

# Test Report of FCC Part 15 C for FCC Certificate

On Behalf of

**Sunbobo Digital CO.LTD.**

**FCC ID:** YGD-D1301

**Product Description:** Car Media Player

**Model No.:** D1301

**Supplementary Model No.:** E0821、 D1001 、 D1302 、 D1201、 D1202 (All Models just different with colour)

**Prepared for:** Sunbobo Digital CO.LTD.

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**Report No.:** BCT10ER-0698E

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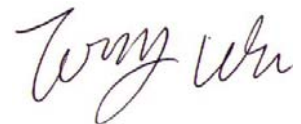
**Test Date:** May 15~June 1, 2010

**Test by:**

**Reviewed By:**



Kendy Wang



Tony Wu

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# 1. GENERAL INFORMATION

## 1.1 Product Description for Equipment Under Test (EUT)

### Client Information

Applicant: **Sunbobo Digital CO.LTD.**  
Address of applicant: Block A,12/F,Victorious Factory Bldg.35 Tseuk Luk Street,San Po Kong,Kowloon,Hongkong.  
Manufacturer: **Sunbobo Digital CO.LTD.**  
Address of manufacturer: Block A,12/F,Victorious Factory Bldg.35 Tseuk Luk Street,San Po Kong,Kowloon,Hongkong.

### General Description of E.U.T

Items	Description
EUT Description:	Car Media Player
Trade Name:	Eonon
Model No.:	D1301
Supplementary Model No.:	E0821、 D1001、 D1302 、 D1201、 D1202
Type of Modulation:	FHSS
Frequency Band:	2402 MHz ~ 2480 MHz
Number of Channels:	79
Channel Bandwidth:	1 MHz
Antenna Type:	Built-in Antenna
Rated Voltage:	DC 12 V

\* The test data gathered are from the production sample provided by the manufacturer.

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

This submittal(s) is a test report based on the Electromagnetic Interference (EMI) tests performed on the EUT. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4 - 2009.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.207, and 15.247 rules.

## 1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 - 2009, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz. Radiated testing was performed at an antenna to EUT distance 3 meters.

## 1.4 Test Facility

All measurement required was performed at laboratory of Bontek Compliance Testing Laboratory Ltd at 1/F, Block East H-3, OCT Eastern Ind. Zone, Qiaocheng East Road, Nanshan, Shenzhen, China and SGS-CSTC Standards Technical Services Co., Ltd ShenZhen Branch EMC Lab at No.1 Workshop, M-10, Middle Section, Science&Technology Park, Shenzhen 518057, Cina

The test facility is recognized, certified, or accredited by the following organizations:

### **FCC – Registration No.: 338263**

BONTEK COMPLIANCE TESTING LABORATORY LTD. , EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 338263, March, 2008.

### **IC Registration No.: 7631A**

The 3m alternate test site of BONTEK COMPLIANCE TESTING LABORATORY LTD. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 7631A on August 2009.

### **CNAS - Registration No.: L3923**

BONTEK COMPLIANCE TESTING LABORATORY LTD. to ISO/IEC 17025:25 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.The acceptance letter from the CNAS is maintained in our files: Registration:L3923,February,2009.

### **TUV - Registration No.: UA 50145371-0001**

BONTEK COMPLIANCE TESTING LABORATORY LTD. An assessment of the laboratory was conducted according to the"Procedures and Conditions for EMC Test Laboratories"with reference to EN ISO/IEC 17025 by a TUV Rheinland auditor. Audit Report NO. 17010783-001

## **2. SYSTEM TEST CONFIGURATION**

The tests documented in this report were performed in accordance with ANSI C63.4-2009 and FCC CFR 47 Part 15 Subpart C.

### **2.1 EUT Configuration**

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

### **2.2 EUT Exercise**

The calibrated antennas used to sample the radiated field strength are mounted on a non-conductive, motorized antenna mast 3 or 10 meters from the leading edge of the turntable.

### **2.3 General Test Procedures**

**Conducted Emissions** The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 7.1 of ANSI C63.4-2009. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak detector mode.

**Radiated Emissions** The EUT is placed on a turntable, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4-2009.

## 2.4 List of Measuring Equipments Used

Test equipments list of BONTEK COMPLIANCE TESTING LABORATORY LTD.

No.	Instrument no.	Equipment	Manufacturer	Model No.	S/N	Calculator date	Calculator due date
1	BCT-EMC001	EMI Test Receiver	R&S	ESCI	100687	2009-8-14	2010-8-13
2	BCT-EMC002	EMI Test Receiver	R&S	ESPI	100097	2009-8-14	2010-8-13
3	BCT-EMC003	Amplifier	HP	8447D	1937A02492	2009-8-14	2010-8-13
4	BCT-EMC004	Single Power Conductor Module	FCC	FCC-LISN-5-50-1-01-CISPR25	07101	2009-8-14	2010-8-13
5	BCT-EMC005	Single Power Conductor Module	FCC	FCC-LISN-5-50-1-01-CISPR25	07102	2009-8-14	2010-8-13
6	BCT-EMC006	Power Clamp	SCHWARZBECK	MDS-21	3812	2009-8-14	2010-8-13
7	BCT-EMC007	Positioning Controller	C&C	CC-C-1F	MF7802113	N/A	N/A
8	BCT-EMC008	Electrostatic Discharge Simulator	TESEQ	NSG437	125	2009-8-14	2010-8-13
9	BCT-EMC009	Fast Transient Burst Generator	SCHAFFNER	MODULA6150	34572	2009-8-14	2010-8-13
10	BCT-EMC010	Fast Transient Noise Simulator	Noiseken	FNS-105AX	31485	2009-8-14	2010-8-13
11	BCT-EMC011	Color TV Pattern Generator	PHILIPS	PM5418	TM209947	N/A	N/A
12	BCT-EMC012	Power Frequency Magnetic Field Generator	EVERFINE	EMS61000-8K	608002	2009-8-14	2010-8-13
13	BCT-EMC014	Capacitive Coupling Clamp	TESEQ	CDN8014	25096	2009-8-14	2010-8-13
14	BCT-EMC015	High Field Biconical Antenna	ELECTRO-METRICS	EM-6913	166	2009-8-14	2010-8-13
15	BCT-	Log Periodic	ELECTRO-	EM-6950	811	2009-8-14	2010-8-13

	EMC016	Antenna	METRICS				
16	BCT-EMC017	Remote Active Vertical Antenna	ELECTRO-METRICS	EM-6892	304	2009-8-14	2010-8-13
17	BCT-EMC018	TRILOG Broadband Test-Antenna	SCHWARZBECK	VULB9163	9163-324	2009-8-14	2010-8-13
18	BCT-EMC019	Horn Antenna	SCHWARZBECK	BBHA9120A	B08000991-0001	2009-8-14	2010-8-13
19	BCT-EMC020	Teo Line Single Phase Module	SCHWARZBECK	NSLK8128	D-69250	2009-8-14	2010-8-13
20	BCT-EMC021	10dB attenuator	SCHWARZBECK	MTAIMP-136	R65.90.0001#06	2009-8-14	2010-8-13
21	BCT-EMC022	Electric bridge	Zentech	100 LCR METER	803024	N/A	N/A
22	BCT-EMC023	RF Current Probe	FCC	F-33-4	80	2009-8-14	2010-8-13
23	BCT-EMC024	SIGNAL GENERATOR	HP	8647A	3349A02296	2009-8-14	2010-8-13
24	BCT-EMC025	MICROWAVE AMPLIFIER	HP	8349B	2627A00994	2009-8-14	2010-8-13
25	BCT-EMC026	Triple-Loop Antenna	EVERFINE	LLA-2	607004	2009-8-14	2010-8-13
26	BCT-EMC027	CDN	FRANKONIA	M2+M3	A3027019	2009-10-20	2010-10-19
27	BCT-EMC028	6dB Attenuator	FRANKONIA	75-A-FFN-06	1001698	2009-10-20	2010-10-19
28	BCT-EMC029	EMV-Mess-Systeme GMBH	FRANKONIA	FLL-75	1020A1109	2009-10-20	2010-10-19
29	BCT-EMC030	EM Injection Clamp	FCC	F-203I-13mm	091536	2009-10-20	2010-10-19
30	BCT-EMC031	9KHz-2.4GHz Signal generator	MARCONI INSTRUMENTS	2024	112260/042	2009-10-20	2010-10-19



### 3. SUMMARY OF TEST RESULTS

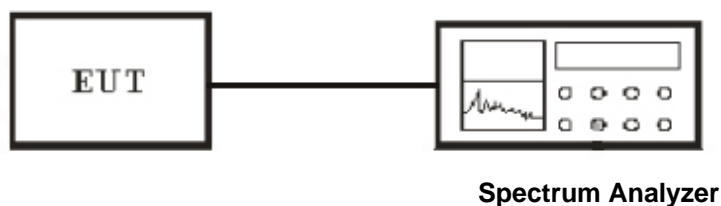
FCC Rules	Description of Test	Result
15.207	Conducted Emission	N/A
15.247(a)(1)	Hopping Channel Bandwidth	Pass
15.247(a)(1)	Hopping Channel Separation	Pass
15.247(a)(1)	Number of Hopping Frequency Used	Pass
15.247(a)(1)(iii)	Dwell Time of Each Frequency	Pass
15.247(b)(1)	Maximum Peak Output Power	Pass
15.247(d)	Band Edges Emission	Pass
15.247(d)	Spurious Radiated Emission	Pass
15.203/15.247(b)/(c)	Antenna Requirement	Pass

## 4. Test of Hopping Channel Bandwidth

### 4.1 Applicable Standard

Section 15.247(a)(1): Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

### 4.2 EUT Setup



### 4.3 Test Equipment List and Details

See section 2.4.

### 4.4 Test Procedure

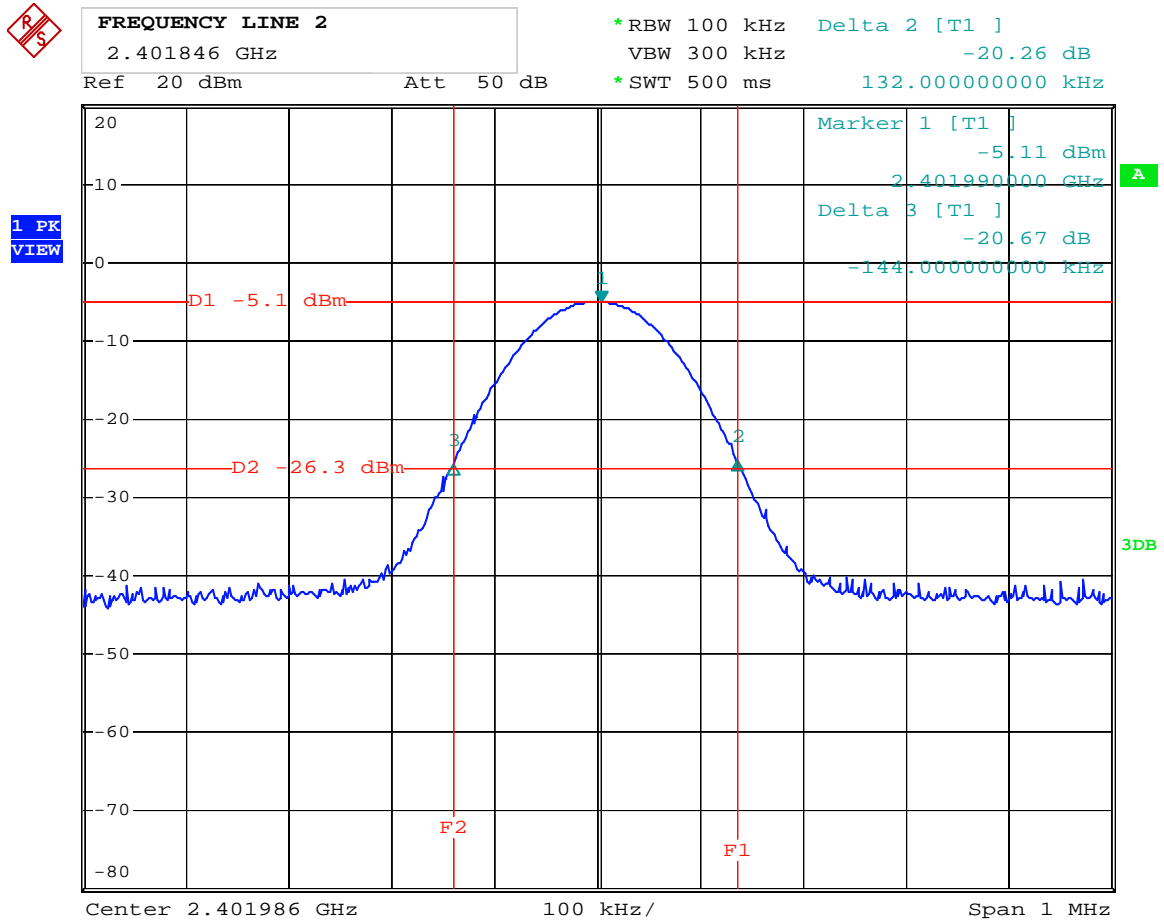
1. The transmitter output was connected to the spectrum analyzer through an attenuator.
2. Set RBW of spectrum analyzer to 30KHz and VBW to 100KHz.
3. Set Detector to Peak, Trace to Max Hold and Sweep Time is Auto.
4. The spectrum width with level higher than 20dB below the peak level.
5. Repeat above 1~3 points for the middle and highest channel of the EUT.

### 4.5 Test Result

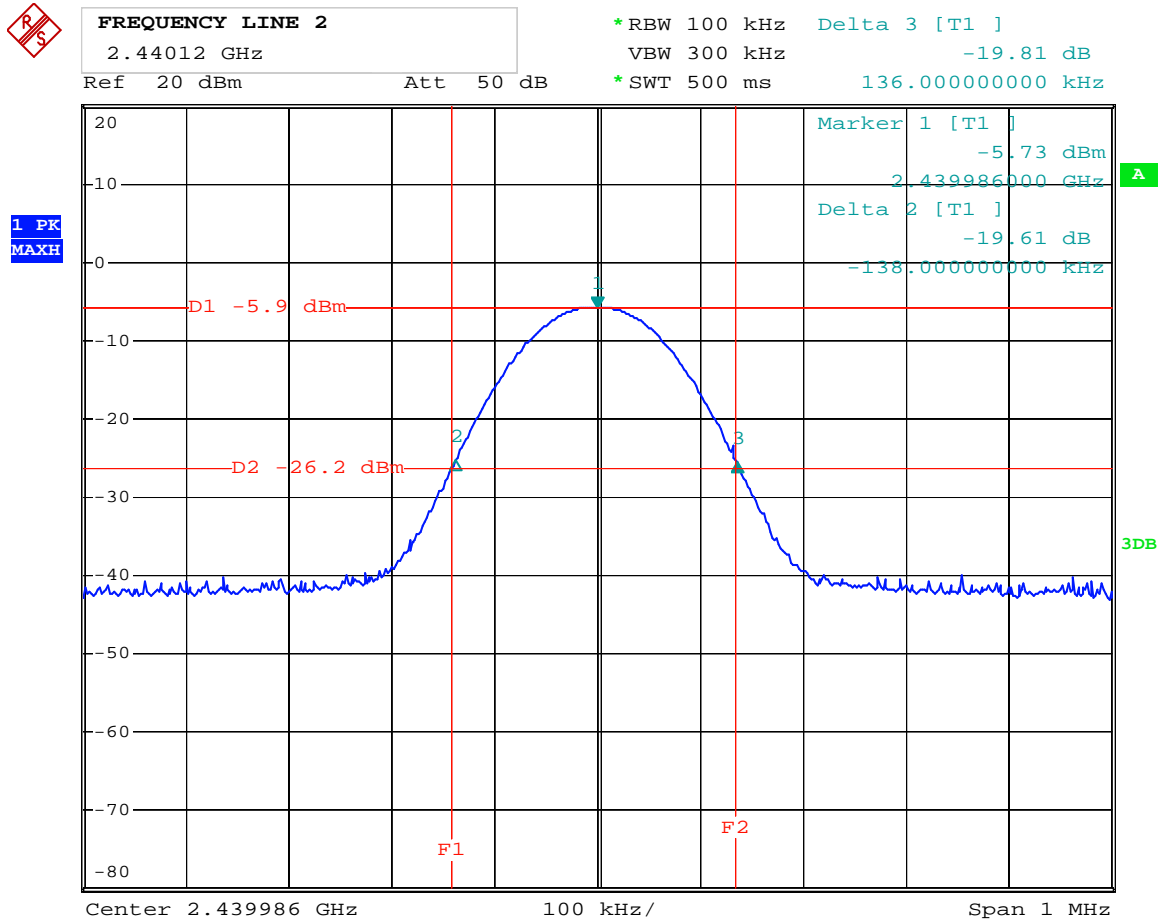
Temperature ( °C ) : 22~23	EUT: Car Media Player
Humidity (%RH) : 50~54	M/N: D1301
Barometric Pressure ( mbar ) : 950~1000	Operation Condition: Tx Mode

Modulation Type	Channel No.	Frequency (MHz)	20dB Bandwidth (kHz)	Min. Limit (kHz)
FHSS	Low	2419.90	276	>25
FHSS	Middle	2440.00	274	>25
FHSS	High	2480.00	278	>25

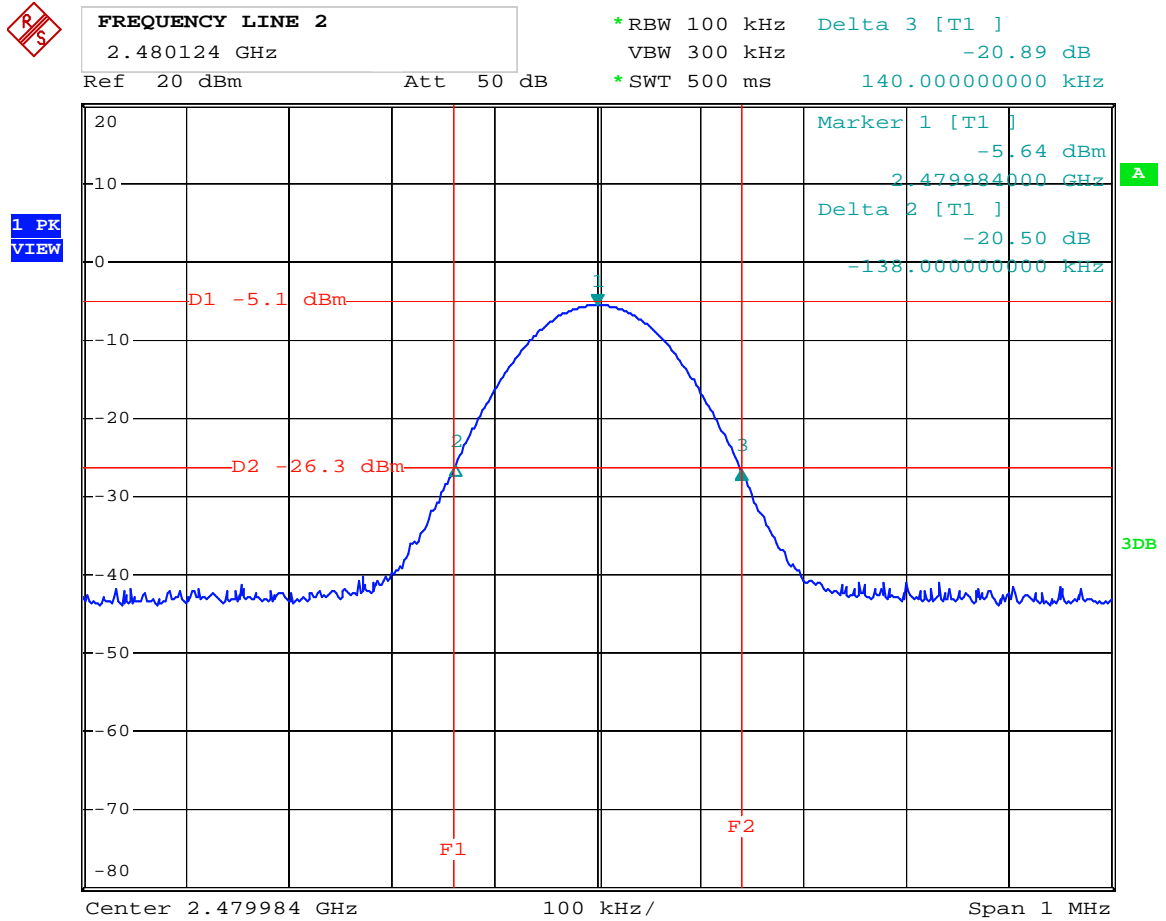
**Channel Low :**



## Channel Middle :



## Channel High :

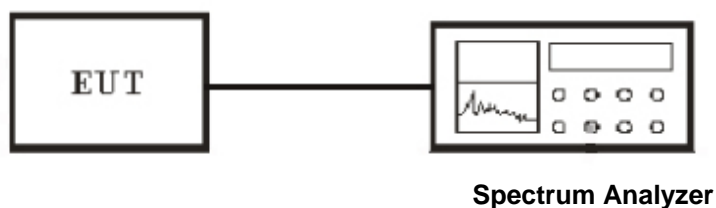


## 5. Test of Hopping Channel Separation

### 5.1 Applicable Standard

Section 15.247(a)(1): Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

### 5.2 EUT Setup



### 5.3 Test Equipment List and Details

See section 2.4.

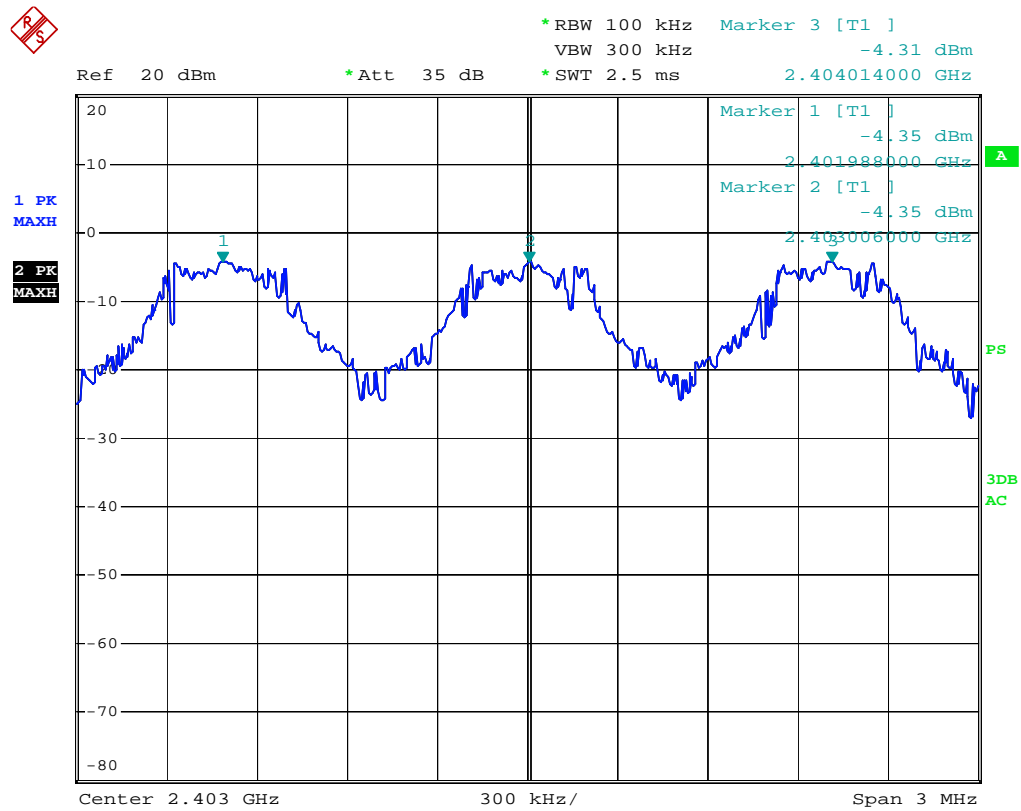
### 5.4 Test Procedure

1. The transmitter output was connected to the spectrum analyzer through an attenuator.
2. Set RBW of spectrum analyzer to 100KHz and VBW to 100KHz.
3. Set Detector to Peak, Trace to Max Hold and Sweep Time is Auto.
4. The Hopping Channel Separation is defined as the separation between 2 neighboring hopping frequencies.
5. Repeat above 1~3 points for the middle and highest channel of the EUT.

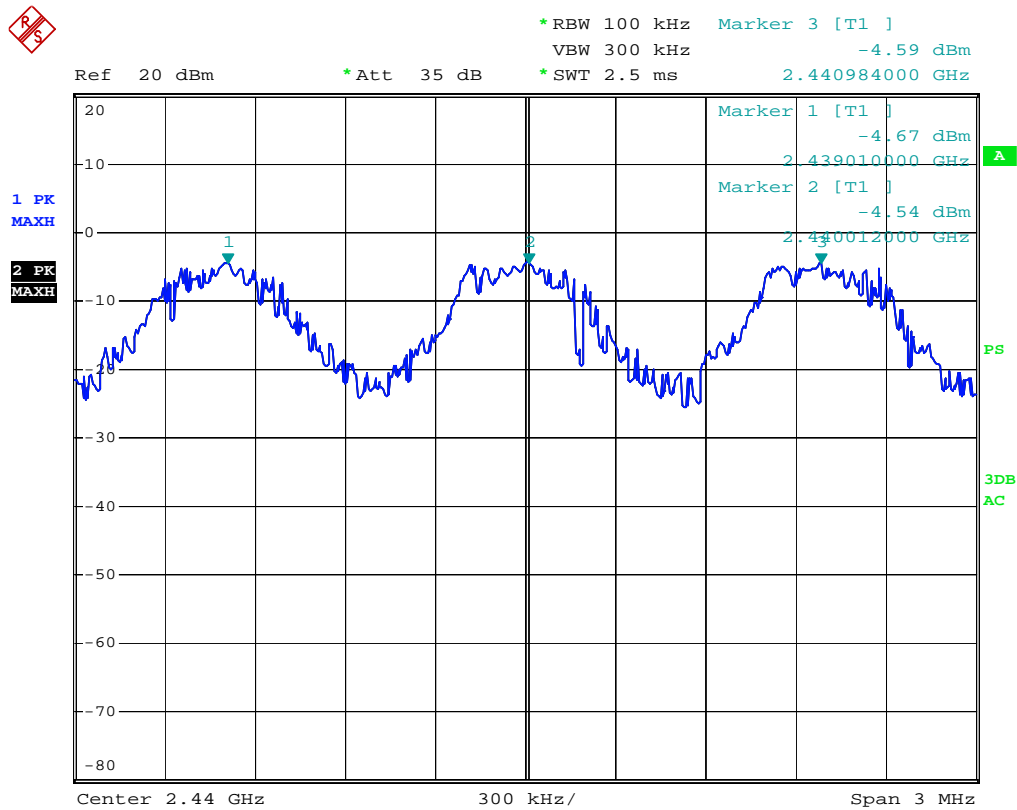
### 5.5 Test Result

Temperature ( °C ) : 22~23	EUT: Car Media Player
Humidity (%RH ) : 50~54	M/N: D1301
Barometric Pressure ( mbar ) : 950~1000	Operation Condition: Tx Mode

Channel Low :

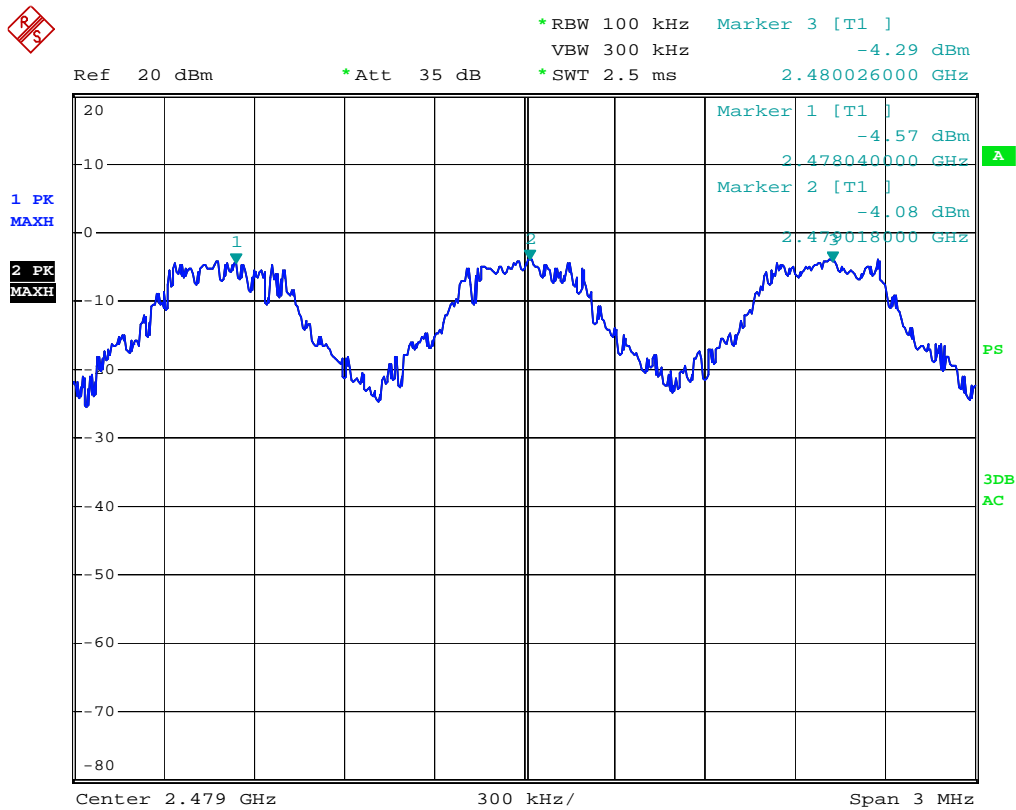


Channel Middle :





Channel High :

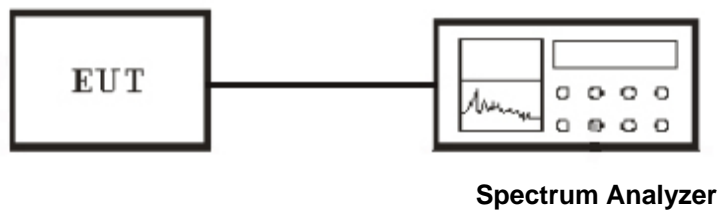


## 6. Test of Number of Hopping Frequency

### 6.1 Applicable Standard

Section 15.247(a)(1)(iii): For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 15 non-overlapping hopping channels. Frequency hopping system which use fewer than 75 hopping frequencies may employ intelligent hopping techniques to avoid interference to other transmissions. Frequency hopping system may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 non-overlapping channels are used.

### 6.2 EUT Setup



### 6.3 Test Equipment List and Details

See section 2.4.

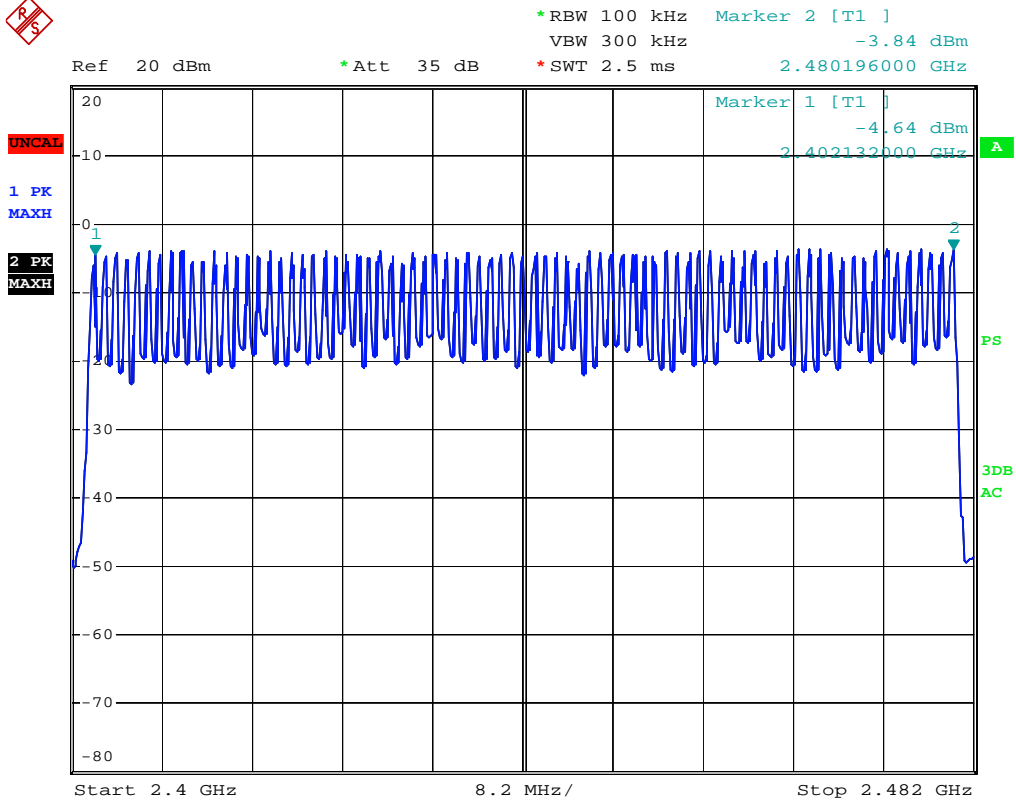
### 6.4 Test Procedure

1. The transmitter output was connected to the spectrum analyzer through an attenuator.
2. Set RBW of spectrum analyzer to 100KHz and VBW to 100KHz.
3. Set Detector to Peak, Trace to Max Hold and Sweep Time is Auto.
4. Observe frequency hopping in 2400MHz~2483.5MHz, there are at least 32 non-overlapping channels.
5. Repeat above 1~3 points for the middle and highest channel of the EUT.

### 6.5 Test Result

Temperature ( °C ) : 22~23	EUT: Car Media Player
Humidity (%RH ) : 50~54	M/N: D1301
Barometric Pressure ( mbar ) : 950~1000	Operation Condition: Tx Mode

Modulation Type	Frequency (MHz)	Number of Hopping Channels	Min. Limit (kHz)
FHSS	2402.0~2480.0	79	>15

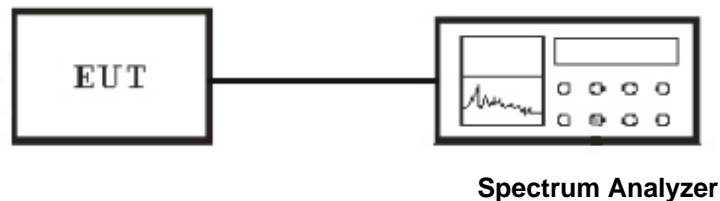


## 7. Test of Dwell Time of Each Frequency

### 7.1 Applicable Standard

Section 15.247(a)(1)(iii): For frequency hopping systems operating in the 2400-2483.5 MHz band  
The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4seconds multiplied by the number of hopping channels employed.

### 7.2 EUT Setup



### 7.3 Test Equipment List and Details

See section 2.4.

### 7.4 Test Procedure

1. The transmitter output was connected to the spectrum analyzer through an attenuator.
2. Set RBW of spectrum analyzer to 1000kHz and VBW to 1000kHz.
3. Set Detector to Peak, Trace to Max Hold and Sweep Time is more than once pulse time.
4. Set the center frequency on any frequency would be measure and set the frequency span to zero span.
5. Measure the maximum time duration of one single pulse.

### 7.5 Test Result

Temperature ( °C ) : 22~23	EUT: Car Media Player
Humidity (%RH ) : 50~54	M/N: D1301
Barometric Pressure ( mbar ) : 950~1000	Operation Condition: Tx Mode

Modulation Type	Channel No.	Frequency (MHz)	Dwell Time (ms)	Limit (ms)
FHSS	Low	2402.00	147.2	400
FHSS	Middle	2440.00	147.2	400
FHSS	High	2480.00	147.2	400

A period time =  $0.4 \text{ (ms)} * 79 = 31.6 \text{ (s)}$

CH Low:

DH1 time slot =  $0.460 \text{ (ms)} * (1600/(2*79)) * 31.6 = 147.2 \text{ (ms)}$

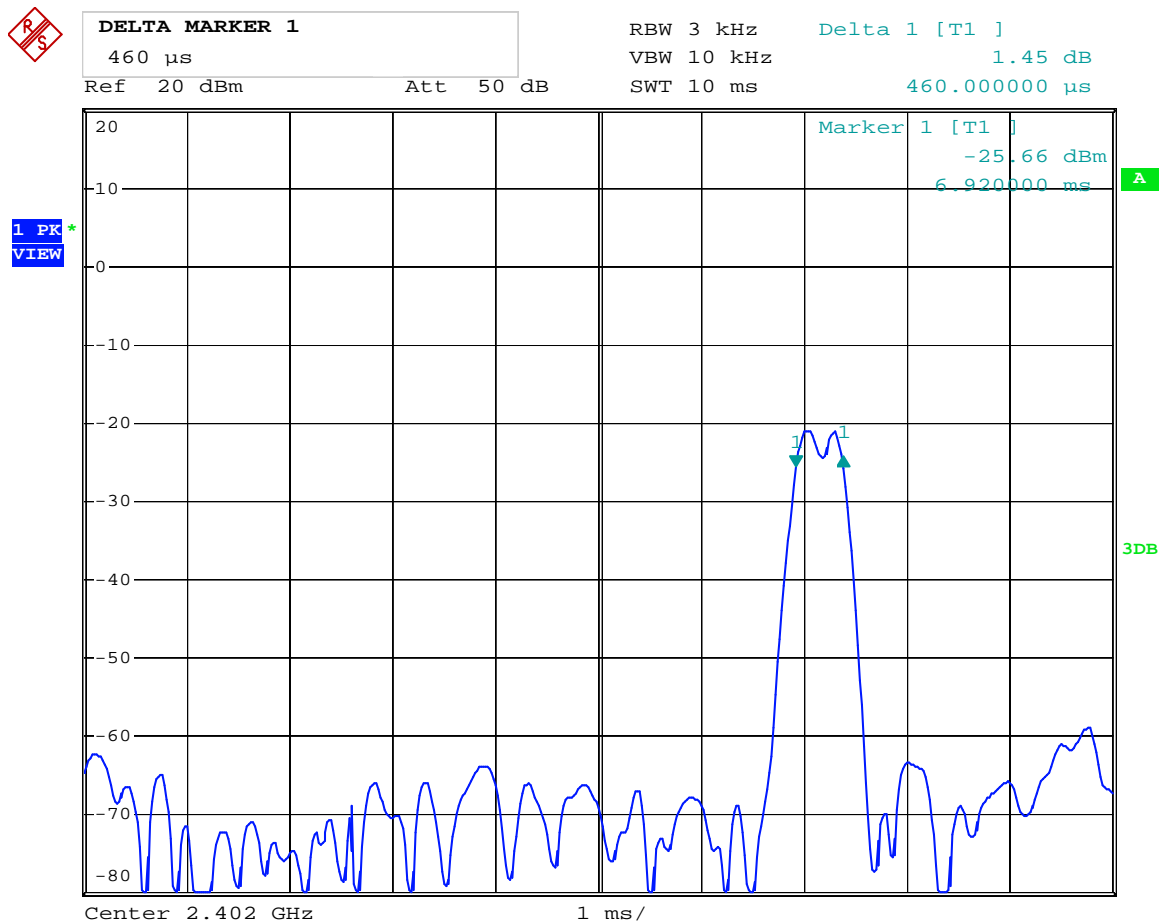
CH Mid:

DH1 time slot =  $0.460 \text{ (ms)} * (1600/(2*79)) * 31.6 = 147.2 \text{ (ms)}$

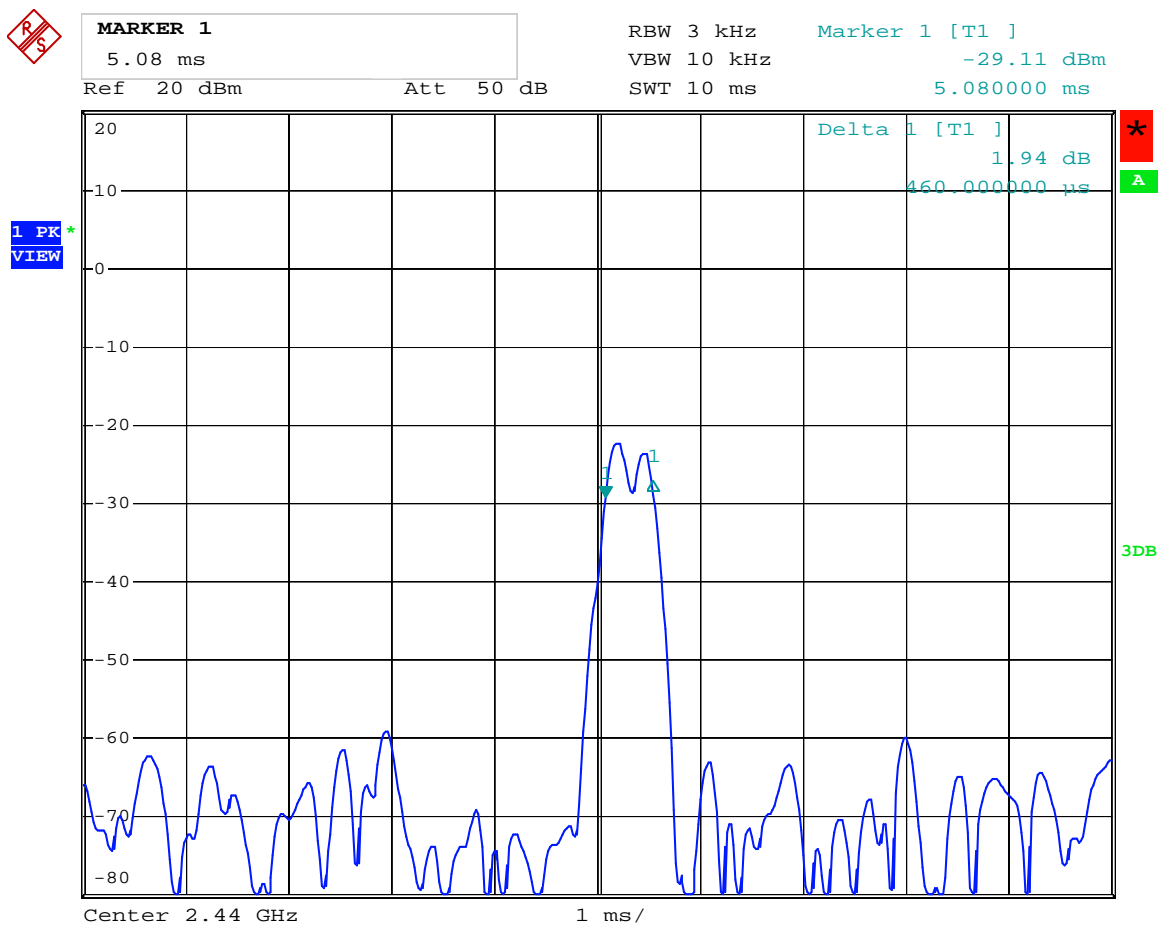
CH High:

DH1 time slot =  $0.460 \text{ (ms)} * (1600/(2*79)) * 31.6 = 147.2 \text{ (ms)}$

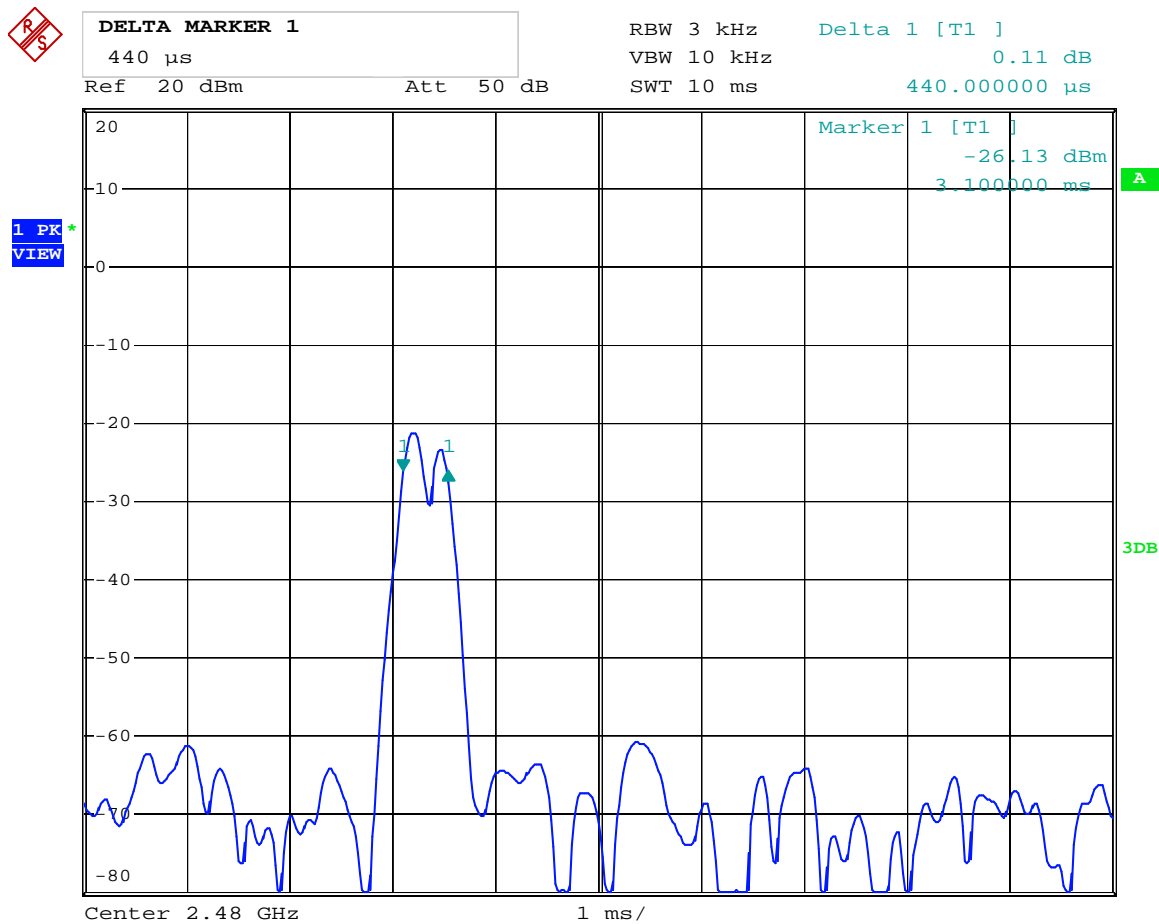
Channel Low :



Channel Middle :



Channel High :



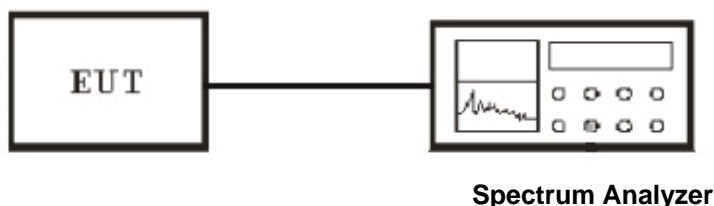


## 8. Test of Maximum Peak Output Power

### 8.1 Applicable Standard

Section 15.247(b)(1): For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels and The maximum peak output power shall not exceed 1 watt. For all other frequency hopping systems in this frequency band, The maximum peak output power shall not exceed 0.125 watt.

### 8.2 EUT Setup



### 8.3 Test Equipment List and Details

See section 2.4.

### 8.4 Test Procedured

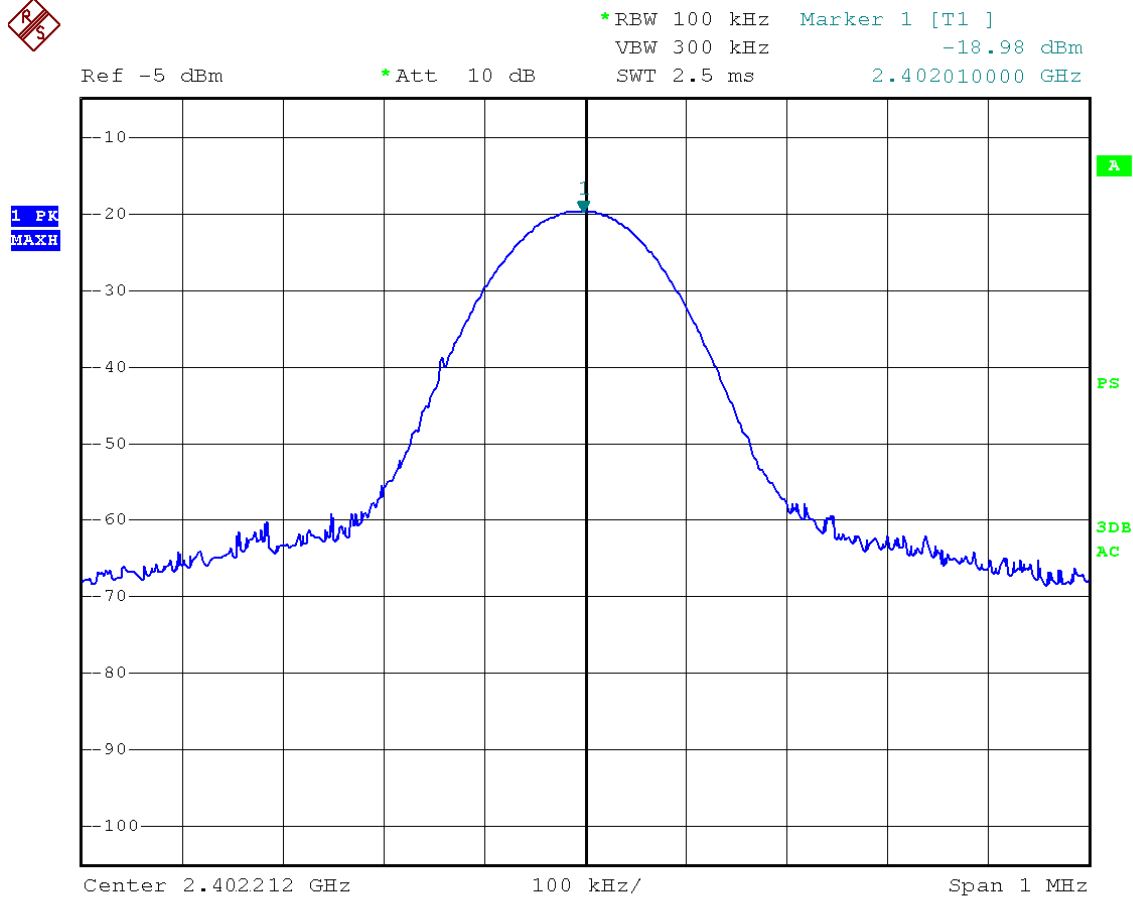
1. The transmitter output was connected to the peak power meter and recorded the peak value.
2. Peak power meter parameter set to auto attenuator and filter is the same as.
3. Repeated the 1 for the middle and highest channel of the EUT.

### 8.5 Test Result

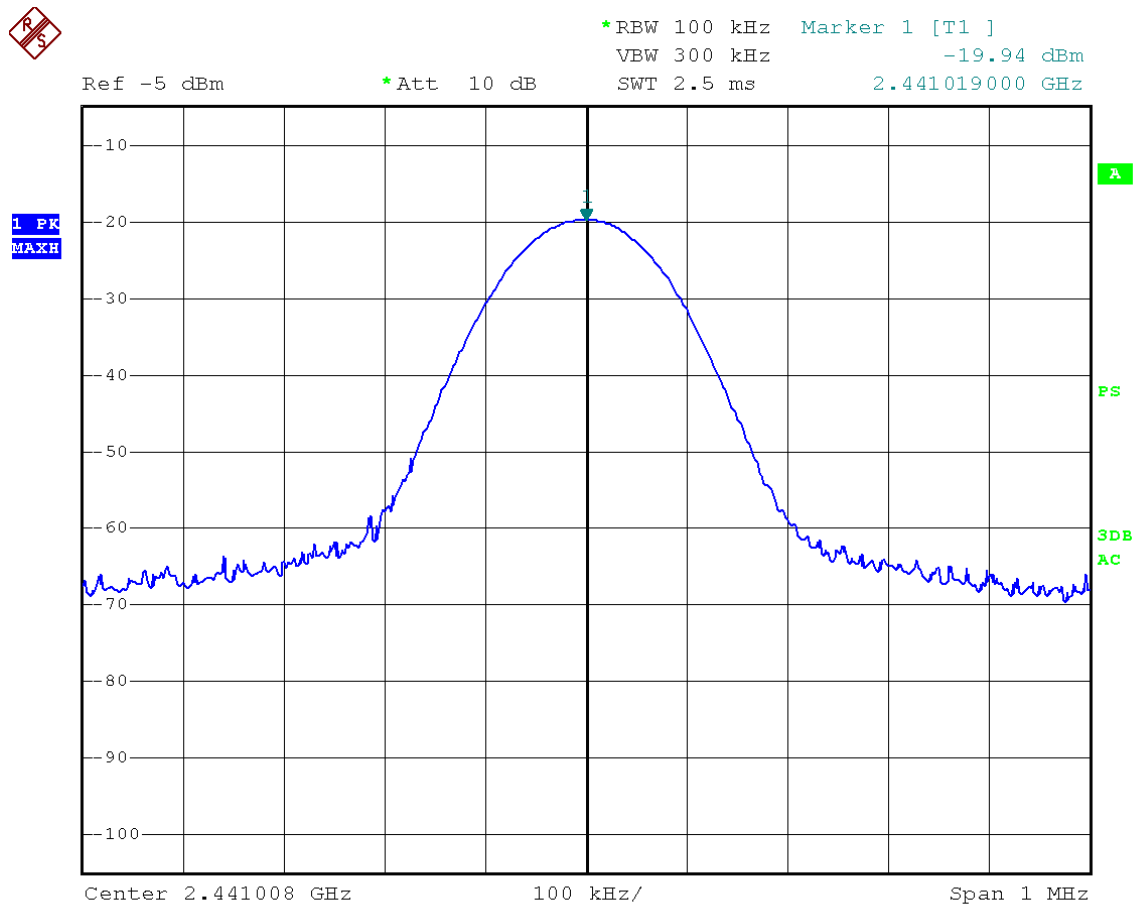
Temperature ( °C ) : 22~23	EUT: Car Media Player
Humidity (%RH) : 50~54	M/N: D1301
Barometric Pressure ( mbar ) : 950~1000	Operation Condition: Tx Mode

Modulation Type	Channel No.	Frequency (MHz)	Output Power (dBm)	Limits (dBm)	Margin (dB)
FHSS	Low	2402.00	-18.98	20.9	39.88
FHSS	Middle	2441.00	-19.94	20.9	41.84
FHSS	High	2480.00	-20.48	20.9	41.38

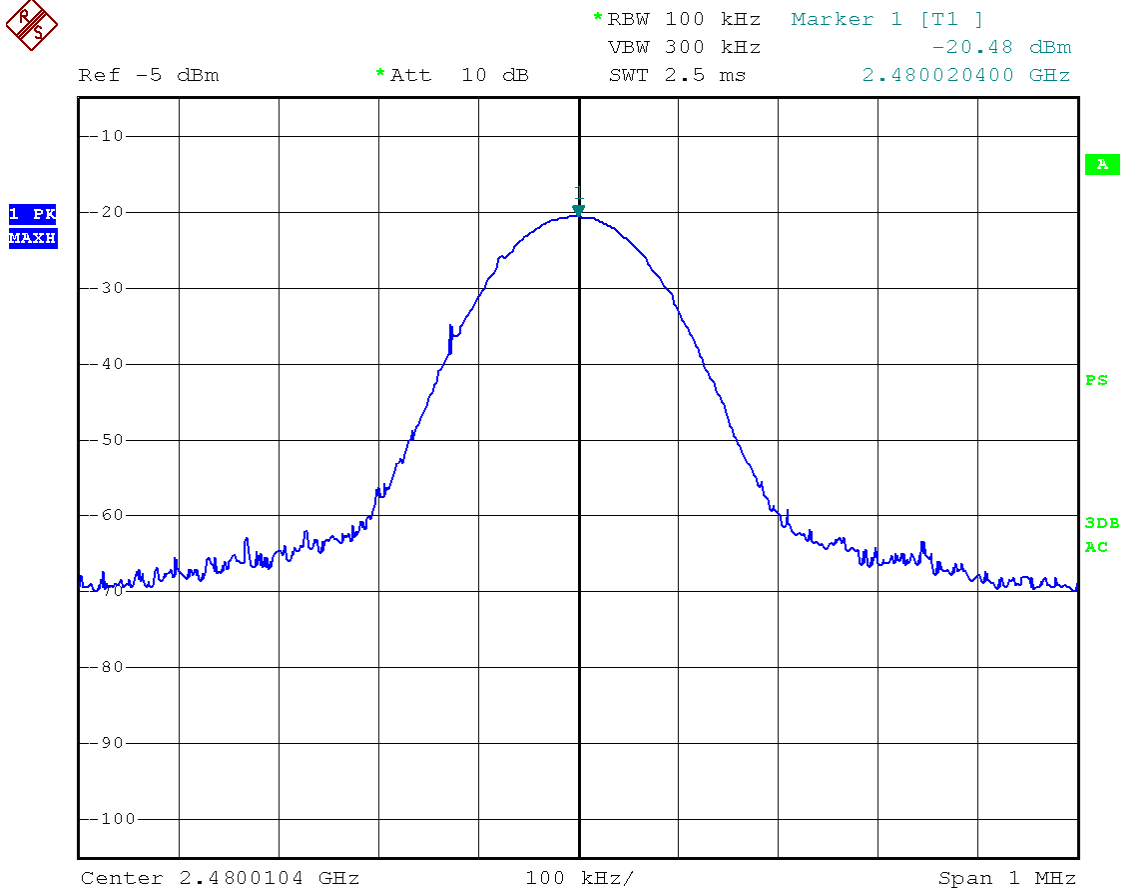
Channel Low :



Channel Middle :



Channel High :



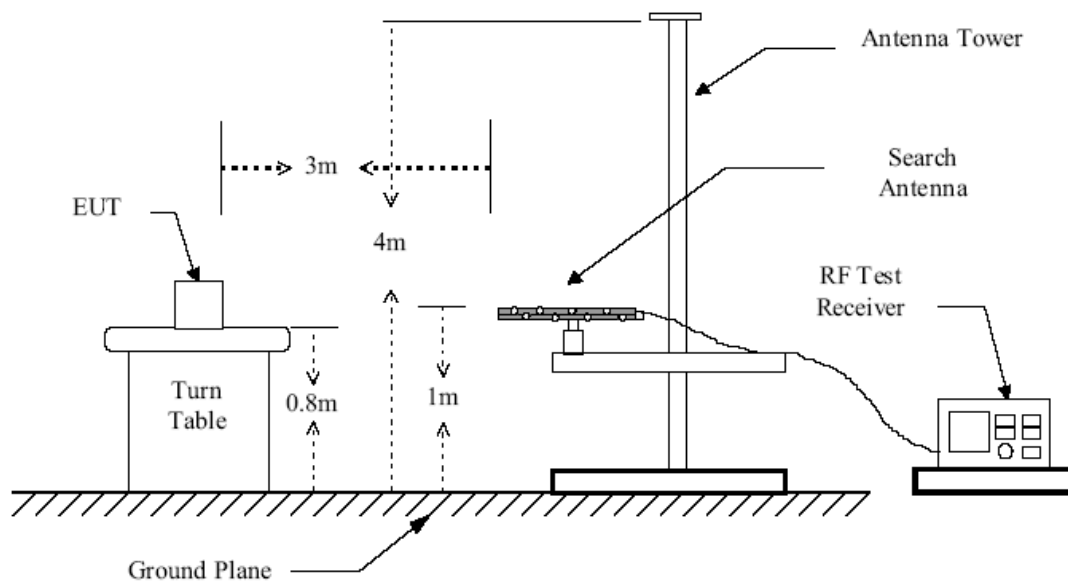
## 9. Test of Band Edges Emission

### 9.1 Applicable Standard

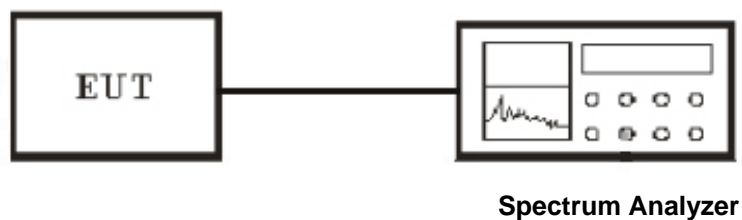
Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. In addition, radiated emissions that fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209.

### 9.2 EUT Setup

#### Radiated Measurement Setup



#### Conducted Measurement Setup



### 9.3 Test Equipment List and Details

See section 2.4.

### 9.4 Test Procedure

#### Conducted Measurement

1. The transmitter is set to the lowest channel.
2. The transmitter output was connected to the spectrum analyzer via a cable and cable loss is used as the offset of the spectrum analyzer.
3. Set both RBW and VBW of spectrum analyzer to 100KHz with convenient frequency span including 100MHz bandwidth from lower band edge. Then detector set to peak and max hold this trace.
4. The lowest band edges emission was measured and recorded.
5. The transmitter set to the highest channel and repeated 2~4.

#### Radiated Measurement

1. Configure the EUT according to ANSI C63.4-2009
2. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emission field strength of both horizontal and vertical polarization.
4. For band edge emission, the antenna tower was scan (from 1 M to 4 M) and then the turn table was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. For band edge emission, use 1MHz VBW and 1MHz RBW for reading under AV and use 1MHz VBW and 1MHz RBW for reading under PK.

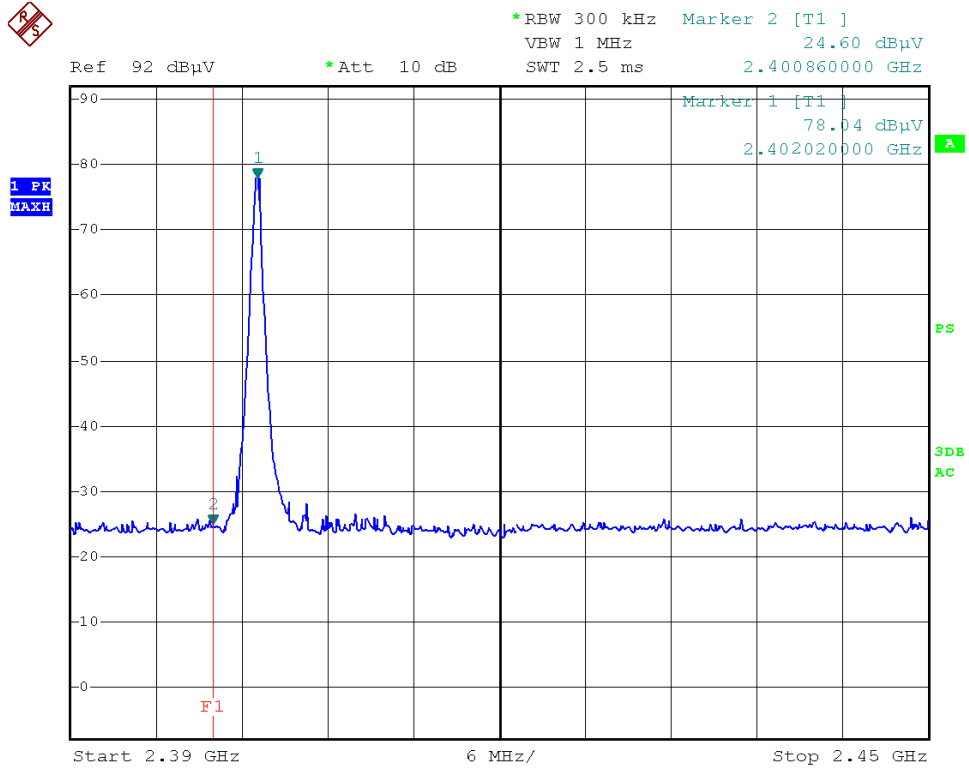
### 9.5 Test Result

Temperature ( °C ) : 22~23	EUT: Car Media Player
Humidity (%RH ) : 50~54	M/N: D1301
Barometric Pressure ( mbar ) : 950~1000	Operation Condition: Tx Mode

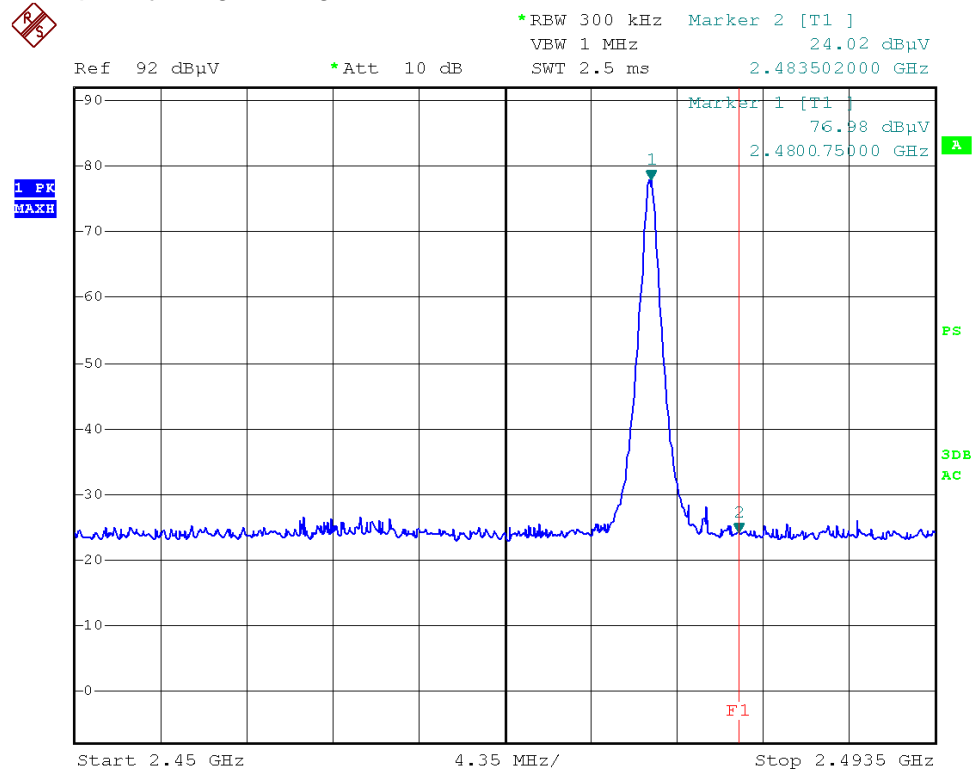
#### Radiated Test Result

Frequency(MHz)
<2400
>2483.5

### The worst frequency range of Low Channel



### The worst frequency range of High Channel



## 10. Test of Spurious Radiated Emission

### 10.1 Applicable Standard

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. In addition, radiated emissions that fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209.

### 10.2 EUT Setup

#### Radiated Measurement Setup

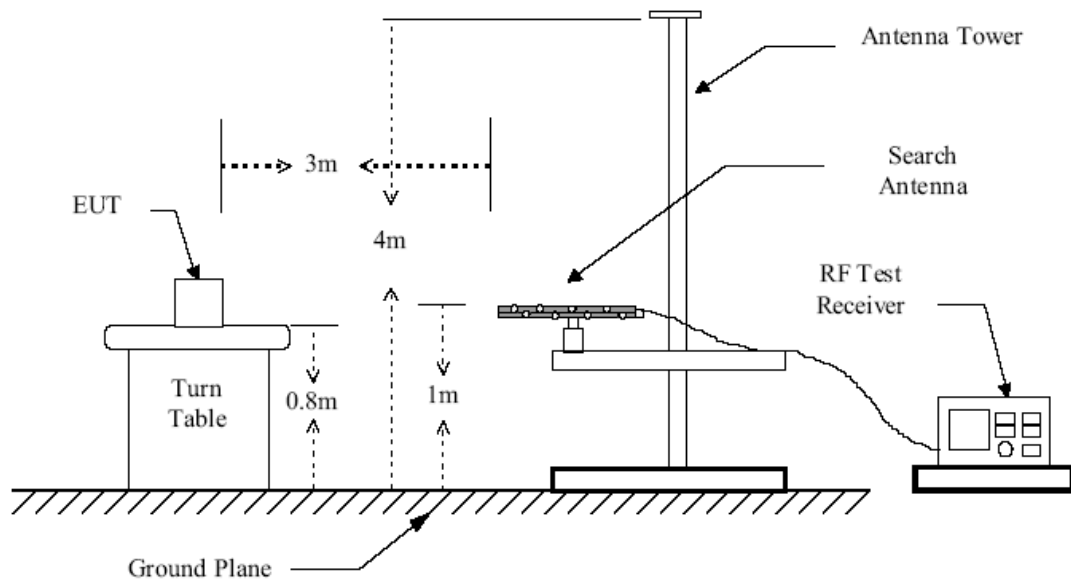


Figure 1 : Frequencies measured below 1 GHz configuration



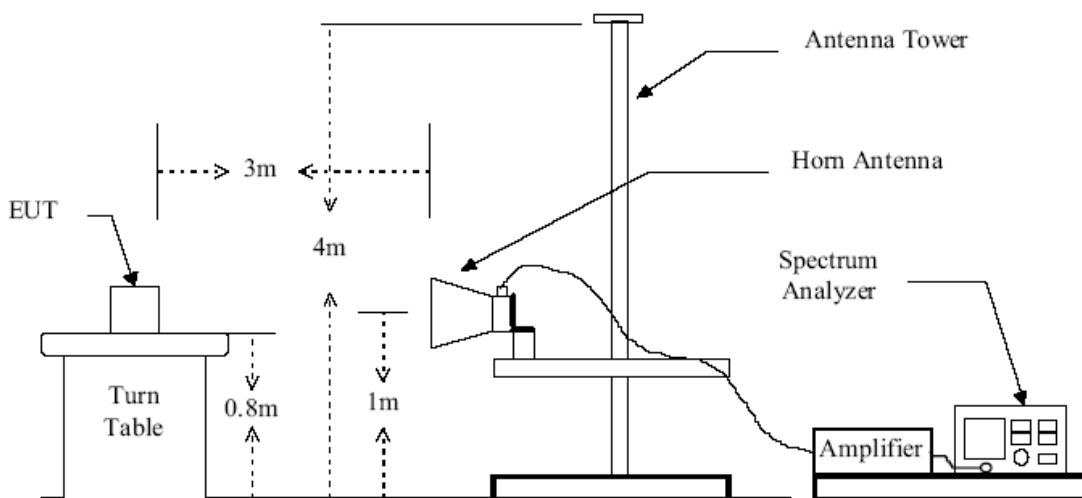
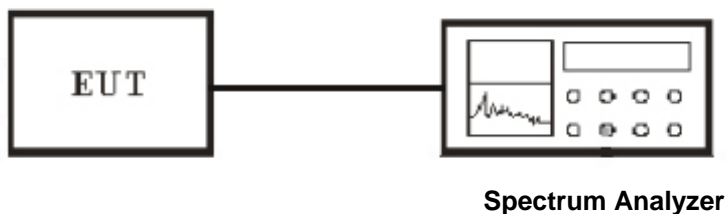


Figure 2 : Frequencies measured above 1 GHz configuration

### Conducted Measurement Setup



### 10.3 Test Equipment List and Details

See section 2.4.

### 10.4 Test Procedure

#### Radiated Measurement

1. Configure the EUT according to ANSI C63.4-2009
2. The EUT was placed on the top of the turntable 0.8 meter above ground.
3. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
4. Power on the EUT and all the supporting units.
5. The turntable was rotated by 360 degrees to determine the position of the highest radiation.

6. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emission field strength of both horizontal and vertical polarization.
7. For each suspected emission, the antenna tower was scanned (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
8. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.

### **Conducted Measurement**

1. For emission above 1GHz,conducted measurement method is used.
2. The transmitter is set to the lowest channel.
3. The transmitter output was connected to the spectrum analyzer via a cable and cable loss is used as the offset of the spectrum analyzer.
4. Set RBW to 1 MHz and VBW to 3 MHz, Then detector set to peak and max hold this trace.
5. The lowest band edges emission was measured and recorded.
6. The transmitter set to the highest channel and repeated 2~4.

### **10.5 Test Result**

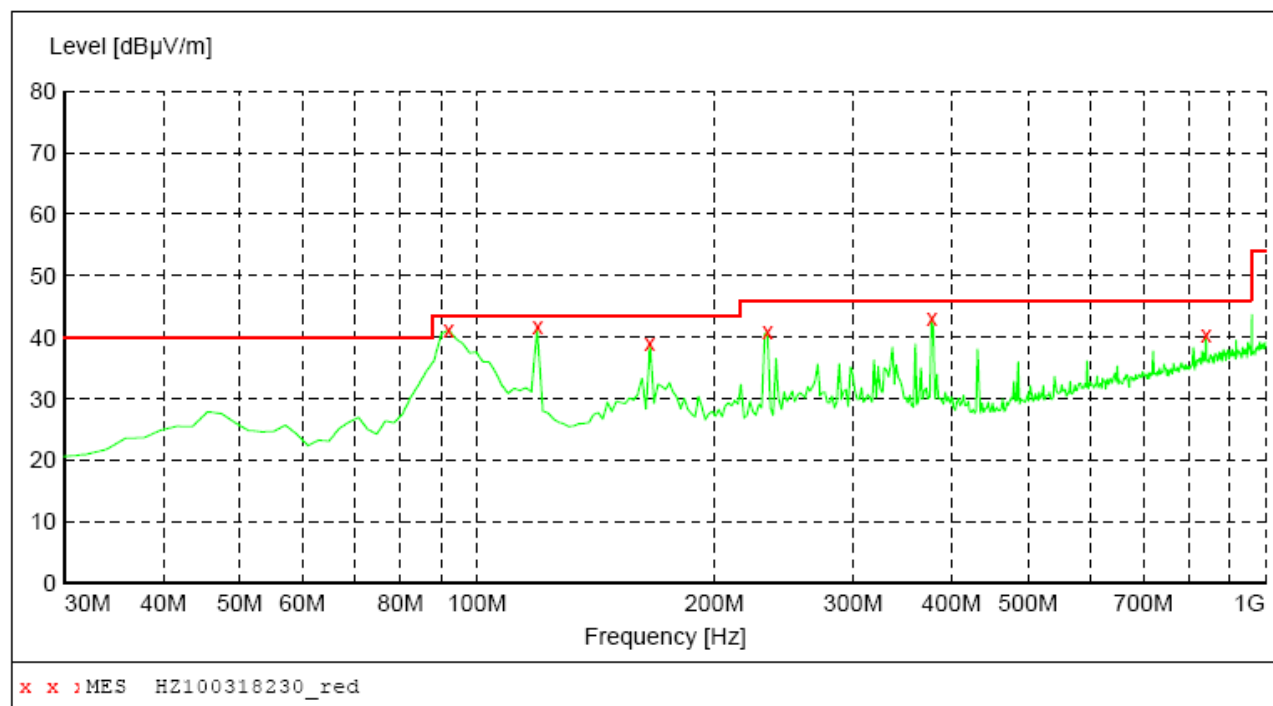
Temperature ( °C ) : 22~23	EUT: Car Media Player
Humidity (%RH ) : 50~54	M/N: D1301
Barometric Pressure ( mbar ) : 950~1000	Operation Condition: Normal operation

## Spurious Emission (30~1000MHz)

EUT: Car Media Player  
M/N: D1301  
Operating Condition: Normal Operation  
Test Site: 3m CHAMBER  
Operator: Chen  
Test Specification: DC 12 V  
Comment: Polarization: Horizontal  
Tem:25°C Hum:50%

### ***SWEEP TABLE: "test (30M-1G)"***

Short Description:		Field Strength			
Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	VULB9163 NEW



### ***MEASUREMENT RESULT: "HZ100318230\_red"***

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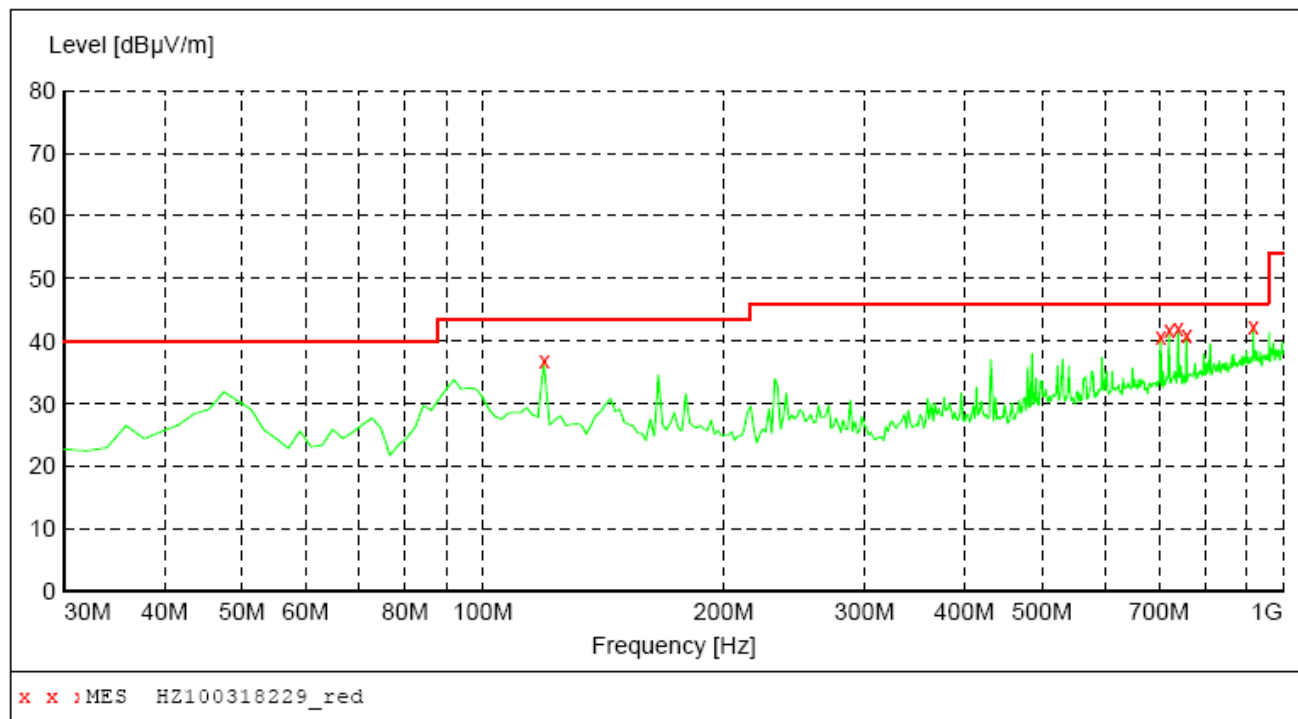
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
92.080000	41.20	16.5	43.5	2.3	---	300.0	0.00	HORIZONTAL
119.240000	41.70	15.2	43.5	1.8	---	300.0	0.00	HORIZONTAL
165.800000	39.10	14.1	43.5	4.4	---	300.0	0.00	HORIZONTAL
233.700000	40.90	16.8	46.0	5.1	---	100.0	0.00	HORIZONTAL
377.260000	43.20	20.9	46.0	2.8	---	100.0	0.00	HORIZONTAL
840.920000	40.40	30.2	46.0	5.6	---	100.0	0.00	HORIZONTAL

## Spurious Emission (30~1000MHz)

EUT: Car Media Player  
M/N: D1301  
Operating Condition: Normal Operation  
Test Site: 3m CHAMBER  
Operator: Chen  
Test Specification: DC 12V  
Comment: Polarization: Vertical  
Tem:25°C Hum:50%

### ***SWEEP TABLE: "test (30M-1G)"***

Short Description:		Field Strength			
Start	Stop	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	VULB9163 NEW

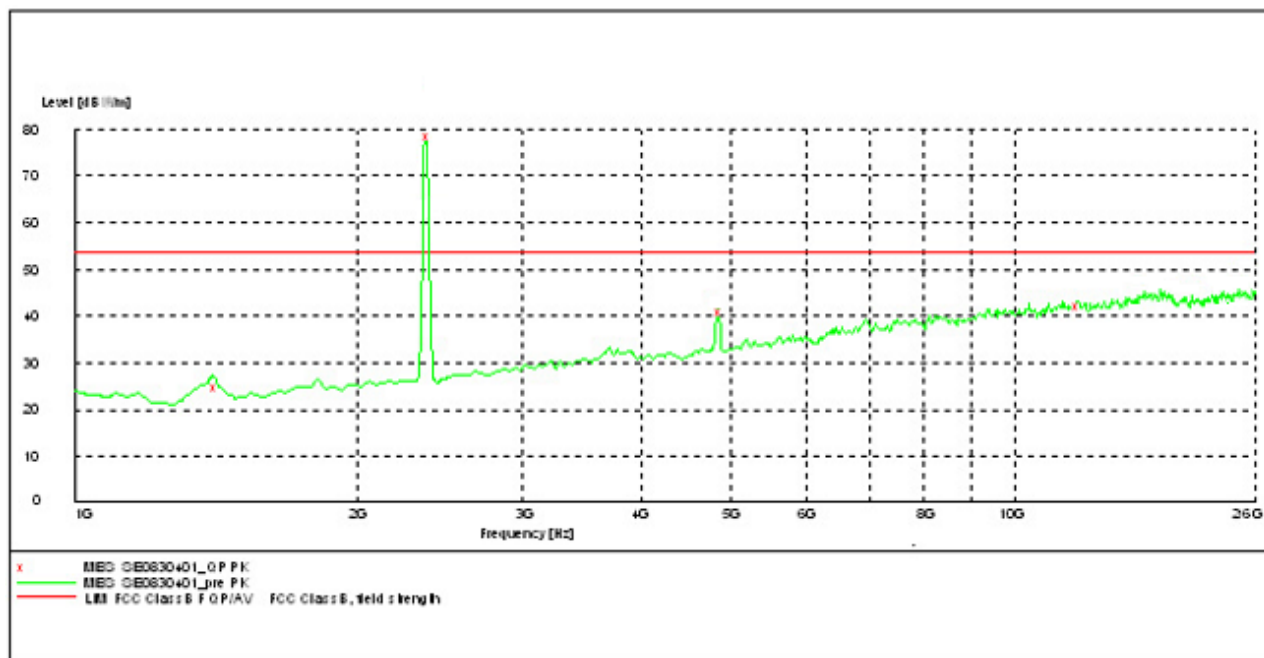


### ***MEASUREMENT RESULT: "HZ100318229\_red"***

5/20/2010 17:15

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
119.240000	36.80	15.2	43.5	6.7	---	100.0	0.00	VERTICAL
703.180000	40.60	27.7	46.0	5.4	---	100.0	0.00	VERTICAL
720.640000	41.70	28.0	46.0	4.3	---	100.0	0.00	VERTICAL
740.040000	42.00	28.4	46.0	4.0	---	100.0	0.00	VERTICAL
757.500000	41.10	28.7	46.0	4.9	---	100.0	0.00	VERTICAL
918.520000	42.40	31.4	46.0	3.6	---	100.0	0.00	VERTICAL

The mid channel(2441MHz)is the worst Spurious Emissions data above 1GHz of horizontal

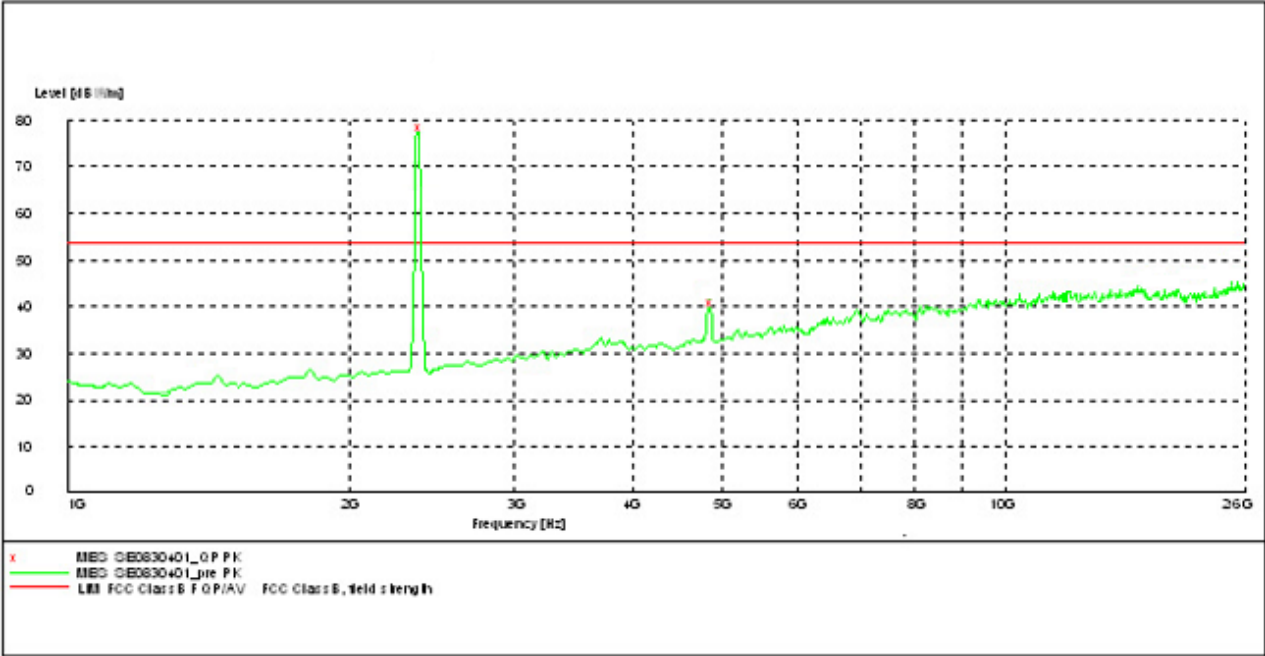


# **MEASUREMENT RESULT:**

5/28/2010 10:32

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
2441.07000	79.01	31.3	84.0	4.99	---	123.0	0.00	HORIZONTAL
4882.30100	36.84	32.4	40.0	3.16	---	131.0	0.00	HORIZONTAL

The mid channel(2441MHz)is the worst Spurious Emissions data above 1GHz of Vertical



MEASUREMENT RESULT:

5/28/2010 10:44

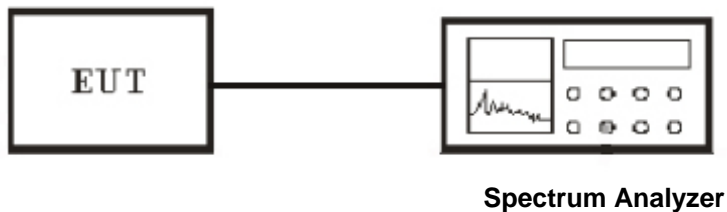
Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
2441.00600	79.80	31.8	84.0	4.2	---	151.0	0.00	VERTICAL
4882.01020	33.89	32.4	40.0	7.6	---	148.0	0.00	VERTICAL

## 11. Test of Peak Power Spectral Density

### 11.1 Applicable Standard

According to § 15.247(d), for direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3kHz band during any time interval of continuous transmission.

### 11.2 EUT Setup



### 11.3 Test Equipment List and Details

See section 2.4.

### 11.4 Test Procedure

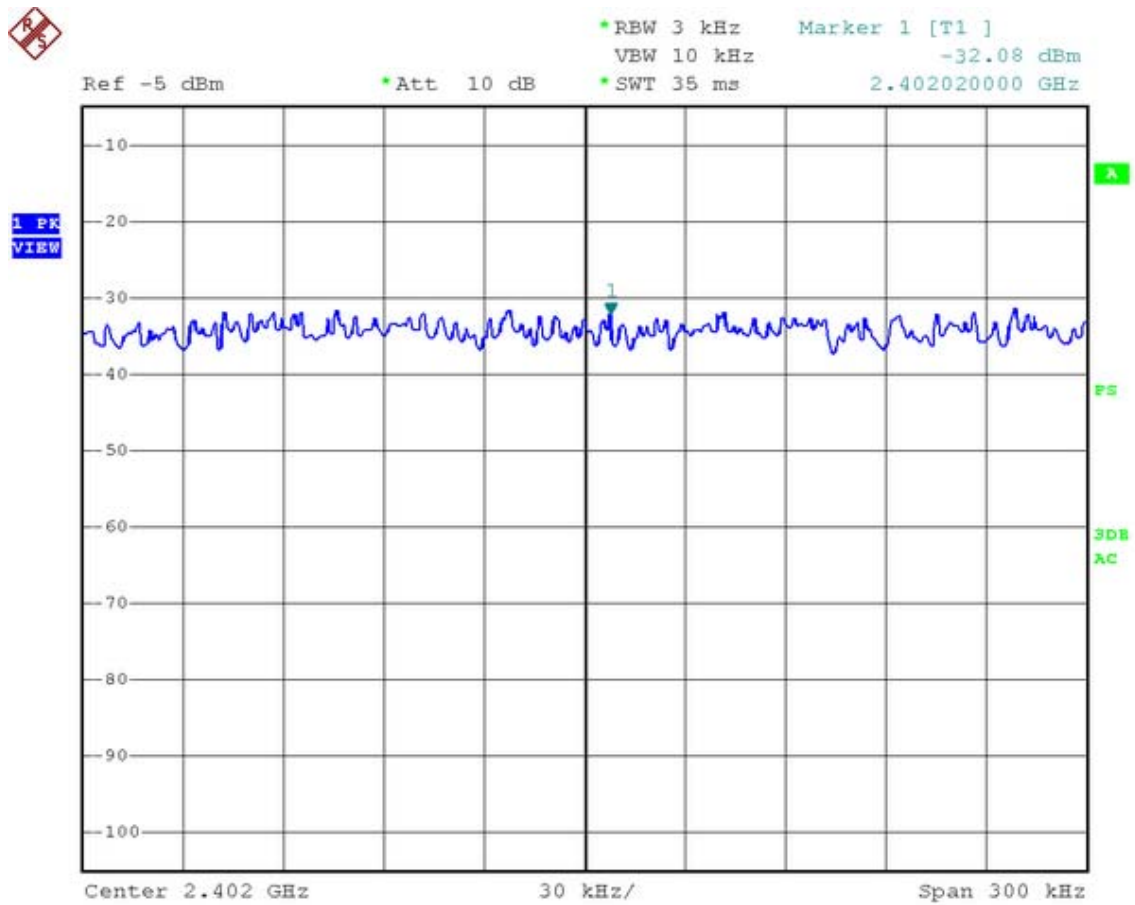
1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 3KHz, VBW = 10KHz, Span = 300KHz, Sweep=100s
4. Record the max. reading.
5. Repeat above procedures until all frequency measured were complete.

### 11.5 Test Result

Temperature ( °C ) : 22~23	EUT: Car Media Player
Humidity (%RH) : 50~54	M/N: D1301
Barometric Pressure ( mbar ) : 950~1000	Operation Condition: Tx Mode

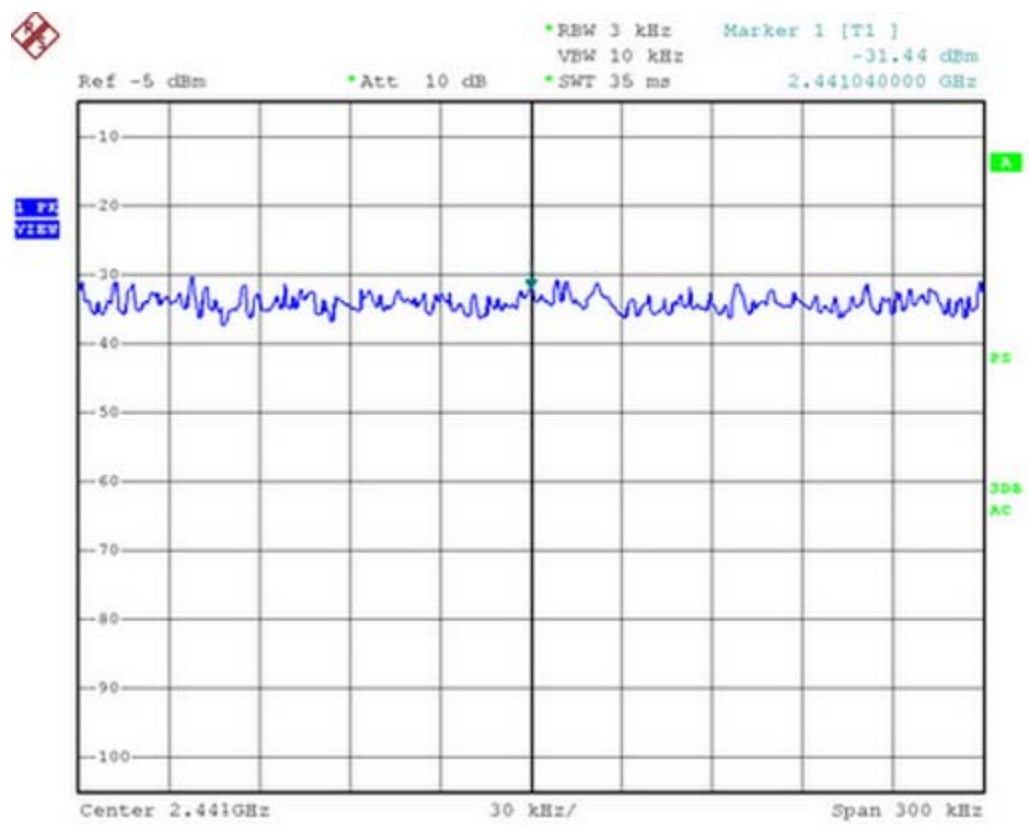
CH	RF Power Density Reading (dBm)	Cable loss (dB)	RF Power Density Level (dBm)	Maximum Limit (dBm)
Low	-32.08	1.20	-30.78	8
Mid	-31.44	1.20	-30.24	8
High	-32.39	1.20	-31.19	8

**Channel Low :**

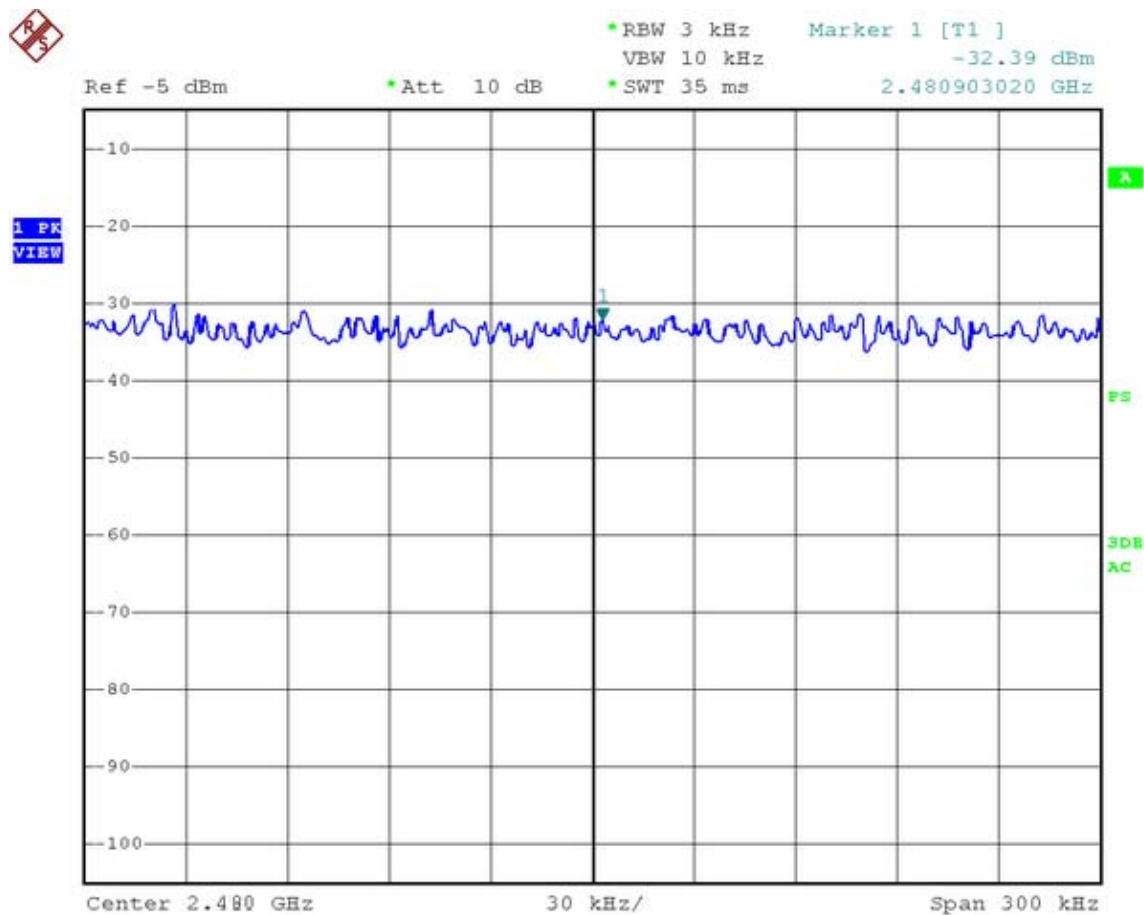




Channel Mid :



Channel High :



## **12. ANTENNA REQUIREMENT**

### **12.1 Standard Applicable**

Section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. 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.

Section 15.247(b)/(c):

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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

### **12.2 Antenna Connected Construction**

The antenna connector is designed with permanent attachment and no consideration of replacement.