FCC TEST REPORT

REPORT NO.:	RF140116E08B
COMPLIANCE ID:	ADBB-GX13004A
PRODUCT NAMES* :	DB 6220, DV 6220

**For any other product variant refer to above Compliance ID*

FCC ID:	MCLDB6220
RECEIVED:	Jan. 16, 2014
TESTED:	Feb. 08 to 26, 2014
ISSUED:	May 14, 2014

APPLICANT:	Hon Hai PRECISION IND.CO.,LTD
ADDRESS:	5F-1,5 Hsin-An Road Hsinchu, Science-Based Industrial Park Taiwan, R.O.C.

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
RF140116E08B	Original release	May 14, 2014

1. CERTIFICATION

COMPLIANCE ID:	ADBB-GX13004A
PRODUCT NAMES*:	DB 6220, DV 6220
PRODUCT DESCRIPTION:	VDSL/GbE WiFi Data Router

**For any other product variant refer to above Compliance ID*

BRAND NAME:	ADB
TEST SAMPLE:	ENGINEERING SAMPLE
APPLICANT:	Hon Hai PRECISION IND.CO.,LTD
TESTED:	Feb. 08 to 26, 2014
STANDARDS:	FCC Part 15, Subpart C (Section 15.247) ANSI C63.10-2009

The above equipment (Model: DB 6220) 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:** *May 14, 2014*
(Midoli Peng, Specialist)

APPROVED BY : _____ , **DATE:** *May 14, 2014*
(May Chen, Manager)

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

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 -17.48dB at 0.15391MHz
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -0.6dB at 2390.00MHz & 2483.50MHz
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 Output power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is I-PEX not a standard connector.

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)	3.99 dB
Radiated emissions (1GHz -6GHz)	3.72 dB
Radiated emissions (6GHz -18GHz)	4.00 dB
Radiated emissions (18GHz -40GHz)	4.11 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

COMPLIANCE ID:	ADBB-GX13004A
PRODUCT NAMES*:	DB 6220, DV 6220
PRODUCT DESCRIPTION:	VDSL/GbE WiFi Data Router
**For any other product variant refer to above Compliance ID*	
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: up to 54Mbps 802.11n(HT20): up to 144.44Mbps 802.11n(HT40): up to 300Mbps
OPERATING FREQUENCY	2.412 ~ 2.462GHz
NUMBER OF CHANNEL	11 for 802.11b, 802.11g, 802.11n (HT20) 7 for 802.11n (HT40)
MAXIMUM OUTPUT POWER	**1Tx** 802.11b: 211.836mW 802.11g: 171.396mW 802.11n (HT20): 166.725mW 802.11n (HT40): 118.577mW **2Tx** 802.11g: 335.393mW 802.11n (HT20): 328.496mW 802.11n (HT40): 200.063mW
ANTENNA TYPE	Please see NOTE
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ASSOCIATED DEVICES	Adapter x1

NOTE:

1. The EUT has two product names, which are identical to each other in all aspects except for the following information:

Brand Name	Product Name	Difference
ADB	DB 6220	With two DSL ports
	DV 6220	With one DSL port
Note: From the above models, model: **DB 6220** was selected as representative model for the test and its data was recorded in this report.		

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

Brand	Model No.	Spec.
Ampower Tek	AU36AA-01	Input: 100-240V, 1A, 50-60Hz Output: 12V, 2.5A DC output cable(1.85m, unshielded with one core)

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

Transmitter Circuit (Ant. No.)	Brand	Model	Antenna Type	Gain (dBi) (including cable loss)	Diversity Function	Frequency range (GHz to GHz)	Connecter Type	Cable Length (mm)
Chain (1) A3	Airgain	M2450DL CM-T-G8 5CC20R2	PIFA	2.6	Yes	2.4 to 2.49	I-PEX	85
Chain (2) A1	Airgain	M2450DL CM-T1-G 190UR2	PIFA	1.8	Yes	2.4 to 2.49	I-PEX	190
Note. : For 2.4GHz<1Tx mode>: Chain (1) was chosen for final test.								

4. The EUT incorporates a MIMO function without beam forming.

MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11b	1 ~ 11Mbps	1Tx diversity	1Rx diversity
802.11g	6 ~ 54Mbps	1Tx diversity & 2Tx CDD	1Rx diversity & 2Rx
802.11n (HT20)	MCS 0~7	1Tx diversity & 2Tx CDD	1Rx diversity & 2Rx
	MCS 8~15	2Tx SDM	2Rx
802.11n (HT40)	MCS 0~7	1Tx diversity & 2Tx CDD	1Rx diversity & 2Rx
	MCS 8~15	2Tx SDM	2Rx

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

6. 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

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		

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO					DESCRIPTION
	PLC	RE < 1G	RE ³ 1G	APCM	OB	
-	√	√	√	√	√	-

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: The EUT had been pre-tested on the positioned of each 2 axis. The worst case was found when positioned on **X-plane**.

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)
802.11g / 2Tx	1 to 11	6	OFDM	BPSK	6

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)
802.11g / 2Tx	1 to 11	6	OFDM	BPSK	6

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 / 1Tx	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g / 1Tx	1 to 11	1, 6, 11	OFDM	BPSK	6
For 2.4 GHz 802.11n (HT20) / 1Tx	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (HT40) / 1Tx	3 to 9	3, 6, 9	OFDM	BPSK	13.5
802.11g / 2Tx	1 to 11	1, 6, 11	OFDM	BPSK	6
For 2.4 GHz 802.11n (HT20) / 2Tx	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (HT40) / 2Tx	3 to 9	3, 6, 9	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 / 1Tx	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g / 1Tx	1 to 11	1, 6, 11	OFDM	BPSK	6
For 2.4 GHz 802.11n (HT20) / 1Tx	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (HT40) / 1Tx	3 to 9	3, 6, 9	OFDM	BPSK	13.5
802.11g / 2Tx	1 to 11	1, 6, 11	OFDM	BPSK	6
For 2.4 GHz 802.11n (HT20) / 2Tx	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (HT40) / 2Tx	3 to 9	3, 6, 9	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 / 1Tx	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g / 1Tx	1 to 11	1, 6, 11	OFDM	BPSK	6
For 2.4 GHz 802.11n (HT20) / 1Tx	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (HT40) / 1Tx	3 to 9	3, 6, 9	OFDM	BPSK	13.5
802.11g / 2Tx	1 to 11	1, 6, 11	OFDM	BPSK	6
For 2.4 GHz 802.11n (HT20) / 2Tx	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (HT40) / 2Tx	3 to 9	3, 6, 9	OFDM	BPSK	13.5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
PLC	20deg. C,66%RH	120Vac, 60Hz	Gavin Peng
RE<1G	21deg. C, 56%RH	120Vac, 60Hz	Scott Chen
RE≥1G	23deg. C, 68%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Chilin Lee
OB	25deg. C, 60%RH	120Vac, 60Hz	Chilin Lee

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 v03r01

662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2009

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

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

3.4 DUTY CYCLE OF TEST SIGNAL

Duty cycle of test signal is ≥ 98 %, duty factor is not required.

For 1Tx

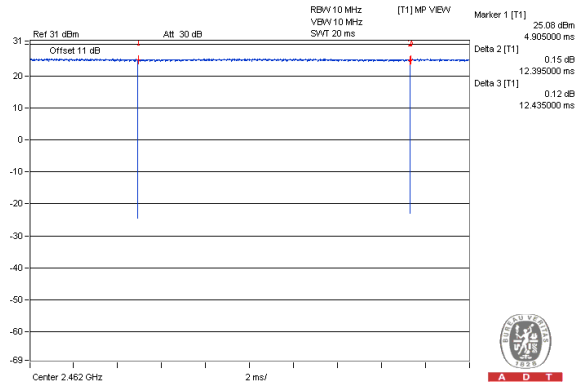
802.11b: Duty cycle = 12.395 ms/12.435 ms = 0.997

802.11g: Duty cycle = 2.064 ms/2.083 ms = 0.991

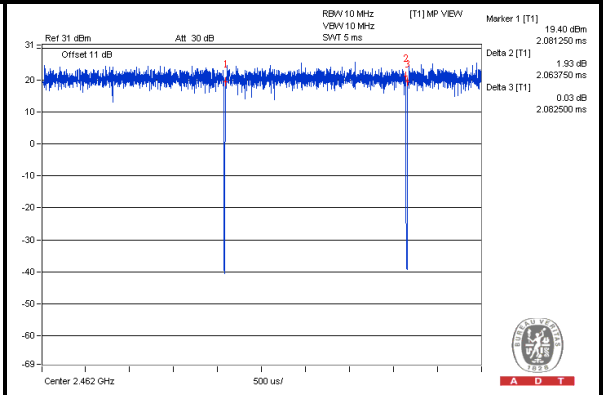
802.11n (HT20): Duty cycle = 1.906 ms/1.926 ms = 0.99

802.11n (HT40): Duty cycle = 0.931 ms/0.95 ms = 0.98

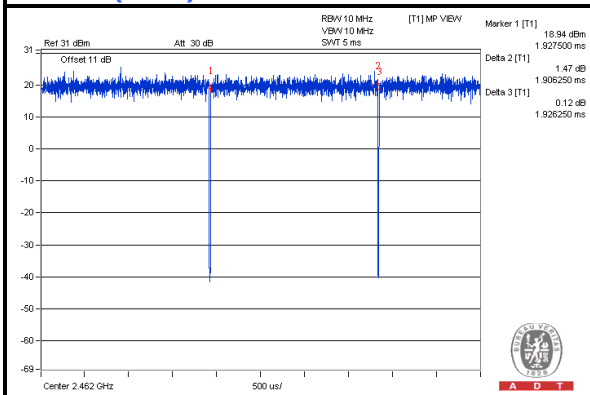
802.11b



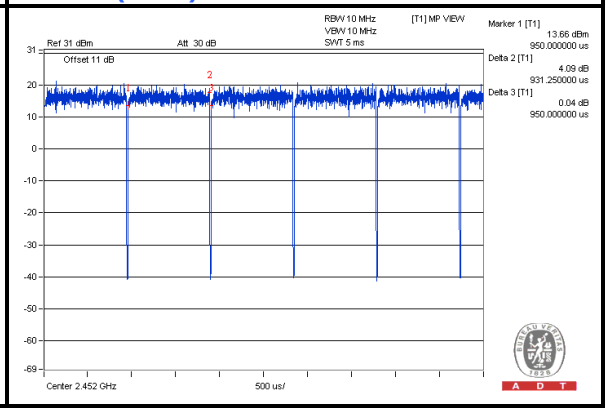
802.11g



802.11n (HT20)



802.11n (HT40)



Duty cycle of test signal is ≥ 98 %, duty factor is not required.

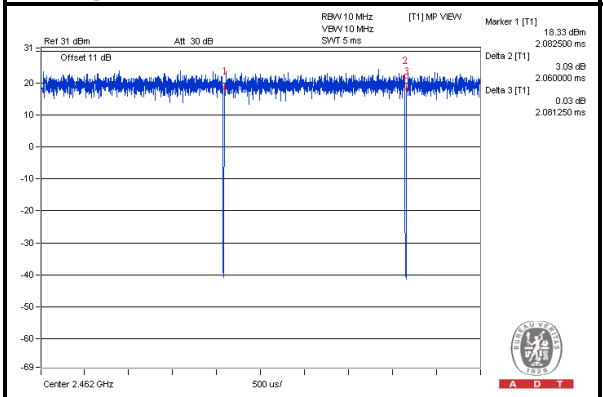
For 2Tx

802.11g: Duty cycle = 2.06 ms/2.081 ms = 0.99

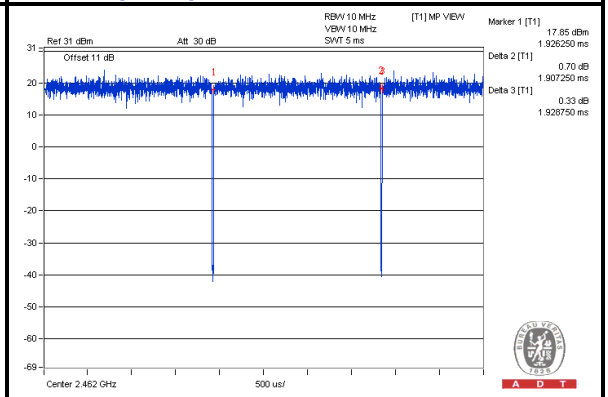
802.11n (HT20): Duty cycle = 1.907 ms/1.929 ms = 0.989

802.11n (HT40): Duty cycle = 0.93 ms/0.949 ms = 0.98

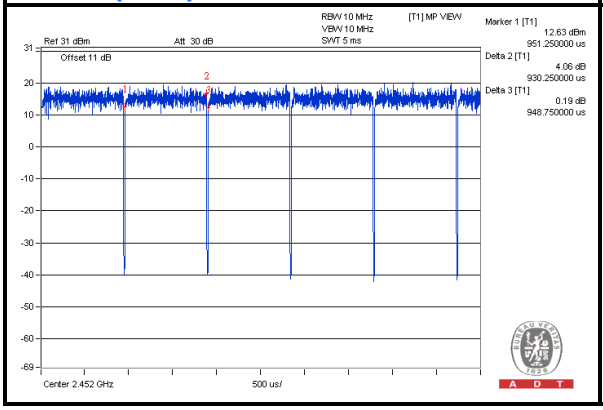
802.11g



802.11n (HT20)



802.11n (HT40)



3.5 DESCRIPTION OF SUPPORT UNITS

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

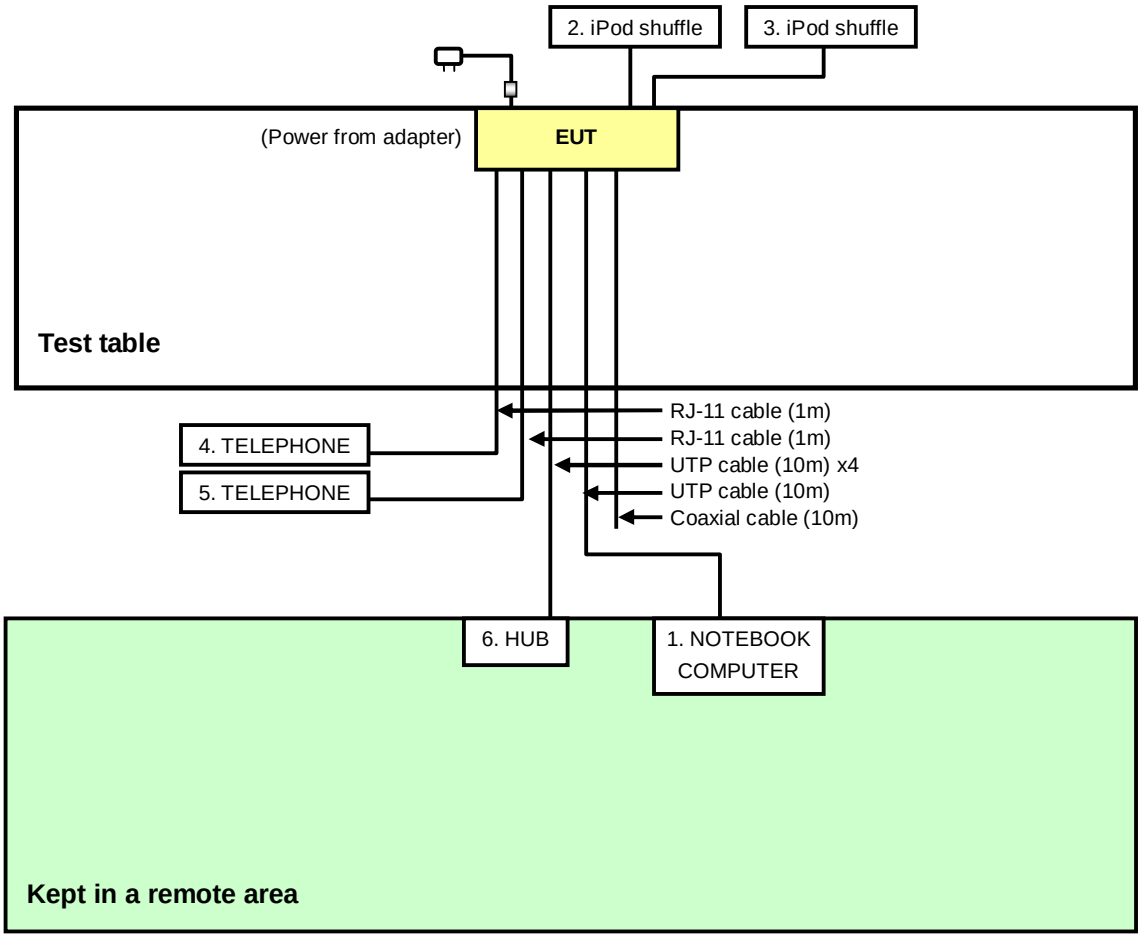
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP32LA	FSLB32S	FCC DoC
2	iPod shuffle	Apple	MC749TA/A	CC4DMFJUDFDM	NA
3	iPod shuffle	Apple	MC749TA/A	CC4DN25WDFDM	NA
4	TELEPHONE	WONDER	WD-303	7C17KA 04011	NA
5	TELEPHONE	WONDER	WD-303	7C17KA 04440	NA
6	HUB	ZyXEL	ES-116P	S060H02000215	FCC DoC

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	UTP Cable, 10m
2	USB Cable, 0.1m
3	USB Cable, 0.1m
4	RJ-11 Cable, 1m
5	RJ-11 Cable, 1m
6	UTP Cable, 10m

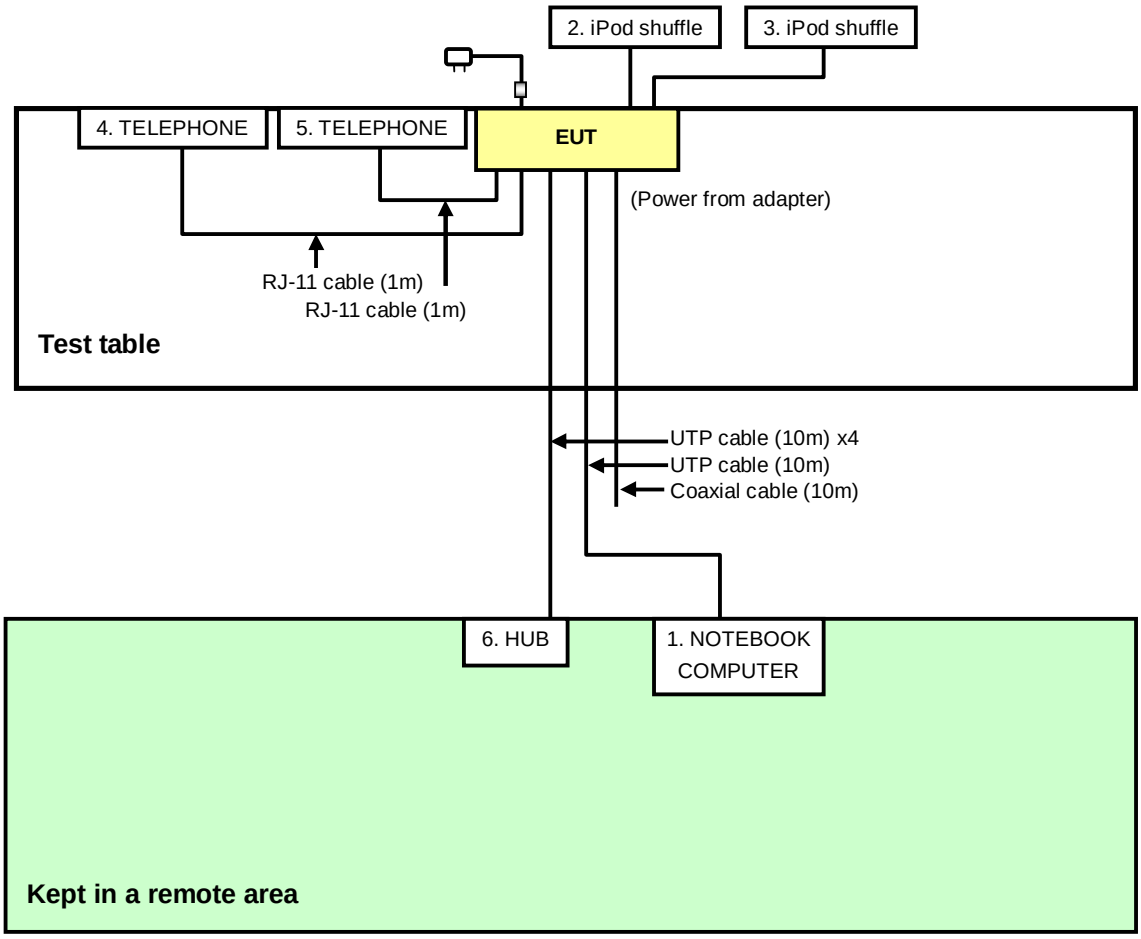
NOTE: All power cords of the above support units are non shielded (1.8m).

3.6 CONFIGURATION OF SYSTEM UNDER TEST

For conducted emission test:



For other test items:



4. TEST TYPES AND RESULTS

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 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.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS 30	100375	Mar. 08, 2013	Mar. 07, 2014
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK8127	8127-522	Sep. 05, 2013	Sep. 04, 2014
Line-Impedance Stabilization Network (for Peripheral)	ENV216	100072	June 06, 2013	June 05, 2014
RF Cable (JYEBAO)	5DFB	COCCAB-001	Mar. 11, 2013	Mar. 10, 2014
50 ohms Terminator	50	EMC-03	Sep. 24, 2013	Sep. 23, 2014
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: Feb. 08, 2014

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.

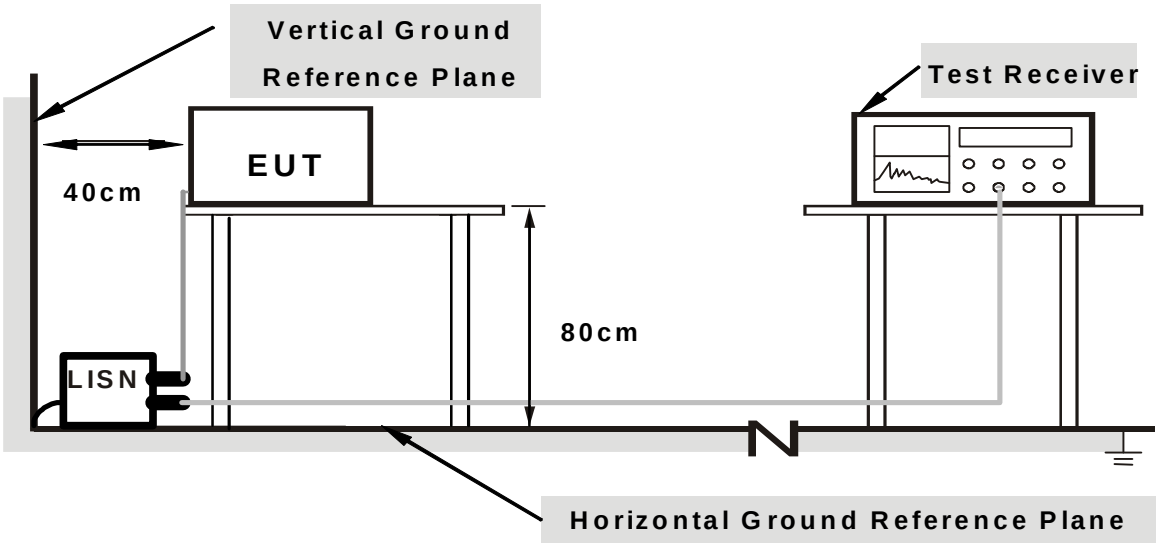
NOTE:

1. The resolution bandwidth of test receiver is 9kHz for Quasi-peak detection (QP) & Average detection (AV).

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. Place the EUT on testing table.
2. Prepare computer system (support unit 1) to act as communication partner.
3. The communication partner runs test program “Mtool 2.0.1.0” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

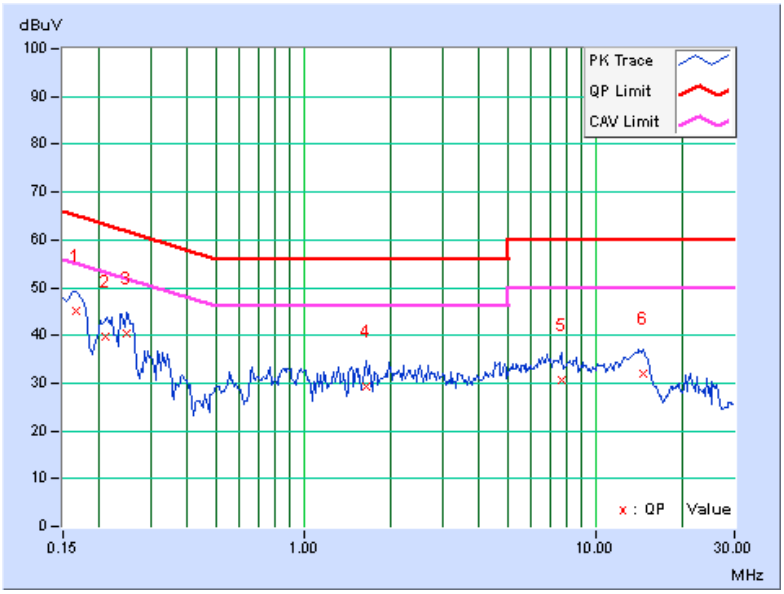
4.1.7 TEST RESULTS

PHASE	Line (L)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)

	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	0.09	45.14	37.01	45.23	37.10	65.18	55.18	-19.95	-18.08
2	0.20859	0.10	39.74	31.26	39.84	31.36	63.26	53.26	-23.42	-21.90
3	0.24766	0.11	40.33	32.74	40.44	32.85	61.84	51.84	-21.40	-18.99
4	1.64063	0.20	29.25	23.55	29.45	23.75	56.00	46.00	-26.55	-22.25
5	7.66016	0.40	30.19	24.53	30.59	24.93	60.00	50.00	-29.41	-25.07
6	14.52734	0.61	31.29	25.45	31.90	26.06	60.00	50.00	-28.10	-23.94

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

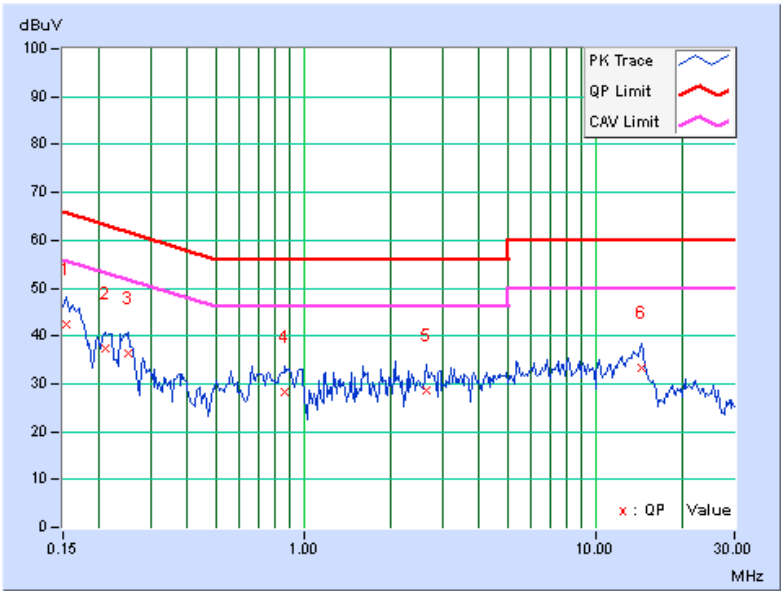


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)

	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**	**42.32**	**38.22**	**42.41**	**38.31**	**65.79**	**55.79**	**-23.38**	**-17.48**
2	0.20859	0.10	37.41	30.28	37.51	30.38	63.26	53.26	-25.75	-22.88
3	0.25156	0.11	36.32	30.27	36.43	30.38	61.71	51.71	-25.28	-21.33
4	0.86484	0.16	28.17	24.08	28.33	24.24	56.00	46.00	-27.67	-21.76
5	2.64453	0.24	28.39	23.45	28.63	23.69	56.00	46.00	-27.37	-22.31
6	14.45703	0.60	32.72	26.65	33.32	27.25	60.00	50.00	-26.68	-22.75

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 30dB 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
MXE EMI Receiver Agilent	N9038A	MY50010156	Jan. 15, 2014	Jan. 14, 2015
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-04	Nov. 13, 2013	Nov. 12, 2014
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Mar. 25, 2013	Mar. 24, 2014
RF Cable	NA	CHHCAB_001	Oct. 06, 2013	Oct. 05, 2014
Spectrum Analyzer R&S	FSV40	100964	July 15, 2013	July 14, 2014
Horn_Antenna AISI	AIH.8018	0000220091110	Dec. 06, 2013	Dec. 05, 2014
Pre-Amplifier Agilent	8449B	3008A01923	Oct. 29, 2013	Oct. 28, 2014
RF Cable	NA	RF104-205 RF104-207 RF104-202	Dec. 12, 2013	Dec. 11, 2014
Spectrum Analyzer Agilent	E4446A	MY48250253	Aug. 28, 2013	Aug. 27, 2014
Pre-Amplifier SPACEK LABS	SLKKa-48-6	9K16	Nov. 13, 2013	Nov. 12, 2014
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Oct. 08, 2013	Oct. 07, 2014
Software	ADT_Radiated _V8.7.07	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: Feb. 08 to 26, 2014

4.2.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. 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:

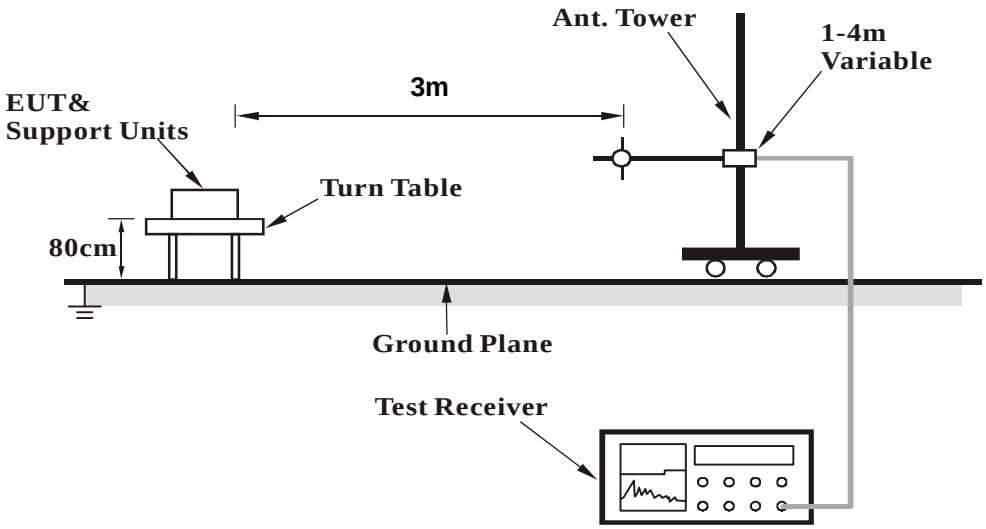
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average (Duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor (10 log(1/duty cycle)).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 DEVIATION FROM TEST STANDARD

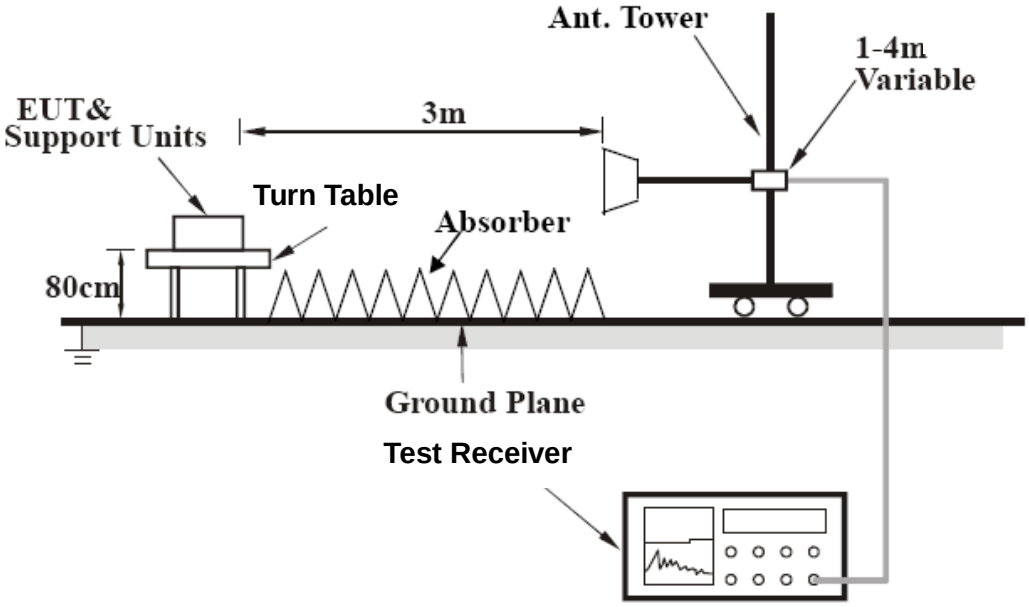
No deviation

4.2.5 TEST SETUP

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



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

802.11g, 2Tx

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	54.40	26.8 QP	40.0	-13.2	1.00 H	170	44.12	-17.29
2	300.34	40.3 QP	46.0	-5.7	1.00 H	242	57.56	-17.27
3	320.03	41.7 QP	46.0	-4.4	1.00 H	29	58.31	-16.66
4	500.01	39.0 QP	46.0	-7.0	2.00 H	59	51.32	-12.29
5	750.03	35.9 QP	46.0	-10.1	1.00 H	16	43.29	-7.38
6	960.04	37.4 QP	54.0	-16.6	1.00 H	228	41.32	-3.90
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	53.62	36.6 QP	40.0	-3.4	2.00 V	289	53.74	-17.16
2	60.02	36.4 QP	40.0	-3.6	1.00 V	237	54.57	-18.19
3	301.75	37.9 QP	46.0	-8.1	2.00 V	197	55.12	-17.23
4	320.03	40.0 QP	46.0	-6.0	2.00 V	237	56.64	-16.66
5	480.03	40.2 QP	46.0	-5.8	1.00 V	283	53.01	-12.83
6	639.98	38.3 QP	46.0	-7.7	2.00 V	251	47.81	-9.47
7	960.08	29.4 QP	54.0	-24.6	1.00 V	297	33.29	-3.90

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

ABOVE 1GHz WORST-CASE DATA

802.11b, 1Tx

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	55.7 PK	74.0	-18.3	1.26 H	114	22.17	33.53
2	2390.00	44.8 AV	54.0	-9.2	1.26 H	114	11.27	33.53
3	*2412.00	109.2 PK			1.26 H	114	75.61	33.59
4	*2412.00	106.2 AV			1.26 H	114	72.61	33.59
5	4824.00	50.9 PK	74.0	-23.1	1.63 H	75	7.72	43.18
6	4824.00	38.2 AV	54.0	-15.8	1.63 H	75	-4.98	43.18
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	54.2 PK	74.0	-19.8	1.00 V	334	20.67	33.53
2	2390.00	43.5 AV	54.0	-10.5	1.00 V	334	9.97	33.53
3	*2412.00	107.6 PK			1.00 V	334	74.01	33.59
4	*2412.00	104.4 AV			1.00 V	334	70.81	33.59
5	4824.00	51.0 PK	74.0	-23.0	1.58 V	85	7.82	43.18
6	4824.00	39.0 AV	54.0	-15.0	1.58 V	85	-4.18	43.18

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) – Pre-Amplifier 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	110.7 PK			1.24 H	97	77.03	33.67
2	*2437.00	107.7 AV			1.24 H	97	74.03	33.67
3	4874.00	52.8 PK	74.0	-21.2	1.00 H	183	9.56	43.24
4	4874.00	43.2 AV	54.0	-10.8	1.00 H	183	-0.04	43.24
5	7311.00	55.0 PK	74.0	-19.0	1.02 H	144	6.93	48.07
6	7311.00	42.0 AV	54.0	-12.0	1.02 H	144	-6.07	48.07
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	108.5 PK			1.22 V	314	74.83	33.67
2	*2437.00	105.6 AV			1.22 V	314	71.93	33.67
3	4874.00	52.6 PK	74.0	-21.4	1.90 V	221	9.36	43.24
4	4874.00	43.2 AV	54.0	-10.8	1.90 V	221	-0.04	43.24
5	7311.00	56.1 PK	74.0	-17.9	1.00 V	205	8.03	48.07
6	7311.00	43.1 AV	54.0	-10.9	1.00 V	205	-4.97	48.07

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier 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	111.5 PK			1.26 H	98	77.76	33.74
2	*2462.00	108.7 AV			1.26 H	98	74.96	33.74
3	2500.00	61.5 PK	74.0	-12.5	1.26 H	98	27.64	33.86
4	2500.00	49.5 AV	54.0	-4.5	1.26 H	98	15.64	33.86
5	4924.00	53.3 PK	74.0	-20.7	1.00 H	184	10.03	43.27
6	4924.00	46.5 AV	54.0	-7.5	1.00 H	184	3.23	43.27
7	7386.00	56.8 PK	74.0	-17.2	1.00 H	155	8.40	48.40
8	7386.00	43.9 AV	54.0	-10.1	1.00 H	155	-4.50	48.40
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	*2462.00	110.0 PK			1.22 V	319	76.26	33.74
2	*2462.00	106.9 AV			1.22 V	319	73.16	33.74
3	2500.00	60.0 PK	74.0	-14.0	1.22 V	319	26.14	33.86
4	2500.00	48.0 AV	54.0	-6.0	1.22 V	319	14.14	33.86
5	4924.00	54.6 PK	74.0	-19.4	1.00 V	119	11.33	43.27
6	4924.00	49.3 AV	54.0	-4.7	1.00 V	119	6.03	43.27
7	7386.00	56.9 PK	74.0	-17.1	1.00 V	201	8.50	48.40
8	7386.00	44.0 AV	54.0	-10.0	1.00 V	201	-4.40	48.40

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) – Pre-Amplifier 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, 1Tx

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	73.3 PK	74.0	-0.7	1.23 H	95	39.77	33.53
2	2390.00	53.3 AV	54.0	-0.7	1.23 H	95	19.77	33.53
3	*2412.00	109.0 PK			1.23 H	95	75.41	33.59
4	*2412.00	99.1 AV			1.23 H	95	65.51	33.59
5	4824.00	50.9 PK	74.0	-23.1	1.54 H	75	7.72	43.18
6	4824.00	38.1 AV	54.0	-15.9	1.54 H	75	-5.08	43.18
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	71.4 PK	74.0	-2.6	1.26 V	308	37.87	33.53
2	2390.00	51.4 AV	54.0	-2.6	1.26 V	308	17.87	33.53
3	*2412.00	106.4 PK			1.26 V	308	72.81	33.59
4	*2412.00	96.7 AV			1.26 V	308	63.11	33.59
5	4824.00	52.4 PK	74.0	-21.6	1.10 V	99	9.22	43.18
6	4824.00	38.7 AV	54.0	-15.3	1.10 V	99	-4.48	43.18

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) – Pre-Amplifier 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	111.8 PK			1.27 H	94	78.13	33.67
2	*2437.00	101.2 AV			1.27 H	94	67.53	33.67
3	4874.00	52.0 PK	74.0	-22.0	1.21 H	180	8.76	43.24
4	4874.00	38.3 AV	54.0	-15.7	1.21 H	180	-4.94	43.24
5	7311.00	56.1 PK	74.0	-17.9	1.11 H	146	8.03	48.07
6	7311.00	43.1 AV	54.0	-10.9	1.11 H	146	-4.97	48.07
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	110.0 PK			1.17 V	311	76.33	33.67
2	*2437.00	99.7 AV			1.17 V	311	66.03	33.67
3	4874.00	52.3 PK	74.0	-21.7	1.11 V	122	9.06	43.24
4	4874.00	38.5 AV	54.0	-15.5	1.11 V	122	-4.74	43.24
5	7311.00	56.3 PK	74.0	-17.7	1.21 V	211	8.23	48.07
6	7311.00	43.2 AV	54.0	-10.8	1.21 V	211	-4.87	48.07

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier 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	110.5 PK			1.26 H	87	76.76	33.74
2	*2462.00	99.6 AV			1.26 H	87	65.86	33.74
3	2483.50	72.4 PK	74.0	-1.6	1.26 H	87	38.59	33.81
4	2483.50	51.3 AV	54.0	-2.7	1.26 H	87	17.49	33.81
5	4924.00	52.1 PK	74.0	-21.9	1.24 H	136	8.83	43.27
6	4924.00	38.7 AV	54.0	-15.3	1.24 H	136	-4.57	43.27
7	7386.00	55.9 PK	74.0	-18.1	1.15 H	108	7.50	48.40
8	7386.00	43.0 AV	54.0	-11.0	1.15 H	108	-5.40	48.40
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	*2462.00	108.2 PK			1.25 V	298	74.46	33.74
2	*2462.00	97.1 AV			1.25 V	298	63.36	33.74
3	2483.50	70.4 PK	74.0	-3.6	1.25 V	298	36.59	33.81
4	2483.50	49.4 AV	54.0	-4.6	1.25 V	298	15.59	33.81
5	4924.00	51.9 PK	74.0	-22.1	1.09 V	116	8.63	43.27
6	4924.00	38.2 AV	54.0	-15.8	1.09 V	116	-5.07	43.27
7	7386.00	55.8 PK	74.0	-18.2	1.22 V	201	7.40	48.40
8	7386.00	42.6 AV	54.0	-11.4	1.22 V	201	-5.80	48.40

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) – Pre-Amplifier 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 (HT20), 1Tx

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	73.2 PK	74.0	-0.8	1.28 H	90	39.67	33.53
2	2390.00	51.4 AV	54.0	-2.6	1.28 H	90	17.87	33.53
3	*2412.00	108.9 PK			1.28 H	90	75.31	33.59
4	*2412.00	98.3 AV			1.28 H	90	64.71	33.59
5	4824.00	52.2 PK	74.0	-21.8	1.08 H	153	9.02	43.18
6	4824.00	38.4 AV	54.0	-15.6	1.08 H	153	-4.78	43.18
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	71.3 PK	74.0	-2.7	1.18 V	300	37.77	33.53
2	2390.00	49.7 AV	54.0	-4.3	1.18 V	300	16.17	33.53
3	*2412.00	106.7 PK			1.18 V	300	73.11	33.59
4	*2412.00	96.2 AV			1.18 V	300	62.61	33.59
5	4824.00	51.7 PK	74.0	-22.3	1.11 V	136	8.52	43.18
6	4824.00	38.2 AV	54.0	-15.8	1.11 V	136	-4.98	43.18

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) – Pre-Amplifier 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	55.0 PK	74.0	-19.0	1.26 H	96	21.47	33.53
2	2390.00	43.0 AV	54.0	-11.0	1.26 H	96	9.47	33.53
3	*2437.00	111.5 PK			1.26 H	96	77.83	33.67
4	*2437.00	101.1 AV			1.26 H	96	67.43	33.67
5	2500.00	57.3 PK	74.0	-16.7	1.26 H	238	23.44	33.86
6	2500.00	49.9 AV	54.0	-4.1	1.26 H	238	16.04	33.86
7	4874.00	51.1 PK	74.0	-22.9	1.14 H	193	7.86	43.24
8	4874.00	37.6 AV	54.0	-16.4	1.14 H	193	-5.64	43.24
9	7311.00	55.8 PK	74.0	-18.2	1.08 H	161	7.73	48.07
10	7311.00	42.7 AV	54.0	-11.3	1.08 H	161	-5.37	48.07
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	55.1 PK	74.0	-18.9	1.19 V	221	21.57	33.53
2	2390.00	43.4 AV	54.0	-10.6	1.19 V	221	9.87	33.53
3	*2437.00	109.1 PK			1.12 V	326	75.43	33.67
4	*2437.00	98.9 AV			1.12 V	326	65.23	33.67
5	2500.00	57.2 PK	74.0	-16.8	1.19 V	221	23.34	33.86
6	2500.00	49.6 AV	54.0	-4.4	1.19 V	221	15.74	33.86
7	4874.00	51.9 PK	74.0	-22.1	1.08 V	130	8.66	43.24
8	4874.00	38.3 AV	54.0	-15.7	1.08 V	130	-4.94	43.24
9	7311.00	55.9 PK	74.0	-18.1	1.13 V	192	7.83	48.07
10	7311.00	42.9 AV	54.0	-11.1	1.13 V	192	-5.17	48.07

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier 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	109.3 PK			1.27 H	88	75.56	33.74
2	*2462.00	99.2 AV			1.27 H	88	65.46	33.74
3	2483.50	73.1 PK	74.0	-0.9	1.27 H	88	39.29	33.81
4	2483.50	49.9 AV	54.0	-4.1	1.27 H	88	16.09	33.81
5	2500.00	61.0 PK	74.0	-13.0	1.05 H	233	27.14	33.86
6	2500.00	50.3 AV	54.0	-3.7	1.05 H	233	16.44	33.86
7	4924.00	51.4 PK	74.0	-22.6	1.12 H	185	8.13	43.27
8	4924.00	37.8 AV	54.0	-16.2	1.12 H	185	-5.47	43.27
9	7386.00	55.5 PK	74.0	-18.5	1.02 H	134	7.10	48.40
10	7386.00	42.6 AV	54.0	-11.4	1.02 H	134	-5.80	48.40
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	*2462.00	107.4 PK			1.12 V	298	73.66	33.74
2	*2462.00	97.6 AV			1.12 V	298	63.86	33.74
3	2483.50	70.7 PK	74.0	-3.3	1.12 V	298	36.89	33.81
4	2483.50	48.0 AV	54.0	-6.0	1.12 V	298	14.19	33.81
5	2500.00	59.0 PK	74.0	-15.0	1.12 V	298	25.14	33.86
6	2500.00	48.6 AV	54.0	-5.4	1.12 V	298	14.74	33.86
7	4924.00	52.5 PK	74.0	-21.5	1.11 V	127	9.23	43.27
8	4924.00	38.9 AV	54.0	-15.1	1.11 V	127	-4.37	43.27
9	7386.00	56.6 PK	74.0	-17.4	1.19 V	193	8.20	48.40
10	7386.00	43.4 AV	54.0	-10.6	1.19 V	193	-5.00	48.40

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) – Pre-Amplifier 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 (HT40), 1Tx

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	69.2 PK	74.0	-4.8	1.93 H	84	35.67	33.53
2	**2390.00**	**53.4 AV**	**54.0**	**-0.6**	**1.93 H**	**84**	**19.87**	**33.53**
3	*2422.00	106.4 PK			1.93 H	84	72.78	33.62
4	*2422.00	95.1 AV			1.93 H	84	61.48	33.62
5	2500.00	56.7 PK	74.0	-17.3	1.98 H	322	22.84	33.86
6	2500.00	51.0 AV	54.0	-3.0	1.98 H	322	17.14	33.86
7	4844.00	51.7 PK	74.0	-22.3	1.18 H	185	8.50	43.20
8	4844.00	38.1 AV	54.0	-15.9	1.18 H	185	-5.10	43.20
9	7266.00	56.4 PK	74.0	-17.6	1.10 H	158	8.49	47.91
10	7266.00	43.3 AV	54.0	-10.7	1.10 H	158	-4.61	47.91
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	67.6 PK	74.0	-6.4	1.26 V	315	34.07	33.53
2	2390.00	51.6 AV	54.0	-2.4	1.26 V	315	18.07	33.53
3	*2422.00	103.9 PK			1.26 V	315	70.28	33.62
4	*2422.00	93.0 AV			1.26 V	315	59.38	33.62
5	2500.00	54.4 PK	74.0	-19.6	1.26 V	315	20.54	33.86
6	2500.00	49.1 AV	54.0	-4.9	1.26 V	315	15.24	33.86
7	4844.00	52.2 PK	74.0	-21.8	1.07 V	112	9.00	43.20
8	4844.00	38.7 AV	54.0	-15.3	1.07 V	112	-4.50	43.20
9	7266.00	56.6 PK	74.0	-17.4	1.23 V	209	8.69	47.91
10	7266.00	43.3 AV	54.0	-10.7	1.23 V	209	-4.61	47.91

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) – Pre-Amplifier 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	66.0 PK	74.0	-8.0	1.92 H	99	32.47	33.53
2	2390.00	51.2 AV	54.0	-2.8	1.92 H	99	17.67	33.53
3	*2437.00	108.1 PK			1.92 H	99	74.43	33.67
4	*2437.00	97.7 AV			1.92 H	99	64.03	33.67
5	**2483.50**	**73.4 PK**	**74.0**	**-0.6**	**1.92 H**	**99**	**39.59**	**33.81**
6	2483.50	53.2 AV	54.0	-0.8	1.92 H	99	19.39	33.81
7	4874.00	51.2 PK	74.0	-22.8	1.26 H	185	7.96	43.24
8	4874.00	37.3 AV	54.0	-16.7	1.26 H	185	-5.94	43.24
9	7311.00	55.1 PK	74.0	-18.9	1.06 H	154	7.03	48.07
10	7311.00	42.2 AV	54.0	-11.8	1.06 H	154	-5.87	48.07

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	63.8 PK	74.0	-10.2	1.22 V	329	30.27	33.53
2	2390.00	49.3 AV	54.0	-4.7	1.22 V	329	15.77	33.53
3	*2437.00	105.6 PK			1.22 V	329	71.93	33.67
4	*2437.00	95.1 AV			1.22 V	329	61.43	33.67
5	2483.50	70.6 PK	74.0	-3.4	1.22 V	329	36.79	33.81
6	2483.50	50.3 AV	54.0	-3.7	1.22 V	329	16.49	33.81
7	4874.00	52.3 PK	74.0	-21.7	1.12 V	123	9.06	43.24
8	4874.00	38.8 AV	54.0	-15.2	1.12 V	123	-4.44	43.24
9	7311.00	56.0 PK	74.0	-18.0	1.12 V	197	7.93	48.07
10	7311.00	42.8 AV	54.0	-11.2	1.12 V	197	-5.27	48.07

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier 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	107.3 PK			1.92 H	89	73.59	33.71
2	*2452.00	96.1 AV			1.92 H	89	62.39	33.71
3	2483.50	73.3 PK	74.0	-0.7	1.92 H	89	39.49	33.81
4	2483.50	50.9 AV	54.0	-3.1	1.92 H	89	17.09	33.81
5	2500.00	63.6 PK	74.0	-10.4	2.00 H	239	29.74	33.86
6	2500.00	51.2 AV	54.0	-2.8	2.00 H	239	17.34	33.86
7	4904.00	51.6 PK	74.0	-22.4	1.15 H	188	8.33	43.27
8	4904.00	38.0 AV	54.0	-16.0	1.15 H	188	-5.27	43.27
9	7356.00	56.1 PK	74.0	-17.9	1.05 H	153	7.83	48.27
10	7356.00	43.1 AV	54.0	-10.9	1.05 H	153	-5.17	48.27
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	105.5 PK			1.19 V	322	71.79	33.71
2	*2452.00	94.3 AV			1.19 V	322	60.59	33.71
3	2483.50	70.3 PK	74.0	-3.7	1.19 V	322	36.49	33.81
4	2483.50	48.1 AV	54.0	-5.9	1.19 V	322	14.29	33.81
5	2500.00	61.6 PK	74.0	-12.4	1.19 V	322	27.74	33.86
6	2500.00	49.4 AV	54.0	-4.6	1.19 V	322	15.54	33.86
7	4904.00	51.6 PK	74.0	-22.4	1.04 V	127	8.33	43.27
8	4904.00	38.1 AV	54.0	-15.9	1.04 V	127	-5.17	43.27
9	7356.00	56.4 PK	74.0	-17.6	1.21 V	227	8.13	48.27
10	7356.00	43.6 AV	54.0	-10.4	1.21 V	227	-4.67	48.27

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) – Pre-Amplifier 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, 2Tx

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	71.2 PK	74.0	-2.8	1.29 H	109	37.67	33.53
2	**2390.00**	**53.4 AV**	**54.0**	**-0.6**	**1.29 H**	**109**	**19.87**	**33.53**
3	*2412.00	112.9 PK			1.29 H	109	79.31	33.59
4	*2412.00	103.8 AV			1.29 H	109	70.21	33.59
5	4824.00	52.4 PK	74.0	-21.6	1.20 H	163	9.22	43.18
6	4824.00	38.6 AV	54.0	-15.4	1.20 H	163	-4.58	43.18
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	70.1 PK	74.0	-3.9	1.01 V	334	36.57	33.53
2	2390.00	51.3 AV	54.0	-2.7	1.01 V	334	17.77	33.53
3	*2412.00	112.8 PK			1.01 V	334	79.21	33.59
4	*2412.00	102.2 AV			1.01 V	334	68.61	33.59
5	4824.00	51.2 PK	74.0	-22.8	1.00 V	74	8.02	43.18
6	4824.00	37.8 AV	54.0	-16.2	1.00 V	74	-5.38	43.18

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) – Pre-Amplifier 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	115.9 PK			1.25 H	112	82.23	33.67
2	*2437.00	105.7 AV			1.25 H	112	72.03	33.67
3	2500.00	60.9 PK	74.0	-13.1	1.25 H	112	27.04	33.86
4	2500.00	50.6 AV	54.0	-3.4	1.25 H	112	16.74	33.86
5	4874.00	52.1 PK	74.0	-21.9	1.24 H	159	8.86	43.24
6	4874.00	38.3 AV	54.0	-15.7	1.24 H	159	-4.94	43.24
7	7311.00	55.6 PK	74.0	-18.4	1.14 H	136	7.53	48.07
8	7311.00	43.0 AV	54.0	-11.0	1.14 H	136	-5.07	48.07
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	113.5 PK			1.05 V	334	79.83	33.67
2	*2437.00	103.3 AV			1.05 V	334	69.63	33.67
3	2500.00	59.3 PK	74.0	-14.7	1.05 V	334	25.44	33.86
4	2500.00	49.0 AV	54.0	-5.0	1.05 V	334	15.14	33.86
5	4874.00	52.1 PK	74.0	-21.9	1.04 V	79	8.86	43.24
6	4874.00	38.3 AV	54.0	-15.7	1.04 V	79	-4.94	43.24
7	7311.00	56.0 PK	74.0	-18.0	1.18 V	197	7.93	48.07
8	7311.00	42.6 AV	54.0	-11.4	1.18 V	197	-5.47	48.07

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier 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	114.0 PK			1.26 H	111	80.26	33.74
2	*2462.00	103.6 AV			1.26 H	111	69.86	33.74
3	2483.50	73.3 PK	74.0	-0.7	1.26 H	111	39.49	33.81
4	2483.50	47.8 AV	54.0	-6.2	1.26 H	111	13.99	33.81
5	2500.00	65.2 PK	74.0	-8.8	1.20 H	113	31.34	33.86
6	2500.00	51.0 AV	54.0	-3.0	1.20 H	113	17.14	33.86
7	4924.00	51.8 PK	74.0	-22.2	1.19 H	159	8.53	43.27
8	4924.00	38.0 AV	54.0	-16.0	1.19 H	159	-5.27	43.27
9	7386.00	54.9 PK	74.0	-19.1	1.07 H	117	6.50	48.40
10	7386.00	42.8 AV	54.0	-11.2	1.07 H	117	-5.60	48.40
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	*2462.00	111.6 PK			1.01 V	310	77.86	33.74
2	*2462.00	101.0 AV			1.01 V	310	67.26	33.74
3	2483.50	71.1 PK	74.0	-2.9	1.01 V	310	37.29	33.81
4	2483.50	45.4 AV	54.0	-8.6	1.01 V	310	11.59	33.81
5	2500.00	62.8 PK	74.0	-11.2	1.01 V	310	28.94	33.86
6	2500.00	48.6 AV	54.0	-5.4	1.01 V	310	14.74	33.86
7	4924.00	52.2 PK	74.0	-21.8	1.06 V	75	8.93	43.27
8	4924.00	38.2 AV	54.0	-15.8	1.06 V	75	-5.07	43.27
9	7386.00	55.3 PK	74.0	-18.7	1.07 V	193	6.90	48.40
10	7386.00	42.1 AV	54.0	-11.9	1.07 V	193	-6.30	48.40

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) – Pre-Amplifier 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 (HT20), 2Tx

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	73.1 PK	74.0	-0.9	1.28 H	113	39.57	33.53
2	2390.00	51.5 AV	54.0	-2.5	1.28 H	113	17.97	33.53
3	*2412.00	111.3 PK			1.28 H	113	77.71	33.59
4	*2412.00	101.9 AV			1.28 H	113	68.31	33.59
5	2500.00	55.9 PK	74.0	-18.1	1.27 H	240	22.04	33.86
6	2500.00	49.5 AV	54.0	-4.5	1.27 H	240	15.64	33.86
7	4824.00	52.5 PK	74.0	-21.5	1.28 H	144	9.32	43.18
8	4824.00	38.5 AV	54.0	-15.5	1.28 H	144	-4.68	43.18
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	71.2 PK	74.0	-2.8	1.06 V	329	37.67	33.53
2	2390.00	49.6 AV	54.0	-4.4	1.06 V	329	16.07	33.53
3	*2412.00	109.1 PK			1.06 V	329	75.51	33.59
4	*2412.00	99.9 AV			1.06 V	329	66.31	33.59
5	2500.00	53.0 PK	74.0	-21.0	1.06 V	329	19.14	33.86
6	2500.00	47.1 AV	54.0	-6.9	1.06 V	329	13.24	33.86
7	4824.00	51.7 PK	74.0	-22.3	1.11 V	90	8.52	43.18
8	4824.00	38.3 AV	54.0	-15.7	1.11 V	90	-4.88	43.18

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) – Pre-Amplifier 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	114.6 PK			1.26 H	110	80.93	33.67
2	*2437.00	105.1 AV			1.26 H	110	71.43	33.67
3	2500.00	61.2 PK	74.0	-12.8	1.21 H	112	27.34	33.86
4	2500.00	51.4 AV	54.0	-2.6	1.21 H	112	17.54	33.86
5	4874.00	52.1 PK	74.0	-21.9	1.20 H	146	8.86	43.24
6	4874.00	38.2 AV	54.0	-15.8	1.20 H	146	-5.04	43.24
7	7311.00	54.5 PK	74.0	-19.5	1.18 H	144	6.43	48.07
8	7311.00	42.0 AV	54.0	-12.0	1.18 H	144	-6.07	48.07
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	112.9 PK			1.03 V	319	79.23	33.67
2	*2437.00	103.3 AV			1.03 V	319	69.63	33.67
3	2500.00	59.1 PK	74.0	-14.9	1.03 V	319	25.24	33.86
4	2500.00	49.5 AV	54.0	-4.5	1.03 V	319	15.64	33.86
5	4874.00	51.9 PK	74.0	-22.1	1.07 V	33	8.66	43.24
6	4874.00	37.7 AV	54.0	-16.3	1.07 V	33	-5.54	43.24
7	7311.00	54.3 PK	74.0	-19.7	1.07 V	192	6.23	48.07
8	7311.00	41.7 AV	54.0	-12.3	1.07 V	192	-6.37	48.07

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier 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	112.0 PK			1.29 H	112	78.26	33.74
2	*2462.00	101.6 AV			1.29 H	112	67.86	33.74
3	2483.50	73.2 PK	74.0	-0.8	1.29 H	112	39.39	33.81
4	2483.50	48.5 AV	54.0	-5.5	1.29 H	112	14.69	33.81
5	2500.00	56.0 PK	74.0	-18.0	1.24 H	237	22.14	33.86
6	2500.00	50.1 AV	54.0	-3.9	1.24 H	237	16.24	33.86
7	4924.00	51.8 PK	74.0	-22.2	1.20 H	173	8.53	43.27
8	4924.00	38.0 AV	54.0	-16.0	1.20 H	173	-5.27	43.27
9	7386.00	55.3 PK	74.0	-18.7	1.04 H	132	6.90	48.40
10	7386.00	42.6 AV	54.0	-11.4	1.04 H	132	-5.80	48.40
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	*2462.00	109.4 PK			1.01 V	325	75.66	33.74
2	*2462.00	99.2 AV			1.01 V	325	65.46	33.74
3	2483.50	71.5 PK	74.0	-2.5	1.01 V	325	37.69	33.81
4	2483.50	46.7 AV	54.0	-7.3	1.01 V	325	12.89	33.81
5	2500.00	54.1 PK	74.0	-19.9	1.01 V	325	20.24	33.86
6	2500.00	48.0 AV	54.0	-6.0	1.01 V	325	14.14	33.86
7	4924.00	52.3 PK	74.0	-21.7	1.08 V	67	9.03	43.27
8	4924.00	38.3 AV	54.0	-15.7	1.08 V	67	-4.97	43.27
9	7386.00	55.2 PK	74.0	-18.8	1.00 V	186	6.80	48.40
10	7386.00	41.7 AV	54.0	-12.3	1.00 V	186	-6.70	48.40

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) – Pre-Amplifier 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 (HT40), 2Tx

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	68.4 PK	74.0	-5.6	1.30 H	112	34.87	33.53
2	**2390.00**	**53.4 AV**	**54.0**	**-0.6**	**1.30 H**	**112**	**19.87**	**33.53**
3	*2422.00	107.0 PK			1.30 H	112	73.38	33.62
4	*2422.00	97.0 AV			1.30 H	112	63.38	33.62
5	2500.00	57.6 PK	74.0	-16.4	1.16 H	106	23.74	33.86
6	2500.00	49.5 AV	54.0	-4.5	1.16 H	106	15.64	33.86
7	4844.00	52.3 PK	74.0	-21.7	1.18 H	145	9.10	43.20
8	4844.00	38.8 AV	54.0	-15.2	1.18 H	145	-4.40	43.20
9	7266.00	54.5 PK	74.0	-19.5	1.01 H	110	6.59	47.91
10	7266.00	42.1 AV	54.0	-11.9	1.01 H	110	-5.81	47.91
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	66.7 PK	74.0	-7.3	1.07 V	326	33.17	33.53
2	2390.00	51.5 AV	54.0	-2.5	1.07 V	326	17.97	33.53
3	*2422.00	104.3 PK			1.07 V	326	70.68	33.62
4	*2422.00	94.2 AV			1.07 V	326	60.58	33.62
5	2500.00	55.7 PK	74.0	-18.3	1.07 V	326	21.84	33.86
6	2500.00	47.5 AV	54.0	-6.5	1.07 V	326	13.64	33.86
7	4844.00	52.2 PK	74.0	-21.8	1.00 V	56	9.00	43.20
8	4844.00	38.5 AV	54.0	-15.5	1.00 V	56	-4.70	43.20
9	7266.00	54.9 PK	74.0	-19.1	1.07 V	165	6.99	47.91
10	7266.00	41.6 AV	54.0	-12.4	1.07 V	165	-6.31	47.91

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) – Pre-Amplifier 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	67.3 PK	74.0	-6.7	1.26 H	117	33.77	33.53
2	2390.00	51.3 AV	54.0	-2.7	1.26 H	117	17.77	33.53
3	*2437.00	110.6 PK			1.26 H	117	76.93	33.67
4	*2437.00	100.6 AV			1.26 H	117	66.93	33.67
5	**2483.50**	**73.4 PK**	**74.0**	**-0.6**	**1.26 H**	**117**	**39.59**	**33.81**
6	2483.50	52.6 AV	54.0	-1.4	1.26 H	117	18.79	33.81
7	4874.00	51.7 PK	74.0	-22.3	1.08 H	169	8.46	43.24
8	4874.00	38.4 AV	54.0	-15.6	1.08 H	169	-4.84	43.24
9	7311.00	54.9 PK	74.0	-19.1	1.18 H	128	6.83	48.07
10	7311.00	42.3 AV	54.0	-11.7	1.18 H	128	-5.77	48.07
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.1 PK	74.0	-8.9	1.08 V	332	31.57	33.53
2	2390.00	49.3 AV	54.0	-4.7	1.08 V	332	15.77	33.53
3	*2437.00	108.1 PK			1.08 V	332	74.43	33.67
4	*2437.00	98.1 AV			1.08 V	332	64.43	33.67
5	2483.50	71.1 PK	74.0	-2.9	1.08 V	332	37.29	33.81
6	2483.50	50.2 AV	54.0	-3.8	1.08 V	332	16.39	33.81
7	4874.00	52.6 PK	74.0	-21.4	1.10 V	75	9.36	43.24
8	4874.00	38.5 AV	54.0	-15.5	1.10 V	75	-4.74	43.24
9	7311.00	54.8 PK	74.0	-19.2	1.11 V	183	6.73	48.07
10	7311.00	41.7 AV	54.0	-12.3	1.11 V	183	-6.37	48.07

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier 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 radiated frequency is out of the restricted band.

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	108.0 PK			1.28 H	117	74.29	33.71
2	*2452.00	98.6 AV			1.28 H	117	64.89	33.71
3	**2483.50**	**73.4 PK**	**74.0**	**-0.6**	**1.28 H**	**117**	**39.59**	**33.81**
4	2483.50	51.2 AV	54.0	-2.8	1.28 H	117	17.39	33.81
5	4904.00	50.8 PK	74.0	-23.2	1.11 H	175	7.53	43.27
6	4904.00	37.0 AV	54.0	-17.0	1.11 H	175	-6.27	43.27
7	7356.00	55.2 PK	74.0	-18.8	1.20 H	149	6.93	48.27
8	7356.00	42.6 AV	54.0	-11.4	1.20 H	149	-5.67	48.27
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	105.3 PK			1.04 V	330	71.59	33.71
2	*2452.00	96.3 AV			1.04 V	330	62.59	33.71
3	2483.50	71.6 PK	74.0	-2.4	1.04 V	330	37.79	33.81
4	2483.50	49.4 AV	54.0	-4.6	1.04 V	330	15.59	33.81
5	4904.00	52.1 PK	74.0	-21.9	1.01 V	89	8.83	43.27
6	4904.00	38.1 AV	54.0	-15.9	1.01 V	89	-5.17	43.27
7	7356.00	55.6 PK	74.0	-18.4	1.11 V	203	7.33	48.27
8	7356.00	42.3 AV	54.0	-11.7	1.11 V	203	-5.97	48.27

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) – Pre-Amplifier 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
Spectrum Analyzer R&S	FSP40	100036	Jan. 21, 2014	Jan. 20, 2015

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 : Feb. 26, 2014

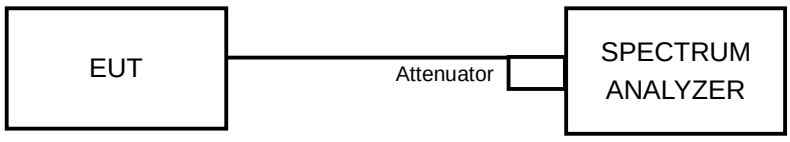
4.3.3 TEST PROCEDURE

1. Set resolution bandwidth (RBW) = 100kHz
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, 1Tx

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	7.69	0.5	PASS
6	2437	8.09	0.5	PASS
11	2462	8.08	0.5	PASS

802.11g, 1Tx

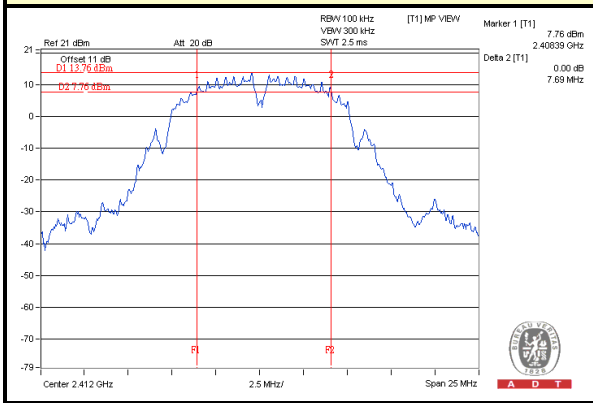
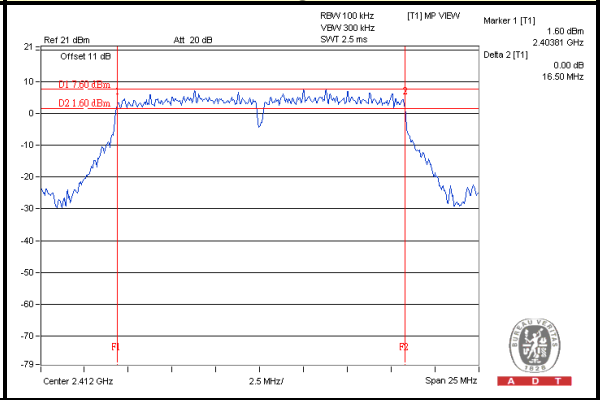
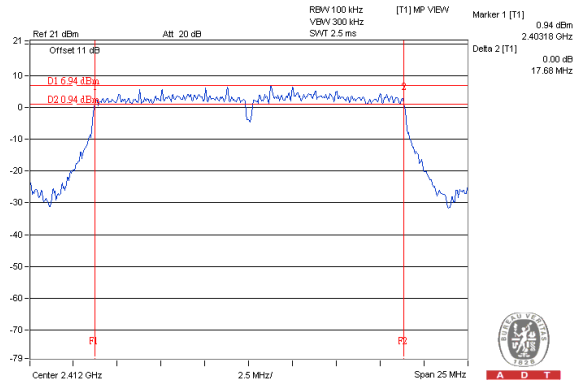
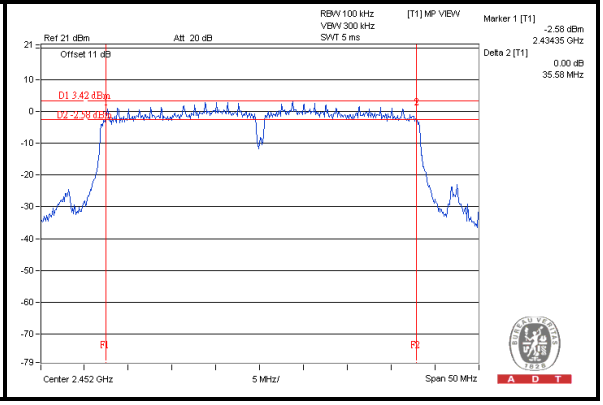
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.50	0.5	PASS
6	2437	16.52	0.5	PASS
11	2462	16.55	0.5	PASS

802.11n (HT20), 1Tx

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.68	0.5	PASS
6	2437	17.68	0.5	PASS
11	2462	17.72	0.5	PASS

802.11n (HT40), 1Tx

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
3	2422	35.80	0.5	PASS
6	2437	35.80	0.5	PASS
9	2452	35.58	0.5	PASS

SPECTRUM PLOT OF WORST VALUE	
802.11b / CH1	**802.11g / CH1**
	
802.11n (HT20) / CH11	**802.11n (HT40) / CH9**
	

802.11g, 2Tx

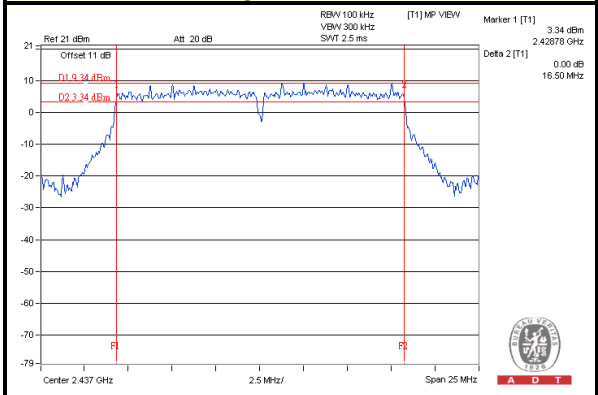
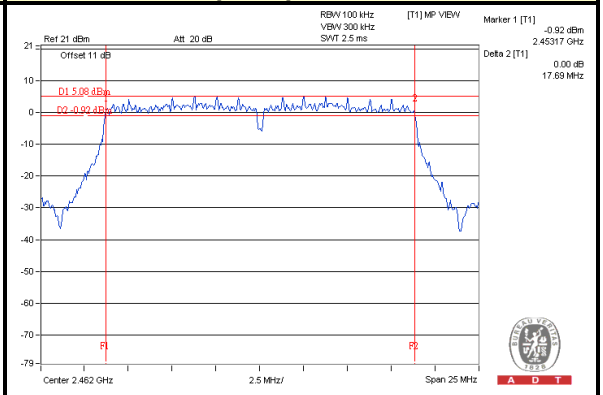
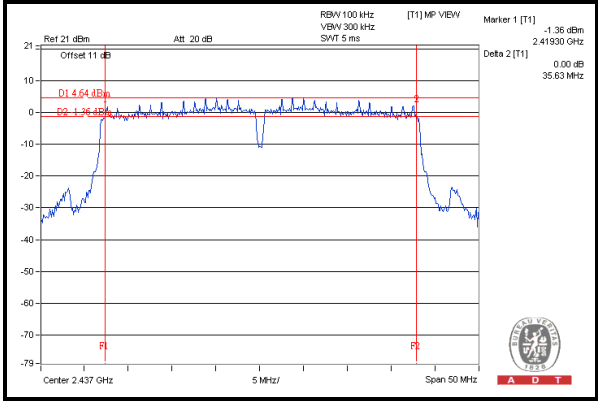
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 2	CHAIN 1		
1	2412	16.51	16.53	0.5	PASS
6	2437	16.50	16.51	0.5	PASS
11	2462	16.52	16.53	0.5	PASS

802.11n (HT20), 2Tx

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 2	CHAIN 1		
1	2412	17.74	17.71	0.5	PASS
6	2437	17.72	17.70	0.5	PASS
11	2462	17.69	17.71	0.5	PASS

802.11n (HT40), 2Tx

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 2	CHAIN 1		
3	2422	36.13	36.04	0.5	PASS
6	2437	35.63	35.90	0.5	PASS
9	2452	35.69	36.41	0.5	PASS

SPECTRUM PLOT OF WORST VALUE	
802.11g_Chain 2 / CH6	**802.11n (HT20)_Chain 2 / CH11**
	
802.11n (HT40)_Chain 2 / CH6	
	

4.4 CONDUCTED OUTPUT POWER MEASUREMENT

4.4.1 LIMITS OF MAXIMUM OUTPUT POWER MEASUREMENT

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

Per KDB 662911 D01 Multiple Transmitter Output Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;

Array Gain = 5 log(NANT/NSS) dB or 3 dB, whichever is less for 20-MHz channel widths with NANT ≥ 5.

For power measurements on all other devices: Array Gain = 10 log(NANT/NSS) dB.

4.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Power meter Anritsu	ML2495A	0824006	May 20, 2013	May 19, 2014
Power sensor Anritsu	MA2411B	0738172	May 20, 2013	May 19, 2014

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 : Feb. 26, 2014

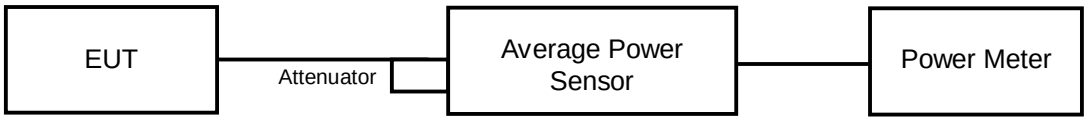
4.4.3 TEST PROCEDURES

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

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, 1Tx

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	195.434	22.91	30	PASS
6	2437	208.449	23.19	30	PASS
11	2462	211.836	23.26	30	PASS

802.11g, 1Tx

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	119.674	20.78	30	PASS
6	2437	171.396	22.34	30	PASS
11	2462	89.125	19.50	30	PASS

802.11n (HT20), 1Tx

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	93.972	19.73	30	PASS
6	2437	166.725	22.22	30	PASS
11	2462	82.224	19.15	30	PASS

802.11n (HT40), 1Tx

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	LIMIT (dBm)	PASS/FAIL
3	2422	65.615	18.17	30	PASS
6	2437	118.577	20.74	30	PASS
9	2452	70.958	18.51	30	PASS

802.11g, 2Tx

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 2	CHAIN 1				
1	2412	20.61	19.97	214.392	23.31	30	PASS
6	2437	22.29	22.20	335.393	25.26	30	PASS
11	2462	18.04	18.20	129.749	21.13	30	PASS

802.11n (HT20), 2Tx

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 2	CHAIN 1				
1	2412	19.39	18.74	161.713	22.09	30	PASS
6	2437	22.16	22.15	328.496	25.17	30	PASS
11	2462	18.10	18.15	129.878	21.14	30	PASS

802.11n (HT40), 2Tx

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 2	CHAIN 1				
3	2422	16.55	17.49	101.291	20.06	30	PASS
6	2437	19.76	20.23	200.063	23.01	30	PASS
9	2452	17.62	18.18	123.576	20.92	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
Spectrum Analyzer R&S	FSP 40	100036	Jan. 21, 2014	Jan. 20, 2015

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 : Feb. 26, 2014

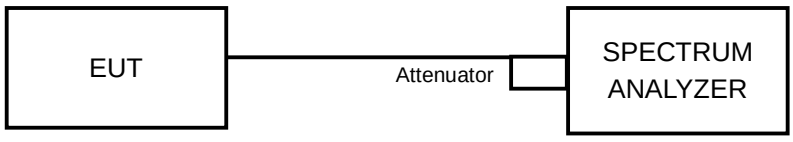
4.5.3 TEST PROCEDURE

1. Set the RBW = 30 kHz, VBW =100 kHz, Detector = power averaging (RMS).
2. Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW
3. Sweep time = auto couple,
4. Employ trace averaging (RMS) mode over a minimum of 100 traces.
5. Use the peak marker function to determine the maximum amplitude level.

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, 1Tx

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	LIMIT (dBm)	PASS /FAIL
1	2412	-6.27	8	PASS
6	2437	-6.14	8	PASS
11	2462	-6.12	8	PASS

802.11g, 1Tx

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	LIMIT (dBm)	PASS /FAIL
1	2412	-11.08	8	PASS
6	2437	-10.00	8	PASS
11	2462	-12.70	8	PASS

802.11n(HT20), 1Tx

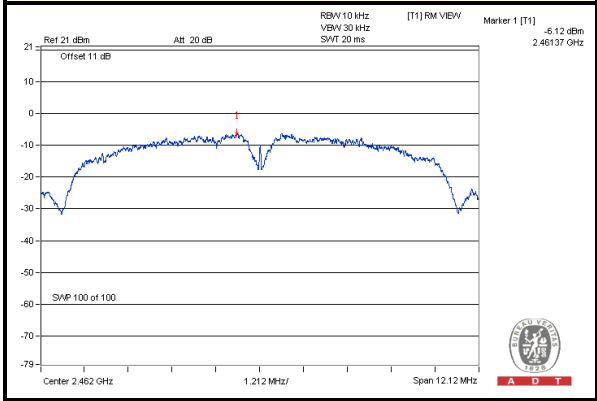
CHANNEL	FREQUENCY (MHz)	PSD (dBm)	LIMIT (dBm)	PASS /FAIL
1	2412	-12.62	8	PASS
6	2437	-9.93	8	PASS
11	2462	-13.36	8	PASS

802.11n(HT40), 1Tx

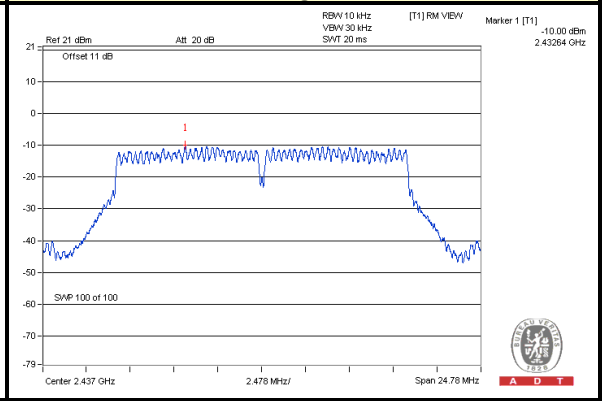
CHANNEL	FREQUENCY (MHz)	PSD (dBm)	LIMIT (dBm)	PASS /FAIL
3	2422	-17.83	8	PASS
6	2437	-14.90	8	PASS
9	2452	-17.30	8	PASS

SPECTRUM PLOT OF WORST VALUE

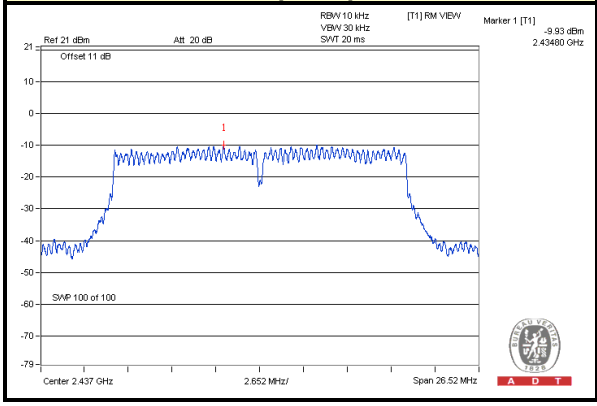
802.11b / CH11



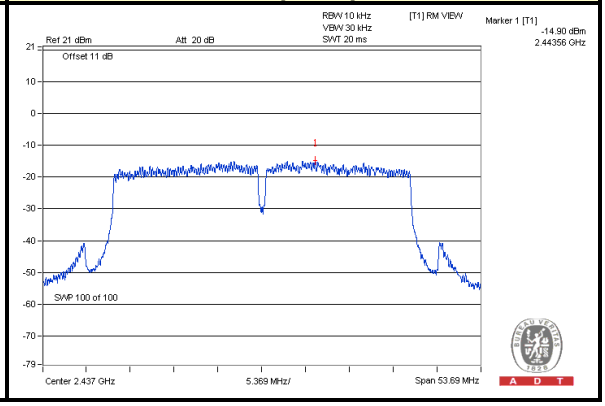
802.11g / CH6



802.11n (HT20) / CH6



802.11n (HT40) / CH6



802.11g, 2Tx

TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm)	10 log (N=2) dB	TOTAL PSD (dBm)	LIMIT (dBm)	PASS /FAIL
2	1	2412	-11.93	3.01	-8.92	8	PASS
	6	2437	-9.93	3.01	-6.92	8	PASS
	11	2462	-14.00	3.01	-10.99	8	PASS
1	1	2412	-12.25	3.01	-9.24	8	PASS
	6	2437	-10.07	3.01	-7.06	8	PASS
	11	2462	-13.85	3.01	-10.84	8	PASS

NOTE: 1. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 5.22dBi < 6dBi , so the power density limit shall not be reduced.

802.11n(HT20), 2Tx

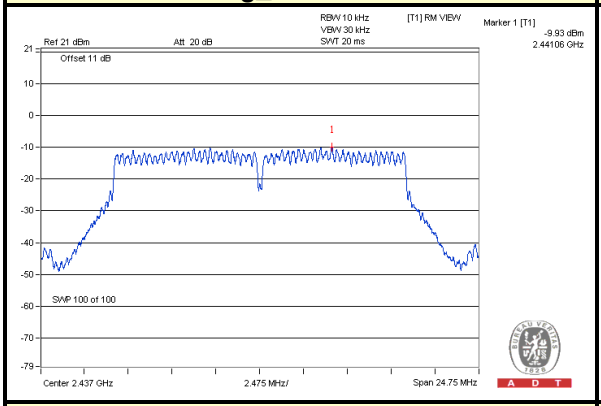
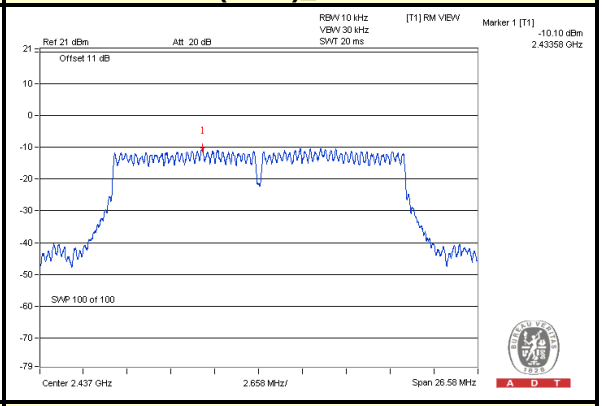
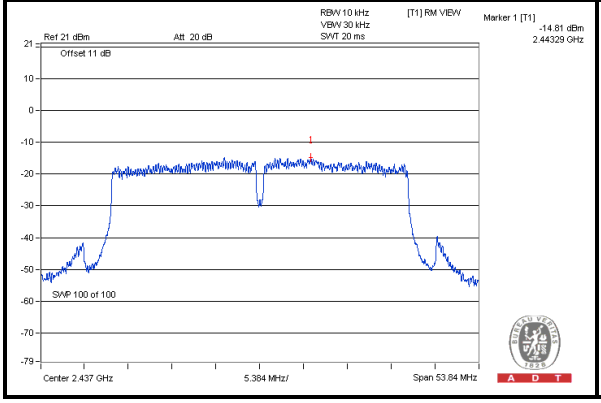
TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm)	10 log (N=2) dB	TOTAL PSD (dBm)	LIMIT (dBm)	PASS /FAIL
2	1	2412	-13.05	3.01	-10.04	8	PASS
	6	2437	-10.10	3.01	-7.09	8	PASS
	11	2462	-14.33	3.01	-11.32	8	PASS
1	1	2412	-13.62	3.01	-10.61	8	PASS
	6	2437	-10.40	3.01	-7.39	8	PASS
	11	2462	-14.27	3.01	-11.26	8	PASS

NOTE: 1. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 5.22dBi < 6dBi , so the power density limit shall not be reduced.

802.11n(HT40), 2Tx

TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm)	10 log (N=2) dB	TOTAL PSD (dBm)	LIMIT (dBm)	PASS /FAIL
2	3	2422	-19.22	3.01	-16.21	8	PASS
	6	2437	-16.02	3.01	-13.01	8	PASS
	9	2452	-17.48	3.01	-14.47	8	PASS
1	3	2422	-18.19	3.01	-15.18	8	PASS
	6	2437	-14.81	3.01	-11.80	8	PASS
	9	2452	-17.67	3.01	-14.66	8	PASS

NOTE: 1. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 5.22dBi < 6dBi , so the power density limit shall not be reduced.

SPECTRUM PLOT OF WORST VALUE	
802.11g_Chain 2 / CH6	**802.11n (HT20)_Chain 2 / CH6**
	
802.11n (HT40)_Chain 1 / CH6	
	

4.6 CONDUCTED OUT-BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT

Below 30dB 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
Spectrum Analyzer R&S	FSP 40	100036	Jan. 21, 2014	Jan. 20, 2015

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 : Feb. 26, 2014

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.

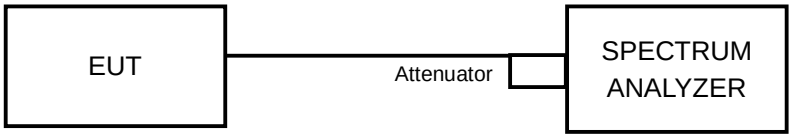
Measurement Procedure –Unwanted Emission Level

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

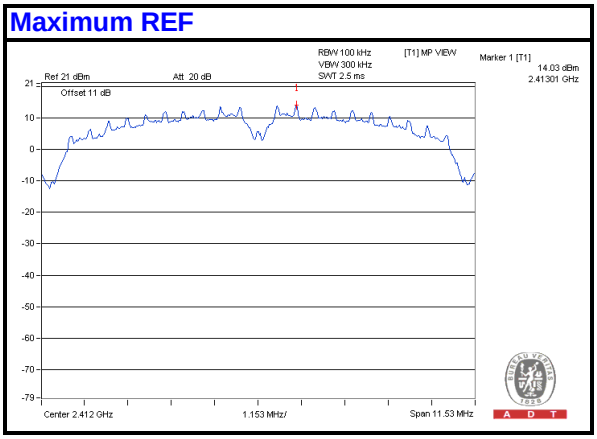
Same as Item 4.3.6

4.6.7 TEST RESULTS

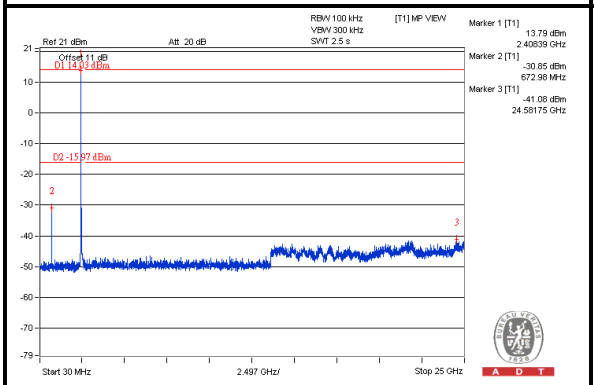
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 30dB offset below D1. It shows compliance with the requirement.

802.11b, 1Tx:

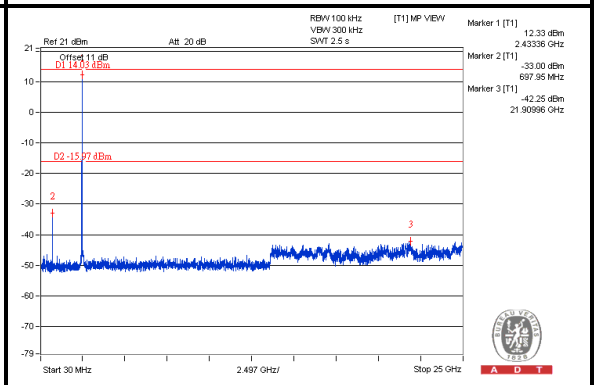
Maximum REF



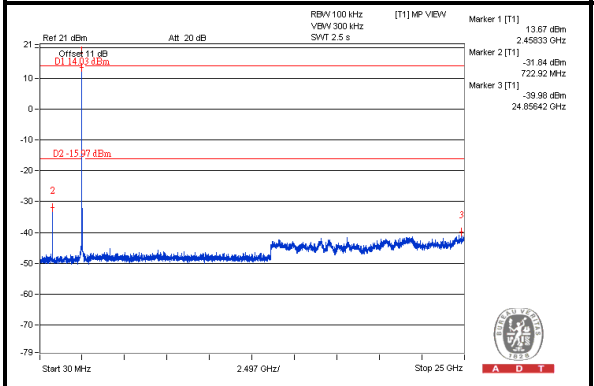
CH 1



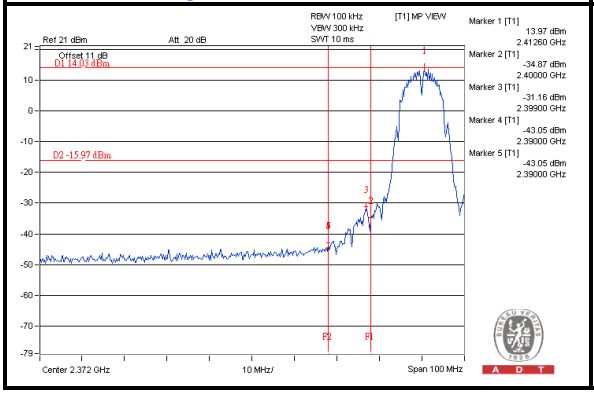
CH 6



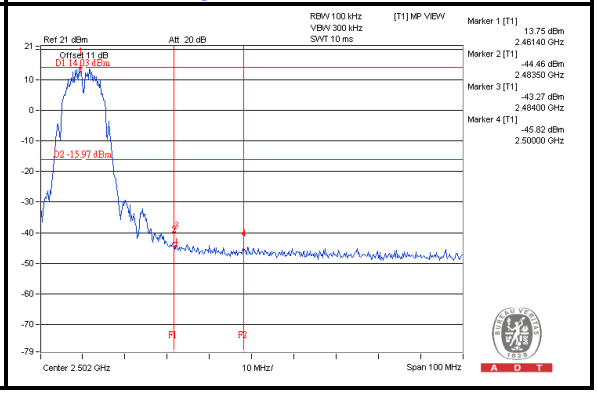
CH 11



CH 1 Band edge

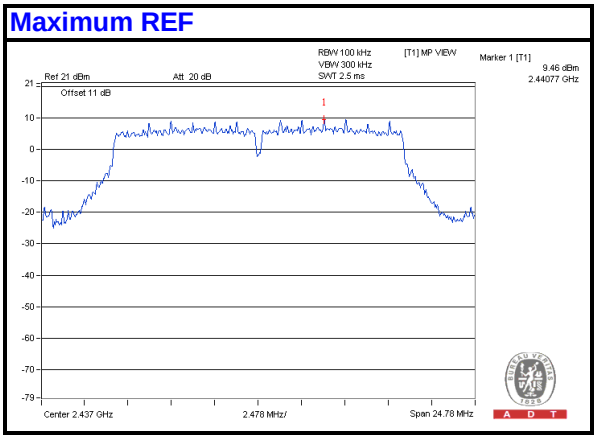


CH 11 Band edge

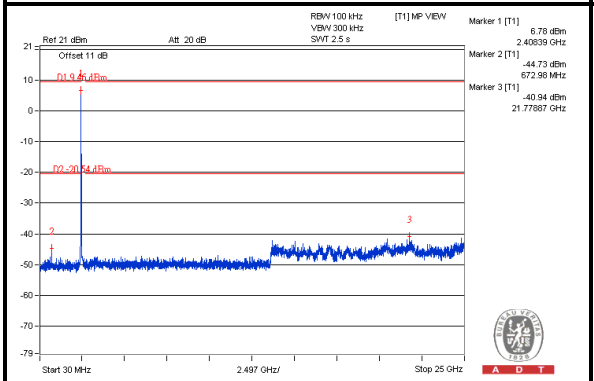


802.11g, 1Tx:

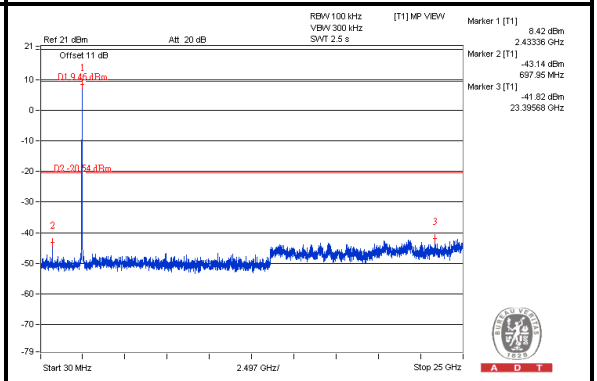
Maximum REF



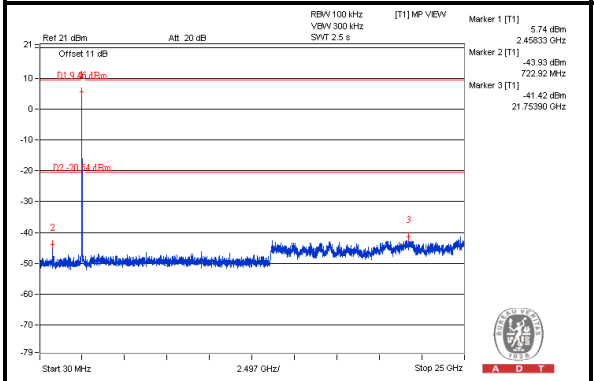
CH 1



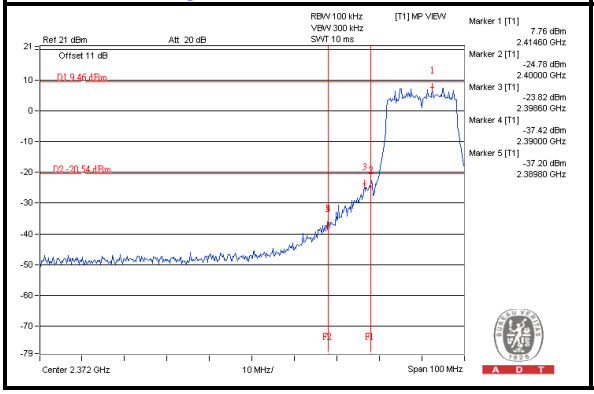
CH 6



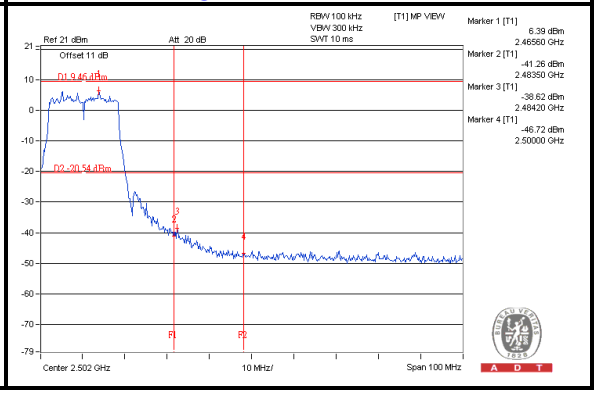
CH 11



CH 1 Band edge

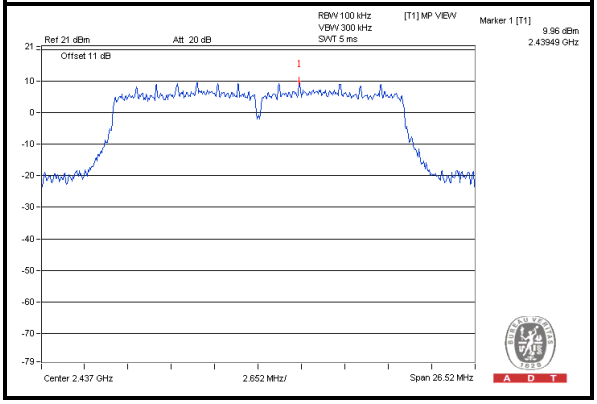


CH 11 Band edge

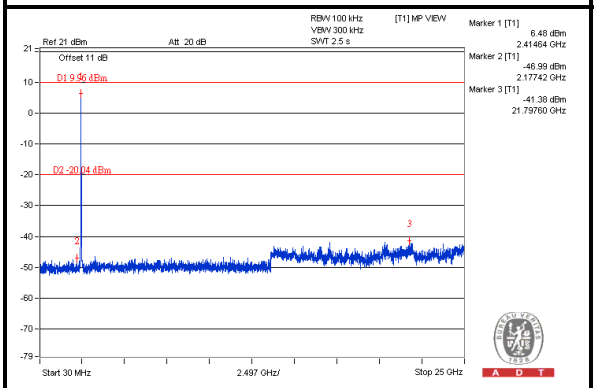


802.11n(HT20), 1Tx:

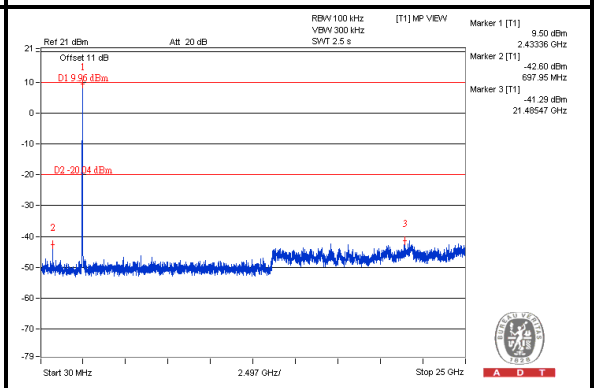
Maximum REF



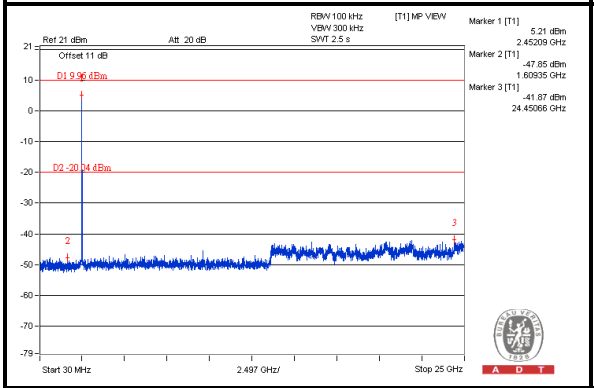
CH 1



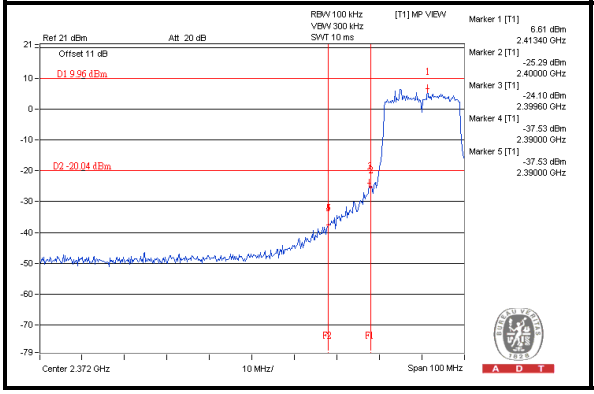
CH 6



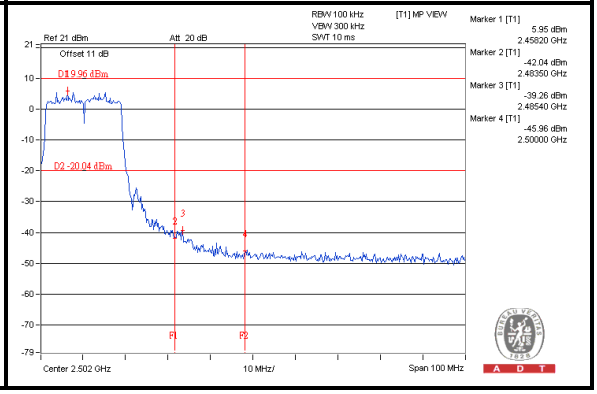
CH 11



CH 1 Band edge

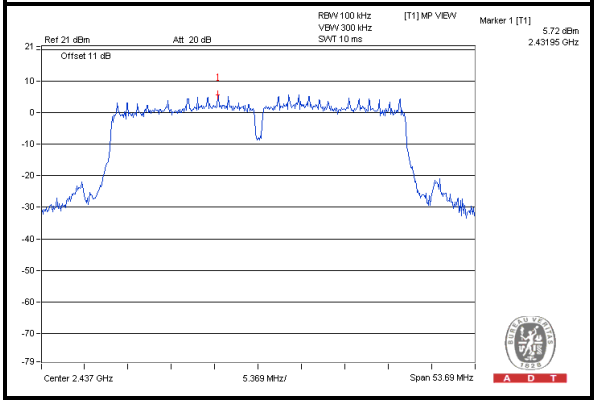


CH 11 Band edge

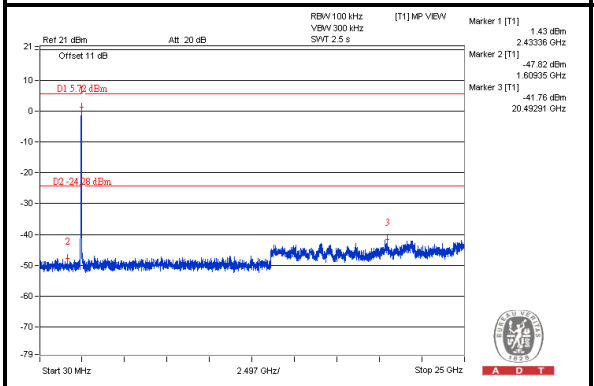


802.11n(HT40), 1Tx:

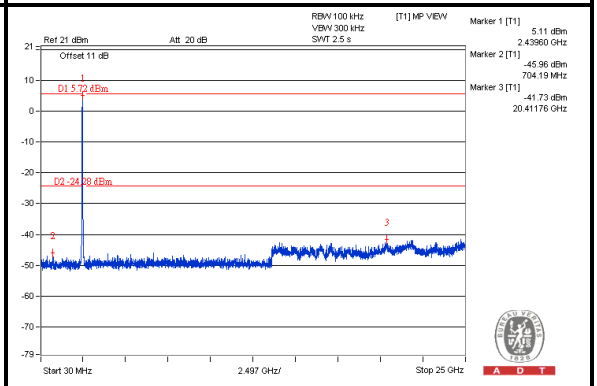
Maximum REF



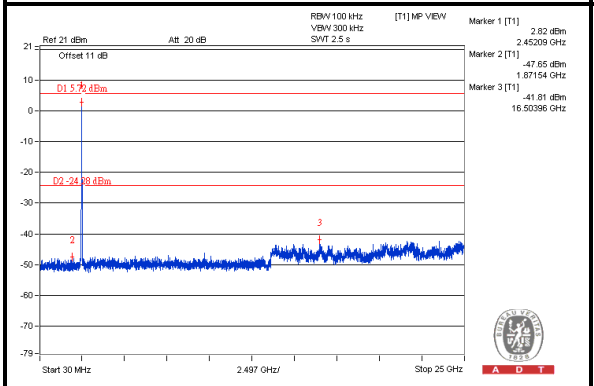
CH 3



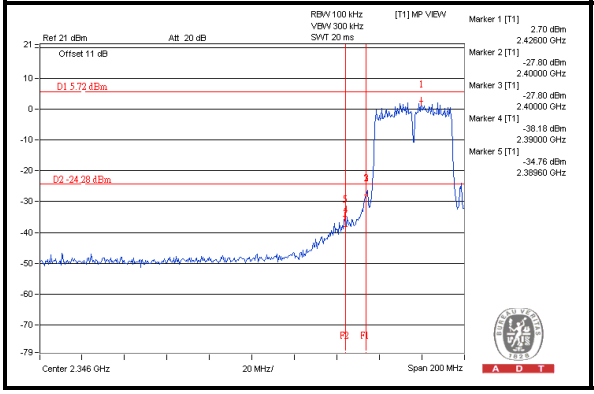
CH 6



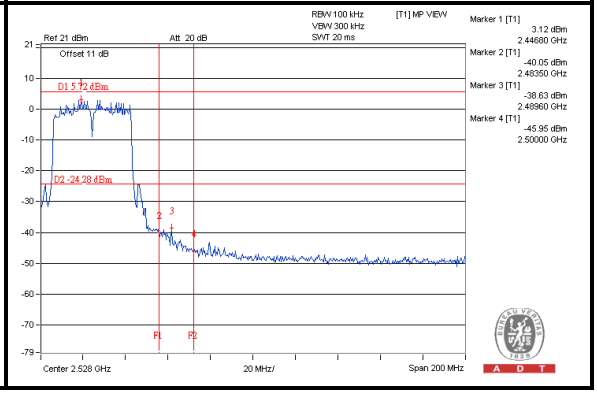
CH 9



CH 3 Band edge

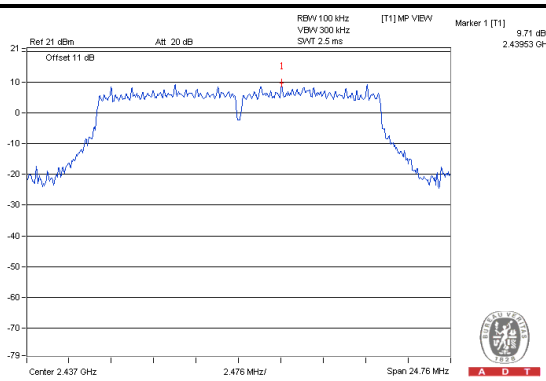


CH 9 Band edge



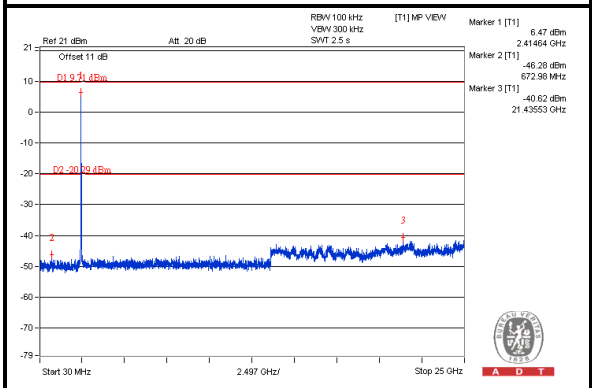
802.11g, 2Tx:

Maximum REF

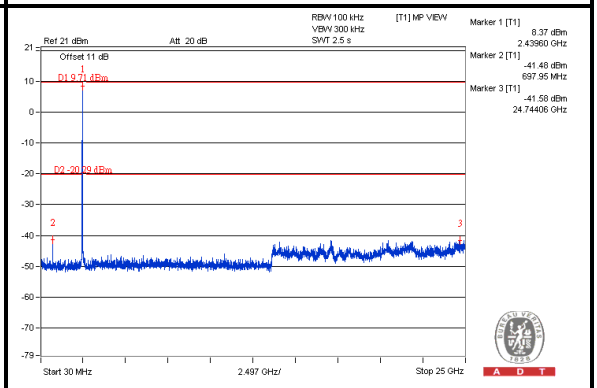


Chain 2

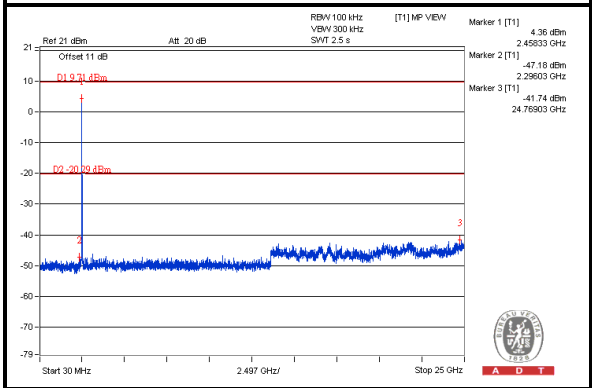
CH 1



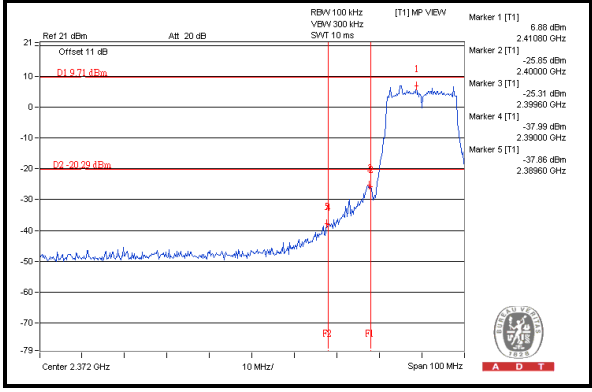
CH 6



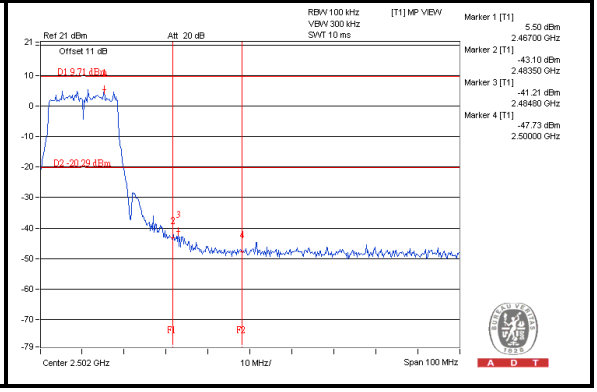
CH 11



CH 1 Band edge

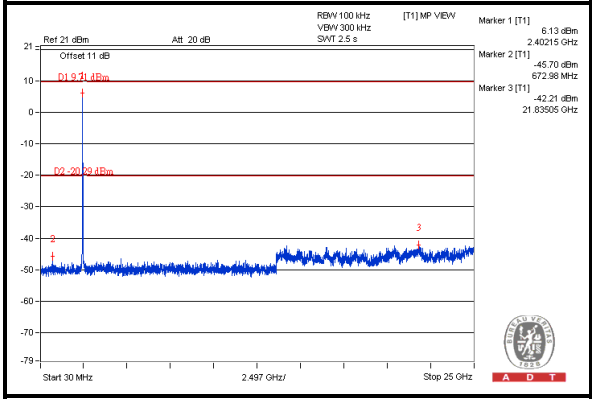


CH 11 Band edge

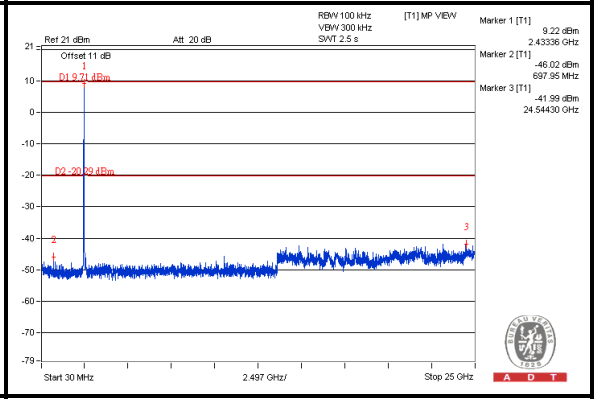


Chain 1

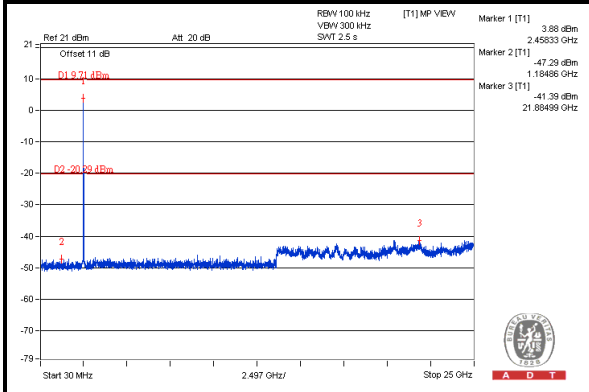
CH 1



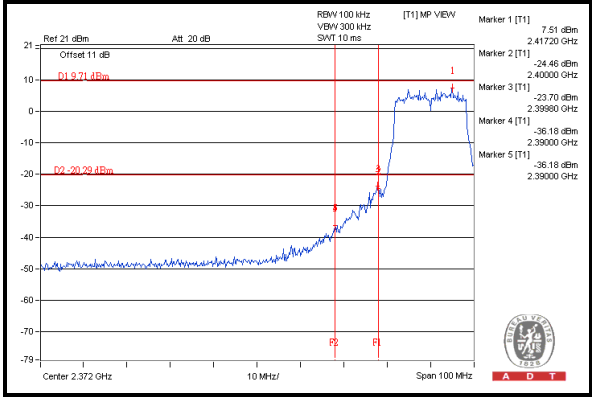
CH 6



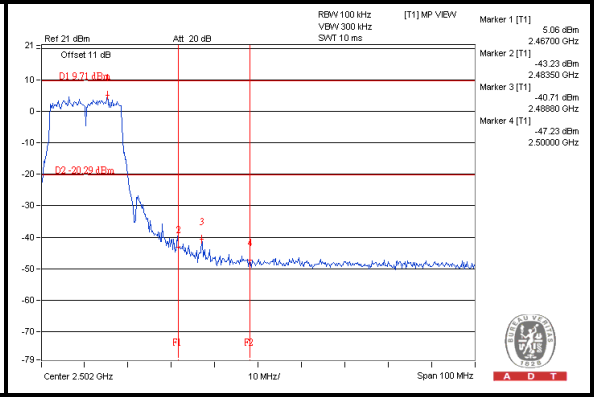
CH 11



CH 1 Band edge

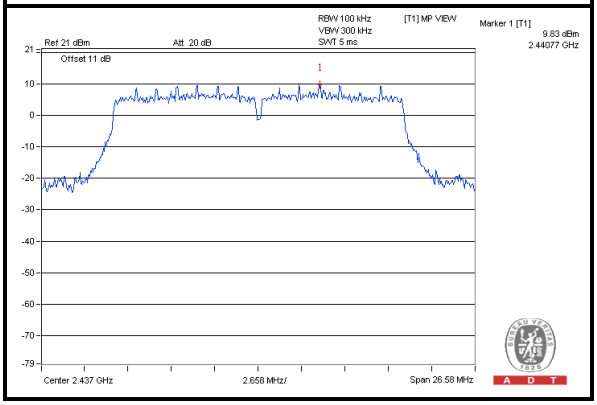


CH 11 Band edge



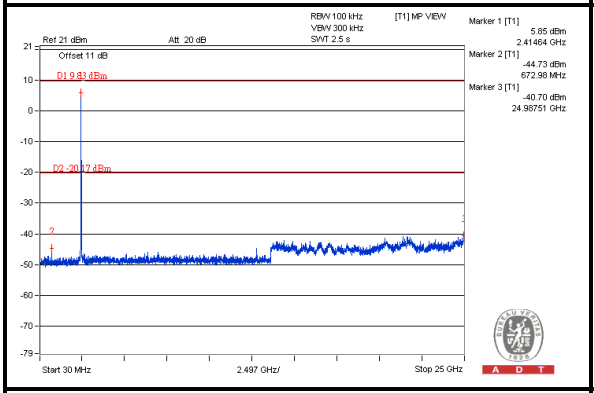
802.11n(HT20), 2Tx:

Maximum REF

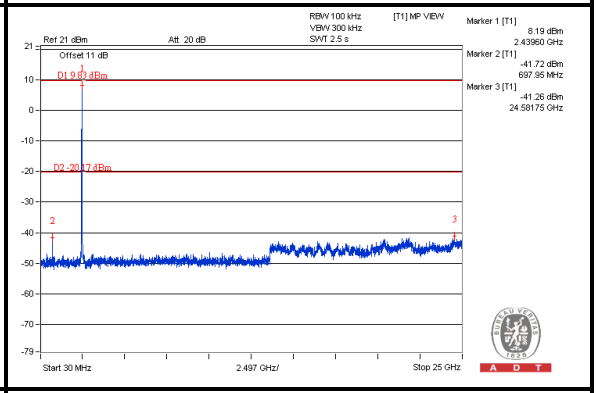


Chain 2

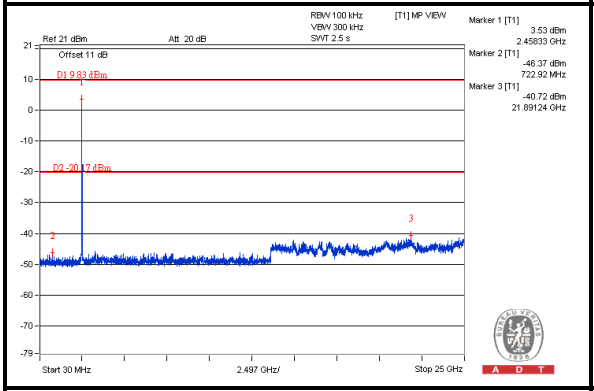
CH 1



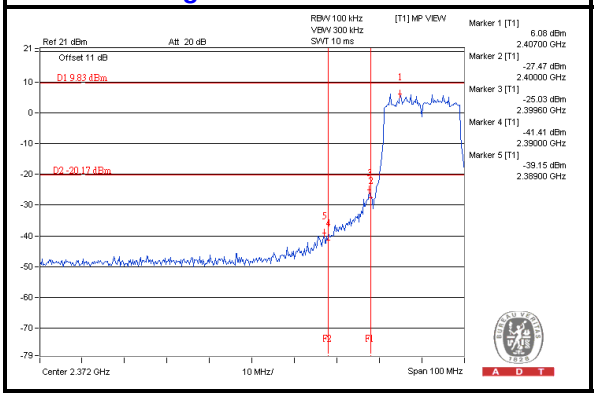
CH 6



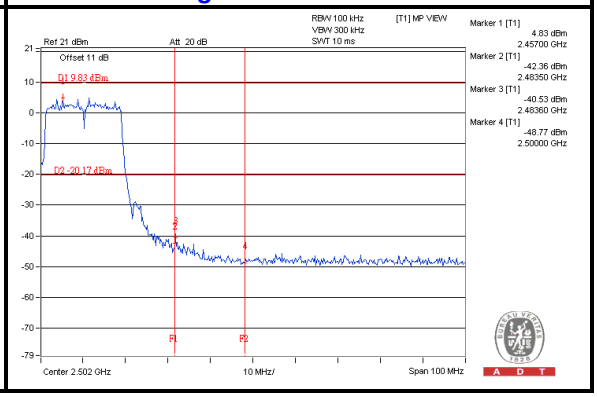
CH 11



CH 1 Band edge

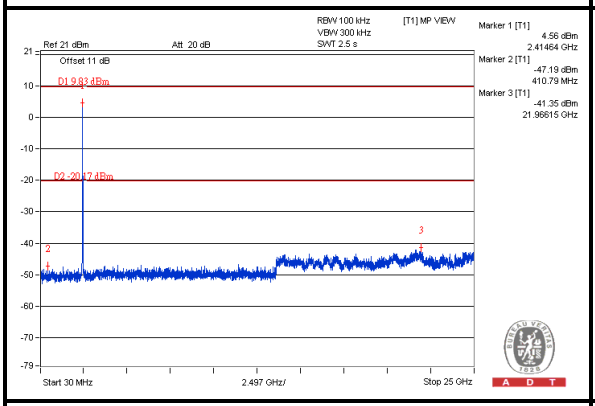


CH 11 Band edge

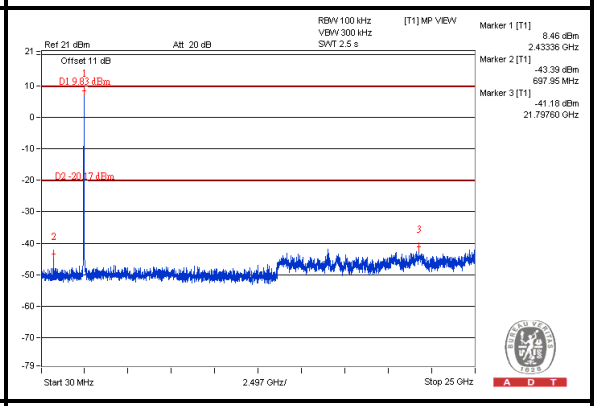


Chain 1

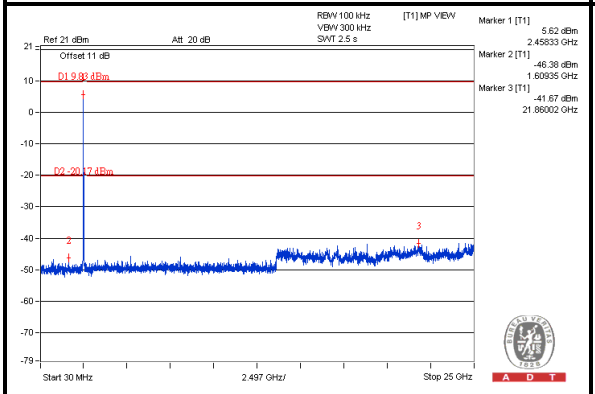
CH 1



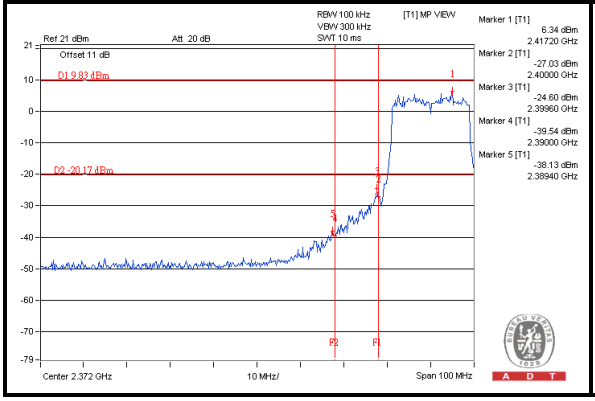
CH 6



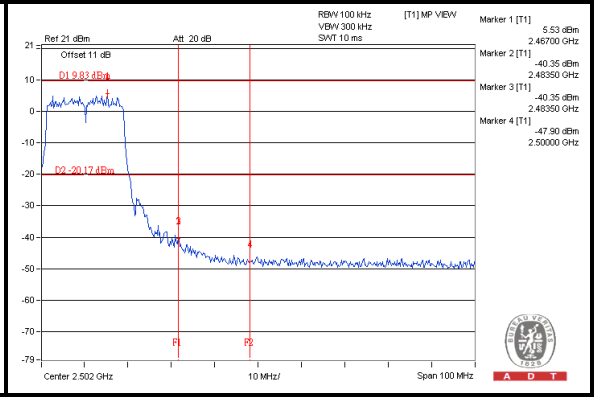
CH 11



CH 1 Band edge

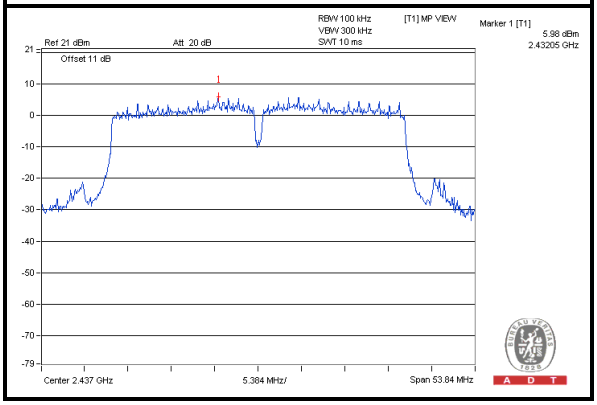


CH 11 Band edge



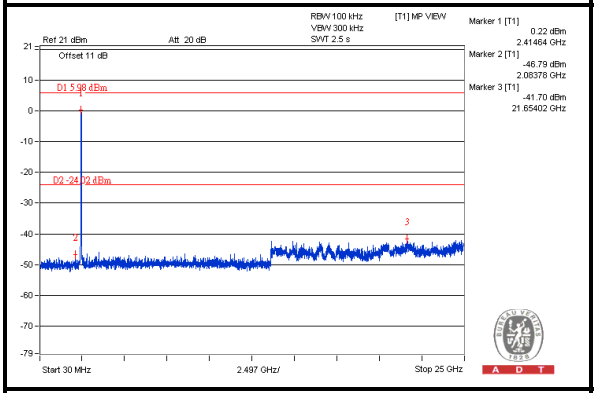
802.11n(HT40), 2Tx:

Maximum REF

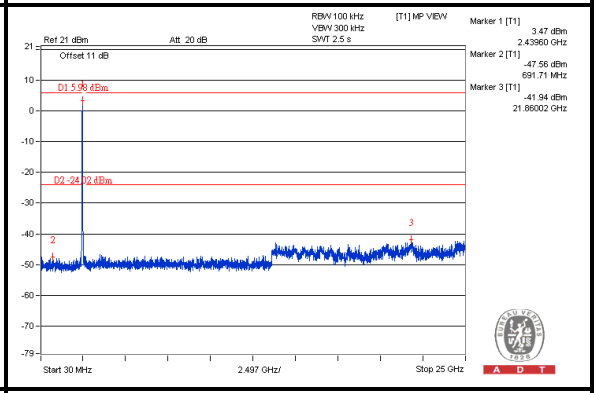


Chain 2

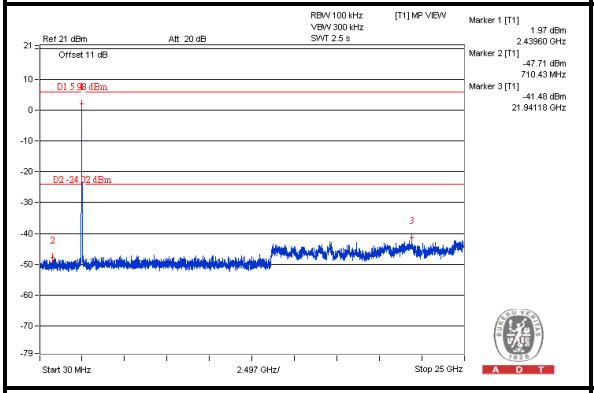
CH 3



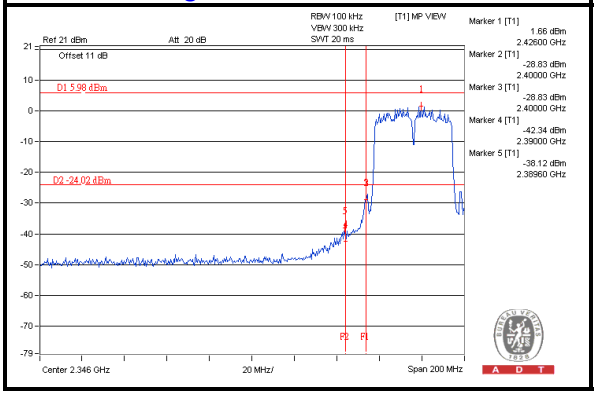
CH 6



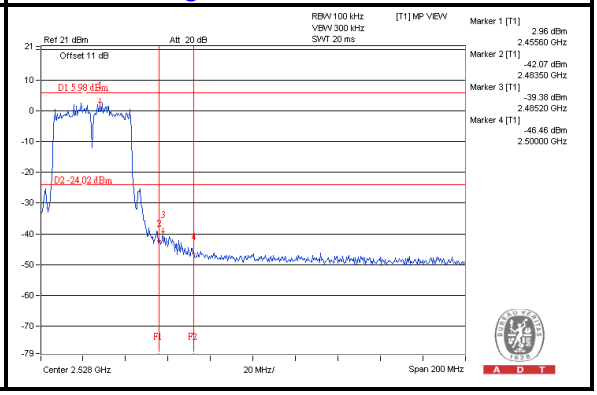
CH 9



CH 3 Band edge

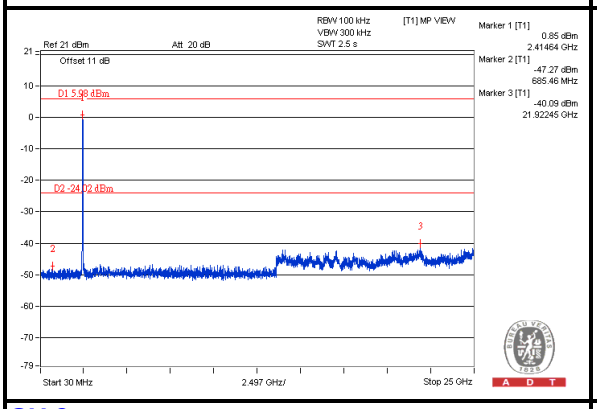


CH 9 Band edge

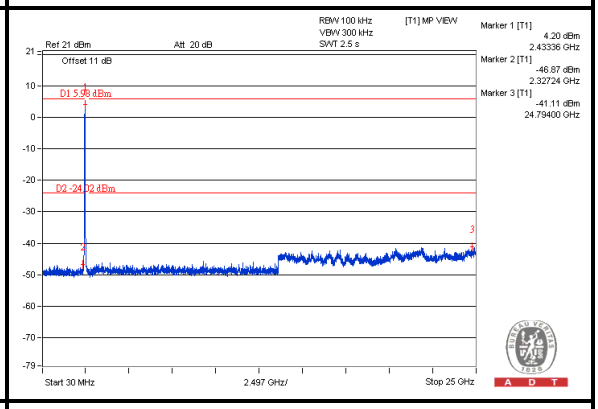


Chain 1

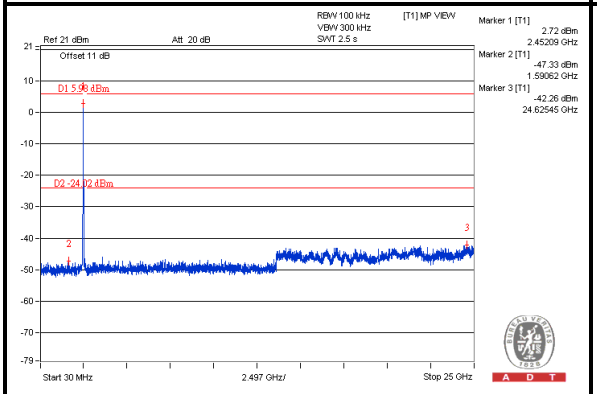
CH 3



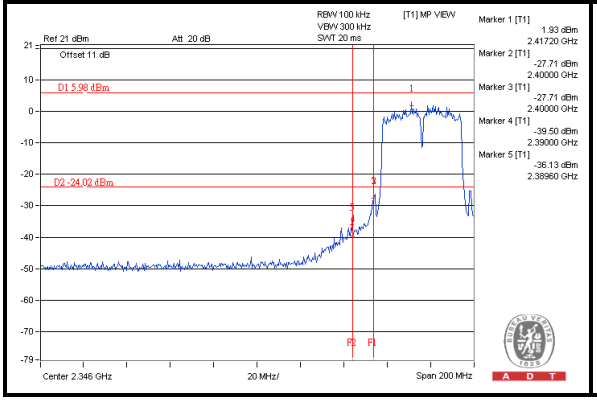
CH 6



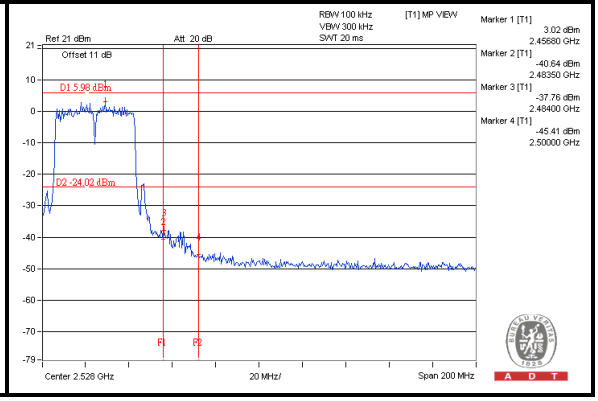
CH 9



CH 3 Band edge



CH 9 Band edge



5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

6. INFORMATION ON THE TESTING LABORATORIES

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

If you have any comments, please feel free to contact us at the following:

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

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

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

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.

7. 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 ---