FCC TEST REPORT (15.247)

REPORT NO.:	RF121012E03
MODEL NO.:	E2500
FCC ID:	Q87-E2500V2
RECEIVED:	Oct. 04, 2012
TESTED:	Oct. 04 to 26, 2012
ISSUED:	Nov. 08, 2012

APPLICANT:	Cisco Consumer Products, LLC
ADDRESS:	121 Theory Drive Irvine, CA 92617(USA)

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
LAB ADDRESS :	No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C.
TEST LOCATION (1):	No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C.
TEST LOCATION (2):	No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C.

This report should not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF121012E03	Original release	Nov. 08, 2012

1. CERTIFICATION

PRODUCT:	Linksys E2500 Advanced Dual-Band N Router
BRAND NAME:	Cisco
MODEL NO.:	E2500
VERSION:	2
TEST SAMPLE:	ENGINEERING SAMPLE
APPLICANT:	Cisco Consumer Products, LLC
TESTED:	Oct. 04 to 26, 2012
STANDARDS:	FCC Part 15, Subpart C (Section 15.247) ANSI C63.10-2009

The above equipment (Model: E2500) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : _____ , **DATE:** *Nov. 08, 2012*
(Midoli Peng, Specialist)

APPROVED BY : _____ , **DATE:** *Nov. 08, 2012*
(May Chen, Deputy Manager)

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

For 2.4GHz, 2412~2462MHz Band

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	**TEST TYPE**	**RESULT**	**REMARK**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -5.66dB at 0.26328MHz.
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -0.5dB at 2390.00MHz.
15.247(d)	Band Edge Measurement	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.

For 5GHz, 5745~5825MHz Band

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	**TEST TYPE**	**RESULT**	**REMARK**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -6.69dB at 0.32188MHz.
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -3.8dB at 11490.0MHz.
15.247(d)	Band Edge Measurement	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.

NOTE: The EUT was operating in 2.400 ~ 2.4835GHz, 5.15~5.25GHz and 5.725~5.850GHz frequencies band. This report was recorded the RF parameters including 2.400 ~ 2.4835GHz and 5.725~5.850GHz. For the 5.15~5.25GHz RF parameters was recorded in another test report.

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	2.98 dB
Radiated emissions (30MHz-1GHz)	5.69 dB
Radiated emissions (1GHz -6GHz)	3.84 dB
Radiated emissions (6GHz -18GHz)	4.09 dB
Radiated emissions (18GHz -40GHz)	4.24 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Linksys E2500 Advanced Dual-Band N Router
MODEL NO.	E2500
POWER SUPPLY	DC 12V from power adapter
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: up to 11Mbps 802.11g/a: up to 54Mbps 802.11n (HT20): up to 130Mbps 802.11n (HT40): up to 270Mbps
OPERATING FREQUENCY	**For 15.407** 5.18 ~ 5.24GHz
	For 15.247 2.4GHz: 2.412 ~ 2.462GHz 5GHz: 5.745 ~ 5.825GHz
NUMBER OF CHANNEL	**For 15.407** 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40)
	For 15.247 (2.4GHz) 11 for 802.11b, 802.11g, 802.11n (HT20) 7 for 802.11n (HT40) **For 15.247 (5GHz)** 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40)
MAXIMUM OUTPUT POWER	**For 15.407** 802.11a: 29.512mW 802.11n (HT20): 30.086mW 802.11n (HT40): 23.416mW **For 15.247 (2.4GHz)** 802.11b: 123.027mW 802.11g: 338.844mW 802.11n (HT20): 557.261mW 802.11n (HT40): 427.706mW **For 15.247 (5GHz)** 802.11a: 223.872mW 802.11n (HT20): 464.247mW 802.11n (HT40): 429.407mW

ANTENNA TYPE	Please see NOTE
DATA CABLE	RJ-45 cable(unshielded, 1.8m)
I/O PORTS	Refer to user's manual
ASSOCIATED DEVICES	Adapter x 1

NOTE:

1. There are 2.4GHz and 5GHz WLAN technology used for the EUT. The test report of EUT listed as below table:

Function	Report No.
WLAN	RF121012E03 (15.247) RF121012E03-1(15.407)

2. The EUT must be supplied with a power adapter as following table:

No	Brand	Model No.	Plug	Spec.
1	DVE	DSA-12G-12 FUS	USA	Input: 100-240V, 0.5A, 50/60Hz Output: 12V, 1A DC power cable: 1.5m, unshielded
2	DVE	DSA-12CA-12	Universal	
3	HK	HK-AO-120A100-US	USA	
4	HK	HK-AF-120A100-CP	Universal	
5	Solytech	CAD1212	USA	
6	Solytech	CAD1212L	Universal	

Note:
1. For radiated emissions test, the EUT was pre-tested with above adapters 1~6, the worst case was found in adapter 4. Therefore only the test data of the adapter was recorded in this report.

3. The antennas provided to the EUT, please refer to the following table:

2.4GHz			
Transmitter Circuit	Antenna Type	Antenna Gain (dBi)	Connector
Chain (0)	PIFA	2.5	NA
Chain (1)	PIFA	4	NA
5GHz			
Transmitter Circuit	Antenna Type	Antenna Gain (dBi)	Connector
Chain (0)	PIFA	4	NA
Chain (1)	PIFA	5	NA

4. The EUT incorporates a MIMO function.

MODULATION MODE	Tx/Rx FUNCTION
802.11a	1Tx/2Rx(diversity)
802.11b	1Tx/2Rx(diversity)
802.11g	1Tx/2Rx(diversity)
802.11n (HT20)	2Tx/2Rx
802.11n (HT40)	2Tx/2Rx

5. Spurious emission of the simultaneous operation (2.4GHz & 5GHz) has been evaluated and no non-compliance was found.

6. When the EUT operating in 802.11n, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 15.

7. The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

Operated in 2400 ~ 2483.5MHz band:

11 channels are provided for 802.11b, 802.11g, 802.11n (HT20):

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

7 channels are provided for 802.11n (HT40):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

Operated in 5725 ~ 5850MHz band:

5 channels are provided for 802.11a, 802.11n (HT20):

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

2 channels are provided for 802.11n (HT40):

CHANNEL	FREQUENCY
151	5755 MHz
159	5795 MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO					DESCRIPTION
	PLC	RE < 1G	RE ³ 1G	APCM	OB	
1	√	-	-	-	-	Adapter 1
2	√	-	-	-	-	Adapter 2
3	√	-	-	-	-	Adapter 3
4	√	√	√	√	√	Adapter 4
5	√	-	-	-	-	Adapter 5
6	√	-	-	-	-	Adapter 6

Where **PLC:** Power Line Conducted Emission **RE < 1G:** Radiated Emission below 1GHz

RE ³ 1G: Radiated Emission above 1GHz **APCM:** Antenna Port Conducted Measurement

OB: Conducted Out-Band Emission Measurement

NOTE: "-"means no effect.

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)
For 2.4 GHz 802.11n (HT20)	1 to 11	11	OFDM	BPSK	6.5
For 5 GHz 802.11n (HT20)	149 to 165	165	OFDM	BPSK	6.5

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)
For 2.4 GHz 802.11n (HT20)	1 to 11	11	OFDM	BPSK	6.5
For 5 GHz 802.11n (HT20)	149 to 165	165	OFDM	BPSK	6.5

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)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
For 2.4 GHz 802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6
For 5 GHz 802.11n (HT20)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
For 5 GHz 802.11n (HT40)	151 to 159	151, 159	OFDM	BPSK	13.5

ANTENNA PORT CONDUCTED 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)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
For 2.4 GHz 802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6
For 5 GHz 802.11n (HT20)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
For 5 GHz 802.11n (HT40)	151 to 159	151, 159	OFDM	BPSK	13.5

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)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
For 2.4 GHz 802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6
For 5 GHz 802.11n (HT20)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
For 5 GHz 802.11n (HT40)	151 to 159	151, 159	OFDM	BPSK	13.5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
PLC	26deg. C, 67%RH 25deg. C, 60%RH	120Vac, 60Hz	Bear Lee Timmy Hu
RE<1G	21deg. C, 64%RH	120Vac, 60Hz	Evan Huang
RE≥1G	21deg. C, 67%RH 22deg. C, 68%RH	120Vac, 60Hz	Frank Liu
APCM	25deg. C, 60%RH	120Vac, 60Hz	Evan Huang
OB	25deg. C, 60%RH	120Vac, 60Hz	Evan Huang

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)

558074 D01 DTS Meas Guidance

ANSI C63.10-2009

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

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

3.4 DESCRIPTION OF SUPPORT UNITS

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

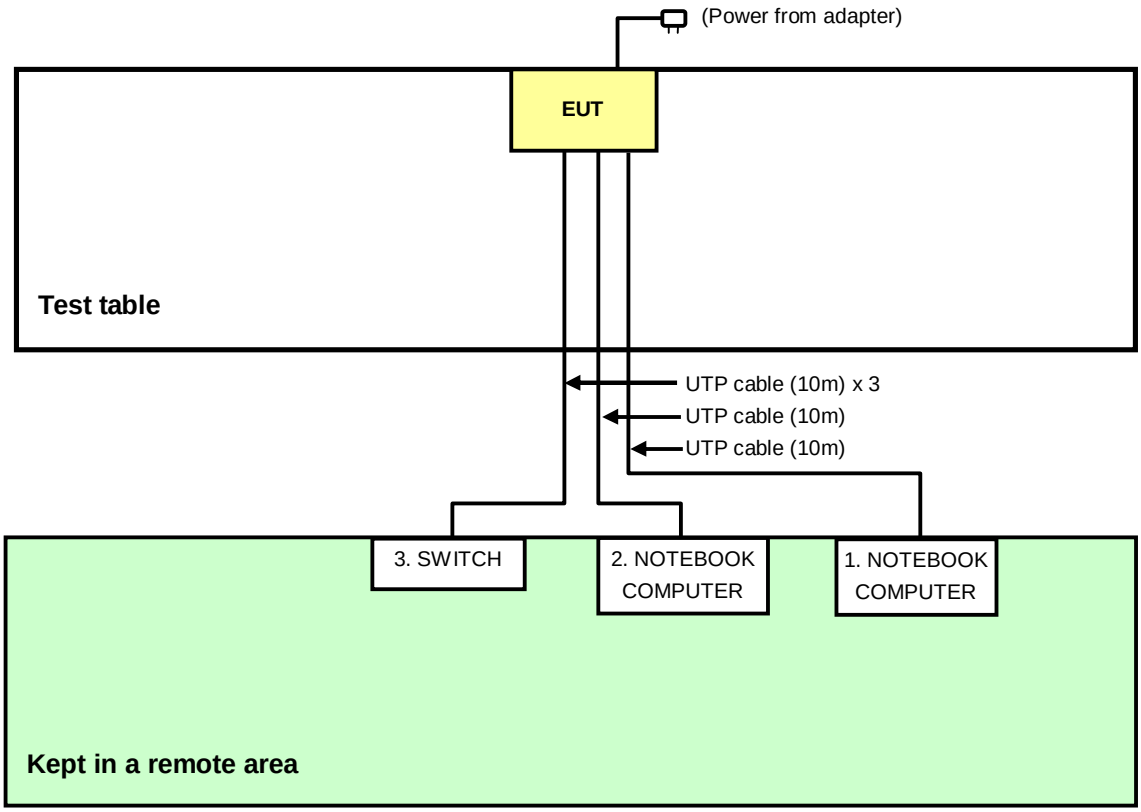
For conducted emission test					
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP32LA	HSLB32S	FCC DoC
2	NOTEBOOK COMPUTER	DELL	PP27L	6YLB32S	FCC DoC
3	SWITCH	HP	J9020A	NA	NA
For other test items					
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP32LA	FSLB32S	FCC DoC
2	NOTEBOOK COMPUTER	DELL	PP32LA	GSLB32S	FCC DoC
3	HUB	ZyXEL	ES-116P	S060H02000215	FCC DoC

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

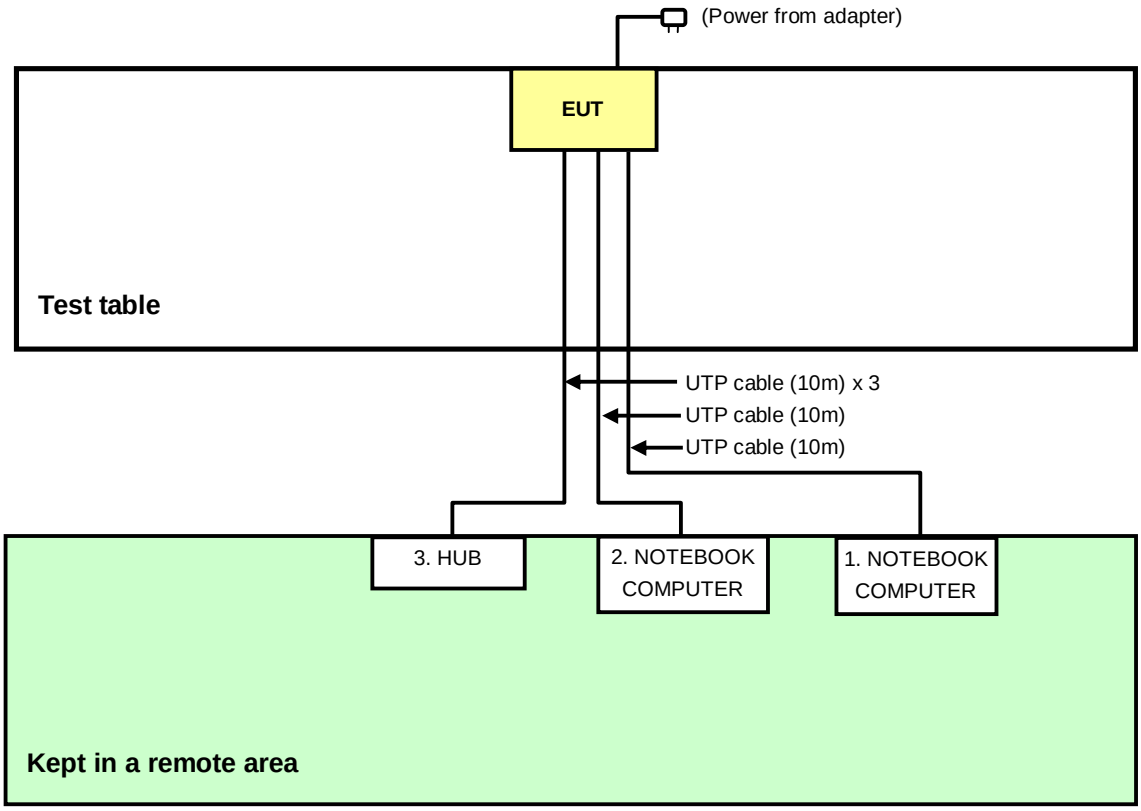
NOTE: All power cords of the above support units are non shielded (1.8m).

3.5 CONFIGURATION OF SYSTEM UNDER TEST

For conducted emission test



For other test items



4. TEST TYPES AND RESULTS (FOR 2.4GHz, 2412 ~ 2462MHz Band)

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	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.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Mar. 12, 2012	Mar.11, 2013
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK8127	8127-522	Sep. 06, 2012	Sep. 05, 2013
Line-Impedance Stabilization Network (for Peripheral)	ENV216	100072	June 08, 2012	June 07, 2013
RF Cable (JYEBAO)	5DFB	COCCAB-001	Aug. 28, 2012	Aug. 27, 2013
50 ohms Terminator	50	EMC-3	Sep. 25, 2012	Sep. 24, 2013
Software ADT	BV ADT_Cond_V7.3.7.3	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.
4 Tested Date: Oct. 04, 2012

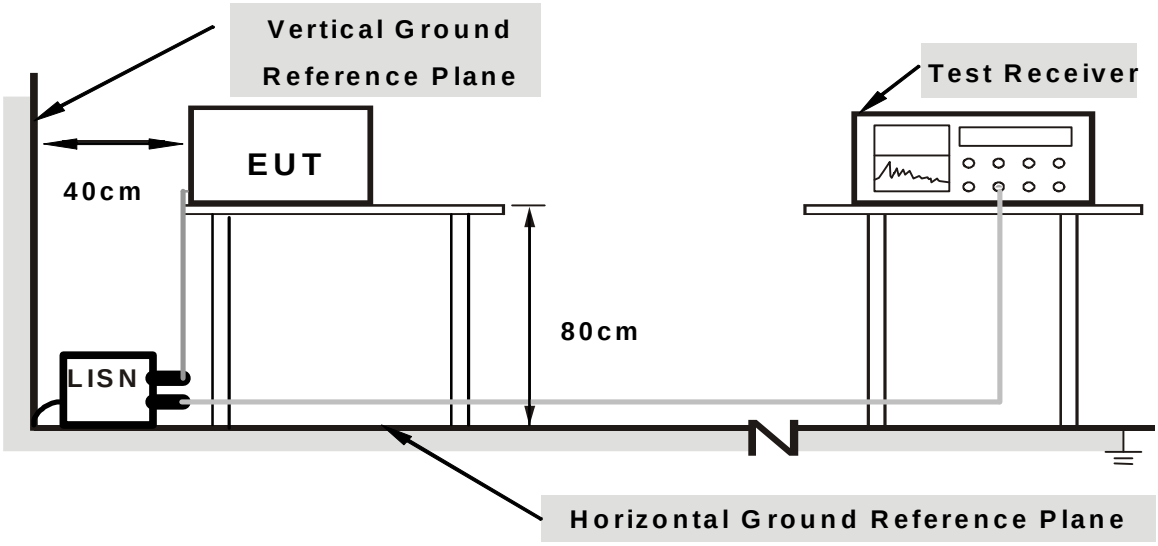
4.1.3 TEST PROCEDURES

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.
b. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
c. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
d. 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.

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

4.1.6 EUT OPERATING CONDITIONS

1. Turn on the power of EUT.
2. The communication partner run test program “WI Command” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

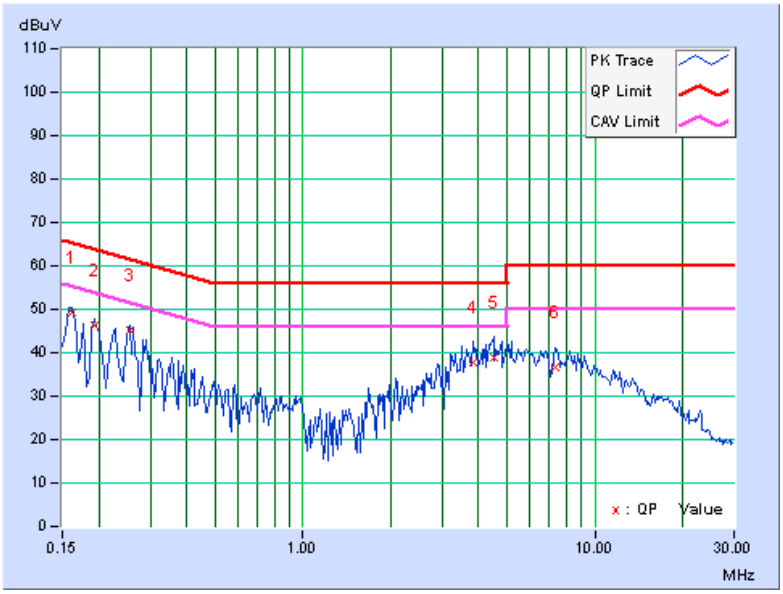
4.1.7 TEST RESULTS (MODE 1)

PHASE	Line (L)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.16172	0.11	49.00	42.94	49.11	43.05	65.38	55.38	-16.26	-12.32
2	0.19297	0.13	46.02	39.94	46.15	40.07	63.91	53.91	-17.76	-13.84
3	0.25547	0.14	45.08	37.02	45.22	37.16	61.58	51.58	-16.35	-14.41
4	3.82031	0.33	37.30	28.34	37.63	28.67	56.00	46.00	-18.37	-17.33
5	4.50391	0.38	38.56	29.32	38.94	29.70	56.00	46.00	-17.06	-16.30
6	7.34375	0.57	36.18	27.32	36.75	27.89	60.00	50.00	-23.25	-22.11

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

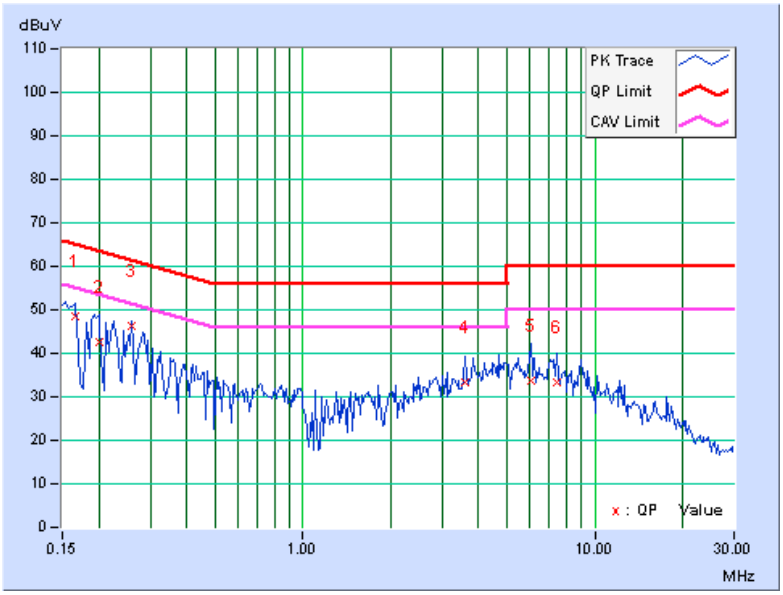


PHASE	Neutral (N)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.16562	0.10	48.32	40.48	48.42	40.58	65.18	55.18	-16.75	-14.59
2	0.20078	0.12	42.44	30.06	42.56	30.18	63.58	53.58	-21.02	-23.40
3	0.25938	0.13	46.06	41.04	46.19	41.17	61.45	51.45	-15.26	-10.28
4	3.57813	0.33	33.04	25.12	33.37	25.45	56.00	46.00	-22.63	-20.55
5	6.03516	0.46	33.28	25.36	33.74	25.82	60.00	50.00	-26.26	-24.18
6	7.44141	0.53	32.78	24.30	33.31	24.83	60.00	50.00	-26.69	-25.17

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



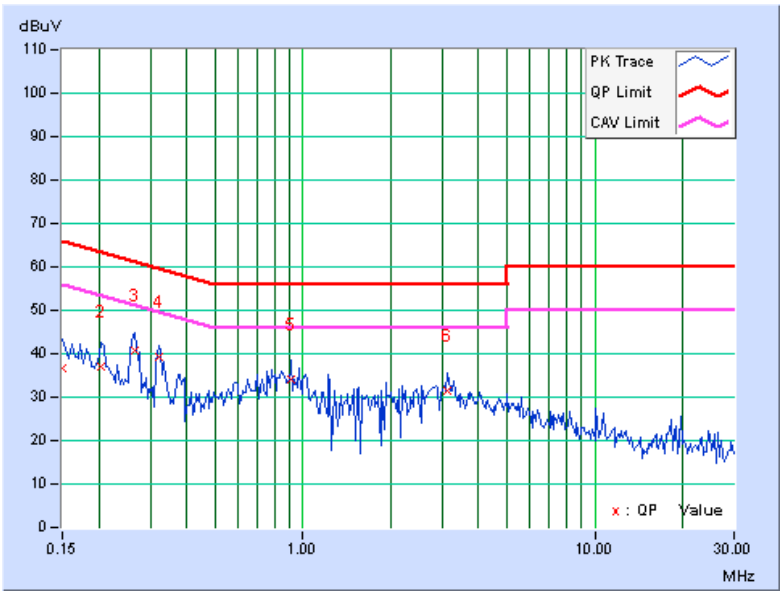
4.1.8 TEST RESULTS (MODE 2)

PHASE	Line (L)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.15000	0.11	36.55	29.37	36.66	29.48	66.00	56.00	-29.34	-26.52
2	0.20469	0.12	36.92	33.02	37.04	33.14	63.42	53.42	-26.38	-20.28
3	0.26719	0.13	40.68	37.74	40.81	37.87	61.20	51.20	-20.39	-13.33
4	0.32188	0.14	39.10	38.24	39.24	38.38	59.66	49.66	-20.41	-11.27
5	0.91172	0.19	33.88	26.15	34.07	26.34	56.00	46.00	-21.93	-19.66
6	3.11381	0.25	31.11	21.05	31.36	21.30	56.00	46.00	-24.64	-24.70

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

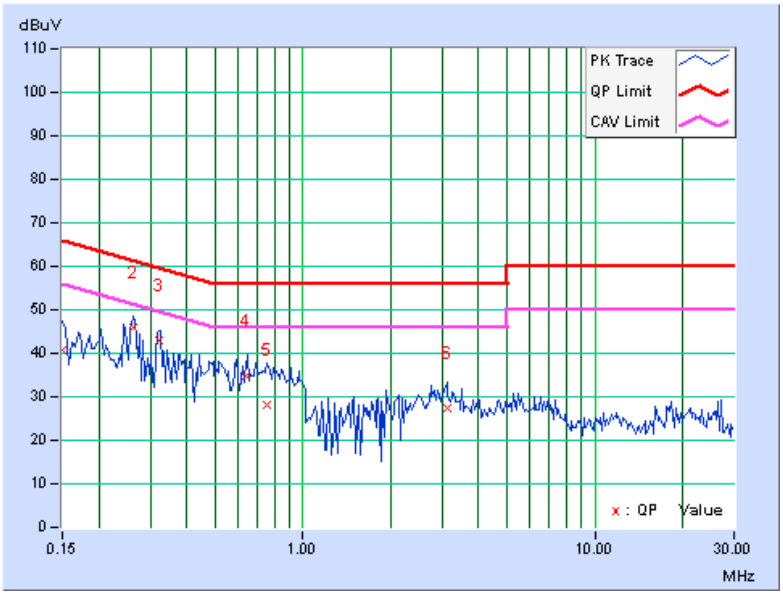


PHASE	Neutral (N)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.15000	0.09	40.75	32.37	40.84	32.46	66.00	56.00	-25.16	-23.54
2	**0.26328**	**0.12**	**45.80**	**45.55**	**45.92**	**45.67**	**61.33**	**51.33**	**-15.41**	**-5.66**
3	0.32328	0.13	43.01	41.80	43.14	41.93	59.62	49.62	-16.48	-7.69
4	0.64222	0.16	34.74	34.13	34.90	34.29	56.00	46.00	-21.10	-11.71
5	0.75156	0.16	27.96	23.79	28.12	23.95	56.00	46.00	-27.88	-22.05
6	3.10938	0.23	27.34	19.13	27.57	19.36	56.00	46.00	-28.43	-26.64

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



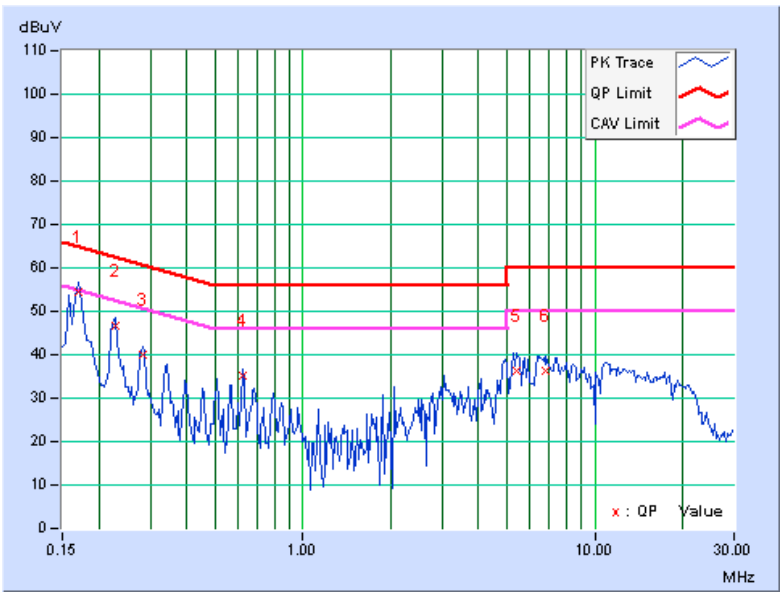
4.1.9 TEST RESULTS (MODE 3)

PHASE	Line (L)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.16953	0.11	54.42	48.93	54.53	49.04	64.98	54.98	-10.45	-5.94
2	0.22812	0.14	46.71	41.39	46.85	41.53	62.52	52.52	-15.67	-10.99
3	0.28281	0.15	39.99	35.24	40.14	35.39	60.73	50.73	-20.59	-15.34
4	0.62266	0.19	34.94	31.91	35.13	32.10	56.00	46.00	-20.87	-13.90
5	5.40234	0.44	35.94	25.45	36.38	25.89	60.00	50.00	-23.62	-24.11
6	6.80859	0.54	35.67	26.21	36.21	26.75	60.00	50.00	-23.79	-23.25

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

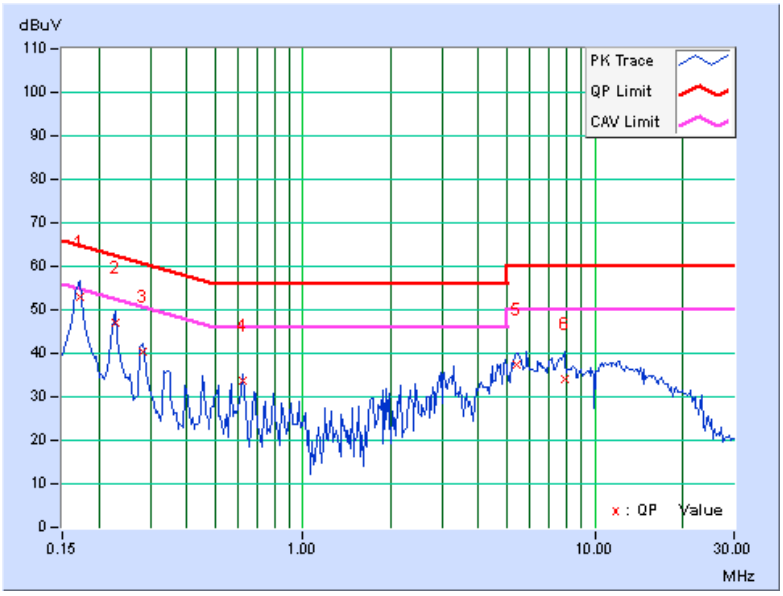


PHASE	Neutral (N)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.17344	0.11	52.99	47.07	53.10	47.18	64.79	54.79	-11.70	-7.62
2	0.22812	0.13	47.03	41.72	47.16	41.85	62.52	52.52	-15.36	-10.67
3	0.28281	0.14	40.25	35.57	40.39	35.71	60.73	50.73	-20.34	-15.02
4	0.62266	0.18	33.66	30.53	33.84	30.71	56.00	46.00	-22.16	-15.29
5	5.36719	0.42	36.84	25.26	37.26	25.68	60.00	50.00	-22.74	-24.32
6	7.86719	0.55	33.67	23.89	34.22	24.44	60.00	50.00	-25.78	-25.56

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



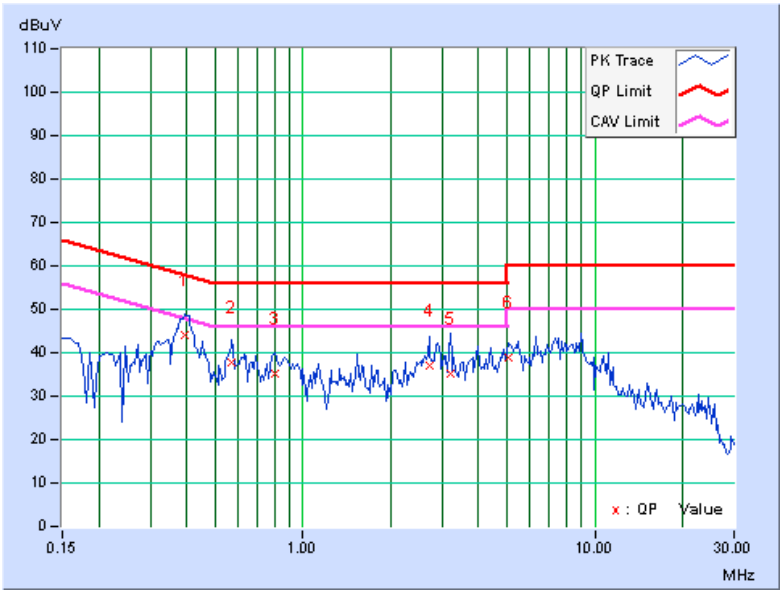
4.1.10 TEST RESULTS (MODE 4)

PHASE	Line (L)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.39219	0.18	44.00	34.05	44.18	34.23	58.02	48.02	-13.84	-13.79
2	0.57188	0.19	37.49	29.71	37.68	29.90	56.00	46.00	-18.32	-16.10
3	0.80234	0.21	35.10	24.78	35.31	24.99	56.00	46.00	-20.69	-21.01
4	2.71875	0.30	36.90	29.53	37.20	29.83	56.00	46.00	-18.80	-16.17
5	3.19531	0.31	34.72	28.48	35.03	28.79	56.00	46.00	-20.97	-17.21
6	5.03516	0.41	38.32	32.09	38.73	32.50	60.00	50.00	-21.27	-17.50

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

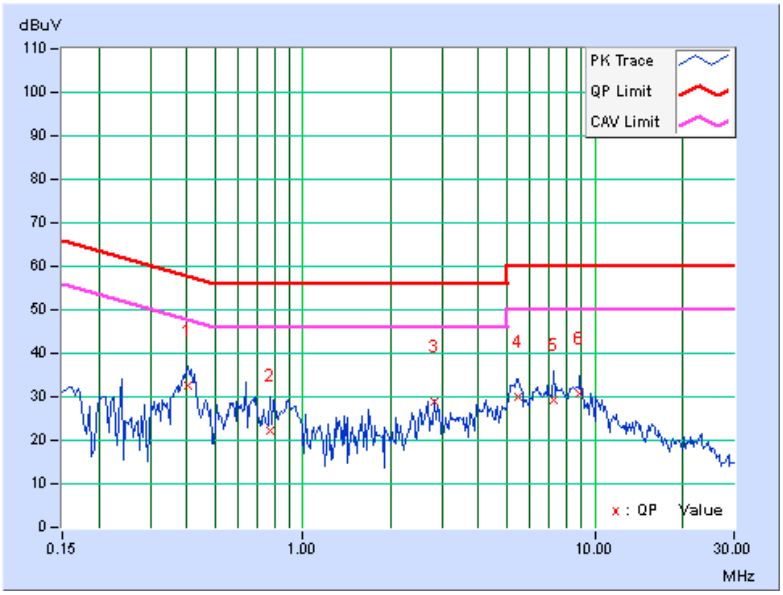


PHASE	Neutral (N)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.40391	0.17	32.41	23.03	32.58	23.20	57.77	47.77	-25.19	-24.57
2	0.77500	0.19	22.01	12.02	22.20	12.21	56.00	46.00	-33.80	-33.79
3	2.82031	0.30	28.46	21.60	28.76	21.90	56.00	46.00	-27.24	-24.10
4	5.43750	0.42	29.43	21.68	29.85	22.10	60.00	50.00	-30.15	-27.90
5	7.19141	0.51	28.70	21.76	29.21	22.27	60.00	50.00	-30.79	-27.73
6	8.88281	0.60	30.20	23.53	30.80	24.13	60.00	50.00	-29.20	-25.87

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



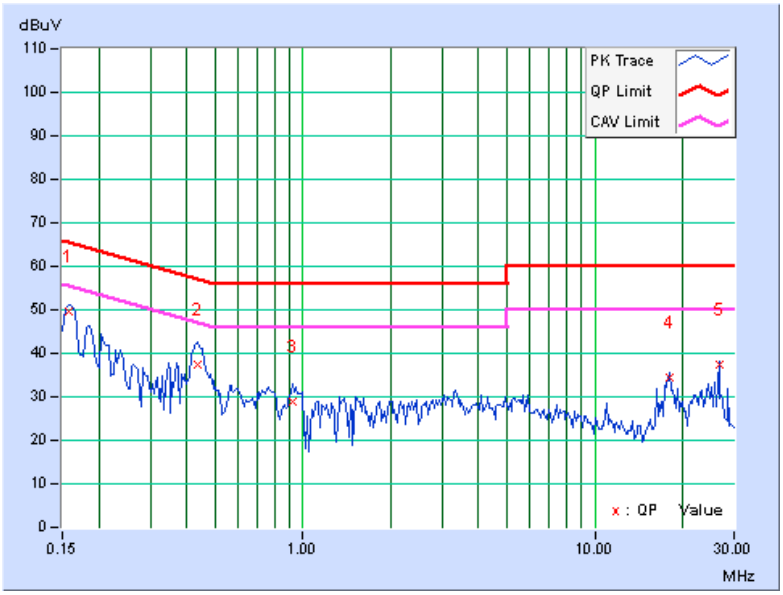
4.1.11 TEST RESULTS (MODE 5)

PHASE	Line (L)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.15781	0.11	49.40	43.51	49.51	43.62	65.58	55.58	-16.07	-11.96
2	0.43516	0.18	37.30	25.71	37.48	25.89	57.15	47.15	-19.67	-21.26
3	0.92344	0.21	28.50	24.81	28.71	25.02	56.00	46.00	-27.29	-20.98
4	17.93750	1.18	33.32	28.80	34.50	29.98	60.00	50.00	-25.50	-20.02
5	26.60938	1.51	35.73	31.69	37.24	33.20	60.00	50.00	-22.76	-16.80

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

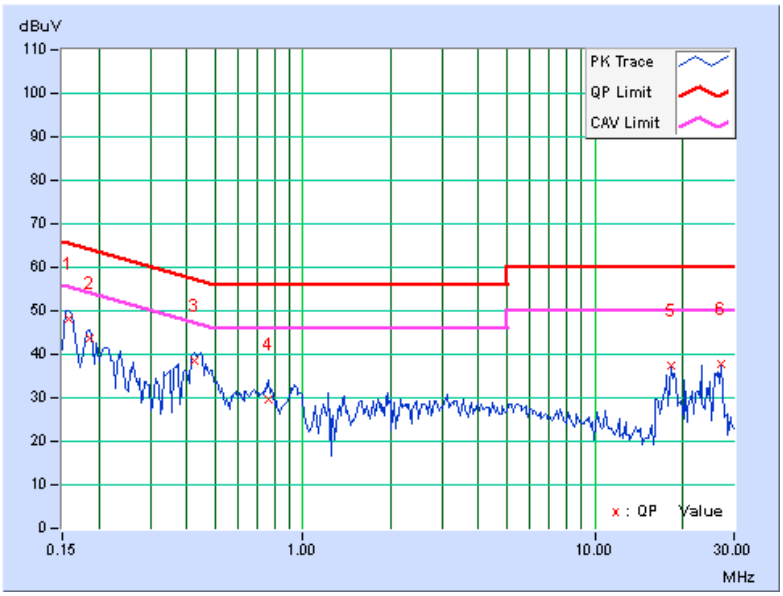


PHASE	Neutral (N)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.15781	0.10	47.90	42.08	48.00	42.18	65.58	55.58	-17.58	-13.40
2	0.18516	0.11	43.59	37.92	43.70	38.03	64.25	54.25	-20.55	-16.22
3	0.42344	0.17	38.37	36.99	38.54	37.16	57.38	47.38	-18.84	-10.22
4	0.76328	0.19	29.43	26.04	29.62	26.23	56.00	46.00	-26.38	-19.77
5	18.24219	0.92	36.43	31.92	37.35	32.84	60.00	50.00	-22.65	-17.16
6	27.15625	1.16	36.44	32.05	37.60	33.21	60.00	50.00	-22.40	-16.79

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



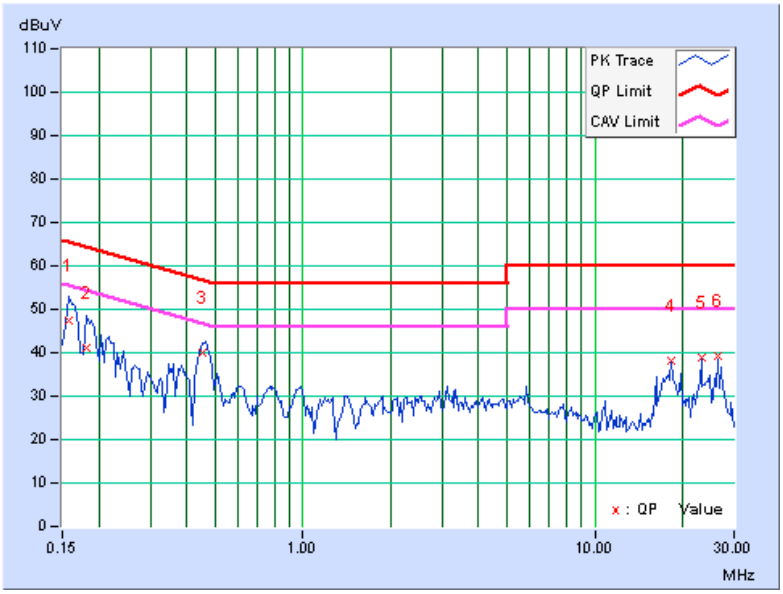
4.1.12 TEST RESULTS (MODE 6)

PHASE	Line (L)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.15781	0.11	47.47	39.70	47.58	39.81	65.58	55.58	-18.00	-15.77
2	0.18125	0.12	41.04	29.54	41.16	29.66	64.43	54.43	-23.27	-24.77
3	0.45469	0.18	39.77	34.40	39.95	34.58	56.79	46.79	-16.84	-12.21
4	18.24219	1.20	37.04	32.84	38.24	34.04	60.00	50.00	-21.76	-15.96
5	23.12891	1.40	37.64	34.31	39.04	35.71	60.00	50.00	-20.96	-14.29
6	26.48828	1.51	37.86	35.12	39.37	36.63	60.00	50.00	-20.63	-13.37

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

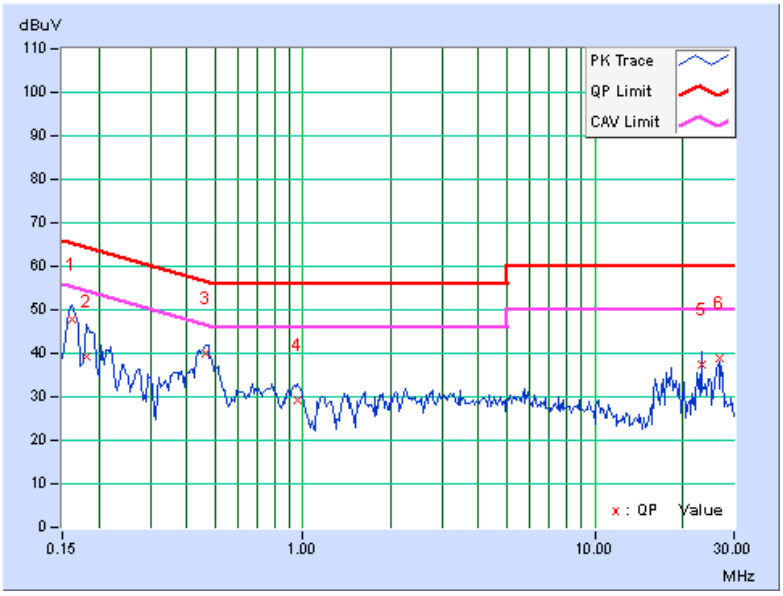


PHASE	Neutral (N)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.16172	0.10	47.70	42.16	47.80	42.26	65.38	55.38	-17.57	-13.11
2	0.18125	0.11	39.04	25.79	39.15	25.90	64.43	54.43	-25.28	-28.53
3	0.46250	0.17	39.69	37.69	39.86	37.86	56.65	46.65	-16.78	-8.78
4	0.95859	0.20	29.02	23.21	29.22	23.41	56.00	46.00	-26.78	-22.59
5	23.12891	1.06	36.50	34.73	37.56	35.79	60.00	50.00	-22.44	-14.21
6	26.60938	1.15	37.88	36.24	39.03	37.39	60.00	50.00	-20.97	-12.61

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



4.2 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

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 (dBuV/m) = 20 log Emission level (uV/m).
3. 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.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer Agilent	E4446A	MY48250253	Sep. 03, 2012	Sep. 02, 2013
Pre-Selector Agilent	N9039A	MY46520310	Sep. 03, 2012	Sep. 02, 2013
Signal Generator Agilent	N5181A	MY49060347	July 24, 2012	July 23, 2013
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-04	Nov. 15, 2011	Nov. 14, 2012
Pre-Amplifier Agilent	8449B	3008A02465	Feb. 27, 2012	Feb. 26, 2013
SPACEK LABS	SLKKa-48-6	9K16	Nov. 15, 2011	Nov. 14, 2012
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Apr. 06, 2012	Apr. 05, 2013
Horn_Antenna AISI	AIH.8018	0000220091110	Nov. 23, 2011	Nov. 22, 2012
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Oct. 12, 2012	Oct. 11, 2013
RF Cable	NA	RF104-205 RF104-207 RF104-202	Dec. 27, 2011	Dec. 26, 2012
RF Cable	NA	CHHCAB_001	Oct. 07, 2012	Oct. 06, 2013
Software	ADT_Radiated_V8.7.05	NA	NA	NA
Antenna Tower & Turn Table CT	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) are used only for the measurement of emission frequency above 1GHz if tested.
3 The test was performed in 966 Chamber No. H.
4. The FCC Site Registration No. is 797305.
5 The CANADA Site Registration No. is IC 7450H-3.
6 Tested Date: Oct. 26, 2012

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 3 meters chamber. 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 height of antenna 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 quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

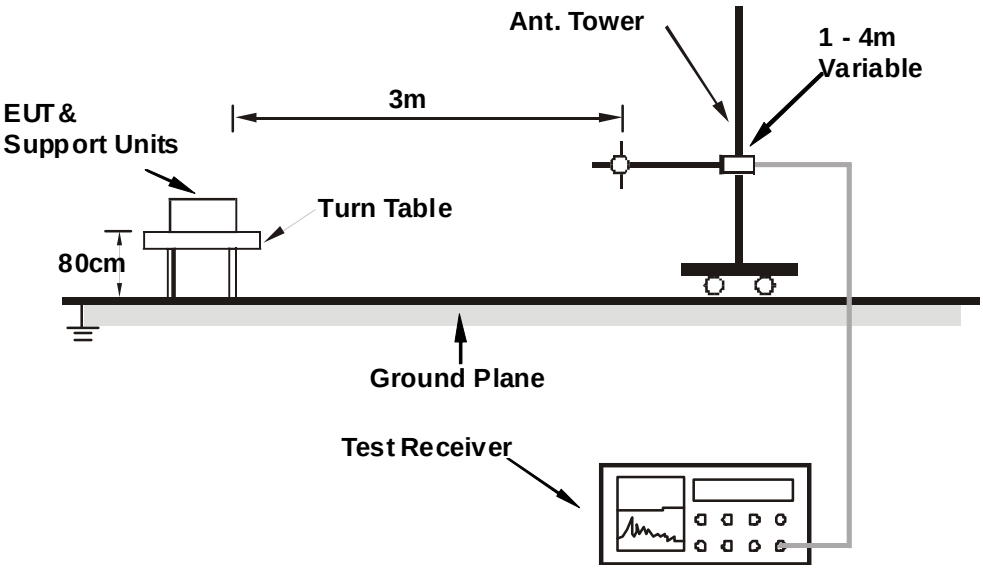
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for 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. All modes of operation were investigated and the worst-case emissions are reported.

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 4.1.6

4.2.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

802.11n (20MHz)

CHANNEL	TX Channel 6	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	Below 1GHz		

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	95.84	35.2 QP	43.5	-8.4	2.00 H	312	25.98	9.17
2	106.74	33.8 QP	43.5	-9.7	1.50 H	106	23.21	10.59
3	148.19	32.6 QP	43.5	-10.9	2.00 H	293	18.11	14.48
4	223.50	34.0 QP	46.0	-12.0	1.00 H	270	21.91	12.10
5	500.02	37.9 QP	46.0	-8.1	2.00 H	250	17.82	20.10
6	599.97	36.0 QP	46.0	-10.0	1.50 H	191	13.76	22.26
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	74.57	36.6 QP	40.0	-3.4	1.50 V	0	25.75	10.89
2	94.30	36.8 QP	43.5	-6.7	1.25 V	327	27.78	8.98
3	104.72	35.3 QP	43.5	-8.3	1.00 V	163	24.93	10.32
4	500.02	40.2 QP	46.0	-5.8	1.00 V	309	20.07	20.10
5	599.97	33.5 QP	46.0	-12.5	1.50 V	65	11.20	22.26
6	750.01	32.0 QP	46.0	-14.0	1.50 V	67	7.32	24.64

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.

ABOVE 1GHz DATA

802.11b

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK)
FREQUENCY RANGE	1GHz~25GHz		Average (AV)

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	59.4 PK	74.0	-14.6	1.32 H	230	27.02	32.38
2	2390.00	47.7 AV	54.0	-6.3	1.32 H	230	15.32	32.38
3	*2412.00	106.2 PK			1.35 H	220	73.76	32.44
4	*2412.00	104.0 AV			1.35 H	220	71.56	32.44
5	4824.00	52.9 PK	74.0	-21.1	1.52 H	255	10.96	41.94
6	4824.00	48.2 AV	54.0	-5.8	1.52 H	255	6.26	41.94
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	58.1 PK	74.0	-15.9	1.00 V	36	25.72	32.38
2	2390.00	47.2 AV	54.0	-6.8	1.00 V	36	14.82	32.38
3	*2412.00	106.2 PK			1.00 V	37	73.76	32.44
4	*2412.00	103.9 AV			1.00 V	37	71.46	32.44
5	4824.00	54.3 PK	74.0	-19.7	1.85 V	339	12.36	41.94
6	4824.00	50.5 AV	54.0	-3.5	1.85 V	339	8.56	41.94

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.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz~25GHz		Average (AV)

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	106.5 PK			1.29 H	231	73.99	32.51
2	*2437.00	104.3 AV			1.29 H	231	71.79	32.51
3	4874.00	54.6 PK	74.0	-19.4	1.50 H	238	12.61	41.99
4	4874.00	50.4 AV	54.0	-3.6	1.50 H	238	8.41	41.99
5	7311.00	52.5 PK	74.0	-21.5	1.33 H	75	5.97	46.53
6	7311.00	41.9 AV	54.0	-12.1	1.33 H	75	-4.63	46.53
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	105.2 PK			1.00 V	54	72.69	32.51
2	*2437.00	102.9 AV			1.00 V	54	70.39	32.51
3	4874.00	56.6 PK	74.0	-17.4	1.79 V	334	14.61	41.99
4	4874.00	52.7 AV	54.0	-1.3	1.79 V	334	10.71	41.99
5	7311.00	54.0 PK	74.0	-20.0	1.81 V	139	7.47	46.53
6	7311.00	44.9 AV	54.0	-9.1	1.81 V	139	-1.63	46.53

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.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz~25GHz		Average (AV)

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	106.9 PK			1.35 H	225	74.33	32.57
2	*2462.00	104.7 AV			1.35 H	225	72.13	32.57
3	2483.50	58.6 PK	74.0	-15.4	1.30 H	232	25.97	32.63
4	2483.50	47.3 AV	54.0	-6.7	1.30 H	232	14.67	32.63
5	4924.00	54.4 PK	74.0	-19.6	1.55 H	247	12.39	42.01
6	4924.00	50.4 AV	54.0	-3.6	1.55 H	247	8.39	42.01
7	7386.00	52.6 PK	74.0	-21.4	1.29 H	67	5.87	46.73
8	7386.00	41.9 AV	54.0	-12.1	1.29 H	67	-4.83	46.73
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	104.4 PK			1.00 V	37	71.83	32.57
2	*2462.00	102.2 AV			1.00 V	37	69.63	32.57
3	2483.50	57.6 PK	74.0	-16.4	1.00 V	35	24.97	32.63
4	2483.50	47.2 AV	54.0	-6.8	1.00 V	35	14.57	32.63
5	4924.00	56.0 PK	74.0	-18.0	1.81 V	333	13.99	42.01
6	4924.00	52.8 AV	54.0	-1.2	1.81 V	333	10.79	42.01
7	7386.00	53.9 PK	74.0	-20.1	1.86 V	126	7.17	46.73
8	7386.00	45.0 AV	54.0	-9.0	1.86 V	126	-1.73	46.73

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.

802.11g

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz~25GHz		Average (AV)

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	69.4 PK	74.0	-4.6	1.12 H	192	37.02	32.38
2	2390.00	53.0 AV	54.0	-1.0	1.12 H	192	20.62	32.38
3	*2412.00	106.3 PK			1.05 H	181	73.86	32.44
4	*2412.00	96.0 AV			1.05 H	181	63.56	32.44
5	4824.00	50.2 PK	74.0	-23.8	1.60 H	262	8.26	41.94
6	4824.00	38.8 AV	54.0	-15.2	1.60 H	262	-3.14	41.94
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	68.2 PK	74.0	-5.8	1.12 V	322	35.82	32.38
2	2390.00	52.8 AV	54.0	-1.2	1.12 V	322	20.42	32.38
3	*2412.00	106.0 PK			1.10 V	321	73.56	32.44
4	*2412.00	95.6 AV			1.10 V	321	63.16	32.44
5	4824.00	53.2 PK	74.0	-20.8	1.79 V	321	11.26	41.94
6	4824.00	47.2 AV	54.0	-6.8	1.79 V	321	5.26	41.94

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.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz~25GHz		Average (AV)

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	68.2 PK	74.0	-5.8	1.07 H	190	35.82	32.38
2	2390.00	52.2 AV	54.0	-1.8	1.07 H	190	19.82	32.38
3	*2437.00	109.8 PK			1.07 H	183	77.29	32.51
4	*2437.00	100.0 AV			1.07 H	183	67.49	32.51
5	2483.50	56.8 PK	74.0	-17.2	1.12 H	185	24.17	32.63
6	2483.50	45.8 AV	54.0	-8.2	1.12 H	185	13.17	32.63
7	4874.00	50.6 PK	74.0	-23.4	1.55 H	268	8.61	41.99
8	4874.00	39.3 AV	54.0	-14.7	1.55 H	268	-2.69	41.99
9	7311.00	53.2 PK	74.0	-20.8	1.55 H	125	6.67	46.53
10	7311.00	42.3 AV	54.0	-11.7	1.55 H	125	-4.23	46.53
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	66.2 PK	74.0	-7.8	1.25 V	49	33.82	32.38
2	2390.00	51.2 AV	54.0	-2.8	1.25 V	49	18.82	32.38
3	*2437.00	109.1 PK			1.28 V	44	76.59	32.51
4	*2437.00	99.3 AV			1.28 V	44	66.79	32.51
5	2483.50	56.8 PK	74.0	-17.2	1.21 V	50	24.17	32.63
6	2483.50	45.9 AV	54.0	-8.1	1.21 V	50	13.27	32.63
7	4874.00	55.4 PK	74.0	-18.6	1.73 V	357	13.41	41.99
8	4874.00	44.2 AV	54.0	-9.8	1.73 V	357	2.21	41.99
9	7311.00	59.0 PK	74.0	-15.0	1.51 V	244	12.47	46.53
10	7311.00	46.4 AV	54.0	-7.6	1.51 V	244	-0.13	46.53

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.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz~25GHz		Average (AV)

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			1.06 H	194	73.23	32.57
2	*2462.00	95.7 AV			1.06 H	194	63.13	32.57
3	2483.50	71.3 PK	74.0	-2.7	1.06 H	195	38.67	32.63
4	2483.50	53.0 AV	54.0	-1.0	1.06 H	195	20.37	32.63
5	4924.00	50.4 PK	74.0	-23.6	1.55 H	270	8.39	42.01
6	4924.00	39.0 AV	54.0	-15.0	1.55 H	270	-3.01	42.01
7	7386.00	52.6 PK	74.0	-21.4	1.49 H	127	5.87	46.73
8	7386.00	41.7 AV	54.0	-12.3	1.49 H	127	-5.03	46.73
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	107.0 PK			1.23 V	45	74.43	32.57
2	*2462.00	96.0 AV			1.23 V	45	63.43	32.57
3	2483.50	70.2 PK	74.0	-3.8	1.22 V	45	37.57	32.63
4	2483.50	53.2 AV	54.0	-0.8	1.22 V	45	20.57	32.63
5	4924.00	55.7 PK	74.0	-18.3	1.78 V	355	13.69	42.01
6	4924.00	44.7 AV	54.0	-9.3	1.78 V	355	2.69	42.01
7	7386.00	58.2 PK	74.0	-15.8	1.51 V	221	11.47	46.73
8	7386.00	46.1 AV	54.0	-7.9	1.51 V	221	-0.63	46.73

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.

802.11n (20MHz)

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz~25GHz		

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	73.1 PK	74.0	-0.9	1.09 H	146	40.72	32.38
2	2390.00	53.2 AV	54.0	-0.8	1.09 H	146	20.82	32.38
3	*2412.00	110.4 PK			1.09 H	142	77.96	32.44
4	*2412.00	100.1 AV			1.09 H	142	67.66	32.44
5	4824.00	50.2 PK	74.0	-23.8	1.61 H	245	8.26	41.94
6	4824.00	39.1 AV	54.0	-14.9	1.61 H	245	-2.84	41.94
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	59.6 PK	74.0	-14.4	1.38 V	94	27.22	32.38
2	2390.00	47.2 AV	54.0	-6.8	1.38 V	94	14.82	32.38
3	*2412.00	101.3 PK			1.37 V	97	68.86	32.44
4	*2412.00	92.6 AV			1.37 V	97	60.16	32.44
5	4824.00	55.4 PK	74.0	-18.6	1.78 V	349	13.46	41.94
6	4824.00	44.4 AV	54.0	-9.6	1.78 V	349	2.46	41.94

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.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz~25GHz		Average (AV)

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	65.7 PK	74.0	-8.3	1.08 H	143	33.32	32.38
2	2390.00	51.1 AV	54.0	-2.9	1.08 H	143	18.72	32.38
3	*2437.00	113.8 PK			1.08 H	142	81.29	32.51
4	*2437.00	103.4 AV			1.08 H	142	70.89	32.51
5	2483.50	69.3 PK	74.0	-4.7	1.08 H	150	36.67	32.63
6	2483.50	52.0 AV	54.0	-2.0	1.08 H	150	19.37	32.63
7	4874.00	50.4 PK	74.0	-23.6	1.56 H	256	8.41	41.99
8	4874.00	39.2 AV	54.0	-14.8	1.56 H	256	-2.79	41.99
9	7311.00	52.5 PK	74.0	-21.5	1.55 H	132	5.97	46.53
10	7311.00	41.8 AV	54.0	-12.2	1.55 H	132	-4.73	46.53
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	64.2 PK	74.0	-9.8	1.32 V	100	31.82	32.38
2	2390.00	49.2 AV	54.0	-4.8	1.32 V	100	16.82	32.38
3	*2437.00	105.2 PK			1.37 V	88	72.69	32.51
4	*2437.00	95.2 AV			1.37 V	88	62.69	32.51
5	2483.50	67.2 PK	74.0	-6.8	1.31 V	102	34.57	32.63
6	2483.50	50.2 AV	54.0	-3.8	1.31 V	102	17.57	32.63
7	4874.00	55.6 PK	74.0	-18.4	1.75 V	341	13.61	41.99
8	4874.00	44.4 AV	54.0	-9.6	1.75 V	341	2.41	41.99
9	7311.00	58.2 PK	74.0	-15.8	1.45 V	228	11.67	46.53
10	7311.00	45.9 AV	54.0	-8.1	1.45 V	228	-0.63	46.53

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.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz~25GHz		Average (AV)

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	111.2 PK			1.07 H	181	78.63	32.57
2	*2462.00	100.2 AV			1.07 H	181	67.63	32.57
3	2483.50	73.1 PK	74.0	-0.9	1.08 H	181	40.47	32.63
4	2483.50	53.1 AV	54.0	-0.9	1.08 H	181	20.47	32.63
5	4924.00	50.7 PK	74.0	-23.3	1.58 H	264	8.69	42.01
6	4924.00	39.4 AV	54.0	-14.6	1.58 H	264	-2.61	42.01
7	7386.00	52.3 PK	74.0	-21.7	1.61 H	140	5.57	46.73
8	7386.00	41.7 AV	54.0	-12.3	1.61 H	140	-5.03	46.73
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	102.2 PK			1.35 V	100	69.63	32.57
2	*2462.00	93.2 AV			1.35 V	100	60.63	32.57
3	2483.50	72.1 PK	74.0	-1.9	1.32 V	87	39.47	32.63
4	2483.50	52.3 AV	54.0	-1.7	1.32 V	87	19.67	32.63
5	4924.00	55.3 PK	74.0	-18.7	1.74 V	340	13.29	42.01
6	4924.00	44.1 AV	54.0	-9.9	1.74 V	340	2.09	42.01
7	7386.00	58.2 PK	74.0	-15.8	1.39 V	243	11.47	46.73
8	7386.00	46.1 AV	54.0	-7.9	1.39 V	243	-0.63	46.73

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.

802.11n (40MHz)

CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz~25GHz		Average (AV)

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	66.1 PK	74.0	-7.9	1.09 H	144	33.72	32.38
2	**2390.00**	**53.5 AV**	**54.0**	**-0.5**	**1.09 H**	**144**	**21.12**	**32.38**
3	*2422.00	104.8 PK			1.10 H	142	72.33	32.47
4	*2422.00	93.1 AV			1.10 H	142	60.63	32.47
5	4844.00	50.2 PK	74.0	-23.8	1.57 H	247	8.24	41.96
6	4844.00	39.2 AV	54.0	-14.8	1.57 H	247	-2.76	41.96
7	7266.00	52.7 PK	74.0	-21.3	1.52 H	123	6.30	46.40
8	7266.00	42.1 AV	54.0	-11.9	1.52 H	123	-4.30	46.40
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	66.2 PK	74.0	-7.8	1.17 V	323	33.82	32.38
2	2390.00	53.2 AV	54.0	-0.8	1.17 V	323	20.82	32.38
3	*2422.00	100.1 PK			1.20 V	321	67.63	32.47
4	*2422.00	89.0 AV			1.20 V	321	56.53	32.47
5	4844.00	55.4 PK	74.0	-18.6	1.72 V	354	13.44	41.96
6	4844.00	44.1 AV	54.0	-9.9	1.72 V	354	2.14	41.96
7	7266.00	58.4 PK	74.0	-15.6	1.40 V	215	12.00	46.40
8	7266.00	46.2 AV	54.0	-7.8	1.40 V	215	-0.20	46.40

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.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz~25GHz		Average (AV)

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	73.3 PK	74.0	-0.7	1.08 H	143	40.92	32.38
2	**2390.00**	**53.5 AV**	**54.0**	**-0.5**	**1.08 H**	**143**	**21.12**	**32.38**
3	*2437.00	108.1 PK			1.07 H	144	75.59	32.51
4	*2437.00	95.1 AV			1.07 H	144	62.59	32.51
5	2483.50	69.2 PK	74.0	-4.8	1.06 H	146	36.57	32.63
6	2483.50	50.9 AV	54.0	-3.1	1.06 H	146	18.27	32.63
7	4874.00	50.3 PK	74.0	-23.7	1.57 H	268	8.31	41.99
8	4874.00	39.3 AV	54.0	-14.7	1.57 H	268	-2.69	41.99
9	7311.00	52.7 PK	74.0	-21.3	1.58 H	131	6.17	46.53
10	7311.00	42.0 AV	54.0	-12.0	1.58 H	131	-4.53	46.53
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	68.4 PK	74.0	-5.6	1.17 V	312	36.02	32.38
2	2390.00	53.1 AV	54.0	-0.9	1.17 V	312	20.72	32.38
3	*2437.00	104.9 PK			1.13 V	321	72.39	32.51
4	*2437.00	92.9 AV			1.13 V	321	60.39	32.51
5	2483.50	64.2 PK	74.0	-9.8	1.16 V	324	31.57	32.63
6	2483.50	49.2 AV	54.0	-4.8	1.16 V	324	16.57	32.63
7	4874.00	55.6 PK	74.0	-18.4	1.72 V	344	13.61	41.99
8	4874.00	44.2 AV	54.0	-9.8	1.72 V	344	2.21	41.99
9	7311.00	58.5 PK	74.0	-15.5	1.41 V	218	11.97	46.53
10	7311.00	46.1 AV	54.0	-7.9	1.41 V	218	-0.43	46.53

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.

CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz~25GHz		Average (AV)

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	*2452.00	105.1 PK			1.09 H	182	72.55	32.55
2	*2452.00	94.9 AV			1.09 H	182	62.35	32.55
3	2483.50	70.4 PK	74.0	-3.6	1.07 H	147	37.77	32.63
4	2483.50	53.3 AV	54.0	-0.7	1.07 H	147	20.67	32.63
5	4904.00	49.9 PK	74.0	-24.1	1.60 H	243	7.88	42.02
6	4904.00	38.9 AV	54.0	-15.1	1.60 H	243	-3.12	42.02
7	7356.00	52.3 PK	74.0	-21.7	1.51 H	147	5.65	46.65
8	7356.00	41.9 AV	54.0	-12.1	1.51 H	147	-4.75	46.65
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	*2452.00	102.1 PK			1.13 V	322	69.55	32.55
2	*2452.00	90.8 AV			1.13 V	322	58.25	32.55
3	2483.50	67.5 PK	74.0	-6.5	1.13 V	322	34.87	32.63
4	2483.50	52.9 AV	54.0	-1.1	1.13 V	322	20.27	32.63
5	4904.00	55.8 PK	74.0	-18.2	1.73 V	340	13.78	42.02
6	4904.00	44.6 AV	54.0	-9.4	1.73 V	340	2.58	42.02
7	7356.00	58.5 PK	74.0	-15.5	1.40 V	241	11.85	46.65
8	7356.00	45.9 AV	54.0	-8.1	1.40 V	241	-0.75	46.65

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.

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. 14, 2011	Dec. 13, 2012

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. Tested date : Oct. 26, 2012

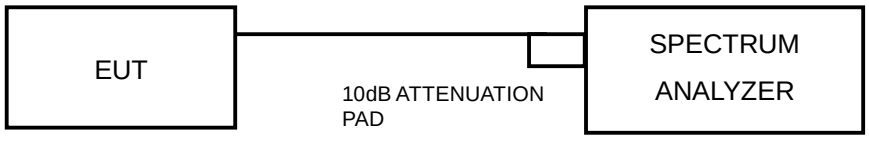
4.3.3 TEST PROCEDURE

1. Set resolution bandwidth (RBW) = approximately 1% of the emission bandwidth
2. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
3. Trace mode = max hold.
4. Sweep = auto couple.
5. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

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.

4.3.7 TEST RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	8.54	0.5	PASS
6	2437	8.67	0.5	PASS
11	2462	8.69	0.5	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	15.10	0.5	PASS
6	2437	15.64	0.5	PASS
11	2462	15.51	0.5	PASS

802.11n (HT20)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	16.65	16.93	0.5	PASS
6	2437	16.46	16.92	0.5	PASS
11	2462	16.57	17.03	0.5	PASS

802.11n (HT40)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
3	2422	35.34	35.59	0.5	PASS
6	2437	35.78	35.73	0.5	PASS
9	2452	35.87	35.71	0.5	PASS

4.4 CONDUCTED OUTPUT POWER MEASUREMENT

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

For systems using digital modulation in the 2400–2483.5 MHz band: 1 Watt (30dBm)

4.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Power Meter	ML2495A	0824006	May 10, 2012	May 09, 2013
Peak Power Sensor	MA2411B	0738172	May 10, 2012	May 09, 2013

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. Tested date : Oct. 26, 2012

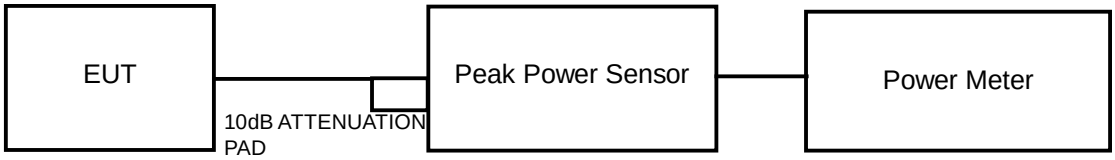
4.4.3 TEST PROCEDURES

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the peak power level.

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

4.4.7 TEST RESULTS

802.11b

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	120.226	20.8	30	PASS
6	2437	123.027	20.9	30	PASS
11	2462	120.226	20.8	30	PASS

802.11g

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	204.174	23.1	30	PASS
6	2437	338.844	25.3	30	PASS
11	2462	288.403	24.6	30	PASS

802.11n (HT20)

CHAN.	FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	21.0	20.9	248.920	23.96	30	PASS
6	2437	24.4	24.5	557.261	27.46	30	PASS
11	2462	20.4	20.7	227.138	23.56	30	PASS

802.11n (HT40)

CHAN.	FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
3	2422	17.1	16.7	98.060	19.91	30	PASS
6	2437	23.2	23.4	427.706	26.31	30	PASS
9	2452	20.3	20.4	216.800	23.36	30	PASS

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. 14, 2011	Dec. 13, 2012

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. Tested date : Oct. 26, 2012

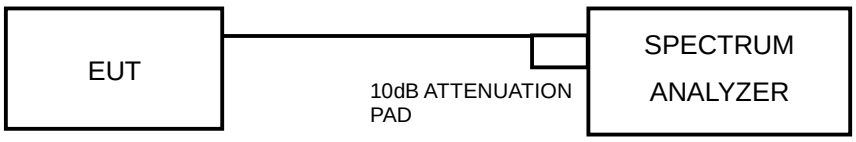
4.5.3 TEST PROCEDURE

1. Set the RBW = 100 kHz, VBW =300 kHz, Detector = peak.
2. Sweep time = auto couple.
3. Trace mode = max hold.
4. Allow trace to fully stabilize.
5. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
6. Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(3 kHz/100kHz)

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

4.5.7 TEST RESULTS

802.11b

Channel	FREQUENCY (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	8.75	-6.48	8	PASS
6	2437	9.08	-6.15	8	PASS
11	2462	9.33	-5.90	8	PASS

802.11g

Channel	FREQUENCY (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	3.45	-11.78	8	PASS
6	2437	9.01	-6.22	8	PASS
11	2462	5.87	-9.36	8	PASS

802.11n (HT20)

TX chain	Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	2.37	-12.86	3.01	-9.85	8	PASS
	6	2437	7.57	-7.66	3.01	-4.65	8	PASS
	11	2462	2.95	-12.28	3.01	-9.27	8	PASS
1	1	2412	3.04	-12.19	3.01	-9.18	8	PASS
	6	2437	8.56	-6.67	3.01	-3.66	8	PASS
	11	2462	3.36	-11.87	3.01	-8.86	8	PASS

802.11n (HT40)

TX chain	Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	3	2422	-2.97	-18.20	3.01	-15.19	8	PASS
	6	2437	1.93	-13.30	3.01	-10.29	8	PASS
	9	2452	-0.94	-16.17	3.01	-13.16	8	PASS
1	3	2422	-2.49	-17.72	3.01	-14.71	8	PASS
	6	2437	1.49	-13.74	3.01	-10.73	8	PASS
	9	2452	-0.98	-16.21	3.01	-13.20	8	PASS

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	100036	Dec. 14, 2011	Dec. 13, 2012

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. Tested date : Oct. 26, 2012

4.6.3 TEST PROCEDURE

Measurement Procedure - Reference Level

1. Set the RBW = 100 kHz.
2. Set the VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

Measurement Procedure –Unwanted Emission Level

1. Set RBW = 100 kHz.
2. Set VBW ≥ 300 kHz.
3. Set span to encompass the spectrum to be examined
4. Detector = peak.
5. Trace Mode = max hold.
6. Sweep = auto couple.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP

4.6.6 EUT OPERATING CONDITION

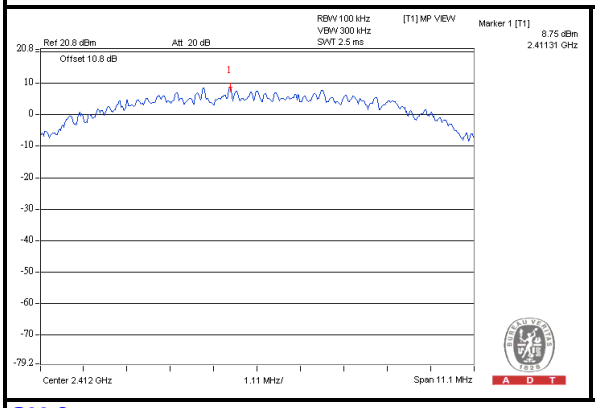
Same as Item 4.3.6

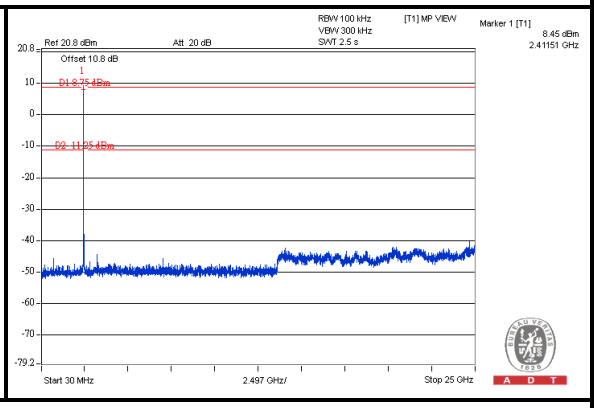
4.6.7 TEST RESULTS

The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement

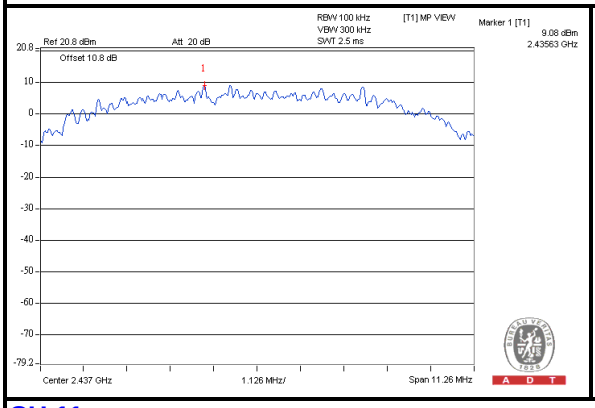
802.11b:

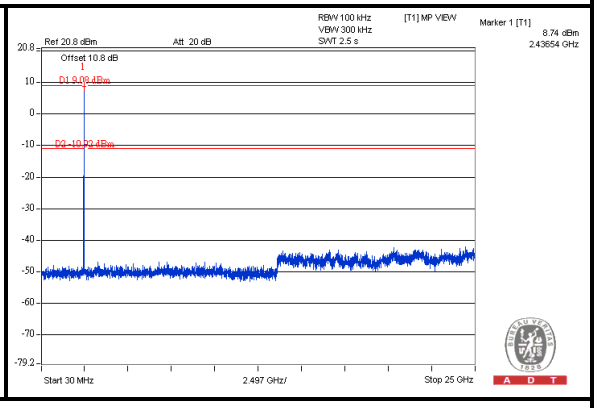
CH 1



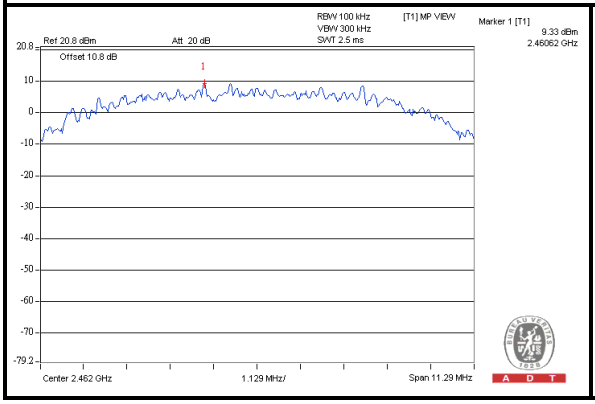


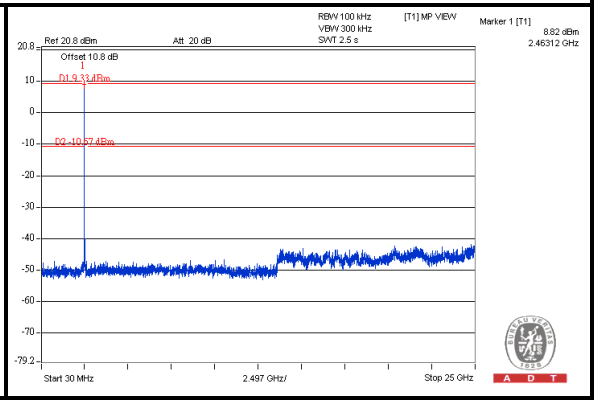
CH 6





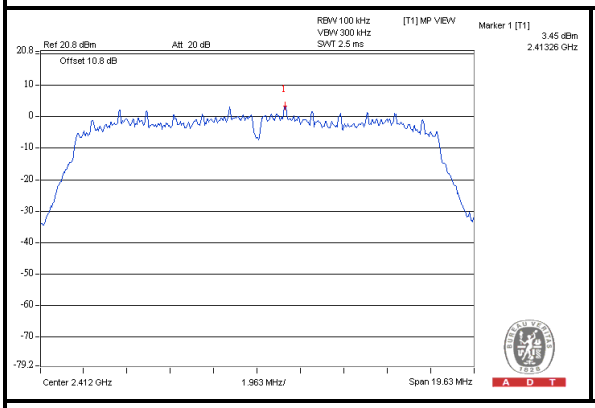
CH 11

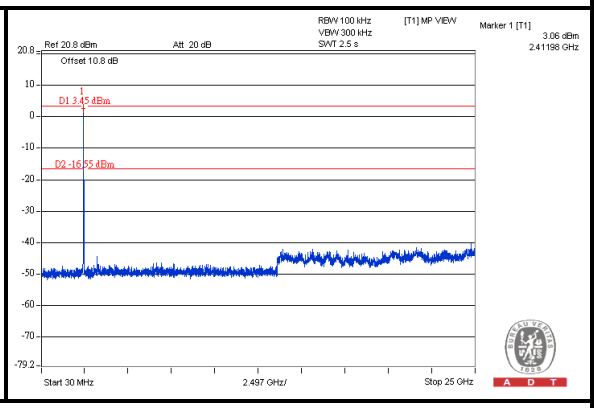




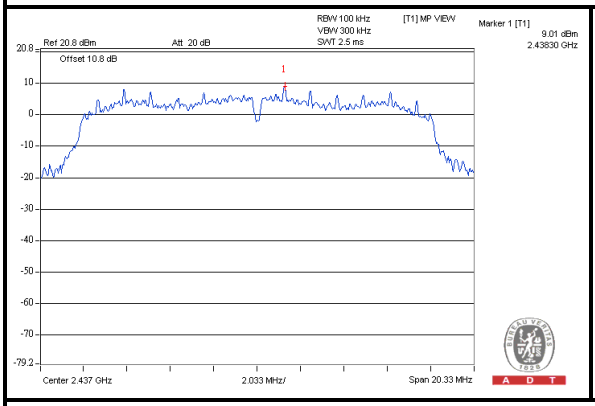
802.11g:

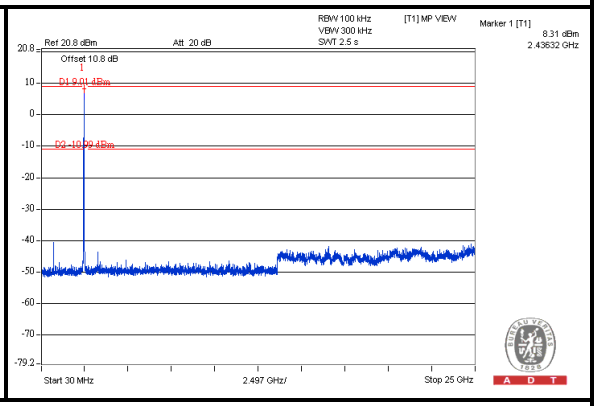
CH 1



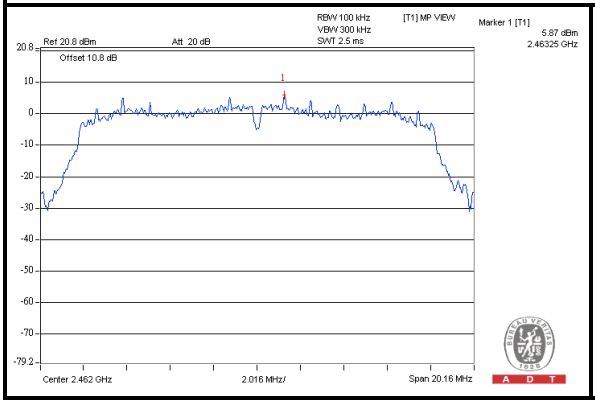


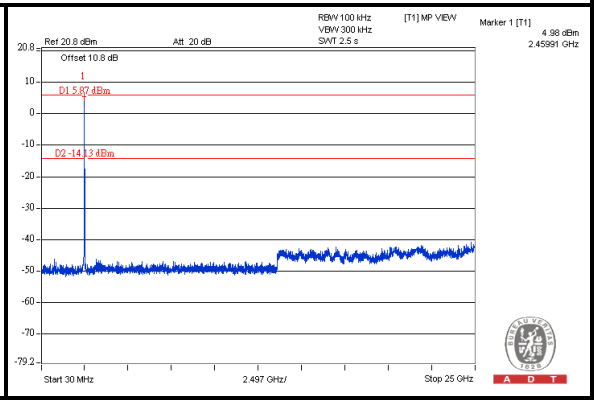
CH 6





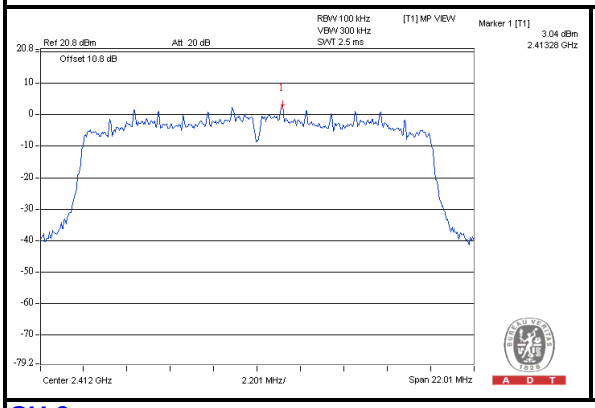
CH 11

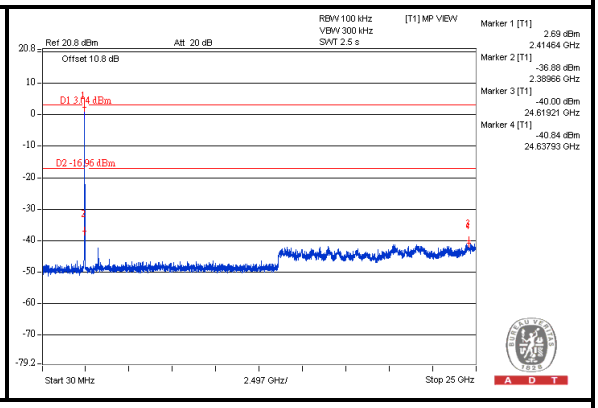




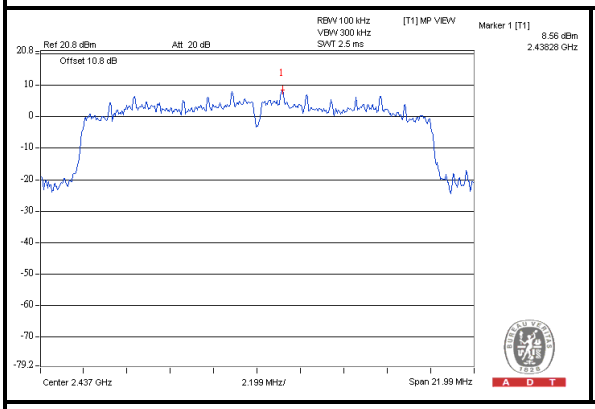
802.11n (HT20):

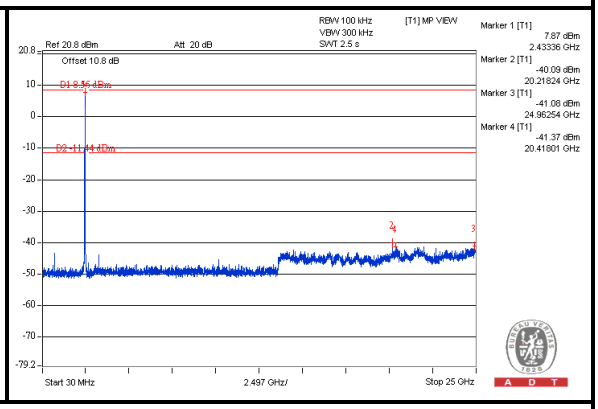
CH 1





CH 6





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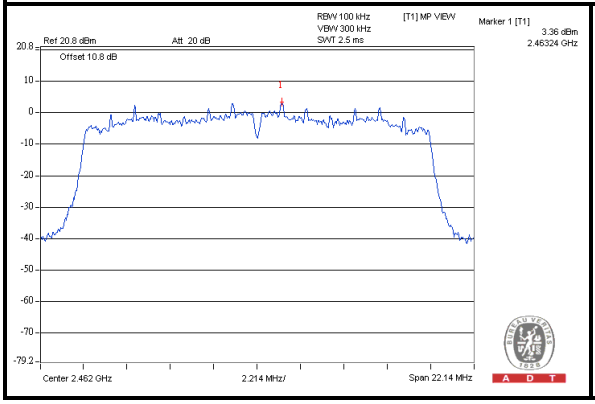
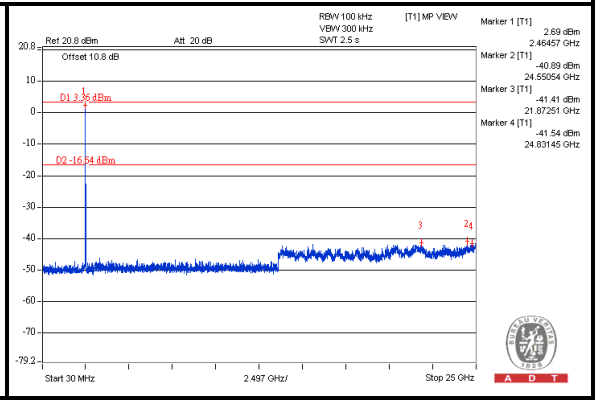
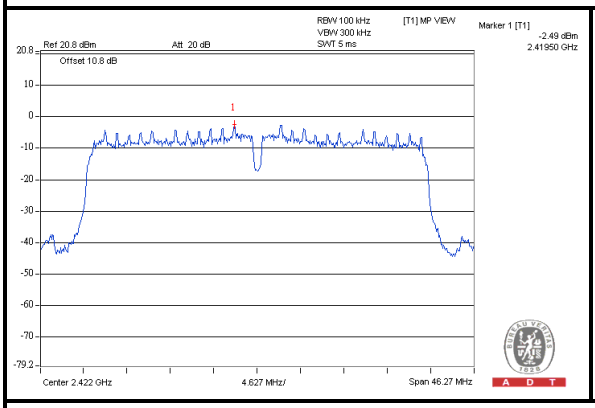
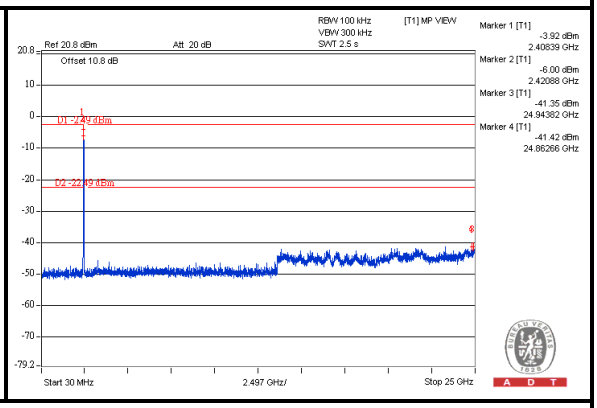




802.11n (HT40):

CH 3





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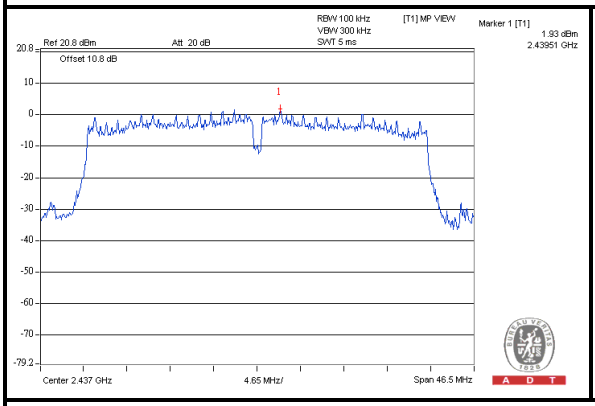
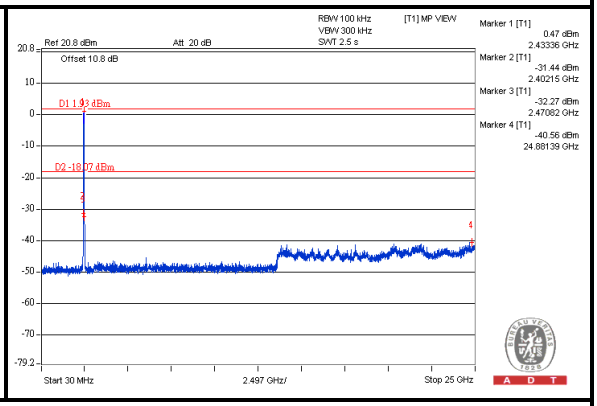
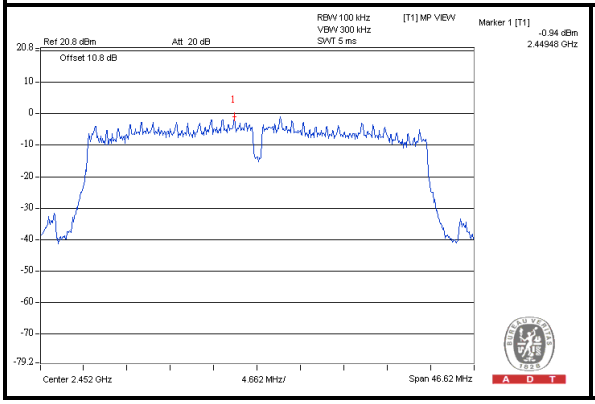
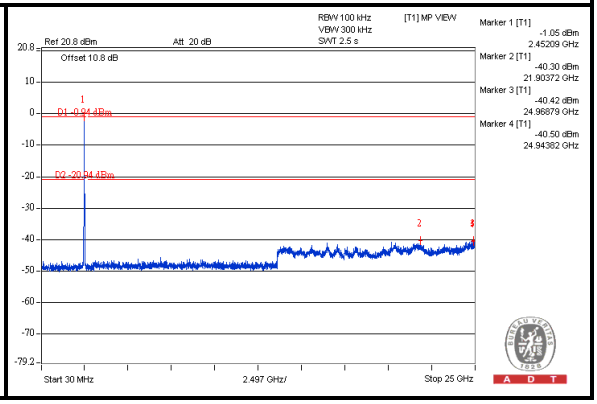




CH 9





5. TEST TYPES AND RESULTS (FOR 5GHz, 5725~5850MHz Band)

5.1 CONDUCTED EMISSION MEASUREMENT

5.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15-0.5 0.5-5 5-30	66 to 56 56 60	56 to 46 46 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.

5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Mar. 12, 2012	Mar.11, 2013
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK8127	8127-522	Sep. 06, 2012	Sep. 05, 2013
Line-Impedance Stabilization Network (for Peripheral)	ENV216	100072	June 08, 2012	June 07,2 013
RF Cable (JYEBAO)	5DFB	COCCAB-001	Aug. 28, 2012	Aug. 27, 2013
50 ohms Terminator	50	EMC-3	Sep. 25, 2012	Sep. 24, 2013
Software ADT	BV ADT_Cond_V7.3.7.3	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.
4 Tested Date: Oct. 25, 2012

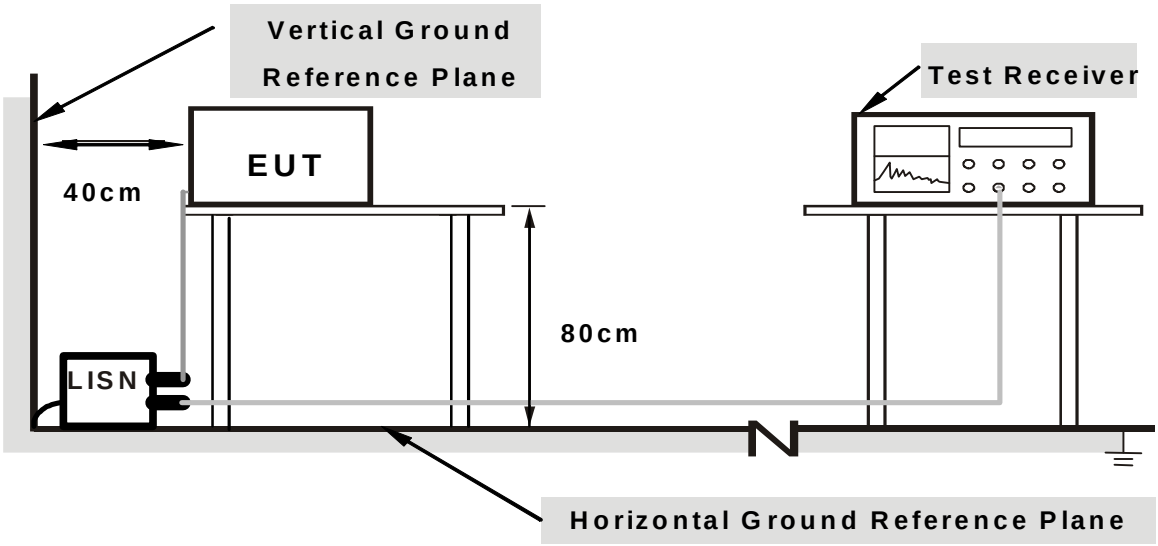
5.1.3 TEST PROCEDURES

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.
b. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
c. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
d. 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.

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

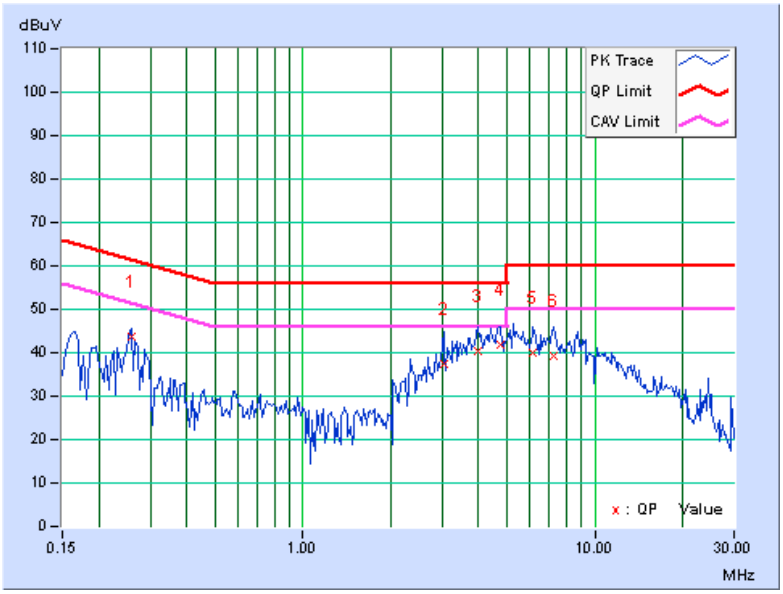
5.1.7 TEST RESULTS (MODE 1)

PHASE	Line (L)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.25938	0.13	43.58	35.62	43.71	35.75	61.45	51.45	-17.74	-15.70
2	3.03125	0.25	37.20	29.87	37.45	30.12	56.00	46.00	-18.55	-15.88
3	3.97266	0.27	40.16	32.94	40.43	33.21	56.00	46.00	-15.57	-12.79
4	4.75391	0.31	41.39	33.93	41.70	34.24	56.00	46.00	-14.30	-11.76
5	6.14453	0.37	39.55	32.15	39.92	32.52	60.00	50.00	-20.08	-17.48
6	7.24609	0.43	38.77	31.33	39.20	31.76	60.00	50.00	-20.80	-18.24

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

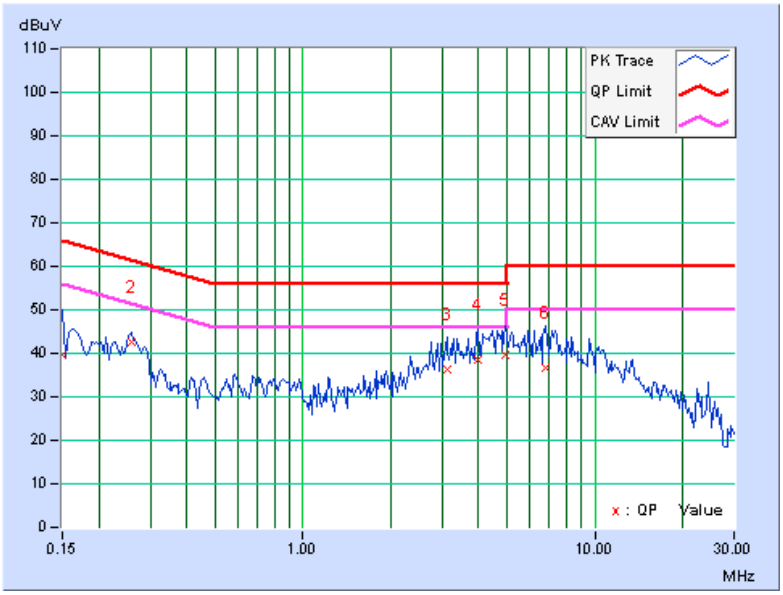


PHASE	Neutral (N)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.15000	0.09	39.55	19.57	39.64	19.66	66.00	56.00	-26.36	-36.34
2	0.25938	0.11	42.52	39.13	42.63	39.24	61.45	51.45	-18.82	-12.21
3	3.11328	0.23	35.97	29.93	36.20	30.16	56.00	46.00	-19.80	-15.84
4	4.00391	0.24	38.31	31.87	38.55	32.11	56.00	46.00	-17.45	-13.89
5	4.91797	0.27	39.31	32.55	39.58	32.82	56.00	46.00	-16.42	-13.18
6	6.76172	0.32	36.21	29.55	36.53	29.87	60.00	50.00	-23.47	-20.13

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



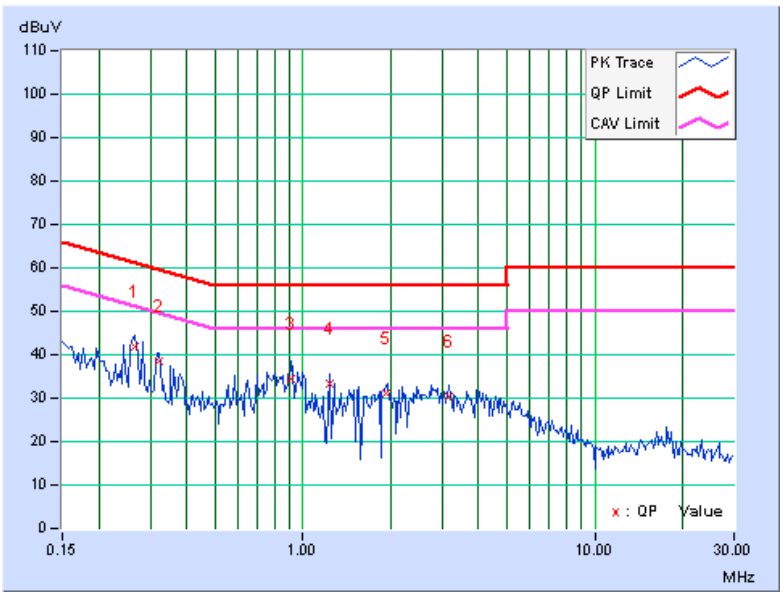
5.1.8 TEST RESULTS (MODE 2)

PHASE	Line (L)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.26719	0.13	41.67	39.84	41.80	39.97	61.20	51.20	-19.40	-11.23
2	0.32188	0.14	38.47	38.30	38.61	38.44	59.66	49.66	-21.04	-11.21
3	0.90634	0.19	34.12	32.37	34.31	32.56	56.00	46.00	-21.69	-13.44
4	1.23047	0.20	33.06	28.33	33.26	28.53	56.00	46.00	-22.74	-17.47
5	1.92256	0.23	31.01	26.52	31.24	26.75	56.00	46.00	-24.76	-19.25
6	3.16016	0.25	29.99	23.25	30.24	23.50	56.00	46.00	-25.76	-22.50

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

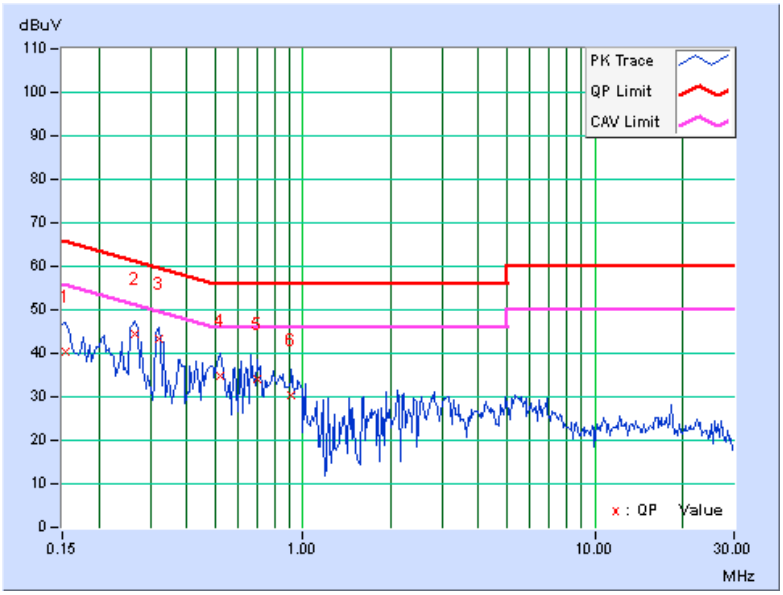


PHASE	Neutral (N)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.15391	0.09	40.28	32.17	40.37	32.26	65.79	55.79	-25.42	-23.53
2	0.26719	0.12	44.30	41.74	44.42	41.86	61.20	51.20	-16.79	-9.35
3	**0.32188**	**0.13**	**43.29**	**42.84**	**43.42**	**42.97**	**59.66**	**49.66**	**-16.24**	**-6.69**
4	0.52109	0.15	34.69	29.07	34.84	29.22	56.00	46.00	-21.16	-16.78
5	0.69937	0.16	33.80	32.44	33.96	32.60	56.00	46.00	-22.04	-13.40
6	0.91172	0.17	30.34	22.57	30.51	22.74	56.00	46.00	-25.49	-23.26

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



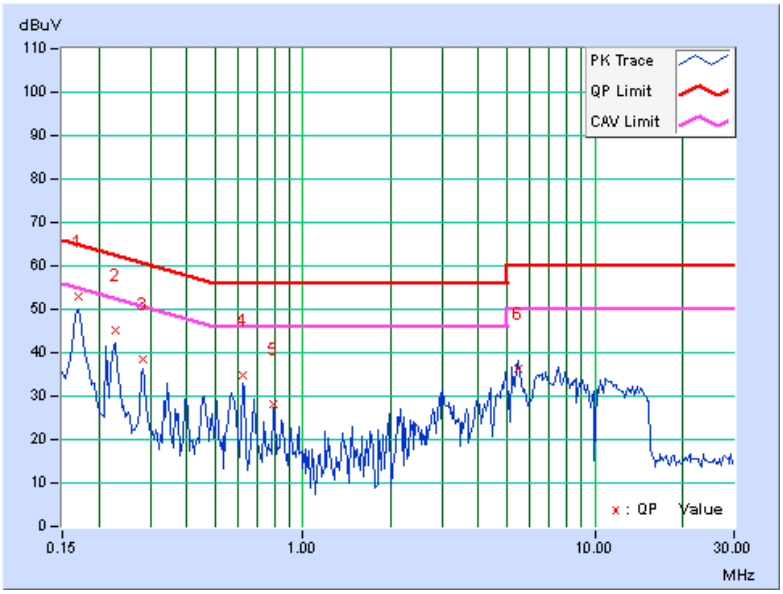
5.1.9 TEST RESULTS (MODE 3)

PHASE	Line (L)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16953	0.11	52.73	47.38	52.84	47.49	64.98	54.98	-12.14	-7.49
2	0.22812	0.14	45.03	39.94	45.17	40.08	62.52	52.52	-17.35	-12.44
3	0.28281	0.15	38.33	33.86	38.48	34.01	60.73	50.73	-22.25	-16.72
4	0.62266	0.19	34.62	32.85	34.81	33.04	56.00	46.00	-21.19	-12.96
5	0.79453	0.21	28.02	24.67	28.23	24.88	56.00	46.00	-27.77	-21.12
6	5.44531	0.44	35.95	26.32	36.39	26.76	60.00	50.00	-23.61	-23.24

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

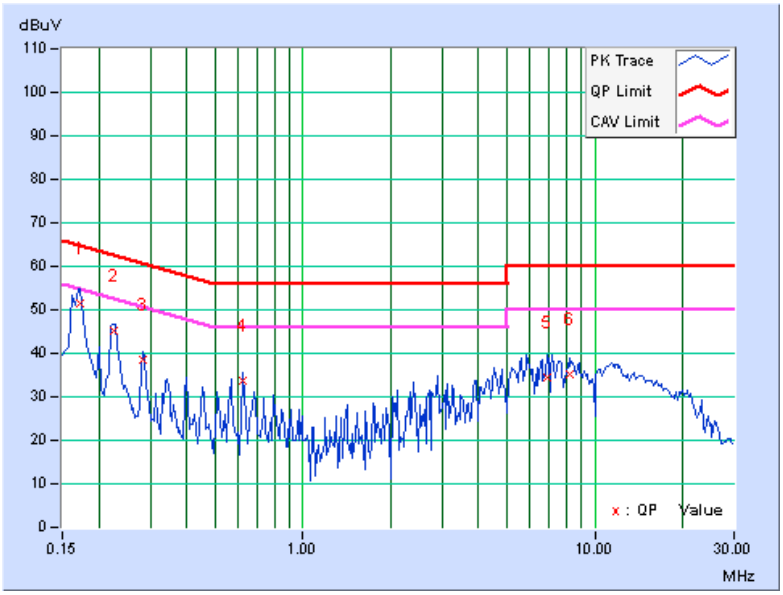


PHASE	Neutral (N)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.17344	0.11	51.34	45.36	51.45	45.47	64.79	54.79	-13.35	-9.33
2	0.22472	0.13	44.90	39.24	45.03	39.37	62.64	52.64	-17.62	-13.28
3	0.28281	0.14	38.51	33.68	38.65	33.82	60.73	50.73	-22.08	-16.91
4	0.62266	0.18	33.44	31.34	33.62	31.52	56.00	46.00	-22.38	-14.48
5	6.87500	0.50	33.76	24.46	34.26	24.96	60.00	50.00	-25.74	-25.04
6	8.18359	0.57	34.74	25.87	35.31	26.44	60.00	50.00	-24.69	-23.56

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



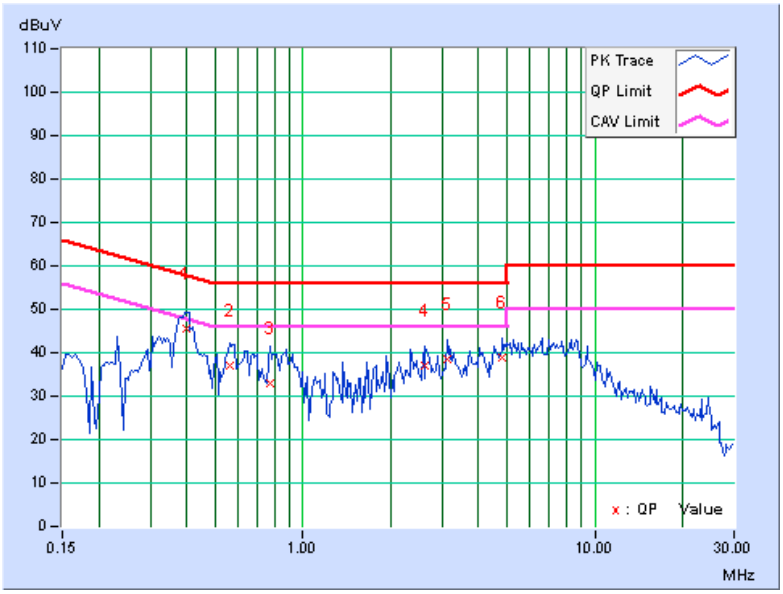
5.1.10 TEST RESULTS (MODE 4)

PHASE	Line (L)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.40000	0.16	45.25	37.16	45.41	37.32	57.85	47.85	-12.44	-10.53
2	0.56406	0.17	36.74	28.33	36.91	28.50	56.00	46.00	-19.09	-17.50
3	0.77500	0.18	32.66	21.56	32.84	21.74	56.00	46.00	-23.16	-24.26
4	2.62500	0.24	36.62	29.93	36.86	30.17	56.00	46.00	-19.14	-15.83
5	3.11719	0.25	38.36	30.87	38.61	31.12	56.00	46.00	-17.39	-14.88
6	4.83594	0.31	38.40	31.80	38.71	32.11	56.00	46.00	-17.29	-13.89

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

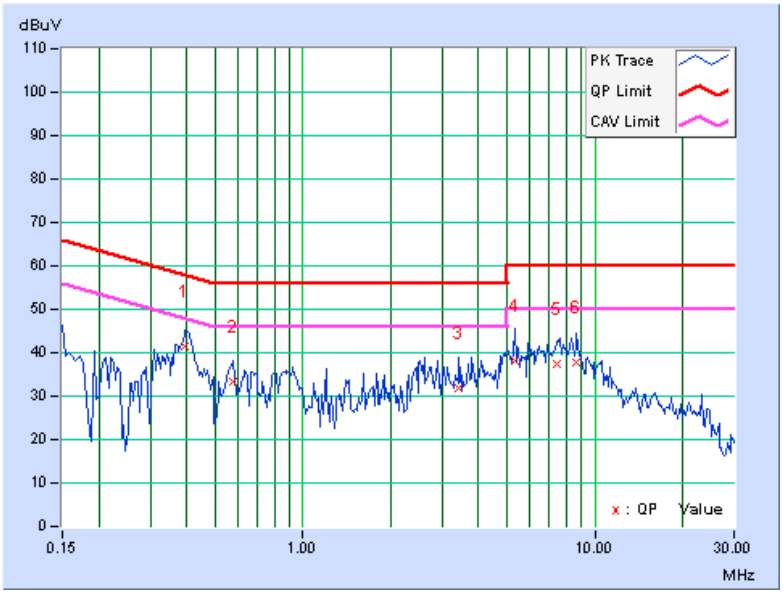


PHASE	Neutral (N)	**DETECTOR FUNCTION & BANDWIDTH**	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.39609	0.15	41.37	31.50	41.52	31.65	57.93	47.93	-16.42	-16.29
2	0.57969	0.16	33.33	23.99	33.49	24.15	56.00	46.00	-22.51	-21.85
3	3.43750	0.23	31.56	24.81	31.79	25.04	56.00	46.00	-24.21	-20.96
4	5.31641	0.28	37.79	31.17	38.07	31.45	60.00	50.00	-21.93	-18.55
5	7.44531	0.34	37.18	30.81	37.52	31.15	60.00	50.00	-22.48	-18.85
6	8.69141	0.38	37.46	31.51	37.84	31.89	60.00	50.00	-22.16	-18.11

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



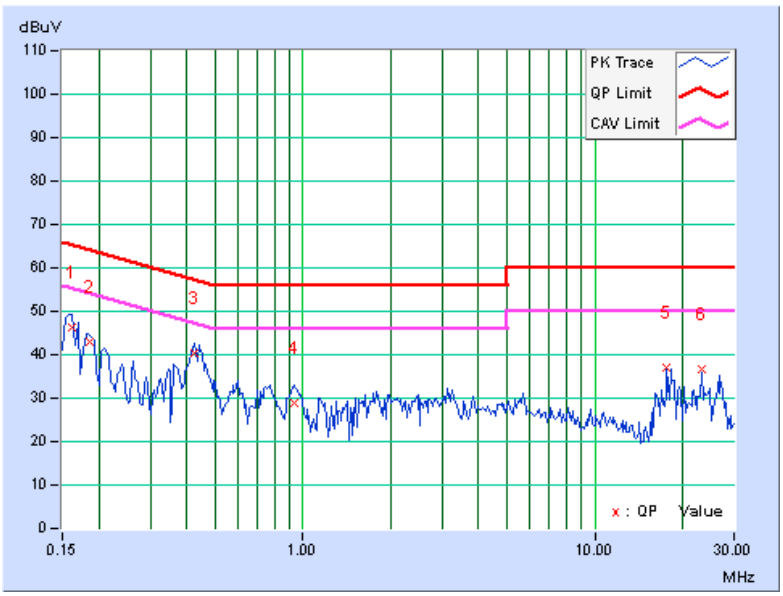
5.1.11 TEST RESULTS (MODE 5)

PHASE	Line (L)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.16172	0.11	46.31	39.17	46.42	39.28	65.38	55.38	-18.95	-16.09
2	0.18516	0.12	42.86	37.25	42.98	37.37	64.25	54.25	-21.27	-16.88
3	0.42734	0.18	40.03	33.58	40.21	33.76	57.30	47.30	-17.09	-13.54
4	0.93125	0.22	28.78	23.09	29.00	23.31	56.00	46.00	-27.00	-22.69
5	17.69141	1.17	35.97	31.88	37.14	33.05	60.00	50.00	-22.86	-16.95
6	23.12891	1.40	35.29	33.31	36.69	34.71	60.00	50.00	-23.31	-15.29

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

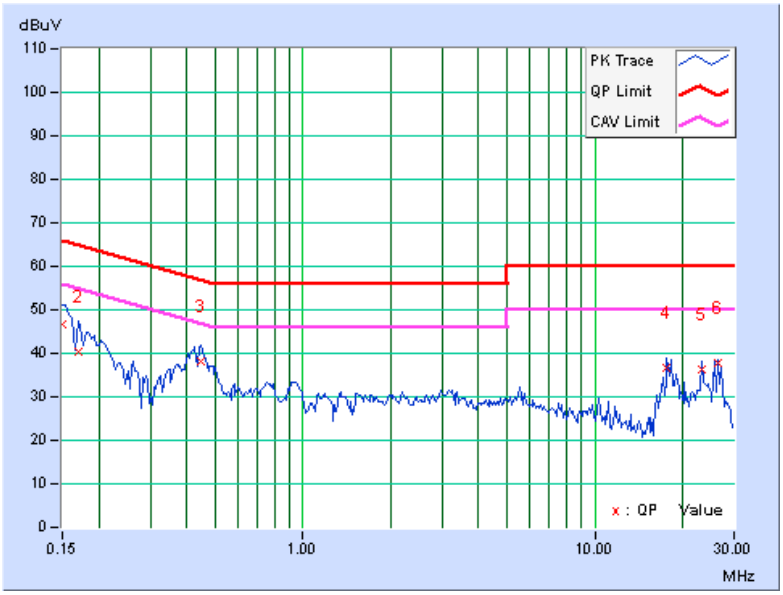


PHASE	Neutral (N)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.15000	0.09	46.75	27.55	46.84	27.64	66.00	56.00	-19.16	-28.36
2	0.16953	0.10	40.20	19.27	40.30	19.37	64.98	54.98	-24.68	-35.61
3	0.44688	0.17	37.92	36.24	38.09	36.41	56.93	46.93	-18.84	-10.52
4	17.69141	0.90	35.72	31.68	36.62	32.58	60.00	50.00	-23.38	-17.42
5	23.12891	1.06	35.34	33.52	36.40	34.58	60.00	50.00	-23.60	-15.42
6	26.54688	1.15	36.61	34.14	37.76	35.29	60.00	50.00	-22.24	-14.71

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



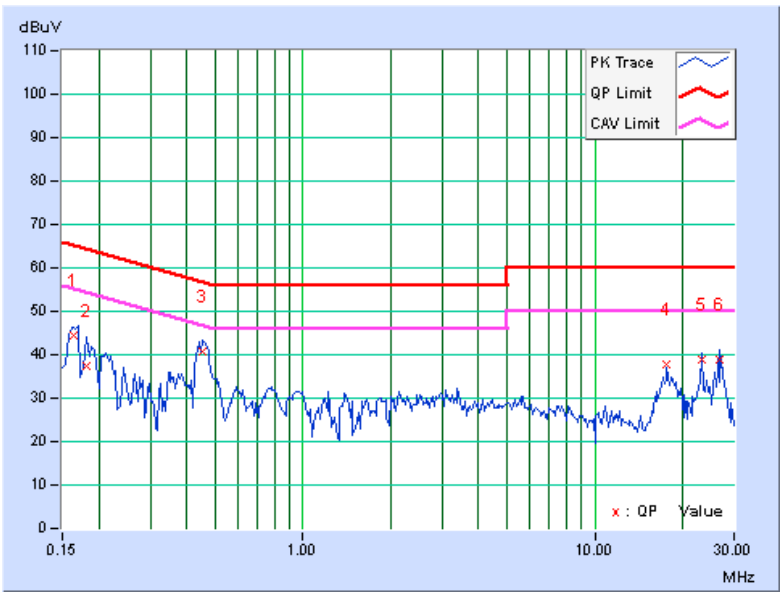
5.1.12 TEST RESULTS (MODE 6)

PHASE	Line (L)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.16403	0.11	44.50	39.33	44.61	39.44	65.26	55.26	-20.65	-15.82
2	0.18125	0.12	37.28	19.56	37.40	19.68	64.43	54.43	-27.03	-34.75
3	0.45469	0.18	40.58	34.07	40.76	34.25	56.79	46.79	-16.03	-12.54
4	17.69141	1.17	36.78	32.65	37.95	33.82	60.00	50.00	-22.05	-16.18
5	23.12891	1.40	37.66	34.61	39.06	36.01	60.00	50.00	-20.94	-13.99
6	26.60938	1.51	37.50	35.75	39.01	37.26	60.00	50.00	-20.99	-12.74

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

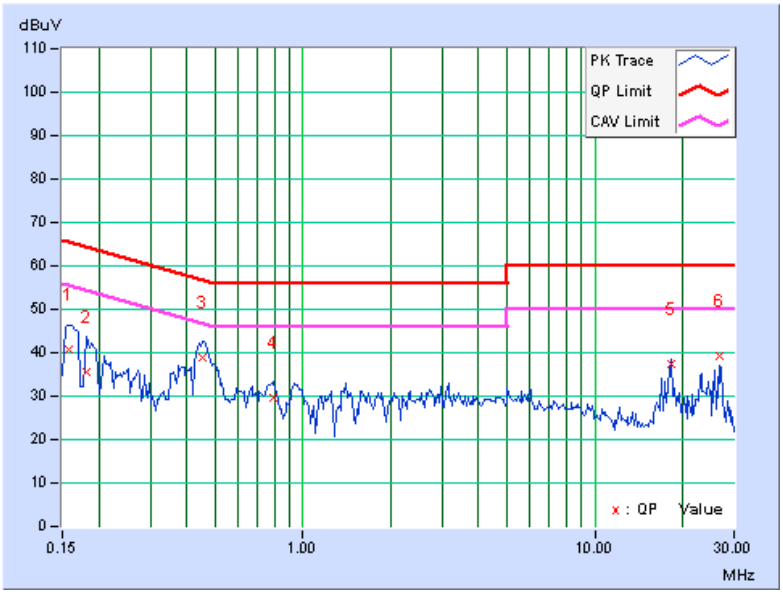


PHASE	Neutral (N)	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9kHz

	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	0.15781	0.10	40.68	35.66	40.78	35.76	65.58	55.58	-24.80	-19.82
2	0.18125	0.11	35.50	19.17	35.61	19.28	64.43	54.43	-28.82	-35.15
3	0.45469	0.17	38.59	32.28	38.76	32.45	56.79	46.79	-18.03	-14.34
4	0.79453	0.19	29.35	22.73	29.54	22.92	56.00	46.00	-26.46	-23.08
5	18.24219	0.92	36.57	32.38	37.49	33.30	60.00	50.00	-22.51	-16.70
6	26.60938	1.15	38.23	35.16	39.38	36.31	60.00	50.00	-20.62	-13.69

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



5.2 RADIATED AND BANDEDGE EMISSION MEASUREMENT

5.2.1 LIMITS OF RADIATED AND BANDEDGE EMISSION MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

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 (dBuV/m) = 20 log Emission level (uV/m).
3. 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.

5.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer Agilent	E4446A	MY48250253	Sep. 03, 2012	Sep. 02, 2013
Pre-Selector Agilent	N9039A	MY46520310	Sep. 03, 2012	Sep. 02, 2013
Signal Generator Agilent	N5181A	MY49060347	July 24, 2012	July 23, 2013
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-04	Nov. 15, 2011	Nov. 14, 2012
Pre-Amplifier Agilent	8449B	3008A02465	Feb. 27, 2012	Feb. 26, 2013
SPACEK LABS	SLKKa-48-6	9K16	Nov. 15, 2011	Nov. 14, 2012
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Apr. 06, 2012	Apr. 05, 2013
Horn_Antenna AISI	AIH.8018	0000220091110	Nov. 23, 2011	Nov. 22, 2012
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Oct. 12, 2012	Oct. 11, 2013
RF Cable	NA	RF104-205 RF104-207 RF104-202	Dec. 27, 2011	Dec. 26, 2012
RF Cable	NA	CHHCAB_001	Oct. 07, 2012	Oct. 06, 2013
Software	ADT_Radiated _V8.7.05	NA	NA	NA
Antenna Tower & Turn Table CT	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) are used only for the measurement of emission frequency above 1GHz if tested.
3 The test was performed in 966 Chamber No. H.
4. The FCC Site Registration No. is 797305.
5 The CANADA Site Registration No. is IC 7450H-3.
6 Tested Date: Oct. 26, 2012

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 3 meters chamber. 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 height of antenna 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 quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

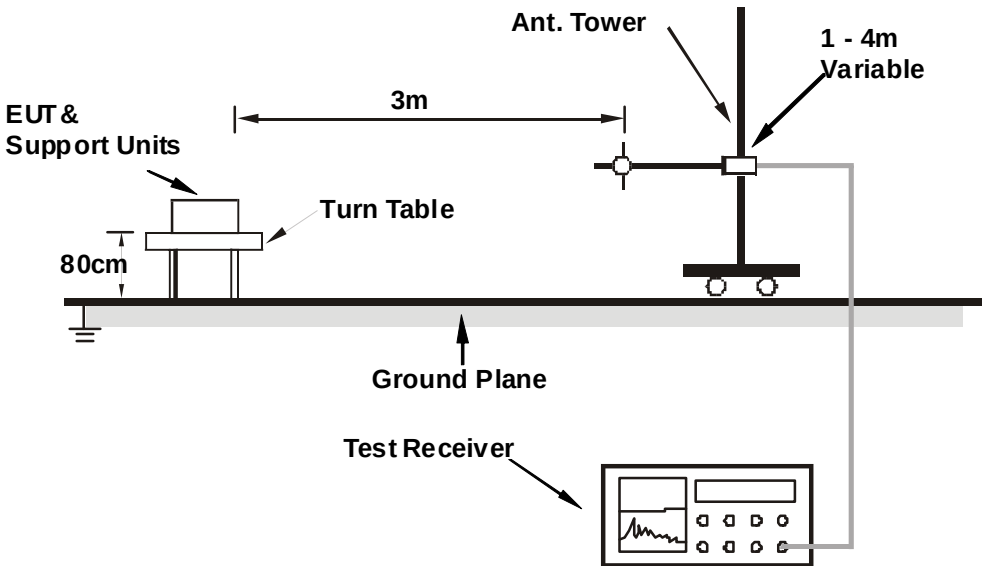
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for 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. All modes of operation were investigated and the worst-case emissions are reported.

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

5.2.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

802.11n (20MHz)

CHANNEL	TX Channel 165	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	Below 1GHz		

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	95.88	35.2 QP	43.5	-8.3	1.25 H	310	26.06	9.18
2	106.10	34.7 QP	43.5	-8.8	1.45 H	24	24.16	10.50
3	148.00	34.0 QP	43.5	-9.5	1.86 H	356	19.55	14.47
4	222.24	34.9 QP	46.0	-11.1	1.30 H	320	22.83	12.05
5	500.10	38.8 QP	46.0	-7.2	1.87 H	325	18.67	20.10
6	599.70	37.0 QP	46.0	-9.0	1.39 H	214	14.77	22.25
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	74.20	36.1 QP	40.0	-3.9	1.50 V	125	25.11	11.00
2	94.00	36.9 QP	43.5	-6.6	1.28 V	287	27.98	8.94
3	104.20	35.2 QP	43.5	-8.3	1.14 V	245	24.97	10.26
4	499.00	40.0 QP	46.0	-6.0	1.00 V	277	19.94	20.08
5	599.99	33.2 QP	46.0	-12.8	1.47 V	125	10.97	22.26
6	749.00	32.3 QP	46.0	-13.7	1.26 V	322	7.66	24.62

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.

ABOVE 1GHz DATA

802.11a

CHANNEL	TX Channel 149	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	105.3 PK			1.00 H	134	61.98	43.32
2	*5745.00	95.6 AV			1.00 H	134	52.28	43.32
3	11490.00	55.2 PK	74.0	-18.8	1.00 H	33	5.41	49.79
4	11490.00	45.9 AV	54.0	-8.1	1.00 H	33	-3.89	49.79
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	110.5 PK			1.00 V	167	67.18	43.32
2	*5745.00	101.4 AV			1.00 V	167	58.08	43.32
3	11490.00	56.3 PK	74.0	-17.7	1.00 V	333	6.51	49.79
4	11490.00	48.1 AV	54.0	-5.9	1.00 V	333	-1.69	49.79

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.

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

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	104.8 PK			1.03 H	154	61.43	43.37
2	*5785.00	95.4 AV			1.03 H	154	52.03	43.37
3	11570.00	55.9 PK	74.0	-18.1	1.00 H	42	6.07	49.83
4	11570.00	45.3 AV	54.0	-8.7	1.00 H	42	-4.53	49.83
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	110.2 PK			1.00 V	168	66.83	43.37
2	*5785.00	101.1 AV			1.00 V	168	57.73	43.37
3	11570.00	56.5 PK	74.0	-17.5	1.00 V	265	6.67	49.83
4	11570.00	48.3 AV	54.0	-5.7	1.00 V	265	-1.53	49.83

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.

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

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	104.3 PK			1.03 H	125	60.83	43.47
2	*5825.00	95.2 AV			1.03 H	125	51.73	43.47
3	11650.00	55.5 PK	74.0	-18.5	1.00 H	23	5.39	50.11
4	11650.00	45.2 AV	54.0	-8.8	1.00 H	23	-4.91	50.11
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	110.0 PK			1.02 V	163	66.53	43.47
2	*5825.00	100.9 AV			1.02 V	163	57.43	43.47
3	11650.00	56.1 PK	74.0	-17.9	1.00 V	321	5.99	50.11
4	11650.00	47.2 AV	54.0	-6.8	1.00 V	321	-2.91	50.11

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.

802.11n (20MHz)

CHANNEL	TX Channel 149	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	109.1 PK			1.00 H	165	65.78	43.32
2	*5745.00	94.2 AV			1.00 H	165	50.88	43.32
3	11490.00	55.3 PK	74.0	-18.7	1.12 H	77	5.51	49.79
4	11490.00	49.3 AV	54.0	-4.7	1.12 H	77	-0.49	49.79
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	109.2 PK			1.00 V	167	65.88	43.32
2	*5745.00	99.7 AV			1.00 V	167	56.38	43.32
3	11490.00	55.8 PK	74.0	-18.2	1.10 V	88	6.01	49.79
4	**11490.00**	**50.2 AV**	**54.0**	**-3.8**	**1.10 V**	**88**	**0.41**	**49.79**

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.

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

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	110.7 PK			1.00 H	165	67.33	43.37
2	*5785.00	98.2 AV			1.00 H	165	54.83	43.37
3	11570.00	55.2 PK	74.0	-18.8	1.13 H	57	5.37	49.83
4	11570.00	47.2 AV	54.0	-6.8	1.13 H	57	-2.63	49.83
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	111.4 PK			1.00 V	163	68.03	43.37
2	*5785.00	102.1 AV			1.00 V	163	58.73	43.37
3	11570.00	55.7 PK	74.0	-18.3	1.12 V	87	5.87	49.83
4	11570.00	50.0 AV	54.0	-4.0	1.12 V	87	0.17	49.83

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.

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

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	110.2 PK			1.00 H	360	66.73	43.47
2	*5825.00	97.4 AV			1.00 H	360	53.91	43.47
3	11650.00	55.1 PK	74.0	-18.9	1.14 H	69	4.99	50.11
4	11650.00	48.2 AV	54.0	-5.8	1.14 H	69	-1.91	50.11
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	110.8 PK			1.00 V	163	67.33	43.47
2	*5825.00	101.3 AV			1.00 V	163	57.83	43.47
3	11650.00	55.6 PK	74.0	-18.4	1.16 V	72	5.49	50.11
4	11650.00	49.2 AV	54.0	-4.8	1.16 V	72	-0.91	50.11

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.

802.11n (40MHz)

CHANNEL	TX Channel 151	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	*5755.00	103.2 PK			1.02 H	162	59.86	43.34
2	*5755.00	97.1 AV			1.02 H	162	53.76	43.34
3	11510.00	56.2 PK	74.0	-17.8	1.00 H	78	6.42	49.78
4	11510.00	49.1 AV	54.0	-4.9	1.00 H	78	-0.68	49.78
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	*5755.00	108.3 PK			1.00 V	167	64.96	43.34
2	*5755.00	98.8 AV			1.00 V	167	55.46	43.34
3	11510.00	55.3 PK	74.0	-18.7	1.15 V	72	5.52	49.78
4	11510.00	48.2 AV	54.0	-5.8	1.15 V	72	-1.58	49.78

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.

CHANNEL	TX Channel 159	**DETECTOR FUNCTION**	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

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	*5795.00	105.3 PK			1.02 H	166	61.92	43.38
2	*5795.00	98.2 AV			1.02 H	166	54.82	43.38
3	11590.00	56.4 PK	74.0	-17.6	1.12 H	82	6.56	49.84
4	11590.00	49.3 AV	54.0	-4.7	1.12 H	82	-0.54	49.84
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	*5795.00	109.5 PK			1.00 V	165	66.12	43.38
2	*5795.00	101.4 AV			1.00 V	165	58.02	43.38
3	11590.00	55.4 PK	74.0	-18.6	1.13 V	73	5.56	49.84
4	11590.00	49.1 AV	54.0	-4.9	1.13 V	73	-0.74	49.84

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. 14, 2011	Dec. 13, 2012

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. Tested date : Oct. 26, 2012

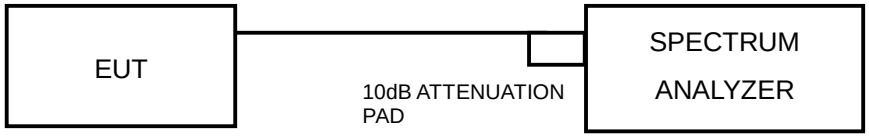
5.3.3 TEST PROCEDURE

1. Set resolution bandwidth (RBW) = approximately 1% of the emission bandwidth
2. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
3. Trace mode = max hold.
4. Sweep = auto couple.
5. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

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.

5.3.7 TEST RESULTS

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	16.24	0.5	PASS
157	5785	16.07	0.5	PASS
165	5825	16.24	0.5	PASS

802.11n (HT20)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
149	5745	16.05	16.63	0.5	PASS
157	5785	17.31	16.60	0.5	PASS
165	5825	17.25	16.60	0.5	PASS

802.11n (HT40)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
151	5755	36.28	36.34	0.5	PASS
159	5795	36.41	36.53	0.5	PASS

5.4 CONDUCTED OUTPUT POWER MEASUREMENT

5.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

For systems using digital modulation in the 5725 –5850 MHz band: 1 Watt (30dBm)

5.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Power Meter	ML2495A	0824006	May 10, 2012	May 09, 2013
Peak Power Sensor	MA2411B	0738172	May 10, 2012	May 09, 2013

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. Tested date : Oct. 26, 2012

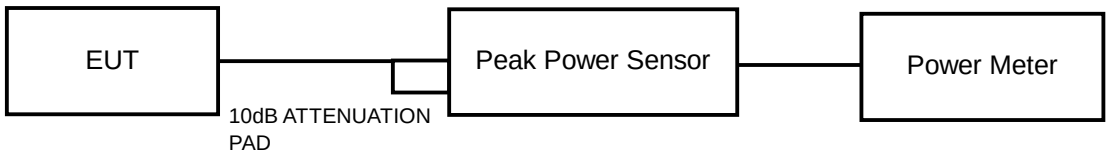
5.4.3 TEST PROCEDURES

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the peak power level.

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

5.4.7 TEST RESULTS

802.11a

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
149	5745	213.796	23.3	30	PASS
157	5785	204.174	23.1	30	PASS
165	5825	223.872	23.5	30	PASS

802.11n (HT20)

CHAN.	FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
149	5745	23.9	23.4	464.247	26.67	30	PASS
157	5785	23.8	22.9	434.867	26.38	30	PASS
165	5825	23.5	22.8	414.418	26.17	30	PASS

802.11n (HT40)

CHAN.	FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
151	5755	21.4	23.2	346.968	25.40	30	PASS
159	5795	23.7	22.9	429.407	26.33	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	FSP 40	100036	Dec. 14, 2011	Dec. 13, 2012

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. Tested date : Oct. 26, 2012

5.5.3 TEST PROCEDURE

1. Set the RBW = 100 kHz, VBW =300 kHz, Detector = peak.
2. Sweep time = auto couple.
3. Trace mode = max hold.
4. Allow trace to fully stabilize.
5. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
6. Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(3 kHz/100kHz)

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

5.5.7 TEST RESULTS

802.11a

Channel	FREQUENCY (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
149	5745	11.93	-3.30	8	PASS
157	5785	11.87	-3.36	8	PASS
165	5825	11.61	-3.62	8	PASS

802.11n (HT20)

TX chain	Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	149	5745	7.09	-8.14	3.01	-5.13	8	PASS
	157	5785	10.29	-4.94	3.01	-1.93	8	PASS
	165	5825	10.18	-5.05	3.01	-2.04	8	PASS
1	149	5745	9.44	-5.79	3.01	-2.78	8	PASS
	157	5785	11.64	-3.59	3.01	-0.58	8	PASS
	165	5825	11.46	-3.77	3.01	-0.76	8	PASS

802.11n (HT40)

TX chain	Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	151	5755	6.82	-8.41	3.01	-5.40	8	PASS
	159	5795	7.80	-7.43	3.01	-4.42	8	PASS
1	151	5755	7.96	-7.27	3.01	-4.26	8	PASS
	159	5795	5.11	-10.12	3.01	-7.11	8	PASS

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. 14, 2011	Dec. 13, 2012

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. Tested date : Oct. 26, 2012

5.6.3 TEST PROCEDURE

Measurement Procedure - Reference Level

1. Set the RBW = 100 kHz.
2. Set the VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

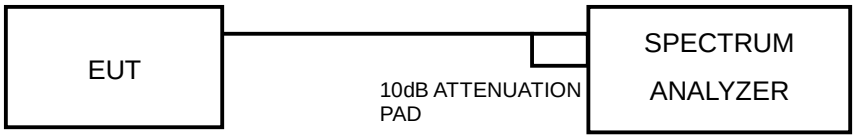
Measurement Procedure –Unwanted Emission Level

1. Set RBW = 100 kHz.
2. Set VBW ≥ 300 kHz.
3. Set span to encompass the spectrum to be examined.
4. Detector = peak.
5. Trace Mode = max hold.
6. Sweep = auto couple.

5.6.4 DEVIATION FROM TEST STANDARD

No deviation

5.6.5 TEST SETUP



5.6.6 EUT OPERATING CONDITION

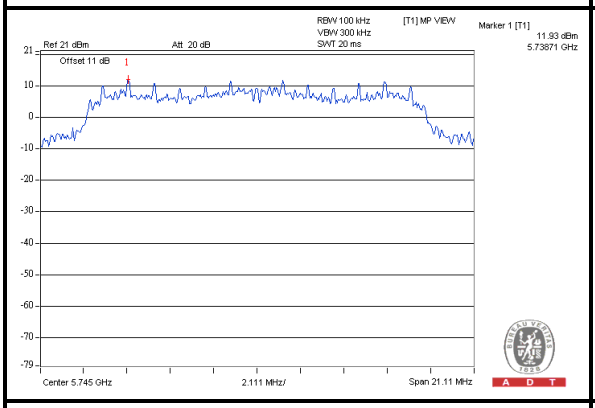
Same as Item 4.3.6

5.6.7 TEST RESULTS

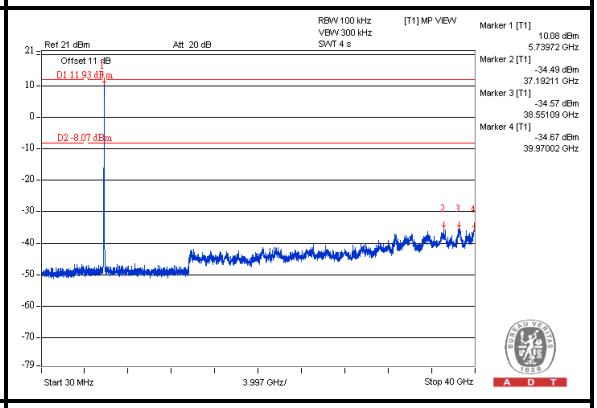
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

802.11a

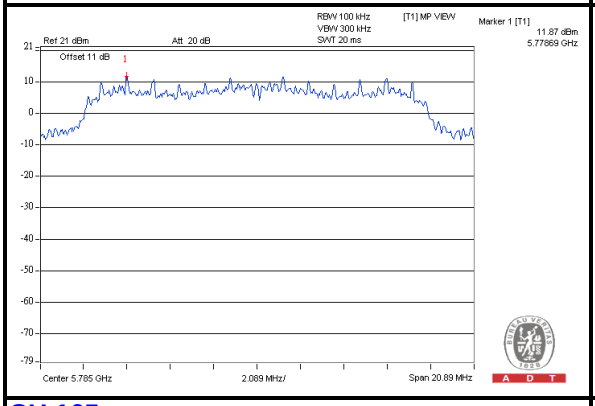
CH 149



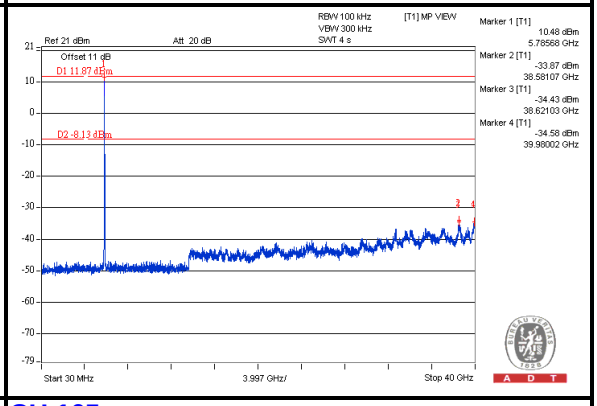
CH 149



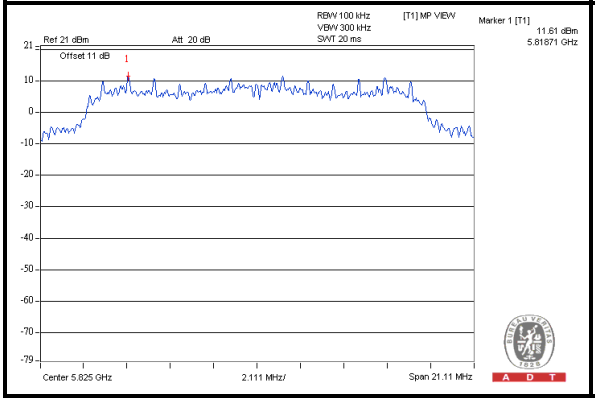
CH 157



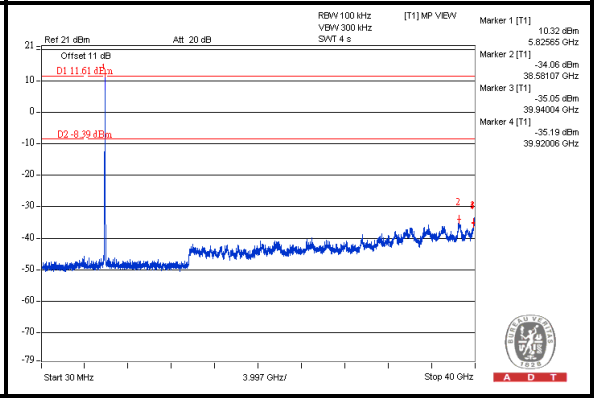
CH 157



CH 165

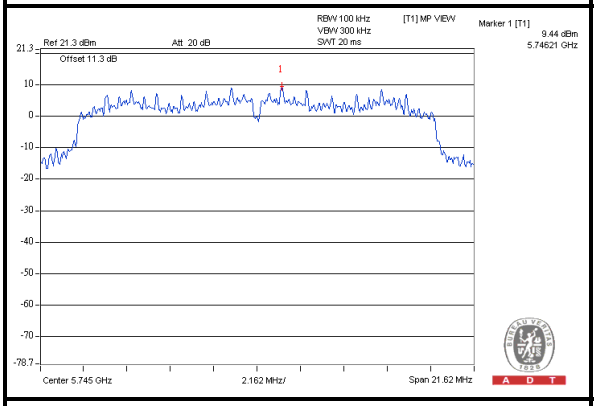


CH 165

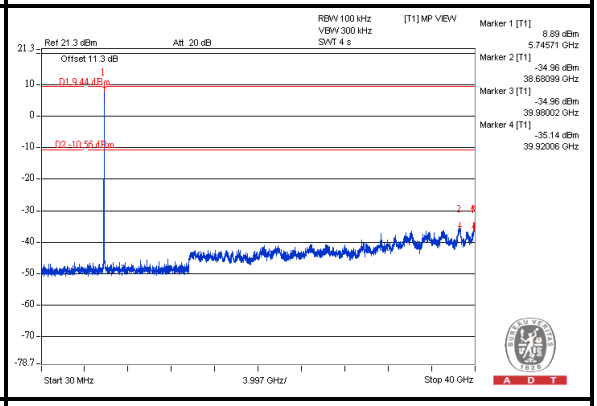


802.11n (HT20)

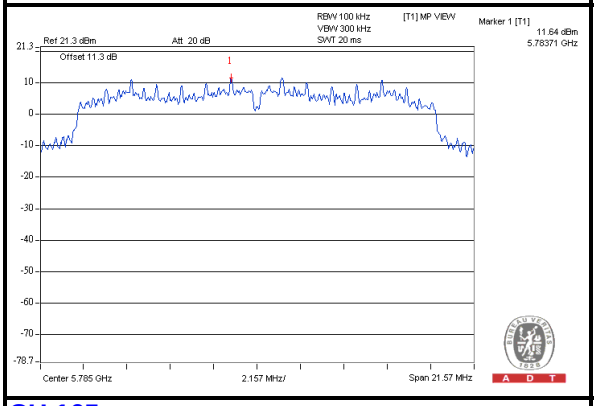
CH 149



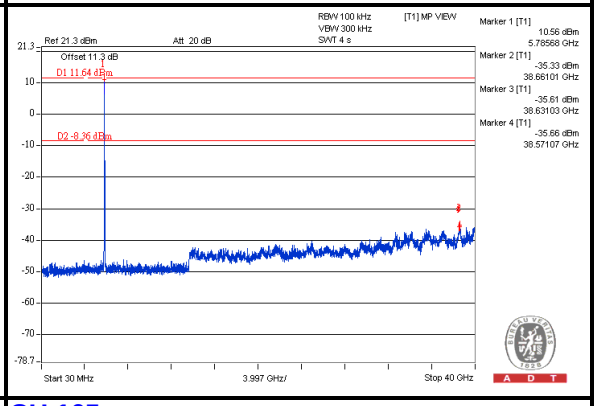
CH 149



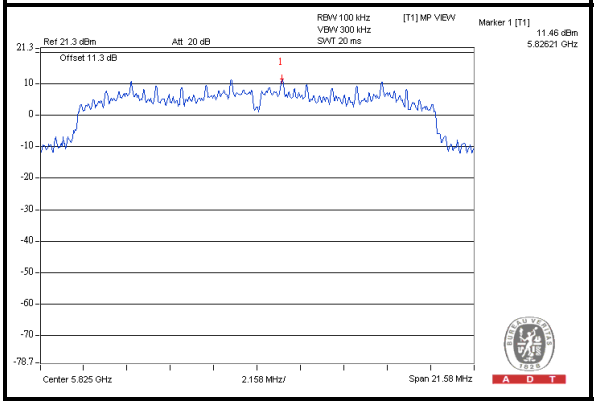
CH 157



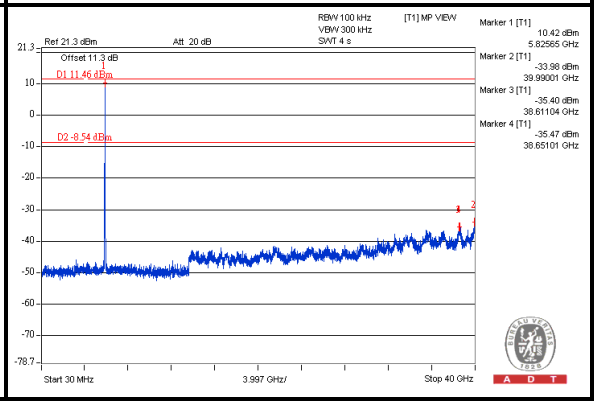
CH 157



CH 165

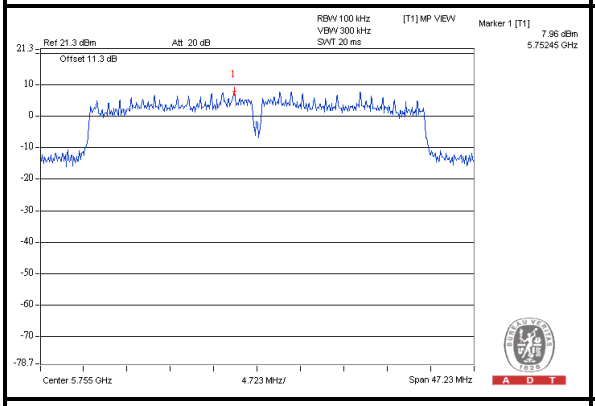


CH 165

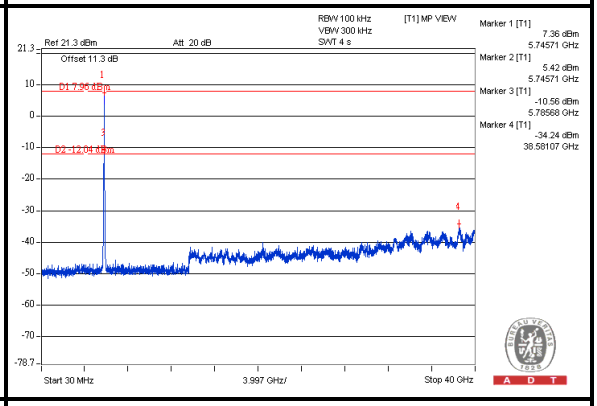


802.11n (HT40)

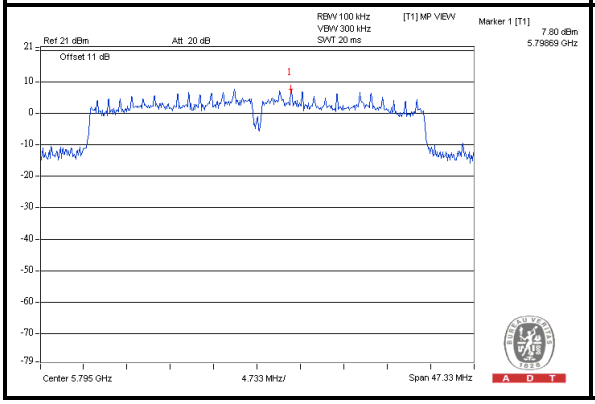
CH 151



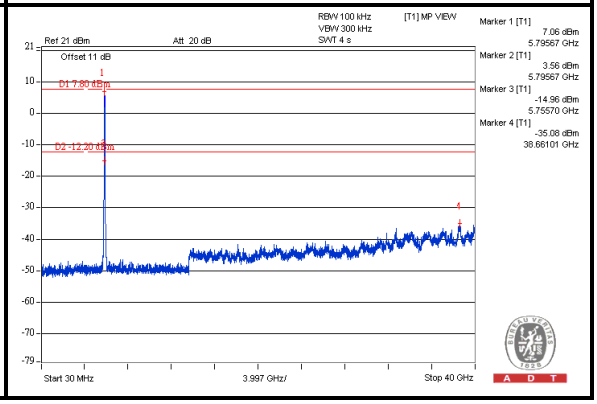
CH 151



CH 159



CH 159



6. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

7. 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.

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:
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Hwa Ya EMC/RF/Safety/Telecom Lab:
Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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

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

No modifications were made to the EUT by the lab during the test.

--- END ---