



FCC TEST REPORT (15.407)

REPORT NO.: RF120321C13-1
MODEL NO.: DG H300
FCC ID: NM8DGH300
RECEIVED: Mar. 21, 2012
TESTED: Apr. 08 ~ Apr. 26, 2012
ISSUED: May 10, 2012

APPLICANT: HTC Corporation

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

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TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei
Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120321C13-1	Original release	May 10, 2012



1. CERTIFICATION

PRODUCT: Media Link HD

MODEL: DG H300

BRAND: HTC

APPLICANT: HTC Corporation

TESTED: Apr. 08 ~ Apr. 26, 2012

TEST SAMPLE: Production Unit

STANDARDS: FCC Part 15, Subpart E (Section 15.407)

ANSI C63.10-2009

The above equipment (model: DG H300) 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 : Ivonne Wu , **DATE** : May 10, 2012
Ivonne Wu / Senior Specialist

APPROVED BY : Gary Chang , **DATE** : May 10, 2012
Gary Chang / Technical Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.407(b)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -2.10dB at 0.49766MHz.
15.407(b/1/2/3) (b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.3dB at 5150.00MHz.
15.407(a/1/2)	Peak Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.

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:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Media Link HD
MODEL NO.	DG H300
POWER SUPPLY	5Vdc (Adapter)
MODULATION TYPE	64QAM, 16QAM, QPSK, BPSK
MODULATION TECHNOLOGY	OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 150.0Mbps
OPERATING FREQUENCY	5180.0 ~ 5240.0MHz
NUMBER OF CHANNEL	4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)
OUTPUT POWER	21.979mW
ANTENNA TYPE	PIFA antenna with 1dBi gain
ANTENNA CONNECTOR	NA
DATA CABLE	Refer to NOTE as below
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Refer to NOTE as below

NOTE:

1. The frequency bands used in this EUT are listed as follows:

Frequency Band (MHz)	2412~2462	5180~5240	5745~5825
802.11b	√		
802.11g	√		
802.11a		√	√
802.11n (20MHz)	√	√	√
802.11n (40MHz)	√	√	√

2. The EUT provides one completed transmitter and two receiver.

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
802.11a	1TX
802.11n (20MHz)	1TX
802.11n (40MHz)	1TX

3. The EUT's accessories list refers to EUT Photo.pdf.

*Item 1, 4, 5 were the worst for the final test.

4. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.



3.2 DESCRIPTION OF TEST MODES

4 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180MHz	44	5220MHz
40	5200MHz	48	5240MHz

2 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190MHz	46	5230MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE \geq 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

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

NOTE:
The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane**.
NOTE: “-” means no effect.

RADIATED EMISSION TEST (ABOVE 1GHz):

- 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.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-	802.11n (20MHz)	36 to 48	36, 40, 48	OFDM	BPSK	7.2
-	802.11n (40MHz)	38 to 46	38, 46	OFDM	BPSK	15.0

RADIATED EMISSION TEST (BELOW 1GHz):

- 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.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	36 to 48	40	OFDM	BPSK	6.0

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.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	36 to 48	40	OFDM	BPSK	6.0

ANTENNA PORT CONDUCTED MEASUREMENT:

- This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-	802.11n (20MHz)	36 to 48	36, 40, 48	OFDM	BPSK	7.2
-	802.11n (40MHz)	38 to 46	38, 46	OFDM	BPSK	15.0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Haru Yang
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Alan Wu
PLC	23deg. C, 66%RH	120Vac, 60Hz	David Huang
APCM	25deg. C, 65%RH	120Vac, 60Hz	Mark Liao

3.3 DUTY CYCLE OF TEST SIGNAL

Test tool can set the EUT to transmit at > 98 % duty cycle.

3.4 DESCRIPTION OF SUPPORT UNITS

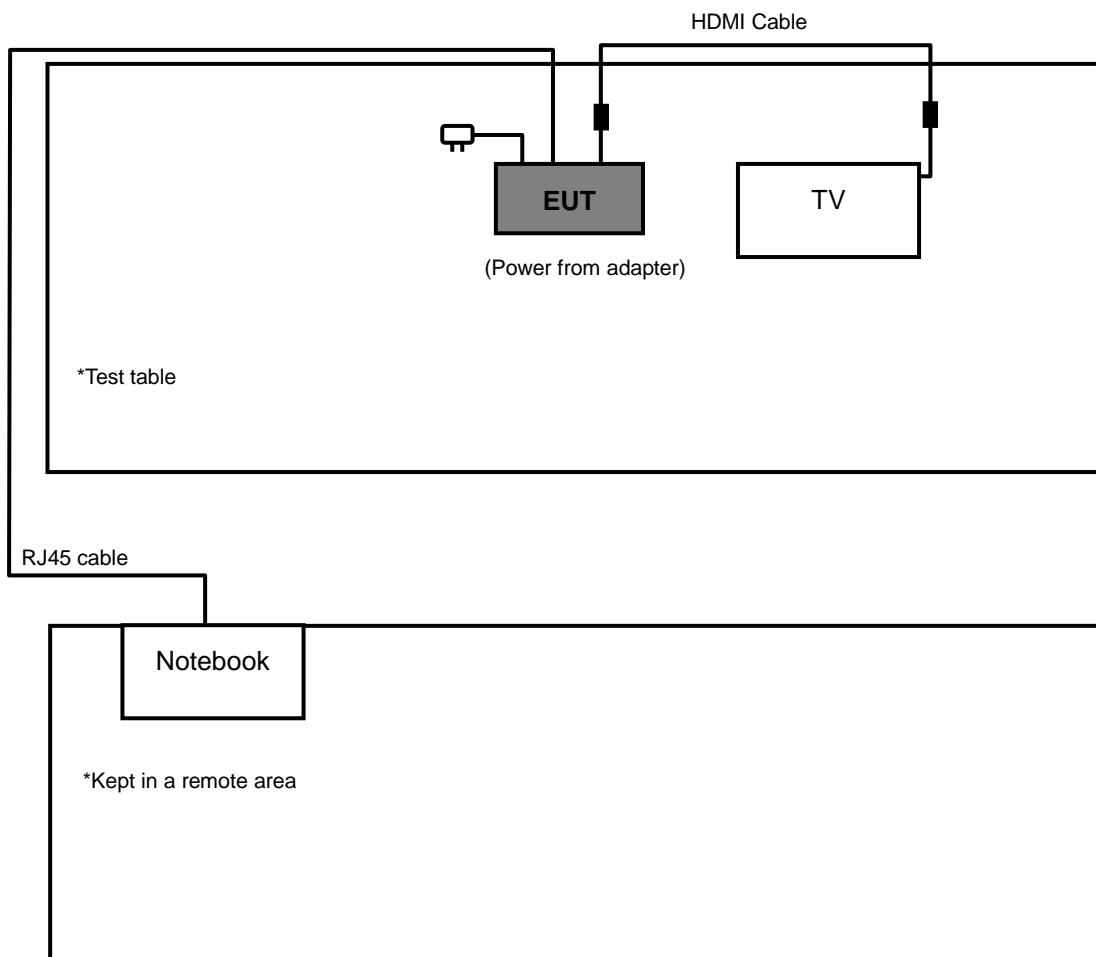
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	LED TV MONITOR	PANASONIC	TH-L32E30W	12500043	FCC DOC APPROVED
2	NOTEBOOK	DELL	E5410	1HC2XM1	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	HDMI Cable with 2 cores
2	RJ45 Cable

NOTE: 1. All power cords of the above support units are non shielded (1.8m).
 2. Item 2 as a communication partner to transfer data.

3.4.1 CONFIGURATION OF SYSTEM UNDER TEST



3.5 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 E (15.407)

ANSI C63.10-2009

KDB 789033 D01 General UNII Test Procedures v01r01

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.

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 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:

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.

4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBμV/m)
PK	PK
-27	68.3

NOTE: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000 \sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts).}$$

4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100744	Apr. 19, 2012	Apr. 18, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Aug. 04, 2011	Aug. 03, 2012
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Apr. 03, 2012	Apr. 02, 2013
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Sep. 06, 2011	Sep. 05, 2012
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 20, 2011	Jul. 19, 2012
Preamplifier Agilent	8449B	3008A01911	Oct. 29, 2011	Oct. 28, 2012
Preamplifier Agilent	8447D	2944A10638	Oct. 29, 2011	Oct. 28, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295013/4 283403/4	Aug. 19, 2011	Aug. 18, 2012
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 13, 2011	Aug. 12, 2012
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Software	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower & Turn Table Controller EMCO	2090	NA	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 29, 2011	Oct. 28, 2012

- NOTE:**
1. The calibration interval of the above test instruments is 12 months except the loop antenna and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
 3. The test was performed in HwaYa Chamber 9.
 4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 5. The FCC Site Registration No. is 460141.
 6. The IC Site Registration No. is IC 7450F-4.

4.1.4 TEST PROCEDURES

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

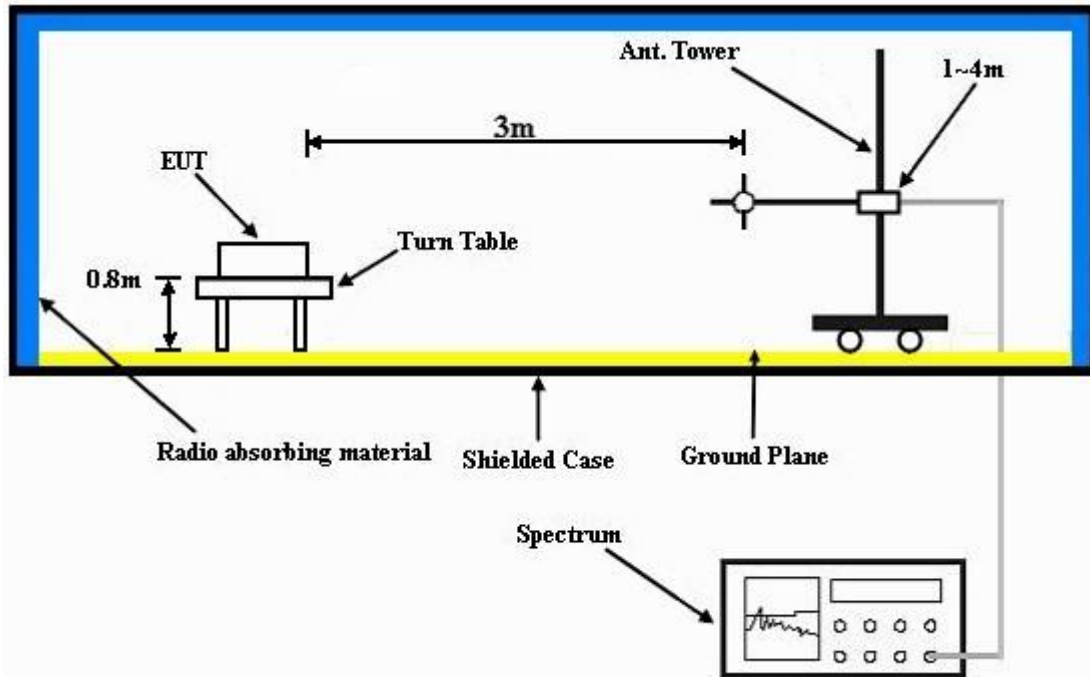
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 1kHz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.5 DEVIATION FROM TEST STANDARD

No deviation.

4.1.6 TEST SETUP



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.7 EUT OPERATING CONDITION

- a. Placed the EUT on the testing table, and connected with TV via HDMI cable.
- b. Prepared notebooks to act as communication partner and placed it outside of testing area.
- c. The communication partner connected with EUT via a RJ45 cable and run a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency, and the TV displayed it.

4.1.8 TEST RESULTS

ABOVE 1GHz DATA

802.11a

CHANNEL	TX Channel 36	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	5150.00	63.2 PK	74.0	-10.8	1.11 H	329	25.00	38.20
2	5150.00	41.1 AV	54.0	-12.9	1.11 H	329	2.90	38.20
3	*5180.00	109.1 PK			1.11 H	329	70.90	38.20
4	*5180.00	98.4 AV			1.11 H	329	60.20	38.20
5	#10360.00	59.2 PK	68.3	-9.1	1.03 H	112	11.20	48.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.2 PK	74.0	-16.8	1.10 V	40	19.00	38.20
2	5150.00	36.1 AV	54.0	-17.9	1.10 V	40	-2.10	38.20
3	*5180.00	103.3 PK			1.10 V	40	65.10	38.20
4	*5180.00	91.8 AV			1.10 V	40	53.60	38.20
5	#10360.00	58.3 PK	68.3	-10.0	1.03 V	222	10.30	48.00

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 40	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	*5200.00	109.3 PK			1.10 H	324	71.10	38.20
2	*5200.00	98.6 AV			1.10 H	324	60.40	38.20
3	#10400.00	59.4 PK	68.3	-8.9	1.03 H	22	11.30	48.10
4	15600.00	58.7 PK	74.0	-15.3	1.04 H	113	9.60	49.10
5	15600.00	45.9 AV	54.0	-8.1	1.04 H	113	-3.20	49.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	103.5 PK			1.06 V	38	65.30	38.20
2	*5200.00	93.0 AV			1.06 V	38	54.80	38.20
3	#10400.00	58.1 PK	68.3	-10.2	1.13 V	215	10.00	48.10
4	15600.00	58.4 PK	74.0	-15.6	1.11 V	34	9.30	49.10
5	15600.00	47.2 AV	54.0	-6.8	1.11 V	34	-1.90	49.10

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 48	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	*5240.00	109.0 PK			1.08 H	326	70.70	38.30
2	*5240.00	98.2 AV			1.08 H	326	59.90	38.30
3	5350.00	56.2 PK	74.0	-17.8	1.08 H	326	17.70	38.50
4	5350.00	40.1 AV	54.0	-13.9	1.08 H	326	1.60	38.50
5	#10480.00	58.7 PK	68.3	-9.6	1.10 H	27	10.50	48.20
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	*5240.00	103.0 PK			1.09 V	35	64.70	38.30
2	*5240.00	92.5 AV			1.09 V	35	54.20	38.30
3	5350.00	55.7 PK	74.0	-18.3	1.09 V	35	17.20	38.50
4	5350.00	39.2 AV	54.0	-14.8	1.09 V	35	0.70	38.50
5	#10480.00	58.1 PK	68.3	-10.2	1.11 V	42	9.90	48.20

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 radiated frequency is out of the restricted band.



A D T

802.11n (20MHz)

CHANNEL	TX Channel 36	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	5150.00	62.9 PK	74.0	-11.1	1.10 H	326	24.70	38.20
2	5150.00	41.1 AV	54.0	-12.9	1.10 H	326	2.90	38.20
3	*5180.00	108.8 PK			1.10 H	326	70.60	38.20
4	*5180.00	98.1 AV			1.10 H	326	59.90	38.20
5	#10360.00	58.6 PK	68.3	-9.7	1.00 H	96	10.60	48.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.1 PK	74.0	-16.9	1.06 V	35	18.90	38.20
2	5150.00	36.2 AV	54.0	-17.8	1.06 V	35	-2.00	38.20
3	*5180.00	103.1 PK			1.06 V	35	64.90	38.20
4	*5180.00	92.6 AV			1.06 V	35	54.40	38.20
5	#10360.00	57.6 PK	68.3	-10.7	1.12 V	45	9.60	48.00

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 40	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	*5200.00	109.0 PK			1.08 H	319	70.80	38.20
2	*5200.00	98.3 AV			1.08 H	319	60.10	38.20
3	#10400.00	58.8 PK	68.3	-9.5	1.03 H	22	10.70	48.10
4	15600.00	59.2 PK	74.0	-14.8	1.08 H	66	10.10	49.10
5	15600.00	46.5 AV	54.0	-7.5	1.08 H	66	-2.60	49.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	103.2 PK			1.05 V	41	65.00	38.20
2	*5200.00	92.7 AV			1.05 V	41	54.50	38.20
3	#10400.00	58.7 PK	68.3	-9.6	1.13 V	26	10.60	48.10
4	15600.00	58.8 PK	74.0	-15.2	1.12 V	33	9.70	49.10
5	15600.00	47.9 AV	54.0	-6.1	1.12 V	33	-1.20	49.10

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 48	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	*5240.00	108.6 PK			1.09 H	324	70.30	38.30
2	*5240.00	97.8 AV			1.09 H	324	59.50	38.30
3	5350.00	56.1 PK	74.0	-17.9	1.09 H	324	17.60	38.50
4	5350.00	39.6 AV	54.0	-14.4	1.09 H	324	1.10	38.50
5	#10480.00	59.1 PK	68.3	-9.2	1.18 H	43	10.90	48.20
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	*5240.00	102.6 PK			1.06 V	44	64.30	38.30
2	*5240.00	92.2 AV			1.06 V	44	53.90	38.30
3	5350.00	55.6 PK	74.0	-18.4	1.06 V	44	17.10	38.50
4	5350.00	39.3 AV	54.0	-14.7	1.06 V	44	0.80	38.50
5	#10480.00	58.4 PK	68.3	-9.9	1.05 V	31	10.20	48.20

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 radiated frequency is out of the restricted band.

802.11n (40MHz)

CHANNEL	TX Channel 38	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	5150.00	72.3 PK	74.0	-1.7	1.10 H	332	34.10	38.20
2	5150.00	52.7 AV	54.0	-1.3	1.10 H	332	14.50	38.20
3	*5190.00	105.1 PK			1.10 H	332	66.90	38.20
4	*5190.00	94.3 AV			1.10 H	332	56.10	38.20
5	#10380.00	58.4 PK	68.3	-9.9	1.11 H	129	10.40	48.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	63.8 PK	74.0	-10.2	1.05 V	42	25.60	38.20
2	5150.00	45.7 AV	54.0	-8.3	1.05 V	42	7.50	38.20
3	*5190.00	99.7 PK			1.05 V	42	61.50	38.20
4	*5190.00	88.6 AV			1.05 V	42	50.40	38.20
5	#10380.00	57.8 PK	68.3	-10.5	1.13 V	66	9.80	48.00

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 46	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	*5230.00	104.3 PK			1.08 H	336	66.00	38.30
2	*5230.00	94.2 AV			1.08 H	336	55.90	38.30
3	5350.00	57.4 PK	74.0	-16.6	1.08 H	336	18.90	38.50
4	5350.00	39.6 AV	54.0	-14.4	1.08 H	336	1.10	38.50
5	#10460.00	58.2 PK	68.3	-10.1	1.10 H	136	10.00	48.20
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	*5230.00	99.1 PK			1.03 V	40	60.80	38.30
2	*5230.00	88.4 AV			1.03 V	40	50.10	38.30
3	5350.00	53.2 PK	74.0	-20.8	1.03 V	40	14.70	38.50
4	5350.00	36.3 AV	54.0	-17.7	1.03 V	40	-2.20	38.50
5	#10460.00	57.8 PK	68.3	-10.5	1.18 V	306	9.60	48.20

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 radiated frequency is out of the restricted band.



BELOW 1GHz WORST-CASE DATA

802.11a

CHANNEL	TX Channel 40	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 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	97.95	36.5 QP	43.5	-7.0	1.00 H	167	27.10	9.40
2	193.22	29.5 QP	43.5	-14.0	1.75 H	246	17.50	12.00
3	296.27	28.5 QP	46.0	-17.5	1.00 H	253	12.90	15.60
4	480.97	25.2 QP	46.0	-20.8	2.00 H	218	4.60	20.60
5	743.45	35.3 QP	46.0	-10.7	1.00 H	111	9.70	25.60
6	875.67	34.8 QP	46.0	-11.2	1.50 H	253	6.60	28.20

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	47.40	35.2 QP	40.0	-4.8	1.00 V	38	21.10	14.10
2	62.95	37.1 QP	40.0	-2.9	1.00 V	250	23.90	13.20
3	136.84	35.8 QP	43.5	-7.7	1.25 V	278	22.20	13.60
4	624.85	30.4 QP	46.0	-15.6	2.00 V	215	6.70	23.70
5	743.45	36.4 QP	46.0	-9.6	1.50 V	152	10.80	25.60
6	961.21	43.3 QP	54.0	-10.7	1.00 V	251	14.00	29.30

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.

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Nov. 19, 2011	Nov. 18, 2012
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 22, 2011	Dec. 21, 2012
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Dec. 30, 2011	Dec. 29, 2012
LISN ROHDE & SCHWARZ	ESH3-Z5	100312	Jul. 07, 2011	Jul. 06, 2012
Software ADT	ADT_Cond_ V7.3.7	NA	NA	NA

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-2047.

4.2.3 TEST PROCEDURES

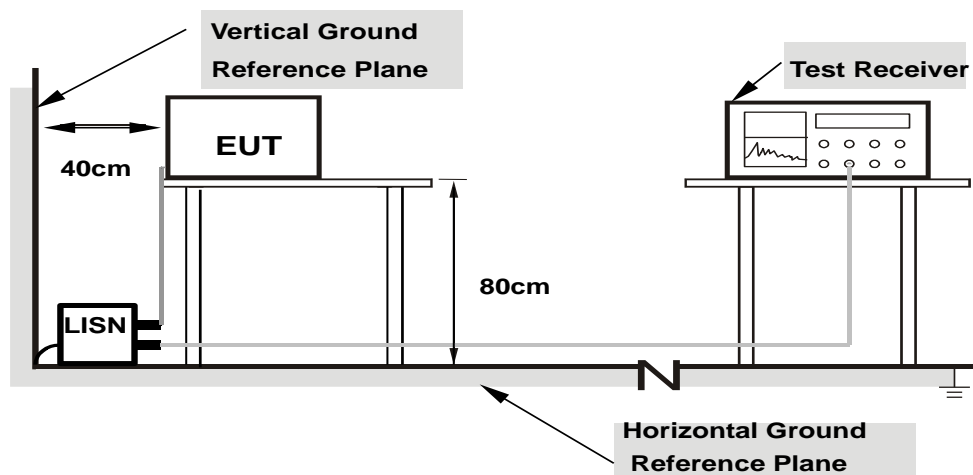
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

NOTE: 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



- Note:**
1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

4.2.7 TEST RESULTS

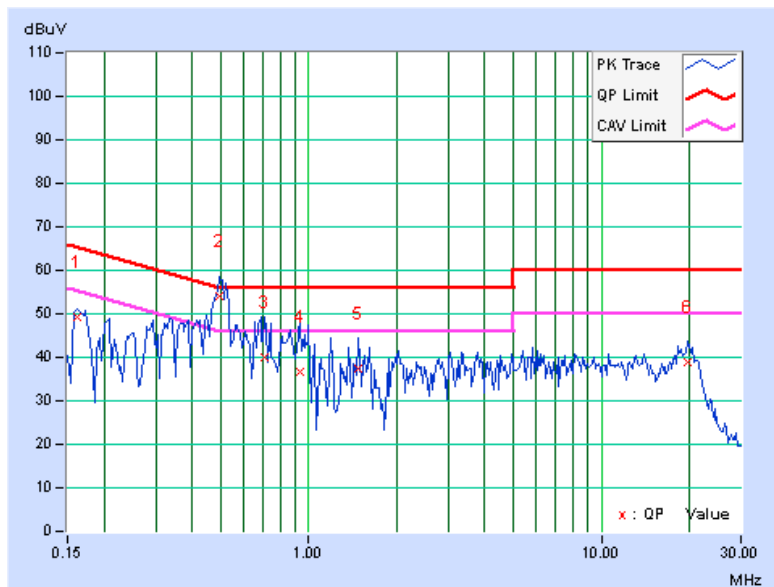
CONDUCTED WORST-CASE DATA : 802.11a

PHASE	Line 1	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16172	0.17	49.24	35.77	49.41	35.94	65.38	55.38	-15.97	-19.44
2	0.49766	0.20	53.73	37.79	53.93	37.99	56.04	46.04	-2.10	-8.04
3	0.70859	0.22	39.85	23.04	40.07	23.26	56.00	46.00	-15.93	-22.74
4	0.93125	0.23	36.61	22.71	36.84	22.94	56.00	46.00	-19.16	-23.06
5	1.46875	0.26	37.23	23.76	37.49	24.02	56.00	46.00	-18.51	-21.98
6	19.66406	0.72	38.25	23.37	38.97	24.09	60.00	50.00	-21.03	-25.91

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.

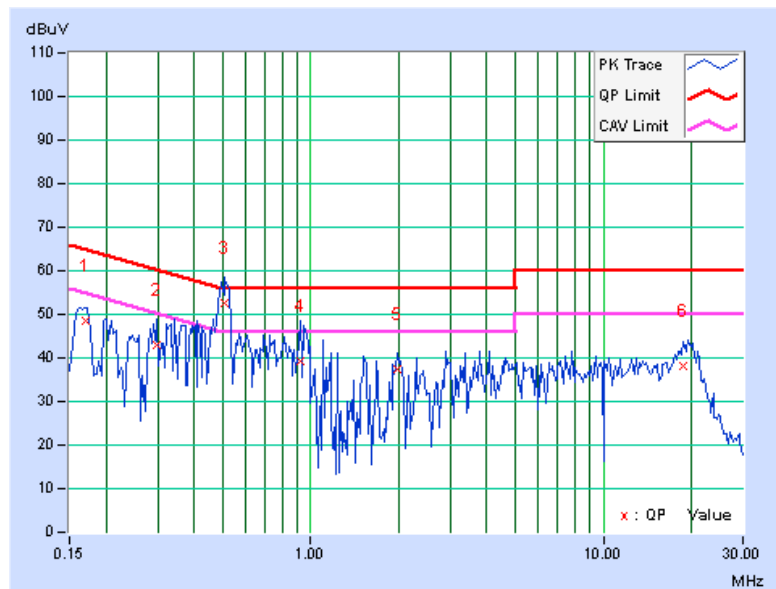


PHASE	Line 2	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16953	0.16	48.41	32.35	48.57	32.51	64.98	54.98	-16.41	-22.47
2	0.29844	0.16	42.85	24.54	43.01	24.70	60.29	50.29	-17.27	-25.58
3	0.50938	0.18	52.33	35.47	52.51	35.65	56.00	46.00	-3.49	-10.35
4	0.91953	0.19	39.10	23.58	39.29	23.77	56.00	46.00	-16.71	-22.23
5	1.98828	0.27	37.13	23.86	37.40	24.13	56.00	46.00	-18.60	-21.87
6	18.83594	0.79	37.36	22.80	38.15	23.59	60.00	50.00	-21.85	-26.41

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.



4.3 PEAK TRANSMIT POWER MEASUREMENT

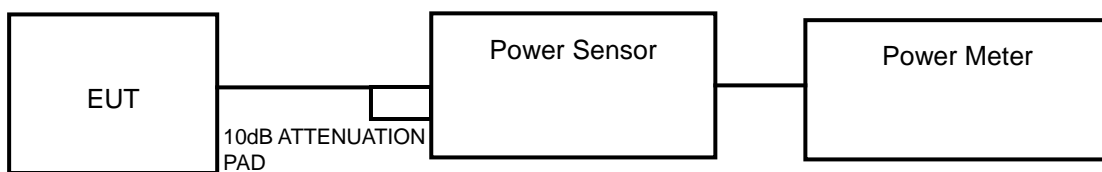
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

FREQUENCY BAND	LIMIT
5.15 ~ 5.25GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB

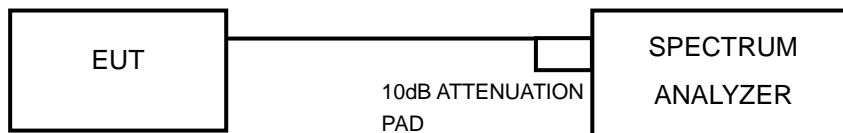
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.3.4 TEST PROCEDURE

FOR AVERAGE POWER MEASUREMENT

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

FOR 26dB BANDWIDTH

- 1) Set RBW = approximately 1% of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Detector = Peak.
- 4) Trace mode = max hold.
- 5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.3.7 TEST RESULTS

POWER OUTPUT: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	20.654	13.15	17	PASS
40	5200	21.979	13.42	17	PASS
48	5240	20.045	13.02	17	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	21.038	13.23	17	PASS
40	5200	20.512	13.12	17	PASS
48	5240	20.654	13.15	17	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	16.444	12.16	17	PASS
46	5230	16.255	12.11	17	PASS



26dB BANDWIDTH: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	28.61	PASS
40	5200	23.90	PASS
48	5240	26.21	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	29.68	PASS
40	5200	28.52	PASS
48	5240	27.73	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	58.90	PASS
46	5230	57.70	PASS

4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

FREQUENCY BAND	LIMIT
5.15 ~ 5.25GHz	4dBm

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.4.4 TEST PROCEDURES

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1 MHz, Set VBW \geq 3 MHz, Detector = RMS
- 3) Sweep time = auto, trigger set to "free run".
- 4) Trace average at least 100 traces in power averaging mode.
- 5) Record the max value

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as 4.3.6.

4.4.7 TEST RESULTS

802.11a

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	0.48	4	PASS
40	5200	0.51	4	PASS
48	5240	0.58	4	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	0.96	4	PASS
40	5200	1.09	4	PASS
48	5240	0.86	4	PASS

802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-2.92	4	PASS
46	5230	-2.78	4	PASS

4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.5.4 TEST PROCEDURE

- 1) Set RBW = 1 MHz, VBW \geq 3 MHz, Detector = peak.
- 2) Trace mode = max-hold. Allow the sweeps to continue until the trace stabilizes.
- 3) Use the peak search function to find the peak of the spectrum.
- 4) Measure the PPSD.
- 5) Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITIONS

Same as 4.2.6



A D T

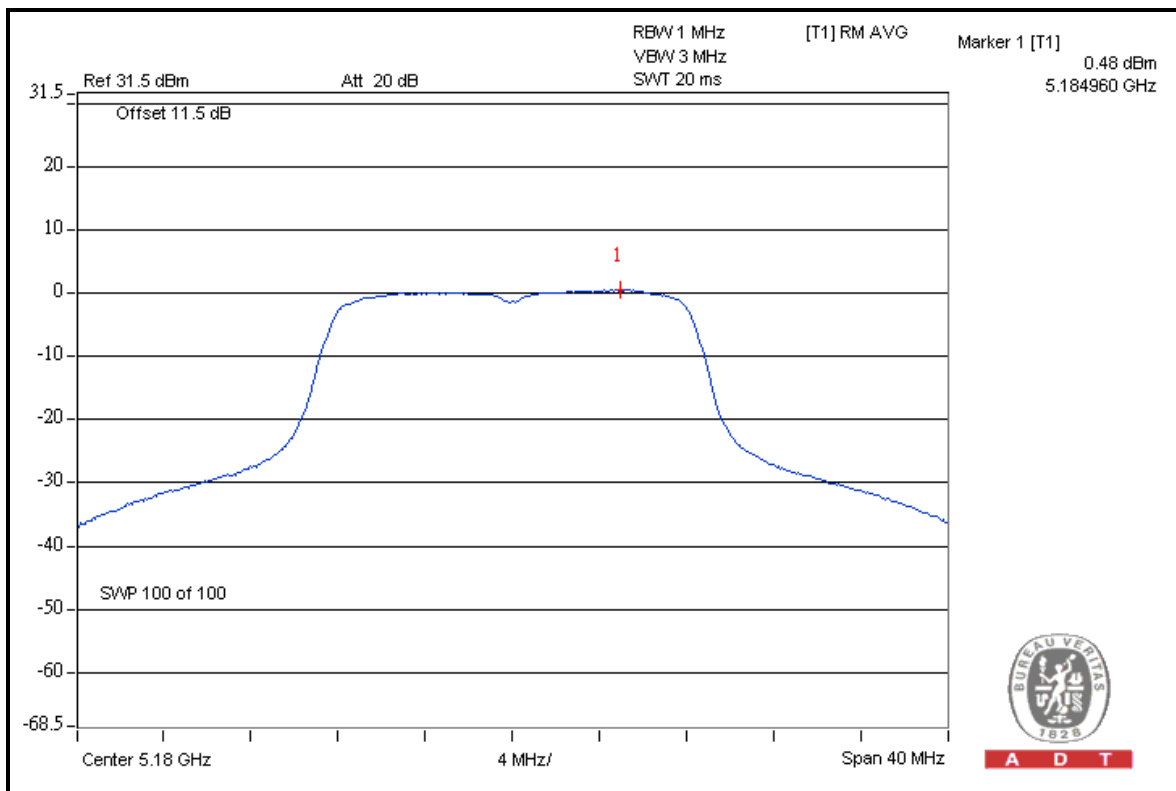
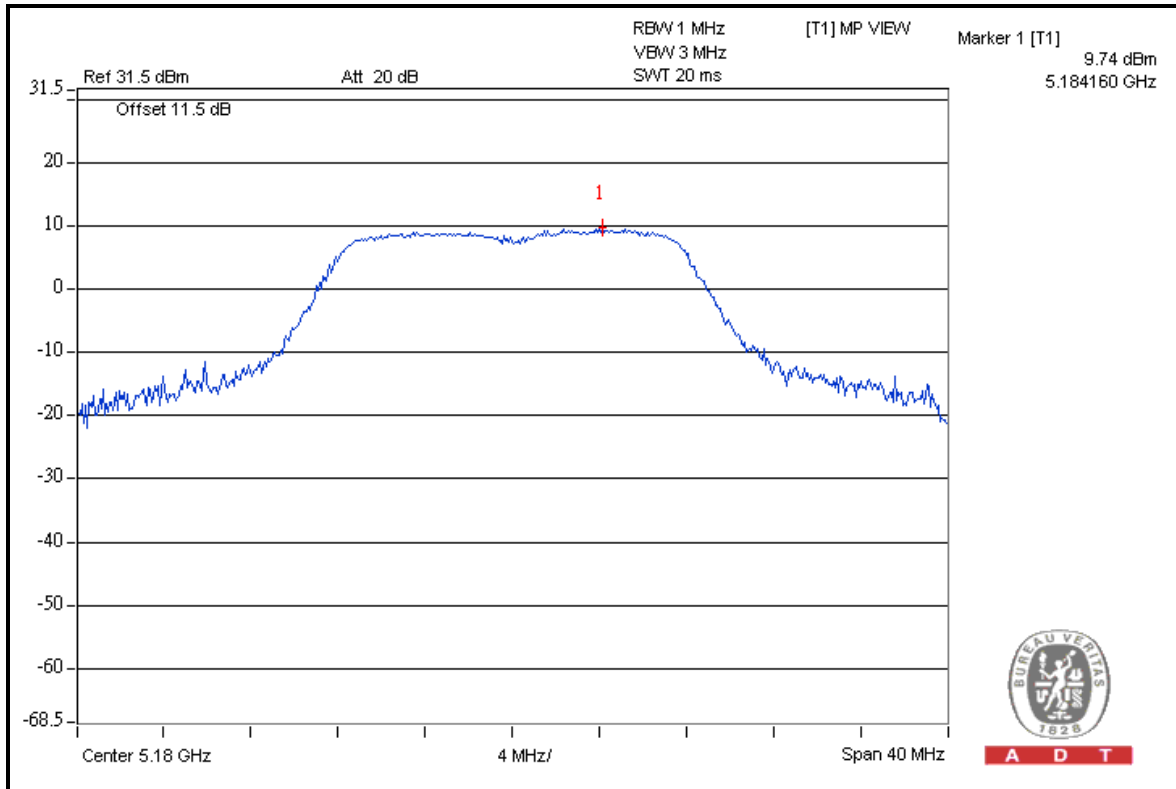
4.5.7 TEST RESULTS

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
36	5180	9.74	0.48	9.26	13	PASS
44	5220	9.76	0.51	9.25	13	PASS
48	5240	9.77	0.58	9.19	13	PASS



A D T





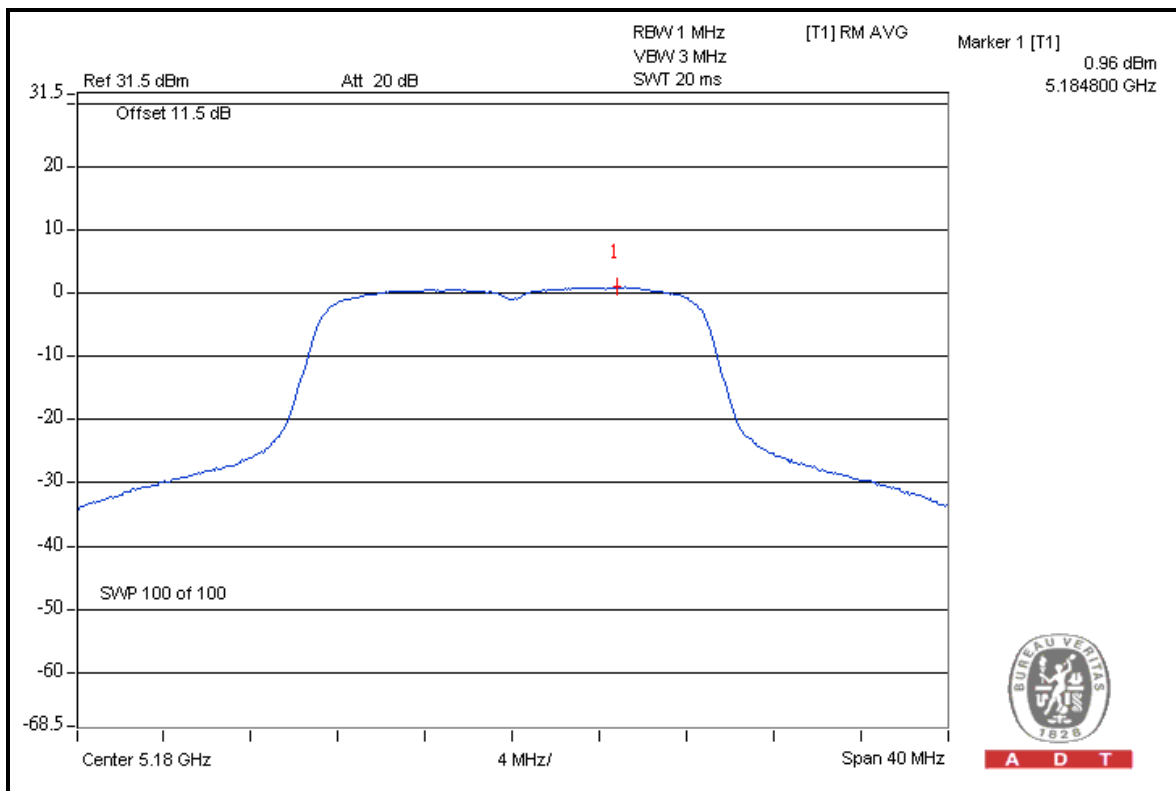
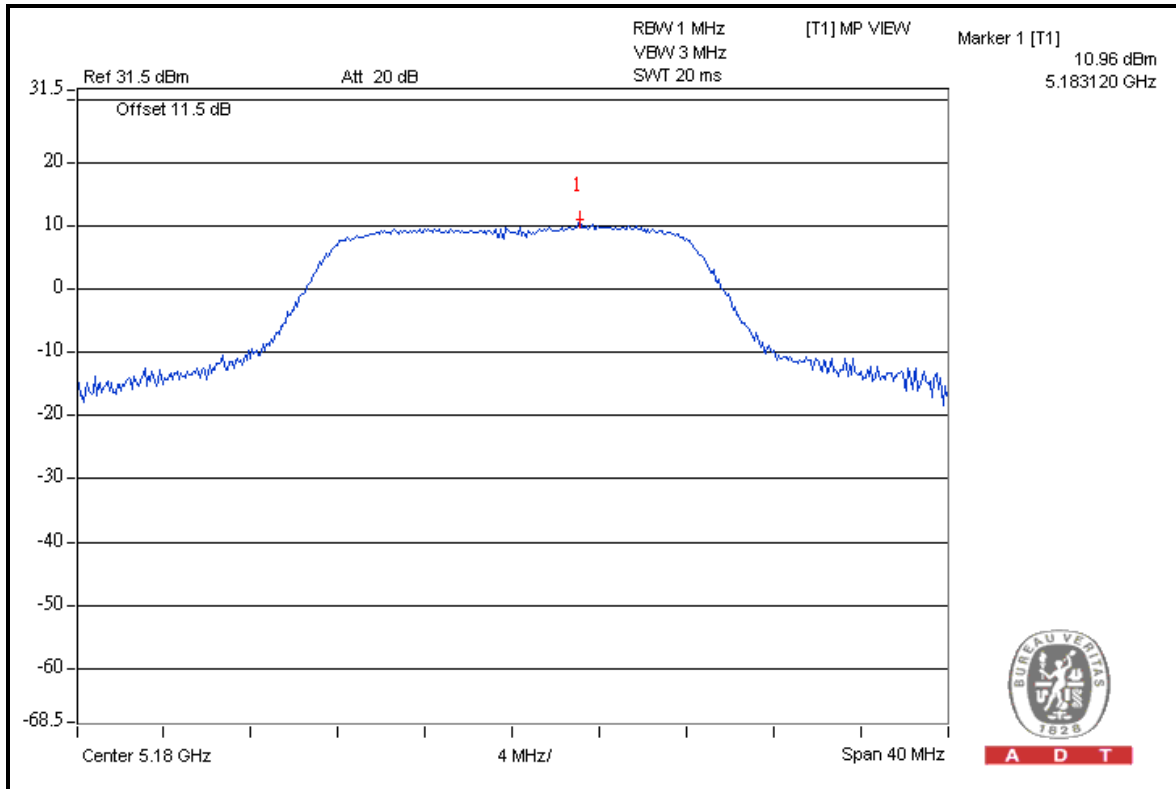
A D T

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
36	5180	10.96	0.96	10	13	PASS
44	5220	10.62	1.09	9.53	13	PASS
48	5240	10.66	0.86	9.8	13	PASS



A D T





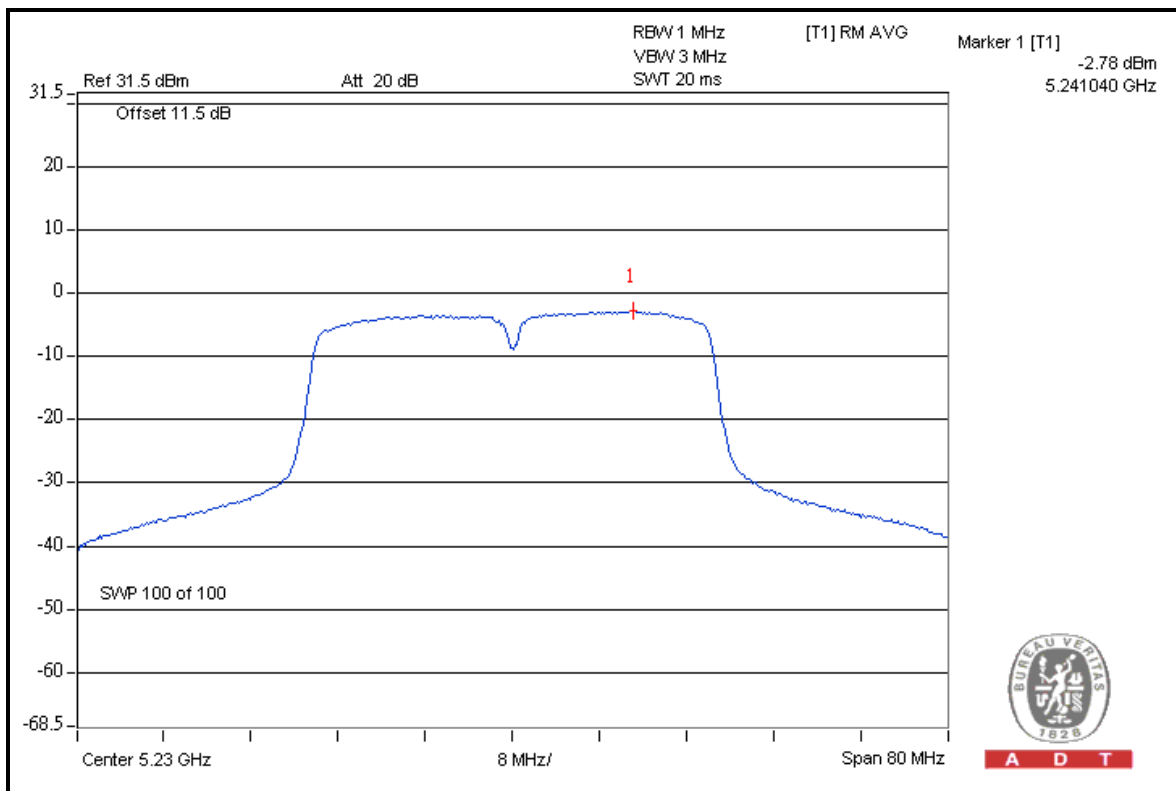
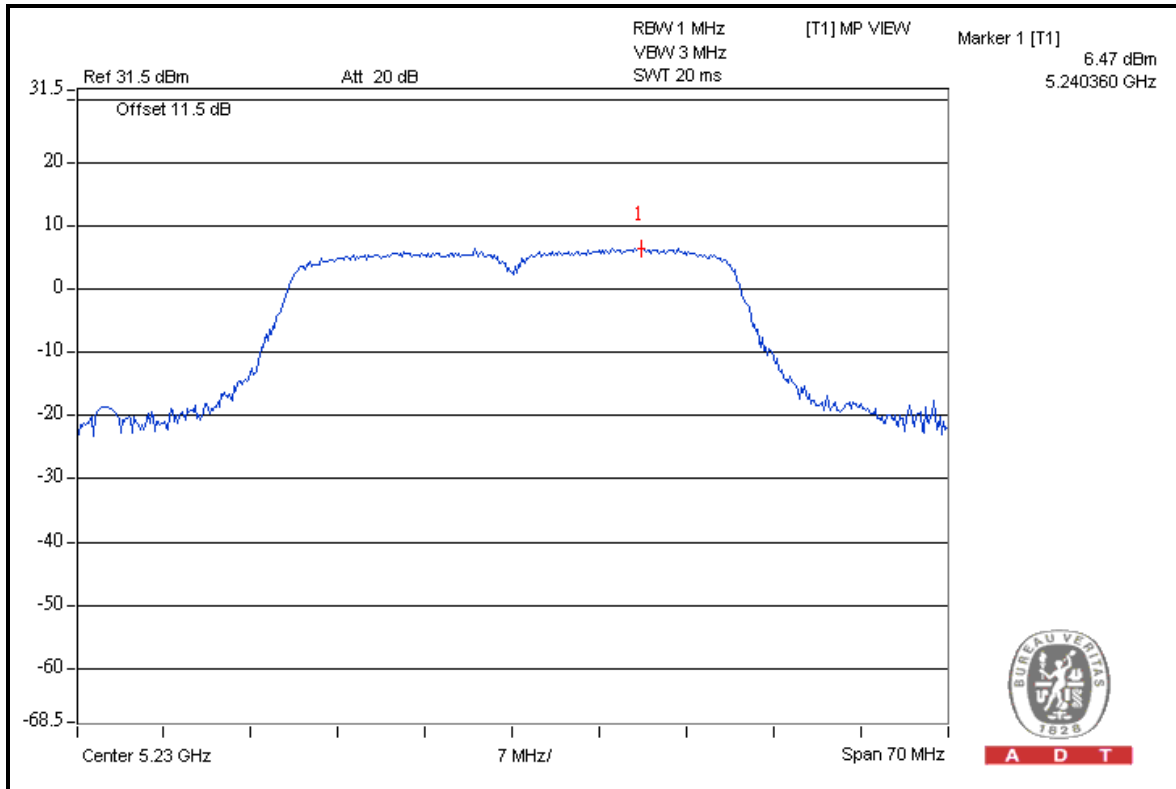
A D T

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
38	5190	6.32	-2.92	9.24	13	PASS
46	5230	6.47	-2.78	9.25	13	PASS



A D T

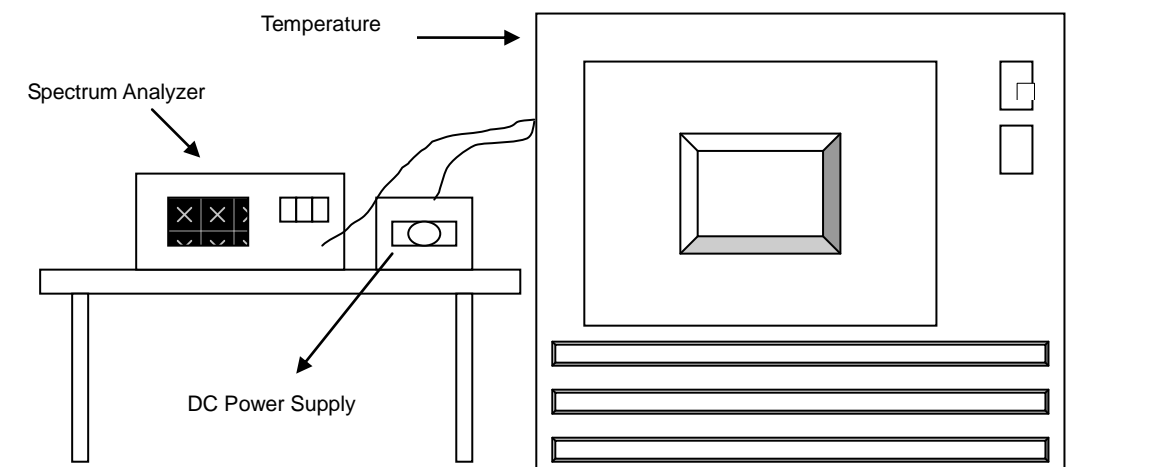


4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency of the carrier signal shall be maintained within band of operation

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.6.4 TEST PROCEDURE

- a. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
- b. Turn the EUT on and couple its output to a spectrum analyzer.
- c. Turn the EUT off and set the chamber to the highest temperature specified.
- d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
- e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

Set the EUT transmit at un-modulation mode to test frequency stability.

4.6.7 TEST RESULTS

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5200MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
55	110.0	5199.987896	-2.328	5199.988173	-2.274	5199.987915	-2.324	5199.988110	-2.287
50	110.0	5199.988846	-2.145	5199.988681	-2.177	5199.988786	-2.157	5199.988853	-2.144
40	110.0	5199.990817	-1.766	5199.990105	-1.903	5199.990648	-1.798	5199.990432	-1.840
30	110.0	5199.991601	-1.615	5199.991503	-1.634	5199.991575	-1.620	5199.991772	-1.582
20	110.0	5199.992559	-1.431	5199.992081	-1.523	5199.992193	-1.501	5199.992618	-1.420
10	110.0	5199.991461	-1.642	5199.991503	-1.634	5199.991379	-1.658	5199.991516	-1.632
0	110.0	5199.989826	-1.957	5199.990415	-1.843	5199.990195	-1.886	5199.989873	-1.947
-10	110.0	5199.988893	-2.136	5199.989369	-2.044	5199.988983	-2.119	5199.989116	-2.093
-20	110.0	5199.987592	-2.386	5199.987684	-2.368	5199.987780	-2.350	5199.987862	-2.334

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5200MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	93.5	5199.991832	-1.571	5199.991813	-1.574	5199.991506	-1.633	5199.991412	-1.652
	110.0	5199.992559	-1.431	5199.992081	-1.523	5199.992193	-1.501	5199.992618	-1.420
	126.5	5199.991675	-1.601	5199.991380	-1.658	5199.991621	-1.611	5199.991840	-1.569

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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



6. INFORMATION ON THE TESTING LABORATORIES

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

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

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26051924

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.adt.com.tw

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---