



# **FCC RADIO TEST REPORT**

## **FCC ID: 2ABKFBER-TRV2**

**Product :** radio controller

**Trade Name :** N/A

**Model Name :** BER-TRV2, BER-TRV1, BER-TRC1,  
BER-RXV1, BER-RXV2, BER-RXV3

**Serial Model :** N/A

**Report No. :** BZT-131206132F

### **Prepared for**

Guangzhou Baiyue Electronic Products Co., Ltd.  
Floor3, No.8, Shanzhuang road Hecun, Dashi Town Panyu Dis. Guangzhou  
China

### **Prepared by**

BZT Testing Technology Co., Ltd.  
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Bao'an District, Shenzhen P.R. China

## TEST RESULT CERTIFICATION

**Applicant's name** ..... : Guangzhou Biaiyue Electronic Products Co., Ltd.

**Address** ..... : Floor3, No.8, Shanzhuang road Hecun, Dashi Town Panyu Dis.  
Guangzhou China

**Manufacture's Name**..... : Guangzhou Biaiyue Electronic Products Co., Ltd.

**Address** ..... : Floor3, No.8, Shanzhuang road Hecun, Dashi Town Panyu Dis.  
Guangzhou China

### Product description

**Product name**..... : radio controller

**Model and/or type reference** : BER-TRV2

**Serial Model** : BER-TRV1, BER-TRC1, BER-RXV1, BER-RXV2, BER-RXV3

**Rating(s)**..... : DC 6V from battery

**Standards** ..... : FCC Part15.249

**Test procedure**..... ANSI C63.4-2003

This device described above has been tested byBZT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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**Date of Test**..... :

**Date (s) of performance of tests**..... : 09 December. 2013 ~14 December. 2013

**Date of Issue**..... : 15 December. 2013

**Test Result**..... : **Pass**

**Testing Engineer** : Apple Huang  
(Apple Huang)

**Technical Manager** : Tom Zhang  
(Tom Zhang)

**Authorized Signatory** : Bovey Yang  
(Bovey Yang)

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**1. SUMMARY OF TEST RESULTS**

Test procedures according to the technical standards:

<b>FCC Part15, Subpart C (15.249)</b>			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	N/A	
15.203	Antenna Requirement	Pass	
15.249	Radiated Spurious Emission	Pass	
15.205	Band Edge Emission	Pass	
15.249	Occupied Bandwidth	Pass	

**NOTE:**

(1) "N/A" denotes test is not applicable in this Test Report

## 1.1 TEST FACILITY

BZT Testing Technology Co., Ltd

Add. : 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen P.R. China.

FCC Registered No.: 701733

## 1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately **95 %** .

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 1.38\text{dB}$
2	RF power,conducted	$\pm 0.16\text{dB}$
3	Spurious emissions,conducted	$\pm 0.21\text{dB}$
4	All emissions,radiated(<1G)	$\pm 4.68\text{dB}$
5	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$

## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

Equipment	radio controller	
Trade Name	N/A	
Model Name	BER-TRV2	
Serial Model	BER-TRV1, BER-TRC1, BER-RXV1, BER-RXV2, BER-RXV3	
Model Difference	All model's software and electric circuit are the same, only with product appearance, decoration, color and name are different. Test model is BER-TRV2.	
Product Description	The EUT is a radio controller	
	Operation Frequency:	2404~2478MHz
	Modulation Type:	GFSK
	Antenna Designation:	Internal antenna
	Antenna Gain(Peak)	3 dBi
	EIRP	98.07 dbuv/m@3m
	Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.	
Channel List	Please refer to the Note 2.	
Adapter	N/A	
Battery	DC 6V for 4*AA battery	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.

Channel List					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2404	12	2430	23	2457
02	2407	13	2433	24	2459
03	2409	14	2435	25	2461
04	2412	15	2438	26	2464
05	2414	16	2440	27	2466
06	2416	17	2442	28	2468
07	2419	18	2445	29	2471
08	2421	19	2447	30	2473
09	2423	20	2449	31	2476
10	2426	21	2452	32	2478
11	2428	22	2454		

3.

Table for Filed Antenna

Ant .	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	N/A	N/A	Internal antenna	NA	3.0	Antenna

## 2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	CH1
Mode 2	CH16
Mode 3	CH32
Mode 4	Link Mode

For Conducted Emission	
Final Test Mode	Description
N/A	N/A

For Radiated Emission	
Final Test Mode	Description
Mode 1	CH1
Mode 2	CH16
Mode 3	CH32

Note:

- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) The EUT use new battery.



**2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED**

Radiated Spurious Emission Test



E-1  
EUT

## 2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	radio controller	N/A	BER-TRV2	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

## 2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

### Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2013.07.06	Jul. 05. 2014	1 year
2	Test Receiver	R&S	ESPI	101318	2013.07.06	Jul. 05. 2014	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2013.07.06	Nov.23. 2014	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2013.07.06	Jul. 05. 2014	1 year
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	2013.07.06	Jul. 05. 2014	1 year
6	Horn Antenna	EM	EM-AH-10180	2011071402	2013.07.06	Nov.23. 2014	1 year
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2013.07.06	Jul. 05. 2014	1 year
8	Amplifier	EM	EM-30180	060538	2013.07.06	Jul. 05. 2014	1 year
9	Loop Antenna	ARA	PLA-1030/B	1029	2013.07.06	Nov.23. 2014	1 year
10	Power Meter	R&S	NRVS	100696	2013.07.06	Nov.23. 2014	1 year
11	Power Sensor	R&S	URV5-Z4	0395.1619.05	2013.07.06	Jul. 05. 2014	1 year

### Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101160	2013.07.06	Jul. 05. 2014	1 year
2	LISN	R&S	ENV216	101313	2013.07.06	Jul. 05. 2014	1 year
3	LISN	EMCO	3816/2	00042990	2013.07.06	Jul. 05. 2014	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2013.07.06	Jul. 05. 2014	1 year
5	Passive Voltage Probe	R&S	ESH2-Z3	100196	2013.07.06	Jul. 05. 2014	1 year
6	Absorbing clamp	R&S	MOS-21	100423	2013.07.06	Jul. 05. 2014	1 year

### **3. ANTENNA REQUIREMENT**

#### **3.1 STANDARD REQUIREMENT**

15.203 requirement: For intentional device, according to 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.

#### **3.2 EUT ANTENNA**

The EUT antenna is integral antenna, the maximum Gain of the antenna is 3dBi, fulfill the requirement of this section.

### 3.3 CONDUCTED EMISSION MEASUREMENT

#### 3.3.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5			66 - 56 *	56 - 46 *	CISPR
0.50 -5.0			56.00	46.00	CISPR
5.0 -30.0			60.00	50.00	CISPR

0.15 -0.5			66 - 56 *	56 - 46 *	LP002.
0.50 -5.0			56.00	46.00	LP002.
5.0 -30.0			60.00	50.00	LP002.

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

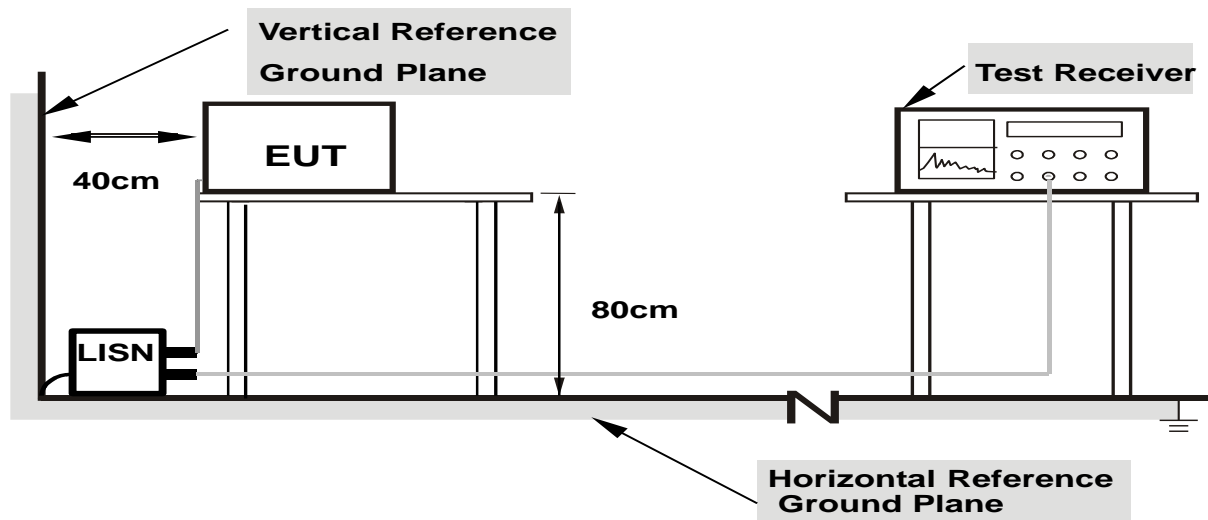
### 3.3.2 TEST PROCEDURE

- The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

### 3.3.3 DEVIATION FROM TEST STANDARD

No deviation

### 3.3.4 TEST SETUP



**Note: 1.**Support units were connected to second LISN.

**2.**Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

**3.2.5 TEST RESULT**

EUT :	radio controller	Model Name. :	BER-TRV2
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	N/A
Test Mode :	N/A	Phase :	N/A

Note: EUT power supply by battery, so the test not applicable.

**3.4 RADIATED EMISSION MEASUREMENT**

### 3.4.1 Radiated Emission Limits ( FCC 15.209 )

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission level (dBuV/m)=20log Emission level (uV/m).

### LIMITS OF RADIATED EMISSION MEASUREMENT ( FCC 15.249)

Frequency of Emission (MHz)	Field Strength of fundamental ((millivolts /meter)	Field Strength of Harmonics (microvolts/meter)
2400 - 2483.5	50	500

Notes:

- (1) 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 Section 15.209, whichever is the lesser attenuation.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1MHz / 1MHz for Peak

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

### 3.4.2 TEST PROCEDURE



- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

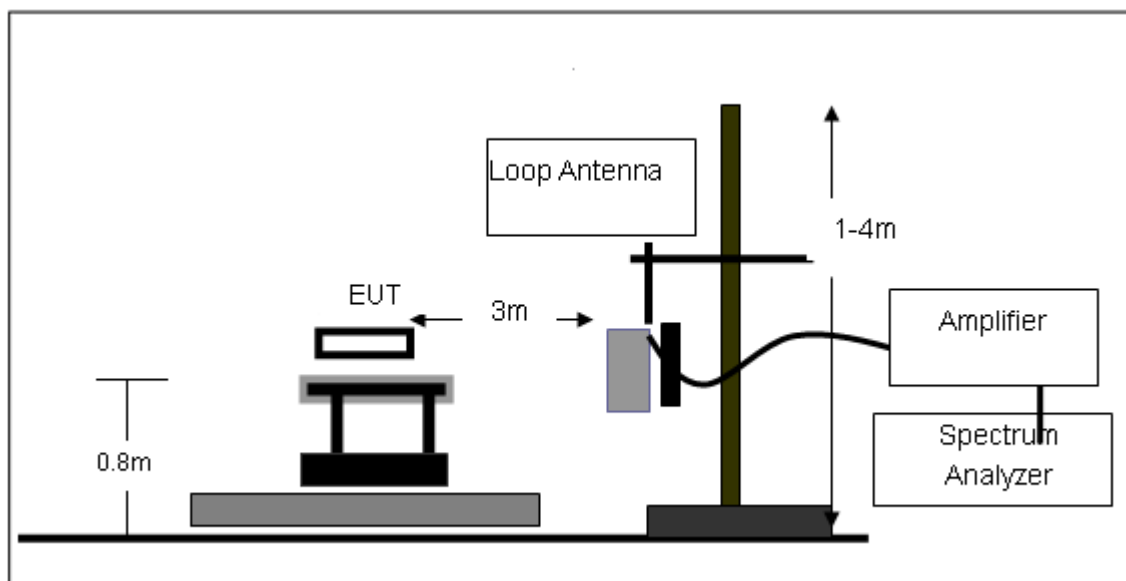
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

### 3.4.3 DEVIATION FROM TEST STANDARD

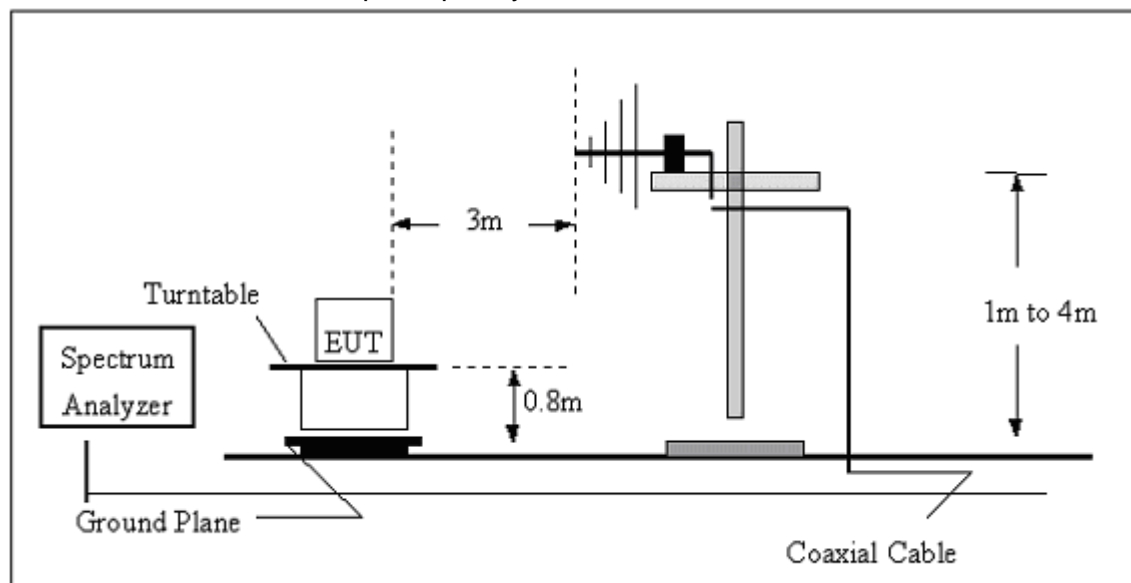
No deviation

### 3.4.4 TEST SETUP

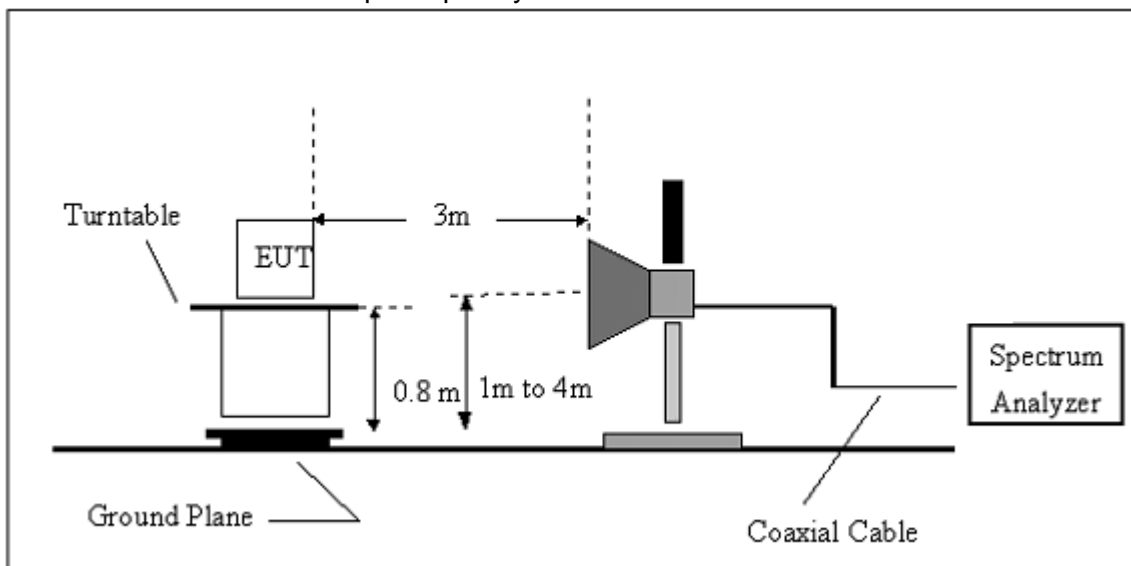
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



### 3.4.5 TEST RESULTS (BLOW 30MHz)

EUT :	radio controller	Model Name. :	BER-TRV2
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 6V from battery
Test Mode :	TX	Polarization :	--

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

#### NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =  $20 \log (\text{specific distance/test distance})(\text{dB})$ ;

Limit line = specific limits(dBuv) + distance extrapolation factor.

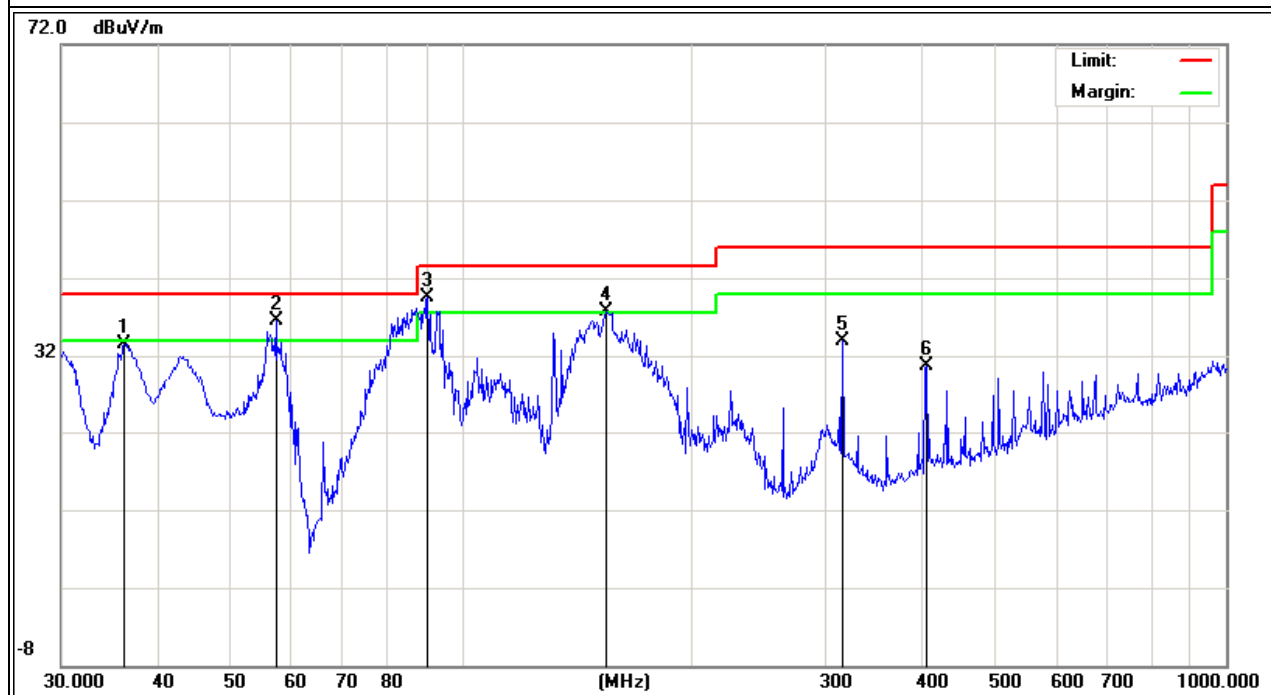
### 3.4.6 TEST RESULTS (BETWEEN 30 – 1000 MHZ)

EUT :	radio controller	Model Name :	BER-TRV2
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 6V from battery
Test Mode :	TX	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
36.2541	18.27	15.24	33.51	40.00	-6.49	QP
57.1914	30.73	5.75	36.48	40.00	-3.52	QP
90.2205	30.05	9.47	39.52	43.50	-3.98	QP
154.2786	26.25	11.50	37.75	43.50	-5.75	QP
315.4806	18.59	15.26	33.85	46.00	-12.15	QP
406.088	12.17	18.54	30.71	46.00	-15.29	QP

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

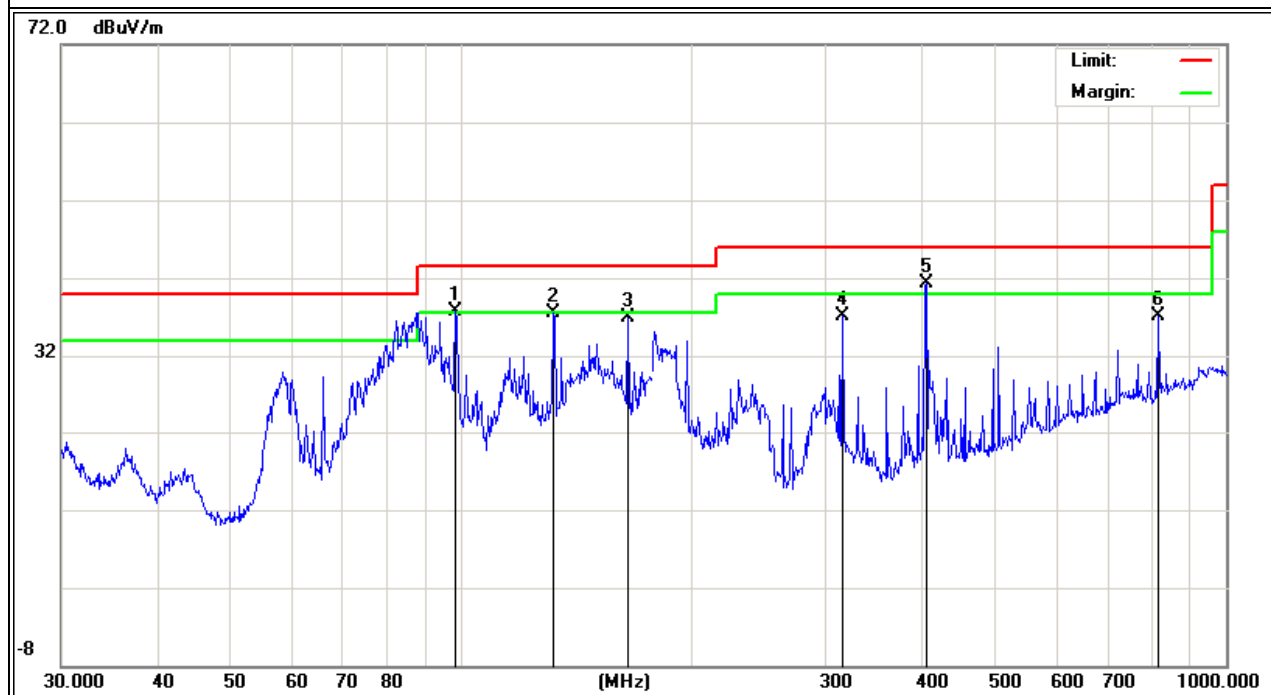


EUT :	radio controller	Model Name :	BER-TRV2
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 6V from battery
Test Mode :	TX	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
98.1419	27.40	10.40	37.8	43.50	-5.70	QP
131.7574	25.28	12.22	37.5	43.50	-6.00	QP
164.9071	26.19	10.81	37.00	43.50	-6.50	QP
315.4806	21.83	15.26	37.09	46.00	-8.91	QP
406.088	22.72	18.54	41.26	46.00	-4.74	QP
815.9678	10.66	26.46	37.12	46.00	-8.88	QP

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



### 3.4.7 TEST RESULTS (ABOVE 1000 MHZ)

EUT :	radio controller	Model Name :	BER-TRV2
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 6V from battery
Test Mode :	TX /2404MHz	Polarization :	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2404	111.06	-12.99	98.07	114.00	-15.93	peak
2404	99.13	-12.99	86.14	94.00	-7.86	AVG
4808	57.32	-3.57	53.75	74.00	-20.25	peak
4808	42.78	-3.57	39.21	54.00	-14.79	AVG
9612	53.87	1.78	55.65	74.00	-18.35	peak
9612	38.68	1.78	40.46	54.00	-13.54	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No emission detected above 18GHz.

EUT :	radio controller	Model Name :	BER-TRV2
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 6V from battery
Test Mode :	TX /2402MHz	Polarization :	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2404	109.81	-12.99	96.82	114.00	-17.18	peak
2404	99.01	-12.99	86.02	94.00	-7.98	AVG
4808	56.15	-3.59	52.56	74.00	-21.44	peak
4808	41.25	-3.59	37.66	54.00	-16.34	AVG
9612	56.44	-0.96	55.48	74.00	-18.52	peak
9612	40.79	-0.96	39.83	54.00	-14.17	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No emission detected above 18GHz.

EUT :	radio controller	Model Name :	BER-TRV2
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 6V from battery
Test Mode :	TX /2440 MHz	Polarization :	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2440	110.45	-12.93	97.52	114.00	-16.48	peak
2440	99.39	-12.93	86.46	94.00	-7.54	AVG
4880	57.71	-3.55	54.16	74.00	-19.84	peak
4880	43.88	-3.55	40.33	54.00	-13.67	AVG
7320	56.88	-0.72	56.16	74.00	-17.84	peak
7320	41.70	-0.72	40.98	54.00	-13.02	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No emission detected above 18GHz.

EUT :	radio controller	Model Name :	BER-TRV2
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 6V from battery
Test Mode :	TX /2441 MHz	Polarization :	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2440	107.21	-12.93	94.28	114.00	-19.72	peak
2440	97.27	-12.93	84.34	94.00	-9.66	AVG
4880	54.97	-3.55	51.42	74.00	-22.58	peak
4880	42.11	-3.55	38.56	54.00	-15.44	AVG
7320	54.69	-0.72	53.97	74.00	-20.03	peak
7320	40.43	-0.72	39.71	54.00	-14.29	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No emission detected above 18GHz.

EUT :	radio controller	Model Name :	BER-TRV2
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 6V from battery
Test Mode :	TX /2478 MHz	Polarization :	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2478	110.55	-12.92	97.63	114.00	-16.37	peak
2478	98.35	-12.92	85.43	94.00	-8.57	AVG
4956	56.31	-3.80	52.51	74.00	-21.49	peak
4956	42.88	-3.80	39.08	54.00	-14.92	AVG
7434	56.04	-0.68	55.36	74.00	-18.64	peak
7434	40.91	-0.68	40.23	54.00	-13.77	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No emission detected above 18GHz.

EUT :	radio controller	Model Name :	BER-TRV2
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 6V from battery
Test Mode :	TX /2480 MHz	Polarization :	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2478	108.35	-12.92	95.43	114.00	-18.57	peak
2478	96.63	-12.92	83.71	94.00	-10.29	AVG
4956	56.38	-3.80	52.58	74.00	-21.42	peak
4956	42.49	-3.80	38.69	54.00	-15.31	AVG
7434	55.84	-0.68	55.16	74.00	-18.84	peak
7434	41.49	-0.68	40.81	54.00	-13.19	AVG

Remark:

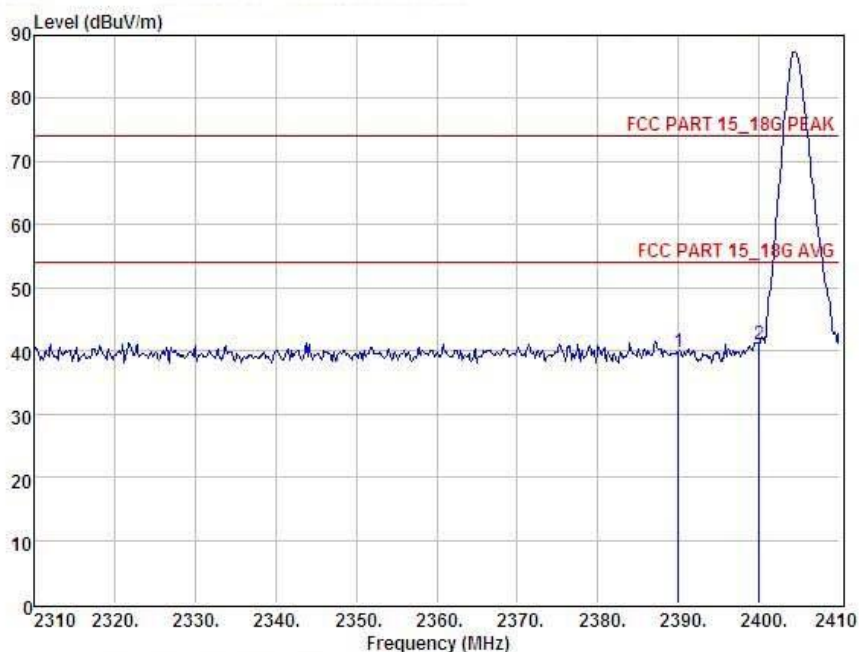
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No emission detected above 18GHz.



### 3.4.8 TEST RESULTS (RESTRICTED BANDS REQUIREMENTS)

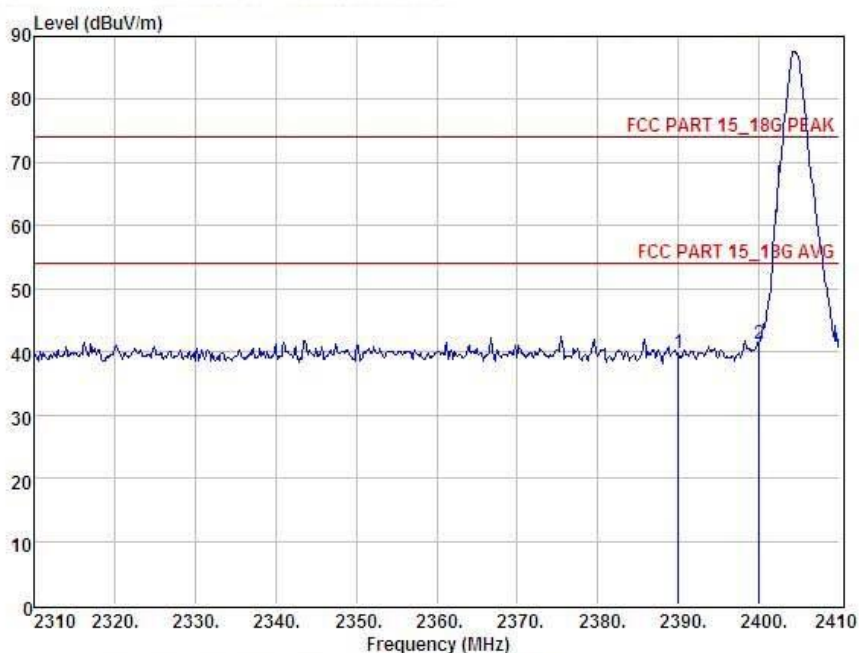
EUT :	radio controller	Model Name :	BER-TRV2
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 6V from battery
Test Mode :	TX /2404MHz	Polarization :	Vertical



Condition : FCC PART 15_18G PEAK 3m. POL: VERTICAL									
Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	2390.00	43.24	27.62	34.97	3.92	39.81	74.00	-34.19	Peak
2	2400.00	44.45	27.62	34.97	3.94	41.04	74.00	-32.96	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

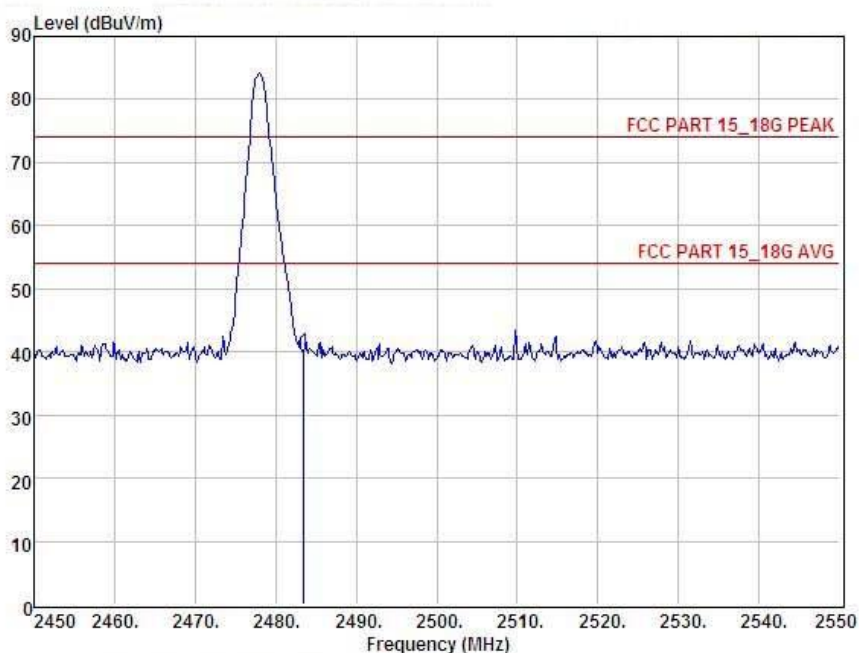
EUT :	radio controller	Model Name :	BER-TRV2
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 6V from battery
Test Mode :	TX /2404MHz	Polarization :	Horizontal



Condition : FCC PART 15_18G PEAK 3m. POL: HORIZONTAL									
Item	Freq	Read	Antenna	Preamp	Cable	Level	Limit	Margin	Remark
	MHz	dBuV	Factor	Factor	Loss	dBuV	dBuV	dBuV	
			dB	dB	dB				
1	2390.00	43.13	27.62	34.97	3.92	39.70	74.00	-34.30	Peak
2	2400.00	44.65	27.62	34.97	3.94	41.24	74.00	-32.76	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

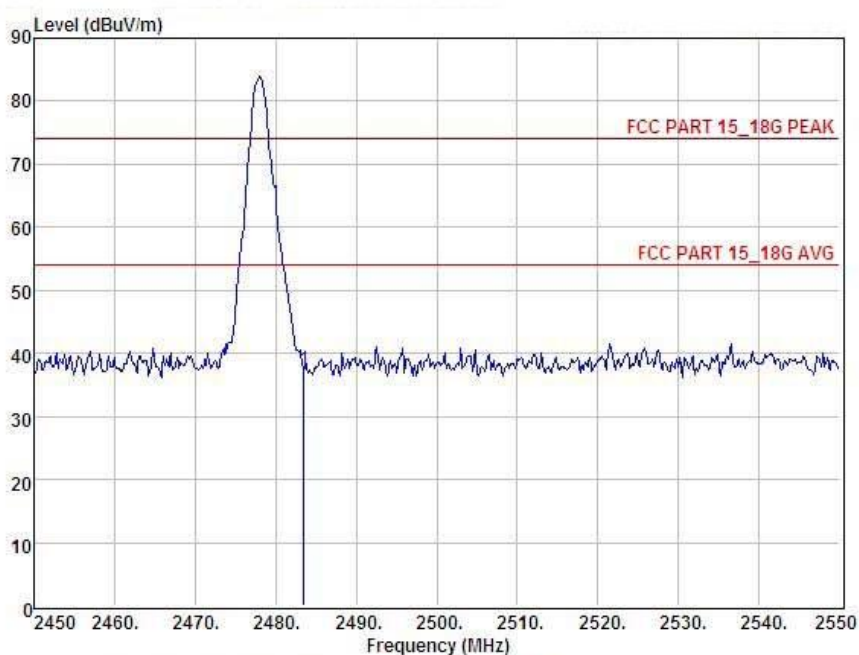
EUT :	radio controller	Model Name :	BER-TRV2
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 6V from battery
Test Mode :	TX /2478MHz	Polarization :	Vertical



Condition : FCC PART 15_18G PEAK 3m. POL: VERTICAL									
Item	Freq	Read	Antenna	Preamp	Cable	Level	Limit	Margin	Remark
	MHz	dBuV	Factor	Factor	Loss	dBuV	dBuV	dBuV	
			dB	dB	dB				
1	2483.50	43.37	27.59	34.97	4.00	39.99	74.00	-34.01	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

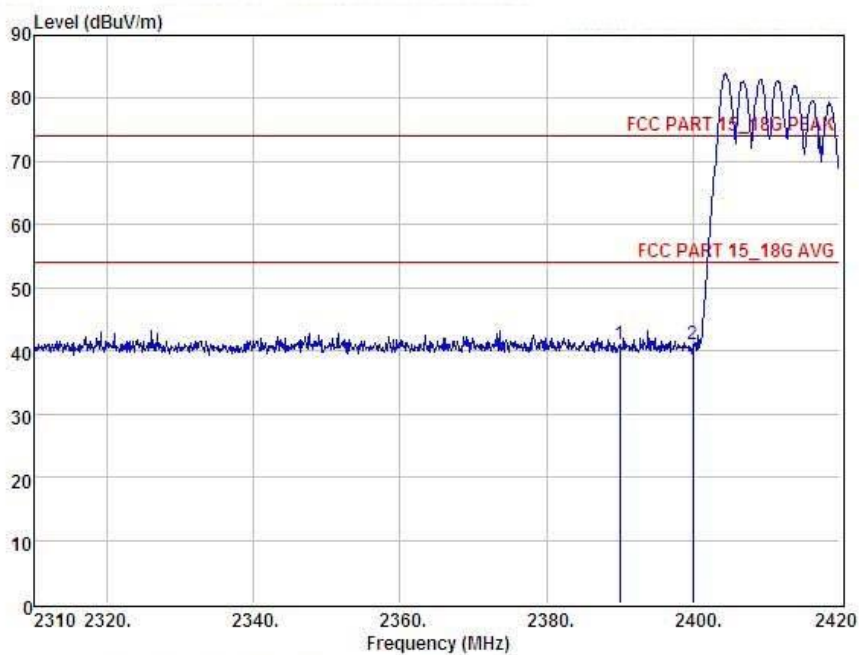
EUT :	radio controller	Model Name :	BER-TRV2
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 6V from battery
Test Mode :	TX /2478MHz	Polarization :	Horizontal



Condition : FCC PART 15_18G PEAK 3m POL: HORIZONTAL									
Item	Freq	Read	Antenna	Preamp	Cable	Level	Limit	Margin	Remark
	MHz	dBuV	Factor	Factor	Loss	dBuV	dBuV	dBuV	
			dB	dB	dB				
1	2483.50	40.66	27.59	34.97	4.00	37.28	74.00	-36.72	Peak

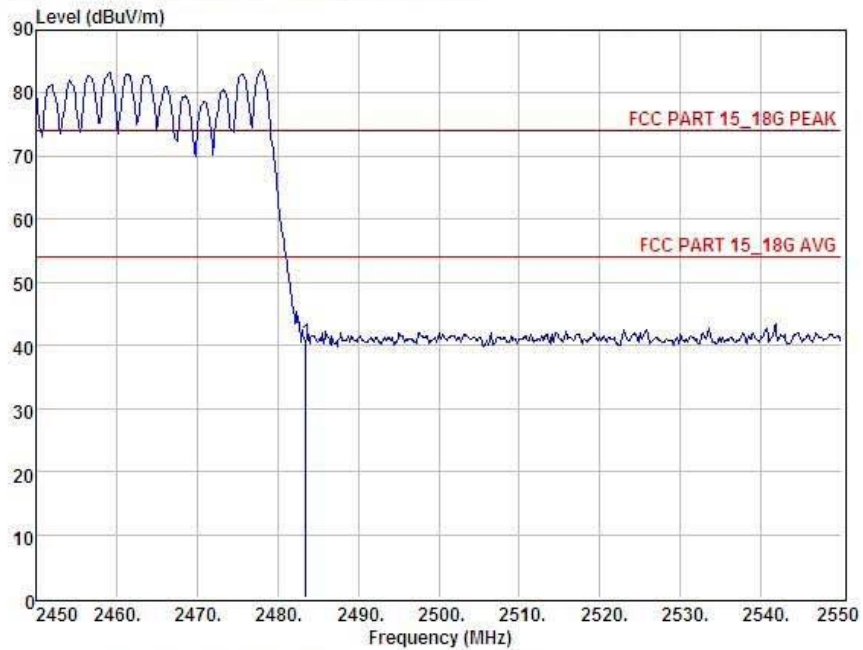
Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

EUT :	radio controller	Model Name :	BER-TRV2
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 6V from battery
Test Mode :	TX /Hopping	Polarization :	Vertical



Condition		: FCC PART 15_18G PEAK 3m.				POL: VERTICAL			
Item	Freq	Read	Antenna	Preamp	Cable	Level	Limit	Margin	Remark
	MHz	Level	Factor	Factor	Loss	dBuV	dBuV	dBuV	
		dBuV	dB	dB	dB				
1	2390.00	44.40	27.62	34.97	3.92	40.97	74.00	-33.03	Peak
2	2400.00	44.38	27.62	34.97	3.94	40.97	74.00	-33.03	Peak

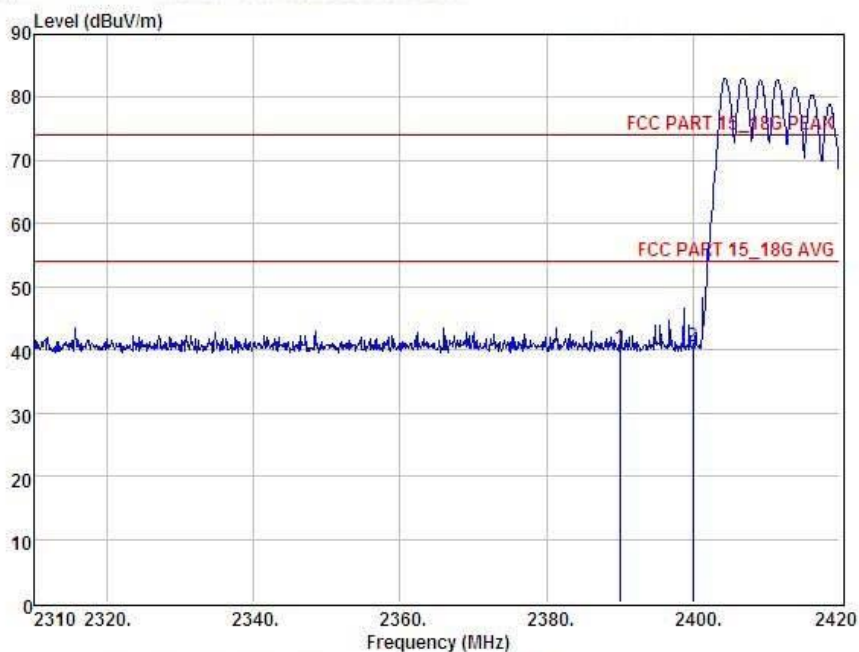
Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



Condition : FCC PART 15_18G PEAK 3m POL: VERTICAL									
Item	Freq	Read	Antenna	Preamp	Cable	Level	Limit	Margin	Remark
	MHz	Level	Factor	Factor	Loss	dBuV	dBuV	dBuV	
		dBuV	dB	dB	dB				
1	2483.50	43.99	27.59	34.97	4.00	40.61	74.00	-33.39	Peak

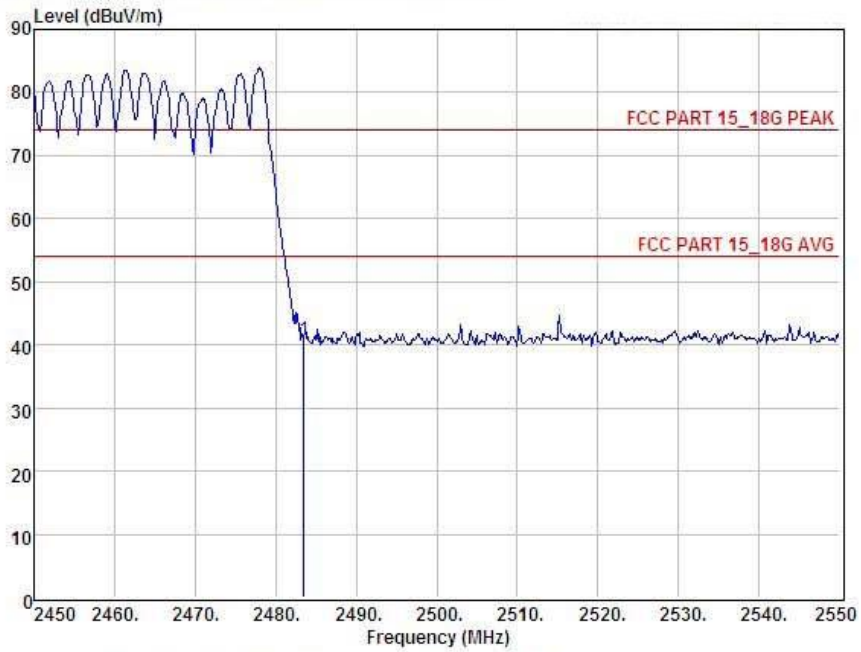
Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 6V from battery
Test Mode :	TX /Hopping	Polarization :	Horizontal



Condition : FCC PART 15_18G PEAK 3m. POL: HORIZONTAL									
Item	Freq	Read	Antenna	Preamp	Cable	Level	Limit	Margin	Remark
	MHz	Level	Factor	Factor	Loss	dBuV	dBuV	dBuV	
		dBuV	dB	dB	dB				
1	2390.00	43.77	27.62	34.97	3.92	40.34	74.00	-33.66	Peak
2	2400.00	43.98	27.62	34.97	3.94	40.57	74.00	-33.43	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



Condition : FCC PART 15_18G PEAK 3m. POL: HORIZONTAL									
Item	Freq	Read	Antenna	Preamp	Cable	Level	Limit	Margin	Remark
	MHz	Level	Factor	Factor	Loss	dBuV	dBuV	dBuV	
		dBuV	dB	dB	dB				
1	2483.50	44.26	27.59	34.97	4.00	40.88	74.00	-33.12	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



#### **4. BANDWIDTH TEST**

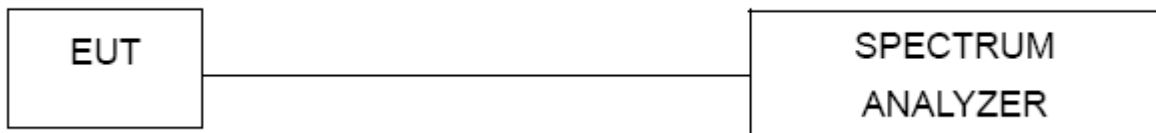
##### **4.1 TEST PROCEDURE**

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- b. Spectrum Setting : RBW= 30KHz, VBW=100KHz, Sweep time = Auto.

##### **4.2 DEVIATION FROM STANDARD**

No deviation.

##### **4.3 TEST SETUP**

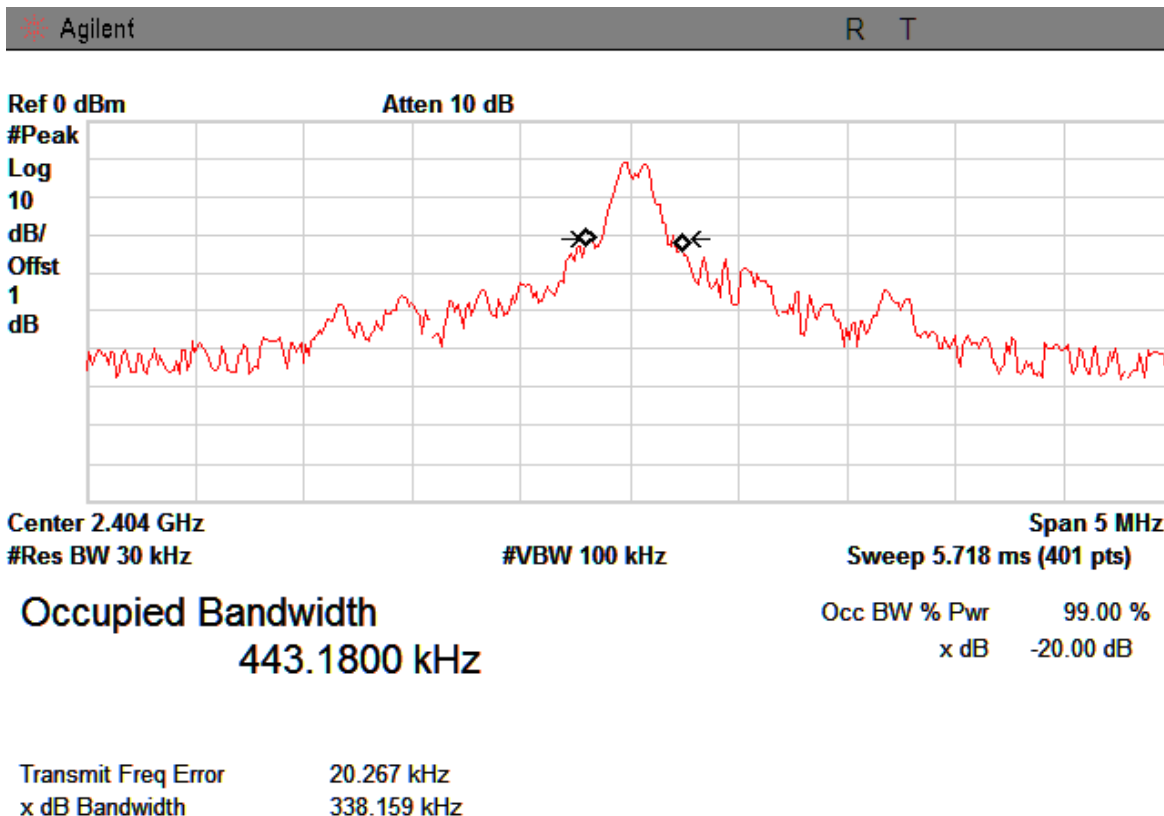


#### 4.4 TEST RESULTS

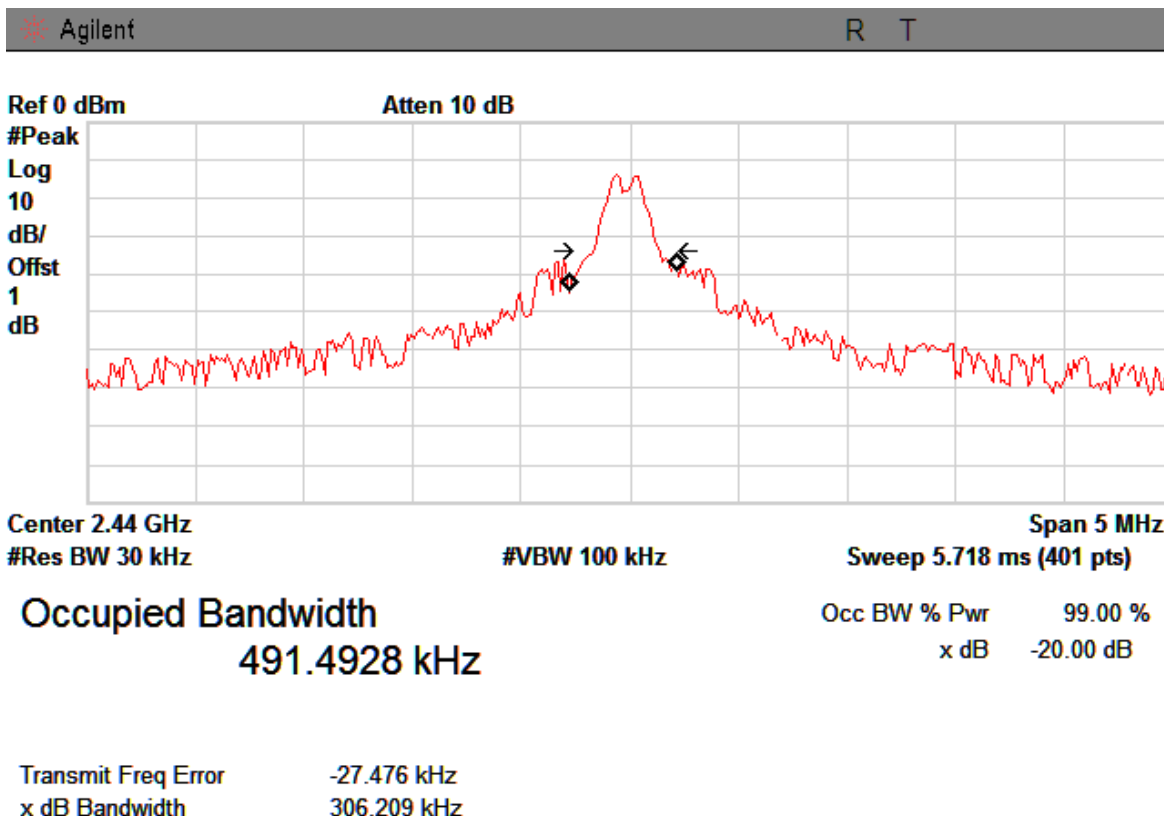
EUT :	radio controller	Model Name :	BER-TRV2
Temperature :	26 °C	Relative Humidity :	53%
Pressure :	1020 hPa	Test Power :	DC 6V from battery
Test Mode :	TX CH 1/16/32		

Test Channel	Frequency (MHz)	20 dBc Bandwidth (MHz)
CH01	2404	0.338
CH40	2440	0.306
CH79	2478	0.291

### The Lowest Channel: 2404MHz

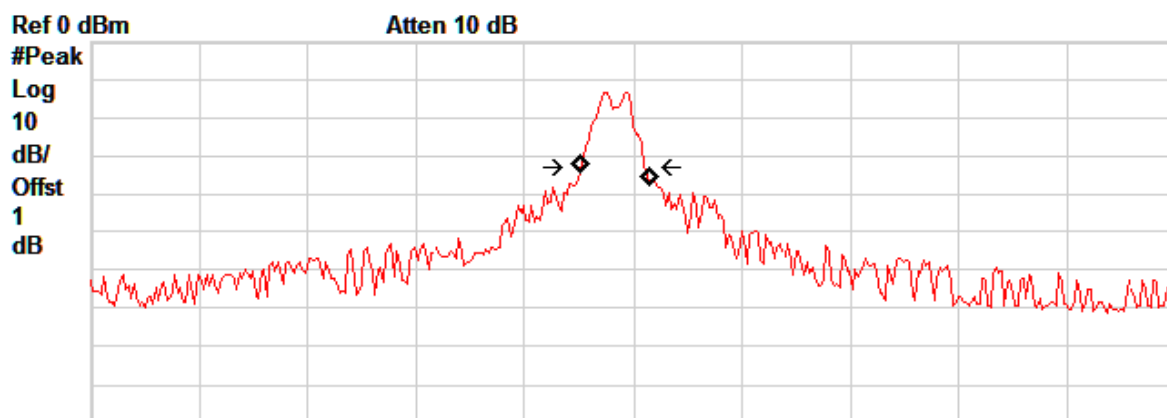


### The Middle Channel: 2440MHz



# The High Channel:2478MHz

Agilent R T



Center 2.478 GHz

#Res BW 30 kHz

#VBW 100 kHz

Span 5 MHz

Sweep 5.718 ms (401 pts)

Occupied Bandwidth

314.1678 kHz

Occ BW % Pwr 99.00 %  
x dB -20.00 dB

Transmit Freq Error -81.941 kHz  
x dB Bandwidth 291.097 kHz



## 5. EUT TEST PHOTO

**Radiated Measurement Photos(worst case position)**

