

TEST REPORT FOR FCC  
Class II PERMISSIVE CHANGE  
On Behalf of  
Amtran Technology Co., Ltd.  
Bluetooth Embedded Module  
Total Model No.: BCM92046MD\_EMB  
FCC ID: MDZSV422XVT-BT

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File Number : EM981525BR1  
Report Number : EM-F980641  
Date of Test : Aug. 03 ~ 28, 2009  
Date of Report : Sep. 01, 2009

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## TEST REPORT CERTIFICATION (Class II Permissive Change)

Applicant : Amtran Technology Co., Ltd.  
 EUT Description : Bluetooth Embedded Module  
 FCC ID : MDZSV422XVT-BT  
 (A) MODEL NO. : BCM92046MD\_EMB  
 (B) SERIAL NO. : N/A  
 (C) POWER SUPPLY : DC 5V  
 (D) TEST VOLTAGE : AC 120V, 60Hz (Via Notebook PC)

Measurement Procedure Used:

FCC RULES AND REGULATIONS PART 15 SUBPART C, July. 2008  
 AND ANSI C63.4/2003

(FCC CFR 47 Part 15C, §15.205, §15.207, §15.209 and §15.247)

The device described above was tested by AUDIX Technology Corporation to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15 subpart C limits.

The measurement results are contained in this test report and AUDIX Technology Corporation is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the FCC official limits.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX Technology Corporation.

**This report is based on report of EM-F980571.**

Date of Test: Aug. 03 ~ 28, 2009

Date of Report: Sep. 01, 2009

Date of Test of Original: Aug. 03 ~ 05, 2009

Date of Original: Aug. 13, 2009

Producer:   
 (Nita Lee/Administrator)

Review:   
 (Ben Cheng/Manager)

Signatory:   
 (Leon Liu/Deputy General Manager)

## 1. DESCRIPTION OF VERSION

Edition No.	Date of Rev.	Summary	Report No.
Rev. 0	Aug. 13, 2009	Original Report.	EM-F980571
Rev. 1	Sep. 01, 2009	<p>1. There is no hardware or electrical modification made to the applying modular transmitter itself. The changes filed under this application are adding LCD TV Model VIZIO VF552XVT collocated with Bluetooth Embedded Module, FCC ID: MDZSV422XVT-BT.</p> <p>2. Supplementary test data are recorded in test report.</p>	EM-F980641

## 2. GENERAL INFORMATION

### 2.1. Description of Device (EUT)

Description	:	Bluetooth Embedded Module
Model Number	:	BCM92046MD_EMB
FCC ID	:	MDZSV422XVT-BT
Applicant	:	Amtran Technology Co., Ltd. 17F, No.268, Lien Chen Rd., Chung Ho City, Taipei County, Taiwan, 235 R.O.C.
Fundamental Range	:	2400MHz ~ 2483.5MHz
Channel Number	:	79
Radio Technology	:	FHSS Modulation
Antenna Gain	:	1.87dBi
Date of Receipt of Sample	:	Jul. 31, 2009
Date of Test	:	Aug. 03 ~ 28, 2009

#### **Information for Class II Permissive Change:**

1. This EUT is additional version with original FCC ID MDZSV422XVT-BT.
2. There is no hardware or electrical modification made to the applying modular transmitter itself. The changes filed under this application are adding LCD TV Model VIZIO VF552XVT collocated with Bluetooth Embedded Module, FCC ID: MDZSV422XVT-BT.
3. This report is based on report of EM-F980571.

## 2.2. Tested Supporting System Details

### 2.2.1. LCD TV (HOST)

Model Number : VIZIO VF552XVT  
 Serial Number : N/A  
 BSMI ID : R31421  
 FCC ID : FCC By DoC  
 Manufacturer : VIZIO  
 Power Cord : Non-Shielded, Detachable, 1.8m

### 2.2.2. NOTEBOOK PC

Model Number : PP2130  
 Serial Number : 5Y32KSQZ40ME  
 BSMI ID : 3912A556  
 FCC ID : FCC By DoC  
 Manufacturer : LG (Brand Compaq)  
 Power Adapter : COMPAQ, M/N PA-1650-02C  
 DC Power Cord: Shielded, Undetachable, 1.8m  
                   Bonded a ferrite core  
 AC Power Cord: Non-Shielded, Undetachable, 1.8m

## 2.3. Description of Test Facility

Name of Firm : **AUDIX Technology Corporation**  
                   **EMC Department**  
                   No. 53-11, Tin-Fu Tsun, Lin-Kou Hsiang,  
                   Taipei County, Taiwan, R.O.C.

Test Site : **Semi-Anechoic Chamber**  
                   No. 53-11, Tin-Fu Tsun, Lin-Kou Hsiang,  
                   Taipei Hsien, Taiwan  
                   May 14, 2009 Renewal on  
                   Federal Communication Commission  
                   Registration Number: 90993

NVLAP Lab. Code : 200077-0  
 (NVLAP is a NATA accredited body under Mutual Recognition Agreement)

TAF Accreditation No : 1724

2.4. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty (dB)
Radiation Test (Distance: 3m)	30MHz~300MHz	±2.91dB
	300MHz~1000MHz	±2.94dB
	Above 1GHz	± 5.02dB

Remark : Uncertainty =  $ku_c(y)$

Test Item	Uncertainty
20dB Bandwidth	± 0.2kHz
Carrier Frequency Separation	± 0.2kHz
Time Of Occupancy	± 0.03sec
Maximum peak Output power	± 0.52dBm
Emission Limitations	± 0.13dB
Band Edges	± 0.13dB

### **3. CONDUCTED EMISSION MEASUREMENT**

**【The EUT only employs DC power for operation, no conductive emission limits are required according to FCC Part 15 Section §15.207】**



## 4. RADIATED EMISSION MEASUREMENT

### 4.1. Test Equipment

The following test equipment was used during the radiated emission measurement:

#### 4.1.1. For Frequency 30MHz~1000MHz (at Semi-Anechoic Chamber)

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	HP	8564EC	3946A00249	Oct. 24, 08'	Oct. 23, 09'
2.	Test Receiver	R & S	ESCS30	100265	Jul. 28, 09'	Jul. 27, 10'
3.	Amplifier	HP	8447D	2944A06305	Feb. 04, 09'	Feb. 03, 10'
4.	Log Periodic Antenna	Schwarzbeck	UHALP 9108-A	0810	Mar. 20, 09'	Mar. 19, 10'
5.	Biconical Antenna	CHASE	VBA6106A	1264	Mar. 20, 09'	Mar. 19, 10'

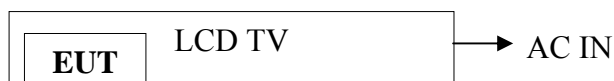
#### 4.1.2. For Frequency Above 1GHz (at Semi-Anechoic Chamber)

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	HP	8564EC	3946A00249	Oct. 24, 08'	Oct. 23, 09'
2.	Amplifier	HP	8449B	3008A01284	Jun. 17, 09'	Jun. 16, 10'
3.	Horn Antenna	EMCO	3115	9112-3775	May 15, 09'	May 14, 10'
4.	Horn Antenna	EMCO	3116	2653	Oct. 03, 08'	Oct. 02, 09'

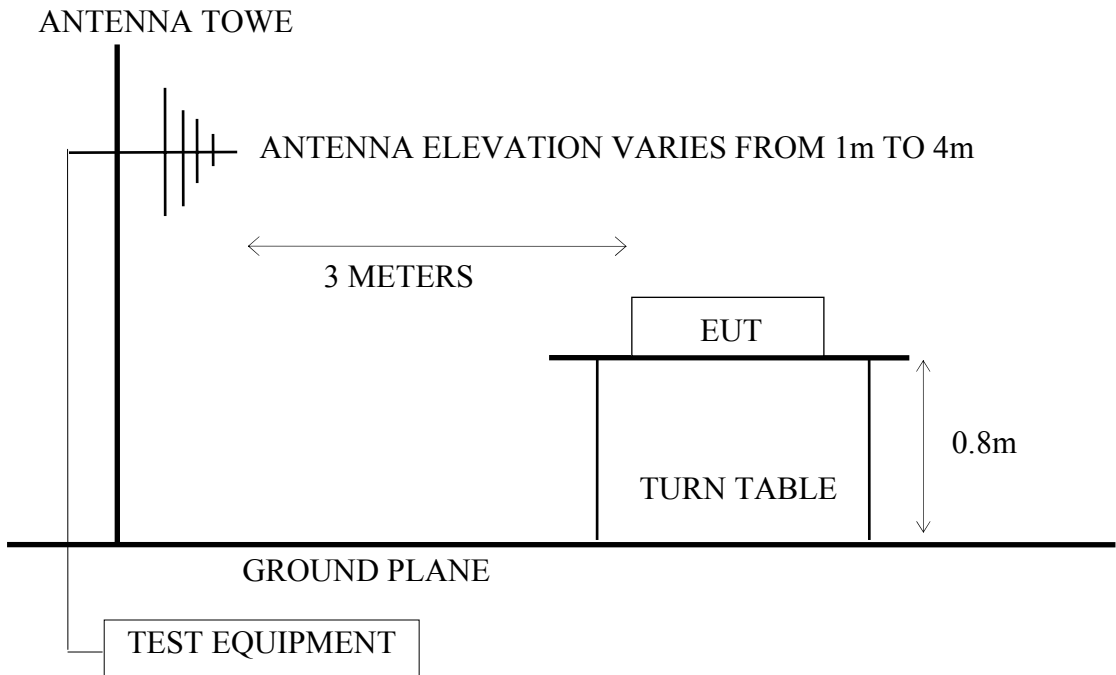
### 4.2. Test Setup

#### 4.2.1. Block Diagram of connection between EUT and simulators

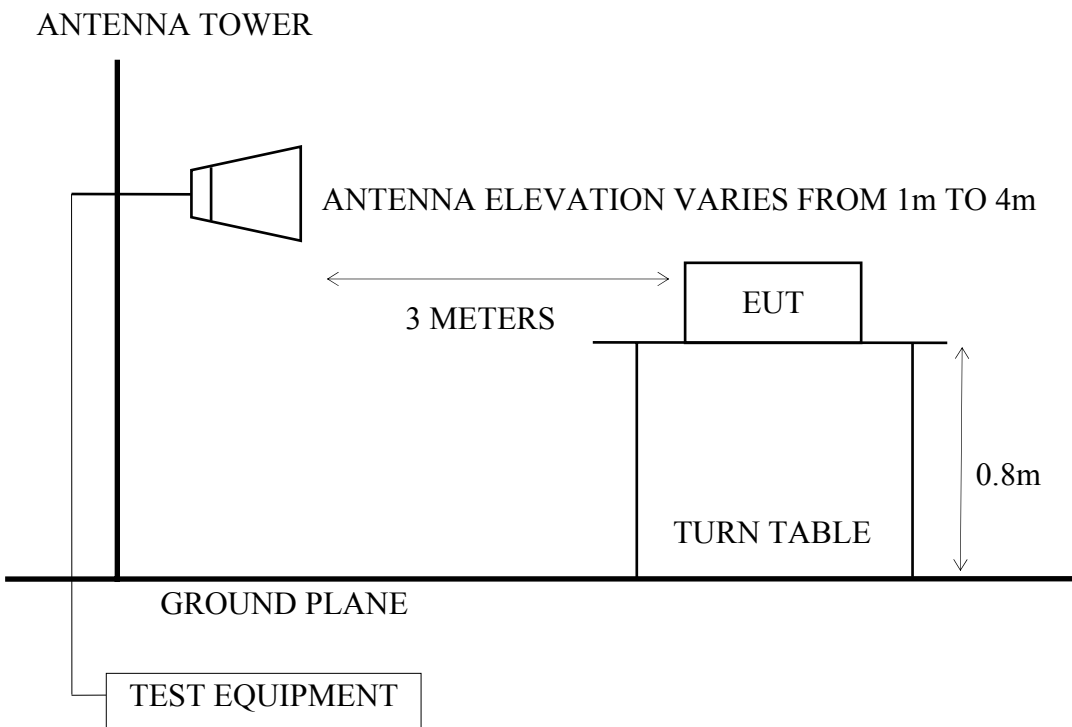
**EUT: Bluetooth Embedded Module**



4.2.2. Semi-Anechoic Chamber (3m) Setup Diagram for 30-1000MHz



4.2.3. Semi-Anechoic Chamber (3m) Setup Diagram for above 1GHz



### 4.3. Radiated Emission Limits (§15.209)

Frequency MHz	Distance Meters	Field Strengths Limits	
		$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0
Above 1000	3	74.0 $\text{dB}\mu\text{V/m}$ (Peak) 54.0 $\text{dB}\mu\text{V/m}$ (Average)	

- Remark :
- (1) Emission level ( $\text{dB}\mu\text{V/m}$ ) = 20 log Emission level ( $\mu\text{V/m}$ )
  - (2) The tighter limit applies at the edge between two frequency bands.
  - (3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
  - (4) The limits in this table are based on CFR 47 Part 15.205(a)(b) and Part 15.209 (a).
  - (5) The over 1GHz limit, FCC limit is used based on CFR 47 Part 15.35 (b) and Part 15.205(b) & Part 15.209(e) and Part 15.207(c).

### 4.4. Operating Condition of EUT

- 4.4.1. Set up the EUT (Bluetooth Embedded Module) and simulator as shown on 3.2.1.
- 4.4.2. To turn on the power of all equipment.
- 4.4.3. The EUT was set to continuously transmit signals at 2402MHz, 2441MHz and 2480MHz during testing.
- 4.4.4. The EUT was set to continuously receive signals at 2441MHz during testing.

### 4.5. Test Procedure

The EUT and its simulators were placed on a turn table which was 0.8 meter above the ground. The turn table rotated 360 degrees to determine the position of the maximum emission level. EUT was set to 3 meters away from the receiving antenna which was mounted on an antenna tower. The antenna moved up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna such as calibrated biconical and log-periodical antennas or horn antenna were used as a receiving antenna. Both horizontal and vertical polarization of the antenna were set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to FCC ANSI C63.4-2003 regulation.

The bandwidth of the R&S Test Receiver ESCS30 was set at 120kHz. (For 30MHz to 1000MHz)

The resolution bandwidth and video bandwidth of test spectrum analyzer is 1MHz for peak detection (PK) at frequency above 1GHz.

The resolution bandwidth of test spectrum analyzer is 1MHz and the video bandwidth is 3kHz for average detection (AV) at frequency above 1GHz.

The frequency range from 30MHz to 25GHz (Up to 10<sup>th</sup> harmonics from fundamental frequency) was checked.

4.6. Radiated Emission Measurement Results

**PASSED.** All the emissions not reported below are too low against the official limits.

EUT : Bluetooth Embedded Module      M/N : BCM92046MD\_EMB

Test Date : Aug. 27, 2009    Temperature : 28      Humidity : 58 %

**For Frequency Range 30MHz~1000MHz:**

[Note: Three types of modulation (GFSK and 8-DPSK and  $\pi/4$ -DQPSK) were evaluated but only the worst case (GFSK) was reported in section 4.6.1 & 4.6.2]

The EUT (Bluetooth Embedded Module) with following test modes was performed during this section testing and all the test results are listed in section 4.6.1.

Mode	Host (LCD TV)	Test Mode and Frequency		Reference Test Data No.	
				Horizontal	Vertical
1.	VIZIO VF552XVT	Transmitting	2402MHz (CH0)	# 8	# 7
2.			2441MHz (CH39)	# 9	# 10
3.			2480MHz (CH78)	# 10	# 9
4.		Receiving	2441MHz (CH39)	# 1	# 2

Remark 1 : Type of modulation: GFSK.

Remark 2 : All above final readings were measured with Quasi-Peak detector.

**For Frequency above 1GHz:**

The EUT (Bluetooth Embedded Module) with following test modes was performed during this section testing and all the test results are listed in section 4.6.2.

Mode	Host (LCD TV)	Test Mode and Frequency		Test Frequency Range
1.	VIZIO VF552XVT	Transmitting	2402MHz (CH0)	1000-2680MHz
2.				2680-5500MHz
3.				5500-18000MHz
4.				18000-25000MHz
5.		Transmitting	2441MHz (CH39)	1000-2680MHz
6.				2680-5500MHz
7.				5500-18000MHz
8.				18000-25000MHz
9.		Transmitting	2480MHz (CH78)	1000-2680MHz
10.				2680-5500MHz
11.				5500-18000MHz
12.				18000-25000MHz
13.		Receiving	2441MHz (CH39)	1000-2680MHz
14.				2680-5500MHz
15.				5500-18000MHz
16.				18000-25000MHz

Remark 1 : The emissions level were too low against the official limit and not report.

Remark 2 : The average measurement of frequency range from 1000MHz to 25000MHz is measured at 1m distance and doesn't find any spurious emission in this frequency range. So just provide the peak measurement results.

Remark 3 : Type of modulation: GFSK.

**For Restricted Bands:**

The EUT (Bluetooth Embedded Module) with following test modes was tested in restricted bands and all the test results are listed in section 4.6.3. (The restricted bands defined in part 15.205(a))

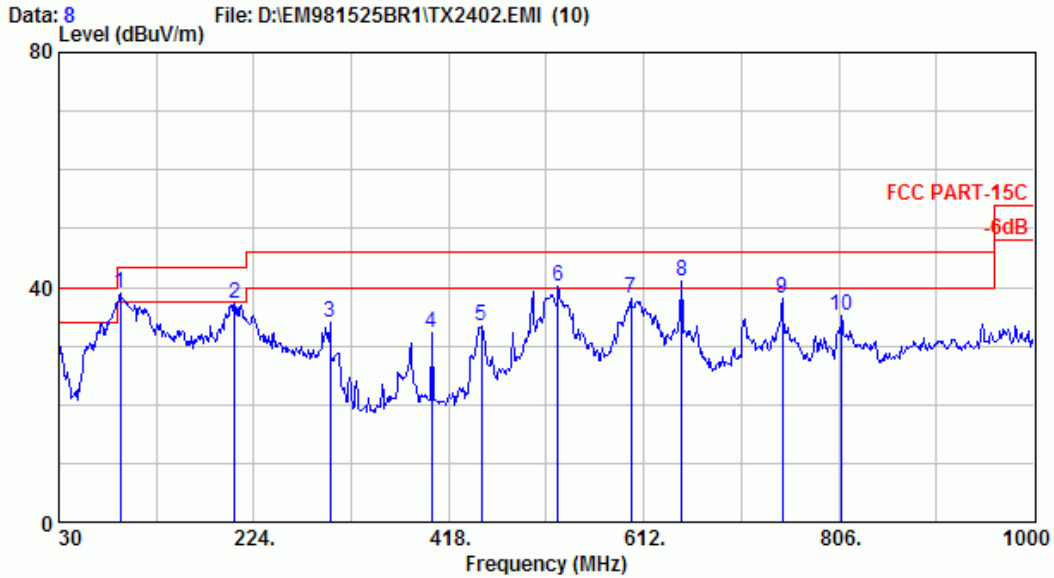
Mode	Host (LCD TV)	Type of Modulation	Test Mode and Frequency		Reference Test Data No.	
					Horizontal	Vertical
1.	VIZIO VF552XVT	GFSK	Transmitting	2402MHz (CH0)	# 2, # 3	# 1 , # 4
2.				2480MHz (CH78)	# 8, # 5	# 7, # 6
3.		8-DPSK	Transmitting	2402MHz (CH0)	# 2, # 3	# 1 , # 4
4.				2480MHz (CH78)	# 7, # 6	# 8, # 5

[Note: Two types of modulation (GFSK and 8-DPSK) were reported in section 4.6.3]

**4.6.1. 30MHz~ 1000MHz Frequency Range Measurement Result**  
**Host (LCD TV): VIZIO VF552XVT**



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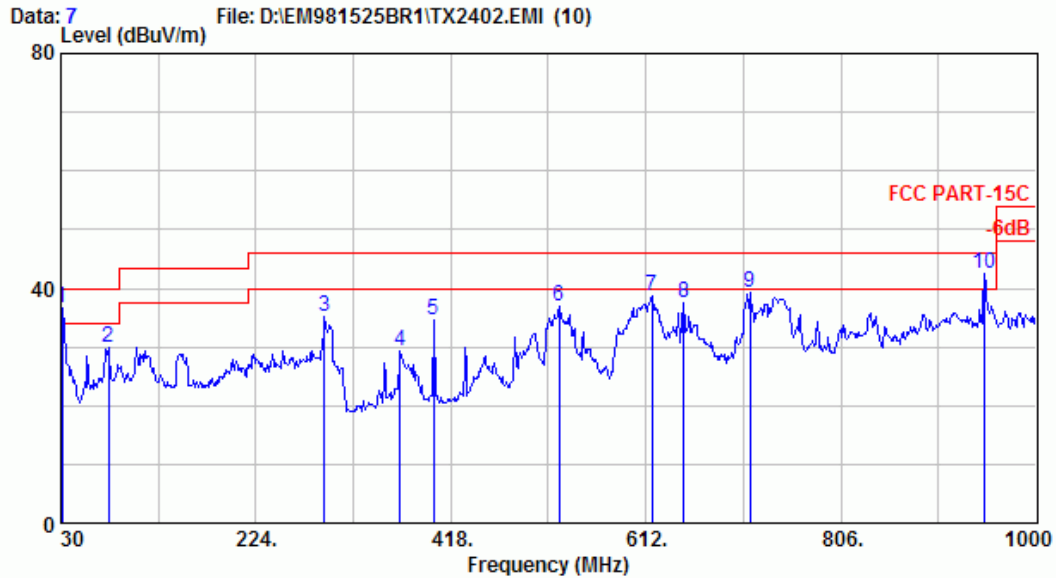
Site no. : site Data no. : 8  
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL  
 Limit : FCC PART-15C  
 Env. / Ins. : 8564EC 28\*C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2402MHz

	Ant. Factor	Cable Loss	Emission Reading	Emission Level	Limits	Margin	Remark
Freq. (MHz)	(dB/m)	(dB)	(dBμV)	(dBμV/m)	(dBμV/m)	(dB)	
1	15.90	2.00	21.14	39.04	43.50	4.46	
2	21.97	3.10	12.02	37.08	43.50	6.42	
3	26.77	3.90	3.42	34.09	46.00	11.91	
4	17.66	4.80	9.65	32.11	46.00	13.89	
5	17.65	5.40	10.37	33.42	46.00	12.58	
6	19.67	6.90	13.55	40.12	46.00	5.88	
7	21.30	6.30	10.43	38.03	46.00	7.97	
8	21.50	6.30	13.34	41.14	46.00	4.86	
9	23.25	6.70	8.09	38.04	46.00	7.96	
10	24.13	7.00	3.97	35.10	46.00	10.90	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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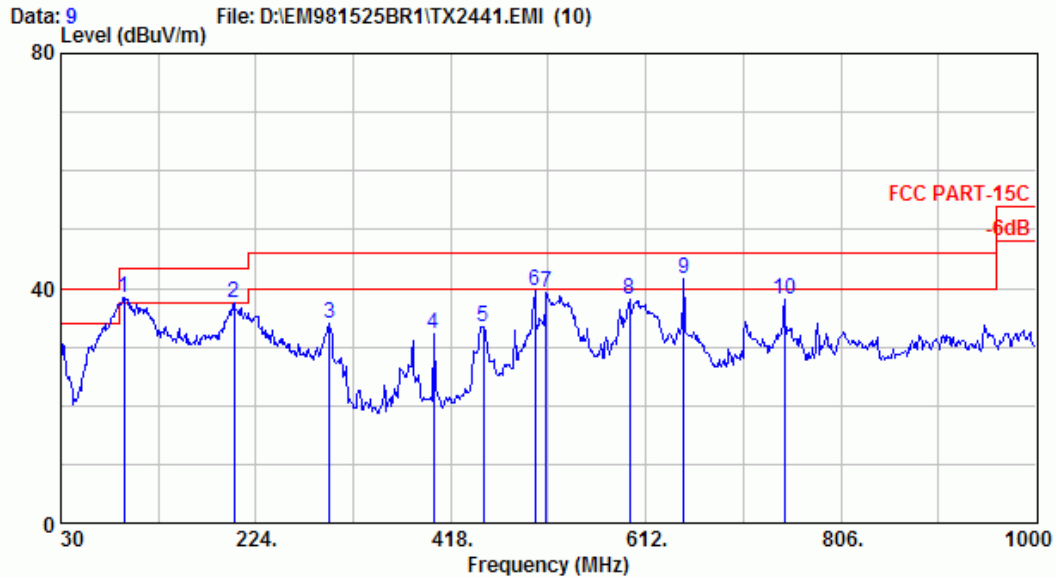
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 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL  
 Limit : FCC PART-15C  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2402MHz

	Freq.	Ant.	Cable	Emission			Margin	Remark
	(MHz)	Factor	Loss	Reading	Level	Limits	(dB)	
		(dB/m)	(dB)	(dBµV)	(dBµV/m)	(dBµV/m)		
1	30.970	24.81	1.10	10.67	36.58	40.00	3.42	
2	77.530	13.22	1.80	14.90	29.92	40.00	10.08	
3	291.900	26.17	3.90	5.02	35.09	46.00	10.91	
4	367.560	16.83	4.46	7.96	29.25	46.00	16.75	
5	400.540	17.66	4.80	12.24	34.70	46.00	11.30	
6	525.670	19.66	6.90	10.26	36.82	46.00	9.18	
7	617.820	21.32	6.30	11.21	38.83	46.00	7.17	
8	649.830	21.50	6.30	9.66	37.46	46.00	8.54	
9	715.790	22.74	6.55	10.06	39.35	46.00	6.65	
10	948.590	25.88	7.50	9.12	42.50	46.00	3.50	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Site no. : site Data no. : 9  
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL  
 Limit : FCC PART-15C  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2441MHz

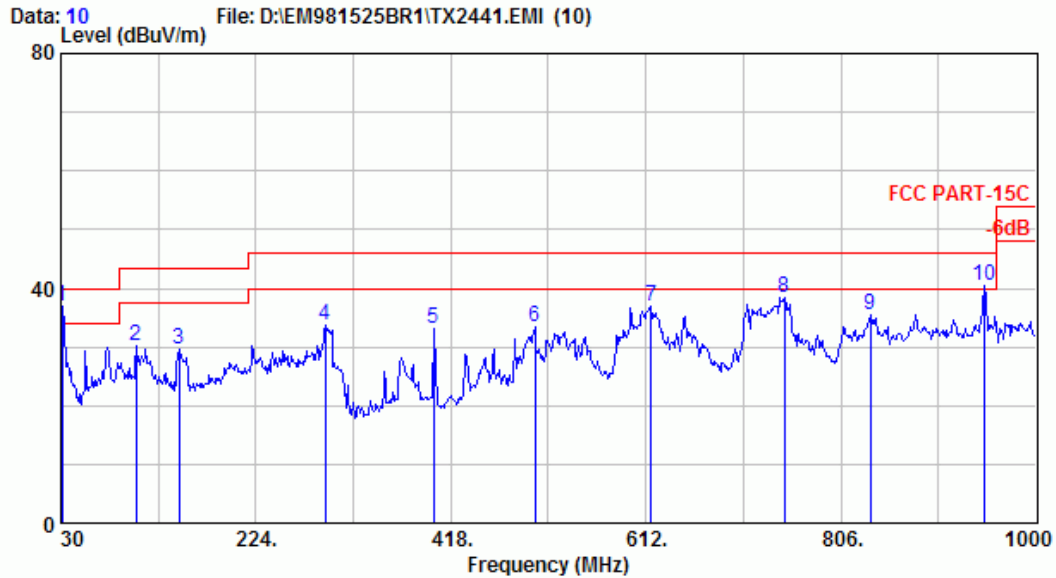
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	93.050	16.25	2.00	20.12	38.37	43.50	5.13	
2	202.660	22.04	3.10	12.28	37.42	43.50	6.08	
3	297.720	26.68	3.98	3.40	34.06	46.00	11.94	
4	400.540	17.66	4.80	9.88	32.34	46.00	13.66	
5	450.010	17.65	5.40	10.44	33.49	46.00	12.51	
6	501.420	18.95	6.52	13.98	39.45	46.00	6.55	
7	513.060	19.95	6.80	12.41	39.15	46.00	6.85	
8	595.510	20.94	6.27	10.91	38.12	46.00	7.88	
9	649.830	21.50	6.30	13.80	41.60	46.00	4.40	
10	749.740	23.25	6.70	8.14	38.09	46.00	7.91	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.





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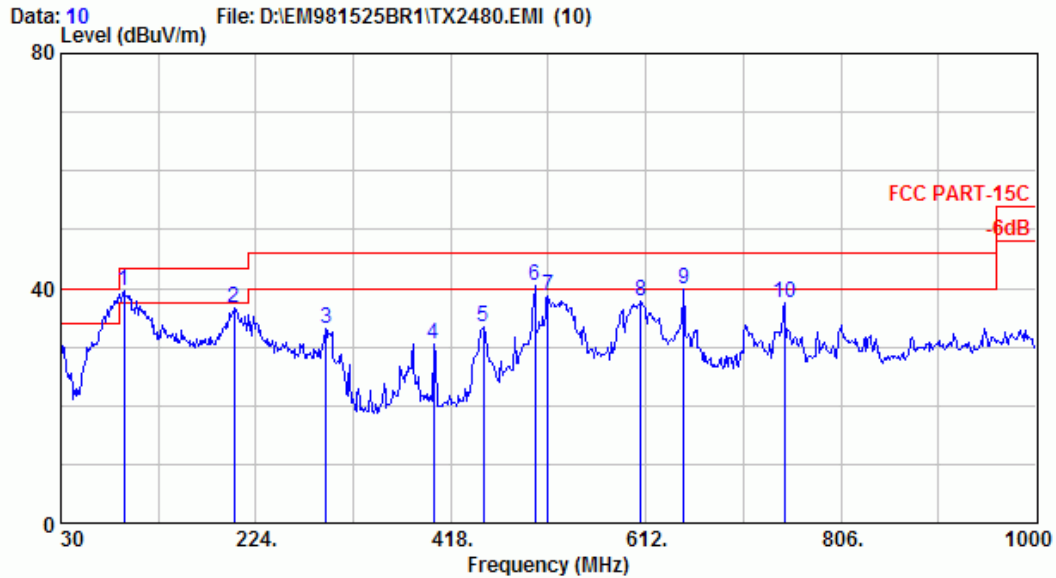
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 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL  
 Limit : FCC PART-15C  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2441MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	30.970	24.81	1.10	11.01	36.92	40.00	3.08	
2	104.690	17.58	2.15	10.31	30.04	43.50	13.46	
3	147.370	20.53	2.58	6.40	29.51	43.50	13.99	
4	292.870	26.24	3.90	3.42	33.56	46.00	12.44	
5	400.540	17.66	4.80	10.68	33.14	46.00	12.86	
6	501.420	18.95	6.52	8.07	33.54	46.00	12.46	
7	616.850	21.31	6.30	9.26	36.87	46.00	9.13	
8	749.740	23.25	6.70	8.46	38.41	46.00	7.59	
9	835.100	24.90	7.10	3.52	35.52	46.00	10.48	
10	948.590	25.88	7.50	7.20	40.58	46.00	5.42	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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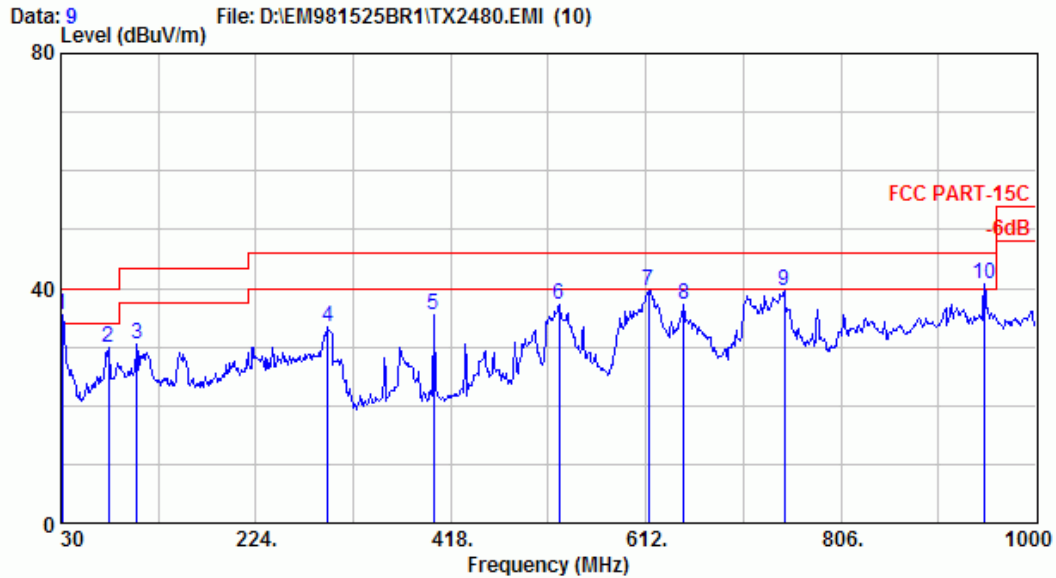
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 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL  
 Limit : FCC PART-15C  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	93.050	16.25	2.00	21.38	39.63	43.50	3.87	
2	202.660	22.04	3.10	11.42	36.57	43.50	6.93	
3	293.840	26.33	3.96	2.71	33.00	46.00	13.00	
4	400.540	17.66	4.80	8.14	30.60	46.00	15.40	
5	450.010	17.65	5.40	10.44	33.49	46.00	12.51	
6	501.420	18.95	6.52	14.84	40.31	46.00	5.69	
7	515.000	19.97	6.80	11.93	38.70	46.00	7.30	
8	607.150	21.49	6.20	9.99	37.68	46.00	8.32	
9	649.830	21.50	6.30	12.15	39.95	46.00	6.05	
10	749.740	23.25	6.70	7.68	37.63	46.00	8.37	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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 Email:ttmc@ttmc.com.tw



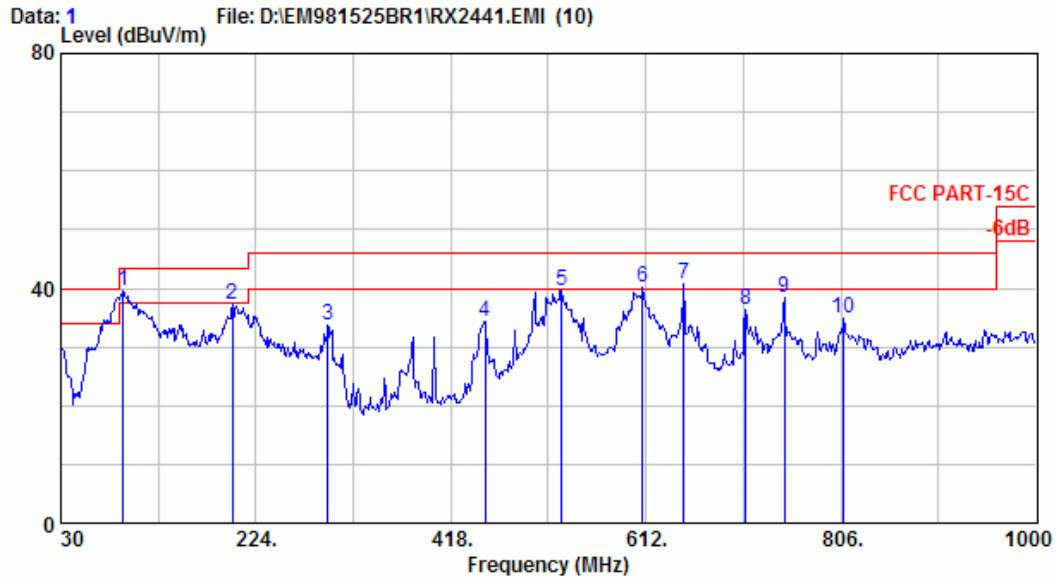
Site no. : site Data no. : 9  
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL  
 Limit : FCC PART-15C  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	30.970	24.81	1.10	9.49	35.40	40.00	4.60	
2	77.530	13.22	1.80	14.90	29.92	40.00	10.08	
3	105.660	17.65	2.20	10.59	30.44	43.50	13.06	
4	295.780	26.48	4.00	2.82	33.29	46.00	12.71	
5	400.540	17.66	4.80	13.06	35.52	46.00	10.48	
6	525.670	19.66	6.90	10.58	37.14	46.00	8.86	
7	614.910	21.33	6.30	11.92	39.55	46.00	6.45	
8	649.830	21.50	6.30	9.32	37.12	46.00	8.88	
9	749.740	23.25	6.70	9.62	39.57	46.00	6.43	
10	948.590	25.88	7.50	7.37	40.75	46.00	5.25	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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 Email:ttmc@ttmc.com.tw



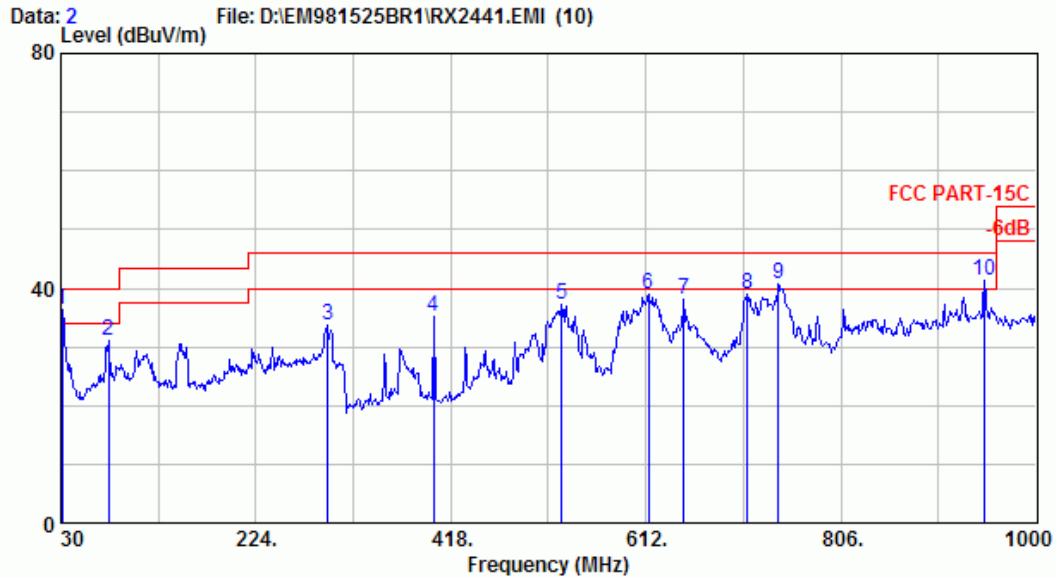
Site no. : site Data no. : 1  
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL  
 Limit : FCC PART-15C  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : RX2441MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	92.080	16.08	2.00	21.46	39.53	43.50	3.97	
2	200.720	22.08	3.00	12.20	37.27	43.50	6.23	
3	295.780	26.48	4.00	3.13	33.60	46.00	12.40	
4	451.950	17.65	5.40	11.33	34.38	46.00	11.62	
5	528.580	19.69	6.90	13.10	39.69	46.00	6.31	
6	609.090	21.45	6.20	12.62	40.27	46.00	5.73	
7	649.830	21.50	6.30	12.99	40.79	46.00	5.21	
8	710.940	23.54	6.51	6.22	36.26	46.00	9.74	
9	749.740	23.25	6.70	8.53	38.48	46.00	7.52	
10	808.910	24.13	7.00	3.60	34.73	46.00	11.27	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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 Email:ttemc@ttemc.com.tw



Site no. : site Data no. : 2  
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL  
 Limit : FCC PART-15C  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : RX2441MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	30.970	24.81	1.10	10.41	36.32	40.00	3.68	
2	77.530	13.22	1.80	16.04	31.06	40.00	8.94	
3	295.780	26.48	4.00	3.36	33.84	46.00	12.16	
4	400.540	17.66	4.80	12.57	35.03	46.00	10.97	
5	528.580	19.69	6.90	10.59	37.18	46.00	8.82	
6	614.910	21.33	6.30	11.35	38.98	46.00	7.02	
7	649.830	21.50	6.30	10.43	38.23	46.00	7.77	
8	712.880	23.30	6.53	9.13	38.96	46.00	7.04	
9	743.920	22.66	6.70	11.39	40.75	46.00	5.25	
10	948.590	25.88	7.50	7.92	41.30	46.00	4.70	

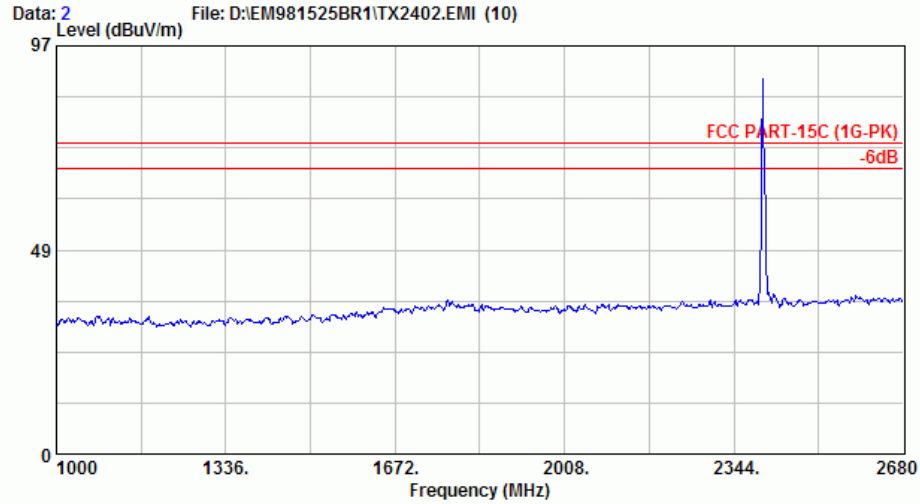
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.

### 4.6.2. Above 1GHz Frequency Range Measurement Results

Test Mode: Transmitting Mode, Frequency: 2402MHz (CH0) with Host (LCD TV): VIZIO VF522XVT



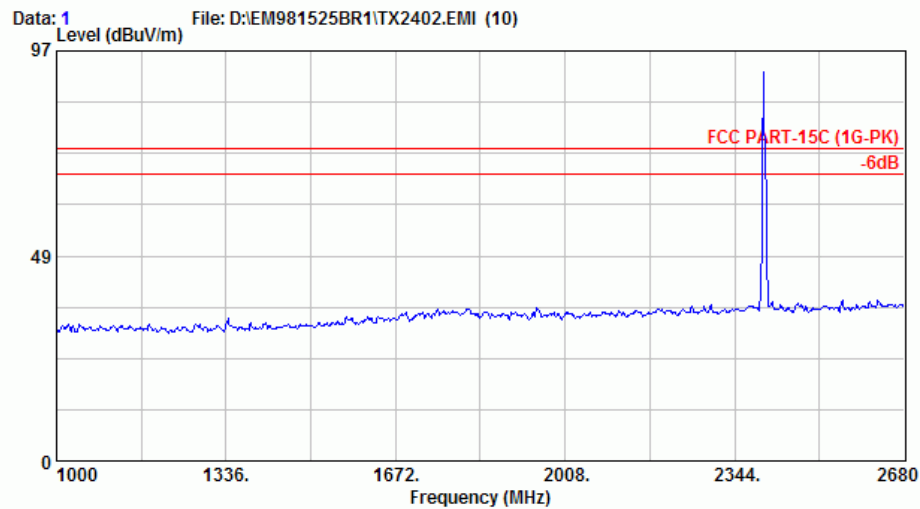
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 County, Taiwan R.O.C. Post Code:24443  
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 Email:ttemc@ttemc.com.tw



Site no. : site	Data no. : 2
Dis. / Ant. : 3m 3115	Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-PK)	
Env. / Ins. : 8564EC 28*C/58%	Engineer : Jarwei Wang
EUT : Bluetooth Embedded Module	
Power Rating : 120Vac/60Hz M/N:BCM92046MD_EMB	
Test Mode : TX2402MHz	



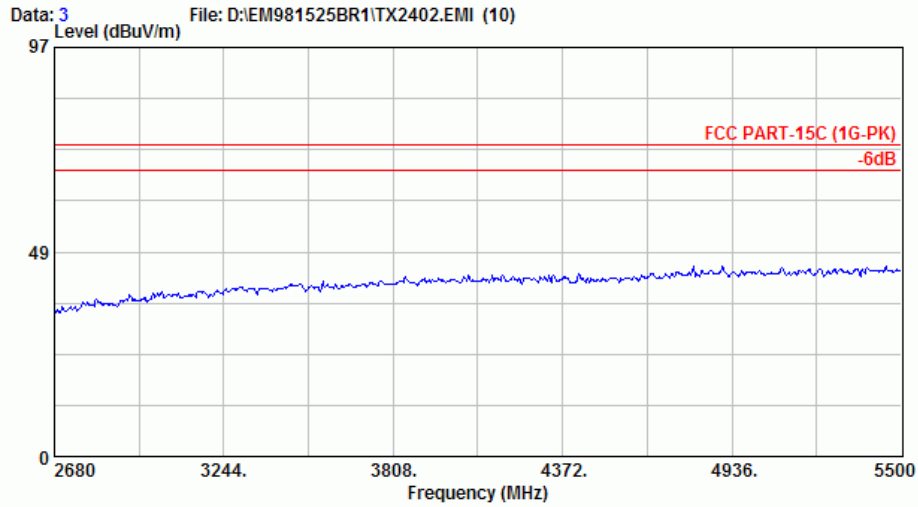
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 Email:ttemc@ttemc.com.tw



Site no. : site	Data no. : 1
Dis. / Ant. : 3m 3115	Ant. pol. : VERTICAL
Limit : FCC PART-15C (1G-PK)	
Env. / Ins. : 8564EC 28*C/58%	Engineer : Jarwei Wang
EUT : Bluetooth Embedded Module	
Power Rating : 120Vac/60Hz M/N:BCM92046MD_EMB	
Test Mode : TX2402MHz	



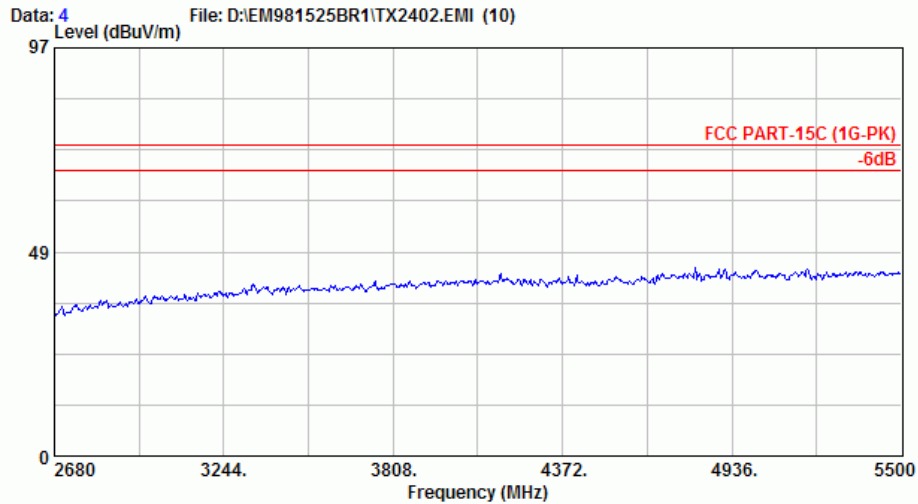
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 Email:ttemc@ttemc.com.tw



Site no. : site Data no. : 3  
 Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2402MHz



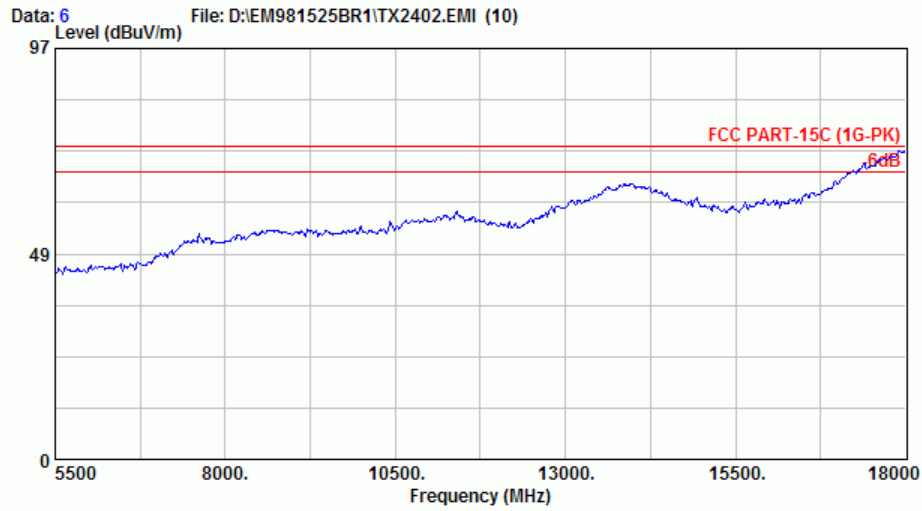
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 County, Taiwan R.O.C. Post Code:24443  
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 Email:ttemc@ttemc.com.tw



Site no. : site Data no. : 4  
 Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2402MHz



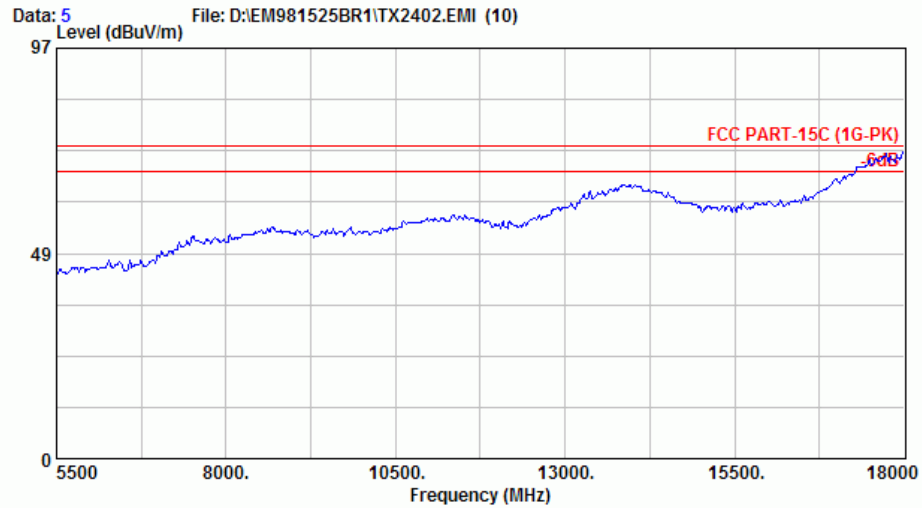
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 Email:ttmc@ttmc.com.tw



Site no. : site Data no. : 6  
 Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2402MHz



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 Email:ttmc@ttmc.com.tw



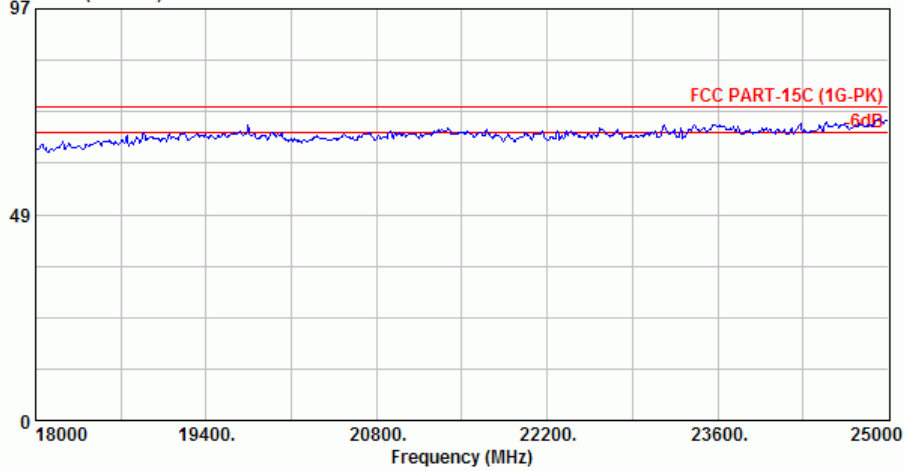
Site no. : site Data no. : 5  
 Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2402MHz





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 Email:ttemc@ttemc.com.tw

Data: 9 File: D:\EM981525BR1\TX2402.EMI (10)  
 Level (dBuV/m)

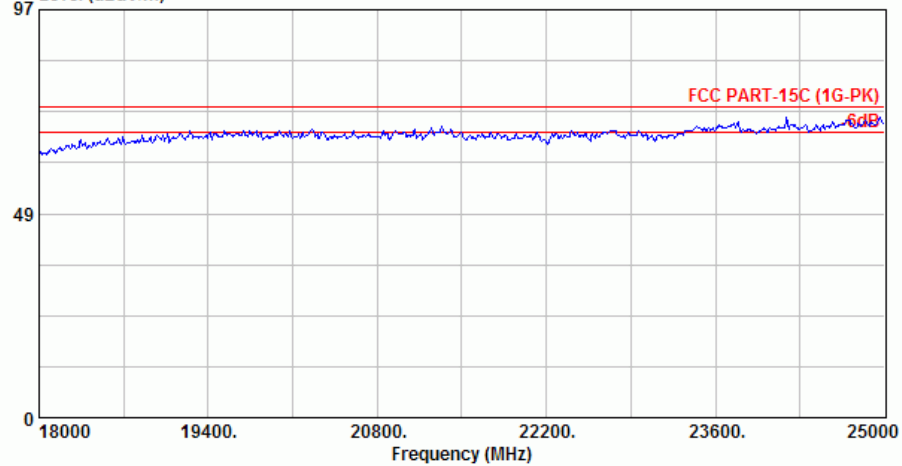


Site no. : site Data no. : 9  
 Dis. / Ant. : 3m 3116 Ant. pol. : HORIZONTAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2402MHz



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 Email:ttemc@ttemc.com.tw

Data: 10 File: D:\EM981525BR1\TX2402.EMI (10)  
 Level (dBuV/m)

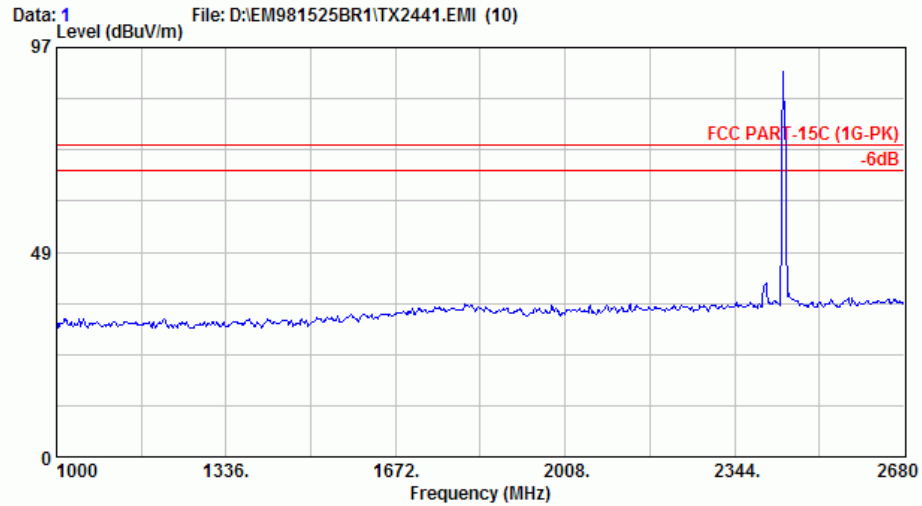


Site no. : site Data no. : 10  
 Dis. / Ant. : 3m 3116 Ant. pol. : VERTICAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2402MHz

**Test Mode: Transmitting Mode, Frequency: 2441MHz (CH39) with Host (LCD TV): VIZIO VF522XVT**



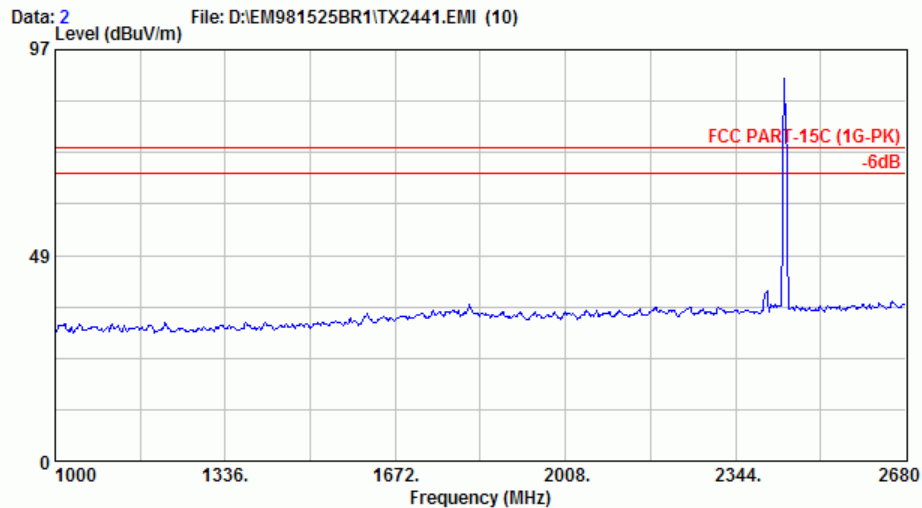
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 Email:ttemc@ttemc.com.tw



Site no. : site Data no. : 1  
 Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2441MHz



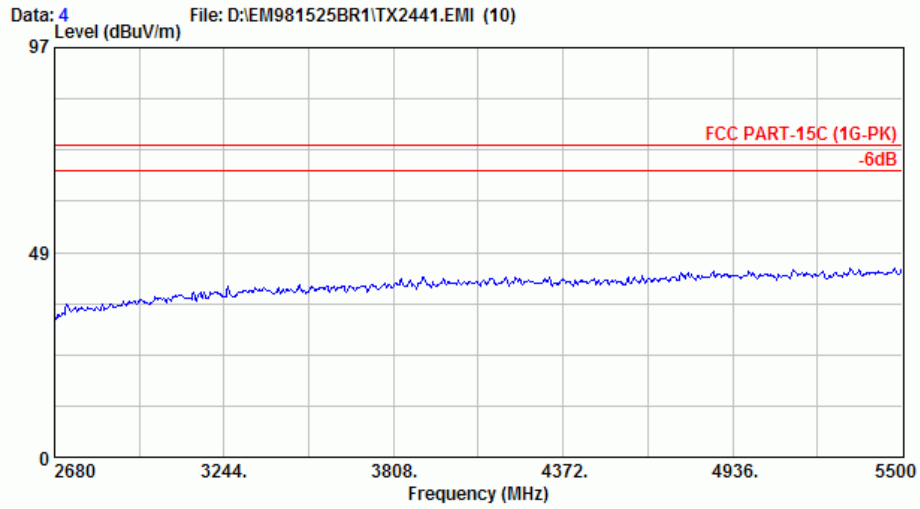
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 Email:ttemc@ttemc.com.tw



Site no. : site Data no. : 2  
 Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2441MHz



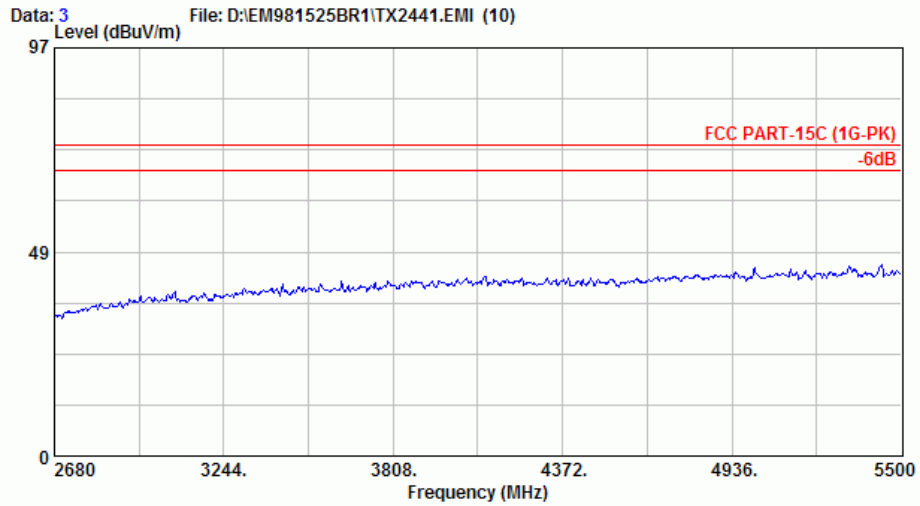
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 Email:ttemc@ttemc.com.tw



Site no. : site Data no. : 4  
 Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2441MHz



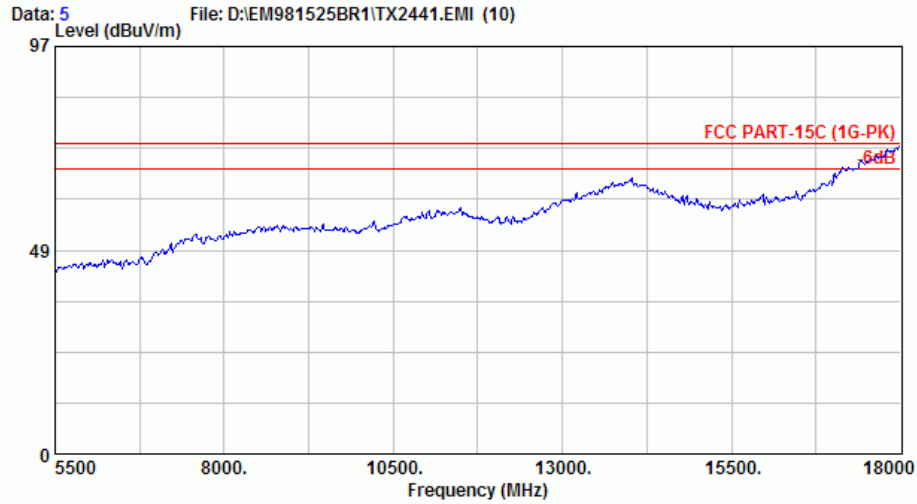
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 Email:ttemc@ttemc.com.tw



Site no. : site Data no. : 3  
 Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2441MHz



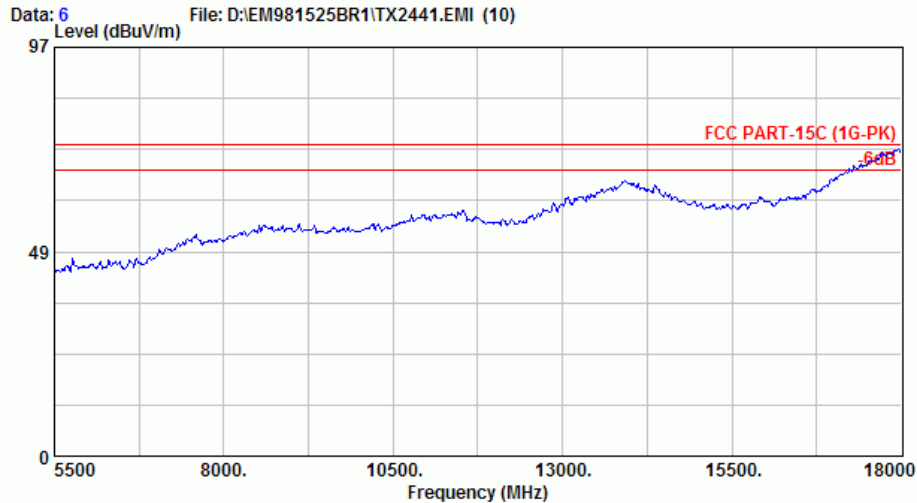
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 County, Taiwan R.O.C. Post Code:24443  
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 Email:ttmc@ttmc.com.tw



Site no. : site Data no. : 5  
 Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28\*C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2441MHz



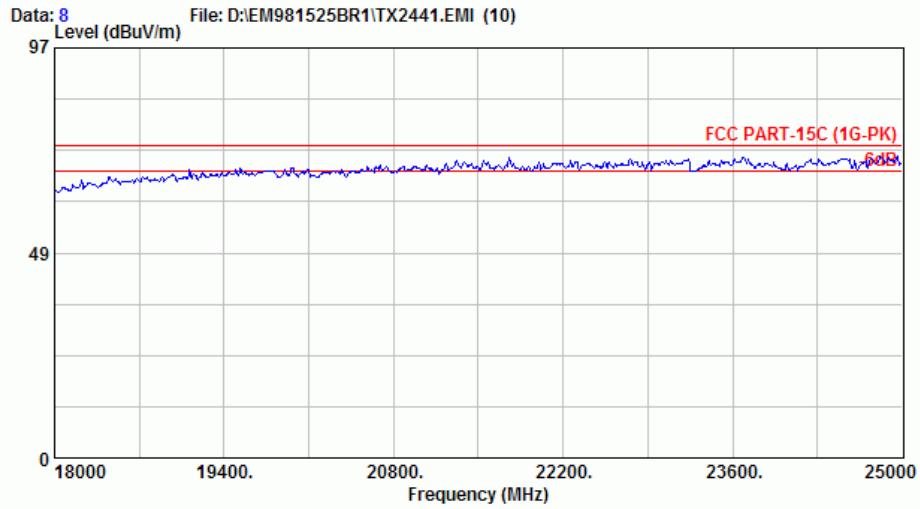
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 County, Taiwan R.O.C. Post Code:24443  
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 Email:ttmc@ttmc.com.tw



Site no. : site Data no. : 6  
 Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28\*C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2441MHz



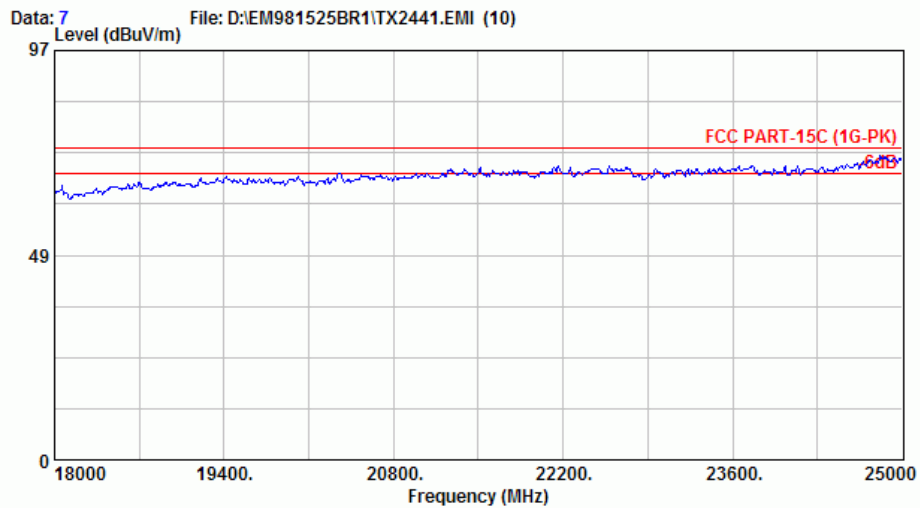
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 County, Taiwan R.O.C. Post Code:24443  
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 Email:ttemc@ttemc.com.tw



Site no. : site Data no. : 8  
 Dis. / Ant. : 3m 3116 Ant. pol. : HORIZONTAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2441MHz



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 County, Taiwan R.O.C. Post Code:24443  
 Tel:+886-2-26092133 Fax:+886-2-26099303  
 Email:ttemc@ttemc.com.tw

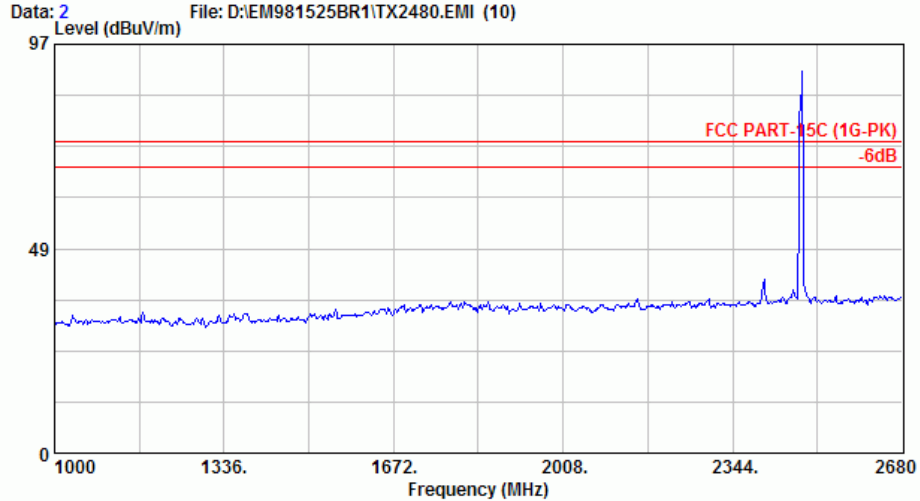


Site no. : site Data no. : 7  
 Dis. / Ant. : 3m 3116 Ant. pol. : VERTICAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2441MHz

**Test Mode: Transmitting Mode, Frequency: 2480MHz (CH78) with Host (LCD TV): VIZIO VF522XVT**



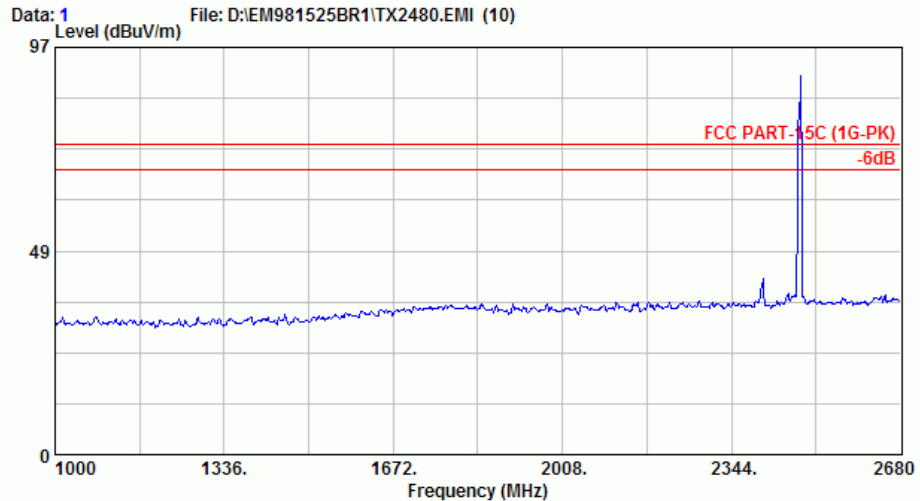
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 County, Taiwan R.O.C. Post Code:24443  
 Tel:+886-2-26092133 Fax:+886-2-26099303  
 Email:ttmc@ttmc.com.tw



Site no. : site Data no. : 2  
 Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28\*C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2480MHz



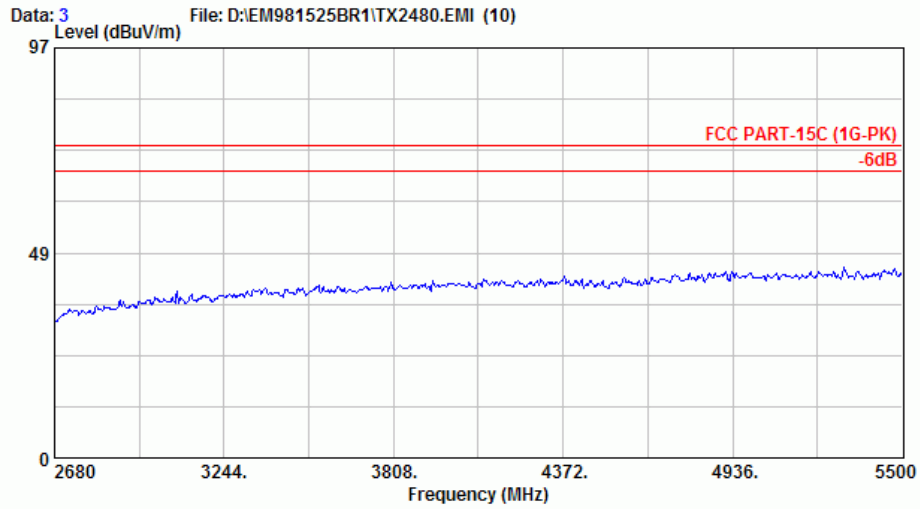
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 County, Taiwan R.O.C. Post Code:24443  
 Tel:+886-2-26092133 Fax:+886-2-26099303  
 Email:ttmc@ttmc.com.tw



Site no. : site Data no. : 1  
 Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28\*C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2480MHz



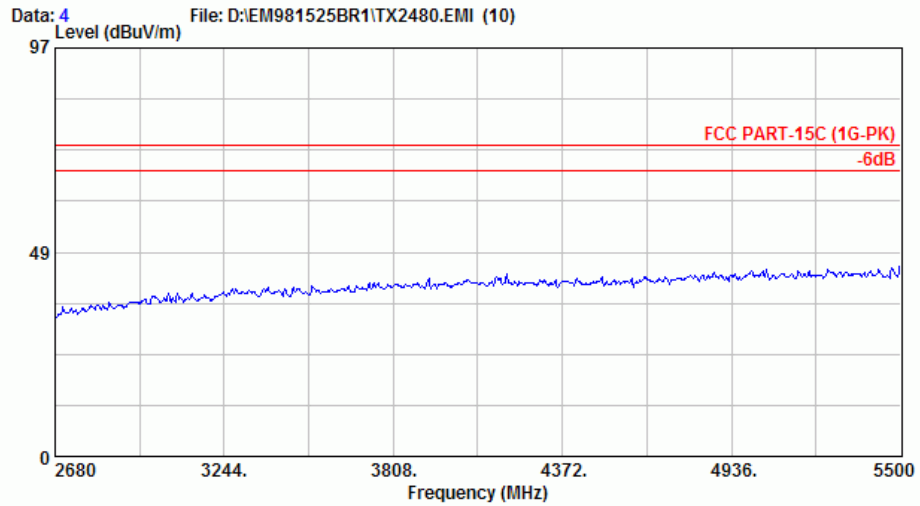
AUDIX TECHNOLOGY Corp. EMC Laboratory  
 No.53-11, Tin-fu Tsun, Lin-kou Hsiang, Taipei  
 County, Taiwan R.O.C. Post Code:24443  
 Tel:+886-2-26092133 Fax:+886-2-26099303  
 Email:ttmc@ttmc.com.tw



Site no. : site Data no. : 3  
 Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2480MHz



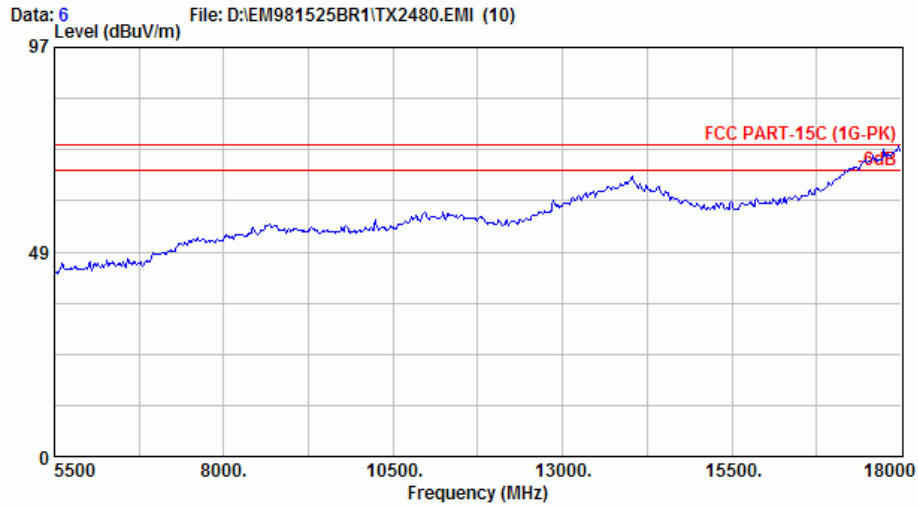
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 No.53-11, Tin-fu Tsun, Lin-kou Hsiang, Taipei  
 County, Taiwan R.O.C. Post Code:24443  
 Tel:+886-2-26092133 Fax:+886-2-26099303  
 Email:ttmc@ttmc.com.tw



Site no. : site Data no. : 4  
 Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2480MHz



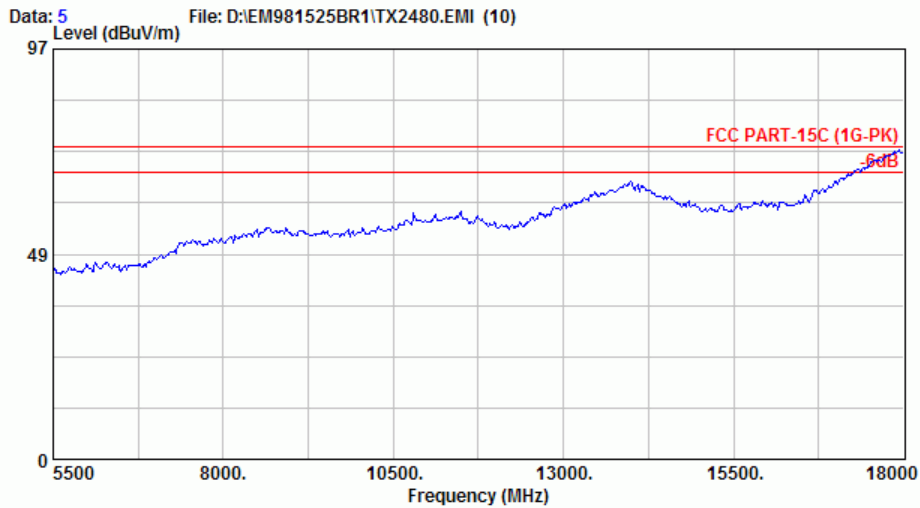
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 No.53-11, Tin-fu Tsun, Lin-kou Hsiang, Taipei  
 County, Taiwan R.O.C. Post Code:24443  
 Tel:+886-2-26092133 Fax:+886-2-26099303  
 Email:ttmc@ttmc.com.tw



Site no. : site Data no. : 6  
 Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2480MHz



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 Email:ttmc@ttmc.com.tw

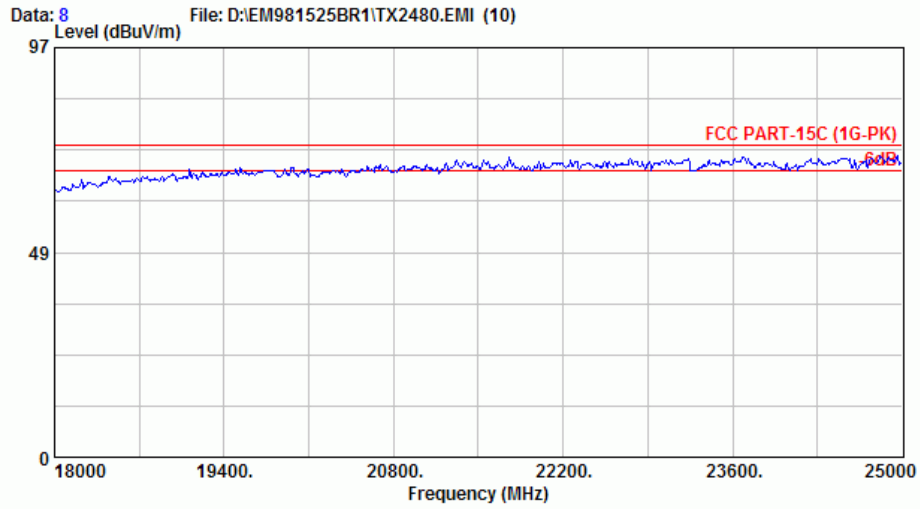


Site no. : site Data no. : 5  
 Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2480MHz





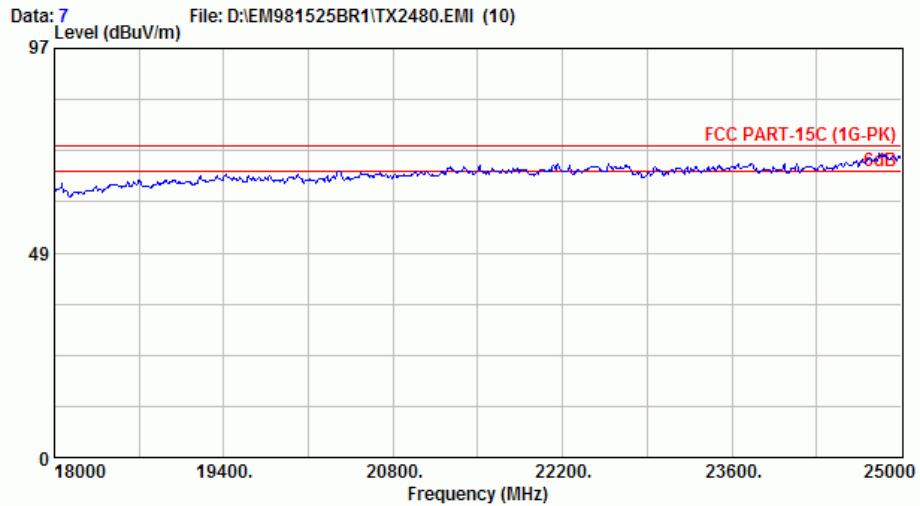
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 County, Taiwan R.O.C. Post Code:24443  
 Tel:+886-2-26092133 Fax:+886-2-26099303  
 Email:ttemc@ttemc.com.tw



Site no. : site Data no. : 8  
 Dis. / Ant. : 3m 3116 Ant. pol. : HORIZONTAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28\*C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2480MHz



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 Email:ttemc@ttemc.com.tw

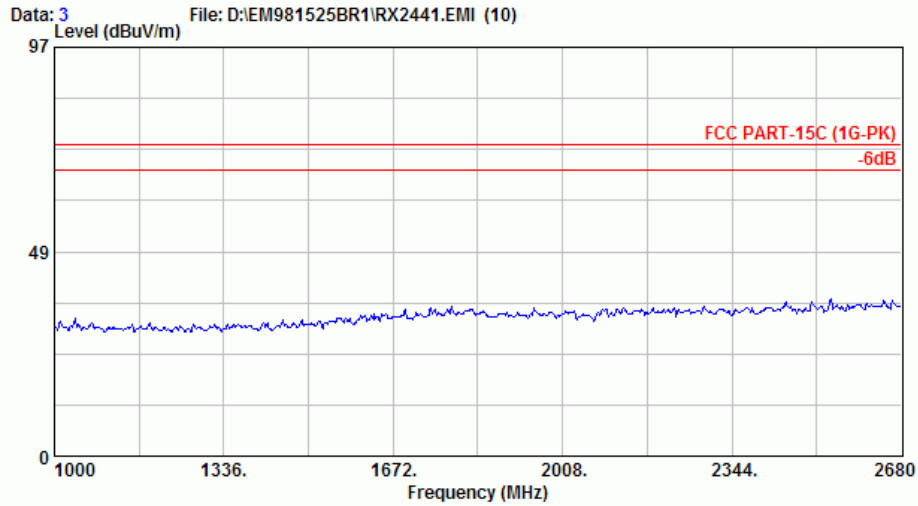


Site no. : site Data no. : 7  
 Dis. / Ant. : 3m 3116 Ant. pol. : VERTICAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28\*C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : TX2480MHz

**Test Mode: Receiving Mode, Frequency: 2441MHz (CH39) with Host (LCD TV): VIZIO VF522XVT**



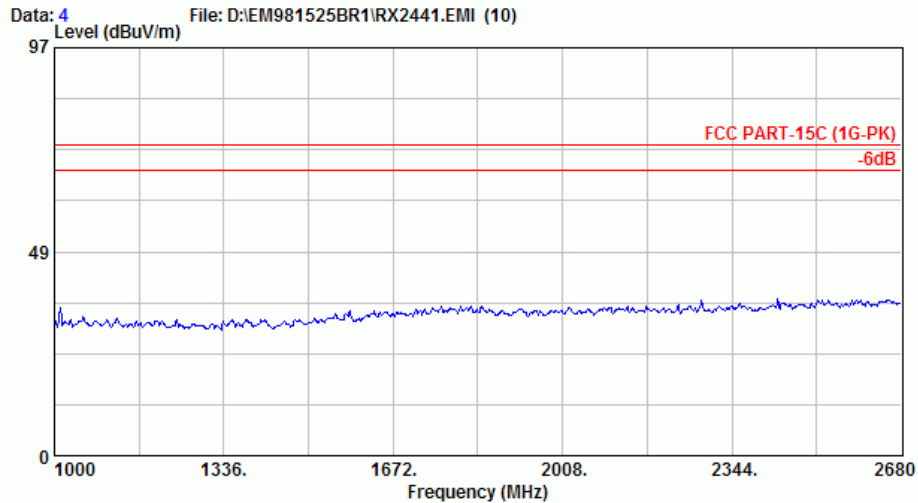
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 County, Taiwan R.O.C. Post Code:24443  
 Tel:+886-2-26092133 Fax:+886-2-26099303  
 Email:ttemc@ttemc.com.tw



Site no. : site Data no. : 3  
 Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28\*C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : RX2441MHz



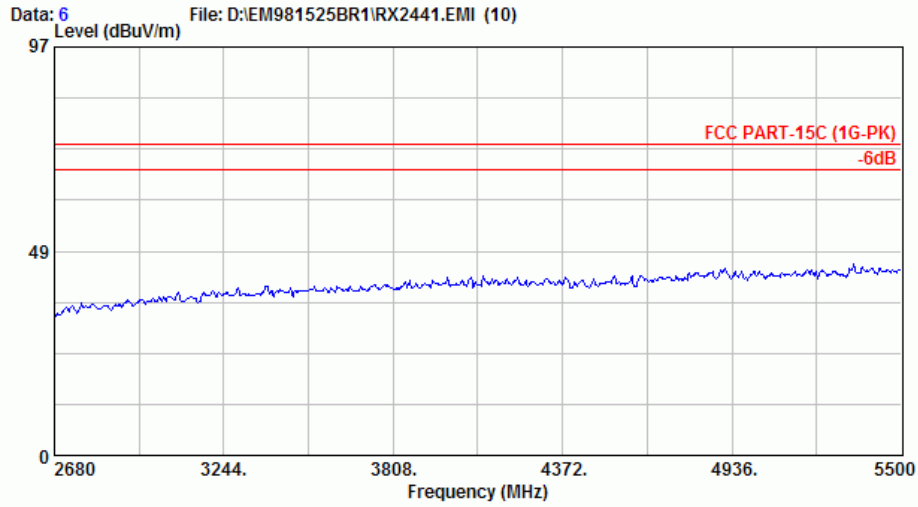
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 County, Taiwan R.O.C. Post Code:24443  
 Tel:+886-2-26092133 Fax:+886-2-26099303  
 Email:ttemc@ttemc.com.tw



Site no. : site Data no. : 4  
 Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28\*C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : RX2441MHz



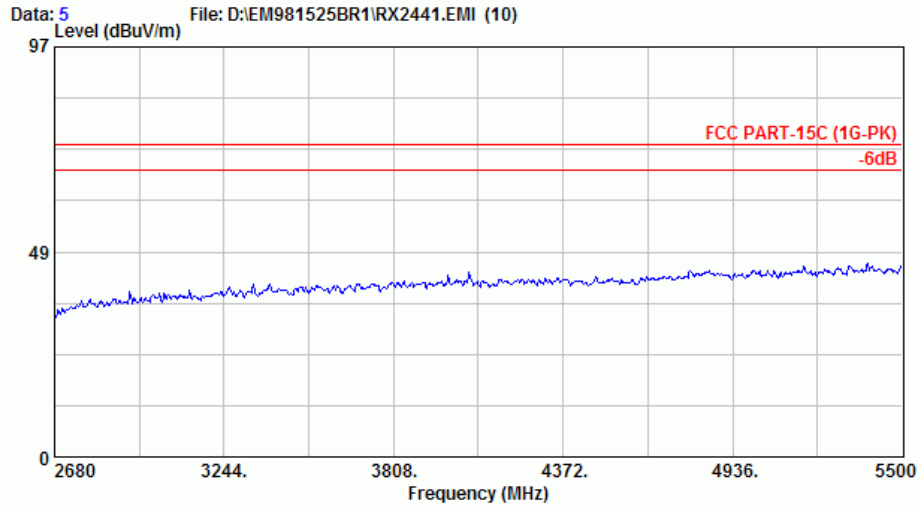
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 County, Taiwan R.O.C. Post Code:24443  
 Tel:+886-2-26092133 Fax:+886-2-26099303  
 Email:ttemc@ttemc.com.tw



Site no. : site Data no. : 6  
 Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : RX2441MHz



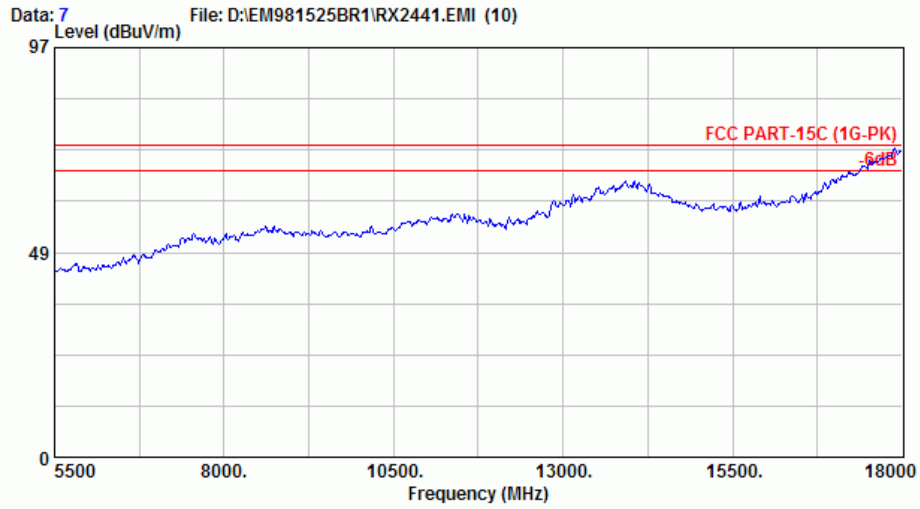
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 Email:ttemc@ttemc.com.tw



Site no. : site Data no. : 5  
 Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : RX2441MHz



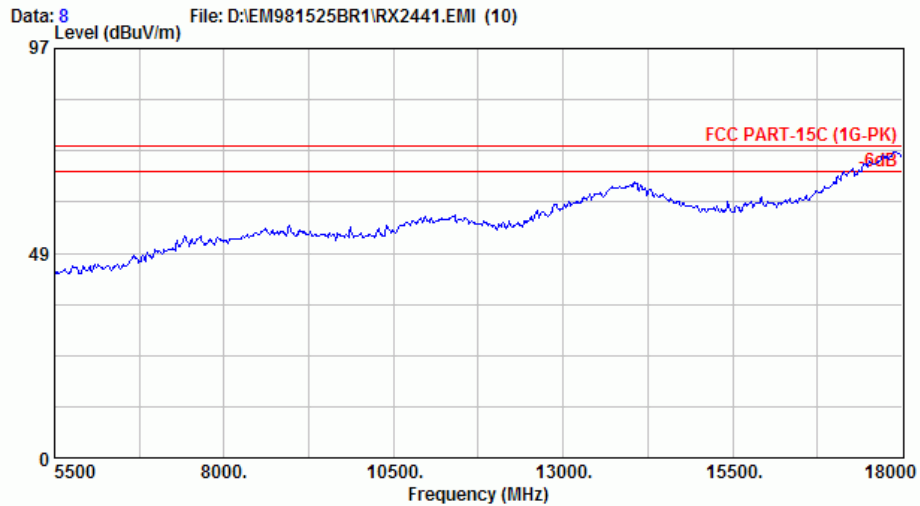
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 County, Taiwan R.O.C. Post Code:24443  
 Tel:+886-2-26092133 Fax:+886-2-26099303  
 Email:ttemc@ttemc.com.tw



Site no. : site Data no. : 7  
 Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28\*C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : RX2441MHz



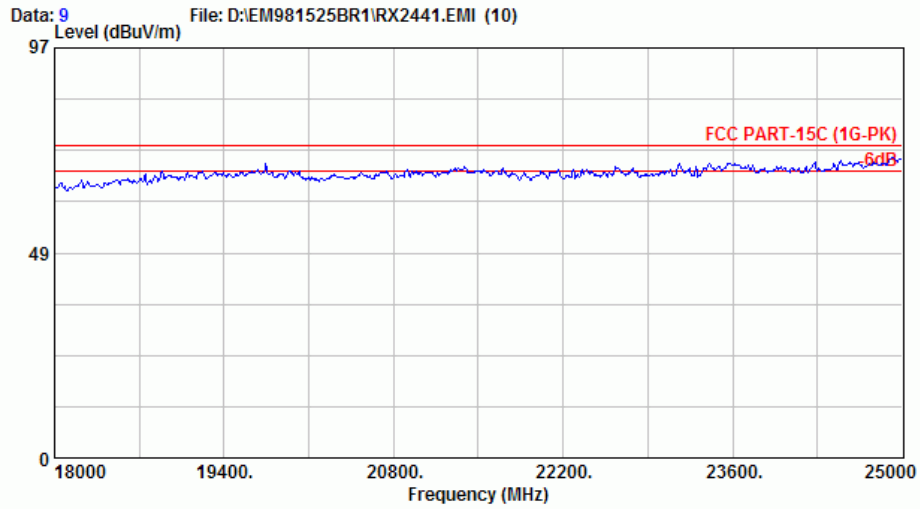
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 County, Taiwan R.O.C. Post Code:24443  
 Tel:+886-2-26092133 Fax:+886-2-26099303  
 Email:ttemc@ttemc.com.tw



Site no. : site Data no. : 8  
 Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28\*C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : RX2441MHz



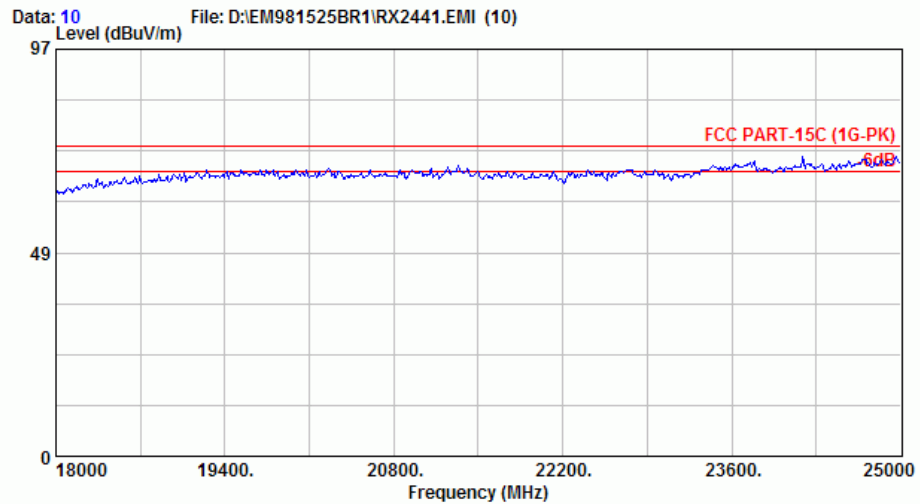
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 County, Taiwan R.O.C. Post Code:24443  
 Tel:+886-2-26092133 Fax:+886-2-26099303  
 Email:ttemc@ttemc.com.tw



Site no. : site Data no. : 9  
 Dis. / Ant. : 3m 3116 Ant. pol. : HORIZONTAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : RX2441MHz



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 County, Taiwan R.O.C. Post Code:24443  
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 Email:ttemc@ttemc.com.tw



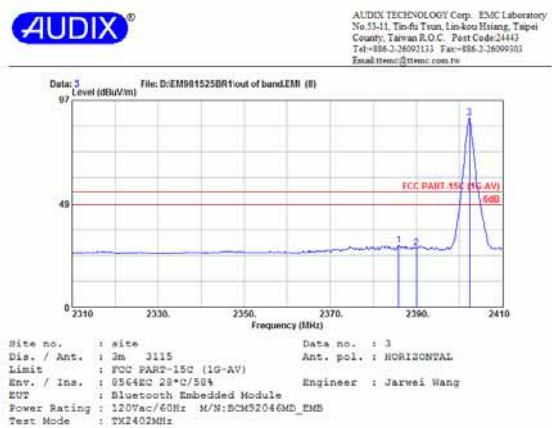
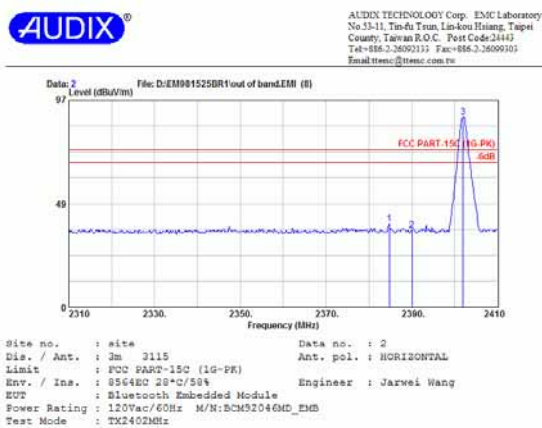
Site no. : site Data no. : 10  
 Dis. / Ant. : 3m 3116 Ant. pol. : VERTICAL  
 Limit : FCC PART-15C (1G-PK)  
 Env. / Ins. : 8564EC 28°C/58% Engineer : Jarwei Wang  
 EUT : Bluetooth Embedded Module  
 Power Rating : 120Vac/60Hz M/N:BCM92046MD\_EMB  
 Test Mode : RX2441MHz

### 4.6.3. Restricted Bands Measurement Results

Date of Test :	Aug. 28, 2009	Temperature :	28
EUT :	Bluetooth Embedded Module (With Host LCD TV: VIZIO VF552XVT)	Humidity :	58%
Test Mode :	Transmitting Mode, Frequency: 2402MHz (CH0) Type of Modulation: GFSK	Test Voltage :	DC 5V

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB $\mu$ V	Meter Reading Horizontal dB $\mu$ V/m	Emission Level Horizontal dB $\mu$ V/m	Limits dB	Margin
Fundamental	2401.900	28.62	6.36	54.12	89.10		
Peak *	2384.700	28.59	6.33	4.07	38.99	74.00	35.01
Fundamental	2402.400	28.62	6.36	53.88	88.86		
Average *	2385.900	28.59	6.33	-5.72	29.20	54.00	24.80

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.  
 2. Low frequency section (spurious in the restricted band 2310-2410MHz).  
 3. “\*” The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



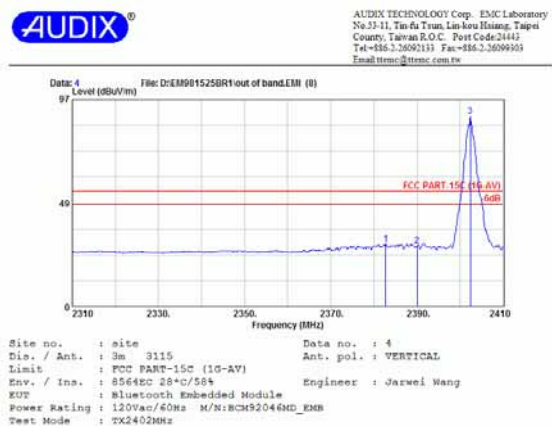
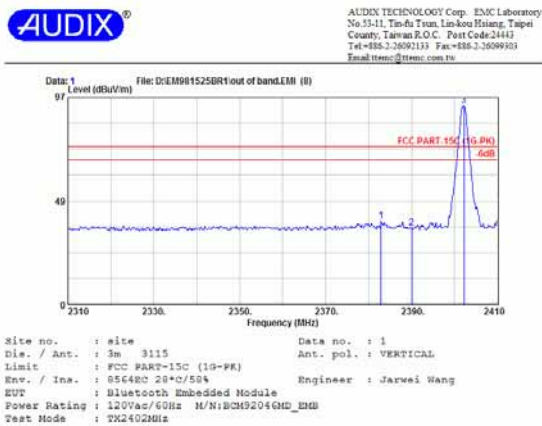
Date of Test : Aug. 28, 2009 Temperature : 28

EUT : Bluetooth Embedded Module Humidity : 58%  
(With Host LCD TV: VIZIO VF552XVT)

Test Mode : Transmitting Mode, Frequency: Test Voltage : DC 5V  
2402MHz (CH0)  
Type of Modulation: GFSK

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB $\mu$ V	Meter Reading Vertical dB $\mu$ V/m	Emission Level Vertical dB $\mu$ V/m	Limits dB	Margin
Fundamental	2402.200	28.62	6.36	58.07	93.05		
Peak *	2382.900	28.58	6.33	4.23	39.14	74.00	34.86
Fundamental	2402.400	28.62	6.36	54.16	89.14		
Average *	2382.700	28.58	6.33	-5.63	29.28	54.00	24.72

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.  
 2. Low frequency section (spurious in the restricted band 2310-2410MHz).  
 3. '\*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



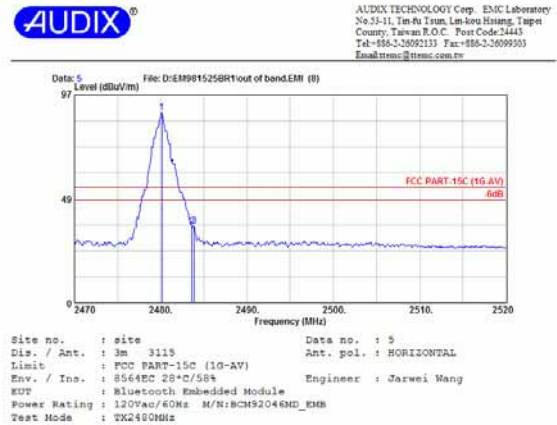
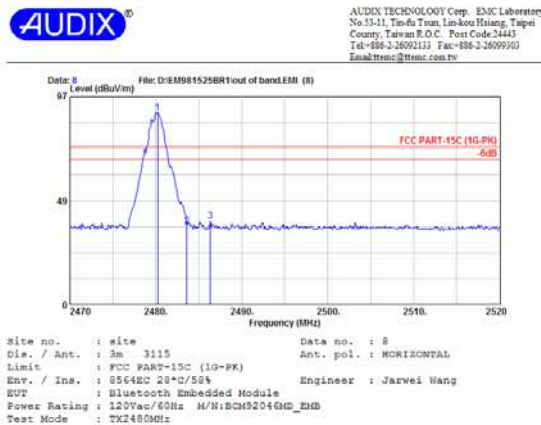
Date of Test : Aug. 28, 2009 Temperature : 28

EUT : Bluetooth Embedded Module Humidity : 58%  
(With Host LCD TV: VIZIO VF552XVT)

Test Mode : Transmitting Mode, Frequency: Test Voltage : DC 5V  
2480MHz (CH78)  
Type of Modulation: GFSK

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB $\mu$ V	Meter Reading Horizontal dB $\mu$ V/m	Emission Level Horizontal dB $\mu$ V/m	Limits dB	Margin
Fundamental	2480.200	28.76	6.44	54.48	89.68		
Peak *	2486.350	28.77	6.45	3.75	38.97	74.00	35.03
Fundamental	2480.100	28.76	6.44	53.68	88.88		
Average *	2483.850	28.77	6.45	0.54	35.76	54.00	18.24

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.  
 2. Low frequency section (spurious in the restricted band 2470-2520MHz).  
 3. '\*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.





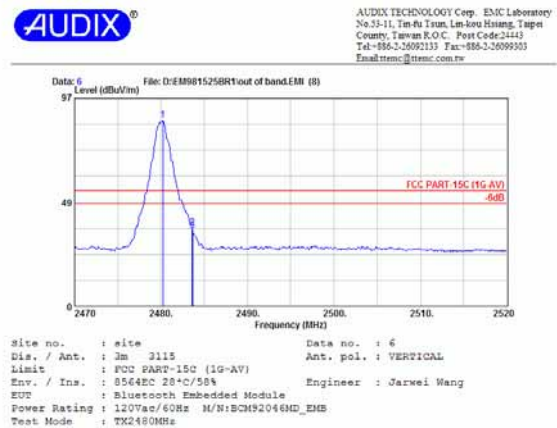
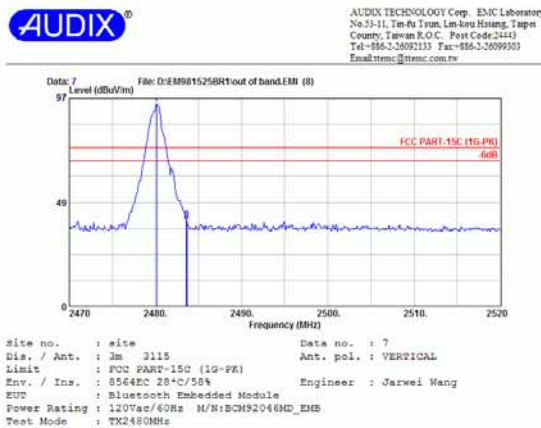
Date of Test : Aug. 28, 2009 Temperature : 28

EUT : Bluetooth Embedded Module Humidity : 58%  
(With Host LCD TV: VIZIO VF552XVT)

Test Mode : Transmitting Mode, Frequency: Test Voltage : DC 5V  
2480MHz (CH78)  
Type of Modulation: GFSK

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB $\mu$ V	Meter Reading Vertical dB $\mu$ V/m	Emission Level Vertical dB $\mu$ V/m	Limits dB	Margin
Fundamental	2480.100	28.76	6.44	59.17	94.37		
Peak *	2483.600	28.77	6.45	4.80	40.02	74.00	33.98
Fundamental	2480.200	28.76	6.44	51.56	86.76		
Average *	2483.600	28.77	6.45	1.35	36.57	54.00	17.43

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.  
 2. Low frequency section (spurious in the restricted band 2470-2520MHz).  
 3. '\*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



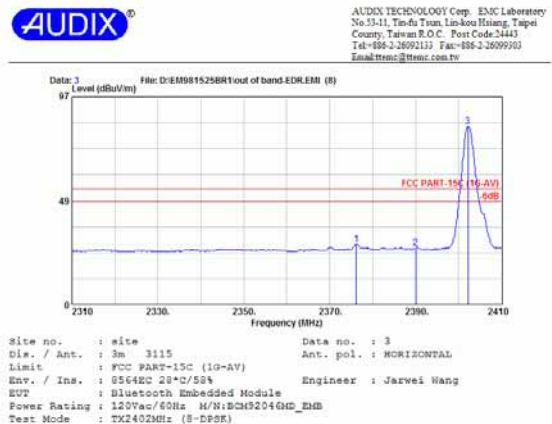
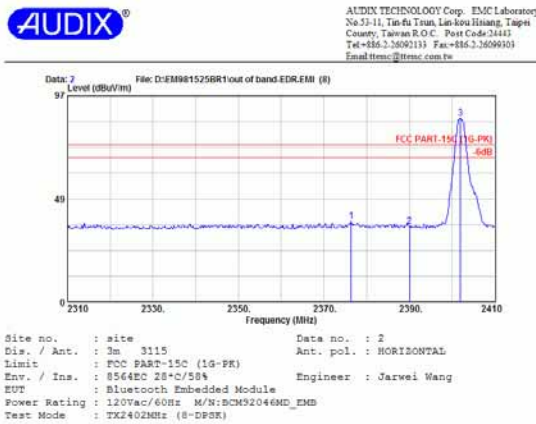
Date of Test : Aug. 28, 2009 Temperature : 28

EUT : Bluetooth Embedded Module Humidity : 58%  
(With Host LCD TV: VIZIO VF552XVT)

Test Mode : Transmitting Mode, Frequency: Test Voltage : DC 5V  
2402MHz (CH0)  
Type of Modulation: 8-DPSK

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB $\mu$ V	Meter Reading Horizontal dB $\mu$ V/m	Emission Level Horizontal dB $\mu$ V/m	Limits dB	Margin
Fundamental	2401.900	28.62	6.36	51.49	86.47		
Peak *	2376.400	28.57	6.32	3.27	38.16	74.00	35.84
Fundamental	2402.200	28.62	6.36	48.34	83.32		
Average *	2376.200	28.57	6.32	-6.80	28.09	54.00	25.91

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.  
 2. Low frequency section (spurious in the restricted band 2310-2410MHz).  
 3. '\*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



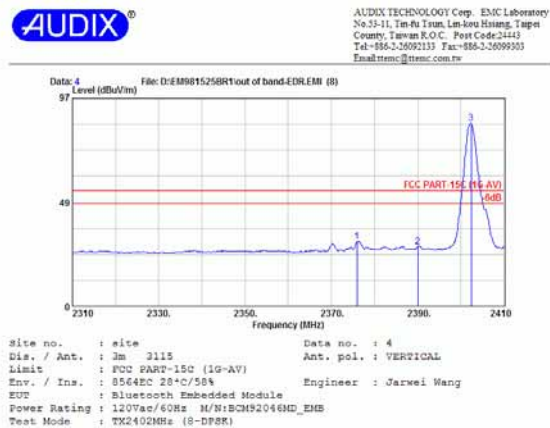
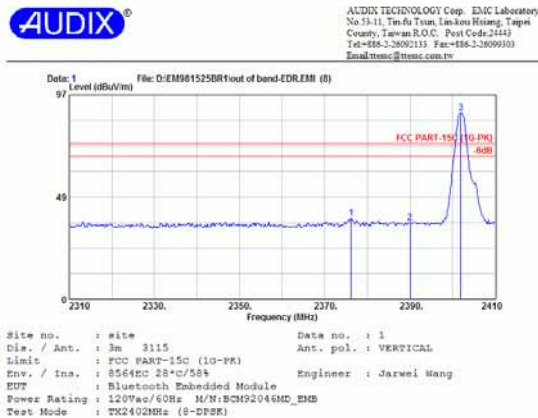
Date of Test : Aug. 28, 2009 Temperature : 28

EUT : Bluetooth Embedded Module Humidity : 58%  
(With Host LCD TV: VIZIO VF552XVT)

Test Mode : Transmitting Mode, Frequency: Test Voltage : DC 5V  
2402MHz (CH0)  
Type of Modulation: 8-DPSK

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB $\mu$ V	Meter Reading Vertical dB $\mu$ V/m	Emission Level Vertical dB $\mu$ V/m	Limits dB	Margin
Fundamental	2401.900	28.62	6.36	53.62	88.60		
Peak *	2376.200	28.57	6.32	3.34	38.23	74.00	35.77
Fundamental	2402.400	28.62	6.36	50.24	85.22		
Average *	2375.900	28.57	6.32	-4.57	30.32	54.00	23.68

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.  
 2. Low frequency section (spurious in the restricted band 2310-2410MHz).  
 3. '\*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



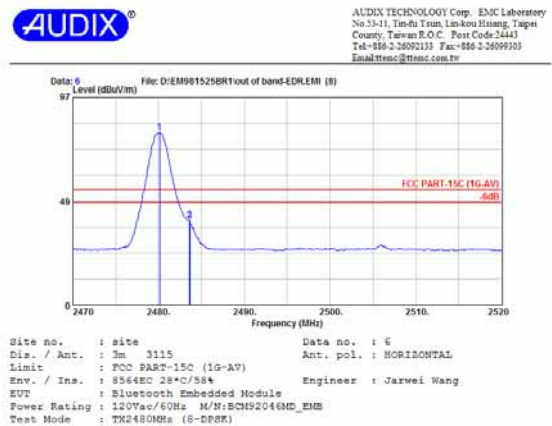
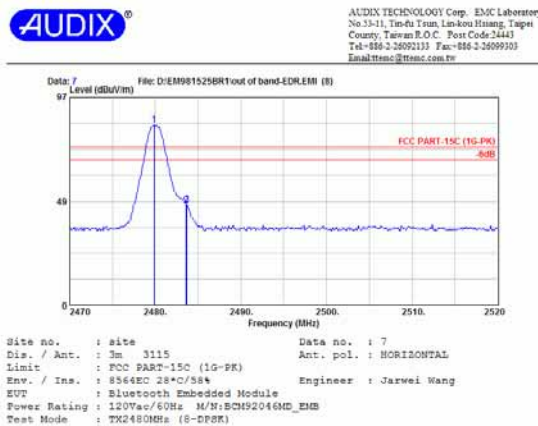
Date of Test : Aug. 28, 2009 Temperature : 28

EUT : Bluetooth Embedded Module Humidity : 58%  
(With Host LCD TV: VIZIO VF552XVT)

Test Mode : Transmitting Mode, Frequency: Test Voltage : DC 5V  
2480MHz (CH78)  
Type of Modulation: 8-DPSK

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB $\mu$ V	Meter Reading Horizontal dB $\mu$ V/m	Emission Level Horizontal dB $\mu$ V/m	Limits dB	Margin
Fundamental	2479.850	28.76	6.44	48.84	84.04		
Peak *	2483.700	28.77	6.45	11.83	47.05	74.00	26.95
Fundamental	2480.100	28.76	6.44	45.38	80.58		
Average *	2483.600	28.77	6.45	4.52	39.74	54.00	14.26

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.  
 2. Low frequency section (spurious in the restricted band 2470-2520MHz).  
 3. '\*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



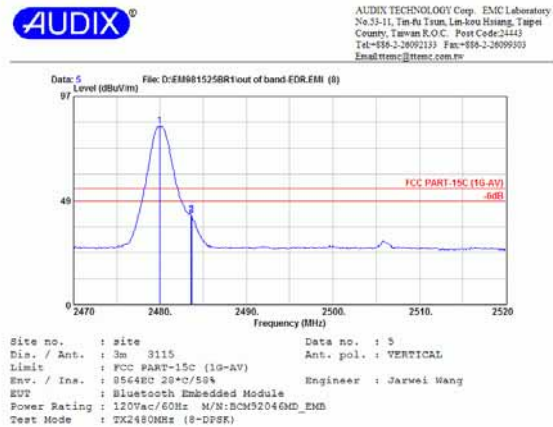
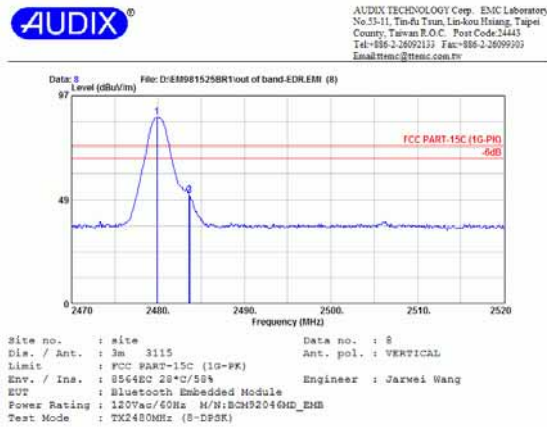
Date of Test : Aug. 28, 2009 Temperature : 28

EUT : Bluetooth Embedded Module Humidity : 58%  
(With Host LCD TV: VIZIO VF552XVT)

Test Mode : Transmitting Mode, Frequency: Test Voltage : DC 5V  
2480MHz (CH78)  
Type of Modulation: 8-DPSK

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB $\mu$ V	Meter Reading Vertical dB $\mu$ V/m	Emission Level Vertical dB $\mu$ V/m	Limits dB	Margin
Fundamental	2479.850	28.76	6.44	51.92	87.12		
Peak *	2483.600	28.77	6.45	15.56	50.78	74.00	23.22
Fundamental	2479.950	28.76	6.44	47.83	83.03		
Average *	2483.600	28.77	6.45	6.68	41.90	54.00	12.10

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.  
 2. Low frequency section (spurious in the restricted band 2470-2520MHz).  
 3. ‘\*’ The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



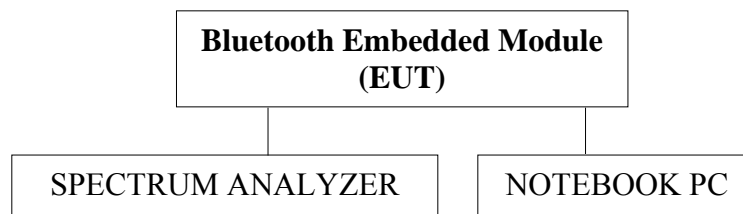
## 5. MAXIMUM PEAK OUTPUT POWER MEASUREMENT

### 5.1. Test Equipment

The following test equipment was used during the maximum peak output power measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	N9020A	MY48011382	Sep. 22, 08'	Sep. 21, 09'

### 5.2. Block Diagram of Test Setup



### 5.3. Specification Limits (§15.247(b)-(1))

The Limits of maximum Peak Output Power for frequency hopping systems in 2400-2483.5MHz is: 0.125Watt. (21dBm)

### 5.4. Operating Condition of EUT

- 5.4.1. Set up the EUT and simulator as shown on 5.2.
- 5.4.2. To turn on the power of all equipment.
- 5.4.3. The EUT (Bluetooth Embedded Module) was on transmitting frequency function during the testing.

### 5.5. Test Procedure follow DA00-705

The transmitter output was connected to the spectrum analyzer.  
 Span can encompass the waveform  
 RBW=VBW=1MHz  
 Sweep=Auto

## 5.6. Test Results

**PASSED.** All the test results are attached in next pages.

[Note: Two types of modulation (GFSK and 8-DPSK) were reported in this report.]

EUT : Bluetooth Embedded Module      M/N : BCM92046MD\_EMB

Test Date : Aug. 03, 2009    Temperature : 26      Humidity : 53 %

### 5.6.1.Type of Modulation: GFSK

No.	Channel	Test Frequency	Peak Output Power	Limit
1.	0	2402MHz	<b>1.278dBm</b>	21dBm
2.	39	2441MHz	<b>1.201dBm</b>	21dBm
3.	78	2480MHz	<b>0.828dBm</b>	21dBm

### 5.6.2.Type of Modulation: 8-DPSK

No.	Channel	Test Frequency	Peak Output Power	Limit
1.	0	2402MHz	<b>-1.451dBm</b>	21dBm
2.	39	2441MHz	<b>-2.359dBm</b>	21dBm
3.	78	2480MHz	<b>-4.973dBm</b>	21dBm

Figure 1: GFSK, Channel 0, Frequency: 2402MHz

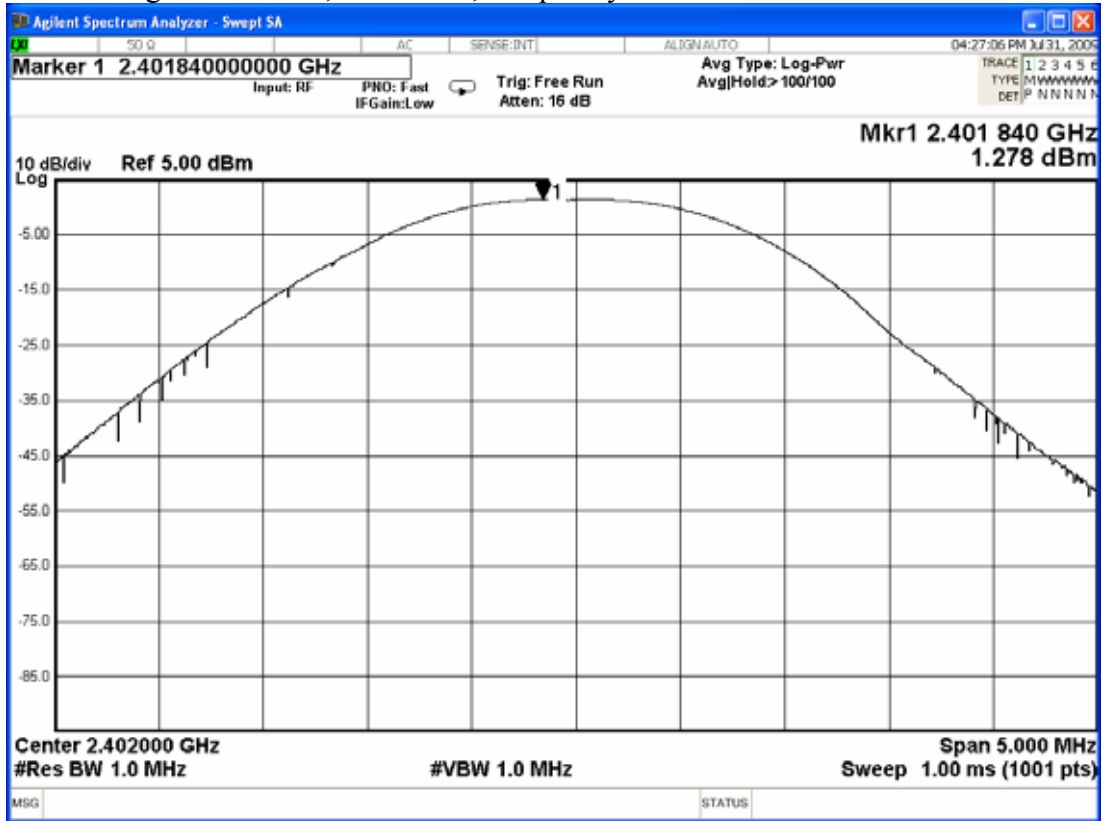


Figure 2: GFSK, Channel 39, Frequency: 2441MHz

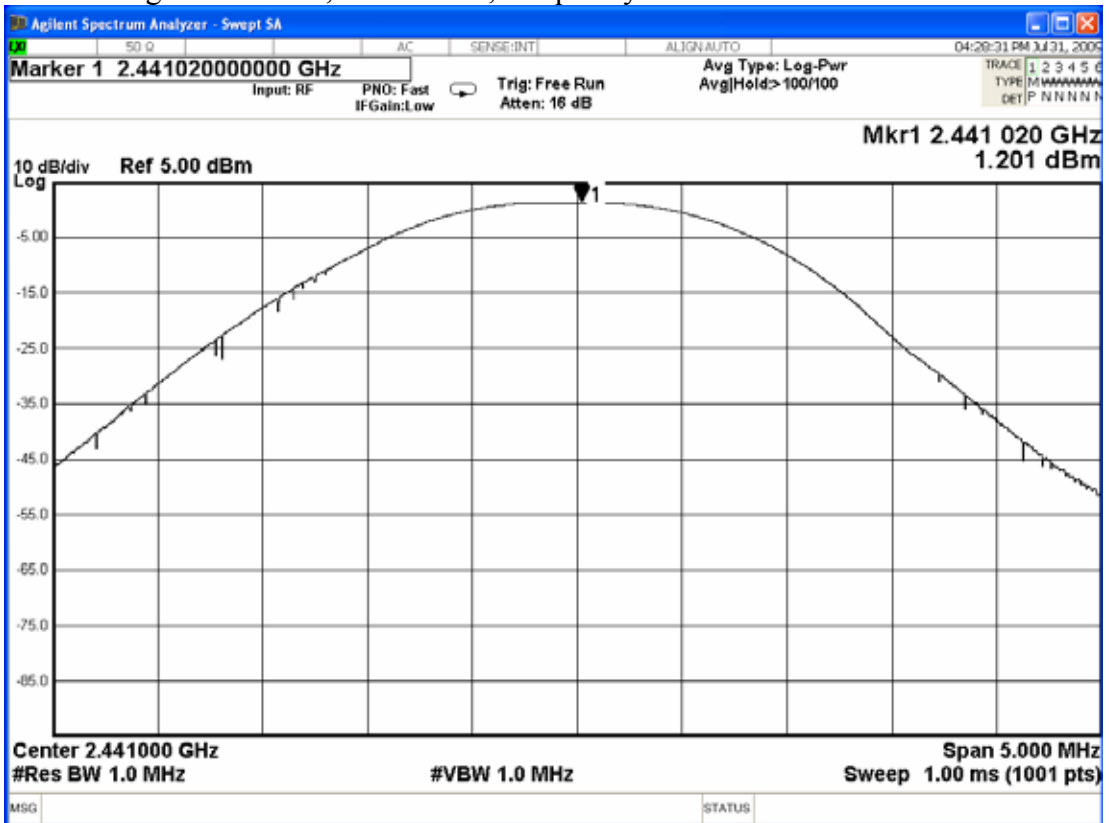




Figure 3: GFSK, Channel 78, Frequency: 2480MHz

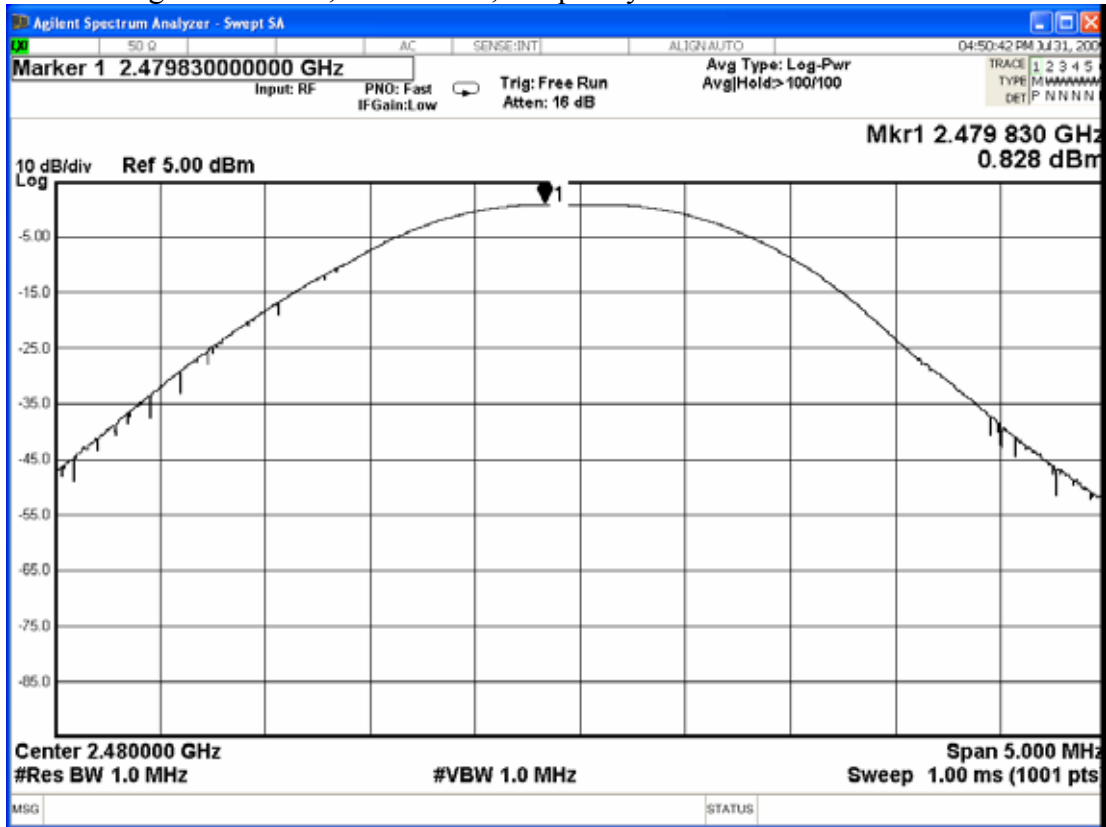


Figure 4: 8-DPSK, Channel 0, Frequency: 2402MHz

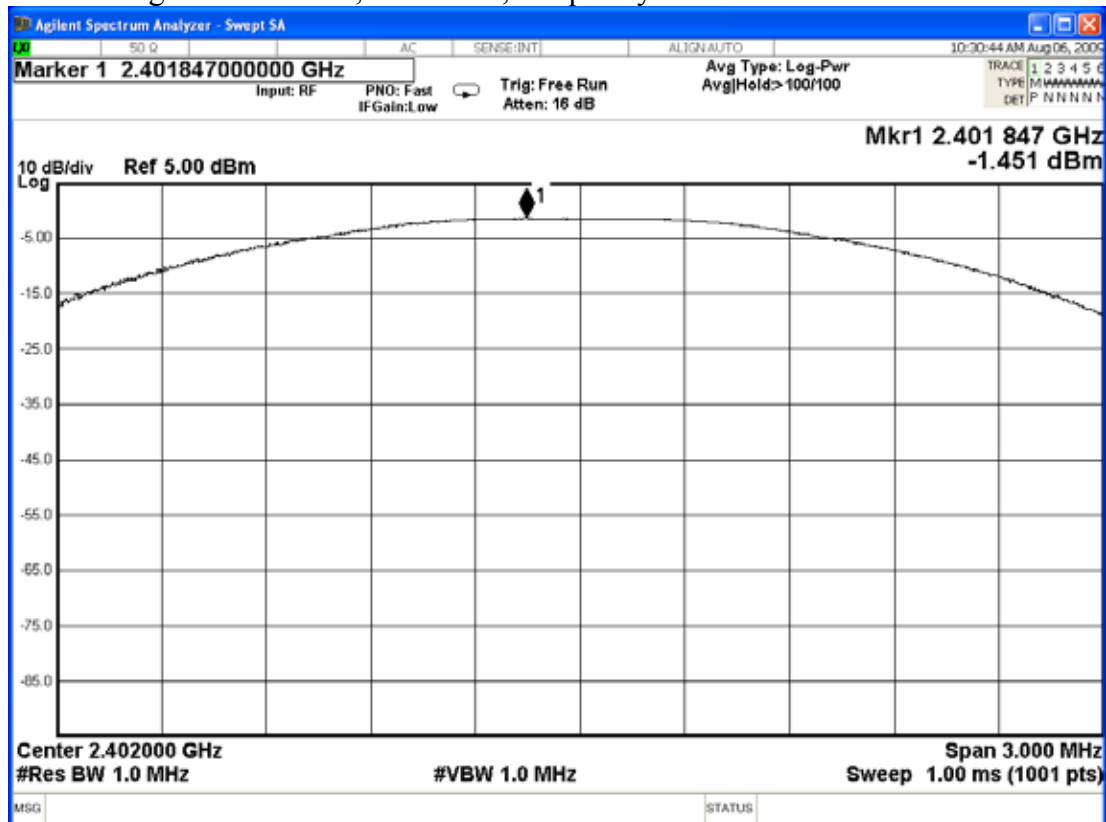


Figure 5: 8-DPSK, Channel 39, Frequency: 2441MHz

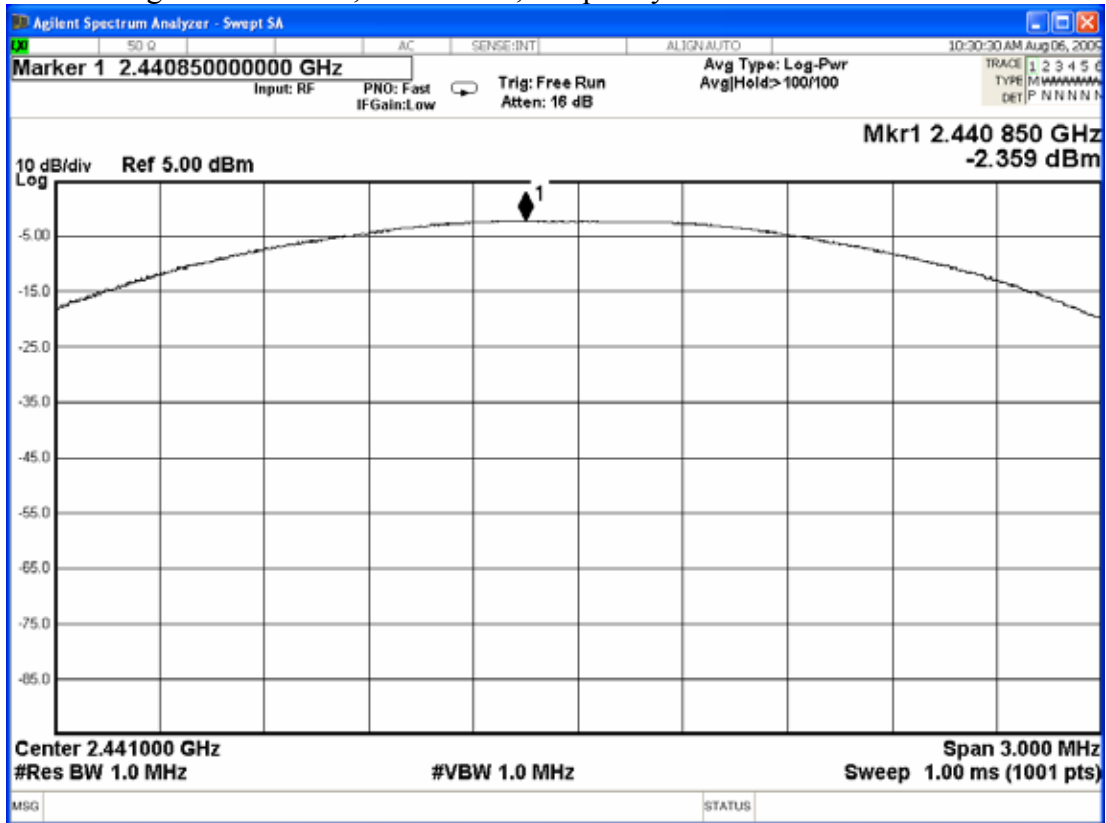
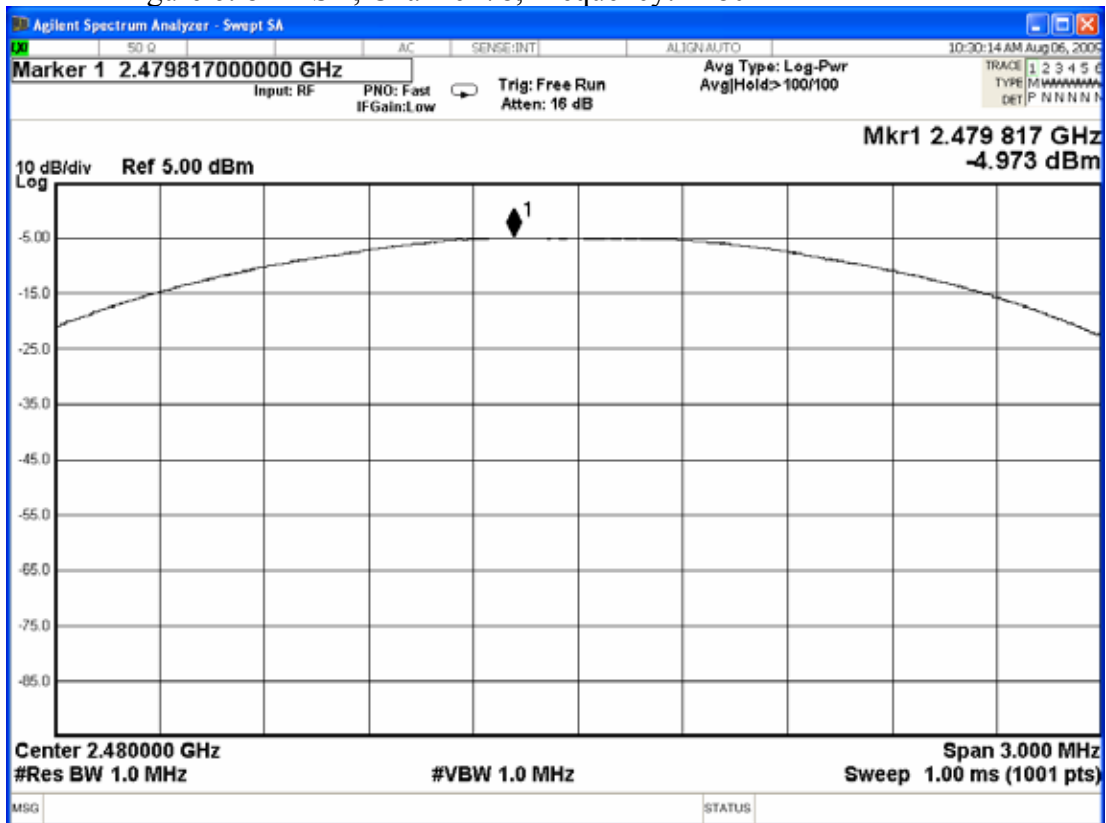


Figure 6: 8-DPSK, Channel 78, Frequency: 2480MHz



## **6. DEVIATION TO TEST SPECIFICATIONS**

**【NONE】**