

FCC Test Report

Product Name	Remote Control
Model No.	RC-A01
FCC ID	Q3V-RC-A01

Applicant	Nien Made Enterprise Co., Ltd.
Address	23F.-1, No. 98, Shizheng N. 7th Rd., Xitun Dist., Taichung City 407, Taiwan (R.O.C.)

Date of Receipt	May 26, 2022
Issued Date	Oct. 31, 2022
Report No.	2250821R-RFUSOTHV06-A
Report Version	V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF or any agency of the government.

The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Test Report

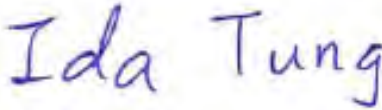
Issued Date: Oct. 31, 2022

Report No.: 2250821R-RFUSOTHV06-A



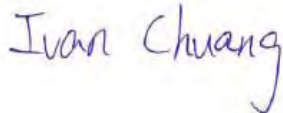
Product Name	Remote Control
Applicant	Nien Made Enterprise Co., Ltd.
Address	23F.-1, No. 98, Shizheng N. 7th Rd., Xitun Dist., Taichung City 407, Taiwan (R.O.C.)
Manufacturer	BRICKCOM CORPORATION
Model No.	RC-A01
FCC ID	Q3V-RC-A01
EUT Rated Voltage	DC 3V (Power by battery)
EUT Test Voltage	DC 3V (Power by battery)
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C ANSI C63.4: 2014, ANSI C63.10: 2013
Test Result	Complied

Documented By :



(Project Specialist / Ida Tung)

Tested By :



(Senior Engineer / Ivan Chuang)

Approved By :



(Senior Engineer / Alan Chen)

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Appendix 1: EUT Test Photographs

Appendix 2: Product Photos-Please refer to the file: 2250821R-Product Photos

Revision History

Report No.	Version	Description	Issued Date
2250821R-RFUSOTHV06-A	V1.0	Initial issue of report.	Oct. 31, 2022

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Remote Control
Model No.	RC-A01
FCC ID	Q3V-RC-A01
Frequency Range	2415MHz-2459MHz
Channel Number	3CH
Type of Modulation	GFSK
Antenna Type	PCB Antenna
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	Brickcom	BKM-RC-ANT	PCB Antenna	2.94dBi for 2.4GHz

Note: The antenna of EUT is conform to FCC 15.203.

Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 15:	2415 MHz	Channel 39:	2439 MHz	Channel 59:	2459 MHz

Note:

1. The EUT is a Remote Control with a built-in 2.4G wireless transmitter.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.
4. These tests are conducted on a sample of the equipment for the purpose of demonstrating compliance of transmitter with Part 15 Subpart C Paragraph 15.249 for spread spectrum devices.

Test Mode	Mode 1: Transmit
	Mode 2: Normal mode

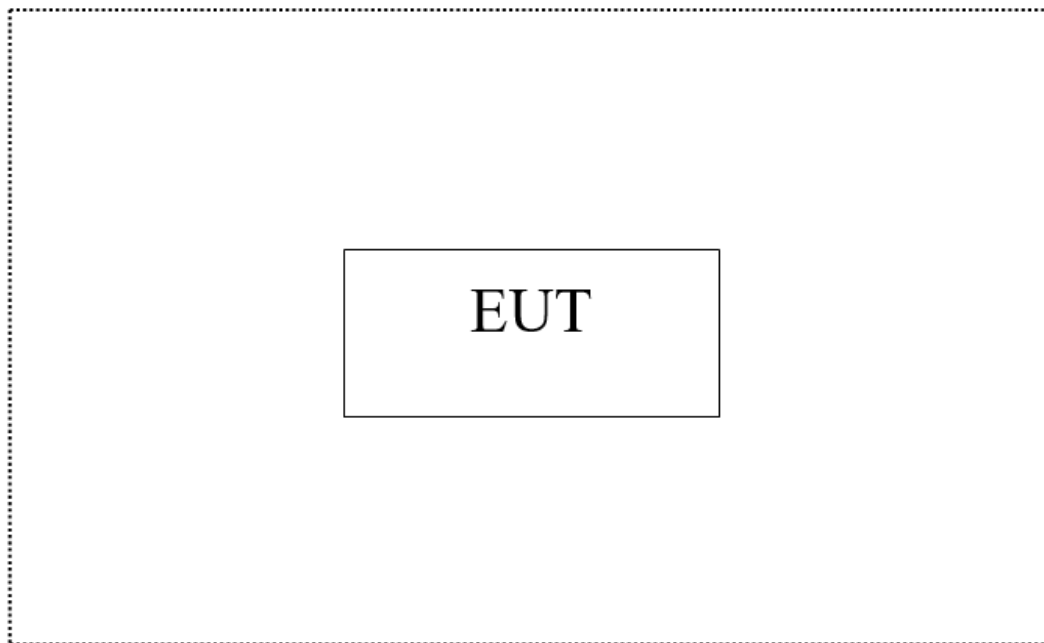
1.2. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product	Manufacturer	Model No.	Serial No.	Power Cord
N/A				

Signal Cable Type	Manufacturer	Model No.	Signal cable Description
N/A			

1.3. Configuration of Test System



1.4. EUT Exercise Software

- (1) Setup the EUT as shown in Section 1.3.
- (2) Provide the DC Power Source.
- (3) Start the continuous transmit.
- (4) Verify that the EUT works properly.

1.5. Test Facility

Ambient conditions in the laboratory:

Performed Item	Items	Required	Actual
Radiated Emission	Temperature (°C)	10~40 °C	24.3 °C
	Humidity (%RH)	10~90 %	59.1 %

USA : FCC Registration Number: TW0033

Canada : CAB Identifier Number: TW3023 / Company Number: 26930

Site Description : Accredited by TAF
Accredited Number: 3023

Test Laboratory : DEKRA Testing and Certification Co., Ltd
Address : No. 5-22, Ruishukeng Linkou District, New Taipei City, 24451, Taiwan
Performed Location : No. 26, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan, R.O.C.
Phone number : +886-3-275-7255
Fax number : +886-3-327-8031
Email address : info.tw@dekra.com
Website : <http://www.dekra.com.tw>

1.6. List of Test Equipment

For Conduction measurements /HY-SR01

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
	EMI Test Receiver	R&S	ESR7	101601	2021/06/19	2022/06/18
	Two-Line V-Network	R&S	ENV216	101306	2022/05/23	2023/05/22
	Two-Line V-Network	R&S	ENV216	101307	2022/05/04	2023/05/03
	Coaxial Cable	SUHNER	RG400_BNC	RF001	2021/05/24	2022/05/23

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with "X" are used to measure the final test results.
3. Test Software version : E3 210616 dekra V9.

For Conducted measurements /HY-SR02

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
X	Spectrum Analyzer	R&S	FSV40	101149	2022/03/25	2023/03/24
	Peak Power Analyzer	KEYSIGHT	8900B	MY51000539	2021/06/07	2022/06/06
	Power Sensor	KEYSIGHT	N1923A	MY59240002	2021/05/17	2022/05/16
	Power Sensor	KEYSIGHT	N1923A	MY59240003	2021/05/17	2022/05/16

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with "X" are used to measure the final test results.
3. Test Software version : RF Conducted Test Tools R3 V3.0.1.19.

For Radiated measurements /HY-CB03

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
	Loop Antenna	AMETEK	HLA6121	49611	2022/03/18	2023/03/17
X	Bi-Log Antenna	SCHWARZBECK	VULB9168	9168-675	2021/08/11	2022/08/10
X	Horn Antenna	ETS-Lindgren	3117	00227700	2021/10/12	2022/10/11
X	Horn Antenna	Com-Power	AH-840	101100	2021/10/04	2022/10/03
X	Pre-Amplifier	SGH	0301	20211007-10	2022/02/22	2023/02/21
X	Pre-Amplifier	SGH	PRAMP118	20200202	2022/03/23	2023/03/22
X	Pre-Amplifier	EMCI	EMC05820SE	980310	2021/07/07	2022/07/06
	Pre-Amplifier	EMCI	EMC184045SE	980369		
	Coaxial Cable	EMCI	EMC102-KM-KM-600	1160314	2022/05/12	2023/05/11
	Coaxial Cable	EMCI	EMC102-KM-KM-7000	170242		
X	Filter	MICRO TRONICS	BRM50702	G251	2021/09/16	2022/09/15
	Filter	MICRO TRONICS	BRM50716	G188	2021/09/16	2022/09/15
X	EMI Test Receiver	R&S	ESR	102793	2021/12/15	2022/12/14
X	Spectrum Analyzer	R&S	FSV3044	101114	2022/02/11	2023/02/10
	Coaxial Cable	SGH	SGH18	2021005-3		
	Coaxial Cable	SGH	SGH18	202108-4		
	Coaxial Cable	SGH	SGH18	202110223-1		
X	Coaxial Cable	SGH	HA800	GD20110222-3	2022/01/05	2023/01/04

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with "X" are used to measure the final test results.
3. Test Software version : E3 210616 dekra V9.

1.7. Uncertainty

Uncertainties have been calculated according to the DEKRA internal document.

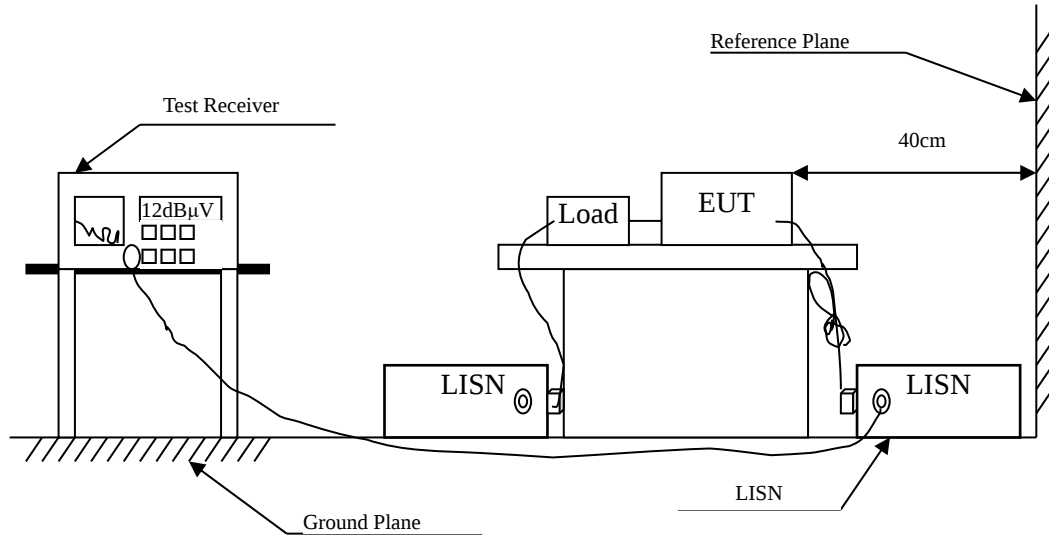
The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Test item	Uncertainty	
Conducted Emission	± 3.42 dB	
Radiated Emission	Under 1GHz ± 4.06 dB	Above 1GHz ± 3.73 dB
Band Edge	Under 1GHz ± 4.06 dB	Above 1GHz ± 3.73 dB
Duty Cycle	± 2.31 ms	

2. Conducted Emission

2.1. Test Setup



2.2. Limits

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

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

2.3. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

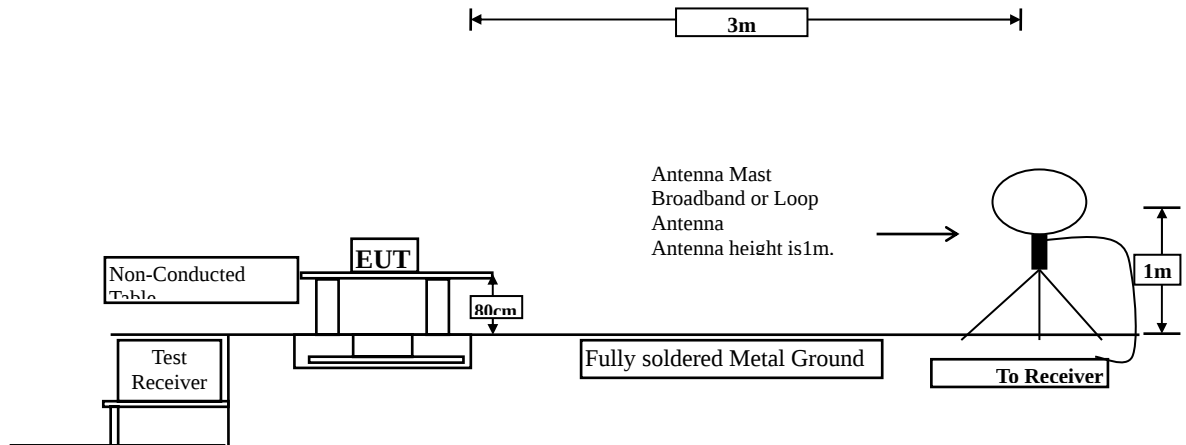
2.4. Test Result of Conducted Emission

Owing to the EUT use DC battery, this test item is not performed.

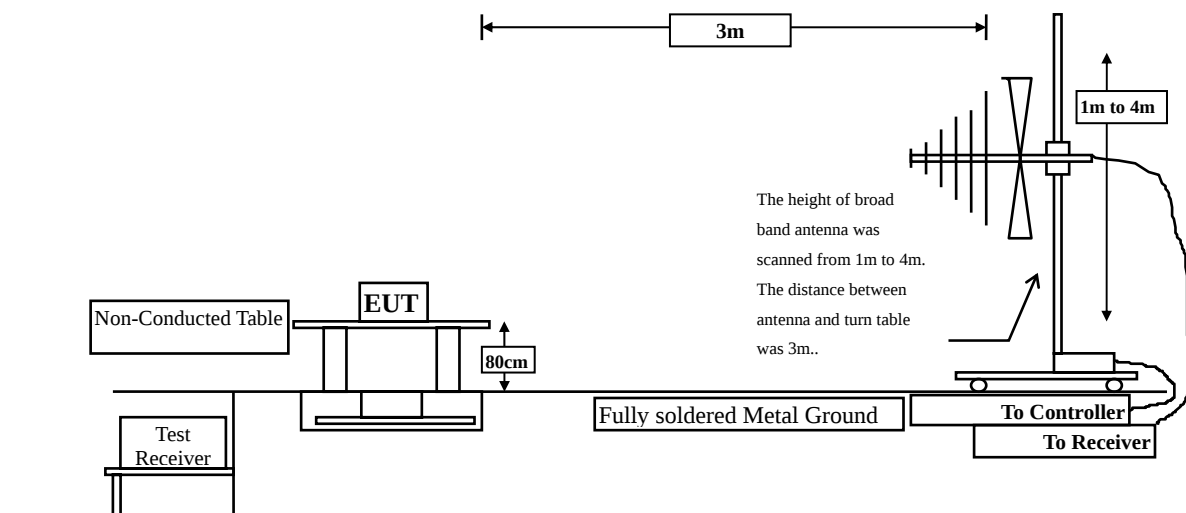
3. Radiated Emission

3.1. Test Setup

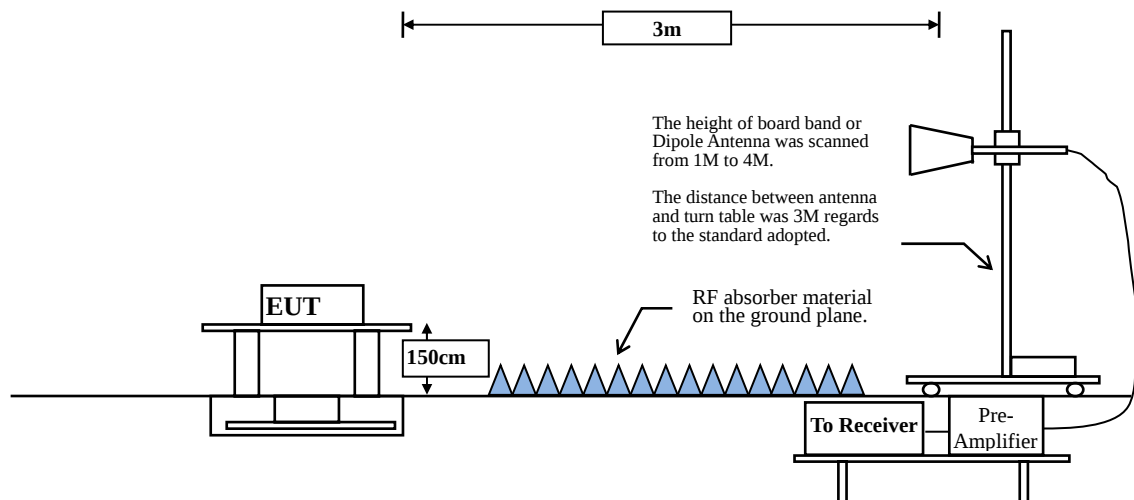
Radiated Emission Under 30MHz



Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



3.2. Limits

➤ Fundamental and Harmonics Emission Limits

FCC Part 15 Subpart C Paragraph 15.249 Limits				
Frequency MHz	Field Strength of Fundamental		Field Strength of Harmonics	
	(mV/m @3m)	(dBμV /m @3m)	(uV/m @3m)	(dBμV /m @3m)
902-928	50	94	500	54
2400-2483.5	50	94	500	54
5725-5875	50	94	500	54
24000-24250	250	108	2500	68

Remarks : 1. RF Voltage (dBμV /m) = 20 log RF Voltage (uV/m)
 2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

➤ General Radiated Emission Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
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

Remarks: E field strength (dBμV /m) = 20 log E field strength (uV/m)

3.3. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested compliance to FCC 47CFR 15.249 requirements.

Measuring the frequency range below 1GHz, the EUT is placed on a turn table which is 0.8 meter above ground, when measuring the frequency range above 1GHz, the EUT is placed on a turn table which is 1.5 meter above ground.

The turn table is rotated 360 degrees to determine the position of the maximum emission level.

The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level.

This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

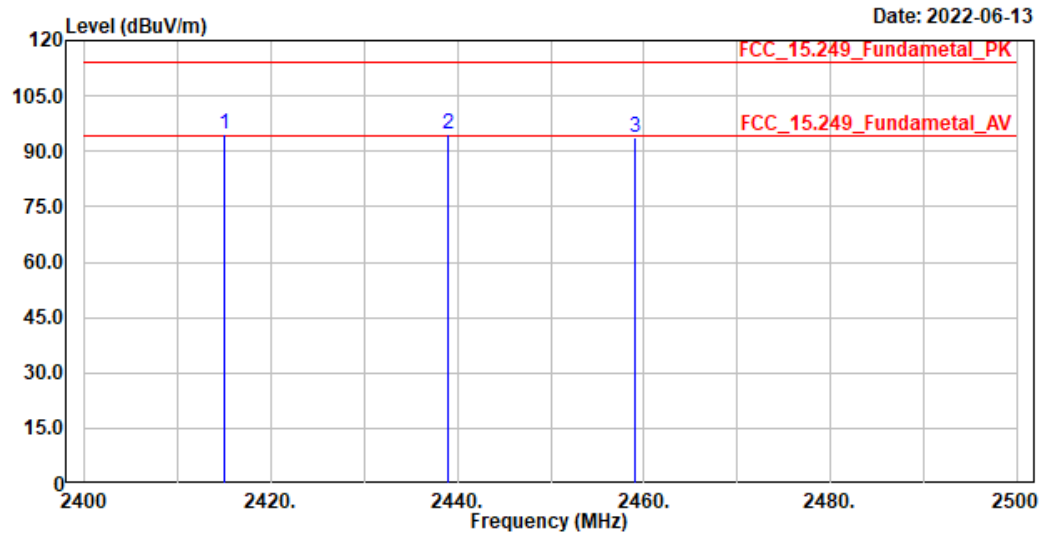
The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The measurement frequency range from 9kHz - 10th Harmonic of fundamental was investigated.

3.4. Test Result of Radiated Emission

Site :HY-CB03
 Condition :3m ,Horizontal
 Mode :TX_Wirless_X
 Test BY :Jing Chang



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2415.000	94.78	113.97	-19.19	81.79	12.99	Peak
2	2439.000	94.49	113.97	-19.48	81.47	13.02	Peak
3	2459.000	93.57	113.97	-20.40	80.53	13.04	Peak

Note:

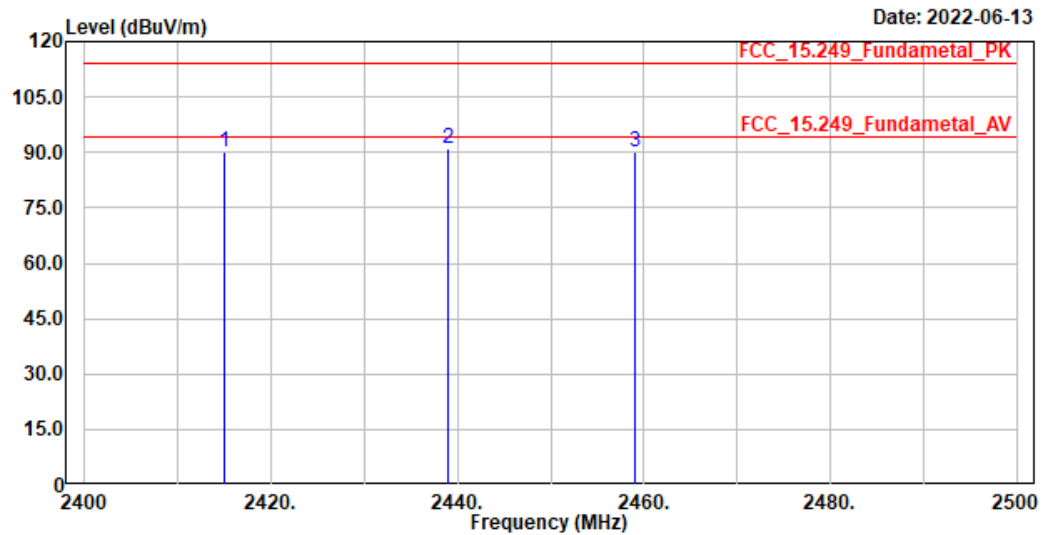
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

Frequency (MHz)	Peak Measurement (dBuV/m)	Duty Cycle Factor (dB)	Average Measurement (dBuV/m)	Margin (dB)	Average Limit (dBuV/m)
2415	94.78	-40.800	53.980	-39.990	93.970
2439	94.49	-40.800	53.690	-40.280	93.970
2459	93.57	-40.800	52.770	-41.200	93.970

Note:

1. AVG Measurement=Peak Measurement + Duty Cycle Correct Factor
2. The Duty Cycle is refer to section 5.

Site :HY-CB03
 Condition :3m ,Vertical
 Mode :TX_Wirless_X
 Test BY :Jing Chang



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2415.000	90.29	113.97	-23.68	77.30	12.99	Peak
2	2439.000	91.22	113.97	-22.75	78.20	13.02	Peak
3	2459.000	89.95	113.97	-24.02	76.91	13.04	Peak

Note:

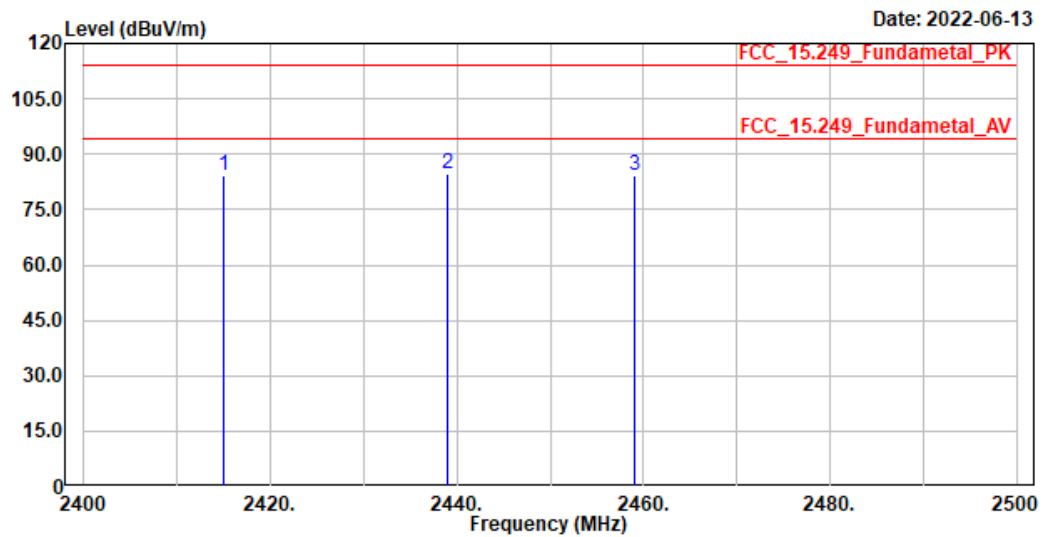
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Average Measurement (dBμV/m)	Margin (dB)	Average Limit (dBμV/m)
2415	90.29	-40.800	49.490	-44.480	93.970
2439	91.22	-40.800	50.420	-43.550	93.970
2459	89.95	-40.800	49.150	-44.820	93.970

Note:

1. AVG Measurement=Peak Measurement + Duty Cycle Correct Factor
2. The Duty Cycle is refer to section 5.

Site :HY-CB03
 Condition :3m ,Horizontal
 Mode :TX_Wirless_Y
 Test BY :Jing Chang



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2415.000	84.25	113.97	-29.72	71.26	12.99	Peak
2	2439.000	84.47	113.97	-29.50	71.45	13.02	Peak
3	2459.000	84.04	113.97	-29.93	71.00	13.04	Peak

Note:

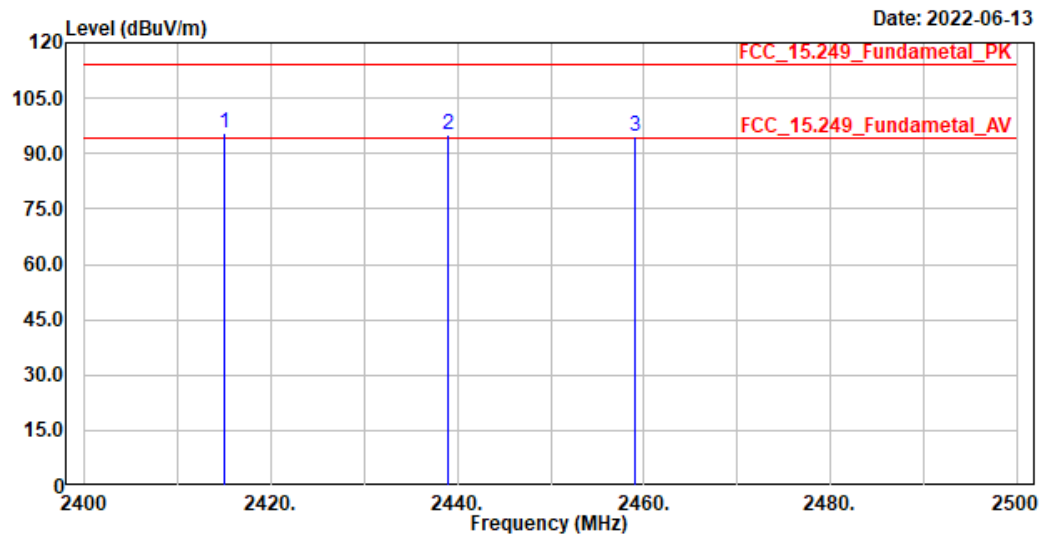
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Average Measurement (dBμV/m)	Margin (dB)	Average Limit (dBμV/m)
2415	84.25	-40.800	43.450	-50.520	93.970
2439	84.47	-40.800	43.670	-50.300	93.970
2459	84.04	-40.800	43.240	-50.730	93.970

Note:

1. AVG Measurement=Peak Measurement + Duty Cycle Correct Factor
2. The Duty Cycle is refer to section 5.

Site :HY-CB03
 Condition :3m ,Vertical
 Mode :TX_Wirless_Y
 Test BY :Jing Chang



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2415.000	95.54	113.97	-18.43	82.55	12.99	Peak
2	2439.000	95.18	113.97	-18.79	82.16	13.02	Peak
3	2459.000	94.84	113.97	-19.13	81.80	13.04	Peak

Note:

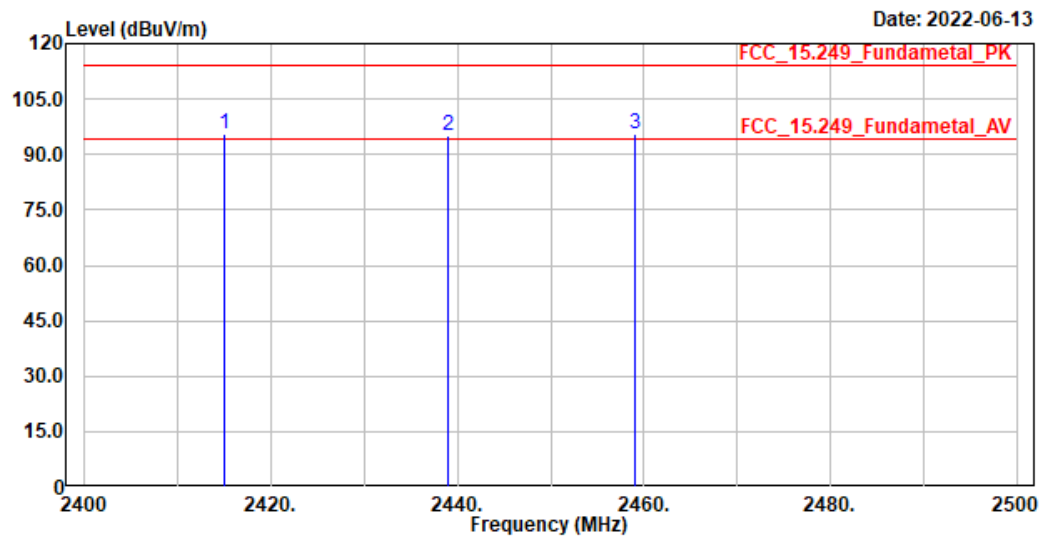
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Average Measurement (dBμV/m)	Margin (dB)	Average Limit (dBμV/m)
2415	95.54	-40.800	54.740	-39.230	93.970
2439	95.18	-40.800	54.380	-39.590	93.970
2459	94.84	-40.800	54.040	-39.930	93.970

Note:

1. AVG Measurement=Peak Measurement + Duty Cycle Correct Factor
2. The Duty Cycle is refer to section 5.

Site :HY-CB03
 Condition :3m ,Horizontal
 Mode :TX_Wirless_Z
 Test BY :Jing Chang



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2415.000	95.34	113.97	-18.63	82.35	12.99	Peak
2	2439.000	95.09	113.97	-18.88	82.07	13.02	Peak
3	2459.000	95.65	113.97	-18.32	82.61	13.04	Peak

Note:

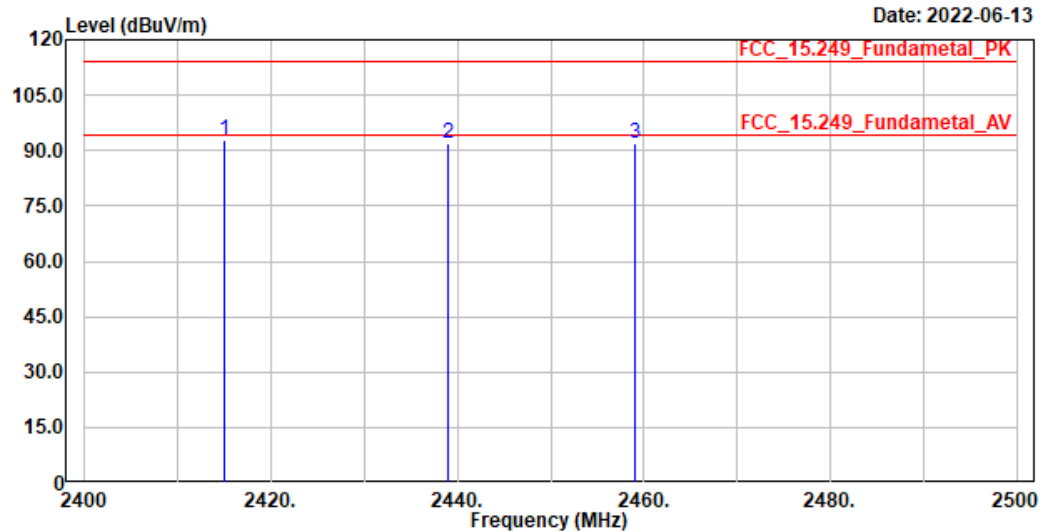
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Average Measurement (dBμV/m)	Margin (dB)	Average Limit (dBμV/m)
2415	95.34	-40.800	54.540	-39.430	93.970
2439	95.09	-40.800	54.290	-39.680	93.970
2459	95.65	-40.800	54.850	-39.120	93.970

Note:

1. AVG Measurement=Peak Measurement + Duty Cycle Correct Factor
2. The Duty Cycle is refer to section 5.

Site :HY-CB03
 Condition :3m ,Vertical
 Mode :TX_Wirless_Z
 Test BY :Jing Chang



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2415.000	92.87	113.97	-21.10	79.88	12.99	Peak
2	2439.000	91.78	113.97	-22.19	78.76	13.02	Peak
3	2459.000	92.06	113.97	-21.91	79.02	13.04	Peak

Note:

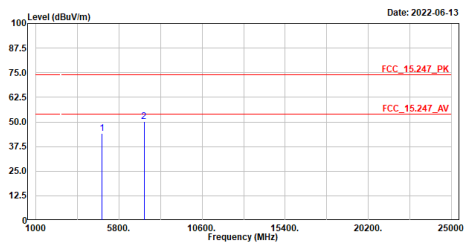
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

Frequency (MHz)	Peak Measurement (dB μ V/m)	Duty Cycle Factor (dB)	Average Measurement (dB μ V/m)	Margin (dB)	Average Limit (dB μ V/m)
2415	92.87	-40.800	52.070	-41.900	93.970
2439	91.78	-40.800	50.980	-42.990	93.970
2459	92.06	-40.800	51.260	-42.710	93.970

Note:

1. AVG Measurement=Peak Measurement + Duty Cycle Correct Factor
2. The Duty Cycle is refer to section 5.

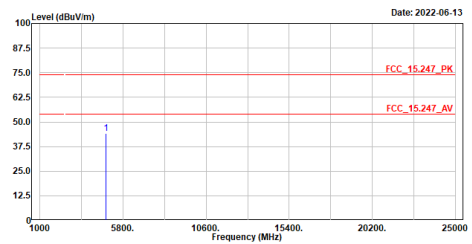
Site :HY-CB03
Condition :3m ,HORIZONTAL
Mode :TX_2415MHz
Test BY :Jing Chang



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level		
			dBuV/m	dB	dBuV	dB	
1	4830.000	44.08	74.00	-29.92	43.23	0.85	Peak
2	7245.000	50.05	74.00	-23.95	46.08	3.97	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

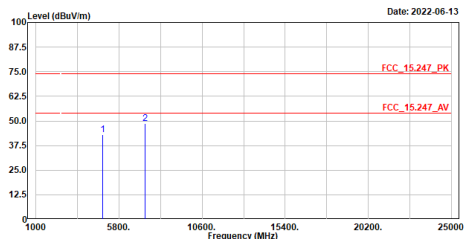
Site :HY-CB03
Condition :3m ,VERTICAL
Mode :TX_2415MHz
Test BY :Jing Chang



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level		
			dBuV/m	dB	dBuV	dB	
1	4830.000	44.08	74.00	-29.92	43.21	0.87	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

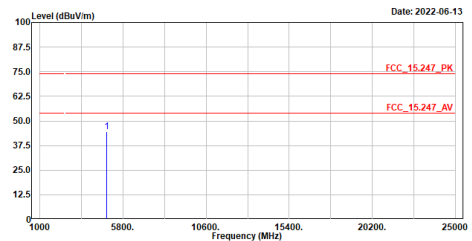
Site :HY-CB03
Condition :3m ,HORIZONTAL
Mode :TX_2439MHz
Test BY :Jing Chang



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level		
			dBuV/m	dB	dBuV	dB	
1	4878.000	43.08	74.00	-30.92	42.17	0.91	Peak
2	7317.000	48.53	74.00	-25.47	44.56	3.97	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

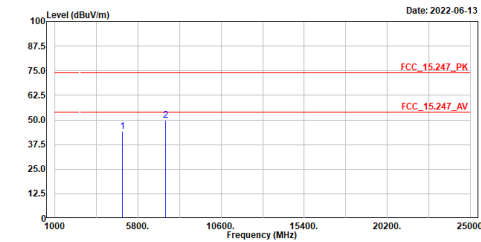
Site :HY-CB03
Condition :3m ,VERTICAL
Mode :TX_2439MHz
Test BY :Jing Chang



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level		
			dBuV/m	dB	dBuV	dB	
1	4878.000	44.40	74.00	-29.60	43.54	0.86	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

Site :HY-CB03
Condition :3m ,HORIZONTAL
Mode :TX_2459MHz
Test BY :Jing Chang

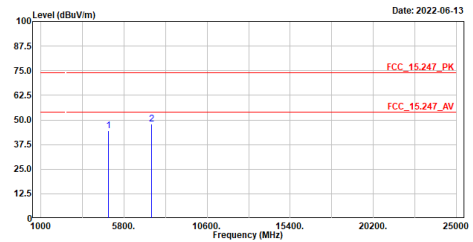


No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level	dB	
1	4918.000	44.30	74.00	-29.70	43.25	1.05	Peak
2	7377.000	49.90	74.00	-24.10	45.91	3.99	Peak

Note:

1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

Site :HY-CB03
Condition :3m ,VERTICAL
Mode :TX_2459MHz
Test BY :Jing Chang

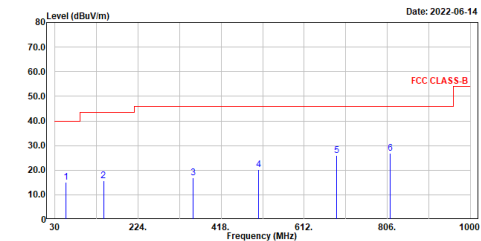


No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level	dB	
1	4918.000	44.48	74.00	-29.52	43.50	0.98	Peak
2	7377.000	47.96	74.00	-26.04	43.97	3.99	Peak

Note:

1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

Site :HY-CB03
Condition :3m ,HORIZONTAL
Mode :TX_2439MHz
Test BY :Jing Chang

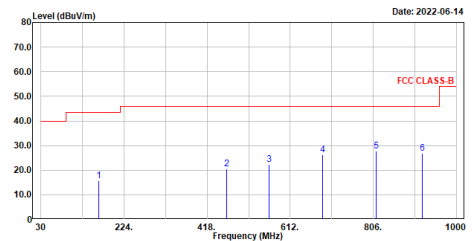


No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level	dB	
1	55.220	15.19	40.00	-24.81	39.87	-24.68	QP
2	143.490	15.55	43.50	-27.95	40.13	-24.58	QP
3	353.010	17.02	46.00	-28.98	39.54	-22.52	QP
4	506.270	20.16	46.00	-25.84	38.82	-18.66	QP
5	687.660	25.97	46.00	-20.03	41.20	-15.23	QP
6	812.790	27.00	46.00	-19.00	40.54	-13.54	QP

Note:

1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

Site :HY-CB03
Condition :3m ,VERTICAL
Mode :TX_2439MHz
Test BY :Jing Chang



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level	dB	
1	164.830	15.71	43.50	-27.79	39.98	-24.27	QP
2	464.560	20.55	46.00	-25.45	40.01	-19.46	QP
3	562.530	22.36	46.00	-23.64	40.03	-17.67	QP
4	687.660	26.27	46.00	-19.73	41.50	-15.23	QP
5	812.790	27.83	46.00	-18.17	41.37	-13.54	QP
6	920.460	26.90	46.00	-19.10	39.07	-12.17	QP

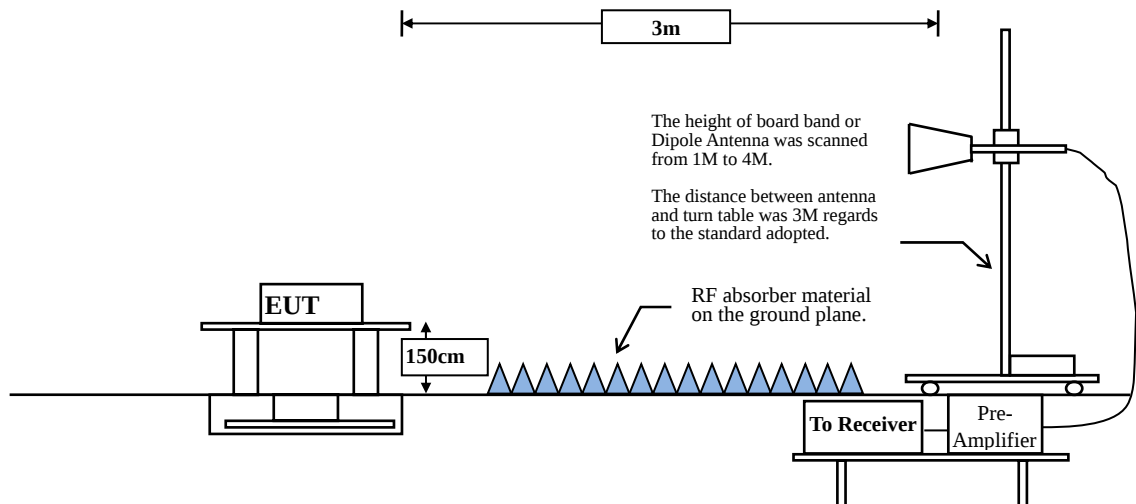
Note:

1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

4. Band Edge

4.1. Test Setup

RF Radiated Measurement:



4.2. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
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

Remarks: E field strength (dB μ V /m) = 20 log E field strength (uV/m)

4.3. Test Procedure

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

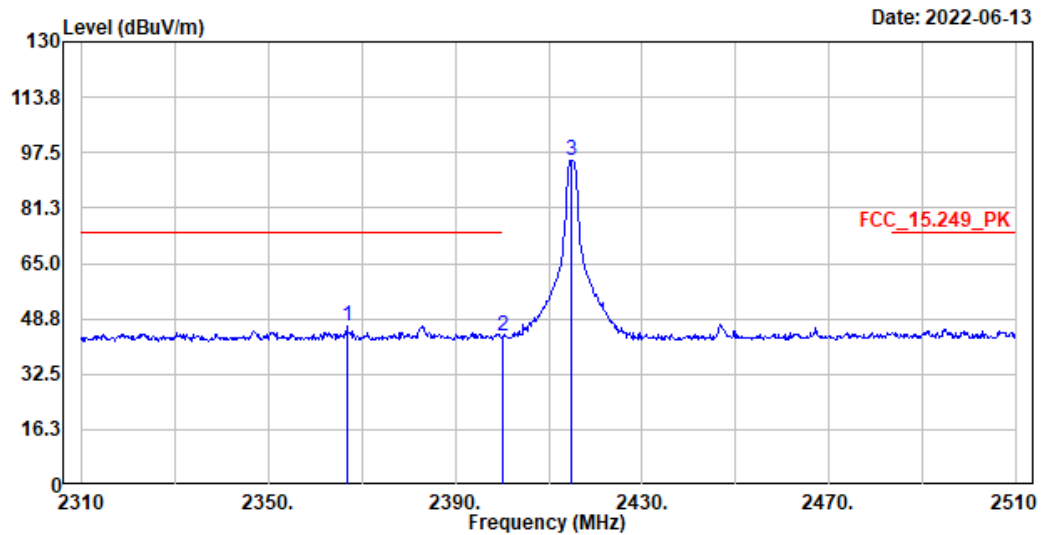
The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.

The bandwidth setting below 1GHz and above 1GHz on the field strength meter is 120 kHz and 1MHz, respectively.

4.4. Test Result of Band Edge

Site :HY-CB03
 Condition :3m ,Horizontal
 Mode :TX_2415MHz
 Test BY :Jing Chang



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2366.800	46.39	74.00	-27.61	33.59	12.80	Peak
2	2400.000	43.55	74.00	-30.45	30.58	12.97	Peak
3	2414.800	95.23	-----	-----	82.24	12.99	Peak

Note:

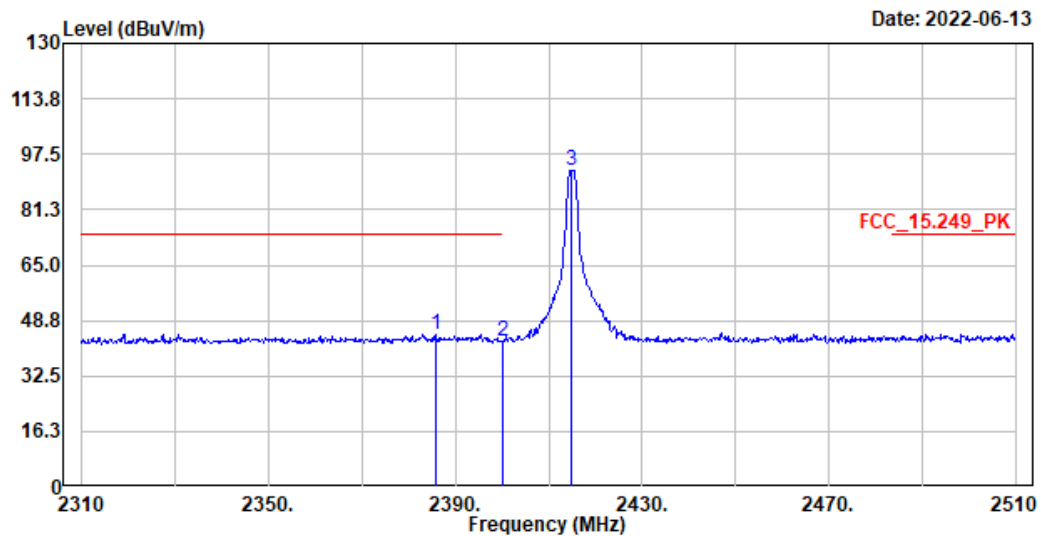
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Average Measurement (dBμV/m)	Margin (dB)	Average Limit (dBμV/m)	Result
2366.8	46.39	-40.800	5.590	-48.410	54.000	Pass
2400	43.55	-40.800	2.750	-51.250	54.000	Pass
2414.8	95.23	-40.800	54.430	--	--	Pass

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 5.

Site :HY-CB03
 Condition :3m ,Vertical
 Mode :TX_2415MHz
 Test BY :Jing Chang



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	dBuV/m	Limit	Level	dB	
1	2385.800	44.85	74.00	-29.15	31.96	12.89	Peak
2	2400.000	42.51	74.00	-31.49	29.54	12.97	Peak
3	2414.800	92.78	-----	-----	79.79	12.99	Peak

Note:

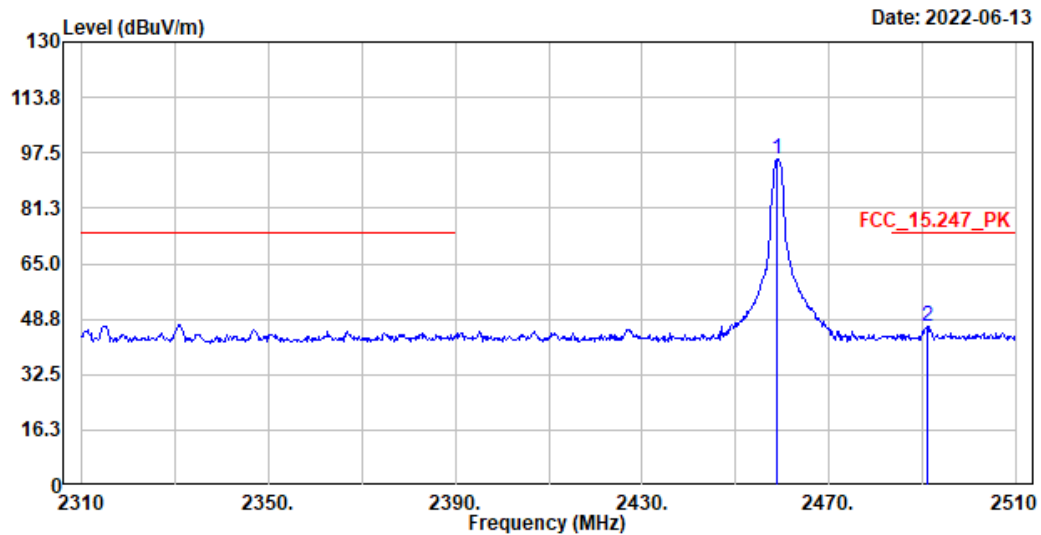
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Average Measurement (dBμV/m)	Margin (dB)	Average Limit (dBμV/m)	Result
2385.8	44.85	-40.800	4.050	-49.950	54.000	Pass
2400	42.51	-40.800	1.710	-52.290	54.000	Pass
2414.8	92.78	-40.800	51.980	--	--	Pass

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 5.

Site :HY-CB03
 Condition :3m ,Horizontal
 Mode :TX_2459MHz
 Test BY :Jing Chang



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	2459.000	95.60	-----	-----	82.56	13.04	Peak
2	2491.200	46.55	74.00	-27.45	33.46	13.09	Peak

Note:

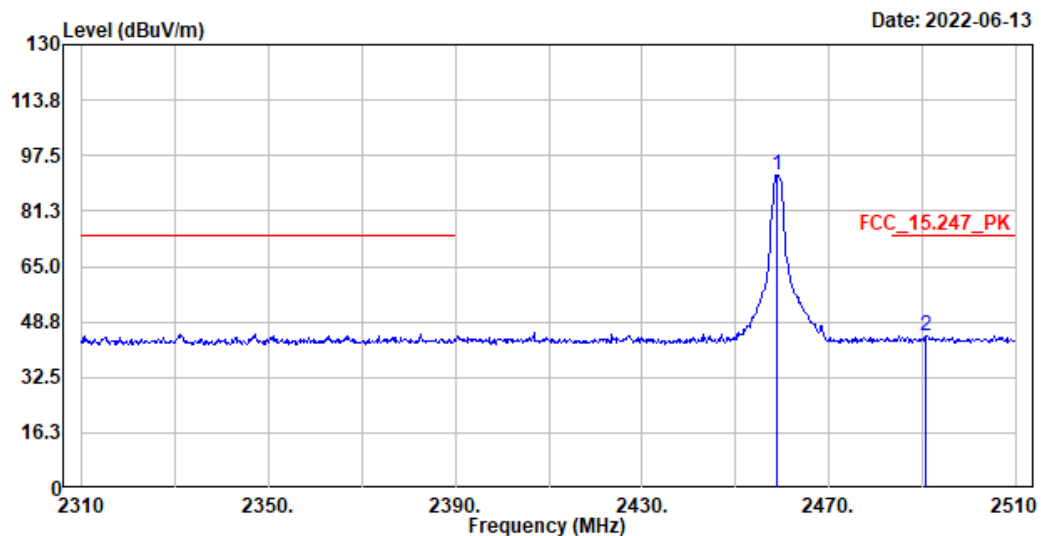
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Average Measurement (dBμV/m)	Margin (dB)	Average Limit (dBμV/m)	Result
2459	95.60	-40.800	54.800	--	--	Pass
2491.2	46.55	-40.800	5.750	-48.250	54.000	Pass

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 5.

Site :HY-CB03
 Condition :3m ,Vertical
 Mode :TX_2459MHz
 Test BY :Jing Chang



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	dBuV/m	Limit	Level	dB	
1	2459.000	91.92	-----	-----	78.88	13.04	Peak
2	2490.800	44.65	74.00	-29.35	31.56	13.09	Peak

Note:

1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

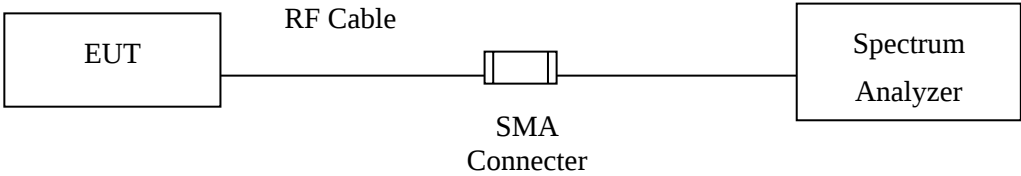
Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Average Measurement (dBμV/m)	Margin (dB)	Average Limit (dBμV/m)	Result
2459	91.92	-40.800	51.120	--	--	Pass
2490.8	44.65	-40.800	3.850	-50.150	54.000	Pass

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 5.

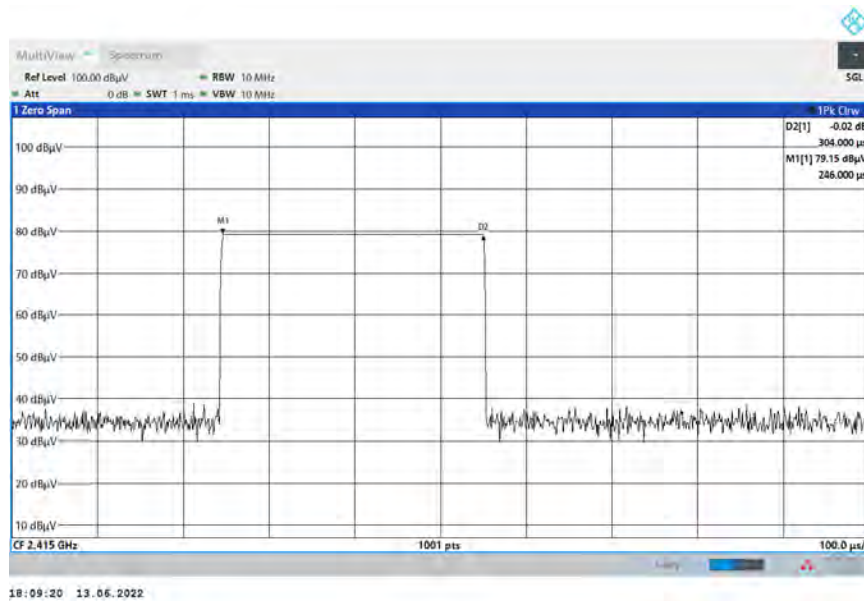
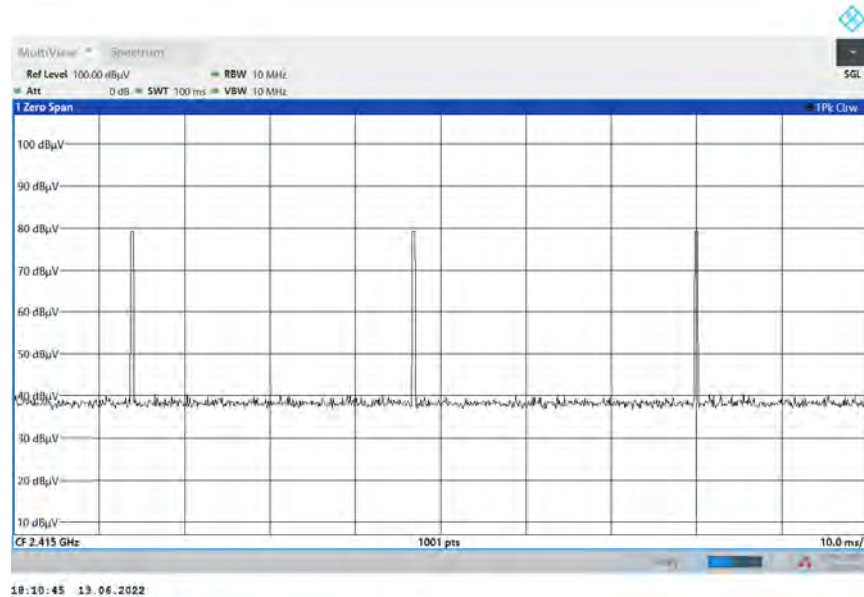
5. **Duty Cycle**

5.1. **Test Setup**



5.2. Test Result of Duty Cycle

Product : Remote Control
 Test Item : Duty Cycle Data
 Test Mode : Mode 2: Normal mode



Time on of 100ms= 0.304us*3= 0.912ms

Duty Cycle=0.912ms / 100ms= 0.00912

Duty Cycle correction factor= 20 LOG 0.00912= -40.800 dB

Duty Cycle correction factor	-40.800 dB
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6. EMI Reduction Method During Compliance Testing

No modification was made during testing.