

# 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 / Manufacturer : Iasus Concepts Limited  
Address : Flat 907A, 9/FI., Shiu Fat Industrial Building, 139-141 Wai Yip St., Kwun Tong, Kowloon, Hong Kong  
Factory : Dongguan chang 'an yaosu electronic business department  
Address : Room 808, fuyuan business center, no. 1, lane 13, xin 'an maiyuan road, chang 'an town, dongguan city  
E.U.T. : Jump Ringz  
Brand Name : N/A  
Model No. : JR-001  
FCC ID : 2ASIJ333JRS8V04  
Measurement Standard : FCC Part 15.225  
Date of Receiver : September 09, 2018  
Date of Test : September 09, 2018 to February 26, 2019  
Date of Report : February 26, 2019

This Test Report is Issued Under the Authority of :

Prepared by



Wendy / Engineer

Approved & Authorized Signer



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 : Jump Ringz

Main Model No. : JR-001

Additional Model No. : N/A

Model Difference Description : N/A

Brand Name : N/A

Power Supply : DC 3.7V(From internal "Li-ion" battery),  
DC 5V(From USB)

Test Voltage : DC 3.7V, DC 5V

Remark : N/A

#### Technical Specification:

Frequency : 13.56MHz

Modulation Type : ASK

Number of Channel : 1

Antenna Type : Coil antenna

Antenna Gain : 0 dBi (Declaration by manufacturer)

Hardware version : BL-MD60-software-V3.0

Software version : BL-MD60-Writer\_Master\_PCB\_V2.0

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

This submittal(s) (test report) is intended for FCC ID: **2ASIJ333JRS8V04** filing to comply with Section 15.225 of the FCC Part 15, Subpart C Rule.

## 1.3 Test Methodology

The radiated emission measurement was performed according to the procedures in ANSI C63.10 (2013). Radiated emission measurement was performed in semi-anechoic chamber. 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

No.	Equipment	Model	Serial No.	Trade name
1	Adapter	EP-TA10EWE	N/A	XVIDA

## 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, 2019  
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.)

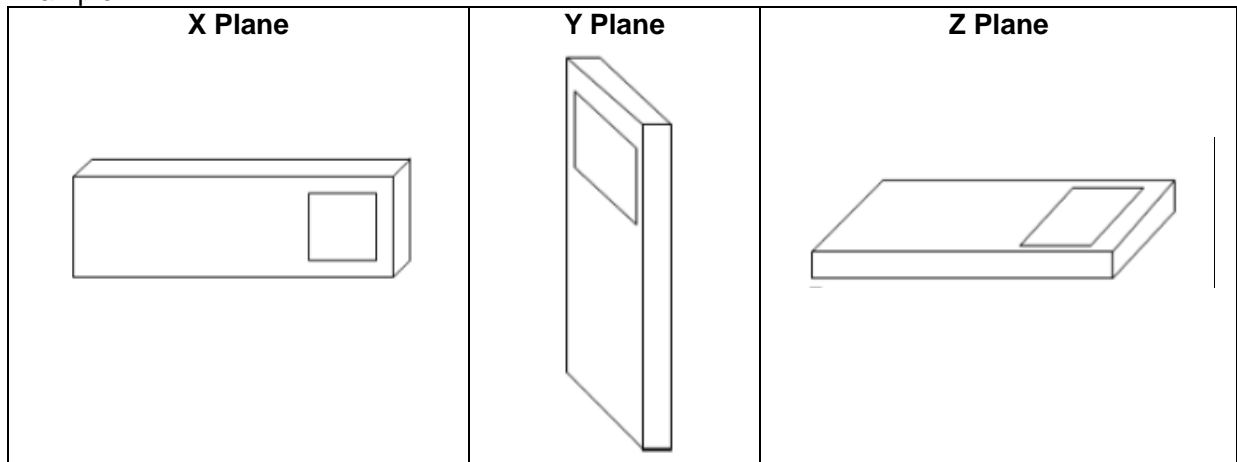
Site Location : Building D, Gaosheng Science and Technology park, Hongtu road, Nancheng district, Dongguan city, Guangdong province, China

### 1.7 Summary of Test Results

FCC Rules	Description Of Test	Result
§15.203	Antenna Requirement	Compliant
§15.207	Conducted Emission	Compliant
§15.225(d)/15.209	Radiated Emissions	Compliant
§15.225(a)(b)(c)/15.205	Field Strength of Fundamental Emissions	Compliant
§15.215	20dB Bandwidth	Compliant
§15.225(e)	Frequency Tolerance	Compliant

Note: 1. The full charge battery used during the test.  
 2. The EUT operating multiple positions, so the EUT shall be performed three orthogonal planes. The worst plane is Z

Example:



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## 2. Antenna requirement

### 2.1 Standard requirement

According to of FCC part 15C section 15.203 and 15.240:

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.

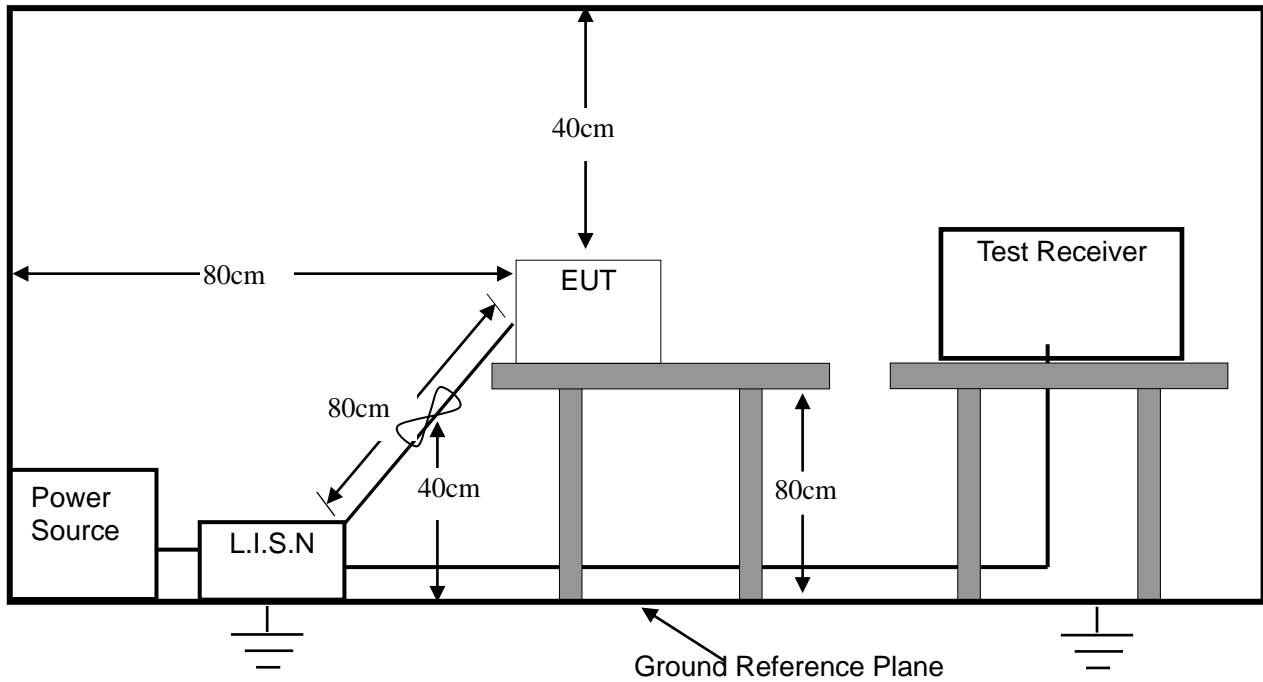
### 2.2 EUT Antenna

The antenna is Coil Antenna and no consideration of replacement, and the best case gain of the antenna is 0 dBi. So, the antenna is consider meet the requirement.



### 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

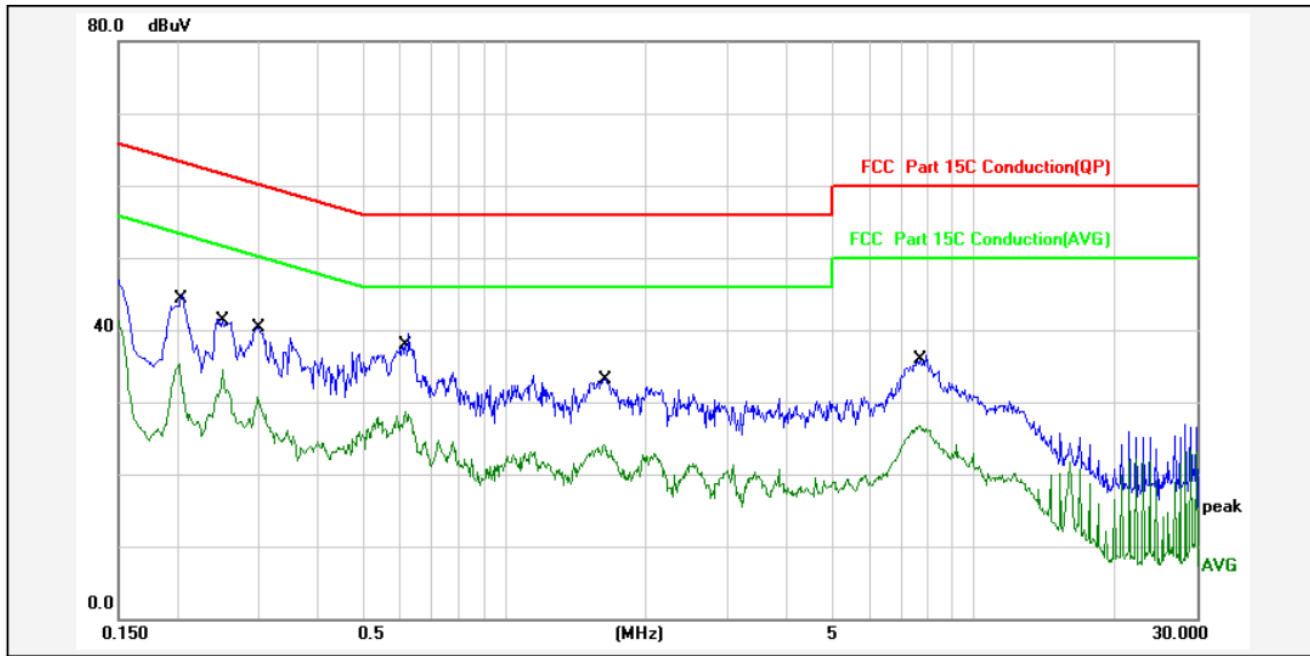
Detector: RBW 9KHz, VBW 30KHz

Operation Mode: Charging+TX

#### 3.3 Measurement Results

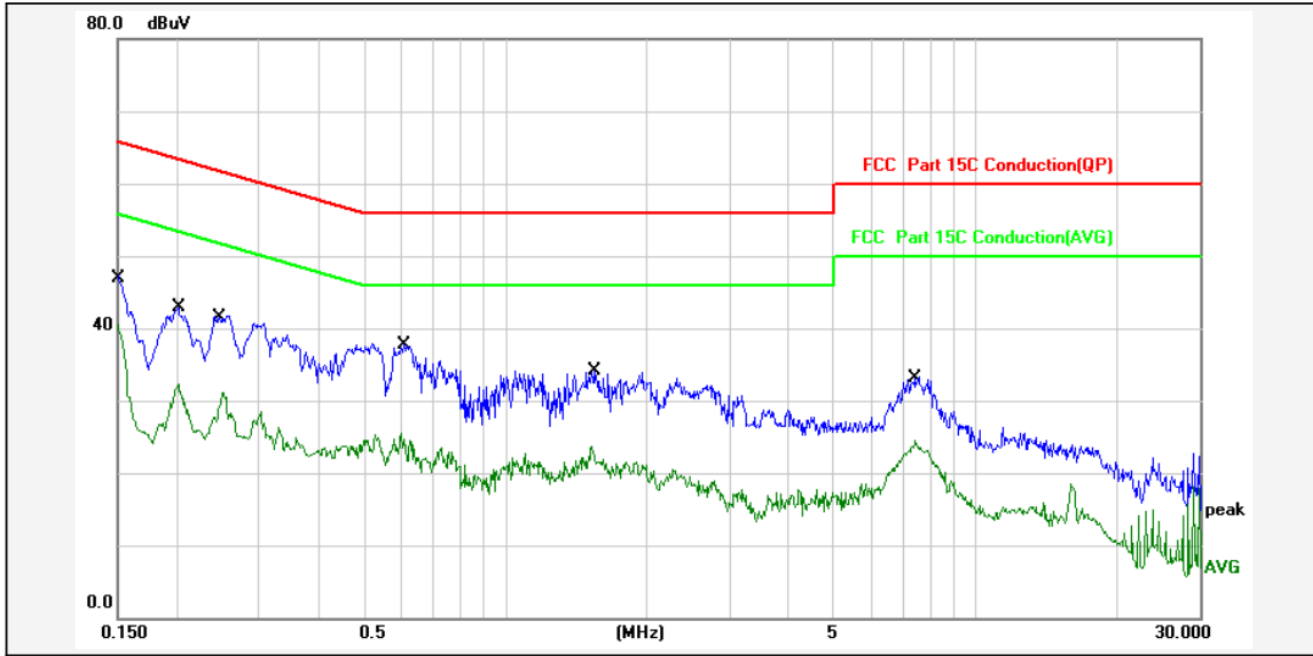
Please refer to following plots of the worst case.

E.U.T :	Jump Ringz	Model Name :	JR-001
Temperature :	26 °C	Relative Humidity :	60 %
Pressure :	1006 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Charging+TX	Phase:	Line



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.2017	6.54	37.30	43.84	63.54	-19.70	QP	P	
2	0.2017	6.54	28.70	35.24	53.54	-18.30	AVG	P	
3	0.2494	6.50	33.99	40.49	61.77	-21.28	QP	P	
4	0.2494	6.50	28.06	34.56	51.77	-17.21	AVG	P	
5	0.2968	6.47	33.86	40.33	60.33	-20.00	QP	P	
6	0.2968	6.47	24.13	30.60	50.33	-19.73	AVG	P	
7	0.6139	6.51	30.79	37.30	56.00	-18.70	QP	P	
8	0.6139	6.51	22.10	28.61	46.00	-17.39	AVG	P	
9	1.6273	6.52	26.60	33.12	56.00	-22.88	QP	P	
10	1.6273	6.52	17.50	24.02	46.00	-21.98	AVG	P	
11	7.6463	6.50	28.52	35.02	60.00	-24.98	QP	P	
12	7.6463	6.50	20.14	26.64	50.00	-23.36	AVG	P	

E.U.T :	Jump Ringz	Model Name :	JR-001
Temperature :	26 °C	Relative Humidity :	60 %
Pressure :	1006 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Charging+TX	Phase:	Neutral

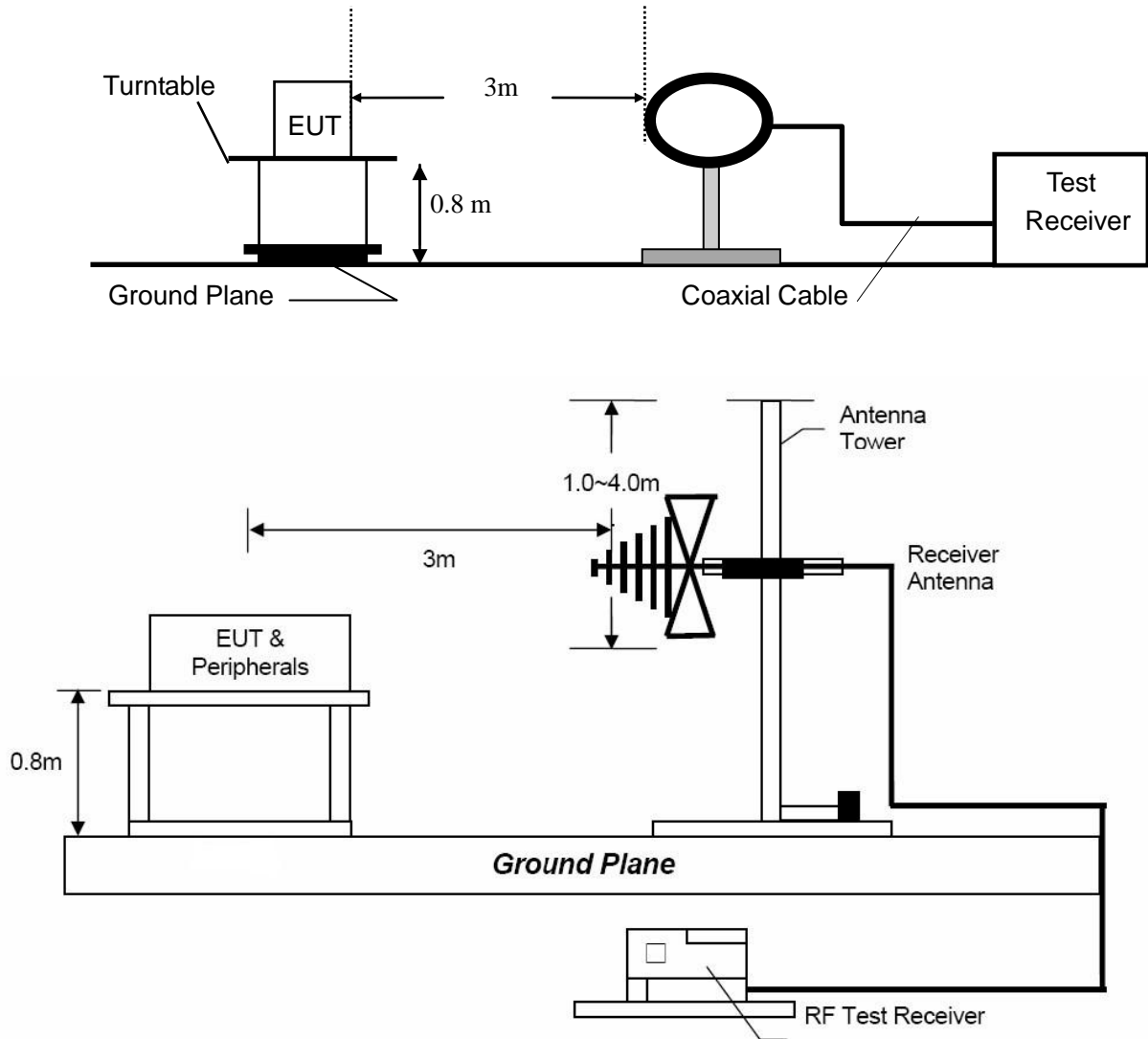


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1524	6.64	39.86	46.50	65.86	-19.36	QP	P	
2	0.1524	6.64	32.31	38.95	55.86	-16.91	AVG	P	
3	0.2017	6.54	36.16	42.70	63.54	-20.84	QP	P	
4	0.2017	6.54	25.70	32.24	53.54	-21.30	AVG	P	
5	0.2494	6.50	34.84	41.34	61.77	-20.43	QP	P	
6	0.2494	6.50	24.65	31.15	51.77	-20.62	AVG	P	
7	0.6010	6.51	30.86	37.37	56.00	-18.63	QP	P	
8	0.6010	6.51	18.95	25.46	46.00	-20.54	AVG	P	
9	1.5273	6.50	26.04	32.54	56.00	-23.46	QP	P	
10	1.5273	6.50	17.30	23.80	46.00	-22.20	AVG	P	
11	7.4463	6.52	26.64	33.16	60.00	-26.84	QP	P	
12	7.4463	6.52	18.05	24.57	50.00	-25.43	AVG	P	

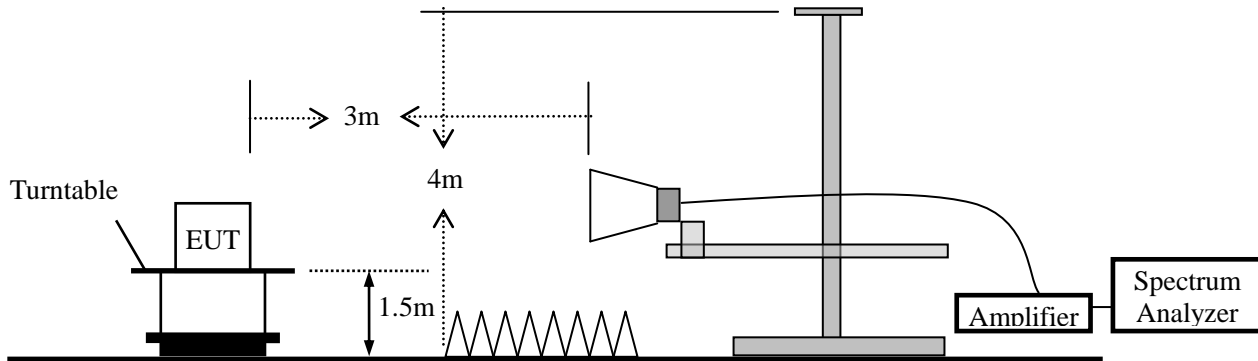
## 4. Radiated Emission Test

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

(1) Radiated Emission Test Set-Up, Frequency Below 30MHz



## (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
0.009~0.15	QP	200 Hz	1 kHz
0.15~30.0	QP	9 kHz	30 kHz
30.0~1000	QP	120 kHz	300 kHz

### 4.3 Limit

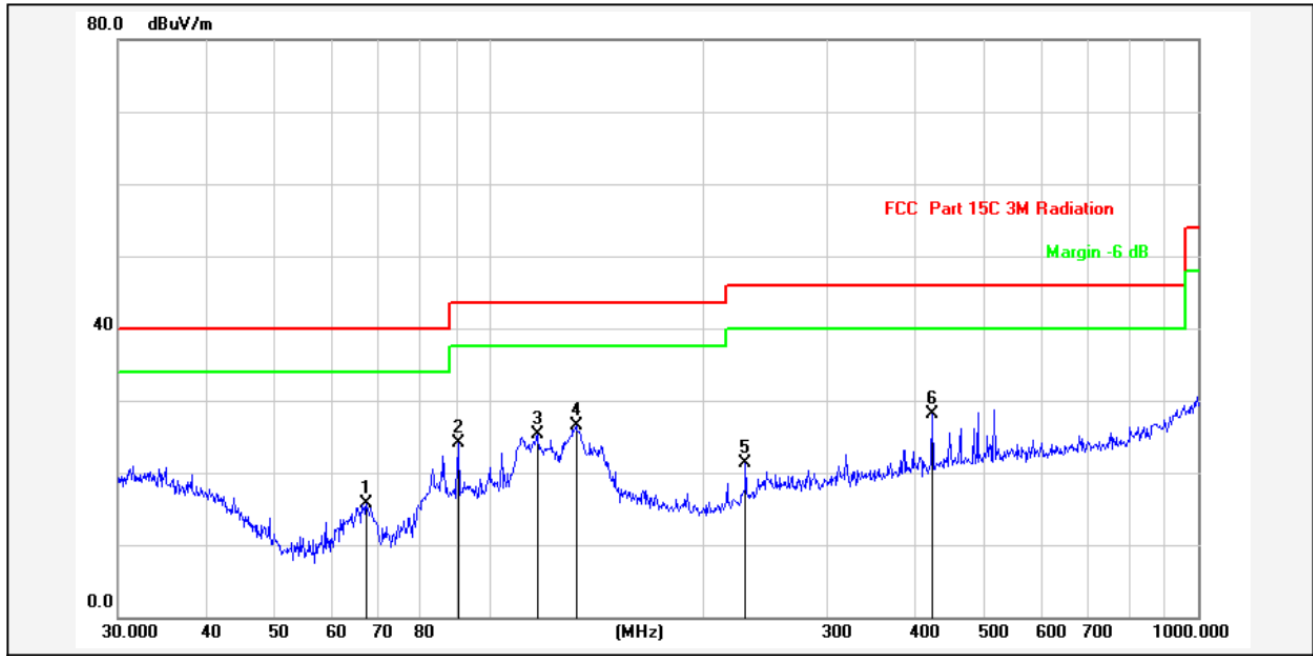
According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency range MHz	Distance Meters	Field Strengths Limit (15.209)
		$\mu\text{V/m}$
0.009 ~ 0.490	300	$2400/F(\text{kHz})$
0.490 ~ 1.705	30	$24000/F(\text{kHz})$
1.705 ~ 30	30	30
30 ~ 88	3	100
88 ~ 216	3	150
216 ~ 960	3	200
Above 960	3	500

- Remark :
- (1) Emission level (dB) $\mu\text{V}$  = 20 log Emission level  $\mu\text{V/m}$
  - (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

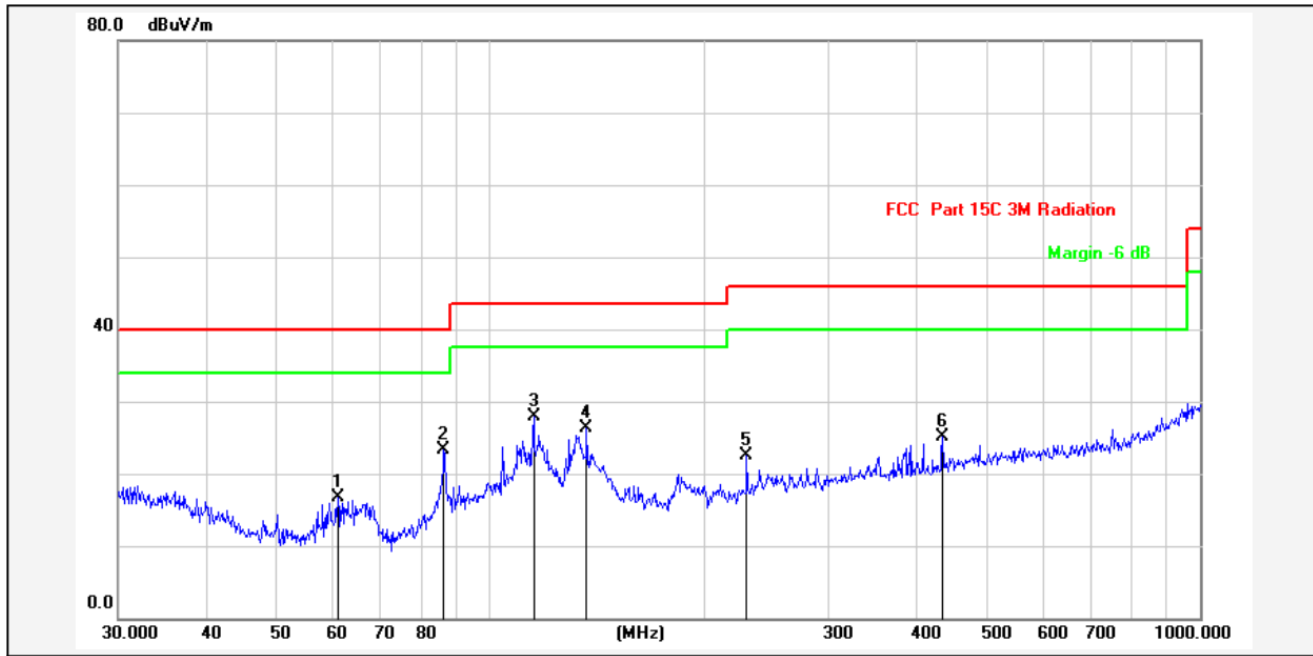
E.U.T :	Jump Ringz	Model Name :	JR-001
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1006 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX	Polarization:	Horizontal



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	67.2022	-16.96	32.70	15.74	40.00	-24.26	QP			P	
2	90.5374	-10.78	34.82	24.04	43.50	-19.46	QP			P	
3	116.9495	-8.17	33.44	25.27	43.50	-18.23	QP			P	
4	132.6850	-7.91	34.50	26.59	43.50	-16.91	QP			P	
5	230.0985	-9.03	30.32	21.29	46.00	-24.71	QP			P	
6	422.0577	-5.04	33.10	28.06	46.00	-17.94	QP			P	

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

E.U.T :	Jump Ringz	Model Name :	JR-001
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1006 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX	Polarization:	Vertical



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	61.1316	-18.31	35.08	16.77	40.00	-23.23	QP			P	
2	86.2001	-11.93	35.16	23.23	40.00	-16.77	QP			P	
3	115.3205	-8.22	36.21	27.99	43.50	-15.51	QP			P	
4	136.9391	-8.14	34.36	26.22	43.50	-17.28	QP			P	
5	230.0985	-9.03	31.62	22.59	46.00	-23.41	QP			P	
6	434.0651	-4.79	29.89	25.10	46.00	-20.90	QP			P	

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



## 5. Field Strength of Fundamental Emissions

### 5.1 Measurement Procedure

As the radiation test, set the RBW=10kHz VBW=30kHz, observed the outside band of 13.110 MHz to 14.010 MHz, than mark the higher-level emission for comparing with the FCC rules.

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

Same as section 3.1.

### 5.3 Limit

According to FCC section 15.225, for <30 MHz, Radiated emissions were measured according to ANSI C63.4. The EUT was set to transmit at the highest output power. The EUT was set 10 meter away from the measuring antenna. The loop antenna was positioned 1 meter above the ground from the center of the loop. The measuring bandwidth was set to 10 KHz. (Note: During testing the receive antenna was rotated about its axis to maximize the emission from the EUT)

There was no detected Restricted bands and Radiated suprious emission below 30MHz. The 30m limit was converted to 3m Limit using square factor(x) as it was found by measurements as follows; 3 m Limit(dBuV/m) =  $20\log(X)+40\log(30/3)=20\log(15848)+40\log(30/3) = 124\text{dBuV}$

Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

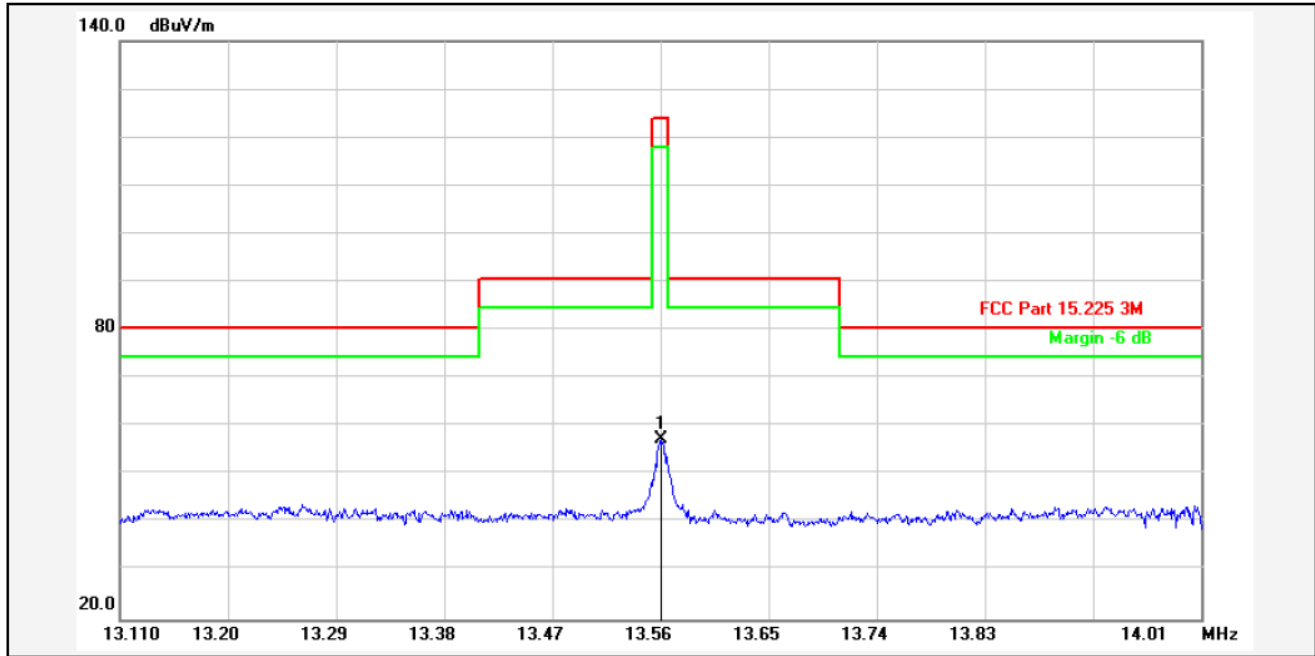
Frequency range (MHz)	Field Strength@30m		Field Strength@3m
	$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$
Below 13.110	30	29.5	69.5
13.110 ~ 13.410	106	40.5	80.5
13.410 ~ 13.553	334	50.5	90.5
13.553 ~13.567	15.848	84	124
13.567 ~ 13.710	334	50.5	90.5
13.710 ~14.010	106	40.5	80.5
Above 14.010	30	29.5	69.5

Note:

1. Field Strength ( $\text{dB}\mu\text{V/m}$ ) =  $20*\log[\text{Field Strength } (\mu\text{V/m})]$ .
2. In the emission tables above, the tighter limit applies at the band edges.

### 5.4 Measurement Results

E.U.T :	Jump Ringz	Model Name :	JR-001
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1006 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX	Polarization:	/



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	13.5603	1.84	55.57	57.41	124.00	-66.59	QP			P	

## 6 20dB Bandwidth

### 6.1 Measurement Procedure

The 20dB bandwidth is measured with a spectrum analyzer connected via a receiver antenna placed near the EUT while the EUT is operating in transmission mode.

### 6.2 Spectrum analyzer settings

Span = approximately 2 to 3 times the 20 dB bandwidth  
RBW  $\geq$  1% of the 20 dB bandwidth  
VBW  $\geq$  RBW  
Sweep = auto  
Detector function = peak  
Trace = max hold.

### 6.3 Limit

Operation within the band 13.110 MHz to 14.010 MHz

### 6.4 Measurement Results

EUT:	Jump Ringz	Model Name :	JR-001
Temperature:	25 °C	Relative Humidity:	60%
Pressure:	1012 hPa	Test Voltage :	DC 3.7
Test Mode :	TX		

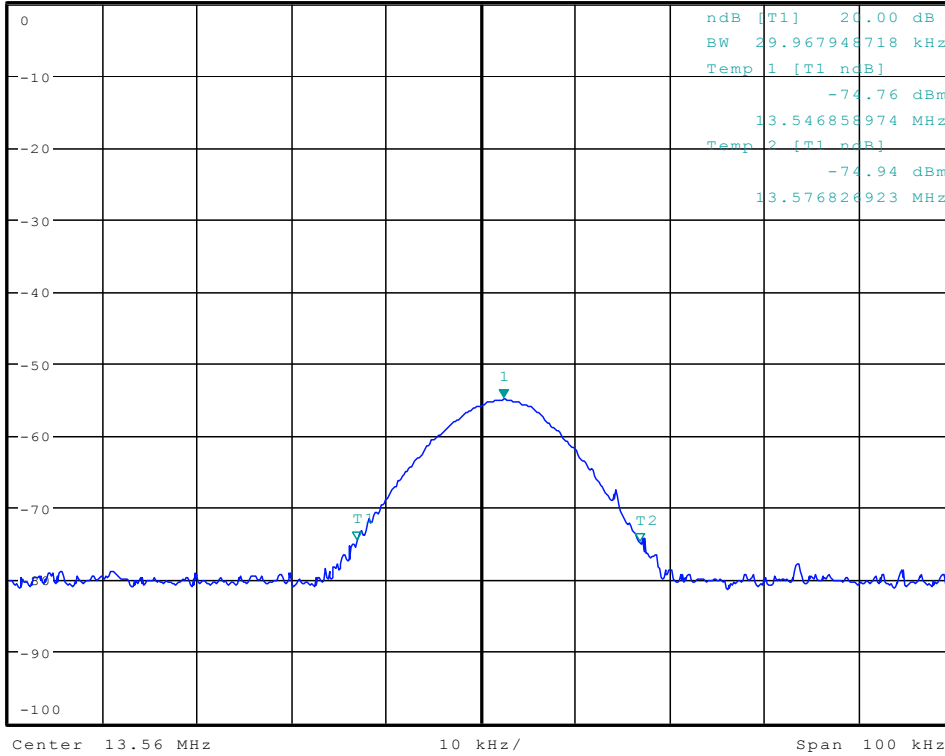
Please refer to the following plot.

## 20dB Bandwidth



\* RBW 10 kHz      Marker 1 [T1 ]  
 \* VBW 30 kHz      -55.03 dBm  
 Ref 0 dBm      Att 25 dB      SWT 5 ms      13.562403846 MHz

1 PK  
 MAXH



## 7 Frequency stability

### 7.1 Test Procedure

The test is performed in a Temperature Chamber.

### 7.2 Limit

The frequency tolerance of the carrier signal shall be maintained within  $\pm 0.01\%$  of the operating frequency over a temperature variation of  $-20$  degrees to  $+ 50$  degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

### 7.3 Measurement Results

Voltage (Vdc)	Temp. (°C)	Frequency (MHz)	Deviation (%)	Limit (%)
3.7	-20	13.560346	0.002%	+/-0.01%
	-10	13.560264	0.001%	
	0	13.560538	0.003%	
	10	13.560672	0.004%	
	20	13.560469	0.003%	
	30	13.560583	0.004%	
	40	13.560588	0.004%	
	50	13.560264	0.001%	
3.33	20	13.560683	0.005%	
4.07	20	13.560395	0.002%	

## 8 Test Equipment List

No.	Equipment	Manufacturer	Model No.	Serial No.	Characteristics	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCI7	100837	9KHz~7GHz	Mar. 14, 2018	Mar. 13, 2019
2.	Antenna	Schwarzbeck	VULB9162	VULB9162-010	30MHz~7GHz	Mar. 23, 2018	Mar. 22, 2019
3.	Spectrum Analyzer	Rohde & Schwarz	FSU26	200409	20Hz~26.5GHz	Mar. 14, 2018	Mar. 13, 2019
4.	Spectrum Analyzer	Keysight	N9020A	MY54200831	20Hz~26.5GHz	Apr. 24 2018	Apr. 23, 2019
5.	Spectrum Analyzer	Rohde & Schwarz	FSV40	101003	10Hz~40GHz	Apr. 24, 2018	Apr. 23, 2019
6.	Horn Antenna	Schwarzbeck	BBHA9170	9170-372	15GHz~40GHz	Mar. 23, 2018	Mar. 22, 2019
7.	Pre-Amplifier	EMCI	EMC 184045	980102	18GHz~40GHz	Apr. 24, 2018	Apr. 23, 2019
8.	Power Sensor	DARE	RPR3006W	15100041SN064	100MHz~6GHz	Mar. 14, 2018	Mar. 13, 2019
9.	Communication Tester	Rohde & Schwarz	CMW500	149004	70MHz~6GHz	Mar. 14, 2018	Mar. 13, 2019
10.	Horn Antenna	COM-Power	AH-118	071078	500MHz~18GHz	Mar. 23, 2018	Mar. 22, 2019
11.	Pre-Amplifier	HP	HP 8449B	3008A00964	1GHz~26.5GHz	Mar. 14, 2018	Mar. 13, 2019
12.	Pre-Amplifier	HP	HP 8447D	1145A00203	100KHz~1.3GHz	Mar. 14, 2018	Mar. 13, 2019
13.	Loop Antenna	Schwarzbeck	FMZB 1513	1513#272	9KHz~30MHz	Apr. 24, 2018	Apr. 23, 2019
14.	Temperature & Humidity Chamber	REMAFEE	SYHR-225L	N/A	-40~150°C	Apr. 25, 2018	Apr. 23, 2019
15.	DC Source	MY	MY8811	N/A	0~30V	Mar. 23, 2018	Mar. 22, 2019
16.	Temporary antenna connector	TESCOM	SS402	N/A	9KHz~25GHz	N/A	N/A
17.	Power Meter	Anritsu	ML2495A	1139001	100k-65GHz	Apr. 24, 2018	Apr. 23, 2019
18.	Power Sensor	Anritsu	MA2411B	100345	300M-40GHz	Apr. 24, 2018	Apr. 23, 2019
19.	Test Receiver	Rohde & Schwarz	ESCI	101152	9KHz~3GHz	Mar. 14, 2018	Mar. 13, 2019
20.	L.I.S.N	Rohde & Schwarz	ENV 216	101317	N/A	Mar. 14, 2018	Mar. 13, 2019
21.	L.I.S.N	Schwarzbeck	NNLK8129	8129212	N/A	Mar. 07, 2018	Mar. 06, 2019
22.	RF Switching Unit	Compliance Direction Systems Inc.	RSU-M2	38311	N/A	Mar. 14, 2018	Mar. 13, 2019
23.	Test Software	EZ	EZ_EMCC	N/A	N/A	N/A	N/A

---End---