# FCC §15.407(b) (1) -OUT OF BAND EMISSIONS

# **Applicable Standard**

FCC §15.407 (b) (1), (2), (3), (4);

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

Report No.: RDG141024001-00

- (1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

#### **Test Procedure**

According to KDB 789033 D02 General UNII Test Procedures New Rules v01.

#### **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSEM	DE31388	2014-05-09	2015-05-09
R&S	Spectrum Analyzer	FSP 38	100478	2014-05-09	2015-05-09

<sup>\*</sup> 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).

FCC Part 15.407 Page 57 of 109

# **Test Data**

# **Environmental Conditions**

Temperature:	22.6 °C-26.8°C
Relative Humidity:	37 %-66%
ATM Pressure:	100.8 kPa-102.2 kPa

The testing was performed by Dean Liu from 2014-11-12 to 2014-12-12.

Please refer to the following table and plots:

Frequency	Test Mode	Bandedge	Wor	st Reading I (dBm)	Limit	Result	
Bands	1000111000	g.	Chain 0	Chain 1	Total	(dBm)	
	20MHz	Left	-31.3	-32.43	-28.82	-27	PASS
5.2G Band	Bandwidth	Right	-40.23	-42.69	-38.28	-27	PASS
3.2G Baild	40MHz Bandwidth	Left	-32.19	-33.96	-29.98	-27	PASS
		Right	-41.35	-42.31	-38.79	-27	PASS
	20MHz	Left-1	-30.68	-30.75	-27.70	-27	PASS
		Left-2	-21.09	-22.35	-18.66	-17	PASS
	Bandwidth	Right-1	-26.55	-25.77	-23.13	-17	PASS
5.8G Band		Right-2	-32.35	-31.33	-28.80	-27	PASS
3.8G Band	40MHz Bandwidth	Left-1	-31.76	-30.57	-28.11	-27	PASS
		Left-2	-26.45	-25.61	-23.00	-17	PASS
		Right-1	-30.61	-30.57	-27.58	-17	PASS
		Right-2	-33.6	-33.42	-30.50	-27	PASS

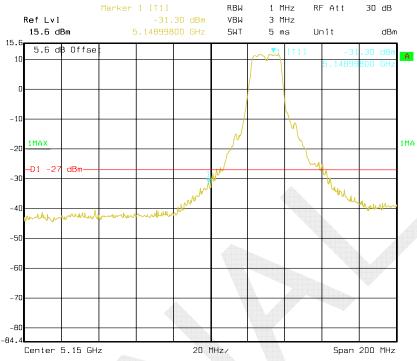
Report No.: RDG141024001-00

Note: the antenna gain was 4.6dBi, the cable loss was 1dB for 5.2G band, and 1.5dB for 5.8G band.

FCC Part 15.407 Page 58 of 109

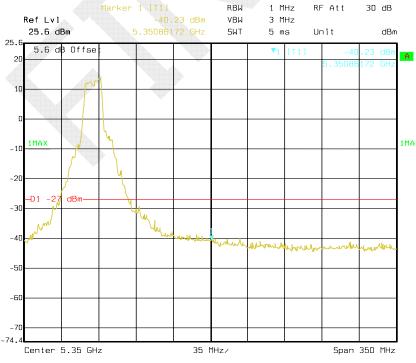
5150MHz-5250MHz: 20MHz Bandwidth:

# Chain<sup>0</sup> Band Edge, Left Side



Date: 19.NOV.2014 13:43:41

#### Chain<sup>0</sup> Band Edge, Right Side

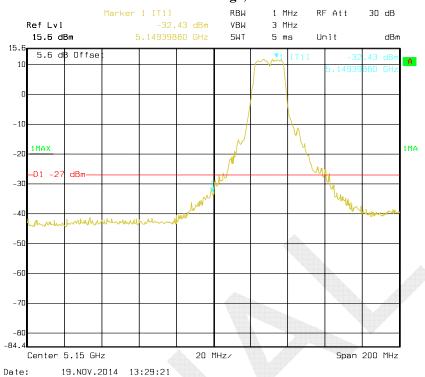


Date: 12.NOV.2014 13:16:47

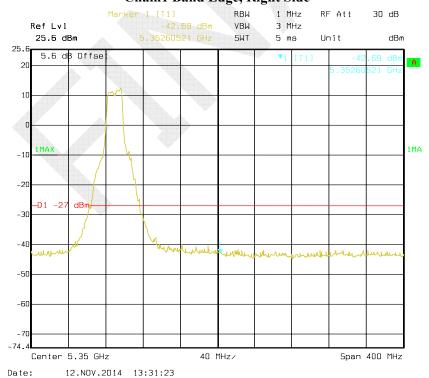
FCC Part 15.407 Page 59 of 109

# Chain1 Band Edge, Left Side

Report No.: RDG141024001-00



# Chain1 Band Edge, Right Side

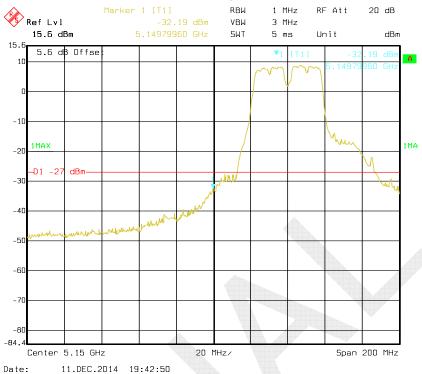


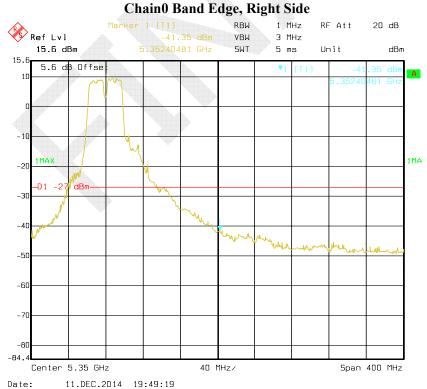
FCC Part 15.407 Page 60 of 109

#### 40MHz Bandwidth:

# Chain<sup>0</sup> Band Edge, Left Side

Report No.: RDG141024001-00

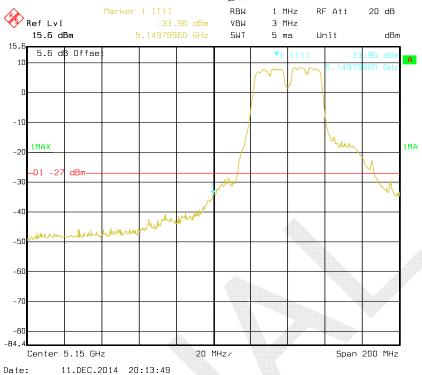




FCC Part 15.407 Page 61 of 109

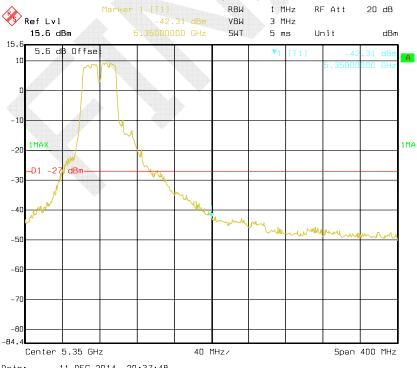
# Chain1 Band Edge, Left Side

Report No.: RDG141024001-00



#### ate: 11.DEC.2014 20:13:49

#### Chain1 Band Edge, Right Side



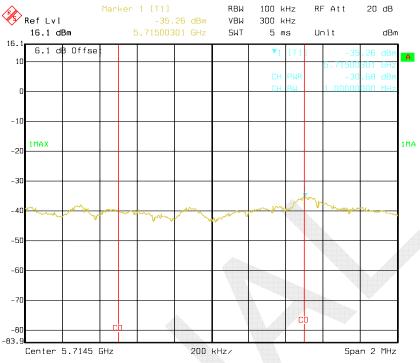
Date: 11.DEC.2014 20:37:48

FCC Part 15.407 Page 62 of 109

5725MHz-5850MHz: 20MHz Bandwidth:

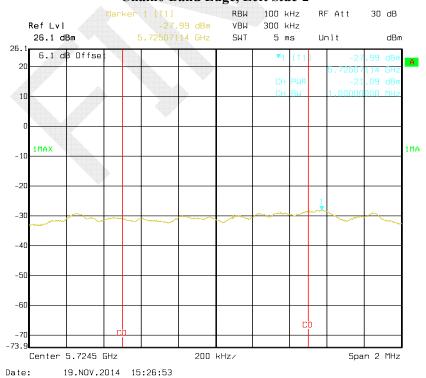
#### Chain Band Edge, Left Side-1

Report No.: RDG141024001-00



Date: 13.DEC.2014 14:00:09

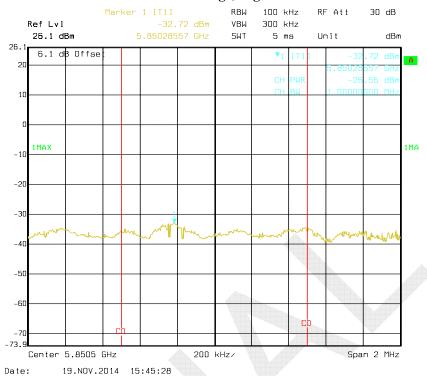
# Chain<sup>0</sup> Band Edge, Left Side-2



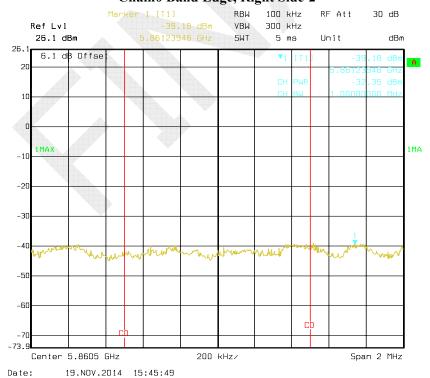
FCC Part 15.407 Page 63 of 109

# Chain Band Edge, Right Side-1

Report No.: RDG141024001-00



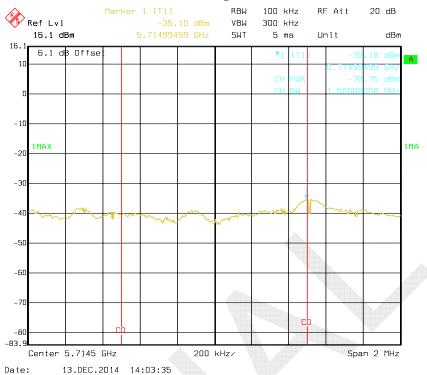
# Chain<sup>0</sup> Band Edge, Right Side-2



FCC Part 15.407 Page 64 of 109

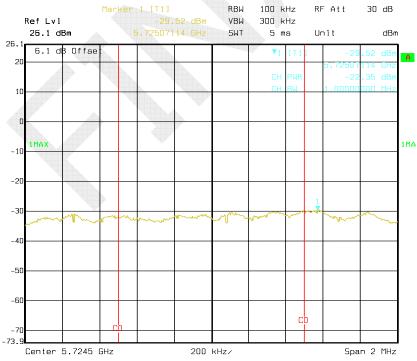
#### Chain1 Band Edge, Left Side-1

Report No.: RDG141024001-00



#### 13.026.2814 14.03.33

# Chain1 Band Edge, Left Side-2

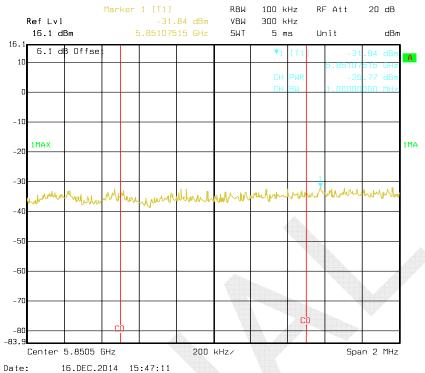


Date: 19.NOV.2014 16:12:10

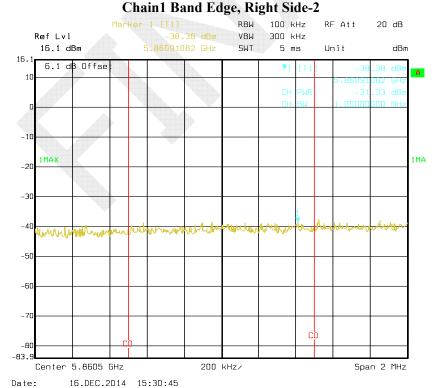
FCC Part 15.407 Page 65 of 109

# Chain1 Band Edge, Right Side-1

Report No.: RDG141024001-00



#### CL 14B JEL BILL

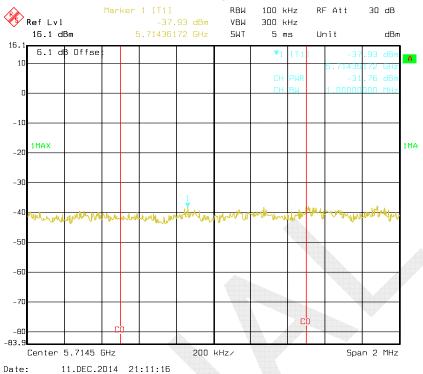


FCC Part 15.407 Page 66 of 109

#### 40MHz Bandwidth

# Chain Band Edge, Left Side-1

Report No.: RDG141024001-00



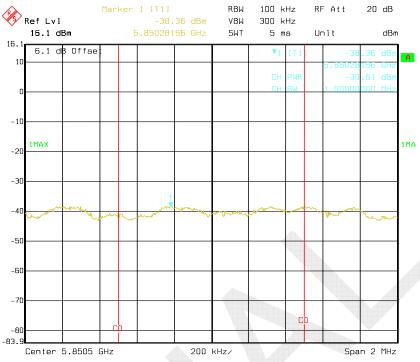
# Chain0 Band Edge, Left Side-2



FCC Part 15.407 Page 67 of 109

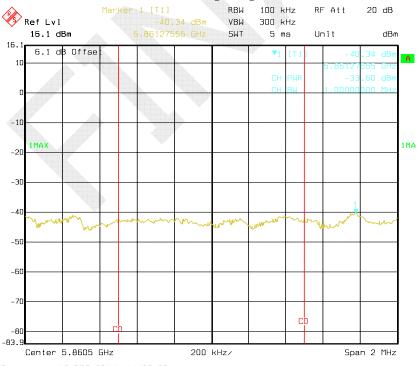
# Chain Band Edge, Right Side-1

Report No.: RDG141024001-00



#### Date: 12.DEC.2014 14:06:13

# Chain Band Edge, Right Side-2

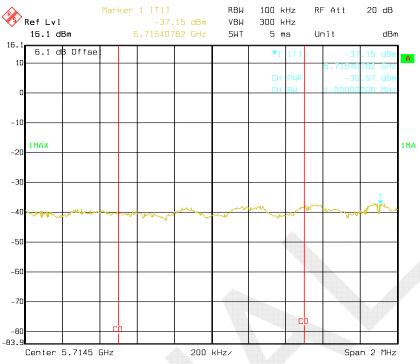


Date: 12.DEC.2014 14:06:30

FCC Part 15.407 Page 68 of 109

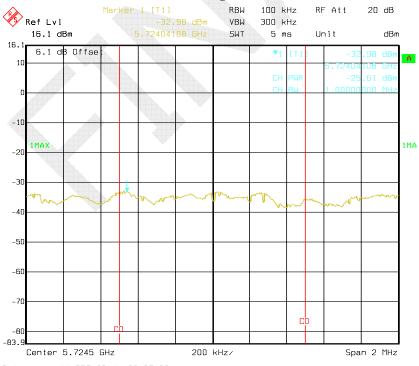
# Chain1 Band Edge, Left Side-1

Report No.: RDG141024001-00



Date: 11.DEC.2014 22:37:05

# Chain1 Band Edge, Left Side-2

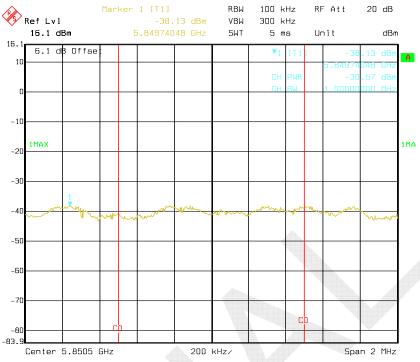


Date: 11.DEC.2014 22:37:38

FCC Part 15.407 Page 69 of 109

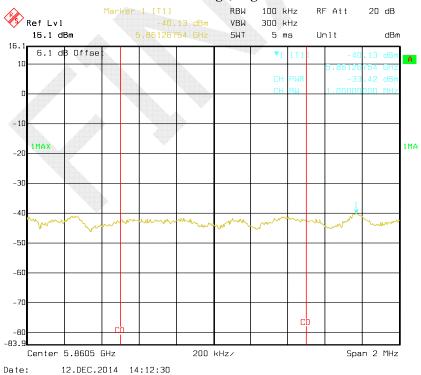
# Chain1 Band Edge, Right Side-1

Report No.: RDG141024001-00



#### Date: 12.DEC.2014 14:12:03

# Chain1 Band Edge, Right Side-2



FCC Part 15.407 Page 70 of 109

# FCC §15.407(a) –EMISSION BANDWIDTH AND OCCUPIED BANDWIDTH

# **Applicable Standard**

15.407(a) (e)

# **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSEM	DE31388	2014-05-09	2015-05-09

Report No.: RDG141024001-00

#### **Test Procedure**

1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01

#### **Test Data**

#### **Environmental Conditions**

Temperature:	22.6 °C-26.8°C		
Relative Humidity:	37 %-66%		
ATM Pressure:	100.8 kPa-102.2 kPa		

The testing was performed by Dean Liu from 2014-11-12 to 2014-12-12.

Test Result: Pass.

Please refer to the following tables and plots.

FCC Part 15.407 Page 71 of 109

<sup>\*</sup> 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 mode: Transmitting

# 5150MHz-5250MHz:

Mode	Channel	Frequency	Frequency 26 dB Bandwidth (MHz)		99% occupied bandwidth (MHz)	
		MHz	Chain 0	Chain 1	Chain 0	Chain 1
20) (1)	Low	5180	38.74	36.72	22.61	21.04
20MHz Bandwidth	Middle	5200	34.46	36.05	19.00	21.28
Bandwidth	High	5240	35.75	34.58	20.80	18.04
40MHz Bandwidth	Low	5190	58.22	58.00	37.07	37.07
	High	5230	60.40	60.40	37.47	37.47

Report No.: RDG141024001-00

# 5725MHz-5850MHz:

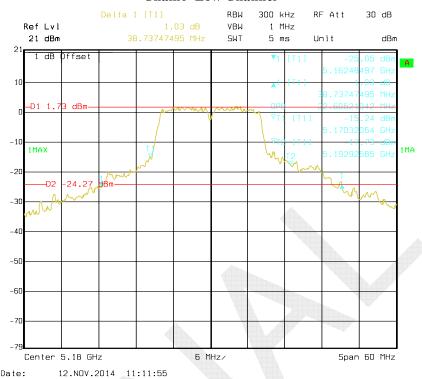
Mode	Channal	Frequency 6 dB Bandwidth (MHz)				D 14
	Channel	MHz	Chain 0	Chain 1	Limits	Result
207.07	Low	5745	16.67	16.77	0.50	PASS
20MHz Bandwidth	Middle	5785	16.61	16.64	0.50	PASS
	High	5825	16.69	16.69	0.50	PASS
40MHz	Low	5755	37.03	37.01	0.50	PASS
Bandwidth	High	5795	37.03	37.01	0.50	PASS

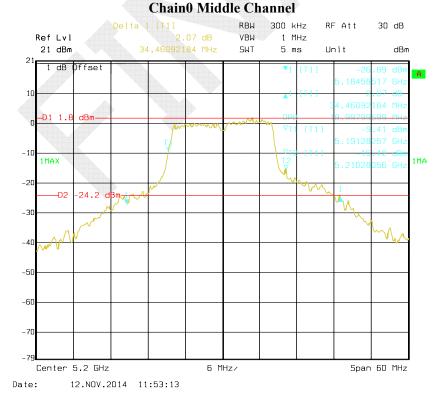
FCC Part 15.407 Page 72 of 109

5150MHz-5250MHz: 20MHz Bandwidth:

#### Chain0 Low Channel

Report No.: RDG141024001-00

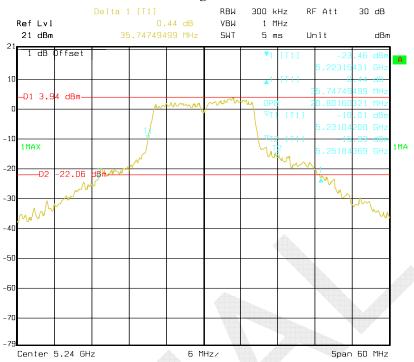




FCC Part 15.407 Page 73 of 109

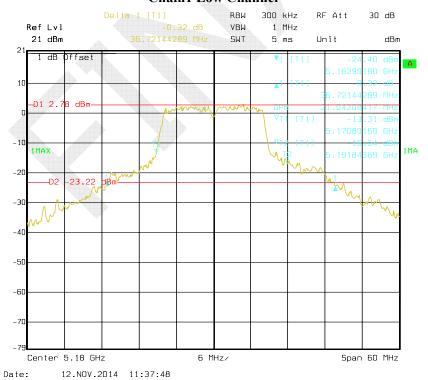
#### **Chain0 High Channel**

Report No.: RDG141024001-00



#### Date: 12.NOV.2014 13:14:13

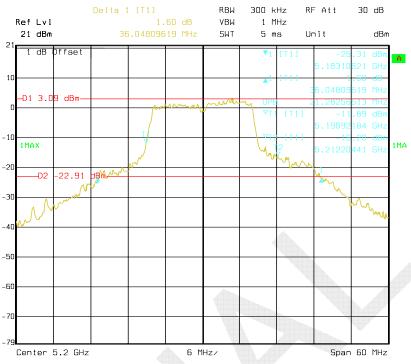
#### **Chain1 Low Channel**



FCC Part 15.407 Page 74 of 109

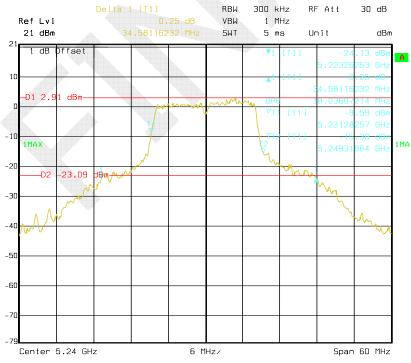
#### **Chain1 Middle Channel**

Report No.: RDG141024001-00



#### Date: 12.NOV.2014 13:07:44

# **Chain1 High Channel**



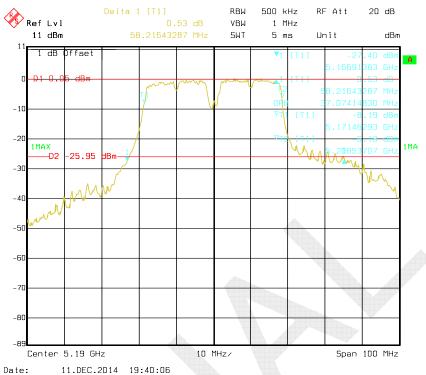
Date: 12.NOV.2014 13:25:08

FCC Part 15.407 Page 75 of 109

#### 40MHz Bandwidth:

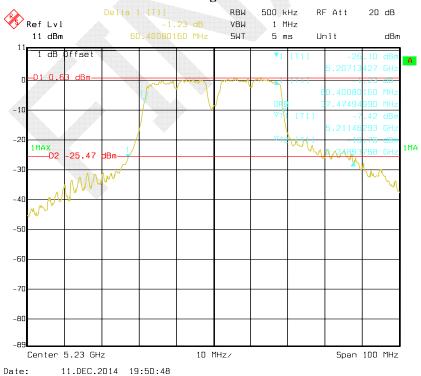
#### **Chain0 Low Channel**

Report No.: RDG141024001-00



#### ate: 11.DEC.2014 19:40:06

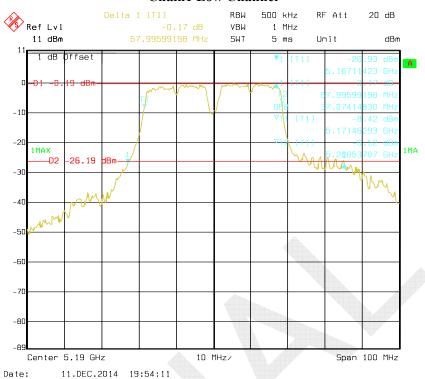
#### **Chain0 High Channel**

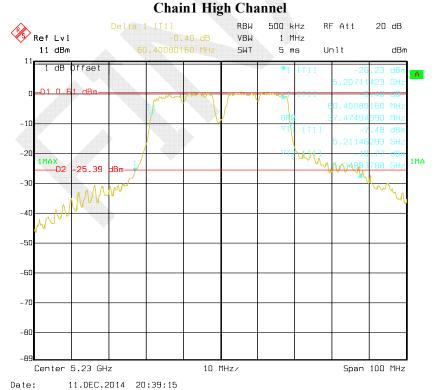


FCC Part 15.407 Page 76 of 109

#### **Chain1 Low Channel**

Report No.: RDG141024001-00

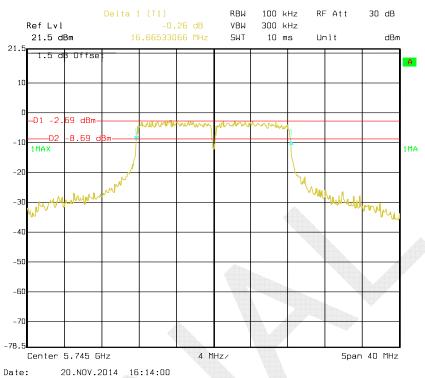




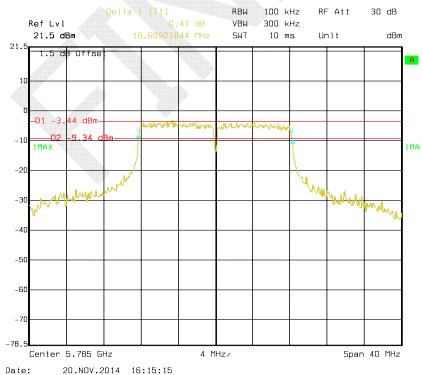
FCC Part 15.407 Page 77 of 109 5725-5850MHz Band: 20MHz Bandwidth:

#### **Chain0 Low Channel**

Report No.: RDG141024001-00



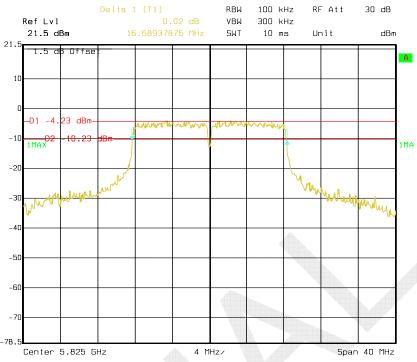
#### **Chain0 Middle Channel**



FCC Part 15.407 Page 78 of 109

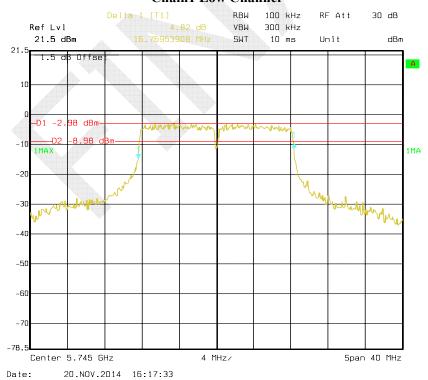
#### Chain<sup>0</sup> High Channel

Report No.: RDG141024001-00



#### Date: 20.NOV.2014 16:16:26

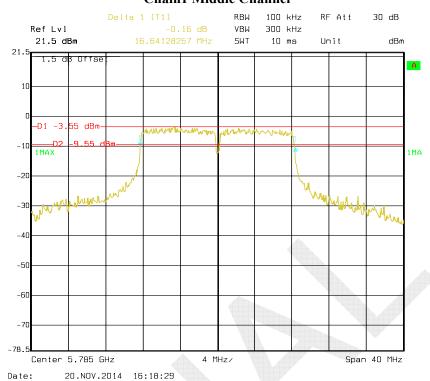
#### **Chain1 Low Channel**



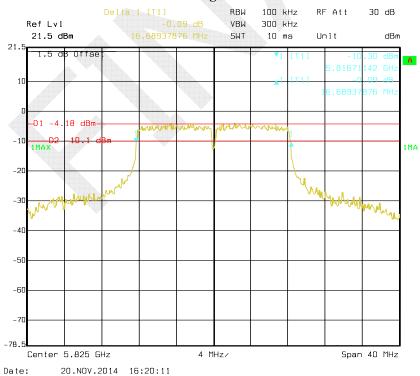
FCC Part 15.407 Page 79 of 109

# **Chain1 Middle Channel**

Report No.: RDG141024001-00



# **Chain1 High Channel**

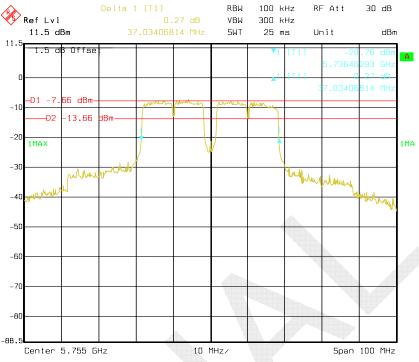


FCC Part 15.407 Page 80 of 109

#### 40MHz Bandwidth:

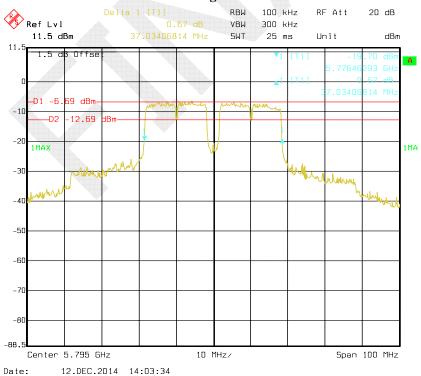
#### **Chain0 Low Channel**

Report No.: RDG141024001-00



Date: 11.DEC.2014 21:04:05

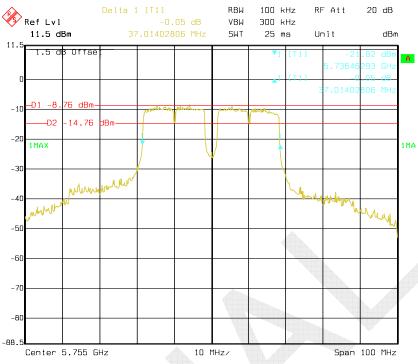
#### Chain<sup>0</sup> High Channel



FCC Part 15.407 Page 81 of 109

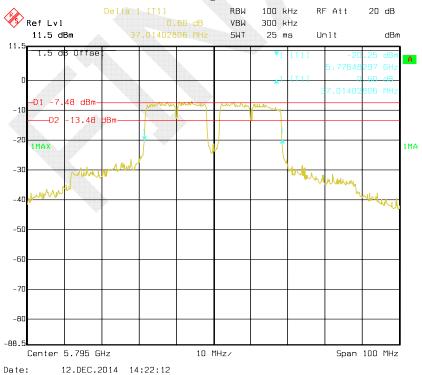
#### **Chain1 Low Channel**

Report No.: RDG141024001-00



Date: 11.DEC.2014 22:32:31

# **Chain1 High Channel**



Date. 12.000.2014 14.22.12

FCC Part 15.407 Page 82 of 109

# FCC §15.407(a) -MAXIMUM CONDUCTED OUTPUT POWER

#### **Applicable Standard**

- (a) Power limits:
- (1) For the band 5.15-5.25 GHz.
- (i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

Report No.: RDG141024001-00

- (ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
- (iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
- (iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
- (2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

FCC Part 15.407 Page 83 of 109

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Report No.: RDG141024001-00

(4) The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

#### **Test Equipment List and Details**

Manufacturer	Description Model		Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSEM	DE31388	2014-05-09	2015-05-09

<sup>\*</sup> 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**

According to KDB 789033 D02 General UNII Test Procedures New Rules v01.

#### **Test Data**

#### **Environmental Conditions**

Temperature:	22.6 °C-26.8°C
Relative Humidity:	37 %-66%
ATM Pressure:	100.8 kPa-102.2 kPa

The testing was performed by Dean Liu from 2014-11-12 to 2014-12-12.

FCC Part 15.407 Page 84 of 109

Test Mode: Transmitting

Frequency	Mode	Channel	Frequency	Maximum Conducted Output Power (dBm)				
Bands			(MHz)	Chain 0	Chain 1	Total	Limits	
	20141	Low	5180	12.06	12.04	15.06	30	PASS
	20MHz Bandwidth	Middle	5200	11.89	11.89	14.90	30	PASS
5.2G Band	Danuwidin	High	5240	12.58	11.47	15.07	30	PASS
	40MHz	Low	5190	10.98	10.65	13.83	30	PASS
	Bandwidth	High	5230	11.39	11.36	14.39	30	PASS
	20) ([]	Low	5745	11.73	11.38	14.57	30	PASS
	20MHz Bandwidth	Middle	5785	11.09	11.12	14.12	30	PASS
5.8G Band	Dandwidth	High	5825	10.21	10.06	13.15	30	PASS
	40MHz	Low	5755	8.53	8.54	11.55	30	PASS
	Bandwidth	High	5795	10.82	10.49	13.67	30	PASS

Report No.: RDG141024001-00

Note: 1. The duty cycle is 100%.
1. The EUT is only for indoor use.

FCC Part 15.407 Page 85 of 109 5150MHz-5250MHz: 20MHz Bandwidth:

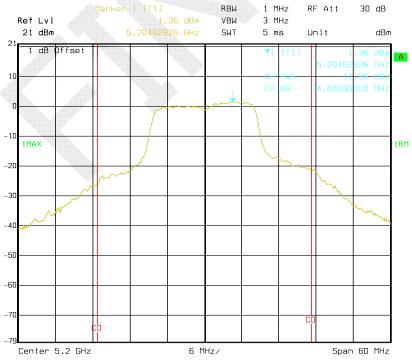
#### **Chain0 Low Channel**

Report No.: RDG141024001-00



ate: 12.NOV.2014 11:14:21

#### **Chain0 Middle Channel**

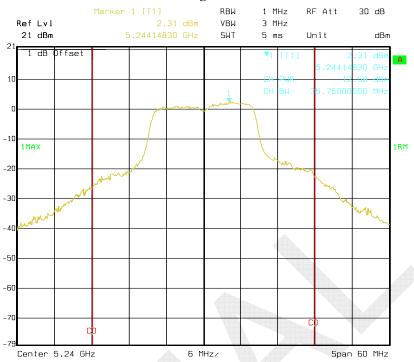


Date: 12.NOV.2014 11:56:19

FCC Part 15.407 Page 86 of 109

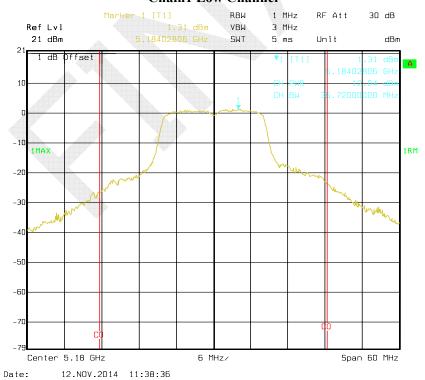
# **Chain0 High Channel**

Report No.: RDG141024001-00



#### Date: 12.NOV.2014 13:14:58

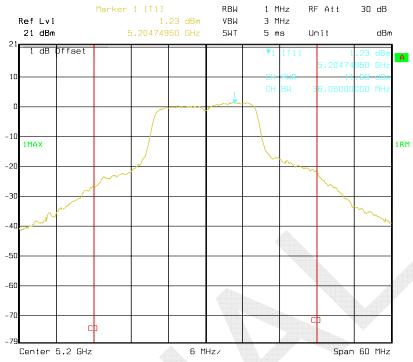
#### **Chain1 Low Channel**



FCC Part 15.407 Page 87 of 109

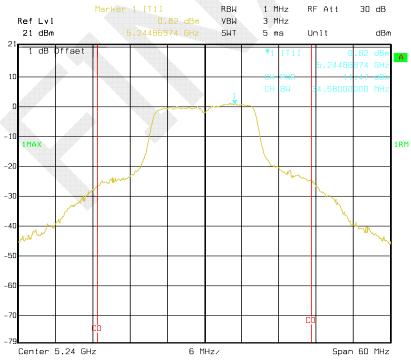
#### **Chain1 Middle Channel**

Report No.: RDG141024001-00



#### Date: 12.NOV.2014 13:09:14

# **Chain1 High Channel**



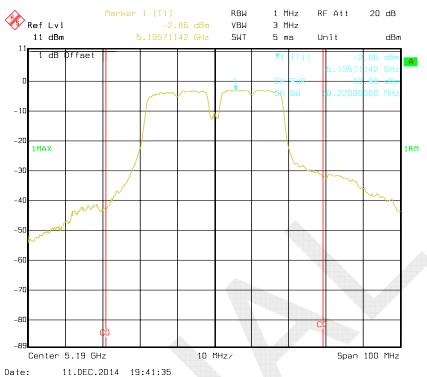
Date: 12.NOV.2014 13:26:20

FCC Part 15.407 Page 88 of 109

# 40MHz Bandwidth:

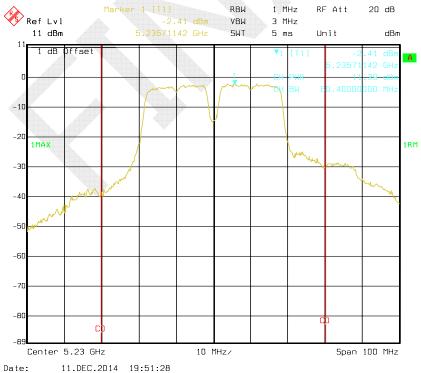
#### **Chain0 Low Channel**

Report No.: RDG141024001-00



ACC. 11.0E0.2014 13.41.00

#### Chain<sup>0</sup> High Channel

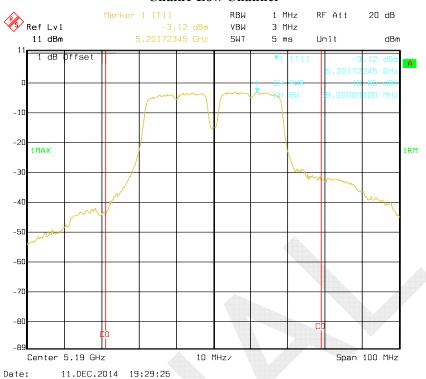


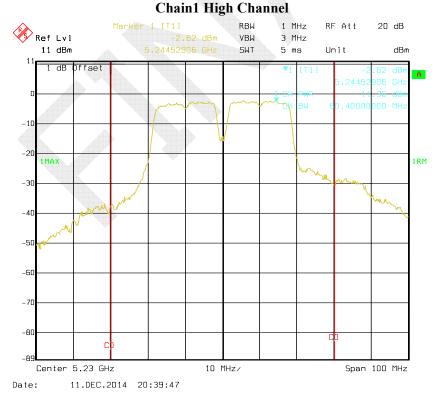
Date. 11.DEC.2014 19.31.20

FCC Part 15.407 Page 89 of 109

#### **Chain1 Low Channel**

Report No.: RDG141024001-00





FCC Part 15.407 Page 90 of 109

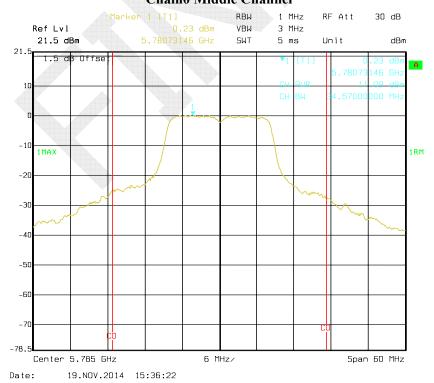
5725MHz-5850MHz: 20MHz Bandwidth:

#### **Chain0 Low Channel**

Report No.: RDG141024001-00



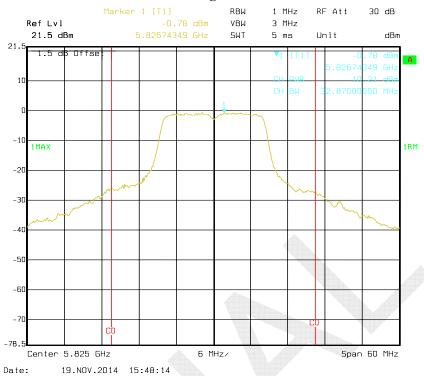
# **Chain0 Middle Channel**



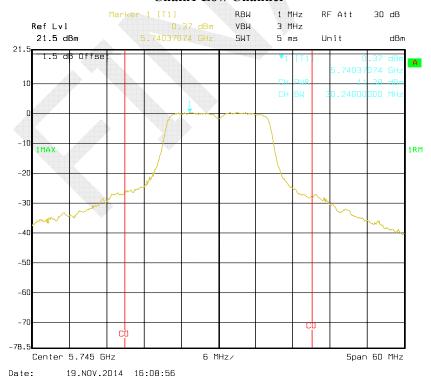
FCC Part 15.407 Page 91 of 109

# **Chain0 High Channel**

Report No.: RDG141024001-00



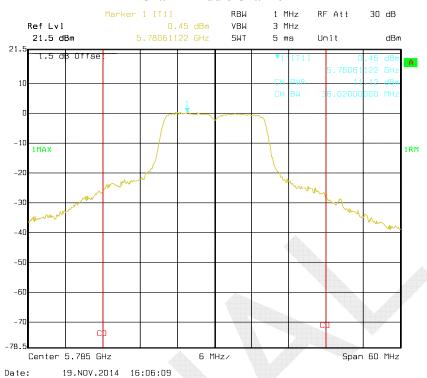
# **Chain1 Low Channel**



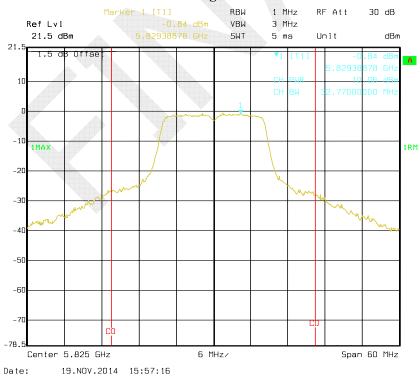
FCC Part 15.407 Page 92 of 109

#### **Chain1 Middle Channel**

Report No.: RDG141024001-00



### **Chain1 High Channel**

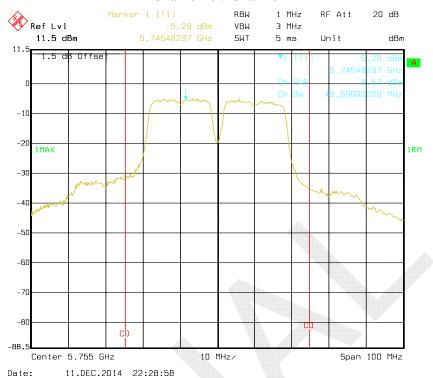


FCC Part 15.407 Page 93 of 109

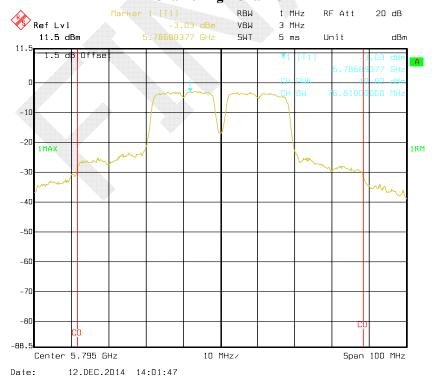
### 40MHz Bandwidth:

#### **Chain0 Low Channel**

Report No.: RDG141024001-00



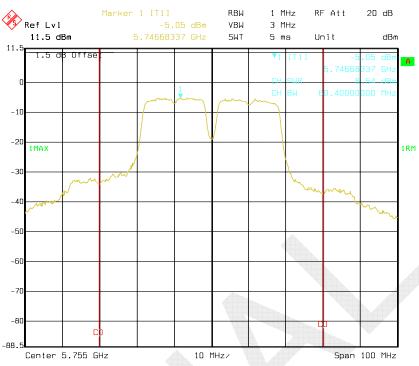
#### **Chain0 High Channel**



FCC Part 15.407 Page 94 of 109

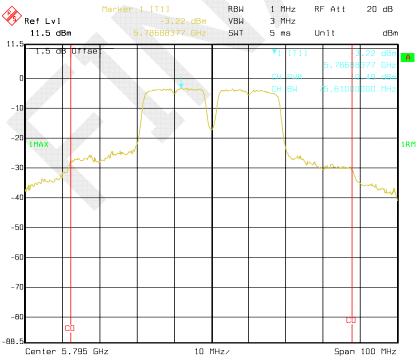
#### **Chain1 Low Channel**

Report No.: RDG141024001-00



Date: 11.DEC.2014 22:33:27

### **Chain1 High Channel**



Date: 12.DEC.2014 14:16:55

FCC Part 15.407 Page 95 of 109

# FCC §15.407(a) - POWER SPECTRAL DENSITY

#### **Applicable Standard**

- (a) Power limits:
- (1) For the band 5.15-5.25 GHz.
- (i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

Report No.: RDG141024001-00

- (ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
- (iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
- (iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
- (2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

FCC Part 15.407 Page 96 of 109

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Report No.: RDG141024001-00

#### **Test Procedure**

According to KDB 789033 D02 General UNII Test Procedures New Rules v01

#### **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date	
R&S	Spectrum Analyzer	FSEM	DE31388	2014-05-09	2015-05-09	

<sup>\*</sup> 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:	22.6 °C-26.8°C			
Relative Humidity:	37 %-66%			
ATM Pressure:	100.8 kPa-102.2 kPa			

The testing was performed by Dean Liu from 2014-11-12 to 2014-12-12.

Test Mode: Transmitting

Test Result: Compliance. Please refer to the following table and plot.

FCC Part 15.407 Page 97 of 109

# 5.2G Band:

Mode	Channel	Frequency (MHz)	Power Spectral Density (dBm/MHz)				Result
			Chain 0	Chain 1	Total	Limits	
20MHz Bandwidth	Low	5180	1.14	1.14	4.15	17	PASS
	Middle	5200	1.31	1.36	4.35	17	PASS
	High	5240	2.29	1.17	4.78	17	PASS
40MHz Bandwidth	Low	5190	-2.92	-3.01	0.05	17	PASS
	High	5230	-2.59	-2.08	0.68	17	PASS

Report No.: RDG141024001-00

# 5.8G Band:

Mode	Channel	Frequency (MHz)	Power Spectral Density (dBm/500kHz)				Result
			Chain 0	Chain 1	Total	Limits	
20MHz Bandwidth	Low	5745	-1.68	-1.72	1.31	30	PASS
	Middle	5785	-2.32	-1.99	0.86	30	PASS
	High	5825	-3.1	-3.02	-0.05	30	PASS
40MHz Bandwidth	Low	5755	-8.63	-7.65	-5.10	30	PASS
	High	5795	-5.15	-6.04	-2.56	30	PASS

Note: The duty cycle is 100%.

FCC Part 15.407 Page 98 of 109 5150MHz-5250MHz:

20MHz Bandwidth:

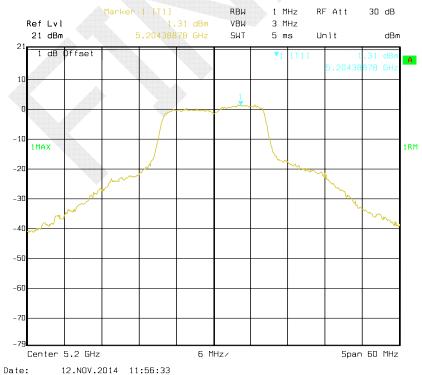
#### **Chain0 Low Channel**

Report No.: RDG141024001-00



#### Date: 12.NOV.2014 11:15:29

#### **Chain0 Middle Channel**



FCC Part 15.407 Page 99 of 109

## Chain0 High Channel

Report No.: RDG141024001-00



#### Date: 12.NOV.2014 13:15:14

### **Chain1 Low Channel**



Date: 12.NOV.2014 11:39:06

FCC Part 15.407 Page 100 of 109

#### **Chain1 Middle Channel**

Report No.: RDG141024001-00



### Chain1 High Channel

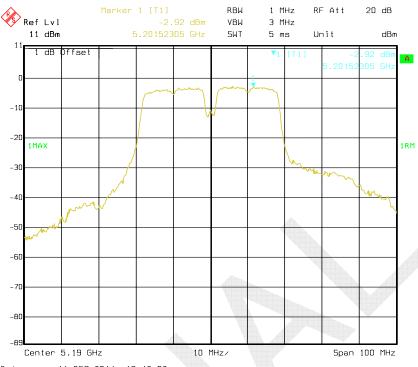


FCC Part 15.407 Page 101 of 109

### 40MHz Bandwidth:

#### **Chain0 Low Channel**

Report No.: RDG141024001-00



Date: 11.DEC.2014 19:42:02

#### **Chain0 High Channel**



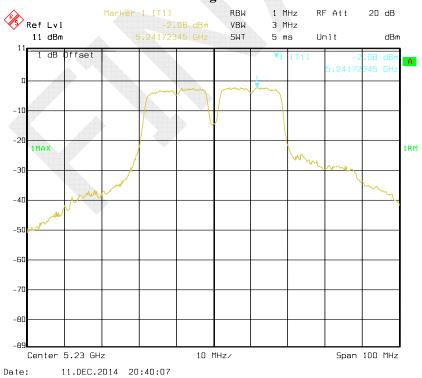
FCC Part 15.407 Page 102 of 109

#### **Chain1 Low Channel**

Report No.: RDG141024001-00



## **Chain1 High Channel**



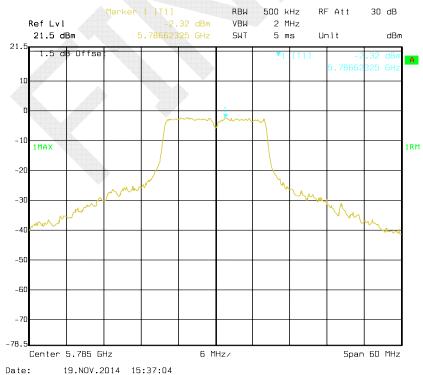
FCC Part 15.407 Page 103 of 109 5725MHz-5850MHz: 20MHz Bandwidth:

#### **Chain0 Low Channel**

Report No.: RDG141024001-00



#### **Chain0 Middle Channel**



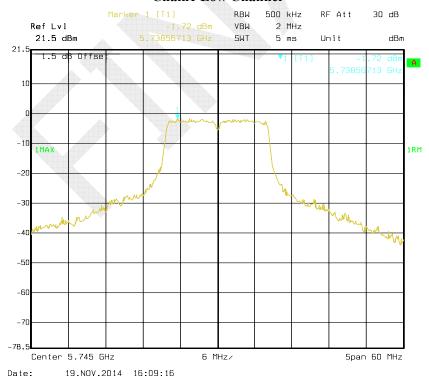
FCC Part 15.407 Page 104 of 109

### **Chain0 High Channel**

Report No.: RDG141024001-00



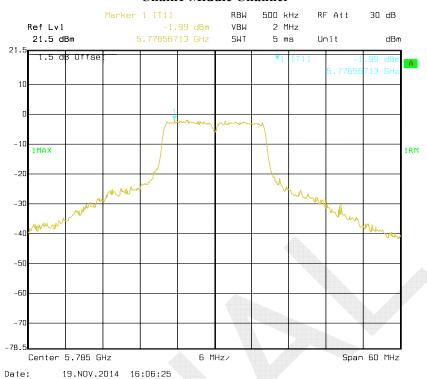
#### **Chain1 Low Channel**

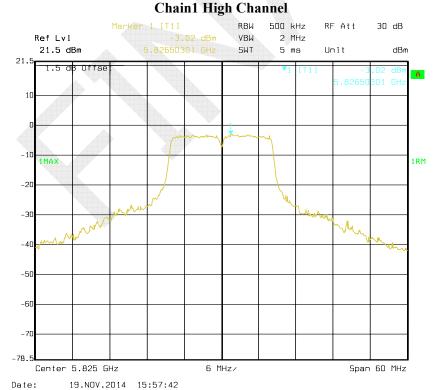


FCC Part 15.407 Page 105 of 109

#### **Chain1 Middle Channel**

Report No.: RDG141024001-00





FCC Part 15.407 Page 106 of 109

# 40MHz Bandwidth:

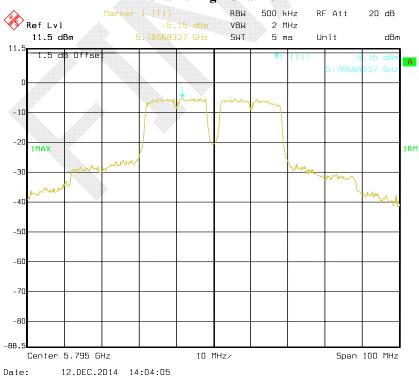
#### **Chain0 Low Channel**

Report No.: RDG141024001-00



ate: 11.DEC.2014 22:23:57

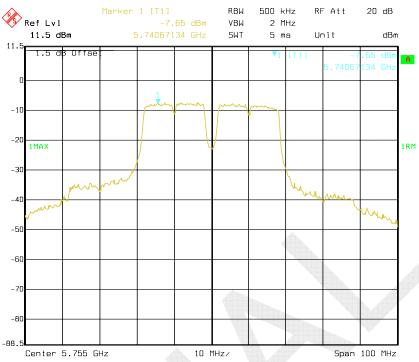
#### **Chain0 High Channel**



FCC Part 15.407 Page 107 of 109

### **Chain1 Low Channel**

Report No.: RDG141024001-00



Date: 11.DEC.2014 22:34:19

12.DEC.2014 14:17:44

Date:

## **Chain1 High Channel**



FCC Part 15.407 Page 108 of 109

### **DECLARATION LETTER**



Shenzhen Crystal Video Technology Co.,LTD.

F13, F518 Idea Land, Baoyuan Road, Baoan Central Area, Shenzhen, China

Tel: 0755-26716030 Fax: 0755-23496331

# **Product Similarity Declaration**

Report No.: RDG141024001-00

Date: 2014-11-26

To Whom It May Concern,

We, Shenzhen Crystal Video Technology Co.,LTD., hereby declare that our product HD wireless video transmitter, Model Number: CH7970, CH4970 are certified in BACL.

They are just different in model name.

The rest are the same.

Please contact me if you have any question.

Mary Wde

Signature:

Zhang Zude

Majordomo

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

FCC Part 15.407 Page 109 of 109