



FCC TEST REPORT (15.247)

REPORT NO.: RF140606E08

MODEL NO.: WND930

FCC ID: PY314200281

RECEIVED: June 06, 2014

TESTED: June 18 to Aug. 07, 2014

ISSUED: Aug. 20, 2014

APPLICANT: Netgear Incorporated

ADDRESS: 350 East Plumeria Drive San Jose, CA
95134

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.



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification



A D T

Table of Contents

RELEASE CONTROL RECORD.....	5
1. CERTIFICATION	6
2. SUMMARY OF TEST RESULTS.....	7
2.1 MEASUREMENT UNCERTAINTY	8
3. GENERAL INFORMATION.....	9
3.1 GENERAL DESCRIPTION OF EUT.....	9
3.2 DESCRIPTION OF TEST MODES.....	12
3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL.....	13
3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS	16
3.4 DUTY CYCLE OF TEST SIGNAL.....	17
3.5 DESCRIPTION OF SUPPORT UNITS	19
3.6 CONFIGURATION OF SYSTEM UNDER TEST.....	20
4. TEST TYPES AND RESULTS (FOR 2.4GHz, 2.400 ~ 2.4835GHz Band)	23
4.1 CONDUCTED EMISSION MEASUREMENT	23
4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT.....	23
4.1.2 TEST INSTRUMENTS	23
4.1.3 TEST PROCEDURES	24
4.1.4 DEVIATION FROM TEST STANDARD	24
4.1.5 TEST SETUP	24
4.1.6 EUT OPERATING CONDITIONS	25
4.1.7 TEST RESULTS (MODE 2).....	26
4.2 RADIATED EMISSION AND BANDEDGE MEASUREMENT.....	30
4.2.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT	30
4.2.2 TEST INSTRUMENTS	31
4.2.3 TEST PROCEDURES	33
4.2.4 DEVIATION FROM TEST STANDARD	34
4.2.5 TEST SETUP	34
4.2.6 EUT OPERATING CONDITIONS	34
4.2.7 TEST RESULTS (MODE 1).....	35
4.2.8 TEST RESULTS (MODE 2).....	48
4.3 6dB BANDWIDTH MEASUREMENT	61
4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT	61
4.3.2 TEST INSTRUMENTS	61
4.3.3 TEST PROCEDURE	61
4.3.4 DEVIATION FROM TEST STANDARD	61
4.3.5 TEST SETUP	61
4.3.6 EUT OPERATING CONDITIONS	61
4.3.7 TEST RESULTS	62
4.4 CONDUCTED OUTPUT POWER MEASUREMENT	64
4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT.....	64
4.4.2 TEST INSTRUMENTS	64
4.4.3 TEST PROCEDURES	64
4.4.4 DEVIATION FROM TEST STANDARD	65
4.4.5 TEST SETUP	65
4.4.6 EUT OPERATING CONDITIONS	65
4.4.7 TEST RESULTS	66
4.5 POWER SPECTRAL DENSITY MEASUREMENT.....	67
4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT	67
4.5.2 TEST INSTRUMENTS	67
4.5.3 TEST PROCEDURE	67
4.5.4 DEVIATION FROM TEST STANDARD	67



4.5.5	TEST SETUP	67
4.5.6	EUT OPERATING CONDITION	67
4.5.7	TEST RESULTS	68
4.6	CONDUCTED OUT-BAND EMISSION MEASUREMENT.....	71
4.6.1	LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT	71
4.6.2	TEST INSTRUMENTS	71
4.6.3	TEST PROCEDURE	71
4.6.4	DEVIATION FROM TEST STANDARD	72
4.6.5	TEST SETUP	72
4.6.6	EUT OPERATING CONDITION	72
4.6.7	TEST RESULTS	72
5.	TEST TYPES AND RESULTS (FOR 5GHz, 5.725~5.850GHz Band)	81
5.1	CONDUCTED EMISSION MEASUREMENT	81
5.1.1	LIMITS OF CONDUCTED EMISSION MEASUREMENT	81
5.1.2	TEST INSTRUMENTS	81
5.1.3	TEST PROCEDURES	82
5.1.4	DEVIATION FROM TEST STANDARD	82
5.1.5	TEST SETUP	82
5.1.6	EUT OPERATING CONDITIONS	83
5.1.7	TEST RESULTS (MODE 2).....	84
5.2	RADIATED AND BANDEDGE EMISSION MEASUREMENT.....	88
5.2.1	LIMITS OF RADIATED AND BANDEDGE EMISSION MEASUREMENT	88
5.2.2	TEST INSTRUMENTS	89
5.2.3	TEST PROCEDURES	91
5.2.4	DEVIATION FROM TEST STANDARD	91
5.2.5	TEST SETUP	92
5.2.6	EUT OPERATING CONDITIONS	92
5.2.7	TEST RESULTS (MODE 1).....	93
5.2.8	TEST RESULTS (MODE 2).....	102
5.3	6dB BANDWIDTH MEASUREMENT	111
5.3.1	LIMITS OF 6dB BANDWIDTH MEASUREMENT	111
5.3.2	TEST INSTRUMENTS	111
5.3.3	TEST PROCEDURE	111
5.3.4	DEVIATION FROM TEST STANDARD	111
5.3.5	TEST SETUP	111
5.3.6	EUT OPERATING CONDITIONS	111
5.3.7	TEST RESULTS	112
5.4	CONDUCTED OUTPUT POWER MEASUREMENT	114
5.4.1	LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT	114
5.4.2	INSTRUMENTS.....	114
5.4.3	TEST PROCEDURES	115
5.4.4	DEVIATION FROM TEST STANDARD	115
5.4.5	TEST SETUP	115
5.4.6	EUT OPERATING CONDITIONS	115
5.4.7	TEST RESULTS	116
5.5	POWER SPECTRAL DENSITY MEASUREMENT.....	117
5.5.1	LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT	117
5.5.2	TEST INSTRUMENTS	117
5.5.3	TEST PROCEDURE	117
5.5.4	DEVIATION FROM TEST STANDARD	117
5.5.5	TEST SETUP	117
5.5.6	EUT OPERATING CONDITION	118
5.5.7	TEST RESULTS	119



A D T

5.6	CONDUCTED OUT-BAND EMISSION MEASUREMENT.....	121
5.6.1	LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT	121
5.6.2	TEST INSTRUMENTS	121
5.6.3	TEST PROCEDURE	121
5.6.4	DEVIATION FROM TEST STANDARD	122
5.6.5	TEST SETUP	122
5.6.6	EUT OPERATING CONDITION	122
5.6.7	TEST RESULTS	122
6.	PHOTOGRAPHS OF THE TEST CONFIGURATION.....	129
7.	INFORMATION ON THE TESTING LABORATORIES	130
8.	APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB.....	131



A D T

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF140606E08	Original release	Aug. 20, 2014



1. CERTIFICATION

PRODUCT: Outdoor High Power Wireless N Access Point
BRAND NAME: NETGEAR
MODEL NO.: WND930
TEST SAMPLE: ENGINEERING SAMPLE
APPLICANT: Netgear Incorporated
TESTED: June 18 to Aug. 07, 2014
STANDARDS: **FCC Part 15, Subpart C (Section 15.247)**
ANSI C63.10-2009

The above equipment (Model: WND930) 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: Aug. 20, 2014
(Lori Chung, Specialist)

APPROVED BY :  , DATE: Aug. 20, 2014
(May Chen, Manager)



2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

For 2.4GHz, 2400~2483.5MHz Band

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -10.82dB at 0.49375MHz
15.247(d) 15.209	Radiated Emissions & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.1dB at 2483.50MHz & 2390.00MHz
15.247(d)	Antenna Port Emission	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(MHF)_internal and N type(M)_external not a standard connector.

For 5GHz, 5725~5850MHz Band

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -10.88dB at 0.49375MHz
15.247(d) 15.209	Radiated Emissions & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.1dB at 5400.00MHz & 5360.00MHz
15.247(d)	Antenna Port Emission	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(MHF)_internal and N type(M)_external not a standard connector.

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



A D T

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	2.86 dB
Radiated emissions (30MHz-1GHz)	5.43 dB
Radiated emissions (1GHz -6GHz)	3.65 dB
Radiated emissions (6GHz -18GHz)	3.88 dB
Radiated emissions (18GHz -40GHz)	4.11 dB



A D T

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Outdoor High Power Wireless N Access Point
MODEL NO.	WND930
POWER SUPPLY	48Vdc (from POE)
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: up to 11Mbps 802.11a / g: up to 54Mbps 802.11n: up to 300Mbps
OPERATING FREQUENCY	For 15.407 5GHz: 5.18 ~ 5.24GHz
	For 15.247 2.4GHz: 2.412 ~ 2.462GHz 5GHz: 5.745 ~ 5.825GHz
NUMBER OF CHANNEL	For 15.407 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40)
	For 15.247 (2.4GHz) 11 for 802.11b, 802.11g, 802.11n (HT20) 7 for 802.11n (HT40)
	For 15.247 (5GHz) 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40)



A D T

MAXIMUM OUTPUT POWER	For 15.407 802.11a: 19.53mW 802.11n (HT20): 18.199mW 802.11n (HT40): 35.591mW For 15.247 (2.4GHz) 802.11b: 301.535mW 802.11g: 474.558mW 802.11n (HT20): 366.511mW 802.11n (HT40): 117.232mW For 15.247 (5GHz) 802.11a: 499.668mW 802.11n (HT20): 507.064mW 802.11n (HT40): 365.563mW
ANTENNA TYPE	Refer to note as below
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ASSOCIATED DEVICES	NA



A D T

Note:

1. There is WLAN (2.4GHz & 5GHz) technology used for the EUT.
2. The emission of the simultaneous operation WLAN (2.4GHz & 5GHz) has been evaluated and no non-compliance was found.
3. The antennas provided to the EUT, please refer to the following table:

Internal Antenna				
Transmitter Circuit	Antenna Gain(dBi) Including cable loss	Frequency range	Antenna Type	Connector Type
Chain (0)	5	2.4~2.4835GHz	Panel	i-pex(MHF)
Chain (1)	5		Panel	i-pex(MHF)
Chain (0)	5	5.150~5.850GHz	Panel	i-pex(MHF)
Chain (1)	5		Panel	i-pex(MHF)
External Antenna				
Transmitter Circuit	Antenna Gain(dBi) Including cable loss	Frequency range	Antenna Type	Connector Type
Chain (0)	5	2.4~2.4835GHz	Dipole	N type(M)
Chain (1)	5		Dipole	N type(M)
Chain (0)	7	5.150~5.850GHz	Dipole	N type(M)
Chain (1)	7		Dipole	N type(M)

4. The EUT incorporates a MIMO function without beamforming.

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

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

3.2 DESCRIPTION OF TEST MODES

Operated in 2400 ~ 2483.5MHz band:

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

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

7 channels are provided for 802.11n (HT40):

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

Operated in 5725 ~ 5850MHz band:

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

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

2 channels are provided for 802.11n (HT40):

CHANNEL	FREQUENCY
151	5755 MHz
159	5795 MHz



3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO					DESCRIPTION
	PLC	RE < 1G	RE ≥ 1G	APCM	OB	
1	-	√	√	√	√	With External antenna
2	√	√	√	-	-	With Internal antenna

Where **PLC**: Power Line Conducted Emission **RE < 1G**: Radiated Emission below 1GHz
RE ≥ 1G: Radiated Emission above 1GHz **APCM**: Antenna Port Conducted Measurement
OB: Conducted Out-Band Emission Measurement

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	1 to 11	6	OFDM	BPSK	6
For 5 GHz 802.11n (HT20)	149 to 165	149	OFDM	BPSK	6.5

RADIATED EMISSION TEST (BELOW 1 GHz):

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11g	1 to 11	6	OFDM	BPSK	6
For 5 GHz 802.11n (HT20)	149 to 165	149	OFDM	BPSK	6.5



A D T

RADIATED EMISSION TEST (ABOVE 1 GHz):

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
For 2.4 GHz 802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6
For 5 GHz 802.11n (HT20)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
For 5 GHz 802.11n (HT40)	151 to 159	151, 159	OFDM	BPSK	13.5

ANTENNA PORT CONDUCTED MEASUREMENT:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
For 2.4 GHz 802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6
For 5 GHz 802.11n (HT20)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
For 5 GHz 802.11n (HT40)	151 to 159	151, 159	OFDM	BPSK	13.5



A D T

CONDUCTED OUT-BAND EMISSION MEASUREMENT:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
For 2.4 GHz 802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6
For 5 GHz 802.11n (HT20)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
For 5 GHz 802.11n (HT40)	151 to 159	151, 159	OFDM	BPSK	13.5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
PLC	25deg. C, 70,%RH	120Vac, 60Hz	Mike Hsieh
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Nelson Teng
RE≥1G	23deg. C, 67%RH 24deg. C, 67%RH	120Vac, 60Hz	Gary Cheng Robert Cheng
APCM	25deg. C, 60%RH	120Vac, 60Hz	James Chan
OB	25deg. C, 60%RH	120Vac, 60Hz	James Chan

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 v03r02

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 shall be considered.

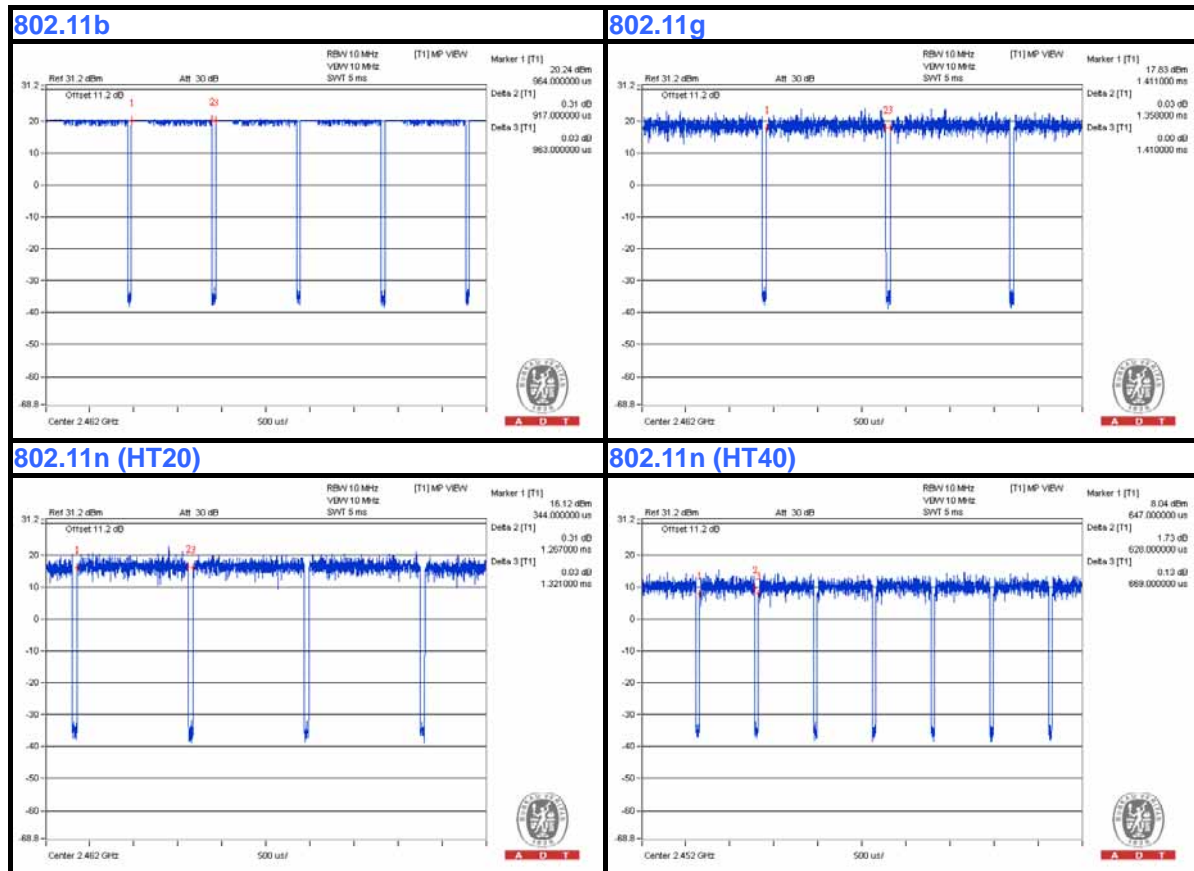
For 2.4GHz

802.11b: Duty cycle = 0.917 ms/0.963 ms = 0.952, Duty factor = $10 * \log(1/0.952) = 0.21$

802.11g: Duty cycle = 1.358 ms/1.41 ms = 0.963, Duty factor = $10 * \log(1/0.963) = 0.16$

802.11n (HT20): Duty cycle = 1.267 ms/1.321 ms = 0.959, Duty factor = $10 * \log(1/0.959) = 0.18$

802.11n (HT40): Duty cycle = 0.628 ms/0.669 ms = 0.939, Duty factor = $10 * \log(1/0.939) = 0.27$





A D T

Duty cycle of test signal is < 98%, duty factor shall be considered.

For 5GHz

802.11a: Duty cycle = 1.357 ms/1.407 ms = 0.964, Duty factor = $10 * \log(1/0.964) = 0.16$

802.11n (HT20): Duty cycle = 1.267 ms/1.315 ms = 0.963, Duty factor = $10 * \log(1/0.963) = 0.16$

802.11n (HT40): Duty cycle = 0.63 ms/0.667 ms = 0.945, Duty factor = $10 * \log(1/0.945) = 0.25$





A D T

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	Remark
A	NOTEBOOK	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab
B	POE	Symbol	AP-PSBIAS-1P2-AFR	NA	FCC DoC	Supplied by client
C	HUB	ZyXEL	ES-116P	S060H02000215	FCC DoC	Supplied by Client

NOTE:

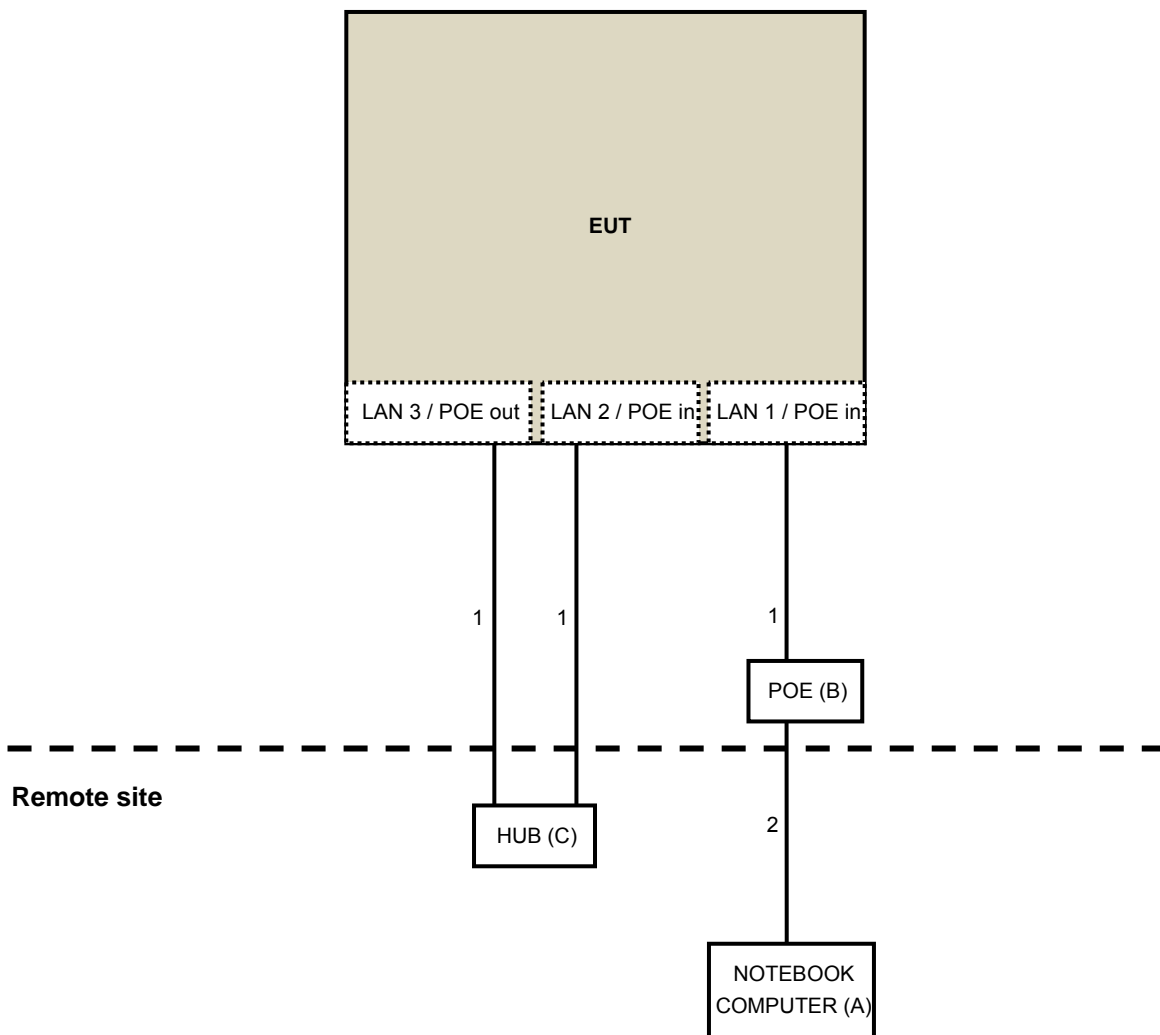
1. All power cords of the above support units are non-shielded (1.8 m).

No.	Cable	Qty.	Length (m)	Shielded (Yes/ No)	Cores (Number)	Remark
1	RJ45	1	10	No	0	Provided by Lab
2	RJ45	1	3	No	0	Provided by Lab

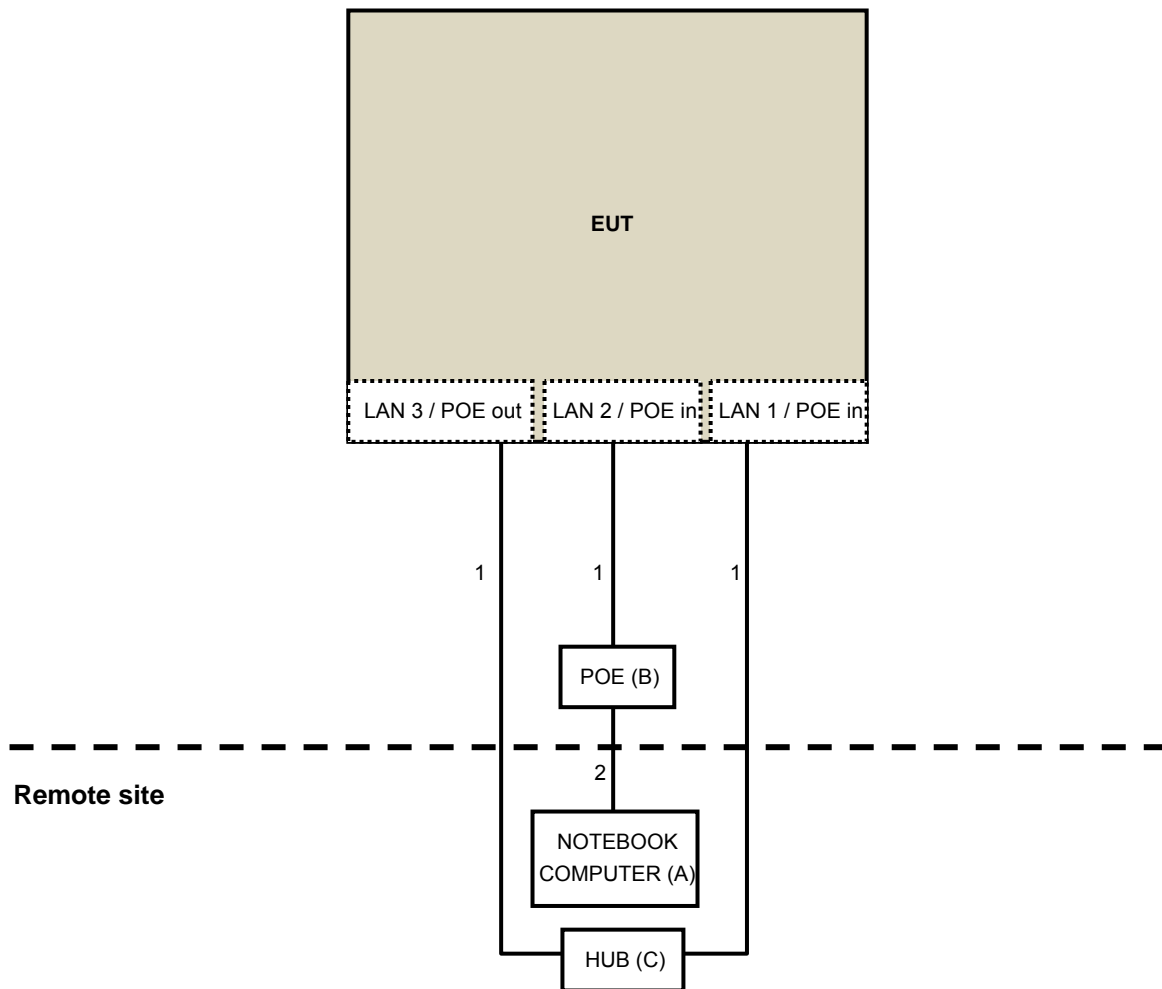
3.6 CONFIGURATION OF SYSTEM UNDER TEST

For conducted emission test:

LAN 1 / POE in



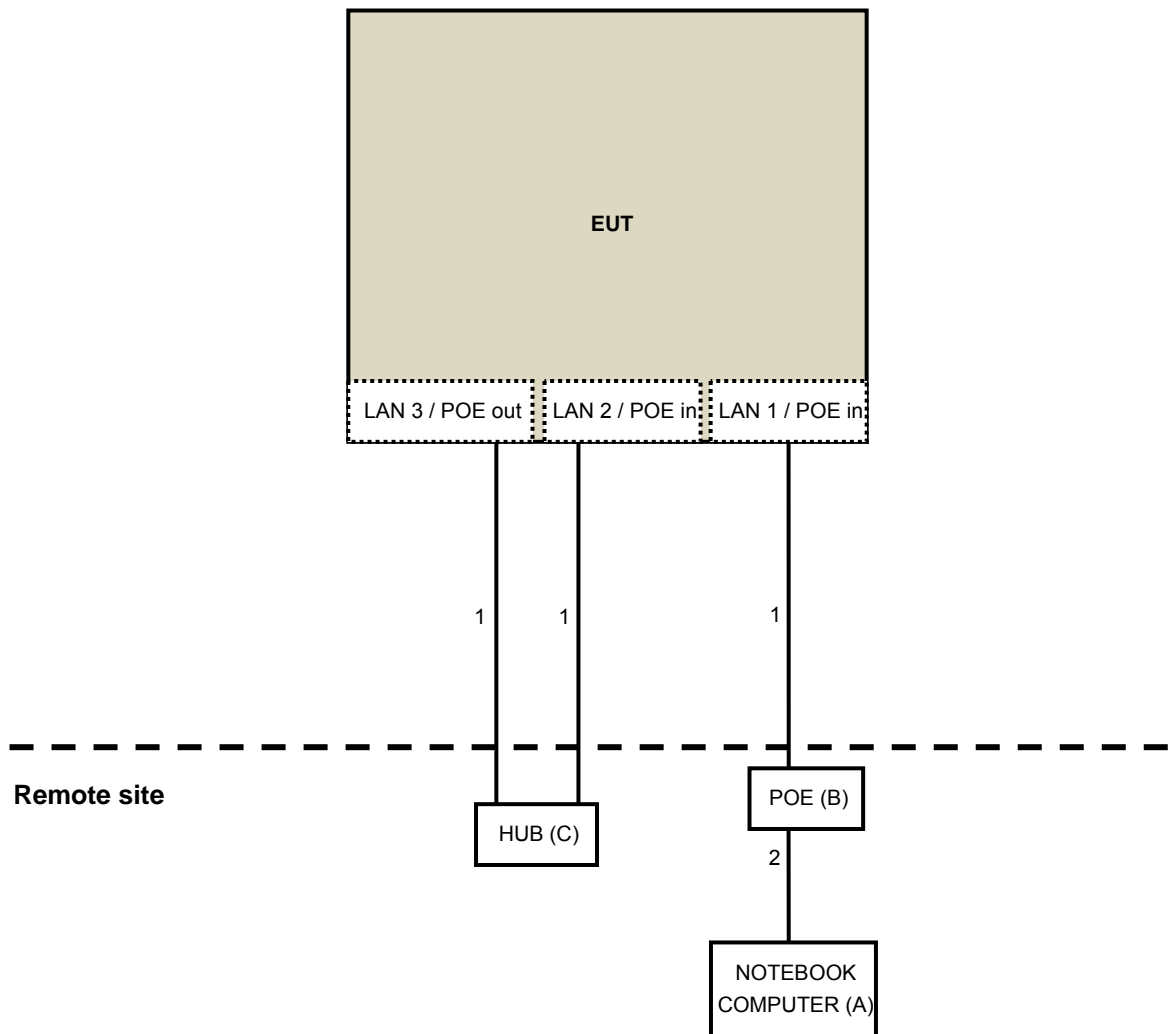
For conducted emission test:
LAN 2 / POE in





A D T

For other test items:





A D T

4. TEST TYPES AND RESULTS (FOR 2.4GHz, 2.400 ~ 2.4835GHz Band)

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS 30	100375	Apr. 29, 2014	Apr. 28, 2015
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK8127	8127-522	Sep. 12, 2013	Sep. 11, 2014
Line-Impedance Stabilization Network (for Peripheral)	ENV216	100071	Nov. 13, 2013	Nov. 12, 2014
RF Cable (JYEBAO)	5DFB	COCCAB-001	Mar. 10, 2014	Mar. 09, 2015
50 ohms Terminator	N/A	EMC-03	Sep. 24, 2013	Sep. 23, 2014
50 ohms Terminator	N/A	EMC-02	Oct. 01, 2013	Sep. 30, 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: June 20, 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.

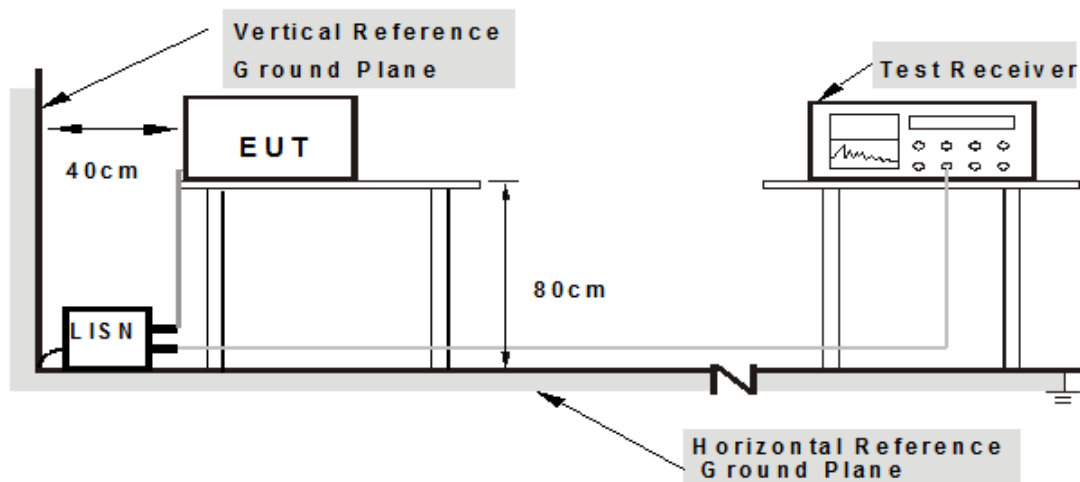
NOTE:

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.



A D T

4.1.6 EUT OPERATING CONDITIONS

1. Placed the EUT on testing table.
2. Prepared support unit A (NOTEBOOK COMPUTER) to act as communication partner.
3. The communication partner run test program “ART2_VER_2_28_7BIN” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

4.1.7 TEST RESULTS (MODE 2)

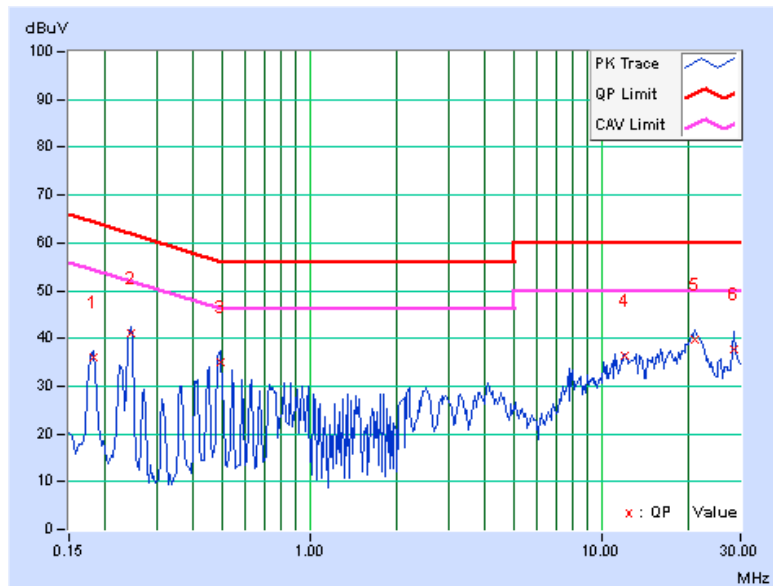
LAN 1 / POE in

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

No	Freq. [MHz]	Corr. Factor [dB]	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin [dB]	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.18125	0.07	35.86	35.49	35.93	35.56	64.43
2	0.24375	0.07	41.12	38.20	41.19	38.27	61.97	51.97	-20.77	-13.69
3	0.49375	0.10	34.75	33.08	34.85	33.18	56.10	46.10	-21.26	-12.93
4	12.04297	0.51	35.94	34.32	36.45	34.83	60.00	50.00	-23.55	-15.17
5	20.94141	0.74	39.02	37.85	39.76	38.59	60.00	50.00	-20.24	-11.41
6	28.59375	0.96	36.66	32.46	37.62	33.42	60.00	50.00	-22.38	-16.58

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

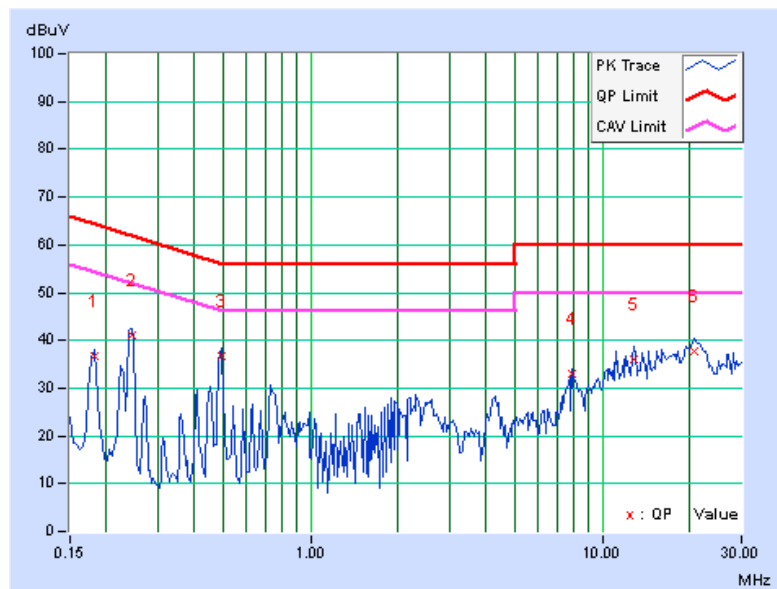


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18125	0.07	36.63	35.37	36.70	35.44	64.43	54.43	-27.73	-18.99
2	0.24375	0.07	40.98	38.20	41.05	38.27	61.97	51.97	-20.91	-13.69
3	0.49375	0.10	36.53	35.19	36.63	35.29	56.10	46.10	-19.48	-10.82
4	7.88281	0.38	32.63	31.26	33.01	31.64	60.00	50.00	-26.99	-18.36
5	12.77869	0.53	35.66	34.16	36.19	34.69	60.00	50.00	-23.81	-15.31
6	20.76563	0.72	37.11	35.20	37.83	35.92	60.00	50.00	-22.17	-14.08

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



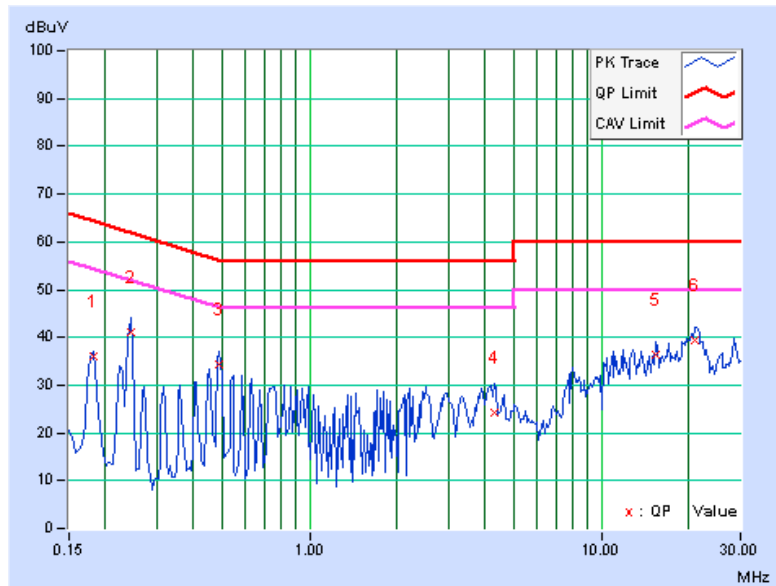
LAN 2 / POE in

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

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18125	0.07	35.82	35.41	35.89	35.48	64.43	54.43	-28.54	-18.95
2	0.24375	0.07	41.08	38.14	41.15	38.21	61.97	51.97	-20.81	-13.75
3	0.48984	0.10	34.10	31.19	34.20	31.29	56.17	46.17	-21.97	-14.88
4	4.30469	0.27	23.88	16.53	24.15	16.80	56.00	46.00	-31.85	-29.20
5	15.39844	0.60	35.75	32.24	36.35	32.84	60.00	50.00	-23.65	-17.16
6	20.84375	0.73	38.79	37.04	39.52	37.77	60.00	50.00	-20.48	-12.23

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

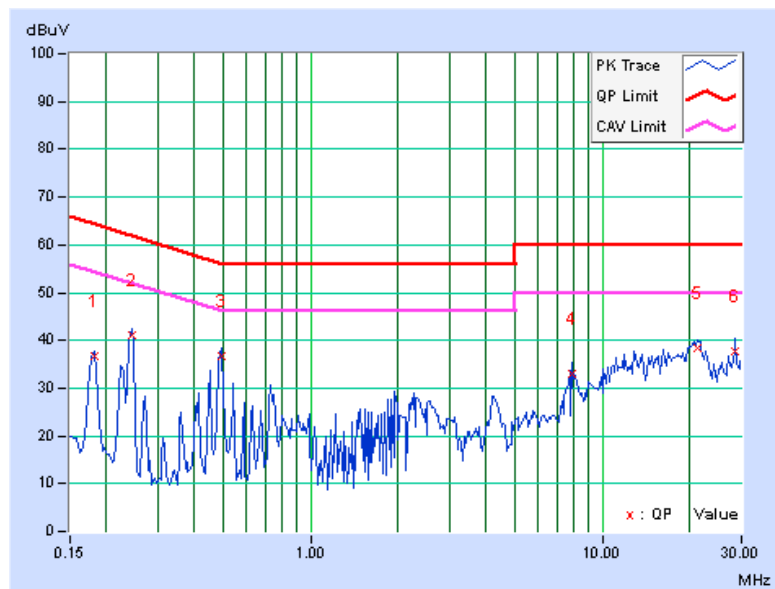


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)
--------------	-------------	--------------------------	--------------------------------

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	0.18125	0.07	36.65	35.41	36.72	35.48	64.43	54.43	-27.71	-18.95
2	0.24375	0.07	41.02	38.06	41.09	38.13	61.97	51.97	-20.87	-13.83
3	0.49375	0.10	36.53	35.15	36.63	35.25	56.10	46.10	-19.48	-10.86
4	7.88281	0.38	32.63	31.22	33.01	31.60	60.00	50.00	-26.99	-18.40
5	21.17506	0.73	37.61	35.49	38.34	36.22	60.00	50.00	-21.66	-13.78
6	28.59766	0.95	36.60	32.48	37.55	33.43	60.00	50.00	-22.45	-16.57

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





A D T

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.



A D T

4.2.2 TEST INSTRUMENTS

For below 1GHz test:

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	Feb. 27, 2014	Feb. 26, 2015
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: June 18, 2014



A D T

For above 1GHz test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
MXE EMI Receiver Agilent	N9038A	MY51210105	July 21, 2014	July 20, 2015
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-03	Nov. 13, 2013	Nov. 12, 2014
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-360	Feb. 26, 2014	Feb. 25, 2015
RF Cable	NA	CHGCAB_001	Oct. 05, 2013	Oct. 04, 2014
Spectrum Analyzer R&S	FSV40	100964	July 05, 2014	July 04, 2015
Horn_Antenna AISI	AIH.8018	0000320091110	Nov. 18, 2013	Nov. 17, 2014
Pre-Amplifier Agilent	8449B	3008A02578	June 24, 2014	June 23, 2015
RF Cable	NA	RF104-201 RF104-203 RF104-204	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. G.
4. The FCC Site Registration No. is 966073.
- 5 The VCCI Site Registration No. is G-137.
- 6 The CANADA Site Registration No. is IC 7450H-2.
- 7 Tested Date: Aug. 01, 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:

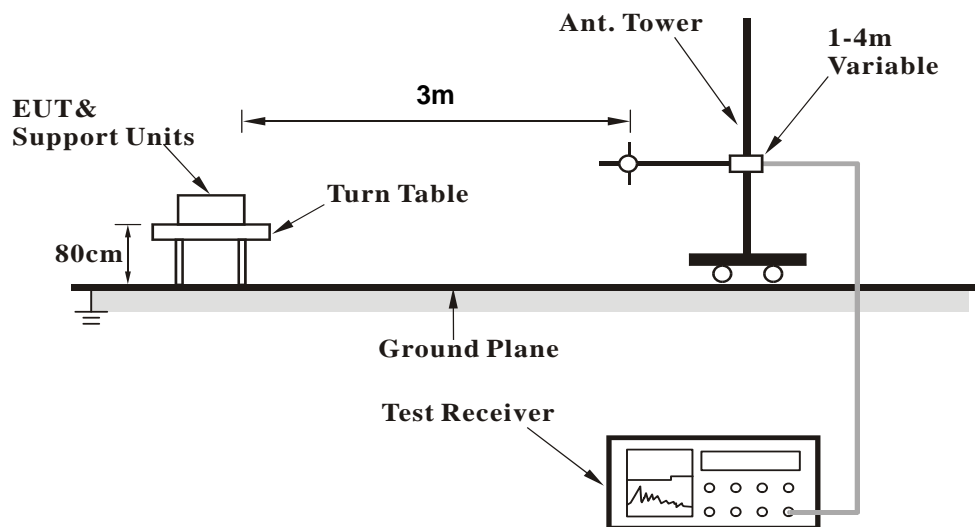
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
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 ($10 \log(1/\text{duty cycle})$).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle $\geq 98\%$) 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

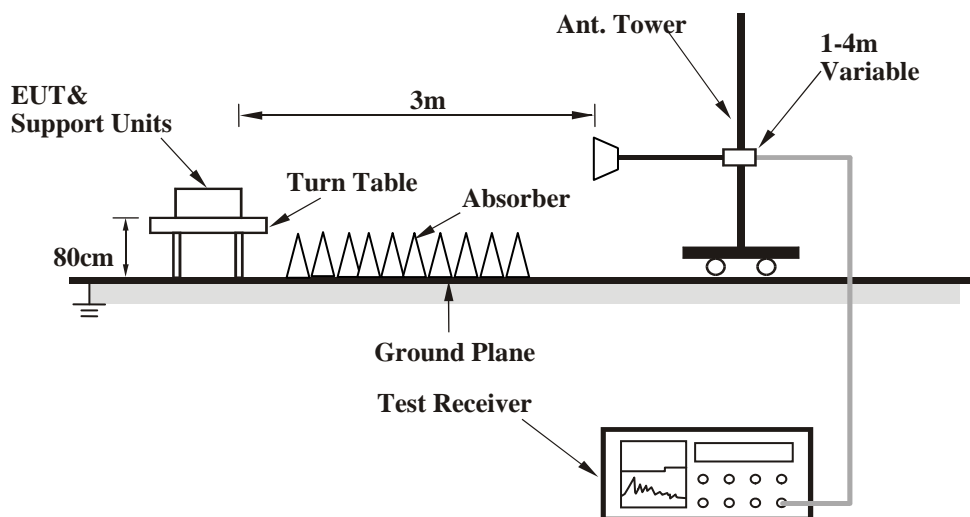
No deviation

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



A D T

4.2.7 TEST RESULTS (MODE 1)

BELOW 1GHz WORST-CASE DATA

802.11g

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	107.99	31.1 QP	43.5	-12.4	1.50 H	260	46.94	-15.80
2	164.98	31.4 QP	43.5	-12.1	1.50 H	101	44.20	-12.79
3	199.99	32.4 QP	43.5	-11.1	1.00 H	18	48.13	-15.73
4	250.00	39.4 QP	46.0	-6.6	1.00 H	320	53.07	-13.66
5	374.98	39.2 QP	46.0	-6.8	2.00 H	84	49.07	-9.91
6	1000.00	42.5 QP	54.0	-11.5	1.00 H	344	40.47	2.00

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	35.68	28.7 QP	40.0	-11.3	1.00 V	250	42.74	-14.05
2	125.01	28.2 QP	43.5	-15.3	1.00 V	5	42.47	-14.26
3	250.00	32.7 QP	46.0	-13.3	2.00 V	75	46.33	-13.66
4	374.98	37.0 QP	46.0	-9.0	1.00 V	359	46.89	-9.91
5	429.98	36.9 QP	46.0	-9.1	1.00 V	5	45.05	-8.15
6	1000.00	44.0 QP	54.0	-10.0	1.50 V	360	41.97	2.00

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



A D T

ABOVE 1GHz DATA

802.11b

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2386.20	48.1 PK	74.0	-25.9	1.63 H	246	50.59	-2.49
2	2386.20	36.7 AV	54.0	-17.3	1.63 H	246	39.19	-2.49
3	*2412.00	100.2 PK			1.63 H	246	102.57	-2.37
4	*2412.00	97.5 AV			1.63 H	246	99.87	-2.37
5	4824.00	47.8 PK	74.0	-26.2	1.00 H	295	42.09	5.71
6	4824.00	40.2 AV	54.0	-13.8	1.00 H	295	34.49	5.71

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	2386.20	64.0 PK	74.0	-10.0	1.43 V	29	66.49	-2.49
2	2386.20	53.5 AV	54.0	-0.5	1.43 V	29	55.99	-2.49
3	*2412.00	116.2 PK			1.61 V	31	118.57	-2.37
4	*2412.00	113.7 AV			1.61 V	31	116.07	-2.37
5	4824.00	48.8 PK	74.0	-25.2	1.46 V	343	43.09	5.71
6	4824.00	40.5 AV	54.0	-13.5	1.46 V	343	34.79	5.71

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.



A D T

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	2359.20	47.2 PK	74.0	-26.8	1.67 H	231	49.80	-2.60
2	2359.20	36.3 AV	54.0	-17.7	1.67 H	231	38.90	-2.60
3	*2437.00	102.1 PK			1.63 H	250	104.35	-2.25
4	*2437.00	99.4 AV			1.63 H	250	101.65	-2.25
5	4874.00	48.2 PK	74.0	-25.8	1.00 H	280	42.30	5.90
6	4874.00	40.5 AV	54.0	-13.5	1.00 H	280	34.60	5.90
7	7311.00	52.8 PK	74.0	-21.2	1.00 H	25	39.63	13.17
8	7311.00	43.7 AV	54.0	-10.3	1.00 H	25	30.53	13.17

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	2359.20	69.3 PK	74.0	-4.7	1.62 V	330	71.90	-2.60
2	2359.20	53.5 AV	54.0	-0.5	1.62 V	330	56.10	-2.60
3	*2437.00	117.9 PK			1.59 V	42	120.15	-2.25
4	*2437.00	115.4 AV			1.59 V	42	117.65	-2.25
5	4874.00	49.2 PK	74.0	-24.8	1.48 V	360	43.30	5.90
6	4874.00	41.4 AV	54.0	-12.6	1.48 V	360	35.50	5.90
7	7311.00	54.6 PK	74.0	-19.4	1.37 V	297	41.43	13.17
8	7311.00	45.5 AV	54.0	-8.5	1.37 V	297	32.33	13.17

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.



A D T

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	98.8 PK			1.63 H	250	100.94	-2.14
2	*2462.00	95.8 AV			1.63 H	250	97.94	-2.14
3	2483.50	47.0 PK	74.0	-27.0	1.61 H	245	49.03	-2.03
4	2483.50	36.0 AV	54.0	-18.0	1.61 H	245	38.03	-2.03
5	2487.77	47.8 PK	74.0	-26.2	1.59 H	223	49.81	-2.01
6	2487.77	36.6 AV	54.0	-17.4	1.59 H	223	38.61	-2.01
7	4924.00	48.3 PK	74.0	-25.7	1.00 H	299	42.19	6.11
8	4924.00	40.2 AV	54.0	-13.8	1.00 H	299	34.09	6.11
9	7386.00	53.1 PK	74.0	-20.9	1.04 H	13	39.92	13.18
10	7386.00	44.2 AV	54.0	-9.8	1.04 H	13	31.02	13.18

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	*2462.00	114.5 PK			1.56 V	47	116.64	-2.14
2	*2462.00	111.8 AV			1.56 V	47	113.94	-2.14
3	2483.50	61.1 PK	74.0	-12.9	1.74 V	360	63.13	-2.03
4	2483.50	52.1 AV	54.0	-1.9	1.74 V	360	54.13	-2.03
5	2487.77	62.4 PK	74.0	-11.6	1.74 V	360	64.41	-2.01
6	2487.77	53.5 AV	54.0	-0.5	1.74 V	360	55.51	-2.01
7	4924.00	49.3 PK	74.0	-24.7	1.52 V	358	43.19	6.11
8	4924.00	41.2 AV	54.0	-12.8	1.52 V	358	35.09	6.11
9	7386.00	54.7 PK	74.0	-19.3	1.38 V	312	41.52	13.18
10	7386.00	45.7 AV	54.0	-8.3	1.38 V	312	32.52	13.18

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.



A D T

802.11g

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	47.8 PK	74.0	-26.2	1.58 H	232	50.27	-2.47
2	2390.00	36.6 AV	54.0	-17.4	1.58 H	232	39.07	-2.47
3	*2412.00	105.7 PK			1.58 H	232	108.07	-2.37
4	*2412.00	93.2 AV			1.58 H	232	95.57	-2.37
5	4824.00	47.6 PK	74.0	-26.4	1.06 H	310	41.89	5.71
6	4824.00	35.0 AV	54.0	-19.0	1.06 H	310	29.29	5.71

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	73.0 PK	74.0	-1.0	1.35 V	212	75.47	-2.47
2	2390.00	51.3 AV	54.0	-2.7	1.35 V	212	53.77	-2.47
3	*2412.00	119.8 PK			1.35 V	212	122.17	-2.37
4	*2412.00	107.8 AV			1.35 V	212	110.17	-2.37
5	4824.00	47.9 PK	74.0	-26.1	1.05 V	16	42.19	5.71
6	4824.00	35.5 AV	54.0	-18.5	1.05 V	16	29.79	5.71

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.



A D T

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	47.3 PK	74.0	-26.7	1.59 H	233	49.77	-2.47
2	2390.00	36.1 AV	54.0	-17.9	1.59 H	233	38.57	-2.47
3	*2437.00	109.2 PK			1.59 H	233	111.45	-2.25
4	*2437.00	97.6 AV			1.59 H	233	99.85	-2.25
5	2483.50	47.2 PK	74.0	-26.8	1.59 H	233	49.23	-2.03
6	2483.50	36.4 AV	54.0	-17.6	1.59 H	233	38.43	-2.03
7	4874.00	48.1 PK	74.0	-25.9	1.00 H	299	42.20	5.90
8	4874.00	35.4 AV	54.0	-18.6	1.00 H	299	29.50	5.90
9	7311.00	57.6 PK	74.0	-16.4	1.04 H	20	44.43	13.17
10	7311.00	43.6 AV	54.0	-10.4	1.04 H	20	30.43	13.17

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	73.0 PK	74.0	-1.0	1.39 V	240	75.47	-2.47
2	2390.00	50.8 AV	54.0	-3.2	1.39 V	240	53.27	-2.47
3	*2437.00	123.1 PK			1.36 V	207	125.35	-2.25
4	*2437.00	111.8 AV			1.36 V	207	114.05	-2.25
5	2483.50	73.2 PK	74.0	-0.8	1.36 V	217	75.23	-2.03
6	2483.50	51.6 AV	54.0	-2.4	1.36 V	217	53.63	-2.03
7	4874.00	48.6 PK	74.0	-25.4	1.05 V	26	42.70	5.90
8	4874.00	35.9 AV	54.0	-18.1	1.05 V	26	30.00	5.90
9	7311.00	57.7 PK	74.0	-16.3	1.00 V	9	44.53	13.17
10	7311.00	43.5 AV	54.0	-10.5	1.00 V	9	30.33	13.17

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.



A D T

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	104.3 PK			1.72 H	205	106.44	-2.14
2	*2462.00	92.1 AV			1.72 H	205	94.24	-2.14
3	2483.50	46.9 PK	74.0	-27.1	1.72 H	205	48.93	-2.03
4	2483.50	36.3 AV	54.0	-17.7	1.72 H	205	38.33	-2.03
5	4924.00	47.2 PK	74.0	-26.8	1.00 H	306	41.09	6.11
6	4924.00	34.8 AV	54.0	-19.2	1.00 H	306	28.69	6.11
7	7386.00	56.6 PK	74.0	-17.4	1.00 H	14	43.42	13.18
8	7386.00	42.8 AV	54.0	-11.2	1.00 H	14	29.62	13.18

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	*2462.00	118.2 PK			1.31 V	149	120.34	-2.14
2	*2462.00	106.3 AV			1.31 V	149	108.44	-2.14
3	2483.50	70.9 PK	74.0	-3.1	1.31 V	149	72.93	-2.03
4	2483.50	53.5 AV	54.0	-0.5	1.31 V	149	55.53	-2.03
5	4924.00	48.6 PK	74.0	-25.4	1.00 V	29	42.49	6.11
6	4924.00	36.2 AV	54.0	-17.8	1.00 V	29	30.09	6.11
7	7386.00	56.7 PK	74.0	-17.3	1.03 V	6	43.52	13.18
8	7386.00	43.2 AV	54.0	-10.8	1.03 V	6	30.02	13.18

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.



A D T

802.11n (HT20)

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	46.8 PK	74.0	-27.2	1.62 H	207	49.27	-2.47
2	2390.00	35.8 AV	54.0	-18.2	1.62 H	207	38.27	-2.47
3	*2412.00	104.5 PK			1.62 H	207	106.87	-2.37
4	*2412.00	93.2 AV			1.62 H	207	95.57	-2.37
5	4824.00	47.3 PK	74.0	-26.7	1.00 H	313	41.59	5.71
6	4824.00	34.9 AV	54.0	-19.1	1.00 H	313	29.19	5.71

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	73.0 PK	74.0	-1.0	1.23 V	209	75.47	-2.47
2	2390.00	51.3 AV	54.0	-2.7	1.23 V	209	53.77	-2.47
3	*2412.00	118.6 PK			1.23 V	209	120.97	-2.37
4	*2412.00	107.5 AV			1.23 V	209	109.87	-2.37
5	4824.00	49.0 PK	74.0	-25.0	1.00 V	52	43.29	5.71
6	4824.00	36.2 AV	54.0	-17.8	1.00 V	52	30.49	5.71

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.



A D T

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	47.0 PK	74.0	-27.0	1.68 H	236	49.47	-2.47
2	2390.00	36.0 AV	54.0	-18.0	1.68 H	236	38.47	-2.47
3	*2437.00	107.8 PK			1.68 H	236	110.05	-2.25
4	*2437.00	96.1 AV			1.68 H	236	98.35	-2.25
5	2483.50	46.8 PK	74.0	-27.2	1.68 H	236	48.83	-2.03
6	2483.50	36.2 AV	54.0	-17.8	1.68 H	236	38.23	-2.03
7	4874.00	47.7 PK	74.0	-26.3	1.00 H	303	41.80	5.90
8	4874.00	35.2 AV	54.0	-18.8	1.00 H	303	29.30	5.90
9	7311.00	57.6 PK	74.0	-16.4	1.07 H	7	44.43	13.17
10	7311.00	44.0 AV	54.0	-10.0	1.07 H	7	30.83	13.17

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	73.0 PK	74.0	-1.0	1.25 V	199	75.47	-2.47
2	2390.00	50.0 AV	54.0	-4.0	1.25 V	199	52.47	-2.47
3	*2437.00	121.9 PK			1.25 V	199	124.15	-2.25
4	*2437.00	110.4 AV			1.25 V	199	112.65	-2.25
5	2483.50	71.6 PK	74.0	-2.4	1.25 V	199	73.63	-2.03
6	2483.50	48.3 AV	54.0	-5.7	1.25 V	199	50.33	-2.03
7	4874.00	48.5 PK	74.0	-25.5	1.01 V	41	42.60	5.90
8	4874.00	35.9 AV	54.0	-18.1	1.01 V	41	30.00	5.90
9	7311.00	56.6 PK	74.0	-17.4	1.00 V	10	43.43	13.17
10	7311.00	43.4 AV	54.0	-10.6	1.00 V	10	30.23	13.17

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.



A D T

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	99.8 PK			1.68 H	235	101.94	-2.14
2	*2462.00	89.2 AV			1.68 H	235	91.34	-2.14
3	2483.50	47.3 PK	74.0	-26.7	1.68 H	235	49.33	-2.03
4	2483.50	36.5 AV	54.0	-17.5	1.68 H	235	38.53	-2.03
5	4924.00	48.1 PK	74.0	-25.9	1.00 H	275	41.99	6.11
6	4924.00	35.2 AV	54.0	-18.8	1.00 H	275	29.09	6.11
7	7386.00	57.8 PK	74.0	-16.2	1.00 H	7	44.62	13.18
8	7386.00	44.0 AV	54.0	-10.0	1.00 H	7	30.82	13.18

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	*2462.00	113.7 PK			1.30 V	151	115.84	-2.14
2	*2462.00	103.2 AV			1.30 V	151	105.34	-2.14
3	2483.50	71.1 PK	74.0	-2.9	1.30 V	151	73.13	-2.03
4	2483.50	53.8 AV	54.0	-0.2	1.30 V	151	55.83	-2.03
5	4924.00	48.2 PK	74.0	-25.8	1.06 V	21	42.09	6.11
6	4924.00	35.8 AV	54.0	-18.2	1.06 V	21	29.69	6.11
7	7386.00	57.2 PK	74.0	-16.8	1.00 V	1	44.02	13.18
8	7386.00	43.6 AV	54.0	-10.4	1.00 V	1	30.42	13.18

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.



A D T

802.11n (HT40)

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	47.2 PK	74.0	-26.8	1.71 H	219	49.67	-2.47
2	2390.00	36.2 AV	54.0	-17.8	1.71 H	219	38.67	-2.47
3	*2422.00	97.8 PK			1.71 H	219	100.12	-2.32
4	*2422.00	85.7 AV			1.71 H	219	88.02	-2.32
5	4844.00	47.3 PK	74.0	-26.7	1.00 H	297	41.52	5.78
6	4844.00	34.9 AV	54.0	-19.1	1.00 H	297	29.12	5.78
7	7266.00	56.6 PK	74.0	-17.4	1.07 H	7	43.40	13.20
8	7266.00	42.8 AV	54.0	-11.2	1.07 H	7	29.60	13.20

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	2390.00	73.0 PK	74.0	-1.0	1.32 V	204	75.47	-2.47
2	2390.00	50.8 AV	54.0	-3.2	1.32 V	204	53.27	-2.47
3	*2422.00	111.3 PK			1.32 V	204	113.62	-2.32
4	*2422.00	99.7 AV			1.32 V	204	102.02	-2.32
5	4844.00	48.7 PK	74.0	-25.3	1.00 V	41	42.92	5.78
6	4844.00	35.8 AV	54.0	-18.2	1.00 V	41	30.02	5.78
7	7266.00	57.1 PK	74.0	-16.9	1.06 V	65	43.90	13.20
8	7266.00	43.5 AV	54.0	-10.5	1.06 V	65	30.30	13.20

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) – 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.



A D T

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	100.2 PK			1.63 H	235	102.45	-2.25
2	*2437.00	88.1 AV			1.63 H	235	90.35	-2.25
3	2483.50	46.6 PK	74.0	-27.4	1.63 H	235	48.63	-2.03
4	2483.50	35.8 AV	54.0	-18.2	1.63 H	235	37.83	-2.03
5	4874.00	47.3 PK	74.0	-26.7	1.00 H	313	41.40	5.90
6	4874.00	35.4 AV	54.0	-18.6	1.00 H	313	29.50	5.90
7	7311.00	57.5 PK	74.0	-16.5	1.00 H	14	44.33	13.17
8	7311.00	43.5 AV	54.0	-10.5	1.00 H	14	30.33	13.17

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	114.4 PK			1.29 V	198	116.65	-2.25
2	*2437.00	102.3 AV			1.29 V	198	104.55	-2.25
3	2483.50	73.3 PK	74.0	-0.7	1.29 V	198	75.33	-2.03
4	2483.50	50.5 AV	54.0	-3.5	1.29 V	198	52.53	-2.03
5	4874.00	48.3 PK	74.0	-25.7	1.00 V	51	42.40	5.90
6	4874.00	35.9 AV	54.0	-18.1	1.00 V	51	30.00	5.90
7	7311.00	56.6 PK	74.0	-17.4	1.00 V	65	43.43	13.17
8	7311.00	43.0 AV	54.0	-11.0	1.00 V	65	29.83	13.17

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.



A D T

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	94.1 PK			1.70 H	220	96.28	-2.18
2	*2452.00	83.1 AV			1.70 H	220	85.28	-2.18
3	2483.50	47.0 PK	74.0	-27.0	1.70 H	220	49.03	-2.03
4	2483.50	36.2 AV	54.0	-17.8	1.70 H	220	38.23	-2.03
5	4904.00	47.7 PK	74.0	-26.3	1.00 H	294	41.68	6.02
6	4904.00	35.0 AV	54.0	-19.0	1.00 H	294	28.98	6.02
7	7356.00	57.2 PK	74.0	-16.8	1.01 H	8	44.02	13.18
8	7356.00	43.1 AV	54.0	-10.9	1.01 H	8	29.92	13.18

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	*2452.00	108.3 PK			1.21 V	201	110.48	-2.18
2	*2452.00	97.1 AV			1.21 V	201	99.28	-2.18
3	2483.50	71.8 PK	74.0	-2.2	1.14 V	208	73.83	-2.03
4	2483.50	53.2 AV	54.0	-0.8	1.14 V	208	55.23	-2.03
5	4904.00	48.6 PK	74.0	-25.4	1.00 V	19	42.58	6.02
6	4904.00	35.8 AV	54.0	-18.2	1.00 V	19	29.78	6.02
7	7356.00	57.7 PK	74.0	-16.3	1.04 V	19	44.52	13.18
8	7356.00	43.9 AV	54.0	-10.1	1.04 V	19	30.72	13.18

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.



A D T

4.2.8 TEST RESULTS (MODE 2)

BELOW 1GHz WORST-CASE DATA

802.11g

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	107.80	31.0 QP	43.5	-12.5	1.60 H	251	47.22	-16.23
2	164.93	30.8 QP	43.5	-12.7	1.58 H	104	43.97	-13.19
3	199.74	32.4 QP	43.5	-11.1	1.02 H	7	48.54	-16.13
4	250.28	39.2 QP	46.0	-6.8	1.00 H	335	53.24	-14.06
5	374.87	39.6 QP	46.0	-6.4	1.86 H	76	49.93	-10.30
6	999.51	42.9 QP	54.0	-11.1	1.08 H	303	41.24	1.66

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	35.13	28.5 QP	40.0	-11.5	1.00 V	252	42.89	-14.39
2	125.33	28.4 QP	43.5	-15.1	1.00 V	64	43.03	-14.65
3	250.56	32.5 QP	46.0	-13.5	1.73 V	64	46.52	-14.05
4	375.23	36.9 QP	46.0	-9.1	1.00 V	336	47.18	-10.30
5	429.73	37.0 QP	46.0	-9.1	1.02 V	27	45.48	-8.53
6	998.87	43.8 QP	54.0	-10.2	1.53 V	25	42.10	1.67

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



A D T

ABOVE 1GHz DATA

802.11b

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.9 PK	74.0	-13.1	1.04 H	333	63.37	-2.47
2	2390.00	52.0 AV	54.0	-2.0	1.04 H	333	54.47	-2.47
3	*2412.00	117.1 PK			1.22 H	339	119.47	-2.37
4	*2412.00	114.5 AV			1.22 H	339	116.87	-2.37
5	4824.00	49.2 PK	74.0	-24.8	1.00 H	350	43.49	5.71
6	4824.00	41.6 AV	54.0	-12.4	1.00 H	350	35.89	5.71
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	62.4 PK	74.0	-11.6	1.15 V	14	64.87	-2.47
2	2390.00	53.1 AV	54.0	-0.9	1.15 V	14	55.57	-2.47
3	*2412.00	116.5 PK			1.38 V	15	118.87	-2.37
4	*2412.00	114.1 AV			1.38 V	15	116.47	-2.37
5	4824.00	49.5 PK	74.0	-24.5	1.00 V	355	43.79	5.71
6	4824.00	40.1 AV	54.0	-13.9	1.00 V	355	34.39	5.71

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.



A D T

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	2356.00	69.5 PK	74.0	-4.5	1.29 H	350	72.12	-2.62
2	2356.00	53.6 AV	54.0	-0.4	1.29 H	350	56.22	-2.62
3	*2437.00	118.1 PK			1.22 H	339	120.35	-2.25
4	*2437.00	115.7 AV			1.22 H	339	117.95	-2.25
5	4874.00	50.3 PK	74.0	-23.7	1.00 H	309	44.40	5.90
6	4874.00	42.3 AV	54.0	-11.7	1.00 H	309	36.40	5.90
7	7311.00	55.4 PK	74.0	-18.6	1.03 H	323	42.23	13.17
8	7311.00	48.6 AV	54.0	-5.4	1.03 H	323	35.43	13.17

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	2356.00	67.3 PK	74.0	-6.7	1.45 V	15	69.92	-2.62
2	2356.00	53.1 AV	54.0	-0.9	1.45 V	15	55.72	-2.62
3	*2437.00	117.6 PK			1.12 V	2	119.85	-2.25
4	*2437.00	115.1 AV			1.12 V	2	117.35	-2.25
5	4874.00	50.1 PK	74.0	-23.9	1.00 V	349	44.20	5.90
6	4874.00	40.2 AV	54.0	-13.8	1.00 V	349	34.30	5.90
7	7311.00	57.7 PK	74.0	-16.3	1.33 V	66	44.53	13.17
8	7311.00	51.3 AV	54.0	-2.7	1.33 V	66	38.13	13.17

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.



A D T

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	115.9 PK			1.00 H	3	118.04	-2.14
2	*2462.00	113.3 AV			1.00 H	3	115.44	-2.14
3	2487.60	62.1 PK	74.0	-11.9	1.00 H	350	64.11	-2.01
4	2487.60	53.8 AV	54.0	-0.2	1.00 H	350	55.81	-2.01
5	4924.00	50.1 PK	74.0	-23.9	1.06 H	340	43.99	6.11
6	4924.00	42.3 AV	54.0	-11.7	1.06 H	340	36.19	6.11
7	7386.00	55.4 PK	74.0	-18.6	1.10 H	330	42.22	13.18
8	7386.00	48.4 AV	54.0	-5.6	1.10 H	330	35.22	13.18

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	*2462.00	115.3 PK			1.09 V	6	117.44	-2.14
2	*2462.00	112.8 AV			1.09 V	6	114.94	-2.14
3	2487.60	62.1 PK	74.0	-11.9	1.06 V	14	64.11	-2.01
4	2487.60	51.7 AV	54.0	-2.3	1.06 V	14	53.71	-2.01
5	4924.00	49.5 PK	74.0	-24.5	1.00 V	360	43.39	6.11
6	4924.00	39.8 AV	54.0	-14.2	1.00 V	360	33.69	6.11
7	7386.00	57.3 PK	74.0	-16.7	1.01 V	46	44.12	13.18
8	7386.00	50.4 AV	54.0	-3.6	1.01 V	46	37.22	13.18

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.



A D T

802.11g

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2388.00	73.8 PK	74.0	-0.2	1.25 H	12	76.28	-2.48
2	2388.00	51.1 AV	54.0	-2.9	1.25 H	12	53.58	-2.48
3	*2412.00	118.2 PK			1.02 H	12	120.57	-2.37
4	*2412.00	107.3 AV			1.02 H	12	109.67	-2.37
5	4824.00	46.1 PK	74.0	-27.9	1.03 H	99	40.39	5.71
6	4824.00	35.0 AV	54.0	-19.0	1.03 H	99	29.29	5.71

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	2388.00	72.0 PK	74.0	-2.0	1.42 V	18	74.48	-2.48
2	2388.00	52.3 AV	54.0	-1.7	1.42 V	18	54.78	-2.48
3	*2412.00	118.2 PK			1.15 V	13	120.57	-2.37
4	*2412.00	107.2 AV			1.15 V	13	109.57	-2.37
5	4824.00	48.6 PK	74.0	-25.4	1.03 V	43	42.89	5.71
6	4824.00	35.9 AV	54.0	-18.1	1.03 V	43	30.19	5.71

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.



A D T

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	2362.00	73.6 PK	74.0	-0.4	1.01 H	7	76.20	-2.60
2	2362.00	50.2 AV	54.0	-3.8	1.01 H	7	52.80	-2.60
3	*2437.00	122.8 PK			1.01 H	7	125.05	-2.25
4	*2437.00	111.4 AV			1.01 H	7	113.65	-2.25
5	2483.50	73.9 PK	74.0	-0.1	1.01 H	7	75.93	-2.03
6	2483.50	51.5 AV	54.0	-2.5	1.01 H	7	53.53	-2.03
7	4874.00	46.2 PK	74.0	-27.8	1.07 H	107	40.30	5.90
8	4874.00	35.3 AV	54.0	-18.7	1.07 H	107	29.40	5.90
9	7311.00	53.7 PK	74.0	-20.3	1.00 H	183	40.53	13.17
10	7311.00	43.0 AV	54.0	-11.0	1.00 H	183	29.83	13.17

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	2362.00	72.1 PK	74.0	-1.9	1.08 V	12	74.70	-2.60
2	2362.00	50.8 AV	54.0	-3.2	1.08 V	12	53.40	-2.60
3	*2437.00	122.1 PK			1.08 V	12	124.35	-2.25
4	*2437.00	110.8 AV			1.08 V	12	113.05	-2.25
5	2483.50	73.1 PK	74.0	-0.9	1.08 V	12	75.13	-2.03
6	2483.50	51.2 AV	54.0	-2.8	1.08 V	12	53.23	-2.03
7	4874.00	48.4 PK	74.0	-25.6	1.04 V	38	42.50	5.90
8	4874.00	35.6 AV	54.0	-18.4	1.04 V	38	29.70	5.90
9	7311.00	57.4 PK	74.0	-16.6	1.05 V	20	44.23	13.17
10	7311.00	43.6 AV	54.0	-10.4	1.05 V	20	30.43	13.17

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.



A D T

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	117.1 PK			1.00 H	2	119.24	-2.14
2	*2462.00	105.9 AV			1.00 H	2	108.04	-2.14
3	2483.50	72.1 PK	74.0	-1.9	1.00 H	3	74.13	-2.03
4	2483.50	53.9 AV	54.0	-0.1	1.00 H	3	55.93	-2.03
5	4924.00	46.2 PK	74.0	-27.8	1.06 H	112	40.09	6.11
6	4924.00	35.8 AV	54.0	-18.2	1.06 H	112	29.69	6.11
7	7386.00	53.3 PK	74.0	-20.7	1.00 H	208	40.12	13.18
8	7386.00	42.8 AV	54.0	-11.2	1.00 H	208	29.62	13.18

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	*2462.00	116.1 PK			1.09 V	14	118.24	-2.14
2	*2462.00	104.8 AV			1.09 V	14	106.94	-2.14
3	2483.50	73.2 PK	74.0	-0.8	1.09 V	14	75.23	-2.03
4	2483.50	53.8 AV	54.0	-0.2	1.09 V	14	55.83	-2.03
5	4924.00	48.4 PK	74.0	-25.6	1.00 V	36	42.29	6.11
6	4924.00	35.6 AV	54.0	-18.4	1.00 V	36	29.49	6.11
7	7386.00	58.1 PK	74.0	-15.9	1.00 V	20	44.92	13.18
8	7386.00	44.1 AV	54.0	-9.9	1.00 V	20	30.92	13.18

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.



A D T

802.11n (HT20)

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	71.4 PK	74.0	-2.6	1.02 H	5	73.87	-2.47
2	2390.00	53.5 AV	54.0	-0.5	1.02 H	5	55.97	-2.47
3	*2412.00	120.0 PK			1.02 H	5	122.37	-2.37
4	*2412.00	108.8 AV			1.02 H	5	111.17	-2.37
5	4824.00	46.2 PK	74.0	-27.8	1.06 H	123	40.49	5.71
6	4824.00	35.0 AV	54.0	-19.0	1.06 H	123	29.29	5.71

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	71.7 PK	74.0	-2.3	1.38 V	10	74.17	-2.47
2	2390.00	53.3 AV	54.0	-0.7	1.38 V	10	55.77	-2.47
3	*2412.00	117.1 PK			1.39 V	13	119.47	-2.37
4	*2412.00	106.8 AV			1.39 V	13	109.17	-2.37
5	4824.00	49.1 PK	74.0	-24.9	1.00 V	40	43.39	5.71
6	4824.00	36.4 AV	54.0	-17.6	1.00 V	40	30.69	5.71

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.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	73.9 PK	74.0	-0.1	1.26 H	10	76.37	-2.47
2	2390.00	51.5 AV	54.0	-2.5	1.26 H	10	53.97	-2.47
3	*2437.00	123.9 PK			1.02 H	5	126.15	-2.25
4	*2437.00	112.7 AV			1.02 H	5	114.95	-2.25
5	2483.50	70.8 PK	74.0	-3.2	1.00 H	6	72.83	-2.03
6	2483.50	48.7 AV	54.0	-5.3	1.00 H	6	50.73	-2.03
7	4874.00	46.2 PK	74.0	-27.8	1.05 H	108	40.30	5.90
8	4874.00	35.2 AV	54.0	-18.8	1.05 H	108	29.30	5.90
9	7311.00	54.3 PK	74.0	-19.7	1.00 H	218	41.13	13.17
10	7311.00	43.0 AV	54.0	-11.0	1.00 H	218	29.83	13.17

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	73.4 PK	74.0	-0.6	1.15 V	9	75.87	-2.47
2	2390.00	50.6 AV	54.0	-3.4	1.15 V	9	53.07	-2.47
3	*2437.00	121.4 PK			1.15 V	9	123.65	-2.25
4	*2437.00	110.7 AV			1.15 V	9	112.95	-2.25
5	2483.50	70.1 PK	74.0	-3.9	1.15 V	9	72.13	-2.03
6	2483.50	47.6 AV	54.0	-6.4	1.15 V	9	49.63	-2.03
7	4874.00	48.5 PK	74.0	-25.5	1.00 V	38	42.60	5.90
8	4874.00	36.2 AV	54.0	-17.8	1.00 V	38	30.30	5.90
9	7311.00	57.2 PK	74.0	-16.8	1.00 V	21	44.03	13.17
10	7311.00	43.5 AV	54.0	-10.5	1.00 V	21	30.33	13.17

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.



A D T

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	116.1 PK			1.01 H	3	118.24	-2.14
2	*2462.00	104.1 AV			1.01 H	3	106.24	-2.14
3	2483.50	70.2 PK	74.0	-3.8	1.01 H	3	72.23	-2.03
4	2483.50	53.9 AV	54.0	-0.1	1.01 H	3	55.93	-2.03
5	4924.00	46.0 PK	74.0	-28.0	1.05 H	124	39.89	6.11
6	4924.00	35.1 AV	54.0	-18.9	1.05 H	124	28.99	6.11
7	7386.00	54.3 PK	74.0	-19.7	1.00 H	222	41.12	13.18
8	7386.00	43.0 AV	54.0	-11.0	1.00 H	222	29.82	13.18

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	*2462.00	114.1 PK			1.16 V	12	116.24	-2.14
2	*2462.00	102.4 AV			1.16 V	12	104.54	-2.14
3	2483.50	73.1 PK	74.0	-0.9	1.16 V	12	75.13	-2.03
4	2483.50	50.5 AV	54.0	-3.5	1.16 V	12	52.53	-2.03
5	4924.00	48.4 PK	74.0	-25.6	1.02 V	37	42.29	6.11
6	4924.00	35.9 AV	54.0	-18.1	1.02 V	37	29.79	6.11
7	7386.00	58.3 PK	74.0	-15.7	1.00 V	22	45.12	13.18
8	7386.00	44.1 AV	54.0	-9.9	1.00 V	22	30.92	13.18

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.



A D T

802.11n (HT40)

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	73.8 PK	74.0	-0.2	1.04 H	2	76.27	-2.47
2	2390.00	52.9 AV	54.0	-1.1	1.04 H	2	55.37	-2.47
3	*2422.00	111.4 PK			1.04 H	2	113.72	-2.32
4	*2422.00	99.8 AV			1.04 H	2	102.12	-2.32
5	4844.00	46.4 PK	74.0	-27.6	1.03 H	112	40.62	5.78
6	4844.00	35.2 AV	54.0	-18.8	1.03 H	112	29.42	5.78
7	7266.00	54.2 PK	74.0	-19.8	1.00 H	188	41.00	13.20
8	7266.00	43.2 AV	54.0	-10.8	1.00 H	188	30.00	13.20

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	2390.00	73.2 PK	74.0	-0.8	1.43 V	18	75.67	-2.47
2	2390.00	52.7 AV	54.0	-1.3	1.43 V	18	55.17	-2.47
3	*2422.00	110.2 PK			1.43 V	18	112.52	-2.32
4	*2422.00	98.0 AV			1.43 V	18	100.32	-2.32
5	4844.00	48.0 PK	74.0	-26.0	1.02 V	31	42.22	5.78
6	4844.00	35.4 AV	54.0	-18.6	1.02 V	31	29.62	5.78
7	7266.00	57.8 PK	74.0	-16.2	1.05 V	1	44.60	13.20
8	7266.00	43.9 AV	54.0	-10.1	1.05 V	1	30.70	13.20

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) – 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.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	73.6 PK	74.0	-0.4	1.03 H	6	76.07	-2.47
2	2390.00	51.7 AV	54.0	-2.3	1.03 H	6	54.17	-2.47
3	*2437.00	116.3 PK			1.03 H	6	118.55	-2.25
4	*2437.00	104.6 AV			1.03 H	6	106.85	-2.25
5	2483.50	72.8 PK	74.0	-1.2	1.03 H	6	74.83	-2.03
6	2483.50	51.1 AV	54.0	-2.9	1.03 H	6	53.13	-2.03
7	4874.00	46.1 PK	74.0	-27.9	1.00 H	90	40.20	5.90
8	4874.00	35.0 AV	54.0	-19.0	1.00 H	90	29.10	5.90
9	7311.00	54.0 PK	74.0	-20.0	1.02 H	207	40.83	13.17
10	7311.00	43.1 AV	54.0	-10.9	1.02 H	207	29.93	13.17

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	71.8 PK	74.0	-2.2	1.10 V	8	74.27	-2.47
2	2390.00	48.2 AV	54.0	-5.8	1.10 V	8	50.67	-2.47
3	*2437.00	113.9 PK			1.10 V	8	116.15	-2.25
4	*2437.00	102.0 AV			1.10 V	8	104.25	-2.25
5	2483.50	73.9 PK	74.0	-0.1	1.10 V	8	75.93	-2.03
6	2483.50	53.0 AV	54.0	-1.0	1.10 V	8	55.03	-2.03
7	4874.00	48.0 PK	74.0	-26.0	1.00 V	38	42.10	5.90
8	4874.00	35.7 AV	54.0	-18.3	1.00 V	38	29.80	5.90
9	7311.00	57.6 PK	74.0	-16.4	1.05 V	5	44.43	13.17
10	7311.00	43.9 AV	54.0	-10.1	1.05 V	5	30.73	13.17

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.



A D T

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	109.4 PK			1.00 H	324	111.58	-2.18
2	*2452.00	96.9 AV			1.00 H	324	99.08	-2.18
3	2483.50	73.1 PK	74.0	-0.9	1.00 H	324	75.13	-2.03
4	2483.50	53.5 AV	54.0	-0.5	1.00 H	324	55.53	-2.03
5	4904.00	45.9 PK	74.0	-28.1	1.02 H	102	39.88	6.02
6	4904.00	35.0 AV	54.0	-19.0	1.02 H	102	28.98	6.02
7	7356.00	54.5 PK	74.0	-19.5	1.00 H	191	41.32	13.18
8	7356.00	43.6 AV	54.0	-10.4	1.00 H	191	30.42	13.18

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	*2452.00	107.6 PK			1.32 V	5	109.78	-2.18
2	*2452.00	95.3 AV			1.32 V	5	97.48	-2.18
3	2483.50	69.5 PK	74.0	-4.5	1.32 V	5	71.53	-2.03
4	2483.50	49.4 AV	54.0	-4.6	1.32 V	5	51.43	-2.03
5	4904.00	47.7 PK	74.0	-26.3	1.00 V	29	41.68	6.02
6	4904.00	35.2 AV	54.0	-18.8	1.00 V	29	29.18	6.02
7	7356.00	57.0 PK	74.0	-17.0	1.03 V	13	43.82	13.18
8	7356.00	43.3 AV	54.0	-10.7	1.03 V	13	30.12	13.18

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.

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	FSV 40	100964	July 05, 2014	July 04, 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 : Aug, 07, 2014

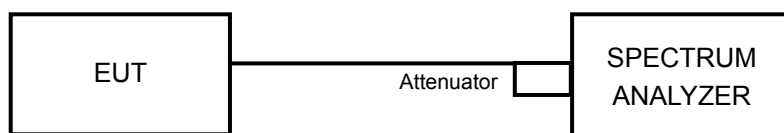
4.3.3 TEST PROCEDURE

1. Set resolution bandwidth (RBW) = 100kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
3. Trace mode = max hold.
4. Sweep = auto couple.
5. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

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



4.3.7 TEST RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	9.49	10.08	0.5	PASS
6	2437	10.72	10.49	0.5	PASS
11	2462	10.17	10.58	0.5	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	16.36	16.42	0.5	PASS
6	2437	16.61	16.58	0.5	PASS
11	2462	16.41	16.42	0.5	PASS

802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	17.37	17.62	0.5	PASS
6	2437	17.83	17.84	0.5	PASS
11	2462	17.63	17.62	0.5	PASS

802.11n (HT40)

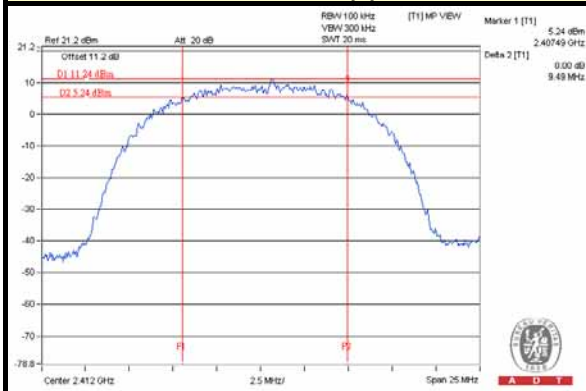
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
3	2422	36.45	36.50	0.5	PASS
6	2437	36.66	36.67	0.5	PASS
9	2452	36.20	36.51	0.5	PASS



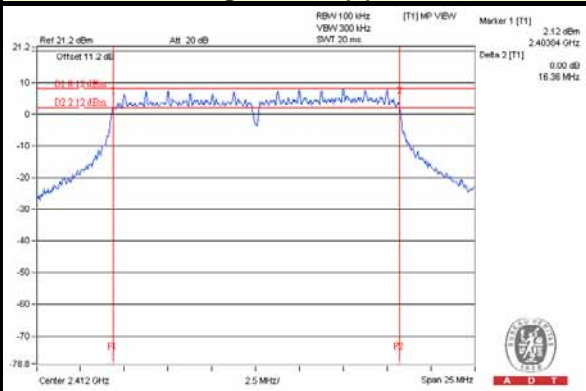
A D T

SPECTRUM PLOT OF WORST VALUE

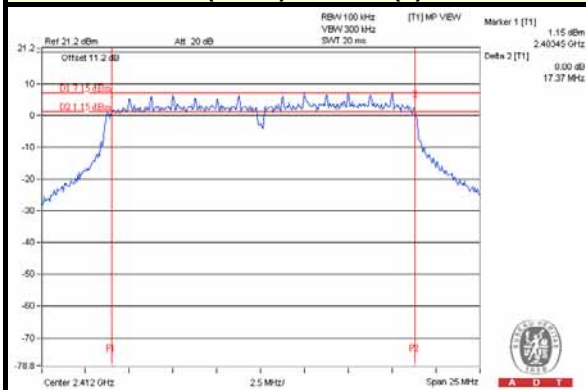
802.11b / Chain (0) : CH1



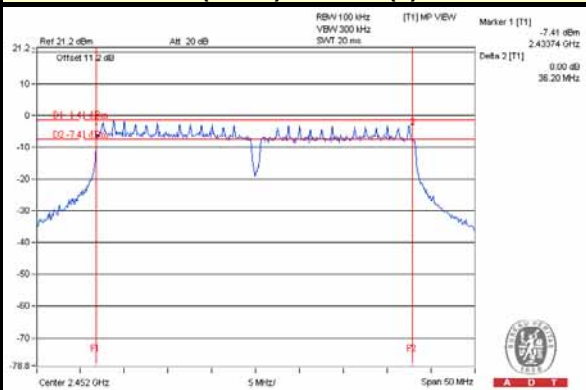
802.11g / Chain (0) : CH1



802.11n (HT20) / Chain (0) : CH1



802.11n (HT40) / Chain (0) : CH9





A D T

4.4 CONDUCTED OUTPUT POWER MEASUREMENT

4.4.1 LIMITS OF CONDUCTED 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 \leq 4;

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

Array Gain = $5 \log(\text{NANT}/\text{NSS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with NANT \geq 5.

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

4.4.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Power meter Anritsu	ML2495A	1014008	Apr. 30, 2014	Apr. 29, 2015
Power sensor Anritsu	MA2411B	0917122	Apr. 30, 2014	Apr. 29, 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 : Aug, 07, 2014

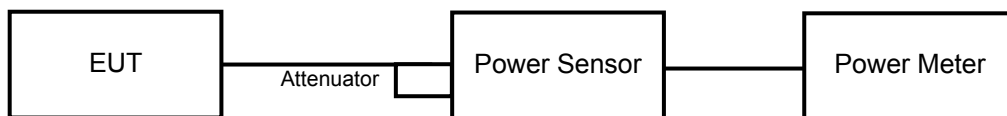
4.4.3 TEST PROCEDURES

The 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 average power level.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation.

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

4.4.7 TEST RESULTS

802.11b

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	19.75	19.19	177.391	22.49	30	PASS
6	2437	22.04	21.51	301.535	24.79	30	PASS
11	2462	18.71	18.60	146.746	21.67	30	PASS

802.11g

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	19.36	18.94	164.641	22.17	30	PASS
6	2437	23.60	23.90	474.558	26.76	30	PASS
11	2462	15.98	16.20	81.315	19.10	30	PASS

802.11n (HT20)

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	18.31	18.07	131.885	21.20	30	PASS
6	2437	22.70	22.56	366.511	25.64	30	PASS
11	2462	15.20	15.34	67.311	18.28	30	PASS

802.11n (HT40)

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
3	2422	15.76	14.90	68.573	18.36	30	PASS
6	2437	17.64	17.72	117.232	20.69	30	PASS
9	2452	12.64	12.76	37.245	15.71	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	FSV 40	100964	July 05, 2014	July 04, 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 : Aug, 07, 2014

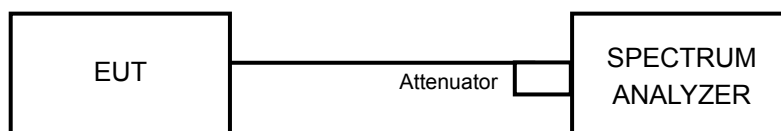
4.5.3 TEST PROCEDURE

1. Set the RBW = 10 kHz, VBW = 30 kHz, Detector = power averaging (RMS).
2. Ensure that the number of measurement points in the sweep $\geq 2 \times$ 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.
6. Add $10 \log (1/x)$, where x is the duty cycle, to the measured PSD to compute the average PSD during the actual transmission time.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6



A D T

4.5.7 TEST RESULTS

802.11b

TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm)	10 log (N=2) dB	TOTAL PSD (dBm)	LIMIT (dBm)	PASS /FAIL
0	1	2412	-7.58	3.01	-4.36	5.99	PASS
	6	2437	-7.15	3.01	-3.93	5.99	PASS
	11	2462	-9.35	3.01	-6.13	5.99	PASS
1	1	2412	-9.24	3.01	-6.02	5.99	PASS
	6	2437	-7.57	3.01	-4.35	5.99	PASS
	11	2462	-10.36	3.01	-7.14	5.99	PASS

NOTE: Directional gain = $5\text{dBi} + 10\log(2) = 8.01\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(8.01-6) = 5.99\text{dBm}$.

802.11g

TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm)	10 log (N=2) dB	TOTAL PSD (dBm)	LIMIT (dBm)	PASS /FAIL
0	1	2412	-10.67	3.01	-7.50	5.99	PASS
	6	2437	-3.81	3.01	-0.64	5.99	PASS
	11	2462	-12.79	3.01	-9.62	5.99	PASS
1	1	2412	-11.29	3.01	-8.12	5.99	PASS
	6	2437	-6.41	3.01	-3.24	5.99	PASS
	11	2462	-13.00	3.01	-9.83	5.99	PASS

NOTE: Directional gain = $5\text{dBi} + 10\log(2) = 8.01\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(8.01-6) = 5.99\text{dBm}$.



A D T

802.11n (HT20)

TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	PASS /FAIL
0	1	2412	-12.19	3.01	-9.00	5.99	PASS
	6	2437	-3.89	3.01	-0.70	5.99	PASS
	11	2462	-15.76	3.01	-12.57	5.99	PASS
1	1	2412	-12.61	3.01	-9.42	5.99	PASS
	6	2437	-7.28	3.01	-4.09	5.99	PASS
	11	2462	-15.61	3.01	-12.42	5.99	PASS

NOTE: Directional gain = $5\text{dBi} + 10\log(2) = 8.01\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(8.01-6) = 5.99\text{dBm}$.

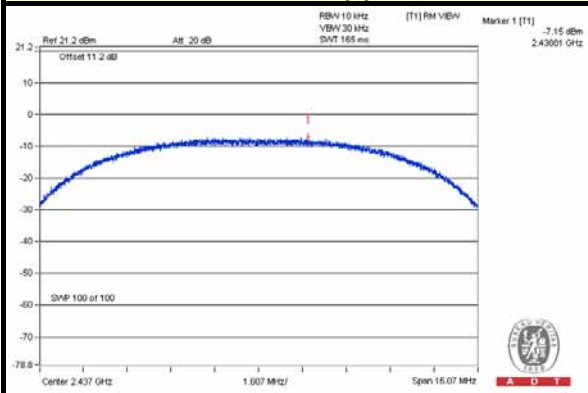
802.11n (HT40)

TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	PASS /FAIL
0	3	2422	-16.91	3.01	-13.63	5.99	PASS
	6	2437	-13.82	3.01	-10.54	5.99	PASS
	9	2452	-20.09	3.01	-16.81	5.99	PASS
1	3	2422	-18.84	3.01	-15.56	5.99	PASS
	6	2437	-14.59	3.01	-11.31	5.99	PASS
	9	2452	-19.84	3.01	-16.56	5.99	PASS

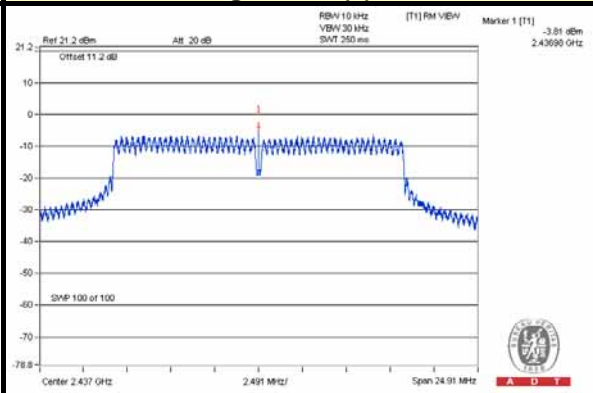
NOTE: Directional gain = $5\text{dBi} + 10\log(2) = 8.01\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(8.01-6) = 5.99\text{dBm}$.

SPECTRUM PLOT OF WORST VALUE

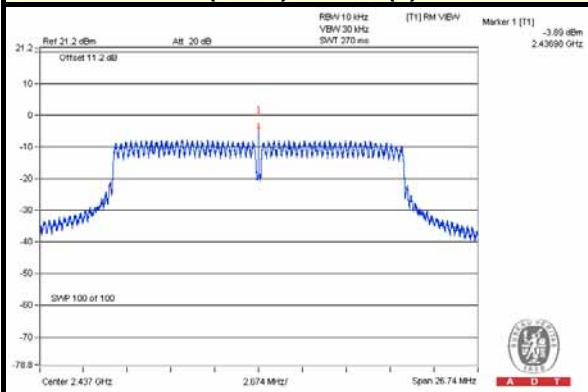
802.11b / Chain(0) : CH6



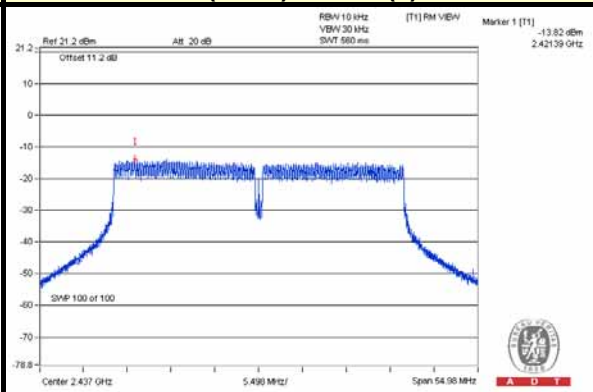
802.11g / Chain(0) : CH6



802.11n (HT20) / Chain(0) : CH6



802.11n (HT40) / Chain(0) : CH6





A D T

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	FSV 40	100964	July 05, 2014	July 04, 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 : Aug, 07, 2014

4.6.3 TEST PROCEDURE

Measurement Procedure - Reference Level

1. Set the RBW = 100 kHz.
2. Set the VBW \geq 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.

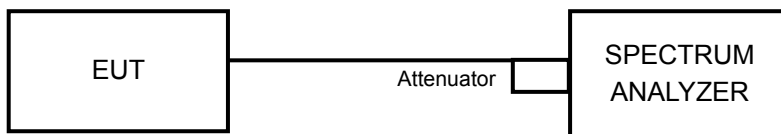
Measurement Procedure –Unwanted Emission Level

1. Set RBW = 100 kHz.
2. Set VBW \geq 300 kHz.
3. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum amplitude level.

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

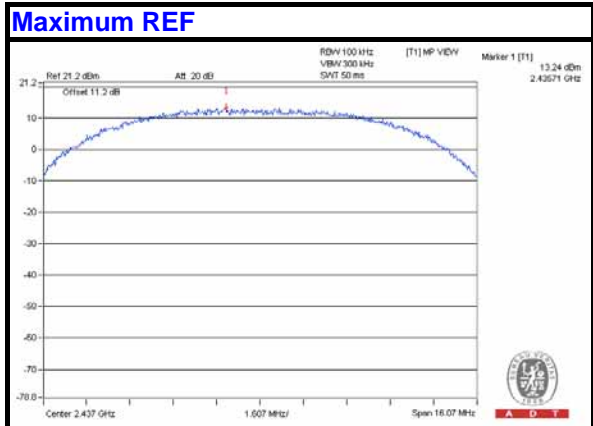
4.6.7 TEST RESULTS

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.



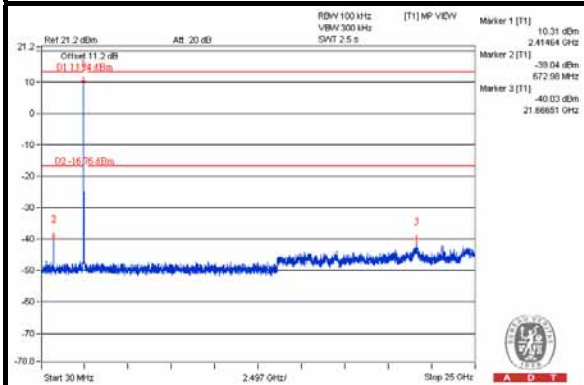
A D T

802.11b

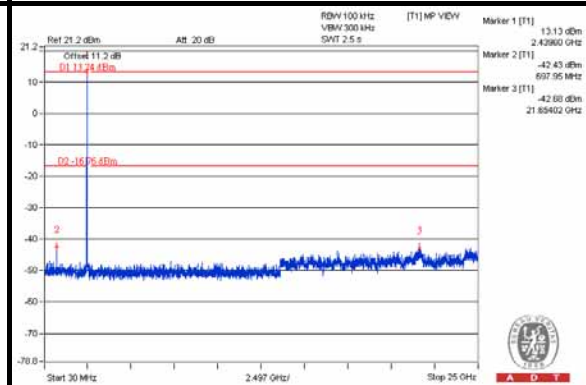


Chain (0)

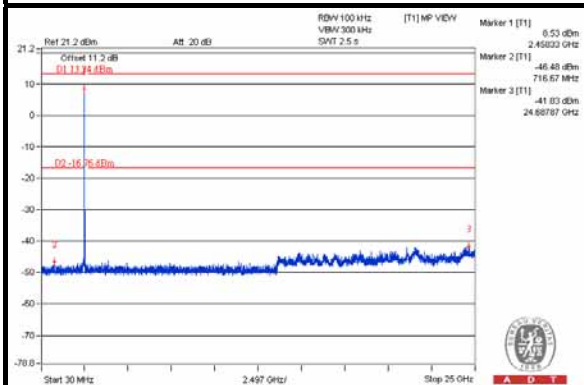
CH 1



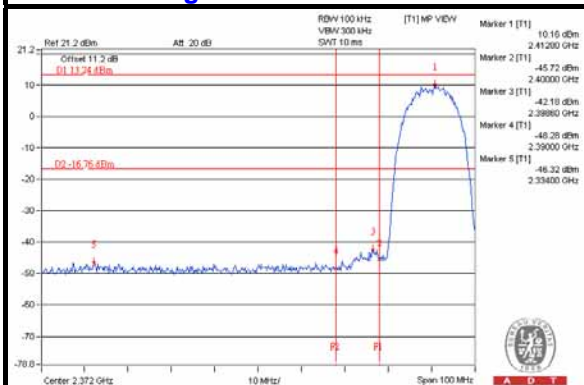
CH 6



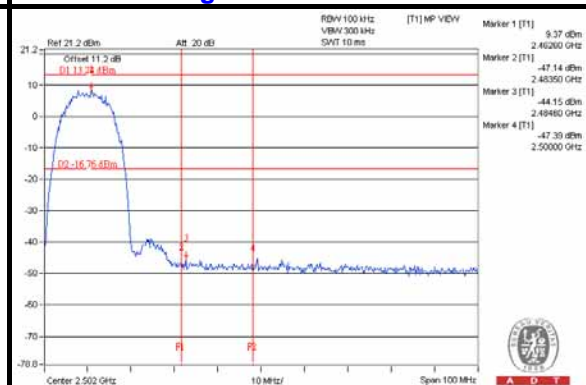
CH 11



CH 11 Band edge



CH 11 Band edge

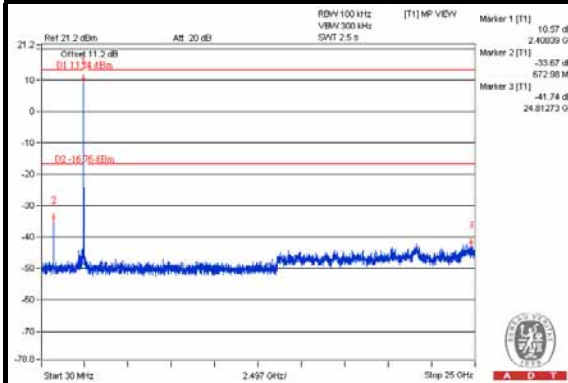




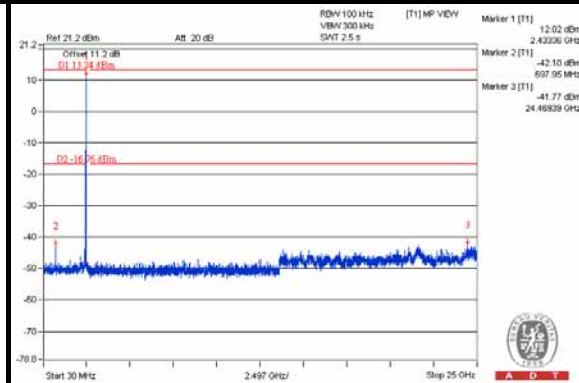
A D T

Chain (1)

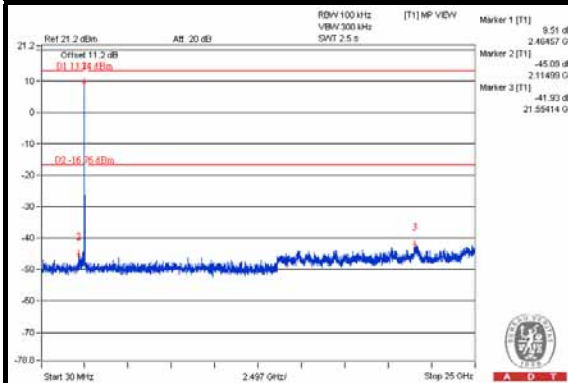
CH 1



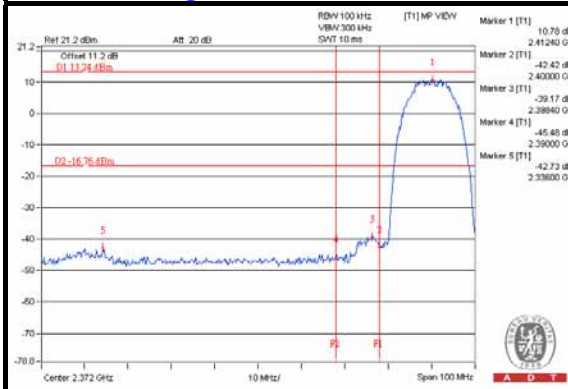
CH 6



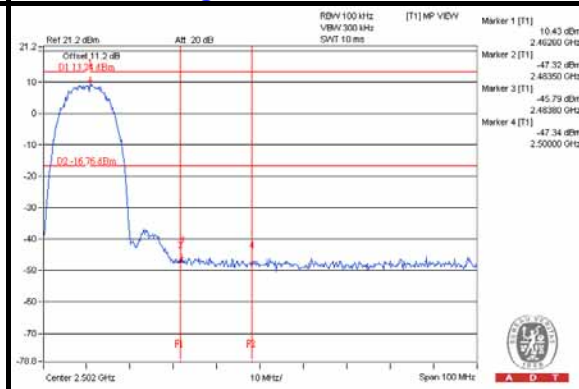
CH 11



CH 1 Band edge



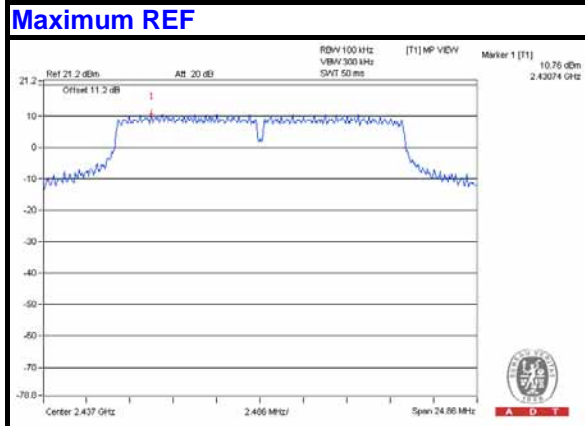
CH 11 Band edge





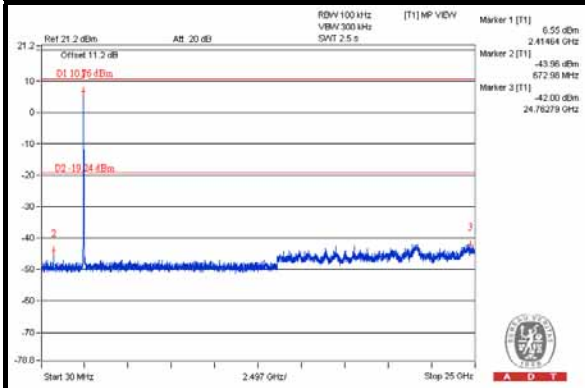
A D T

802.11g

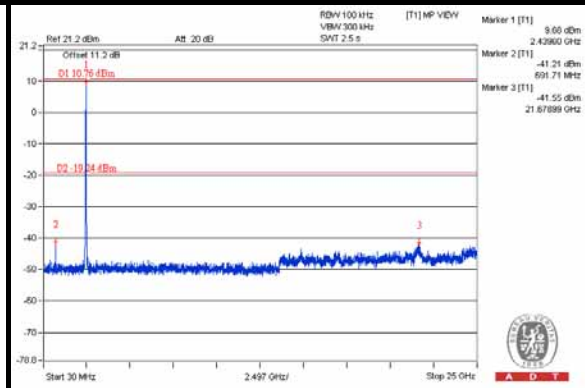


Chain (0)

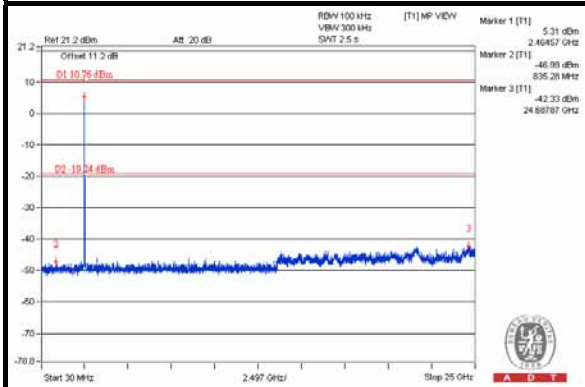
CH 1



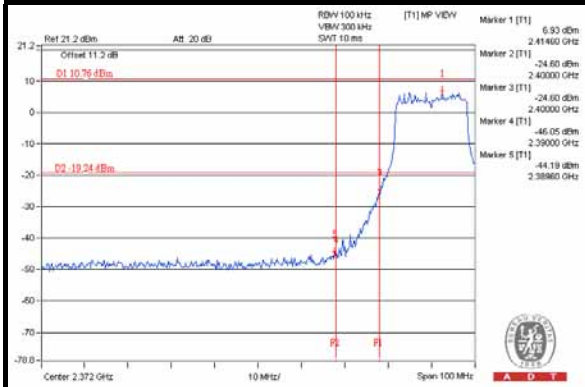
CH 6



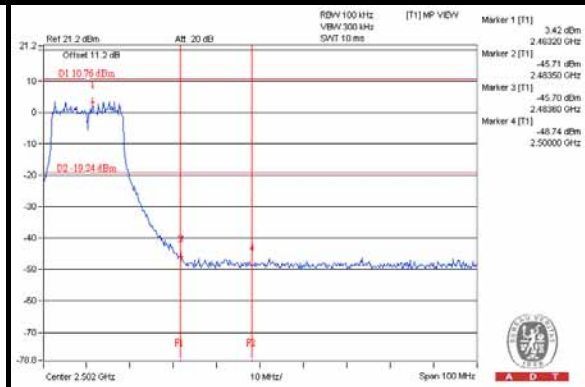
CH 11



CH 1 Band edge



CH 11 Band edge

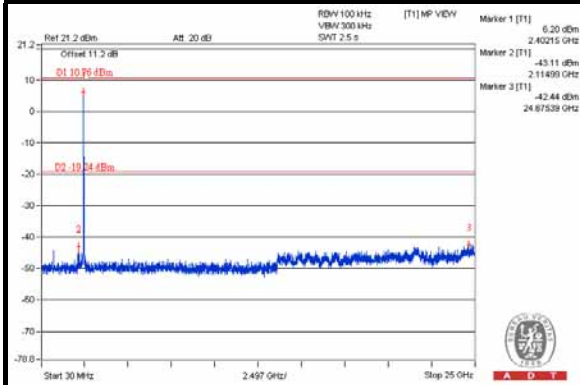




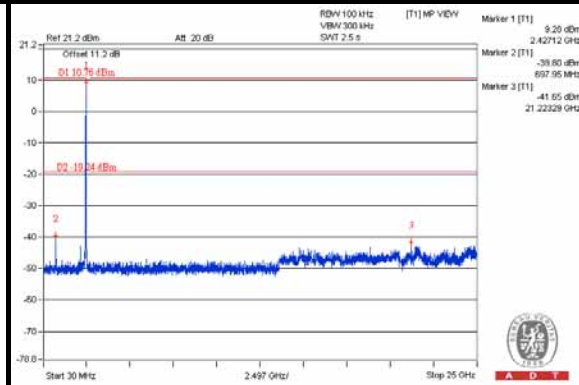
A D T

Chain (1)

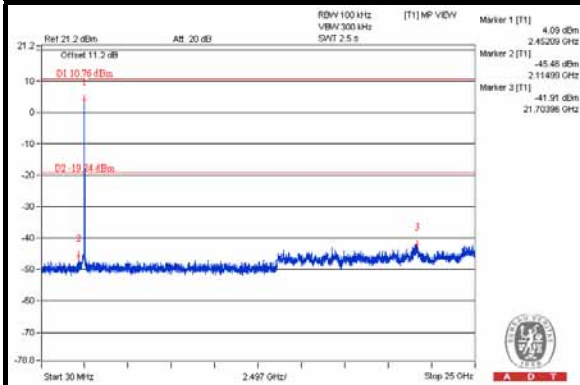
CH 1



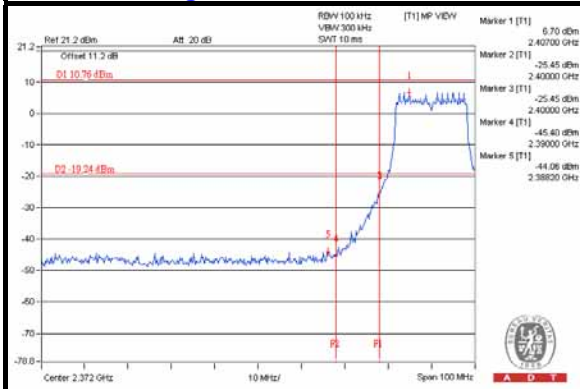
CH 6



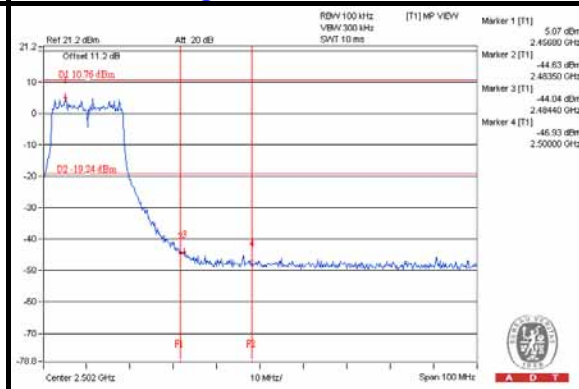
CH 11



CH 1 Band edge



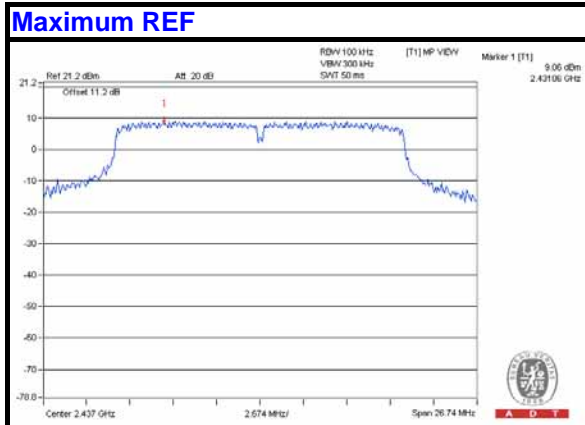
CH 11 Band edge





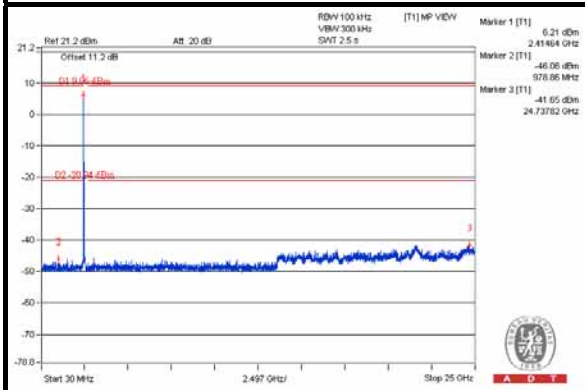
A D T

802.11n (HT20)

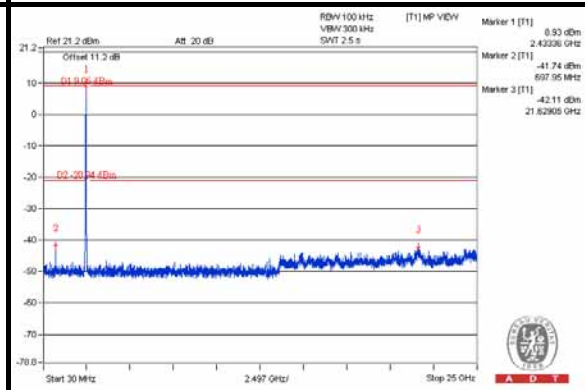


Chain (0)

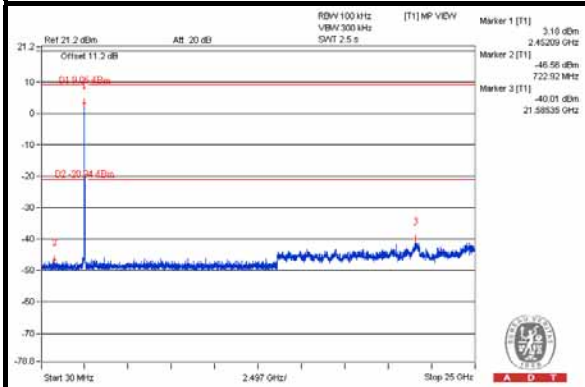
CH 1



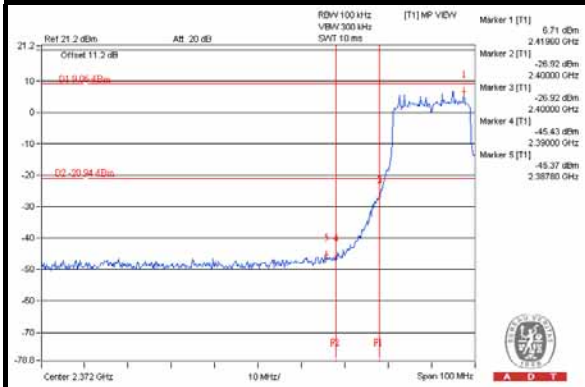
CH 6



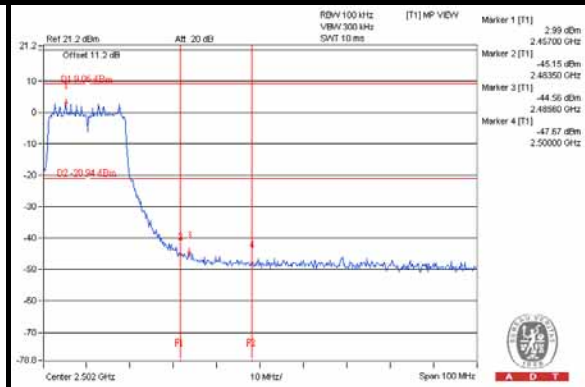
CH 11



CH 1 Band edge



CH 11 Band edge

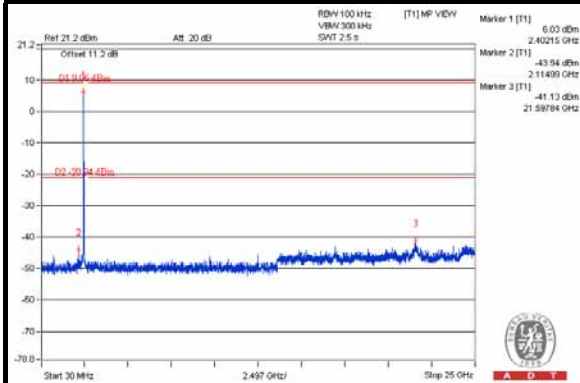




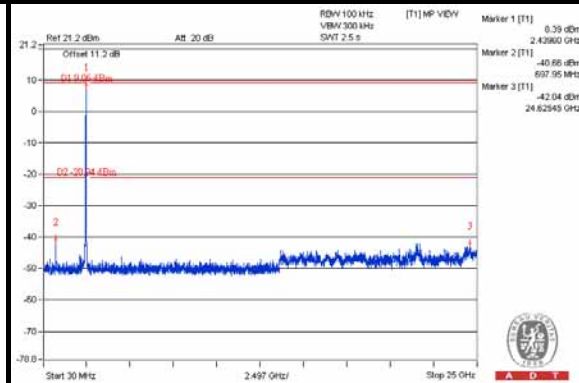
A D T

Chain (1)

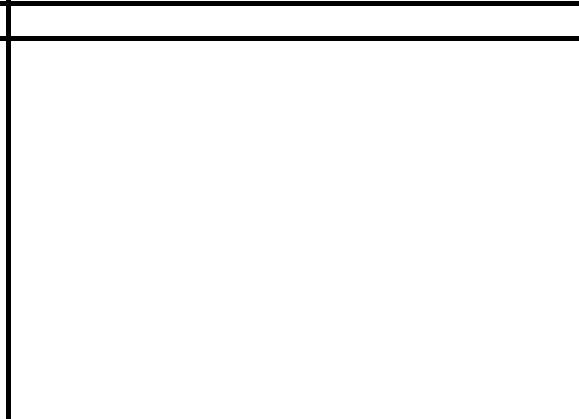
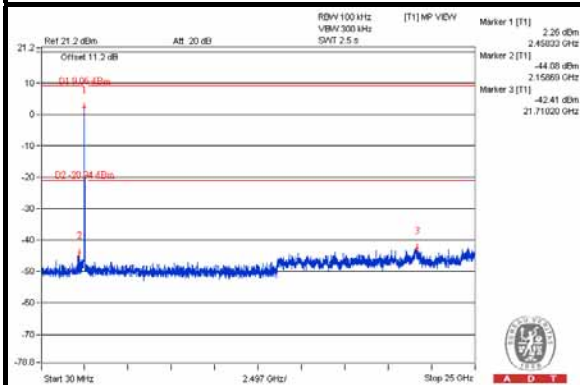
CH 1



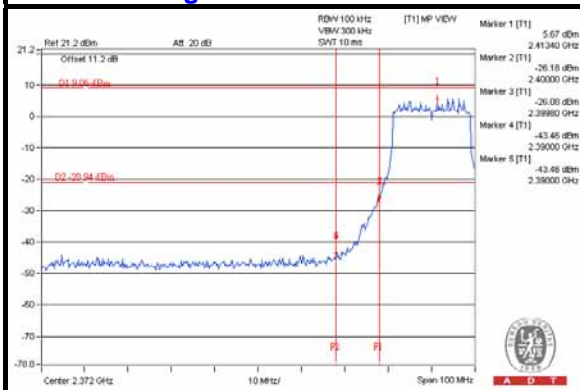
CH 6



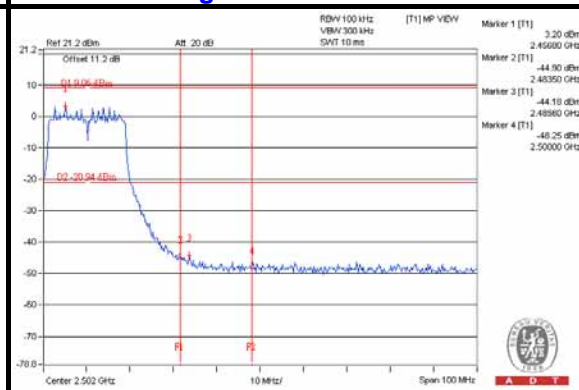
CH 11



CH 1 Band edge



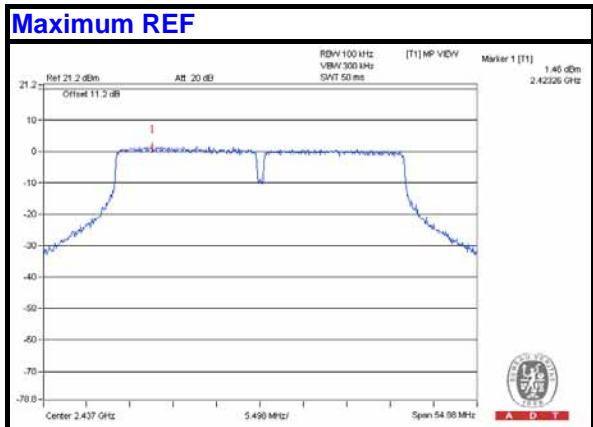
CH 11 Band edge





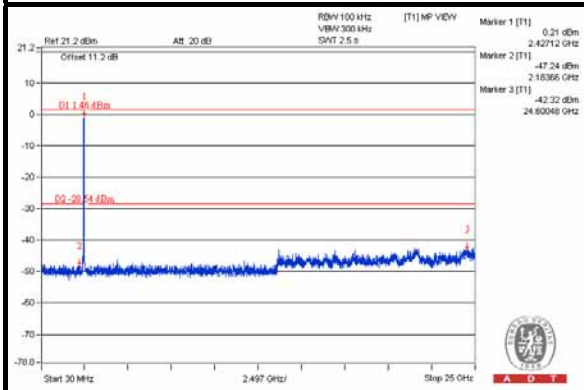
A D T

802.11n (HT40)

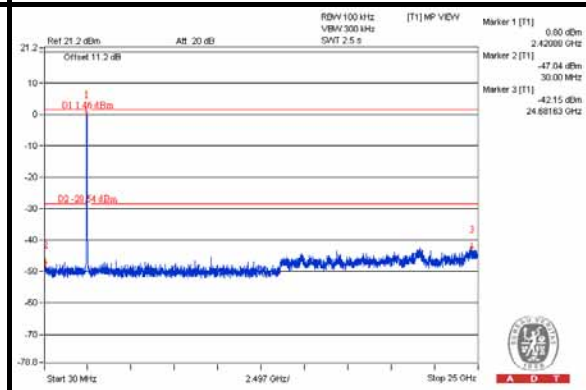


Chain (0)

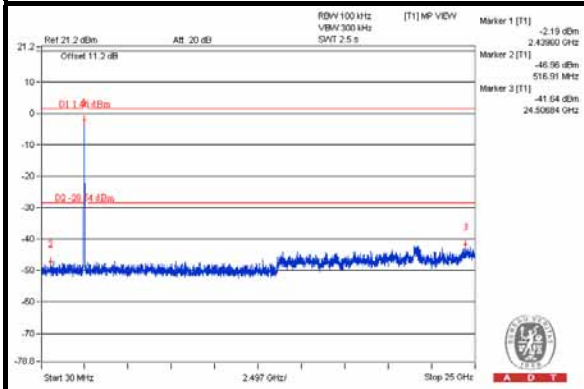
CH 3



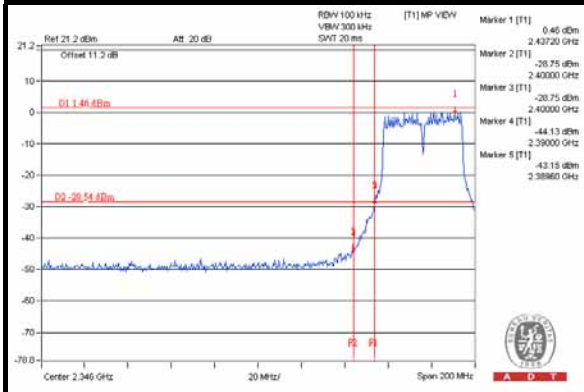
CH 6



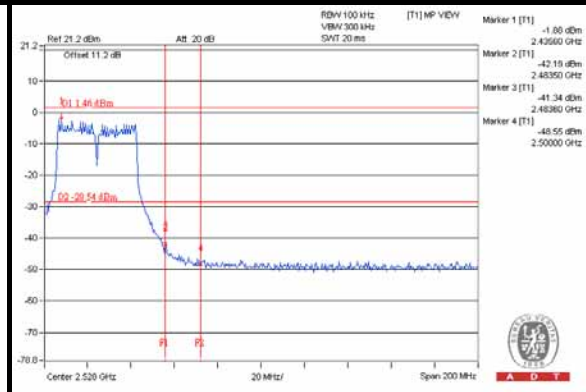
CH 9



CH 3 Band edge



CH 9 Band edge

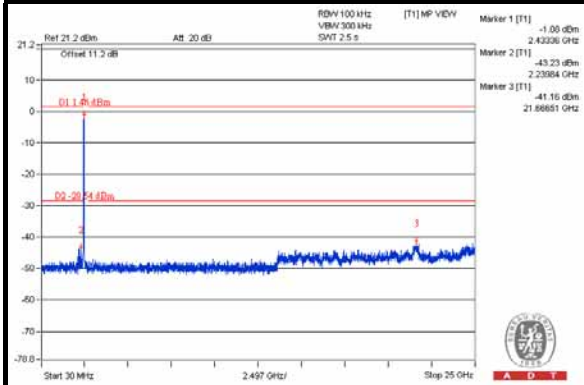




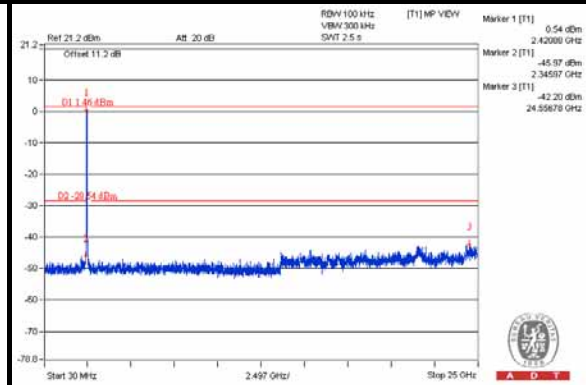
A D T

Chain (1)

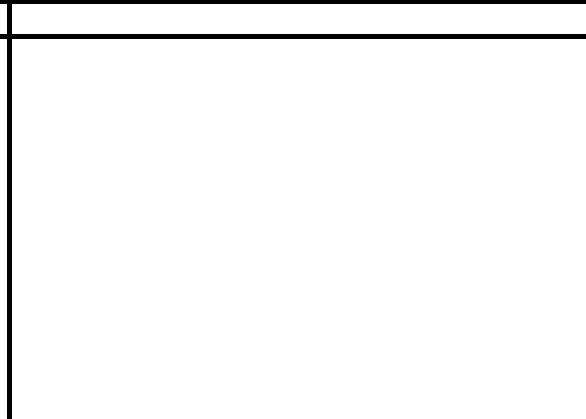
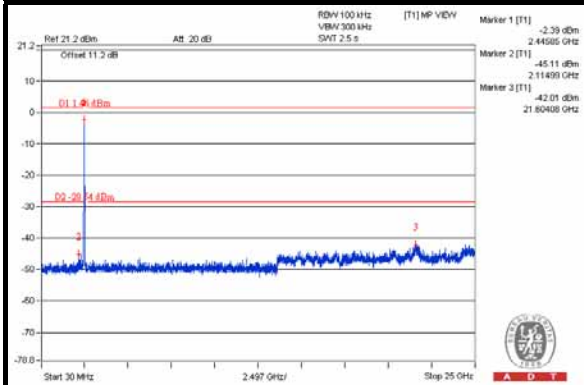
CH 3



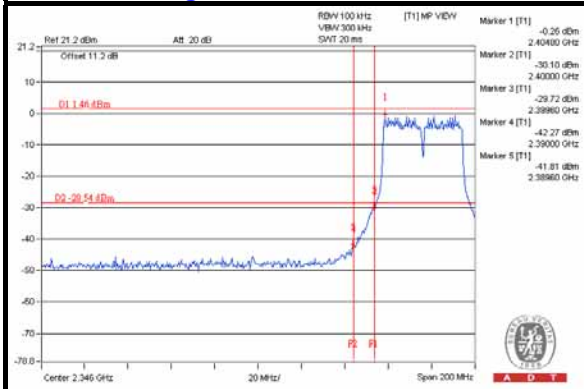
CH 6



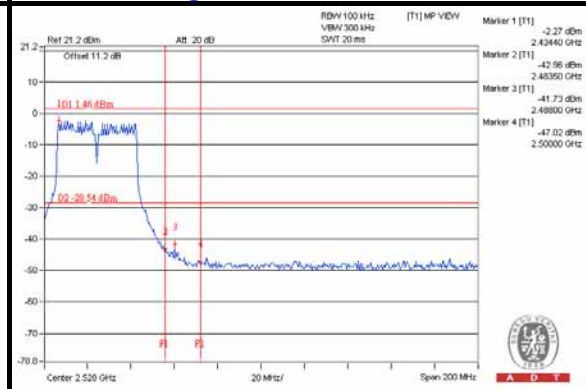
CH 9



CH 3 Band edge



CH 9 Band edge





A D T

5. TEST TYPES AND RESULTS (FOR 5GHz, 5.725~5.850GHz Band)

5.1 CONDUCTED EMISSION MEASUREMENT

5.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS 30	100375	Apr. 29, 2014	Apr. 28, 2015
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK8127	8127-522	Sep. 12, 2013	Sep. 11, 2014
Line-Impedance Stabilization Network (for Peripheral)	ENV216	100071	Nov. 13, 2013	Nov. 12, 2014
RF Cable (JYEBAO)	5DFB	COCCAB-001	Mar. 10, 2014	Mar. 09, 2015
50 ohms Terminator	N/A	EMC-03	Sep. 24, 2013	Sep. 23, 2014
50 ohms Terminator	N/A	EMC-02	Oct. 01, 2013	Sep. 30, 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: June 20, 2014

5.1.3 TEST PROCEDURES

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

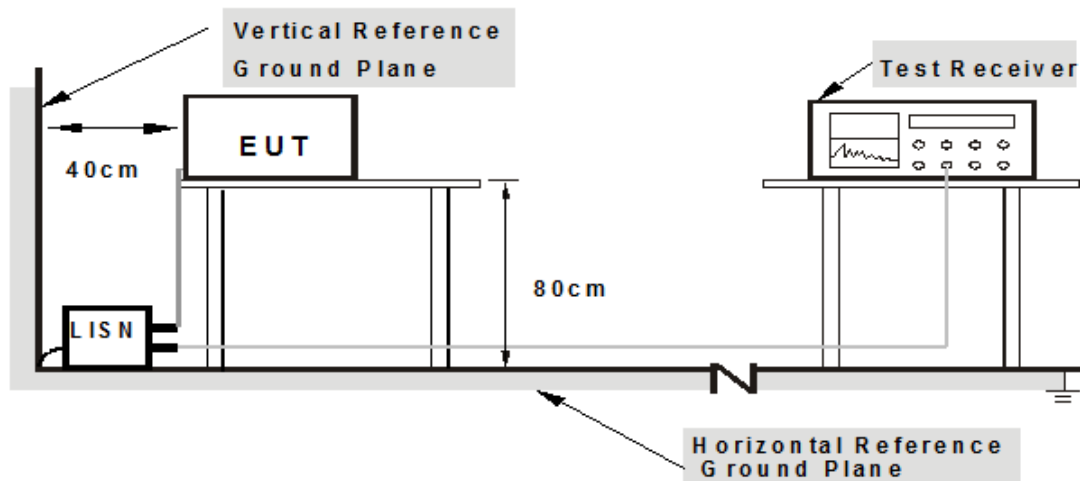
NOTE:

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

5.1.4 DEVIATION FROM TEST STANDARD

No deviation

5.1.5 TEST SETUP



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

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



A D T

5.1.6 EUT OPERATING CONDITIONS

Same as the 4.1.6

5.1.7 TEST RESULTS (MODE 2)

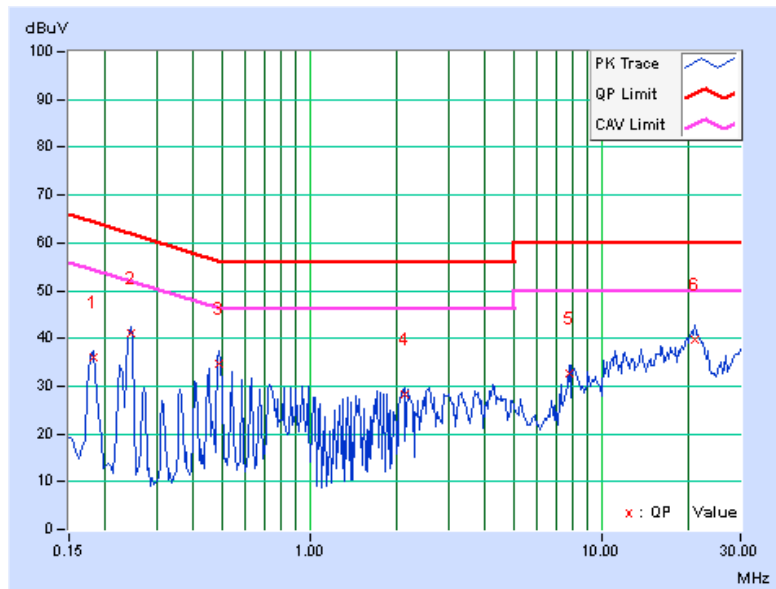
LAN 1 / POE in

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

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.18125	0.07	36.00	35.67	36.07	35.74	64.43
2	0.24375	0.07	41.10	38.22	41.17	38.29	61.97	51.97	-20.79	-13.67
3	0.49259	0.10	34.71	32.25	34.81	32.35	56.12	46.12	-21.32	-13.78
4	2.11719	0.18	28.06	27.57	28.24	27.75	56.00	46.00	-27.76	-18.25
5	7.75391	0.38	32.37	29.35	32.75	29.73	60.00	50.00	-27.25	-20.27
6	20.86719	0.73	39.10	37.73	39.83	38.46	60.00	50.00	-20.17	-11.54

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





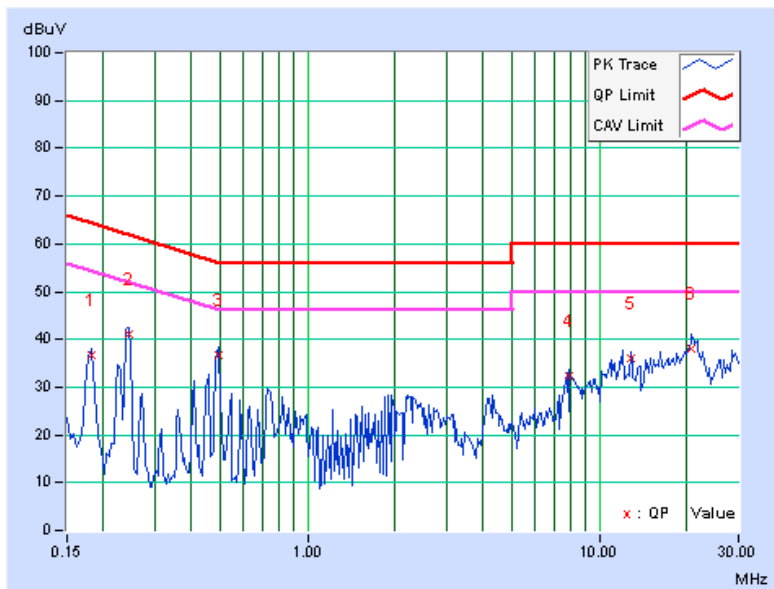
A D T

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

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18125	0.07	36.67	35.45	36.74	35.52	64.43	54.43	-27.69	-18.91
2	0.24375	0.07	41.02	38.22	41.09	38.29	61.97	51.97	-20.87	-13.67
3	0.49375	0.10	36.49	35.13	36.59	35.23	56.10	46.10	-19.52	-10.88
4	7.87891	0.38	31.98	30.19	32.36	30.57	60.00	50.00	-27.64	-19.43
5	12.78516	0.53	35.60	34.14	36.13	34.67	60.00	50.00	-23.87	-15.33
6	20.73047	0.72	37.17	35.28	37.89	36.00	60.00	50.00	-22.11	-14.00

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



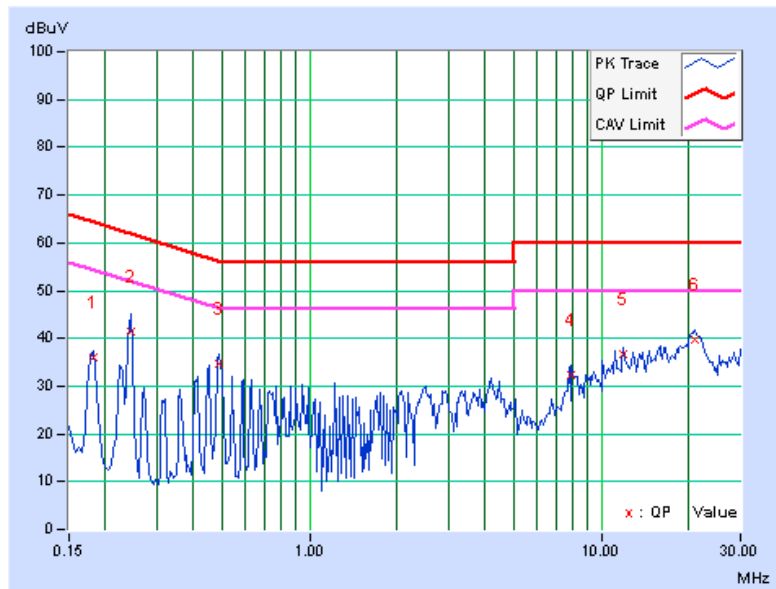
LAN 2 / POE in

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

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.18125	0.07	36.02	35.69	36.09	35.76	64.43
2	0.24375	0.07	41.44	38.18	41.51	38.25	61.97	51.97	-20.45	-13.71
3	0.49247	0.10	34.67	32.11	34.77	32.21	56.13	46.13	-21.36	-13.92
4	7.88281	0.38	31.98	30.80	32.36	31.18	60.00	50.00	-27.64	-18.82
5	11.87500	0.50	36.19	34.30	36.69	34.80	60.00	50.00	-23.31	-15.20
6	20.87109	0.73	39.16	37.95	39.89	38.68	60.00	50.00	-20.11	-11.32

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

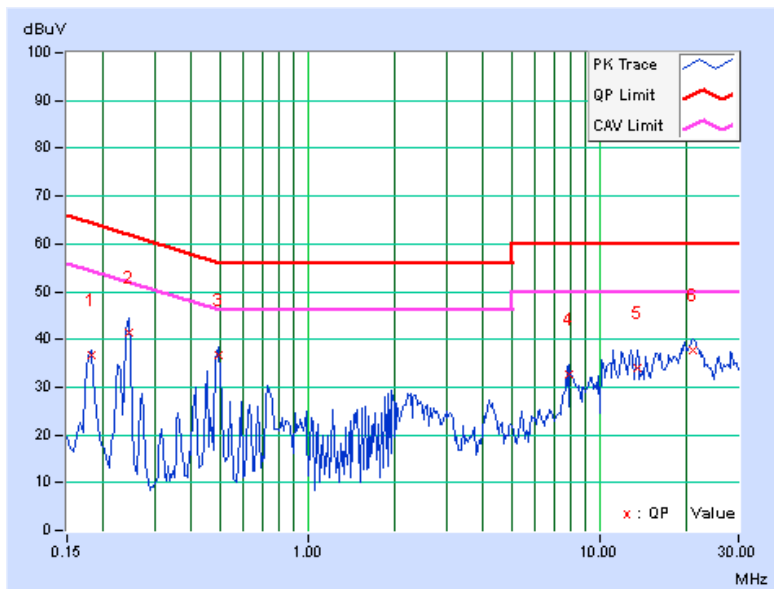


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)
--------------	-------------	--------------------------	--------------------------------

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18125	0.07	36.65	35.43	36.72	35.50	64.43	54.43	-27.71	-18.93
2	0.24375	0.07	41.42	38.10	41.49	38.17	61.97	51.97	-20.47	-13.79
3	0.49375	0.10	36.51	35.13	36.61	35.23	56.10	46.10	-19.50	-10.88
4	7.88281	0.38	32.35	30.59	32.73	30.97	60.00	50.00	-27.27	-19.03
5	13.51563	0.54	33.61	31.02	34.15	31.56	60.00	50.00	-25.85	-18.44
6	20.99609	0.73	37.13	35.02	37.86	35.75	60.00	50.00	-22.14	-14.25

REMARKS:

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





A D T

5.2 RADIATED AND BANDEGE EMISSION MEASUREMENT

5.2.1 LIMITS OF RADIATED AND BANDEGE EMISSION MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 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.



A D T

5.2.2 TEST INSTRUMENTS

For below 1GHz test:

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	Feb. 27, 2014	Feb. 26, 2015
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: June 20, 2014

**A D T****For above 1GHz test:**

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
MXE EMI Receiver Agilent	N9038A	MY51210105	July 21, 2014	July 20, 2015
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-03	Nov. 13, 2013	Nov. 12, 2014
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-360	Feb. 26, 2014	Feb. 25, 2015
RF Cable	NA	CHGCAB_001	Oct. 05, 2013	Oct. 04, 2014
Spectrum Analyzer R&S	FSV40	100964	July 05, 2014	July 04, 2015
Horn_Antenna AISI	AIH.8018	0000320091110	Nov. 18, 2013	Nov. 17, 2014
Pre-Amplifier Agilent	8449B	3008A02578	June 24, 2014	June 23, 2015
RF Cable	NA	RF104-201 RF104-203 RF104-204	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. G.
4. The FCC Site Registration No. is 966073.
- 5 The VCCI Site Registration No. is G-137.
- 6 The CANADA Site Registration No. is IC 7450H-2.
- 7 Tested Date: Aug. 01 to 02, 2014



A D T

5.2.3 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:

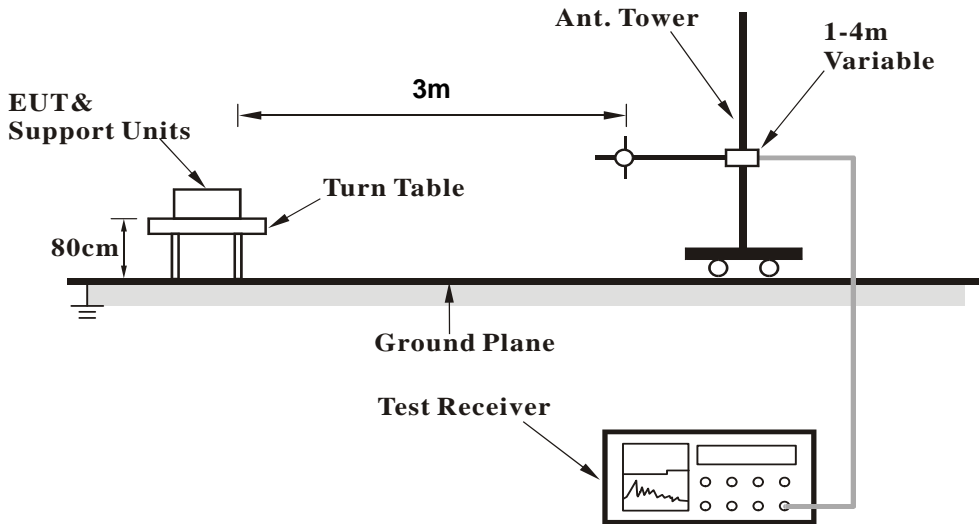
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
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 ($10 \log(1/\text{duty cycle})$).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

5.2.4 DEVIATION FROM TEST STANDARD

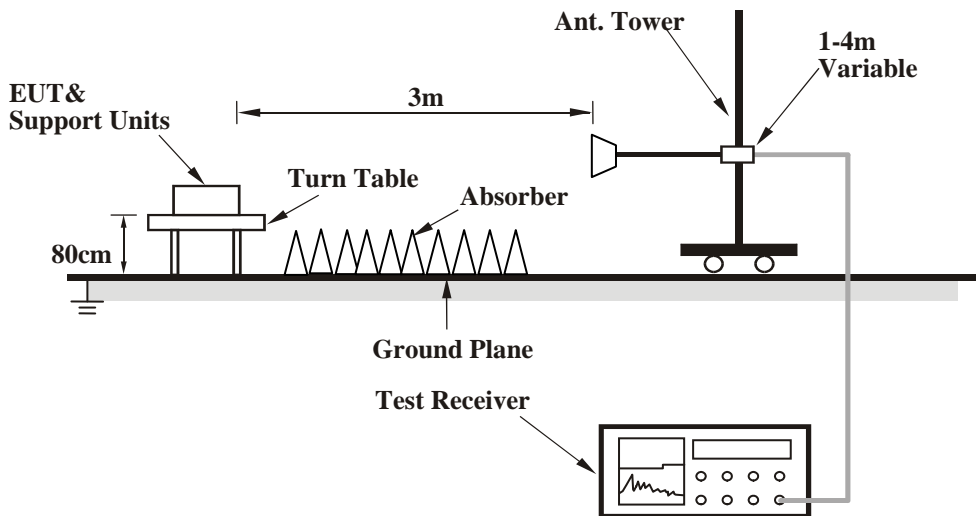
No deviation

5.2.5 TEST SETUP

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



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

5.2.6 EUT OPERATING CONDITIONS

Same as the 4.1.6



A D T

5.2.7 TEST RESULTS (MODE 1)

BELOW 1GHz WORST-CASE DATA

802.11n (HT20)

CHANNEL	TX Channel 149	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	108.09	31.0 QP	43.5	-12.5	1.53 H	248	47.20	-16.19
2	165.31	31.4 QP	43.5	-12.1	1.53 H	111	44.64	-13.22
3	200.24	32.2 QP	43.5	-11.3	1.00 H	355	48.33	-16.14
4	250.18	39.2 QP	46.0	-6.8	1.01 H	341	53.25	-14.06
5	375.56	39.6 QP	46.0	-6.4	1.86 H	76	49.89	-10.29
6	999.98	42.5 QP	54.0	-11.5	1.06 H	310	40.81	1.66

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	35.36	28.2 QP	40.0	-11.8	1.01 V	268	42.62	-14.38
2	124.47	27.8 QP	43.5	-15.7	1.03 V	52	42.51	-14.67
3	249.87	32.4 QP	46.0	-13.7	1.72 V	65	46.42	-14.07
4	374.71	37.1 QP	46.0	-8.9	1.00 V	356	47.37	-10.31
5	429.60	36.7 QP	46.0	-9.3	1.00 V	25	45.19	-8.53
6	999.92	43.7 QP	54.0	-10.4	1.58 V	40	41.99	1.66

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



A D T

ABOVE 1GHz DATA

802.11a

CHANNEL	TX Channel 149	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	5000.00	52.8 PK	74.0	-21.2	1.00 H	124	46.38	6.42
2	5000.00	39.4 AV	54.0	-14.6	1.00 H	124	32.98	6.42
3	5440.00	53.3 PK	74.0	-20.7	1.05 H	165	45.47	7.83
4	5440.00	40.1 AV	54.0	-13.9	1.05 H	165	32.27	7.83
5	*5745.00	109.1 PK			1.21 H	23	100.68	8.42
6	*5745.00	98.9 AV			1.21 H	23	90.48	8.42
7	11490.00	63.4 PK	74.0	-10.6	1.22 H	196	49.05	14.35
8	11490.00	52.2 AV	54.0	-1.8	1.22 H	196	37.85	14.35

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	5000.00	58.2 PK	74.0	-15.8	1.09 V	258	51.78	6.42
2	5000.00	51.6 AV	54.0	-2.4	1.09 V	258	45.18	6.42
3	5440.00	66.9 PK	74.0	-7.1	1.09 V	162	59.07	7.83
4	5440.00	53.5 AV	54.0	-0.5	1.09 V	162	45.67	7.83
5	*5745.00	125.3 PK			1.00 V	226	116.88	8.42
6	*5745.00	114.6 AV			1.00 V	226	106.18	8.42
7	11490.00	61.8 PK	74.0	-12.2	1.32 V	341	47.45	14.35
8	11490.00	51.2 AV	54.0	-2.8	1.32 V	341	36.85	14.35

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.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	52.0 PK	74.0	-22.0	1.02 H	145	45.58	6.42
2	5000.00	39.4 AV	54.0	-14.6	1.02 H	145	32.98	6.42
3	5440.00	53.2 PK	74.0	-20.8	1.01 H	118	45.37	7.83
4	5440.00	40.1 AV	54.0	-13.9	1.01 H	118	32.27	7.83
5	*5785.00	107.9 PK			1.11 H	13	99.41	8.49
6	*5785.00	98.5 AV			1.11 H	13	90.01	8.49
7	11570.00	65.2 PK	74.0	-8.8	1.22 H	328	50.89	14.31
8	11570.00	52.1 AV	54.0	-1.9	1.22 H	328	37.79	14.31

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	5000.00	57.7 PK	74.0	-16.3	1.00 V	247	51.28	6.42
2	5000.00	51.4 AV	54.0	-2.6	1.00 V	247	44.98	6.42
3	5440.00	64.4 PK	74.0	-9.6	1.11 V	288	56.57	7.83
4	5440.00	53.7 AV	54.0	-0.3	1.11 V	288	45.87	7.83
5	*5785.00	124.5 PK			1.01 V	221	116.01	8.49
6	*5785.00	114.1 AV			1.01 V	221	105.61	8.49
7	11570.00	61.1 PK	74.0	-12.9	1.35 V	336	46.79	14.31
8	11570.00	51.2 AV	54.0	-2.8	1.35 V	336	36.89	14.31

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.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	51.5 PK	74.0	-22.5	1.00 H	153	45.08	6.42
2	5000.00	39.5 AV	54.0	-14.5	1.00 H	153	33.08	6.42
3	5440.00	52.4 PK	74.0	-21.6	1.01 H	100	44.57	7.83
4	5440.00	39.4 AV	54.0	-14.6	1.01 H	100	31.57	7.83
5	*5825.00	108.8 PK			1.20 H	10	100.21	8.59
6	*5825.00	98.9 AV			1.20 H	10	90.31	8.59
7	11650.00	65.1 PK	74.0	-8.9	1.28 H	330	50.72	14.38
8	11650.00	52.2 AV	54.0	-1.8	1.28 H	330	37.82	14.38

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	5000.00	58.1 PK	74.0	-15.9	1.00 V	252	51.68	6.42
2	5000.00	51.9 AV	54.0	-2.1	1.00 V	252	45.48	6.42
3	5440.00	65.5 PK	74.0	-8.5	1.06 V	310	57.67	7.83
4	5440.00	53.2 AV	54.0	-0.8	1.06 V	310	45.37	7.83
5	*5825.00	125.1 PK			1.00 V	231	116.51	8.59
6	*5825.00	114.5 AV			1.00 V	231	105.91	8.59
7	11650.00	60.5 PK	74.0	-13.5	1.32 V	352	46.12	14.38
8	11650.00	50.4 AV	54.0	-3.6	1.32 V	352	36.02	14.38

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.



A D T

802.11n (HT20)

CHANNEL	TX Channel 149	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	5000.00	52.3 PK	74.0	-21.7	1.02 H	153	45.88	6.42
2	5000.00	39.8 AV	54.0	-14.2	1.02 H	153	33.38	6.42
3	5440.00	52.7 PK	74.0	-21.3	1.00 H	132	44.87	7.83
4	5440.00	39.6 AV	54.0	-14.4	1.00 H	132	31.77	7.83
5	*5745.00	108.3 PK			1.18 H	14	99.88	8.42
6	*5745.00	98.3 AV			1.18 H	14	89.88	8.42
7	11490.00	63.8 PK	74.0	-10.2	1.15 H	197	49.45	14.35
8	11490.00	52.7 AV	54.0	-1.3	1.15 H	197	38.35	14.35

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	5000.00	57.8 PK	74.0	-16.2	1.00 V	231	51.38	6.42
2	5000.00	51.6 AV	54.0	-2.4	1.00 V	231	45.18	6.42
3	5440.00	64.0 PK	74.0	-10.0	1.08 V	270	56.17	7.83
4	5440.00	53.8 AV	54.0	-0.2	1.08 V	270	45.97	7.83
5	*5745.00	125.0 PK			1.00 V	223	116.58	8.42
6	*5745.00	114.5 AV			1.00 V	223	106.08	8.42
7	11490.00	62.0 PK	74.0	-12.0	1.27 V	332	47.65	14.35
8	11490.00	51.1 AV	54.0	-2.9	1.27 V	332	36.75	14.35

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.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	53.4 PK	74.0	-20.6	1.06 H	178	46.98	6.42
2	5000.00	40.0 AV	54.0	-14.0	1.06 H	178	33.58	6.42
3	5440.00	53.2 PK	74.0	-20.8	1.00 H	112	45.37	7.83
4	5440.00	39.5 AV	54.0	-14.5	1.00 H	112	31.67	7.83
5	*5785.00	108.4 PK			1.24 H	22	99.91	8.49
6	*5785.00	98.0 AV			1.24 H	22	89.51	8.49
7	11570.00	62.2 PK	74.0	-11.8	1.21 H	191	47.89	14.31
8	11570.00	51.5 AV	54.0	-2.5	1.21 H	191	37.19	14.31

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	5000.00	57.9 PK	74.0	-16.1	1.00 V	213	51.48	6.42
2	5000.00	51.8 AV	54.0	-2.2	1.00 V	213	45.38	6.42
3	5440.00	64.3 PK	74.0	-9.7	1.12 V	263	56.47	7.83
4	5440.00	53.5 AV	54.0	-0.5	1.12 V	263	45.67	7.83
5	*5785.00	125.0 PK			1.00 V	211	116.51	8.49
6	*5785.00	114.2 AV			1.00 V	211	105.71	8.49
7	11570.00	61.9 PK	74.0	-12.1	1.26 V	329	47.59	14.31
8	11570.00	51.3 AV	54.0	-2.7	1.26 V	329	36.99	14.31

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.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	53.6 PK	74.0	-20.4	1.01 H	140	47.18	6.42
2	5000.00	40.5 AV	54.0	-13.5	1.01 H	140	34.08	6.42
3	5440.00	52.5 PK	74.0	-21.5	1.00 H	118	44.67	7.83
4	5440.00	39.1 AV	54.0	-14.9	1.00 H	118	31.27	7.83
5	*5825.00	108.1 PK			1.25 H	12	99.51	8.59
6	*5825.00	98.0 AV			1.25 H	12	89.41	8.59
7	11650.00	63.2 PK	74.0	-10.8	1.19 H	206	48.82	14.38
8	11650.00	51.7 AV	54.0	-2.3	1.19 H	206	37.32	14.38

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	5000.00	57.5 PK	74.0	-16.5	1.00 V	235	51.08	6.42
2	5000.00	51.6 AV	54.0	-2.4	1.00 V	235	45.18	6.42
3	5440.00	63.6 PK	74.0	-10.4	1.05 V	293	55.77	7.83
4	5440.00	53.2 AV	54.0	-0.8	1.05 V	293	45.37	7.83
5	*5825.00	124.6 PK			1.01 V	220	116.01	8.59
6	*5825.00	114.4 AV			1.01 V	220	105.81	8.59
7	11650.00	61.4 PK	74.0	-12.6	1.33 V	348	47.02	14.38
8	11650.00	50.9 AV	54.0	-3.1	1.33 V	348	36.52	14.38

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.



A D T

802.11n (HT40)

CHANNEL	TX Channel 151	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	5000.00	53.7 PK	74.0	-20.3	1.07 H	173	47.28	6.42
2	5000.00	40.4 AV	54.0	-13.6	1.07 H	173	33.98	6.42
3	5440.00	52.6 PK	74.0	-21.4	1.00 H	121	44.77	7.83
4	5440.00	39.1 AV	54.0	-14.9	1.00 H	121	31.27	7.83
5	*5755.00	101.7 PK			1.16 H	11	93.26	8.44
6	*5755.00	90.3 AV			1.16 H	11	81.86	8.44
7	11510.00	63.8 PK	74.0	-10.2	1.22 H	195	49.46	14.34
8	11510.00	52.7 AV	54.0	-1.3	1.22 H	195	38.36	14.34

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	5000.00	56.9 PK	74.0	-17.1	1.00 V	221	50.48	6.42
2	5000.00	50.7 AV	54.0	-3.3	1.00 V	221	44.28	6.42
3	5440.00	61.4 PK	74.0	-12.6	1.02 V	279	53.57	7.83
4	5440.00	51.3 AV	54.0	-2.7	1.02 V	279	43.47	7.83
5	*5755.00	117.8 PK			1.00 V	226	109.36	8.44
6	*5755.00	106.9 AV			1.00 V	226	98.46	8.44
7	11510.00	57.9 PK	74.0	-16.1	1.33 V	351	43.56	14.34
8	11510.00	46.7 AV	54.0	-7.3	1.33 V	351	32.36	14.34

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.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	52.2 PK	74.0	-21.8	1.01 H	172	45.78	6.42
2	5000.00	39.1 AV	54.0	-14.9	1.01 H	172	32.68	6.42
3	5440.00	52.9 PK	74.0	-21.1	1.00 H	138	45.07	7.83
4	5440.00	39.5 AV	54.0	-14.5	1.00 H	138	31.67	7.83
5	*5795.00	105.7 PK			1.12 H	4	97.20	8.50
6	*5795.00	94.2 AV			1.12 H	4	85.70	8.50
7	11590.00	59.1 PK	74.0	-14.9	1.16 H	200	44.80	14.30
8	11590.00	47.9 AV	54.0	-6.1	1.16 H	200	33.60	14.30

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	5000.00	57.2 PK	74.0	-16.8	1.00 V	249	50.78	6.42
2	5000.00	51.4 AV	54.0	-2.6	1.00 V	249	44.98	6.42
3	5440.00	64.5 PK	74.0	-9.5	1.09 V	163	56.67	7.83
4	5440.00	53.6 AV	54.0	-0.4	1.09 V	163	45.77	7.83
5	*5795.00	121.8 PK			1.00 V	229	113.30	8.50
6	*5795.00	110.5 AV			1.00 V	229	102.00	8.50
7	11590.00	58.6 PK	74.0	-15.4	1.33 V	350	44.30	14.30
8	11590.00	47.3 AV	54.0	-6.7	1.33 V	350	33.00	14.30

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) – 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.



A D T

5.2.8 TEST RESULTS (MODE 2)

BELOW 1GHz WORST-CASE DATA

802.11n (HT20)

CHANNEL	TX Channel 149	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	107.78	30.7 QP	43.5	-12.8	1.63 H	248	46.93	-16.23
2	164.93	31.9 QP	43.5	-11.6	1.62 H	88	45.05	-13.19
3	200.73	31.9 QP	43.5	-11.6	1.00 H	360	48.09	-16.17
4	250.11	39.4 QP	46.0	-6.6	1.00 H	327	53.50	-14.07
5	375.09	39.7 QP	46.0	-6.4	1.83 H	75	49.95	-10.30
6	999.86	42.7 QP	54.0	-11.3	1.10 H	307	41.02	1.66

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	35.48	28.7 QP	40.0	-11.4	1.05 V	260	43.03	-14.38
2	125.59	28.7 QP	43.5	-14.8	1.08 V	65	43.30	-14.64
3	250.68	32.3 QP	46.0	-13.7	1.74 V	78	46.31	-14.05
4	375.13	37.3 QP	46.0	-8.7	1.08 V	348	47.59	-10.30
5	429.85	37.5 QP	46.0	-8.6	1.03 V	5	45.97	-8.52
6	999.03	43.5 QP	54.0	-10.5	1.63 V	30	41.84	1.67

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



A D T

ABOVE 1GHz DATA

802.11a

CHANNEL	TX Channel 149	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	5000.00	57.7 PK	74.0	-16.3	1.00 H	199	51.28	6.42
2	5000.00	49.8 AV	54.0	-4.2	1.00 H	199	43.38	6.42
3	5400.00	61.3 PK	74.0	-12.7	1.51 H	351	53.59	7.71
4	5400.00	50.5 AV	54.0	-3.5	1.51 H	351	42.79	7.71
5	*5745.00	120.2 PK			1.15 H	337	111.78	8.42
6	*5745.00	109.6 AV			1.15 H	337	101.18	8.42
7	11490.00	61.7 PK	74.0	-12.3	1.00 H	341	47.35	14.35
8	11490.00	49.2 AV	54.0	-4.8	1.00 H	341	34.85	14.35

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	5000.00	55.9 PK	74.0	-18.1	1.24 V	192	49.48	6.42
2	5000.00	45.2 AV	54.0	-8.8	1.24 V	192	38.78	6.42
3	5400.00	62.1 PK	74.0	-11.9	1.32 V	30	54.39	7.71
4	5400.00	51.5 AV	54.0	-2.5	1.32 V	30	43.79	7.71
5	*5745.00	122.2 PK			1.00 V	36	113.78	8.42
6	*5745.00	111.6 AV			1.00 V	36	103.18	8.42
7	11490.00	60.8 PK	74.0	-13.2	1.11 V	21	46.45	14.35
8	11490.00	48.9 AV	54.0	-5.1	1.11 V	21	34.55	14.35

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.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	58.1 PK	74.0	-15.9	1.00 H	184	51.68	6.42
2	5000.00	50.0 AV	54.0	-4.0	1.00 H	184	43.58	6.42
3	5400.00	57.5 PK	74.0	-16.5	1.00 H	191	49.79	7.71
4	5400.00	50.1 AV	54.0	-3.9	1.00 H	191	42.39	7.71
5	*5785.00	118.6 PK			1.15 H	337	110.11	8.49
6	*5785.00	108.7 AV			1.15 H	337	100.21	8.49
7	11570.00	62.6 PK	74.0	-11.4	1.00 H	331	48.29	14.31
8	11570.00	50.0 AV	54.0	-4.0	1.00 H	331	35.69	14.31

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	5000.00	56.6 PK	74.0	-17.4	1.22 V	193	50.18	6.42
2	5000.00	46.1 AV	54.0	-7.9	1.22 V	193	39.68	6.42
3	5400.00	64.3 PK	74.0	-9.7	1.19 V	30	56.59	7.71
4	5400.00	53.2 AV	54.0	-0.8	1.19 V	30	45.49	7.71
5	*5785.00	121.7 PK			1.00 V	45	113.21	8.49
6	*5785.00	110.4 AV			1.00 V	45	101.91	8.49
7	11570.00	61.8 PK	74.0	-12.2	1.14 V	23	47.49	14.31
8	11570.00	49.8 AV	54.0	-4.2	1.14 V	23	35.49	14.31

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.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	57.5 PK	74.0	-16.5	1.00 H	195	51.08	6.42
2	5000.00	49.6 AV	54.0	-4.4	1.00 H	195	43.18	6.42
3	5400.00	56.9 PK	74.0	-17.1	1.00 H	184	49.19	7.71
4	5400.00	49.2 AV	54.0	-4.8	1.00 H	184	41.49	7.71
5	*5825.00	118.2 PK			1.15 H	337	109.61	8.59
6	*5825.00	108.3 AV			1.15 H	337	99.71	8.59
7	11650.00	62.4 PK	74.0	-11.6	1.00 H	317	48.02	14.38
8	11650.00	50.2 AV	54.0	-3.8	1.00 H	317	35.82	14.38

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	5000.00	56.6 PK	74.0	-17.4	1.23 V	181	50.18	6.42
2	5000.00	45.9 AV	54.0	-8.1	1.23 V	181	39.48	6.42
3	5400.00	65.1 PK	74.0	-8.9	1.10 V	29	57.39	7.71
4	5400.00	53.9 AV	54.0	-0.1	1.10 V	29	46.19	7.71
5	*5825.00	121.4 PK			1.00 V	51	112.81	8.59
6	*5825.00	110.0 AV			1.00 V	51	101.41	8.59
7	11650.00	61.8 PK	74.0	-12.2	1.19 V	7	47.42	14.38
8	11650.00	49.5 AV	54.0	-4.5	1.19 V	7	35.12	14.38

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.



A D T

802.11n (HT20)

CHANNEL	TX Channel 149	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	5000.00	57.2 PK	74.0	-16.8	1.04 H	172	50.78	6.42
2	5000.00	48.8 AV	54.0	-5.2	1.04 H	172	42.38	6.42
3	5440.00	61.9 PK	74.0	-12.1	1.49 H	343	54.07	7.83
4	5440.00	51.1 AV	54.0	-2.9	1.49 H	343	43.27	7.83
5	*5745.00	120.1 PK			1.16 H	331	111.68	8.42
6	*5745.00	109.9 AV			1.16 H	331	101.48	8.42
7	11490.00	62.4 PK	74.0	-11.6	1.00 H	312	48.05	14.35
8	11490.00	49.7 AV	54.0	-4.3	1.00 H	312	35.35	14.35

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	5000.00	56.8 PK	74.0	-17.2	1.15 V	211	50.38	6.42
2	5000.00	46.1 AV	54.0	-7.9	1.15 V	211	39.68	6.42
3	5400.00	61.4 PK	74.0	-12.6	1.00 V	29	53.69	7.71
4	5400.00	50.8 AV	54.0	-3.2	1.00 V	29	43.09	7.71
5	*5745.00	122.2 PK			1.61 V	14	113.78	8.42
6	*5745.00	111.9 AV			1.61 V	14	103.48	8.42
7	11490.00	61.5 PK	74.0	-12.5	1.25 V	7	47.15	14.35
8	11490.00	49.2 AV	54.0	-4.8	1.25 V	7	34.85	14.35

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.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	58.2 PK	74.0	-15.8	1.01 H	166	51.78	6.42
2	5000.00	50.4 AV	54.0	-3.6	1.01 H	166	43.98	6.42
3	5440.00	63.5 PK	74.0	-10.5	1.47 H	9	55.67	7.83
4	5440.00	52.6 AV	54.0	-1.4	1.47 H	9	44.77	7.83
5	*5785.00	120.6 PK			1.05 H	335	112.11	8.49
6	*5785.00	110.2 AV			1.05 H	335	101.71	8.49
7	11570.00	62.0 PK	74.0	-12.0	1.00 H	332	47.69	14.31
8	11570.00	49.5 AV	54.0	-4.5	1.00 H	332	35.19	14.31

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	5000.00	56.2 PK	74.0	-17.8	1.17 V	200	49.78	6.42
2	5000.00	45.8 AV	54.0	-8.2	1.17 V	200	39.38	6.42
3	5440.00	63.2 PK	74.0	-10.8	1.00 V	29	55.37	7.83
4	5440.00	52.7 AV	54.0	-1.3	1.00 V	29	44.87	7.83
5	*5785.00	121.9 PK			1.51 V	11	113.41	8.49
6	*5785.00	111.5 AV			1.51 V	11	103.01	8.49
7	11570.00	61.6 PK	74.0	-12.4	1.17 V	36	47.29	14.31
8	11570.00	49.3 AV	54.0	-4.7	1.17 V	36	34.99	14.31

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.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	58.3 PK	74.0	-15.7	1.04 H	143	51.88	6.42
2	5000.00	50.5 AV	54.0	-3.5	1.04 H	143	44.08	6.42
3	5360.00	65.3 PK	74.0	-8.7	1.28 H	0	57.76	7.54
4	5360.00	53.9 AV	54.0	-0.1	1.28 H	0	46.36	7.54
5	5400.00	64.3 PK	74.0	-9.7	1.28 H	0	56.59	7.71
6	5400.00	53.1 AV	54.0	-0.9	1.28 H	0	45.39	7.71
7	*5825.00	120.1 PK			1.05 H	337	111.51	8.59
8	*5825.00	109.9 AV			1.05 H	337	101.31	8.59
9	11650.00	62.2 PK	74.0	-11.8	1.00 H	328	47.82	14.38
10	11650.00	49.7 AV	54.0	-4.3	1.00 H	328	35.32	14.38

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	5000.00	56.6 PK	74.0	-17.4	1.20 V	179	50.18	6.42
2	5000.00	46.0 AV	54.0	-8.0	1.20 V	179	39.58	6.42
3	5400.00	64.3 PK	74.0	-9.7	1.11 V	29	56.59	7.71
4	5400.00	53.7 AV	54.0	-0.3	1.11 V	29	45.99	7.71
5	*5825.00	121.5 PK			1.50 V	20	112.91	8.59
6	*5825.00	111.1 AV			1.50 V	20	102.51	8.59
7	11650.00	62.0 PK	74.0	-12.0	1.22 V	23	47.62	14.38
8	11650.00	49.6 AV	54.0	-4.4	1.22 V	23	35.22	14.38

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.



A D T

802.11n (HT40)

CHANNEL	TX Channel 151	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	5000.00	58.0 PK	74.0	-16.0	1.04 H	186	51.58	6.42
2	5000.00	49.9 AV	54.0	-4.1	1.04 H	186	43.48	6.42
3	*5755.00	117.6 PK			1.05 H	338	109.16	8.44
4	*5755.00	107.7 AV			1.05 H	338	99.26	8.44
5	11510.00	62.0 PK	74.0	-12.0	1.03 H	320	47.66	14.34
6	11510.00	49.4 AV	54.0	-4.6	1.03 H	320	35.06	14.34

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	5000.00	55.6 PK	74.0	-18.4	1.27 V	188	49.18	6.42
2	5000.00	45.3 AV	54.0	-8.7	1.27 V	188	38.88	6.42
3	5360.00	64.2 PK	74.0	-9.8	1.18 V	28	56.66	7.54
4	5360.00	53.2 AV	54.0	-0.8	1.18 V	28	45.66	7.54
5	*5755.00	119.7 PK			1.08 V	29	111.26	8.44
6	*5755.00	108.6 AV			1.08 V	29	100.16	8.44
7	11510.00	62.2 PK	74.0	-11.8	1.17 V	9	47.86	14.34
8	11510.00	50.0 AV	54.0	-4.0	1.17 V	9	35.66	14.34

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.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	58.5 PK	74.0	-15.5	1.02 H	166	52.08	6.42
2	5000.00	50.1 AV	54.0	-3.9	1.02 H	166	43.68	6.42
3	*5795.00	116.2 PK			1.05 H	339	107.70	8.50
4	*5795.00	106.1 AV			1.05 H	339	97.60	8.50
5	11590.00	62.2 PK	74.0	-11.8	1.00 H	337	47.90	14.30
6	11590.00	49.7 AV	54.0	-4.3	1.00 H	337	35.40	14.30

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	5000.00	56.6 PK	74.0	-17.4	1.25 V	203	50.18	6.42
2	5000.00	45.8 AV	54.0	-8.2	1.25 V	203	39.38	6.42
3	5360.00	63.6 PK	74.0	-10.4	1.18 V	28	56.06	7.54
4	5360.00	53.3 AV	54.0	-0.7	1.18 V	28	45.76	7.54
5	*5795.00	118.1 PK			1.08 V	34	109.60	8.50
6	*5795.00	107.2 AV			1.08 V	34	98.70	8.50
7	11590.00	62.3 PK	74.0	-11.7	1.08 V	16	48.00	14.30
8	11590.00	49.7 AV	54.0	-4.3	1.08 V	16	35.40	14.30

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) – 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.

5.3 6dB BANDWIDTH MEASUREMENT

5.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

5.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER R&S	FSV 40	100964	July 05, 2014	July 04, 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 : Aug. 07, 2014

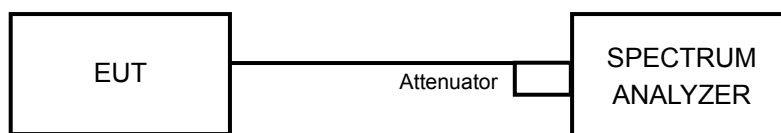
5.3.3 TEST PROCEDURE

1. Set resolution bandwidth (RBW) = 100kHz
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
3. Trace mode = max hold.
4. Sweep = auto couple.
5. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

5.3.4 DEVIATION FROM TEST STANDARD

No deviation

5.3.5 TEST SETUP



5.3.6 EUT OPERATING CONDITIONS

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

5.3.7 TEST RESULTS

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
149	5745	16.14	16.39	0.5	PASS
157	5785	16.14	16.41	0.5	PASS
165	5825	16.13	16.42	0.5	PASS

802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
149	5745	16.12	17.59	0.5	PASS
157	5785	17.32	17.61	0.5	PASS
165	5825	17.31	17.59	0.5	PASS

802.11n (HT40)

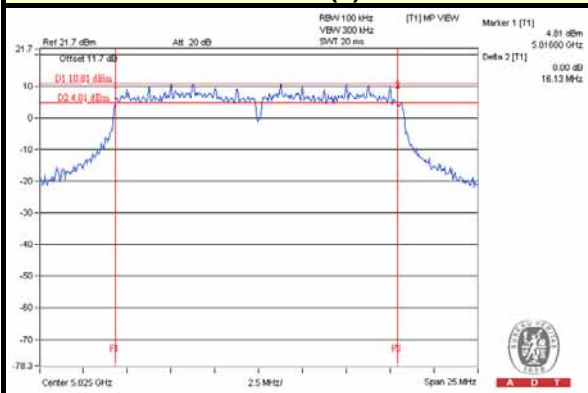
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
151	5755	35.34	35.81	0.5	PASS
159	5795	35.86	35.87	0.5	PASS



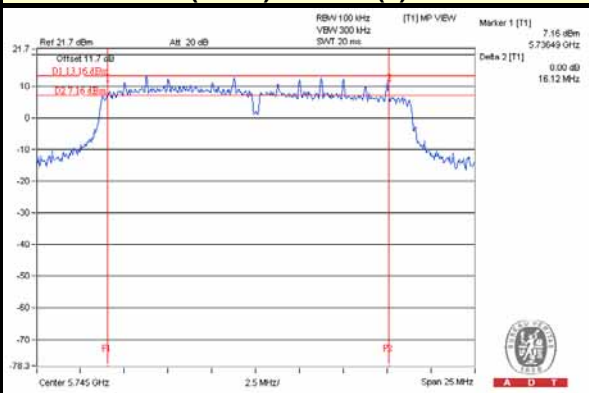
A D T

SPECTRUM PLOT OF WORST VALUE

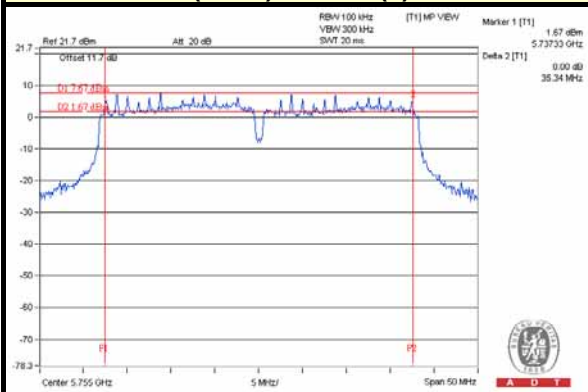
802.11a / Chain (0) : CH165



802.11n (HT20) / Chain (0): CH149



802.11n (HT40) / Chain (0): CH151



5.4 CONDUCTED OUTPUT POWER MEASUREMENT

5.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

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

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 $NANT \leq 4$;

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 $NANT \geq 5$.

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

5.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Power meter Anritsu	ML2495A	1014008	Apr. 30, 2014	Apr. 29, 2015
Power sensor Anritsu	MA2411B	0917122	Apr. 30, 2014	Apr. 29, 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 : Aug. 07, 2014

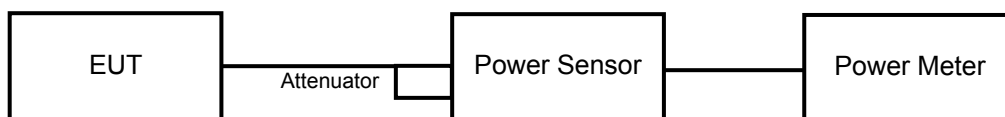
5.4.3 TEST PROCEDURES

The 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 average power level.

5.4.4 DEVIATION FROM TEST STANDARD

No deviation.

5.4.5 TEST SETUP



5.4.6 EUT OPERATING CONDITIONS

Same as Item 5.3.6

5.4.7 TEST RESULTS

802.11a

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
149	5745	24.09	23.86	499.668	26.99	29.00	PASS
157	5785	23.74	22.70	422.801	26.26	29.00	PASS
165	5825	22.82	21.95	348.101	25.42	29.00	PASS

NOTE: The directional gain is 7dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $30-(7-6) = 29\text{dBm}$.

802.11n (HT20)

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
149	5745	24.25	23.82	507.064	27.05	29.00	PASS
157	5785	23.43	22.93	416.629	26.20	29.00	PASS
165	5825	23.17	22.03	367.079	25.65	29.00	PASS

NOTE: The directional gain is 7dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $30-(7-6) = 29\text{dBm}$.

802.11n (HT40)

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
151	5755	21.14	22.15	294.076	24.68	29.00	PASS
159	5795	23.01	22.19	365.563	25.63	29.00	PASS

NOTE: The directional gain is 7dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $30-(7-6) = 29\text{dBm}$.

5.5 POWER SPECTRAL DENSITY MEASUREMENT

5.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

5.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER R&S	FSV 40	100964	July 05, 2014	July 04, 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 : Aug. 07, 2014

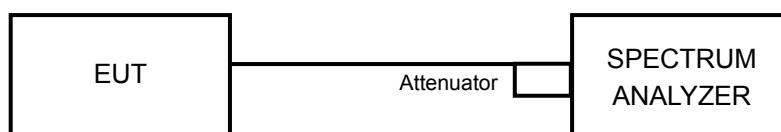
5.5.3 TEST PROCEDURE

1. Set the RBW = 10 kHz, VBW = 30 kHz, Detector = power averaging (RMS).
2. Ensure that the number of measurement points in the sweep $\geq 2 \times$ 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.
6. Add $10 \log (1/x)$, where x is the duty cycle, to the measured PSD to compute the average PSD during the actual transmission time.

5.5.4 DEVIATION FROM TEST STANDARD

No deviation

5.5.5 TEST SETUP





A D T

5.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6



A D T

5.5.7 TEST RESULTS

802.11a

TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	PASS /FAIL
0	149	5745	-6.66	3.01	-3.49	3.99	PASS
	157	5785	-7.33	3.01	-4.16	3.99	PASS
	165	5825	-7.81	3.01	-4.64	3.99	PASS
1	149	5745	-6.92	3.01	-3.75	3.99	PASS
	157	5785	-8.09	3.01	-4.92	3.99	PASS
	165	5825	-8.65	3.01	-5.48	3.99	PASS

NOTE: Directional gain = 7dBi + 10log(2) = 10.01dBi > 6dBi , so the power density limit shall be reduced to 8-(10.01-6) = 3.99dBm.

802.11n (HT20)

TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	PASS /FAIL
0	149	5745	-6.72	3.01	-3.55	3.99	PASS
	157	5785	-7.52	3.01	-4.35	3.99	PASS
	165	5825	-7.67	3.01	-4.50	3.99	PASS
1	149	5745	-7.18	3.01	-4.01	3.99	PASS
	157	5785	-8.29	3.01	-5.12	3.99	PASS
	165	5825	-8.88	3.01	-5.71	3.99	PASS

NOTE: Directional gain = 7dBi + 10log(2) = 10.01dBi > 6dBi , so the power density limit shall be reduced to 8-(10.01-6) = 3.99dBm.

802.11n (HT40)

TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	PASS /FAIL
0	151	5755	-10.97	3.01	-7.71	3.99	PASS
	159	5795	-10.39	3.01	-7.13	3.99	PASS
1	151	5755	-11.57	3.01	-8.31	3.99	PASS
	159	5795	-11.12	3.01	-7.86	3.99	PASS

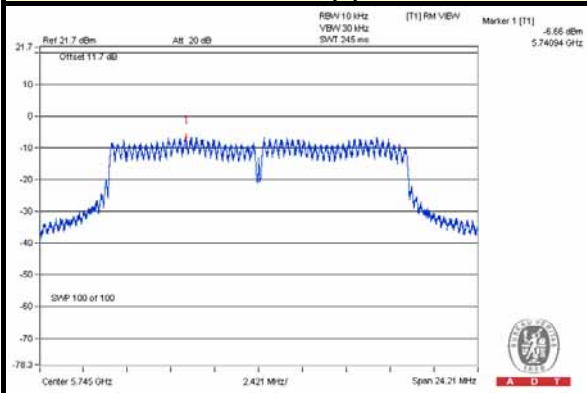
NOTE: Directional gain = 7dBi + 10log(2) = 10.01dBi > 6dBi , so the power density limit shall be reduced to 8-(10.01-6) = 3.99dBm.



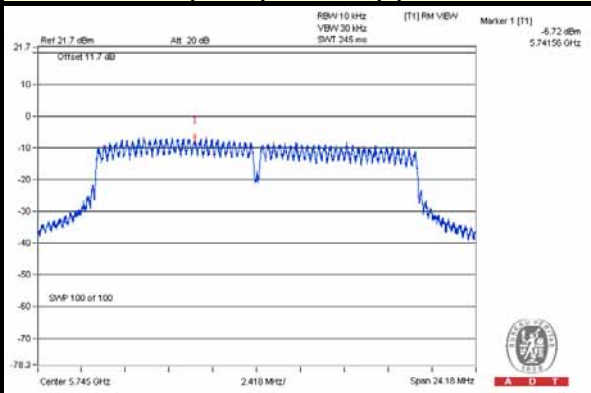
A D T

SPECTRUM PLOT OF WORST VALUE

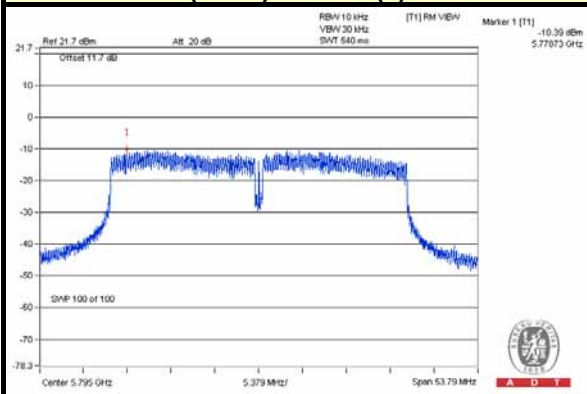
802.11a / Chain (0) : CH149



802.11n (HT20) / Chain (0) : CH149



802.11n (HT40) / Chain (0) : CH159





A D T

5.6 CONDUCTED OUT-BAND EMISSION MEASUREMENT

5.6.1 LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT

Below 30dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

5.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER R&S	FSV 40	100964	July 05, 2014	July 04, 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 : Aug. 07, 2014

5.6.3 TEST PROCEDURE

Measurement Procedure - Reference Level

1. Set the RBW = 100 kHz.
2. Set the VBW \geq 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.

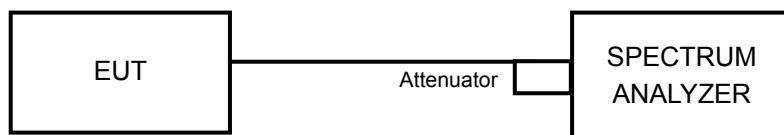
Measurement Procedure –Unwanted Emission Level

1. Set RBW = 100 kHz.
2. Set VBW \geq 300 kHz.
3. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum amplitude level.

5.6.4 DEVIATION FROM TEST STANDARD

No deviation

5.6.5 TEST SETUP



5.6.6 EUT OPERATING CONDITION

Same as Item 4.3.6

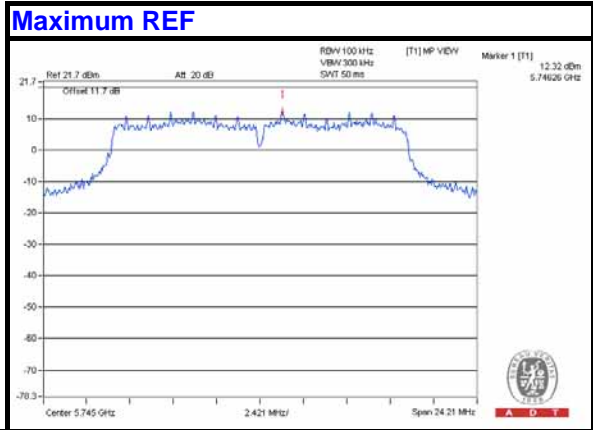
5.6.7 TEST RESULTS

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



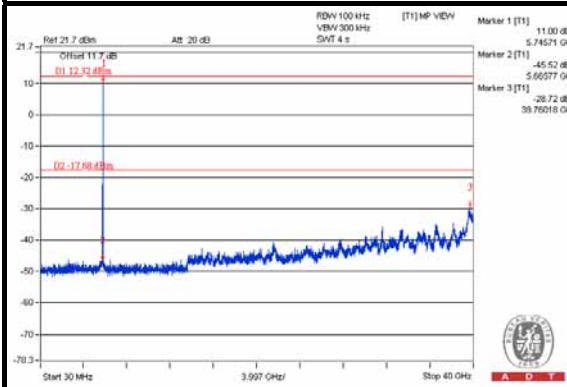
A D T

802.11a

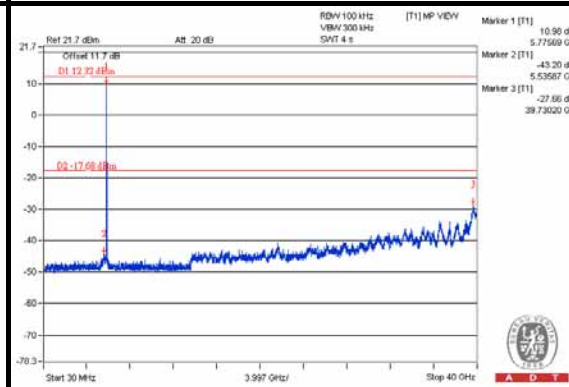


Chain (0)

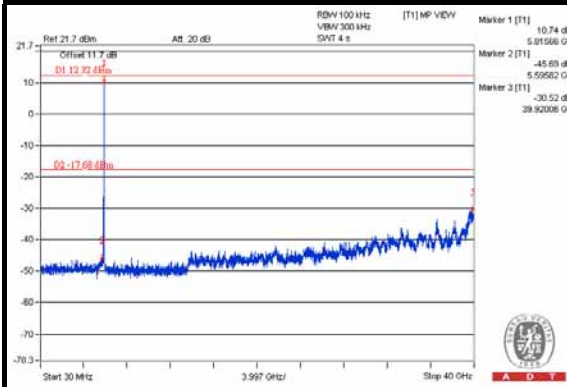
CH 149



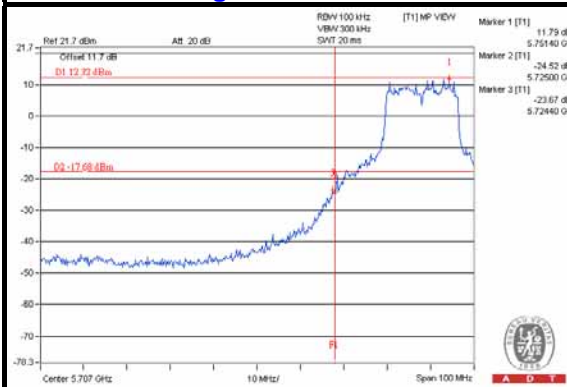
CH 157



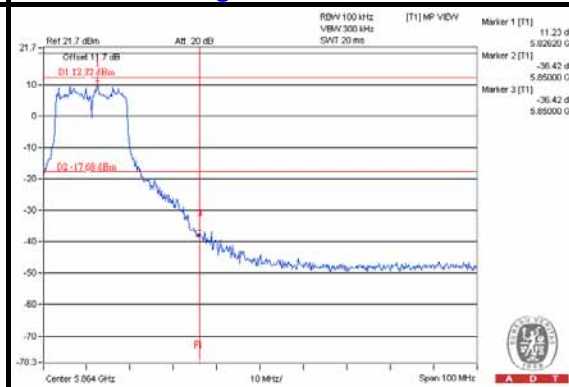
CH 165



CH 149 Band edge



CH 165 Band edge

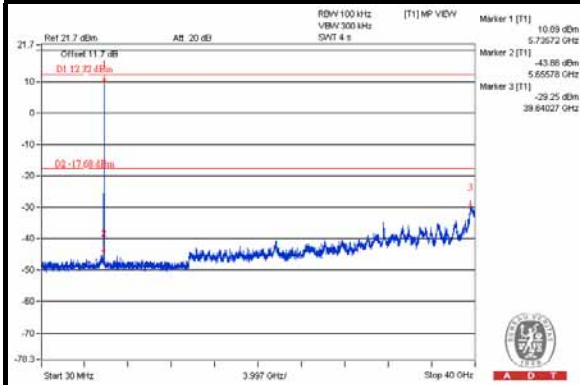




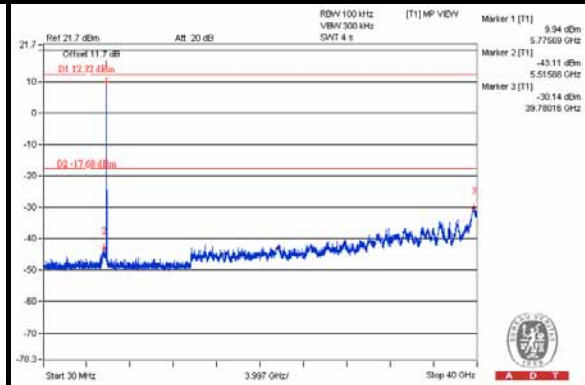
A D T

Chain (1)

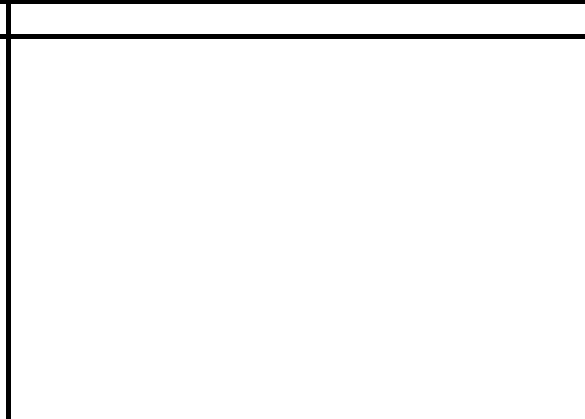
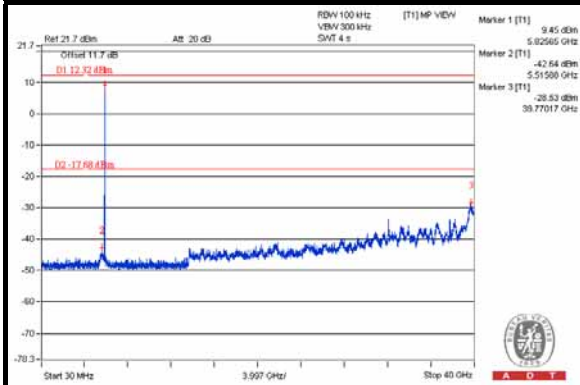
CH 149



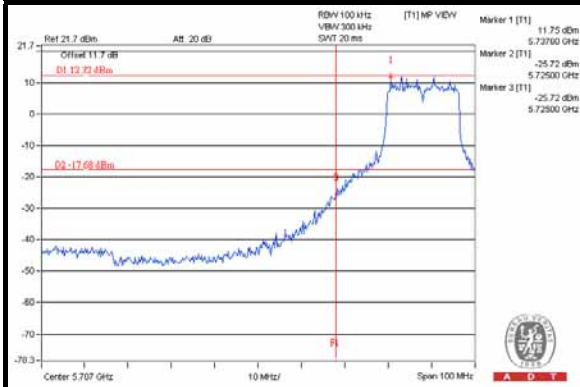
CH 157



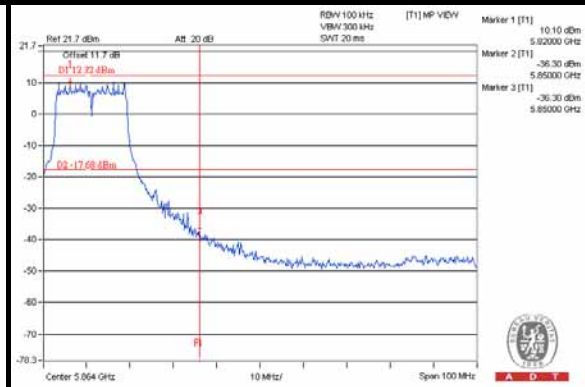
CH 165



CH 149 Band edge



CH 165 Band edge

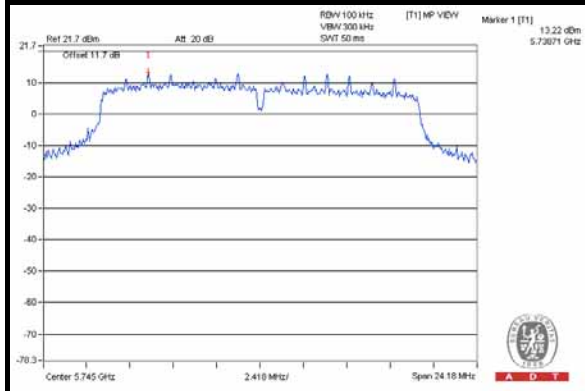




A D T

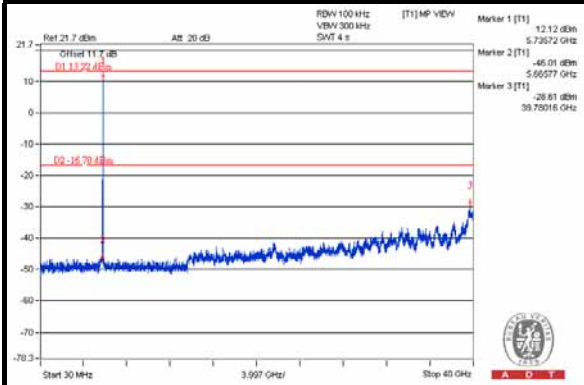
802.11n (HT20)

Maximum REF

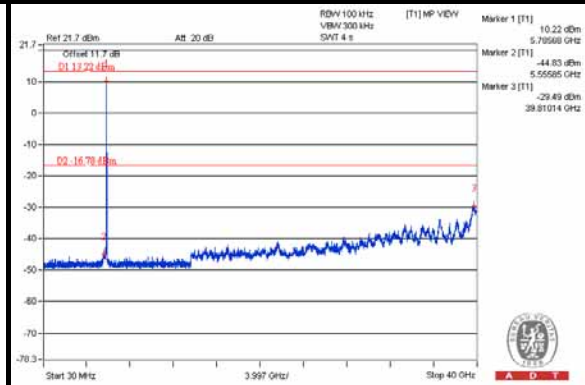


Chain (0)

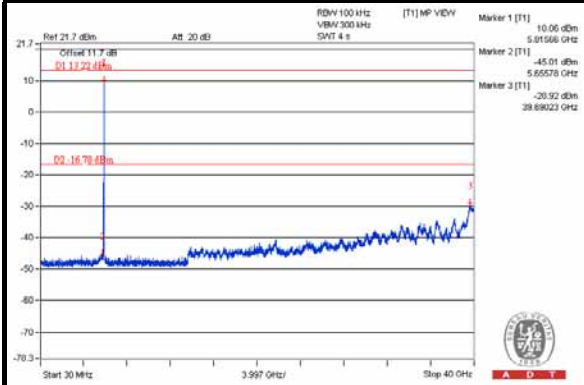
CH 149



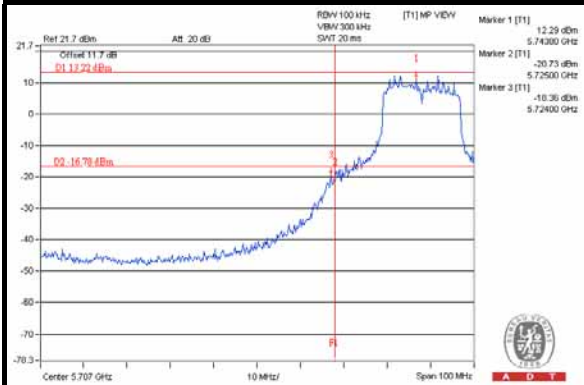
CH 157



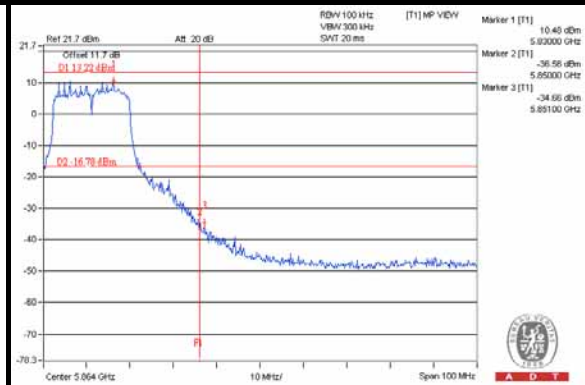
CH 165



CH 149 Band edge



CH 165 Band edge

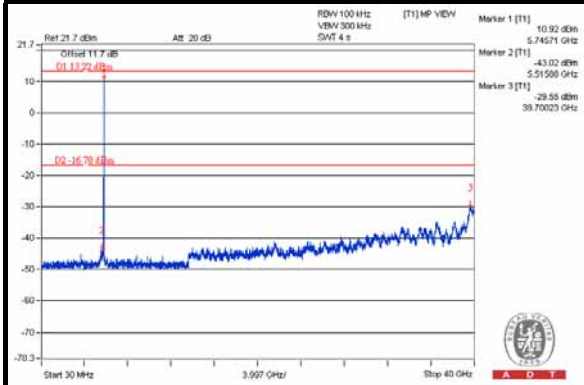




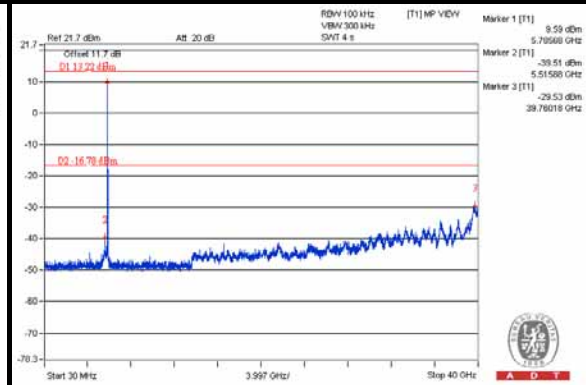
A D T

Chain (1)

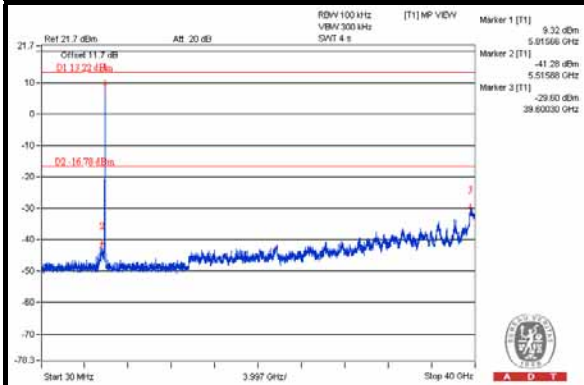
CH 149



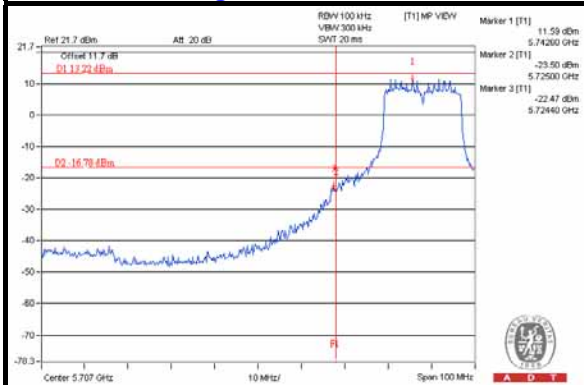
CH 157



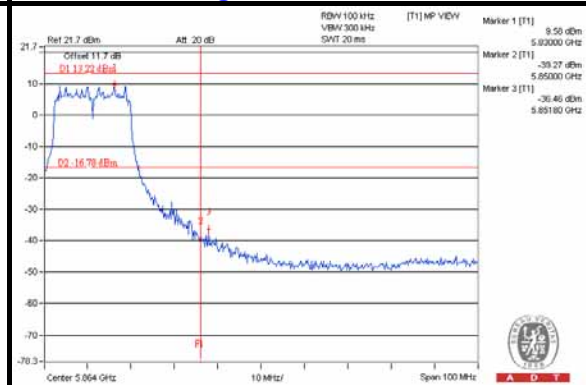
CH 165



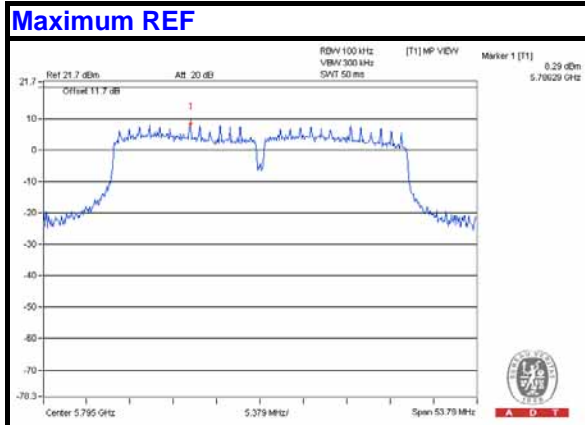
CH 149 Band edge



CH 165 Band edge

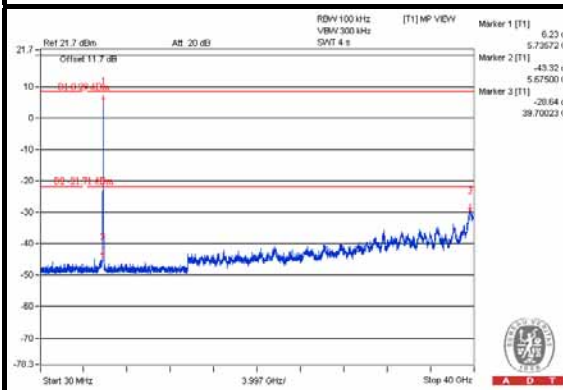


802.11n (HT40)

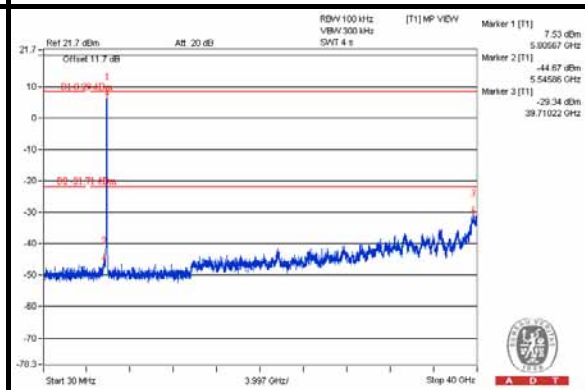


Chain (0)

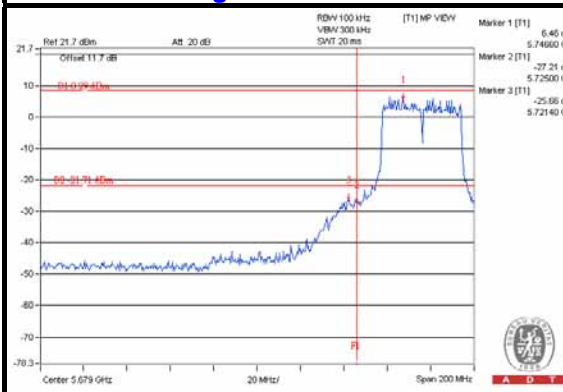
CH 151



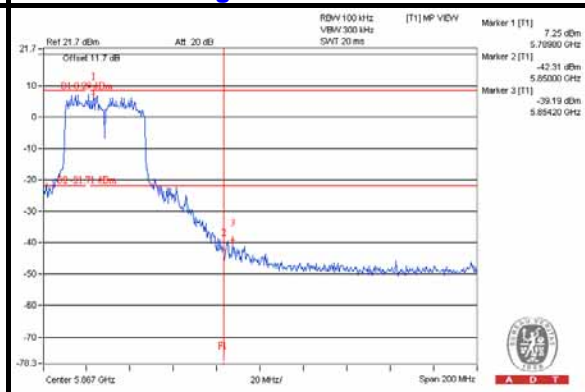
CH 159



CH 151 Band edge



CH 159 Band edge

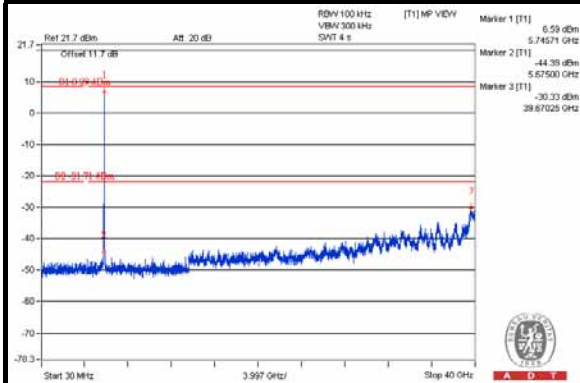




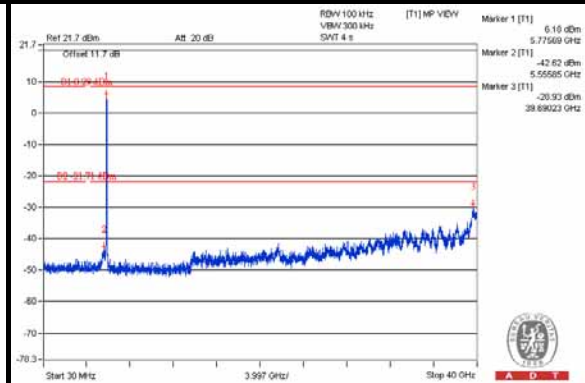
A D T

Chain (1)

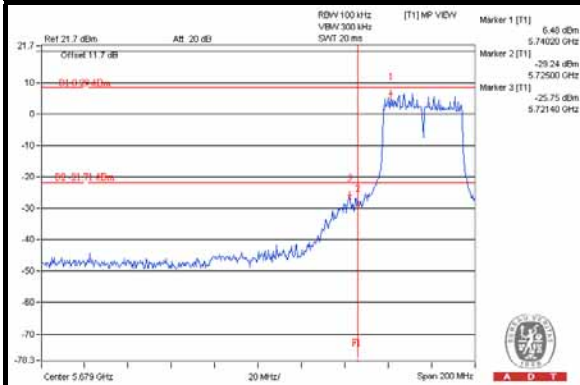
CH 151



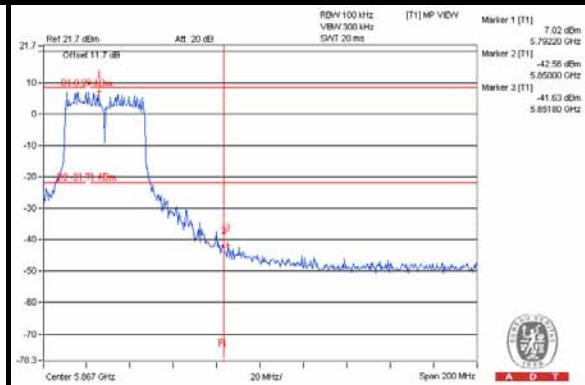
CH 159



CH 151 Band edge



CH 159 Band edge





A D T

6. PHOTOGRAPHS OF THE TEST CONFIGURATION

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





A D T

7. INFORMATION ON THE TESTING LABORATORIES

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

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

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:

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.



A D T

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

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

--- END ---