



# **Test Report**

Product Name : PLYR 2

Model No. : SMPLFY-207, SMPLFY-205, SMPLFY-280

FCC ID. : Y22-SK20120002

Applicant : Skullcandy

Address : 1441 W. Ute Blvd Suite 250, Park City, UT 84098, U.S.A.

Date of Receipt : 2012/09/12

Issued Date : 2012/10/02

Report No. : 129270R-RFUSP42V01-A

Report Version : V1.0





The test results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.



# **Test Report Certification**

Issued Date : 2012/10/02

Report No. : 129270R-RFUSP42V01-A

# QuieTek

Product Name : PLYR 2

Applicant : Skullcandy

Address : 1441 W. Ute Blvd Suite 250, Park City, UT 84098, U.S.A.

Manufacturer : Merry Electronics (Shenzhen) Co., Ltd.

Model No. : SMPLFY-207, SMPLFY-205, SMPLFY-280

FCC ID. : Y22-SK20120002

EUT Voltage : DC 3.7V (Power by Battery)

DC 5V (Power by PC)

Trade Name : SKULLCANDY

Applicable Standard : FCC CFR Title 47 Part 15 Subpart C Section 15.247: 2011

Test Result : Complied

The test results relate only to the samples tested.

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Dami Change

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#### **Laboratory Information**

We, **QuieTek Corporation**, are an independent RF consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted (audited or listed) by the following related bodies in compliance with ISO 17025 specified testing scopes:

Taiwan R.O.C. : TAF, Accreditation Number: 1313

Germany : TUV Rheinland, Certificate No.: 10011438-2-2010

USA : FCC, Registration Number: 365520

Canada : IC, Submission No: 150981

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site:http://www.quietek.com/tw/ctg/cts/accreditations.htm

The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : <a href="http://www.quietek.com/">http://www.quietek.com/</a>

If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

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#### **Suzhou Testing Laboratory:**

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# 1. General Information

# 1.1. EUT Description

Product Name	PLYR 2
Model No.	SMPLFY-207, SMPLFY-205, SMPLFY-280
Trade Name	SKULLCANDY
Frequency Range	2403.35-2477.35MHz
Type of Modulation	pi/4 - DQPSK
Antenna Type	PCB Antenna
Antenna Gain	0dBi
Number of Channels	38
Channel Control	Auto

Component	
USB-to-USB Mini 'B' Cable	Shielded, 1m
2.5mm-to-2.5mm Xbox Live Controller Cable	Shielded, 1m

Working Frequency of Each Channel					
Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01	2403.35 MHz	Channel 14	2429.35 MHz	Channel 27	2455.35 MHz
Channel 02	2405.35 MHz	Channel 15	2431.35 MHz	Channel 28	2457.35 MHz
Channel 03	2407.35 MHz	Channel 16	2433.35 MHz	Channel 29	2459.35 MHz
Channel 04	2409.35 MHz	Channel 17	2435.35 MHz	Channel 30	2461.35 MHz
Channel 05	2411.35 MHz	Channel 18	2437.35 MHz	Channel 31	2463.35 MHz
Channel 06	2413.35 MHz	Channel 19	2439.35 MHz	Channel 32	2465.35 MHz
Channel 07	2415.35 MHz	Channel 20	2441.35 MHz	Channel 33	2467.35 MHz
Channel 08	2417.35 MHz	Channel 21	2443.35 MHz	Channel 34	2469.35 MHz
Channel 09	2419.35 MHz	Channel 22	2445.35 MHz	Channel 35	2471.35 MHz
Channel 10	2421.35 MHz	Channel 23	2447.35 MHz	Channel 36	2473.35 MHz
Channel 11	2423.35 MHz	Channel 24	2449.35 MHz	Channel 37	2475.35 MHz
Channel 12	2425.35 MHz	Channel 25	2451.35 MHz	Channel 38	2477.35 MHz
Channel 13	2427.35 MHz	Channel 26	2453.35 MHz		



1. This device is a PLYR 2 included a 2.4GHz transmitting function, and 2.4GHz receiving function.

2. The PLYR 2 has three models. The different of the each model is color and shown as below:

Model Name	Description
SMPLFY-207	BLACK/YELLOW
SMPLFY-205	WHITE
SMPLFY-280	TEAL/NAVY

- These test results on a sample of the device are for the purpose of demonstrating Compliance with Part 15 Subpart C Paragraph 15.247.
- 4. Regards to the frequency band operation; the lowest \ middle and highest frequency of channel were selected to perform the test, and then shown on this report.
- This device is a composite device in accordance with Part 15 regulations. The receiving function receiving was tested and its test report number is 129270R-RFUSP37V02 under Declaration of Conformity.



#### 1.3. Test Mode

QuieTek has verified the construction and function in typical operation. The preliminary tests were performed in different data rate, and to find the worst condition, which was shown in this test report. The following table is the final test mode.

TX	Mode 1: Transmit-Headset	

Test Items	Channel	Result
Conducted Emission	1/ 20/ 38	Complies
Peak Power Output	1/ 20/ 38	Complies
Radiated Emission (Under 1GHz)	20	Complies
Radiated Emission (Above 1GHz)	1/ 20/ 38	Complies
RF antenna conducted test	1/ 38	Complies
Radiated Emission Band Edge	1/ 38	Complies
Occupied Bandwidth	1/ 20/ 38	Complies
Power Density	1/ 20/ 38	Complies



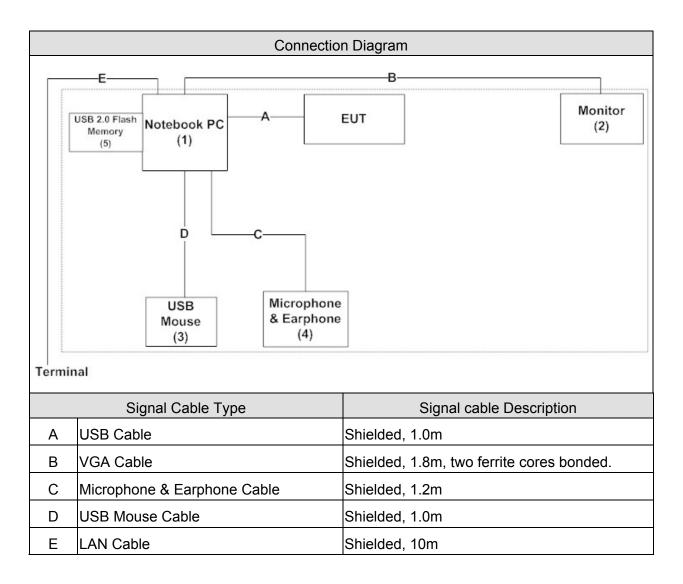
# 1.4. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Pro	duct	Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1	Notebook PC	ACER	PAV70	LUSEW0D0371105	DoC	Non-Shielded, 2.5m
				FE221601		a ferrite core bonded
2	Monitor	CHI MEI	A170E1-09	3UC120955RA0033	DoC	Non-Shielded, 1.8m
3	USB Mouse	Logitech	M-UV83	LZE35150261	DoC	
4	Microphone &	Fujiei	SBZ-38	N/A	DoC	
	Earphone					
5	USB 2.0	Apacer	AH223	N/A	DoC	
	Flash Memory					



# 1.5. Configuration of tested System



#### 1.6. EUT Exercise Software

1	Setup the EUT as shown in Section 1.5.
2	Execute the VMIdev V1.1.6.38 on the EUT.
3	Configure the test mode, and the test channel
4	Press "Start TX" to start the continuous transmitting.
5	Verify that the EUT works properly.



# 1.7. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)	FCC PART 15 C 15.207	15 - 35	20
Humidity (%RH)	Conducted Emission	25 - 75	50
Barometric pressure (mbar)	Conducted Emission	860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247	15 - 35	25
Humidity (%RH)	Peak Power Output (DSSS)	25 - 75	48
Barometric pressure (mbar)	l eak i owei output (D333)	860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247	15 - 35	25
Humidity (%RH)	Radiated Emission (DSSS)	25 - 75	65
Barometric pressure (mbar)	Tradiated Effission (D333)	860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247	15 - 35	24
Humidity (%RH)	RF antenna conducted test	25 - 75	49
Barometric pressure (mbar)	(DSSS)	860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247	15 - 35	25
Humidity (%RH)	Band Edge (DSSS)	25 - 75	48
Barometric pressure (mbar)	Band Edge (D333)	860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247	15 - 35	25
Humidity (%RH)	Occupied Bandwidth (DSSS)	25 - 75	48
Barometric pressure (mbar)	Cccupied Baridwidti (D333)	860 - 1060	950-1000
Temperature (°C)	ECC DADT 15 C 15 247	15 - 35	25
Humidity (%RH)	FCC PART 15 C 15.247 Power Density (DSSS)	25 - 75	48
Barometric pressure (mbar)	r ower Density (D333)	860 - 1060	950-1000

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# 2. Conducted Emission

# 2.1. Test Equipment

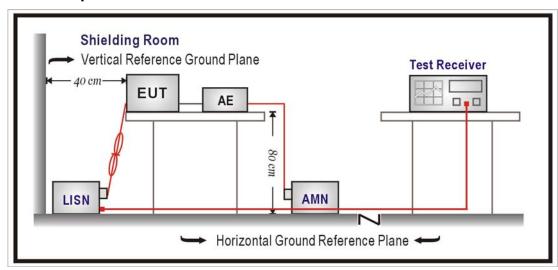
The following test equipments are used during the test:

# Conducted Emission / SR3

Instrument	Manufacturer	Model No.	Serial No	Next Cal.
LISN	R&S	ENV216	100096	2013/08/12
LISN	R&S	ESH3-Z5	836679/022	2013/02/06
Test Receiver	R&S	ESCS 30	825442/017	2013/01/01

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

# 2.2. Test Setup





#### 2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 Limits (dBuV)			
Frequency MHz	QP	AV	
0.15 - 0.50	66-56	56-46	
0.50 - 5.0	56	46	
5.0 - 30	60	50	

Remarks: In the above table, the tighter limit applies at the band edges.

#### 2.4. Test Procedure

The EUT was setup according to ANSI C63.4: 2009 and tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs.)

Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

#### 2.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.207: 2011

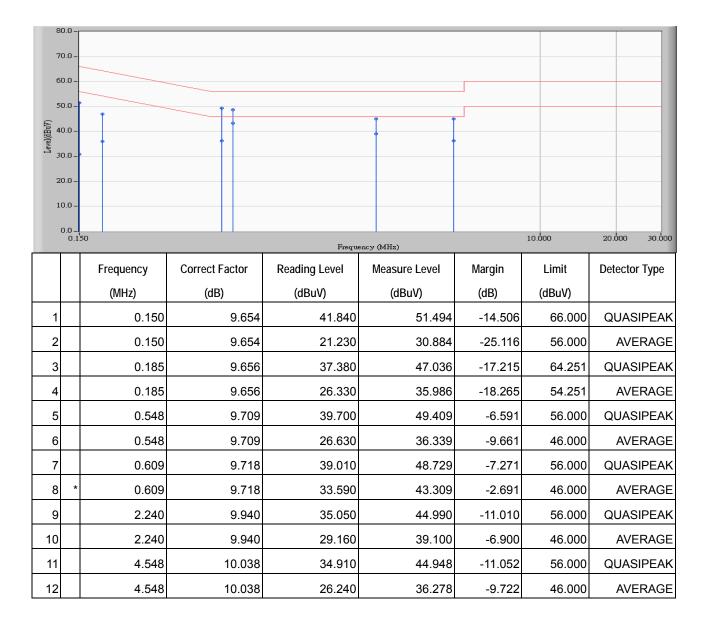
#### 2.6. Uncertainty

The measurement uncertainty is defined as  $\pm$  2.26 dB.



#### 2.7. Test Result

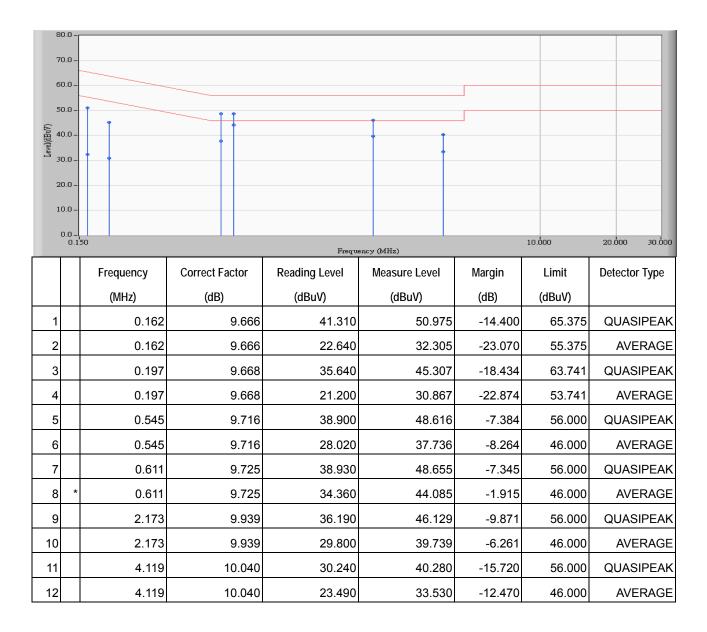
Site : SR3	Time : 2012/09/24 - 13:35
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR3_LISN(16A)-1_0907 - Line1	Power : DC 5V (Power by PC)
EUT : PLYR 2	Note : Mode 1: Transmit-Headset-2441.35MHz_client



- 1. All Reading Levels are Quasi-Peak and average value.
- 2. " \* ", means this data is the worst emission level.
- 3. Measurement Level = Reading Level + Correct Factor.



Site : SR3	Time : 2012/09/24 - 13:38
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR3_LISN(16A)-1_0907 - Line2	Power : DC 5V (Power by PC)
EUT : PLYR 2	Note : Mode 1: Transmit-Headset-2441.35MHz_client



- 1. All Reading Levels are Quasi-Peak and average value.
- 2. " \* ", means this data is the worst emission level.
- 3. Measurement Level = Reading Level + Correct Factor.



# 3. Peak Power Output

# 3.1. Test Equipment

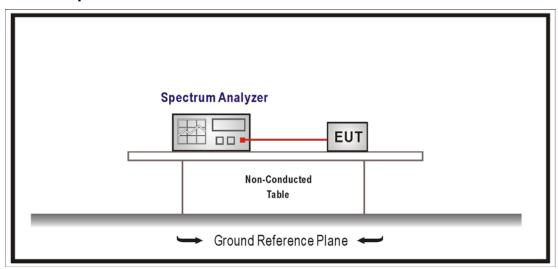
The following test equipments are used during the test:

Peak Power Output / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	R&S	FSP	100561	2013/02/19

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

#### 3.2. Test Setup



## 3.3. Test procedures

The EUT was tested according to DTS test procedure of Jan. 2012 KDB558074, Section 5.2.1.2 Measurement Procedure PK2 for compliance to FCC 47CFR 15.247 requirements.

#### 3.4. Limits

The maximum peak power shall be less 1 Watt.

# 3.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2011

#### 3.6. Uncertainty

The measurement uncertainty is defined as  $\pm$  1.27 dB.

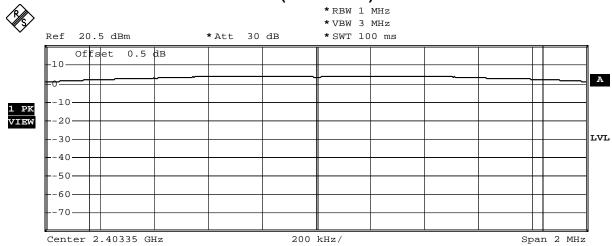


#### 3.7. Test Result

Product	PLYR 2		
Test Item	Peak Power Output		
Test Mode	Transmit		
Date of Test	2012/09/18	Test Site	SR7

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2403.35	5.12	1Watt= 30 dBm	Pass
20	2441.35	4.00	1Watt= 30 dBm	Pass
38	2477.35	2.89	1Watt= 30 dBm	Pass

# CH 1 (2403.35MHz)



Tx Channel

Bandwidth 1.68 MHz Power 5.12 dBm

Comment: A:\2

Date: 18.SEP.2012 20:06:56



# CH 20 (2441.35MHz)

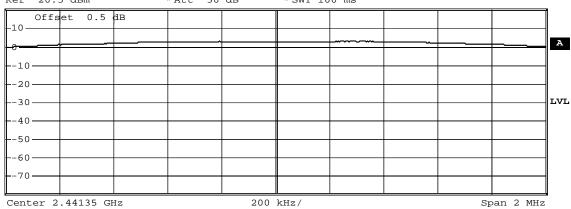


\*RBW 1 MHz

\*VBW 3 MHz

Ref 20.5 dBm \* Att 30 dB \*SWT 100 ms





Tx Channel

Bandwidth

1.6 MHz

Power

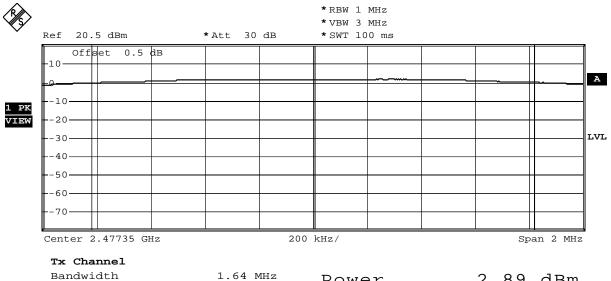
4.00 dBm

Comment: A:\2

Date: 18.SEP.2012 20:06:28



# CH 38 (2477.35MHz)



Power

2.89 dBm

Comment: A:\2

18.SEP.2012 20:05:33



#### 4. Radiated Emission

# 4.1. Test Equipment

The following test equipments are used during the test:

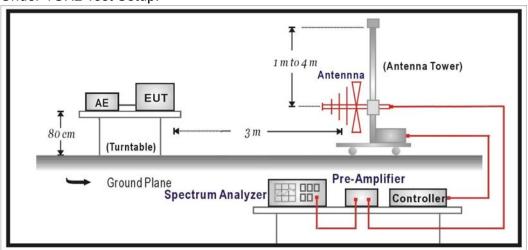
#### Radiated Emission / CB1

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Bilog Antenna	SCHAFFNER	CBL6112B	2895	2013/08/14
Double Ridged	Schwarzback	BBHA 9120D	743	2013/02/02
Guide Horn Antenna				
Pre-Amplifier	MITEQ	AMF-4D-005180-24-10P	888003	2012/12/05
Pre-Amplifier	QuieTek	AP-025C	CHM-0706049	2013/03/01
Spectrum Analyzer	Agilent	E4440A	MY46187335	2013/02/07
Coaxial Cable	Huber+Suhner AG	Sucoflex 102	25623/2	2013/03/04

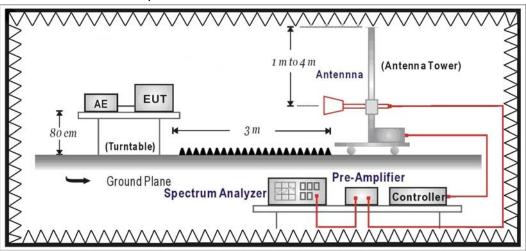
Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

# 4.2. Test Setup

Under 1GHz Test Setup:



#### Above 1GHz Test Setup:





#### 4.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15	FCC Part 15 Subpart C Paragraph 15.209 Limits			
Frequency MHz	uV/m	dBuV/m		
30-88	100	40		
88-216	150	43.5		
216-960	200	46		
Above 960	500	54		

Remarks: E field strength (dBuV/m) = 20 log E field strength (uV/m)

#### 4.4. Test Procedure

The EUT was setup according to ANSI C63.4: 2009 and tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements. The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4: 2009 on radiated measurement.

On any frequency or frequencies below or equal to 1000 MHz, the limits shown are based on measuring equipment employing a quasi-peak detector function and on any frequency or frequencies above 1000 MHz the radiated limits shown are based upon the use of measurement instrumentation employing an average detector function. When average radiated emission measurement are included emission measurement below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit. The bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

#### 4.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2011

#### 4.6. Uncertainty

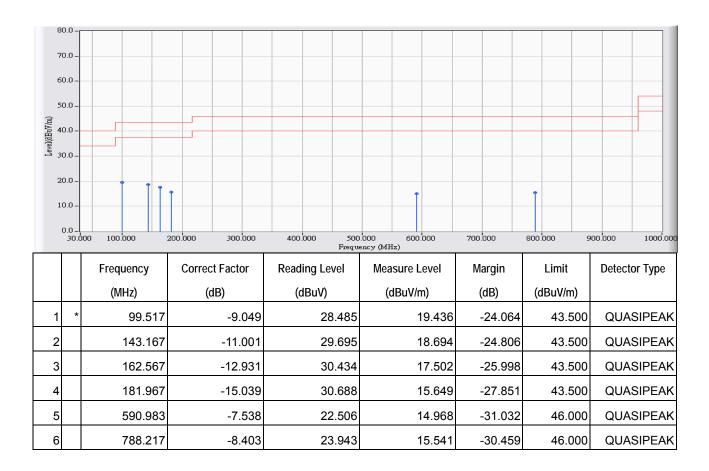
The measurement uncertainty 30MHz~1GHz as ±3.43dB 1GHz~26.5Ghz as ±3.65dB



#### 4.7. Test Result

#### 30MHz-1GHz Spurious

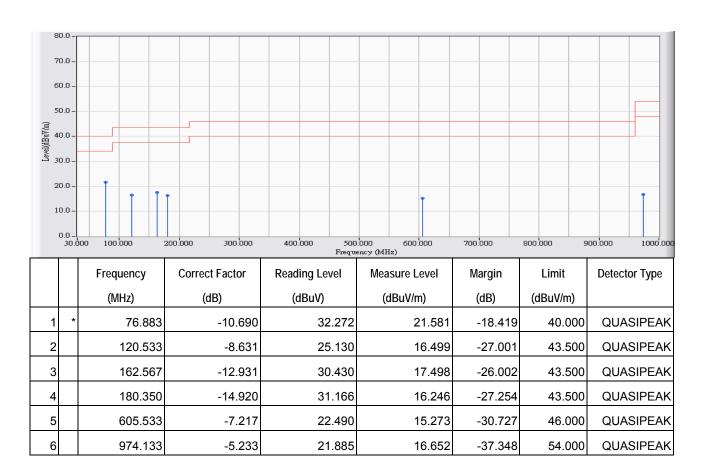
Site : CB1	Time : 2012/09/18 - 21:58
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_EFS_30-1G-1_0901 - HORIZONTAL	Power : DC 5V (Power by PC)
EUT : PLYR 2	Note : Mode 1: Transmit-Headset-2441.35MHz_client



- 1. All Reading Levels are Quasi-Peak value.
- 2. " \* ", means this data is the worst emission level.
- Measurement Level = Reading Level + Correct Factor.



Site : CB1	Time : 2012/09/18 - 21:58
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_EFS_30-1G-1_0901 - VERTICAL	Power : DC 5V (Power by PC)
EUT : PLYR 2	Note : Mode 1: Transmit-Headset-2441.35MHz_client

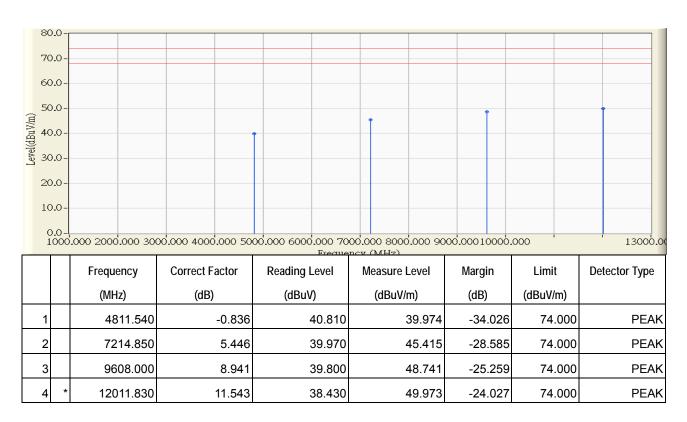


- 1. All Reading Levels are Quasi-Peak value.
- 2. " \* ", means this data is the worst emission level.
- 3. Measurement Level = Reading Level + Correct Factor.



#### **Harmonic & Spurious:**

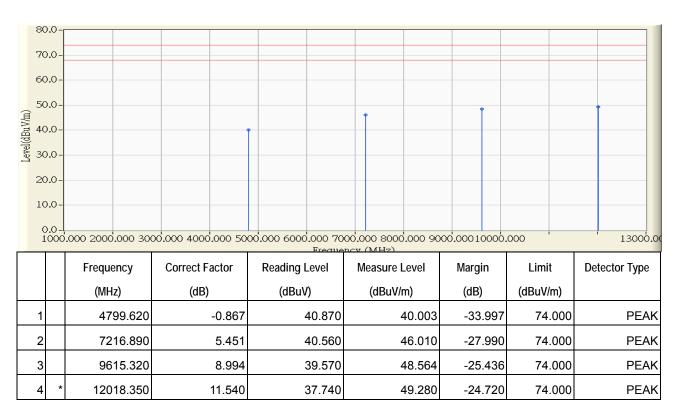
Site : CB1	Time : 2012/09/17 - 15:43
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : DC 5V (Power by PC)
EUT : PLYR 2	Note : Mode 1: Transmit-Headset-2403.35MHz_client



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. " \* ", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The Emission above 13GHz were not included is because their levels are too low.



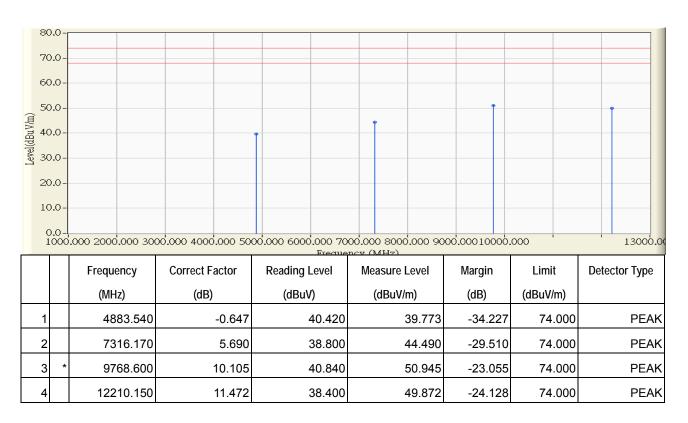
Site : CB1	Time : 2012/09/17 - 15:39
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : DC 5V (Power by PC)
EUT : PLYR 2	Note : Mode 1: Transmit-Headset-2403.35MHz_client



- All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. " \* ", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The Emission above 13GHz were not included is because their levels are too low.



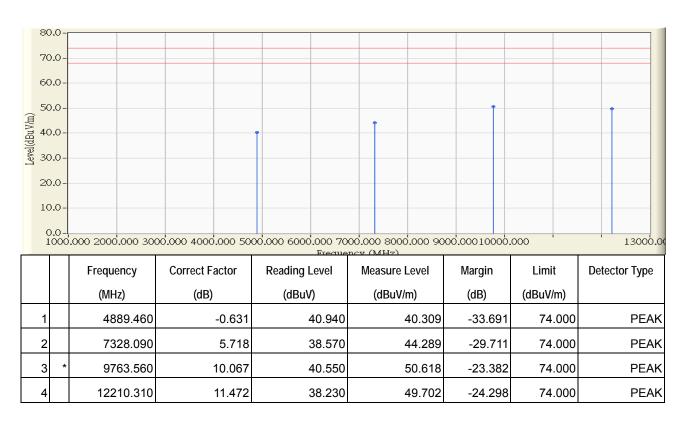
Site : CB1	Time : 2012/09/17 - 15:53
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : DC 5V (Power by PC)
EUT : PLYR 2	Note : Mode 1: Transmit-Headset-2441.35MHz_client



- All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. " \* ", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The Emission above 13GHz were not included is because their levels are too low.



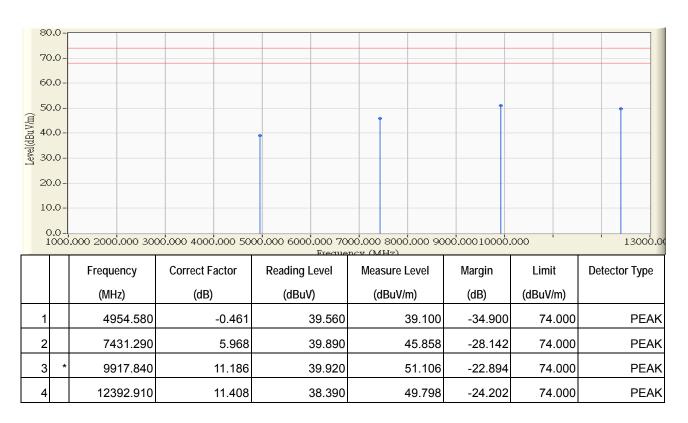
Site : CB1	Time : 2012/09/17 - 15:48
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : DC 5V (Power by PC)
EUT : PLYR 2	Note : Mode 1: Transmit-Headset-2441.35MHz_client



- All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. " \* ", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The Emission above 13GHz were not included is because their levels are too low.



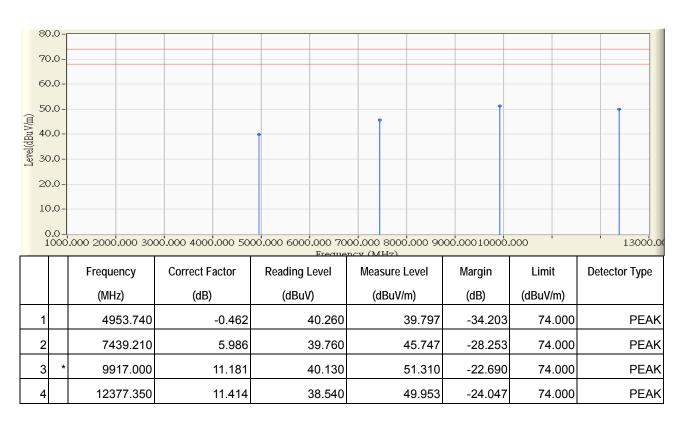
Site : CB1	Time : 2012/09/17 - 16:12
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : DC 5V (Power by PC)
EUT : PLYR 2	Note : Mode 1: Transmit-Headset-2477.35MHz_client



- All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. " \* ", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The Emission above 13GHz were not included is because their levels are too low.



Site : CB1	Time : 2012/09/17 - 16:08
Limit : FCC_SpartC_15.247_H_03M_PK	Margin: 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : DC 5V (Power by PC)
EUT : PLYR 2	Note : Mode 1: Transmit-Headset-2477.35MHz_client



- All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. " \* ", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The Emission above 13GHz were not included is because their levels are too low.



#### 5. RF antenna conducted test

# 5.1. Test Equipment

The following test equipments are used during the test:

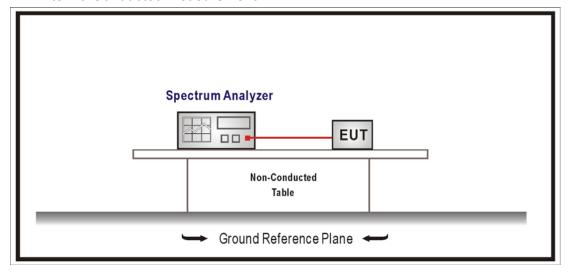
RF antenna conducted test / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	R&S	FSP	100561	2013/02/19

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

#### 5.2. Test Setup

RF Antenna Conducted Measurement:





#### 5.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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 an RF conducted or radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

#### 5.4. Test Procedure

The EUT was setup according to ANSI C63.4: 2009 and tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements Set RBW = 100 kHz, Set VBW> RBW, scan up through 10th harmonic.

# 5.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2011

# 5.6. Uncertainty

Conducted is defined as  $\pm$  1.27dB



#### 5.7. Test Result

Product	PLYR 2		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit-Headset		
Date of Test	2012/09/18	Test Site	SR7

Antenna Gain: 0dBi				
Channal Na	Frequency	Measure Level	Limit	Dooult
Channel No.	(MHz)	(dBc)	(dBc)	Result
1	2403.35	43.07	≧20	Pass
38	2477.35	48.07	≥20	Pass

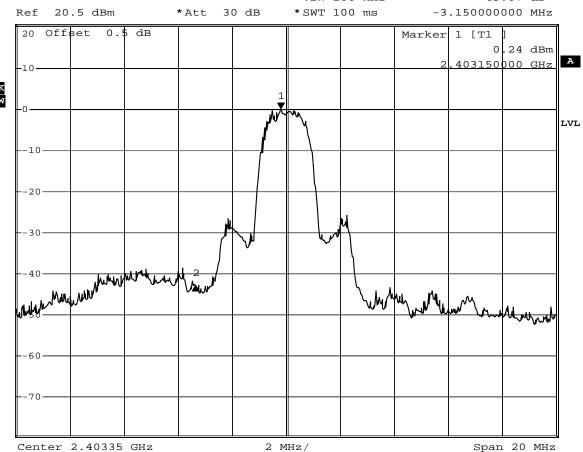
# Channel 01 (2403.35MHz)



\*RBW 100 kHz Delta 2 [T1 ]

\*VBW 100 kHz -43.07 dB



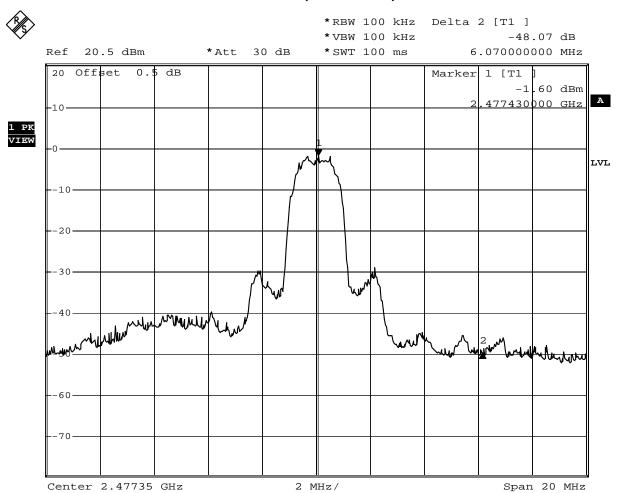


Comment: A:\2

Date: 18.SEP.2012 13:30:28



# Channel 38 (2477.35MHz)



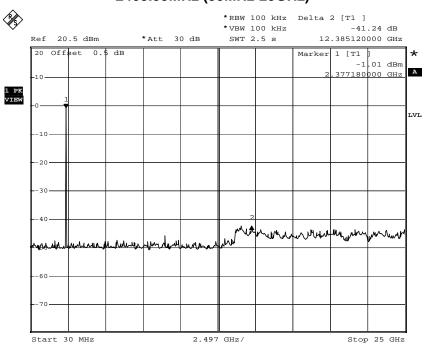
Comment: A:\2

Date: 18.SEP.2012 13:36:02



Product	PLYR 2		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit-Headset		
Date of Test	2012/09/18	Test Site	SR7

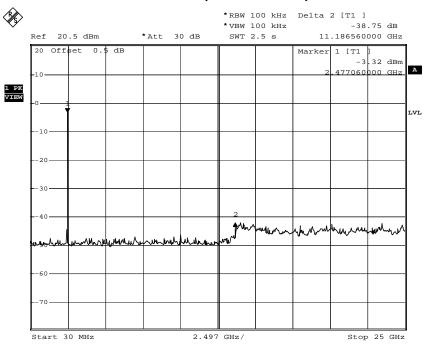
# 2403.35MHz (30MHz-25GHz)



Comment: A:\2 Date: 18.SEP.2012 13:33:40



# 2477.35MHz (30MHz-25GHz)



Comment: A:\2 Date: 18.SEP.2012 13:34:57



# 6. Radiated Emission Band Edge

# 6.1. Test Equipment

The following test equipments are used during the test:

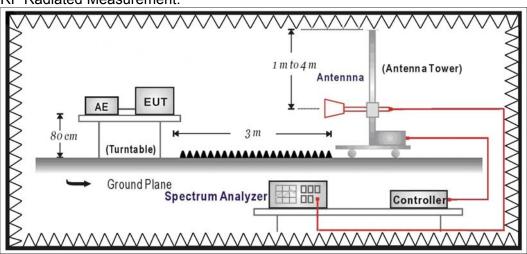
Radiated Emission Band Edge / CB1

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Double Ridged Guide	Schwarzback	BBHA 9120D	743	2013/02/02
Horn Antenna				
Spectrum Analyzer	Agilent	E4440A	MY46187335	2013/02/07
Coaxial Cable	Huber+Suhner AG	Sucoflex 102	25623/2	2013/03/04

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

# 6.2. Test Setup

RF Radiated Measurement:



#### 6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.



#### 6.4. Test Procedure

The EUT was setup according to ANSI C63.4: 2009 and tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements. The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4: 2009 on radiated measurement.

## 6.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2011

#### 6.6. Uncertainty

The measurement uncertainty

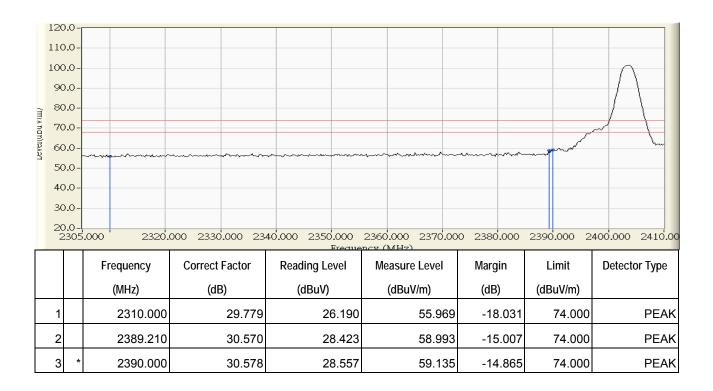
± 3.9 dB above 1GHz



#### 6.7. Test Result

#### Radiated is defined as

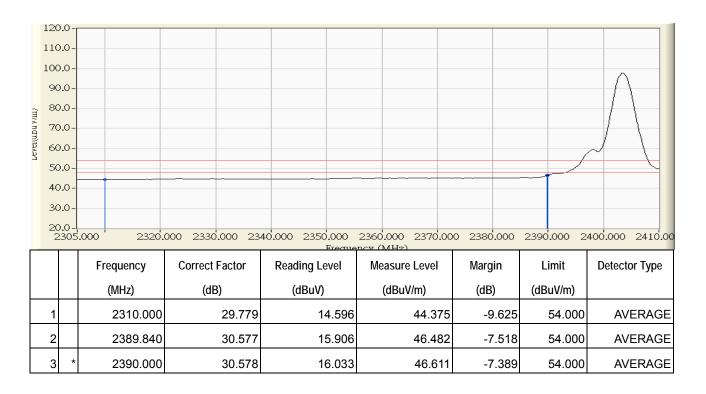
Site : CB1	Time : 2012/09/18 - 09:50
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : DC 5V (Power by PC)
EUT : PLYR 2	Note: Mode 1: Transmit-Headset-2403.35MHz



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. " \* ", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



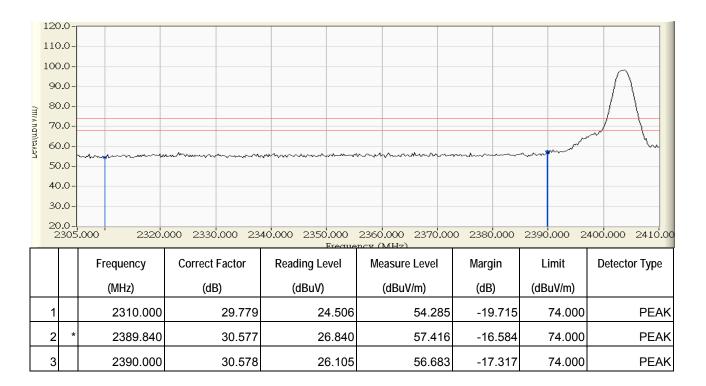
Site : CB1	Time : 2012/09/18 - 09:51
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : DC 5V (Power by PC)
EUT : PLYR 2	Note : Mode 1: Transmit-Headset-2403.35MHz



- All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. " \* ", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



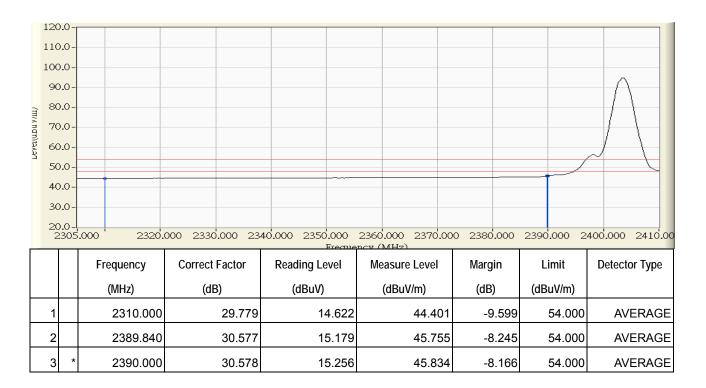
Site : CB1	Time : 2012/09/18 - 09:48
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : DC 5V (Power by PC)
EUT : PLYR 2	Note : Mode 1: Transmit-Headset-2403.35MHz



- All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. " \* ", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



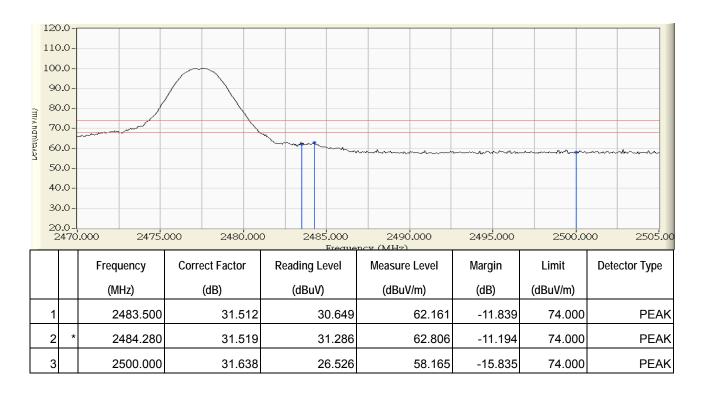
Site : CB1	Time : 2012/09/18 - 09:48
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : DC 5V (Power by PC)
EUT : PLYR 2	Note : Mode 1: Transmit-Headset-2403.35MHz



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. " \* ", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



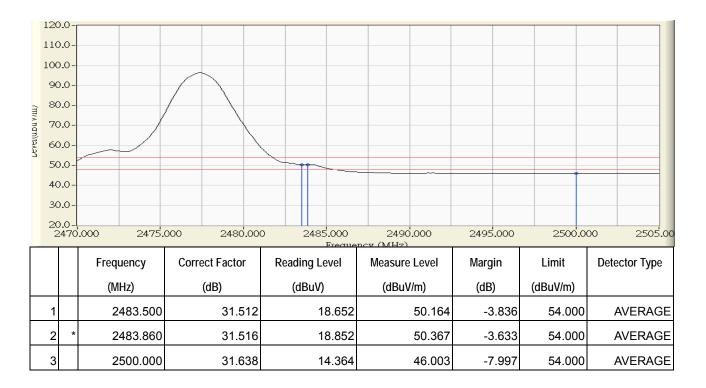
Site : CB1	Time : 2012/09/18 - 10:00
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : DC 5V (Power by PC)
EUT : PLYR 2	Note : Mode 1: Transmit-Headset-2477.35MHz



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. " \* ", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



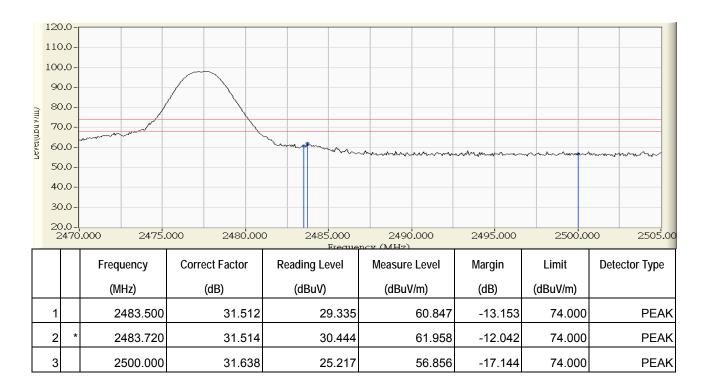
Site : CB1	Time : 2012/09/18 - 10:01
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : DC 5V (Power by PC)
EUT : PLYR 2	Note : Mode 1: Transmit-Headset-2477.35MHz



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. " \* ", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



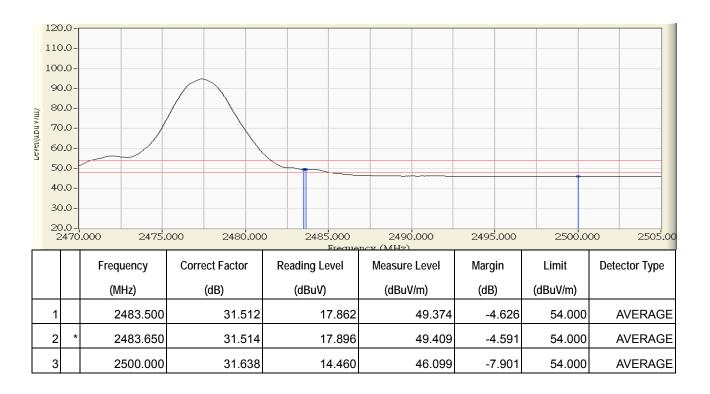
Site : CB1	Time : 2012/09/18 - 09:54
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : DC 5V (Power by PC)
EUT : PLYR 2	Note : Mode 1: Transmit-Headset-2477.35MHz



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. " \* ", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



Site : CB1	Time : 2012/09/18 - 09:55
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : DC 5V (Power by PC)
EUT : PLYR 2	Note : Mode 1: Transmit-Headset-2477.35MHz



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. " \* ", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



# 7. Occupied Bandwidth

## 7.1. Test Equipment

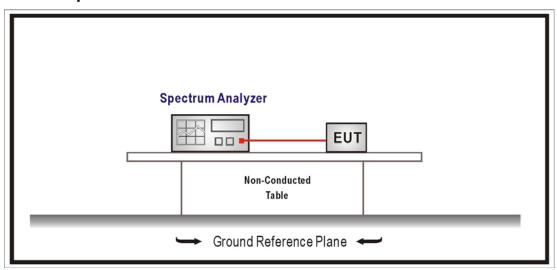
The following test equipments are used during the test:

Occupied Bandwidth / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	R&S	FSP	100561	2013/02/19

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

## 7.2. Test Setup



#### 7.3. Test Procedures

The EUT was setup according to ANSI C63.4: 2009; tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 1% of EBW, Span greater than RBW.

#### 7.4. Limits

The 6 dB bandwidth must be greater than 500 kHz.

## 7.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2011

## 7.6. Uncertainty

The measurement uncertainty is defined as ±150Hz

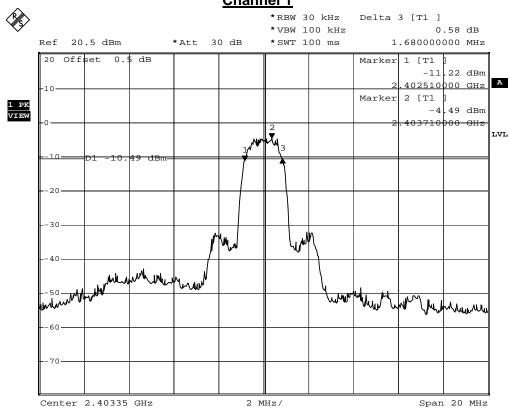


## 7.7. Test Result

Product	PLYR 2		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit-Headset		
Date of Test	2012/09/18	Test Site	SR7

Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
1	2403.35	1.680	≧0.5	Pass
20	2441.35	1.600	≧0.5	Pass
38	2477.35	1.640	≧0.5	Pass

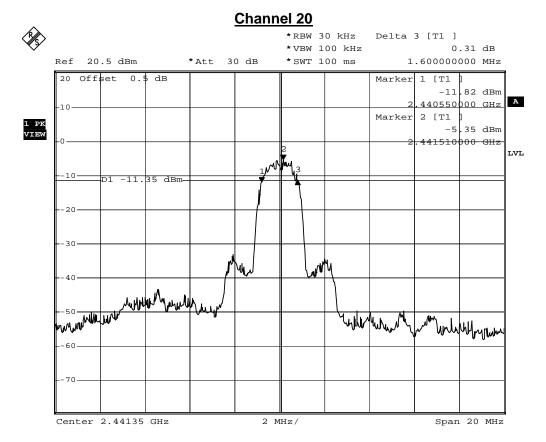
# Channel 1



Comment: A:\2

Date: 18.SEP.2012 19:59:31

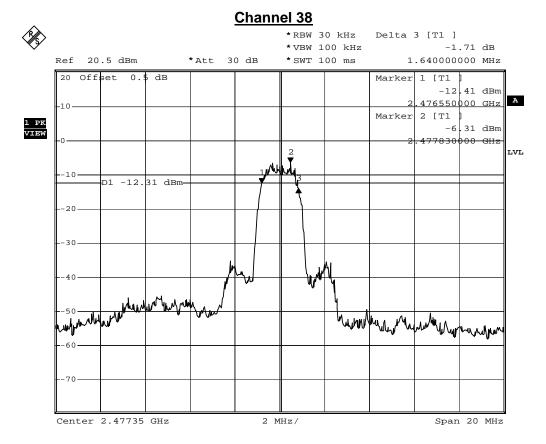




Comment: A:\2

Date: 18.SEP.2012 20:00:51





Comment: A:\2

Date: 18.SEP.2012 20:01:55



## 8. Power Density

## 8.1. Test Equipment

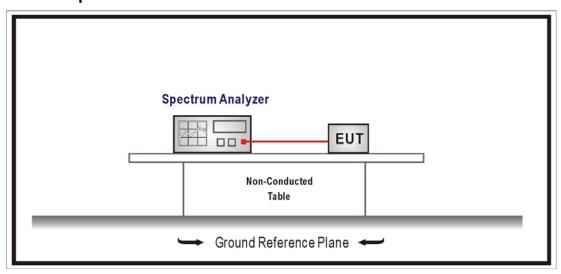
The following test equipment are used during the test:

#### Power Density / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	R&S	FSP	100561	2013/02/19

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

## 8.2. Test Setup



#### 8.3. Limits

The peak power spectral density conducted from the intentional radiated to the antenna shall not be greater than +8dBm in any 3kHz band during any time interval of continuous transmission.

#### 8.4. Test Procedures

The EUT was setup according to ANSI C63.4: 2009; tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW= 100 kHz, Set VBW= 300 kHz, Sweep time=Auto, Set detector=Peak detector. Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log (3 kHz/100 kHz = -15.2 dB).



# 8.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2011

# 8.6. Uncertainty

The measurement uncertainty is defined as  $\pm 1.27$ dB.

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#### 8.7. **Test Result**

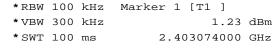
Product	PLYR 2		
Test Item	Power Density		
Test Mode	Mode 1: Transmit-Headset		
Date of Test	2012/09/18	Test Site	SR7

Channel No.	Frequency (MHz)	Reading Level(dBm)	Measure Level (dBm)	Limit (dBm)	Result
1	2403.35	1.23	-13.97	≤8	Pass
20	2441.35	0.39	-14.81	≤8	Pass
38	2477.35	-0.85	-16.05	≤8	Pass

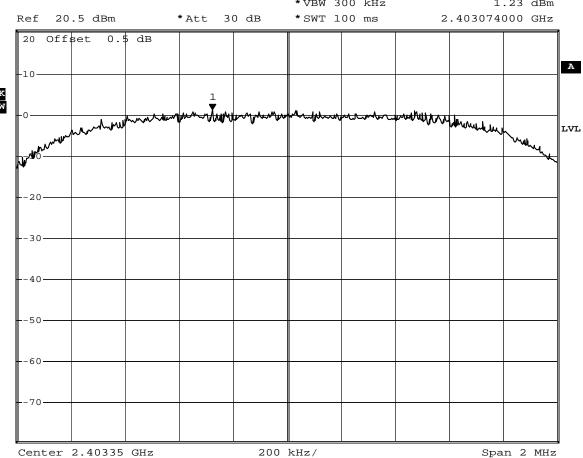
Note: Measure Level (dBm) = Reading Level (dBm) + BWCF = Reading Level (dBm) -15.2 (dB) Bandwidth correction factor (BWCF) = 10log (3kHz.100kHz)

## **Channel 1**









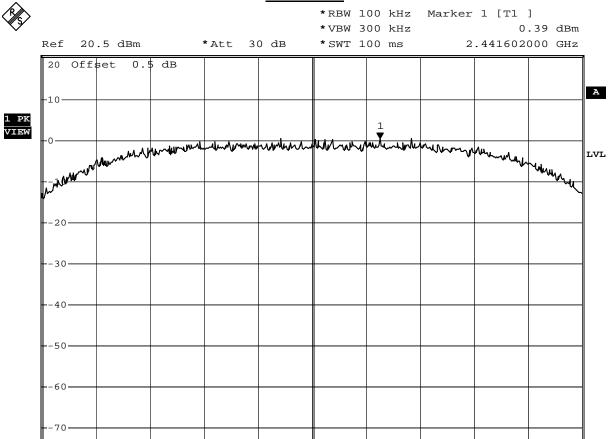
Comment:  $A:\2$ 

18.SEP.2012 20:07:59 Date:

Span 2 MHz



# Channel 20



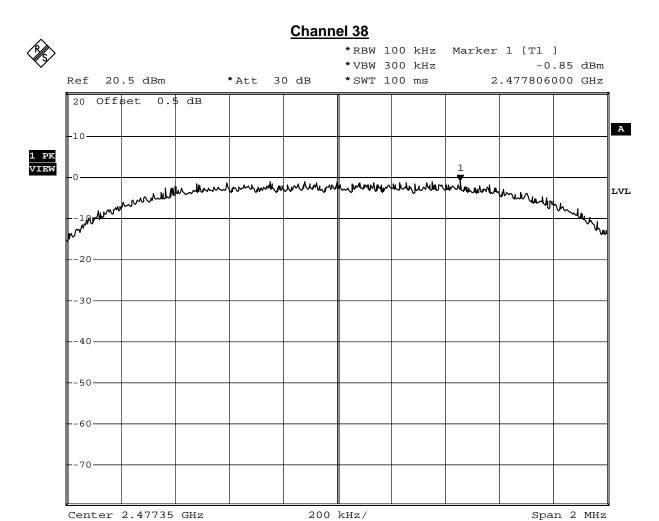
200 kHz/

Comment: A:\2

Date: 18.SEP.2012 20:08:25

Center 2.44135 GHz





Comment: A:\2

Date: 18.SEP.2012 20:08:56