

FCC PART 15.247

TEST REPORT

For

SZ DJI TECHNOLOGY CO., LTD

14th floor, West Wing, Skyworth Semiconductor Design Building NO.18 Gaoxin South 4th Ave, Nanshan,
Shenzhen, Guangdong, China

FCC ID: SS3-GL200A1606

Report Type: Original Report	Product Type: C2
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Report Number: <u>RDG160806014-00</u>	
Report Date: <u>2016-08-24</u>	
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Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Dongguan).

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FINAL

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *SZ DJI TECHNOLOGY CO., LTD*'s product, model number: *GL200A (FCC ID: SS3-GL200A1606)* (the "EUT") in this report was a C2, which was measured approximately: 14.4cm (L) x 8.1cm (W) x 5.9cm(H), rated input voltage: DC 3.7V from lithium battery, or DC5.0V from adapter.

** All measurement and test data in this report was gathered from production sample serial number: 160806014. (Assigned by BACL.Dongguan). The EUT was received on 2016-08-01.*

Objective

This report is prepared on behalf of *SZ DJI TECHNOLOGY CO., LTD* in accordance with Part 2, Subpart J, Part 15, Subparts A, B and C of the Federal Communications Commission's rules

The tests were performed in order to determine the compliance of the EUT with FCC Part 15-Subpart C, section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Related Submittal(s)/Grant(s)

Part of system submissions with FCC ID: SS3-M1P1607.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Dongguan).

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) has been fully described in reports submitted to the Federal Communications Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 06, 2015.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in Engineering Mode, which was provided by the manufacturer. The device employed 1.4MHz, 10MHz, 20MHz modes. 1.4MHz, 10MHz, 20MHz only support SISO mode at antenna chain 0 or chain 1.

For 1.4MHz mode, 38 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2403.5	20	2441.5
2	2405.5
...
...
...	...	37	2475.5
19	2439.5	38	2477.5

For 10MHz mode, 73channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2405.5	38	2442.5
2	2406.5
...
...
...	...	73	2477.5
37	2441.5	/	/

For 20MHz mode, 63channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2410.5	33	2442.5
2	2411.5
...
...
...	...	63	2472.5
32	2441.5	/	/

EUT Exercise Software

The software “DJI-RF Certification” was used for testing, which was provided by manufacturer. The worst condition (maximum power) was configured by system default setting. The default setting level as below:

Antenna 0&1										
Test Mode	Test Software Version	DJI-RF Certification								
1.4MHz	Frequency (MHz)	2403.5-2477.5								
	Power Level Setting	18								
10MHz	Frequency (MHz)	2405.5	2406.5	2407.5	2408.5	2409.5 ~ 2410.5	2411.5 ~ 2462.5	2462.5 ~ 2464.5	2465.5 ~ 2466.5	2467.5 ~ 2468.5
	Power Level Setting	13	14	15	16	17	18	17	16	15
	Frequency (MHz)	2469.5	2470.5	2471.5	2472.5	2473.5	2474.5	2475.5	2476.5	2477.5
	Power Level Setting	13	12	11	9	7	6	5	4	-4
20MHz	Frequency (MHz)	2410.5	2411.5	2412.5	2413.5	2414.5	2415.5 ~ 2417.5	2418.5 ~ 2422.5	2423.5	2424.5 ~ 2427.5
	Power Level Setting	9	10	11	12	13	14	15	16	17
	Frequency (MHz)	2428.5 ~ 2446.5	2447.5 ~ 2449.5	2450.5 ~ 2452.5	2453.5 ~ 2454.5	2455.5 ~ 2456.5	2457.5 ~ 2458.5	2459.5 ~ 2460.5	2461.5 ~ 2465.5	2466.5
	Power Level Setting	18	17	16	15	14	13	12	11	10
	Frequency (MHz)	2467.5	2468.5	2469.5 ~ 2470.5	2471.5	2472.5	/	/	/	/
	Power Level Setting	9	8	7	6	5	/	/	/	/

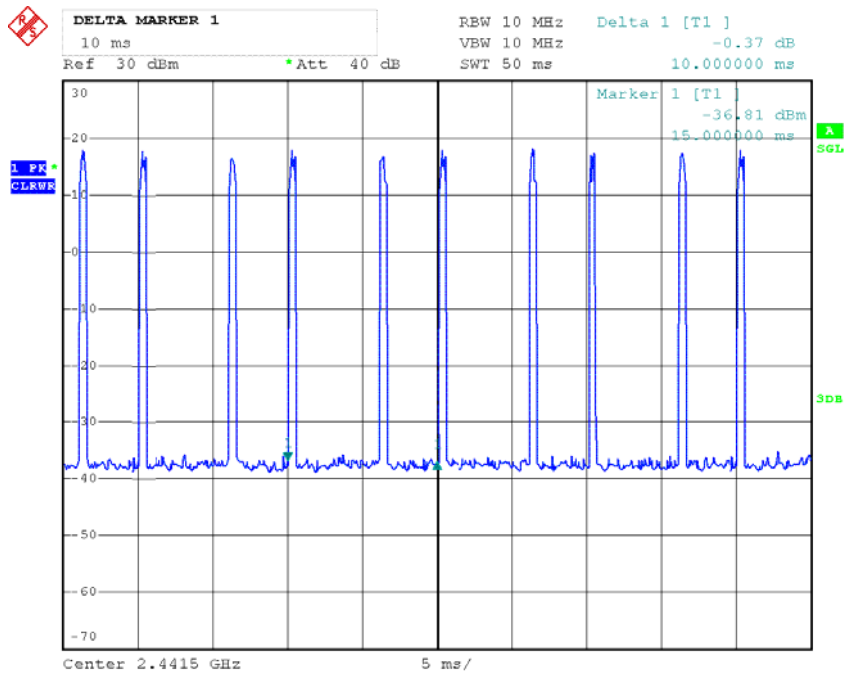
For difference power level setting configured by system default, all test items performed at Low, Middle and High Channel, output power, radiation bandedge test with additional channels according to the power setting and power test results.

The software configured maximum duty cycle as below:

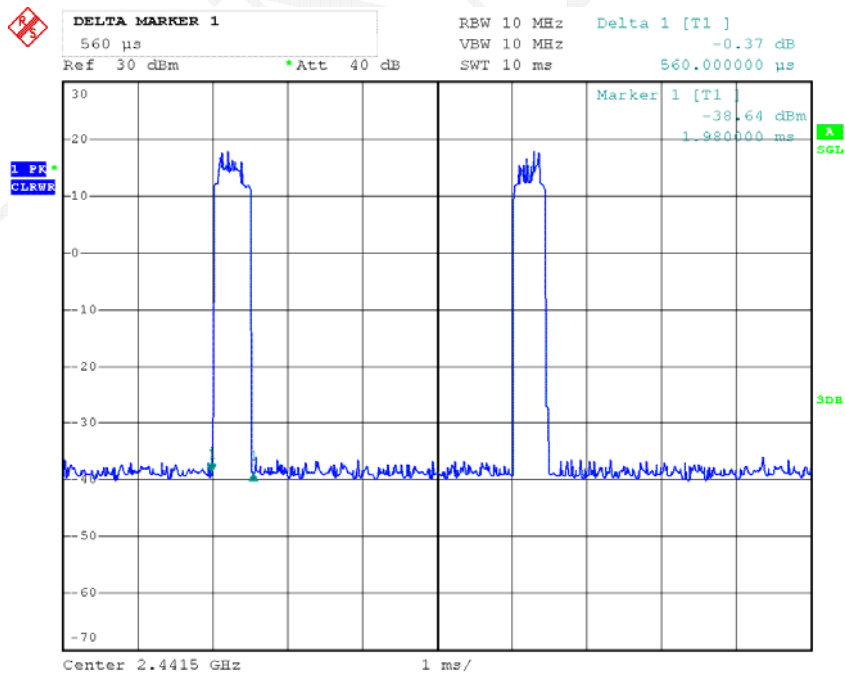
Mode	T _{on} (ms)	T _{on+off} (ms)	Duty Cycle (%)
1.4MHz	0.56*2=1.12	10	11.2%
10MHz	5.36+3.36=8.5	10.02	87%
20MHz	5.36+3.36=8.5	10.02	85.15%

The minimum transmission duration(T) is 0.56ms in 1.4MHz mode, 3.36ms in 10MHz mode, 3.36 ms in 20MHz mode.

1.4MHz

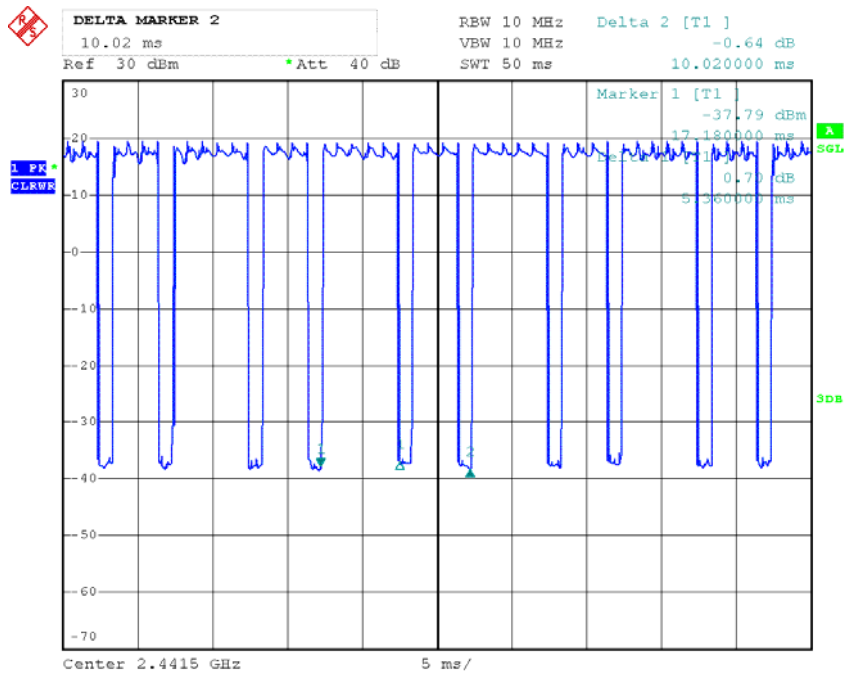


Date: 25.AUG.2016 02:31:31

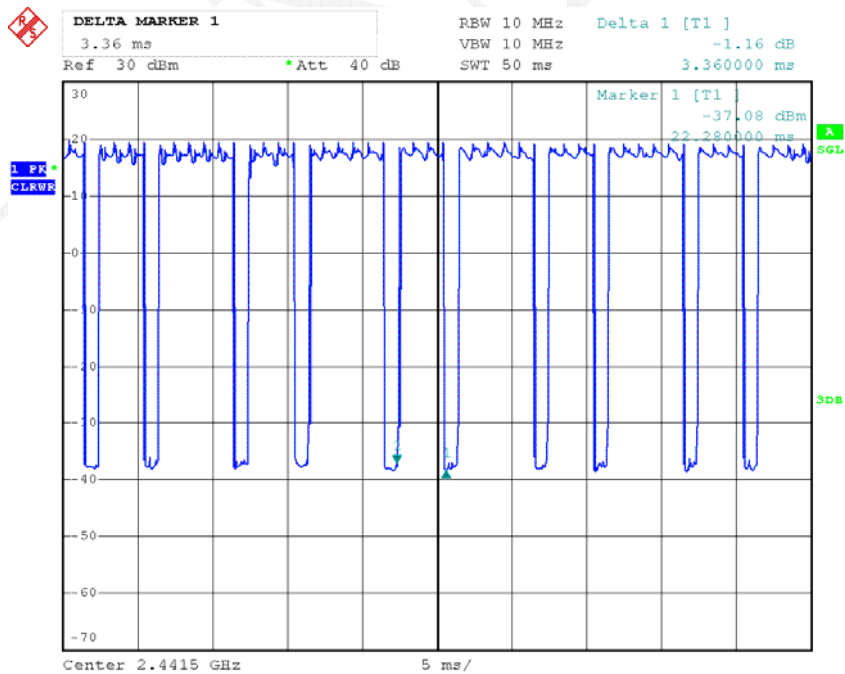


Date: 25.AUG.2016 02:32:17

10MHz

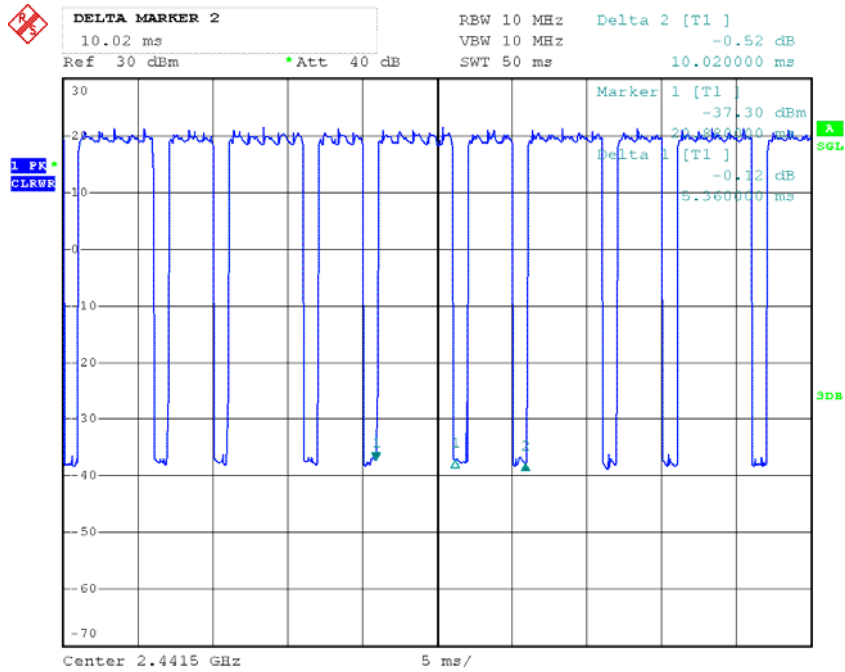


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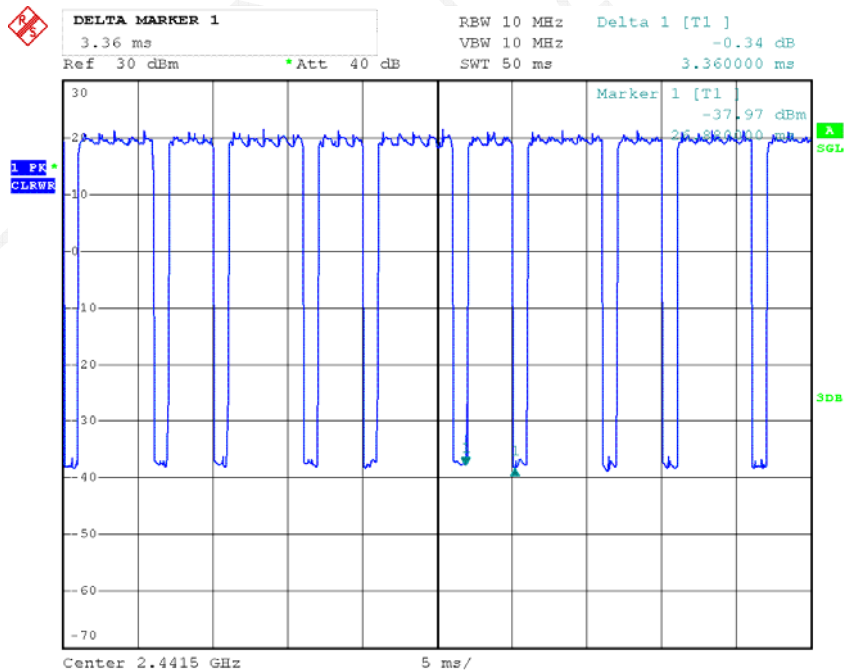


Date: 25.AUG.2016 02:34:05

20MHz



Date: 25.AUG.2016 02:35:33



Date: 25.AUG.2016 02:34:45

Equipment Modifications

No modification was made to the EUT.

Support Equipment List and Details

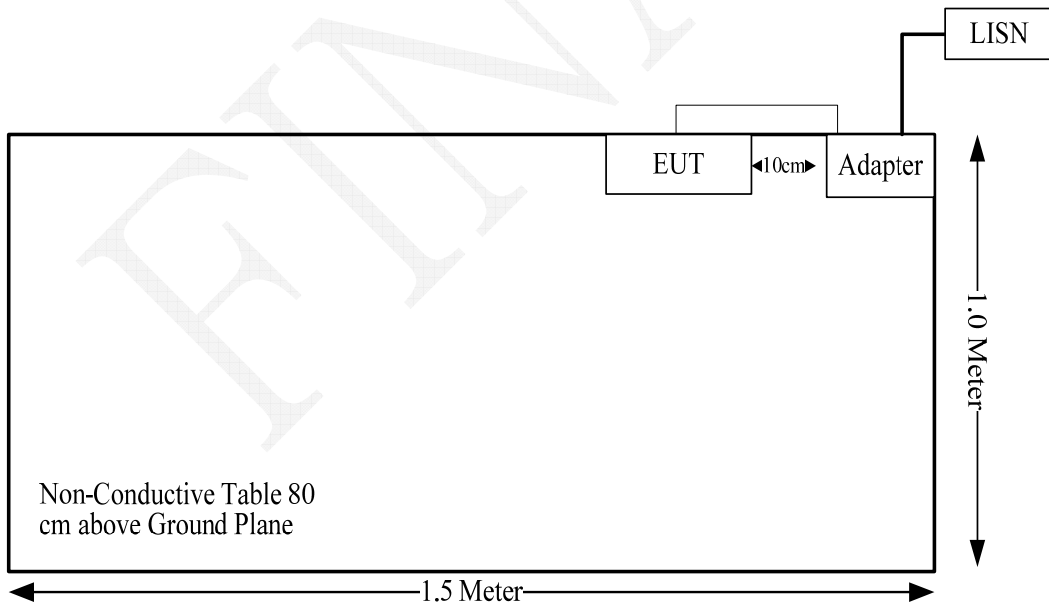
Manufacturer	Description	Model	Serial Number
Adapter	DJI	F1C50	/

External I/O Cable

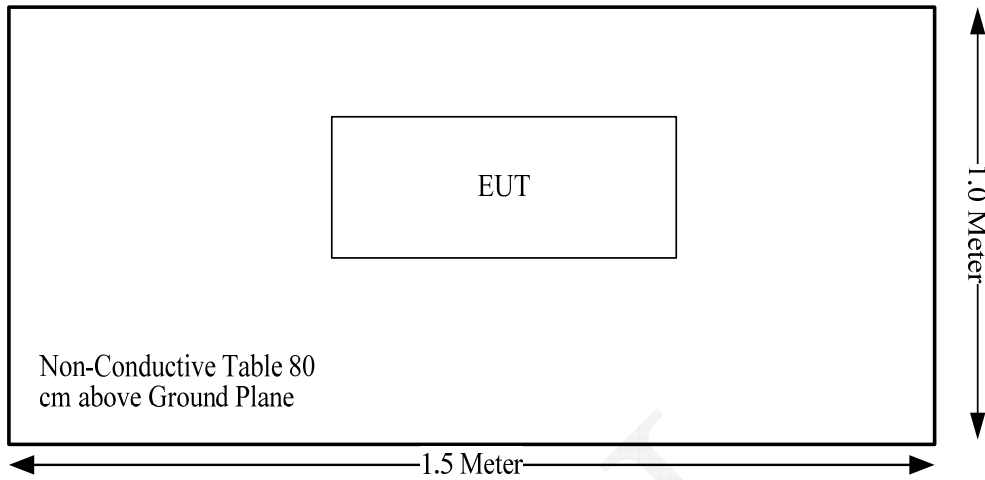
Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
USB cable	yes	no	0.52	Adapter	EUT

Test Setup Block Diagram

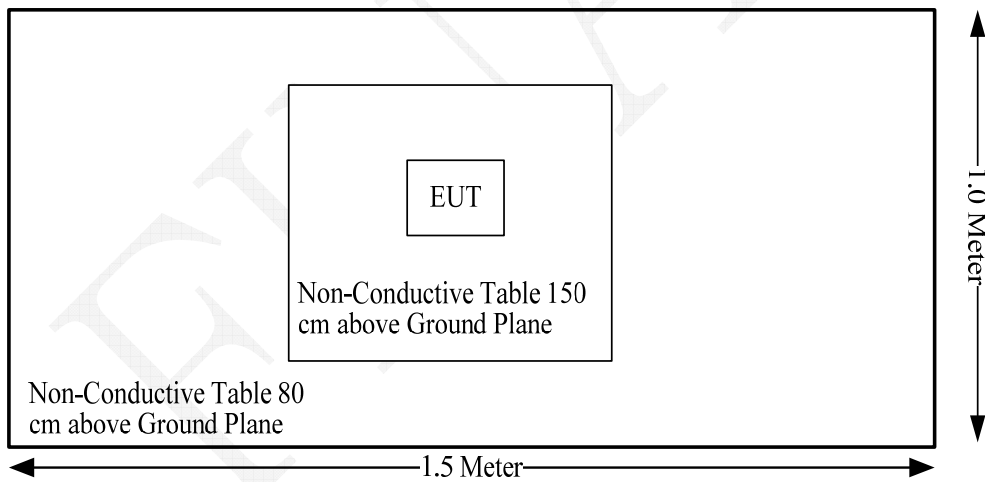
Charging:



Radiation 30-1GHz:



Radiation 1-25GHz:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §15.247 (i) & §1.1310 & §2.1093	RF Exposure	Compliance
§15.203	Antenna Requirement	Compliance
§15.207 (a)	AC Line Conducted Emissions	Compliance
§15.247(d)	Spurious Emissions at Antenna Port	Compliance
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliance
§15.247 (a)(2)	6 dB Bandwidth	Compliance
§15.247(b)(3)	Maximum Peak Conducted Output Power	Compliance
§15.247(d)	100 kHz Bandwidth of Frequency Band Edge	Compliance
§15.247(e)	Power Spectral Density	Compliance

FCC §15.247 (i) & §1.1310 & §2.1093- RF EXPOSURE

Applicable Standard

According to §15.247(i), §1.1310 and §2.1093.

Test Result

Compliant, please refer to the SAR report: RDG160806014-20A.

FUNVAL

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

- a. Antenna must be permanently attached to the unit.
- b. Antenna must use a unique type of connector to attach to the EUT.
- c. Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

Antenna Connector Construction

The EUT has 2 non-detachable arrangement, the antenna gains are 5.05 dBi.

Result: Compliance.

§15.207 (a) – CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a)

Measurement Uncertainty

Compliance or non-compliance with a disturbance limit shall be determined in the following manner:

If U_{lab} is less than or equal to U_{cispr} of Table 1, then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{lab} is greater than U_{cispr} of Table 1, then:

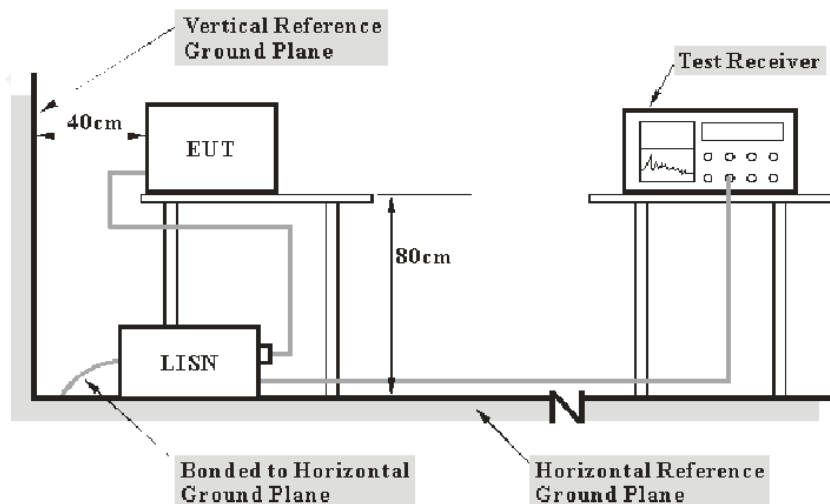
- compliance is deemed to occur if no measured disturbance level, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit.

Based on CISPR 16-4-2: 2011, measurement uncertainty of conducted disturbance at mains port using AMN at Bay Area Compliance Laboratories Corp. (Dongguan) is 3.12 dB (150 kHz to 30 MHz).

Table 1 – Values of U_{cispr}

Measurement	U_{cispr}
Conducted disturbance at mains port using AMN (150 kHz to 30 MHz)	3.4 dB

EUT Setup



- Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120 VAC/60 Hz power source

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$$V_C = V_R + A_C + VDF$$

$$C_f = A_C + VDF$$

Herein,

V_C (cord. Reading): corrected voltage amplitude

V_R : reading voltage amplitude

A_C : attenuation caused by cable loss

VDF: voltage division factor of AMN

C_f : Correction Factor

The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the maximum limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCS 30	830245/006	2015-12-10	2016-12-09
R&S	L.I.S.N	ESH2-Z5	892107/021	2016-07-16	2017-07-15
R&S	Two-line V-network	ENV 216	3560.6550.12	2015-11-26	2016-11-25
N/A	Coaxial Cable	1.8m	N/A	2016-05-06	2017-05-06
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Procedure

During the conducted emission test, the adapter was connected to the first LISN and the other support equipments were connected to the outlet of the second LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Test Data**Environmental Conditions**

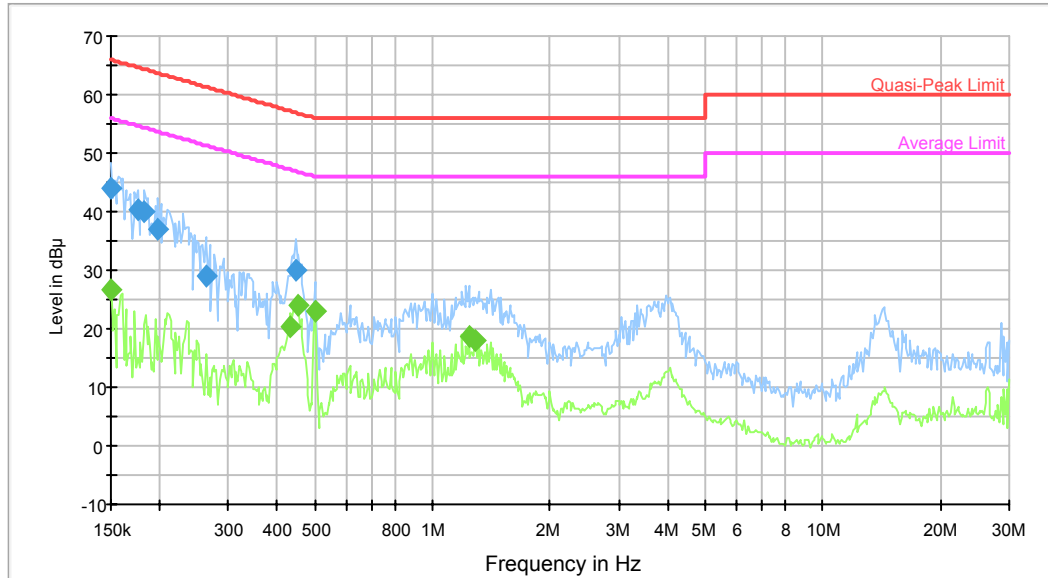
Temperature:	27.8 °C
Relative Humidity:	66 %
ATM Pressure:	98.9 kPa

The testing was performed by Emily Wang on 2016-08-17.

Test Result: Compliance, please refer to the below data and plots.

Test Mode: Charging

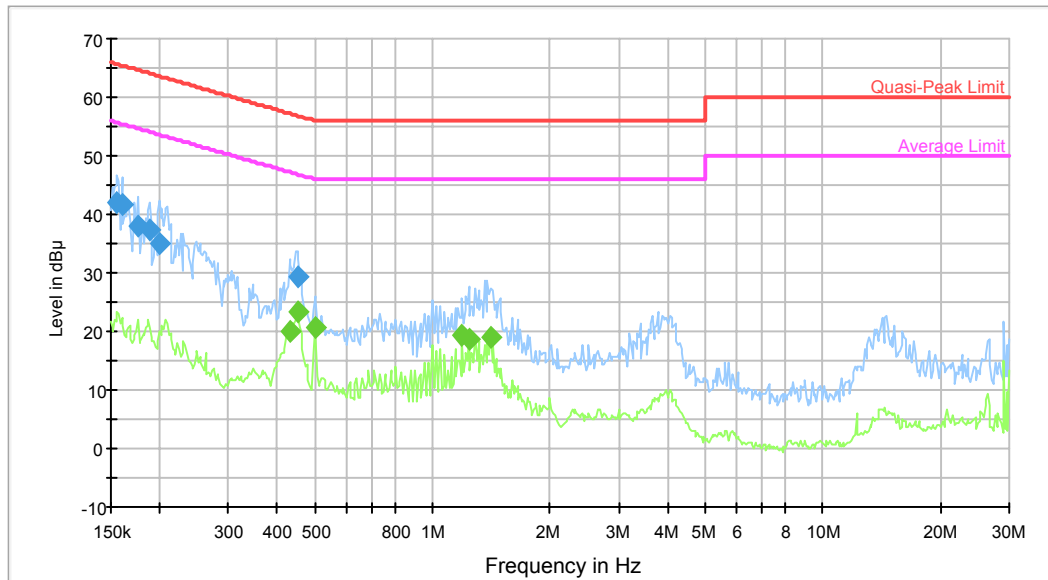
AC120V, 60Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.150000	44.0	9.000	L1	10.2	22.0	66.0	Compliance
0.175915	40.4	9.000	L1	10.1	24.3	64.7	Compliance
0.183065	40.1	9.000	L1	10.2	24.2	64.3	Compliance
0.198249	37.1	9.000	L1	10.2	26.6	63.7	Compliance
0.262017	29.0	9.000	L1	10.2	32.4	61.4	Compliance
0.446873	30.1	9.000	L1	10.2	26.8	56.9	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)	Comment
0.150000	26.5	9.000	L1	10.2	29.5	56.0	Compliance
0.429420	20.4	9.000	L1	10.2	26.9	47.3	Compliance
0.454052	23.9	9.000	L1	10.1	22.9	46.8	Compliance
0.499611	22.9	9.000	L1	10.1	23.1	46.0	Compliance
1.239175	18.7	9.000	L1	10.4	27.3	46.0	Compliance
1.289541	18.0	9.000	L1	10.4	28.0	46.0	Compliance

Neutral:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.156097	42.0	9.000	N	10.1	23.7	65.7	Compliance
0.159873	41.7	9.000	N	10.1	23.8	65.5	Compliance
0.175915	38.1	9.000	N	10.1	26.6	64.7	Compliance
0.188994	37.4	9.000	N	10.2	26.7	64.1	Compliance
0.199835	35.2	9.000	N	10.2	28.4	63.6	Compliance
0.450448	29.3	9.000	N	10.1	27.6	56.9	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.429420	20.2	9.000	N	10.2	27.1	47.3	Compliance
0.454052	23.2	9.000	N	10.1	23.6	46.8	Compliance
0.499611	20.6	9.000	N	10.1	25.4	46.0	Compliance
1.190776	19.3	9.000	N	10.4	26.7	46.0	Compliance
1.239175	18.7	9.000	N	10.4	27.3	46.0	Compliance
1.407671	19.0	9.000	N	10.4	27.0	46.0	Compliance

FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

FCC §15.247 (d); §15.209; §15.205;

Measurement Uncertainty

Compliance or non-compliance with a disturbance limit shall be determined in the following manner:

If U_{lab} is less than or equal to U_{cispr} of Table 2, then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{lab} is greater than U_{cispr} of Table 2, then:

- compliance is deemed to occur if no measured disturbance level, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit.

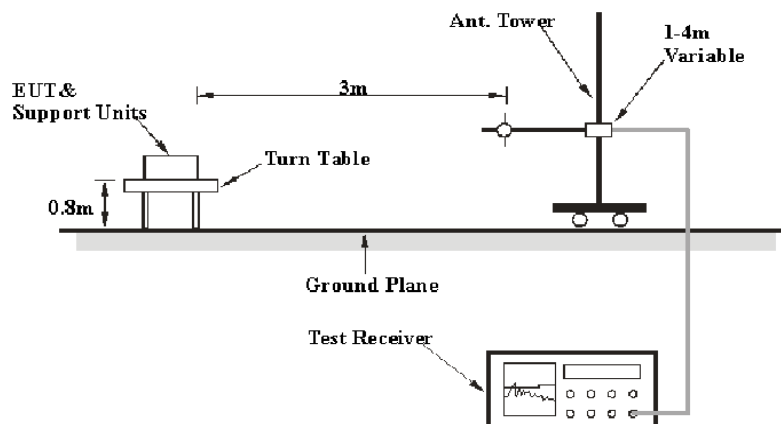
Based on CISPR 16-4-2-2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is: 30M~200MHz: 4.58 dB for Horizontal, 4.59 dB for Vertical; 200M~1GHz: 4.83 dB for Horizontal, 5.85 dB for Vertical; 1G~6GHz: 4.45 dB, 6G~18GHz: 5.23 dB.

Table 2 – Values of U_{cispr}

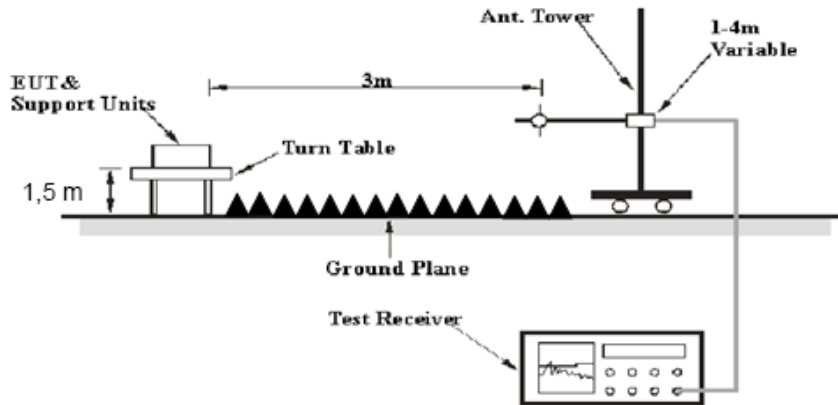
Measurement	U_{cispr}
Radiated disturbance (electric field strength at an OATS or in a SAC) (30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR) (1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR) (6 GHz to 18 GHz)	5.5 dB

EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.247 limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

30MHz-1000MHz:

Detector	RBW	Video B/W	IF B/W
QP	120 kHz	300 kHz	120kHz

1GHz- 25GHz:

Detector	Duty cycle	RBW	Video B/W
PK	Any	1MHz	3 MHz
Ave.	>98%	1MHz	10 Hz
	<98%	1MHz	1/T

Note: T is minimum transmission duration

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz, peak and Average detection modes for frequencies above 1 GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Loss} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2016-08-03	2017-08-02
Sunol Sciences	Antenna	JB3	A060611-3	2014-11-06	2017-11-05
HP	Amplifier	8447E	2434A02181	2015-09-01	2016-09-01
Agilent	Spectrum Analyzer	E4440A	SG43360054	2015-11-23	2016-11-22
ETS-Lindgren	Horn Antenna	3115	9808-5557	2015-09-06	2018-09-06
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2016-02-19	2017-02-19
R&S	Spectrum Analyzer	FSP 38	100478	2016-05-09	2017-05-09
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-01 1304	2014-06-16	2017-06-15
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2015-09-06	2016-09-06
N/A	Coaxial Cable	14m	N/A	2016-05-06	2017-05-06
N/A	Coaxial Cable	8m	N/A	2016-05-06	2017-05-06
N/A	Coaxial Cable	0.1m	N/A	2016-05-06	2017-05-06
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2016-05-06	2017-05-06

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	27.7 °C
Relative Humidity:	40 %
ATM Pressure:	99.7 kPa

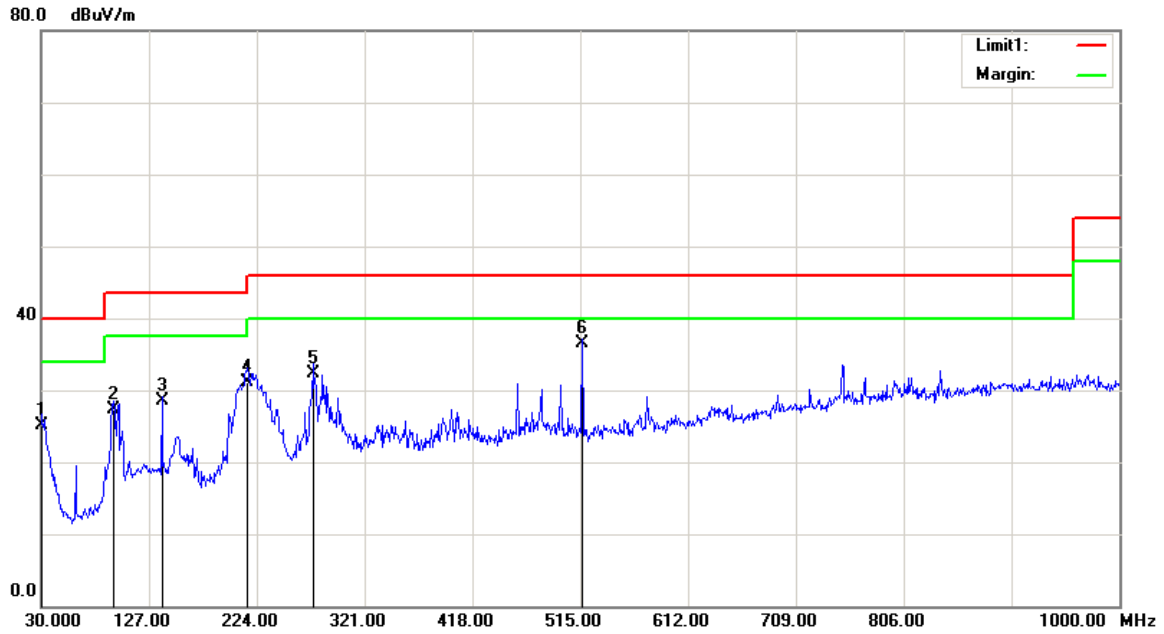
The testing was performed by Emily Wang on 2016-08-09.

Test Result: Compliance, please Refer to the following data

Test Mode: Transmitting

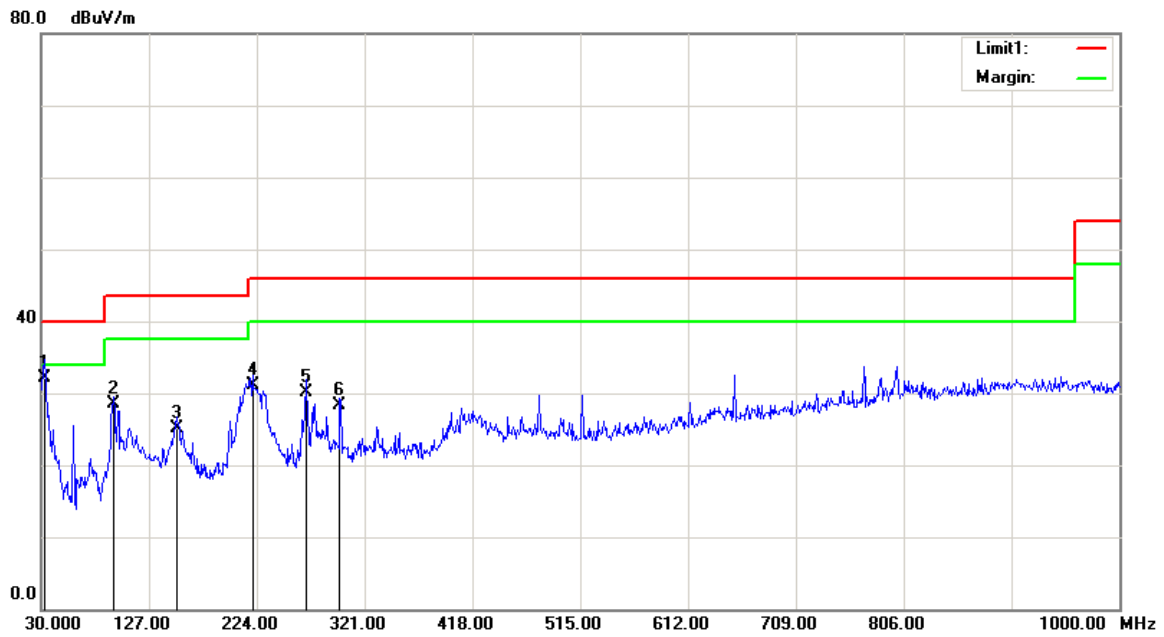
Below 1GHz

Horizontal:



Frequency (MHz)	Receiver Reading (dBμV)	Detector (PK/QP/Ave)	Correction Factor (dB/m)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
30.0000	24.15	QP	0.95	25.10	40.00	14.90
94.9900	38.36	QP	-10.96	27.40	43.50	16.10
138.6400	35.11	QP	-6.51	28.60	43.50	14.90
215.2700	40.11	QP	-8.91	31.20	43.50	12.30
274.4400	38.41	QP	-6.01	32.40	46.00	13.60
516.9400	38.37	QP	-1.87	36.50	46.00	9.50

Vertical:



Frequency (MHz)	Receiver Reading (dBμV)	Detector (PK/QP/Ave)	Correction Factor (dB/m)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
32.9100	33.44	QP	-1.24	32.20	40.00	7.80
94.9900	39.56	QP	-10.96	28.60	43.50	14.90
152.2200	32.22	QP	-7.12	25.10	43.50	18.40
220.1200	39.77	QP	-8.67	31.10	46.00	14.90
268.6200	36.36	QP	-6.16	30.20	46.00	15.80
298.6900	34.24	QP	-5.84	28.40	46.00	17.60

1-25GHz:

1.4M Mode

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Low Channel: 2403.5 MHz									
2403.5	93.69	PK	H	25.65	3.66	0.00	123.00	N/A	N/A
2403.5	64.94	AV	H	25.65	3.66	0.00	94.25	N/A	N/A
2403.5	80.85	PK	V	25.65	3.66	0.00	110.16	N/A	N/A
2403.5	51.66	AV	V	25.65	3.66	0.00	80.97	N/A	N/A
2390	25.39	PK	H	25.61	3.63	0.00	54.63	74.00	19.37
2390	13.26	AV	H	25.61	3.63	0.00	42.50	54.00	11.50
4807	47.13	PK	H	30.60	5.06	27.41	55.38	74.00	18.62
4807	26.33	AV	H	30.60	5.06	27.41	34.58	54.00	19.42
7210.5	33.83	PK	H	34.11	6.62	25.91	48.65	74.00	25.35
7210.5	20.13	AV	H	34.11	6.62	25.91	34.95	54.00	19.05
9614	35.98	PK	H	36.75	8.53	27.54	53.72	74.00	20.28
9614	20.58	AV	H	36.75	8.53	27.54	38.32	54.00	15.68
3187	33.57	PK	H	27.80	6.31	27.38	40.30	74.00	33.70
3187	21.23	AV	H	27.80	6.31	27.38	27.96	54.00	26.04
Middle Channel: 2441.5 MHz									
2441.5	92.53	PK	H	25.75	3.77	0.00	122.05	N/A	N/A
2441.5	63.16	AV	H	25.75	3.77	0.00	92.68	N/A	N/A
2441.5	81.35	PK	V	25.75	3.77	0.00	110.87	N/A	N/A
2441.5	52.25	AV	V	25.75	3.77	0.00	81.77	N/A	N/A
4883	47.93	PK	H	30.80	5.20	27.42	56.51	74.00	17.49
4883	26.18	AV	H	30.80	5.20	27.42	34.76	54.00	19.24
7324.5	33.71	PK	H	34.38	6.75	25.88	48.96	74.00	25.04
7324.5	19.87	AV	H	34.38	6.75	25.88	35.12	54.00	18.88
9766	35.82	PK	H	36.81	8.62	27.20	54.05	74.00	19.95
9766	20.35	AV	H	36.81	8.62	27.20	38.58	54.00	15.42
3189	34.32	PK	H	27.80	6.28	27.38	41.02	74.00	32.98
3189	22.83	AV	H	27.80	6.28	27.38	29.53	54.00	24.47
3650	34.26	PK	H	29.13	4.53	27.30	40.62	74.00	33.38
3650	21.68	AV	H	29.13	4.53	27.30	28.04	54.00	25.96
High Channel: 2477.5 MHz									
2477.5	92.12	PK	H	25.84	3.69	0.00	121.65	N/A	N/A
2477.5	62.47	AV	H	25.84	3.69	0.00	92.00	N/A	N/A
2477.5	81.36	PK	V	25.84	3.69	0.00	110.89	N/A	N/A
2477.5	51.03	AV	V	25.84	3.69	0.00	80.56	N/A	N/A
2483.5	35.12	PK	H	25.86	3.67	0.00	64.65	74.00	9.35
2483.5	14.09	AV	H	25.86	3.67	0.00	43.62	54.00	10.38
4955	47.66	PK	H	30.98	5.35	27.43	56.56	74.00	17.44
4955	25.9	AV	H	30.98	5.35	27.43	34.80	54.00	19.20
7432.5	33.46	PK	H	34.64	6.88	25.95	49.03	74.00	24.97
7432.5	19.65	AV	H	34.64	6.88	25.95	35.22	54.00	18.78
9910	35.58	PK	H	36.86	8.70	26.70	54.44	74.00	19.56
9910	20.13	AV	H	36.86	8.70	26.70	38.99	54.00	15.01
3189	35.05	PK	H	27.80	6.28	27.38	41.75	74.00	32.25
3189	23.57	AV	H	27.80	6.28	27.38	30.27	54.00	23.73

10M Mode

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Low Channel: 2405.5 MHz									
2405.5	78.49	PK	H	25.65	3.67	0.00	107.81	N/A	N/A
2405.5	65.72	AV	H	25.65	3.67	0.00	95.04	N/A	N/A
2405.5	65.69	PK	V	25.65	3.67	0.00	95.01	N/A	N/A
2405.5	53.37	AV	V	25.65	3.67	0.00	82.69	N/A	N/A
2390	40.04	PK	H	25.61	3.63	0.00	69.28	74.00	4.72
2390	23.72	AV	H	25.61	3.63	0.00	52.96	54.00	1.04
4811	42.83	PK	H	30.61	5.05	27.41	51.08	74.00	22.92
4811	30.54	AV	H	30.61	5.05	27.41	38.79	54.00	15.21
7216.5	33.59	PK	H	34.12	6.63	25.91	48.43	74.00	25.57
7216.5	21.02	AV	H	34.12	6.63	25.91	35.86	54.00	18.14
9622	31.21	PK	H	36.75	8.54	27.52	48.98	74.00	25.02
9622	19.35	AV	H	36.75	8.54	27.52	37.12	54.00	16.88
3187	34.61	PK	H	27.80	6.31	27.38	41.34	74.00	32.66
3187	22.57	AV	H	27.80	6.31	27.38	29.30	54.00	24.70
Middle Channel: 2441.5 MHz									
2441.5	81.02	PK	H	25.75	3.77	0.00	110.54	N/A	N/A
2441.5	68.64	AV	H	25.75	3.77	0.00	98.16	N/A	N/A
2441.5	67.18	PK	V	25.75	3.77	0.00	96.70	N/A	N/A
2441.5	54.51	AV	V	25.75	3.77	0.00	84.03	N/A	N/A
4883	42.6	PK	H	30.80	5.20	27.42	51.18	74.00	22.82
4883	28.69	AV	H	30.80	5.20	27.42	37.27	54.00	16.73
7324.5	33.66	PK	H	34.38	6.75	25.88	48.91	74.00	25.09
7324.5	21.2	AV	H	34.38	6.75	25.88	36.45	54.00	17.55
9766	31.35	PK	H	36.81	8.62	27.20	49.58	74.00	24.42
9766	20.58	AV	H	36.81	8.62	27.20	38.81	54.00	15.19
3198	36.42	PK	H	27.83	6.12	27.37	43.00	74.00	31.00
3198	23.87	AV	H	27.83	6.12	27.37	30.45	54.00	23.55
3992	33.77	PK	H	29.88	4.84	27.21	41.28	74.00	32.72
3992	21.6	AV	H	29.88	4.84	27.21	29.11	54.00	24.89
High Channel: 2477.5 MHz									
2477.5	58.46	PK	H	25.84	3.69	0.00	87.99	N/A	N/A
2477.5	46.21	AV	H	25.84	3.69	0.00	75.74	N/A	N/A
2477.5	47.77	PK	V	25.84	3.69	0.00	77.30	N/A	N/A
2477.5	35.46	AV	V	25.84	3.69	0.00	64.99	N/A	N/A
2483.5	33.21	PK	H	25.86	3.67	0.00	62.74	74.00	11.26
2483.5	17.41	AV	H	25.86	3.67	0.00	46.94	54.00	7.06
4955	33.94	PK	H	30.98	5.35	27.43	42.84	74.00	31.16
4955	21.03	AV	H	30.98	5.35	27.43	29.93	54.00	24.07
7432.5	33.58	PK	H	34.64	6.88	25.95	49.15	74.00	24.85
7432.5	20.33	AV	H	34.64	6.88	25.95	35.90	54.00	18.10
9910	31.63	PK	H	36.86	8.70	26.70	50.49	74.00	23.51
9910	19.52	AV	H	36.86	8.70	26.70	38.38	54.00	15.62
3187	34.78	PK	H	27.80	6.31	27.38	41.51	74.00	32.49
3187	22.09	AV	H	27.80	6.31	27.38	28.82	54.00	25.18

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Additional Channels: 2406.5 MHz									
2406.5	78.92	PK	H	25.66	3.67	0.00	108.25	N/A	N/A
2406.5	66.02	AV	H	25.66	3.67	0.00	95.35	N/A	N/A
2390	39.21	PK	H	25.61	3.63	0.00	68.45	74.00	5.55
2390	22.39	AV	H	25.61	3.63	0.00	51.63	54.00	2.37
Additional Channels: 2407.5 MHz									
2407.5	79.78	PK	H	25.66	3.67	0.00	109.11	N/A	N/A
2407.5	66.75	AV	H	25.66	3.67	0.00	96.08	N/A	N/A
2390	38.47	PK	H	25.61	3.63	0.00	67.71	74.00	6.29
2390	21.06	AV	H	25.61	3.63	0.00	50.30	54.00	3.70
Additional Channels: 2408.5 MHz									
2408.5	80.25	PK	H	25.66	3.67	0.00	109.58	N/A	N/A
2408.5	67.12	AV	H	25.66	3.67	0.00	96.45	N/A	N/A
2390	38.21	PK	H	25.61	3.63	0.00	67.45	74.00	6.55
2390	20.13	AV	H	25.61	3.63	0.00	49.37	54.00	4.63
Additional Channels: 2409.5 MHz									
2409.5	81.25	PK	H	25.66	3.68	0.00	110.59	N/A	N/A
2409.5	68.29	AV	H	25.66	3.68	0.00	97.63	N/A	N/A
2390	37.23	PK	H	25.61	3.63	0.00	66.47	74.00	7.53
2390	19.55	AV	H	25.61	3.63	0.00	48.79	54.00	5.21
Additional Channels: 2411.5 MHz									
2411.5	82.61	PK	H	25.67	3.68	0.00	111.96	N/A	N/A
2411.5	69.11	AV	H	25.67	3.68	0.00	98.46	N/A	N/A
2390	37.23	PK	H	25.61	3.63	0.00	66.47	74.00	7.53
2390	19.28	AV	H	25.61	3.63	0.00	48.52	54.00	5.48
Additional Channels: 2462.5 MHz									
2462.5	81.59	PK	H	25.80	3.75	0.00	111.14	N/A	N/A
2462.5	69.58	AV	H	25.80	3.75	0.00	99.13	N/A	N/A
2483.5	30.02	PK	H	25.86	3.67	0.00	59.55	74.00	14.45
2483.5	16.57	AV	H	25.86	3.67	0.00	46.10	54.00	7.90
Additional Channels: 2464.5 MHz									
2464.5	79.25	PK	H	25.81	3.74	0.00	108.80	N/A	N/A
2464.5	68.25	AV	H	25.81	3.74	0.00	97.80	N/A	N/A
2483.5	30.81	PK	H	25.86	3.67	0.00	60.34	74.00	13.66
2483.5	17.59	AV	H	25.86	3.67	0.00	47.12	54.00	6.88
Additional Channels: 2466.5 MHz									
2466.5	77.96	PK	H	25.81	3.73	0.00	107.50	N/A	N/A
2466.5	67.05	AV	H	25.81	3.73	0.00	96.59	N/A	N/A
2483.5	31.25	PK	H	25.86	3.67	0.00	60.78	74.00	13.22
2483.5	17.58	AV	H	25.86	3.67	0.00	47.11	54.00	6.89
Additional Channels: 2468.5 MHz									
2468.5	76.25	PK	H	25.82	3.72	0.00	105.79	N/A	N/A
2468.5	65.97	AV	H	25.82	3.72	0.00	95.51	N/A	N/A
2483.5	30.92	PK	H	25.86	3.67	0.00	60.45	74.00	13.55
2483.5	17.58	AV	H	25.86	3.67	0.00	47.11	54.00	6.89

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Additional Channels: 2469.5 MHz									
2469.5	74.66	PK	H	25.82	3.72	0.00	104.20	N/A	N/A
2469.5	63.95	AV	H	25.82	3.72	0.00	93.49	N/A	N/A
2483.5	31.02	PK	H	25.86	3.67	0.00	60.55	74.00	13.45
2483.5	17.25	AV	H	25.86	3.67	0.00	46.78	54.00	7.22
Additional Channels: 2470.5 MHz									
2470.5	73.02	PK	H	25.82	3.72	0.00	102.56	N/A	N/A
2470.5	62.88	AV	H	25.82	3.72	0.00	92.42	N/A	N/A
2483.5	30.24	PK	H	25.86	3.67	0.00	59.77	74.00	14.23
2483.5	16.77	AV	H	25.86	3.67	0.00	46.30	54.00	7.70
Additional Channels: 2471.5 MHz									
2471.5	72.11	PK	H	25.83	3.71	0.00	101.65	N/A	N/A
2471.5	61.2	AV	H	25.83	3.71	0.00	90.74	N/A	N/A
2483.5	30.25	PK	H	25.86	3.67	0.00	59.78	74.00	14.22
2483.5	16.88	AV	H	25.86	3.67	0.00	46.41	54.00	7.59
Additional Channels: 2472.5 MHz									
2472.5	70.15	PK	H	25.83	3.71	0.00	99.69	N/A	N/A
2472.5	59.64	AV	H	25.83	3.71	0.00	89.18	N/A	N/A
2483.5	31.08	PK	H	25.86	3.67	0.00	60.61	74.00	13.39
2483.5	17.29	AV	H	25.86	3.67	0.00	46.82	54.00	7.18
Additional Channels: 2473.5 MHz									
2473.5	68.05	PK	H	25.83	3.71	0.00	97.59	N/A	N/A
2473.5	57.95	AV	H	25.83	3.71	0.00	87.49	N/A	N/A
2483.5	32.17	PK	H	25.86	3.67	0.00	61.70	74.00	12.30
2483.5	18.25	AV	H	25.86	3.67	0.00	47.78	54.00	6.22
Additional Channels: 2474.5 MHz									
2474.5	67.58	PK	H	25.83	3.70	0.00	97.11	N/A	N/A
2474.5	56.87	AV	H	25.83	3.70	0.00	86.40	N/A	N/A
2483.5	33.24	PK	H	25.86	3.67	0.00	62.77	74.00	11.23
2483.5	18.02	AV	H	25.86	3.67	0.00	47.55	54.00	6.45
Additional Channels: 2475.5 MHz									
2475.5	66.47	PK	H	25.84	3.70	0.00	96.01	N/A	N/A
2475.5	55.69	AV	H	25.84	3.70	0.00	85.23	N/A	N/A
2483.5	33.15	PK	H	25.86	3.67	0.00	62.68	74.00	11.32
2483.5	17.58	AV	H	25.86	3.67	0.00	47.11	54.00	6.89
Additional Channels: 2476.5 MHz									
2476.5	65.74	PK	H	25.84	3.69	0.00	95.27	N/A	N/A
2476.5	54.16	AV	H	25.84	3.69	0.00	83.69	N/A	N/A
2483.5	33.25	PK	H	25.86	3.67	0.00	62.78	74.00	11.22
2483.5	17.58	AV	H	25.86	3.67	0.00	47.11	54.00	6.89

20M Mode

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Low Channel: 2410.5 MHz									
2410.5	73.51	PK	H	25.67	3.68	0.00	102.86	N/A	N/A
2410.5	58.18	AV	H	25.67	3.68	0.00	87.53	N/A	N/A
2410.5	63.99	PK	V	25.67	3.68	0.00	93.34	N/A	N/A
2410.5	48.64	AV	V	25.67	3.68	0.00	77.99	N/A	N/A
2390	39.16	PK	H	25.61	3.63	0.00	68.40	74.00	5.60
2390	24.46	AV	H	25.61	3.63	0.00	53.70	54.00	0.30
4821	35.74	PK	H	30.63	5.03	27.41	43.99	74.00	30.01
4821	22.08	AV	H	30.63	5.03	27.41	30.33	54.00	23.67
7231.5	33.68	PK	H	34.16	6.64	25.90	48.58	74.00	25.42
7231.5	21.15	AV	H	34.16	6.64	25.90	36.05	54.00	17.95
9642	30.82	PK	H	36.76	8.55	27.48	48.65	74.00	25.35
9642	28.31	AV	H	36.76	8.55	27.48	46.14	54.00	7.86
3187	36.05	PK	H	27.80	6.31	27.38	42.78	74.00	31.22
3187	23.97	AV	H	27.80	6.31	27.38	30.70	54.00	23.30
Middle Channel: 2441.5 MHz									
2441.5	81.13	PK	H	25.75	3.77	0.00	110.65	N/A	N/A
2441.5	65.67	AV	H	25.75	3.77	0.00	95.19	N/A	N/A
2441.5	67.54	PK	V	25.75	3.77	0.00	97.06	N/A	N/A
2441.5	52.22	AV	V	25.75	3.77	0.00	81.74	N/A	N/A
4883	42.83	PK	H	30.80	5.20	27.42	51.41	74.00	22.59
4883	30.15	AV	H	30.80	5.20	27.42	38.73	54.00	15.27
7324.5	33.68	PK	H	34.38	6.75	25.88	48.93	74.00	25.07
7324.5	21.71	AV	H	34.38	6.75	25.88	36.96	54.00	17.04
9766	31.25	PK	H	36.81	8.62	27.20	49.48	74.00	24.52
9766	20.33	AV	H	36.81	8.62	27.20	38.56	54.00	15.44
3187	35.57	PK	H	27.80	6.31	27.38	42.30	74.00	31.70
3187	24.35	AV	H	27.80	6.31	27.38	31.08	54.00	22.92
3610	33.88	PK	H	29.04	4.61	27.28	40.25	74.00	33.75
3610	21.57	AV	H	29.04	4.61	27.28	27.94	54.00	26.06
High Channel: 2472.5 MHz									
2472.5	68.51	PK	H	25.83	3.71	0.00	98.05	N/A	N/A
2472.5	52.1	AV	H	25.83	3.71	0.00	81.64	N/A	N/A
2472.5	56.31	PK	V	25.83	3.71	0.00	85.85	N/A	N/A
2472.5	40.37	AV	V	25.83	3.71	0.00	69.91	N/A	N/A
2483.5	32.4	PK	H	25.86	3.67	0.00	61.93	74.00	12.07
2483.5	16.75	AV	H	25.86	3.67	0.00	46.28	54.00	7.72
4945	34.01	PK	H	30.96	5.36	27.43	42.90	74.00	31.10
4945	21.05	AV	H	30.96	5.36	27.43	29.94	54.00	24.06
7417.5	33.62	PK	H	34.60	6.86	25.91	49.17	74.00	24.83
7417.5	20.35	AV	H	34.60	6.86	25.91	35.90	54.00	18.10
9890	31.71	PK	H	36.86	8.69	26.78	50.48	74.00	23.52
9890	19.54	AV	H	36.86	8.69	26.78	38.31	54.00	15.69
3198	34.79	PK	H	27.83	6.12	27.37	41.37	74.00	32.63
3198	22.18	AV	H	27.83	6.12	27.37	28.76	54.00	25.24

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Additional Channels: 2411.5 MHz									
2411.5	74.26	PK	H	25.67	3.68	0.00	103.61	N/A	N/A
2411.5	59.24	AV	H	25.67	3.68	0.00	88.59	N/A	N/A
2390	38.25	PK	H	25.61	3.63	0.00	67.49	74.00	6.51
2390	22.69	AV	H	25.61	3.63	0.00	51.93	54.00	2.07
Additional Channels: 2412.5 MHz									
2412.5	75.25	PK	H	25.67	3.69	0.00	104.61	N/A	N/A
2412.5	60.28	AV	H	25.67	3.69	0.00	89.64	N/A	N/A
2390	37.44	PK	H	25.61	3.63	0.00	66.68	74.00	7.32
2390	21.06	AV	H	25.61	3.63	0.00	50.30	54.00	3.70
Additional Channels: 2413.5 MHz									
2413.5	76.17	PK	H	25.68	3.69	0.00	105.54	N/A	N/A
2413.5	61.36	AV	H	25.68	3.69	0.00	90.73	N/A	N/A
2390	36.25	PK	H	25.61	3.63	0.00	65.49	74.00	8.51
2390	21.97	AV	H	25.61	3.63	0.00	51.21	54.00	2.79
Additional Channels: 2414.5 MHz									
2414.5	76.98	PK	H	25.68	3.69	0.00	106.35	N/A	N/A
2414.5	62.25	AV	H	25.68	3.69	0.00	91.62	N/A	N/A
2390	34.22	PK	H	25.61	3.63	0.00	63.46	74.00	10.54
2390	20.14	AV	H	25.61	3.63	0.00	49.38	54.00	4.62
Additional Channels: 2415.5 MHz									
2415.5	78.02	PK	H	25.68	3.69	0.00	107.39	N/A	N/A
2415.5	63.58	AV	H	25.68	3.69	0.00	92.95	N/A	N/A
2390	35.22	PK	H	25.61	3.63	0.00	64.46	74.00	9.54
2390	20.18	AV	H	25.61	3.63	0.00	49.42	54.00	4.58
Additional Channels: 2418.5 MHz									
2418.5	79.24	PK	H	25.69	3.70	0.00	108.63	N/A	N/A
2418.5	64.25	AV	H	25.69	3.70	0.00	93.64	N/A	N/A
2390	34.12	PK	H	25.61	3.63	0.00	63.36	74.00	10.64
2390	20.17	AV	H	25.61	3.63	0.00	49.41	54.00	4.59
Additional Channels: 2423.5 MHz									
2423.5	80.14	PK	H	25.70	3.72	0.00	109.56	N/A	N/A
2423.5	65.07	AV	H	25.70	3.72	0.00	94.49	N/A	N/A
2390	33.21	PK	H	25.61	3.63	0.00	62.45	74.00	11.55
2390	21.08	AV	H	25.61	3.63	0.00	50.32	54.00	3.68
Additional Channels: 2424.5 MHz									
2424.5	81.05	PK	H	25.70	3.72	0.00	110.47	N/A	N/A
2424.5	66.22	AV	H	25.70	3.72	0.00	95.64	N/A	N/A
2390	31.41	PK	H	25.61	3.63	0.00	60.65	74.00	13.35
2390	20.26	AV	H	25.61	3.63	0.00	49.50	54.00	4.50
Additional Channels: 2428.5 MHz									
2428.5	82.21	PK	H	25.71	3.73	0.00	111.65	N/A	N/A
2428.5	66.95	AV	H	25.71	3.73	0.00	96.39	N/A	N/A
2390	30.11	PK	H	25.61	3.63	0.00	59.35	74.00	14.65
2390	19.25	AV	H	25.61	3.63	0.00	48.49	54.00	5.51

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Additional Channels: 2446.5 MHz									
2446.5	81.49	PK	H	25.76	3.78	0.00	111.03	N/A	N/A
2446.5	65.68	AV	H	25.76	3.78	0.00	95.22	N/A	N/A
2483.5	30.26	PK	H	25.86	3.67	0.00	59.79	74.00	14.21
2483.5	16.2	AV	H	25.86	3.67	0.00	45.73	54.00	8.27
Additional Channels: 2449.5 MHz									
2449.5	80.16	PK	H	25.77	3.79	0.00	109.72	N/A	N/A
2449.5	64.29	AV	H	25.77	3.79	0.00	93.85	N/A	N/A
2483.5	30.41	PK	H	25.86	3.67	0.00	59.94	74.00	14.06
2483.5	16.35	AV	H	25.86	3.67	0.00	45.88	54.00	8.12
Additional Channels: 2452.5 MHz									
2452.5	79.25	PK	H	25.78	3.78	0.00	108.81	N/A	N/A
2452.5	63.71	AV	H	25.78	3.78	0.00	93.27	N/A	N/A
2483.5	30.16	PK	H	25.86	3.67	0.00	59.69	74.00	14.31
2483.5	16.45	AV	H	25.86	3.67	0.00	45.98	54.00	8.02
Additional Channels: 2454.5 MHz									
2454.5	78.68	PK	H	25.78	3.77	0.00	108.23	N/A	N/A
2454.5	62.74	AV	H	25.78	3.77	0.00	92.29	N/A	N/A
2483.5	30.28	PK	H	25.86	3.67	0.00	59.81	74.00	14.19
2483.5	16.48	AV	H	25.86	3.67	0.00	46.01	54.00	7.99
Additional Channels: 2456.5 MHz									
2456.5	77.65	PK	H	25.79	3.77	0.00	107.21	N/A	N/A
2456.5	61.28	AV	H	25.79	3.77	0.00	90.84	N/A	N/A
2483.5	30.26	PK	H	25.86	3.67	0.00	59.79	74.00	14.21
2483.5	16.54	AV	H	25.86	3.67	0.00	46.07	54.00	7.93
Additional Channels: 2458.5 MHz									
2458.5	76.22	PK	H	25.79	3.76	0.00	105.77	N/A	N/A
2458.5	60.18	AV	H	25.79	3.76	0.00	89.73	N/A	N/A
2483.5	30.21	PK	H	25.86	3.67	0.00	59.74	74.00	14.26
2483.5	16.28	AV	H	25.86	3.67	0.00	45.81	54.00	8.19
Additional Channels: 2460.5 MHz									
2460.5	75.18	PK	H	25.80	3.75	0.00	104.73	N/A	N/A
2460.5	59.81	AV	H	25.80	3.75	0.00	89.36	N/A	N/A
2483.5	30.25	PK	H	25.86	3.67	0.00	59.78	74.00	14.22
2483.5	16.27	AV	H	25.86	3.67	0.00	45.80	54.00	8.20
Additional Channels: 2465.5 MHz									
2465.5	74.29	PK	H	25.81	3.73	0.00	103.83	N/A	N/A
2465.5	58.18	AV	H	25.81	3.73	0.00	87.72	N/A	N/A
2483.5	30.24	PK	H	25.86	3.67	0.00	59.77	74.00	14.23
2483.5	16.28	AV	H	25.86	3.67	0.00	45.81	54.00	8.19
Additional Channels: 2466.5 MHz									
2466.5	73.34	PK	H	25.81	3.73	0.00	102.88	N/A	N/A
2466.5	57.42	AV	H	25.81	3.73	0.00	86.96	N/A	N/A
2483.5	31.02	PK	H	25.86	3.67	0.00	60.55	74.00	13.45
2483.5	16.28	AV	H	25.86	3.67	0.00	45.81	54.00	8.19

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Additional Channels: 2467.5 MHz									
2467.5	72.36	PK	H	25.82	3.73	0.00	101.91	N/A	N/A
2467.5	56.24	AV	H	25.82	3.73	0.00	85.79	N/A	N/A
2483.5	31.14	PK	H	25.86	3.67	0.00	60.67	74.00	13.33
2483.5	17.11	AV	H	25.86	3.67	0.00	46.64	54.00	7.36
Additional Channels: 2468.5 MHz									
2468.5	71.47	PK	H	25.82	3.72	0.00	101.01	N/A	N/A
2468.5	55.02	AV	H	25.82	3.72	0.00	84.56	N/A	N/A
2483.5	31.26	PK	H	25.86	3.67	0.00	60.79	74.00	13.21
2483.5	17.29	AV	H	25.86	3.67	0.00	46.82	54.00	7.18
Additional Channels: 2470.5 MHz									
2470.5	70.25	PK	H	25.82	3.72	0.00	99.79	N/A	N/A
2470.5	54.63	AV	H	25.82	3.72	0.00	84.17	N/A	N/A
2483.5	31.25	PK	H	25.86	3.67	0.00	60.78	74.00	13.22
2483.5	17.24	AV	H	25.86	3.67	0.00	46.77	54.00	7.23
Additional Channels: 2471.5 MHz									
2471.5	69.24	PK	H	25.83	3.71	0.00	98.78	N/A	N/A
2471.5	53.25	AV	H	25.83	3.71	0.00	82.79	N/A	N/A
2483.5	31.29	PK	H	25.86	3.67	0.00	60.82	74.00	13.18
2483.5	17.42	AV	H	25.86	3.67	0.00	46.95	54.00	7.05

FCC §15.247(a) (2) – 6dB BANDWIDTH

Applicable Standard

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 6 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-11-23	2016-11-22
N/A	Coaxial Cable	0.1m	N/A	2016-05-06	2017-05-06
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2016-05-06	2017-05-06

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	26.5~27.2 °C
Relative Humidity:	49~51 %
ATM Pressure:	99.4~100.2 kPa

The testing was performed by Emily Wang 2016-08-03 to 2016-08-07.

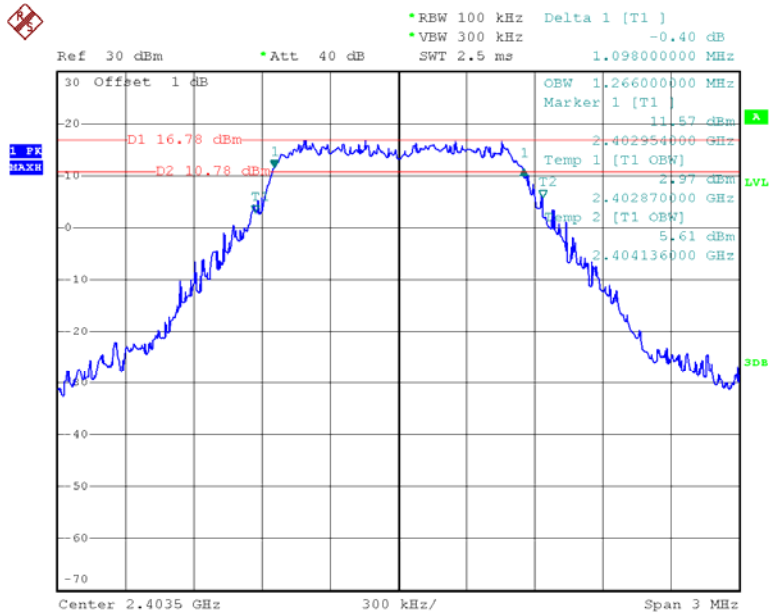
Test Result: Compliance.

Please refer to the following tables and plots.

Test Mode: Transmitting (Test performed at Chain 0)

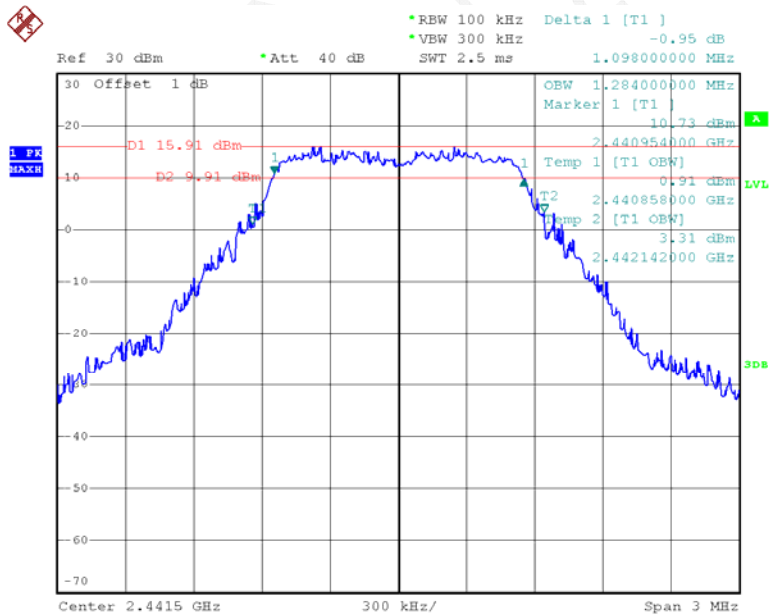
Test mode	Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	Limit (MHz)
1.4MHz	Low	2403.5	1.10	≥ 0.5
	Middle	2441.5	1.10	≥ 0.5
	High	2477.5	1.10	≥ 0.5
10MHz	Low	2405.5	9.08	≥ 0.5
	Middle	2441.5	8.96	≥ 0.5
	High	2477.5	9.08	≥ 0.5
20MHz	Low	2410.5	18.16	≥ 0.5
	Middle	2441.5	18.08	≥ 0.5
	High	2472.5	18.16	≥ 0.5

1.4M Low Channel



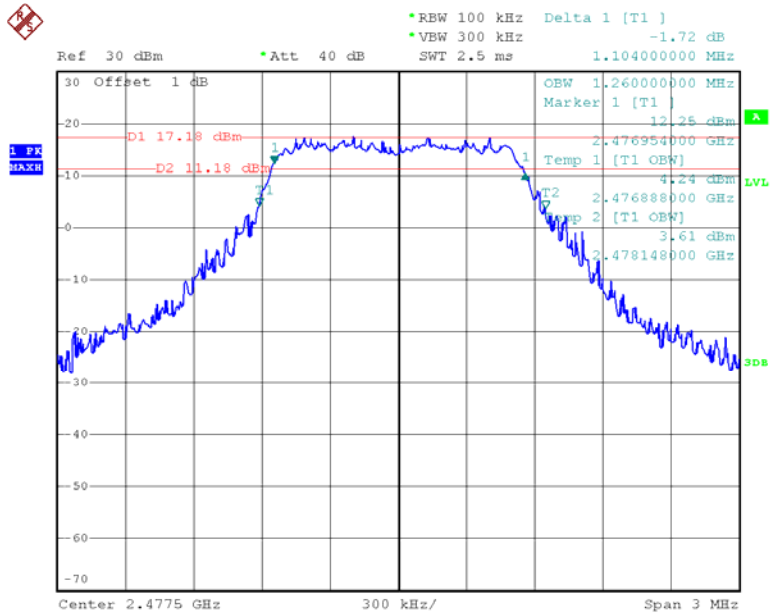
Date: 7.AUG.2016 11:11:36

1.4M Middle Channel



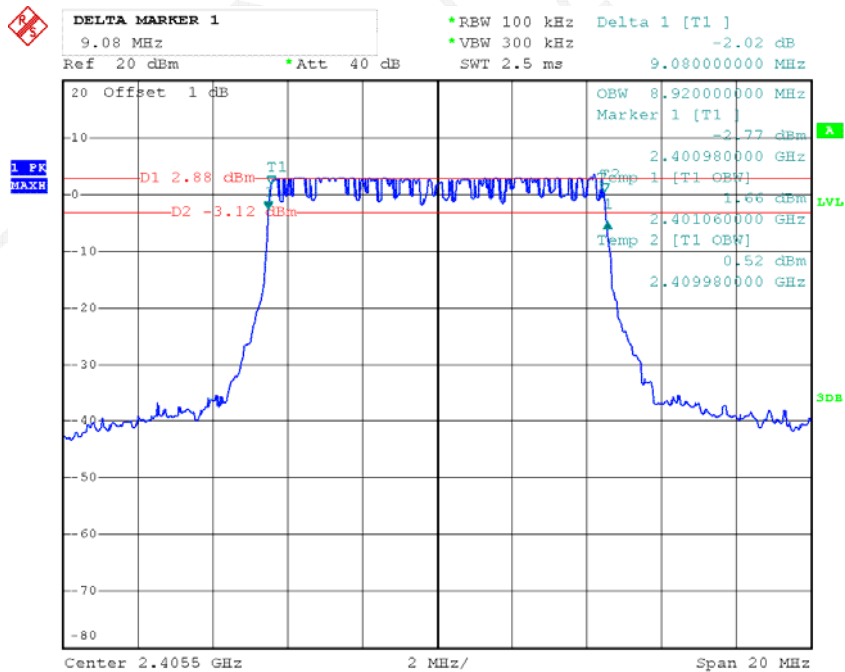
Date: 7.AUG.2016 11:10:31

1.4M High Channel



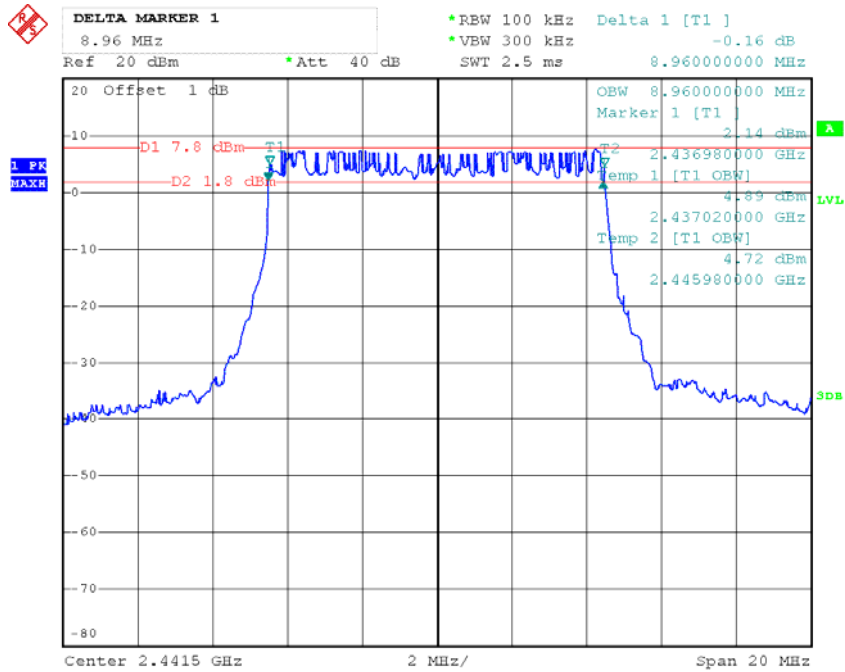
Date: 7.AUG.2016 11:09:21

10M Low Channel



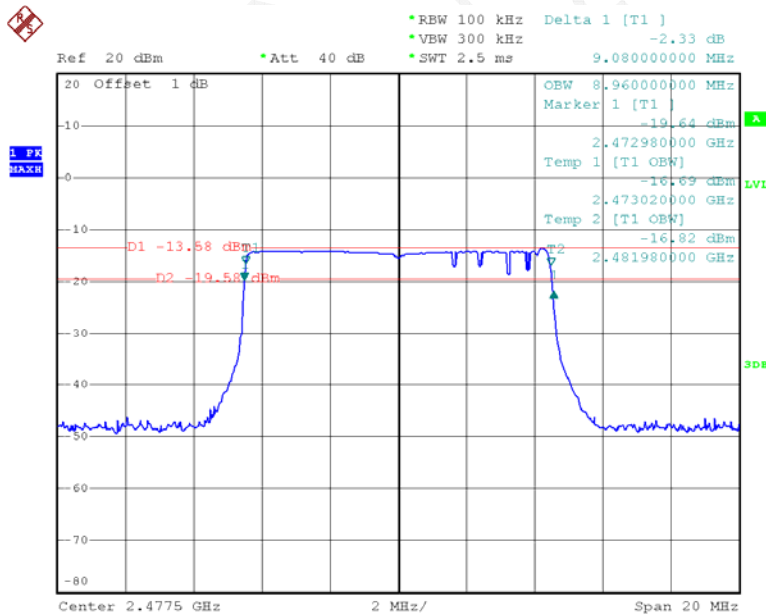
Date: 3.AUG.2016 15:07:41

10M Middle Channel



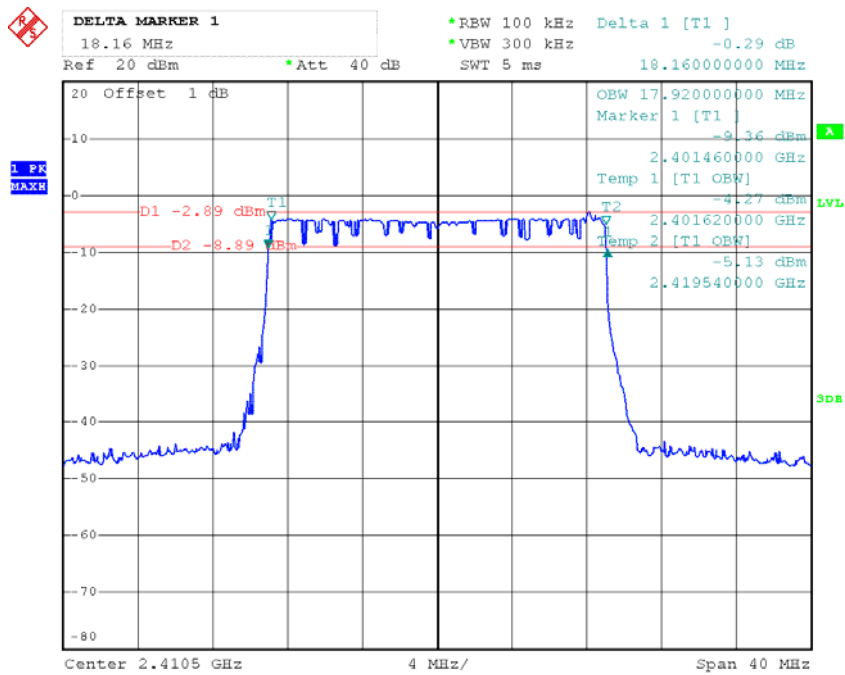
Date: 3.AUG.2016 15:05:07

10M High Channel



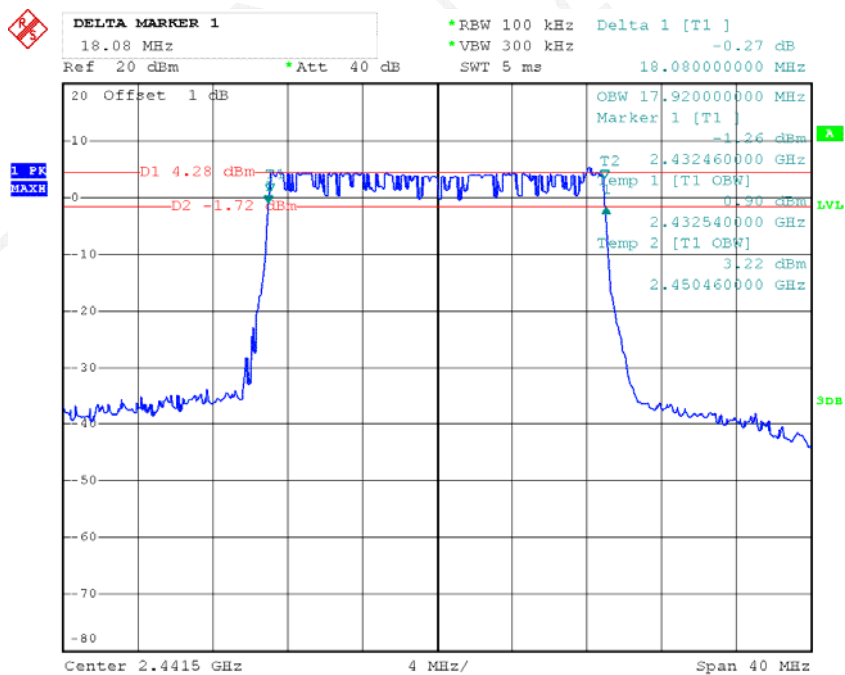
Date: 7.AUG.2016 13:11:20

20M Low Channel



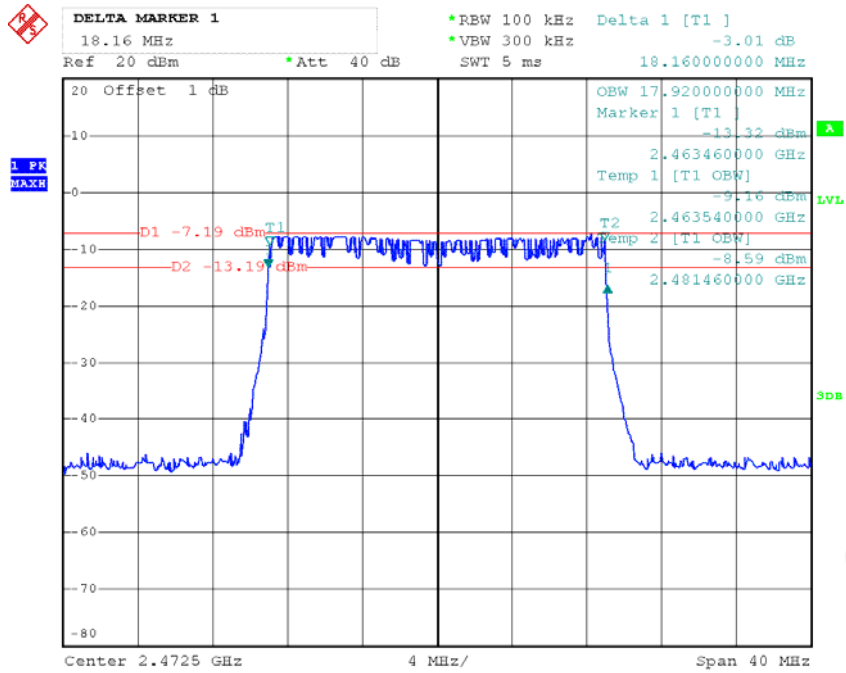
Date: 3.AUG.2016 15:16:45

20M Middle Channel



Date: 3.AUG.2016 15:18:45

20M High Channel



Date: 3.AUG.2016 15:20:32

FULL

FCC §15.247(b) (3) - MAXIMUM PEAK CONDUCTED OUTPUT POWER

Applicable Standard

According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

Test Procedure

1. According to KDB 558074 D01 DTS Meas Guidance v03r03, place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to a Test Equipment.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	Wideband Power Sensor	N1921A	MY54210016	2015-11-03	2016-11-03
Agilent	Wideband Power Sensor	N1921A	MY54170013	2015-11-03	2016-11-03
Agilent	P-Series Power Meter	N1912A	MY5000448	2015-11-03	2016-11-03
N/A	Coaxial Cable	0.1m	N/A	2016-05-06	2017-05-06
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2016-05-06	2017-05-06

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	27.2 °C
Relative Humidity:	51%
ATM Pressure:	99.4 kPa

The testing was performed by Emily Wang 2016-08-07.

Test Mode: Transmitting

Test Mode	Frequency	Conducted Peak Output Power (dBm)		Limits
	(MHz)	Chain 0	Chain 1	(dBm)
1.4M	2403.5	28.69	25.42	30
	2441.5	28.02	25.24	30
	2477.5	28.75	25.82	30
10M	2405.5	19.65	18.68	30
	2406.5	19.95	19.28	30
	2407.5	20.25	19.89	30
	2408.5	21.36	20.48	30
	2409.5	22.65	21.69	30
	2411.5	23.09	22.75	30
	2446.5	23.65	23.83	30
	2462.5	22.75	22.99	30
	2464.5	21.69	22.05	30
	2466.5	20.77	21.48	30
	2468.5	19.69	20.19	30
	2469.5	18.73	19.33	30
	2470.5	17.68	18.69	30
	2471.5	16.85	17.21	30
	2472.5	15.98	16.05	30
	2473.5	14.29	14.96	30
	2474.5	13.69	13.87	30
	2475.5	12.65	12.59	30
2476.5	11.45	11.26	30	
2477.5	3.33	3.39	30	
20M	2410.5	21.90	21.15	30
	2411.5	22.84	21.95	30
	2412.5	23.69	22.87	30
	2413.5	24.52	23.69	30
	2414.5	25.36	24.58	30
	2415.5	26.01	25.67	30
	2418.5	26.79	26.71	30
	2423.5	27.68	27.48	30
	2424.5	28.12	28.15	30
	2428.5	29.01	29.04	30
	2441.5	29.33	29.63	30
	2446.5	28.69	28.98	30
	2449.5	28.14	28.01	30
	2452.5	27.08	27.42	30
	2454.5	27.05	26.69	30
	2456.5	26.41	25.45	30
	2458.5	25.66	24.71	30
	2460.5	24.69	23.96	30
	2465.5	23.57	23.08	30
	2466.5	22.78	22.36	30
2467.5	21.69	21.42	30	
2468.5	20.45	20.85	30	
2470.5	19.87	19.97	30	
2471.5	18.94	19.05	30	
2472.5	18.10	18.27	30	

Test Mode	Frequency	Conducted Average Output Power (dBm)		Limits
	(MHz)	Chain 0	Chain 1	(dBm)
1.4M	2403.5	21.99	20.84	30
	2441.5	21.79	19.99	30
	2477.5	23.08	21.52	30
10M	2405.5	9.65	9.29	30
	2406.5	10.21	9.87	30
	2407.5	10.93	10.68	30
	2408.5	11.62	11.26	30
	2409.5	12.36	12.45	30
	2411.5	12.94	13.26	30
	2446.5	13.20	14.89	30
	2462.5	12.98	13.74	30
	2464.5	12.07	12.69	30
	2466.5	11.34	11.42	30
	2468.5	10.26	10.58	30
	2469.5	9.19	9.99	30
	2470.5	8.19	8.94	30
	2471.5	7.62	8.06	30
	2472.5	6.28	7.05	30
	2473.5	5.59	5.69	30
	2474.5	4.43	4.28	30
	2475.5	3.18	3.25	30
2476.5	2.15	2.14	30	
2477.5	-6.84	-6.80	30	
20M	2410.5	5.51	5.37	30
	2411.5	6.28	6.58	30
	2412.5	7.05	7.09	30
	2413.5	7.98	8.04	30
	2414.5	8.75	8.96	30
	2415.5	9.85	10.25	30
	2418.5	10.56	11.25	30
	2423.5	11.29	12.02	30
	2424.5	12.05	12.89	30
	2428.5	12.97	13.75	30
	2441.5	13.78	14.78	30
	2446.5	13.09	14.02	30
	2449.5	12.57	13.25	30
	2452.5	11.75	12.56	30
	2454.5	10.97	11.89	30
	2456.5	10.09	10.96	30
	2458.5	9.44	10.30	30
	2460.5	8.57	9.48	30
2465.5	7.69	8.87	30	
2466.5	6.75	7.69	30	
2467.5	5.84	6.58	30	
2468.5	4.69	5.48	30	
2470.5	3.49	4.25	30	
2471.5	2.89	3.59	30	
2472.5	1.79	2.53	30	

FCC §15.247(d) – 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE

Applicable Standard

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSEM	DE23437	2015-11-23	2016-11-22
N/A	Coaxial Cable	0.1m	N/A	2016-05-06	2017-05-06
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2016-05-06	2017-05-06

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

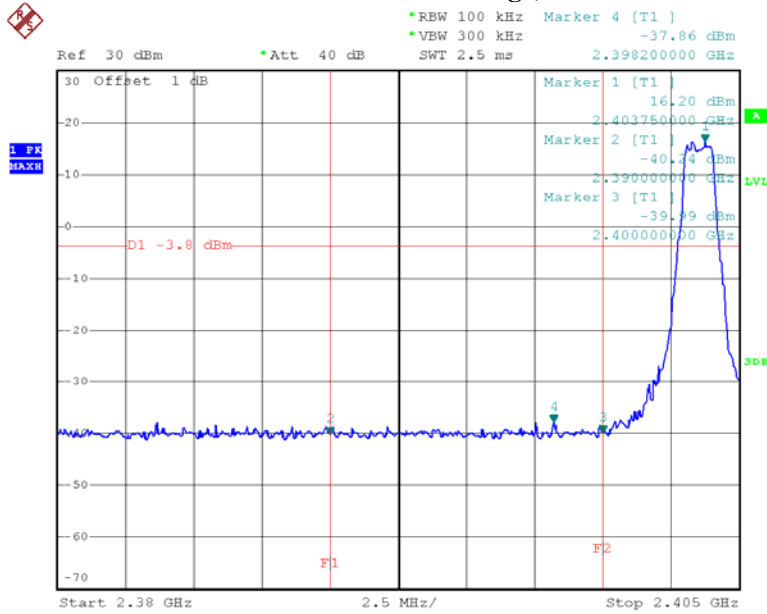
Temperature:	26.5~27.2 °C
Relative Humidity:	49~51 %
ATM Pressure:	99.4~100.2 kPa

The testing was performed by Emily Wang from 2016-08-03 to 2016-08-07.

Test mode: Transmitting

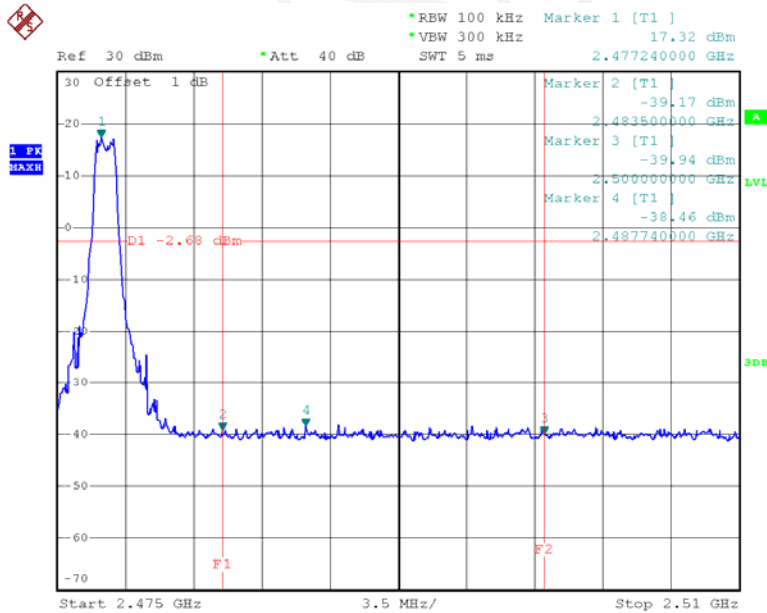
Test Result: Compliant. Please refer to following plots.

Chain 0-1.4M Band Edge, Left Side



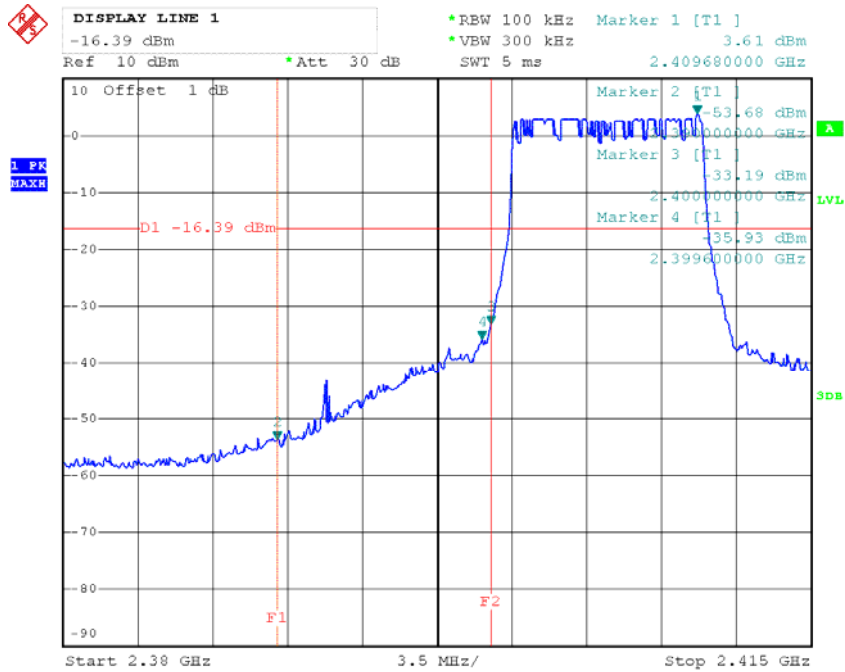
Date: 7.AUG.2016 11:13:48

Chain 0-1.4M Band Edge, Right Side



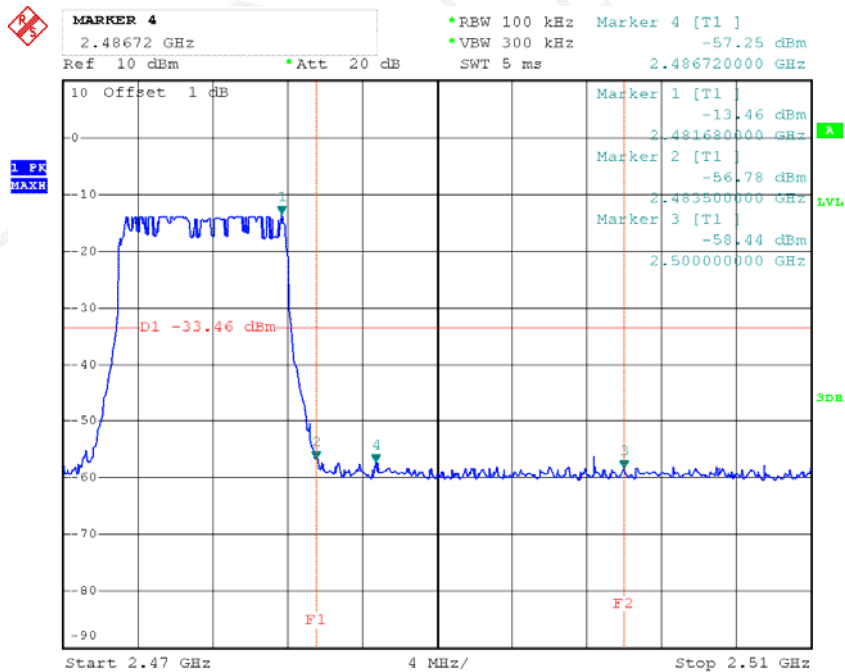
Date: 7.AUG.2016 11:15:40

Chain 0-10M Band Edge, Left Side



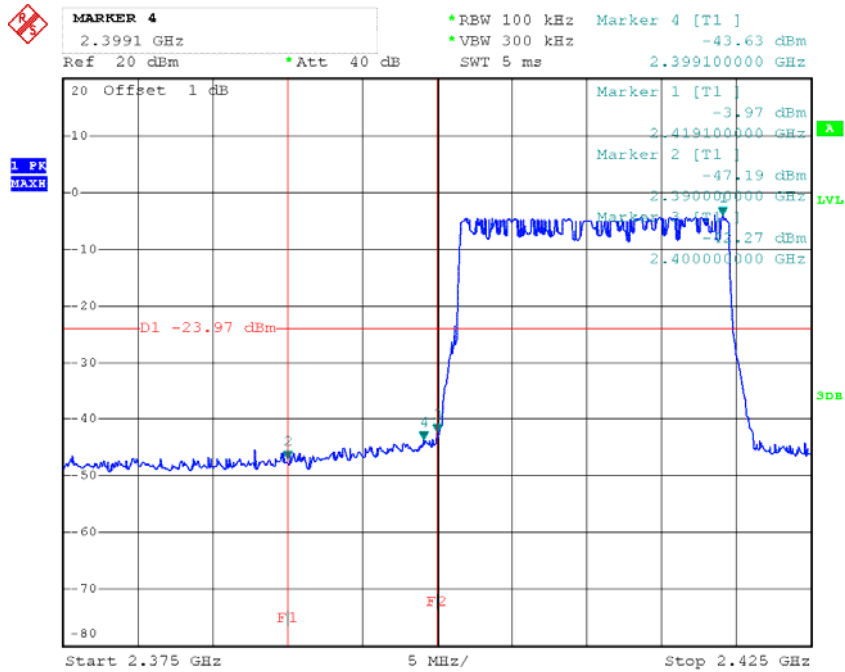
Date: 3.AUG.2016 14:58:31

Chain 0-10M Band Edge, Right Side



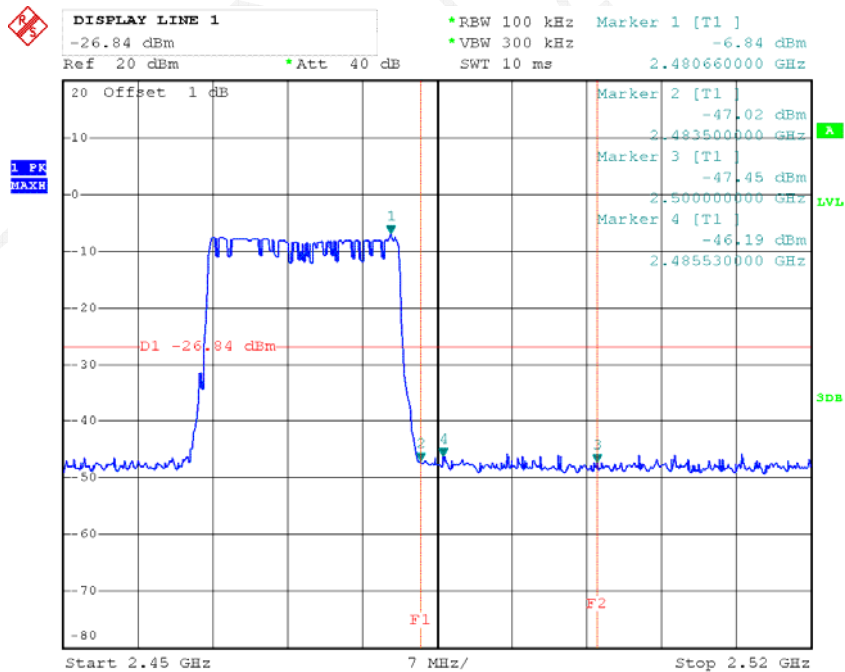
Date: 3.AUG.2016 15:00:34

Chain 0-20M Band Edge, Left Side



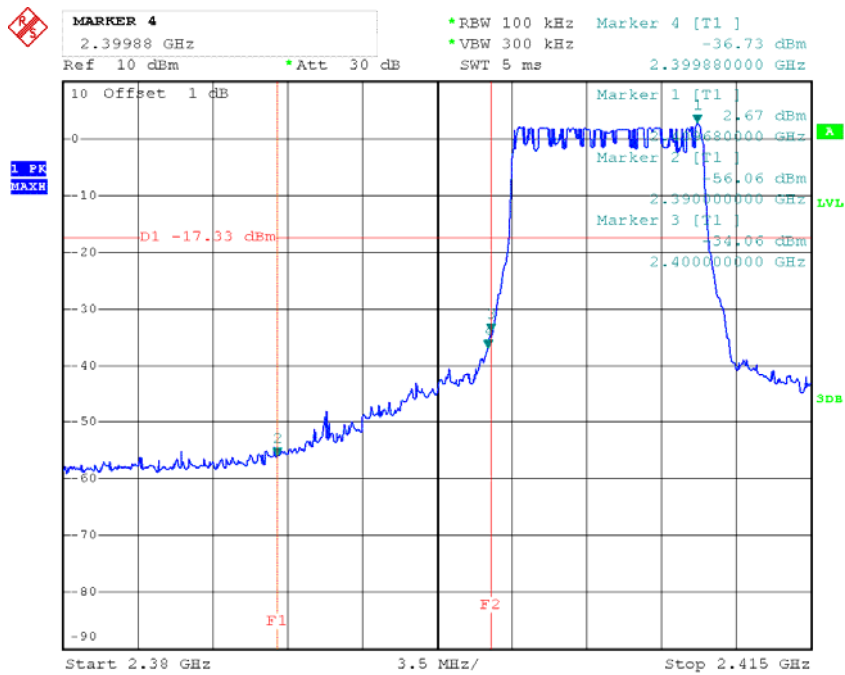
Date: 3.AUG.2016 15:33:10

Chain 0-20M Band Edge, Right Side



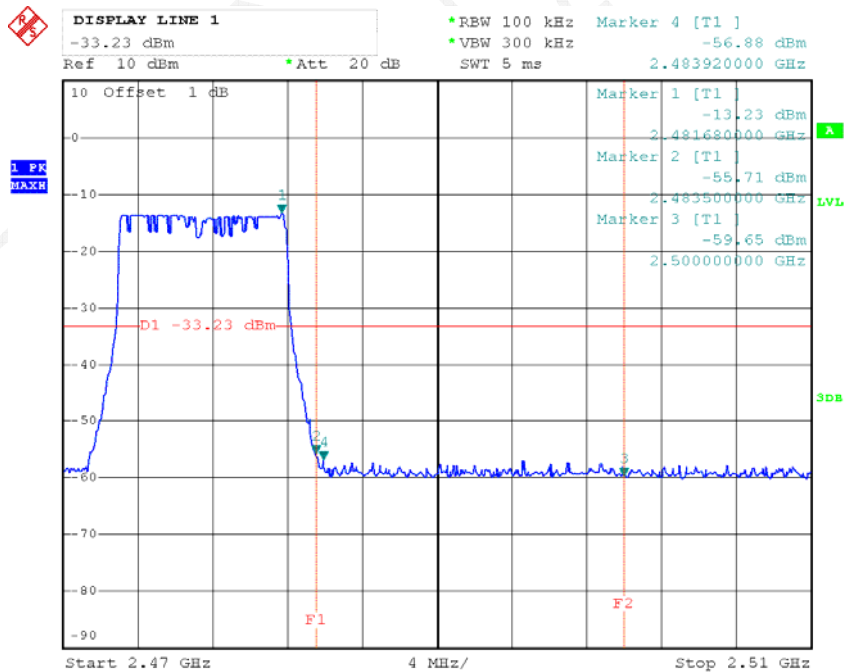
Date: 3.AUG.2016 15:29:08

Chain 1-10M Band Edge, Left Side



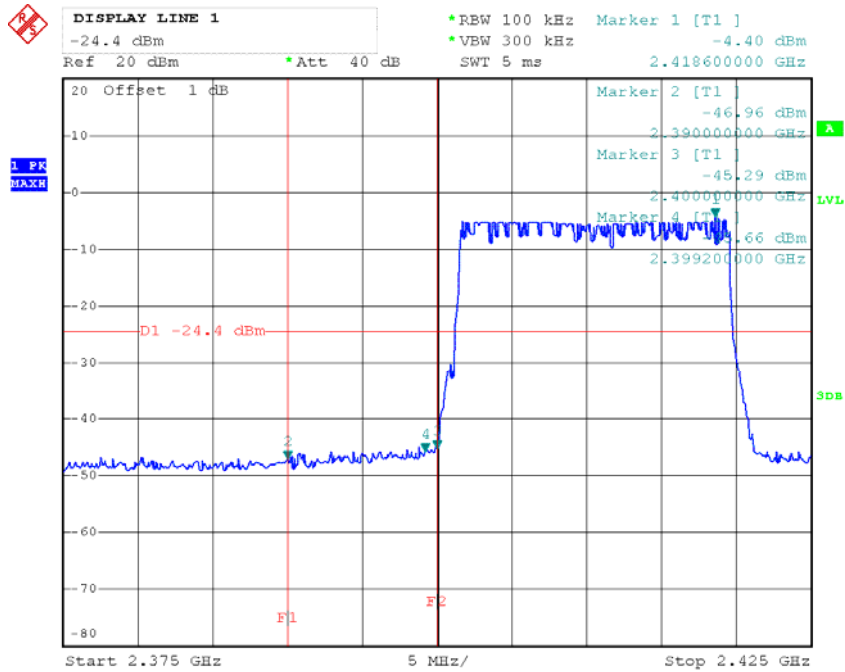
Date: 3.AUG.2016 14:55:34

Chain 1-10M Band Edge, Right Side



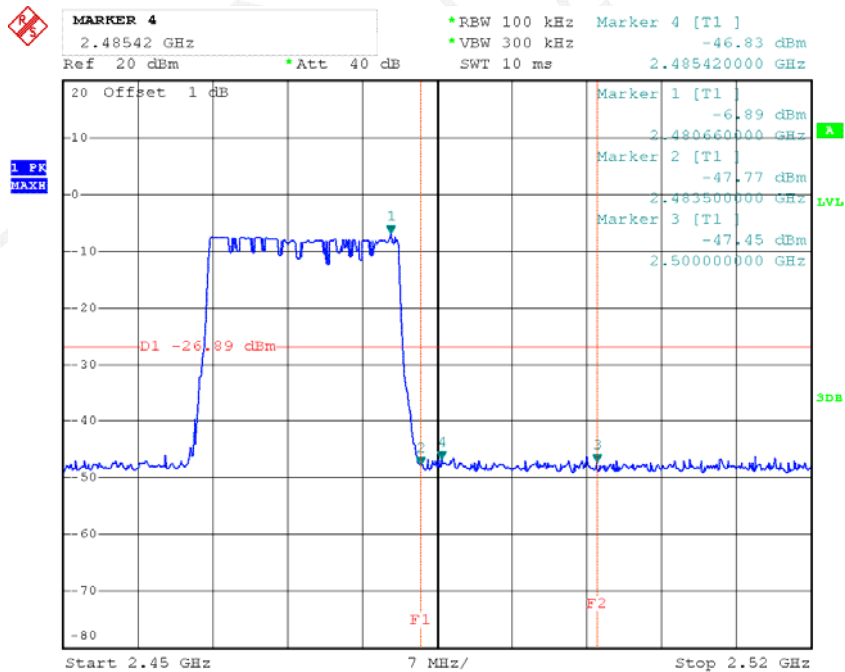
Date: 3.AUG.2016 14:53:03

Chain 1-20M Band Edge, Left Side



Date: 3.AUG.2016 16:51:15

Chain 1-20M Band Edge, Right Side



Date: 3.AUG.2016 16:52:57

FCC §15.247(e) - POWER SPECTRAL DENSITY

Applicable Standard

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT was set without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set the RBW = 3 kHz, VBW = 10 kHz, Set the span to 1.5 times the DTS bandwidth.
4. Use the peak marker function to determine the maximum amplitude level.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSEM	DE23437	2015-11-23	2016-11-22
N/A	Coaxial Cable	0.1m	N/A	2016-05-06	2017-05-06
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2016-05-06	2017-05-06

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	26.5~27.2 °C
Relative Humidity:	49~51 %
ATM Pressure:	99.4~100.2 kPa

The testing was performed by Emily Wang from 2016-08-03 to 2016-08-07.

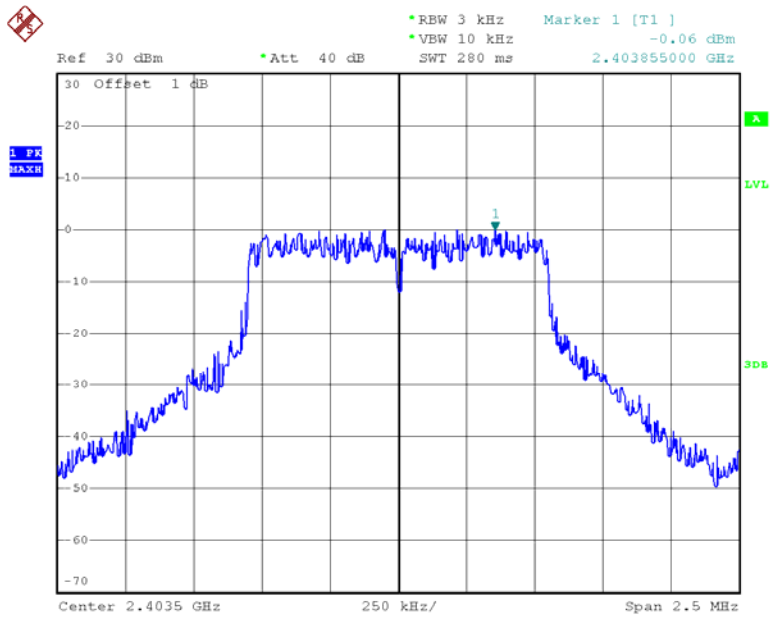
Test Result: Compliance

Test mode	Channel	Frequency MHz	Power Spectral Density (dBm/3kHz)		Limits dBm/3kHz	Result
			Chain 0	Chain 1		
1.4MHz	Low	2403.5	-0.06	-0.58	8	Compliance
	Middle	2441.5	-1.03	-0.18	8	Compliance
	High	2477.5	1.13	0.61	8	Compliance
10MHz	Low	2405.5	-14.97	-15.43	8	Compliance
	Middle	2441.5	-10.92	-10.53	8	Compliance
	High	2477.5	-31.13	-31.40	8	Compliance
20MHz	Low	2410.5	-22.49	-21.95	8	Compliance
	Middle	2441.5	-13.44	-12.62	8	Compliance
	High	2472.5	-25.94	-24.90	8	Compliance

FINAL

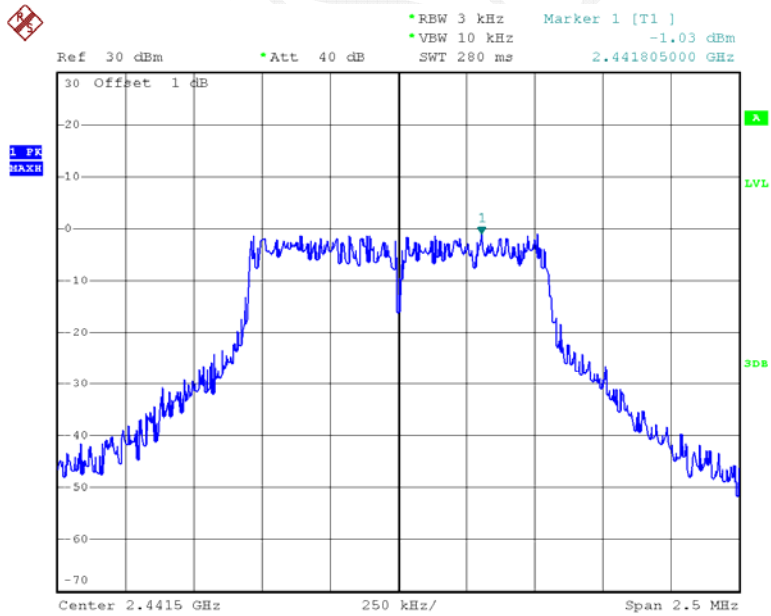
Please refer to the following plots

Chain 0-Power Spectral Density,1.4M Low Channel



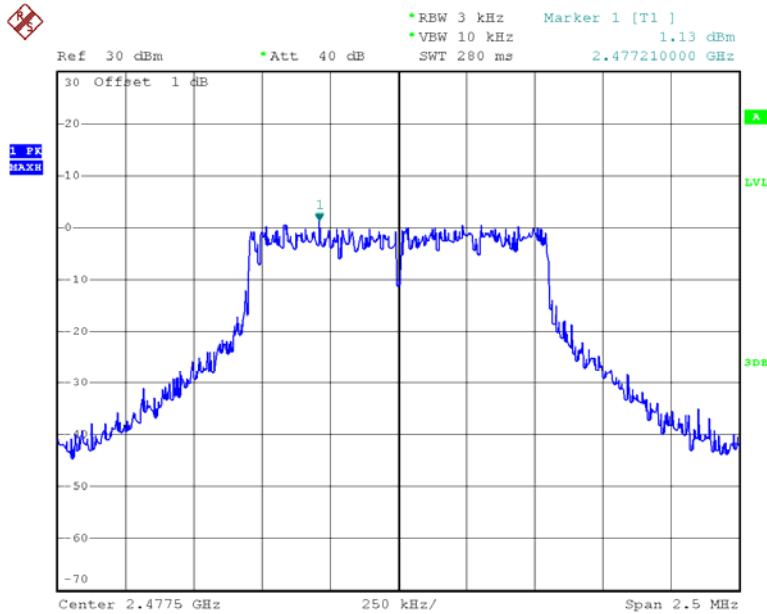
Date: 7.AUG.2016 11:17:41

Chain 0-Power Spectral Density, 1.4M Middle Channel



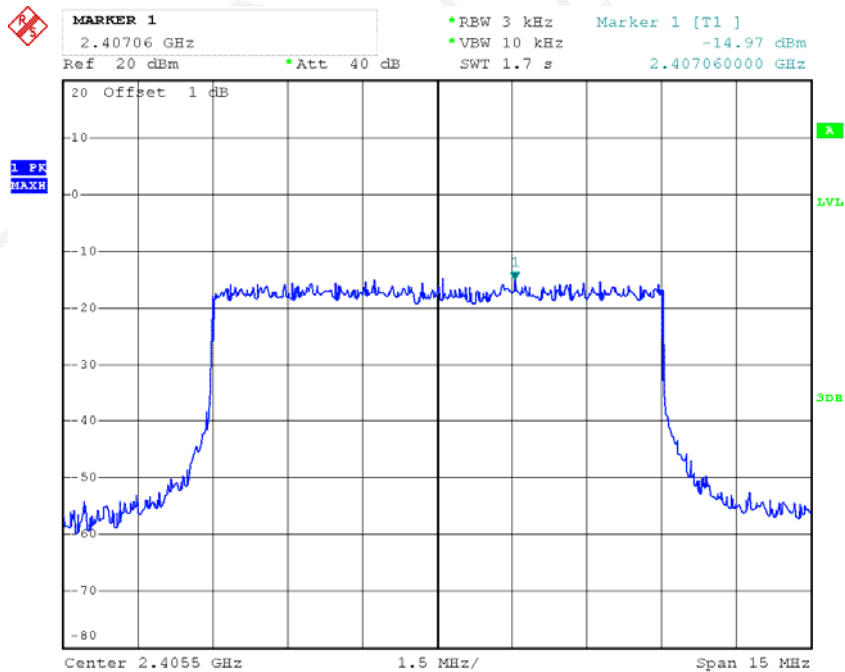
Date: 7.AUG.2016 11:17:12

Chain 0-Power Spectral Density, 1.4M High Channel



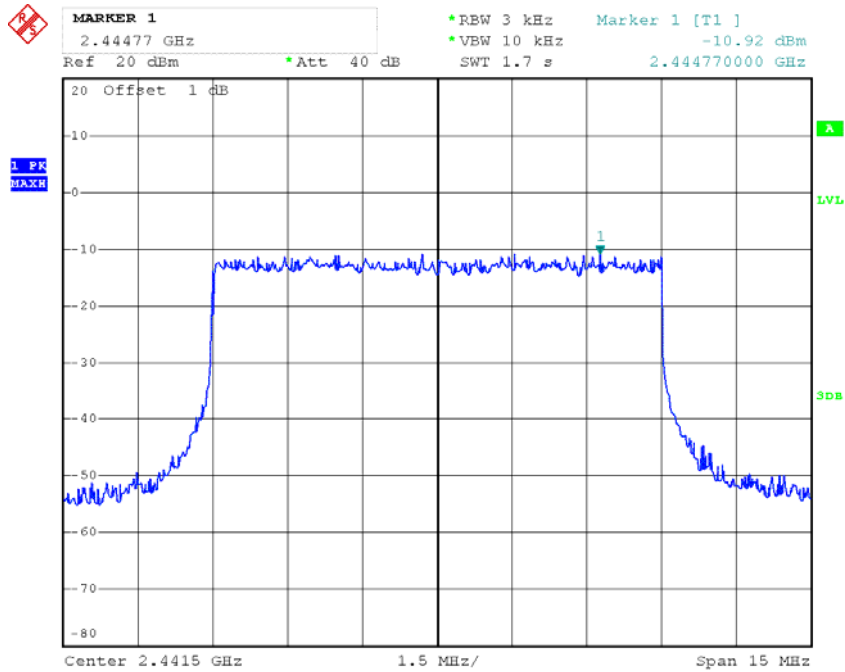
Date: 7.AUG.2016 11:16:44

Chain 0-Power Spectral Density, 10M Low Channel



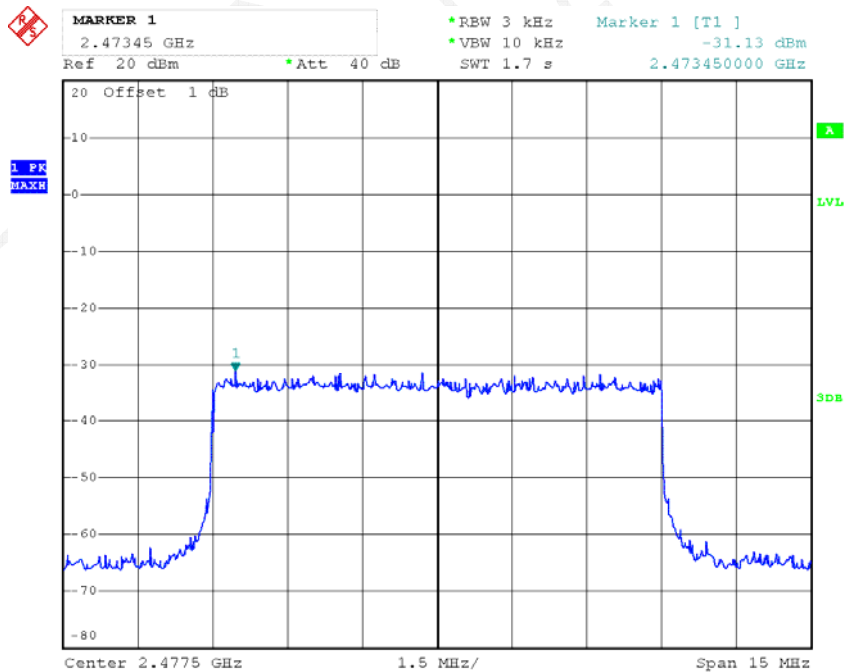
Date: 3.AUG.2016 15:08:20

Chain 0-Power Spectral Density, 10M Middle Channel



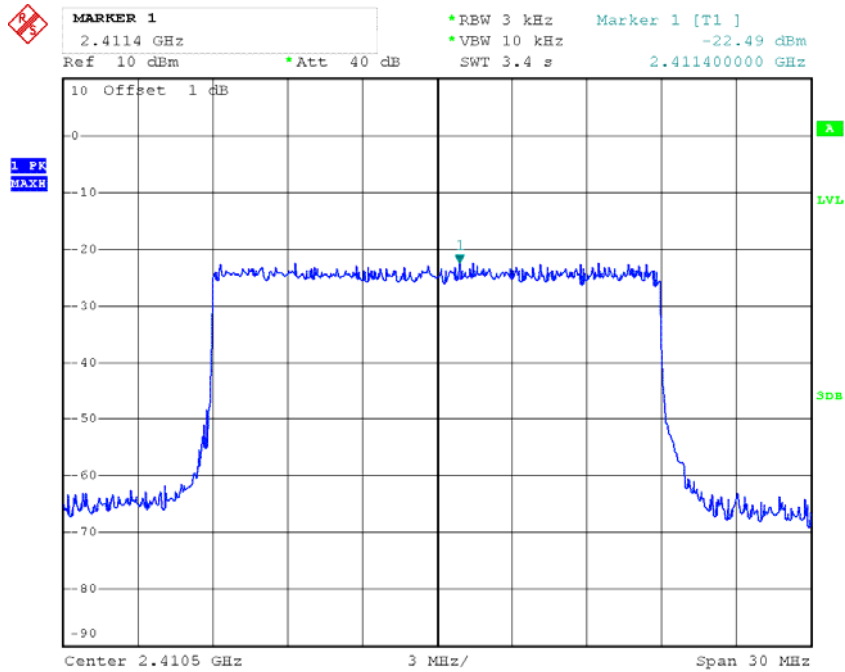
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Chain 0-Power Spectral Density, 10M High Channel



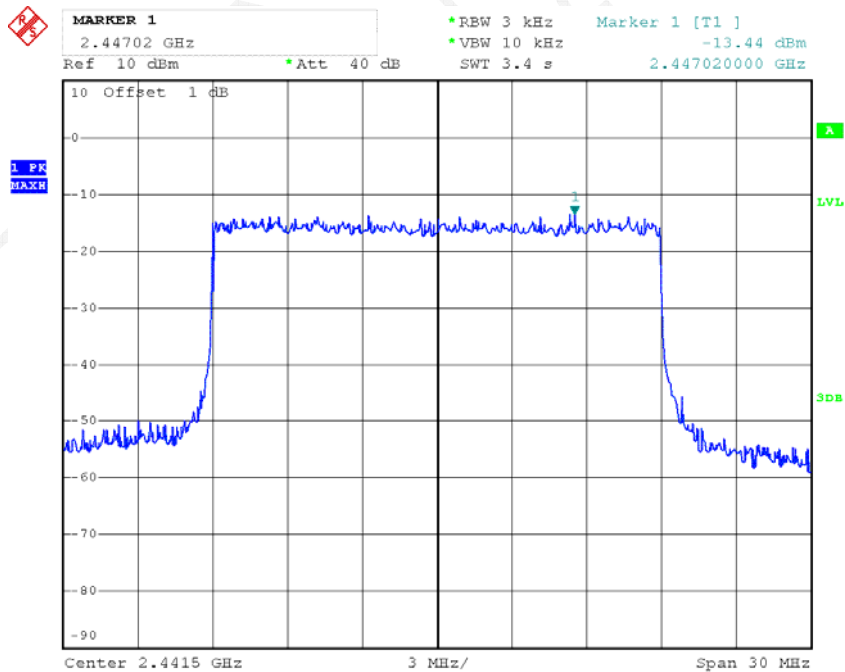
Date: 3.AUG.2016 15:09:32

Chain 0-Power Spectral Density, 20M Low Channel



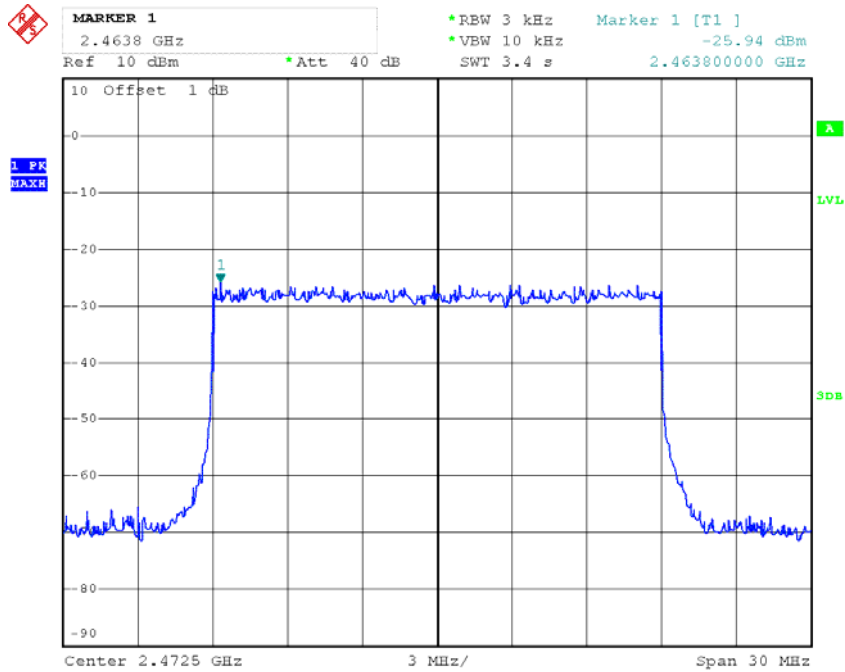
Date: 3.AUG.2016 17:03:17

Chain 0-Power Spectral Density, 20M Middle Channel



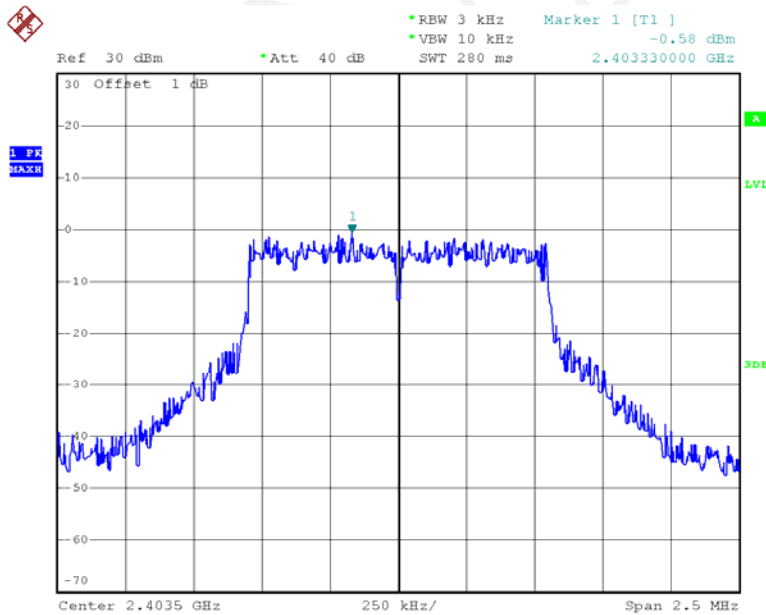
Date: 3.AUG.2016 17:03:41

Chain 0-Power Spectral Density, 20M High Channel



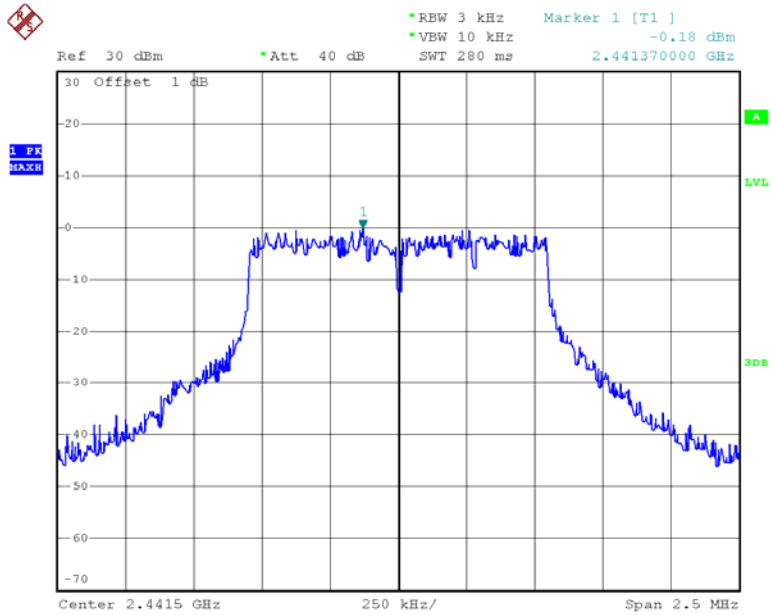
Date: 3.AUG.2016 17:04:02

Chain 1-Power Spectral Density, 1.4M Low Channel



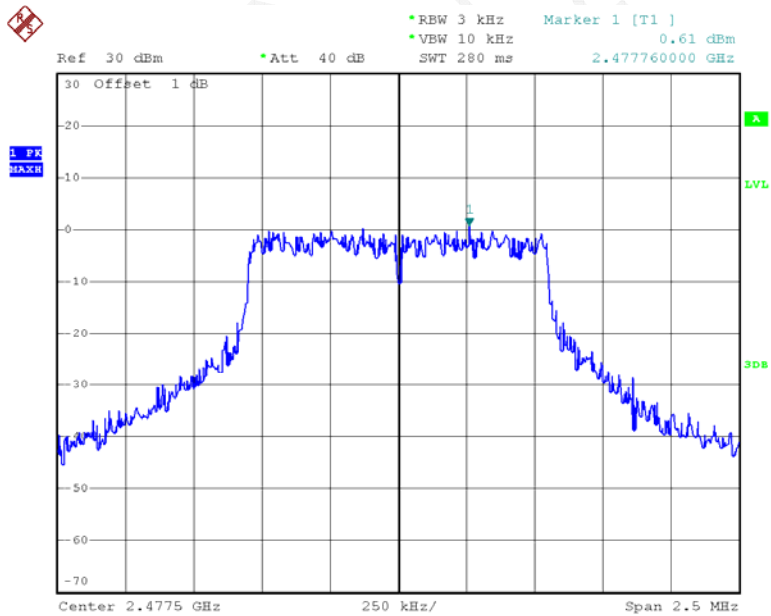
Date: 7.AUG.2016 10:35:29

Chain 1-Power Spectral Density, 1.4M Middle Channel



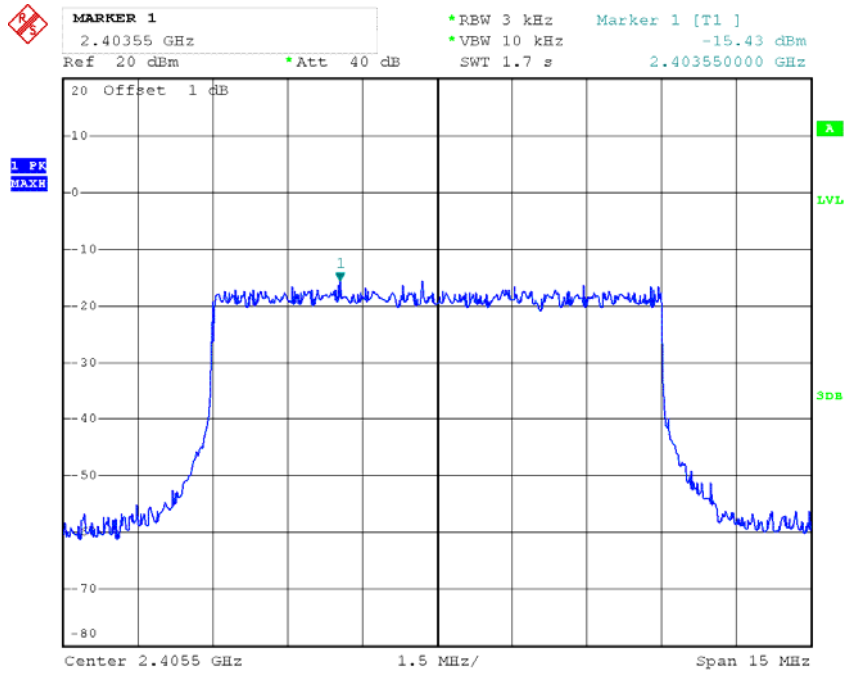
Date: 7.AUG.2016 10:35:01

Chain 1-Power Spectral Density, 1.4M High Channel



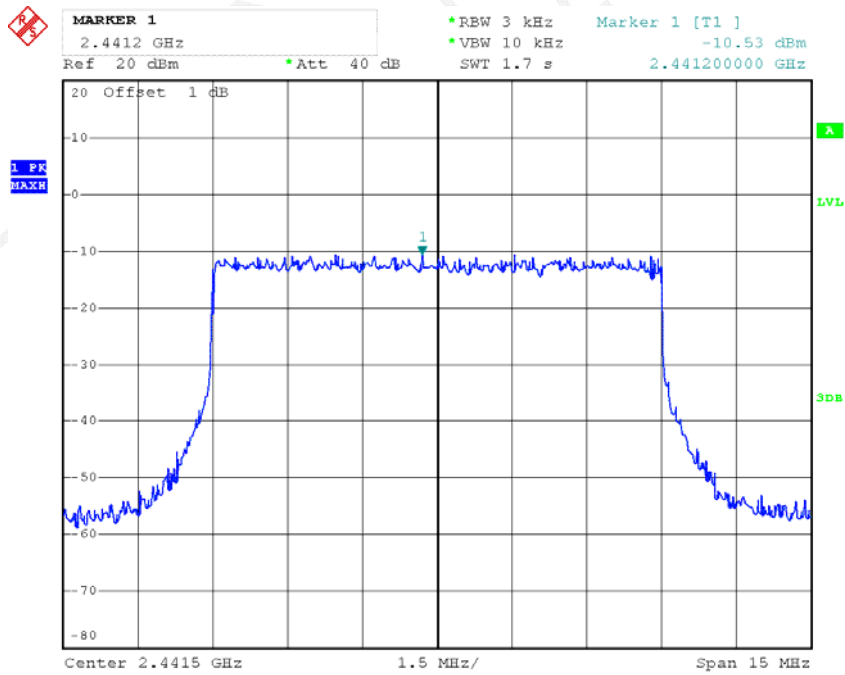
Date: 7.AUG.2016 10:34:06

Chain 1-Power Spectral Density, 10M Low Channel



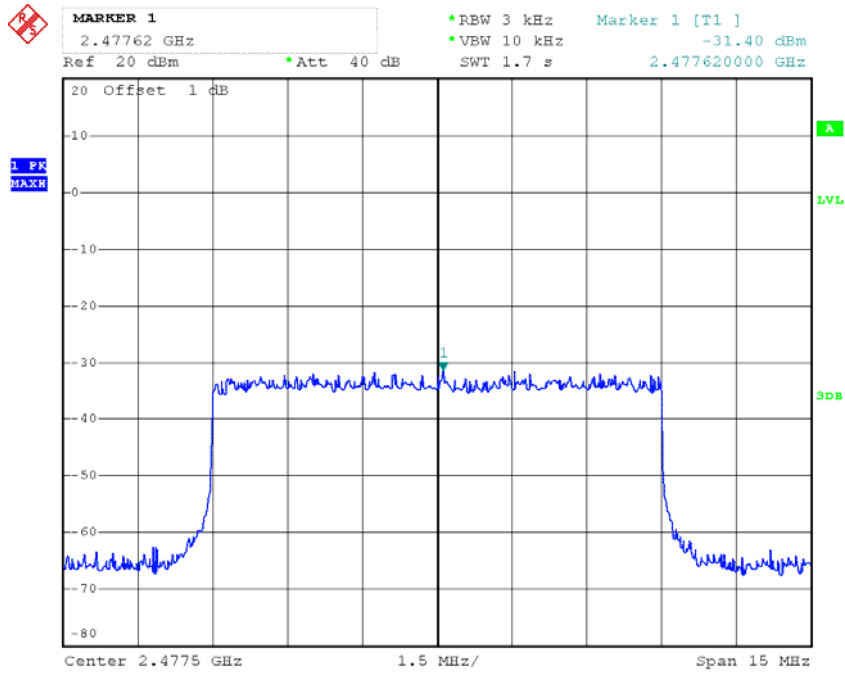
Date: 3.AUG.2016 14:44:21

Chain 1-Power Spectral Density, 10M Middle Channel



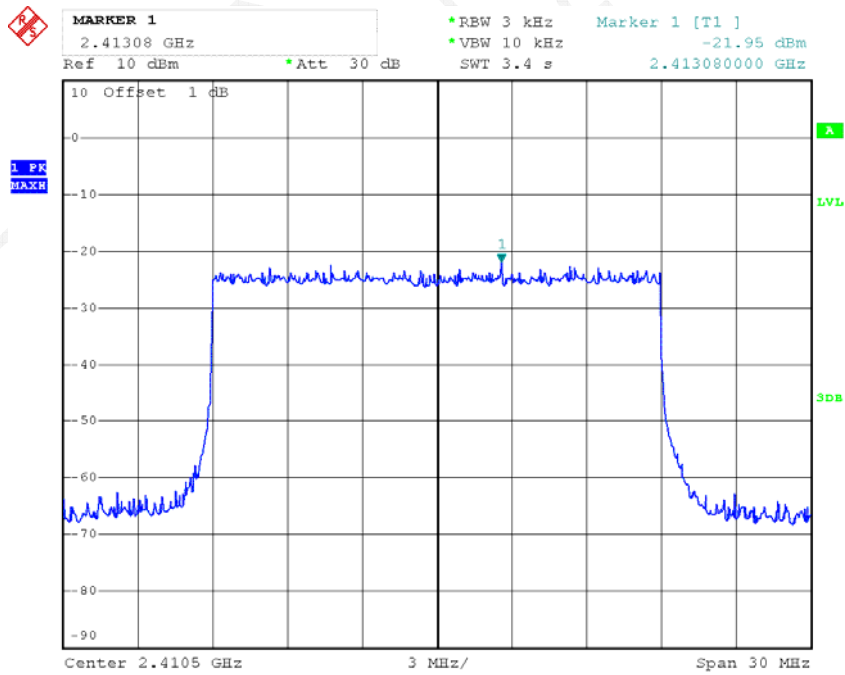
Date: 3.AUG.2016 14:43:31

Chain 1-Power Spectral Density, 10M High Channel



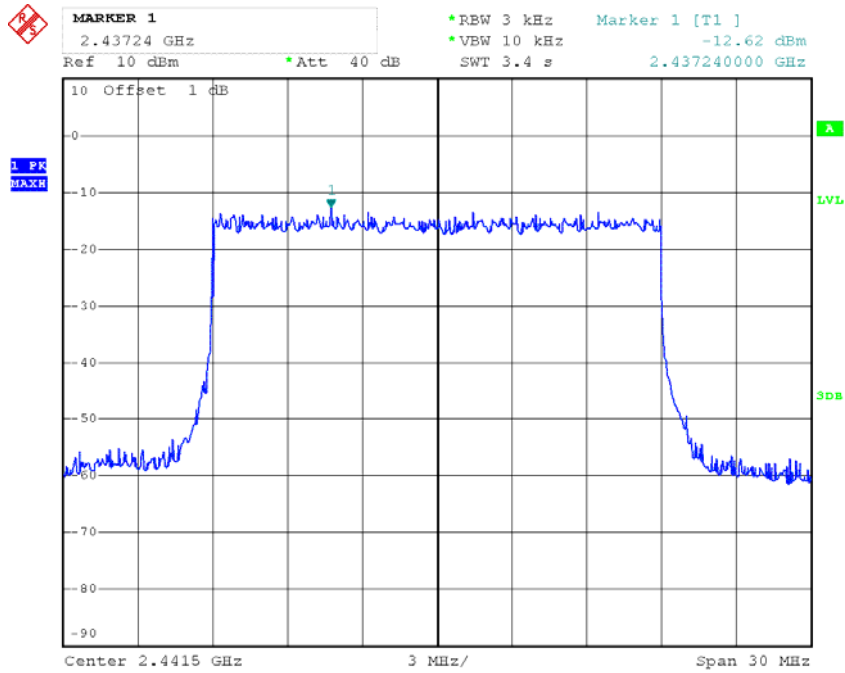
Date: 3.AUG.2016 14:43:59

Chain 1-Power Spectral Density, 20M Low Channel



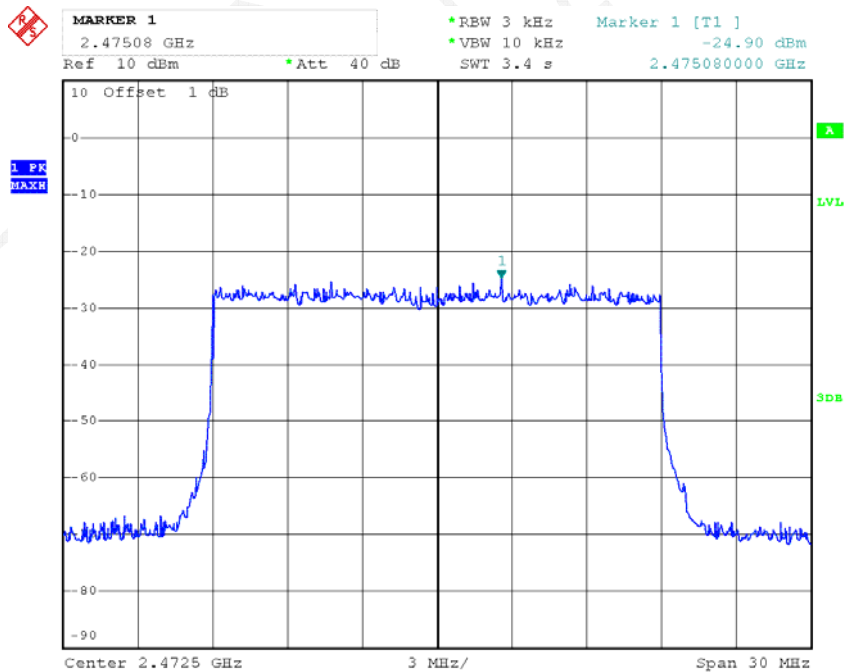
Date: 3.AUG.2016 17:00:38

Chain 1-Power Spectral Density, 20M Middle Channel



Date: 3.AUG.2016 17:01:12

Chain 1-Power Spectral Density, 20M High Channel



Date: 3.AUG.2016 17:01:33

*****END OF REPORT*****