

# FCC Test Report

**FCC ID** : P27RC8522  
**Equipment** : Wireless Network FHD Camera  
**Model No.** : RC8522  
**Multiple Listing** : RC8522xxxxxxxx, VistaCam 900xxxxx  
(The 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, "blank" or "-", for marking purpose.)  
**Brand Name** : Sercomm, Vera Control, Inc.  
**Applicant** : Sercomm Corporation  
**Address** : 8F, No. 3-1, YuanQu St., NanKang, Taipei 115, Taiwan, R.O.C.  
**Standard** : 47 CFR FCC Part 15.247  
**Received Date** : Feb. 25, 2016  
**Tested Date** : Mar. 11 ~ May 24, 2016

We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Approved & Reviewed by:

  
\_\_\_\_\_  
Gary Chang / Manager



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## Table of Contents

<b>1</b>	<b>GENERAL DESCRIPTION .....</b>	<b>5</b>
1.1	Information.....	5
1.2	Local Support Equipment List .....	7
1.3	Test Setup Chart .....	7
1.4	The Equipment List .....	8
1.5	Test Standards .....	9
1.6	Measurement Uncertainty .....	9
<b>2</b>	<b>TEST CONFIGURATION .....</b>	<b>10</b>
2.1	Testing Condition .....	10
2.2	The Worst Test Modes and Channel Details .....	10
<b>3</b>	<b>TRANSMITTER TEST RESULTS.....</b>	<b>11</b>
3.1	Conducted Emissions.....	11
3.2	6dB and Occupied Bandwidth .....	14
3.3	RF Output Power .....	17
3.4	Power Spectral Density .....	19
3.5	Unwanted Emissions into Restricted Frequency Bands .....	21
3.6	Emissions in Non-Restricted Frequency Bands .....	49
<b>4</b>	<b>TEST LABORATORY INFORMATION .....</b>	<b>62</b>

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## Release Record

Report No.	Version	Description	Issued Date
FR622502AC	Rev. 01	Initial issue	Jul. 04, 2016

## Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 4.570MHz 38.47 (Margin -7.53dB) - AV	Pass
15.247(d) 15.209	Radiated Emissions	[dBuV/m at 3m]: 4874.00MHz 53.00 (Margin -1.00dB) - AV [dBuV/m at 3m]: 2483.50MHz 73.00 (Margin -1.00dB) - PK [dBuV/m at 3m]: 7311.00MHz 53.00 (Margin -1.00dB) - AV [dBuV/m at 3m]: 2483.50MHz 53.00 (Margin -1.00dB) - AV	Pass
15.247(b)(3)	Maximum Output Power	Max Power [dBm]: 27.85	Pass
15.247(a)(2)	6dB Bandwidth	Meet the requirement of limit	Pass
15.247(e)	Power Spectral Density	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass

# 1 General Description

## 1.1 Information

### 1.1.1 Product Details

The following models are provided to this EUT.

Brand Name	Model Name	Main tested model	Product Name
Sercomm	RC8522xxxxxxxx	RC8522	Wireless Network FHD Camera
Vera Control, Inc.	VistaCam 900xxxxx		
† The 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, "blank" or "-", for marking purpose			

### 1.1.2 Specification of the Equipment under Test (EUT)

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N <sub>TX</sub> )	Data Rate / MCS
2400-2483.5	b	2412-2462	1-11 [11]	1	1-11 Mbps
2400-2483.5	g	2412-2462	1-11 [11]	1	6-54 Mbps
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	2	MCS 0-15
2400-2483.5	n (HT40)	2422-2452	3-9 [7]	2	MCS 0-15
Note 1: RF output power specifies that Maximum Peak Conducted Output Power. Note 2: 802.11b uses a combination of DSSS-DBPSK, DQPSK, CCK modulation. Note 3: 802.11g/n uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation. Note 4: 802.11b/g is transmitting signal through chain 0 only.					

### 1.1.3 Antenna Details

Model	Type	Connector	Operating Frequencies (MHz) / Antenna Gain (dBi)		
			2400~2483.5	5150~5250	5725~5850
Ant 1	Dipole	UFL	3	3.7	3.6
Ant 2	Dipole	UFL	2.8	2	4.1

### 1.1.4 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	12Vdc from adapter
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### 1.1.5 Accessories

Accessories		
No.	Equipment	Description
1	Adapter	Brand: APD Model: WA-12M12FU I/P: 100-240Vac, 50-60Hz, 0.5A Max O/P: 12Vdc, 1A Power line: 2.9m non-shielded w/o core.
2	RJ45 to Micro USB cable	0.15m non-shielded w/o core.

### 1.1.6 Channel List

Frequency band (MHz)		2400~2483.5	
802.11 b / g / n HT20		802.11n HT40	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
1	2412	3	2422
2	2417	4	2427
3	2422	5	2432
4	2427	6	2437
5	2432	7	2442
6	2437	8	2447
7	2442	9	2452
8	2447	---	---
9	2452	---	---
10	2457	---	---
11	2462	---	---

### 1.1.7 Test Tool and Duty Cycle

Test Tool	telnet		
Duty Cycle and Duty Factor	Mode	Duty cycle (%)	Duty factor (dB)
	11b	99.54%	0.02
	11g	93.81%	0.28
	HT20	92.39%	0.34
	HT40	88.83%	0.51

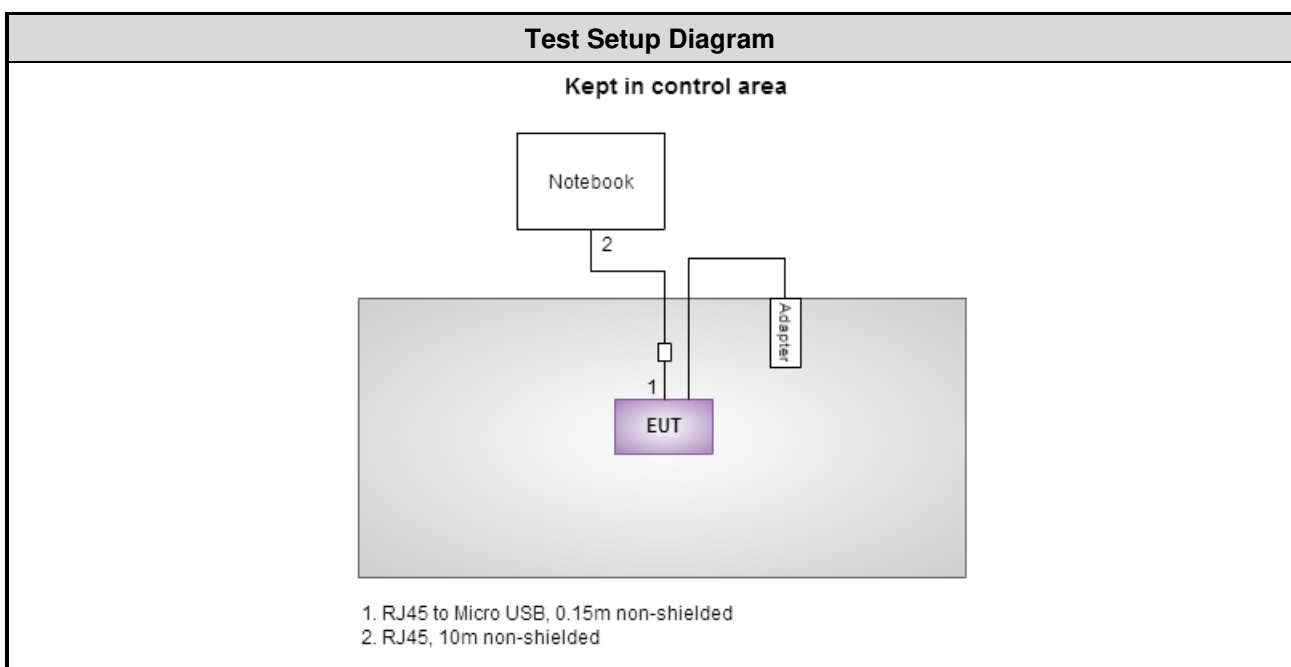
### 1.1.8 Power Setting

Modulation Mode	Test Frequency (MHz)	Power Set
11b	2412	43
11b	2437	45
11b	2462	47
11g	2412	52
11g	2437	58
11g	2462	51
HT20	2412	54/54
HT20	2437	60/60
HT20	2462	51/51
HT40	2422	51/51
HT40	2437	53/53
HT40	2452	52/52

### 1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Signal cable / Length (m)
1	Notebook	DELL	Latitude E5420	DoC	RJ45, 10m non-shielded.

### 1.3 Test Setup Chart



## 1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
EMC Receiver	R&S	ESCS 30	100169	Oct. 21, 2015	Oct. 20, 2016
LISN	SCHWARZBECK	Schwarzbeck 8127	8127-667	Nov. 13, 2015	Nov. 12, 2016
RF Cable-CON	EMC	EMCCFD300-BM-BM-6000	50821	Dec. 21, 2015	Dec. 20, 2016
Measurement Software	AUDIX	e3	6.120210k	NA	NA

Note: Calibration Interval of instruments listed above is one year.

Test Item	Radiated Emission				
Test Site	966 chamber 2 / (03CH02-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101499	Dec. 17, 2015	Dec. 16, 2016
Receiver	R&S	ESR3	101657	Jan. 12, 2016	Jan. 11, 2017
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-523	Nov. 09, 2015	Nov. 08, 2016
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1095	Oct. 07, 2015	Oct. 06, 2016
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 04, 2015	Nov. 03, 2016
Preamplifier	Burgeon	BPA-530	100218	Nov. 03, 2015	Nov. 02, 2016
Preamplifier	Agilent	83017A	MY39501309	Sep. 22, 2015	Sep. 21, 2016
Preamplifier	EMC	EMC184045B	980192	Sep. 01, 2015	Aug. 31, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16140/4	Dec. 10, 2015	Dec. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16018/4	Dec. 10, 2015	Dec. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16015/4	Dec. 10, 2015	Dec. 09, 2016
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-003	Dec. 10, 2015	Dec. 09, 2016
LF cable 10M	EMCC	CFD400-E	CFD400-001	Dec. 10, 2015	Dec. 09, 2016
Measurement Software	AUDIX	e3	6.120210g	NA	NA

Note: Calibration Interval of instruments listed above is one year.

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101063	Feb. 17, 2016	Feb. 16, 2017
Power Meter	Anritsu	ML2495A	1241002	Sep. 21, 2015	Sep. 20, 2016
Power Sensor	Anritsu	MA2411B	1207366	Sep. 21, 2015	Sep. 20, 2016
Measurement Software	Sporton	Sporton_1	1.3.30	NA	NA

Note: Calibration Interval of instruments listed above is one year.



## 1.5 Test Standards

According to the specification of EUT, the EUT must comply with following standards and KDB documents.

47 CFR FCC Part 15.247

ANSI C63.10-2013

FCC KDB 558074 D01 DTS Meas Guidance v03r05

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

## 1.6 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Measurement Uncertainty	
Parameters	Uncertainty
Bandwidth	±34.134 Hz
Conducted power	±0.808 dB
Power density	±0.463 dB
Conducted emission	±2.670 dB
AC conducted emission	±2.90 dB
Radiated emission ≤ 1GHz	±3.87 dB
Radiated emission > 1GHz	±5.60 dB

## 2 Test Configuration

### 2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	23°C / 65%	Alex Tsai
Radiated Emissions	03CH02-WS	18-20°C / 62-64%	Felix Sung Anderson Hung Aska Huang
RF Conducted	TH01-WS	24°C / 66%	Alex Huang

➤ FCC site registration No.: 181692

➤ IC site registration No.: 10807A-2

### 2.2 The Worst Test Modes and Channel Details

Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
Conducted Emissions	HT20	2437	MCS 0	---
Radiated Emissions ≤1GHz	HT20	2437	MCS 0	---
Radiated Emissions >1GHz	11b	2412 / 2437 / 2462	1 Mbps	---
Maximum Output Power	11g	2412 / 2437 / 2462	6 Mbps	
6dB bandwidth	HT20	2412 / 2437 / 2462	MCS 0	
Power spectral density	HT40	2422 / 2437 / 2452	MCS 0	

**NOTE:**

- The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **Z-plane** results were found as the worst case and were shown in this report.

## 3 Transmitter Test Results

### 3.1 Conducted Emissions

#### 3.1.1 Limit of Conducted Emissions

Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: \* Decreases with the logarithm of the frequency.

#### 3.1.2 Test Procedures

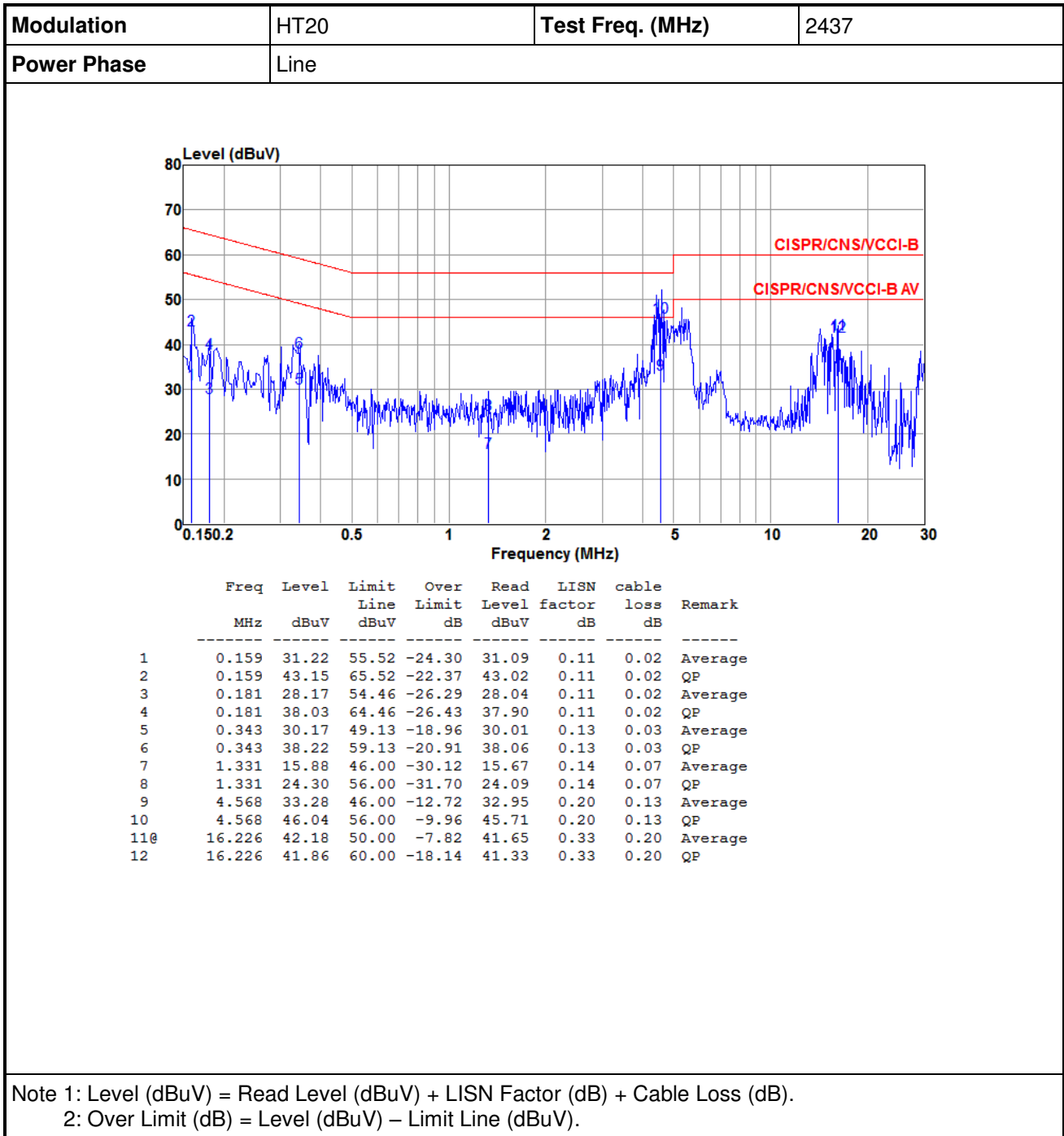
1. The device is placed on a test table, raised 80 cm above the reference ground plane. The vertical conducting plane is located 40 cm to the rear of the device.
2. The device is connected to line impedance stabilization network (LISN) and other accessories are connected to other LISN. Measured levels of AC power line conducted emission are across the 50  $\Omega$  LISN port.
3. AC conducted emission measurements is made over frequency range from 150 kHz to 30 MHz.
4. This measurement was performed with AC 120V / 60Hz.

#### 3.1.3 Test Setup

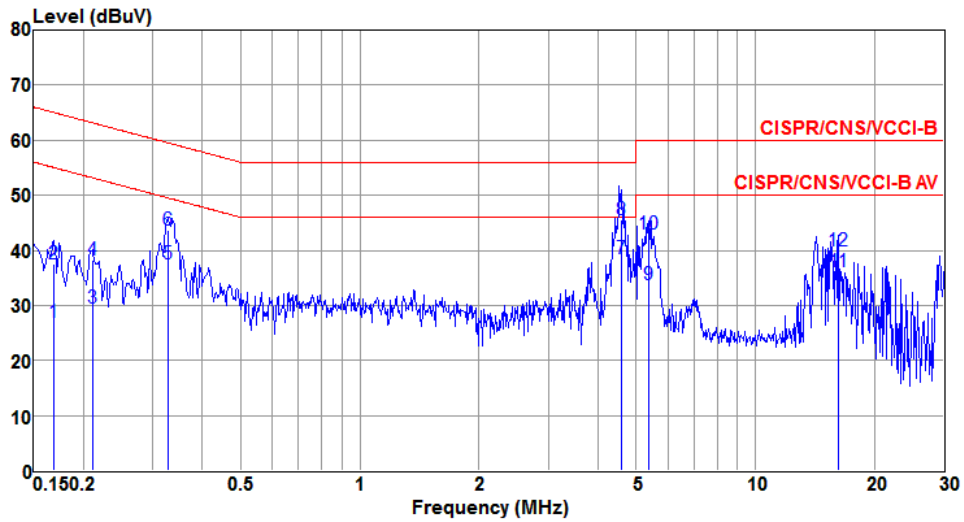


- Note: 1. Support units were connected to second LISN.  
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

### 3.1.4 Test Result of Conducted Emissions



<b>Modulation</b>	HT20	<b>Test Freq. (MHz)</b>	2437
<b>Power Phase</b>	Neutral		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.169	26.88	55.03	-28.15	26.74	0.12	0.02	Average
2	0.169	37.52	65.03	-27.51	37.38	0.12	0.02	QP
3	0.211	29.46	53.18	-23.72	29.34	0.10	0.02	Average
4	0.211	38.22	63.18	-24.96	38.10	0.10	0.02	QP
5	0.327	37.64	49.53	-11.89	37.48	0.13	0.03	Average
6	0.327	43.57	59.53	-15.96	43.41	0.13	0.03	QP
7@	4.570	38.47	46.00	-7.53	38.16	0.18	0.13	Average
8	4.570	45.51	56.00	-10.49	45.20	0.18	0.13	QP
9	5.362	33.81	50.00	-16.19	33.48	0.20	0.13	Average
10	5.362	43.05	60.00	-16.95	42.72	0.20	0.13	QP
11	16.226	36.07	50.00	-13.93	35.51	0.36	0.20	Average
12	16.226	39.83	60.00	-20.17	39.27	0.36	0.20	QP

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).  
 Note 2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).

## 3.2 6dB and Occupied Bandwidth

### 3.2.1 Limit of 6dB Bandwidth

The minimum 6dB bandwidth shall be at least 500 kHz.

### 3.2.2 Test Procedures

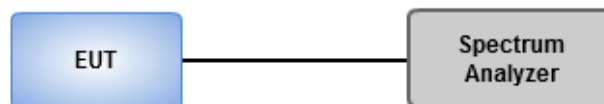
#### 6dB Bandwidth

1. Set resolution bandwidth (RBW) = 100 kHz, Video bandwidth = 300 kHz.
2. Detector = Peak, Trace mode = max hold.
3. Sweep = auto couple, Allow the trace to stabilize.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6dB relative to the maximum level measured in the fundamental emission.

#### Occupied Bandwidth

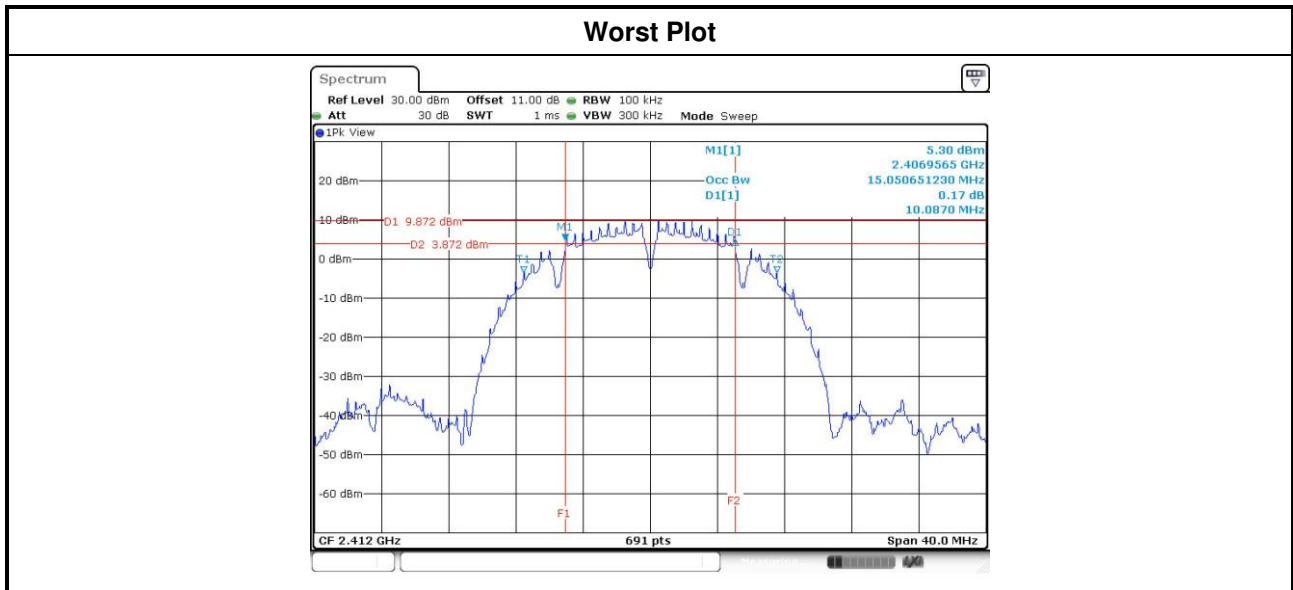
1. Set resolution bandwidth (RBW) = 1 MHz, Video bandwidth = 3 MHz.
2. Detector = Sample, Trace mode = max hold.
3. Sweep = auto couple, Allow the trace to stabilize.
4. Use the OBW measurement function of spectrum analyzer to measure the occupied bandwidth.

### 3.2.3 Test Setup

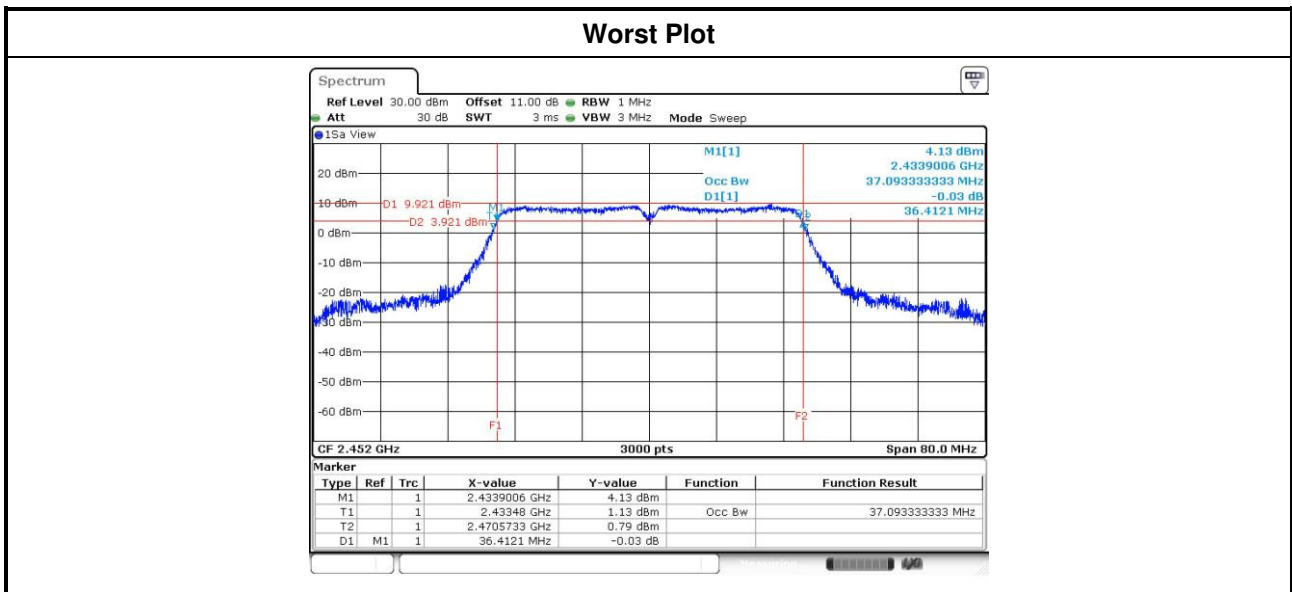


### 3.2.4 Test Result of 6dB and Occupied Bandwidth

Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	6dB Bandwidth (MHz)				Limit (kHz)
			Chain 0	Chain 1	Chain 2	Chain 3	
11b	1	2412	10.09	---	---	---	500
11b	1	2437	10.09	---	---	---	500
11b	1	2462	10.09	---	---	---	500
11g	1	2412	16.35	---	---	---	500
11g	1	2437	16.35	---	---	---	500
11g	1	2462	16.35	---	---	---	500
HT20	2	2412	17.57	17.62	---	---	500
HT20	2	2437	17.51	16.64	---	---	500
HT20	2	2462	17.28	17.04	---	---	500
HT40	2	2422	35.94	35.71	---	---	500
HT40	2	2437	36.06	35.36	---	---	500
HT40	2	2452	36.06	35.83	---	---	500



Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	99% Occupied Bandwidth (MHz)			
			Chain 0	Chain 1	Chain 2	Chain 3
11b	1	2412	15.01	---	---	---
11b	1	2437	15.04	---	---	---
11b	1	2462	15.07	---	---	---
11g	1	2412	16.93	---	---	---
11g	1	2437	17.35	---	---	---
11g	1	2462	16.96	---	---	---
HT20	2	2412	17.93	18.00	---	---
HT20	2	2437	18.33	18.33	---	---
HT20	2	2462	17.95	17.99	---	---
HT40	2	2422	36.85	36.93	---	---
HT40	2	2437	36.88	36.96	---	---
HT40	2	2452	37.04	37.09	---	---





## 3.3 RF Output Power

### 3.3.1 Limit of RF Output Power

Conducted power shall not exceed 1Watt.

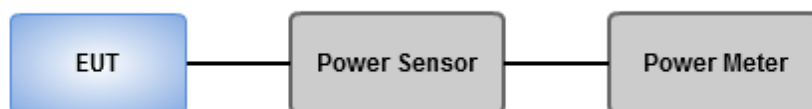
- Antenna gain  $\leq$  6dBi, no any corresponding reduction is in output power limit.
- Antenna gain  $>$  6dBi
  - Non Fixed, point to point operations.  
The conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dB
  - Fixed, point to point operations  
Systems operating in the 2400–2483.5 MHz band that are used exclusively for fixed, point-to-point Operations, maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

Systems operating in the 5725–5850 MHz band that are used exclusively for fixed, point-to-point operations ,no any corresponding reduction is in transmitter peak output power

### 3.3.2 Test Procedures

- Maximum Peak Conducted Output Power
  - Spectrum analyzer**
    1. Set RBW = 1MHz, VBW = 3MHz, Detector = Peak.
    2. Sweep time = auto, Trace mode = max hold, Allow trace to fully stabilize.
    3. Use the spectrum analyzer channel power measurement function with the band limits set equal to the DTS bandwidth edges.
  - Power meter**
    1. A broadband Peak RF power meter is used for output power measurement. The video bandwidth of power meter is greater than DTS bandwidth of EUT. If duty cycle of test signal is not 100 %, trigger and gating function of power meter will be enabled to capture transmission burst for measuring output power.
- Maximum Conducted Output Power ( For reference only )
  - Power meter**
    1. A broadband Average RF power meter is used for output power measurement. The video bandwidth of power meter is greater than DTS bandwidth of EUT. If duty cycle of test signal is not 100 %, trigger and gating function of power meter will be enabled to capture transmission burst for measuring output power.

### 3.3.3 Test Setup



### 3.3.4 Test Result of Maximum Output Power

Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	Peak conducted Output Power (dBm)							Ant. Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3	Total Power (mW)	Total Power (dBm)	Limit (dBm)			
11b	1	2412	20.54	---	---	---	113.240	20.54	30.00	3.00	23.54	36.00
11b	1	2437	21.43	---	---	---	138.995	21.43	30.00	3.00	24.43	36.00
11b	1	2462	22.31	---	---	---	170.216	22.31	30.00	3.00	25.31	36.00
11g	1	2412	24.66	---	---	---	292.415	24.66	30.00	3.00	27.66	36.00
11g	1	2437	25.21	---	---	---	331.894	25.21	30.00	3.00	28.21	36.00
11g	1	2462	24.28	---	---	---	267.917	24.28	30.00	3.00	27.28	36.00
HT20	2	2412	23.71	22.96	---	---	432.660	26.36	30.00	3.00	29.36	36.00
HT20	2	2437	25.05	24.61	---	---	608.957	<b>27.85</b>	30.00	3.00	30.85	36.00
HT20	2	2462	23.14	22.97	---	---	404.216	26.07	30.00	3.00	29.07	36.00
HT40	2	2422	23.18	22.68	---	---	393.323	25.95	30.00	3.00	28.95	36.00
HT40	2	2437	23.89	23.27	---	---	457.231	26.60	30.00	3.00	29.60	36.00
HT40	2	2452	23.51	23.23	---	---	434.766	26.38	30.00	3.00	29.38	36.00

Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	Conducted (Average) Output Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3			
11b	1	2412	18.11	---	---	---	64.714	18.11	---
11b	1	2437	19.01	---	---	---	79.616	19.01	---
11b	1	2462	19.98	---	---	---	99.541	19.98	---
11g	1	2412	16.68	---	---	---	46.559	16.68	---
11g	1	2437	19.12	---	---	---	81.658	19.12	---
11g	1	2462	16.17	---	---	---	41.400	16.17	---
HT20	2	2412	15.69	15.38	---	---	71.582	18.55	---
HT20	2	2437	18.65	18.55	---	---	144.897	<b>21.61</b>	---
HT20	2	2462	15.26	15.11	---	---	66.008	18.20	---
HT40	2	2422	14.76	14.72	---	---	59.571	17.75	---
HT40	2	2437	15.72	15.46	---	---	72.481	18.60	---
HT40	2	2452	15.15	15.03	---	---	64.576	18.10	---

Note: Conducted average output power is for reference only.

## 3.4 Power Spectral Density

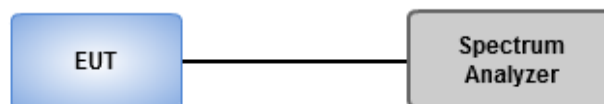
### 3.4.1 Limit of Power Spectral Density

Power spectral density shall not be greater than 8 dBm in any 3 kHz band.

### 3.4.2 Test Procedures

- Maximum peak conducted output power was used to demonstrate compliance to the fundamental output power limit.
  1. Set the RBW = 3kHz, VBW = 10kHz.
  2. Detector = Peak, Sweep time = auto couple.
  3. Trace mode = max hold, allow trace to fully stabilize.
  4. Use the peak marker function to determine the maximum amplitude level.
- Maximum (average) conducted output power was used to demonstrate compliance to the fundamental output power limit.
  1. Set the RBW = 100kHz, VBW = 300 kHz.
  2. Detector = RMS, Sweep time = auto couple.
  3. Set the sweep time to:  $\geq 10 \times (\text{number of measurement points in sweep}) \times (\text{maximum data rate per stream})$ .
  4. Perform the measurement over a single sweep.
  5. Use the peak marker function to determine the maximum amplitude level.

### 3.4.3 Test Setup





## 3.5 Unwanted Emissions into Restricted Frequency Bands

### 3.5.1 Limit of Unwanted Emissions into Restricted Frequency Bands

Restricted Band Emissions Limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

**Note 1:**  
Quasi-Peak value is measured for frequency below 1GHz except for 9–90 kHz, 110–490 kHz frequency band. Peak and average value are measured for frequency above 1GHz. The limit on average radio frequency emission is as above table. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit

**Note 2:**  
Measurements may be performed at a distance other than what is specified provided. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor as below, Frequency at or above 30 MHz: 20 dB/decade Frequency below 30 MHz: 40 dB/decade.

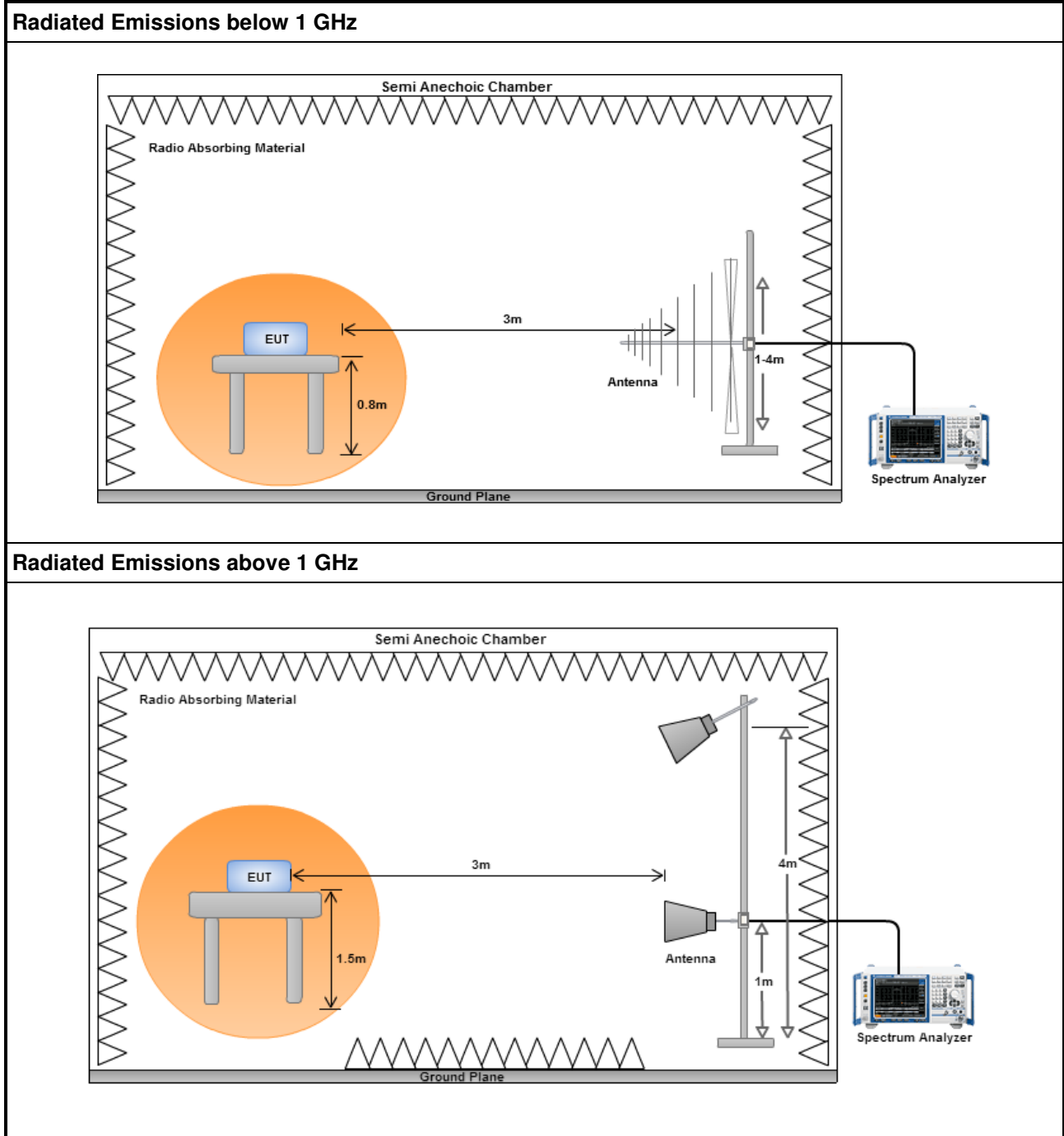
### 3.5.2 Test Procedures

1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at test table. For emissions testing at or below 1 GHz, the table height is 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height is 1.5 m
2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
3. This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

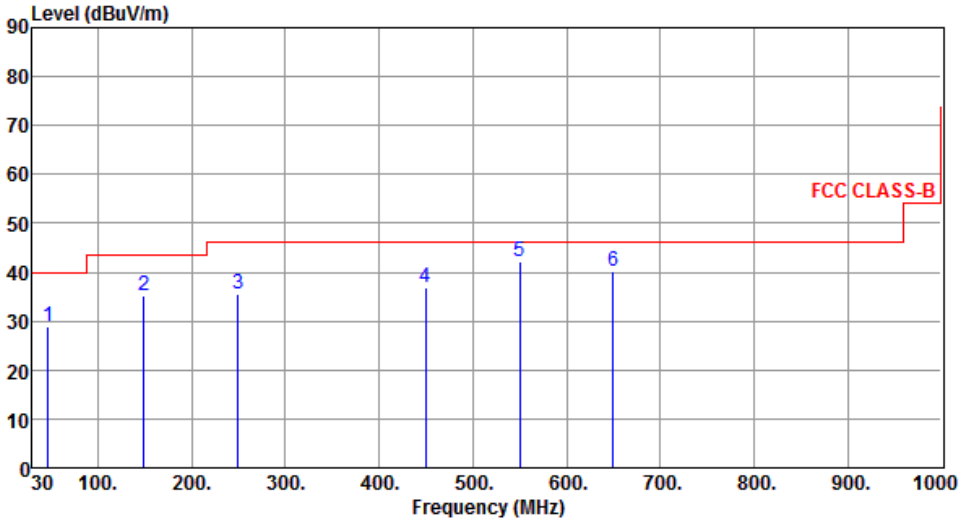
Note:

1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above 1GHz.

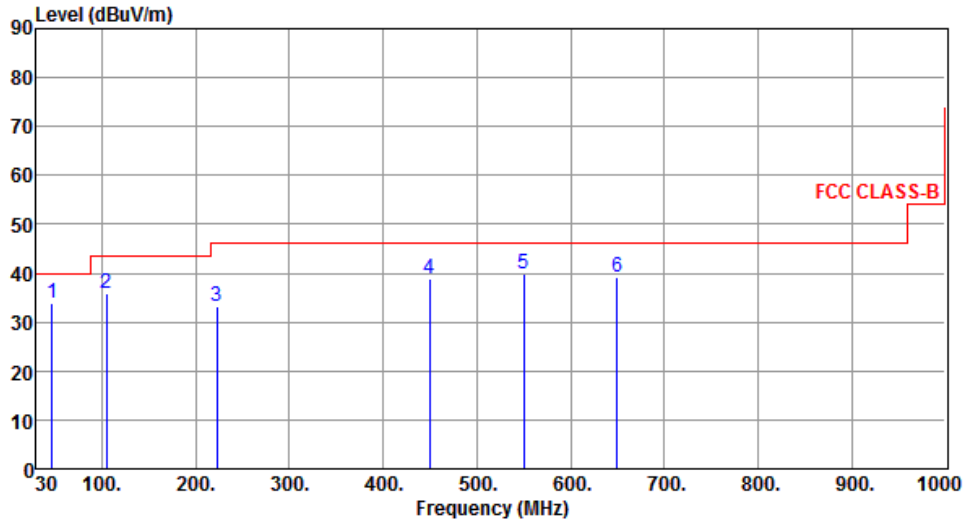
### 3.5.3 Test Setup



### 3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

Modulation	HT20	Test Freq. (MHz)	2437						
Polarization	Horizontal								
									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	46.49	29.05	40.00	-10.95	40.69	-11.64	Peak	---	---
2	149.31	35.08	43.50	-8.42	47.03	-11.95	Peak	---	---
3	249.22	35.46	46.00	-10.54	48.25	-12.79	Peak	---	---
4	450.01	36.93	46.00	-9.07	68.34	-31.41	Peak	---	---
5	549.92	42.25	46.00	-3.75	47.90	-5.65	Peak	---	---
6	649.83	40.09	46.00	-5.91	44.08	-3.99	Peak	---	---
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)            *Factor includes antenna factor , cable loss and amplifier gain            Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).            Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.</p>									

<b>Modulation</b>	HT20	<b>Test Freq. (MHz)</b>	2437
<b>Polarization</b>	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	46.49	33.88	40.00	-6.12	45.52	-11.64	QP	100	113
2	104.69	35.77	43.50	-7.73	51.65	-15.88	Peak	---	---
3	223.03	33.23	46.00	-12.77	47.38	-14.15	Peak	---	---
4	450.01	39.00	46.00	-7.00	46.54	-7.54	Peak	---	---
5	549.92	39.70	46.00	-6.30	45.35	-5.65	Peak	---	---
6	649.83	39.12	46.00	-6.88	70.51	-31.39	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

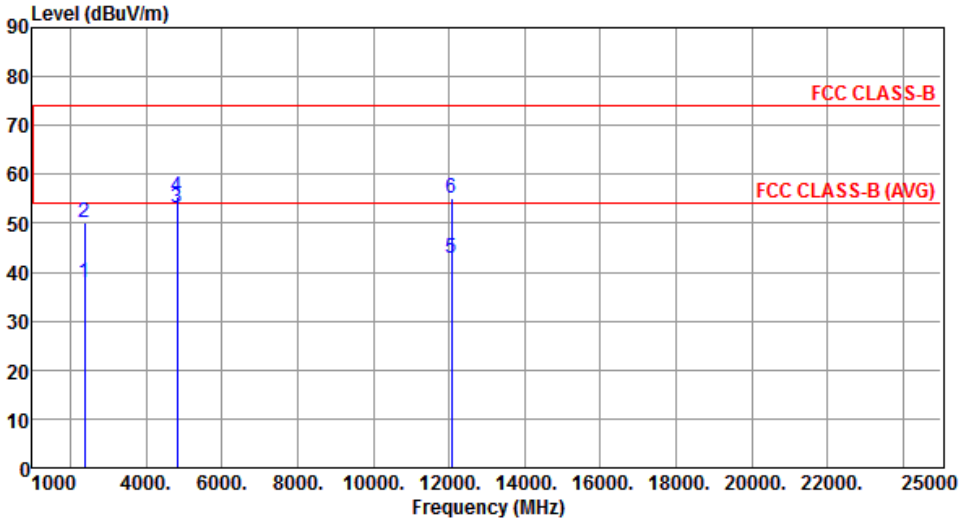
\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

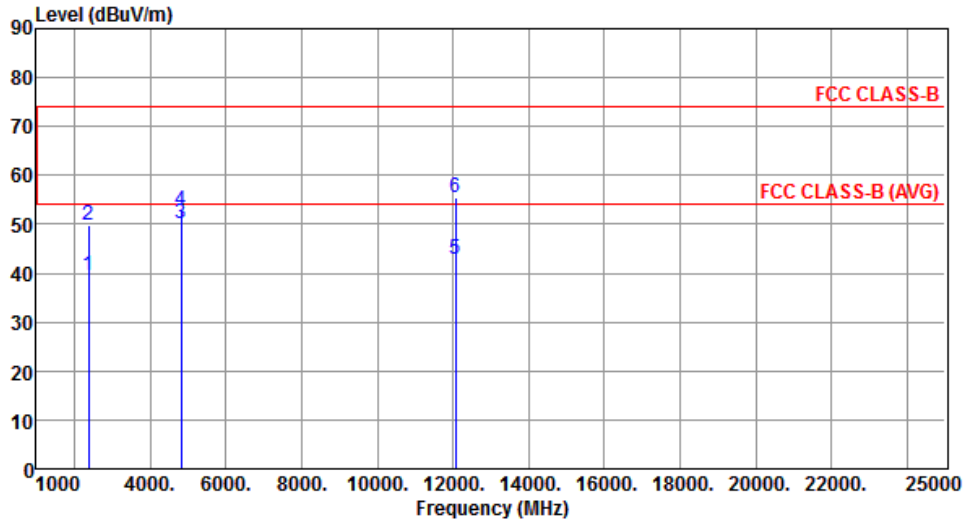
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.



### 3.5.5 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11b

Modulation	11b	Test Freq. (MHz)	2412						
Polarization	Horizontal								
									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	2390.00	37.83	54.00	-16.17	40.89	-3.06	Average	132	342
2	2390.00	50.08	74.00	-23.92	53.14	-3.06	Peak	132	342
3	4824.00	52.99	54.00	-1.01	48.73	4.26	Average	100	33
4	4824.00	55.36	74.00	-18.64	51.10	4.26	Peak	100	33
5	12060.00	42.96	54.00	-11.04	29.11	13.85	Average	100	155
6	12060.00	55.28	74.00	-18.72	41.43	13.85	Peak	100	155
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)            *Factor includes antenna factor , cable loss and amplifier gain            Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p>									

<b>Modulation</b>	11b	<b>Test Freq. (MHz)</b>	2412
<b>Polarization</b>	Vertical		



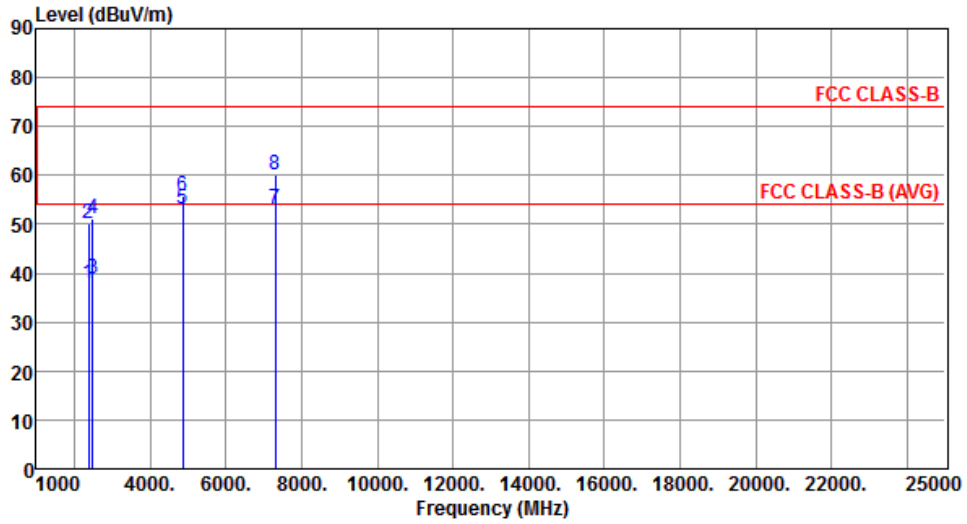
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	39.54	54.00	-14.46	42.60	-3.06	Average	100	94
2	2390.00	49.74	74.00	-24.26	52.80	-3.06	Peak	100	94
3	4824.00	50.16	54.00	-3.84	45.90	4.26	Average	257	359
4	4824.00	52.92	74.00	-21.08	48.66	4.26	Peak	257	359
5	12060.00	42.79	54.00	-11.21	28.94	13.85	Average	133	156
6	12060.00	55.52	74.00	-18.48	41.67	13.85	Peak	133	156

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11b	<b>Test Freq. (MHz)</b>	2437
<b>Polarization</b>	Horizontal		



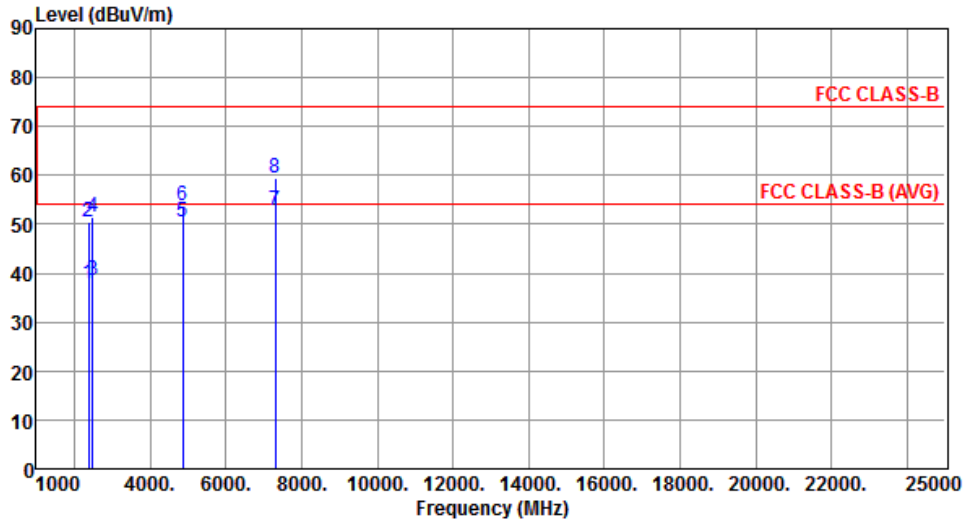
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	37.75	54.00	-16.25	40.81	-3.06	Average	100	341
2	2390.00	50.14	74.00	-23.86	53.20	-3.06	Peak	100	341
3	2483.50	38.84	54.00	-15.16	41.53	-2.69	Average	100	341
4	2483.50	51.21	74.00	-22.79	53.90	-2.69	Peak	100	341
5	4874.00	53.00	54.00	-1.00	48.60	4.40	Average	305	11
6	4874.00	55.86	74.00	-18.14	51.46	4.40	Peak	305	11
7	7311.00	52.98	54.00	-1.02	43.77	9.21	Average	110	281
8	7311.00	60.10	74.00	-13.90	50.89	9.21	Peak	110	281

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11b	<b>Test Freq. (MHz)</b>	2437
<b>Polarization</b>	Vertical		



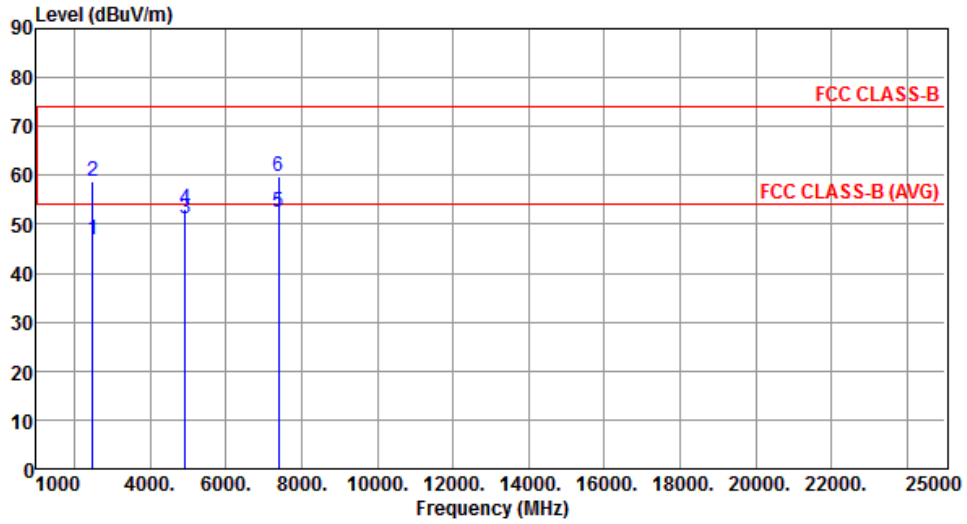
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	37.99	54.00	-16.01	41.05	-3.06	Average	199	224
2	2390.00	50.60	74.00	-23.40	53.66	-3.06	Peak	199	224
3	2483.50	38.56	54.00	-15.44	41.25	-2.69	Average	199	224
4	2483.50	51.40	74.00	-22.60	54.09	-2.69	Peak	199	224
5	4874.00	50.49	54.00	-3.51	46.09	4.40	Average	267	3
6	4874.00	53.79	74.00	-20.21	49.39	4.40	Peak	267	3
7	7311.00	52.75	54.00	-1.25	43.54	9.21	Average	239	338
8	7311.00	59.60	74.00	-14.40	50.39	9.21	Peak	239	338

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11b	<b>Test Freq. (MHz)</b>	2462
<b>Polarization</b>	Horizontal		



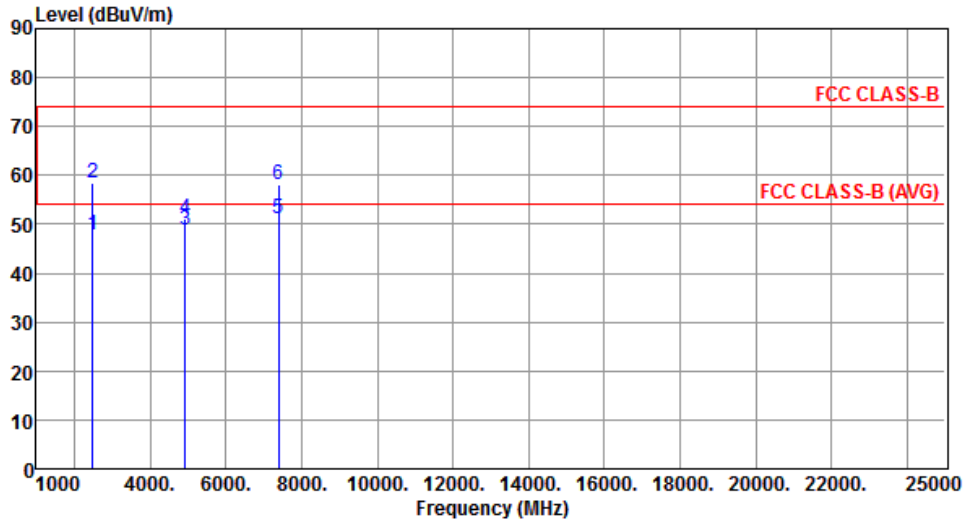
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	46.82	54.00	-7.18	49.51	-2.69	Average	110	346
2	2483.50	58.63	74.00	-15.37	61.32	-2.69	Peak	110	346
3	4924.00	51.05	54.00	-2.95	46.52	4.53	Average	268	11
4	4924.00	53.08	74.00	-20.92	48.55	4.53	Peak	268	11
5	7386.00	52.50	54.00	-1.50	43.11	9.39	Average	116	289
6	7386.00	59.70	74.00	-14.30	50.31	9.39	Peak	116	289

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11b	<b>Test Freq. (MHz)</b>	2462
<b>Polarization</b>	Vertical		



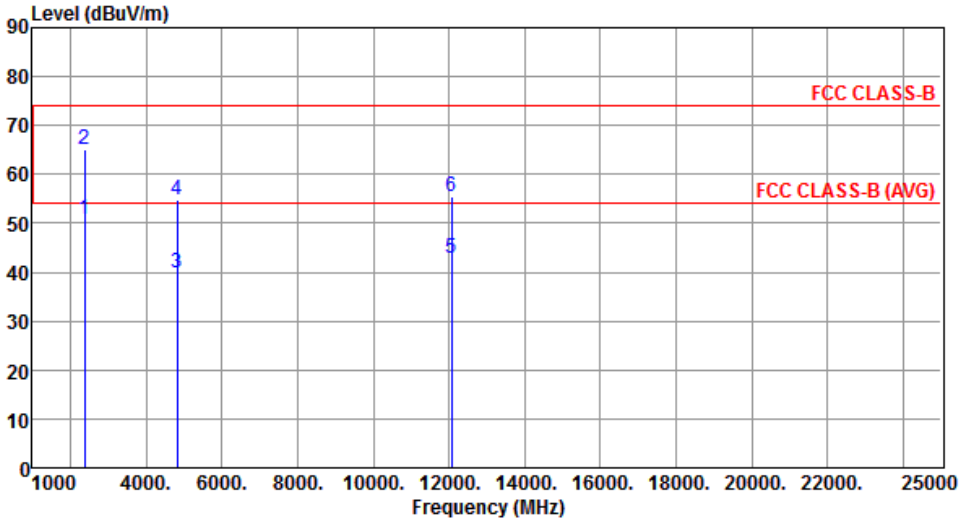
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	47.82	54.00	-6.18	50.51	-2.69	Average	244	337
2	2483.50	58.51	74.00	-15.49	61.20	-2.69	Peak	244	337
3	4924.00	48.91	54.00	-5.09	44.38	4.53	Average	249	22
4	4924.00	51.28	74.00	-22.72	46.75	4.53	Peak	249	22
5	7386.00	51.03	54.00	-2.97	41.64	9.39	Average	244	337
6	7386.00	58.13	74.00	-15.87	48.74	9.39	Peak	244	337

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

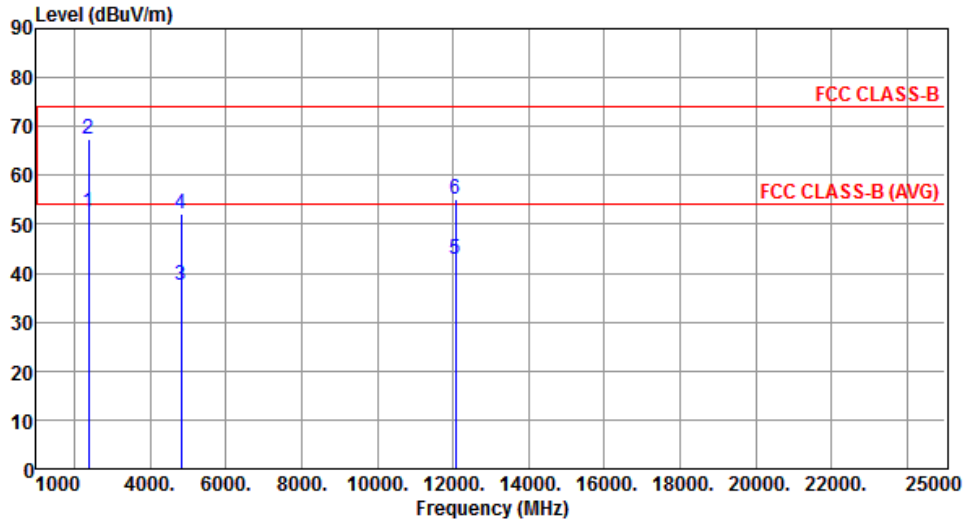
\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

### 3.5.6 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11g

Modulation	11g	Test Freq. (MHz)	2412						
Polarization	Horizontal								
									
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	50.70	54.00	-3.30	53.76	-3.06	Average	100	347
2	2390.00	65.11	74.00	-8.89	68.17	-3.06	Peak	100	347
3	4824.00	39.99	54.00	-14.01	35.73	4.26	Average	100	31
4	4824.00	54.80	74.00	-19.20	50.54	4.26	Peak	100	31
5	12060.00	42.93	54.00	-11.07	29.08	13.85	Average	100	133
6	12060.00	55.41	74.00	-18.59	41.56	13.85	Peak	100	133
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)            *Factor includes antenna factor , cable loss and amplifier gain            Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p>									

<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2412
<b>Polarization</b>	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	52.55	54.00	-1.45	55.61	-3.06	Average	100	97
2	2390.00	67.52	74.00	-6.48	70.58	-3.06	Peak	100	97
3	4824.00	37.52	54.00	-16.48	33.26	4.26	Average	270	6
4	4824.00	52.00	74.00	-22.00	47.74	4.26	Peak	270	6
5	12060.00	42.88	54.00	-11.12	29.03	13.85	Average	122	53
6	12060.00	55.10	74.00	-18.90	41.25	13.85	Peak	122	53

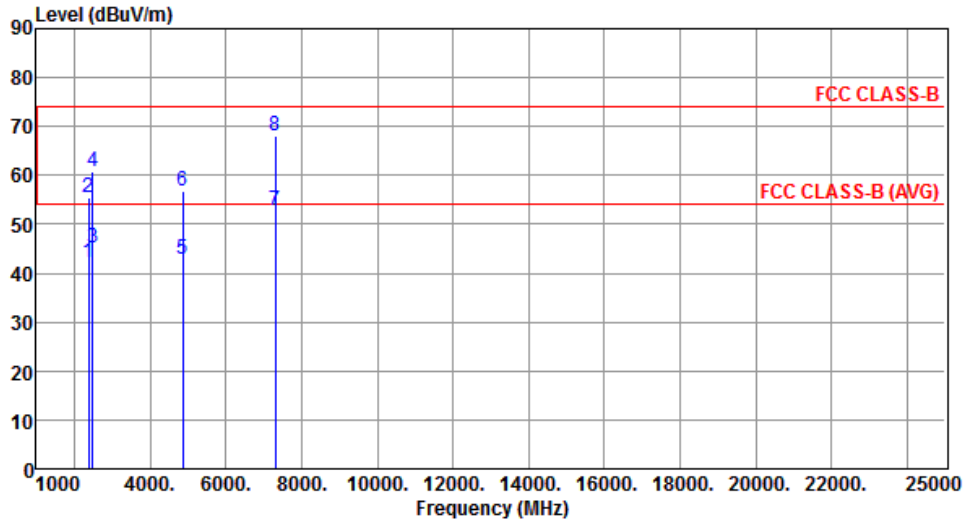
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2437
<b>Polarization</b>	Horizontal		



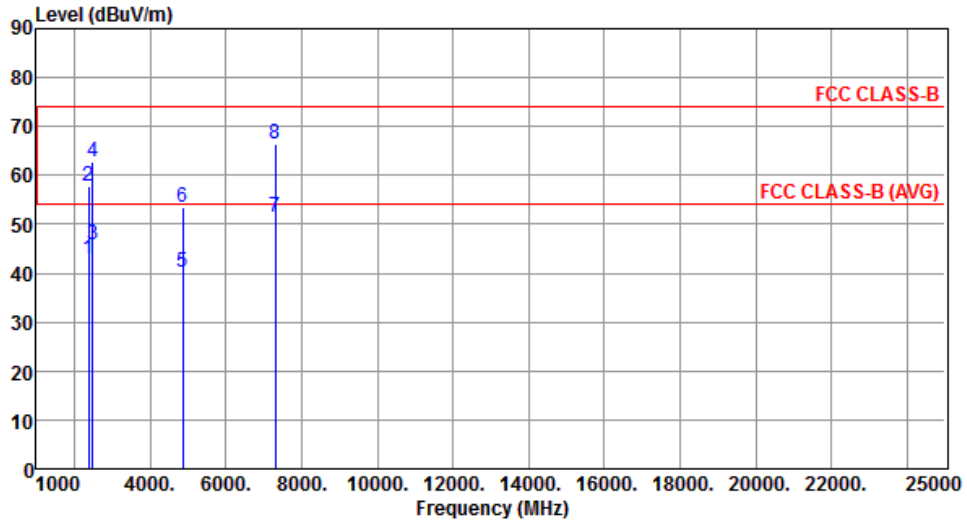
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	42.25	54.00	-11.75	45.31	-3.06	Average	100	0
2	2390.00	55.49	74.00	-18.51	58.55	-3.06	Peak	100	0
3	2483.50	45.16	54.00	-8.84	47.85	-2.69	Average	100	0
4	2483.50	60.83	74.00	-13.17	63.52	-2.69	Peak	100	0
5	4874.00	42.85	54.00	-11.15	38.45	4.40	Average	100	15
6	4874.00	56.79	74.00	-17.21	52.39	4.40	Peak	100	15
7	7311.00	52.90	54.00	-1.10	43.69	9.21	Average	100	284
8	7311.00	68.23	74.00	-5.77	59.02	9.21	Peak	100	284

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2437
<b>Polarization</b>	Vertical		



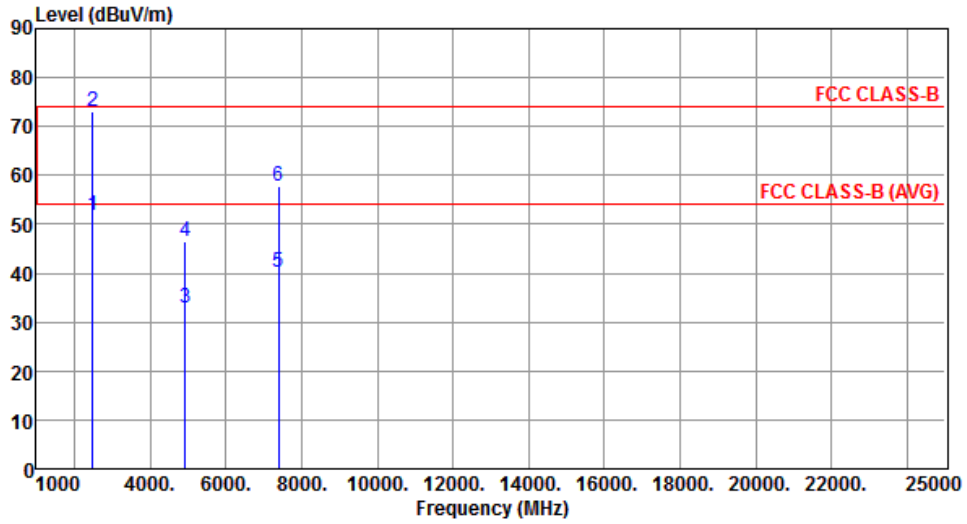
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	43.00	54.00	-11.00	46.06	-3.06	Average	100	209
2	2390.00	57.62	74.00	-16.38	60.68	-3.06	Peak	100	209
3	2483.50	45.84	54.00	-8.16	48.53	-2.69	Average	100	209
4	2483.50	62.85	74.00	-11.15	65.54	-2.69	Peak	100	209
5	4874.00	40.21	54.00	-13.79	35.81	4.40	Average	253	0
6	4874.00	53.40	74.00	-20.60	49.00	4.40	Peak	253	0
7	7311.00	51.47	54.00	-2.53	42.26	9.21	Average	247	338
8	7311.00	66.44	74.00	-7.56	57.23	9.21	Peak	247	338

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2462
<b>Polarization</b>	Horizontal		



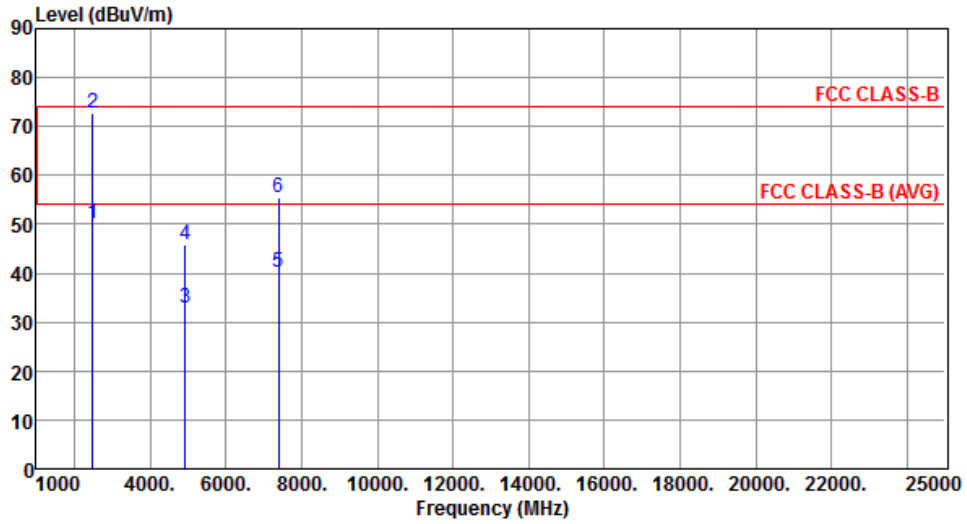
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	51.95	54.00	-2.05	54.64	-2.69	Average	100	338
2	2483.50	73.00	74.00	-1.00	75.69	-2.69	Peak	100	338
3	4924.00	32.96	54.00	-21.04	28.43	4.53	Average	100	14
4	4924.00	46.40	74.00	-27.60	41.87	4.53	Peak	100	14
5	7386.00	40.05	54.00	-13.95	30.66	9.39	Average	119	288
6	7386.00	57.67	74.00	-16.33	48.28	9.39	Peak	119	288

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2462
<b>Polarization</b>	Vertical		



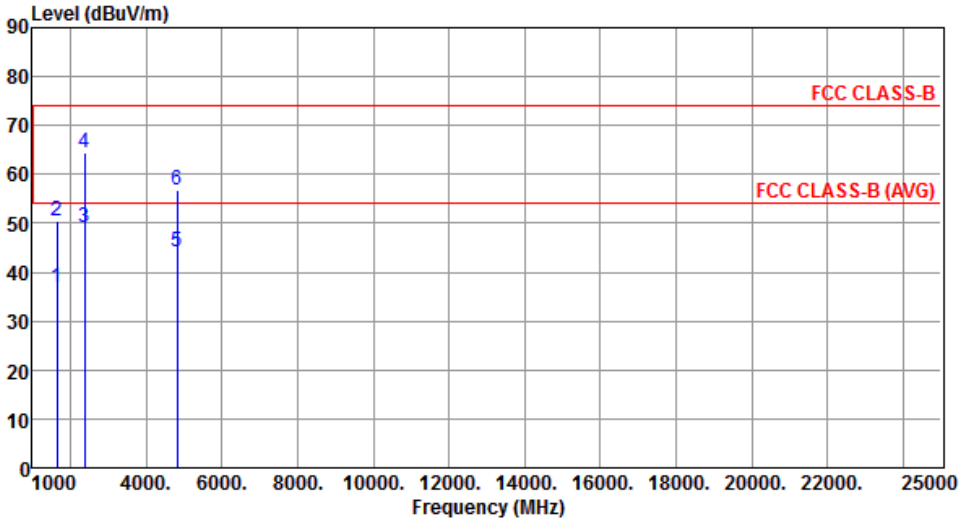
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	50.08	54.00	-3.92	52.77	-2.69	Average	244	301
2	2483.50	72.65	74.00	-1.35	75.34	-2.69	Peak	244	301
3	4924.00	32.76	54.00	-21.24	28.23	4.53	Average	222	22
4	4924.00	45.98	74.00	-28.02	41.45	4.53	Peak	222	22
5	7386.00	40.18	54.00	-13.82	30.79	9.39	Average	221	338
6	7386.00	55.35	74.00	-18.65	45.96	9.39	Peak	221	338

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

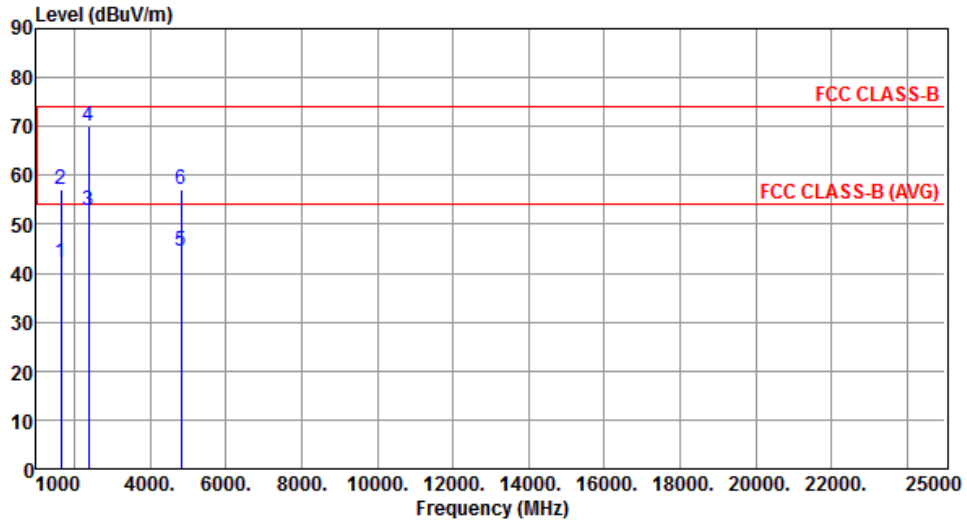
\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

### 3.5.7 Transmitter Radiated Unwanted Emissions (Above 1GHz) for HT20

Modulation	HT20	Test Freq. (MHz)	2412						
Polarization	Horizontal								
									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	1660.00	36.82	54.00	-17.18	42.58	-5.76	Average	241	219
2	1660.00	50.44	74.00	-23.56	56.20	-5.76	Peak	241	219
3	2390.00	49.06	54.00	-4.94	52.12	-3.06	Average	309	240
4	2390.00	64.42	74.00	-9.58	67.48	-3.06	Peak	309	240
5	4824.00	44.12	54.00	-9.88	39.86	4.26	Average	261	5
6	4824.00	56.75	74.00	-17.25	52.49	4.26	Peak	261	5
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)            *Factor includes antenna factor , cable loss and amplifier gain            Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p>									

<b>Modulation</b>	HT20	<b>Test Freq. (MHz)</b>	2412
<b>Polarization</b>	Vertical		



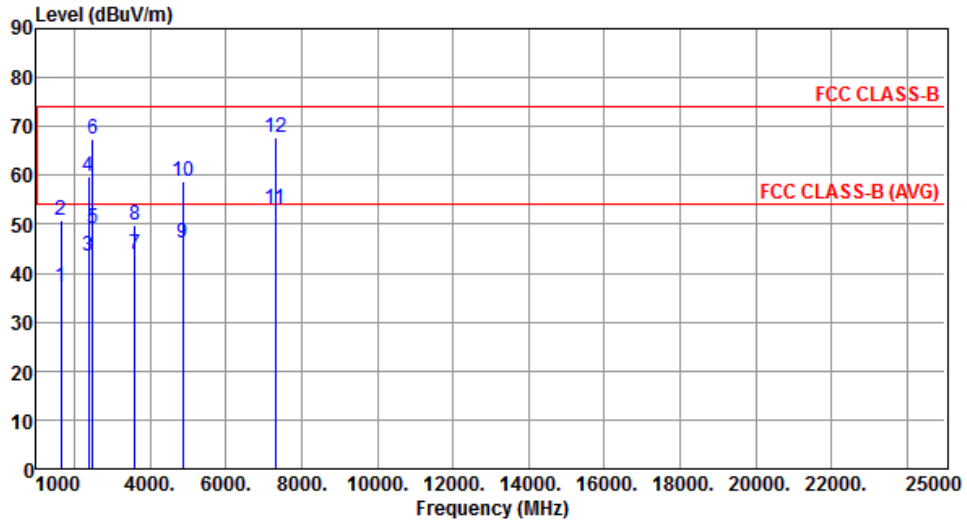
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1660.00	42.11	54.00	-11.89	47.87	-5.76	Average	203	171
2	1660.00	57.15	74.00	-16.85	62.91	-5.76	Peak	203	171
3	2390.00	52.87	54.00	-1.13	55.93	-3.06	Average	195	215
4	2390.00	69.95	74.00	-4.05	73.01	-3.06	Peak	195	215
5	4824.00	44.36	54.00	-9.64	40.10	4.26	Average	155	3
6	4824.00	57.15	74.00	-16.85	52.89	4.26	Peak	155	3

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	HT20	<b>Test Freq. (MHz)</b>	2437
<b>Polarization</b>	Horizontal		



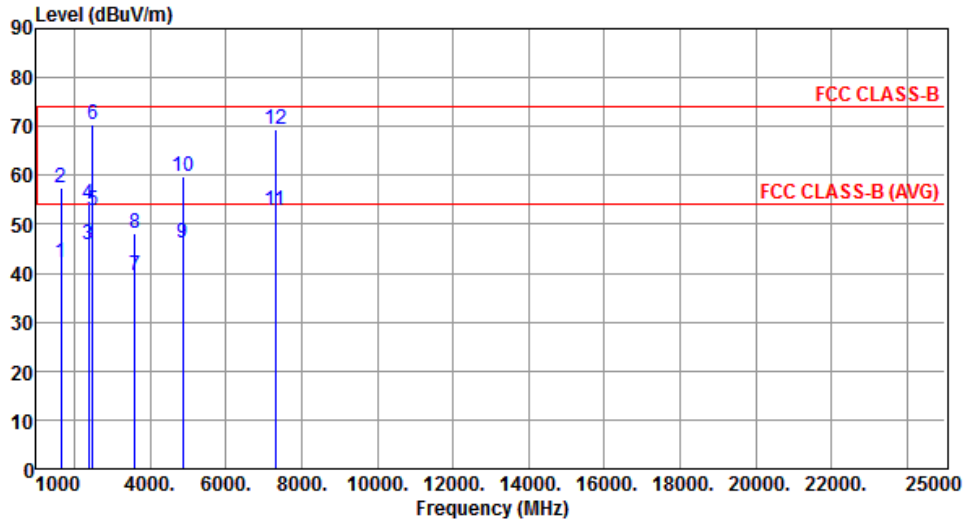
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1660.00	37.10	54.00	-16.90	42.86	-5.76	Average	245	215
2	1660.00	50.82	74.00	-23.18	56.58	-5.76	Peak	245	215
3	2390.00	43.39	54.00	-10.61	46.45	-3.06	Average	116	352
4	2390.00	59.71	74.00	-14.29	62.77	-3.06	Peak	116	352
5	2483.50	49.06	54.00	-4.94	51.75	-2.69	Average	116	352
6	2483.50	67.53	74.00	-6.47	70.22	-2.69	Peak	116	352
7	3600.00	43.97	54.00	-10.03	43.48	0.49	Average	297	195
8	3600.00	49.76	74.00	-24.24	49.27	0.49	Peak	297	195
9	4874.00	46.18	54.00	-7.82	41.78	4.40	Average	269	2
10	4874.00	58.87	74.00	-15.13	54.47	4.40	Peak	269	2
11	7311.00	53.00	54.00	-1.00	43.79	9.21	Average	187	269
12	7311.00	67.75	74.00	-6.25	58.54	9.21	Peak	187	269

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	HT20	<b>Test Freq. (MHz)</b>	2437
<b>Polarization</b>	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1660.00	42.34	54.00	-11.66	48.10	-5.76	Average	207	179
2	1660.00	57.38	74.00	-16.62	63.14	-5.76	Peak	207	179
3	2390.00	45.68	54.00	-8.32	48.74	-3.06	Average	300	255
4	2390.00	54.17	74.00	-19.83	57.23	-3.06	Peak	300	255
5	2483.50	52.73	54.00	-1.27	55.42	-2.69	Average	300	255
6	2483.50	70.38	74.00	-3.62	73.07	-2.69	Peak	300	255
7	3600.00	39.39	54.00	-14.61	38.90	0.49	Average	244	174
8	3600.00	48.15	74.00	-25.85	47.66	0.49	Peak	244	174
9	4874.00	46.32	54.00	-7.68	41.92	4.40	Average	159	7
10	4874.00	59.90	74.00	-14.10	55.50	4.40	Peak	159	7
11	7311.00	52.78	54.00	-1.22	43.57	9.21	Average	245	319
12	7311.00	69.39	74.00	-4.61	60.18	9.21	Peak	245	319

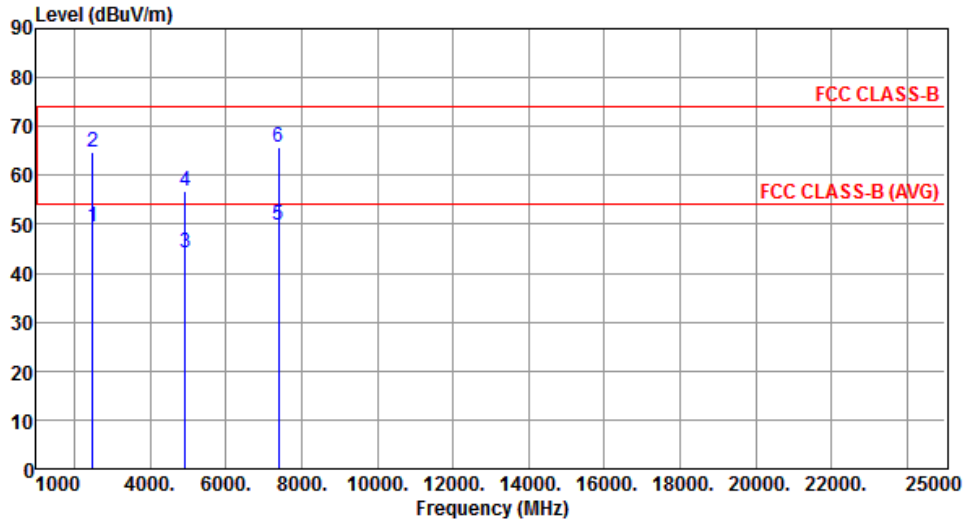
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



<b>Modulation</b>	HT20	<b>Test Freq. (MHz)</b>	2462
<b>Polarization</b>	Horizontal		



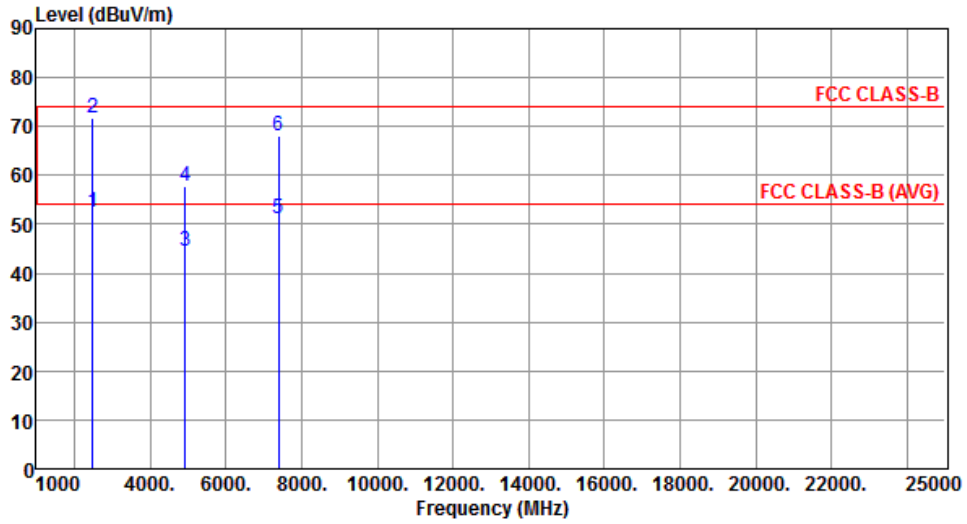
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	49.62	54.00	-4.38	52.31	-2.69	Average	305	244
2	2483.50	64.81	74.00	-9.19	67.50	-2.69	Peak	305	244
3	4924.00	44.02	54.00	-9.98	39.49	4.53	Average	263	7
4	4924.00	56.63	74.00	-17.37	52.10	4.53	Peak	263	7
5	7386.00	49.72	54.00	-4.28	40.33	9.39	Average	182	264
6	7386.00	65.65	74.00	-8.35	56.26	9.39	Peak	182	264

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	HT20	<b>Test Freq. (MHz)</b>	2462
<b>Polarization</b>	Vertical		



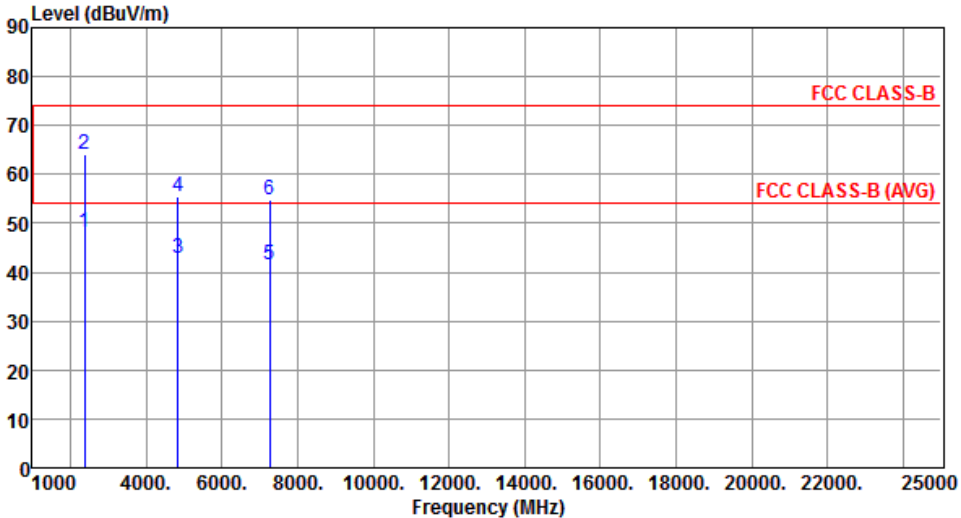
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	52.60	54.00	-1.40	55.29	-2.69	Average	226	230
2	2483.50	71.86	74.00	-2.14	74.55	-2.69	Peak	226	230
3	4924.00	44.60	54.00	-9.40	40.07	4.53	Average	155	17
4	4924.00	57.82	74.00	-16.18	53.29	4.53	Peak	155	17
5	7386.00	51.24	54.00	-2.76	41.85	9.39	Average	244	315
6	7386.00	68.02	74.00	-5.98	58.63	9.39	Peak	244	315

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

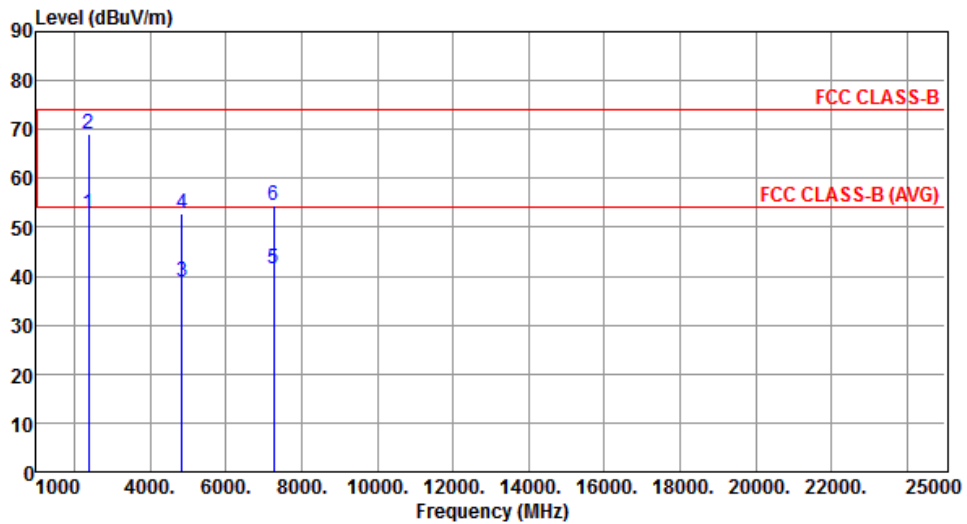
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

### 3.5.8 Transmitter Radiated Unwanted Emissions (Above 1GHz) for HT40

Modulation	HT40	Test Freq. (MHz)	2422						
Polarization	Horizontal								
									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	2390.00	48.24	54.00	-5.76	51.30	-3.06	Average	100	0
2	2390.00	64.12	74.00	-9.88	67.18	-3.06	Peak	100	0
3	4844.00	42.73	54.00	-11.27	38.41	4.32	Average	222	0
4	4844.00	55.55	74.00	-18.45	51.23	4.32	Peak	222	0
5	7266.00	41.42	54.00	-12.58	32.31	9.11	Average	100	253
6	7266.00	54.79	74.00	-19.21	45.68	9.11	Peak	100	253

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)  
\*Factor includes antenna factor , cable loss and amplifier gain  
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	HT40	<b>Test Freq. (MHz)</b>	2422
<b>Polarization</b>	Vertical		



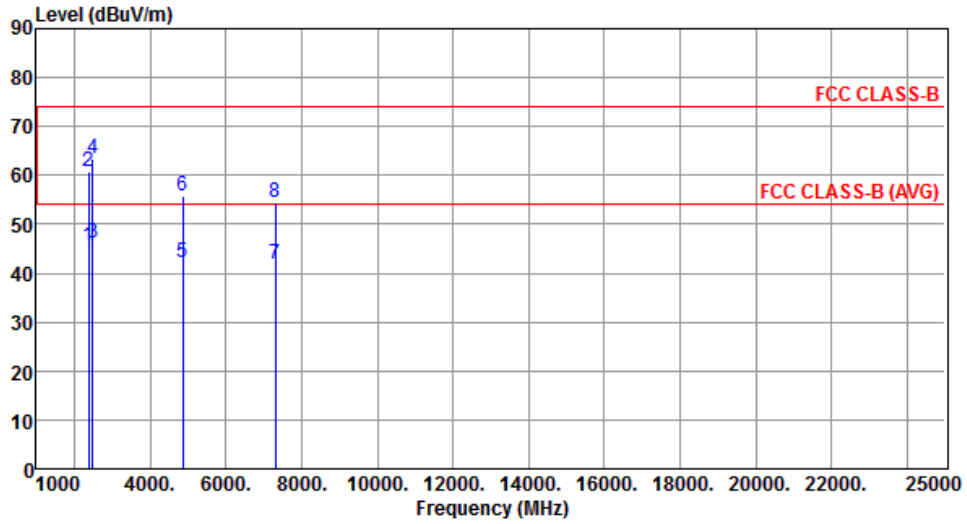
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	52.81	54.00	-1.19	55.87	-3.06	Average	100	226
2	2390.00	69.22	74.00	-4.78	72.28	-3.06	Peak	100	226
3	4844.00	38.88	54.00	-15.12	34.56	4.32	Average	244	10
4	4844.00	52.85	74.00	-21.15	48.53	4.32	Peak	244	10
5	7266.00	41.43	54.00	-12.57	32.32	9.11	Average	188	147
6	7266.00	54.59	74.00	-19.41	45.48	9.11	Peak	188	147

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	HT40	<b>Test Freq. (MHz)</b>	2437
<b>Polarization</b>	Horizontal		



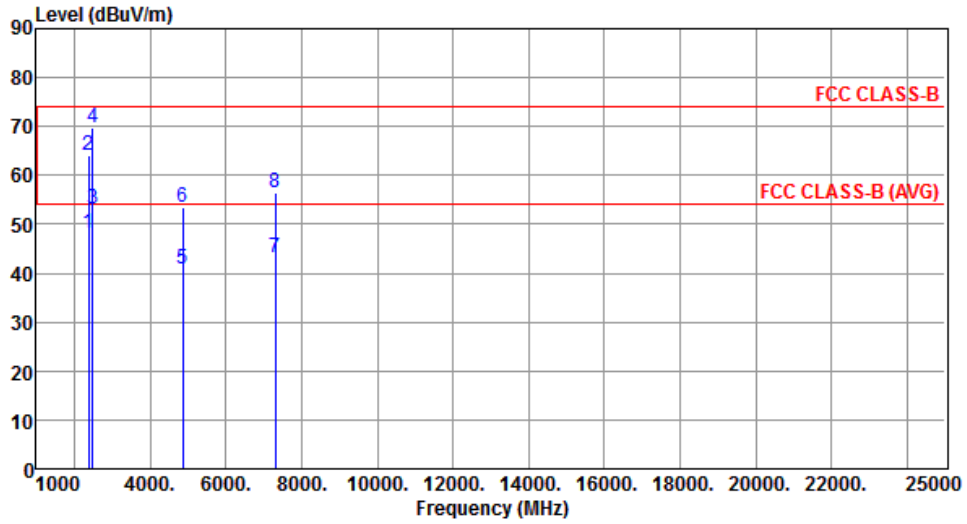
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	45.53	54.00	-8.47	48.59	-3.06	Average	100	2
2	2390.00	60.67	74.00	-13.33	63.73	-3.06	Peak	100	2
3	2483.50	46.11	54.00	-7.89	48.80	-2.69	Average	100	2
4	2483.50	63.55	74.00	-10.45	66.24	-2.69	Peak	100	2
5	4874.00	42.22	54.00	-11.78	37.82	4.40	Average	249	0
6	4874.00	55.74	74.00	-18.26	51.34	4.40	Peak	249	0
7	7311.00	41.71	54.00	-12.29	32.50	9.21	Average	100	293
8	7311.00	54.35	74.00	-19.65	45.14	9.21	Peak	100	293

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	HT40	<b>Test Freq. (MHz)</b>	2437
<b>Polarization</b>	Vertical		



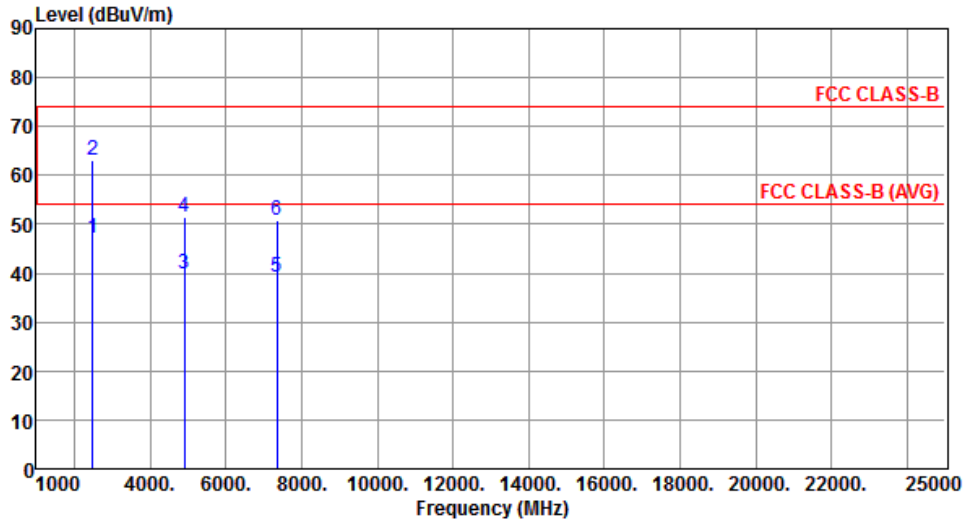
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	48.06	54.00	-5.94	51.12	-3.06	Average	120	193
2	2390.00	63.95	74.00	-10.05	67.01	-3.06	Peak	120	193
3	2483.50	53.00	54.00	-1.00	55.69	-2.69	Average	120	193
4	2483.50	69.74	74.00	-4.26	72.43	-2.69	Peak	120	193
5	4874.00	40.81	54.00	-13.19	36.41	4.40	Average	229	32
6	4874.00	53.33	74.00	-20.67	48.93	4.40	Peak	229	32
7	7311.00	43.31	54.00	-10.69	34.10	9.21	Average	100	338
8	7311.00	56.59	74.00	-17.41	47.38	9.21	Peak	100	338

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	HT40	<b>Test Freq. (MHz)</b>	2452
<b>Polarization</b>	Horizontal		



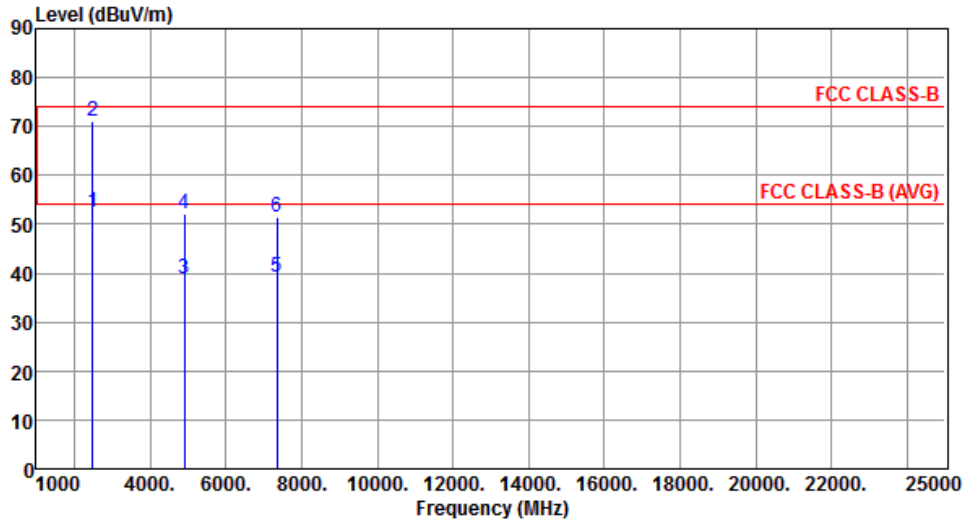
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	47.28	54.00	-6.72	49.97	-2.69	Average	100	17
2	2483.50	62.96	74.00	-11.04	65.65	-2.69	Peak	100	17
3	4904.00	39.81	54.00	-14.19	35.33	4.48	Average	258	0
4	4904.00	51.46	74.00	-22.54	46.98	4.48	Peak	258	0
5	7356.00	39.04	54.00	-14.96	29.73	9.31	Average	100	290
6	7356.00	50.70	74.00	-23.30	41.39	9.31	Peak	100	290

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	HT40	<b>Test Freq. (MHz)</b>	2452
<b>Polarization</b>	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	52.52	54.00	-1.48	55.21	-2.69	Average	121	194
2	2483.50	70.93	74.00	-3.07	73.62	-2.69	Peak	121	194
3	4904.00	39.01	54.00	-14.99	34.53	4.48	Average	239	28
4	4904.00	52.20	74.00	-21.80	47.72	4.48	Peak	239	28
5	7356.00	39.07	54.00	-14.93	29.76	9.31	Average	100	336
6	7356.00	51.40	74.00	-22.60	42.09	9.31	Peak	100	336

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



## 3.6 Emissions in Non-Restricted Frequency Bands

### 3.6.1 Emissions in Non-Restricted Frequency Bands Limit

Peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz

### 3.6.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

### 3.6.3 Test Procedures

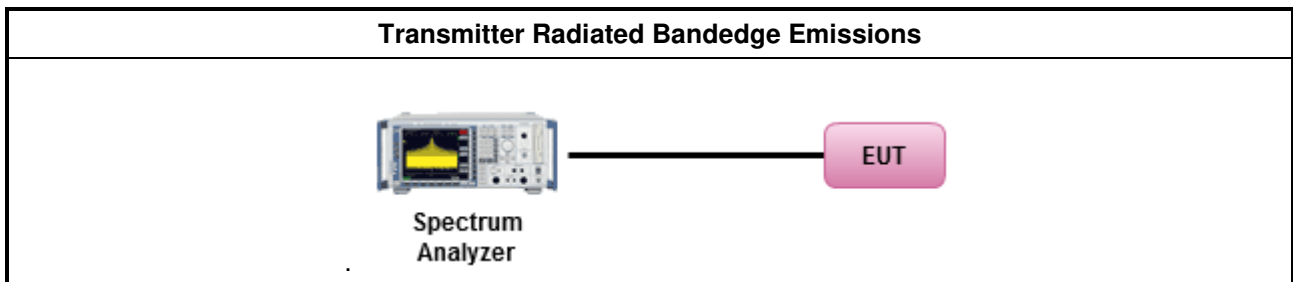
#### Reference level measurement

1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Use the peak marker function to determine the maximum PSD level

#### Emission level measurement

1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Scan Frequency range is up to 25GHz
4. Use the peak marker function to determine the maximum amplitude level

### 3.6.4 Test Setup

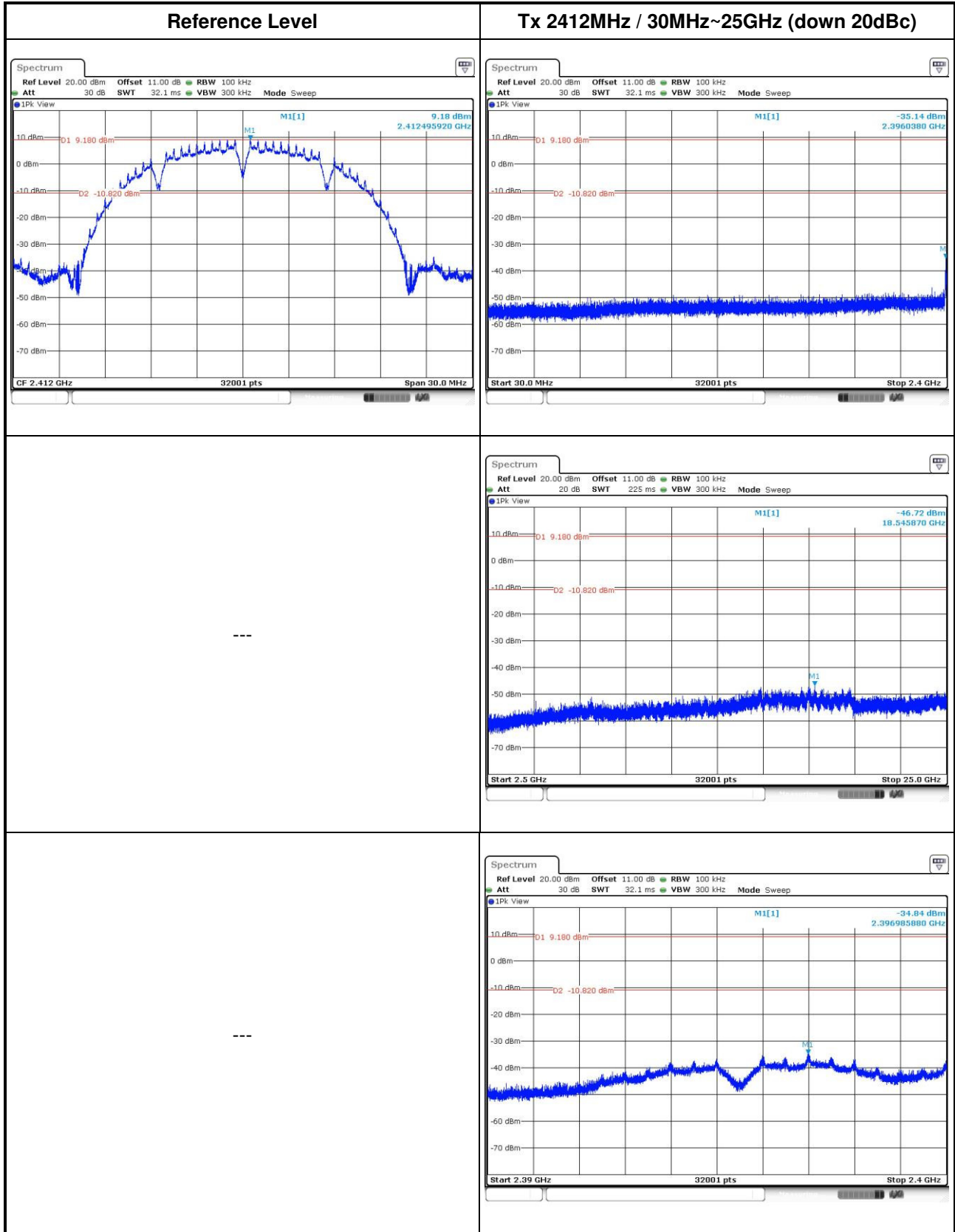


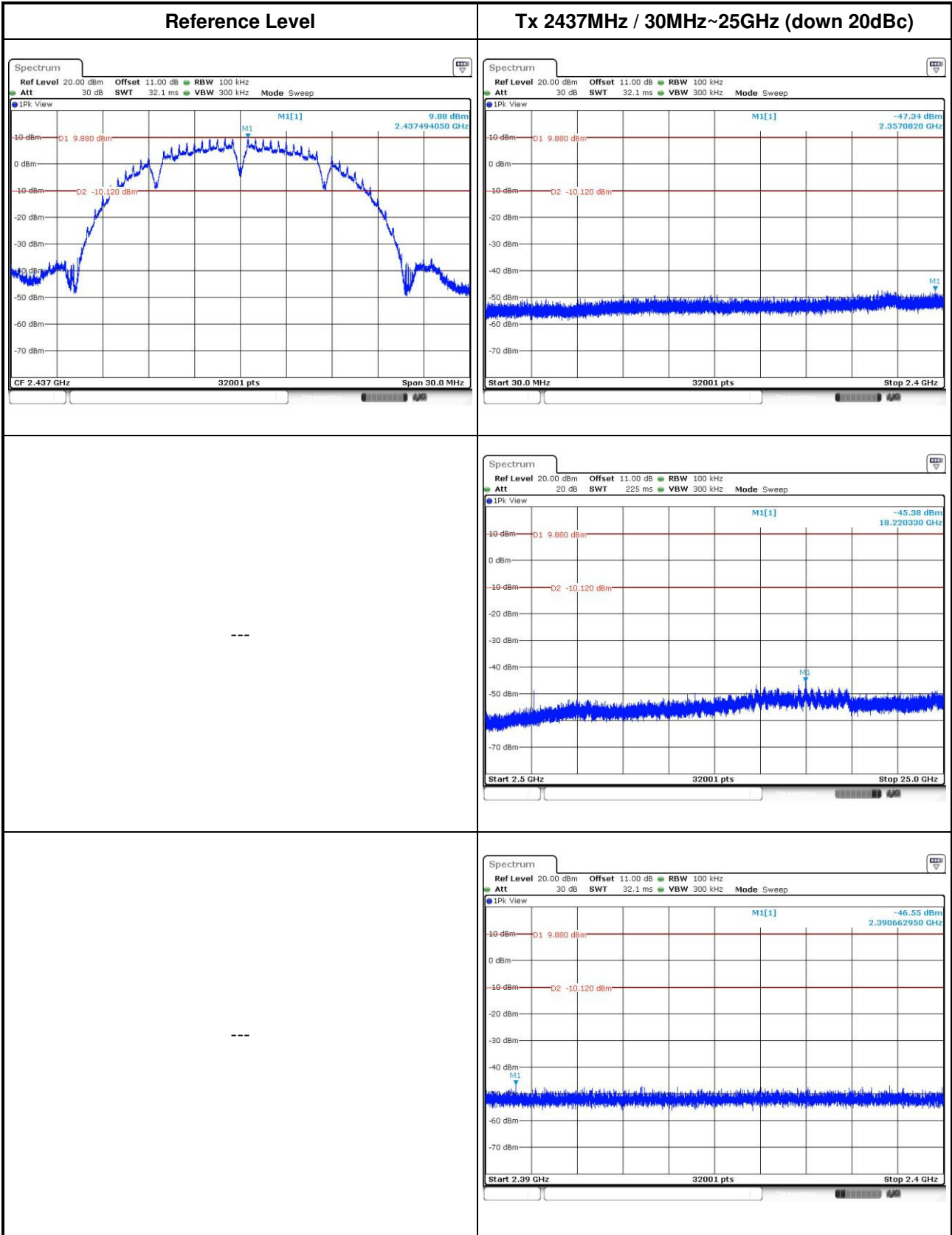
### 3.6.5 Test Result of Emissions in non-restricted frequency bands

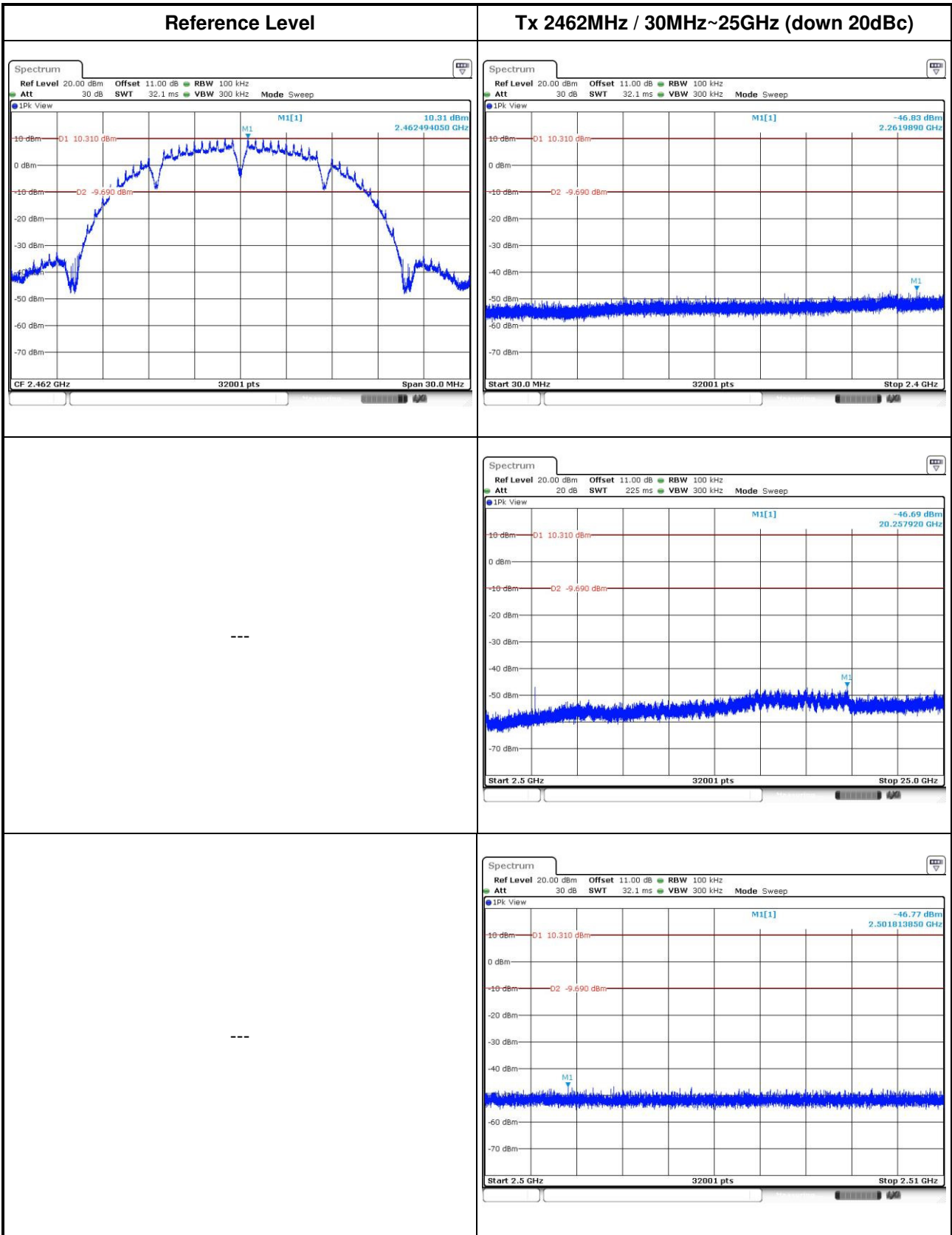
This test item is performed on each TX output individually without summing or adding  $10 \log(N_{ANT})$  since measurements are made relative to the in-band emissions on the individual outputs. Only worst test result of each operating mode is presented.

### 3.6.6 Unwanted Emissions into Non-Restricted Frequency Bands

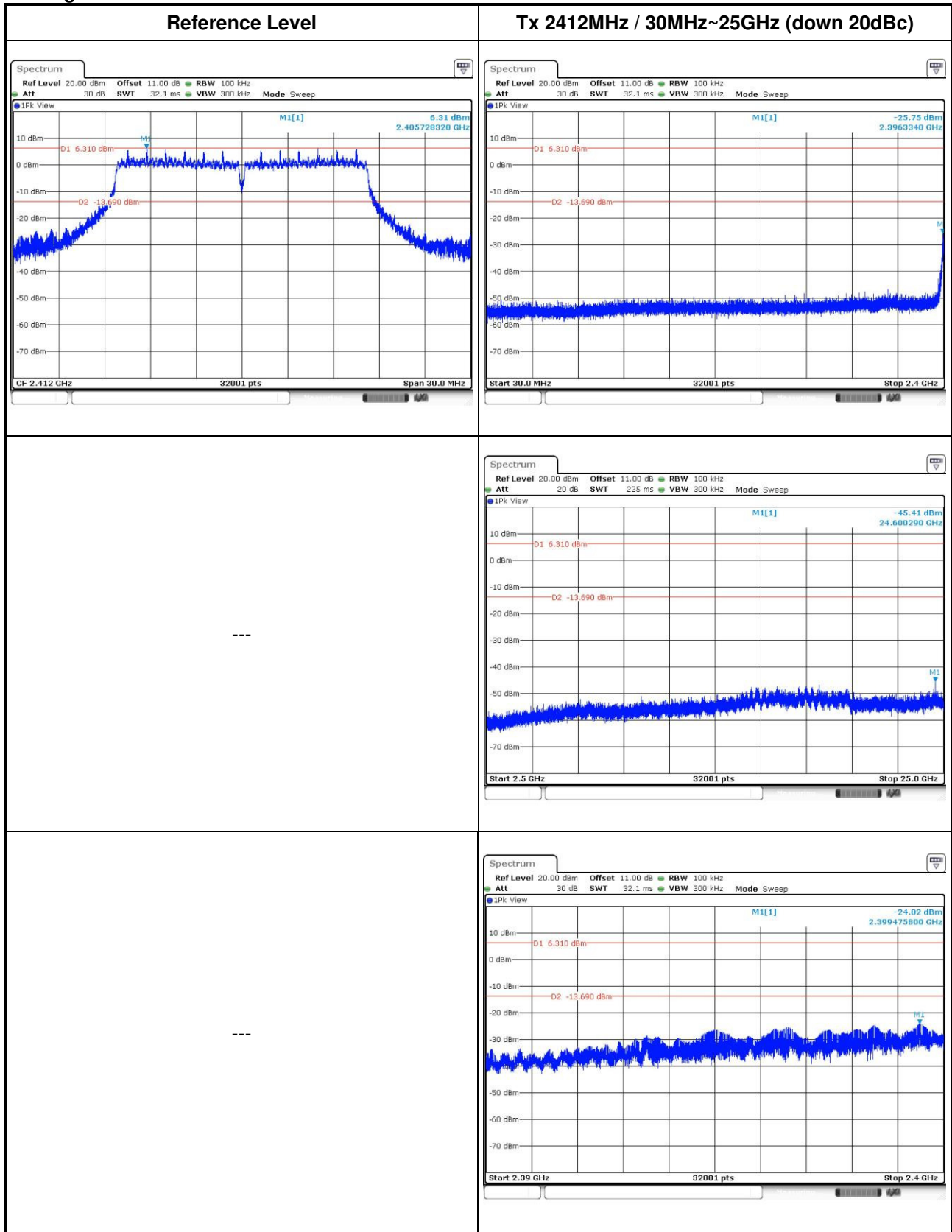
802.11b

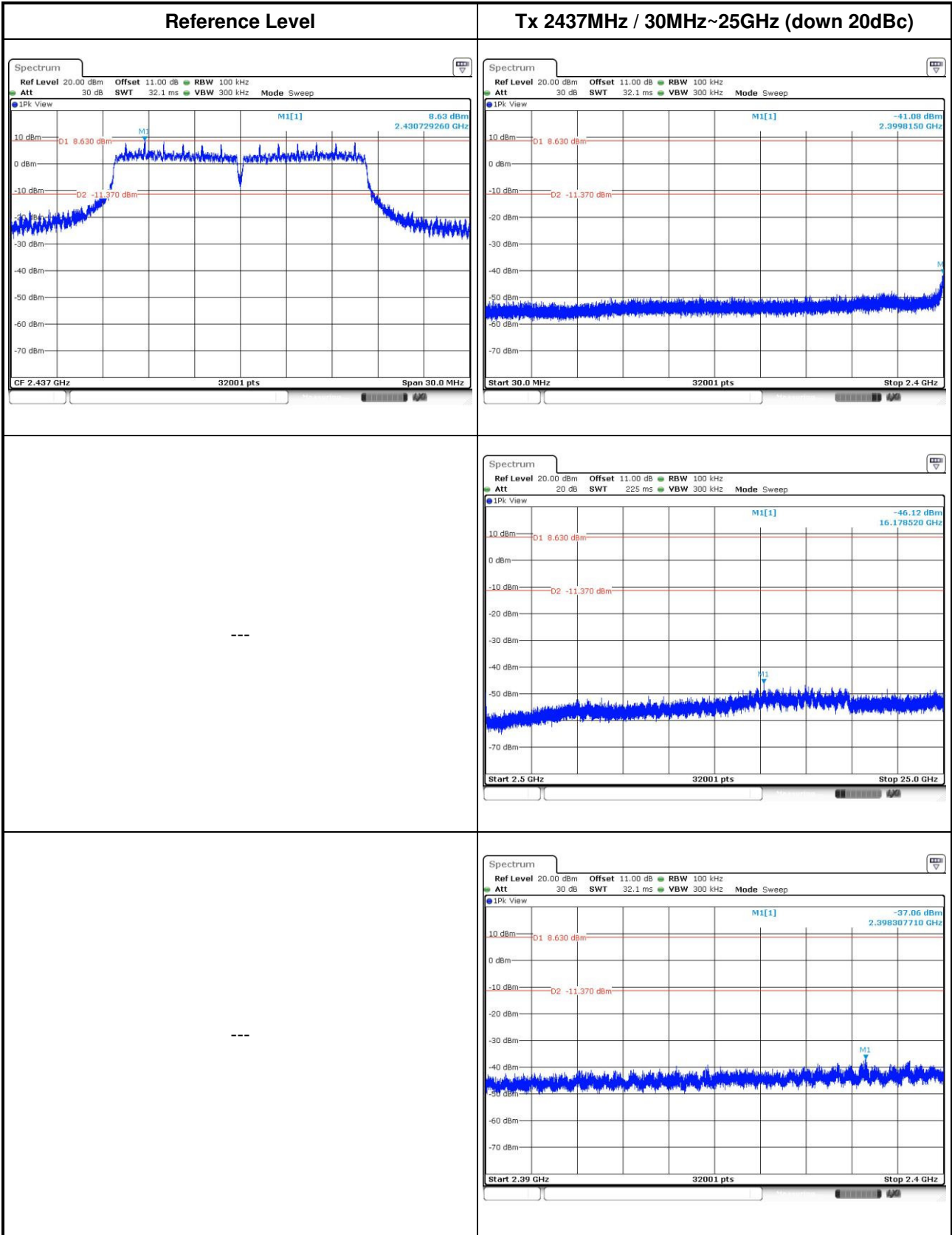




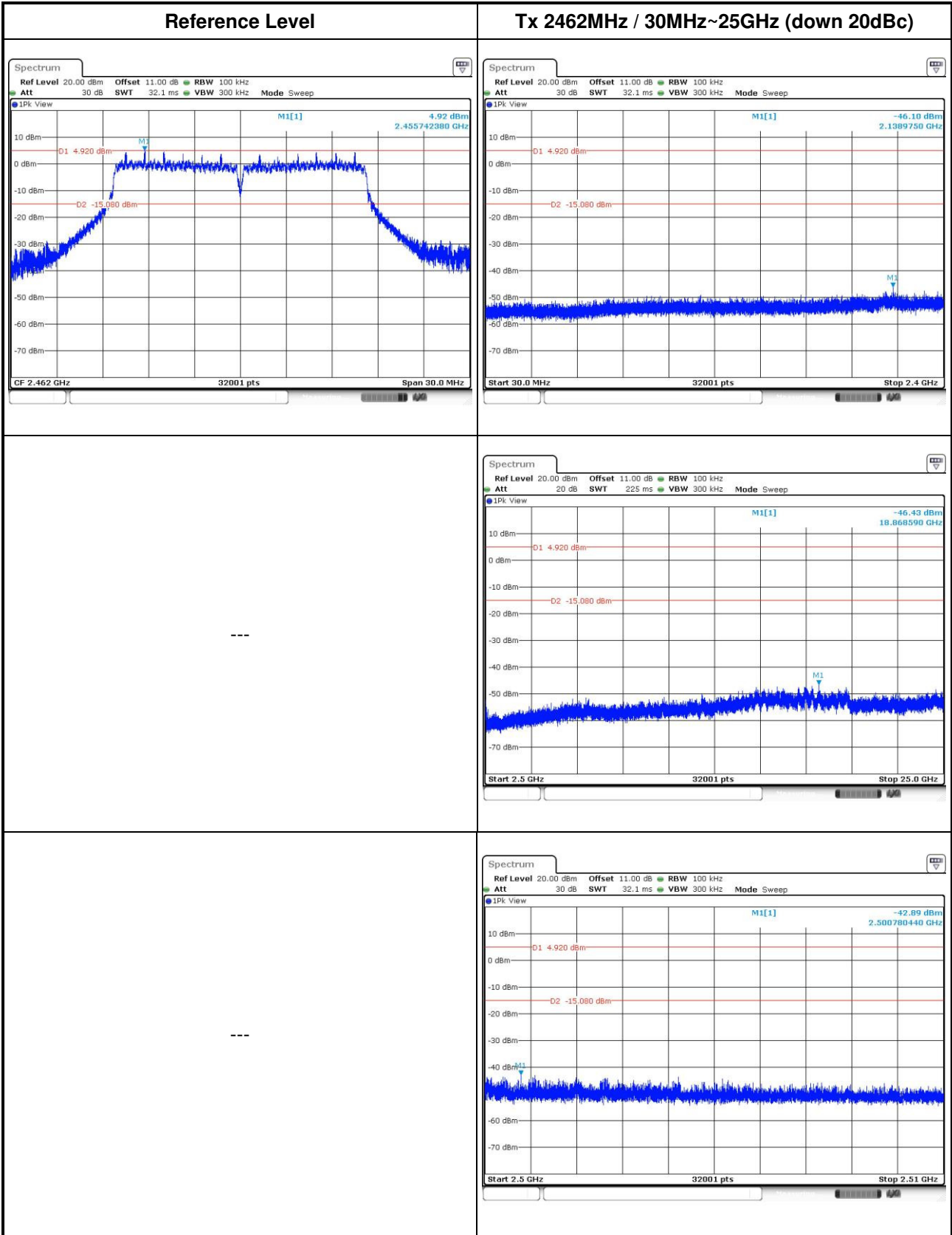


802.11g

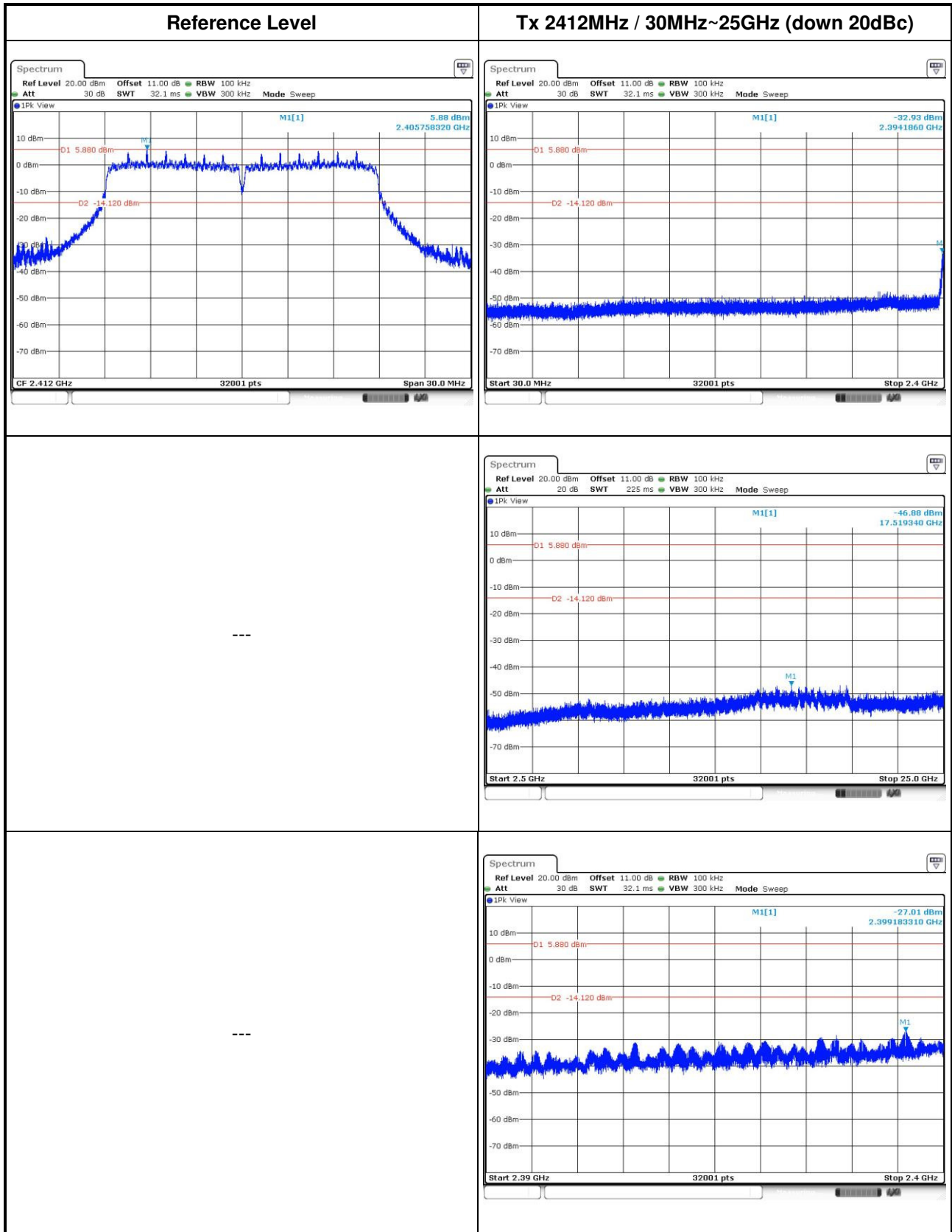




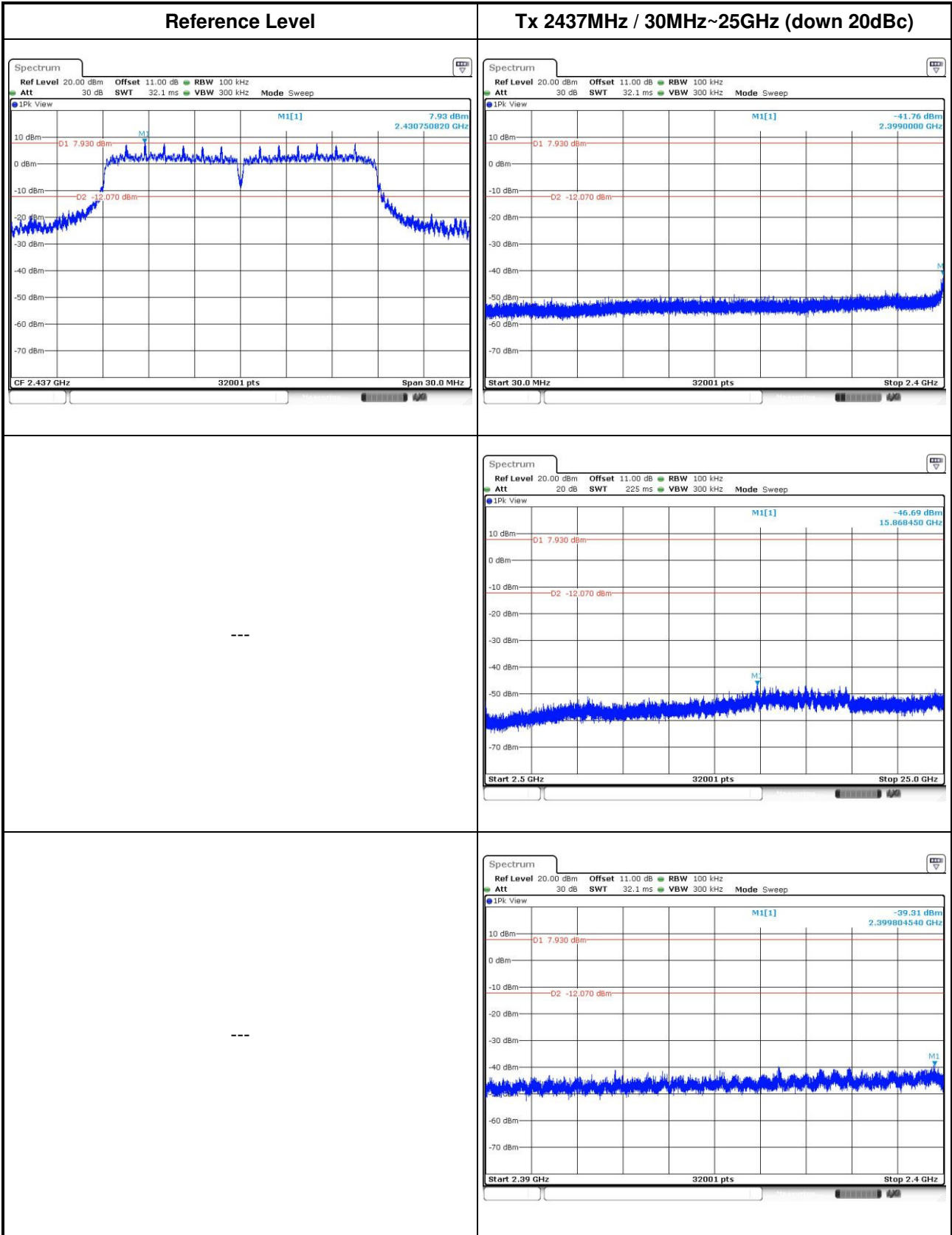


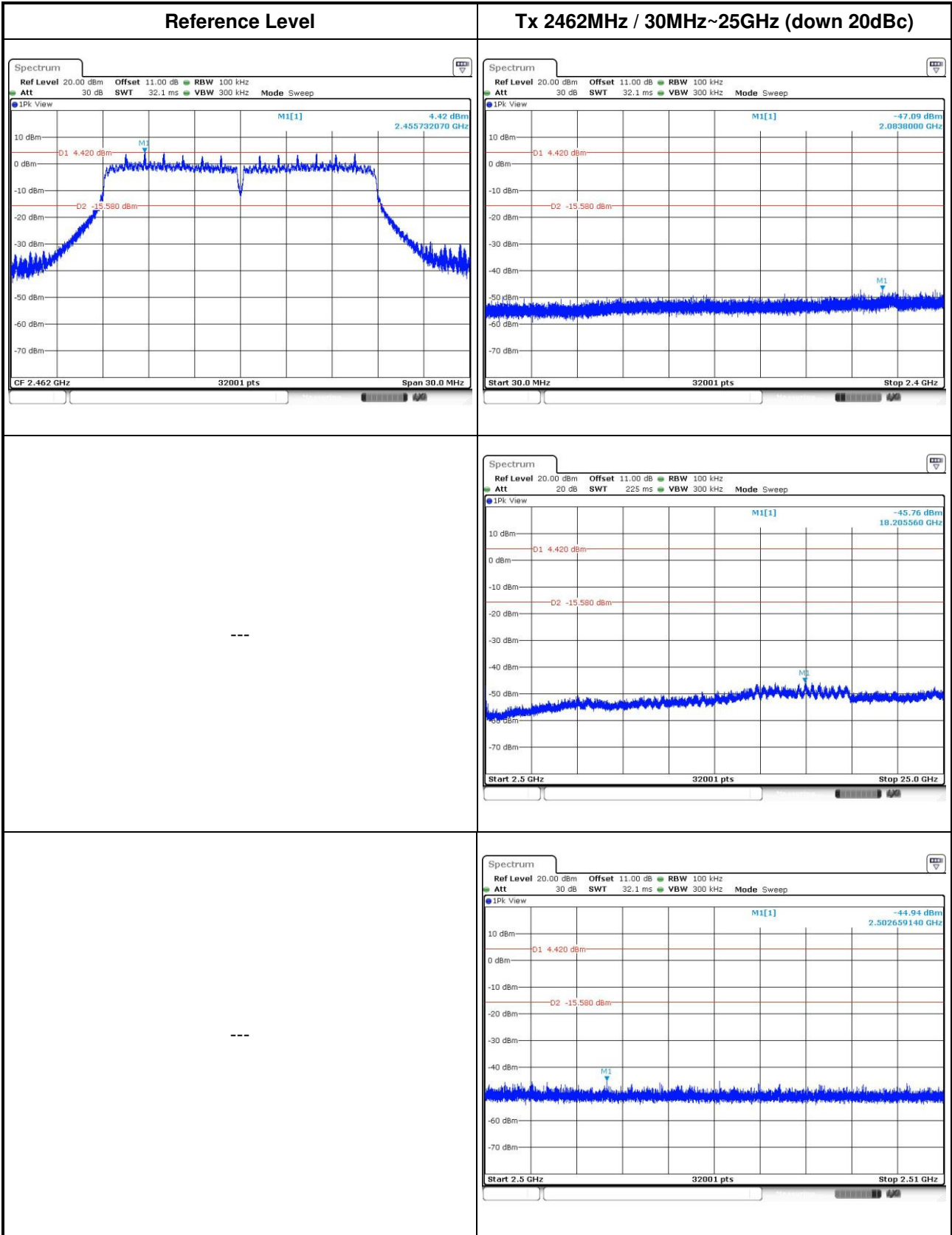


802.11n HT20

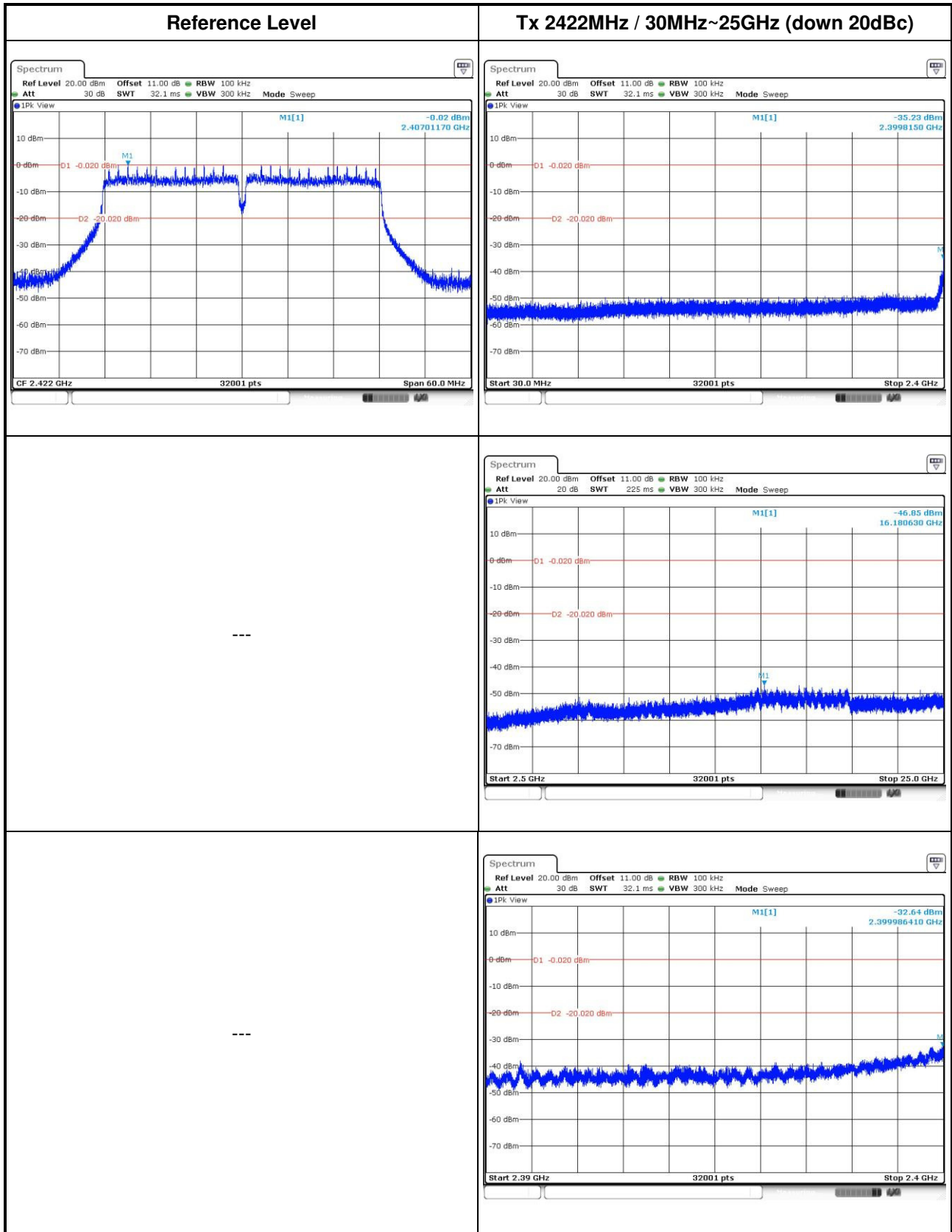


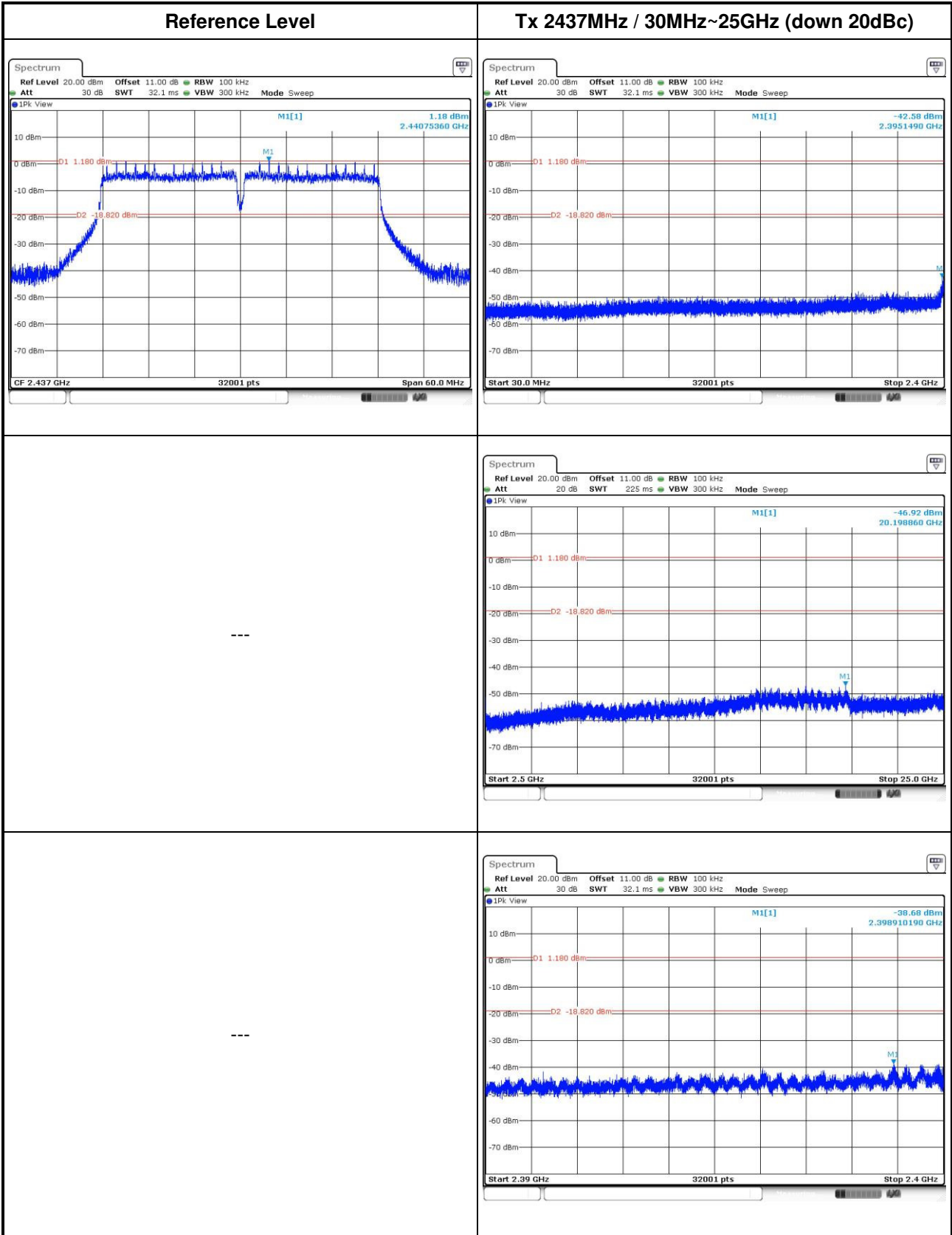


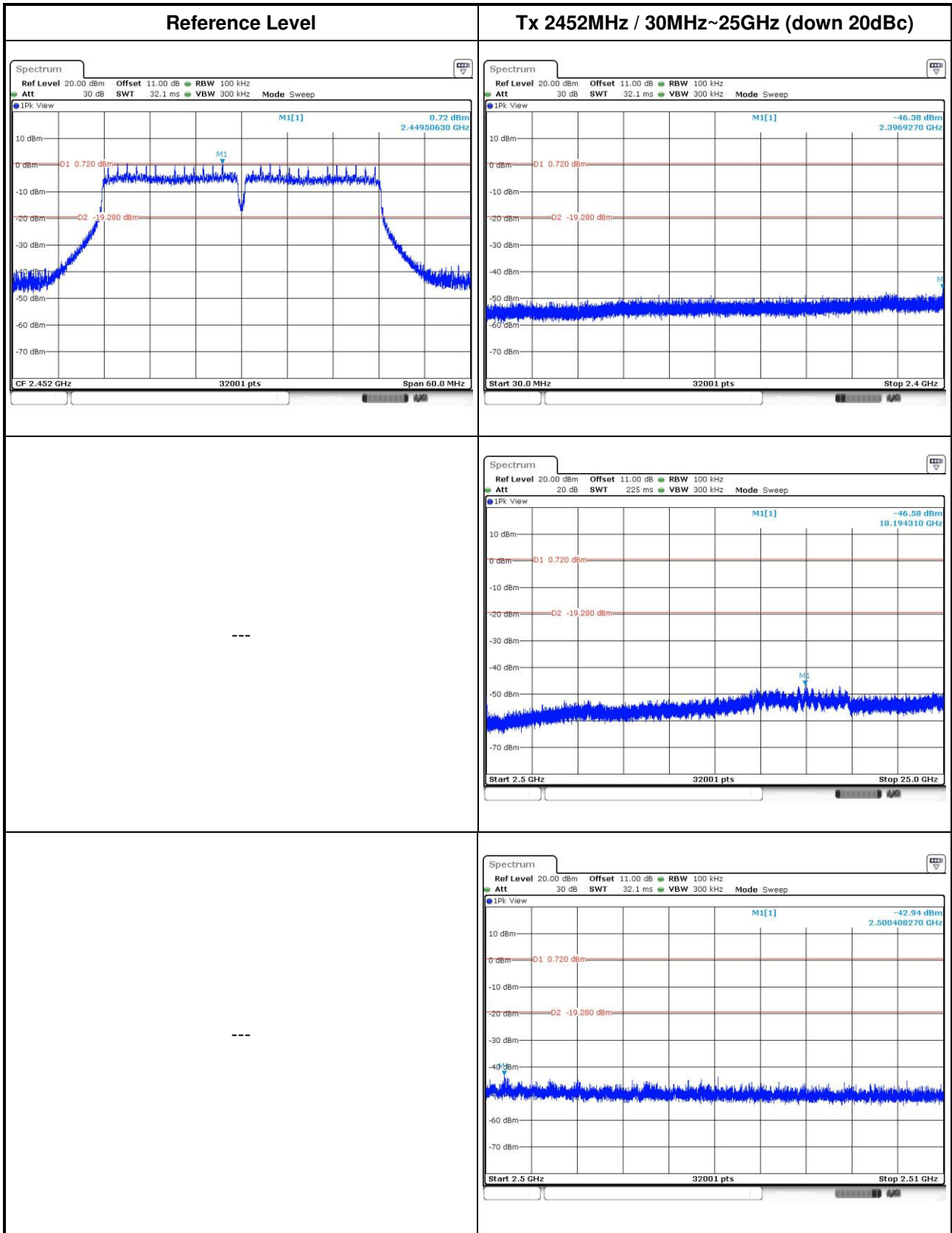




802.11n HT40







## 4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan Hsiang. Location map can be found on our website <http://www.icertifi.com.tw>.

### **Linkou**

Tel: 886-2-2601-1640

No. 30-2, Ding Fwu Tsuen, Lin  
Kou District, New Taipei City,  
Taiwan, R.O.C.

### **Kwei Shan**

Tel: 886-3-271-8666

No. 3-1, Lane 6, Wen San 3rd St.,  
Kwei Shan District, Tao Yuan City  
333, Taiwan, R.O.C.

### **Kwei Shan Site II**

Tel: 886-3-271-8640

No. 14-1, Lane 19, Wen San 3rd  
St., Kwei Shan District, Tao Yuan  
City 333, Taiwan, R.O.C.

If you have any suggestion, please feel free to contact us as below information.

Tel: 886-3-271-8666

Fax: 886-3-318-0155

Email: [ICC\\_Service@icertifi.com.tw](mailto:ICC_Service@icertifi.com.tw)

==END==