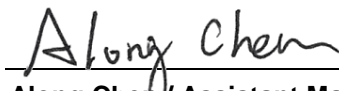


FCC Test Report

FCC ID : 2AD8UFTHJ01
Equipment : Nokia Dual Band UE Relay
Model No. : FTHJ
Brand Name : Nokia
Applicant : Nokia Solutions and Networks, OY
Address : 2000 W. Lucent Lane, Naperville, Illinois,
United States. 60563
Standard : 47 CFR FCC Part 15.247
Received Date : Dec. 12, 2017
Tested Date : Jan. 18 ~ Mar. 06, 2018

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

1	GENERAL DESCRIPTION	5
1.1	Information.....	5
1.2	Local Support Equipment List	8
1.3	Test Setup Chart	8
1.4	The Equipment List	9
1.5	Test Standards	10
1.6	Measurement Uncertainty	10
2	TEST CONFIGURATION	11
2.1	Testing Condition	11
2.2	The Worst Test Modes and Channel Details	11
3	TRANSMITTER TEST RESULTS.....	12
3.1	Conducted Emissions.....	12
3.2	6dB and Occupied Bandwidth	15
3.3	RF Output Power	18
3.4	Power Spectral Density	20
3.5	Unwanted Emissions into Restricted Frequency Bands	22
3.6	Emissions in Non-Restricted Frequency Bands	50
4	TEST LABORATORY INFORMATION	63

Release Record

Report No.	Version	Description	Issued Date
FR7D1203AC	Rev. 01	Initial issue	May 10, 2018

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.484MHz 39.86 (Margin -6.41dB) - AV	Pass
15.247(d) 15.209	Radiated Emissions	[dBuV/m at 3m]: 2483.50MHz 52.96 (Margin -1.04dB) - AV	Pass
15.247(b)(3)	Maximum Output Power	Max Power [dBm]: 23.83	Pass
15.247(a)(2)	6dB Bandwidth	Meet the requirement of limit	Pass
15.247(e)	Power Spectral Density	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass

1 General Description

1.1 Information

1.1.1 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 _{TX})	Data Rate / MCS
2400-2483.5	b	2412-2462	1-11 [11]	1	1-11 Mbps
2400-2483.5	g	2412-2462	1-11 [11]	1	6-54 Mbps
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	1	MCS 0-7
2400-2483.5	n (HT40)	2422-2452	3-9 [7]	1	MCS 0-7

Note 1: RF output power specifies that Maximum Peak Conducted Output Power.
 Note 2: 802.11b uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
 Note 3: 802.11g/n uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.

1.1.2 Antenna Details

Ant. No.	Model	Type	Connector	Gain (dBi)
1	WLTGG-124	PIFA	UFL	1.5

1.1.3 EUT Operational Condition

Power Supply Type	56Vdc from POE (support unit only.) Brand: GOSPELL Model: G0883-560-045 Power Rating: I/P: 100-240Vac, 50/60Hz, 0.75A MAX O/P: 56Vdc, 0.45A
--------------------------	--

1.1.4 Accessories

N/A

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	PUTTY, v0.6		
Duty Cycle and Duty Factor	Mode	Duty cycle (%)	Duty factor (dB)
	11b	100.00%	0.00
	11g	100.00%	0.00
	HT20	100.00%	0.00
	HT40	100.00%	0.00

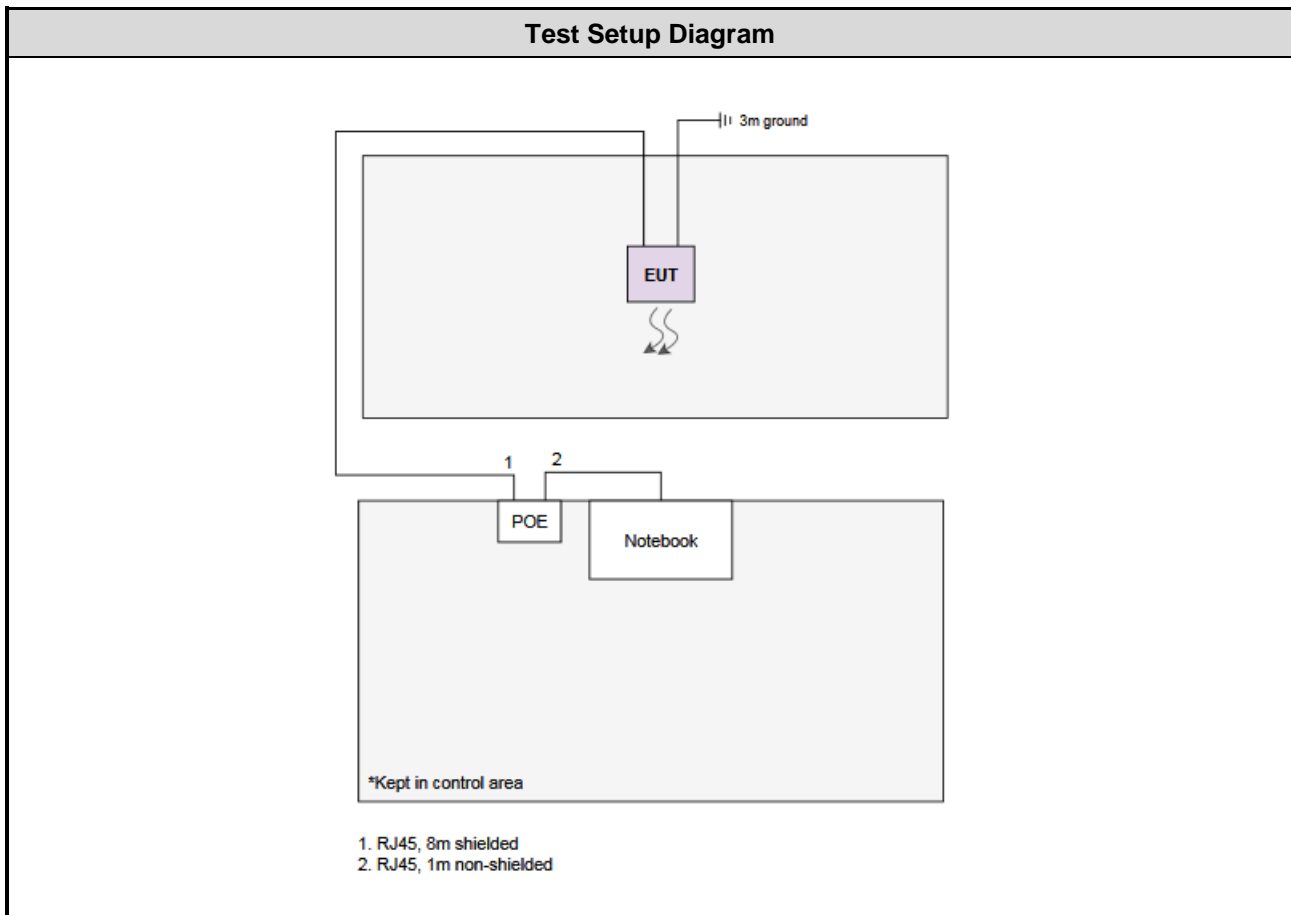
1.1.7 Power Setting

Modulation Mode	Test Frequency (MHz)	Power Set
11b	2412	62
11b	2437	60
11b	2462	51
11g	2412	60
11g	2437	63
11g	2462	51
HT20	2412	58
HT20	2437	63
HT20	2462	50
HT40	2422	56
HT40	2437	55
HT40	2452	49

1.2 Local Support Equipment List

Support Equipment List						
No.	Equipment	Brand	Model	S/N	FCC ID	Signal cable / Length (m)
1	Notebook	DELL	Latitude E6430	9ZFB4X1	DoC	RJ45, 1m non-shielded.
2	POE	GOSPELL	G0883-56 0-045	---	---	RJ45, 8m shielded.

1.3 Test Setup Chart



1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Receiver	R&S	ESR3	101657	Jan. 05, 2018	Jan. 04, 2019
LISN	SCHWARZBECK	Schwarzbeck 8127	8127-667	Nov. 13, 2017	Nov. 12, 2018
RF Cable-CON	EMC	EMCCFD300-BM-B M-6000	50821	Dec. 18, 2017	Dec. 17, 2018
Measurement Software	AUDIX	e3	6.120210k	NA	NA

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

Test Item	Radiated Emission				
Test Site	966 chamber1 / (03CH01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101498	Dec. 04, 2017	Dec. 03, 2018
Receiver	R&S	ESR3	101658	Nov. 20, 2017	Nov. 19, 2018
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jul. 25, 2017	Jul. 24, 2018
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 20, 2017	Dec. 19, 2018
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 23, 2017	Nov. 22, 2018
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 13, 2017	Nov. 12, 2018
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Dec. 07, 2017	Dec. 06, 2018
Preamplifier	EMC	EMC02325	980225	Jul. 28, 2017	Jul. 27, 2018
Preamplifier	Agilent	83017A	MY39501308	Oct. 06, 2017	Oct. 05, 2018
Preamplifier	EMC	EMC184045B	980192	Aug. 22, 2017	Aug. 21, 2018
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Dec. 07, 2017	Dec. 06, 2018
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 07, 2017	Dec. 06, 2018
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 07, 2017	Dec. 06, 2018
LF cable 1M	EMC	EMCCFD400-NM-N M-1000	16052	Dec. 07, 2017	Dec. 06, 2018
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Dec. 07, 2017	Dec. 06, 2018
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	Dec. 07, 2017	Dec. 06, 2018
Measurement Software	AUDIX	e3	6.120210g	NA	NA

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

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101063	Mar. 15, 2017	Mar. 14, 2018
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Nov. 27, 2017	Nov. 26, 2018
Power Meter	Anritsu	ML2495A	1241002	Oct. 16, 2017	Oct. 15, 2018
Power Sensor	Anritsu	MA2411B	1207366	Oct. 16, 2017	Oct. 15, 2018
AC POWER SOURCE	APC	AFC-500W	F312060012	Dec. 01, 2017	Nov. 30, 2018
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 v04

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 ≤ 1 GHz	± 3.66 dB
Radiated emission > 1 GHz	± 5.63 dB

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	21°C / 58%	Alex Tsai
Radiated Emissions	03CH01-WS	21-23°C / 66%	Aska Huang
RF Conducted	TH01-WS	21°C / 64%	Brad Wu

- FCC Designation No.: TW2732
- FCC site registration No.: 181692
- IC site registration No.: 10807A-1

2.2 The Worst Test Modes and Channel Details

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

3 Transmitter Test Results

3.1 Conducted Emissions

3.1.1 Limit of Conducted Emissions

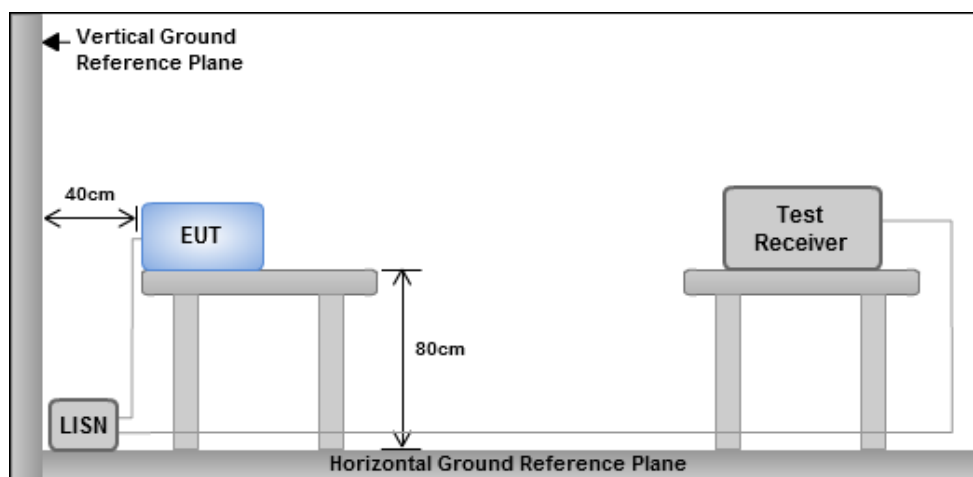
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

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

3.1.2 Test Procedures

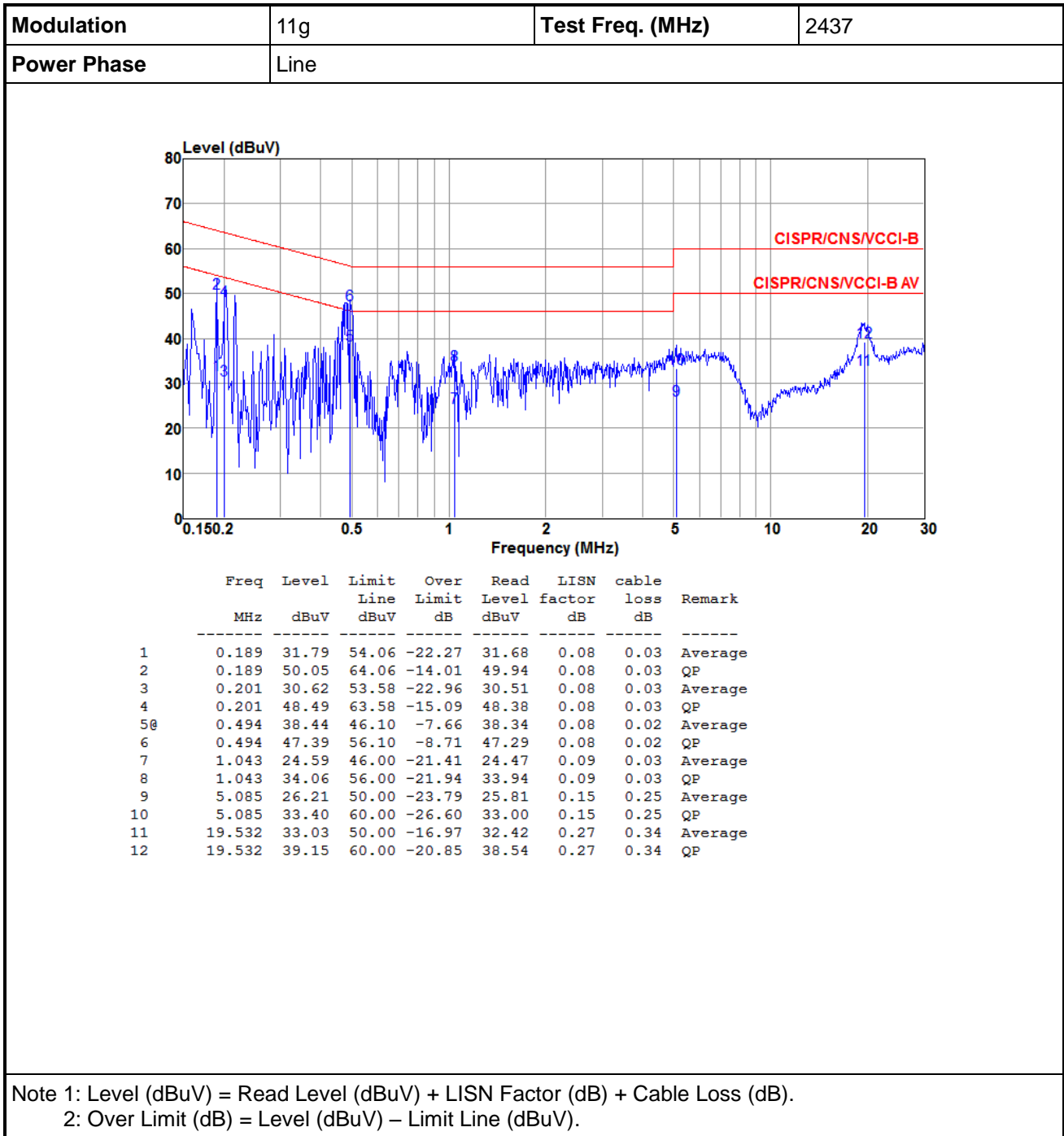
1. The device is placed on a test table, raised 80 cm above the reference ground plane. The vertical conducting plane is located 40 cm to the rear of the device.
2. The device is connected to line impedance stabilization network (LISN) and other accessories are connected to other LISN. Measured levels 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

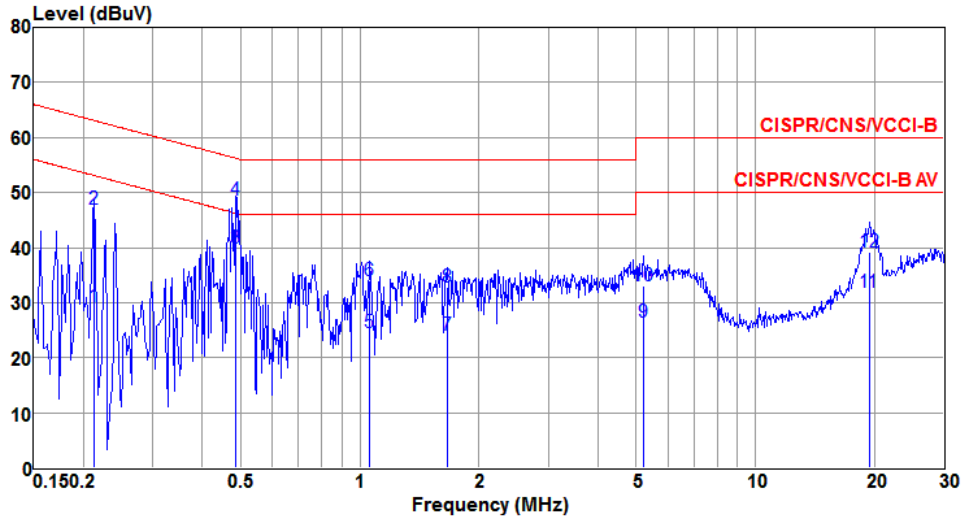


- Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.4 Test Result of Conducted Emissions



Modulation	11g	Test Freq. (MHz)	2437
Power Phase	Neutral		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.213	29.21	53.10	-23.89	29.14	0.04	0.03	Average
2	0.213	47.06	63.10	-16.04	46.99	0.04	0.03	QP
3	0.484	39.86	46.27	-6.41	39.80	0.04	0.02	Average
4	0.484	48.59	56.27	-7.68	48.53	0.04	0.02	QP
5	1.060	24.48	46.00	-21.52	24.39	0.05	0.04	Average
6	1.060	33.92	56.00	-22.08	33.83	0.05	0.04	QP
7	1.662	24.00	46.00	-22.00	23.86	0.06	0.08	Average
8	1.662	32.91	56.00	-23.09	32.77	0.06	0.08	QP
9	5.221	26.38	50.00	-23.62	26.02	0.11	0.25	Average
10	5.221	33.10	60.00	-26.90	32.74	0.11	0.25	QP
11	19.428	31.86	50.00	-18.14	31.25	0.27	0.34	Average
12	19.428	39.20	60.00	-20.80	38.59	0.27	0.34	QP

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

3.2 6dB and Occupied Bandwidth

3.2.1 Limit of 6dB Bandwidth

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

3.2.2 Test Procedures

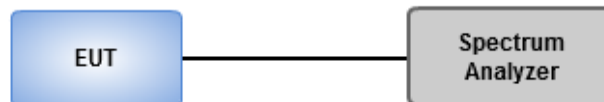
6dB Bandwidth

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

Occupied Bandwidth

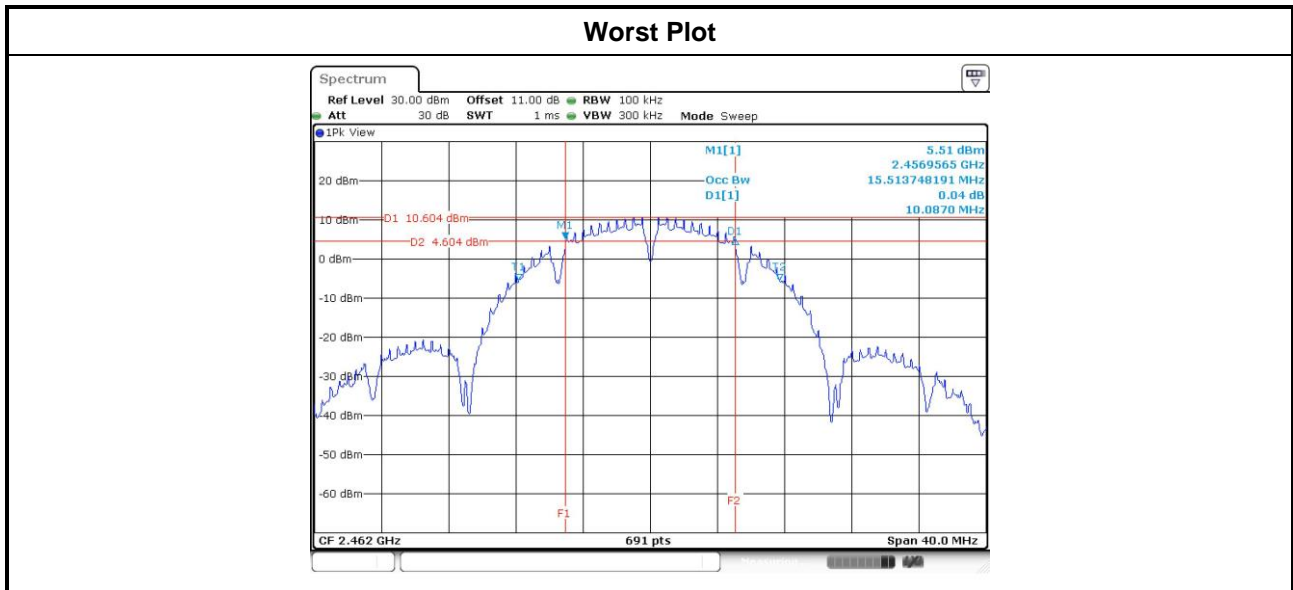
1. Set resolution bandwidth (RBW) = 1 MHz, Video bandwidth = 3 MHz.
2. Detector = Sample, Trace mode = max hold.
3. Sweep = auto couple, Allow the trace to stabilize.
4. Use the OBW measurement function of spectrum analyzer to measure the occupied bandwidth.

3.2.3 Test Setup

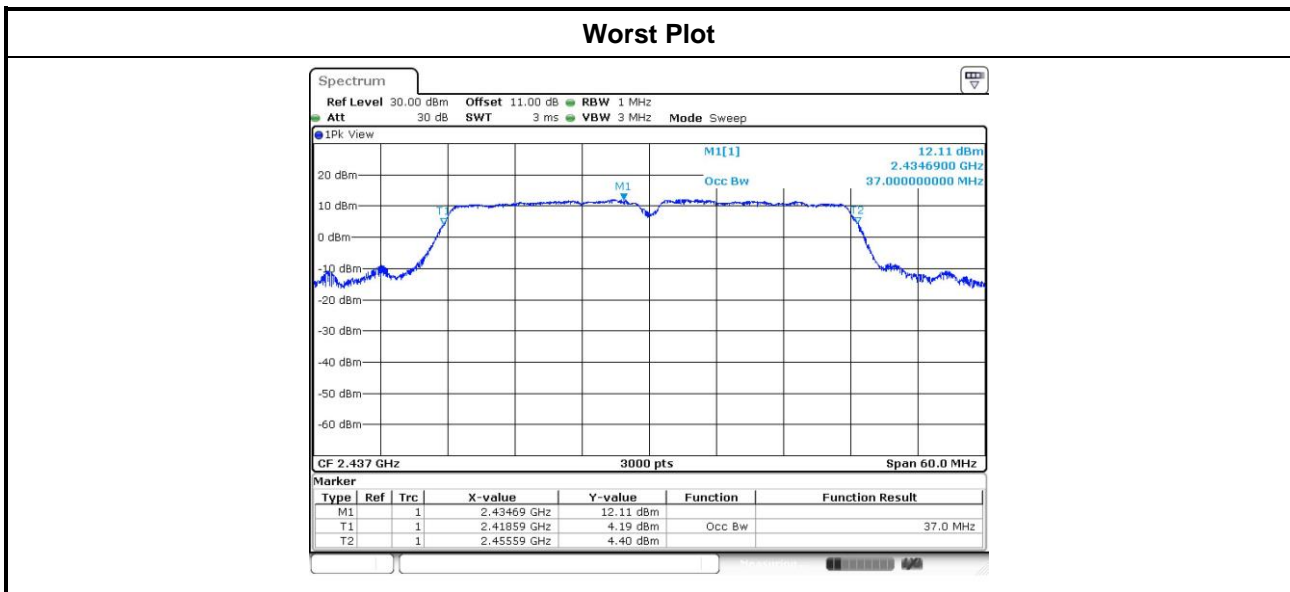


3.2.4 Test Result of 6dB and Occupied Bandwidth

Modulation Mode	N _{TX}	Freq. (MHz)	6dB Bandwidth (MHz)				Limit (kHz)
			Chain 0	Chain 1	Chain 2	Chain 3	
11b	1	2412	11.07	---	---	---	500
11b	1	2437	11.07	---	---	---	500
11b	1	2462	10.09	---	---	---	500
11g	1	2412	16.58	---	---	---	500
11g	1	2437	16.58	---	---	---	500
11g	1	2462	16.58	---	---	---	500
HT20	1	2412	17.86	---	---	---	500
HT20	1	2437	17.86	---	---	---	500
HT20	1	2462	17.86	---	---	---	500
HT40	1	2422	36.41	---	---	---	500
HT40	1	2437	36.41	---	---	---	500
HT40	1	2452	36.41	---	---	---	500



Modulation Mode	N _{TX}	Freq. (MHz)	99% Occupied Bandwidth (MHz)			
			Chain 0	Chain 1	Chain 2	Chain 3
11b	1	2412	17.65	---	---	---
11b	1	2437	17.18	---	---	---
11b	1	2462	15.51	---	---	---
11g	1	2412	19.41	---	---	---
11g	1	2437	22.13	---	---	---
11g	1	2462	17.10	---	---	---
HT20	1	2412	19.35	---	---	---
HT20	1	2437	22.88	---	---	---
HT20	1	2462	18.13	---	---	---
HT40	1	2422	36.84	---	---	---
HT40	1	2437	37.00	---	---	---
HT40	1	2452	36.70	---	---	---



3.3 RF Output Power

3.3.1 Limit of RF Output Power

Conducted power shall not exceed 1Watt.

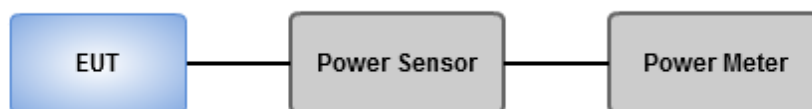
- Antenna gain \leq 6dBi, no any corresponding reduction is in output power limit.
- Antenna gain $>$ 6dBi
 - Non Fixed, point to point operations.
The conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dB
 - Fixed,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

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

3.3.2 Test Procedures

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

3.3.3 Test Setup



3.3.4 Test Result of Maximum Output Power

Modulation Mode	N _{TX}	Freq. (MHz)	Peak conducted Output Power (dBm)							Ant. Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3	Total Power (mW)	Total Power (dBm)	Limit (dBm)			
11b	1	2412	23.67	---	---	---	232.809	23.67	30.00	1.50	25.17	232.809
11b	1	2437	23.56	---	---	---	226.986	23.56	30.00	1.50	25.06	226.986
11b	1	2462	22.53	---	---	---	179.061	22.53	30.00	1.50	24.03	179.061
11g	1	2412	23.34	---	---	---	215.774	23.34	30.00	1.50	24.84	215.774
11g	1	2437	23.83	---	---	---	241.546	23.83	30.00	1.50	25.33	241.546
11g	1	2462	23.23	---	---	---	210.378	23.23	30.00	1.50	24.73	210.378
HT20	1	2412	23.26	---	---	---	211.836	23.26	30.00	1.50	24.76	211.836
HT20	1	2437	23.81	---	---	---	240.436	23.81	30.00	1.50	25.31	240.436
HT20	1	2462	23.09	---	---	---	203.704	23.09	30.00	1.50	24.59	203.704
HT40	1	2422	23.41	---	---	---	219.280	23.41	30.00	1.50	24.91	219.280
HT40	1	2437	23.58	---	---	---	228.034	23.58	30.00	1.50	25.08	228.034
HT40	1	2452	22.89	---	---	---	194.536	22.89	30.00	1.50	24.39	194.536

Modulation Mode	N _{TX}	Freq. (MHz)	Conducted (Average) Output Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3			
11b	1	2412	22.74	---	---	---	187.932	22.74	---
11b	1	2437	22.58	---	---	---	181.134	22.58	---
11b	1	2462	20.91	---	---	---	123.310	20.91	---
11g	1	2412	19.51	---	---	---	89.331	19.51	---
11g	1	2437	21.05	---	---	---	127.350	21.05	---
11g	1	2462	17.23	---	---	---	52.845	17.23	---
HT20	1	2412	18.91	---	---	---	77.804	18.91	---
HT20	1	2437	21.02	---	---	---	126.474	21.02	---
HT20	1	2462	16.83	---	---	---	48.195	16.83	---
HT40	1	2422	18.28	---	---	---	67.298	18.28	---
HT40	1	2437	18.26	---	---	---	66.988	18.26	---
HT40	1	2452	15.79	---	---	---	37.931	15.79	---

Note: Conducted average output power is for reference only.

3.4 Power Spectral Density

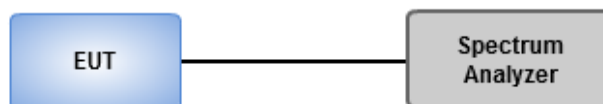
3.4.1 Limit of Power Spectral Density

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

3.4.2 Test Procedures

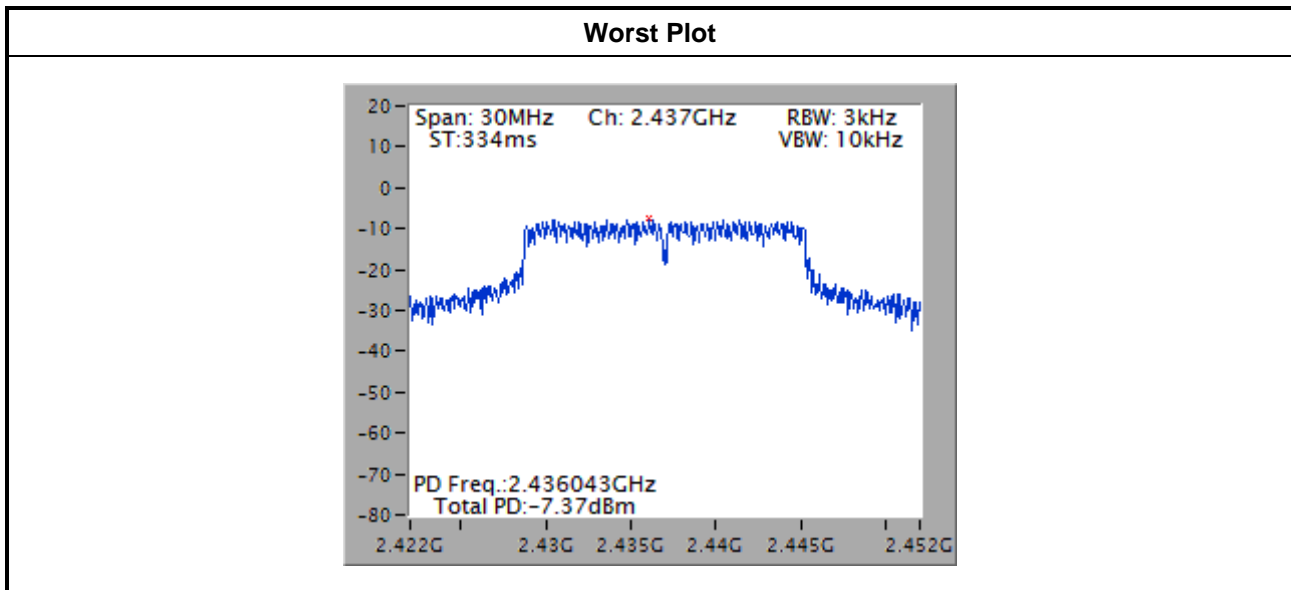
- Maximum peak conducted output power was used to demonstrate compliance to the fundamental output power limit.
 1. Set the RBW = 3kHz, VBW = 10kHz.
 2. Detector = Peak, Sweep time = auto couple.
 3. Trace mode = max hold, allow trace to fully stabilize.
 4. Use the peak marker function to determine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

3.4.3 Test Setup



3.4.4 Test Result of Power Spectral Density

Modulation Mode	N _{TX}	Freq. (MHz)	Total Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)
11b	1	2412	-8.84	8.00
11b	1	2437	-8.19	8.00
11b	1	2462	-9.48	8.00
11g	1	2412	-9.35	8.00
11g	1	2437	-7.37	8.00
11g	1	2462	-11.61	8.00
HT20	1	2412	-9.56	8.00
HT20	1	2437	-7.47	8.00
HT20	1	2462	-11.50	8.00
HT40	1	2422	-12.43	8.00
HT40	1	2437	-12.04	8.00
HT40	1	2452	-12.91	8.00



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

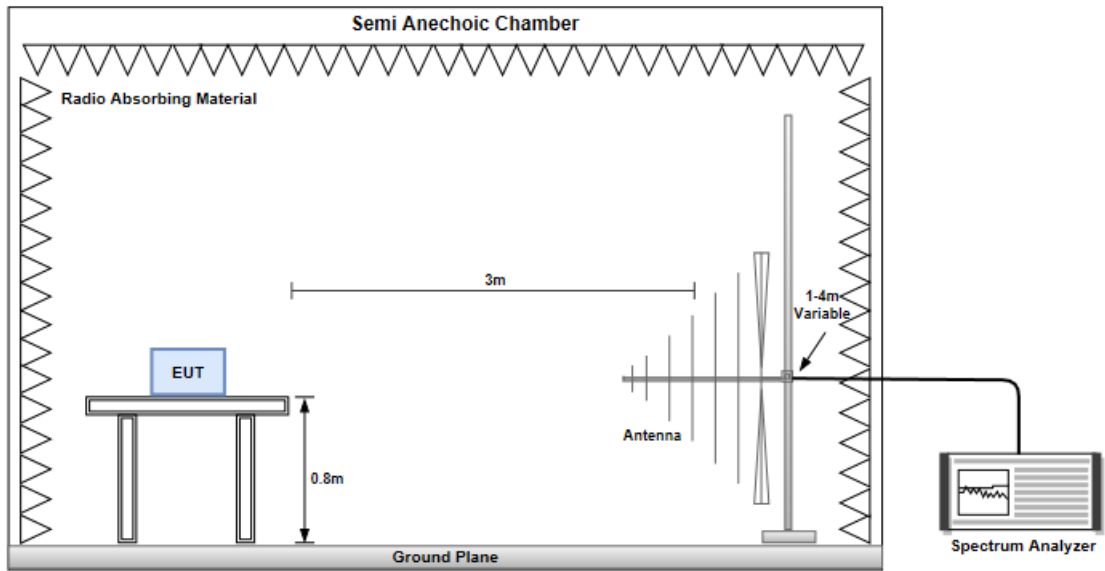
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

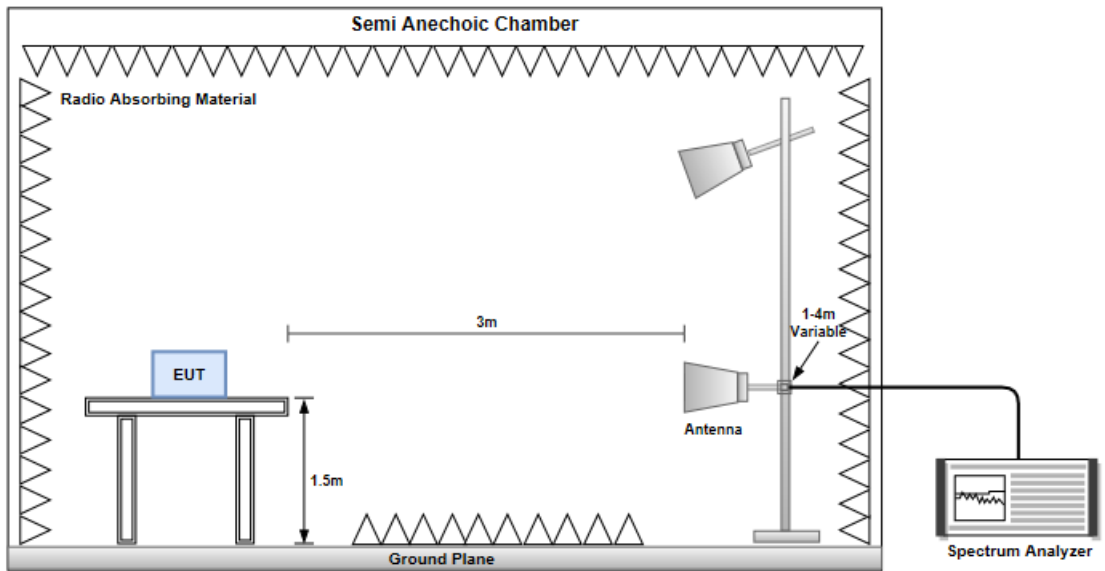
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

Radiated Emissions below 1 GHz

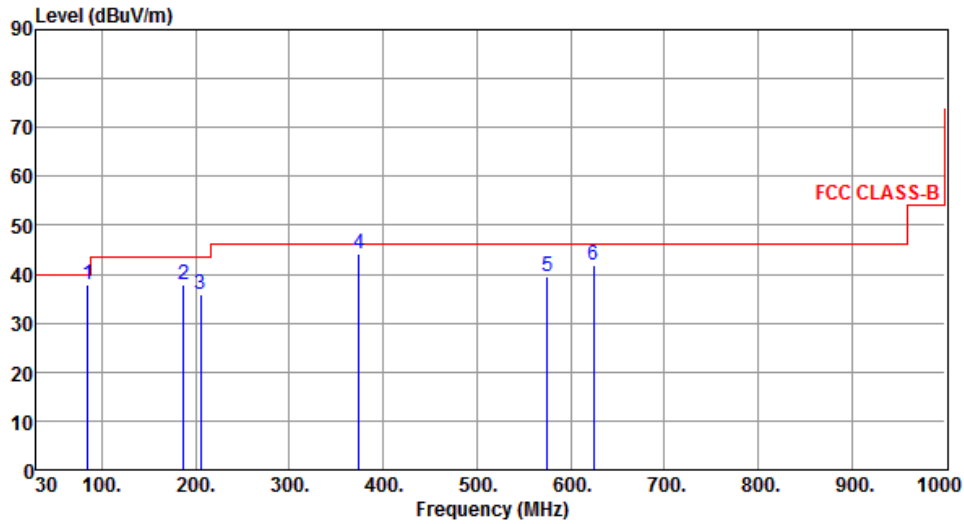


Radiated Emissions above 1 GHz



3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

Modulation	11g	Test Freq. (MHz)	2437
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	85.29	37.78	40.00	-2.22	51.50	-13.72	QP	199	245
2	187.14	37.99	43.50	-5.51	48.35	-10.36	Peak	---	---
3	205.57	35.70	43.50	-7.80	46.49	-10.79	Peak	---	---
4	374.35	44.01	46.00	-1.99	49.71	-5.70	QP	100	119
5	575.14	39.42	46.00	-6.58	40.62	-1.20	Peak	---	---
6	624.61	41.73	46.00	-4.27	42.13	-0.40	Peak	---	---

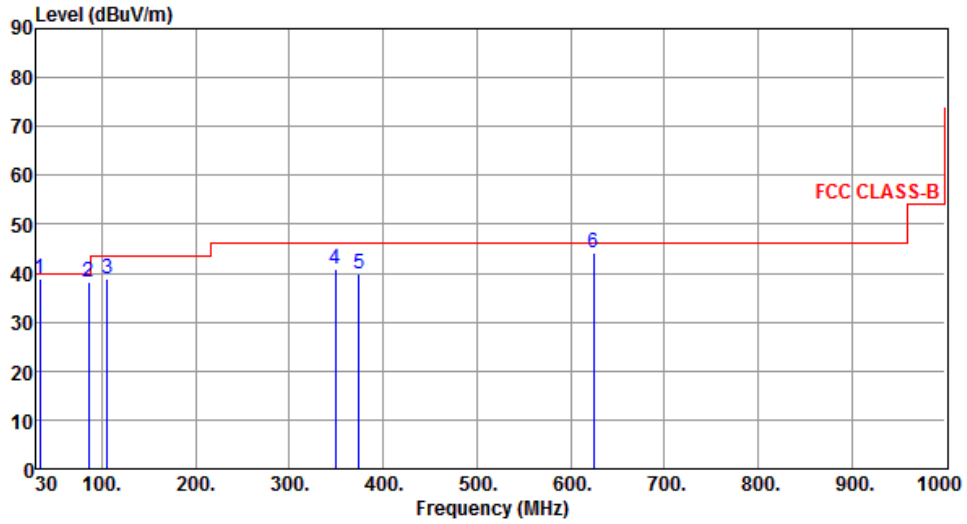
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*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.

Modulation	11g	Test Freq. (MHz)	2437
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	33.88	38.89	40.00	-1.11	47.41	-8.52	QP	100	21
2	85.54	38.04	40.00	-1.96	51.80	-13.76	QP	100	145
3	105.66	39.01	43.50	-4.49	51.17	-12.16	Peak	---	---
4	349.13	40.76	46.00	-5.24	47.19	-6.43	Peak	---	---
5	374.35	39.76	46.00	-6.24	45.46	-5.70	Peak	---	---
6	624.61	44.19	46.00	-1.81	44.59	-0.40	QP	100	221

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

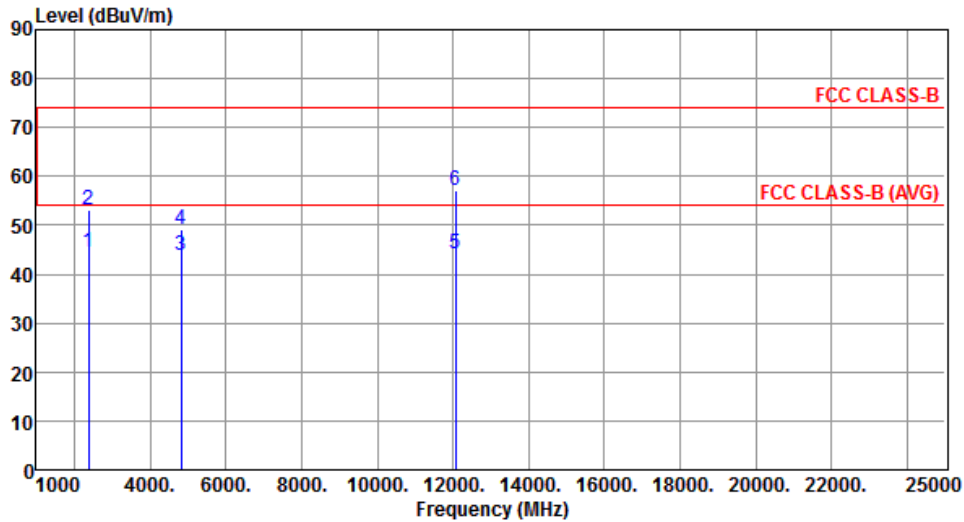
*Factor includes antenna factor , cable loss and amplifier gain

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

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

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

Modulation	11b	Test Freq. (MHz)	2412
Polarization	Horizontal		



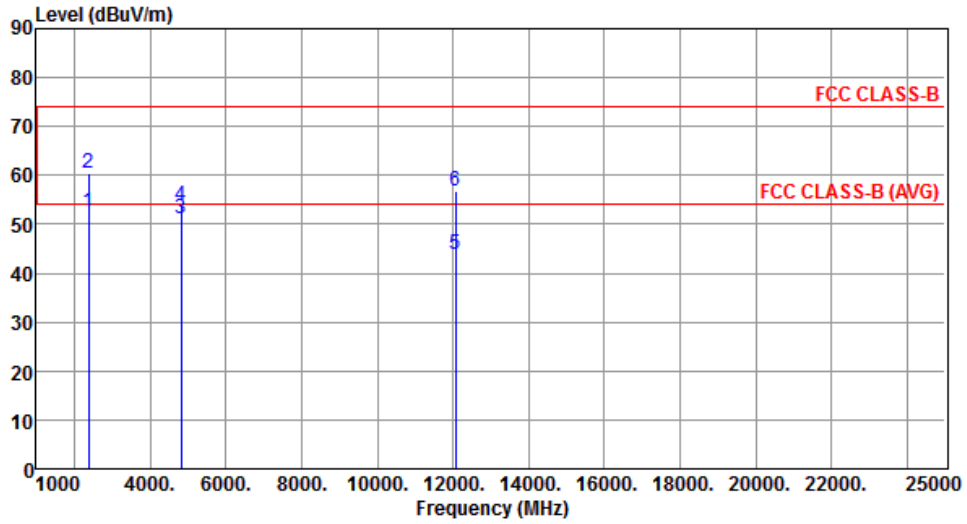
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	44.45	54.00	-9.55	48.03	-3.58	Average	118	3
2	2390.00	53.25	74.00	-20.75	56.83	-3.58	Peak	118	3
3	4824.00	43.97	54.00	-10.03	40.30	3.67	Average	100	176
4	4824.00	49.08	74.00	-24.92	45.41	3.67	Peak	100	176
5	12060.00	44.15	54.00	-9.85	30.84	13.31	Average	100	122
6	12060.00	57.08	74.00	-16.92	43.77	13.31	Peak	100	122

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).

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



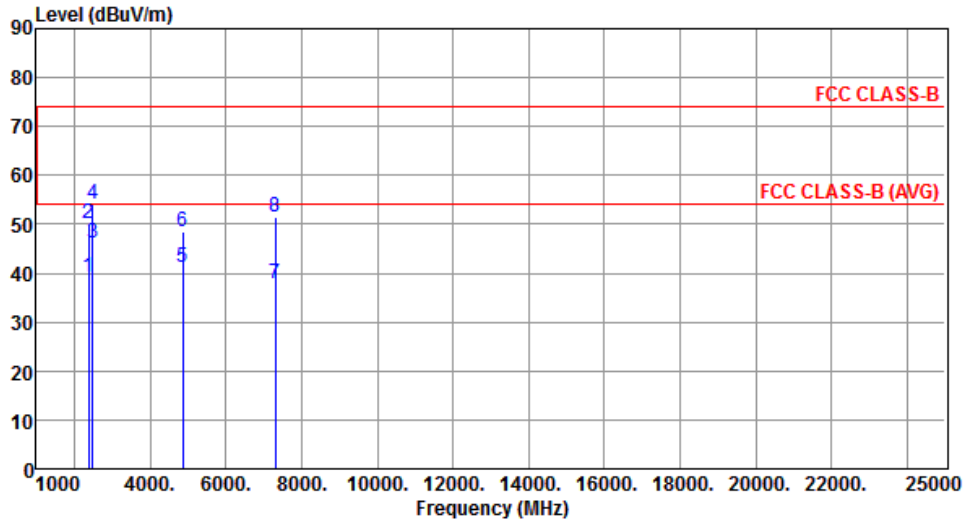
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	52.58	54.00	-1.42	56.16	-3.58	Average	100	20
2	2390.00	60.44	74.00	-13.56	64.02	-3.58	Peak	100	20
3	4824.00	51.01	54.00	-2.99	47.34	3.67	Average	100	211
4	4824.00	53.87	74.00	-20.13	50.20	3.67	Peak	100	211
5	12060.00	43.99	54.00	-10.01	30.68	13.31	Average	100	14
6	12060.00	56.93	74.00	-17.07	43.62	13.31	Peak	100	14

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).

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



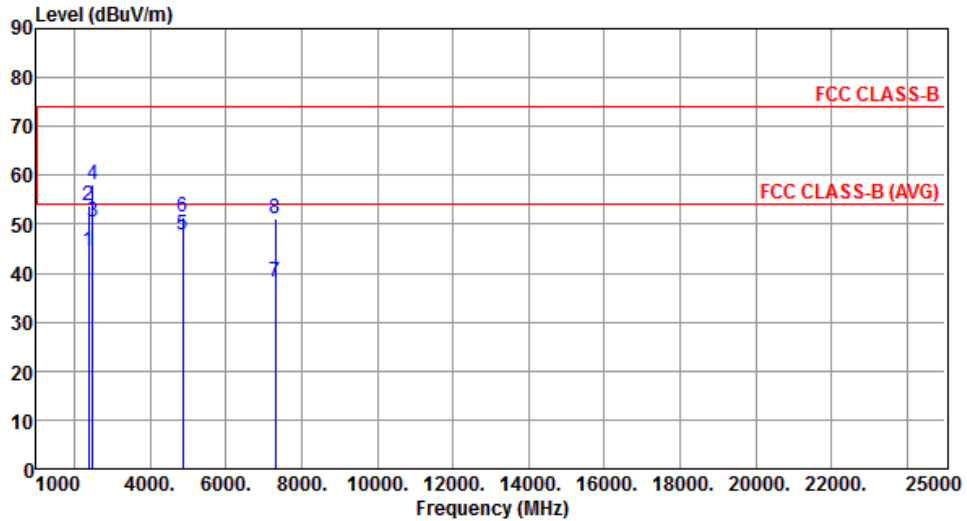
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	39.35	54.00	-14.65	42.93	-3.58	Average	106	2
2	2390.00	50.19	74.00	-23.81	53.77	-3.58	Peak	106	2
3	2483.50	46.18	54.00	-7.82	49.36	-3.18	Average	106	2
4	2483.50	54.16	74.00	-19.84	57.34	-3.18	Peak	106	2
5	4874.00	41.02	54.00	-12.98	37.22	3.80	Average	106	173
6	4874.00	48.50	74.00	-25.50	44.70	3.80	Peak	106	173
7	7311.00	37.99	54.00	-16.01	29.90	8.09	Average	100	116
8	7311.00	51.49	74.00	-22.51	43.40	8.09	Peak	100	116

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).

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



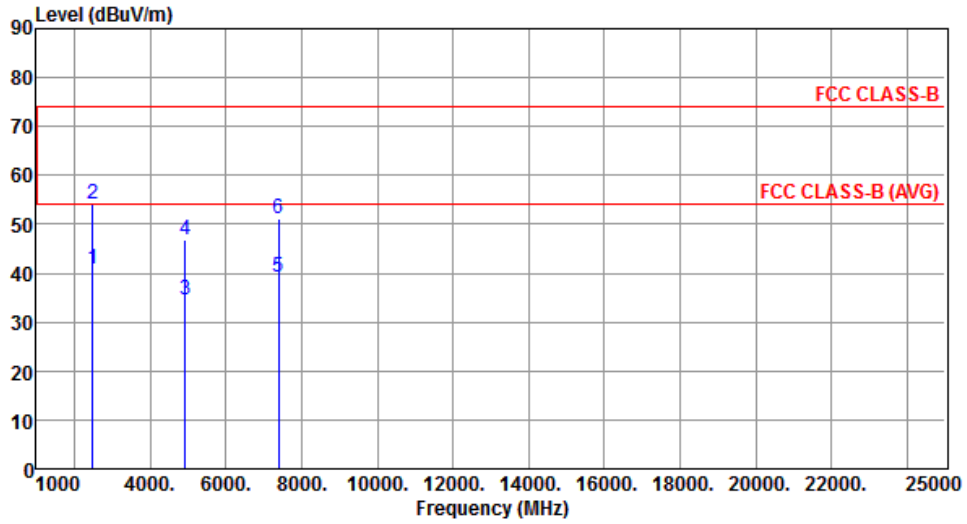
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	44.44	54.00	-9.56	48.02	-3.58	Average	186	359
2	2390.00	53.92	74.00	-20.08	57.50	-3.58	Peak	186	359
3	2483.50	50.53	54.00	-3.47	53.71	-3.18	Average	177	16
4	2483.50	57.97	74.00	-16.03	61.15	-3.18	Peak	177	16
5	4874.00	47.98	54.00	-6.02	44.18	3.80	Average	100	210
6	4874.00	51.60	74.00	-22.40	47.80	3.80	Peak	100	210
7	7311.00	38.30	54.00	-15.70	30.21	8.09	Average	100	19
8	7311.00	51.24	74.00	-22.76	43.15	8.09	Peak	100	19

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).

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



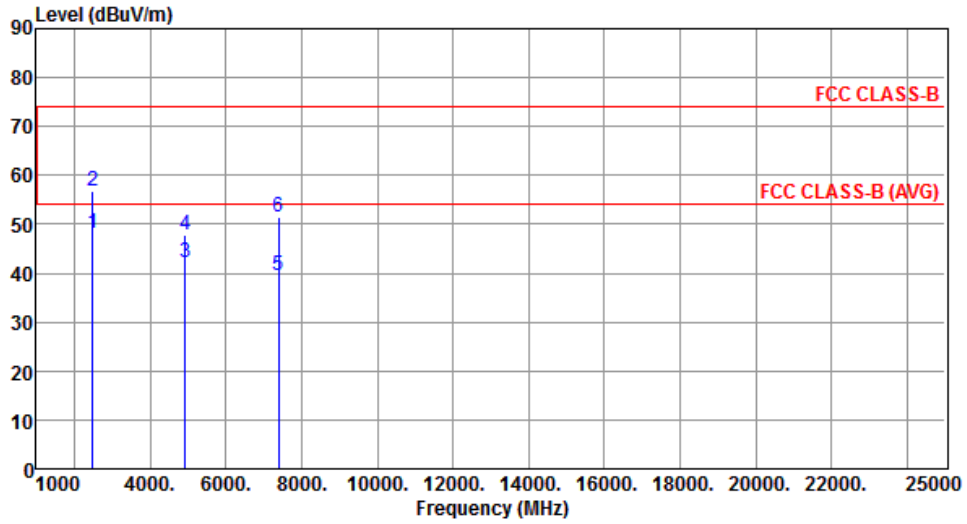
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	40.90	54.00	-13.10	44.08	-3.18	Average	185	176
2	2483.50	54.17	74.00	-19.83	57.35	-3.18	Peak	185	176
3	4924.00	34.56	54.00	-19.44	30.61	3.95	Average	100	89
4	4924.00	46.79	74.00	-27.21	42.84	3.95	Peak	100	89
5	7386.00	39.33	54.00	-14.67	31.12	8.21	Average	100	155
6	7386.00	51.28	74.00	-22.72	43.07	8.21	Peak	100	155

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).

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



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	48.22	54.00	-5.78	51.40	-3.18	Average	102	325
2	2483.50	56.95	74.00	-17.05	60.13	-3.18	Peak	102	325
3	4924.00	42.22	54.00	-11.78	38.27	3.95	Average	100	149
4	4924.00	47.83	74.00	-26.17	43.88	3.95	Peak	100	149
5	7386.00	39.62	54.00	-14.38	31.41	8.21	Average	100	311
6	7386.00	51.43	74.00	-22.57	43.22	8.21	Peak	100	311

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

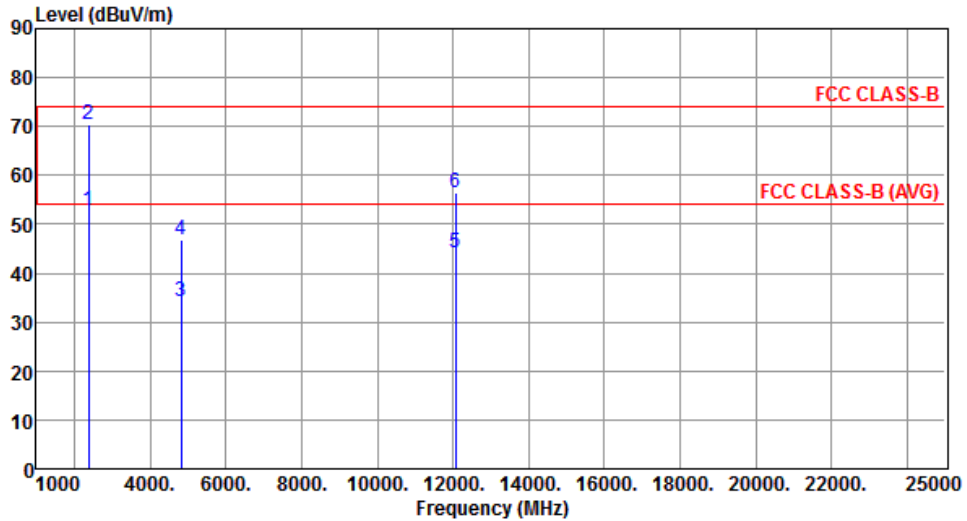
*Factor includes antenna factor , cable loss and amplifier gain

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

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

Modulation	11g	Test Freq. (MHz)	2412						
Polarization	Horizontal								
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	2390.00	43.55	54.00	-10.45	47.13	-3.58	Average	196	174
2	2390.00	60.79	74.00	-13.21	64.37	-3.58	Peak	196	174
3	4824.00	33.64	54.00	-20.36	29.97	3.67	Average	100	96
4	4824.00	45.68	74.00	-28.32	42.01	3.67	Peak	100	96
5	12060.00	43.99	54.00	-10.01	30.68	13.31	Average	100	149
6	12060.00	55.89	74.00	-18.11	42.58	13.31	Peak	100	149
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p>									

Modulation	11g	Test Freq. (MHz)	2412
Polarization	Vertical		



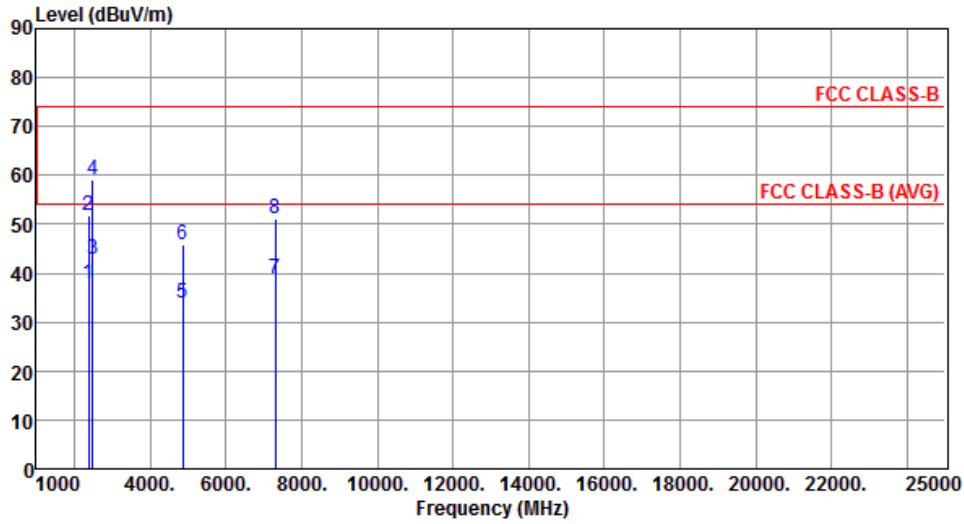
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	52.91	54.00	-1.09	56.49	-3.58	Average	100	326
2	2390.00	70.37	74.00	-3.63	73.95	-3.58	Peak	100	326
3	4824.00	34.08	54.00	-19.92	30.41	3.67	Average	100	156
4	4824.00	46.98	74.00	-27.02	43.31	3.67	Peak	100	156
5	12060.00	44.09	54.00	-9.91	30.78	13.31	Average	100	323
6	12060.00	56.49	74.00	-17.51	43.18	13.31	Peak	100	323

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).

Modulation	11g	Test Freq. (MHz)	2437
Polarization	Horizontal		



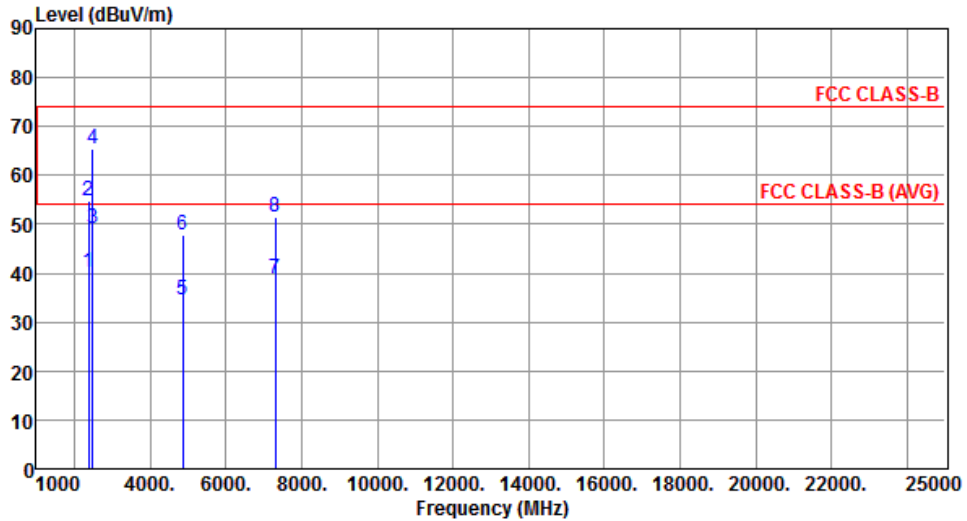
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	37.75	54.00	-16.25	41.33	-3.58	Average	190	174
2	2390.00	51.66	74.00	-22.34	55.24	-3.58	Peak	190	174
3	2483.50	42.98	54.00	-11.02	46.16	-3.18	Average	190	174
4	2483.50	59.09	74.00	-14.91	62.27	-3.18	Peak	190	174
5	4874.00	33.76	54.00	-20.24	29.96	3.80	Average	100	92
6	4874.00	45.77	74.00	-28.23	41.97	3.80	Peak	100	92
7	7311.00	38.89	54.00	-15.11	30.80	8.09	Average	100	162
8	7311.00	51.07	74.00	-22.93	42.98	8.09	Peak	100	162

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).

Modulation	11g	Test Freq. (MHz)	2437
Polarization	Vertical		



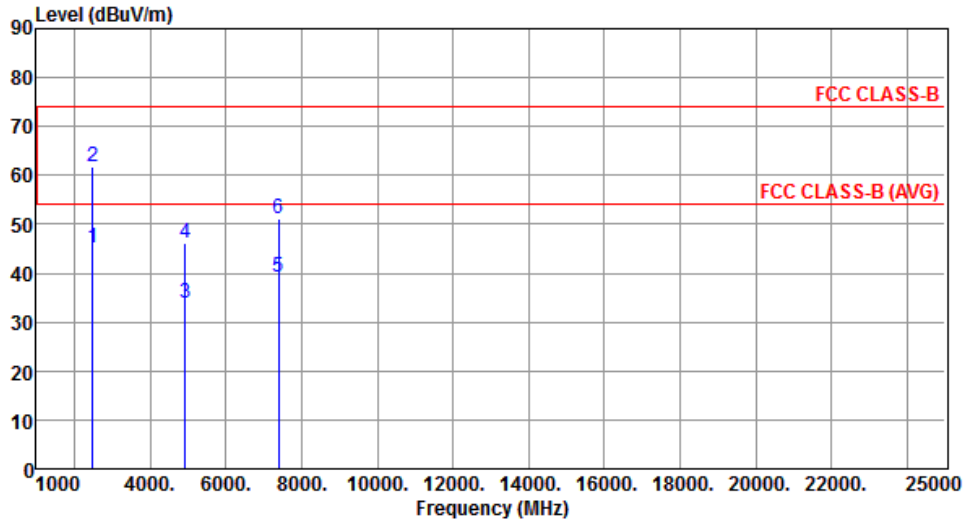
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	40.33	54.00	-13.67	43.91	-3.58	Average	114	325
2	2390.00	54.86	74.00	-19.14	58.44	-3.58	Peak	114	325
3	2483.50	49.30	54.00	-4.70	52.48	-3.18	Average	114	325
4	2483.50	65.35	74.00	-8.65	68.53	-3.18	Peak	114	325
5	4874.00	34.55	54.00	-19.45	30.75	3.80	Average	100	148
6	4874.00	47.82	74.00	-26.18	44.02	3.80	Peak	100	148
7	7311.00	38.94	54.00	-15.06	30.85	8.09	Average	100	320
8	7311.00	51.34	74.00	-22.66	43.25	8.09	Peak	100	320

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).

Modulation	11g	Test Freq. (MHz)	2462
Polarization	Horizontal		



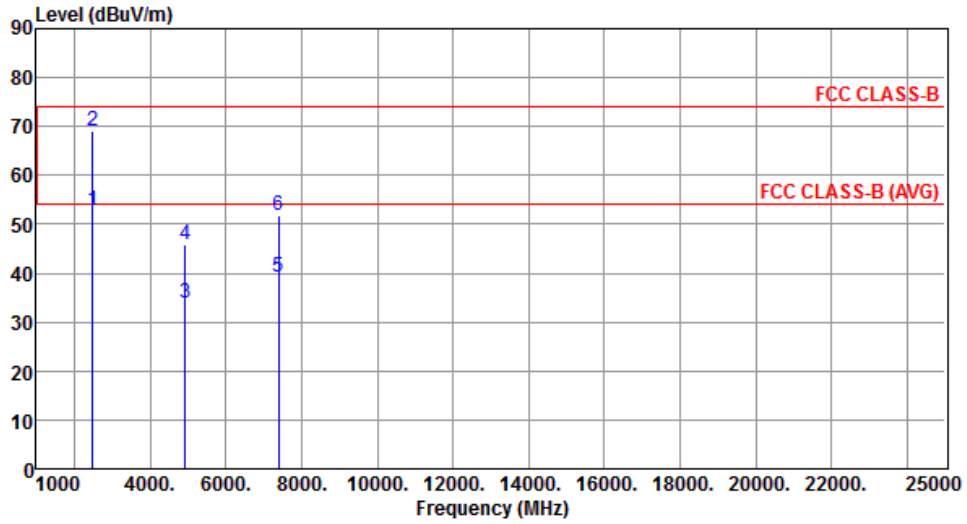
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	45.17	54.00	-8.83	48.35	-3.18	Average	185	175
2	2483.50	61.77	74.00	-12.23	64.95	-3.18	Peak	185	175
3	4924.00	33.71	54.00	-20.29	29.76	3.95	Average	100	90
4	4924.00	46.04	74.00	-27.96	42.09	3.95	Peak	100	90
5	7386.00	39.19	54.00	-14.81	30.98	8.21	Average	100	143
6	7386.00	51.16	74.00	-22.84	42.95	8.21	Peak	100	143

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).

Modulation	11g	Test Freq. (MHz)	2462
Polarization	Vertical		



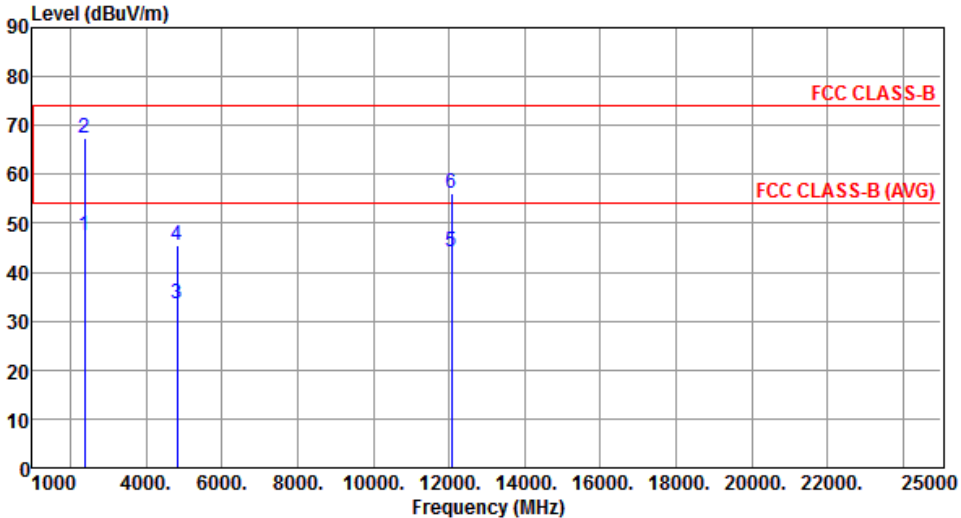
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	52.82	54.00	-1.18	56.00	-3.18	Average	103	327
2	2483.50	69.13	74.00	-4.87	72.31	-3.18	Peak	103	327
3	4924.00	33.77	54.00	-20.23	29.82	3.95	Average	100	143
4	4924.00	45.90	74.00	-28.10	41.95	3.95	Peak	100	143
5	7386.00	39.24	54.00	-14.76	31.03	8.21	Average	100	312
6	7386.00	51.67	74.00	-22.33	43.46	8.21	Peak	100	312

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

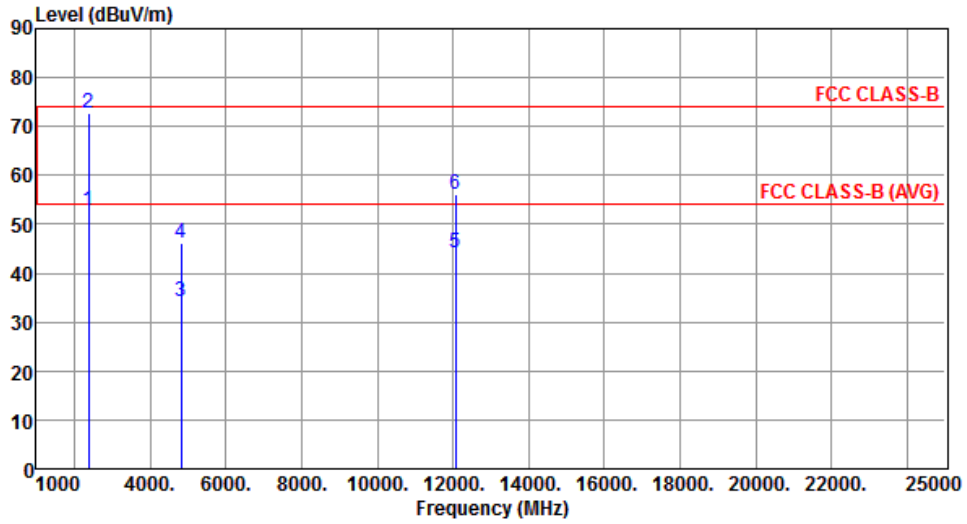
*Factor includes antenna factor , cable loss and amplifier gain

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

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

Modulation	HT20	Test Freq. (MHz)	2412						
Polarization	Horizontal								
									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBUV/m	dBUV/m	dB	dBUV	dB		cm	deg
1	2390.00	47.61	54.00	-6.39	51.19	-3.58	Average	196	175
2	2390.00	67.58	74.00	-6.42	71.16	-3.58	Peak	196	175
3	4824.00	33.68	54.00	-20.32	30.01	3.67	Average	100	91
4	4824.00	45.62	74.00	-28.38	41.95	3.67	Peak	100	91
5	12060.00	44.02	54.00	-9.98	30.71	13.31	Average	100	149
6	12060.00	56.02	74.00	-17.98	42.71	13.31	Peak	100	149
<p>Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).</p>									

Modulation	HT20	Test Freq. (MHz)	2412
Polarization	Vertical		



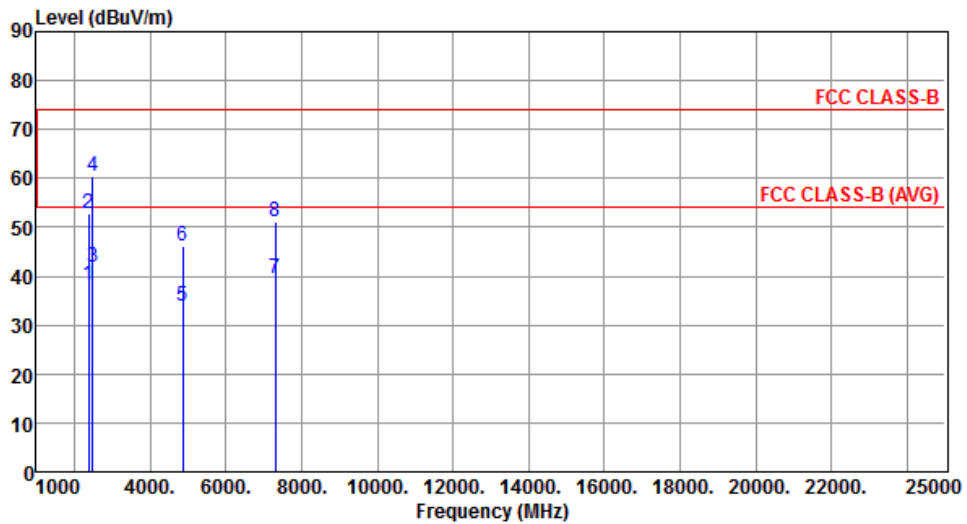
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	52.94	54.00	-1.06	56.52	-3.58	Average	100	327
2	2390.00	72.81	74.00	-1.19	76.39	-3.58	Peak	100	327
3	4824.00	34.05	54.00	-19.95	30.38	3.67	Average	100	148
4	4824.00	46.02	74.00	-27.98	42.35	3.67	Peak	100	148
5	12060.00	44.04	54.00	-9.96	30.73	13.31	Average	100	325
6	12060.00	56.00	74.00	-18.00	42.69	13.31	Peak	100	325

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).

Modulation	HT20	Test Freq. (MHz)	2437
Polarization	Horizontal		



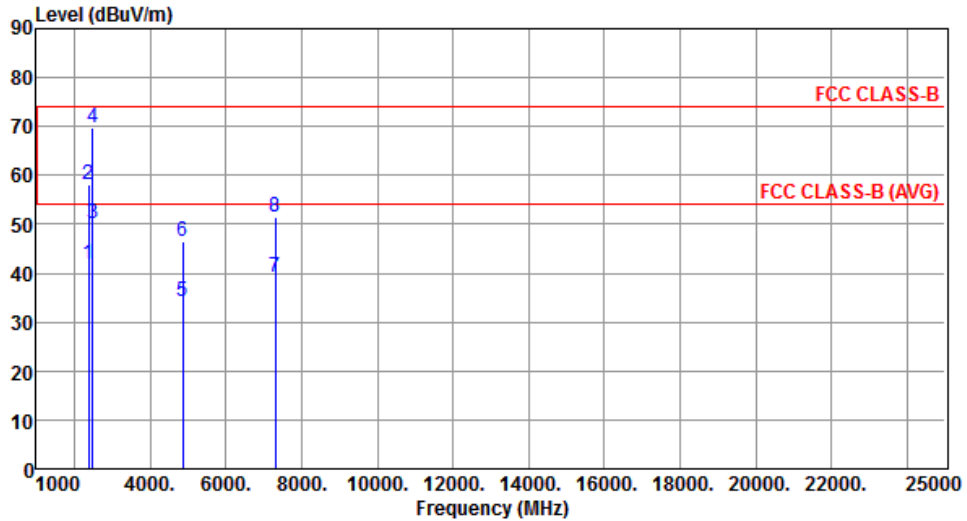
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	38.23	54.00	-15.77	41.81	-3.58	Average	171	175
2	2390.00	52.77	74.00	-21.23	56.35	-3.58	Peak	171	175
3	2483.50	41.92	54.00	-12.08	45.10	-3.18	Average	171	175
4	2483.50	60.44	74.00	-13.56	63.62	-3.18	Peak	171	175
5	4874.00	33.85	54.00	-20.15	30.05	3.80	Average	100	93
6	4874.00	46.02	74.00	-27.98	42.22	3.80	Peak	100	93
7	7311.00	39.38	54.00	-14.62	31.29	8.09	Average	100	93
8	7311.00	51.18	74.00	-22.82	43.09	8.09	Peak	100	93

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).

Modulation	HT20	Test Freq. (MHz)	2437
Polarization	Vertical		



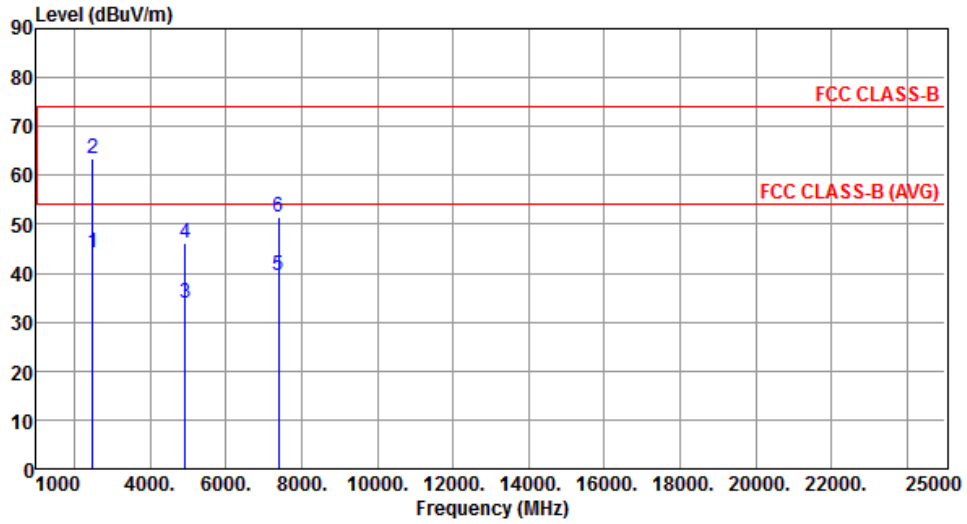
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	41.68	54.00	-12.32	45.26	-3.58	Average	109	322
2	2390.00	58.20	74.00	-15.80	61.78	-3.58	Peak	109	322
3	2483.50	50.23	54.00	-3.77	53.41	-3.18	Average	109	322
4	2483.50	69.82	74.00	-4.18	73.00	-3.18	Peak	109	322
5	4874.00	34.20	54.00	-19.80	30.40	3.80	Average	100	159
6	4874.00	46.60	74.00	-27.40	42.80	3.80	Peak	100	159
7	7311.00	39.34	54.00	-14.66	31.25	8.09	Average	100	320
8	7311.00	51.34	74.00	-22.66	43.25	8.09	Peak	100	320

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).

Modulation	HT20	Test Freq. (MHz)	2462
Polarization	Horizontal		



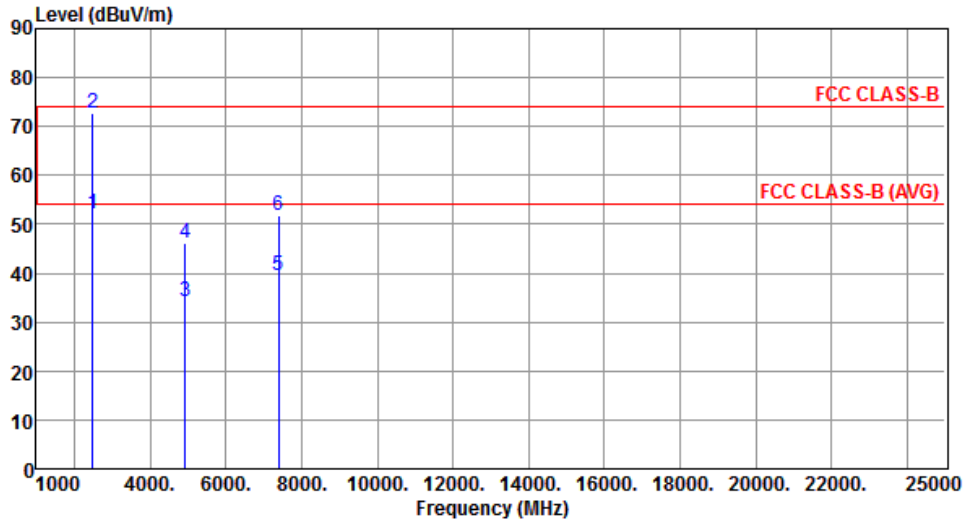
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	44.10	54.00	-9.90	47.28	-3.18	Average	197	175
2	2483.50	63.40	74.00	-10.60	66.58	-3.18	Peak	197	175
3	4924.00	33.88	54.00	-20.12	29.93	3.95	Average	100	92
4	4924.00	46.04	74.00	-27.96	42.09	3.95	Peak	100	92
5	7386.00	39.57	54.00	-14.43	31.36	8.21	Average	100	156
6	7386.00	51.50	74.00	-22.50	43.29	8.21	Peak	100	156

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	HT20	Test Freq. (MHz)	2462
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	51.98	54.00	-2.02	55.16	-3.18	Average	102	325
2	2483.50	72.75	74.00	-1.25	75.93	-3.18	Peak	102	325
3	4924.00	34.13	54.00	-19.87	30.18	3.95	Average	100	153
4	4924.00	46.30	74.00	-27.70	42.35	3.95	Peak	100	153
5	7386.00	39.37	54.00	-14.63	31.16	8.21	Average	100	323
6	7386.00	51.77	74.00	-22.23	43.56	8.21	Peak	100	323

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

*Factor includes antenna factor , cable loss and amplifier gain

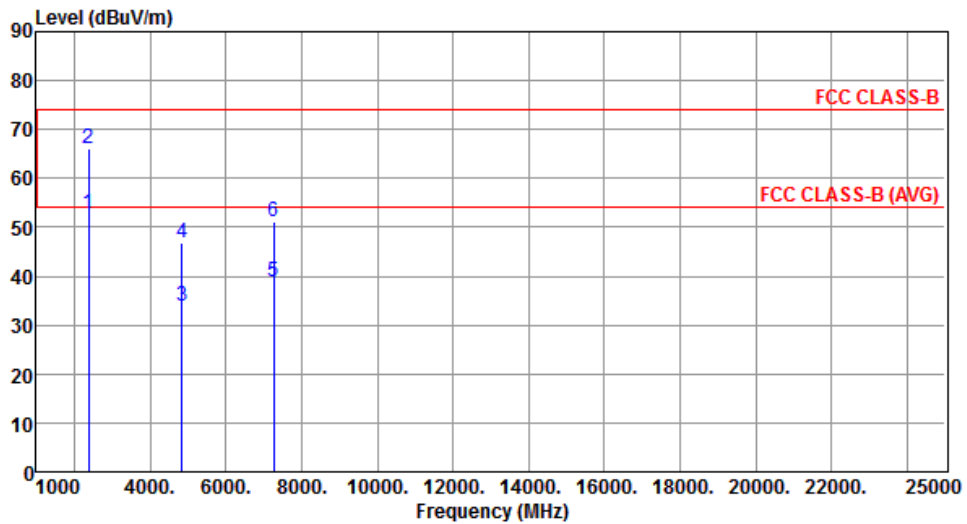
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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

Modulation	HT40	Test Freq. (MHz)	2422						
Polarization	Horizontal								
	Freq. 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	46.92	54.00	-7.08	50.50	-3.58	Average	197	178
2	2390.00	61.01	74.00	-12.99	64.59	-3.58	Peak	197	178
3	4844.00	33.62	54.00	-20.38	29.89	3.73	Average	100	83
4	4844.00	45.71	74.00	-28.29	41.98	3.73	Peak	100	83
5	7266.00	38.67	54.00	-15.33	30.66	8.01	Average	100	148
6	7266.00	50.74	74.00	-23.26	42.73	8.01	Peak	100	148

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).

Modulation	HT40	Test Freq. (MHz)	2422
Polarization	Vertical		



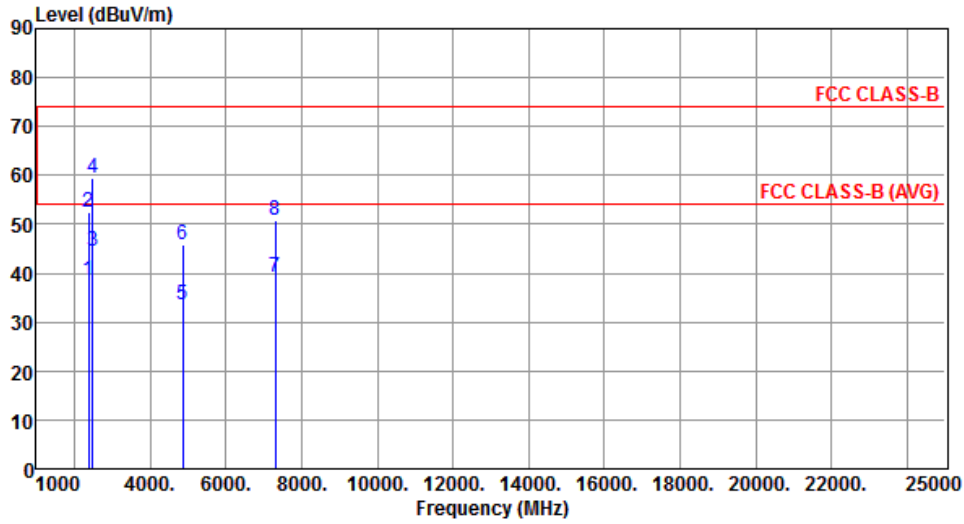
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	52.74	54.00	-1.26	56.32	-3.58	Average	100	327
2	2390.00	66.24	74.00	-7.76	69.82	-3.58	Peak	100	327
3	4844.00	34.03	54.00	-19.97	30.30	3.73	Average	100	142
4	4844.00	46.72	74.00	-27.28	42.99	3.73	Peak	100	142
5	7266.00	38.83	54.00	-15.17	30.82	8.01	Average	100	304
6	7266.00	51.23	74.00	-22.77	43.22	8.01	Peak	100	304

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).

Modulation	HT40	Test Freq. (MHz)	2437
Polarization	Horizontal		



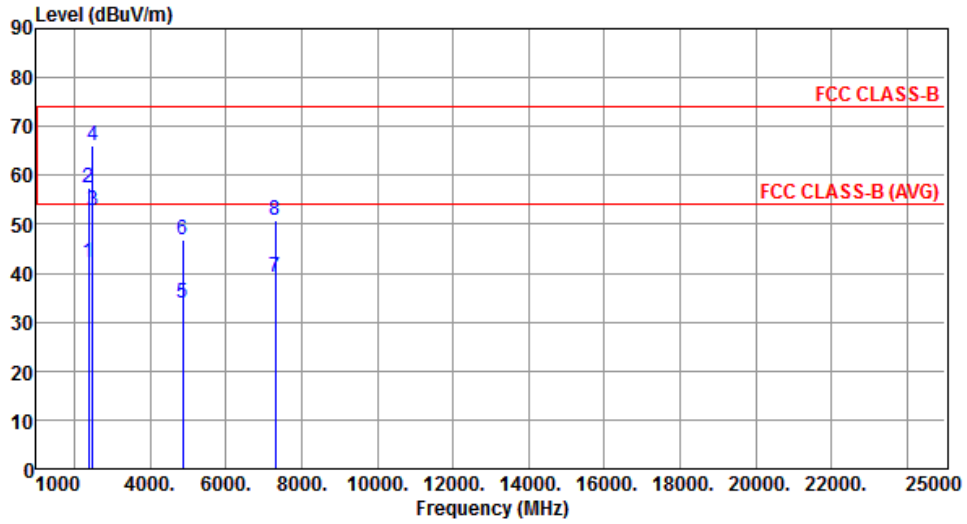
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	38.58	54.00	-15.42	42.16	-3.58	Average	188	177
2	2390.00	52.37	74.00	-21.63	55.95	-3.58	Peak	188	177
3	2483.50	44.44	54.00	-9.56	47.62	-3.18	Average	188	177
4	2483.50	59.47	74.00	-14.53	62.65	-3.18	Peak	188	177
5	4874.00	33.67	54.00	-20.33	29.87	3.80	Average	100	96
6	4874.00	45.82	74.00	-28.18	42.02	3.80	Peak	100	96
7	7311.00	39.08	54.00	-14.92	30.99	8.09	Average	100	142
8	7311.00	50.94	74.00	-23.06	42.85	8.09	Peak	100	142

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).

Modulation	HT40	Test Freq. (MHz)	2437
Polarization	Vertical		



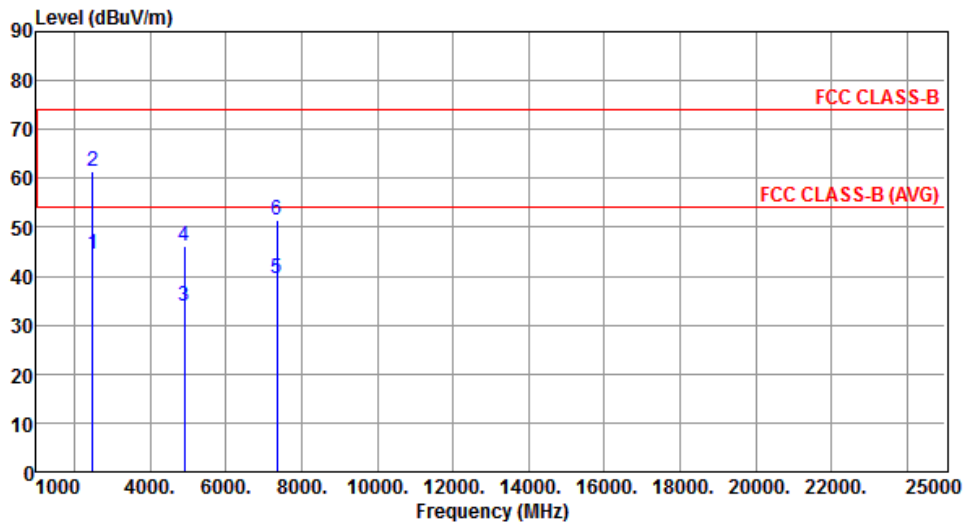
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	42.06	54.00	-11.94	45.64	-3.58	Average	100	327
2	2390.00	57.36	74.00	-16.64	60.94	-3.58	Peak	100	327
3	2483.50	52.92	54.00	-1.08	56.10	-3.18	Average	100	327
4	2483.50	65.92	74.00	-8.08	69.10	-3.18	Peak	100	327
5	4874.00	33.80	54.00	-20.20	30.00	3.80	Average	100	152
6	4874.00	46.69	74.00	-27.31	42.89	3.80	Peak	100	152
7	7311.00	39.22	54.00	-14.78	31.13	8.09	Average	100	302
8	7311.00	50.96	74.00	-23.04	42.87	8.09	Peak	100	302

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).

Modulation	HT40	Test Freq. (MHz)	2452
Polarization	Horizontal		



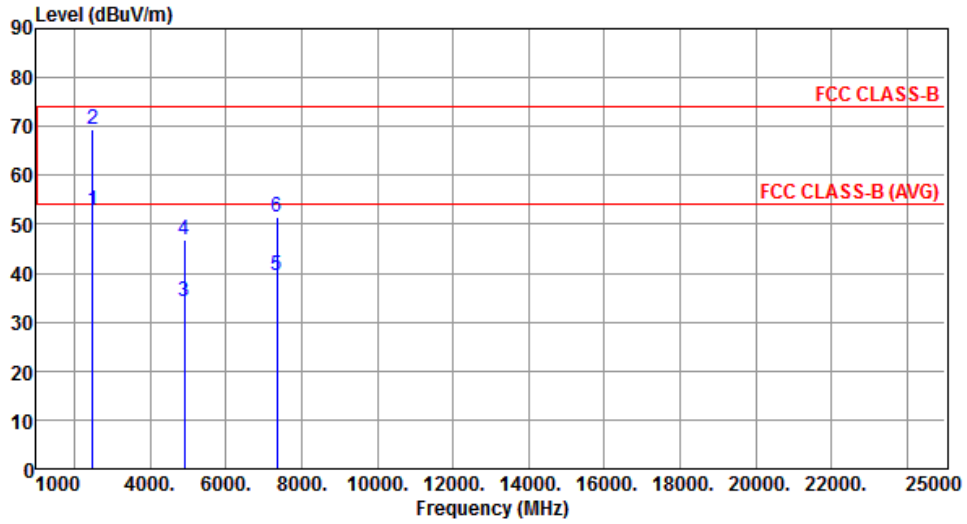
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	44.62	54.00	-9.38	47.80	-3.18	Average	190	177
2	2483.50	61.49	74.00	-12.51	64.67	-3.18	Peak	190	177
3	4904.00	33.83	54.00	-20.17	29.93	3.90	Average	100	82
4	4904.00	46.01	74.00	-27.99	42.11	3.90	Peak	100	82
5	7356.00	39.47	54.00	-14.53	31.30	8.17	Average	100	141
6	7356.00	51.37	74.00	-22.63	43.20	8.17	Peak	100	141

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).

Modulation	HT40	Test Freq. (MHz)	2452
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	52.96	54.00	-1.04	56.14	-3.18	Average	101	323
2	2483.50	69.41	74.00	-4.59	72.59	-3.18	Peak	101	323
3	4904.00	34.24	54.00	-19.76	30.34	3.90	Average	100	150
4	4904.00	46.79	74.00	-27.21	42.89	3.90	Peak	100	150
5	7356.00	39.58	54.00	-14.42	31.41	8.17	Average	100	305
6	7356.00	51.44	74.00	-22.56	43.27	8.17	Peak	100	305

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

*Factor includes antenna factor , cable loss and amplifier gain

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

3.6 Emissions in Non-Restricted Frequency Bands

3.6.1 Emissions in Non-Restricted Frequency Bands Limit

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

3.6.2 Test Procedures

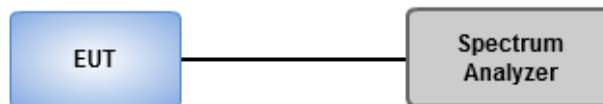
Reference level measurement

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

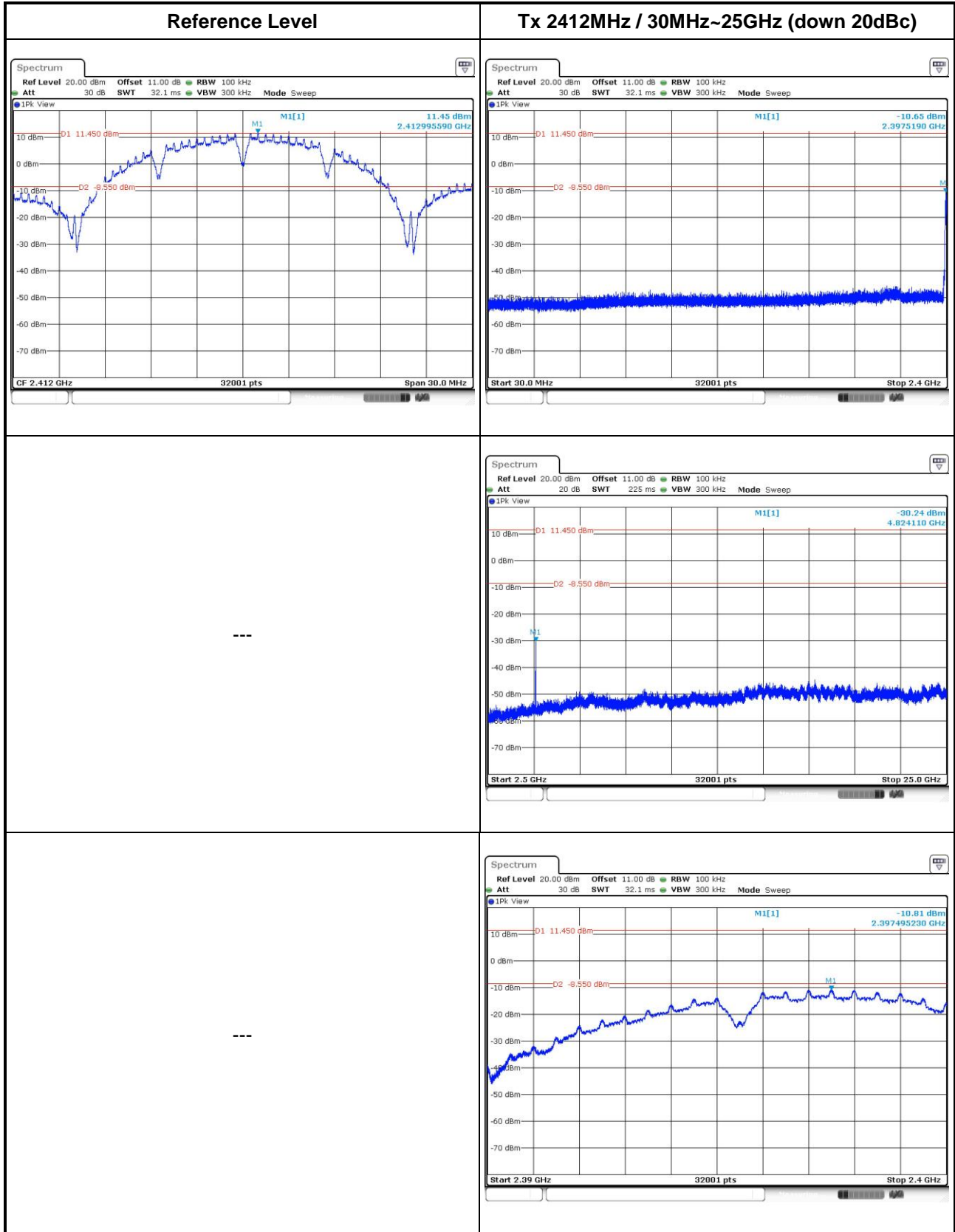
1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Scan Frequency range is up to 25GHz
4. Use the peak marker function to determine the maximum amplitude level

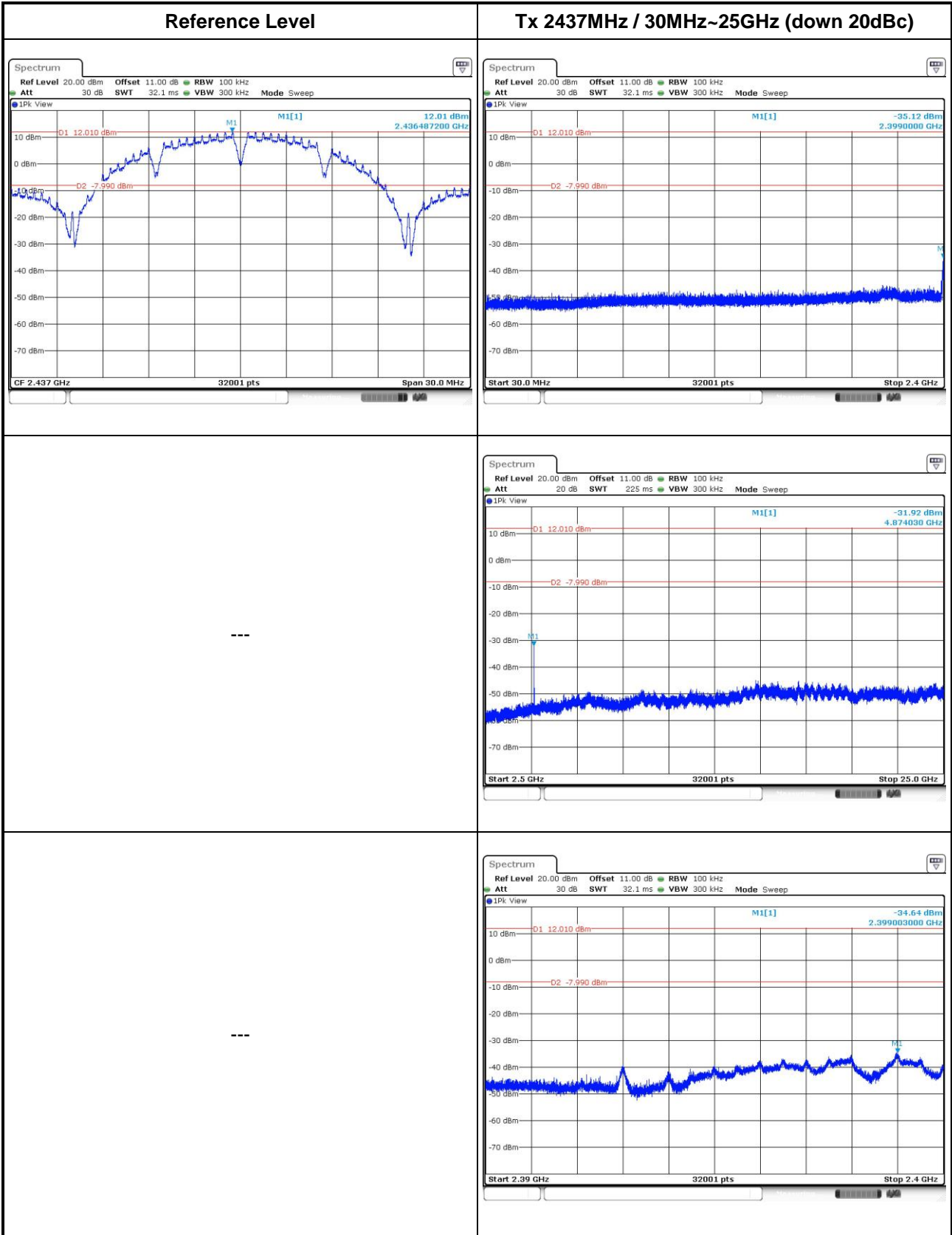
3.6.3 Test Setup

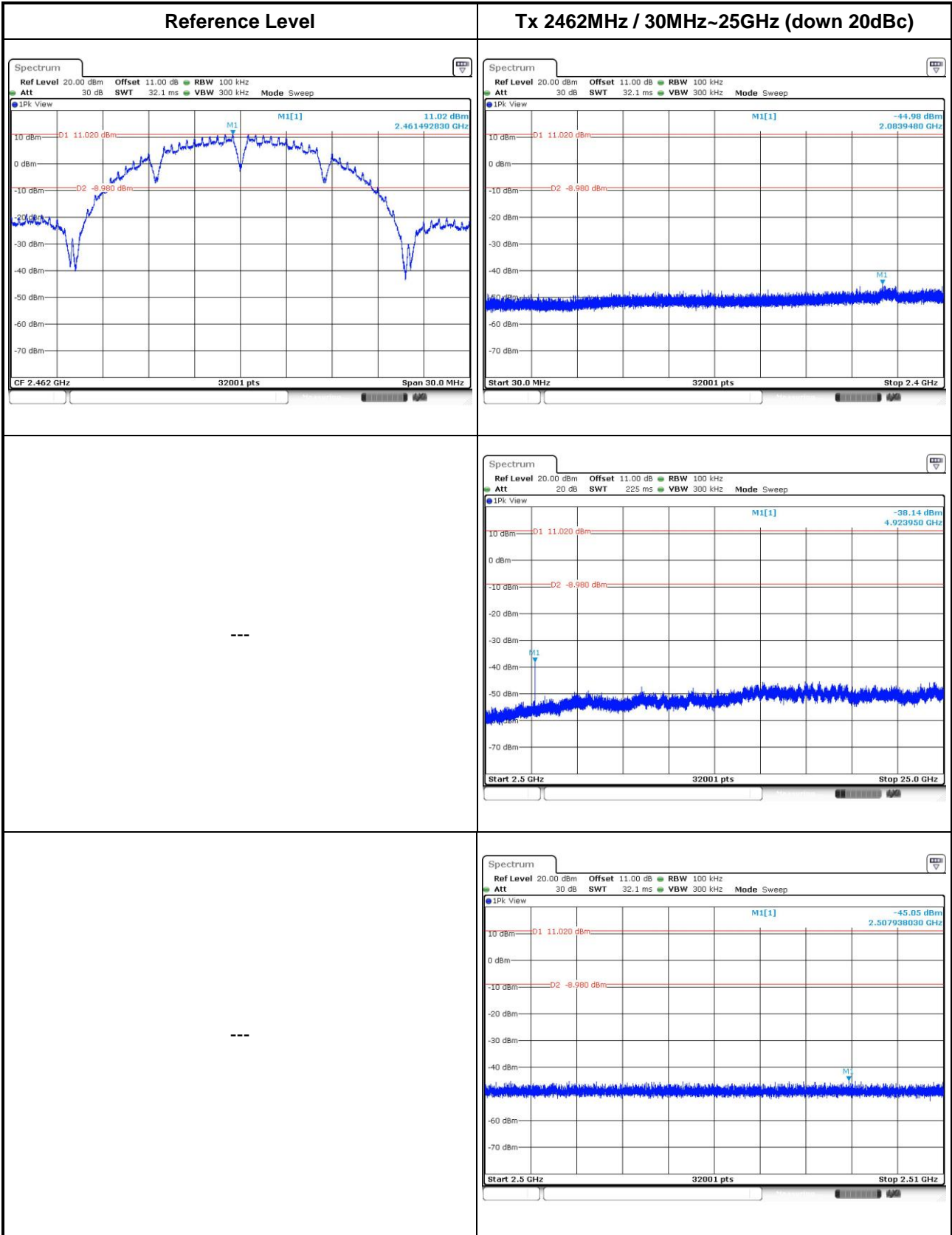


3.6.4 Unwanted Emissions into Non-Restricted Frequency Bands

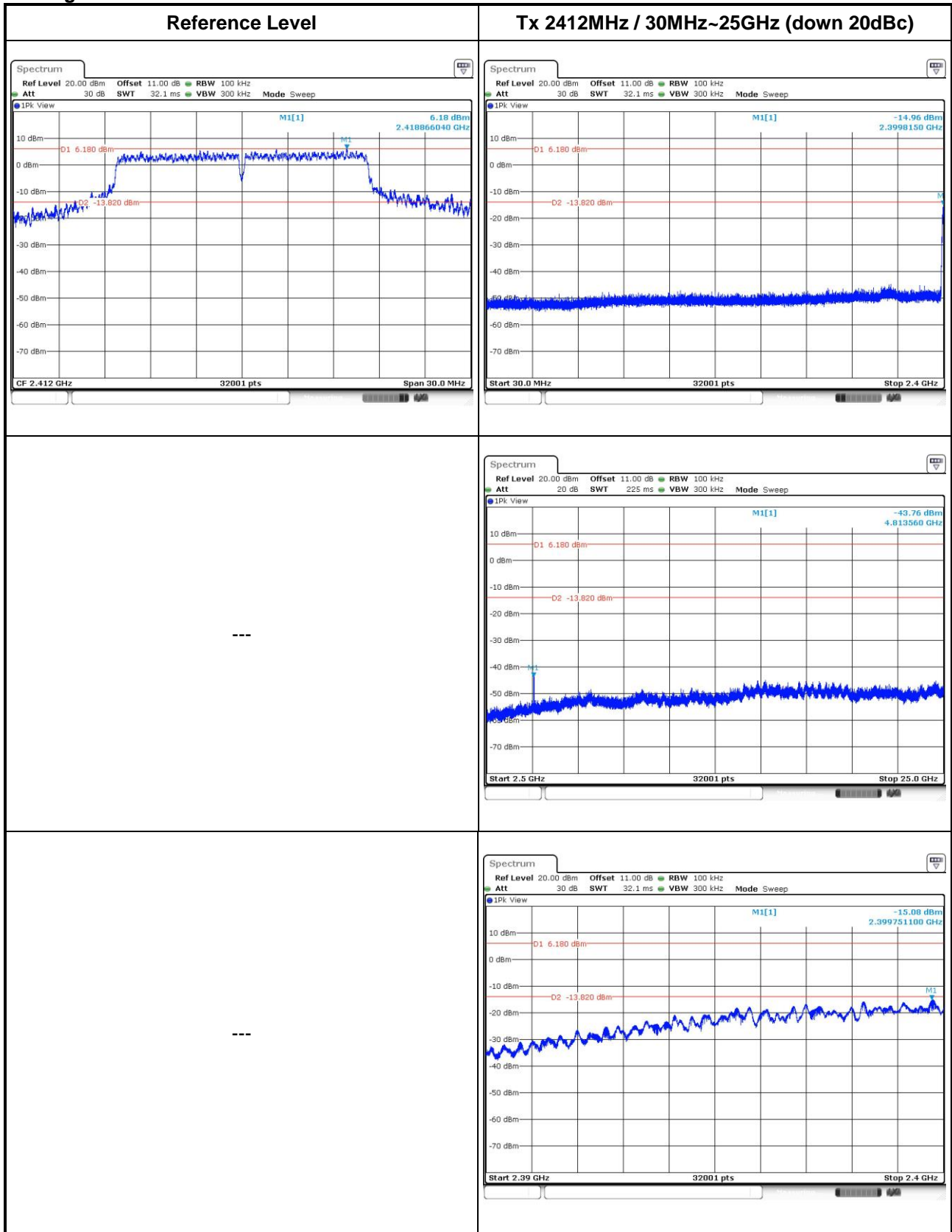
802.11b

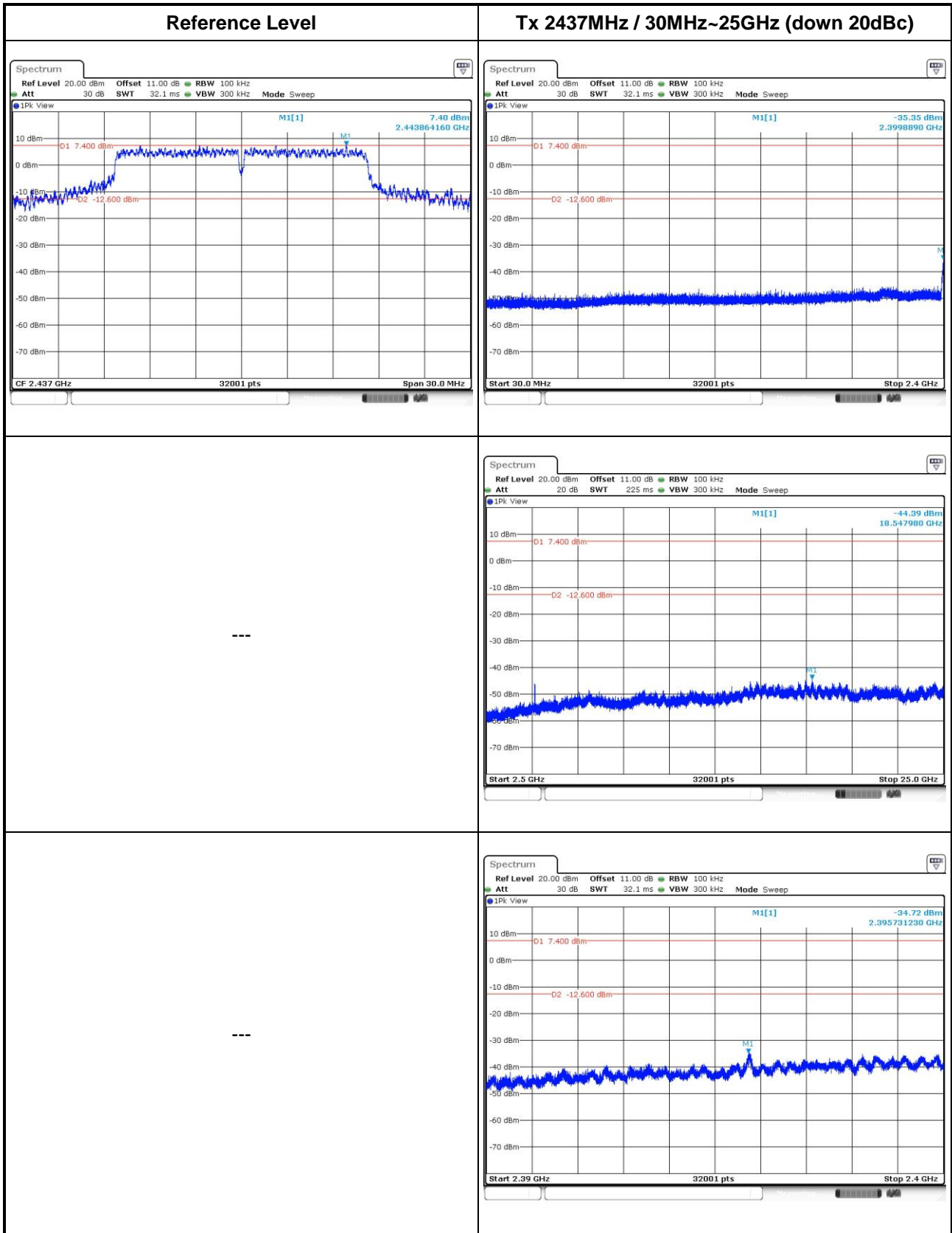


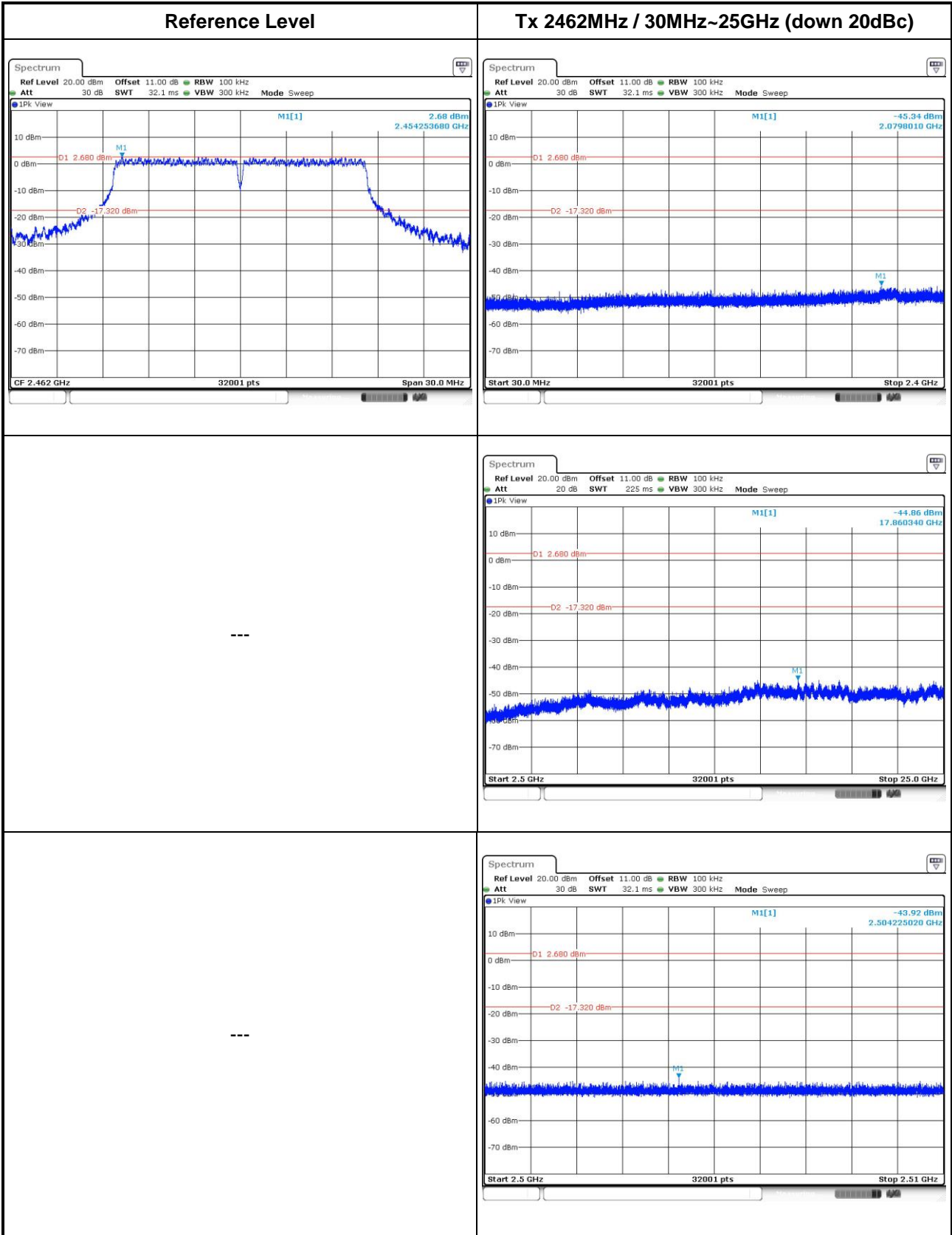




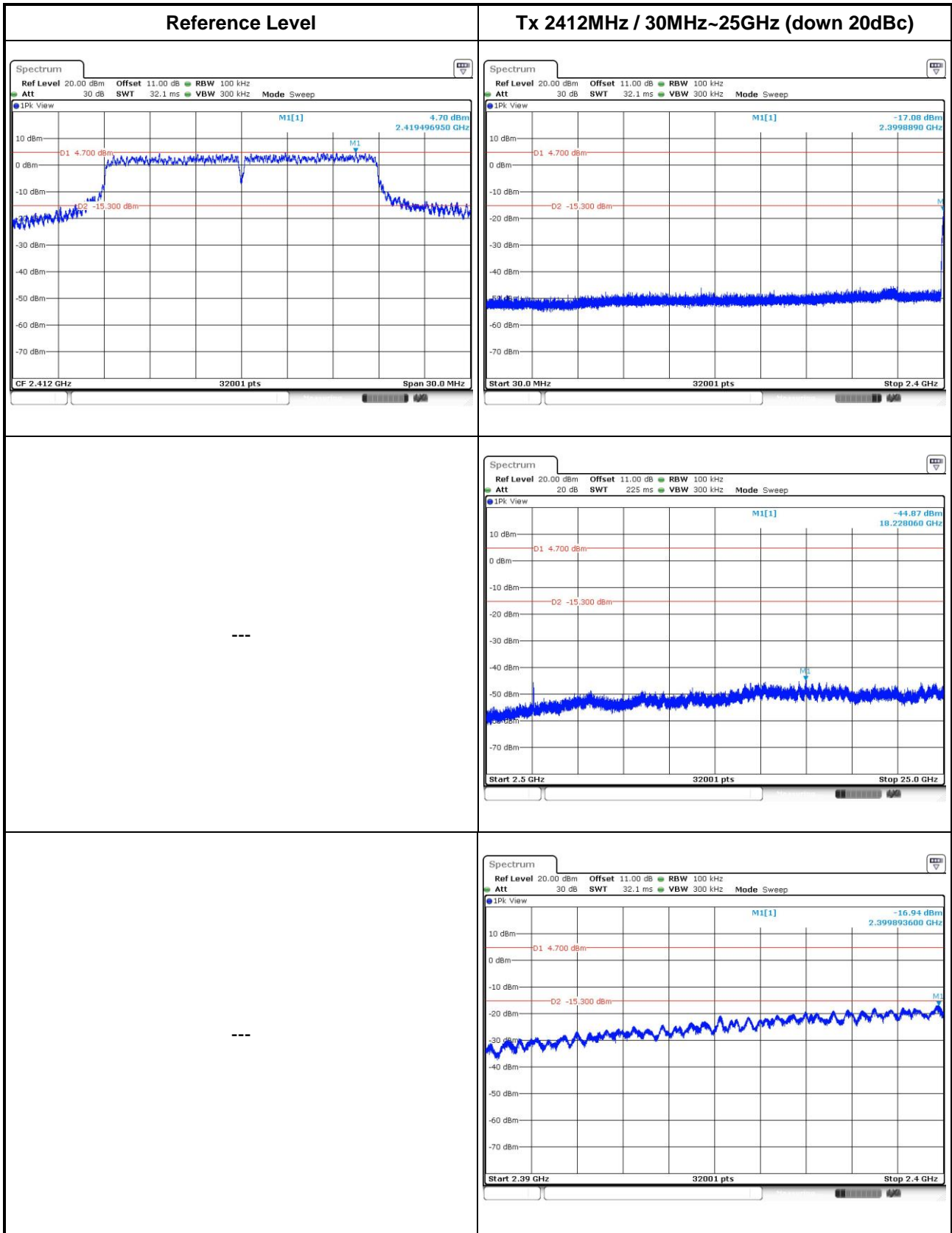
802.11g

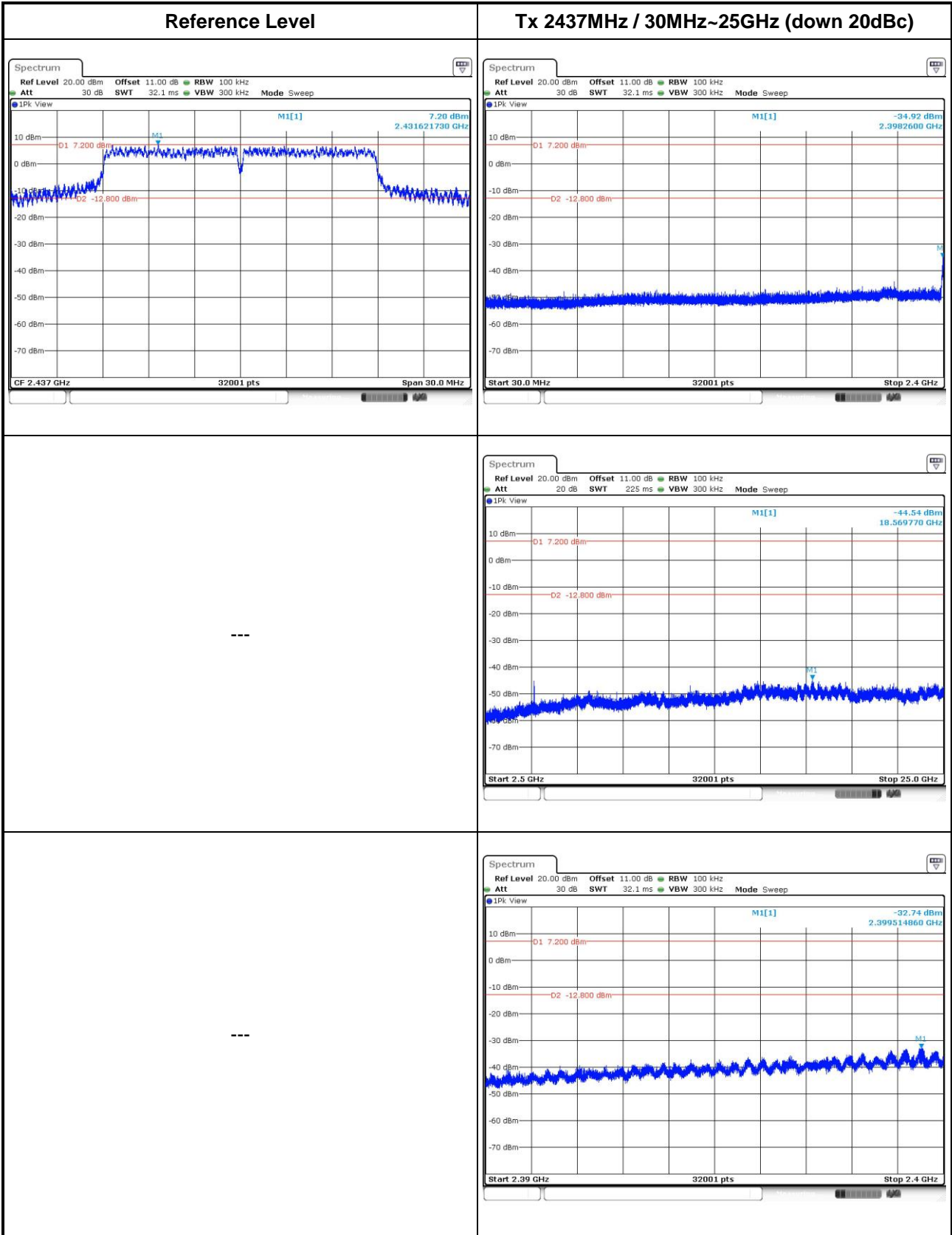


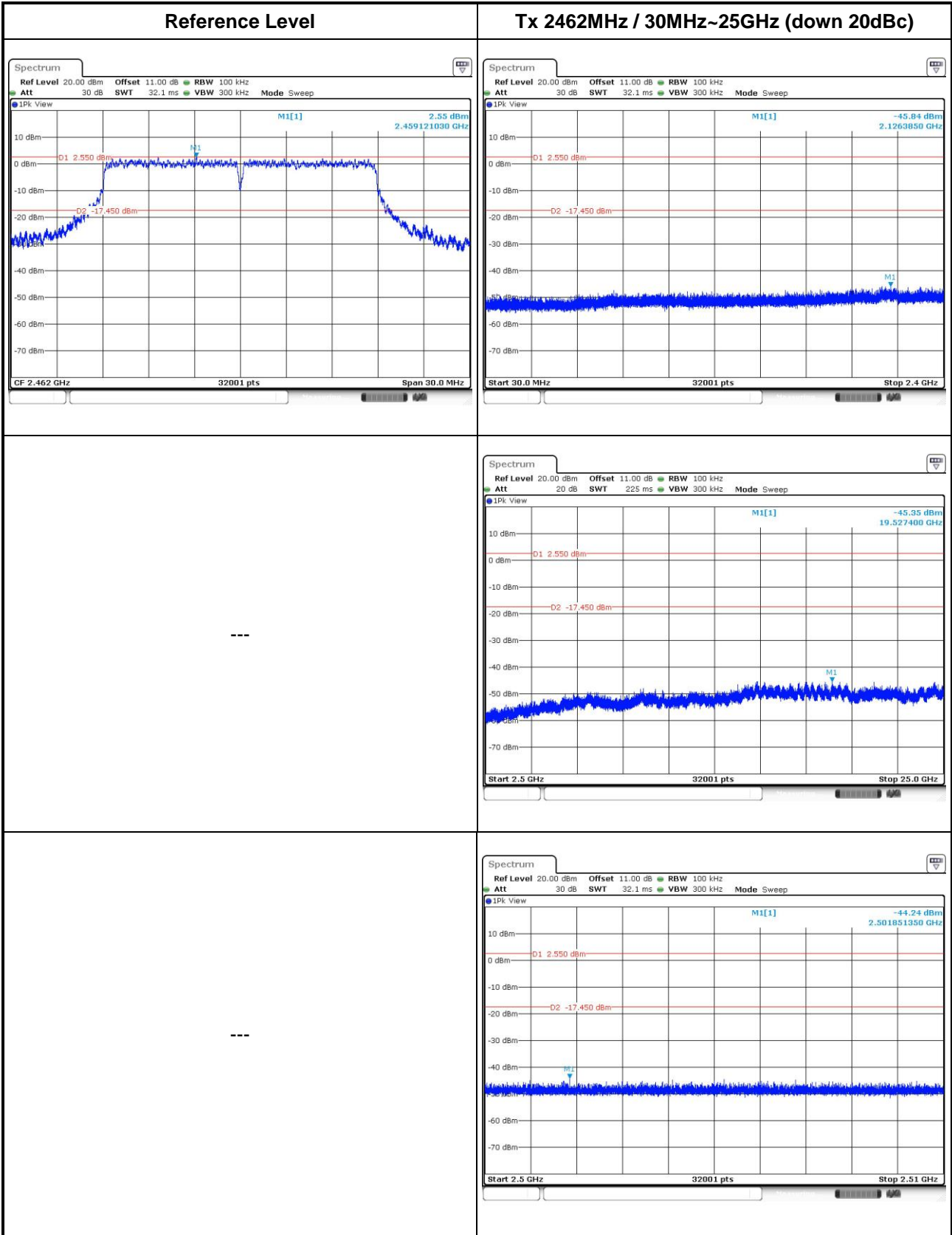




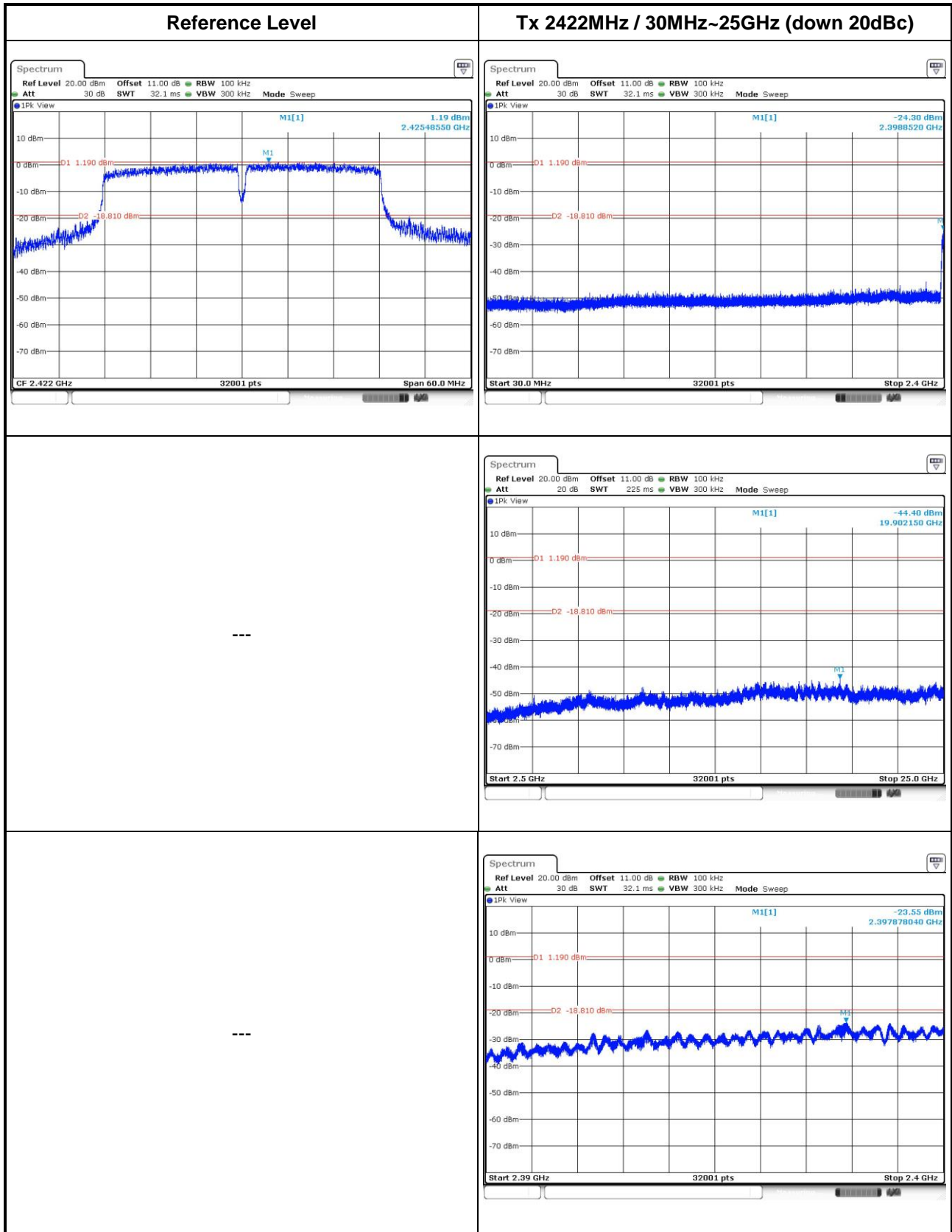
802.11n HT20

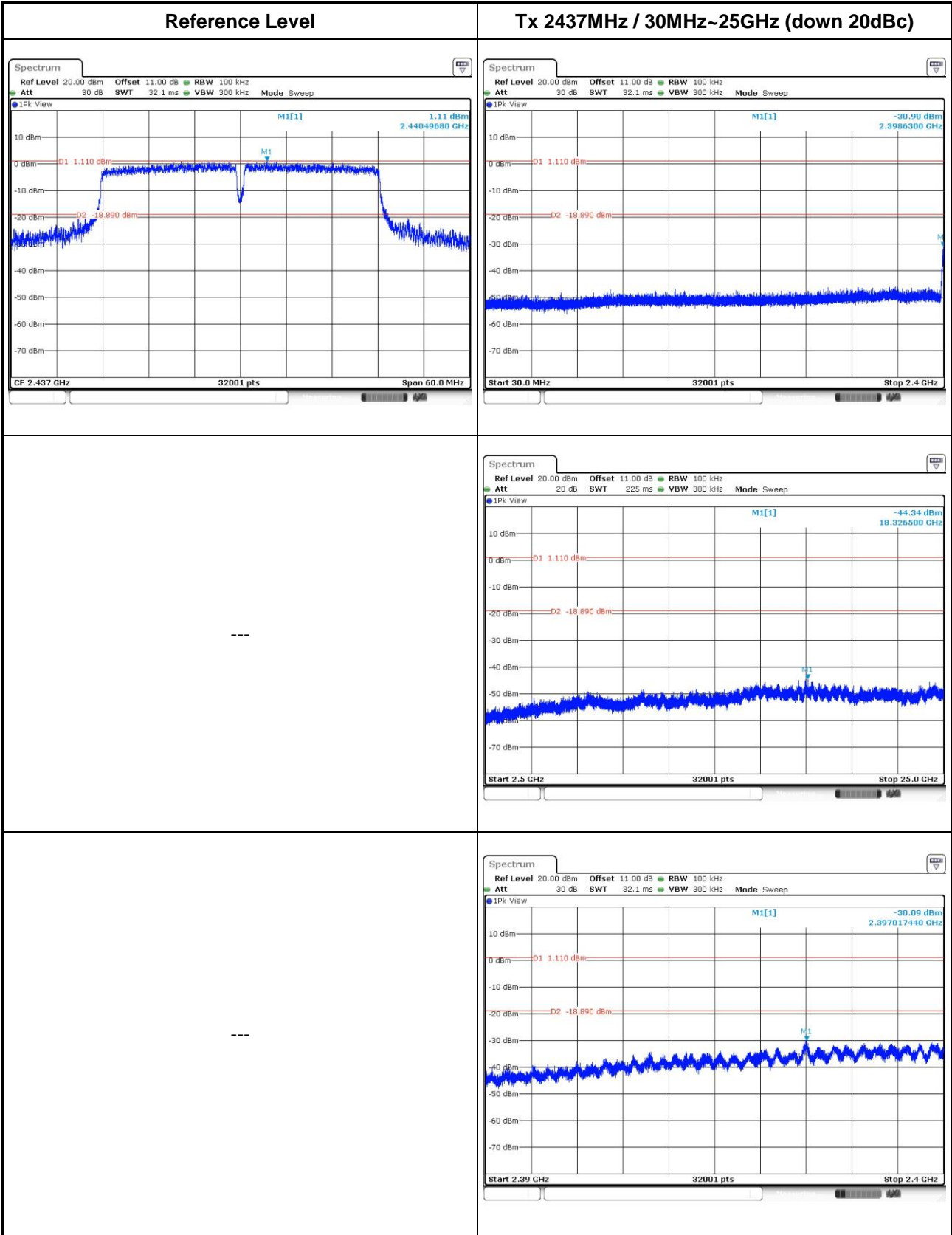


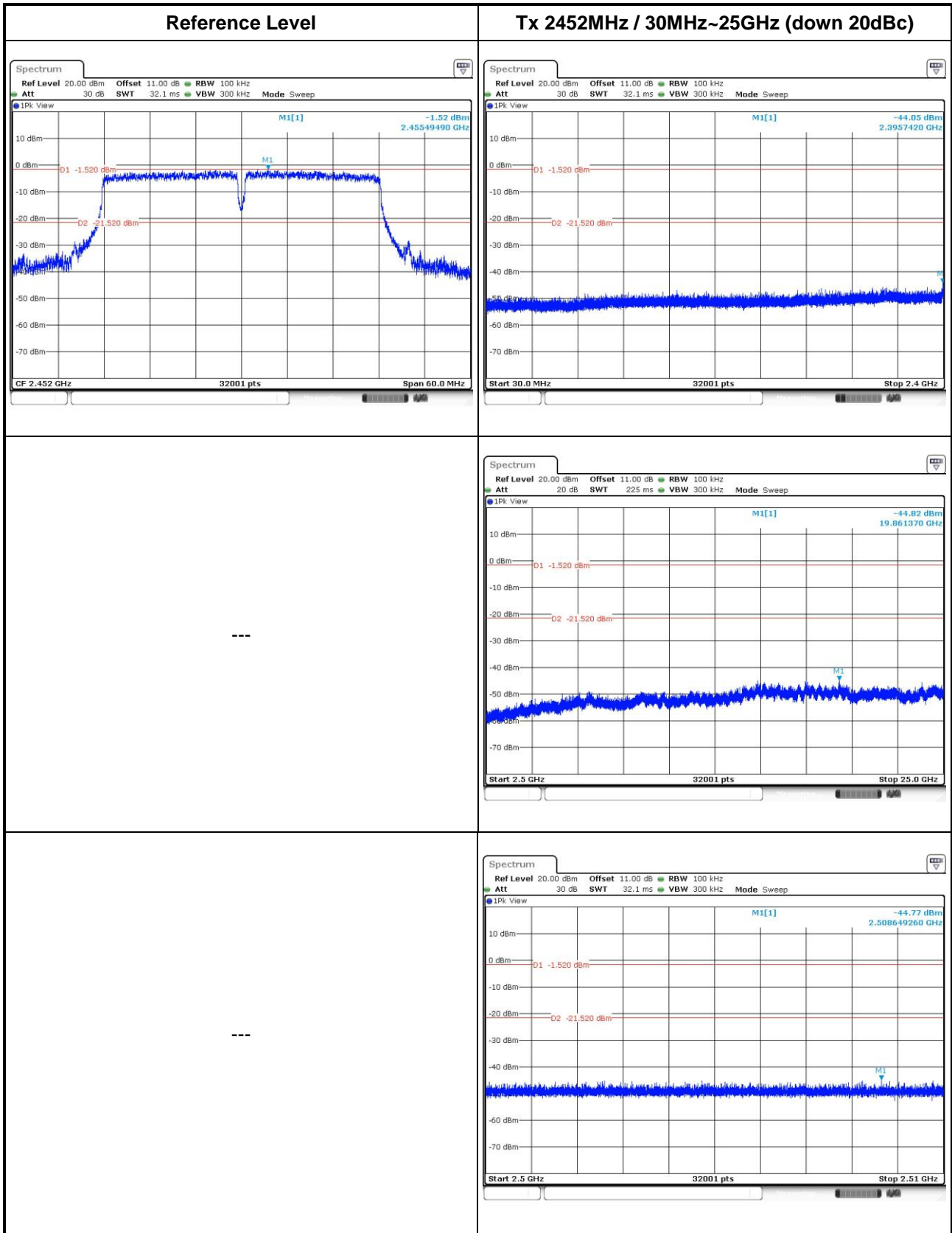




802.11n HT40







4 Test laboratory information

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

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

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

Linkou

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Kou District, New Taipei City,
Taiwan, R.O.C.

Kwei Shan

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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

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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.

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Email: ICC_Service@icertifi.com.tw

==END==