



MEASUREMENT REPORT

FCC ID : HLEMS852PW

APPLICANT : Unitech Electronics Co., Ltd.

Application Type : Certification

Product : Wireless 2D Imager Scanner

Model No. : MS852P

Brand Name : unitech

FCC Classification : (DTS) Digital Transmission System

FCC Rule Part(s) : Part 15.247

Test Procedure(s) : ANSI C63.10-2013

Received Date : October 03, 2022

Test Date : October 19, 2022~December 02, 2022

Tested By : *Fran Chen*
(Fran Chen)



Reviewed By : *Paddy Chen*
(Paddy Chen)

Approved By : *Chenz Ker*
(Chenz Ker)

The test results only relate to the tested sample.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Taiwan) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
2210TW2602-U1	1.0	Original Report	2022-12-14	

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§2.1033 General Information

Applicant	Unitech Electronics Co., Ltd.
Applicant Address	5F, No. 136, Lane 235, Pao-Chiao Rd., Hsin-Tien Dist., New Taipei City, Taiwan
Manufacturer	Unitech Electronics Co., Ltd.
Manufacturer Address	5F, No. 136, Lane 235, Pao-Chiao Rd., Hsin-Tien Dist., New Taipei City, Taiwan
Test Site	MRT Technology (Taiwan) Co., Ltd
Test Site Address	No. 38, Fuxing Second Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C)
MRT FCC Registration No.	291082
FCC Rule Part(s)	Part 15.247
Test Device Serial No.	#1-1 <input type="checkbox"/> Production <input checked="" type="checkbox"/> Pre-Production <input type="checkbox"/> Engineering

Test Facility / Accreditations

1. MRT facility is a FCC registered (Reg. No. 291082) test facility with the site description report on file and is designated by the FCC as an Accredited Test Firm.
2. MRT facility is an IC registered (MRT Reg. No. 21723) test laboratory with the site description on file at Industry Canada.
3. MRT Lab is accredited to ISO 17025 by the Taiwan Accreditation Foundation (TAF Cert. No. 3261) in EMC, Telecommunications and Radio testing for FCC (Designation Number: TW3261), Industry Taiwan, EU and TELEC Rules.

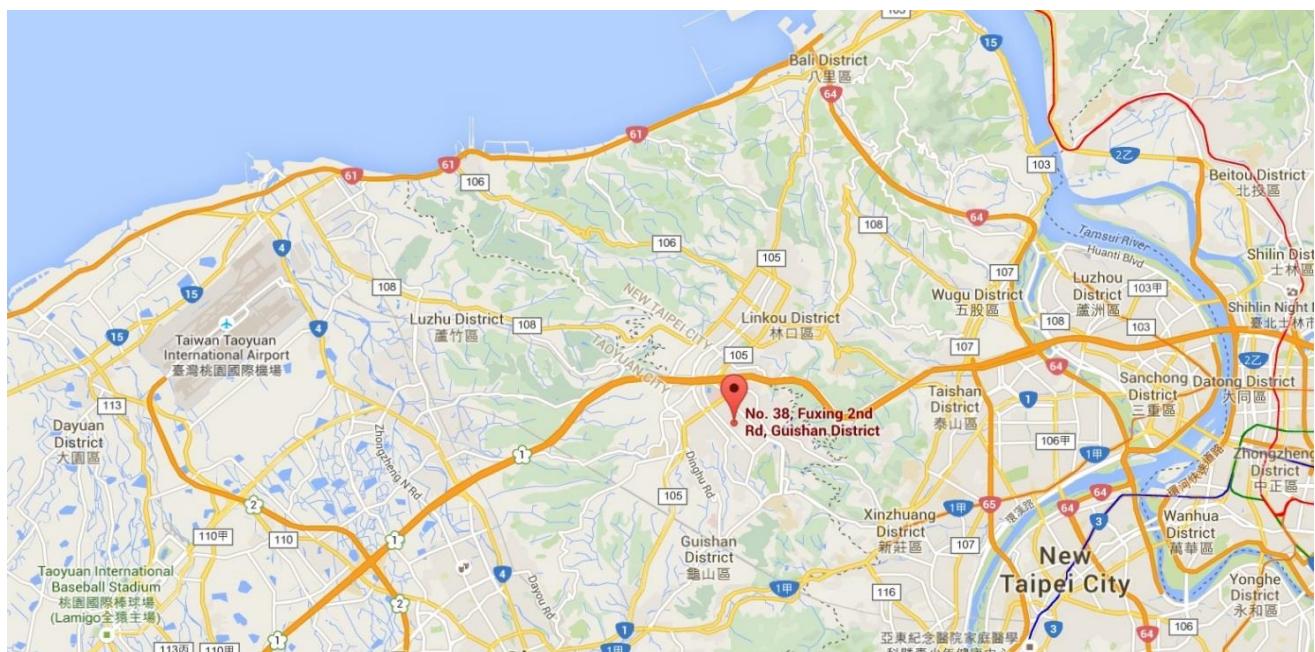
1. INTRODUCTION

1.1. Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Industry Canada Certification and Engineering Bureau.

1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taoyuan City. These measurement tests were conducted at the MRT Technology (Taiwan) Co., Ltd. Facility located at No.38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C).



2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name	Wireless 2D Imager Scanner
Model No.	MS852P
Brand Name	unitech
RF Specification	2.4GHz
Maximum Power	-4.67dBm
Accessory	
USB Adapter	Brand: Ten Pao Model No: S010CCU0500200 Input: AC 100-240V~50/60Hz 0.4A Output: DC 5.0V, 2.0A
Docking	Brand: unitech M/N: MS852P
USB to LAN Cable	Brand: unitech M/N: MS852P Length:2.0m
Dongle	Brand: unitech M/N: MS84X-2

2.2. Product Specification Subjective to this Standard

Operating Frequency	2410~2470MHz
Type of modulation	GFSK

2.3. Test Mode

Test Mode	Mode 1: Transmit - GFSK
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Note: Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.

2.4. Operation Frequency / Channel List

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2410	32	2441
2	2411	33	2442
3	2412	34	2443
4	2413	35	2444
5	2414	36	2445
6	2415	37	2446
7	2416	38	2447
8	2417	39	2448
9	2418	40	2449
10	2419	41	2450
11	2420	42	2451
12	2421	43	2452
13	2422	44	2453
14	2423	45	2454
15	2424	46	2455
16	2425	47	2456
17	2426	48	2457
18	2427	49	2458
19	2428	50	2459
20	2429	51	2460
21	2430	52	2461
22	2431	53	2462
23	2432	54	2463
24	2433	55	2464
25	2434	56	2465
26	2435	57	2466
27	2436	58	2467
28	2437	59	2468
29	2438	60	2469
30	2439	61	2470
31	2440	--	--

2.5. Test Configuration

This device was tested per the guidance of ANSI C63.10-2013. ANSI C63.10-2013 was used to reference the appropriate EUT setup for radiated spurious emissions testing and AC line conducted testing.

2.6. Test Software

The test used during testing was “scanned the Engineer Mode Barcode”.

2.7. EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

2.8. Labeling Requirements

Per 2.1074 & 15.19; Docket 95-19

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase. However, when the device is so small wherein placement of the label with specified statement is not practical, only the FCC ID must be displayed on the device per Section 15.19(a)(5). Please see attachment for FCC ID label and label location.

3. DESCRIPTION of TEST

3.1. Evaluation Procedure

The measurement procedures described in the American National Standard for Testing Unlicensed Wireless Devices (ANSI C63.10-2013), and the guidance provided in KDB 558074 D01v05r02 were used in the measurement of the **Wireless 2D Imager Scanner**.

Deviation from measurement procedure.....**None**

3.2. AC Line Conducted Emissions

The line-conducted facility is located inside an 9'x4'x3' shielded enclosure. A 1m x 2m wooden table 80cm high is placed 40cm away from the vertical wall and 80cm away from the sidewall of the shielded room. Two 10kHz-30MHz, 50Ω/50uH Line-Impedance Stabilization Networks (LISNs) are bonded to the shielded room floor. Power to the LISNs is filtered by external high-current high-insertion loss power line filters. These filters attenuate ambient signal noise from entering the measurement lines. These filters are also bonded to the shielded enclosure.

The EUT is powered from one LISN and the support equipment is powered from the second LISN. All interconnecting cables more than 1 meter were shortened to a 1 meter length by non-inductive bundling (serpentine fashion) and draped over the back edge of the test table. All cables were at least 40cm above the horizontal reference ground-plane. Power cables for support equipment were routed down to the second LISN while ensuring that that cables were not draped over the second LISN.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the receiver and exploratory measurements were made to determine the frequencies producing the maximum emission from the EUT. The receiver was scanned from 150kHz to 30MHz. The detector function was set to peak mode for exploratory measurements while the bandwidth of the analyzer was set to 9kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Each emission was also maximized by varying: power lines, the mode of operation or data exchange speed, or support equipment which determined the worst-case emission. Once the worst case emissions have been identified, the one EUT cable configuration/arrangement and mode of operation that produced these emissions are used for final measurements on the same test site. The analyzer is set to CISPR quasi-peak and average detectors with a 9kHz resolution bandwidth for final measurements.

An extension cord was used to connect to a single LISN which powered by EUT. The extension cord was calibrated with LISN, the impedance and insertion loss are compliance with the requirements as stated in ANSI C63.10-2013.

Line conducted emissions test results are shown in Section 7.8.

3.3. Radiated Emissions

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. For measurements above 1GHz absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1GHz, the absorbers are removed. A MF Model 210SS turntable is used for radiated measurement. It is a continuously rotatable, remote controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm high PVC support structure is placed on top of the turntable. For all measurements, the spectrum was scanned through all EUT azimuths and from 1 to 4 meter receive antenna height using a broadband antenna from 30MHz up to the upper frequency shown in 15.33(b)(1) depending on the highest frequency generated or used in the device or on which the device operates or tunes. For frequencies above 1GHz, linearly polarized double ridge horn antennas were used. For frequencies below 30MHz, a calibrated loop antenna was used. When exploratory measurements were necessary, they were performed at 1 meter test distance inside the semi-anechoic chamber using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequencies and modes producing the maximum emissions. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The test set-up for frequencies below 1GHz was placed on top of the 0.8 meter high, 1 x 1.5 meter table; and test set-up for frequencies 1-40GHz was placed on top of the 1.5 meter high, 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configuration, clock speed, mode of operation or video resolution, if applicable, turntable azimuth, and receive antenna height was noted for each frequency found.

Final measurements were made in the semi-anechoic chamber using calibrated, linearly polarized broadband and horn antennas. The test setup was configured to the setup that produced the worst case emissions. The spectrum analyzer was set to investigate all frequencies required for testing to compare the highest radiated disturbances with respect to the specified limits. The turntable containing the EUT was rotated through 360 degrees and the height of the receive antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by changing the orientation of the EUT through three orthogonal planes and changing the polarity of the receive antenna, which produced the worst-case emissions.

According to 3dB Beam-Width of horn antenna, the horn antenna should be always directed to the EUT when rising height.

Radiated emissions test results are shown in Section 7.6 & 7.7 .

4. ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can 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."

- The antenna of the **Wireless 2D Imager Scanner**, is permanently attached.
- There are no provisions for connection to an external antenna.

Conclusion:

The EUT unit complies with the requirement of §15.203.

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	ACX	AT8010-E2R9HAA	Chip	2.5dBi

5. TEST EQUIPMENT CALIBRATION DATE

Conducted Emissions – SR2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Two-Line V-Network	R&S	ENV216	MRTTWA00020	1 year	2023/4/20
Cable	Rosnol	N1C50-RG400-B 1C50-500CM	MRTTWE00013	1 year	2023/6/19
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2023/3/9

Radiated Emissions – AC2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Broadband TRILOG Antenna	SCHWARZBECK	VULB 9162	MRTTWA00001	1 year	2022/12/30
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2023/3/9
Signal Analyzer	R&S	FSVA3044	MRTTWA00092	1 year	2023/6/23
Acitive Loop Antenna	Schwarzbeck	FMZB 1519B	MRTTWA00002	1 year	2023/5/24
Broadband Hornantenna	RFSPIN	DRH18-E	MRTTWA00087	1 year	2023/5/10
Breitband Hornantenna	Schwarzbeck	BBHA 9170	MRTTWA00004	1 year	2023/3/29
Broadband Preamplifier	EMC Instruments corporation	EMC118A45SE	MRTTWA00088	1 year	2023/5/9
Broadband Preamplifier	SCHWARZBECK	BBV 9718	MRTTWA00005	1 year	2023/3/30
Signal Analyzer	R&S	FSV40	MRTTWA00007	1 year	2023/3/16
Cable	HUBERSUHNER	SF106	MRTTWE00034	1 year	2023/6/27

Conducted Test Equipment – SR5

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EXA Signal Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2023/10/5
EXA Signal Analyzer	KEYSIGHT	N9010B	MRTTWA00074	1 year	2023/7/19
USB Wideband Power Sensor	KEYSIGHT	U2021XA	MRTTWA00015	1 year	2023/3/16

Test Software

Software	Version	Function
e3	9.160520a	EMI Test Software
EMI	V3	EMI Test Software

6. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Conducted Emission- Power Line
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_{c(y)}$): 0.15MHz~30MHz: ± 2.53 dB
Radiated Spurious Emission
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_{c(y)}$): 9kHz~30MHz: ± 3.92 dB 30MHz~1GHz: ± 4.25 dB 1GHz~18GHz: ± 4.40 dB 18GHz~40GHz: ± 4.45 dB
Frequency Error
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_{c(y)}$): ± 78.4 Hz
Conducted Power
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_{c(y)}$): ± 0.84 dB
Conducted Spurious Emission
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_{c(y)}$): ± 2.65 dB
Occupied Bandwidth
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_{c(y)}$): ± 3.3 %
Temp. / Humidity
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_{c(y)}$): $\pm 0.82^{\circ}\text{C}$ / ± 3 %
DC Voltage
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_{c(y)}$): ± 0.3 %

7. TEST RESULT

7.1. Summary

Product Name: Wireless 2D Imager Scanner

FCC Classification: (DTS) Digital Transmission System

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
15.247(a)(2)	6dB Bandwidth	$\geq 500\text{kHz}$	Conducted	Pass	Section 7.2
15.247(b)(3)	Output Power	$\leq 30.00\text{dBm}$		Pass	Section 7.3
15.247(e)	Power Spectral Density	$\leq 8.00\text{dBm/3kHz}$		Pass	Section 7.4
15.247(d)	Out-of-Band Emissions	Conducted $\geq 20\text{dBc}$		Pass	Section 7.5
15.205 15.209	Spurious Emission	$< \text{FCC 15.209 limits}$	Radiated	Pass	Section 7.6
15.205 15.209	Band Edge Measurement	$\leq 74\text{dBuV/m(Peak)}$ $\leq 54\text{dBuV/m(Average)}$		Pass	Section 7.7
15.207	AC Conducted Emissions 150kHz - 30MHz	$< \text{FCC 15.207 limits}$	Line Conducted	Pass	Section 7.8

Notes:

- 1) Determining compliance is based on the test results met the regulation limits or requirements declared by clients, and the test results don't take into account the value of measurement uncertainty.
- 2) All modes of operation and data rates were investigated. For radiated emission test, every axis (X, Y, Z) was also verified when applicable. The test results shown in the following sections represent the worst case emissions.
- 3) The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
- 4) All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables and attenuators.

7.2. 6dB Bandwidth Measurement

7.2.1. Test Limit

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

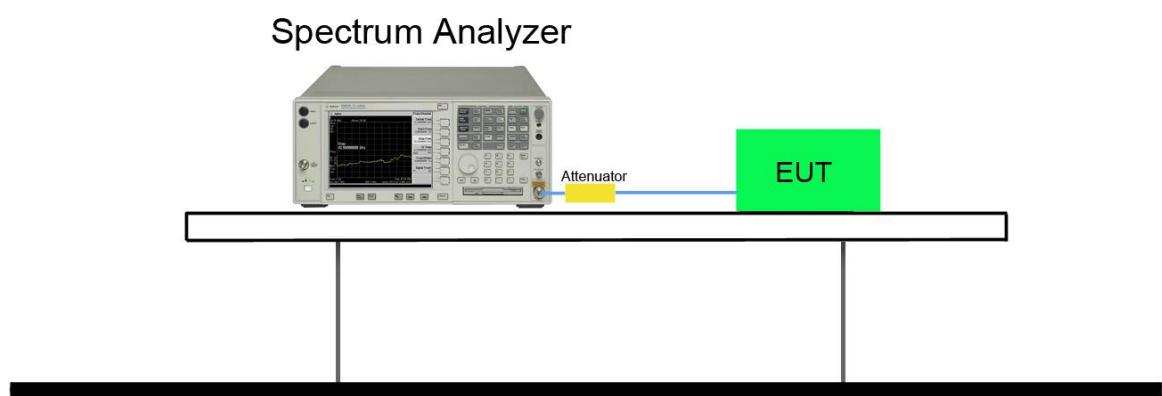
7.2.2. Test Procedure used

KDB 558074 D01v05r02- Section 8.2 Option 2

7.2.3. Test Setting

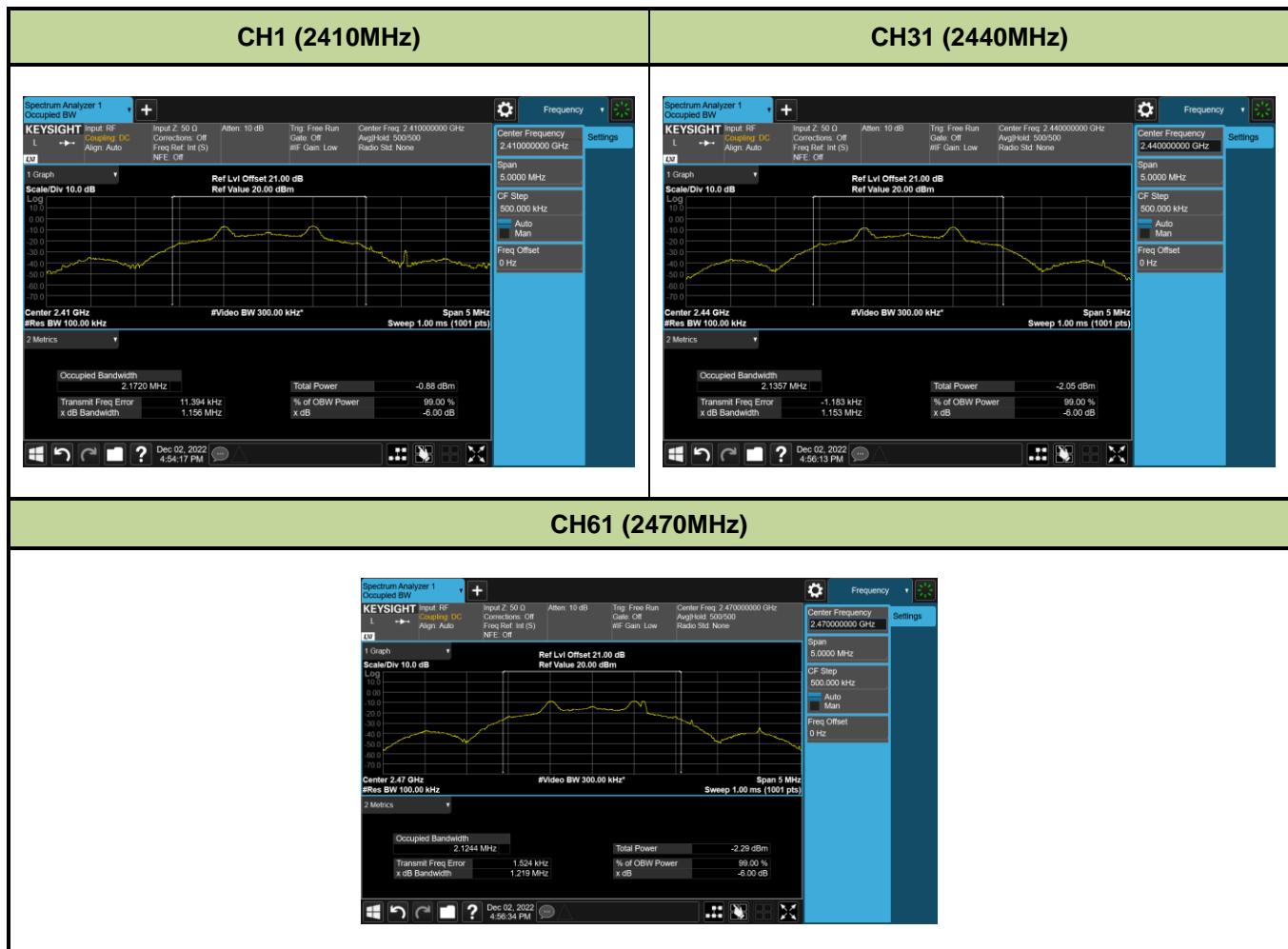
1. The Spectrum's automatic bandwidth measurement capability was used to perform the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to X = 6. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. Set RBW = 100 kHz
3. VBW $\geq 3 \times$ RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. Allow the trace was allowed to stabilize

7.2.4. Test Setup



7.2.5. Test Result

Test Mode	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)	Result
GFSK	1	2410	1.156	2.172	≥ 0.5	Pass
	31	2440	1.153	2.136	≥ 0.5	Pass
	61	2470	1.219	2.124	≥ 0.5	Pass



7.3. Output Power Measurement

7.3.1. Test Limit

The maximum out power shall be less 1 Watt (30dBm).

7.3.2. Test Procedure Used

KDB 558074 D01v05r02 - Section 8.3

7.3.3. Test Setting

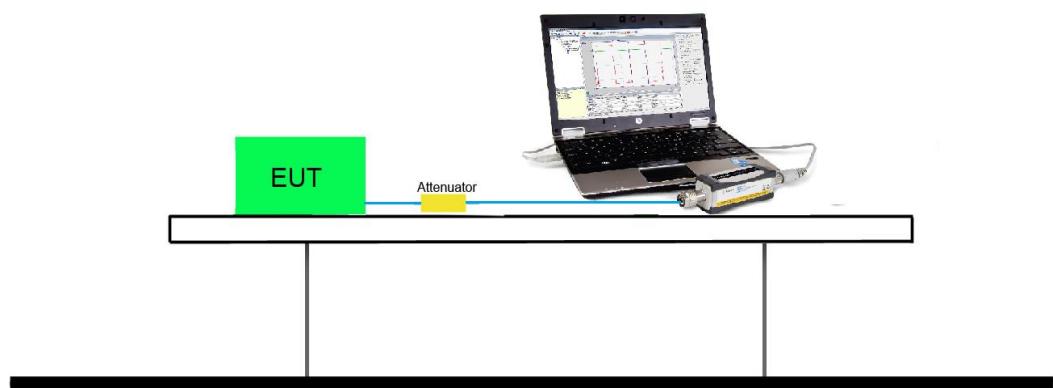
Peak Power Measurement

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector.

Average Power Measurement

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

7.3.4. Test Setup



7.3.5. Test Result of Output Power

Test Mode	Channel No.	Frequency (MHz)	Peak Power (dBm)	Power Limit (dBm)
GFSK	1	2410	-4.67	< 30
	31	2440	-5.65	< 30
	61	2470	-6.23	< 30

Note1: Output power =Reading value on power meter + cable loss.

Note2: Antenna Gain: 2.5dBi.

7.4. Power Spectral Density Measurement

7.4.1. Test Limit

The maximum permissible power spectral density is 8dBm in any 3 kHz band.

7.4.2. Test Procedure Used

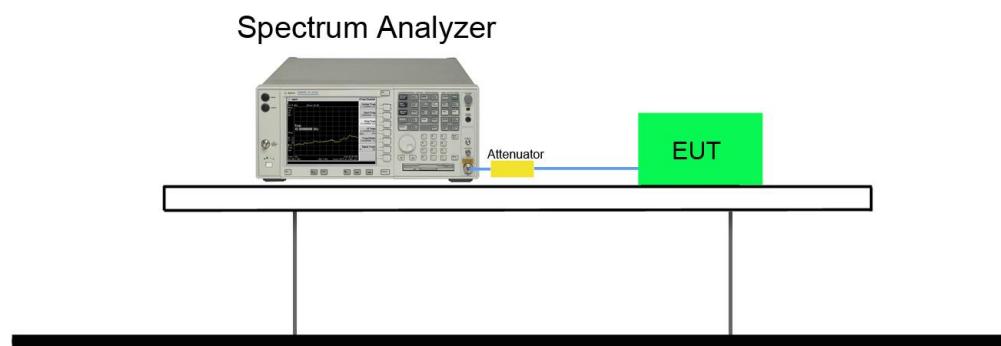
KDB 558074 D01v05r02 - Section 8.4 Method PKPSD

7.4.3. Test Setting

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance, and is optional if the maximum conducted (average) output power was used to demonstrate compliance.

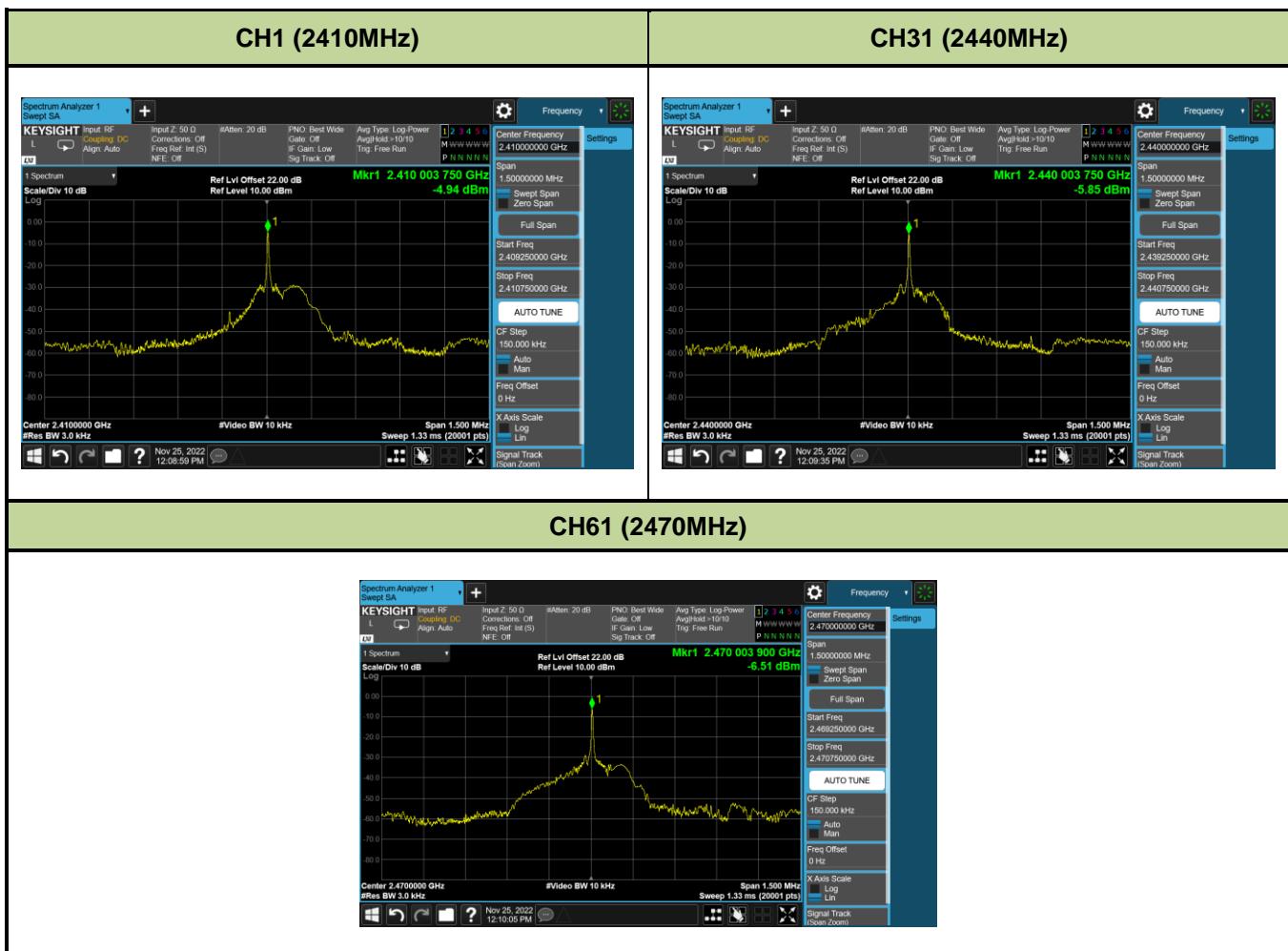
- a) Set analyzer center frequency to DTS channel center frequency.
- b) Set the span to 1.5 times the DTS bandwidth.
- c) Set the RBW to: 3 kHz.
- d) Set the VBW $\geq 3^* \text{ RBW}$.
- e) Detector = peak.
- f) Sweep time = auto couple.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the maximum amplitude level within the RBW.

7.4.4. Test Setup



7.4.5. Test Result

Test Mode	Channel No.	Frequency (MHz)	PSD (dBm / 3kHz)	Limit (dBm / 3kHz)	Result
GFSK	1	2410	-4.94	≤ 8	Pass
	31	2440	-5.85	≤ 8	Pass
	61	2470	-6.51	≤ 8	Pass



7.5. Out-of-Band Spurious Emissions Emissions Measurement

7.5.1. Test Limit

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 RF conducted measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

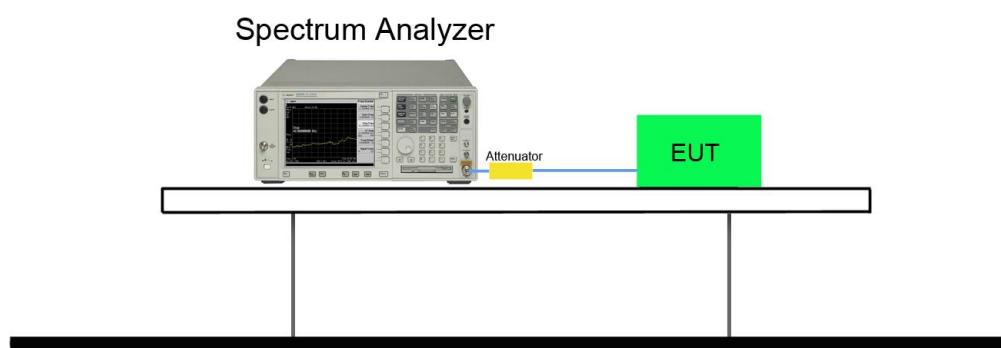
7.5.2. Test Procedure Used

ANSI C63.10- Section 11.1 & 11.2

7.5.3. Test Setting

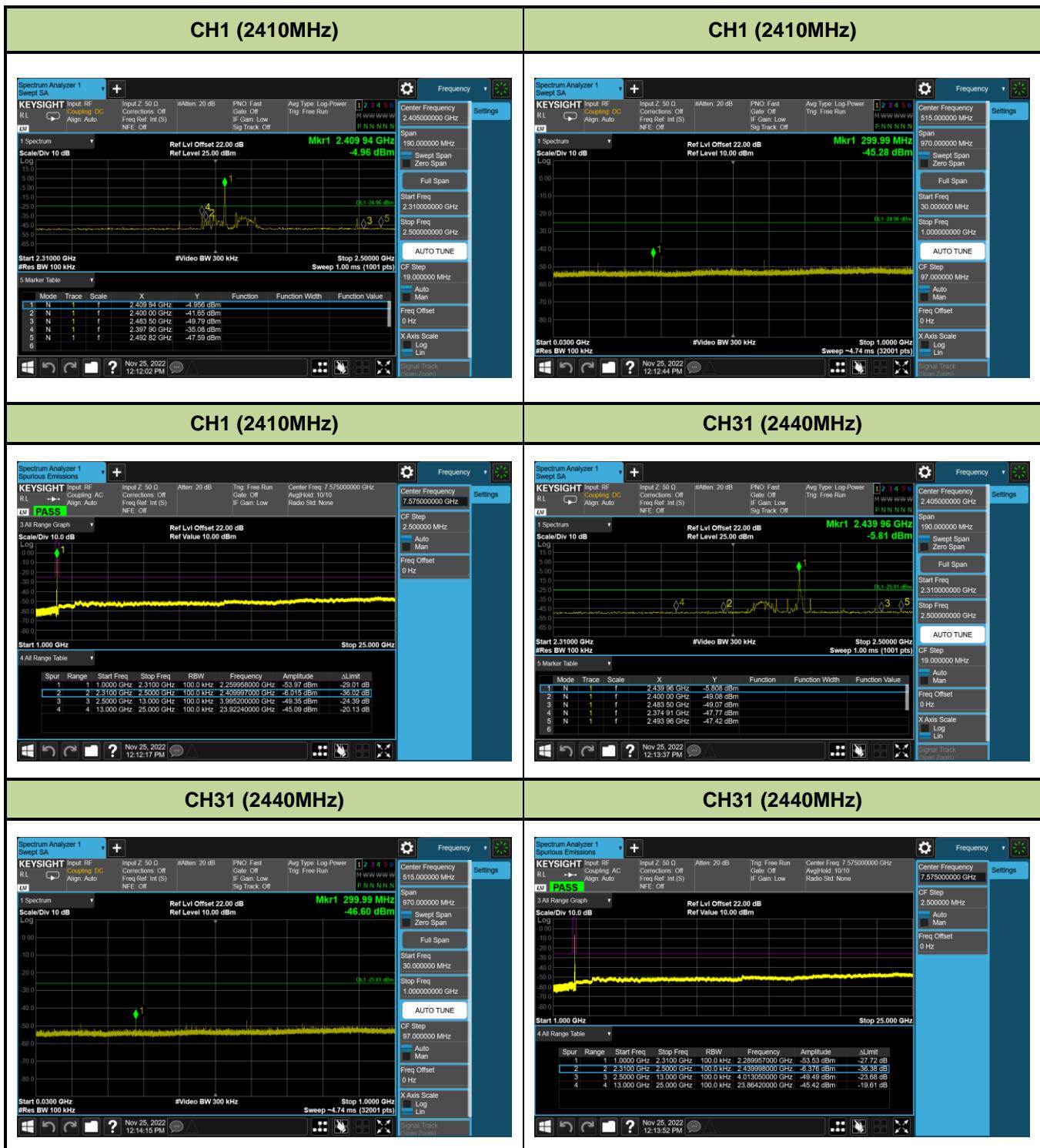
- (a) Set instrument center frequency to DTS channel center frequency
- (b) Set the span to \geq 1.5 times the DTS bandwidth
- (c) Set the RBW = 100 kHz
- (d) Set the VBW \geq 3 x RBW
- (e) Detector = peak
- (f) Sweep time = auto couple
- (g) Trace mode = max hold
- (h) Allow trace to fully stabilize

7.5.4. Test Setup



7.5.5. Test Result

Test Mode	Channel No.	Frequency (MHz)	Limit	Result
GFSK	1	2410	20dBc	Pass
	31	2440	20dBc	Pass
	61	2470	20dBc	Pass





7.6. Radiated Spurious Emission Measurement

7.6.1. Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [V/m]	Measured 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	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

7.6.2. Test Procedure Used

ANSI C63.10 - Section 11.12.2.3 (quasi-peak measurements)

ANSI C63.10 - Section 11.12.2.4 (peak power measurements)

ANSI C63.10 - Section 11.12.2.5 (average power measurements)

7.6.3. Test Setting

Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = as specified in Table 1
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple

6. Trace mode = max hold

7. Trace was allowed to stabilize

Table 1 - RBW as a function of frequency

Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

Average Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

2. RBW = 1MHz

3. VBW $\geq 1/T$

4. De As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to "Voltage" regardless of the display mode

5. Detector = Peak

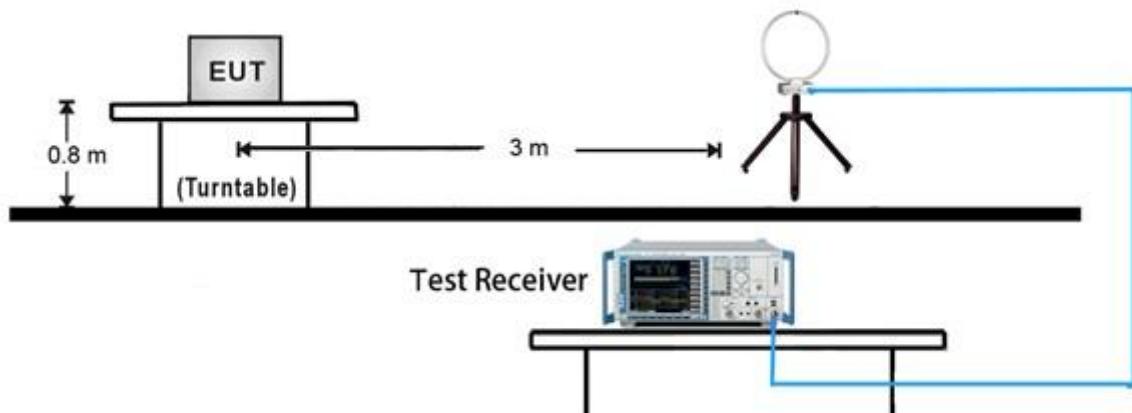
6. Sweep time = auto

7. Trace mode = max hold

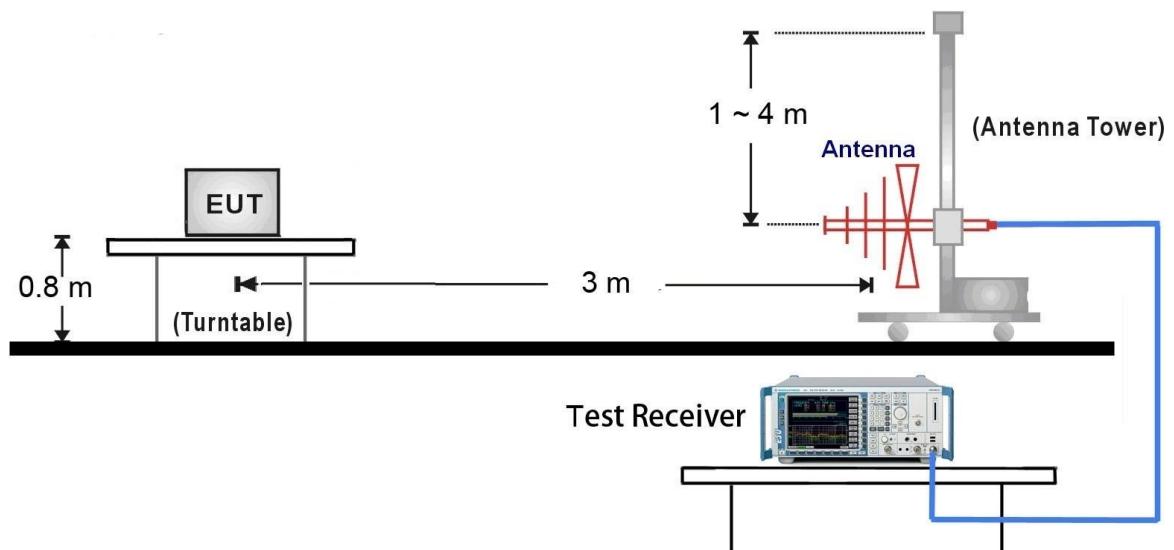
8. Allow max hold to run for at least 50 times (1/duty cycle) traces

7.6.4. Test Setup

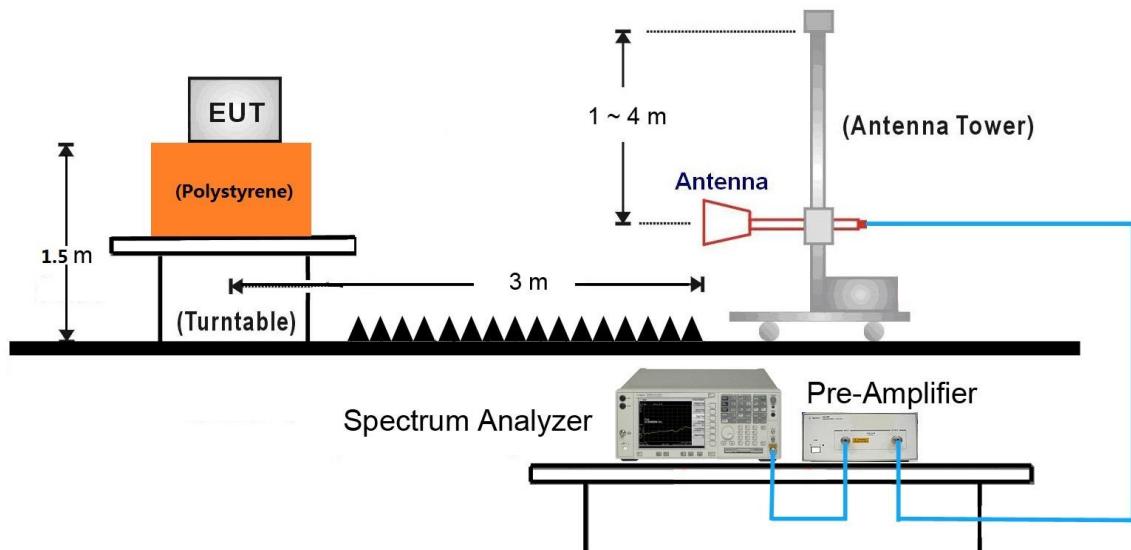
9kHz ~ 30MHz Test Setup:



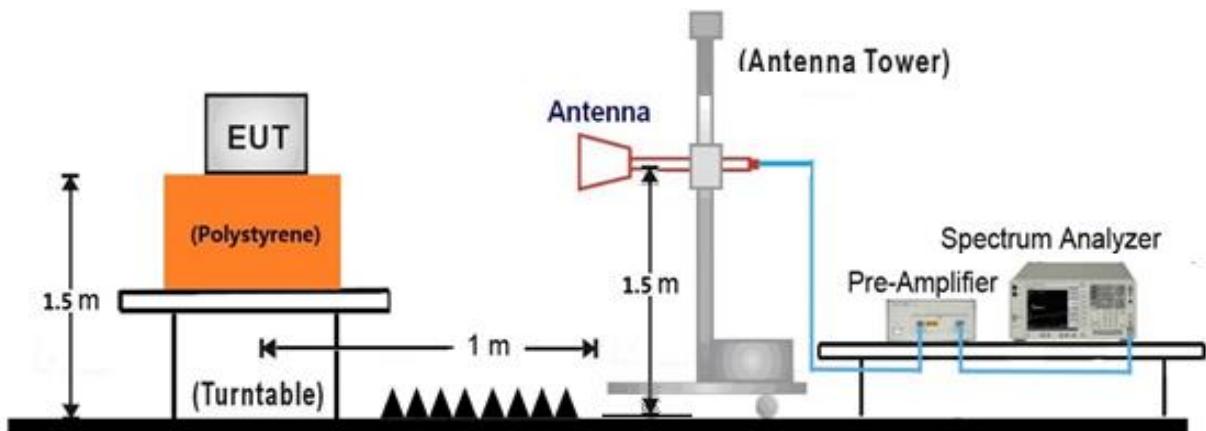
30MHz ~ 1GHz Test Setup:



1GHz ~ 18GHz Test Setup:

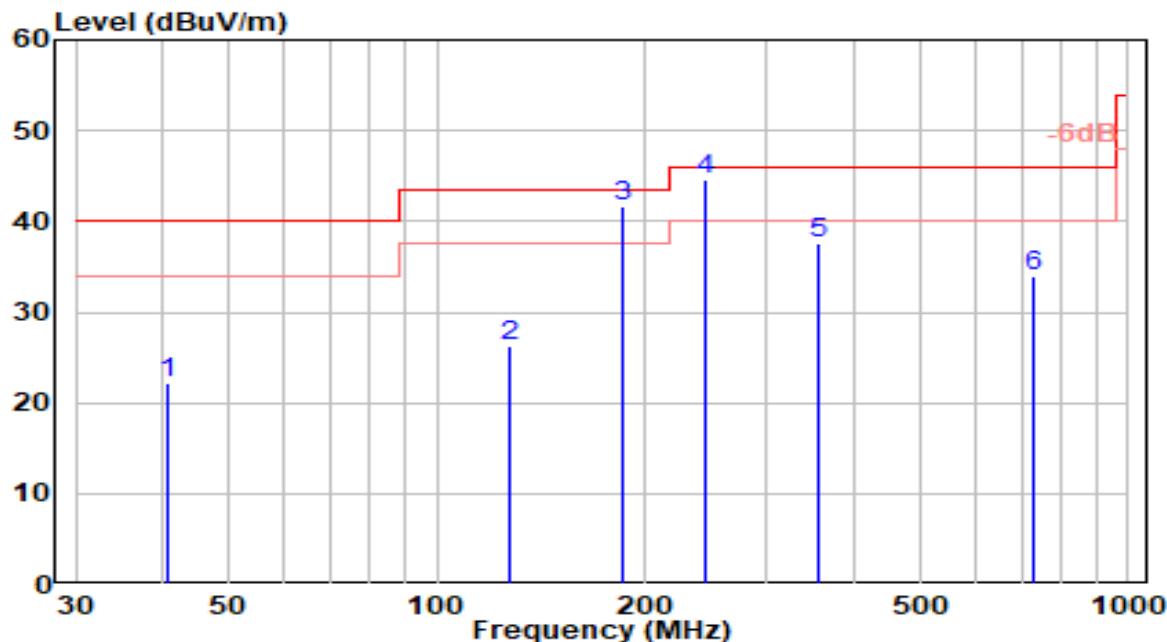


18GHz ~25GHz Test Setup:



7.6.5. Test Result

EUT	Wireless 2D Imager Scanner	Date of Test	2022-10-19
Factor	VULB 9162	Temp. / Humidity	24°C /56%
Polarity	Horizontal	Site / Test Engineer	AC2 / Jay
Test Mode	TX-2440MHz	Test Voltage	AC 110V/60Hz

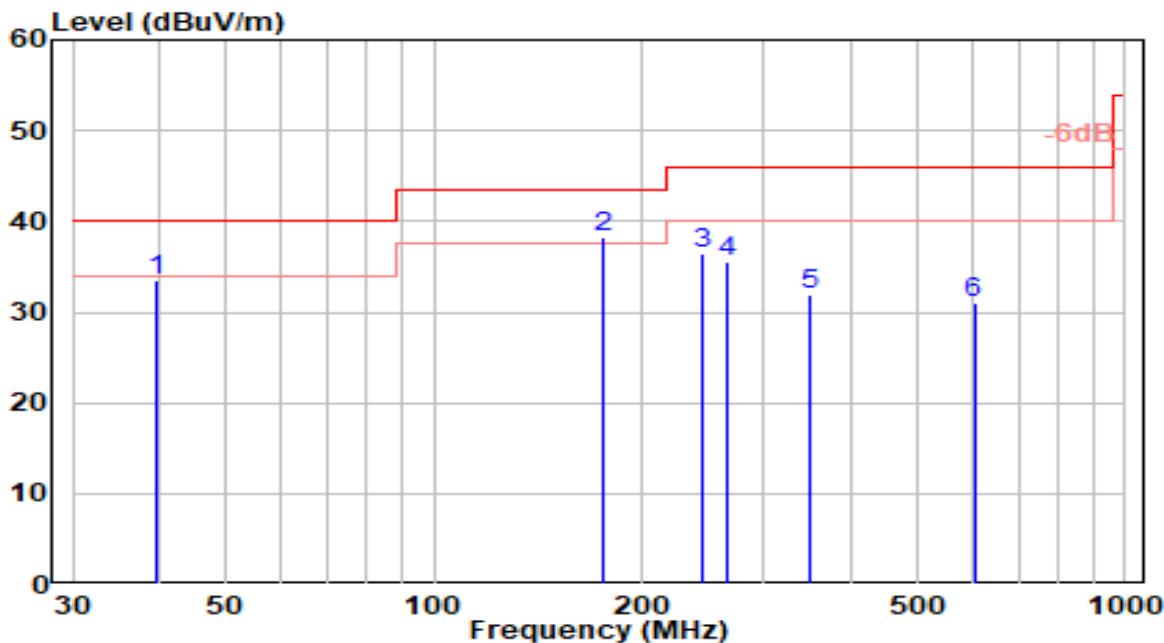


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	40.670	2.20	19.92	22.12	-17.88	40.00	100	275	QP
2	127.000	10.39	15.96	26.35	-17.15	43.50	100	285	QP
3	186.170	24.29	17.27	41.55	-1.95	43.50	100	110	QP
4 *	244.370	24.62	19.89	44.51	-1.49	46.00	100	65	QP
5	357.860	15.04	22.45	37.49	-8.51	46.00	100	105	QP
6	728.400	5.24	28.63	33.86	-12.14	46.00	100	240	QP

Note:

1. "*", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m)+ Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless 2D Imager Scanner	Date of Test	2022-10-19
Factor	VULB 9162	Temp. / Humidity	24°C /56%
Polarity	Vertical	Site / Test Engineer	AC2 / Jay
Test Mode	TX-2440MHz	Test Voltage	AC 110V/60Hz

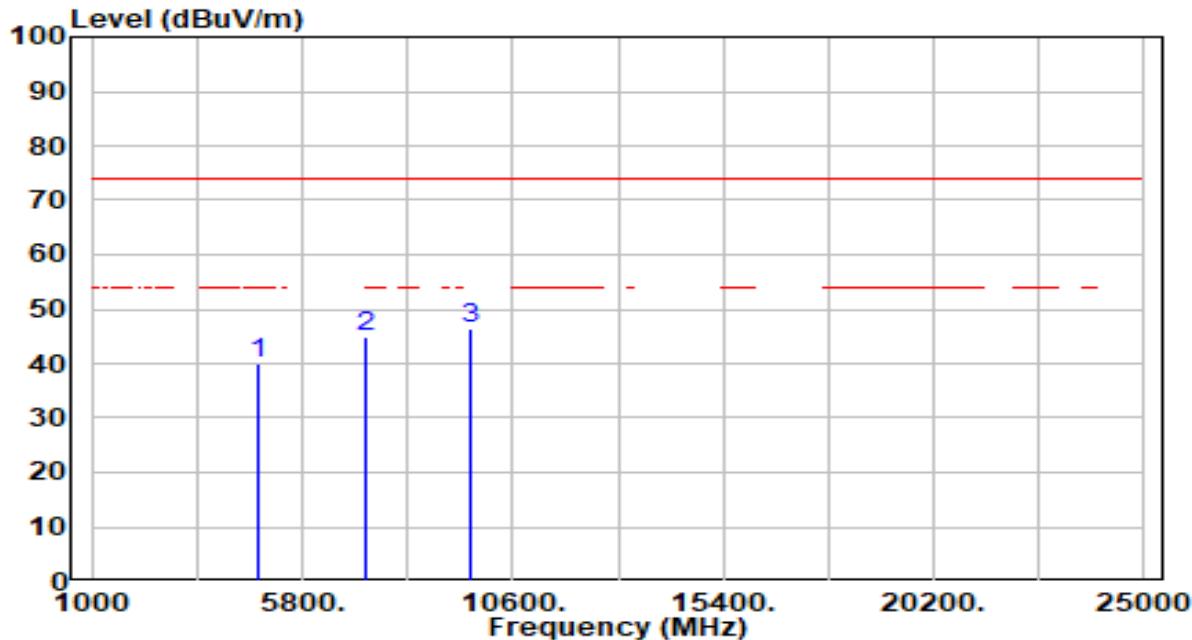


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	39.700	13.82	19.66	33.48	-6.52	40.00	100	335	QP
2 *	175.500	22.00	16.27	38.27	-5.23	43.50	100	290	QP
3	245.340	16.48	19.94	36.43	-9.57	46.00	100	95	QP
4	266.680	15.38	20.12	35.50	-10.50	46.00	100	330	QP
5	350.100	9.63	22.28	31.92	-14.08	46.00	100	350	QP
6	604.240	4.01	27.02	31.03	-14.97	46.00	100	65	QP

Note:

1. **, means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless 2D Imager Scanner	Date of Test	2022-11-08
Factor	DRH18-E & BBHA 9170	Temp. / Humidity	24°C /56%
Polarity	Horizontal	Site / Test Engineer	AC2 / Xuan
Test Mode	TX-2410MHz	Test Voltage	AC 110V/60Hz

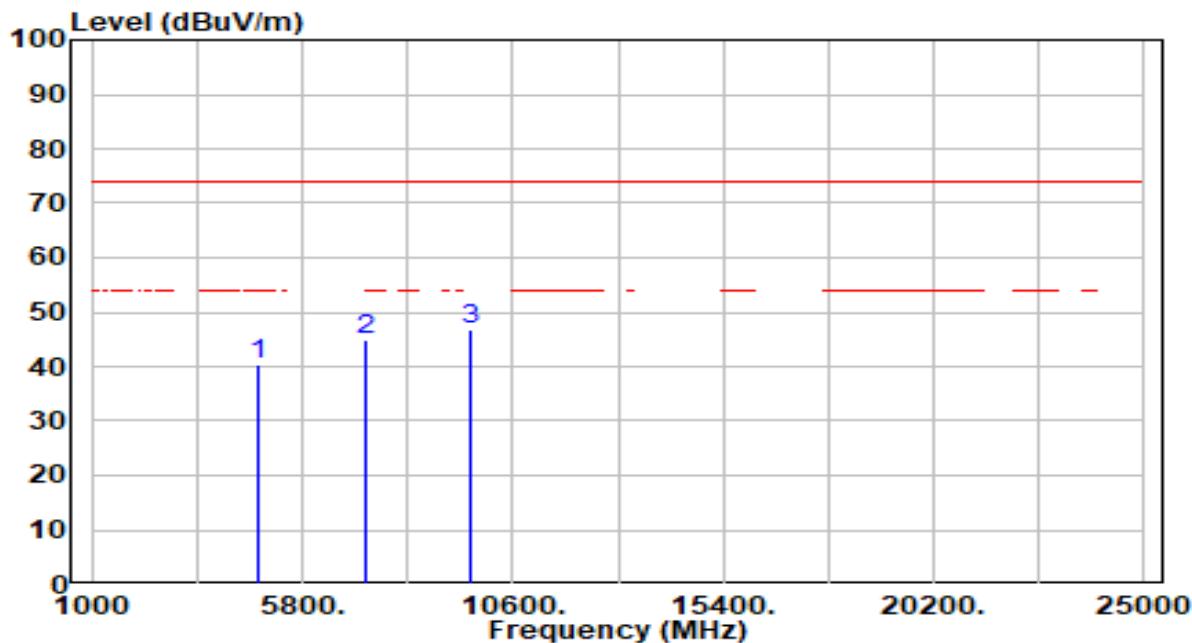


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4820.000	40.39	-0.40	39.99	-34.01	74.00	100	25	Peak
2	7230.000	39.44	5.33	44.77	-29.23	74.00	100	85	Peak
3 *	9640.000	41.39	5.14	46.53	-27.47	74.00	100	210	Peak

Note:

1. **, means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) - Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless 2D Imager Scanner	Date of Test	2022-11-08
Factor	DRH18-E & BBHA 9170	Temp. / Humidity	24°C /56%
Polarity	Vertical	Site / Test Engineer	AC2 / Xuan
Test Mode	TX-2410MHz	Test Voltage	AC 110V/60Hz

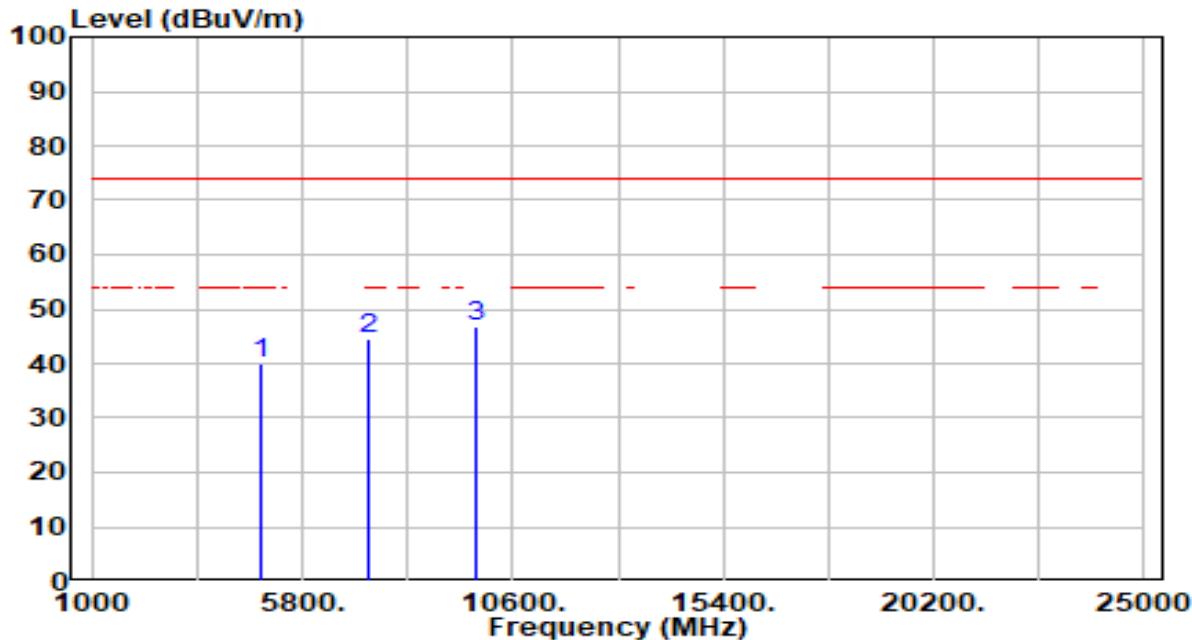


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4820.000	40.73	-0.40	40.33	-33.67	74.00	100	5	Peak
2	7230.000	39.70	5.33	45.04	-28.96	74.00	100	40	Peak
3 *	9640.000	41.79	5.14	46.93	-27.07	74.00	100	175	Peak

Note:

1. **, means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) - Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless 2D Imager Scanner	Date of Test	2022-11-08
Factor	DRH18-E & BBHA 9170	Temp. / Humidity	24°C /56%
Polarity	Horizontal	Site / Test Engineer	AC2 / Xuan
Test Mode	TX-2440MHz	Test Voltage	AC 110V/60Hz

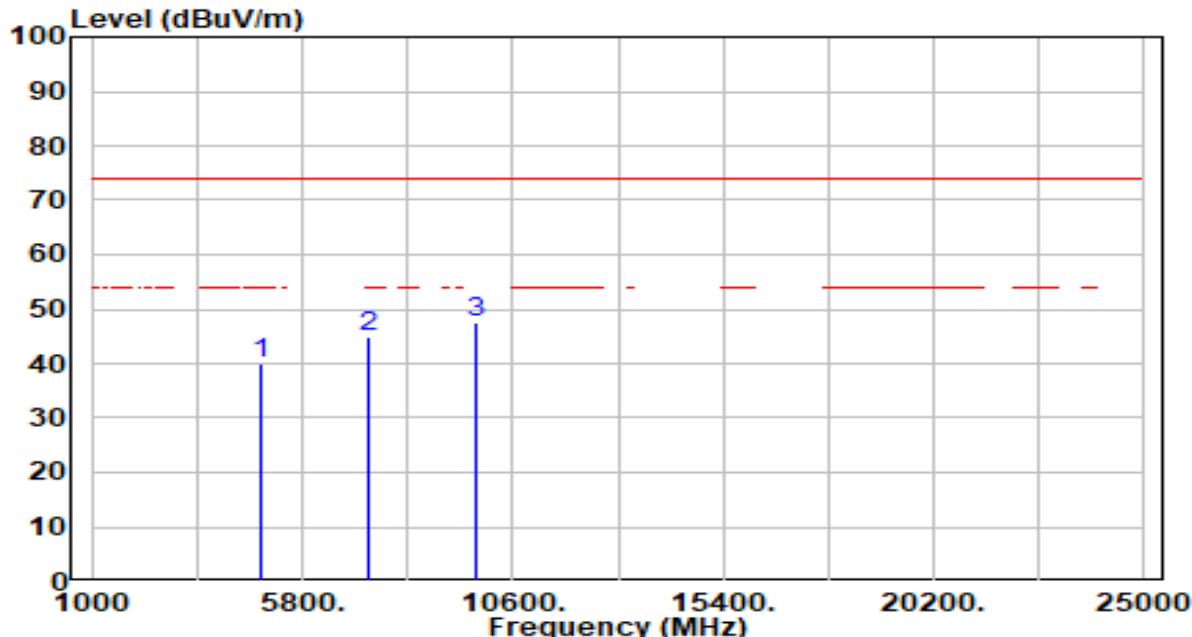


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4880.000	40.24	-0.28	39.96	-34.04	74.00	100	345	Peak
2	7320.000	39.34	5.32	44.66	-29.34	74.00	100	250	Peak
3 *	9760.000	41.50	5.12	46.62	-27.38	74.00	100	40	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m)+ Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless 2D Imager Scanner	Date of Test	2022-11-08
Factor	DRH18-E & BBHA 9170	Temp. / Humidity	24°C /56%
Polarity	Vertical	Site / Test Engineer	AC2 / Xuan
Test Mode	TX-2440MHz	Test Voltage	AC 110V/60Hz

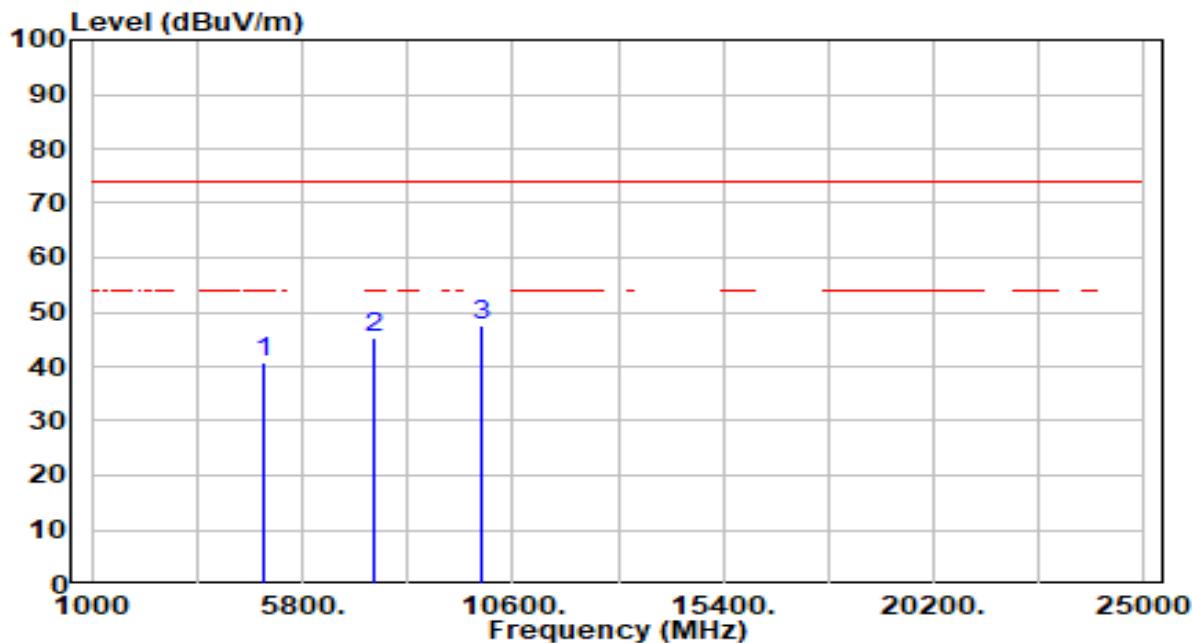


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4880.000	40.25	-0.28	39.97	-34.03	74.00	100	275	Peak
2	7320.000	39.58	5.32	44.90	-29.10	74.00	100	245	Peak
3 *	9760.000	42.43	5.12	47.55	-26.45	74.00	100	315	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m)+ Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless 2D Imager Scanner	Date of Test	2022-11-08
Factor	DRH18-E & BBHA 9170	Temp. / Humidity	24°C /56%
Polarity	Horizontal	Site / Test Engineer	AC2 / Xuan
Test Mode	TX-2470MHz	Test Voltage	AC 110V/60Hz

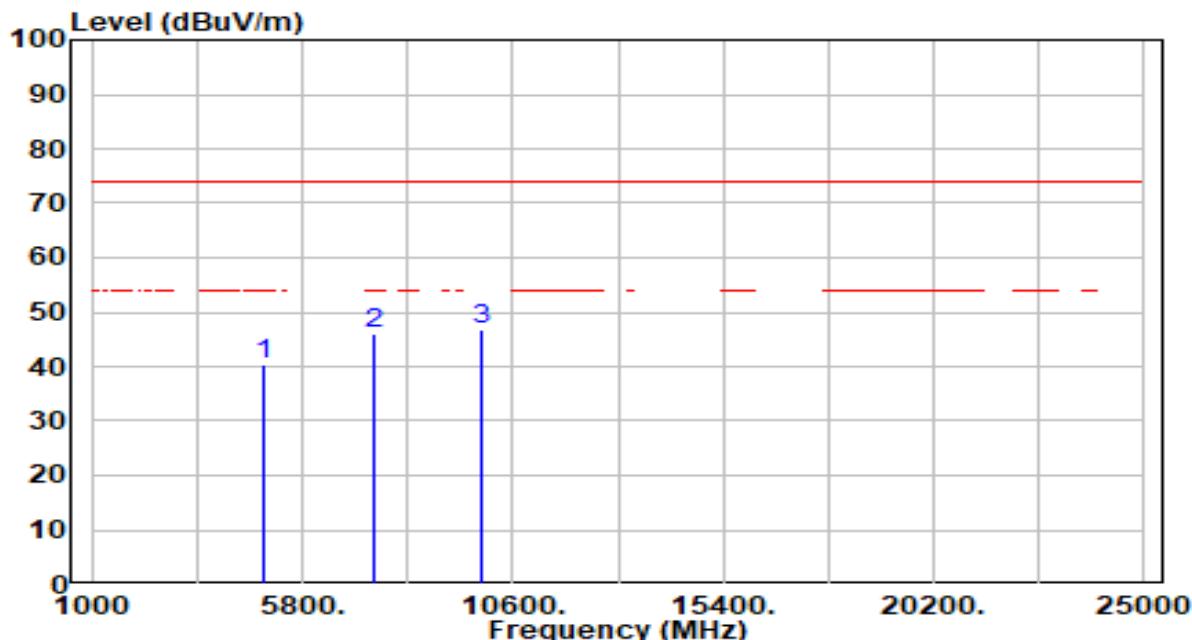


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4940.000	40.85	-0.16	40.69	-33.31	74.00	200	350	Peak
2	7410.000	40.14	5.30	45.44	-28.56	74.00	100	350	Peak
3 *	9880.000	42.36	5.13	47.49	-26.51	74.00	270	0	Peak

Note:

1. **, means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) - Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless 2D Imager Scanner	Date of Test	2022-11-08
Factor	DRH18-E & BBHA 9170	Temp. / Humidity	24°C /56%
Polarity	Vertical	Site / Test Engineer	AC2 / Xuan
Test Mode	TX-2470MHz	Test Voltage	AC 110V/60Hz



No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4940.000	40.63	-0.16	40.47	-33.53	74.00	300	30	Peak
2	7410.000	40.57	5.30	45.87	-28.13	74.00	200	95	Peak
3 *	9880.000	41.68	5.13	46.82	-27.18	74.00	300	335	Peak

Note:

1. **, means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m)+ Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

7.7. Radiated Restricted Band Edge Measurement

7.7.1. Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [V/m]	Measured 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	3
88 – 216	150	3
216 – 960	200	3
Above 960	500	3

7.7.2. Test Procedure Used

ANSI C63.10-2013 - Section 11.13

7.7.3. Test Setting

Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = as specified in Table 1
3. VBW = $3 * \text{RBW}$
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Table 1 - RBW as a function of frequency

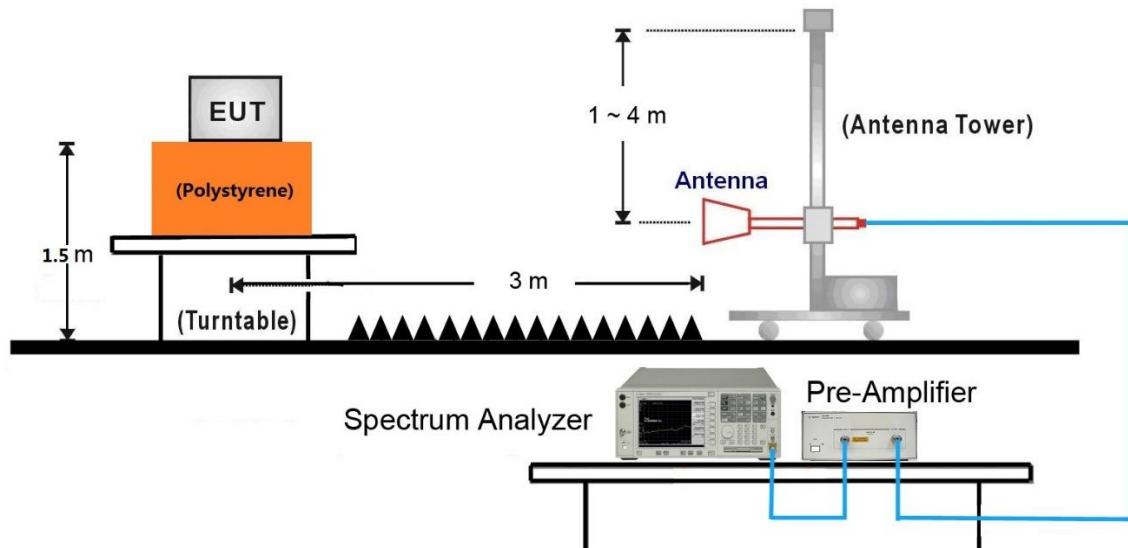
Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

Average Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW $\geq 1/T$
4. De As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to "Voltage" regardless of the display mode
5. Detector = Peak
6. Sweep time = auto
7. Trace mode = max hold
8. Allow max hold to run for at least 50 times (1/duty cycle) traces

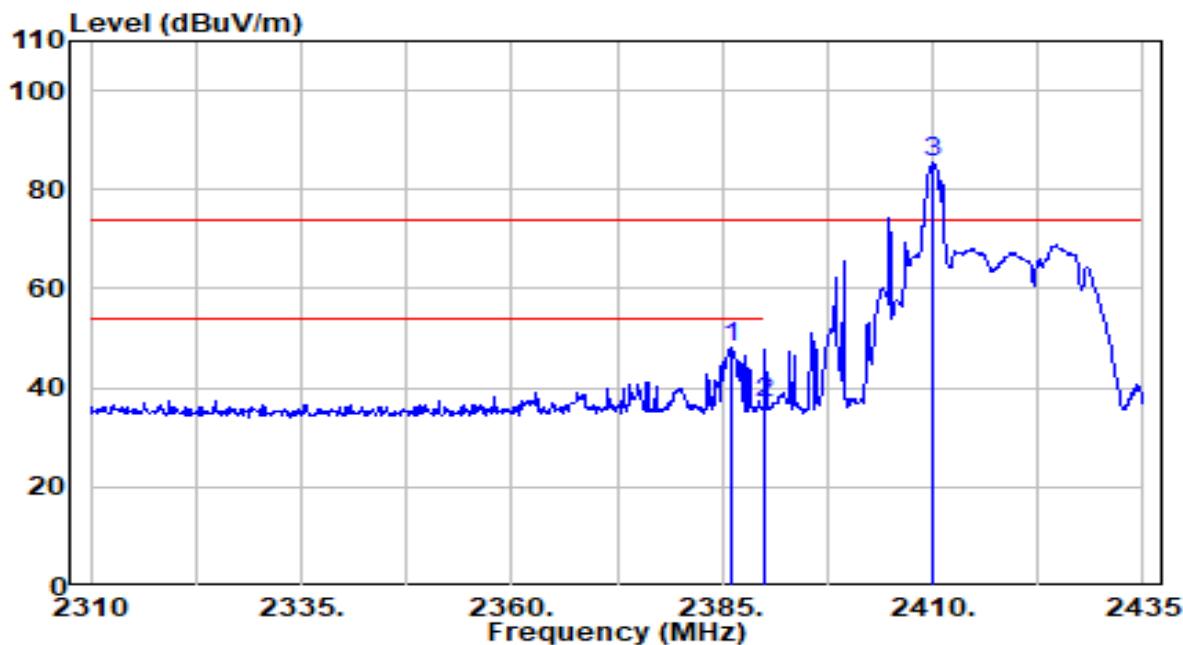
7.7.4. Test Setup

1GHz ~ 18GHz Test Setup:



7.7.5. Test Result

EUT	Wireless 2D Imager Scanner	Date of Test	2022-11-08
Factor	DRH18-E	Temp. / Humidity	24°C /56%
Polarity	Horizontal	Site / Test Engineer	AC2 / Xuan
Test Mode	TX-2410MHz	Test Voltage	AC 110V/60Hz

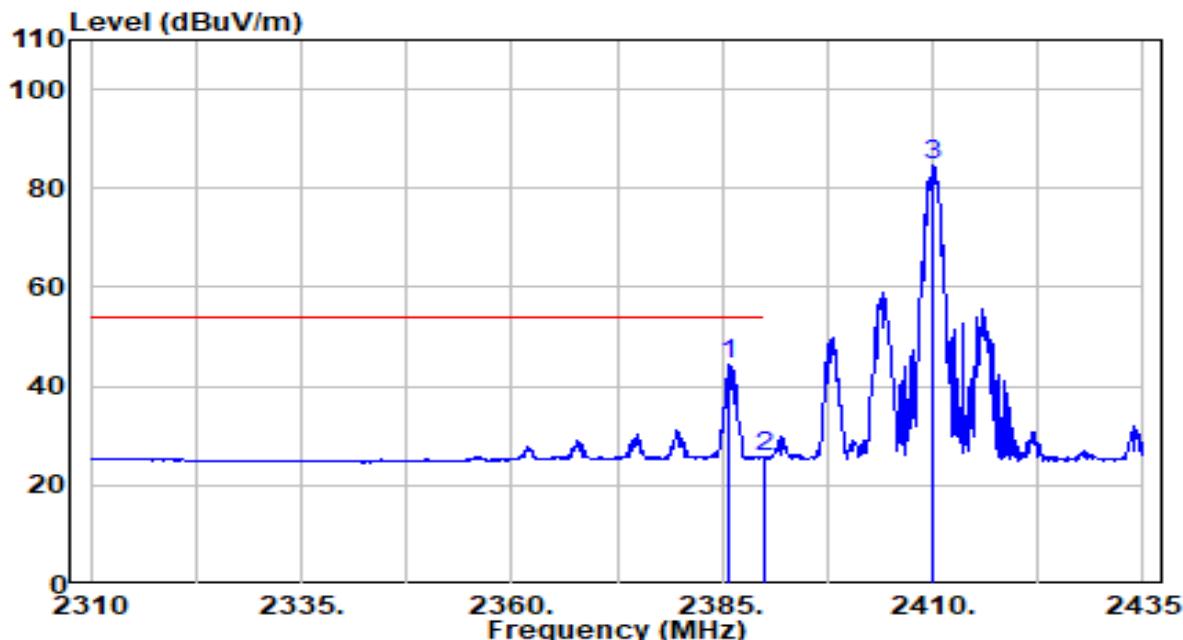


No	Frequency (MHz)	Reading (dB _{BuV})	C.F (dB/m)	Measurement (dB _{BuV/m})	Margin (dB)	Limit (dB _{BuV/m})	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1 *	2386.250	53.93	-5.84	48.09	-25.91	74.00	140	85	Peak
2	2390.000	42.59	-5.83	36.76	-37.24	74.00	140	85	Peak
3	2410.125	91.25	-5.81	85.45	N/A	N/A	140	85	Peak

Note:

1. **, means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dB_{BuV/m}) = Reading(dB_{BuV}) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless 2D Imager Scanner	Date of Test	2022-11-08
Factor	DRH18-E	Temp. / Humidity	24°C /56%
Polarity	Horizontal	Site / Test Engineer	AC2 / Xuan
Test Mode	TX-2410MHz	Test Voltage	AC 110V/60Hz

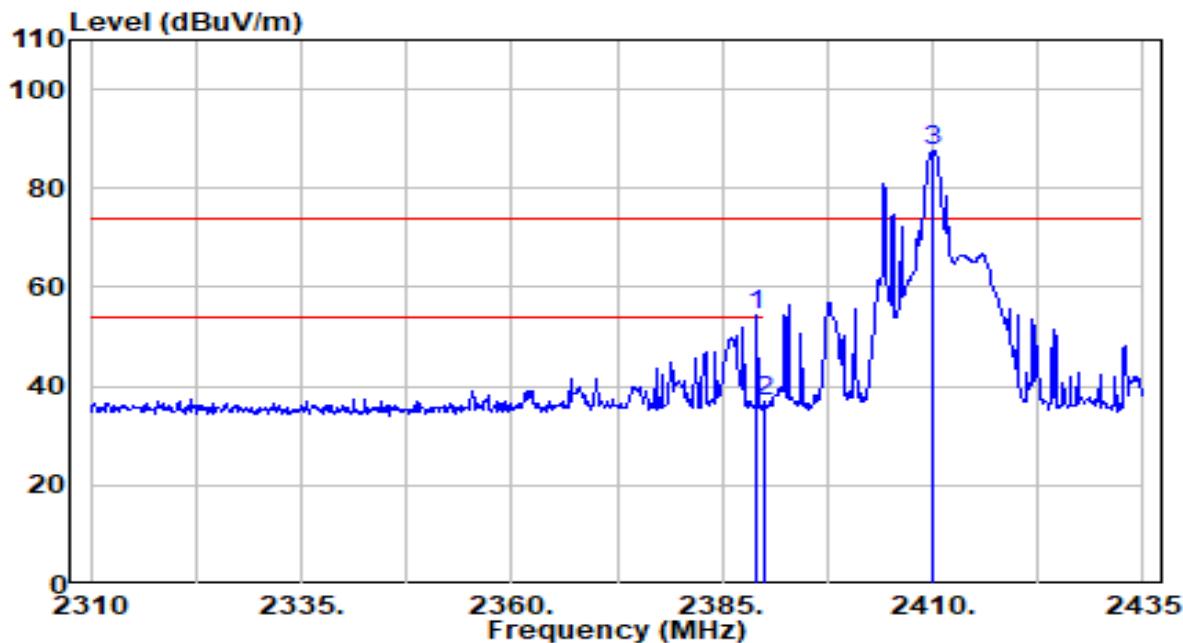


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1 *	2385.875	50.29	-5.84	44.46	-9.54	54.00	140	85	Average
2	2390.000	31.57	-5.83	25.74	-28.26	54.00	140	85	Average
3	2410.000	90.56	-5.81	84.75	N/A	N/A	140	85	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m)+ Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless 2D Imager Scanner	Date of Test	2022-11-08
Factor	DRH18-E	Temp. / Humidity	24°C /56%
Polarity	Vertical	Site / Test Engineer	AC2 / Xuan
Test Mode	TX-2410MHz	Test Voltage	AC 110V/60Hz

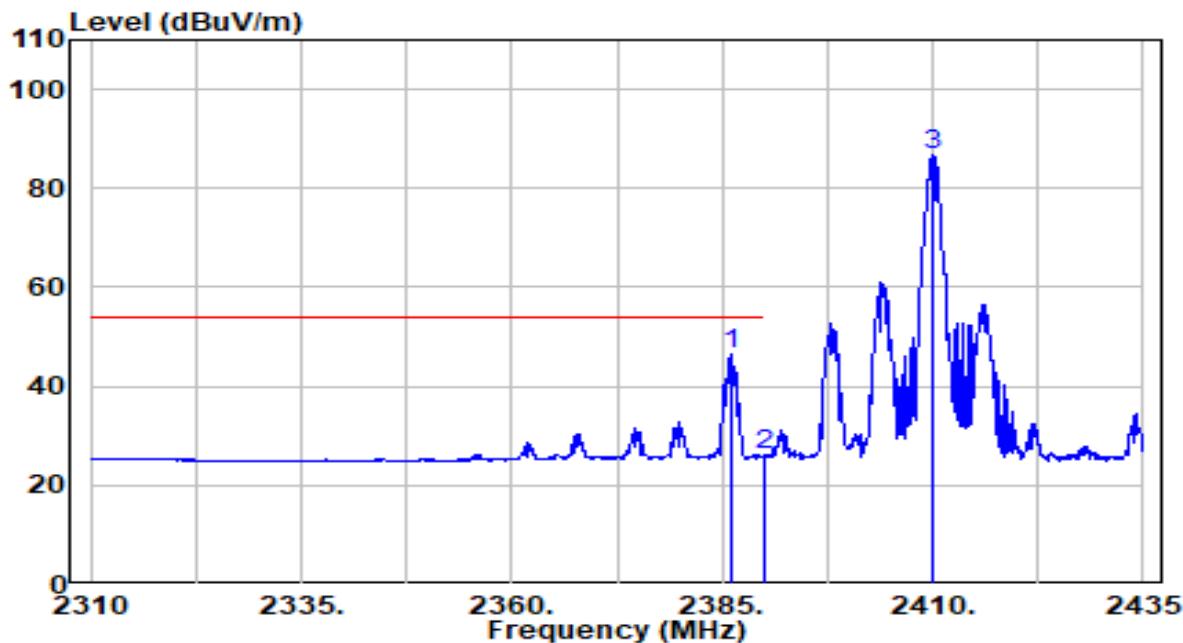


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2389.000	60.23	-5.83	54.39	-19.61	74.00	185	280	Peak
2	2390.000	42.81	-5.83	36.98	-37.02	74.00	185	280	Peak
3	2410.125	93.59	-5.81	87.79	N/A	N/A	185	280	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m)+ Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless 2D Imager Scanner	Date of Test	2022-11-08
Factor	DRH18-E	Temp. / Humidity	24°C /56%
Polarity	Vertical	Site / Test Engineer	AC2 / Xuan
Test Mode	TX-2410MHz	Test Voltage	AC 110V/60Hz

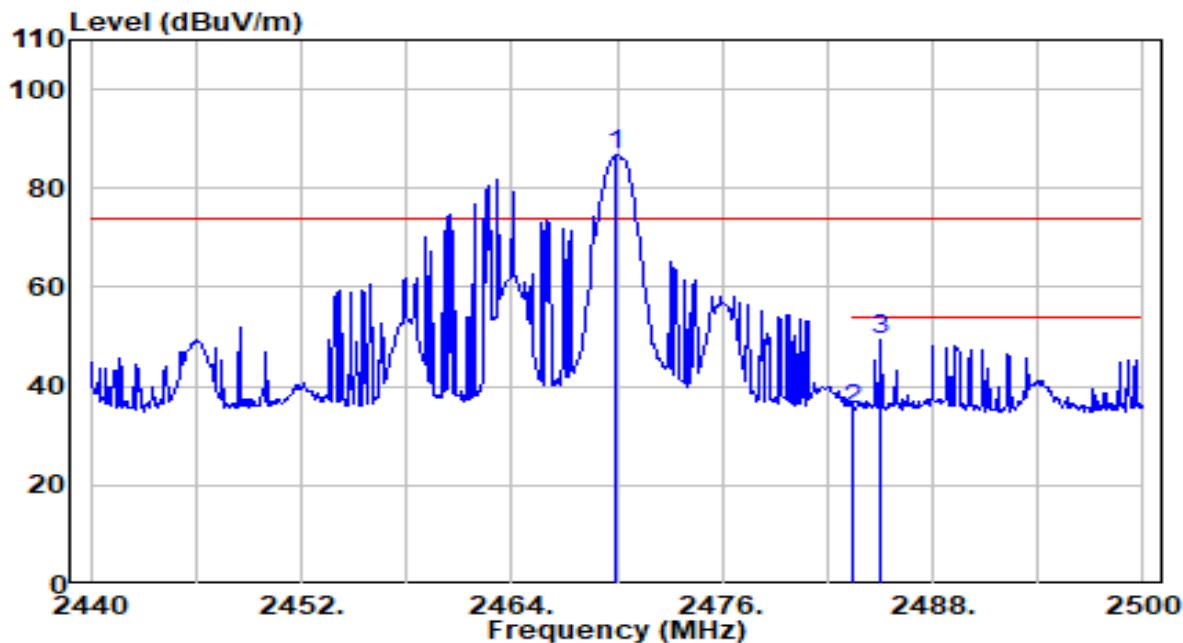


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1 *	2386.125	52.32	-5.84	46.49	-7.51	54.00	185	280	Average
2	2390.000	31.84	-5.83	26.01	-27.99	54.00	185	280	Average
3	2410.125	92.72	-5.81	86.91	N/A	N/A	185	280	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m)+ Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless 2D Imager Scanner	Date of Test	2022-11-08
Factor	DRH18-E	Temp. / Humidity	24°C /56%
Polarity	Horizontal	Site / Test Engineer	AC2 / Xuan
Test Mode	TX-2470MHz	Test Voltage	AC 110V/60Hz

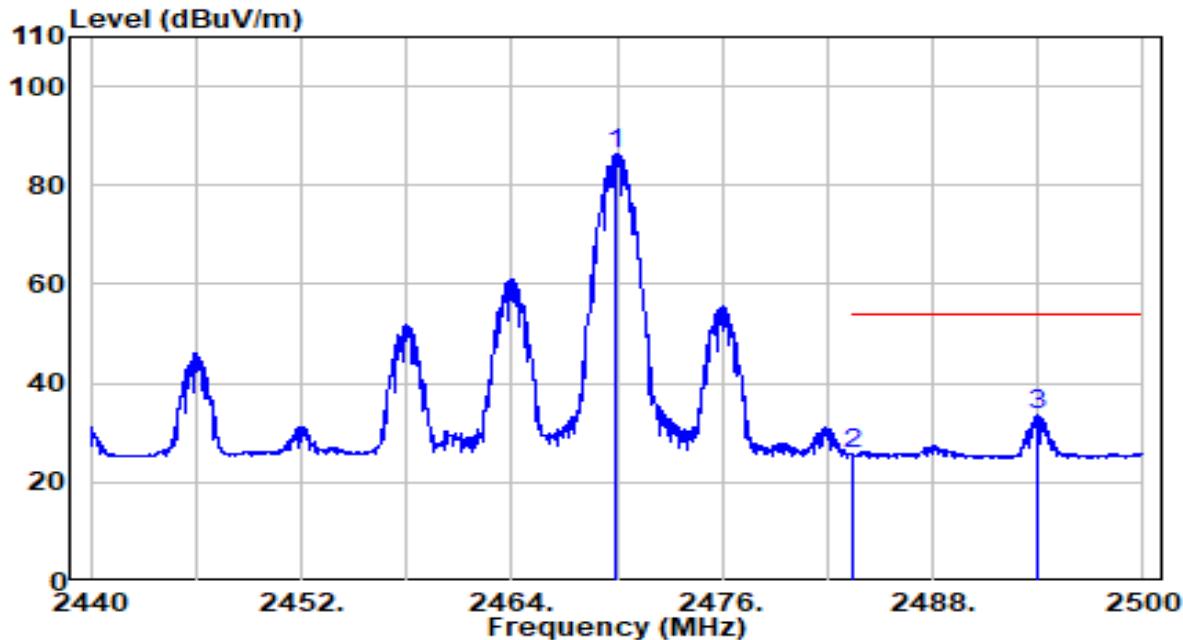


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2469.880	92.34	-5.66	86.68	N/A	N/A	130	85	Peak
2	2483.500	40.98	-5.63	35.36	-38.64	74.00	130	85	Peak
3 *	2485.060	55.16	-5.63	49.53	-24.47	74.00	130	85	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m)+ Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless 2D Imager Scanner	Date of Test	2022-11-08
Factor	DRH18-E	Temp. / Humidity	24°C /56%
Polarity	Horizontal	Site / Test Engineer	AC2 / Xuan
Test Mode	TX-2470MHz	Test Voltage	AC 110V/60Hz

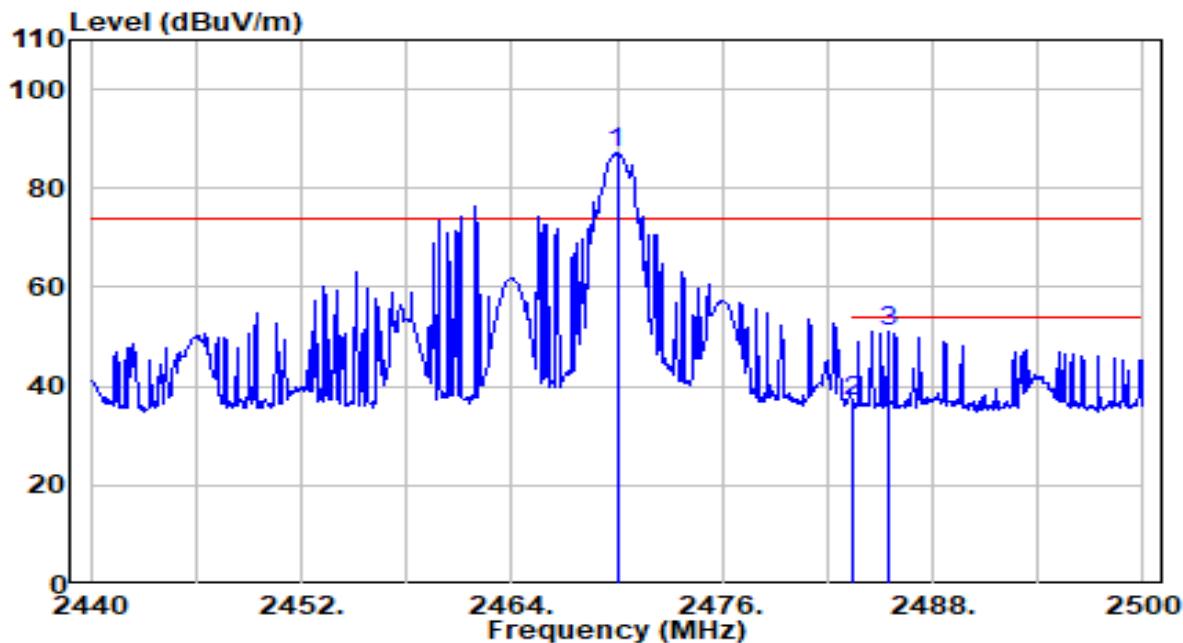


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2469.940	92.15	-5.66	86.49	N/A	N/A	130	85	Average
2	2483.500	31.35	-5.63	25.72	-28.28	54.00	130	85	Average
3 *	2494.000	39.04	-5.60	33.43	-20.57	54.00	130	85	Average

Note:

1. **, means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m)+ Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless 2D Imager Scanner	Date of Test	2022-11-08
Factor	DRH18-E	Temp. / Humidity	24°C /56%
Polarity	Vertical	Site / Test Engineer	AC2 / Xuan
Test Mode	TX-2470MHz	Test Voltage	AC 110V/60Hz

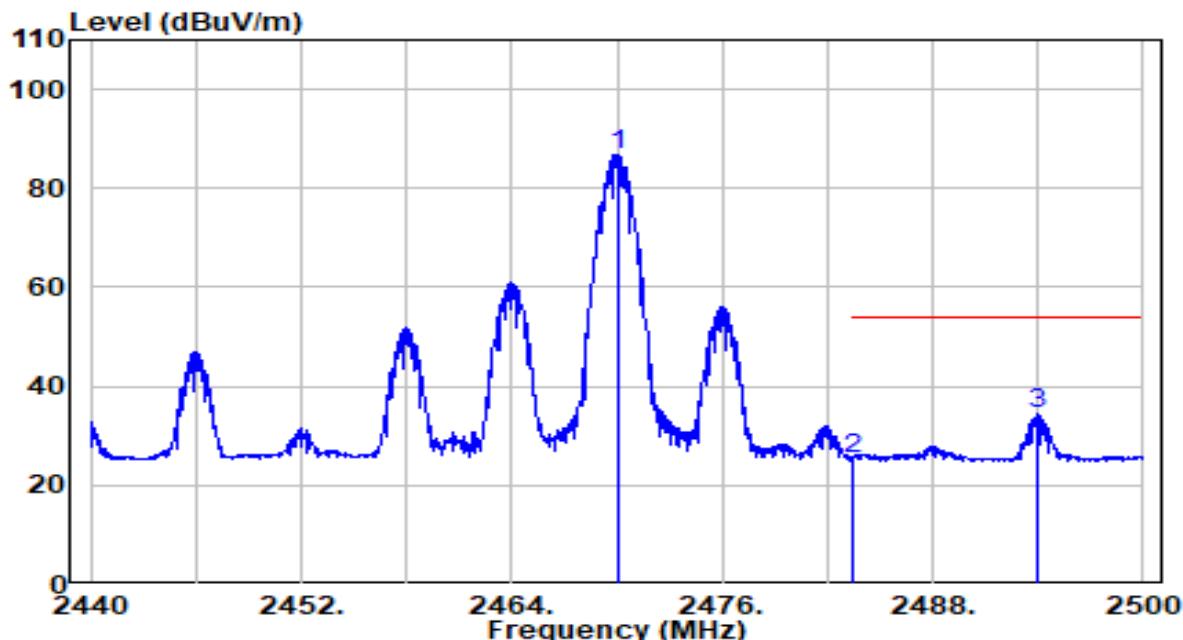


No	Frequency (MHz)	Reading (dB _B uV)	C.F (dB/m)	Measurement (dB _B uV/m)	Margin (dB)	Limit (dB _B uV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2470.000	92.70	-5.66	87.04	N/A	N/A	175	280	Peak
2	2483.500	42.52	-5.63	36.89	-37.11	74.00	175	280	Peak
3 *	2485.480	56.77	-5.62	51.15	-22.85	74.00	175	280	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m)+ Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dB_BuV/m) = Reading(dB_BuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless 2D Imager Scanner	Date of Test	2022-11-08
Factor	DRH18-E	Temp. / Humidity	24°C /56%
Polarity	Vertical	Site / Test Engineer	AC2 / Xuan
Test Mode	TX-2470MHz	Test Voltage	AC 110V/60Hz



No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2470.060	92.56	-5.66	86.90	N/A	N/A	175	280	Average
2	2483.500	31.12	-5.63	25.49	-28.51	54.00	175	280	Average
3 *	2494.000	39.92	-5.60	34.32	-19.68	54.00	175	280	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m)+ Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

7.8. AC Conducted Emissions Measurement

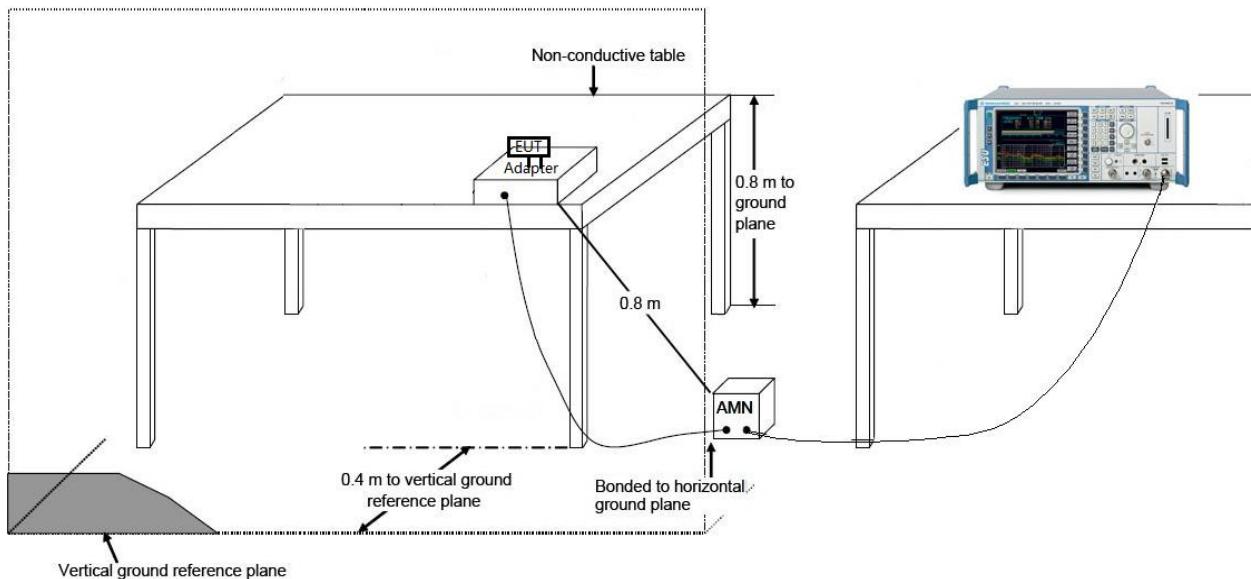
7.8.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.207 / RSS-Gen Limits		
Frequency (MHz)	QP (dB μ V)	Average (dB μ V)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

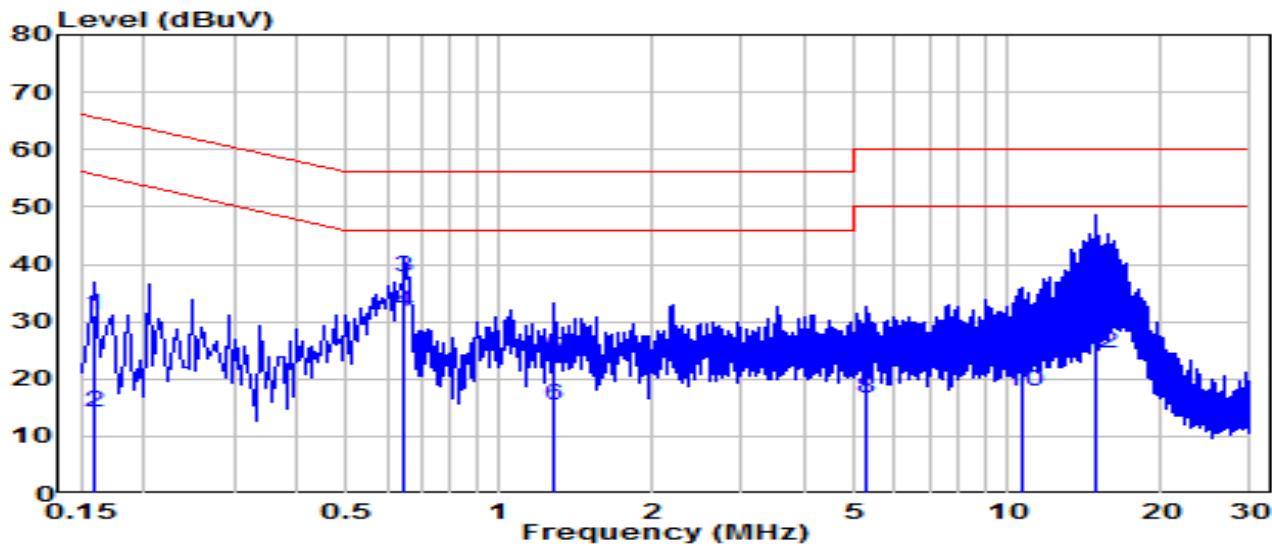
Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

7.8.2. Test Setup



7.8.3. Test Result

EUT	Wireless 2D Imager Scanner	Date of Test	2022-10-28
Factor	CE_ENV216-L1 (Filter ON)	Temp. / Humidity	24.4°C /52%
Polarity	Line1	Site / Test Engineer	SR2 / Dio
Test Mode	2.4GHz_TX_CH 31	Test Voltage	AC 120V/60Hz

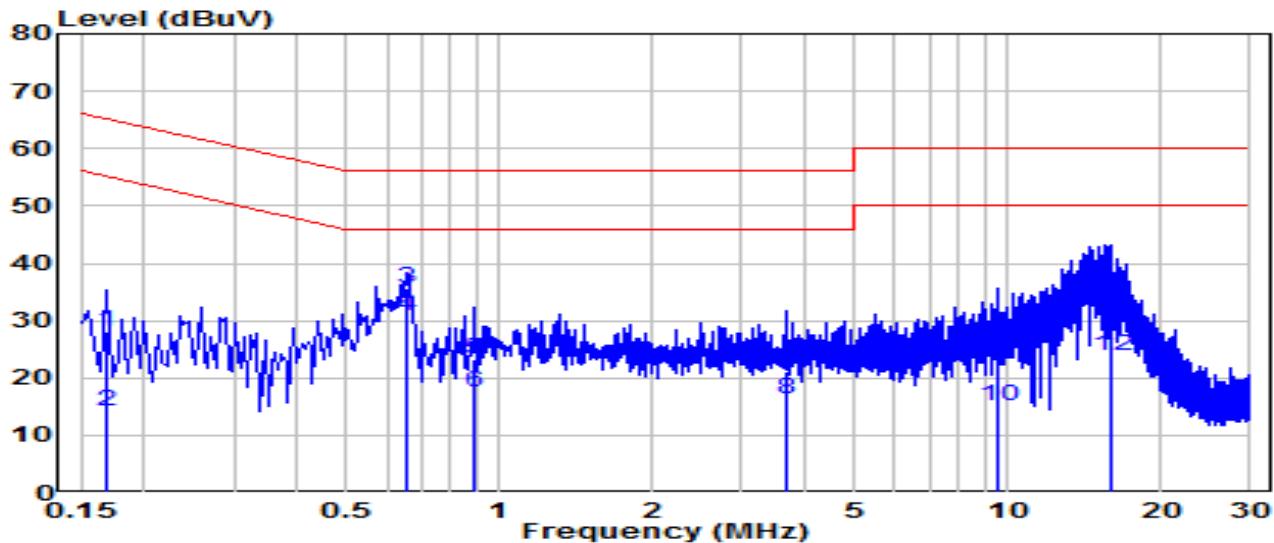


No	Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV)	Margin (dB)	Limit (dBuV)	Remark (QP/PK/AV)
1	0.159	21.38	9.62	31.00	-34.52	65.52	QP
2	0.159	4.67	9.62	14.29	-41.22	55.52	Average
3 *	0.649	28.07	9.65	37.72	-18.28	56.00	QP
4 *	0.649	21.90	9.65	31.55	-14.45	46.00	Average
5	1.275	13.96	9.68	23.64	-32.36	56.00	QP
6	1.275	5.74	9.68	15.41	-30.59	46.00	Average
7	5.252	13.88	9.75	23.63	-36.37	60.00	QP
8	5.252	6.70	9.75	16.45	-33.55	50.00	Average
9	10.652	16.83	9.86	26.69	-33.31	60.00	QP
10	10.652	7.87	9.86	17.74	-32.26	50.00	Average
11	14.877	27.89	9.89	37.78	-22.22	60.00	QP
12	14.877	14.62	9.89	24.51	-25.49	50.00	Average

Note:

1. " * ", means this data is the worst emission level.
2. C.F (Correction Factor) = LISN Factor (dB)+ Cable Loss (dB).
3. Measurement (dBuV) = Reading(dBuV) + C.F (Correction Factor).

EUT	Wireless 2D Imager Scanner	Date of Test	2022-10-28
Factor	CE_ENV216-N (Filter ON)	Temp. / Humidity	24.4°C /52%
Polarity	Neutral	Site / Test Engineer	SR2 / Dio
Test Mode	2.4GHz_TX_CH 31	Test Voltage	AC 120V/60Hz

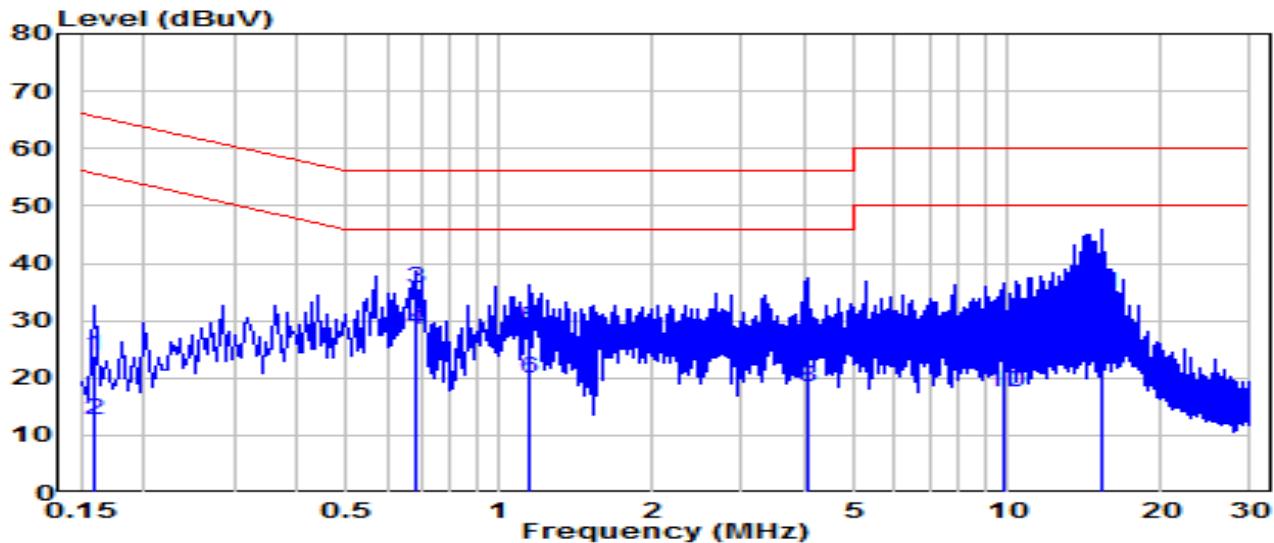


No	Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV)	Margin (dB)	Limit (dBuV)	Remark (QP/PK/AV)
1	0.168	18.32	9.62	27.95	-37.11	65.06	QP
2	0.168	4.56	9.62	14.18	-40.88	55.06	Average
3	0.654	26.11	9.65	35.76	-20.24	56.00	QP
4	0.654	21.11	9.65	30.76	-15.24	46.00	Average
5	0.897	13.70	9.66	23.37	-32.63	56.00	QP
6	0.897	7.73	9.66	17.39	-28.61	46.00	Average
7	3.673	11.42	9.72	21.15	-34.85	56.00	QP
8	3.673	6.59	9.72	16.32	-29.68	46.00	Average
9	9.541	15.56	9.86	25.42	-34.58	60.00	QP
10	9.541	5.32	9.86	15.18	-34.82	50.00	Average
11	15.993	24.04	9.94	33.99	-26.01	60.00	QP
12	15.993	13.79	9.94	23.73	-26.27	50.00	Average

Note:

1. ** means this data is the worst emission level.
2. C.F (Correction Factor) = LISN Factor (dB) + Cable Loss (dB).
3. Measurement (dBuV) = Reading(dBuV) + C.F (Correction Factor).

EUT	Wireless 2D Imager Scanner	Date of Test	2022-10-28
Factor	CE_ENV216-L1 (Filter ON)	Temp. / Humidity	24.4°C /52%
Polarity	Line1	Site / Test Engineer	SR2 / Dio
Test Mode	2.4GHz_TX_CH 31	Test Voltage	AC 240V/60Hz

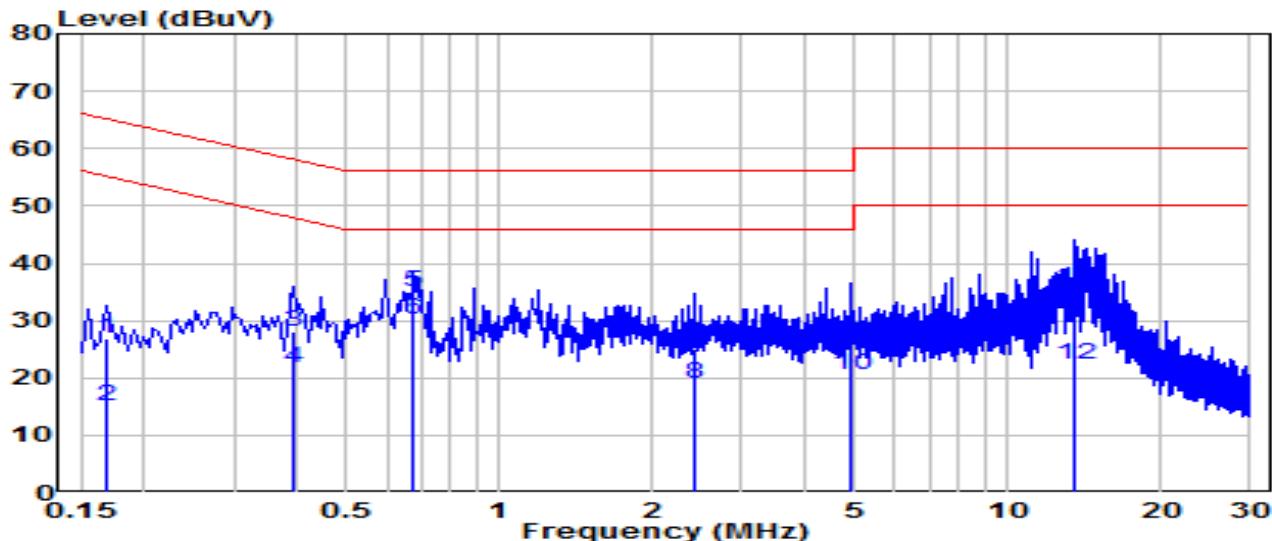


No	Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV)	Margin (dB)	Limit (dBuV)	Remark (QP/PK/AV)
1	0.159	14.31	9.62	23.93	-41.59	65.52	QP
2	0.159	3.17	9.62	12.79	-42.73	55.52	Average
3 *	0.685	26.08	9.65	35.73	-20.27	56.00	QP
4 *	0.685	18.83	9.65	28.48	-17.52	46.00	Average
5	1.144	19.08	9.67	28.76	-27.24	56.00	QP
6	1.144	10.34	9.67	20.01	-25.99	46.00	Average
7	4.024	16.63	9.73	26.36	-29.64	56.00	QP
8	4.024	8.78	9.73	18.51	-27.49	46.00	Average
9	9.779	17.30	9.85	27.15	-32.85	60.00	QP
10	9.779	7.65	9.85	17.50	-32.50	50.00	Average
11	15.336	24.91	9.89	34.80	-25.20	60.00	QP
12	15.336	11.63	9.89	21.52	-28.48	50.00	Average

Note:

1. **, means this data is the worst emission level.
2. C.F (Correction Factor) = LISN Factor (dB)+ Cable Loss (dB).
3. Measurement (dBuV) = Reading(dBuV) + C.F (Correction Factor).

EUT	Wireless 2D Imager Scanner	Date of Test	2022-10-28
Factor	CE_ENV216-N (Filter ON)	Temp. / Humidity	24.4°C /52%
Polarity	Neutral	Site / Test Engineer	SR2 / Dio
Test Mode	2.4GHz_TX_CH 31	Test Voltage	AC 240V/60Hz



No	Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV)	Margin (dB)	Limit (dBuV)	Remark (QP/PK/AV)
1	0.168	17.26	9.62	26.88	-38.18	65.06	QP
2	0.168	5.56	9.62	15.18	-39.88	55.06	Average
3	0.393	18.37	9.63	28.00	-30.00	58.00	QP
4	0.393	12.22	9.63	21.86	-26.14	48.00	Average
5 *	0.676	25.39	9.65	35.04	-20.96	56.00	QP
6 *	0.676	20.57	9.65	30.23	-15.77	46.00	Average
7	2.418	15.45	9.70	25.15	-30.85	56.00	QP
8	2.418	9.45	9.70	19.15	-26.85	46.00	Average
9	4.938	16.40	9.75	26.15	-29.85	56.00	QP
10	4.938	10.76	9.75	20.50	-25.50	46.00	Average
11	13.469	25.76	9.91	35.68	-24.32	60.00	QP
12	13.469	12.50	9.91	22.41	-27.59	50.00	Average

Note:

1. **, means this data is the worst emission level.
2. C.F (Correction Factor) = LISN Factor (dB)+ Cable Loss (dB).
3. Measurement (dBuV) = Reading(dBuV) + C.F (Correction Factor).

8. CONCLUSION

The data collected relate only the item(s) tested and show that the **Wireless 2D Imager Scanner** is in compliance with Part 15C of the FCC Rules.

The End