FCC Test Report (WLAN 2.4GHz)

Report No.: RF161201C02

FCC ID: G95-MGM0110VZN

Equipment Name: LTE Router

Trade Name: technicolor

Model Number: MBHA10

Product Code: DSLMVZ011GM

Received Date: Dec. 01, 2016

Test Date: Dec. 01, 2016 to Jan. 18, 2017

Issued Date: Mar. 08, 2017

Applicant: Technicolor Connected Home USA LLC

Address: 5030 Sugarloaf Parkway Building Lawrenceville Georgia United States 30044

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory

Lab Address: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.

This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must 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 **4**

1 Certificate of Conformity **5**

2 Summary of Test Results **6**

2.1 Measurement Uncertainty 6
2.2 Modification Record 6

3 General Information **7**

3.1 Basic Description of Equipment Under Test (WLAN 2.4GHz) 7
3.2 Accessories 9
3.3 Feature of Equipment Under Test 9
3.4 Information Provided by the Manufacturer 9
3.5 General Description of Applied Standards 10
3.6 Cabling Attached to the Equipment 11
3.7 Panel Drawing 12
3.8 Transmit Operating Mode 13
3.9 Antenna Requirements 13
3.10 Antenna Information 14
3.11 Table for Carrier Frequency 17
3.12 Table for Test Modes 18
3.13 Parameters of Test Software Setting 20
3.14 On Time and Duty Cycle 21
3.15 Testing Location Information 23
3.16 EUT Diagram and Support Equipment 24

4 Test Types and Results **26**

4.1 AC Power Conducted Emissions Measurement 26
4.1.1 Limit 26
4.1.2 Measuring Instruments and Setting 26
4.1.3 Test Procedures 26
4.1.4 Test Setup Layout 27
4.1.5 Test Deviation 27
4.1.6 EUT Operating during Test 28
4.1.7 Test Results of AC Power Conducted Emissions 28
4.2 Maximum Conducted Output Power Measurement 30
4.2.1 Limit 30
4.2.2 Measuring Instruments and Setting 30
4.2.3 Test Procedures 30
4.2.4 Test Setup Layout 31
4.2.5 Test Deviation 31
4.2.6 EUT Operating Conditions 31
4.2.7 Test Results of Maximum Conducted Output Power 32
4.3 Power Spectral Density Measurement 34
4.3.1 Limit 34
4.3.2 Measuring Instruments and Setting 34
4.3.3 Test Procedures 34
4.3.4 Test Setup Layout 35
4.3.5 Test Deviation 35
4.3.6 EUT Operating Conditions 35
4.3.7 Test Results of Power Spectral Density 36
4.4 6dB Bandwidth Measurement 44
4.4.1 Limit 44
4.4.2 Measuring Instruments and Setting 44
4.4.3 Test Procedures 44
4.4.4 Test Setup Layout 45
4.4.5 Test Deviation 45

4.4.6 EUT Operating Conditions 45
4.4.7 Test Results of 6dB Bandwidth 46
4.5 Occupied Bandwidth Measurement 54
4.5.1 Measuring Instruments and Setting 54
4.5.2 Test Procedure 54
4.5.3 Test Setup Layout 54
4.5.4 Test Deviation 55
4.5.5 EUT Operating Conditions 55
4.5.6 Test Results of Occupied Bandwidth 56
4.6 Radiated Emissions Measurement 64
4.6.1 Limit 64
4.6.2 Measuring Instruments and Setting 64
4.6.3 Test Procedure 65
4.6.4 Test Setup Layout 66
4.6.5 Test Deviation 67
4.6.6 EUT Operating Conditions 67
4.6.7 Test Results of Radiated Emissions 68
4.7 Band Edge and Fundamental Emissions Measurement 100
4.7.1 Limit 100
4.7.2 Measuring Instruments and Setting 100
4.7.3 Test Procedure 100
4.7.4 Test Setup Layout 101
4.7.5 Test Deviation 102
4.7.6 EUT Operating Conditions 102
4.7.7 Test Results of Band Edge and Fundamental Emissions 103
4.7.8 Test Results of Band Edge and Emissions not in Restricted Bands 133
4.8 List of Test Instruments 141

Appendix A. List of test command 144

Appendix B. Information on the Testing Laboratories 168

Release Control Record

Issue No.	Description	Date Issued
RF161201C02	Original release.	Mar. 08, 2017

1 Certificate of Conformity

Equipment Name: LTE Router

Trade Name: technicolor

Test Model: MBHA10

Product Code: DSLMVZ011GM

Sample Status: Product Unit

Applicant: Technicolor Connected Home USA LLC

Test Date: Dec. 01, 2016 to Jan. 18, 2017

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
ANSI C63.10: 2013

The above equipment 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 RF EMI characteristics under the conditions specified in this report.

Prepared by : _____ , **Date:** Mar. 08, 2017
Claire Kuan / Specialist

Approved by : _____ , **Date:** Mar. 08, 2017
May Chen / Manager

2 Summary of Test Results

Applied Standard: 47 CFR FCC Part 15 Subpart C					
Section	**Ref. Std. Clause**	**Description**	**Measured**	**Limit**	**Result**
3.9	15.203	Antenna Requirements	-	-	PASS
4.1	15.207	AC Power Conducted Emissions	Margin is -5.84dB at 0.15000MHz.	-	PASS
4.2	15.247(b)(3)	Maximum Conducted Output Power	Power [dBm]: 11b: 20.52 dBm 11g: 18.10 dBm 11n(20M): 20.81 dBm 11n(40M): 15.54 dBm	30 dBm	PASS
4.3	15.247(e)	Power Spectral Density	PSD [dBm]: 11b: -7.08 dBm/10kHz 11g: -13.75 dBm/10kHz 11n(20M): -10.74 dBm/10kHz 11n(40M): -20.87 dBm/10kHz	8dBm/10kHz	PASS
4.4	15.247(a)(2)	6dB Spectrum Bandwidth	Bandwidth [MHz]: 11b: 8.11 MHz 11g: 15.11 MHz 20MHz: 15.17 MHz 11n(40M): 31.36 MHz	≥500kHz	PASS
4.5	-	Occupied Bandwidth	Bandwidth [MHz]: 11b: 11.16 MHz 11g: 16.56 MHz 11n(20M): 17.64 MHz 11n(40M): 36.72 MHz	FCC 15.207	-
4.6	15.247(d)	Radiated Emissions	Margin is -0.1dB at 7386.00MHz	-	PASS
4.7	15.247(a)(2)	Band Edge Emissions	Margin is -0.2dB at 2483.50MHz.	-	PASS

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.83 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.36 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	3.47 dB
	6GHz ~ 18GHz	3.75 dB
	18GHz ~ 40GHz	3.30 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 Basic Description of Equipment Under Test (WLAN 2.4GHz)

Items	Description			
Equipment Name	LTE Router			
Trade Name	technicolor			
Model Number	MBHA10			
Product Code	DSLMVZ011GM			
FCC ID	G95-MGM0110VZN			
Power Type	From power adapter			
Antenna	Refer section 3.10			
EUT Stage	■	Product Unit	□	Pre-Sample
Operating Band and Conducted Output Power	2400~2483.5MHz		■	IEEE 802.11b: 20.52 dBm
			■	IEEE 802.11g: 18.10 dBm
			■	IEEE 802.11n (20MHz): 20.81 dBm
			■	IEEE 802.11n (40MHz): 15.54 dBm
Product Type	For IEEE 802.11b: WLAN(1TX, 2RX) For IEEE 802.11g: WLAN(1TX, 2RX) For IEEE 802.11n: WLAN(2TX, 2RX)			
Nominal Bandwidth	20MHz / 40MHz			
Modulation	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g: OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11n: (BPSK / QPSK / 16QAM / 64QAM) See the below table			
Data Rate (Mbps)	802.11b mode :DSSS (1/2/5.5/11) 802.11g mode :OFDM (6/9/12/18/24/36/48/54) 802.11n(20MHz) mode(MCS0~MCS15); 802.11n(40MHz) mode(MCS0~MCS15) See the below table			
I/O Ports	LAN Port x 1 RJ31 Port x 1 FXS Port x 1 SIM Port x1 Console Port x 1 (For engineer debug use only)			
Hardware Version	FGR1			
Software Version	16.4.7446-3130000-20161220230657-aa636a7383f23e65d07560e3fbe49cd6cbed2ce0			

IEEE Std. 802.11n modulation and data rate information							
MCS Index	Spatial Streams	Modulation Type	Coding Rate	Data Rate (Mbit/s)			
				20 MHz channel		40 MHz channel	
				800ns GI	400ns GI	800ns GI	400ns GI
0	1	BPSK	1/2	6.5	7.2	13.5	15
1		QPSK	1/2	13	14.4	27	30
2		QPSK	3/4	19.5	21.7	40.5	45
3		16-QAM	1/2	26	28.9	54	60
4		16-QAM	3/4	39	43.3	81	90
5		64-QAM	2/3	52	57.8	108	120
6		64-QAM	3/4	58.5	65	121.5	135
7		64-QAM	5/6	65	72.2	135	150
8	2	BPSK	1/2	13	14.4	27	30
9		QPSK	1/2	26	28.9	54	60
10		QPSK	3/4	39	43.3	81	90
11		16-QAM	1/2	52	57.8	108	120
12		16-QAM	3/4	78	86.7	162	180
13		64-QAM	2/3	104	115.6	216	240
14		64-QAM	3/4	117	130	243	270
15		64-QAM	5/6	130	144.4	270	300
Note: GI means guard interval.							

3.2 Accessories

Li-ion Battery:

Model	BP-MGM0110
Manufacturer	GETAC TECHNOLOGY CORP.
Rating	3.7V, 2500mAh / 9.25Wh

Power supply:

Model	WAE002
P/N	DSL37544940
Manufacturer	AcBel
Input	100/240Vac , 50/60Hz , 0.7A
Output	12Vdc , 2A
DC power cord	1.5m

3.3 Feature of Equipment Under Test

Please refer to user manual.

3.4 Information Provided by the Manufacturer

Interface Availability

Interface / Model	DC 12Vdc	RJ31-X Alarm	Ethernet 10/100 Mbps	FXS	SIM	Zigbee	Z-Wave	BT	GPS	LTE (4G)	WLAN 802.11a/b/g/n/ac (2.4GHz 2*2) (5GHz 2*2 ac)
MBHA10	● (2A)	● (1 port)	● (1 port)	● (1 port)	● (1 port)	●	●	●	●	●	●

● : Equipped
○ : Not Equipped

3.5 General Description of Applied Standards

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

FCC Part 15, Subpart C (15.247)

KDB 558074 D01 DTS Meas Guidance v03r05, 04/08/2016

KDB 662911 D01 Multiple Transmitter Output v02r01, 10/31/2013

ANSI C63.10-2013

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

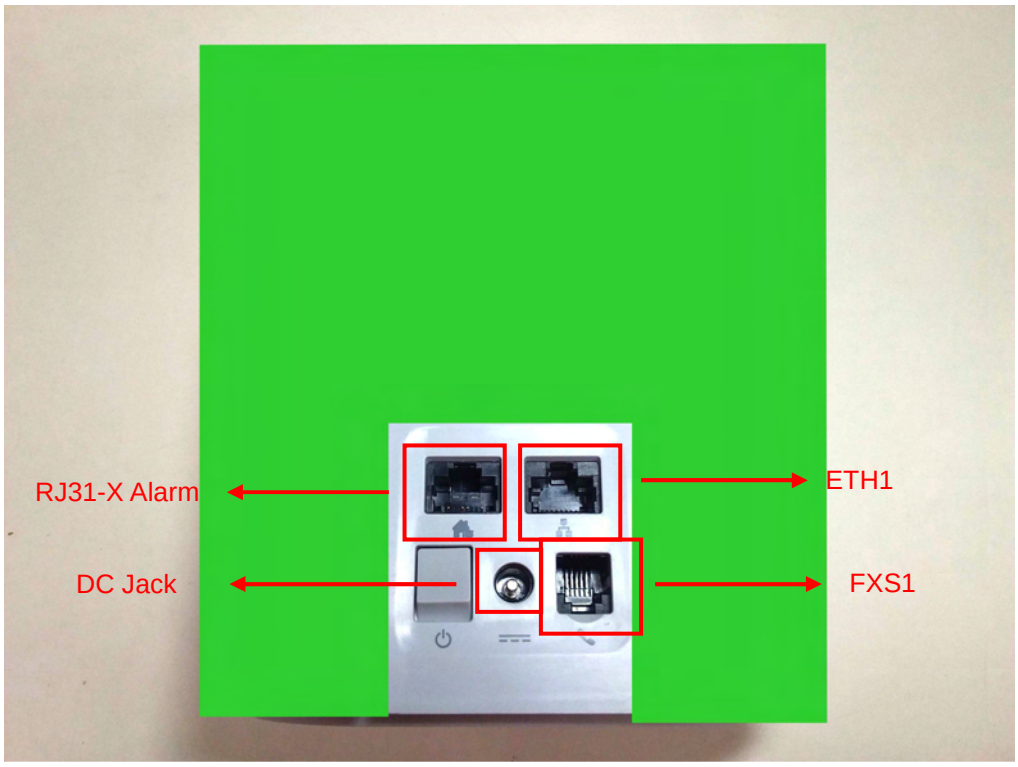
NOTE: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

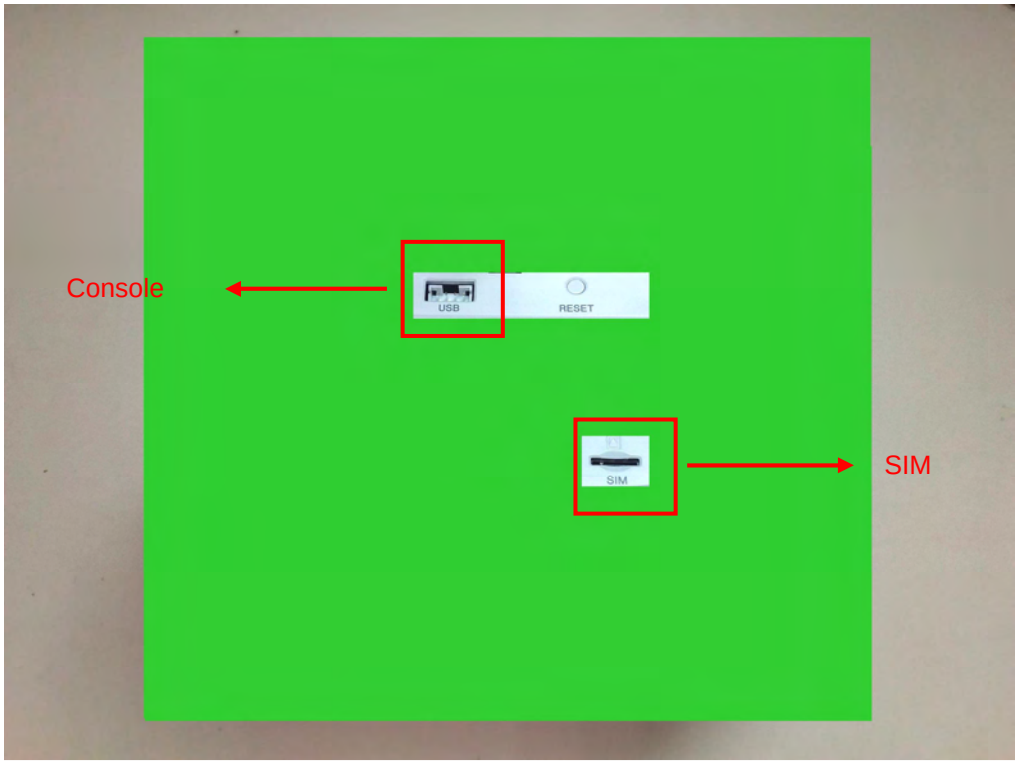
3.6 Cabling Attached to the Equipment

Cable and Interconnection

Interface	Cable Type	Cable Length Delivered with the Modem	"Real Life" Cable Length that can be Attached to this Type of Interface	Cable Length to be used for Testing	Internal/ External Connection
ETH1	UTP Cat 5	1 meter	> 10 meter	10 meter	Internal
RJ31-X Alarm	UTP Cat 3	1 meter	> 10 meter	10 meter	Internal
FXS1	UTP Cat 3	1 meter	> 10 meter	10 meter flat cable	Internal
AC power	-	-	-	-	External

3.7 Panel Drawing





3.8 Transmit Operating Mode

Transmit Operating Mode							Transmit Muitiple Antennas				
■	Operating mode 1 (single antenna)						■	1TX			
■	Operating mode 2 (muitiple antenna, no beam forming)						■	2TX	□	3TX	□ 4TX
■	Operating mode 3 (muitiple antenna, with beam forming)						□	2TX	□	3TX	□ 4TX
■	802.11b	Operating mode	■	1TX	□	2TX	□	3TX	□	Cyclic shift	
■	802.11g	Operating mode	■	1TX	■	2TX	□	3TX	□	Cyclic shift	
■	802.11n(20MHz)	Operating mode	■	1TX	■	2TX	□	3TX	□	Cyclic shift	
■	802.11n(40MHz)	Operating mode	■	1TX	■	2TX	□	3TX	□	Cyclic shift	

Note: For 802.11n, MCS0~MCS7: 1S1T SISO; MCS8~MCS15: 2S2T SDM mode

3.9 Antenna Requirements

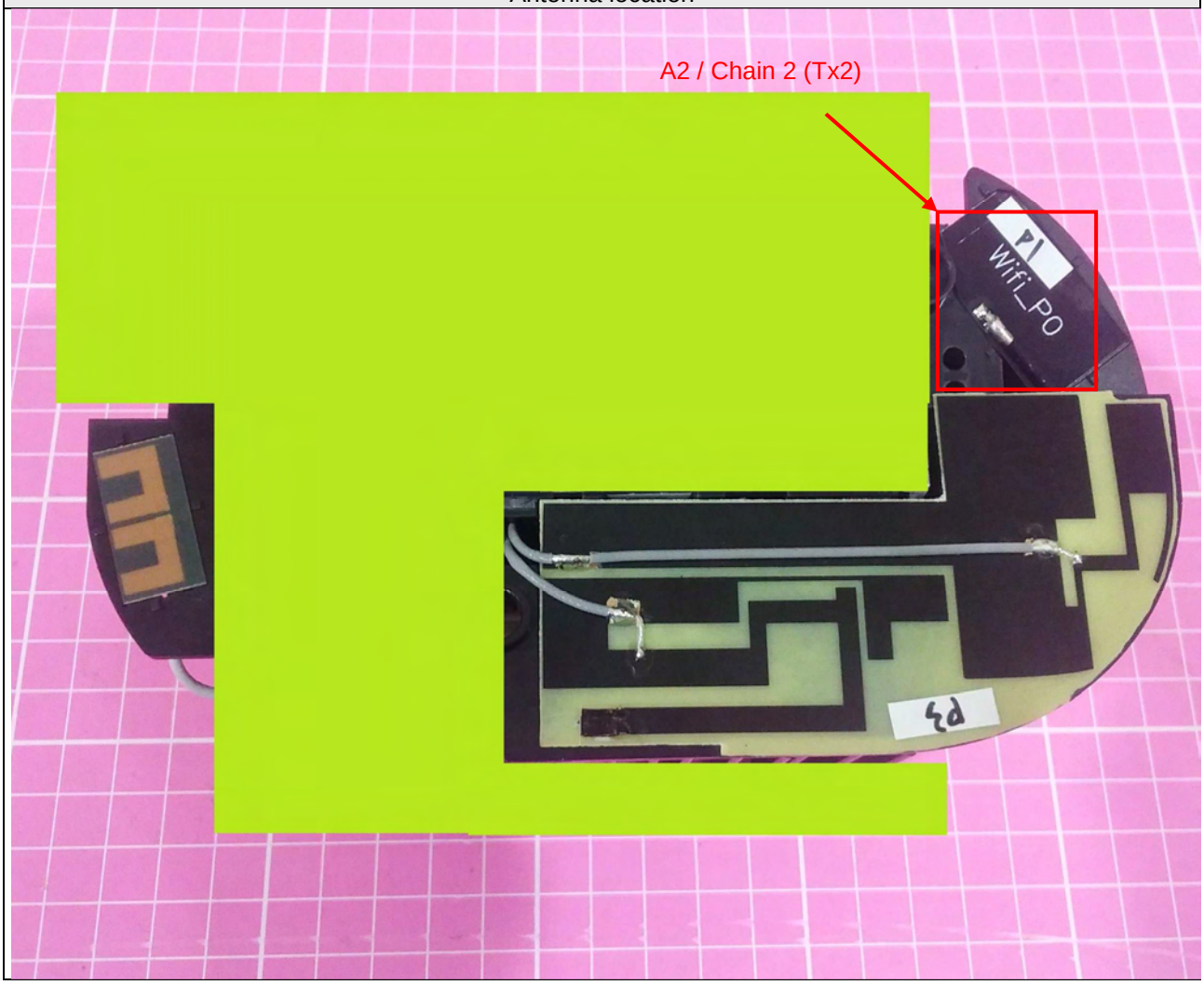
Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

3.10 Antenna Information

Antenna Information					
Ant.	**Brand**	**Model No.**	**Antenna Type**	**Connector**	**Cable Length**
A1	**INPAQ**	**WA-F-LA-02-020**	**PCB Antenna**	**I-PEX**	**44.5 mm**
A2	**INPAQ**	**WA-P-DAG1-03-001**	**PCB Antenna**	**I-PEX**	**105 mm**

Antenna location

Antenna location



Number of Transmitter Antennas & Bandwidth

Number of Transmitter Antennas	1TX		2TX	
Bandwidth Mode	**20 MHz**	**40 MHz**	**20 MHz**	**40 MHz**
802.11b	**V**	**X**	**X**	**X**
802.11g	**V**	**X**	**V**	**X**
802.11n	**V**	**V**	**V**	**V**

For 2400~2483.5MHz

Frequency	Maximum Antenna Gain (dBi)			
	Ant. A1 (J711)		Ant. A2 (J710)	
	20 MHz	40 MHz	20 MHz	40 MHz
2412MHz	2.90	-	2.78	-
2422MHz	-	2.66	-	2.60
2437MHz	2.89	2.89	2.68	2.68
2452MHz	-	2.87	-	2.58
2462MHz	2.87	-	2.71	-

Frequency	Directional Gain (dBi) for SDM mode	
	SDM mode (2 Stream 2 TX) for Power & PSD Gain (KDB 662911 Option 2)	
	20 MHz	40 MHz
2412MHz	1.93	-
2422MHz	-	1.75
2437MHz	1.76	1.76
2452MHz	-	1.66
2462MHz	1.78	-

Note:

1. Antenna Gain refer to “General MBHA10 antenna table_20161205.xls” files
2. Maximum Correlated Directional Gain = 10 log[(10 G1 / 20 + 10 G2 / 20 + … +10 GN / 20)2 / N ANT] dBi
3. Maximum Uncorrelated Directional Gain = 10 log[(10 G1 / 10 + 10 G2 / 10 + … +10 GN / 10) / N ANT] dBi

3.11 Table for Carrier Frequency

Eleven channels are provided for 802.11b, 802.11g, 802.11n (20MHz):

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
2400MHz ~ 2483.5 MHz	1	2412 MHz	7	2442MHz
	2	2417MHz	8	2447MHz
	3	2422MHz	9	2452MHz
	4	2427MHz	10	2457MHz
	5	2432MHz	11	2462MHz
	6	2437MHz		

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

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
2400MHz ~ 2483.5 MHz	3	2422 MHz	7	2442MHz
	4	2427MHz	8	2447MHz
	5	2432MHz	9	2452MHz
	6	2437MHz		

3.12 Table for Test Modes

Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Note	Channel	Data Rate	Antenna
AC Power Conducted Emissions	802.11n (20MHz)	OFDM/BPSK	6	-	1+2
Conducted Output Power	802.11b	DSSS/DBPSK	1/6/11	1Mbps	1
	802.11g	OFDM/BPSK	1/6/11	6Mbps	1
	802.11n (20MHz)		1/6/11	MCS0	1
				MCS8 2S2T(SDM)	1+2
	802.11n (40MHz)		3/6/9	MCS0	1
				MCS8 2S2T(SDM)	1+2
Power Spectral Density	802.11b	DSSS/DBPSK	1/6/11	1Mbps	1
	802.11g	OFDM/BPSK	1/6/11	6Mbps	1
	802.11n (20MHz)		1/6/11	MCS0	1
				MCS8 2S2T(SDM)	1+2
	802.11n (40MHz)		3/6/9	MCS0	1
				MCS8 2S2T(SDM)	1+2
6dB Bandwidth	802.11b	DSSS/DBPSK	1/6/11	1Mbps	1,
	802.11n (20MHz)	OFDM/BPSK	1/6/11	MCS0	1
				MCS8 2S2T(SDM)	1+2
	802.11n (40MHz)		3/6/9	MCS0	1
				MCS8 2S2T(SDM)	1+2
Band Edge Emissions	802.11b	DSSS/DBPSK	1/6/11	1Mbps	1
	802.11n (20MHz)	OFDM/BPSK	1/6/11	MCS0	1
				MCS8 2S2T(SDM)	1+2
	802.11n (40MHz)		3/6/9	MCS0	1
				MCS8 2S2T(SDM)	1+2
Radiated Emissions Above 1GHz	802.11b	DSSS/DBPSK	1/6/11	1Mbps	1
	802.11n (20MHz)	OFDM/BPSK	1/6/11	MCS0	1
				MCS8 2S2T(SDM)	1+2
	802.11n (40MHz)		3/6/9	MCS0	1
				MCS8 2S2T(SDM)	1+2
Radiated Emissions Below 1GHz	802.11n (20MHz)	OFDM/BPSK	6	-	1+2

Note:

1. The device with multiple operating mode, measurements on the middle channel were tested to determine the worst case mode. (Each modulation family were tested in band edge, spurious emissions and in band PSD after investigate worst case mode)
2. Base on tx core command, the 11b/g default mode is 1S1T SISO , the 802.11n 20MHz/ 40MHz, default mode are 1S1T SISO, 2S2T SDM,
   wl -i wl0 txcore
   txcore enabled bitmap (Nsts {4..1}) 0x0f 0x07 0x03 0x01
   txcore mask OFDM 0x01 CCK 0x01
3. Base on same power setting with 802.11n mode, the 802.11g mode were only tested the “Maximum Conducted Output Power”, “Power Spectral Density” and “Bandwidth”.

3.13 Parameters of Test Software Setting

During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

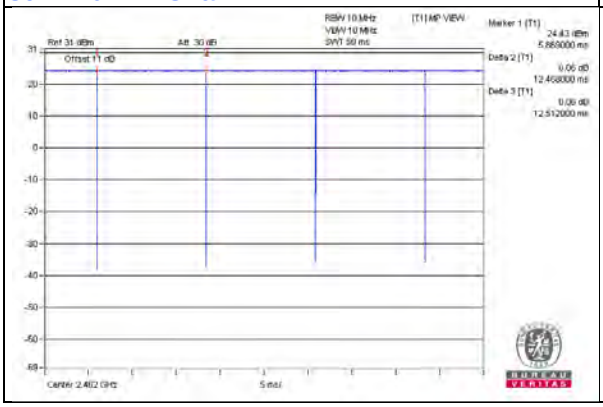
The Power Setting Parameter					
Test Software Version	16.4.7446-3130000-20161220230657-aa636a7383f23e65d07560e3fbe49cd6cbed2ce0				
Worst Modulation Mode	**Number of Transmit Chains (NTX)**	**Frequency (MHz)**	**Maximum Output Power (dBm)**	**Power Setting**	**Data Rate / MCS**
802.11b, Ant. 1	1Stream 1TX	2412	17.81	17.5	1Mbps
802.11b, Ant. 1	1Stream 1TX	2437	16.32	16.25	1Mbps
802.11b, Ant. 1	1Stream 1TX	2462	20.52	20	1Mbps
802.11g, Ant. 1	1Stream 1TX	2412	11.31	10.75	6Mbps
802.11g, Ant. 1	1Stream 1TX	2437	18.1	18.25	6Mbps
802.11g, Ant. 1	1Stream 1TX	2462	14.25	14	6Mbps
802.11n 20MHz, Ant. 1	1Stream 1TX	2412	11.32	10.75	MCS0
802.11n 20MHz, Ant. 1	1Stream 1TX	2437	18.2	18.25	MCS0
802.11n 20MHz, Ant. 1	1Stream 1TX	2462	14.35	14	MCS0
802.11n 20MHz, Ant. 1+2 (SDM)	2Stream 2TX	2412	14.01	10.25	MCS8
802.11n 20MHz, Ant. 1+2 (SDM)	2Stream 2TX	2437	20.81	17.75	MCS8
802.11n 20MHz, Ant. 1+2 (SDM)	2Stream 2TX	2462	17.44	13.75	MCS8
802.11n 40MHz, Ant. 1	1Stream 1TX	2422	8.9	8.75	MCS0
802.11n 40MHz, Ant. 1	1Stream 1TX	2437	12.63	12.5	MCS0
802.11n 40MHz, Ant. 1	1Stream 1TX	2437	10.5	9.75	MCS0
802.11n 40MHz, Ant. 1+2 (SDM)	2Stream 2TX	2422	11.42	8.25	MCS8
802.11n 40MHz, Ant. 1+2 (SDM)	2Stream 2TX	2437	15.54	12	MCS8
802.11n 40MHz, Ant. 1+2 (SDM)	2Stream 2TX	2452	12.14	9	MCS8

3.14 On Time and Duty Cycle

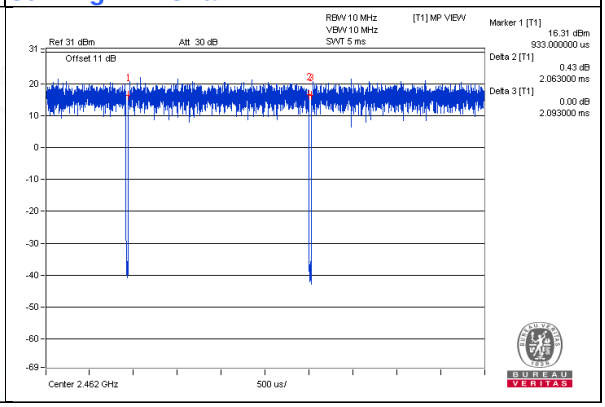
Mode	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)
802.11b 1Tx Chain1	12.468	12.512	99.6	-	-
802.11g 1Tx Chain1	2.063	2.093	98.6	-	-
802.11n (20MHz) 1Tx Chain1	1.906	1.955	97.5	0.11	1
802.11n (20MHz) 2Tx SDM	0.971	1.006	96.5	0.15	3
802.11n (40MHz) 1Tx Chain1	0.931	0.96	97	0.13	3
802.11n (40MHz) 2Tx SDM	0.483	0.503	96	0.18	3

Note: Power measurement using sweep trigger and gating of the power meter, duty factor is not required.

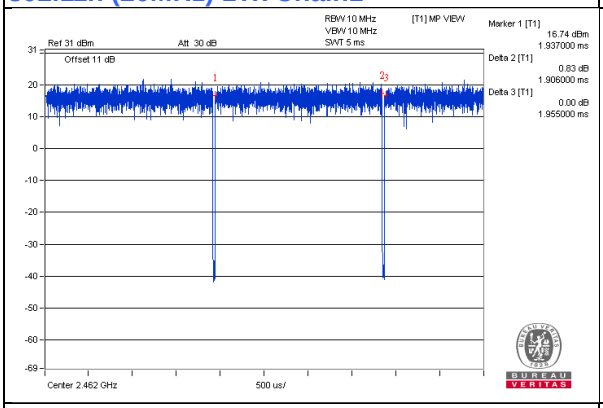
802.11b 1Tx Chain1



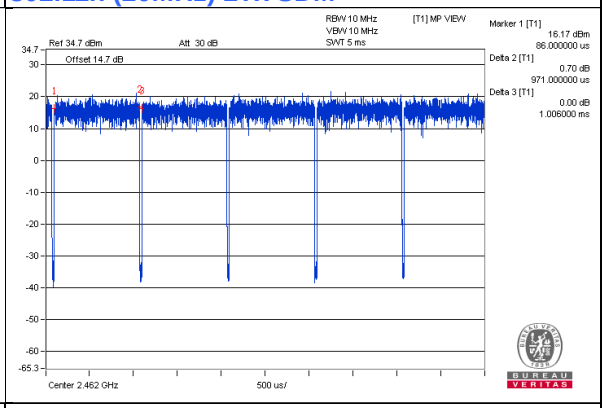
802.11g 1Tx Chain1



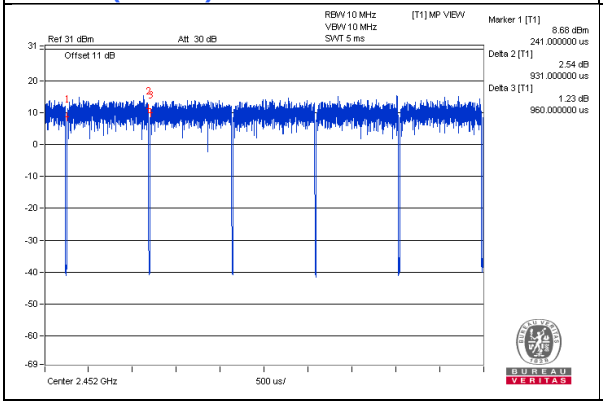
802.11n (20MHz) 1Tx Chain1



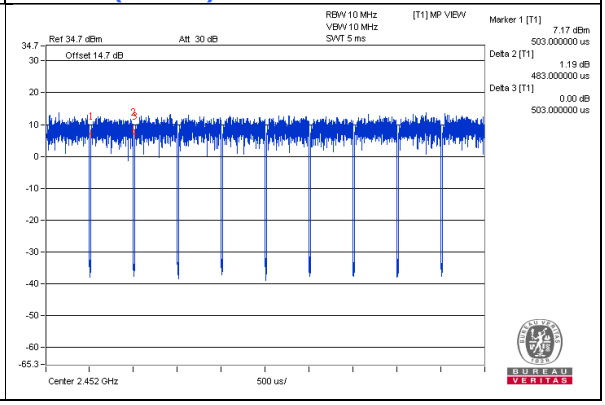
802.11n (20MHz) 2Tx SDM



802.11n (40MHz) 1Tx Chain1



802.11n (40MHz) 2Tx SDM



3.15 Testing Location Information

Test Site Location					
Address	(1) E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.				
TEL	886-3-6668565				
FAX	886-3-6668323				
Test Site No.	**Site Category**	**Location**	**FCC Reg. No.**	**IC Reg. No.**	**VCCI Reg. No**
Conduction 1	Conduction	Hsinchu	-	-	-
Chamber 3	966 Chamber	Hsinchu	147459	20331-1	-
Oven 2	Oven	Hsinchu	-	-	-

3.16 EUT Diagram and Support Equipment

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.

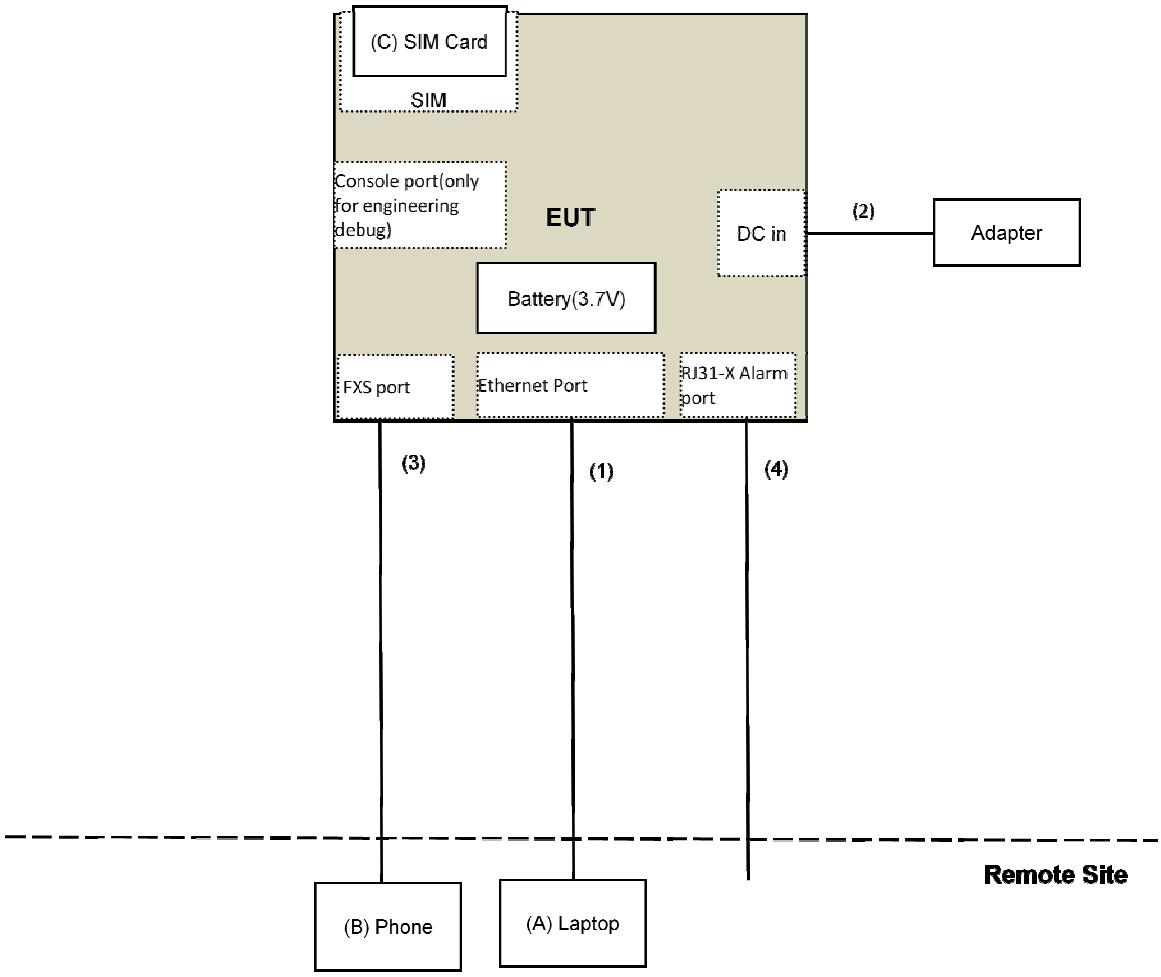
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E6440	F9LYQ32	FCC DoC	Provided by Lab
B.	Phone	WONDER	WD-303	8C17DA02763	NA	Provided by Lab
C.	SIM Card	R&S	CRT-Z3	NA	NA	Provided by Lab

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Internal/external connection	Remarks
1.	RJ-45 Cable	1	10	No	0	External	Provided by Lab
2.	DC Cable	1	1.8	No	0	Internal	Supplied by client
3.	RJ-11 Cable	1	10	No	0	External	Provided by Lab
4.	RJ-31 Cable	1	10	No	0	External	Provided by Lab

EUT Diagram


(C) SIM Card
SIM
Console port(only for engineering debug)
EUT
DC in
(2)
Adapter
Battery(3.7V)
FXS port
Ethernet Port
RJ31-X Alarm port
(3)
(1)
(4)
Remote Site
(B) Phone
(A) Laptop

4 Test Types and Results

4.1 AC Power Conducted Emissions Measurement

4.1.1 Limit

For this product which is designed to be connected to the AC power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed below limits table.

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

4.1.2 Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver

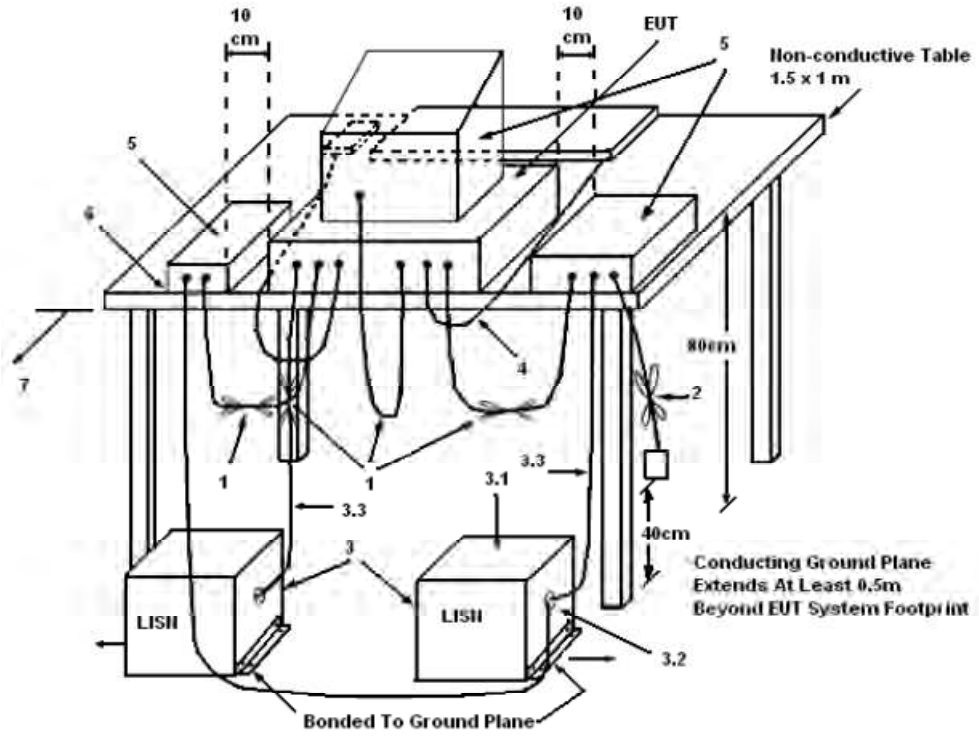
Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

4.1.3 Test Procedures

1. Configure the EUT according to ANSI C63.10. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 kHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

4.1.4 Test Setup Layout

Test Setup



1. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
2. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
3. EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω. LISN can be placed on top of, or immediately beneath, reference ground plane.
   3.1 All other equipment powered from additional LISN(s).
   3.2 Multiple outlet strip can be used for multiple power cords of non-EUT equipment.
   3.3 LISN at least 80 cm from nearest part of EUT chassis.
4. Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.
5. Non-EUT components of EUT system being tested.
6. Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.
   Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

4.1.5 Test Deviation

There are no deviations with the original standard.

4.1.6 EUT Operating during Test

The EUT was placed on the test table and programmed in normal function.

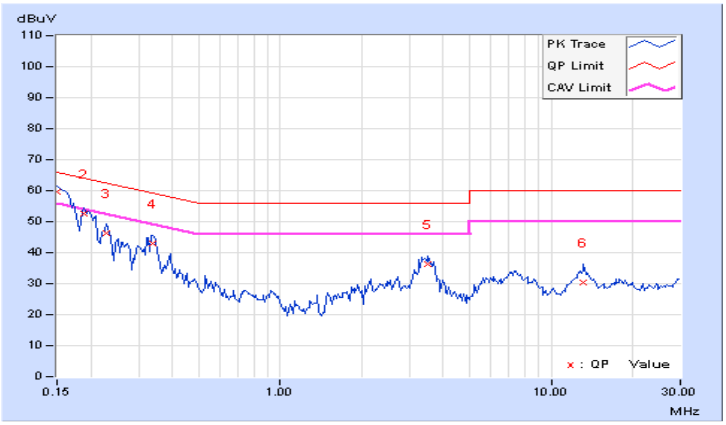
4.1.7 Test Results of AC Power Conducted Emissions

Frequency Range	150kHz ~ 30MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	**Environmental Conditions**	25℃, 75%RH
Tested by	Andy Ho		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15000	10.20	49.52	36.14	59.72	46.34	66.00	56.00	-6.28	-9.66
2	0.18906	10.20	42.39	29.95	52.59	40.15	64.08	54.08	-11.49	-13.93
3	0.22812	10.21	36.09	24.71	46.30	34.92	62.52	52.52	-16.22	-17.60
4	0.33750	10.23	32.58	23.48	42.81	33.71	59.26	49.26	-16.45	-15.55
5	3.51563	10.31	26.15	20.27	36.46	30.58	56.00	46.00	-19.54	-15.42
6	13.21094	11.10	19.28	13.72	30.38	24.82	60.00	50.00	-29.62	-25.18

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

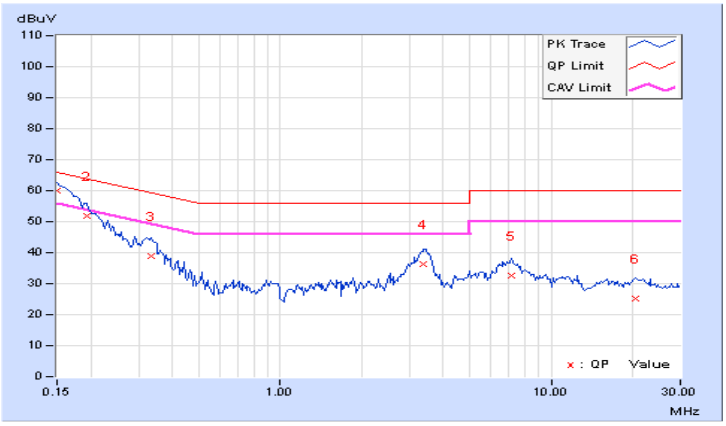


Frequency Range	150kHz ~ 30MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	**Environmental Conditions**	25℃, 75%RH
Tested by	Andy Ho		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	**0.15000**	**10.19**	**49.97**	**37.13**	**60.16**	**47.32**	**66.00**	**56.00**	**-5.84**	**-8.68**
2	0.19297	10.17	41.51	29.42	51.68	39.59	63.91	53.91	-12.23	-14.32
3	0.33359	10.22	28.80	17.24	39.02	27.46	59.36	49.36	-20.34	-21.90
4	3.38672	10.25	26.14	20.74	36.39	30.99	56.00	46.00	-19.61	-15.01
5	7.12891	10.43	22.24	16.97	32.67	27.40	60.00	50.00	-27.33	-22.60
6	20.52344	11.38	13.95	9.68	25.33	21.06	60.00	50.00	-34.67	-28.94

Remarks:

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



4.2 Maximum Conducted Output Power Measurement

4.2.1 Limit

For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm).The limited has to be reduced by the amount in dB that the gain of the antenna exceed 6dBi. For of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

4.2.2 Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the power meter.

Power Meter Parameter	Setting
Power Measurement	Average(RMS), Peak
Rise Time	<8 ns typical 12ns maximum
Sensor Model	MA2411B

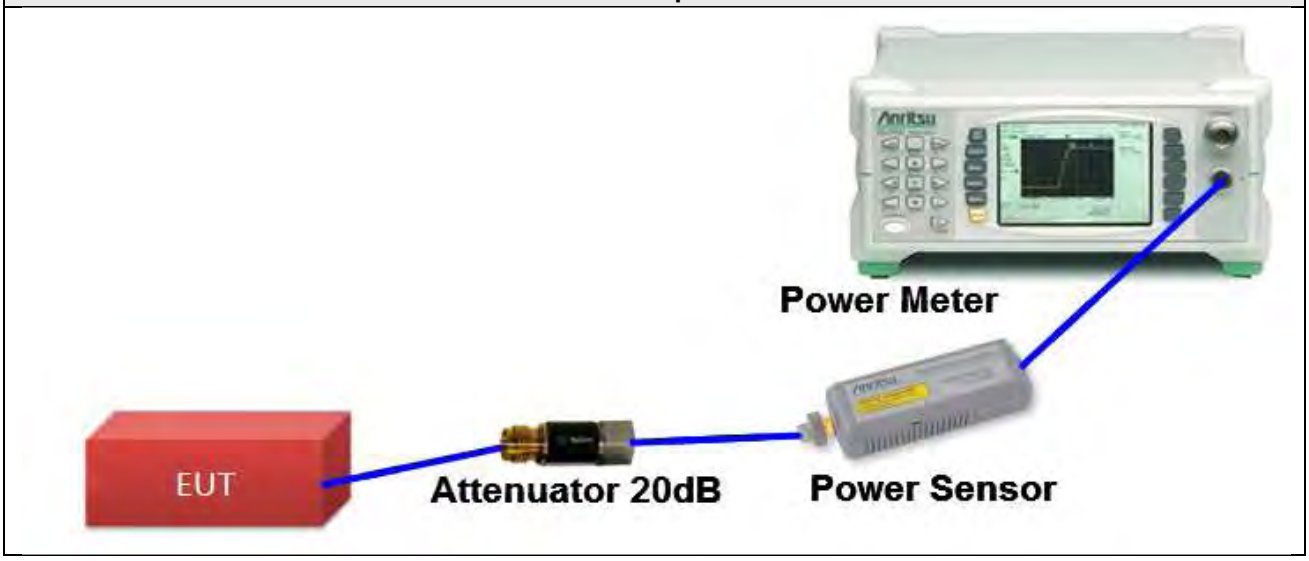
4.2.3 Test Procedures

1 Test was performed in accordance with Measurement of Digital Transmission Systems Operating under KDB558074 D01 DTS Meas Guidance v03r05, in section “Maximum conducted output power Method AVGPM-G”, 04/08/2016

2 The average power sensor was used on the output port of the EUT. A power meter was used to read the response of the average power sensor and enable the trigger function to get the all on time transmission . Record the average power level.

3 When measuring maximum conducted output power with multiple antenna systems, add every result of the values by mathematic formula.

4.2.4 Test Setup Layout

Setup


4.2.5 Test Deviation

There are no deviations with the original standard.

4.2.6 EUT Operating Conditions

The EUT was programmed to be in continuously transmitting mode.

4.2.7 Test Results of Maximum Conducted Output Power

Temperature	25℃	Humidity	60%
Test Engineer	Anderson Chen		

FOR AVERAGE POWER

802.11b 1Tx Chain1

Channel	Frequency (MHz)	Conducted Power (dBm)	Max. Antenna Gain (dBi)	Max. Limit (dBm)	Result
1	2412	17.81	2.90	30	PASS
6	2437	16.32	2.89	30	PASS
11	2462	20.52	2.87	30	PASS

802.11g 1Tx Chain1

Channel	Frequency (MHz)	Conducted Power (dBm)	Max. Antenna Gain (dBi)	Max. Limit (dBm)	Result
1	2412	11.31	2.90	30	PASS
6	2437	18.1	2.89	30	PASS
11	2462	14.25	2.87	30	PASS

802.11n (20MHz) 1Tx Chain1

Channel	Frequency (MHz)	Conducted Power (dBm)	Max. Antenna Gain (dBi)	Max. Limit (dBm)	Result
1	2412	11.32	2.90	30	PASS
6	2437	18.2	2.89	30	PASS
11	2462	14.35	2.87	30	PASS

802.11n (20MHz) 2Tx SDM

Channel	Frequency (MHz)	Conducted Power (dBm)			Directional Gain (dBi)	Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total			
1	2412	11.23	10.76	14.01	1.93	30	PASS
6	2437	17.88	17.71	20.81	1.76	30	PASS
11	2462	14.27	14.58	17.44	1.78	30	PASS

Note:
1. Total Conducted Power = Conducted Power [TX 1(unit in W) + TX 2(unit in W)](unit in dBm)
2. Directional Gain <6dBi, so the limit doesn't reduce.

802.11n (40MHz) 1Tx Chain1

Channel	Frequency (MHz)	Conducted Power (dBm)	Max. Antenna Gain (dBi)	Max. Limit (dBm)	Result
3	2422	8.9	2.66	30	PASS
6	2437	12.63	2.89	30	PASS
9	2452	10.5	2.87	30	PASS

802.11n (40MHz) 2Tx SDM

Channel	Frequency (MHz)	Conducted Power (dBm)			Directional Gain (dBi)	Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total			
3	2422	8.41	8.41	11.42	1.75	30	PASS
6	2437	12.18	12.86	15.54	1.76	30	PASS
9	2452	9.61	8.58	12.14	1.66	30	PASS

Note:
1. Total Conducted Power = Conducted Power [TX 1(unit in W) + TX 2(unit in W)](unit in dBm)
2. Directional Gain <6dBi, so the limit doesn't reduce.

4.3 Power Spectral Density Measurement

4.3.1 Limit

For digitally modulated systems, the conductive measured power spectral density(PSD) shall not be greater than 8 dBm in any 3 kHz bandwidth during any time interval of continuous transmission.

4.3.2 Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Set the span to 1.5 times the DTS channel bandwidth.
RBW	Set the RBW ≥ 3 kHz
VBW	Set the VBW ≥ 3 x RBW
Detector	RMS
Trace	Average sweep count 100
Sweep Time	Auto couple

4.3.3 Test Procedures

1 The transmitter output (antenna port) was connected to the spectrum analyzer.

2 Test was performed in accordance with Measurement of Digital Transmission Systems Operating under KDB558074 D01 DTS Meas Guidance v03r05, in section “Maximum power spectral density level in the fundamental emissions Method AVGPSD-1”, 04/08/2016.

3 Multiple antenna systems was performed in accordance KDB 662911 D01 v02r01 in-Band Power Spectral Density (PSD) Measurements (a) Measure and sum the spectra across the outputs (bin-by-bin summing).

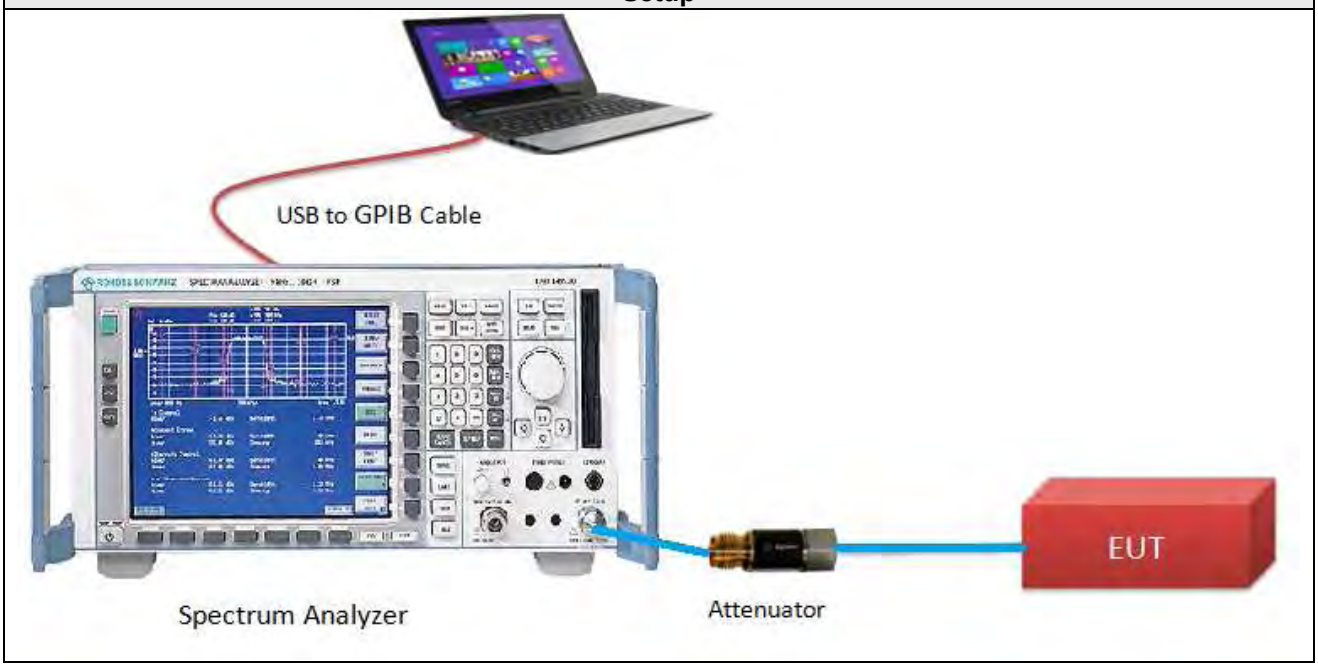
4 This procedure may be used when the maximum (average) conducted output power was used to demonstrate compliance to the output power limit. The EUT must be configured to transmit continuously (duty cycle ≥ 98%) to ensure that measurements are made only when the EUT is transmitting at its maximum power control level (no transmitter off time is to be considered).

5 Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW (use of a greater number of measurement points than this minimum requirement is recommended).

6 When measuring first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and so on up to the Nth output to obtain the value for the first frequency bin of the summed spectrum. The summed spectrum value for each of the other frequency bins is computed in the same way.

4.3.4 Test Setup Layout

Setup



4.3.5 Test Deviation

There are no deviations with the original standard.

4.3.6 EUT Operating Conditions

The EUT was programmed to be in continuously transmitting mode.

4.3.7 Test Results of Power Spectral Density

Temperature	20℃	Humidity	62%
Test Engineer	Anderson Chen		

802.11b 1Tx Chain1

Channel	Frequency (MHz)	Power Density (dBm/3kHz)	Max. Antenna Gain (dBi)	Limit (dBm/3kHz)	Result
1	2412	-11.76	2.90	8	PASS
6	2437	-14.31	2.89	8	PASS
11	2462	-7.08	2.87	8	PASS
Note.1. Directional Gain <6dBi, so the limit doesn't reduce.					

802.11g 1Tx Chain1

Channel	Frequency (MHz)	Power Density (dBm/3kHz)	Max. Antenna Gain (dBi)	Limit (dBm/3kHz)	Result
1	2412	-19.87	2.90	8	PASS
6	2437	-13.75	2.89	8	PASS
11	2462	-16.86	2.87	8	PASS
Note.1. Directional Gain <6dBi, so the limit doesn't reduce.					

802.11n (20MHz) 1Tx Chain1

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/3kHz)	Max. Antenna Gain (dBi)	Duty Factor (dB)	PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Result
1	2412	-20.40	2.90	0.11	-20.29	8	PASS
6	2437	-13.83	2.89	0.11	-13.72	8	PASS
11	2462	-16.67	2.87	0.11	-16.56	8	PASS
Note.1. Directional Gain <6dBi, so the limit doesn't reduce.							

802.11n (20MHz) 2Tx SDM

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/3kHz)			Directional Gain (dBi)	Duty Factor (dB)	PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Result
		Chain1	Chain2	Total					
1	2412	-17.34	-22.69	-16.23	1.93	0.15	-16.08	8	PASS
6	2437	-12.85	-15.28	-10.89	1.76	0.15	-10.74	8	PASS
11	2462	-15.84	-19.90	-14.40	1.78	0.15	-14.25	8	PASS
Note. 1. Directional Gain <6dBi, so the limit doesn't reduce.									

Note:

1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

802.11n (40MHz) 1Tx Chain1

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/3kHz)	Max. Antenna Gain (dBi)	Duty Factor (dB)	PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Result
3	2422	-25.66	2.66	0.13	-25.53	8	PASS
6	2437	-22.01	2.89	0.13	-21.88	8	PASS
9	2452	-22.98	2.87	0.13	-22.85	8	PASS
Note.1. Directional Gain <6dBi, so the limit doesn't reduce.							

802.11n (40MHz) 2Tx SDM

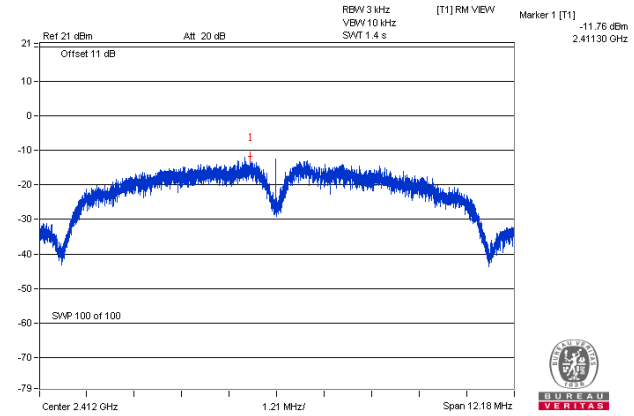
Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/3kHz)			Directional Gain (dBi)	Duty Factor (dB)	PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Result
		Chain1	Chain2	Total					
3	2422	-27.86	-29.21	-25.47	1.75	0.18	-25.29	8	PASS
6	2437	-22.68	-26.08	-21.05	1.76	0.18	-20.87	8	PASS
9	2452	-25.74	-27.99	-23.71	1.66	0.18	-23.53	8	PASS
Note. 2. Directional Gain <6dBi, so the limit doesn't reduce.									

Note:

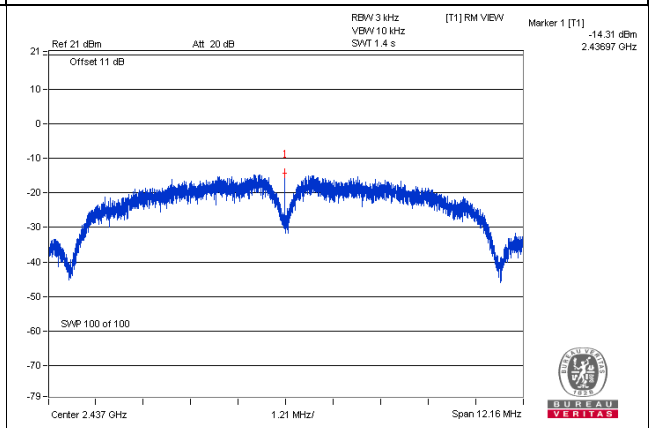
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

SPECTRUM PLOT

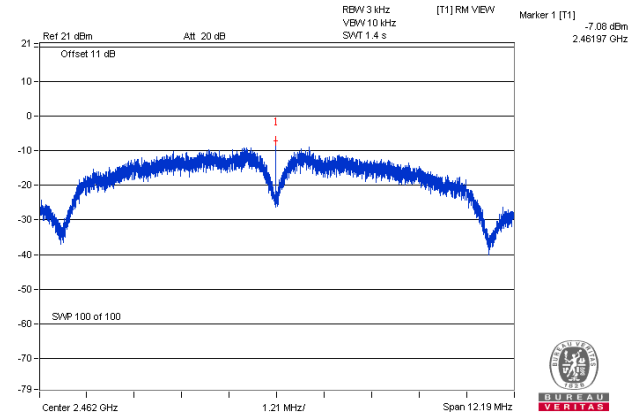
802.11b 1Tx Chain1 2412 MHz



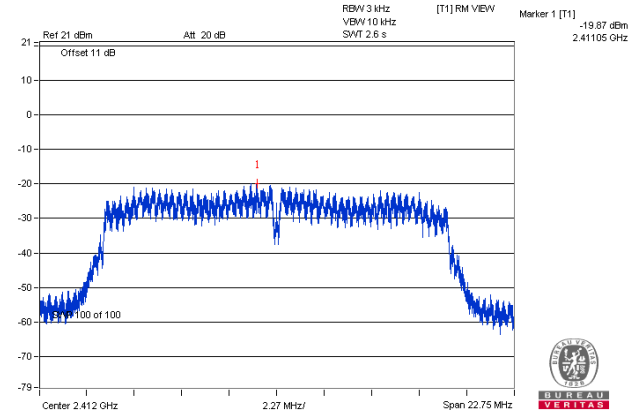
802.11b 1Tx Chain1 2437 MHz



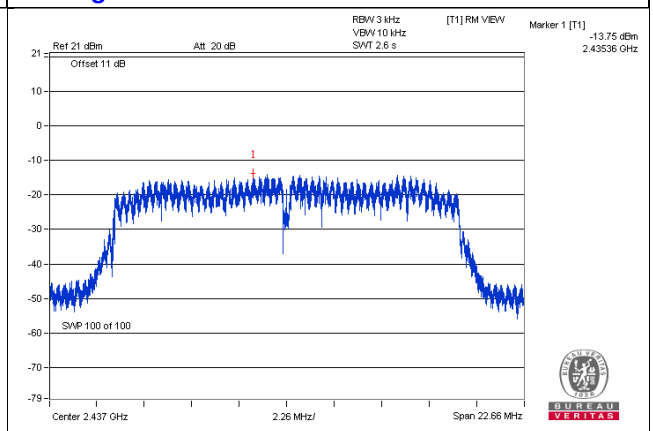
802.11b 1Tx Chain1 2462 MHz



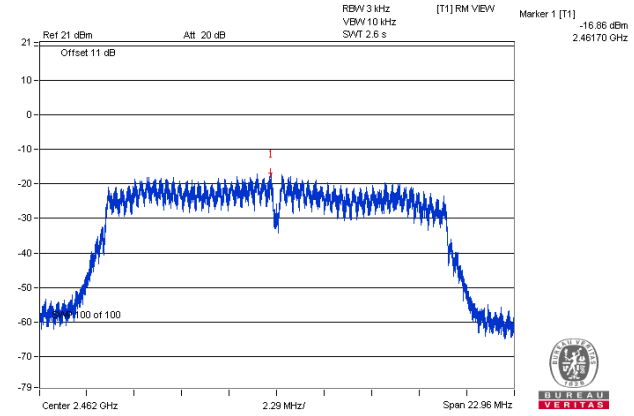
802.11g 1Tx Chain1 2412 MHz



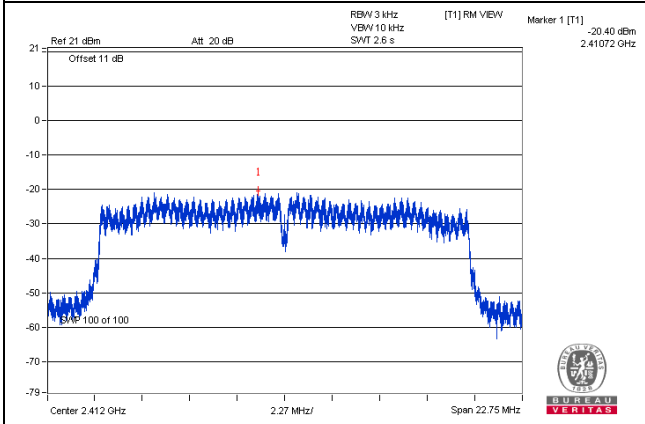
802.11g 1Tx Chain1 2437 MHz



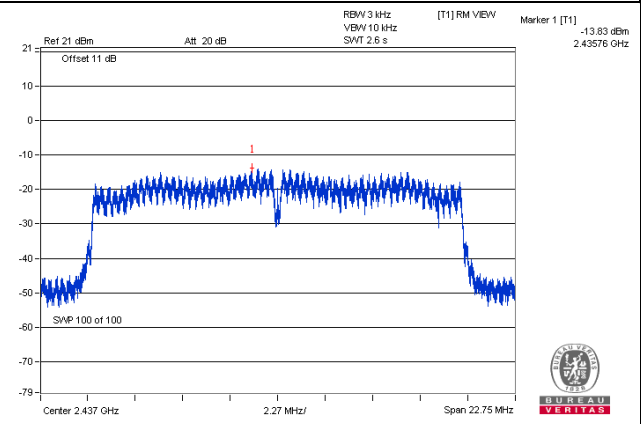
802.11g 1Tx Chain1 2462 MHz



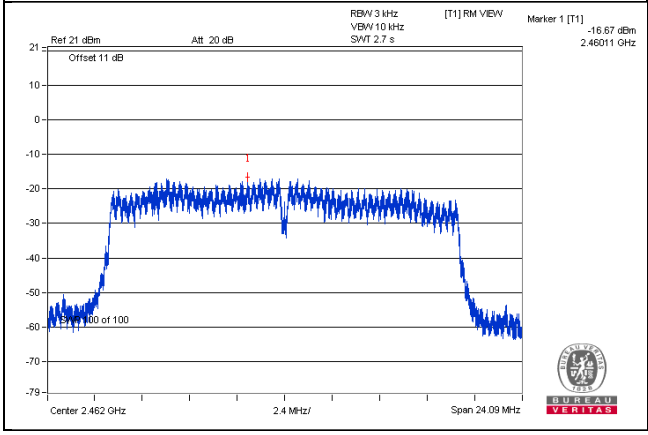
802.11n (20MHz) 1Tx Chain1 2412 MHz



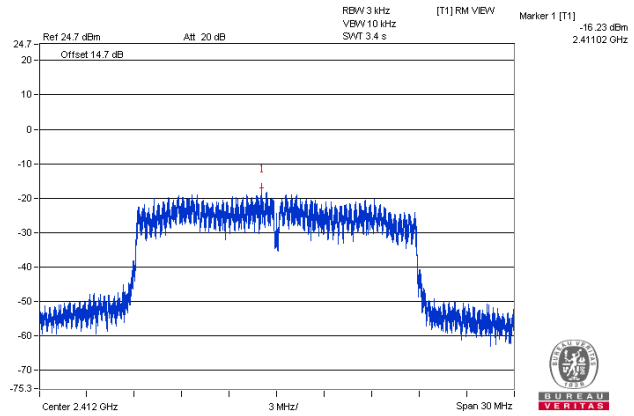
802.11n (20MHz) 1Tx Chain1 2437 MHz



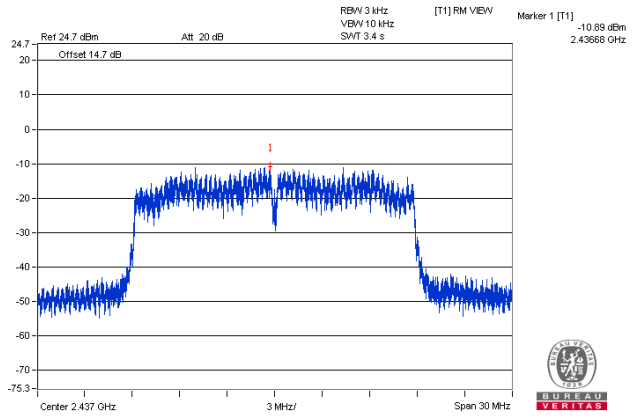
802.11n (20MHz) 1Tx Chain1 2462 MHz



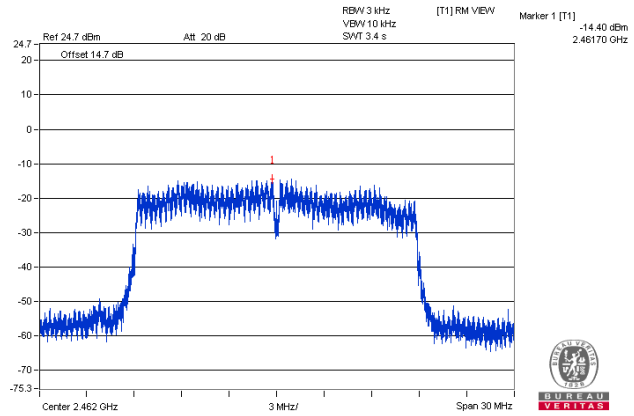
802.11n (20MHz) 2Tx SDM 2412 MHz



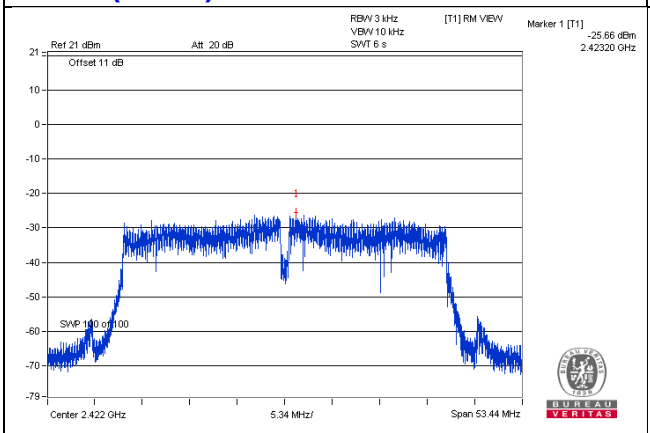
802.11n (20MHz) 2Tx SDM 2437 MHz



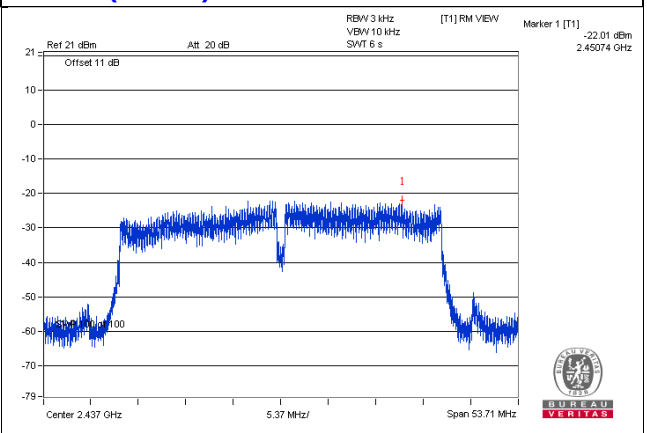
802.11n (20MHz) 2Tx SDM 2462 MHz



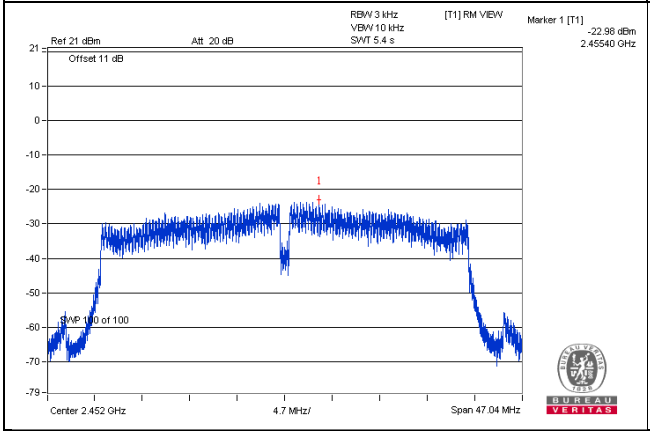
802.11n (40MHz) 1Tx Chain1 2422 MHz



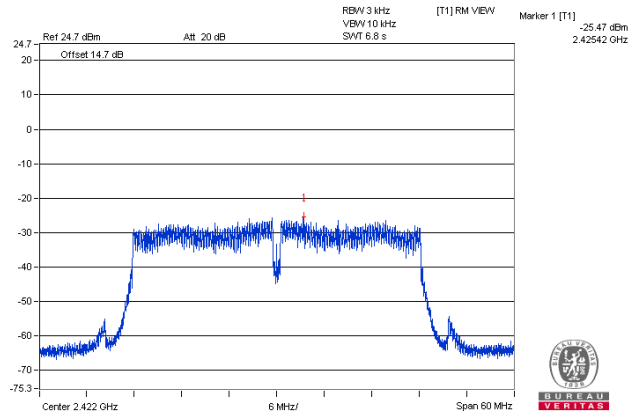
802.11n (40MHz) 1Tx Chain1 2437 MHz



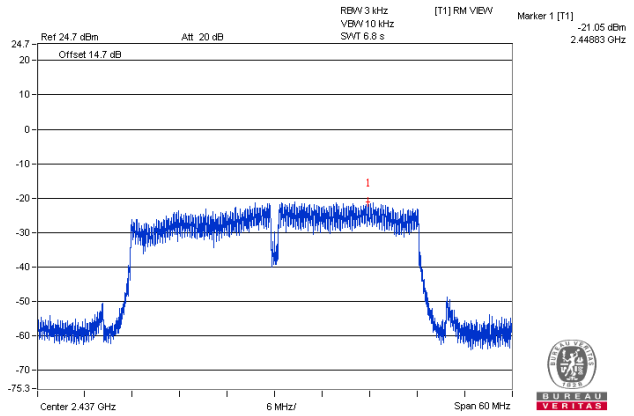
802.11n (40MHz) 1Tx Chain1 2452 MHz



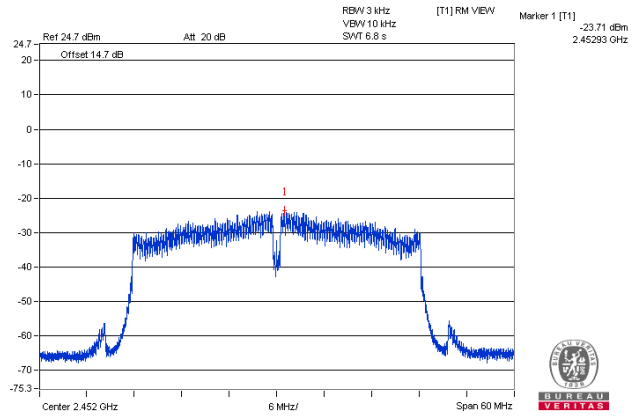
802.11n (40MHz) 2Tx SDM 2422 MHz



802.11n (40MHz) 2Tx SDM 2437 MHz



802.11n (40MHz) 2Tx SDM 2452 MHz



4.4 6dB Bandwidth Measurement

4.4.1 Limit

For digital modulation systems, the minimum 6dB bandwidth shall be at least 500 kHz

4.4.2 Measuring Instruments and Setting

The following table is the setting of the Spectrum Analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> 6dB Bandwidth
RBW	100KHz
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto couple

4.4.3 Test Procedures

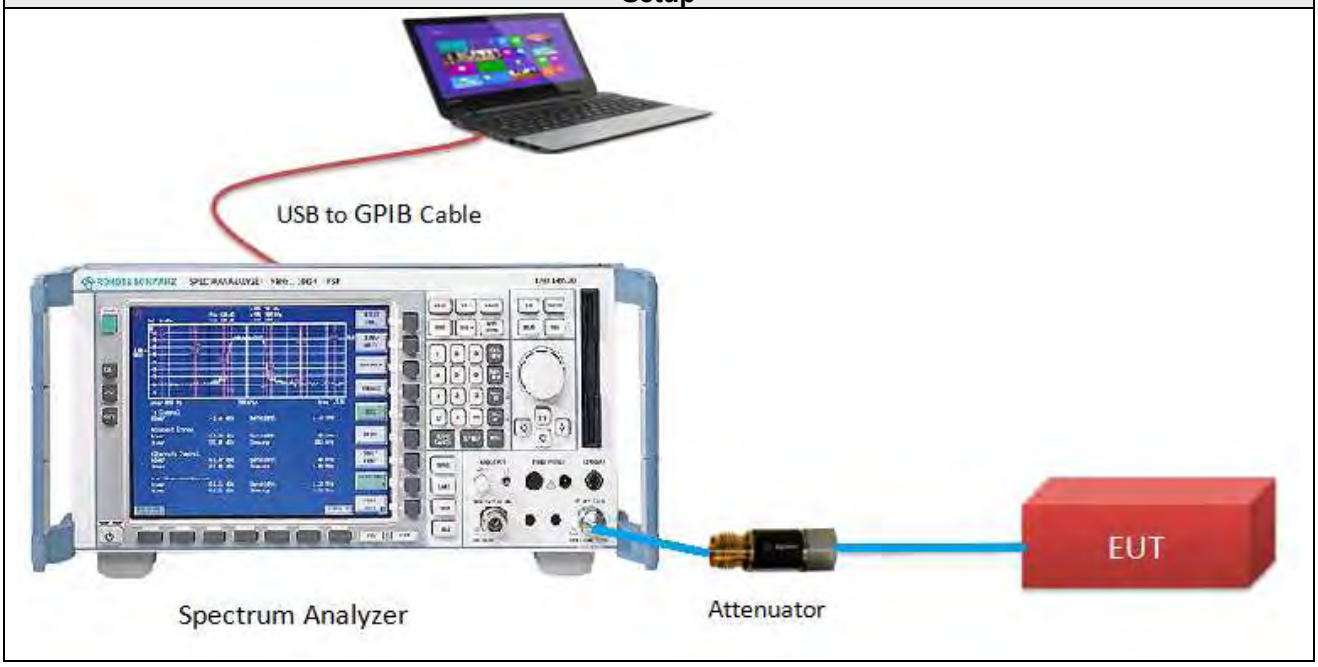
1 The transmitter output (antenna port) was connected to the spectrum analyzer in peak, Max hold mode.

2 For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier frequency. A peak reading was taken; two markers were set 6 dB below the maximum level on the right and the left side of the emissions.

3 The 6 dB bandwidth is the frequency difference between the two markers

4.4.4 Test Setup Layout

Setup



4.4.5 Test Deviation

There are no deviations with the original standard.

4.4.6 EUT Operating Conditions

The EUT was programmed to be in continuously transmitting mode.

4.4.7 Test Results of 6dB Bandwidth

Temperature	25℃	**Humidity**	60%
Test Engineer	Anderson Chen		

802.11b 1Tx Chain1

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	8.12	0.5	PASS
6	2437	8.11	0.5	PASS
11	2462	8.13	0.5	PASS

802.11g 1Tx Chain1

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	15.17	0.5	PASS
6	2437	15.11	0.5	PASS
11	2462	15.31	0.5	PASS

802.11n (20MHz) 1Tx Chain1

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	15.17	0.5	PASS
6	2437	15.17	0.5	PASS
11	2462	16.06	0.5	PASS

802.11n (20MHz) 2Tx SDM

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 1	CHAIN 2		
1	2412	16.10	16.36	0.5	PASS
6	2437	15.17	16.01	0.5	PASS
11	2462	16.06	16.34	0.5	PASS

802.11n (40MHz) 1Tx Chain1

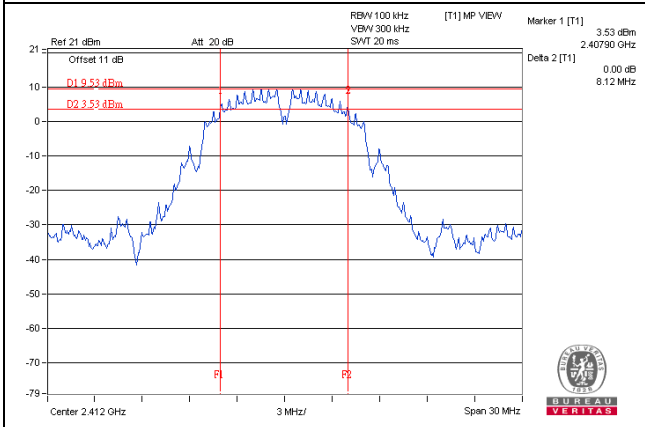
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
3	2422	35.63	0.5	PASS
6	2437	35.81	0.5	PASS
9	2452	31.36	0.5	PASS

802.11n (40MHz) 2Tx SDM

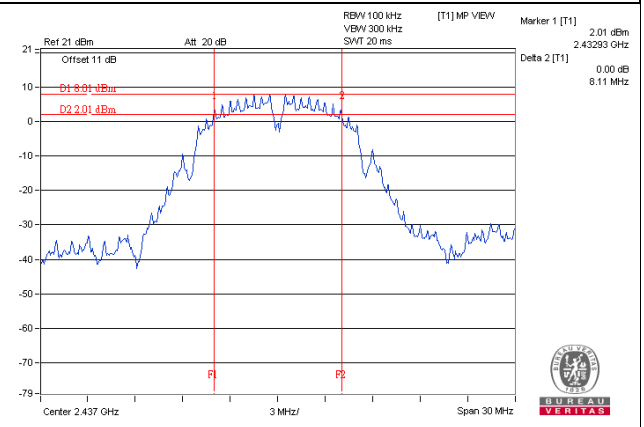
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 1	CHAIN 2		
3	2422	36.11	36.02	0.5	PASS
6	2437	35.73	35.84	0.5	PASS
9	2452	31.38	31.36	0.5	PASS

SPECTRUM PLOT

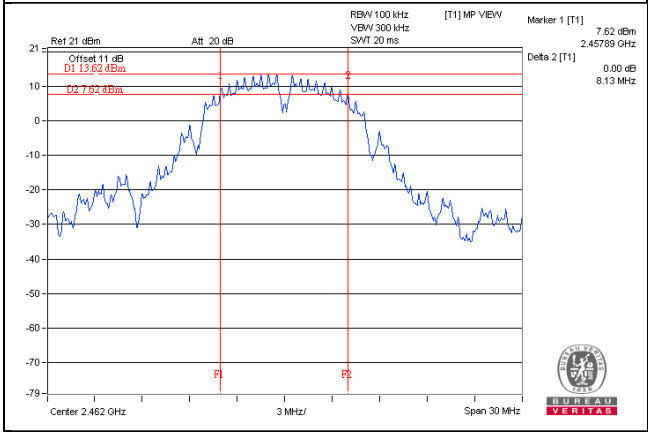
802.11b 1Tx Chain1 CH1



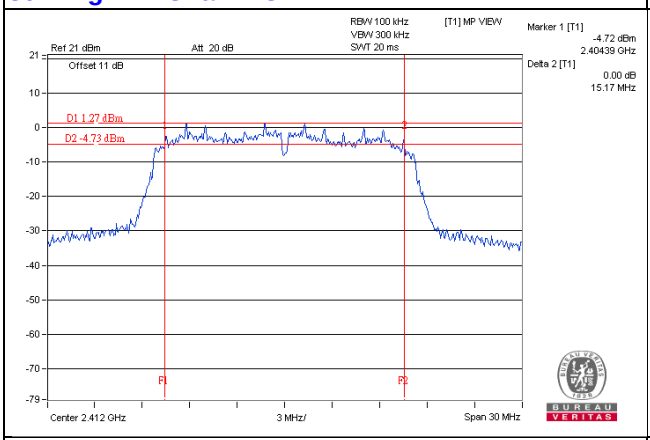
802.11b 1Tx Chain1 CH6



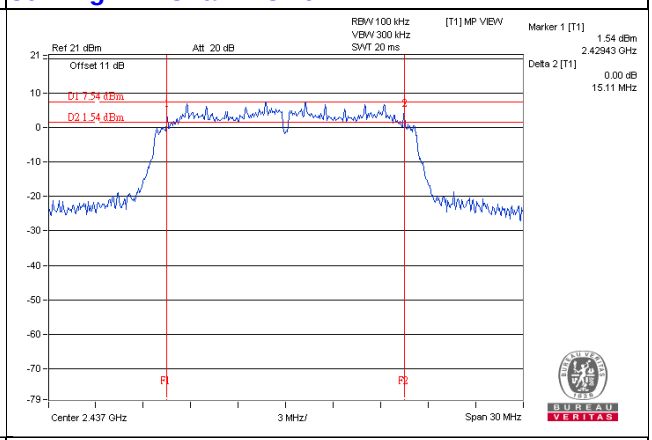
802.11b 1Tx Chain1 CH11



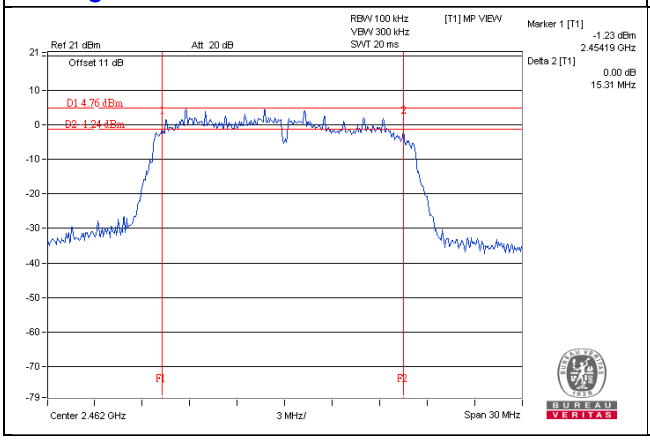
802.11g 1Tx Chain1 CH1



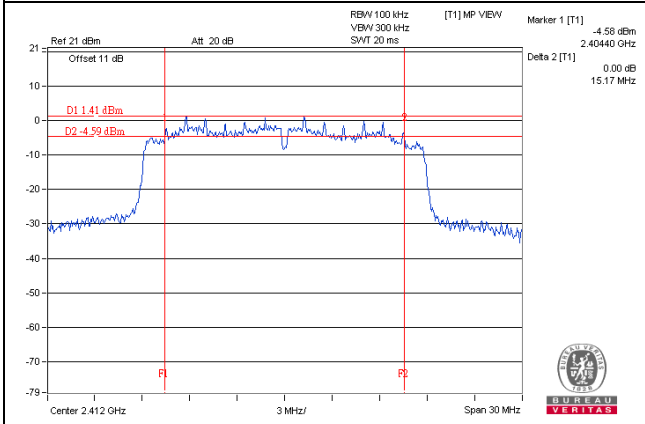
802.11g 1Tx Chain1 CH6



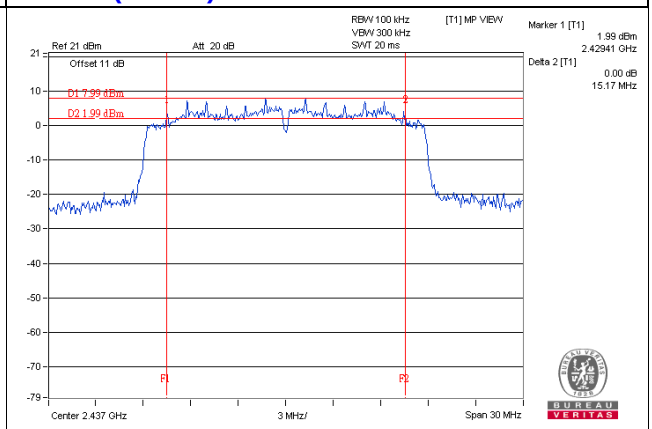
802.11g 1Tx Chain1 CH11



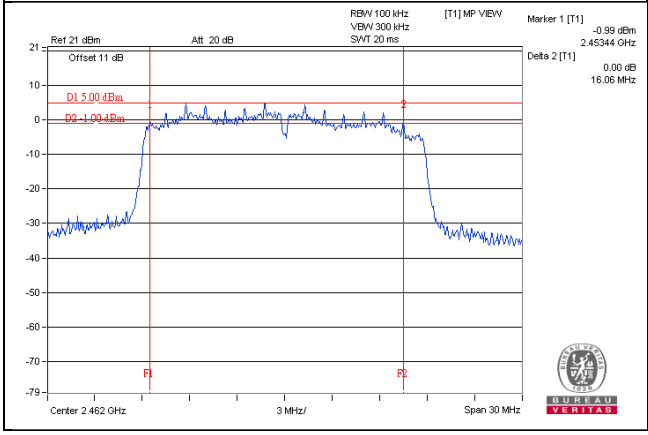
802.11n (20MHz) 1Tx Chain1 CH1



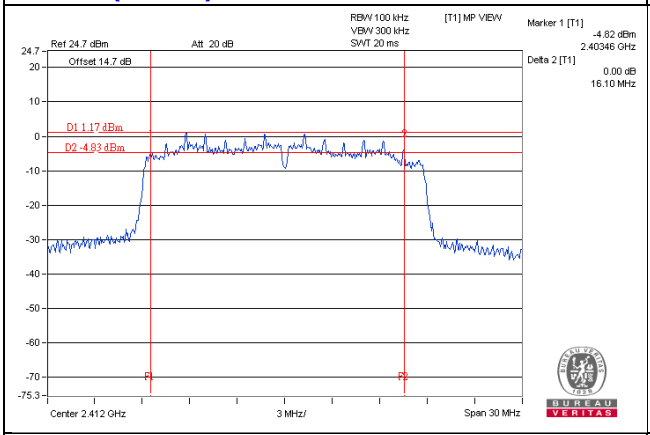
802.11n (20MHz) 1Tx Chain1 CH6



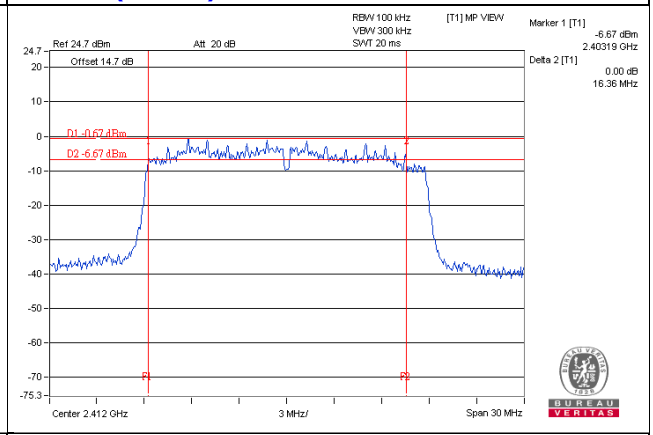
802.11n (20MHz) 1Tx Chain1 CH11



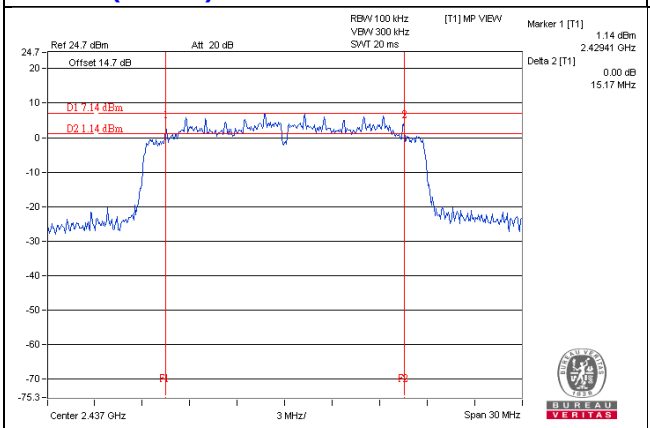
802.11n (20MHz) 2Tx SDM mode Chain1 CH1



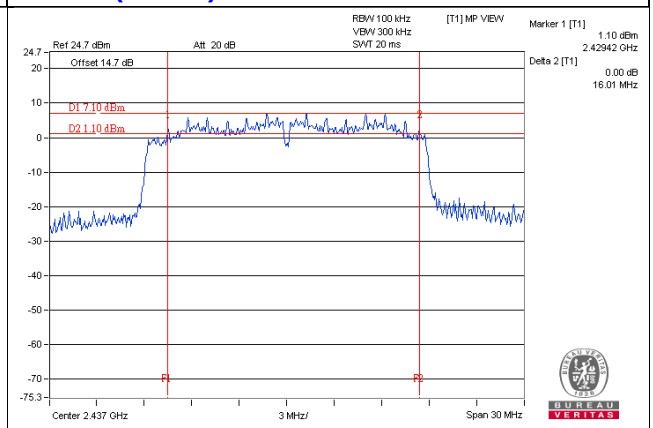
802.11n (20MHz) 2Tx SDM mode Chain2 CH1



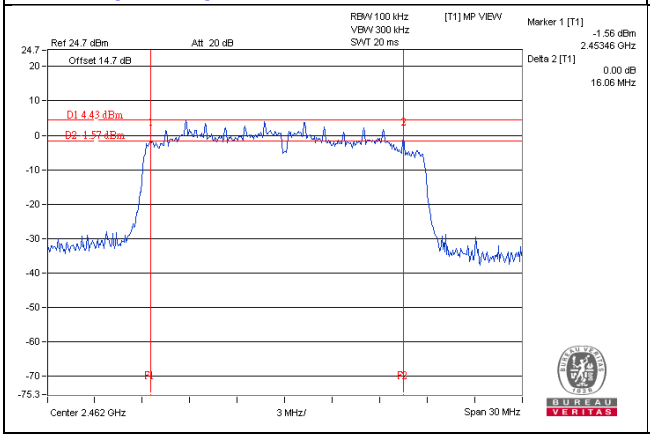
802.11n (20MHz) 2Tx SDM mode Chain1 CH6



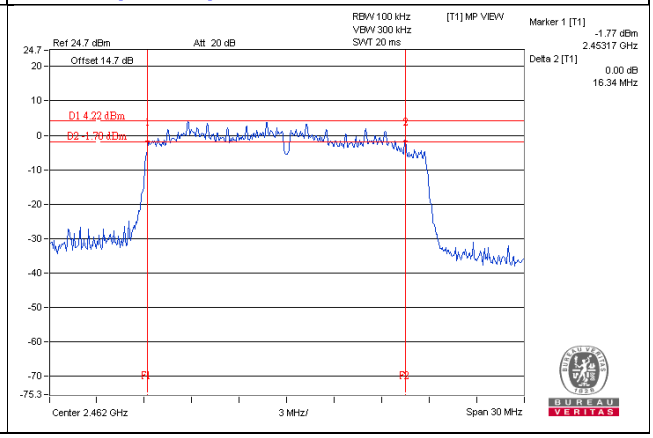
802.11n (20MHz) 2Tx SDM mode Chain2 CH6



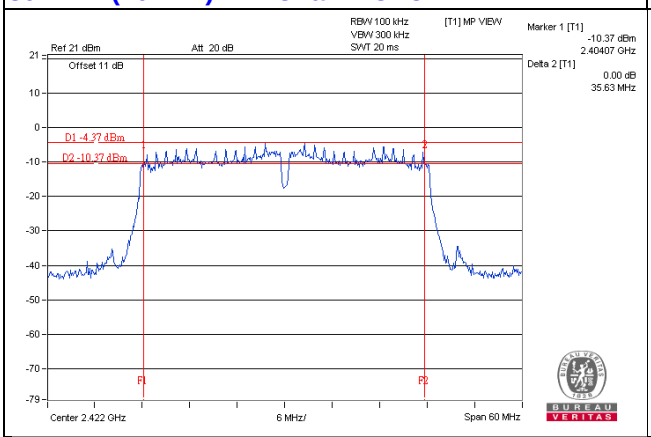
802.11n (20MHz) 2Tx SDM mode Chain1 CH11



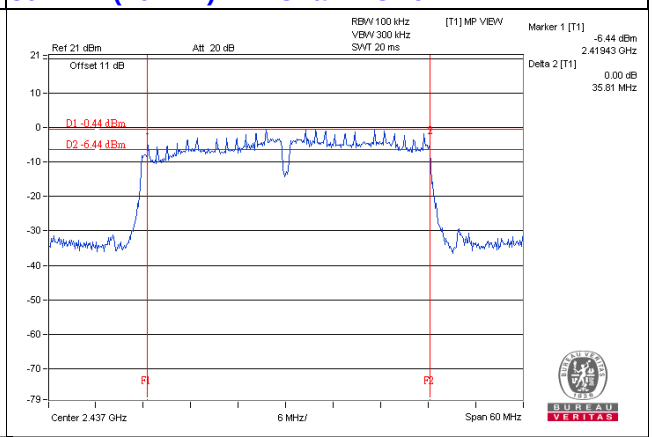
802.11n (20MHz) 2Tx SDM mode Chain2 CH11



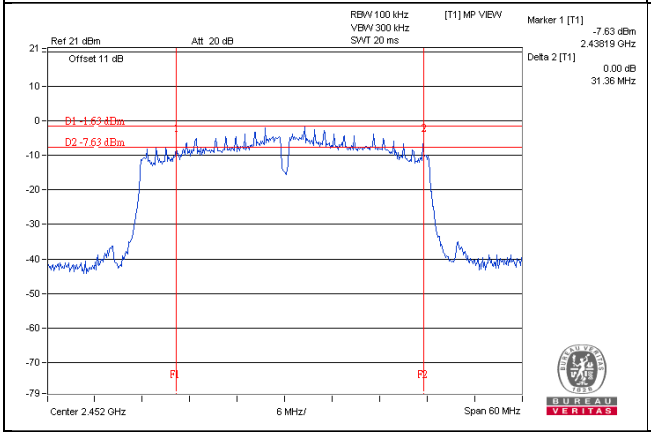
802.11n (40MHz) 1Tx Chain1 CH3



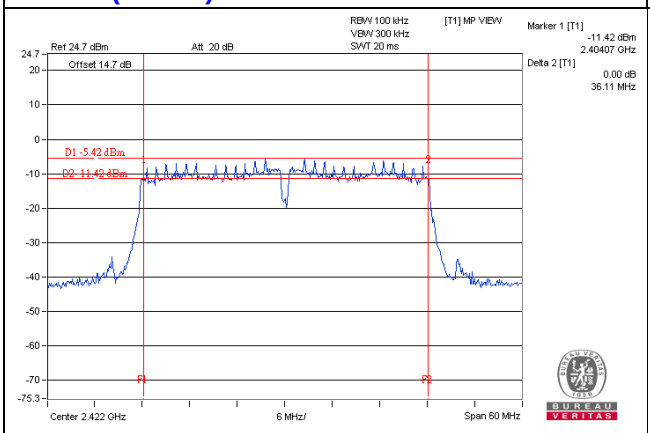
802.11n (40MHz) 1Tx Chain1 CH6



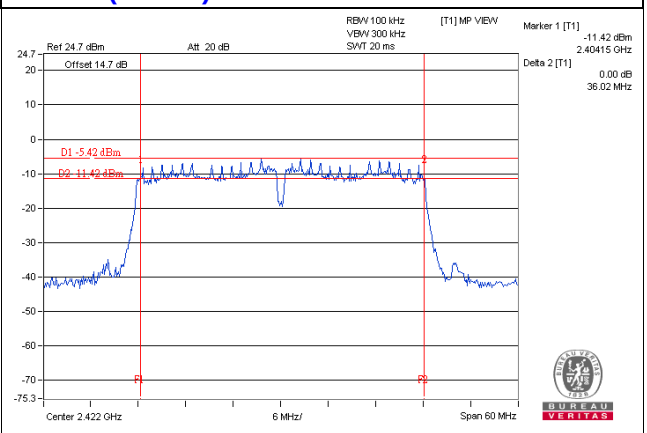
802.11n (40MHz) 1Tx Chain1 CH9



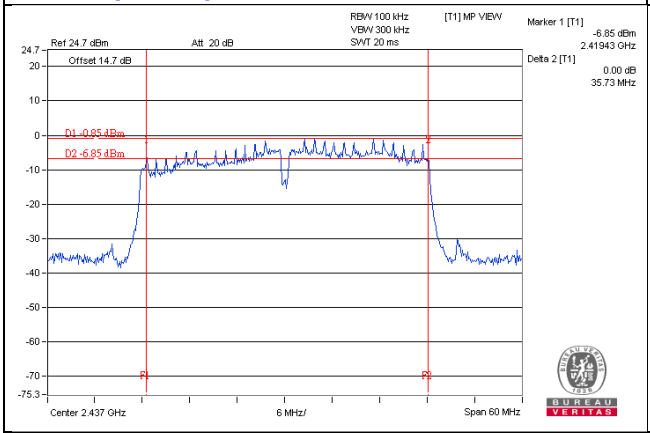
802.11n (40MHz) 2Tx SDM mode Chain1 CH3



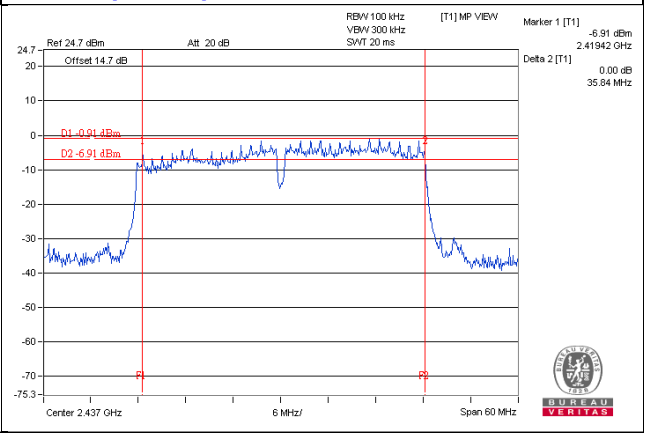
802.11n (40MHz) 2Tx SDM mode Chain2 CH3



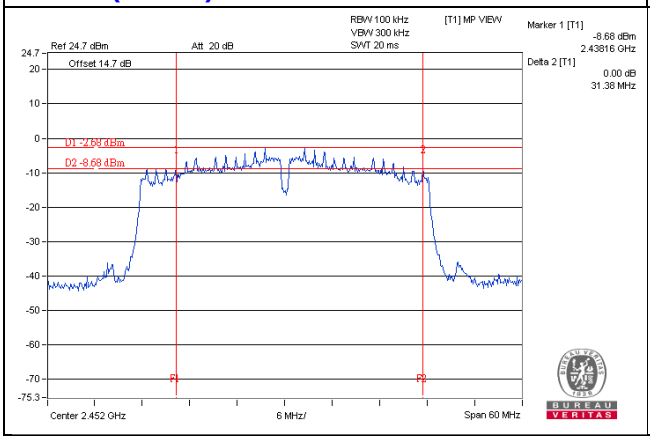
802.11n (40MHz) 2Tx SDM mode Chain1 CH6



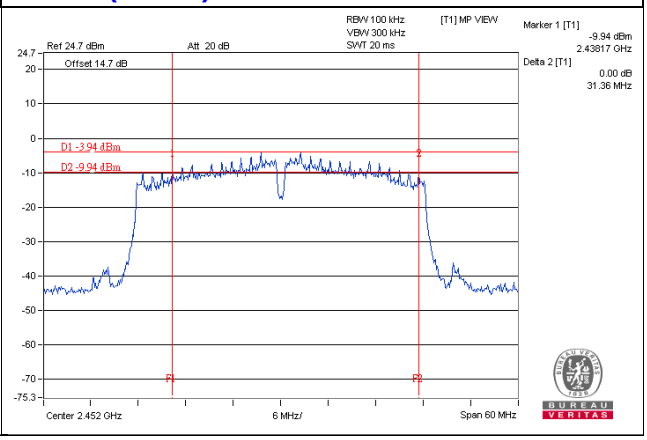
802.11n (40MHz) 2Tx SDM mode Chain2 CH6



802.11n (40MHz) 2Tx SDM mode Chain1 CH9



802.11n (40MHz) 2Tx SDM mode Chain2 CH9



4.5 Occupied Bandwidth Measurement

4.5.1 Measuring Instruments and Setting

The following table is the setting of the Spectrum Analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
RBW	1% to 5% of the anticipated emission bandwidth
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto couple

4.5.2 Test Procedure

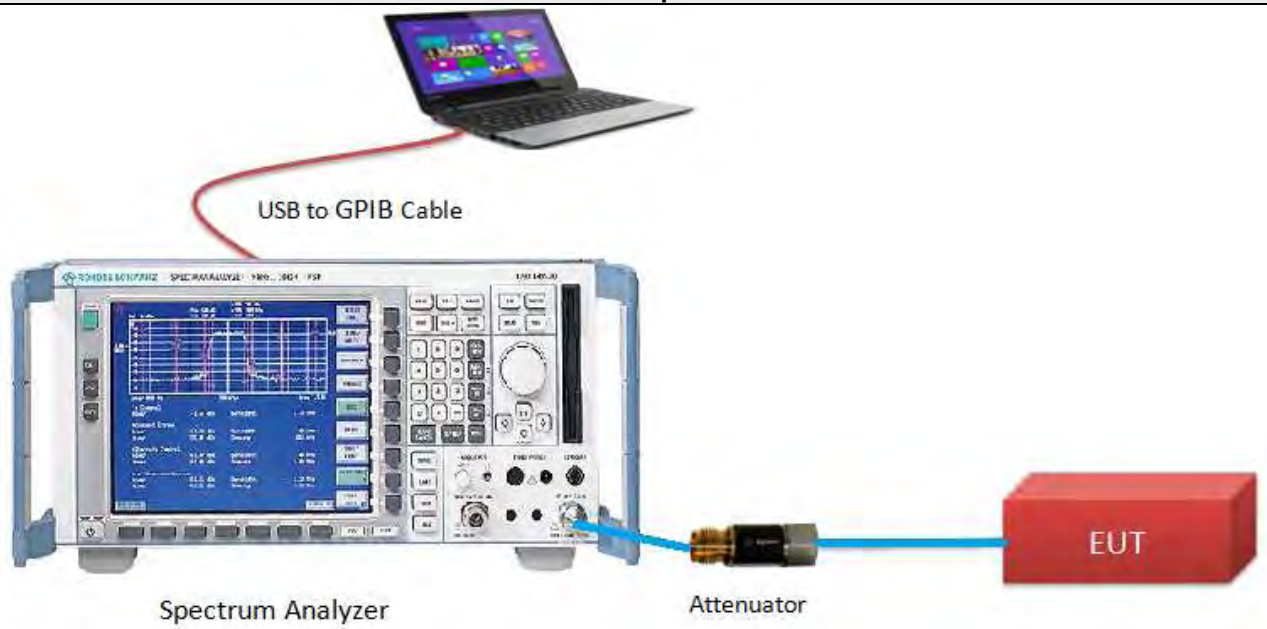
1 The transmitter output (antenna port) was connected to the spectrum analyzer in peak, Max hold mode.

2 For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier frequency. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to peak.

3 The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

4.5.3 Test Setup Layout

Setup



4.5.4 Test Deviation

There are no deviations with the original standard.

4.5.5 EUT Operating Conditions

The EUT was programmed to be in continuously transmitting mode.

4.5.6 Test Results of Occupied Bandwidth

Temperature	25℃	**Humidity**	60%
Test Engineer	Anderson Chen		

802.11b 1Tx Chain1

CHANNEL	FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)
1	2412	10.56
6	2437	10.56
11	2462	11.16

802.11g 1Tx Chain1

CHANNEL	FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)
1	2412	16.56
6	2437	16.56
11	2462	16.44

802.11n (20MHz) 1Tx Chain1

CHANNEL	FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)
1	2412	17.52
6	2437	17.64
11	2462	17.52

802.11n (20MHz) 2Tx SDM

CHANNEL	FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)	
		CHAIN 1	CHAIN 2
1	2412	17.52	17.52
6	2437	17.52	17.64
11	2462	17.40	17.52

802.11n (40MHz) 1Tx Chain1

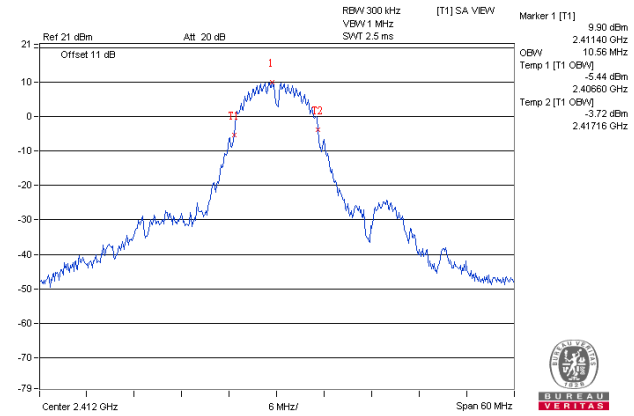
CHANNEL	FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)
3	2422	36.72
6	2437	36.72
9	2452	36.24

802.11n (40MHz) 2Tx SDM

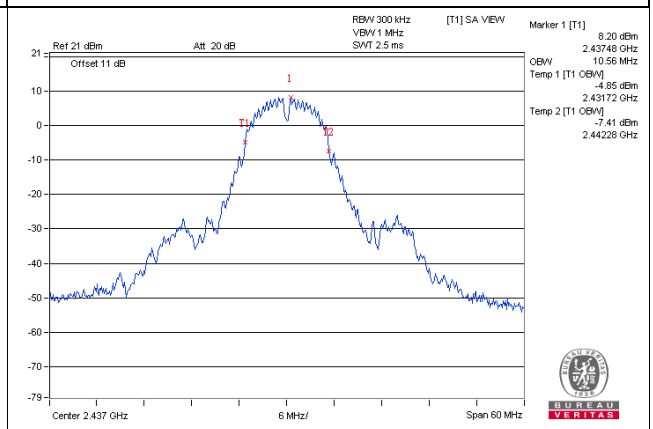
CHANNEL	FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)	
		CHAIN 1	CHAIN 2
3	2422	36.72	36.96
6	2437	36.48	36.72
9	2452	36.00	36.48

SPECTRUM PLOT

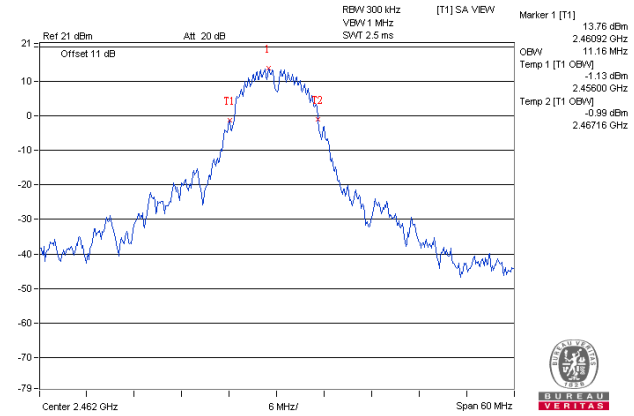
802.11b 1Tx Chain1 CH1



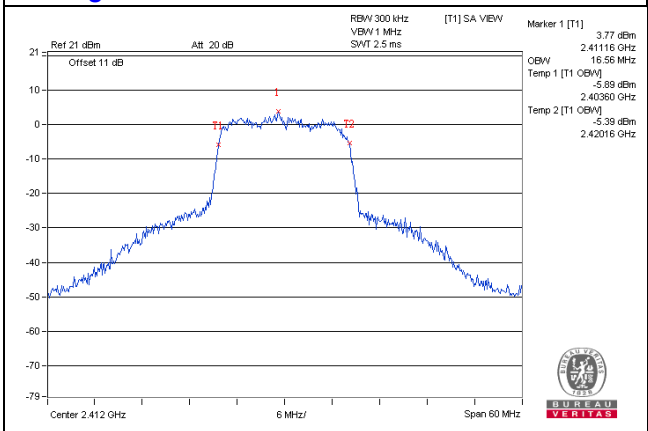
802.11b 1Tx Chain1 CH6



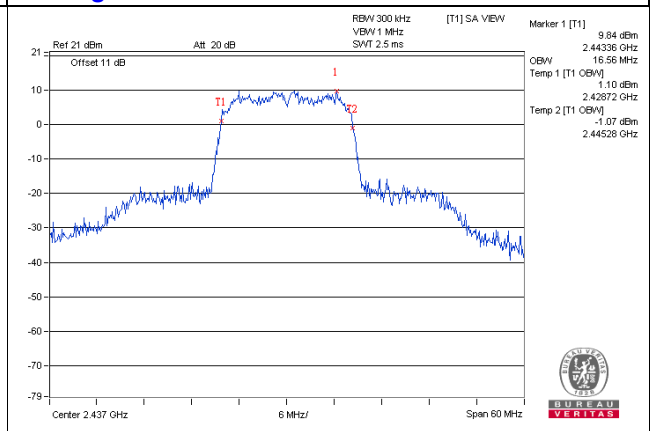
802.11b 1Tx Chain1 CH11



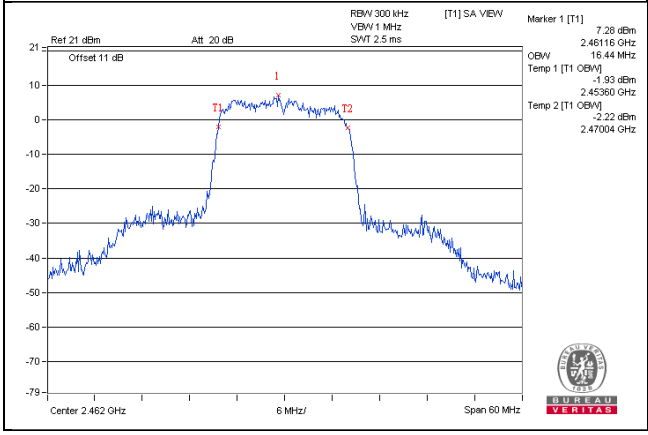
802.11g 1Tx Chain1 CH1



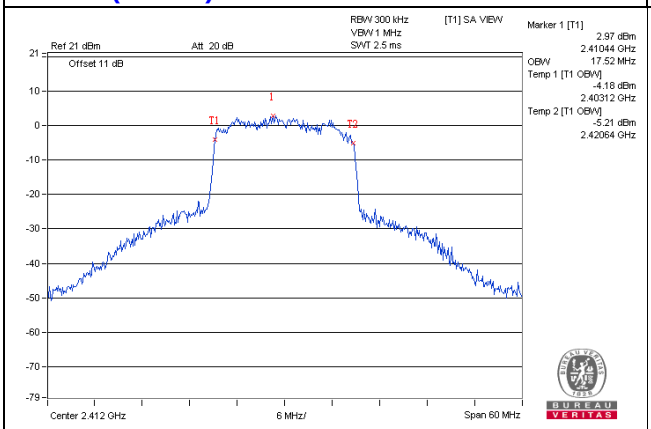
802.11g 1Tx Chain1 CH6



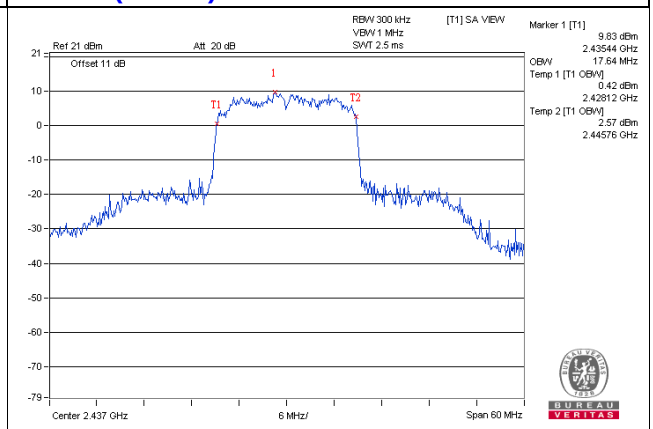
802.11g 1Tx Chain1 CH11



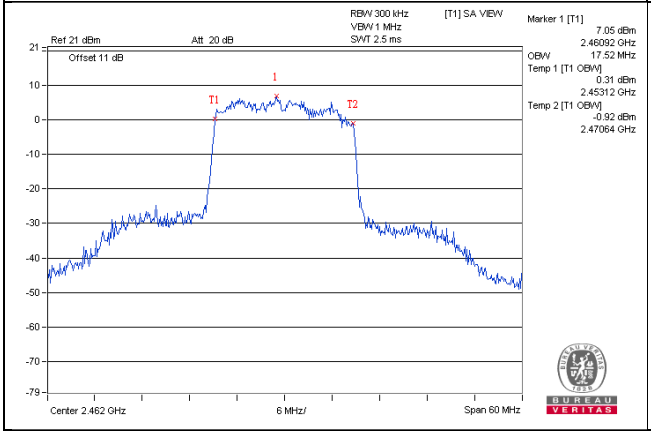
802.11n (20MHz) 1Tx Chain1 CH1



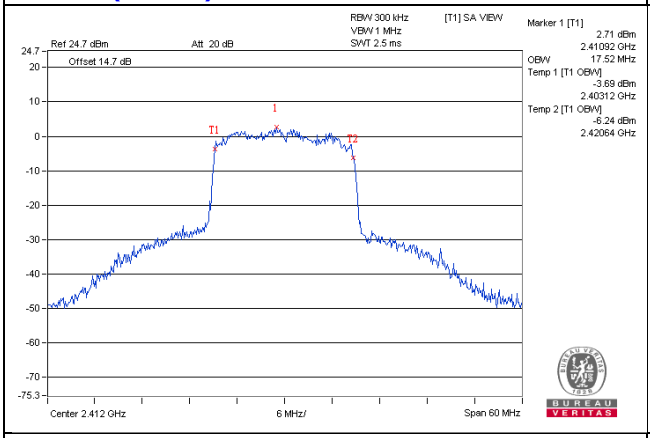
802.11n (20MHz) 1Tx Chain1 CH6



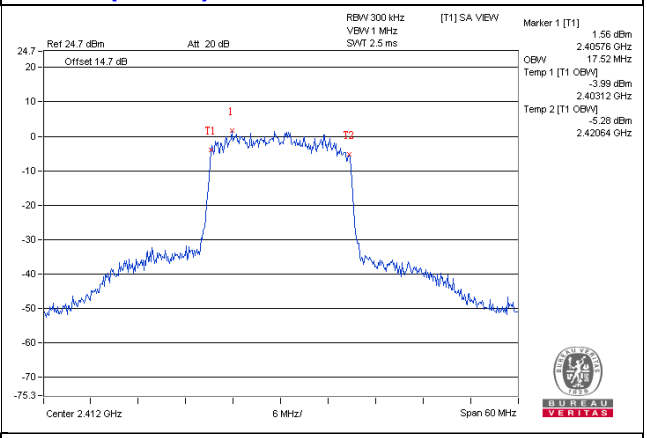
802.11n (20MHz) 1Tx Chain1 CH11



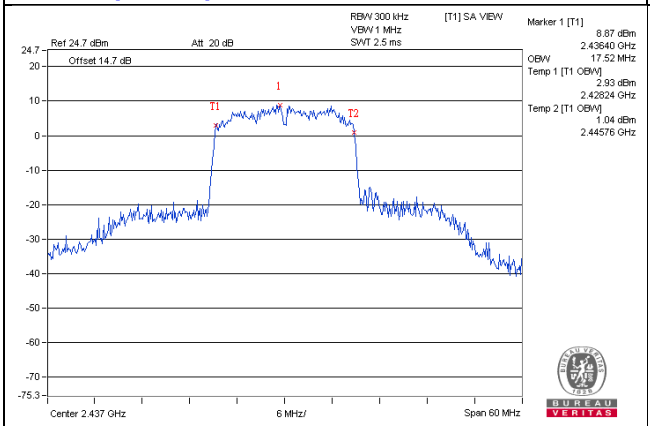
802.11n (20MHz) 2Tx SDM mode Chain1 CH1



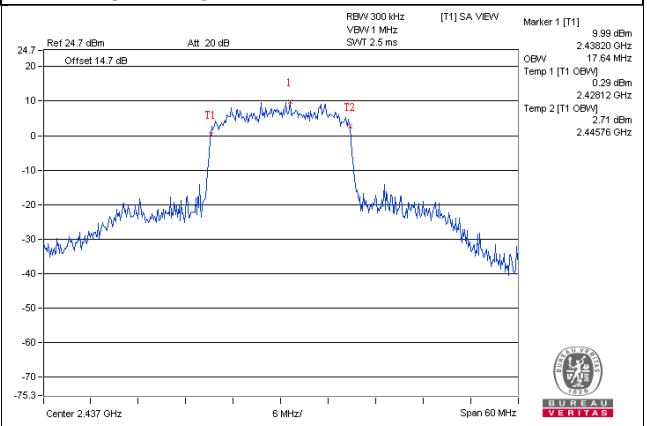
802.11n (20MHz) 2Tx SDM mode Chain2 CH1



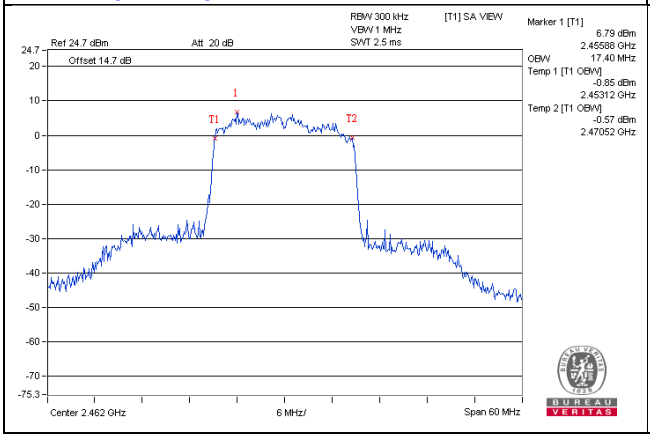
802.11n (20MHz) 2Tx SDM mode Chain1 CH6



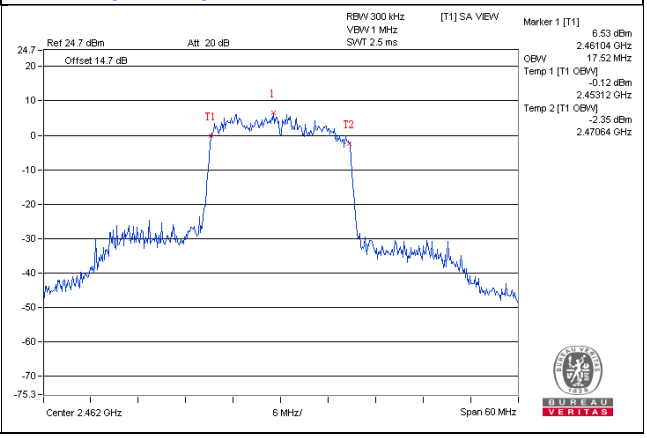
802.11n (20MHz) 2Tx SDM mode Chain2 CH6



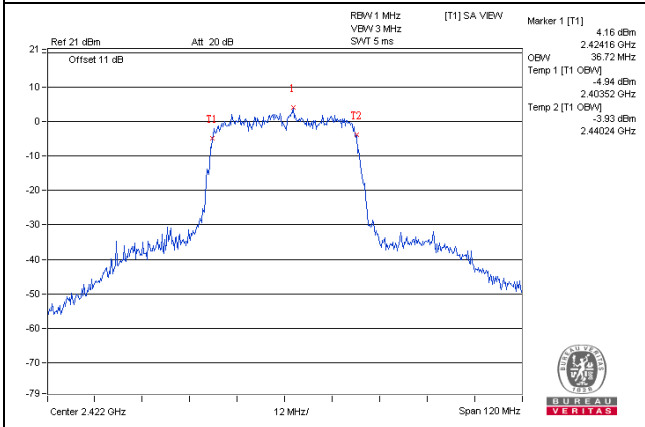
802.11n (20MHz) 2Tx SDM mode Chain1 CH11



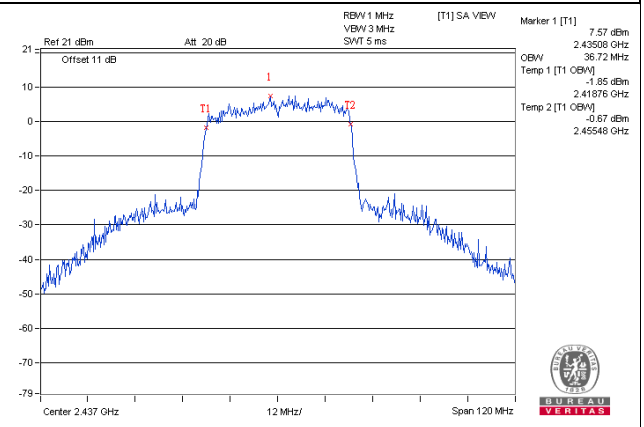
802.11n (20MHz) 2Tx SDM mode Chain2 CH11



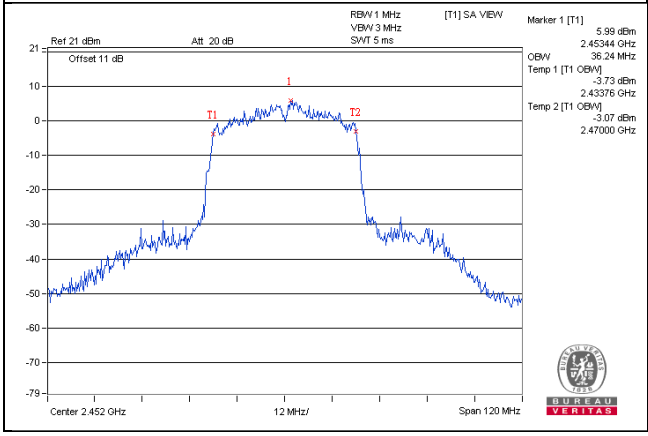
802.11n (40MHz) 1Tx Chain1 CH3



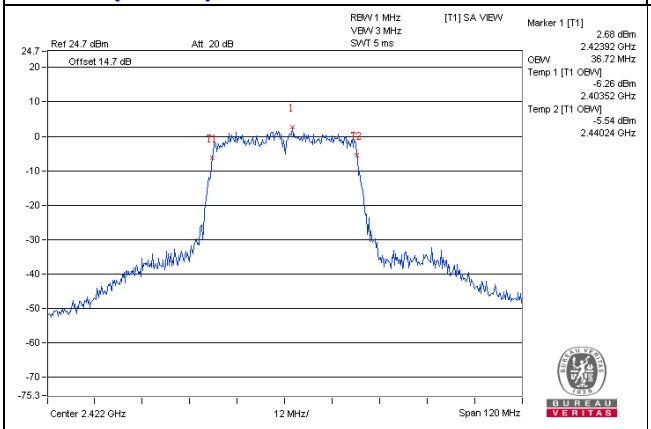
802.11n (40MHz) 1Tx Chain1 CH6



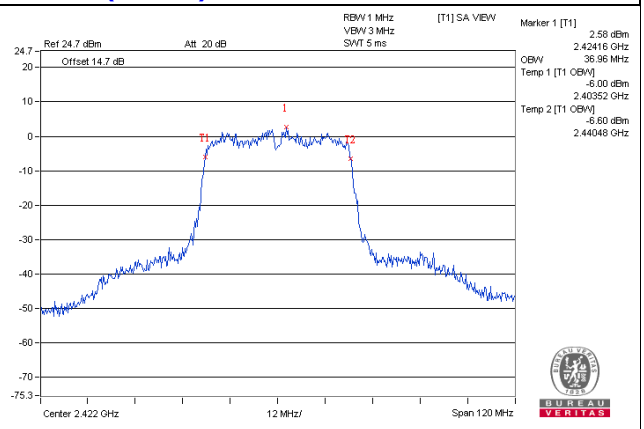
802.11n (40MHz) 1Tx Chain1 CH9



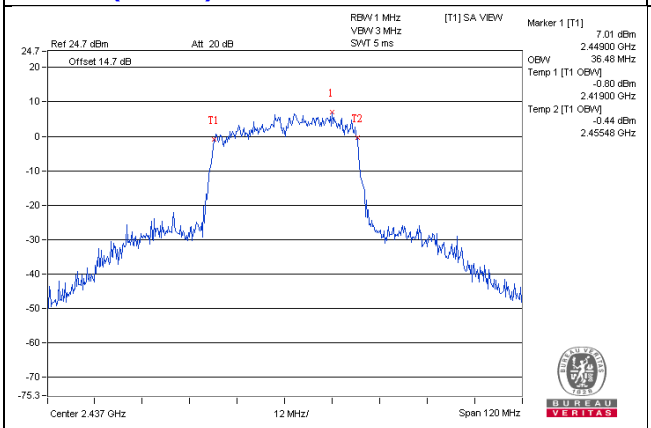
802.11n (40MHz) 2Tx SDM mode Chain1 CH3



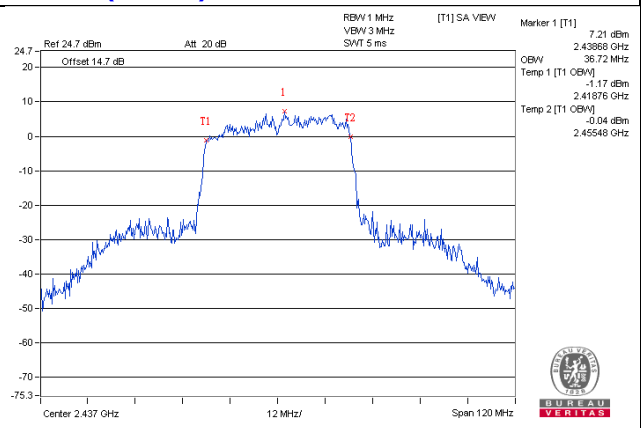
802.11n (40MHz) 2Tx SDM mode Chain2 CH3



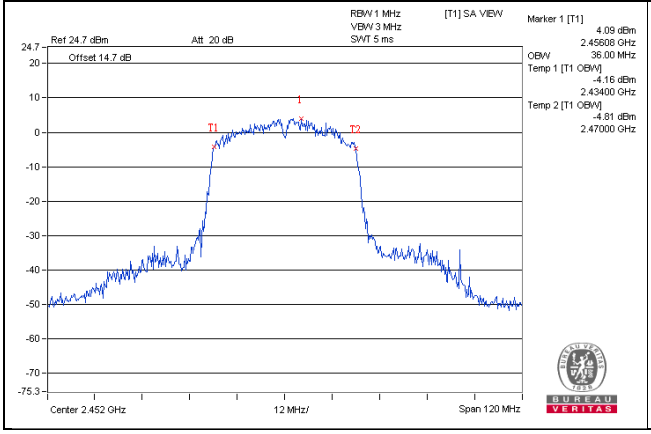
802.11n (40MHz) 2Tx SDM mode Chain1 CH6



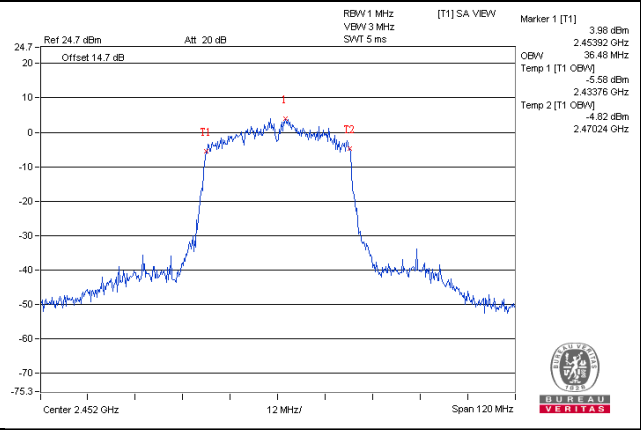
802.11n (40MHz) 2Tx SDM mode Chain2 CH6



802.11n (40MHz) 2Tx SDM mode Chain1 CH9



802.11n (40MHz) 2Tx SDM mode Chain2 CH9



4.6 Radiated Emissions Measurement

4.6.1 Limit

30dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emissions fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequency Range (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

4.6.2 Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emissions in restricted band)	1MHz / 3MHz for Peak, 1 MHz / 1/T for Average
RBW / VBW (Emissions in non-restricted band)	100kHz / 300kHz for peak

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RBW 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RBW 120kHz for QP

4.6.3 Test Procedure

1 Configure the EUT according to ANSI C63.10. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.

2 Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.

3 The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.

4 For each suspected emissions, the antenna tower was scan (from 1 m to 4 m) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.

5 Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode

6 For emissions above 1GHz, use 1MHz VBW and 3MHz RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer for Duty ≥ 98%, 1MHz RBW and VBW is ≥ 1/T for average reading in spectrum analyzer for Duty < 98%.

7 When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.

8 If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.

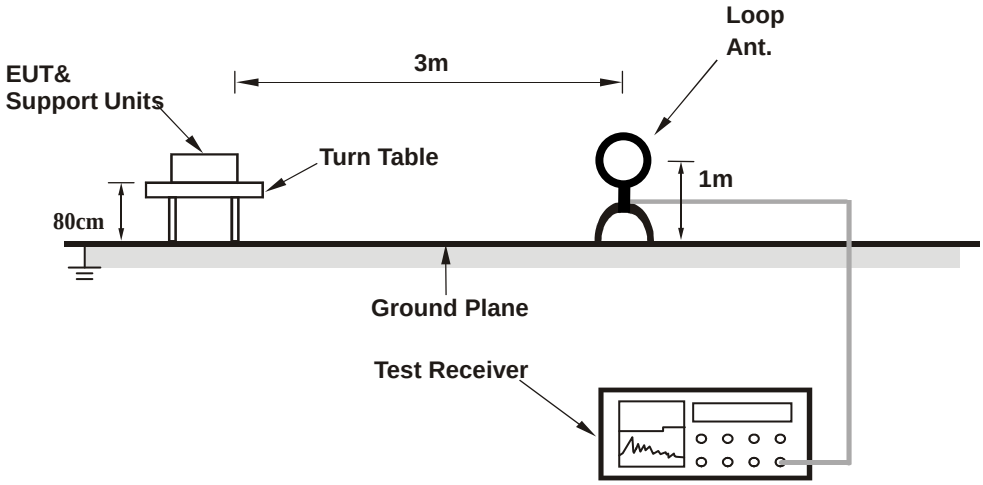
9 For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also PASS with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

10 As the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

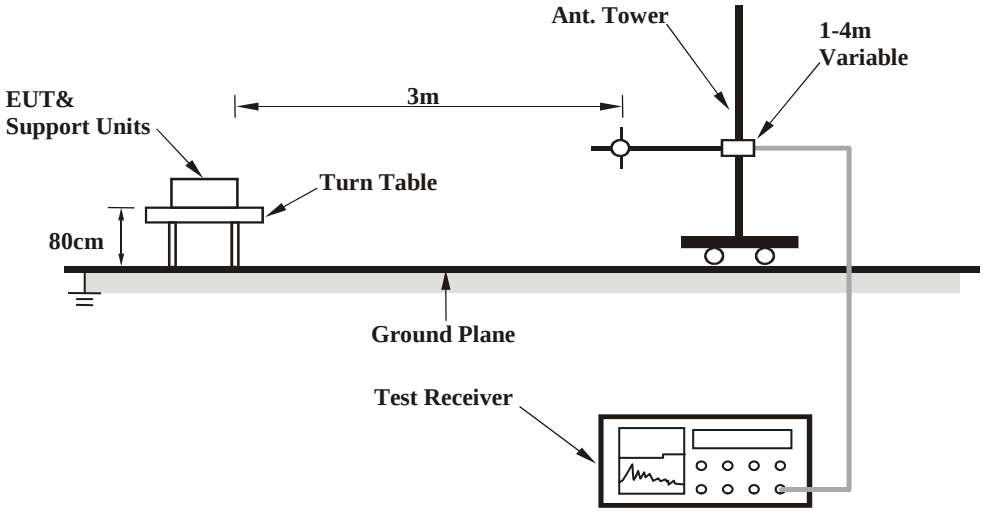
4.6.4 Test Setup Layout

Setup

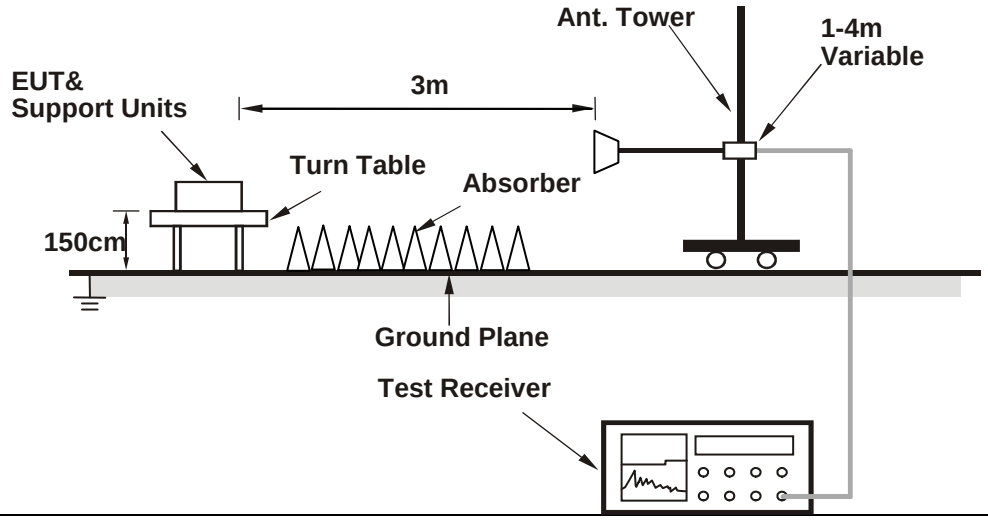
For Radiated Emissions below 1GHz (9kHz~30MHz)



For Radiated Emissions below 1GHz (30MHz~1GHz)



For Radiated Emissions above 1GHz



4.6.5 Test Deviation

There are no deviations with the original standard.

4.6.6 EUT Operating Conditions

The EUT was programmed to be in continuously transmitting mode.

4.6.7 Test Results of Radiated Emissions

Temperature	23℃	**Humidity**	70%
Test Engineer	Gary Cheng		

Radiated Emissions Range 9kHz~30MHz

The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.

Radiated Emissions Range 30MHz~1GHz

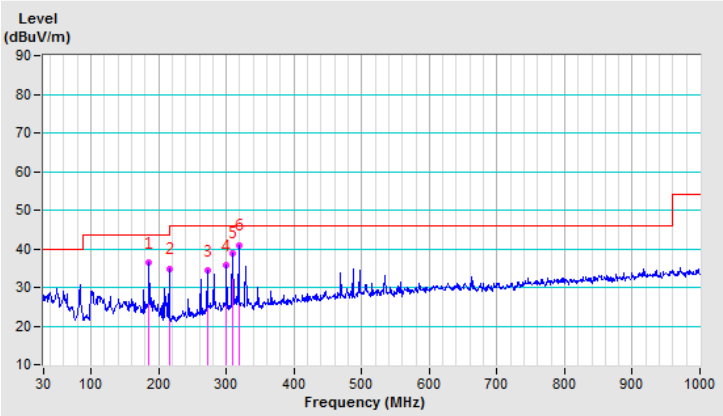
802.11n (20MHz)

CHANNEL	TX Channel 6	**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	186.15	36.3 QP	43.5	-7.2	2.00 H	282	46.9	-10.6
2	215.63	34.7 QP	43.5	-8.8	1.00 H	279	46.0	-11.3
3	271.87	34.3 QP	46.0	-11.7	1.00 H	304	42.8	-8.5
4	300.00	35.6 QP	46.0	-10.4	1.50 H	331	42.9	-7.3
5	309.36	38.8 QP	46.0	-7.2	1.50 H	254	45.7	-6.9
6	318.74	40.8 QP	46.0	-5.2	1.50 H	226	47.4	-6.6

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

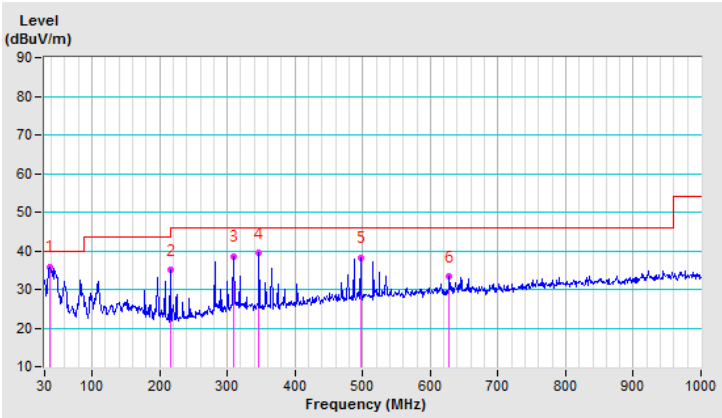


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

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	37.01	35.9 QP	40.0	-4.1	1.00 V	326	45.1	-9.2
2	215.63	35.0 QP	43.5	-8.5	1.00 V	186	46.3	-11.3
3	309.38	38.4 QP	46.0	-7.6	2.00 V	4	45.3	-6.9
4	346.87	39.3 QP	46.0	-6.7	1.50 V	126	45.6	-6.3
5	496.89	38.3 QP	46.0	-7.7	1.00 V	344	40.9	-2.6
6	628.10	33.3 QP	46.0	-12.7	1.00 V	66	33.0	0.3

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



Radiated Emission Range 1GHz~10th Harmonic

1TX

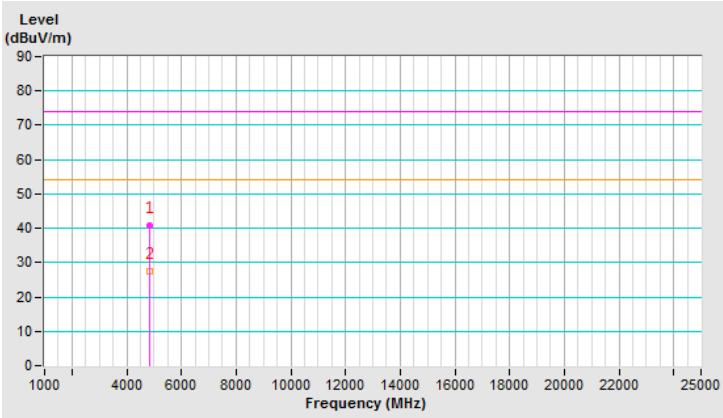
802.11b

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	4824.00	40.8 PK	74.0	-33.2	1.50 H	58	38.5	2.3
2	4824.00	27.5 AV	54.0	-26.5	1.50 H	58	25.2	2.3

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

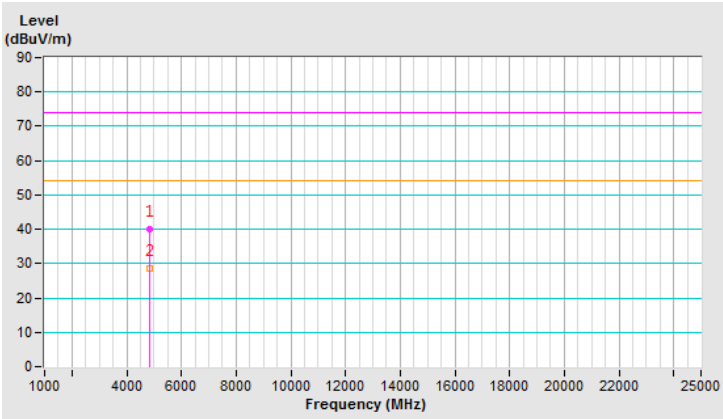


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4824.00	40.0 PK	74.0	-34.0	1.29 V	104	37.7	2.3
2	4824.00	28.6 AV	54.0	-25.4	1.29 V	104	26.3	2.3

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

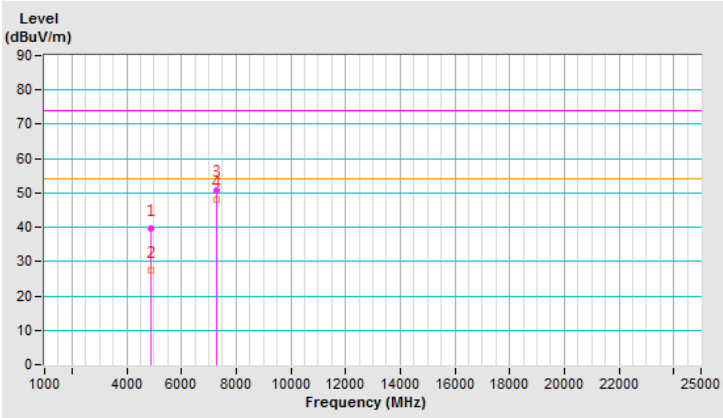


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4874.00	39.5 PK	74.0	-34.5	1.50 H	36	37.0	2.5
2	4874.00	27.6 AV	54.0	-26.4	1.50 H	36	25.1	2.5
3	7311.00	50.9 PK	74.0	-23.1	1.93 H	236	42.0	8.9
4	7311.00	47.9 AV	54.0	-6.1	1.93 H	236	39.0	8.9

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

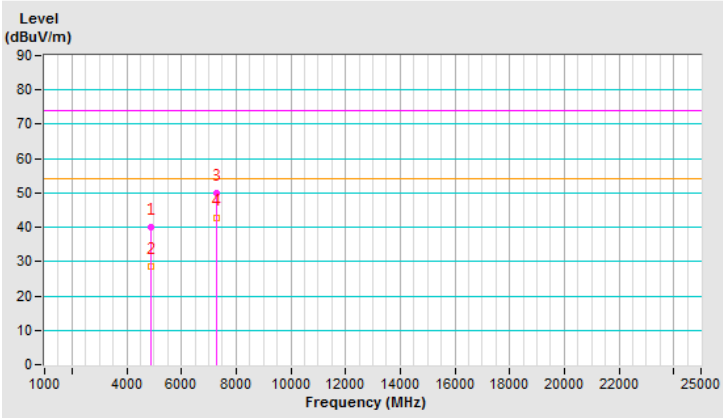


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4874.00	39.9 PK	74.0	-34.1	1.25 V	110	37.4	2.5
2	4874.00	28.5 AV	54.0	-25.5	1.25 V	110	26.0	2.5
3	7311.00	50.1 PK	74.0	-23.9	1.87 V	162	41.2	8.9
4	7311.00	42.6 AV	54.0	-11.4	1.87 V	162	33.7	8.9

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

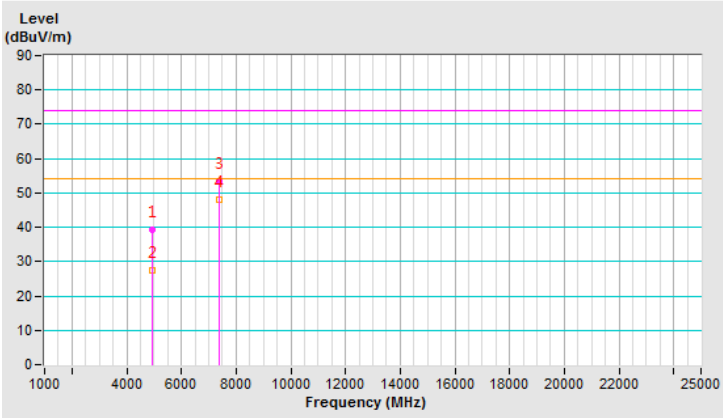


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4924.00	39.3 PK	74.0	-34.7	1.47 H	34	36.7	2.6
2	4924.00	27.4 AV	54.0	-26.6	1.47 H	34	24.8	2.6
3	7386.00	53.3 PK	74.0	-20.7	1.86 H	239	44.1	9.2
4	7386.00	48.1 AV	54.0	-5.9	1.86 H	239	38.9	9.2

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

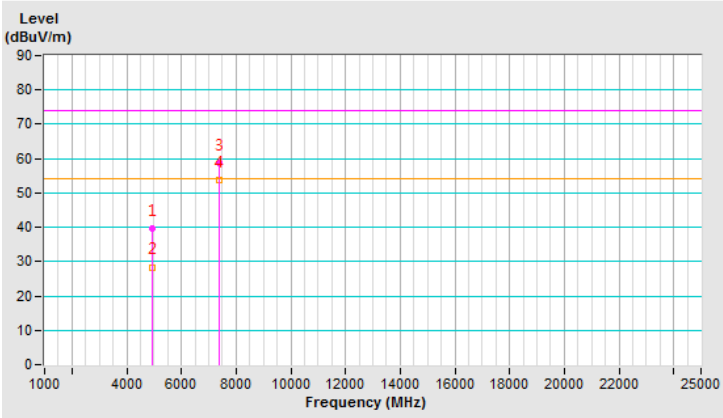


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4924.00	39.7 PK	74.0	-34.3	1.29 V	100	37.1	2.6
2	4924.00	28.4 AV	54.0	-25.6	1.29 V	100	25.8	2.6
3	7386.00	58.8 PK	74.0	-15.2	1.83 V	156	49.6	9.2
4	**7386.00**	**53.9 AV**	**54.0**	**-0.1**	**1.83 V**	**156**	**44.7**	**9.2**

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



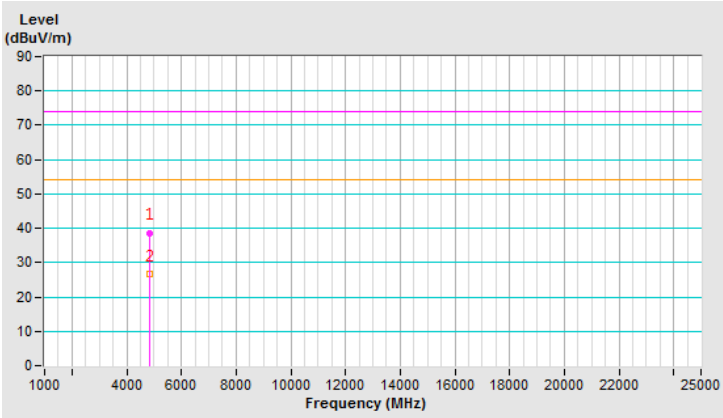
802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4824.00	38.7 PK	74.0	-35.3	1.45 H	32	36.4	2.3
2	4824.00	26.8 AV	54.0	-27.2	1.45 H	32	24.5	2.3

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

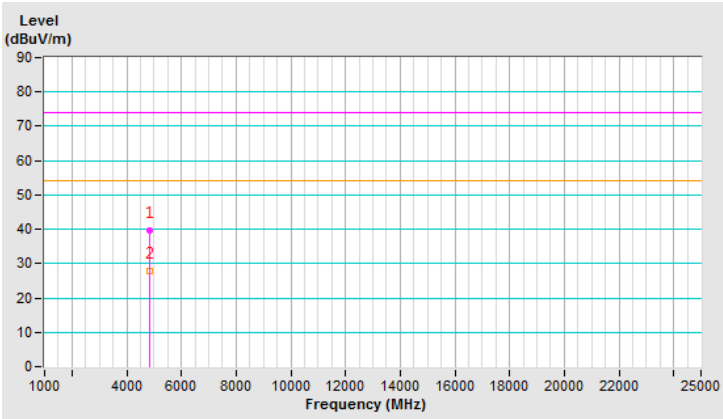


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4824.00	39.7 PK	74.0	-34.3	1.69 V	145	37.4	2.3
2	4824.00	27.9 AV	54.0	-26.1	1.69 V	145	25.6	2.3

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

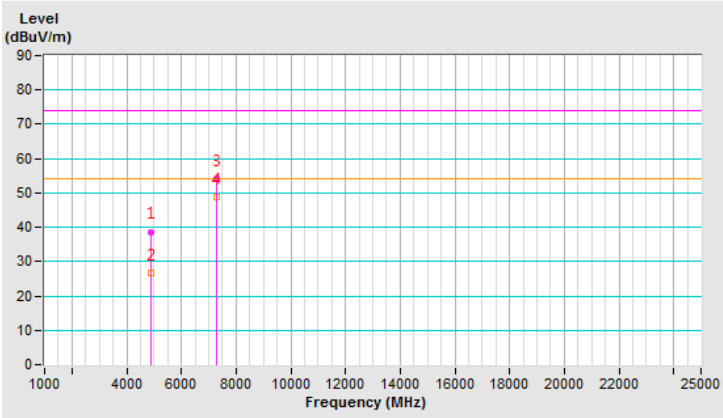


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4874.00	38.7 PK	74.0	-35.3	1.42 H	16	36.2	2.5
2	4874.00	26.7 AV	54.0	-27.3	1.42 H	16	24.2	2.5
3	7311.00	54.1 PK	74.0	-19.9	1.85 H	230	45.2	8.9
4	7311.00	48.9 AV	54.0	-5.1	1.85 H	230	40.0	8.9

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

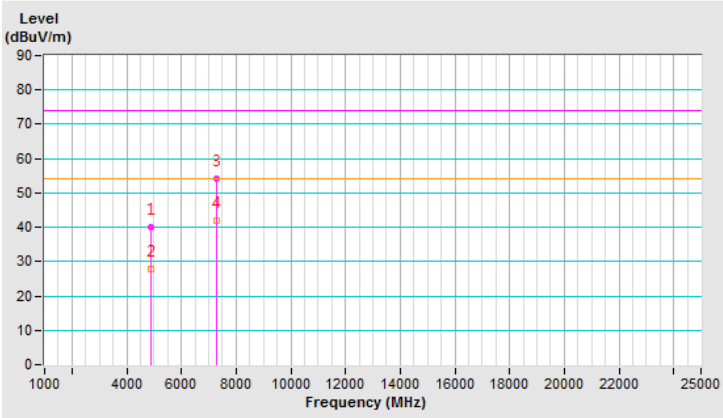


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4874.00	40.0 PK	74.0	-34.0	1.74 V	153	37.5	2.5
2	4874.00	27.9 AV	54.0	-26.1	1.74 V	153	25.4	2.5
3	7311.00	54.1 PK	74.0	-19.9	1.60 V	164	45.2	8.9
4	7311.00	42.0 AV	54.0	-12.0	1.60 V	164	33.1	8.9

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

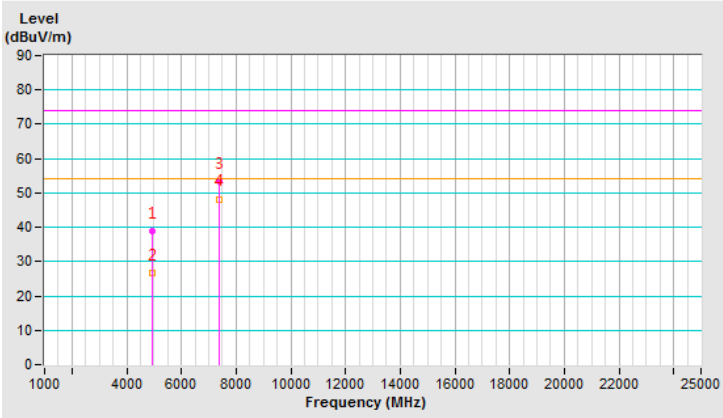


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4924.00	38.8 PK	74.0	-35.2	1.39 H	8	36.2	2.6
2	4924.00	26.6 AV	54.0	-27.4	1.39 H	8	24.0	2.6
3	7386.00	53.5 PK	74.0	-20.5	1.88 H	214	44.3	9.2
4	7386.00	48.2 AV	54.0	-5.8	1.88 H	214	39.0	9.2

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

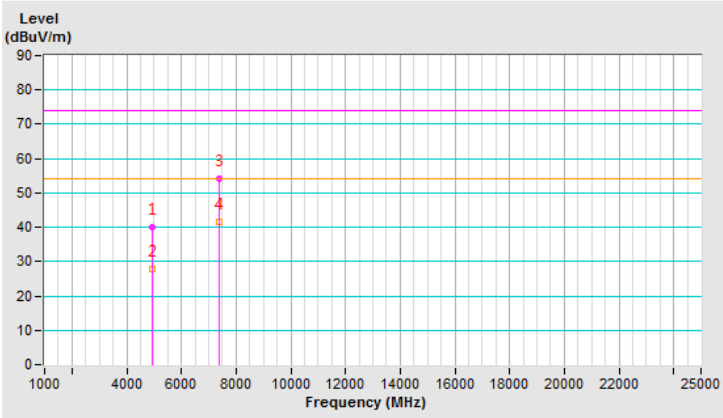


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4924.00	40.0 PK	74.0	-34.0	1.68 V	137	37.4	2.6
2	4924.00	27.7 AV	54.0	-26.3	1.68 V	137	25.1	2.6
3	7386.00	54.0 PK	74.0	-20.0	1.62 V	157	44.8	9.2
4	7386.00	41.7 AV	54.0	-12.3	1.62 V	157	32.5	9.2

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



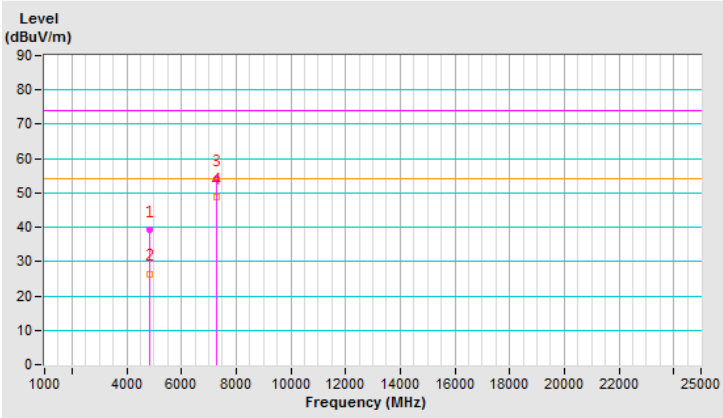
802.11n (40MHz)

CHANNEL	TX Channel 3	**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	4844.00	39.2 PK	74.0	-34.8	1.48 H	18	36.8	2.4
2	4844.00	26.5 AV	54.0	-27.5	1.48 H	18	24.1	2.4
3	7266.00	54.0 PK	74.0	-20.0	1.83 H	218	45.2	8.8
4	7266.00	48.9 AV	54.0	-5.1	1.83 H	218	40.1	8.8

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

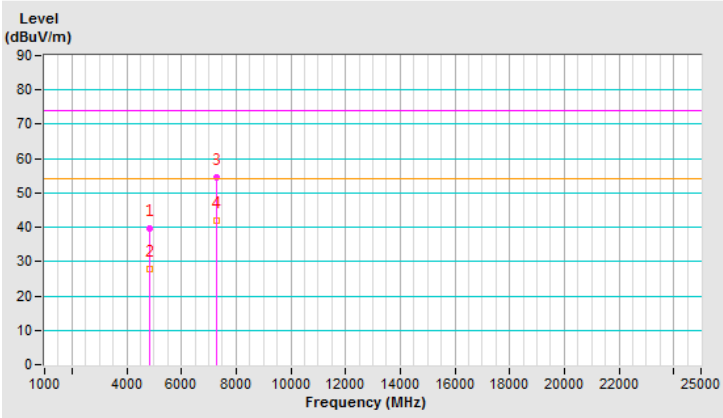


CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4844.00	39.8 PK	74.0	-34.2	1.73 V	168	37.4	2.4
2	4844.00	27.8 AV	54.0	-26.2	1.73 V	168	25.4	2.4
3	7266.00	54.4 PK	74.0	-19.6	1.63 V	167	45.6	8.8
4	7266.00	42.0 AV	54.0	-12.0	1.63 V	167	33.2	8.8

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

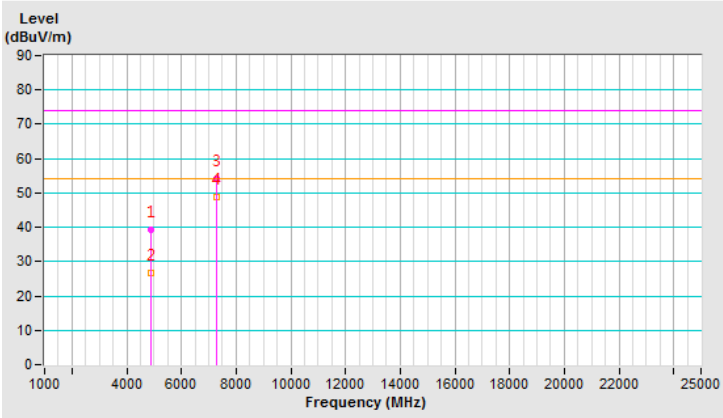


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4874.00	39.1 PK	74.0	-34.9	1.43 H	10	36.6	2.5
2	4874.00	26.7 AV	54.0	-27.3	1.43 H	10	24.2	2.5
3	7311.00	54.0 PK	74.0	-20.0	1.84 H	215	45.1	8.9
4	7311.00	48.7 AV	54.0	-5.3	1.84 H	215	39.8	8.9

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

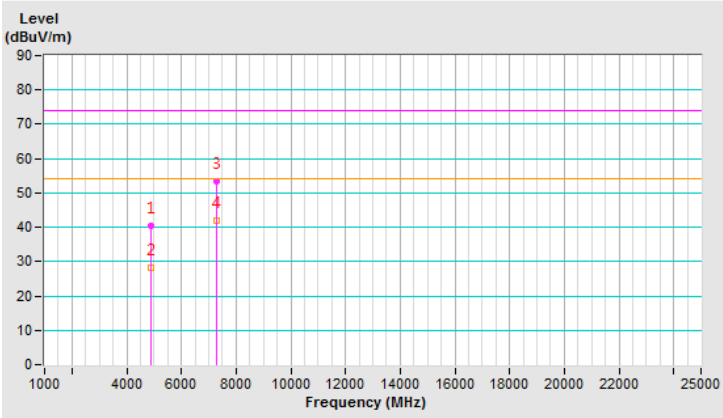


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4874.00	40.5 PK	74.0	-33.5	1.74 V	150	38.0	2.5
2	4874.00	28.3 AV	54.0	-25.7	1.74 V	150	25.8	2.5
3	7311.00	53.5 PK	74.0	-20.5	1.53 V	153	44.6	8.9
4	7311.00	42.0 AV	54.0	-12.0	1.53 V	153	33.1	8.9

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

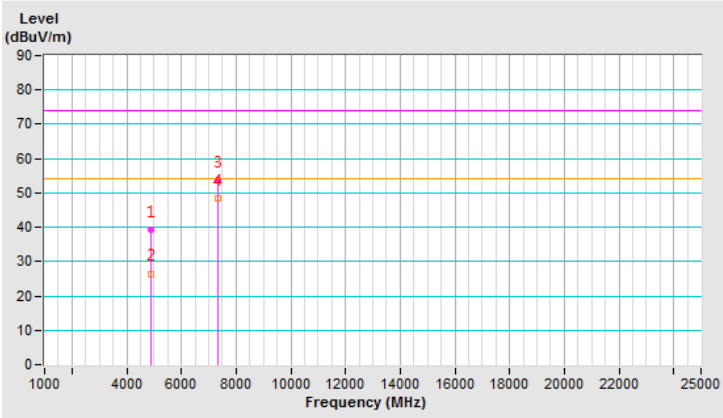


CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4904.00	39.2 PK	74.0	-34.8	1.40 H	21	36.7	2.5
2	4904.00	26.5 AV	54.0	-27.5	1.40 H	21	24.0	2.5
3	7356.00	53.9 PK	74.0	-20.1	1.83 H	224	44.7	9.2
4	7356.00	48.5 AV	54.0	-5.5	1.83 H	224	39.3	9.2

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

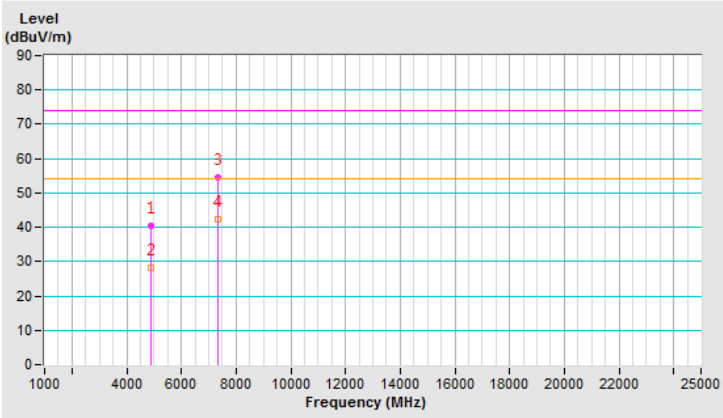


CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4904.00	40.5 PK	74.0	-33.5	1.80 V	153	38.0	2.5
2	4904.00	28.2 AV	54.0	-25.8	1.80 V	153	25.7	2.5
3	7356.00	54.4 PK	74.0	-19.6	1.57 V	175	45.2	9.2
4	7356.00	42.3 AV	54.0	-11.7	1.57 V	175	33.1	9.2

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



2TX

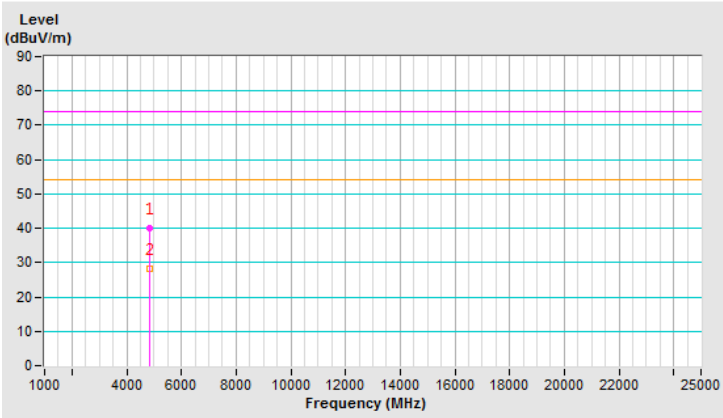
802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4824.00	40.2 PK	74.0	-33.8	1.56 H	40	37.9	2.3
2	4824.00	28.4 AV	54.0	-25.6	1.56 H	40	26.1	2.3

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

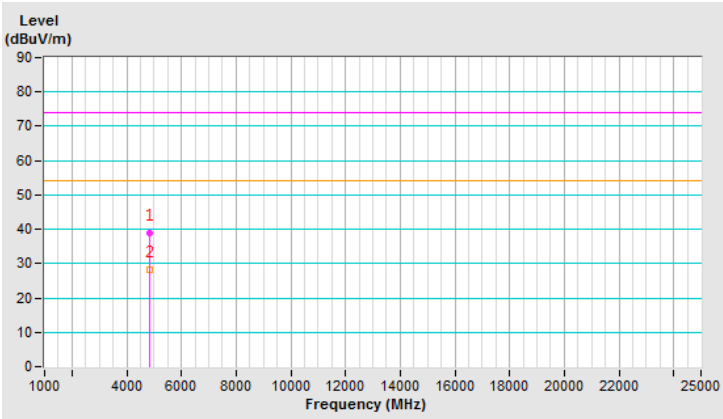


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4824.00	39.0 PK	74.0	-35.0	1.60 V	344	36.7	2.3
2	4824.00	28.3 AV	54.0	-25.7	1.60 V	344	26.0	2.3

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

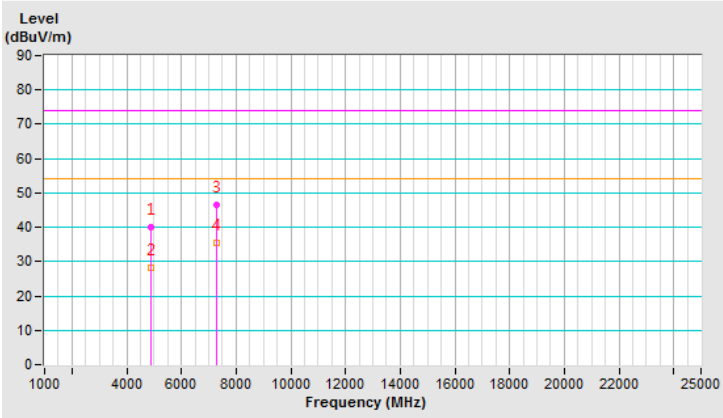


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4874.00	40.0 PK	74.0	-34.0	1.53 H	40	37.5	2.5
2	4874.00	28.1 AV	54.0	-25.9	1.53 H	40	25.6	2.5
3	7311.00	46.6 PK	74.0	-27.4	1.82 H	194	37.7	8.9
4	7311.00	35.5 AV	54.0	-18.5	1.82 H	194	26.6	8.9

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

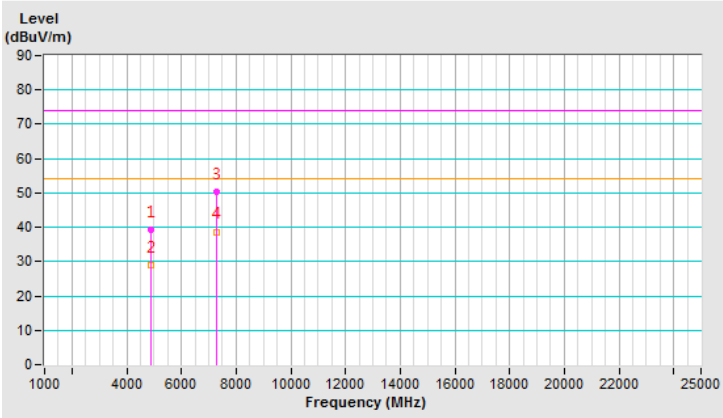


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4874.00	39.2 PK	74.0	-34.8	1.61 V	341	36.7	2.5
2	4874.00	28.9 AV	54.0	-25.1	1.61 V	341	26.4	2.5
3	7311.00	50.3 PK	74.0	-23.7	1.95 V	176	41.4	8.9
4	7311.00	38.7 AV	54.0	-15.3	1.95 V	176	29.8	8.9

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

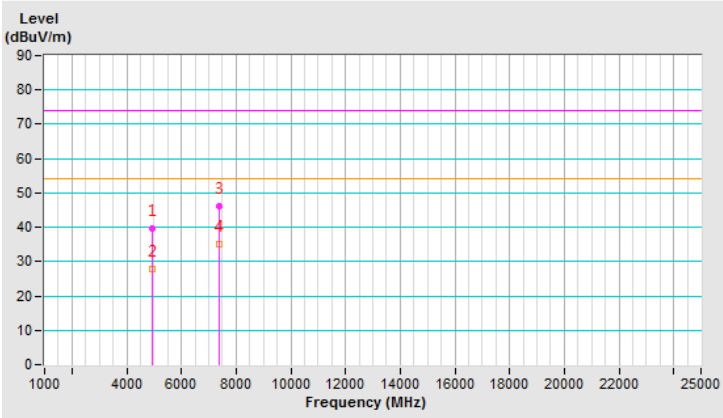


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4924.00	39.5 PK	74.0	-34.5	1.50 H	30	36.9	2.6
2	4924.00	27.7 AV	54.0	-26.3	1.50 H	30	25.1	2.6
3	7386.00	46.2 PK	74.0	-27.8	1.81 H	200	37.0	9.2
4	7386.00	35.2 AV	54.0	-18.8	1.81 H	200	26.0	9.2

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

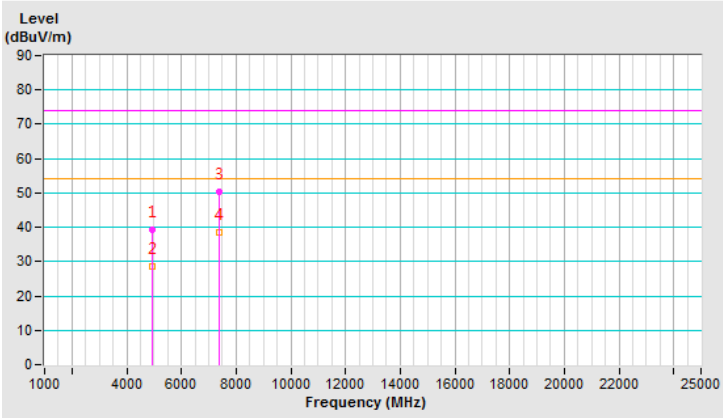


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4924.00	39.1 PK	74.0	-34.9	1.66 V	355	36.5	2.6
2	4924.00	28.7 AV	54.0	-25.3	1.66 V	355	26.1	2.6
3	7386.00	50.2 PK	74.0	-23.8	1.94 V	160	41.0	9.2
4	7386.00	38.6 AV	54.0	-15.4	1.94 V	160	29.4	9.2

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



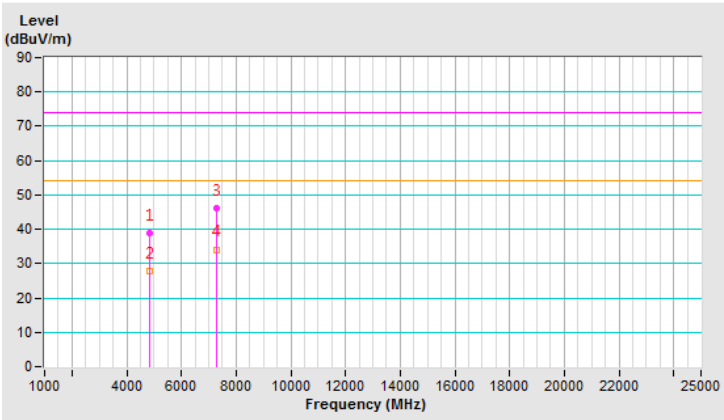
802.11n (40MHz)

CHANNEL	TX Channel 3	**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	4844.00	39.0 PK	74.0	-35.0	1.53 H	131	36.6	2.4
2	4844.00	27.9 AV	54.0	-26.1	1.53 H	131	25.5	2.4
3	7266.00	46.1 PK	74.0	-27.9	1.60 H	205	37.3	8.8
4	7266.00	34.1 AV	54.0	-19.9	1.60 H	205	25.3	8.8

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

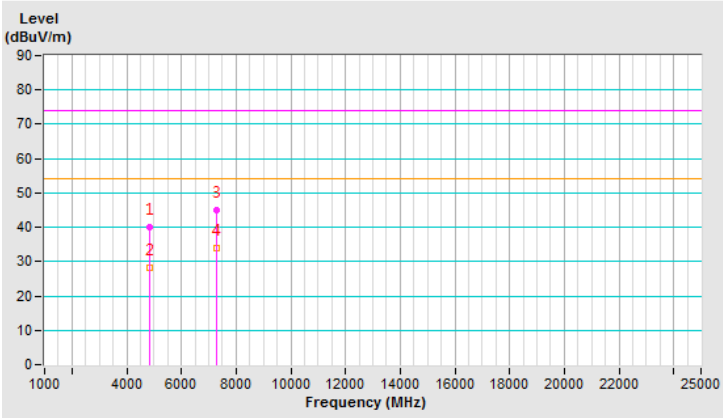


CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4844.00	40.1 PK	74.0	-33.9	1.59 V	130	37.7	2.4
2	4844.00	28.3 AV	54.0	-25.7	1.59 V	130	25.9	2.4
3	7266.00	45.1 PK	74.0	-28.9	1.64 V	358	36.3	8.8
4	7266.00	34.0 AV	54.0	-20.0	1.64 V	358	25.2	8.8

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

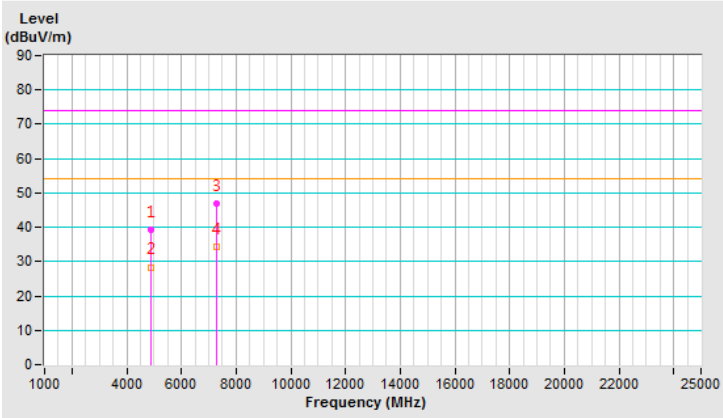


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4874.00	39.3 PK	74.0	-34.7	1.55 H	100	36.8	2.5
2	4874.00	28.4 AV	54.0	-25.6	1.55 H	100	25.9	2.5
3	7311.00	46.9 PK	74.0	-27.1	1.60 H	200	38.0	8.9
4	7311.00	34.3 AV	54.0	-19.7	1.60 H	200	25.4	8.9

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

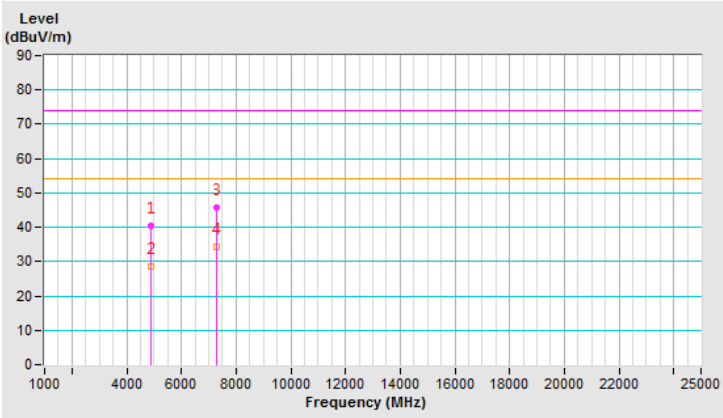


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4874.00	40.3 PK	74.0	-33.7	1.55 V	122	37.8	2.5
2	4874.00	28.6 AV	54.0	-25.4	1.55 V	122	26.1	2.5
3	7311.00	45.7 PK	74.0	-28.3	1.66 V	360	36.8	8.9
4	7311.00	34.2 AV	54.0	-19.8	1.66 V	360	25.3	8.9

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

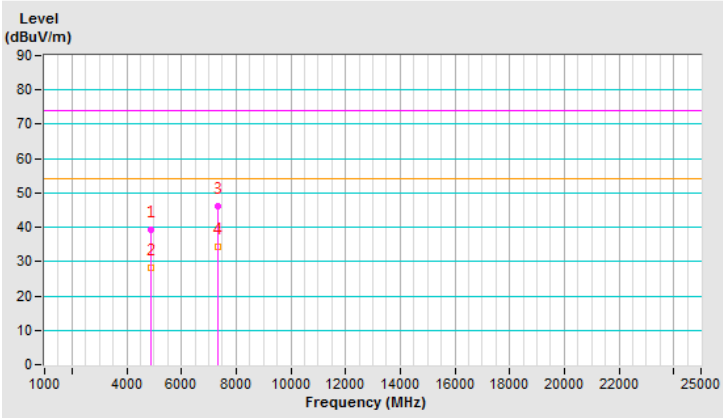


CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4904.00	39.2 PK	74.0	-34.8	1.50 H	122	36.7	2.5
2	4904.00	28.3 AV	54.0	-25.7	1.50 H	122	25.8	2.5
3	7356.00	46.2 PK	74.0	-27.8	1.66 H	220	37.0	9.2
4	7356.00	34.2 AV	54.0	-19.8	1.66 H	220	25.0	9.2

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

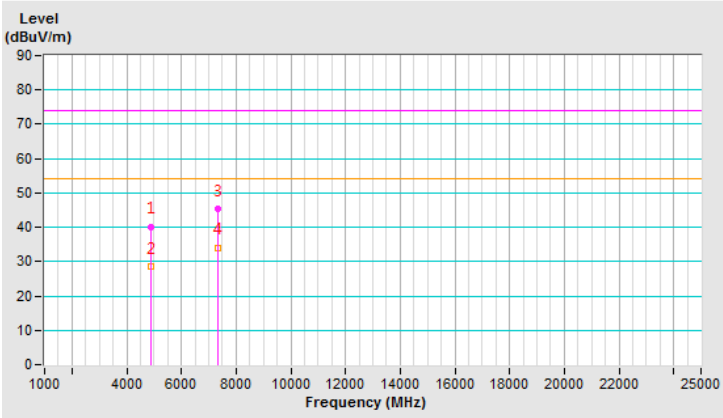


CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	4904.00	40.2 PK	74.0	-33.8	1.59 V	123	37.7	2.5
2	4904.00	28.5 AV	54.0	-25.5	1.59 V	123	26.0	2.5
3	7356.00	45.3 PK	74.0	-28.7	1.71 V	360	36.1	9.2
4	7356.00	34.1 AV	54.0	-19.9	1.71 V	360	24.9	9.2

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



4.7 Band Edge and Fundamental Emissions Measurement

4.7.1 Limit

30dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emissions fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed

Frequency range (MHz)	Field Strength (mV/meter)	Measurement Distance (m)
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

4.7.2 Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emissions in restricted band)	1MHz / 3MHz for Peak, 1 MHz / 1/T for Average
RBW / VBW (Emissions in non-restricted band)	100kHz / 300kHz for peak

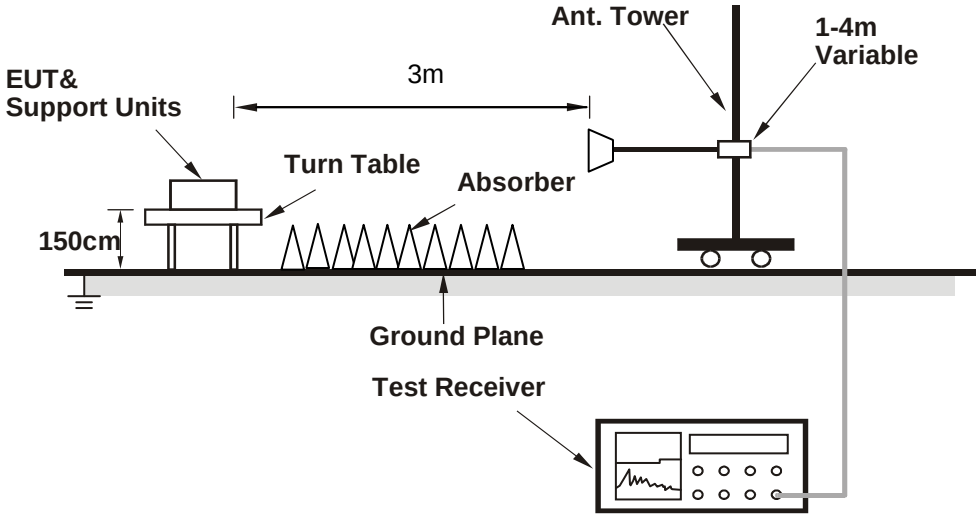
4.7.3 Test Procedure

1 The test procedure is the same as section 4.6.3; only the frequency range investigated is 2310MHz to 2500MHz

2 Test for Emissions in non-restricted band was performed in accordance with KDB 558074 D01 v03r05 for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 section 11 Unwanted Emissions into Non-Restricted Frequency Bands Measurement Procedure.

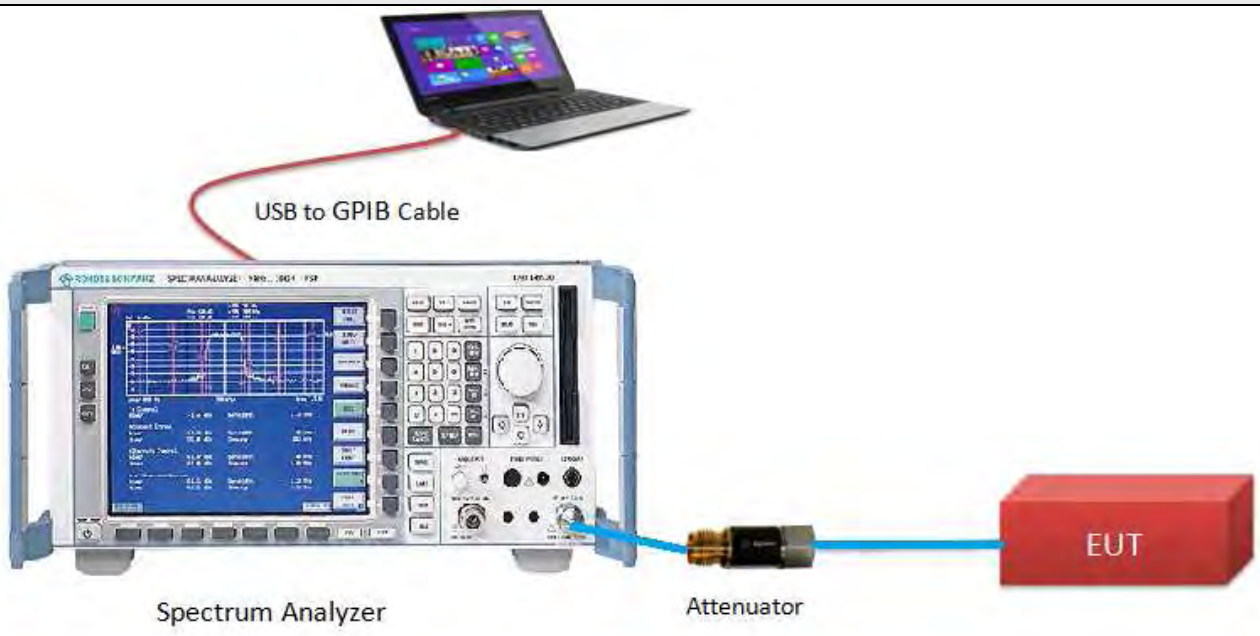
4.7.4 Test Setup Layout

Setup in restricted band



For Radiated Emissions above 1GHz

Setup in non-restricted band



4.7.5 Test Deviation

There are no deviations with the original standard.

4.7.6 EUT Operating Conditions

The EUT was programmed to be in continuously transmitting mode.

4.7.7 Test Results of Band Edge and Fundamental Emissions

Temperature	23℃	**Humidity**	69%
Test Engineer	Weiwei Lo		

1TX

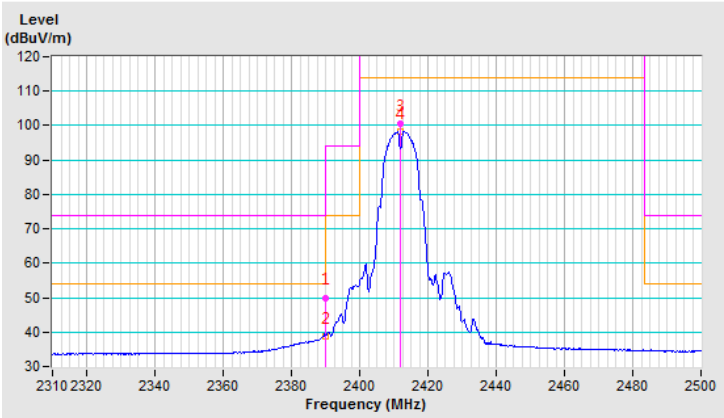
802.11b

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	50.0 PK	74.0	-24.0	2.40 H	156	54.2	-4.2
2	2390.00	38.8 AV	54.0	-15.2	2.40 H	156	43.0	-4.2
3	*2412.00	100.6 PK			2.40 H	156	104.7	-4.1
4	*2412.00	98.1 AV			2.40 H	156	102.2	-4.1

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.

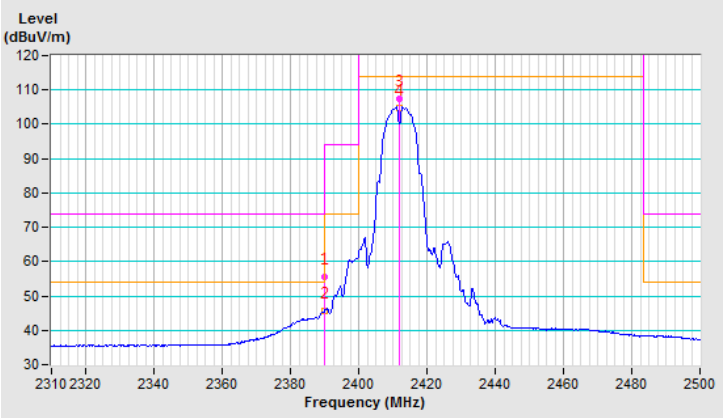


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	55.6 PK	74.0	-18.4	1.86 V	129	59.8	-4.2
2	2390.00	45.5 AV	54.0	-8.5	1.86 V	129	49.7	-4.2
3	*2412.00	107.5 PK			1.86 V	129	111.6	-4.1
4	*2412.00	104.8 AV			1.86 V	129	108.9	-4.1

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.

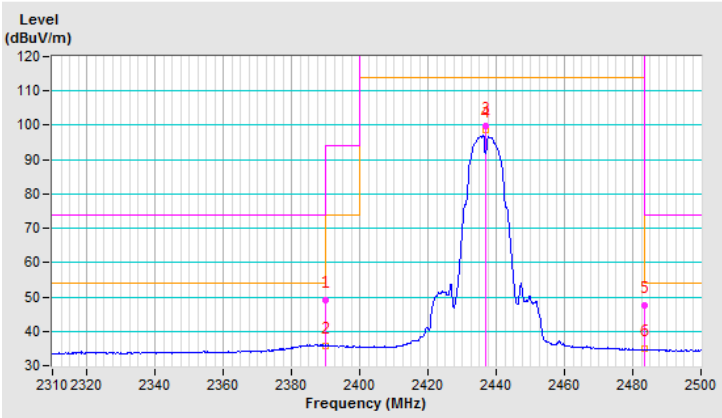


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	48.9 PK	74.0	-25.1	2.72 H	156	53.1	-4.2
2	2390.00	35.8 AV	54.0	-18.2	2.72 H	156	40.0	-4.2
3	*2437.00	99.7 PK			2.72 H	156	103.7	-4.0
4	*2437.00	98.6 AV			2.72 H	156	102.6	-4.0
5	2483.50	47.6 PK	74.0	-26.4	2.72 H	156	51.6	-4.0
6	2483.50	34.9 AV	54.0	-19.1	2.72 H	156	38.9	-4.0

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.

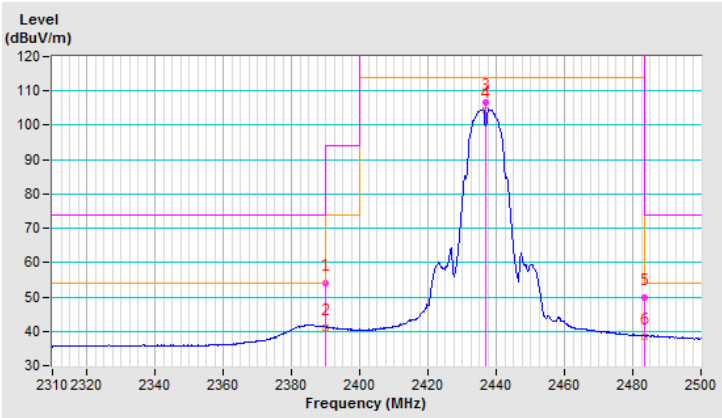


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	53.9 PK	74.0	-20.1	1.80 V	123	58.1	-4.2
2	2390.00	40.9 AV	54.0	-13.1	1.80 V	123	45.1	-4.2
3	*2437.00	106.8 PK			1.80 V	123	110.8	-4.0
4	*2437.00	104.3 AV			1.80 V	123	108.3	-4.0
5	2483.50	49.8 PK	74.0	-24.2	1.80 V	123	53.8	-4.0
6	2483.50	38.2 AV	54.0	-15.8	1.80 V	123	42.2	-4.0

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.

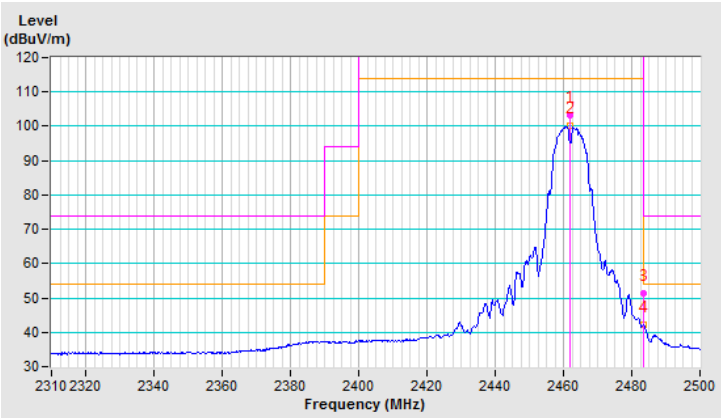


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	*2462.00	103.1 PK			2.76 H	162	107.2	-4.1
2	*2462.00	100.3 AV			2.76 H	162	104.4	-4.1
3	2483.50	51.2 PK	74.0	-22.8	2.76 H	162	55.2	-4.0
4	2483.50	42.2 AV	54.0	-11.8	2.76 H	162	46.2	-4.0

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.

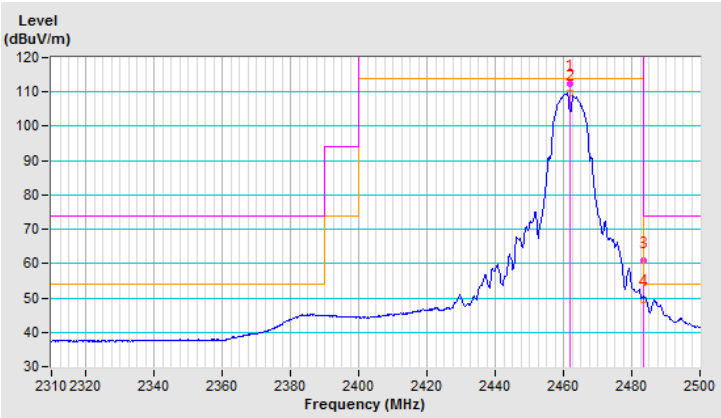


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	112.2 PK			2.49 V	123	116.3	-4.1
2	*2462.00	109.8 AV			2.49 V	123	113.9	-4.1
3	2483.50	61.0 PK	74.0	-13.0	2.49 V	123	65.0	-4.0
4	2483.50	49.6 AV	54.0	-4.4	2.49 V	123	53.6	-4.0

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.



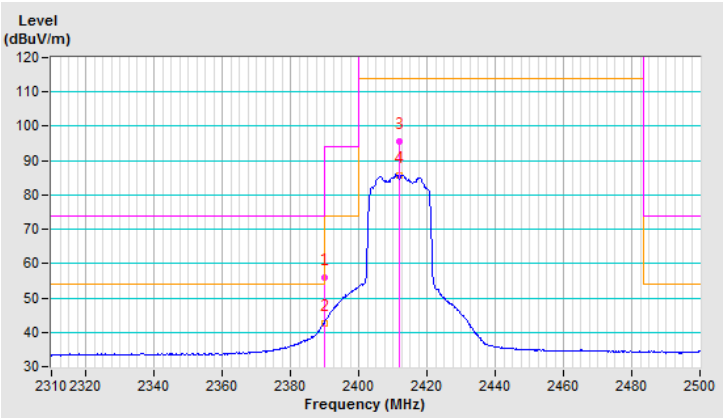
802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	2390.00	55.9 PK	74.0	-18.1	2.18 H	156	60.1	-4.2
2	2390.00	42.7 AV	54.0	-11.3	2.18 H	156	46.9	-4.2
3	*2412.00	95.6 PK			2.18 H	156	99.7	-4.1
4	*2412.00	85.7 AV			2.18 H	156	89.8	-4.1

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.

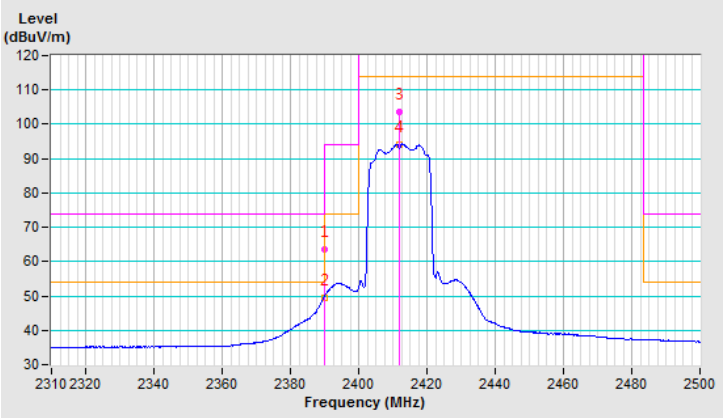


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	63.4 PK	74.0	-10.6	1.75 V	124	67.6	-4.2
2	2390.00	49.3 AV	54.0	-4.7	1.75 V	124	53.5	-4.2
3	*2412.00	103.7 PK			1.75 V	124	107.8	-4.1
4	*2412.00	93.9 AV			1.75 V	124	98.0	-4.1

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.

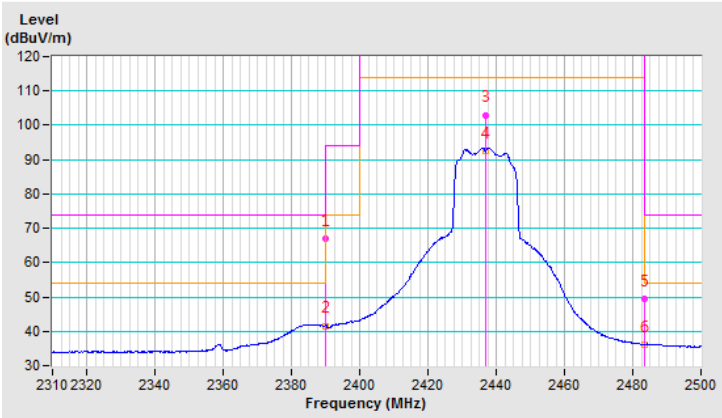


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	67.0 PK	74.0	-7.0	1.79 H	159	71.2	-4.2
2	2390.00	41.6 AV	54.0	-12.4	1.79 H	159	45.8	-4.2
3	*2437.00	103.0 PK			1.79 H	159	107.0	-4.0
4	*2437.00	92.6 AV			1.79 H	159	96.6	-4.0
5	2483.50	49.3 PK	74.0	-24.7	1.79 H	159	53.3	-4.0
6	2483.50	36.0 AV	54.0	-18.0	1.79 H	159	40.0	-4.0

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.

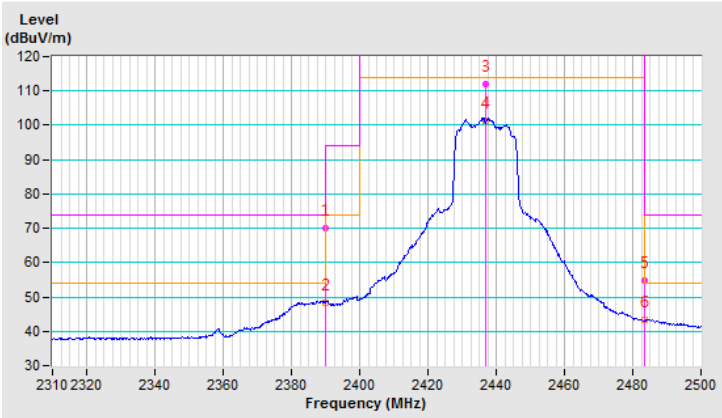


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	70.0 PK	74.0	-4.0	2.04 V	124	74.2	-4.2
2	2390.00	48.3 AV	54.0	-5.7	2.04 V	124	52.5	-4.2
3	*2437.00	112.0 PK			2.04 V	124	116.0	-4.0
4	*2437.00	101.4 AV			2.04 V	124	105.4	-4.0
5	2483.50	54.8 PK	74.0	-19.2	2.04 V	124	58.8	-4.0
6	2483.50	43.3 AV	54.0	-10.7	2.04 V	124	47.3	-4.0

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.

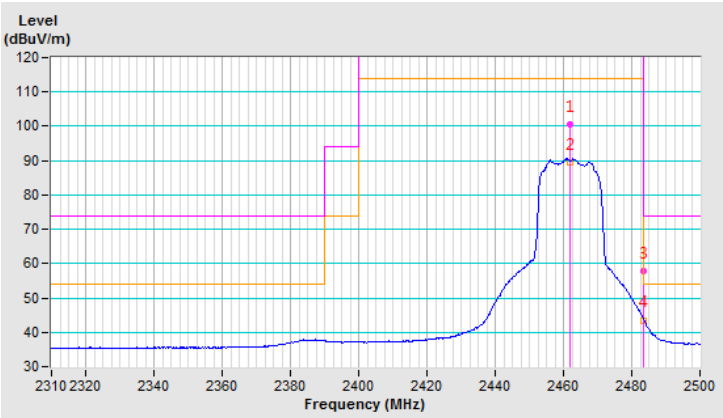


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	*2462.00	100.4 PK			3.09 H	164	104.5	-4.1
2	*2462.00	89.5 AV			3.09 H	164	93.6	-4.1
3	2483.50	57.8 PK	74.0	-16.2	3.09 H	164	61.8	-4.0
4	2483.50	43.5 AV	54.0	-10.5	3.09 H	164	47.5	-4.0

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.

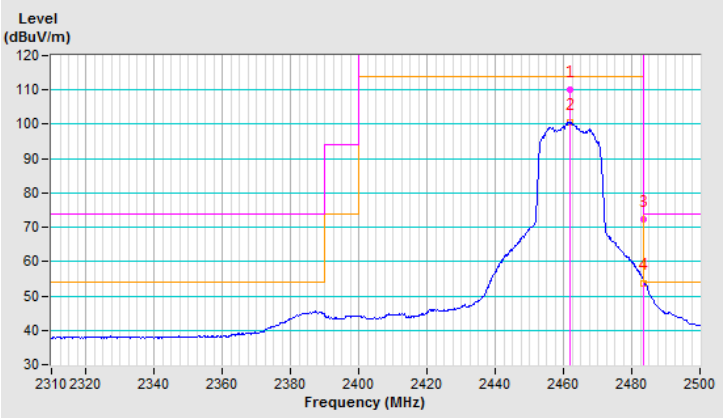


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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			2.00 V	124	114.3	-4.1
2	*2462.00	100.4 AV			2.00 V	124	104.5	-4.1
3	2483.50	72.3 PK	74.0	-1.7	2.00 V	124	76.3	-4.0
4	**2483.50**	**53.8 AV**	**54.0**	**-0.2**	**2.00 V**	**124**	**57.8**	**-4.0**

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.



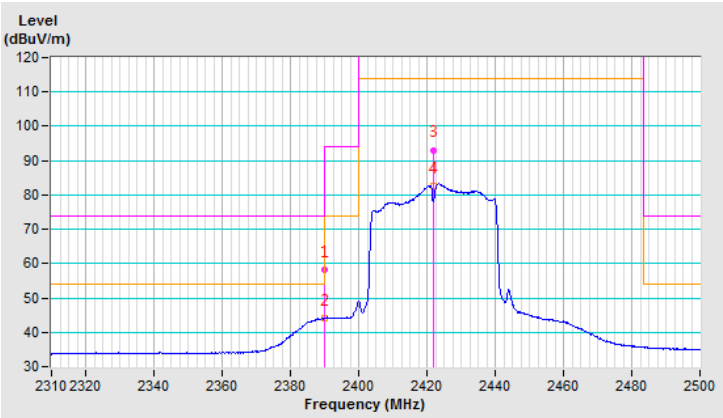
802.11n (40MHz)

CHANNEL	TX Channel 3	**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	58.2 PK	74.0	-15.8	2.30 H	326	62.4	-4.2
2	2390.00	44.0 AV	54.0	-10.0	2.30 H	326	48.2	-4.2
3	*2422.00	93.1 PK			2.30 H	326	97.2	-4.1
4	*2422.00	82.6 AV			2.30 H	326	86.7	-4.1

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.

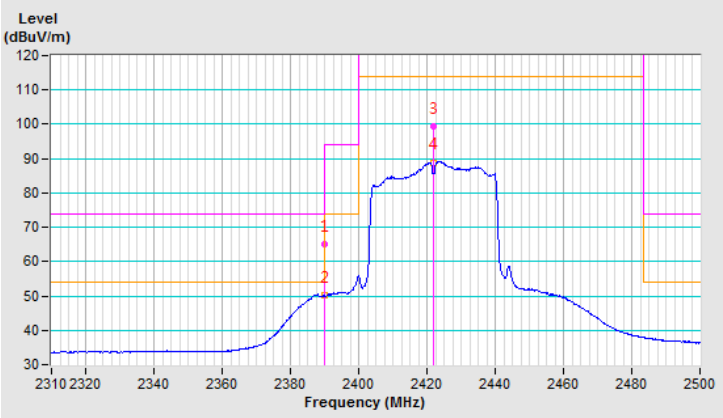


CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	64.9 PK	74.0	-9.1	1.77 V	128	69.1	-4.2
2	2390.00	50.3 AV	54.0	-3.7	1.77 V	128	54.5	-4.2
3	*2422.00	99.3 PK			1.77 V	128	103.4	-4.1
4	*2422.00	88.9 AV			1.77 V	128	93.0	-4.1

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.

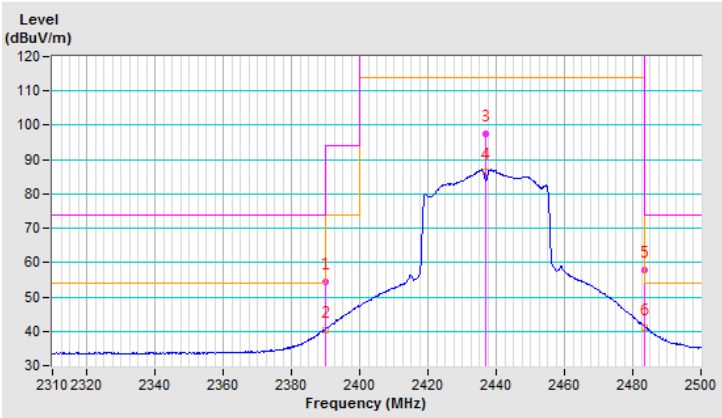


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	54.3 PK	74.0	-19.7	2.55 H	328	58.5	-4.2
2	2390.00	40.4 AV	54.0	-13.6	2.55 H	328	44.6	-4.2
3	*2437.00	97.4 PK			2.55 H	328	101.4	-4.0
4	*2437.00	86.5 AV			2.55 H	328	90.5	-4.0
5	2483.50	57.7 PK	74.0	-16.3	2.55 H	328	61.7	-4.0
6	2483.50	41.1 AV	54.0	-12.9	2.55 H	328	45.1	-4.0

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.

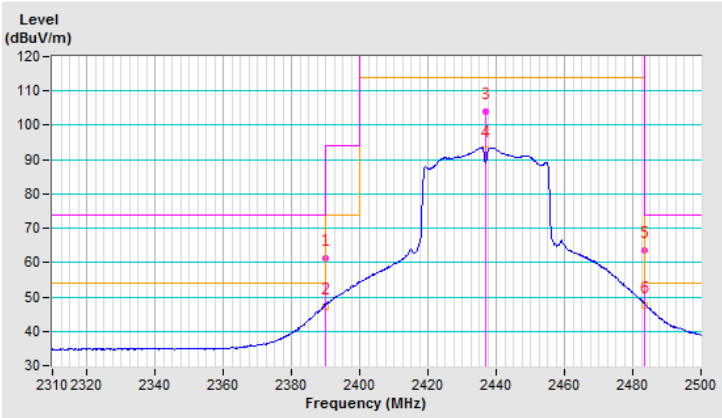


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	61.1 PK	74.0	-12.9	2.11 V	119	65.3	-4.2
2	2390.00	47.1 AV	54.0	-6.9	2.11 V	119	51.3	-4.2
3	*2437.00	104.0 PK			2.11 V	119	108.0	-4.0
4	*2437.00	92.8 AV			2.11 V	119	96.8	-4.0
5	2483.50	63.4 PK	74.0	-10.6	2.11 V	119	67.4	-4.0
6	2483.50	47.5 AV	54.0	-6.5	2.11 V	119	51.5	-4.0

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.

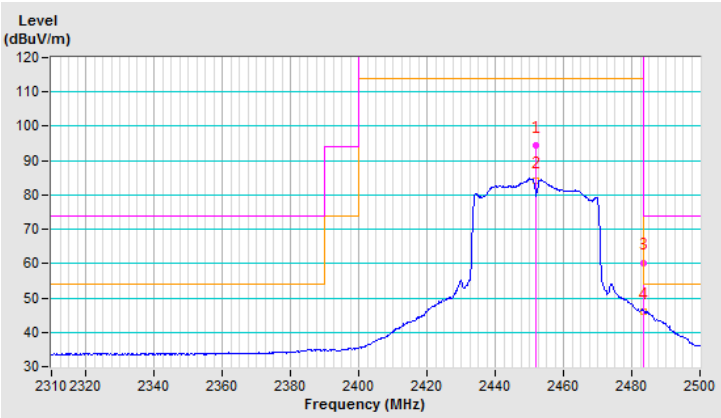


CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	*2452.00	94.3 PK			2.57 H	326	98.4	-4.1
2	*2452.00	84.3 AV			2.57 H	326	88.4	-4.1
3	2483.50	60.3 PK	74.0	-13.7	2.57 H	326	64.3	-4.0
4	2483.50	46.1 AV	54.0	-7.9	2.57 H	326	50.1	-4.0

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.

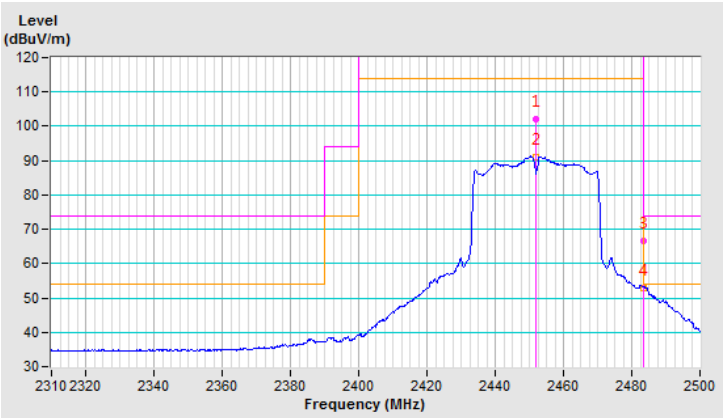


CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	102.0 PK			2.02 V	118	106.1	-4.1
2	*2452.00	91.0 AV			2.02 V	118	95.1	-4.1
3	2483.50	66.7 PK	74.0	-7.3	2.02 V	118	70.7	-4.0
4	2483.50	52.9 AV	54.0	-1.1	2.02 V	118	56.9	-4.0

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.



2TX

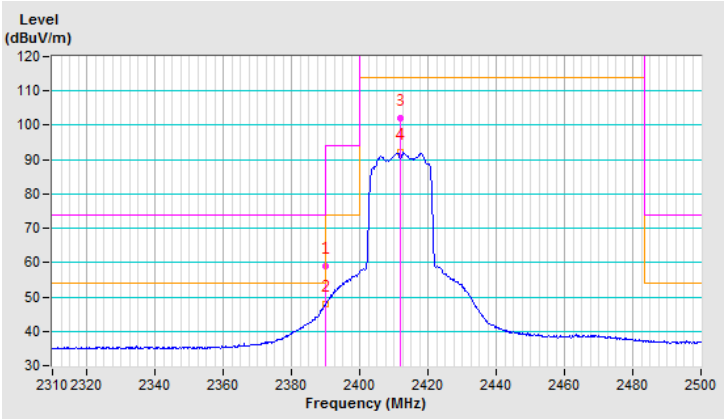
802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.9 PK	74.0	-15.1	1.04 H	269	63.1	-4.2
2	2390.00	47.9 AV	54.0	-6.1	1.04 H	269	52.1	-4.2
3	*2412.00	102.2 PK			1.04 H	269	106.3	-4.1
4	*2412.00	92.1 AV			1.04 H	269	96.2	-4.1

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.

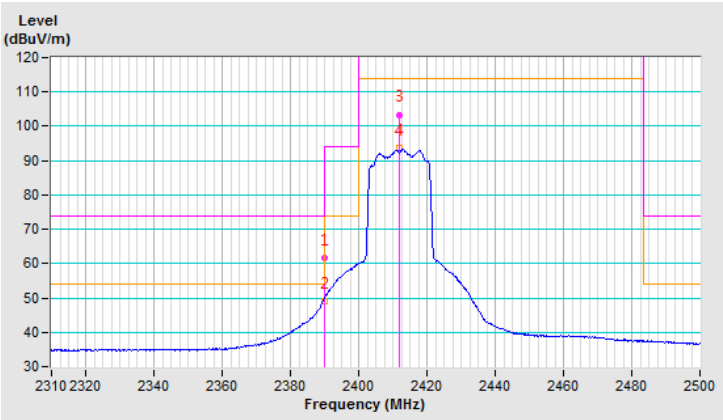


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	61.8 PK	74.0	-12.2	2.33 V	124	66.0	-4.2
2	2390.00	49.2 AV	54.0	-4.8	2.33 V	124	53.4	-4.2
3	*2412.00	103.4 PK			2.33 V	124	107.5	-4.1
4	*2412.00	93.6 AV			2.33 V	124	97.7	-4.1

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.

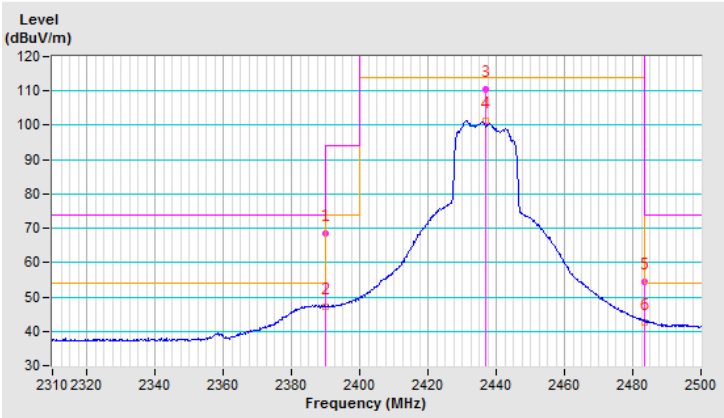


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	68.6 PK	74.0	-5.4	1.06 H	272	72.8	-4.2
2	2390.00	47.1 AV	54.0	-6.9	1.06 H	272	51.3	-4.2
3	*2437.00	110.3 PK			1.06 H	272	114.3	-4.0
4	*2437.00	101.3 AV			1.06 H	272	105.3	-4.0
5	2483.50	54.5 PK	74.0	-19.5	1.06 H	272	58.5	-4.0
6	2483.50	42.5 AV	54.0	-11.5	1.06 H	272	46.5	-4.0

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.

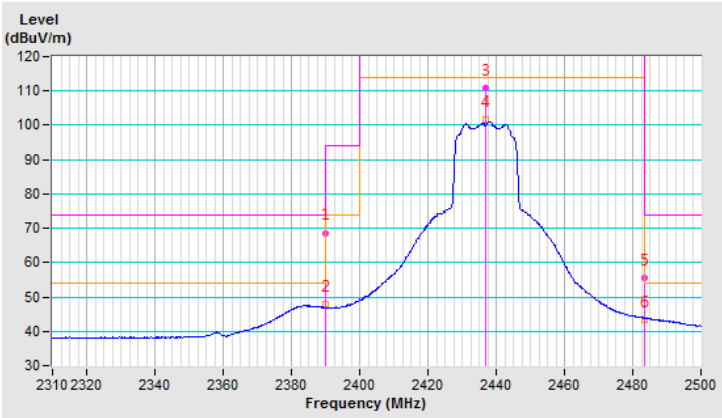


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	68.7 PK	74.0	-5.3	2.62 V	108	72.9	-4.2
2	2390.00	47.8 AV	54.0	-6.2	2.62 V	108	52.0	-4.2
3	*2437.00	110.9 PK			2.62 V	108	114.9	-4.0
4	*2437.00	101.6 AV			2.62 V	108	105.6	-4.0
5	2483.50	55.5 PK	74.0	-18.5	2.62 V	108	59.5	-4.0
6	2483.50	43.2 AV	54.0	-10.8	2.62 V	108	47.2	-4.0

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.

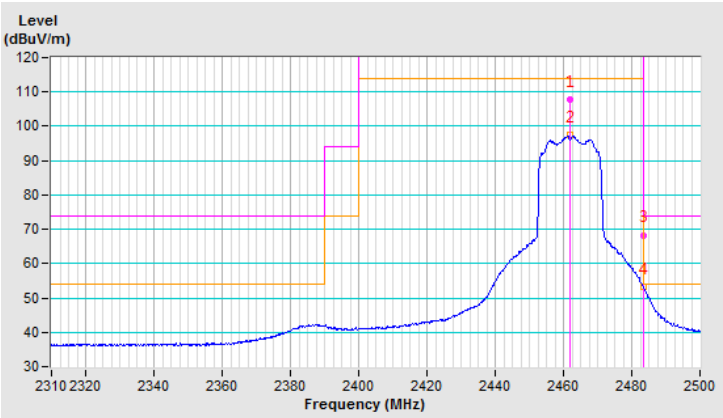


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	*2462.00	107.7 PK			1.17 H	274	111.8	-4.1
2	*2462.00	97.4 AV			1.17 H	274	101.5	-4.1
3	2483.50	68.3 PK	74.0	-5.7	1.17 H	274	72.3	-4.0
4	2483.50	53.1 AV	54.0	-0.9	1.17 H	274	57.1	-4.0

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.

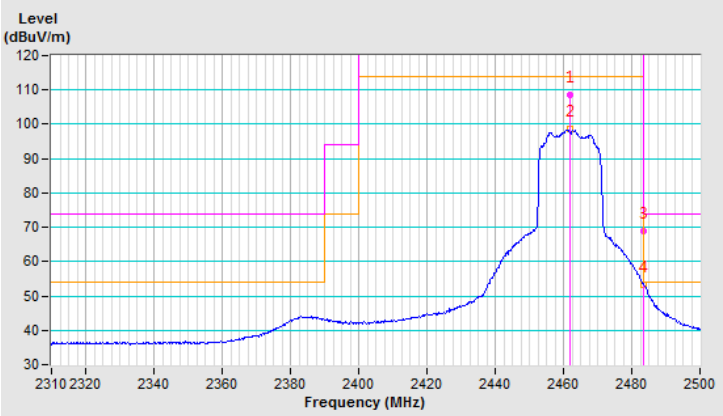


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	108.4 PK			1.85 V	114	112.5	-4.1
2	*2462.00	98.7 AV			1.85 V	114	102.8	-4.1
3	2483.50	68.9 PK	74.0	-5.1	1.85 V	114	72.9	-4.0
4	2483.50	53.2 AV	54.0	-0.8	1.85 V	114	57.2	-4.0

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.



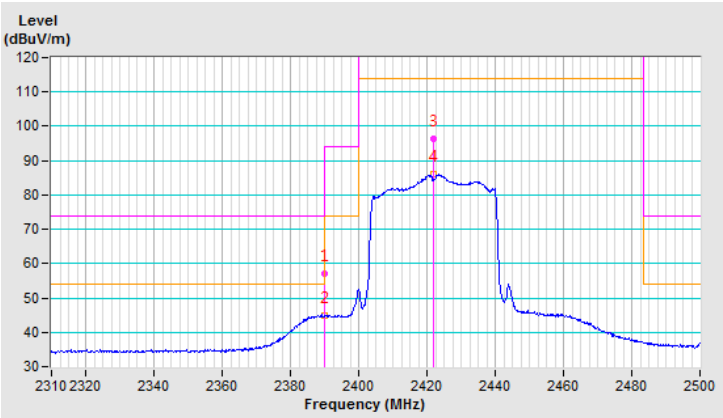
802.11n (40MHz)

CHANNEL	TX Channel 3	**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	57.2 PK	74.0	-16.8	1.01 H	277	61.4	-4.2
2	2390.00	44.9 AV	54.0	-9.1	1.01 H	277	49.1	-4.2
3	*2422.00	96.5 PK			1.01 H	277	100.6	-4.1
4	*2422.00	86.1 AV			1.01 H	277	90.2	-4.1

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.

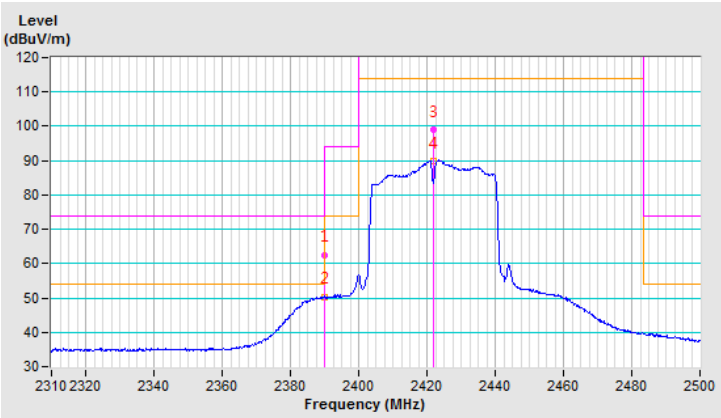


CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	62.6 PK	74.0	-11.4	2.59 V	119	66.8	-4.2
2	2390.00	50.4 AV	54.0	-3.6	2.59 V	119	54.6	-4.2
3	*2422.00	99.0 PK			2.59 V	119	103.1	-4.1
4	*2422.00	90.0 AV			2.59 V	119	94.1	-4.1

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.

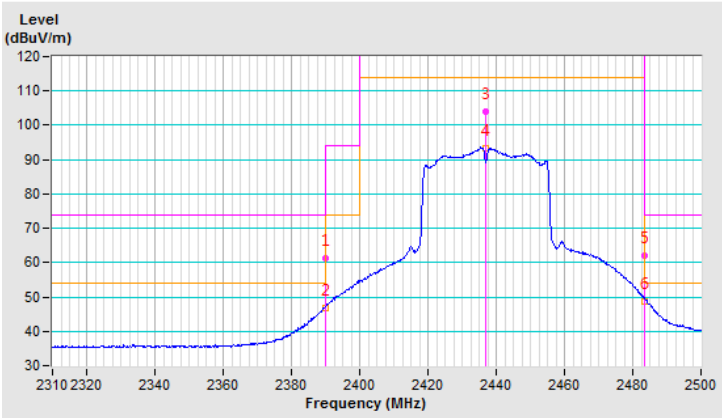


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	61.1 PK	74.0	-12.9	1.01 H	268	65.3	-4.2
2	2390.00	46.7 AV	54.0	-7.3	1.01 H	268	50.9	-4.2
3	*2437.00	104.1 PK			1.01 H	268	108.1	-4.0
4	*2437.00	93.3 AV			1.01 H	268	97.3	-4.0
5	2483.50	62.1 PK	74.0	-11.9	1.01 H	268	66.1	-4.0
6	2483.50	48.8 AV	54.0	-5.2	1.01 H	268	52.8	-4.0

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.

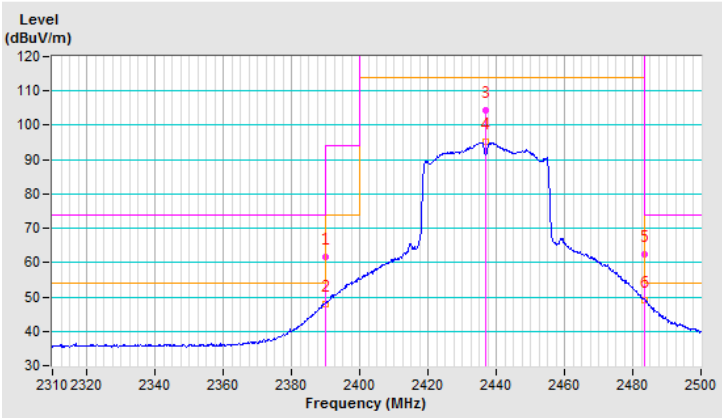


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	61.7 PK	74.0	-12.3	2.45 V	113	65.9	-4.2
2	2390.00	47.9 AV	54.0	-6.1	2.45 V	113	52.1	-4.2
3	*2437.00	104.2 PK			2.45 V	113	108.2	-4.0
4	*2437.00	95.1 AV			2.45 V	113	99.1	-4.0
5	2483.50	62.3 PK	74.0	-11.7	2.45 V	113	66.3	-4.0
6	2483.50	49.1 AV	54.0	-4.9	2.45 V	113	53.1	-4.0

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.

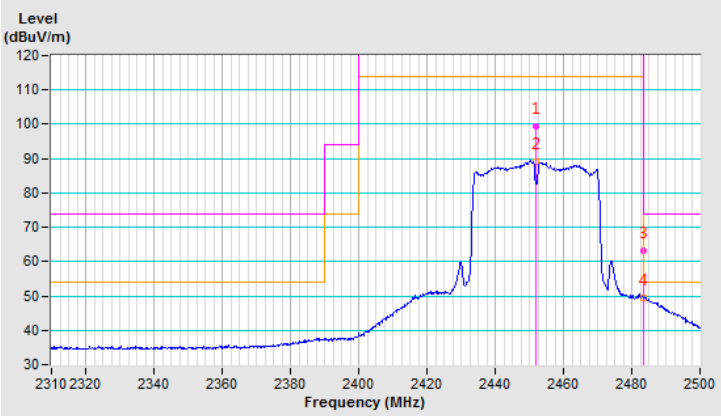


CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	*2452.00	99.5 PK			1.24 H	267	103.6	-4.1
2	*2452.00	89.2 AV			1.24 H	267	93.3	-4.1
3	2483.50	63.2 PK	74.0	-10.8	1.24 H	267	67.2	-4.0
4	2483.50	49.3 AV	54.0	-4.7	1.24 H	267	53.3	-4.0

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.

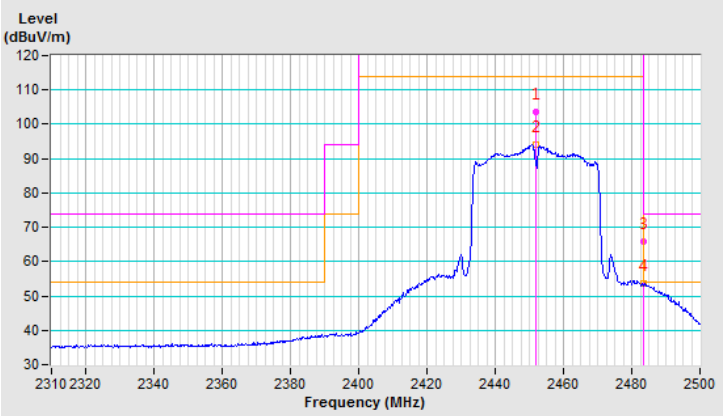


CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	103.7 PK			1.97 V	124	107.8	-4.1
2	*2452.00	93.9 AV			1.97 V	124	98.0	-4.1
3	2483.50	65.7 PK	74.0	-8.3	1.97 V	124	69.7	-4.0
4	2483.50	53.7 AV	54.0	-0.3	1.97 V	124	57.7	-4.0

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.

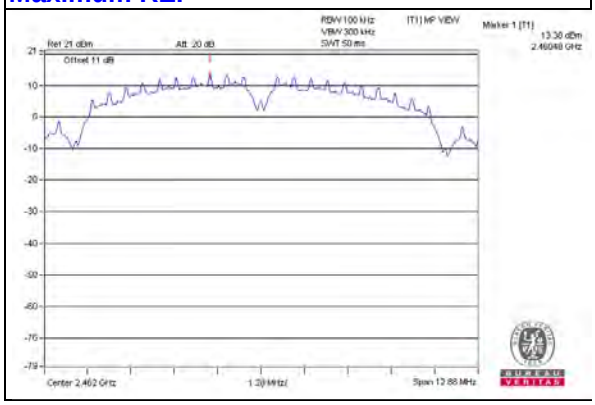


4.7.8 Test Results of Band Edge and Emissions not in Restricted Bands

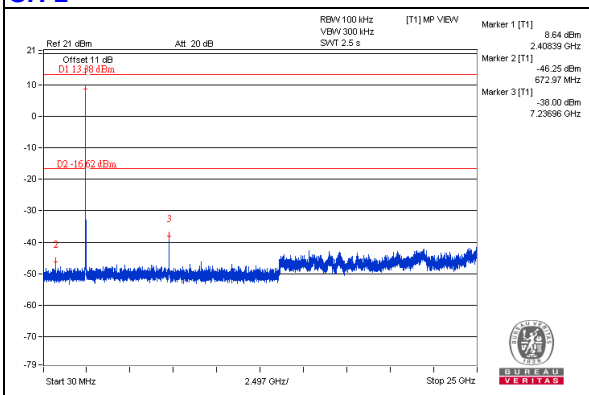
Below 30dB of the highest emissions level of operating band (in 100kHz Resolution Bandwidth).

802.11b

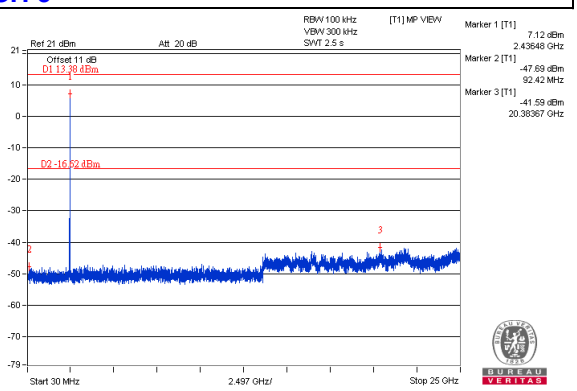
Maximum REF



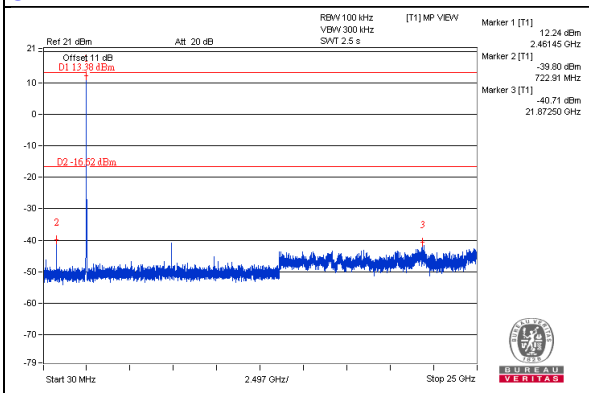
CH 1



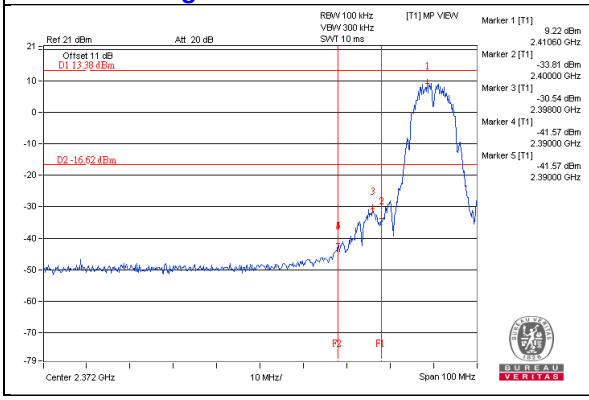
CH 6



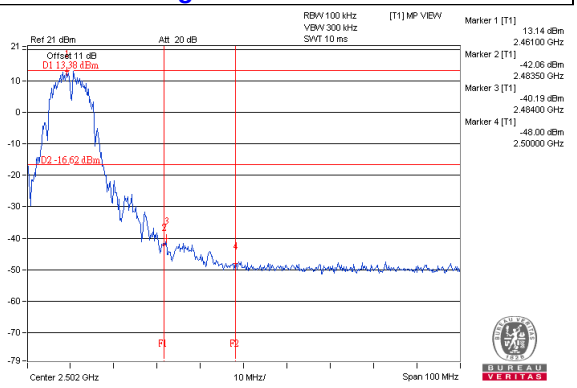
CH 11



CH 1 Band edge

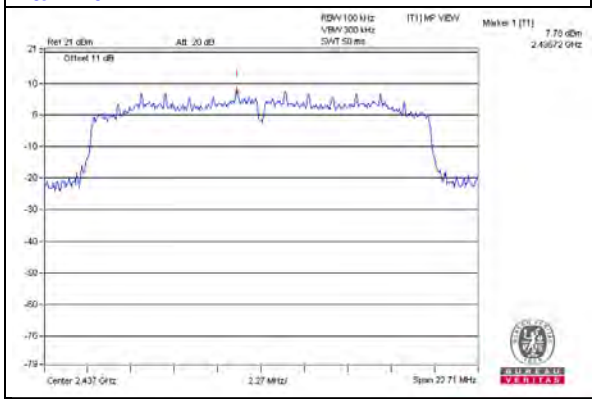


CH 11 Band edge



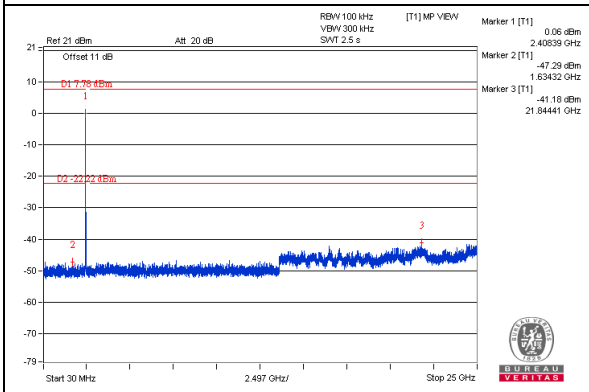
802.11n (20MHz) – 1TX:

Maximum REF

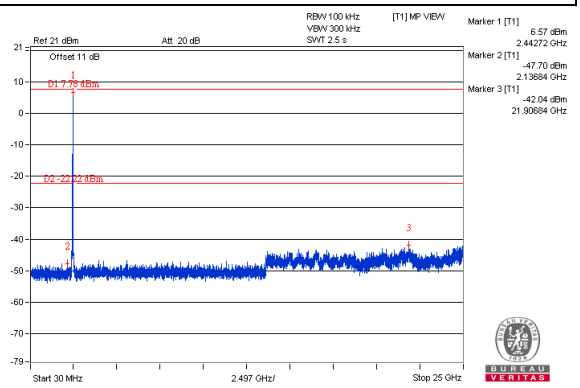


Chain 1

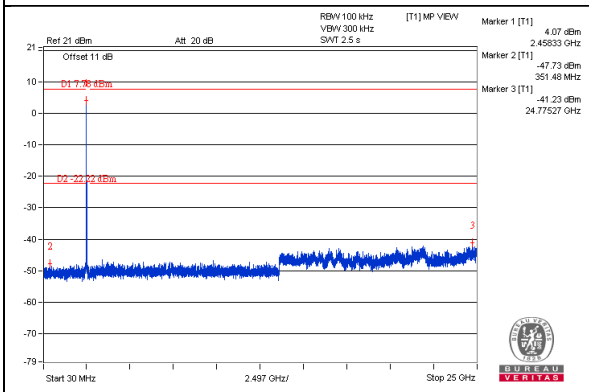
CH 1



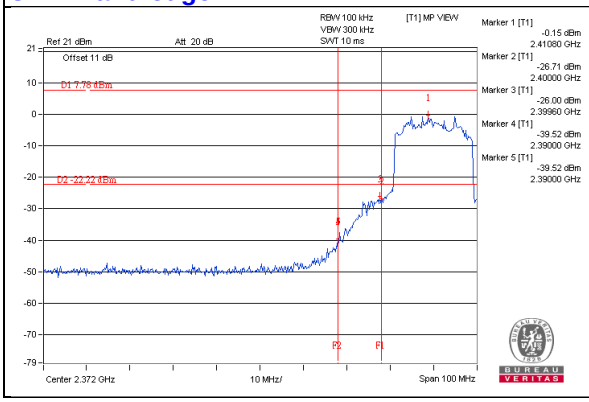
CH 6



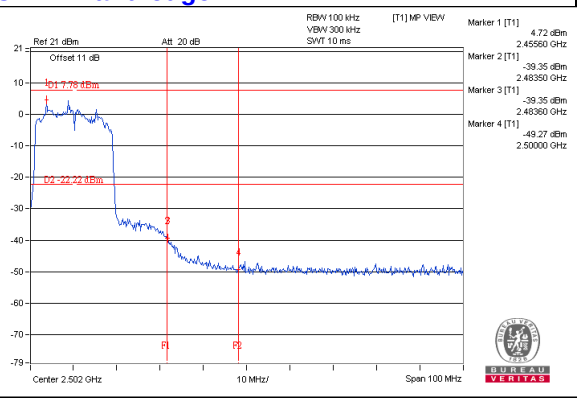
CH 11



CH 1 Band edge

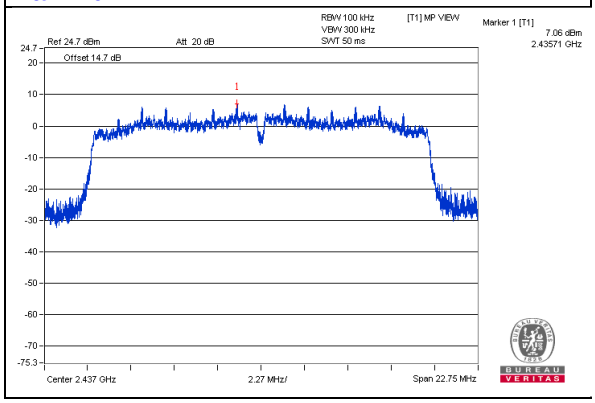


CH 11 Band edge



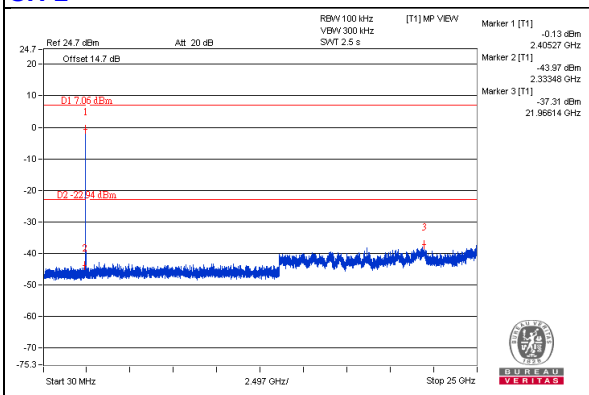
802.11n (20MHz) – 2TX:

Maximum REF

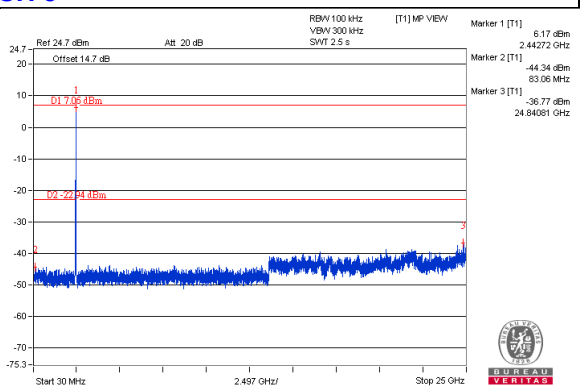


Chain 1

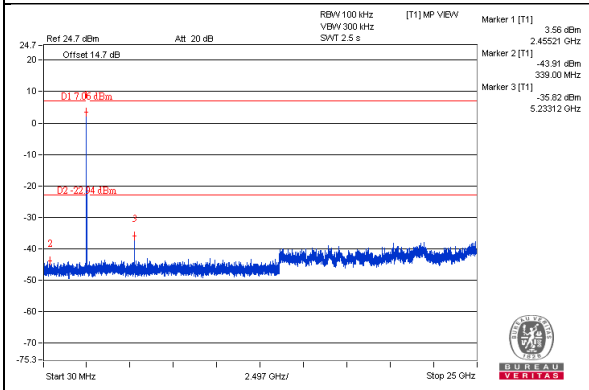
CH 1



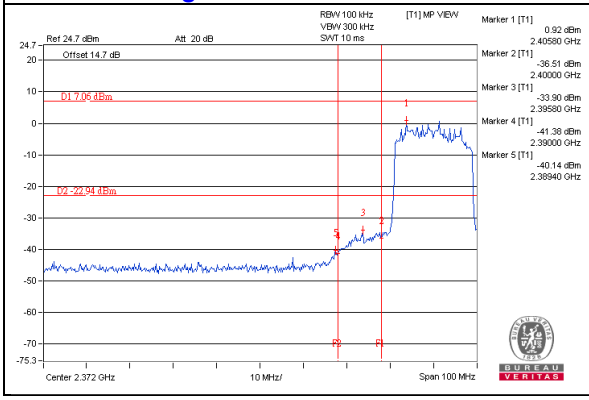
CH 6



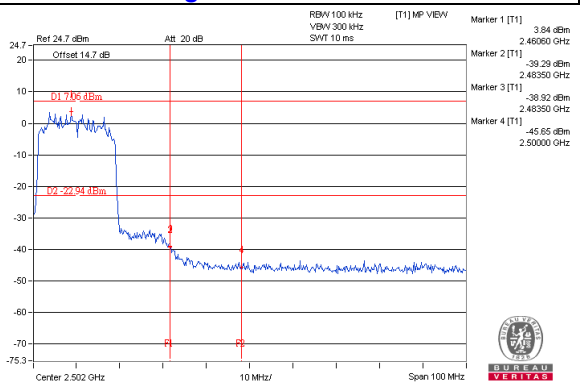
CH 11



CH 1 Band edge

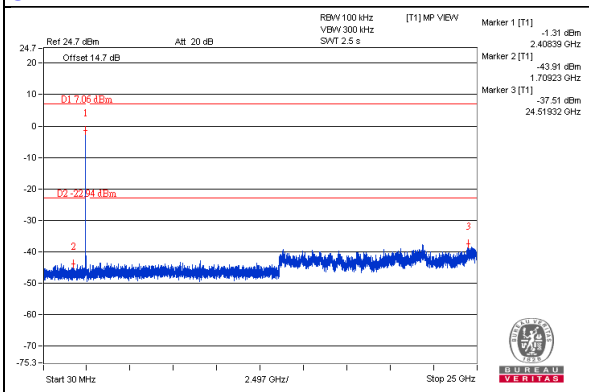


CH 11 Band edge

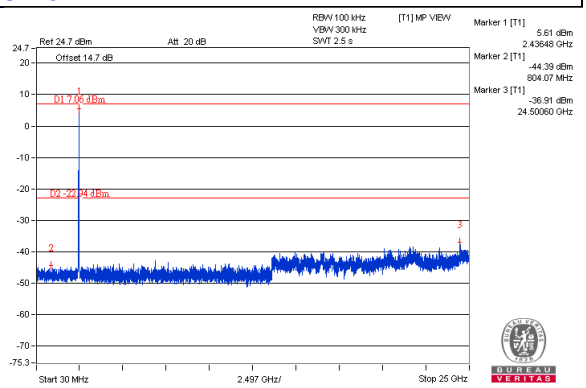


Chain 2

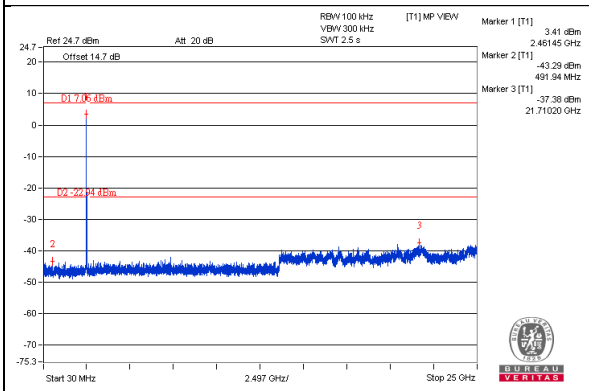
CH 1



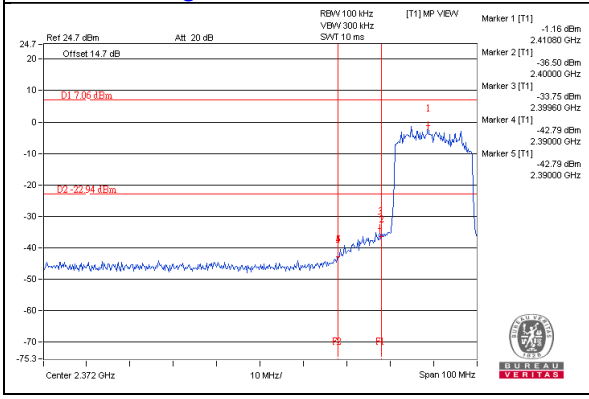
CH 6



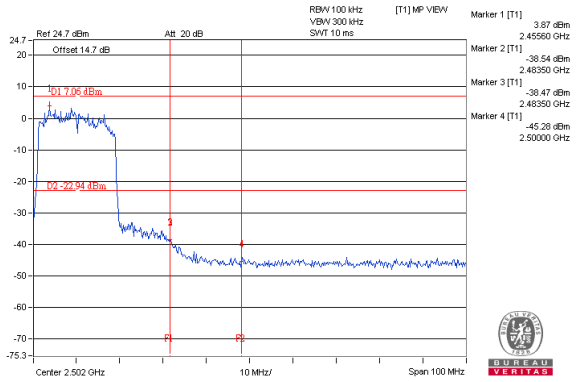
CH 11



CH 1 Band edge

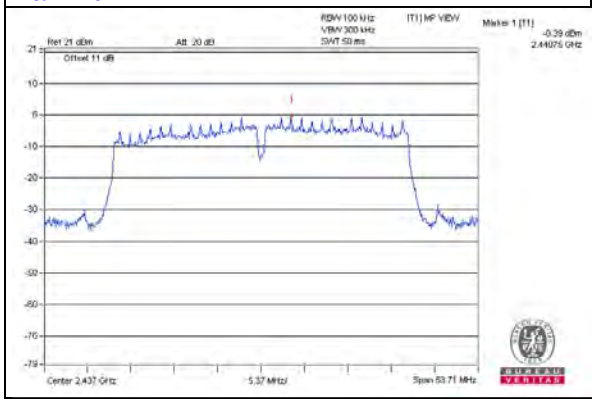


CH 11 Band edge

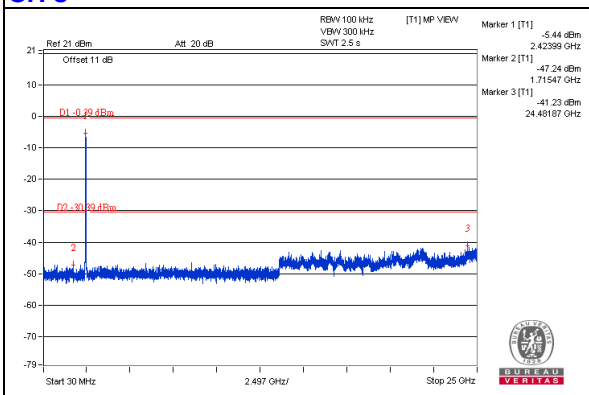


802.11n (40MHz) – 1TX:

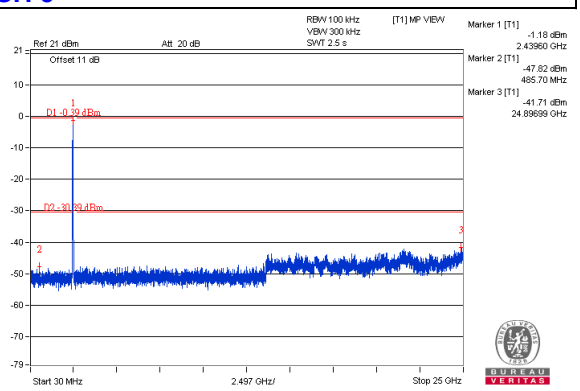
Maximum REF



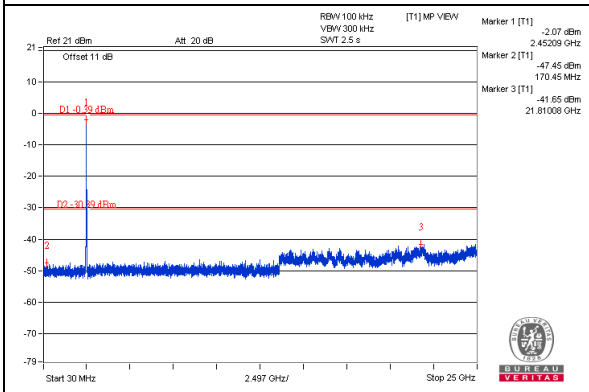
CH 3



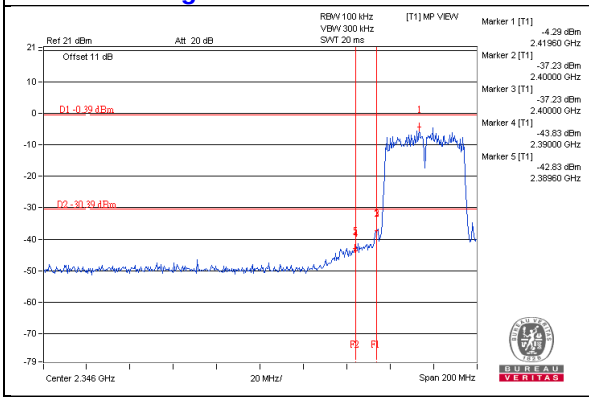
CH 6



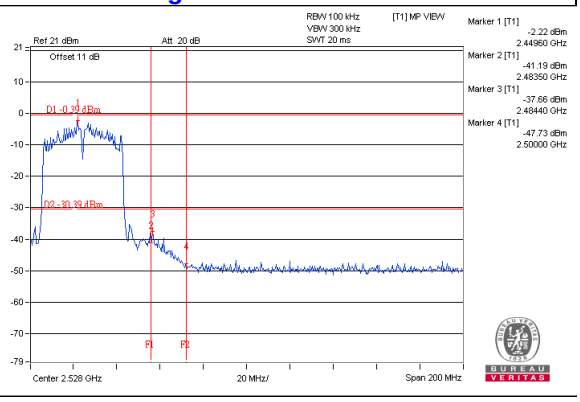
CH 9



CH 3 Band edge

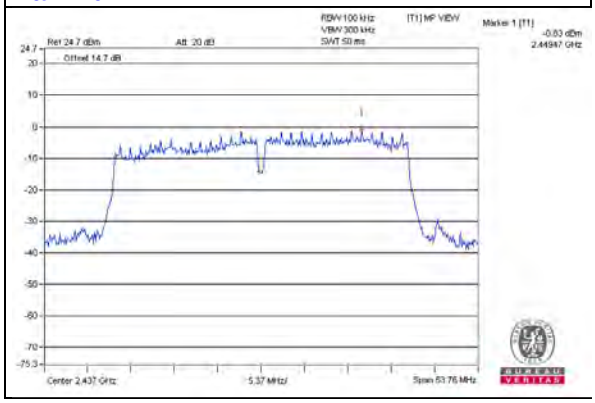


CH 9 Band edge



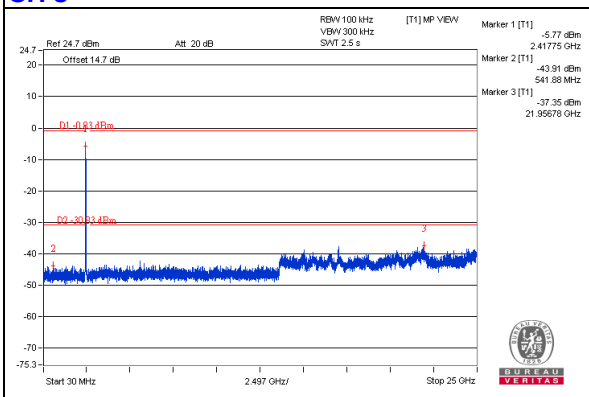
802.11n (40MHz) – 2TX:

Maximum REF

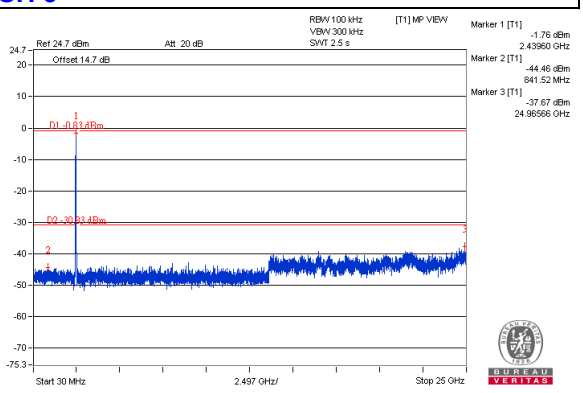


Chain 1

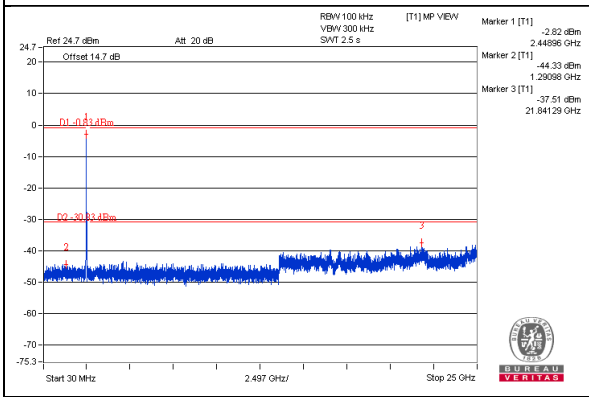
CH 3



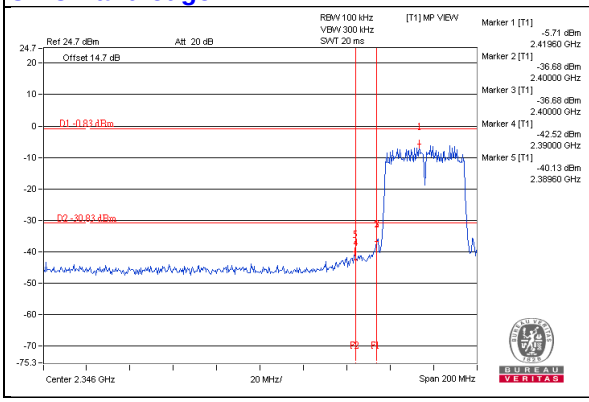
CH 6



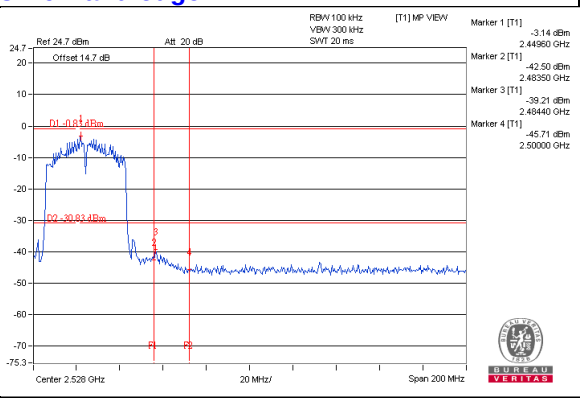
CH 9



CH 3 Band edge

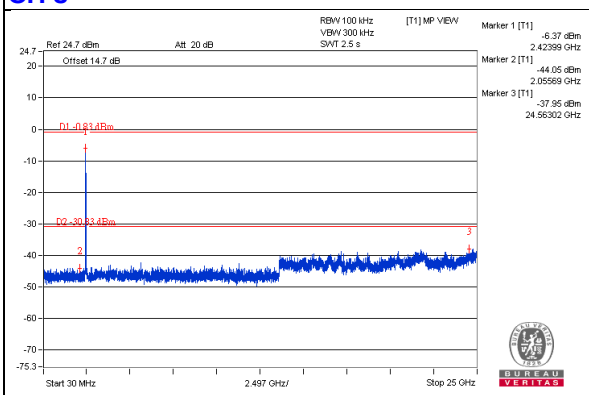


CH 9 Band edge

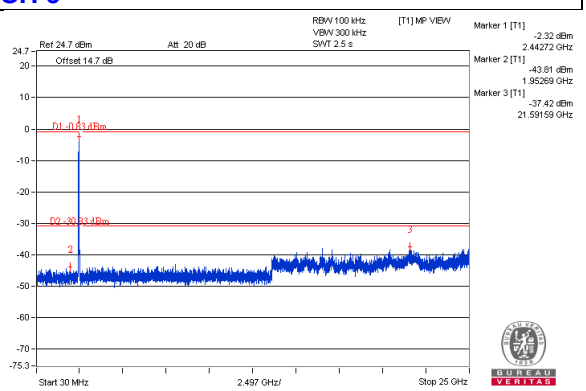


Chain 2

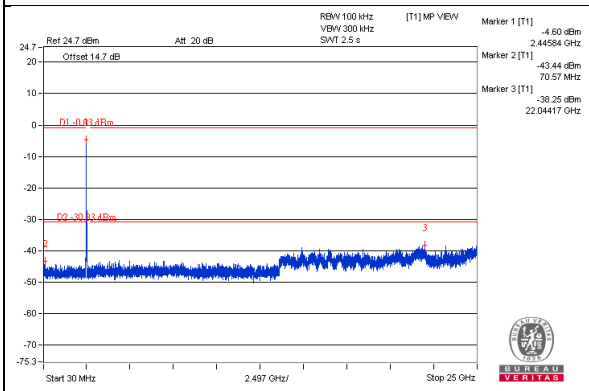
CH 3



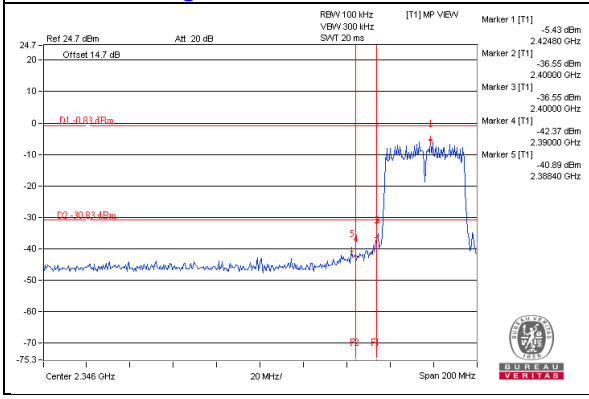
CH 6



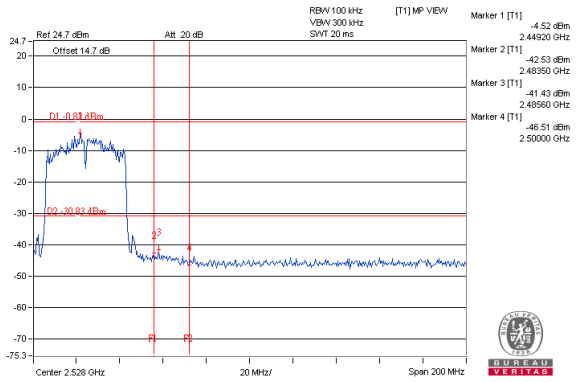
CH 9



CH 3 Band edge



CH 9 Band edge



4.8 List of Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Oct. 24, 2016	Oct. 23, 2017
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 26, 2016	Oct. 25, 2017
RF Cable	5D-FB	COCCAB-001	Sep. 30, 2016	Sep. 29, 2017
10 dB PAD Mini-Circuits	HAT-10+	CONATT-004	June 20, 2016	June 19, 2017
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. 1.
3. Tested Date: Dec. 01, 2016

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY50010156	Aug. 18, 2016	Aug. 17, 2017
Pre-Amplifier(*) EMCI	EMC001340	980142	Jan. 20, 2016	Jan. 19, 2018
Loop Antenna(*) Electro-Metrics	EM-6879	264	Dec. 16, 2014	Dec. 15, 2016
RF Cable	NA	LOOPCAB-001 LOOPCAB-002	Jan. 18, 2016	Jan. 17, 2017
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-05	May 07, 2016	May 06, 2017
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-156	Jan. 04, 2016	Jan. 03, 2017
RF Cable	8D	966-3-1 966-3-2 966-3-3	Apr. 02, 2016	Apr. 01, 2017
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	Oct. 05, 2016	Oct. 04, 2017
Horn_Antenna SCHWARZBECK	BBHA9120-D	9120D-406	Jan. 20, 2016	Jan. 19, 2017
Pre-Amplifier Agilent	8449B	3008A02465	Apr. 05, 2016	Apr. 04, 2017
RF Cable	EMC104-SM-SM-2000 EMC104-SM-SM-5000 EMC104-SM-SM-5000	150317 150321 150322	Mar. 30, 2016	Mar. 29, 2017
Spectrum Analyzer Keysight	N9030A	MY54490520	July 29, 2016	July 28, 2017
Pre-Amplifier EMCI	EMC184045	980143	Jan. 15, 2016	Jan. 14, 2017
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Jan. 08, 2016	Jan. 07, 2017
RF Cable	SUCOFLEX 102	36432/2 36433/2	Jan. 16, 2016	Jan. 15, 2017
Software	ADT_Radiated _V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	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 calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in 966 Chamber No. 3.
4. The FCC Site Registration No. is 147459
5. The CANADA Site Registration No. is 20331-1
6. Tested Date: Dec. 06 to 14, 2016

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	June 28, 2016	June 27, 2017
Spectrum Analyzer Agilent	E4446A	MY48250253	Dec. 21, 2016	Dec. 20, 2017
Power meter Anritsu	ML2495A	1014008	May 5, 2016	May 4, 2017
Power sensor Anritsu	MA2411B	0917122	May 5, 2016	May 4, 2017
AC Power Source Extech Electronics	6205	1440452	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 15, 2016	Jan. 14, 2017
DC Power Supply Topward	6603D	795558	NA	NA
Digital Multimeter FLUKE	87III	73680266	Nov. 10, 2016	Nov. 09, 2017
ESG Vector signal generator Agilent	E4438C	MY45094468/005 506 602 UK6 UNJ	Nov. 25, 2016	Nov. 24, 2017
Mech Switch Absorptive Mini-Circuits	MSP4TA-18+	0140	Mar. 19, 2016	Mar. 18, 2017
FXD ATTEN Mini-Circuits	BW-S3W2+	MN71981	Mar. 19, 2016	Mar. 18, 2017
Software	ADT_RF Test Software V6.6.5.4	NA	NA	NA

NOTE:
1. The test was performed in Oven room 2.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. Tested Date: Jan. 10, 2017

Appendix A. List of test command

```
BusyBox v1.23.2 (2016-12-20 22:47:02 UTC) built-in shell (ash)

  _______                     __       __                   __
 |_     _|.-----.-----.|  |--.-----.|__|.----.-----.|  |.-----.----.
   |   |  |  -__|  __||     |     ||  ||  __|  _  ||  ||  _  |   _|
   |___|  |_____|____||__|__|__|__||__||____|_____||__||_____|__|
                    N E X T   G E N E R A T I O N   G A T E W A Y
 -----------------------------------------------------------------
 NG GATEWAY SIGNATURE DRINK
 -----------------------------------------------------------------
  * 1 oz Vodka              Pour all ingredients into mixing
  * 1 oz Triple Sec       tin with ice, strain into glass.
  * 1 oz Orange juice
 -----------------------------------------------------------------

Product: gbnt-a_vzw
Release: Ruby (16.4)
Version: 16.4.7446-3130000-20161220230657-aa636a7383f23e65d07560e3fbe49cd6cbed2ce0


 Demo build, unofficial Technicolor SW, not suitable for deployment!


Hash config:          aa636a7383f23e65d07560e3fbe49cd6cbed2ce0
Hash openwrt:          2725ab044c9cf73e801506acad38074d56e11b5e
Hash kernel:          8ebb71a4a24463e49cf4b0afa9b7acb2940a2006
Hash packages:         1bbf6846238a26287697dd99861acfdfe613fee1
Hash technicolor:     b3b9b3ef5d4a893faffdc1148c13aa14081b205f
Hash routing:         261305c69baf57ea5512be33af9803c54c2c2dfa
Hash lte:             d353d489c2ddcd883e7b36d4375d7ee408a4b637
Hash custo:            cb1aa41b7db10b7526f3a785cdce80953cef2dbe
Hash mindspeed:         cd5df6841bf54c8c1d7e716ce22d0afa2fef66e5

Bootloader: 16.37.1032-0000000-20160920131846-087cc81602b56d92980ad55d8e70fc9165432df7

==============================================================================
root@OpenWrt:~# uci get wireless.radio_2G.country
US
==============================================================================
root@OpenWrt:~# wl -i wl0 ver
7.14 RC89.14
wl0: Dec 20 2016 21:26:06 version 7.14.89.14.cpe4.16L03.0-kdb
==============================================================================
root@OpenWrt:~# wl -i wl0 txcore
txcore enabled bitmap (Nsts {4..1}) 0x0f 0x07 0x03 0x01
txcore mask OFDM 0x01    CCK 0x01
==============================================================================
root@OpenWrt:~# wireless_caldata.sh -c dump
ERIP Data:
00->0F: FF0301BC FFFF0200 81828282 01000081
10->1F: 00000101 FFFF0000 FFFFFFFF FFFFFFFF
20->2F: FFFFFFFF FFFFFFFF FFFFFFFF FFFFFFFF
30->3F: 82828282 01000081 00010101 FFFF0000
40->4F: FFFFFFFF FFFFFFFF FFFFFFFF FFFFFFFF
```

```
50->5F: FFFFFFFF FFFFFFFF FFFFFFFF FFFFFFFF
60->6F: FFFFFFFF FFFFFFFF FFFFFFFF FFFFFFFF
70->7F: FFFFFFFF FFFFFFFF FFFFFFFF FFFFFFFF
80->8F: FFFFFFFF FFFFFFFF FFFFFFFF FFFFFFFF
90->9F: FFFFFFFF FFFFFFFF FFFFFFFF FFFFFFFF
A0->AF: FFFFFFFF FFFFFFFF FFFFFFFF FFFFFFFF
B0->BF: FFFFFFFF FFFFFFFF FFFFFFFF FFFFFFFF
C0->CF: FFFFFFFF FFFFFFFF FFFFFFFF FFFFFFFF
D0->DF: FFFFFFFF FFFFFFFF FFFFFFFF FFFFFFFF
E0->EF: FFFFFFFF FFFFFFFF FFFFFFFF FFFFFFFF
F0->FF: FFFFFFFF FFFFFFFF FFFFFFFF FFFFFFFF

Locked: no
==============================================================================
root@OpenWrt:~#    wl -i wl0 nvram_dump
sromrev=8
boardrev=0x1255
boardflags=0x200
boardflags2=0x9800
boardtype=0x5e9
subvid=0x14e4
boardnum=0
regrev=3
ledbh3=136
pa0b0=0xfe81
pa0b1=0x1764
pa0b2=0xfa42
pa0itssit=32
pa0maxpwr=86
opo=85
aa2g=3
aa5g=0
ag0=194
ag1=194
ag2=194
ag3=194
pa1b0=0x0
pa1b1=0x0
pa1b2=0x0
pa1lob0=0x0
pa1lob1=0x0
pa1lob2=0x0
pa1hib0=0x0
pa1hib1=0x0
pa1hib2=0x0
pa1itssit=0
pa1maxpwr=0
pa1lomaxpwr=0
pa1himaxpwr=0
bxa2g=0
rssisav2g=0
rssismc2g=0
rssismf2g=0
bxa5g=0
rssisav5g=0
rssismc5g=0
rssismf5g=0
tri2g=0
```

```
tri5g=0
tri5gl=0
tri5gh=0
rxpo2g=0
rxpo5g=0
txchain=3
rxchain=3
antswitch=0
tssipos2g=1
extpagain2g=2
pdetrange2g=2
triso2g=4
antswctl2g=0
tssipos5g=0
extpagain5g=0
pdetrange5g=0
triso5g=0
antswctl5g=0
ccode=
macaddr=e0:b9:e5:6d:ce:7b
tempthresh=120
tempoffset=0
rawtempsense=0x0
measpower=0x0
tempsense_slope=0x0
tempcorrx=0x0
tempsense_option=0x0
freqoffset_corr=0x0
iqcal_swp_dis=0x0
hw_iqcal_en=0x0
elna2g=0
elna5g=0
phycal_tempdelta=0
temps_period=0
temps_hysteresis=0
measpower1=0x0
measpower2=0x0
cck2gpo=0
ofdm2gpo=1986356821
ofdm5gpo=0
ofdm5glpo=0
ofdm5ghpo=0
mcs2gpo0=21845
mcs2gpo1=30037
mcs2gpo2=21845
mcs2gpo3=30037
mcs2gpo4=30583
mcs2gpo5=34679
mcs2gpo6=30583
mcs2gpo7=34679
mcs5gpo0=0
mcs5gpo1=0
mcs5gpo2=0
mcs5gpo3=0
mcs5gpo4=0
mcs5gpo5=0
mcs5gpo6=0
mcs5gpo7=0
```

```
mcs5glpo0=0
mcs5glpo1=0
mcs5glpo2=0
mcs5glpo3=0
mcs5glpo4=0
mcs5glpo5=0
mcs5glpo6=0
mcs5glpo7=0
mcs5ghpo0=0
mcs5ghpo1=0
mcs5ghpo2=0
mcs5ghpo3=0
mcs5ghpo4=0
mcs5ghpo5=0
mcs5ghpo6=0
mcs5ghpo7=0
cddpo=0
stbcpo=0
bw40po=0
bwduppo=0
pcieingress_war=15
eu_edthresh2g=255
eu_edthresh5g=255
rxgainerr2ga0=63
rxgainerr2ga1=31
rxgainerr2ga2=31
rxgainerr5gla0=63
rxgainerr5gla1=31
rxgainerr5gla2=31
rxgainerr5gma0=63
rxgainerr5gma1=31
rxgainerr5gma2=31
rxgainerr5gha0=63
rxgainerr5gha1=31
rxgainerr5gha2=31
rxgainerr5gua0=63
rxgainerr5gua1=31
rxgainerr5gua2=31
noiselvl2ga0=31
noiselvl2ga1=31
noiselvl2ga2=31
noiselvl5gla0=31
noiselvl5gla1=31
noiselvl5gla2=31
noiselvl5gma0=31
noiselvl5gma1=31
noiselvl5gma2=31
noiselvl5gha0=31
noiselvl5gha1=31
noiselvl5gha2=31
noiselvl5gua0=31
noiselvl5gua1=31
noiselvl5gua2=31
noisecaloffset=255
noisecaloffset5g=255
subband5gver=7
maxp2ga0=86
itt2ga0=32
```

```
itt5ga0=0
pa2gw0a0=0xfe81
pa2gw1a0=0x1764
pa2gw2a0=0xfa42
maxp5ga0=0
maxp5gha0=0
maxp5gla0=0
pa5gw0a0=0x0
pa5gw1a0=0x0
pa5gw2a0=0x0
pa5glw0a0=0x0
pa5glw1a0=0x0
pa5glw2a0=0x0
pa5ghw0a0=0x0
pa5ghw1a0=0x0
pa5ghw2a0=0x0
maxp2ga1=86
itt2ga1=32
itt5ga1=0
pa2gw0a1=0xfeb5
pa2gw1a1=0x17d0
pa2gw2a1=0xfa95
maxp5ga1=0
maxp5gha1=0
maxp5gla1=0
pa5gw0a1=0x0
pa5gw1a1=0x0
pa5gw2a1=0x0
pa5glw0a1=0x0
pa5glw1a1=0x0
pa5glw2a1=0x0
pa5ghw0a1=0x0
pa5ghw1a1=0x0
pa5ghw2a1=0x0
maxp2ga2=255
itt2ga2=255
itt5ga2=255
pa2gw0a2=0xffff
pa2gw1a2=0xffff
pa2gw2a2=0xffff
maxp5ga2=255
maxp5gha2=255
maxp5gla2=255
pa5gw0a2=0xffff
pa5gw1a2=0xffff
pa5gw2a2=0xffff
pa5glw0a2=0xffff
pa5glw1a2=0xffff
pa5glw2a2=0xffff
pa5ghw0a2=0xffff
pa5ghw1a2=0xffff
pa5ghw2a2=0xffff
maxp2ga3=255
itt2ga3=255
itt5ga3=255
pa2gw0a3=0xffff
pa2gw1a3=0xffff
pa2gw2a3=0xffff
```

```
maxp5ga3=255
maxp5gha3=255
maxp5gla3=255
pa5gw0a3=0xffff
pa5gw1a3=0xffff
pa5gw2a3=0xffff
pa5glw0a3=0xffff
pa5glw1a3=0xffff
pa5glw2a3=0xffff
pa5ghw0a3=0xffff
pa5ghw1a3=0xffff
pa5ghw2a3=0xffff
devid=0x43a9
watchdog=3000
================================================================================
root@OpenWrt:~# wl -i wl0 srdump

   srom[000]:   0x2801   0x0000   0x05e9   0x14e4   0x0070   0xedbe   0x1c00   0x2bc4
   srom[008]:   0x2a64   0x2964   0x2c64   0x3ce7   0x46ff   0x47ff   0x0c00   0x0820
   srom[016]:   0x0030   0x1002   0x9f28   0x5d44   0x8080   0x1d8f   0x0032   0x0100
   srom[024]:   0xdf00   0x71f5   0x8400   0x0083   0x8500   0x2010   0x0001   0x0000
   srom[032]:   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000
   srom[040]:   0x0000   0x0000   0x1008   0x0305   0x0000   0x0000   0x0000   0x0000
   srom[048]:   0x43a9   0x8000   0x0002   0x0000   0x1f30   0x1800   0x0000   0x0000
   srom[056]:   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000
   srom[064]:   0x5372   0x1255   0x0200   0x0000   0x9800   0x0000   0x0000   0x0000
   srom[072]:   0x0000   0x0000   0x0003   0xffff   0x88ff   0xffff   0x0003   0xc2c2
   srom[080]:   0xc2c2   0x0033   0x0000   0x0000   0x0000   0x0000   0x0000   0x0415
   srom[088]:   0x0000   0x7800   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000
   srom[096]:   0x2056   0xfe81   0x1764   0xfa42   0x0000   0x0000   0x0000   0x0000
   srom[104]:   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000
   srom[112]:   0x2056   0xfeb5   0x17d0   0xfa95   0x0000   0x0000   0x0000   0x0000
   srom[120]:   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000
   srom[128]:   0xffff   0xffff   0xffff   0xffff   0xffff   0xffff   0xffff   0xffff
   srom[136]:   0xffff   0xffff   0xffff   0xffff   0xffff   0xffff   0xffff   0xffff
   srom[144]:   0xffff   0xffff   0xffff   0xffff   0xffff   0xffff   0xffff   0xffff
   srom[152]:   0xffff   0xffff   0xffff   0xffff   0xffff   0xffff   0xffff   0xffff
   srom[160]:   0x0000   0x6655   0x7665   0x0000   0x0000   0x0000   0x0000   0x0000
   srom[168]:   0x0000   0x5555   0x7555   0x5555   0x7555   0x7777   0x8777   0x7777
   srom[176]:   0x8777   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000
   srom[184]:   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000
   srom[192]:   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000   0x0000
   srom[200]:   0x0000   0x0000   0x0000   0x0000   0x0000   0xffff   0xffff   0xffff
   srom[208]:   0xffff   0xffff   0xffff   0xffff   0xffff   0xffff   0xffff   0xffff
   srom[216]:   0xffff   0xffff   0xffff   0x7a08
root@OpenWrt:~#
================================================================================

=====================================
========      11N20 mode, CH 1 =======
=====================================
root@OpenWrt:~# wl -i wl0 curpower
Power Control:              On, HW
Current Channel:            1
BSS Channel:                  1
BSS Local Max:              30.0 dBm
BSS Local Constraint:   0.0 dB
Channel Width:              20MHz
```

```
User Target:                31.75 dBm
SROM Antgain 2G:            2.75 dB / 2.75 dB
SROM Antgain 5G:            0.0 dB / 0.0 dB
SAR:                        -
Open loop:                  Off
Current rate:               [MCS0] ht mcs 0 Tx Exp 0 BW 20

Power Adjust:               abs 0.0 dB (disabled)
Calibration acc:            0.75 dB
TXChain compensation:       txch offset + ch offset
   TXChain 1:               0.0 + -0.50 = -0.50 dB
   TXChain 2:               0.50 + -0.50 = 0.0 dB

NOTE: Regulatory Limits, board limits and target power are for core 0
         Use "wl curpower_display_core" to select another one
NOTE: Regulatory limit is conducted -> Antenna gain is ignored

Regulatory Limits:
Rate                        Chains 20MHz
DSSS                        1      18.25
OFDM                        1      11.50
MCS0_7                      1      11.50
VHT8_9SS1                   1      11.50
DSSS_MULTI1                 2      -
OFDM_CDD1                   2      11.00
MCS0_7_CDD1                 2      11.00
VHT8_9SS1_CDD1              2      11.00
MCS0_7_STBC                 2      11.00
VHT8_9SS1_STBC              2      11.00
MCS8_15                     2      11.00
VHT8_9SS2                   2      11.00
DSSS_MULTI2                 3      -
OFDM_CDD2                   3      -
MCS0_7_CDD2                 3      -
VHT8_9SS1_CDD2              3      -
MCS0_7_STBC_SPEXP1          3      -
VHT8_9SS1_STBC_SPEXP1       3      -
MCS8_15_SPEXP1              3      -
VHT8_9SS2_SPEXP1            3      -
MCS16_23                    3      -
VHT8_9SS3                   3      -
OFDM_TXBF1                  2      -
MCS0_7_TXBF1                2      -
VHT8_9SS1_TXBF1             2      -
MCS8_15_TXBF0               2      -
OFDM_TXBF2                  3      -
MCS0_7_TXBF2                3      -
VHT8_9SS1_TXBF2             3      -
MCS8_15_TXBF1               3      -
VHT8_9SS2_TXBF1             3      -
MCS16_23_TXBF0              3      -

Core Index:                 0
Board Limits:
Rate                        Chains 20MHz
DSSS                        1      21.50
OFDM6                       1      19.00
OFDM9                       1      19.00
```

OFDM12	1	18.50
OFDM18	1	18.50
OFDM24	1	19.00
OFDM36	1	18.50
OFDM48	1	18.50
OFDM54	1	18.00
MCS0	1	19.00
MCS1	1	18.50
MCS2	1	18.50
MCS3	1	19.00
MCS4	1	18.50
MCS5	1	18.50
MCS6	1	18.00
MCS7	1	18.00
VHT8_9SS1	1	-
DSSS_MULTI1	2	21.50
OFDM_CDD1	2	19.00
MCS0_CDD1	2	19.00
MCS1_CDD1	2	19.00
MCS2_CDD1	2	19.00
MCS3_CDD1	2	19.00
MCS4_CDD1	2	19.00
MCS5_CDD1	2	19.00
MCS6_CDD1	2	19.00
MCS7_CDD1	2	18.00
VHT8_9SS1_CDD1	2	-
MCS0_STBC	2	19.00
MCS1_STBC	2	19.00
MCS2_STBC	2	19.00
MCS3_STBC	2	19.00
MCS4_STBC	2	19.00
MCS5_STBC	2	19.00
MCS6_STBC	2	19.00
MCS7_STBC	2	18.00
VHT8_9SS1_STBC	2	-
MCS8	2	19.00
MCS9	2	19.00
MCS10	2	19.00
MCS11	2	19.00
MCS12	2	19.00
MCS13	2	19.00
MCS14	2	19.00
MCS15	2	18.00
VHT8_9SS2	2	-
DSSS_MULTI2	3	-
OFDM_CDD2	3	-
MCS0_7_CDD2	3	-
VHT8_9SS1_CDD2	3	-
MCS0_7_STBC_SPEXP1	3	-
VHT8_9SS1_STBC_SPEXP1	3	-
MCS8_15_SPEXP1	3	-
VHT8_9SS2_SPEXP1	3	-
MCS16_23	3	-
VHT8_9SS3	3	-
OFDM_TXBF1	2	-
MCS0_7_TXBF1	2	-
VHT8_9SS1_TXBF1	2	-
MCS8_15_TXBF0	2	-

```
OFDM_TXBF2                  3        -
MCS0_7_TXBF2                3        -
VHT8_9SS1_TXBF2             3        -
MCS8_15_TXBF1               3        -
VHT8_9SS2_TXBF1             3        -
MCS16_23_TXBF0              3        -

Power Targets:
Rate                        Chains 20MHz
DSSS                        1        17.50
OFDM                        1        10.75
MCS0_7                      1        10.75
VHT8_9SS1                   1        8.00
DSSS_MULTI1                 2        8.00
OFDM_CDD1                   2        10.25
MCS0_7_CDD1                 2        10.25
VHT8_9SS1_CDD1              2        8.00
MCS0_7_STBC                 2        10.25
VHT8_9SS1_STBC              2        8.00
MCS8_15                     2        10.25
VHT8_9SS2                   2        8.00
DSSS_MULTI2                 3        8.00
OFDM_CDD2                   3        8.00
MCS0_7_CDD2                 3        8.00
VHT8_9SS1_CDD2              3        8.00
MCS0_7_STBC_SPEXP1          3        8.00
VHT8_9SS1_STBC_SPEXP1       3        8.00
MCS8_15_SPEXP1              3        8.00
VHT8_9SS2_SPEXP1            3        8.00
MCS16_23                    3        8.00
VHT8_9SS3                   3        8.00
OFDM_TXBF1                  2        8.00
MCS0_7_TXBF1                2        8.00
VHT8_9SS1_TXBF1             2        8.00
MCS8_15_TXBF0               2        8.00
OFDM_TXBF2                  3        8.00
MCS0_7_TXBF2                3        8.00
VHT8_9SS1_TXBF2             3        8.00
MCS8_15_TXBF1               3        8.00
VHT8_9SS2_TXBF1             3        8.00
MCS16_23_TXBF0              3        8.00

Maximum Power Target among all rates:     17.50    17.50
Last est. power                           :     17.00     0.00
Power Target for the current rate     :     10.75    -
Last adjusted est. power                  :     17.00     0.00
=====================================
========       11N20 mode, CH 6 =======
=====================================
root@OpenWrt:~# wl -i wl0 curpower
Power Control:              On, HW
Current Channel:            6
BSS Channel:                6
BSS Local Max:              30.0 dBm
BSS Local Constraint:    0.0 dB
Channel Width:              20MHz
User Target:                31.75 dBm
SROM Antgain 2G:            2.75 dB / 2.75 dB
```

```
SROM Antgain 5G:          0.0 dB / 0.0 dB
SAR:                      -
Open loop:                Off
Current rate:             [MCS0] ht mcs 0 Tx Exp 0 BW 20

Power Adjust:             abs 0.0 dB (disabled)
Calibration acc:          0.75 dB
TXChain compensation:     txch offset + ch offset
   TXChain 1:             0.0 + 0.0 = 0.0 dB
   TXChain 2:             0.50 + 0.0 = 0.50 dB

NOTE: Regulatory Limits, board limits and target power are for core 0
         Use "wl curpower_display_core" to select another one
NOTE: Regulatory limit is conducted -> Antenna gain is ignored

Regulatory Limits:
Rate                      Chains 20MHz
DSSS                      1      17.00
OFDM                      1      19.00
MCS0_7                    1      19.00
VHT8_9SS1                 1      19.00
DSSS_MULTI1               2      -
OFDM_CDD1                 2      18.50
MCS0_7_CDD1               2      18.50
VHT8_9SS1_CDD1            2      18.50
MCS0_7_STBC               2      18.50
VHT8_9SS1_STBC            2      18.50
MCS8_15                   2      18.50
VHT8_9SS2                 2      18.50
DSSS_MULTI2               3      -
OFDM_CDD2                 3      -
MCS0_7_CDD2               3      -
VHT8_9SS1_CDD2            3      -
MCS0_7_STBC_SPEXP1        3      -
VHT8_9SS1_STBC_SPEXP1     3      -
MCS8_15_SPEXP1            3      -
VHT8_9SS2_SPEXP1          3      -
MCS16_23                  3      -
VHT8_9SS3                 3      -
OFDM_TXBF1                2      -
MCS0_7_TXBF1              2      -
VHT8_9SS1_TXBF1           2      -
MCS8_15_TXBF0             2      -
OFDM_TXBF2                3      -
MCS0_7_TXBF2              3      -
VHT8_9SS1_TXBF2           3      -
MCS8_15_TXBF1             3      -
VHT8_9SS2_TXBF1           3      -
MCS16_23_TXBF0            3      -

Core Index:               0
Board Limits:
Rate                      Chains 20MHz
DSSS                      1      21.50
OFDM6                     1      19.00
OFDM9                     1      19.00
OFDM12                    1      18.50
OFDM18                    1      18.50
```

OFDM24	1	19.00
OFDM36	1	18.50
OFDM48	1	18.50
OFDM54	1	18.00
MCS0	1	19.00
MCS1	1	18.50
MCS2	1	18.50
MCS3	1	19.00
MCS4	1	18.50
MCS5	1	18.50
MCS6	1	18.00
MCS7	1	18.00
VHT8_9SS1	1	-
DSSS_MULTI1	2	21.50
OFDM_CDD1	2	19.00
MCS0_CDD1	2	19.00
MCS1_CDD1	2	19.00
MCS2_CDD1	2	19.00
MCS3_CDD1	2	19.00
MCS4_CDD1	2	19.00
MCS5_CDD1	2	19.00
MCS6_CDD1	2	19.00
MCS7_CDD1	2	18.00
VHT8_9SS1_CDD1	2	-
MCS0_STBC	2	19.00
MCS1_STBC	2	19.00
MCS2_STBC	2	19.00
MCS3_STBC	2	19.00
MCS4_STBC	2	19.00
MCS5_STBC	2	19.00
MCS6_STBC	2	19.00
MCS7_STBC	2	18.00
VHT8_9SS1_STBC	2	-
MCS8	2	19.00
MCS9	2	19.00
MCS10	2	19.00
MCS11	2	19.00
MCS12	2	19.00
MCS13	2	19.00
MCS14	2	19.00
MCS15	2	18.00
VHT8_9SS2	2	-
DSSS_MULTI2	3	-
OFDM_CDD2	3	-
MCS0_7_CDD2	3	-
VHT8_9SS1_CDD2	3	-
MCS0_7_STBC_SPEXP1	3	-
VHT8_9SS1_STBC_SPEXP1	3	-
MCS8_15_SPEXP1	3	-
VHT8_9SS2_SPEXP1	3	-
MCS16_23	3	-
VHT8_9SS3	3	-
OFDM_TXBF1	2	-
MCS0_7_TXBF1	2	-
VHT8_9SS1_TXBF1	2	-
MCS8_15_TXBF0	2	-
OFDM_TXBF2	3	-
MCS0_7_TXBF2	3	-

VHT8_9SS1_TXBF2	3	-
MCS8_15_TXBF1	3	-
VHT8_9SS2_TXBF1	3	-
MCS16_23_TXBF0	3	-

Power Targets:

Rate	Chains	20MHz
DSSS	1	16.25
OFDM6	1	18.25
OFDM9	1	18.25
OFDM12	1	17.75
OFDM18	1	17.75
OFDM24	1	18.25
OFDM36	1	17.75
OFDM48	1	17.75
OFDM54	1	17.25
MCS0	1	18.25
MCS1	1	17.75
MCS2	1	17.75
MCS3	1	18.25
MCS4	1	17.75
MCS5	1	17.75
MCS6	1	17.25
MCS7	1	17.25
VHT8_9SS1	1	8.00
DSSS_MULTI1	2	8.00
OFDM_CDD1	2	17.75
MCS0_CDD1	2	17.75
MCS1_CDD1	2	17.75
MCS2_CDD1	2	17.75
MCS3_CDD1	2	17.75
MCS4_CDD1	2	17.75
MCS5_CDD1	2	17.75
MCS6_CDD1	2	17.75
MCS7_CDD1	2	17.25
VHT8_9SS1_CDD1	2	8.00
MCS0_STBC	2	17.75
MCS1_STBC	2	17.75
MCS2_STBC	2	17.75
MCS3_STBC	2	17.75
MCS4_STBC	2	17.75
MCS5_STBC	2	17.75
MCS6_STBC	2	17.75
MCS7_STBC	2	17.25
VHT8_9SS1_STBC	2	8.00
MCS8	2	17.75
MCS9	2	17.75
MCS10	2	17.75
MCS11	2	17.75
MCS12	2	17.75
MCS13	2	17.75
MCS14	2	17.75
MCS15	2	17.25
VHT8_9SS2	2	8.00
DSSS_MULTI2	3	8.00
OFDM_CDD2	3	8.00
MCS0_7_CDD2	3	8.00
VHT8_9SS1_CDD2	3	8.00

```
MCS0_7_STBC_SPEXP1        3        8.00
VHT8_9SS1_STBC_SPEXP1    3        8.00
MCS8_15_SPEXP1              3        8.00
VHT8_9SS2_SPEXP1           3        8.00
MCS16_23                       3        8.00
VHT8_9SS3                      3        8.00
OFDM_TXBF1                    2        8.00
MCS0_7_TXBF1                 2        8.00
VHT8_9SS1_TXBF1             2        8.00
MCS8_15_TXBF0               2        8.00
OFDM_TXBF2                   3        8.00
MCS0_7_TXBF2                 3        8.00
VHT8_9SS1_TXBF2             3        8.00
MCS8_15_TXBF1               3        8.00
VHT8_9SS2_TXBF1             3        8.00
MCS16_23_TXBF0              3        8.00

Maximum Power Target among all rates:     18.25    18.25
Last est. power                                :     18.25      0.00
Power Target for the current rate     :     18.25    -
Last adjusted est. power                   :     20.25      0.00
root@OpenWrt:~#
====================================
========       11N20 mode, CH 11 ======
====================================

root@OpenWrt:~# wl -i wl0 curpower
Power Control:              On, HW
Current Channel:           11
BSS Channel:                 11
BSS Local Max:               30.0 dBm
BSS Local Constraint:    0.0 dB
Channel Width:               20MHz
User Target:                 31.75 dBm
SROM Antgain 2G:           2.75 dB / 2.75 dB
SROM Antgain 5G:           0.0 dB / 0.0 dB
SAR:                          -
Open loop:                   Off
Current rate:                [MCS0] ht mcs 0 Tx Exp 0 BW 20

Power Adjust:                abs 0.0 dB (disabled)
Calibration acc:            0.75 dB
TXChain compensation:    txch offset + ch offset
   TXChain 1:                0.0 + 0.0 = 0.0 dB
   TXChain 2:                0.50 + 0.25 = 0.75 dB

NOTE: Regulatory Limits, board limits and target power are for core 0
         Use "wl curpower_display_core" to select another one
NOTE: Regulatory limit is conducted -> Antenna gain is ignored

Regulatory Limits:
Rate                          Chains 20MHz
DSSS                             1        21.50
OFDM                             1        15.25
MCS0_7                           1        15.25
VHT8_9SS1                        1        15.25
DSSS_MULTI1                      2        -
OFDM_CDD1                        2        14.50
```

MCS0_7_CDD1	2	14.50
VHT8_9SS1_CDD1	2	14.50
MCS0_7_STBC	2	14.50
VHT8_9SS1_STBC	2	14.50
MCS8_15	2	14.50
VHT8_9SS2	2	14.50
DSSS_MULTI2	3	-
OFDM_CDD2	3	-
MCS0_7_CDD2	3	-
VHT8_9SS1_CDD2	3	-
MCS0_7_STBC_SPEXP1	3	-
VHT8_9SS1_STBC_SPEXP1	3	-
MCS8_15_SPEXP1	3	-
VHT8_9SS2_SPEXP1	3	-
MCS16_23	3	-
VHT8_9SS3	3	-
OFDM_TXBF1	2	-
MCS0_7_TXBF1	2	-
VHT8_9SS1_TXBF1	2	-
MCS8_15_TXBF0	2	-
OFDM_TXBF2	3	-
MCS0_7_TXBF2	3	-
VHT8_9SS1_TXBF2	3	-
MCS8_15_TXBF1	3	-
VHT8_9SS2_TXBF1	3	-
MCS16_23_TXBF0	3	-

Core Index: 0
Board Limits:

Rate	Chains	20MHz
DSSS	1	21.50
OFDM6	1	19.00
OFDM9	1	19.00
OFDM12	1	18.50
OFDM18	1	18.50
OFDM24	1	19.00
OFDM36	1	18.50
OFDM48	1	18.50
OFDM54	1	18.00
MCS0	1	19.00
MCS1	1	18.50
MCS2	1	18.50
MCS3	1	19.00
MCS4	1	18.50
MCS5	1	18.50
MCS6	1	18.00
MCS7	1	18.00
VHT8_9SS1	1	-
DSSS_MULTI1	2	21.50
OFDM_CDD1	2	19.00
MCS0_CDD1	2	19.00
MCS1_CDD1	2	19.00
MCS2_CDD1	2	19.00
MCS3_CDD1	2	19.00
MCS4_CDD1	2	19.00
MCS5_CDD1	2	19.00
MCS6_CDD1	2	19.00
MCS7_CDD1	2	18.00

VHT8_9SS1_CDD1	2	-
MCS0_STBC	2	19.00
MCS1_STBC	2	19.00
MCS2_STBC	2	19.00
MCS3_STBC	2	19.00
MCS4_STBC	2	19.00
MCS5_STBC	2	19.00
MCS6_STBC	2	19.00
MCS7_STBC	2	18.00
VHT8_9SS1_STBC	2	-
MCS8	2	19.00
MCS9	2	19.00
MCS10	2	19.00
MCS11	2	19.00
MCS12	2	19.00
MCS13	2	19.00
MCS14	2	19.00
MCS15	2	18.00
VHT8_9SS2	2	-
DSSS_MULTI2	3	-
OFDM_CDD2	3	-
MCS0_7_CDD2	3	-
VHT8_9SS1_CDD2	3	-
MCS0_7_STBC_SPEXP1	3	-
VHT8_9SS1_STBC_SPEXP1	3	-
MCS8_15_SPEXP1	3	-
VHT8_9SS2_SPEXP1	3	-
MCS16_23	3	-
VHT8_9SS3	3	-
OFDM_TXBF1	2	-
MCS0_7_TXBF1	2	-
VHT8_9SS1_TXBF1	2	-
MCS8_15_TXBF0	2	-
OFDM_TXBF2	3	-
MCS0_7_TXBF2	3	-
VHT8_9SS1_TXBF2	3	-
MCS8_15_TXBF1	3	-
VHT8_9SS2_TXBF1	3	-
MCS16_23_TXBF0	3	-

Power Targets:

Rate	Chains	20MHz
DSSS	1	20.75
OFDM	1	14.50
MCS0_7	1	14.50
VHT8_9SS1	1	8.00
DSSS_MULTI1	2	8.00
OFDM_CDD1	2	13.75
MCS0_7_CDD1	2	13.75
VHT8_9SS1_CDD1	2	8.00
MCS0_7_STBC	2	13.75
VHT8_9SS1_STBC	2	8.00
MCS8_15	2	13.75
VHT8_9SS2	2	8.00
DSSS_MULTI2	3	8.00
OFDM_CDD2	3	8.00
MCS0_7_CDD2	3	8.00
VHT8_9SS1_CDD2	3	8.00

```
MCS0_7_STBC_SPEXP1        3        8.00
VHT8_9SS1_STBC_SPEXP1    3        8.00
MCS8_15_SPEXP1              3        8.00
VHT8_9SS2_SPEXP1           3        8.00
MCS16_23                       3        8.00
VHT8_9SS3                      3        8.00
OFDM_TXBF1                    2        8.00
MCS0_7_TXBF1                 2        8.00
VHT8_9SS1_TXBF1             2        8.00
MCS8_15_TXBF0               2        8.00
OFDM_TXBF2                   3        8.00
MCS0_7_TXBF2                 3        8.00
VHT8_9SS1_TXBF2             3        8.00
MCS8_15_TXBF1               3        8.00
VHT8_9SS2_TXBF1             3        8.00
MCS16_23_TXBF0              3        8.00

Maximum Power Target among all rates:     20.75    20.75
Last est. power                                :     20.75      0.00
Power Target for the current rate     :     14.50    -
Last adjusted est. power                   :     20.75      0.00
root@OpenWrt:~#

=====================================
========       11N40 mode, CH 3 =======
=====================================
root@OpenWrt:~# wl -i wl0 curpower
Power Control:              On, HW
Current Channel:           1l
BSS Channel:                 1l
BSS Local Max:               30.0 dBm
BSS Local Constraint:    0.0 dB
Channel Width:               40MHz
User Target:                 31.75 dBm
SROM Antgain 2G:            2.75 dB / 2.75 dB
SROM Antgain 5G:            0.0 dB / 0.0 dB
SAR:                          -
Open loop:                   Off
Current rate:                [MCS0] ht mcs 0 Tx Exp 0 BW 40

Power Adjust:                abs 0.0 dB (disabled)
Calibration acc:            0.75 dB
TXChain compensation:    txch offset + ch offset
   TXChain 1:                0.0 + -0.50 = -0.50 dB
   TXChain 2:                0.50 + -0.50 = 0.0 dB

NOTE: Regulatory Limits, board limits and target power are for core 0
         Use "wl curpower_display_core" to select another one
NOTE: Regulatory limit is conducted -> Antenna gain is ignored

Regulatory Limits:
Rate                          Chains 20in40 40MHz
DSSS                             1        18.25    18.25
OFDM                             1        9.50      9.50
MCS0_7                           1        9.50      9.50
VHT8_9SS1                        1        9.50      9.50
DSSS_MULTI1                      2        -          -
OFDM_CDD1                        2        9.00      9.00
```

MCS0_7_CDD1	2	9.00	9.00
VHT8_9SS1_CDD1	2	9.00	9.00
MCS0_7_STBC	2	9.00	9.00
VHT8_9SS1_STBC	2	9.00	9.00
MCS8_15	2	9.00	9.00
VHT8_9SS2	2	9.00	9.00
DSSS_MULTI2	3	-	-
OFDM_CDD2	3	-	-
MCS0_7_CDD2	3	-	-
VHT8_9SS1_CDD2	3	-	-
MCS0_7_STBC_SPEXP1	3	-	-
VHT8_9SS1_STBC_SPEXP1	3	-	-
MCS8_15_SPEXP1	3	-	-
VHT8_9SS2_SPEXP1	3	-	-
MCS16_23	3	-	-
VHT8_9SS3	3	-	-
OFDM_TXBF1	2	-	-
MCS0_7_TXBF1	2	-	-
VHT8_9SS1_TXBF1	2	-	-
MCS8_15_TXBF0	2	-	-
OFDM_TXBF2	3	-	-
MCS0_7_TXBF2	3	-	-
VHT8_9SS1_TXBF2	3	-	-
MCS8_15_TXBF1	3	-	-
VHT8_9SS2_TXBF1	3	-	-
MCS16_23_TXBF0	3	-	-

Core Index: 0
Board Limits:

Rate	Chains	20in40	40MHz
DSSS	1	21.50	21.50
OFDM	1	18.00	18.00
MCS0	1	18.00	18.00
MCS1	1	18.00	18.00
MCS2	1	18.00	18.00
MCS3	1	18.00	18.00
MCS4	1	18.00	18.00
MCS5	1	18.00	18.00
MCS6	1	18.00	18.00
MCS7	1	17.50	17.50
VHT8_9SS1	1	-	-
DSSS_MULTI1	2	21.50	21.50
OFDM_CDD1	2	18.00	18.00
MCS0_CDD1	2	18.00	18.00
MCS1_CDD1	2	18.00	18.00
MCS2_CDD1	2	18.00	18.00
MCS3_CDD1	2	18.00	18.00
MCS4_CDD1	2	18.00	18.00
MCS5_CDD1	2	18.00	18.00
MCS6_CDD1	2	18.00	18.00
MCS7_CDD1	2	17.50	17.50
VHT8_9SS1_CDD1	2	-	-
MCS0_STBC	2	18.00	18.00
MCS1_STBC	2	18.00	18.00
MCS2_STBC	2	18.00	18.00
MCS3_STBC	2	18.00	18.00
MCS4_STBC	2	18.00	18.00
MCS5_STBC	2	18.00	18.00

MCS6_STBC	2	18.00	18.00
MCS7_STBC	2	17.50	17.50
VHT8_9SS1_STBC	2	-	-
MCS8	2	18.00	18.00
MCS9	2	18.00	18.00
MCS10	2	18.00	18.00
MCS11	2	18.00	18.00
MCS12	2	18.00	18.00
MCS13	2	18.00	18.00
MCS14	2	18.00	18.00
MCS15	2	17.50	17.50
VHT8_9SS2	2	-	-
DSSS_MULTI2	3	-	-
OFDM_CDD2	3	-	-
MCS0_7_CDD2	3	-	-
VHT8_9SS1_CDD2	3	-	-
MCS0_7_STBC_SPEXP1	3	-	-
VHT8_9SS1_STBC_SPEXP1	3	-	-
MCS8_15_SPEXP1	3	-	-
VHT8_9SS2_SPEXP1	3	-	-
MCS16_23	3	-	-
VHT8_9SS3	3	-	-
OFDM_TXBF1	2	-	-
MCS0_7_TXBF1	2	-	-
VHT8_9SS1_TXBF1	2	-	-
MCS8_15_TXBF0	2	-	-
OFDM_TXBF2	3	-	-
MCS0_7_TXBF2	3	-	-
VHT8_9SS1_TXBF2	3	-	-
MCS8_15_TXBF1	3	-	-
VHT8_9SS2_TXBF1	3	-	-
MCS16_23_TXBF0	3	-	-

Power Targets:

Rate	Chains	20in40	40MHz
DSSS	1	17.50	8.00
OFDM	1	8.75	8.75
MCS0_7	1	8.75	8.75
VHT8_9SS1	1	8.00	8.00
DSSS_MULTI1	2	8.00	8.00
OFDM_CDD1	2	8.25	8.25
MCS0_7_CDD1	2	8.25	8.25
VHT8_9SS1_CDD1	2	8.00	8.00
MCS0_7_STBC	2	8.25	8.25
VHT8_9SS1_STBC	2	8.00	8.00
MCS8_15	2	8.25	8.25
VHT8_9SS2	2	8.00	8.00
DSSS_MULTI2	3	8.00	8.00
OFDM_CDD2	3	8.00	8.00
MCS0_7_CDD2	3	8.00	8.00
VHT8_9SS1_CDD2	3	8.00	8.00
MCS0_7_STBC_SPEXP1	3	8.00	8.00
VHT8_9SS1_STBC_SPEXP1	3	8.00	8.00
MCS8_15_SPEXP1	3	8.00	8.00
VHT8_9SS2_SPEXP1	3	8.00	8.00
MCS16_23	3	8.00	8.00
VHT8_9SS3	3	8.00	8.00
OFDM_TXBF1	2	8.00	8.00

```
MCS0_7_TXBF1            2      8.00    8.00
VHT8_9SS1_TXBF1         2      8.00    8.00
MCS8_15_TXBF0           2      8.00    8.00
OFDM_TXBF2              3      8.00    8.00
MCS0_7_TXBF2            3      8.00    8.00
VHT8_9SS1_TXBF2         3      8.00    8.00
MCS8_15_TXBF1           3      8.00    8.00
VHT8_9SS2_TXBF1         3      8.00    8.00
MCS16_23_TXBF0          3      8.00    8.00

Maximum Power Target among all rates:    17.50   17.50
Last est. power                     :    20.25    0.00
Power Target for the current rate   :     8.75   -
Last adjusted est. power            :    20.25    0.00
=====================================
========      11N40 mode, CH 6 =======
=====================================
root@OpenWrt:~# wl -i wl0 curpower
Power Control:            On, HW
Current Channel:          4l
BSS Channel:              4l
BSS Local Max:            30.0 dBm
BSS Local Constraint:     0.0 dB
Channel Width:            40MHz
User Target:              31.75 dBm
SROM Antgain 2G:          2.75 dB / 2.75 dB
SROM Antgain 5G:          0.0 dB / 0.0 dB
SAR:                      -
Open loop:                Off
Current rate:             [MCS0] ht mcs 0 Tx Exp 0 BW 40

Power Adjust:             abs 0.0 dB (disabled)
Calibration acc:          0.75 dB
TXChain compensation:     txch offset + ch offset
   TXChain 1:             0.0 + 0.0 = 0.0 dB
   TXChain 2:             0.50 + 0.0 = 0.50 dB

NOTE: Regulatory Limits, board limits and target power are for core 0
        Use "wl curpower_display_core" to select another one
NOTE: Regulatory limit is conducted -> Antenna gain is ignored

Regulatory Limits:
Rate                      Chains 20in40 40MHz
DSSS                      1      17.00   17.00
OFDM                      1      13.25   13.25
MCS0_7                    1      13.25   13.25
VHT8_9SS1                 1      13.25   13.25
DSSS_MULTI1               2      -       -
OFDM_CDD1                 2      12.75   12.75
MCS0_7_CDD1               2      12.75   12.75
VHT8_9SS1_CDD1            2      12.75   12.75
MCS0_7_STBC               2      12.75   12.75
VHT8_9SS1_STBC            2      12.75   12.75
MCS8_15                   2      12.75   12.75
VHT8_9SS2                 2      12.75   12.75
DSSS_MULTI2               3      -       -
OFDM_CDD2                 3      -       -
MCS0_7_CDD2               3      -       -
```

VHT8_9SS1_CDD2	3	-	-
MCS0_7_STBC_SPEXP1	3	-	-
VHT8_9SS1_STBC_SPEXP1	3	-	-
MCS8_15_SPEXP1	3	-	-
VHT8_9SS2_SPEXP1	3	-	-
MCS16_23	3	-	-
VHT8_9SS3	3	-	-
OFDM_TXBF1	2	-	-
MCS0_7_TXBF1	2	-	-
VHT8_9SS1_TXBF1	2	-	-
MCS8_15_TXBF0	2	-	-
OFDM_TXBF2	3	-	-
MCS0_7_TXBF2	3	-	-
VHT8_9SS1_TXBF2	3	-	-
MCS8_15_TXBF1	3	-	-
VHT8_9SS2_TXBF1	3	-	-
MCS16_23_TXBF0	3	-	-

Core Index: 0

Board Limits:

Rate	Chains	20in40	40MHz
DSSS	1	21.50	21.50
OFDM	1	18.00	18.00
MCS0	1	18.00	18.00
MCS1	1	18.00	18.00
MCS2	1	18.00	18.00
MCS3	1	18.00	18.00
MCS4	1	18.00	18.00
MCS5	1	18.00	18.00
MCS6	1	18.00	18.00
MCS7	1	17.50	17.50
VHT8_9SS1	1	-	-
DSSS_MULTI1	2	21.50	21.50
OFDM_CDD1	2	18.00	18.00
MCS0_CDD1	2	18.00	18.00
MCS1_CDD1	2	18.00	18.00
MCS2_CDD1	2	18.00	18.00
MCS3_CDD1	2	18.00	18.00
MCS4_CDD1	2	18.00	18.00
MCS5_CDD1	2	18.00	18.00
MCS6_CDD1	2	18.00	18.00
MCS7_CDD1	2	17.50	17.50
VHT8_9SS1_CDD1	2	-	-
MCS0_STBC	2	18.00	18.00
MCS1_STBC	2	18.00	18.00
MCS2_STBC	2	18.00	18.00
MCS3_STBC	2	18.00	18.00
MCS4_STBC	2	18.00	18.00
MCS5_STBC	2	18.00	18.00
MCS6_STBC	2	18.00	18.00
MCS7_STBC	2	17.50	17.50
VHT8_9SS1_STBC	2	-	-
MCS8	2	18.00	18.00
MCS9	2	18.00	18.00
MCS10	2	18.00	18.00
MCS11	2	18.00	18.00
MCS12	2	18.00	18.00
MCS13	2	18.00	18.00

MCS14	2	18.00	18.00
MCS15	2	17.50	17.50
VHT8_9SS2	2	-	-
DSSS_MULTI2	3	-	-
OFDM_CDD2	3	-	-
MCS0_7_CDD2	3	-	-
VHT8_9SS1_CDD2	3	-	-
MCS0_7_STBC_SPEXP1	3	-	-
VHT8_9SS1_STBC_SPEXP1	3	-	-
MCS8_15_SPEXP1	3	-	-
VHT8_9SS2_SPEXP1	3	-	-
MCS16_23	3	-	-
VHT8_9SS3	3	-	-
OFDM_TXBF1	2	-	-
MCS0_7_TXBF1	2	-	-
VHT8_9SS1_TXBF1	2	-	-
MCS8_15_TXBF0	2	-	-
OFDM_TXBF2	3	-	-
MCS0_7_TXBF2	3	-	-
VHT8_9SS1_TXBF2	3	-	-
MCS8_15_TXBF1	3	-	-
VHT8_9SS2_TXBF1	3	-	-
MCS16_23_TXBF0	3	-	-

Power Targets:

Rate	Chains	20in40	40MHz
DSSS	1	16.25	8.00
OFDM	1	12.50	12.50
MCS0_7	1	12.50	12.50
VHT8_9SS1	1	8.00	8.00
DSSS_MULTI1	2	8.00	8.00
OFDM_CDD1	2	12.00	12.00
MCS0_7_CDD1	2	12.00	12.00
VHT8_9SS1_CDD1	2	8.00	8.00
MCS0_7_STBC	2	12.00	12.00
VHT8_9SS1_STBC	2	8.00	8.00
MCS8_15	2	12.00	12.00
VHT8_9SS2	2	8.00	8.00
DSSS_MULTI2	3	8.00	8.00
OFDM_CDD2	3	8.00	8.00
MCS0_7_CDD2	3	8.00	8.00
VHT8_9SS1_CDD2	3	8.00	8.00
MCS0_7_STBC_SPEXP1	3	8.00	8.00
VHT8_9SS1_STBC_SPEXP1	3	8.00	8.00
MCS8_15_SPEXP1	3	8.00	8.00
VHT8_9SS2_SPEXP1	3	8.00	8.00
MCS16_23	3	8.00	8.00
VHT8_9SS3	3	8.00	8.00
OFDM_TXBF1	2	8.00	8.00
MCS0_7_TXBF1	2	8.00	8.00
VHT8_9SS1_TXBF1	2	8.00	8.00
MCS8_15_TXBF0	2	8.00	8.00
OFDM_TXBF2	3	8.00	8.00
MCS0_7_TXBF2	3	8.00	8.00
VHT8_9SS1_TXBF2	3	8.00	8.00
MCS8_15_TXBF1	3	8.00	8.00
VHT8_9SS2_TXBF1	3	8.00	8.00
MCS16_23_TXBF0	3	8.00	8.00

```
Maximum Power Target among all rates:     16.25    16.25
Last est. power                           :     16.25     0.00
Power Target for the current rate     :     12.50    -
Last adjusted est. power                  :     16.25     0.00
=====================================
=======       11N40 mode, CH 9 ======
=====================================
root@OpenWrt:~# wl -i wl0 curpower
Power Control:              On, HW
Current Channel:            7l
BSS Channel:                  7l
BSS Local Max:               30.0 dBm
BSS Local Constraint:    0.0 dB
Channel Width:               40MHz
User Target:                31.75 dBm
SROM Antgain 2G:            2.75 dB / 2.75 dB
SROM Antgain 5G:            0.0 dB / 0.0 dB
SAR:                         -
Open loop:                   Off
Current rate:               [MCS0] ht mcs 0 Tx Exp 0 BW 40

Power Adjust:               abs 0.0 dB (disabled)
Calibration acc:            0.75 dB
TXChain compensation:    txch offset + ch offset
   TXChain 1:                0.0 + 0.25 = 0.25 dB
   TXChain 2:                0.50 + 0.25 = 0.75 dB

NOTE: Regulatory Limits, board limits and target power are for core 0
         Use "wl curpower_display_core" to select another one
NOTE: Regulatory limit is conducted -> Antenna gain is ignored

Regulatory Limits:
Rate                        Chains 20in40 40MHz
DSSS                          1        17.00    17.00
OFDM                          1        10.50    10.50
MCS0_7                        1        10.50    10.50
VHT8_9SS1                     1        10.50    10.50
DSSS_MULTI1                   2        -        -
OFDM_CDD1                     2        9.75     9.75
MCS0_7_CDD1                   2        9.75     9.75
VHT8_9SS1_CDD1                2        9.75     9.75
MCS0_7_STBC                   2        9.75     9.75
VHT8_9SS1_STBC                2        9.75     9.75
MCS8_15                       2        9.75     9.75
VHT8_9SS2                     2        9.75     9.75
DSSS_MULTI2                   3        -        -
OFDM_CDD2                     3        -        -
MCS0_7_CDD2                   3        -        -
VHT8_9SS1_CDD2                3        -        -
MCS0_7_STBC_SPEXP1        3        -        -
VHT8_9SS1_STBC_SPEXP1    3        -        -
MCS8_15_SPEXP1                3        -        -
VHT8_9SS2_SPEXP1              3        -        -
MCS16_23                      3        -        -
VHT8_9SS3                     3        -        -
OFDM_TXBF1                    2        -        -
MCS0_7_TXBF1                  2        -        -
```

VHT8_9SS1_TXBF1	2	-	-
MCS8_15_TXBF0	2	-	-
OFDM_TXBF2	3	-	-
MCS0_7_TXBF2	3	-	-
VHT8_9SS1_TXBF2	3	-	-
MCS8_15_TXBF1	3	-	-
VHT8_9SS2_TXBF1	3	-	-
MCS16_23_TXBF0	3	-	-

Core Index: 0

Board Limits:

Rate	Chains	20in40	40MHz
DSSS	1	21.50	21.50
OFDM	1	18.00	18.00
MCS0	1	18.00	18.00
MCS1	1	18.00	18.00
MCS2	1	18.00	18.00
MCS3	1	18.00	18.00
MCS4	1	18.00	18.00
MCS5	1	18.00	18.00
MCS6	1	18.00	18.00
MCS7	1	17.50	17.50
VHT8_9SS1	1	-	-
DSSS_MULTI1	2	21.50	21.50
OFDM_CDD1	2	18.00	18.00
MCS0_CDD1	2	18.00	18.00
MCS1_CDD1	2	18.00	18.00
MCS2_CDD1	2	18.00	18.00
MCS3_CDD1	2	18.00	18.00
MCS4_CDD1	2	18.00	18.00
MCS5_CDD1	2	18.00	18.00
MCS6_CDD1	2	18.00	18.00
MCS7_CDD1	2	17.50	17.50
VHT8_9SS1_CDD1	2	-	-
MCS0_STBC	2	18.00	18.00
MCS1_STBC	2	18.00	18.00
MCS2_STBC	2	18.00	18.00
MCS3_STBC	2	18.00	18.00
MCS4_STBC	2	18.00	18.00
MCS5_STBC	2	18.00	18.00
MCS6_STBC	2	18.00	18.00
MCS7_STBC	2	17.50	17.50
VHT8_9SS1_STBC	2	-	-
MCS8	2	18.00	18.00
MCS9	2	18.00	18.00
MCS10	2	18.00	18.00
MCS11	2	18.00	18.00
MCS12	2	18.00	18.00
MCS13	2	18.00	18.00
MCS14	2	18.00	18.00
MCS15	2	17.50	17.50
VHT8_9SS2	2	-	-
DSSS_MULTI2	3	-	-
OFDM_CDD2	3	-	-
MCS0_7_CDD2	3	-	-
VHT8_9SS1_CDD2	3	-	-
MCS0_7_STBC_SPEXP1	3	-	-
VHT8_9SS1_STBC_SPEXP1	3	-	-

```
MCS8_15_SPEXP1          3       -       -
VHT8_9SS2_SPEXP1        3       -       -
MCS16_23                3       -       -
VHT8_9SS3               3       -       -
OFDM_TXBF1              2       -       -
MCS0_7_TXBF1            2       -       -
VHT8_9SS1_TXBF1         2       -       -
MCS8_15_TXBF0           2       -       -
OFDM_TXBF2              3       -       -
MCS0_7_TXBF2            3       -       -
VHT8_9SS1_TXBF2         3       -       -
MCS8_15_TXBF1           3       -       -
VHT8_9SS2_TXBF1         3       -       -
MCS16_23_TXBF0          3       -       -

Power Targets:
Rate                    Chains 20in40 40MHz
DSSS                    1       16.25   8.00
OFDM                    1       9.75    9.75
MCS0_7                  1       9.75    9.75
VHT8_9SS1               1       8.00    8.00
DSSS_MULTI1             2       8.00    8.00
OFDM_CDD1               2       9.00    9.00
MCS0_7_CDD1             2       9.00    9.00
VHT8_9SS1_CDD1          2       8.00    8.00
MCS0_7_STBC             2       9.00    9.00
VHT8_9SS1_STBC          2       8.00    8.00
MCS8_15                 2       9.00    9.00
VHT8_9SS2               2       8.00    8.00
DSSS_MULTI2             3       8.00    8.00
OFDM_CDD2               3       8.00    8.00
MCS0_7_CDD2             3       8.00    8.00
VHT8_9SS1_CDD2          3       8.00    8.00
MCS0_7_STBC_SPEXP1      3       8.00    8.00
VHT8_9SS1_STBC_SPEXP1   3       8.00    8.00
MCS8_15_SPEXP1          3       8.00    8.00
VHT8_9SS2_SPEXP1        3       8.00    8.00
MCS16_23                3       8.00    8.00
VHT8_9SS3               3       8.00    8.00
OFDM_TXBF1              2       8.00    8.00
MCS0_7_TXBF1            2       8.00    8.00
VHT8_9SS1_TXBF1         2       8.00    8.00
MCS8_15_TXBF0           2       8.00    8.00
OFDM_TXBF2              3       8.00    8.00
MCS0_7_TXBF2            3       8.00    8.00
VHT8_9SS1_TXBF2         3       8.00    8.00
MCS8_15_TXBF1           3       8.00    8.00
VHT8_9SS2_TXBF1         3       8.00    8.00
MCS16_23_TXBF0          3       8.00    8.00

Maximum Power Target among all rates:   16.25   16.25
Last est. power                 :       22.50   0.00
Power Target for the current rate   :   9.75   -
Last adjusted est. power        :       22.50   0.00
root@OpenWrt:~#
```

Appendix B. 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: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab
Tel: 886-3-6668565
Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety
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.

--- END ---