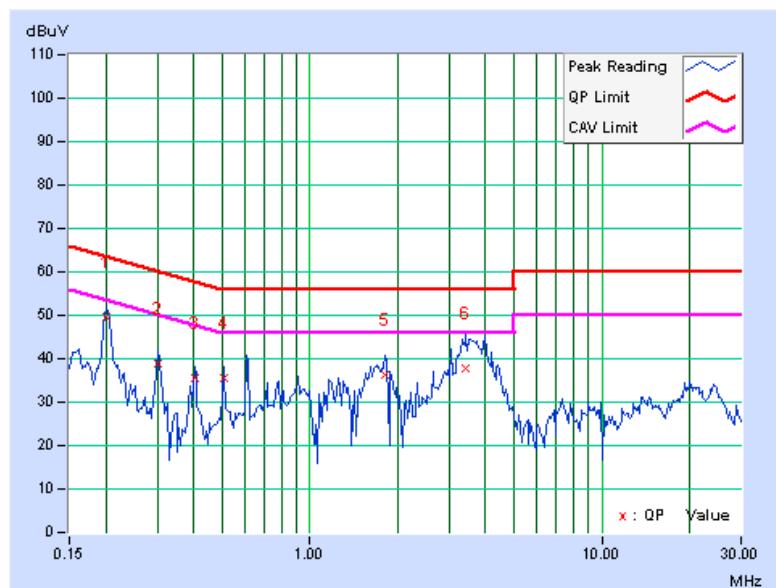
5.1.8 TEST RESULTS (MODE B)

PHASE	Line (L)	6dB BANDWIDTH	9 kHz
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.201	0.05	49.65	-	49.70	-	63.58	53.58	-13.88	-
2	0.302	0.06	38.99	-	39.05	-	60.18	50.18	-21.13	-
3	0.404	0.06	35.36	-	35.42	-	57.77	47.77	-22.35	-
4	0.505	0.07	35.61	-	35.68	-	56.00	46.00	-20.32	-
5	1.820	0.12	36.15	-	36.27	-	56.00	46.00	-19.73	-
6	3.438	0.17	37.78	-	37.95	-	56.00	46.00	-18.05	-

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





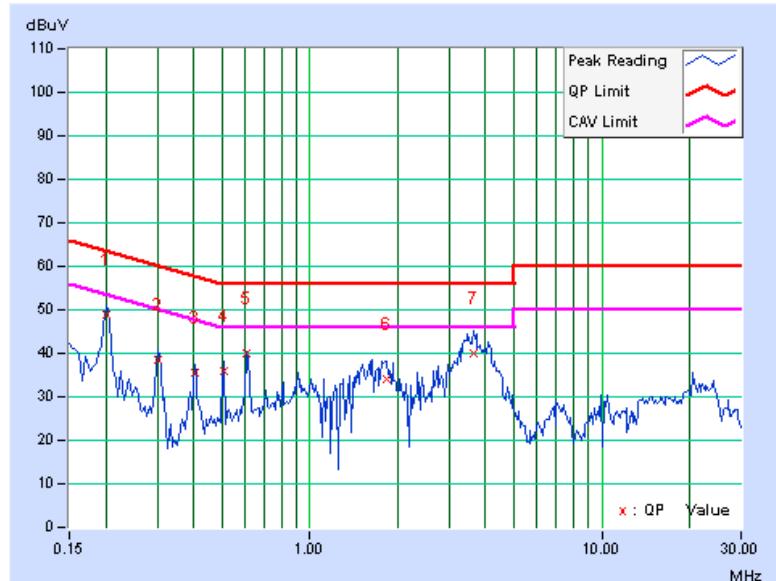
A D T

PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	Factor	[dB (uV)]	[dB (uV)]	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	(dB)
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.201	0.06	48.66	-	48.72	-	63.58	53.58	-14.86	-
2	0.302	0.07	38.53	-	38.60	-	60.18	50.18	-21.58	-
3	0.404	0.07	35.44	-	35.51	-	57.77	47.77	-22.26	-
4	0.505	0.08	35.87	-	35.95	-	56.00	46.00	-20.05	-
5	0.607	0.08	39.92	-	40.00	-	56.00	46.00	-16.00	-
6	1.832	0.13	33.77	-	33.90	-	56.00	46.00	-22.10	-
7	3.645	0.19	39.93	-	40.12	-	56.00	46.00	-15.88	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



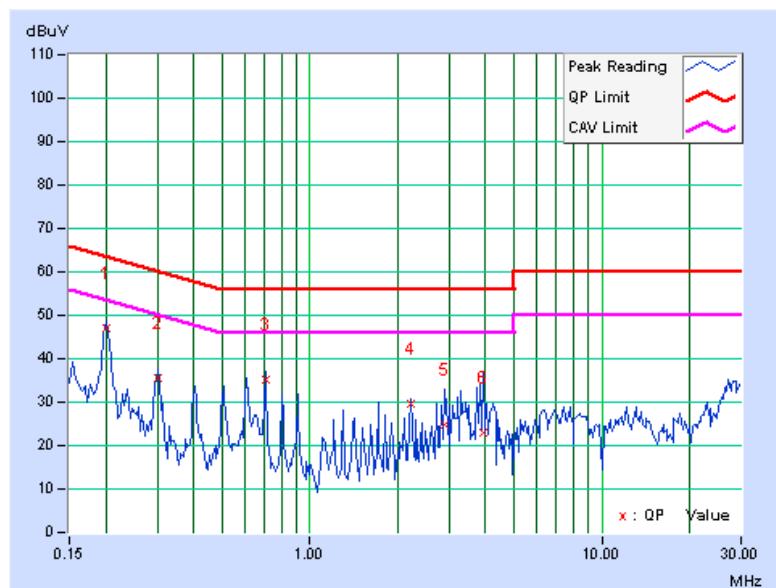
5.1.9 TEST RESULTS (MODE C)

PHASE	Line (L)	6dB BANDWIDTH		9 kHz	
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.201	0.05	47.10	-	47.15	-	63.58	53.58	-16.43	-
2	0.302	0.06	35.39	-	35.45	-	60.18	50.18	-24.73	-
3	0.705	0.08	35.19	-	35.27	-	56.00	46.00	-20.73	-
4	2.215	0.14	29.33	-	29.47	-	56.00	46.00	-26.53	-
5	2.910	0.16	24.51	-	24.67	-	56.00	46.00	-31.33	-
6	3.930	0.19	22.63	-	22.82	-	56.00	46.00	-33.18	-

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





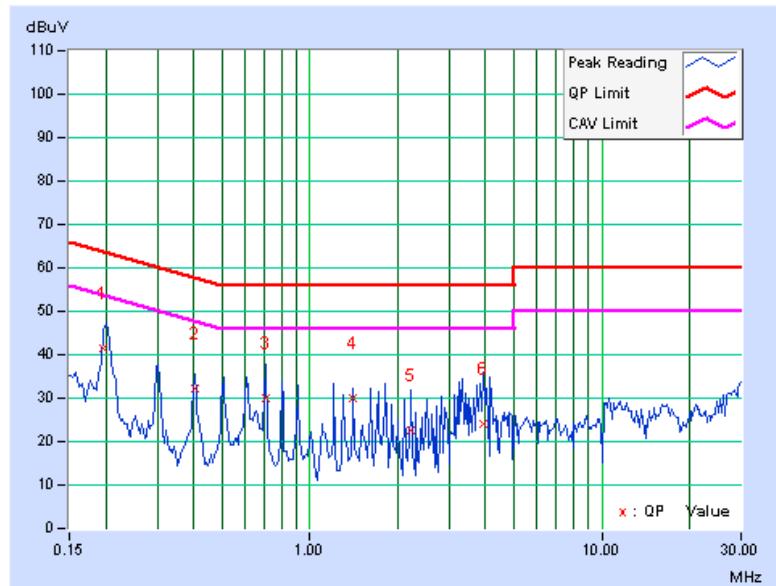
A D T

PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.197	0.06	41.24	-	41.30	-	63.74	53.74	-22.44	-
2	0.404	0.07	32.23	-	32.30	-	57.77	47.77	-25.47	-
3	0.709	0.09	29.79	-	29.88	-	56.00	46.00	-26.12	-
4	1.410	0.12	29.94	-	30.06	-	56.00	46.00	-25.94	-
5	2.215	0.15	22.47	-	22.62	-	56.00	46.00	-33.38	-
6	3.922	0.20	23.87	-	24.07	-	56.00	46.00	-31.93	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



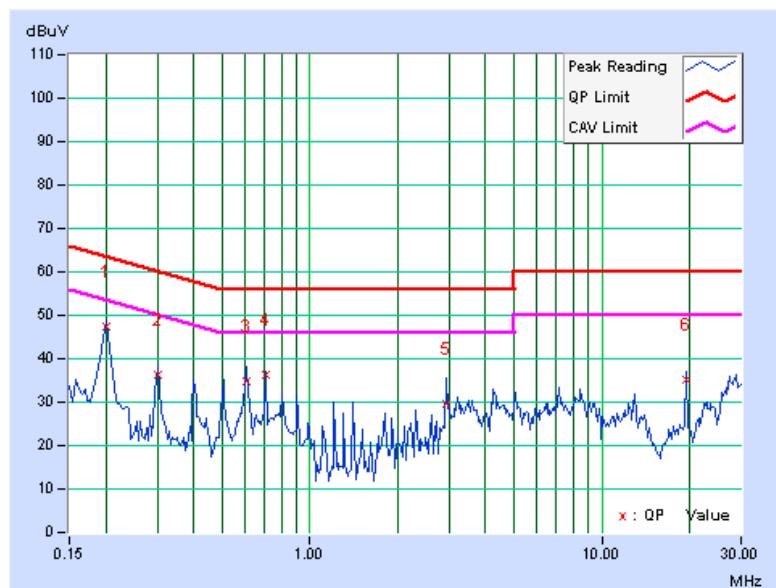
5.1.10 TEST RESULTS (MODE D)

PHASE	Line (L)	6dB BANDWIDTH		9 kHz	
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.201	0.05	47.24	-	47.29	-	63.58	53.58	-16.29	-
2	0.302	0.06	36.21	-	36.27	-	60.18	50.18	-23.91	-
3	0.603	0.07	34.67	-	34.74	-	56.00	46.00	-21.26	-
4	0.705	0.08	36.14	-	36.22	-	56.00	46.00	-19.78	-
5	2.922	0.16	29.62	-	29.78	-	56.00	46.00	-26.22	-
6	19.500	0.50	34.81	-	35.31	-	60.00	50.00	-24.69	-

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





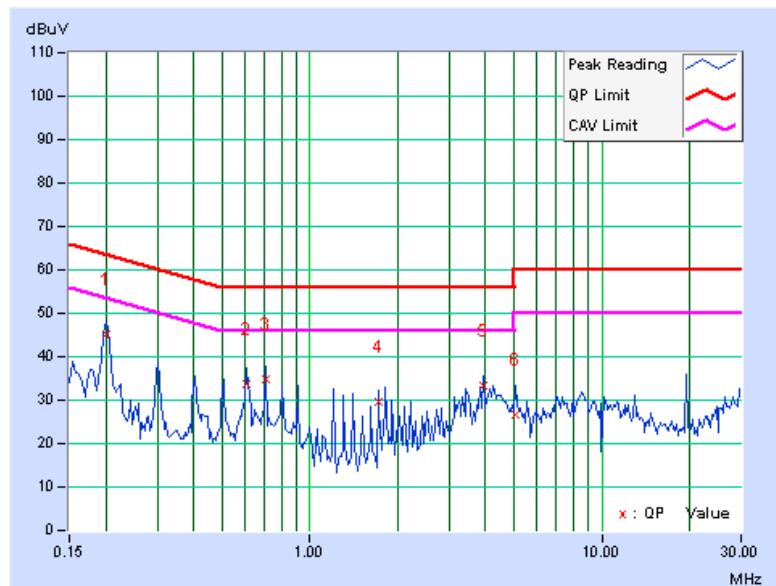
A D T

PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	[dB (uV)] Q.P.	[dB (uV)] AV.	[dB (uV)] Q.P.	[dB (uV)] AV.	[dB (uV)] Q.P.	[dB (uV)] AV.	[dB] Q.P.	[dB] AV.
1	0.201	0.06	45.19	-	45.25	-	63.58	53.58	-18.33	-
2	0.607	0.08	33.44	-	33.52	-	56.00	46.00	-22.48	-
3	0.705	0.09	34.77	-	34.86	-	56.00	46.00	-21.14	-
4	1.711	0.13	29.38	-	29.51	-	56.00	46.00	-26.49	-
5	3.926	0.20	33.00	-	33.20	-	56.00	46.00	-22.80	-
6	5.063	0.23	26.27	-	26.50	-	60.00	50.00	-33.50	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



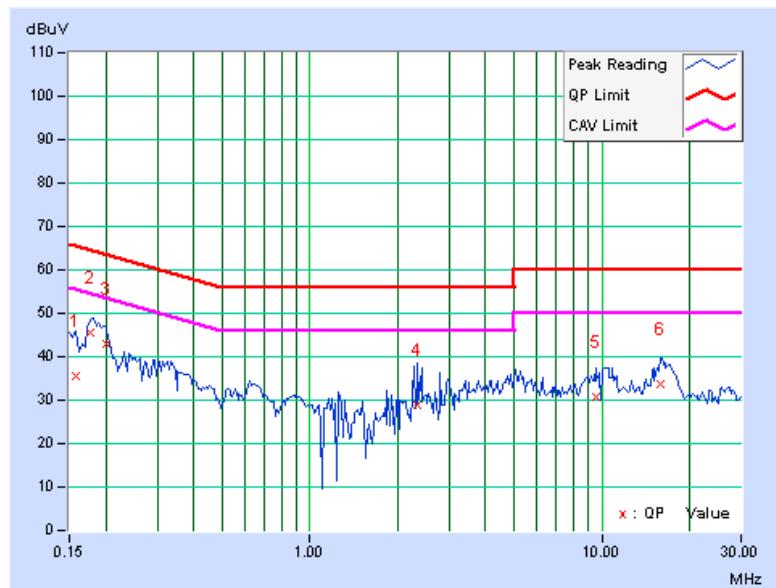
5.1.11 TEST RESULTS (MODE E)

PHASE	Line (L)	6dB BANDWIDTH		9 kHz	
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.158	0.05	35.61	-	35.66	-	65.58	55.58	-29.91	-
2	0.177	0.05	45.33	-	45.38	-	64.61	54.61	-19.23	-
3	0.201	0.05	42.92	-	42.97	-	63.58	53.58	-20.61	-
4	2.336	0.14	28.64	-	28.78	-	56.00	46.00	-27.22	-
5	9.508	0.34	30.44	-	30.78	-	60.00	50.00	-29.22	-
6	15.840	0.44	33.09	-	33.53	-	60.00	50.00	-26.47	-

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





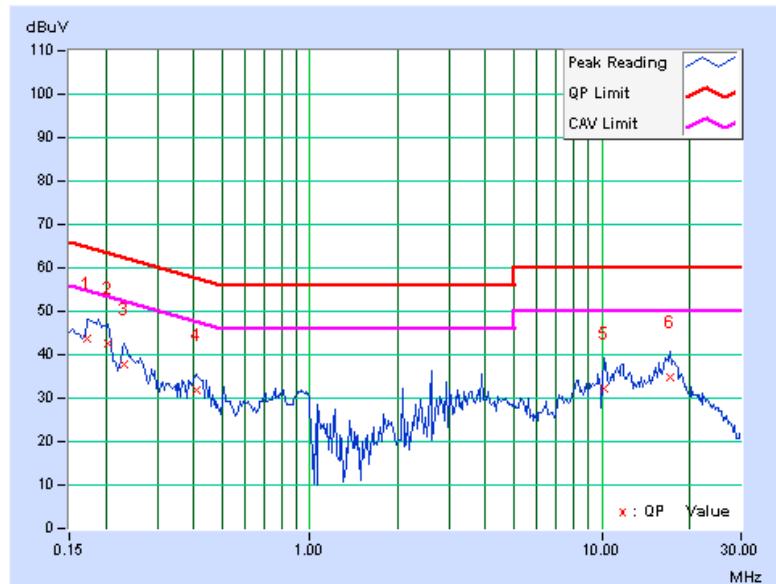
A D T

PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.173	0.06	43.61	-	43.67	-	64.79	54.79	-21.12	-
2	0.205	0.06	42.53	-	42.59	-	63.42	53.42	-20.83	-
3	0.232	0.06	37.73	-	37.79	-	62.38	52.38	-24.59	-
4	0.408	0.07	31.69	-	31.76	-	57.69	47.69	-25.93	-
5	10.207	0.36	31.70	-	32.06	-	60.00	50.00	-27.94	-
6	17.137	0.47	34.39	-	34.86	-	60.00	50.00	-25.14	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



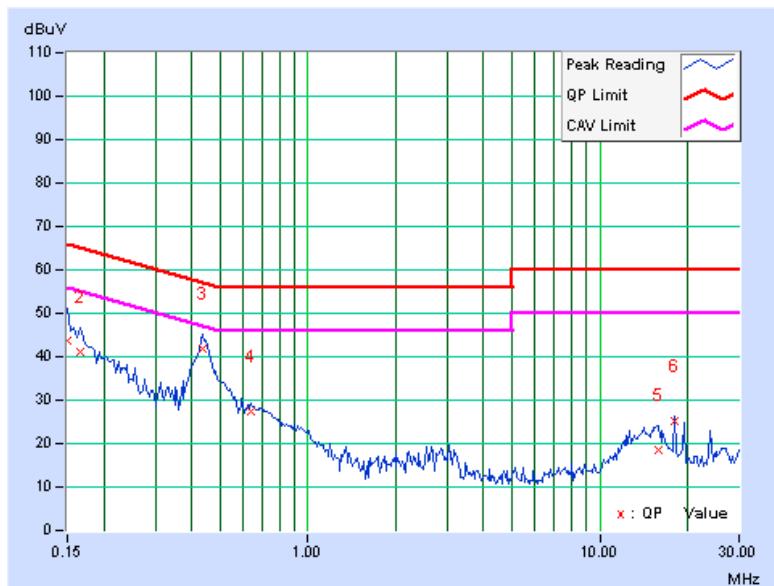
5.1.12 TEST RESULTS (MODE F)

PHASE	Line (L)		6dB BANDWIDTH		9 kHz	
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.04	43.71	-	43.75	-	66.00	56.00	-22.25	-
2	0.166	0.04	41.25	-	41.29	-	65.17	55.17	-23.88	-
3	0.435	0.05	41.96	-	42.01	-	57.15	47.15	-15.14	-
4	0.642	0.07	27.35	-	27.42	-	56.00	46.00	-28.58	-
5	15.828	0.53	17.94	-	18.47	-	60.00	50.00	-41.53	-
6	18.027	0.54	24.49	-	25.03	-	60.00	50.00	-34.97	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.

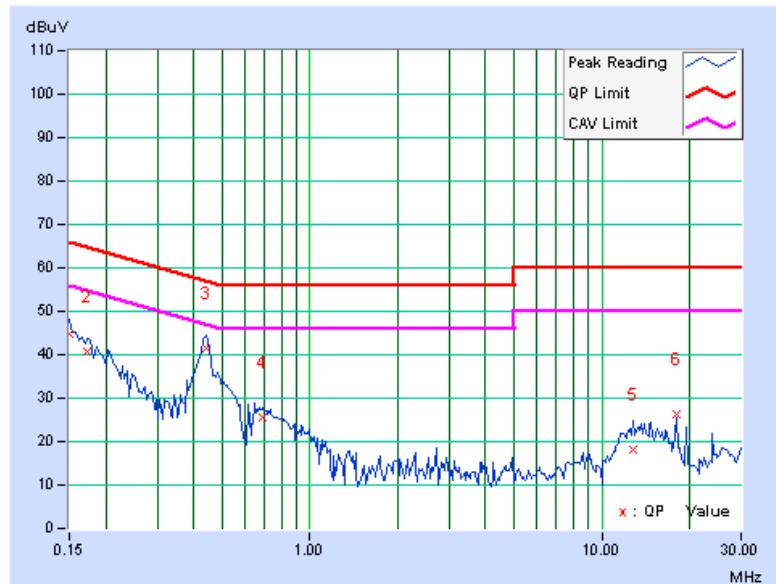


PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	(dB)	(dB)
1	0.150	0.05	44.76	-	44.81	-	66.00	56.00	-21.19	-
2	0.173	0.05	40.79	-	40.84	-	64.79	54.79	-23.95	-
3	0.443	0.06	41.26	-	41.32	-	57.01	47.01	-15.68	-
4	0.689	0.08	25.61	-	25.69	-	56.00	46.00	-30.31	-
5	12.797	0.42	17.86	-	18.28	-	60.00	50.00	-41.72	-
6	18.031	0.55	25.82	-	26.37	-	60.00	50.00	-33.63	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



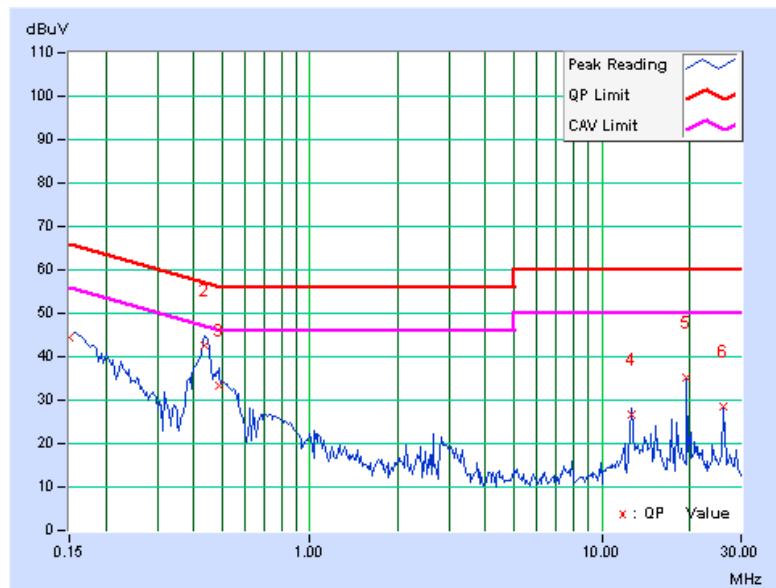
5.1.13 TEST RESULTS (MODE G)

PHASE	Line (L)	6dB BANDWIDTH		9 kHz	
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.04	44.52	-	44.56	-	66.00	56.00	-21.44	-
2	0.435	0.05	42.68	-	42.73	-	57.15	47.15	-14.42	-
3	0.486	0.06	33.10	-	33.16	-	56.24	46.24	-23.08	-
4	12.629	0.40	29.86	-	30.26	-	60.00	50.00	-29.74	-
5	19.500	0.54	34.72	-	35.26	-	60.00	50.00	-24.74	-
6	26.000	0.80	27.84	-	28.64	-	60.00	50.00	-31.36	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





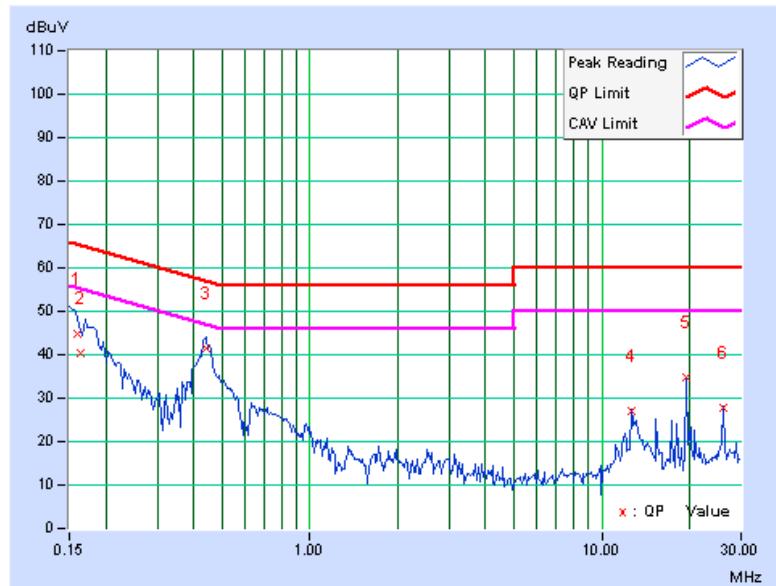
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PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.160	0.05	44.86	-	44.91	-	65.46	55.46	-20.55	-
2	0.165	0.05	40.35	-	40.40	-	65.22	55.22	-24.82	-
3	0.442	0.06	41.35	-	41.41	-	57.02	47.02	-15.60	-
4	12.615	0.41	26.55	-	26.96	-	60.00	50.00	-33.04	-
5	19.500	0.55	34.28	-	34.83	-	60.00	50.00	-25.17	-
6	26.000	0.81	27.15	-	27.96	-	60.00	50.00	-32.04	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



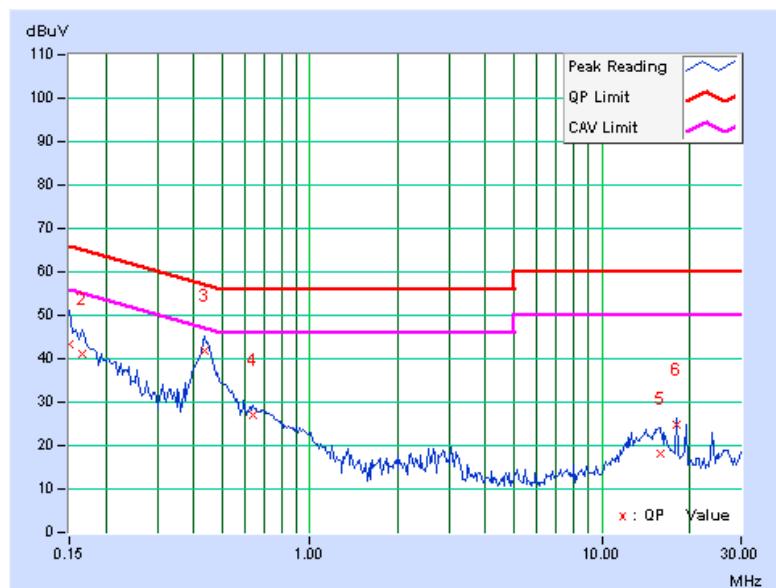
5.1.14 TEST RESULTS (MODE H)

PHASE	Line (L)	6dB BANDWIDTH		9 kHz	
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.04	43.25	-	43.29	-	66.00	56.00	-22.71	-
2	0.166	0.04	41.12	-	41.16	-	65.18	55.18	-24.02	-
3	0.435	0.05	41.75	-	41.80	-	57.15	47.15	-15.35	-
4	0.642	0.07	27.05	-	27.12	-	56.00	46.00	-28.88	-
5	15.828	0.53	17.54	-	18.07	-	60.00	50.00	-41.93	-
6	18.027	0.54	24.22	-	24.76	-	60.00	50.00	-35.24	-

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.

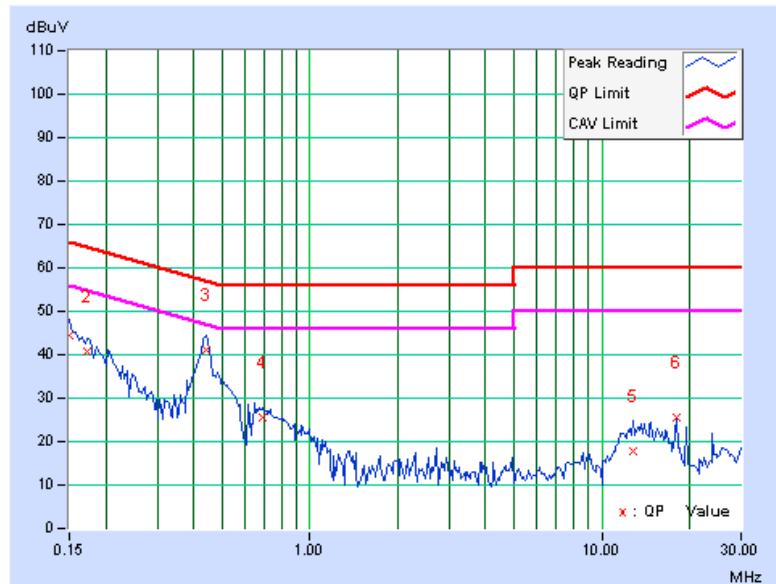


PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.05	44.32	-	44.37	-	66.00	56.00	-21.63	-
2	0.173	0.05	40.52	-	40.57	-	64.79	54.79	-24.22	-
3	0.443	0.06	41.15	-	41.21	-	57.01	47.01	-15.79	-
4	0.689	0.08	25.32	-	25.40	-	56.00	46.00	-30.60	-
5	12.797	0.42	17.25	-	17.67	-	60.00	50.00	-42.33	-
6	18.031	0.55	25.15	-	25.70	-	60.00	50.00	-34.30	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



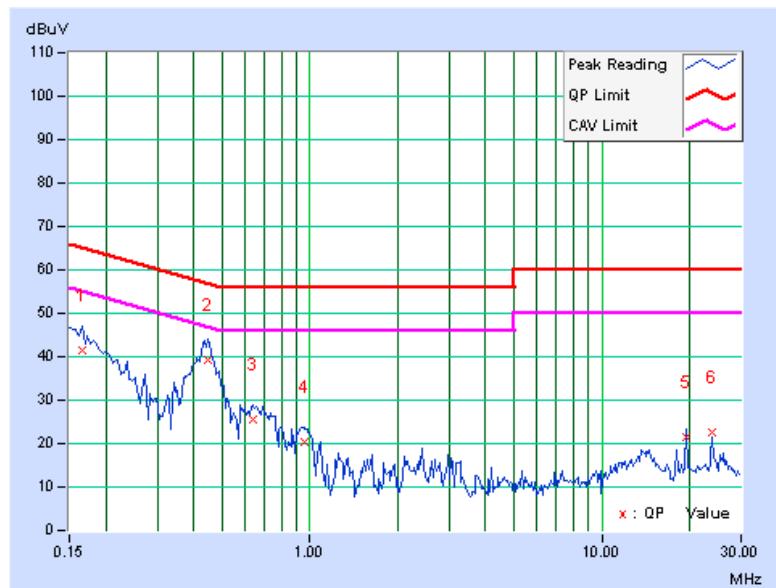
5.1.15 TEST RESULTS (MODE I)

PHASE	Line (L)		6dB BANDWIDTH		9 kHz	
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.166	0.04	41.55	-	41.59	-	65.18	55.18	-23.59	-
2	0.447	0.05	39.24	-	39.29	-	56.93	46.93	-17.64	-
3	0.642	0.07	25.57	-	25.64	-	56.00	46.00	-30.36	-
4	0.955	0.10	20.31	-	20.41	-	56.00	46.00	-35.59	-
5	19.500	0.54	21.12	-	21.66	-	60.00	50.00	-38.34	-
6	24.016	0.70	22.03	-	22.73	-	60.00	50.00	-37.27	-

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





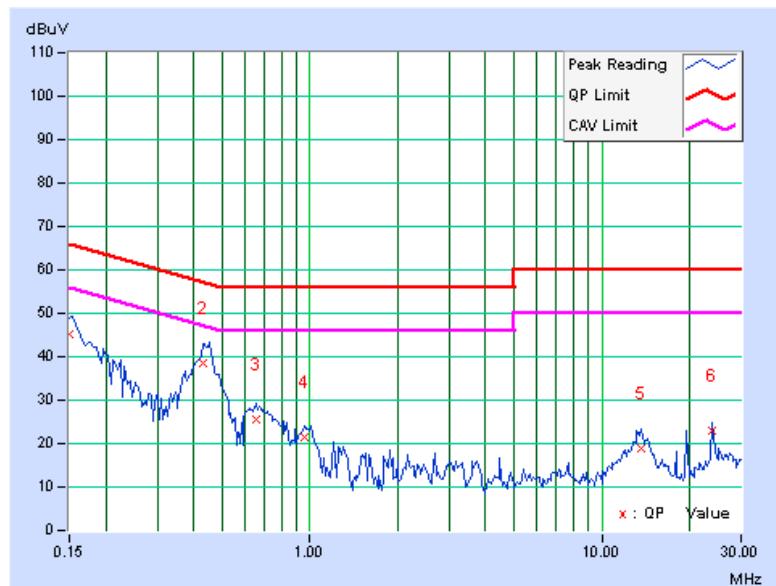
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PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	[dB (uV)] Q.P.	[dB (uV)] AV.	[dB (uV)] Q.P.	[dB (uV)] AV.	[dB (uV)] Q.P.	[dB (uV)] AV.	[dB] Q.P.	[dB] AV.
1	0.150	0.05	45.21	-	45.26	-	66.00	56.00	-20.74	-
2	0.431	0.06	38.42	-	38.48	-	57.23	47.23	-18.75	-
3	0.658	0.08	25.63	-	25.71	-	56.00	46.00	-30.29	-
4	0.955	0.11	21.55	-	21.66	-	56.00	46.00	-34.34	-
5	13.586	0.46	18.25	-	18.71	-	60.00	50.00	-41.29	-
6	24.016	0.71	22.35	-	23.06	-	60.00	50.00	-36.94	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





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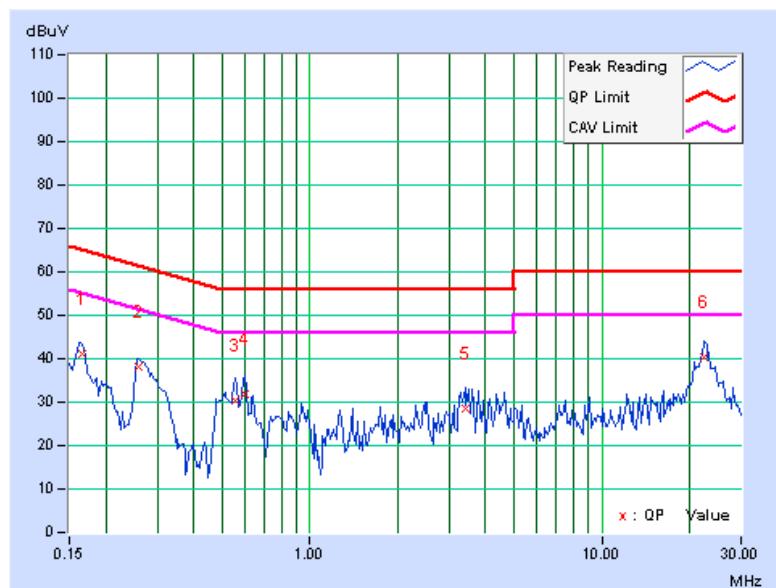
5.1.16 TEST RESULTS (MODE J)

PHASE	Line (L)	6dB BANDWIDTH		9 kHz	
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.166	0.04	41.25	-	41.29	-	65.18	55.18	-23.89	-
2	0.259	0.04	38.12	-	38.16	-	61.45	51.45	-23.29	-
3	0.556	0.06	30.35	-	30.41	-	56.00	46.00	-25.59	-
4	0.599	0.07	31.67	-	31.74	-	56.00	46.00	-24.26	-
5	3.398	0.13	28.22	-	28.35	-	56.00	46.00	-27.65	-
6	22.508	0.64	39.65	-	40.29	-	60.00	50.00	-19.71	-

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.

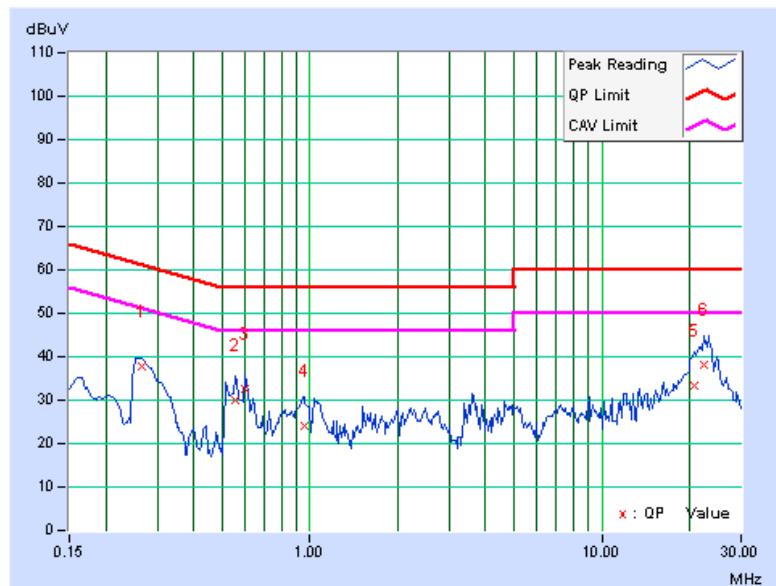


PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.267	0.05	37.68	-	37.73	-	61.20	51.20	-23.47	-
2	0.556	0.07	30.11	-	30.18	-	56.00	46.00	-25.82	-
3	0.599	0.08	32.62	-	32.70	-	56.00	46.00	-23.30	-
4	0.955	0.11	24.08	-	24.19	-	56.00	46.00	-31.81	-
5	20.859	0.58	32.65	-	33.23	-	60.00	50.00	-26.77	-
6	22.266	0.64	37.54	-	38.18	-	60.00	50.00	-21.82	-

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





5.2 RADIATED EMISSION MEASUREMENT

5.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dB_BV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.
4. Section 15.205 restricted bands of operation shall compliance with the limits in Section 15.209.



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5.2.2 TEST INSTRUMENTS

For below 1GHz test, tested date: Nov. 17

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. 01, 2010	Oct. 31, 2011
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
R&S Loop Antenna	HFH2-Z2	100070	Feb. 03, 2010	Feb. 02, 2012
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.



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Above 1GHz test, tested date: Aug. 11~24

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	Aug. 28, 2009	Aug. 27, 2010
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
R&S Loop Antenna	HFH2-Z2	100070	Feb. 03, 2010	Feb. 02, 2011
RF Switches	EMH-011	1001	NA	NA
RF CABLE (Chaintek)	Sucoflex 106	28077	Aug. 14, 2010	Aug. 13, 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.



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5.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

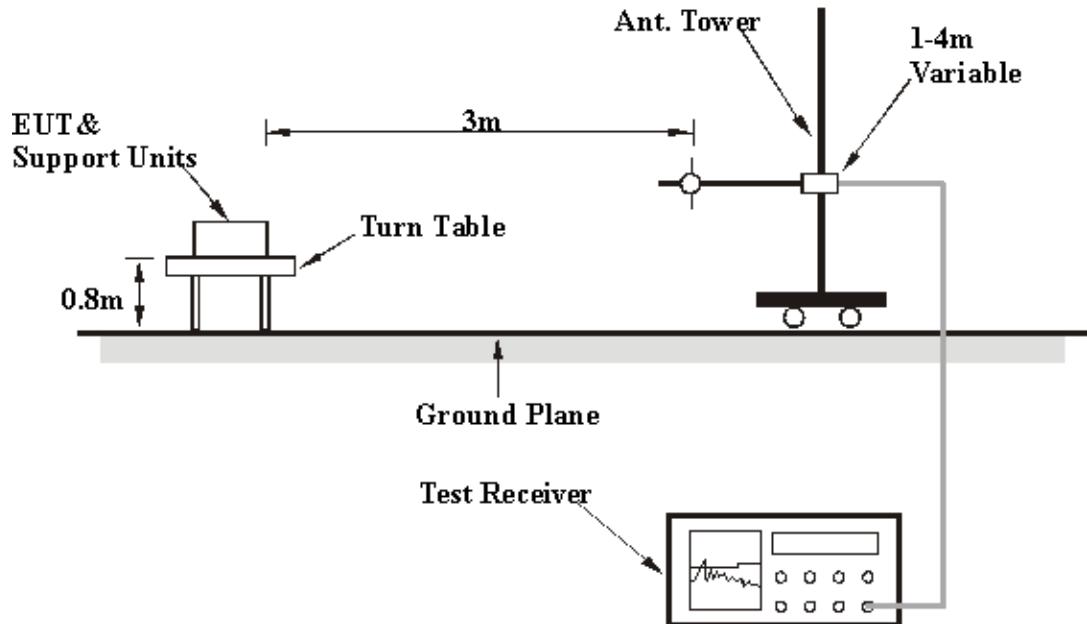
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

5.2.4 DEVIATION FROM TEST STANDARD

No deviation

5.2.5 TEST SETUP



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

5.2.6 EUT OPERATING CONDITIONS

Same as the 4.1.6



A D T

5.2.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA : 802.11a OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		Channel 157		FREQUENCY RANGE Below 1000MHz
INPUT POWER (SYSTEM)		120Vac, 60Hz		DETECTOR FUNCTION Quasi-Peak
ENVIRONMENTAL CONDITIONS		22deg. C, 63%RH 1013 hPa		TESTED BY Wen Yu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	125.03	36.86 QP	43.50	-6.64	1.53 H	211	23.99	12.87
2	144.00	37.86 QP	43.50	-5.64	1.44 H	123	23.32	14.54
3	223.35	36.48 QP	46.00	-9.52	1.33 H	250	24.31	12.17
4	250.00	41.67 QP	46.00	-4.33	1.14 H	326	28.10	13.57
5	375.00	40.42 QP	46.00	-5.58	1.10 H	152	22.87	17.55
6	500.00	40.87 QP	46.00	-5.13	1.00 H	55	20.11	20.76
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	74.60	36.78 QP	40.00	-3.22	1.00 V	55	25.86	10.92
2	113.11	34.78 QP	43.50	-8.72	1.00 V	266	23.64	11.14
3	143.24	36.33 QP	43.50	-7.17	1.00 V	262	21.73	14.60
4	250.00	40.41 QP	46.00	-5.59	1.00 V	171	26.84	13.57
5	600.00	42.74 QP	46.00	-3.26	1.31 V	17	19.47	23.27
6	1000.00	42.45 QP	54.00	-11.55	1.45 V	27	13.84	28.61

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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ABOVE 1GHz WORST-CASE DATA

802.11a OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		FREQUENCY RANGE		1 ~ 40GHz
INPUT POWER (SYSTEM)		DETECTOR FUNCTION		Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS		TESTED BY		Phoenix Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5745.00	102.6 PK			1.31 H	58	65.39	37.21
2	*5745.00	93.3 AV			1.31 H	58	56.09	37.21
3	11490.00	58.2 PK	74.0	-15.8	1.40 H	283	11.07	47.13
4	11490.00	45.7 AV	54.0	-8.3	1.40 H	283	-1.43	47.13

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5745.00	103.4 PK			1.35 V	287	66.19	37.21
2	*5745.00	93.6 AV			1.35 V	287	56.39	37.21
3	11490.00	56.8 PK	74.0	-17.2	1.52 V	5	9.67	47.13
4	11490.00	44.3 AV	54.0	-9.7	1.52 V	5	-2.83	47.13

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “*”: Fundamental frequency.
6. The limit value is defined as per 15.247.



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EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		Channel 157		FREQUENCY RANGE 1 ~ 40GHz
INPUT POWER (SYSTEM)		120Vac, 60Hz		DETECTOR FUNCTION Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS		25deg. C, 66%RH 1013 hPa		TESTED BY Phoenix Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	103.7 PK			1.00 H	61	66.39	37.31
2	*5785.00	94.0 AV			1.00 H	61	56.69	37.31
3	11570.00	56.6 PK	74.0	-17.4	1.31 H	312	9.53	47.07
4	11570.00	44.0 AV	54.0	-10.0	1.31 H	312	-3.07	47.07

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	104.1 PK			1.28 V	285	66.79	37.31
2	*5785.00	94.3 AV			1.28 V	285	56.99	37.31
3	11570.00	56.4 PK	74.0	-17.6	1.52 V	5	9.33	47.07
4	11570.00	43.7 AV	54.0	-10.3	1.52 V	5	-3.37	47.07

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “*”: Fundamental frequency.
6. The limit value is defined as per 15.247.



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EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		Channel 165		FREQUENCY RANGE 1 ~ 40GHz
INPUT POWER (SYSTEM)		120Vac, 60Hz		DETECTOR FUNCTION Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS		25deg. C, 66%RH 1013 hPa		TESTED BY Phoenix Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	104.1 PK			1.31 H	59	66.68	37.42
2	*5825.00	94.5 AV			1.31 H	59	57.08	37.42
3	11650.00	56.2 PK	74.0	-17.8	1.42 H	285	9.20	47.00
4	11650.00	43.5 AV	54.0	-10.5	1.42 H	285	-3.50	47.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	103.2 PK			1.34 V	286	65.78	37.42
2	*5825.00	93.6 AV			1.34 V	286	56.18	37.42
3	11650.00	54.8 PK	74.0	-19.2	1.40 V	0	7.80	47.00
4	11650.00	42.6 AV	54.0	-11.4	1.40 V	0	-4.40	47.00

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “*”: Fundamental frequency.
6. The limit value is defined as per 15.247.



5.3 6dB BANDWIDTH MEASUREMENT

5.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

5.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 18, 2009	Dec. 17, 2010

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

5.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 100kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

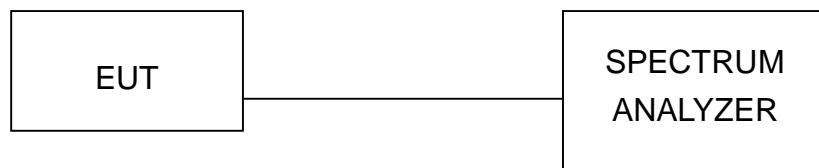
NOTE:

The EUT was setup to ANSI C63.4, tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

5.3.4 DEVIATION FROM TEST STANDARD

No deviation

5.3.5 TEST SETUP



5.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.



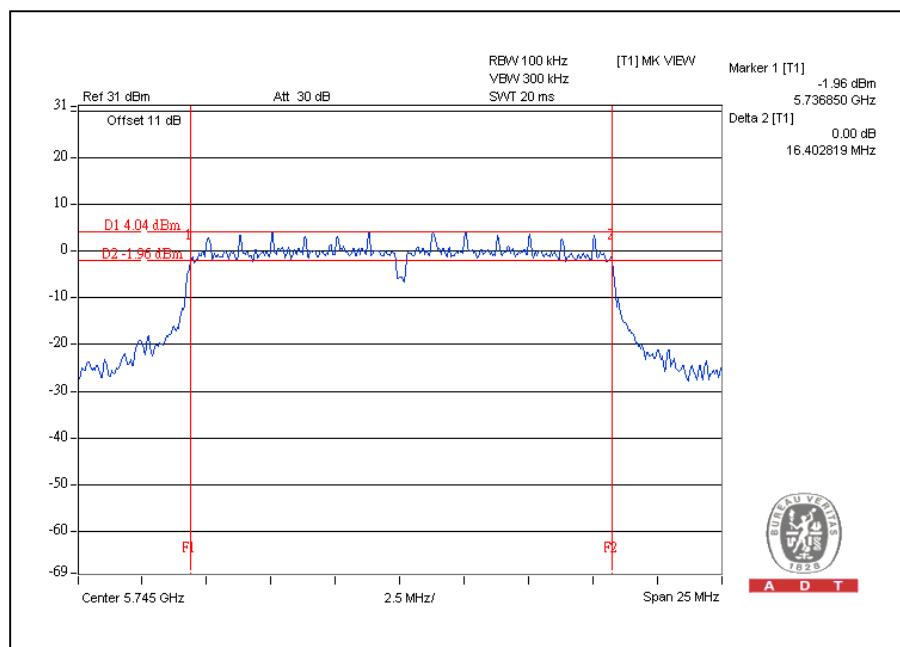
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5.3.7 TEST RESULTS

802.11a OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	16.40	0.5	PASS
157	5785	16.36	0.5	PASS
165	5825	16.36	0.5	PASS

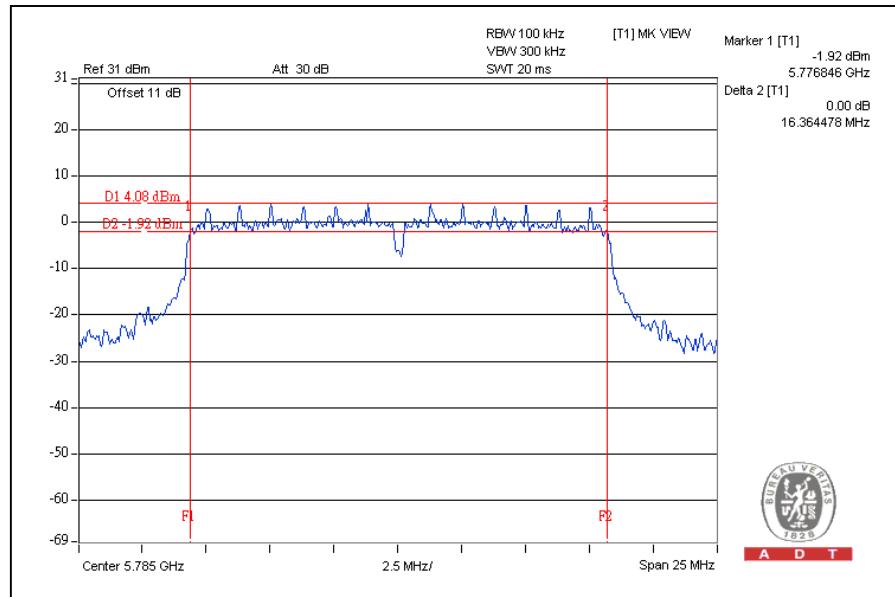
CH149



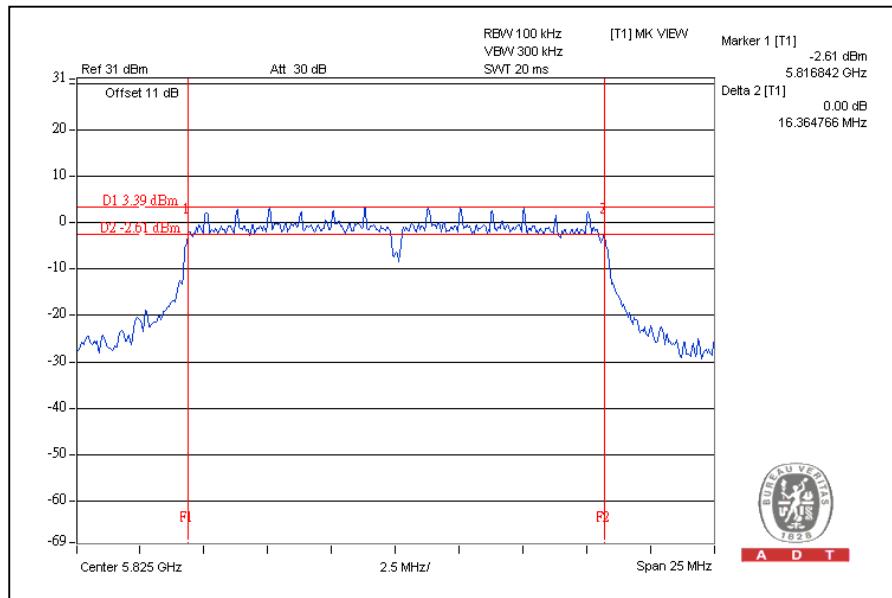


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CH157



CH165





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5.4 MAXIMUM PEAK OUTPUT POWER

5.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

5.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Anritsu Power Meter	ML2495A	0824006	May 04, 2010	May 03, 2011
Pulse Power Sensor	MA2411B	0738172	May 04, 2010	May 03, 2011

NOTE:

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

5.4.3 TEST PROCEDURES

1. The transmitter output was connected to the power meter through an attenuator; the bandwidth of the fundamental frequency was measured with the power meter.
2. Record the power level.

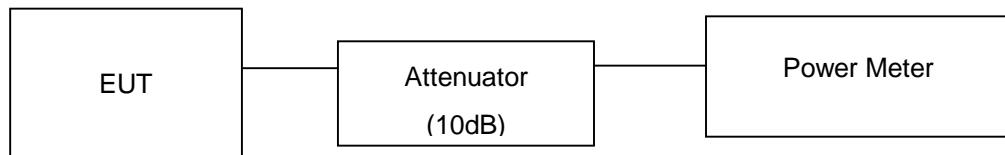
NOTE:

The EUT was setup to ANSI C63.4, tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

5.4.4 DEVIATION FROM TEST STANDARD

No deviation

5.4.5 TEST SETUP



5.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6



A D T

5.4.7 TEST RESULTS

802.11a OFDM modulation:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
149	5745	128.8	21.1	30	PASS
157	5785	131.8	21.2	30	PASS
165	5825	117.5	20.7	30	PASS



5.5 POWER SPECTRAL DENSITY MEASUREMENT

5.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

5.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 18, 2009	Dec. 17, 2010

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

5.5.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3 kHz RBW and 30 kHz VBW, set sweep time = span/3 kHz. The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span/3 kHz for a full response of the mixer in the spectrum analyzer.

NOTE:

The EUT was setup to ANSI C63.4, tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

5.5.4 DEVIATION FROM TEST STANDARD

No deviation

5.5.5 TEST SETUP



5.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6



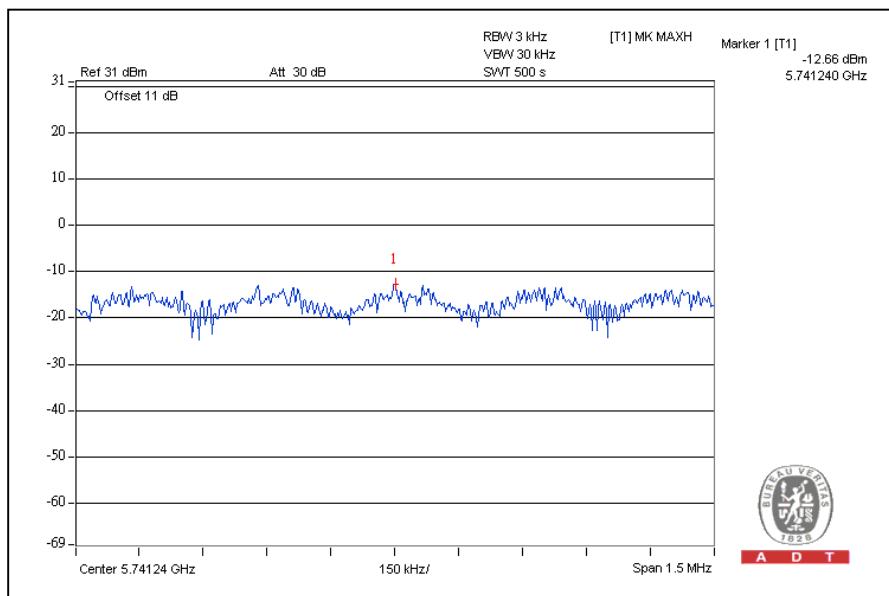
A D T

5.5.7 TEST RESULTS

802.11a OFDM modulation

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
149	5745	-12.7	8	PASS
157	5785	-12.0	8	PASS
165	5825	-13.7	8	PASS

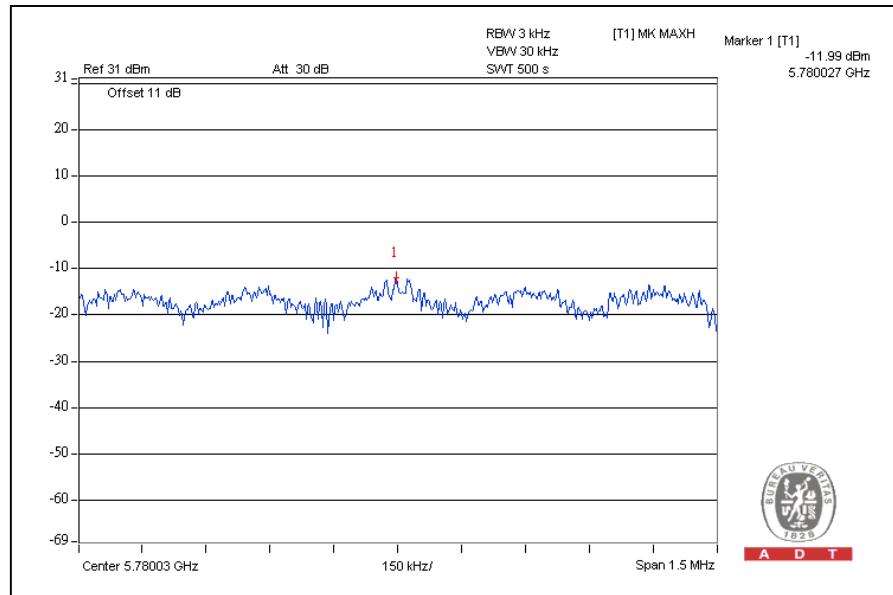
CH149



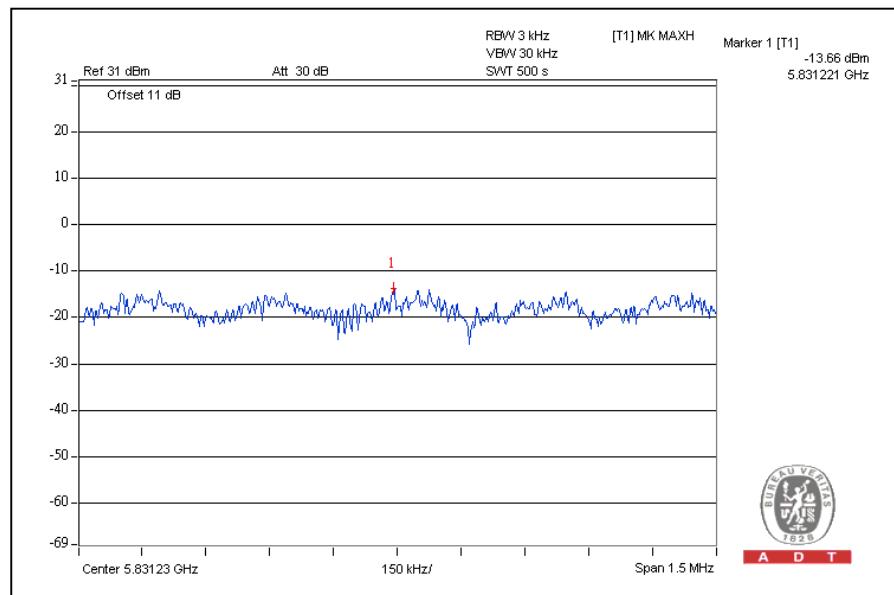


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5.6 CONDUCTED OUT-BAND EMISSION MEASUREMENT

5.6.1 LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT

Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

5.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 18, 2009	Dec. 17, 2010

NOTE:

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

5.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low loss cable. Set RBW of spectrum analyzer to 100 kHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

NOTE:

The EUT was setup to ANSI C63.4, tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

5.6.4 DEVIATION FROM TEST STANDARD

No deviation

5.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6

5.6.6 TEST RESULTS

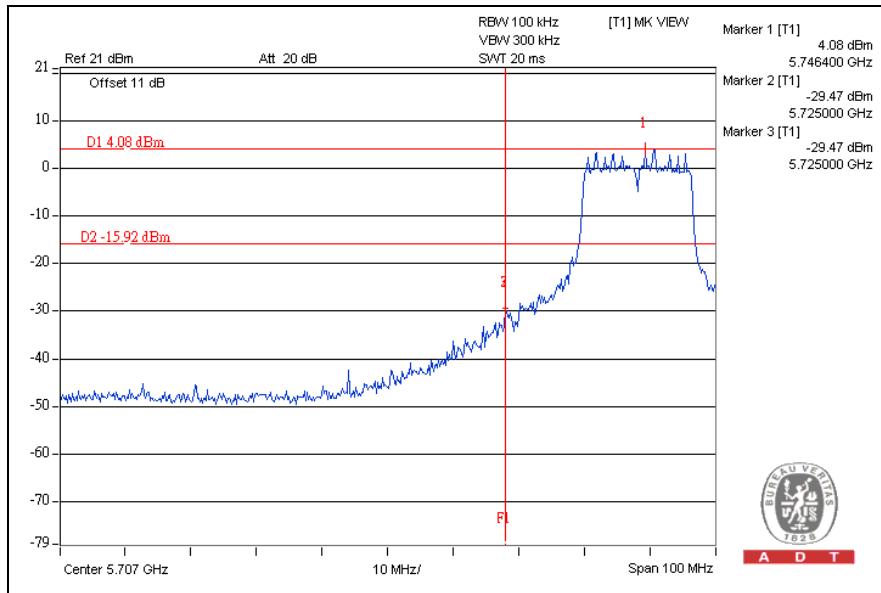
The spectrum plots are attached on the following pages. D2 line indicates the highest level, D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(d).



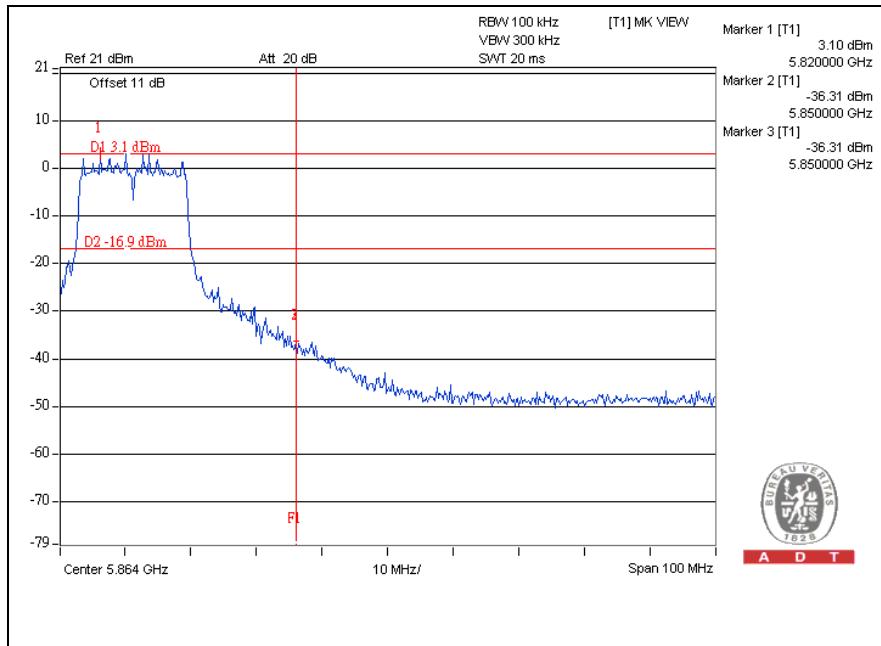
A D T

802.11a OFDM modulation

CH149



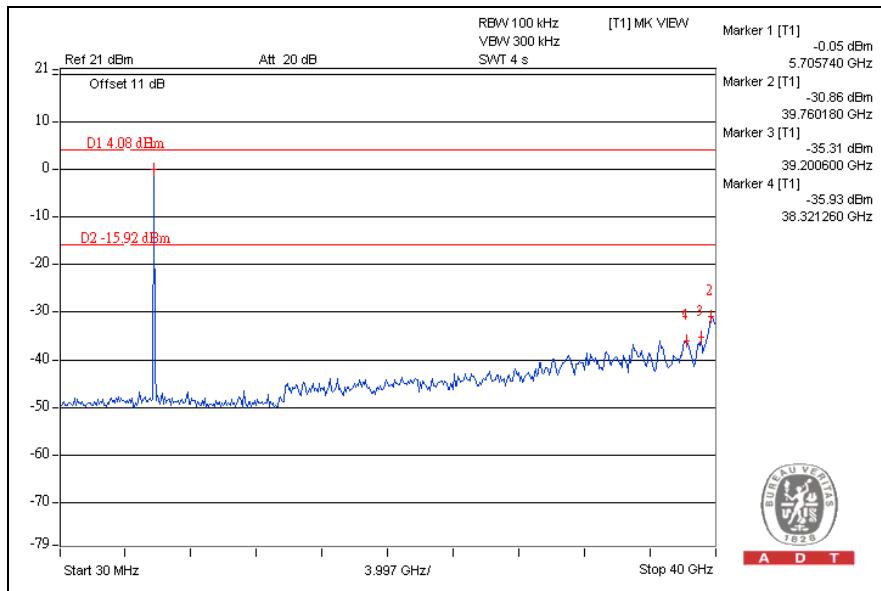
CH165



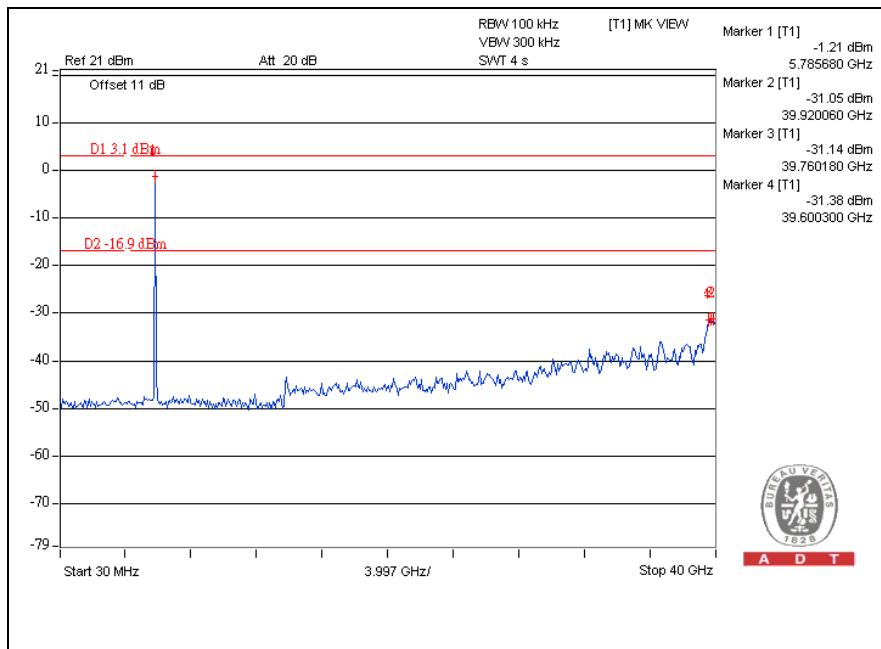


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6. INFORMATION ON THE TESTING LABORATORIES

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
Fax: 886-3-3185050

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.



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7.APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

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