

 MOTOROLA SOLUTIONS	    CERTIFICATE 2518.08 SAMM 825																																						
MOTOROLA PENANG ADV. COMM. LABORATORY Motorola Solutions Malaysia Sdn. Bhd. Plot 2A Medan Bayan Lepas, Mukim 12, S.W.D. 11900 Bayan Lepas, Penang, Malaysia.	FCC / ISED TEST REPORT Report Revision : Rev.A																																						
<table><tr><td>Date/s Tested</td><td>: 13-Jul-2025 - 12-Aug-2025</td></tr><tr><td>Report Issue Date</td><td>: 13-Aug-2025</td></tr><tr><td>Test Location</td><td>: Motorola Penang Advanced Communication Laboratory (ACL)</td></tr><tr><td>Manufacturer/Location</td><td>: Motorola Solutions INC. (Plantation), 8000 West Sunrise Blv d MD 41-128, USA Plantation FL 333222-9947</td></tr><tr><td>Requestor</td><td>: Stankovska Daniela</td></tr><tr><td>Product Type</td><td>: Portable</td></tr><tr><td>Product Marketing Name (PMN)</td><td>: APX NEXT</td></tr><tr><td>Hardware Version Identification Number (HVIN)</td><td>: H55TGT9PW8BN</td></tr><tr><td>Frequency Band</td><td>: 2.402 - 2.480 GHz</td></tr><tr><td>Max RF Output Power</td><td>: 22.39 mWatts</td></tr><tr><td>Applicant Name</td><td>: Motorola Solutions Inc</td></tr><tr><td>Applicant Address</td><td>: Plot 2A, Medan Bayan Lepas, Mukim 12 S.W.D.11900 Bayan Lepas, Penang, Malaysia</td></tr><tr><td>FCC Registrations</td><td>: 461337</td></tr><tr><td>ISED Registrations</td><td>: MY0001</td></tr><tr><td>Firmware Version Identification Number (FVIN)</td><td>: D37.00.17 (BP) D37.00.02 (AP)</td></tr></table> The equipment was tested accordance to the requirement listed below: <table><tr><td>(2.4GHz BT LE)</td><td>PASS</td></tr><tr><td>47 CFR Part 15C</td><td></td></tr><tr><td>ISED RSS 247 Issue 4</td><td></td></tr><tr><td>July 24,2025</td><td></td></tr></table>		Date/s Tested	: 13-Jul-2025 - 12-Aug-2025	Report Issue Date	: 13-Aug-2025	Test Location	: Motorola Penang Advanced Communication Laboratory (ACL)	Manufacturer/Location	: Motorola Solutions INC. (Plantation), 8000 West Sunrise Blv d MD 41-128, USA Plantation FL 333222-9947	Requestor	: Stankovska Daniela	Product Type	: Portable	Product Marketing Name (PMN)	: APX NEXT	Hardware Version Identification Number (HVIN)	: H55TGT9PW8BN	Frequency Band	: 2.402 - 2.480 GHz	Max RF Output Power	: 22.39 mWatts	Applicant Name	: Motorola Solutions Inc	Applicant Address	: Plot 2A, Medan Bayan Lepas, Mukim 12 S.W.D.11900 Bayan Lepas, Penang, Malaysia	FCC Registrations	: 461337	ISED Registrations	: MY0001	Firmware Version Identification Number (FVIN)	: D37.00.17 (BP) D37.00.02 (AP)	(2.4GHz BT LE)	PASS	47 CFR Part 15C		ISED RSS 247 Issue 4		July 24,2025	
Date/s Tested	: 13-Jul-2025 - 12-Aug-2025																																						
Report Issue Date	: 13-Aug-2025																																						
Test Location	: Motorola Penang Advanced Communication Laboratory (ACL)																																						
Manufacturer/Location	: Motorola Solutions INC. (Plantation), 8000 West Sunrise Blv d MD 41-128, USA Plantation FL 333222-9947																																						
Requestor	: Stankovska Daniela																																						
Product Type	: Portable																																						
Product Marketing Name (PMN)	: APX NEXT																																						
Hardware Version Identification Number (HVIN)	: H55TGT9PW8BN																																						
Frequency Band	: 2.402 - 2.480 GHz																																						
Max RF Output Power	: 22.39 mWatts																																						
Applicant Name	: Motorola Solutions Inc																																						
Applicant Address	: Plot 2A, Medan Bayan Lepas, Mukim 12 S.W.D.11900 Bayan Lepas, Penang, Malaysia																																						
FCC Registrations	: 461337																																						
ISED Registrations	: MY0001																																						
Firmware Version Identification Number (FVIN)	: D37.00.17 (BP) D37.00.02 (AP)																																						
(2.4GHz BT LE)	PASS																																						
47 CFR Part 15C																																							
ISED RSS 247 Issue 4																																							
July 24,2025																																							
This report shall not be reproduced without written approval from an officially designated representative of the Motorola Penang Adv. Comm. Laboratory. The results and statements contained in this report pertain only to the device(s) evaluated.																																							
Prepared By:  NURUL NATASHA BINTI ABDUL HAMID Test Personnel	Approved Signatory:  HO SZE KHIAN Responsible Engineer																																						

Table of Contents

1.0 General Information..... 3

2.0 Summary of Test Results..... 4

3.0. Measurement Uncertainty 4

4.0 Equipment List 5

5.0 Test Mode Applicability and Test Channel Detail 6

6.0 Transmitter Test Parameters 7

 6.1 6dB Channel Bandwidth..... 7

 6.1.1 Test Setup 7

 6.1.2 Test Limits: 7

 6.1.3 Test Data: 8

 6.2 Conducted RF Output Power 12

 6.2.1 Test Setup 12

 6.2.2 Test Limits: 12

 6.2.3 Test Data: 13

 6.3 Maximum Peak Power Spectral Density 15

 6.3.1 Test Setup 15

 6.3.2 Test Limits: 15

 6.3.3 Test Result 16

 6.4 Conducted Spurious Emission 18

 6.4.1 Test Setup 18

 6.4.2 Test Limits: 18

 6.4.3 Test Result 19

 6.5 Band edge Conducted Spurious Emission 31

 6.5.1 Test Setup 31

 6.5.2 Test Limits: 31

 6.6 Radiated Emission within Restricted Bands 34

 6.6.1 Test Setup 34

 6.6.2 Test Limits: 35

 6.6.3 Test Results: 36

 6.7 AC Powerline Conducted Emission 68

 6.7.1 Test Setup 68

 6.7.2 Test Limits: 68

 6.7.3 Test Result 70

REVISION HISTORY

Revision History	Description	Date	Originator
Rev. A	Initial Report	13-Aug-2025	Nurul Natasha

1.0 General Information

EUT Description:

Technologies	2.4GHz BT LE
TX Frequency range	2402MHz – 2480MHz
Modulation Type	GFSK
Connector type	PROGRAMMING, TEST & ALIGNMENT CABLE
Antenna type	ILA
Temporary RF Connector	0.59dB

Note: The description and information regarding the EUT are provided by the customer. The laboratory shall not be held responsible for any inaccuracies or misinformation in the provided details that may result in incorrect test outcomes.

The EUT contains following accessory devices and data cable:

Item	Brand	Model or P/N
BATTERY PACK, BATT IMPRES 2 LIION IP68 5800T	MOTOROLA	PMNN4895A
ANTENNA, WHIP, WHIP, ALLBAND	MOTOROLA	AN000297A01
CHARGER, MULTI-UNIT, IMPRES G2, 6-DISP, US/NA/CA/LA PLUG, ACC-CHARGER	MOTOROLA	NNTN9115A
CHARGER, MULTI-UNIT, IMPRES-G2, 6-DISP, BASE w/INSERTS	MOTOROLA	PS000337A01

Channel number and frequency information:

40 channels are provided to this EUT:

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

General Description of Applied Standards

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

FCC 47 CFR Part 15 Subpart C
 KDB 558074 D01 15.247 Meas Guidance v05
 ANSI C63.10-2013

Deviation from standard

Not applicable as no deviation from standard test method

Modifications to EUT

For RF conducted measurements a pigtail was soldered out of the board while for radiated measurements there were no modifications to the device

2.0 Summary of Test Results

FCC Clause	ISED Clause	Test Item	Result	Remark	Serial number tested	Tested by
15.247 (a)(2)	RSS 247 5.2 (a)	DTS & 99% Channel Bandwidth	Pass	Highest 99% OCB: BT 4.0 - 1.04 MHz (1M04F1D) BT 5.0 - 2.04 MHz (2M04F1D)	437ZBG0038	Natasha
15.247 (b)(3)	RSS 247 5.4 (d)	Conducted RF Output Power (Peak)	Pass	Highest output power: BT 4.0 - 12.860 dBm (19.32mW) BT 5.0 - 13.032 dBm (20.10mW)	437ZBG0038	Natasha
15.247(e)	RSS 247 5.2 (b)	Maximum Peak Power Spectral Density	Pass	Meet the limit requirement.	437ZBG0038	Natasha
15.247 (d)	RSS-247 5.5	Band-Edge Conducted Spurious Emission	Pass	Worst case emission: -48.91 dBm	437ZBG0038	Natasha
15.247 (b)	RSS-247 5.5	Conducted Spurious Emission	Pass	Worst case emission: -40.88 dBm	437ZBG0038	Natasha
15.205, 15.209, 15.247 (d)	RSS247 5.5	Radiated Emission within Restricted Bands	Pass	Worst case emission: RBE: 37.3549dBuV/m (Margin: 16.6451 dB) RSE: 26.9147dBuV/m (Margin: 13.0853dB)	437ZBG0592, 437ZBG0594, 437ZBG0577	Nazrin & Rezza
15.207	RSS-Gen 8.8	AC Power Line Conducted Spurious Emission	NA	Meet the limit requirement.	NA	NA
15.203	-	Antenna Requirement	NA	Internal antenna is not accessible to the end-user	NA	NA

3.0. Measurement Uncertainty

Measurement	Frequency	Expended Uncertainty (k=1.96) (±dB)
AC Power Line Conducted Spurious Emission	150KHz ~ 30MHz	3.44
Radiated Emissions up to 1 GHz	30MHz ~ 1000MHz	6.00
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.14
	18GHz ~ 40GHz	5.36
Conducted Spurious Emissions	9kHz ~ 12.75GHz	2.82

Final Reported Test Results

The final reported test results are calculated using the following equation:

$$\text{Reported RF Measurement Results} = \text{Measured Measurement Results} + \text{Correction Factor}$$

Where:

- **Measured Measurement Results** is the measured test results
- **Correction Factor** is the cumulative loss of all cables used during measurement, including temporary RF connector and antenna gain.

4.0 Equipment List

Bluetooth ATE # 1 (SW Version: Ate Main_3.1.12_R1)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
CHAMBER	SH-641	92003820	09-Jul-25	09-Jul-26
SPECTRUM ANALYZER	E4440A	MY46186938	29-Oct-24	29-Oct-25
POWER SUPPLY	6652A	3541A02371	11-Sep-24	11-Sep-25

Radiated Emission Station (SW Version: EMC.FCC.IC.RE.v1.7.1)

Description	Model #	Serial Number	Calibration Date	Calibration Due Date
DRG HORN FREQ.	SAS-571	566	09-Jan-25	09-Jan-26
DRG HORN FREQ.	SAS-571	719	09-Oct-24	09-Oct-25
DC Power Supply	N7977A	MY54420118	16-Apr-25	16-Apr-26
SIGNAL GENERATOR	SMB 100A	180683	20-Dec-24	20-Dec-27
EMI TEST RECEIVER	ESW44	101731	10-Aug-25	10-Aug-26
5m SEMI-ANECHOIC CHAMBER	S800-HX	J2308	No Cal. Req'd	No Cal. Req'd
BILOG ANTENNA	CBL6112B	2964	08-Oct-24	08-Oct-25
BILOG ANTENNA	CBL6112D	30991	18-Mac-25	18-Mac-26
DATA LOGGER THERMOHYGROMETER	SDL500	A.016800	30-Jun-25	30-Jun-26
SYSTEM CONTROLLER	SC104V	050806-1	No Cal. Req'd	No Cal. Req'd
TURNTABLE FLUSH MOUNT 2M	FM2011	FM2011-001	No Cal. Req'd	No Cal. Req'd
ANTENNA POSITIONING TOWER	TLT2	090308-5	No Cal. Req'd	No Cal. Req'd
BROAD-BAND HORN ANTENNA	BBHA9170	BBHA9170143	30-Sep-24	30-Sep-25
PREAMPLIFIER 18-40GHz	JS44-18004000-33-8P	2034566	No Cal. Req'd	No Cal. Req'd
PREAMPLIFIER 1-18GHz	EMC0518A45SE	980890	04-Nov-24	04-Nov-25
PREAMPLIFIER	PAM-0118P	269	27-Aug-24	27-Aug-25
LOOP ANTENNA	6502	00208416	08-Oct-24	08-Oct-25

5.0 Test Mode Applicability and Test Channel Detail

Radiated Emission Test (Above 1GHz)

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

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

EUT Configure Mode	Available Channel	Tested Channel	Modulation Type	Environmental Conditions
Test Mode	0 to 39	0,19,39	GFSK	22.5°C, 6.31%RH

Radiated Emission Test (Below 1GHz)

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

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

EUT Configure Mode	Available Channel	Tested Channel	Modulation Type	Environmental Conditions
Test Mode	0 to 39	0,19,39	GFSK	22.5°C, 63.1%RH

Power Line Conducted Emission Test

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

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

EUT Configure Mode	Available Channel	Tested Channel	Modulation Type	Environmental Conditions
Application Mode	0 to 39	AUTO	AUTO	NA

Antenna Port Conducted Measurement:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

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

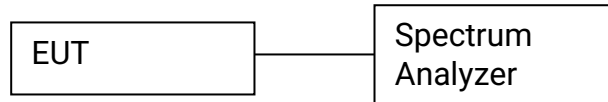
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Type	Environmental Conditions
Test Mode	0 to 39	0,19,39	GFSK	25°C, 54.8%RH

6.0 Transmitter Test Parameters

6.1 6dB Channel Bandwidth

6.1.1 Test Setup



- 1) Check and ensure the spectrum analyzer well calibrate.
- 2) Turn on the DUT and set DUT to transmit maximum power.
- 3) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- 4) Setting of Spectrum analyzer:
 - a. RBW = 100 kHz
 - b. VBW = 300 kHz
 - c. Detector mode = Peak
 - d. Trace = Max hold
 - e. Sweep = auto
- 5) Measure the freq differnet of two frequencies that were attenuated 6dB from peak of the emission & record the frequency difference as the emission bandwidth.

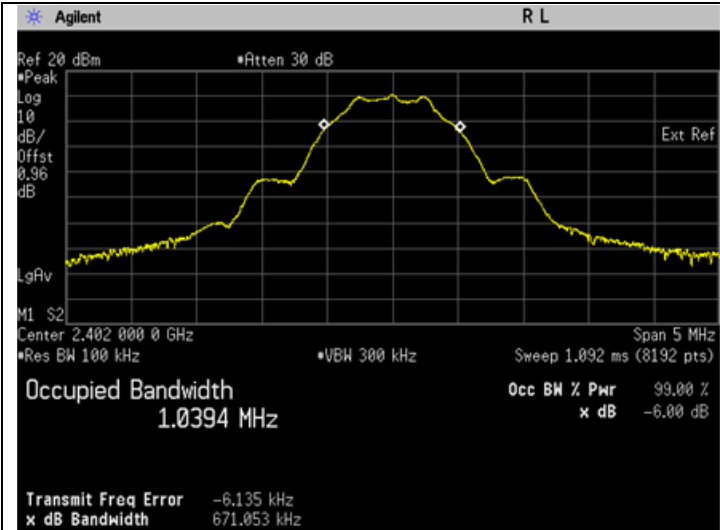
6.1.2 Test Limits:

Normal Condition (25 ° C)
≥500 kHz

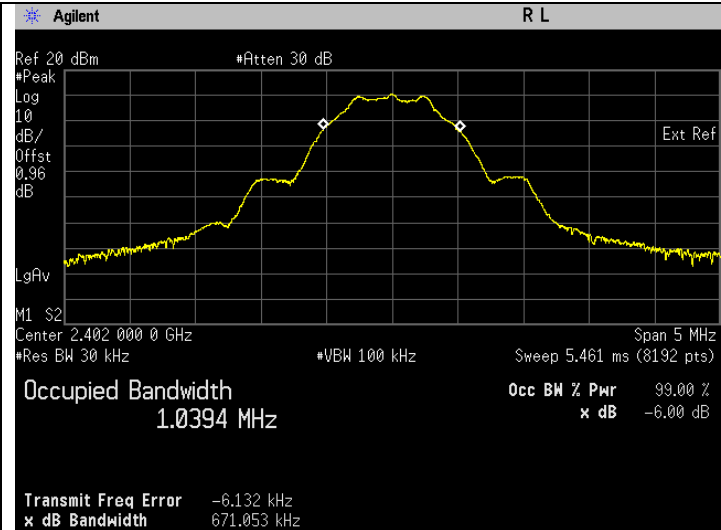
6.1.3 Test Data:

BTLE 1M

Test Conditions		Test Frequency	Results		
Standard	Data Rate	Tx (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Status
Bluetooth LE	1	2402	0.67	1.04	Pass
Bluetooth LE	1	2440	0.66	1.04	Pass
Bluetooth LE	1	2480	0.67	1.04	Pass



6dB Bandwidth. Bluetooth LE Frequency 2402 MHz



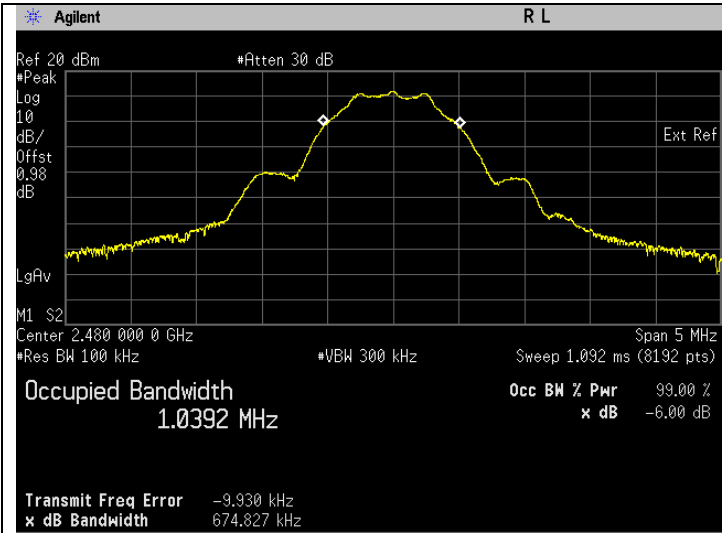
99% Bandwidth. Bluetooth LE Frequency 2402 MHz



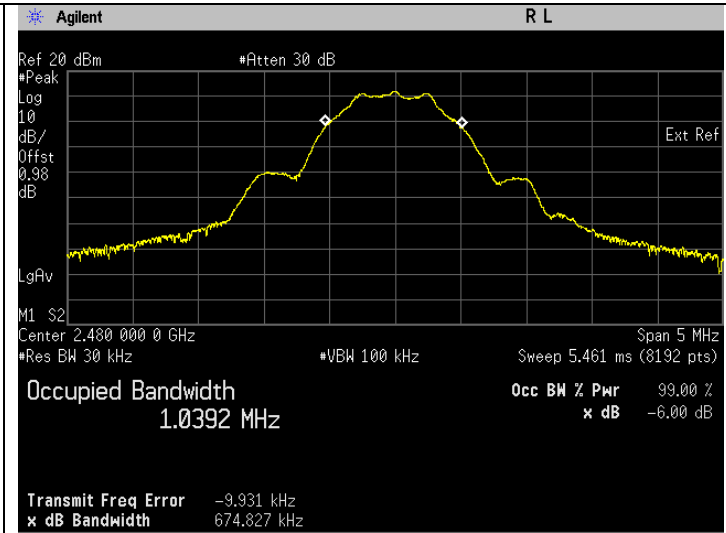
6dB Bandwidth. Bluetooth LE Frequency 2440 MHz



99% Bandwidth. Bluetooth LE Frequency 2440 MHz



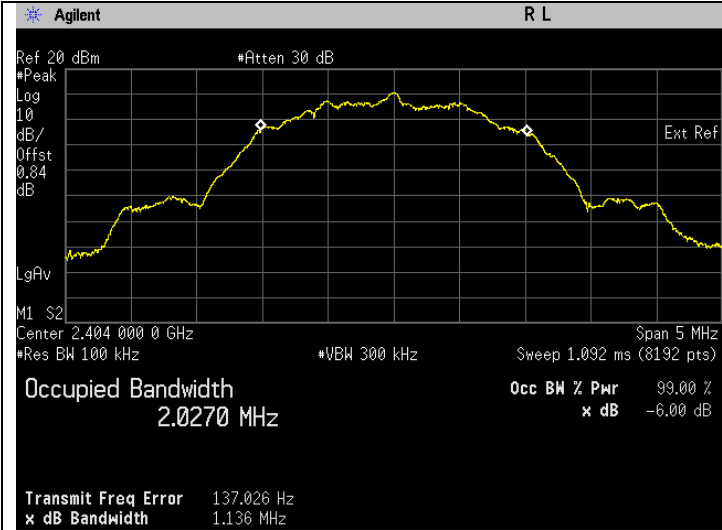
6dB Bandwidth. Bluetooth LE Frequency 2480 MHz



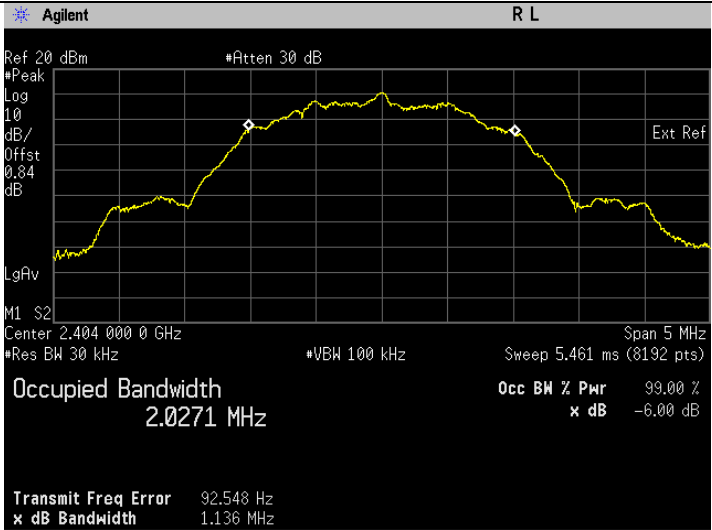
99% Bandwidth. Bluetooth LE Frequency 2480 MHz

BTLE 2M

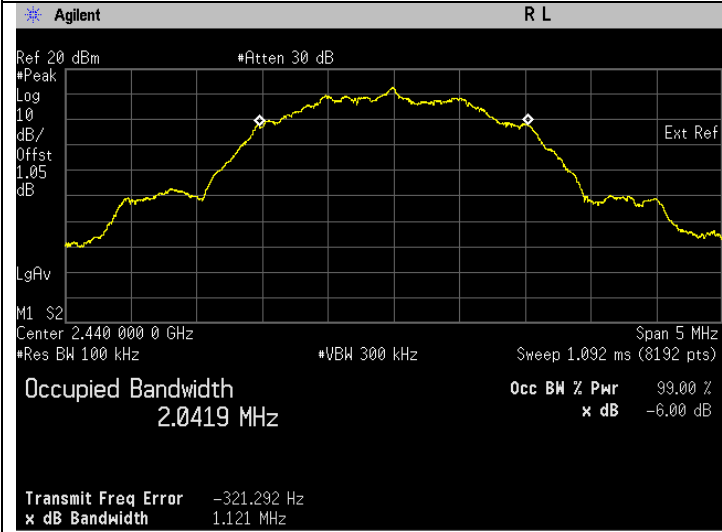
Test Conditions		Test Frequency	Results		
Standard	Data Rate	Tx (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Status
Bluetooth LE	2	2404	1.14	2.03	Pass
Bluetooth LE	2	2440	1.12	2.04	Pass
Bluetooth LE	2	2478	1.13	2.04	Pass



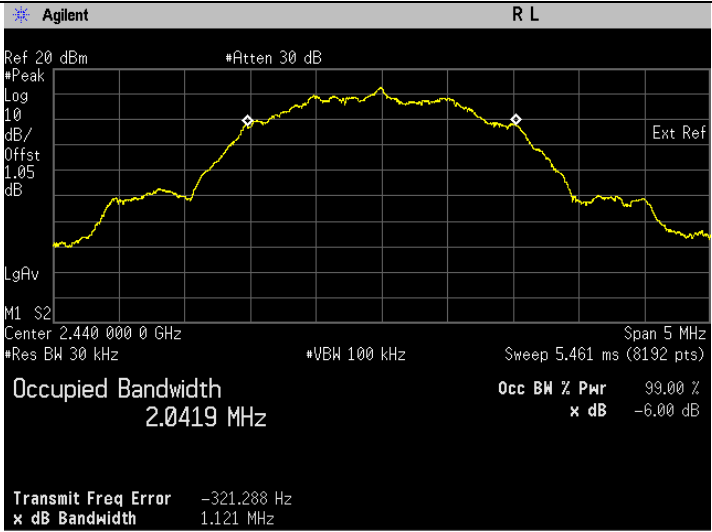
6dB Bandwidth. Bluetooth LE Frequency 2404 MHz



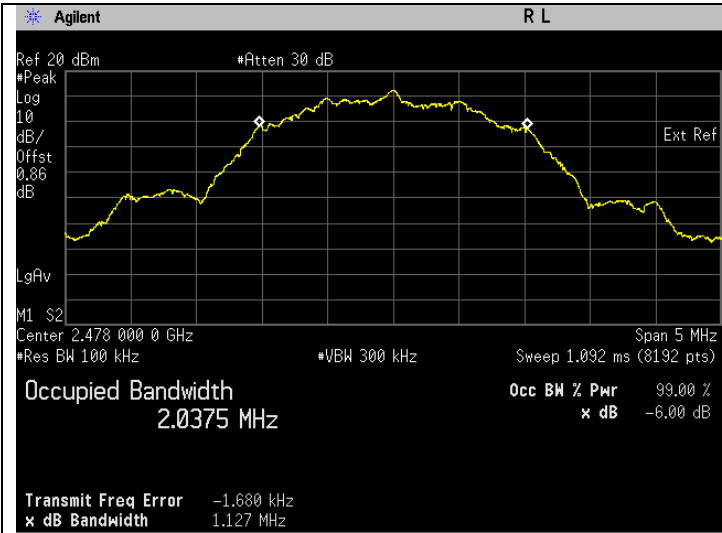
99% Bandwidth. Bluetooth LE Frequency 2404 MHz



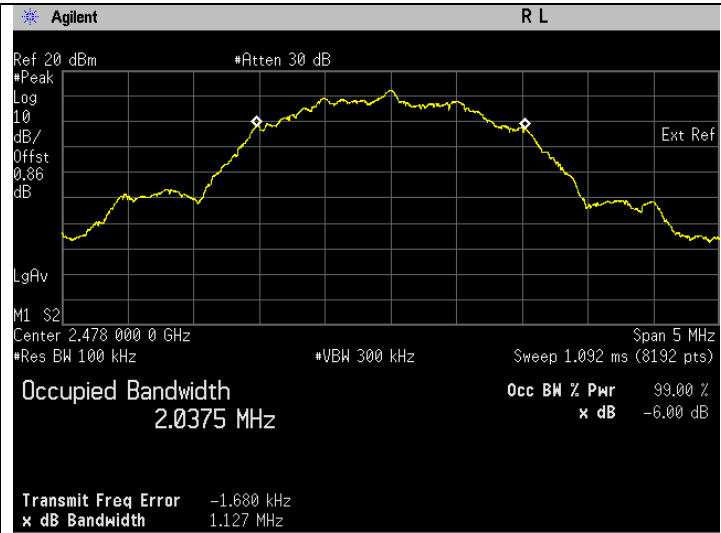
6dB Bandwidth. Bluetooth LE Frequency 2440 MHz



99% Bandwidth. Bluetooth LE Frequency 2440 MHz



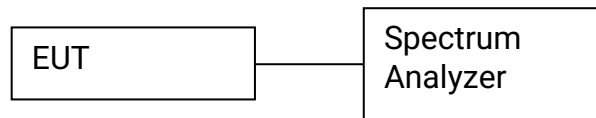
6dB Bandwidth. Bluetooth LE Frequency 2478 MHz



99% Bandwidth. Bluetooth LE Frequency 2478 MHz

6.2 Conducted RF Output Power

6.2.1 Test Setup



Peak

- 1) Check and ensure the spectrum analyzer well calibrate.
- 2) Turn on the DUT and set DUT to transmit maximum power.
- 3) Measure the duty cycle of transmitter output signal.
- 4) Setting of Spectrum analyzer:
 - a. Set the RBW = 3 MHz.
 - b. Set the VBW = 50 MHz.
 - c. Set the span $\geq [1.5 \times \text{OBW bandwidth}]$.
 - d. Detector = Peak
 - e. Sweep time = auto couple.
 - f. Trace mode = max hold.
 - g. Allow trace to fully stabilize.

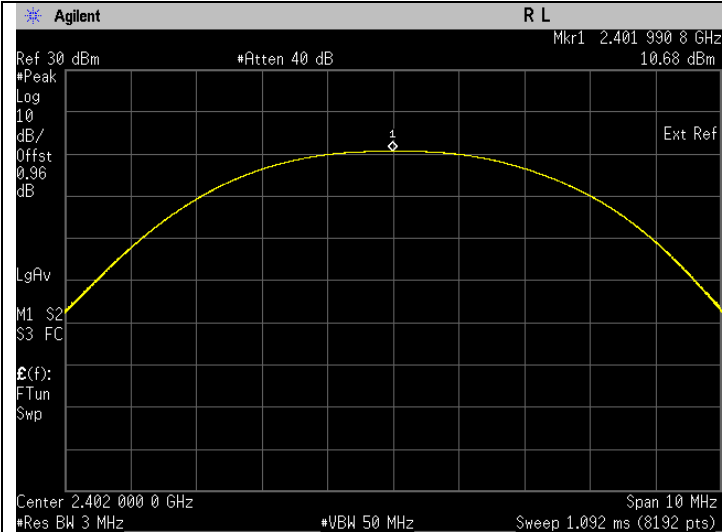
6.2.2 Test Limits:

Normal Condition (25 ° C)
≤ 1 Watt (30 dBm)

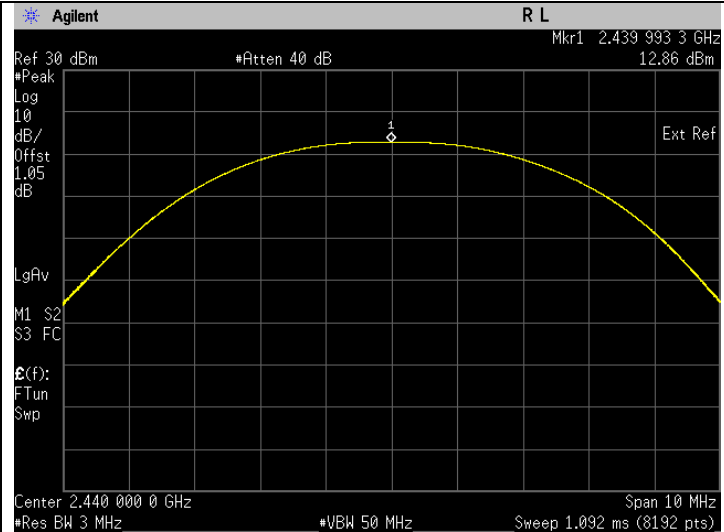
6.2.3 Test Data:

BTLE 1M

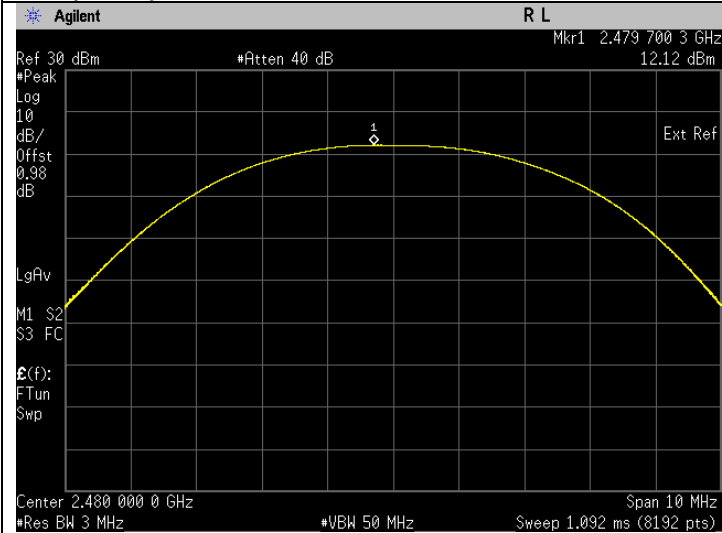
Test Conditions		Test Frequency	Results	
Standard	Data Rate	Tx (MHz)	Output Power (dBm)	Status
Bluetooth LE	1	2402	10.684	Pass
Bluetooth LE	1	2440	12.860	Pass
Bluetooth LE	1	2480	12.124	Pass



Frequency 2402 MHz



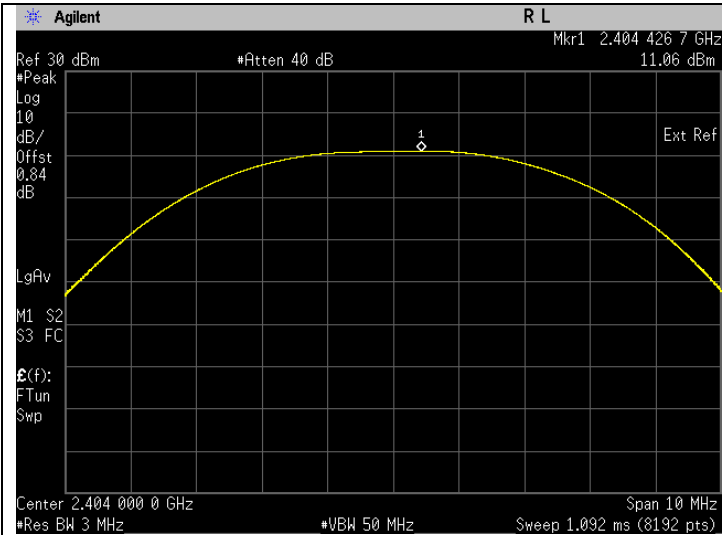
Frequency 2440 MHz



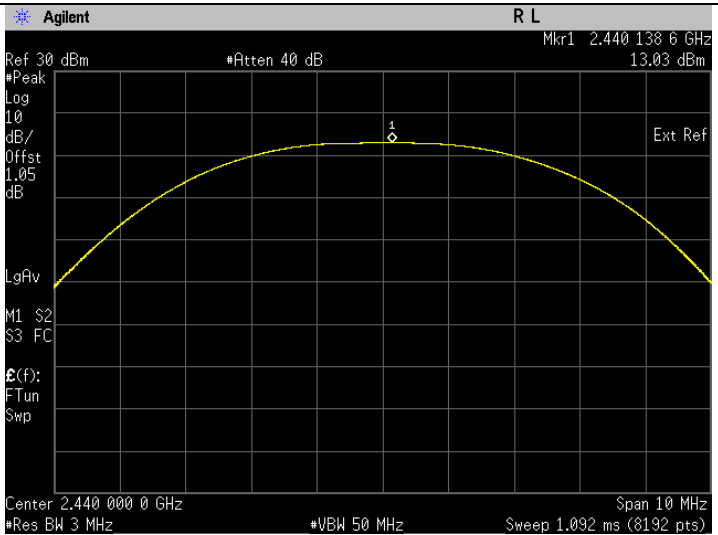
Frequency 2480 MHz

BTLE 2M

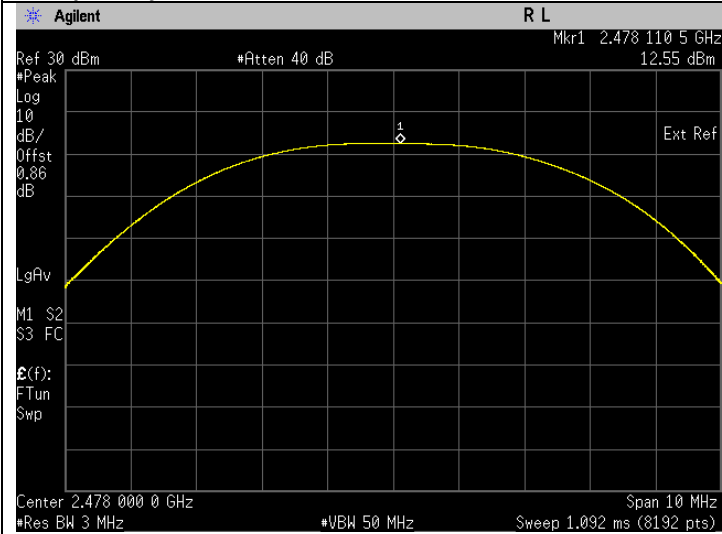
Test Conditions		Test Frequency	Results	
Standard	Data Rate	Tx (MHz)	Output Power (dBm)	Status
Bluetooth LE	2	2404	11.058	Pass
Bluetooth LE	2	2440	13.032	Pass
Bluetooth LE	2	2478	12.548	Pass



Frequency 2404 MHz



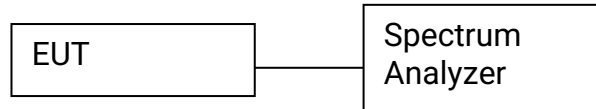
Frequency 2440 MHz



Frequency 2478 MHz

6.3 Maximum Peak Power Spectral Density

6.3.1 Test Setup



Maximum Peak

- 1) Check and ensure the spectrum analyzer well calibrate.
- 2) Turn on the DUT and set DUT to transmit maximum power.
- 3) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- 4) Setting of Spectrum analyzer:
 - a. Set analyzer center frequency to DTS channel center frequency.
 - b. Set the span to 1.5 times the DTS bandwidth.
 - c. Set the RBW to 3 kHz.
 - d. Set the VBW $\geq [3 \times \text{RBW}]$.
 - e. Detector = peak.
 - f. Sweep time = auto couple.
 - g. Trace mode = max hold.
 - h. Allow trace to fully stabilize.
 - i. Use the peak marker function to determine the maximum amplitude level within the RBW.
 - j. If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

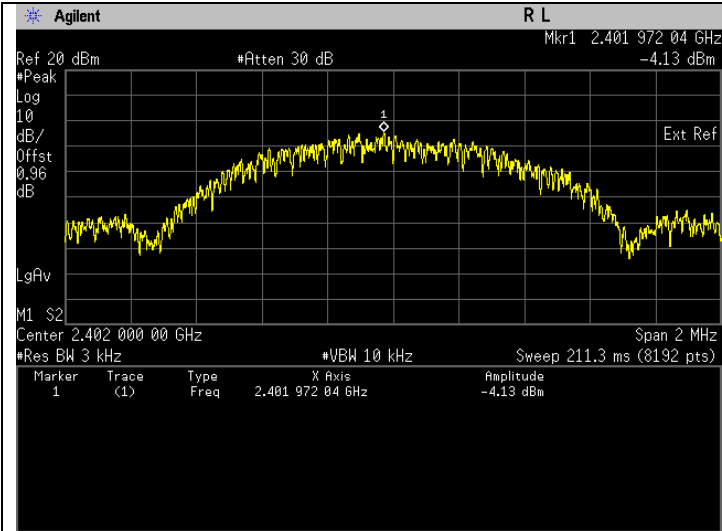
6.3.2 Test Limits:

Normal Condition (25 ° C)
$\leq 8 \text{ dBm/3kHz}$

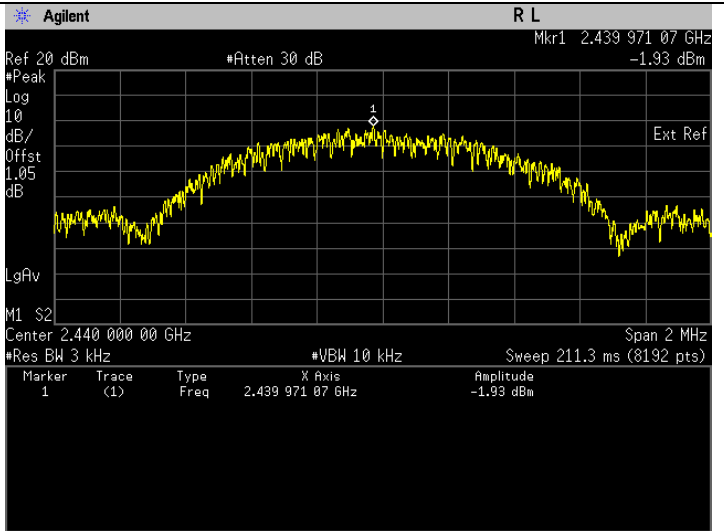
6.3.3 Test Result

BTLE 1M

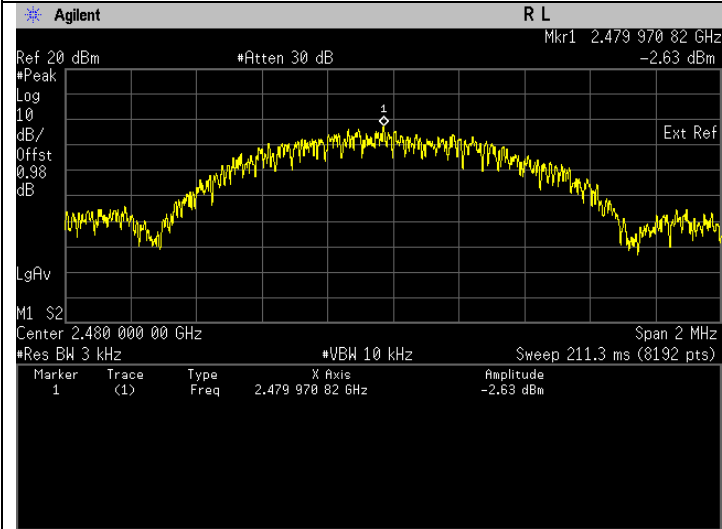
Test Conditions		Test Frequency	Results	
Standard	Data Rate	Tx (MHz)	Power (dBm/3kHz)	Status
Bluetooth LE	1	2402	-4.13	Pass
Bluetooth LE	1	2440	-1.93	Pass
Bluetooth LE	1	2480	-2.64	Pass



Maximum Power Spectral Density. Bluetooth LE
Frequency 2402 MHz



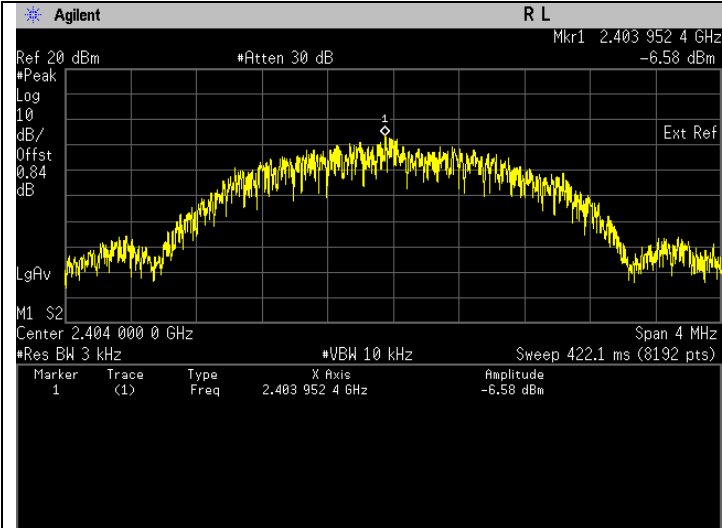
Maximum Power Spectral Density. Bluetooth LE
Frequency 2440 MHz



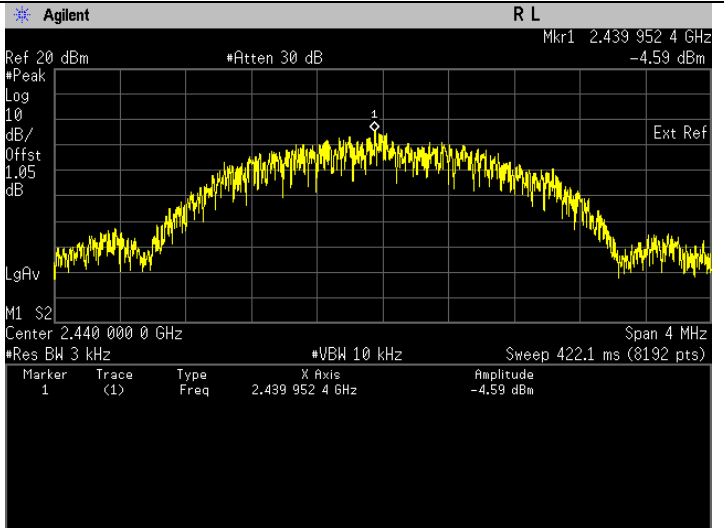
Maximum Power Spectral Density. Bluetooth LE
Frequency 2480 MHz

BTLE 2M

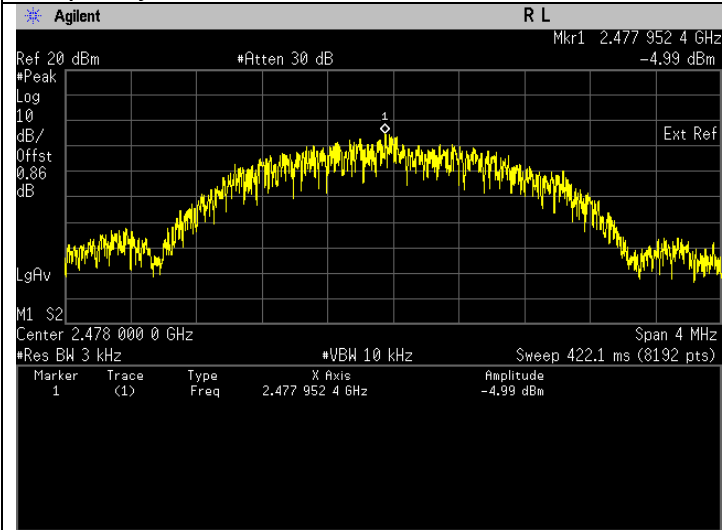
Test Conditions		Test Frequency	Results	
Standard	Data Rate	Tx (MHz)	Power (dBm/3kHz)	Status
Bluetooth LE	2	2404	-6.58	Pass
Bluetooth LE	2	2440	-4.59	Pass
Bluetooth LE	2	2478	-4.99	Pass



Maximum Power Spectral Density. Bluetooth LE
Frequency 2404 MHz



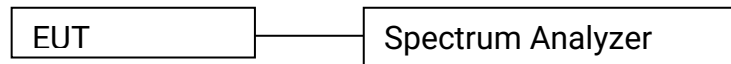
Maximum Power Spectral Density. Bluetooth LE
Frequency 2440 MHz



Maximum Power Spectral Density. Bluetooth LE
Frequency 2478 MHz

6.4 Conducted Spurious Emission

6.4.1 Test Setup



- 1) Check and ensure the spectrum analyzer well calibrate.
- 2) Turn on the DUT and set DUT to transmit maximum power.
- 3) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- 4) Setting of Spectrum analyzer:
 - a. RBW = 100 kHz
 - b. VBW = 300 kHz
 - c. Detector mode = Peak
 - d. Trace = Max Hold
 - e. Sweep = auto
- 5) Use the peak marker function to measure highest emission and scan up to 10th harmonic.

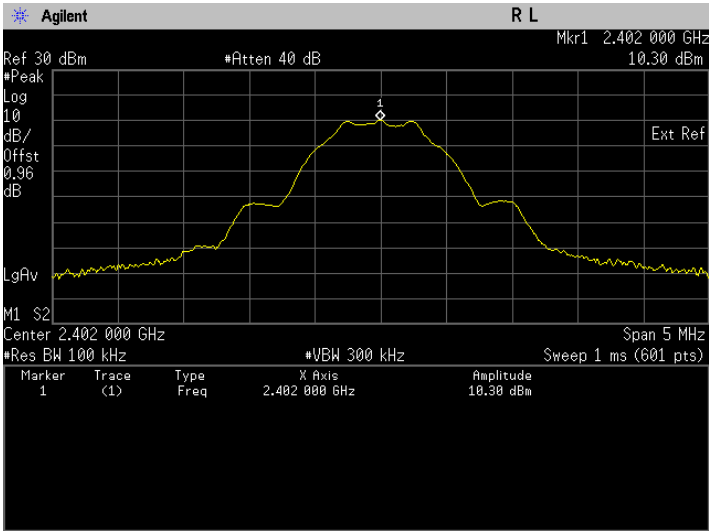
6.4.2 Test Limits:

Normal Condition (25 ° C)
Shall be at least 20 dB below max power. (Peak detector)

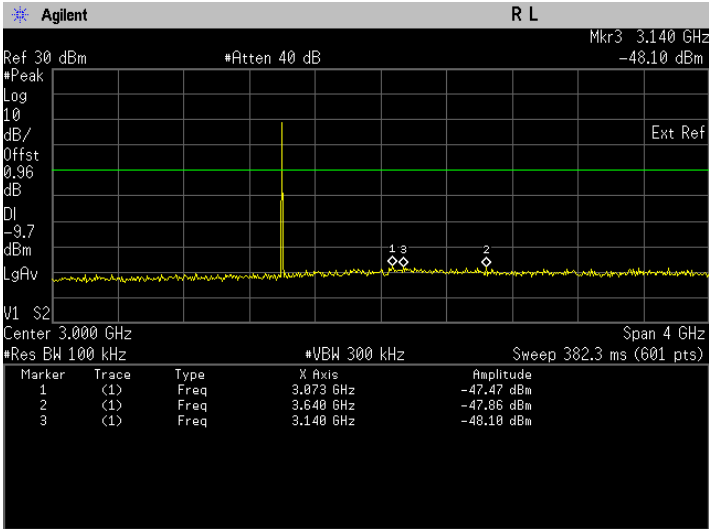
6.4.3 Test Result

BTLE 1M

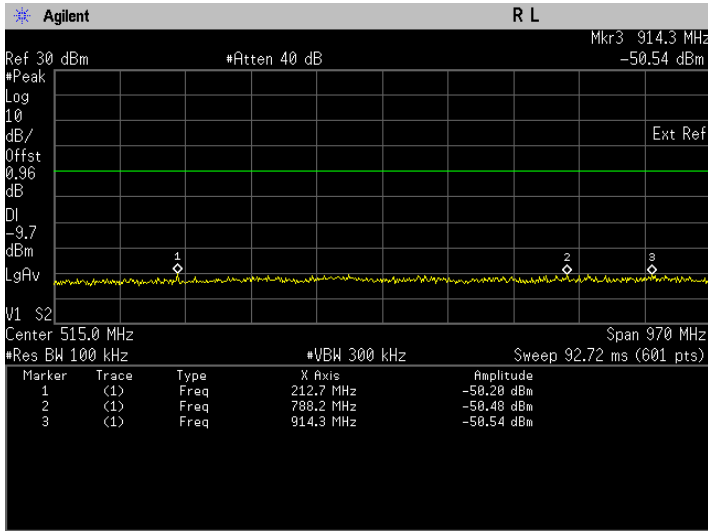
Test Conditions		Test Frequency	Results		
Standard	Data Rate	Tx (MHz)	Spurs (MHz)	Level (dBm)	Status
Bluetooth LE	1	2402	15000.00	-41.43	Pass
			24842.00	-41.71	Pass
			24892.00	-41.99	Pass
Bluetooth LE	1	2440	13608.00	-41.21	Pass
			23592.00	-41.82	Pass
			23033.00	-41.94	Pass
Bluetooth LE	1	2480	24833.00	-41.37	Pass
			24158.00	-41.42	Pass
			24733.00	-41.50	Pass



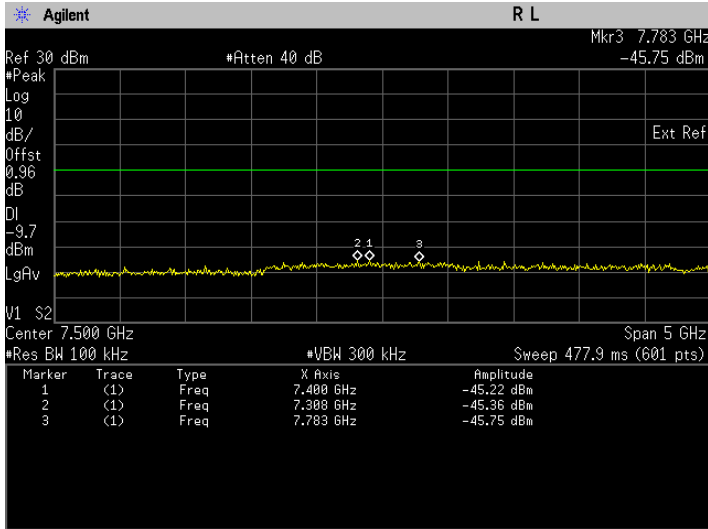
Conducted Emissions (Peak). Bluetooth LE, Frequency 2402 MHz Reference Level



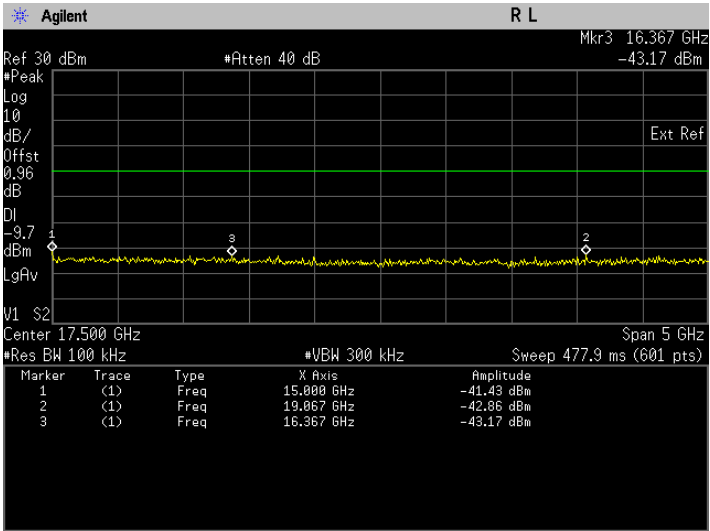
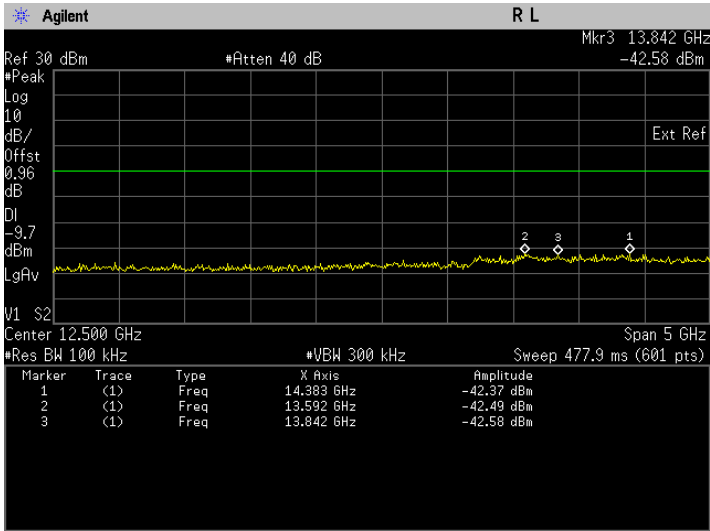
Conducted Emissions (Peak). Bluetooth LE, Frequency 2402 MHz Emission Level, 1 GHz -> 5 GHz



Conducted Emissions (Peak). Bluetooth LE, Frequency 2402 MHz Emission Level, 30 MHz -> 1 GHz

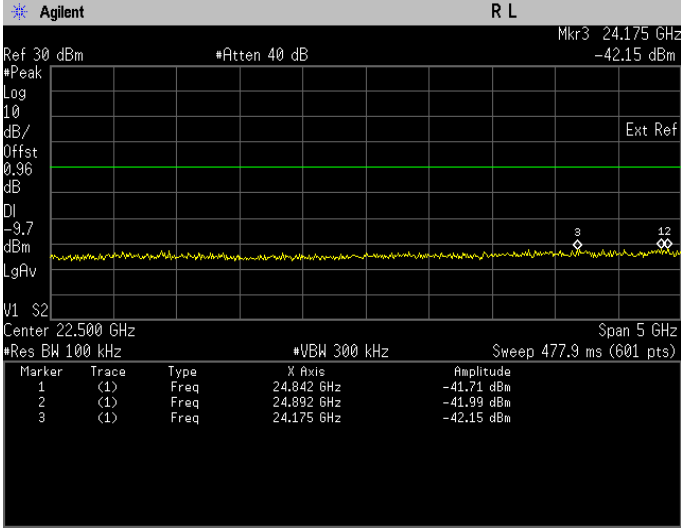


Conducted Emissions (Peak). Bluetooth LE, Frequency 2402 MHz Emission Level, 5 GHz -> 10 GHz

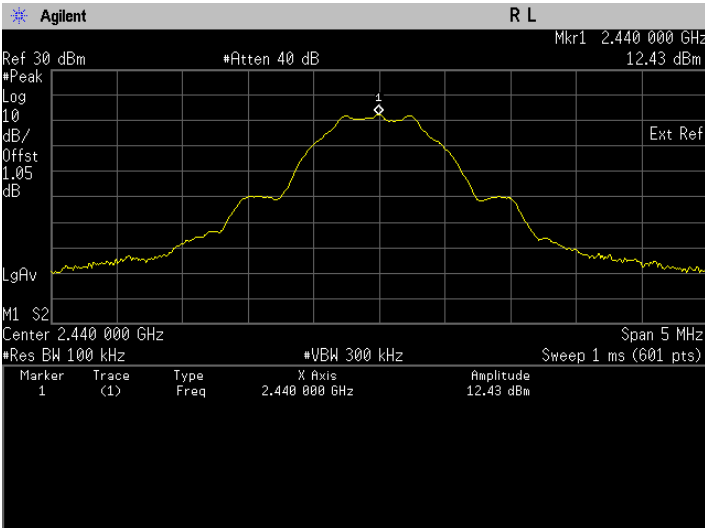


Conducted Emissions (Peak). Bluetooth LE, Frequency 2402 Emission Level, 10 GHz -> 15 GHz

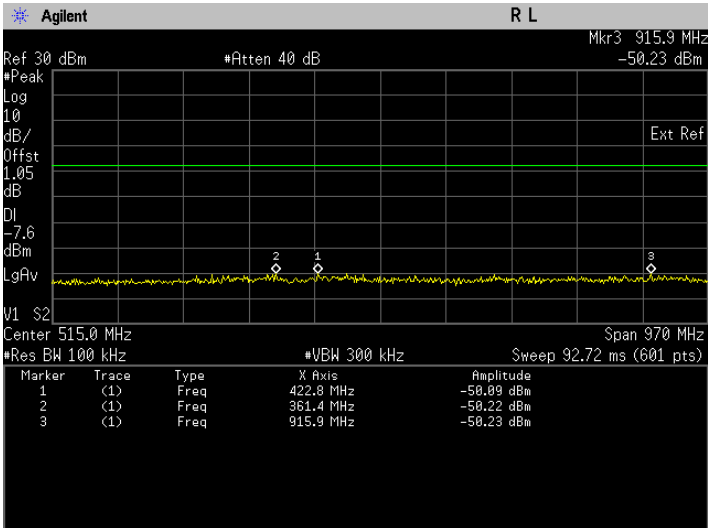
Conducted Emissions (Peak). Bluetooth LE, Frequency 2402 MHz Emission Level, 15 GHz -> 20 GHz



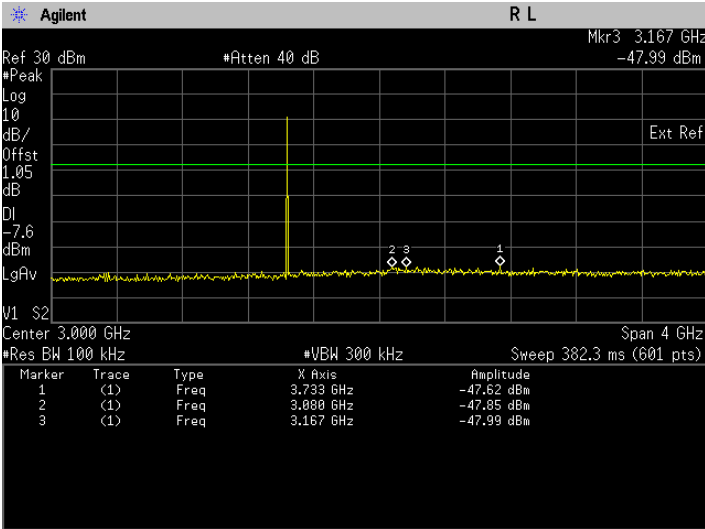
Conducted Emissions (Peak). Bluetooth LE, Frequency 2402 MHz Emission Level, 20 GHz -> 25 GHz



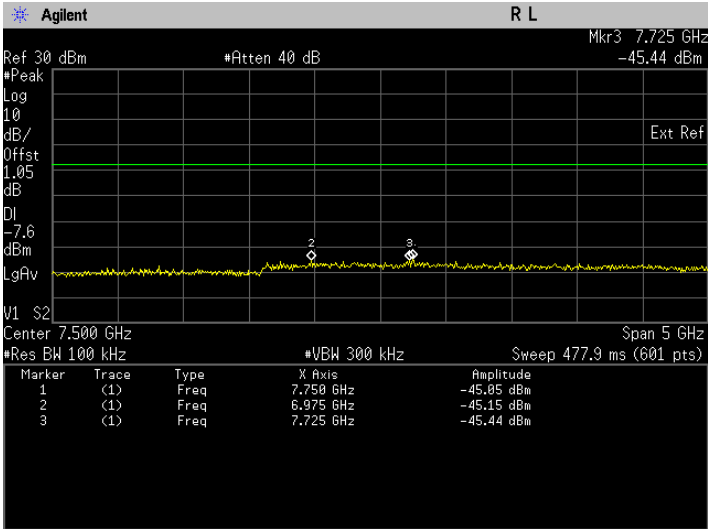
Conducted Emissions (Peak). Bluetooth LE, Frequency 2440 MHz Reference Level



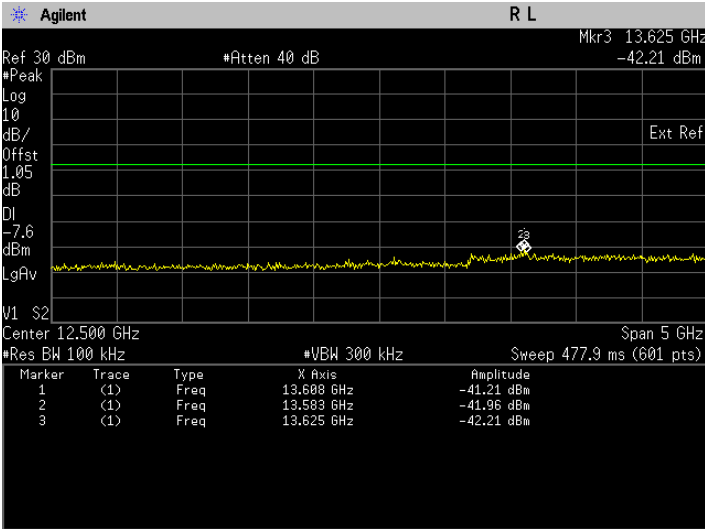
Conducted Emissions (Peak). Bluetooth LE, Frequency 2440 MHz Emission Level, 30 MHz -> 1 GHz



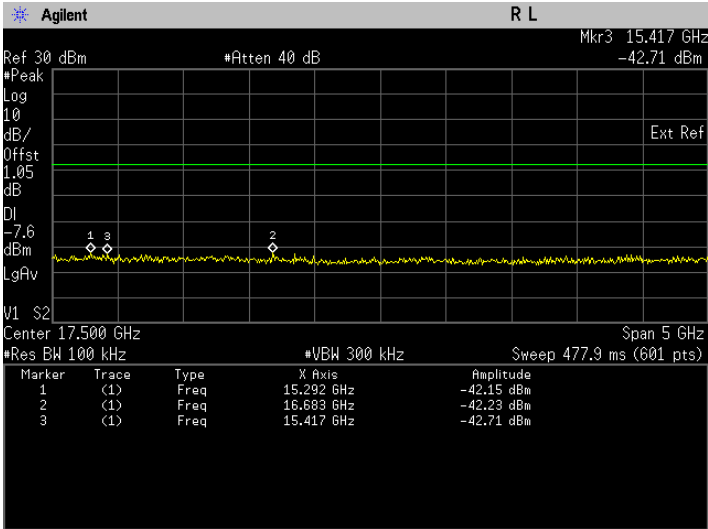
Conducted Emissions (Peak). Bluetooth LE, Frequency 2440 MHz Emission Level, 1 GHz -> 5 GHz



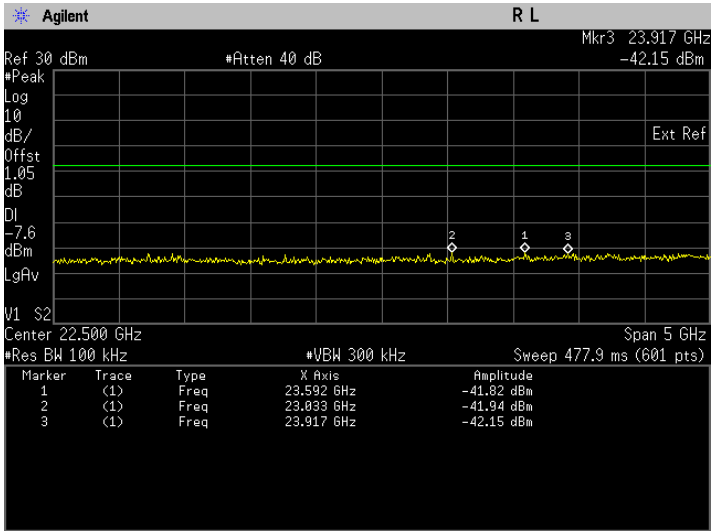
Conducted Emissions (Peak). Bluetooth LE, Frequency 2440 MHz Emission Level, 5 GHz -> 10 GHz



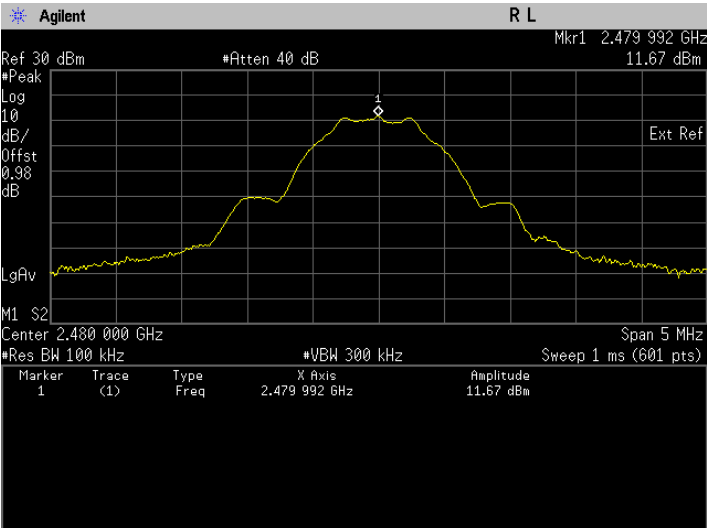
Conducted Emissions (Peak). Bluetooth LE, Frequency 2440 MHz Emission Level, 10 GHz -> 15 GHz



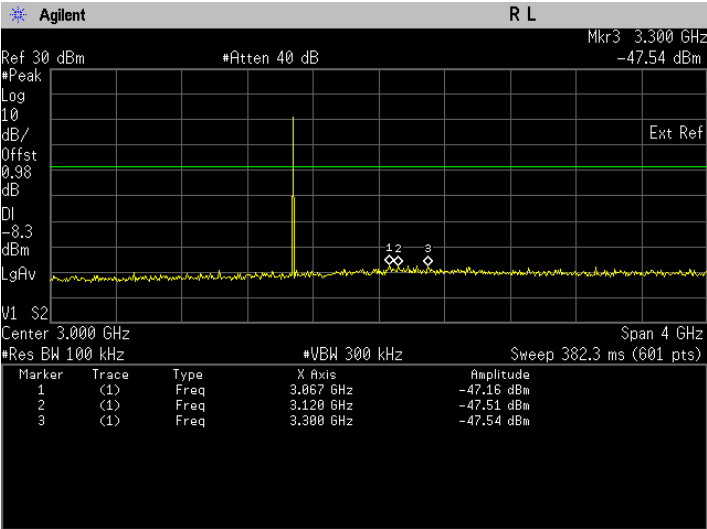
Conducted Emissions (Peak). Bluetooth LE, Frequency 2440 MHz Emission Level, 15 GHz -> 20 GHz



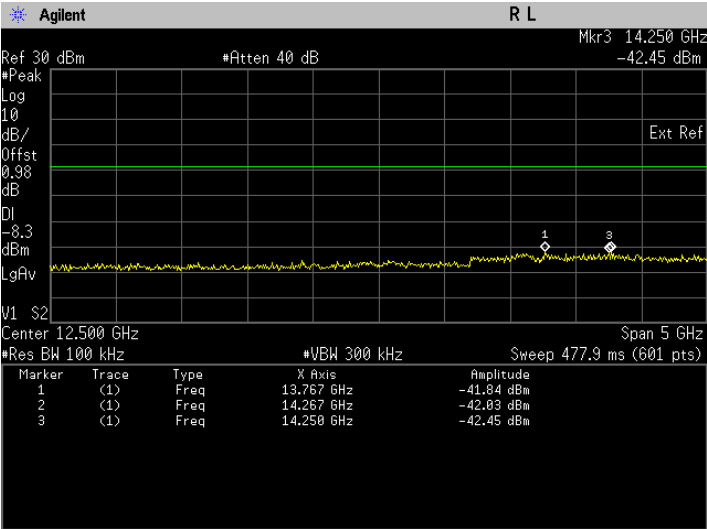
Conducted Emissions (Peak). Bluetooth LE,
Frequency 2440 MHz Emission Level, 20 GHz -> 25
GHz



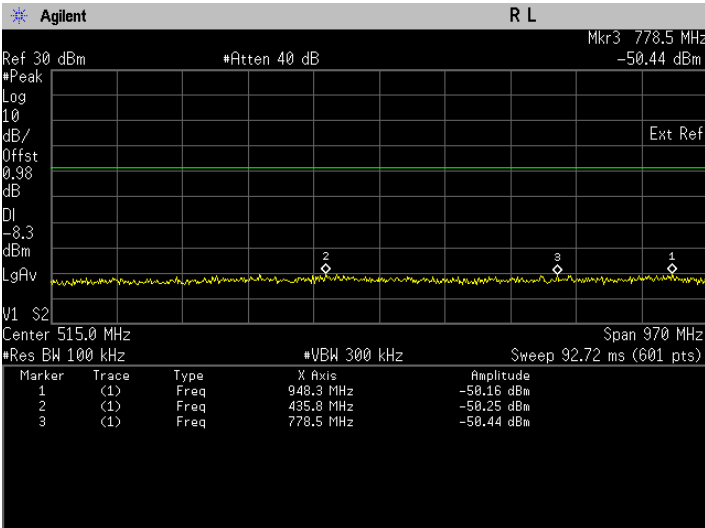
Conducted Emissions (Peak). Bluetooth LE, Frequency 2480 MHz Reference Level



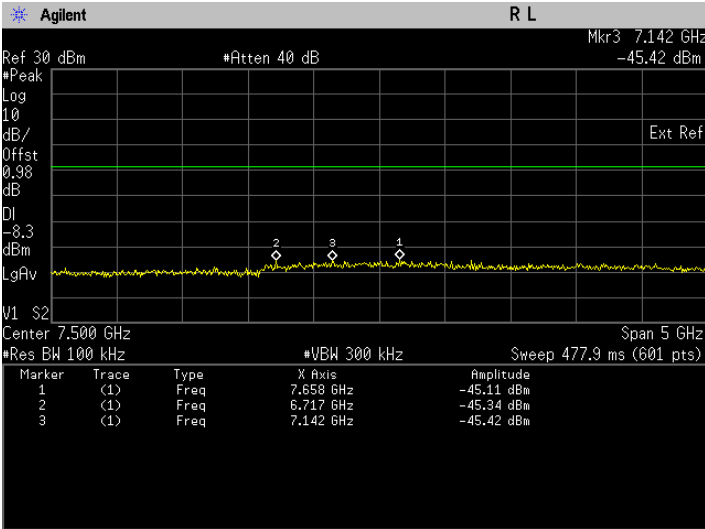
Conducted Emissions (Peak). Bluetooth LE, Frequency 2480 MHz Emission Level, 1 GHz -> 5 GHz



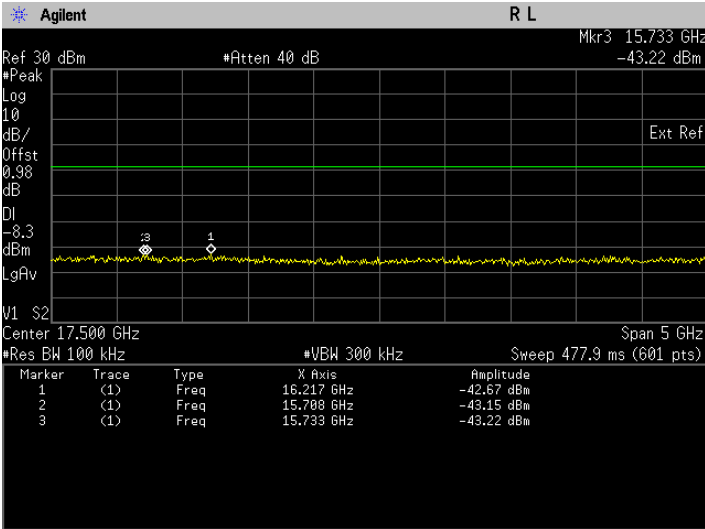
Conducted Emissions (Peak). Bluetooth LE, Frequency 2480 MHz Emission Level, 10 GHz -> 15 GHz



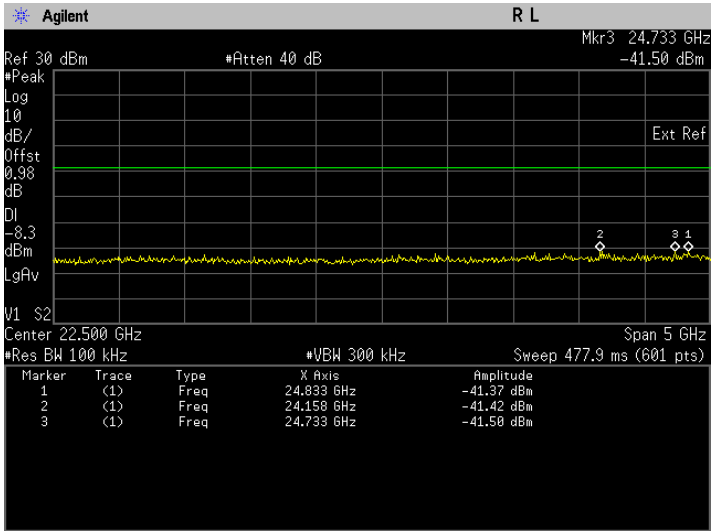
Conducted Emissions (Peak). Bluetooth LE, Frequency 2480 MHz Emission Level, 30 MHz -> 1 GHz



Conducted Emissions (Peak). Bluetooth LE, Frequency 2480 MHz Emission Level, 5 GHz -> 10 GHz



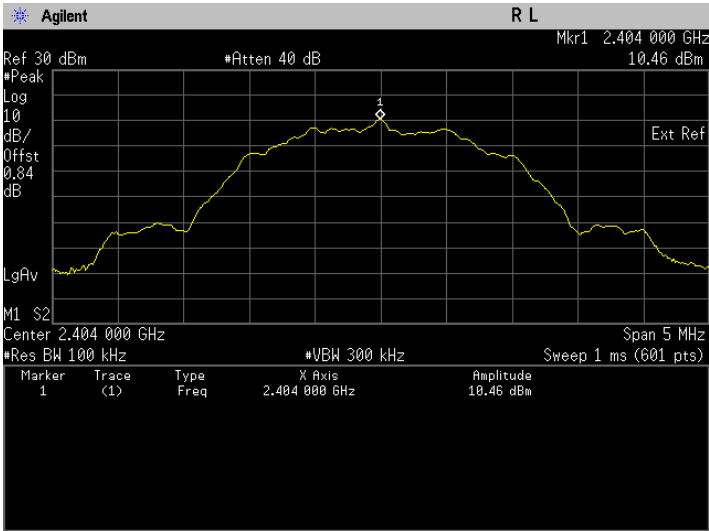
Conducted Emissions (Peak). Bluetooth LE, Frequency 2480 MHz Emission Level, 15 GHz -> 20 GHz



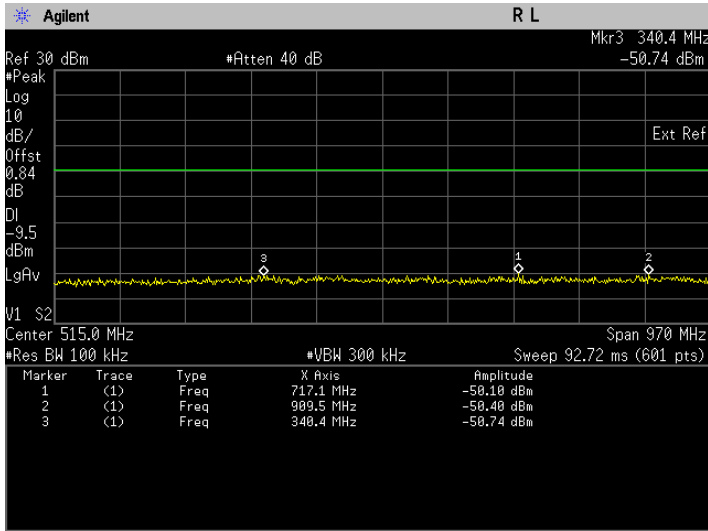
Conducted Emissions (Peak). Bluetooth LE, Frequency
2480 MHz Emission Level, 20 GHz -> 25 GHz

BTLE 2M

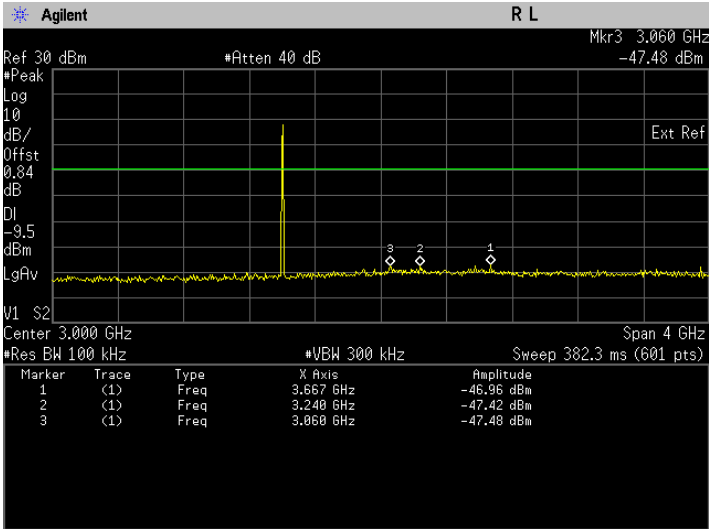
Test Conditions		Test Frequency	Results		
Standard	Data Rate	Tx (MHz)	Spurs (MHz)	Level (dBm)	Status
Bluetooth LE	2	2404	24900.00	-40.89	Pass
			23917.00	-41.64	Pass
			24858.00	-41.78	Pass
Bluetooth LE	2	2440	23667.00	-41.74	Pass
			13600.00	-42.23	Pass
			15508.00	-42.35	Pass
Bluetooth LE	2	2478	23850.00	-40.88	Pass
			23933.00	-41.18	Pass
			23808.00	-41.48	Pass



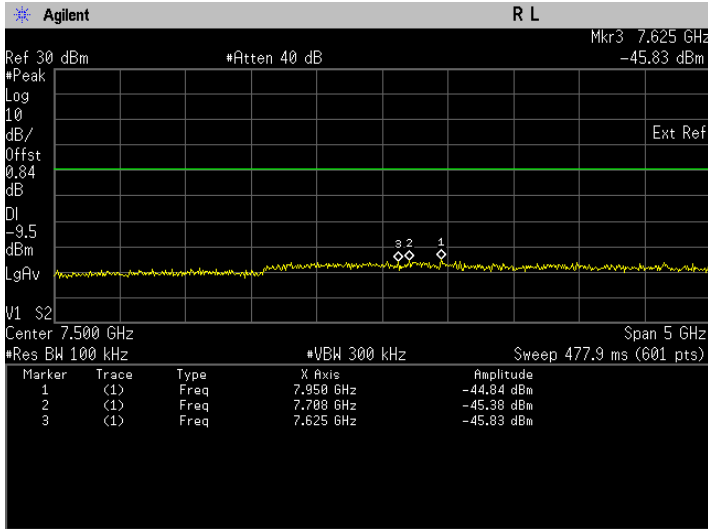
Conducted Emissions (Peak). Bluetooth LE, Frequency 2404 MHz Reference Level



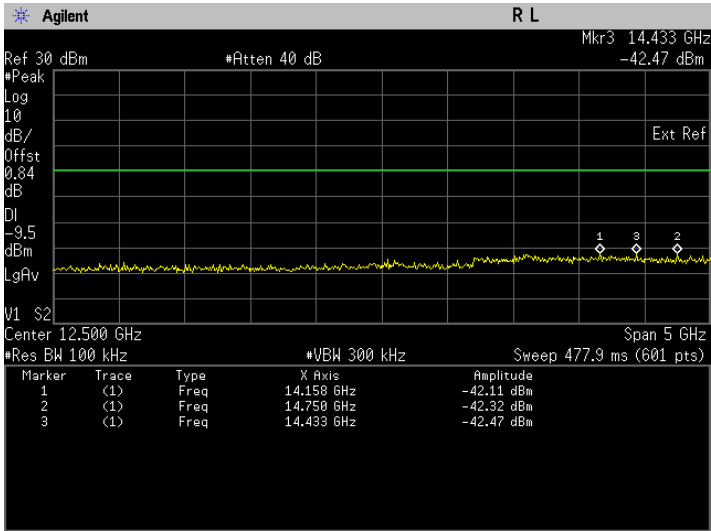
Conducted Emissions (Peak). Bluetooth LE, Frequency 2404 MHz Emission Level, 30 MHz -> 1 GHz



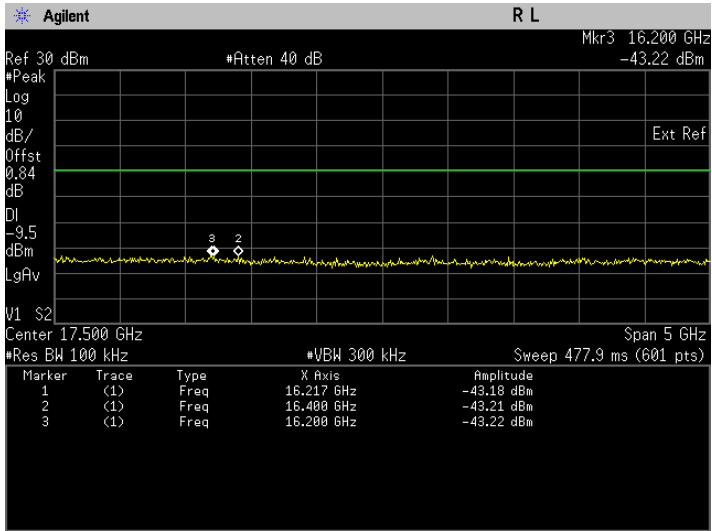
Conducted Emissions (Peak). Bluetooth LE, Frequency 2404 MHz Emission Level, 1 GHz -> 5 GHz



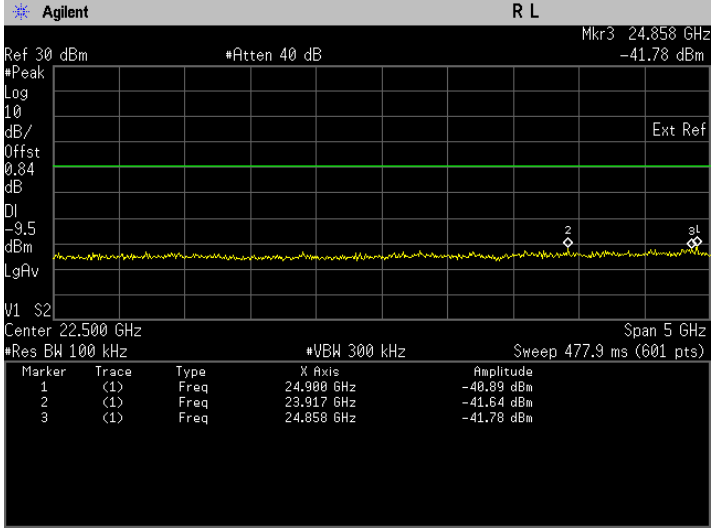
Conducted Emissions (Peak). Bluetooth LE, Frequency 2404 MHz Emission Level, 5 GHz -> 10 GHz



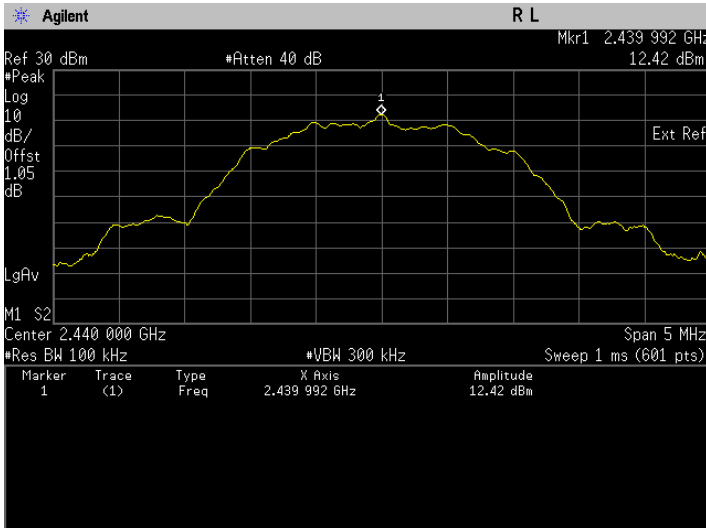
Conducted Emissions (Peak). Bluetooth LE, Frequency 2404 Emission Level, 10 GHz -> 15 GHz



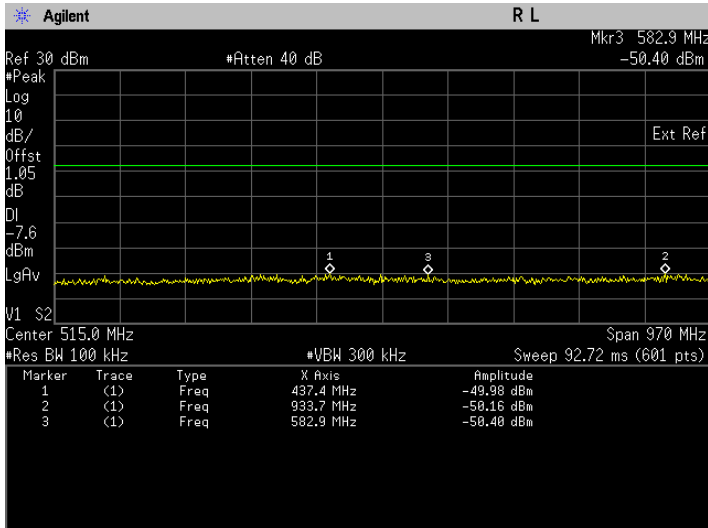
Conducted Emissions (Peak). Bluetooth LE, Frequency 2404 MHz Emission Level, 15 GHz -> 20 GHz



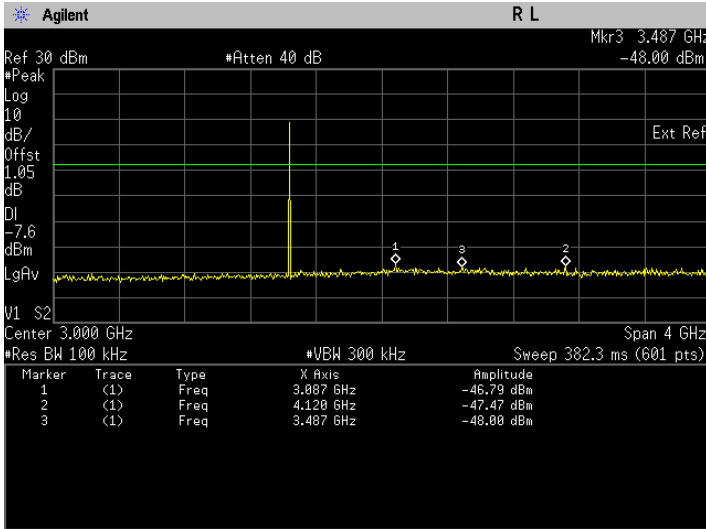
Conducted Emissions (Peak). Bluetooth LE, Frequency 2404 MHz Emission Level, 20 GHz -> 25 GHz



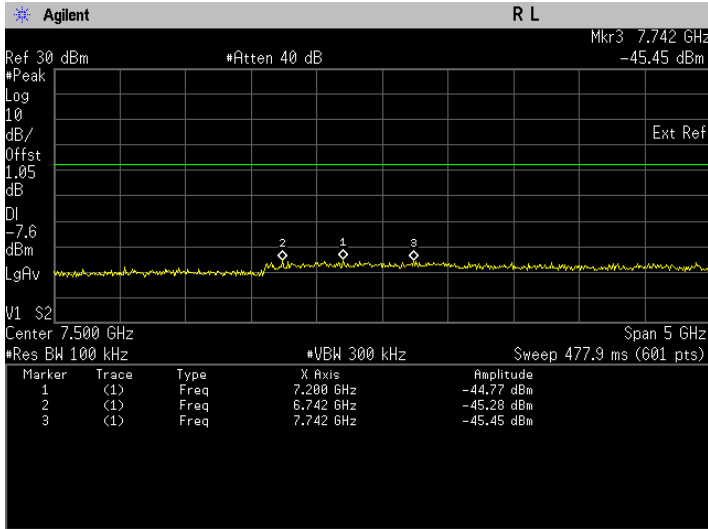
Conducted Emissions (Peak). Bluetooth LE, Frequency 2440 MHz Reference Level



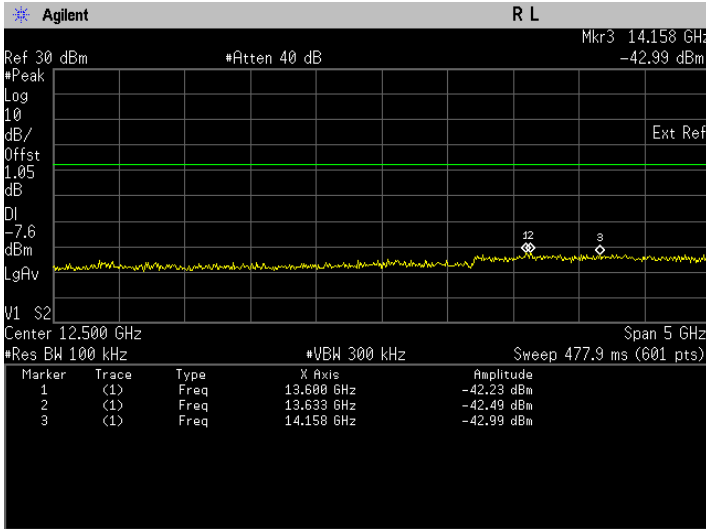
Conducted Emissions (Peak). Bluetooth LE, Frequency 2440 MHz Emission Level, 30 MHz -> 1 GHz



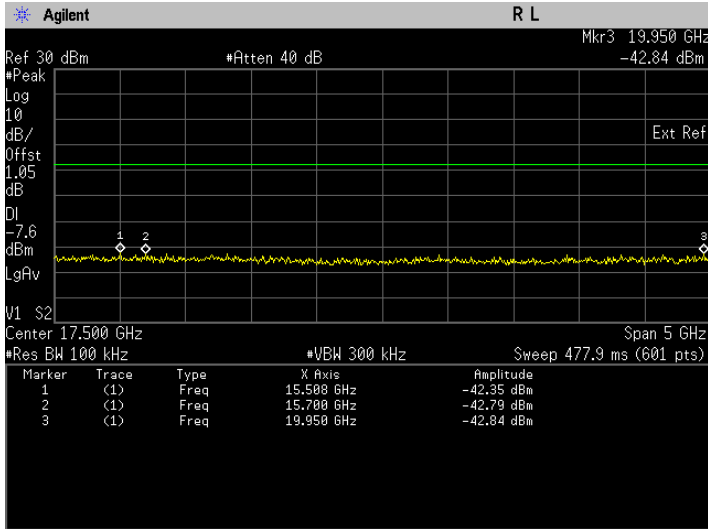
Conducted Emissions (Peak). Bluetooth LE, Frequency 2440 MHz Emission Level, 1 GHz -> 5 GHz



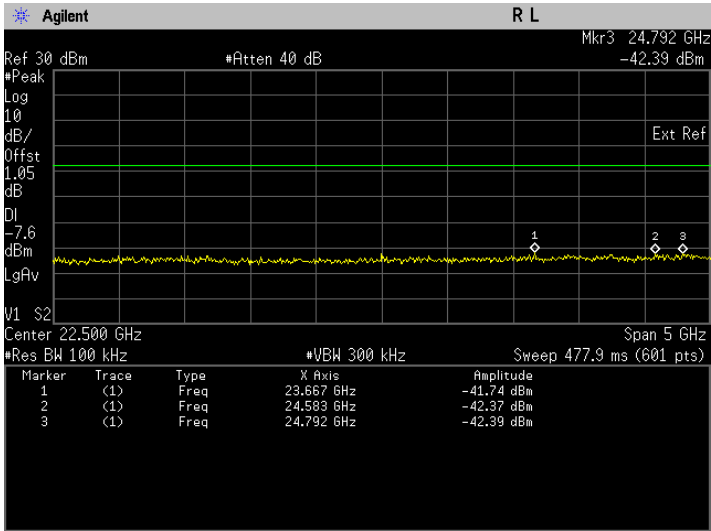
Conducted Emissions (Peak). Bluetooth LE, Frequency 2440 MHz Emission Level, 5 GHz -> 10 GHz



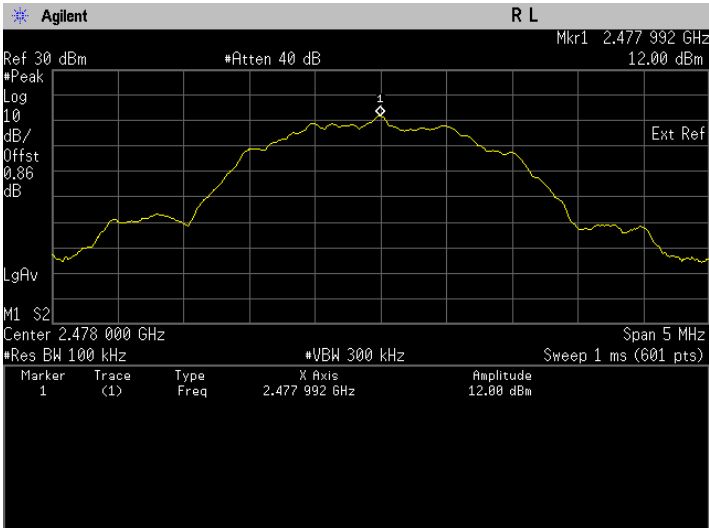
Conducted Emissions (Peak). Bluetooth LE, Frequency 2440 MHz Emission Level, 10 GHz -> 15 GHz



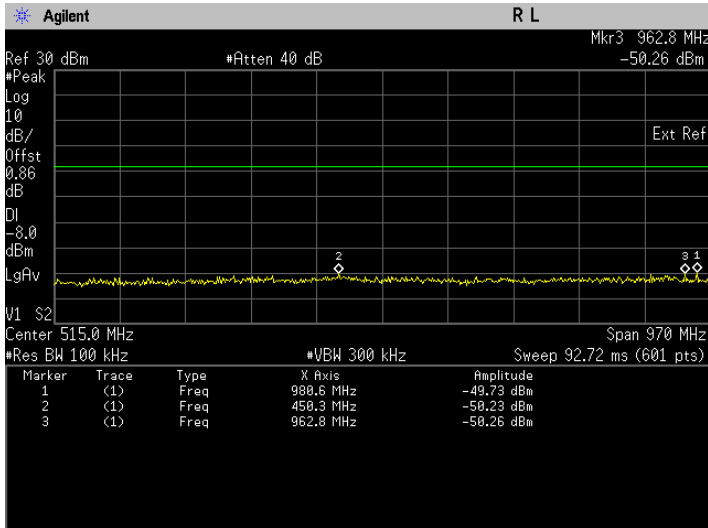
Conducted Emissions (Peak). Bluetooth LE, Frequency 2440 MHz Emission Level, 15 GHz -> 20 GHz



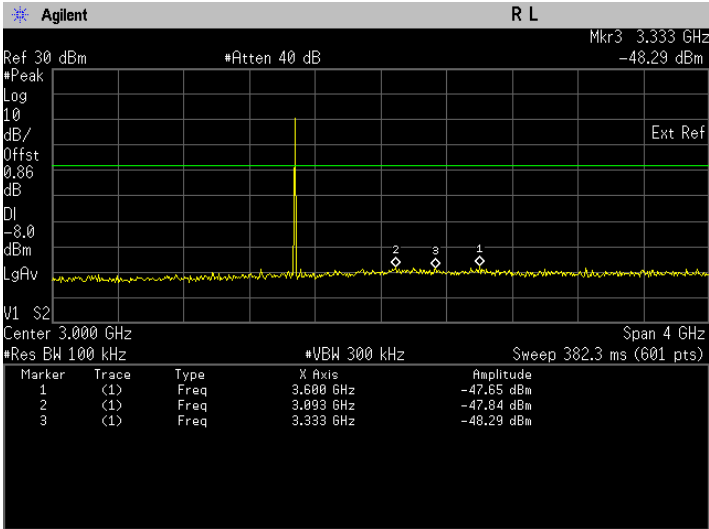
Conducted Emissions (Peak). Bluetooth LE, Frequency
2440 MHz Emission Level, 20 GHz -> 25 GHz



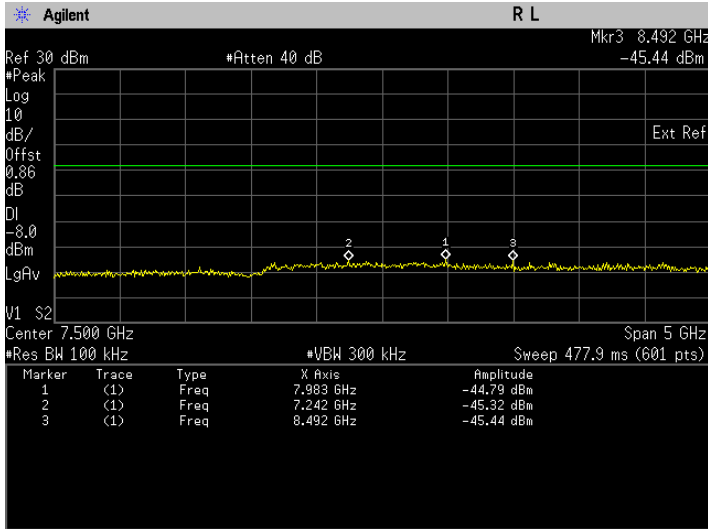
Conducted Emissions (Peak). Bluetooth LE, Frequency 2478 MHz Reference Level



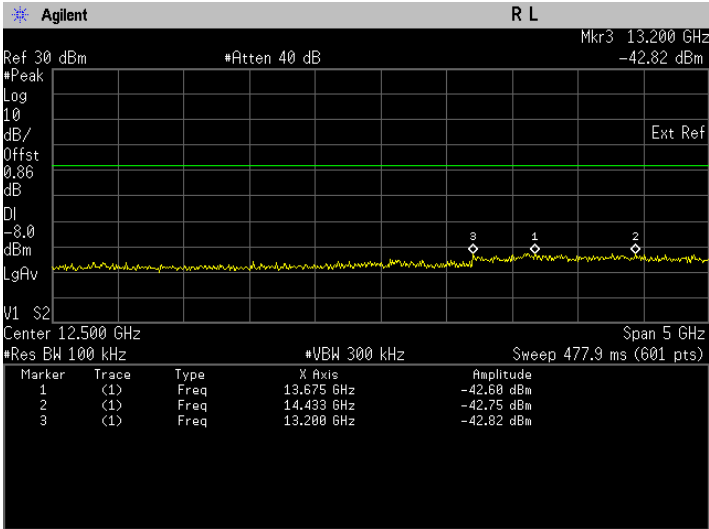
Conducted Emissions (Peak). Bluetooth LE, Frequency 2478 MHz Emission Level, 30 MHz -> 1 GHz



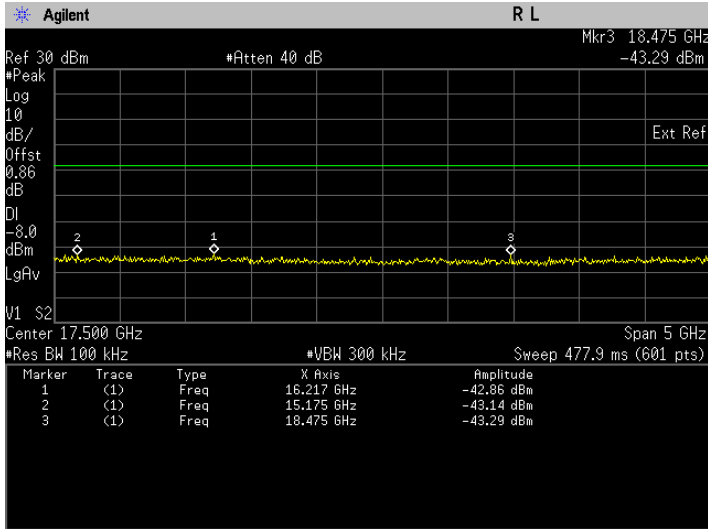
Conducted Emissions (Peak). Bluetooth LE, Frequency 2478 MHz Emission Level, 1 GHz -> 5 GHz



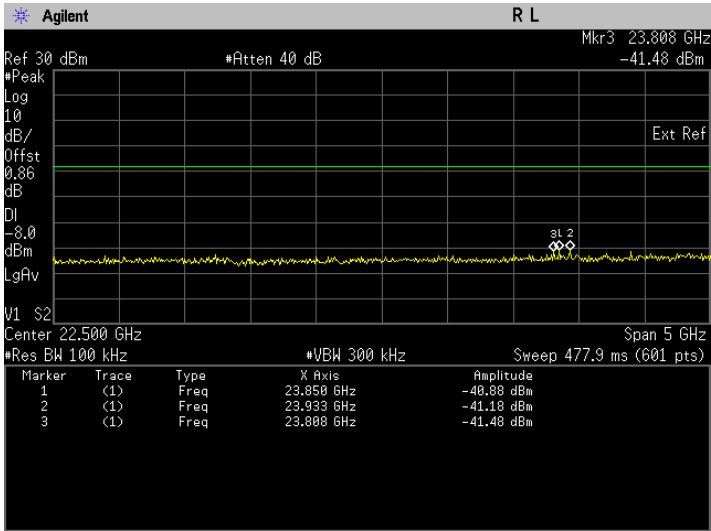
Conducted Emissions (Peak). Bluetooth LE, Frequency 2478 MHz Emission Level, 5 GHz -> 10 GHz



Conducted Emissions (Peak). Bluetooth LE, Frequency 2478 MHz Emission Level, 10 GHz -> 15 GHz



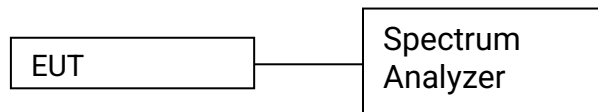
Conducted Emissions (Peak). Bluetooth LE, Frequency 2478 MHz Emission Level, 15 GHz -> 20 GHz



Conducted Emissions (Peak). Bluetooth LE, Frequency
2478 MHz Emission Level, 20 GHz -> 25 GHz

6.5 Band edge Conducted Spurious Emission

6.5.1 Test Setup



- a) Check and ensure the spectrum analyzer well calibrate.
- b) Turn on the DUT and set DUT to transmit maximum power.
- c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- d) Setting of Spectrum analyzer:
 - a. RBW = 100 kHz
 - b. VBW = 300 kHz
 - c. Detector mode = Peak
 - d. Trace = Max Hold
 - e. Sweep = auto
- e) Use the peak marker function to measure highest emission.

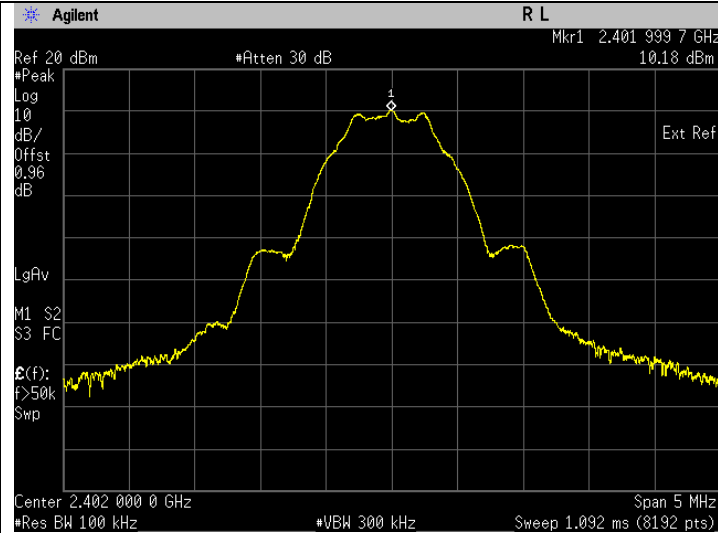
6.5.2 Test Limits:

Normal Condition (25 ° C)
Shall be at least 20 dB below max power. (Peak detector)

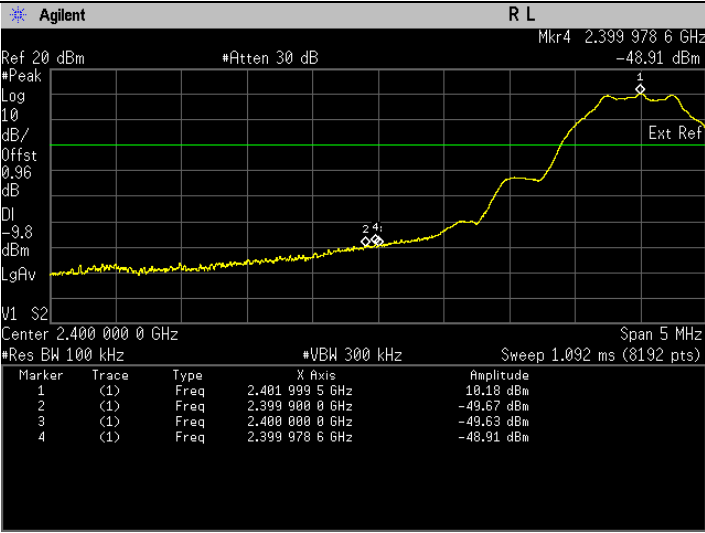
6.5.3 Test Result

BTLE 1M

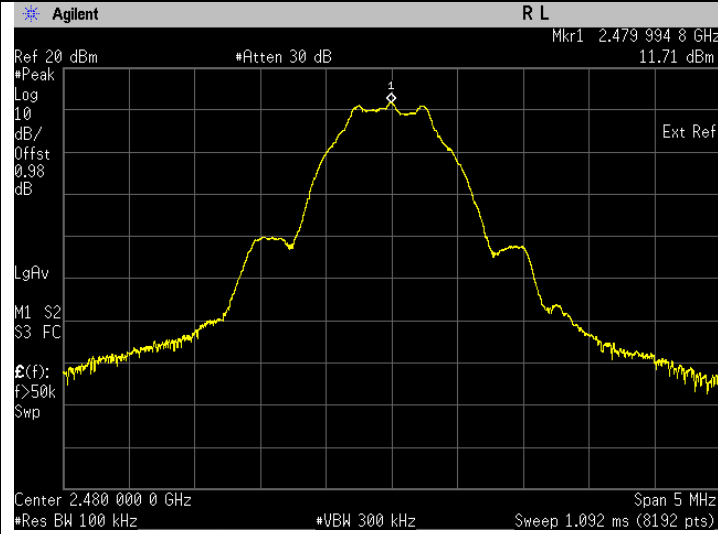
Test Conditions		Test Frequency	Results		
Standard	Data Rate	Tx (MHz)	Frequencies (MHz)	Power (dBm)	Status
Bluetooth LE	1	2402	2399.98	-48.91	Pass
Bluetooth LE	1	2480	2483.53	-56.34	Pass



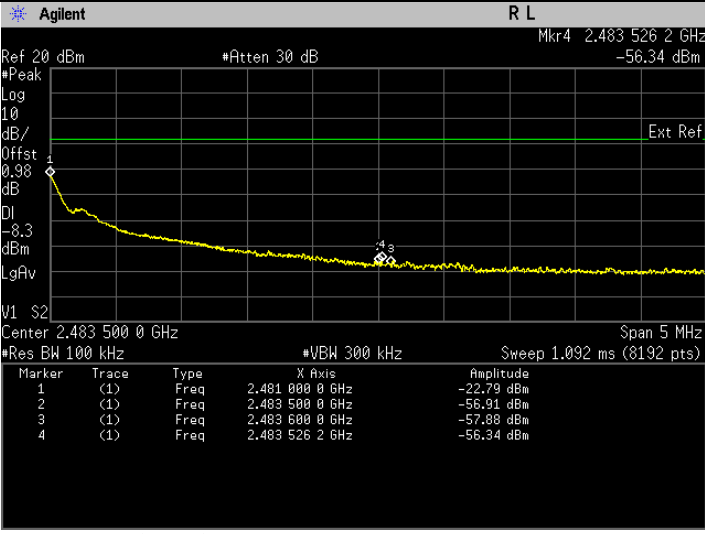
Band Edge (Peak). Bluetooth LE Frequency 2402 MHz
Reference Level



Band Edge (Peak). Bluetooth LE Frequency 2402 MHz
Band Edge



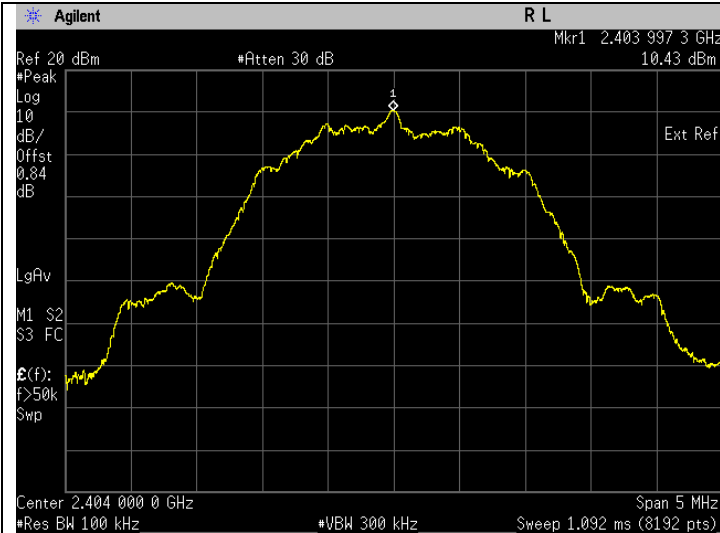
Band Edge (Peak). Bluetooth LE Frequency 2480 MHz
Reference Level



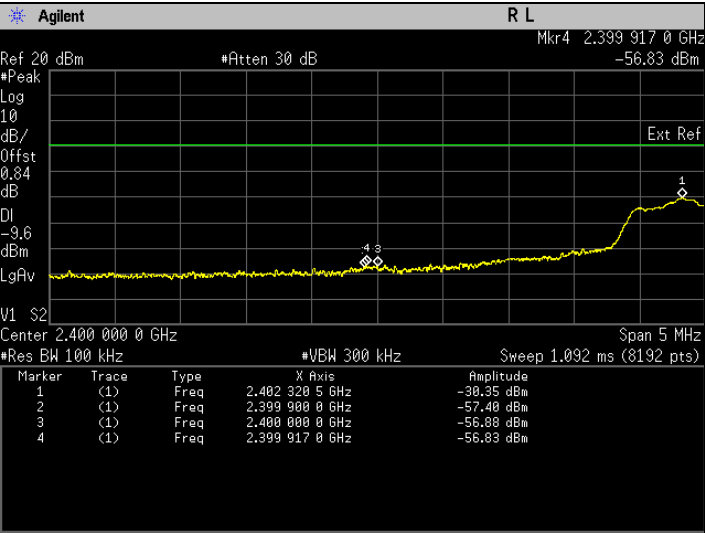
Band Edge (Peak). Bluetooth LE Frequency 2480 MHz
Band Edge

BTLE 2M

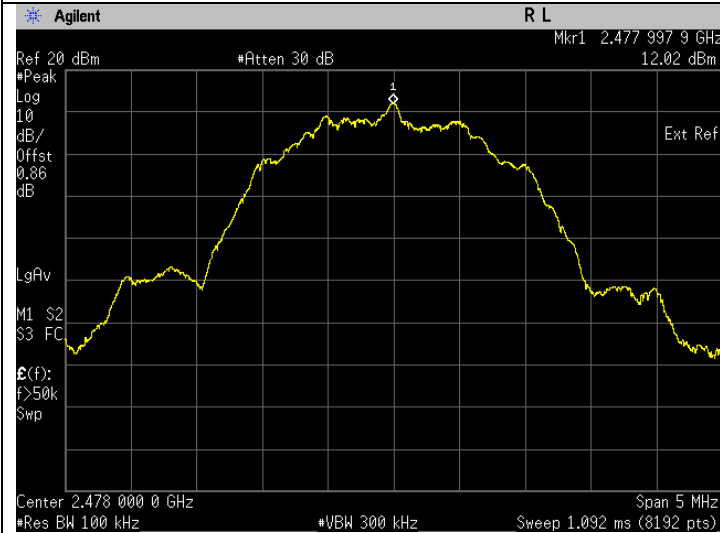
Test Conditions		Test Frequency	Results		
Standard	Data Rate	Tx (MHz)	Frequencies (MHz)	Power (dBm)	Status
Bluetooth LE	2	2404	2399.92	-56.83	Pass
Bluetooth LE	2	2478	2483.57	-60.09	Pass



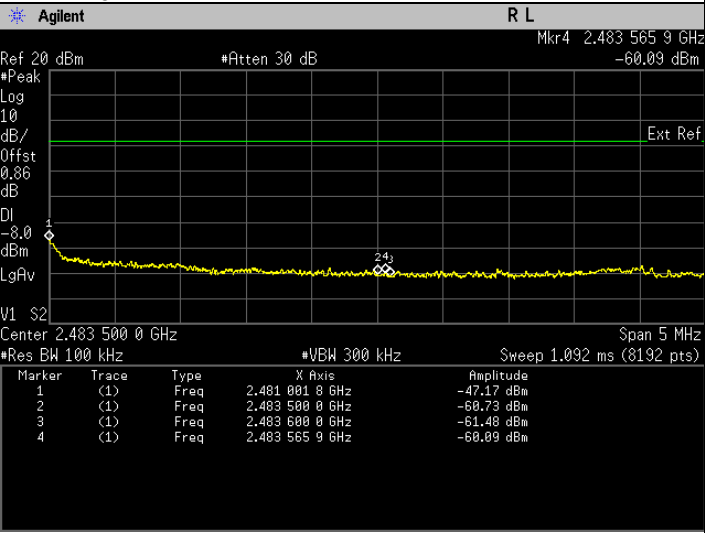
Band Edge (Peak). Bluetooth LE Frequency 2404 MHz
Reference Level



Band Edge (Peak). Bluetooth LE Frequency 2404 MHz
Band Edge



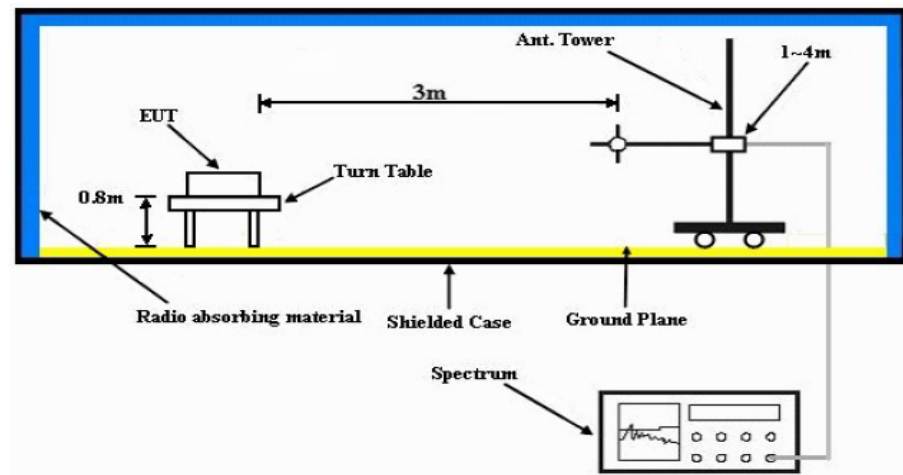
Band Edge (Peak). Bluetooth LE Frequency 2478 MHz
Reference Level



Band Edge (Peak). Bluetooth LE Frequency 2478 MHz
Band Edge

6.6 Radiated Emission within Restricted Bands

6.6.1 Test Setup



- The EUT is placed on the top of a rotating table 0.8m (<1GHz) or 1.5m (>1GHz) above the ground at a 3m semi-anechoic chamber. The table is rotated 360 degrees to determine the position of the highest radiation.
- The EUT is set 3m away from the interference-receiving antenna, which is mounted on the top of a variable-height antenna tower.
- The antenna is Bilog/Horn antenna depend on which frequency range uses, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT is arranged to its worst case and then the antenna is tuned to heights from 1m to 4m and the rotatable table is turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system is set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode is fall within the range of 10dB from the limit specified, the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. Otherwise, the testing could be stopped and the peak values of the EUT would be reported.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3 MHz for Peak detection at frequency above 1 GHz.
3. All modes of operation were investigated and the worst-case emissions are reported.

6.6.2 Test Limits:

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

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	$2400/F(\text{kHz})$	300
0.490-1.705	$24000/F(\text{kHz})$	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

NOTE:

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

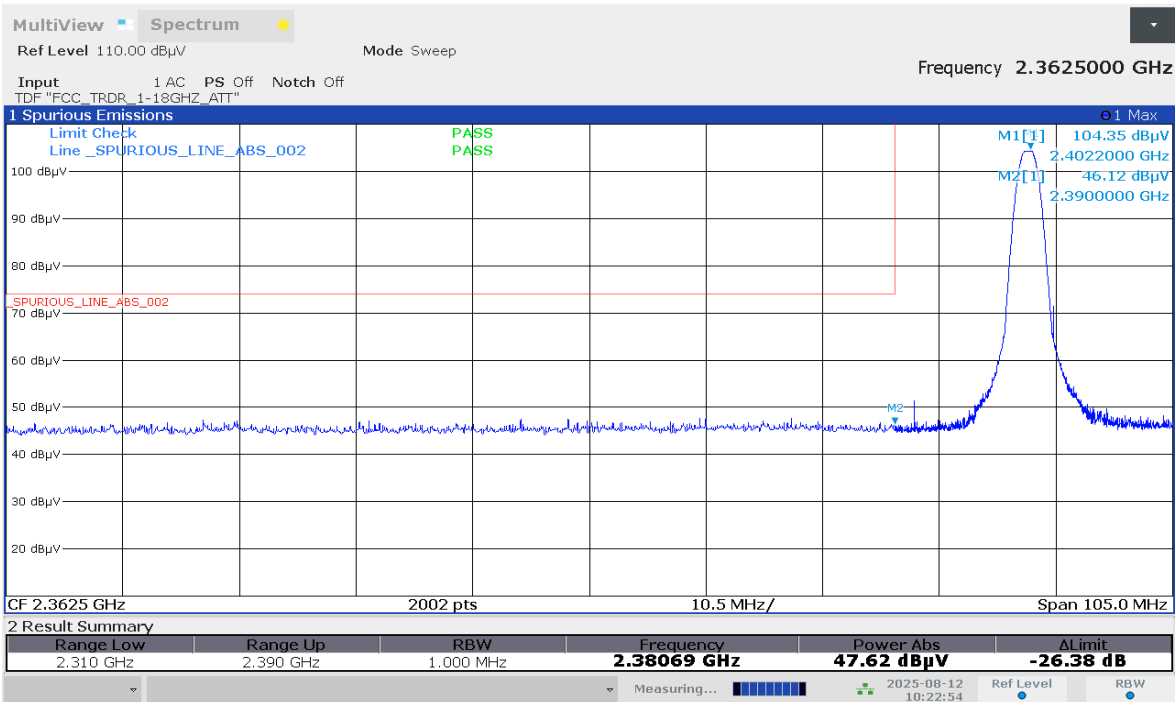
Test: Bluetooth SAC Restricted Band Edge	EMC SR ID: 0875N00-EMC-00075
Model Number: H55TGT9PW8BN	S/N: 437ZBG0592
Battery: PMNN4895A	
Accessory: AN000297A01	
Test Channel: Low	Test Frequency: 2402.0000 MHz
Test Standard: ANSI C63.10-2013	Worst Case Plane: X-Plane (BTLE 1M)
Modulation: GFSK	

[illegible]

Remarks: Pass Result	Marginal Result	Fail Result
-------------------------	-----------------	-------------

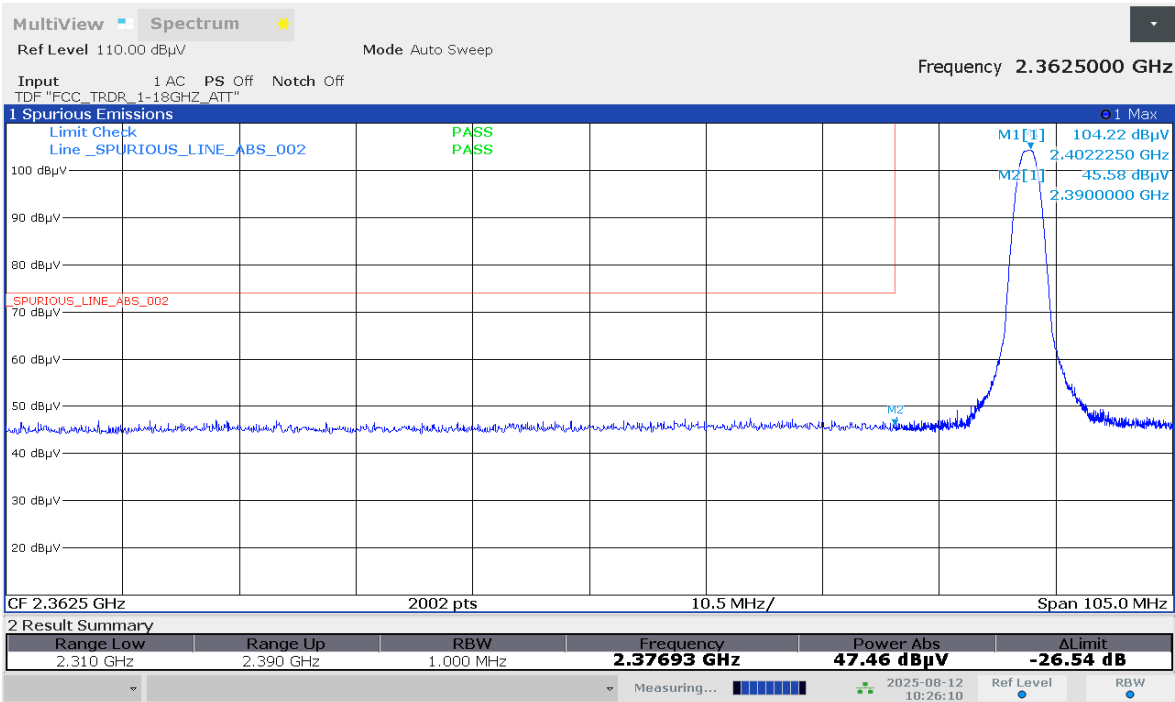
Humidity (%): 69.3
Test Date: Tue, 12 Aug, 2025

Restricted Band Edge (Low Channel, Vertical, Peak) graphical screen shot



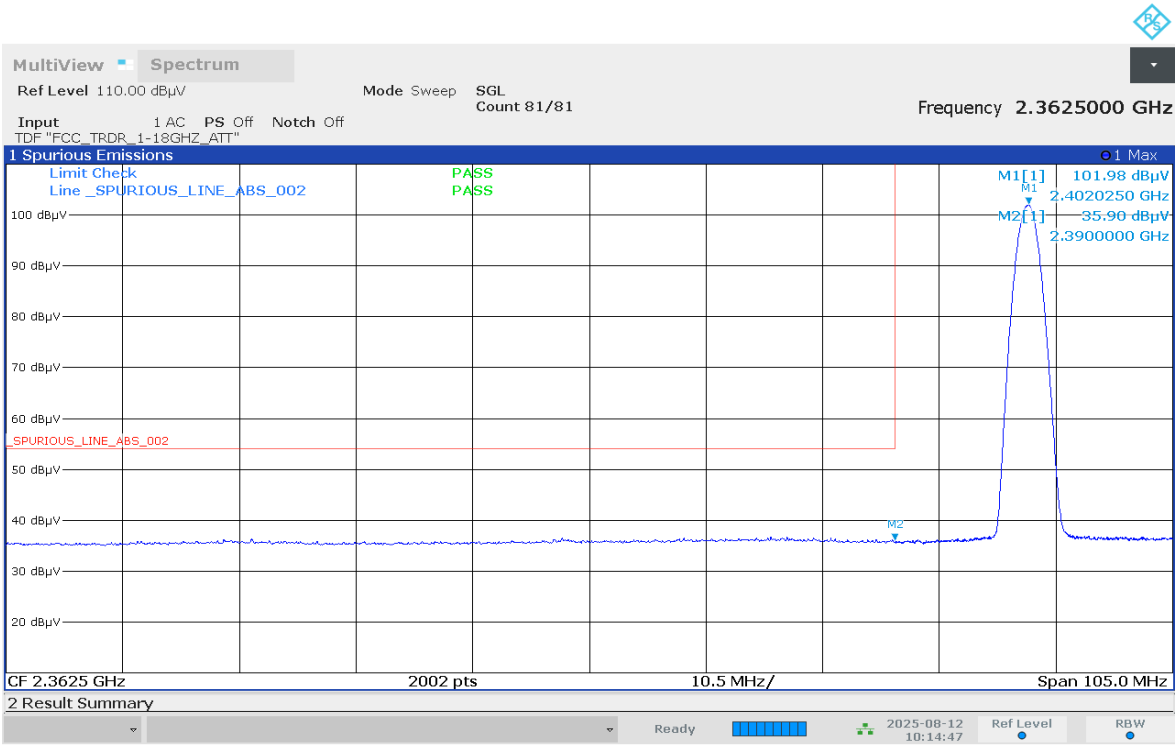
10:22:54 AM 08/12/2025

Restricted Band Edge (Low Channel, Horizontal, Peak) graphical screen shot



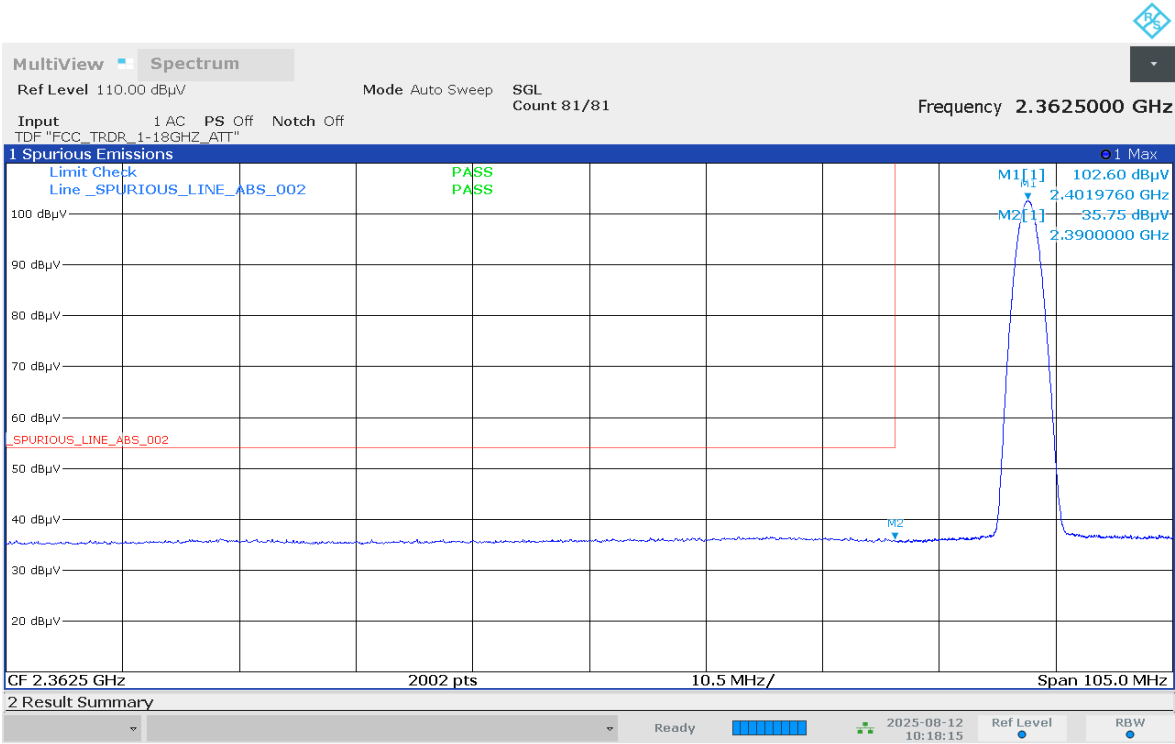
10:26:10 AM 08/12/2025

Restricted Band Edge (Low Channel, Vertical, Average) graphical screen shot



10:14:48 AM 08/12/2025

Restricted Band Edge (Low Channel, Horizontal, Average) graphical screen shot



10:18:15 AM 08/12/2025

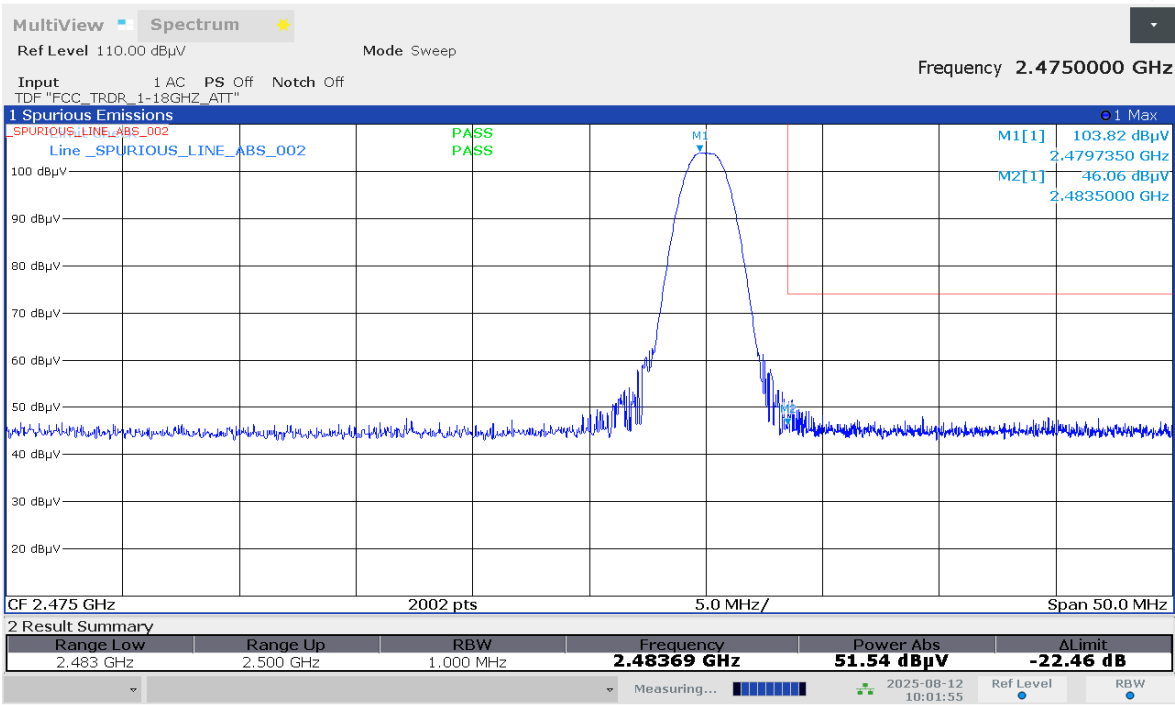
Restricted Band Edge (High Channel) tabular data

Remarks: Pass Result	Marginal Result	Fail Result
-------------------------	-----------------	-------------

Humidity (%): 69.3
Test Date: Tue, 12 Aug, 2025

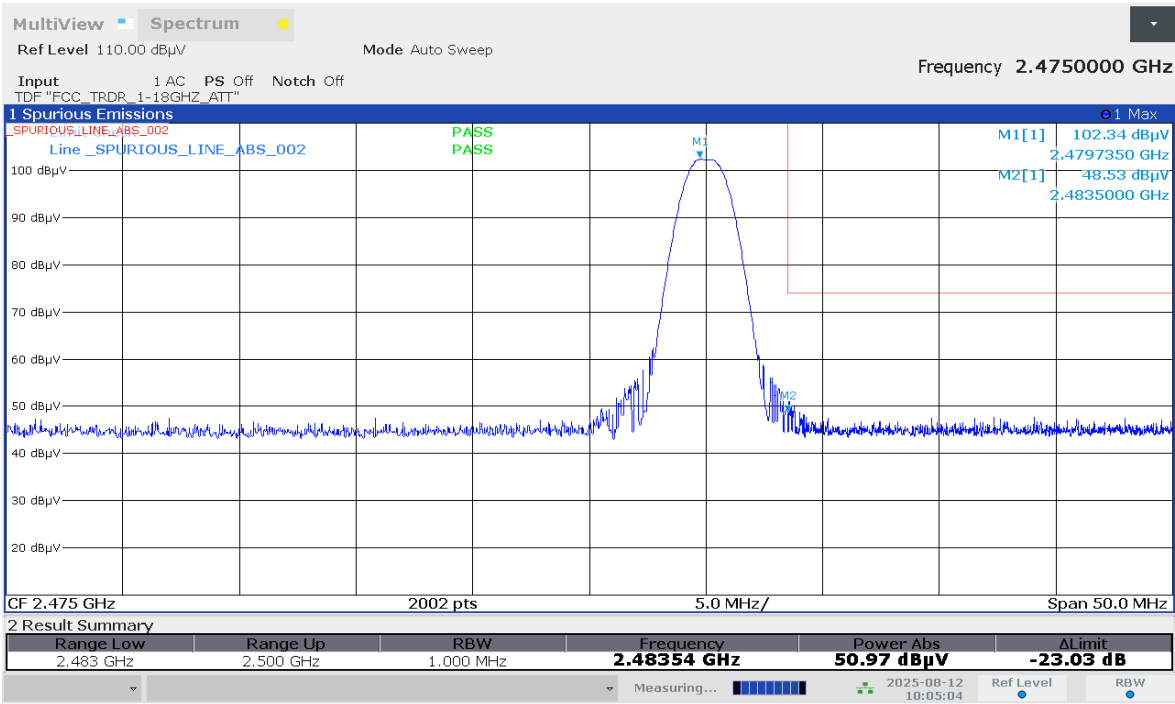
Page 39 of 70

Restricted Band Edge (High Channel, Vertical, Peak) graphical screen shot



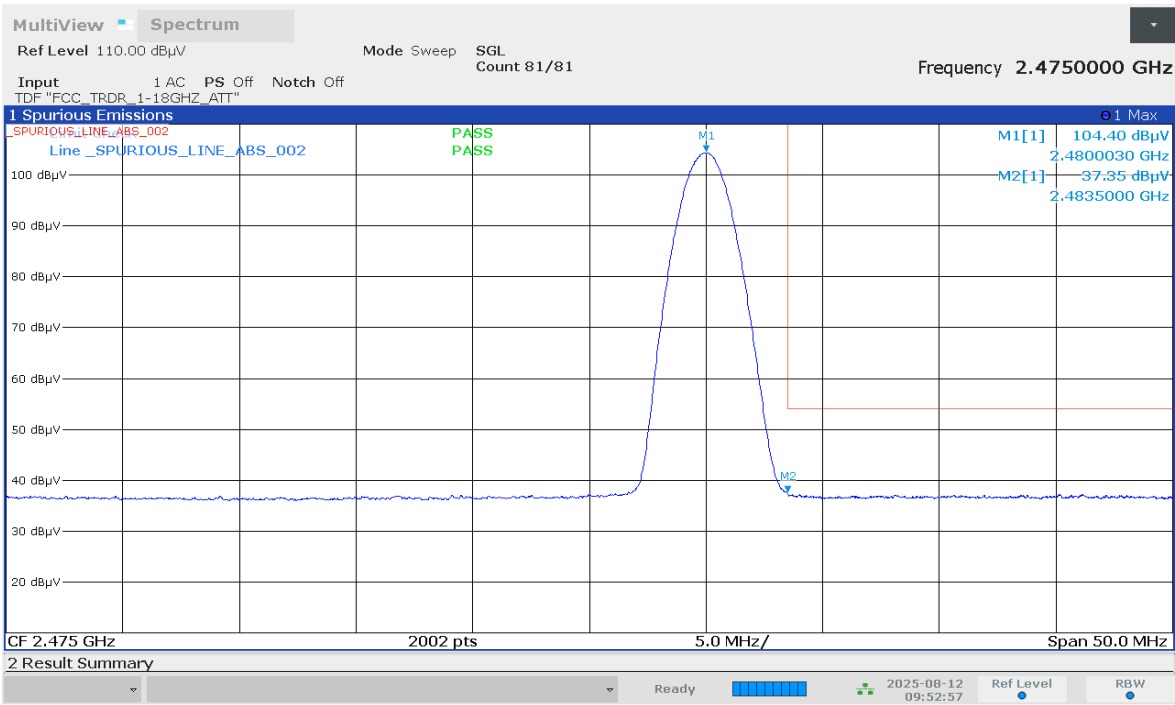
10:01:55 AM 08/12/2025

Restricted Band Edge (High Channel, Horizontal, Peak) graphical screen shot



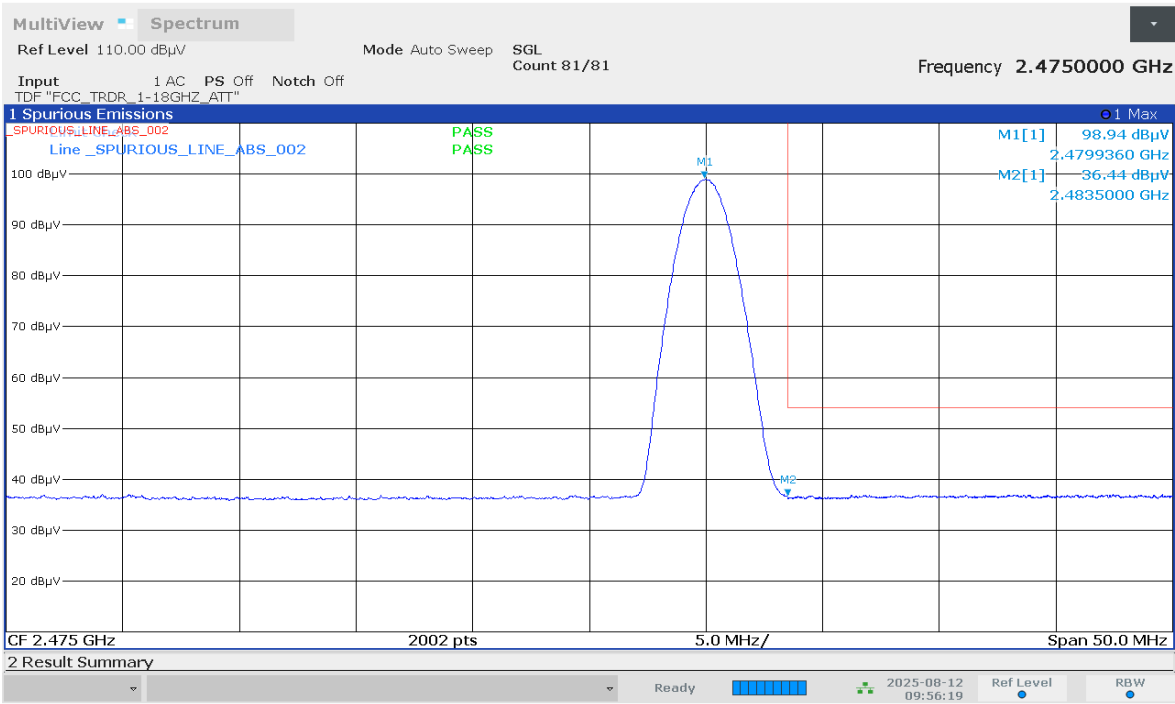
10:05:05 AM 08/12/2025

Restricted Band Edge (High Channel, Vertical, Average) graphical screen shot



09:52:58 AM 08/12/2025

Restricted Band Edge (High Channel, Horizontal, Average) graphical screen shot



09:56:20 AM 08/12/2025

Test: Bluetooth SAC Restricted Band Edge	EMC SR ID: 0875N00-EMC-00075
Model Number: H55TGT9PW8BN	S/N: 437ZBG0592
Battery: PMNN4895A	
Accessory: AN000297A01	
Test Channel: Low	Test Frequency: 2404.0000 MHz
Test Standard: ANSI C63.10-2013	Worst Case Plane: X-Plane (BTLE 2M)
Modulation: GFSK	

Restricted Band Edge (Low Channel) tabular data

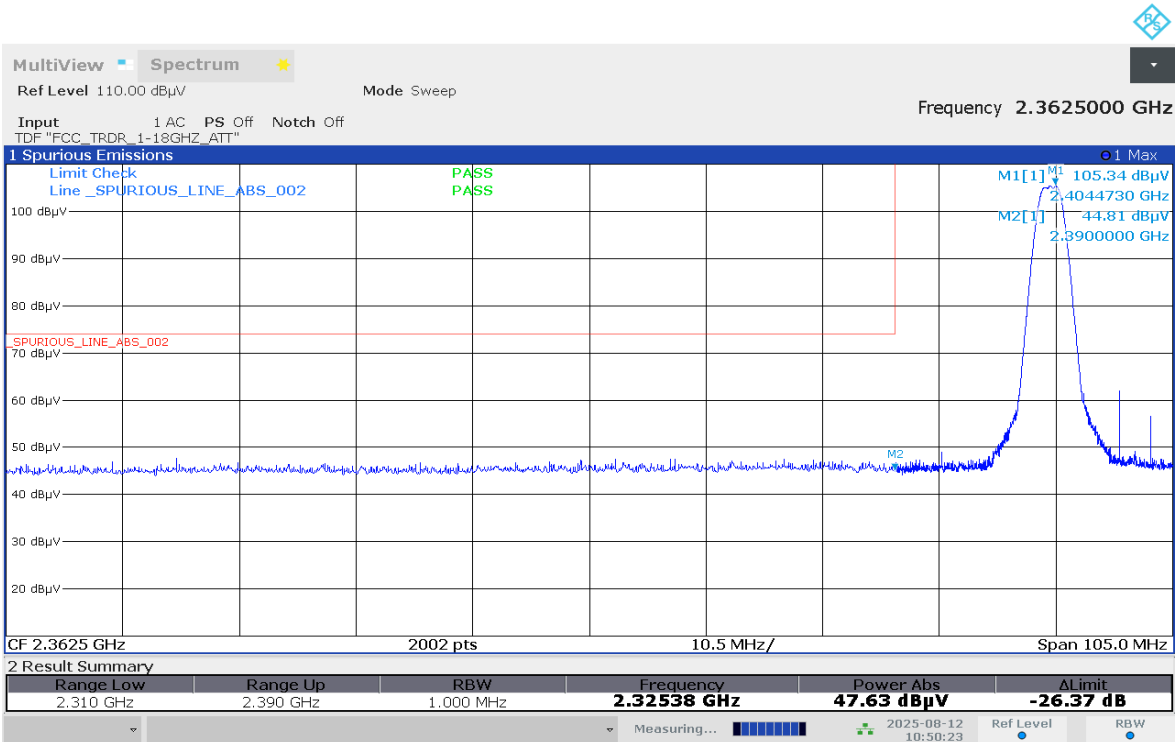
[illegible]

Remarks: Pass Result	Marginal Result	Fail Result
-------------------------	-----------------	-------------

Temperature (degC): 23.5
Test Performed by: Nazrin&Rezva

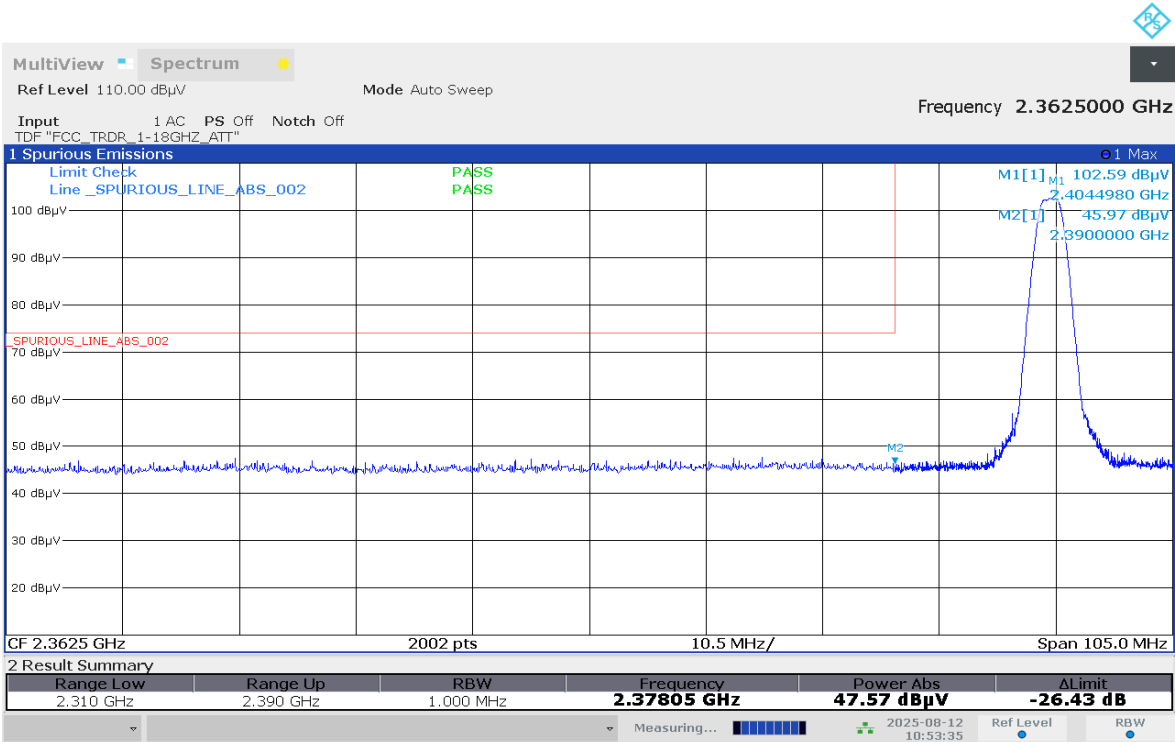
Humidity (%): 69.3
Test Date: Tue, 12 Aug, 2025

Restricted Band Edge (Low Channel, Vertical, Peak) graphical screen shot



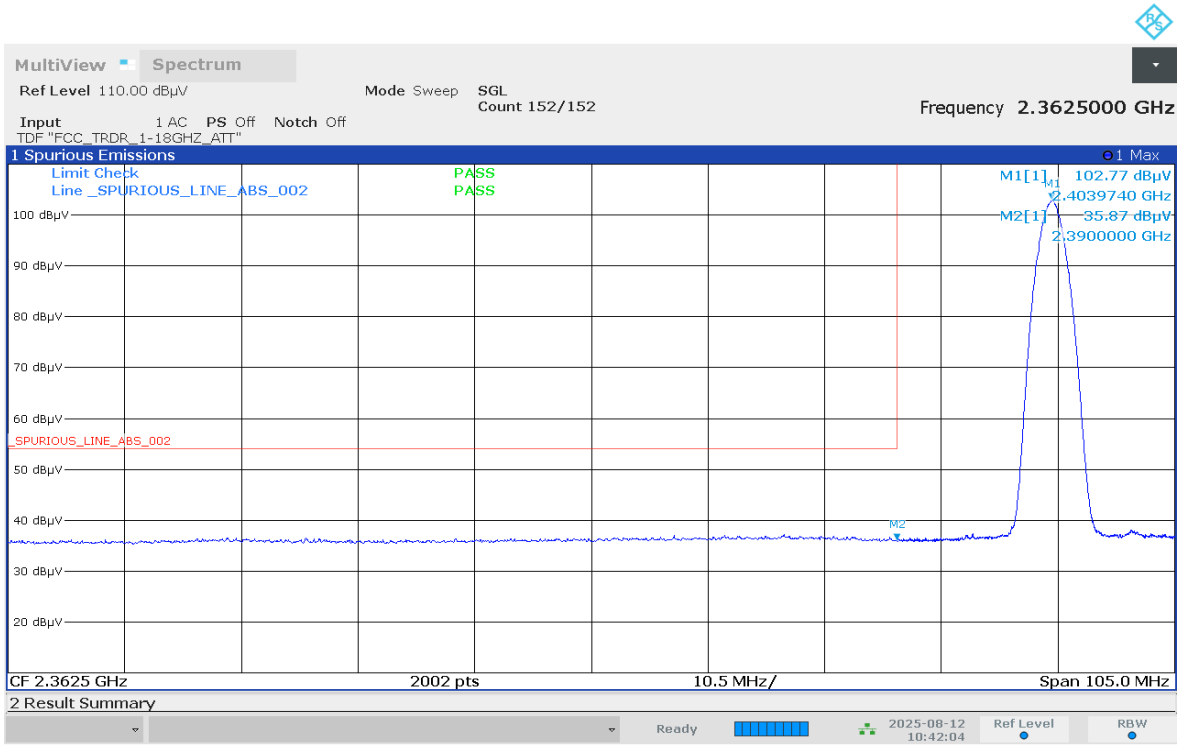
10:50:23 AM 08/12/2025

Restricted Band Edge (Low Channel, Horizontal, Peak) graphical screen shot



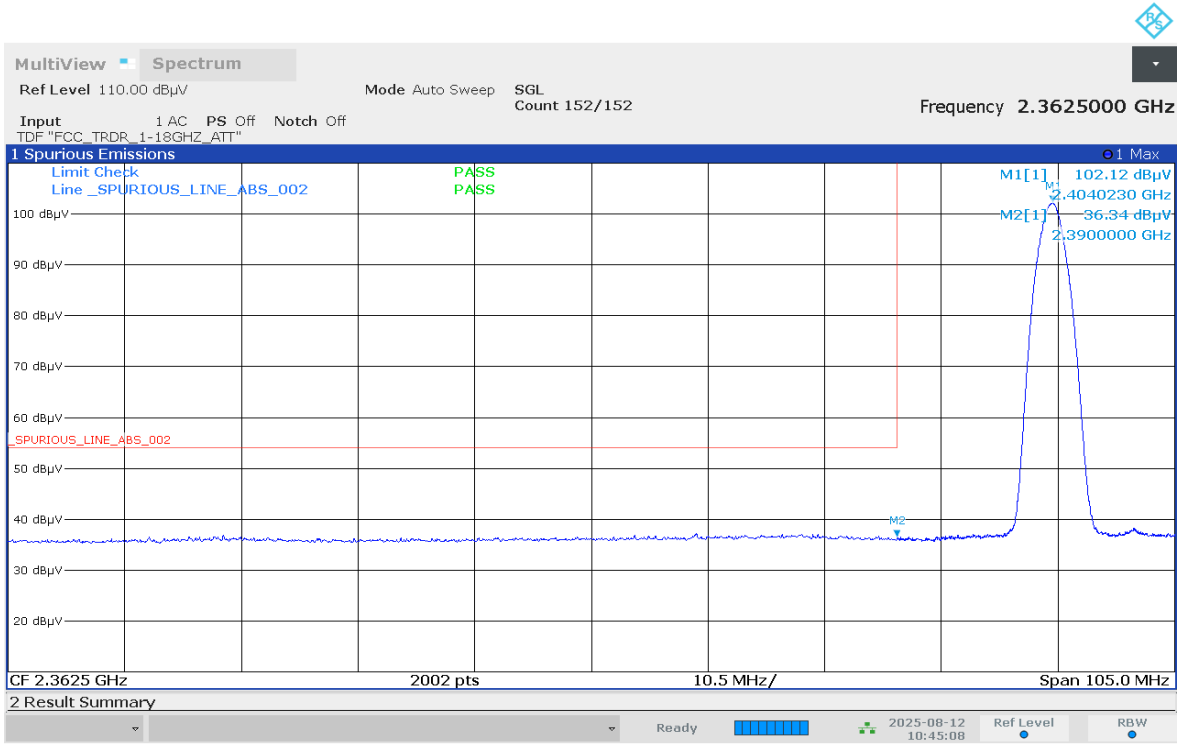
10:53:36 AM 08/12/2025

Restricted Band Edge (Low Channel, Vertical, Average) graphical screen shot



10:42:05 AM 08/12/2025

Restricted Band Edge (Low Channel, Horizontal, Average) graphical screen shot



10:45:09 AM 08/12/2025

Test: Bluetooth SAC Restricted Band Edge	EMC SR ID: 0875N00-EMC-00075
Model Number: H55TGT9PW8BN	S/N: 437ZBG0592
Battery: PMNN4895A	
Accessory: AN000297A01	
Test Channel: High	Test Frequency: 2478.0000 MHz
Test Standard: ANSI C63.10-2013	Worst Case Plane: X-Plane (BTLE 2M)
Modulation: GFSK	

Restricted Band Edge (High Channel) tabular data

[illegible]

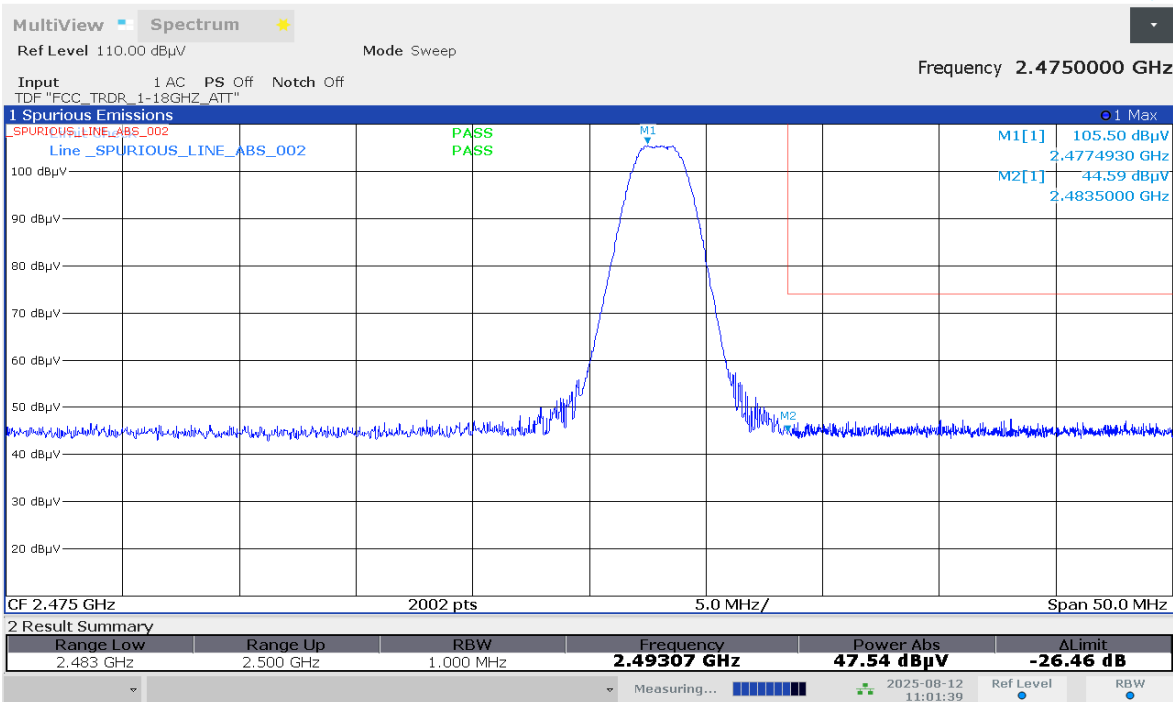
Remarks: Pass Result	Marginal Result	Fail Result
-------------------------	-----------------	-------------

Temperature (degC): 23.5
Test Performed by: Nazrin&Rezva

System MU: 5.14dB

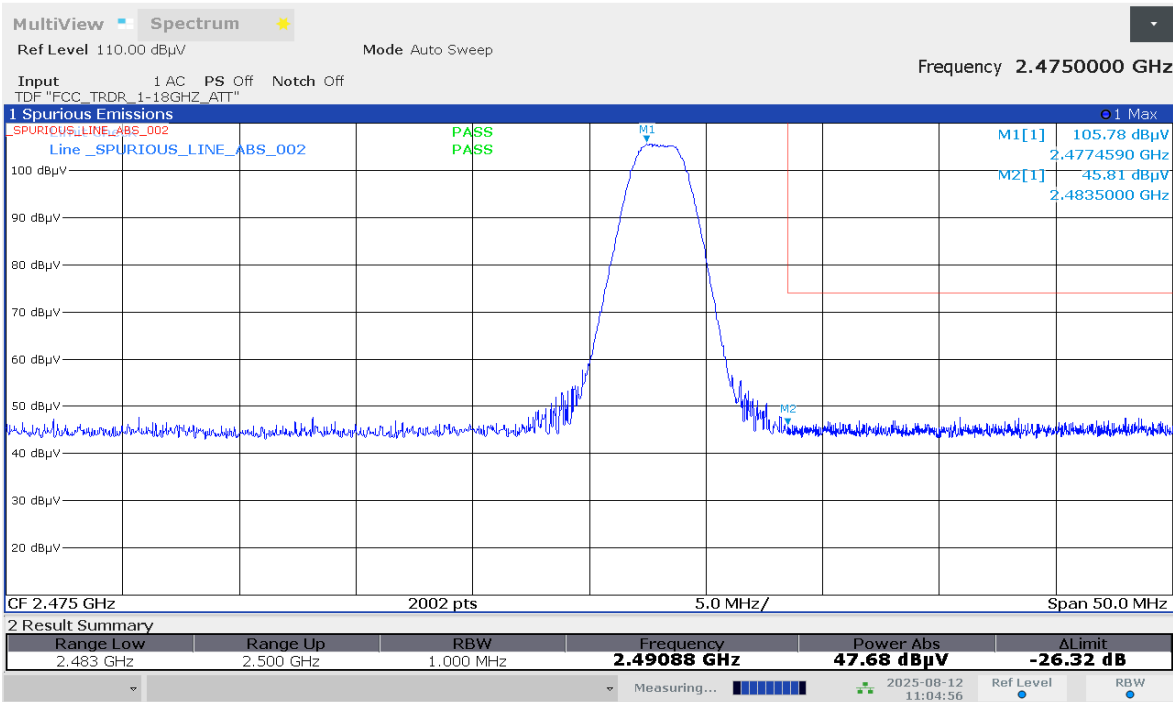
Humidity (%): 69.3
Test Date: Tue, 12 Aug, 2025

Restricted Band Edge (High Channel, Vertical, Peak) graphical screen shot



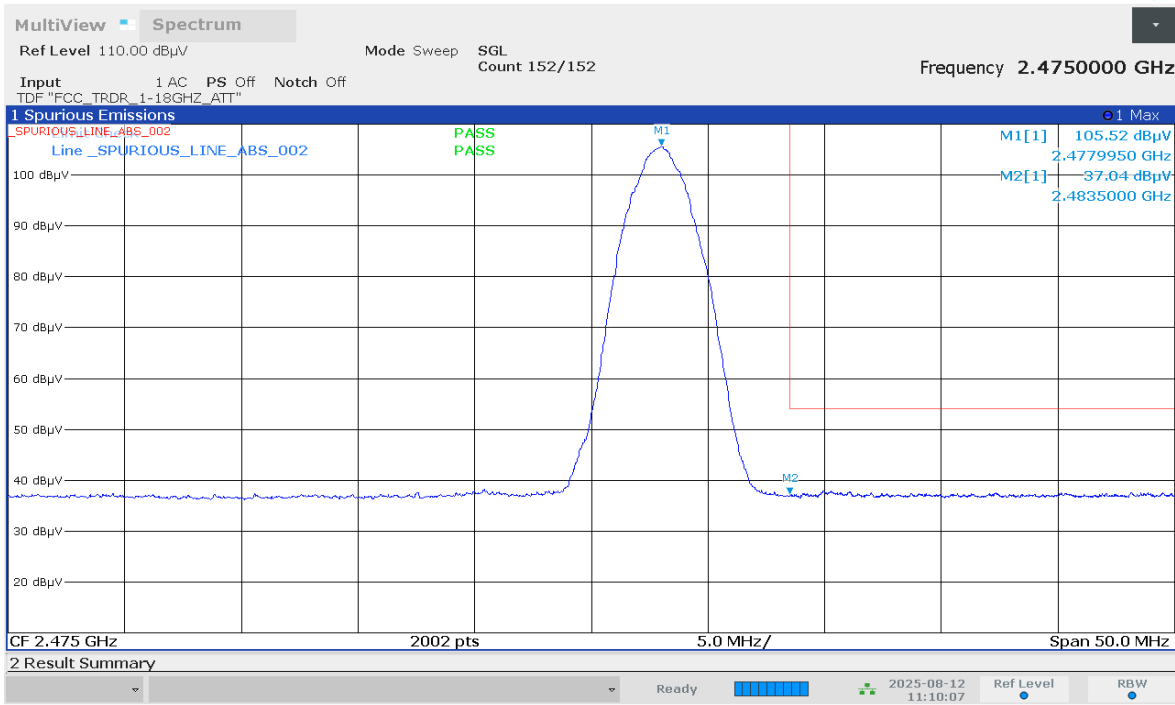
11:01:40 AM 08/12/2025

Restricted Band Edge (High Channel, Horizontal, Peak) graphical screen shot



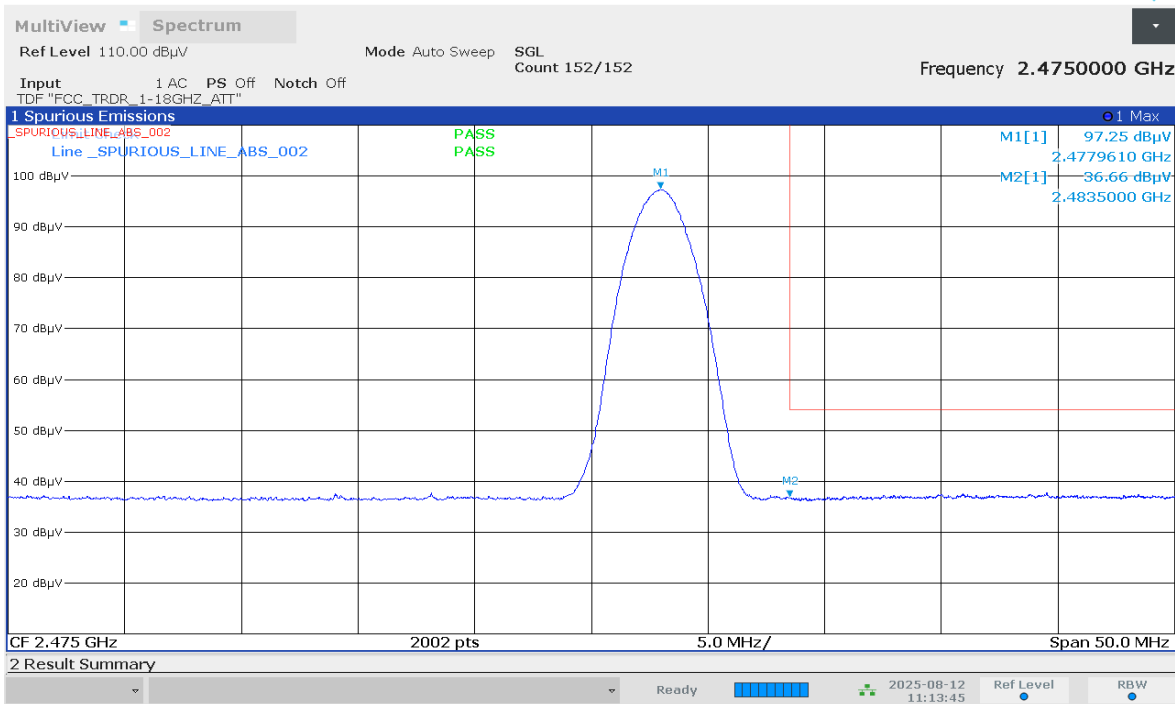
11:04:56 AM 08/12/2025

Restricted Band Edge (High Channel, Vertical, Average) graphical screen shot



11:10:07 AM 08/12/2025

Restricted Band Edge (High Channel, Horizontal, Average) graphical screen shot



11:13:45 AM 08/12/2025

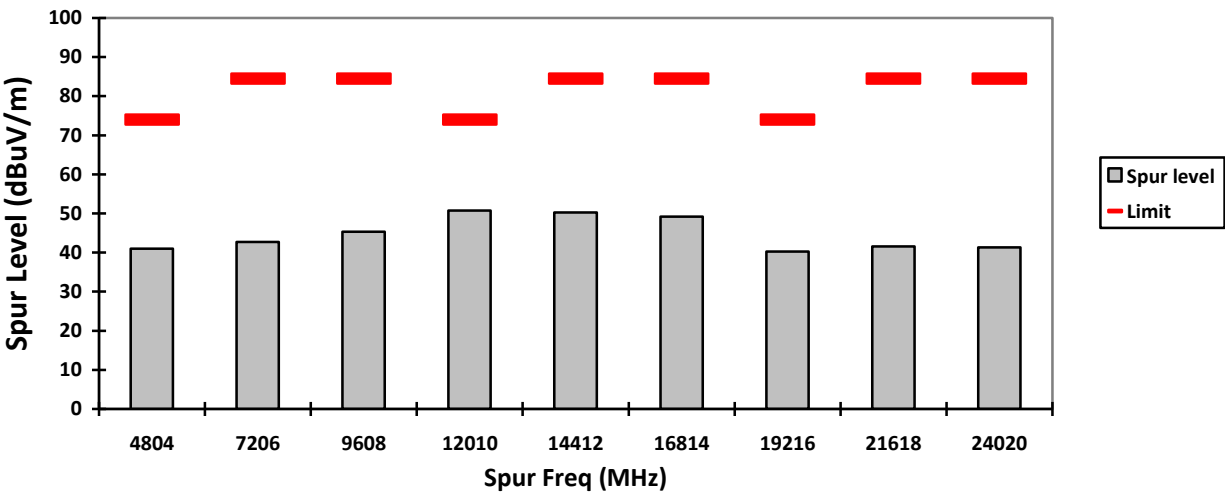
Radiated Emission (Low Channel) tabular data

Remarks: Pass Result	Marginal Result	Fail Result
-------------------------	-----------------	-------------

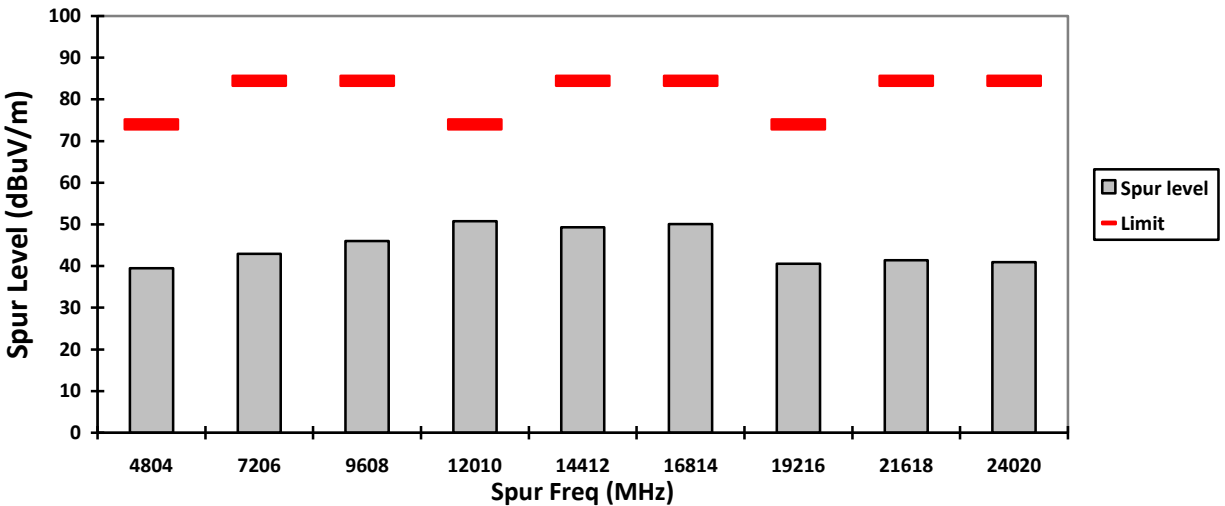
Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

- 1) If the peak values is less than the QP limit, the QP result deemed to comply with QP limit.
- 2) If the peak values is less than the AV limit, the average result deemed to comply with AV limit.

VERTICAL, PK



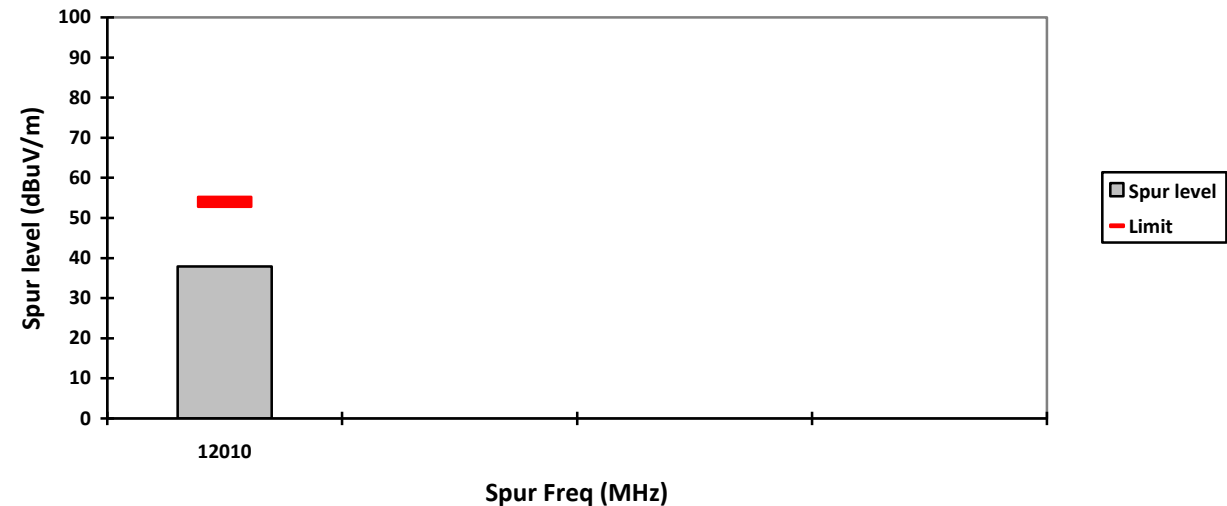
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: Bluetooth SAC Transmitter Radiated Emission	EMC SR ID: 0875N00-EMC-00075
Model Number: H55TGT9PW8BN	S/N: 437ZBG0592
Battery: PMNN4895A	
Accessory: AN000297A01	
Test Channel: Mid	Test Frequency: 2440.0000 MHz
Test Standard: ANSI C63.10-2013	Worst Case Plane: X-Plane (BTLE 1M)
Modulation: GFSK	

Vertical Radiated Emission Result

[illegible]

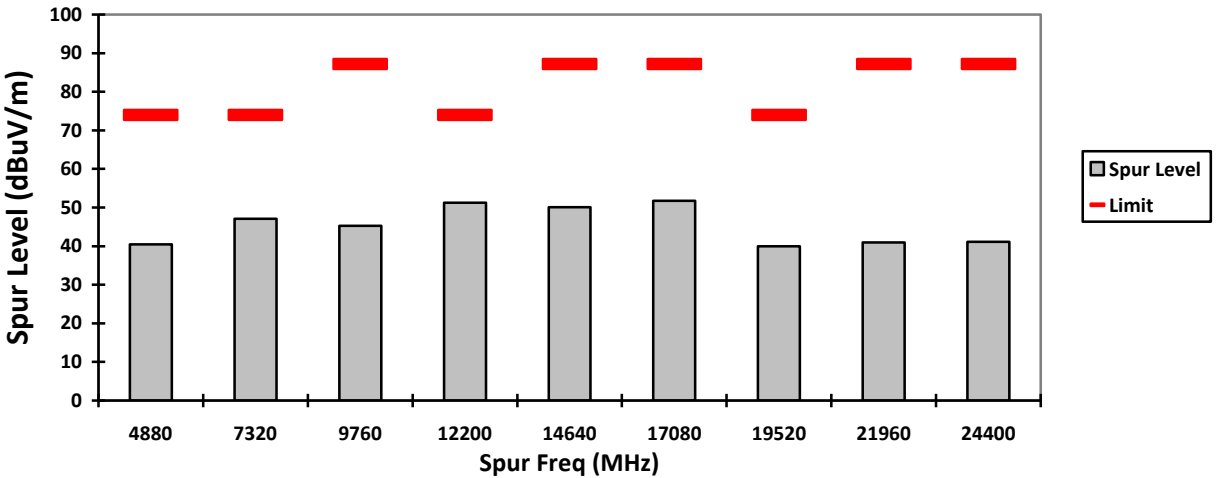
Remarks: Pass Result	Marginal Result	Fail Result
-------------------------	-----------------	-------------

Temperature (degC): 23.5 Humidity (%): 69.3
Test Performed by: Nazrin&Rezva Test Date: Tue, 12 Aug, 2025
System MU: 6.00 dB (30-1000MHz), 5.14 dB (1000-18000MHz), 5.36 dB (18000MHz-40000MHz)

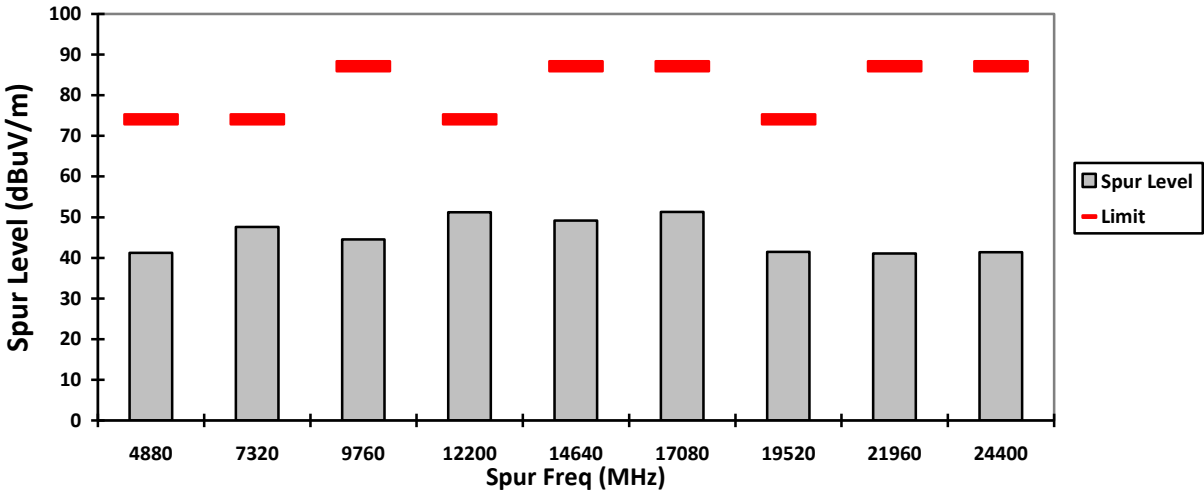
Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
*Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.

- 3) If the peak values is less than the QP limit, the QP result deemed to comply with QP limit.
- 4) If the peak values is less than the AV limit, the average result deemed to comply with AV limit.

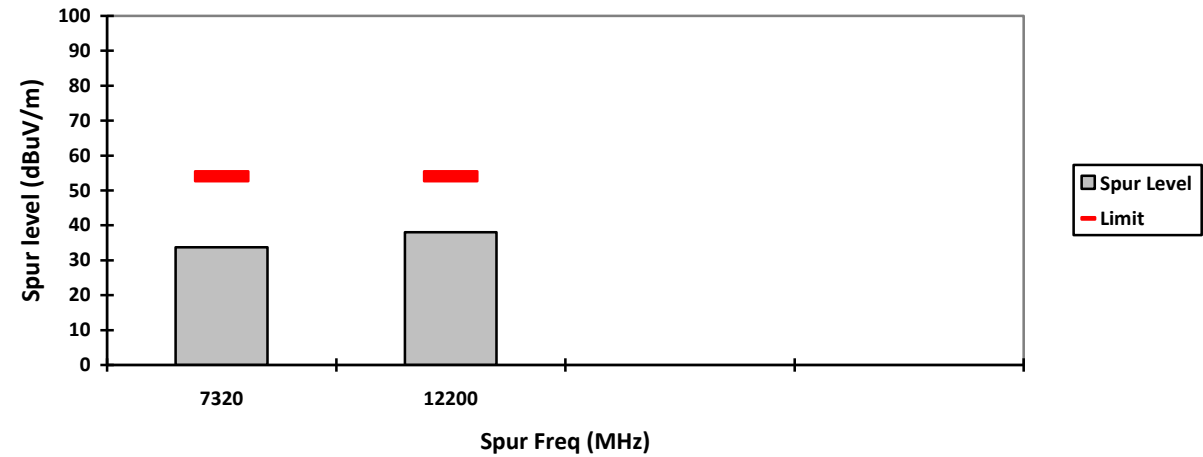
VERTICAL, PK



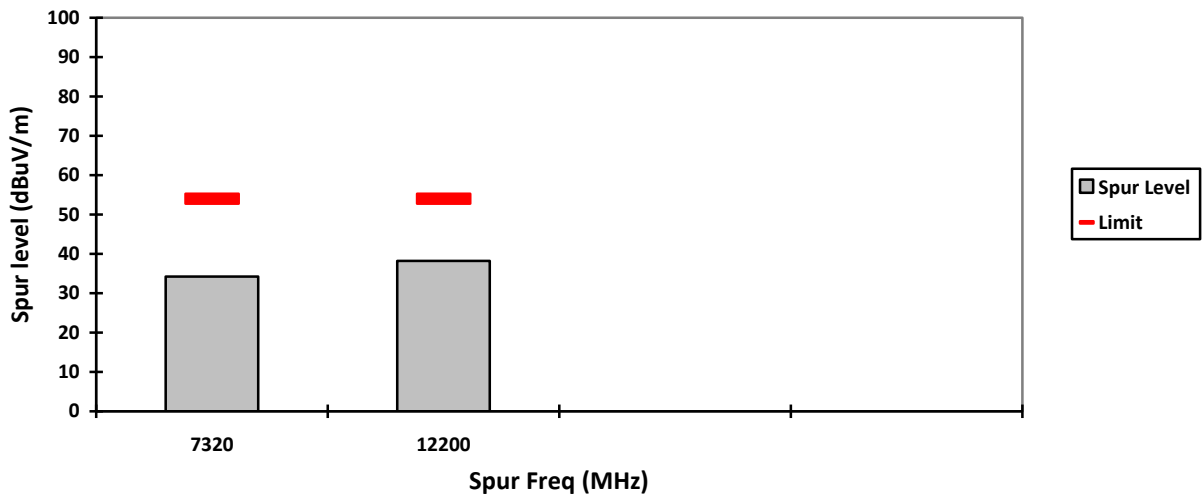
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: Bluetooth SAC Transmitter Radiated Emission	EMC SR ID: 0875N00-EMC-00075
Model Number: H55TGT9PW8BN	S/N: 437ZBG0592
Battery: PMNN4895A	
Accessory: AN000297A01	
Test Channel: High	Test Frequency: 2480.0000 MHz
Test Standard: ANSI C63.10-2013	Worst Case Plane: X-Plane (BTLE 1M)
Modulation: GFSK	

Radiated Emission (High Channel) tabular data

[illegible]

Remarks: Pass Result	Marginal Result	Fail Result
-------------------------	-----------------	-------------

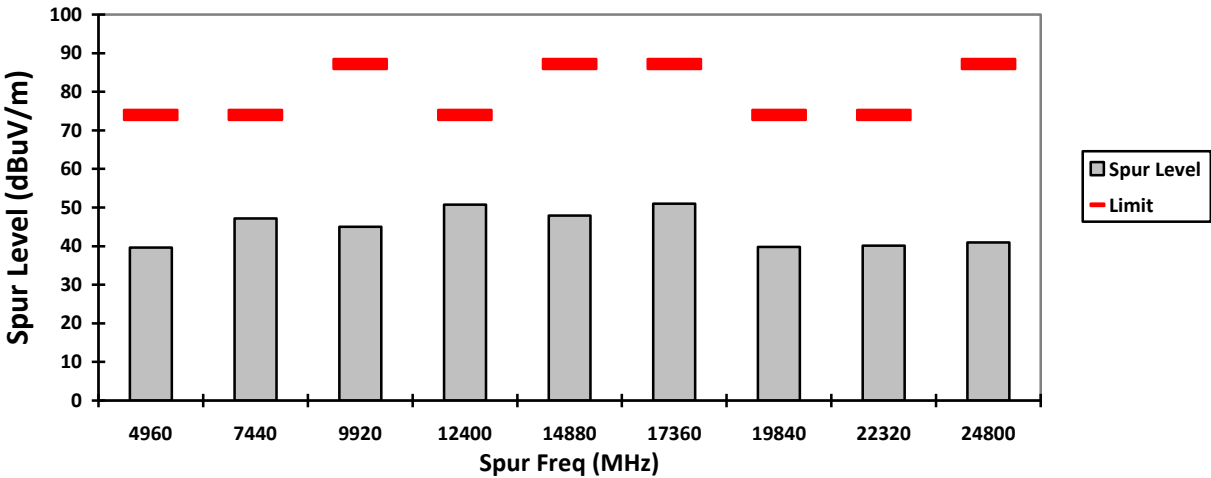
Temperature (degC): 23.5 Humidity (%): 69.3
 Test Performed by: Nazrin&Rezza Test Date: Tue, 12 Aug, 2025
 System MU: 6.00 dB (30-1000MHz), 5.14 dB (1000-18000MHz), 5.36 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

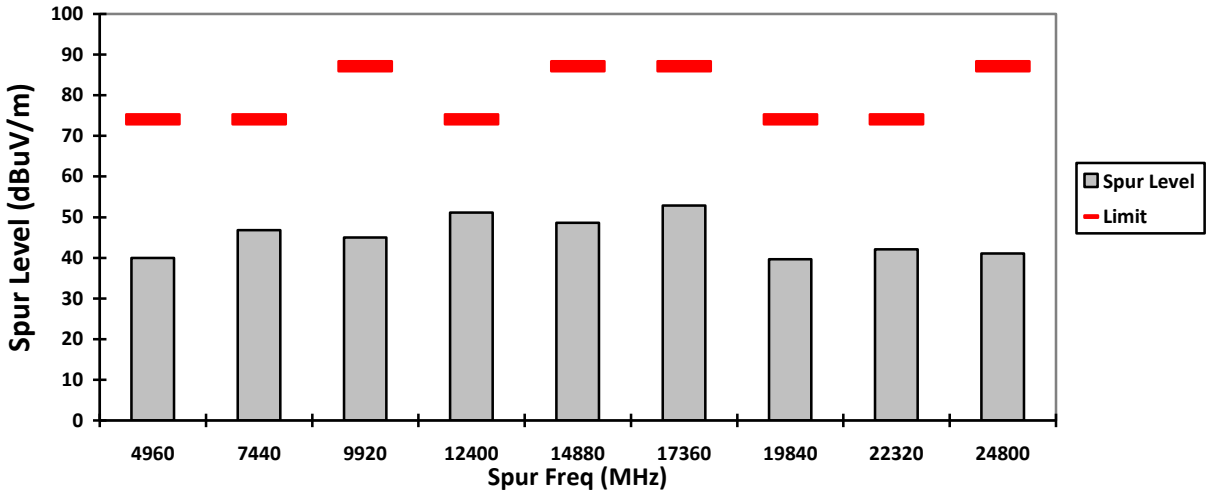
Note:

- 5) If the peak values is less than the QP limit, the QP result deemed to comply with QP limit.
- 6) If the peak values is less than the AV limit, the average result deemed to comply with AV limit.

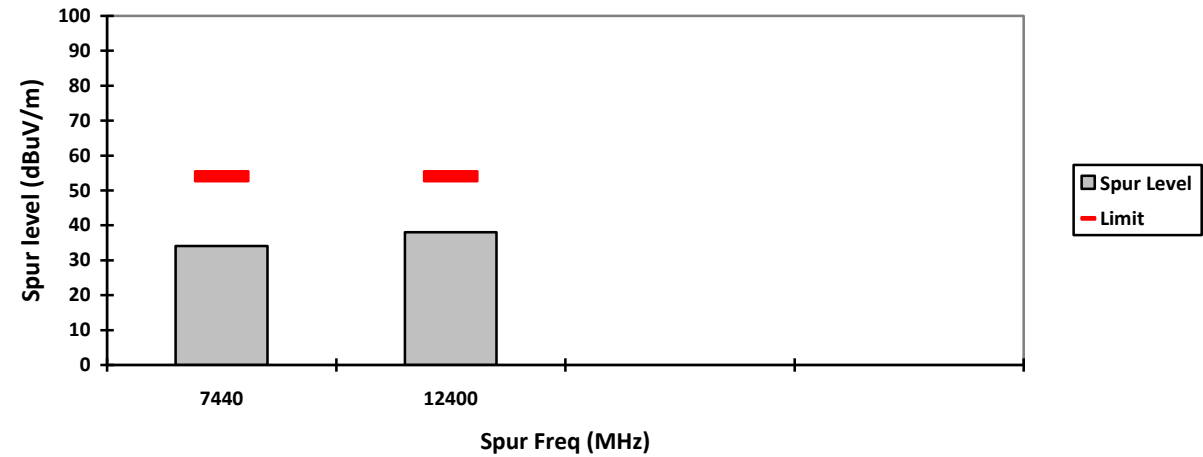
VERTICAL, PK



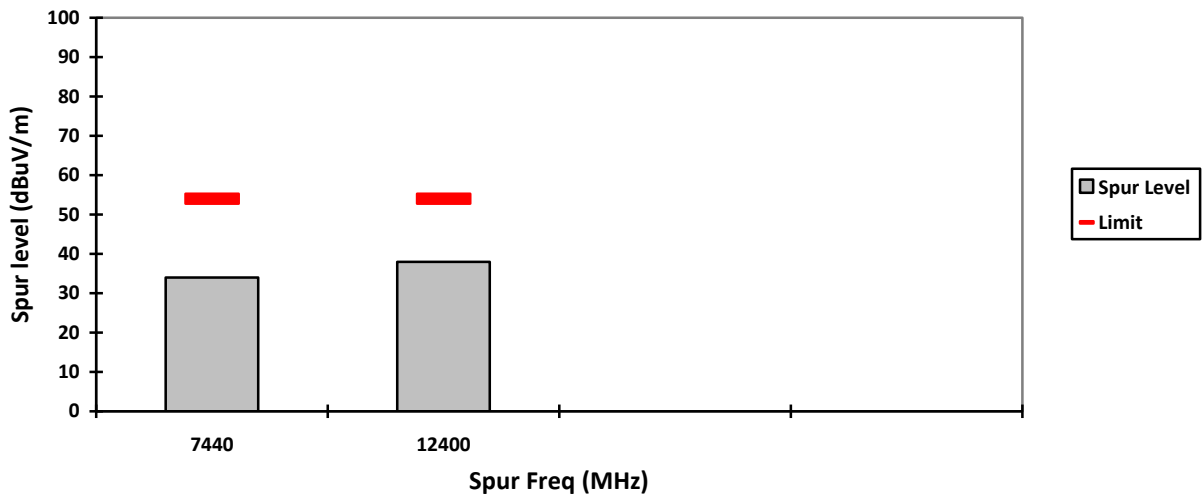
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: Bluetooth SAC Transmitter Radiated Emission	EMC SR ID: 0875N00-EMC-00075
Model Number: H55TGT9PW8BN	S/N: 437ZBG0592
Battery: PMNN4895A	
Accessory: AN000297A01	
Test Channel: Low	Test Frequency: 2404.0000 MHz
Test Standard: ANSI C63.10-2013	Worst Case Plane: X-Plane (BTLE 2M)
Modulation: GFSK	

Radiated Emission (Low Channel) tabular data

[illegible]

Remarks: Pass Result	Marginal Result	Fail Result
-------------------------	-----------------	-------------

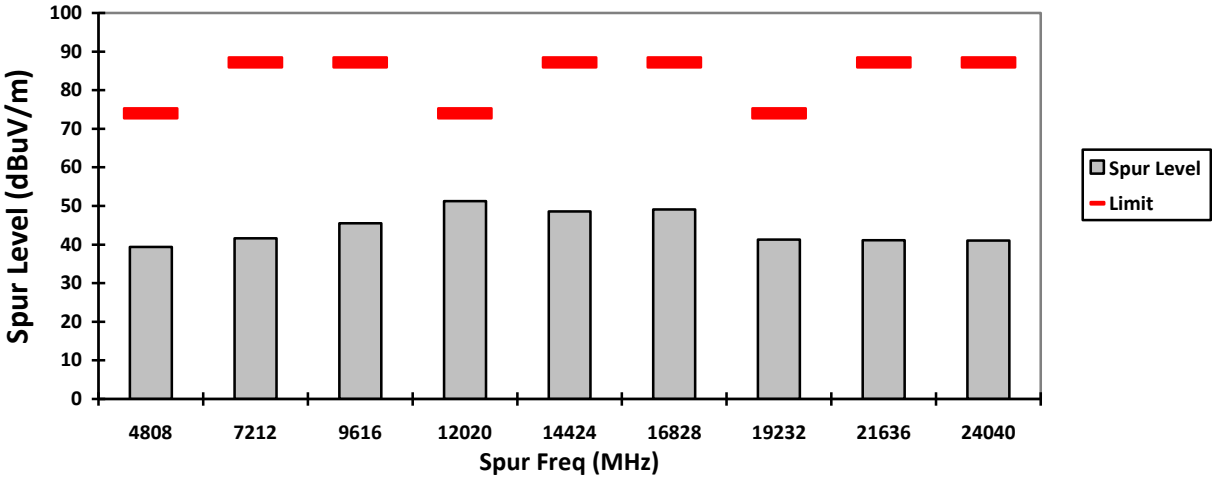
Temperature (degC): 23.5 Humidity (%): 69.3
Test Performed by: Nazrin&Rezza Test Date: Tue, 12 Aug, 2025
System MU: 6.00 dB (30-1000MHz), 5.14 dB (1000-18000MHz), 5.36 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

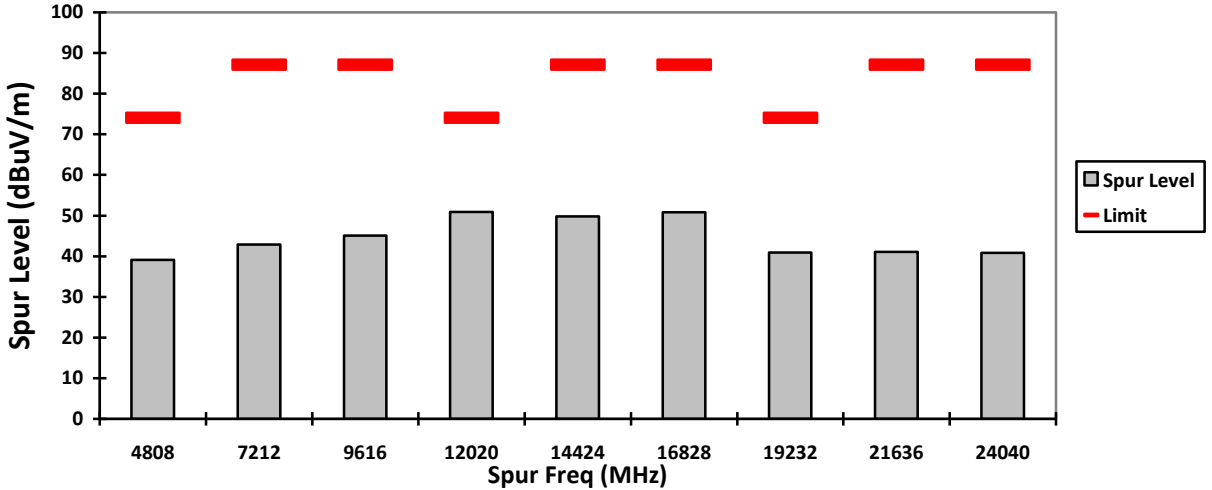
Note:

- 1) If the peak values is less than the QP limit, the QP result deemed to comply with QP limit.
- 2) If the peak values is less than the AV limit, the average result deemed to comply with AV limit.

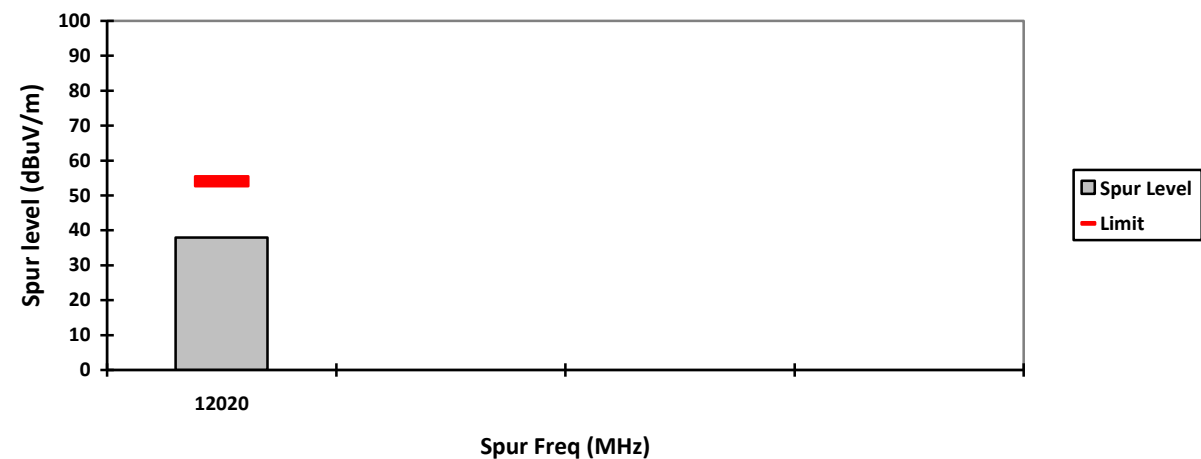
VERTICAL, PK



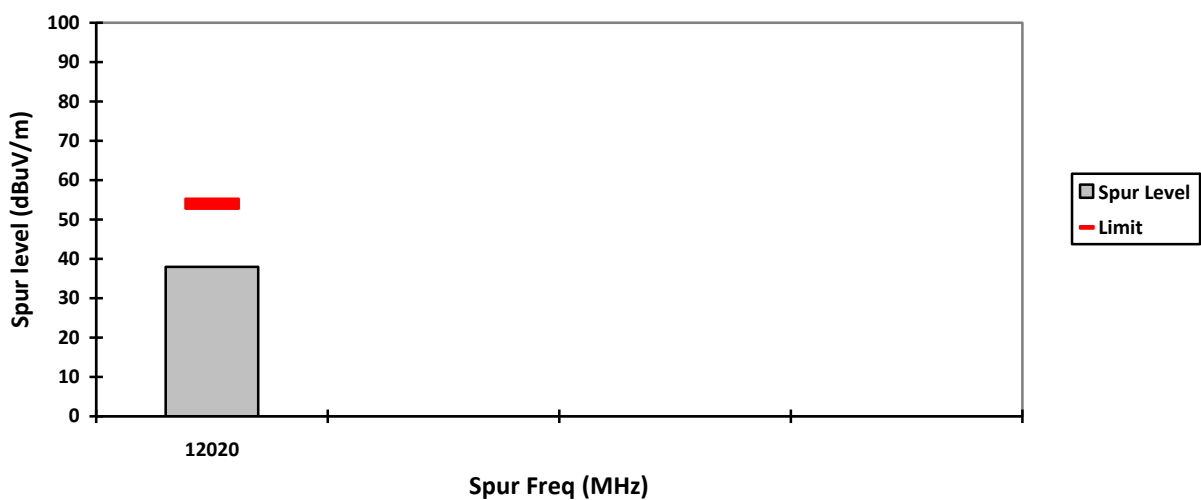
HORIZONTAL, PK



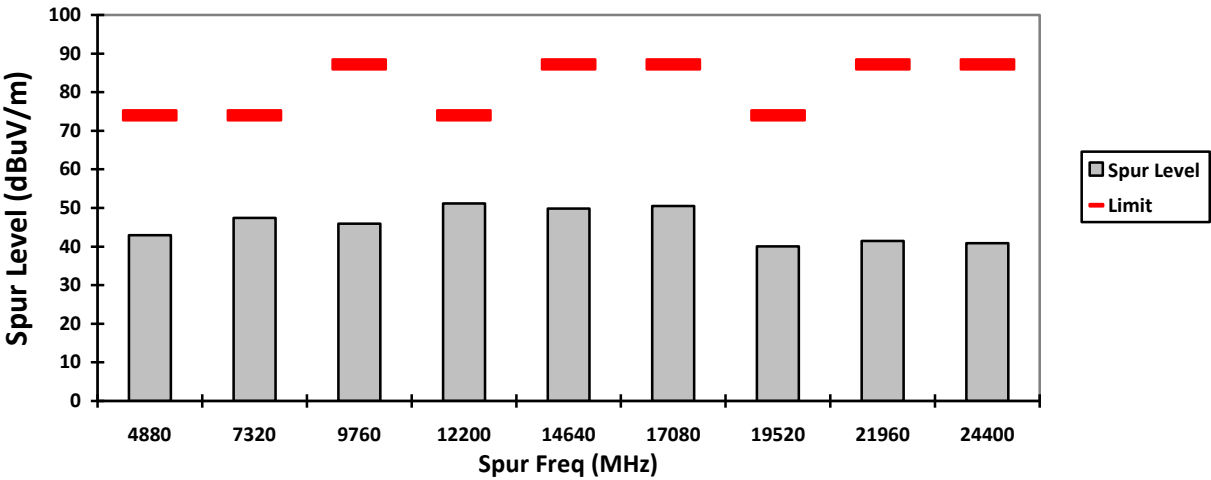
VERTICAL, AV



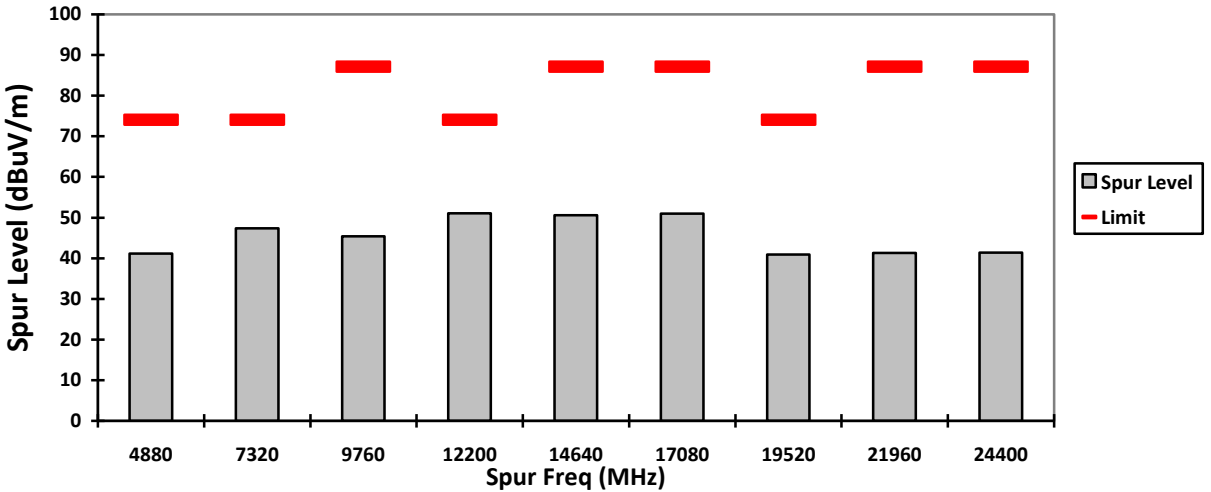
HORIZONTAL, AV



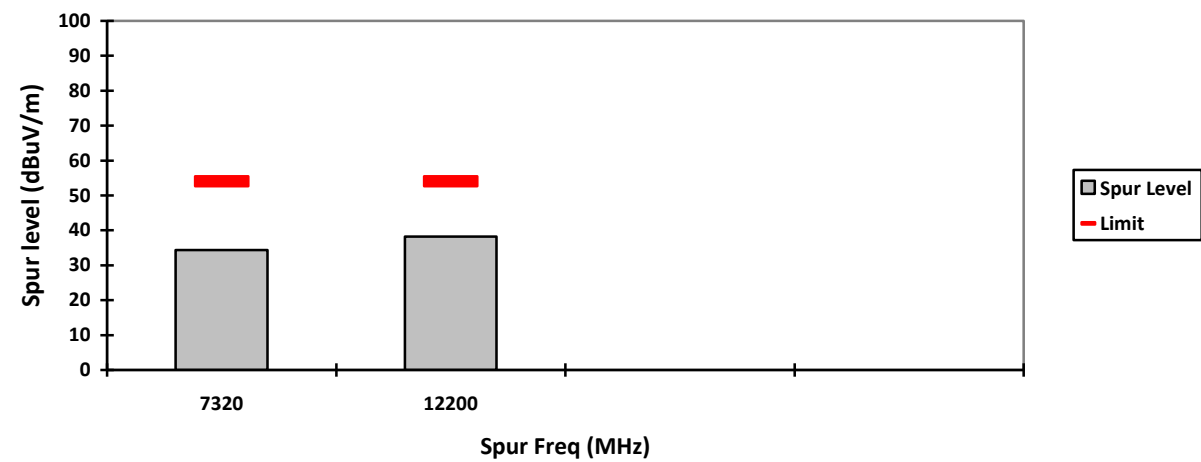
VERTICAL, PK



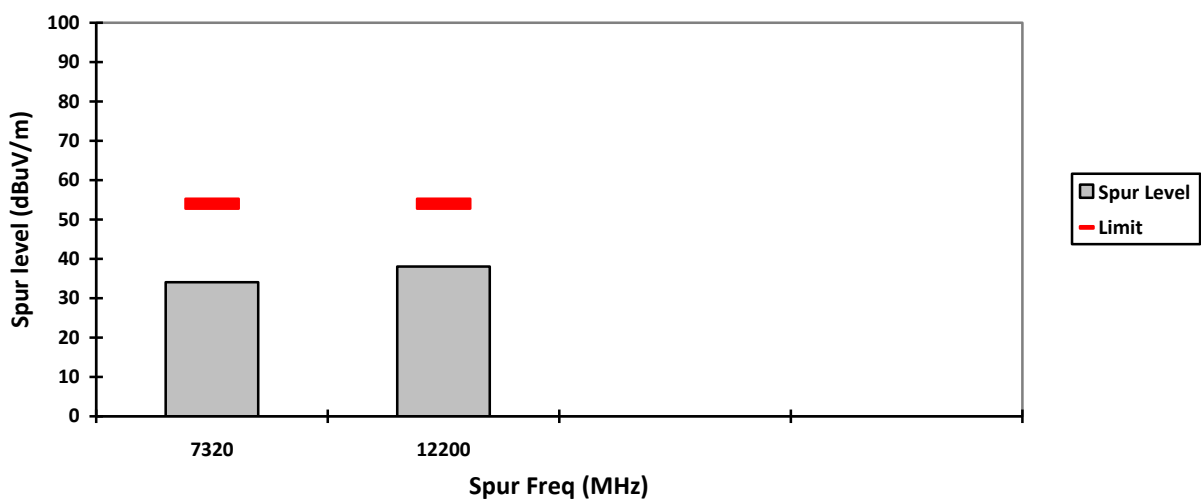
HORIZONTAL, PK

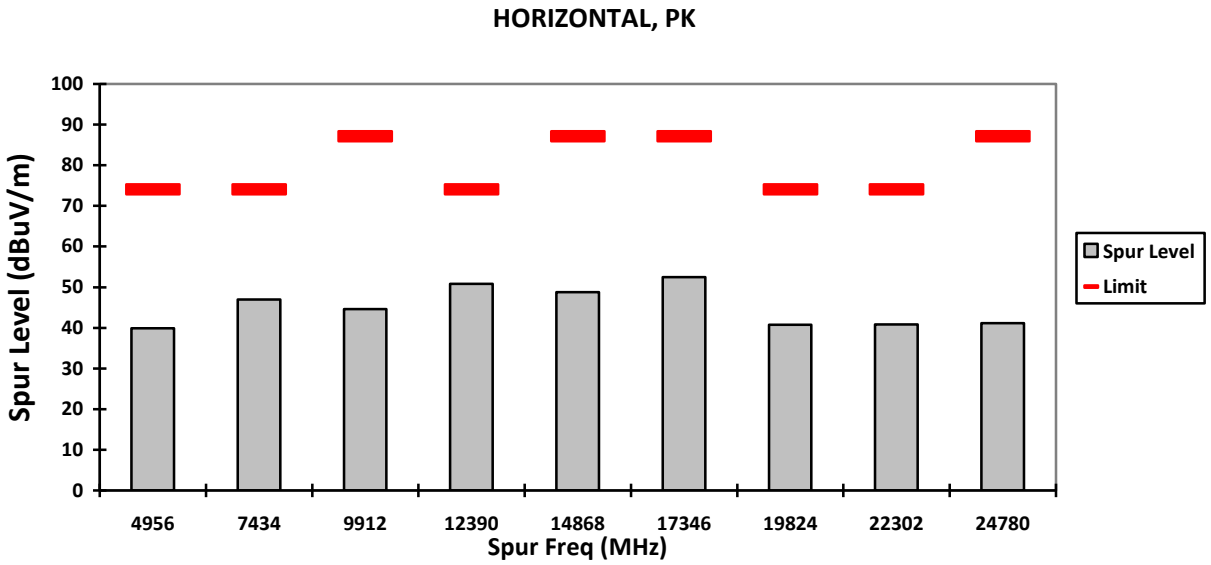
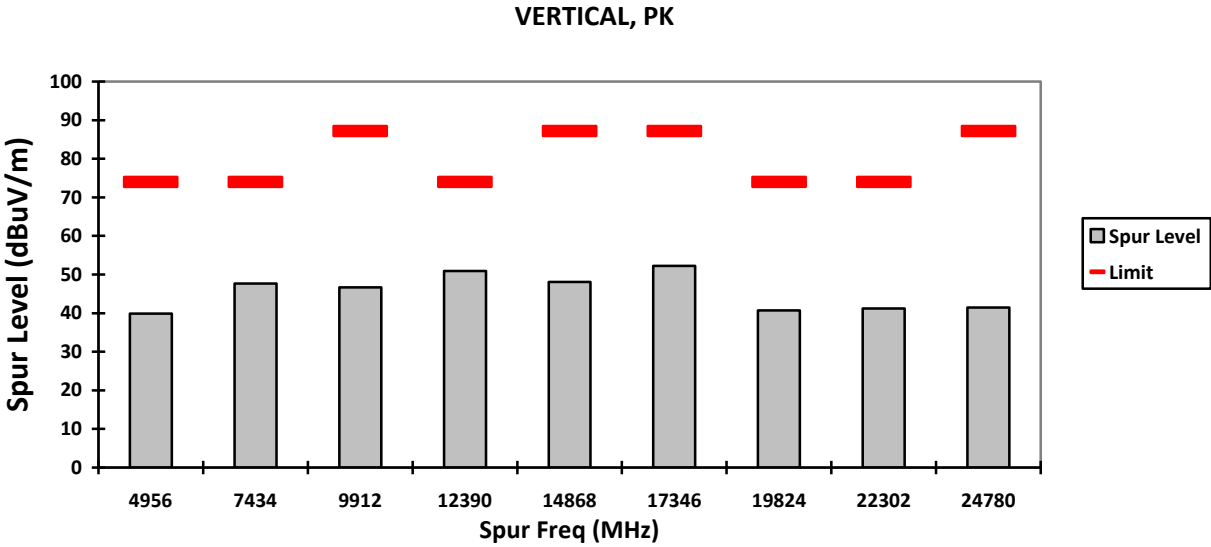


VERTICAL, AV

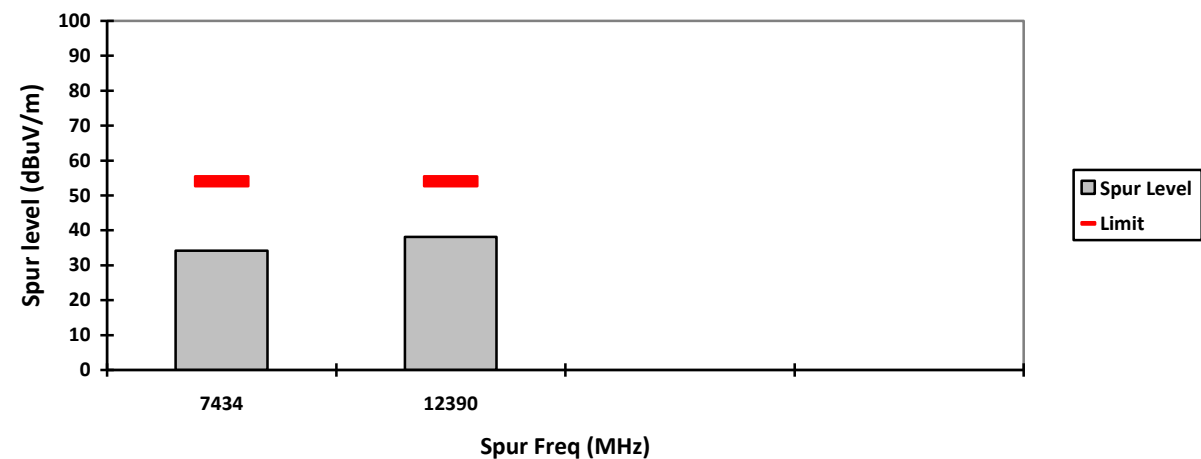


HORIZONTAL, AV

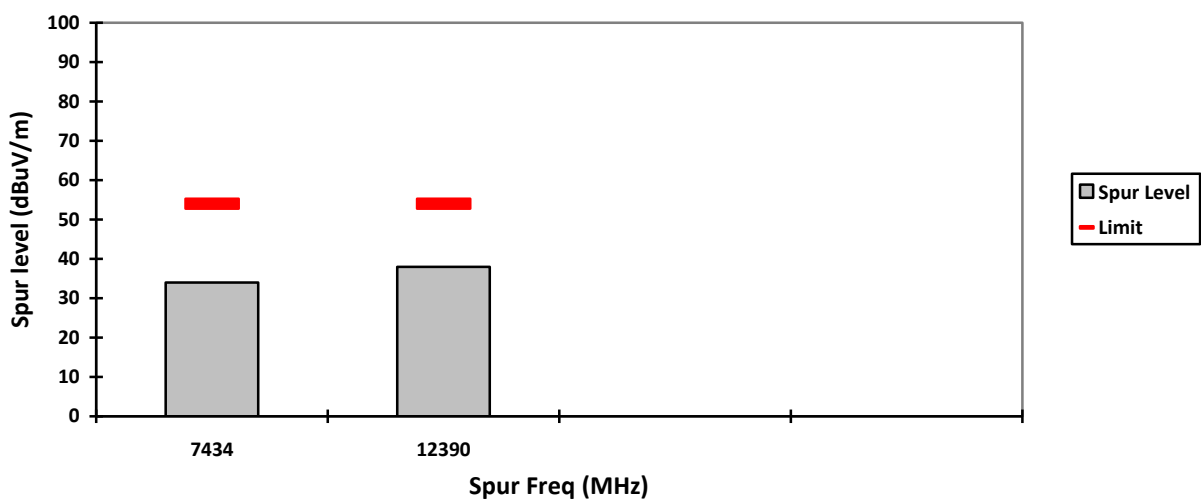




VERTICAL, AV



HORIZONTAL, AV



Test: Bluetooth SAC Transmitter Radiated Emission	EMC SR ID: 0875N00-EMC-00109
Model Number: H55TGT9PW8BN	S/N: 437ZBG0592, 437ZBG0594, 437ZBG0577
Battery: PMNN4895A	
Accessory: AN000297A01, NNTN9115A (PS000337A01-C3, 3087791G01)	
Test Channel: Low	Test Frequency: 2404.0000 MHz
Test Standard: ANSI C63.10-2013	Worst Case Plane: Y-Plane (BTLE 2M)
Modulation: GFSK	

Radiated Emission (Low Channel) tabular data

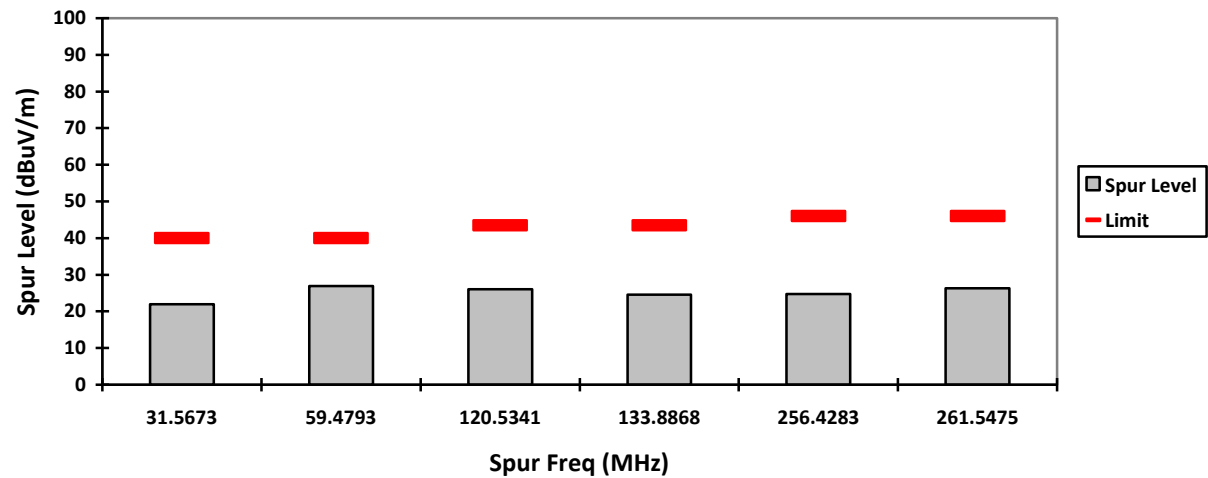
[illegible]

Remarks: Pass Result	Marginal Result	Fail Result
-------------------------	-----------------	-------------

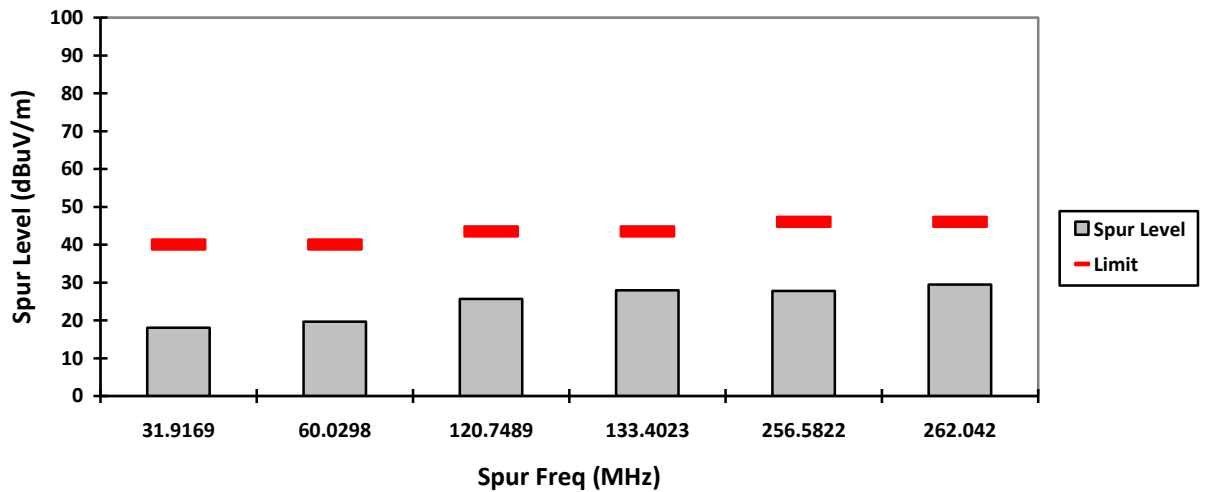
Temperature (degC): 23.1 Humidity (%): 68.4
Test Performed by: Nazrin & Fuad Test Date: Sun, 13 Jul, 2025
System MU: 6.00 dB (30-1000MHz), 5.14 dB (1000-18000MHz), 5.36 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

VERTICAL, QPK

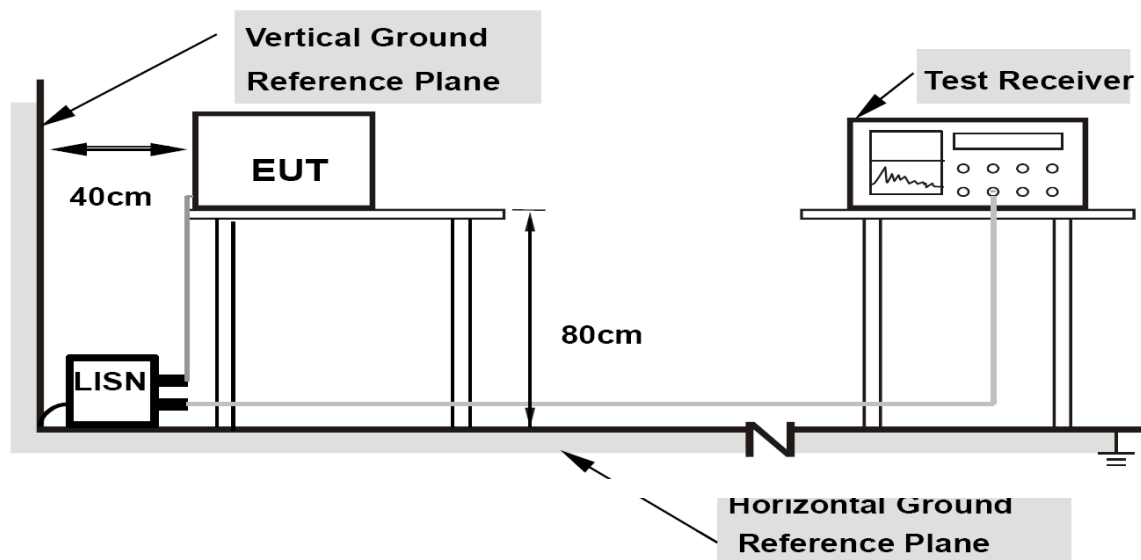


HORIZONTAL, QPK



6.7AC Powerline Conducted Emission

6.7.1 Test Setup



- 1) Tests were conducted for both Receive and Transmit Mode of the EUT.
- 2) The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/50uH of coupling impedance for the measuring instrument.
- 3) Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- 4) The frequency range from 150 kHz to 30MHz was measured.

6.7.2 Test Limits:

For AC Power Line Conducted Test Limit can be Class A or B depends on product classification.

Limits for conducted disturbance at the mains ports
of class A ITE

Frequency range MHz	Limits dB(μV)	
	Quasi-peak	Average
0,15 to 0,50	79	66
0,50 to 30	73	60
NOTE The lower limit shall apply at the transition frequency.		

Table 1: Limits for Conducted Disturbance at the Mains Ports of Class A ITE.

**Limits for conducted disturbance at the mains ports
of class B ITE**

Frequency range MHz	Limits dB(μ V)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56	56 to 46
0,50 to 5	56	46
5 to 30	60	50
NOTE 1 The lower limit shall apply at the transition frequencies.		
NOTE 2 The limit decreases linearly with the logarithm of the frequency in the range 0,15 MHz to 0,50 MHz.		

Table 2: Limits for Conducted Disturbance at the Mains Ports of Class B ITE

6.7.3 Test Result

NA

END OF TEST REPORT