FCC TEST REPORT
(WLAN/DTS 15.247)

REPORT NO.:	RF131205E01
MODEL NO.:	RTL8812AEBT
FCC ID:	TX2RTL8812AEBT
RECEIVED:	Dec. 04, 2013
TESTED:	Dec. 24, 2013 to Feb. 05, 2014
ISSUED:	Feb. 10, 2014

APPLICANT:	Realtek Semiconductor Corp.
ADDRESS:	No. 2, Innovation Road II, Hsinchu Science Park, Hsinchu 300, Taiwan

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.

Table of Contents

RELEASE CONTROL RECORD....6
1. CERTIFICATION....7
2. SUMMARY OF TEST RESULTS....8
2.1 MEASUREMENT UNCERTAINTY....10
3. GENERAL INFORMATION....11
3.1 GENERAL DESCRIPTION OF EUT(WLAN / DTS)....11
3.2 DESCRIPTION OF TEST MODES....16
3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL....18
3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS....22
3.4 DUTY CYCLE OF TEST SIGNAL....23
3.5 DESCRIPTION OF SUPPORT UNITS....26
3.6 CONFIGURATION OF SYSTEM UNDER TEST....26
4. TEST TYPES AND RESULTS (FOR 2.4GHz, 2.400 ~ 2.4835GHz Band)...27
4.1 CONDUCTED EMISSION MEASUREMENT....27
4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT....27
4.1.2 TEST INSTRUMENTS....27
4.1.3 TEST PROCEDURES....28
4.1.4 DEVIATION FROM TEST STANDARD....28
4.1.5 TEST SETUP....28
4.1.6 EUT OPERATING CONDITIONS....29
4.1.7 TEST RESULTS (WLAN)....30
4.1.8 TEST RESULTS (BT<LE>)....32
4.2 RADIATED EMISSION AND BANDEDGE MEASUREMENT....34
4.2.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT....34
4.2.2 TEST INSTRUMENTS....35
4.2.3 TEST PROCEDURES....36
4.2.4 DEVIATION FROM TEST STANDARD....36
4.2.5 TEST SETUP....37
4.2.6 EUT OPERATING CONDITIONS....37
4.2.7 TEST RESULTS (MODE 1, WLAN)....38
4.2.8 TEST RESULTS (MODE 2, WLAN)....54
4.2.9 TEST RESULTS (MODE 1, BT<LE>)....70
4.2.10 TEST RESULTS (MODE 2, BT<LE>)....74
4.3 6dB BANDWIDTH MEASUREMENT....78
4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT....78
4.3.2 TEST INSTRUMENTS....78
4.3.3 TEST PROCEDURE....78

4.3.4 DEVIATION FROM TEST STANDARD 78
4.3.5 TEST SETUP 78
4.3.6 EUT OPERATING CONDITIONS 78
4.3.7 TEST RESULTS 79
4.4 CONDUCTED OUTPUT POWER MEASUREMENT 83
4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT 83
4.4.2 INSTRUMENTS 83
4.4.3 TEST PROCEDURES 83
4.4.4 DEVIATION FROM TEST STANDARD 84
4.4.5 TEST SETUP 84
4.4.6 EUT OPERATING CONDITIONS 84
4.4.7 TEST RESULTS 85
4.5 AVERAGE OUTPUT POWER 87
4.5.1 FOR REFERENCE 87
4.5.2 TEST INSTRUMENTS 87
4.5.3 TEST PROCEDURES 87
4.5.4 TEST SETUP 87
4.5.5 EUT OPERATING CONDITIONS 87
4.5.6 TEST RESULTS 88
4.6 POWER SPECTRAL DENSITY MEASUREMENT 90
4.6.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT 90
4.6.2 TEST INSTRUMENTS 90
4.6.3 TEST PROCEDURE 90
4.6.4 DEVIATION FROM TEST STANDARD 90
4.6.5 TEST SETUP 90
4.6.6 EUT OPERATING CONDITION 90
4.6.7 TEST RESULTS 91
4.7 CONDUCTED OUT-BAND EMISSION MEASUREMENT 95
4.7.1 LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT 95
4.7.2 TEST INSTRUMENTS 95
4.7.3 TEST PROCEDURE 95
4.7.4 DEVIATION FROM TEST STANDARD 96
4.7.5 TEST SETUP 96
4.7.6 EUT OPERATING CONDITION 96
4.7.7 TEST RESULTS 96
5. TEST TYPES AND RESULTS (FOR 5GHz, 5.725~5.850GHz Band) 106
5.1 CONDUCTED EMISSION MEASUREMENT 106
5.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT 106
5.1.2 TEST INSTRUMENTS 106

5.1.3 TEST PROCEDURES 107
5.1.4 DEVIATION FROM TEST STANDARD 107
5.1.5 TEST SETUP 107
5.1.6 EUT OPERATING CONDITIONS 108
5.1.7 TEST RESULTS 109
5.2 RADIATED AND BANDEDGE EMISSION MEASUREMENT 111
5.2.1 LIMITS OF RADIATED AND BANDEDGE EMISSION MEASUREMENT 111
5.2.2 TEST INSTRUMENTS 112
5.2.3 TEST PROCEDURES 113
5.2.4 DEVIATION FROM TEST STANDARD 113
5.2.5 TEST SETUP 114
5.2.6 EUT OPERATING CONDITIONS 114
5.2.7 TEST RESULTS (MODE 1) 115
5.2.8 TEST RESULTS (MODE 2) 128
5.3 6dB BANDWIDTH MEASUREMENT 141
5.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT 141
5.3.2 TEST INSTRUMENTS 141
5.3.3 TEST PROCEDURE 141
5.3.4 DEVIATION FROM TEST STANDARD 141
5.3.5 TEST SETUP 141
5.3.6 EUT OPERATING CONDITIONS 141
5.3.7 TEST RESULTS 142
5.4 CONDUCTED OUTPUT POWER MEASUREMENT 145
5.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT 145
5.4.2 INSTRUMENTS 145
5.4.3 TEST PROCEDURES 146
5.4.4 DEVIATION FROM TEST STANDARD 147
5.4.5 TEST SETUP 147
5.4.6 EUT OPERATING CONDITIONS 147
5.4.7 TEST RESULTS 148
5.5 AVERAGE OUTPUT POWER 150
5.5.1 FOR REFERENCE 150
5.5.2 TEST INSTRUMENTS 150
5.5.3 TEST PROCEDURES 150
5.5.4 TEST SETUP 150
5.5.5 EUT OPERATING CONDITIONS 150
5.5.6 TEST RESULTS 151
5.6 POWER SPECTRAL DENSITY MEASUREMENT 152
5.6.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT 152

5.6.2 TEST INSTRUMENTS 152
5.6.3 TEST PROCEDURE 152
5.6.4 DEVIATION FROM TEST STANDARD 152
5.6.5 TEST SETUP 152
5.6.6 EUT OPERATING CONDITION 152
5.6.7 TEST RESULTS 153
5.7 CONDUCTED OUT-BAND EMISSION MEASUREMENT 157
5.7.1 LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT 157
5.7.2 TEST INSTRUMENTS 157
5.7.3 TEST PROCEDURE 157
5.7.4 DEVIATION FROM TEST STANDARD 158
5.7.5 TEST SETUP 158
5.7.6 EUT OPERATING CONDITION 158
5.7.7 TEST RESULTS 158
6. PHOTOGRAPHS OF THE TEST CONFIGURATION 168
7. INFORMATION ON THE TESTING LABORATORIES 169
8. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB 170

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF131205E01	Original release	Feb. 10, 2014

1. CERTIFICATION

PRODUCT:	802.11a/b/g/n/ac RTL8812AE Combo module
BRAND NAME:	Realtek
MODEL NO.:	RTL8812AEBT
TEST SAMPLE:	ENGINEERING SAMPLE
APPLICANT:	Realtek Semiconductor Corp.
TESTED:	Dec. 24, 2013 to Feb. 05, 2014
STANDARDS:	**FCC Part 15, Subpart C (Section 15.247)** ANSI C63.10-2009

The above equipment (Model: RTL8812AEBT) 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:** *Feb. 10, 2014*
(Midoli Peng, Specialist)

APPROVED BY : _____ , **DATE:** *Feb. 10, 2014*
(May Chen, Manager)

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

For 2.4GHz(WLAN), 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 -31.39dB at 1.35547MHz
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.0dB at 2483.00MHz
15.247(d)	Band Edge Measurement	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted 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 IPEX not a standard connector.

For 2.4GHz(BT-LE(GFSK)), 2402~2480MHz 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 -28.82dB at 0.38828MHz
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.0dB at 2483.00MHz
15.247(d)	Band Edge Measurement	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted 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 IPEX 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 -31.47dB at 1.33203MHz
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -5.5dB at 11570.00MHz & 11650.00MHz & 11590.00MHz
15.247(d)	Band Edge Measurement	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted 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 IPEX not a standard connector.

NOTE:

The EUT was operating in 2.400 ~ 2.4835GHz, 5.15~5.35GHz, 5.47~5.6GHz & 5.65~5.725GHz 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 5.15~5.35GHz and 5.47~5.6GHz & 5.65~5.725GHz RF parameters was recorded in another test report.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

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

Measurement	Value
Conducted emissions	2.98 dB
Radiated emissions (30MHz-1GHz)	5.37 dB
Radiated emissions (1GHz -6GHz)	3.65 dB
Radiated emissions (6GHz -18GHz)	3.88 dB
Radiated emissions (18GHz -40GHz)	4.11 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT(WLAN / DTS)

PRODUCT	802.11a/b/g/n/ac RTL8812AE Combo module
MODEL NO.	RTL8812AEBT
POWER SUPPLY	DC 3.3V from host equipment
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM BT-LE (GFSK) for DTS 256QAM for OFDM in 11ac mode only
MODULATION TECHNOLOGY	DSSS,OFDM, DTS
TRANSFER RATE	802.11b: up to 11Mbps 802.11a / g: up to 54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.7Mbps BT-LE (GFSK): 1Mbps
OPERATING FREQUENCY	**For 15.407** **5GHz:** 5.18 ~ 5.24GHz, 5.26 ~ 5.32GHz, 5.50 ~ 5.58GHz & 5.66GHz ~ 5.70GHz
	For 15.247 **2.4GHz:** 2.412 ~ 2.462GHz **5GHz:** 5.745 ~ 5.825GHz **BT-LE(GFSK):** 2.402 ~ 2.480GHz
NUMBER OF CHANNEL	**For 15.407** 16 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 7 for 802.11n (HT40), 802.11ac (VHT40) 3 for 802.11ac (VHT80)
	For 15.247 (2.4GHz) 11 for 802.11b, 802.11g, 802.11n (HT20) 7 for 802.11n (HT40) 40 for BT-LE(GFSK) **For 15.247 (5GHz)** 5 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 2 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80)

MAXIMUM OUTPUT POWER	**For 15.407** 802.11a: 147.582mW 802.11ac (VHT20): 137.730mW 802.11ac (VHT40): 139.680mW 802.11ac (VHT80): 27.530mW **For 15.247 (2.4GHz)** 802.11b: 123.310mW 802.11g: 572.434mW 802.11n (HT20): 514.717mW 802.11n (HT40): 393.088mW BT-LE(GFSK): 2.415mW **For 15.247 (5GHz)** 802.11a: 676.106mW 802.11ac (VHT20): 579.327mW 802.11ac (VHT40): 592.004mW 802.11ac (VHT80): 548.990mW
ANTENNA TYPE	Please see NOTE
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ASSOCIATED DEVICES	NA

Note:

1. There are Bluetooth technology and WLAN technology used for the EUT.
2. For WLAN: 2.4GHz and 5GHz technology cannot transmit at same time.
3. WLAN & BT technology can transmit at same time.

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

No.	Brand	Model	Antenna Type	Peak gain with cable loss (dBi) (2.4GHz)	Peak gain with cable loss(dBi) (5GHz)	Cable Loss (dB) (2.4GHz)	Cable Loss (dB) (5GHz)	Connector Type
1	LYNwave	ALA110-222050-300010 (Main) ALA110-222050-300010 (Aux)	PIFA	3.5 3.5	5 5	NA	NA	IPEX
2	JOYMAX	TWF-614XMPXX-500 (Main) TWF-614XMPXX-500 (Aux)	Dipole	3 3	5 5	NA	NA	IPEX
3	WGT	SKA91WMPB02+A (Tx1) SKA91WMPB01+A (Tx2)	PIFA	0.82 -2.23	0.94 2.18	-1.32 -0.75	-2.04 -1.17	IPEX
4	JEM	1510-0122-0027 (Tx1) 1510-0122-0027 (Tx2)	PIFA	3.23 2.31	4.89 1.89	NA	NA	RF
5	FVC	K05007014501(6-23-7W25H-010) (Tx1) K05007014501(6-23-7W25H-010) (Tx2)	PIFA	2.85 1.59	2.46 2.91	NA	NA	IPEX
6	JEM	1510-0122-0022(IA-120073) (Tx1) 1510-0122-0022(IA-120073) (Tx2)	PIFA	2.23 2.21	1.69 1.84	NA	NA	RF
7	WGT	SK81WMPB01+A (Tx1) SK81WMPB02+A (Tx2)	PIFA	1.79 0.66	1.49 -0.40	-1.88 -2.95	-3.17 -4.96	IPEX
8	WGT	SKW2UWMPB01+A (Tx1) SKW2UWMPB01+A (Tx2)	PIFA	1.36 2.88	1.92 3.16	NA	NA	IPEX
9	WGT	SKW25WMPB01+A (Tx1) SKW25WMPB01+A (Tx2)	PIFA	0.72 0.49	-0.72 -0.71	-1.41 -1.39	-2.18 -2.15	IPEX
10	WGT	SK549WMPB01+A (Tx1) SK549WMPB02+A (Tx2)	PIFA	-0.17 -2.24	-0.13 0.03	-1.04 -0.88	-1.94 -1.64	IPEX
11	WGT	SK110WMPB01+A (Tx1) SK110WMPB02+A (Tx2)	PIFA	1.05 -0.41	1.08 2.32	-0.98 -0.99	-1.52 -1.54	IPEX
12	WGT	SKW31WMPB01+A (Tx1) SKW31WMPB01+A (Tx2)	PIFA	1.85 3.14	1.74 2.10	NA	NA	IPEX
13	FVC	6-23-7B51M-031 (Tx1) 6-23-7B51M-031 (Tx2)	PIFA	1.58 1.75	2.54 2.24	NA	NA	IPEX
14	FVC	6-23-7E51Q-011 (Tx1) 6-23-7E51Q-011 (Tx2)	PIFA	2.70 2.19	1.57 2.94	NA	NA	IPEX
15	FVC	6-23-7B710-022 (WM1) 6-23-7B710-022 (WM2)	PIFA	1.51 2.04	2.99 3.02	NA	NA	IPEX
16	WGT	SKM11WMPB03+A (Tx1) SKM11WMPB02+D (Tx2)	PIFA	-1.84 -2.93	0.44 1.35	1.17 0.89	2.02 1.54	IPEX
17	WGT	SKW23WMPB01+A (Tx1) SKW23WMPB02+A (Tx2)	PIFA	-1.61 -2.84	-0.14 -0.96	-2.10 -2.07	-3.25 -3.20	IPEX
18	WGT	SKW24WMPB01+B (WM1) SKW24WMPB01+B (WM2)	PIFA	1.25 3.17	1.95 2.42	NA	NA	IPEX

No.	Brand	Model	Antenna Type	Peak gain with cable loss (dBi) (2.4GHz)	Peak gain with cable loss(dBi) (5GHz)	Cable Loss (dB) (2.4GHz)	Cable Loss (dB) (5GHz)	Connector Type
19	FVC	K05007015501(6-23-7W244-020-1) (Tx1) K05007015501(6-23-7W244-020-1) (Tx2)	PIFA	2.53 2.28	2.86 2.97	NA	NA	IPEX
20	FVC	K05007014201(6-23-7W25P-020) (Tx1) K05007014201(6-23-7W25P-020) (Tx2)	PIFA	3.00 1.52	2.82 2.21	NA	NA	IPEX
21	WGT	SKW10WMPB01+A (Tx1) SKW10WMPB02+A (Tx2)	PIFA	0.85 0.44	0.75 1.24	-1.56 -1.53	-2.42 -2.36	IPEX
22	WGT	SKCZTWMPB01+A (Tx1) SKCZTWMPB02+A (Tx2)	PIFA	0.46 -0.79	2.80 1.03	-1.56 -1.53	-2.42 -2.36	IPEX
23	JEM	IA-120266 (Tx1) IA-120267 (Tx2)	PIFA	2.60 0.53	2.61 2.60	2.12 1.76	3.48 2.87	IPEX
24	WGT	SK547WMPB01+A (Tx1) SK549WMPB02+A (Tx2)	PIFA	-0.66 0.78	-0.19 2.06	-1.42 -1.43	-2.20 -2.21	IPEX
25	WGT	SK555WMPB01+B (Tx1) SK555WMPB02+B (Tx2)	PIFA	0.76 0.09	1.97 0.56	-1.83 -1.80	-2.83 -2.78	IPEX
26	WGT	SK65EWMPB01+A (Tx1) SK650WMPB02+A (Tx2)	PIFA	0.42 -0.13	0.11 1.27	-1.56 -0.61	-2.41 -0.94	IPEX
27	WGT	SK670WMPB01+A (Tx1) SK670WMPB02+A (Tx2)	PIFA	1.48 1.15	-0.44 0.42	-2.47 -1.93	-3.82 -2.99	IPEX
28	WGT	SK740WMPB01+A (Tx1) SK740WMPB02+A (Tx2)	PIFA	-0.93 0.20	0.96 0.86	-1.39 -1.26	-2.16 -1.95	IPEX
29	WGT	SK840WMPB01+B_SN (Tx1) SK840WMPB01+B_SN (Tx2)	PIFA	3.03 0.55	4.16 0.90	-1.12 -1.20	-1.74 -1.86	IPEX
30	WGT	SK94SWMPB01+B (TX1) SK94SWMPB01+B (TX2)	PIFA	0.76 0.46	1.12 1.44	-0.32 -0.44	-0.50 -0.68	IPEX
31	WGT	SK94TWMPB01+B (TX1) SK94TWMPB01+B (TX2)	PIFA	1.32 1.86	2.59 1.57	-0.59 -0.71	-0.91 -1.10	IPEX
32	WGT	SK50SWMPB01+A (TX1) SK50SWMPB02+A (TX2)	PIFA	-0.03 -0.13	1.25 2.13	-0.86 -0.72	-1.32 -1.12	IPEX
33	WGT	SK94TWMPB01+D (TX1) SK94TWMPB01+D (TX2)	PIFA	1.32 1.86	2.59 1.57	-0.59 -0.71	-0.91 -1.10	IPEX
34	WGT	SKC45WMPB03+B (WM1) SKC45WMPB03+B (WM2)	PIFA	2.46 2.91	2.90 2.67	NA	NA	IPEX
35	FVC	K05007015801 (WM1) K05007015901 (WM2)	PIFA	3.12 1.01	3.51 1.93	NA	NA	RF
36	WGT	SK345WMPB01+A (WM1) SK345WMPB02+A (WM2)	PIFA	0.86 2.51	2.94 3.25	NA	NA	IPEX
37	FVC	K05007014901 (WM1) K05007015001 (WM2)	PIFA	1.85 1.94	1.35 1.99	NA	NA	IPEX
38	WGT	SKX51WMPB01+C (WM1) SKX51WMPB02+C (WM2)	PIFA	3.2 2.76	2.28 2.51	NA	NA	IPEX

No.	Brand	Model	Antenna Type	Peak gain with cable loss (dBi) (2.4GHz)	Peak gain with cable loss(dBi) (5GHz)	Cable Loss (dB) (2.4GHz)	Cable Loss (dB) (5GHz)	Connector Type
39	INPAQ	WA-P-LB-02-122 (Main) WA-P-LB-01-072 (Aux)	PIFA	-1.41 -0.33	-2.44 -3.87	1.23 1.86	2.06 3.12	IPEX
40	Smart Approach	SE-ECZ50-001 (Tx1) SE-ECZ50-002 (Tx2)	PIFA	-1.37 -2.17	1.83 1.86	0.96 1.45	1.73 2.62	IPEX
41	INPAQ	WA-P-LB-02-121 (Main) WA-P-LB-01-071 (Aux)	PIFA	-2.26 -4.63	-2.87 -2.49	1.32 1.95	2.22 3.28	IPEX
42	Smart Approach	SE-ECZ70-001 (Tx1) SE-ECZ70-002 (Tx2)	PIFA	-0.65 -2.39	1.52 0.58	1.03 1.52	1.87 2.76	IPEX

Antenna 1 & 2 were chosen for final test.

5. The EUT incorporates a MIMO function.

MODULATION MODE	Tx/Rx FUNCTION	Beam forming
802.11a	1Tx/2RX or 2Tx/2Rx	No
802.11b	1Tx/1Rx	No
802.11g	1Tx/2RX or 2Tx/2Rx	No
802.11n (HT20)	1Tx/2RX or 2Tx/2Rx	Yes
802.11n (HT40)	1Tx/2RX or 2Tx/2Rx	Yes
802.11ac (VHT20)	1Tx/2RX or 2Tx/2Rx	Yes
802.11ac (VHT40)	1Tx/2RX or 2Tx/2Rx	Yes
802.11ac (VHT80)	1Tx/2RX or 2Tx/2Rx	Yes
For 1Tx, 1Rx mode will fix transmission on Chain (0).		

Note: The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz) and 802.11ac mode for 20MHz (40MHz), therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

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

7. When the EUT operating in 802.11ac, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 9.

8. 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		

40 channels are provided for Bluetooth LE mode:

CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

Operated in 5725 ~ 5850MHz band:

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

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), 802.11ac (VHT40):

CHANNEL	FREQUENCY
151	5755 MHz
159	5795 MHz

1 channel is provided for 802.11ac (VHT80):

CHANNEL	FREQUENCY
155	5775 MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO					DESCRIPTION
	PLC	RE < 1G	RE ³ 1G	APCM	OB	
1	√	√	√	√	√	With PIFA antenna
2	-	√	√	-	-	With Dipole antenna

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

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

OB: Conducted Out-Band Emission Measurement

NOTE: 1. "-"means no effect.

2. The EUT's antenna (PIFA) had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-plane** (for below 1GHz) and **X-plane** (for above 1GHz)**.**
3. **For 802.11a/g and UNII band 1 mode:** Same transmitter may have different power setup in 1T and 2T mode as reported in power measurement section.
4. **For 802.11b/n/ac mode:** Same transmitter outputs same power value in 1T and 2T mode.

POWER LINE CONDUCTED EMISSION TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
For 2.4 GHz 802.11n (HT20) / 2Tx	1 to 11	6	OFDM	BPSK	6.5
BT-LE	0 to 39	39	DTS	GFSK	1
For 5 GHz 802.11a / 2Tx	149 to 165	157	OFDM	BPSK	6

RADIATED EMISSION TEST (BELOW 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
For 2.4 GHz 802.11n (HT20) / 2Tx	1 to 11	6	OFDM	BPSK	6.5
BT-LE	0 to 39	39	DTS	GFSK	1
For 5 GHz 802.11a / 2Tx	149 to 165	157	OFDM	BPSK	6

RADIATED EMISSION TEST (ABOVE 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b / 1Tx	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g / 1Tx	1 to 11	1, 6, 11	OFDM	BPSK	6
802.11g / 2Tx	1 to 11	1, 6, 11	OFDM	BPSK	6
For 2.4 GHz 802.11n (HT20) / 2Tx	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (HT40) / 2Tx	3 to 9	3, 6, 9	OFDM	BPSK	13.5
BT-LE	0 to 39	0, 19, 39	DTS	GFSK	1
802.11a / 1Tx	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11a / 2Tx	149 to 165	149, 157, 165	OFDM	BPSK	6
For 5 GHz 802.11ac (VHT20) / 2Tx	149 to 165	149, 157, 165	OFDM	BPSK	6.5
For 5 GHz 802.11ac (VHT40) / 2Tx	151 to 159	151, 159	OFDM	BPSK	13.5
For 5 GHz 802.11ac (VHT80) / 2Tx	155	155	OFDM	BPSK	29.3

ANTENNA PORT CONDUCTED MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b / 1Tx	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g / 1Tx	1 to 11	1, 6, 11	OFDM	BPSK	6
802.11g / 2Tx	1 to 11	1, 6, 11	OFDM	BPSK	6
For 2.4 GHz 802.11n (HT20) / 2Tx	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (HT40) / 2Tx	3 to 9	3, 6, 9	OFDM	BPSK	13.5
BT-LE	0 to 39	0, 19, 39	DTS	GFSK	1
802.11a / 1Tx	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11a / 2Tx	149 to 165	149, 157, 165	OFDM	BPSK	6
For 5 GHz 802.11ac (VHT20) / 2Tx	149 to 165	149, 157, 165	OFDM	BPSK	6.5
For 5 GHz 802.11ac (VHT40) / 2Tx	151 to 159	151, 159	OFDM	BPSK	13.5
For 5 GHz 802.11ac (VHT80) / 2Tx	155	155	OFDM	BPSK	29.3

CONDUCTED OUT-BAND EMISSION MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b / 1Tx	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g / 1Tx	1 to 11	1, 6, 11	OFDM	BPSK	6
802.11g / 2Tx	1 to 11	1, 6, 11	OFDM	BPSK	6
For 2.4 GHz 802.11n (HT20) / 2Tx	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (HT40) / 2Tx	3 to 9	3, 6, 9	OFDM	BPSK	13.5
BT-LE	0 to 39	0, 19, 39	DTS	GFSK	1
802.11a / 1Tx	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11a / 2Tx	149 to 165	149, 157, 165	OFDM	BPSK	6
For 5 GHz 802.11ac (VHT20) / 2Tx	149 to 165	149, 157, 165	OFDM	BPSK	6.5
For 5 GHz 802.11ac (VHT40) / 2Tx	151 to 159	151, 159	OFDM	BPSK	13.5
For 5 GHz 802.11ac (VHT80) / 2Tx	155	155	OFDM	BPSK	29.3

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
PLC	24deg. 53C,%RH	120Vac, 60Hz	Bear Lee
RE<1G	24deg. C, 64%RH	120Vac, 60Hz	Jason Huang
RE≥1G	23deg. C, 66%RH	120Vac, 60Hz	Tim Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Nelson Tseng

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C. (15.247)

558074 D01 DTS Meas Guidance v03r01

662911 D01 Multiple Transmitter Output v02

ANSI C63.10-2009

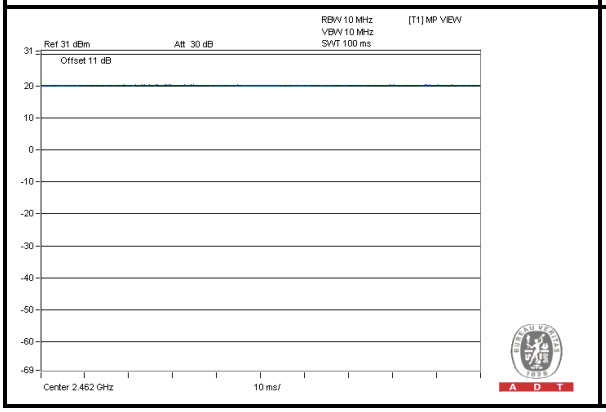
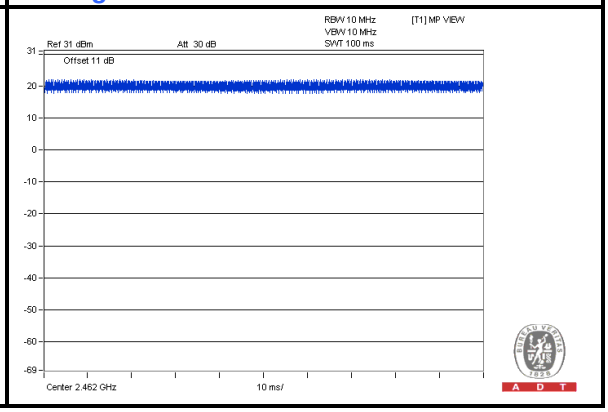
All test items have been performed and recorded as per the above standards.

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.

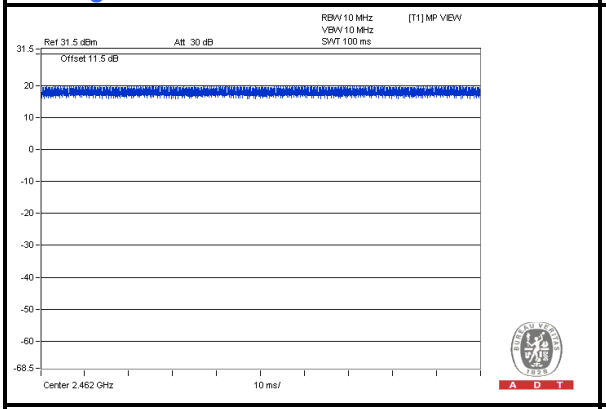
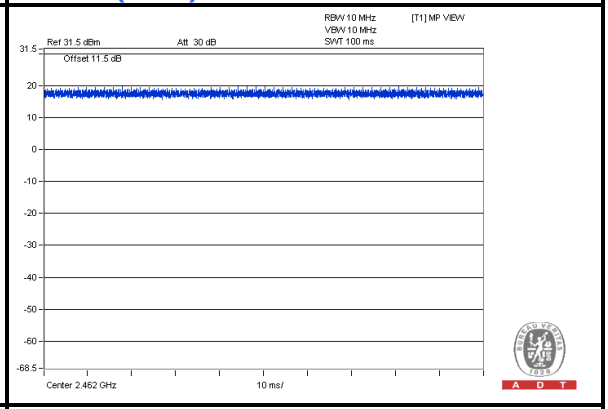
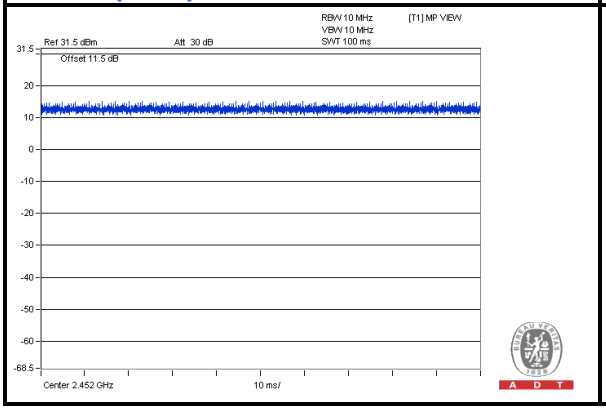
3.4 DUTY CYCLE OF TEST SIGNAL

Duty cycle of test signal is 100 %, duty factor is not required.

For 2.4GHz, 1Tx

802.11b	802.11g
	

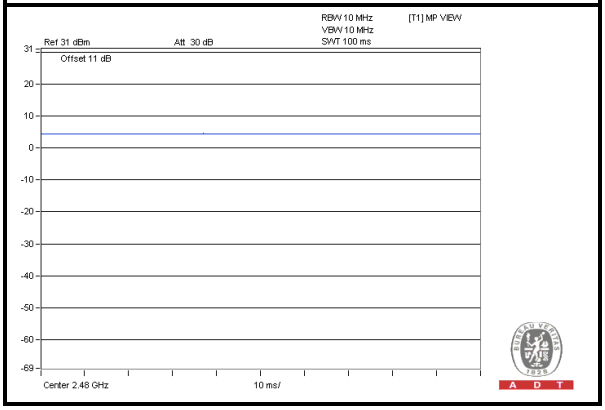
For 2.4GHz, 2Tx

802.11g	802.11n (HT20)
	
802.11n (HT40)	
	

Duty cycle of test signal is 100 %, duty factor is not required.

For BT_LE-GFSK:

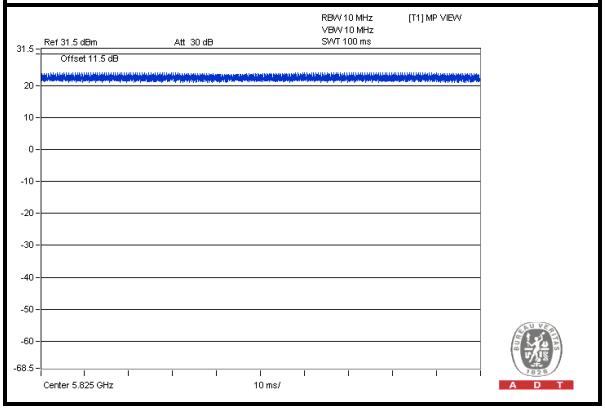
BT_LE-GFSK



Duty cycle of test signal is 100 %, duty factor is not required.

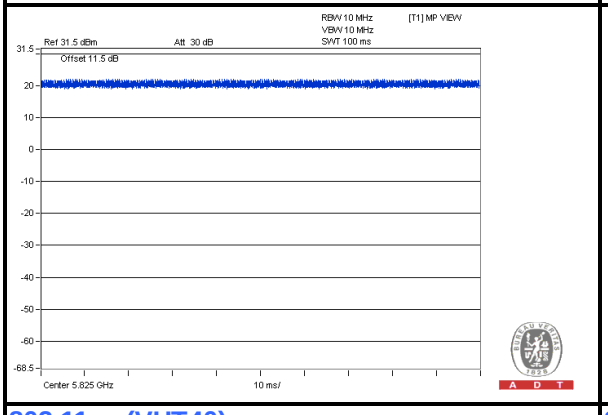
For 5GHz, 1Tx

802.11a

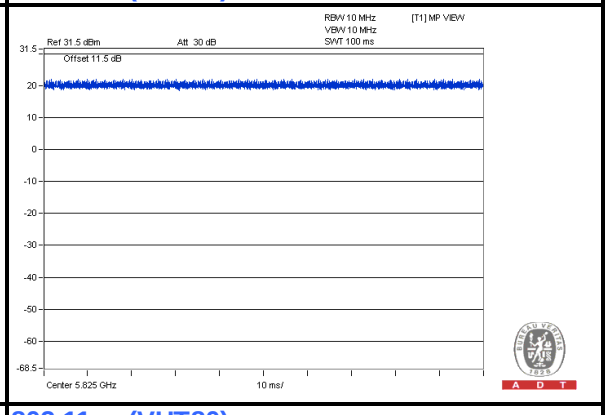


For 5GHz, 2Tx

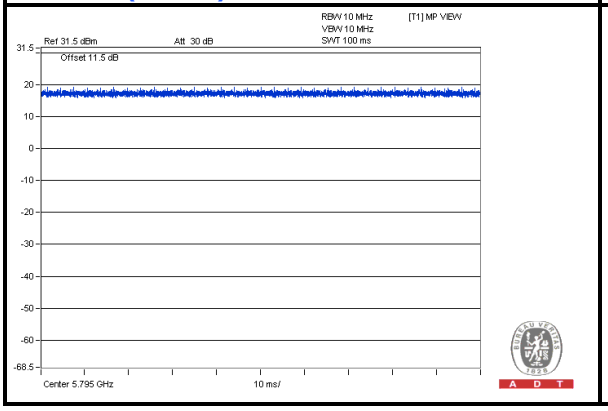
802.11a



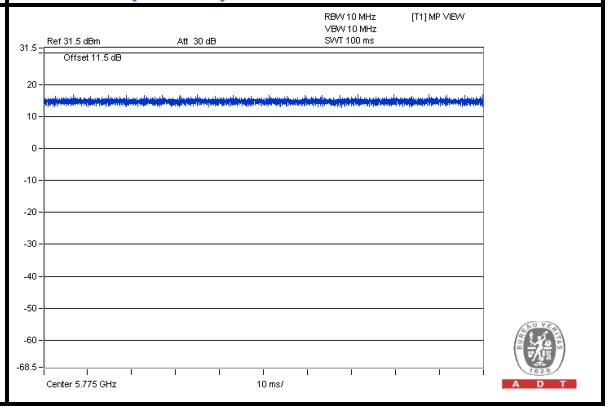
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)



3.5 DESCRIPTION OF SUPPORT UNITS

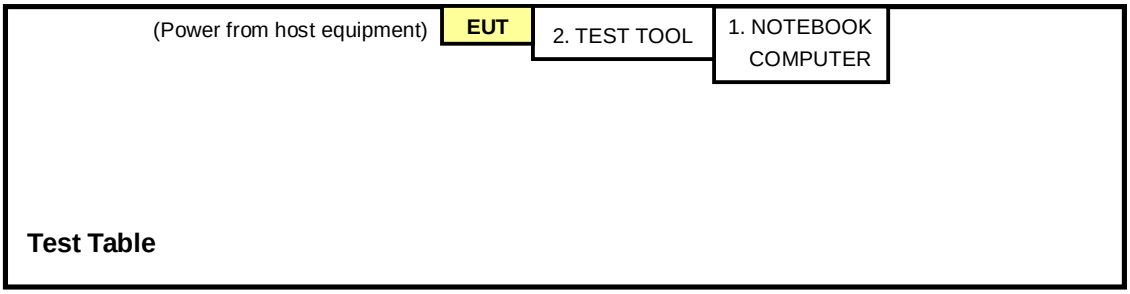
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Product	Brand	Model No.	Serial No.	FCC ID
1	NOTEBOOK COMPUTER	DELL	E6420	482T3R1	FCC DoC
2	TEST TOOL	Realtek	NA	NA	NA

No.	Signal cable description
1	NA
2	NA

Note: The power cords of the above support units were unshielded (1.8m).

3.6 CONFIGURATION OF SYSTEM UNDER TEST



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 (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

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

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS 30	100375	Mar. 08, 2013	Mar. 07, 2014
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK8127	8127-522	Sep. 05, 2013	Sep. 04, 2014
Line-Impedance Stabilization Network (for Peripheral)	ENV216	100072	June 06, 2013	June 05, 2014
RF Cable (JYEBAO)	5DFB	COCCAB-001	Mar. 11, 2013	Mar. 10, 2014
50 ohms Terminator	50	EMC-03	Sep. 24, 2013	Sep. 23, 2014
Software ADT	BV ADT_Cond_V7.3.7.3	NA	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. C.
3 The VCCI Con C Registration No. is C-3611.
4 Tested Date: Dec. 24, 2013

4.1.3 TEST PROCEDURES

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

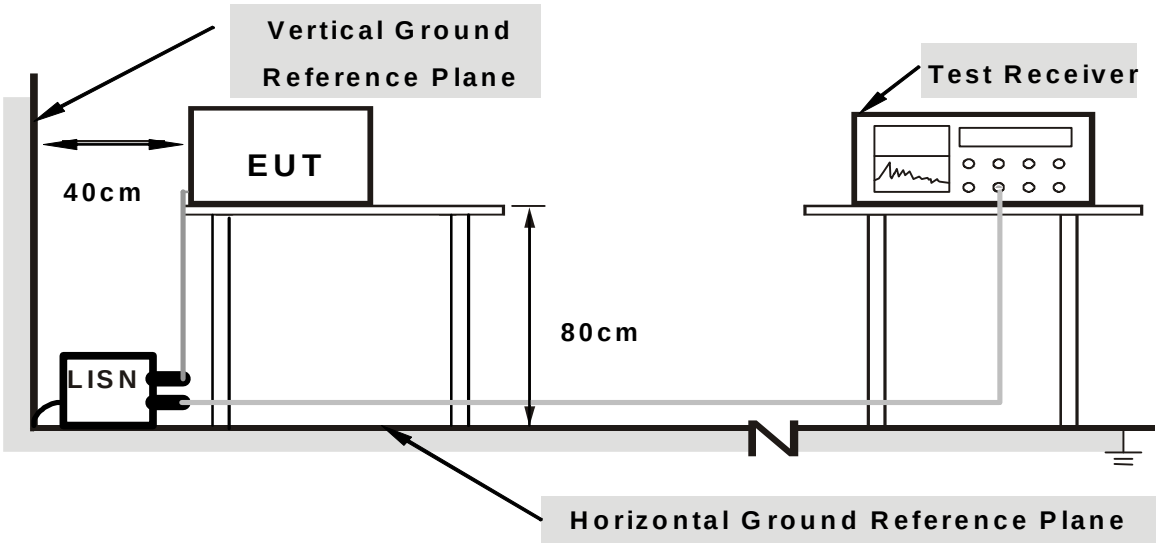
NOTE:

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

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

4.1.6 EUT OPERATING CONDITIONS

1. Connect the EUT with the support unit 1 (Notebook Computer) which is placed on a testing table.
2. The communication partner run test program “MP_Kit_RTL11ac_8812AE_PCIE_v57_20131202<WLAN> & RTL_BT_MP_Kit_Setup_20140123_cer<BT>” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

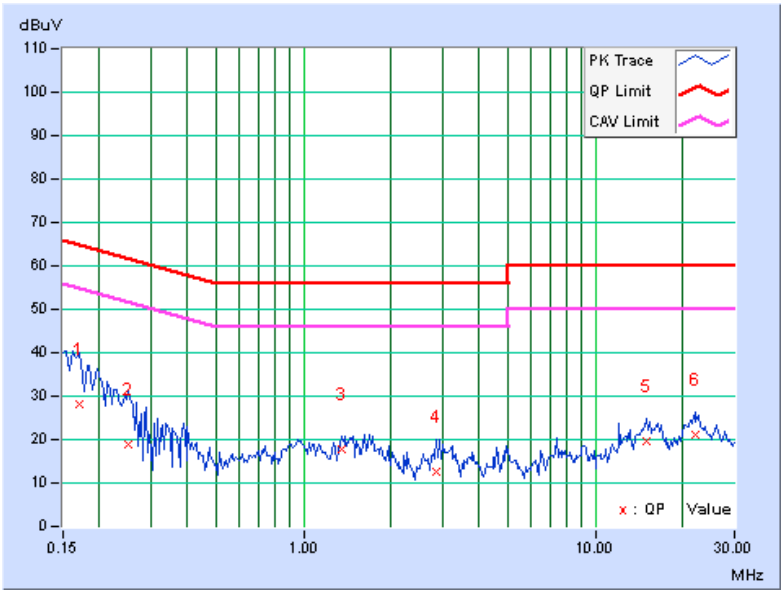
4.1.7 TEST RESULTS (WLAN)

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

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16953	0.09	27.93	17.31	28.02	17.40	64.98	54.98	-36.97	-37.59
2	0.25156	0.11	18.79	7.67	18.90	7.78	61.71	51.71	-42.81	-43.93
3	**1.35547**	**0.18**	**17.68**	**14.43**	**17.86**	**14.61**	**56.00**	**46.00**	**-38.14**	**-31.39**
4	2.85547	0.24	12.49	7.91	12.73	8.15	56.00	46.00	-43.27	-37.85
5	14.90625	0.62	18.97	13.51	19.59	14.13	60.00	50.00	-40.41	-35.87
6	21.89844	0.77	20.27	14.66	21.04	15.43	60.00	50.00	-38.96	-34.57

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

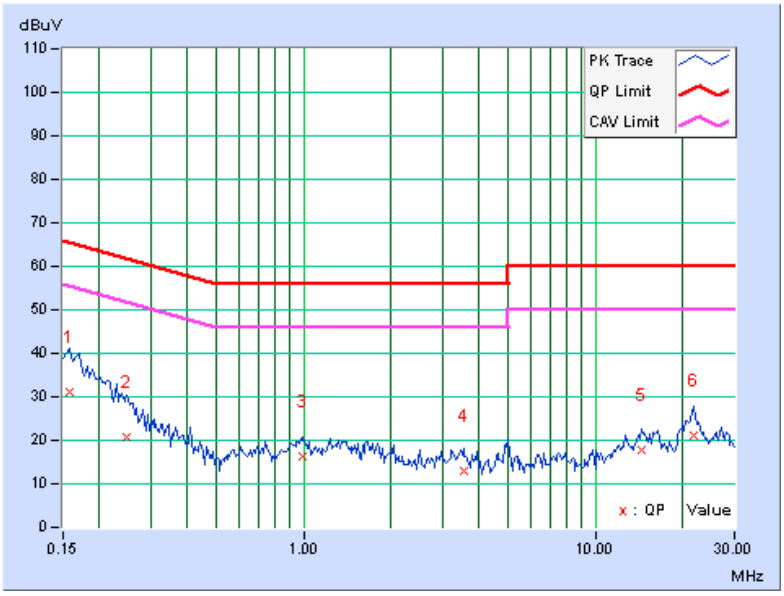


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	0.09	30.96	17.80	31.05	17.89	65.58	55.58	-34.53	-37.69
2	0.24766	0.11	20.75	8.94	20.86	9.05	61.84	51.84	-40.98	-42.79
3	0.98984	0.17	15.97	12.62	16.14	12.79	56.00	46.00	-39.86	-33.21
4	3.54688	0.27	12.83	8.58	13.10	8.85	56.00	46.00	-42.90	-37.15
5	14.44531	0.60	17.04	11.53	17.64	12.13	60.00	50.00	-42.36	-37.87
6	21.67188	0.75	20.46	16.51	21.21	17.26	60.00	50.00	-38.79	-32.74

REMARKS:

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



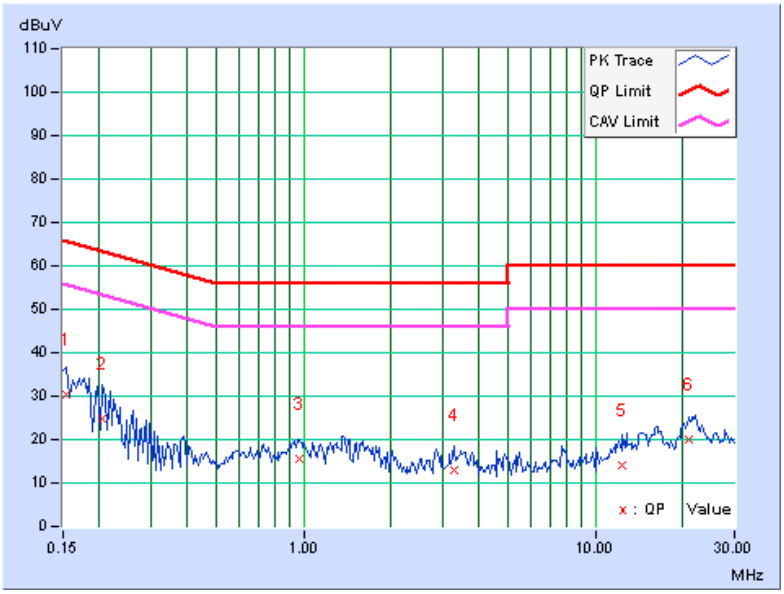
4.1.8 TEST RESULTS (BT<LE>)

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

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	0.08	30.12	18.47	30.20	18.55	65.79	55.79	-35.58	-37.23
2	0.20469	0.10	24.63	13.91	24.73	14.01	63.42	53.42	-38.69	-39.41
3	0.97031	0.17	15.47	10.96	15.64	11.13	56.00	46.00	-40.36	-34.87
4	3.26953	0.25	12.89	6.98	13.14	7.23	56.00	46.00	-42.86	-38.77
5	12.41406	0.54	13.45	9.31	13.99	9.85	60.00	50.00	-46.01	-40.15
6	20.85938	0.74	19.41	14.86	20.15	15.60	60.00	50.00	-39.85	-34.40

REMARKS:

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

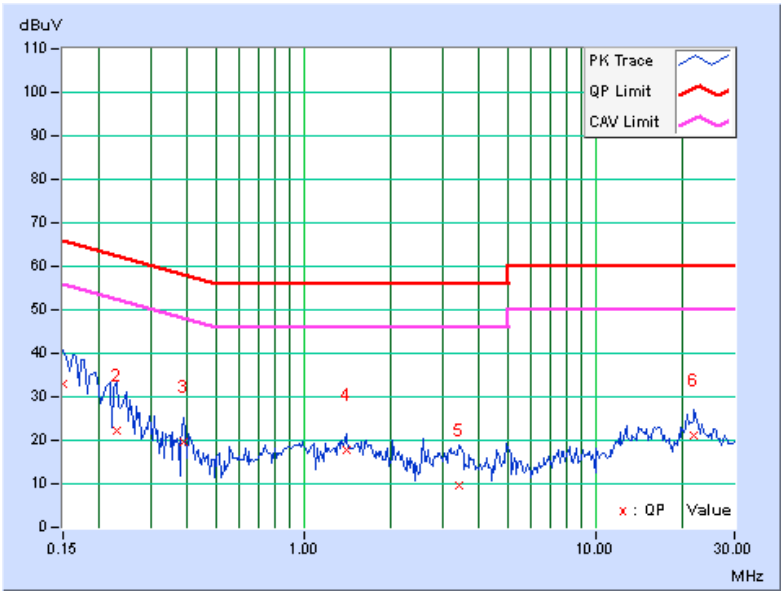


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.09	32.73	19.02	32.82	19.11	66.00	56.00	-33.18	-36.89
2	0.22812	0.11	22.04	12.41	22.15	12.52	62.52	52.52	-40.37	-40.00
3	**0.38828**	**0.14**	**19.35**	**19.14**	**19.49**	**19.28**	**58.10**	**48.10**	**-38.61**	**-28.82**
4	1.39844	0.19	17.72	14.35	17.91	14.54	56.00	46.00	-38.09	-31.46
5	3.43359	0.26	9.40	4.31	9.66	4.57	56.00	46.00	-46.34	-41.43
6	21.87109	0.76	20.49	14.43	21.25	15.19	60.00	50.00	-38.75	-34.81

REMARKS:

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



4.2 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

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

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

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
MXE EMI Receiver Agilent	N9038A	MY51210105	Jan. 29, 2013	Jan. 28, 2014
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-03	Nov. 13, 2013	Nov. 12, 2014
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-360	Mar. 19, 2013	Mar. 18, 2014
RF Cable	NA	CHGCAB_001	Oct. 05, 2013	Oct. 04, 2014
Spectrum Analyzer R&S	FSV40	100964	July 15, 2013	July 14, 2014
Horn_Antenna AISI	AIH.8018	0000320091110	Nov. 18, 2013	Nov. 17, 2014
Pre-Amplifier Agilent	8449B	3008A02578	June 25, 2013	June 24, 2014
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: Jan. 17, 2014

4.2.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

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

Note:

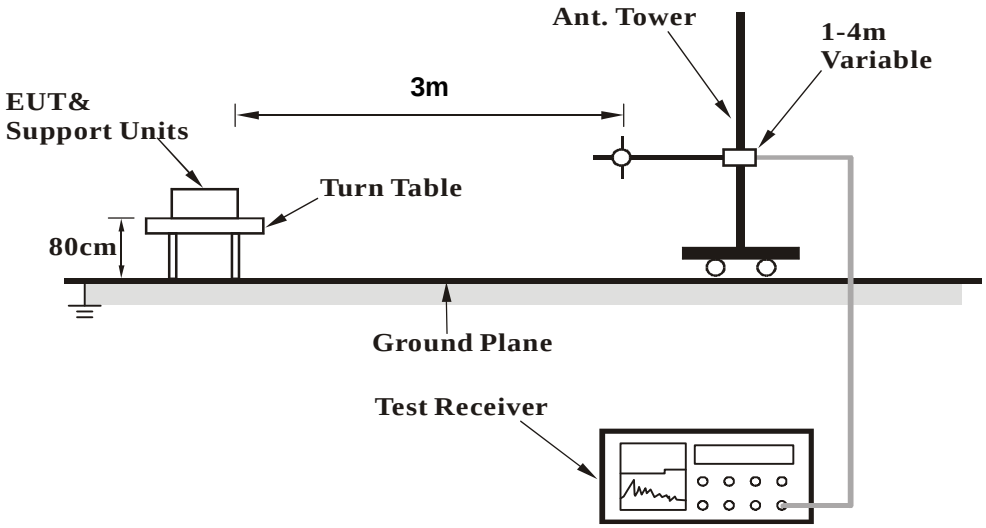
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.2.4 DEVIATION FROM TEST STANDARD

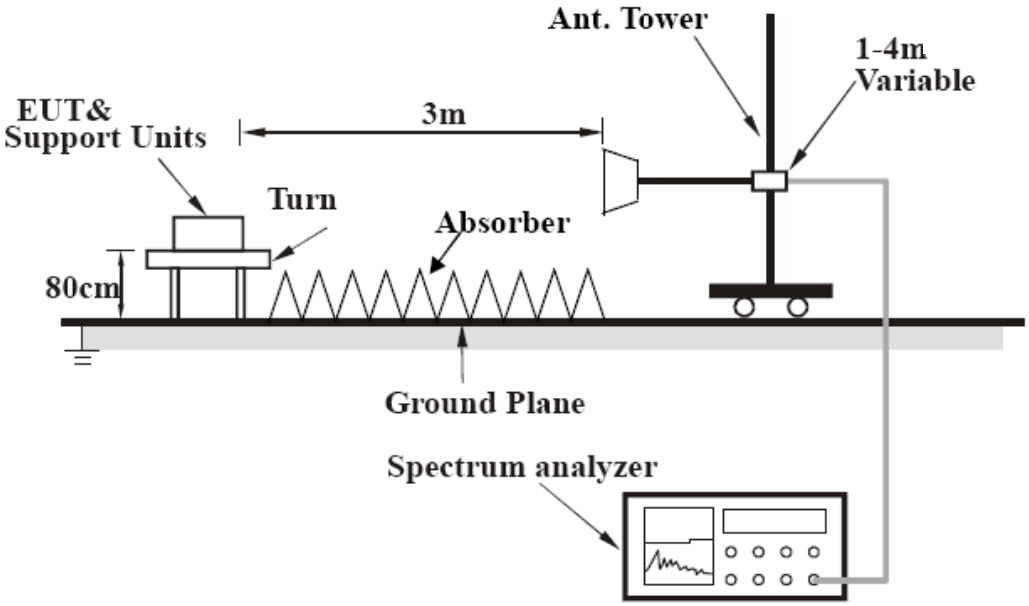
No deviation

4.2.5 TEST SETUP

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6

4.2.7 TEST RESULTS (MODE 1, WLAN)

BELOW 1GHz WORST-CASE DATA

802.11n(HT20), 2Tx

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	118.36	28.3 QP	43.5	-15.2	1.50 H	25	43.60	-15.33
2	147.42	26.2 QP	43.5	-17.3	1.50 H	205	39.81	-13.63
3	166.34	33.0 QP	43.5	-10.5	1.50 H	34	46.95	-13.93
4	232.57	32.4 QP	46.0	-13.6	1.00 H	189	47.99	-15.57
5	252.37	30.3 QP	46.0	-15.8	1.50 H	182	44.58	-14.33
6	400.20	31.4 QP	46.0	-14.6	1.00 H	327	41.29	-9.91
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	117.98	32.5 QP	43.5	-11.1	1.00 V	360	47.76	-15.31
2	141.31	33.2 QP	43.5	-10.3	1.50 V	360	46.82	-13.65
3	216.00	28.6 QP	43.5	-14.9	1.00 V	120	44.94	-16.37
4	255.57	32.5 QP	46.0	-13.5	1.50 V	333	46.78	-14.26
5	322.02	28.2 QP	46.0	-17.8	1.50 V	256	39.91	-11.71
6	854.11	34.6 QP	46.0	-11.4	2.00 V	360	35.36	-0.79

REMARKS:

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

ABOVE 1GHz DATA

802.11b, 1Tx

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	2386.00	57.7 PK	74.0	-16.3	1.14 H	5	59.42	-1.72
2	2386.00	47.7 AV	54.0	-6.3	1.14 H	5	49.42	-1.72
3	*2412.00	110.2 PK			1.14 H	5	111.80	-1.60
4	*2412.00	106.3 AV			1.14 H	5	107.90	-1.60
5	2491.00	55.5 PK	74.0	-18.5	1.14 H	5	56.76	-1.26
6	2491.00	44.8 AV	54.0	-9.2	1.14 H	5	46.06	-1.26
7	4824.00	53.1 PK	74.0	-20.9	1.16 H	218	45.90	7.20
8	4824.00	46.3 AV	54.0	-7.7	1.16 H	218	39.10	7.20
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	52.8 PK	74.0	-21.2	1.10 V	92	54.50	-1.70
2	2390.00	42.9 AV	54.0	-11.1	1.10 V	92	44.60	-1.70
3	*2412.00	100.1 PK			1.10 V	92	101.70	-1.60
4	*2412.00	96.2 AV			1.10 V	92	97.80	-1.60
5	2491.00	52.2 PK	74.0	-21.8	1.10 V	92	53.46	-1.26
6	2491.00	41.6 AV	54.0	-12.4	1.10 V	92	42.86	-1.26
7	4824.00	54.9 PK	74.0	-19.1	1.15 V	299	47.70	7.20
8	4824.00	49.4 AV	54.0	-4.6	1.15 V	299	42.20	7.20

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.

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	2360.00	52.2 PK	74.0	-21.8	1.12 H	23	54.03	-1.83
2	2360.00	40.4 AV	54.0	-13.6	1.12 H	23	42.23	-1.83
3	*2437.00	109.5 PK			1.12 H	23	110.99	-1.49
4	*2437.00	107.0 AV			1.12 H	23	108.49	-1.49
5	2488.00	53.3 PK	74.0	-20.7	1.12 H	23	54.56	-1.26
6	2488.00	41.4 AV	54.0	-12.6	1.12 H	23	42.66	-1.26
7	4874.00	53.8 PK	74.0	-20.2	1.13 H	224	46.47	7.33
8	4874.00	46.5 AV	54.0	-7.5	1.13 H	224	39.17	7.33
9	7311.00	58.4 PK	74.0	-15.6	1.00 H	257	43.44	14.96
10	7311.00	44.6 AV	54.0	-9.4	1.00 H	257	29.64	14.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	47.5 PK	74.0	-26.5	1.00 V	97	49.20	-1.70
2	2390.00	34.9 AV	54.0	-19.1	1.00 V	97	36.60	-1.70
3	*2437.00	100.2 PK			1.00 V	97	101.69	-1.49
4	*2437.00	97.3 AV			1.00 V	97	98.79	-1.49
5	2483.50	49.7 PK	74.0	-24.3	1.00 V	97	50.98	-1.28
6	2483.50	36.6 AV	54.0	-17.4	1.00 V	97	37.88	-1.28
7	4874.00	55.0 PK	74.0	-19.0	1.13 V	264	47.67	7.33
8	4874.00	49.2 AV	54.0	-4.8	1.13 V	264	41.87	7.33
9	7311.00	58.1 PK	74.0	-15.9	1.00 V	329	43.14	14.96
10	7311.00	44.5 AV	54.0	-9.5	1.00 V	329	29.54	14.96

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	112.2 PK			1.12 H	10	113.58	-1.38
2	*2462.00	108.4 AV			1.12 H	10	109.78	-1.38
3	2488.00	59.2 PK	74.0	-14.8	1.12 H	10	60.46	-1.26
4	2488.00	48.9 AV	54.0	-5.1	1.12 H	10	50.16	-1.26
5	4924.00	53.4 PK	74.0	-20.6	1.15 H	223	45.93	7.47
6	4924.00	46.3 AV	54.0	-7.7	1.15 H	223	38.83	7.47
7	7386.00	58.2 PK	74.0	-15.8	1.00 H	241	43.31	14.89
8	7386.00	44.3 AV	54.0	-9.7	1.00 H	241	29.41	14.89
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	102.3 PK			1.08 V	66	103.68	-1.38
2	*2462.00	98.6 AV			1.08 V	66	99.98	-1.38
3	2483.50	53.8 PK	74.0	-20.2	1.08 V	66	55.08	-1.28
4	2483.50	43.9 AV	54.0	-10.1	1.08 V	66	45.18	-1.28
5	4924.00	55.8 PK	74.0	-18.2	1.12 V	300	48.33	7.47
6	4924.00	49.5 AV	54.0	-4.5	1.12 V	300	42.03	7.47
7	7386.00	58.6 PK	74.0	-15.4	1.00 V	335	43.71	14.89
8	7386.00	44.8 AV	54.0	-9.2	1.00 V	335	29.91	14.89

REMARKS:

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

802.11g, 1Tx

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	71.6 PK	74.0	-2.4	1.12 H	12	73.30	-1.70
2	2390.00	52.2 AV	54.0	-1.8	1.12 H	12	53.90	-1.70
3	*2412.00	111.1 PK			1.12 H	12	112.70	-1.60
4	*2412.00	101.5 AV			1.12 H	12	103.10	-1.60
5	4824.00	54.9 PK	74.0	-19.1	1.11 H	211	47.70	7.20
6	4824.00	43.1 AV	54.0	-10.9	1.11 H	211	35.90	7.20
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	66.2 PK	74.0	-7.8	1.05 V	65	67.90	-1.70
2	2390.00	47.0 AV	54.0	-7.0	1.05 V	65	48.70	-1.70
3	*2412.00	101.5 PK			1.05 V	65	103.10	-1.60
4	*2412.00	92.1 AV			1.05 V	65	93.70	-1.60
5	4824.00	56.1 PK	74.0	-17.9	1.00 V	164	48.90	7.20
6	4824.00	44.0 AV	54.0	-10.0	1.00 V	164	36.80	7.20

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.

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	62.1 PK	74.0	-11.9	1.12 H	10	63.80	-1.70
2	2390.00	45.0 AV	54.0	-9.0	1.12 H	10	46.70	-1.70
3	*2437.00	114.4 PK			1.12 H	10	115.89	-1.49
4	*2437.00	105.2 AV			1.12 H	10	106.69	-1.49
5	2483.50	63.1 PK	74.0	-10.9	1.12 H	10	64.38	-1.28
6	2483.50	47.2 AV	54.0	-6.8	1.12 H	10	48.48	-1.28
7	4874.00	55.3 PK	74.0	-18.7	1.08 H	209	47.97	7.33
8	4874.00	43.3 AV	54.0	-10.7	1.08 H	209	35.97	7.33
9	7311.00	58.3 PK	74.0	-15.7	1.00 H	267	43.34	14.96
10	7311.00	46.3 AV	54.0	-7.7	1.00 H	267	31.34	14.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	56.3 PK	74.0	-17.7	1.01 V	61	58.00	-1.70
2	2390.00	39.7 AV	54.0	-14.3	1.01 V	61	41.40	-1.70
3	*2437.00	104.3 PK			1.01 V	61	105.79	-1.49
4	*2437.00	95.2 AV			1.01 V	61	96.69	-1.49
5	2483.50	57.4 PK	74.0	-16.6	1.01 V	61	58.68	-1.28
6	2483.50	41.6 AV	54.0	-12.4	1.01 V	61	42.88	-1.28
7	4874.00	55.4 PK	74.0	-18.6	1.03 V	143	48.07	7.33
8	4874.00	43.6 AV	54.0	-10.4	1.03 V	143	36.27	7.33
9	7311.00	59.0 PK	74.0	-15.0	1.00 V	276	44.04	14.96
10	7311.00	46.7 AV	54.0	-7.3	1.00 V	276	31.74	14.96

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	112.0 PK			1.10 H	11	113.38	-1.38
2	*2462.00	102.2 AV			1.10 H	11	103.58	-1.38
3	2483.50	71.9 PK	74.0	-2.1	1.10 H	11	73.18	-1.28
4	2483.50	52.7 AV	54.0	-1.3	1.10 H	11	53.98	-1.28
5	4924.00	55.5 PK	74.0	-18.5	1.08 H	208	48.03	7.47
6	4924.00	43.4 AV	54.0	-10.6	1.08 H	208	35.93	7.47
7	7386.00	58.2 PK	74.0	-15.8	1.03 H	281	43.31	14.89
8	7386.00	46.1 AV	54.0	-7.9	1.03 H	281	31.21	14.89
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	101.5 PK			1.00 V	63	102.88	-1.38
2	*2462.00	92.1 AV			1.00 V	63	93.48	-1.38
3	2483.50	66.2 PK	74.0	-7.8	1.00 V	63	67.48	-1.28
4	2483.50	47.3 AV	54.0	-6.7	1.00 V	63	48.58	-1.28
5	4924.00	56.1 PK	74.0	-17.9	1.05 V	150	48.63	7.47
6	4924.00	44.1 AV	54.0	-9.9	1.05 V	150	36.63	7.47
7	7386.00	59.3 PK	74.0	-14.7	1.00 V	277	44.41	14.89
8	7386.00	46.9 AV	54.0	-7.1	1.00 V	277	32.01	14.89

REMARKS:

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

802.11g, 2Tx

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	72.6 PK	74.0	-1.4	1.16 H	14	74.30	-1.70
2	2390.00	52.0 AV	54.0	-2.0	1.16 H	14	53.70	-1.70
3	*2412.00	114.6 PK			1.14 H	32	116.20	-1.60
4	*2412.00	104.6 AV			1.14 H	32	106.20	-1.60
5	4824.00	52.7 PK	74.0	-21.3	1.00 H	360	45.50	7.20
6	4824.00	40.8 AV	54.0	-13.2	1.00 H	360	33.60	7.20
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	67.7 PK	74.0	-6.3	1.08 V	299	69.40	-1.70
2	2390.00	47.1 AV	54.0	-6.9	1.08 V	299	48.80	-1.70
3	*2412.00	102.0 PK			1.08 V	299	103.60	-1.60
4	*2412.00	93.1 AV			1.08 V	299	94.70	-1.60
5	4824.00	55.6 PK	74.0	-18.4	1.03 V	141	48.40	7.20
6	4824.00	43.7 AV	54.0	-10.3	1.03 V	141	36.50	7.20

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.

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	2386.00	65.7 PK	74.0	-8.3	1.12 H	35	67.42	-1.72
2	2386.00	46.8 AV	54.0	-7.2	1.12 H	35	48.52	-1.72
3	*2437.00	118.7 PK			1.12 H	35	120.19	-1.49
4	*2437.00	109.1 AV			1.12 H	35	110.59	-1.49
5	2484.00	66.8 PK	74.0	-7.2	1.11 H	10	68.07	-1.27
6	2484.00	49.4 AV	54.0	-4.6	1.11 H	10	50.67	-1.27
7	4874.00	53.4 PK	74.0	-20.6	1.00 H	360	46.07	7.33
8	4874.00	41.3 AV	54.0	-12.7	1.00 H	360	33.97	7.33
9	7311.00	58.8 PK	74.0	-15.2	1.00 H	145	43.84	14.96
10	7311.00	46.5 AV	54.0	-7.5	1.00 H	145	31.54	14.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2386.00	60.7 PK	74.0	-13.3	1.13 V	314	62.42	-1.72
2	2386.00	41.9 AV	54.0	-12.1	1.13 V	314	43.62	-1.72
3	*2437.00	113.6 PK			1.13 V	314	115.09	-1.49
4	*2437.00	104.0 AV			1.13 V	314	105.49	-1.49
5	2484.00	61.2 PK	74.0	-12.8	1.13 V	314	62.47	-1.27
6	2484.00	43.6 AV	54.0	-10.4	1.13 V	314	44.87	-1.27
7	4874.00	55.7 PK	74.0	-18.3	1.00 V	155	48.37	7.33
8	4874.00	43.8 AV	54.0	-10.2	1.00 V	155	36.47	7.33
9	7311.00	59.1 PK	74.0	-14.9	1.00 V	289	44.14	14.96
10	7311.00	46.6 AV	54.0	-7.4	1.00 V	289	31.64	14.96

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	113.0 PK			1.10 H	30	114.38	-1.38
2	*2462.00	104.5 AV			1.10 H	30	105.88	-1.38
3	2483.50	72.8 PK	74.0	-1.2	1.12 H	34	74.08	-1.28
4	2483.50	52.3 AV	54.0	-1.7	1.12 H	34	53.58	-1.28
5	4924.00	53.1 PK	74.0	-20.9	1.00 H	360	45.63	7.47
6	4924.00	40.8 AV	54.0	-13.2	1.00 H	360	33.33	7.47
7	7386.00	58.2 PK	74.0	-15.8	1.01 H	138	43.31	14.89
8	7386.00	44.7 AV	54.0	-9.3	1.01 H	138	29.81	14.89
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	107.5 PK			1.15 V	299	108.88	-1.38
2	*2462.00	99.1 AV			1.15 V	299	100.48	-1.38
3	2483.50	67.2 PK	74.0	-6.8	1.15 V	299	68.48	-1.28
4	2483.50	46.9 AV	54.0	-7.1	1.15 V	299	48.18	-1.28
5	4924.00	56.0 PK	74.0	-18.0	1.05 V	166	48.53	7.47
6	4924.00	43.8 AV	54.0	-10.2	1.05 V	166	36.33	7.47
7	7386.00	59.0 PK	74.0	-15.0	1.04 V	266	44.11	14.89
8	7386.00	46.5 AV	54.0	-7.5	1.04 V	266	31.61	14.89

REMARKS:

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

802.11n (HT20), 2Tx

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	71.2 PK	74.0	-2.8	1.16 H	29	72.90	-1.70
2	2390.00	52.3 AV	54.0	-1.7	1.16 H	29	54.00	-1.70
3	*2412.00	113.6 PK			1.15 H	30	115.20	-1.60
4	*2412.00	103.7 AV			1.15 H	30	105.30	-1.60
5	4824.00	49.3 PK	74.0	-24.7	1.02 H	360	42.10	7.20
6	4824.00	37.2 AV	54.0	-16.8	1.02 H	360	30.00	7.20
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	65.8 PK	74.0	-8.2	1.11 V	295	67.50	-1.70
2	2390.00	46.6 AV	54.0	-7.4	1.11 V	295	48.30	-1.70
3	*2412.00	108.1 PK			1.11 V	295	109.70	-1.60
4	*2412.00	98.8 AV			1.11 V	295	100.40	-1.60
5	4824.00	56.0 PK	74.0	-18.0	1.10 V	168	48.80	7.20
6	4824.00	43.6 AV	54.0	-10.4	1.10 V	168	36.40	7.20

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.

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	2357.00	66.0 PK	74.0	-8.0	1.18 H	30	67.85	-1.85
2	2357.00	47.1 AV	54.0	-6.9	1.18 H	30	48.95	-1.85
3	*2437.00	118.0 PK			1.13 H	34	119.49	-1.49
4	*2437.00	108.5 AV			1.13 H	34	109.99	-1.49
5	2483.50	70.2 PK	74.0	-3.8	1.13 H	35	71.48	-1.28
6	2483.50	52.0 AV	54.0	-2.0	1.13 H	35	53.28	-1.28
7	4874.00	50.2 PK	74.0	-23.8	1.02 H	349	42.87	7.33
8	4874.00	36.9 AV	54.0	-17.1	1.02 H	349	29.57	7.33
9	7311.00	58.0 PK	74.0	-16.0	1.02 H	133	43.04	14.96
10	7311.00	44.7 AV	54.0	-9.3	1.02 H	133	29.74	14.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2357.00	60.7 PK	74.0	-13.3	1.05 V	289	62.55	-1.85
2	2357.00	42.1 AV	54.0	-11.9	1.05 V	289	43.95	-1.85
3	*2437.00	112.7 PK			1.05 V	289	114.19	-1.49
4	*2437.00	103.1 AV			1.05 V	289	104.59	-1.49
5	2483.50	64.8 PK	74.0	-9.2	1.05 V	289	66.08	-1.28
6	2483.50	46.8 AV	54.0	-7.2	1.05 V	289	48.08	-1.28
7	4874.00	56.0 PK	74.0	-18.0	1.01 V	171	48.67	7.33
8	4874.00	43.9 AV	54.0	-10.1	1.01 V	171	36.57	7.33
9	7311.00	59.4 PK	74.0	-14.6	1.04 V	251	44.44	14.96
10	7311.00	46.7 AV	54.0	-7.3	1.04 V	251	31.74	14.96

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	114.9 PK			1.12 H	34	116.28	-1.38
2	*2462.00	103.9 AV			1.12 H	34	105.28	-1.38
3	2483.50	72.9 PK	74.0	-1.1	1.10 H	34	74.18	-1.28
4	2483.50	52.5 AV	54.0	-1.5	1.10 H	34	53.78	-1.28
5	4924.00	50.6 PK	74.0	-23.4	1.03 H	349	43.13	7.47
6	4924.00	37.1 AV	54.0	-16.9	1.03 H	349	29.63	7.47
7	7386.00	58.1 PK	74.0	-15.9	1.00 H	134	43.21	14.89
8	7386.00	44.6 AV	54.0	-9.4	1.00 H	134	29.71	14.89
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	109.8 PK			1.04 V	286	111.18	-1.38
2	*2462.00	99.1 AV			1.04 V	286	100.48	-1.38
3	2483.50	67.8 PK	74.0	-6.2	1.04 V	286	69.08	-1.28
4	2483.50	47.7 AV	54.0	-6.3	1.04 V	286	48.98	-1.28
5	4924.00	56.0 PK	74.0	-18.0	1.10 V	164	48.53	7.47
6	4924.00	44.0 AV	54.0	-10.0	1.10 V	164	36.53	7.47
7	7386.00	58.9 PK	74.0	-15.1	1.15 V	280	44.01	14.89
8	7386.00	46.4 AV	54.0	-7.6	1.15 V	280	31.51	14.89

REMARKS:

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

802.11n (HT40), 2Tx

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.3 PK	74.0	-8.7	1.15 H	168	67.00	-1.70
2	2390.00	52.8 AV	54.0	-1.2	1.15 H	168	54.50	-1.70
3	*2422.00	107.5 PK			1.15 H	168	109.05	-1.55
4	*2422.00	99.5 AV			1.15 H	168	101.05	-1.55
5	4844.00	50.0 PK	74.0	-24.0	1.06 H	333	42.76	7.24
6	4844.00	36.9 AV	54.0	-17.1	1.06 H	333	29.66	7.24
7	7266.00	57.9 PK	74.0	-16.1	1.00 H	141	42.88	15.02
8	7266.00	44.8 AV	54.0	-9.2	1.00 H	141	29.78	15.02
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	60.2 PK	74.0	-13.8	1.03 V	272	61.90	-1.70
2	2390.00	47.6 AV	54.0	-6.4	1.03 V	272	49.30	-1.70
3	*2422.00	102.6 PK			1.03 V	272	104.15	-1.55
4	*2422.00	94.5 AV			1.03 V	272	96.05	-1.55
5	4844.00	55.5 PK	74.0	-18.5	1.00 V	186	48.26	7.24
6	4844.00	43.3 AV	54.0	-10.7	1.00 V	186	36.06	7.24
7	7266.00	59.5 PK	74.0	-14.5	1.00 V	239	44.48	15.02
8	7266.00	47.0 AV	54.0	-7.0	1.00 V	239	31.98	15.02

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	70.0 PK	74.0	-4.0	1.13 H	168	71.70	-1.70
2	2390.00	52.7 AV	54.0	-1.3	1.13 H	168	54.40	-1.70
3	*2437.00	108.6 PK			1.13 H	168	110.09	-1.49
4	*2437.00	102.0 AV			1.13 H	168	103.49	-1.49
5	2483.50	70.2 PK	74.0	-3.8	1.13 H	168	71.48	-1.28
6	**2483.50**	**53.0 AV**	**54.0**	**-1.0**	**1.13 H**	**168**	**54.28**	**-1.28**
7	4874.00	50.2 PK	74.0	-23.8	1.00 H	356	42.87	7.33
8	4874.00	36.9 AV	54.0	-17.1	1.00 H	356	29.57	7.33
9	7311.00	58.6 PK	74.0	-15.4	1.06 H	133	43.64	14.96
10	7311.00	45.2 AV	54.0	-8.8	1.06 H	133	30.24	14.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.2 PK	74.0	-8.8	1.00 V	287	66.90	-1.70
2	2390.00	48.1 AV	54.0	-5.9	1.00 V	287	49.80	-1.70
3	*2437.00	103.6 PK			1.00 V	287	105.09	-1.49
4	*2437.00	97.0 AV			1.00 V	287	98.49	-1.49
5	2483.50	65.0 PK	74.0	-9.0	1.00 V	287	66.28	-1.28
6	2483.50	48.0 AV	54.0	-6.0	1.00 V	287	49.28	-1.28
7	4874.00	55.7 PK	74.0	-18.3	1.04 V	182	48.37	7.33
8	4874.00	43.7 AV	54.0	-10.3	1.04 V	182	36.37	7.33
9	7311.00	58.7 PK	74.0	-15.3	1.09 V	241	43.74	14.96
10	7311.00	46.3 AV	54.0	-7.7	1.09 V	241	31.34	14.96

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	106.3 PK			1.12 H	168	107.72	-1.42
2	*2452.00	95.7 AV			1.12 H	168	97.12	-1.42
3	2483.50	67.1 PK	74.0	-6.9	1.12 H	168	68.38	-1.28
4	**2483.50**	**53.0 AV**	**54.0**	**-1.0**	**1.12 H**	**168**	**54.28**	**-1.28**
5	4904.00	49.9 PK	74.0	-24.1	1.01 H	353	42.49	7.41
6	4904.00	36.7 AV	54.0	-17.3	1.01 H	353	29.29	7.41
7	7356.00	58.4 PK	74.0	-15.6	1.00 H	140	43.49	14.91
8	7356.00	45.0 AV	54.0	-9.0	1.00 H	140	30.09	14.91
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	101.4 PK			1.03 V	285	102.82	-1.42
2	*2452.00	90.6 AV			1.03 V	285	92.02	-1.42
3	2483.50	62.0 PK	74.0	-12.0	1.03 V	285	63.28	-1.28
4	2483.50	47.9 AV	54.0	-6.1	1.03 V	285	49.18	-1.28
5	4904.00	55.9 PK	74.0	-18.1	1.00 V	183	48.49	7.41
6	4904.00	43.7 AV	54.0	-10.3	1.00 V	183	36.29	7.41
7	7356.00	58.4 PK	74.0	-15.6	1.00 V	240	43.49	14.91
8	7356.00	45.7 AV	54.0	-8.3	1.00 V	240	30.79	14.91

REMARKS:

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

4.2.8 TEST RESULTS (MODE 2, WLAN)

BELOW 1GHz WORST-CASE DATA

802.11n(HT20) / 2Tx

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	117.88	25.9 QP	43.5	-17.6	1.50 H	360	41.22	-15.32
2	158.23	25.4 QP	43.5	-18.1	1.50 H	331	38.82	-13.41
3	254.85	32.7 QP	46.0	-13.3	1.50 H	208	47.01	-14.29
4	324.69	27.7 QP	46.0	-18.3	1.00 H	320	39.39	-11.73
5	398.36	26.1 QP	46.0	-19.9	1.00 H	156	36.05	-9.92
6	613.55	25.5 QP	46.0	-20.5	1.00 H	285	30.02	-4.50
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	115.35	34.2 QP	43.5	-9.3	1.00 V	341	49.93	-15.69
2	146.91	28.3 QP	43.5	-15.2	1.00 V	181	41.91	-13.58
3	249.51	31.3 QP	46.0	-14.7	2.00 V	221	45.63	-14.33
4	337.44	29.7 QP	46.0	-16.3	1.00 V	302	41.10	-11.43
5	398.30	25.7 QP	46.0	-20.3	1.50 V	262	35.64	-9.92
6	828.30	36.5 QP	46.0	-9.5	1.00 V	357	37.52	-1.01

REMARKS:

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

ABOVE 1GHz DATA

802.11b, 1Tx

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	2386.00	51.4 PK	74.0	-22.6	1.02 H	305	53.12	-1.72
2	2386.00	38.7 AV	54.0	-15.3	1.02 H	305	40.42	-1.72
3	*2412.00	100.9 PK			1.02 H	305	102.50	-1.60
4	*2412.00	96.8 AV			1.02 H	305	98.40	-1.60
5	4824.00	49.0 PK	74.0	-25.0	1.13 H	354	41.80	7.20
6	4824.00	36.5 AV	54.0	-17.5	1.13 H	354	29.30	7.20
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	56.7 PK	74.0	-17.3	1.11 V	83	58.40	-1.70
2	2390.00	44.9 AV	54.0	-9.1	1.11 V	83	46.60	-1.70
3	*2412.00	112.8 PK			1.11 V	83	114.40	-1.60
4	*2412.00	109.1 AV			1.11 V	83	110.70	-1.60
5	4824.00	51.7 PK	74.0	-22.3	1.03 V	95	44.50	7.20
6	4824.00	44.0 AV	54.0	-10.0	1.03 V	95	36.80	7.20

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.

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	2360.00	50.5 PK	74.0	-23.5	1.04 H	305	52.33	-1.83
2	2360.00	36.6 AV	54.0	-17.4	1.04 H	305	38.43	-1.83
3	*2437.00	101.5 PK			1.04 H	305	102.99	-1.49
4	*2437.00	97.5 AV			1.04 H	305	98.99	-1.49
5	2488.00	51.5 PK	74.0	-22.5	1.04 H	305	52.76	-1.26
6	2488.00	36.9 AV	54.0	-17.1	1.04 H	305	38.16	-1.26
7	4874.00	49.3 PK	74.0	-24.7	1.14 H	342	41.97	7.33
8	4874.00	36.8 AV	54.0	-17.2	1.14 H	342	29.47	7.33
9	7311.00	54.5 PK	74.0	-19.5	1.00 H	194	39.54	14.96
10	7311.00	41.6 AV	54.0	-12.4	1.00 H	194	26.64	14.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2357.00	54.2 PK	74.0	-19.8	1.08 V	82	56.05	-1.85
2	2357.00	43.5 AV	54.0	-10.5	1.08 V	82	45.35	-1.85
3	*2437.00	112.5 PK			1.08 V	82	113.99	-1.49
4	*2437.00	108.7 AV			1.08 V	82	110.19	-1.49
5	2483.50	54.4 PK	74.0	-19.6	1.08 V	82	55.68	-1.28
6	2483.50	41.3 AV	54.0	-12.7	1.08 V	82	42.58	-1.28
7	4874.00	51.6 PK	74.0	-22.4	1.06 V	90	44.27	7.33
8	4874.00	43.7 AV	54.0	-10.3	1.06 V	90	36.37	7.33
9	7311.00	55.4 PK	74.0	-18.6	1.04 V	326	40.44	14.96
10	7311.00	42.0 AV	54.0	-12.0	1.04 V	326	27.04	14.96

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	100.6 PK			1.00 H	52	101.98	-1.38
2	*2462.00	96.6 AV			1.00 H	52	97.98	-1.38
3	2487.00	51.8 PK	74.0	-22.2	1.00 H	52	53.07	-1.27
4	2487.00	38.6 AV	54.0	-15.4	1.00 H	52	39.87	-1.27
5	4924.00	49.5 PK	74.0	-24.5	1.10 H	355	42.03	7.47
6	4924.00	36.9 AV	54.0	-17.1	1.10 H	355	29.43	7.47
7	7386.00	54.5 PK	74.0	-19.5	1.00 H	199	39.61	14.89
8	7386.00	41.8 AV	54.0	-12.2	1.00 H	199	26.91	14.89
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	112.3 PK			1.07 V	83	113.68	-1.38
2	*2462.00	108.6 AV			1.07 V	83	109.98	-1.38
3	2483.50	58.8 PK	74.0	-15.2	1.07 V	83	60.08	-1.28
4	2483.50	47.7 AV	54.0	-6.3	1.07 V	83	48.98	-1.28
5	4924.00	51.8 PK	74.0	-22.2	1.02 V	100	44.33	7.47
6	4924.00	43.6 AV	54.0	-10.4	1.02 V	100	36.13	7.47
7	7386.00	54.8 PK	74.0	-19.2	1.00 V	333	39.91	14.89
8	7386.00	41.6 AV	54.0	-12.4	1.00 V	333	26.71	14.89

REMARKS:

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

802.11g, 1Tx

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.9 PK	74.0	-13.1	1.03 H	66	62.60	-1.70
2	2390.00	42.4 AV	54.0	-11.6	1.03 H	66	44.10	-1.70
3	*2412.00	101.8 PK			1.03 H	66	103.40	-1.60
4	*2412.00	91.6 AV			1.03 H	66	93.20	-1.60
5	4824.00	50.0 PK	74.0	-24.0	1.10 H	353	42.80	7.20
6	4824.00	37.3 AV	54.0	-16.7	1.10 H	353	30.10	7.20
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	68.1 PK	74.0	-5.9	1.07 V	263	69.80	-1.70
2	2390.00	49.5 AV	54.0	-4.5	1.07 V	263	51.20	-1.70
3	*2412.00	113.8 PK			1.10 V	81	115.40	-1.60
4	*2412.00	103.8 AV			1.10 V	81	105.40	-1.60
5	4824.00	51.1 PK	74.0	-22.9	1.08 V	105	43.90	7.20
6	4824.00	43.5 AV	54.0	-10.5	1.08 V	105	36.30	7.20

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.

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	59.7 PK	74.0	-14.3	1.02 H	59	61.40	-1.70
2	2390.00	43.1 AV	54.0	-10.9	1.02 H	59	44.80	-1.70
3	*2437.00	101.8 PK			1.02 H	59	103.29	-1.49
4	*2437.00	92.2 AV			1.02 H	59	93.69	-1.49
5	2483.50	58.3 PK	74.0	-15.7	1.02 H	59	59.58	-1.28
6	2483.50	43.2 AV	54.0	-10.8	1.02 H	59	44.48	-1.28
7	4874.00	49.5 PK	74.0	-24.5	1.04 H	350	42.17	7.33
8	4874.00	37.0 AV	54.0	-17.0	1.04 H	350	29.67	7.33
9	7311.00	54.7 PK	74.0	-19.3	1.03 H	211	39.74	14.96
10	7311.00	42.0 AV	54.0	-12.0	1.03 H	211	27.04	14.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	59.4 PK	74.0	-14.6	1.10 V	83	61.10	-1.70
2	2390.00	43.0 AV	54.0	-11.0	1.10 V	83	44.70	-1.70
3	*2437.00	114.5 PK			1.10 V	83	115.99	-1.49
4	*2437.00	104.7 AV			1.10 V	83	106.19	-1.49
5	2483.50	58.1 PK	74.0	-15.9	1.10 V	83	59.38	-1.28
6	2483.50	43.0 AV	54.0	-11.0	1.10 V	83	44.28	-1.28
7	4874.00	51.3 PK	74.0	-22.7	1.11 V	75	43.97	7.33
8	4874.00	43.4 AV	54.0	-10.6	1.11 V	75	36.07	7.33
9	7311.00	55.2 PK	74.0	-18.8	1.01 V	322	40.24	14.96
10	7311.00	42.0 AV	54.0	-12.0	1.01 V	322	27.04	14.96

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	97.9 PK			1.08 H	81	99.28	-1.38
2	*2462.00	87.9 AV			1.08 H	81	89.28	-1.38
3	2487.00	57.0 PK	74.0	-17.0	1.08 H	81	58.27	-1.27
4	2487.00	38.6 AV	54.0	-15.4	1.08 H	81	39.87	-1.27
5	4924.00	49.2 PK	74.0	-24.8	1.11 H	347	41.73	7.47
6	4924.00	36.8 AV	54.0	-17.2	1.11 H	347	29.33	7.47
7	7386.00	54.7 PK	74.0	-19.3	1.00 H	200	39.81	14.89
8	7386.00	41.9 AV	54.0	-12.1	1.00 H	200	27.01	14.89
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	110.2 PK			1.02 V	294	111.58	-1.38
2	*2462.00	100.1 AV			1.02 V	294	101.48	-1.38
3	2483.50	63.9 PK	74.0	-10.1	1.02 V	294	65.18	-1.28
4	2483.50	45.4 AV	54.0	-8.6	1.02 V	294	46.68	-1.28
5	4924.00	52.1 PK	74.0	-21.9	1.02 V	75	44.63	7.47
6	4924.00	44.0 AV	54.0	-10.0	1.02 V	75	36.53	7.47
7	7386.00	54.8 PK	74.0	-19.2	1.05 V	319	39.91	14.89
8	7386.00	41.7 AV	54.0	-12.3	1.05 V	319	26.81	14.89

REMARKS:

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

802.11g, 2Tx

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.5 PK	74.0	-7.5	1.04 H	295	68.20	-1.70
2	2390.00	47.6 AV	54.0	-6.4	1.04 H	295	49.30	-1.70
3	*2412.00	102.4 PK			1.04 H	295	104.00	-1.60
4	*2412.00	92.8 AV			1.04 H	295	94.40	-1.60
5	4824.00	48.9 PK	74.0	-25.1	1.07 H	339	41.70	7.20
6	4824.00	36.7 AV	54.0	-17.3	1.07 H	339	29.50	7.20
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	70.1 PK	74.0	-3.9	1.09 V	272	71.80	-1.70
2	2390.00	51.2 AV	54.0	-2.8	1.09 V	272	52.90	-1.70
3	*2412.00	113.9 PK			1.09 V	263	115.50	-1.60
4	*2412.00	104.6 AV			1.09 V	263	106.20	-1.60
5	4824.00	52.0 PK	74.0	-22.0	1.03 V	101	44.80	7.20
6	4824.00	43.6 AV	54.0	-10.4	1.03 V	101	36.40	7.20

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.

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	2386.00	53.6 PK	74.0	-20.4	1.08 H	294	55.32	-1.72
2	2386.00	40.0 AV	54.0	-14.0	1.08 H	294	41.72	-1.72
3	*2437.00	101.8 PK			1.08 H	294	103.29	-1.49
4	*2437.00	92.1 AV			1.08 H	294	93.59	-1.49
5	2484.00	54.7 PK	74.0	-19.3	1.08 H	294	55.97	-1.27
6	2484.00	39.5 AV	54.0	-14.5	1.08 H	294	40.77	-1.27
7	4874.00	49.5 PK	74.0	-24.5	1.03 H	349	42.17	7.33
8	4874.00	36.8 AV	54.0	-17.2	1.03 H	349	29.47	7.33
9	7311.00	54.5 PK	74.0	-19.5	1.00 H	203	39.54	14.96
10	7311.00	41.8 AV	54.0	-12.2	1.00 H	203	26.84	14.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2357.00	57.3 PK	74.0	-16.7	1.06 V	92	59.15	-1.85
2	2357.00	43.8 AV	54.0	-10.2	1.06 V	92	45.65	-1.85
3	*2437.00	114.0 PK			1.06 V	92	115.49	-1.49
4	*2437.00	104.4 AV			1.06 V	92	105.89	-1.49
5	2483.50	58.9 PK	74.0	-15.1	1.06 V	92	60.18	-1.28
6	2483.50	43.8 AV	54.0	-10.2	1.06 V	92	45.08	-1.28
7	4874.00	52.3 PK	74.0	-21.7	1.02 V	109	44.97	7.33
8	4874.00	44.1 AV	54.0	-9.9	1.02 V	109	36.77	7.33
9	7311.00	55.2 PK	74.0	-18.8	1.05 V	345	40.24	14.96
10	7311.00	42.0 AV	54.0	-12.0	1.05 V	345	27.04	14.96

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	103.1 PK			1.03 H	282	104.48	-1.38
2	*2462.00	93.5 AV			1.03 H	282	94.88	-1.38
3	2483.50	61.8 PK	74.0	-12.2	1.03 H	282	63.08	-1.28
4	2483.50	45.3 AV	54.0	-8.7	1.03 H	282	46.58	-1.28
5	4924.00	49.1 PK	74.0	-24.9	1.03 H	343	41.63	7.47
6	4924.00	36.8 AV	54.0	-17.2	1.03 H	343	29.33	7.47
7	7386.00	54.5 PK	74.0	-19.5	1.05 H	199	39.61	14.89
8	7386.00	41.9 AV	54.0	-12.1	1.05 H	199	27.01	14.89
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	114.8 PK			1.05 V	83	116.18	-1.38
2	*2462.00	105.1 AV			1.05 V	83	106.48	-1.38
3	2483.50	66.1 PK	74.0	-7.9	1.05 V	83	67.38	-1.28
4	2483.50	49.7 AV	54.0	-4.3	1.05 V	83	50.98	-1.28
5	4924.00	51.8 PK	74.0	-22.2	1.02 V	103	44.33	7.47
6	4924.00	43.3 AV	54.0	-10.7	1.02 V	103	35.83	7.47
7	7386.00	54.5 PK	74.0	-19.5	1.00 V	323	39.61	14.89
8	7386.00	41.3 AV	54.0	-12.7	1.00 V	323	26.41	14.89

REMARKS:

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

802.11n (HT20), 2Tx

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.7 PK	74.0	-5.3	1.05 H	271	70.40	-1.70
2	2390.00	48.6 AV	54.0	-5.4	1.05 H	271	50.30	-1.70
3	*2412.00	103.4 PK			1.05 H	271	105.00	-1.60
4	*2412.00	93.3 AV			1.05 H	271	94.90	-1.60
5	4824.00	49.8 PK	74.0	-24.2	1.03 H	344	42.60	7.20
6	4824.00	37.0 AV	54.0	-17.0	1.03 H	344	29.80	7.20
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	72.4 PK	74.0	-1.6	1.09 V	96	74.10	-1.70
2	2390.00	52.5 AV	54.0	-1.5	1.09 V	96	54.20	-1.70
3	*2412.00	115.4 PK			1.09 V	96	117.00	-1.60
4	*2412.00	105.6 AV			1.09 V	96	107.20	-1.60
5	4824.00	52.1 PK	74.0	-21.9	1.00 V	107	44.90	7.20
6	4824.00	43.8 AV	54.0	-10.2	1.00 V	107	36.60	7.20

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.

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	2357.00	56.4 PK	74.0	-17.6	1.01 H	287	58.25	-1.85
2	2357.00	39.9 AV	54.0	-14.1	1.01 H	287	41.75	-1.85
3	*2437.00	104.9 PK			1.01 H	287	106.39	-1.49
4	*2437.00	95.2 AV			1.01 H	287	96.69	-1.49
5	2483.50	55.3 PK	74.0	-18.7	1.01 H	287	56.58	-1.28
6	2483.50	38.5 AV	54.0	-15.5	1.01 H	287	39.78	-1.28
7	4874.00	49.6 PK	74.0	-24.4	1.01 H	348	42.27	7.33
8	4874.00	37.3 AV	54.0	-16.7	1.01 H	348	29.97	7.33
9	7311.00	54.9 PK	74.0	-19.1	1.00 H	217	39.94	14.96
10	7311.00	42.1 AV	54.0	-11.9	1.00 H	217	27.14	14.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	61.0 PK	74.0	-13.0	1.05 V	62	62.70	-1.70
2	2390.00	44.2 AV	54.0	-9.8	1.05 V	62	45.90	-1.70
3	*2437.00	117.3 PK			1.05 V	62	118.79	-1.49
4	*2437.00	107.5 AV			1.05 V	62	108.99	-1.49
5	2483.50	59.6 PK	74.0	-14.4	1.05 V	62	60.88	-1.28
6	2483.50	42.8 AV	54.0	-11.2	1.05 V	62	44.08	-1.28
7	4874.00	52.0 PK	74.0	-22.0	1.05 V	104	44.67	7.33
8	4874.00	43.8 AV	54.0	-10.2	1.05 V	104	36.47	7.33
9	7311.00	55.1 PK	74.0	-18.9	1.00 V	346	40.14	14.96
10	7311.00	41.7 AV	54.0	-12.3	1.00 V	346	26.74	14.96

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	100.0 PK			1.00 H	303	101.38	-1.38
2	*2462.00	89.8 AV			1.00 H	303	91.18	-1.38
3	2483.50	57.0 PK	74.0	-17.0	1.00 H	303	58.28	-1.28
4	2483.50	38.9 AV	54.0	-15.1	1.00 H	303	40.18	-1.28
5	4924.00	49.1 PK	74.0	-24.9	1.09 H	355	41.63	7.47
6	4924.00	36.9 AV	54.0	-17.1	1.09 H	355	29.43	7.47
7	7386.00	54.0 PK	74.0	-20.0	1.07 H	212	39.11	14.89
8	7386.00	41.6 AV	54.0	-12.4	1.07 H	212	26.71	14.89
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	112.0 PK			1.02 V	61	113.38	-1.38
2	*2462.00	102.1 AV			1.02 V	61	103.48	-1.38
3	2483.50	66.9 PK	74.0	-7.1	1.02 V	61	68.18	-1.28
4	2483.50	47.5 AV	54.0	-6.5	1.02 V	61	48.78	-1.28
5	4924.00	52.2 PK	74.0	-21.8	1.06 V	86	44.73	7.47
6	4924.00	44.1 AV	54.0	-9.9	1.06 V	86	36.63	7.47
7	7386.00	54.5 PK	74.0	-19.5	1.05 V	325	39.61	14.89
8	7386.00	41.4 AV	54.0	-12.6	1.05 V	325	26.51	14.89

REMARKS:

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

802.11n (HT40), 2Tx

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	55.6 PK	74.0	-18.4	1.04 H	318	57.30	-1.70
2	2390.00	40.2 AV	54.0	-13.8	1.04 H	318	41.90	-1.70
3	*2422.00	104.9 PK			1.04 H	318	106.45	-1.55
4	*2422.00	97.1 AV			1.04 H	318	98.65	-1.55
5	4844.00	49.4 PK	74.0	-24.6	1.01 H	360	42.16	7.24
6	4844.00	36.7 AV	54.0	-17.3	1.01 H	360	29.46	7.24
7	7266.00	54.8 PK	74.0	-19.2	1.02 H	210	39.78	15.02
8	7266.00	41.9 AV	54.0	-12.1	1.02 H	210	26.88	15.02
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.5 PK	74.0	-7.5	1.06 V	303	68.20	-1.70
2	2390.00	51.1 AV	54.0	-2.9	1.06 V	303	52.80	-1.70
3	*2422.00	107.2 PK			1.06 V	303	108.75	-1.55
4	*2422.00	99.4 AV			1.06 V	303	100.95	-1.55
5	4844.00	52.0 PK	74.0	-22.0	1.03 V	102	44.76	7.24
6	4844.00	43.8 AV	54.0	-10.2	1.03 V	102	36.56	7.24
7	7266.00	55.1 PK	74.0	-18.9	1.06 V	321	40.08	15.02
8	7266.00	41.8 AV	54.0	-12.2	1.06 V	321	26.78	15.02

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	54.3 PK	74.0	-19.7	1.05 H	317	56.00	-1.70
2	2390.00	40.3 AV	54.0	-13.7	1.05 H	317	42.00	-1.70
3	*2437.00	107.1 PK			1.05 H	317	108.59	-1.49
4	*2437.00	97.8 AV			1.05 H	317	99.29	-1.49
5	2483.50	57.3 PK	74.0	-16.7	1.05 H	317	58.58	-1.28
6	2483.50	42.6 AV	54.0	-11.4	1.05 H	317	43.88	-1.28
7	4874.00	48.7 PK	74.0	-25.3	1.06 H	352	41.37	7.33
8	4874.00	36.5 AV	54.0	-17.5	1.06 H	352	29.17	7.33
9	7311.00	54.5 PK	74.0	-19.5	1.03 H	202	39.54	14.96
10	7311.00	41.9 AV	54.0	-12.1	1.03 H	202	26.94	14.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.6 PK	74.0	-15.4	1.08 V	277	60.30	-1.70
2	2390.00	44.6 AV	54.0	-9.4	1.08 V	277	46.30	-1.70
3	*2437.00	109.3 PK			1.08 V	277	110.79	-1.49
4	*2437.00	100.1 AV			1.08 V	277	101.59	-1.49
5	2483.50	61.2 PK	74.0	-12.8	1.08 V	277	62.48	-1.28
6	2483.50	46.7 AV	54.0	-7.3	1.08 V	277	47.98	-1.28
7	4874.00	51.7 PK	74.0	-22.3	1.01 V	103	44.37	7.33
8	4874.00	43.8 AV	54.0	-10.2	1.01 V	103	36.47	7.33
9	7311.00	55.3 PK	74.0	-18.7	1.03 V	325	40.34	14.96
10	7311.00	41.9 AV	54.0	-12.1	1.03 V	325	26.94	14.96

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	105.7 PK			1.00 H	91	107.12	-1.42
2	*2452.00	96.3 AV			1.00 H	91	97.72	-1.42
3	2483.50	61.2 PK	74.0	-12.8	1.00 H	91	62.48	-1.28
4	2483.50	44.9 AV	54.0	-9.1	1.00 H	91	46.18	-1.28
5	4904.00	49.4 PK	74.0	-24.6	1.05 H	344	41.99	7.41
6	4904.00	36.8 AV	54.0	-17.2	1.05 H	344	29.39	7.41
7	7356.00	54.7 PK	74.0	-19.3	1.02 H	197	39.79	14.91
8	7356.00	42.0 AV	54.0	-12.0	1.02 H	197	27.09	14.91
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	107.2 PK			1.06 V	276	108.62	-1.42
2	*2452.00	98.0 AV			1.06 V	276	99.42	-1.42
3	2483.50	65.2 PK	74.0	-8.8	1.06 V	276	66.48	-1.28
4	2483.50	48.9 AV	54.0	-5.1	1.06 V	276	50.18	-1.28
5	4904.00	52.3 PK	74.0	-21.7	1.06 V	113	44.89	7.41
6	4904.00	44.1 AV	54.0	-9.9	1.06 V	113	36.69	7.41
7	7356.00	54.9 PK	74.0	-19.1	1.04 V	339	39.99	14.91
8	7356.00	41.7 AV	54.0	-12.3	1.04 V	339	26.79	14.91

REMARKS:

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

4.2.9 TEST RESULTS (MODE 1, BT<LE>)

BELOW 1GHz WORST-CASE DATA

BT_LE-GFSK

CHANNEL	TX Channel 39	**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	117.74	27.1 QP	43.5	-16.4	1.00 H	191	42.45	-15.33
2	149.91	26.6 QP	43.5	-16.9	1.50 H	251	39.99	-13.35
3	168.21	31.0 QP	43.5	-12.5	1.00 H	219	44.72	-13.76
4	256.43	31.3 QP	46.0	-14.7	1.00 H	154	45.52	-14.22
5	400.80	26.8 QP	46.0	-19.2	1.00 H	171	36.70	-9.91
6	961.21	31.5 QP	54.0	-22.5	1.50 H	105	30.48	1.03
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	108.01	27.1 QP	43.5	-16.4	1.50 V	360	43.59	-16.50
2	117.86	33.6 QP	43.5	-9.9	1.50 V	38	48.89	-15.32
3	149.89	27.2 QP	43.5	-16.3	1.00 V	281	40.57	-13.35
4	249.36	30.6 QP	46.0	-15.4	1.50 V	299	44.96	-14.34
5	400.31	25.8 QP	46.0	-20.2	2.00 V	21	35.70	-9.91
6	433.23	26.4 QP	46.0	-19.6	1.00 V	256	35.29	-8.87

REMARKS:

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

ABOVE 1GHz DATA

BT_LE-GFSK

CHANNEL	TX Channel 0	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	2360.00	52.2 PK	74.0	-21.8	1.24 H	116	54.03	-1.83
2	2360.00	44.2 AV	54.0	-9.8	1.24 H	116	46.03	-1.83
3	*2402.00	92.9 PK			1.24 H	116	94.54	-1.64
4	*2402.00	92.2 AV			1.24 H	116	93.84	-1.64
5	4804.00	50.8 PK	74.0	-23.2	1.00 H	235	43.66	7.14
6	4804.00	37.7 AV	54.0	-16.3	1.00 H	235	30.56	7.14
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	2360.00	55.5 PK	74.0	-18.5	1.16 V	275	57.33	-1.83
2	2360.00	50.5 AV	54.0	-3.5	1.16 V	275	52.33	-1.83
3	*2402.00	98.7 PK			1.16 V	275	100.34	-1.64
4	*2402.00	97.7 AV			1.16 V	275	99.34	-1.64
5	4804.00	51.1 PK	74.0	-22.9	1.00 V	301	43.96	7.14
6	4804.00	37.8 AV	54.0	-16.2	1.00 V	301	30.66	7.14

REMARKS:

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

CHANNEL	TX Channel 19	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	*2440.00	92.8 PK			1.30 H	123	94.30	-1.50
2	*2440.00	92.4 AV			1.30 H	123	93.90	-1.50
3	4880.00	50.8 PK	74.0	-23.2	1.00 H	250	43.50	7.30
4	4880.00	38.2 AV	54.0	-15.8	1.00 H	250	30.90	7.30
5	7320.00	58.8 PK	74.0	-15.2	1.00 H	114	43.80	15.00
6	7320.00	45.9 AV	54.0	-8.1	1.00 H	114	30.90	15.00
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	*2440.00	98.3 PK			1.15 V	272	99.80	-1.50
2	*2440.00	97.1 AV			1.15 V	272	98.60	-1.50
3	4880.00	51.1 PK	74.0	-22.9	1.00 V	311	43.80	7.30
4	4880.00	38.0 AV	54.0	-16.0	1.00 V	311	30.70	7.30
5	7320.00	58.8 PK	74.0	-15.2	1.00 V	155	43.80	15.00
6	7320.00	45.9 AV	54.0	-8.1	1.00 V	155	30.90	15.00

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
5. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 39	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	*2480.00	92.4 PK			1.24 H	125	93.71	-1.31
2	*2480.00	91.9 AV			1.24 H	125	93.21	-1.31
3	2483.50	51.6 PK	74.0	-22.4	1.24 H	125	52.88	-1.28
4	2483.50	36.9 AV	54.0	-17.1	1.24 H	125	38.18	-1.28
5	4960.00	50.6 PK	74.0	-23.4	1.00 H	265	43.02	7.58
6	4960.00	37.9 AV	54.0	-16.1	1.00 H	265	30.32	7.58
7	7440.00	59.3 PK	74.0	-14.7	1.00 H	107	44.45	14.85
8	7440.00	46.5 AV	54.0	-7.5	1.00 H	107	31.65	14.85
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	*2480.00	98.3 PK			1.13 V	283	99.61	-1.31
2	*2480.00	97.2 AV			1.13 V	283	98.51	-1.31
3	2483.50	50.3 PK	74.0	-23.7	1.13 V	283	51.58	-1.28
4	2483.50	37.1 AV	54.0	-16.9	1.13 V	283	38.38	-1.28
5	4960.00	50.9 PK	74.0	-23.1	1.00 V	304	43.32	7.58
6	4960.00	38.0 AV	54.0	-16.0	1.00 V	304	30.42	7.58
7	7440.00	58.9 PK	74.0	-15.1	1.00 V	170	44.05	14.85
8	7440.00	46.2 AV	54.0	-7.8	1.00 V	170	31.35	14.85

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.

4.2.10 TEST RESULTS (MODE 2, BT<LE>)

BELOW 1GHz WORST-CASE DATA

BT_LE-GFSK

CHANNEL	TX Channel 39	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	117.93	26.1 QP	43.5	-17.4	1.50 H	290	41.44	-15.32
2	167.13	30.4 QP	43.5	-13.1	1.50 H	72	44.26	-13.85
3	255.50	33.1 QP	46.0	-12.9	1.00 H	360	47.38	-14.27
4	399.90	26.1 QP	46.0	-19.9	1.00 H	52	36.01	-9.91
5	608.00	26.2 QP	46.0	-19.8	1.00 H	38	30.92	-4.72
6	960.20	30.3 QP	54.0	-23.7	1.00 H	221	29.27	1.03
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	102.34	31.3 QP	43.5	-12.2	1.00 V	221	48.90	-17.57
2	116.24	35.8 QP	43.5	-7.7	1.50 V	215	51.28	-15.47
3	138.00	33.2 QP	43.5	-10.3	1.00 V	21	47.20	-13.99
4	251.34	31.5 QP	46.0	-14.5	2.00 V	311	45.78	-14.32
5	400.10	26.3 QP	46.0	-19.7	1.50 V	27	36.23	-9.91
6	960.68	32.8 QP	54.0	-21.2	1.00 V	251	31.73	1.03

REMARKS:

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

ABOVE 1GHz DATA

BT_LE-GFSK

CHANNEL	TX Channel 0	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	2360.00	49.8 PK	74.0	-24.2	1.22 H	127	51.63	-1.83
2	2360.00	39.7 AV	54.0	-14.3	1.22 H	127	41.53	-1.83
3	*2402.00	89.4 PK			1.22 H	127	91.04	-1.64
4	*2402.00	86.2 AV			1.22 H	127	87.84	-1.64
5	4804.00	51.1 PK	74.0	-22.9	1.04 H	228	43.96	7.14
6	4804.00	38.0 AV	54.0	-16.0	1.04 H	228	30.86	7.14
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	2360.00	55.4 PK	74.0	-18.6	1.18 V	275	57.23	-1.83
2	**2360.00**	**50.7 AV**	**54.0**	**-3.3**	**1.18 V**	**275**	**52.53**	**-1.83**
3	*2402.00	99.6 PK			1.18 V	275	101.24	-1.64
4	*2402.00	98.4 AV			1.18 V	275	100.04	-1.64
5	4804.00	50.6 PK	74.0	-23.4	1.06 V	294	43.46	7.14
6	4804.00	37.6 AV	54.0	-16.4	1.06 V	294	30.46	7.14

REMARKS:

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

CHANNEL	TX Channel 19	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	*2440.00	89.3 PK			1.34 H	111	90.80	-1.50
2	*2440.00	85.9 AV			1.34 H	111	87.40	-1.50
3	4880.00	50.3 PK	74.0	-23.7	1.00 H	246	43.00	7.30
4	4880.00	37.9 AV	54.0	-16.1	1.00 H	246	30.60	7.30
5	7320.00	58.4 PK	74.0	-15.6	1.00 H	125	43.40	15.00
6	7320.00	45.5 AV	54.0	-8.5	1.00 H	125	30.50	15.00
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	*2440.00	99.0 PK			1.20 V	273	100.50	-1.50
2	*2440.00	97.9 AV			1.20 V	273	99.40	-1.50
3	4880.00	51.6 PK	74.0	-22.4	1.00 V	322	44.30	7.30
4	4880.00	38.2 AV	54.0	-15.8	1.00 V	322	30.90	7.30
5	7320.00	58.6 PK	74.0	-15.4	1.00 V	147	43.60	15.00
6	7320.00	45.5 AV	54.0	-8.5	1.00 V	147	30.50	15.00

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
5. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 39	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	*2480.00	89.6 PK			1.26 H	141	90.91	-1.31
2	*2480.00	86.6 AV			1.26 H	141	87.91	-1.31
3	2483.50	52.2 PK	74.0	-21.8	1.26 H	141	53.48	-1.28
4	2483.50	37.2 AV	54.0	-16.8	1.26 H	141	38.48	-1.28
5	4960.00	50.8 PK	74.0	-23.2	1.00 H	280	43.22	7.58
6	4960.00	38.1 AV	54.0	-15.9	1.00 H	280	30.52	7.58
7	7440.00	59.1 PK	74.0	-14.9	1.00 H	114	44.25	14.85
8	7440.00	46.4 AV	54.0	-7.6	1.00 H	114	31.55	14.85
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	*2480.00	98.9 PK			1.09 V	291	100.21	-1.31
2	*2480.00	97.7 AV			1.09 V	291	99.01	-1.31
3	2483.50	50.3 PK	74.0	-23.7	1.09 V	291	51.58	-1.28
4	2483.50	37.1 AV	54.0	-16.9	1.09 V	291	38.38	-1.28
5	4960.00	51.4 PK	74.0	-22.6	1.00 V	312	43.82	7.58
6	4960.00	38.3 AV	54.0	-15.7	1.00 V	312	30.72	7.58
7	7440.00	58.6 PK	74.0	-15.4	1.00 V	164	43.75	14.85
8	7440.00	45.9 AV	54.0	-8.1	1.00 V	164	31.05	14.85

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	FSP 40	100036	Jan. 21, 2013	Jan. 20, 2014

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : Jan. 14 to 17, 2014

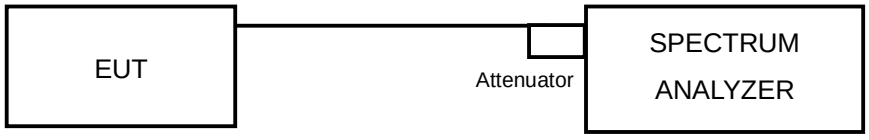
4.3.3 TEST PROCEDURE

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

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

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

4.3.7 TEST RESULTS

802.11b, 1Tx

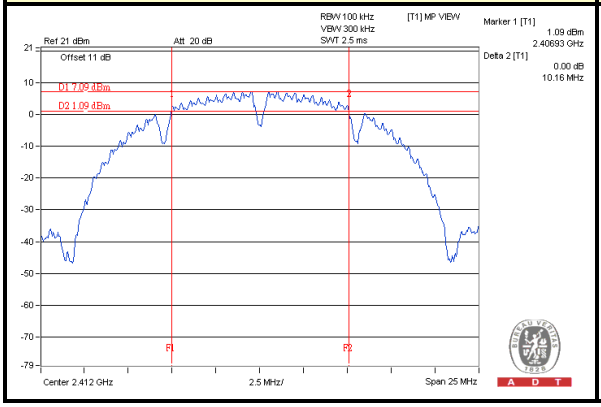
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	10.16	0.5	PASS
6	2437	10.18	0.5	PASS
11	2462	10.17	0.5	PASS

802.11g, 1Tx

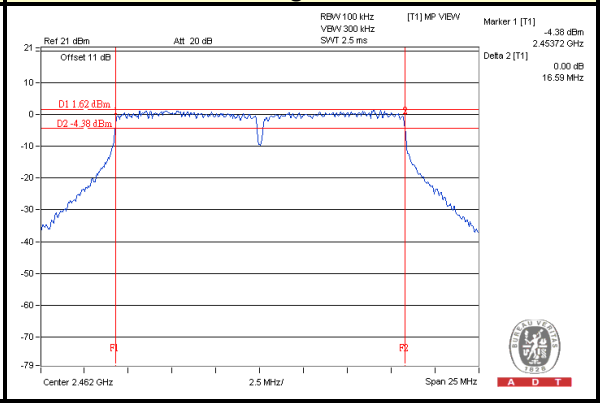
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.61	0.5	PASS
6	2437	16.62	0.5	PASS
11	2462	16.59	0.5	PASS

SPECTRUM PLOT OF WORST VALUE

802.11b / CH1



802.11g / CH11



802.11g, 2Tx

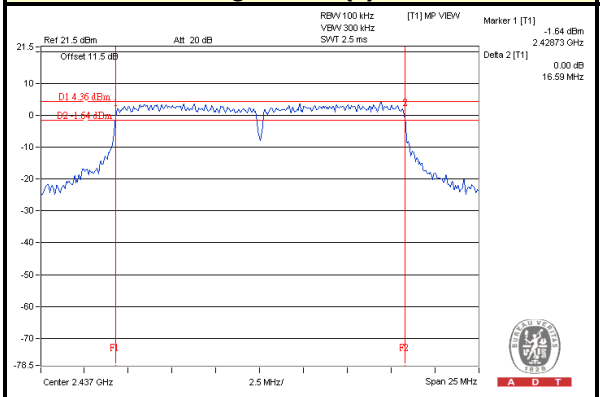
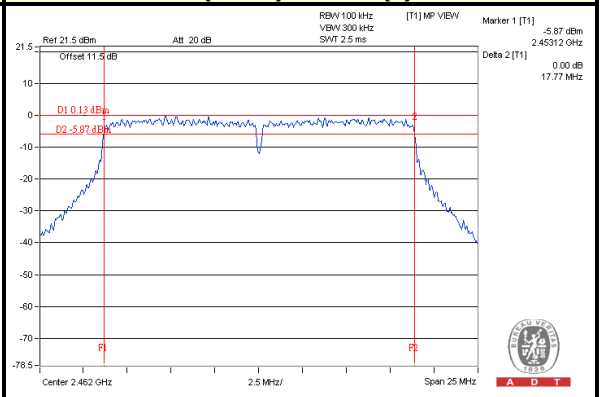
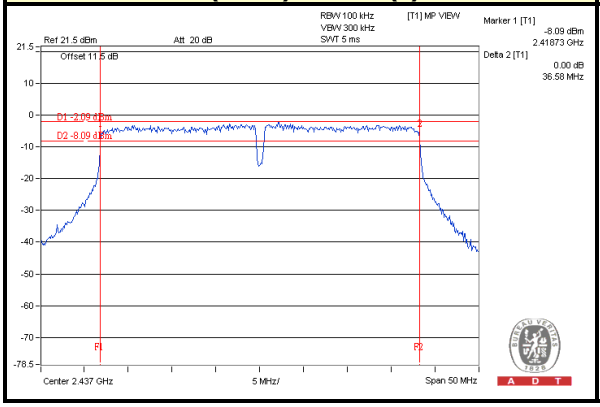
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	16.61	16.60	0.5	PASS
6	2437	16.62	16.59	0.5	PASS
11	2462	16.60	16.59	0.5	PASS

802.11n (HT20), 2Tx

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	17.82	17.82	0.5	PASS
6	2437	17.83	17.85	0.5	PASS
11	2462	17.77	17.81	0.5	PASS

802.11n (HT40), 2Tx

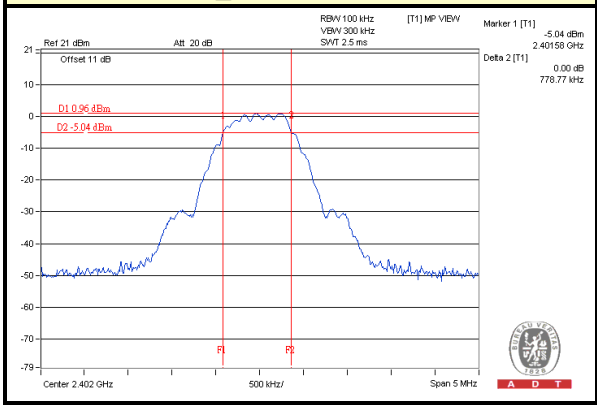
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
3	2422	36.62	36.61	0.5	PASS
6	2437	36.58	36.63	0.5	PASS
9	2452	36.63	36.63	0.5	PASS

SPECTRUM PLOT OF WORST VALUE	
802.11g / Chain(1) : CH6	**802.11n (HT20) / Chain(0) : CH11**
	
802.11n (HT40) / Chain(0) : CH6	
	

BT_LE-GFSK

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
0	2402	0.78	0.5	PASS
19	2440	0.80	0.5	PASS
39	2480	0.80	0.5	PASS

SPECTRUM PLOT OF WORST VALUE	
BT_LE-GFSK / CH0	



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 ≤ 4;

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

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

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

4.4.2 INSTRUMENTS

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

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : Jan. 14 to Feb. 05, 2014

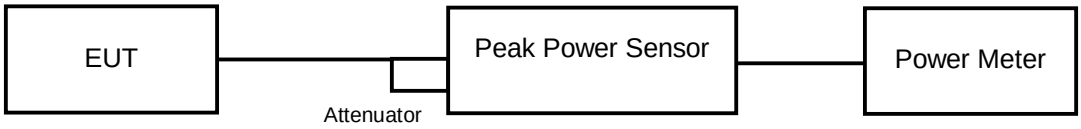
4.4.3 TEST PROCEDURES

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

4.4.4 DEVIATION FROM TEST STANDARD

No deviation.

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

4.4.7 TEST RESULTS

802.11b, 1Tx

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	120.504	20.81	30	PASS
6	2437	123.310	20.91	30	PASS
11	2462	109.901	20.41	30	PASS

802.11g, 1Tx

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	302.691	24.81	30	PASS
6	2437	339.625	25.31	30	PASS
11	2462	358.922	25.55	30	PASS

802.11g, 2Tx

CHANNEL	FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	22.87	23.12	398.758	26.01	30	PASS
6	2437	25.31	23.67	572.434	27.58	30	PASS
11	2462	23.18	22.52	386.619	25.87	30	PASS

802.11n (HT20), 2Tx

CHANNEL	FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	22.37	22.87	366.226	25.64	29.49	PASS
6	2437	24.55	23.61	514.717	27.12	29.49	PASS
11	2462	22.79	22.16	354.545	25.50	29.49	PASS

NOTE: Directional gain = 3.5dBi + 10log(2) = 6.51dBi > 6dBi , so the power limit shall be reduced to 30-(6.51-6) = 29.49dBm.

802.11n (HT40), 2Tx

CHANNEL	FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
3	2422	20.61	19.34	200.981	23.03	29.49	PASS
6	2437	23.13	22.73	393.088	25.94	29.49	PASS
9	2452	21.00	20.84	247.232	23.93	29.49	PASS

NOTE: Directional gain = 3.5dBi + 10log(2) = 6.51dBi > 6dBi , so the power limit shall be reduced to 30-(6.51-6) = 29.49dBm.

BT_LE-GFSK

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
0	2402	1.644	2.16	30	PASS
19	2440	2.109	3.24	30	PASS
39	2480	2.415	3.83	30	PASS

4.5 AVERAGE OUTPUT POWER

4.5.1 FOR REFERENCE.

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Power Meter	ML2495A	1014008	Apr. 23, 2013	Apr. 22, 2014
Power Sensor	MA2411B	0917122	Apr. 23, 2013	Apr. 22, 2014

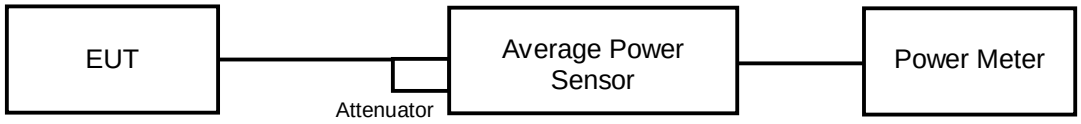
Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : Jan. 14 to Feb. 05, 2014

4.5.3 TEST PROCEDURES

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

4.5.4 TEST SETUP



4.5.5 EUT OPERATING CONDITIONS

Same as Item 4.3.6

4.5.6 TEST RESULTS

802.11b, 1Tx

CHAN.	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)
1	2412	64.863	18.12
6	2437	71.945	18.57
11	2462	67.143	18.27

802.11g, 1Tx

CHAN.	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)
1	2412	35.156	15.46
6	2437	70.146	18.46
11	2462	33.651	15.27

802.11g, 2Tx

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
1	2412	13.83	15.27	57.806	17.62
6	2437	18.46	18.27	137.289	21.38
11	2462	14.12	14.45	53.684	17.30

802.11n (HT20), 2Tx

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
1	2412	14.17	15.16	58.932	17.70
6	2437	18.01	18.52	134.362	21.28
11	2462	14.19	14.94	57.431	17.59

802.11n (HT40), 2Tx

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
3	2422	12.71	11.84	33.940	15.31
6	2437	15.63	15.19	69.596	18.43
9	2452	13.21	13.09	41.311	16.16

BT_LE-GFSK

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)
0	2402	1.403	1.47
19	2440	1.791	2.53
39	2480	2.061	3.14

4.6 POWER SPECTRAL DENSITY MEASUREMENT

4.6.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSP 40	100036	Jan. 21, 2013	Jan. 20, 2014

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : Jan. 14 to 17, 2014

4.6.3 TEST PROCEDURE

1. Set the RBW = 3 kHz, VBW =10 kHz, Detector = peak.
2. Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
3. 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

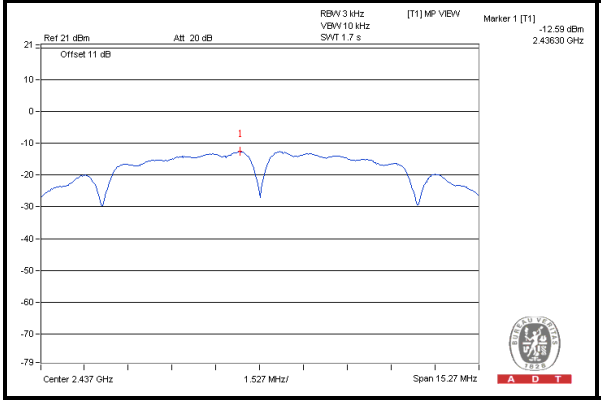
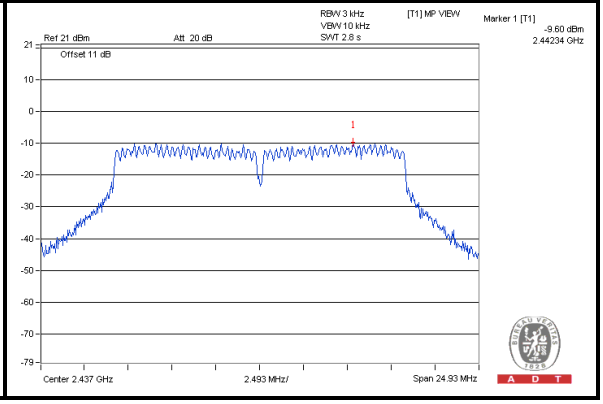
4.6.7 TEST RESULTS

802.11b, 1Tx

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	LIMIT (dBm)	PASS /FAIL
1	2412	-12.92	8	PASS
6	2437	-12.59	8	PASS
11	2462	-12.70	8	PASS

802.11g, 1Tx

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	LIMIT (dBm)	PASS /FAIL
1	2412	-12.39	8	PASS
6	2437	-9.60	8	PASS
11	2462	-12.83	8	PASS

SPECTRUM PLOT OF WORST VALUE	
802.11b / CH6	802.11g / CH6
	

802.11g, 2Tx

TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	PASS /FAIL
0	1	2412	-14.84	3.01	-11.83	7.49	PASS
	6	2437	-10.18	3.01	-7.17	7.49	PASS
	11	2462	-14.60	3.01	-11.59	7.49	PASS
1	1	2412	-14.07	3.01	-11.06	7.49	PASS
	6	2437	-10.82	3.01	-7.81	7.49	PASS
	11	2462	-14.07	3.01	-11.06	7.49	PASS

NOTE: 1. Directional gain = 3.5dBi + 10log(2) = 6.51dBi > 6dBi , so the power density limit shall be reduced to 8-(6.51-6) = 7.49 dBm.

802.11n (HT20), 2Tx

TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	PASS /FAIL
0	1	2412	-13.48	3.01	-10.47	7.49	PASS
	6	2437	-10.80	3.01	-7.79	7.49	PASS
	11	2462	-13.37	3.01	-10.36	7.49	PASS
1	1	2412	-13.99	3.01	-10.98	7.49	PASS
	6	2437	-9.14	3.01	-6.13	7.49	PASS
	11	2462	-13.25	3.01	-10.24	7.49	PASS

NOTE: 1. Directional gain = 3.5dBi + 10log(2) = 6.51dBi > 6dBi , so the power density limit shall be reduced to 8-(6.51-6) = 7.49 dBm.

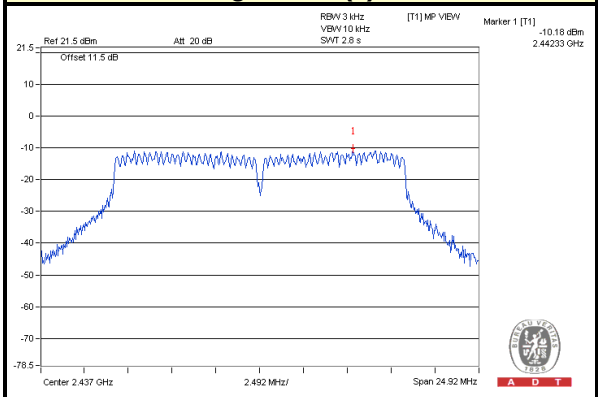
802.11n (HT40), 2Tx

TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	PASS /FAIL
0	3	2422	-18.65	3.01	-15.64	7.49	PASS
	6	2437	-14.60	3.01	-11.59	7.49	PASS
	9	2452	-17.77	3.01	-14.76	7.49	PASS
1	3	2422	-17.25	3.01	-14.24	7.49	PASS
	6	2437	-15.19	3.01	-12.18	7.49	PASS
	9	2452	-19.20	3.01	-16.19	7.49	PASS

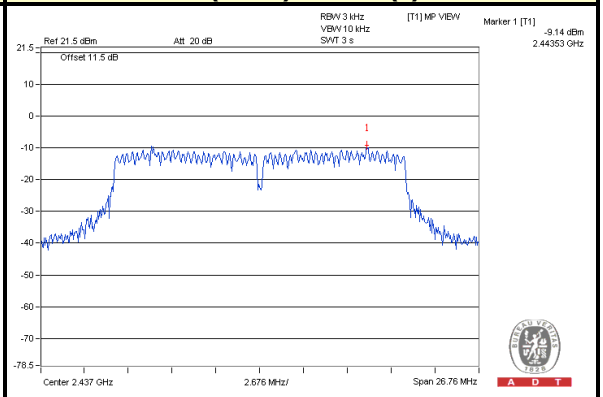
NOTE: 1. Directional gain = 3.5dBi + 10log(2) = 6.51dBi > 6dBi , so the power density limit shall be reduced to 8-(6.51-6) = 7.49 dBm.

SPECTRUM PLOT OF WORST VALUE

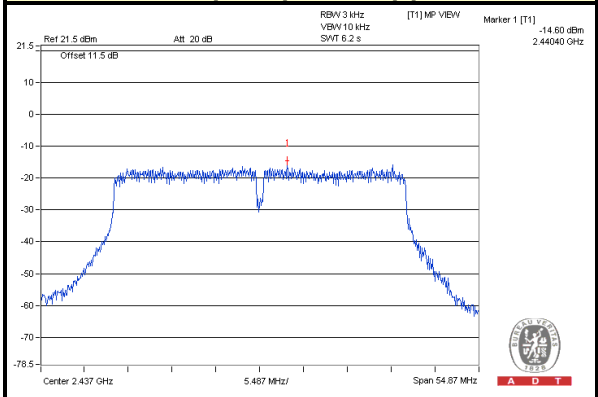
802.11g / Chain(0) : CH6



802.11n (HT20) / Chain(1) : CH6

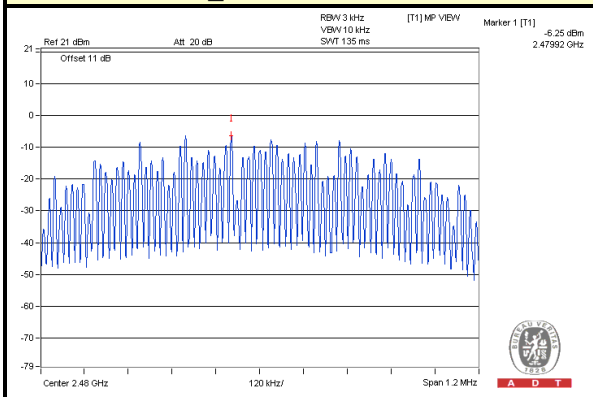


802.11n (HT40) / Chain(0) : CH6



BT_LE-GFSK

Channel	FREQUENCY (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-8.26	8	PASS
19	2440	-7.00	8	PASS
39	2480	-6.25	8	PASS

SPECTRUM PLOT OF WORST VALUE	
BT_LE-GFSK / CH39	
	

4.7 CONDUCTED OUT-BAND EMISSION MEASUREMENT

4.7.1 LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT

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

4.7.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSP 40	100036	Jan. 21, 2013	Jan. 20, 2014

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : Jan. 14 to 17, 2014

4.7.3 TEST PROCEDURE

Measurement Procedure - Reference Level

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

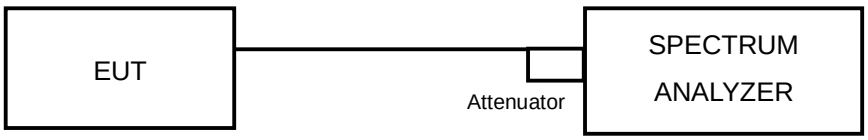
Measurement Procedure –Unwanted Emission Level

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

4.7.4 DEVIATION FROM TEST STANDARD

No deviation

4.7.5 TEST SETUP



4.7.6 EUT OPERATING CONDITION

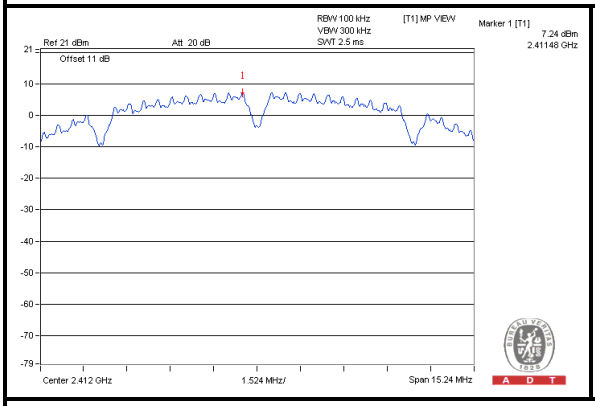
Same as Item 4.3.6

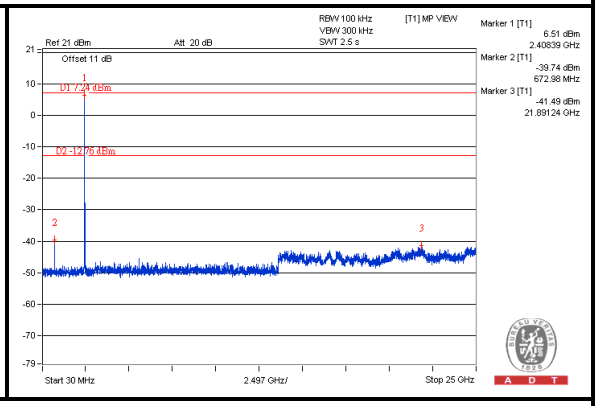
4.7.7 TEST RESULTS

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

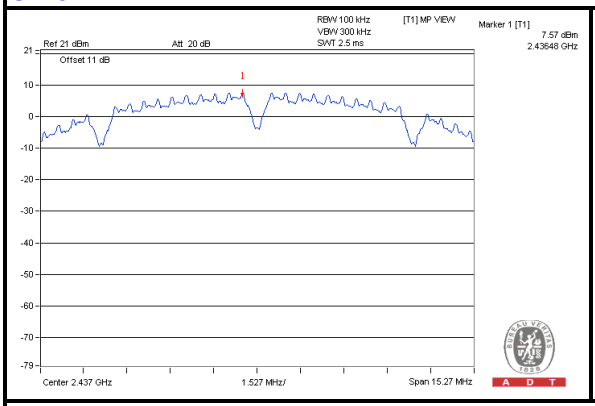
802.11b, 1Tx

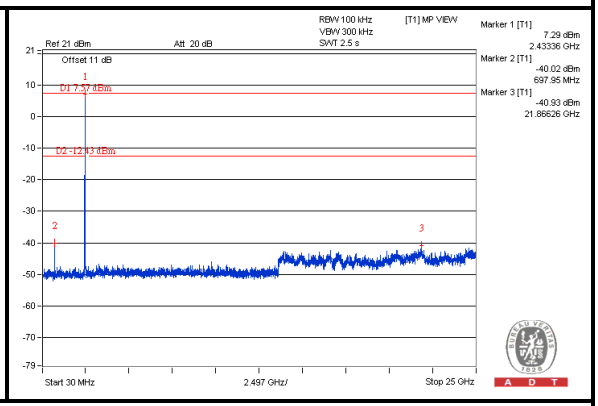
CH 1



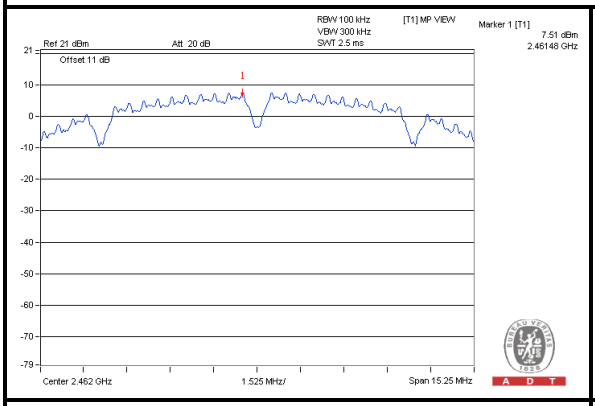


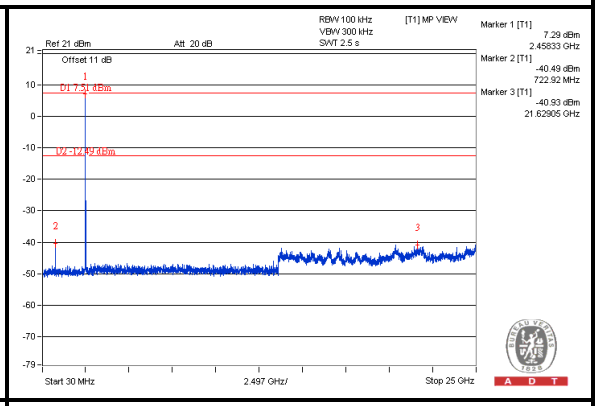
CH 6



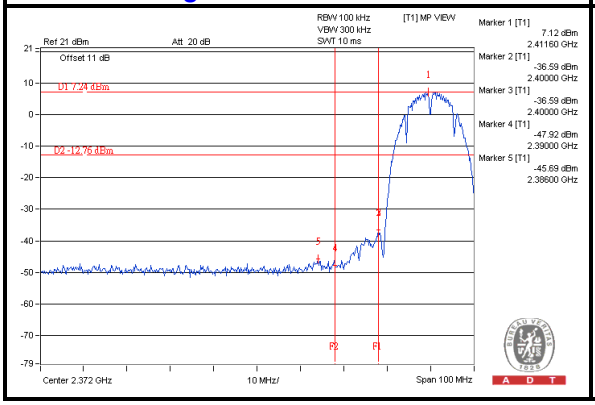


CH 11

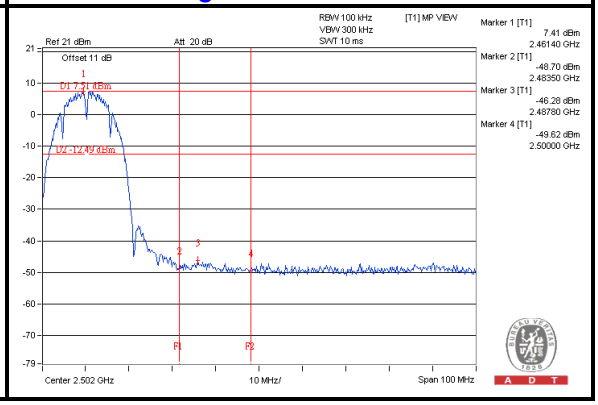




CH 1 Band edge

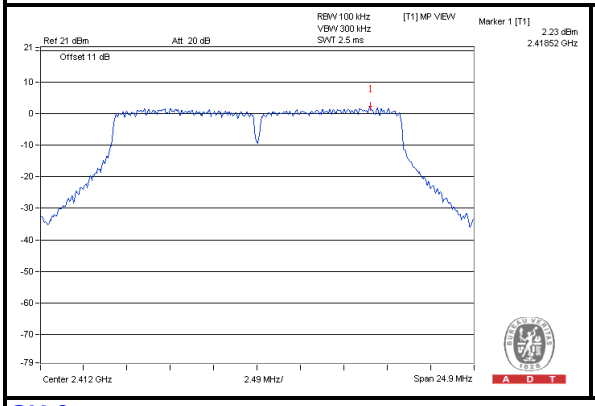


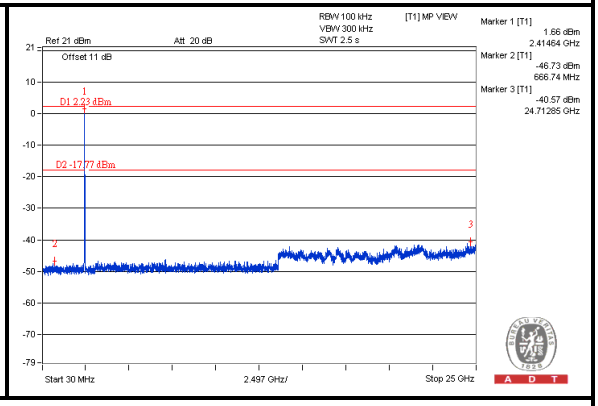
CH 11 Band edge



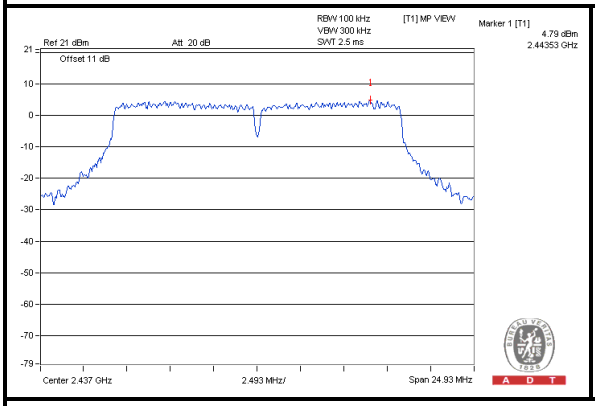
802.11g / 1Tx

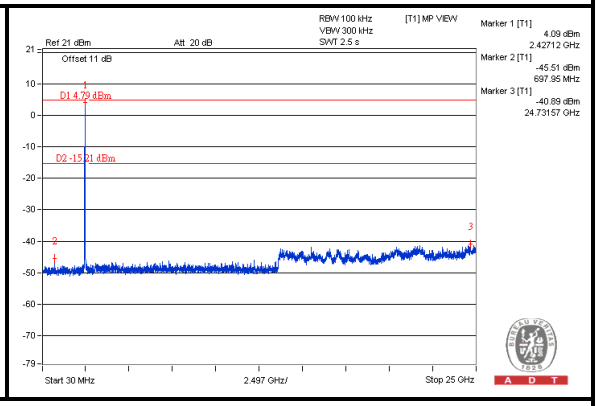
CH 1



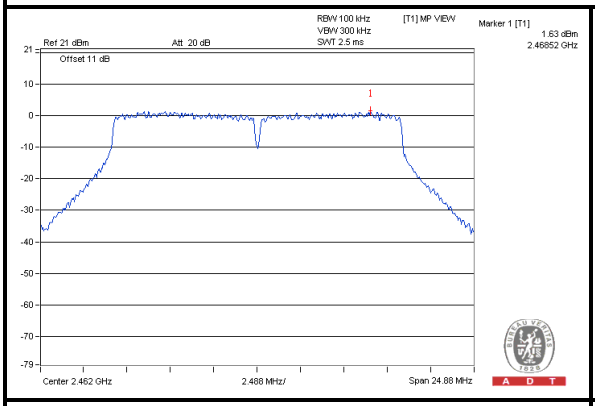


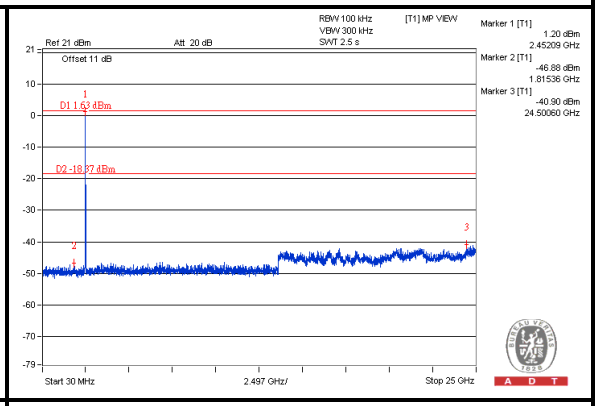
CH 6



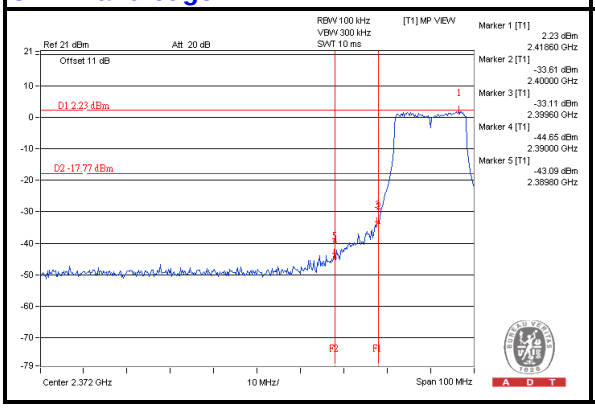


CH 11

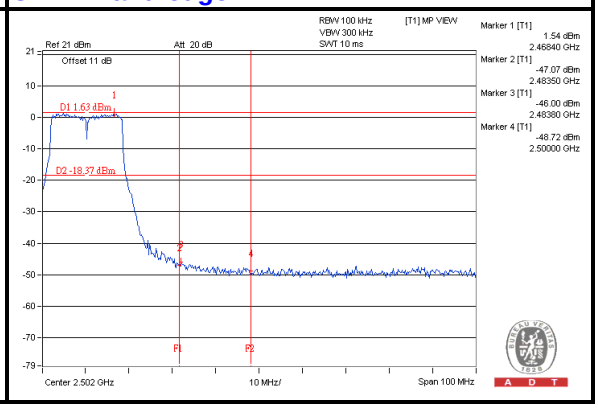




CH 1 Band edge

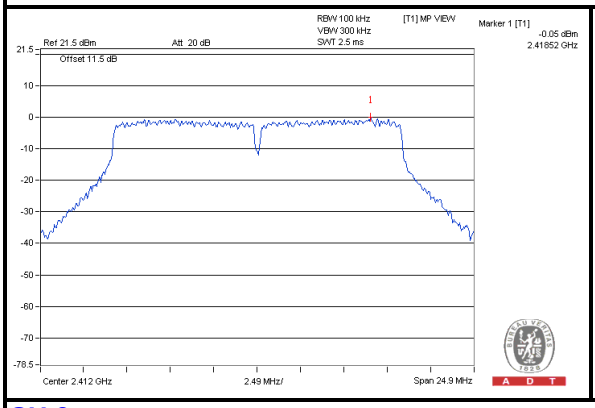


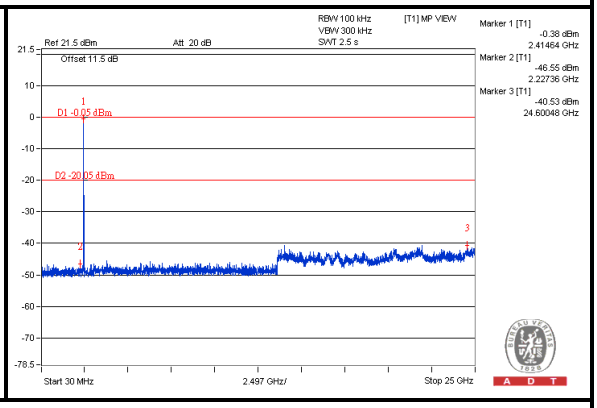
CH 11 Band edge



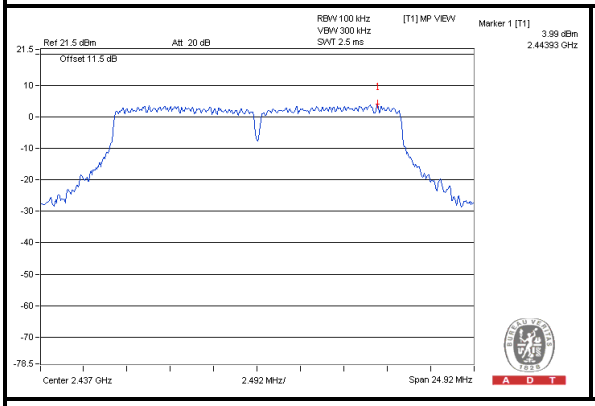
For Chain (0): 802.11g, 2Tx

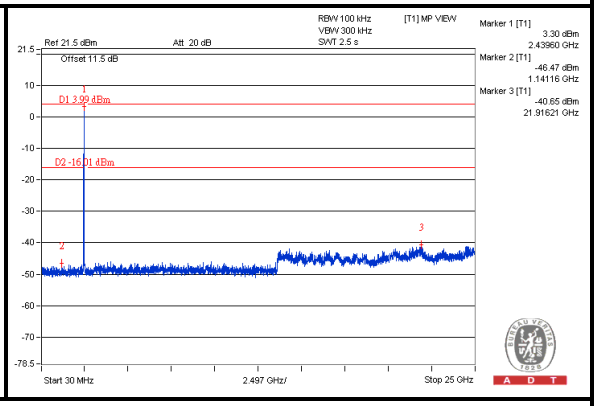
CH 1



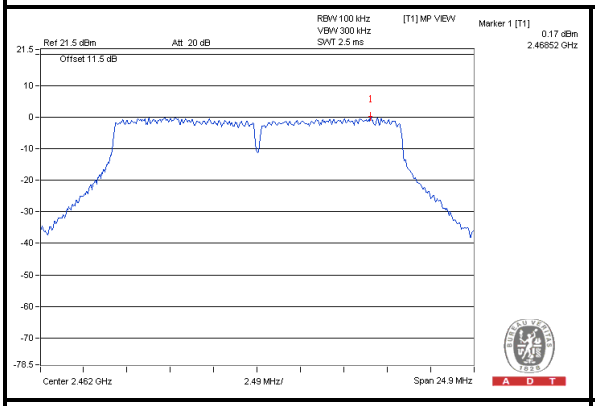


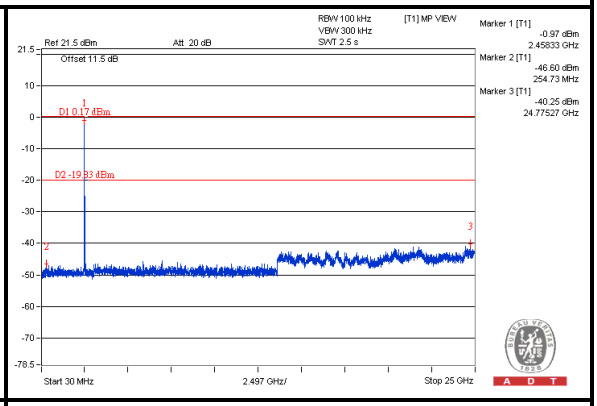
CH 6



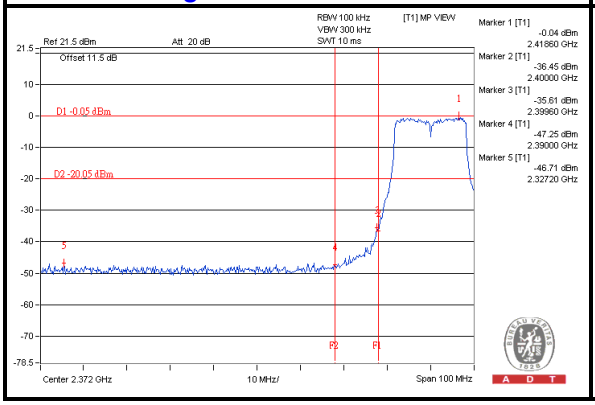


CH 11

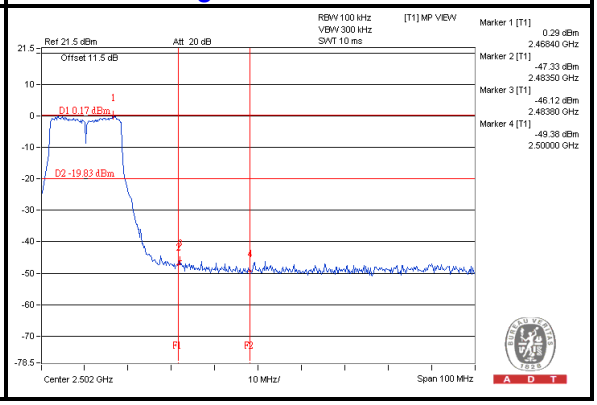




CH 1 Band edge

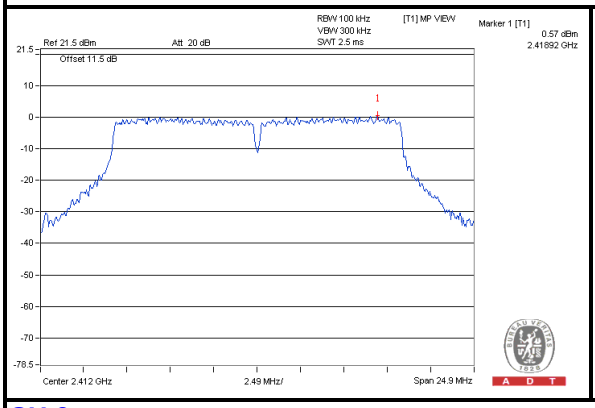


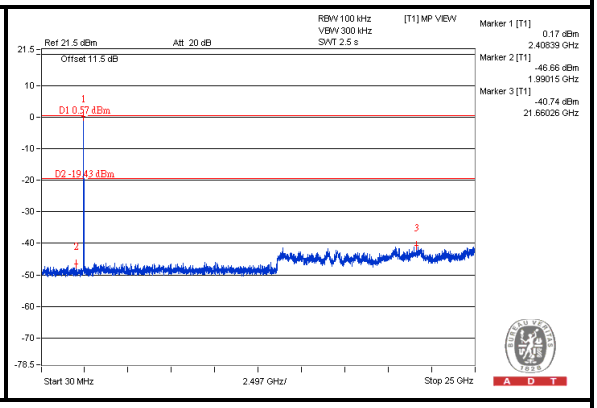
CH 11 Band edge



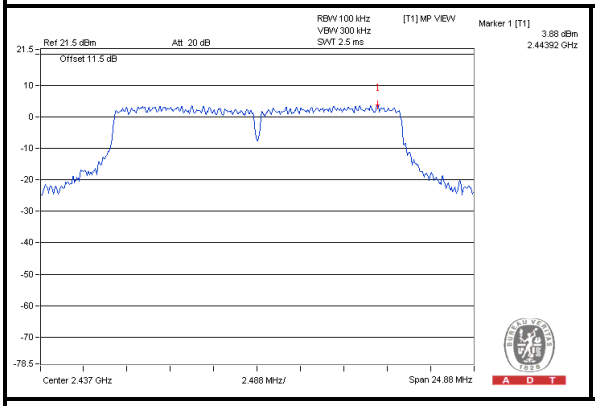
For Chain (1): 802.11g, 2Tx

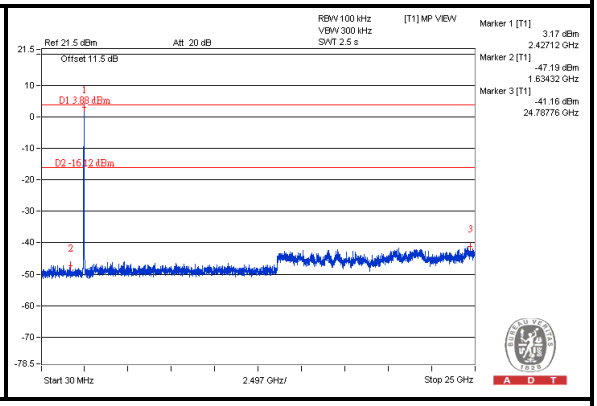
CH 1



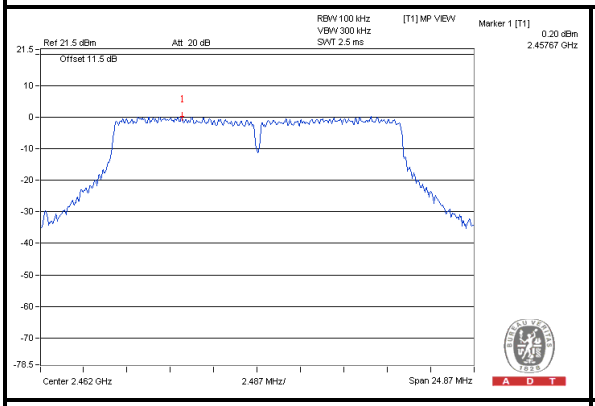


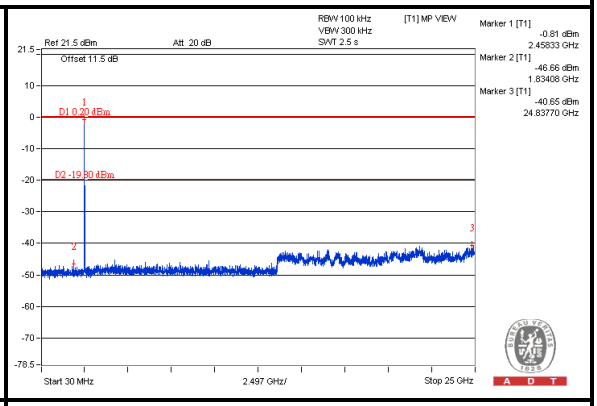
CH 6



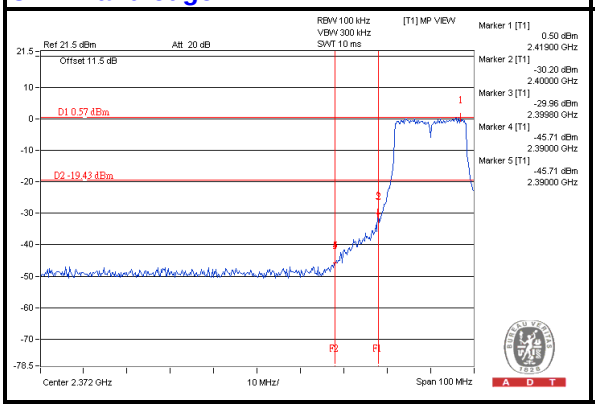


CH 11

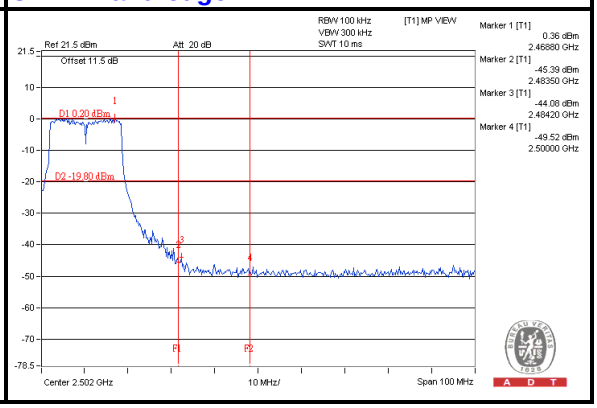




CH 1 Band edge

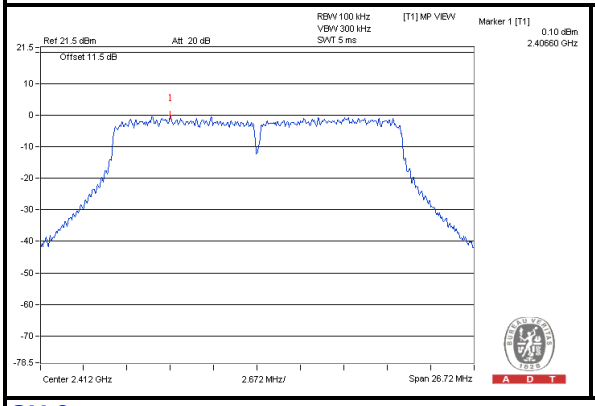


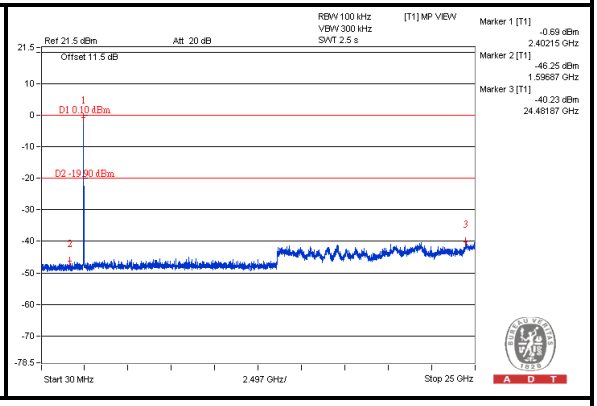
CH 11 Band edge



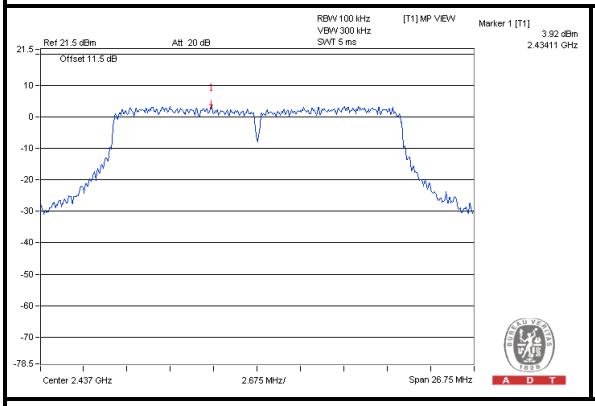
For Chain (0): 802.11n(HT20), 2Tx

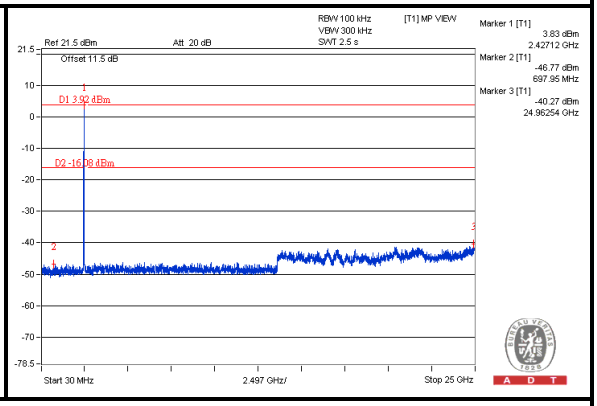
CH 1



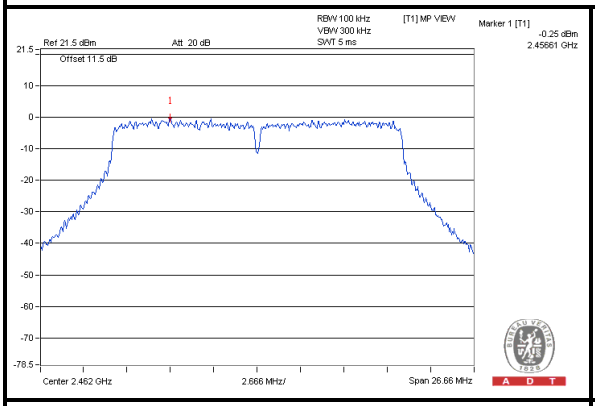


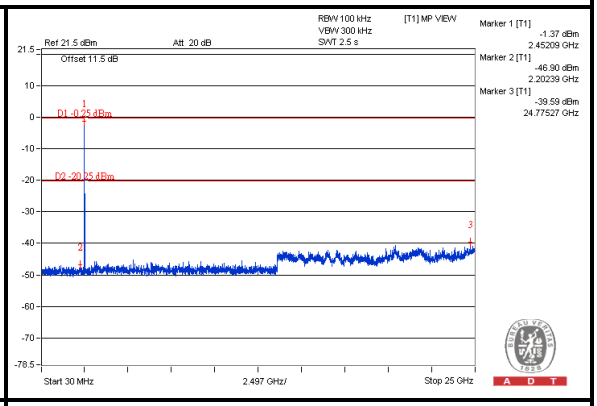
CH 6



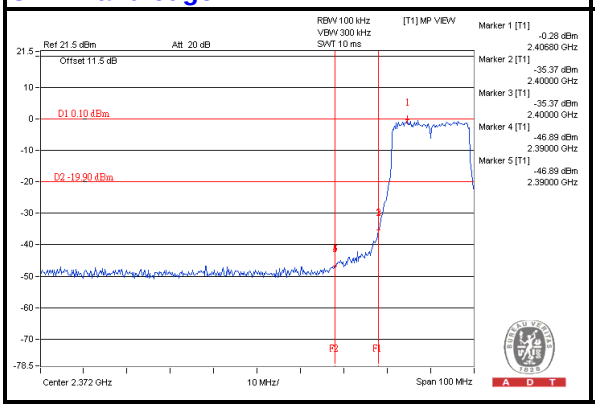


CH 11

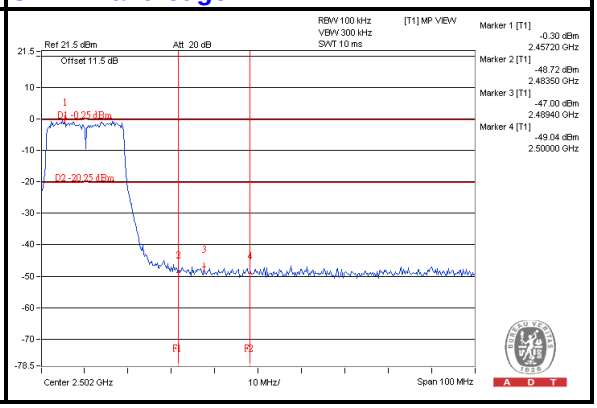




CH 1 Band edge

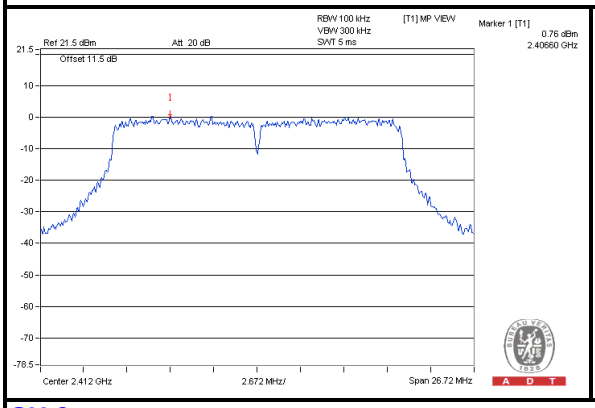


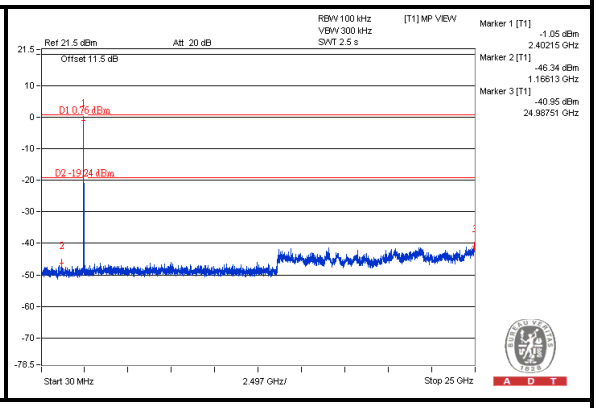
CH 11 Band edge



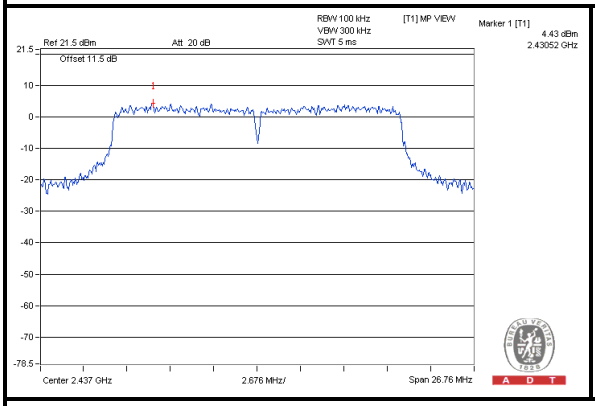
For Chain (1): 802.11n(HT20), 2Tx

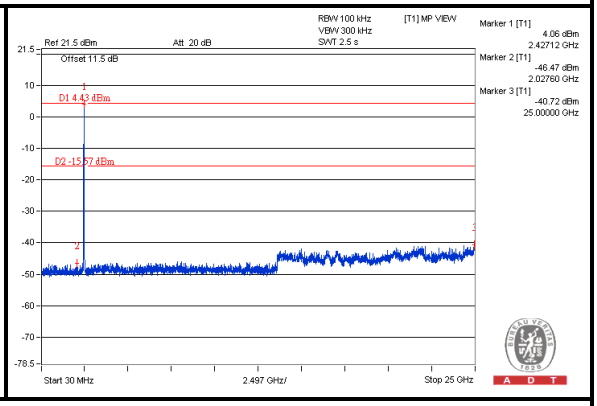
CH 1



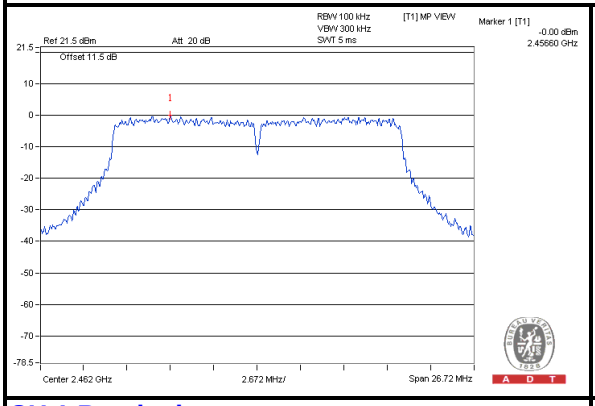


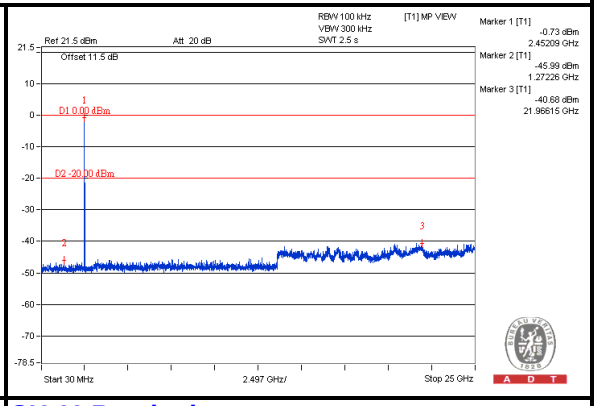
CH 6



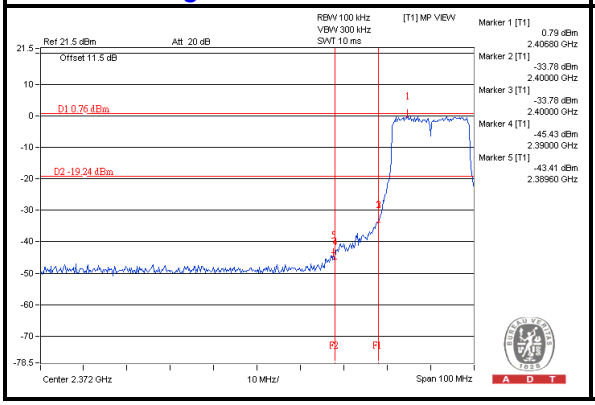


CH 11

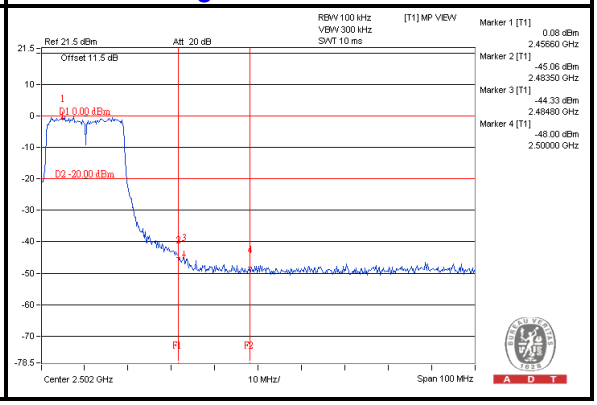




CH 1 Band edge

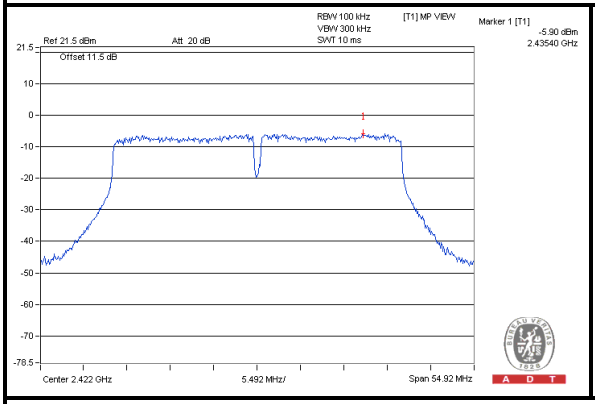


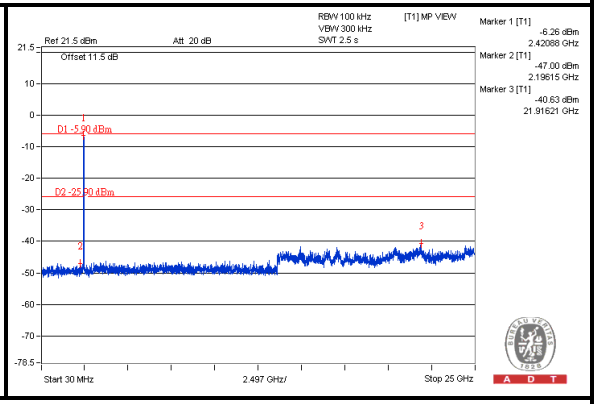
CH 11 Band edge



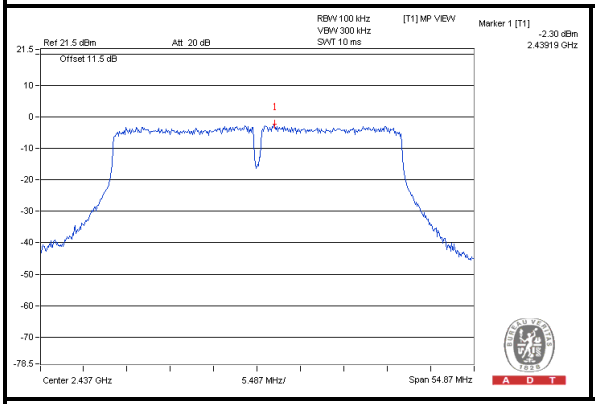
For Chain (0): 802.11n(HT40), 2Tx

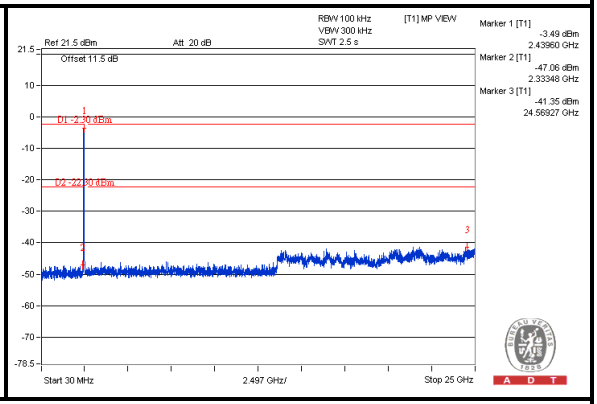
CH 3



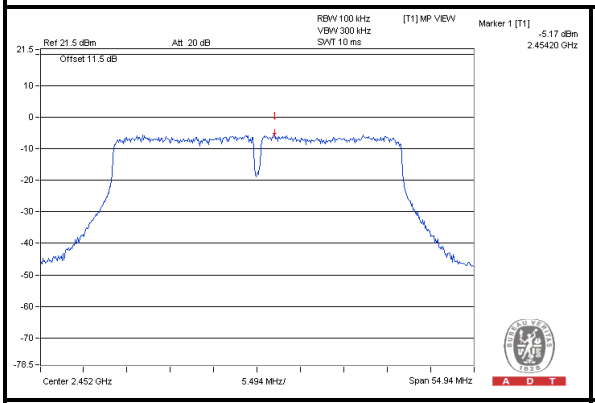


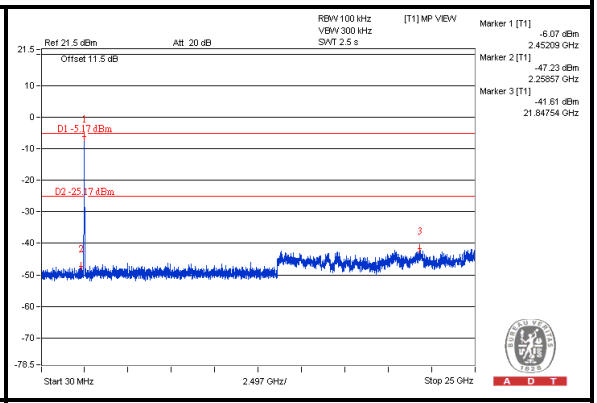
CH 6



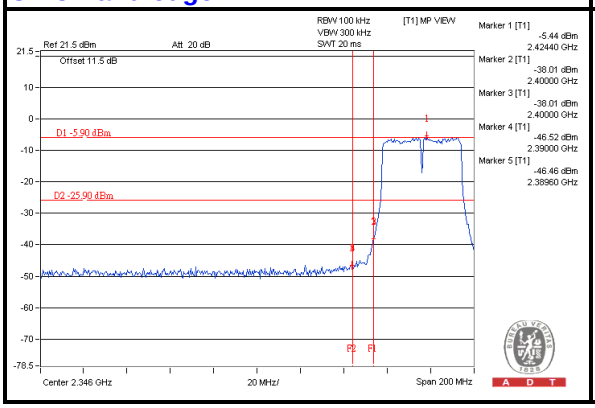


CH 9

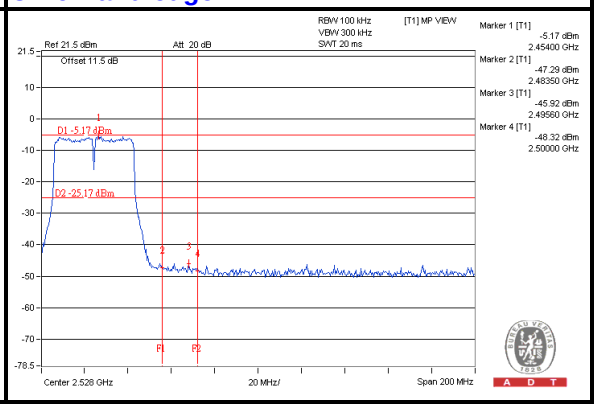




CH 3 Band edge

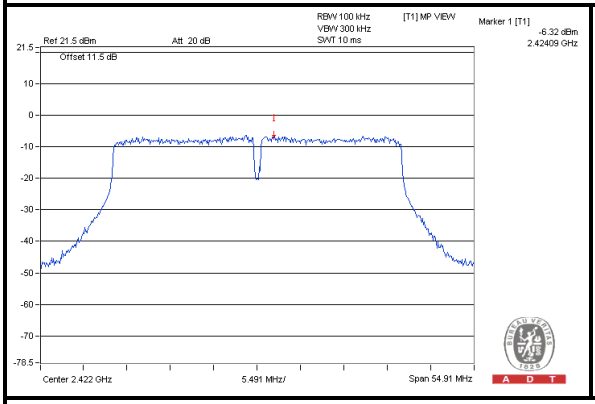


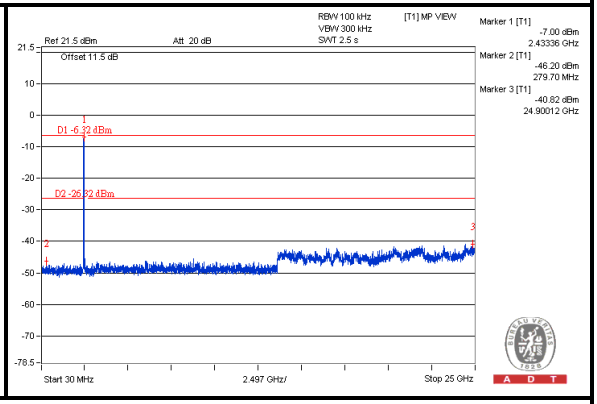
CH 9 Band edge



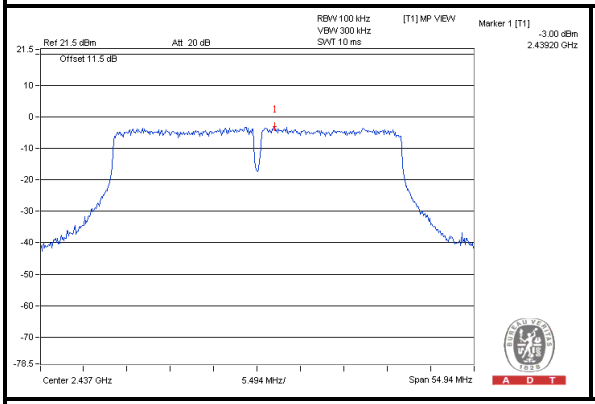
For Chain (1): 802.11n(HT40), 2Tx

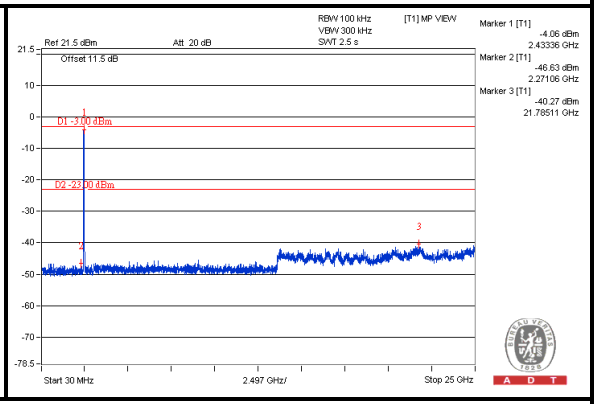
CH 3



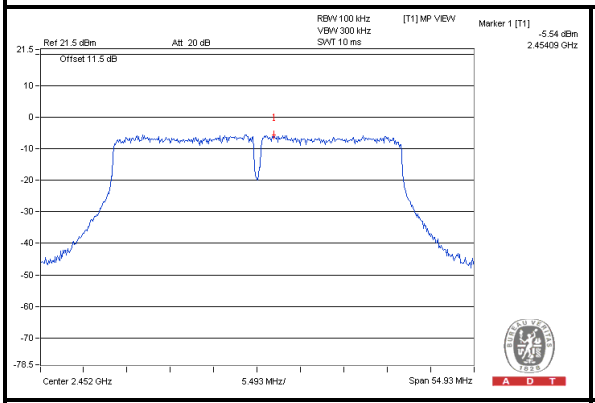


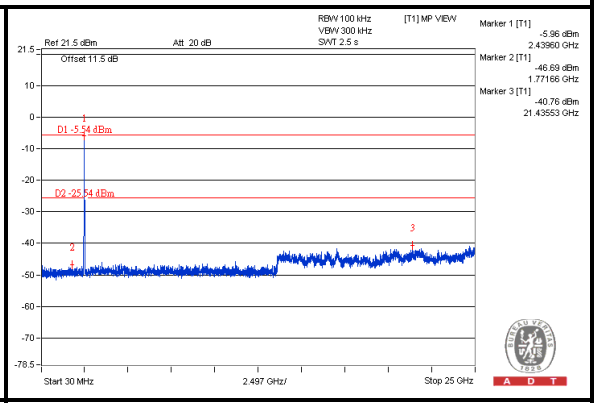
CH 6



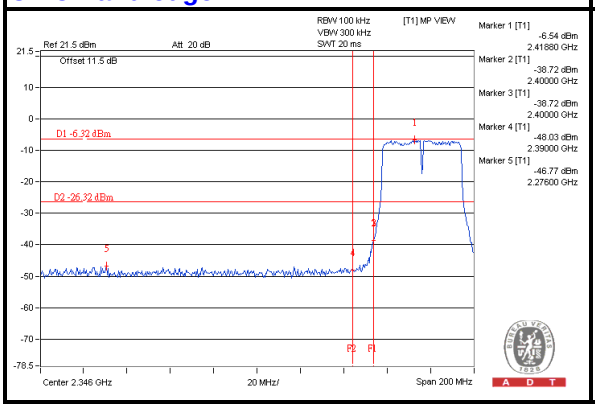


CH 9

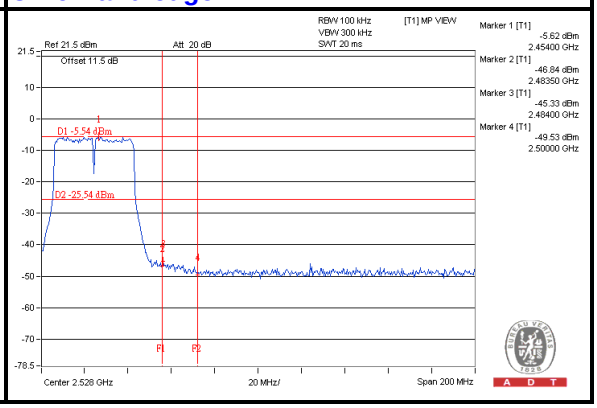




CH 3 Band edge

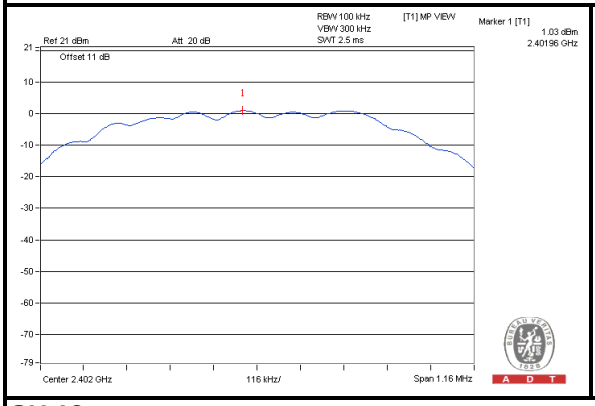


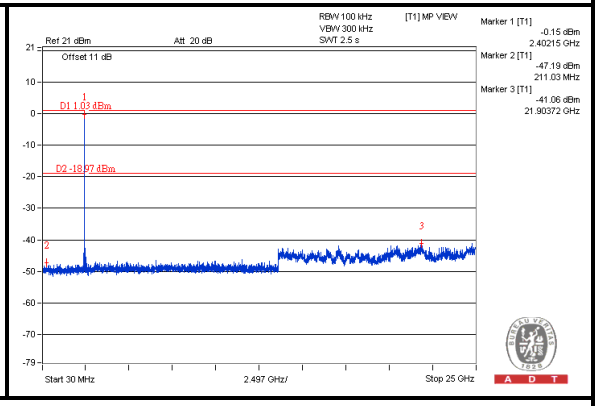
CH 9 Band edge



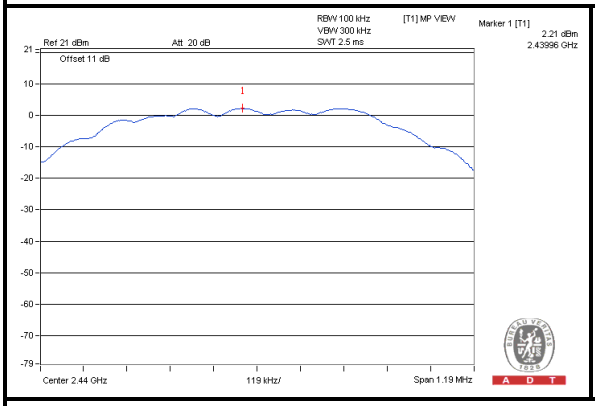
BT_LE-GFSK

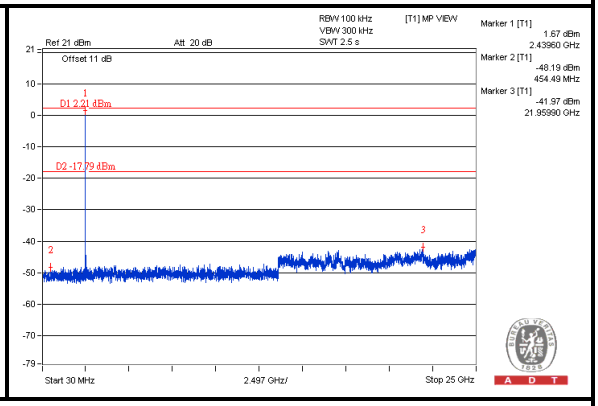
CH 0



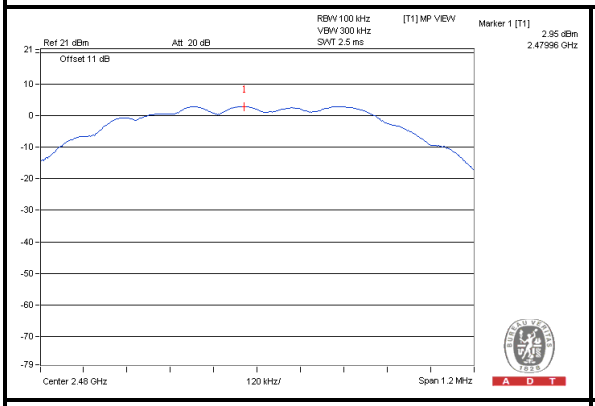


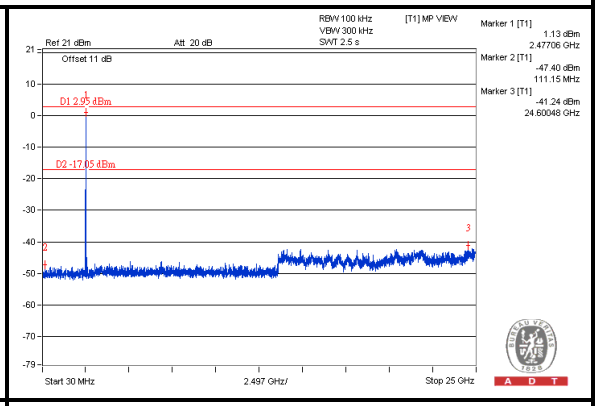
CH 19



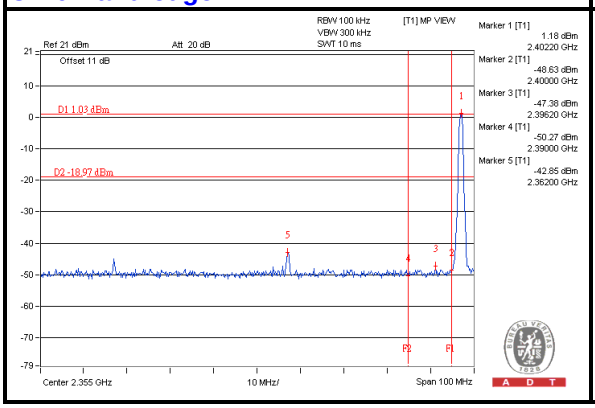


CH 39

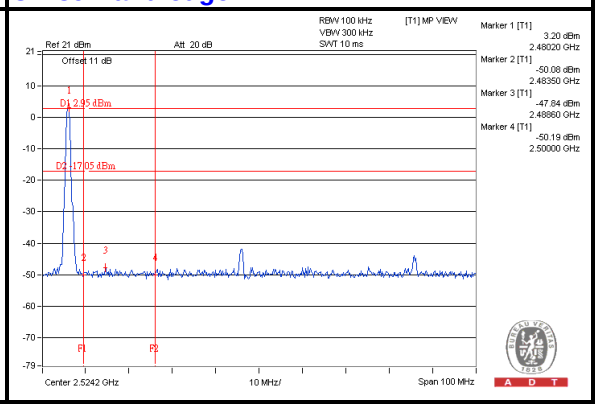




CH 0 Band edge



CH 39 Band edge



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 (dBμV)	
	Quasi-peak	Average
0.15-0.5 0.5-5 5-30	66 to 56 56 60	56 to 46 46 50

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

5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS 30	100375	Mar. 08, 2013	Mar. 07, 2014
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK8127	8127-522	Sep. 05, 2013	Sep. 04, 2014
Line-Impedance Stabilization Network (for Peripheral)	ENV216	100072	June 06, 2013	June 05, 2014
RF Cable (JYEBAO)	5DFB	COCCAB-001	Mar. 11, 2013	Mar. 10, 2014
50 ohms Terminator	50	EMC-03	Sep. 24, 2013	Sep. 23, 2014
Software ADT	BV ADT_Cond_V7.3.7.3	NA	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. C.
3 The VCCI Con C Registration No. is C-3611.
4 Tested Date: Dec. 24, 2013

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.

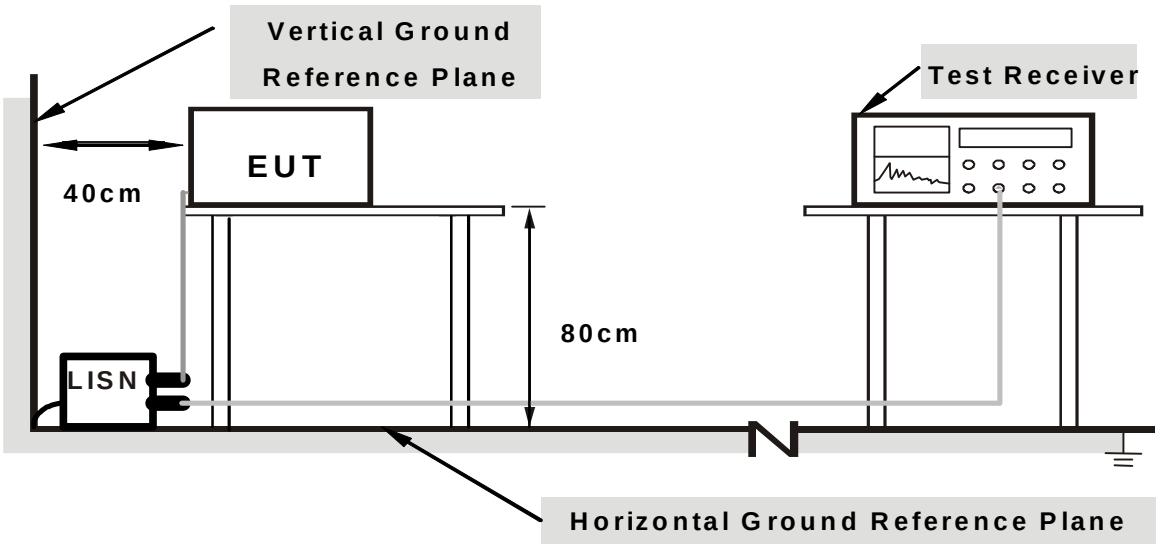
NOTE:

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.

5.1.6 EUT OPERATING CONDITIONS

Same as the 4.1.6

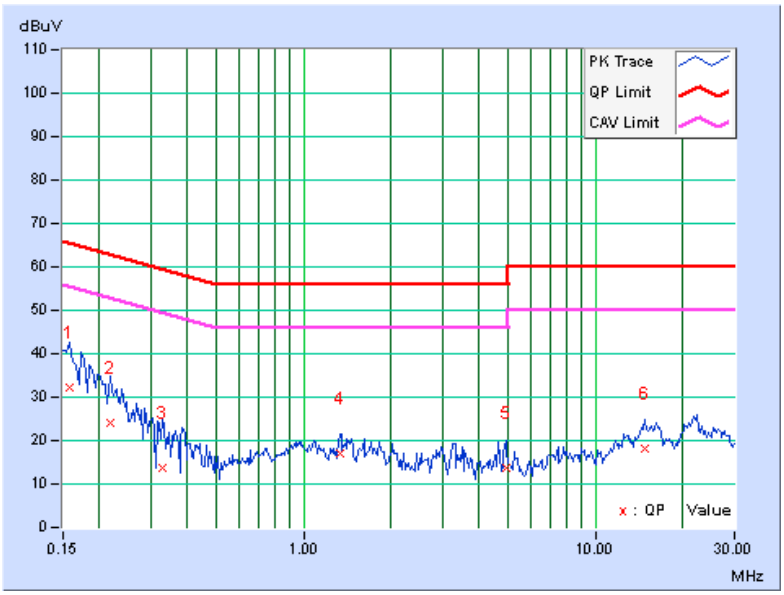
5.1.7 TEST RESULTS

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

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	0.08	32.05	18.53	32.13	18.61	65.58	55.58	-33.45	-36.97
2	0.21641	0.10	24.13	14.92	24.23	15.02	62.96	52.96	-38.72	-37.93
3	0.32969	0.13	13.71	7.19	13.84	7.32	59.46	49.46	-45.62	-42.14
4	**1.33203**	**0.18**	**16.74**	**14.35**	**16.92**	**14.53**	**56.00**	**46.00**	**-39.08**	**-31.47**
5	4.94531	0.31	13.41	6.55	13.72	6.86	56.00	46.00	-42.28	-39.14
6	14.80859	0.61	17.65	11.82	18.26	12.43	60.00	50.00	-41.74	-37.57

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

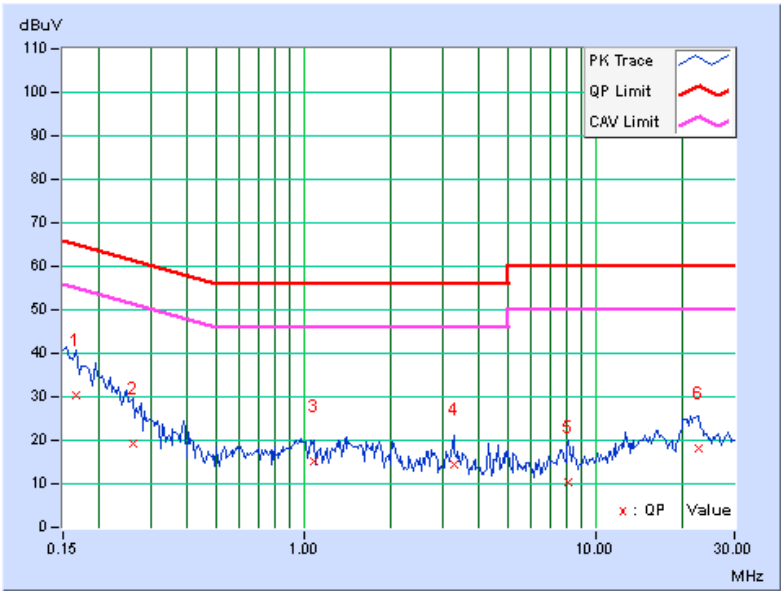


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16562	0.09	30.46	16.46	30.55	16.55	65.18	55.18	-34.62	-38.62
2	0.25938	0.11	19.07	5.27	19.18	5.38	61.45	51.45	-42.27	-46.07
3	1.08203	0.17	14.98	12.11	15.15	12.28	56.00	46.00	-40.85	-33.72
4	3.26953	0.26	14.06	7.00	14.32	7.26	56.00	46.00	-41.68	-38.74
5	8.05078	0.41	9.92	4.51	10.33	4.92	60.00	50.00	-49.67	-45.08
6	22.66406	0.78	17.25	12.42	18.03	13.20	60.00	50.00	-41.97	-36.80

REMARKS:

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



5.2 RADIATED AND BANDEDGE EMISSION MEASUREMENT

5.2.1 LIMITS OF RADIATED AND BANDEDGE EMISSION MEASUREMENT

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

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

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB.

5.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
MXE EMI Receiver Agilent	N9038A	MY51210105	Jan. 29, 2013	Jan. 28, 2014
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-03	Nov. 13, 2013	Nov. 12, 2014
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-360	Mar. 19, 2013	Mar. 18, 2014
RF Cable	NA	CHGCAB_001	Oct. 05, 2013	Oct. 04, 2014
Spectrum Analyzer R&S	FSV40	100964	July 15, 2013	July 14, 2014
Horn_Antenna AISI	AIH.8018	0000320091110	Nov. 18, 2013	Nov. 17, 2014
Pre-Amplifier Agilent	8449B	3008A02578	June 25, 2013	June 24, 2014
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: Jan. 17, 2014

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:

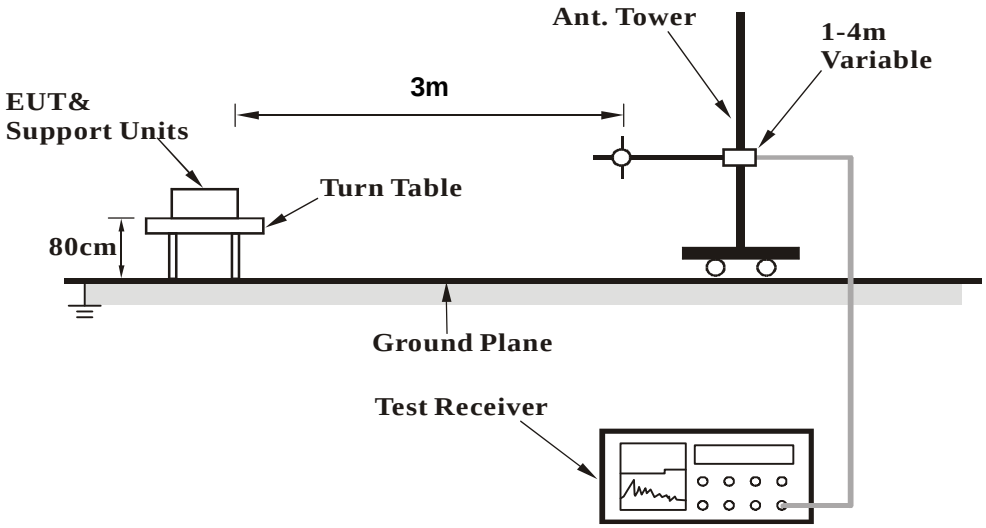
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

5.2.4 DEVIATION FROM TEST STANDARD

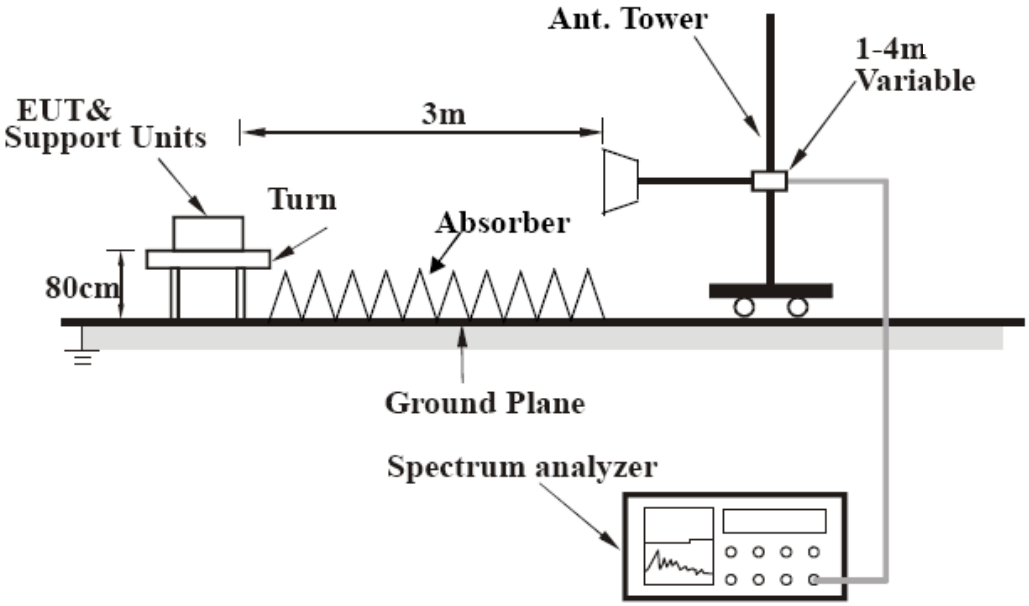
No deviation

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

5.2.7 TEST RESULTS (MODE 1)

BELOW 1GHz WORST-CASE DATA

802.11a, 2Tx

CHANNEL	TX Channel 157	**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	117.88	25.3 QP	43.5	-18.2	1.50 H	3	40.59	-15.32
2	147.42	26.2 QP	43.5	-17.3	1.50 H	205	39.81	-13.63
3	166.04	32.4 QP	43.5	-11.1	1.50 H	151	46.38	-13.96
4	252.37	30.3 QP	46.0	-15.8	1.00 H	207	44.58	-14.33
5	398.36	28.4 QP	46.0	-17.6	1.00 H	172	38.30	-9.92
6	963.24	30.9 QP	54.0	-23.1	2.00 H	118	29.79	1.09
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	117.92	35.3 QP	43.5	-8.2	1.50 V	33	50.63	-15.32
2	146.80	28.2 QP	43.5	-15.3	1.50 V	31	41.76	-13.56
3	249.81	30.6 QP	46.0	-15.4	1.50 V	307	44.93	-14.32
4	337.45	28.1 QP	46.0	-17.9	1.50 V	286	39.50	-11.43
5	399.10	27.4 QP	46.0	-18.6	2.00 V	241	37.31	-9.91
6	960.41	31.7 QP	54.0	-22.3	1.00 V	78	30.69	1.03

REMARKS:

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

ABOVE 1GHz DATA

802.11a, 1Tx

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	5460.00	54.8 PK	74.0	-19.2	1.04 H	104	45.61	9.19
2	5460.00	42.9 AV	54.0	-11.1	1.04 H	104	33.71	9.19
3	*5745.00	114.3 PK			1.40 H	84	104.36	9.94
4	*5745.00	105.9 AV			1.40 H	84	95.96	9.94
5	11490.00	55.0 PK	74.0	-19.0	1.21 H	240	38.42	16.58
6	11490.00	42.7 AV	54.0	-11.3	1.21 H	240	26.12	16.58
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	5460.00	55.1 PK	74.0	-18.9	1.04 V	344	45.91	9.19
2	5460.00	43.0 AV	54.0	-11.0	1.04 V	344	33.81	9.19
3	*5745.00	110.8 PK			1.04 V	344	100.86	9.94
4	*5745.00	102.1 AV			1.04 V	344	92.16	9.94
5	11490.00	59.2 PK	74.0	-14.8	1.47 V	80	42.62	16.58
6	11490.00	48.4 AV	54.0	-5.6	1.47 V	80	31.82	16.58

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	114.8 PK			1.04 H	105	104.79	10.01
2	*5785.00	106.2 AV			1.04 H	105	96.19	10.01
3	11570.00	54.9 PK	74.0	-19.1	1.20 H	254	38.26	16.64
4	11570.00	42.5 AV	54.0	-11.5	1.20 H	254	25.86	16.64
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	110.5 PK			1.00 V	359	100.49	10.01
2	*5785.00	102.2 AV			1.00 V	359	92.19	10.01
3	11570.00	58.8 PK	74.0	-15.2	1.37 V	71	42.16	16.64
4	11570.00	48.0 AV	54.0	-6.0	1.37 V	71	31.36	16.64

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	114.6 PK			1.09 H	96	104.50	10.10
2	*5825.00	106.4 AV			1.09 H	96	96.30	10.10
3	11650.00	54.7 PK	74.0	-19.3	1.23 H	245	37.85	16.85
4	11650.00	42.3 AV	54.0	-11.7	1.23 H	245	25.45	16.85
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	110.2 PK			1.00 V	342	100.10	10.10
2	*5825.00	101.8 AV			1.00 V	342	91.70	10.10
3	11650.00	59.1 PK	74.0	-14.9	1.42 V	75	42.25	16.85
4	11650.00	48.2 AV	54.0	-5.8	1.42 V	75	31.35	16.85

REMARKS:

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

802.11a, 2Tx

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	5460.00	54.2 PK	74.0	-19.8	1.56 H	118	45.01	9.19
2	5460.00	42.3 AV	54.0	-11.7	1.56 H	118	33.11	9.19
3	*5745.00	117.5 PK			1.56 H	118	107.56	9.94
4	*5745.00	108.4 AV			1.56 H	118	98.46	9.94
5	11490.00	55.1 PK	74.0	-18.9	1.17 H	237	38.52	16.58
6	11490.00	43.0 AV	54.0	-11.0	1.17 H	237	26.42	16.58
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	5460.00	54.5 PK	74.0	-19.5	1.05 V	349	45.31	9.19
2	5460.00	42.7 AV	54.0	-11.3	1.05 V	349	33.51	9.19
3	*5745.00	113.4 PK			1.05 V	349	103.46	9.94
4	*5745.00	104.1 AV			1.05 V	349	94.16	9.94
5	11490.00	59.2 PK	74.0	-14.8	1.39 V	74	42.62	16.58
6	11490.00	48.4 AV	54.0	-5.6	1.39 V	74	31.82	16.58

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	117.5 PK			1.51 H	110	107.49	10.01
2	*5785.00	108.2 AV			1.51 H	110	98.19	10.01
3	11570.00	55.0 PK	74.0	-19.0	1.25 H	225	38.36	16.64
4	11570.00	42.6 AV	54.0	-11.4	1.25 H	225	25.96	16.64
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	114.1 PK			1.10 V	359	104.09	10.01
2	*5785.00	104.8 AV			1.10 V	359	94.79	10.01
3	11570.00	58.9 PK	74.0	-15.1	1.32 V	73	42.26	16.64
4	11570.00	47.9 AV	54.0	-6.1	1.32 V	73	31.26	16.64

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	117.7 PK			1.59 H	108	107.60	10.10
2	*5825.00	108.8 AV			1.59 H	108	98.70	10.10
3	11650.00	55.2 PK	74.0	-18.8	1.16 H	233	38.35	16.85
4	11650.00	42.7 AV	54.0	-11.3	1.16 H	233	25.85	16.85
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	113.7 PK			1.00 V	351	103.60	10.10
2	*5825.00	104.8 AV			1.00 V	351	94.70	10.10
3	11650.00	59.0 PK	74.0	-15.0	1.46 V	97	42.15	16.85
4	11650.00	47.9 AV	54.0	-6.1	1.46 V	97	31.05	16.85

REMARKS:

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

802.11ac(VHT20), 2Tx

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	5460.00	54.8 PK	74.0	-19.2	1.51 H	114	45.61	9.19
2	5460.00	42.7 AV	54.0	-11.3	1.51 H	114	33.51	9.19
3	*5745.00	117.2 PK			1.51 H	114	107.26	9.94
4	*5745.00	107.7 AV			1.51 H	114	97.76	9.94
5	11490.00	54.8 PK	74.0	-19.2	1.17 H	244	38.22	16.58
6	11490.00	42.2 AV	54.0	-11.8	1.17 H	244	25.62	16.58
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	5460.00	54.6 PK	74.0	-19.4	1.05 V	360	45.41	9.19
2	5460.00	42.6 AV	54.0	-11.4	1.05 V	360	33.41	9.19
3	*5745.00	113.6 PK			1.05 V	360	103.66	9.94
4	*5745.00	104.0 AV			1.05 V	360	94.06	9.94
5	11490.00	58.6 PK	74.0	-15.4	1.41 V	68	42.02	16.58
6	11490.00	48.1 AV	54.0	-5.9	1.41 V	68	31.52	16.58

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	117.1 PK			1.49 H	119	107.09	10.01
2	*5785.00	107.7 AV			1.49 H	119	97.69	10.01
3	11570.00	55.1 PK	74.0	-18.9	1.25 H	247	38.46	16.64
4	11570.00	42.6 AV	54.0	-11.4	1.25 H	247	25.96	16.64
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	113.1 PK			1.11 V	317	103.09	10.01
2	*5785.00	103.5 AV			1.11 V	317	93.49	10.01
3	11570.00	59.3 PK	74.0	-14.7	1.32 V	57	42.66	16.64
4	**11570.00**	**48.5 AV**	**54.0**	**-5.5**	**1.32 V**	**57**	**31.86**	**16.64**

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	117.8 PK			1.47 H	113	107.70	10.10
2	*5825.00	108.1 AV			1.47 H	113	98.00	10.10
3	11650.00	55.1 PK	74.0	-18.9	1.21 H	232	38.25	16.85
4	11650.00	42.6 AV	54.0	-11.4	1.21 H	232	25.75	16.85
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	113.3 PK			1.10 V	339	103.20	10.10
2	*5825.00	103.7 AV			1.10 V	339	93.60	10.10
3	11650.00	59.2 PK	74.0	-14.8	1.46 V	87	42.35	16.85
4	**11650.00**	**48.5 AV**	**54.0**	**-5.5**	**1.46 V**	**87**	**31.65**	**16.85**

REMARKS:

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

802.11ac(VHT40), 2Tx

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	5460.00	54.6 PK	74.0	-19.4	1.53 H	136	45.41	9.19
2	5460.00	42.9 AV	54.0	-11.1	1.53 H	136	33.71	9.19
3	*5755.00	114.9 PK			1.53 H	136	104.94	9.96
4	*5755.00	105.3 AV			1.53 H	136	95.34	9.96
5	11510.00	55.4 PK	74.0	-18.6	1.23 H	233	38.84	16.56
6	11510.00	42.9 AV	54.0	-11.1	1.23 H	233	26.34	16.56
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	5460.00	54.7 PK	74.0	-19.3	1.16 V	344	45.51	9.19
2	5460.00	42.6 AV	54.0	-11.4	1.16 V	344	33.41	9.19
3	*5755.00	110.7 PK			1.16 V	344	100.74	9.96
4	*5755.00	100.9 AV			1.16 V	344	90.94	9.96
5	11510.00	58.7 PK	74.0	-15.3	1.41 V	85	42.14	16.56
6	11510.00	47.9 AV	54.0	-6.1	1.41 V	85	31.34	16.56

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	115.1 PK			1.51 H	130	105.09	10.01
2	*5795.00	105.7 AV			1.51 H	130	95.69	10.01
3	11590.00	55.7 PK	74.0	-18.3	1.24 H	250	39.03	16.67
4	11590.00	43.1 AV	54.0	-10.9	1.24 H	250	26.43	16.67
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	111.1 PK			1.11 V	330	101.09	10.01
2	*5795.00	101.3 AV			1.11 V	330	91.29	10.01
3	11590.00	59.1 PK	74.0	-14.9	1.49 V	92	42.43	16.67
4	**11590.00**	**48.5 AV**	**54.0**	**-5.5**	**1.49 V**	**92**	**31.83**	**16.67**

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
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.

802.11ac(VHT80), 2Tx

CHANNEL	TX Channel 155	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	5460.00	54.7 PK	74.0	-19.3	1.42 H	85	45.51	9.19
2	5460.00	43.1 AV	54.0	-10.9	1.42 H	85	33.91	9.19
3	*5775.00	111.2 PK			1.42 H	85	101.21	9.99
4	*5775.00	103.1 AV			1.42 H	85	93.11	9.99
5	11550.00	55.0 PK	74.0	-19.0	1.19 H	250	38.38	16.62
6	11550.00	42.6 AV	54.0	-11.4	1.19 H	250	25.98	16.62
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	5460.00	54.5 PK	74.0	-19.5	1.05 V	341	45.31	9.19
2	5460.00	42.4 AV	54.0	-11.6	1.05 V	341	33.21	9.19
3	*5775.00	106.7 PK			1.05 V	341	96.71	9.99
4	*5775.00	98.8 AV			1.05 V	341	88.81	9.99
5	11550.00	59.2 PK	74.0	-14.8	1.32 V	82	42.58	16.62
6	11550.00	48.4 AV	54.0	-5.6	1.32 V	82	31.78	16.62

REMARKS:

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

5.2.8 TEST RESULTS (MODE 2)

BELOW 1GHz WORST-CASE DATA

802.11a, 2Tx

CHANNEL	TX Channel 157	**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	165.95	31.4 QP	43.5	-12.1	1.50 H	333	45.37	-13.95
2	199.17	32.8 QP	43.5	-10.7	1.00 H	318	49.26	-16.48
3	232.39	35.0 QP	46.0	-11.0	1.50 H	323	50.61	-15.59
4	254.94	34.0 QP	46.0	-12.0	1.00 H	193	48.26	-14.29
5	398.41	28.8 QP	46.0	-17.2	1.00 H	162	38.69	-9.92
6	599.97	30.0 QP	46.0	-16.0	1.50 H	114	35.14	-5.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	117.83	34.9 QP	43.5	-8.6	1.00 V	360	50.24	-15.32
2	141.31	33.2 QP	43.5	-10.3	1.00 V	71	46.87	-13.65
3	245.92	31.0 QP	46.0	-15.0	1.50 V	305	45.59	-14.61
4	256.64	32.7 QP	46.0	-13.3	2.00 V	315	46.87	-14.21
5	400.36	25.2 QP	46.0	-20.8	1.50 V	266	35.13	-9.91
6	600.02	26.5 QP	46.0	-19.5	1.00 V	227	31.59	-5.10

REMARKS:

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

ABOVE 1GHz DATA

802.11a, 1Tx

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	5460.00	54.3 PK	74.0	-19.7	1.65 H	96	45.11	9.19
2	5460.00	42.1 AV	54.0	-11.9	1.65 H	96	32.91	9.19
3	*5745.00	104.1 PK			1.65 H	96	94.16	9.94
4	*5745.00	94.0 AV			1.65 H	96	84.06	9.94
5	11490.00	53.3 PK	74.0	-20.7	1.24 H	241	36.72	16.58
6	11490.00	41.5 AV	54.0	-12.5	1.24 H	241	24.92	16.58
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	5460.00	55.0 PK	74.0	-19.0	1.11 V	103	45.81	9.19
2	5460.00	42.9 AV	54.0	-11.1	1.11 V	103	33.71	9.19
3	*5745.00	116.5 PK			1.11 V	103	106.56	9.94
4	*5745.00	106.7 AV			1.11 V	103	96.76	9.94
5	11490.00	57.4 PK	74.0	-16.6	1.51 V	287	40.82	16.58
6	11490.00	46.8 AV	54.0	-7.2	1.51 V	287	30.22	16.58

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	103.6 PK			1.58 H	110	93.59	10.01
2	*5785.00	93.6 AV			1.58 H	110	83.59	10.01
3	11570.00	52.6 PK	74.0	-21.4	1.19 H	225	35.96	16.64
4	11570.00	40.7 AV	54.0	-13.3	1.19 H	225	24.06	16.64
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	115.5 PK			1.11 V	81	105.49	10.01
2	*5785.00	106.0 AV			1.11 V	81	95.99	10.01
3	11570.00	56.8 PK	74.0	-17.2	1.47 V	278	40.16	16.64
4	11570.00	46.3 AV	54.0	-7.7	1.47 V	278	29.66	16.64

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	104.4 PK			1.58 H	84	94.30	10.10
2	*5825.00	94.5 AV			1.58 H	84	84.40	10.10
3	11650.00	53.6 PK	74.0	-20.4	1.27 H	243	36.75	16.85
4	11650.00	42.0 AV	54.0	-12.0	1.27 H	243	25.15	16.85
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	115.1 PK			1.11 V	99	105.00	10.10
2	*5825.00	105.7 AV			1.11 V	99	95.60	10.10
3	11650.00	57.4 PK	74.0	-16.6	1.49 V	292	40.55	16.85
4	11650.00	46.5 AV	54.0	-7.5	1.49 V	292	29.65	16.85

REMARKS:

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

802.11a, 2Tx

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	5460.00	54.2 PK	74.0	-19.8	1.08 H	347	45.01	9.19
2	5460.00	42.3 AV	54.0	-11.7	1.08 H	347	33.11	9.19
3	*5745.00	103.8 PK			1.08 H	347	93.86	9.94
4	*5745.00	93.9 AV			1.08 H	347	83.96	9.94
5	11490.00	52.7 PK	74.0	-21.3	1.22 H	223	36.12	16.58
6	11490.00	41.5 AV	54.0	-12.5	1.22 H	223	24.92	16.58
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	5460.00	54.3 PK	74.0	-19.7	1.11 V	101	45.11	9.19
2	5460.00	42.5 AV	54.0	-11.5	1.11 V	101	33.31	9.19
3	*5745.00	120.5 PK			1.11 V	101	110.56	9.94
4	*5745.00	110.8 AV			1.11 V	101	100.86	9.94
5	11490.00	57.0 PK	74.0	-17.0	1.54 V	288	40.42	16.58
6	11490.00	46.2 AV	54.0	-7.8	1.54 V	288	29.62	16.58

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	103.3 PK			1.03 H	338	93.29	10.01
2	*5785.00	93.3 AV			1.03 H	338	83.29	10.01
3	11570.00	52.9 PK	74.0	-21.1	1.15 H	242	36.26	16.64
4	11570.00	41.1 AV	54.0	-12.9	1.15 H	242	24.46	16.64
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	121.2 PK			1.08 V	74	111.19	10.01
2	*5785.00	111.3 AV			1.08 V	74	101.29	10.01
3	11570.00	56.5 PK	74.0	-17.5	1.58 V	293	39.86	16.64
4	11570.00	45.9 AV	54.0	-8.1	1.58 V	293	29.26	16.64

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	104.3 PK			1.06 H	360	94.20	10.10
2	*5825.00	94.2 AV			1.06 H	360	84.10	10.10
3	11650.00	52.5 PK	74.0	-21.5	1.18 H	254	35.65	16.85
4	11650.00	40.7 AV	54.0	-13.3	1.18 H	254	23.85	16.85
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	120.0 PK			1.08 V	68	109.90	10.10
2	*5825.00	110.4 AV			1.08 V	68	100.30	10.10
3	11650.00	57.1 PK	74.0	-16.9	1.50 V	279	40.25	16.85
4	11650.00	46.4 AV	54.0	-7.6	1.50 V	279	29.55	16.85

REMARKS:

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

802.11ac(VHT20), 2Tx

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	5460.00	54.8 PK	74.0	-19.2	1.51 H	114	45.61	9.19
2	5460.00	42.7 AV	54.0	-11.3	1.51 H	114	33.51	9.19
3	*5745.00	104.4 PK			1.00 H	360	94.46	9.94
4	*5745.00	94.5 AV			1.00 H	360	84.56	9.94
5	11490.00	53.6 PK	74.0	-20.4	1.24 H	204	37.02	16.58
6	11490.00	41.9 AV	54.0	-12.1	1.24 H	204	25.32	16.58
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	5460.00	54.5 PK	74.0	-19.5	1.10 V	59	45.31	9.19
2	5460.00	42.7 AV	54.0	-11.3	1.10 V	59	33.51	9.19
3	*5745.00	120.4 PK			1.10 V	59	110.46	9.94
4	*5745.00	110.6 AV			1.10 V	59	100.66	9.94
5	11490.00	59.2 PK	74.0	-14.8	1.34 V	64	42.62	16.58
6	11490.00	48.4 AV	54.0	-5.6	1.34 V	64	31.82	16.58

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	104.4 PK			1.10 H	349	94.39	10.01
2	*5785.00	94.1 AV			1.10 H	349	84.09	10.01
3	11570.00	52.9 PK	74.0	-21.1	1.08 H	246	36.26	16.64
4	11570.00	41.5 AV	54.0	-12.5	1.08 H	246	24.86	16.64
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	120.3 PK			1.05 V	108	110.29	10.01
2	*5785.00	110.8 AV			1.05 V	108	100.79	10.01
3	11570.00	59.1 PK	74.0	-14.9	1.28 V	69	42.46	16.64
4	11570.00	48.2 AV	54.0	-5.8	1.28 V	69	31.56	16.64

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	103.4 PK			1.00 H	357	93.30	10.10
2	*5825.00	93.4 AV			1.00 H	357	83.30	10.10
3	11650.00	53.1 PK	74.0	-20.9	1.16 H	203	36.25	16.85
4	11650.00	41.2 AV	54.0	-12.8	1.16 H	203	24.35	16.85
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	120.3 PK			1.08 V	91	110.20	10.10
2	*5825.00	110.7 AV			1.08 V	91	100.60	10.10
3	11650.00	58.9 PK	74.0	-15.1	1.29 V	64	42.05	16.85
4	11650.00	48.0 AV	54.0	-6.0	1.29 V	64	31.15	16.85

REMARKS:

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

802.11ac(VHT40), 2Tx

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	5460.00	54.6 PK	74.0	-19.4	1.01 H	358	45.41	9.19
2	5460.00	42.9 AV	54.0	-11.1	1.01 H	358	33.71	9.19
3	*5755.00	99.4 PK			1.01 H	358	89.44	9.96
4	*5755.00	88.5 AV			1.01 H	358	78.54	9.96
5	11510.00	53.5 PK	74.0	-20.5	1.22 H	240	36.94	16.56
6	11510.00	41.5 AV	54.0	-12.5	1.22 H	240	24.94	16.56
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	5460.00	54.8 PK	74.0	-19.2	1.11 V	83	45.61	9.19
2	5460.00	42.6 AV	54.0	-11.4	1.11 V	83	33.41	9.19
3	*5755.00	117.0 PK			1.11 V	83	107.04	9.96
4	*5755.00	107.2 AV			1.11 V	83	97.24	9.96
5	11510.00	58.7 PK	74.0	-15.3	1.43 V	68	42.14	16.56
6	11510.00	48.0 AV	54.0	-6.0	1.43 V	68	31.44	16.56

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	98.5 PK			1.02 H	358	88.49	10.01
2	*5795.00	88.0 AV			1.02 H	358	77.99	10.01
3	11590.00	52.7 PK	74.0	-21.3	1.10 H	240	36.03	16.67
4	11590.00	41.1 AV	54.0	-12.9	1.10 H	240	24.43	16.67
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	116.0 PK			1.00 V	77	105.99	10.01
2	*5795.00	106.6 AV			1.00 V	77	96.59	10.01
3	11590.00	58.4 PK	74.0	-15.6	1.38 V	81	41.73	16.67
4	11590.00	47.6 AV	54.0	-6.4	1.38 V	81	30.93	16.67

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
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.

802.11ac(VHT80), 2Tx

CHANNEL	TX Channel 155	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	54.7 PK	74.0	-19.3	1.01 H	350	45.51	9.19
2	5460.00	43.1 AV	54.0	-10.9	1.01 H	350	33.91	9.19
3	*5775.00	95.8 PK			1.01 H	350	85.81	9.99
4	*5775.00	85.5 AV			1.01 H	350	75.51	9.99
5	11550.00	52.7 PK	74.0	-21.3	1.18 H	225	36.08	16.62
6	11550.00	40.9 AV	54.0	-13.1	1.18 H	225	24.28	16.62
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	5460.00	54.7 PK	74.0	-19.3	1.06 V	296	45.51	9.19
2	5460.00	42.6 AV	54.0	-11.4	1.06 V	296	33.41	9.19
3	*5775.00	113.4 PK			1.06 V	296	103.41	9.99
4	*5775.00	103.4 AV			1.06 V	296	93.41	9.99
5	11550.00	58.4 PK	74.0	-15.6	1.33 V	66	41.78	16.62
6	11550.00	48.1 AV	54.0	-5.9	1.33 V	66	31.48	16.62

REMARKS:

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

5.3 6dB BANDWIDTH MEASUREMENT

5.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

5.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSP 40	100036	Jan. 21, 2013	Jan. 20, 2014

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : Jan. 15, 2014

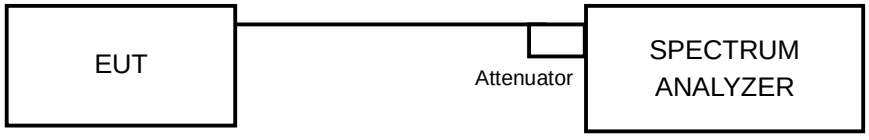
5.3.3 TEST PROCEDURE

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

5.3.4 DEVIATION FROM TEST STANDARD

No deviation

5.3.5 TEST SETUP



5.3.6 EUT OPERATING CONDITIONS

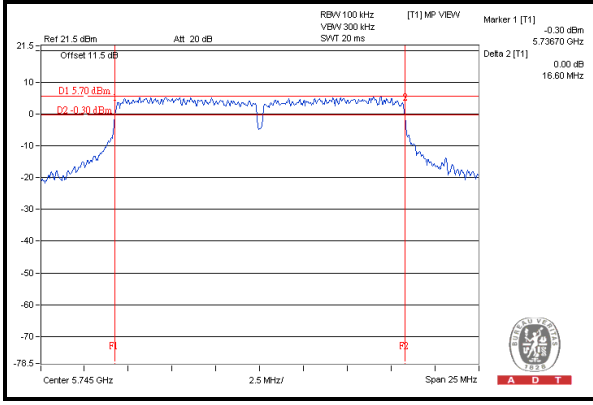
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

5.3.7 TEST RESULTS

802.11a, 1Tx

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	16.60	0.5	PASS
157	5785	16.61	0.5	PASS
165	5825	16.62	0.5	PASS

SPECTRUM PLOT OF WORST VALUE	
802.11a / CH149	



802.11a, 2Tx

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
149	5745	16.59	16.55	0.5	PASS
157	5785	16.62	16.62	0.5	PASS
165	5825	16.61	16.60	0.5	PASS

802.11ac(VHT20), 2Tx

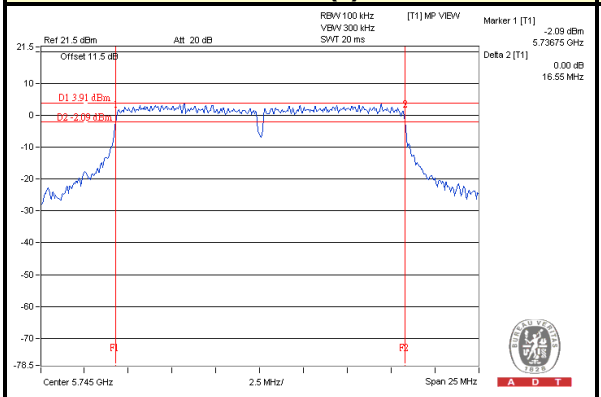
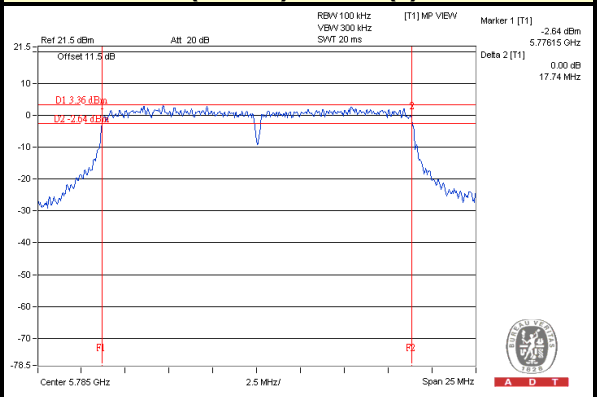
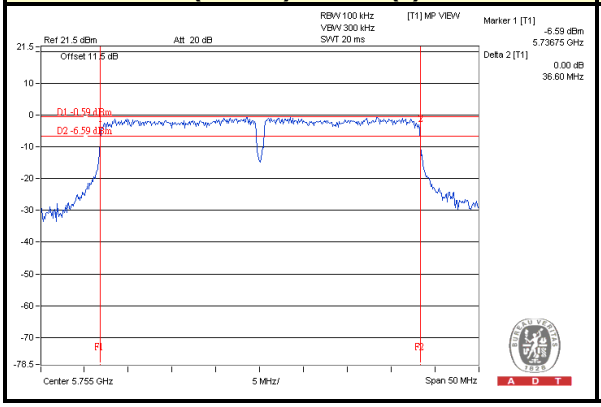
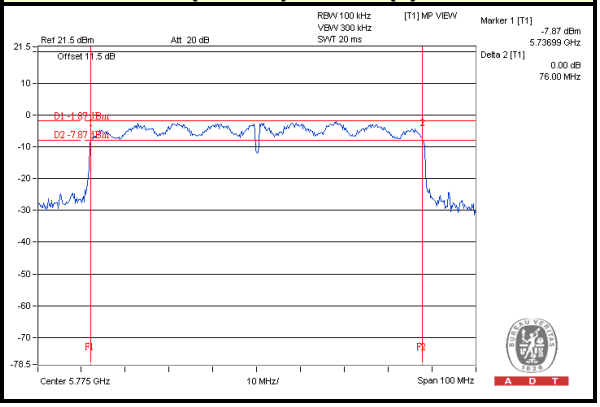
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
149	5745	17.81	17.78	0.5	PASS
157	5785	17.74	17.75	0.5	PASS
165	5825	17.78	17.78	0.5	PASS

802.11ac(VHT40), 2Tx

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
151	5755	36.60	36.60	0.5	PASS
159	5795	36.64	36.64	0.5	PASS

802.11ac (VHT80), 2Tx

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
155	5775	76.10	76.00	0.5	PASS

SPECTRUM PLOT OF WORST VALUE	
802.11a / Chain(1) : CH149	**802.11ac (VHT20) / Chain(0) : CH157**
	
802.11ac (VHT40) / Chain(0) : CH151	**802.11ac (VHT80) / Chain(1) : CH155**
	

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 ≤ 4;

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

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

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

5.4.2 INSTRUMENTS

For 802.11a, 802.11ac(VHT20), 802.11ac(VHT40)

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

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : Jan. 17, 2014

For 802.11ac(VHT80)

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S Spectrum Analyzer	FSP40	100060	May 03, 2013	May 02, 2014

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : Jan. 17, 2014

5.4.3 TEST PROCEDURES

For 802.11a, 802.11ac(VHT20), 802.11ac(VHT40)

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

For 802.11ac(VHT80)

Follow FCC KDB 558074 DTS test procedure:

Measurement Procedure Peak 2

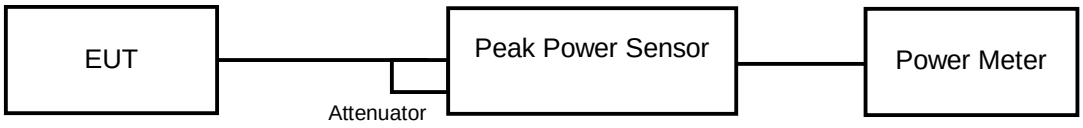
1. Set the RBW = 1 MHz.
2. Set the VBW ≥ 3 RBW.
3. Set the span ≥ 1.5 x DTS bandwidth.
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the spectrum analyzer's integrated band power measurement function with band limits set equal to the DTS bandwidth edges.

5.4.4 DEVIATION FROM TEST STANDARD

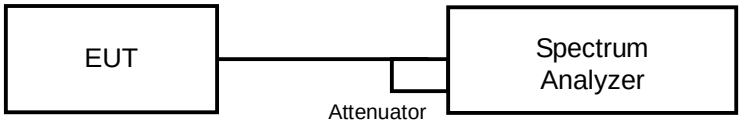
No deviation.

5.4.5 TEST SETUP

For 802.11a, 802.11ac(VHT20), 802.11ac(VHT40)



For 802.11ac(VHT80)



5.4.6 EUT OPERATING CONDITIONS

Same as Item 5.3.6

5.4.7 TEST RESULTS

802.11a, 1Tx

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
149	5745	306.902	24.87	30	PASS
157	5785	301.995	24.80	30	PASS
165	5825	304.089	24.83	30	PASS

802.11a, 2Tx

CHANNEL	FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
149	5745	24.87	24.88	614.512	27.89	30	PASS
157	5785	24.80	25.73	676.106	28.30	30	PASS
165	5825	24.83	24.65	595.832	27.75	30	PASS

802.11ac(VHT20), 2Tx

CHANNEL	FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
149	5745	24.55	24.59	572.842	27.58	27.99	PASS
157	5785	24.61	24.45	567.680	27.54	27.99	PASS
165	5825	24.43	24.80	579.327	27.63	27.99	PASS

NOTE: Directional gain = 5dBi + 10log(2) = 8.01dBi > 6dBi , so the power limit shall be reduced to 30-(8.01-6) = 27.99dBm.

802.11ac(VHT40), 2Tx

CHANNEL	FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
151	5755	24.87	24.55	592.004	27.72	27.99	PASS
159	5795	24.38	24.76	573.383	27.58	27.99	PASS

NOTE: Directional gain = 5dBi + 10log(2) = 8.01dBi > 6dBi , so the power limit shall be reduced to 30-(8.01-6) = 27.99dBm.

802.11ac (VHT80), 2Tx

CHANNEL	FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
155	5775	24.33	24.44	548.990	27.40	27.99	PASS

NOTE: Directional gain = 5dBi + 10log(2) = 8.01dBi > 6dBi , so the power limit shall be reduced to 30-(8.01-6) = 27.99dBm.

5.5 AVERAGE OUTPUT POWER

5.5.1 FOR REFERENCE.

5.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Power Meter	ML2495A	1014008	Apr. 23, 2013	Apr. 22, 2014
Power Sensor	MA2411B	0917122	Apr. 23, 2013	Apr. 22, 2014

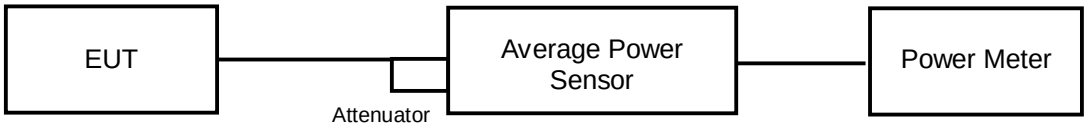
Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : Jan. 15, 2014

5.5.3 TEST PROCEDURES

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

5.5.4 TEST SETUP



5.5.5 EUT OPERATING CONDITIONS

Same as Item 4.3.6

5.5.6 TEST RESULTS

802.11a

CHAN.	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)
149	5745	75.509	18.78
157	5785	73.282	18.65
165	5825	71.614	18.55

802.11a, 2Tx

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
149	5745	18.78	18.58	147.620	21.69
157	5785	18.65	18.62	146.060	21.65
165	5825	18.55	18.32	139.534	21.45

802.11ac(VHT20), 2Tx

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
149	5745	18.31	18.27	134.907	21.30
157	5785	18.41	18.36	137.892	21.40
165	5825	18.26	18.56	138.767	21.42

802.11ac(VHT40), 2Tx

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
151	5755	18.77	18.36	143.885	21.58
159	5795	18.31	18.85	144.500	21.60

802.11ac (VHT80), 2Tx

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
155	5775	18.47	18.33	138.384	21.41

5.6 POWER SPECTRAL DENSITY MEASUREMENT

5.6.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

5.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSP 40	100036	Jan. 21, 2013	Jan. 20, 2014

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : Jan. 15, 2014

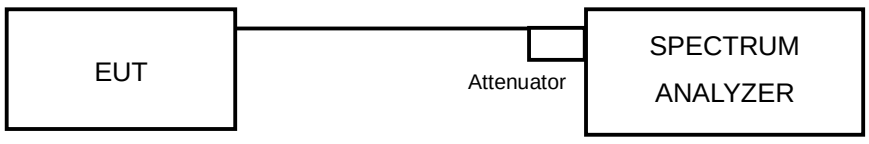
5.6.3 TEST PROCEDURE

1. Set the RBW = 3 kHz, VBW =10 kHz, Detector = peak.
2. Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
3. 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

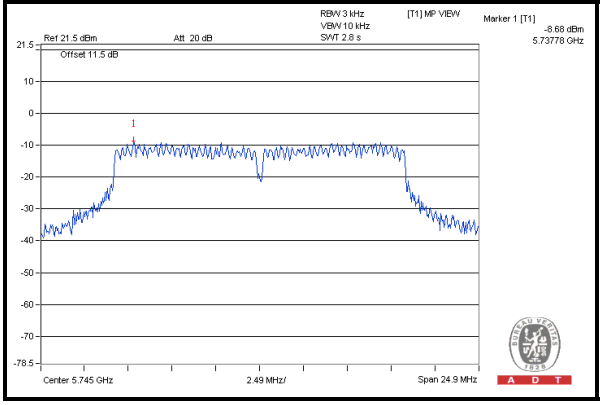
Same as Item 4.3.6

5.6.7 TEST RESULTS

802.11a, 1Tx

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	LIMIT (dBm)	PASS /FAIL
149	5745	-8.68	8	PASS
157	5785	-9.70	8	PASS
165	5825	-9.94	8	PASS

SPECTRUM PLOT OF WORST VALUE	
802.11a / CH149	



802.11a, 2Tx

TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	PASS /FAIL
0	149	5745	-10.31	3.01	-7.30	5.99	PASS
	157	5785	-9.24	3.01	-6.23	5.99	PASS
	165	5825	-11.40	3.01	-8.39	5.99	PASS
1	149	5745	-10.69	3.01	-7.68	5.99	PASS
	157	5785	-10.06	3.01	-7.05	5.99	PASS
	165	5825	-11.42	3.01	-8.41	5.99	PASS

NOTE: 1. Directional gain = 5dBi + 10log(2) = 8.01dBi > 6dBi , so the power density limit shall be reduced to 8-(8.01-6) = 5.99 dBm.

802.11ac(VHT20), 2Tx

TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	PASS /FAIL
0	149	5745	-10.66	3.01	-7.65	5.99	PASS
	157	5785	-9.87	3.01	-6.86	5.99	PASS
	165	5825	-11.37	3.01	-8.36	5.99	PASS
1	149	5745	-10.17	3.01	-7.16	5.99	PASS
	157	5785	-9.06	3.01	-6.05	5.99	PASS
	165	5825	-10.58	3.01	-7.57	5.99	PASS

NOTE: 1. Directional gain = 5dBi + 10log(2) = 8.01dBi > 6dBi , so the power density limit shall be reduced to 8-(8.01-6) = 5.99 dBm.

802.11ac(VHT40), 2Tx

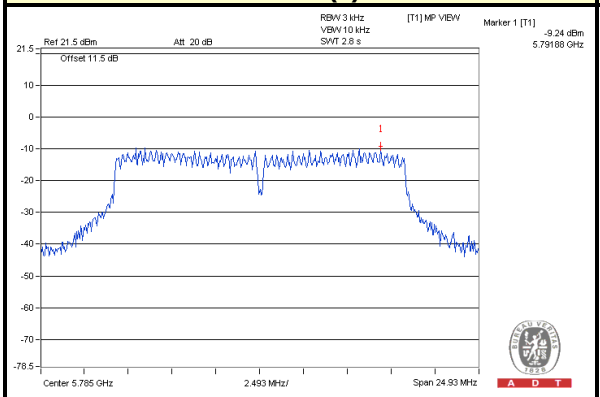
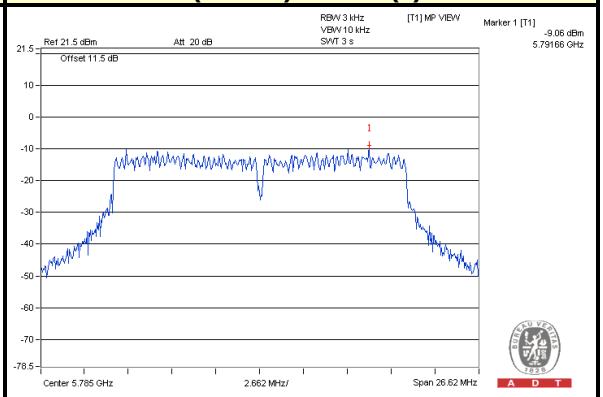
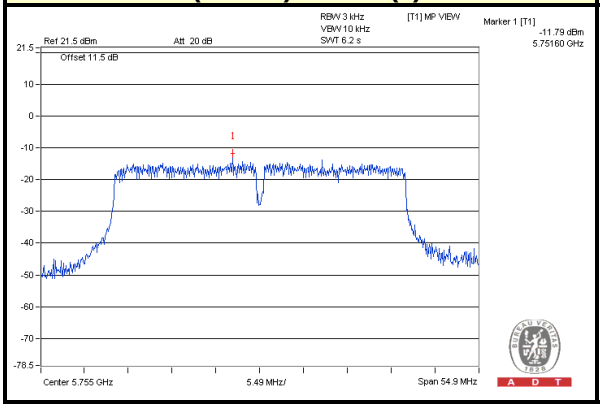
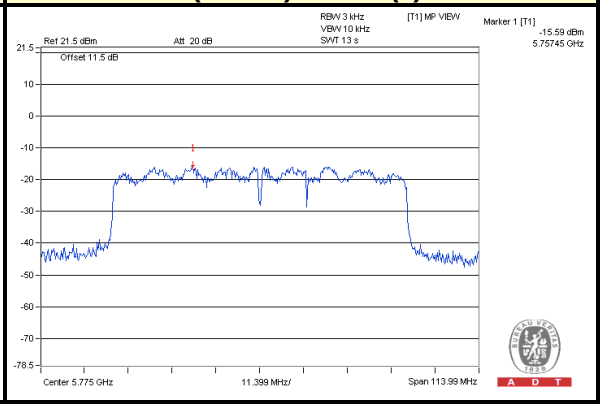
TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	PASS /FAIL
0	151	5755	-11.79	3.01	-8.78	5.99	PASS
	159	5795	-13.62	3.01	-10.61	5.99	PASS
1	151	5755	-13.54	3.01	-10.53	5.99	PASS
	159	5795	-13.26	3.01	-10.25	5.99	PASS

NOTE: 1. Directional gain = 5dBi + 10log(2) = 8.01dBi > 6dBi , so the power density limit shall be reduced to 8-(8.01-6) = 5.99 dBm.

802.11ac(VHT80), 2Tx

TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	PASS /FAIL
0	155	5775	-16.28	3.01	-13.27	5.99	PASS
1	155	5775	-15.59	3.01	-12.58	5.99	PASS

NOTE: 1. Directional gain = 5dBi + 10log(2) = 8.01dBi > 6dBi , so the power density limit shall be reduced to 8-(8.01-6) = 5.99 dBm.

SPECTRUM PLOT OF WORST VALUE	
802.11a / Chain(0) : CH157	**802.11ac (VHT20) / Chain(1) : CH157**
	
802.11ac (VHT40) / Chain(0) : CH151	**802.11ac (VHT80) / Chain(1) : CH155**
	

5.7 CONDUCTED OUT-BAND EMISSION MEASUREMENT

5.7.1 LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT

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

5.7.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSP 40	100036	Jan. 21, 2013	Jan. 20, 2014

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : Jan. 15, 2014

5.7.3 TEST PROCEDURE

Measurement Procedure - Reference Level

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

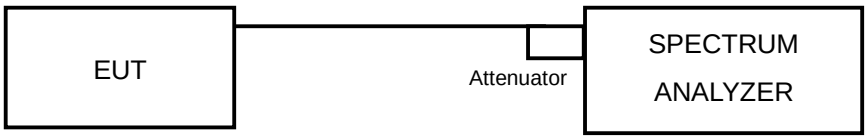
Measurement Procedure –Unwanted Emission Level

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

5.7.4 DEVIATION FROM TEST STANDARD

No deviation

5.7.5 TEST SETUP



5.7.6 EUT OPERATING CONDITION

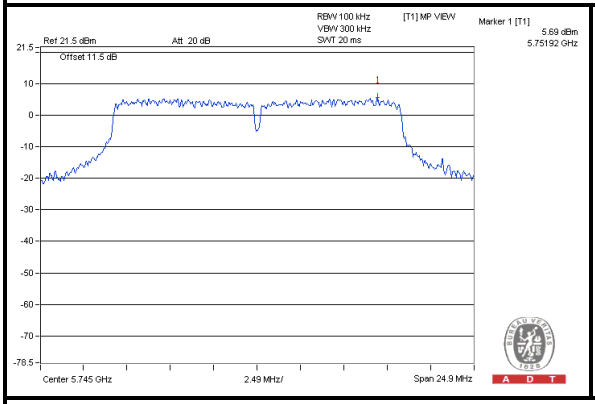
Same as Item 4.3.6

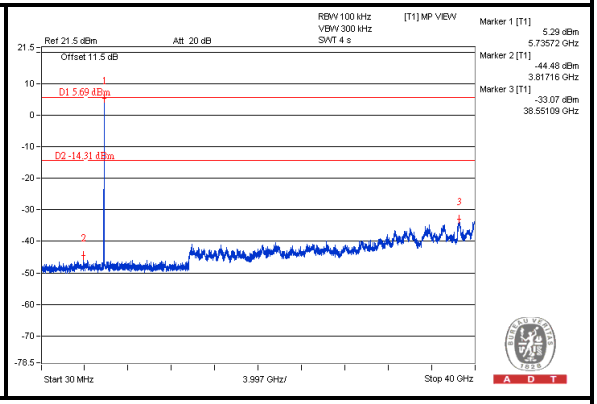
5.7.7 TEST RESULTS

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

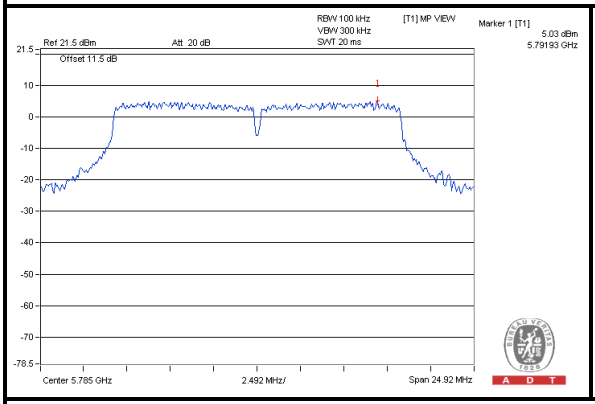
802.11a, 1Tx

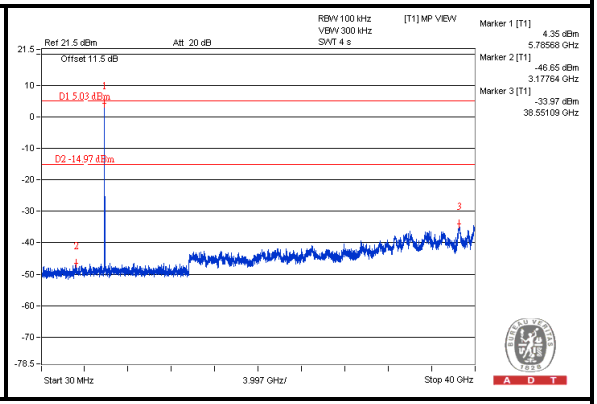
CH 149



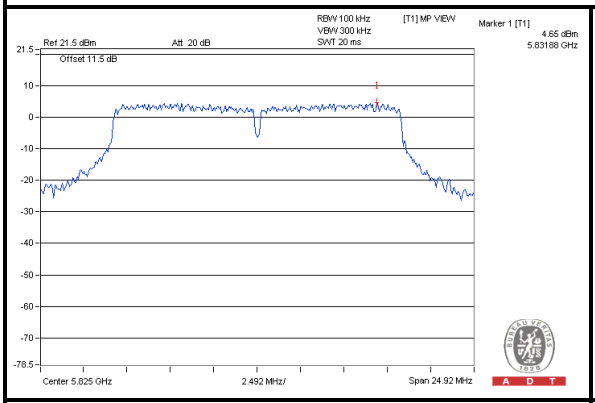


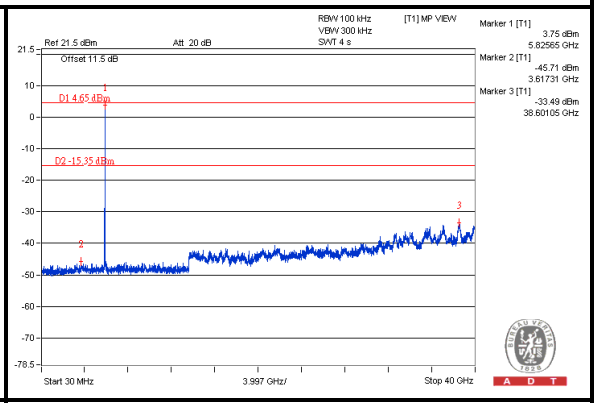
CH 157



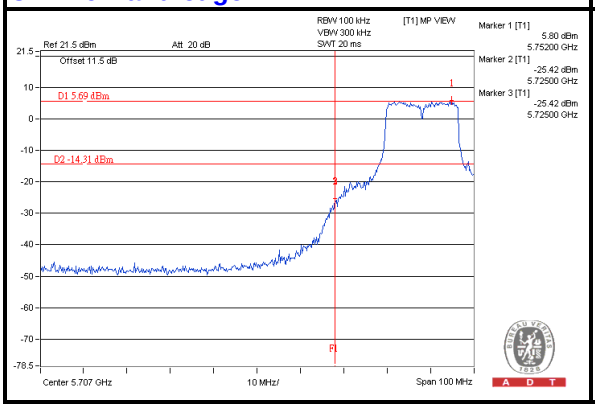


CH 165

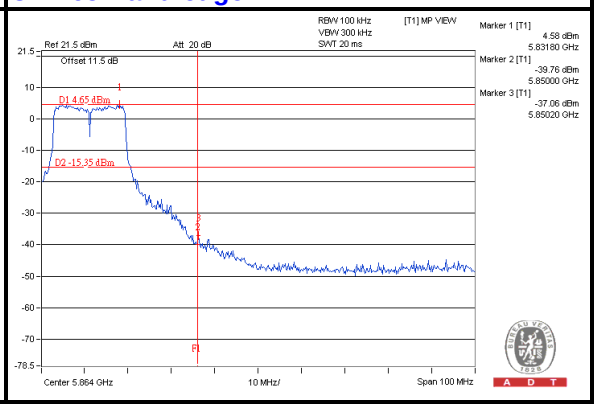




CH 149 Band edge

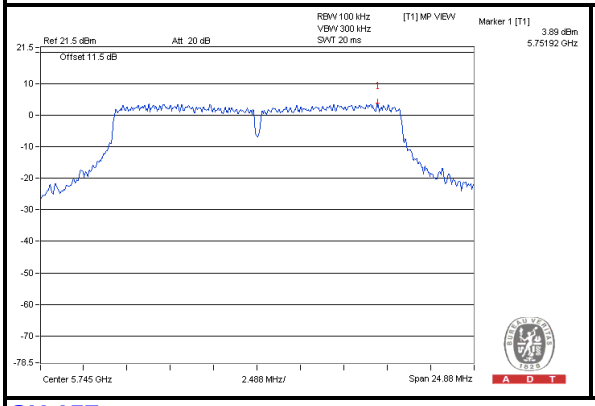


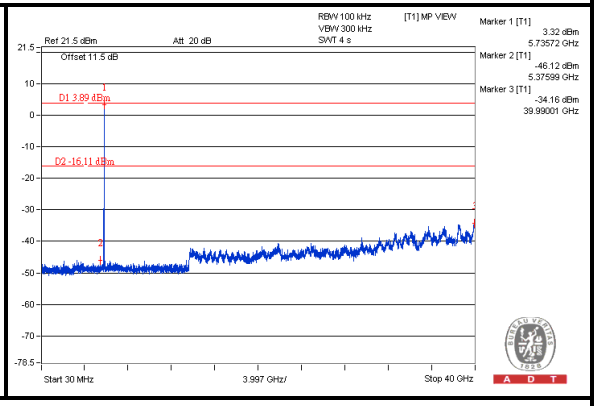
CH 165 Band edge



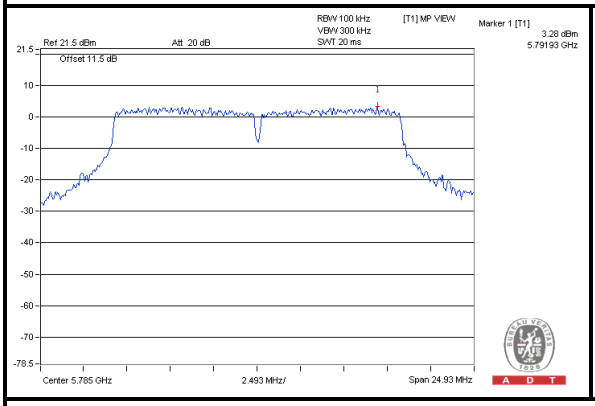
For Chain (0): 802.11a, 2Tx

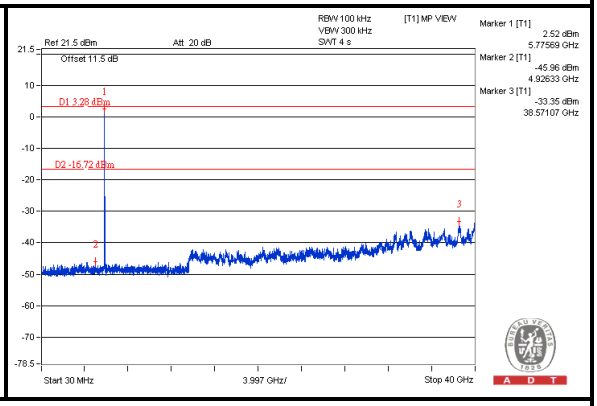
CH 149



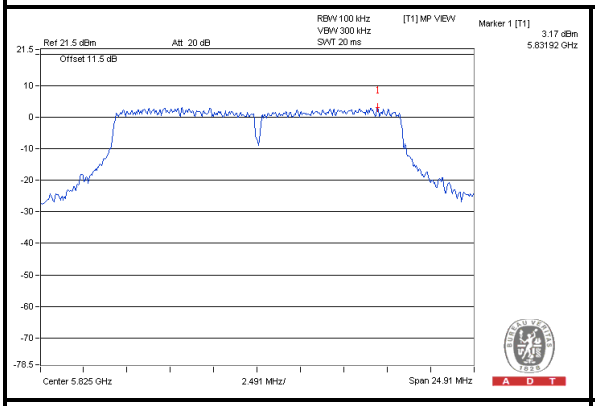


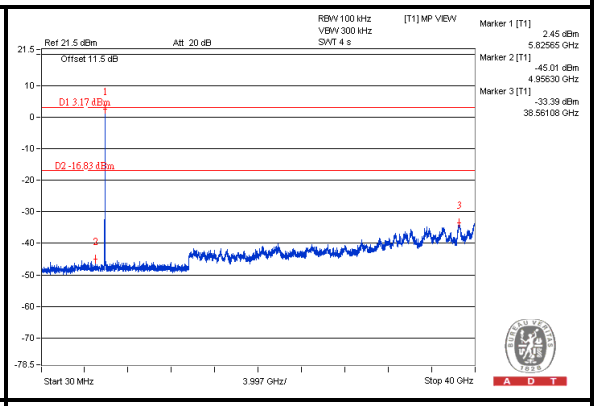
CH 157



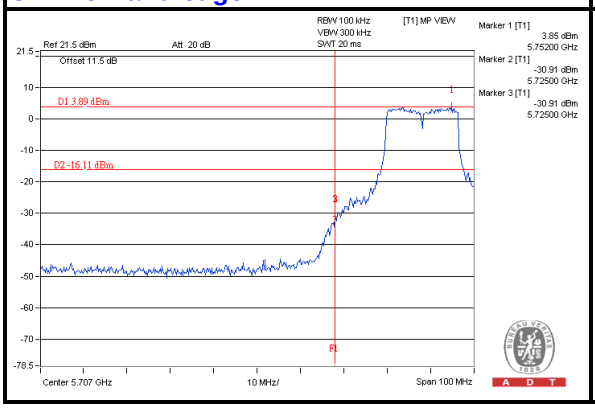


CH 165

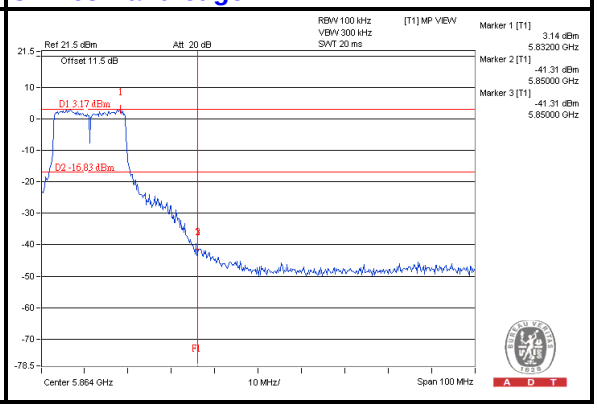




CH 149 Band edge

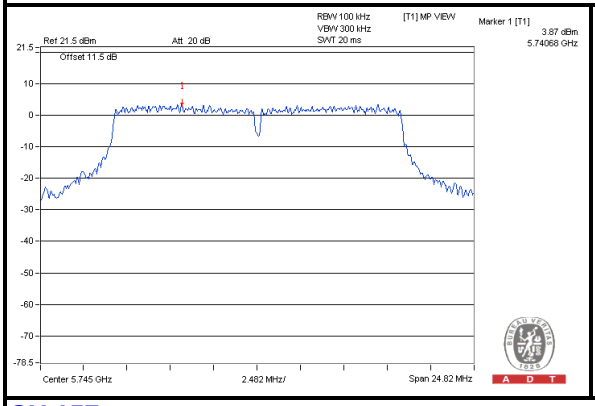


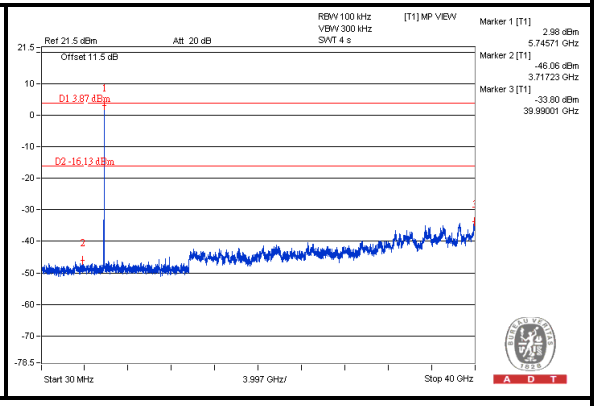
CH 165 Band edge



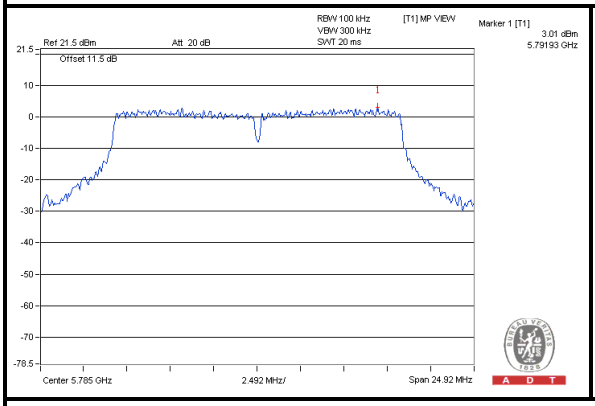
For Chain (1): 802.11a, 2Tx

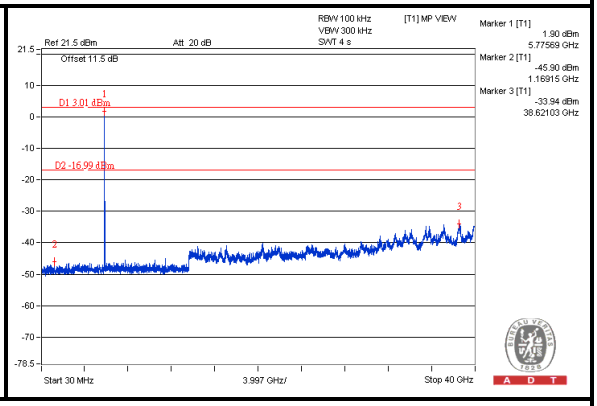
CH 149



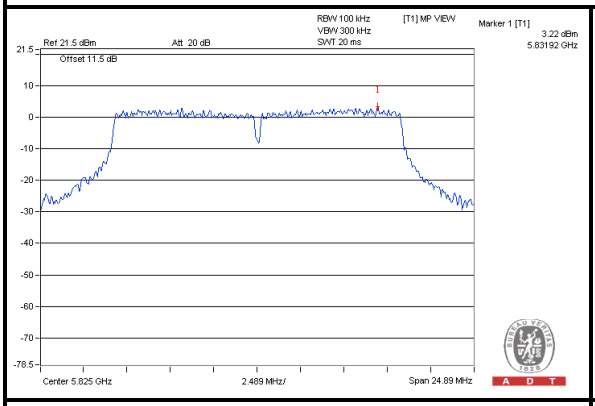


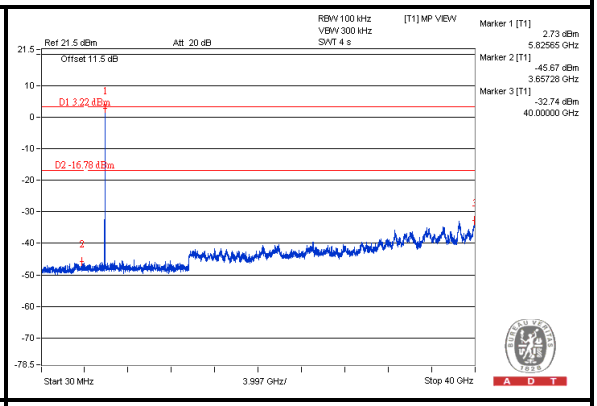
CH 157



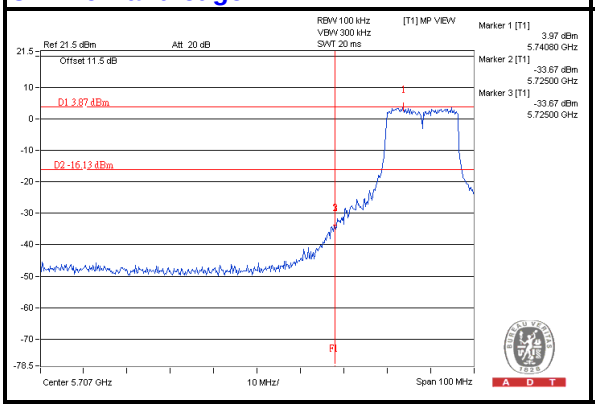


CH 165

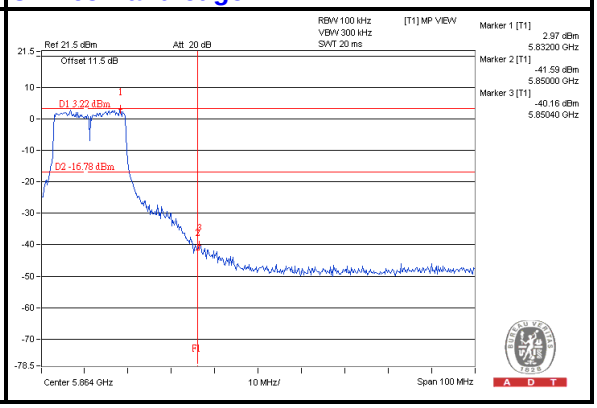




CH 149 Band edge

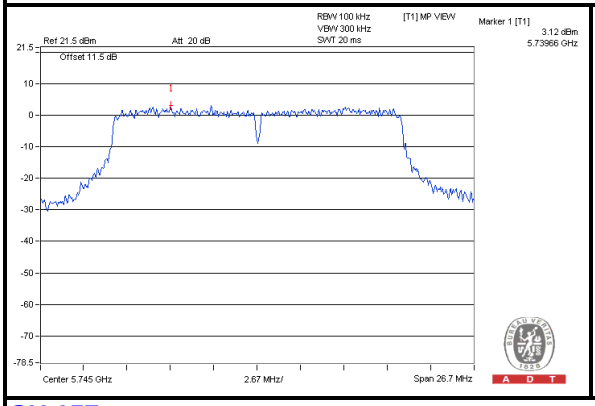


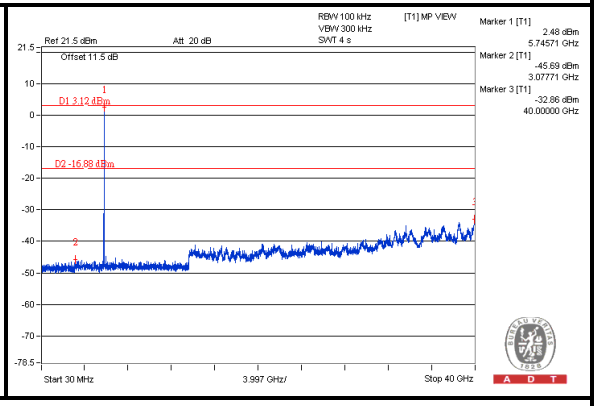
CH 165 Band edge



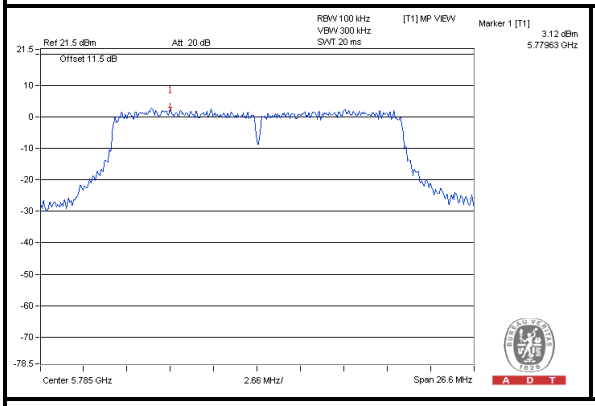
For Chain (0): 802.11ac(VHT20), 2Tx

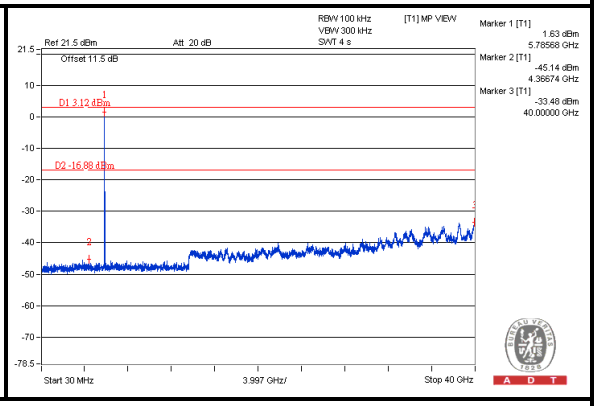
CH 149



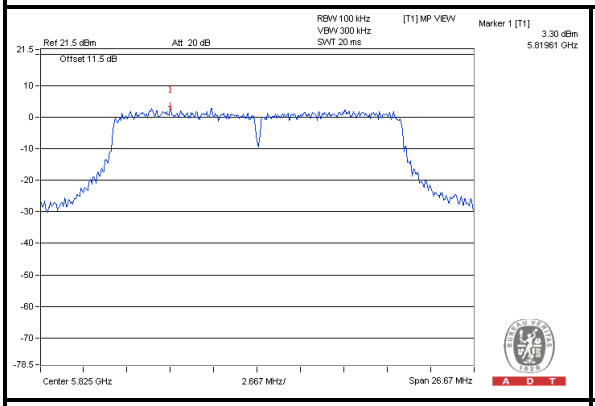


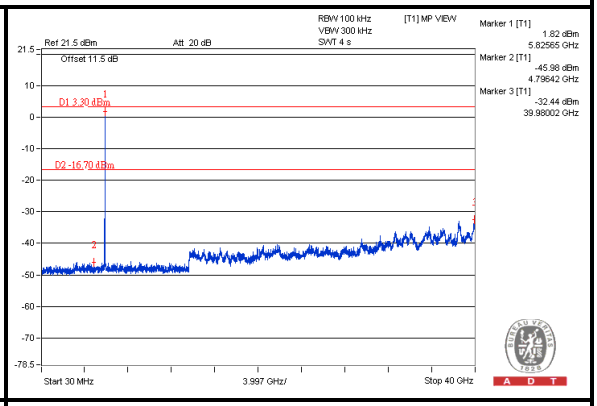
CH 157



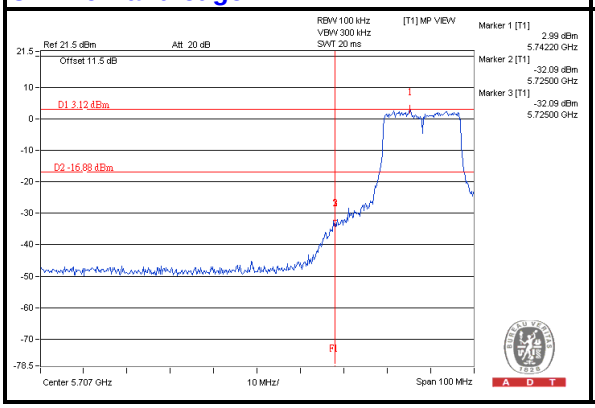


CH 165

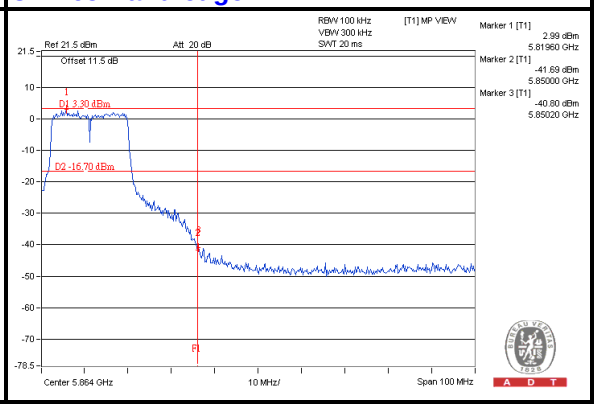




CH 149 Band edge

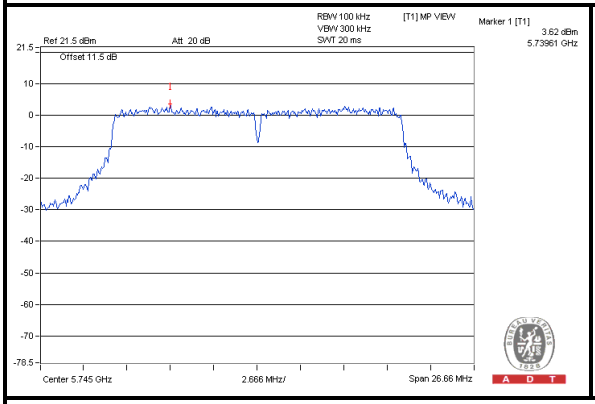


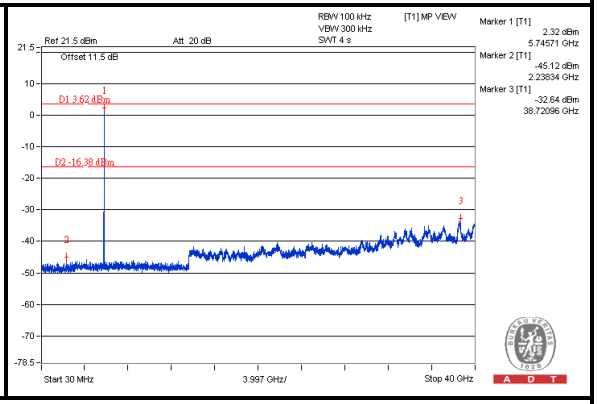
CH 165 Band edge



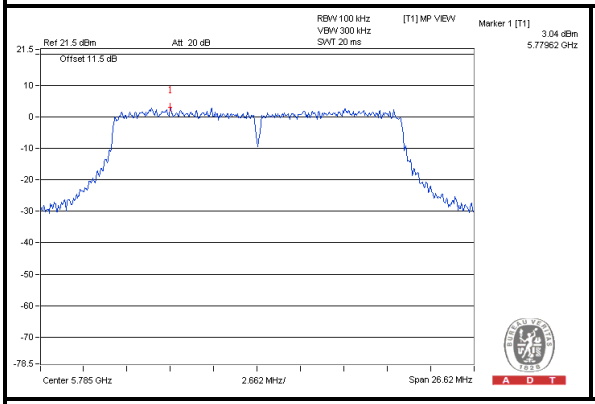
For Chain (1): 802.11ac(VHT20), 2Tx

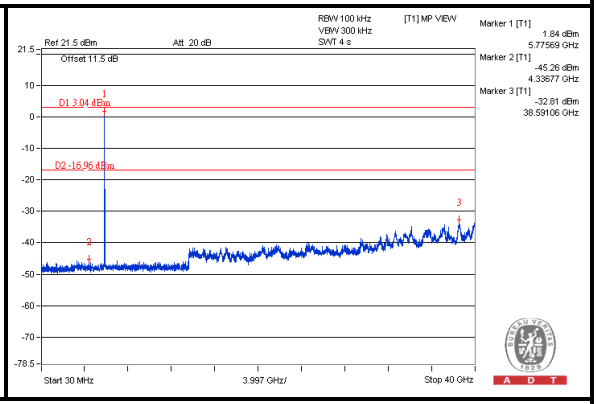
CH 149



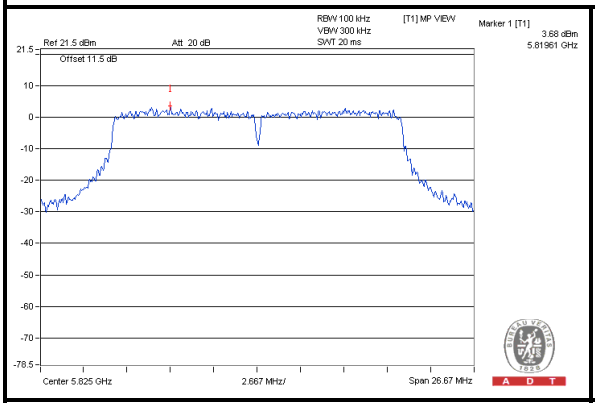


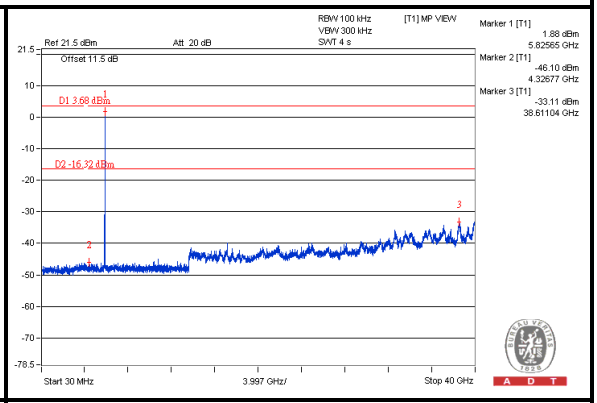
CH 157



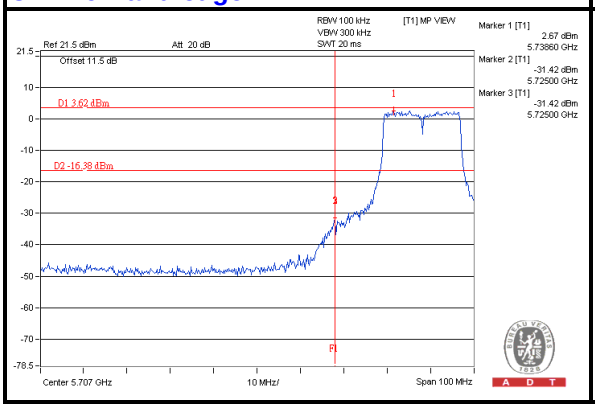


CH 165

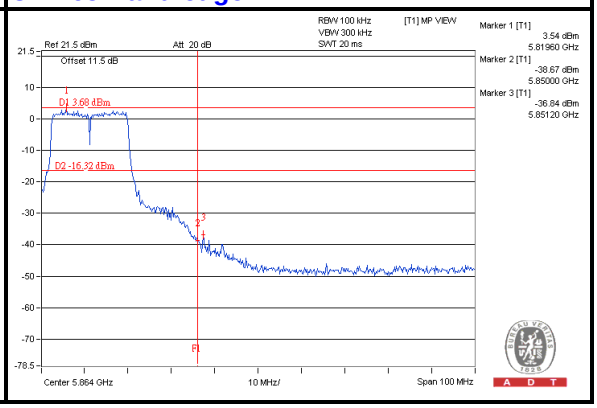




CH 149 Band edge

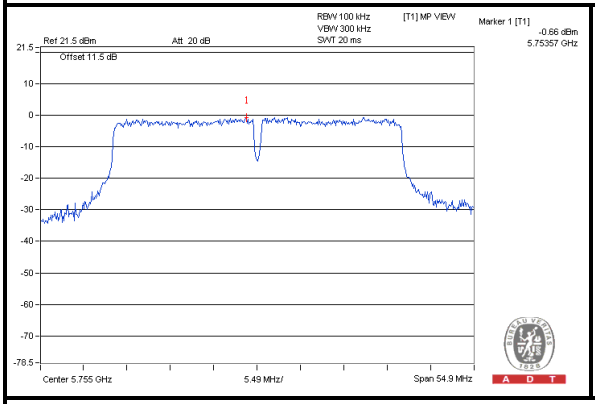


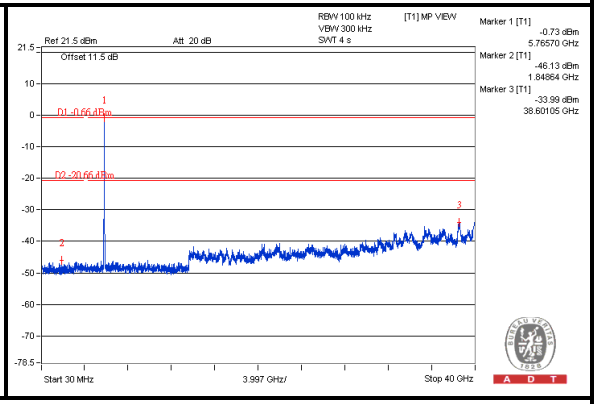
CH 165 Band edge



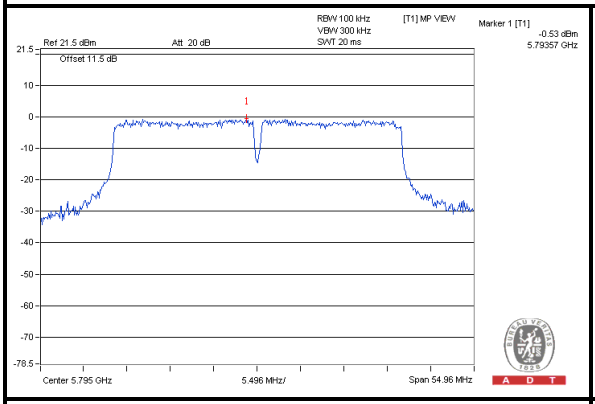
For Chain (0): 802.11ac(VHT40), 2Tx

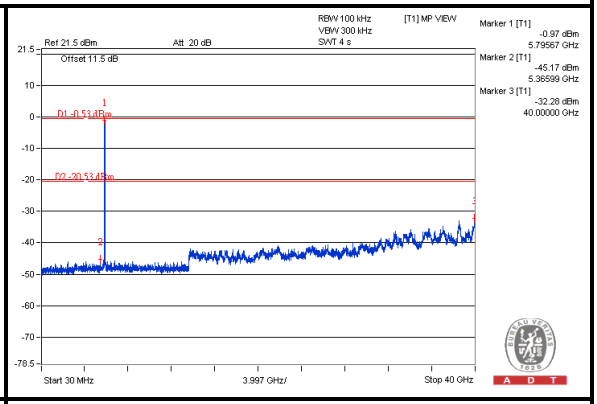
CH 151



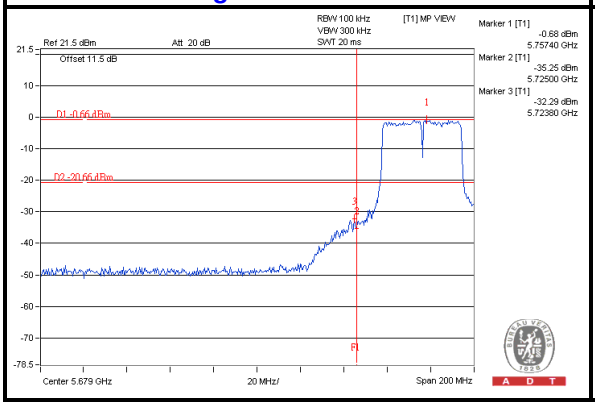


CH 159

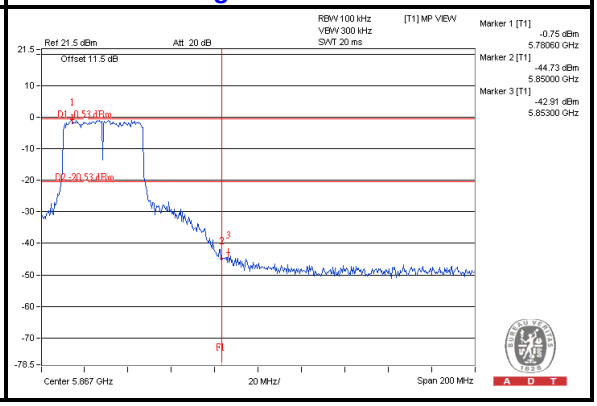




CH 151 Band edge

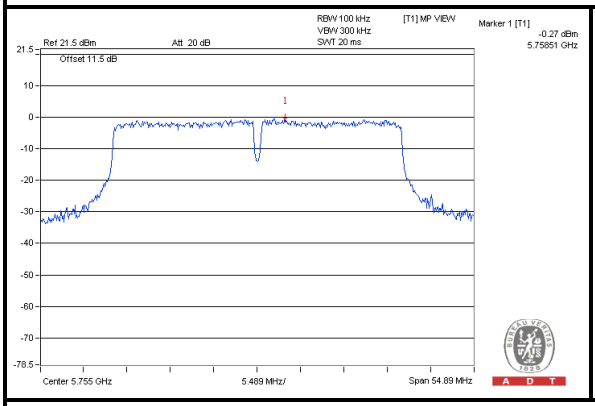


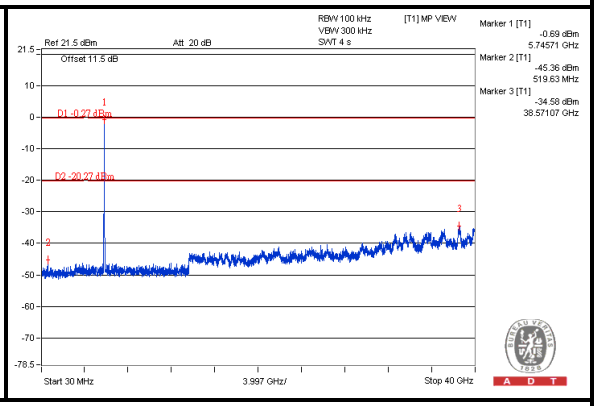
CH 159 Band edge



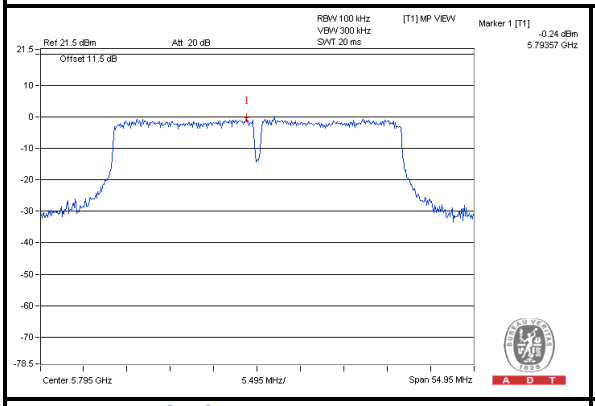
For Chain (1): 802.11ac(VHT40), 2Tx

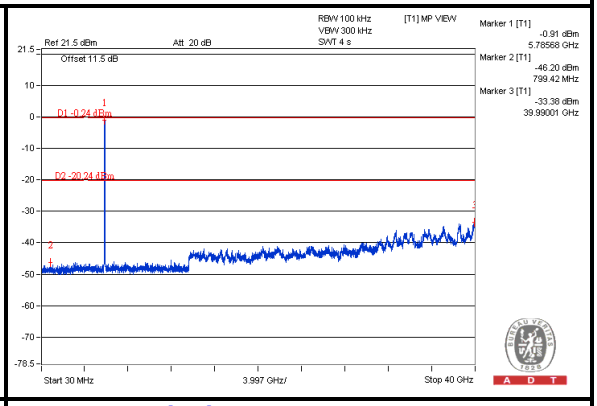
CH 151



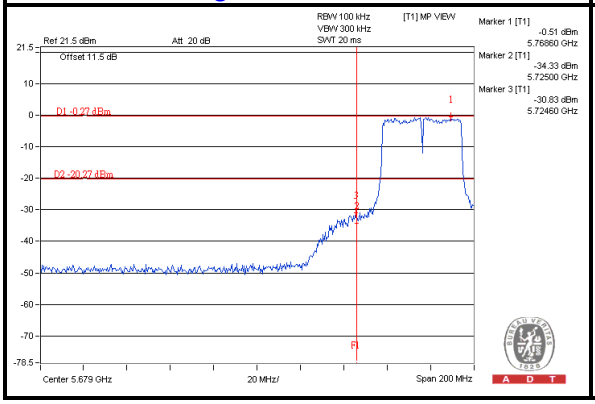


CH 159

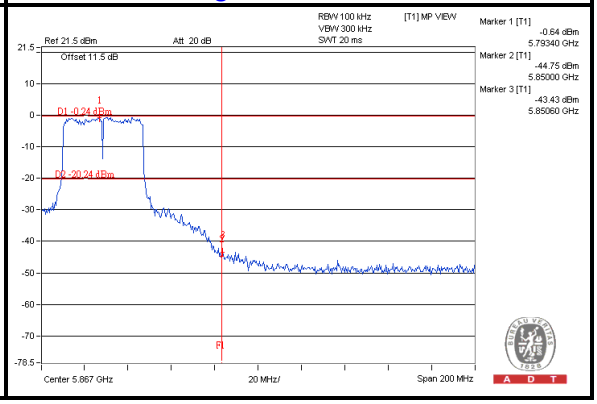




CH 151 Band edge

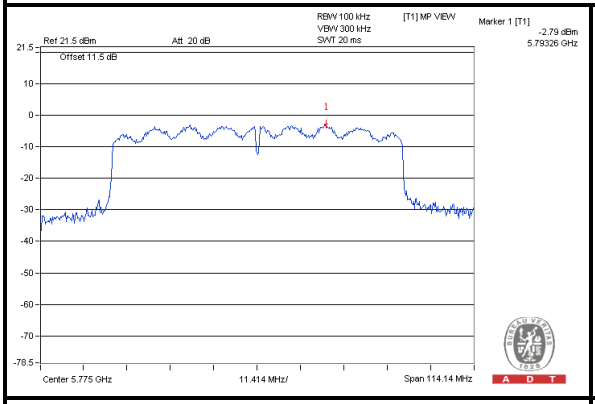


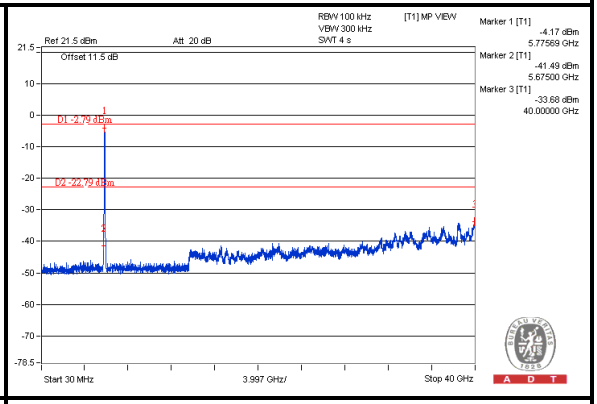
CH 159 Band edge



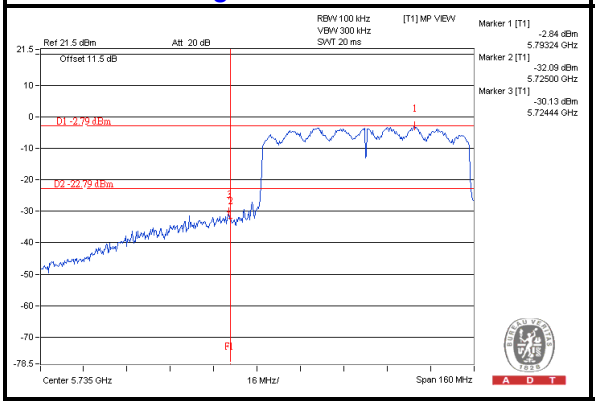
For Chain (0): 802.11ac(VHT80), 2Tx

CH 155

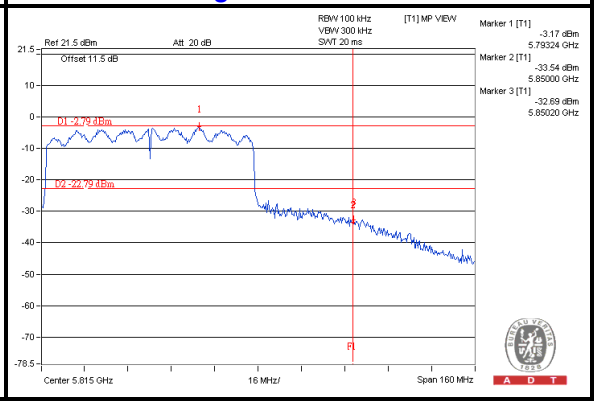




CH 155 Band edge

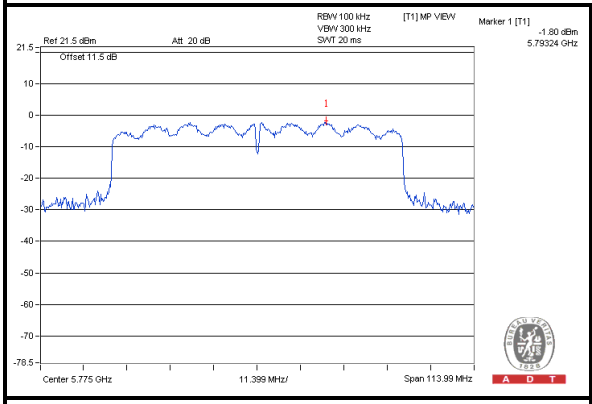


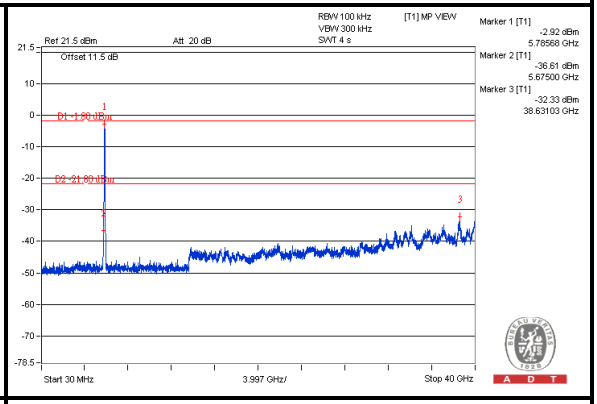
CH 155 Band edge



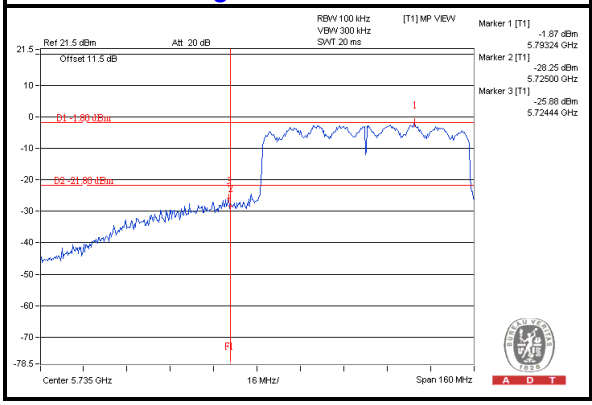
For Chain (1): 802.11ac(VHT80), 2Tx

CH 155

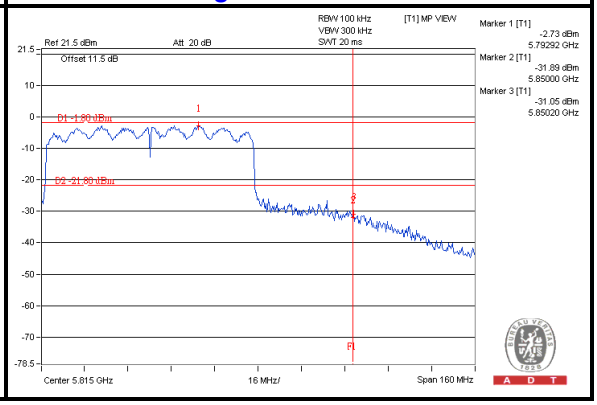




CH 155 Band edge



CH 155 Band edge



6. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

7. INFORMATION ON THE TESTING LABORATORIES

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

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

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

Hsin Chu EMC/RF Lab:
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.

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 ---