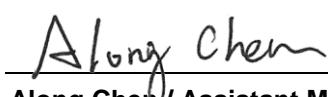


# FCC Test Report

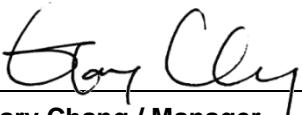
**FCC ID** : I88WRE6505V2  
**Equipment** : Wireless AC750 Range Extender  
**Model No.** : WRE6505 v2  
**Brand Name** : **ZYXEL**  
**Applicant** : Zyxel Communications Corporation  
**Address** : No.2 Industry East RD. IX, Hsinchu Science Park, Hsinchu 30075, Taiwan, R.O.C  
**Standard** : 47 CFR FCC Part 15.247  
**Received Date** : May 04, 2016  
**Tested Date** : Aug. 02 ~ Aug. 12, 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.

Reviewed by:

  
\_\_\_\_\_  
Along Chen / Assistant Manager

Approved by:

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



## Table of Contents

<b>1</b>	<b>GENERAL DESCRIPTION .....</b>	<b>5</b>
1.1	Information.....	5
1.2	Local Support Equipment List .....	9
1.3	Test Setup Chart .....	10
1.4	The Equipment List .....	11
1.5	Test Standards .....	12
1.6	Measurement Uncertainty .....	12
<b>2</b>	<b>TEST CONFIGURATION.....</b>	<b>13</b>
2.1	Testing Condition .....	13
2.2	The Worst Test Modes and Channel Details .....	14
<b>3</b>	<b>TRANSMITTER TEST RESULTS.....</b>	<b>15</b>
3.1	Conducted Emissions.....	15
3.2	6dB and Occupied Bandwidth .....	24
3.3	RF Output Power.....	29
3.4	Power Spectral Density .....	31
3.5	Unwanted Emissions into Restricted Frequency Bands .....	34
3.6	Emissions in Non-Restricted Frequency Bands .....	80
<b>4</b>	<b>TEST LABORATORY INFORMATION .....</b>	<b>99</b>

## Release Record

Report No.	Version	Description	Issued Date
FR650401AC	Rev. 01	Initial issue	Oct. 21, 2016

## Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.554MHz 37.78 (Margin -8.22dB) - AV	Pass
15.247(d) 15.209	Radiated Emissions	[dBuV/m at 3m]: 2390.00MHz 53.83 (Margin -0.17dB) - AV	Pass
15.247(b)(3)	Maximum Output Power	Max Power [dBm]: <b>Non-beamforming mode</b> 23.61 <b>Beamforming mode</b> 22.17	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

The following versions are provided to this EUT.

sample version	Internal DDR Size	Working voltage of DDR
VE3	32M	DDR1 voltage: 2.5V
VE4	64M	DDR2 voltabe:1.8V

#### 1.1.1 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]	2	1-11 Mbps
2400-2483.5	g	2412-2462	1-11 [11]	2	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 Conducted (Average) 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: 802.11n supports beamforming function.

#### 1.1.2 Antenna Details

Model	Type	Connector	Operating Frequencies (MHz) / Antenna Gain (dBi)		
			2400~2483.5	5150~5250	5725~5850
ALA110-052026	PIFA	N/A	4.70836	--	--
ALA160-222034	PIFA	N/A	2.82	3.43	3.43

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

Power Supply Type	100-240V, 0.15A, 50/60Hz
-------------------	--------------------------

#### 1.1.4 Accessories

Accessories		
No.	Equipment	Description
1	RJ45 cable	0.94m non-shielded w/o core

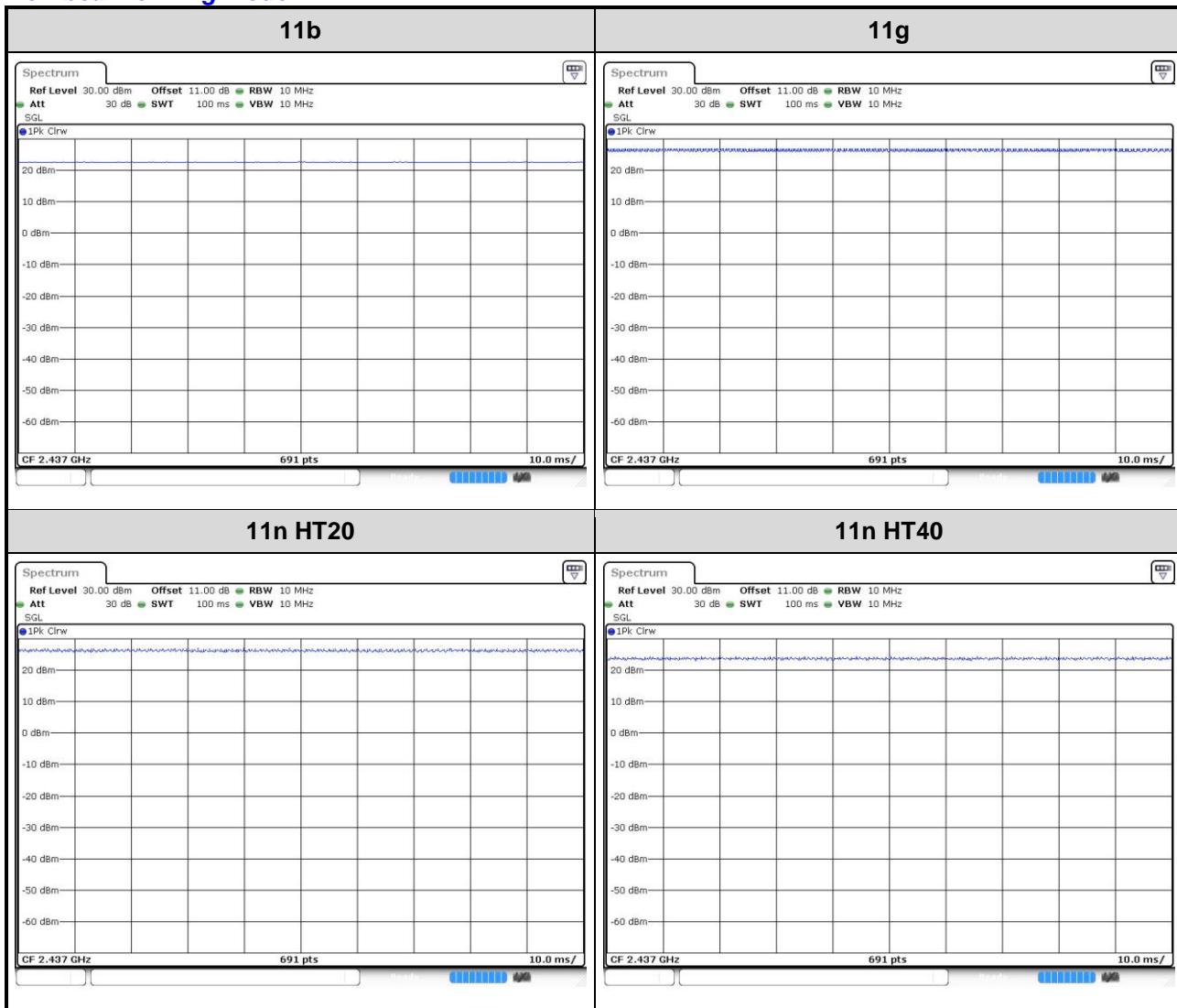
### 1.1.5 Channel List

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	---	---

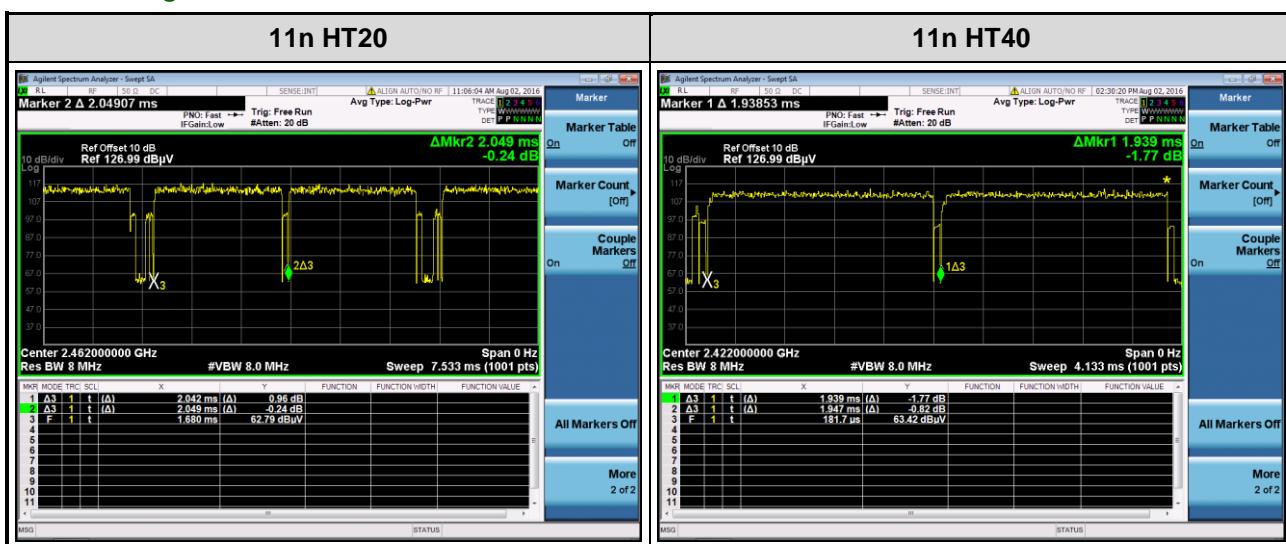
### 1.1.6 Test Tool and Duty Cycle

Test Tool	Non-beamforming: MP_TEST, Version: 1.3.8.0 Beamforming: LanTest20, Version: 2.0.0.2				
Duty Cycle and Duty Factor	Mode	Non-beamforming		Beamforming	
		Duty cycle (%)	Duty factor (dB)	Duty cycle (%)	Duty factor (dB)
	11b	100.00%	0.00	---	---
	11g	100.00%	0.00	---	---
	HT20	100.00%	0.00	99.66%	0.01
	HT40	100.00%	0.00	99.59%	0.02

### Non-beamforming mode



### Beamforming mode



### 1.1.7 Power Setting

Modulation Mode	Test Frequency (MHz)	Power Set	
		Non-beamforming	Beamforming
11b	2412	48/45	---
11b	2437	48/46	---
11b	2462	48/46	---
11g	2412	48/43	---
11g	2437	57/51	---
11g	2462	53/49	---
HT20	2412	48/43	2D/2A
HT20	2437	57/51	3B/36
HT20	2462	52/48	33/30
HT40	2422	46/40	30/2A
HT40	2437	57/53	3A/37
HT40	2452	49/44	33/2D

## 1.2 Local Support Equipment List

### *Non-beamforming mode*

Support Equipment List					
No.	Equipment	Brand	Model	S/N	Signal cable / Length (m)
1	Notebook	DELL	Latitude E6430	C0GB4X1	RJ45, 10m non-shielded.

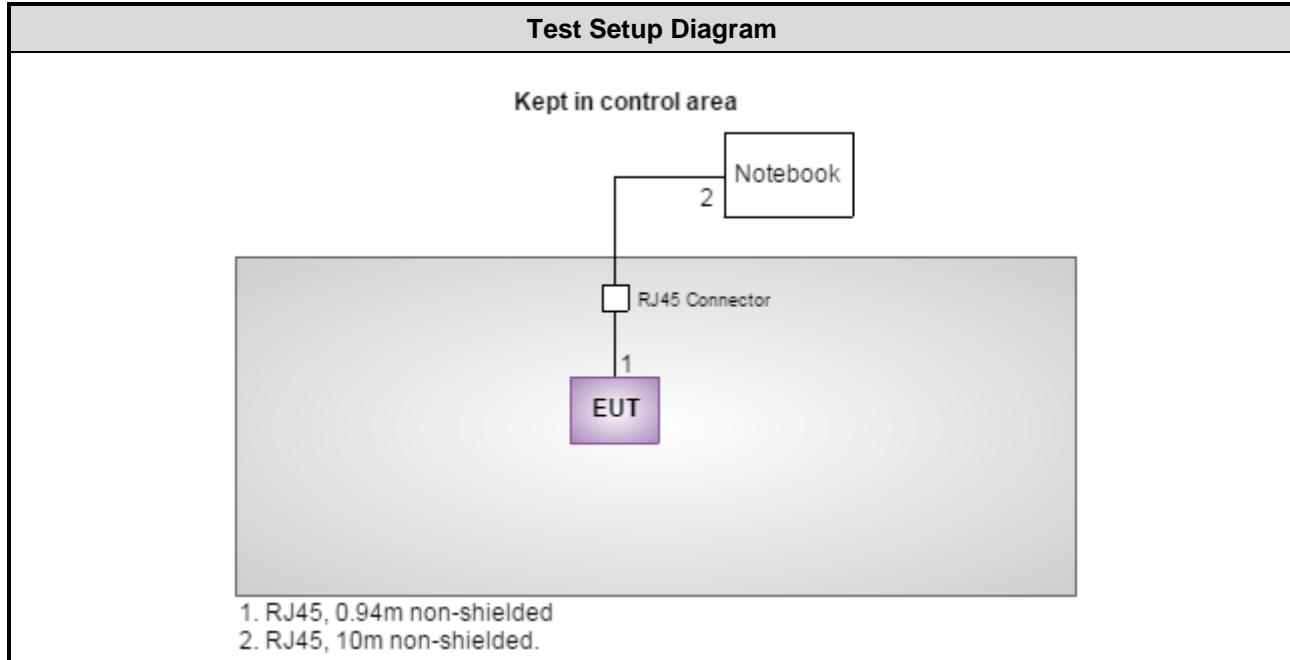
### *Beamforming mode*

Support Equipment List					
No.	Equipment	Brand	Model	S/N	Signal cable / Length (m)
1	Notebook	DELL	Latitude E6430	C0GB4X1	RJ45, 10m non-shielded.
2	Notebook	DELL	Latitude E6430	9ZFB4X1	---
3	USB dongle	Edimax	EW-7612UAn	---	---

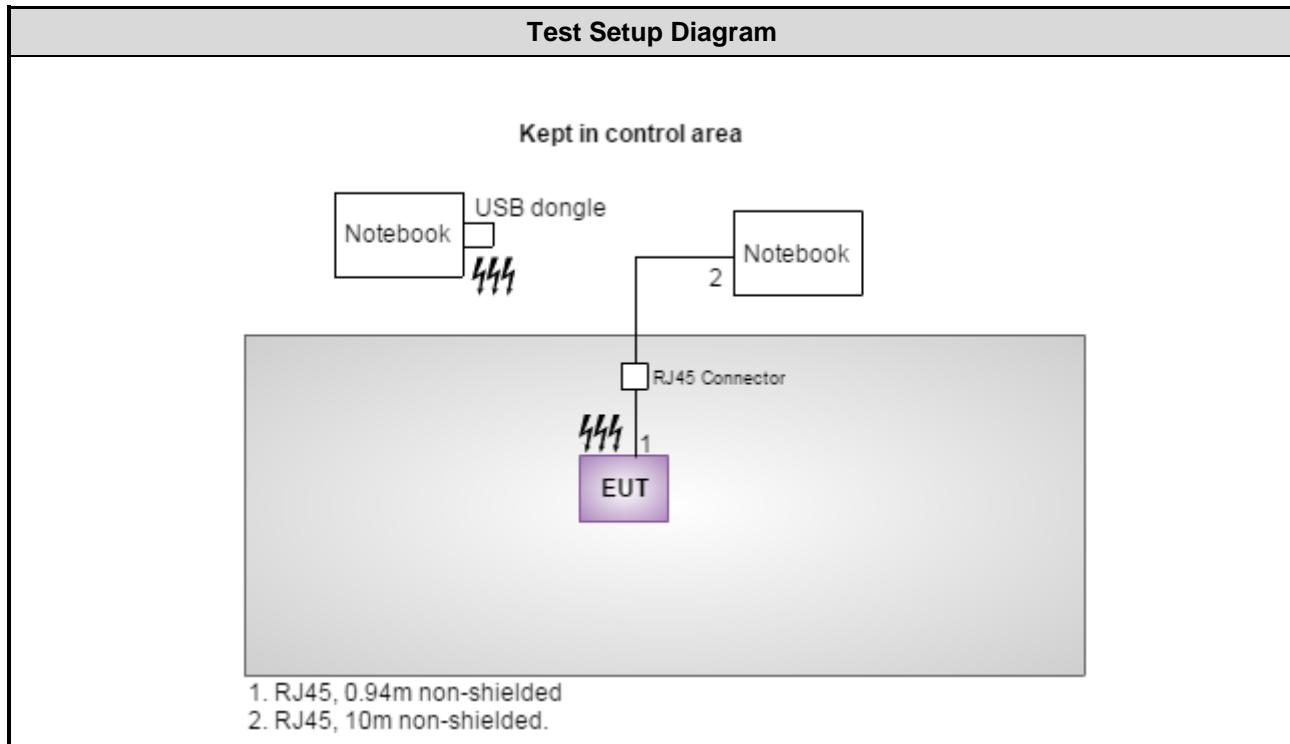
Note: No. 3 is provided by applicant.

## 1.3 Test Setup Chart

### *Non-beamforming mode*



### *Beamforming mode*



## 1.4 The Equipment List

<b>Test Item</b>	Conducted Emission				
<b>Test Site</b>	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	R&S	ENV216	101579	Jan. 11, 2016	Jan. 10, 2017
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.

<b>Test Item</b>	Radiated Emission				
<b>Test Site</b>	966 chamber 3 / (03CH03-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	Agilent	N9010A	MY53400091	Sep. 14, 2015	Sep. 13, 2016
Receiver	Agilent	N9038A	MY53290044	Oct. 14, 2015	Oct. 13, 2016
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-563	Dec. 29, 2015	Dec. 28, 2016
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1206	Feb. 24, 2016	Feb. 23, 2017
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 04, 2015	Nov. 03, 2016
Preamplifier	EMC	EMC02325	980187	Sep. 21, 2015	Sep. 20, 2016
Preamplifier	Agilent	83017A	MY53270014	Sep. 07, 2015	Sep. 06, 2016
Preamplifier	EMC	EMC184045B	980192	Sep. 01, 2015	Aug. 31, 2016
RF cable-3M	HUBER+SUHNER	SUCOFLEX104	MY22620/4	Feb. 05, 2016	Feb. 04, 2017
RF cable-8M	HUBER+SUHNER	SUCOFLEX104	MY22600/4	Feb. 05, 2016	Feb. 04, 2017
RF cable-1M	HUBER+SUHNER	SUCOFLEX104	MY22624/4	Feb. 05, 2016	Feb. 04, 2017
LF cable-0.8M	EMC	EMC8D-NM-NM-800	EMC8D-NM-NM-800-001	Feb. 05, 2016	Feb. 04, 2017
LF cable-3M	EMC	EMC8D-NM-NM-3000	131103	Feb. 05, 2016	Feb. 04, 2017
LF cable-13M	EMC	EMC8D-NM-NM-13000	131104	Feb. 05, 2016	Feb. 04, 2017
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 16, 2015	Nov. 15, 2016
Measurement Software	AUDIX	e3	6.120210g	NA	NA

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

<b>Test Item</b>	RF Conducted				
<b>Test Site</b>	(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
AC POWER SOURCE	APC	AFC-500W	F312060012	Oct. 26, 2015	Oct. 25, 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	±3.66 dB
Radiated emission > 1GHz	±5.37 dB

## 2 Test Configuration

### 2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	23°C / 62%	Howard Huang
Radiated Emissions	03CH03-WS	20-25°C / 60-63%	Warren Lee Brad Wu
RF Conducted	TH01-WS	22°C / 65%	Brad Wu

➤ FCC site registration No.: 207696

➤ IC site registration No.: 10807C-1

## 2.2 The Worst Test Modes and Channel Details

### Non-beamforming mode

Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
Conducted Emissions	11b	2437	1 Mbps	1, 2
Radiated Emissions ≤1GHz	11b	2437	1 Mbps	1, 2
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	1
Power spectral density	HT40	2422 / 2437 / 2452	MCS 0	

**NOTE:**

- 1) The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **X-plane** results were found as the worst case and were shown in this report.
- 2) The EUT has two versions for different Internal DDR Size and Working voltage of DDR (Sample 1: VE3; Sample 2: VE4).
- 3) The test configurations are listed as follows:  
Configuration 1 : Sample 1: VE3  
Configuration 2 : Sample 2: VE4

### Beamforming mode

Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
Conducted Emissions	HT20	2437	MCS 0	1, 2
Radiated Emissions ≤1GHz	HT20	2437	MCS 0	1, 2
Radiated Emissions >1GHz	HT20	2412 / 2437 / 2462	MCS 0	
Maximum Output Power	HT40	2422 / 2437 / 2452	MCS 0	
6dB bandwidth				1
Power spectral density				

**NOTE:**

- 1) The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **X-plane** results were found as the worst case and were shown in this report.
- 2) The EUT has two versions for different Internal DDR Size and Working voltage of DDR (Sample 1: VE3; Sample 2: VE4).
- 3) The test configurations are listed as follows:  
Configuration 1 : Sample 1: VE3  
Configuration 2 : Sample 2: VE4

## 3 Transmitter Test Results

### 3.1 Conducted Emissions

#### 3.1.1 Limit of Conducted Emissions

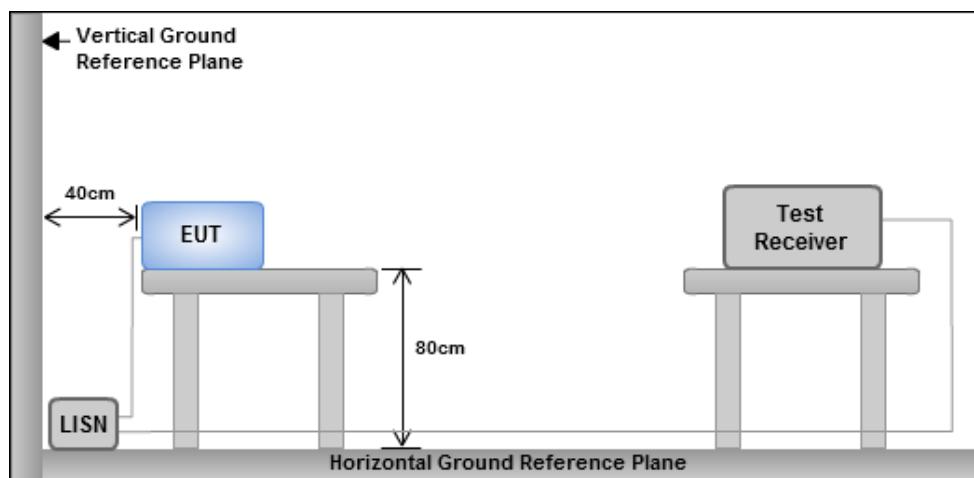
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

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 Ω 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.

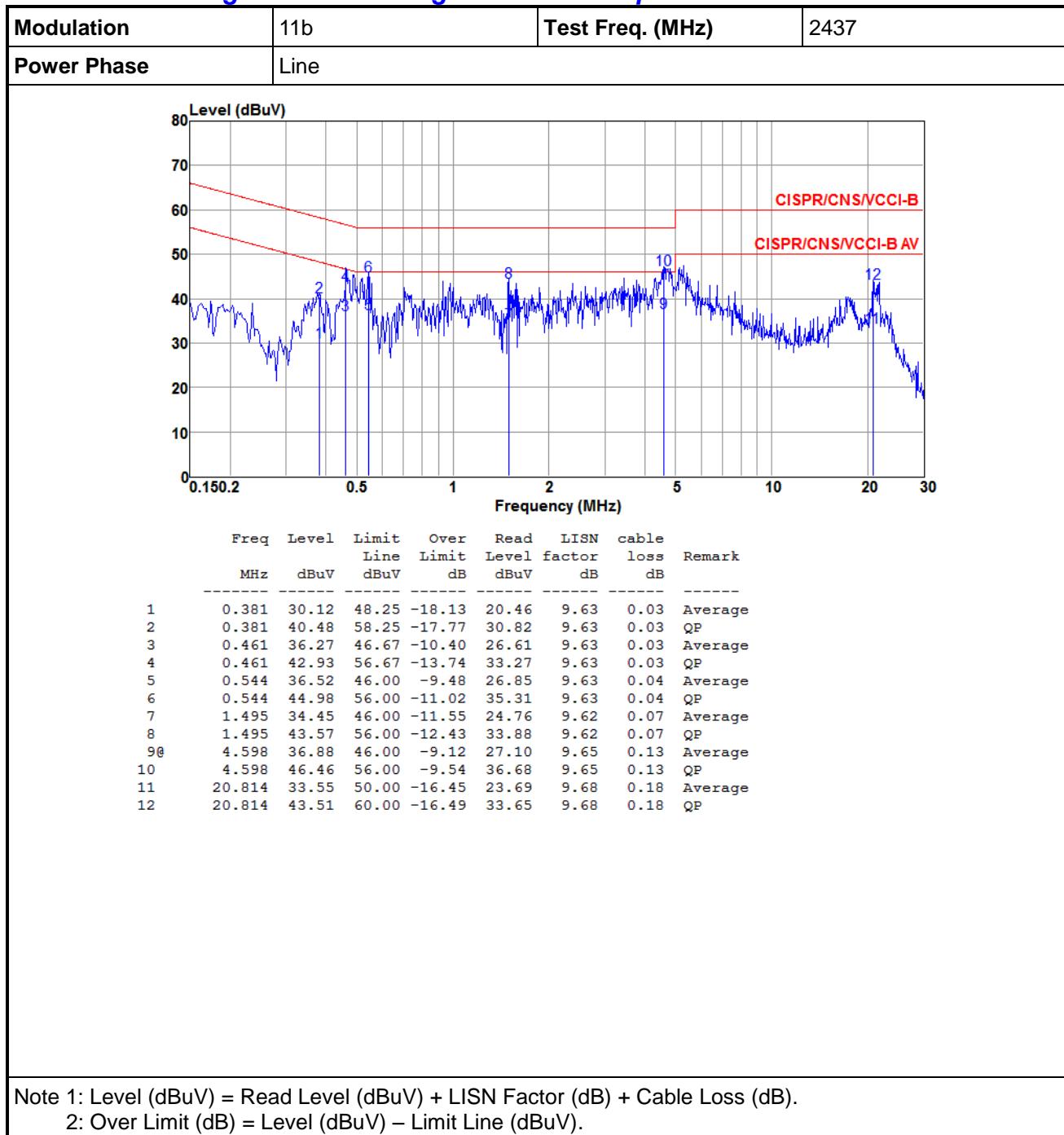
#### 3.1.3 Test Setup

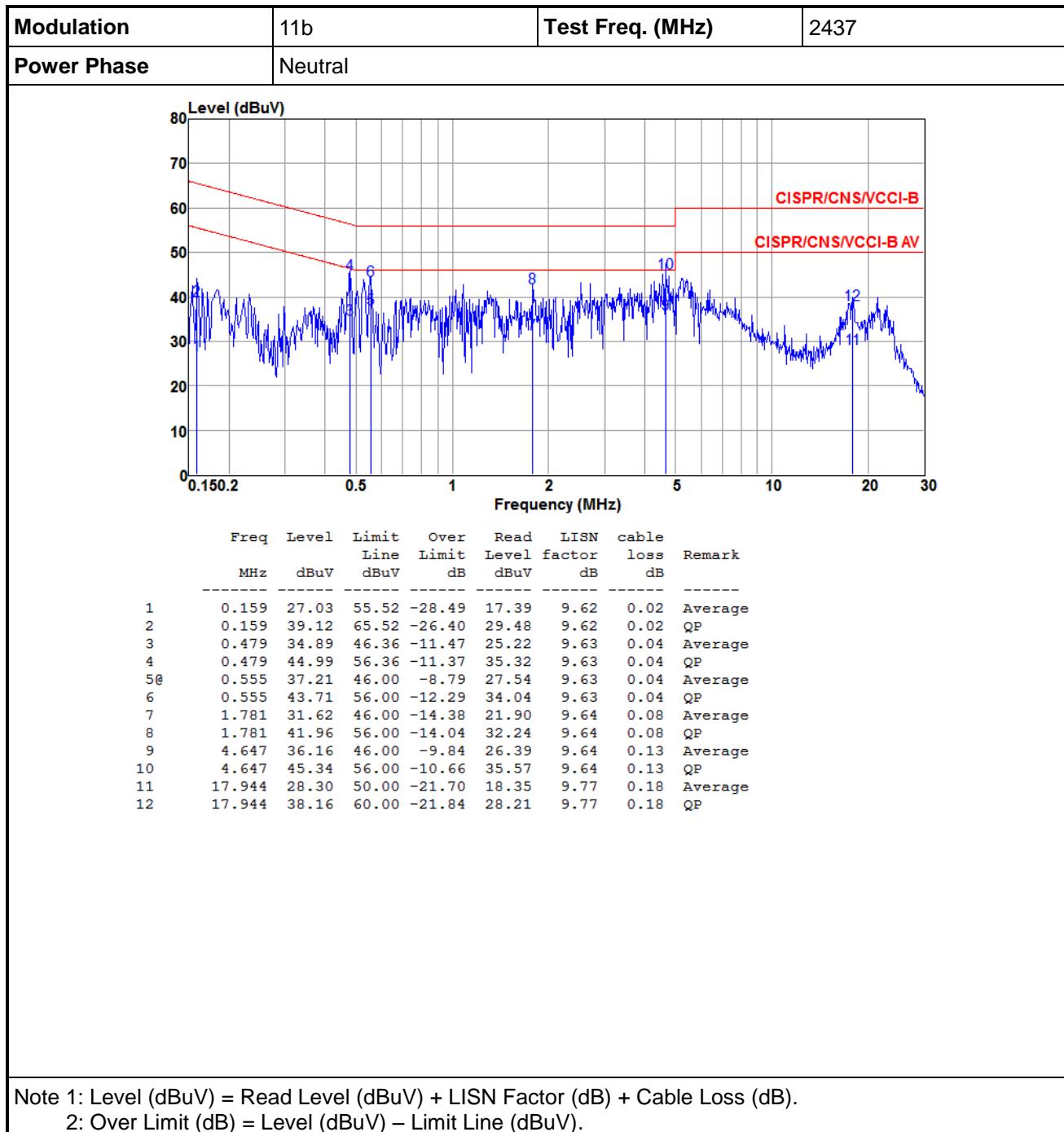


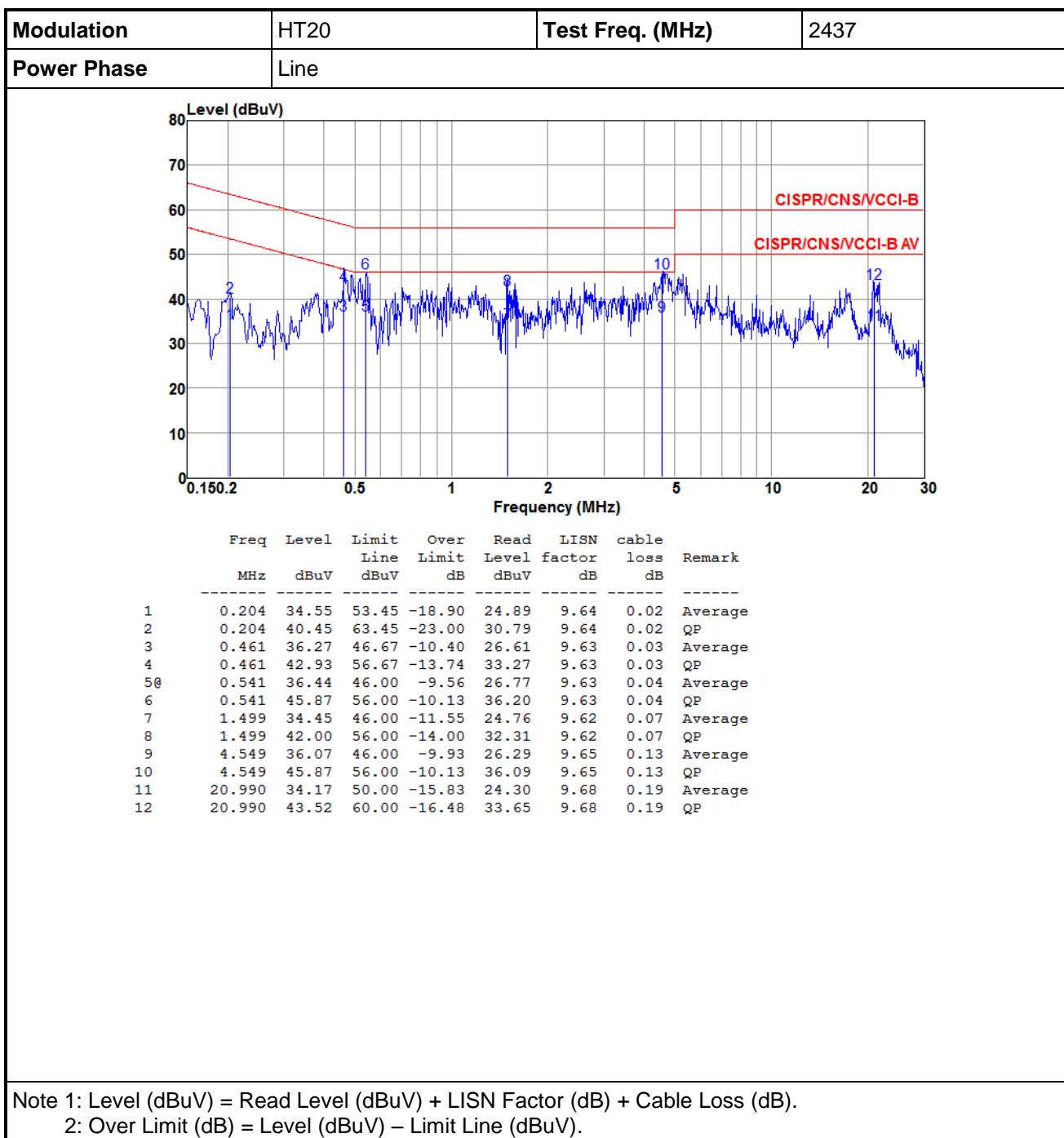
Note: 1. Support units were connected to second LISN.  
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

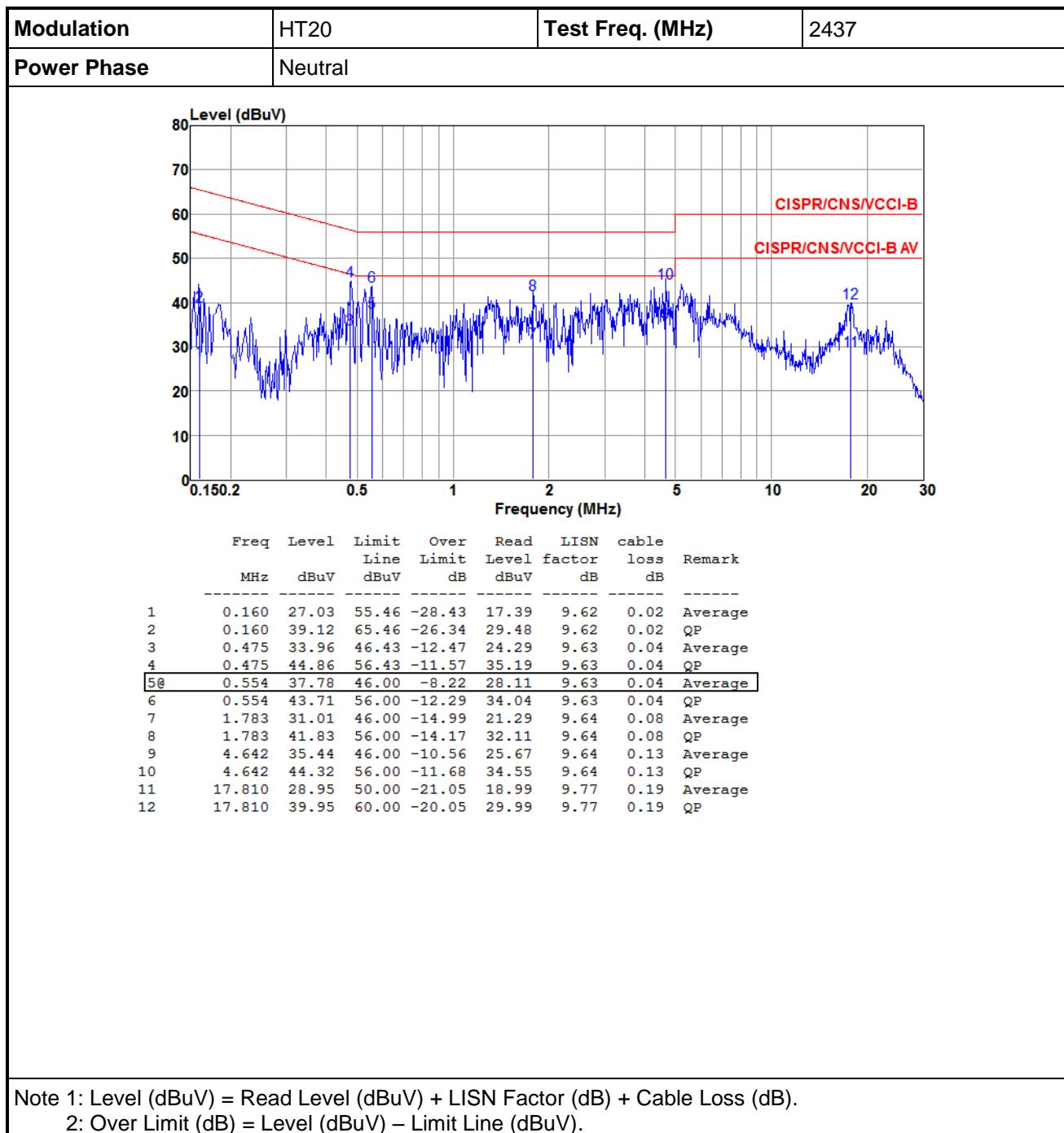
### 3.1.4 Test Result of Conducted Emissions

#### Non-beamforming mode for Configuration 1 : Sample 1: VE3



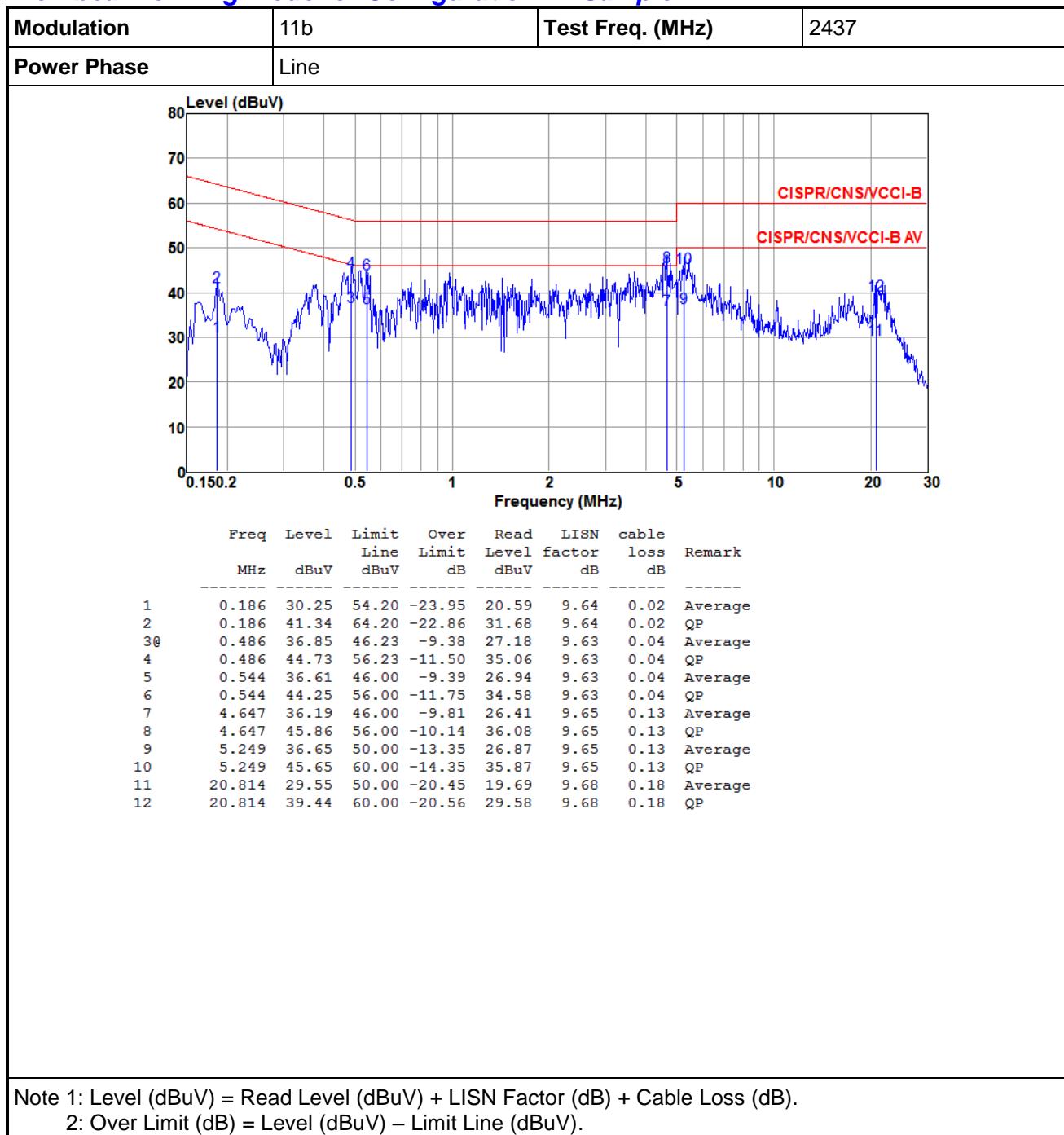


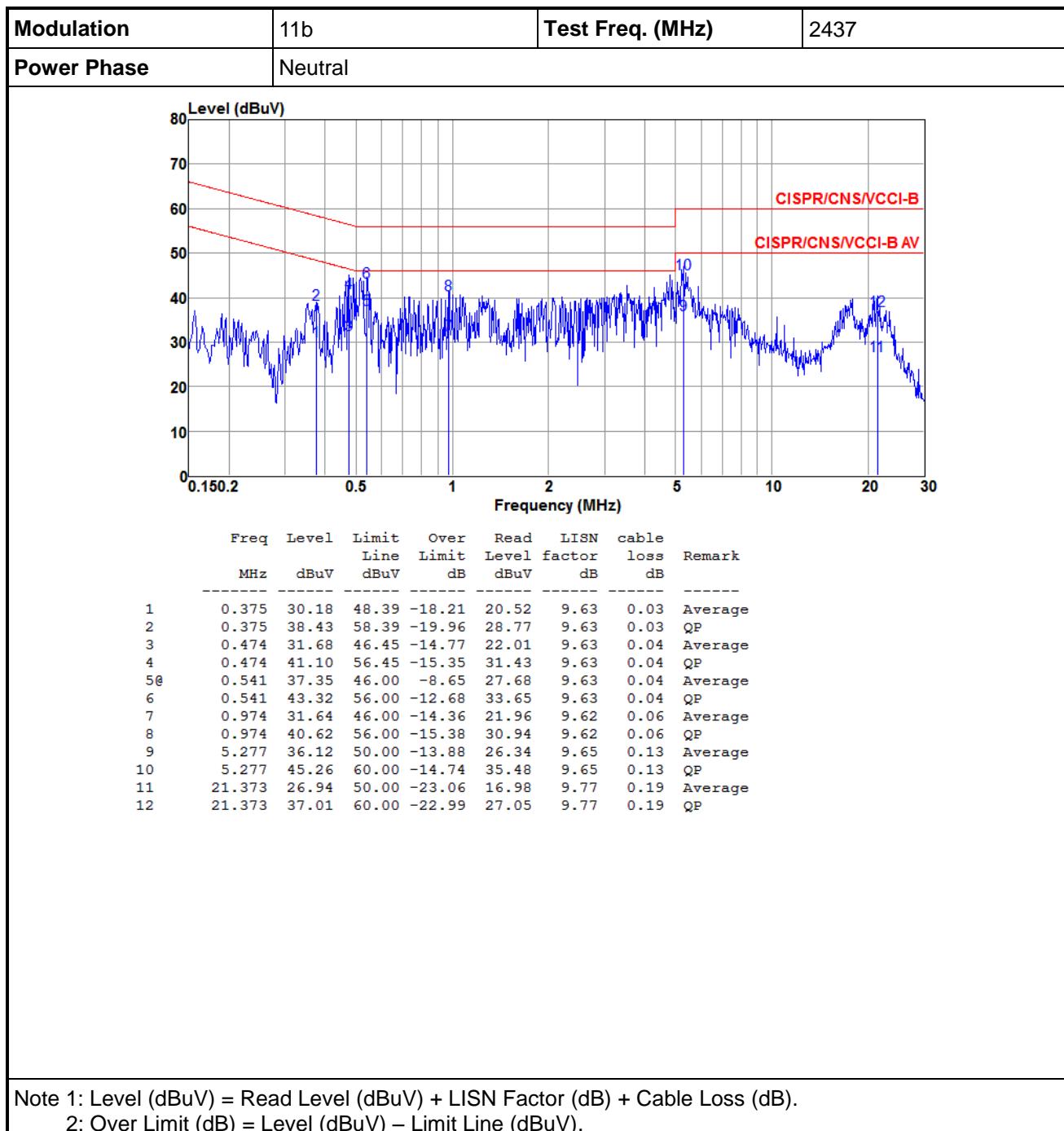
**Beamforming mode for Configuration 1 : Sample 1: VE3**


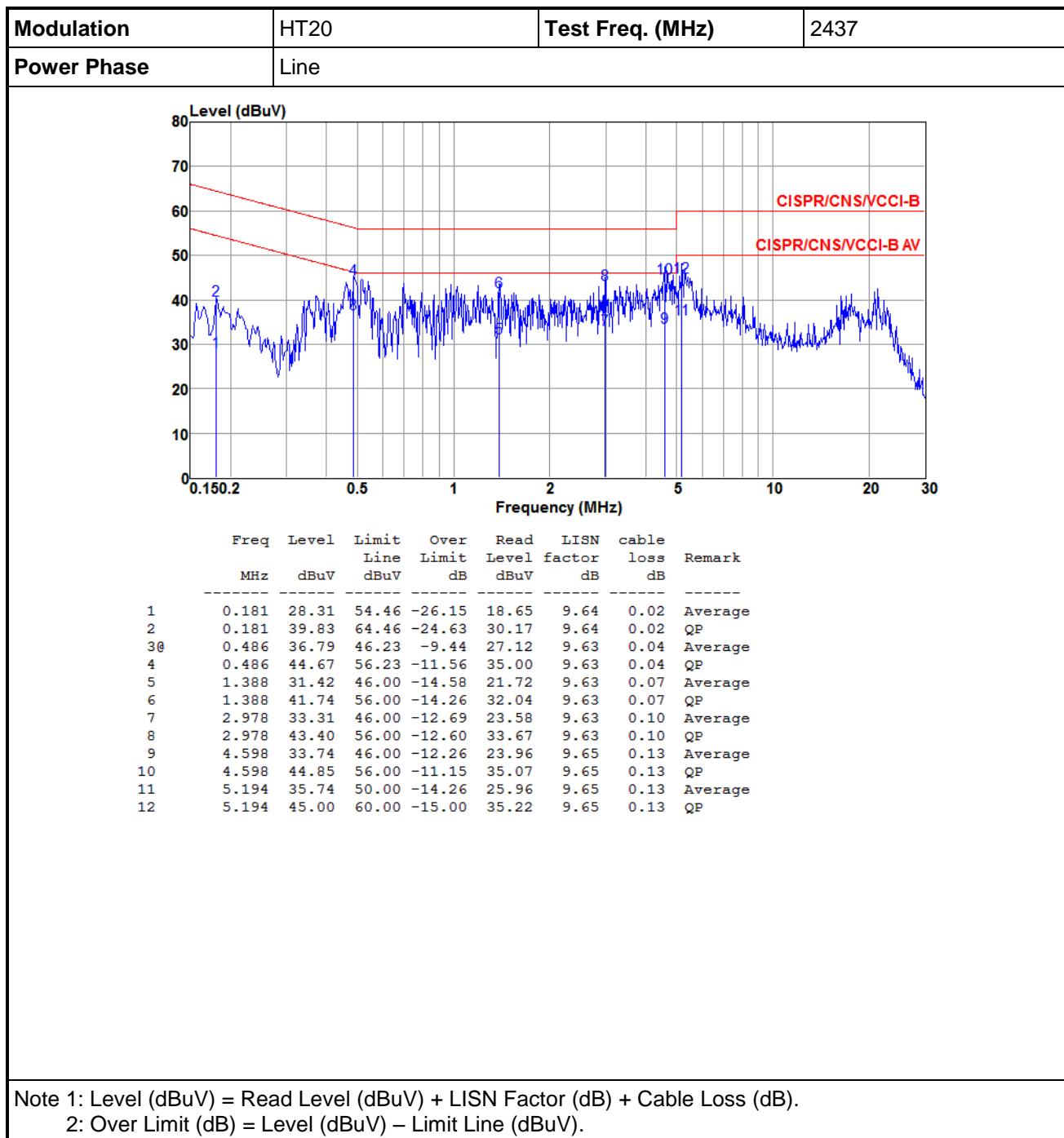


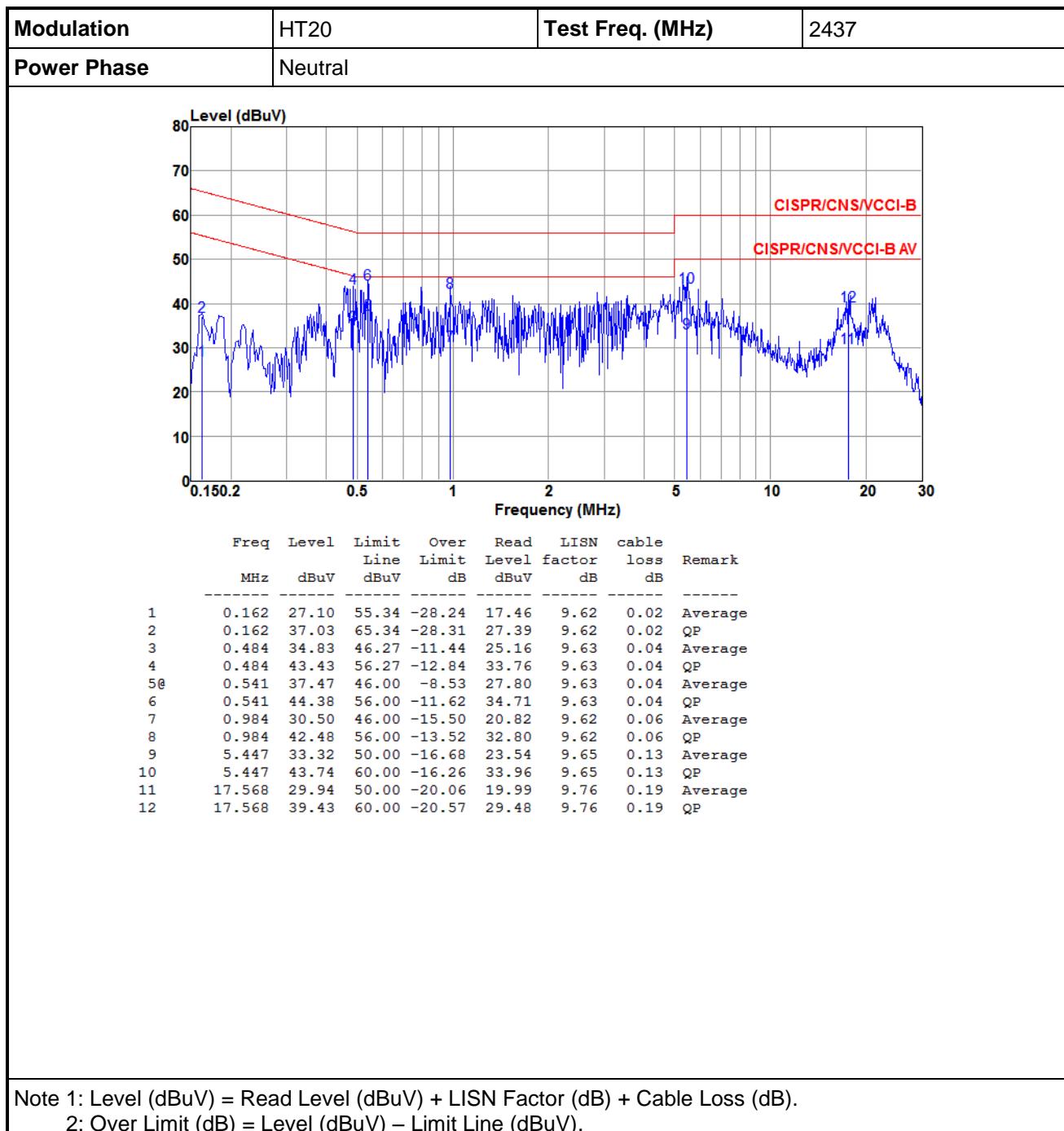
Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).

2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).

**Non-beamforming mode for Configuration 2 : Sample 2: VE4**




**Beamforming mode for Configuration 2 : Sample 2: VE4**




## 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

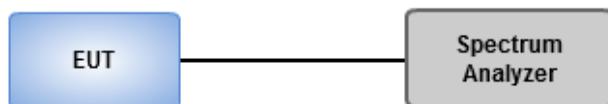
#### 6dB Bandwidth

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.

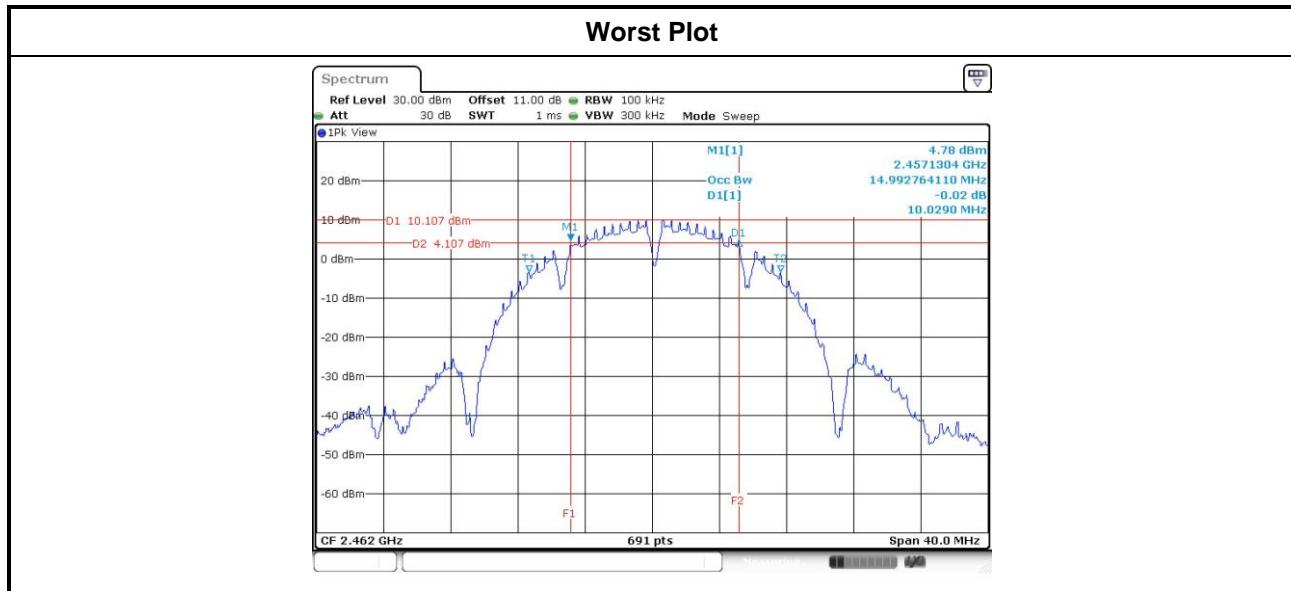
### 3.2.3 Test Setup



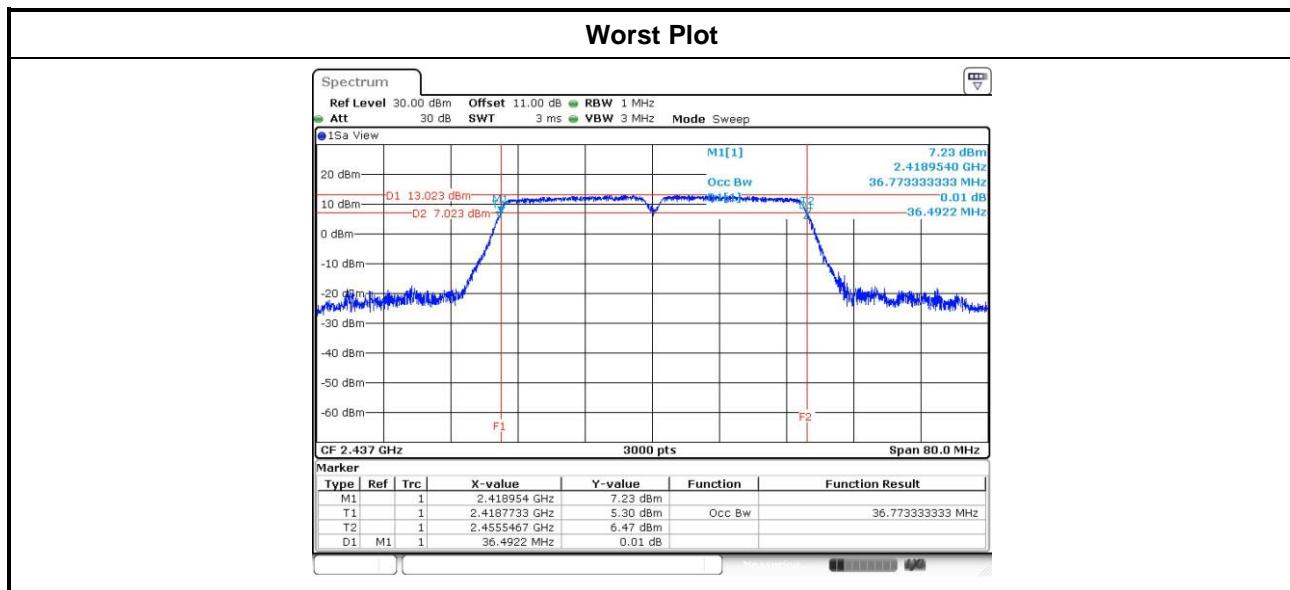
### 3.2.4 Test Result of 6dB and Occupied Bandwidth

#### Non-beamforming mode

Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	6dB Bandwidth (MHz)				Limit (kHz)
			Chain 0	Chain 1	Chain 2	Chain 3	
11b	2	2412	10.09	10.09	---	---	500
11b	2	2437	10.09	10.09	---	---	500
11b	2	2462	10.03	10.03	---	---	500
11g	2	2412	16.58	16.52	---	---	500
11g	2	2437	16.58	16.64	---	---	500
11g	2	2462	16.58	16.58	---	---	500
HT20	2	2412	17.80	17.80	---	---	500
HT20	2	2437	17.80	17.80	---	---	500
HT20	2	2462	17.80	17.86	---	---	500
HT40	2	2422	36.41	36.41	---	---	500
HT40	2	2437	36.41	36.41	---	---	500
HT40	2	2452	36.41	36.41	---	---	500



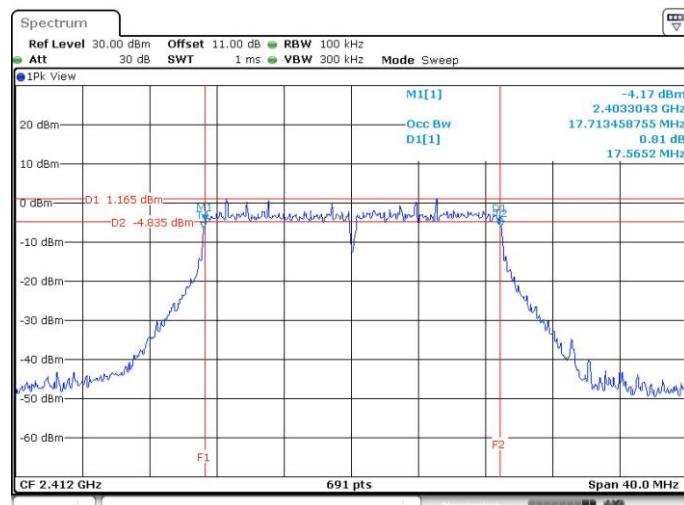
Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	99% Occupied Bandwidth (MHz)			
			Chain 0	Chain 1	Chain 2	Chain 3
11b	2	2412	15.07	15.04	---	---
11b	2	2437	15.07	15.05	---	---
11b	2	2462	15.03	15.04	---	---
11g	2	2412	17.01	16.91	---	---
11g	2	2437	17.05	16.93	---	---
11g	2	2462	16.93	17.05	---	---
HT20	2	2412	18.05	18.05	---	---
HT20	2	2437	18.09	18.09	---	---
HT20	2	2462	18.07	18.08	---	---
HT40	2	2422	36.64	36.67	---	---
HT40	2	2437	36.77	36.69	---	---
HT40	2	2452	36.67	36.69	---	---



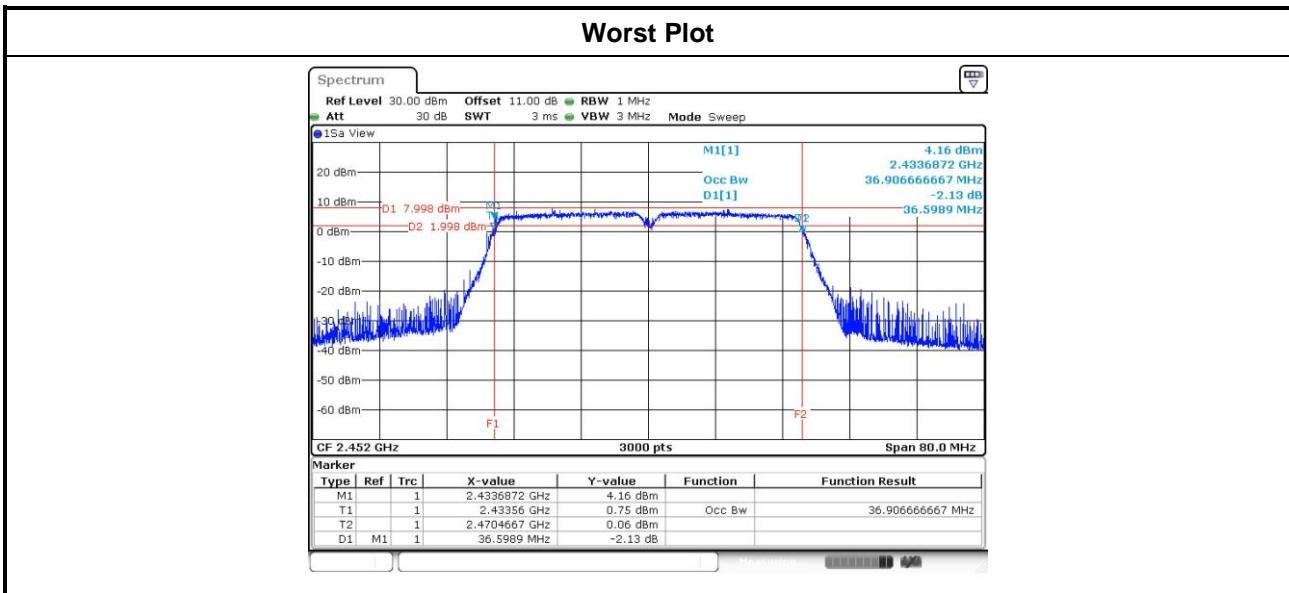
### Beamforming mode

Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	6dB Bandwidth (MHz)				Limit (kHz)
			Chain 0	Chain 1	Chain 2	Chain 3	
HT20	2	2412	17.57	17.57	---	---	500
HT20	2	2437	17.57	17.57	---	---	500
HT20	2	2462	17.62	17.62	---	---	500
HT40	2	2422	35.01	35.01	---	---	500
HT40	2	2437	35.25	36.64	---	---	500
HT40	2	2452	35.25	36.52	---	---	500

### Worst Plot



Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	99% Occupied Bandwidth (MHz)			
			Chain 0	Chain 1	Chain 2	Chain 3
HT20	2	2412	18.01	18.01	---	---
HT20	2	2437	18.11	18.07	---	---
HT20	2	2462	18.05	18.04	---	---
HT40	2	2422	36.85	36.43	---	---
HT40	2	2437	36.61	36.69	---	---
HT40	2	2452	36.91	36.64	---	---



### 3.3 RF Output Power

#### 3.3.1 Limit of RF Output Power

Conducted power shall not exceed 1Watt.

Antenna gain <= 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

**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

#### Non-beamforming mode

Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	Conducted (Average) 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	2	2412	20.38	20.52	---	---	221.864	23.46	30.00	4.71	28.17	36.00
11b	2	2437	20.41	20.79	---	---	229.851	23.61	30.00	4.71	28.32	36.00
11b	2	2462	20.25	20.75	---	---	224.776	23.52	30.00	4.71	28.23	36.00
11g	2	2412	15.24	15.11	---	---	65.853	18.19	30.00	4.71	22.90	36.00
11g	2	2437	19.31	19.02	---	---	165.109	22.18	30.00	4.71	26.89	36.00
11g	2	2462	17.78	17.86	---	---	121.073	20.83	30.00	4.71	25.54	36.00
HT20	2	2412	15.12	15.03	---	---	64.351	18.09	30.00	4.71	22.80	36.00
HT20	2	2437	19.01	19.32	---	---	165.123	22.18	30.00	4.71	26.89	36.00
HT20	2	2462	17.11	17.38	---	---	106.106	20.26	30.00	4.71	24.97	36.00
HT40	2	2422	13.35	13.14	---	---	42.233	16.26	30.00	4.71	20.97	36.00
HT40	2	2437	19.12	18.56	---	---	153.438	21.86	30.00	4.71	26.57	36.00
HT40	2	2452	15.12	14.85	---	---	63.058	18.00	30.00	4.71	22.71	36.00

#### Beamforming mode

Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	Conducted (Average) 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)			
HT20	2	2412	15.12	15.01	---	---	64.204	18.08	29.17	6.83	24.91	36.00
HT20	2	2437	19.28	19.03	---	---	164.706	22.17	29.17	6.83	29.00	36.00
HT20	2	2462	16.14	16.96	---	---	90.774	19.58	29.17	6.83	26.41	36.00
HT40	2	2422	13.16	13.02	---	---	40.746	16.10	29.17	6.83	22.93	36.00
HT40	2	2437	18.16	18.48	---	---	135.933	21.33	29.17	6.83	28.16	36.00
HT40	2	2452	14.68	14.33	---	---	56.478	17.52	29.17	6.83	24.35	36.00

#### Note:

Directional gain =  $10 * \log((10^{4.70836/20} + 10^{2.82/20})^2/2) = 6.83 \text{ dBi} > 6 \text{ dBi}$

Limit shall be reduced to  $30 \text{ dBm} - (6.83 \text{ dBi} - 6 \text{ dBi}) = 29.17 \text{ dBm}$

## 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

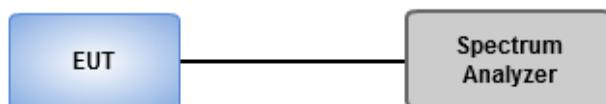
Method AVGPSD-1

1. Set the RBW = 30kHz, VBW = 100kHz.
2. Detector = RMS, Sweep time = auto couple.
3. Employ trace averaging (RMS) mode over a minimum of 100 traces.
4. Use the peak marker function to determine the maximum amplitude level.

Method AVGPSD-2 Alternative

1. Set the RBW = 30kHz, VBW = 100 kHz, Detector = RMS
2. Manually set the sweep time to:  $\geq 10 \times (\text{number of measurement points in sweep}) \times (\text{total on/off period of the transmitted signal})$ .
3. Perform the measurement over a single sweep.
4. Use the peak marker function to determine the maximum amplitude level.
5. Add  $10 \log (1/x)$ , where x is the duty cycle

### 3.4.3 Test Setup



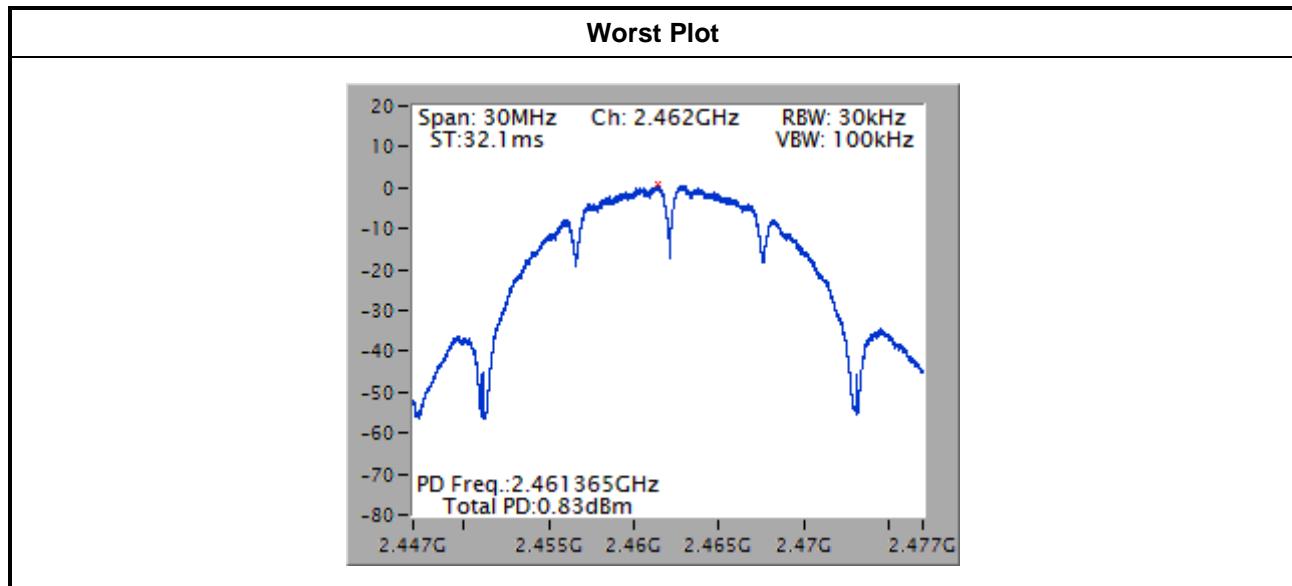
### 3.4.4 Test Result of Power Spectral Density

#### *Non-beamforming mode*

Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	PPSD w/o D.F (dBm/30kHz)	Duty Factor (dB)	PPSD with D.F (dBm/30kHz)	Limit (dBm/3kHz)
11b	2	2412	0.15	0.00	0.15	8.00
11b	2	2437	0.63	0.00	0.63	8.00
11b	2	2462	0.83	0.00	0.83	8.00
11g	2	2412	-7.73	0.00	-7.73	8.00
11g	2	2437	-3.11	0.00	-3.11	8.00
11g	2	2462	-4.40	0.00	-4.40	8.00
HT20	2	2412	-8.18	0.00	-8.18	8.00
HT20	2	2437	-3.58	0.00	-3.58	8.00
HT20	2	2462	-5.27	0.00	-5.27	8.00
HT40	2	2422	-12.62	0.00	-12.62	8.00
HT40	2	2437	-6.99	0.00	-6.99	8.00
HT40	2	2452	-10.85	0.00	-10.85	8.00

Note 1: Test result is bin-by-bin summing measured value of each TX port.

Note 2: D.F is duty factor

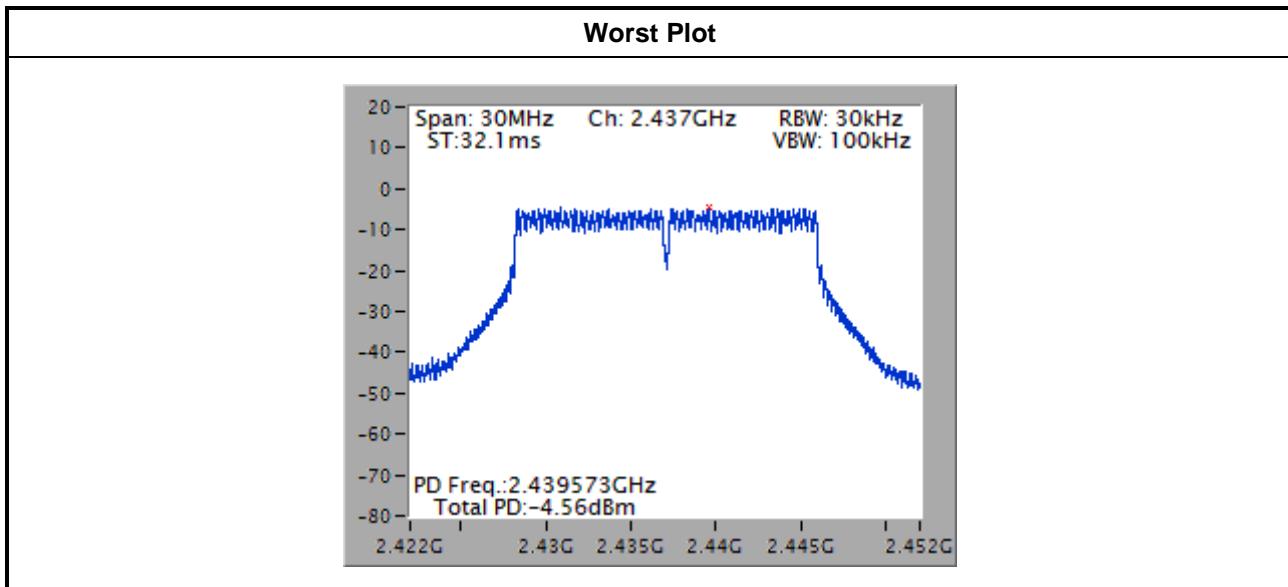


### Beamforming mode

Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	PPSD w/o D.F (dBm/30kHz)	Duty Factor (dB)	PPSD with D.F (dBm/30kHz)	Limit (dBm/3kHz)
HT20	2	2412	-8.12	0.00	-8.12	8.00
HT20	2	2437	-4.56	0.00	-4.56	8.00
HT20	2	2462	-6.99	0.00	-6.99	8.00
HT40	2	2422	-11.98	0.00	-11.98	8.00
HT40	2	2437	-7.88	0.00	-7.88	8.00
HT40	2	2452	-12.13	0.00	-12.13	8.00

Note 1: Test result is bin-by-bin summing measured value of each TX port.

Note 2: D.F is duty factor



## 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

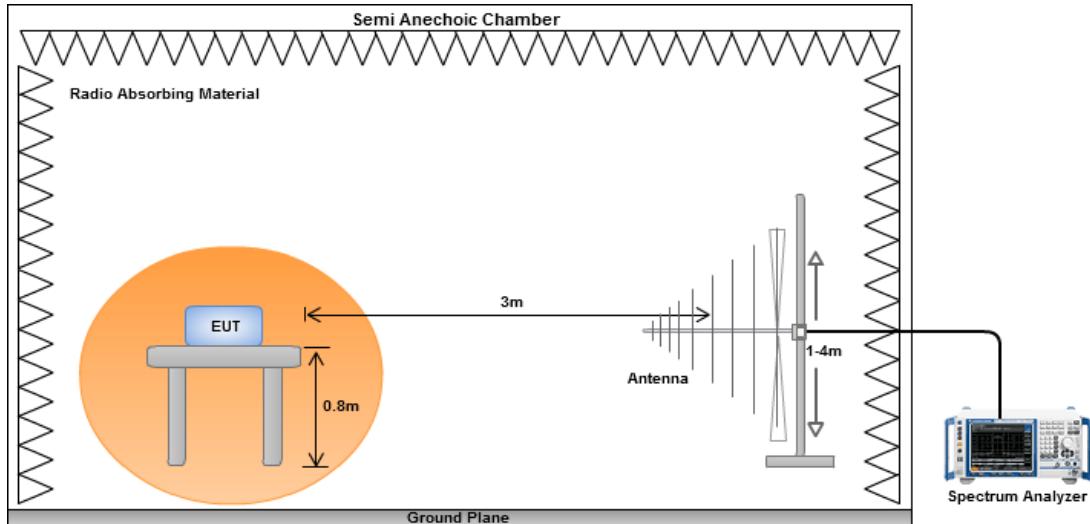
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission 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:

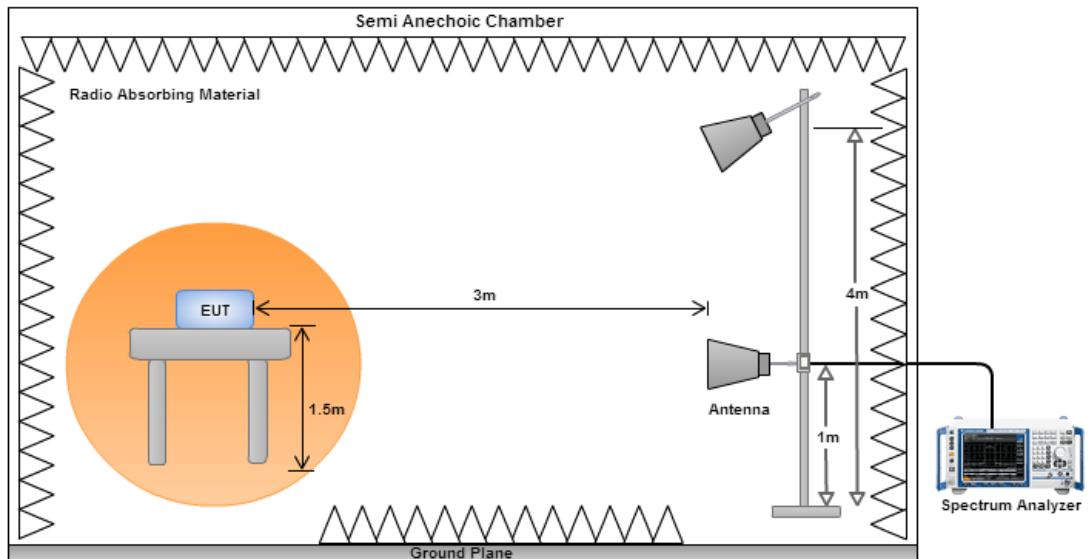
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

### 3.5.3 Test Setup

#### Radiated Emissions below 1 GHz

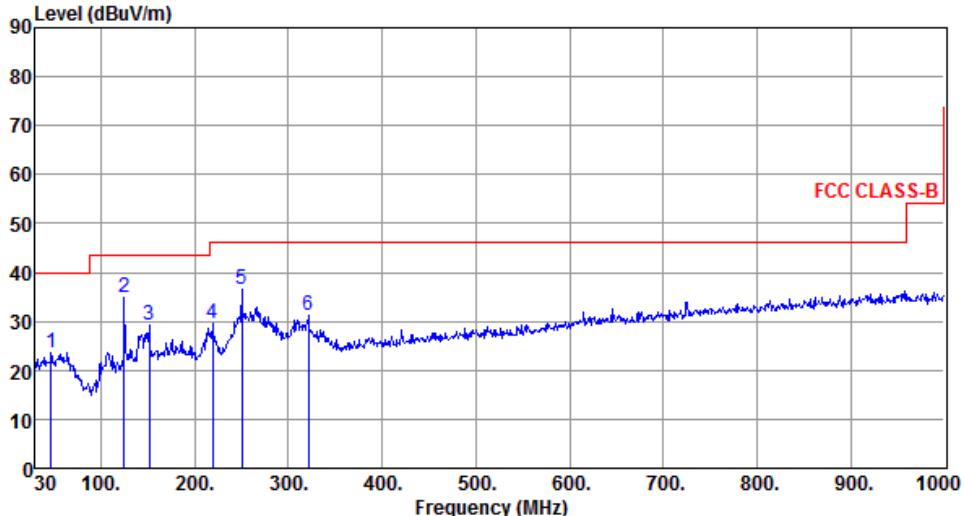


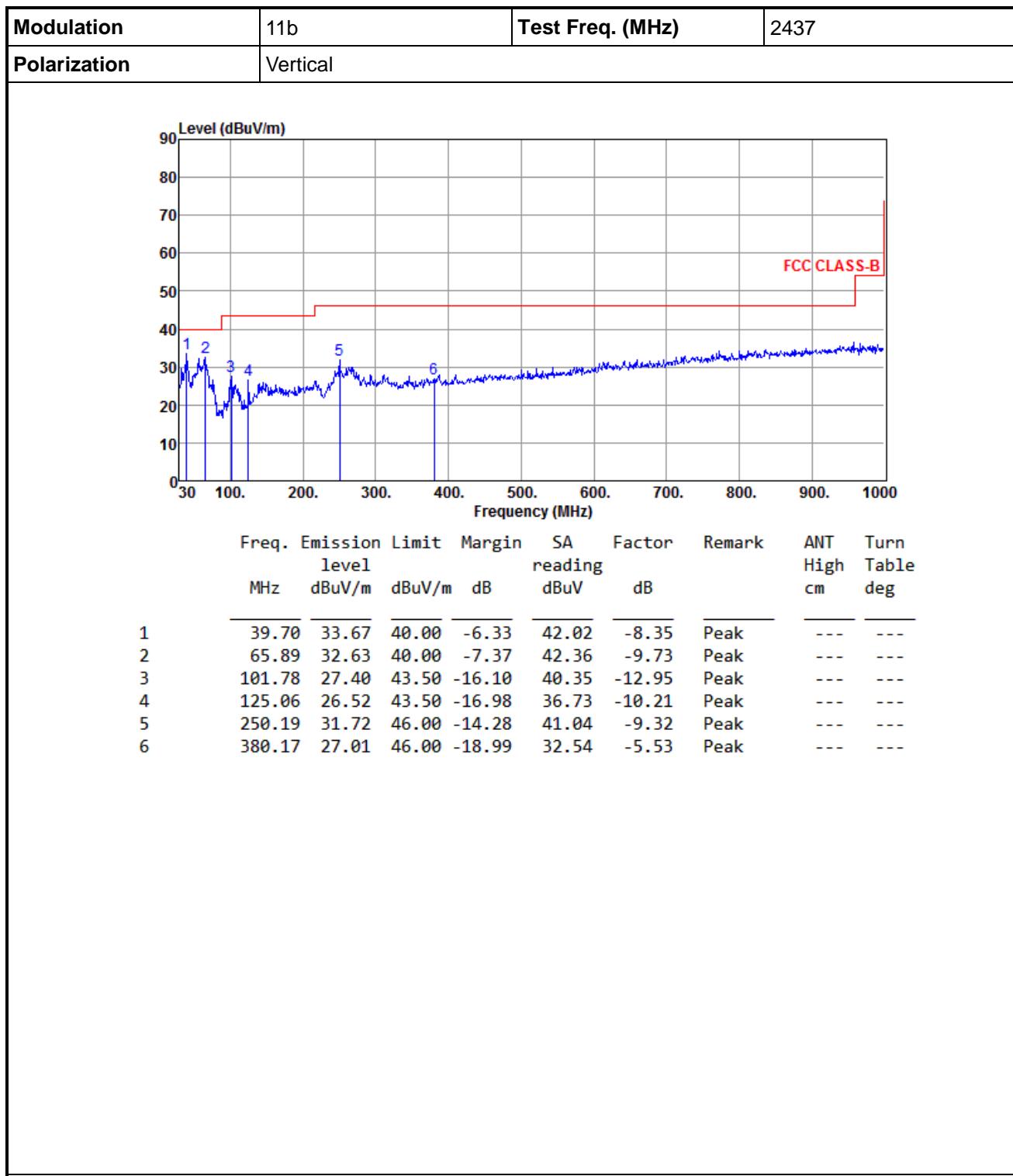
#### Radiated Emissions above 1 GHz



### Non-beamforming mode for Configuration 1 : Sample 1: VE3

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

Modulation	11b	Test Freq. (MHz)	2437																																																																								
Polarization	Horizontal																																																																										
																																																																											
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Freq.</th> <th style="text-align: left;">Emission</th> <th style="text-align: left;">Limit</th> <th style="text-align: left;">Margin</th> <th style="text-align: left;">SA</th> <th style="text-align: left;">Factor</th> <th style="text-align: left;">Remark</th> <th style="text-align: left;">ANT</th> <th style="text-align: left;">Turn</th> </tr> <tr> <th style="text-align: left;">MHz</th> <th style="text-align: left;">level</th> <th style="text-align: left;">dBuV/m</th> <th style="text-align: left;">dB</th> <th style="text-align: left;">reading</th> <th style="text-align: left;">dB</th> <th style="text-align: left;"></th> <th style="text-align: left;">High</th> <th style="text-align: left;">Table</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>46.49</td> <td>23.66</td> <td>40.00</td> <td>-16.34</td> <td>31.54</td> <td>-7.88</td> <td>Peak</td> <td>---</td> </tr> <tr> <td>2</td> <td>125.06</td> <td>35.02</td> <td>43.50</td> <td>-8.48</td> <td>45.23</td> <td>-10.21</td> <td>Peak</td> <td>---</td> </tr> <tr> <td>3</td> <td>151.25</td> <td>29.07</td> <td>43.50</td> <td>-14.43</td> <td>37.19</td> <td>-8.12</td> <td>Peak</td> <td>---</td> </tr> <tr> <td>4</td> <td>219.15</td> <td>29.46</td> <td>46.00</td> <td>-16.54</td> <td>40.24</td> <td>-10.78</td> <td>Peak</td> <td>---</td> </tr> <tr> <td>5</td> <td>250.19</td> <td>36.65</td> <td>46.00</td> <td>-9.35</td> <td>45.97</td> <td>-9.32</td> <td>Peak</td> <td>---</td> </tr> <tr> <td>6</td> <td>321.00</td> <td>31.17</td> <td>46.00</td> <td>-14.83</td> <td>38.33</td> <td>-7.16</td> <td>Peak</td> <td>---</td> </tr> </tbody> </table>				Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn	MHz	level	dBuV/m	dB	reading	dB		High	Table	1	46.49	23.66	40.00	-16.34	31.54	-7.88	Peak	---	2	125.06	35.02	43.50	-8.48	45.23	-10.21	Peak	---	3	151.25	29.07	43.50	-14.43	37.19	-8.12	Peak	---	4	219.15	29.46	46.00	-16.54	40.24	-10.78	Peak	---	5	250.19	36.65	46.00	-9.35	45.97	-9.32	Peak	---	6	321.00	31.17	46.00	-14.83	38.33	-7.16	Peak	---
Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn																																																																			
MHz	level	dBuV/m	dB	reading	dB		High	Table																																																																			
1	46.49	23.66	40.00	-16.34	31.54	-7.88	Peak	---																																																																			
2	125.06	35.02	43.50	-8.48	45.23	-10.21	Peak	---																																																																			
3	151.25	29.07	43.50	-14.43	37.19	-8.12	Peak	---																																																																			
4	219.15	29.46	46.00	-16.54	40.24	-10.78	Peak	---																																																																			
5	250.19	36.65	46.00	-9.35	45.97	-9.32	Peak	---																																																																			
6	321.00	31.17	46.00	-14.83	38.33	-7.16	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.																																																																											



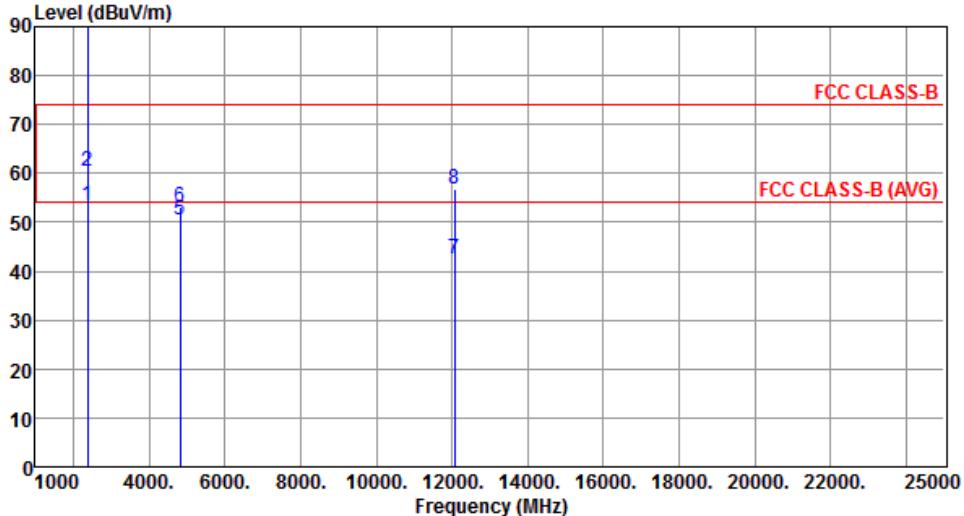
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

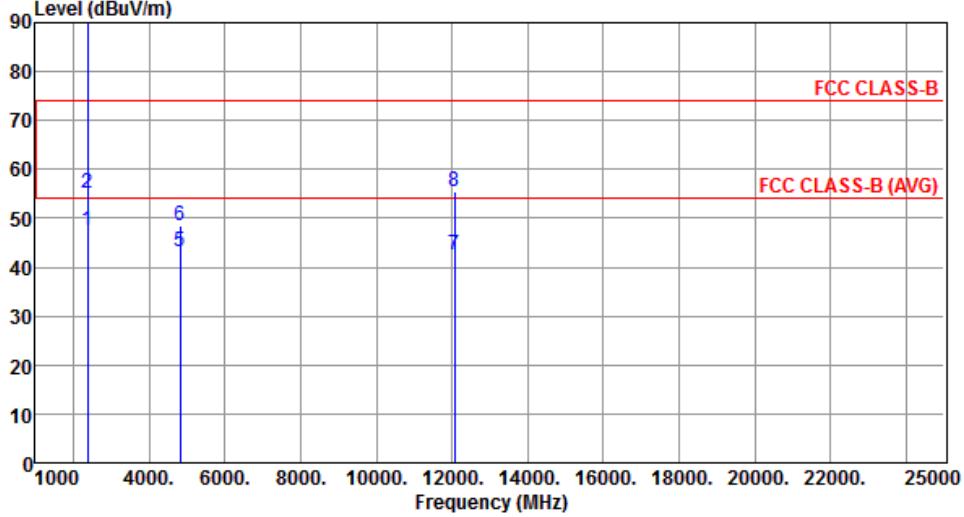
\*Factor includes antenna factor , cable loss and amplifier gain

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																																																																																												
																																																																																													
<table border="1"> <thead> <tr> <th></th> <th>Freq. MHz</th> <th>Emission level dBuV/m</th> <th>Limit dBuV/m</th> <th>Margin dB</th> <th>SA reading dBuV</th> <th>Factor dB</th> <th>Remark</th> <th>ANT High cm</th> <th>Turn Table deg</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2390.00</td> <td>53.62</td> <td>54.00</td> <td>-0.38</td> <td>54.72</td> <td>-1.10</td> <td>Average</td> <td>100</td> <td>20</td> </tr> <tr> <td>2</td> <td>2390.00</td> <td>60.52</td> <td>74.00</td> <td>-13.48</td> <td>61.62</td> <td>-1.10</td> <td>Peak</td> <td>100</td> <td>20</td> </tr> <tr> <td>3 *</td> <td>2412.00</td> <td>107.72</td> <td></td> <td></td> <td>108.71</td> <td>-0.99</td> <td>Average</td> <td>100</td> <td>20</td> </tr> <tr> <td>4 *</td> <td>2412.00</td> <td>110.68</td> <td></td> <td></td> <td>111.67</td> <td>-0.99</td> <td>Peak</td> <td>100</td> <td>20</td> </tr> <tr> <td>5</td> <td>4824.00</td> <td>50.54</td> <td>54.00</td> <td>-3.46</td> <td>45.24</td> <td>5.30</td> <td>Average</td> <td>218</td> <td>349</td> </tr> <tr> <td>6</td> <td>4824.00</td> <td>53.11</td> <td>74.00</td> <td>-20.89</td> <td>47.81</td> <td>5.30</td> <td>Peak</td> <td>218</td> <td>349</td> </tr> <tr> <td>7</td> <td>12060.00</td> <td>42.36</td> <td>54.00</td> <td>-11.64</td> <td>27.33</td> <td>15.03</td> <td>Average</td> <td>100</td> <td>18</td> </tr> <tr> <td>8</td> <td>12060.00</td> <td>56.77</td> <td>74.00</td> <td>-17.23</td> <td>41.74</td> <td>15.03</td> <td>Peak</td> <td>100</td> <td>18</td> </tr> </tbody> </table>					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	53.62	54.00	-0.38	54.72	-1.10	Average	100	20	2	2390.00	60.52	74.00	-13.48	61.62	-1.10	Peak	100	20	3 *	2412.00	107.72			108.71	-0.99	Average	100	20	4 *	2412.00	110.68			111.67	-0.99	Peak	100	20	5	4824.00	50.54	54.00	-3.46	45.24	5.30	Average	218	349	6	4824.00	53.11	74.00	-20.89	47.81	5.30	Peak	218	349	7	12060.00	42.36	54.00	-11.64	27.33	15.03	Average	100	18	8	12060.00	56.77	74.00	-17.23	41.74	15.03	Peak	100	18
	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	53.62	54.00	-0.38	54.72	-1.10	Average	100	20																																																																																				
2	2390.00	60.52	74.00	-13.48	61.62	-1.10	Peak	100	20																																																																																				
3 *	2412.00	107.72			108.71	-0.99	Average	100	20																																																																																				
4 *	2412.00	110.68			111.67	-0.99	Peak	100	20																																																																																				
5	4824.00	50.54	54.00	-3.46	45.24	5.30	Average	218	349																																																																																				
6	4824.00	53.11	74.00	-20.89	47.81	5.30	Peak	218	349																																																																																				
7	12060.00	42.36	54.00	-11.64	27.33	15.03	Average	100	18																																																																																				
8	12060.00	56.77	74.00	-17.23	41.74	15.03	Peak	100	18																																																																																				
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: ** is Peak / Average value of fundamental frequency																																																																																													

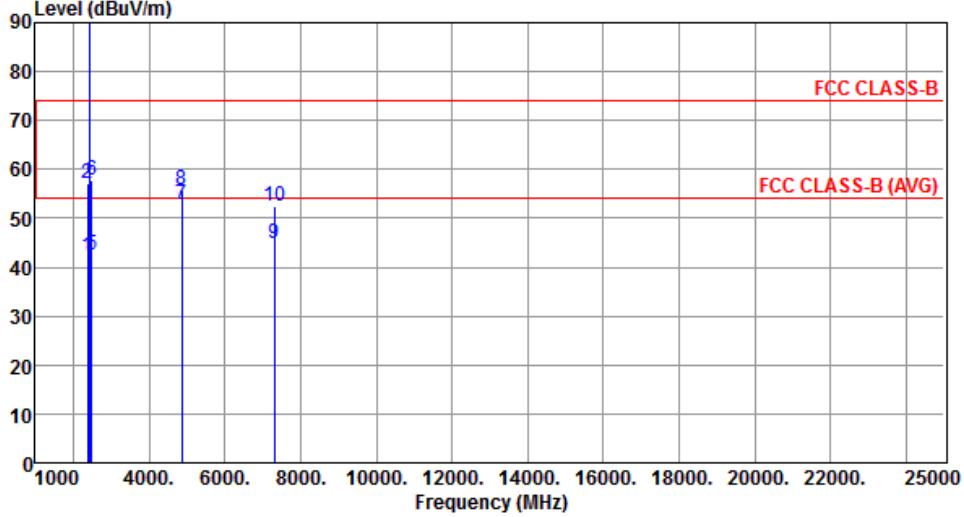
<b>Modulation</b>	11b	<b>Test Freq. (MHz)</b>	2412																																																																																	
<b>Polarization</b>	Vertical																																																																																			
																																																																																				
<table border="1"> <thead> <tr> <th></th> <th>Freq. level MHz</th> <th>Emission Limit dBuV/m</th> <th>Margin dB</th> <th>SA reading dBuV</th> <th>Factor dB</th> <th>Remark</th> <th>ANT High cm</th> <th>Turn Table deg</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2390.00</td> <td>47.45</td> <td>54.00</td> <td>48.55</td> <td>-1.10</td> <td>Average</td> <td>352</td> <td>188</td> </tr> <tr> <td>2</td> <td>2390.00</td> <td>55.12</td> <td>74.00</td> <td>56.22</td> <td>-1.10</td> <td>Peak</td> <td>352</td> <td>188</td> </tr> <tr> <td>3 *</td> <td>2412.00</td> <td>104.65</td> <td></td> <td>105.64</td> <td>-0.99</td> <td>Average</td> <td>352</td> <td>188</td> </tr> <tr> <td>4 *</td> <td>2412.00</td> <td>107.22</td> <td></td> <td>108.21</td> <td>-0.99</td> <td>Peak</td> <td>352</td> <td>188</td> </tr> <tr> <td>5</td> <td>4824.00</td> <td>43.13</td> <td>54.00</td> <td>37.83</td> <td>5.30</td> <td>Average</td> <td>315</td> <td>273</td> </tr> <tr> <td>6</td> <td>4824.00</td> <td>48.54</td> <td>74.00</td> <td>43.24</td> <td>5.30</td> <td>Peak</td> <td>315</td> <td>273</td> </tr> <tr> <td>7</td> <td>12060.00</td> <td>42.61</td> <td>54.00</td> <td>27.58</td> <td>15.03</td> <td>Average</td> <td>100</td> <td>20</td> </tr> <tr> <td>8</td> <td>12060.00</td> <td>55.33</td> <td>74.00</td> <td>40.30</td> <td>15.03</td> <td>Peak</td> <td>100</td> <td>20</td> </tr> </tbody> </table>					Freq. level MHz	Emission Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg	1	2390.00	47.45	54.00	48.55	-1.10	Average	352	188	2	2390.00	55.12	74.00	56.22	-1.10	Peak	352	188	3 *	2412.00	104.65		105.64	-0.99	Average	352	188	4 *	2412.00	107.22		108.21	-0.99	Peak	352	188	5	4824.00	43.13	54.00	37.83	5.30	Average	315	273	6	4824.00	48.54	74.00	43.24	5.30	Peak	315	273	7	12060.00	42.61	54.00	27.58	15.03	Average	100	20	8	12060.00	55.33	74.00	40.30	15.03	Peak	100	20
	Freq. level MHz	Emission Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg																																																																												
1	2390.00	47.45	54.00	48.55	-1.10	Average	352	188																																																																												
2	2390.00	55.12	74.00	56.22	-1.10	Peak	352	188																																																																												
3 *	2412.00	104.65		105.64	-0.99	Average	352	188																																																																												
4 *	2412.00	107.22		108.21	-0.99	Peak	352	188																																																																												
5	4824.00	43.13	54.00	37.83	5.30	Average	315	273																																																																												
6	4824.00	48.54	74.00	43.24	5.30	Peak	315	273																																																																												
7	12060.00	42.61	54.00	27.58	15.03	Average	100	20																																																																												
8	12060.00	55.33	74.00	40.30	15.03	Peak	100	20																																																																												

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: "\*" is Peak / Average value of fundamental frequency

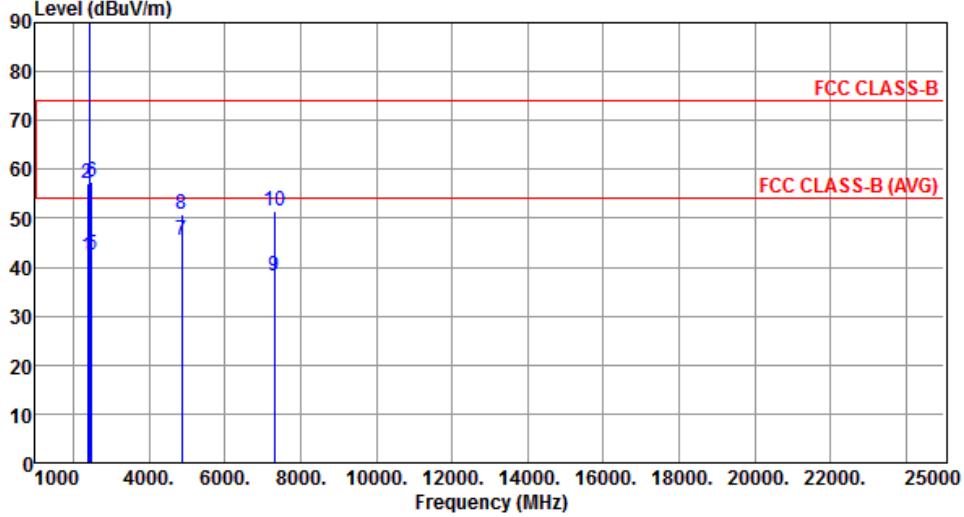
<b>Modulation</b>	11b	<b>Test Freq. (MHz)</b>	2437																																																																																																												
<b>Polarization</b>	Horizontal																																																																																																														
																																																																																																															
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Freq.</th> <th style="text-align: left;">Emission</th> <th style="text-align: left;">Limit</th> <th style="text-align: left;">Margin</th> <th style="text-align: left;">SA</th> <th style="text-align: left;">Factor</th> <th style="text-align: left;">Remark</th> <th style="text-align: left;">ANT</th> <th style="text-align: left;">Turn</th> </tr> <tr> <th style="text-align: left;">MHz</th> <th style="text-align: left;">level</th> <th style="text-align: left;">dBuV/m</th> <th style="text-align: left;">dB</th> <th style="text-align: left;">reading</th> <th style="text-align: left;">dBuV</th> <th style="text-align: left;">dB</th> <th style="text-align: left;">High</th> <th style="text-align: left;">Table</th> </tr> </thead> <tbody> <tr> <td>1</td><td>2390.00</td><td>42.23</td><td>54.00</td><td>-11.77</td><td>43.33</td><td>-1.10</td><td>Average</td><td>346</td> </tr> <tr> <td>2</td><td>2390.00</td><td>57.26</td><td>74.00</td><td>-16.74</td><td>58.36</td><td>-1.10</td><td>Peak</td><td>346</td> </tr> <tr> <td>3 *</td><td>2437.00</td><td>107.67</td><td></td><td></td><td>108.53</td><td>-0.86</td><td>Average</td><td>346</td> </tr> <tr> <td>4 *</td><td>2437.00</td><td>110.80</td><td></td><td></td><td>111.66</td><td>-0.86</td><td>Peak</td><td>346</td> </tr> <tr> <td>5</td><td>2483.50</td><td>42.61</td><td>54.00</td><td>-11.39</td><td>43.22</td><td>-0.61</td><td>Average</td><td>346</td> </tr> <tr> <td>6</td><td>2483.50</td><td>57.91</td><td>74.00</td><td>-16.09</td><td>58.52</td><td>-0.61</td><td>Peak</td><td>346</td> </tr> <tr> <td>7</td><td>4874.00</td><td>52.68</td><td>54.00</td><td>-1.32</td><td>47.26</td><td>5.42</td><td>Average</td><td>222</td> </tr> <tr> <td>8</td><td>4874.00</td><td>55.65</td><td>74.00</td><td>-18.35</td><td>50.23</td><td>5.42</td><td>Peak</td><td>222</td> </tr> <tr> <td>9</td><td>7311.00</td><td>44.80</td><td>54.00</td><td>-9.20</td><td>34.54</td><td>10.26</td><td>Average</td><td>387</td> </tr> <tr> <td>10</td><td>7311.00</td><td>52.64</td><td>74.00</td><td>-21.36</td><td>42.38</td><td>10.26</td><td>Peak</td><td>387</td> </tr> </tbody> </table>				Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn	MHz	level	dBuV/m	dB	reading	dBuV	dB	High	Table	1	2390.00	42.23	54.00	-11.77	43.33	-1.10	Average	346	2	2390.00	57.26	74.00	-16.74	58.36	-1.10	Peak	346	3 *	2437.00	107.67			108.53	-0.86	Average	346	4 *	2437.00	110.80			111.66	-0.86	Peak	346	5	2483.50	42.61	54.00	-11.39	43.22	-0.61	Average	346	6	2483.50	57.91	74.00	-16.09	58.52	-0.61	Peak	346	7	4874.00	52.68	54.00	-1.32	47.26	5.42	Average	222	8	4874.00	55.65	74.00	-18.35	50.23	5.42	Peak	222	9	7311.00	44.80	54.00	-9.20	34.54	10.26	Average	387	10	7311.00	52.64	74.00	-21.36	42.38	10.26	Peak	387
Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn																																																																																																							
MHz	level	dBuV/m	dB	reading	dBuV	dB	High	Table																																																																																																							
1	2390.00	42.23	54.00	-11.77	43.33	-1.10	Average	346																																																																																																							
2	2390.00	57.26	74.00	-16.74	58.36	-1.10	Peak	346																																																																																																							
3 *	2437.00	107.67			108.53	-0.86	Average	346																																																																																																							
4 *	2437.00	110.80			111.66	-0.86	Peak	346																																																																																																							
5	2483.50	42.61	54.00	-11.39	43.22	-0.61	Average	346																																																																																																							
6	2483.50	57.91	74.00	-16.09	58.52	-0.61	Peak	346																																																																																																							
7	4874.00	52.68	54.00	-1.32	47.26	5.42	Average	222																																																																																																							
8	4874.00	55.65	74.00	-18.35	50.23	5.42	Peak	222																																																																																																							
9	7311.00	44.80	54.00	-9.20	34.54	10.26	Average	387																																																																																																							
10	7311.00	52.64	74.00	-21.36	42.38	10.26	Peak	387																																																																																																							

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: "\*" is Peak / Average value of fundamental frequency

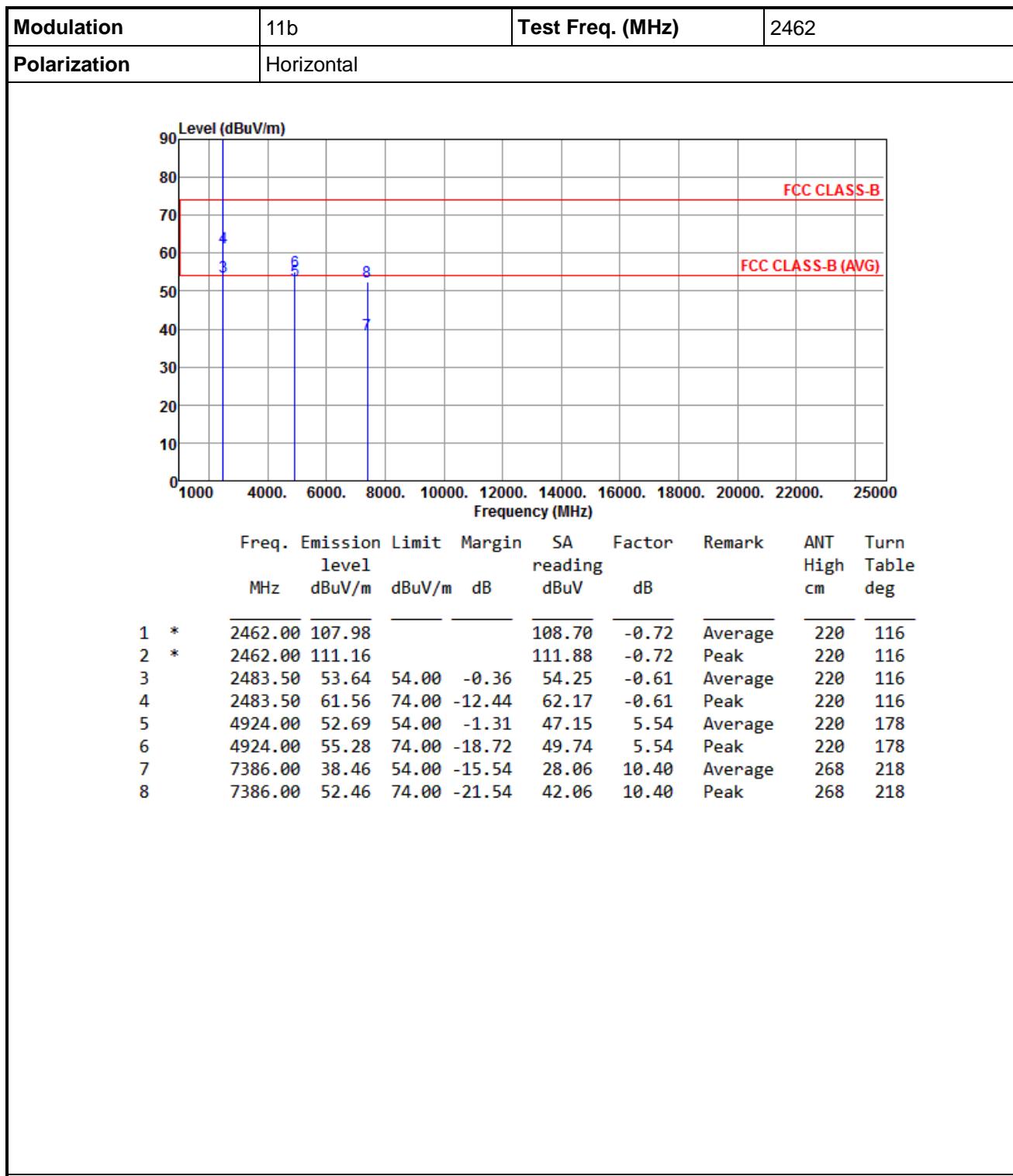
<b>Modulation</b>	11b	<b>Test Freq. (MHz)</b>	2437																																																																																																																						
<b>Polarization</b>	Vertical																																																																																																																								
																																																																																																																									
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Freq.</th> <th style="text-align: left;">Emission</th> <th style="text-align: left;">Limit</th> <th style="text-align: left;">Margin</th> <th style="text-align: left;">SA</th> <th style="text-align: left;">Factor</th> <th style="text-align: left;">Remark</th> <th style="text-align: left;">ANT</th> <th style="text-align: left;">Turn</th> </tr> <tr> <th style="text-align: left;">MHz</th> <th style="text-align: left;">level</th> <th style="text-align: left;">dBuV/m</th> <th style="text-align: left;">dB</th> <th style="text-align: left;">reading</th> <th style="text-align: left;">dBuV</th> <th style="text-align: left;">deg</th> <th style="text-align: left;">High</th> <th style="text-align: left;">Table</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2390.00</td> <td>42.19</td> <td>54.00</td> <td>-11.81</td> <td>43.29</td> <td>-1.10</td> <td>Average</td> <td>345</td> <td>134</td> </tr> <tr> <td>2</td> <td>2390.00</td> <td>57.17</td> <td>74.00</td> <td>-16.83</td> <td>58.27</td> <td>-1.10</td> <td>Peak</td> <td>345</td> <td>134</td> </tr> <tr> <td>3 *</td> <td>2437.00</td> <td>105.06</td> <td></td> <td></td> <td>105.92</td> <td>-0.86</td> <td>Average</td> <td>345</td> <td>134</td> </tr> <tr> <td>4 *</td> <td>2437.00</td> <td>107.45</td> <td></td> <td></td> <td>108.31</td> <td>-0.86</td> <td>Peak</td> <td>345</td> <td>134</td> </tr> <tr> <td>5</td> <td>2483.50</td> <td>42.53</td> <td>54.00</td> <td>-11.47</td> <td>43.14</td> <td>-0.61</td> <td>Average</td> <td>345</td> <td>134</td> </tr> <tr> <td>6</td> <td>2483.50</td> <td>57.55</td> <td>74.00</td> <td>-16.45</td> <td>58.16</td> <td>-0.61</td> <td>Peak</td> <td>345</td> <td>134</td> </tr> <tr> <td>7</td> <td>4874.00</td> <td>45.42</td> <td>54.00</td> <td>-8.58</td> <td>40.00</td> <td>5.42</td> <td>Average</td> <td>250</td> <td>115</td> </tr> <tr> <td>8</td> <td>4874.00</td> <td>50.68</td> <td>74.00</td> <td>-23.32</td> <td>45.26</td> <td>5.42</td> <td>Peak</td> <td>250</td> <td>115</td> </tr> <tr> <td>9</td> <td>7311.00</td> <td>38.29</td> <td>54.00</td> <td>-15.71</td> <td>28.03</td> <td>10.26</td> <td>Average</td> <td>236</td> <td>221</td> </tr> <tr> <td>10</td> <td>7311.00</td> <td>51.52</td> <td>74.00</td> <td>-22.48</td> <td>41.26</td> <td>10.26</td> <td>Peak</td> <td>236</td> <td>221</td> </tr> </tbody> </table>				Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn	MHz	level	dBuV/m	dB	reading	dBuV	deg	High	Table	1	2390.00	42.19	54.00	-11.81	43.29	-1.10	Average	345	134	2	2390.00	57.17	74.00	-16.83	58.27	-1.10	Peak	345	134	3 *	2437.00	105.06			105.92	-0.86	Average	345	134	4 *	2437.00	107.45			108.31	-0.86	Peak	345	134	5	2483.50	42.53	54.00	-11.47	43.14	-0.61	Average	345	134	6	2483.50	57.55	74.00	-16.45	58.16	-0.61	Peak	345	134	7	4874.00	45.42	54.00	-8.58	40.00	5.42	Average	250	115	8	4874.00	50.68	74.00	-23.32	45.26	5.42	Peak	250	115	9	7311.00	38.29	54.00	-15.71	28.03	10.26	Average	236	221	10	7311.00	51.52	74.00	-22.48	41.26	10.26	Peak	236	221
Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn																																																																																																																	
MHz	level	dBuV/m	dB	reading	dBuV	deg	High	Table																																																																																																																	
1	2390.00	42.19	54.00	-11.81	43.29	-1.10	Average	345	134																																																																																																																
2	2390.00	57.17	74.00	-16.83	58.27	-1.10	Peak	345	134																																																																																																																
3 *	2437.00	105.06			105.92	-0.86	Average	345	134																																																																																																																
4 *	2437.00	107.45			108.31	-0.86	Peak	345	134																																																																																																																
5	2483.50	42.53	54.00	-11.47	43.14	-0.61	Average	345	134																																																																																																																
6	2483.50	57.55	74.00	-16.45	58.16	-0.61	Peak	345	134																																																																																																																
7	4874.00	45.42	54.00	-8.58	40.00	5.42	Average	250	115																																																																																																																
8	4874.00	50.68	74.00	-23.32	45.26	5.42	Peak	250	115																																																																																																																
9	7311.00	38.29	54.00	-15.71	28.03	10.26	Average	236	221																																																																																																																
10	7311.00	51.52	74.00	-22.48	41.26	10.26	Peak	236	221																																																																																																																

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: "\*" is Peak / Average value of fundamental frequency

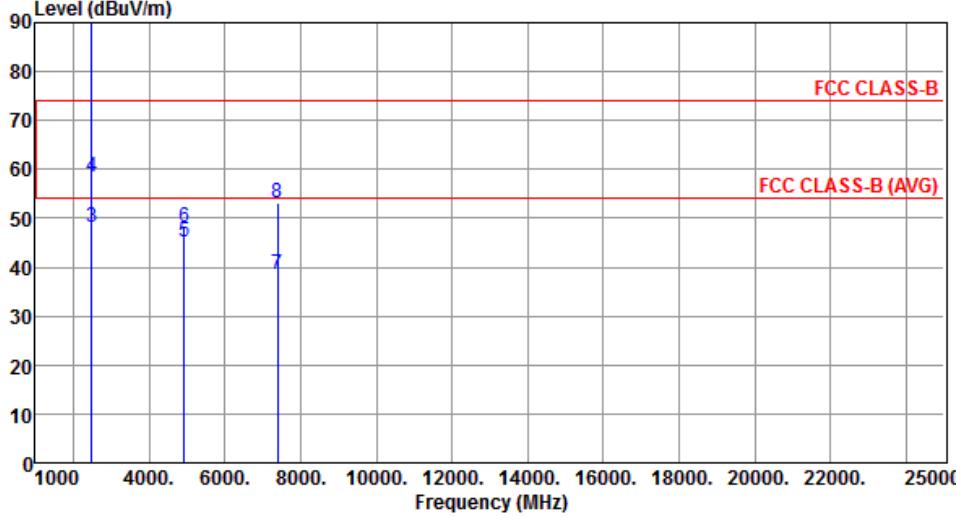


Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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

Note 3: "\*" is Peak / Average value of fundamental frequency

<b>Modulation</b>	11b	<b>Test Freq. (MHz)</b>	2462																																																																																										
<b>Polarization</b>	Vertical																																																																																												
																																																																																													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Freq.</th> <th style="text-align: left;">Emission</th> <th style="text-align: left;">Limit</th> <th style="text-align: left;">Margin</th> <th style="text-align: left;">SA</th> <th style="text-align: left;">Factor</th> <th style="text-align: left;">Remark</th> <th style="text-align: left;">ANT</th> <th style="text-align: left;">Turn</th> </tr> <tr> <th style="text-align: left;">MHz</th> <th style="text-align: left;">level</th> <th style="text-align: left;">dBuV/m</th> <th style="text-align: left;">dB</th> <th style="text-align: left;">reading</th> <th style="text-align: left;">dBuV</th> <th style="text-align: left;">deg</th> <th style="text-align: left;">High</th> <th style="text-align: left;">Table</th> </tr> </thead> <tbody> <tr> <td>1 *</td> <td>2462.00</td> <td>105.26</td> <td></td> <td>105.98</td> <td>-0.72</td> <td>Average</td> <td>385</td> <td>98</td> </tr> <tr> <td>2 *</td> <td>2462.00</td> <td>107.62</td> <td></td> <td>108.34</td> <td>-0.72</td> <td>Peak</td> <td>385</td> <td>98</td> </tr> <tr> <td>3</td> <td>2483.50</td> <td>48.26</td> <td>54.00 -5.74</td> <td>48.87</td> <td>-0.61</td> <td>Average</td> <td>385</td> <td>98</td> </tr> <tr> <td>4</td> <td>2483.50</td> <td>58.41</td> <td>74.00 -15.59</td> <td>59.02</td> <td>-0.61</td> <td>Peak</td> <td>385</td> <td>98</td> </tr> <tr> <td>5</td> <td>4924.00</td> <td>45.26</td> <td>54.00 -8.74</td> <td>39.72</td> <td>5.54</td> <td>Average</td> <td>205</td> <td>224</td> </tr> <tr> <td>6</td> <td>4924.00</td> <td>48.29</td> <td>74.00 -25.71</td> <td>42.75</td> <td>5.54</td> <td>Peak</td> <td>205</td> <td>224</td> </tr> <tr> <td>7</td> <td>7386.00</td> <td>38.45</td> <td>54.00 -15.55</td> <td>28.05</td> <td>10.40</td> <td>Average</td> <td>264</td> <td>177</td> </tr> <tr> <td>8</td> <td>7386.00</td> <td>53.00</td> <td>74.00 -21.00</td> <td>42.60</td> <td>10.40</td> <td>Peak</td> <td>264</td> <td>177</td> </tr> </tbody> </table>				Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn	MHz	level	dBuV/m	dB	reading	dBuV	deg	High	Table	1 *	2462.00	105.26		105.98	-0.72	Average	385	98	2 *	2462.00	107.62		108.34	-0.72	Peak	385	98	3	2483.50	48.26	54.00 -5.74	48.87	-0.61	Average	385	98	4	2483.50	58.41	74.00 -15.59	59.02	-0.61	Peak	385	98	5	4924.00	45.26	54.00 -8.74	39.72	5.54	Average	205	224	6	4924.00	48.29	74.00 -25.71	42.75	5.54	Peak	205	224	7	7386.00	38.45	54.00 -15.55	28.05	10.40	Average	264	177	8	7386.00	53.00	74.00 -21.00	42.60	10.40	Peak	264	177
Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn																																																																																					
MHz	level	dBuV/m	dB	reading	dBuV	deg	High	Table																																																																																					
1 *	2462.00	105.26		105.98	-0.72	Average	385	98																																																																																					
2 *	2462.00	107.62		108.34	-0.72	Peak	385	98																																																																																					
3	2483.50	48.26	54.00 -5.74	48.87	-0.61	Average	385	98																																																																																					
4	2483.50	58.41	74.00 -15.59	59.02	-0.61	Peak	385	98																																																																																					
5	4924.00	45.26	54.00 -8.74	39.72	5.54	Average	205	224																																																																																					
6	4924.00	48.29	74.00 -25.71	42.75	5.54	Peak	205	224																																																																																					
7	7386.00	38.45	54.00 -15.55	28.05	10.40	Average	264	177																																																																																					
8	7386.00	53.00	74.00 -21.00	42.60	10.40	Peak	264	177																																																																																					

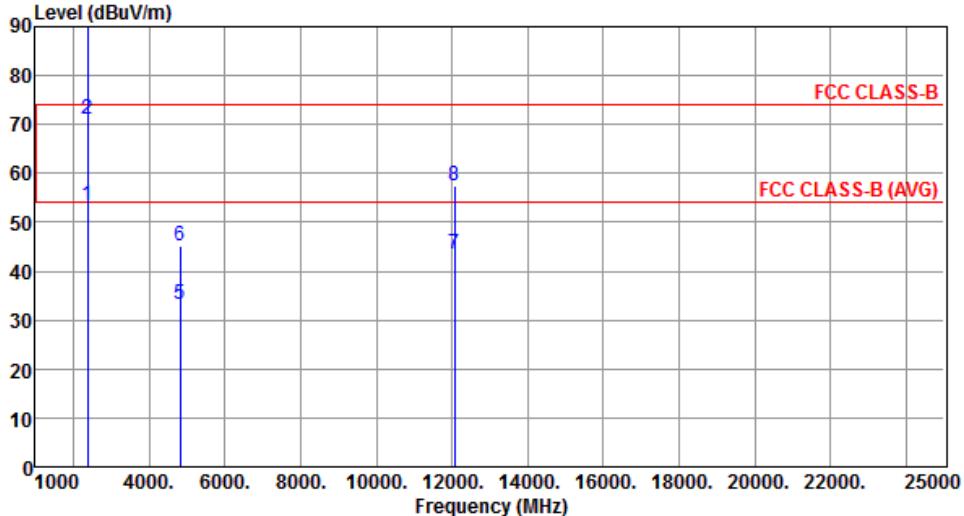
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

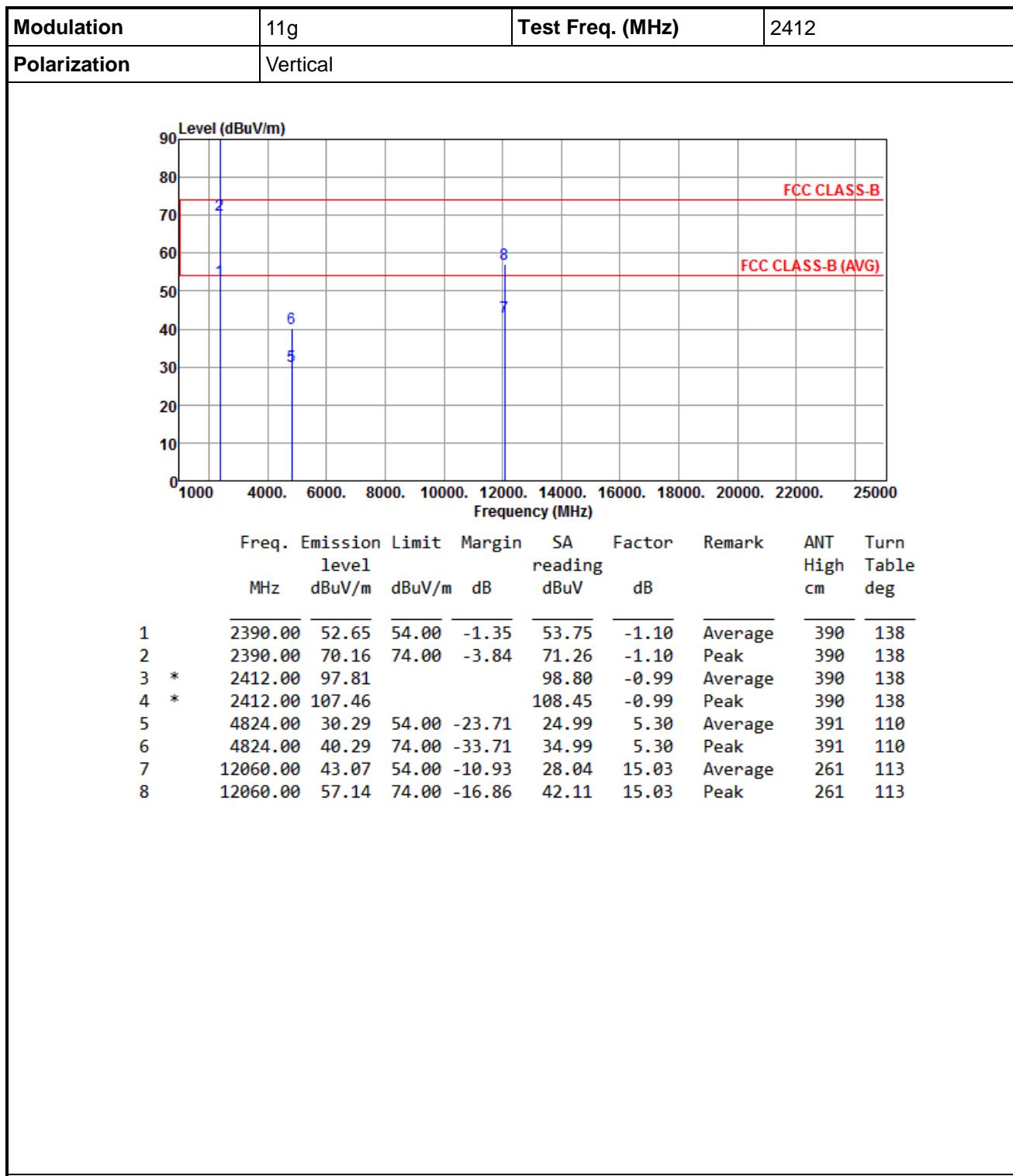
\*Factor includes antenna factor , cable loss and amplifier gain

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

Note 3: "\*" is Peak / Average value of fundamental frequency

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

Modulation	11g	Test Freq. (MHz)	2412																																																																																										
Polarization	Horizontal																																																																																												
																																																																																													
<table border="1"> <thead> <tr> <th></th> <th>Freq. MHz</th> <th>Emission level dBuV/m</th> <th>Limit dBuV/m</th> <th>Margin dB</th> <th>SA reading dBuV</th> <th>Factor dB</th> <th>Remark</th> <th>ANT High cm</th> <th>Turn Table deg</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2390.00</td> <td>53.55</td> <td>54.00</td> <td>-0.45</td> <td>54.65</td> <td>-1.10</td> <td>Average</td> <td>263</td> <td>281</td> </tr> <tr> <td>2</td> <td>2390.00</td> <td>70.95</td> <td>74.00</td> <td>-3.05</td> <td>72.05</td> <td>-1.10</td> <td>Peak</td> <td>263</td> <td>281</td> </tr> <tr> <td>3 *</td> <td>2412.00</td> <td>99.52</td> <td></td> <td></td> <td>100.51</td> <td>-0.99</td> <td>Average</td> <td>263</td> <td>281</td> </tr> <tr> <td>4 *</td> <td>2412.00</td> <td>109.08</td> <td></td> <td></td> <td>110.07</td> <td>-0.99</td> <td>Peak</td> <td>263</td> <td>281</td> </tr> <tr> <td>5</td> <td>4824.00</td> <td>33.15</td> <td>54.00</td> <td>-20.85</td> <td>27.85</td> <td>5.30</td> <td>Average</td> <td>385</td> <td>56</td> </tr> <tr> <td>6</td> <td>4824.00</td> <td>45.11</td> <td>74.00</td> <td>-28.89</td> <td>39.81</td> <td>5.30</td> <td>Peak</td> <td>385</td> <td>56</td> </tr> <tr> <td>7</td> <td>12060.00</td> <td>43.46</td> <td>54.00</td> <td>-10.54</td> <td>28.43</td> <td>15.03</td> <td>Average</td> <td>267</td> <td>157</td> </tr> <tr> <td>8</td> <td>12060.00</td> <td>57.30</td> <td>74.00</td> <td>-16.70</td> <td>42.27</td> <td>15.03</td> <td>Peak</td> <td>267</td> <td>157</td> </tr> </tbody> </table>					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	53.55	54.00	-0.45	54.65	-1.10	Average	263	281	2	2390.00	70.95	74.00	-3.05	72.05	-1.10	Peak	263	281	3 *	2412.00	99.52			100.51	-0.99	Average	263	281	4 *	2412.00	109.08			110.07	-0.99	Peak	263	281	5	4824.00	33.15	54.00	-20.85	27.85	5.30	Average	385	56	6	4824.00	45.11	74.00	-28.89	39.81	5.30	Peak	385	56	7	12060.00	43.46	54.00	-10.54	28.43	15.03	Average	267	157	8	12060.00	57.30	74.00	-16.70	42.27	15.03	Peak	267	157
	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	53.55	54.00	-0.45	54.65	-1.10	Average	263	281																																																																																				
2	2390.00	70.95	74.00	-3.05	72.05	-1.10	Peak	263	281																																																																																				
3 *	2412.00	99.52			100.51	-0.99	Average	263	281																																																																																				
4 *	2412.00	109.08			110.07	-0.99	Peak	263	281																																																																																				
5	4824.00	33.15	54.00	-20.85	27.85	5.30	Average	385	56																																																																																				
6	4824.00	45.11	74.00	-28.89	39.81	5.30	Peak	385	56																																																																																				
7	12060.00	43.46	54.00	-10.54	28.43	15.03	Average	267	157																																																																																				
8	12060.00	57.30	74.00	-16.70	42.27	15.03	Peak	267	157																																																																																				
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)</p> <p>*Factor includes antenna factor, cable loss and amplifier gain</p> <p>Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p> <p>Note 3: ** is Peak / Average value of fundamental frequency</p>																																																																																													

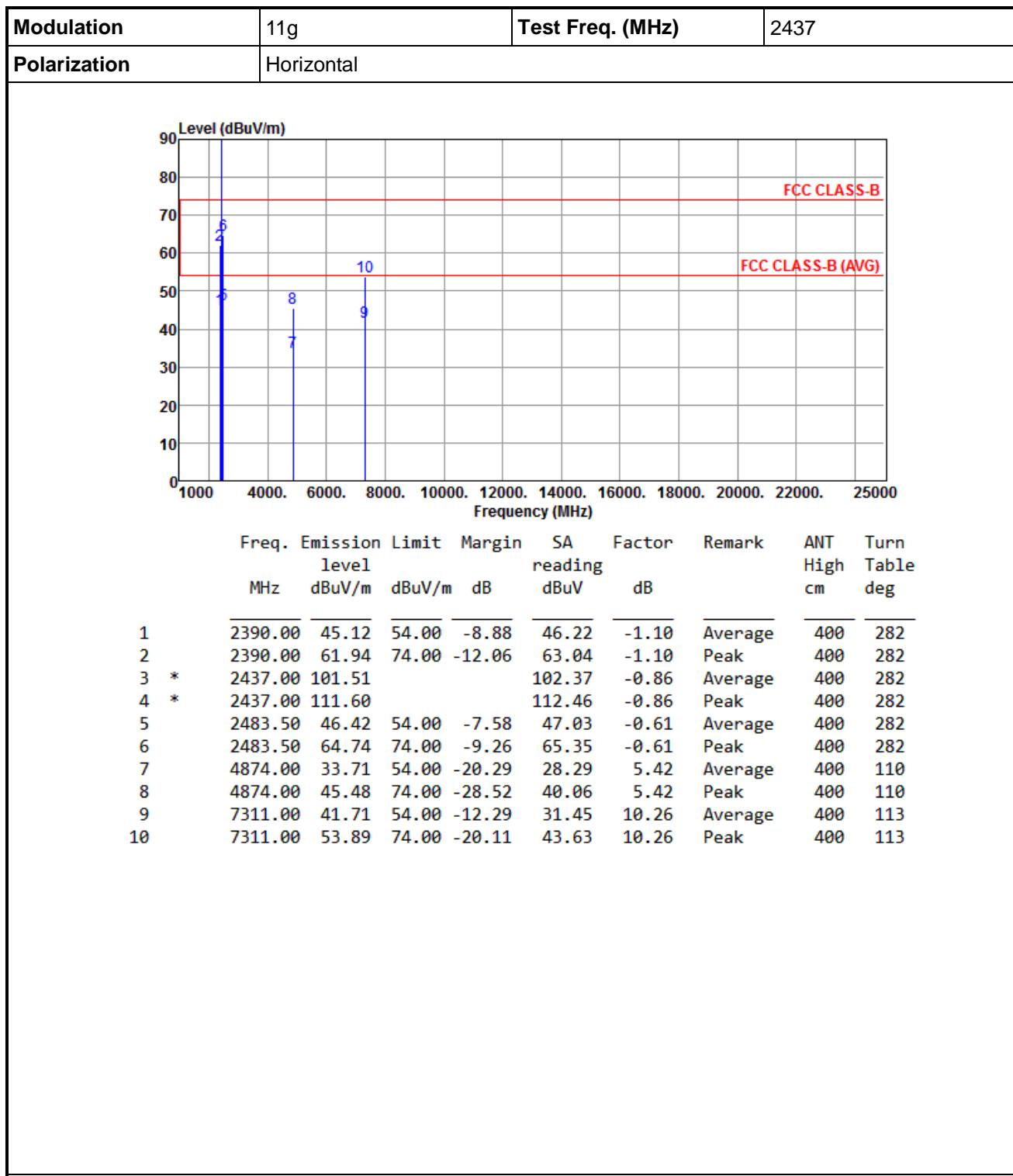


Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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

Note 3: "\*" is Peak / Average value of fundamental frequency

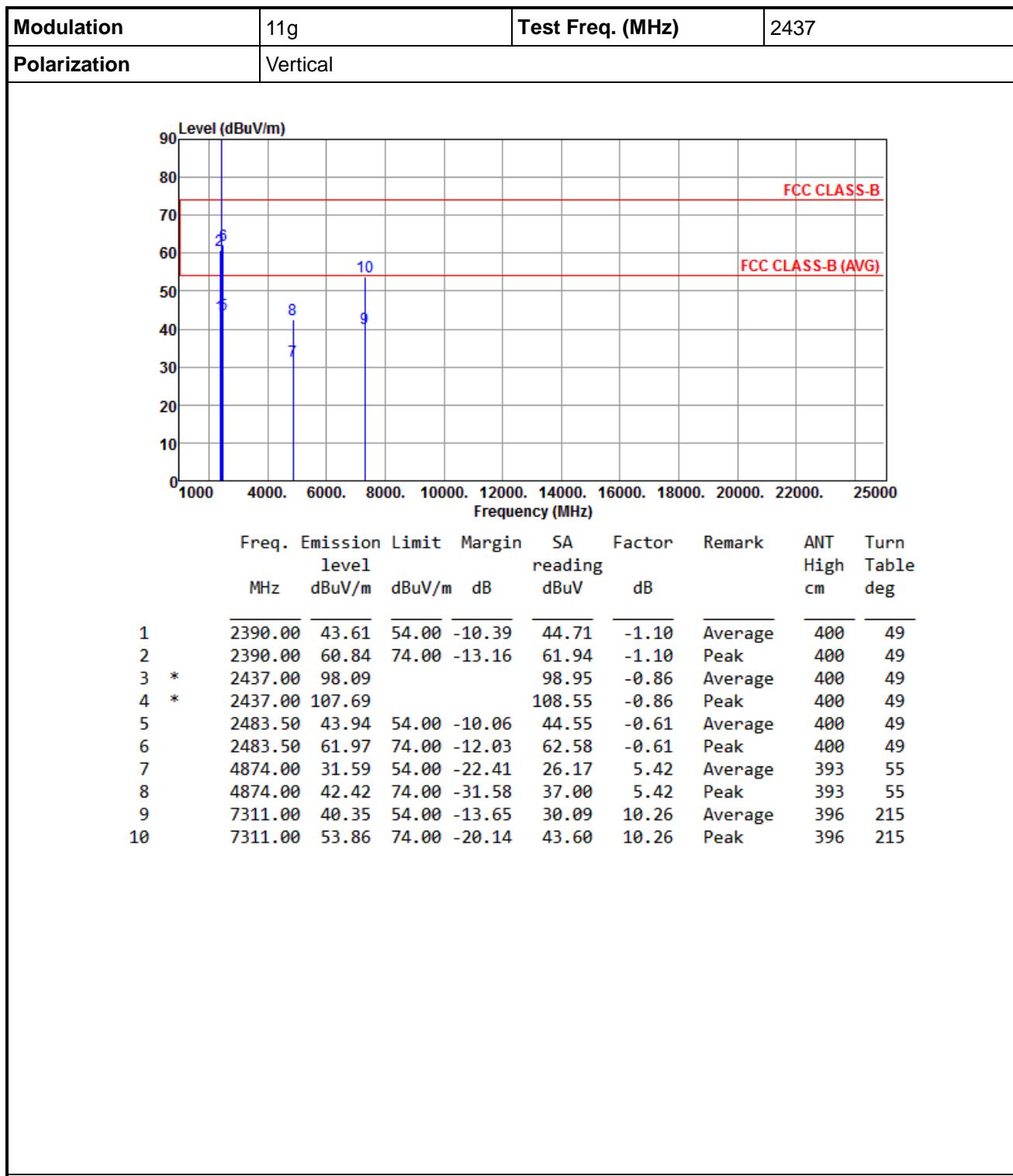


Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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

Note 3: "\*" is Peak / Average value of fundamental frequency

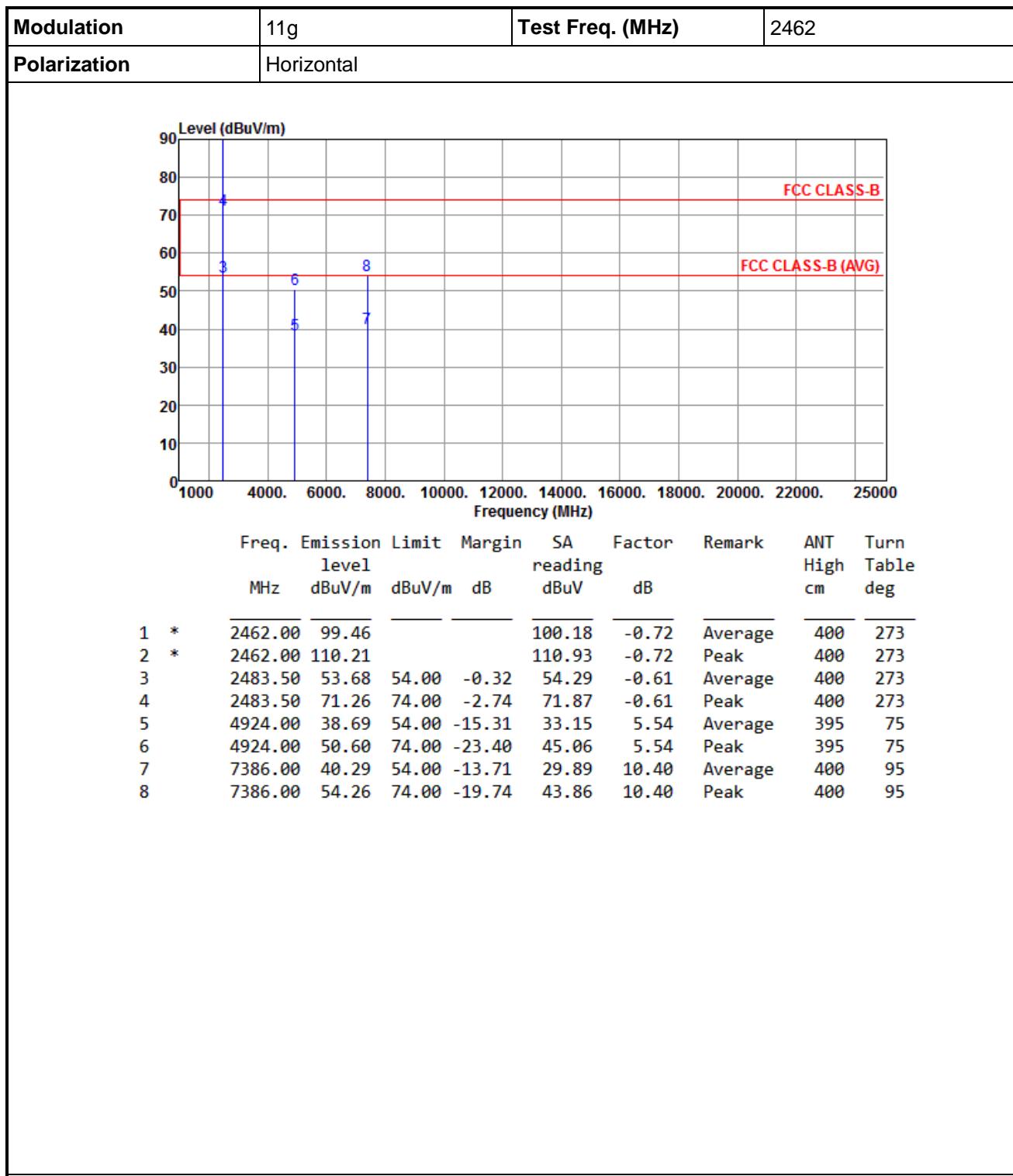


Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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

Note 3: "\*" is Peak / Average value of fundamental frequency

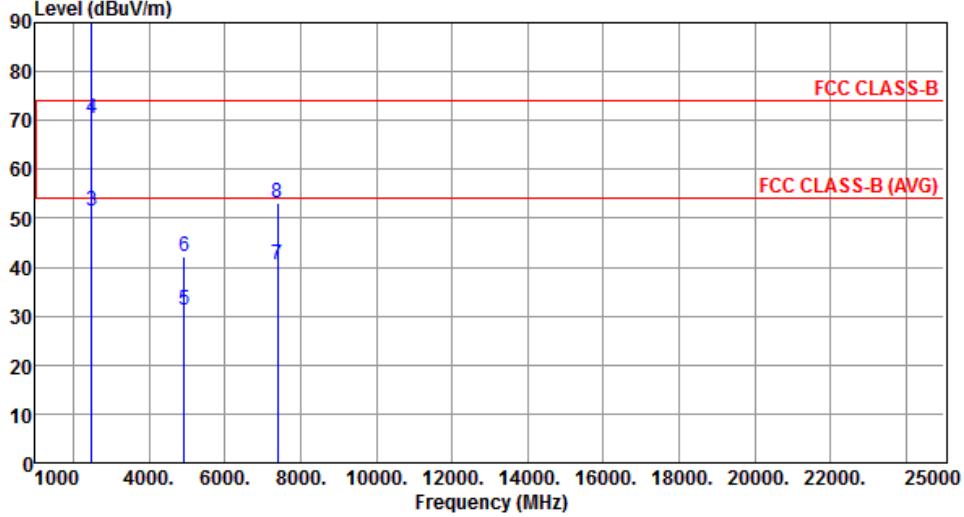


Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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

Note 3: "\*" is Peak / Average value of fundamental frequency

<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2462																																																																																										
<b>Polarization</b>	Vertical																																																																																												
																																																																																													
<table border="1"> <thead> <tr> <th></th> <th>Freq. MHz</th> <th>Emission level dBuV/m</th> <th>Limit dBuV/m</th> <th>Margin dB</th> <th>SA reading dBuV</th> <th>Factor dB</th> <th>Remark</th> <th>ANT High cm</th> <th>Turn Table deg</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2462.00</td> <td>97.34</td> <td></td> <td></td> <td>98.06</td> <td>-0.72</td> <td>Average</td> <td>400</td> <td>41</td> </tr> <tr> <td>2</td> <td>2462.00</td> <td>107.53</td> <td></td> <td></td> <td>108.25</td> <td>-0.72</td> <td>Peak</td> <td>400</td> <td>41</td> </tr> <tr> <td>3</td> <td>2483.50</td> <td>51.56</td> <td>54.00</td> <td>-2.44</td> <td>52.17</td> <td>-0.61</td> <td>Average</td> <td>400</td> <td>41</td> </tr> <tr> <td>4</td> <td>2483.50</td> <td>70.52</td> <td>74.00</td> <td>-3.48</td> <td>71.13</td> <td>-0.61</td> <td>Peak</td> <td>400</td> <td>41</td> </tr> <tr> <td>5</td> <td>4924.00</td> <td>31.15</td> <td>54.00</td> <td>-22.85</td> <td>25.61</td> <td>5.54</td> <td>Average</td> <td>275</td> <td>135</td> </tr> <tr> <td>6</td> <td>4924.00</td> <td>42.06</td> <td>74.00</td> <td>-31.94</td> <td>36.52</td> <td>5.54</td> <td>Peak</td> <td>275</td> <td>135</td> </tr> <tr> <td>7</td> <td>7386.00</td> <td>40.55</td> <td>54.00</td> <td>-13.45</td> <td>30.15</td> <td>10.40</td> <td>Average</td> <td>395</td> <td>215</td> </tr> <tr> <td>8</td> <td>7386.00</td> <td>53.26</td> <td>74.00</td> <td>-20.74</td> <td>42.86</td> <td>10.40</td> <td>Peak</td> <td>395</td> <td>215</td> </tr> </tbody> </table>					Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg	1	2462.00	97.34			98.06	-0.72	Average	400	41	2	2462.00	107.53			108.25	-0.72	Peak	400	41	3	2483.50	51.56	54.00	-2.44	52.17	-0.61	Average	400	41	4	2483.50	70.52	74.00	-3.48	71.13	-0.61	Peak	400	41	5	4924.00	31.15	54.00	-22.85	25.61	5.54	Average	275	135	6	4924.00	42.06	74.00	-31.94	36.52	5.54	Peak	275	135	7	7386.00	40.55	54.00	-13.45	30.15	10.40	Average	395	215	8	7386.00	53.26	74.00	-20.74	42.86	10.40	Peak	395	215
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg																																																																																				
1	2462.00	97.34			98.06	-0.72	Average	400	41																																																																																				
2	2462.00	107.53			108.25	-0.72	Peak	400	41																																																																																				
3	2483.50	51.56	54.00	-2.44	52.17	-0.61	Average	400	41																																																																																				
4	2483.50	70.52	74.00	-3.48	71.13	-0.61	Peak	400	41																																																																																				
5	4924.00	31.15	54.00	-22.85	25.61	5.54	Average	275	135																																																																																				
6	4924.00	42.06	74.00	-31.94	36.52	5.54	Peak	275	135																																																																																				
7	7386.00	40.55	54.00	-13.45	30.15	10.40	Average	395	215																																																																																				
8	7386.00	53.26	74.00	-20.74	42.86	10.40	Peak	395	215																																																																																				

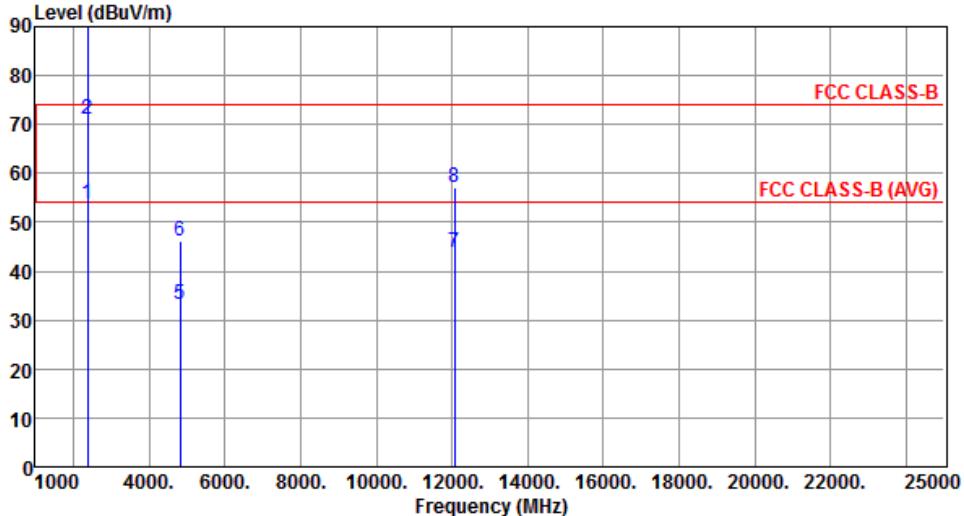
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

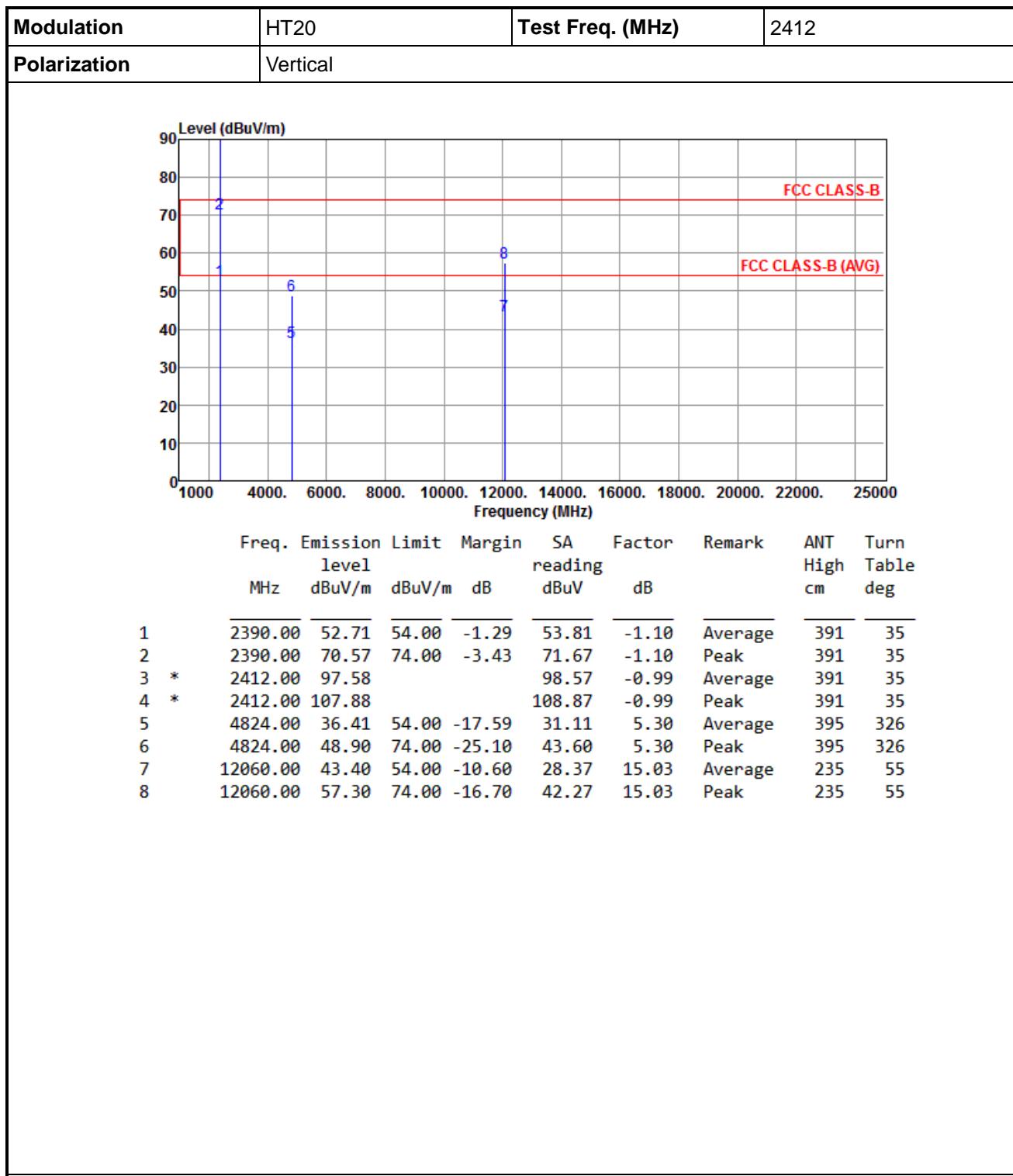
\*Factor includes antenna factor , cable loss and amplifier gain

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

Note 3: "\*" is Peak / Average value of fundamental frequency

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

Modulation	HT20	Test Freq. (MHz)	2412																																																																																										
Polarization	Horizontal																																																																																												
																																																																																													
<table border="1"> <thead> <tr> <th></th> <th>Freq. (MHz)</th> <th>Emission level (dBuV/m)</th> <th>Limit (dBuV/m)</th> <th>Margin (dB)</th> <th>SA reading (dBuV)</th> <th>Factor (dB)</th> <th>Remark</th> <th>ANT High (cm)</th> <th>Turn Table deg</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2390.00</td> <td>53.72</td> <td>54.00</td> <td>-0.28</td> <td>54.82</td> <td>-1.10</td> <td>Average</td> <td>399</td> <td>8</td> </tr> <tr> <td>2</td> <td>2390.00</td> <td>70.96</td> <td>74.00</td> <td>-3.04</td> <td>72.06</td> <td>-1.10</td> <td>Peak</td> <td>399</td> <td>8</td> </tr> <tr> <td>3 *</td> <td>2412.00</td> <td>99.25</td> <td></td> <td></td> <td>100.24</td> <td>-0.99</td> <td>Average</td> <td>399</td> <td>8</td> </tr> <tr> <td>4 *</td> <td>2412.00</td> <td>109.68</td> <td></td> <td></td> <td>110.67</td> <td>-0.99</td> <td>Peak</td> <td>399</td> <td>8</td> </tr> <tr> <td>5</td> <td>4824.00</td> <td>33.15</td> <td>54.00</td> <td>-20.85</td> <td>27.85</td> <td>5.30</td> <td>Average</td> <td>386</td> <td>47</td> </tr> <tr> <td>6</td> <td>4824.00</td> <td>46.26</td> <td>74.00</td> <td>-27.74</td> <td>40.96</td> <td>5.30</td> <td>Peak</td> <td>386</td> <td>47</td> </tr> <tr> <td>7</td> <td>12060.00</td> <td>43.75</td> <td>54.00</td> <td>-10.25</td> <td>28.72</td> <td>15.03</td> <td>Average</td> <td>305</td> <td>125</td> </tr> <tr> <td>8</td> <td>12060.00</td> <td>57.15</td> <td>74.00</td> <td>-16.85</td> <td>42.12</td> <td>15.03</td> <td>Peak</td> <td>305</td> <td>125</td> </tr> </tbody> </table>					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	53.72	54.00	-0.28	54.82	-1.10	Average	399	8	2	2390.00	70.96	74.00	-3.04	72.06	-1.10	Peak	399	8	3 *	2412.00	99.25			100.24	-0.99	Average	399	8	4 *	2412.00	109.68			110.67	-0.99	Peak	399	8	5	4824.00	33.15	54.00	-20.85	27.85	5.30	Average	386	47	6	4824.00	46.26	74.00	-27.74	40.96	5.30	Peak	386	47	7	12060.00	43.75	54.00	-10.25	28.72	15.03	Average	305	125	8	12060.00	57.15	74.00	-16.85	42.12	15.03	Peak	305	125
	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	53.72	54.00	-0.28	54.82	-1.10	Average	399	8																																																																																				
2	2390.00	70.96	74.00	-3.04	72.06	-1.10	Peak	399	8																																																																																				
3 *	2412.00	99.25			100.24	-0.99	Average	399	8																																																																																				
4 *	2412.00	109.68			110.67	-0.99	Peak	399	8																																																																																				
5	4824.00	33.15	54.00	-20.85	27.85	5.30	Average	386	47																																																																																				
6	4824.00	46.26	74.00	-27.74	40.96	5.30	Peak	386	47																																																																																				
7	12060.00	43.75	54.00	-10.25	28.72	15.03	Average	305	125																																																																																				
8	12060.00	57.15	74.00	-16.85	42.12	15.03	Peak	305	125																																																																																				
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: ** is Peak / Average value of fundamental frequency																																																																																													

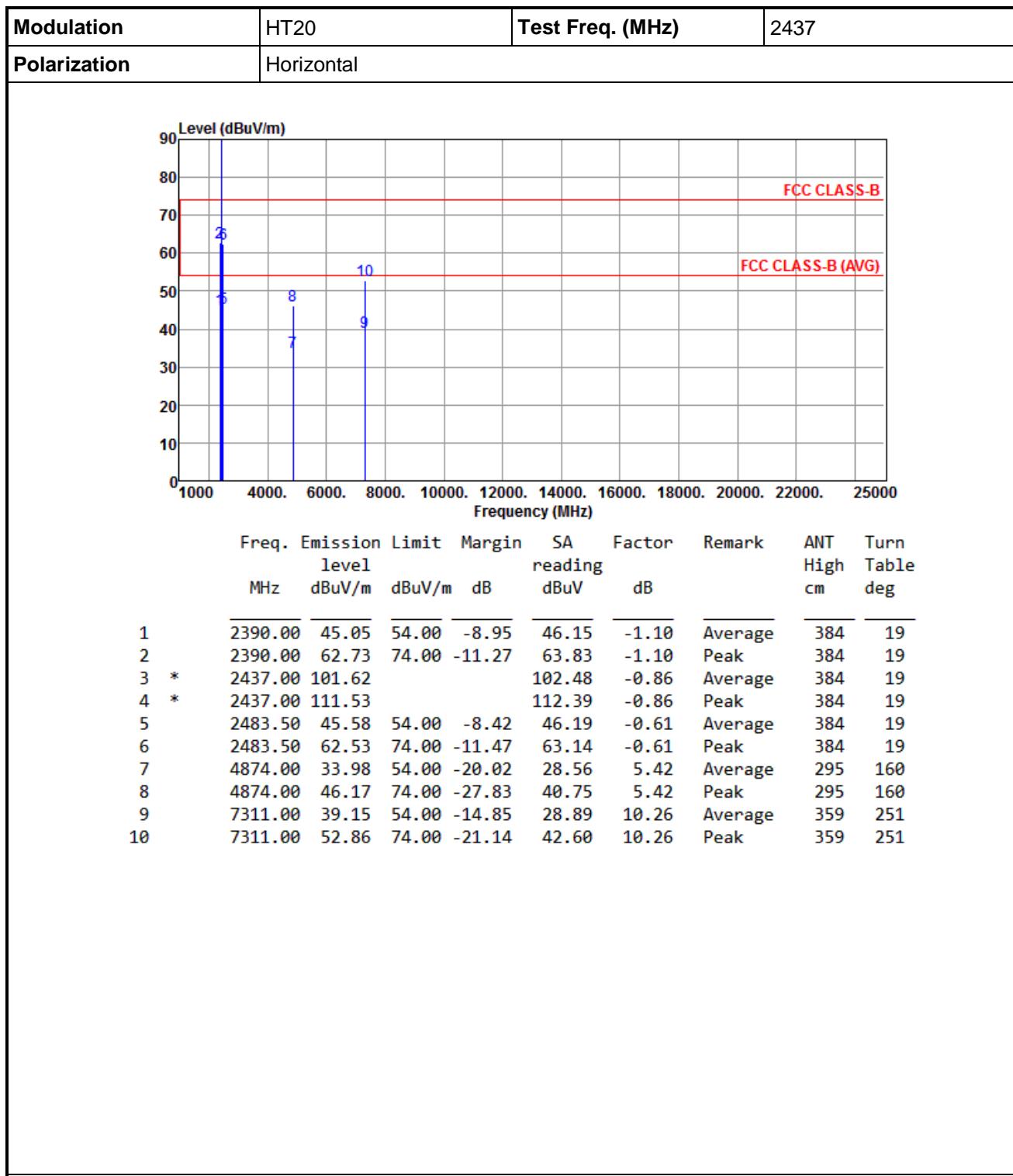


Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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

Note 3: "\*" is Peak / Average value of fundamental frequency

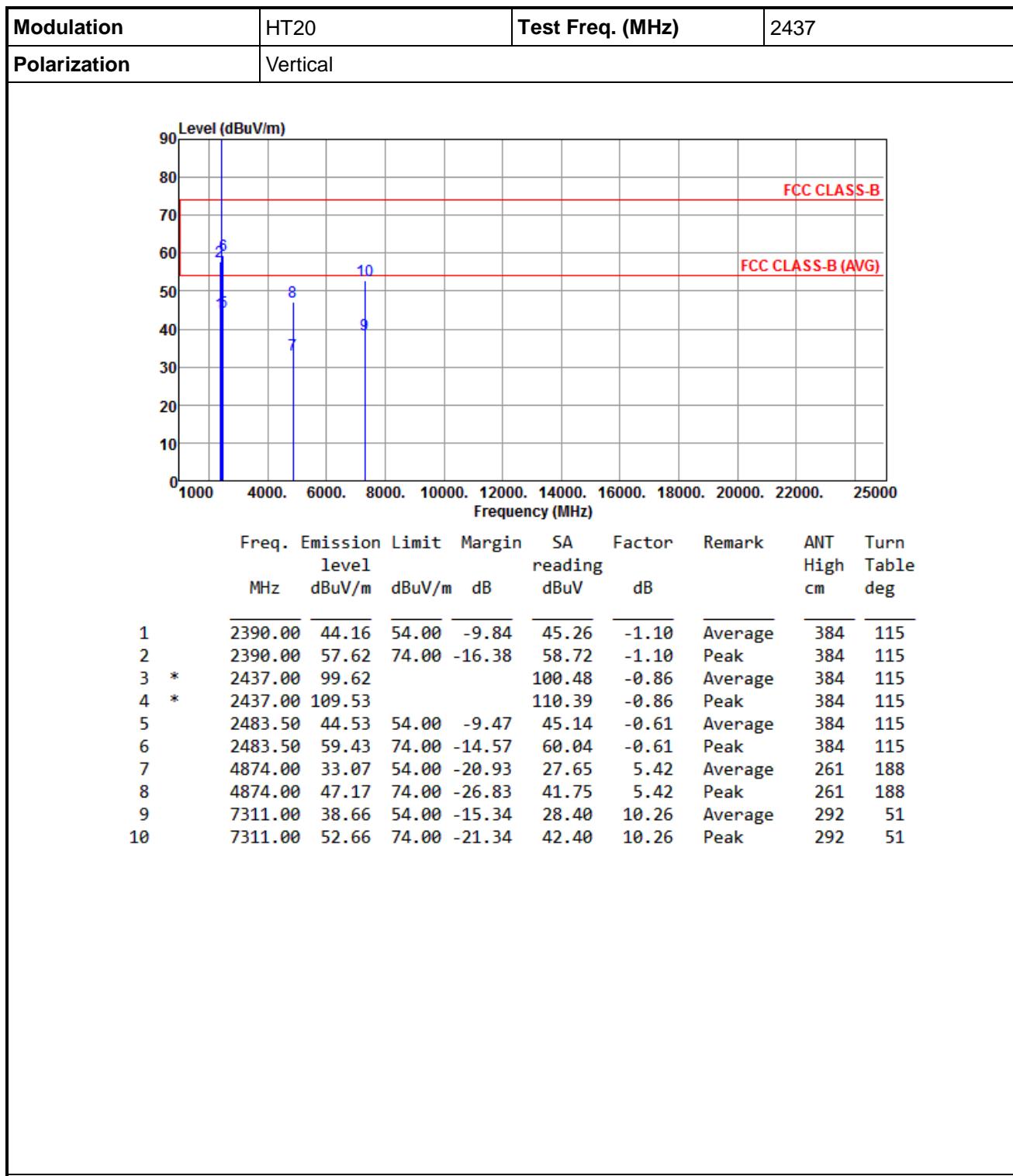


Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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

Note 3: "\*" is Peak / Average value of fundamental frequency

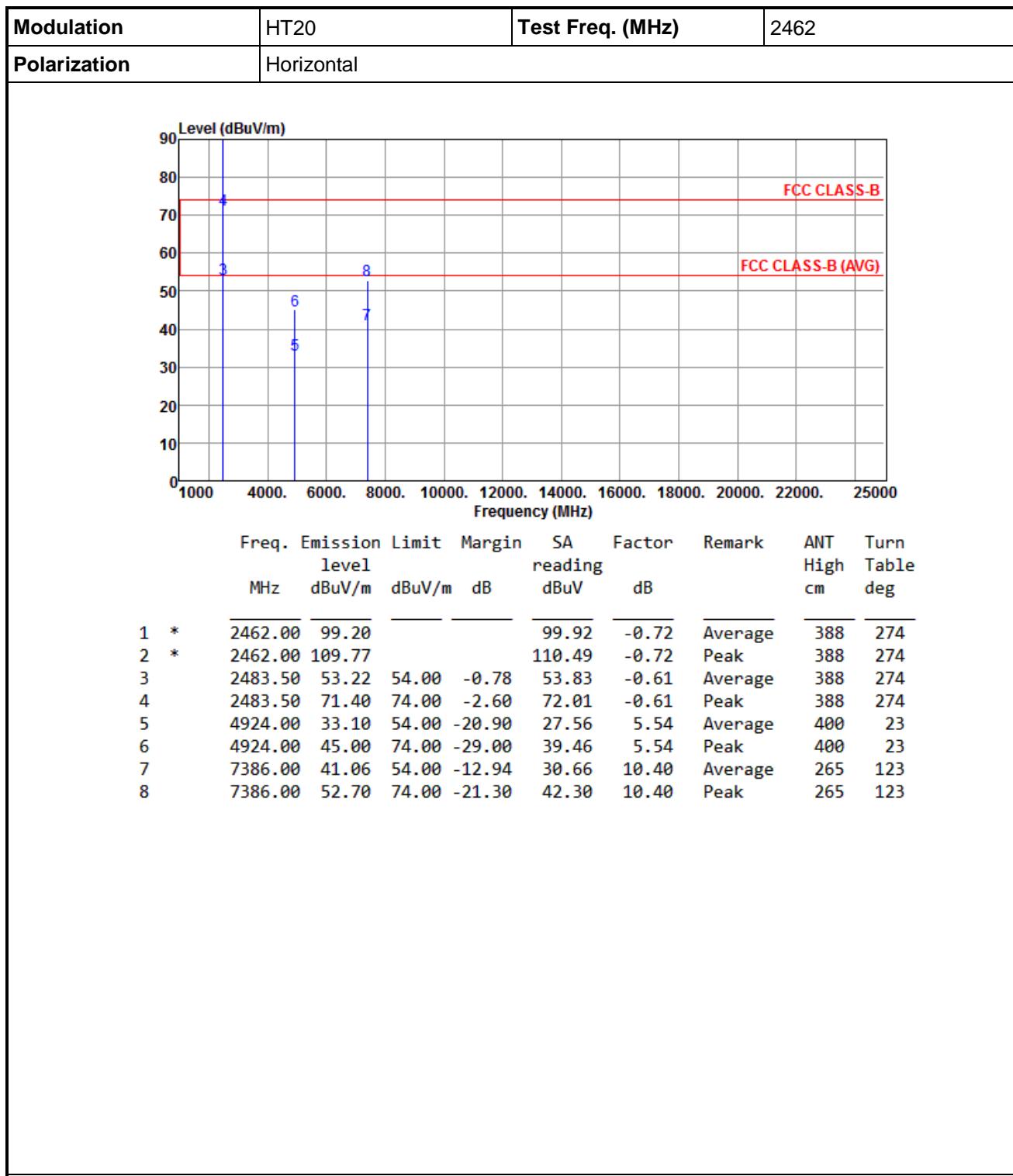


Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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

Note 3: "\*" is Peak / Average value of fundamental frequency

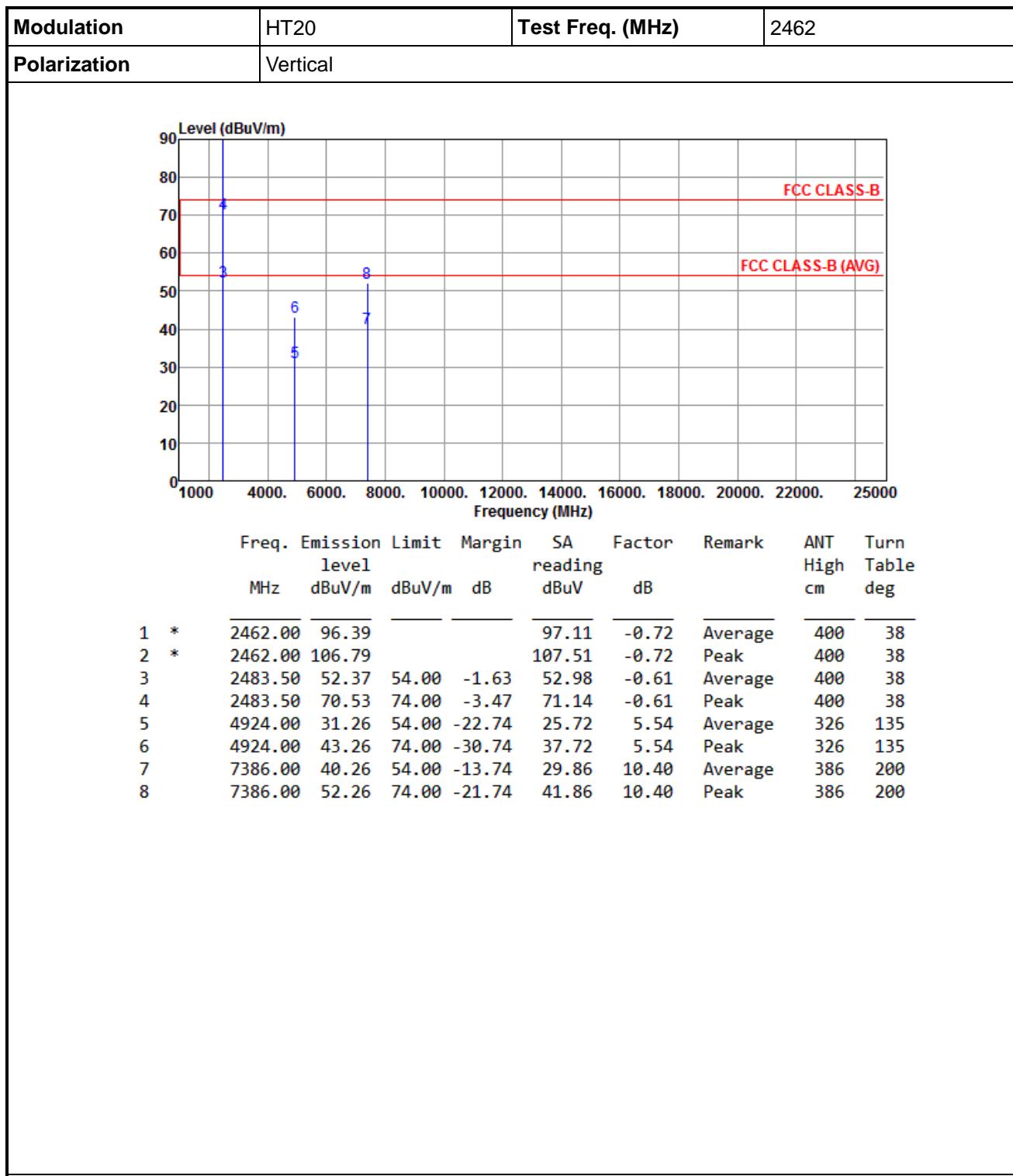


Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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

Note 3: "\*" is Peak / Average value of fundamental frequency



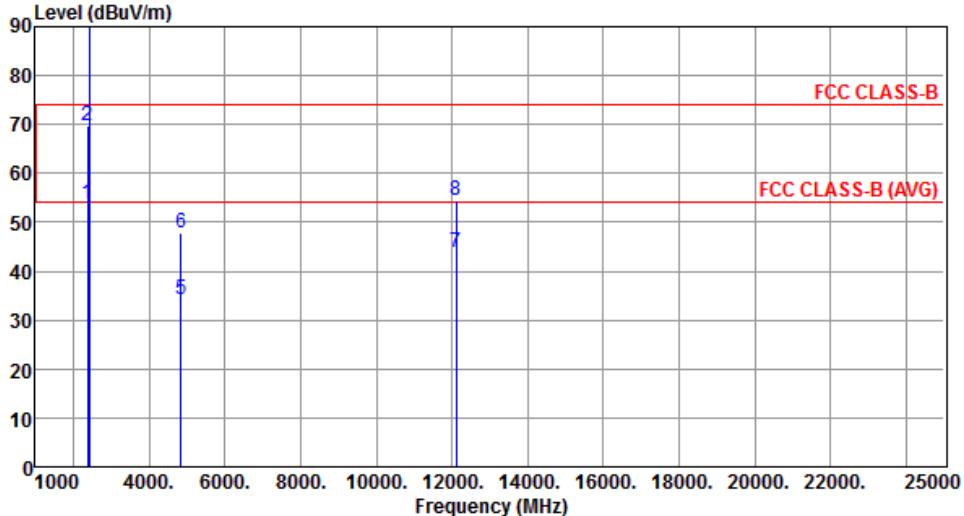
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

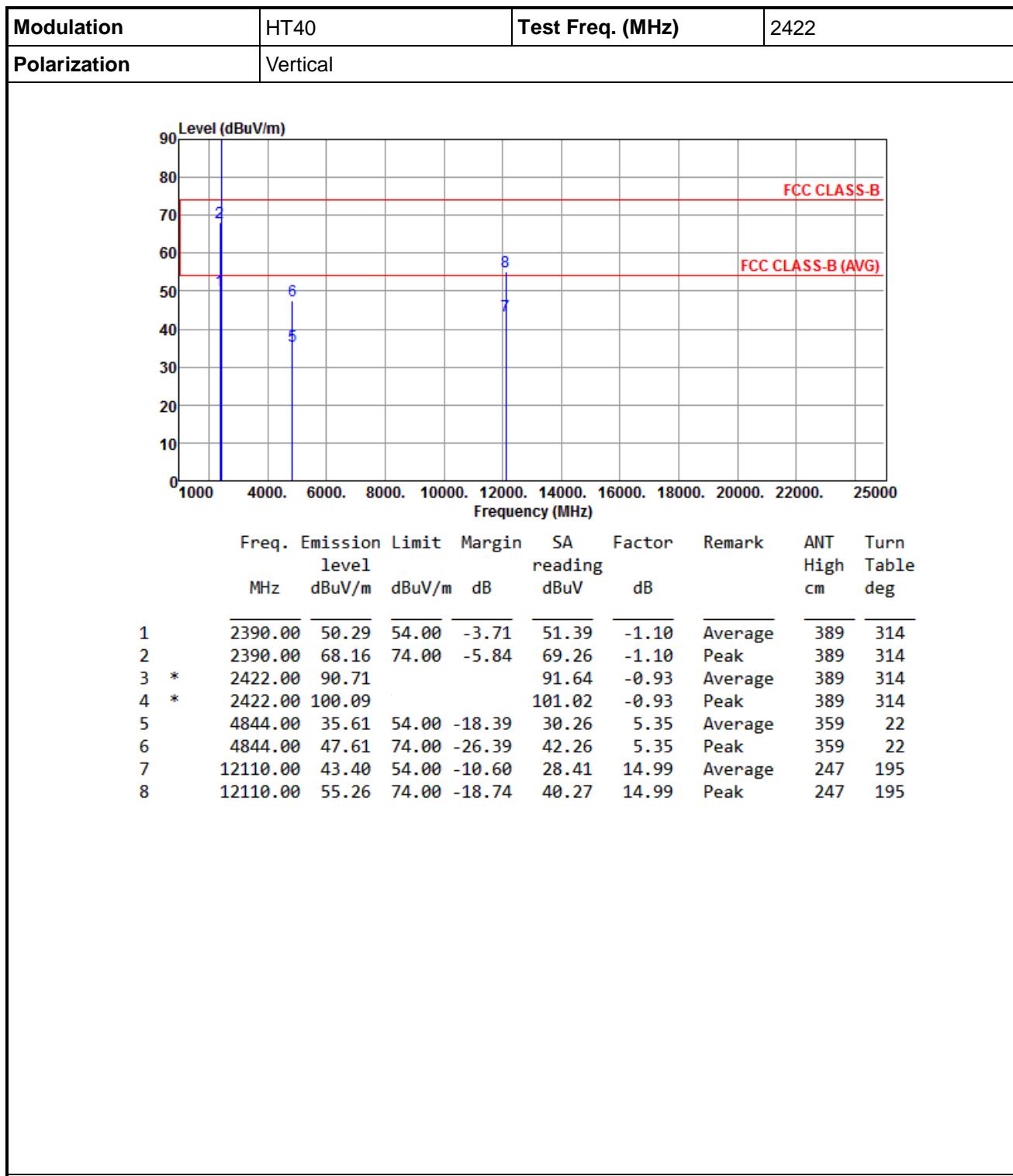
\*Factor includes antenna factor , cable loss and amplifier gain

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

Note 3: "\*" is Peak / Average value of fundamental frequency

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

Modulation	HT40	Test Freq. (MHz)	2422																																																																																																
Polarization	Horizontal																																																																																																		
																																																																																																			
<table border="1"> <thead> <tr> <th>Freq.</th> <th>Emission Limit</th> <th>Margin</th> <th>SA</th> <th>Factor</th> <th>Remark</th> <th>ANT</th> <th>Turn</th> </tr> <tr> <th>MHz</th> <th>level</th> <th>dBuV/m</th> <th>dB</th> <th>dBuV</th> <th></th> <th>High</th> <th>Table</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2390.00</td> <td>53.68</td> <td>54.00</td> <td>-0.32</td> <td>54.78</td> <td>-1.10</td> <td>Average</td> <td>391</td> <td>3</td> </tr> <tr> <td>2</td> <td>2390.00</td> <td>69.68</td> <td>74.00</td> <td>-4.32</td> <td>70.78</td> <td>-1.10</td> <td>Peak</td> <td>391</td> <td>3</td> </tr> <tr> <td>3 *</td> <td>2422.00</td> <td>92.23</td> <td></td> <td></td> <td>93.16</td> <td>-0.93</td> <td>Average</td> <td>391</td> <td>3</td> </tr> <tr> <td>4 *</td> <td>2422.00</td> <td>102.39</td> <td></td> <td></td> <td>103.32</td> <td>-0.93</td> <td>Peak</td> <td>391</td> <td>3</td> </tr> <tr> <td>5</td> <td>4844.00</td> <td>34.25</td> <td>54.00</td> <td>-19.75</td> <td>28.90</td> <td>5.35</td> <td>Average</td> <td>356</td> <td>158</td> </tr> <tr> <td>6</td> <td>4844.00</td> <td>47.95</td> <td>74.00</td> <td>-26.05</td> <td>42.60</td> <td>5.35</td> <td>Peak</td> <td>356</td> <td>158</td> </tr> <tr> <td>7</td> <td>12110.00</td> <td>43.68</td> <td>54.00</td> <td>-10.32</td> <td>28.69</td> <td>14.99</td> <td>Average</td> <td>356</td> <td>154</td> </tr> <tr> <td>8</td> <td>12110.00</td> <td>54.59</td> <td>74.00</td> <td>-19.41</td> <td>39.60</td> <td>14.99</td> <td>Peak</td> <td>356</td> <td>154</td> </tr> </tbody> </table>				Freq.	Emission Limit	Margin	SA	Factor	Remark	ANT	Turn	MHz	level	dBuV/m	dB	dBuV		High	Table	1	2390.00	53.68	54.00	-0.32	54.78	-1.10	Average	391	3	2	2390.00	69.68	74.00	-4.32	70.78	-1.10	Peak	391	3	3 *	2422.00	92.23			93.16	-0.93	Average	391	3	4 *	2422.00	102.39			103.32	-0.93	Peak	391	3	5	4844.00	34.25	54.00	-19.75	28.90	5.35	Average	356	158	6	4844.00	47.95	74.00	-26.05	42.60	5.35	Peak	356	158	7	12110.00	43.68	54.00	-10.32	28.69	14.99	Average	356	154	8	12110.00	54.59	74.00	-19.41	39.60	14.99	Peak	356	154
Freq.	Emission Limit	Margin	SA	Factor	Remark	ANT	Turn																																																																																												
MHz	level	dBuV/m	dB	dBuV		High	Table																																																																																												
1	2390.00	53.68	54.00	-0.32	54.78	-1.10	Average	391	3																																																																																										
2	2390.00	69.68	74.00	-4.32	70.78	-1.10	Peak	391	3																																																																																										
3 *	2422.00	92.23			93.16	-0.93	Average	391	3																																																																																										
4 *	2422.00	102.39			103.32	-0.93	Peak	391	3																																																																																										
5	4844.00	34.25	54.00	-19.75	28.90	5.35	Average	356	158																																																																																										
6	4844.00	47.95	74.00	-26.05	42.60	5.35	Peak	356	158																																																																																										
7	12110.00	43.68	54.00	-10.32	28.69	14.99	Average	356	154																																																																																										
8	12110.00	54.59	74.00	-19.41	39.60	14.99	Peak	356	154																																																																																										
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: ** is Peak / Average value of fundamental frequency																																																																																																			

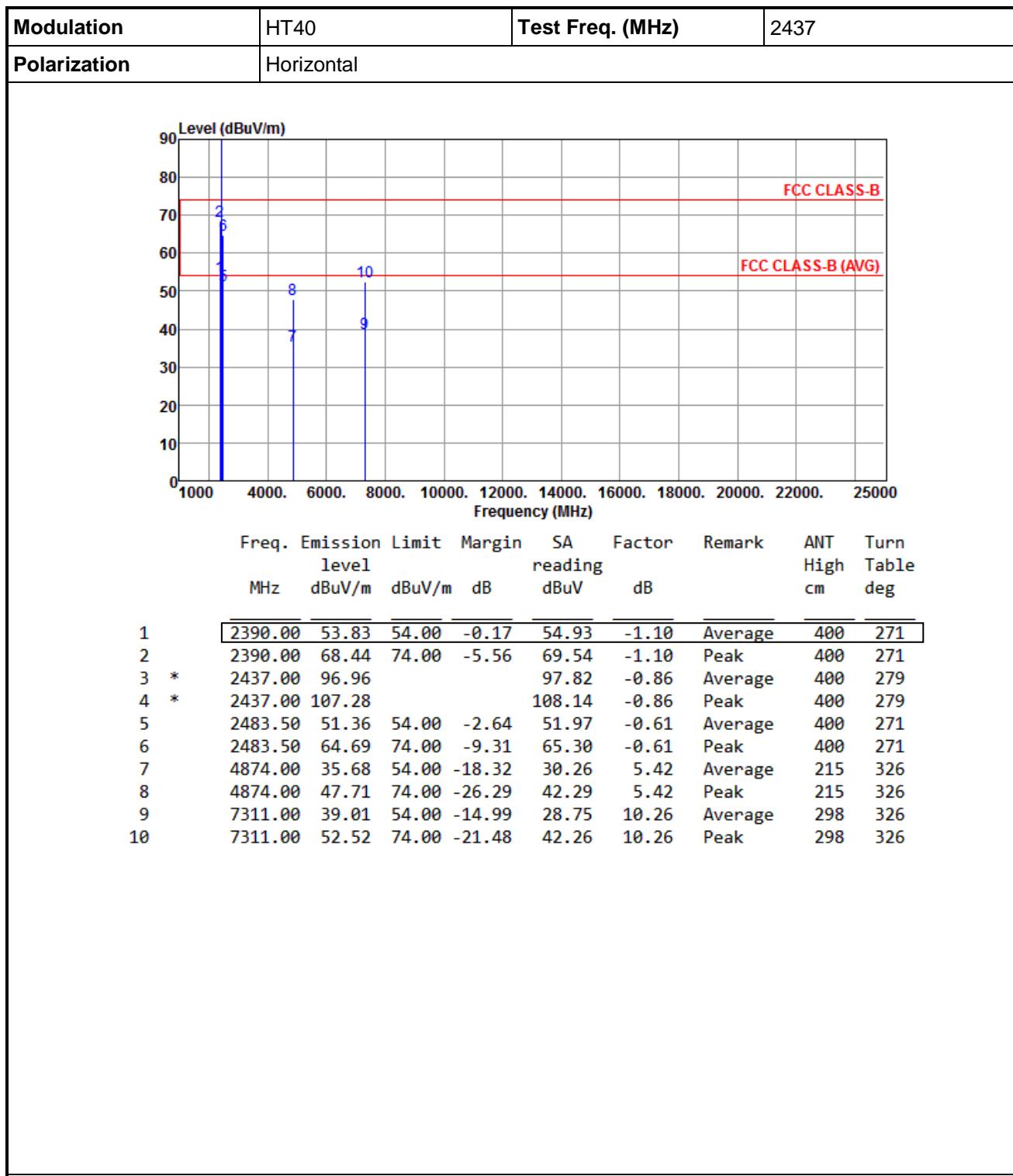


Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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

Note 3: "\*" is Peak / Average value of fundamental frequency

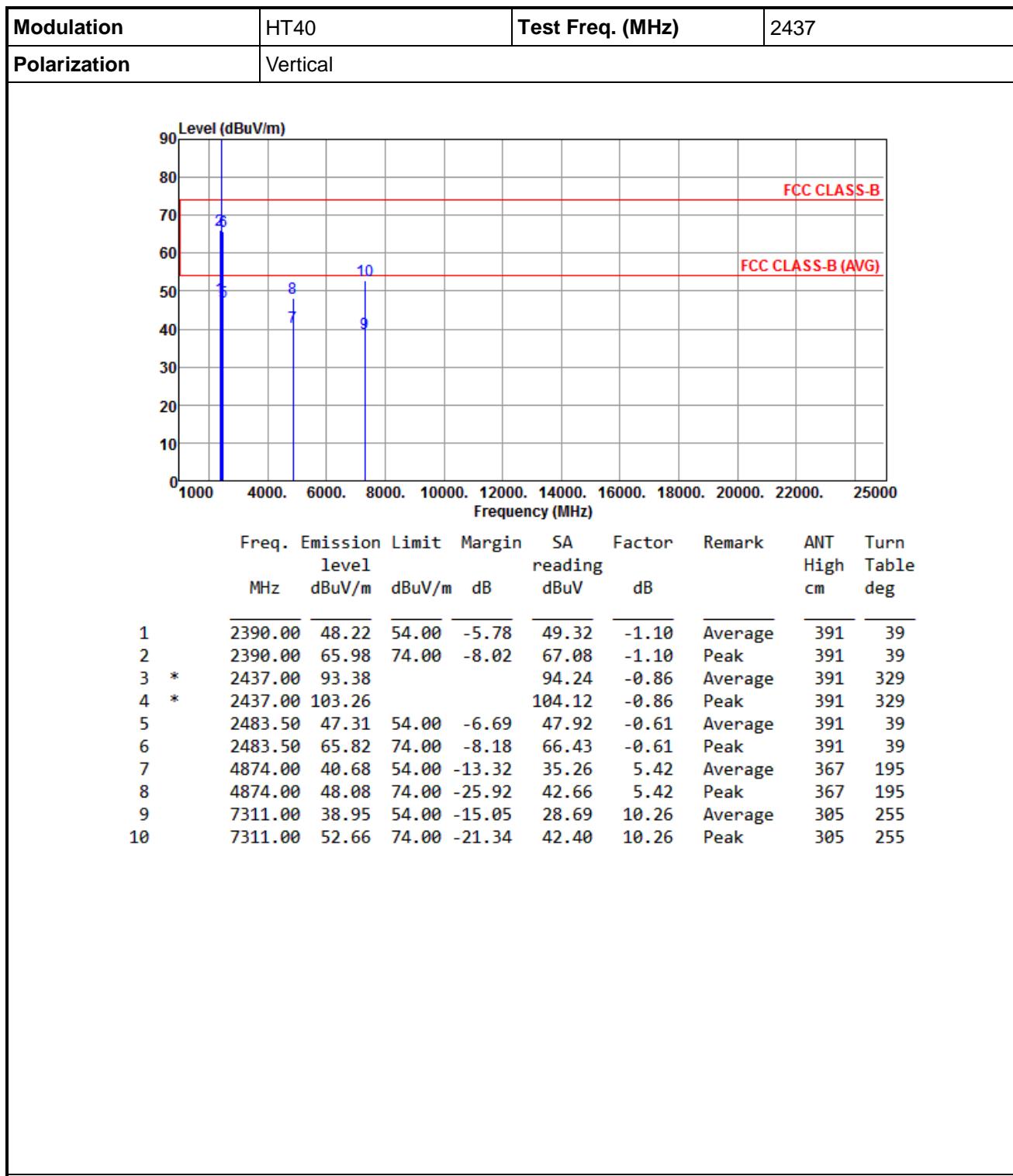


Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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

Note 3: "\*" is Peak / Average value of fundamental frequency

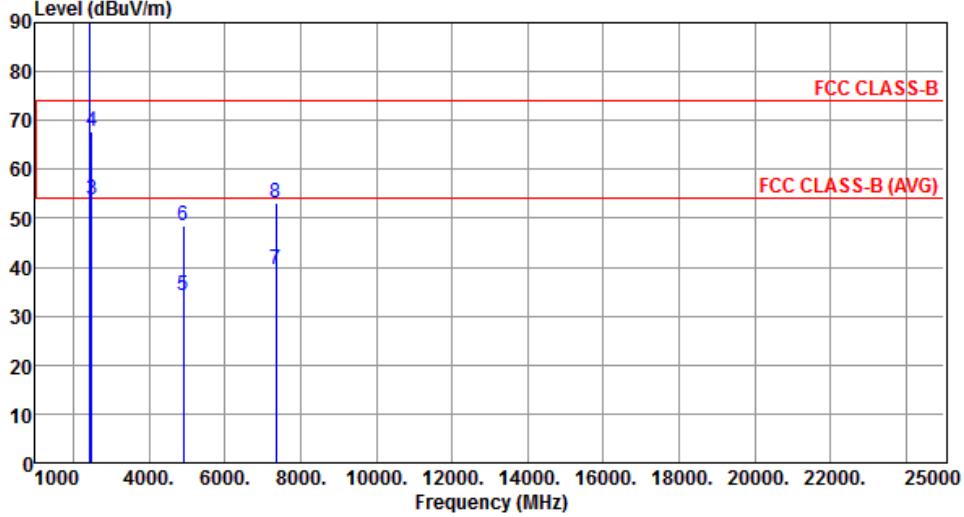


Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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

Note 3: "\*" is Peak / Average value of fundamental frequency

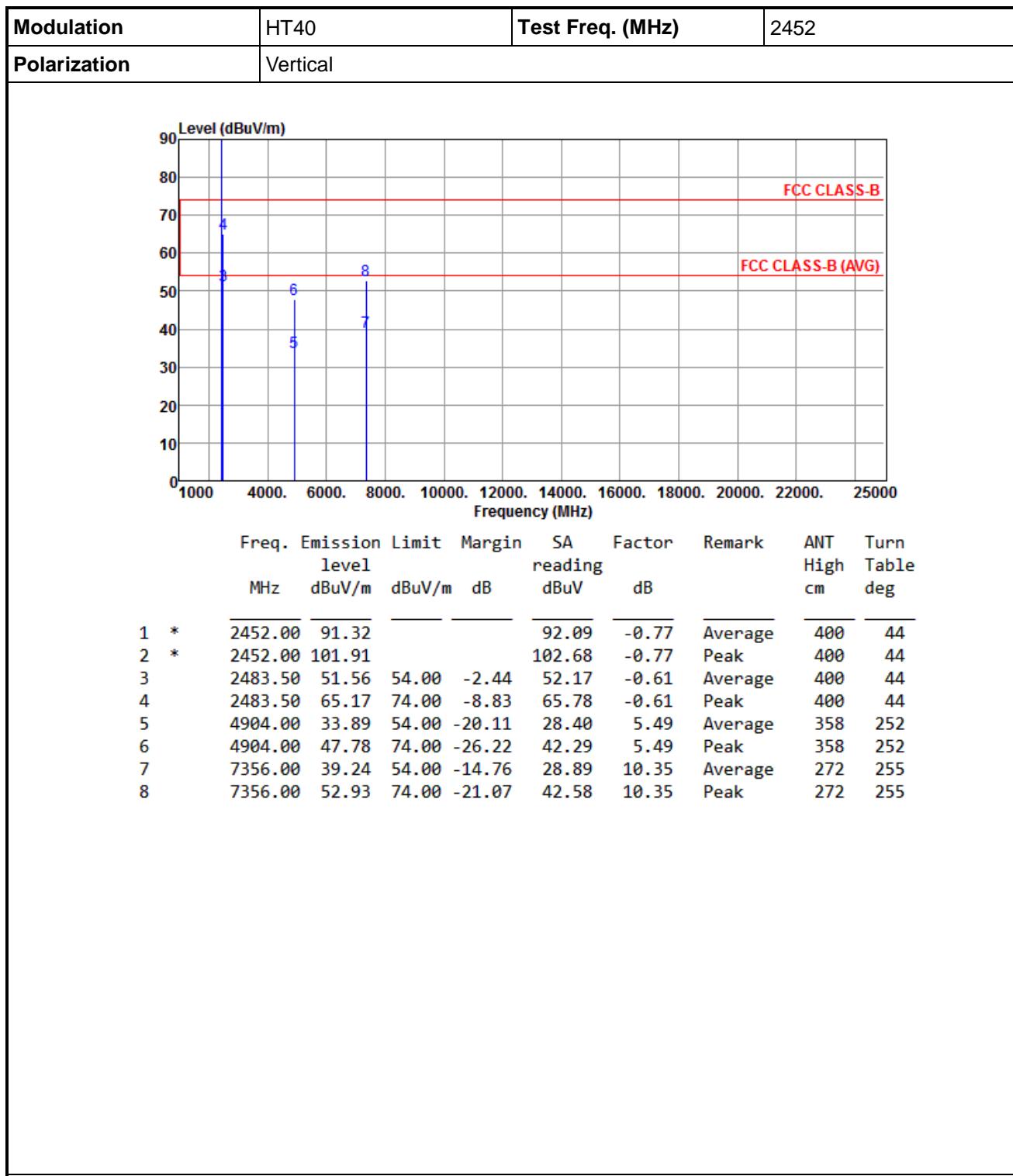
<b>Modulation</b>	HT40	<b>Test Freq. (MHz)</b>	2452																																																																																										
<b>Polarization</b>	Horizontal																																																																																												
																																																																																													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding-bottom: 2px;">Freq.</th> <th style="text-align: left; padding-bottom: 2px;">Emission</th> <th style="text-align: left; padding-bottom: 2px;">Limit</th> <th style="text-align: left; padding-bottom: 2px;">Margin</th> <th style="text-align: left; padding-bottom: 2px;">SA</th> <th style="text-align: left; padding-bottom: 2px;">Factor</th> <th style="text-align: left; padding-bottom: 2px;">Remark</th> <th style="text-align: left; padding-bottom: 2px;">ANT</th> <th style="text-align: left; padding-bottom: 2px;">Turn</th> </tr> <tr> <th style="text-align: left;">MHz</th> <th style="text-align: left;">level</th> <th style="text-align: left;">dBuV/m</th> <th style="text-align: left;">dB</th> <th style="text-align: left;">reading</th> <th style="text-align: left;">dB</th> <th style="text-align: left;"> </th> <th style="text-align: left;">High</th> <th style="text-align: left;">Table</th> </tr> </thead> <tbody> <tr> <td style="text-align: left;">1 * 2452.00</td> <td style="text-align: left;">94.77</td> <td style="text-align: left;">—</td> <td style="text-align: left;">—</td> <td style="text-align: left;">95.54</td> <td style="text-align: left;">-0.77</td> <td style="text-align: left;">Average</td> <td style="text-align: left;">394</td> <td style="text-align: left;">300</td> </tr> <tr> <td style="text-align: left;">2 * 2452.00</td> <td style="text-align: left;">105.95</td> <td style="text-align: left;">—</td> <td style="text-align: left;">—</td> <td style="text-align: left;">106.72</td> <td style="text-align: left;">-0.77</td> <td style="text-align: left;">Peak</td> <td style="text-align: left;">394</td> <td style="text-align: left;">300</td> </tr> <tr> <td style="text-align: left;">3 2483.50</td> <td style="text-align: left;">53.64</td> <td style="text-align: left;">54.00</td> <td style="text-align: left;">-0.36</td> <td style="text-align: left;">54.25</td> <td style="text-align: left;">-0.61</td> <td style="text-align: left;">Average</td> <td style="text-align: left;">394</td> <td style="text-align: left;">300</td> </tr> <tr> <td style="text-align: left;">4 2483.50</td> <td style="text-align: left;">67.72</td> <td style="text-align: left;">74.00</td> <td style="text-align: left;">-6.28</td> <td style="text-align: left;">68.33</td> <td style="text-align: left;">-0.61</td> <td style="text-align: left;">Peak</td> <td style="text-align: left;">394</td> <td style="text-align: left;">300</td> </tr> <tr> <td style="text-align: left;">5 4904.00</td> <td style="text-align: left;">34.18</td> <td style="text-align: left;">54.00</td> <td style="text-align: left;">-19.82</td> <td style="text-align: left;">28.69</td> <td style="text-align: left;">5.49</td> <td style="text-align: left;">Average</td> <td style="text-align: left;">347</td> <td style="text-align: left;">188</td> </tr> <tr> <td style="text-align: left;">6 4904.00</td> <td style="text-align: left;">48.46</td> <td style="text-align: left;">74.00</td> <td style="text-align: left;">-25.54</td> <td style="text-align: left;">42.97</td> <td style="text-align: left;">5.49</td> <td style="text-align: left;">Peak</td> <td style="text-align: left;">347</td> <td style="text-align: left;">188</td> </tr> <tr> <td style="text-align: left;">7 7356.00</td> <td style="text-align: left;">39.45</td> <td style="text-align: left;">54.00</td> <td style="text-align: left;">-14.55</td> <td style="text-align: left;">29.10</td> <td style="text-align: left;">10.35</td> <td style="text-align: left;">Average</td> <td style="text-align: left;">215</td> <td style="text-align: left;">257</td> </tr> <tr> <td style="text-align: left;">8 7356.00</td> <td style="text-align: left;">53.00</td> <td style="text-align: left;">74.00</td> <td style="text-align: left;">-21.00</td> <td style="text-align: left;">42.65</td> <td style="text-align: left;">10.35</td> <td style="text-align: left;">Peak</td> <td style="text-align: left;">215</td> <td style="text-align: left;">257</td> </tr> </tbody> </table>				Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn	MHz	level	dBuV/m	dB	reading	dB		High	Table	1 * 2452.00	94.77	—	—	95.54	-0.77	Average	394	300	2 * 2452.00	105.95	—	—	106.72	-0.77	Peak	394	300	3 2483.50	53.64	54.00	-0.36	54.25	-0.61	Average	394	300	4 2483.50	67.72	74.00	-6.28	68.33	-0.61	Peak	394	300	5 4904.00	34.18	54.00	-19.82	28.69	5.49	Average	347	188	6 4904.00	48.46	74.00	-25.54	42.97	5.49	Peak	347	188	7 7356.00	39.45	54.00	-14.55	29.10	10.35	Average	215	257	8 7356.00	53.00	74.00	-21.00	42.65	10.35	Peak	215	257
Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn																																																																																					
MHz	level	dBuV/m	dB	reading	dB		High	Table																																																																																					
1 * 2452.00	94.77	—	—	95.54	-0.77	Average	394	300																																																																																					
2 * 2452.00	105.95	—	—	106.72	-0.77	Peak	394	300																																																																																					
3 2483.50	53.64	54.00	-0.36	54.25	-0.61	Average	394	300																																																																																					
4 2483.50	67.72	74.00	-6.28	68.33	-0.61	Peak	394	300																																																																																					
5 4904.00	34.18	54.00	-19.82	28.69	5.49	Average	347	188																																																																																					
6 4904.00	48.46	74.00	-25.54	42.97	5.49	Peak	347	188																																																																																					
7 7356.00	39.45	54.00	-14.55	29.10	10.35	Average	215	257																																																																																					
8 7356.00	53.00	74.00	-21.00	42.65	10.35	Peak	215	257																																																																																					

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: "\*" is Peak / Average value of fundamental frequency

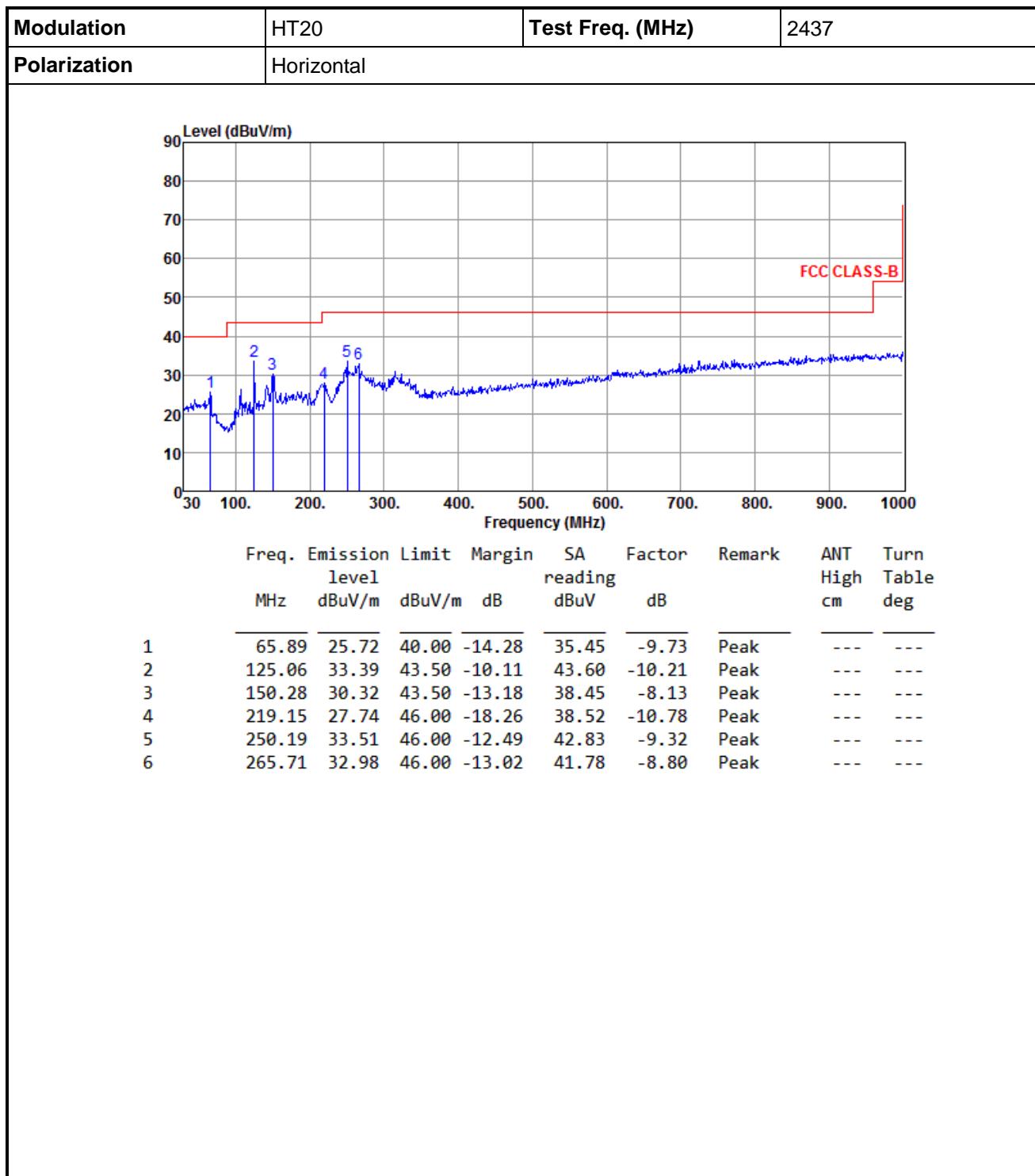


Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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

Note 3: "\*" is Peak / Average value of fundamental frequency

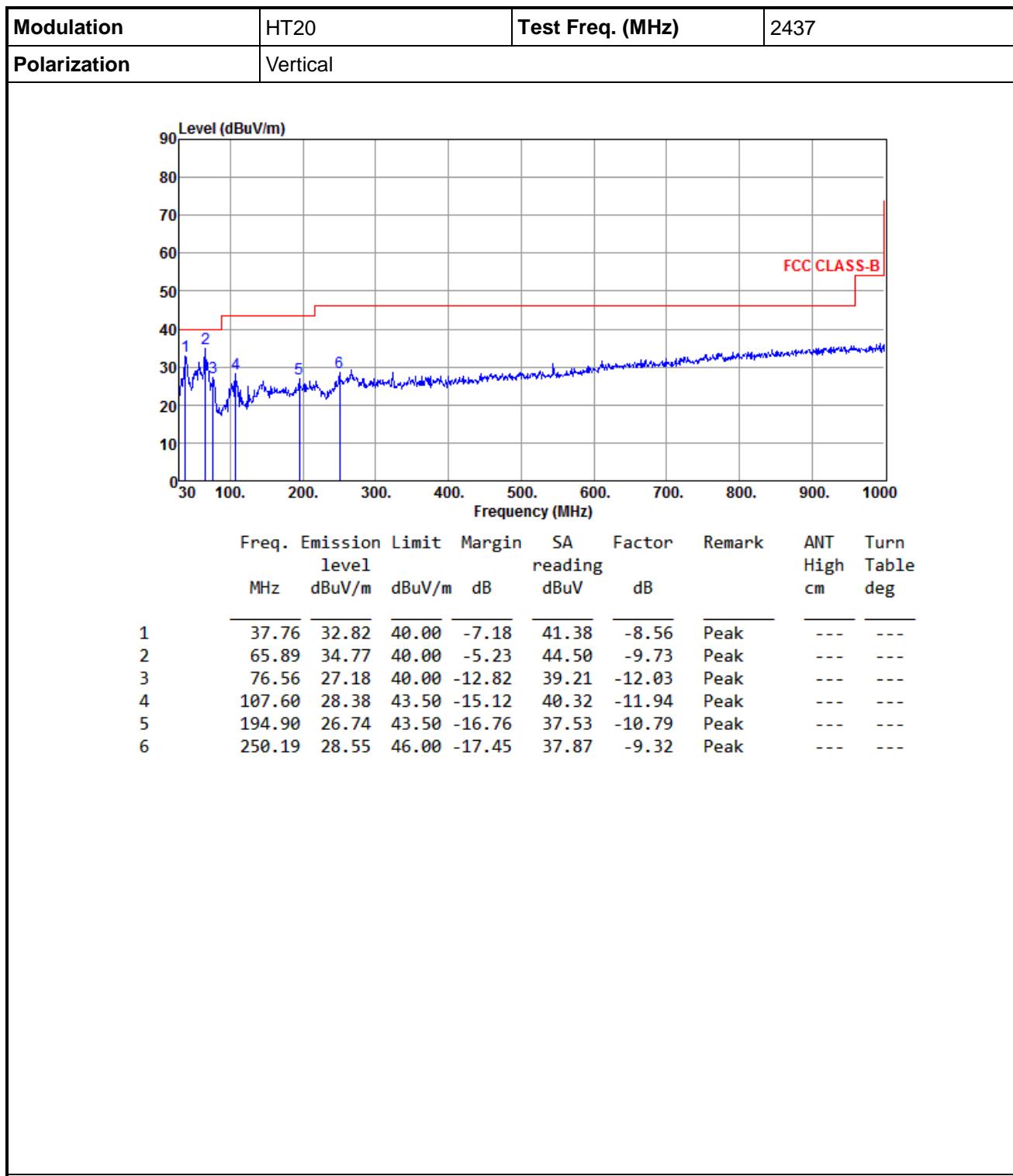
**Beamforming mode for Configuration 1 : Sample 1: VE3**
**3.5.9 Transmitter Radiated Unwanted Emissions (Below 1GHz)**


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.



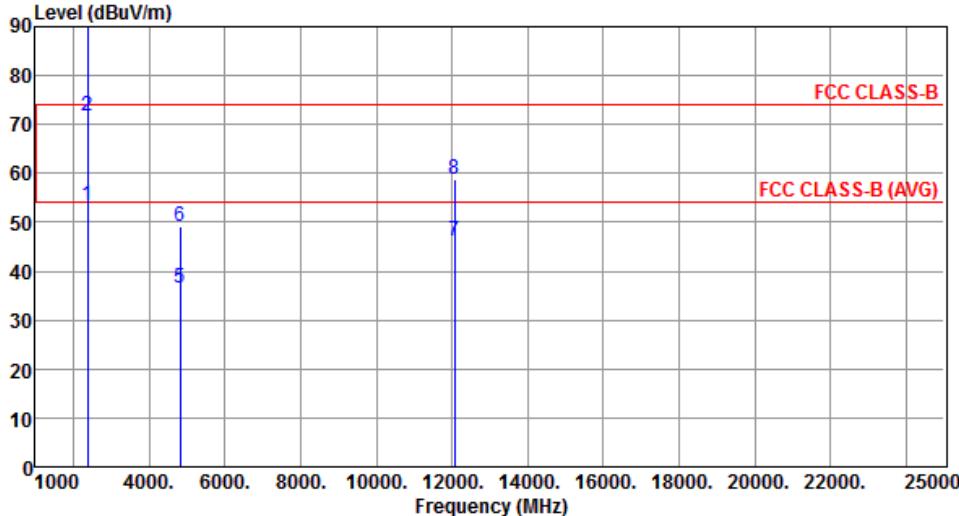
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

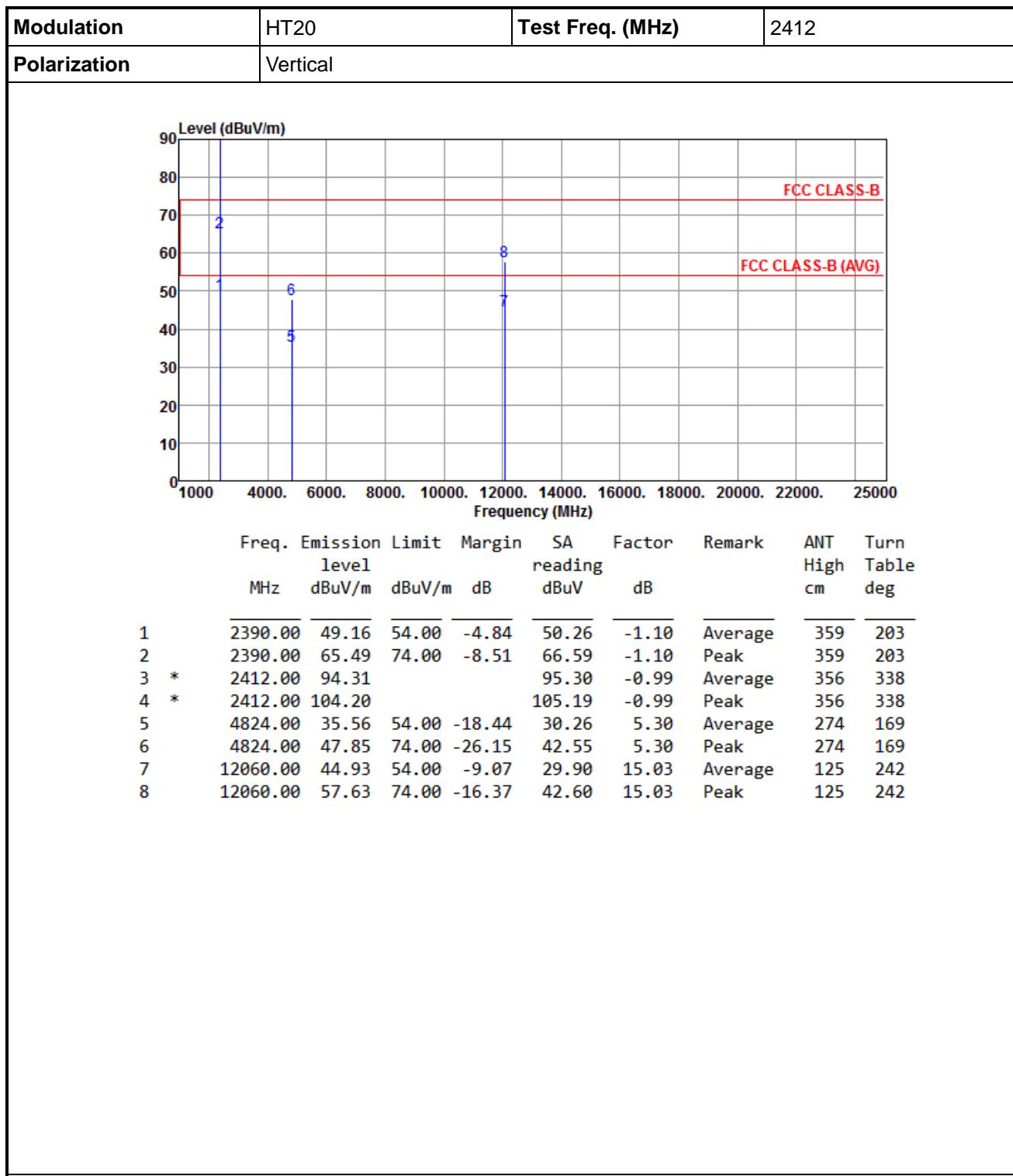
\*Factor includes antenna factor , cable loss and amplifier gain

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.

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

Modulation	HT20	Test Freq. (MHz)	2412																																																																																										
Polarization	Horizontal																																																																																												
																																																																																													
<table border="1"> <thead> <tr> <th></th> <th>Freq. MHz</th> <th>Emission level dBuV/m</th> <th>Limit dBuV/m</th> <th>Margin dB</th> <th>SA reading dBuV</th> <th>Factor dB</th> <th>Remark</th> <th>ANT High cm</th> <th>Turn Table deg</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2390.00</td> <td>53.56</td> <td>54.00</td> <td>-0.44</td> <td>54.66</td> <td>-1.10</td> <td>Average</td> <td>359</td> <td>218</td> </tr> <tr> <td>2</td> <td>2390.00</td> <td>71.65</td> <td>74.00</td> <td>-2.35</td> <td>72.75</td> <td>-1.10</td> <td>Peak</td> <td>359</td> <td>218</td> </tr> <tr> <td>3 *</td> <td>2412.00</td> <td>95.23</td> <td></td> <td></td> <td>96.22</td> <td>-0.99</td> <td>Average</td> <td>359</td> <td>218</td> </tr> <tr> <td>4 *</td> <td>2412.00</td> <td>105.33</td> <td></td> <td></td> <td>106.32</td> <td>-0.99</td> <td>Peak</td> <td>359</td> <td>218</td> </tr> <tr> <td>5</td> <td>4824.00</td> <td>36.59</td> <td>54.00</td> <td>-17.41</td> <td>31.29</td> <td>5.30</td> <td>Average</td> <td>265</td> <td>105</td> </tr> <tr> <td>6</td> <td>4824.00</td> <td>49.10</td> <td>74.00</td> <td>-24.90</td> <td>43.80</td> <td>5.30</td> <td>Peak</td> <td>265</td> <td>105</td> </tr> <tr> <td>7</td> <td>12060.00</td> <td>46.33</td> <td>54.00</td> <td>-7.67</td> <td>31.30</td> <td>15.03</td> <td>Average</td> <td>215</td> <td>325</td> </tr> <tr> <td>8</td> <td>12060.00</td> <td>58.84</td> <td>74.00</td> <td>-15.16</td> <td>43.81</td> <td>15.03</td> <td>Peak</td> <td>215</td> <td>325</td> </tr> </tbody> </table>					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	53.56	54.00	-0.44	54.66	-1.10	Average	359	218	2	2390.00	71.65	74.00	-2.35	72.75	-1.10	Peak	359	218	3 *	2412.00	95.23			96.22	-0.99	Average	359	218	4 *	2412.00	105.33			106.32	-0.99	Peak	359	218	5	4824.00	36.59	54.00	-17.41	31.29	5.30	Average	265	105	6	4824.00	49.10	74.00	-24.90	43.80	5.30	Peak	265	105	7	12060.00	46.33	54.00	-7.67	31.30	15.03	Average	215	325	8	12060.00	58.84	74.00	-15.16	43.81	15.03	Peak	215	325
	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	53.56	54.00	-0.44	54.66	-1.10	Average	359	218																																																																																				
2	2390.00	71.65	74.00	-2.35	72.75	-1.10	Peak	359	218																																																																																				
3 *	2412.00	95.23			96.22	-0.99	Average	359	218																																																																																				
4 *	2412.00	105.33			106.32	-0.99	Peak	359	218																																																																																				
5	4824.00	36.59	54.00	-17.41	31.29	5.30	Average	265	105																																																																																				
6	4824.00	49.10	74.00	-24.90	43.80	5.30	Peak	265	105																																																																																				
7	12060.00	46.33	54.00	-7.67	31.30	15.03	Average	215	325																																																																																				
8	12060.00	58.84	74.00	-15.16	43.81	15.03	Peak	215	325																																																																																				
<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: ** is Peak / Average value of fundamental frequency</p>																																																																																													

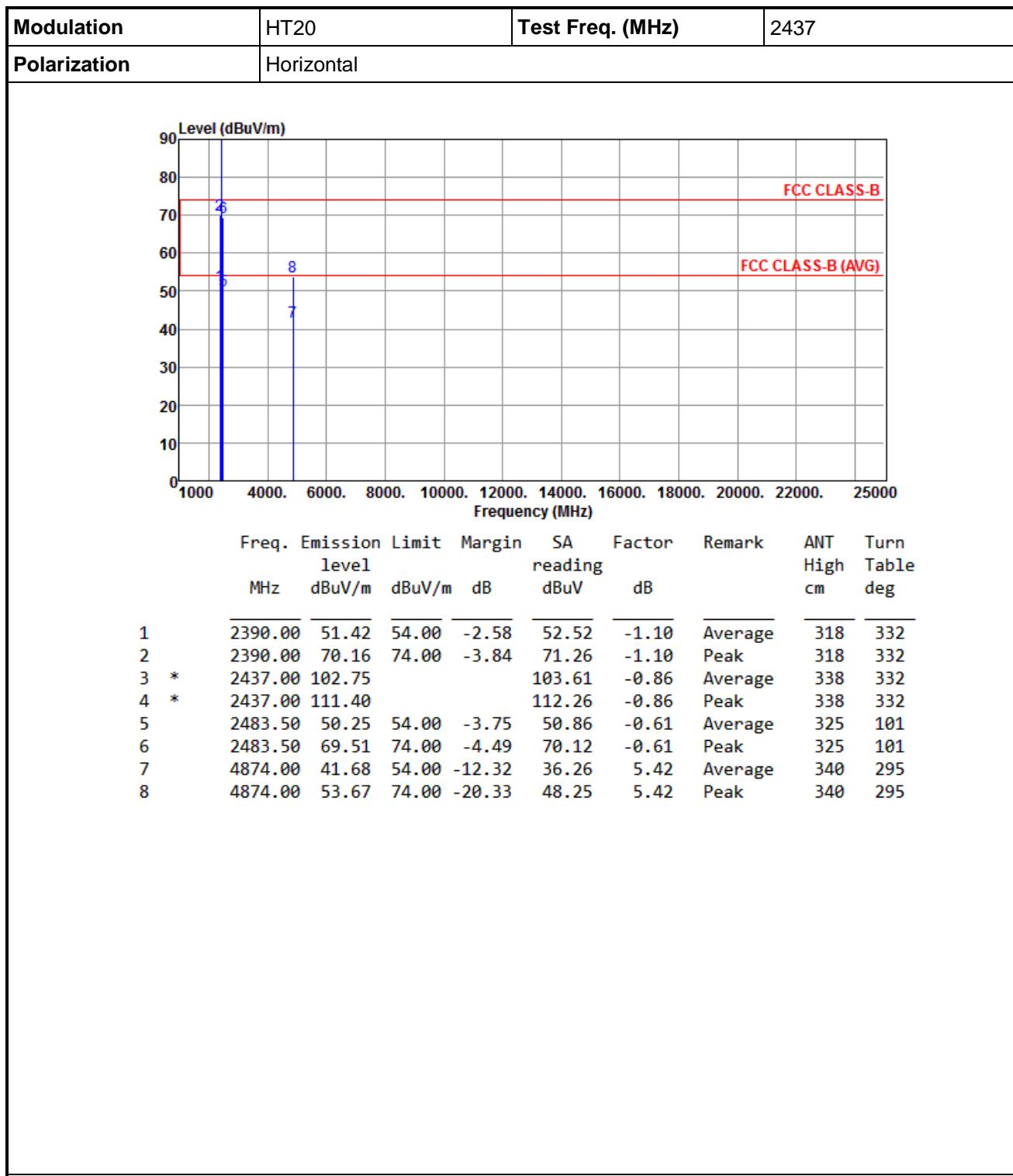


Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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

Note 3: "\*" is Peak / Average value of fundamental frequency

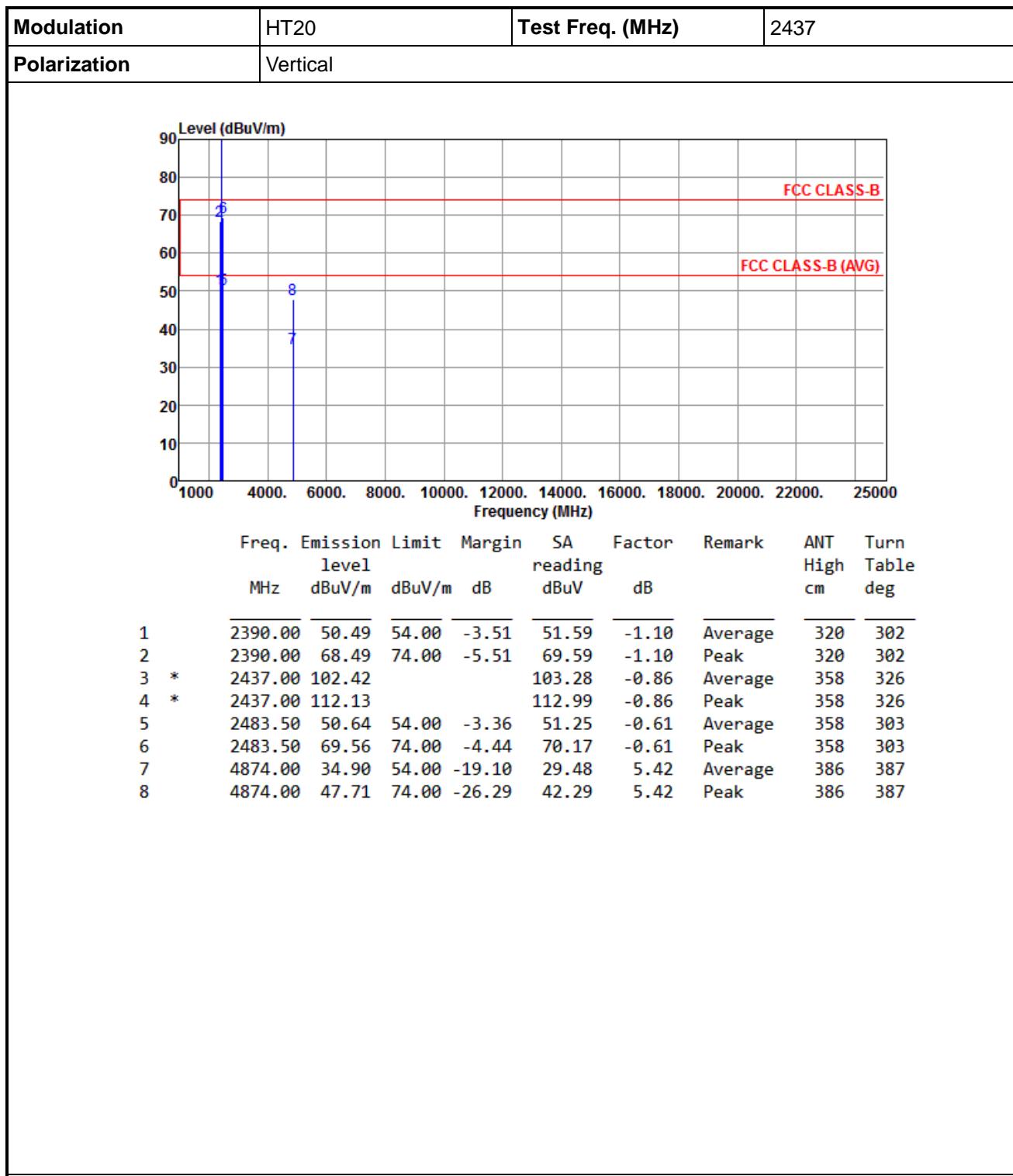


Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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

Note 3: "\*" is Peak / Average value of fundamental frequency

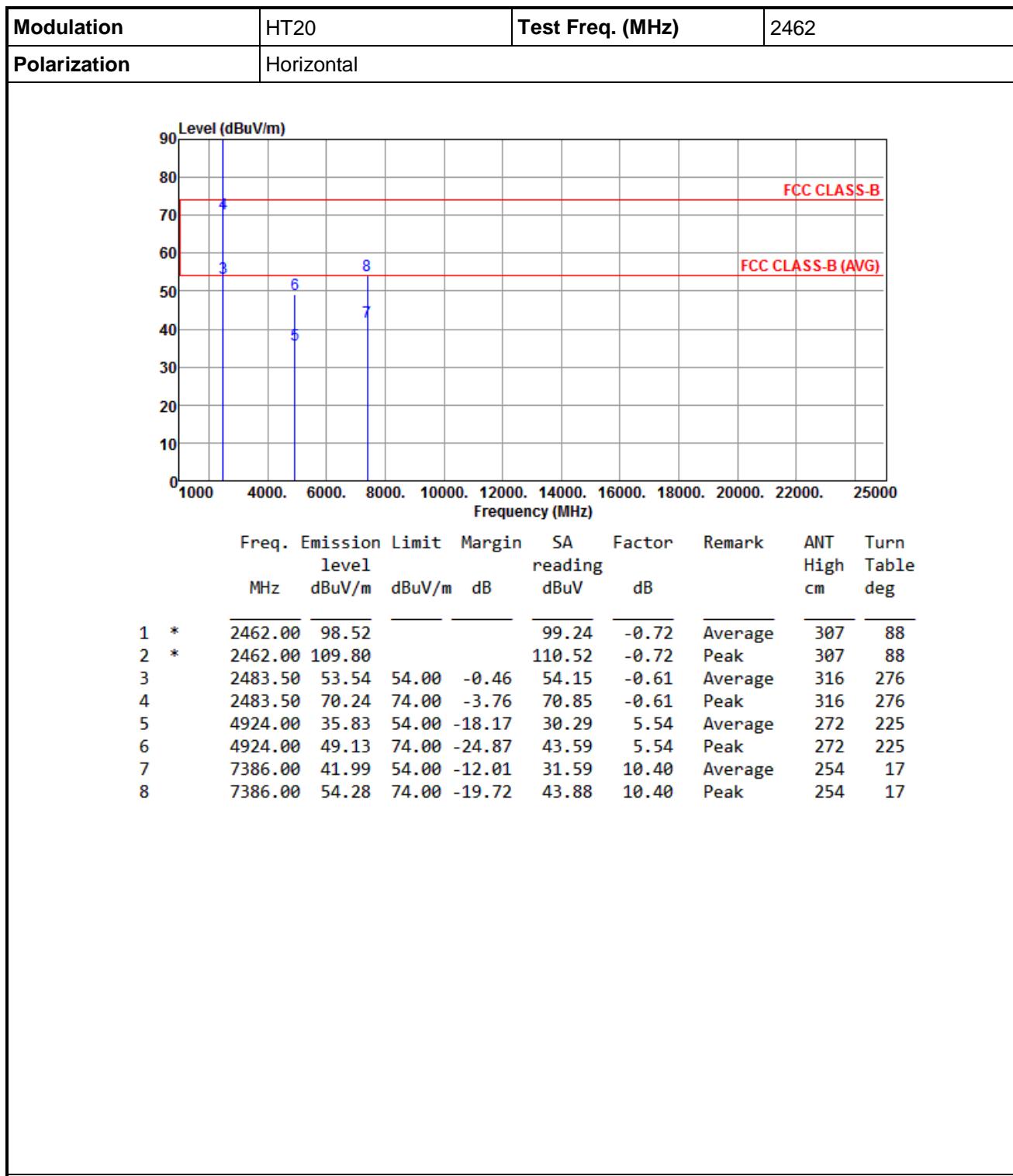


Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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

Note 3: "\*" is Peak / Average value of fundamental frequency

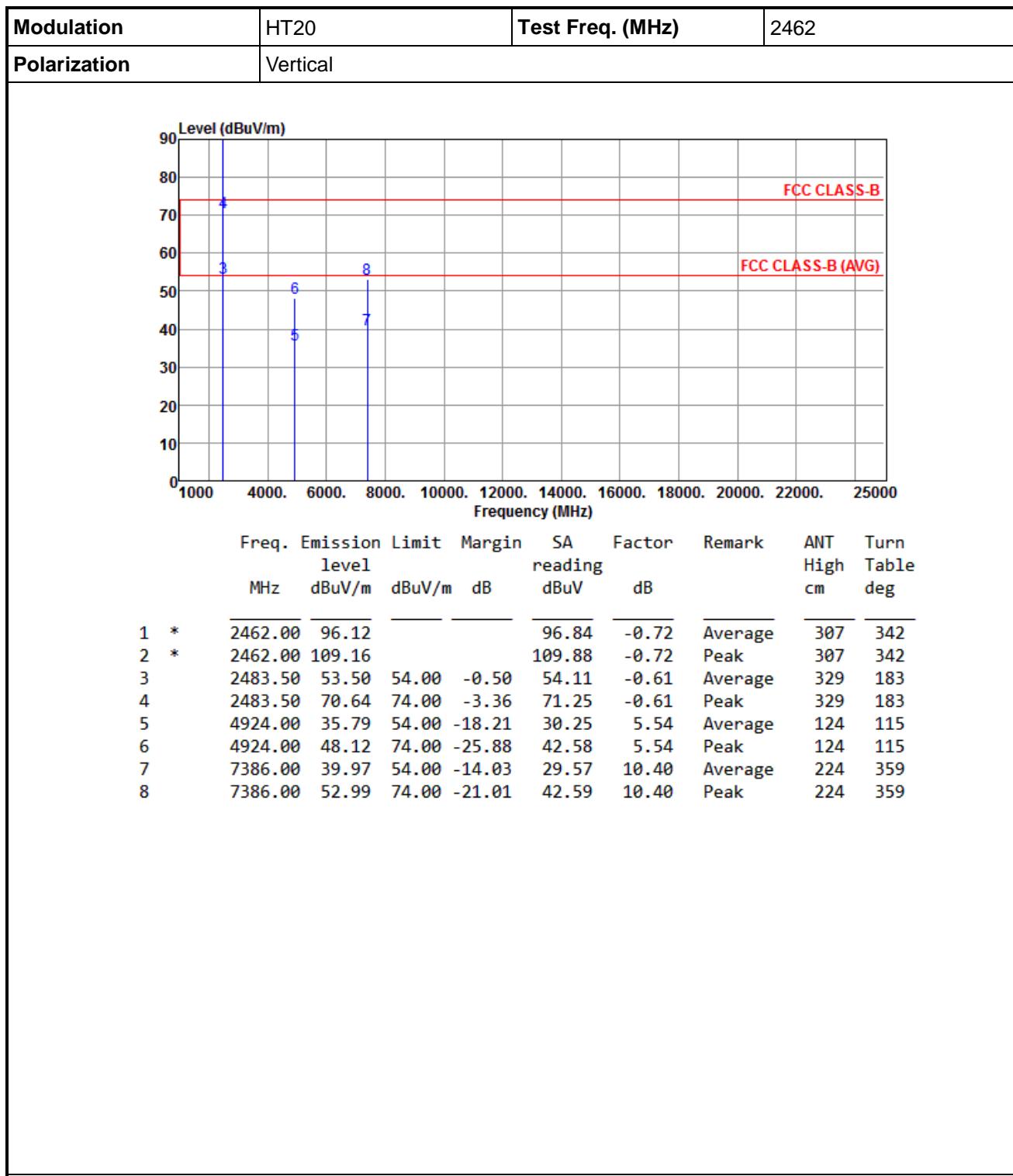


Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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

Note 3: "\*" is Peak / Average value of fundamental frequency



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

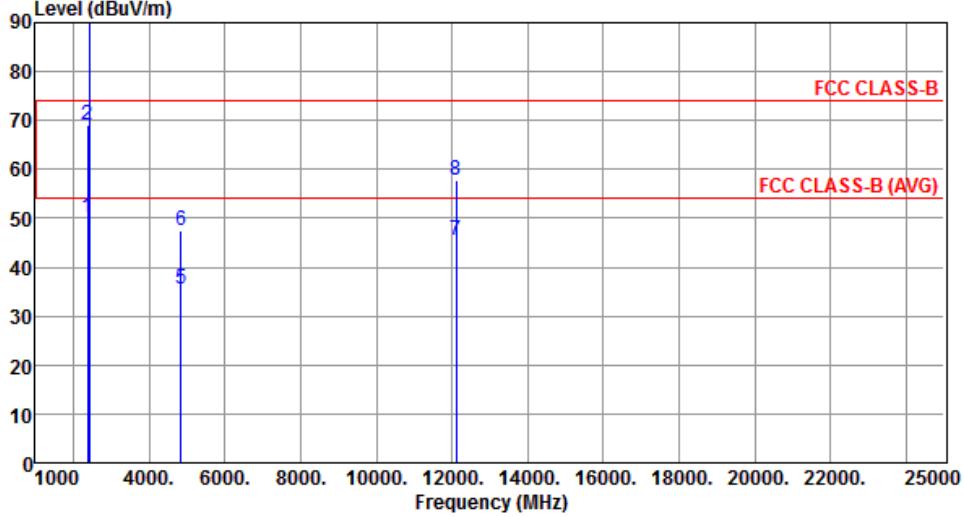
\*Factor includes antenna factor , cable loss and amplifier gain

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

Note 3: "\*" is Peak / Average value of fundamental frequency

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

Modulation	HT40	Test Freq. (MHz)	2422																																																																																									
Polarization	Horizontal																																																																																											
<table border="1"> <thead> <tr> <th>Freq.</th> <th>Emission level MHz</th> <th>Limit dBuV/m</th> <th>Margin dB</th> <th>SA reading dBuV</th> <th>Factor dB</th> <th>Remark</th> <th>ANT High cm</th> <th>Turn Table deg</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2390.00</td> <td>53.39</td> <td>54.00</td> <td>-0.61</td> <td>54.49</td> <td>-1.10</td> <td>Average</td> <td>333</td> <td>242</td> </tr> <tr> <td>2</td> <td>2390.00</td> <td>73.22</td> <td>74.00</td> <td>-0.78</td> <td>74.32</td> <td>-1.10</td> <td>Peak</td> <td>333</td> <td>242</td> </tr> <tr> <td>3 *</td> <td>2422.00</td> <td>95.76</td> <td></td> <td></td> <td>96.69</td> <td>-0.93</td> <td>Average</td> <td>333</td> <td>242</td> </tr> <tr> <td>4 *</td> <td>2422.00</td> <td>106.82</td> <td></td> <td></td> <td>107.75</td> <td>-0.93</td> <td>Peak</td> <td>333</td> <td>242</td> </tr> <tr> <td>5</td> <td>4844.00</td> <td>36.47</td> <td>54.00</td> <td>-17.53</td> <td>31.12</td> <td>5.35</td> <td>Average</td> <td>189</td> <td>257</td> </tr> <tr> <td>6</td> <td>4844.00</td> <td>48.94</td> <td>74.00</td> <td>-25.06</td> <td>43.59</td> <td>5.35</td> <td>Peak</td> <td>189</td> <td>257</td> </tr> <tr> <td>7</td> <td>12110.00</td> <td>46.25</td> <td>54.00</td> <td>-7.75</td> <td>31.26</td> <td>14.99</td> <td>Average</td> <td>247</td> <td>199</td> </tr> <tr> <td>8</td> <td>12110.00</td> <td>58.47</td> <td>74.00</td> <td>-15.53</td> <td>43.48</td> <td>14.99</td> <td>Peak</td> <td>247</td> <td>199</td> </tr> </tbody> </table>				Freq.	Emission level MHz	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg	1	2390.00	53.39	54.00	-0.61	54.49	-1.10	Average	333	242	2	2390.00	73.22	74.00	-0.78	74.32	-1.10	Peak	333	242	3 *	2422.00	95.76			96.69	-0.93	Average	333	242	4 *	2422.00	106.82			107.75	-0.93	Peak	333	242	5	4844.00	36.47	54.00	-17.53	31.12	5.35	Average	189	257	6	4844.00	48.94	74.00	-25.06	43.59	5.35	Peak	189	257	7	12110.00	46.25	54.00	-7.75	31.26	14.99	Average	247	199	8	12110.00	58.47	74.00	-15.53	43.48	14.99	Peak	247	199
Freq.	Emission level MHz	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg																																																																																				
1	2390.00	53.39	54.00	-0.61	54.49	-1.10	Average	333	242																																																																																			
2	2390.00	73.22	74.00	-0.78	74.32	-1.10	Peak	333	242																																																																																			
3 *	2422.00	95.76			96.69	-0.93	Average	333	242																																																																																			
4 *	2422.00	106.82			107.75	-0.93	Peak	333	242																																																																																			
5	4844.00	36.47	54.00	-17.53	31.12	5.35	Average	189	257																																																																																			
6	4844.00	48.94	74.00	-25.06	43.59	5.35	Peak	189	257																																																																																			
7	12110.00	46.25	54.00	-7.75	31.26	14.99	Average	247	199																																																																																			
8	12110.00	58.47	74.00	-15.53	43.48	14.99	Peak	247	199																																																																																			
<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: ** is Peak / Average value of fundamental frequency</p>																																																																																												

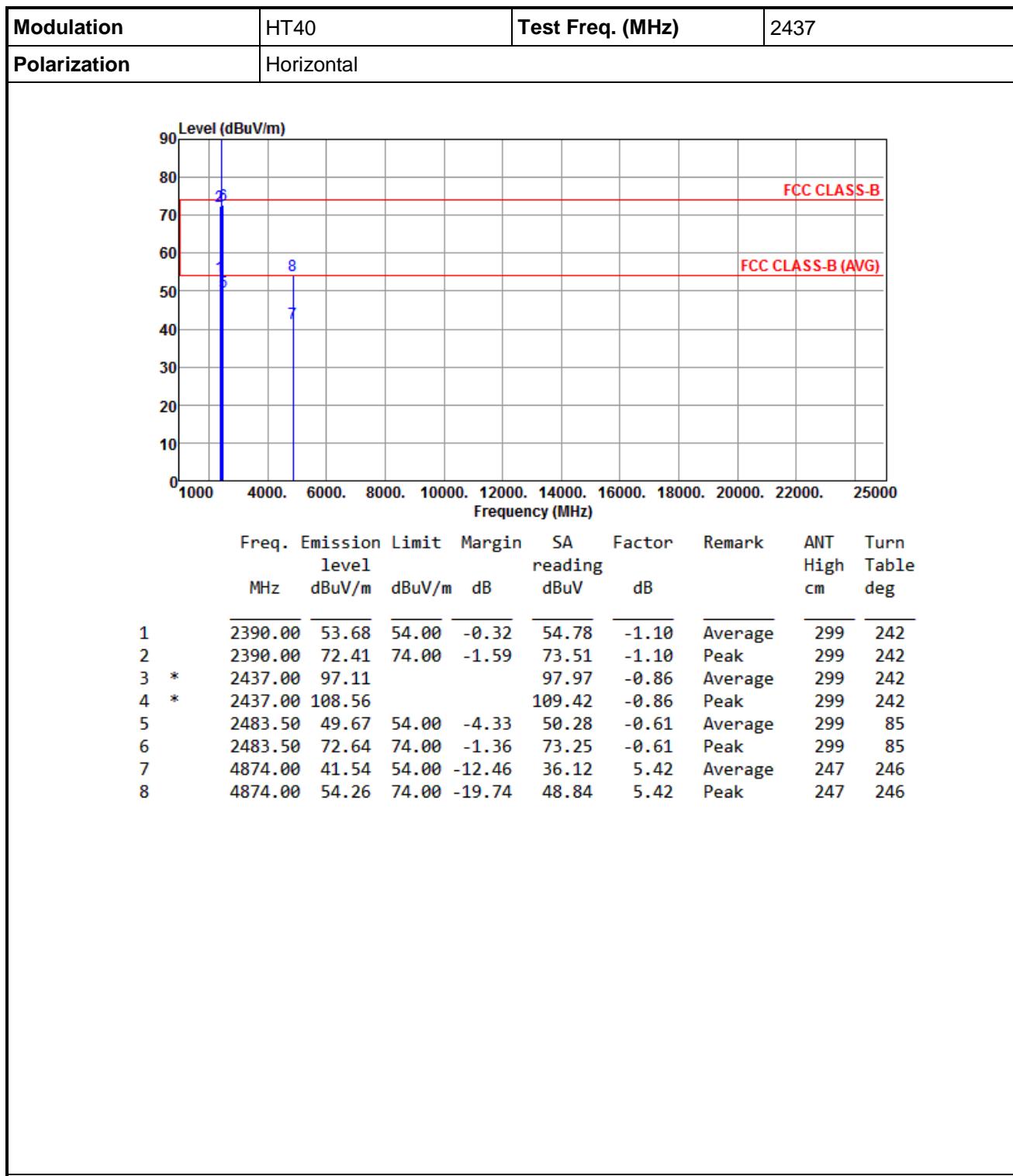
<b>Modulation</b>	HT40	<b>Test Freq. (MHz)</b>	2422																																																																																																					
<b>Polarization</b>	Vertical																																																																																																							
																																																																																																								
<table border="1"> <thead> <tr> <th>Freq.</th> <th>Emission Limit</th> <th>Margin</th> <th>SA Factor</th> <th>Remark</th> <th>ANT High</th> <th>Turn Table</th> </tr> <tr> <th>level</th> <th>level</th> <th>reading</th> <th>reading</th> <th></th> <th>cm</th> <th>deg</th> </tr> <tr> <th>MHz</th> <th>dBuV/m</th> <th>dBuV/m</th> <th>dB</th> <th>dB</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2390.00</td> <td>50.16</td> <td>54.00</td> <td>-3.84</td> <td>51.26</td> <td>-1.10</td> <td>Average</td> <td>333</td> <td>316</td> </tr> <tr> <td>2</td> <td>2390.00</td> <td>69.19</td> <td>74.00</td> <td>-4.81</td> <td>70.29</td> <td>-1.10</td> <td>Peak</td> <td>333</td> <td>316</td> </tr> <tr> <td>3 *</td> <td>2422.00</td> <td>95.39</td> <td></td> <td></td> <td>96.32</td> <td>-0.93</td> <td>Average</td> <td>334</td> <td>187</td> </tr> <tr> <td>4 *</td> <td>2422.00</td> <td>106.32</td> <td></td> <td></td> <td>107.25</td> <td>-0.93</td> <td>Peak</td> <td>334</td> <td>187</td> </tr> <tr> <td>5</td> <td>4844.00</td> <td>35.64</td> <td>54.00</td> <td>-18.36</td> <td>30.29</td> <td>5.35</td> <td>Average</td> <td>265</td> <td>288</td> </tr> <tr> <td>6</td> <td>4844.00</td> <td>47.49</td> <td>74.00</td> <td>-26.51</td> <td>42.14</td> <td>5.35</td> <td>Peak</td> <td>265</td> <td>288</td> </tr> <tr> <td>7</td> <td>12110.00</td> <td>45.44</td> <td>54.00</td> <td>-8.56</td> <td>30.45</td> <td>14.99</td> <td>Average</td> <td>217</td> <td>290</td> </tr> <tr> <td>8</td> <td>12110.00</td> <td>57.88</td> <td>74.00</td> <td>-16.12</td> <td>42.89</td> <td>14.99</td> <td>Peak</td> <td>217</td> <td>290</td> </tr> </tbody> </table>				Freq.	Emission Limit	Margin	SA Factor	Remark	ANT High	Turn Table	level	level	reading	reading		cm	deg	MHz	dBuV/m	dBuV/m	dB	dB			1	2390.00	50.16	54.00	-3.84	51.26	-1.10	Average	333	316	2	2390.00	69.19	74.00	-4.81	70.29	-1.10	Peak	333	316	3 *	2422.00	95.39			96.32	-0.93	Average	334	187	4 *	2422.00	106.32			107.25	-0.93	Peak	334	187	5	4844.00	35.64	54.00	-18.36	30.29	5.35	Average	265	288	6	4844.00	47.49	74.00	-26.51	42.14	5.35	Peak	265	288	7	12110.00	45.44	54.00	-8.56	30.45	14.99	Average	217	290	8	12110.00	57.88	74.00	-16.12	42.89	14.99	Peak	217	290
Freq.	Emission Limit	Margin	SA Factor	Remark	ANT High	Turn Table																																																																																																		
level	level	reading	reading		cm	deg																																																																																																		
MHz	dBuV/m	dBuV/m	dB	dB																																																																																																				
1	2390.00	50.16	54.00	-3.84	51.26	-1.10	Average	333	316																																																																																															
2	2390.00	69.19	74.00	-4.81	70.29	-1.10	Peak	333	316																																																																																															
3 *	2422.00	95.39			96.32	-0.93	Average	334	187																																																																																															
4 *	2422.00	106.32			107.25	-0.93	Peak	334	187																																																																																															
5	4844.00	35.64	54.00	-18.36	30.29	5.35	Average	265	288																																																																																															
6	4844.00	47.49	74.00	-26.51	42.14	5.35	Peak	265	288																																																																																															
7	12110.00	45.44	54.00	-8.56	30.45	14.99	Average	217	290																																																																																															
8	12110.00	57.88	74.00	-16.12	42.89	14.99	Peak	217	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).

Note 3: "\*" is Peak / Average value of fundamental frequency

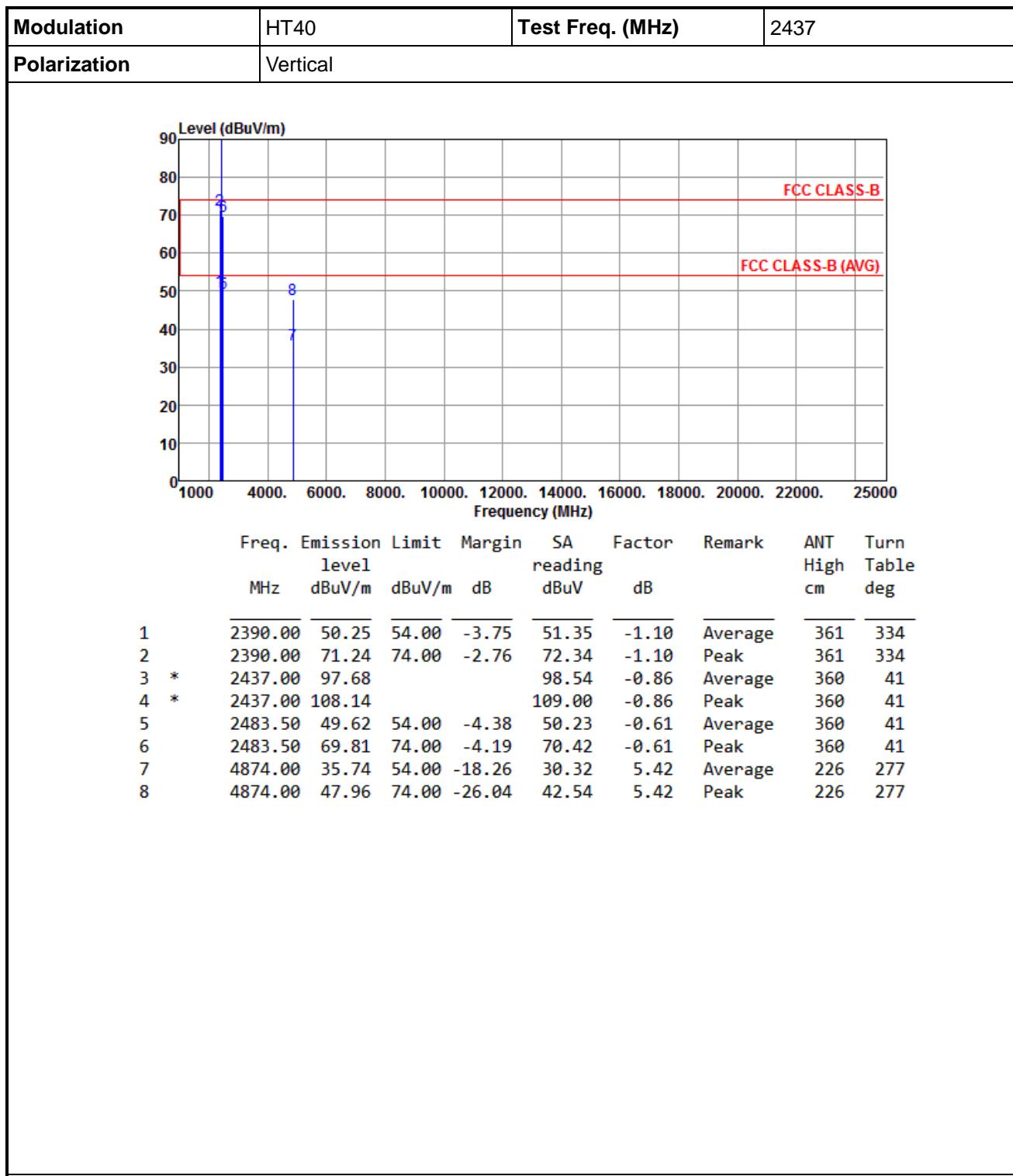


Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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

Note 3: "\*" is Peak / Average value of fundamental frequency

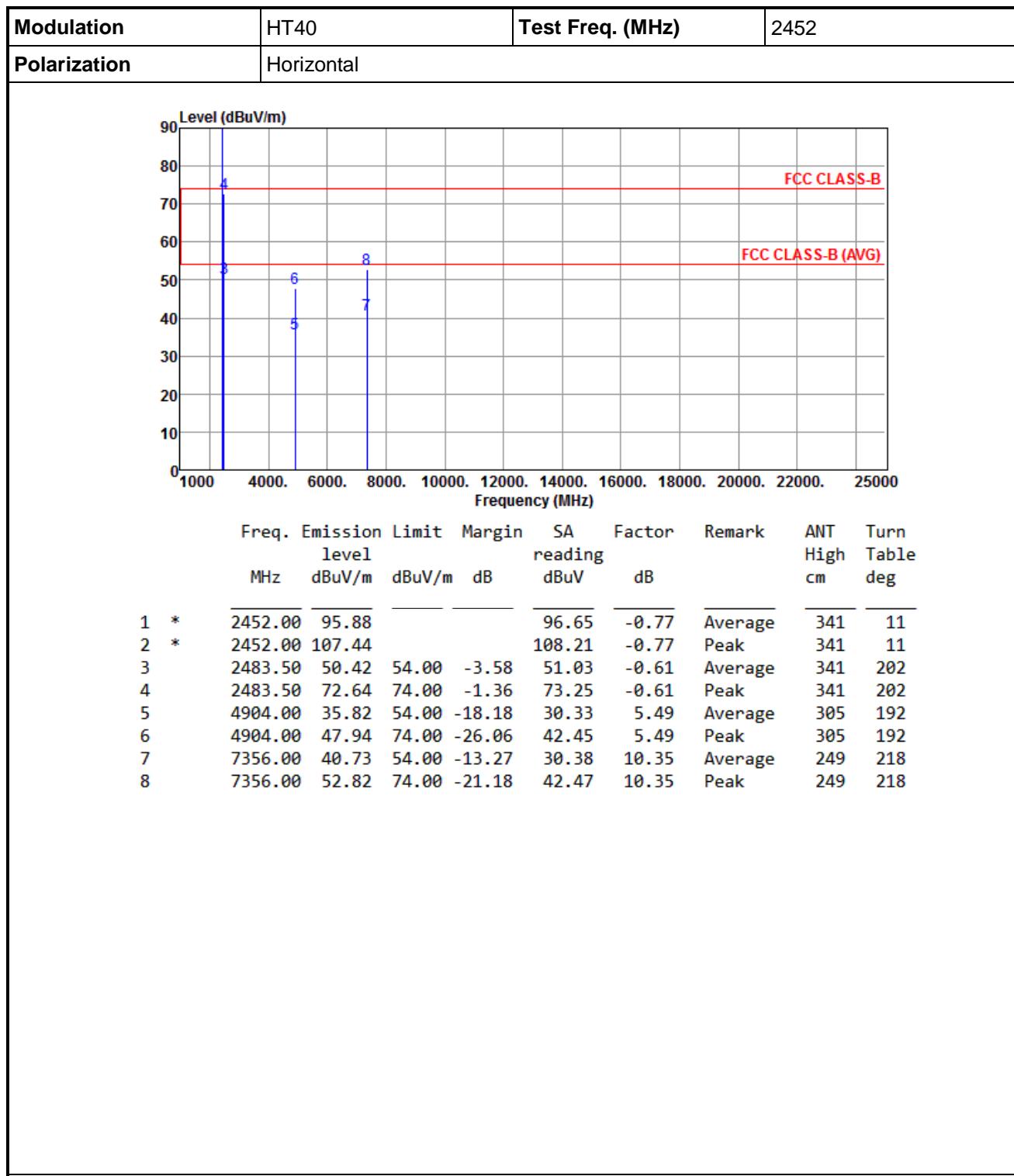


Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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

Note 3: "\*" is Peak / Average value of fundamental frequency



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: "\*" is Peak / Average value of fundamental frequency

<b>Modulation</b>	HT40	<b>Test Freq. (MHz)</b>	2452																																																																																																											
<b>Polarization</b>	Vertical																																																																																																													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding-bottom: 2px;">Freq.</th> <th style="text-align: left; padding-bottom: 2px;">Emission</th> <th style="text-align: left; padding-bottom: 2px;">Limit</th> <th style="text-align: left; padding-bottom: 2px;">Margin</th> <th style="text-align: left; padding-bottom: 2px;">SA</th> <th style="text-align: left; padding-bottom: 2px;">Factor</th> <th style="text-align: left; padding-bottom: 2px;">Remark</th> <th style="text-align: left; padding-bottom: 2px;">ANT</th> <th style="text-align: left; padding-bottom: 2px;">Turn</th> </tr> <tr> <th style="text-align: left;">MHz</th> <th style="text-align: left;">level</th> <th style="text-align: left;">dBuV/m</th> <th style="text-align: left;">dBuV/m</th> <th style="text-align: left;">dB</th> <th style="text-align: left;">reading</th> <th style="text-align: left;">reading</th> <th style="text-align: left;">High</th> <th style="text-align: left;">Table</th> </tr> <tr> <th></th> <th></th> <th></th> <th></th> <th></th> <th style="text-align: left;">dBuV</th> <th style="text-align: left;">dB</th> <th style="text-align: left;">cm</th> <th style="text-align: left;">deg</th> </tr> </thead> <tbody> <tr> <td>1 *</td> <td>2452.00</td> <td>94.74</td> <td></td> <td></td> <td>95.51</td> <td>-0.77</td> <td>Average</td> <td>342</td> <td>8</td> </tr> <tr> <td>2 *</td> <td>2452.00</td> <td>105.75</td> <td></td> <td></td> <td>106.52</td> <td>-0.77</td> <td>Peak</td> <td>342</td> <td>8</td> </tr> <tr> <td>3</td> <td>2483.50</td> <td>51.49</td> <td>54.00</td> <td>-2.51</td> <td>52.10</td> <td>-0.61</td> <td>Average</td> <td>341</td> <td>330</td> </tr> <tr> <td>4</td> <td>2483.50</td> <td>73.51</td> <td>74.00</td> <td>-0.49</td> <td>74.12</td> <td>-0.61</td> <td>Peak</td> <td>341</td> <td>330</td> </tr> <tr> <td>5</td> <td>4904.00</td> <td>36.07</td> <td>54.00</td> <td>-17.93</td> <td>30.58</td> <td>5.49</td> <td>Average</td> <td>195</td> <td>135</td> </tr> <tr> <td>6</td> <td>4904.00</td> <td>47.97</td> <td>74.00</td> <td>-26.03</td> <td>42.48</td> <td>5.49</td> <td>Peak</td> <td>195</td> <td>135</td> </tr> <tr> <td>7</td> <td>7356.00</td> <td>40.62</td> <td>54.00</td> <td>-13.38</td> <td>30.27</td> <td>10.35</td> <td>Average</td> <td>212</td> <td>187</td> </tr> <tr> <td>8</td> <td>7356.00</td> <td>52.76</td> <td>74.00</td> <td>-21.24</td> <td>42.41</td> <td>10.35</td> <td>Peak</td> <td>212</td> <td>187</td> </tr> </tbody> </table>				Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn	MHz	level	dBuV/m	dBuV/m	dB	reading	reading	High	Table						dBuV	dB	cm	deg	1 *	2452.00	94.74			95.51	-0.77	Average	342	8	2 *	2452.00	105.75			106.52	-0.77	Peak	342	8	3	2483.50	51.49	54.00	-2.51	52.10	-0.61	Average	341	330	4	2483.50	73.51	74.00	-0.49	74.12	-0.61	Peak	341	330	5	4904.00	36.07	54.00	-17.93	30.58	5.49	Average	195	135	6	4904.00	47.97	74.00	-26.03	42.48	5.49	Peak	195	135	7	7356.00	40.62	54.00	-13.38	30.27	10.35	Average	212	187	8	7356.00	52.76	74.00	-21.24	42.41	10.35	Peak	212	187
Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn																																																																																																						
MHz	level	dBuV/m	dBuV/m	dB	reading	reading	High	Table																																																																																																						
					dBuV	dB	cm	deg																																																																																																						
1 *	2452.00	94.74			95.51	-0.77	Average	342	8																																																																																																					
2 *	2452.00	105.75			106.52	-0.77	Peak	342	8																																																																																																					
3	2483.50	51.49	54.00	-2.51	52.10	-0.61	Average	341	330																																																																																																					
4	2483.50	73.51	74.00	-0.49	74.12	-0.61	Peak	341	330																																																																																																					
5	4904.00	36.07	54.00	-17.93	30.58	5.49	Average	195	135																																																																																																					
6	4904.00	47.97	74.00	-26.03	42.48	5.49	Peak	195	135																																																																																																					
7	7356.00	40.62	54.00	-13.38	30.27	10.35	Average	212	187																																																																																																					
8	7356.00	52.76	74.00	-21.24	42.41	10.35	Peak	212	187																																																																																																					

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

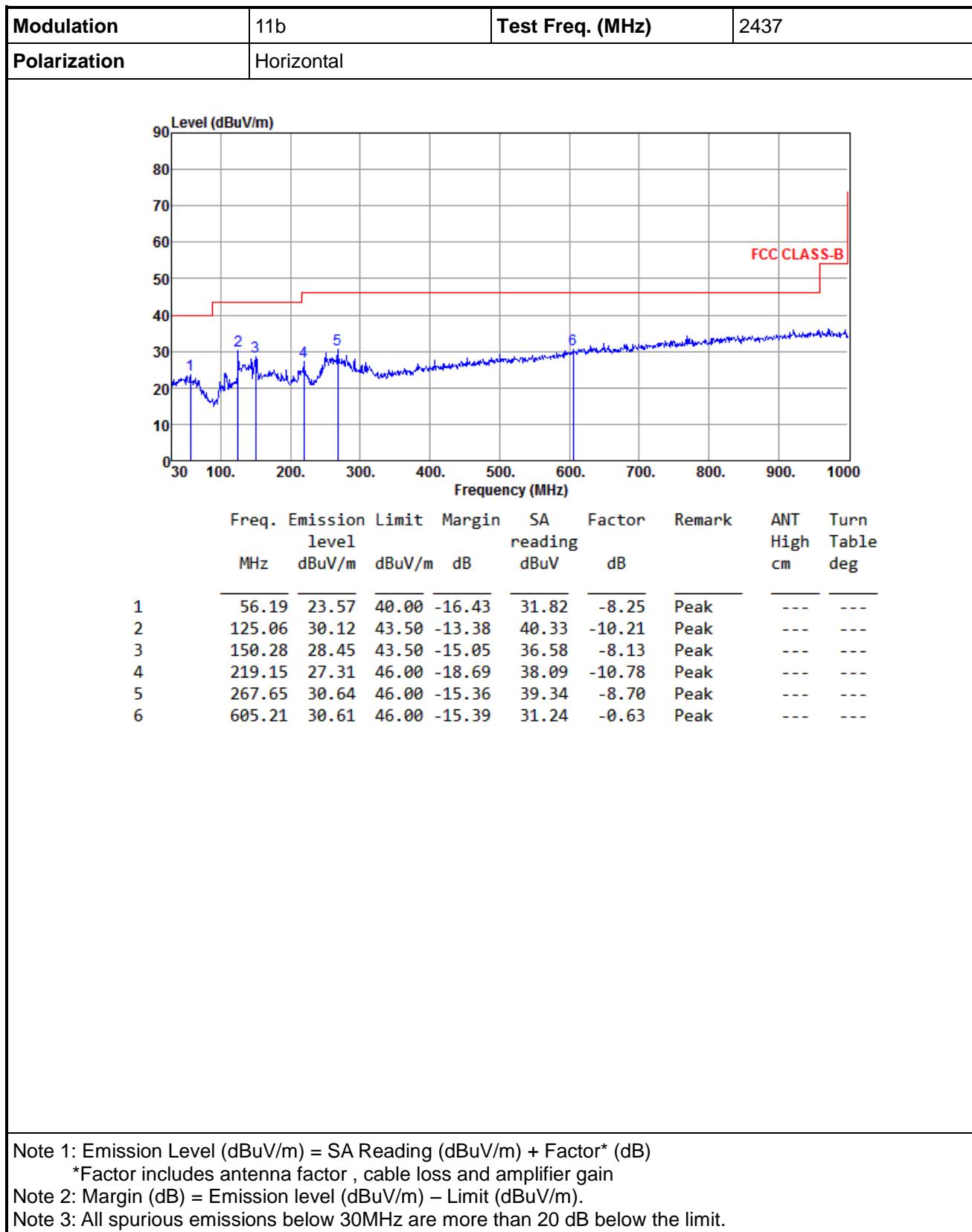
\*Factor includes antenna factor , cable loss and amplifier gain

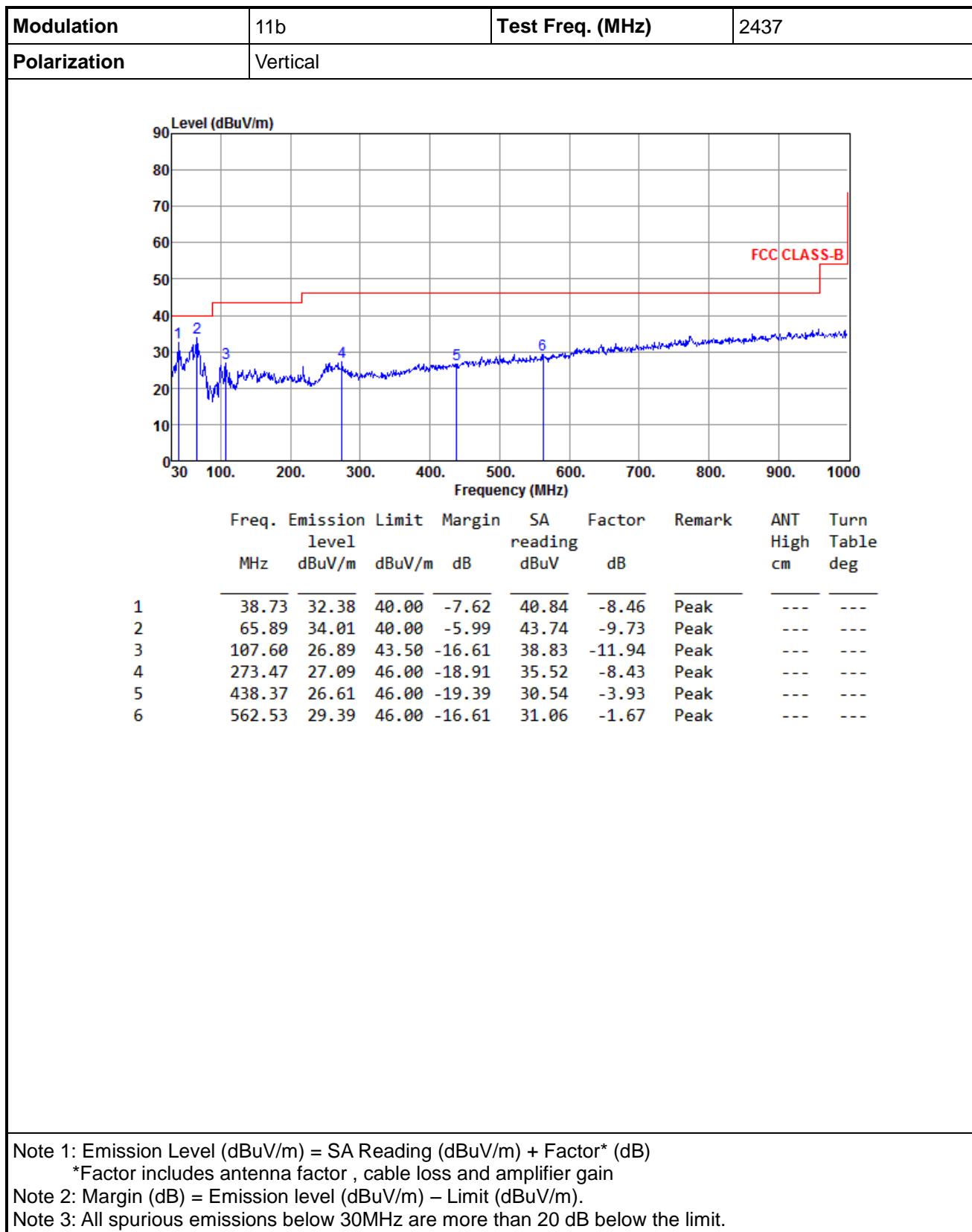
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: "\*" is Peak / Average value of fundamental frequency

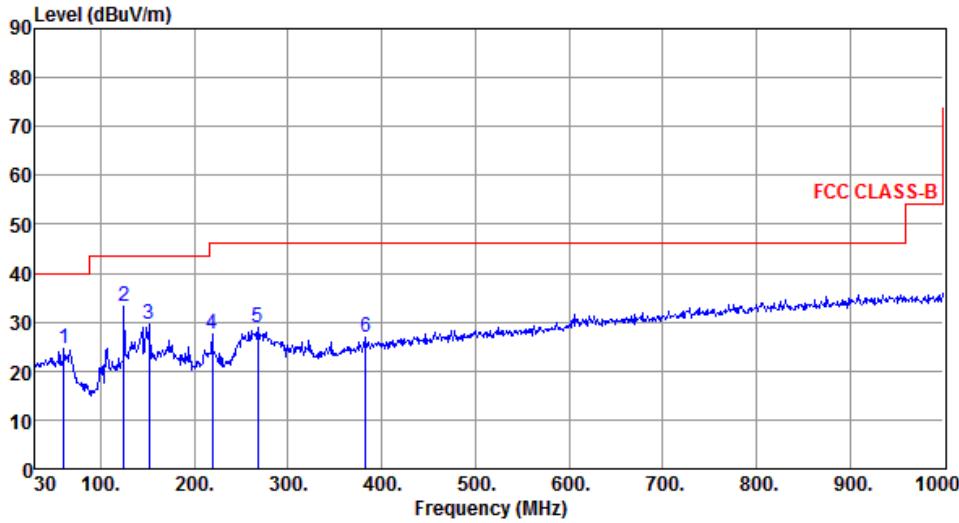
### Non-beamforming mode for Configuration 2 : Sample 2: VE4

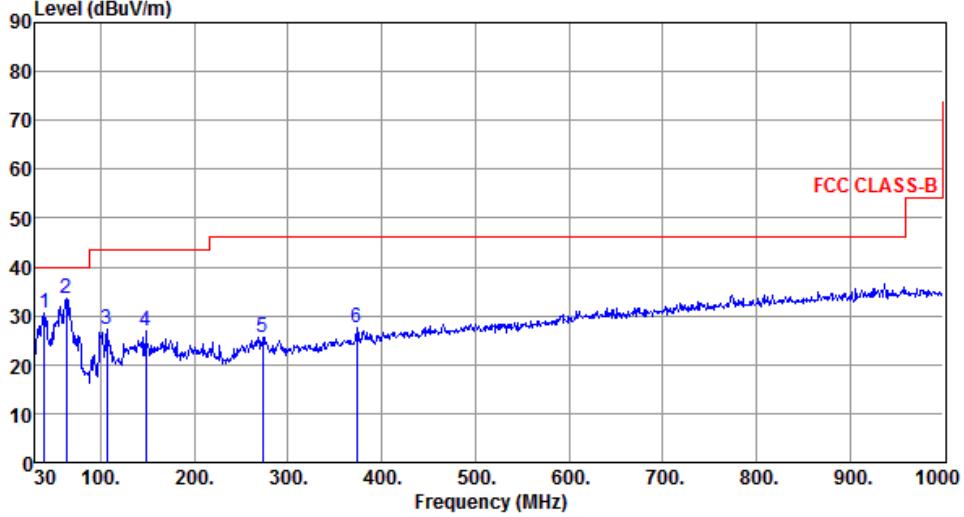
#### 3.5.12 Transmitter Radiated Unwanted Emissions (Below 1GHz)





**Beamforming mode for Configuration 2 : Sample 2: VE4**
**3.5.13 Transmitter Radiated Unwanted Emissions (Below 1GHz)**

Modulation	HT20	Test Freq. (MHz)	2437																																																																						
Polarization	Horizontal																																																																								
																																																																									
<table border="1"> <thead> <tr> <th></th> <th>Freq. level MHz</th> <th>Emission level dBuV/m</th> <th>Limit dBuV/m</th> <th>Margin dB</th> <th>SA reading dBuV</th> <th>Factor dB</th> <th>Remark</th> <th>ANT High cm</th> <th>Turn Table deg</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>61.04</td> <td>24.57</td> <td>40.00</td> <td>-15.43</td> <td>33.29</td> <td>-8.72</td> <td>Peak</td> <td>---</td> <td>---</td> </tr> <tr> <td>2</td> <td>125.06</td> <td>33.13</td> <td>43.50</td> <td>-10.37</td> <td>43.34</td> <td>-10.21</td> <td>Peak</td> <td>---</td> <td>---</td> </tr> <tr> <td>3</td> <td>151.25</td> <td>29.54</td> <td>43.50</td> <td>-13.96</td> <td>37.66</td> <td>-8.12</td> <td>Peak</td> <td>---</td> <td>---</td> </tr> <tr> <td>4</td> <td>219.15</td> <td>27.71</td> <td>46.00</td> <td>-18.29</td> <td>38.49</td> <td>-10.78</td> <td>Peak</td> <td>---</td> <td>---</td> </tr> <tr> <td>5</td> <td>267.65</td> <td>28.97</td> <td>46.00</td> <td>-17.03</td> <td>37.67</td> <td>-8.70</td> <td>Peak</td> <td>---</td> <td>---</td> </tr> <tr> <td>6</td> <td>383.08</td> <td>26.82</td> <td>46.00</td> <td>-19.18</td> <td>32.27</td> <td>-5.45</td> <td>Peak</td> <td>---</td> <td>---</td> </tr> </tbody> </table>					Freq. level MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg	1	61.04	24.57	40.00	-15.43	33.29	-8.72	Peak	---	---	2	125.06	33.13	43.50	-10.37	43.34	-10.21	Peak	---	---	3	151.25	29.54	43.50	-13.96	37.66	-8.12	Peak	---	---	4	219.15	27.71	46.00	-18.29	38.49	-10.78	Peak	---	---	5	267.65	28.97	46.00	-17.03	37.67	-8.70	Peak	---	---	6	383.08	26.82	46.00	-19.18	32.27	-5.45	Peak	---	---
	Freq. level MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg																																																																
1	61.04	24.57	40.00	-15.43	33.29	-8.72	Peak	---	---																																																																
2	125.06	33.13	43.50	-10.37	43.34	-10.21	Peak	---	---																																																																
3	151.25	29.54	43.50	-13.96	37.66	-8.12	Peak	---	---																																																																
4	219.15	27.71	46.00	-18.29	38.49	-10.78	Peak	---	---																																																																
5	267.65	28.97	46.00	-17.03	37.67	-8.70	Peak	---	---																																																																
6	383.08	26.82	46.00	-19.18	32.27	-5.45	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.																																																																									

<b>Modulation</b>	HT20	<b>Test Freq. (MHz)</b>	2437																																																												
<b>Polarization</b>	Vertical																																																														
 <b>Freq. Emission Limit Margin SA Factor Remark ANT Turn</b> <b>level level reading reading Factor Remark ANT Turn</b> <b>MHz dBuV/m dBuV/m dB dB dB cm deg</b>																																																															
<table> <tbody> <tr> <td>1</td><td>39.70</td><td>30.62</td><td>40.00</td><td>-9.38</td><td>38.97</td><td>-8.35</td><td>Peak</td><td>---</td><td>---</td></tr> <tr> <td>2</td><td>62.98</td><td>33.38</td><td>40.00</td><td>-6.62</td><td>42.51</td><td>-9.13</td><td>Peak</td><td>---</td><td>---</td></tr> <tr> <td>3</td><td>106.63</td><td>27.17</td><td>43.50</td><td>-16.33</td><td>39.27</td><td>-12.10</td><td>Peak</td><td>---</td><td>---</td></tr> <tr> <td>4</td><td>148.34</td><td>26.98</td><td>43.50</td><td>-16.52</td><td>35.16</td><td>-8.18</td><td>Peak</td><td>---</td><td>---</td></tr> <tr> <td>5</td><td>272.50</td><td>25.53</td><td>46.00</td><td>-20.47</td><td>34.01</td><td>-8.48</td><td>Peak</td><td>---</td><td>---</td></tr> <tr> <td>6</td><td>373.38</td><td>27.70</td><td>46.00</td><td>-18.30</td><td>33.41</td><td>-5.71</td><td>Peak</td><td>---</td><td>---</td></tr> </tbody> </table>				1	39.70	30.62	40.00	-9.38	38.97	-8.35	Peak	---	---	2	62.98	33.38	40.00	-6.62	42.51	-9.13	Peak	---	---	3	106.63	27.17	43.50	-16.33	39.27	-12.10	Peak	---	---	4	148.34	26.98	43.50	-16.52	35.16	-8.18	Peak	---	---	5	272.50	25.53	46.00	-20.47	34.01	-8.48	Peak	---	---	6	373.38	27.70	46.00	-18.30	33.41	-5.71	Peak	---	---
1	39.70	30.62	40.00	-9.38	38.97	-8.35	Peak	---	---																																																						
2	62.98	33.38	40.00	-6.62	42.51	-9.13	Peak	---	---																																																						
3	106.63	27.17	43.50	-16.33	39.27	-12.10	Peak	---	---																																																						
4	148.34	26.98	43.50	-16.52	35.16	-8.18	Peak	---	---																																																						
5	272.50	25.53	46.00	-20.47	34.01	-8.48	Peak	---	---																																																						
6	373.38	27.70	46.00	-18.30	33.41	-5.71	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.																																																															

## 3.6 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 30 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

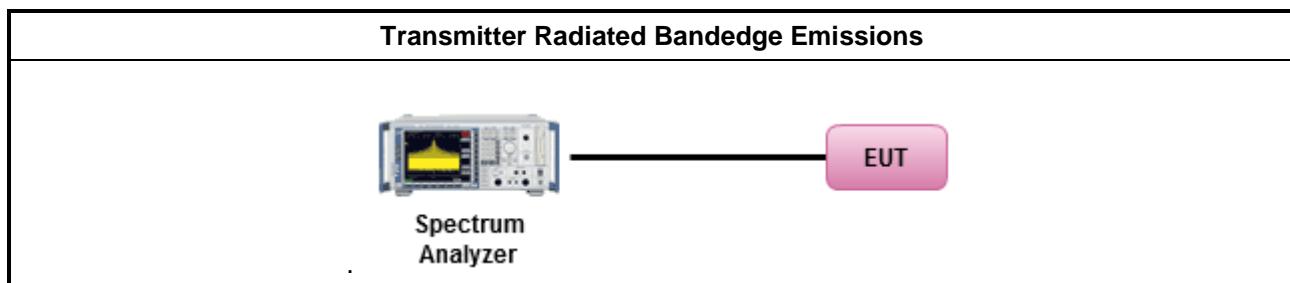
#### Reference level measurement

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



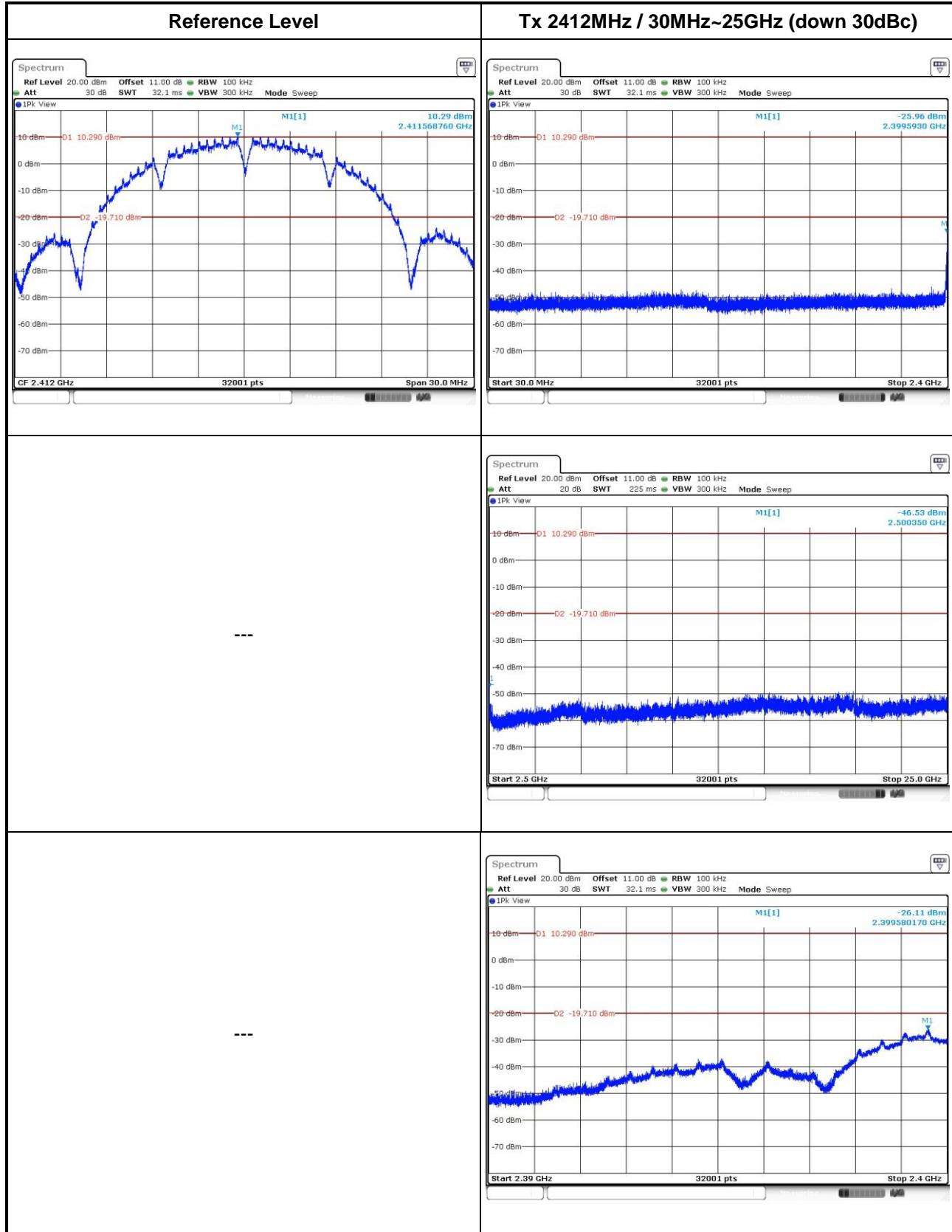
### 3.6.5 Test Result of Emissions in non-restricted frequency bands

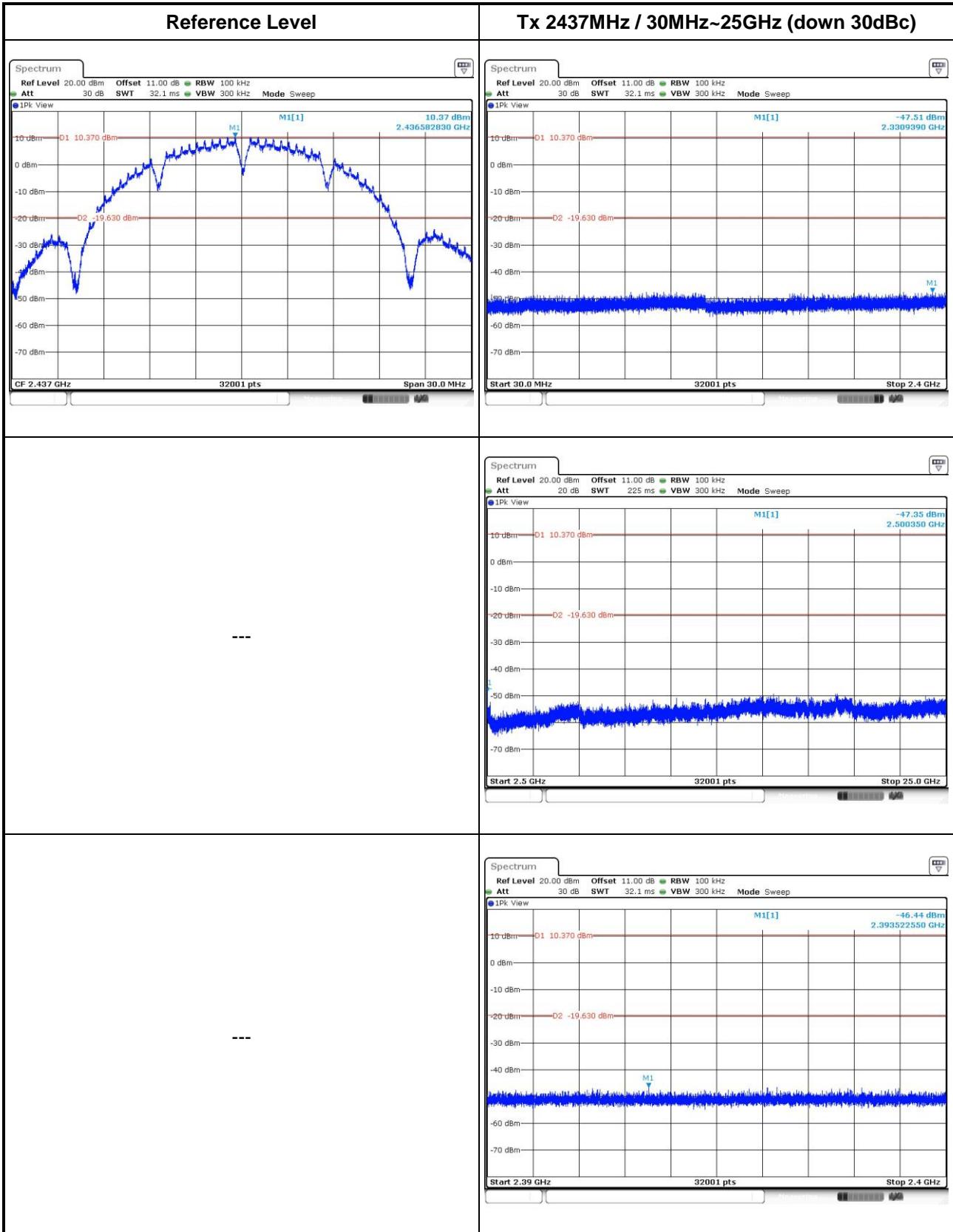
This test item is performed on each TX output individually without summing or adding  $10 \log(N_{ANT})$  since measurements are made relative to the in-band emissions on the individual outputs. Only worst test result of each operating mode is presented.

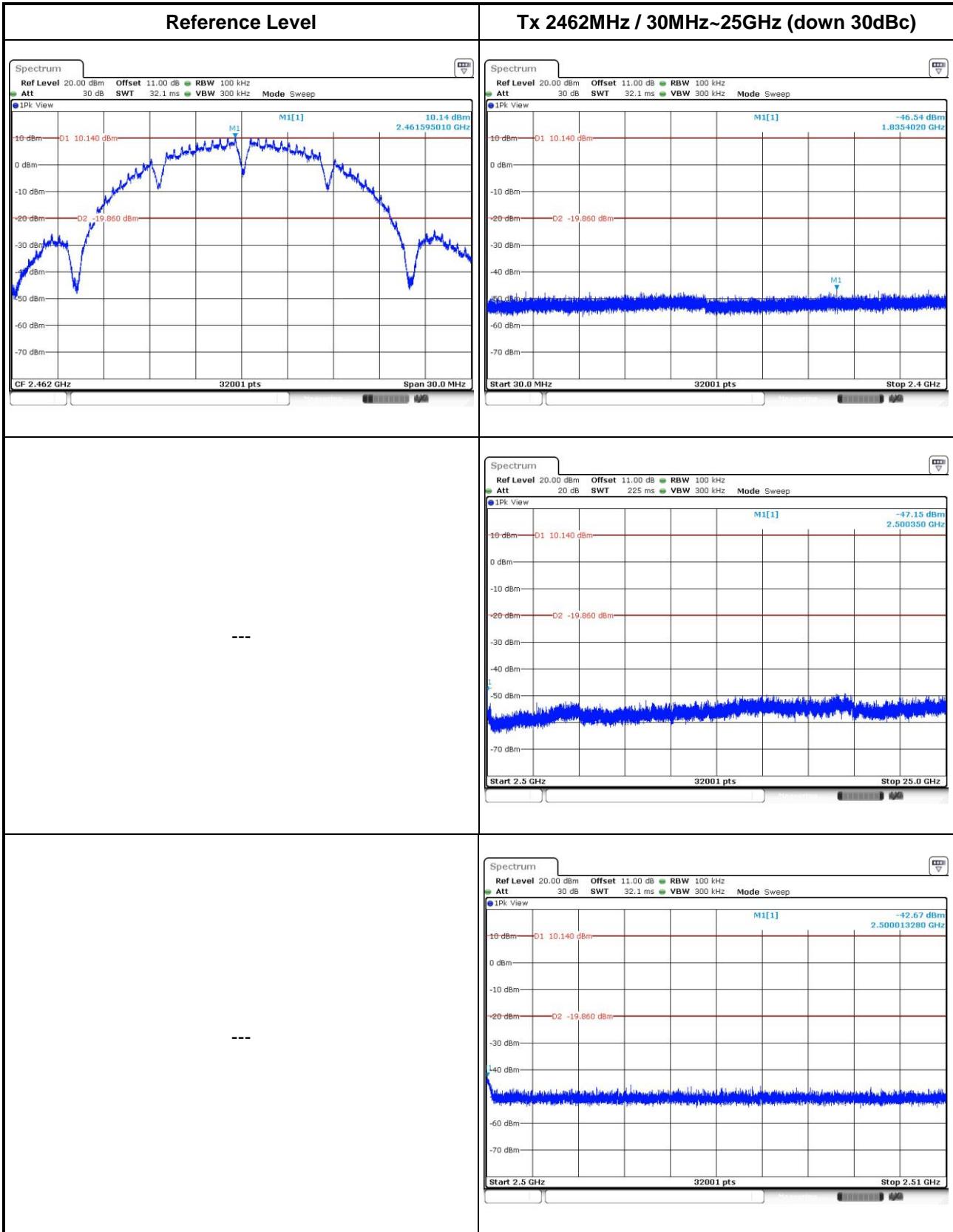
### Non-beamforming mode

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

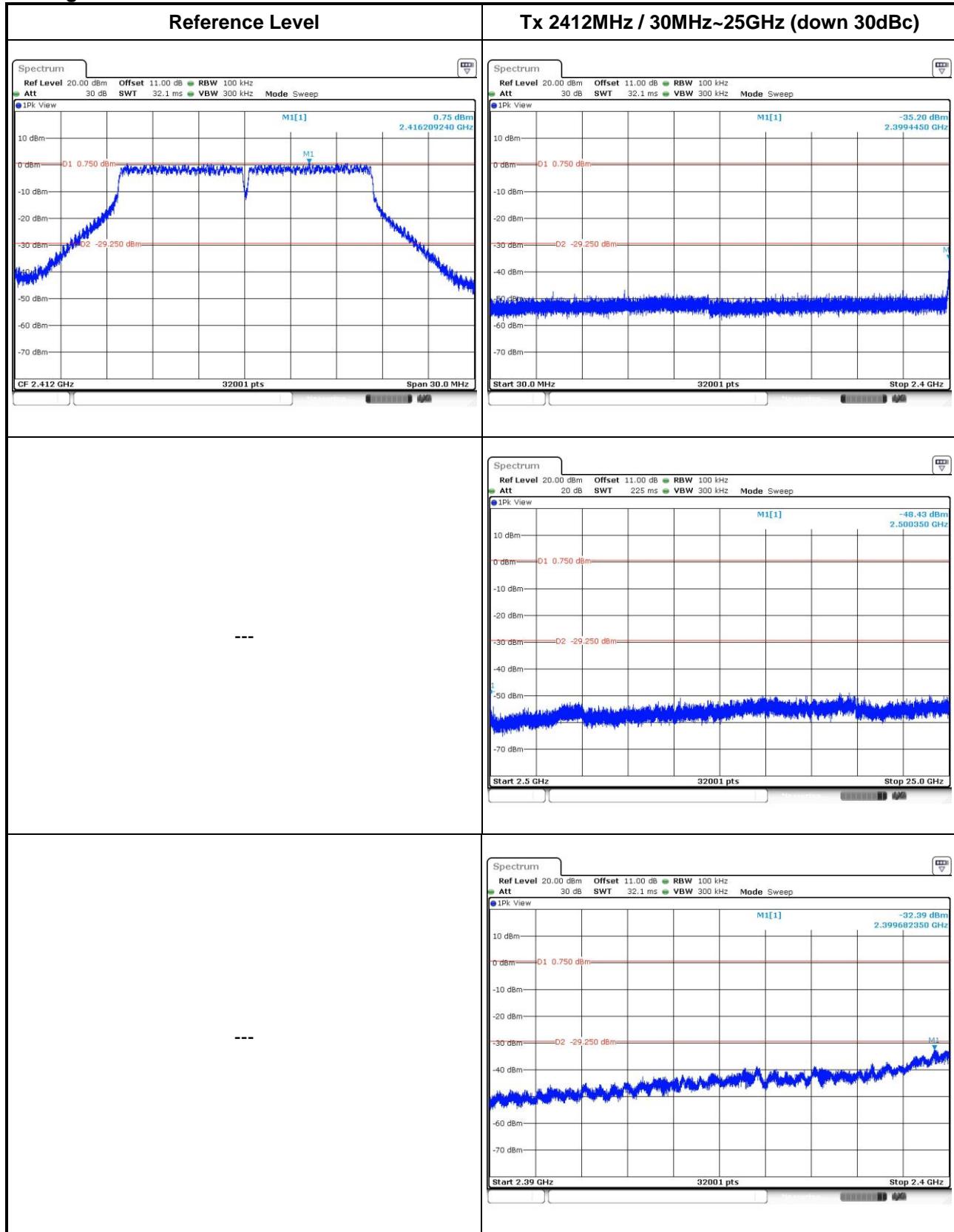
802.11b

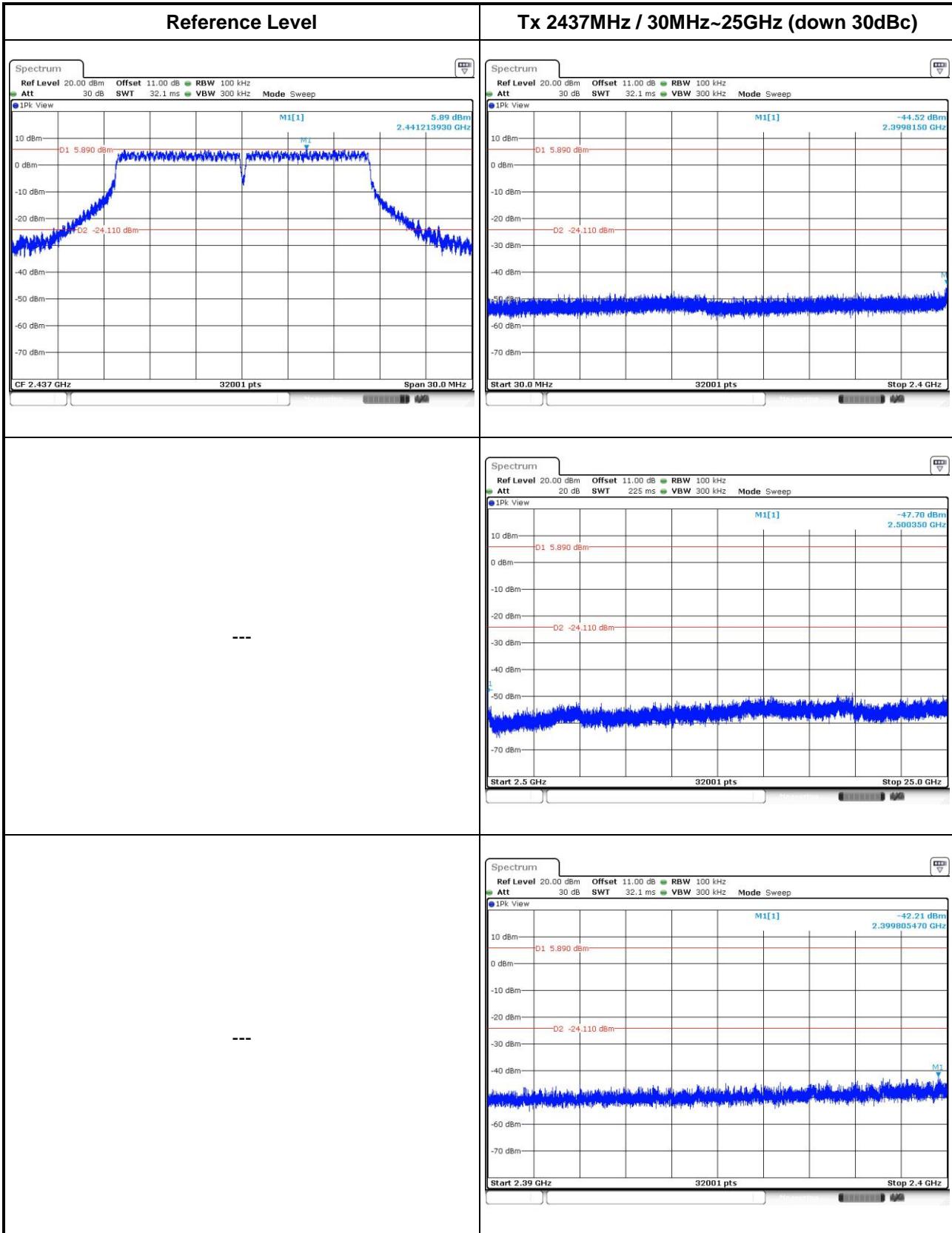


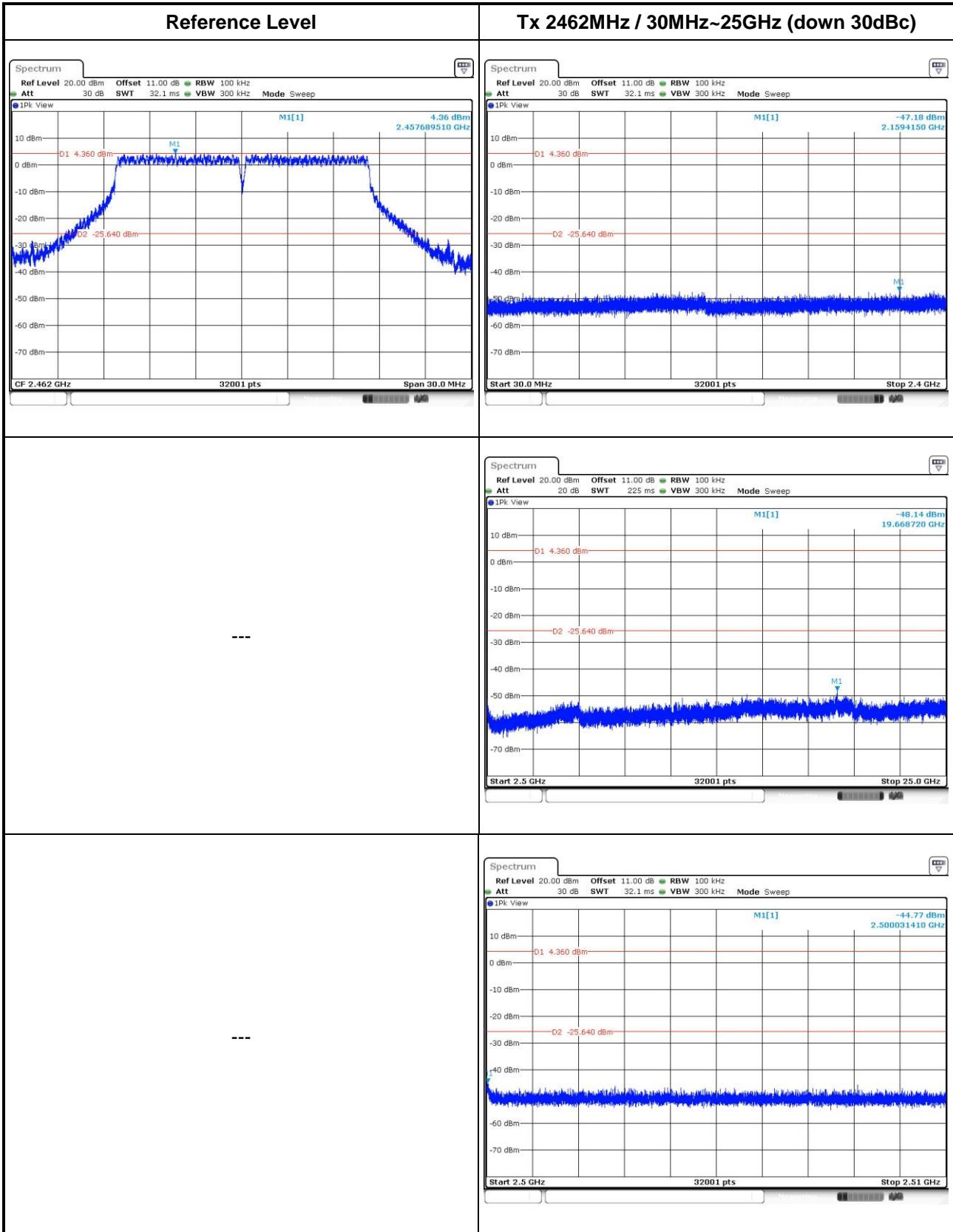




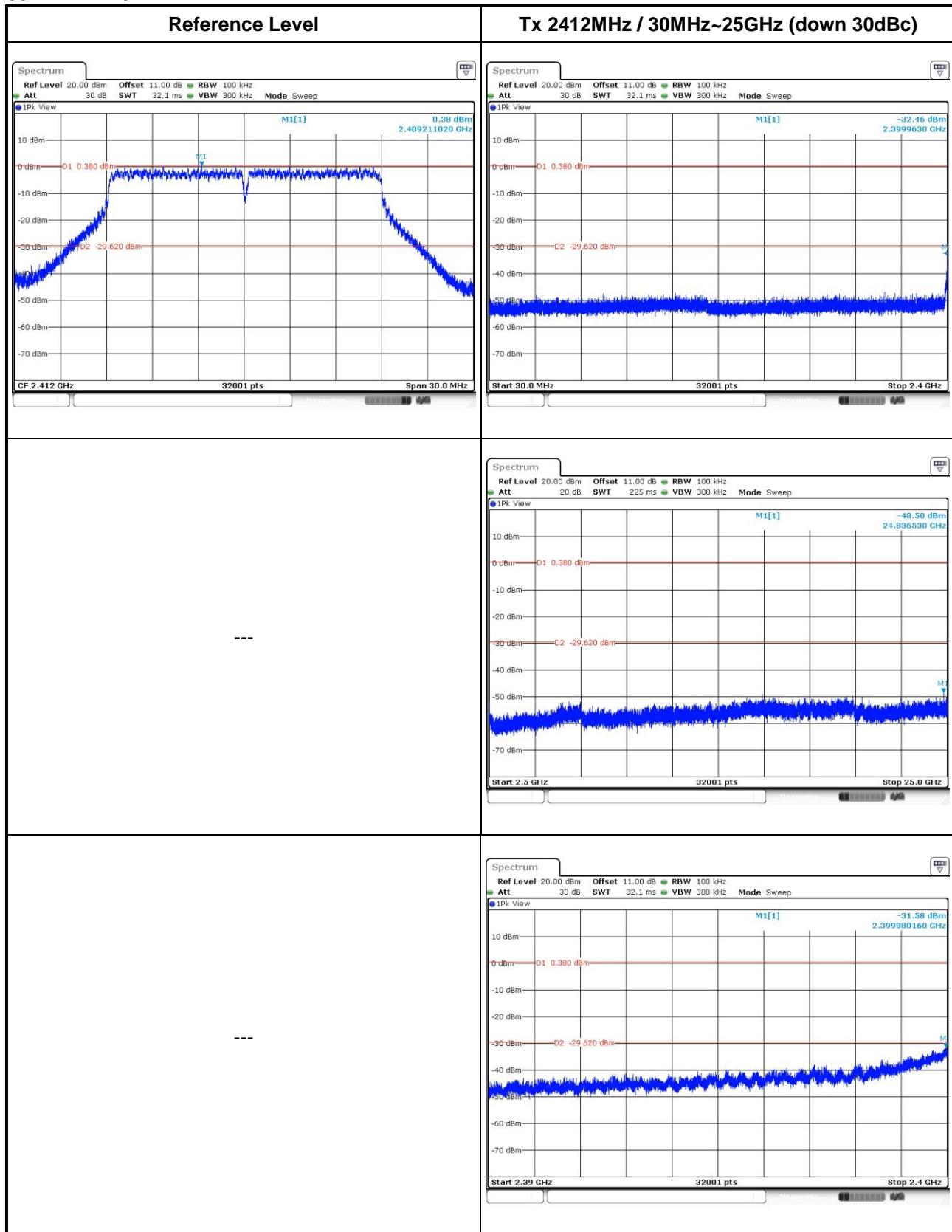
## 802.11g

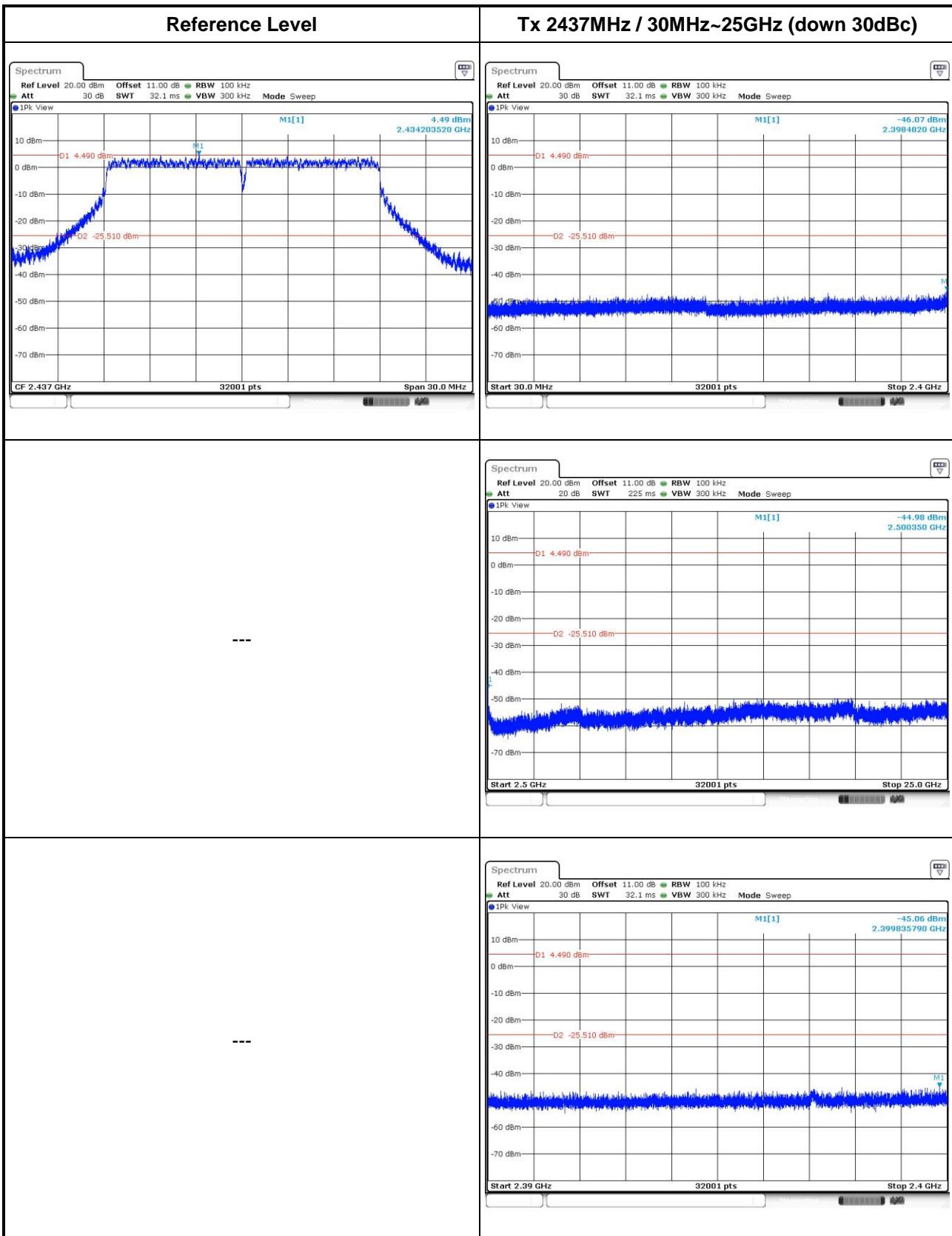


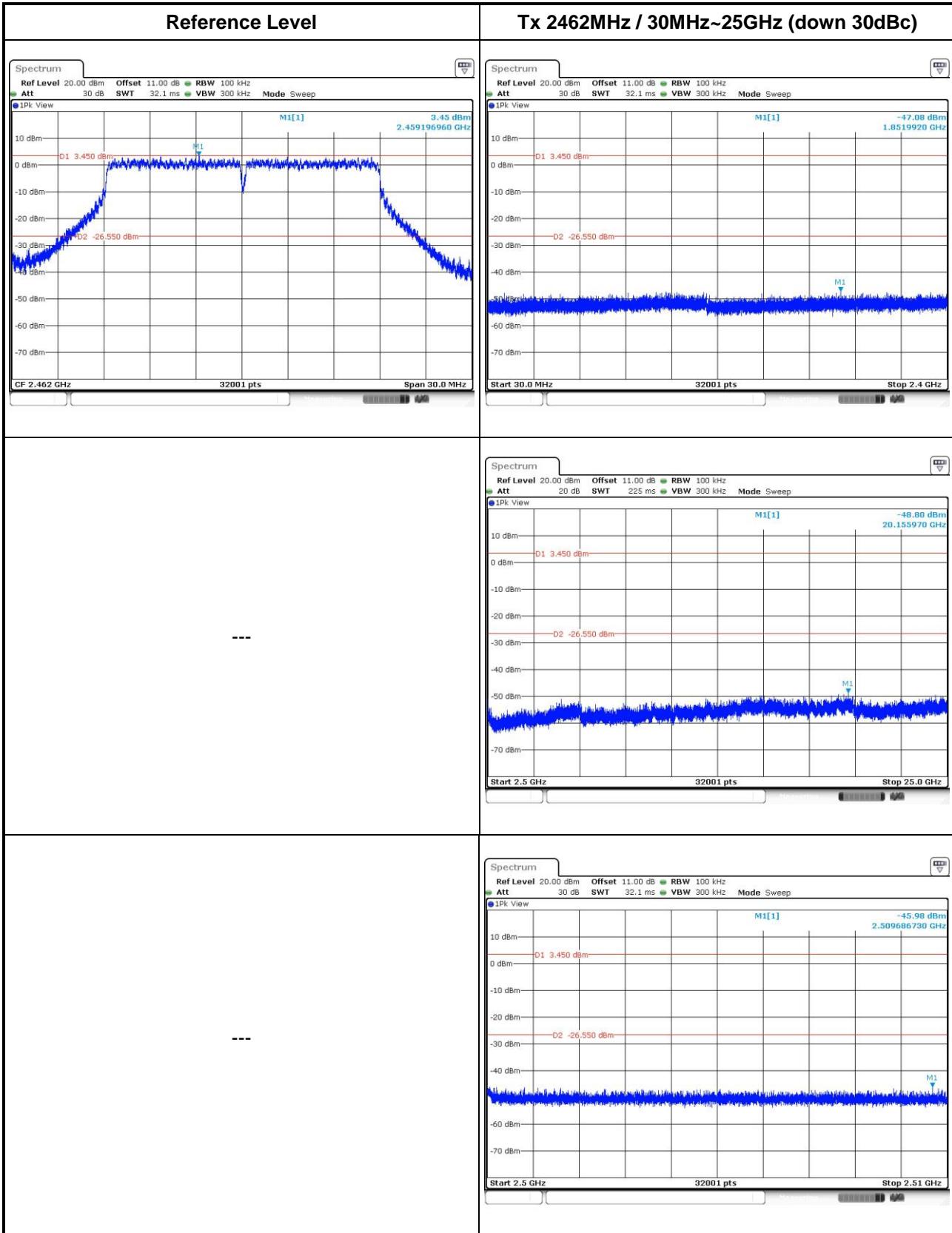




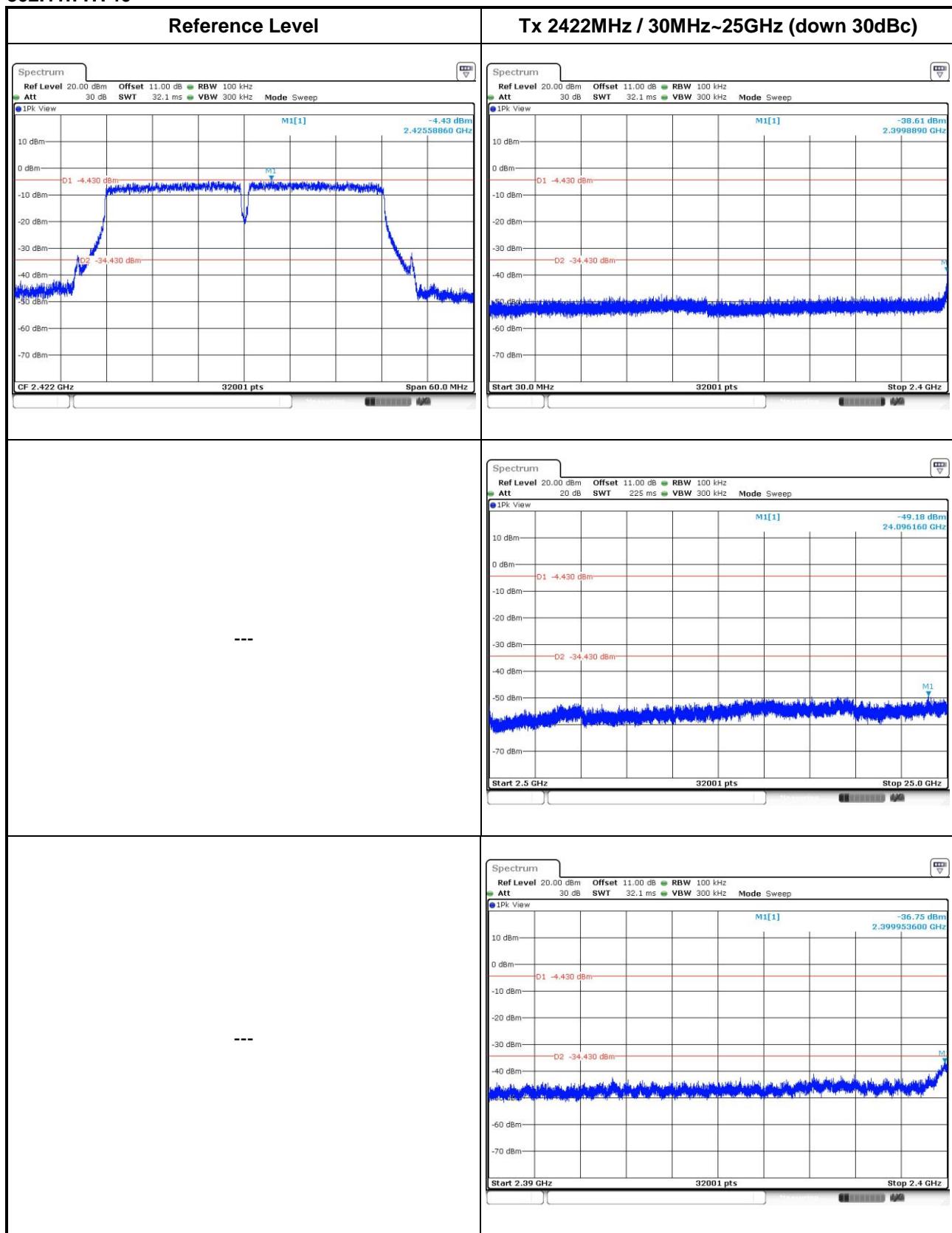
## 802.11n HT20

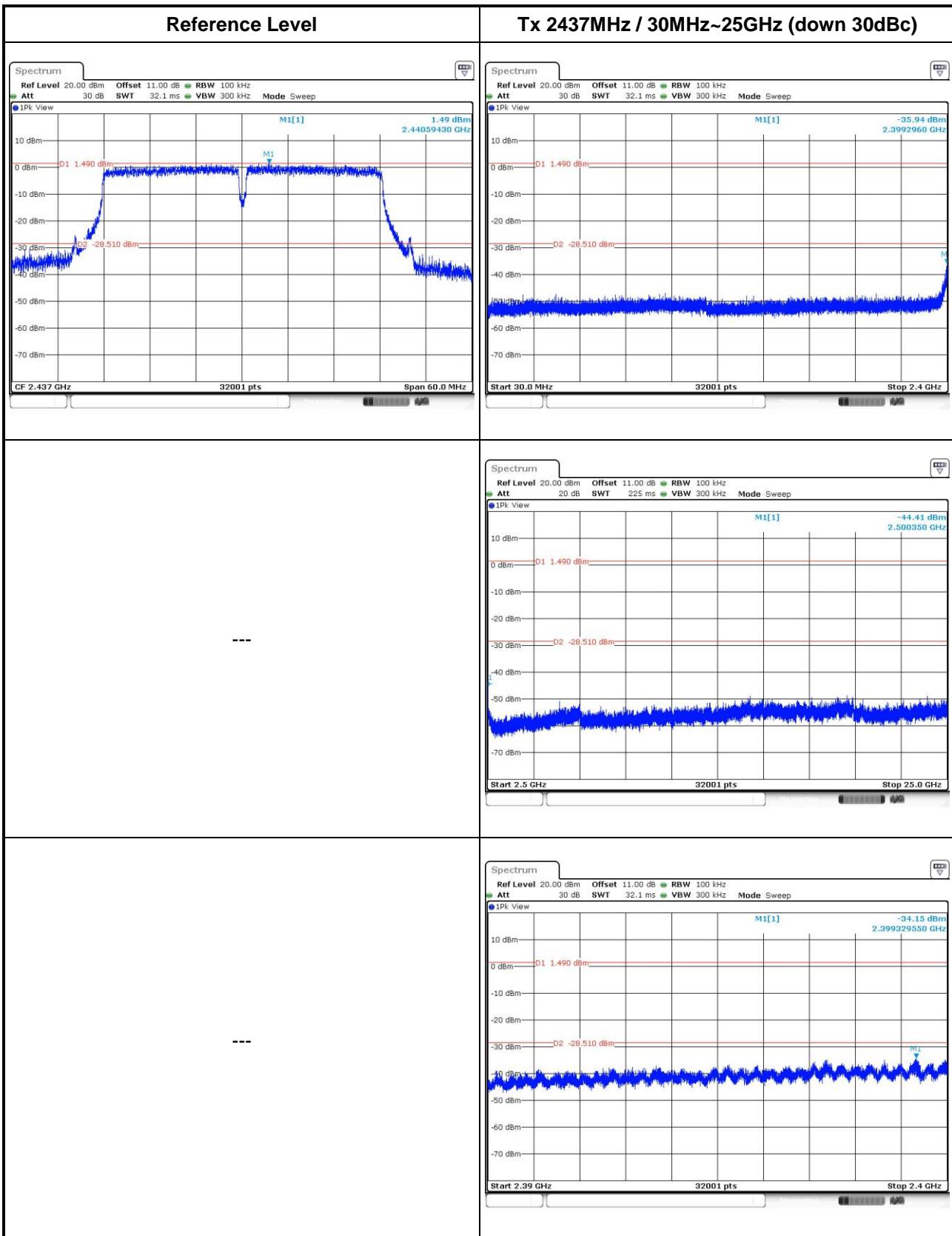


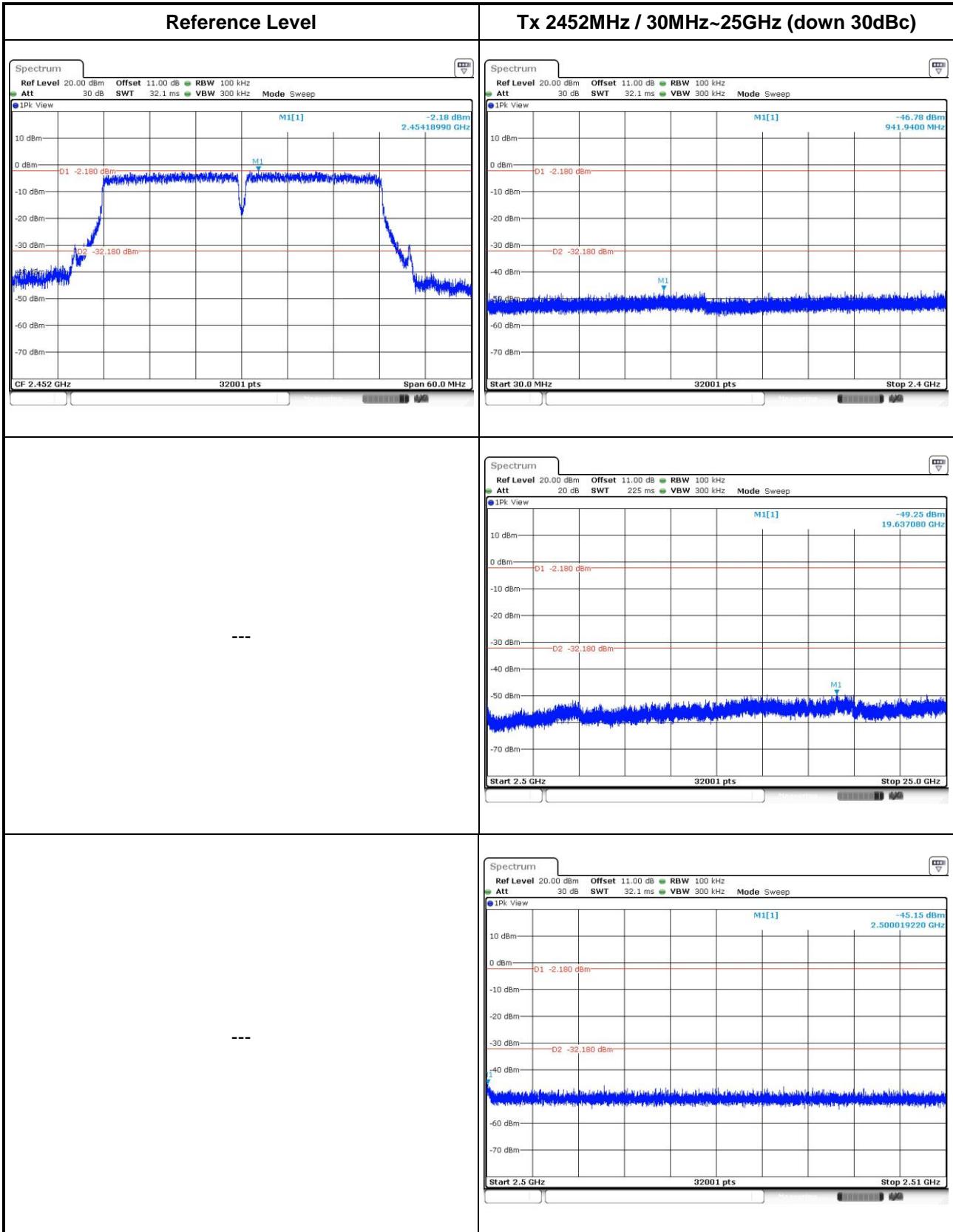




## 802.11n HT40



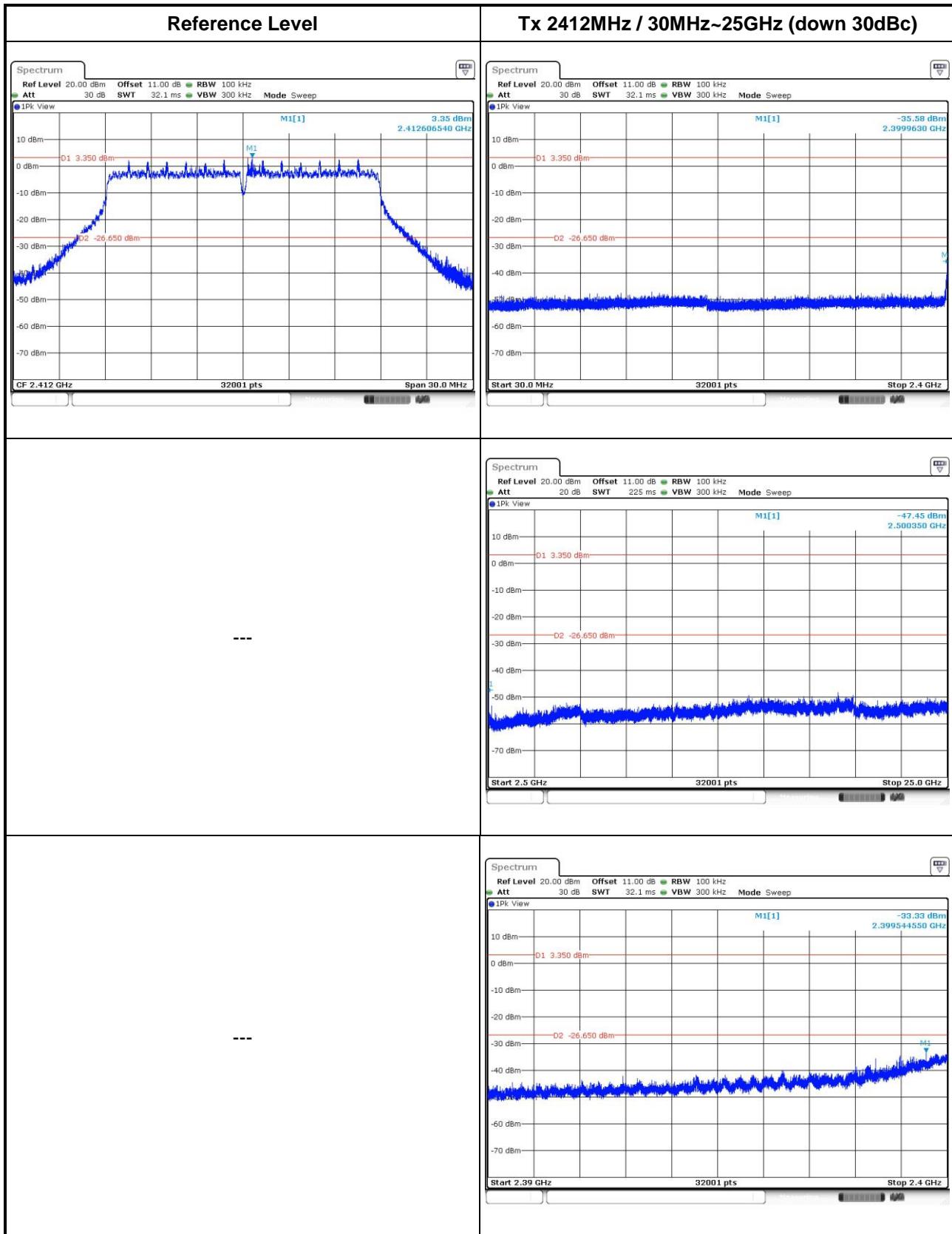


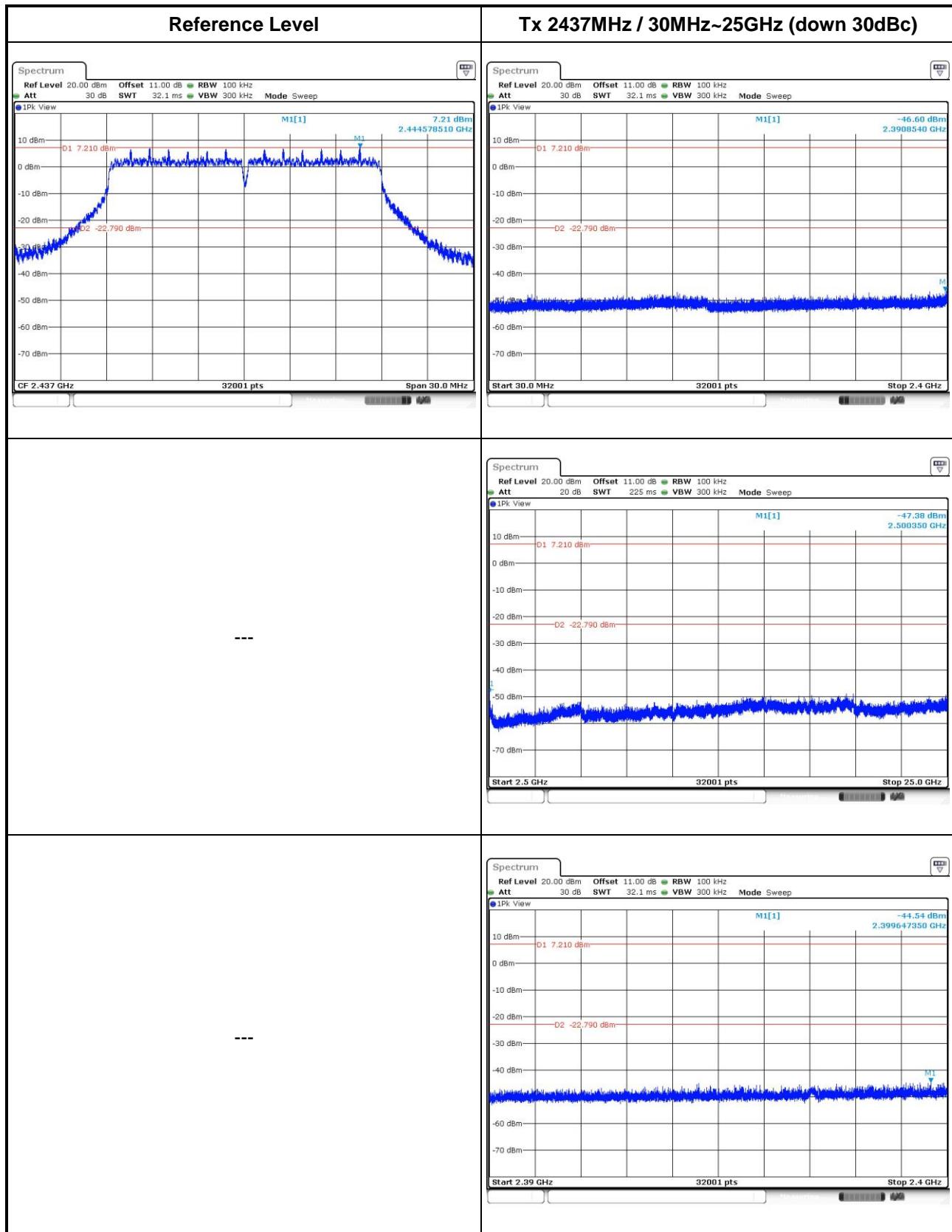


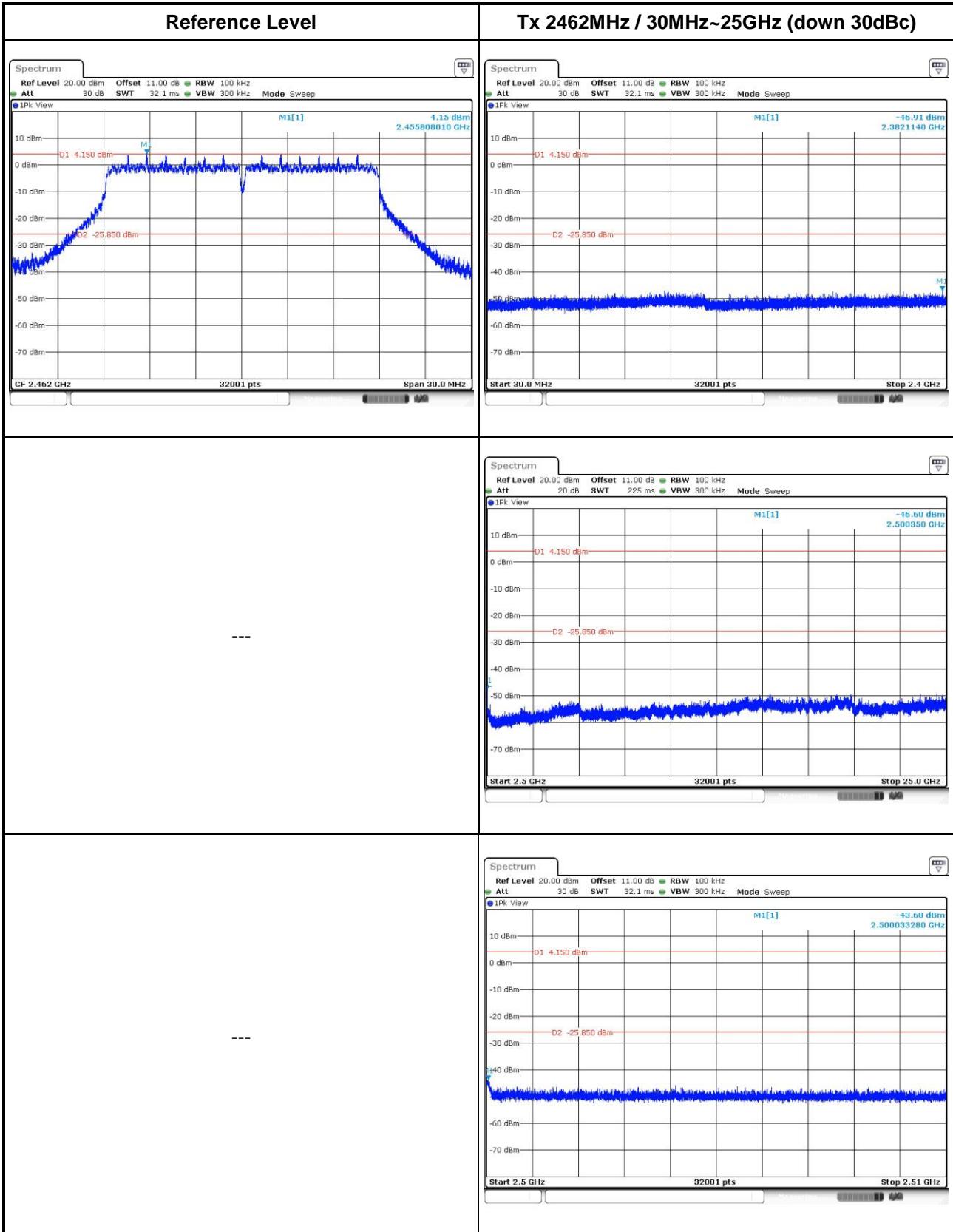
### Beamforming mode

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

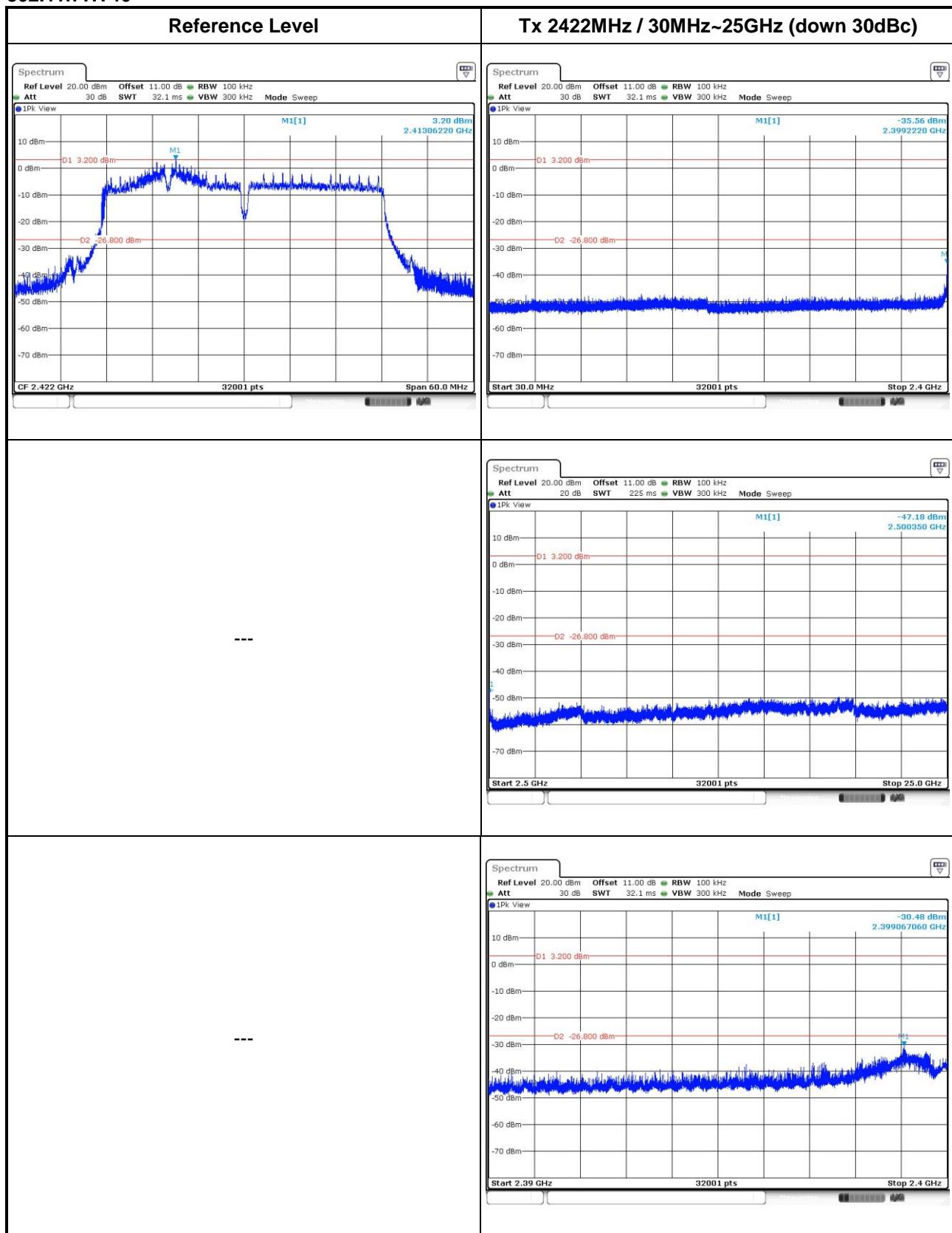
802.11n HT20

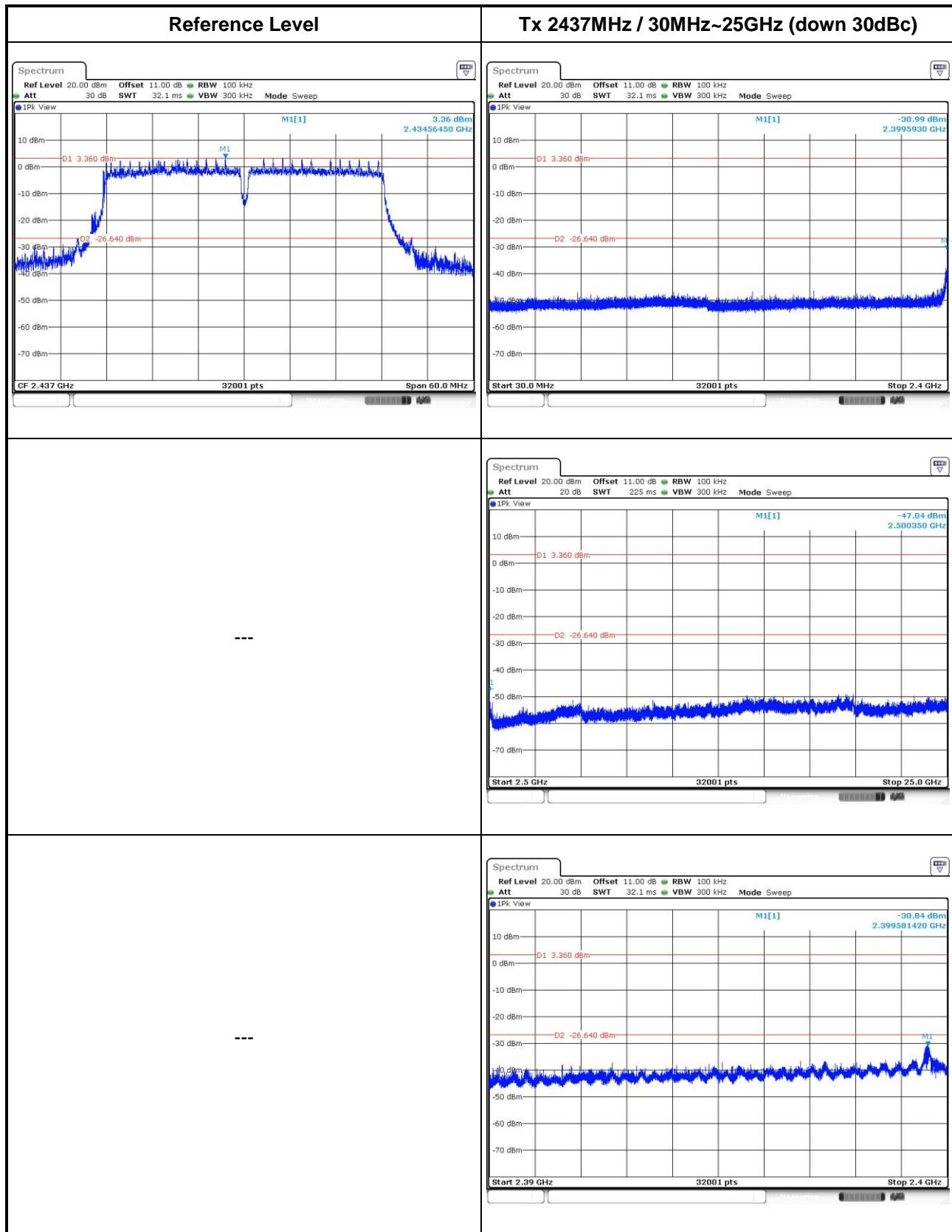


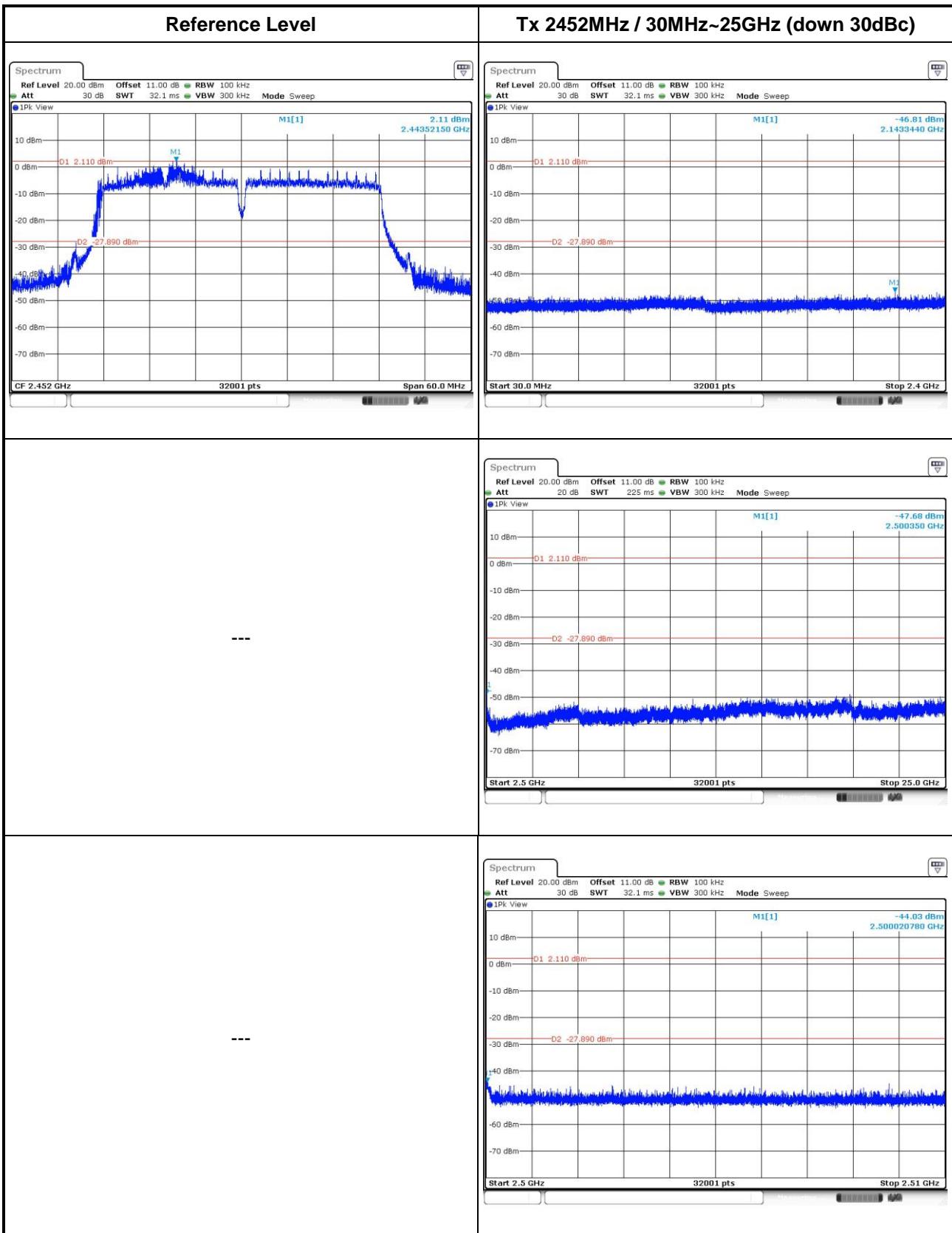




## 802.11n HT40







## 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 District. 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—