



FCC TEST REPORT

According to

FCC Rules and Regulations

Part 15 Subpart C

Applicant	:	United Integrated Services Co., Ltd.
Address	:	5F, No. 3, Lane 7, Paokao Rd., Hsintien, Taipei Hsien, Taiwan, R.O.C.
Equipment	:	Wireless Console Controller
Model No.	:	WCC-120
FCC ID.	:	XBTWCC-120
Trade Name	:	UIS

Laboratory Accreditation



- The test result refers exclusively to the test presented test model / sample.,
- Without written approval of **CerpPASS Technology Corp.**, the test report shall not be reproduced except in full.



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Appendix A. Photographs of EUT A1 ~ A6



CERTIFICATE OF COMPLIANCE

According to

FCC Rules and Regulations

Part 15 Subpart C

Applicant : United Integrated Services Co., Ltd.
Address : 5F, No. 3, Lane 7, Paokao Rd., Hsintien,
Taipei Hsien, Taiwan, R.O.C.
Equipment : Wireless Console Controller
Model No. : WCC-120
FCC ID : XBTWCC-120

I **HEREBY** CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4** The equipment was **passed** the test performed according to **FCC Rules and Regulations Part 15 Subpart C (2009)**.

The test was carried out on Aug. 12, 2010 at CerpPASS Technology Corp.

Signature

Anson Chou

EMC/RF B.U. Vice General Manager



1. Report of Measurements and Examinations

1.1 List of Measurements and Examinations

FCC Rule	Description of Test	Result
15.203	. Antenna Requirement	Pass
15.207	. Conducted Emission	Pass
15.209 15.247(d)	. Radiated Emission	Pass
15.247(a)(2)	. 6dB Bandwidth	Pass
15.247(b)	. Maximum Peak Output Power	Pass
15.247(d)	. 100kHz Bandwidth of Frequency Band Edges	Pass
15.247(e)	. Power Spectral Density	Pass
1.1307 1.1310 2.1091 2.1093	. RF Exposure Compliance	Pass



2. Test Configuration of Equipment under Test

2.1 Feature of Equipment under Test

Frequency Band	2400 ~ 2483.5MHz
Transmit Power	Approx. 300m (open area) For IEEE 802.15.4 Wireless: 15dBm (Typ.)
Receiver Sensitivity	For IEEE 802.15.4 Wireless: -101dBm
Power Input	DC 5V / 1A
Power adapter	Input: AC 100V ~ 240V (47 ~ 63Hz) Output: DC 5V / 1A, 5W MAX.
Power consumption	Operating: 350mA (Max.) Standby: 15mA (Max.)
Battery	2 x alkaline batteries type AA (1.5V*2) at 2200mAh The battery can be maintained for 2 years while supplying power
Operating Voltage	3.3V
Environment	Temperature - Operating: -5 ~ 45 - Non-operating: -20 to 65 Humidity (non-condensing) - Operating: 20% to 85% (RH) - Non-operating: 10% to 90%
Dimensions	157 (L) x 95 (W) x 21.5 (H) mm
Weight	250g (including AA*2) 203g (non-including AA*2)

2.2 RF Spec.

Frequency Band:	2400 ~ 2483.5MHz
Number of Channels	1 ~ 16 (16 Channels)
Carrier Frequency of each channel	CH01: 2405, CH02: 2410, CH03: 2415, CH04: 2420, CH05: 2425, CH06: 2430, CH07: 2435, CH08: 2440, CH09: 2440, CH10: 2450, CH11: 2455, CH12: 2460, CH13: 2465, CH14: 2470, CH15: 2475, CH16: 2480
Modulation Type:	O-QPSK

2.3 Carrier Frequency of Channels

Channel	Frequency(MHz)	Channel	Frequency(MHz)
01	2405	09	2445
02	2410	10	2450
03	2415	11	2455
04	2420	12	2460
05	2425	13	2465
06	2430	14	2470
07	2435	15	2475
08	2440	16	2480



2.4 Test Mode and Test Software

- a. During testing, the interface cables and equipment positions were varied according to ANSI C63.4.
- b. The complete test system included EUT for EMI test.
- c. The following test mode were performed for conduction and radiation test:
Test Mode 1. Link Wireless, power from Adapter
 - CH 01: 2405MHz • CH 09: 2445MHz • CH 16: 2480MHzTest Mode 2. Link Wireless, power from battery – only Radiation test
 - CH 01: 2405MHz • CH 09: 2445MHz • CH 16: 2480MHzcause “mode 1” generated the worst test result, so it was reported as final data.
- d. The EUT keeps to transmit and receive data by wireless.

2.5 Description of Test System

No test software was used during testing.

2.6 Connection Diagram of Test System





2.7 General Information of Test

Test Site:	CerpPASS Technology Corp. 2F-11, No. 3, Yuan Qu St. (Nankang Software Park), Taipei, Taiwan 115, R.O.C.
Test Site Location (OATS1-SD):	No. 7-2, Moshihkeng, Fongtian Village, Shihding Township, Taipei County, Taiwan, R.O.C.
FCC Registration Number :	TW1049, TW1056, 982971, 488071
IC Registration Number :	4934C-1, 4934D-1
VCCI Registration Number :	T-543 for Telecommunication Test C-3328 for Conducted emission test R-3013 for Radiated emission test G-97 for radiated disturbance above 1GHz
Test Voltage:	AC 120V / 60Hz, DC 3V
Test in Compliance with:	ANSI C63.4-2003 FCC Part 15 Subpart C
Frequency Range Investigated:	Conducted: from 150kHz to 30MHz Radiation: from 30MHz to 25,000MHz
Test Distance:	The test distance of radiated emission from antenna to EUT is 3 M.

2.8 Measurement Uncertainty

Measurement Item	Measurement Frequency	Polarization	Uncertainty
Conducted Emission	9 kHz ~ 30 MHz	LINE/NEUTRAL	2.71 dB
Radiated Emission	30 MHz ~ 25 GHz	Vertical	4.11 dB
		Horizontal	4.10 dB
6 dB Bandwidth	---	---	7500 Hz
Maximum Peak Output Power	---	---	1.4 dB
100kHz Bandwidth of Frequency Band Edges	---	---	2.2 dB
Power Spectral Density	---	---	2.2 dB



2.9 History of this test report

■ ORIGINAL.

Additional attachment as following record:

Attachment No.	Issue Date	Description



3. Antenna Requirements

3.1 Standard Applicable

For intentional device, according to FCC 47 CFR 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.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

3.2 Antenna Construction and Directional Gain

Antenna Type: PCB Antenna

Antenna Gain: 2.6 dBi



4. Test of Conducted Emission

4.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.4-2003 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

Frequency (MHz)	Quasi Peak (dB μ V)	Average (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

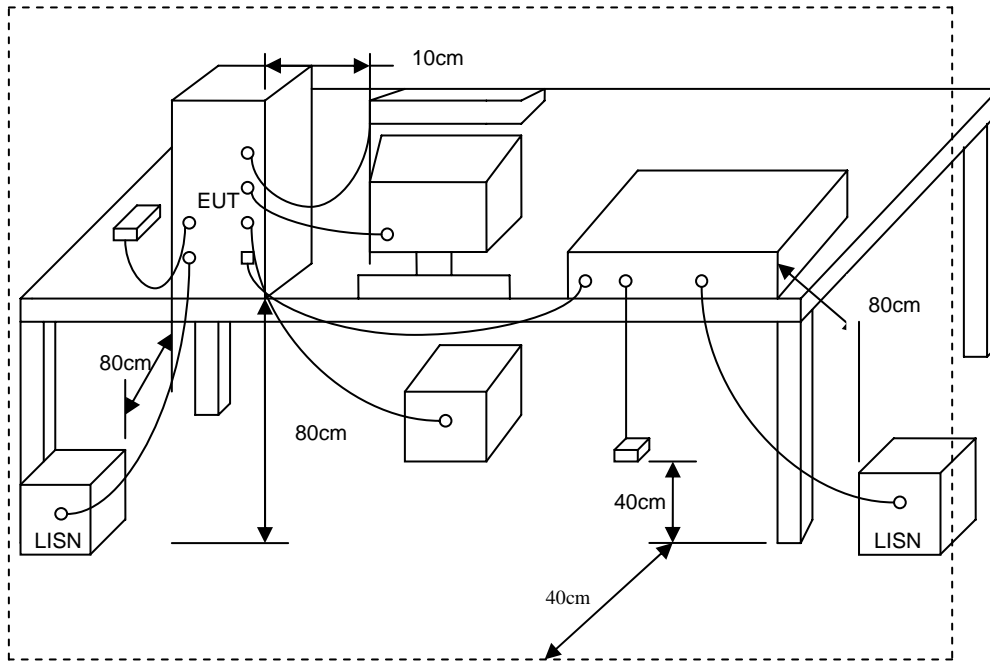
*Decreases with the logarithm of the frequency.

4.2 Test Procedures

- The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- Connect EUT to the power mains through a line impedance stabilization network (LISN).
- All the support units are connecting to the other LISN.
- The LISN provides 50 ohm coupling impedance for the measuring instrument.
- The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
- Both sides of AC line were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched.
- Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.



4.3 Typical Test Setup



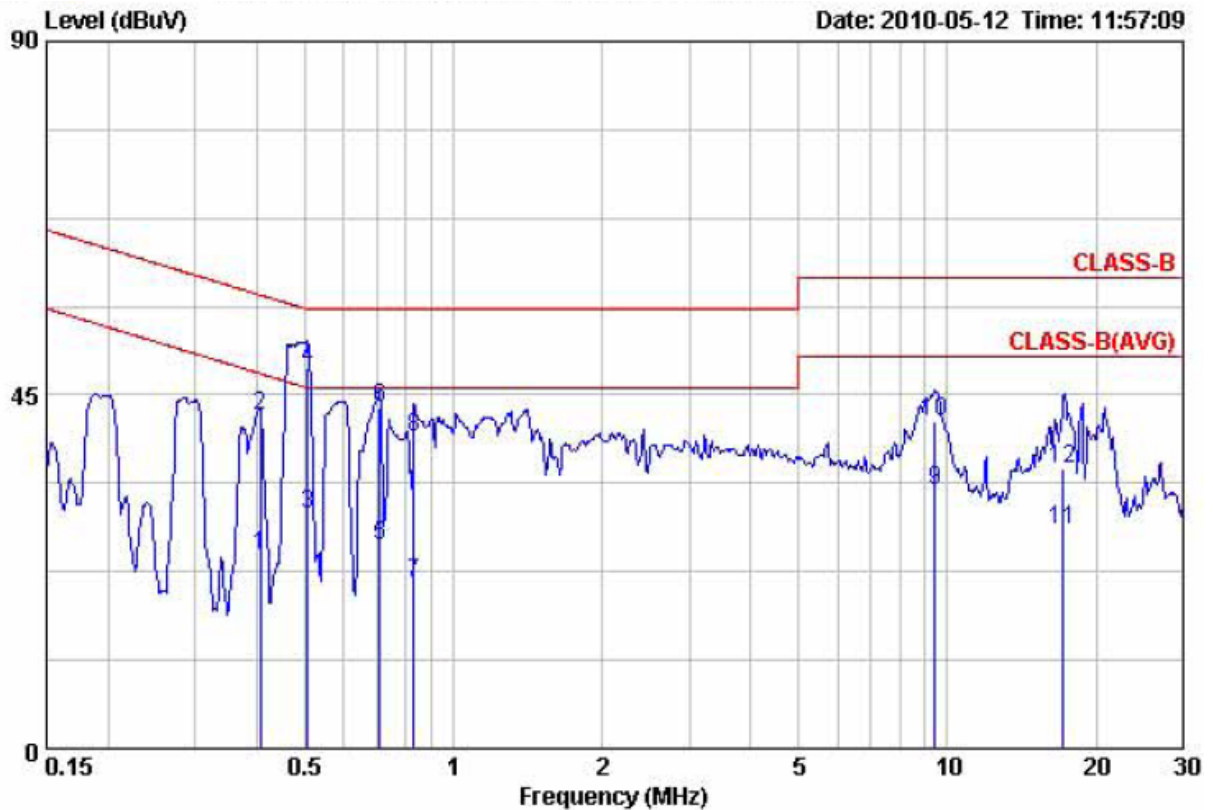
4.4 Measurement Equipment

Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
EMI Receiver	R&S	ESCI	100821	2010/01/21	2011/01/20
LISN	Schwarzbeck	NSLK 8127	8127-516	2009/05/15	2010/05/14
LISN	MESS TEC	NNB-2/16Z	02/10191	2009/06/18	2010/06/17



4.5 Test Result and Data

Power	: AC 120V	Pol/Phase	: LINE
Test Mode	: O-QPSK, CH01	Temperature	: 24 °C
Memo	:	Humidity	: 62 %

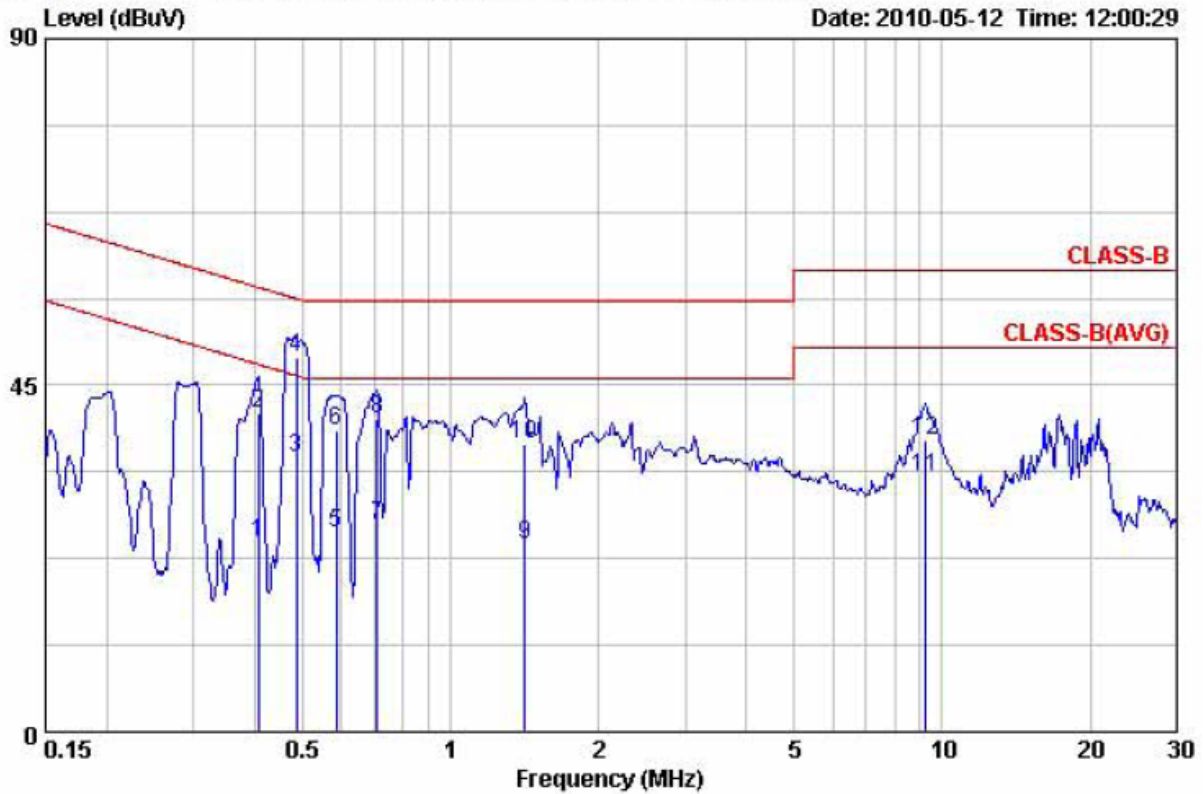


Item	Freq MHz	Read Value dBuV	Factor dB	Result dBuV	Limit dBuV	Margin dBuV	Remark
1	0.406	24.372	0.080	24.452	47.732	-23.280	Average
2	0.406	42.329	0.080	42.409	57.732	-15.323	QP
3	0.507	29.803	0.085	29.888	46.000	-16.112	Average
4	0.507	48.321	0.085	48.406	56.000	-7.594	QP
5	0.708	25.719	0.092	25.811	46.000	-20.189	Average
6	0.708	43.361	0.092	43.453	56.000	-12.547	QP
7	0.833	20.846	0.096	20.942	46.000	-25.058	Average
8	0.833	39.494	0.096	39.590	56.000	-16.410	QP
9	9.451	32.473	0.449	32.922	50.000	-17.078	Average
10	9.451	41.083	0.449	41.532	60.000	-18.468	QP
11	17.170	27.272	0.509	27.781	50.000	-22.219	Average
12	17.170	35.039	0.509	35.548	60.000	-24.452	QP

Remarks: 1. Result = Read Value + Factor
 2. Factor = LISN(ISN) Factor + Cable Loss



Power	: AC 120V	Pol/Phase	: NEUTRAL
Test Mode	: O-QPSK, CH01	Temperature	: 24 °C
Memo	:	Humidity	: 62 %



Item	Freq MHz	Read Value dBuV	Factor dB	Result dBuV	Limit dBuV	Margin dBuV	Remark
1	0.407	24.465	0.080	24.545	47.707	-23.162	Average
2	0.407	41.251	0.080	41.331	57.707	-16.376	QP
3	0.486	35.585	0.084	35.669	46.230	-10.561	Average
4	0.486	48.572	0.084	48.656	56.230	-7.574	QP
5	0.585	25.628	0.088	25.716	46.000	-20.284	Average
6	0.585	38.954	0.088	39.042	56.000	-16.958	QP
7	0.708	26.643	0.092	26.735	46.000	-19.265	Average
8	0.708	40.548	0.092	40.640	56.000	-15.360	QP
9	1.418	24.240	0.110	24.350	46.000	-21.650	Average
10	1.418	37.221	0.110	37.331	56.000	-18.669	QP
11	9.245	32.876	0.337	33.213	50.000	-16.787	Average
12	9.245	37.564	0.337	37.901	60.000	-22.099	QP

Remarks: 1. Result = Read Value + Factor
 2. Factor = LISN(ISN) Factor + Cable Loss

Test engineer: Ben



5. Test of Radiated Emission

5.1 Test Limit

Radiated emissions from 30 MHz to 25 GHz were measured according to the methods defines in ANSI C63.4-2003. The EUT was placed, 0.8 meter above the ground plane, as shown in section 5.6.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions for unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency (MHz)	Distance Meters	Radiated (μ V / M)	Radiated (dB μ V/ M)
30-88	3	100	40.0
88-216	3	150	43.5
216-960	3	200	46.0
Above 960	3	500	54.0

For unintentional device, according to CISPR PUB.22, for Class B digital devices, the general requirement of field strength of radiated emissions from intentional radiators at a distance of 10 meters shall not exceed the below table.

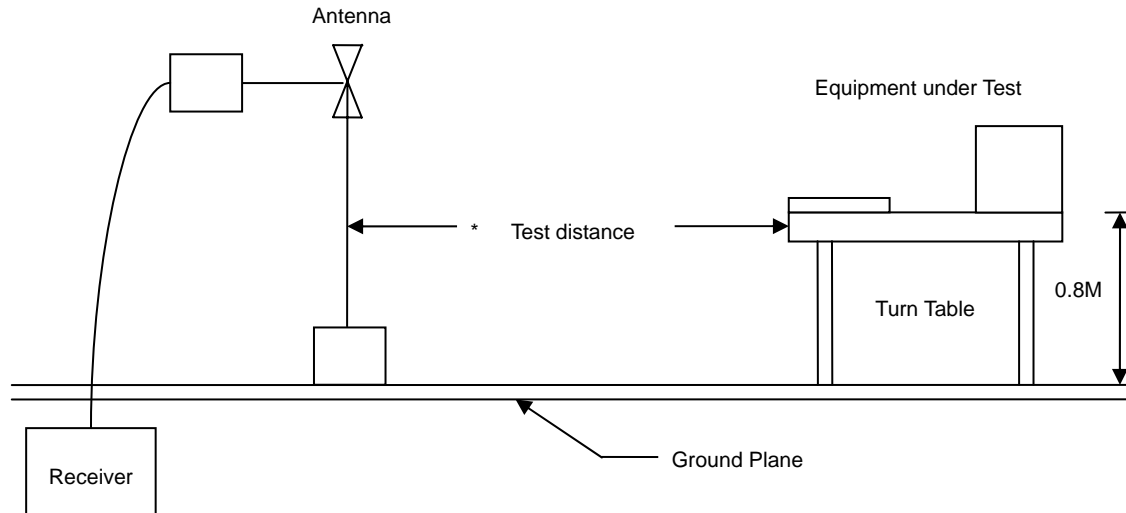
Frequency (MHz)	Distance Meters	Radiated (dB μ V/ M)
30-230	10	30
230-1000	10	37

5.2 Test Procedures

- The EUT was placed on a rotatable table top 0.8 meter above ground.
- The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- The table was rotated 360 degrees to determine the position of the highest radiation.
- The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.
- For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.



5.3 Typical Test Setup



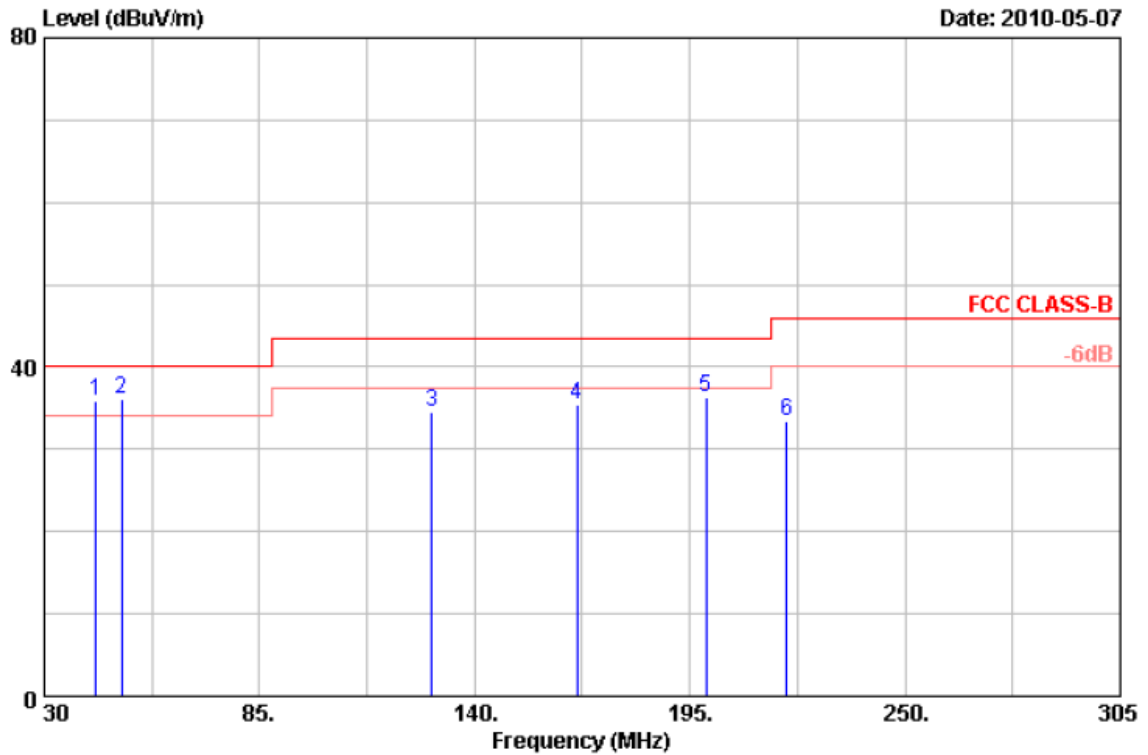
5.4 Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Bilog Antenna	Schaffner	CBL6112B	2840	2009/05/14	2010/05/13
Amplifier	Agilent	8447D	2944A10593	2009/05/21	2010/05/20
Signal Generator	HP	8648B	3629U00612	2009/12/23	2010/12/22
EMI Receiver	HP	8546A	3807A00454	2009/10/23	2010/10/22
RF Filter Section	HP	85460A	3704A00386	2009/10/23	2010/10/22
SPECTRUM ANALYZER	R&S	FSP40	100219	2009/11/20	2010/11/19
HORN ANTENNA	EMCO	3115	31589	2010/05/04	2011/05/03
Preamplifier	Agilent	8449B	3008A01954	2010/02/26	2011/02/25



5.5 Test Result and Data

Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: O-QPSK, CH1	Temperature	: 25 °C
Memo	:	Humidity	: 68 %



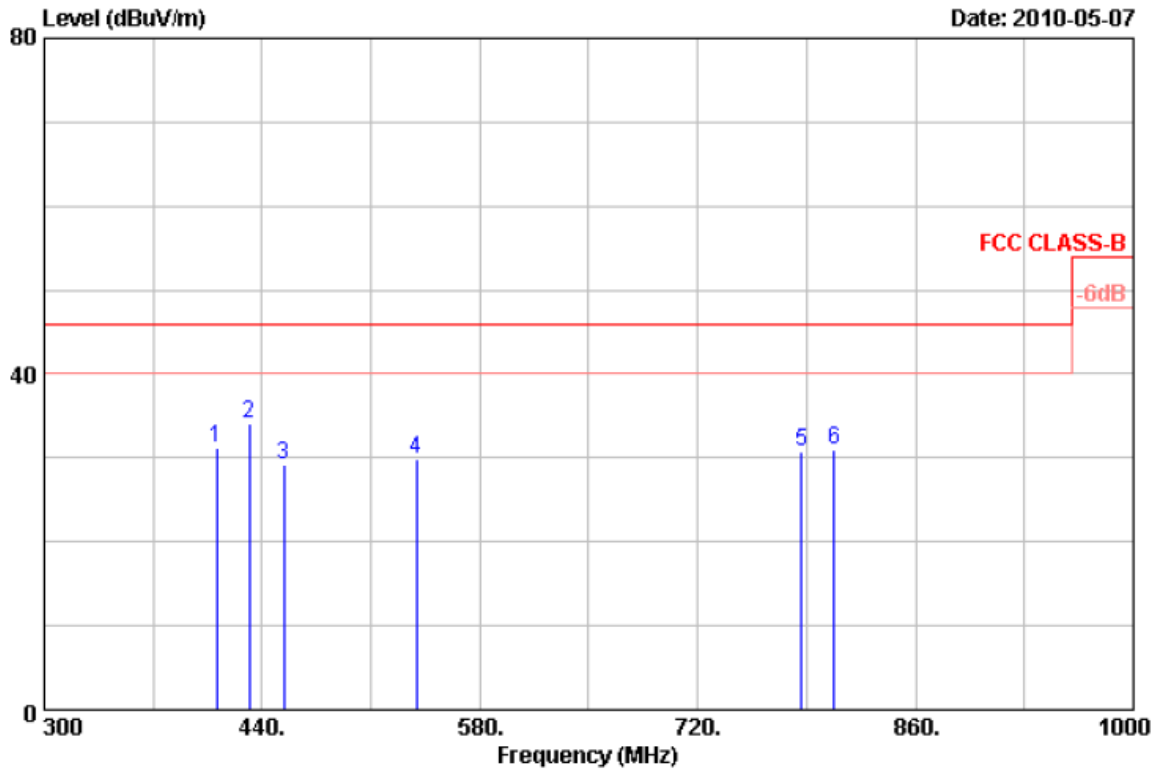
Item	Freq	Read Value	Factor	Result	Limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	43.20	40.46	-4.61	35.85	40.00	-4.15	QP	99	360
2	49.80	43.54	-7.48	36.06	40.00	-3.94	QP	99	360
3	129.00	40.88	-6.24	34.64	43.50	-8.86	Peak	99	360
4	166.13	45.04	-9.70	35.34	43.50	-8.16	Peak	99	360
5	199.13	43.87	-7.48	36.39	43.50	-7.11	Peak	99	360
6	219.75	42.20	-8.76	33.44	46.00	-12.56	Peak	99	360

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300KHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. According to technical experiences, all spurious emission of FSK mode at channel 1,8,16 are almost the same below 1GHz, so that the channel 1 was chosen as representative in final test.
5. The data is worse case.



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: O-QPSK, CH1	Temperature	: 25 °C
Memo	:	Humidity	: 68 %



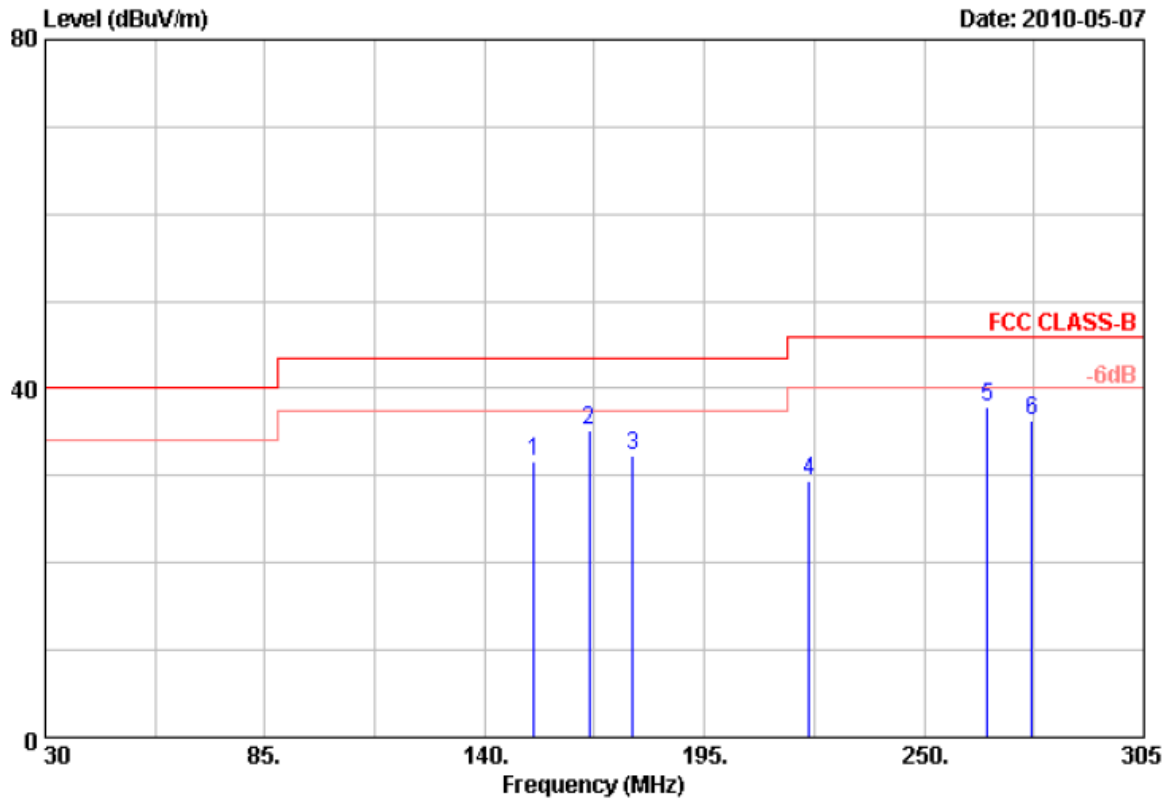
Item	Freq	Read Value	Factor	Result	Limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	410.60	35.47	-4.34	31.13	46.00	-14.87	Peak	99	0
2	431.60	38.84	-4.67	34.17	46.00	-11.83	Peak	99	0
3	454.00	34.33	-5.12	29.21	46.00	-16.79	Peak	99	0
4	539.40	33.47	-3.72	29.75	46.00	-16.25	Peak	99	0
5	786.50	28.96	1.80	30.76	46.00	-15.24	Peak	99	0
6	807.50	27.77	3.19	30.96	46.00	-15.04	Peak	99	0

Notes:

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Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: O-QPSK, CH1	Temperature	: 25 °C
Memo	:	Humidity	: 68 %



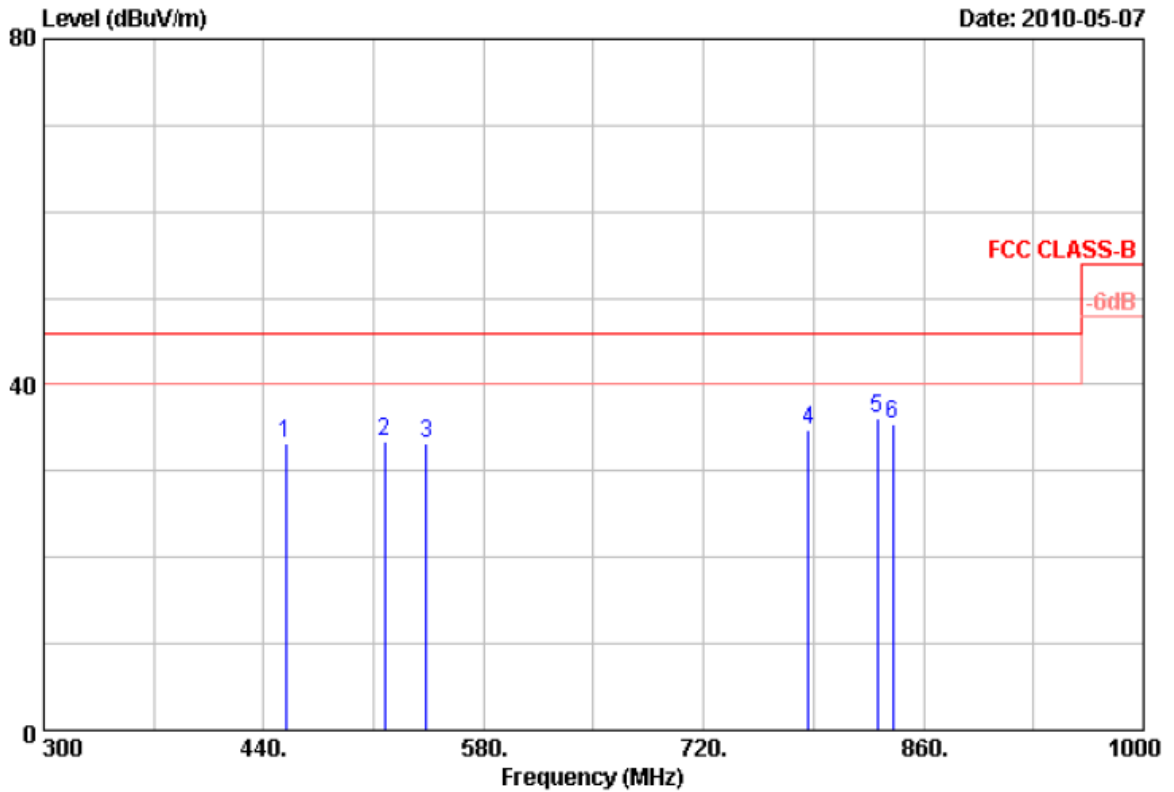
Item	Freq	Read Value	Factor	Result	Limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	152.38	45.57	-13.97	31.60	43.50	-11.90	Peak	100	360
2	166.13	50.01	-14.79	35.22	43.50	-8.28	Peak	100	360
3	177.13	47.13	-14.92	32.21	43.50	-11.29	Peak	100	360
4	221.13	42.68	-13.20	29.48	46.00	-16.52	Peak	100	360
5	265.95	49.18	-11.24	37.94	46.00	-8.06	Peak	100	360
6	276.95	47.03	-10.80	36.23	46.00	-9.77	Peak	100	360

Notes:

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Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: O-QPSK, CH1	Temperature	: 25 °C
Memo	:	Humidity	: 68 %



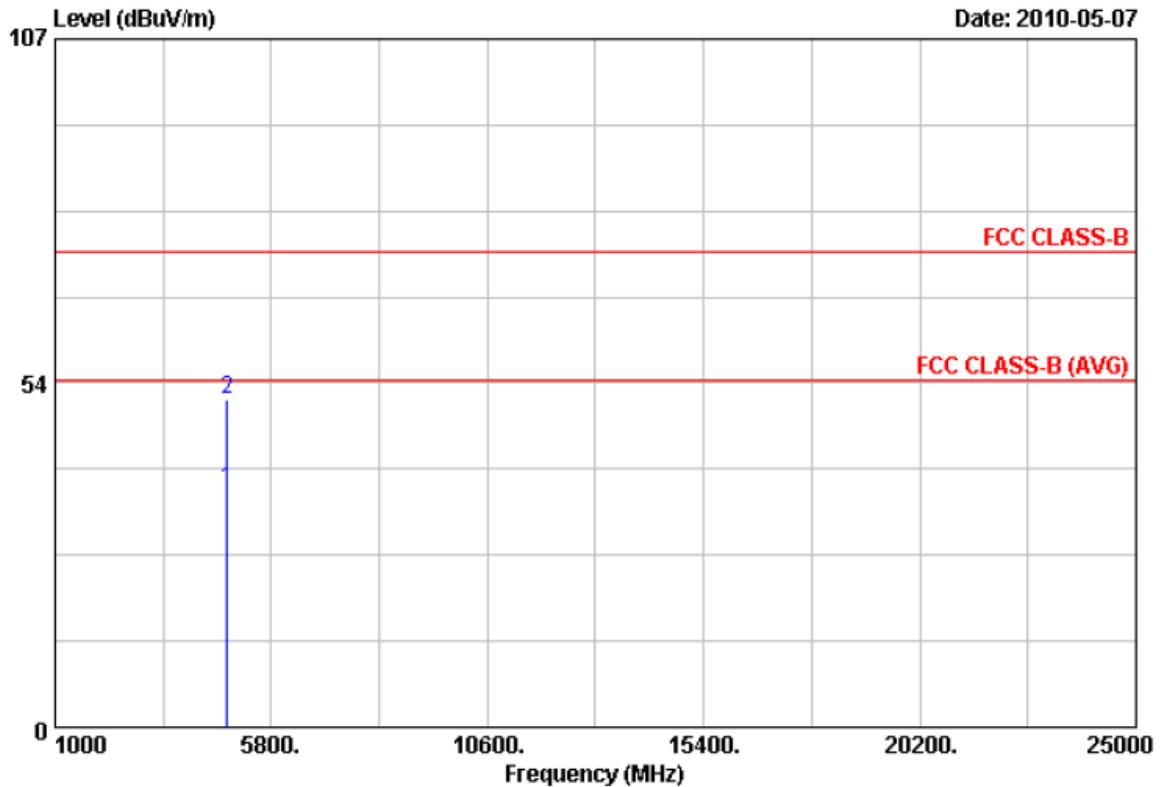
Item	Freq	Read Value	Factor	Result	Limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	454.00	36.09	-2.98	33.11	46.00	-12.89	Peak	100	0
2	517.00	37.27	-3.83	33.44	46.00	-12.56	Peak	100	0
3	543.60	35.33	-2.16	33.17	46.00	-12.83	Peak	100	0
4	786.50	31.12	3.73	34.85	46.00	-11.15	Peak	100	0
5	830.60	29.92	6.18	36.10	46.00	-9.90	Peak	100	0
6	840.40	29.46	5.95	35.41	46.00	-10.59	Peak	100	0

Notes:

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3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. According to technical experiences, all spurious emission of FSK mode at channel 1,8,16 are almost the same below 1GHz, so that the channel 1 was chosen as representative in final test.
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Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: O-QPSK, CH1	Temperature	: 25 °C
Memo	:	Humidity	: 68 %



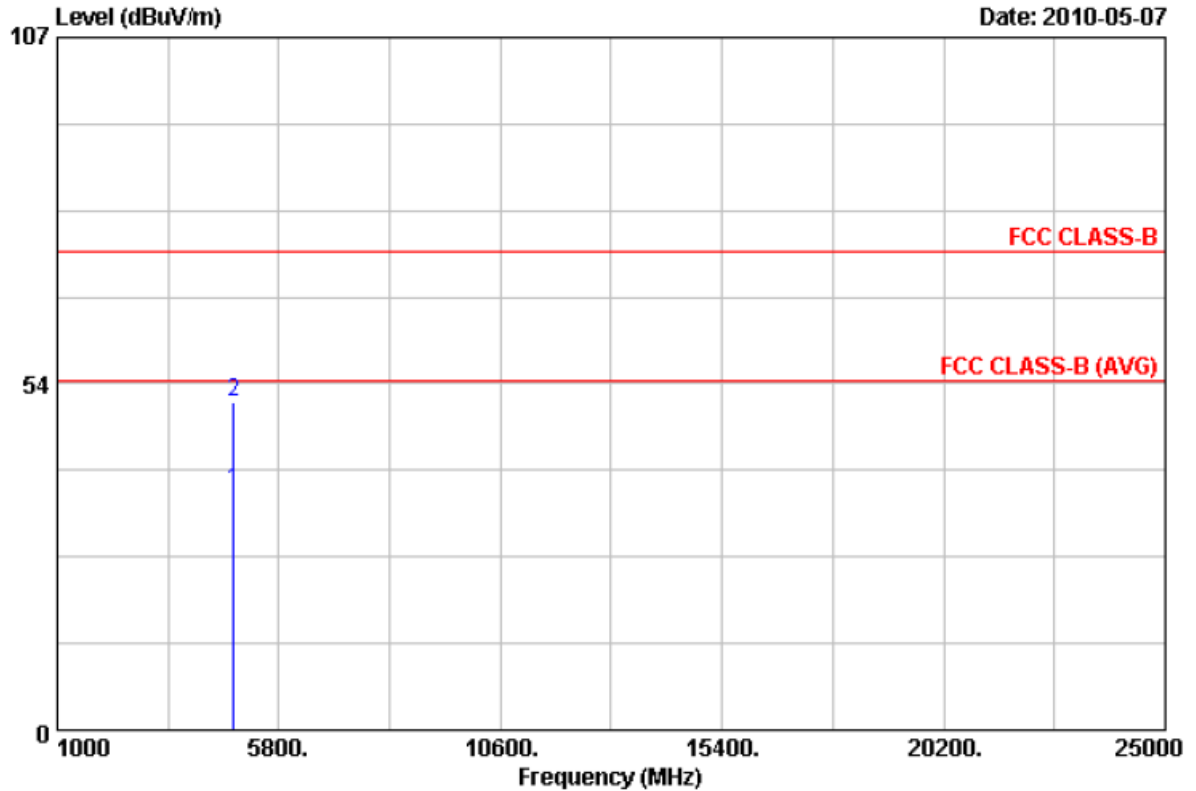
Item	Freq	Read Value	Factor	Result	Limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4809.94	29.45	7.65	37.10	54.00	-16.90	Average	100	360
2	4810.32	43.37	7.65	51.02	74.00	-22.98	Peak	100	0

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: O-QPSK, CH1	Temperature	: 25 °C
Memo	:	Humidity	: 68 %



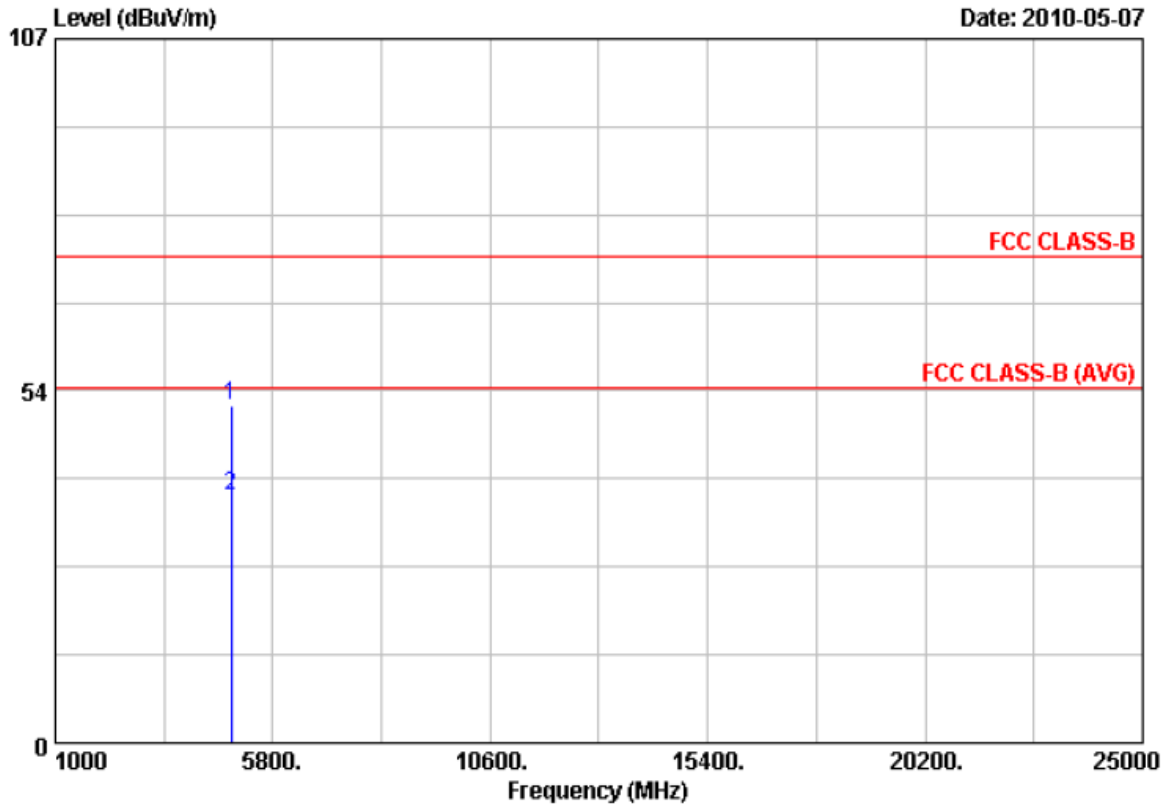
Item	Freq	Read Value	Factor	Result	Limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4809.67	29.31	7.65	36.96	54.00	-17.04	Average	100	360
2	4810.37	42.94	7.65	50.59	74.00	-23.41	Peak	100	0

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: O-QPSK, CH9	Temperature	: 25 °C
Memo	:	Humidity	: 68 %



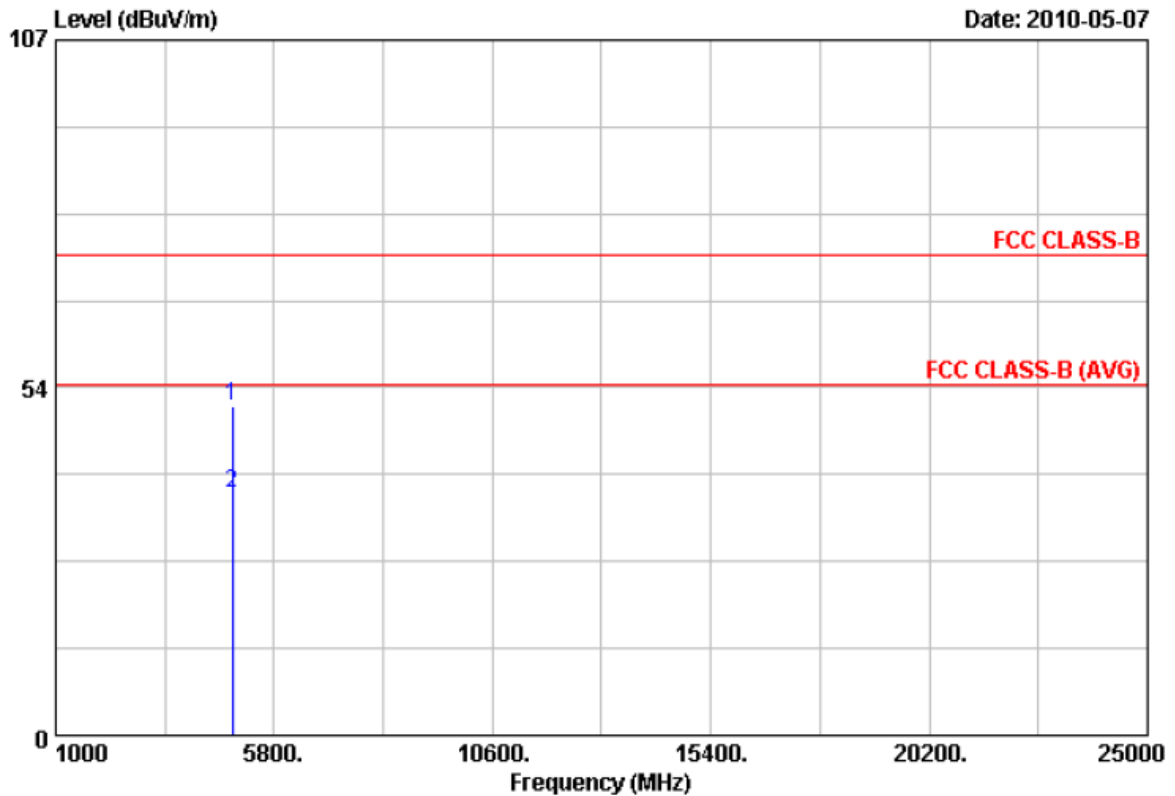
Item	Freq	Read Value	Factor	Result	Limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4889.54	43.29	7.93	51.22	74.00	-22.78	Peak	100	0
2	4890.50	29.56	7.93	37.49	54.00	-16.51	Average	100	360

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: O-QPSK, CH9	Temperature	: 25 °C
Memo	:	Humidity	: 68 %



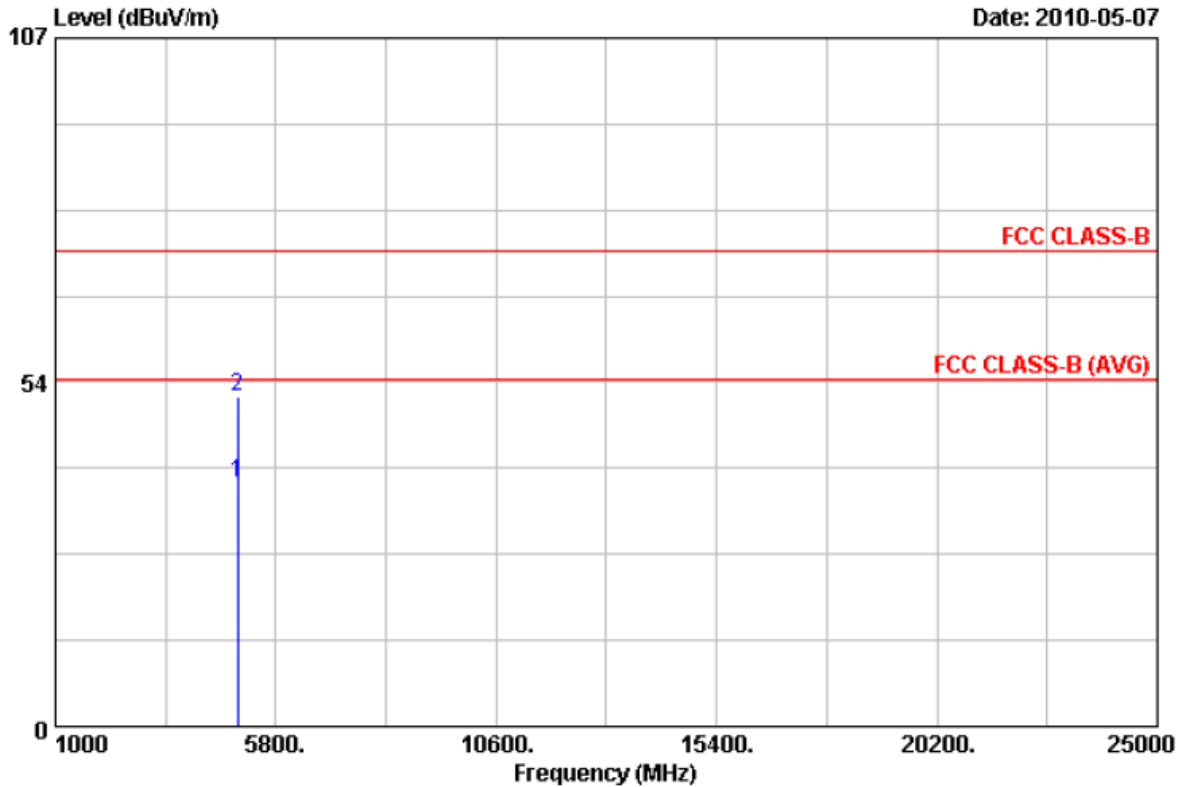
Item	Freq	Read Value	Factor	Result	Limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4890.07	42.82	7.93	50.75	74.00	-23.25	Peak	100	0
2	4890.45	29.20	7.93	37.13	54.00	-16.87	Average	100	360

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: O-QPSK, CH16	Temperature	: 25 °C
Memo	:	Humidity	: 68 %



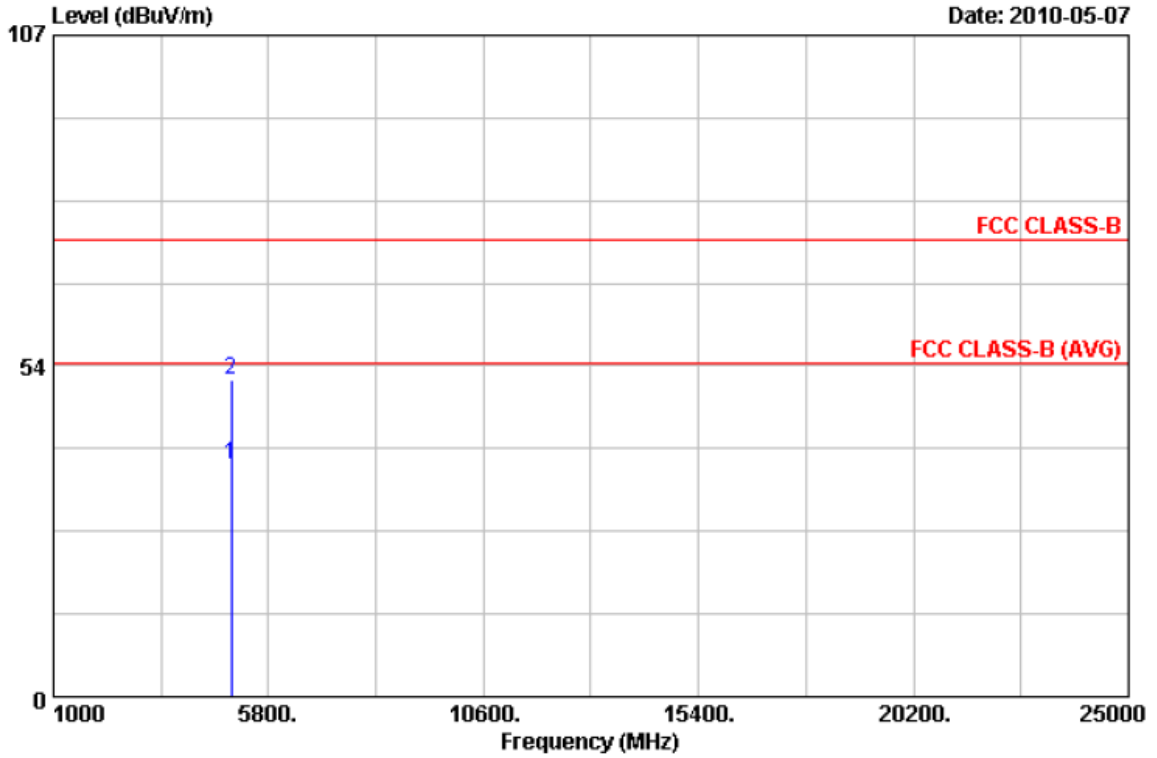
Item	Freq	Read Value	Factor	Result	Limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4959.56	29.63	8.16	37.79	54.00	-16.21	Average	100	360
2	4960.30	43.24	8.16	51.40	74.00	-22.60	Peak	100	0

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: O-QPSK, CH16	Temperature	: 25 °C
Memo	:	Humidity	: 68 %



Item	Freq	Read Value	Factor	Result	Limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	4959.97	29.28	8.16	37.44	54.00	-16.56	Average	100	360
2	4960.27	43.13	8.16	51.29	74.00	-22.71	Peak	100	0

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.

Test engineer: Ben



6. 6dB Bandwidth Measurement Data

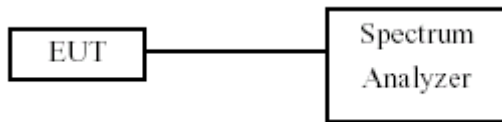
6.1 Test Limit

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

6.2 Test Procedures

- a. The transmitter output was connected to the spectrum analyzer.
- b. Set RBW of spectrum analyzer to 100 KHz and VBW to 100 KHz.
- c. The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB.

6.3 Test Setup Layout



6.4 Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	R&S	FSP40	100047	2010/05/08	2011/05/07

6.5 Test Result and Data

Test Date: Aug. 12, 2010

Temperature: 26

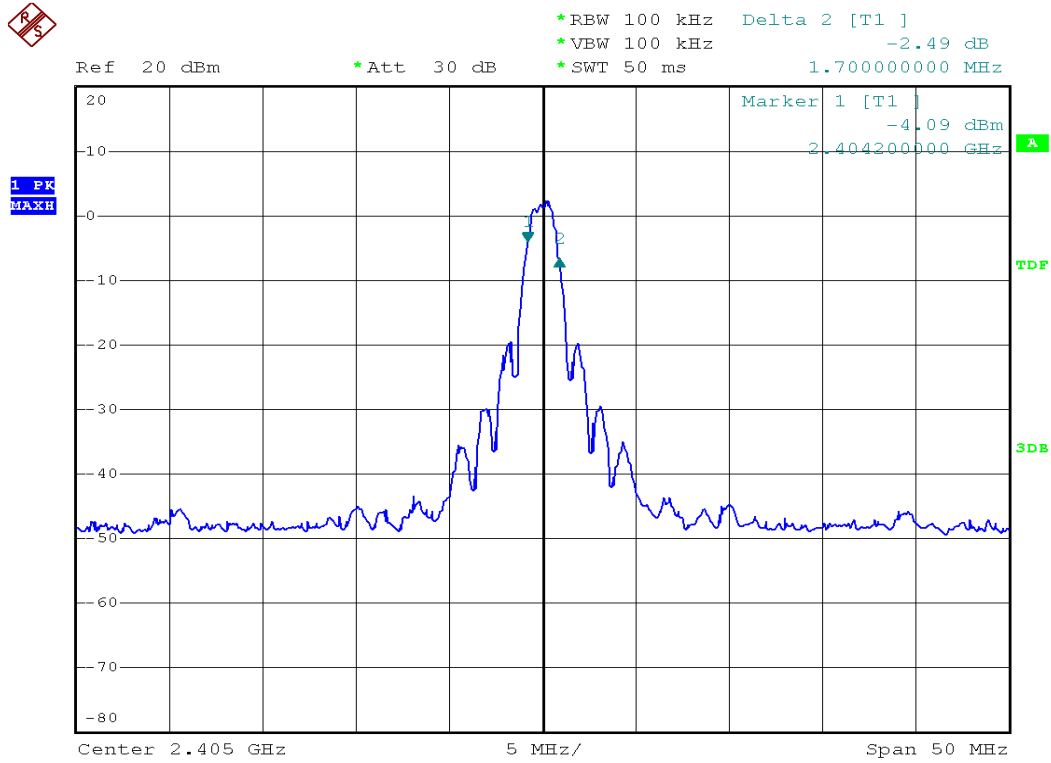
Atmospheric pressure: 1020 hPa

Humidity: 61%

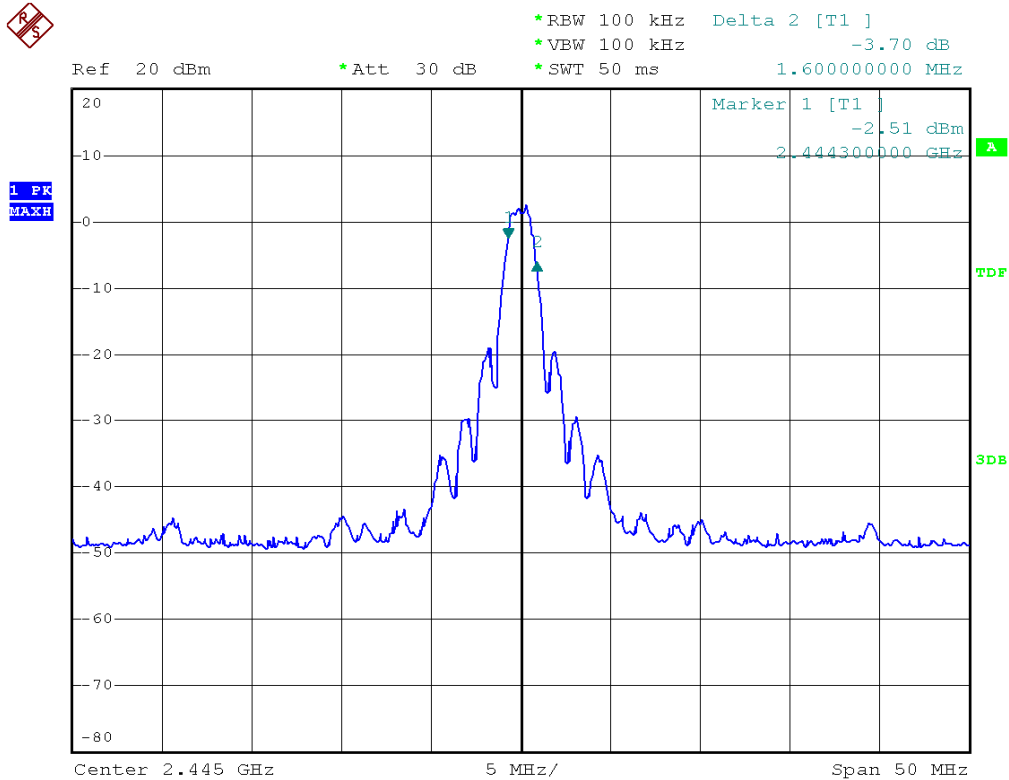
Modulation Standard	Channel	Frequency (MHz)	6dB Bandwidth (MHz)
O-QPSK	01	2405	1.70
	09	2445	1.60
	16	2480	1.70



Modulation Standard: O-QPSK
Channel: 01

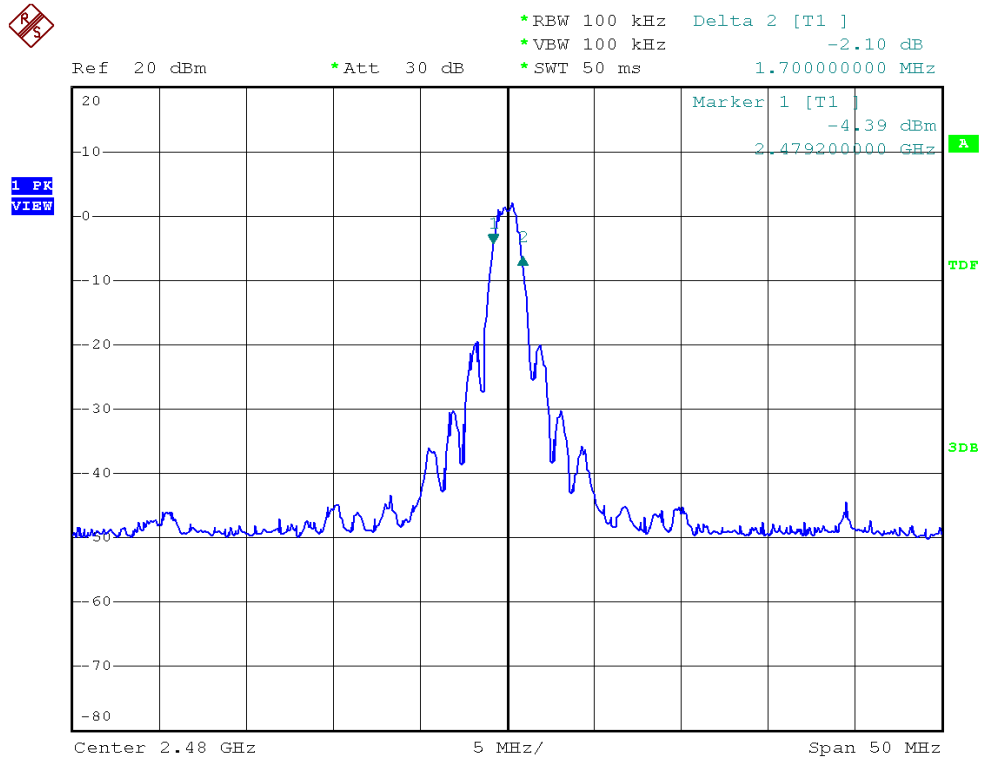


Modulation Standard: OQPSK
Channel: 09





Modulation Standard: OQPSK
Channel: 16





7. Maximum Peak Output Power

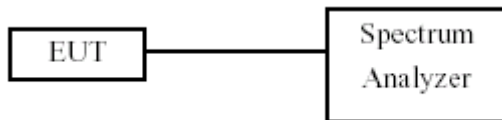
7.1 Test Limit

The Maximum Peak Output Power Measurement is 30dBm.

7.2 Test Procedures

The antenna port (RF output) of the EUT was connected to the input (RF input) of a power meter. Power was read directly from the meter and cable loss connection was added to the reading to obtain power at the EUT antenna terminal. The EUT Output Power was set to maximum to produce the worse case test result.

7.3 Test Setup Layout



7.4 Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	R&S	FSP40	100047	2010/05/08	2011/05/07

7.5 Test Result and Data

Test Date: Aug. 12, 2010

Temperature: 26

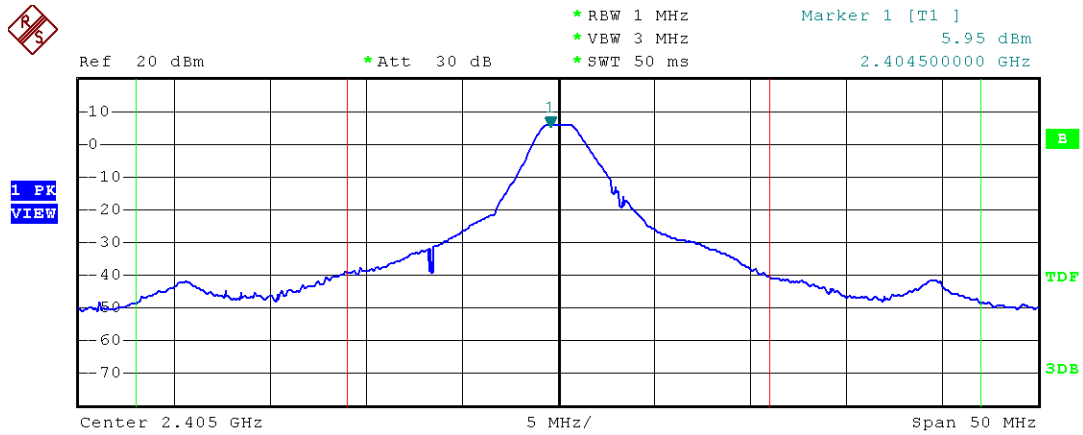
Atmospheric pressure: 1020 hPa

Humidity: 61%

Modulation Standard	Channel	Frequency (MHz)	Peak Power Output (dBm)	Peak Power Output (mW)
O-QPSK	01	2405	8.96	7.9
	06	2445	9.12	8.2
	11	2480	8.60	7.2

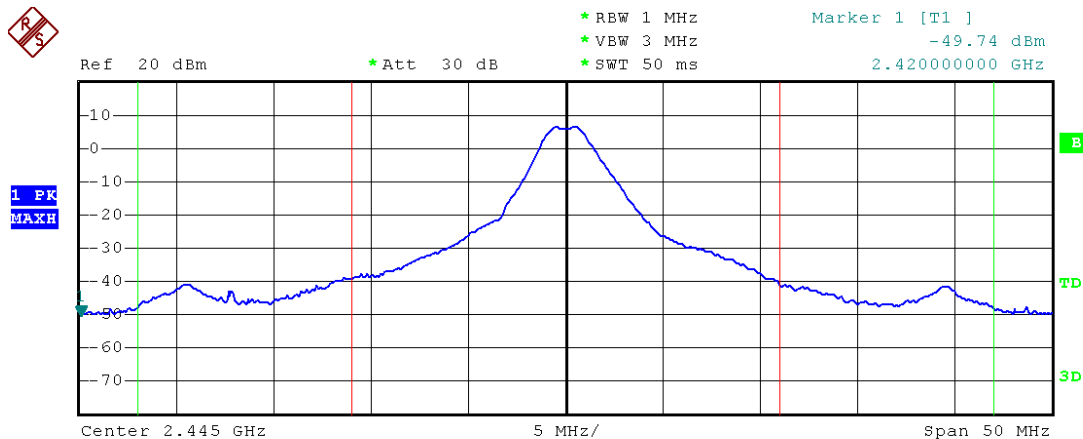


Modulation Standard: O-QPSK
Channel: 01



Tx Channel		WLAN 802.11B	
Bandwidth	22 MHz	Power	8.96 dBm
Adjacent Channel		Lower	-43.29 dB
Bandwidth	11 MHz	Upper	-43.27 dB
Spacing	16.5 MHz		
Alternate Channel		Lower	----
Bandwidth	11 MHz	Upper	----
Spacing	27.5 MHz		

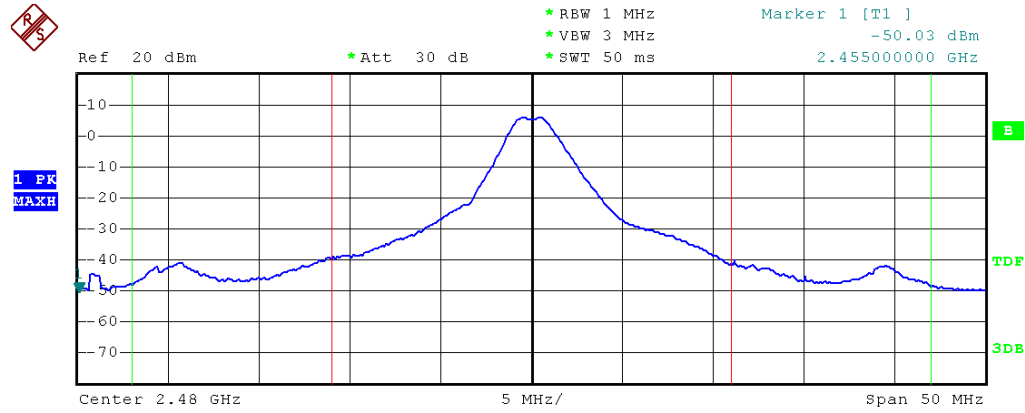
Modulation Standard: O-QPSK
Channel: 09



Tx Channel		WLAN 802.11B	
Bandwidth	22 MHz	Power	9.12 dBm
Adjacent Channel		Lower	-42.65 dB
Bandwidth	11 MHz	Upper	-43.60 dB
Spacing	16.5 MHz		
Alternate Channel		Lower	----
Bandwidth	11 MHz	Upper	----
Spacing	27.5 MHz		



Modulation Standard: O-QPSK
Channel: 16



Tx Channel		WLAN 802.11B	
Bandwidth	22 MHz	Power	8.60 dBm
Adjacent Channel		Lower	-42.41 dB
Bandwidth	11 MHz	Upper	-43.31 dB
Spacing	16.5 MHz		
Alternate Channel		Lower	-----
Bandwidth	11 MHz	Upper	-----
Spacing	27.5 MHz		



8. Power Spectral Density

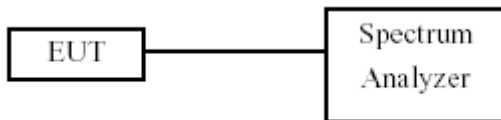
8.1 Test Limit

The Maximum of Power Spectral Density Measurement is 8dBm.

8.2 Test Procedures

- a. The transmitter output was connected to spectrum analyzer.
- b. The spectrum analyzer's resolution bandwidth were set at 3KHz RBW and 30KHz VBW as that of the fundamental frequency. Set the sweep time=span/3KHz.
- c. The power spectral density was measured and recorded.
- d. The Sweep time is allowed to be longer than span/3KHz for a full response of the mixer in the spectrum analyzer.

8.3 Test Setup Layout



8.4 Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	R&S	FSP40	100047	2010/05/08	2011/05/07

8.5 Test Result and Data

Test Date: Aug. 12, 2010

Temperature: 26

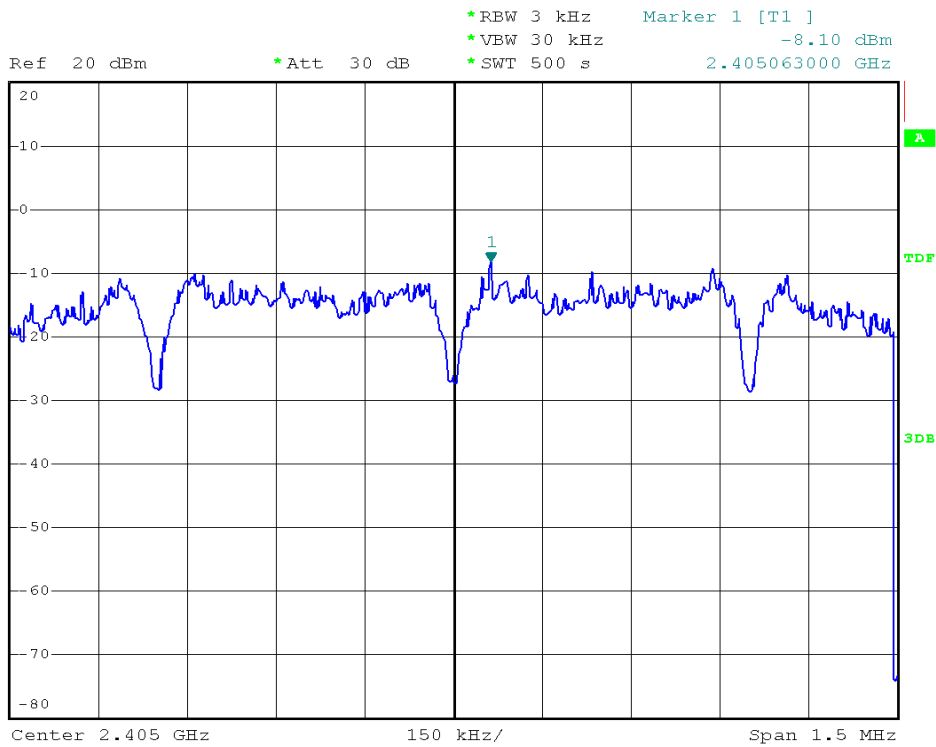
Atmospheric pressure: 1020 hPa

Humidity: 61%

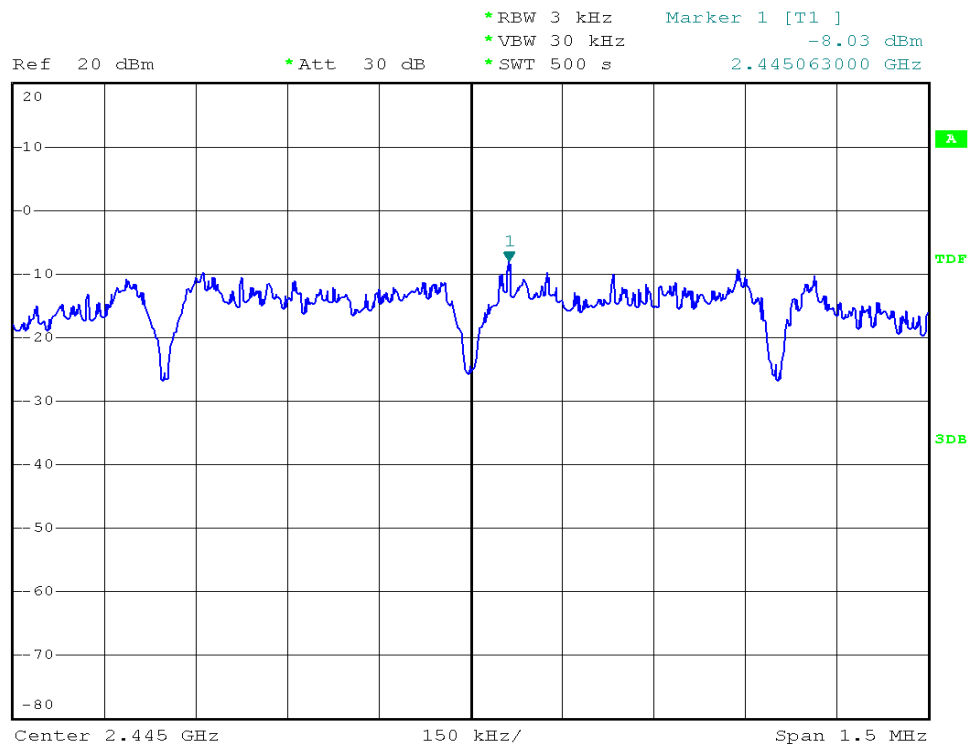
Modulation Standard	Channel	Frequency (MHz)	Maximum Power Density of 3 kHz Bandwidth (dBm)
O-QPSK	01	2405	-8.10
	09	2445	-8.03
	16	2480	-8.60



Modulation Standard: O-QPSK
Channel: 01



Modulation Standard: O-QPSK
Channel: 09

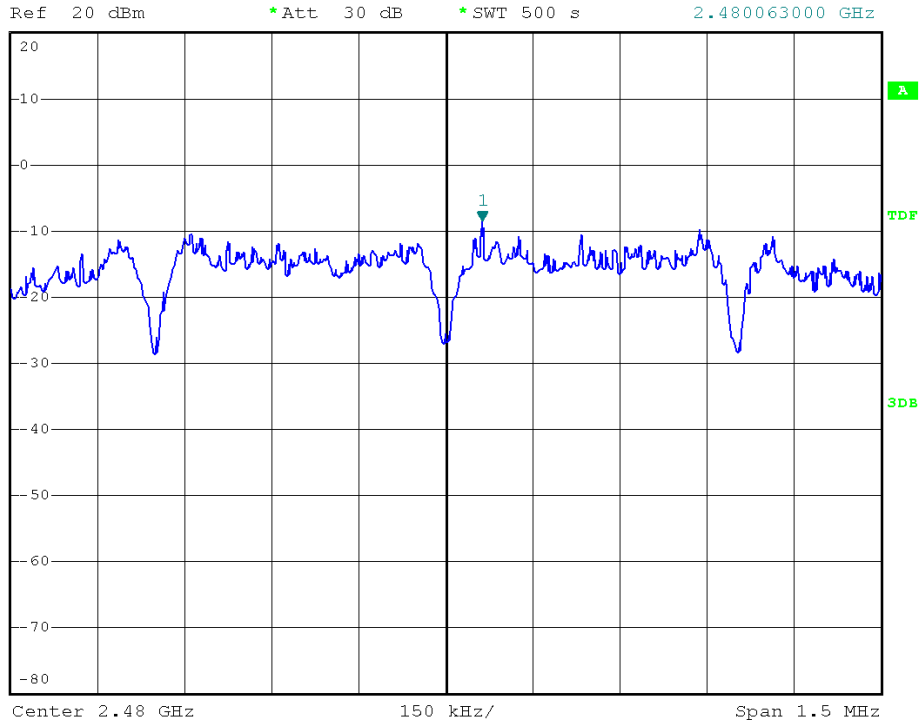




Modulation Standard: O-QPSK
Channel: 16



*RBW 3 kHz Marker 1 [T1]
*VBW 30 kHz -8.60 dBm
*SWT 500 s 2.480063000 GHz





9. Band Edges Measurement

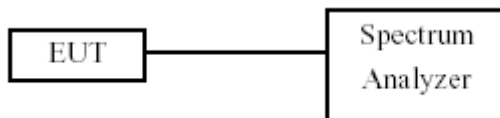
9.1 Test Limit

Below -20dB of the highest emission level of operating band (In 100 kHz Resolution Bandwidth)

9.2 Test Procedure

- The transmitter output was connected to the spectrum analyzer via a low lose cable.
- Set both RBW and VBW of spectrum analyzer to 100 KHz with convenient frequency span including 100 KHz bandwidth from band edge.
- The band edges was measured and recorded.

9.3 Test Setup Layout



9.4 Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	R&S	FSP40	100047	2010/05/08	2011/05/07

9.5 Test Result and Data

Test Date: Aug. 12, 2010

Temperature: 26

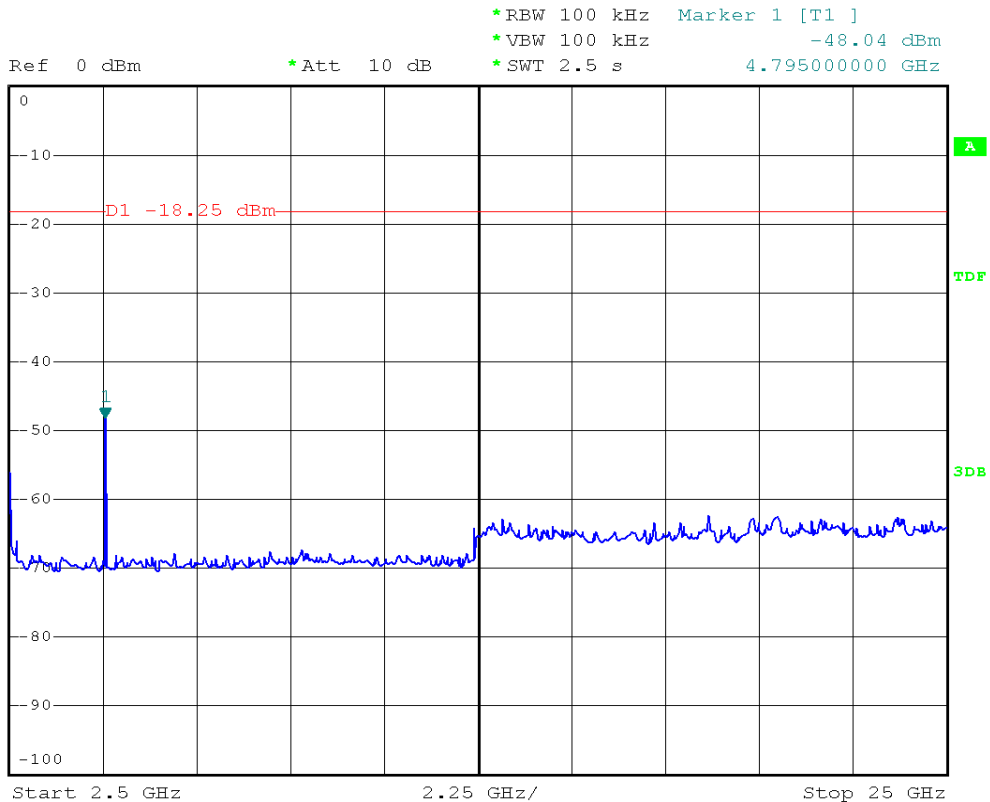
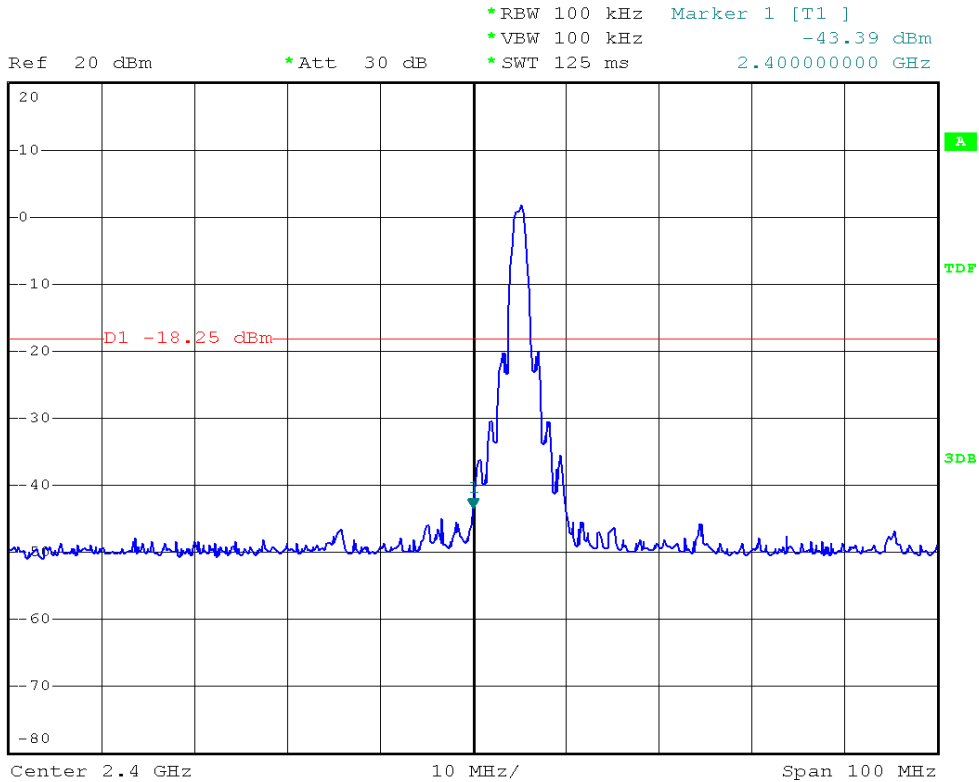
Atmospheric pressure: 2010 hPa

Humidity: 61%

Modulation Standard	Channel	Frequency (MHz)	maximum value in frequency (MHz)	maximum value (dBm)
O-QPSK	01	2405	2400.0	-43.39
	16	2480	2483.5	-34.89

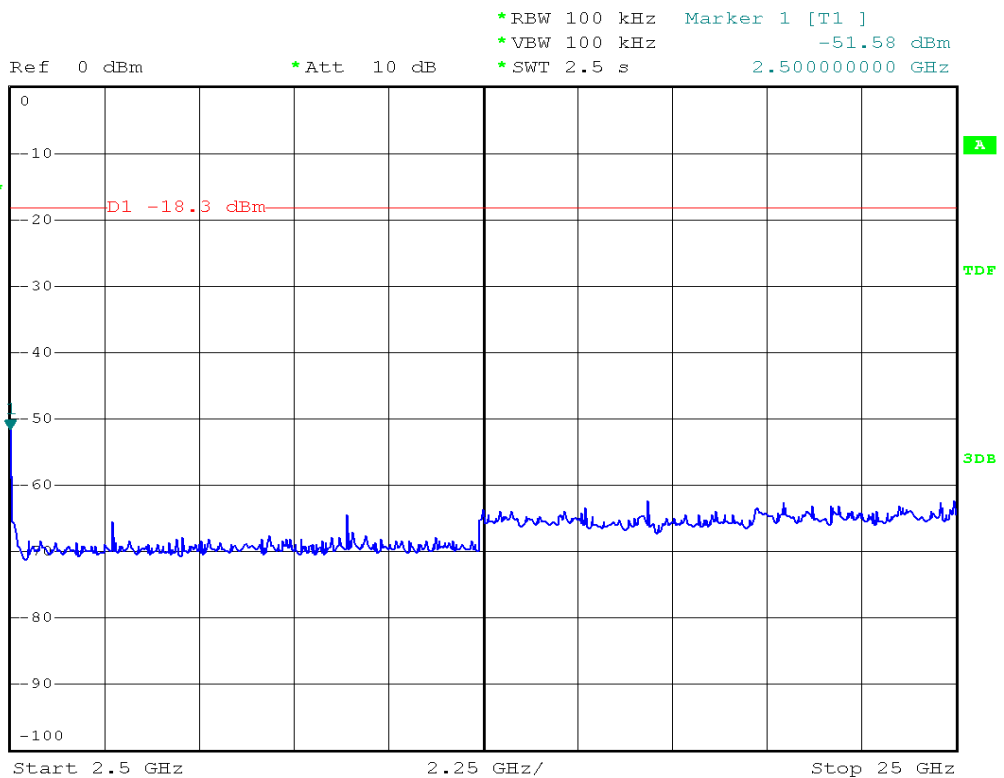
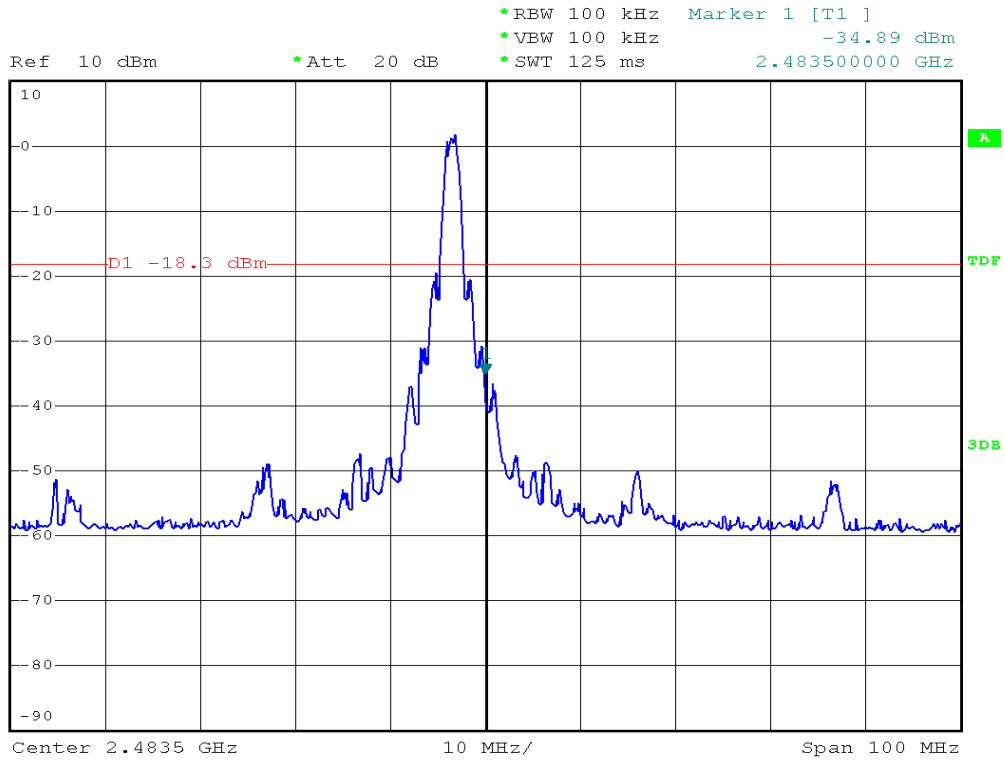


Modulation Standard: O-QPSK
Channel: 01





Modulation Standard: O-QPSK
Channel: 16





9.6 Restrict Band Emission Measurement Data

Test Date: Aug. 12, 2010

Temperature: 26

Atmospheric pressure: 1020 hPa

Humidity: 61%

Modulation Standard: O-QPSK

Channel 1						Fundamental Frequency: 2405 MHz				
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2385.65	H	47.01	-0.68	46.33	Peak	74	54	-27.68	185	124
2345.33	H	37.68	-0.85	36.83	Ave	74	54	-17.17	185	124
2385.65	V	49.30	-0.68	48.62	Peak	74	54	-25.38	137	109
2345.04	V	39.17	-0.85	38.32	Ave	74	54	-15.68	137	109
Channel 16						Fundamental Frequency: 2480 MHz				
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2483.52	H	60.59	-0.27	60.32	Peak	74	54	-13.68	197	113
2483.52	H	49.69	-0.27	49.42	Ave	74	54	-4.58	197	113
2483.52	V	64.33	-0.27	51.95	Peak	74	54	-9.94	151	113
2483.52	V	52.22	-0.27	64.06	Ave	74	54	-2.05	151	113

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz for Average detection at frequency above 1GHz.



10. Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.09000 – 0.11000	16.42000 – 16.42300	399.9 – 410.0	4.500 – 5.250
0.49500 – 0.505**	16.69475 – 16.69525	608.0 – 614.0	5.350 – 5.460
2.17350 – 2.19050	16.80425 – 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 – 25.67000	1300.0 – 1427.0	8.025 – 8.500
4.17725 – 4.17775	37.50000 – 38.25000	1435.0 – 1626.5	9.000 – 9.200
4.20725 – 4.20775	73.00000 – 74.60000	1645.5 – 1646.5	9.300 – 9.500
6.21500 – 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 – 6.26825	108.00000 – 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 – 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 – 8.29400	149.90000 – 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 – 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 – 8.38675	156.70000 – 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 – 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 – 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 – 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 – 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

** : Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

10.1 Labeling Requirement

The device shall bear the following statement in a conspicuous location on the device:
 This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



10.2 Test Result of RF Exposure Evaluation

- . Product: Wireless Console Controller
- . Test Item: RF Exposure Evaluation Data
- . Test site: OATSI-SD

10.2.1 Antenna Gain

Frequency Range: 2405 - 2480 MHz
Antenna type: PCB Antenna
Antenna Gain: 2.6 dBi

10.2.2 EUT Operation condition

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

10.2.3 Output Power into Antenna & RF Exposure Evaluation Distance

Test Date: Aug. 12, 2010

Temperature: 26

Atmospheric pressure: 1020 hPa

Humidity: 61%

Modulation Standard	Channel	Frequency (MHz)	Output Power to Antenna (dBm)	Power Density (S) (mW/cm ²)
O-QPSK	01	2405	8.96	0.003
	09	2445	9.12	0.003
	16	2480	8.60	0.003

10.2.4 The MPE is calculated as $0.003 \text{ mW} / \text{cm}^2 < \text{limit } 1 \text{ mW} / \text{cm}^2$. So, RF exposure limit warning or SAR test are not required.