

Test Report

Applicant : Huizhou TWOLF Intelligent Technology CO.,LTD
Address : 7F, Building 13, No.1 Yong Guang East Road,
Zhong Kai High-tech Zone, Huizhou
Product Name : V11 4752 C1
Brand Mark : N/A
Model : V11 4752 C1
Series model : N/A
Report Number : BLA-EMC-202606-A56-02
FCC ID : 2BXEZ-V114752C1
Date of Receipt : Jun. 26, 2026
Date of Test : Jun. 26, 2026 to Jul. 16, 2026
Test Standard : 47 CFR Part 15, Subpart C 15.249
Test Result : Pass

Compiled by:



Review by:



Approved by:



Issued Date:

Aug. 18, 2026



BlueAsia Technical Services (Shenzhen) Co., Ltd

Address: No.41, South of Beihuan Road, Shangwu Community, Shiyan
Subdistrict, Bao'an District, Shenzhen, Guangdong, China



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Revise Record

Version No.	Date	Description
01	Aug. 18,2026	Original

1 General information

1.1 General information

Applicant	Huizhou TWOLF Intelligent Technology CO.,LTD
Address	7F, Building 13, No.1 Yong Guang East Road, Zhong Kai High-tech Zone, Huizhou
Manufacturer	Huizhou TWOLF Intelligent Technology CO.,LTD
Address	7F, Building 13, No.1 Yong Guang East Road, Zhong Kai High-tech Zone, Huizhou
Factory	Huizhou TWOLF Intelligent Technology CO.,LTD
Address	7F, Building 13, No.1 Yong Guang East Road, Zhong Kai High-tech Zone, Huizhou

1.2 General description of EUT

Product name	V11 4752 C1
Model no.	V11 4752 C1
Series model	N/A
Differences of Series model	N/A
Operation Band	2.4G ISM band
Operation Frequency	2402MHz-2480MHz
Modulation Type	GFSK
Rate data	1Mbps
Channel Spacing	2MHz
Number of Channels	40
Antenna Type	PCB antenna
Antenna Gain	1.71dBi(Provided by customer)
Max. Field Strength(PK)	92.08dBuV/m@3m/2480Mhz
Max. Field Strength(AV)	90.45dBuV/m@3m/2480Mhz
Power supply or adapter information	DC3.7V
Hardware version	V1
Software version	V1
Engineer sample no.	BLA-EMC-202606-A56

Note: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

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2 Test summary

No.	Test item	FCC Part Section(s)	Test Method(Clause)	Result
1	Antenna Requirement	§15.203	N/A	Pass
2	Conducted Emissions at AC Power Line (150kHz-30MHz)	§15.207	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 Clause 6.2	Pass
3	20dB Bandwidth	N/A	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 Section 6.9	Pass
4	Field Strength of the Fundamental Signal	§15.249(a)	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 Clause 6.5&6.6	Pass
5	Radiated Emissions	§15.249 (d) §15.209	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 Section 6.4,6.5,6.6	Pass
6	Restricted Band Around Fundamental Frequency	§15.205 §15.209	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 Section 6.4,6.5,6.6	Pass

N/A: Not Applicable

3 Test Configuration

3.1 Test mode

Test Mode ^{Note 1}	Description
TX	Keep the EUT in continuously transmitting with modulation mode.
RX	Keep the EUT in receiving mode
TX Low channel	Keep the EUT in continuously transmitting mode in low channel
TX middle channel	Keep the EUT in continuously transmitting mode in middle channel
TX high channel	Keep the EUT in continuously transmitting mode in high channel

Note 1: The EUT was configured to measure its highest possible emission and/or immunity level. The test modes were adapted according to the operation manual for use

3.2 Operation Frequency each of channel

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2402MHz	10	2422MHz	20	2442MHz	30	2462MHz
1	2404MHz	11	2424MHz	21	2444MHz	31	2464MHz
...	...	...	...	...	...	...	...
8	2418MHz	18	2438MHz	28	2458MHz	38	2478MHz
9	2420MHz	19	2440MHz	29	2460MHz	39	2480MHz

3.3 Test channel

Channel	Frequency
The lowest channel	2402MHz
The middle channel	2442MHz
The Highest channel	2480MHz

3.4 Auxiliary equipment

Device Type	Manufacturer	Model Name	Serial No.	Remark
PC	lenovo	E46OC	N/A	From lab (No.BLA-ZC-BS-2022005)
AC adapter	PISEN	ZY2207-A521H	N/A	From lab
Note: “--” mean no any auxiliary device during testing.				

3.5 Test environment

Environment	Temperature	Voltage
Normal	25℃	DC 3.7V

4 Laboratory information

4.1 Laboratory and accreditations

The test facility is recognized, certified, or accredited by the following organizations:

Company name:	BlueAsia Technical Services (Shenzhen) Co.,Ltd.
Address:	No.41, South of Beihuan Road, Shangwu Community, Shiyan Subdistrict, Bao'an District, Shenzhen, Guangdong, China
CNAS accredited No.:	L9788
A2LA Cert. No.:	5071.01
FCC Designation No.:	CN1252
Test Firm Registration Number:	923526
ISED CAB identifier No.:	CN0028
Company Number:	24243
Telephone:	+86-755-28682673
FAX:	+86-755-28682673

4.2 Measurement uncertainty

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=1.96$.

Parameter	Expanded Uncertainty
Radiated Emission(9kHz-30MHz)	$\pm 4.34\text{dB}$
Radiated Emission(30Mz-1000MHz)	$\pm 4.24\text{dB}$
Radiated Emission(1GHz-18GHz)	$\pm 4.68\text{dB}$
Radiated Emission(18GHz-40GHz)	$\pm 4.78\text{dB}$
AC Power Line Conducted Emission(150kHz-30MHz)	$\pm 3.45\text{dB}$
Occupied Channel Bandwidth	$\pm 5\%$
RF output power, conducted	$\pm 1.5\text{ dB}$
Power Spectral Density, conducted	$\pm 3.0\text{ dB}$
Unwanted Emissions, conducted	$\pm 3.0\text{ dB}$
Temperature	$\pm 3\text{ }^{\circ}\text{C}$
Supply voltages	$\pm 3\%$
Time	$\pm 5\%$

5 Test equipment

Radiated Emissions (Below 1GHz)

Equipment	Name	Model	Manufacture	S/N	Cal. Date	Due. Date
BLA-EMC-002-01	Anechoic chamber	9*6*6 chamber	SKET	N/A	2024/3/27	2027/3/26
BLA-EMC-002-02	Control room	966 control room	SKET	N/A	2024/3/27	2027/3/26
BLA-EMC-009	EMI receiver	ESR7	R&S	101199	2025/08/05	2026/08/04
BLA-EMC-043	Loop antenna	FMZB1519B	Schwarzbeck	00102	2024/06/29	2027/06/28
BLA-EMC-065	Broadband antenna	VULB9168	Schwarzbeck	01065P	2024/06/29	2027/06/27
BLA-XC-01	Coaxial Cable	N/A	BlueAsia	V01	N/A	N/A
BLA-XC-02	Coaxial Cable	N/A	BlueAsia	V02	N/A	N/A

Radiated Emissions (Above 1GHz)

Equipment	Name	Model	Manufacture	S/N	Cal. Date	Due. Date
BLA-EMC-001-01	Anechoic chamber	9*6*6 chamber	SKET	N/A	2023/11/16	2026/11/15
BLA-EMC-001-02	Control Room	966 control room	SKET	N/A	2023/11/16	2027/11/15
BLA-EMC-008	Spectrum	FSP40	R&S	100817	2025/08/05	2026/08/04
BLA-EMC-013	Horn Antenna	BBHA9120D	Schwarzbeck	01892	2024/06/29	2027/06/28
BLA-EMC-014	Amplifier	PA_000318G-45	SKET	PA2018043003	2025/08/05	2026/08/04
BLA-EMC-046	Filter bank	2.4G/5G Filter bank	SKET	N/A	2025/06/09	2027/06/08

BLA-EMC-061	Receiver	ESPI7	R&S	101477	2025/06/09	2027/06/08
BLA-EMC-066	Amplifier	LNPA_30M01 G-30	SKET	SK202106 0801	2025/06/09	2027/06/08
BLA-EMC-086	Amplifier	LNPA_18G40 G-50dB	SKET	SK202207 1301	2025/06/09	2027/06/08
BLA-EMC-087	Horn Antenna	BBHA 9170	Schwarzbeck	1106	2024/06/29	2027/06/28
BLA-XC-03	Coaxial Cable	N/A	BlueAsia	V03	N/A	N/A
BLA-XC-04	Coaxial Cable	N/A	BlueAsia	V04	N/A	N/A

Conducted Emissions at Mains Terminals (150 kHz-30MHz)

Equipment	Name	Model	Manufacture	S/N	Cal. Date	Due. Date
BLA-EMC-003-001	Shield room	8*3*3	SKET	N/A	2023/11/16	2027/11/15
BLA-EMC-009	EMI receiver	ESR7	R&S	101199	2025/08/05	2026/08/04
BLA-EMC-011	LISN	ENV216	R&S	101372	2025/08/05	2026/08/04
BLA-EMC-033	Impedance transformer	DC-2GHz	DFXP	N/A	2025/06/09	2027/06/08
BLA-EMC-041	LISN	AT166-2	ATTEN	AKK180600 0003	2025/08/05	2026/08/04
BLA-EMC-045	Impedance stable network	ISNT8-cat 6	TESEQ	53580	2025/08/05	2026/08/04
BLA-EMC-095	Single-channel vehicle artificial power network	NNBM 8124	Schwarzbeck	01045	2025/06/09	2027/06/08
BLA-EMC-096	Single-channel vehicle artificial power network	NNBM 8124	Schwarzbeck	01075	2025/06/09	2027/06/08
BLA-XC-05	Coaxial Cable	N/A	BlueAsia	V05	N/A	N/A

Test Software Record

Software No.	Software Name	Manufacture	Software version	Test site
BLA-EMC-S001	EZ-EMC	EZ	EEMC-3A1+	RE
BLA-EMC-S002	EZ-EMC	EZ	EEMC-3A1+	RE
BLA-EMC-S003	EZ-EMC	EZ	EEMC-3A1+	CE

RF conducted

Equipment	Name	Model	Manufacture	S/N	Cal. Date	Due. Date
BLA-EMC-003-003	Shield room	5*3*3	SKET	N/A	2023/11/16	2027/11/15
BLA-EMC-016	Signal Generator	N5182A	Agilent	MY52420567	2025/06/09	2027/06/08
BLA-EMC-038	Spectrum	N9020A	Agilent	MY49100060	2025/08/05	2026/08/04
BLA-EMC-042	Power sensor	RPR3006 W	DARE	14I00889SN042	2025/08/05	2026/08/04
BLA-EMC-044	Radio communication tester	CMW500	R&S	132429	2025/08/05	2026/08/04
BLA-EMC-064	Signal Generator	N5182B	KEYSIGHT	MY58108892	2025/06/09	2027/06/08
BLA-EMC-079	Spectrum	N9020A	Agilent	MY54420161	2025/08/05	2026/08/04
BLA-EMC-088	Audio Analyzer	ATS-1	Audio Precision	ATS141094	2025/06/09	2027/06/08
BLA-EMC-100	Digital Radio	RWC2010	Redwoodcom	RWC201024903	2025/06/09	2027/06/08

	Tester		m	04		
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Test Software Record

Software No.	Software Name	Manufacture	Software version	Test site
BLA-EMC-S001	EZ-EMC	EZ	EEMC-3A1+	RE
BLA-EMC-S002	EZ-EMC	EZ	EEMC-3A1+	RE
BLA-EMC-S003	EZ-EMC	EZ	EEMC-3A1+	CE
BLA-EMC-S010	MTS 8310	MW	2.0.0.0	RF

6 Test result

6.1 Antenna requirement

Test Standard	47 CFR Part 15, Subpart C 15.203
Test Method	N/A

6.1.1 Requirement

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 an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of a so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT antenna:

The antenna is PCB Antenna The best case gain of the antenna is 1.71dBi

6.2 Conducted emissions at AC power line (150 kHz-30 MHz)

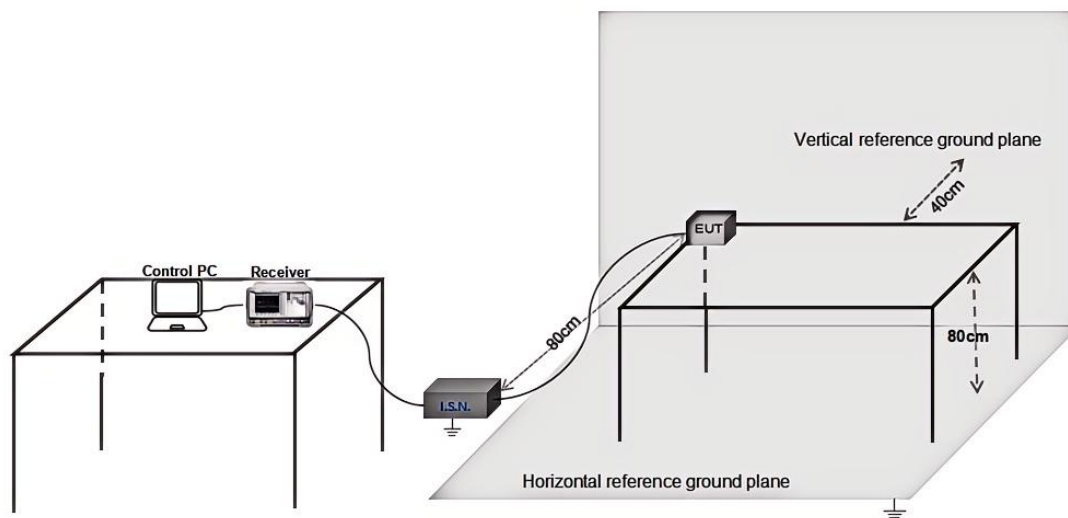
Test Standard	47 CFR Part 15, Subpart C 15.207
Test Method	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 Section 6.2
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

6.2.1 Limit

Frequency of emission(MHz)	Conducted limit(dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

6.2.2 Test setup



Description of test setup connection:

- Connect the control PC to the receiver through a USB to GPIB cable;
- The receiver is connected to the LISN through a coaxial line;
- Connect the power port of LISN to the EUT.

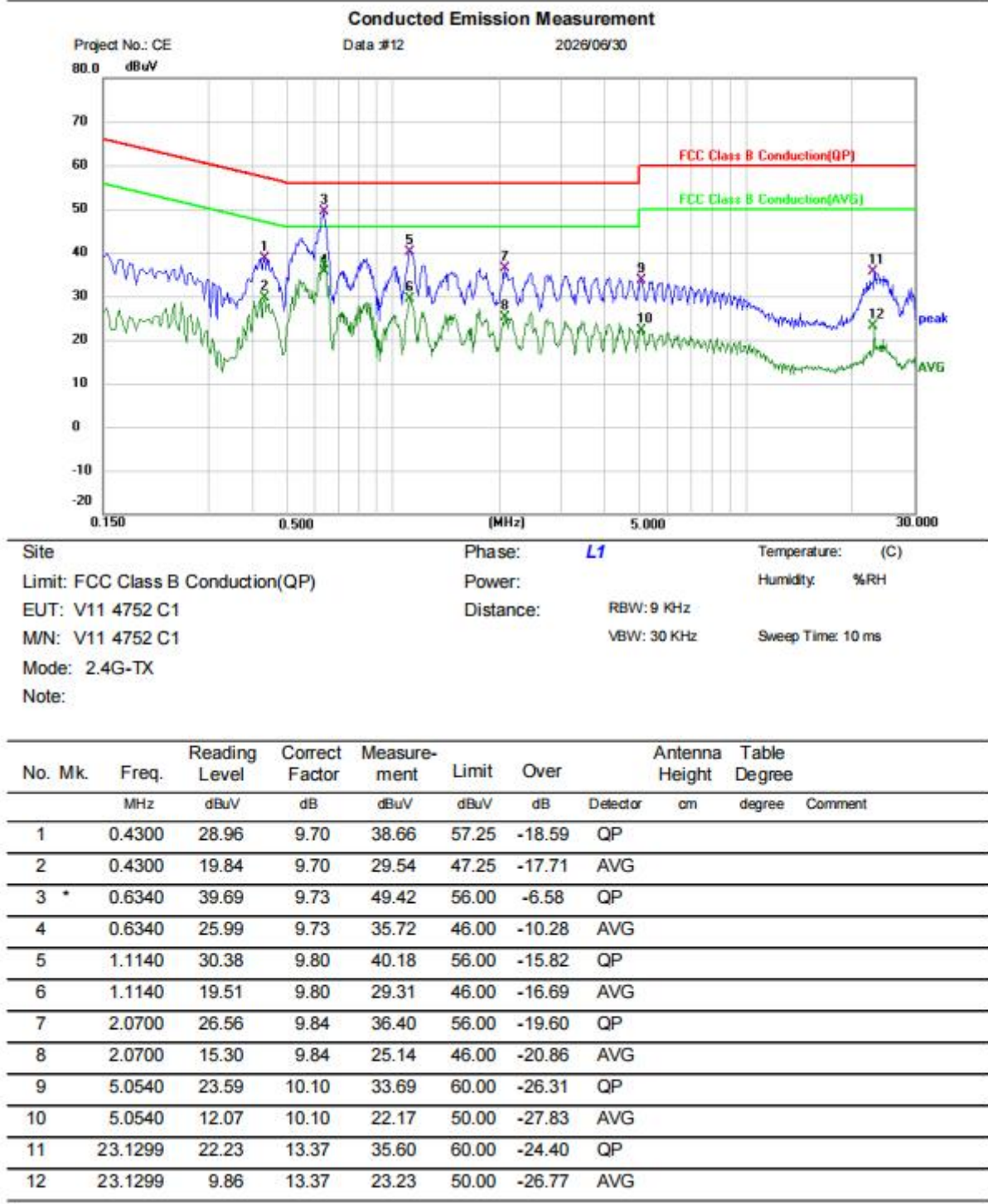
6.2.3 Procedure

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50H + 5ohm 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.
- 3) 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,
- 4) 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.
- 5) 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.

LISN=Read Level+ Cable Loss+ LISN Factor

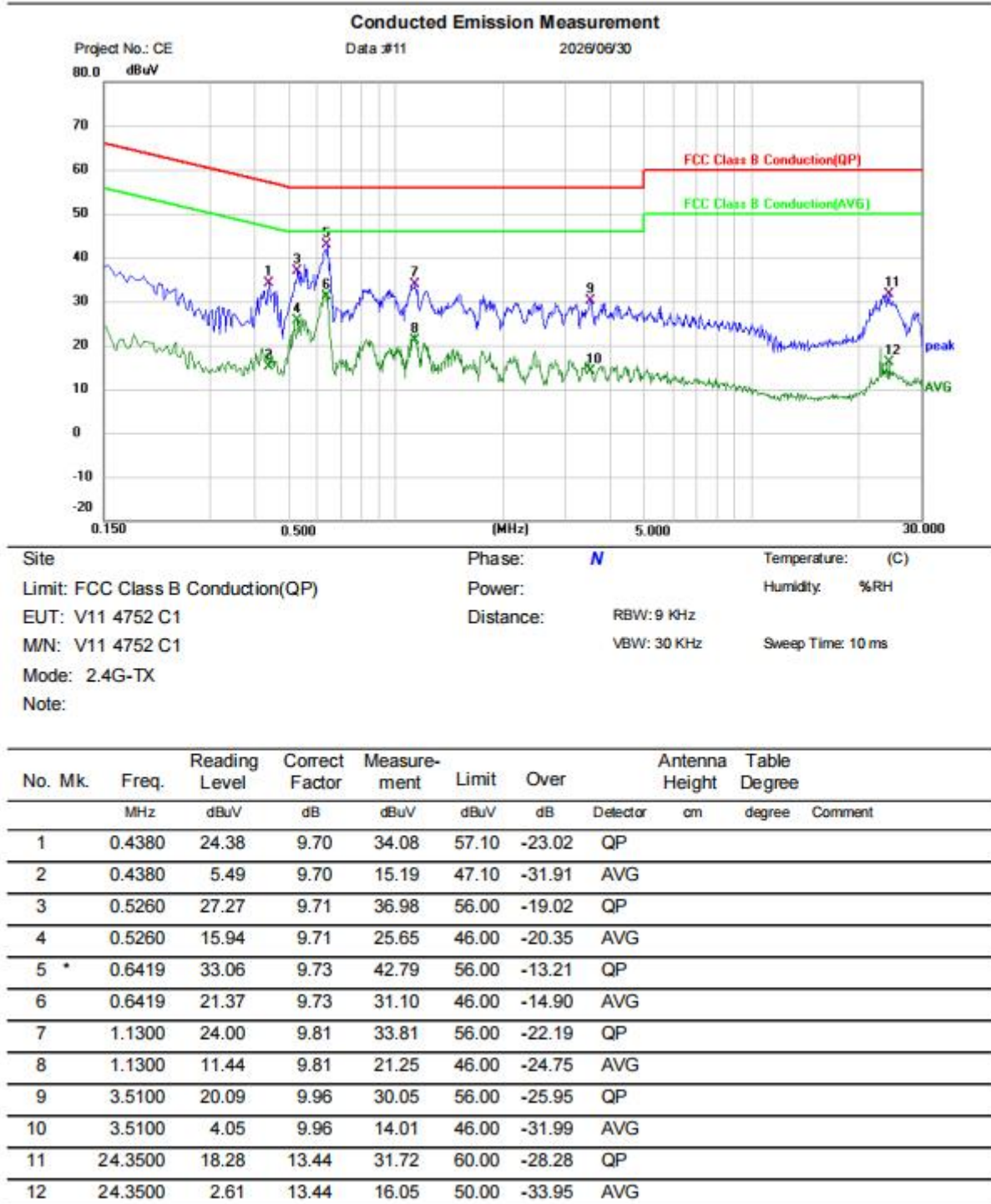
6.2.4 Test data

[Test mode: TX]; [Line: Line];[Power:AC120V/60Hz]



Test Result: Pass

[Test mode: TX]; [Line: Neutral];[Power:AC120V/60Hz]



Test Result: Pass

tests have been conducted low, medium and high channels. Only the worst low channels mode was reported.

6.3 Field strength of the fundamental signal

Test Standard	47 CFR Part 15, Subpart C 15.249(a)
Test Method	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 Section 6.5&6.6
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

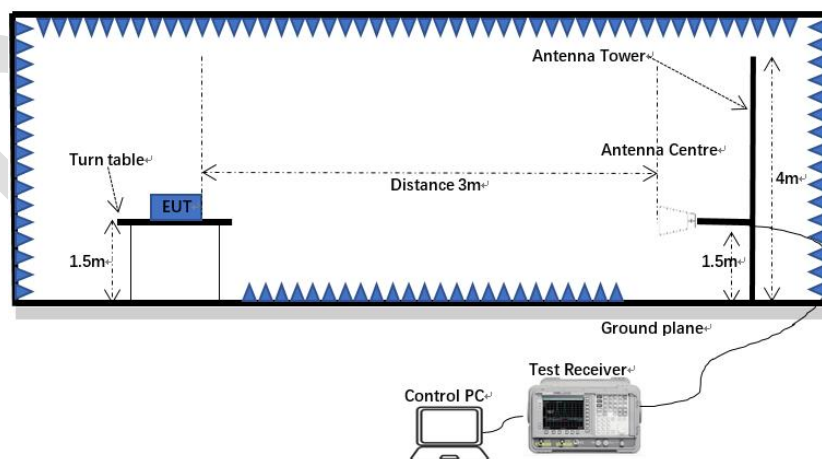
6.3.1 Limit

Fundamental frequency(MHz)	Field strength of fundamental(dBuV/m)	Field strength of harmonics(dBuV/m)
2400-2483.5	94	54
5725-5875	94	54
24000-24250	108	68

Remark: The frequencies above 1000MHz are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

6.3.2 Test setup

Above 1GHz:



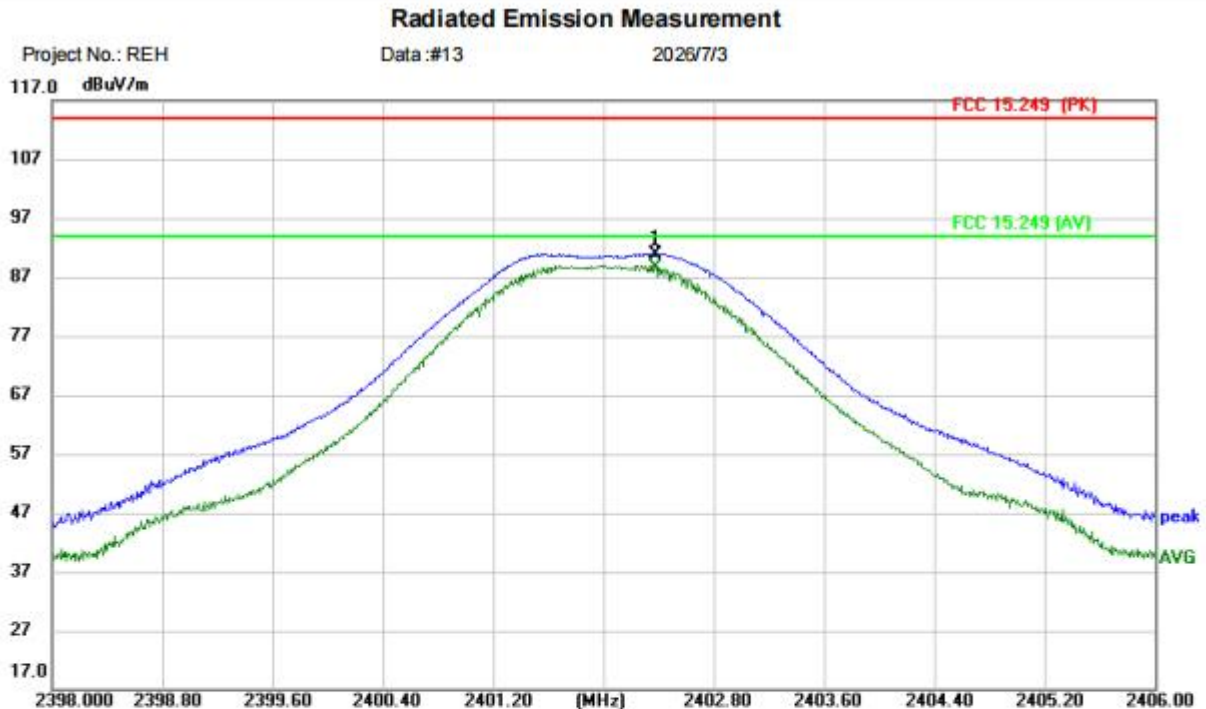
6.3.3 Procedure

- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

- b) The EUT was set 3 or 10 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable 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, the middle channel, the Highest channel.
- h) The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- i) Repeat above procedures until all frequencies measured was complete.
- j) $\text{Level (dB}\mu\text{V/m)} = \text{Reading Level(dBuV)} + \text{Correct Factor (dB)}$
- k) SA setting: RBW=1MHz, VBW=3MHz, PK detector is for PK value ,RMS detector is for AV value.

6.3.4 Test data

[Test mode: TX low channel]; [Polarity: Horizontal] ;[Power: DC3.7V]

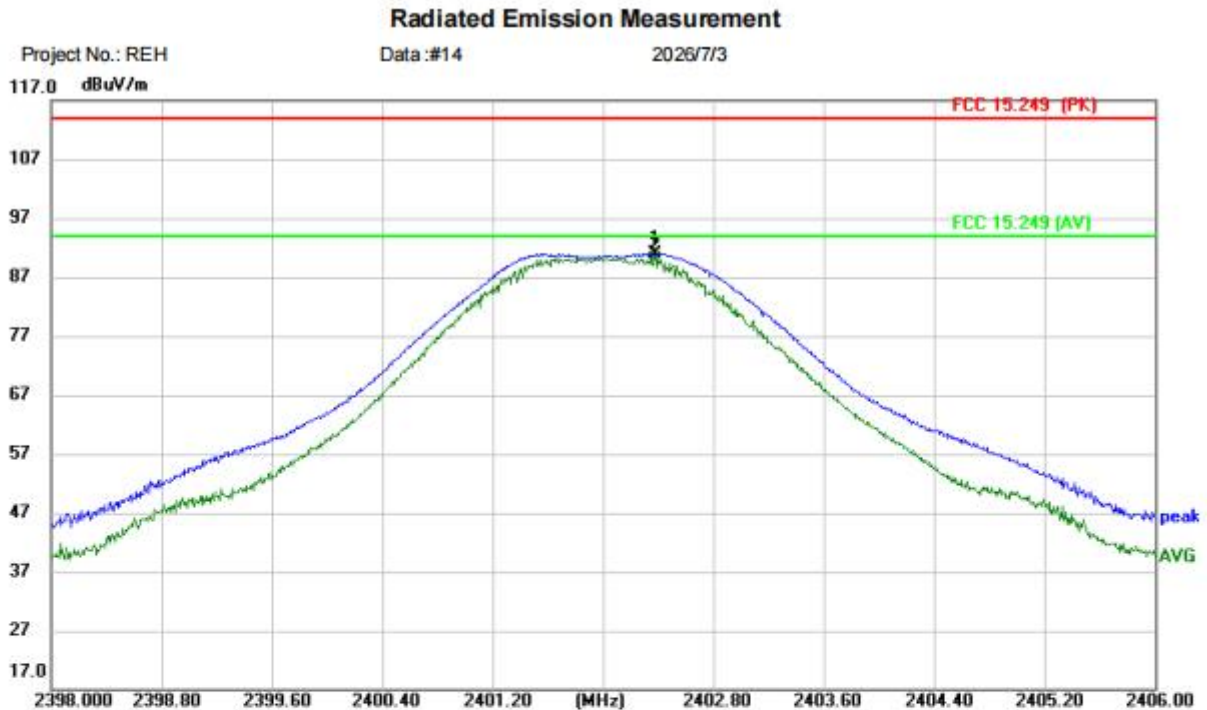


Site	Polarization: Horizontal	Temperature: (C)
Limit: FCC 15.249 (PK)	Power:	Humidity: %RH
EUT: V11 4752 C1		
M/N: V11 4752 C1		
Mode: 2.4G-2402		
Note:		

No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	2402.384	100.08	-9.15	90.93	114.0	-23.07	peak	
2 *	2402.384	97.82	-9.15	88.67	94.00	-5.33	AVG	

Test Result: Pass

[Test mode: TX low channel]; [Polarity: Vertical] ;[Power: DC3.7V]



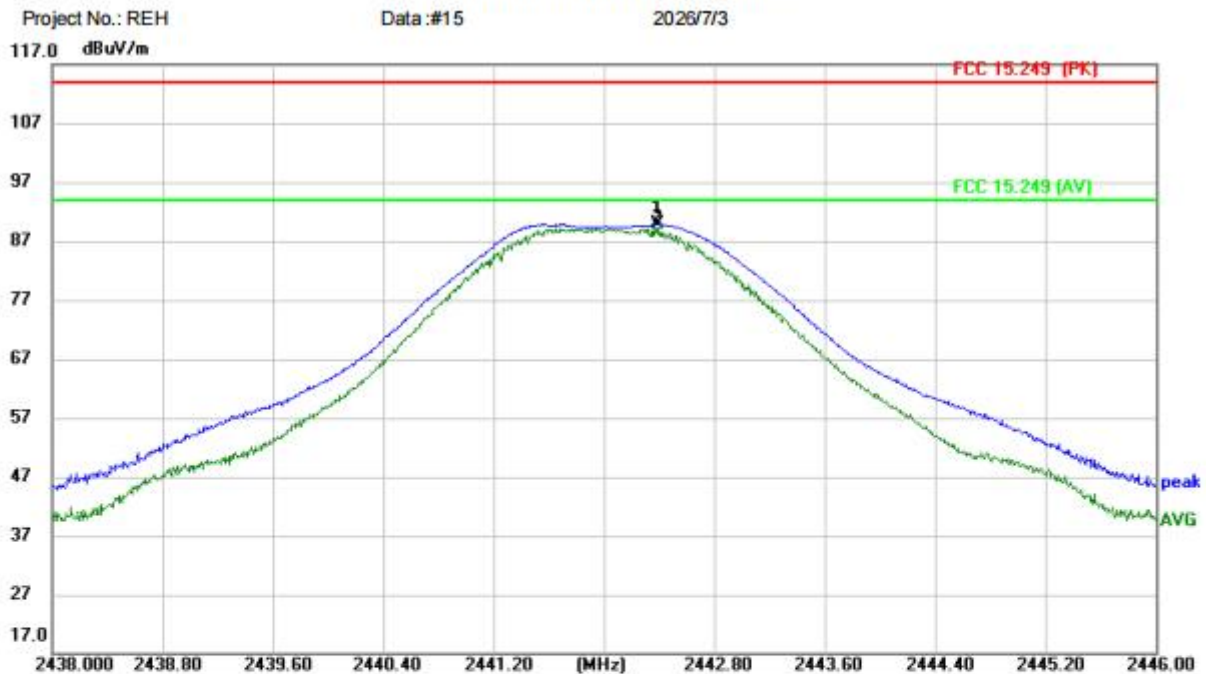
Site: Polarization: **Vertical** Temperature: (C)
 Limit: FCC 15.249 (PK) Power: Humidity: %RH
 EUT: V11 4752 C1
 M/N: V11 4752 C1
 Mode: 2.4G-2402
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2402.384	100.08	-9.15	90.93	114.0	-23.07	peak	
2	*	2402.384	98.98	-9.15	89.83	94.00	-4.17	AVG	

Test Result: Pass

[Test mode: TX middle channel]; [Polarity: Horizontal] ;[Power: DC3.7V]

Radiated Emission Measurement

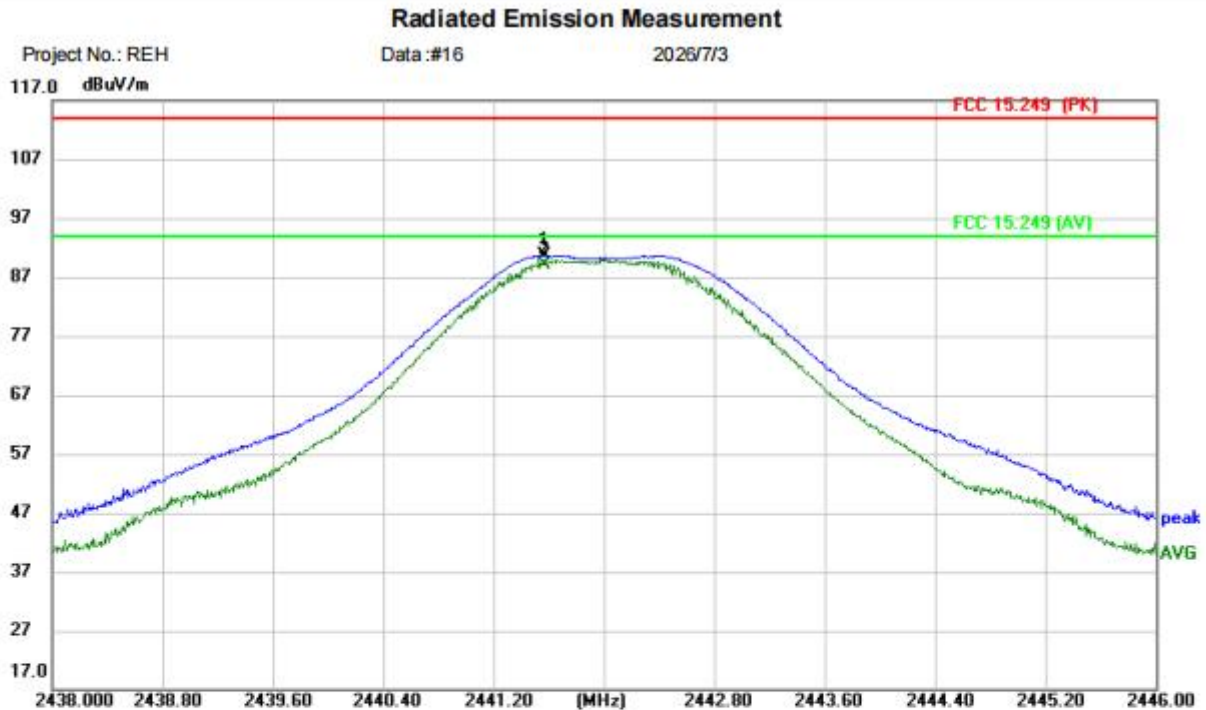


Site Polarization: **Horizontal** Temperature: (C)
 Limit: FCC 15.249 (PK) Power: Humidity: %RH
 EUT: V11 4752 C1
 M/N: V11 4752 C1
 Mode: 2.4G-2442
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2442.392	99.01	-9.18	89.83	114.0	-24.17	peak	
2	*	2442.392	97.53	-9.18	88.35	94.00	-5.65	AVG	

Test Result: Pass

[Test mode: TX middle channel]; [Polarity: Vertical] ;[Power: DC3.7V]

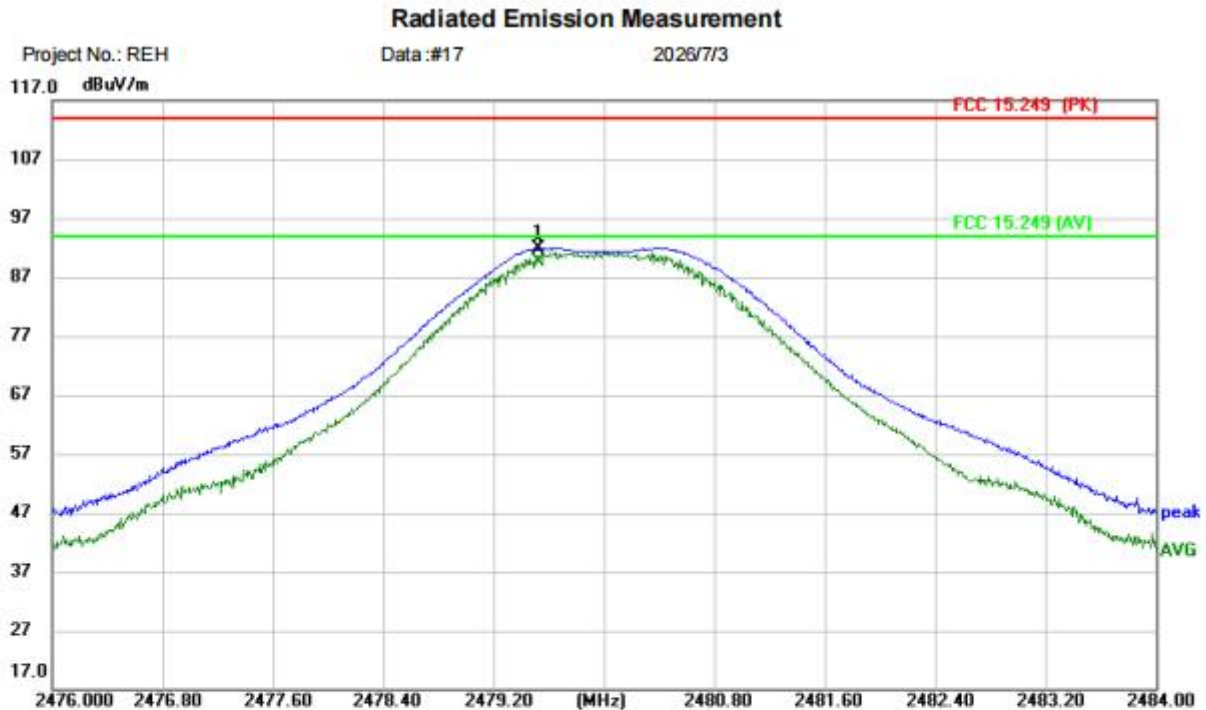


Site	Polarization: Vertical	Temperature: (C)
Limit: FCC 15.249 (PK)	Power:	Humidity: %RH
EUT: V11 4752 C1		
M/N: V11 4752 C1		
Mode: 2.4G-2442		
Note:		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2441.568	99.87	-9.18	90.69	114.0	-23.31	peak	
2	*	2441.568	98.30	-9.18	89.12	94.00	-4.88	AVG	

Test Result: Pass

[Test mode: TX High channel]; [Polarity: Horizontal] ;[Power: DC3.7V]

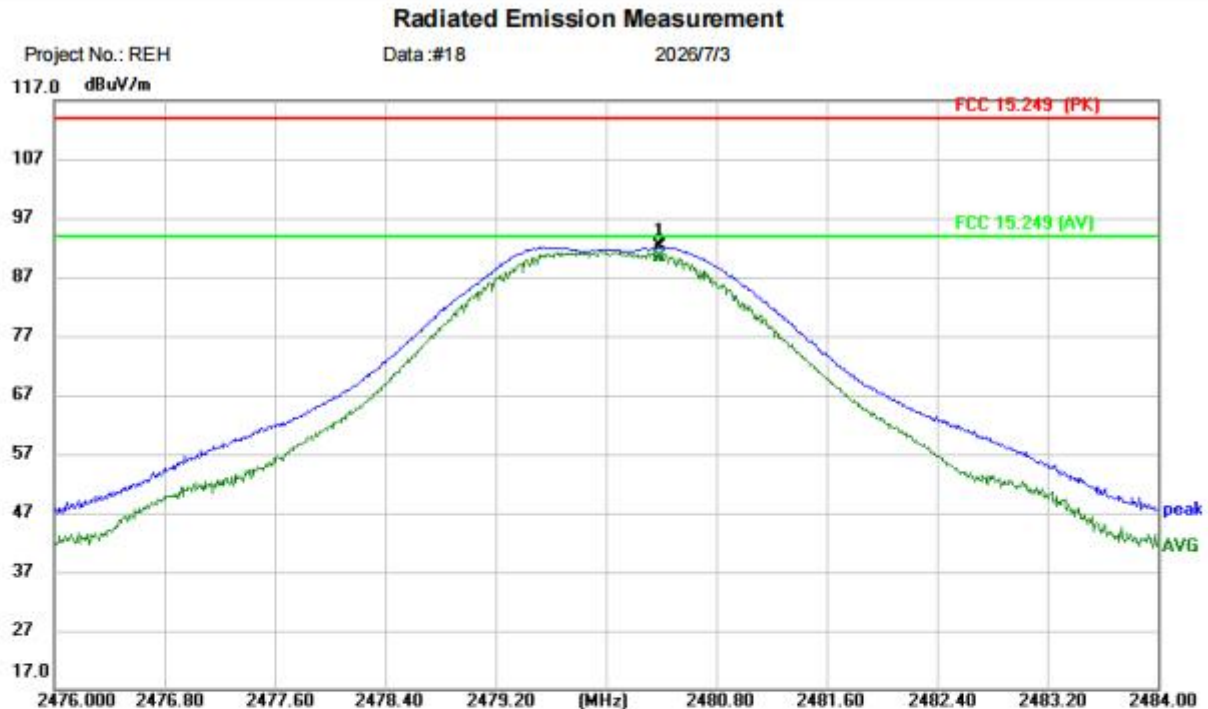


Site	Polarization: Horizontal	Temperature: (C)
Limit: FCC 15.249 (PK)	Power:	Humidity: %RH
EUT: V11 4752 C1		
M/N: V11 4752 C1		
Mode: 2.4G-2480		
Note:		

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2479.528	101.05	-9.14	91.91	114.0	-22.09	peak	
2 *	2479.528	98.84	-9.14	89.70	94.00	-4.30	AVG	

Test Result: Pass

[Test mode: TX High channel]; [Polarity: Vertical] ;[Power: DC3.7V]



Site	Polarization: Vertical	Temperature: (C)
Limit: FCC 15.249 (PK)	Power:	Humidity: %RH
EUT: V11 4752 C1		
M/N: V11 4752 C1		
Mode: 2.4G-2480		
Note:		

No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	2480.392	101.22	-9.14	92.08	114.0	-21.92	peak	
2 *	2480.392	99.59	-9.14	90.45	94.00	-3.55	AVG	

Test Result: Pass

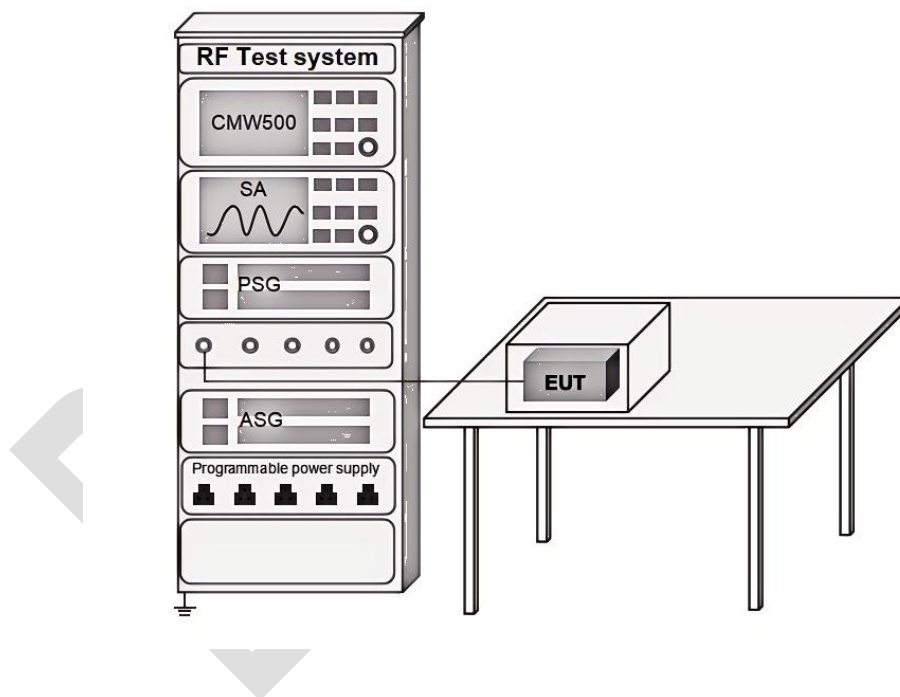
6.4 20dB bandwidth

Test Standard	47 CFR Part 15, Subpart C 15.249
Test Method	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 Section 6.9
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

6.4.1 Limit

N/A

6.4.2 Test setup



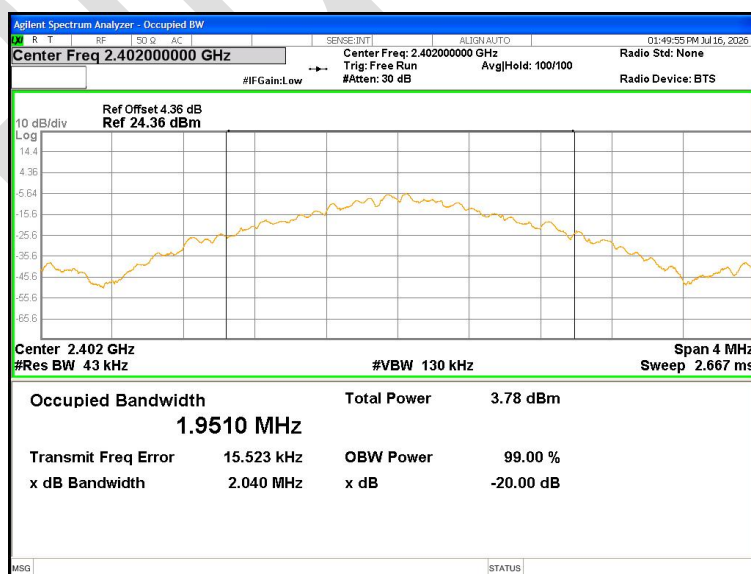
6.4.3 Procedure

1. Set RBW $\geq$ 1% to 5% of the 20dB bandwidth
2. VBW = Approximately three times RBW
3. Span = Approximately 2 to 5 times the 20dB bandwidth, centered on a hopping channel
4. Detector = Peak
5. Trace mode = Max hold
6. Sweep = Auto couple
7. Allow the trace to stabilize
8. Measure the maximum width of the emission that is constrained by the frequencies associated
9. with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20
10. dB relative to the maximum level in the fundamental emission.

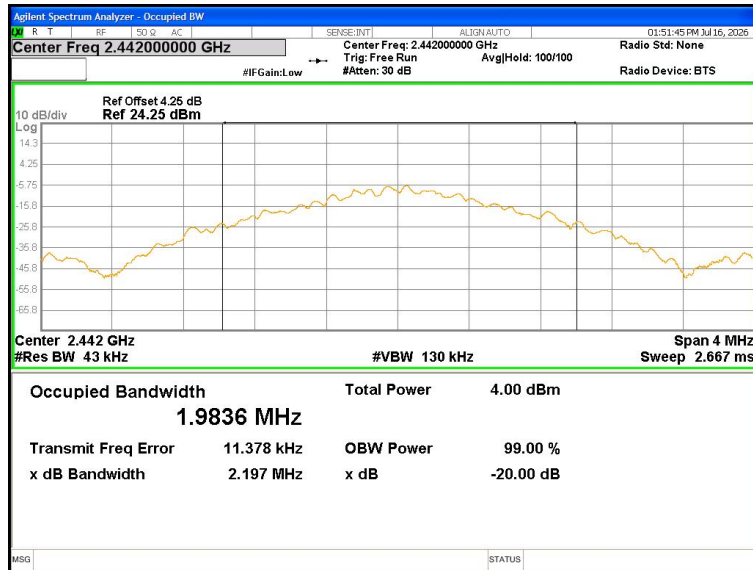
6.4.4 Test data

Condition	Mode	Frequency (MHz)	Antenna	-20dB Bandwidth (MHz)
NVNT	2.4G	2402	Ant1	2.040
NVNT	2.4G	2442	Ant1	2.197
NVNT	2.4G	2480	Ant1	2.245

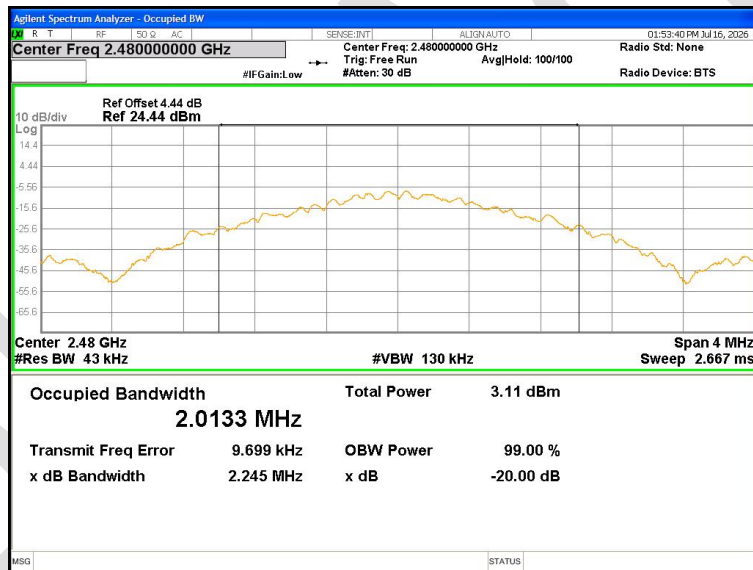
-20dB Bandwidth 2402MHz Ant1



-20dB Bandwidth 2442MHz Ant1



-20dB Bandwidth 2480MHz Ant1



6.5 Radiated spurious emissions

Test Standard	47 CFR Part 15, Subpart C 15.249(d) 47 CFR Part 15, Subpart C 15.209
Test Method	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 Section 6.4,6.5,6.6
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

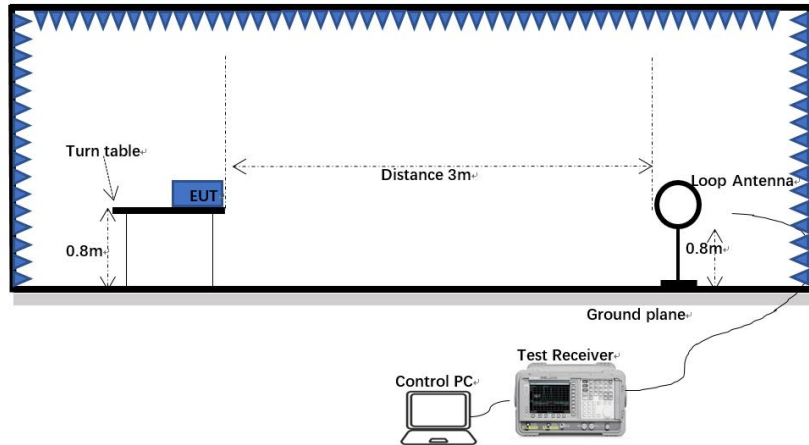
6.5.1 Limit

Frequency(MHz)	Field strength (microvolts/meter)	Limit (dBuV/m)	Detector	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	-	-	300
0.490-1.705	24000/F(kHz)	-	-	30
1.705-30	30	-	-	30
30-88	100	40.0	QP	3
88-216	150	43.5	QP	3
216-960	200	46.0	QP	3
960-1000	500	54.0	QP	3
Above 1000	500	54.0	AV	3

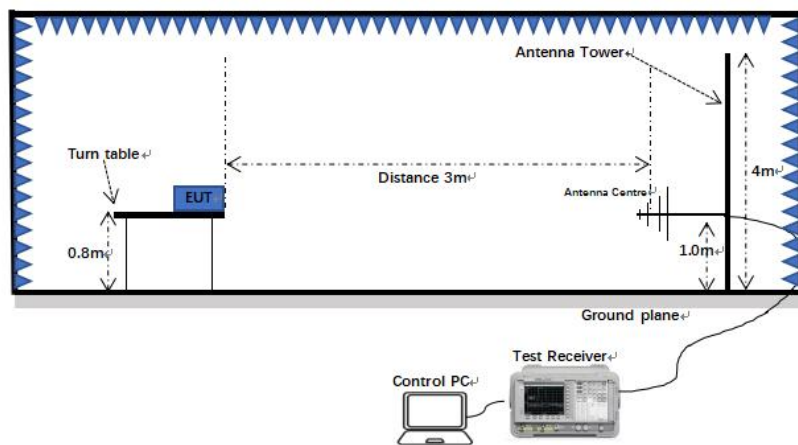
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

6.5.2 Test setup

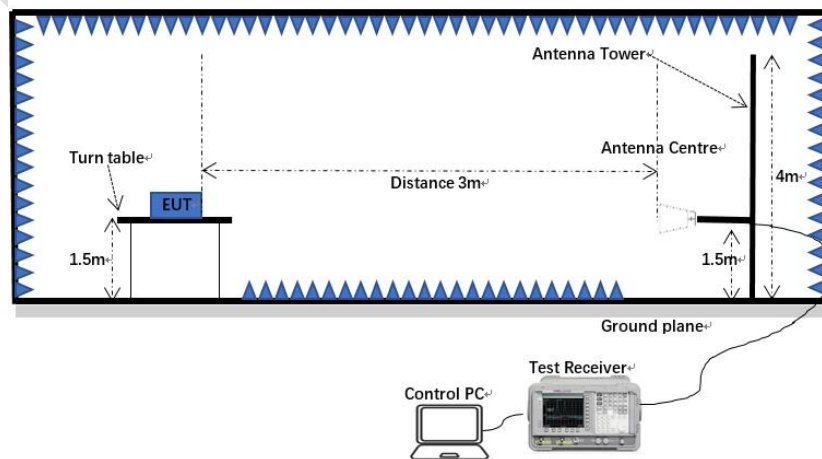
Below 1GHz:



30MHz-1GHz:



Above 1GHz:



6.5.3 Procedure

For testing performed with the loop antenna, the center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane. Only the worst position of vertical was shown in the report.

Remark:

1) For emission below 1GHz, through pre-scan found the worst case is the lowest channel. Only the worst case is recorded in the report.

2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor

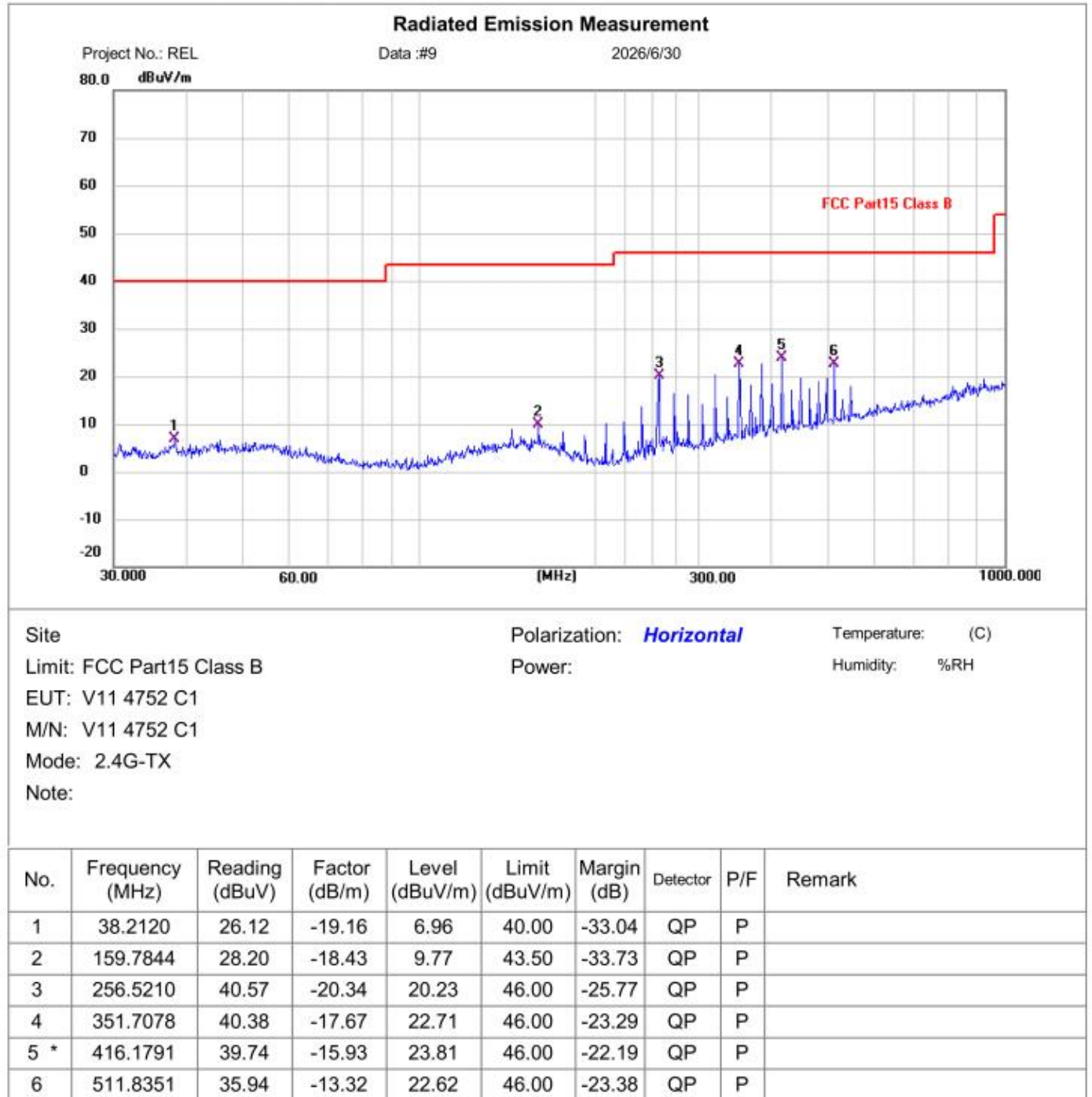
3) Scan from 9kHz to 40GHz, the disturbance above 18GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. Fundamental frequency is blocked by filter, and only spurious emission is shown.

4) For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

6.5.4 Test data

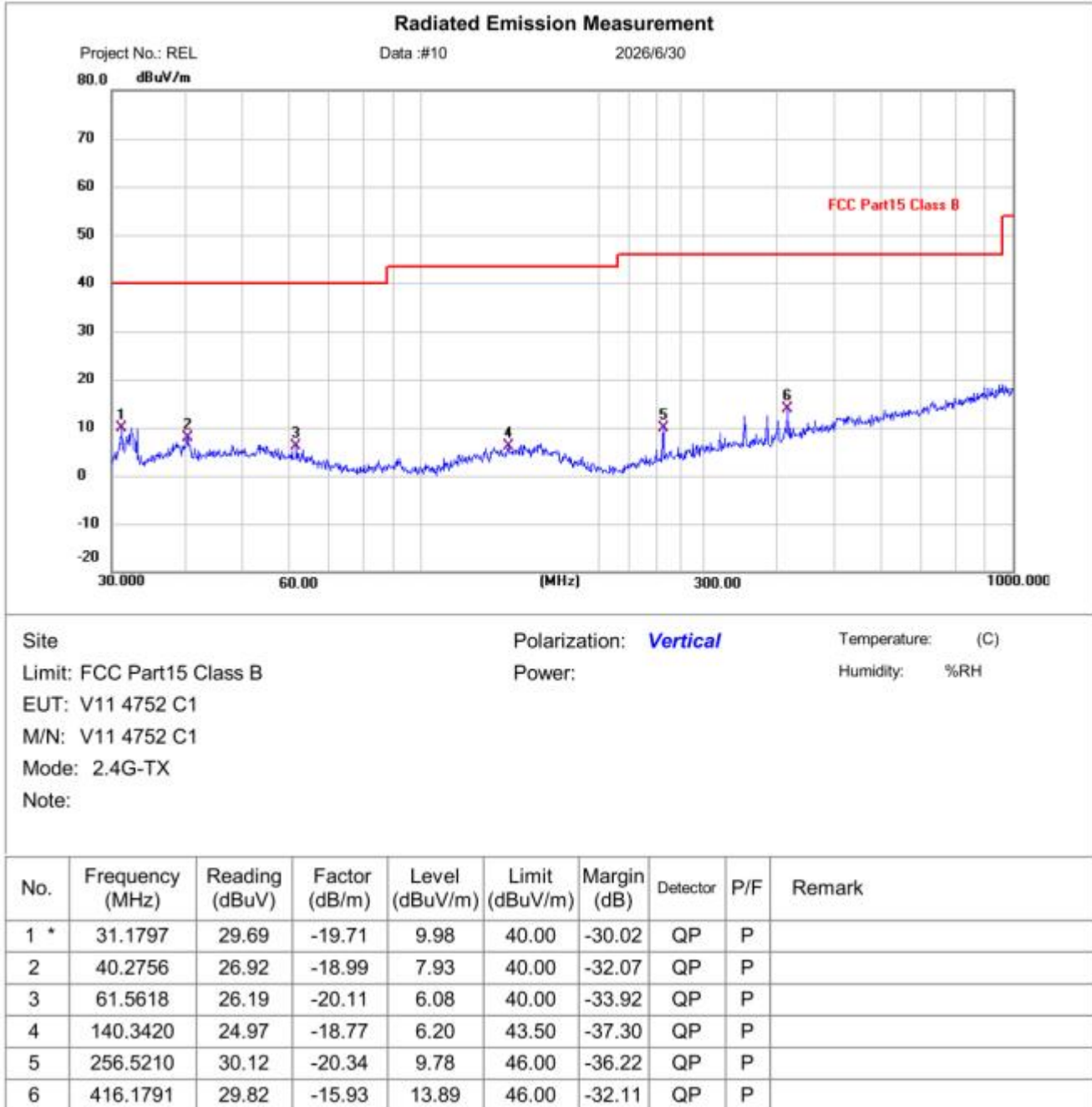
Below 1GHz

[Test mode: TX]; [Polarity: Horizontal] ;[Power: DC3.7V]



Test Result: Pass

[Test mode: TX]; [Polarity: Vertical] ;[Power: DC3.7V]

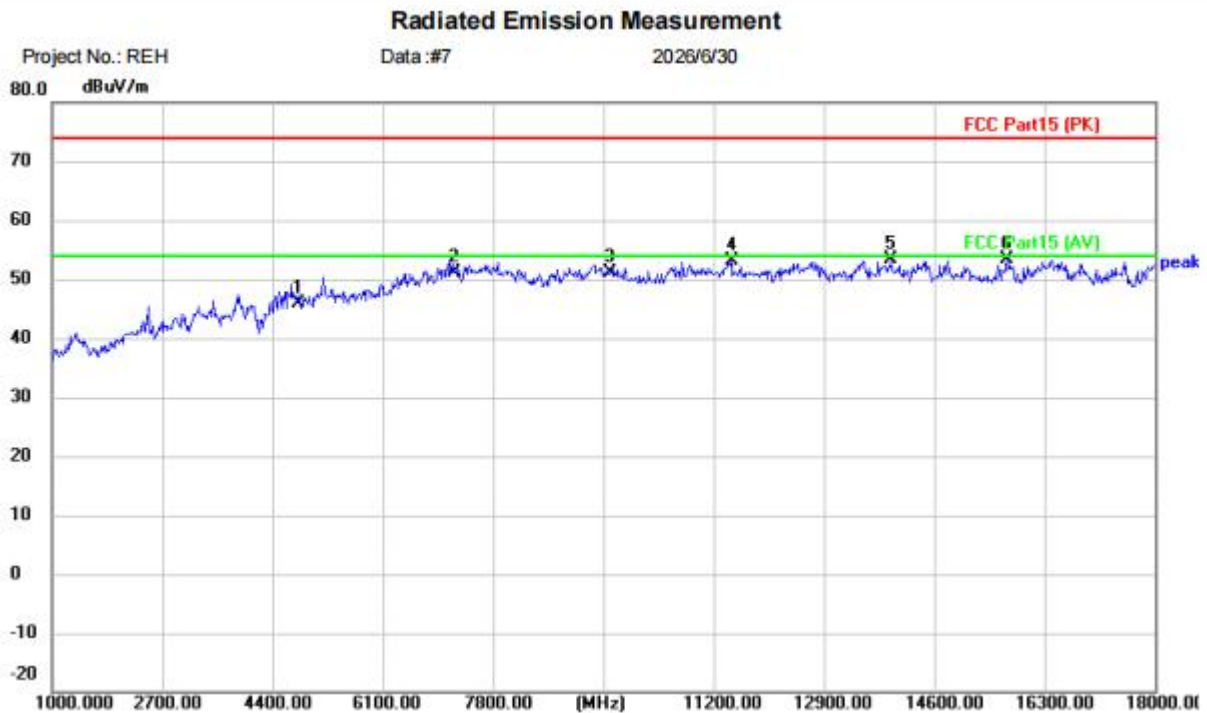


Test Result: Pass

tests have been conducted low, medium and high channels. Only the worst low channels mode was reported.

Above 1GHz:

[Test mode: TX low channel]; [Polarity: Horizontal] ;[Power: DC3.7V]



Site Polarization: **Horizontal** Temperature: (C)

Limit: FCC Part15 (PK) Power: Humidity: %RH

EUT: V11 4752 C1

M/N: V11 4752 C1

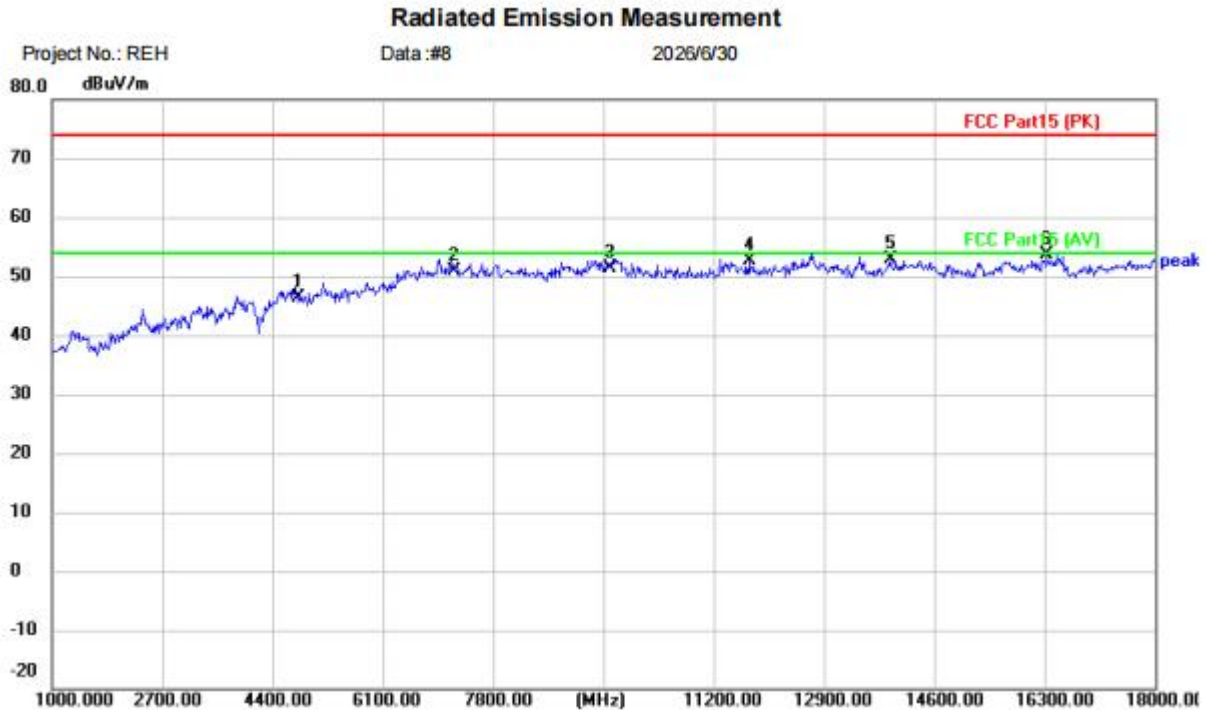
Mode: 2.4G-2402

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4804.000	46.63	-0.74	45.89	74.00	-28.11	peak	
2		7206.000	44.39	6.81	51.20	74.00	-22.80	peak	
3		9608.000	43.59	7.48	51.07	74.00	-22.93	peak	
4		11472.00	43.03	9.98	53.01	74.00	-20.99	peak	
5		13937.00	43.48	9.90	53.38	74.00	-20.62	peak	
6	*	15722.00	45.22	8.25	53.47	74.00	-20.53	peak	

Test Result: Pass

[Test mode: TX low channel]; [Polarity: Vertical] ;[Power: DC3.7V]

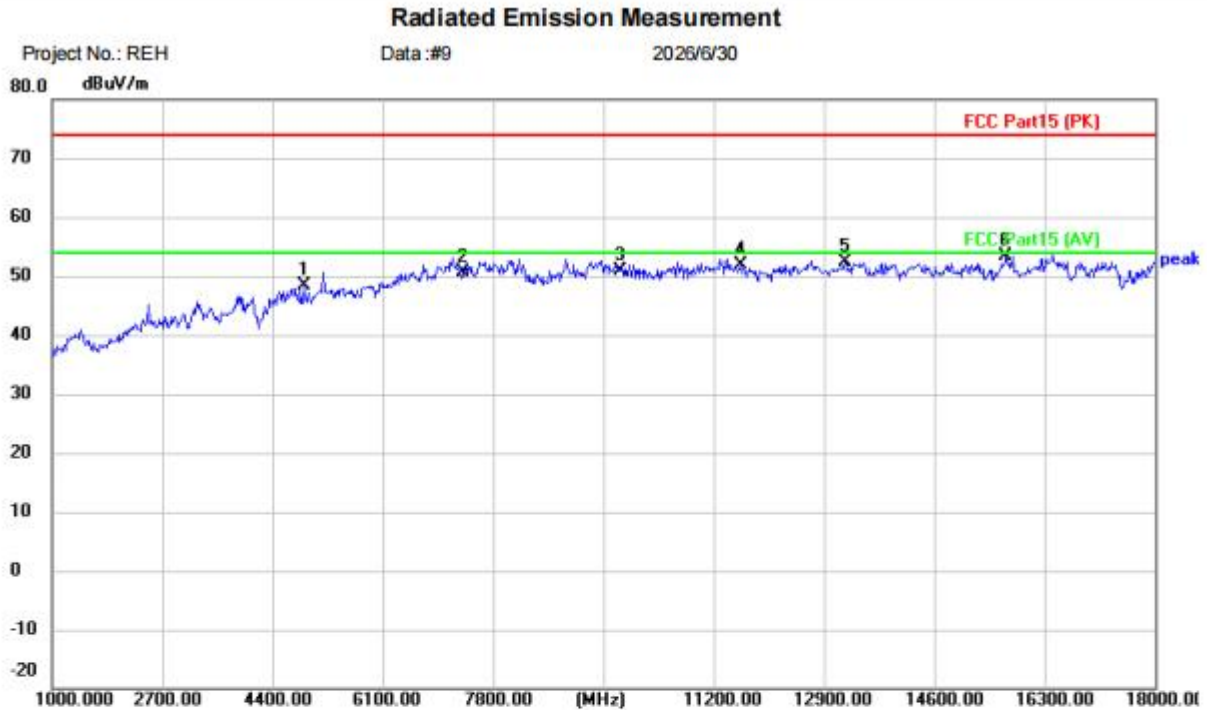


Site: Polarization: **Vertical** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: V11 4752 C1
M/N: V11 4752 C1
Mode: 2.4G-2402
Note:

No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	4804.000	47.00	-0.74	46.26	74.00	-27.74	peak	
2	7206.000	44.16	6.81	50.97	74.00	-23.03	peak	
3	9608.000	43.97	7.48	51.45	74.00	-22.55	peak	
4	11744.00	44.11	8.59	52.70	74.00	-21.30	peak	
5	13920.00	43.13	9.82	52.95	74.00	-21.05	peak	
6 *	16334.00	44.74	8.95	53.69	74.00	-20.31	peak	

Test Result: Pass

[Test mode: TX middle channel]; [Polarity: Horizontal] ;[Power: DC3.7V]

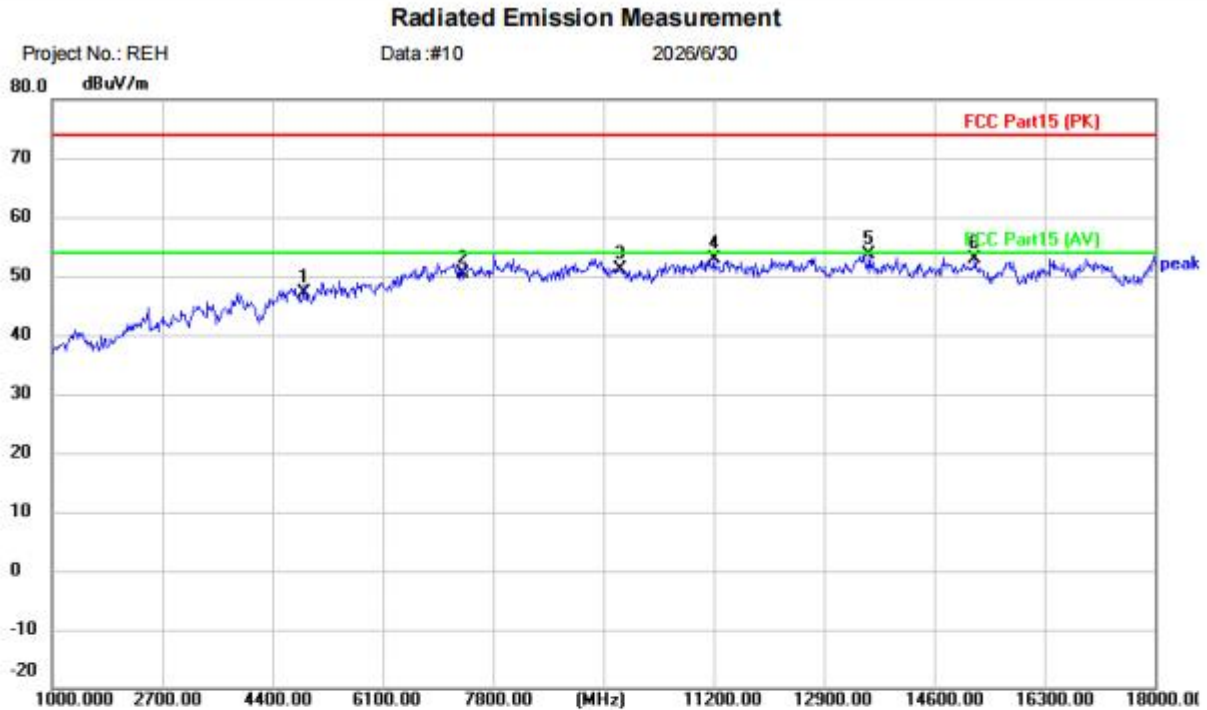


Site: Polarization: **Horizontal** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: V11 4752 C1
 M/N: V11 4752 C1
 Mode: 2.4G-2442
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4884.000	48.87	-0.59	48.28	74.00	-25.72	peak	
2		7326.000	44.30	6.44	50.74	74.00	-23.26	peak	
3		9768.000	42.51	8.29	50.80	74.00	-23.20	peak	
4		11625.00	42.14	9.63	51.77	74.00	-22.23	peak	
5		13223.00	40.13	12.16	52.29	74.00	-21.71	peak	
6	*	15705.00	45.04	8.37	53.41	74.00	-20.59	peak	

Test Result: Pass

[Test mode: TX middle channel]; [Polarity: Vertical] ;[Power: DC3.7V]

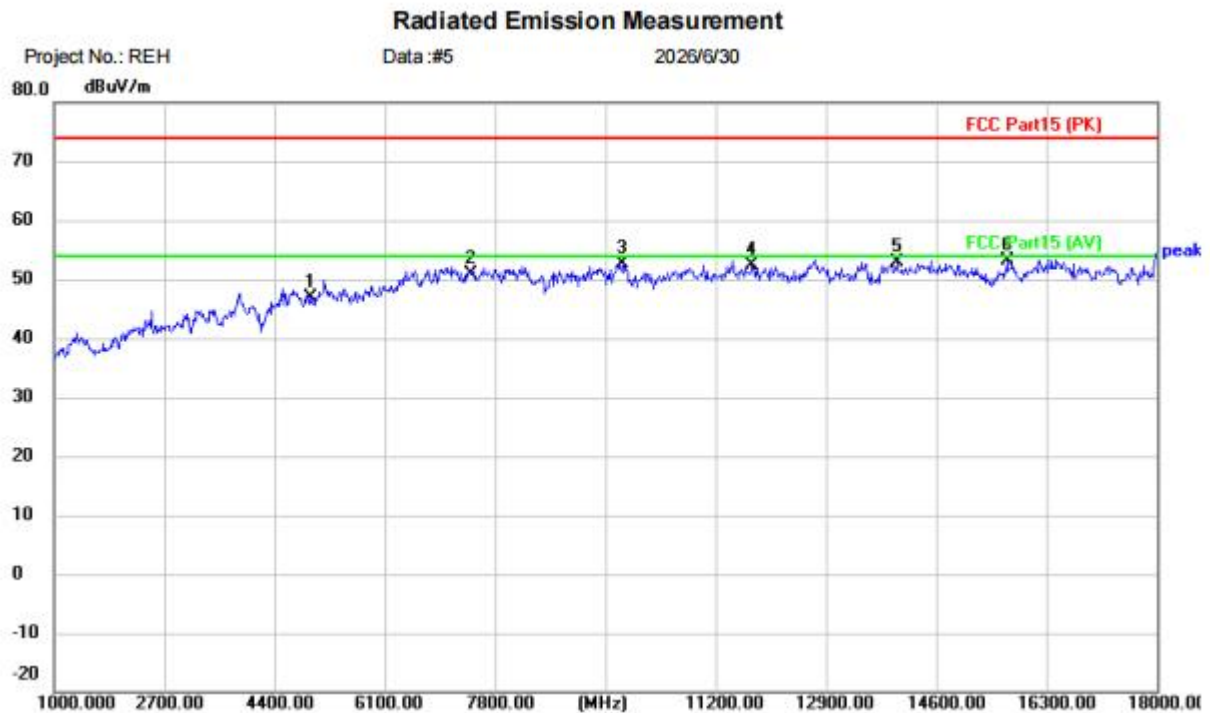


Site Polarization: **Vertical** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: V11 4752 C1
 M/N: V11 4752 C1
 Mode: 2.4G-2442
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4884.000	47.84	-0.59	47.25	74.00	-26.75	peak	
2		7326.000	43.93	6.44	50.37	74.00	-23.63	peak	
3		9768.000	42.93	8.29	51.22	74.00	-22.78	peak	
4		11200.00	44.25	8.72	52.97	74.00	-21.03	peak	
5	*	13597.00	44.13	9.54	53.67	74.00	-20.33	peak	
6		15229.00	44.60	8.18	52.78	74.00	-21.22	peak	

Test Result: Pass

[Test mode: TX High channel]; [Polarity: Horizontal] ;[Power: DC3.7V]

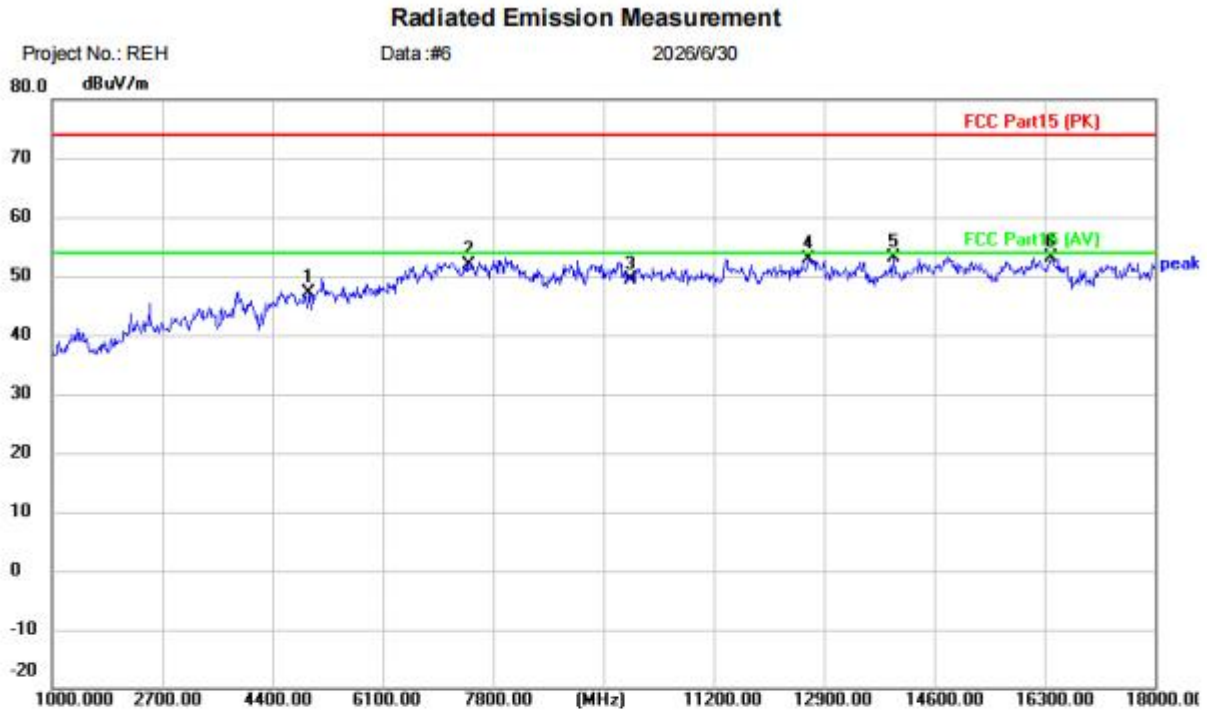


Site: Polarization: **Horizontal** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: V11 4752 C1
 M/N: V11 4752 C1
 Mode: 2.4G-2480
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4960.000	47.32	-0.37	46.95	74.00	-27.05	peak	
2		7440.000	43.72	7.06	50.78	74.00	-23.22	peak	
3		9768.000	44.24	8.29	52.53	74.00	-21.47	peak	
4		11761.00	43.71	8.58	52.29	74.00	-21.71	peak	
5		13988.00	42.79	10.15	52.94	74.00	-21.06	peak	
6	*	15688.00	44.79	8.35	53.14	74.00	-20.86	peak	

Test Result: Pass

[Test mode: TX High channel]; [Polarity: Vertical] ;[Power: DC3.7V]



Site: Polarization: **Vertical** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: V11 4752 C1
M/N: V11 4752 C1
Mode: 2.4G-2480
Note:

No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	4960.000	47.46	-0.37	47.09	74.00	-26.91	peak	
2	7440.000	44.84	7.06	51.90	74.00	-22.10	peak	
3	9920.000	41.64	7.76	49.40	74.00	-24.60	peak	
4	12662.00	43.58	9.39	52.97	74.00	-21.03	peak	
5	13971.00	42.95	10.07	53.02	74.00	-20.98	peak	
6 *	16402.00	44.11	9.00	53.11	74.00	-20.89	peak	

Test Result: Pass

Note:When scanning in the range of 1GHz~ 25GHz and the interference above 18GHz is very small, it is a low noise signal. The point shown in the figure above is the highest emission that can be found during the test, so only the above point is shown. The fundamental frequency is blocked by the filter. Only stray emission.

6.6 Restricted bands around fundamental frequency

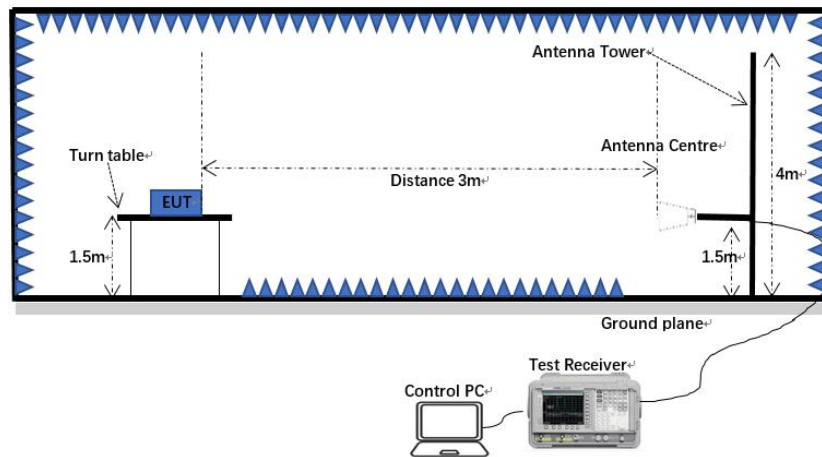
Test Standard	47 CFR Part 15, Subpart C 15.205 & 209
Test Method	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 Section 6.4&6.5&6.6
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

6.6.1 Limit

Frequency	Limit (dBuV/m @3m)	Remark
Above 1GHz	54.0	Average Value
Above 1GHz	74.0	Peak Value
Remark: Emission radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.		

6.6.2 Test setup

Above 1GHz:



6.6.3 Procedure

- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 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.
- Test the EUT in the lowest channel, the middle channel, the highest channel.
- The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- Repeat above procedures until all frequencies measured was complete.

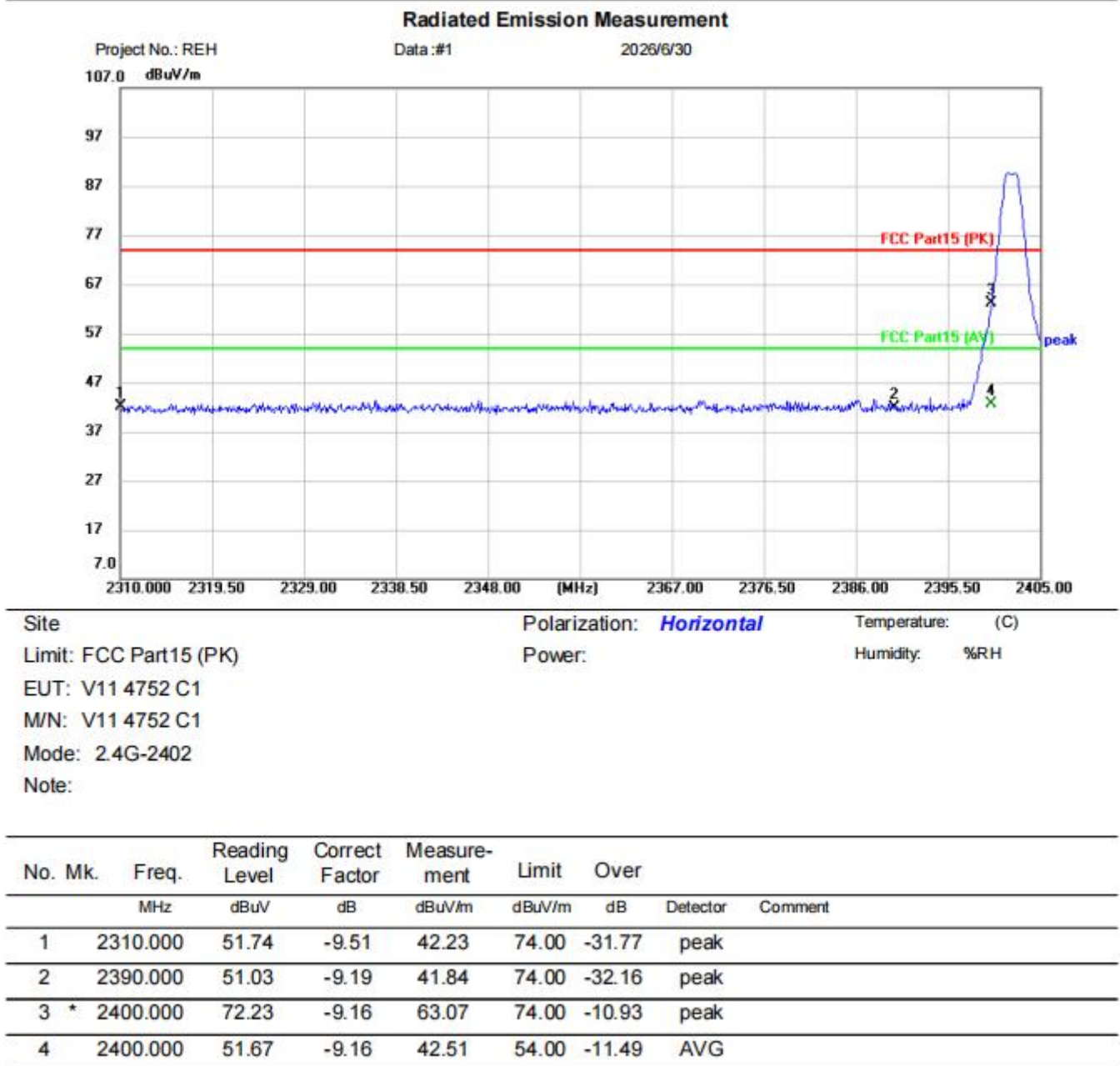
Note 1: Level (dBuV) = Reading (dBuV) + Factor (dB/m)

Note 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

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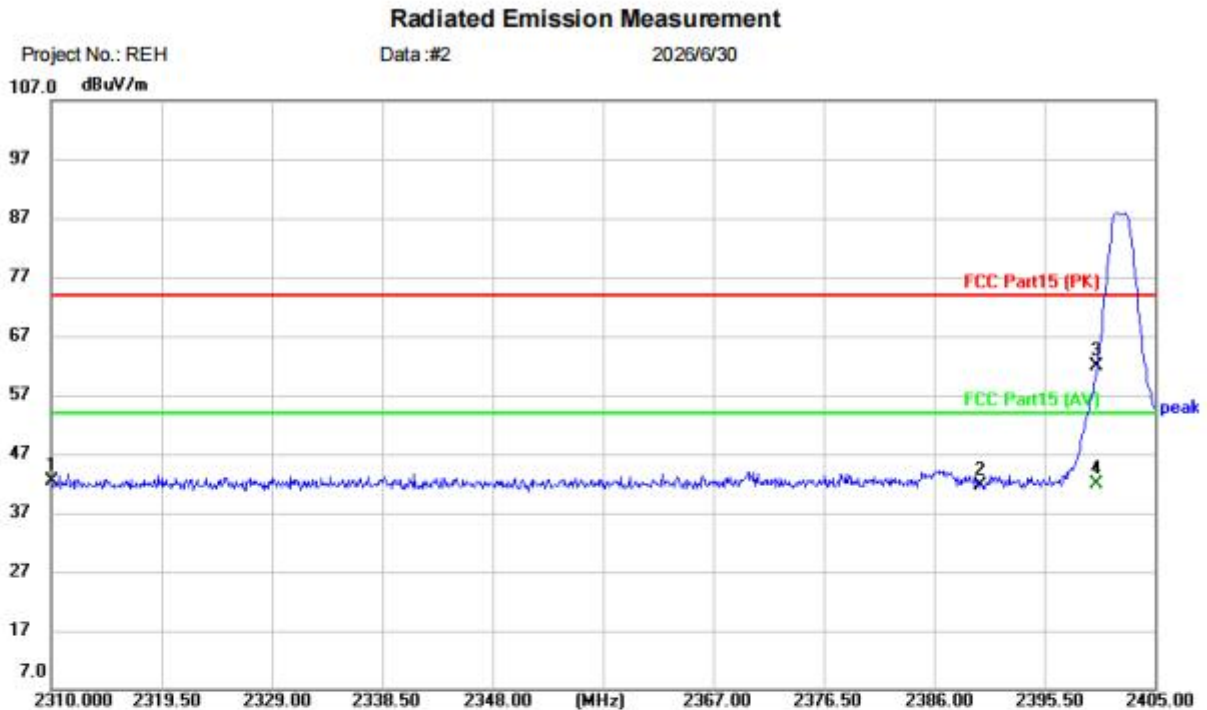
6.6.4 Test data

[Test mode: TX low channel]; [Polarity: Horizontal] ;[Power: DC3.7V]



Test Result: Pass

[Test mode:TX low channel]; [Polarity: Vertical] ;[Power: DC3.7V]



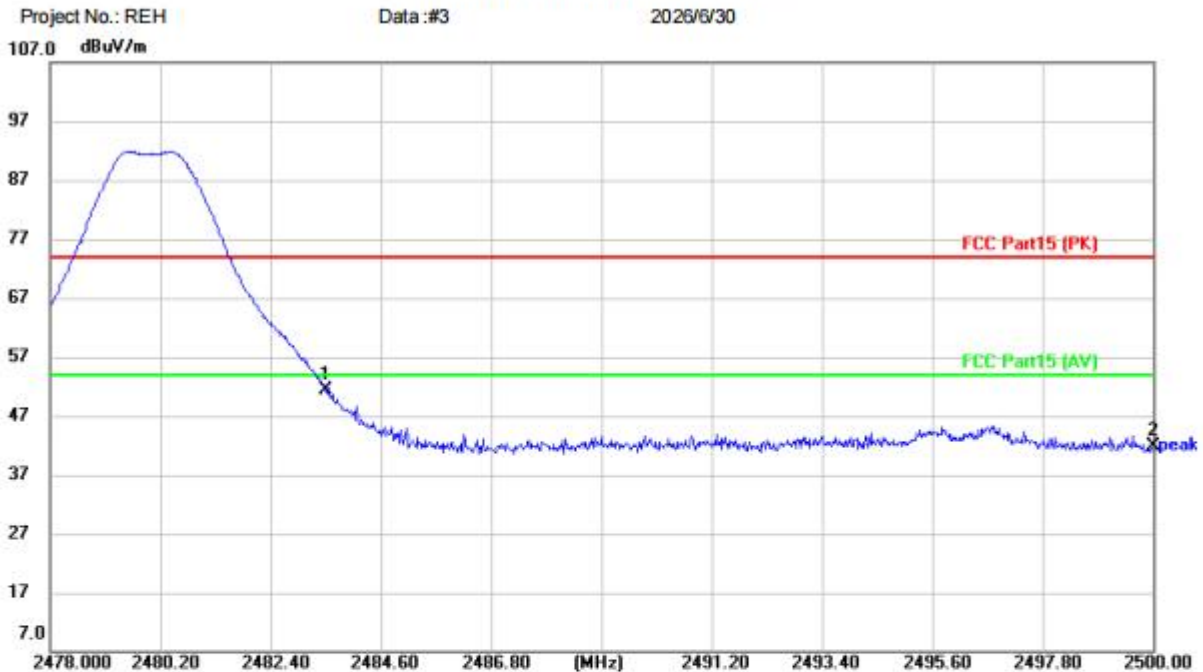
Site: Polarization: **Vertical** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: V11 4752 C1
 M/N: V11 4752 C1
 Mode: 2.4G-2402
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2310.000	51.96	-9.51	42.45	74.00	-31.55	peak	
2		2390.000	50.79	-9.19	41.60	74.00	-32.40	peak	
3		2400.000	71.01	-9.16	61.85	74.00	-12.15	peak	
4	*	2400.000	51.14	-9.16	41.98	54.00	-12.02	AVG	

Test Result: Pass

[Test mode: TX High channel]; [Polarity: Horizontal] ;[Power: DC3.7V]

Radiated Emission Measurement



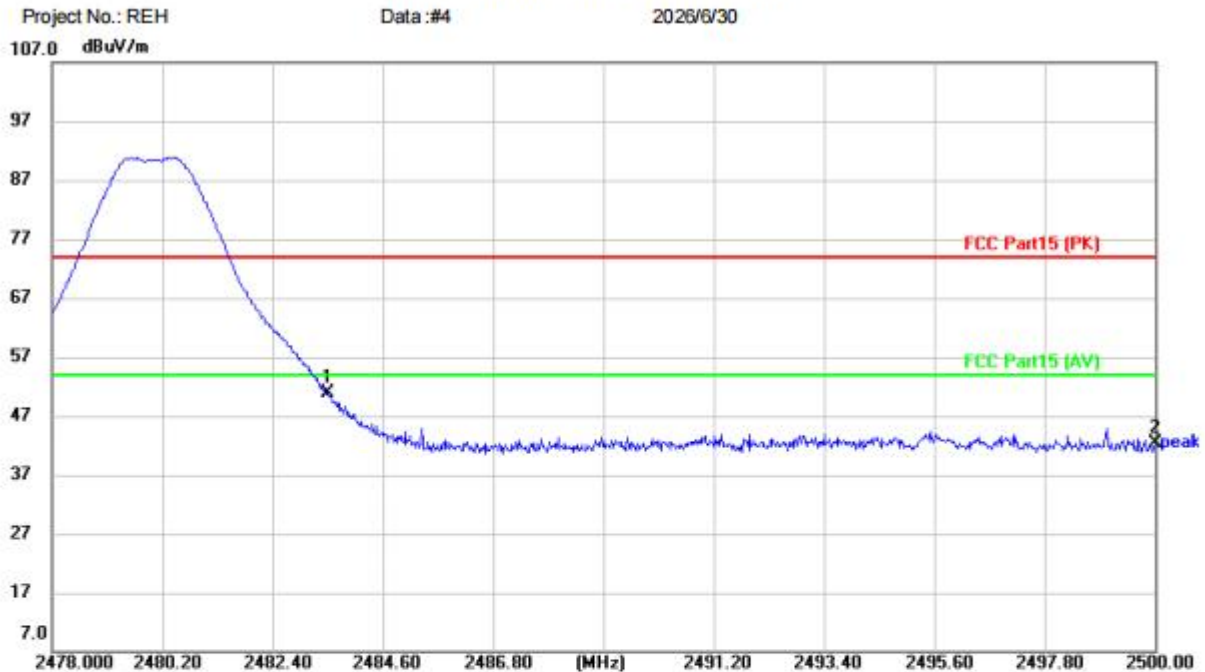
Site Polarization: **Horizontal** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: V11 4752 C1
 M/N: V11 4752 C1
 Mode: 2.4G-2480
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	2483.500	60.55	-9.14	51.41	74.00	-22.59	peak	
2		2500.000	50.95	-9.11	41.84	74.00	-32.16	peak	

Test Result: Pass

[Test mode:TX High channel]; [Polarity: Vertical] ;[Power: DC3.7V]

Radiated Emission Measurement



Site Polarization: **Vertical** Temperature: (C)

Limit: FCC Part15 (PK) Power: Humidity: %RH

EUT: V11 4752 C1

M/N: V11 4752 C1

Mode: 2.4G-2480

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	2483.500	59.93	-9.14	50.79	74.00	-23.21	peak	
2		2500.000	51.45	-9.11	42.34	74.00	-31.66	peak	

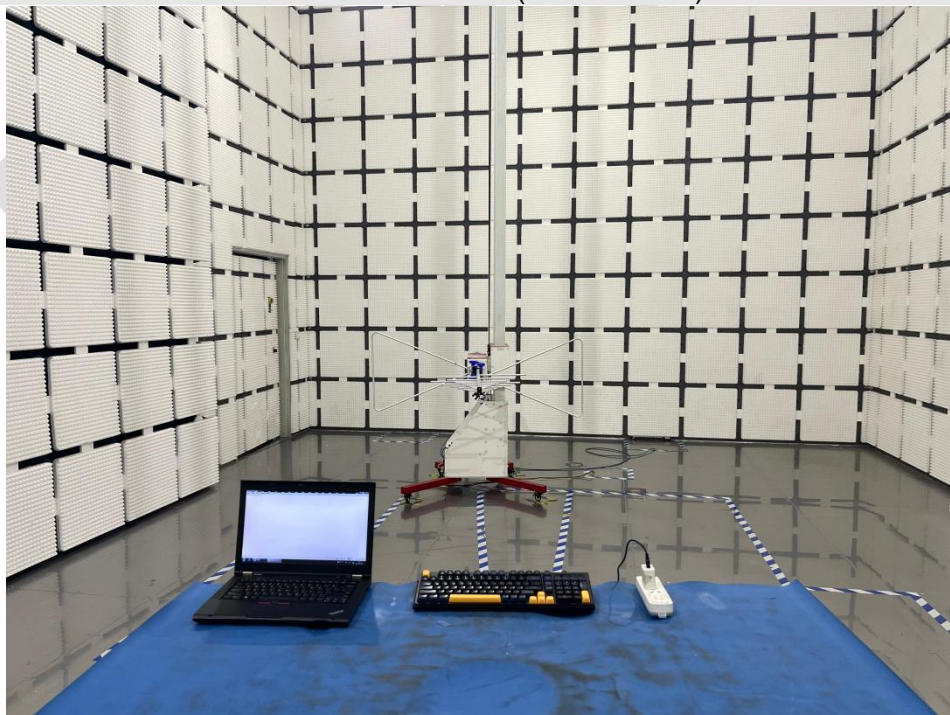
Test Result: Pass

Appendix A: photographs of test setup

Conducted emissions at AC power line (150kHz-30MHz)



Radiated Emissions (30MHz-1GHz)



Radiated Emissions (above 1GHz)



RF TEST



Appendix B: photographs of EUT

Reference to the test report no. BLA-EMC-202606-A56-01

----END OF REPORT----

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