Test Report

Product Name ： IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER

Model No. ： C2PNSCTRUI0024R1

FCC ID. ： PJHC2PTRUI24R

Applicant ： Syncomm Technology Corp.

Address ： 6F-15, No.81, Shui-Li Rd., Hsinchu City, Taiwan 300, R.O.C.

Date of Receipt ： 2009/04/17

Issued Date ： 2009/04/30

Report No. ： 094310R-RFUSP05V01

Report Version ： V1.0

Test Report Certification

Issued Date : 2009/04/30
Report No. : 094310R-RFUSP05V01

QuieTek

Product Name	:	IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER
Applicant	:	Syncomm Technology Corp.
Address	:	6F-15, No.81, Shui-Li Rd., Hsinchu City, Taiwan 300, R.O.C.
Manufacturer	:	Syncomm Technology Corp.
Model No.	:	C2PNSCTRUI0024R1
FCC ID.	:	PJHC2PTRUI24R
Rated Voltage	:	DC 5V
EUT Voltage	:	DC 5V
Trade Name	:	SYNIC
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart C Section 15.247: 2008
Test Result	:	Complied

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.

Documented By : Sandy Chuang
(Sandy Chuang / Adm. Specialist)

Reviewed By : Sheena Huang
(Sheena Huang / Engineer)

Approved By : Roy Wang
(Roy Wang / Manager)

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1. General Information

1.1. EUT Description

Product Name	IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER
Trade Name	SYNIC
Model No.	C2PNSCTRUI0024R1
Frequency Range	2404~2476MHz
Channel Number	25
Type of Modulation	GFSK
Antenna Gain	1.2dBi
Channel Control	Auto
Antenna Type	Printed

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2404	7	2422	13	2440	19	2458
2	2407	8	2425	14	2443	20	2461
3	2410	9	2428	15	2446	21	2464
4	2413	10	2431	16	2449	22	2467
5	2416	11	2434	17	2452	23	2470
6	2419	12	2437	18	2455	24	2473
25	2476						

Note:

1. This device is a IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER included a 2.4GHz receiving function, and 2.4GHz transmitting function.
2. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.247 for spread spectrum devices.
3. Regards to the frequency band operation; the highest rate that was included the lowest、middle and highest frequency of channel were selected to perform the test, and then shown on this report.
4. This device is a composite device in accordance with Part 15 regulations. The function receiving was measured and made a test report that the report number is 094310R-RFUSP01V02 under Declaration of Conformity.

1.3. Test Mode

QuieTek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Pre-Test Mode	
EMI	Mode 1: Transmit
Final Test Mode	
TX	Mode 1: Transmit

Emission	
Conducted Emission	No
Peak Power Output	Yes
Radiated Emission	Yes
Band Edge	Yes
Occupied Bandwidth	Yes
Power Density	Yes

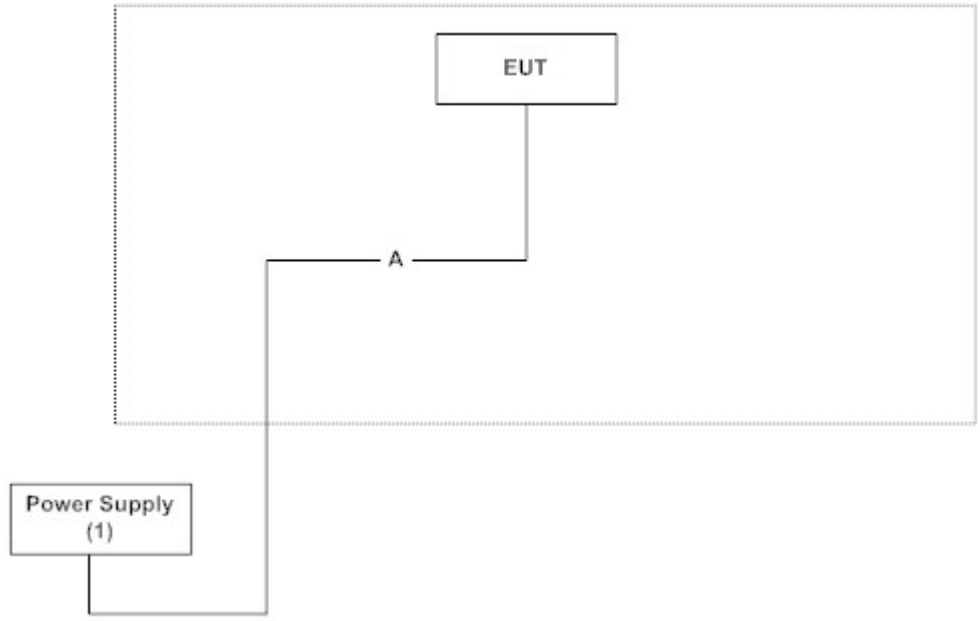
1.4. Tested System Details

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

Product		Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1	Power Supply	Agilent	E3646A	MY400008218	DoC	--

1.5. Configuration of tested System

Connection Diagram



Signal Cable Type		Signal cable Description
A	Power Cable	Non-Shielded, 1.5m

1.6. EUT Exercise Software

1	Setup the EUT and simulators as shown on 1.5
2	Turn on the power of all equipment.
3	The EUT will continued transmitting.
4	Repeat the above procedure (2) to (3)

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 Conducted Emission	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Band Edge (DSSS)	15 - 35	25
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Occupied Bandwidth (DSSS)	15 - 35	25
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Peak Power Output (DSSS)	15 - 35	25
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Power Density (DSSS)	15 - 35	25
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Radiated Emission (DSSS)	15 - 35	25
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000

Site Description:

January 24, 2005 File on
Federal Communications Commission
Laboratory Division
7435 Oakland Mills Road
Columbia, MD 21046
Registration Number: 365520

Accredited by TAF
Accreditation Number: 1313
Effective through: December 27, 2010

Testing Laboratory 1313

Accredited by NVLAP
NVLAP Lab Code: 200347-0
Effective through: September 30, 2009

NVLAP Lab Code : 200347-0

Site Name: Quietek Corporation

Site Address: No.75-1, Wang-Yeh Valley, Yung-Hsing,
Chiung-Lin, Hsin-Chu County,
Taiwan, R.O.C.
TEL : 886-3-592-8858 / FAX : 886-3-592-8859
E-Mail : service@quietek.com

2. Peak Power Output

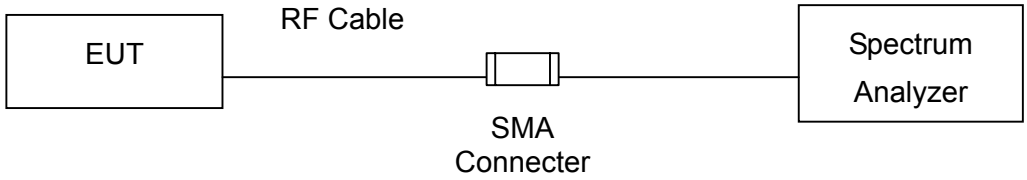
2.1. Test Equipment

The following test equipments are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	Spectrum Analyzer	R & S	FSP / 100561	Mar., 2009
2	No.1 OATS			Sep., 2008

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2.2. Test Setup



2.3. Test procedures

The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

2.4. Limits

The maximum peak power shall be less 1 Watt.

2.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB.

2.6. Test Result

Product	IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2008/04/21	Test Site	No.1 OATS

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2404	15.39	1Watt= 30 dBm	Pass
12	2438	16.23	1Watt= 30 dBm	Pass
25	2476	16.32	1Watt= 30 dBm	Pass

3. Radiated Emission

3.1. Test Equipment

The following test equipment are used during the test:

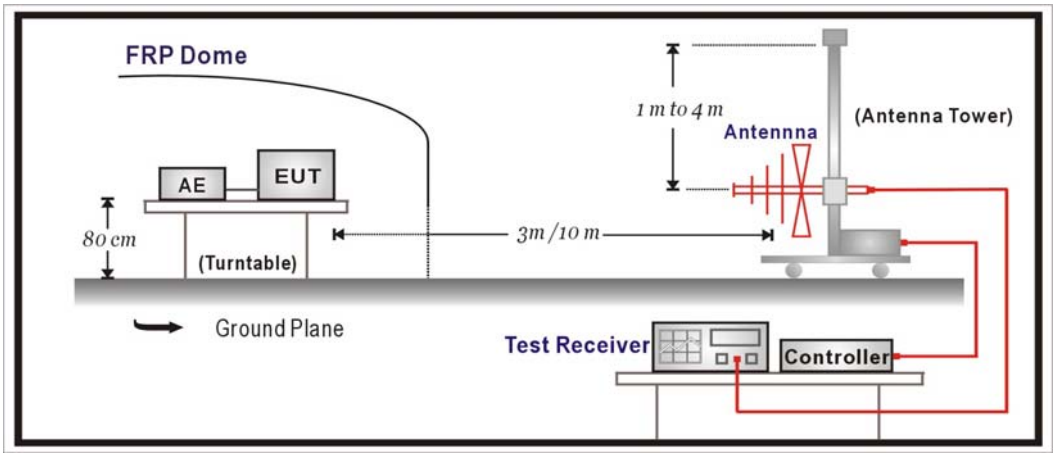
Radiated Emission / Site1

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Bilog Antenna	Schaffner Chase	CBL6112B	2895	2008/09/03
Horn Antenna	Electro Metrics	EM-6961	103325	2009/03/15
Pre-Amplifier	HP	8449B	3008A01123	2008/11/15
Pre-Amplifier	Quietek	AP-025C	N/A	N/A
Spectrum Analyzer	R & S	FSP40	100005	2008/08/25
Spectrum Analyzer	Advantest	R3162	120300649	2008/11/24
Test Receiver	R & S	ESCS 30	825442/017	2009/02/13

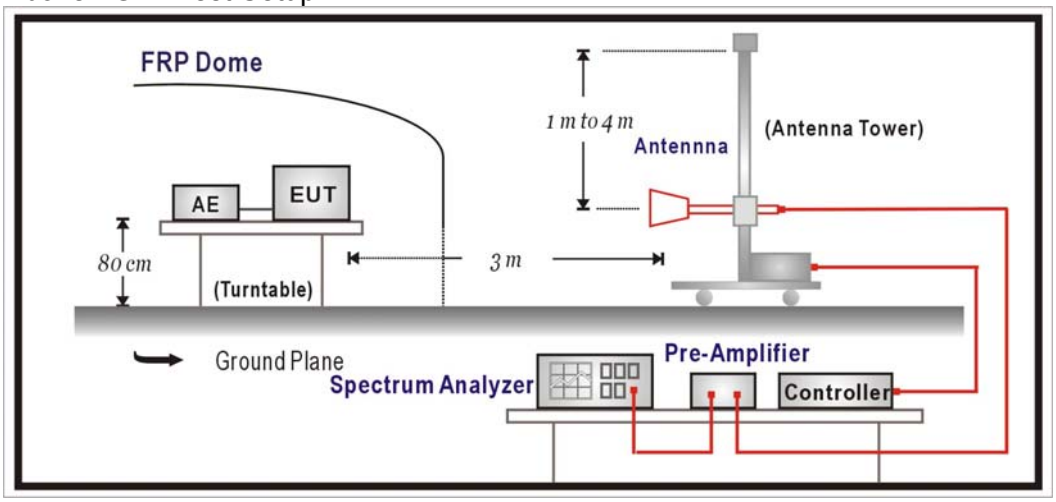
Note: 1. All equipments that need to calibrate are with calibration period of 1 year.
2. “N/A” Ca1.Date is used to Pre-test, not final test.

3.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



3.3. 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 Subpart C Paragraph 15.209 Limits		
Frequency MHz	dBuV/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)

3.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to DTS test procedure of Oct 2002 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 C63.4:2003 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.

3.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.207: 2008

3.6. Uncertainty

The measurement uncertainty

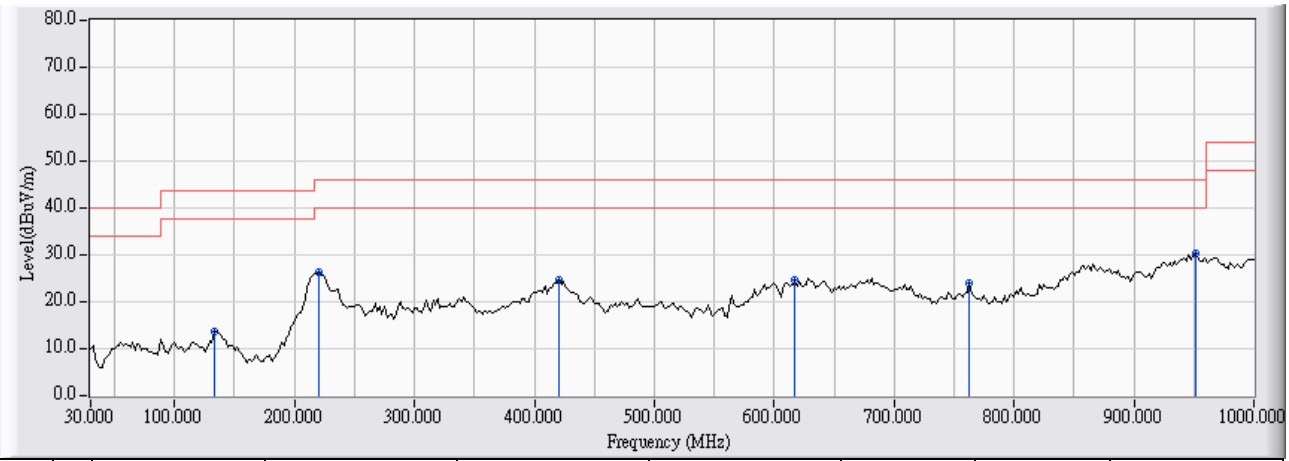
30MHz～1GHz as ±3.19dB

1GHz～26.5Ghz as ±3.9dB

3.7. Test Result

30MHz-1GHz Spurious:

Site : Site 1	Time : 2009/04/15 - 16:47
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB3_FCC_30-1G(2008-9) - HORIZONTAL	Power : AC 120V/60Hz
EUT : IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER	Note : TX

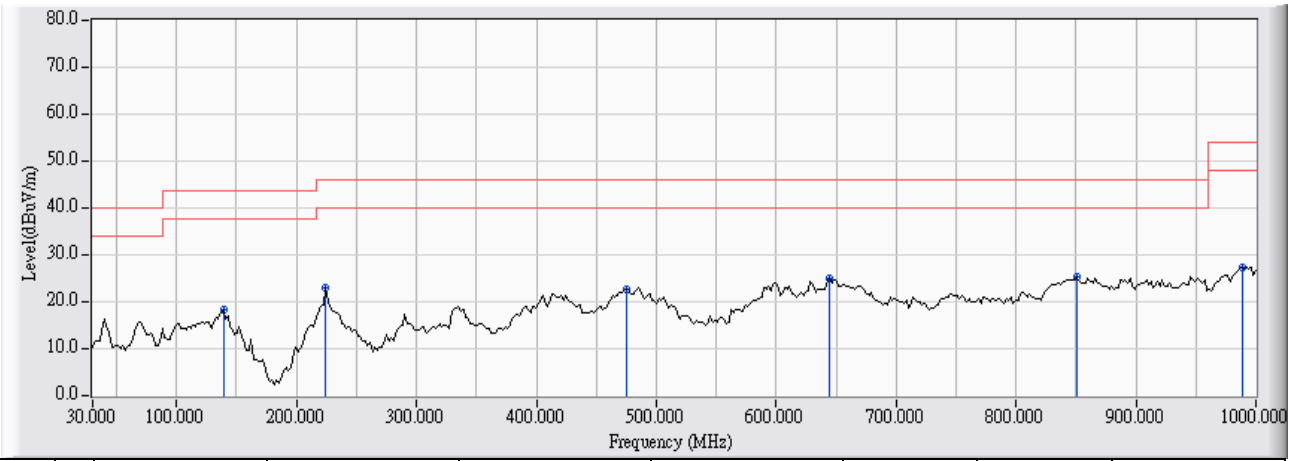


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		133.026	-14.816	28.329	13.513	-29.987	43.500	QUASIPEAK
2		220.501	-12.271	38.475	26.204	-19.796	46.000	QUASIPEAK
3		420.721	-2.251	26.887	24.636	-21.364	46.000	QUASIPEAK
4		617.054	-0.365	25.093	24.728	-21.272	46.000	QUASIPEAK
5		762.846	-1.960	25.927	23.967	-22.033	46.000	QUASIPEAK
6	*	951.403	5.599	24.619	30.218	-15.782	46.000	QUASIPEAK

Note:

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

Site : Site 1	Time : 2009/04/15 - 16:41
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB3_FCC_30-1G(2008-9) - VERTICAL	Power : AC 120V/60Hz
EUT : IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER	Note : TX



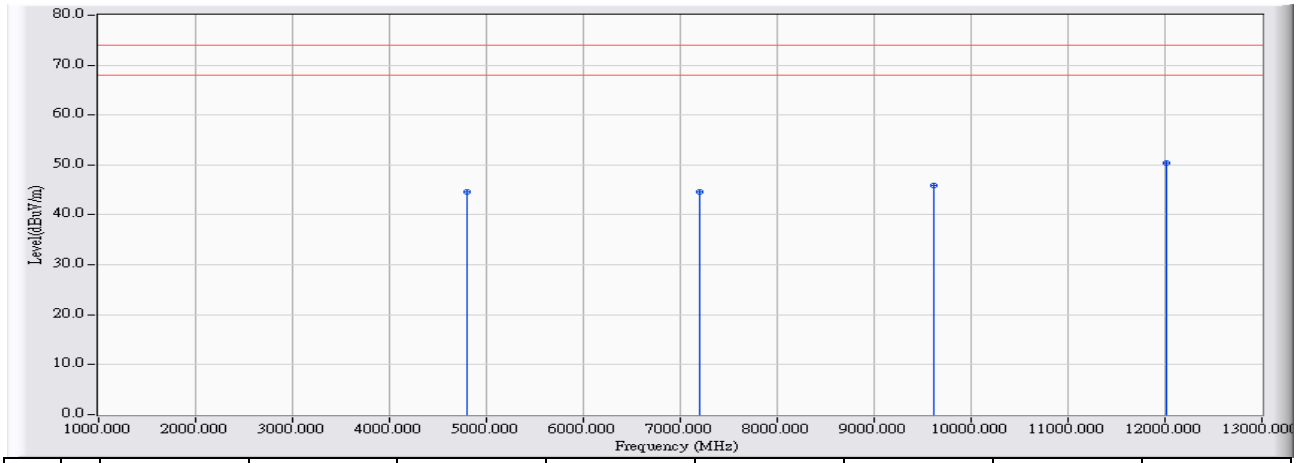
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		138.858	-11.343	29.777	18.434	-25.066	43.500	QUASIPEAK
2		224.389	-10.945	33.810	22.865	-23.135	46.000	QUASIPEAK
3		475.150	-1.140	23.915	22.775	-23.225	46.000	QUASIPEAK
4		644.269	-0.189	25.095	24.906	-21.094	46.000	QUASIPEAK
5	*	850.321	0.815	24.400	25.215	-20.785	46.000	QUASIPEAK
6		988.337	3.118	24.291	27.410	-26.590	54.000	QUASIPEAK

Note:

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 : Site 1	Time : 2009/04/28 - 11:08
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB3_FCC_1-18G(2009-01) - HORIZONTAL	Power : AC 120V/60Hz
EUT : IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER	Note : TX-2404MHz

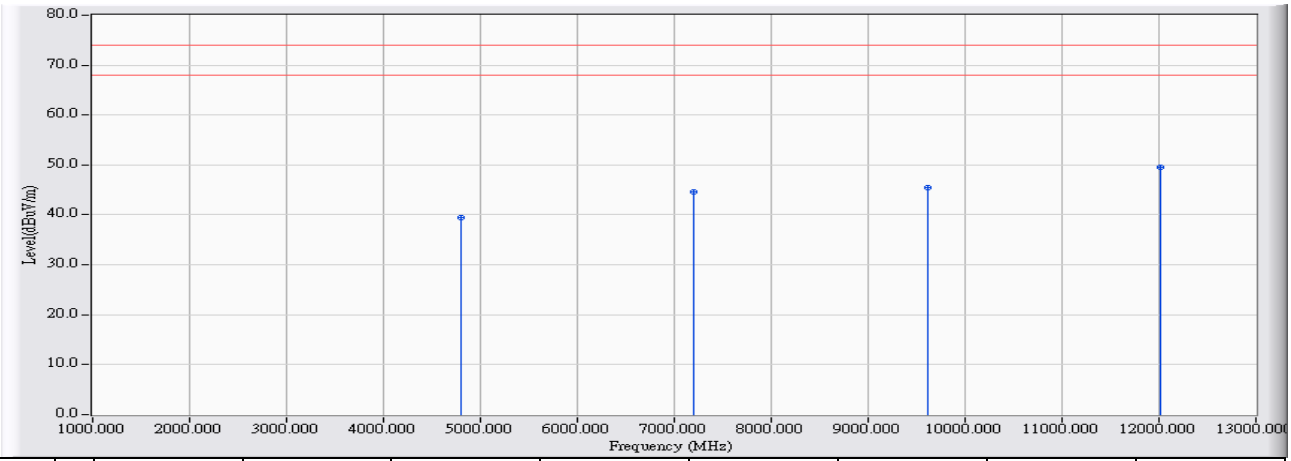


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		4807.930	4.359	40.300	44.658	-29.342	74.000	54.000	PEAK
2		7208.030	10.221	34.388	44.610	-29.390	74.000	54.000	PEAK
3		9616.020	13.976	31.852	45.828	-28.172	74.000	54.000	PEAK
4	*	12020.023	19.934	30.514	50.448	-23.552	74.000	54.000	PEAK

Note:

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 : Site 1	Time : 2009/04/28 - 11:15
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB3_FCC_1-18G(2009-01) - VERTICAL	Power : AC 120V/60Hz
EUT : IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER	Note : TX-2404MHz

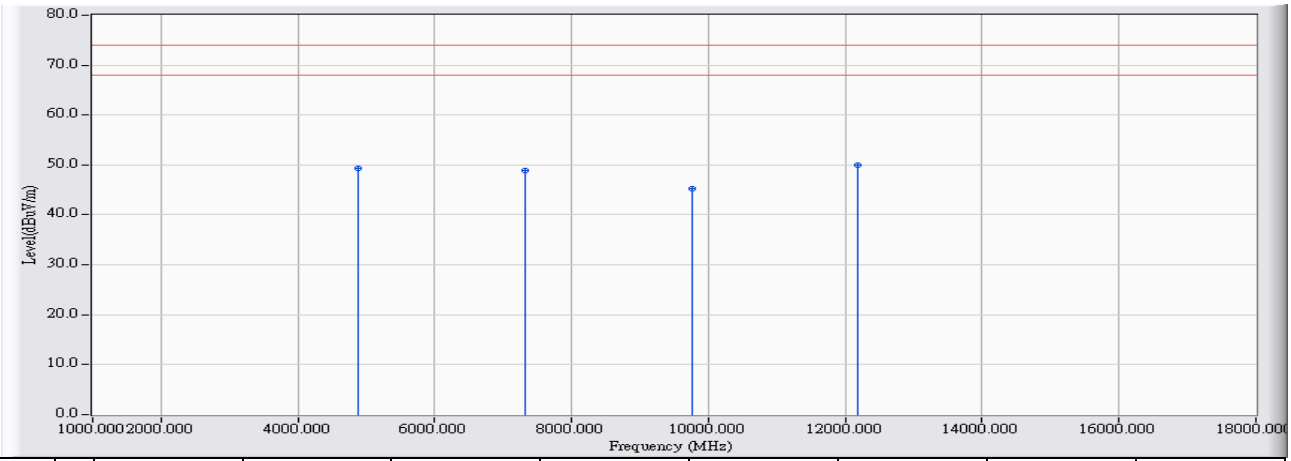


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		4807.950	4.236	35.153	39.389	-34.611	74.000	54.000	PEAK
2		7208.020	10.428	34.248	44.676	-29.324	74.000	54.000	PEAK
3		9616.030	14.212	31.299	45.511	-28.489	74.000	54.000	PEAK
4	*	12020.030	18.823	30.648	49.471	-24.529	74.000	54.000	PEAK

Note:

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 : Site 1	Time : 2009/04/10 - 11:27
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB3_FCC_1-18G(2009-01) - HORIZONTAL	Power : AC 120V / 60Hz
EUT : IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER	Note : TX-2438 MHz

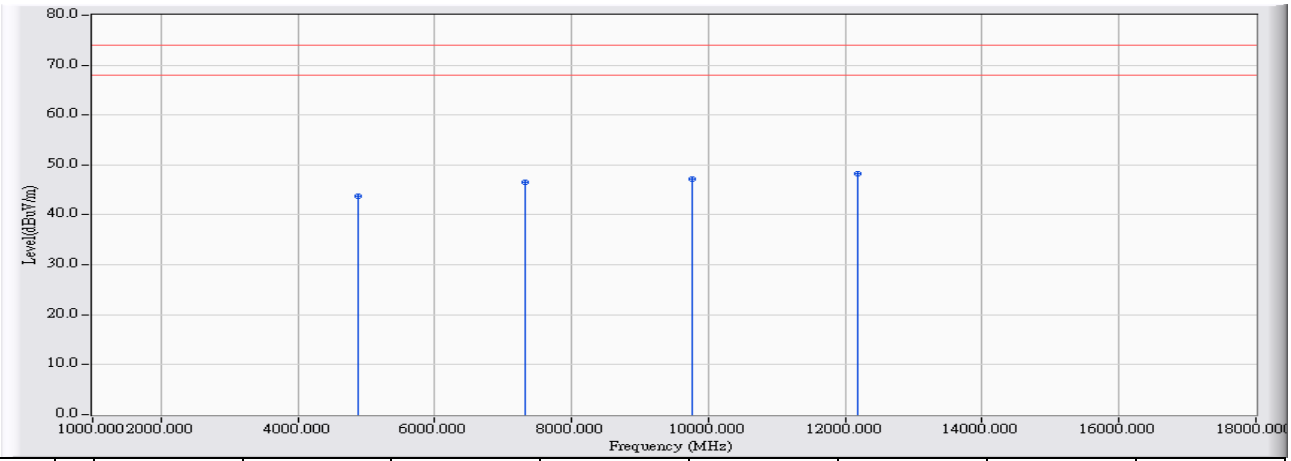


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		4876.980	4.580	44.650	49.231	-24.769	74.000	54.000	PEAK
2		7314.420	10.802	38.040	48.842	-25.158	74.000	54.000	PEAK
3		9752.110	14.832	30.390	45.221	-28.779	74.000	54.000	PEAK
4	*	12190.000	19.227	30.840	50.068	-23.932	74.000	54.000	PEAK

Note:

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 : Site 1	Time : 2009/04/10 - 11:35
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB3_FCC_1-18G(2009-01) - VERTICAL	Power : AC 120V / 60Hz
EUT : IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER	Note : TX-2438 MHz

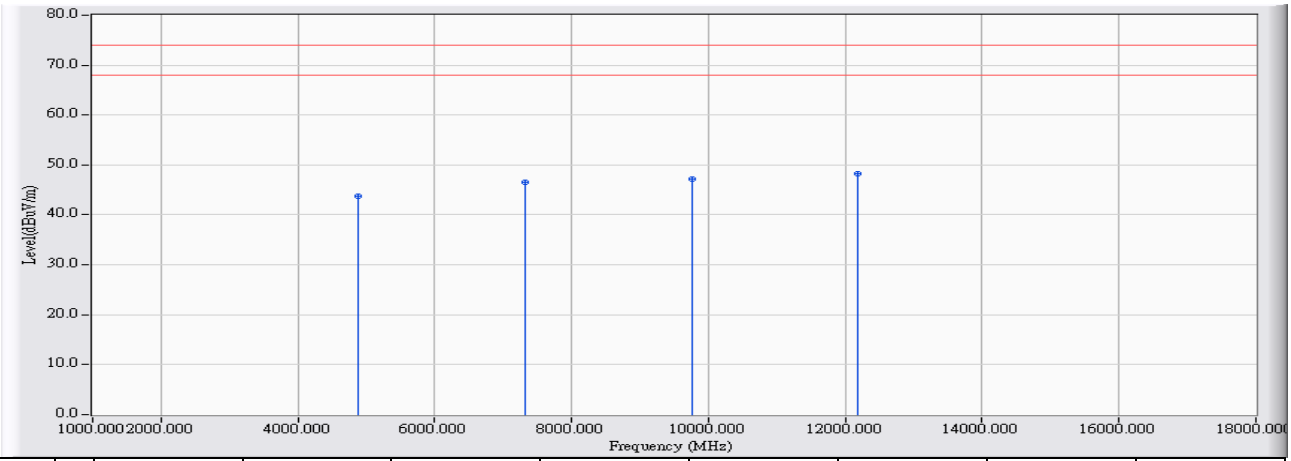


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		4876.280	4.543	39.310	43.853	-30.147	74.000	54.000	PEAK
2		7314.393	10.570	35.950	46.519	-27.481	74.000	54.000	PEAK
3		9752.010	14.985	32.110	47.095	-26.905	74.000	54.000	PEAK
4	*	12190.080	18.143	30.100	48.243	-25.757	74.000	54.000	PEAK

Note:

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 : Site 1	Time : 2009/04/10 - 11:35
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB3_FCC_1-18G(2009-01) - VERTICAL	Power : AC 120V / 60Hz
EUT : IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER	Note : TX-2438 MHz

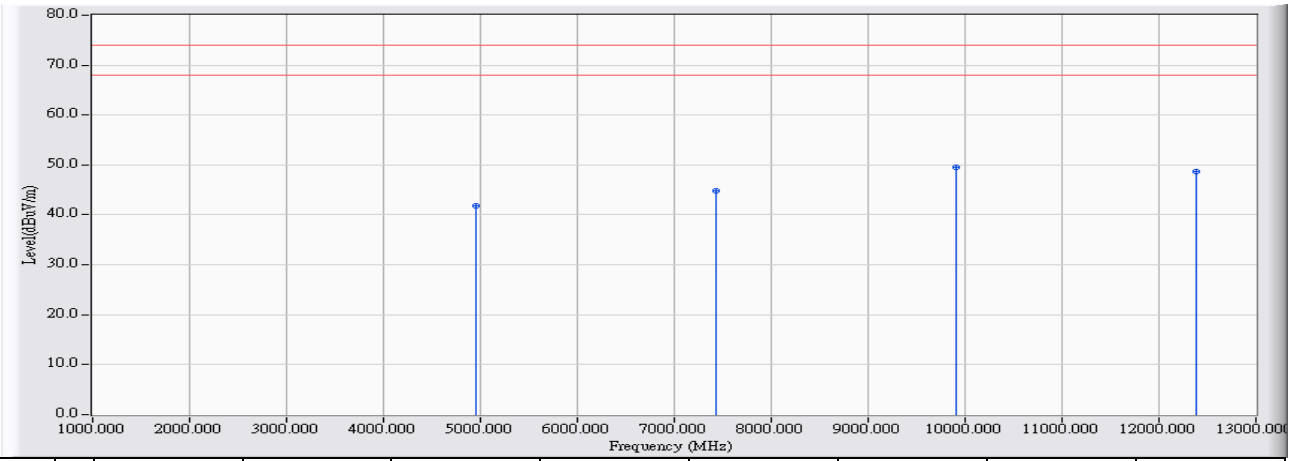


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		4876.280	4.543	39.310	43.853	-30.147	74.000	54.000	PEAK
2		7314.393	10.570	35.950	46.519	-27.481	74.000	54.000	PEAK
3		9752.010	14.985	32.110	47.095	-26.905	74.000	54.000	PEAK
4	*	12190.080	18.143	30.100	48.243	-25.757	74.000	54.000	PEAK

Note:

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 : Site 1	Time : 2009/04/10 - 11:33
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB3_FCC_1-18G(2009-01) - VERTICAL	Power : AC 120V/60Hz
EUT : IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER	Note : TX-2476MHz



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		4952.050	4.859	37.000	41.859	-32.141	74.000	54.000	PEAK
2		7428.050	10.728	34.000	44.728	-29.272	74.000	54.000	PEAK
3	*	9904.010	15.799	33.780	49.579	-24.421	74.000	54.000	PEAK
4		12379.980	17.402	31.240	48.642	-25.358	74.000	54.000	PEAK

Note:

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.

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4. RF antenna conducted test

4.1. Test Equipment

The following test equipments are used during the test:

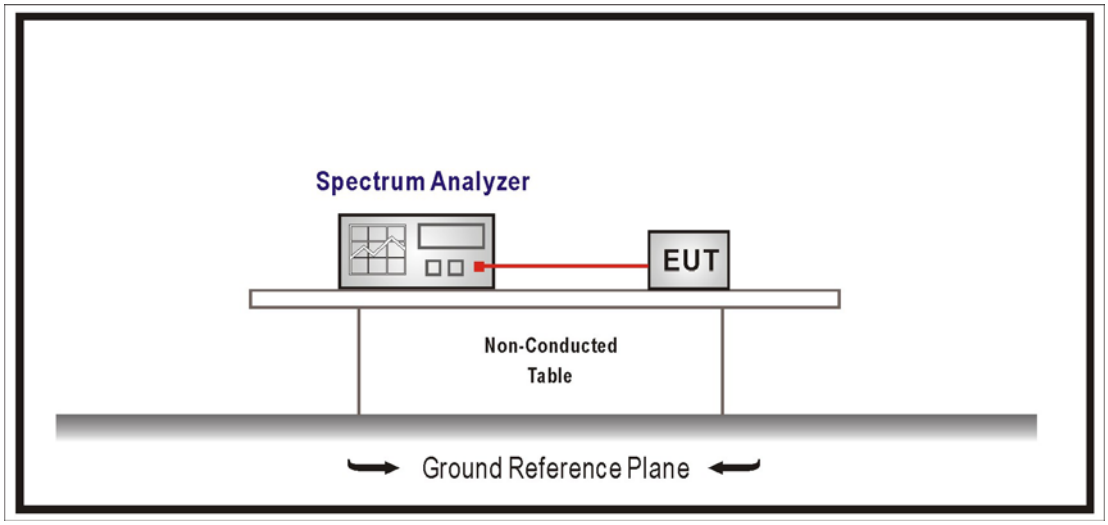
RF Conducted Measurement:				
Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	Spectrum Analyzer	R & S	FSP / 100561	Mar., 2009
2	No.1 OATS			Sep., 2008

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. Test instruments are marked with “X” are used to measure the final test results.

4.2. Test Setup

RF Antenna Conducted Measurement:



4.3. 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)).

4.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements Set RBW = 100 kHz, Set VBW> RBW, scan up through 10th harmonic.

4.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.207: 2008

4.6. Uncertainty

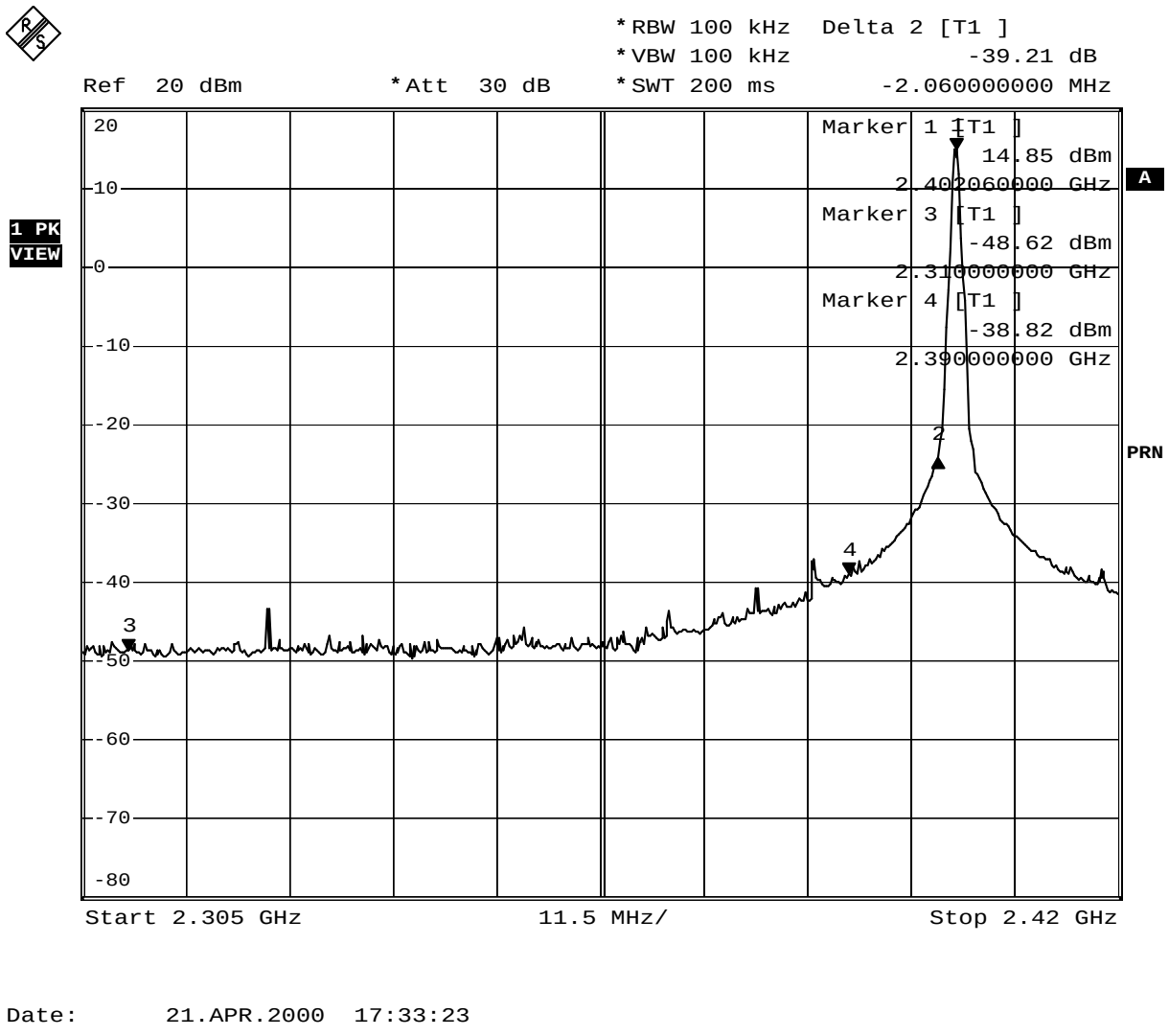
The measurement uncertainty
Conducted is defined as ± 1.27dB
Radiated is defined as ± 3.9dB

4.7. Test Result

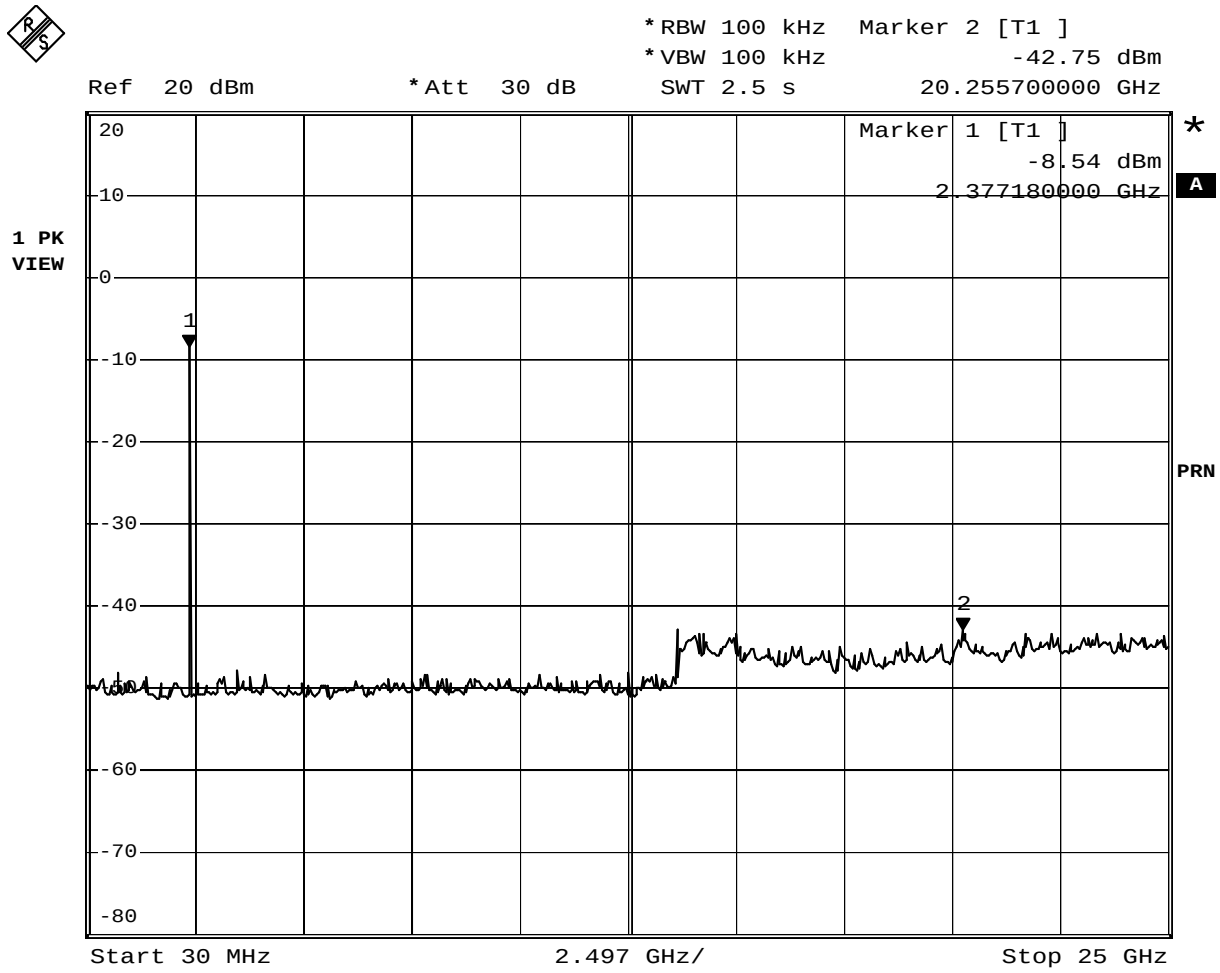
Product	IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER		
Test Item	RF antenna conducted test		
Test Mode	Transmit		
Date of Test	2009/04/21	Test Site	No.1 OATS

Channel No.	Frequency (MHz)	Measure Level (dBc)	Limit (dBc)	Result
1	2404	39.21	≥20	Pass
25	2476	50.60	≥20	Pass

Channel 01-Bandedge

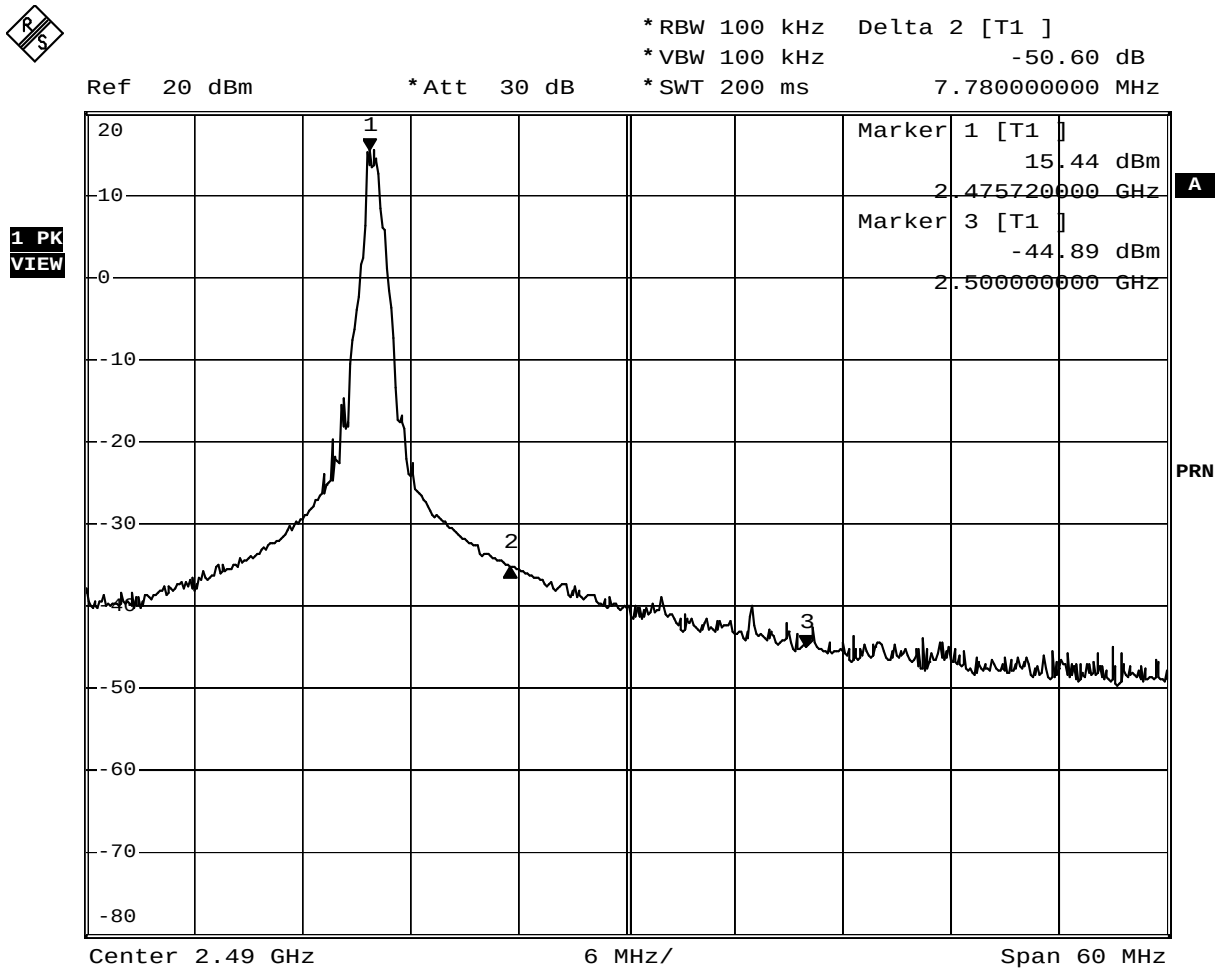


Channel 01-(30M-25G)



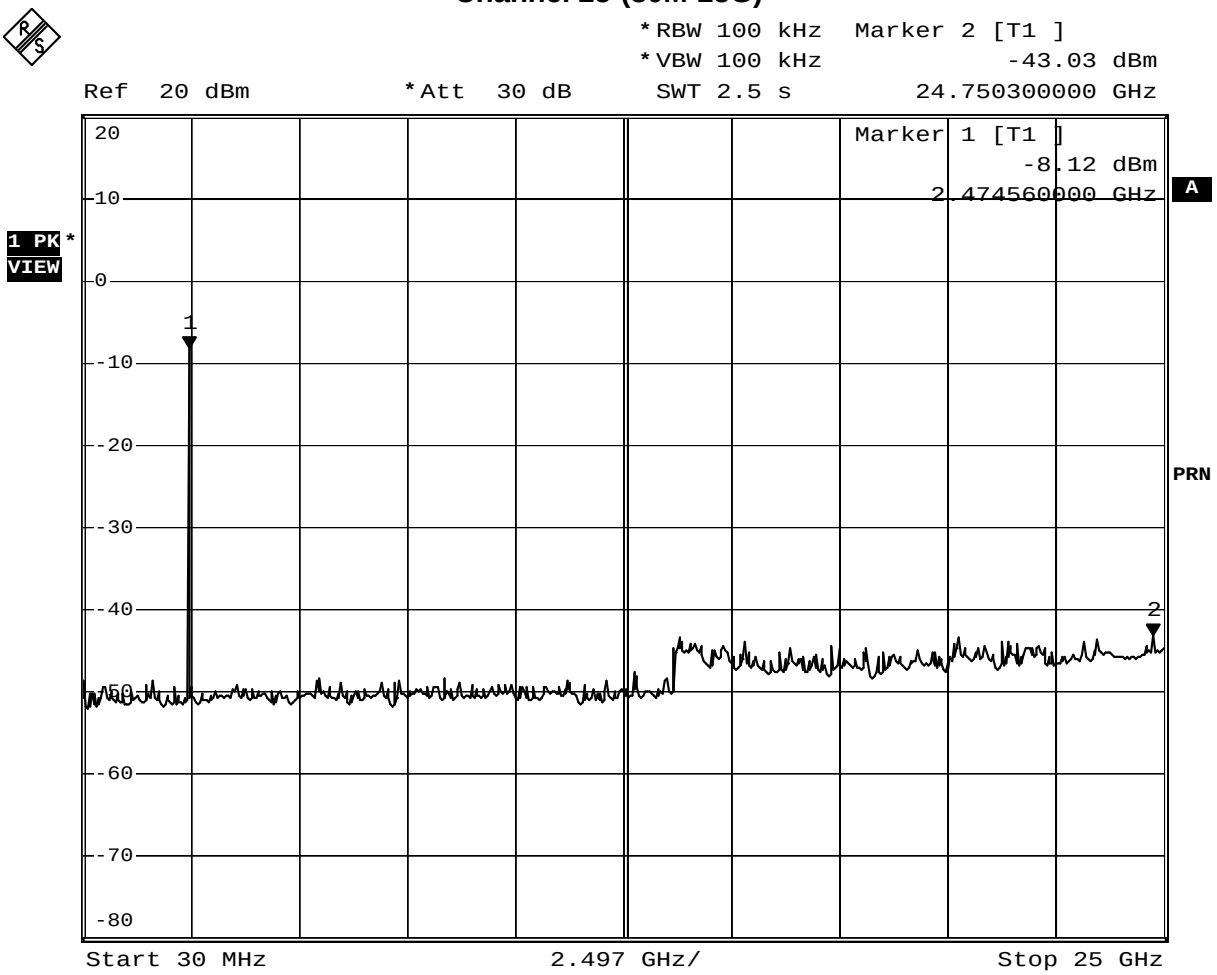
Date: 24.APR.2009 17:10:40

Channel 25-Bandedge



Date: 21.APR.2000 17:45:36

Channel 25-(30M-25G)



Date: 24.APR.2009 17:15:27

5. Radiated Emission Band Edge

5.1. Test Equipment

The following test equipments are used during the test:

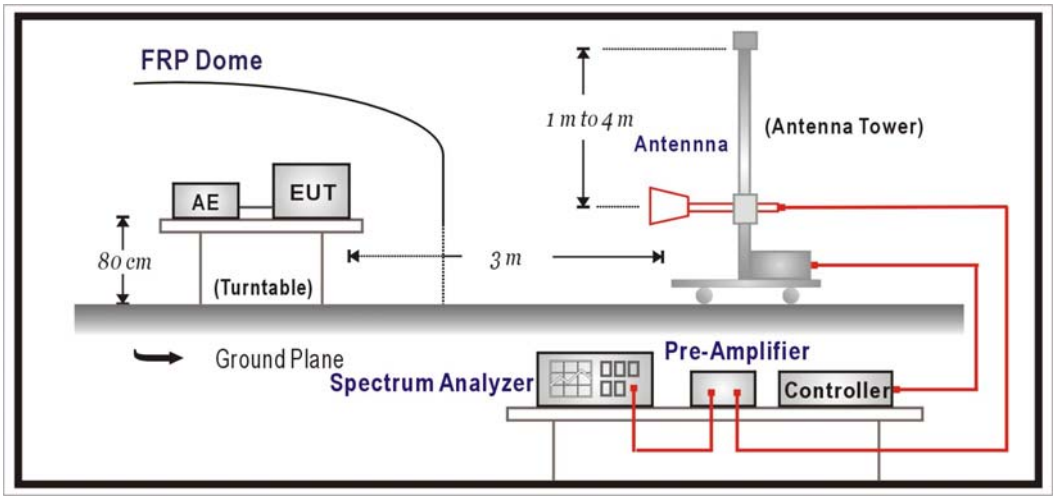
RF Radiated Measurement:					
Item	Equipment		Manufacturer	Model No. / Serial No.	Last Cal.
1	X	Spectrum Analyzer	R & S	FSP40 / 100005	Aug., 2008
2	X	Pre-Amplifier	HP	8449B / 3008A01123	Feb., 2009
3		Loop Antenna	R & S	HFH2-Z2 / 833799/004	Sep., 2008
4		BiconiLog Antenna	Schwarzbeck	VULB 9166 / 1061	Sep., 2008
5		Bilog Antenna	Chase	CBL6112B / 2455	Sep., 2008
6	X	Horn Antenna	Schwarzbeck	BBHA 9120D / BBHA9120D312	Sep., 2008
7	No.1 OATS				Sep., 2008

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. Test instruments are marked with “X” are used to measure the final test results.

5.2. Test Setup

RF Radiated Measurement:



5.3. 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.

5.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to DTS test procedure of Oct 2002 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 C63.4:2003 on radiated measurement.

5.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.207: 2008

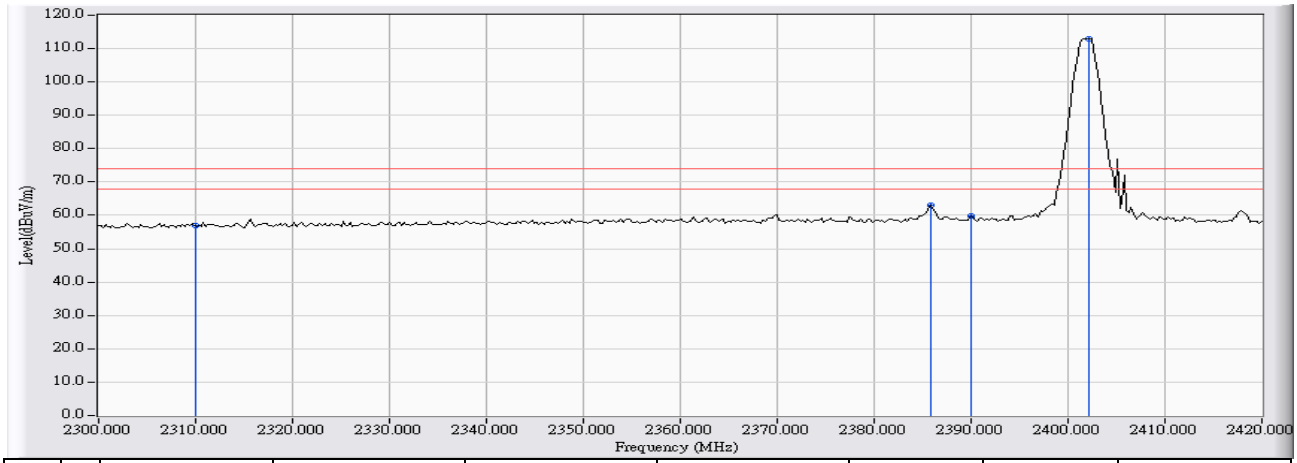
5.6. Uncertainty

The measurement uncertainty
± 3.9 dB above 1GHz

5.7. Test Result

Radiated is defined as

Site : Site 1	Time : 2009/04/28 - 14:49
Limit : FCC_15.209(961011)_03M_PK	Margin : 6
Probe : CB3_FCC_1-18G(2009-01) - HORIZONTAL	Power : AC 120V / 60Hz
EUT : IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER	Note : TX-2404MHz

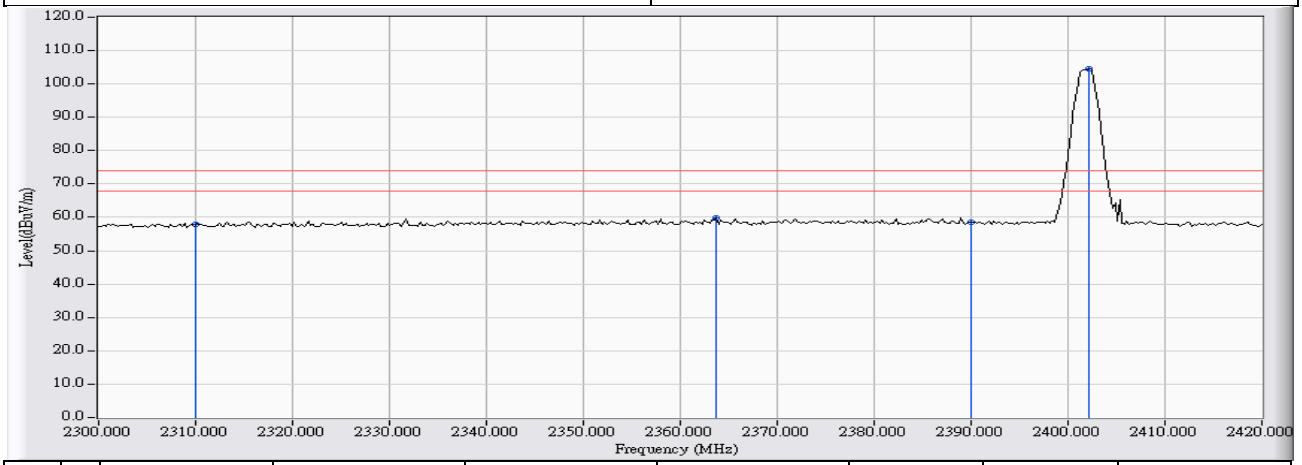


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.919	27.871	56.790	-17.210	74.000	PEAK
2	*	2385.852	29.276	33.828	63.104	-10.896	74.000	PEAK
3		2390.000	29.295	30.394	59.689	-14.311	74.000	PEAK
4		2404.204	29.354	83.701	113.055	39.055	74.000	PEAK

Note:

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 : Site 1	Time : 2009/04/28 - 14:55
Limit : FCC_15.209(961011)_03M_PK	Margin : 6
Probe : CB3_FCC_1-18G(2009-01) - VERTICAL	Power : AC 120V / 60Hz
EUT : IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER	Note : TX-2404MHz

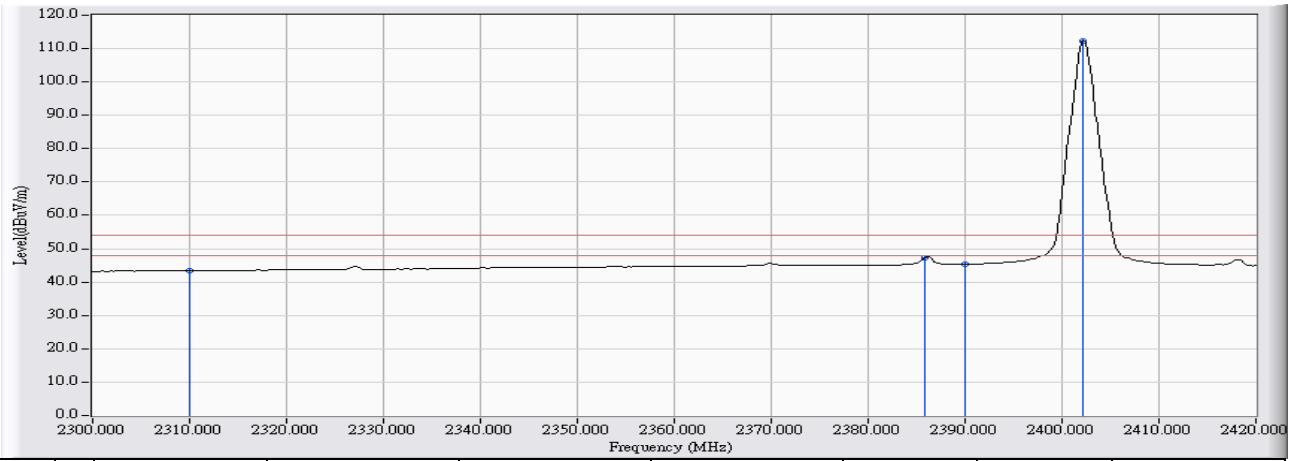


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.545	28.371	57.916	-16.084	74.000	PEAK
2	*	2363.728	29.256	30.500	59.756	-14.244	74.000	PEAK
3		2390.000	29.117	29.493	58.609	-15.391	74.000	PEAK
4		2404.204	29.048	75.383	104.431	30.431	74.000	PEAK

Note:

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 : Site 1	Time : 2009/04/28 - 14:49
Limit : FCC_15.209(961011)_03M_AV	Margin : 6
Probe : CB3_FCC_1-18G(2009-01) - HORIZONTAL	Power : AC 120V / 60Hz
EUT : IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER	Note : TX-2404MHz

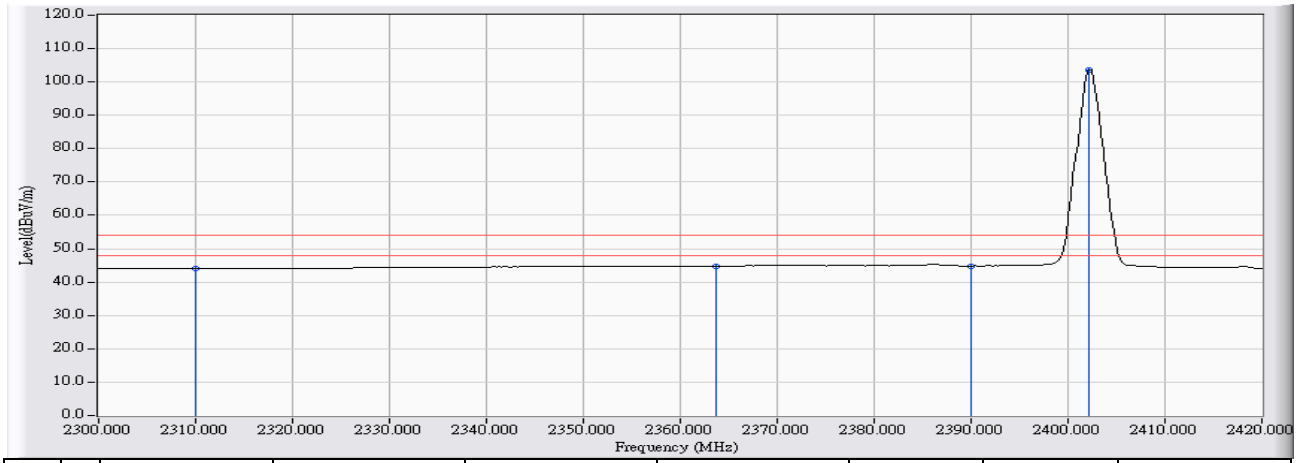


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.919	14.484	43.403	-10.597	54.000	AVERAGE
2	*	2385.852	29.276	18.126	47.402	-6.598	54.000	AVERAGE
3		2390.000	29.295	16.216	45.511	-8.489	54.000	AVERAGE
4		2404.204	29.354	82.829	112.183	58.183	54.000	AVERAGE

Note:

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 : Site 1	Time : 2009/04/28 - 14:57
Limit : FCC_15.209(961011)_03M_AV	Margin : 6
Probe : CB3_FCC_1-18G(2009-01) - VERTICAL	Power : AC 120V / 60Hz
EUT : IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER	Note : TX-2404MHz

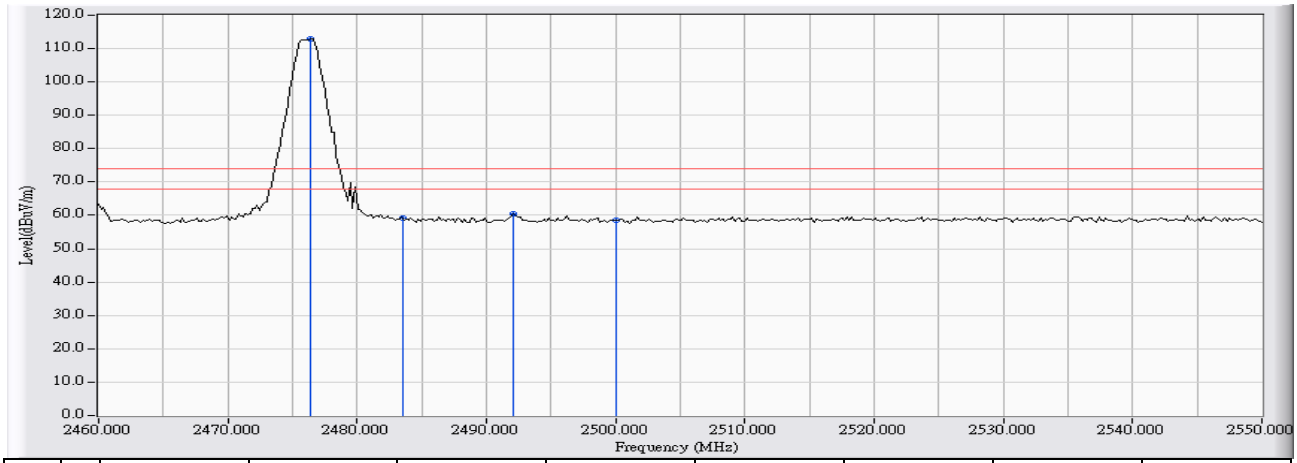


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.545	14.485	44.030	-9.970	54.000	AVERAGE
2	*	2363.728	29.256	15.591	44.847	-9.153	54.000	AVERAGE
3		2390.000	29.117	15.749	44.865	-9.135	54.000	AVERAGE
4		2404.204	29.048	74.672	103.720	49.720	54.000	AVERAGE

Note:

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 : Site 1	Time : 2009/04/01 - 15:22
Limit : FCC_15.209(961011)_03M_PK	Margin : 6
Probe : CB3_FCC_1-18G(2009-01) - HORIZONTAL	Power : AC 120V / 60Hz
EUT : IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER	Note : TX-2476MHz

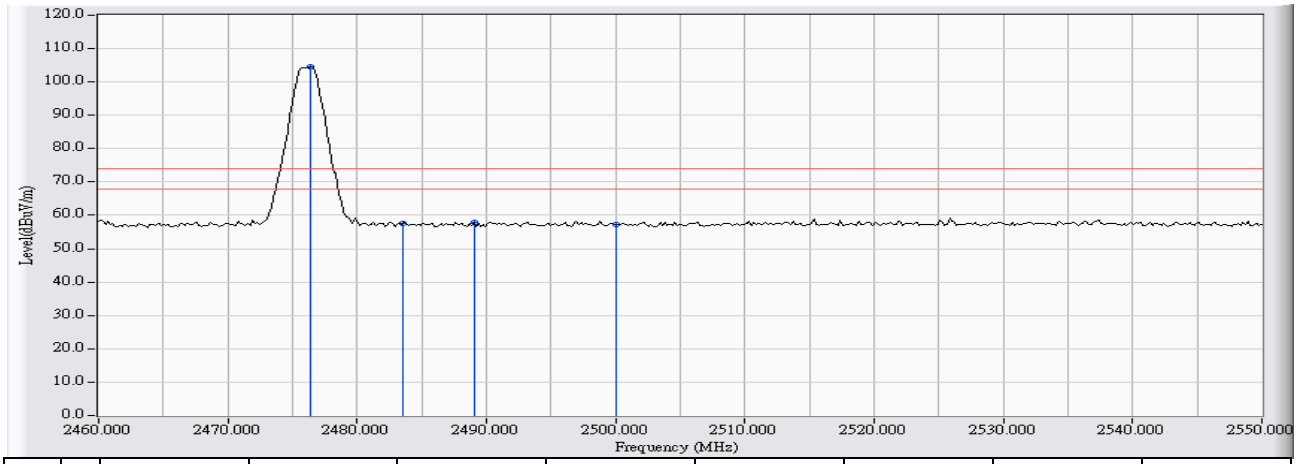


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		2476.413	29.708	83.127	112.836	38.836	74.000	54.000	PEAK
2	*	2483.500	29.742	29.415	59.157	-14.843	74.000	54.000	PEAK
3		2492.104	29.780	30.737	60.517	-13.483	74.000	54.000	PEAK
4		2500.000	29.819	28.677	58.496	-15.504	74.000	54.000	PEAK

Note:

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 : Site 1	Time : 2009/04/01 - 15:28
Limit : FCC_15.209(961011)_03M_PK	Margin : 6
Probe : CB3_FCC_1-18G(2009-01) - VERTICAL	Power : AC 120V / 60Hz
EUT : IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER	Note : TX-2476MHz

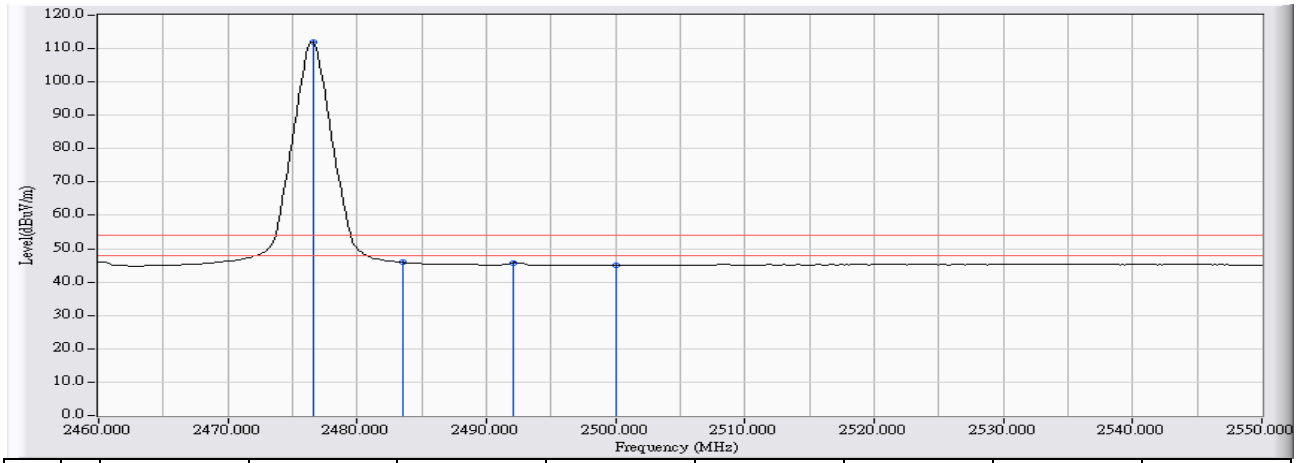


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		2476.413	28.660	75.794	104.455	30.455	74.000	54.000	PEAK
2		2483.500	28.620	28.922	57.542	-16.458	74.000	54.000	PEAK
3	*	2489.038	28.586	29.339	57.925	-16.075	74.000	54.000	PEAK
4		2500.000	28.556	28.613	57.168	-16.832	74.000	54.000	PEAK

Note:

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 : Site 1	Time : 2009/04/01 - 15:22
Limit : FCC_15.209(961011)_03M_AV	Margin : 6
Probe : CB3_FCC_1-18G(2009-01) - HORIZONTAL	Power : AC 120V / 60Hz
EUT : IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER	Note : TX-2476MHz

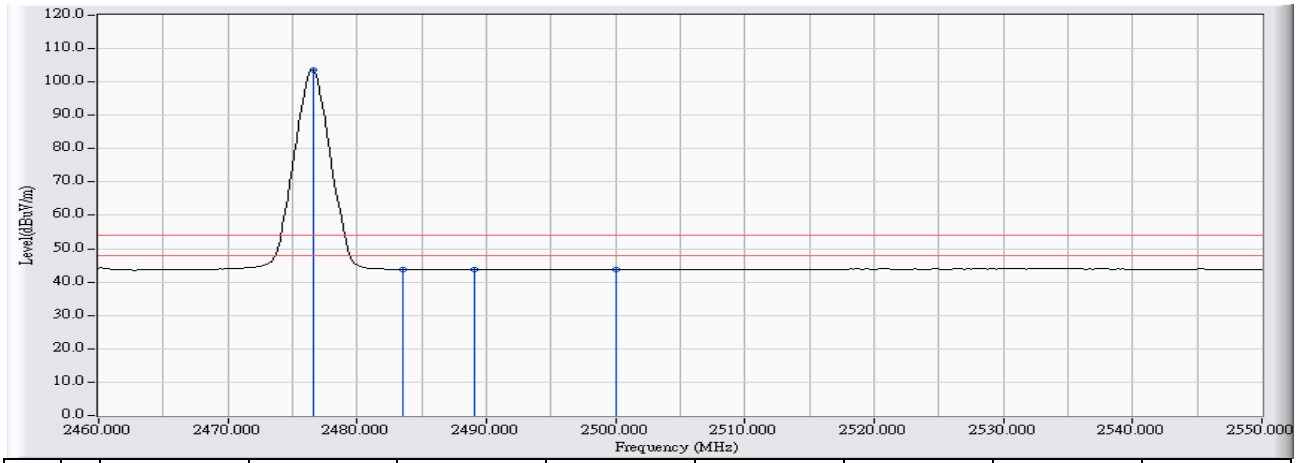


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		2476.593	29.710	82.318	112.028	58.028	74.000	54.000	AVERAGE
2	*	2483.500	29.742	16.131	45.873	-8.127	74.000	54.000	AVERAGE
3		2492.104	29.780	16.018	45.798	-8.202	74.000	54.000	AVERAGE
4		2500.000	29.819	15.225	45.044	-8.956	74.000	54.000	AVERAGE

Note:

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 : Site 1	Time : 2009/04/01 - 15:28
Limit : FCC_15.209(961011)_03M_AV	Margin : 6
Probe : CB3_FCC_1-18G(2009-01) - VERTICAL	Power : AC 120V / 60Hz
EUT : IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER	Note : TX-2476MHz



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		2476.593	28.660	75.037	103.697	49.697	74.000	54.000	AVERAGE
2		2483.500	28.620	15.145	43.765	-10.235	74.000	54.000	AVERAGE
3	*	2489.038	28.586	15.117	43.703	-10.297	74.000	54.000	AVERAGE
4		2500.000	28.556	15.224	43.779	-10.221	74.000	54.000	AVERAGE

Note:

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.

6. Occupied Bandwidth

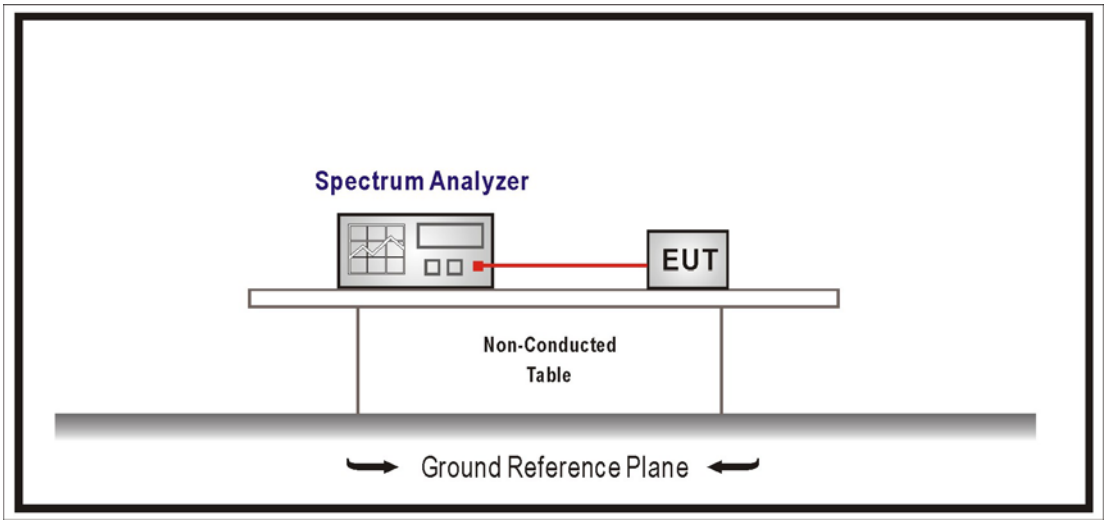
6.1. Test Equipment

The following test equipments are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	Spectrum Analyzer	R & S	FSP / 100561	Mar., 2009
2	No.1 OATS			Sep., 2008

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

6.2. Test Setup



6.3. Test Procedures

The EUT was setup according to ANSI C63.4, 2003; tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
Set RBW = 100 kHz, Span greater than RBW.

6.4. Limits

The 6 dB bandwidth must be greater than 500 kHz.

6.5. Uncertainty

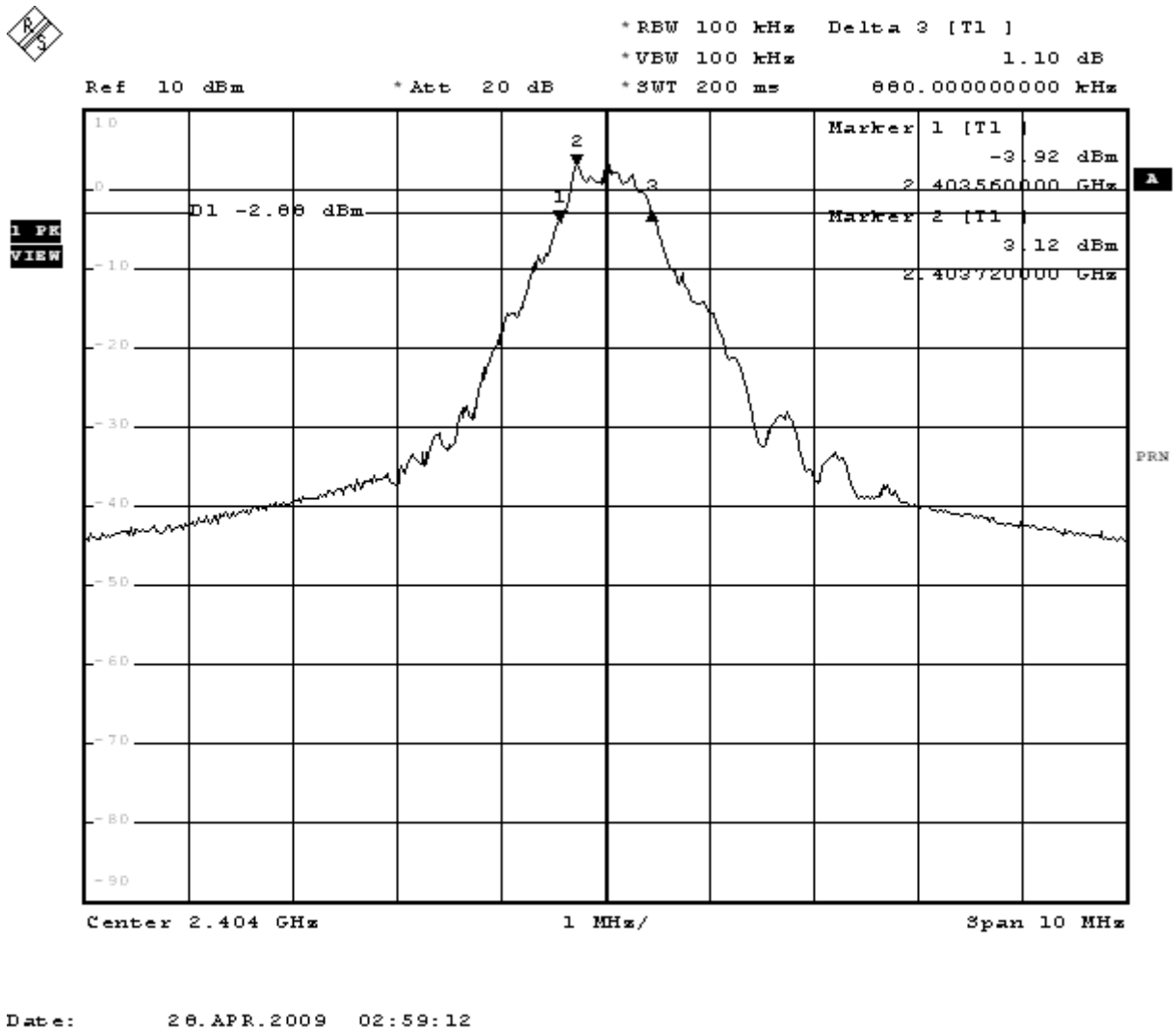
The measurement uncertainty is defined as ±150Hz

6.6. Test Result

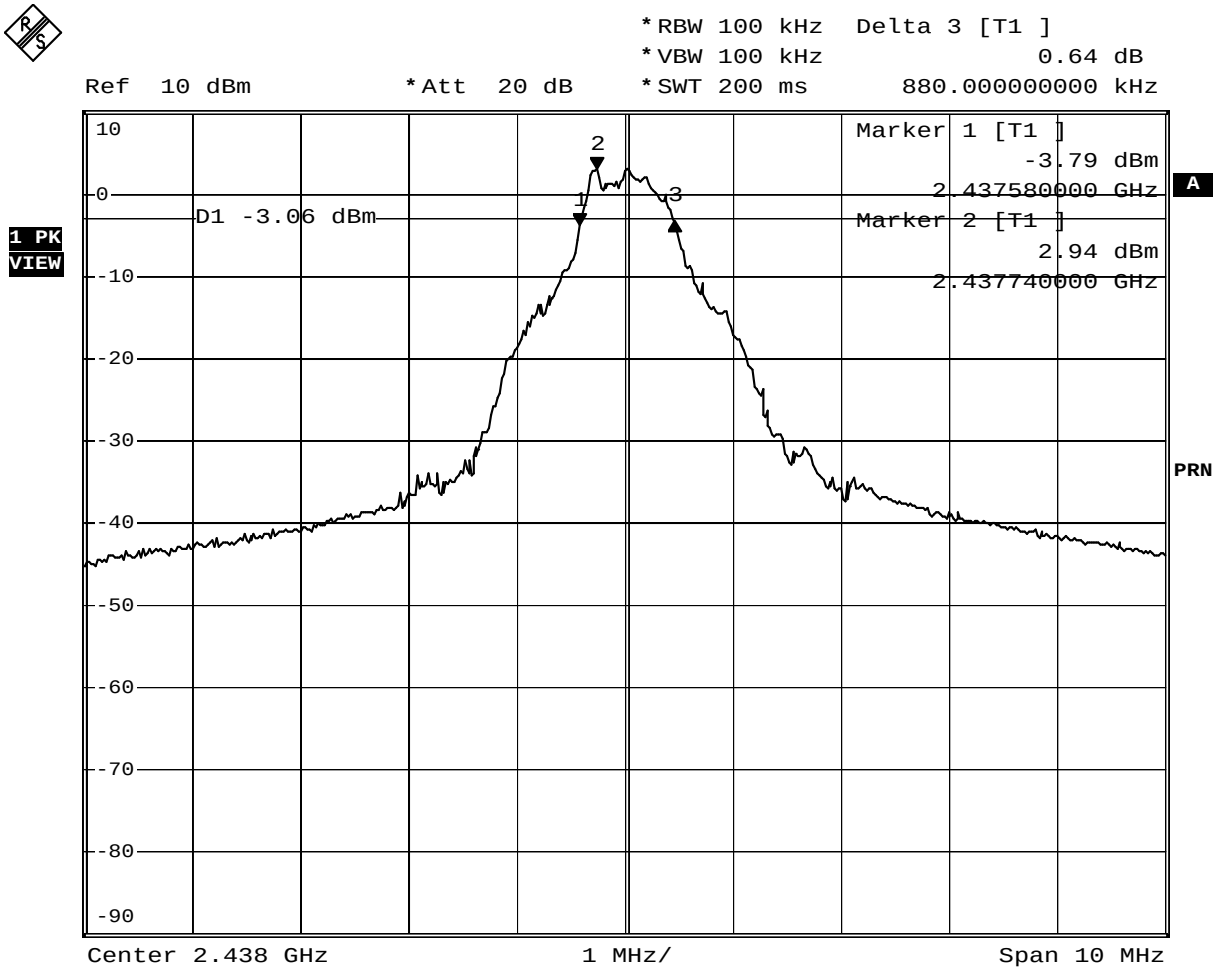
Product	IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER		
Test Item	Occupied Bandwidth		
Test Mode	Transmit		
Date of Test	2009/04/21	Test Site	No.1 OATS

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2404	880	≥500	Pass
12	2438	880	≥500	Pass
25	2476	880	≥500	Pass

Channel 1

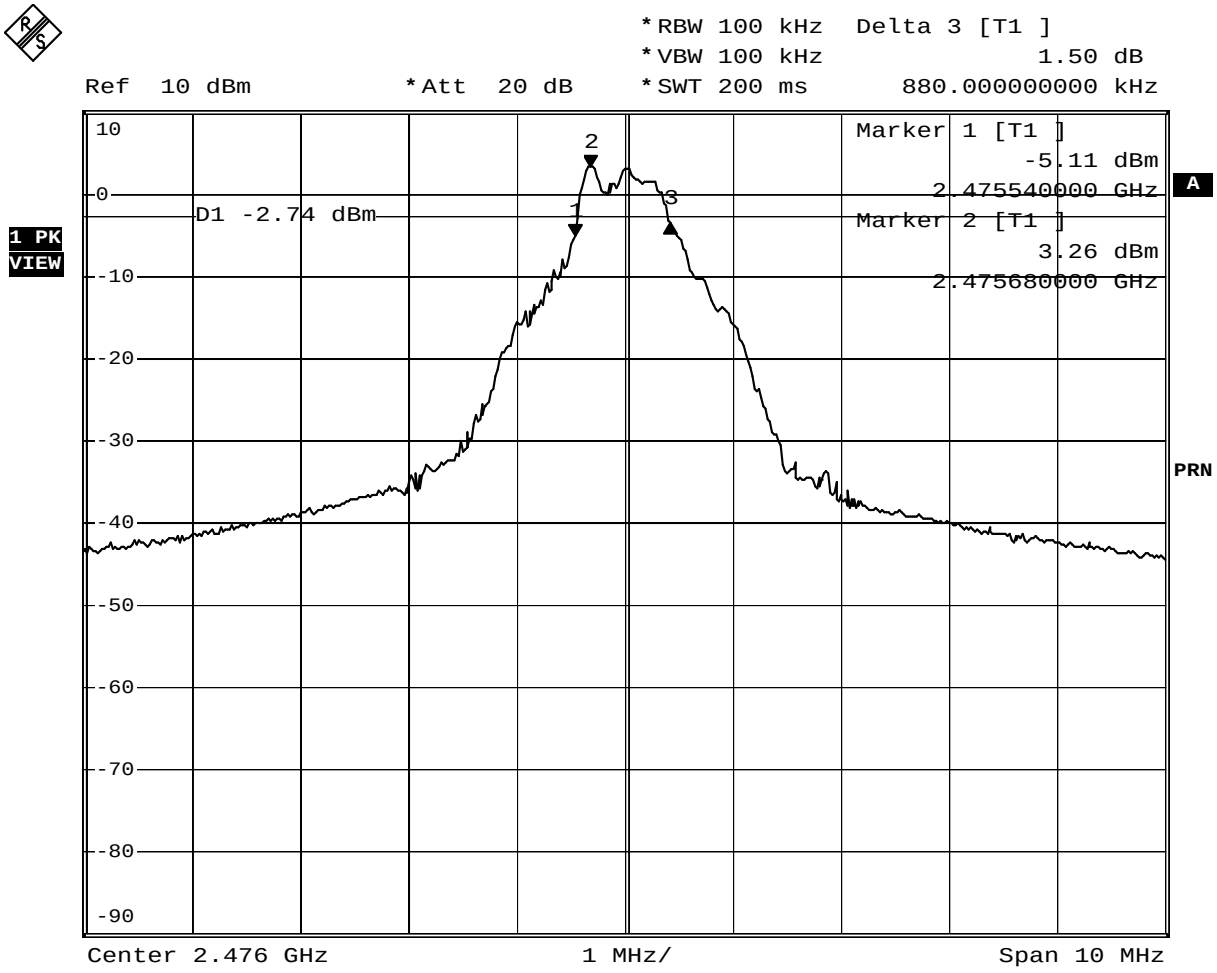


Channel 12



Date: 24.APR.2009 02:41:08

Channel 25



Date: 24.APR.2009 02:44:32

7. Power Density

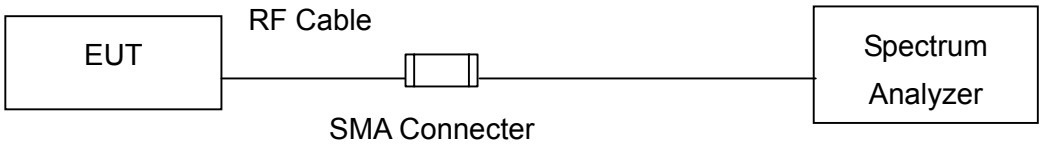
7.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	Spectrum Analyzer	R & S	FSP / 100561	Mar., 2009
2	No.1 OATS			Sep., 2008

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

7.2. Test Setup



7.3. 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.

7.4. Test Procedures

The EUT was setup according to ANSI C63.4, 2003; tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
Set RBW= 3 kHz, Set VBW≧ 9 kHz, Sweep time=Auto, Set detector=Peak detector

7.5. Uncertainty

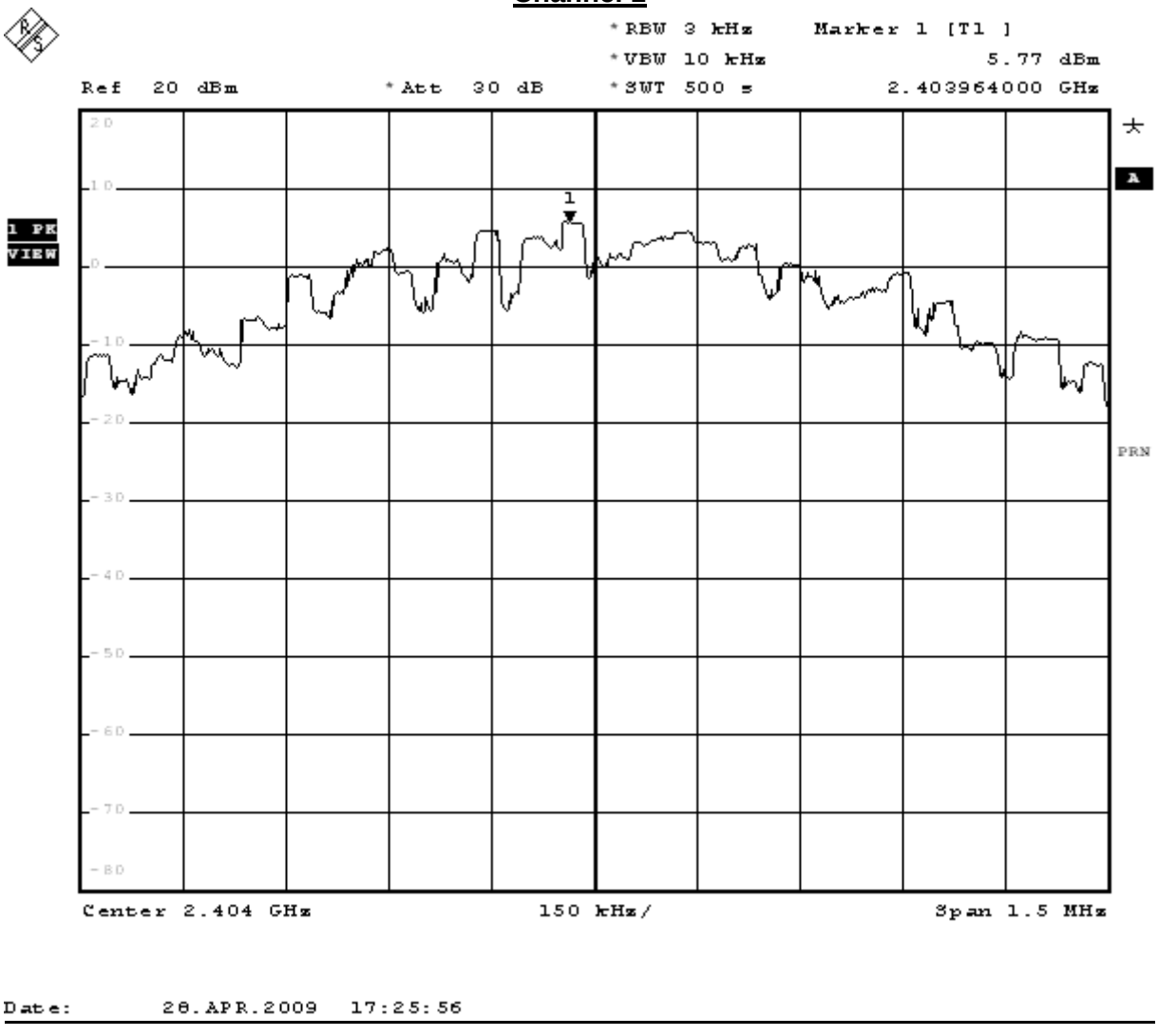
The measurement uncertainty is defined as ±1.27dB.

7.6. Test Result

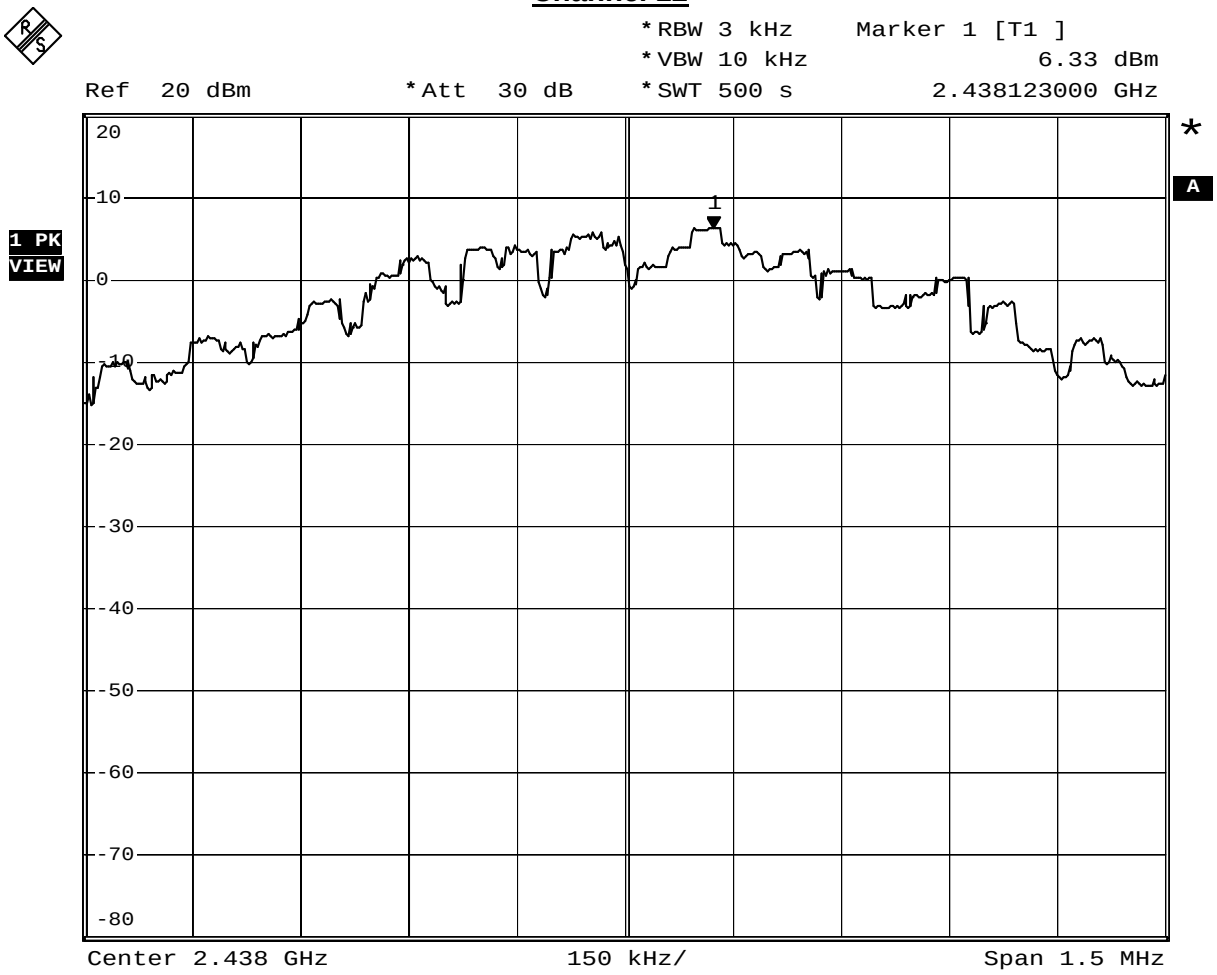
Product	IA2P DUPLEX CARDTYPE DIGITAL AUDIO TRANSCEIVER		
Test Item	Power Density		
Test Mode	Transmit		
Date of Test	2009/04/21	Test Site	No.1 OATS

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2404	5.77	≤8	Pass
12	2438	6.33	≤8	Pass
25	2476	6.41	≤8	Pass

Channel 1

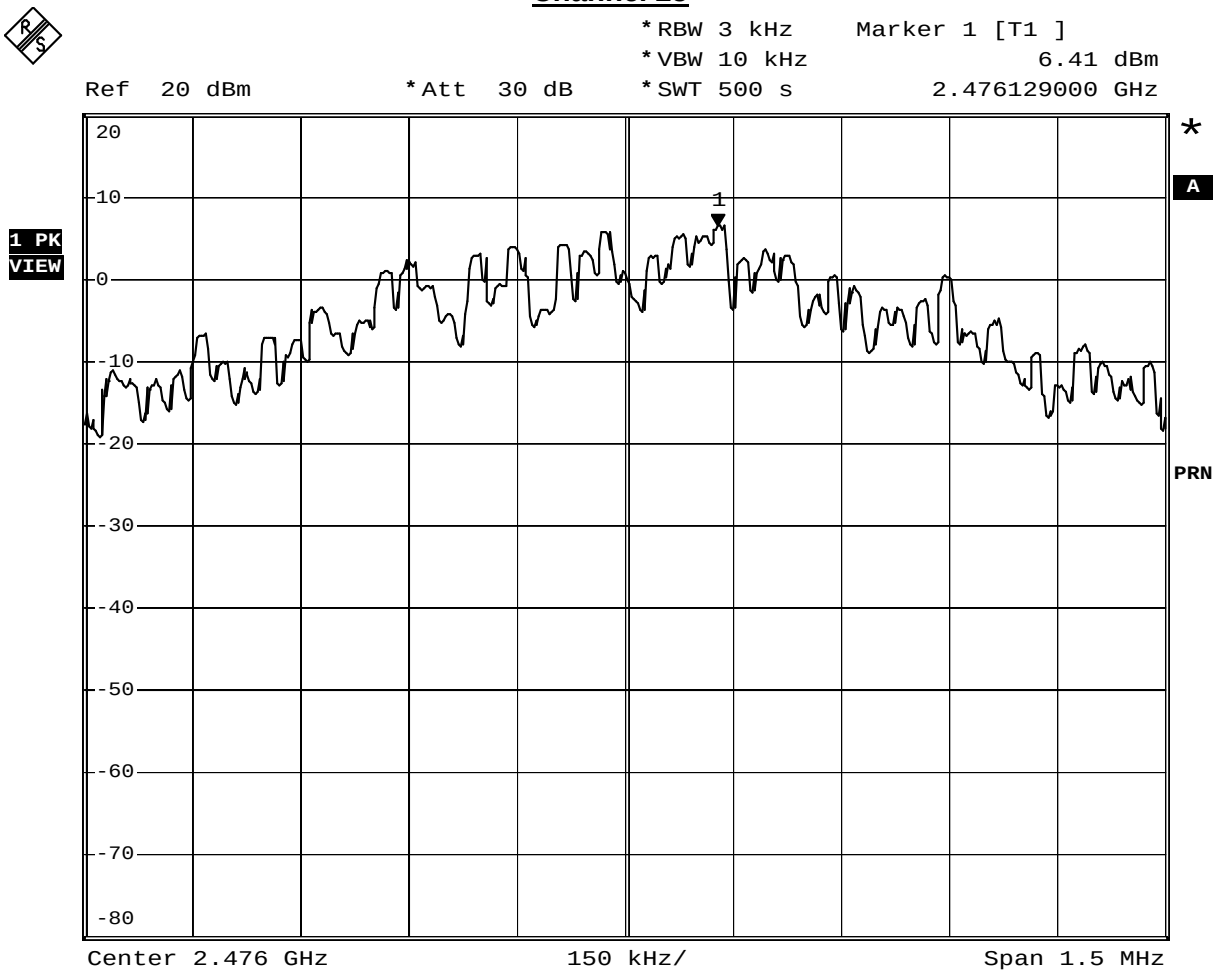


Channel 12



Date: 21.APR.2000 17:09:45

Channel 25


*RBW 3 kHz
*VBW 10 kHz
*SWT 500 s
Marker 1 [T1]
6.41 dBm
2.476129000 GHz
Ref 20 dBm
*Att 30 dB
1 PK
VIEW
A
PRN
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.476 GHz
150 kHz/
Span 1.5 MHz
Date: 21.APR.2000 17:42:35