RF TEST REPORT

FCC ID: 2A4ND-KY-2027

Product Name: Soundbar Speaker

Brand Name: N/A

Model Name: KY-2027

Report No.: N26060408812E

Prepared for

JiangXi MeiDong Technology Co., Ltd.

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Prepared by

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Table of Contents

1. REVISION HISTORY 4
2. TETS SUMMARY 5
3. TEST RESULT CERTIFICATION 7
4. FACILITIES AND ACCREDITATIONS 8
4.1 FACILITIES 8
4.2 LABORATORY ACCREDITATIONS AND LISTINGS 8
4.3 MEASUREMENT UNCERTAINTY 8
5. GENERAL DESCRIPTION OF EUT 9
5.1 DETAILS OF E.U.T. 9
5.2 EUT FEATURE AND SPECIFICATION 9
5.3 DEVIATION FROM STANDARDS 9
5.4 ABNORMALITIES FROM STANDARD CONDITION 9
6. DESCRIPTION OF TEST MODES AND OPERATION CONFIGURATION OF EUT 10
6.1 DESCRIPTION OF TEST MODES 10
6.2 OPERATION CONFIGURATION OF EUT 10
7. SETUP OF EQUIPMENT UNDER TEST 11
7.1 Block Diagram Configuration Of Test System 11
7.2 SUPPORT EQUIPMENT 12
8. EQUIPMENT LIST 13
9. EVALUATION RESULTS (EVALUATION) 15
9.1 ANTENNA REQUIREMENT 15
9.2 CONCLUSION: 15
10. RADIO SPECTRUM MATTER TEST RESULTS (RF) 16
10.1 CONDUCTED EMISSION AT AC POWER LINE 16
10.1.1 TEST SETUP DIAGRAM: 17
10.1.2 E.U.T. OPERATION: 17
10.1.3 TEST DATA: 18
10.2 20DB BANDWIDTH 20
10.2.1 TEST SETUP DIAGRAM: 20
10.2.2 TEST DATA: 20
10.3 MAXIMUM CONDUCTED OUTPUT POWER 21
10.3.1 TEST SETUP DIAGRAM: 21
10.3.2 TEST DATA: 21
10.4 CHANNEL SEPARATION 22
10.4.1 TEST SETUP DIAGRAM: 22
10.4.2 TEST DATA: 22
10.5 NUMBER OF HOPPING FREQUENCIES 23
10.5.1 TEST SETUP DIAGRAM: 23
10.5.2 TEST DATA: 23
10.6 DWELL TIME 24
10.6.1 TEST SETUP DIAGRAM: 24
10.6.2 TEST DATA: 24
10.7 EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS 25
10.7.1 TEST SETUP DIAGRAM: 26
10.7.2 TEST DATA: 26
10.8 BAND EDGE EMISSIONS (RADIATED) 27
10.8.1 E.U.T. OPERATION: 28
10.8.2 TEST DATA: 29
10.9 EMISSIONS IN FREQUENCY BANDS (BELOW 30MHZ) 41
10.9.1 TEST SETUP DIAGRAM: 42
10.9.2 E.U.T. OPERATION: 42
10.9.3 TEST DATA: 42
10.10 EMISSIONS IN FREQUENCY BANDS (30M - 1GHZ) 43
10.10.1 TEST SETUP DIAGRAM: 44
10.10.2 E.U.T. OPERATION: 44

10.10.3 TEST DATA: 45
10.11 EMISSIONS IN FREQUENCY BANDS (ABOVE 1GHZ) 47
10.11.1 TEST SETUP DIAGRAM: 49
10.11.2 E.U.T. OPERATION: 49
10.11.3 TEST DATA: 50
10.12 EMISSIONS IN FREQUENCY BANDS (ABOVE 18GHZ) 68
10.12.1 TEST SETUP DIAGRAM: 69
10.12.2 E.U.T. OPERATION: 69
A1. DWELL TIME 73
A2. MAXIMUM CONDUCTED OUTPUT POWER 83
A3.-20DB BANDWIDTH 89
A4. CARRIER FREQUENCIES SEPARATION 95
A5. NUMBER OF HOPPING CHANNEL 101
A6. BAND EDGE 103
A7. BAND EDGE(HOPPING) 110
A8. CONDUCTED RF SPURIOUS EMISSION 117

1. Revision History

Revision History			
Report No.	Version	Description	Issued Date
N26060408812E	Rev.01	Initial issue of report	Jul. 15, 2026

2. Tets Summary

FCC Rule	Test Item	Method	Tested By	Result
47 CFR Part 15.203/15.247 (b)(4)	Antenna requirement	---	Abel Chen	Pass
47 CFR 15.207	Conducted Emission at AC power line	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 6.2	---	N/A
47 CFR 15.247(a)(1)	20dB Bandwidth	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 6.9.2 KDB 558074 D01 15.247 Meas Guidance v05r02	Leo wang	Pass
47 CFR 15.247(b)(1)	Maximum Conducted Output Power	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 7.8.5 KDB 558074 D01 15.247 Meas Guidance v05r02	Leo wang	Pass
47 CFR 15.247(a)(1)	Channel Separation	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 7.8.2 KDB 558074 D01 15.247 Meas Guidance v05r02	Leo wang	Pass
47 CFR 15.247(a)(1)(iii)	Number of Hopping Frequencies	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 7.8.3 KDB 558074 D01 15.247 Meas Guidance v05r02	Leo wang	Pass
47 CFR 15.247(a)(1)(iii)	Dwell Time	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 7.8.4 KDB 558074 D01 15.247 Meas Guidance v05r02	Leo wang	Pass
47 CFR 15.247(d)	Emissions in non-restricted frequency bands	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 7.8.7&6.10.4 KDB 558074 D01 15.247 Meas Guidance v05r02	Leo wang	Pass
47 CFR 15.247(d), 15.209, 15.205	Band edge emissions (Radiated)	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 6.10.5 KDB 558074 D01 15.247 Meas Guidance v05r02	Harry Huang	Pass
47 CFR 15.247(d), 15.209, 15.205	Emissions in frequency bands (below 30MHz)	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 6.4 KDB 558074 D01 15.247 Meas Guidance v05r02	Pass Qiu	Pass
47 CFR 15.247(d), 15.209, 15.205	Emissions in frequency bands (30M - 1GHz)	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 6.5 KDB 558074 D01 15.247 Meas Guidance v05r02	Pass Qiu	Pass

47 CFR 15.247(d), 15.209, 15.205	Emissions in frequency bands (1G - 18GHz)	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 6.6 KDB 558074 D01 15.247 Meas Guidance v05r02	Harry Huang	Pass
47 CFR 15.247(d), 15.209, 15.205	Emissions in frequency bands (above 18GHz)	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 6.6 KDB 558074 D01 15.247 Meas Guidance v05r02	Harry Huang	Pass

Remark:
1. "N/A" denotes test is not applicable in this Test Report.
2. All test items were verified and recorded according to the standards and without any deviation during the test.
3. The antenna gain provided by customer. NTEK is not responsible for the accuracy of antenna gain parameter.

3. Test Result Certification

CLIENT INFORMATION	
Applicant:	JiangXi MeiDong Technology Co., Ltd.
Address of Applicant:	No.1, Food Avenue,Jingshan Comprehensive District, Shanggao Prefecture Industrial Park Yichun, Jiangxi, China
Manufacturer:	JiangXi MeiDong Technology Co., Ltd.
Address of Manufacturer:	No.1, Food Avenue,Jingshan Comprehensive District, Shanggao Prefecture Industrial Park Yichun, Jiangxi, China
EUT INFORMATION	
Product Name:	Soundbar Speaker
Brand Name:	N/A
Model Name:	KY-2027
Sample Received Date:	Jun. 12, 2026
Sample Number:	S2606050110-1#
Applicable Standards	47 CFR Part 15.247
Measurement Procedures	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 KDB 558074 D01 15.247 Meas Guidance v05r02
This device described above has been tested by Shenzhen NTEK Testing Technology Co., Ltd., and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report. This report shall not be reproduced except in full, without the written approval of Shenzhen NTEK Testing Technology Co., Ltd., this document may be altered or revised by Shenzhen NTEK Testing Technology Co., Ltd., personnel only, and shall be noted in the revision of the document. The test results of this report relate only to the tested sample identified in this report.	
Date of Test:	Jun. 12, 2026 to Jul. 15, 2026
Issue Date:	Jul. 15, 2026

Prepared By:	Reviewed by:	Approved By:
Mary Hu (Project Engineer)	Aaron Cheng (Supervisor)	Alex Li (Manager)

4. Facilities and Accreditations

4.1 Facilities

All measurement facilities used to collect the measurement data are located at
No. 24 Xinfa East Road, Xiangshan Community, Xinqiao Street, Baoan District, Shenzhen, Guangdong, People's Republic of China.
The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 and CISPR Publication 16-1-4.

4.2 Laboratory Accreditations And Listings

Site Description

CNAS-Lab.	:	Registration Code L5516
A2LA-Lab.	:	Certificate Number 4298.01
FCC-Accredited	:	Test Firms Registration Number: 463705 Designation Number: CN1184
ISED Wireless Device Testing Laboratories	:	The ISED Company Number is 9270A CAB identifier:CN0074

4.3 Measurement Uncertainty

The reported uncertainty of measurement y±U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.	
Item	Uncertainty
Conductions emission-power port(0.15MHz ~ 30MHz)	3.30dB
FCC_Occupied bandwidth(2G/3G/4G/5G)	0.01
RF Power, conducted	1.34dB
Spurious emissions, conducted	2.71dB
Radiated Spurious Emissions(1GHz ~ 18GHz)	4.9dB
Radiated Spurious Emissions(9kHz ~ 30MHz)	5.26dB
Radiated Spurious Emissions(30MHz ~ 1GHz)	5.1dB
Radiated Spurious Emissions(18GHz ~ 40GHz)	5.76dB

5. General Description of EUT

5.1 Details of E.U.T.

Product Name	Soundbar Speaker
Brand Name	N/A
Model Name	KY-2027
Family Model	KY-2027M，KY-2027C，KY-2027D, KY-2023, KY-2023D, KY-2023M
Model Difference	All of the models are identical, the only difference is the soundbar grille, where cloth and iron.

5.2 EUT Feature And Specification

Operation Frequency	2402MHz to 2480MHz
Modulation	GFSK, π/4 DQPSK, 8DPSK
Number of Channels	79
Antenna Type	On-board Antenna
Antenna Gain	1.9 dBi
Rating	DC 24V, 2A Adapter: Model: GA240020U INPUT:100-240V~, 50/60Hz 1.8A OUTPUT: 24.0V⎓2.0A 48W
Power Supply	DC24V, 2A
Hardware Version	N/A
Software Version	N/A

Frequency and Channel list:

Channel	Frequency(MHz)	Channel	Frequency(MHz)
0	2402	39	2441
1	2403	40	2442
...	...	...	...
37	2439	77	2479
38	2440	78	2480

Fk=2.402+k×1 MHz （k=0,1,⋯,78）

Note: Laboratory evaluation test cloth soundbar grille and iron soundbar grille, cloth soundbar grille is the worst case

5.3 Deviation from Standards

None

5.4 Abnormalities from Standard Condition

None

6. Description of Test Modes and Operation Configuration of EUT

6.1 Description of Test Modes

a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases were recorded in this report.
b. AC power line Conducted Emission was tested under maximum output power.
c. The measurements are performed at the highest, middle, lowest available channels.
d. The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

The following summary table is showing all test modes to demonstrate in compliance with the standard

No	Title	Description
TM1	TX-GFSK (Non-Hopping)	Keep the EUT in continuously transmitting mode (non-hopping) with GFSK modulation at lowest, middle and highest channel.
TM2	TX-Pi/4DQPSK (Non-Hopping)	Keep the EUT in continuously transmitting mode (non-hopping) with Pi/4DQPSK modulation at lowest, middle and highest channel.
TM3	TX-8DPSK (Non-Hopping)	Keep the EUT in continuously transmitting mode (non-hopping) with 8DPSK modulation at lowest, middle and highest channel.
TM4	TX-GFSK (Hopping)	Keep the EUT in continuously transmitting mode (hopping) with GFSK modulation,.
TM5	TX-Pi/4DQPSK (Hopping)	Keep the EUT in continuously transmitting mode (hopping) with Pi/4DQPSK modulation.
TM6	TX-8DPSK (Hopping)	Keep the EUT in continuously transmitting mode (hopping) with 8DPSK modulation.

Note: Model KY-2027 selected as representative model for the test and its data was recorded in this report.

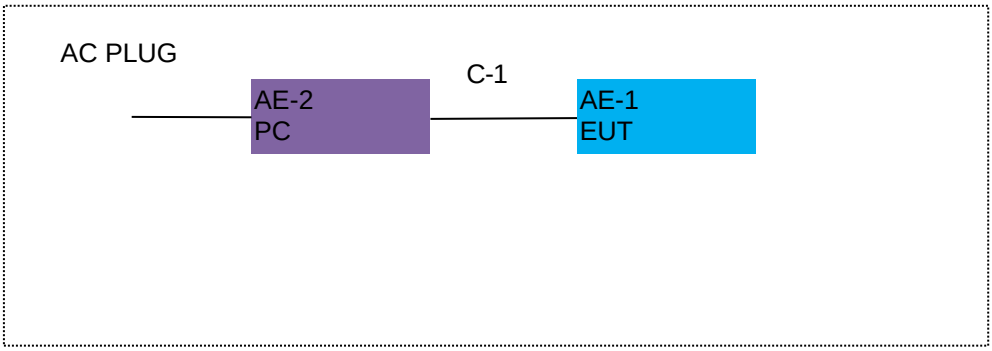
6.2 Operation Configuration of EUT

Test Software	MV_AP82xx_BP10xx_PC_Tools_V2.2.15(2021.11.12)		
RF Power Setting as following:			
Mode	Channel	Frequency(MHz)	Power Setting Value
GFSK	0	2402	4
GFSK	39	2441	4
GFSK	79	2480	4
GFSK_hopping	N/A	N/A	4
π /4 DQPSK	0	2402	4
π /4 DQPSK	39	2441	4
π /4 DQPSK	78	2480	4
π /4 DQPSK_hopping	N/A	N/A	4
8DPSK	0	2402	4
8DPSK	39	2441	4
8DPSK	78	2480	4
8DPSK_hopping	N/A	N/A	4

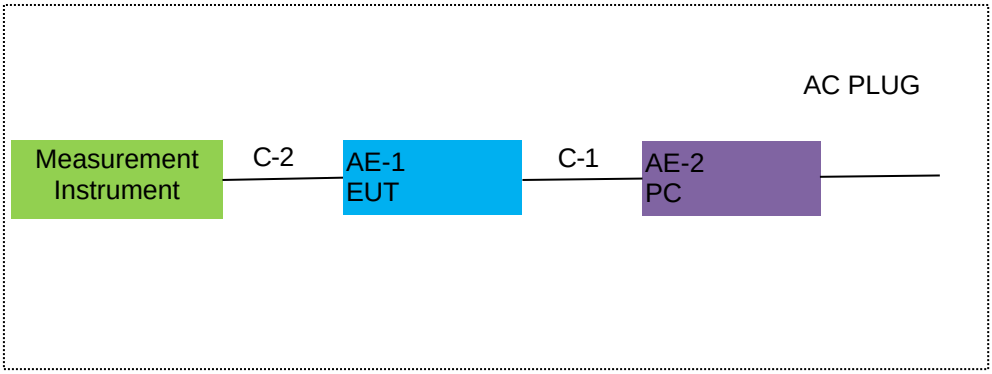
7. Setup Of Equipment Under Test

7.1 Block Diagram Configuration Of Test System

For Radiated Test Cases



For Conducted Test Cases



Note: 1. The temporary antenna connector is soldered on the PCB board in order to perform conducted tests.

7.2 Support Equipment

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Title	Manufacturer	Model No.	Serial No.
/	/	/	/

Item	Equipment	Model/Type No.	Series No.	Note
AE-1	mobile phone	xiaomi13	N/A	Peripherals

Item	Cable Type	Shielded Type	Ferrite Core	Length
C-1	DC cable	NO	NO	1.5m
C-2	RF cable	YES	NO	0.1m

Note:
Notes:
(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.
(3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

8. Equipment List

Conducted measurements at antenna port					
Equipment	Manufacturer	Model No	Serial No.	Cal Date	Cal Due Date
Power meter	MWRFtest	MW100-PSB	N/A	2025-09-16	2026-09-15
Power meter	MWRFtest	MW100-PSB	N/A	2025-09-16	2026-09-15
Power meter	MWRFtest	MW100-PSB	N/A	2025-09-16	2026-09-15
Power meter	MWRFtest	MW100-PSB	N/A	2025-09-16	2026-09-15
Spread spectrum device	MWRFtest	MW100-7UD	N/A	2025-09-16	2026-09-15
Spectrum Analyzer	R&S	FSV40	101417	2026-04-08	2027-04-07
MXG Vector Signal Generator	Agilent	N5182A	MY47070317	2026-04-08	2027-04-07
Shielding Room	Taihe Mao Rui Electronic	743	N/A	2025-01-03	2028-01-02
USB RF Power Sensor	DARE	RPR3006W	15I00041SNO84	2026-04-08	2027-04-07

Radiated spurious emissions					
Equipment	Manufacturer	Model No	Serial No.	Cal Date	Cal Due Date
Low Noise Amplifier	EMC Solutions	TRLA-180400G50	25102901	2026-04-08	2027-04-07
Wideband Radio Communication Tester	R&S	CMW500	153336	2026-04-08	2027-04-07
Spectrum Analyzer	Keysight	N9020B	MY60112710	2025-12-25	2026-12-24
Semi Anechoic Chamber	N/A	966	N/A	2024-05-20	2027-05-19
Spectrum Analyzer	Keysight	N9020A	MY53280244	2026-04-15	2027-04-14
Broadband Horn Antenna	SCHWARZBECK	BBHA 9120 D	2816	2024-05-18	2027-05-17
AMPLIFIER	Sonoma	310N	186604	2026-04-08	2027-04-07
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	803	2024-05-12	2027-05-11
Active Loop Antenna	SCHWARZBECK	FMZB 1519 B	055	2024-05-17	2027-05-16
Spectrum Analyzer	R&S	FSV40	101417	2026-04-08	2027-04-07
Low Noise Amplifier	B&Z	BZ-P540-550850-452727	16476-11729	2026-04-16	2027-04-15
Pre-Amplifier	EMC	EMC051835SE	980246	2026-04-08	2027-04-07
Broadband Horn Antenna	EM	EM-AH-10180	2011071402	2024-05-12	2027-05-11

Measurement Software

Manufacturer	Software Name	Software Version	Description
MWRFtest	MTS 8310 2.4GHz/5GHz	2.0	RF Conducted Test
Farad	EZ-EMC_RE	AIT-03A	Radiated Test

9. Evaluation Results (Evaluation)

9.1 Antenna requirement

Test Requirement:	Refer to 47 CFR Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.
Test Method:	---

9.2 Conclusion:

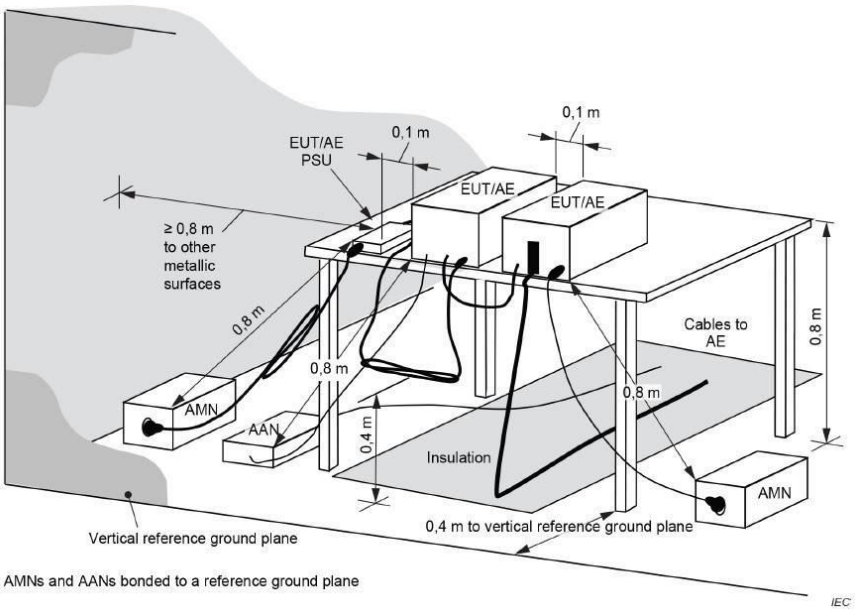
The EUT uses a PCB antenna, the max antenna gain is 1.9 dBi, which is deemed to comply with the antenna requirement.

10. Radio Spectrum Matter Test Results (RF)

10.1 Conducted Emission at AC power line

<table>
<tr><td>Test Requirement:</td><td>Refer to 47 CFR 15.207(a), Except as shown in paragraphs (b)and (c)of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN).</td></tr>
<tr><td>Test Limit:</td><td><table>
<tr><td rowspan="2">Frequency of emission (MHz)</td><td colspan="2">Conducted limit (dBμV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>5-30</td><td>60</td><td>50</td></tr>
</table>*Decreases with the logarithm of the frequency.</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 6.2
KDB 558074 D01 15.247 Meas Guidance v05r02</td></tr>
<tr><td>Procedure:</td><td>a) The mains terminal disturbance voltage test was conducted in a shielded room.
b) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
c) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
d) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
e) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.
f) The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver’s pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
g) For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.</td></tr>
</table>

10.1.1 Test Setup Diagram:

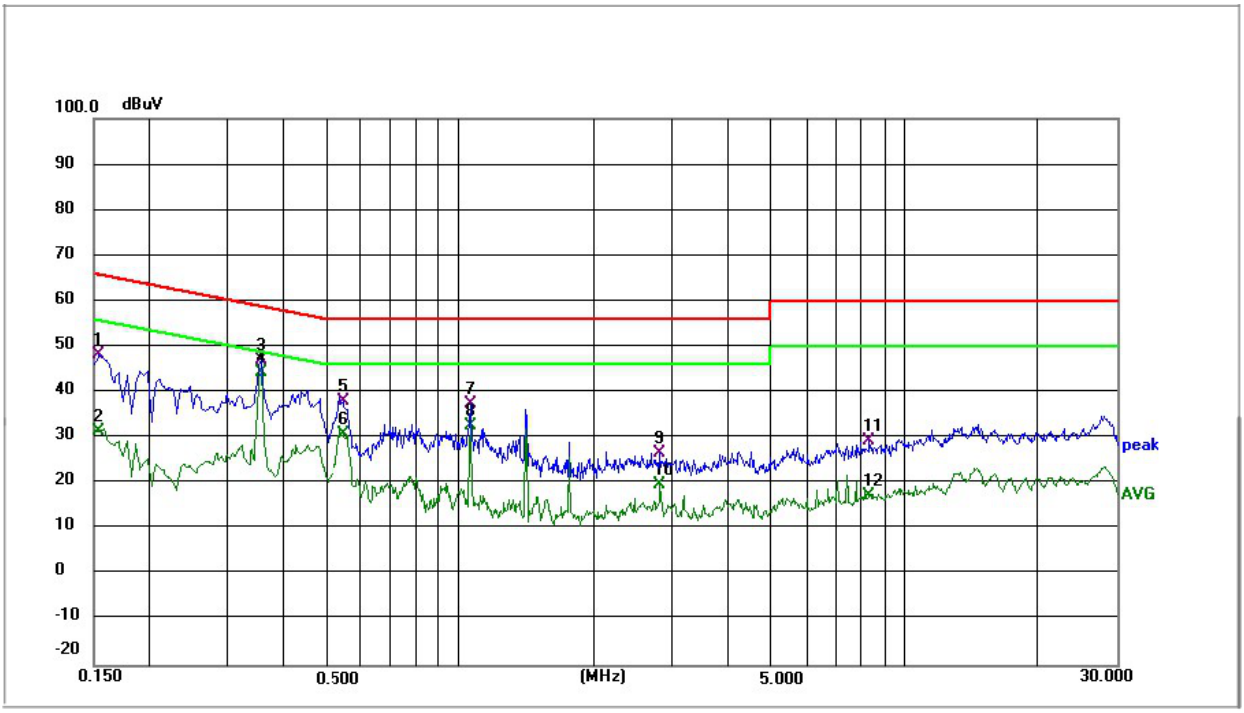


10.1.2 E.U.T. Operation:

Operating Environment:					
Temperature:	25 °C	Humidity:	61 %	Atmospheric Pressure:	1001 mbar
Pre test mode:	TM1				
Final test mode:	TM1				

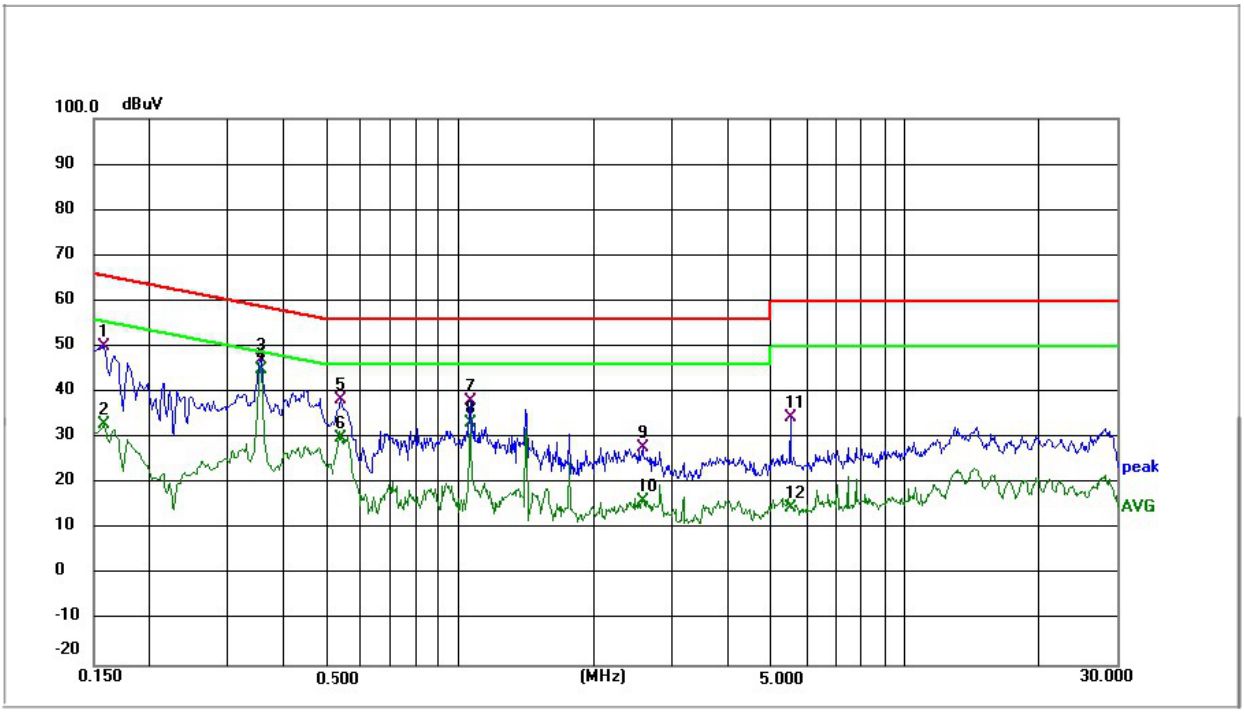
10.1.3 Test Data:

TM1 / Line: Line / Band: 2400-2483.5 MHz / BW: 1 / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1539	27.81	20.35	48.16	65.79	-17.63	QP	P	
2	0.1539	11.19	20.35	31.54	55.79	-24.25	AVG	P	
3	0.3540	26.46	20.49	46.95	58.87	-11.92	QP	P	
4 *	0.3540	23.74	20.49	44.23	48.87	-4.64	AVG	P	
5	0.5460	17.60	20.47	38.07	56.00	-17.93	QP	P	
6	0.5460	10.39	20.47	30.86	46.00	-15.14	AVG	P	
7	1.0580	17.14	20.29	37.43	56.00	-18.57	QP	P	
8	1.0580	12.51	20.29	32.80	46.00	-13.20	AVG	P	
9	2.8220	6.42	20.28	26.70	56.00	-29.30	QP	P	
10	2.8220	-0.66	20.28	19.62	46.00	-26.38	AVG	P	
11	8.3100	9.03	20.33	29.36	60.00	-30.64	QP	P	
12	8.3100	-3.08	20.33	17.25	50.00	-32.75	AVG	P	

TM1 / Line: Neutral / Band: 2400-2483.5 MHz / BW: 1 / CH: L

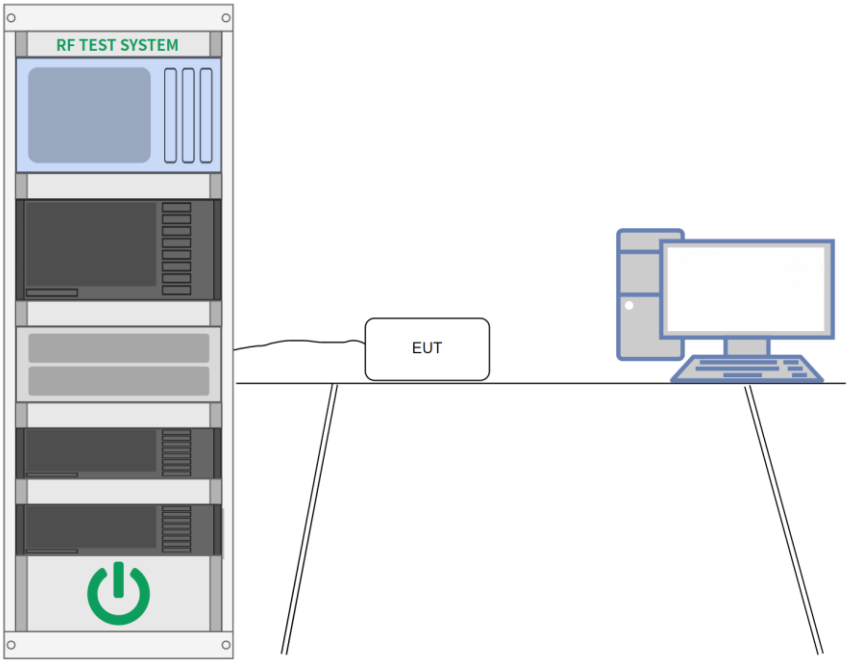


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1580	29.63	20.38	50.01	65.57	-15.56	QP	P	
2	0.1580	12.47	20.38	32.85	55.57	-22.72	AVG	P	
3	0.3540	26.61	20.47	47.08	58.87	-11.79	QP	P	
4 *	0.3540	24.48	20.47	44.95	48.87	-3.92	AVG	P	
5	0.5420	17.90	20.43	38.33	56.00	-17.67	QP	P	
6	0.5420	9.60	20.43	30.03	46.00	-15.97	AVG	P	
7	1.0580	17.69	20.25	37.94	56.00	-18.06	QP	P	
8	1.0580	13.07	20.25	33.32	46.00	-12.68	AVG	P	
9	2.5700	7.55	20.21	27.76	56.00	-28.24	QP	P	
10	2.5700	-3.92	20.21	16.29	46.00	-29.71	AVG	P	
11	5.5140	14.11	20.26	34.37	60.00	-25.63	QP	P	
12	5.5140	-5.50	20.26	14.76	50.00	-35.24	AVG	P	

10.2 20dB Bandwidth

Test Requirement:	47 CFR 15.247(a)(1)
Test Limit:	Refer to 47 CFR 15.215(c), intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.
Test Method:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 6.9.2. Frequency hopping shall be disabled for this test. KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer. Use the following spectrum analyzer settings: a) Span = approximately 2 to 5 times the OBW, centered on a hopping channel. b) RBW = 1% to 5% of the OBW. c) VBW ⩾ 3 x RBW d) Sweep = auto; e) Detector function = peak f) Trace = max hold g) All the trace to stabilize, use the marker-to-peak function to set the marker to the peak of the emission, use the marker-delta function to measure and record the 20dB down bandwidth of the emission. Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

10.2.1 Test Setup Diagram:



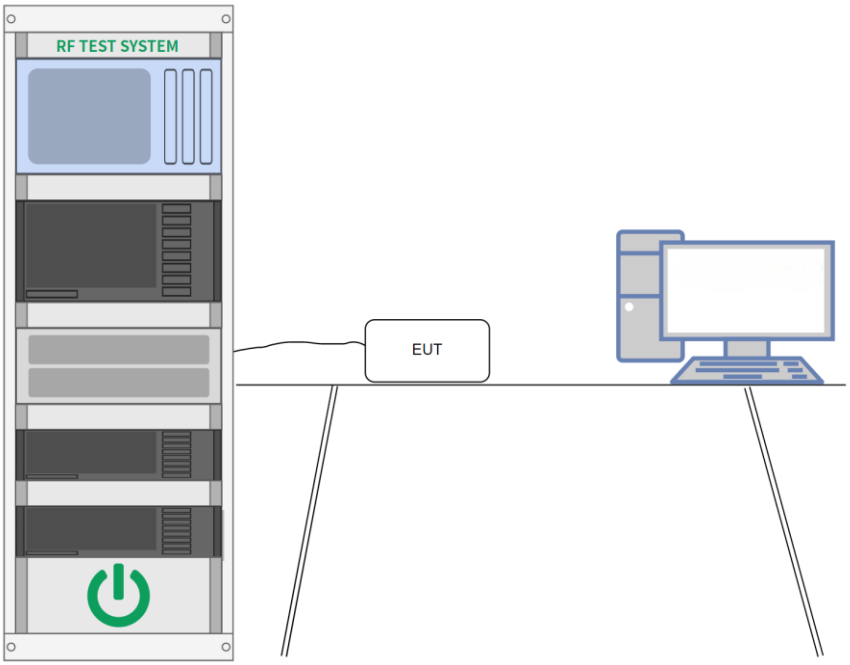
10.2.2 Test Data:

Please Refer to Appendix for Details.

10.3 Maximum Conducted Output Power

Test Requirement:	47 CFR 15.247(b)(1)
Test Limit:	Refer to 47 CFR 15.247(b)(1), For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.
Test Method:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 7.8.5 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	This is an RF-conducted test to evaluate maximum peak output power. Use a direct connection between the antenna port of the unlicensed wireless device and the spectrum analyzer, through suitable attenuation. Frequency hopping shall be disabled for this test. Use the following spectrum analyzer settings: a) Span: Approximately five times the 20 dB bandwidth, centered on a hopping channel. b) RBW > 20 dB bandwidth of the emission being measured. c) VBW ≥ RBW. d) Sweep: No faster than coupled (auto) time. e) Detector function: Peak. f) Trace: Max-hold. g) Allow trace to stabilize. h) Use the marker-to-peak function to set the marker to the peak of the emission. i) The indicated level is the peak output power, after any corrections for external attenuators and cables. j) A spectral plot of the test results and setup description shall be included in the test report. NOTE—A peak responding power meter may be used, where the power meter and sensor system video bandwidth is greater than the occupied bandwidth of the unlicensed wireless device, rather than a spectrum analyzer.

10.3.1 Test Setup Diagram:



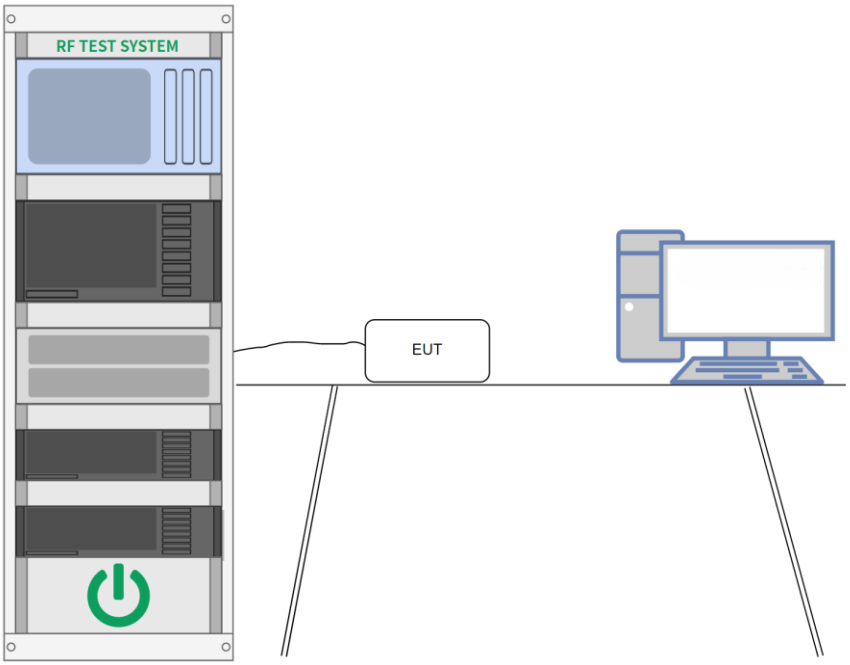
10.3.2 Test Data:

Please Refer to Appendix for Details.

10.4 Channel Separation

Test Requirement:	47 CFR 15.247(a)(1)
Test Limit:	Refer to 47 CFR 15.247(a)(1), Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.
Test Method:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 7.8.2 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings: a) Span: Wide enough to capture the peaks of two adjacent channels. b) RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel. c) Video (or average) bandwidth (VBW) ≥ RBW. d) Sweep: No faster than coupled (auto) time. e) Detector function: Peak. f) Trace: Max-hold. g) Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. Compliance of an EUT with the appropriate regulatory limit shall be determined. A spectral plot of the data shall be included in the test report.

10.4.1 Test Setup Diagram:



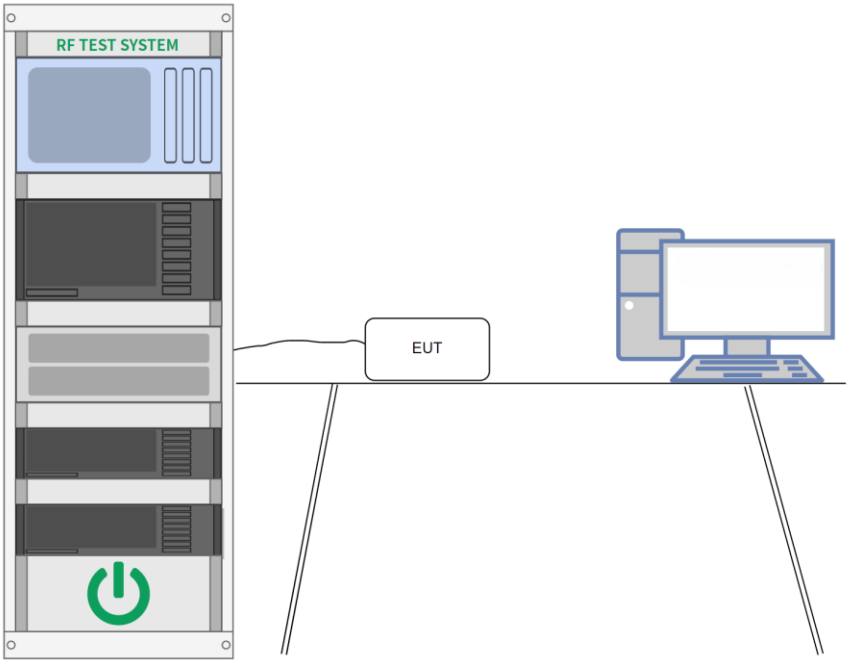
10.4.2 Test Data:

Please Refer to Appendix for Details.

10.5 Number of Hopping Frequencies

Test Requirement:	47 CFR 15.247(a)(1)(iii)
Test Limit:	Refer to 47 CFR 15.247(a)(1)(iii), Fequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.
Test Method:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 7.8.3 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings: a) Span: The frequency band of operation. Depending on the number of channels the device supports, it could be necessary to divide the frequency range of operation across multiple spans, to allow the individual channels to be clearly seen. b) RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller. c) VBW ≥ RBW. d) Sweep: No faster than coupled (auto) time. e) Detector function: Peak. f) Trace: Max-hold. g) Allow the trace to stabilize. It might prove necessary to break the span up into subranges to show clearly all of the hopping frequencies. Compliance of an EUT with the appropriate regulatory limit shall be determined for the number of hopping channels. A spectral plot of the data shall be included in the test report.

10.5.1 Test Setup Diagram:



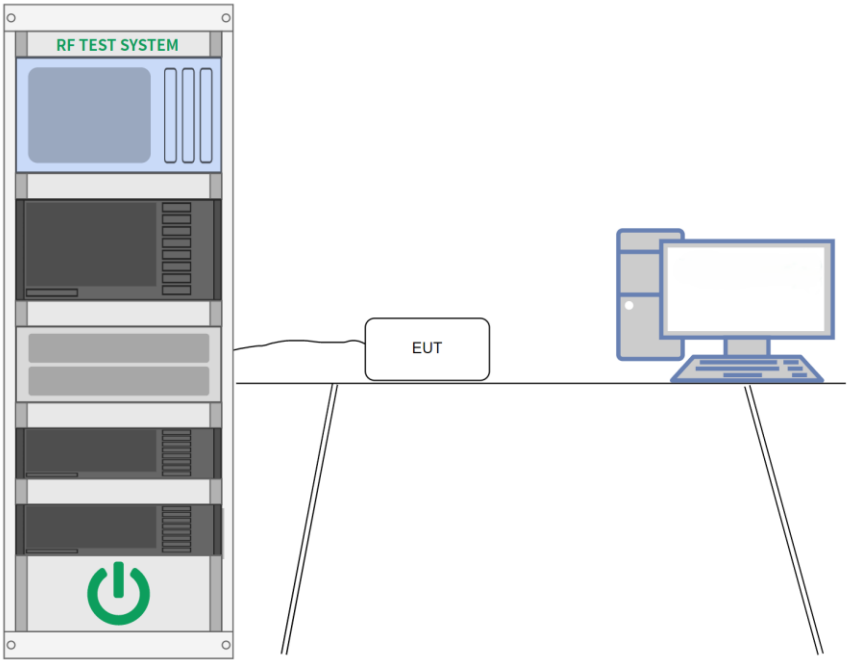
10.5.2 Test Data:

Please Refer to Appendix for Details.

10.6 Dwell Time

Test Requirement:	47 CFR 15.247(a)(1)(iii)
Test Limit:	Refer to 47 CFR 15.247(a)(1)(iii), Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.
Test Method:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 7.8.4 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer. Use the following spectrum analyzer settings: a) Span = zero span, centered on a hopping channel b) RBW shall be ≤ channel spacing and where possible RBW should be set >> 1 / T, where T is the expected dwell time per channel. c) Sweep = As necessary to capture the entire dwell time per hopping channel; where possible use a video trigger and trigger delay so that the transmitted signal starts a little to the right of the start of the plot. The trigger level might need slight adjustment to prevent triggering when the system hops on an adjacent channel; a second plot might be needed with a longer sweep time to show two successive hops on a channel. d) Detector function = peak e) Trace = max hold f) Use the marker-delta function to determine the dwell time Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

10.6.1 Test Setup Diagram:



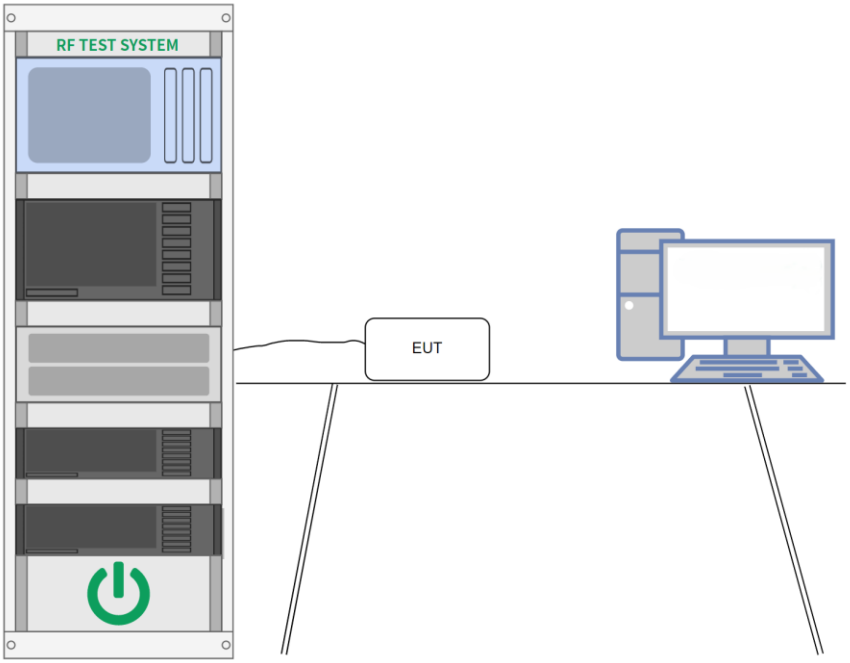
10.6.2 Test Data:

Please Refer to Appendix for Details.

10.7 Emissions in non-restricted frequency bands

Test Requirement:	47 CFR 15.247(d)
Test Limit:	Refer to 47 CFR 15.247(d), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required.
Test Method:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 7.8.7 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer. Use the following spectrum analyzer settings: Step 1:Measurement Procedure REF a) Set instrument center frequency to 2400 MHz or 2483.5 MHz. b) Wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products that fall outside of the authorized band of operation. c) Set the RBW = 100 kHz. d) Set the VBW ⩾ 3 x RBW. e) Detector = peak. f) Sweep time = auto couple. g) Sweep points ⩾ 2 x Span/RBW h) Trace mode = max hold. i) Allow the trace to stabilize. j) Set the marker on the emission at the band edge, or on the highest modulation product outside of the band, if this level is greater than that at the band edge. Enable the marker-delta function, and then use the marker-to-peak function to move the marker to the peak of the in-band emission. Step 2:Measurement Procedure OOBE a) Set RBW = 100 kHz. b) Set VBW ⩾ 300 kHz. c) Detector = peak. d) Sweep = auto couple. e) Trace Mode = max hold. f) Allow trace to fully stabilize. g) Use the peak marker function to determine the maximum amplitude level. Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

10.7.1 Test Setup Diagram:



10.7.2 Test Data:

Please Refer to Appendix for Details.

10.8 Band edge emissions (Radiated)

Test Requirement:

Refer to 47 CFR 15.247(d), In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).

Test Limit:

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

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.
In the emission table above, the tighter limit applies at the band edges.
The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

Table 1 – Restricted frequency bands

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

Test Method:

ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.10.5
KDB 558074 D01 15.247 Meas Guidance v05r02

Procedure:

Radiated band edge measurements at 2390 MHz and 2483.5 MHz were made with the unit transmitting in the low end of the channel range and the high end closest to the restricted bands respectively. The emissions were made on the 966 Semi-Chamber. Use (resolution bandwidth (RBW) = 1 MHz, video bandwidth (VBW) = 3 MHz for peak levels and RBW = 1 MHz and VBW = 10 Hz or 1/T for average levels).
a) Use radiated spurious emission test procedure described in clause 10.12. The transmitter output (antenna port) was connected to the antenna.
b) Set the PK and AV limit line.
c) Record the fundamental emission and emissions out of the band-edge.
d) Determine band-edge compliance as required.

Where,

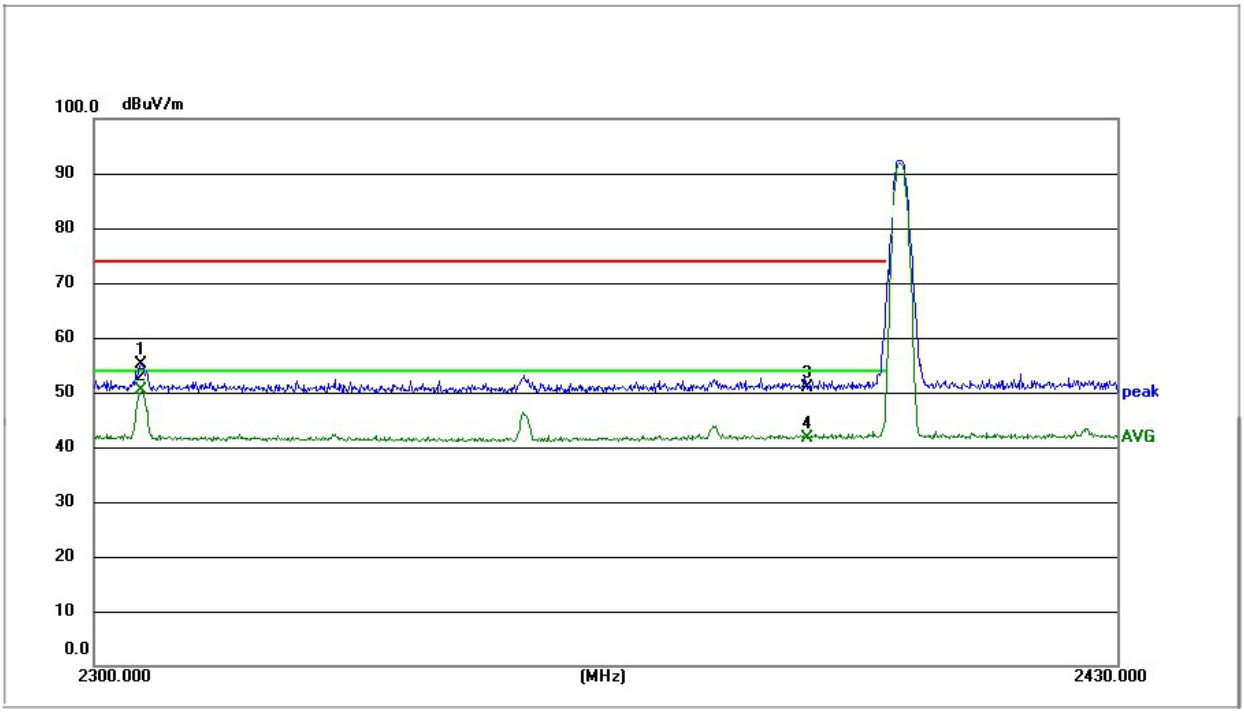
	a) Factor = Antenna Factor + Cable Loss, the value was added to Original Receiver Reading by the software automatically. b) Level = Reading + Factor. c) Margin = Level – Limit

10.8.1 E.U.T. Operation:

Operating Environment:					
Temperature:	24.6 °C	Humidity:	58.2 %	Atmospheric Pressure:	1001 mbar
Pre test mode:	TM1, TM2, TM3				
Final test mode:	TM1, TM2, TM3				

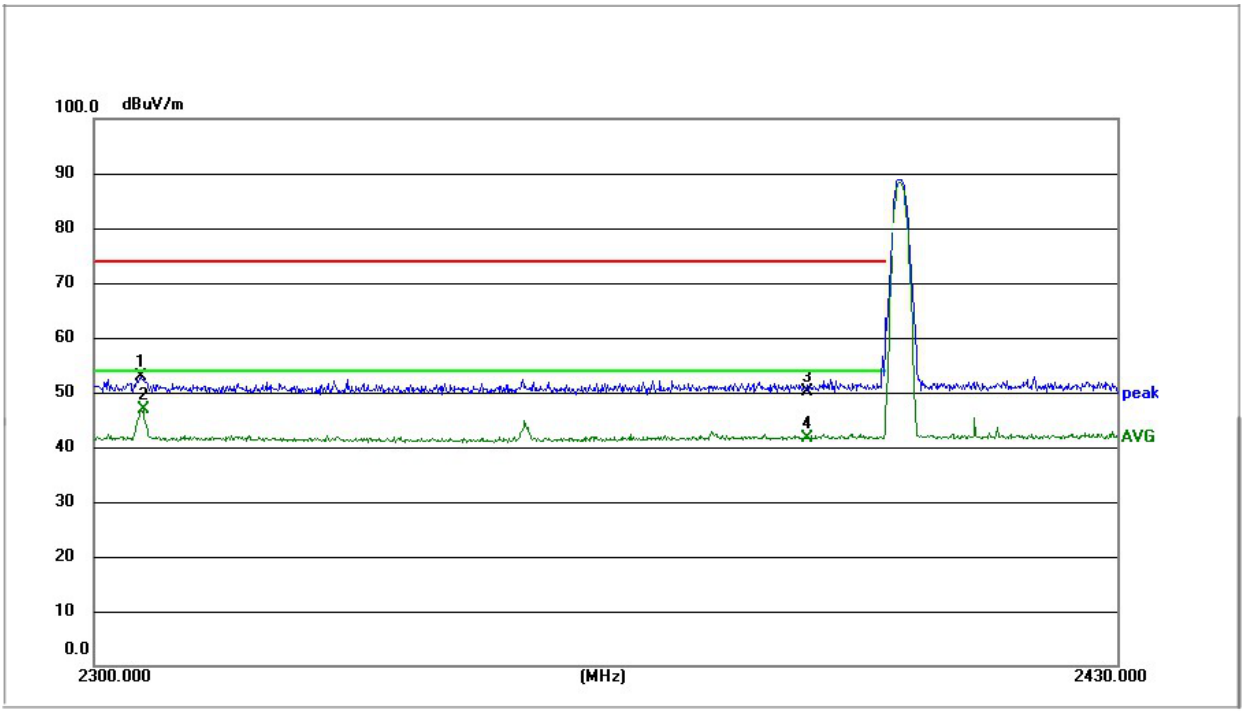
10.8.2 Test Data:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



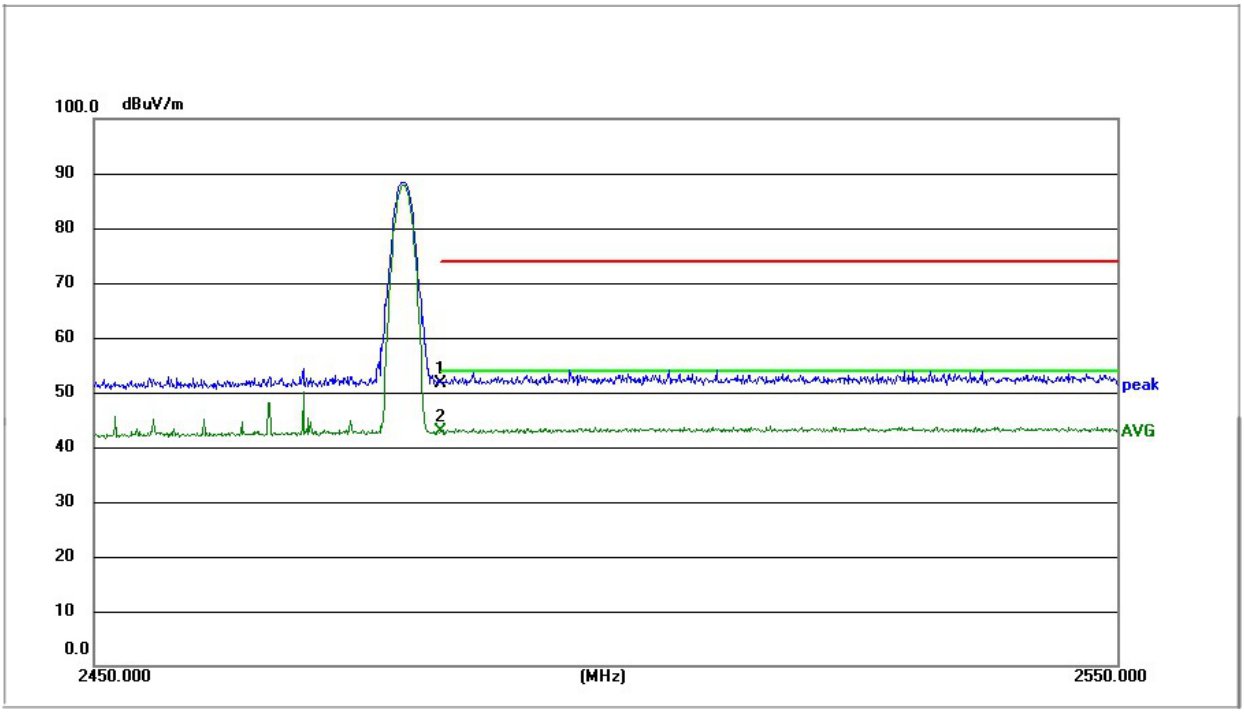
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	2306.019	25.20	30.01	55.21	74.00	-18.79	peak	P	
2 *	2306.019	20.39	30.01	50.40	54.00	-3.60	AVG	P	
3	2390.000	21.06	29.88	50.94	74.00	-23.06	peak	P	
4	2390.000	11.74	29.88	41.62	54.00	-12.38	AVG	P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



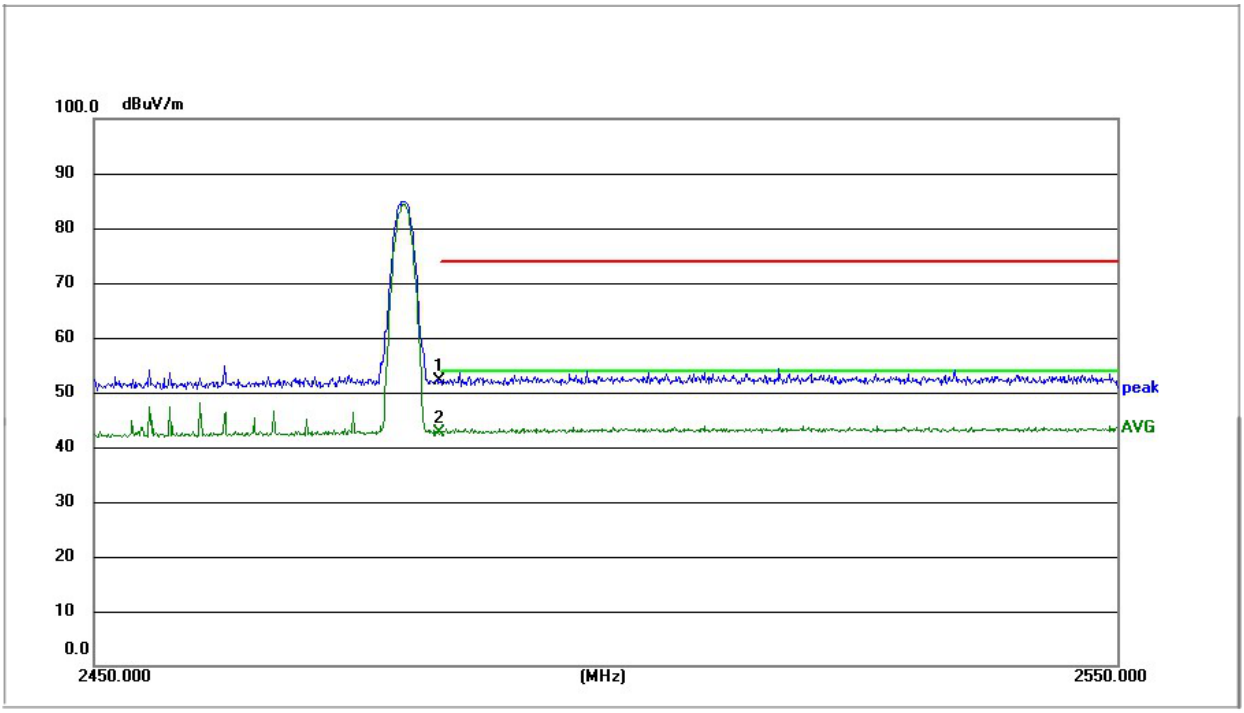
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	2305.941	22.97	30.01	52.98	74.00	-21.02	peak	P	
2 *	2306.123	16.99	30.01	47.00	54.00	-7.00	AVG	P	
3	2390.000	20.33	29.88	50.21	74.00	-23.79	peak	P	
4	2390.000	11.75	29.88	41.63	54.00	-12.37	AVG	P	

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: H



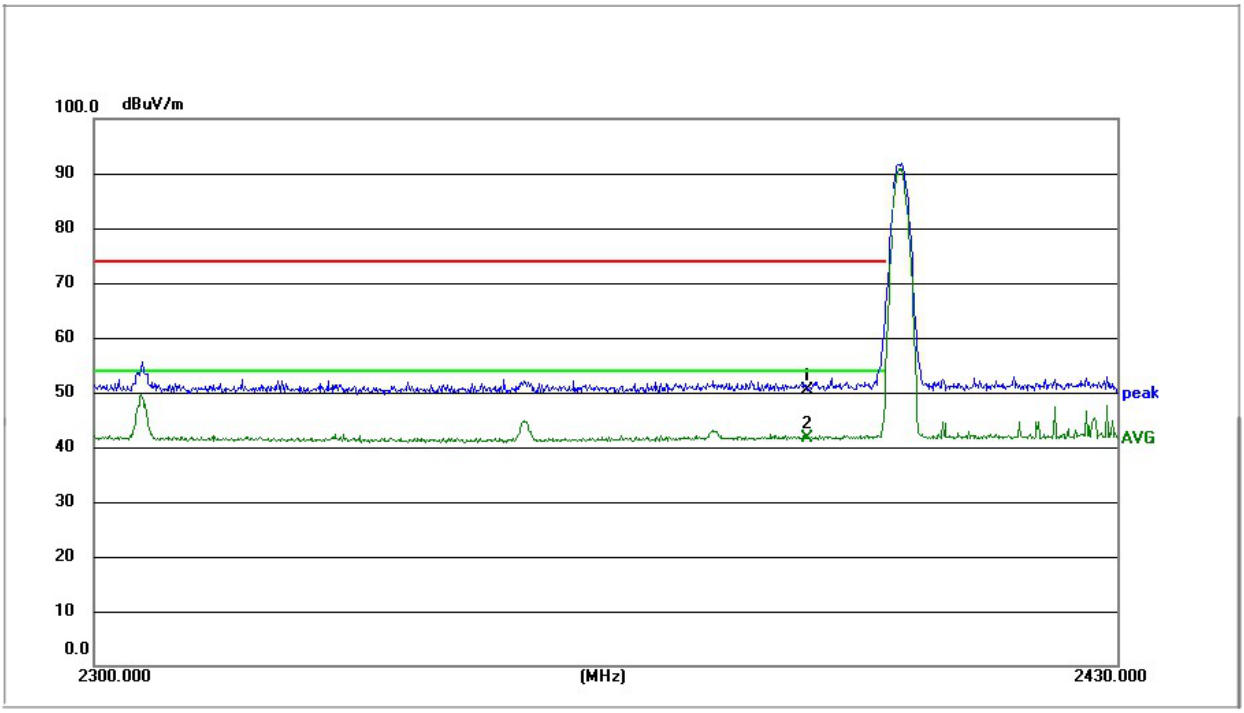
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	2483.500	21.05	30.69	51.74	74.00	-22.26	peak	P	
2 *	2483.500	12.13	30.69	42.82	54.00	-11.18	AVG	P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H



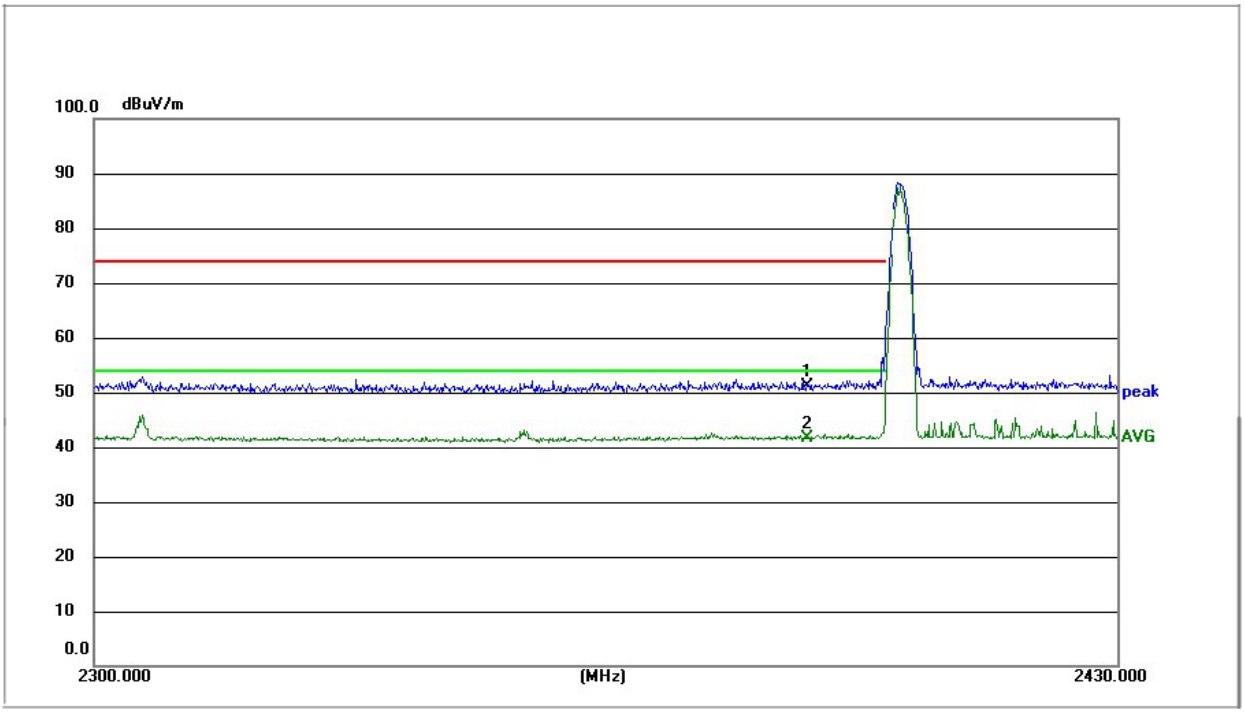
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	2483.500	21.53	30.69	52.22	74.00	-21.78	peak	P	
2 *	2483.500	11.98	30.69	42.67	54.00	-11.33	AVG	P	

TM2 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



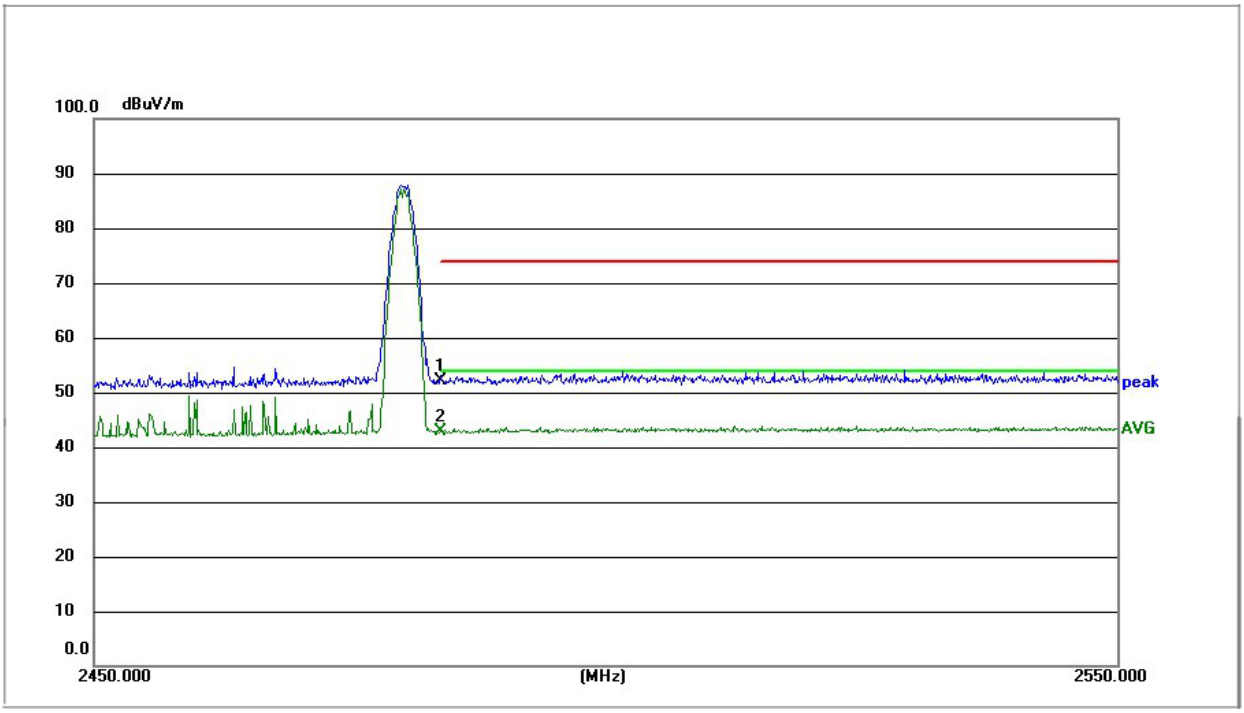
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	2390.000	20.52	29.88	50.40	74.00	-23.60	peak	P	
2 *	2390.000	11.75	29.88	41.63	54.00	-12.37	AVG	P	

TM2 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



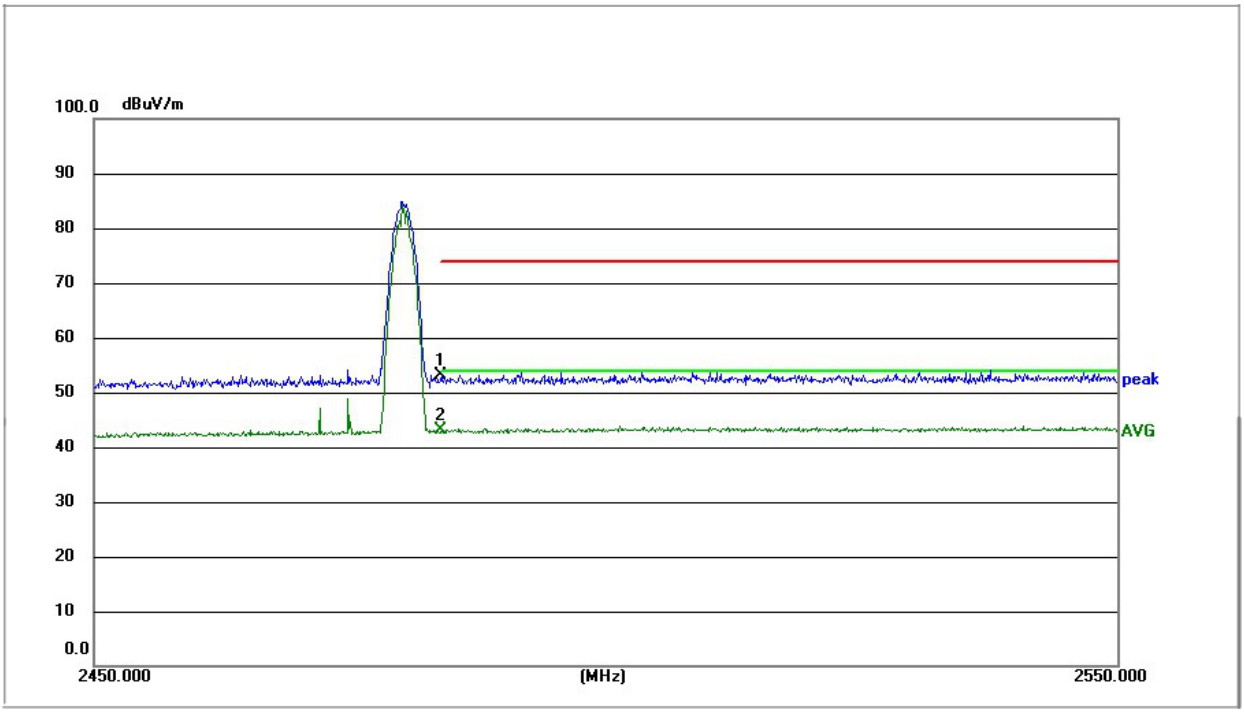
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	2390.000	21.26	29.88	51.14	74.00	-22.86	peak	P	
2 *	2390.000	11.76	29.88	41.64	54.00	-12.36	AVG	P	

TM2 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: H



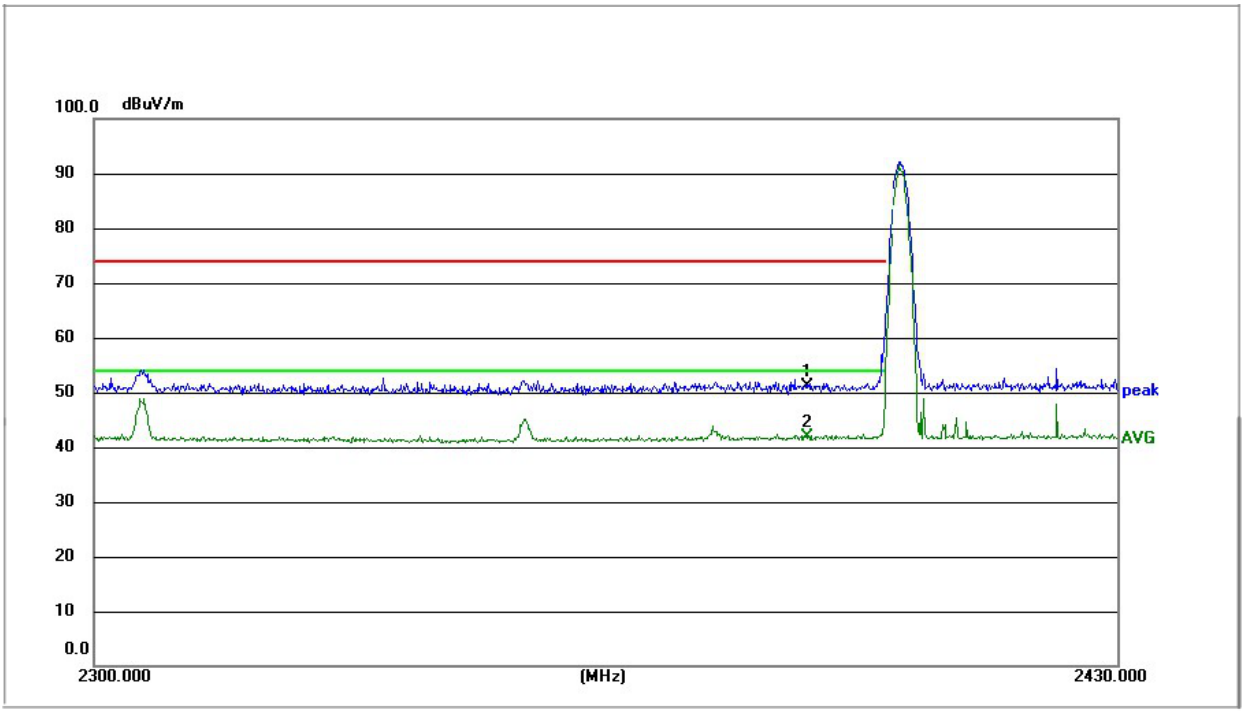
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	2483.500	21.55	30.69	52.24	74.00	-21.76	peak	P	
2 *	2483.500	12.18	30.69	42.87	54.00	-11.13	AVG	P	

TM2 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H



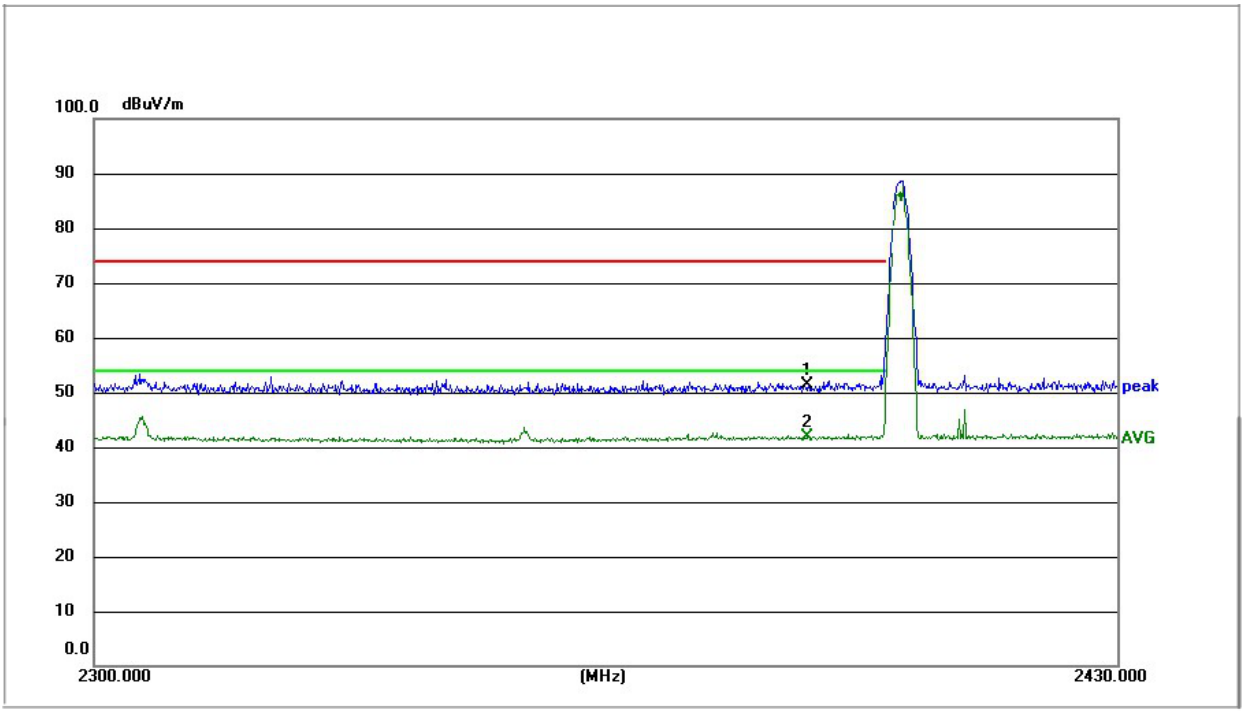
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	2483.500	22.36	30.69	53.05	74.00	-20.95	peak	P	
2 *	2483.500	12.49	30.69	43.18	54.00	-10.82	AVG	P	

TM3 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



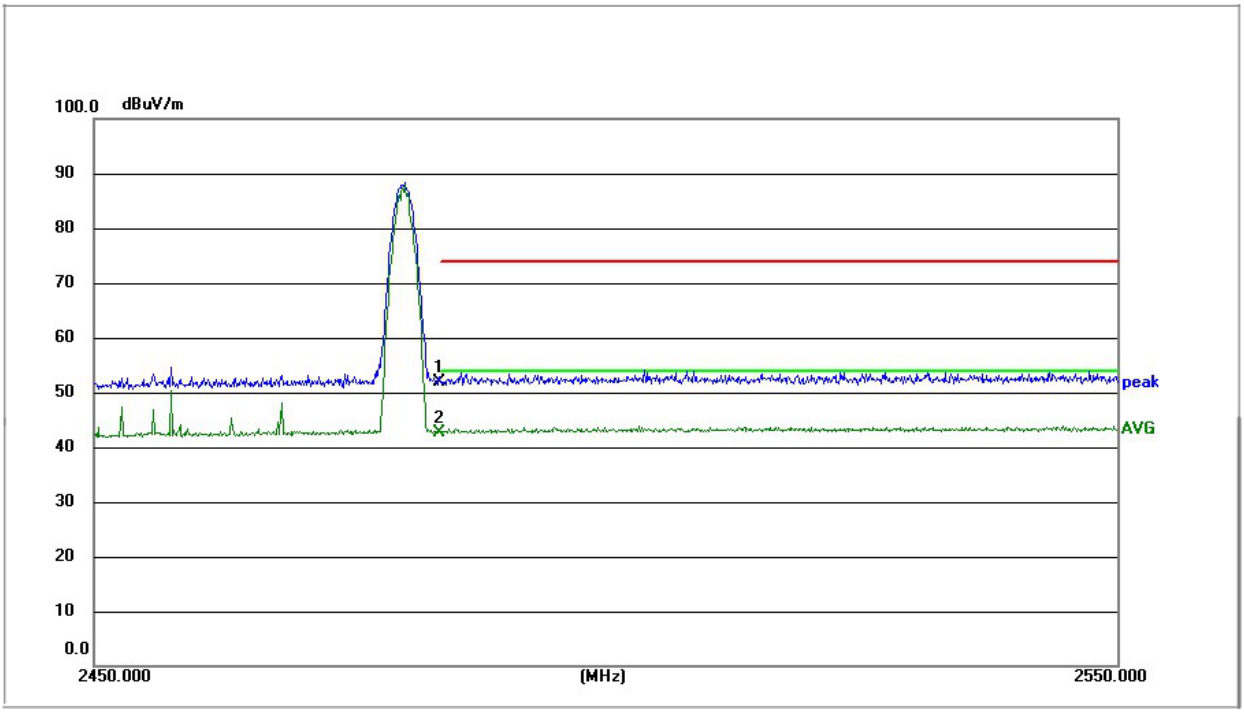
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	2390.000	21.16	29.88	51.04	74.00	-22.96	peak	P	
2 *	2390.000	12.04	29.88	41.92	54.00	-12.08	AVG	P	

TM3 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



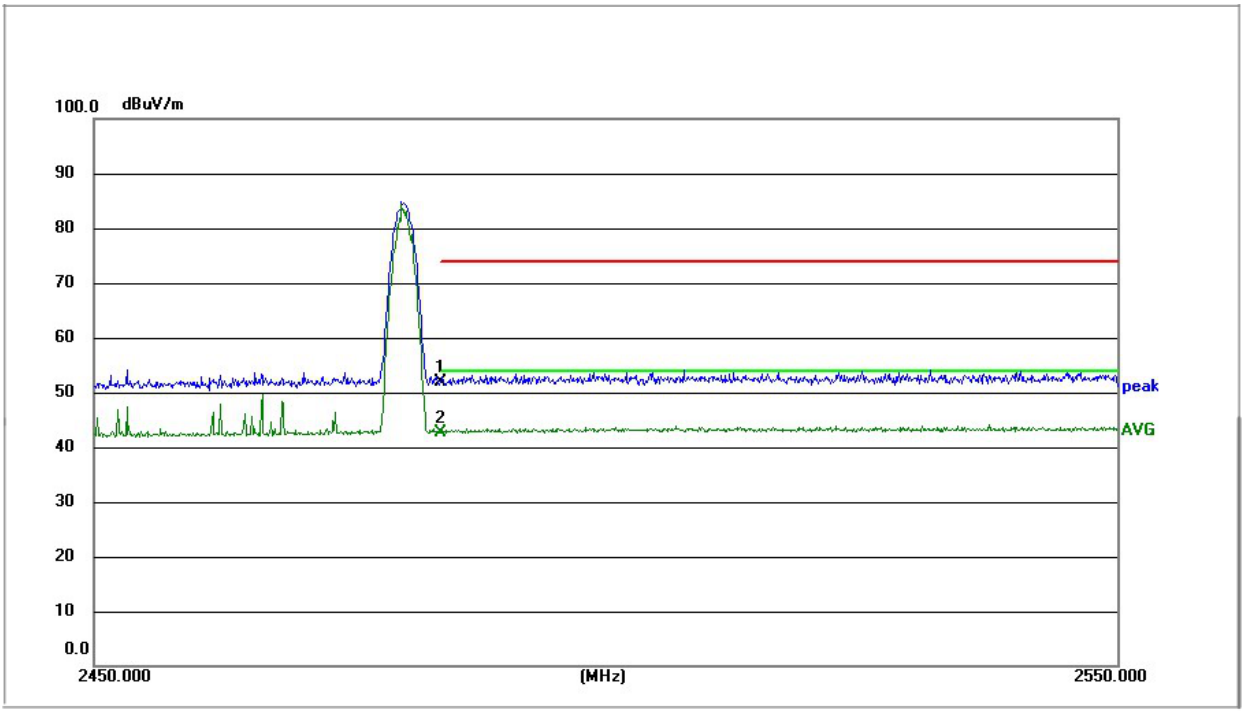
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	2390.000	21.61	29.88	51.49	74.00	-22.51	peak	P	
2 *	2390.000	12.11	29.88	41.99	54.00	-12.01	AVG	P	

TM3 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	2483.500	21.29	30.69	51.98	74.00	-22.02	peak	P	
2 *	2483.500	12.05	30.69	42.74	54.00	-11.26	AVG	P	

TM3 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	2483.500	21.12	30.69	51.81	74.00	-22.19	peak	P	
2 *	2483.500	12.04	30.69	42.73	54.00	-11.27	AVG	P	

10.9 Emissions in frequency bands (below 30MHz)

Test Requirement:

Refer to 47 CFR 15.247(d), In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).

Test Limit:

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

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.
In the emission table above, the tighter limit applies at the band edges.
The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

Table 1 – Restricted frequency bands

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

Test Method:

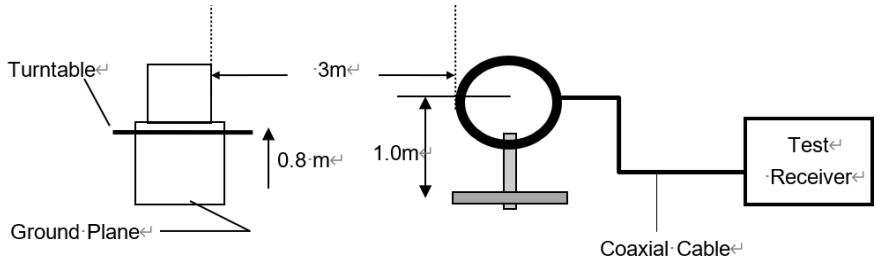
ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.4
KDB 558074 D01 15.247 Meas Guidance v05r02

Procedure:

a) The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b) The EUT was set 3 meters away from the interference-receiving antenna.
c) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights 1 meter and the rota table table was turned from 0 degrees to 360 degrees to find the maximum reading.
d) The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
e) If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

	f) The radiation measurements are performed in X, Y, Z axis positioning. only the test worst case mode is recorded in the report.(for portable and mobile devices) Where, a) Factor = Antenna Factor + Cable Loss, the value was added to Original Receiver Reading by the software automatically. b) Level = Reading + Factor. c) Margin = Level – Limit

10.9.1 Test Setup Diagram:



10.9.2 E.U.T. Operation:

Operating Environment:					
Temperature:	25 °C	Humidity:	59 %	Atmospheric Pressure:	1010 mbar
Per-test mode:	TM1, TM2, TM3				
Final test mode:	TM1				

10.9.3 Test Data:

Note: the amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

10.10 Emissions in frequency bands (30M - 1GHz)

Test Requirement:

Refer to 47 CFR 15.247(d), In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).

Test Limit:

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

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.

In the emission table above, the tighter limit applies at the band edges.

The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

Table 1 – Restricted frequency bands

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

Test Method:

ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.5.4

KDB 558074 D01 15.247 Meas Guidance v05r02

Procedure:

a) The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.

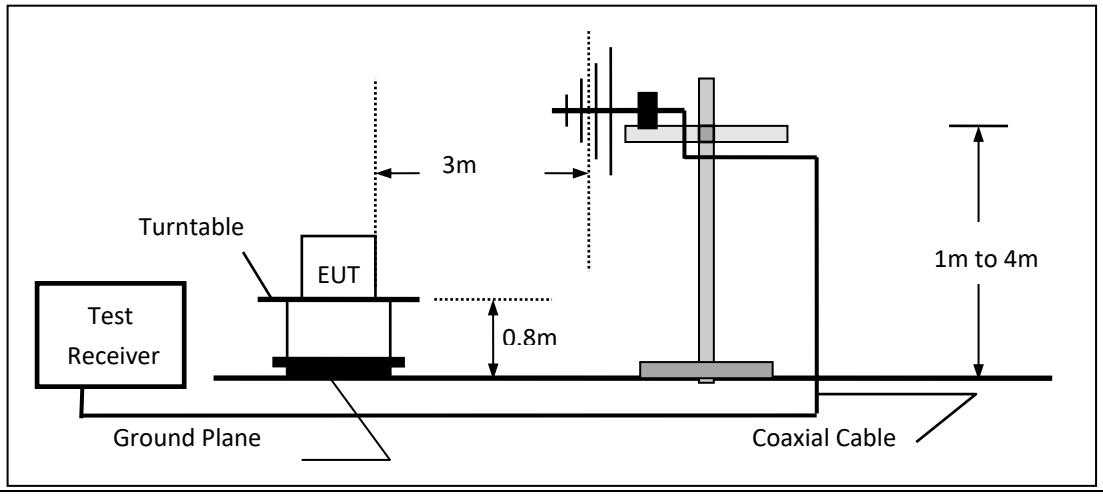
b) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c) The antenna 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.

d) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table table was turned from 0 degrees to 360 degrees to find the maximum reading.

	e) The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f) If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. Where, a) Factor = Antenna Factor + Cable Loss, the value was added to Original Receiver Reading by the software automatically. b) Level = Reading + Factor. c) Margin = Level – Limit

10.10.1 Test Setup Diagram:

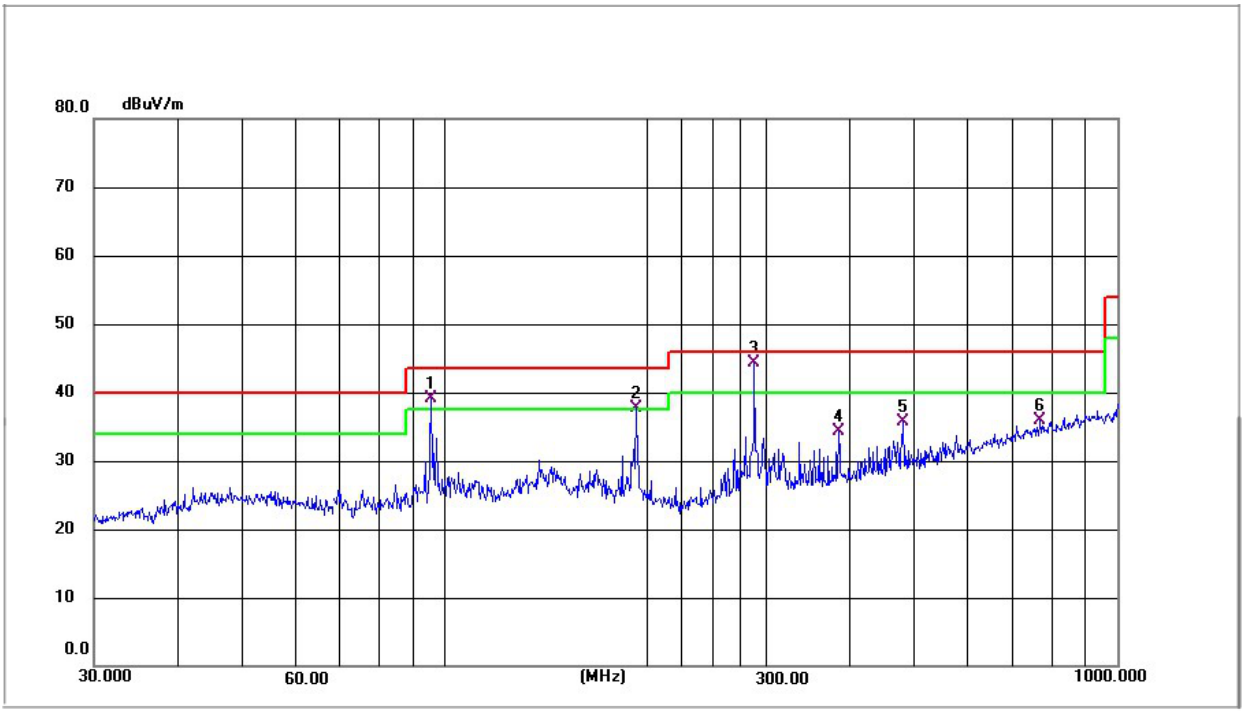


10.10.2 E.U.T. Operation:

Operating Environment:					
Temperature:	24.6 °C	Humidity:	58.2 %	Atmospheric Pressure:	1001 mbar
Pre test mode:	TM1				
Final test mode:	TM1				

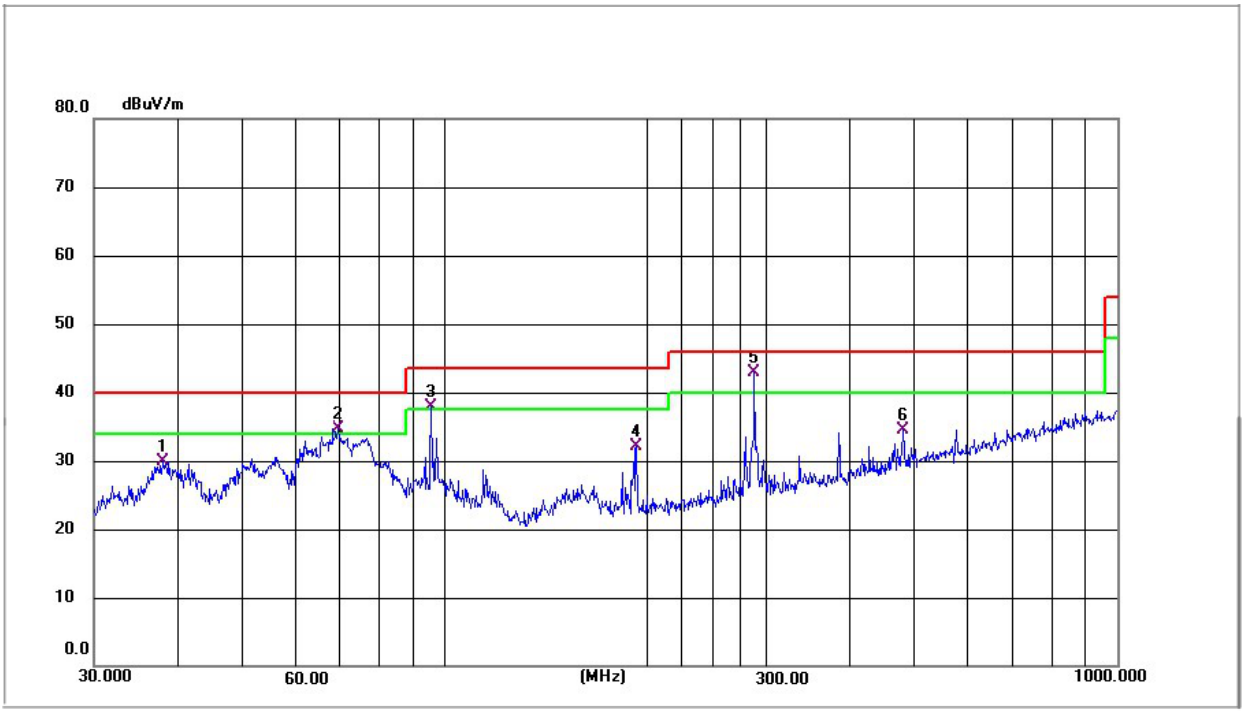
10.10.3 Test Data:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 !	95.4270	21.91	17.16	39.07	43.50	-4.43	QP	P	
2 !	192.4190	20.62	17.06	37.68	43.50	-5.82	QP	P	
3 *	287.9904	24.21	20.01	44.22	46.00	-1.78	QP	P	
4	383.9318	11.98	22.24	34.22	46.00	-11.78	QP	P	
5	480.5276	11.61	24.06	35.67	46.00	-10.33	QP	P	
6	768.7481	7.09	28.83	35.92	46.00	-10.08	QP	P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	37.9450	11.78	18.19	29.97	40.00	-10.03	QP	P	
2 !	69.3570	18.27	16.39	34.66	40.00	-5.34	QP	P	
3 !	95.4270	20.82	17.16	37.98	43.50	-5.52	QP	P	
4	192.4190	15.04	17.06	32.10	43.50	-11.40	QP	P	
5 *	287.9900	22.94	20.01	42.95	46.00	-3.05	QP	P	
6	480.5276	10.49	24.06	34.55	46.00	-11.45	QP	P	

10.11 Emissions in frequency bands (above 1GHz)

Test Requirement:

Refer to 47 CFR 15.247(d), in addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).

Test Limit:

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

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.
In the emission table above, the tighter limit applies at the band edges.
The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

Table 1 – Restricted frequency bands

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

Test Method:

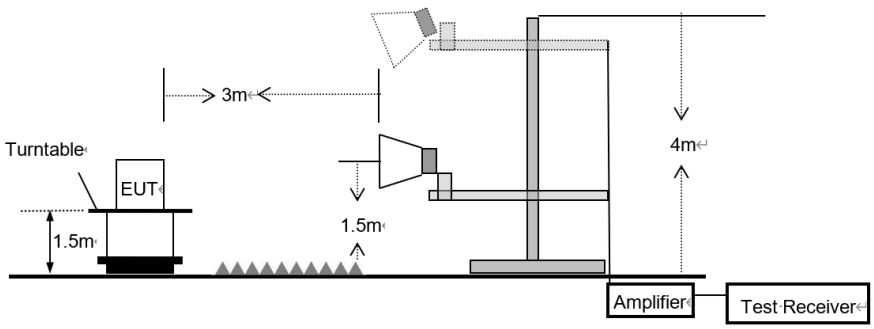
ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.6
KDB 558074 D01 15.247 Meas Guidance v05r02

Procedure:

a) The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c) The antenna 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.
d) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table table was turned from 0 degrees to 360 degrees to find the maximum reading.

	e) The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f) If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. g) Test the EUT in the lowest channel ,middle channel, the Highest channel h) The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, only the test worst case is recorded in the report. i) Repeat above procedures until all frequencies measured was complete. Where, a) Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically. b) Level = Reading + Factor. c) Margin = Level – Limit

10.11.1 Test Setup Diagram:

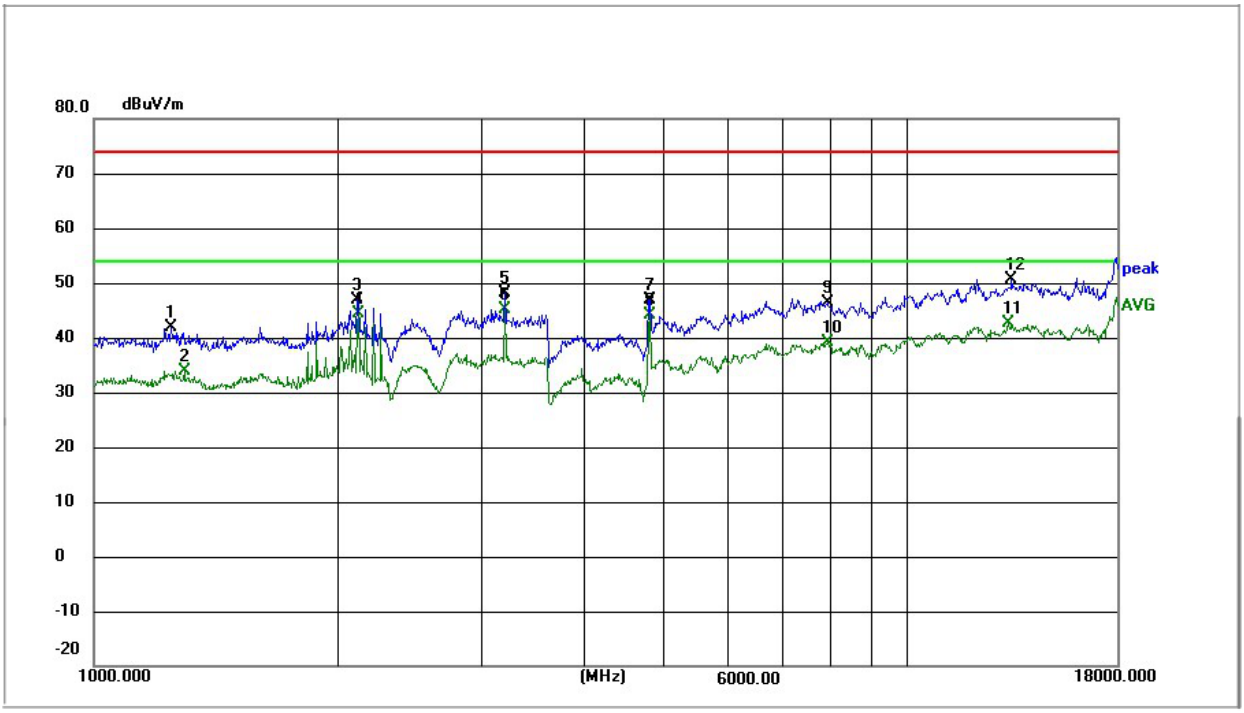


10.11.2 E.U.T. Operation:

Operating Environment:					
Temperature:	24.6 °C	Humidity:	58.2 %	Atmospheric Pressure:	1001 mbar
Pre test mode:	TM1, TM2, TM3				
Final test mode:	TM1, TM2, TM3				

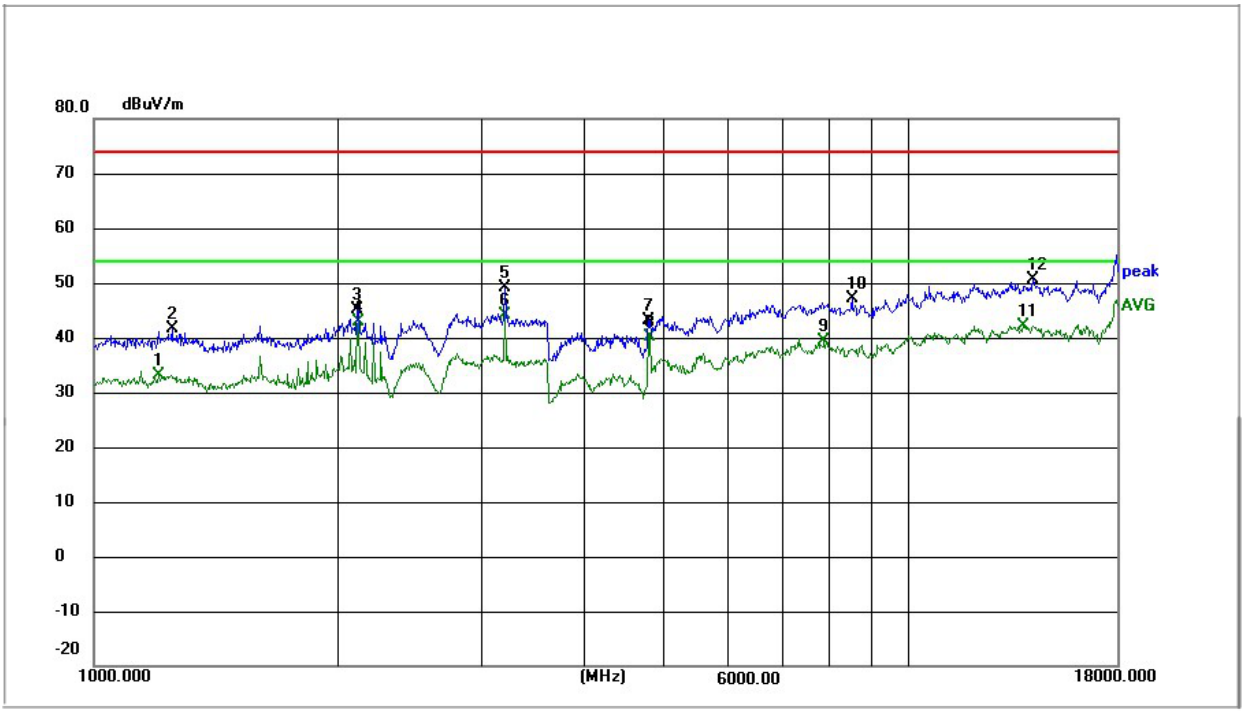
10.11.3 Test Data:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



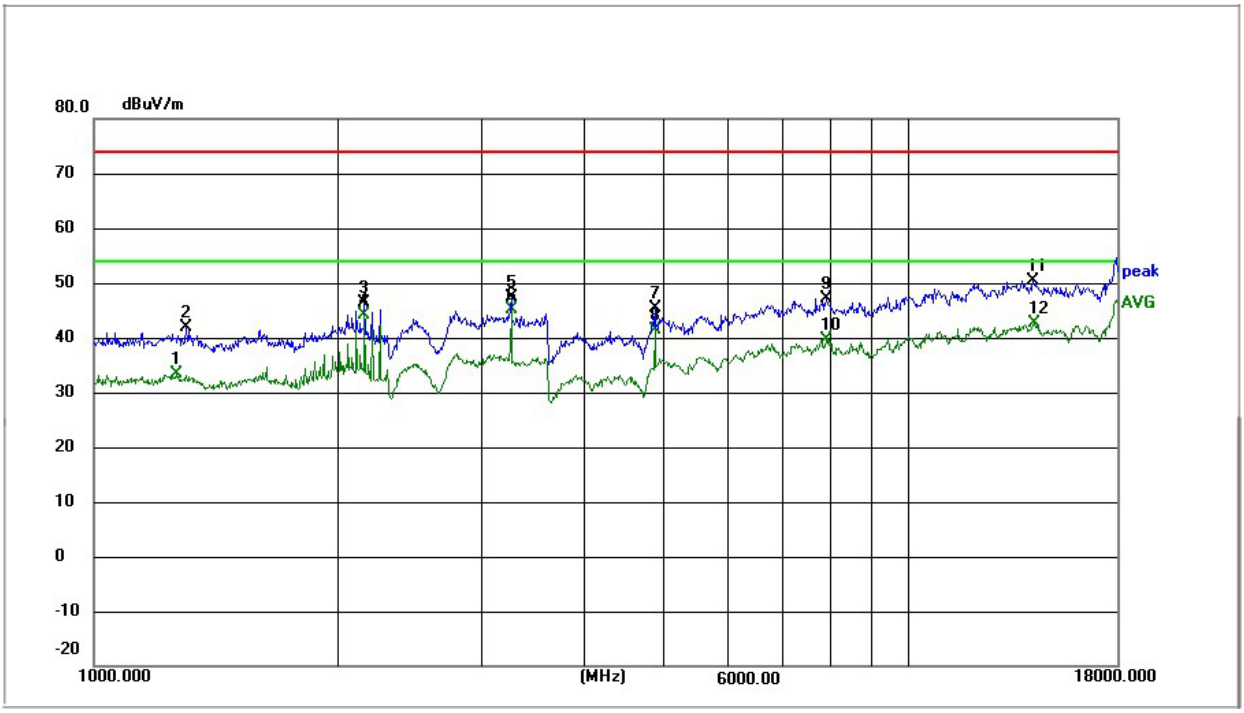
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1245.225	59.91	-17.92	41.99	74.00	-32.01	peak	P	
2	1290.275	51.63	-17.85	33.78	54.00	-20.22	AVG	P	
3	2113.925	59.47	-12.55	46.92	74.00	-27.08	peak	P	
4	2114.350	56.88	-12.55	44.33	54.00	-9.67	AVG	P	
5	3202.775	57.24	-9.21	48.03	74.00	-25.97	peak	P	
6 *	3202.775	54.31	-9.21	45.10	54.00	-8.90	AVG	P	
7	4804.175	53.95	-7.02	46.93	74.00	-27.07	peak	P	
8	4804.175	51.18	-7.02	44.16	54.00	-9.84	AVG	P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



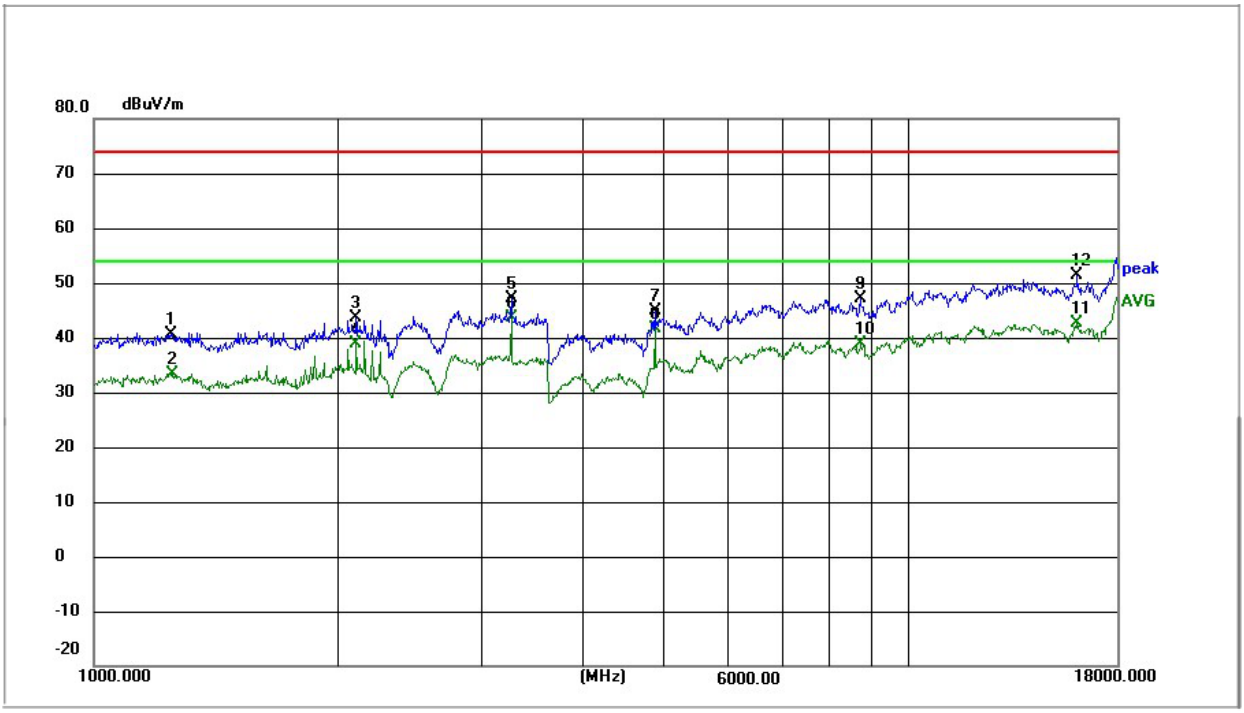
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1200.600	51.44	-18.40	33.04	54.00	-20.96	AVG	P	
2	1247.775	59.56	-17.90	41.66	74.00	-32.34	peak	P	
3	2113.925	57.80	-12.55	45.25	74.00	-28.75	peak	P	
4	2114.350	55.31	-12.55	42.76	54.00	-11.24	AVG	P	
5	3202.775	58.26	-9.21	49.05	74.00	-24.95	peak	P	
6 *	3202.775	53.33	-9.21	44.12	54.00	-9.88	AVG	P	
7	4803.750	50.23	-7.03	43.20	74.00	-30.80	peak	P	
8	4804.600	47.19	-7.02	40.17	54.00	-13.83	AVG	P	

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: M



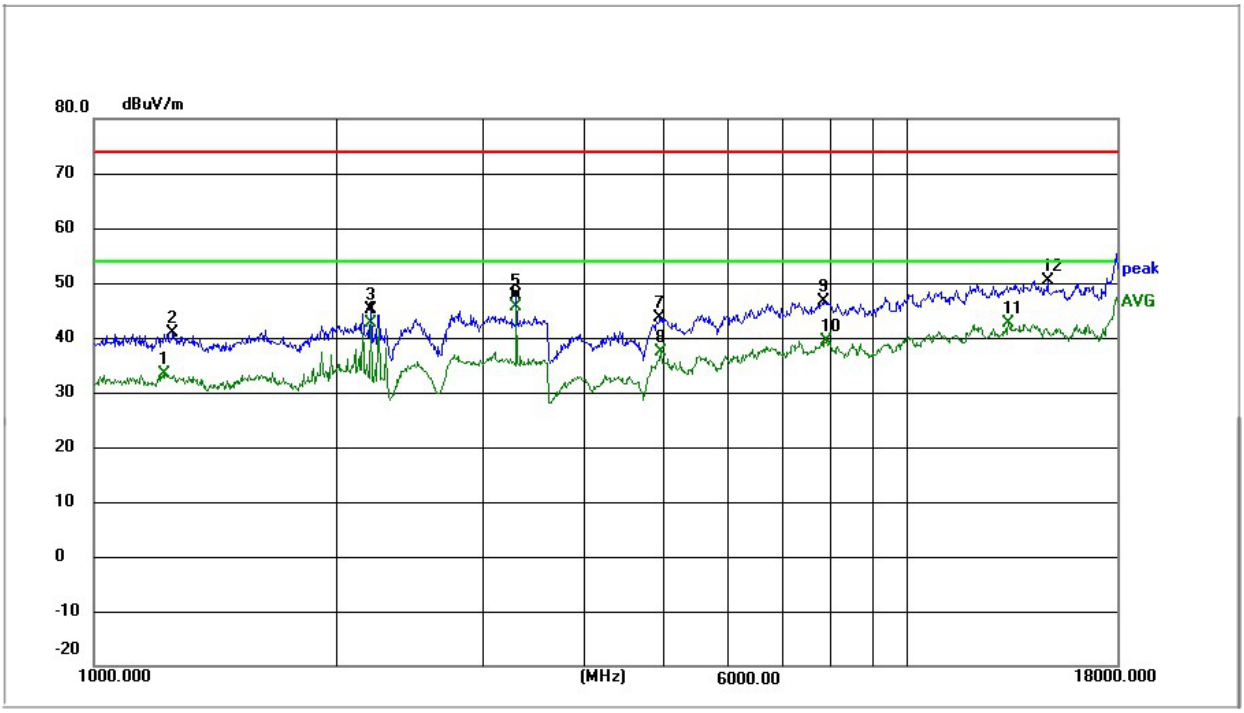
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1261.800	51.34	-17.87	33.47	54.00	-20.53	AVG	P	
2	1299.200	59.62	-17.85	41.77	74.00	-32.23	peak	P	
3	2153.450	59.18	-12.84	46.34	74.00	-27.66	peak	P	
4	2153.450	56.94	-12.84	44.10	54.00	-9.90	AVG	P	
5	3255.050	56.39	-9.01	47.38	74.00	-26.62	peak	P	
6 *	3255.050	54.02	-9.01	45.01	54.00	-8.99	AVG	P	
7	4882.375	52.65	-7.25	45.40	74.00	-28.60	peak	P	
8	4882.375	48.71	-7.25	41.46	54.00	-12.54	AVG	P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: M



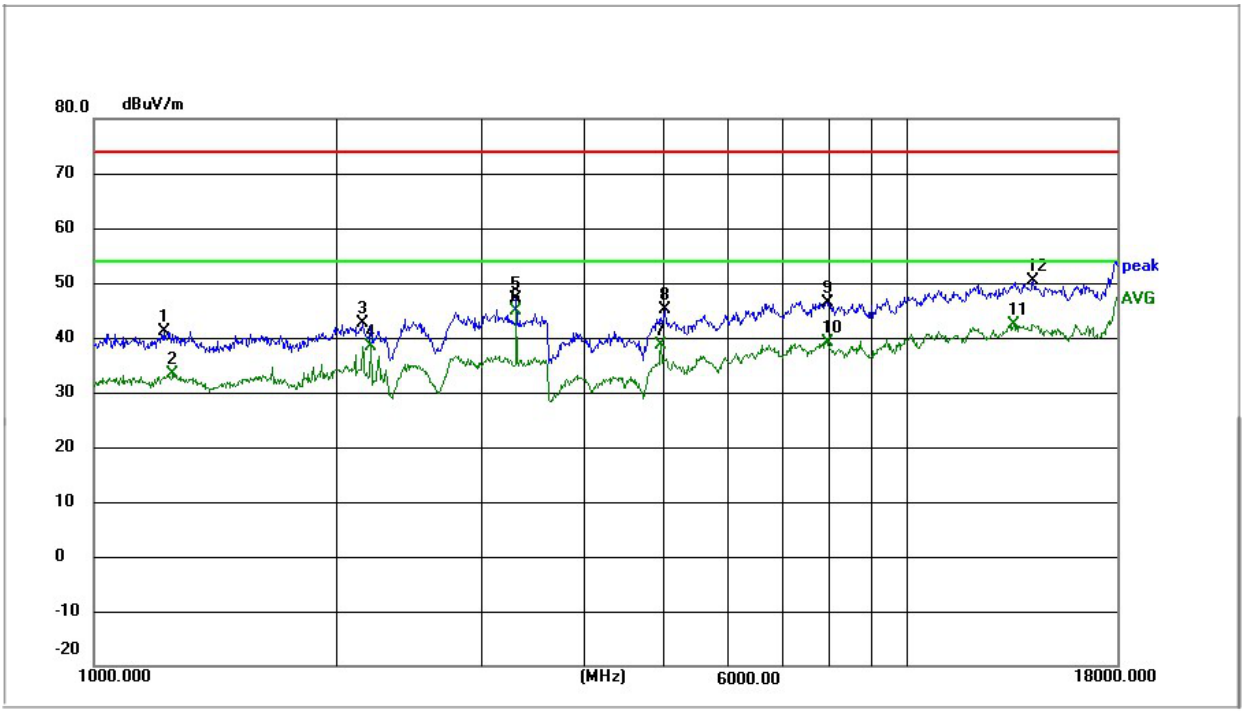
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1243.100	58.59	-17.95	40.64	74.00	-33.36	peak	P	
2	1250.325	51.32	-17.87	33.45	54.00	-20.55	AVG	P	
3	2105.425	56.17	-12.50	43.67	74.00	-30.33	peak	P	
4	2105.425	51.34	-12.50	38.84	54.00	-15.16	AVG	P	
5	3255.050	56.04	-9.01	47.03	74.00	-26.97	peak	P	
6 *	3255.050	52.66	-9.01	43.65	54.00	-10.35	AVG	P	
7	4882.375	52.04	-7.25	44.79	74.00	-29.21	peak	P	
8	4882.375	48.98	-7.25	41.73	54.00	-12.27	AVG	P	

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: H



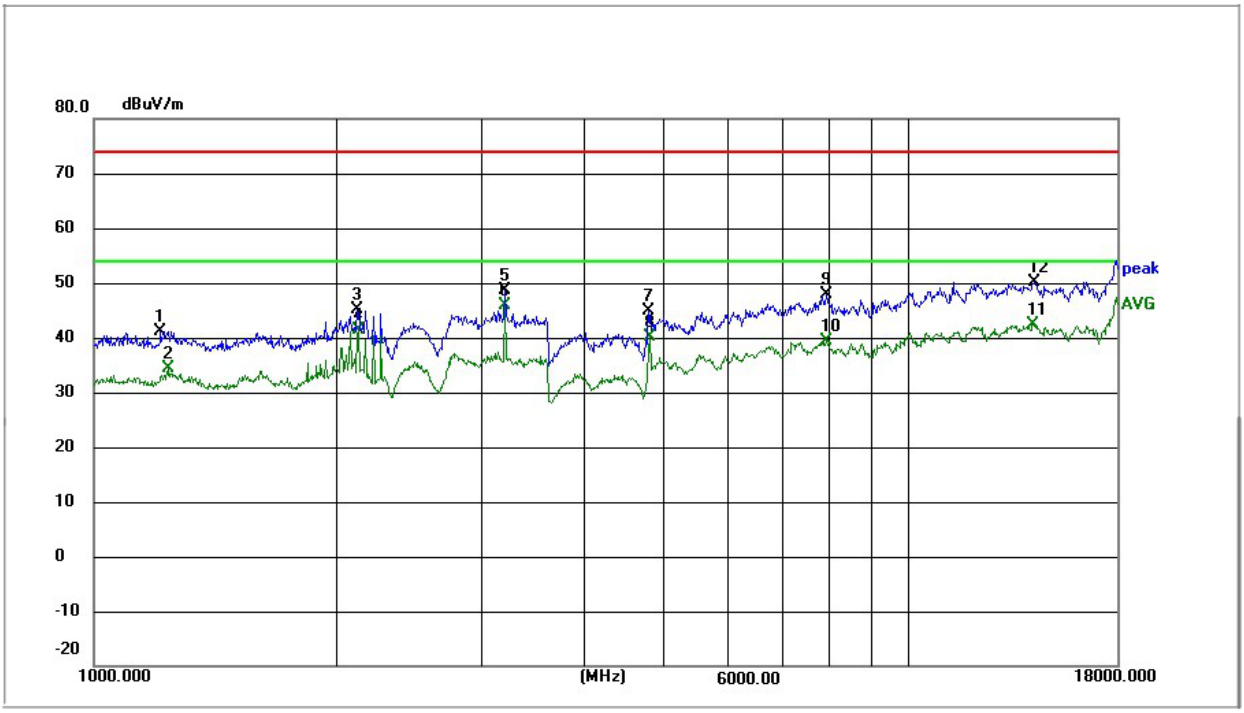
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1221.850	51.49	-18.17	33.32	54.00	-20.68	AVG	P	
2	1249.900	58.79	-17.88	40.91	74.00	-33.09	peak	P	
3	2192.550	58.66	-13.61	45.05	74.00	-28.95	peak	P	
4	2192.550	56.18	-13.61	42.57	54.00	-11.43	AVG	P	
5	3306.900	57.15	-9.40	47.75	74.00	-26.25	peak	P	
6 *	3306.900	55.05	-9.40	45.65	54.00	-8.35	AVG	P	
7	4950.800	49.64	-6.01	43.63	74.00	-30.37	peak	P	
8	4960.150	43.43	-6.07	37.36	54.00	-16.64	AVG	P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H



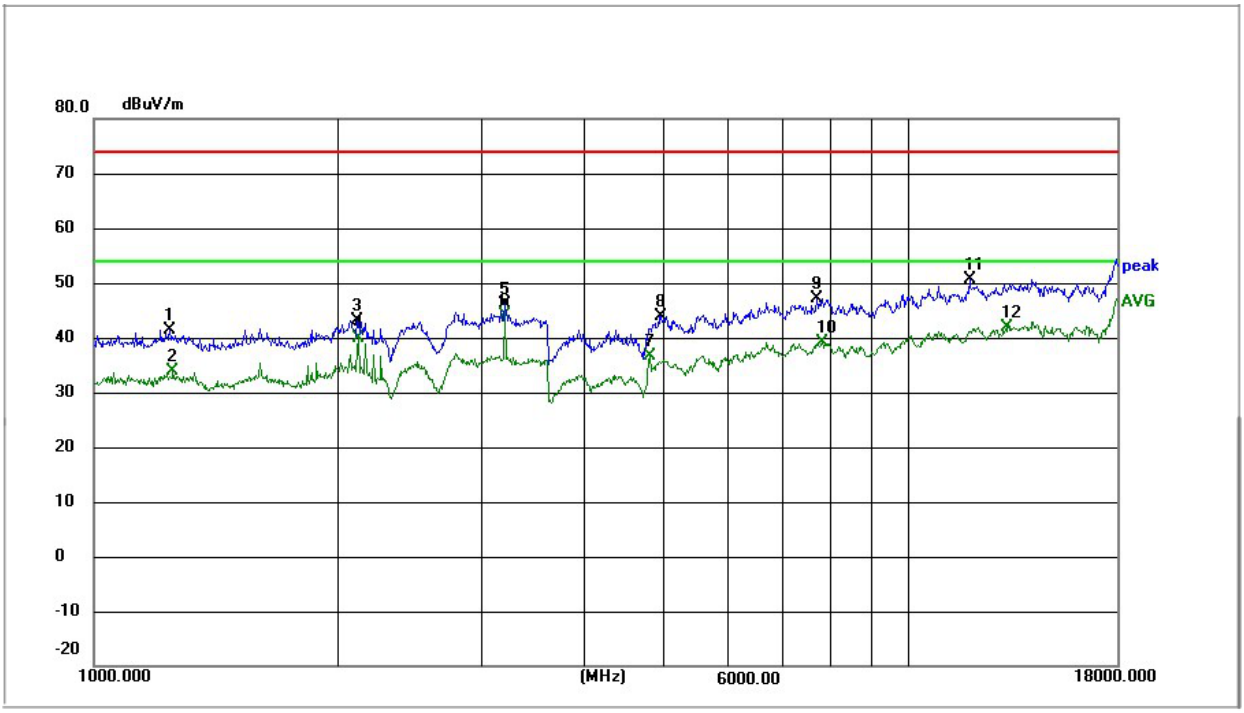
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1219.725	59.28	-18.19	41.09	74.00	-32.91	peak	P	
2	1249.475	51.32	-17.88	33.44	54.00	-20.56	AVG	P	
3	2144.100	55.31	-12.73	42.58	74.00	-31.42	peak	P	
4	2192.550	52.09	-13.61	38.48	54.00	-15.52	AVG	P	
5	3306.900	56.46	-9.40	47.06	74.00	-26.94	peak	P	
6 *	3306.900	54.25	-9.40	44.85	54.00	-9.15	AVG	P	
7	4960.150	44.80	-6.07	38.73	54.00	-15.27	AVG	P	
8	5030.700	51.07	-6.04	45.03	74.00	-28.97	peak	P	

TM2 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



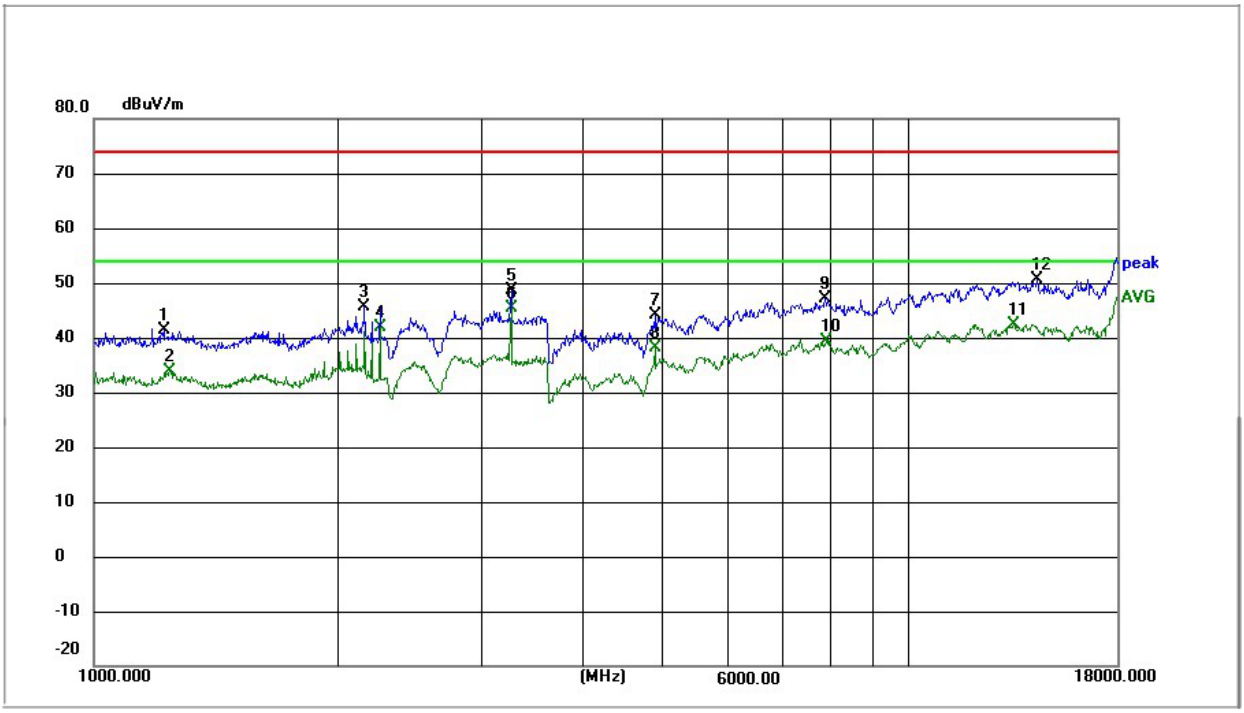
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1208.250	59.37	-18.31	41.06	74.00	-32.94	peak	P	
2	1236.725	52.40	-18.02	34.38	54.00	-19.62	AVG	P	
3	2113.925	57.71	-12.55	45.16	74.00	-28.84	peak	P	
4	2114.350	54.03	-12.55	41.48	54.00	-12.52	AVG	P	
5	3202.775	57.80	-9.21	48.59	74.00	-25.41	peak	P	
6 *	3202.775	54.99	-9.21	45.78	54.00	-8.22	AVG	P	
7	4803.750	52.01	-7.03	44.98	74.00	-29.02	peak	P	
8	4804.175	47.27	-7.02	40.25	54.00	-13.75	AVG	P	

TM2 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



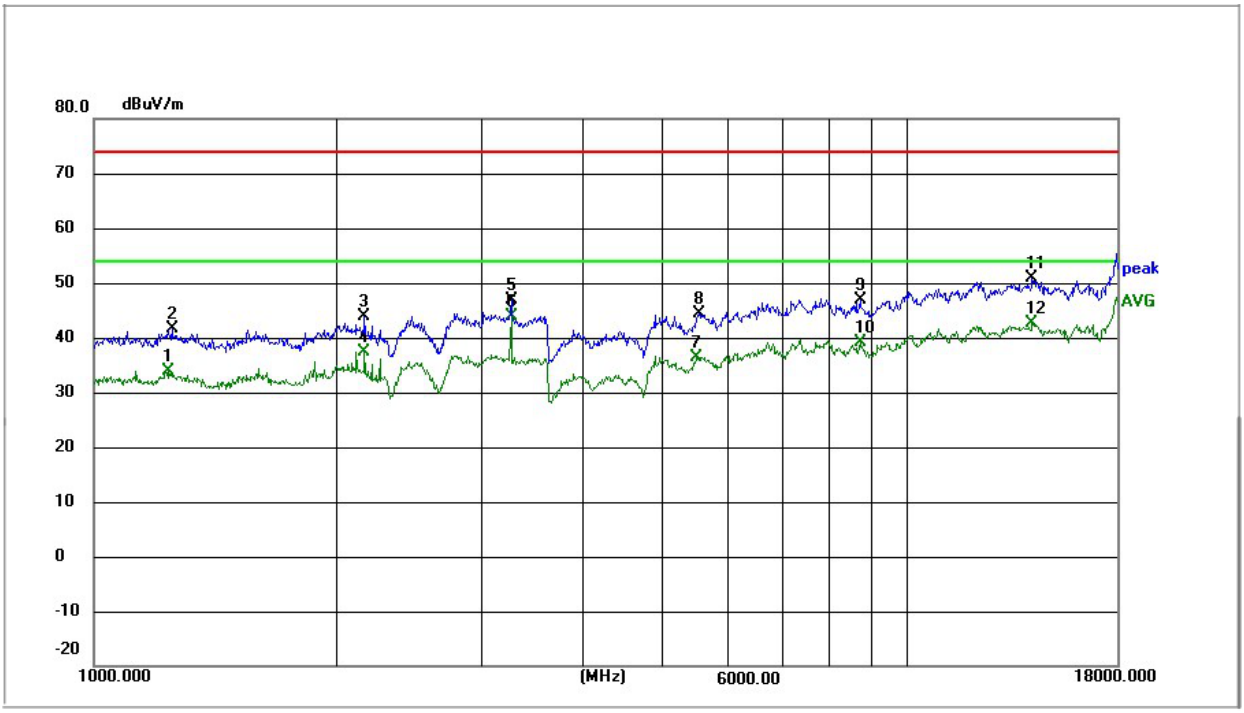
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1240.550	59.44	-17.97	41.47	74.00	-32.53	peak	P	
2	1251.600	51.77	-17.87	33.90	54.00	-20.10	AVG	P	
3	2113.925	55.68	-12.55	43.13	74.00	-30.87	peak	P	
4	2114.350	52.45	-12.55	39.90	54.00	-14.10	AVG	P	
5	3203.200	55.44	-9.21	46.23	74.00	-27.77	peak	P	
6 *	3203.200	53.32	-9.21	44.11	54.00	-9.89	AVG	P	
7	4804.175	43.65	-7.02	36.63	54.00	-17.37	AVG	P	
8	4969.500	50.13	-6.16	43.97	74.00	-30.03	peak	P	

TM2 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: M



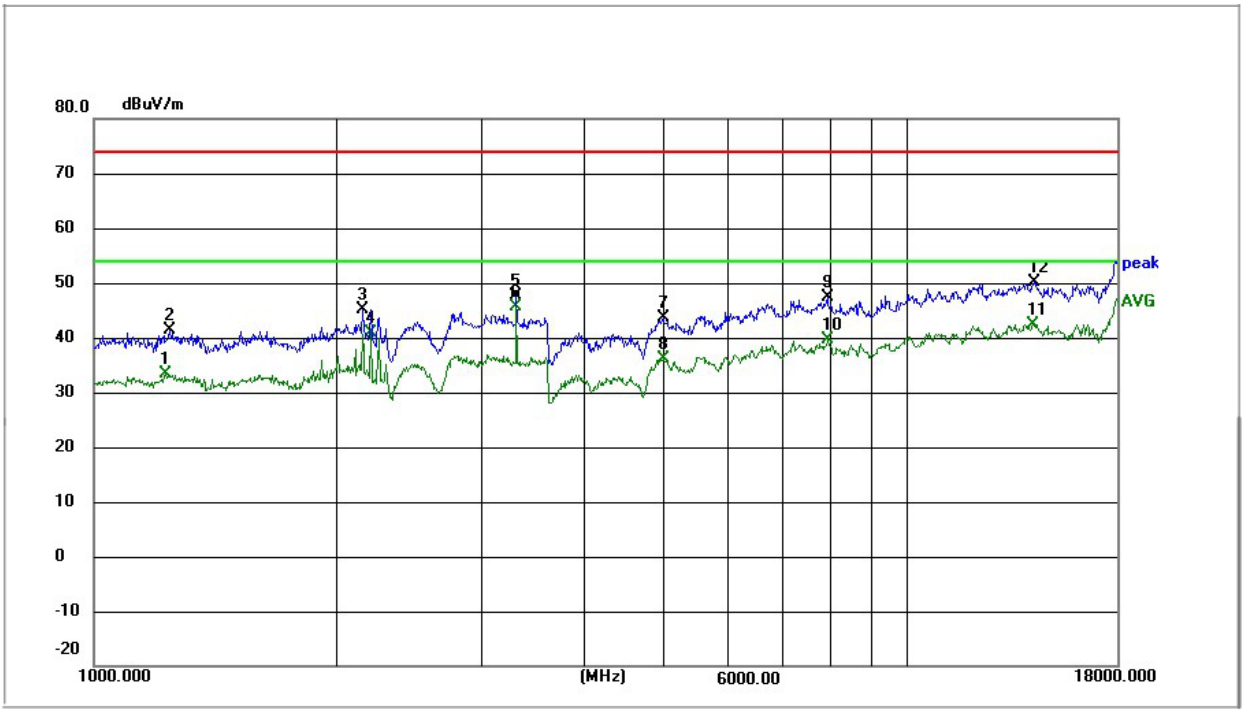
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1219.300	59.49	-18.20	41.29	74.00	-32.71	peak	P	
2	1239.700	51.98	-17.98	34.00	54.00	-20.00	AVG	P	
3	2152.175	58.55	-12.81	45.74	74.00	-28.26	peak	P	
4	2248.225	54.90	-13.07	41.83	54.00	-12.17	AVG	P	
5	3253.775	57.55	-9.00	48.55	74.00	-25.45	peak	P	
6 *	3253.775	54.44	-9.00	45.44	54.00	-8.56	AVG	P	
7	4879.825	51.33	-7.23	44.10	74.00	-29.90	peak	P	
8	4879.825	45.27	-7.23	38.04	54.00	-15.96	AVG	P	

TM2 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: M



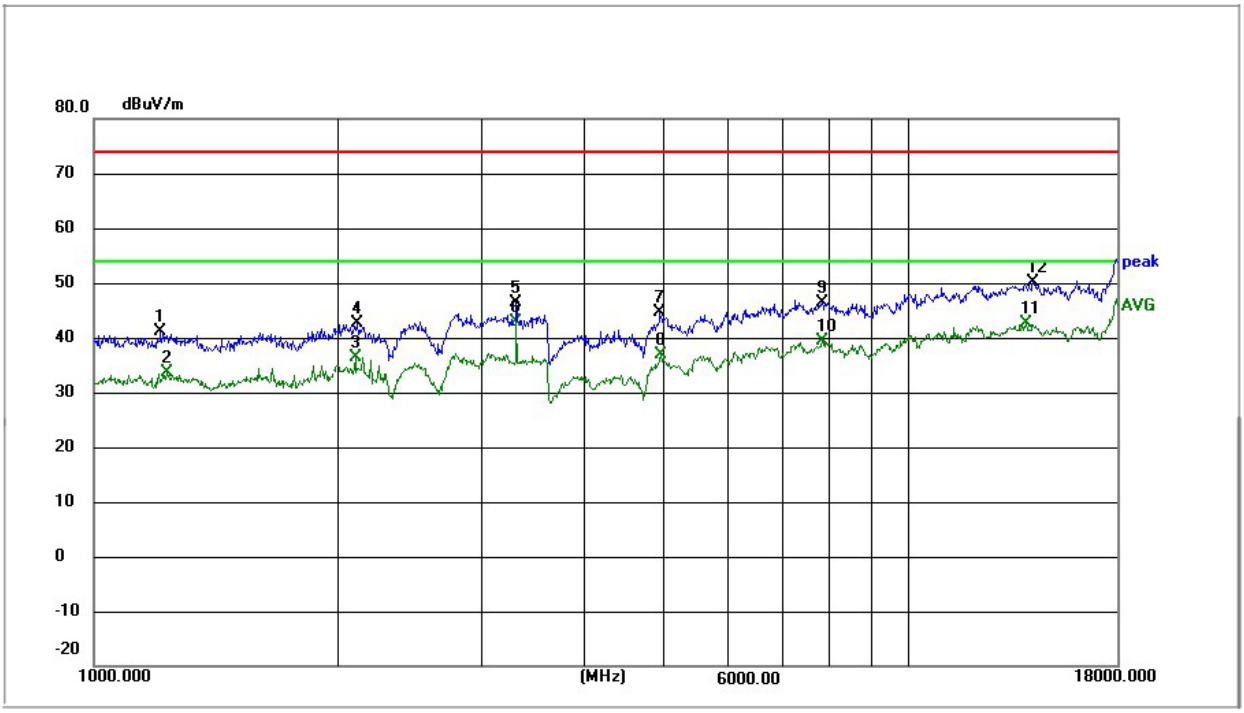
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1236.725	51.90	-18.02	33.88	54.00	-20.12	AVG	P	
2	1248.200	59.52	-17.89	41.63	74.00	-32.37	peak	P	
3	2152.600	56.62	-12.82	43.80	74.00	-30.20	peak	P	
4	2152.600	50.30	-12.82	37.48	54.00	-16.52	AVG	P	
5	3253.350	55.89	-9.00	46.89	74.00	-27.11	peak	P	
6 *	3253.350	52.98	-9.00	43.98	54.00	-10.02	AVG	P	
7	5489.700	41.92	-5.45	36.47	54.00	-17.53	AVG	P	
8	5532.200	49.99	-5.55	44.44	74.00	-29.56	peak	P	

TM2 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: H



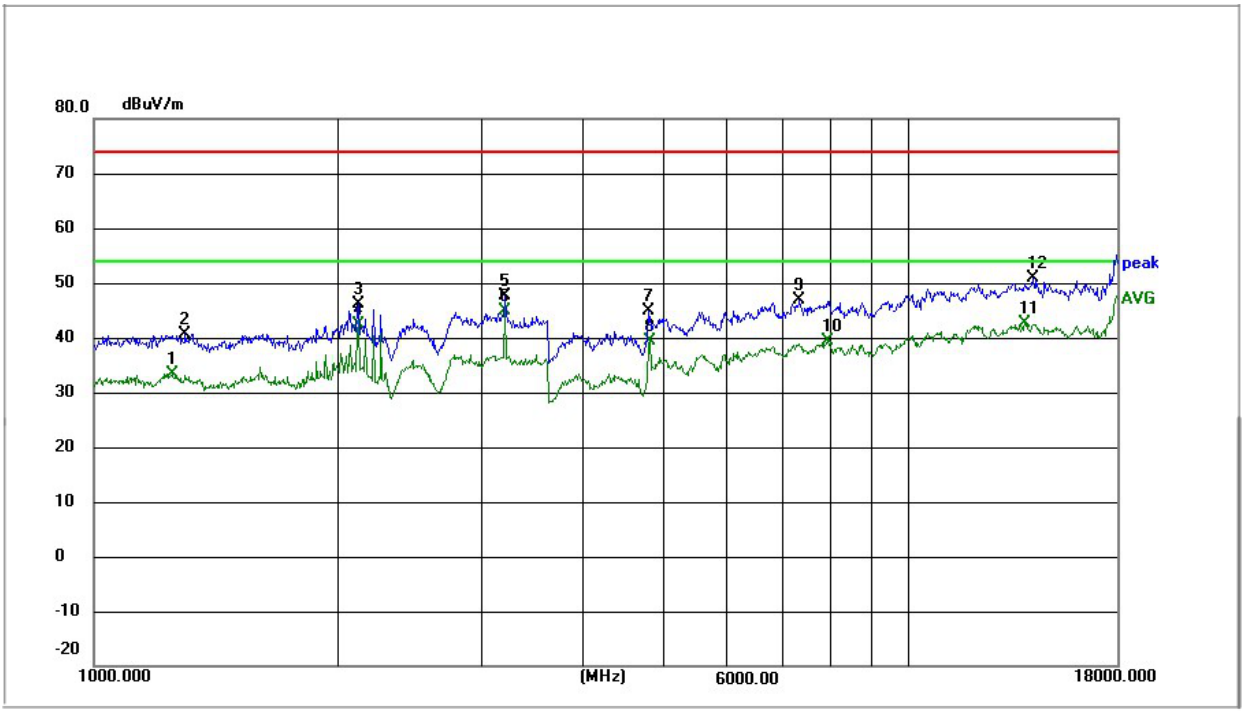
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1226.100	51.42	-18.13	33.29	54.00	-20.71	AVG	P	
2	1240.550	59.37	-17.97	41.40	74.00	-32.60	peak	P	
3	2144.525	57.94	-12.74	45.20	74.00	-28.80	peak	P	
4	2192.550	54.57	-13.61	40.96	54.00	-13.04	AVG	P	
5	3306.900	57.03	-9.40	47.63	74.00	-26.37	peak	P	
6 *	3306.900	55.07	-9.40	45.67	54.00	-8.33	AVG	P	
7	4998.400	50.15	-6.40	43.75	74.00	-30.25	peak	P	
8	4998.400	42.54	-6.40	36.14	54.00	-17.86	AVG	P	

TM2 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H



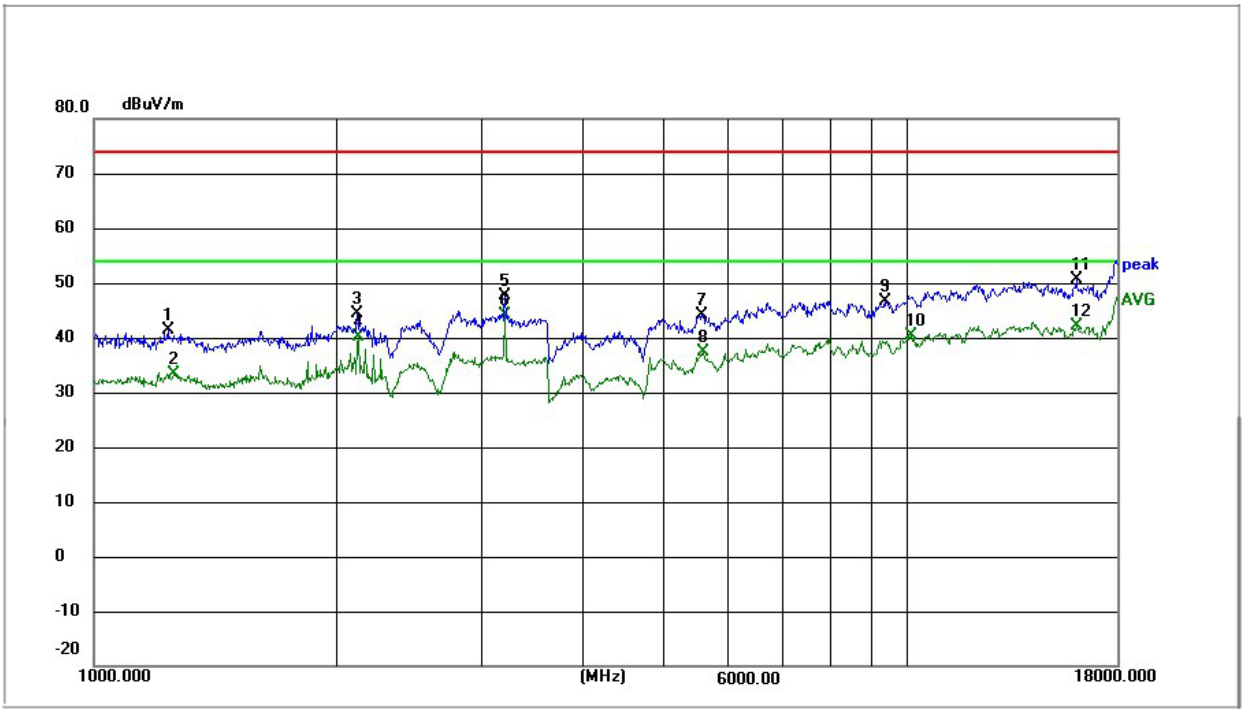
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1207.825	59.44	-18.32	41.12	74.00	-32.88	peak	P	
2	1230.775	51.66	-18.08	33.58	54.00	-20.42	AVG	P	
3	2096.925	48.94	-12.50	36.44	54.00	-17.56	AVG	P	
4	2113.500	55.18	-12.55	42.63	74.00	-31.37	peak	P	
5	3306.900	55.78	-9.40	46.38	74.00	-27.62	peak	P	
6 *	3306.900	52.36	-9.40	42.96	54.00	-11.04	AVG	P	
7	4957.600	50.68	-6.05	44.63	74.00	-29.37	peak	P	
8	4959.725	42.95	-6.07	36.88	54.00	-17.12	AVG	P	

TM3 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



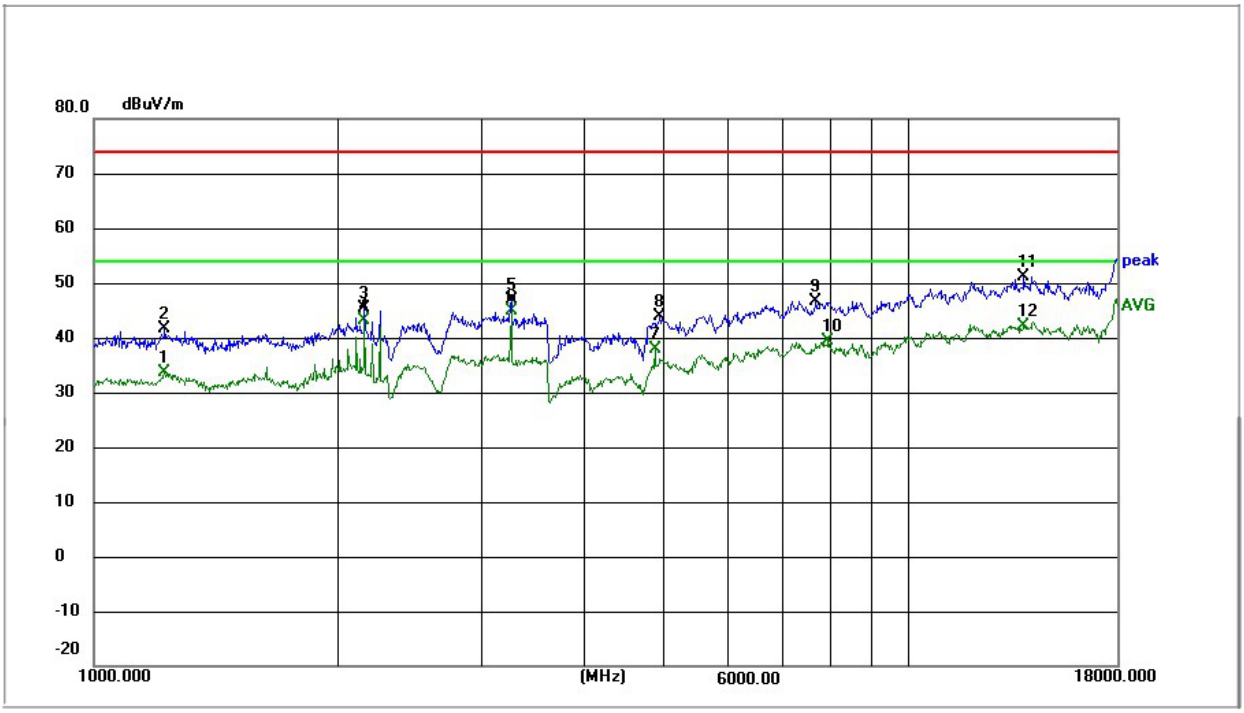
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1246.500	51.31	-17.91	33.40	54.00	-20.60	AVG	P	
2	1296.225	58.36	-17.85	40.51	74.00	-33.49	peak	P	
3	2114.350	58.70	-12.55	46.15	74.00	-27.85	peak	P	
4	2114.350	54.93	-12.55	42.38	54.00	-11.62	AVG	P	
5	3202.775	56.87	-9.21	47.66	74.00	-26.34	peak	P	
6 *	3202.775	54.08	-9.21	44.87	54.00	-9.13	AVG	P	
7	4803.750	51.92	-7.03	44.89	74.00	-29.11	peak	P	
8	4804.175	46.47	-7.02	39.45	54.00	-14.55	AVG	P	

TM3 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



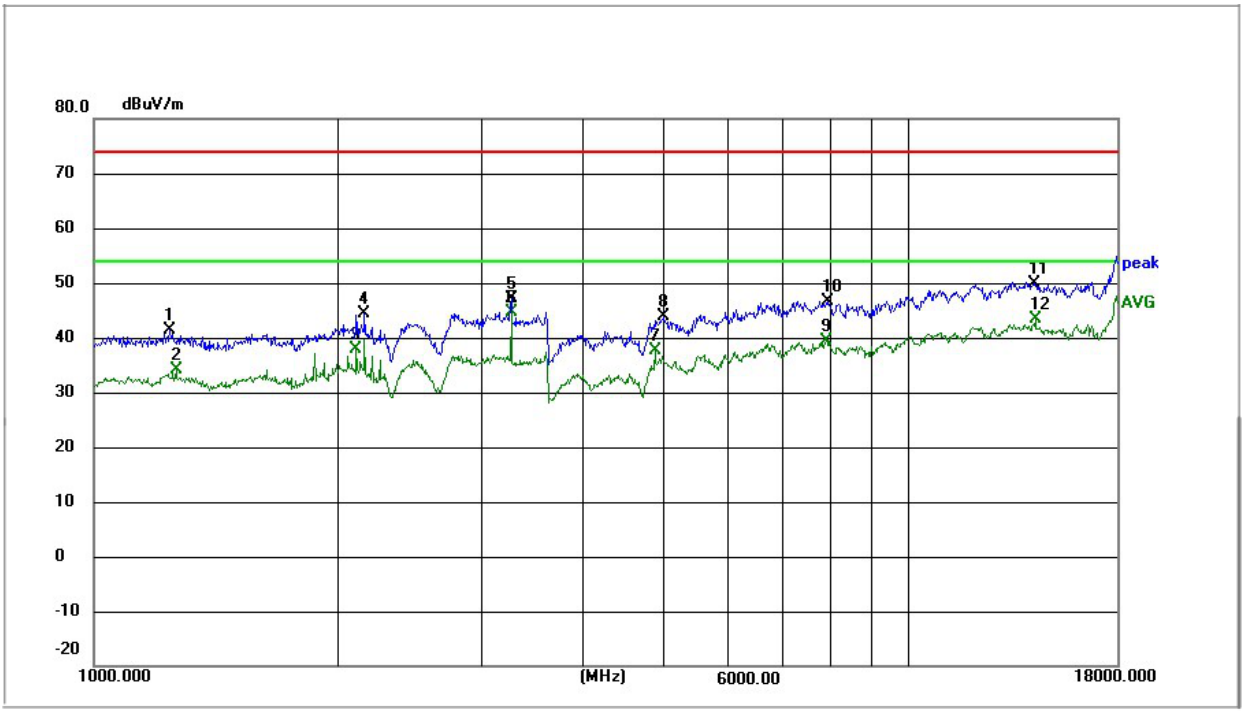
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1232.050	59.47	-18.06	41.41	74.00	-32.59	peak	P	
2	1255.000	51.24	-17.87	33.37	54.00	-20.63	AVG	P	
3	2113.925	56.91	-12.55	44.36	74.00	-29.64	peak	P	
4	2114.350	52.73	-12.55	40.18	54.00	-13.82	AVG	P	
5	3202.775	56.88	-9.21	47.67	74.00	-26.33	peak	P	
6 *	3202.775	53.37	-9.21	44.16	54.00	-9.84	AVG	P	
7	5577.250	49.98	-5.80	44.18	74.00	-29.82	peak	P	
8	5596.375	43.18	-5.88	37.30	54.00	-16.70	AVG	P	

TM3 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: M



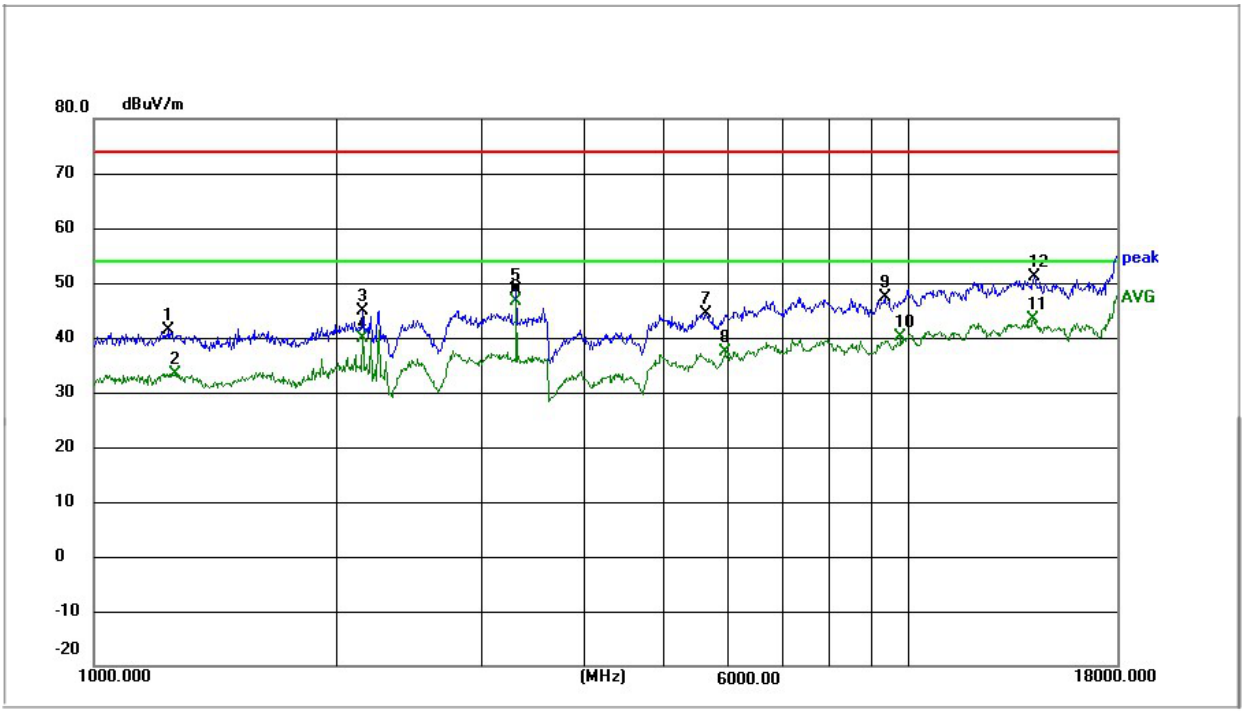
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1220.575	51.94	-18.19	33.75	54.00	-20.25	AVG	P	
2	1221.850	59.73	-18.17	41.56	74.00	-32.44	peak	P	
3	2153.025	58.24	-12.83	45.41	74.00	-28.59	peak	P	
4	2153.025	55.88	-12.83	43.05	54.00	-10.95	AVG	P	
5	3255.050	55.95	-9.01	46.94	74.00	-27.06	peak	P	
6 *	3255.050	53.98	-9.01	44.97	54.00	-9.03	AVG	P	
7	4881.950	45.13	-7.24	37.89	54.00	-16.11	AVG	P	
8	4956.325	49.90	-6.04	43.86	74.00	-30.14	peak	P	

TM3 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: M



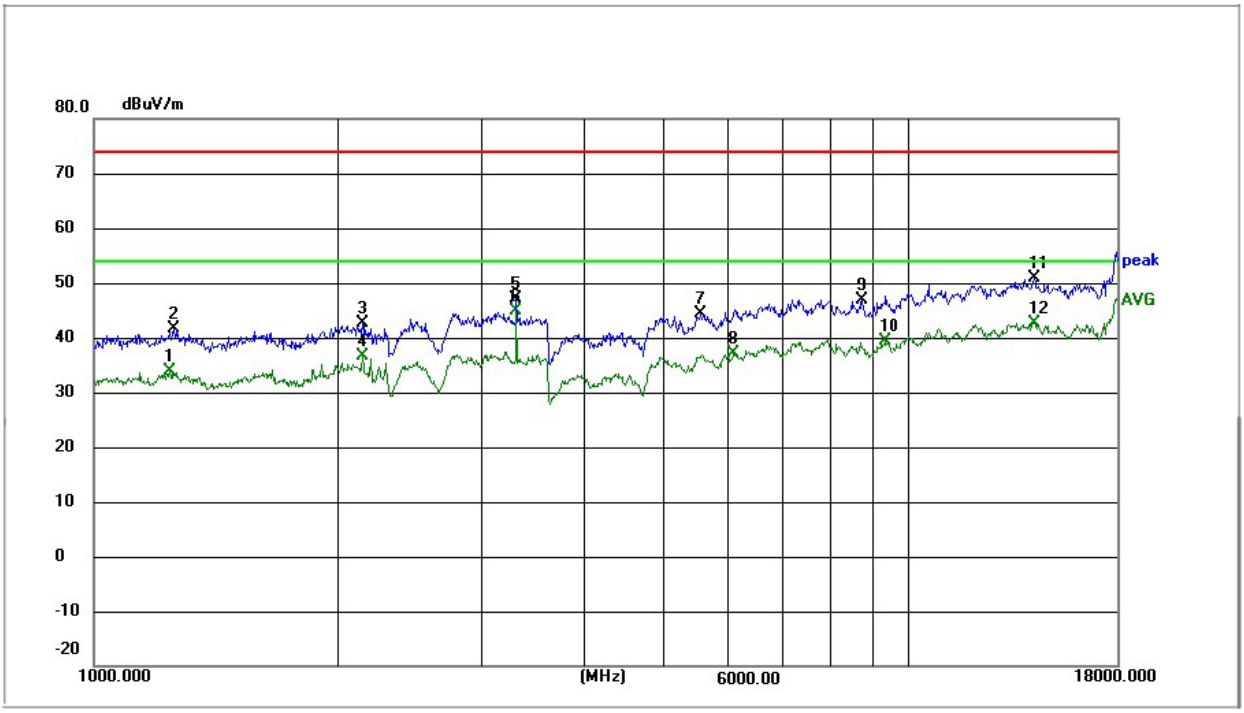
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1239.275	59.40	-17.99	41.41	74.00	-32.59	peak	P	
2	1260.525	51.90	-17.87	34.03	54.00	-19.97	AVG	P	
3	2105.425	50.30	-12.50	37.80	54.00	-16.20	AVG	P	
4	2153.025	57.19	-12.83	44.36	74.00	-29.64	peak	P	
5	3255.050	56.11	-9.01	47.10	74.00	-26.90	peak	P	
6 *	3255.050	53.65	-9.01	44.64	54.00	-9.36	AVG	P	
7	4881.950	44.89	-7.24	37.65	54.00	-16.35	AVG	P	
8	5003.075	50.14	-6.37	43.77	74.00	-30.23	peak	P	

TM3 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1235.875	59.50	-18.02	41.48	74.00	-32.52	peak	P	
2	1258.400	51.28	-17.88	33.40	54.00	-20.60	AVG	P	
3	2144.525	57.52	-12.74	44.78	74.00	-29.22	peak	P	
4	2144.525	52.57	-12.74	39.83	54.00	-14.17	AVG	P	
5	3306.900	58.09	-9.40	48.69	74.00	-25.31	peak	P	
6 *	3306.900	56.14	-9.40	46.74	54.00	-7.26	AVG	P	
7	5640.150	50.13	-5.72	44.41	74.00	-29.59	peak	P	
8	5953.375	41.71	-4.45	37.26	54.00	-16.74	AVG	P	

TM3 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1239.700	51.75	-17.98	33.77	54.00	-20.23	AVG	P	
2	1254.150	59.63	-17.88	41.75	74.00	-32.25	peak	P	
3	2144.525	55.49	-12.74	42.75	74.00	-31.25	peak	P	
4	2144.525	49.29	-12.74	36.55	54.00	-17.45	AVG	P	
5	3306.900	56.59	-9.40	47.19	74.00	-26.81	peak	P	
6 *	3306.900	54.33	-9.40	44.93	54.00	-9.07	AVG	P	
7	5561.950	50.02	-5.74	44.28	74.00	-29.72	peak	P	
8	6089.375	42.02	-4.78	37.24	54.00	-16.76	AVG	P	

10.12 Emissions in frequency bands (above 18GHz)

Test Requirement:

Refer to 47 CFR 15.247(d), in addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).

Test Limit:

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

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.
In the emission table above, the tighter limit applies at the band edges.
The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

Table 1 – Restricted frequency bands

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

Test Method:

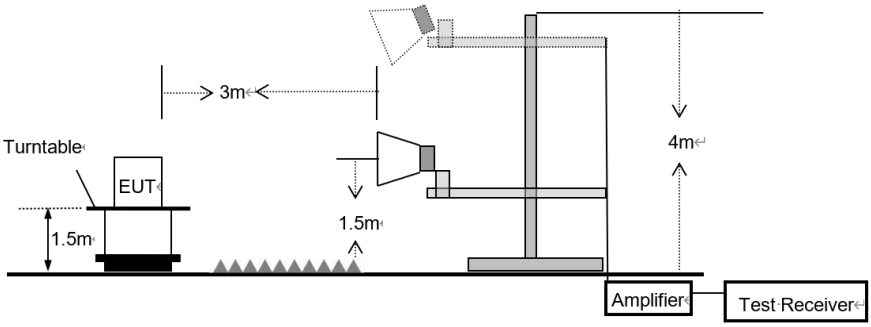
ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.6
KDB 558074 D01 15.247 Meas Guidance v05r02

Procedure:

a) The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c) The antenna 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.
d) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table table was turned from 0 degrees to 360 degrees to find the maximum reading.

	e) The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f) If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. g) Test the EUT in the lowest channel ,middle channel, the Highest channel h) The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, only the test worst case is recorded in the report. i) Repeat above procedures until all frequencies measured was complete. Where, a) Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically. b) Level = Reading + Factor. c) Margin = Level – Limit

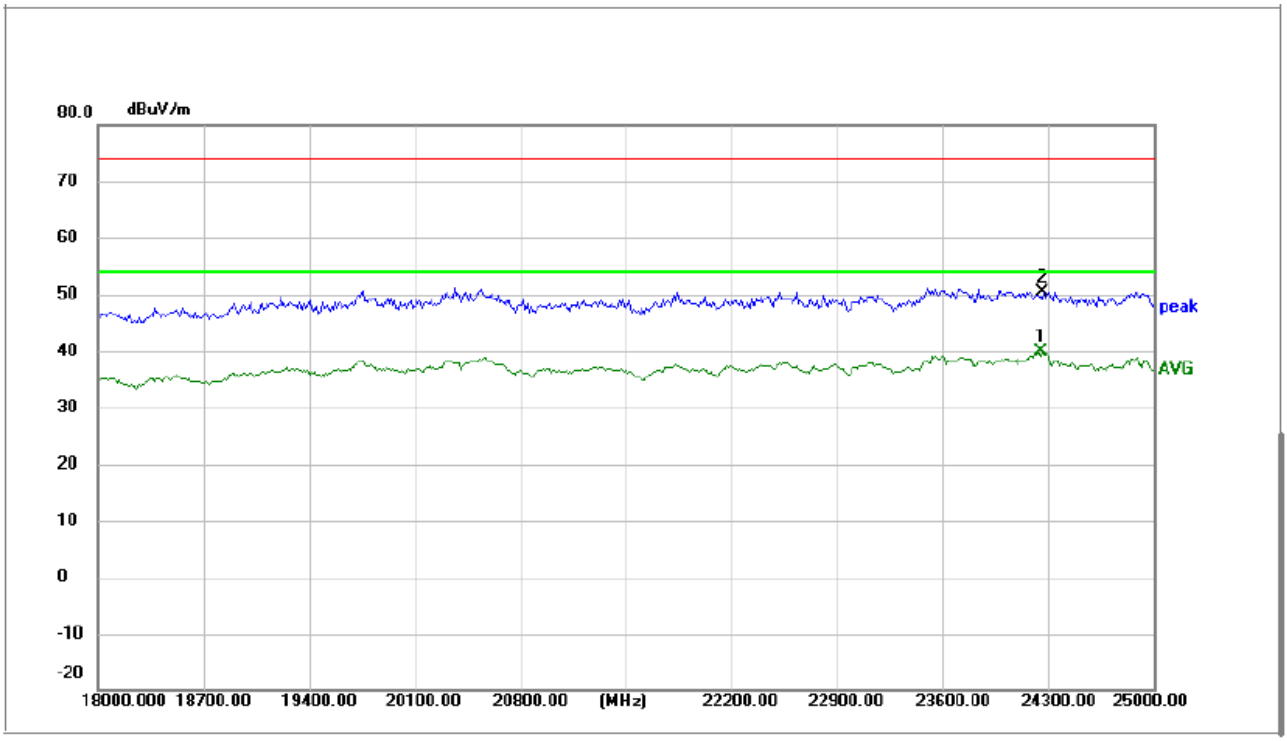
10.12.1 Test Setup Diagram:



10.12.2 E.U.T. Operation:

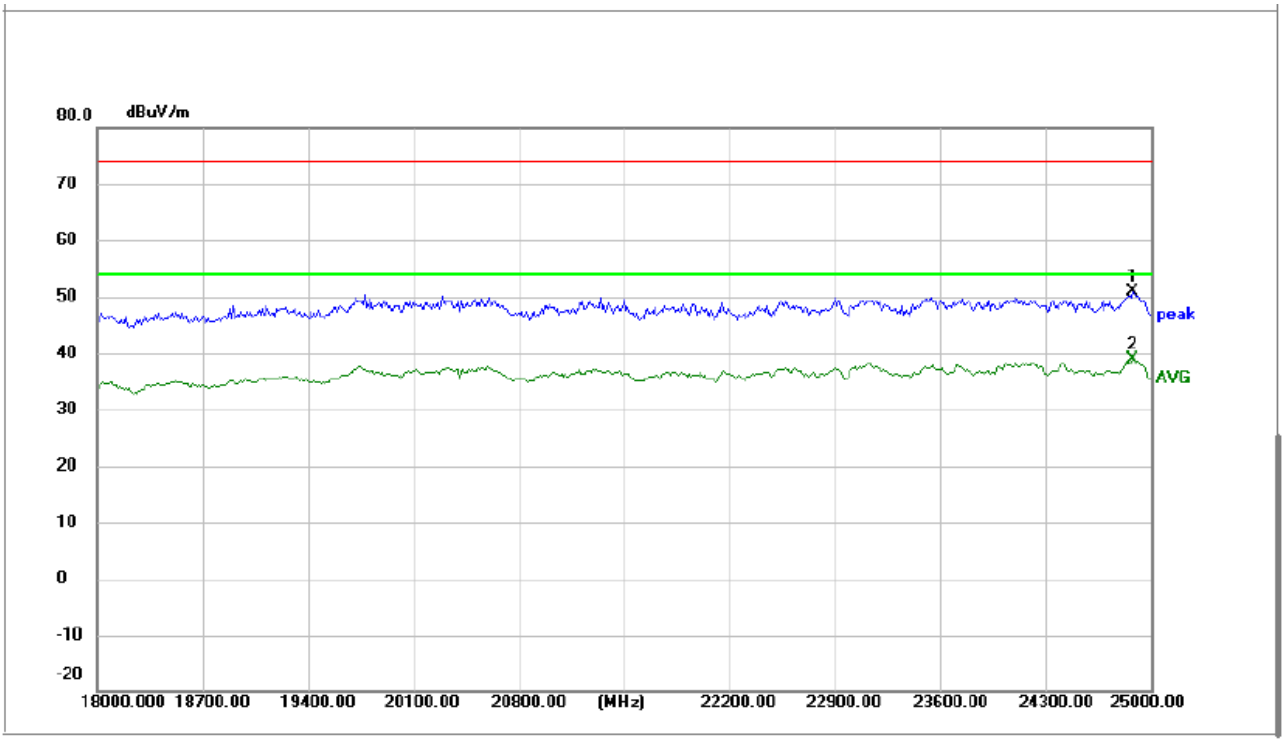
Operating Environment:					
Temperature:	20 °C	Humidity:	59 %	Atmospheric Pressure:	1010 mbar
Per-test mode:	TM1, TM2, TM3				
Final test mode:	TM1				

TM1 / Polarization: Horizontal / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	24259.420	51.49	-11.73	39.76	54.00	-14.24	AVG	P	
2	24269.565	62.20	-11.70	50.50	74.00	-23.50	peak	P	

TM1 / Polarization: Vertical / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	24878.261	61.15	-10.29	50.86	74.00	-23.14	peak	P	
2 *	24878.261	49.20	-10.29	38.91	54.00	-15.09	AVG	P	

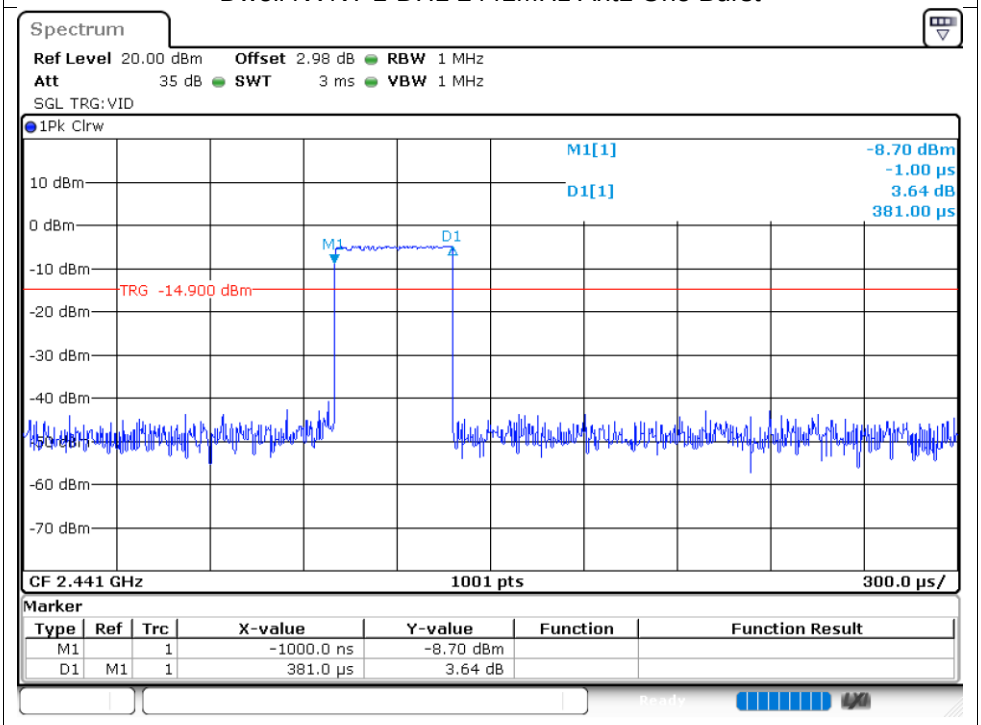
Appendix A

A1. Dwell Time

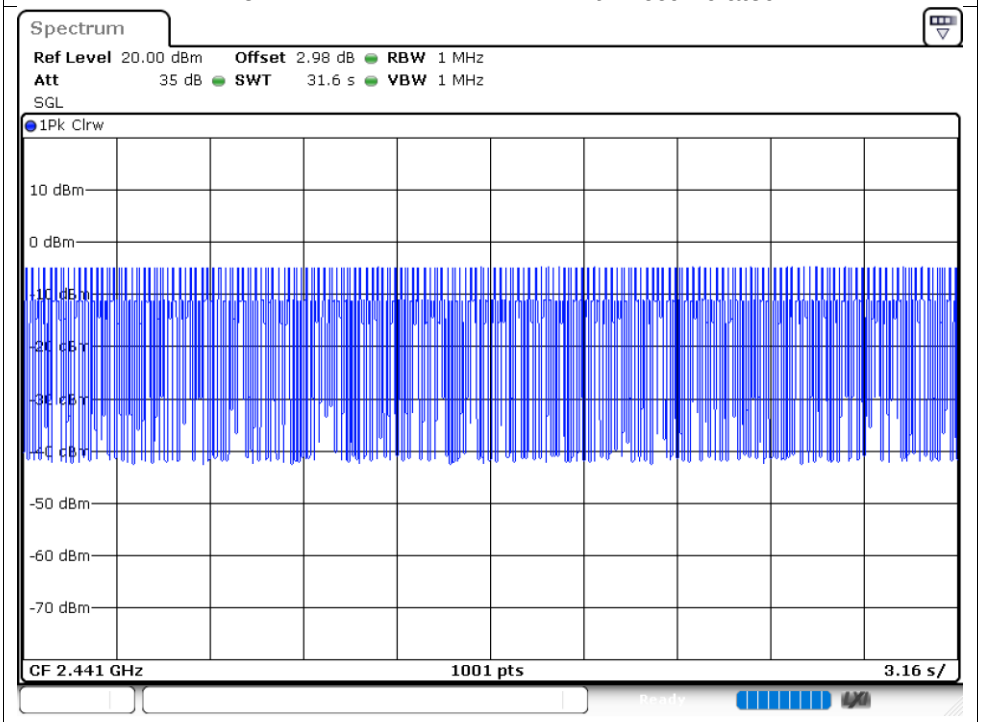
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.381	80.391	211	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.644	225.228	137	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.888	283.024	98	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.387	81.27	210	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.64	219.76	134	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.888	280.136	97	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.387	83.205	215	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.64	224.68	137	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.888	271.472	94	31600	400	Pass

Test Graphs

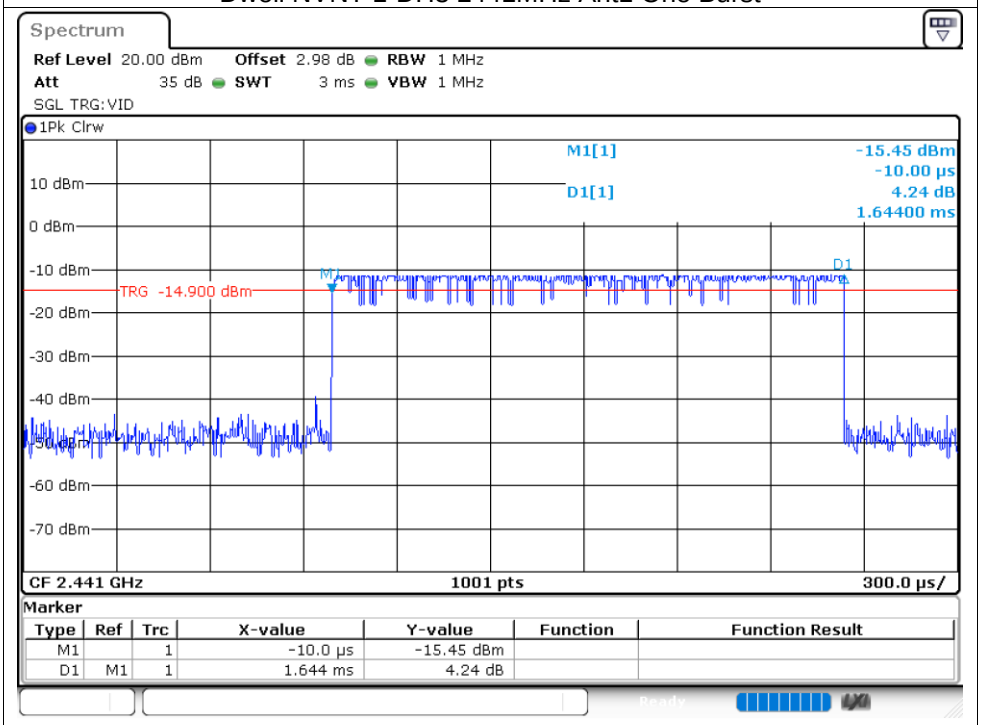
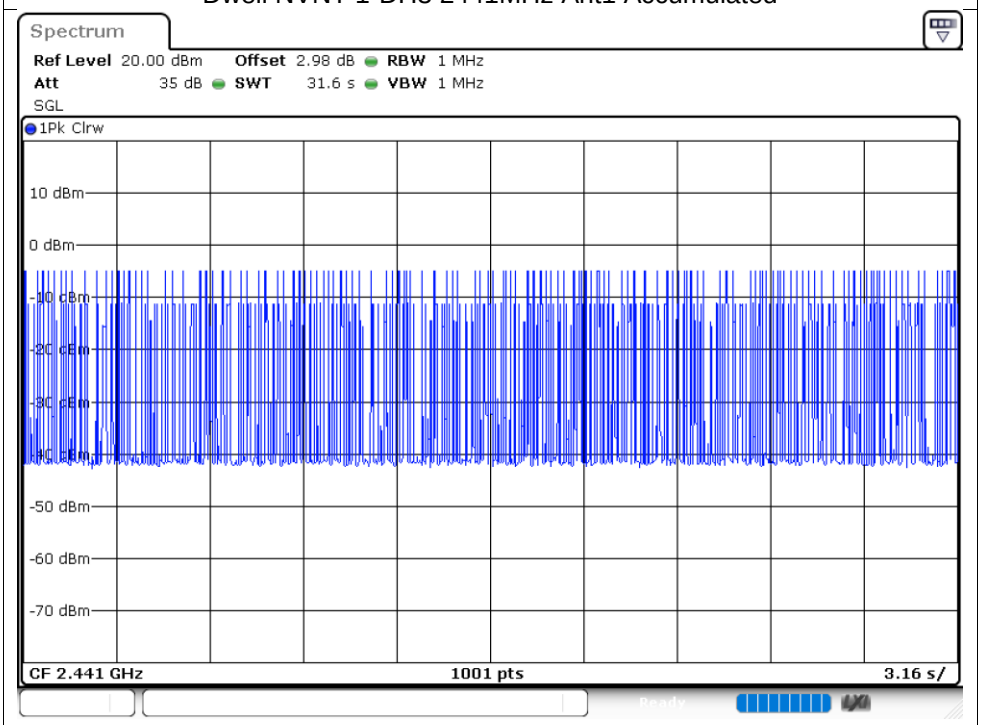
Dwell NVNT 1-DH1 2441MHz Ant1 One Burst



Dwell NVNT 1-DH1 2441MHz Ant1 Accumulated



Dwell NVNT 1-DH3 2441MHz Ant1 One Burst



Dwell NVNT 1-DH3 2441MHz Ant1 Accumulated