

## RADIO TEST REPORT

The device described below is tested by Dongguan Nore Testing Center Co., Ltd. to determine the maximum emission levels emanating from the device, the severe levels which the device can endure and E.U.T.'s performance criterion. The test results, data evaluation, test procedures, and equipment of configurations shown in this report were made in accordance with the procedures in ANSI C63.10(2013).

Applicant : Chenghai Udirc Toys Co.,Ltd  
Address : Dengfeng Industrial Zone, Chenghai District, Shantou, Guangdong, China  
Manufacturer /Factory : Chenghai Udirc Toys Co.,Ltd  
Address : Dengfeng Industrial Zone, Chenghai District, Shantou, Guangdong, China  
E.U.T. : Transmitter  
Brand Name : N/A  
Model No. : UA24 /For additional models refer to section 1.  
FCC ID : ZKWUA2420060001  
Measurement Standard : FCC PART 15.249  
Date of Receiver : June 09, 2020  
Date of Test : June 09, 2020 to July 01, 2020  
Date of Report : July 01, 2020

This Test Report is Issued Under the Authority of :

Prepared by

Approved & Authorized Signer



Rose Hu / Engineer



Iori Fan / Authorized Signatory

This test report is for the customer shown above and their specific product only. This report applies to above tested sample only and shall not be reproduced in part without written approval of Dongguan Nore Testing Center Co., Ltd.

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## 1. GENERAL INFORMATION

### 1.1 Product Description for Equipment under Test

Product Name	: Transmitter
Main model number	: UA24
Additional Model number	: See Page 5-6
Brand Name	: N/A
Power Supply	: DC 5V come from USB port; DC 3.7V li-ion battery
Test Voltage	: AC 120V 60Hz Adapter input, DC 3.7V li-ion battery Only the worst case was recorded in the report.
Model Difference Description	: Those models have the same circuit schematic, construction, PCB Layout and critical components. The difference is model number only due to trading purpose.
Hardware version	: V1.0
Software version	: V1.0
Note	: N/A
Remark	: N/A



**Model List:**

U62
U01,U01S,UDI001,VR1,VR-1,I-18MT, U02,U02S,UDI002,VR2,VR-2,I-18SC,
U03,U03S,UDI003,VR3,VR-3,MT18, U04,U04S,UDI004,VR4,VR-4,SC18,
U05,U05S,UDI005,VR5,VR-5,B18, U06,U06S,UDI006,VR6,VR-6,T18,
U07,U07S,UDI007,VR7,VR-7,TC18, U08,U08S,UDI008,VR8,VR-8,D18,
U09,U09S,UDI009,VR9,VR-9 C18, U10 U10S,UDI010,VR10,VR-10,B18,
U11,U11S,UDI011, U12,U12S,UDI012, U13,U13S,UDI013, U14,U14S,UDI014,
U15,U15S,UDI015, U16,U16S,UDI016, U17,U17S,UDI017, U18,U18S,UDI018,
U19,U19S,UDI019, U20,U20S,UDI020, U21,U21S,UDI021, U22,U22S,UDI022,UA22
U23,U23S,UDI023, U24,U24S,UDI024, U25,U25S,UDI025, U26,U26S,UDI026,
U27,U27S,UDI027, U28,U28S,U28W,U28-1,UDI028,
U29,U29S,U29D,U29W,U29S,U29S-E,U29Plus,U29Plus-G,UDI029,
U30,U30S,UDI030, U31,U31S,U31W,U31R,U31D, U32,U32S, U33,U33S,
U34,U34S,U34W, U35,U35S,U818A Plus,U818A Plus-C,U818A Plus-G,
U36,36S,U36W,U36D, U37,U37S, U38,U38S, U39,U39S,
U40,U40S,U40W, U41,U41S,U41W, U42,U42S,U42W,U42HW, U43,U43S,U43W,
U44,U44S,U44W, U45,U45S,U45W, U46,U46S,U46W,U46C,U46C-W,
U47,U47S,U47B,U47W, U48,U48S,U48W, U49,U49S,U49C,U49W, U50,U50S,
U51,U51S,U51W, U52,U52S,U52G,U52W, U53,U53S, U54,U54S,U54W,U54Plus,
U55,U55S, U56,U56S, U57,U57S, U58,U58S, U59,U59S, U60,U60S, U61W,
U61,U61S, U62,U62S, U63,U63S, U64,U64S, U65,U65S, U66,U66S,
U67,U67S, U68,U68S, U69,U69S, U70,U70S, U71,U71S, U72,U72S, U73,U73S,
U74,U74S, U75,U75S, U76,U76S, U77,U77S, U78,U78S, U79,U79S, U80,U80S,
U81,U81S, U82,U82S, U83,U83S, U84,U84S, U85,U85S, U86,U86S, U87,U87S,
U88,U88S,U88Plus,U88Plus-G, U89,U89S, U90,U90S, U91,U91S, U92,U92S,
U93,U93S, U94,U94S, U95,U95S, U96,U96S, U97,U97S, U98,U98S, U99,U99S,
U100,U100S, U101,U101S, U102,U102S, U103,U103S, U104,U104S, U105,U105S,
U106,U106S, U107,U107S, U108,U108S, U109,U109S, U110,U110S, U111,U111S,
U112,U112S, U113,U113S, U114,U114S, U115,U115S, U116,U116S, U117,U117S,
U118,U118S, U119,U119S, U120,U120S, U121,U121S, U122,U122S, U123,U123S,
U124,U124S, U125,U125S, U126,U126S, U127,U127S, U128,U128S, U129,U129S,



U130,U130S, U131,U131S, U132,U132S, U133,U133S, U134,U134S, U135,U135S,
U136,U136S, U137,U137S, U138,U138S, U139,U139S, U140,U140S, U141,U141S,
U142,U142S, U143,U143S, U144,U144S, U145,U145S, U146,U146S, U147,U147S,
U148,U148S, U149,U149S, U150,U150S, U151,U151S, U152,U152S, U153,U153S,
U154,U154S, U155,U155S, U156,U156S, U157,U157S, U158,U158S, U159,U159S,
U160,U160S, U161,U161S, U162,U162S, U163,U163S, U164,U164S, U165,U165S,
U166,U166S, U167,U167S, U168,U168S, U169,U169S, U170,U170S, U171,U171S,
U172,U172S, U173,U173S, U174,U174S, U175,U175S, U176,U176S, U177,U177S,
U178,U178S, U179,U179S, U180,U180S, U181,U181S, U182,U182S, U183,U183S,
U184,U184S, U185,U185S, U186,U186S, U187,U187S, U188,U188S, U189,U189S,
U190,U190S, U191,U191S, U192,U192S, U193,U193S, U194,U194S, U195,U195S,
U196,U196S, U197,U197S, U198,U198S, U199,U199S, U200,U200S,
6182-7SN,6182-7S DIL,6182-7S,6182-7RC DIL,6182-7RC,6182-7RC STE, 6182-7SN MCE,6182-7S BI,6182-7RCHA WAL,6182-7RCH MCE,6182-7SH, ACDVR,Archos Drone VR,U818A,U818A HD,U818A WIFI,U842-1, U842 WIFI,U845,U841-1,U841-1,Xerall,X-TankCopter,3A-U46-BL,SYRIO, DRAKO,U829A,U842,U845WIFI,U835,U28-1,U28W,U42,U42W,VR-2, Falcon Pro,U820,U843,D2,ZX-TTN,ZX-ATL,ZXRHD,ZXNVA,ZXRAP, ZXSPT,6182-7RB TM1,_titan,_hydra,ZX-HRA,ARCHOS DRONE WW, ARCHOS PICO DRONE,A15W,CW4,U48A,U48HW,TDFT0019, TDFT0014,TDLB0010,RC60706,RC49581,RC46892,DRONE 200, DRONE 400,25197,25163,T5176,T5177,AA108,AA818,AA101. AA102.AA200.A20,A20W,A30,A30W,D20,D50,D60,D35,D58,D65, D68,D52 ,25196,25194,25159,25160,23938,NT.SS9,NT.SF1M,RC18167, RC18168,RC15771,RC46892,RC49580,T5147,T5170,RGR3000,TDFT0005, TDFT0006,EC16238,EC16242,EC16241,EC16239,EC16243,6182-7RC AEO, 6182-7SN AEO,6182-7RB TM1,6182-7SC BUR,ACPIDR,ACDRONE,CW10, U88WIFI,6182-7RCHA,6182-1GH,6182-1GHB,6182-1GXA,6182-1GE, 6182-1GB,8073472,8073473,RC60706,TDFT0020,TDFT0021,TDFT0027, TDFT0028,TDFT0031,TDLB0002,Robin FPV,U60Pro-WCH,U61W,U48, A15,T20,D28,6182-7RCHB

**Technical Specification:**

**2.4G Function:**

Frequency Range : 2425-2470MHz  
Modulation Type : GFSK  
Number of Channel : 3  
Antenna Type : PCB antenna  
Antenna Gain : 2.5dBi (Declaration by manufacturer)

**Channel List:**

Channel	Frequency(MHz)
1	2425
2	2454
3	2470

## 1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: ZKWUA2420060001 filing to comply with Section 15.249 of the FCC Part 15 (2017), Subpart C Rule.

## 1.3 Test Methodology

Both of Conducted emission and Radiated emission measurements performed according to the procedures in ANSI C63.10 (2013). Radiated emission measurement was performed in semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters.

## 1.4 Equipment Modifications

Not available for this EUT intended for grant.

## 1.5 Support Device

Adapter : Manufacturer: HUWEI  
Model No.: HW-050200C01  
Input: AC100-240V 50/60Hz, 0.5A  
Output: DC5V 2A



## 1.6 Test Facility and Location

Site Description

EMC Lab : Listed by CNAS, August 13, 2018  
The certificate is valid until August 13, 2024  
The Laboratory has been assessed and proved to  
be in compliance with CNAS/CL01  
The Certificate Registration Number is L5795.

Listed by A2LA, November 01, 2017  
The certificate is valid until December 31, 2021  
The Laboratory has been assessed and proved to  
be in compliance with ISO17025  
The Certificate Registration Number is 4429.01

Listed by FCC, November 06, 2017  
The Designation Number is CN1214  
Test Firm Registration Number: 907417

Listed by Industry Canada, June 08, 2017  
The Certificate Registration Number. Is  
46405-9743

Name of Firm : Dongguan Nore Testing Center Co., Ltd.  
(Dongguan NTC Co., Ltd.)

Site Location : Building D, Gaosheng Science and Technology  
park, Hongtu road, Nancheng district, Dongguan  
city, Guangdong province, China

## 1.7 Deviations and Abnormalities from Standard Conditions

No additions, deviations and exclusions from the standard.

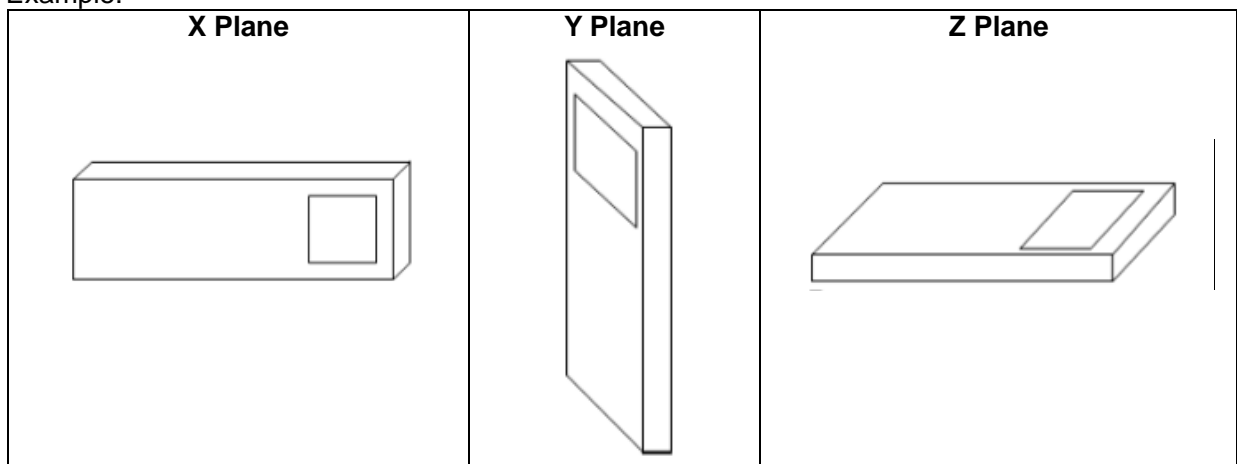
### 1.8 Summary of Test Results

FCC Rules	Description Of Test	Uncertainty	Result
§15.207(a)	AC Power Conducted Emission	±1.06dB	Compliant
§15.249(a)/ 15.209	Radiated Emissions	Below 1GHz: ±4.6 dB Above 1GHz: ±5.02 dB	Compliant
§15.249(d)/ 15.205	Band Edge	±1.70dB	Compliant
§15.215(c)	20dB Bandwidth	±1.42 x10 <sup>-4</sup> %	Compliant
§15.203	Antenna Requirement	±0.60dB	Compliant

**Note:**

The EUT is a portable device and can be operated in multiple orientations, so X,Y,Z three orientations are tested during preliminary measurement. The worst case was Z.

**Example:**



## **2. System Test Configuration**

### **2.1 EUT Configuration**

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

### **2.2 Special Accessories**

Not available for this EUT intended for grant.

### **2.3 Description of test modes**

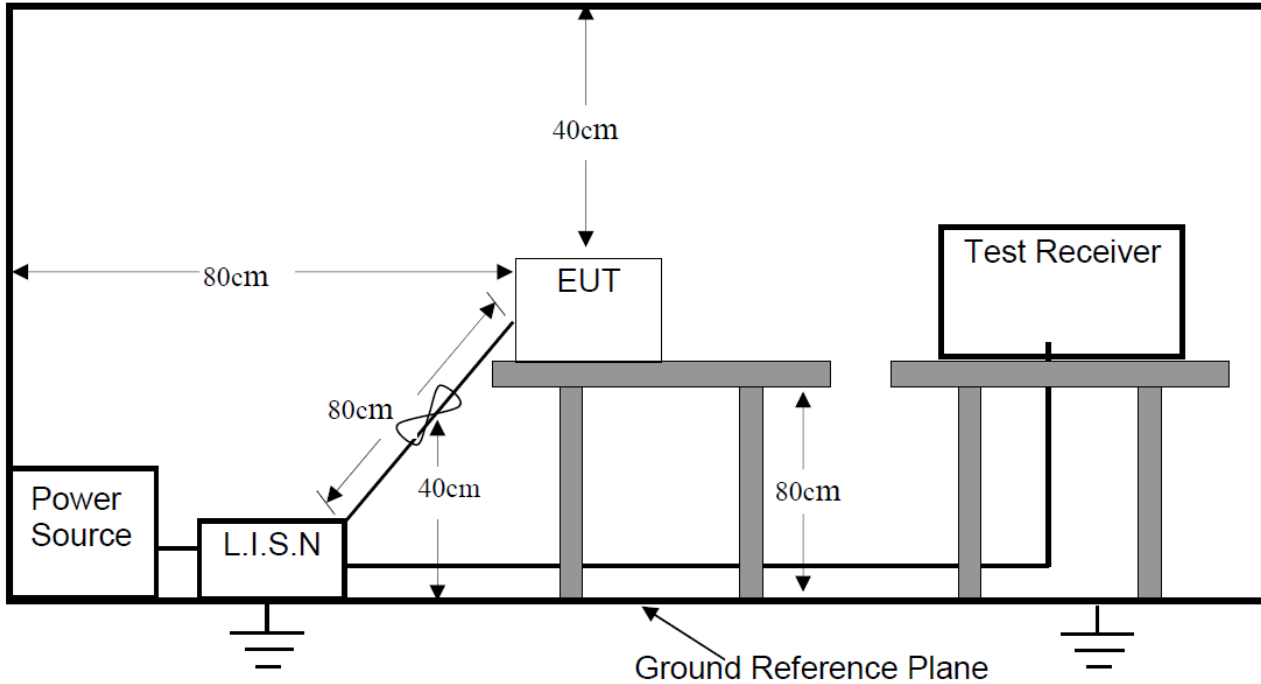
The EUT has been tested under operating condition. The Lowest, middle and highest frequencies were chosen for testing.

### **2.4 EUT Exercise**

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements.

### 3. Conducted Emissions Test

#### 3.1 Test SET-UP (Block Diagram of Configuration)



#### 3.2 Test Condition

**Test Requirement: FCC Part 15.207**

**Frequency Range: 150KHz ~ 30MHz**

**Detector: RBW 9KHz, VBW 30KHz**

**Operation Mode: TX**

#### 3.3 Measurement Results

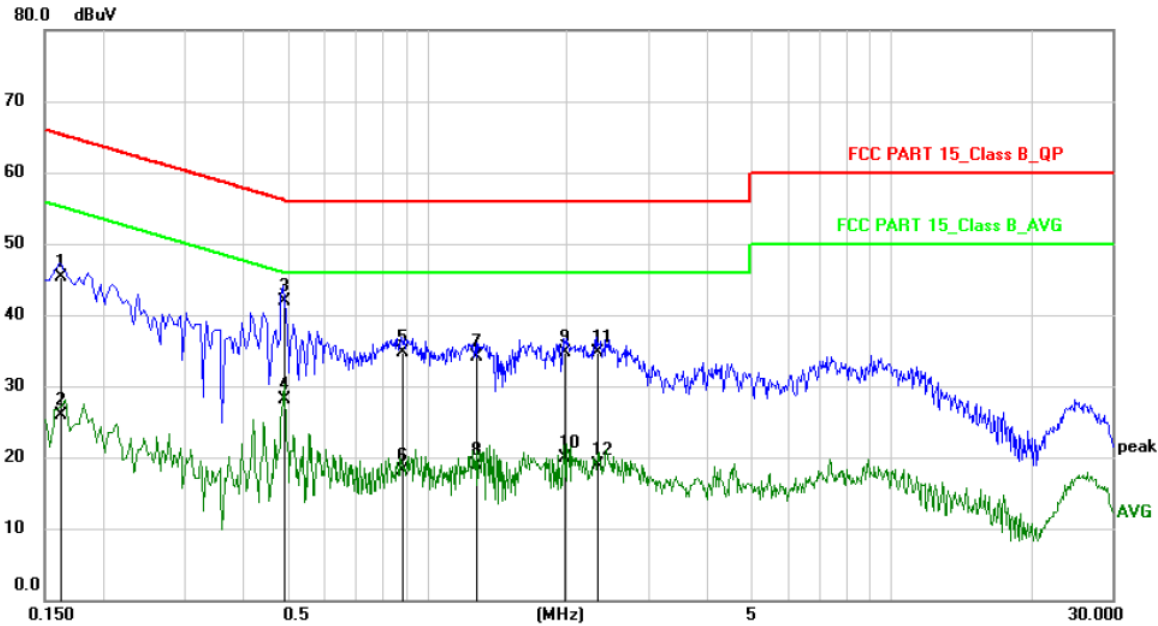
Please refer to following the test plots of the worst case: (Middle channel).



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Conducted Emission Measurement

File :UA24 Data :#1 Date: 2020/6/12 Time: 19:42:54



Site Phase: **L1** Temperature: 26  
 Limit: FCC PART 15\_Class B\_QP Power: AC120V/60Hz Humidity: 50 %  
 EUT: Transmitter  
 M/N: UA24  
 Mode: TX  
 Note:

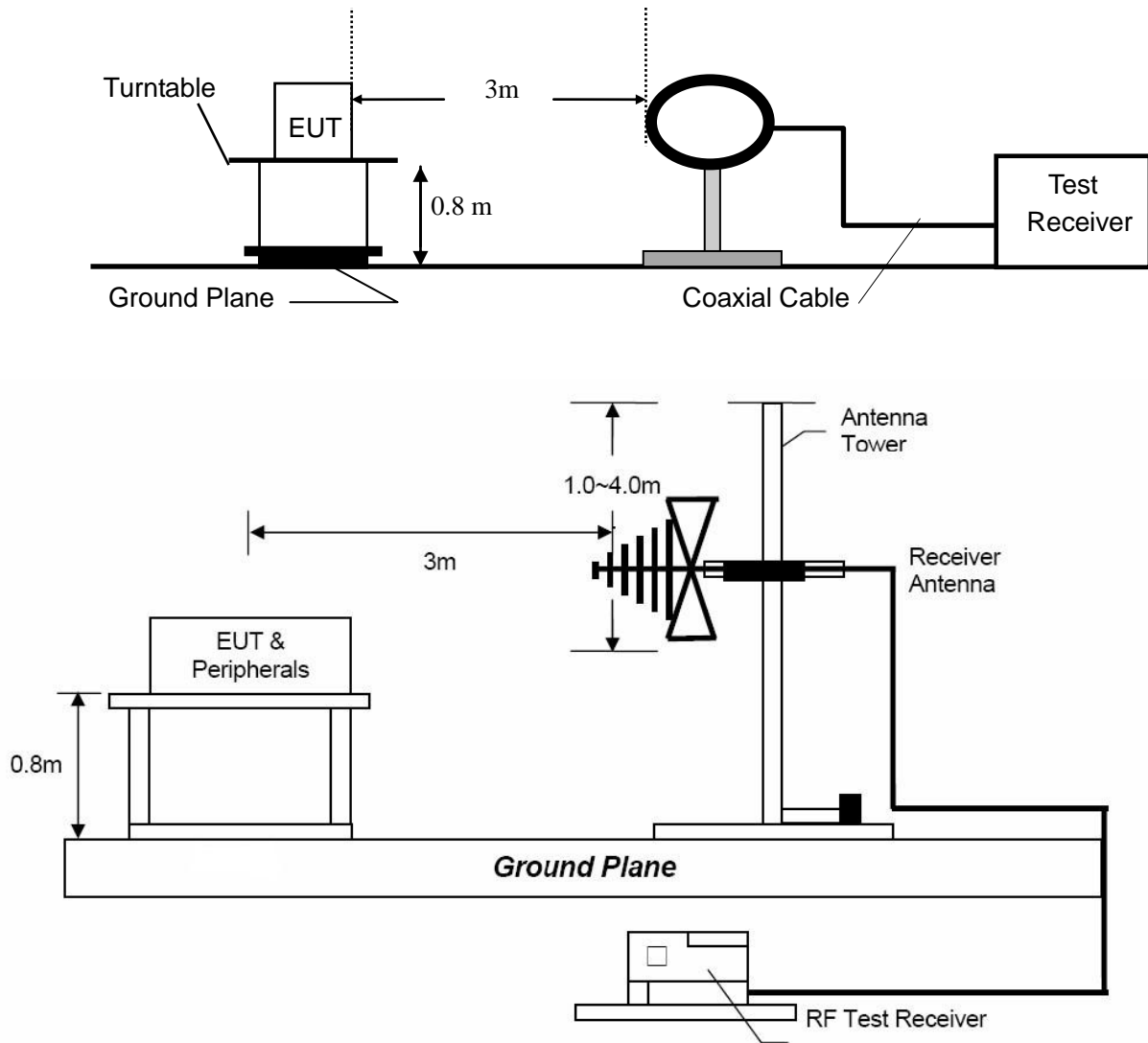
No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1620	34.70	10.60	45.30	65.36	-20.06	QP	
2	0.1620	15.40	10.60	26.00	55.36	-29.36	AVG	
3 *	0.4900	31.37	10.63	42.00	56.17	-14.17	QP	
4	0.4900	17.57	10.63	28.20	46.17	-17.97	AVG	
5	0.8820	24.12	10.68	34.80	56.00	-21.20	QP	
6	0.8820	7.52	10.68	18.20	46.00	-27.80	AVG	
7	1.2820	23.40	10.70	34.10	56.00	-21.90	QP	
8	1.2820	8.30	10.70	19.00	46.00	-27.00	AVG	
9	1.9779	24.10	10.70	34.80	56.00	-21.20	QP	
10	1.9779	9.30	10.70	20.00	46.00	-26.00	AVG	
11	2.3220	24.10	10.70	34.80	56.00	-21.20	QP	
12	2.3220	8.30	10.70	19.00	46.00	-27.00	AVG	



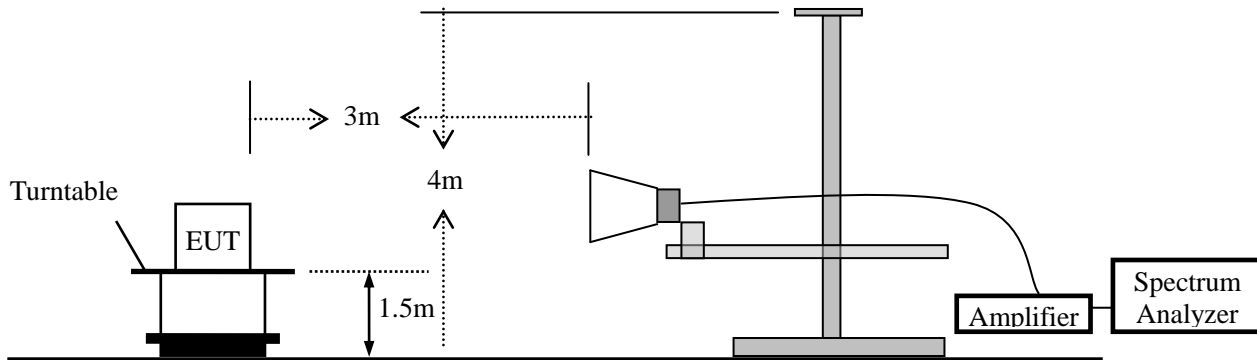
## 4. Radiated Emission Test

### 4.1 Test SET-UP (Block Diagram of Configuration)

#### 4.1.1 Radiated Emission Test Set-Up, Frequency Below 30MHz



#### 4.1.2 Radiated Emission Test Set-Up, Frequency above 1GHz



#### 4.2 Measurement Procedure

- Blow 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi- anechoic chamber room.
- For the radiated emission test above 1GHz:  
The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter full anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The height of antenna 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 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.
- A Quasi-peak measurement was then made for that frequency point for below 1GHz test. PK and AV for above 1GHz emission test.



During the radiated emission test, the spectrum analyzer was set with the following configurations:

Frequency Band (MHz)	Level	Resolution Bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	3 MHz
	Average	1 MHz	10 Hz

### 4.3 Limit

Frequency range MHz	Distance Meters	Field Strengths Limit (15.209)	
		μV/m	
0.009 ~ 0.490	300	2400/F(kHz)	
0.490 ~ 1.705	30	24000/F(kHz)	
1.705 ~ 30	30	30	
30 ~ 88	3	100	
88 ~ 216	3	150	
216 ~ 960	3	200	
Above 960	3	500	
Frequency range MHz	Distance Meters	Field Strengths Limit (15.249)	
		mV/m (Field strength of fundamental)	μV/m (Field strength of Harmonics)
902 ~ 928	3	50	500
2400 ~ 2483.5	3	50	500
5725 ~ 5875	3	50	500
24000 ~ 2425000	3	250	2500

- Remark: (1) Emission level (dB)μV = 20 log Emission level μV/m  
 (2) The smaller limit shall apply at the cross point between two frequency bands.  
 (3) As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.  
 (4) The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower.

#### 4.4 Measurement Results

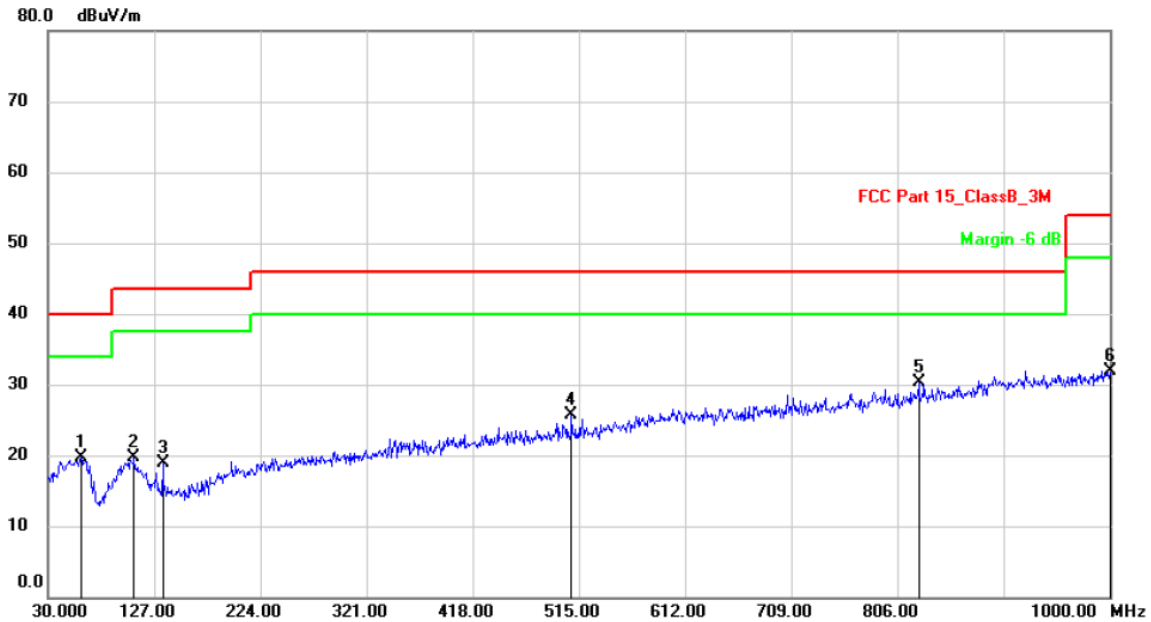
Please refer to following the test plots of the worst case: (Middle channel).



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**Radiated Emission Measurement**

File :UA24 Data :#11 Date: 2020/6/11 Time: 20:59:06



Site: 3m Chamber Polarization: *Horizontal* Temperature: 26  
 Limit: FCC Part 15\_ClassB\_3M Power: DC3.7V Humidity: 47 %  
 EUT: Transmitter Distance: 3m  
 M/N: UA24  
 Mode: TX  
 Note:

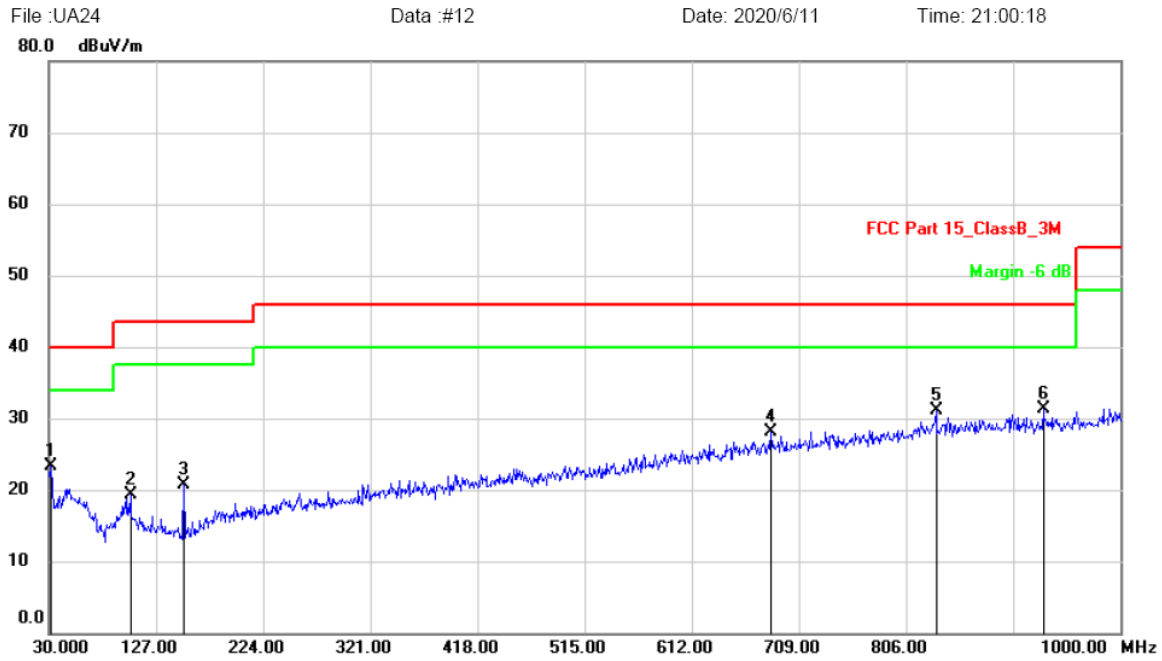
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		60.0700	26.95	-7.26	19.69	40.00	-20.31	QP		
2		108.5700	27.25	-7.54	19.71	43.50	-23.79	QP		
3		134.7600	29.63	-10.73	18.90	43.50	-24.60	QP		
4		508.2100	27.29	-1.63	25.66	46.00	-20.34	QP		
5	*	825.4000	25.88	4.41	30.29	46.00	-15.71	QP		
6		1000.0000	25.34	6.63	31.97	54.00	-22.03	QP		

**Note: Below 30MHz, the emissions are lower than 20dB below the allowable limit.**



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**Radiated Emission Measurement**



Site: 3m Chamber                      Polarization: **Vertical**                      Temperature: 26  
 Limit: FCC Part 15\_ClassB\_3M                      Power: DC3.7V                      Humidity: 47 %  
 EUT: Transmitter                      Distance: 3m  
 M/N: UA24  
 Mode: TX  
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		31.9400	32.95	-9.60	23.35	40.00	-16.65	QP		
2		103.7200	28.34	-9.08	19.26	43.50	-24.24	QP		
3		152.2200	32.34	-11.69	20.65	43.50	-22.85	QP		
4		683.7800	26.15	1.89	28.04	46.00	-17.96	QP		
5		833.1599	26.57	4.52	31.09	46.00	-14.91	QP		
6	*	930.1600	26.28	5.01	31.29	46.00	-14.71	QP		

**Note: Below 30MHz, the emissions are lower than 20dB below the allowable limit.**



Frequency Range:	1-25GHz	Test Date :	2020-6+-28
Test Result:	PASS	Temperature :	21 °C
Measured Distance:	3m	Humidity :	55 %
Test By:	Sance		

Freq. (MHz)	Ant.Pol. (H/V)	Reading Level(dBuV)		Factor (dB/m)	Emission Level (dBuV)		Limit 3m (dBuV/m)		Margin (dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
<b>Operation Mode: TX Mode (Low)</b>										
2425	V	69.8	43.38	0.09	69.89	43.47	114.00	94.00	-44.11	-50.53
4850	V	53.52	33.75	6.48	60.00	40.23	74.00	54.00	-14.00	-13.77
7275	V	45.95	31.25	10.52	56.47	41.77	74.00	54.00	-17.53	-12.23
---										
2425	H	76.73	43.96	0.09	76.82	44.05	114.00	94.00	-37.18	-49.95
4850	H	54.67	34.29	6.48	61.15	40.77	74.00	54.00	-12.85	-13.23
7275	H	46.48	31.38	10.52	57.00	41.90	74.00	54.00	-17.00	-12.10
---										
<b>Operation Mode: TX Mode (Mid)</b>										
2454	V	68.07	39.06	0.28	68.35	39.34	114.00	94.00	-45.65	-54.66
4908	V	52.43	33.94	6.70	59.13	40.64	74.00	54.00	-14.87	-13.36
7362	V	45.28	30.26	10.56	55.84	40.82	74.00	54.00	-18.16	-13.18
---										
2454	H	76.89	40.04	0.28	77.17	40.32	114.00	94.00	-36.83	-53.68
4908	H	53.37	34.45	6.70	60.07	41.15	74.00	54.00	-13.93	-12.85
7362	H	45.25	30.34	10.56	55.81	40.90	74.00	54.00	-18.19	-13.10
---										
<b>Operation Mode: TX Mode (High)</b>										
2470	V	68.68	42.47	0.31	68.99	42.78	114.00	94.00	-45.01	-51.22
4940	V	52.26	33.84	6.82	59.08	40.66	74.00	54.00	-14.92	-13.34
7410	V	46.17	31.13	10.58	56.75	41.71	74.00	54.00	-17.25	-12.29
---										
2470	H	73.98	43.51	0.31	74.29	43.82	114.00	94.00	-39.71	-50.18
4940	H	55.57	34.25	6.82	62.39	41.07	74.00	54.00	-11.61	-12.93
7410	H	46.45	31.13	10.58	57.03	41.71	74.00	54.00	-16.97	-12.29
---										

- Note:** (1) All Readings are Peak Value and AV.  
 (2) Emission Level= Reading Level + Factor  
 (3) Factor= Antenna Gain + Cable Loss – Amplifier Gain  
 (4) Data of measurement within this frequency range shown “ ---” in the table above means the reading of emissions are attenuated more than 10dB below the permissible limits.  
 (5) Horn antenna used for the emission over 1000MHz.

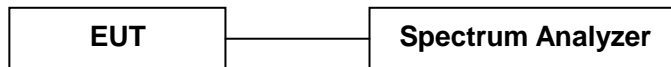
## 5. 20dB Bandwidth

### 5.1 Measurement Procedure

The 20dB bandwidth of the emission was contained within the frequency band designated which the EUT operated. The effects, if any, from frequency sweeping, frequency hopping, other modulation techniques and frequency stability over excepted variations in temperature and supply voltage were considered, FCC Rule 15.215(c):

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RBW was chosen so that the display was a result of the hopping channel modulation. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. Use the spectrum 20dB down delta function to measure the bandwidth.

### 5.2 Test SET-UP (Block Diagram of Configuration)



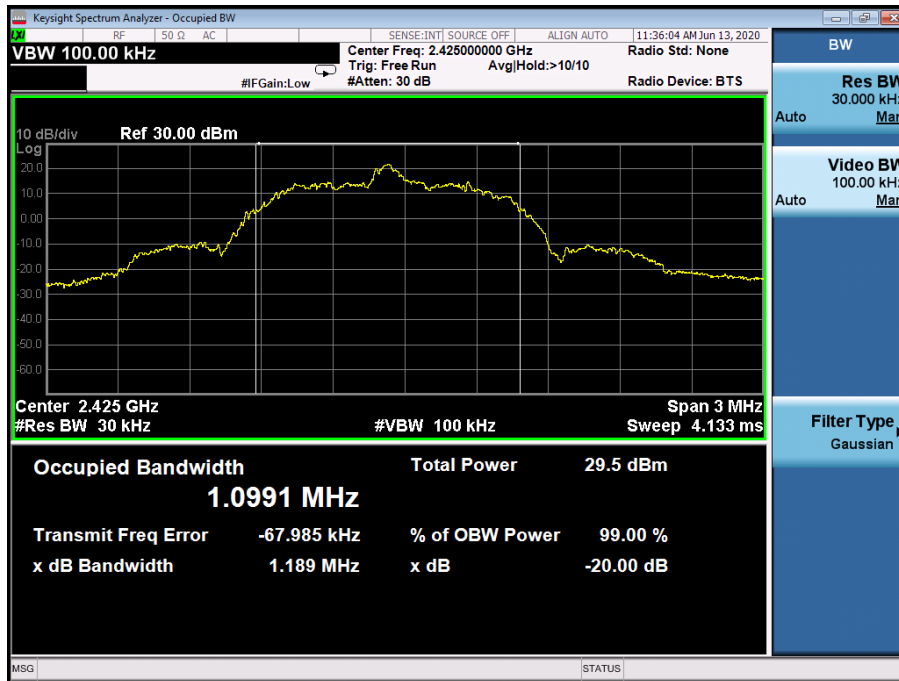
### 5.3 Measurement Results

Refer to attached data chart.

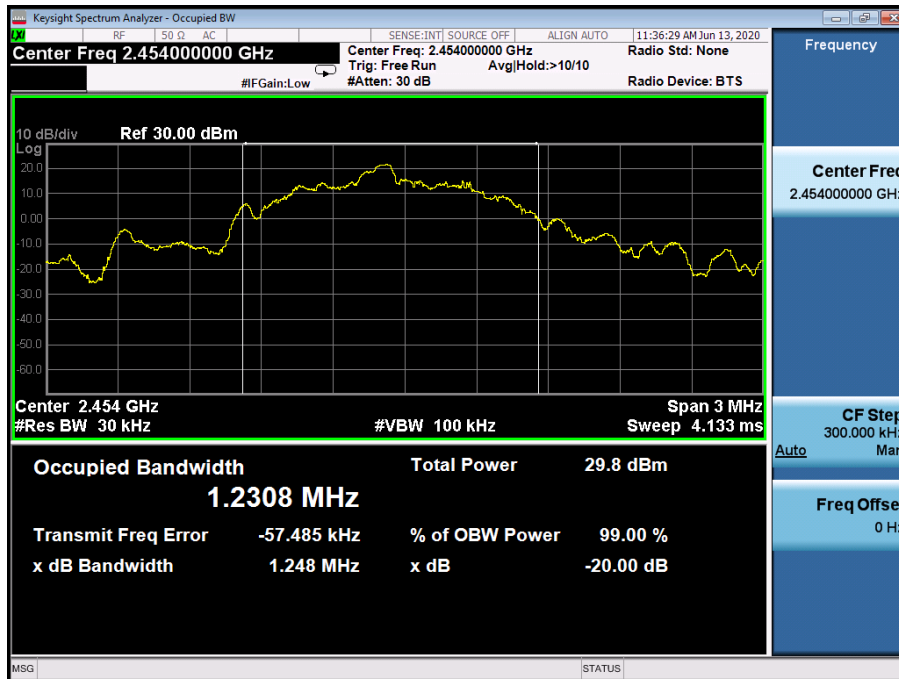
RBW:	100KHz	VBW:	300KHz
Spectrum Detector:	PK	Temperature :	22 °C
Test By:	Sance	Humidity :	54 %
Test Result:	PASS	Test Date :	2020-06-13

Channel frequency (MHz)	20dB Down BW(kHz)
2425	1189
2454	1248
2470	1419

### Lowest Channel



### Middle Channel



### Highest Channel





## 6. Band Edge

### 6.1 Measurement Procedure

Same as Radiated Emission Test.

### 6.2 Limit

Emissions 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 §15.209, whichever is the lesser attenuation.

### 6.3 Measurement Results

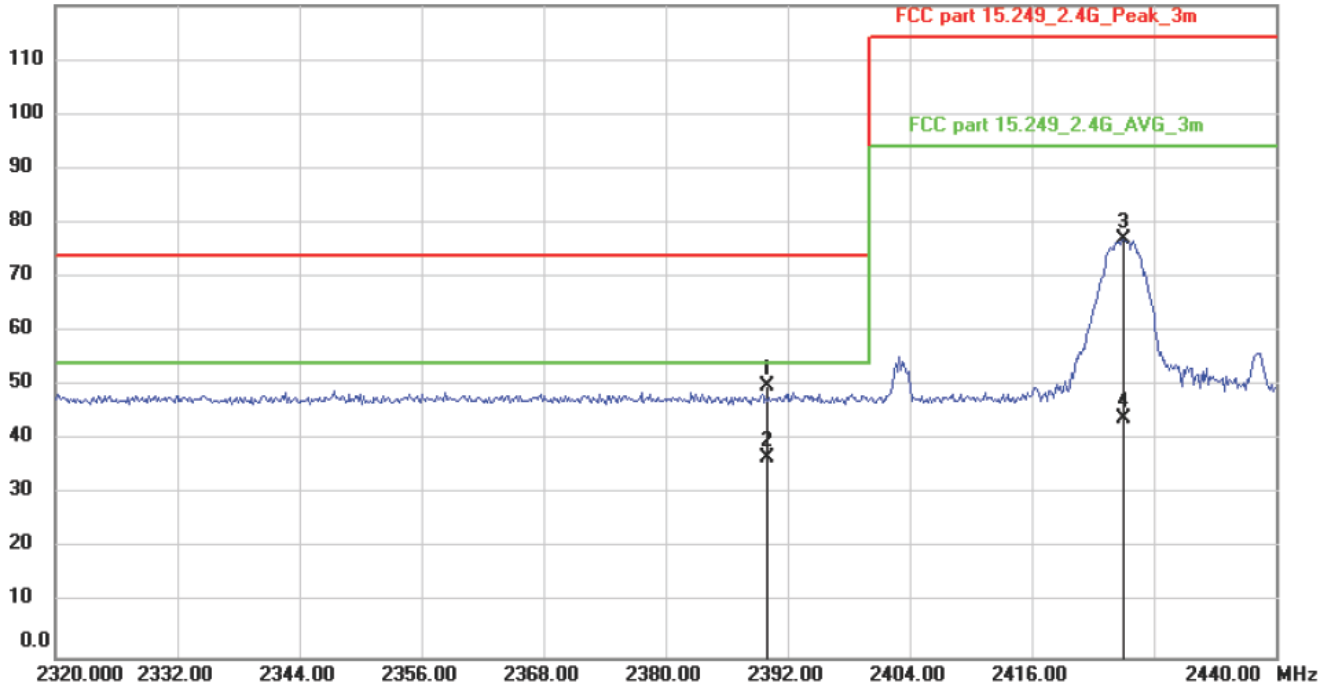
Operation Mode:	TX Mode	Test Date :	2020-6-28
Temperature :	21 °C	Humidity :	55 %
Test Result:	PASS	Test By:	Sance
Measured Distance:	3m		

Freq. (MHz)	Ant.Pol. (H/V)	Reading Level(dBuV)		Factor (dB/m)	Emission Level (dBuV)		Limit 3m (dBuV/m)		Margin (dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
2390.000	H	49.74	36.65	0.09	49.83	36.74	74.00	54.00	-24.17	-17.26
2390.000	V	49.78	36.46	0.09	49.87	36.55	74.00	54.00	-24.13	-17.45
2483.500	H	54.61	36.47	0.34	54.95	36.81	74.00	54.00	-19.05	-17.19
2483.500	V	50.53	36.84	0.34	50.87	37.18	74.00	54.00	-23.13	-16.82

- Note:**
- (1) Emission Level= Reading Level + Factor
  - (2) Factor= Antenna Gain + Cable Loss – Amplifier Gain
  - (3) Horn antenna used for the emission over 1000MHz.

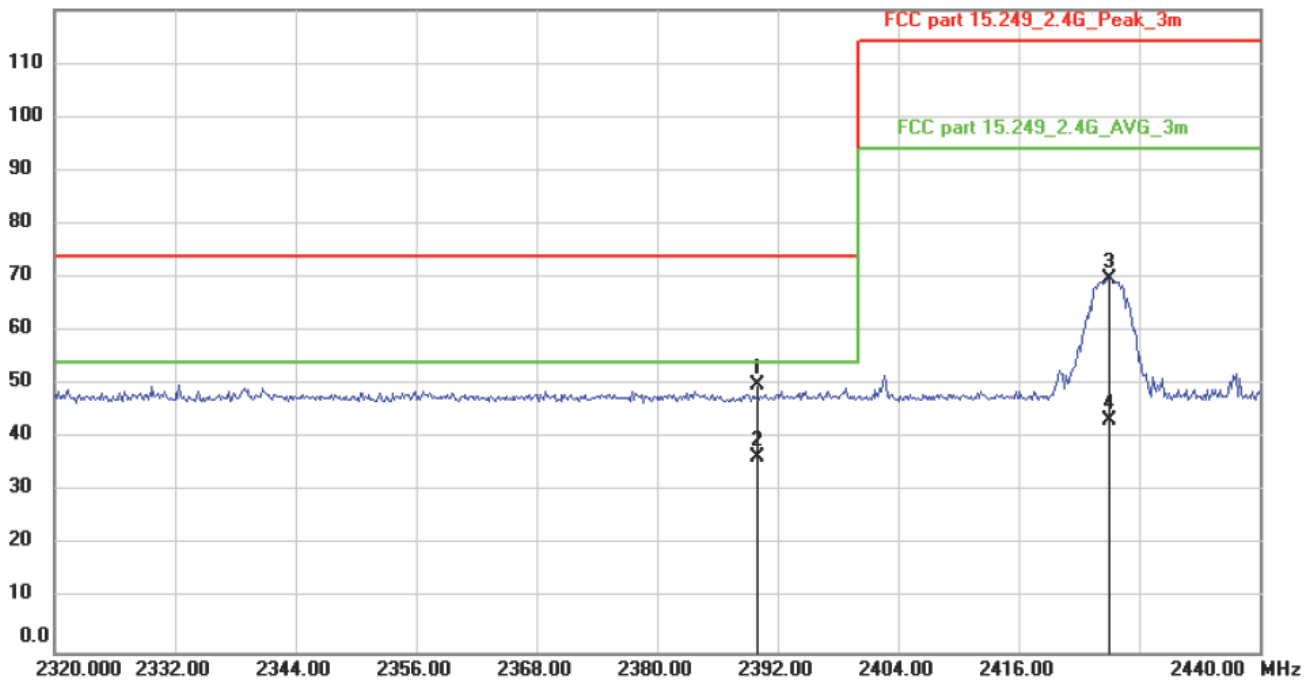
### Low channel

Horizontal  
120.0 dBuV/m



Vertical

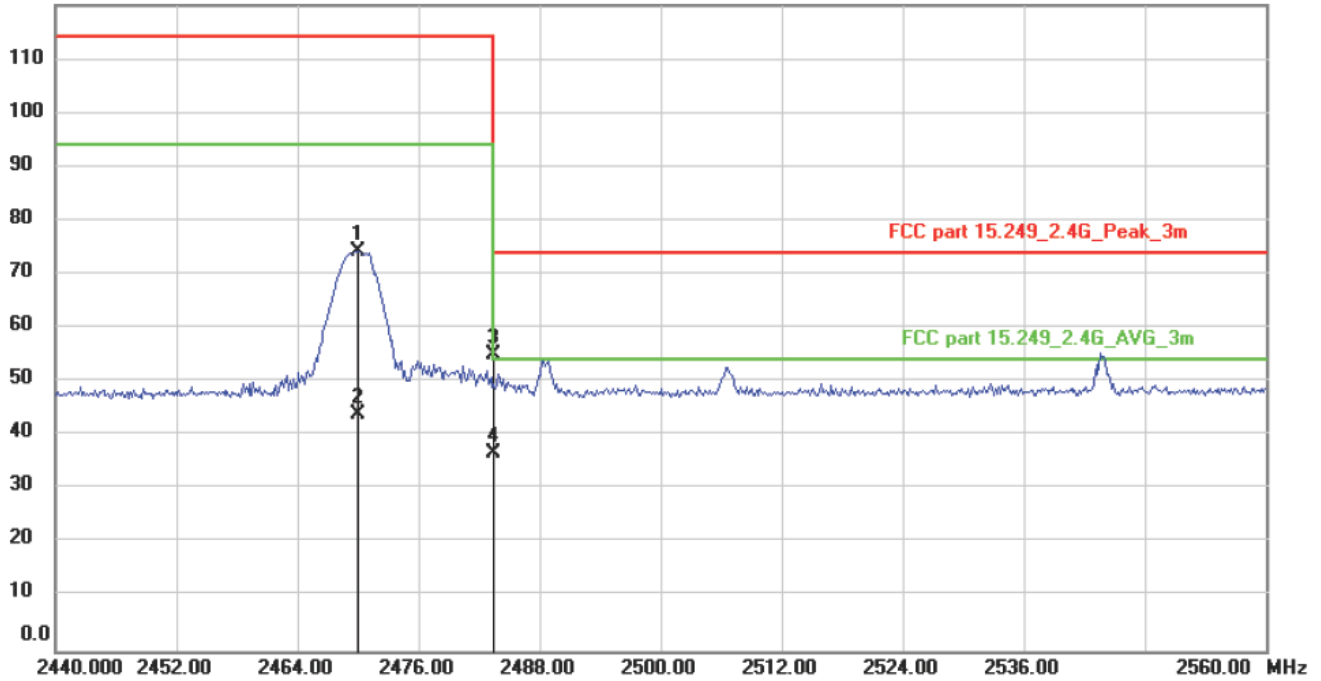
120.0 dBuV/m



# High channel

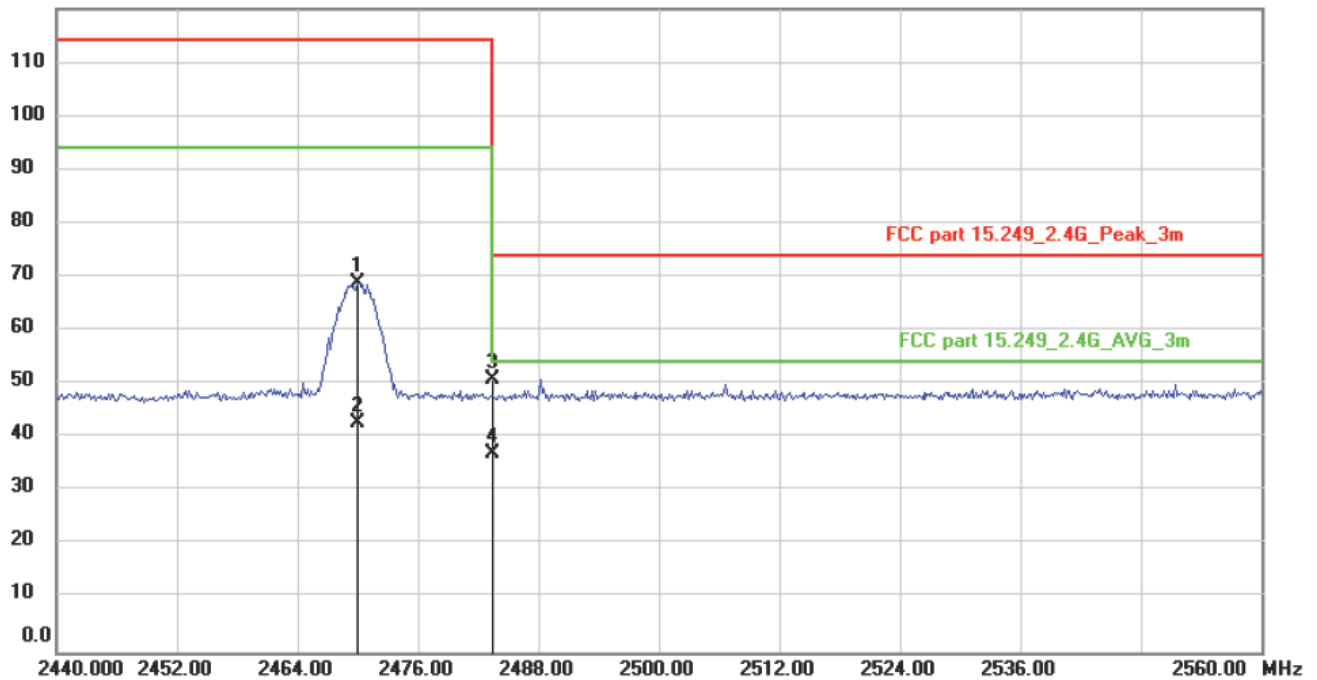
Horizontal

120.0 dBuV/m



Vertical

120.0 dBuV/m



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## 7. Antenna requirement

### 7.1 Measurement Procedure

According to of FCC part 15C section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Systems operating in the 2400-2483.5MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum peak output power of the intentional radiator is reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

### 7.2 Measurement Results

The antenna is PCB antenna and no consideration of replacement, and the best case gain of the antenna is 2.5dBi. So, the antenna is consider meet the requirement.

## 8. Test Equipment List

Description	Manufacturer	Model Number	Serial Number	Characteristics	Calibration Date	Calibration Due Date
Test Receiver	Rohde & Schwarz	ESCI7	100837	9KHz~7GHz	Mar. 14, 2020	Mar. 13, 2021
Antenna	Schwarzbeck	VULB9162	9162-010	30MHz~7GHz	Mar. 23, 2020	Mar. 22, 2021
Spectrum Analyzer	Rohde & Schwarz	FSU26	200409/026	20Hz~26.5GHz	Mar. 14, 2020	Mar. 13, 2021
Spectrum Analyzer	Keysight	N9020A	MY54200831	20Hz~26.5GHz	Apr. 24, 2020	Apr. 23, 2021
Spectrum Analyzer	Rohde & Schwarz	FSV40	101003	10Hz~40GHz	Apr. 24, 2020	Apr. 23, 2021
Horn Antenna	Schwarzbeck	BBHA9170	9170-372	15GHz~40GHz	Mar. 23, 2020	Mar. 22, 2021
Pre-Amplifier	EMCI	EMC 184045	980102	18GHz~40GHz	Apr. 24, 2020	Apr. 23, 2021
Power Sensor	DARE	RPR3006W	15100041SN O64	100MHz~6GHz	Mar. 14, 2020	Mar. 13, 2021
Communication Tester	Rohde & Schwarz	CMW500	149004	70MHz~6GHz	Mar. 14, 2020	Mar. 13, 2021
Horn Antenna	COM-Power	AH-118	071078	500MHz~18GHz	Mar. 23, 2020	Mar. 22, 2021
Pre-Amplifier	HP	HP 8449B	3008A00964	1GHz~26.5GHz	Mar. 14, 2020	Mar. 13, 2021
Pre-Amplifier	HP	HP 8447D	1145A00203	100KHz~1.3GHz	Mar. 14, 2020	Mar. 13, 2021
Loop Antenna	Schwarzbeck	FMZB 1513	1513-272	9KHz~30MHz	Apr. 24, 2020	Apr. 23, 2021
Temperature & Humidity Chamber	REMAFEE	SYHR225L	N/A	-40~150°C	Apr. 24, 2020	Apr. 23, 2021
DC Source	MY	MY8811	N/A	0~30V	N/A	N/A
Temporary antenna connector	TESCOM	SS402	N/A	9KHz~25GHz	N/A	N/A
Power Meter	Anritsu	ML2495A	1139001	100k-65GHz	Apr. 24, 2020	Apr. 23, 2021
Power Sensor	Anritsu	MA2411B	100345	300M-40GHz	Apr. 24, 2020	Apr. 23, 2021
Test Software	EZ	EZ_EMG	N/A	N/A	N/A	N/A

Note: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

---End---