

Bandedge

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249 - 1170

Customer: **Digital Path**
 Specification: **Bandedge plot**
 Work Order #: **92682** Date: 6/2/2012
 Test Type: **Radiated Scan** Time: 09:51:29
 Equipment: **5GHz Panel (18dBi) + Omni (11dBi),** Sequence#: 211
5GHz Sector (20 dBi),
5GHz Tri-Sector (17dBi)
 Manufacturer: Digital Path Tested By: E. Wong
 Model: G5RL10G, G5RL10E, G5RL10T
 S/N: EMI 2, EMI 3, EMI 1

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02668	Spectrum Analyzer	E4446A	2/23/2011	2/23/2013
T2	AN02157	Horn Antenna-ANSI C63.5	3115	1/17/2011	1/17/2013
T3	AN03302	Cable	32026-29094K-29094K-72TC	3/21/2012	3/21/2014
T4	ANP01210	Cable	FSJ1P-50A-4A	3/15/2011	3/15/2013
T5	ANP05913	Cable	32022-29094K-65TC	8/30/2011	8/30/2013
T6	AN03114	Preamp	AMF-7D-00101800-30-10P	5/13/2011	5/13/2013
	ANP05935	Attenuator	84A-10	10/19/2011	10/19/2013
	ANP01211	Attenuator	23-10-34	4/15/2011	4/15/2013

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
5GHz Panel (18dBi) + Omni (11dBi)*	Digital Path	G5RL10G	EMI 2
5GHz Sector (20 dBi)	Digital Path	G5RL10E	EMI 3
5GHz Tri-Sector (17dBi)	Digital Path	G5RL10T	EMI 1

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	HP	ProBook 6565b	5CB13637ZF
Laptop Power Supply	HP	608428-002	F12941126327228

Test Conditions / Notes:

The EUT installed on a pole as intended. DC power port is connected to a DC power supply via a CAT5 cable. The Ethernet port is connected to a remote laptop via unshielded twisted pair.

The Remote laptop is running test software to exercise the intended functionalities. Receiver circuit and GPS receiver are active.

5GHz Omni (11 dBi)

Freq: 5275MHz, 5300MHz, 5325MHz.

BW = 10 MHz

802.11a: 24Mbps, TX power setting= 17.5, 17.5, 17.5

802.11n: 13MCSHT20 2S, TX power setting= 17.5, 17.5, 17.5

Freq: 5280MHz, 5300MHz, 5320MHz.

BW= 20MHz

802.11a: 9 Mbps, TX power= 19, 19, 18

802.11n: 6.5MCS HT20 1S, TX power= 19, 19, 18

Freq = 5470-5725MHz

5495MHz, 5590MHz, 5705MHz.

BW = 10 MHz

802.11a: 24Mbps, TX power setting= 17, 18.5, 18.5

802.11n: 13MCSHT20 2S, TX power setting= 17, 18.5, 17.5

Freq: 5500MHz, 5590MHz, 5700MHz.

BW= 20MHz

802.11a: 9 Mbps, TX power setting= 17, 19, 16.5

802.11n: 6.5MCS HT20 1S, TX power setting= 16.5, 19, 16.5

5GHz Panel (18 dBi)

5250-5350MHz

Freq: 5275MHz, 5300MHz, 5325MHz.

BW = 10 MHz

802.11a: 24Mbps, TX power setting= 10.,10.,10

802.11n: 13MCSHT20 2S, TX power setting= 10.,10.,10

Freq: 5280MHz, 5300MHz, 5320MHz.

BW= 20MHz

802.11a: 9 Mbps, TX power setting 12.5,12.5,12.5

802.11n: 6.5MCS HT20 1S, TX power setting= 12.5,12.5,12.5

5470-5725MHz

Freq: 5495MHz, 5590MHz, 5705MHz.

BW = 10 MHz

802.11a: 24Mbps, TX power setting= 11, 11, 11

802.11n: 13MCS HT20 2S, TX power setting= 11, 11, 11

Freq: 5500MHz, 5590MHz, 5700MHz.

BW= 20MHz

802.11a: 24 Mbps, TX power setting= 13.5, 13.5, 12.5

802.11n: 6.5MCS HT20 1S, TX power setting= 13.5, 13.5, 11

5GHz Sector (20 dBi)

5250-5350MHz

Freq: 5275MHz, 5300MHz, 5325MHz.

BW = 10 MHz

802.11a: 24Mbps, TX power= 10.5,10.5,10.5

802.11n: 13MCSHT20 2S,TX power= 10.5,10.5,10.5

Freq: 5280MHz, 5300MHz, 5320MHz.

BW= 20MHz

802.11a: 9 Mbps, TX power= 10.5,10.5,10.5

5470-5725MHz

Freq: 5495MHz, 5590MHz, 5705MHz.

BW = 10 MHz

802.11a: 24Mbps, TX power setting= 11.5, 11.5, 11.5

802.11n: 13MCS HT20 2S,TX power setting = 11.5, 11.5, 11.5

Freq: 5500MHz, 5590MHz, 5700MHz.

BW= 20MHz

802.11a: 24 Mbps, TX power setting= 10.5, 14.10.5

802.11n: 6.5MCS HT20 1S, TX power setting= 12, 14 .8.5

5GHz Tri-Sector (17dBi)

Freq: 5275MHz, 5300MHz, 5325MHz.

BW = 10 MHz

802.11a: 24Mbps, TX power setting= 11,11,11

802.11n: 13MCSHT20 2S,TX power setting = 11,11,11

Freq: 5280MHz, 5300MHz, 5320MHz.

BW= 20MHz

802.11a: 9 Mbps, TX power setting= 12.5,13.5,13.5

802.11n: 6.5MCS HT20 1S, TX power setting= 12, 13.5,12

Freq: 5495MHz, 5590MHz, 5705MHz.

BW = 10 MHz

802.11a: 24Mbps, TX power setting= 12,12,12

802.11n: 13MCS HT20 2S,TX power setting= 12,12,12

Freq: 5500MHz, 5590MHz, 5700MHz.

BW= 20MHz

802.11a: 24 Mbps, TX power setting= 14.5, 14.5, 14.5

802.11n: 6.5MCS HT20 1S, TX power setting= 14.5, 14.5, 14.5

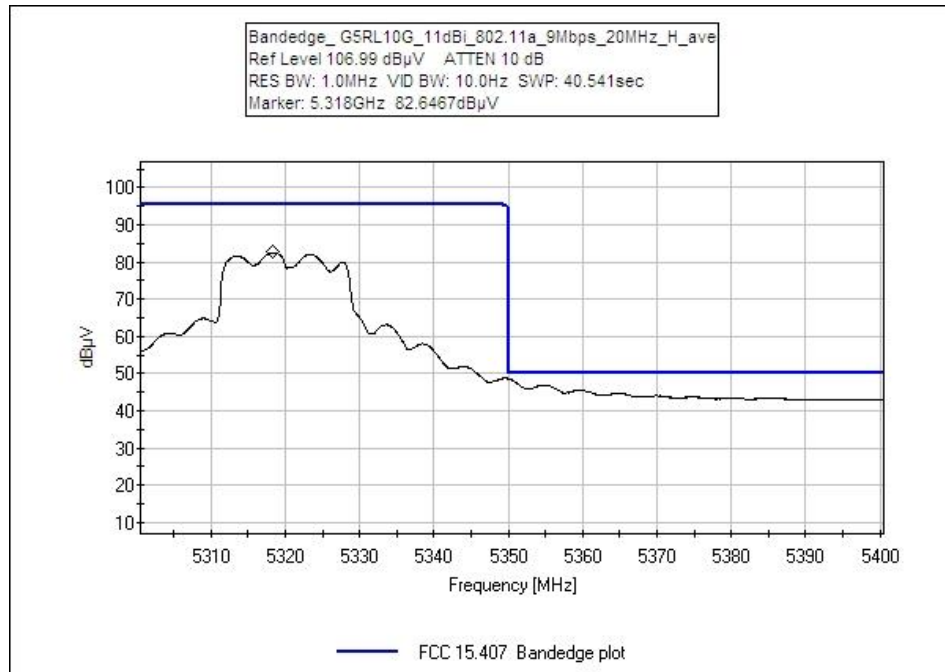
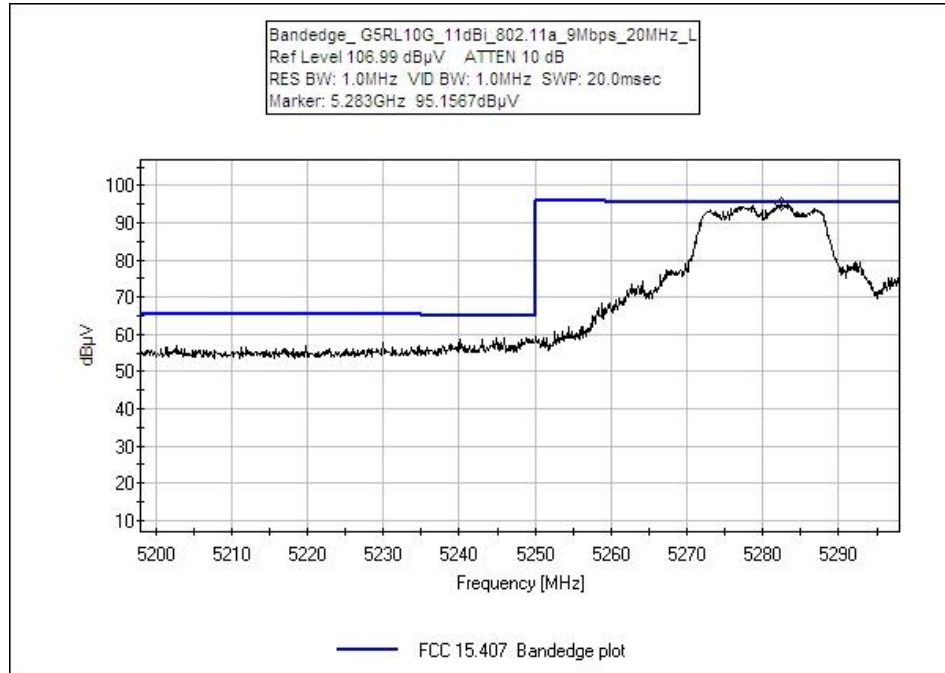
Temperature: 21.9°C, Relative Humidity: 38-43%, Atmospheric Pressure: 101.5kPa

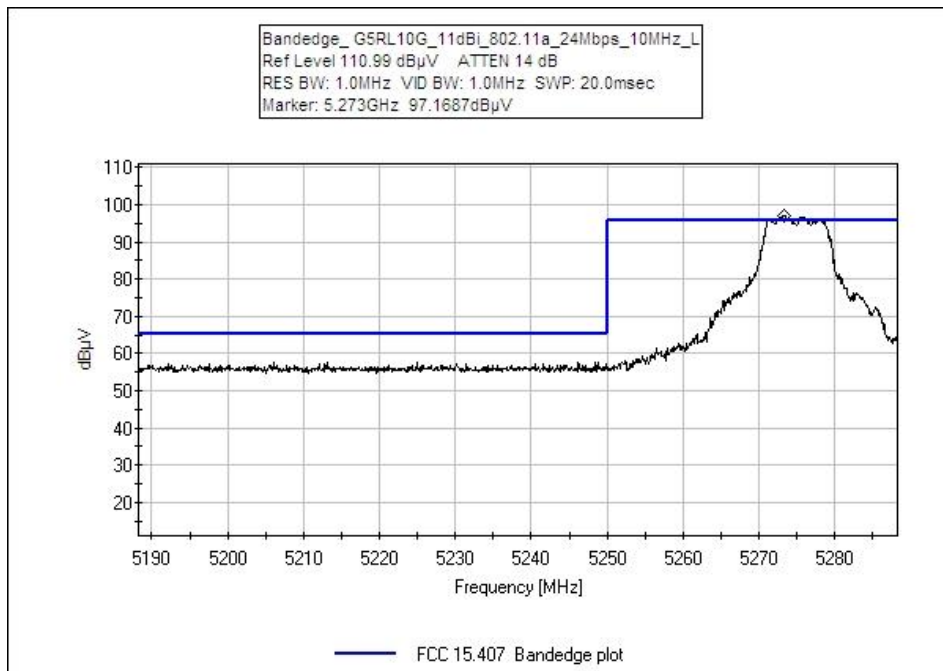
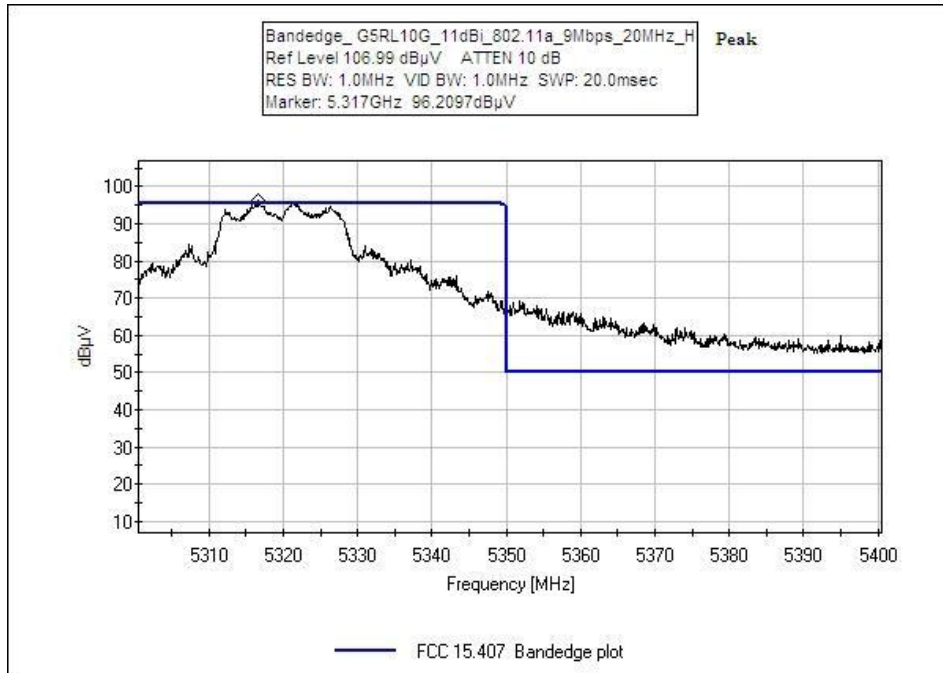
Frequency range of measurement = Fundamental

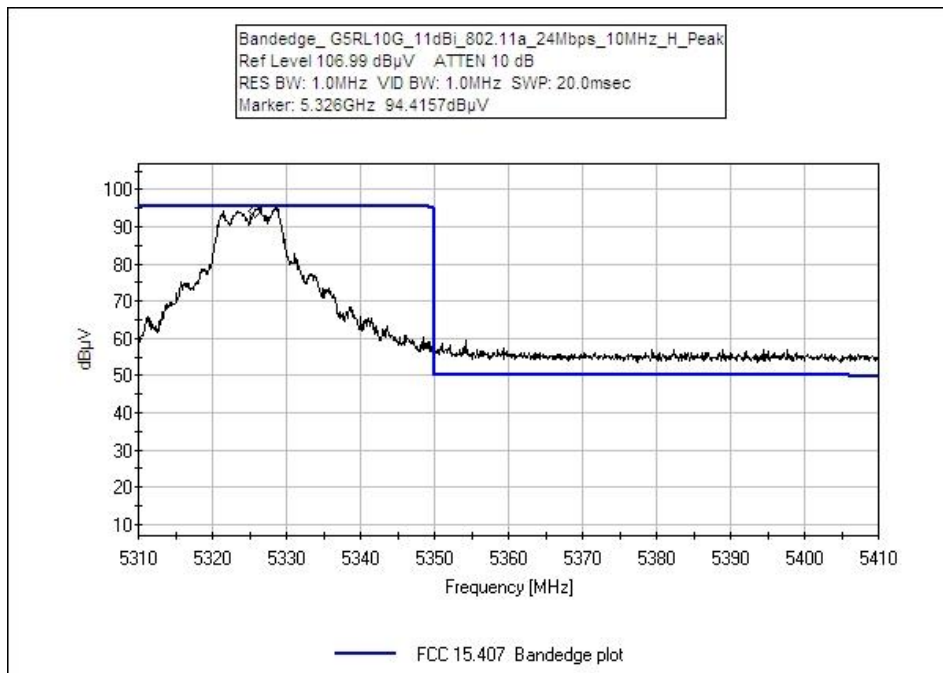
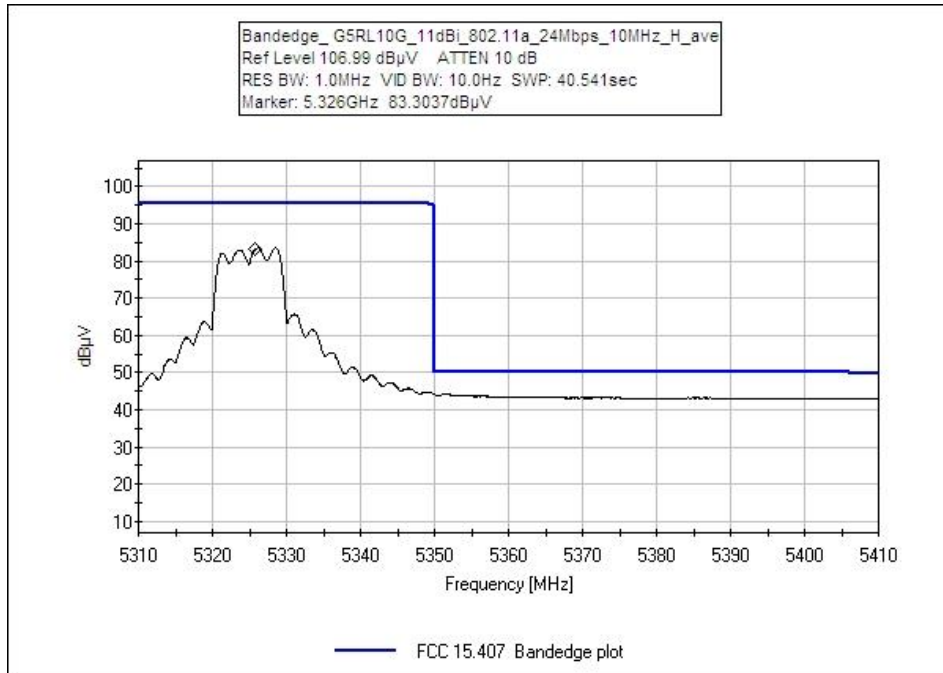
Bandedge limit are based on 15.209 in restricted band (54 dBuV/m@3m) and 15.407 (b) EIRP limit of -27dBm/MHz (68.2dBuV/m @ 3 meter) IAW 789033 D01 General UNII Test Procedures V01r01. In addition to Peak reading, average reading was measured to show compliance to 15.209 limit where applicable.

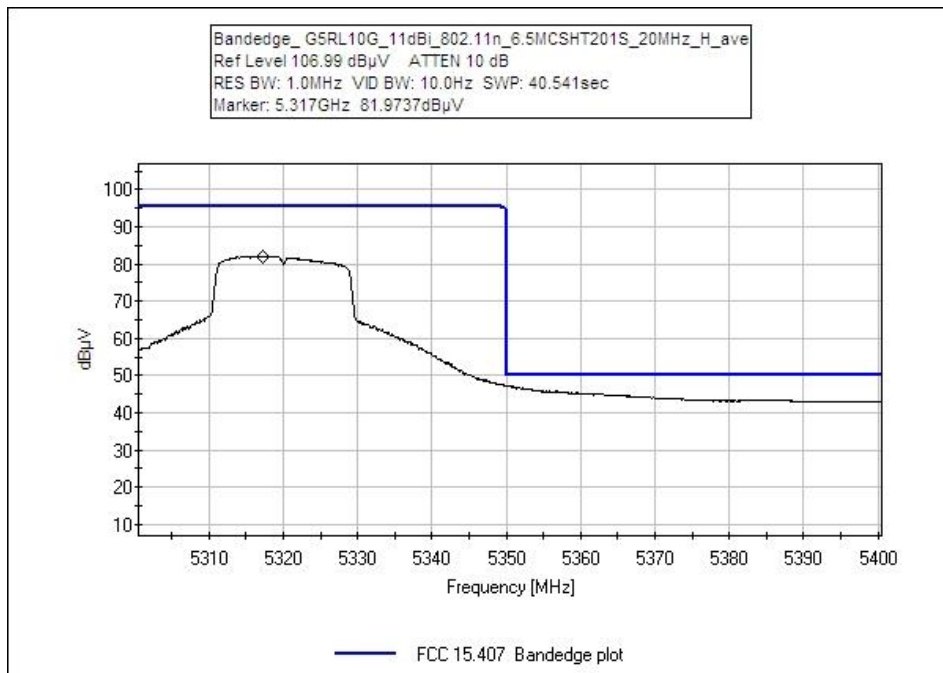
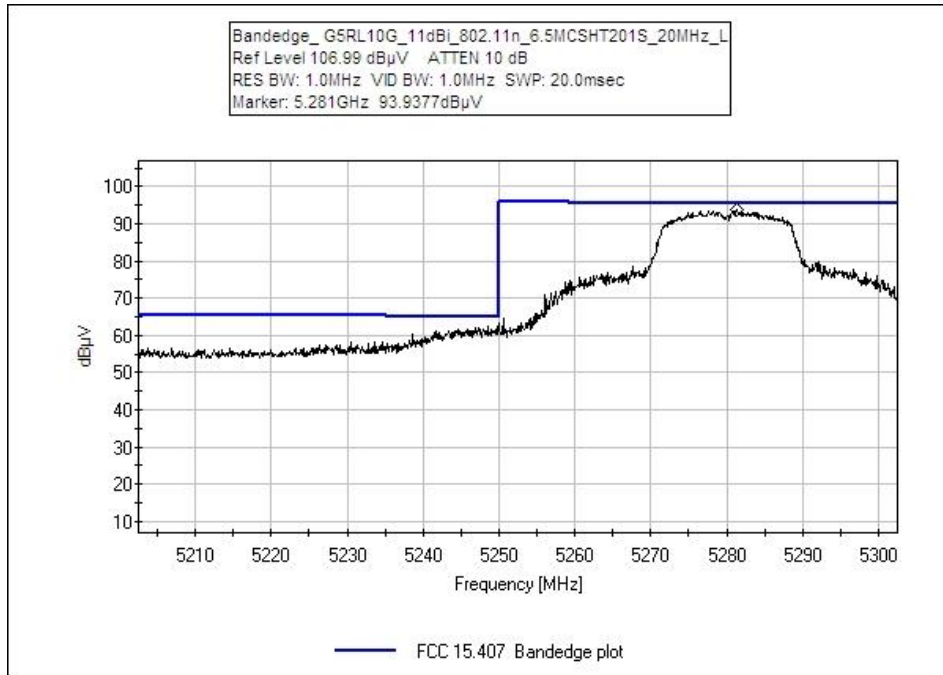
Test Data

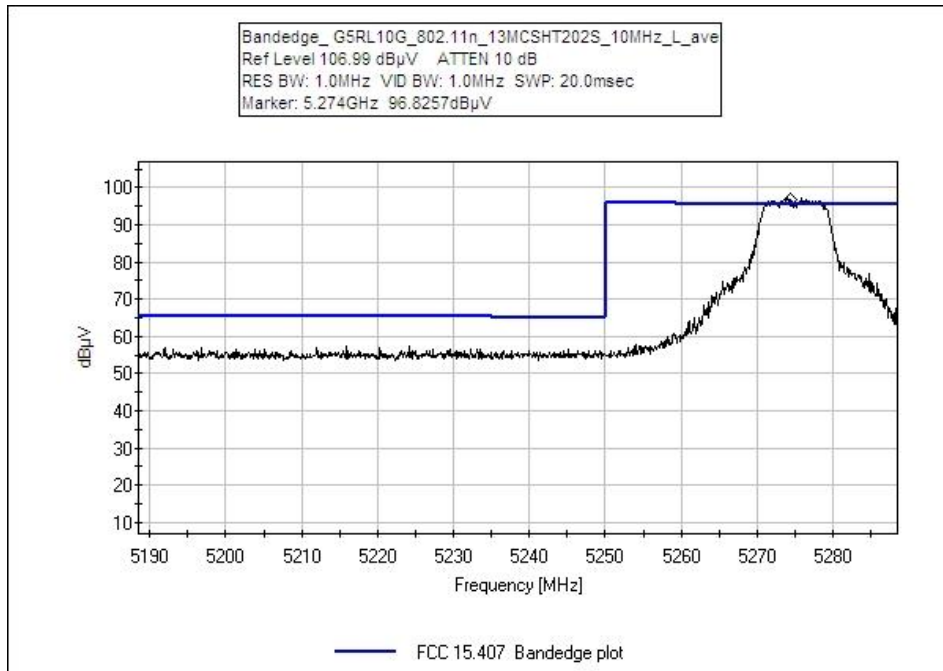
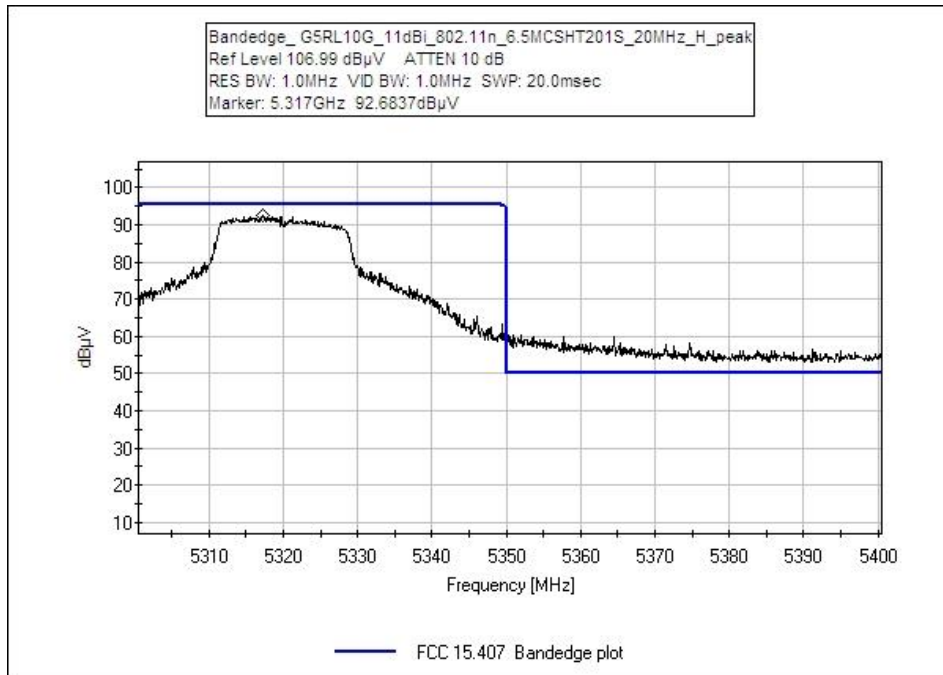
G5R10G_11dBi omni

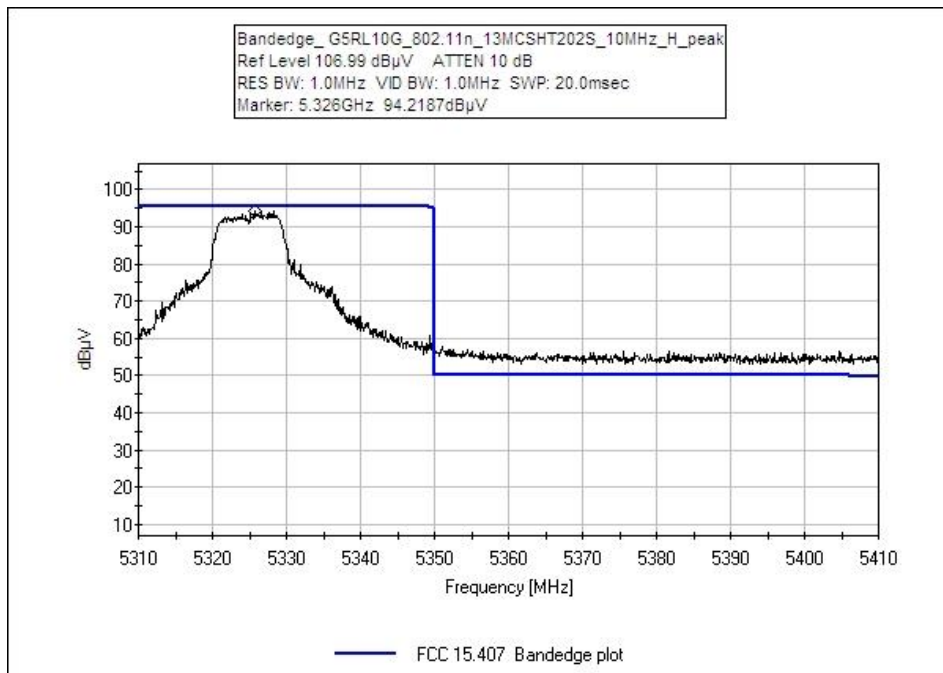
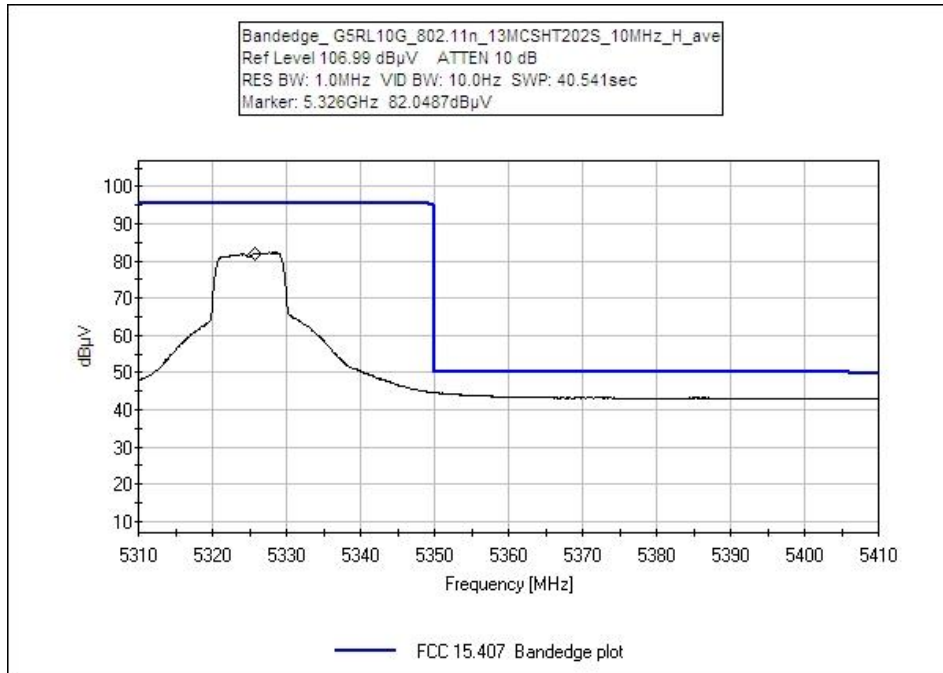


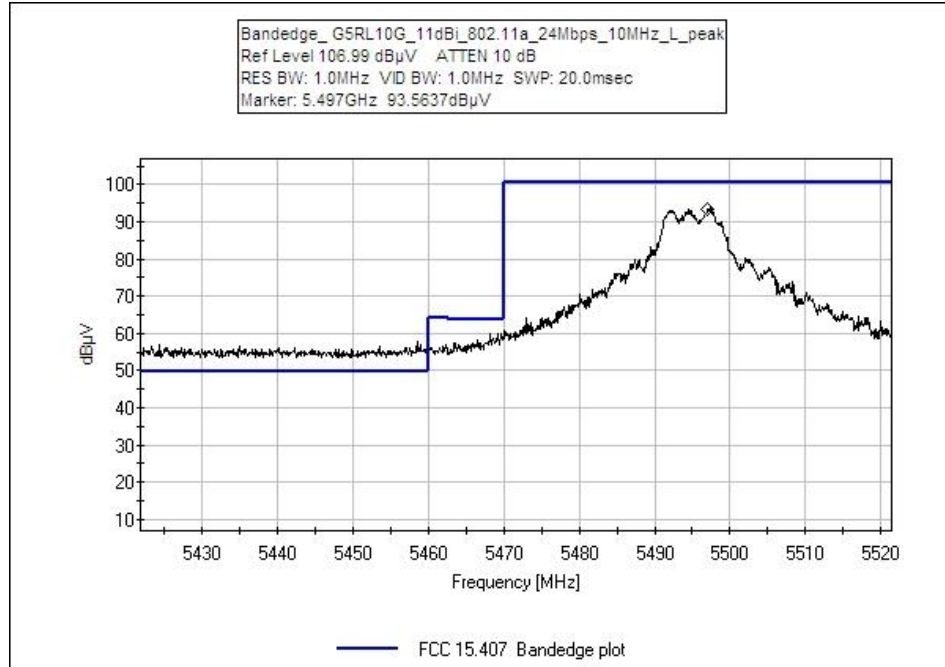
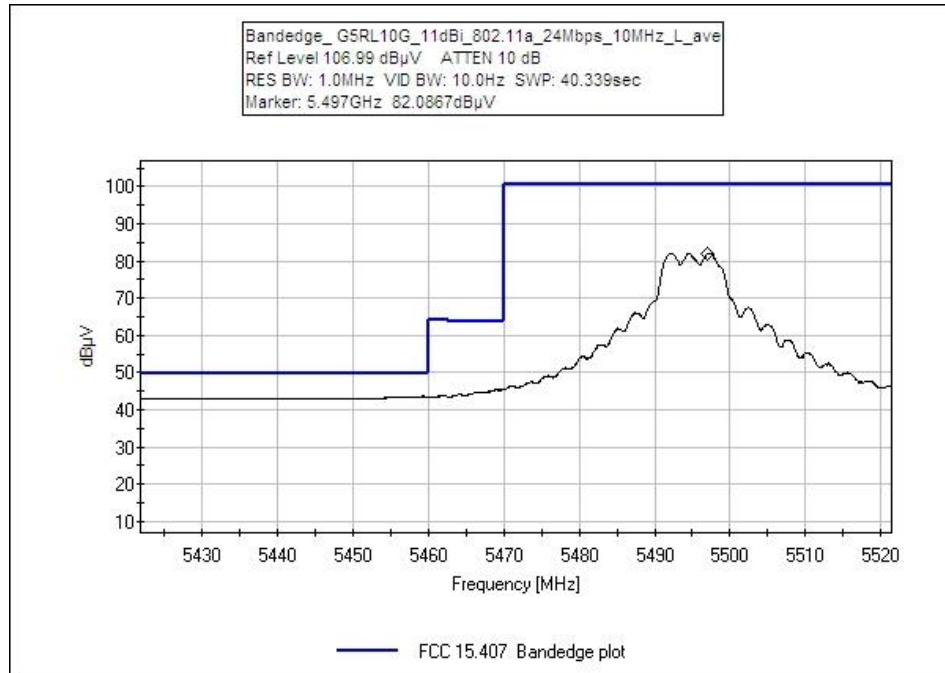


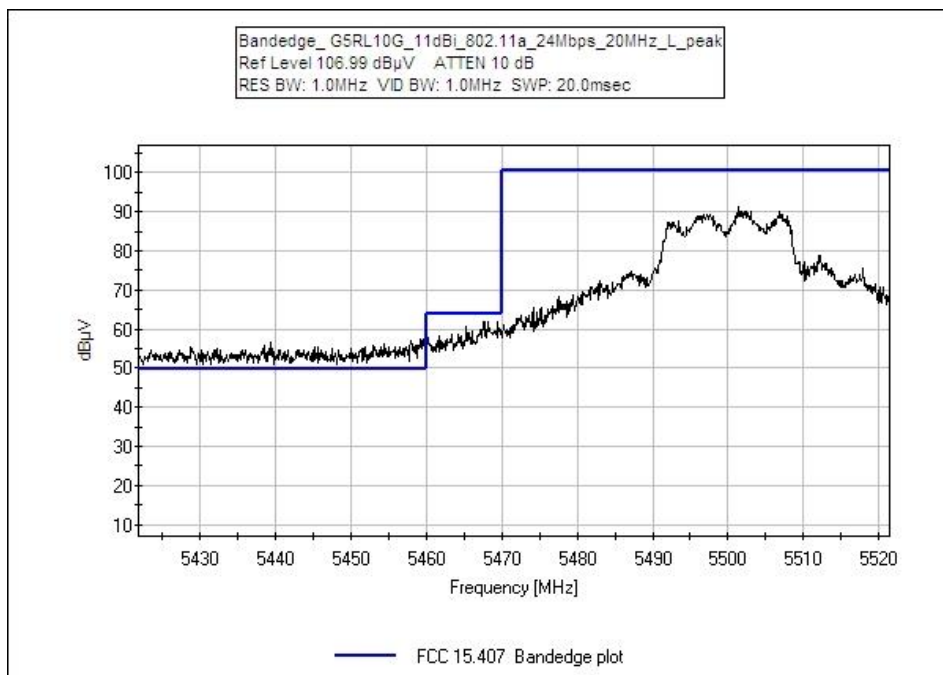
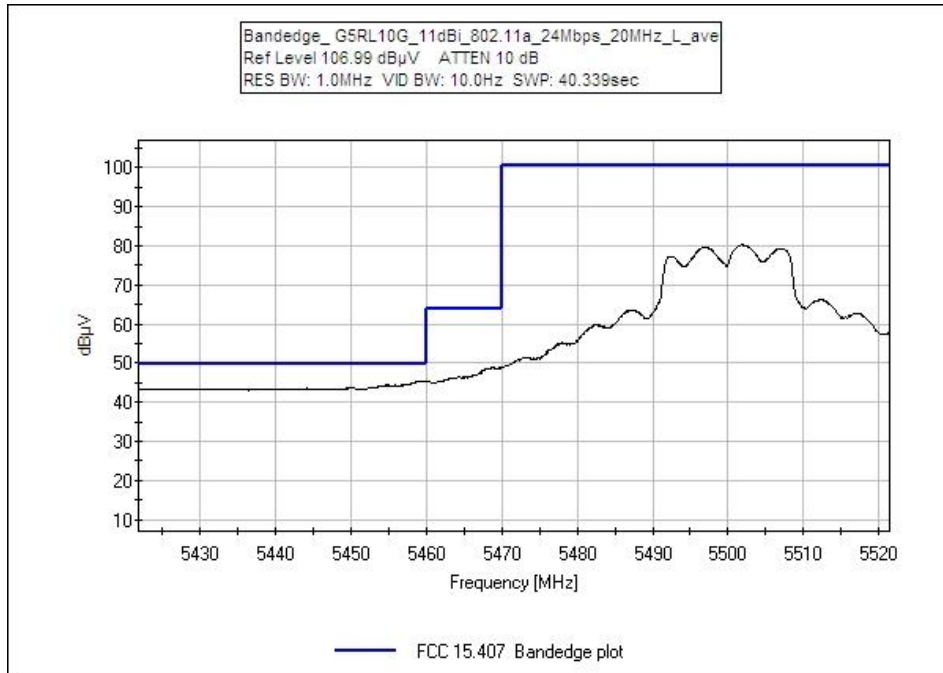


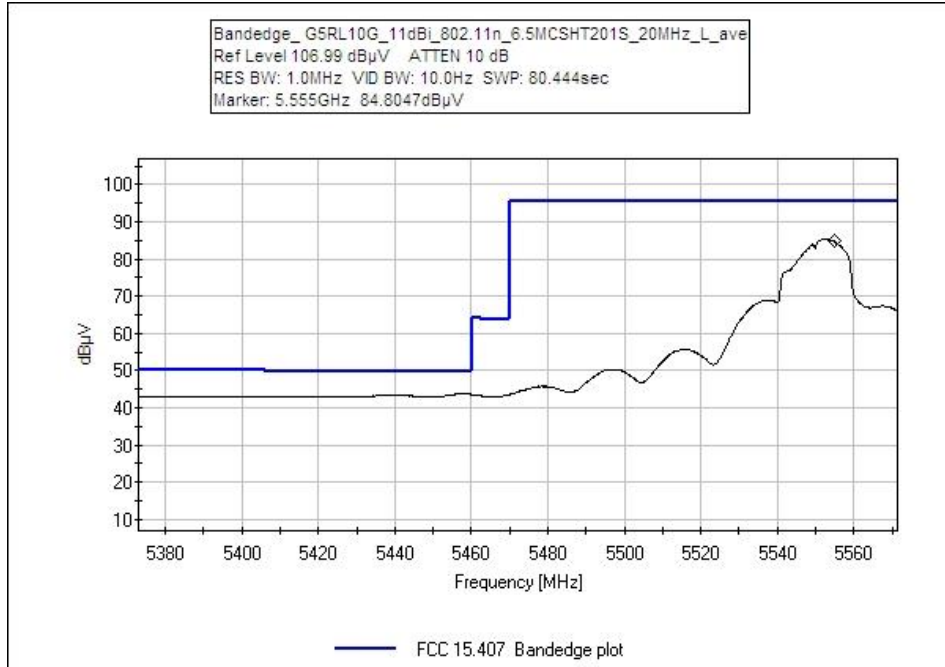
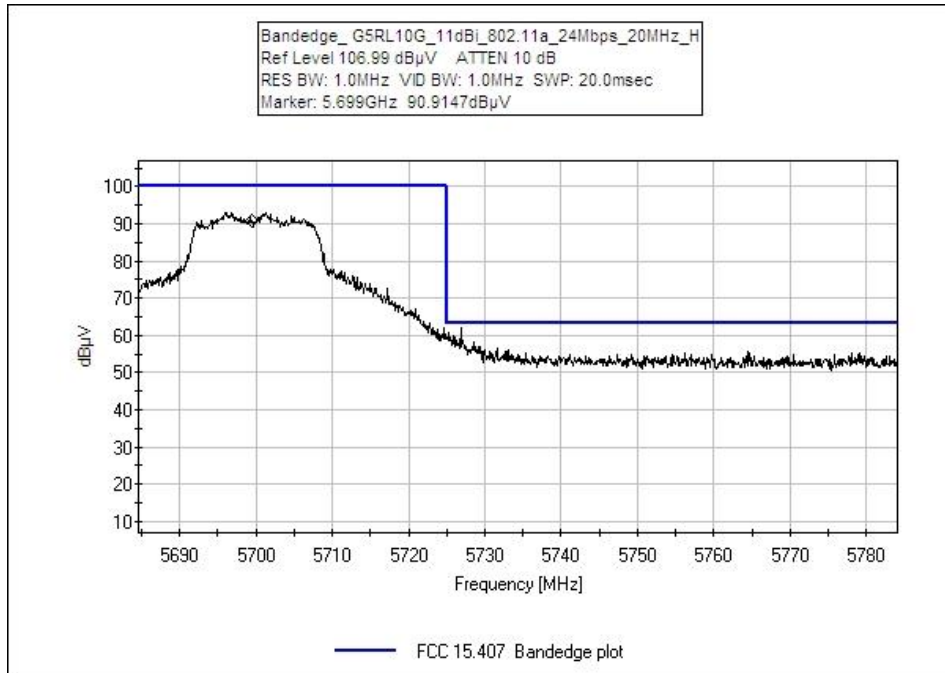


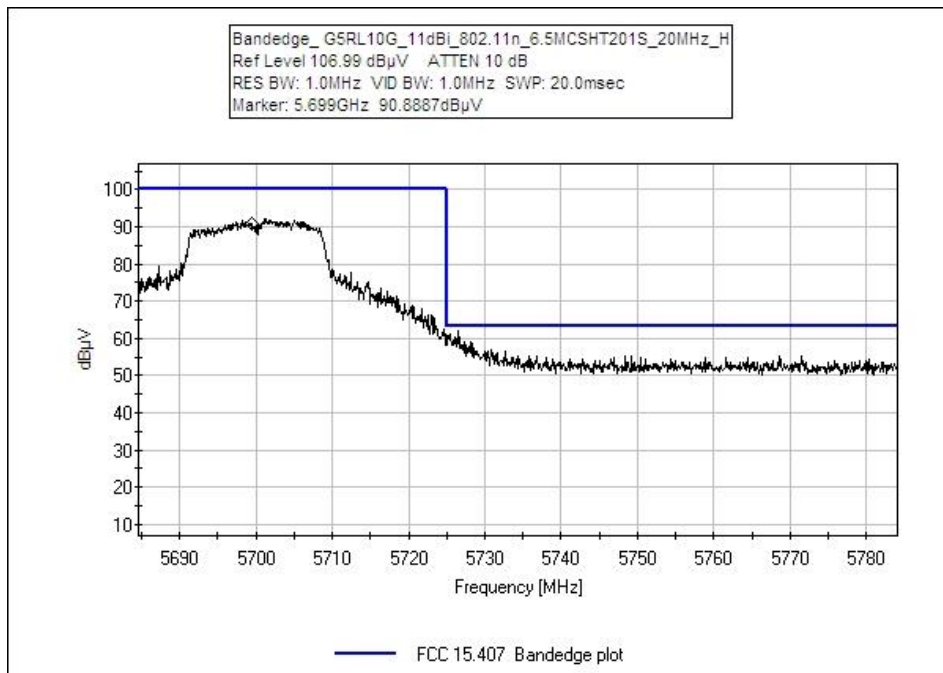
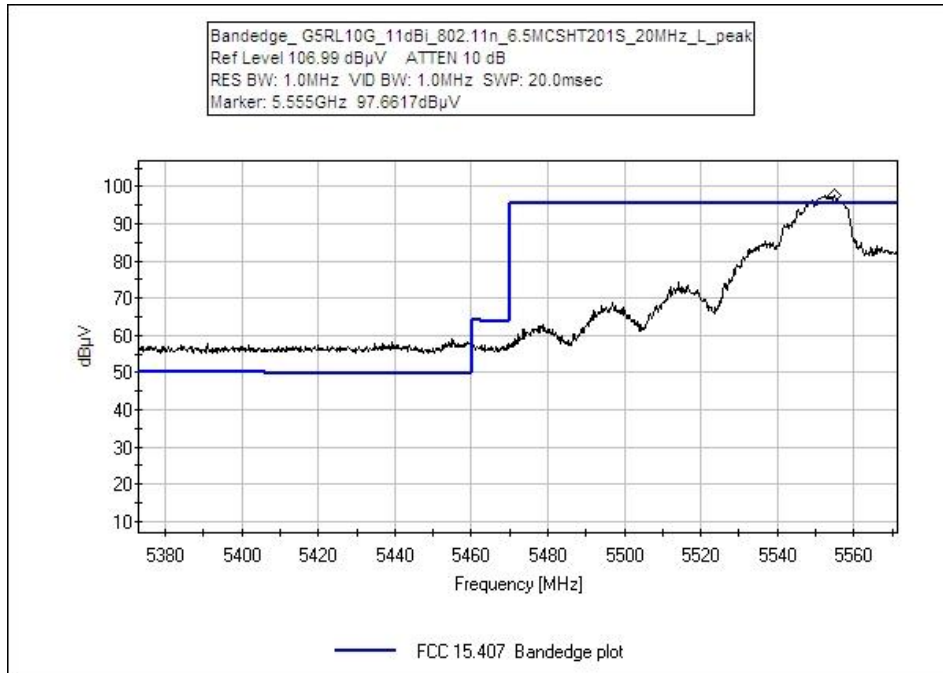


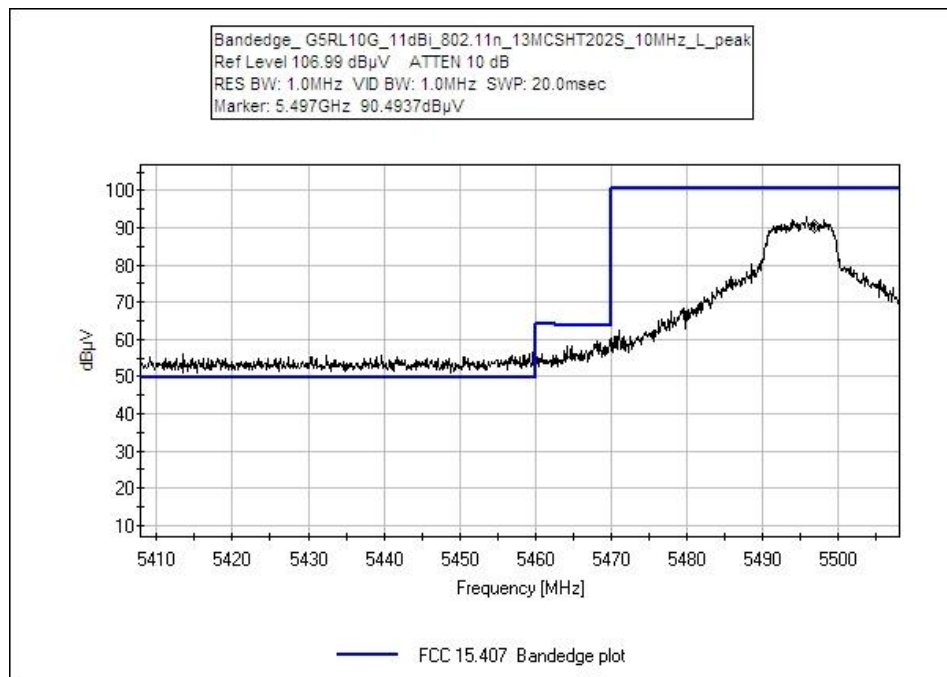
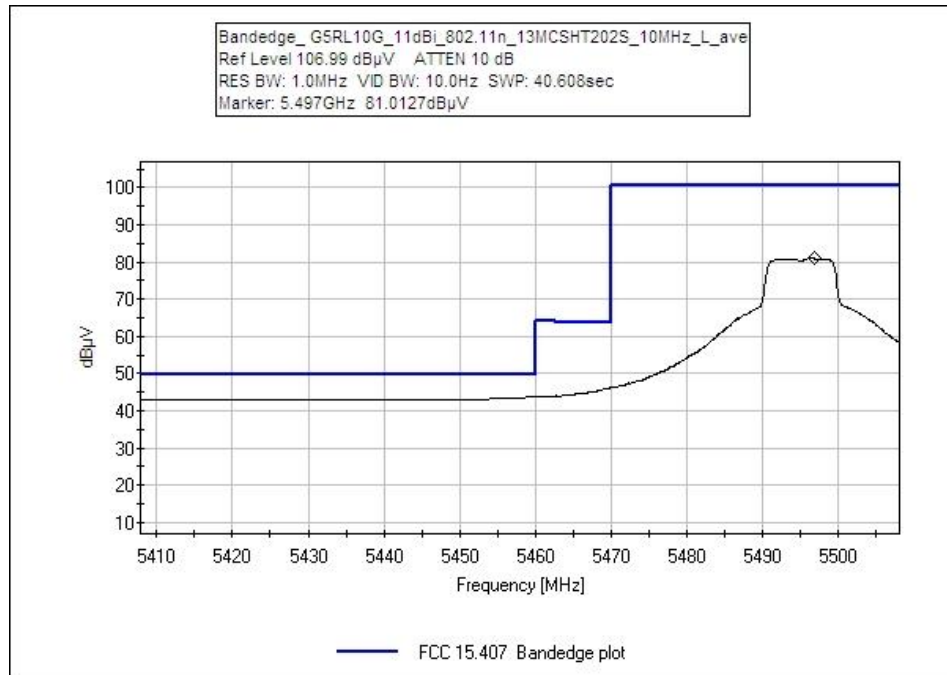


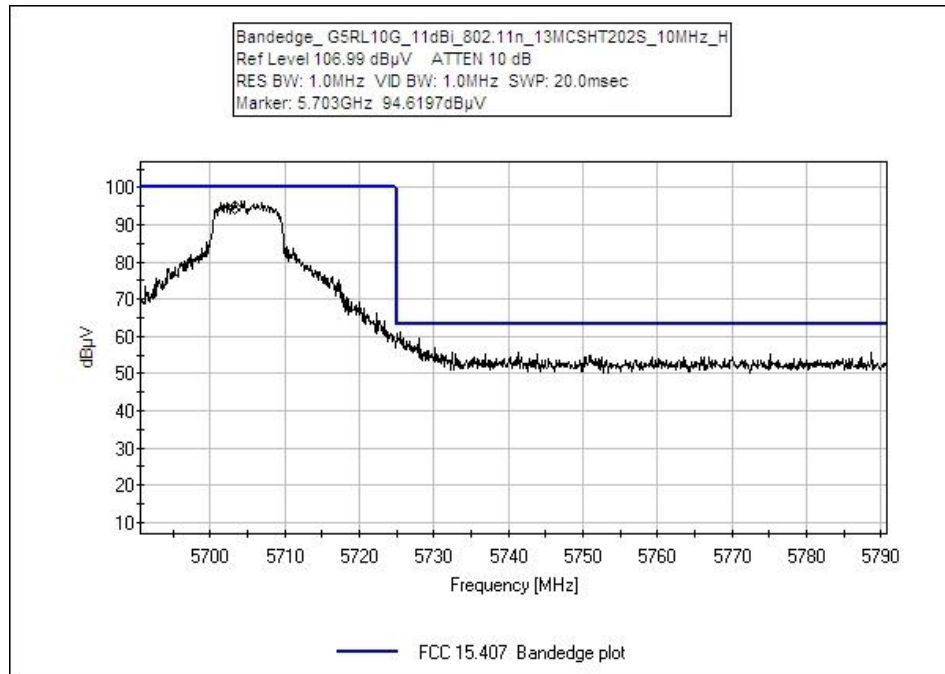




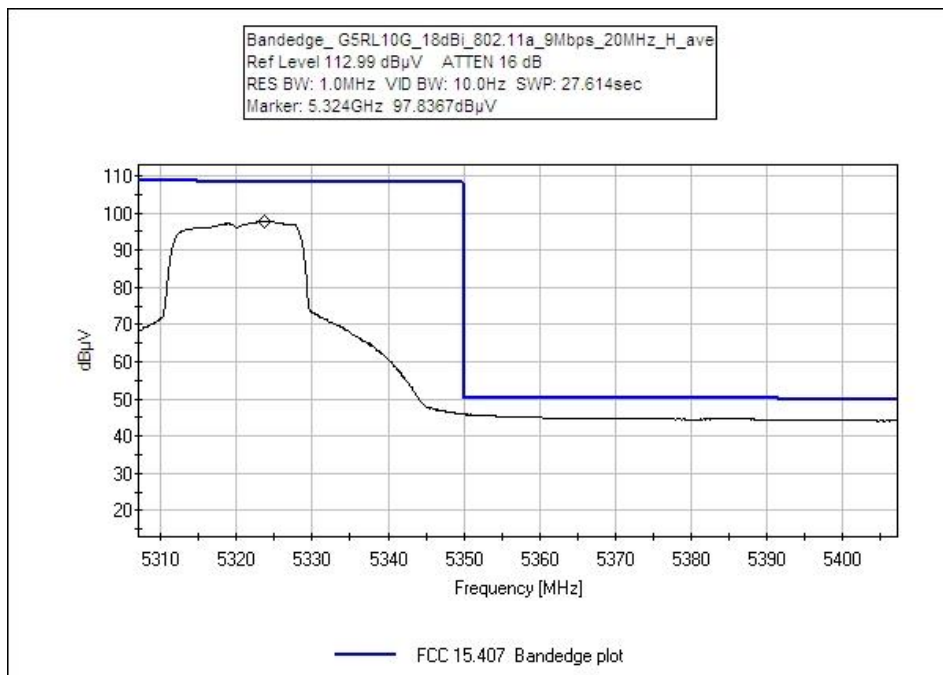
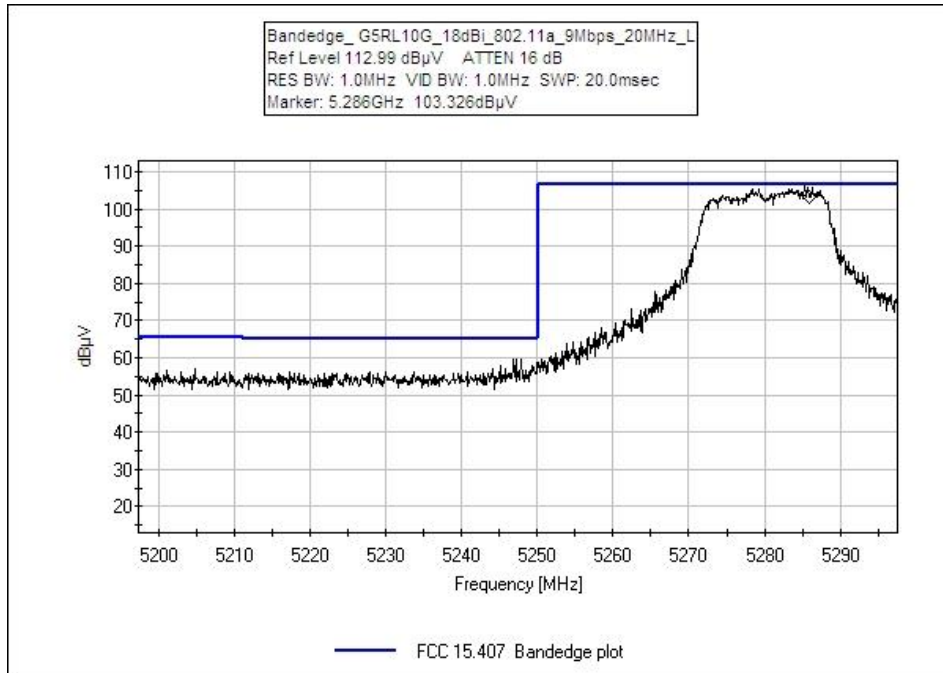


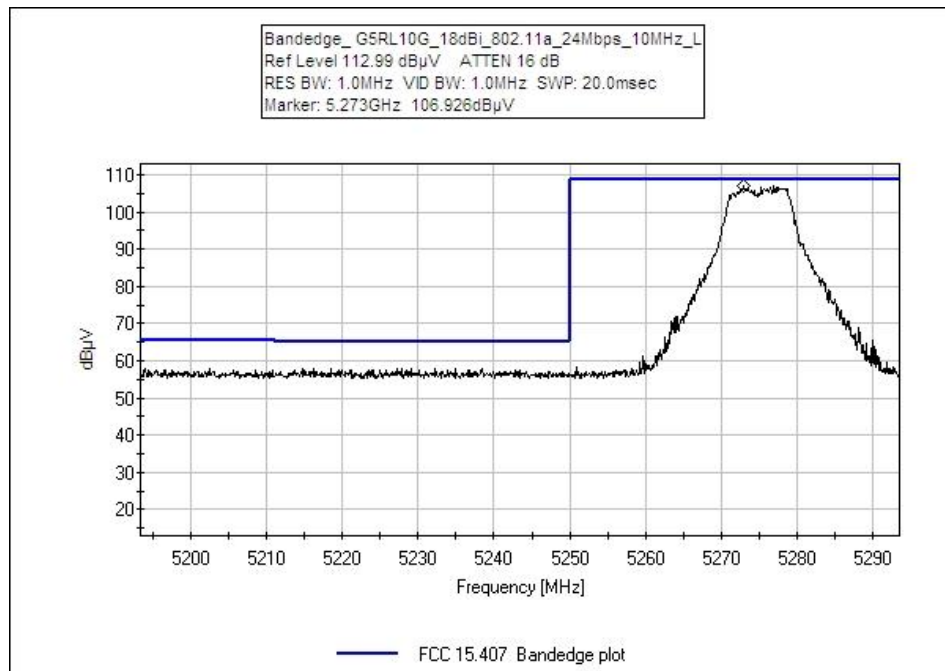
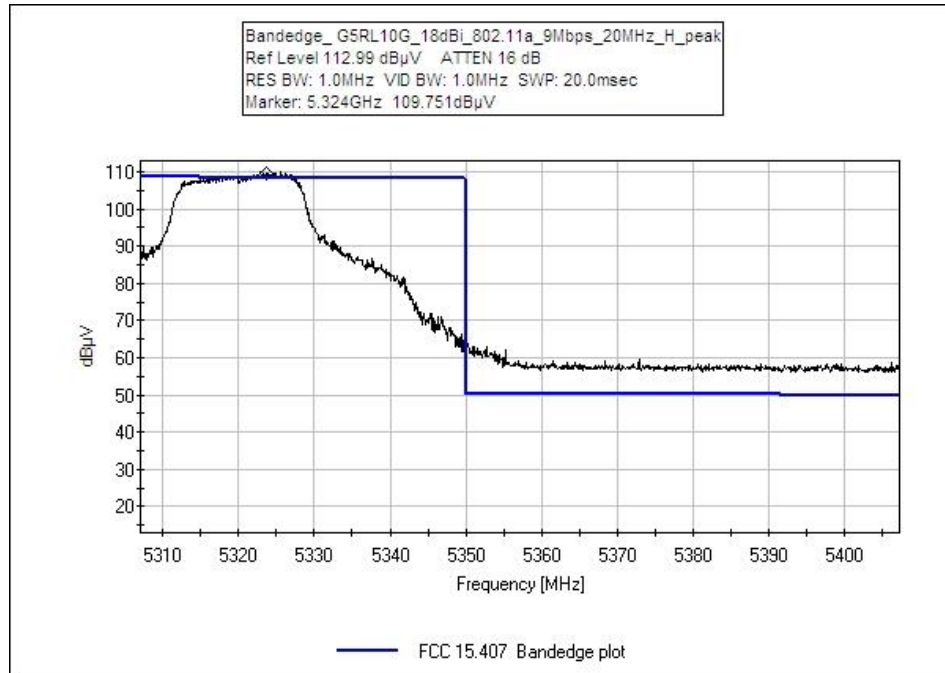


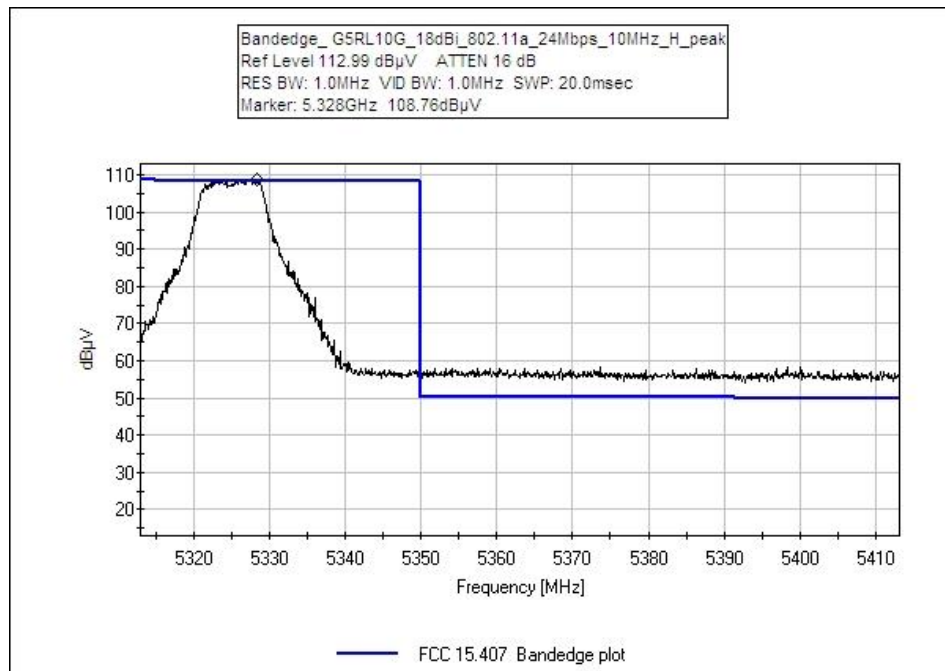
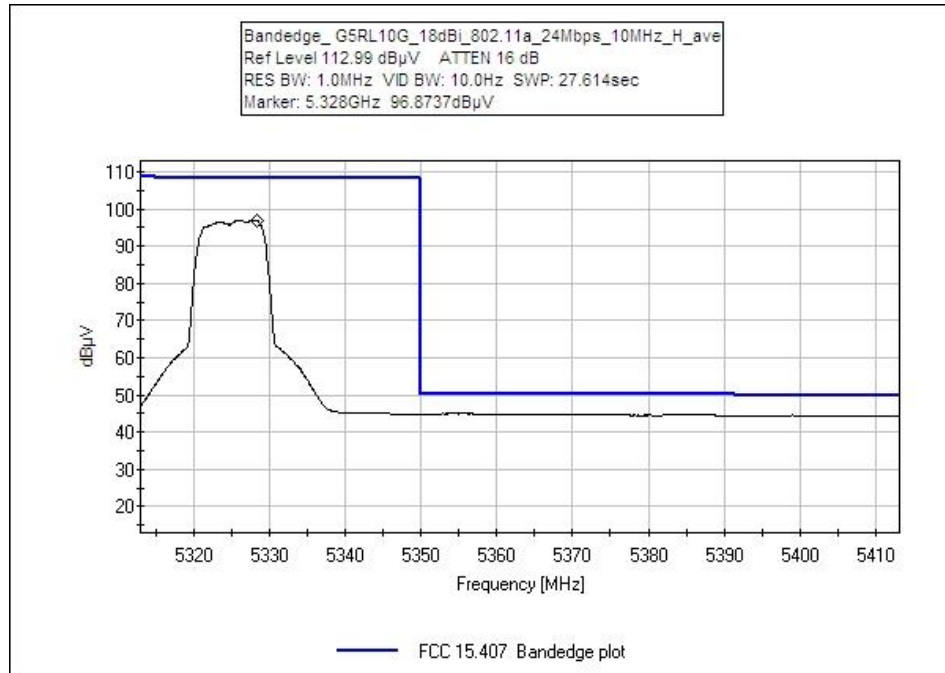


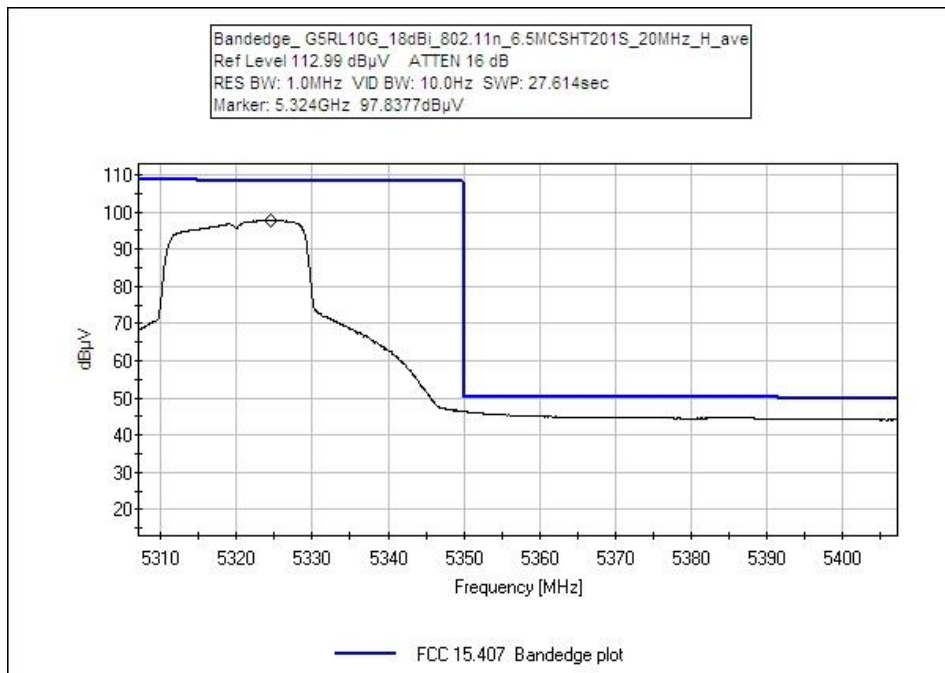
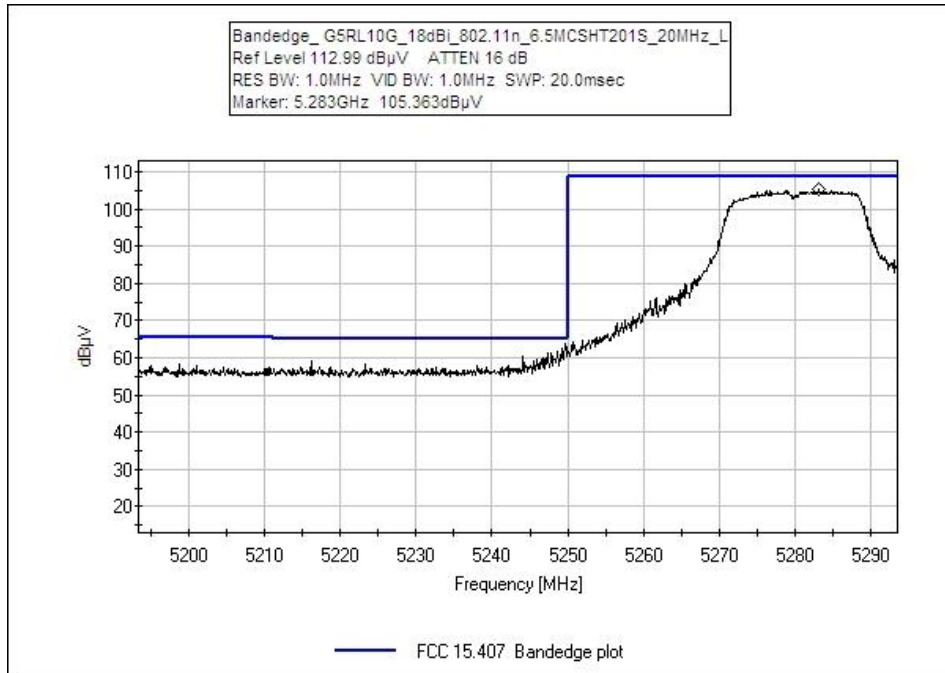


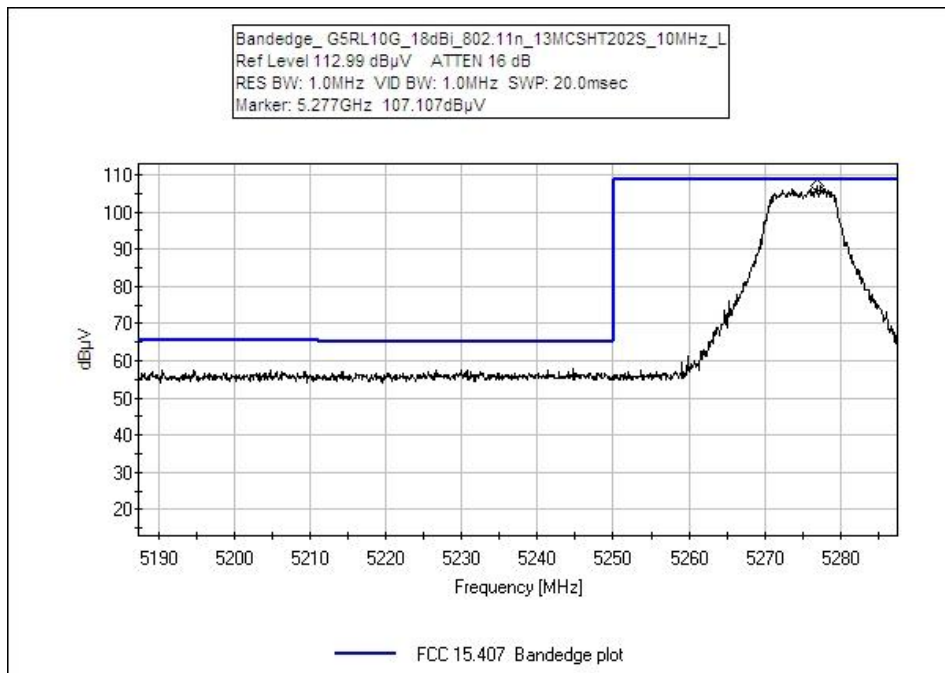
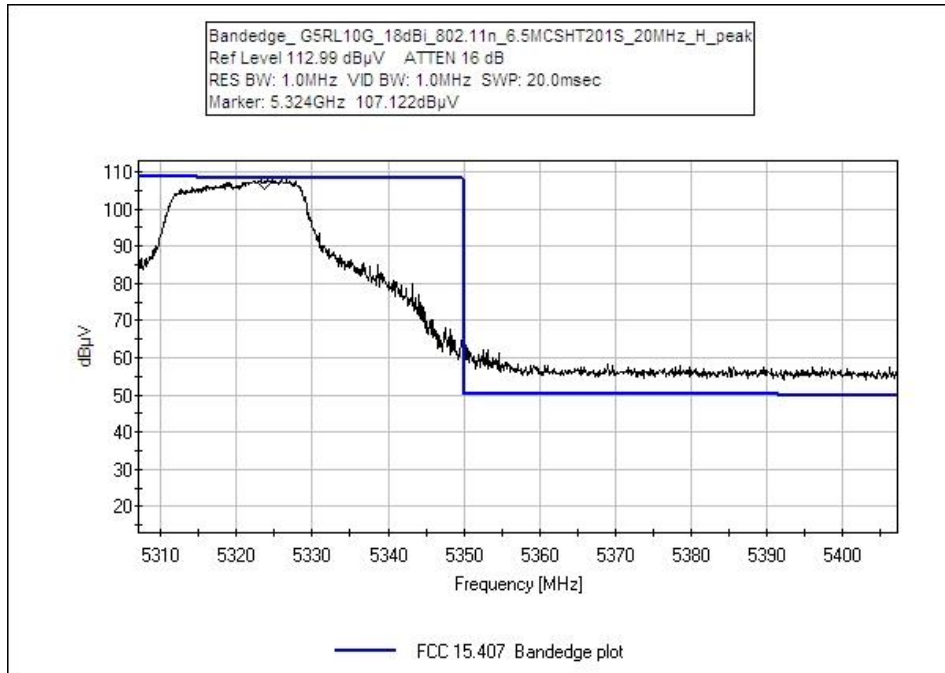
G5R10G_18dBi Panel

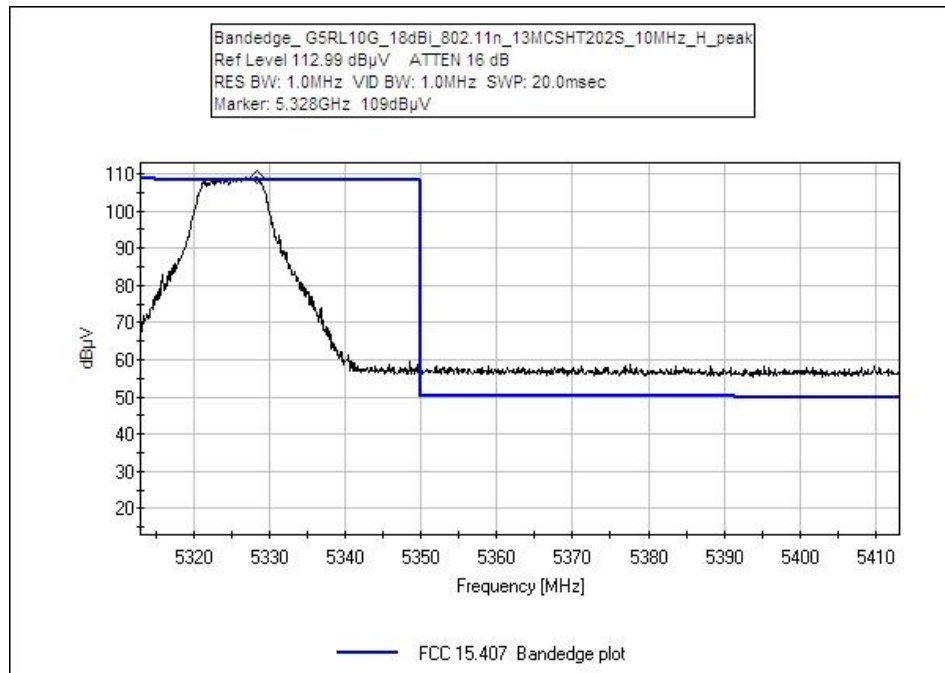
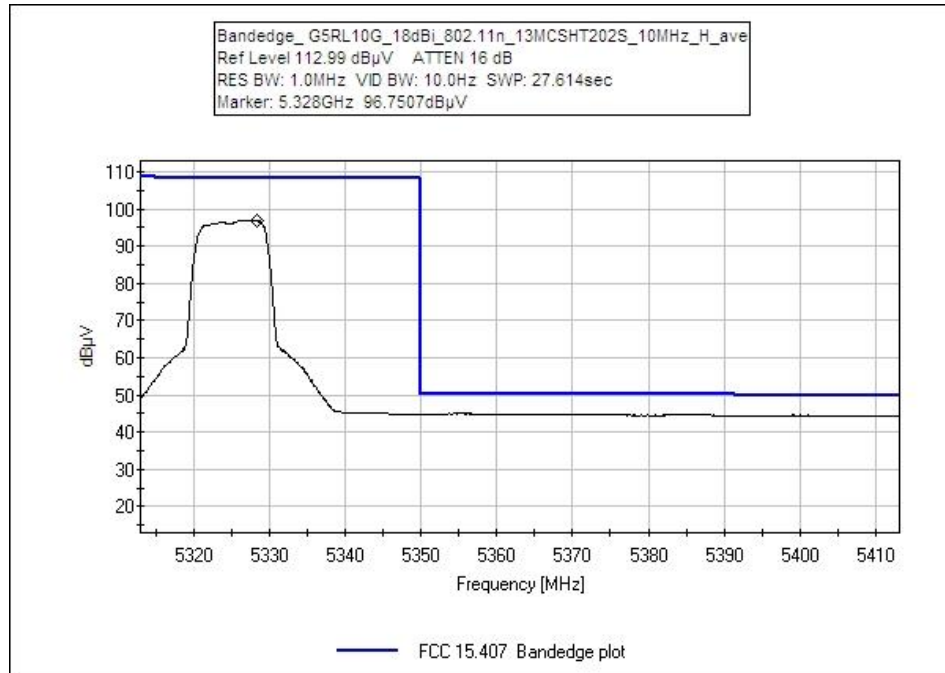


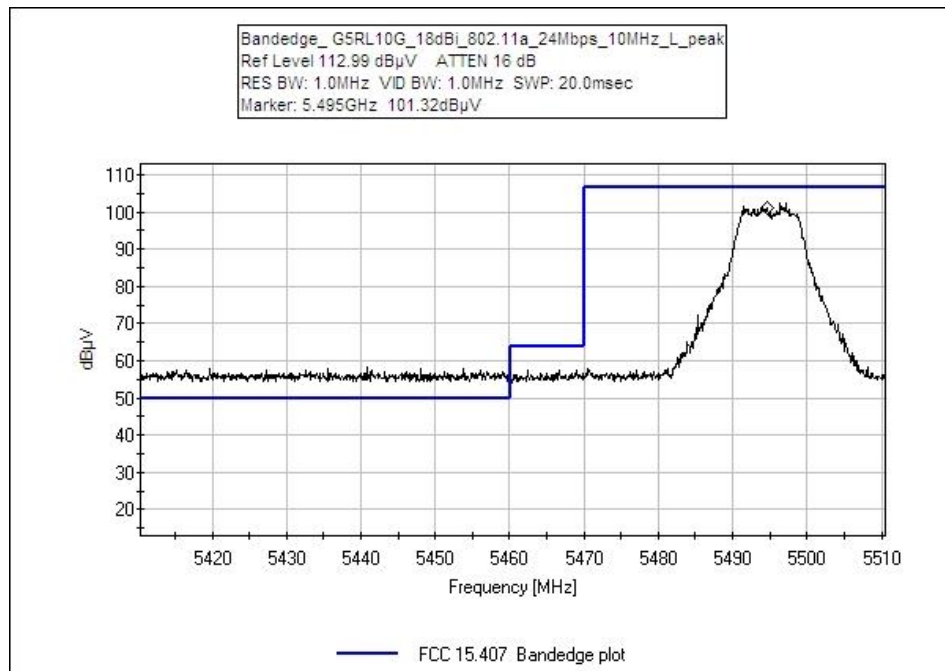
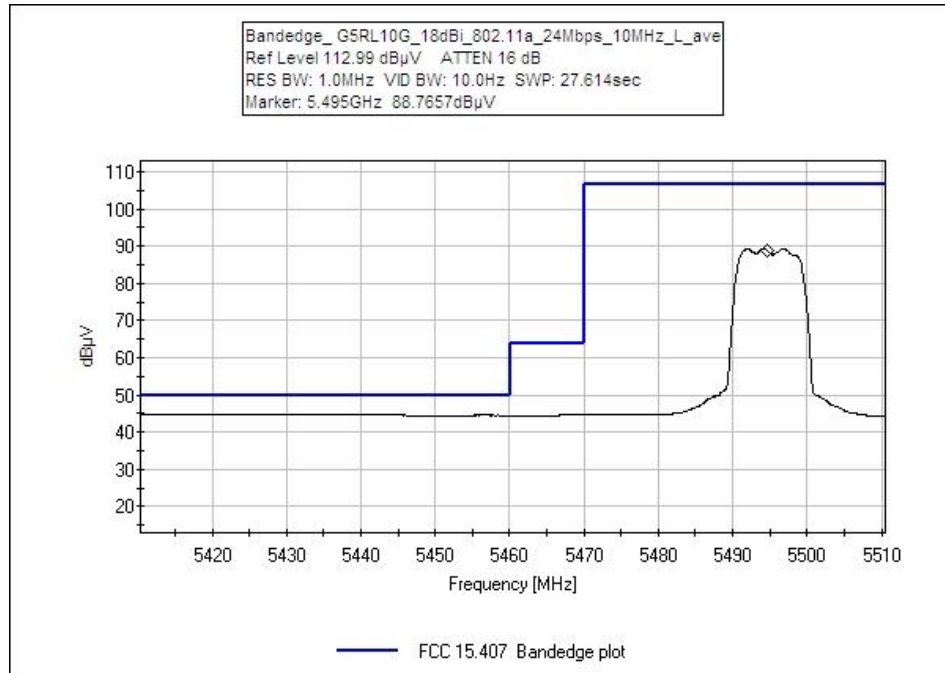


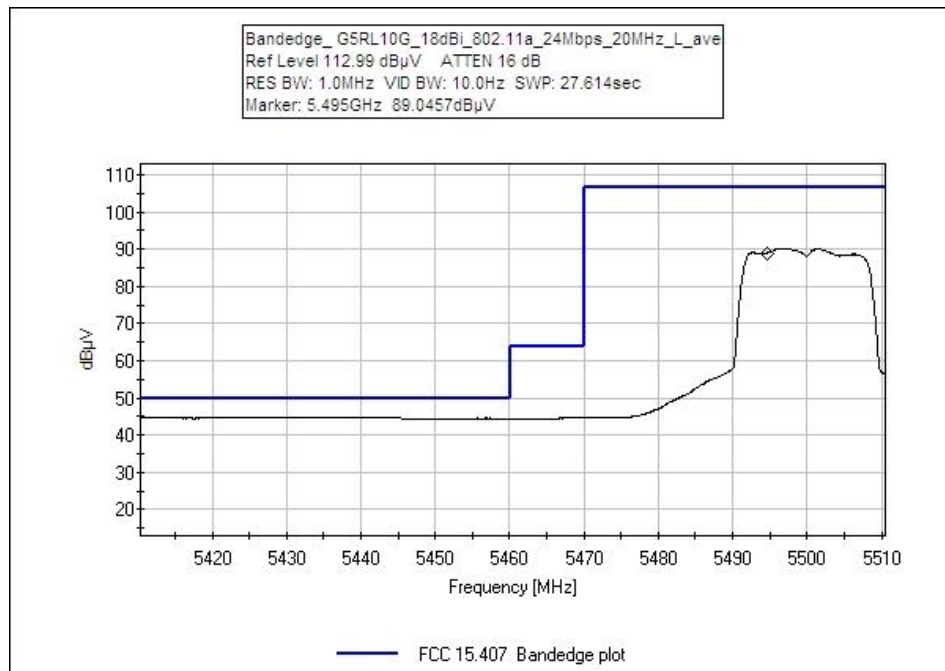
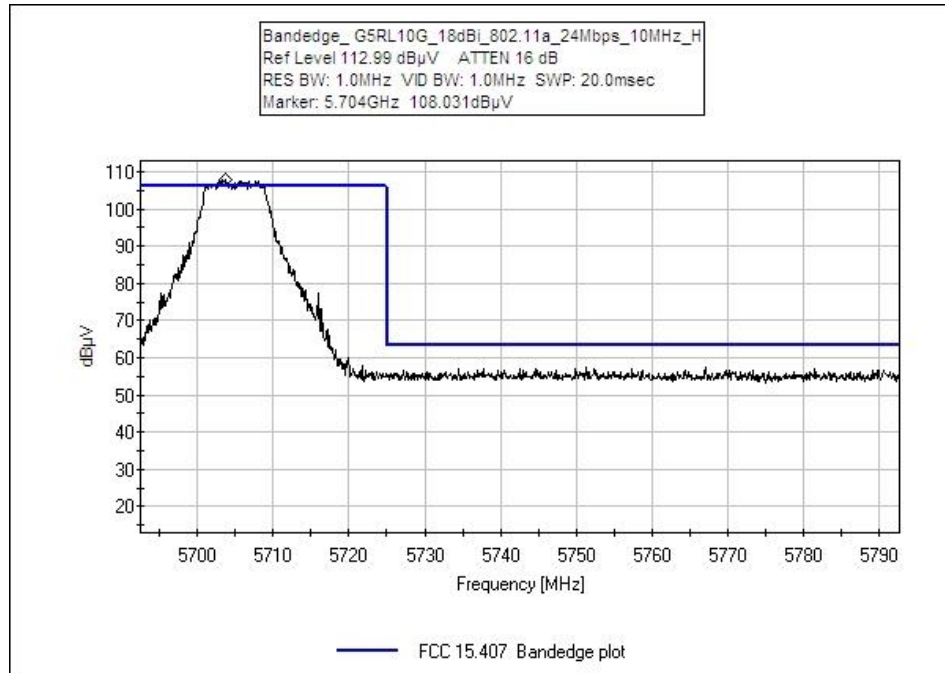


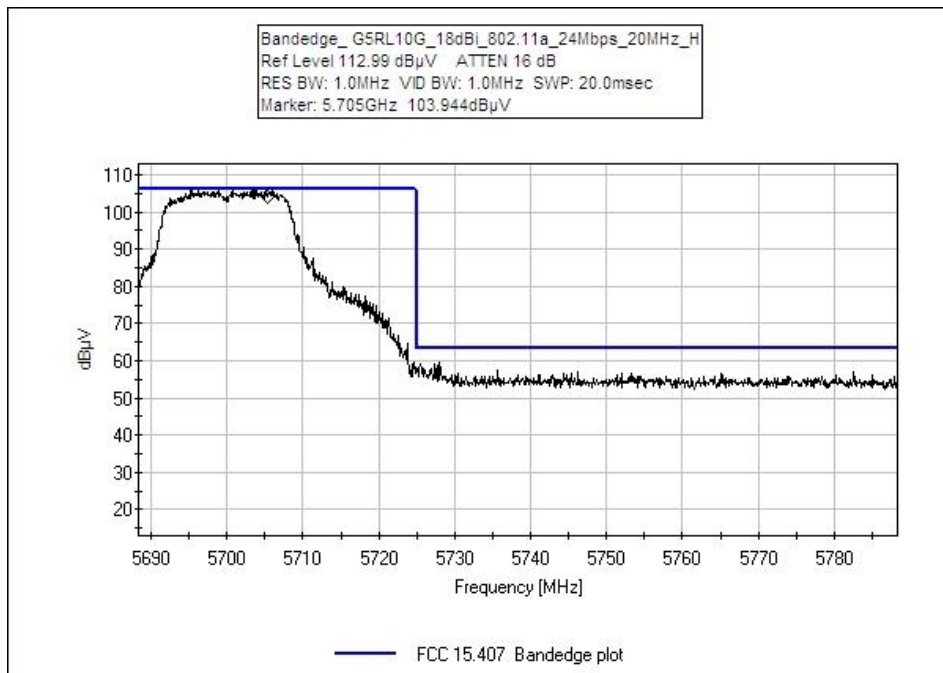
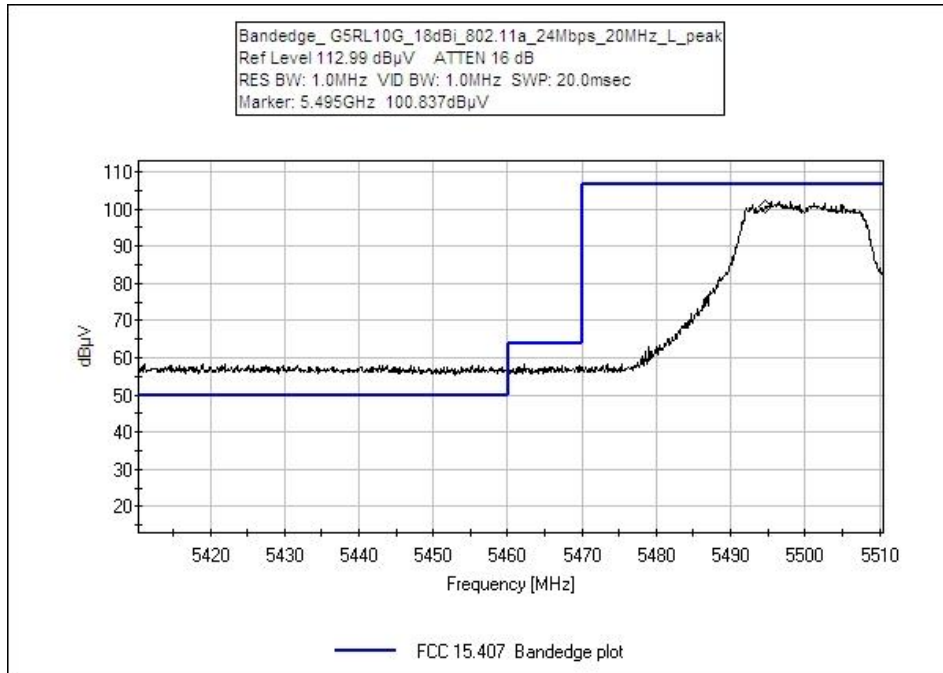


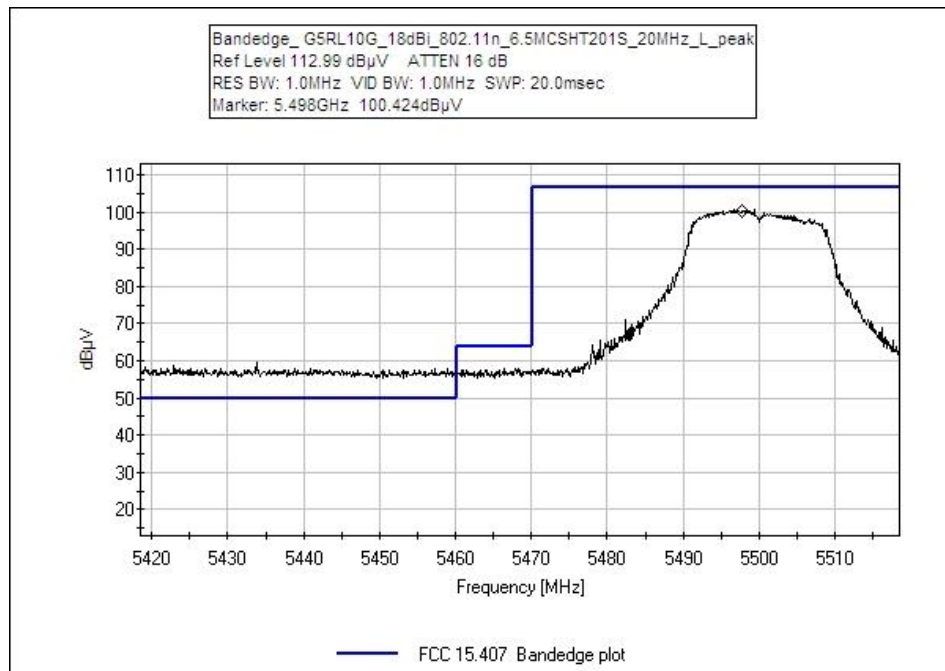
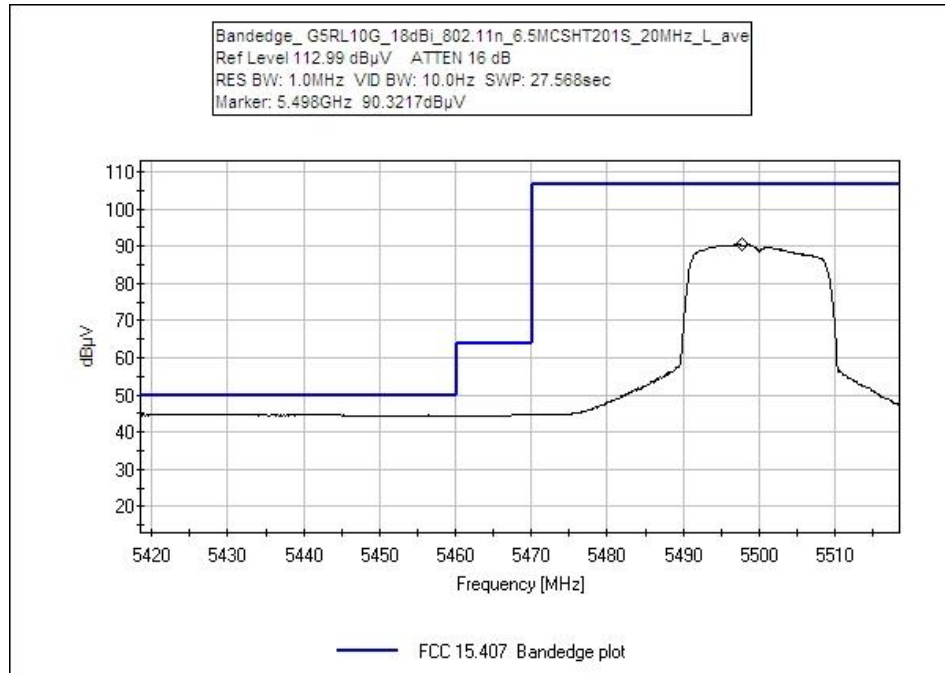


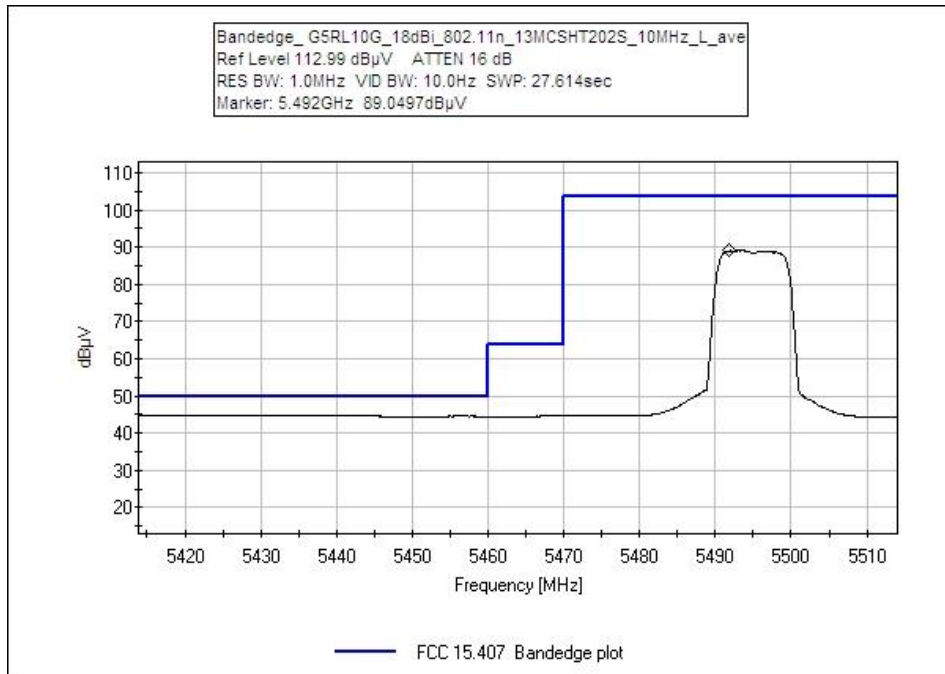
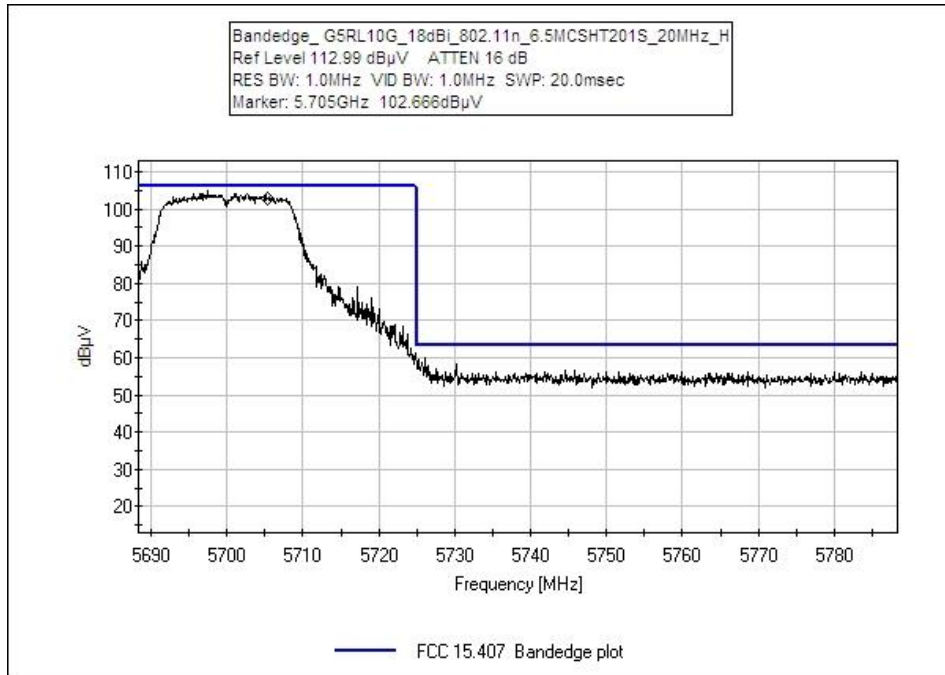


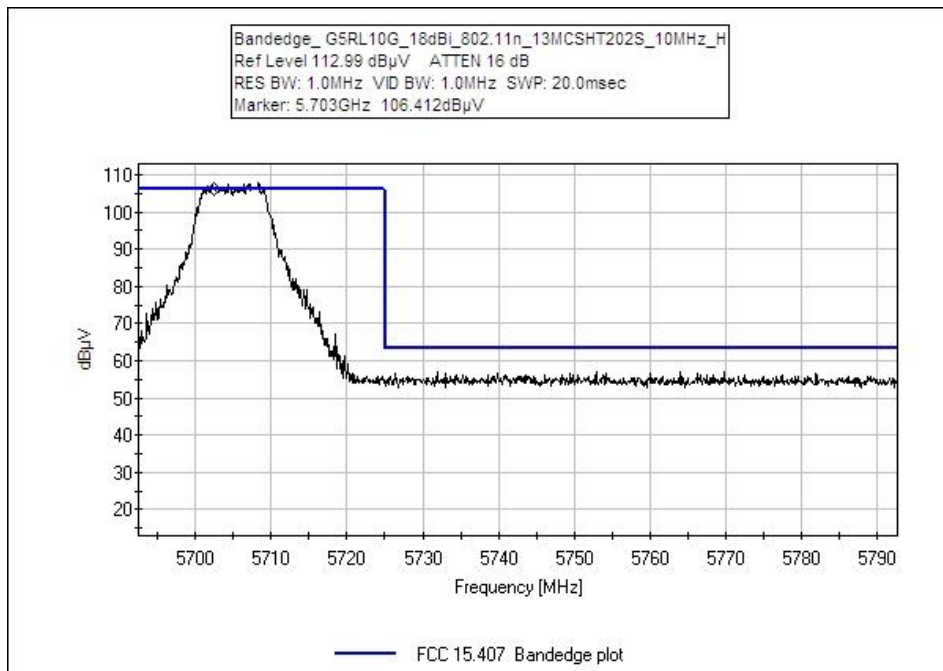
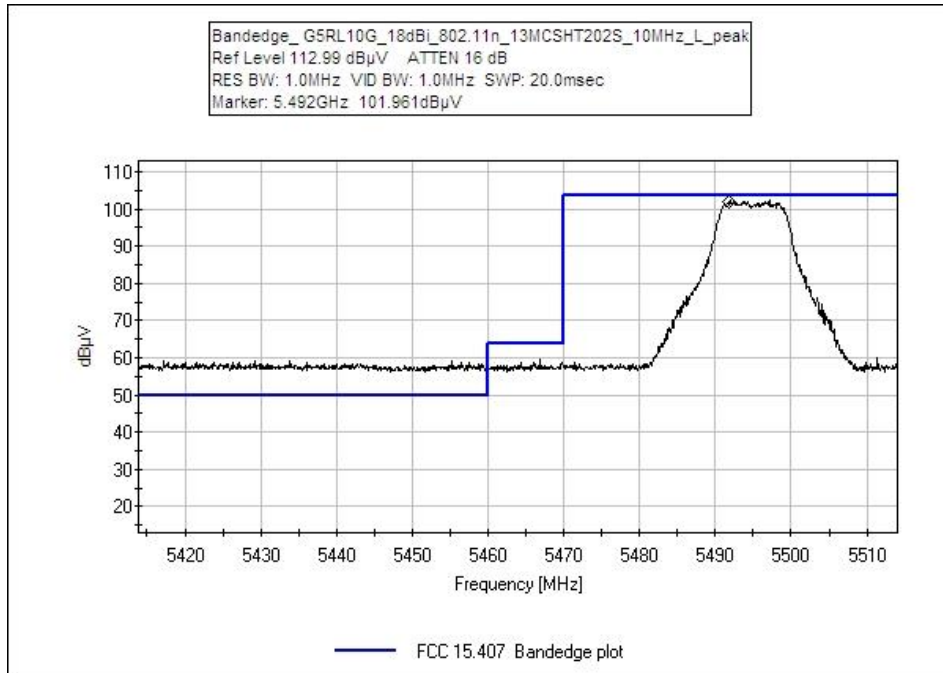




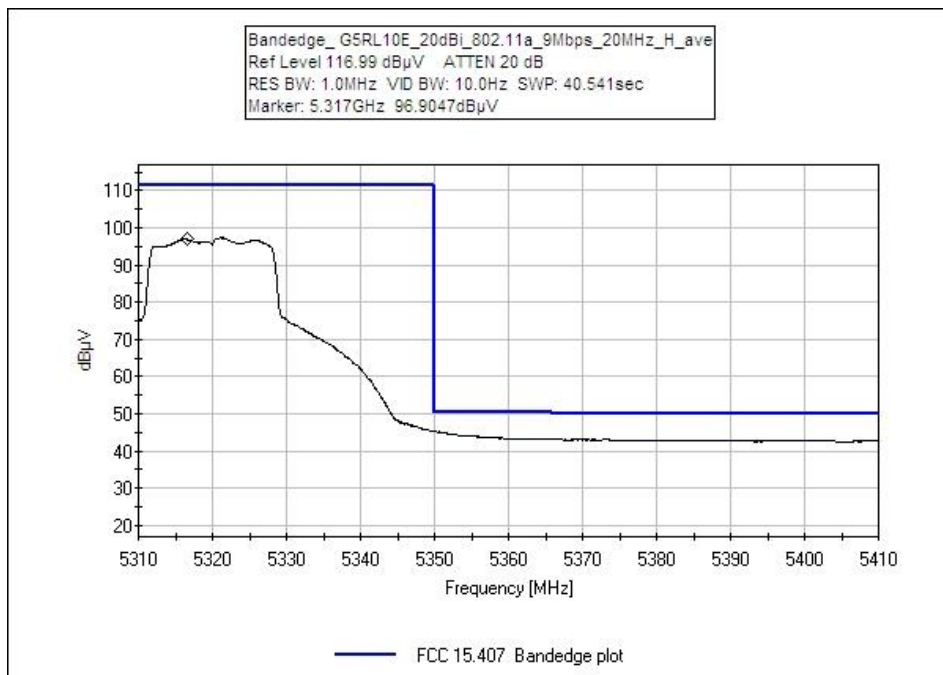
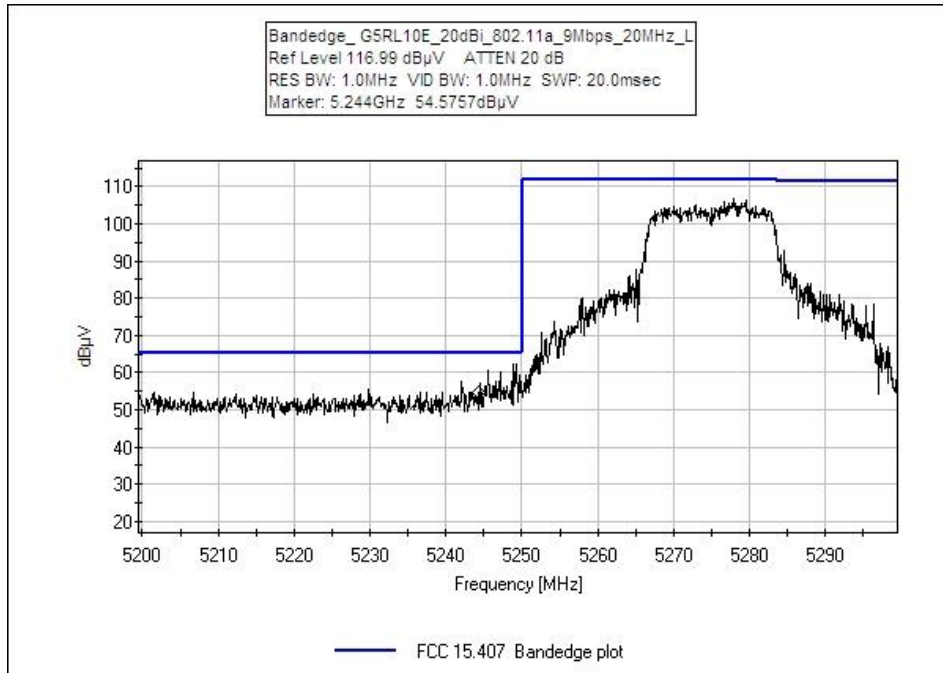


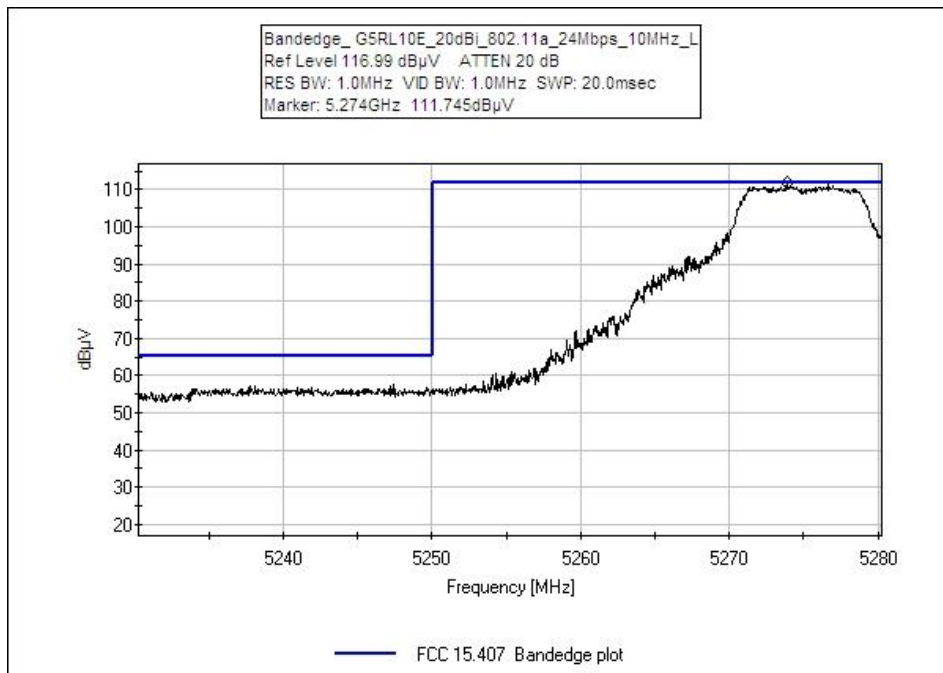
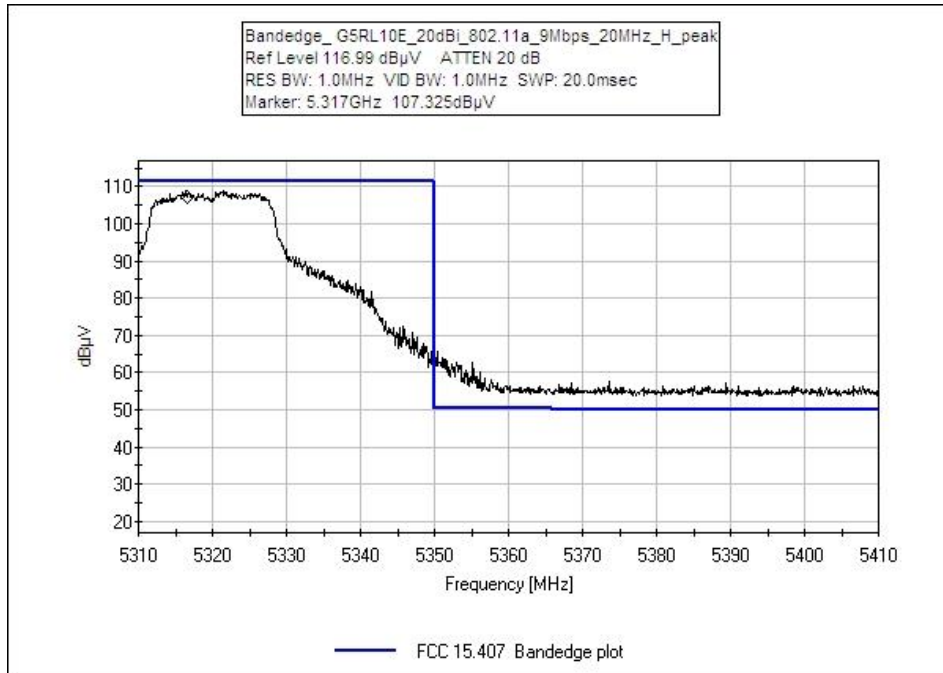


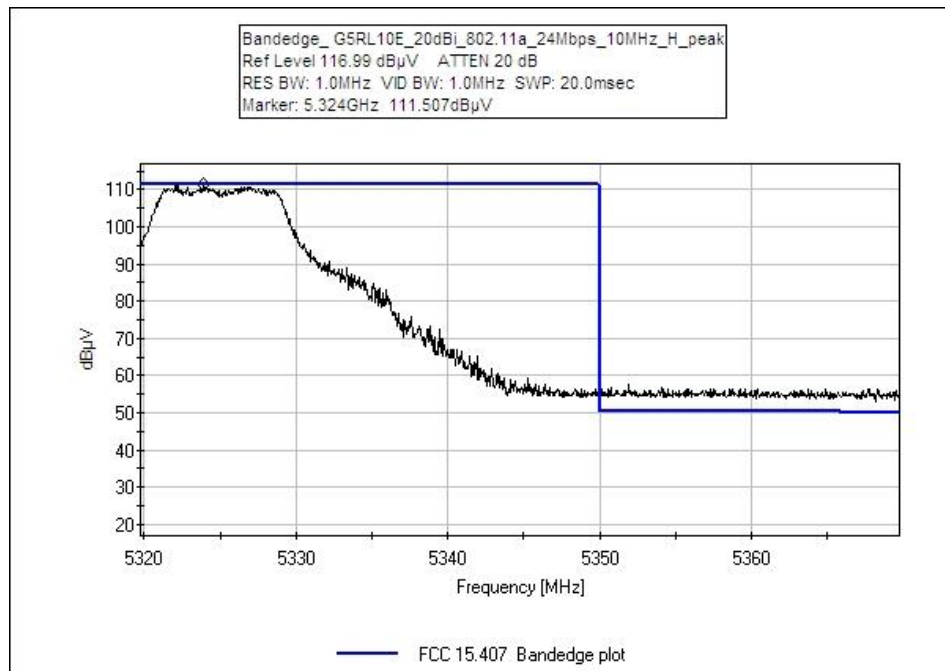
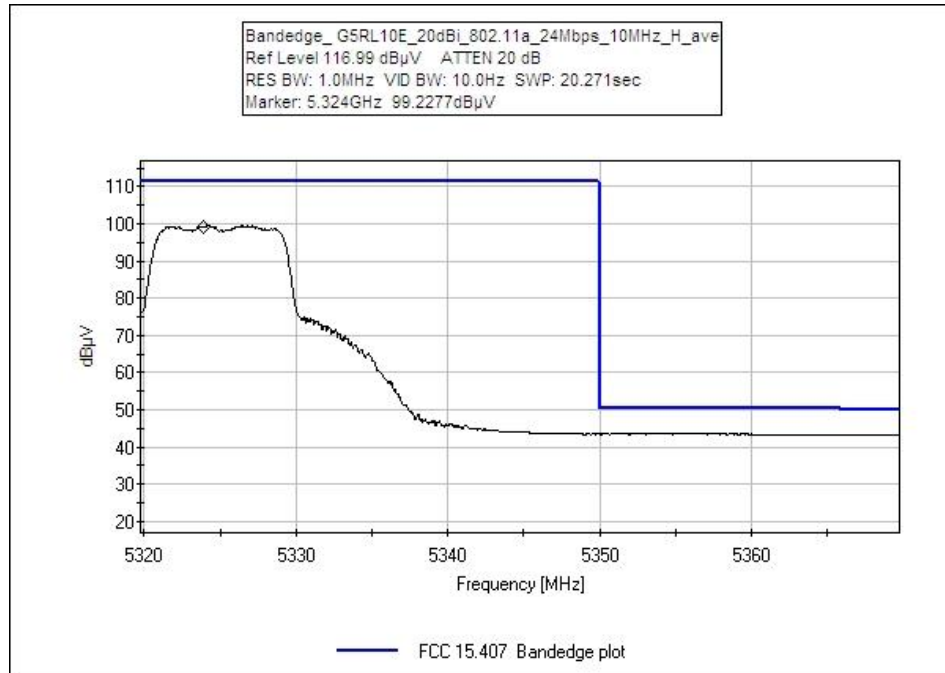


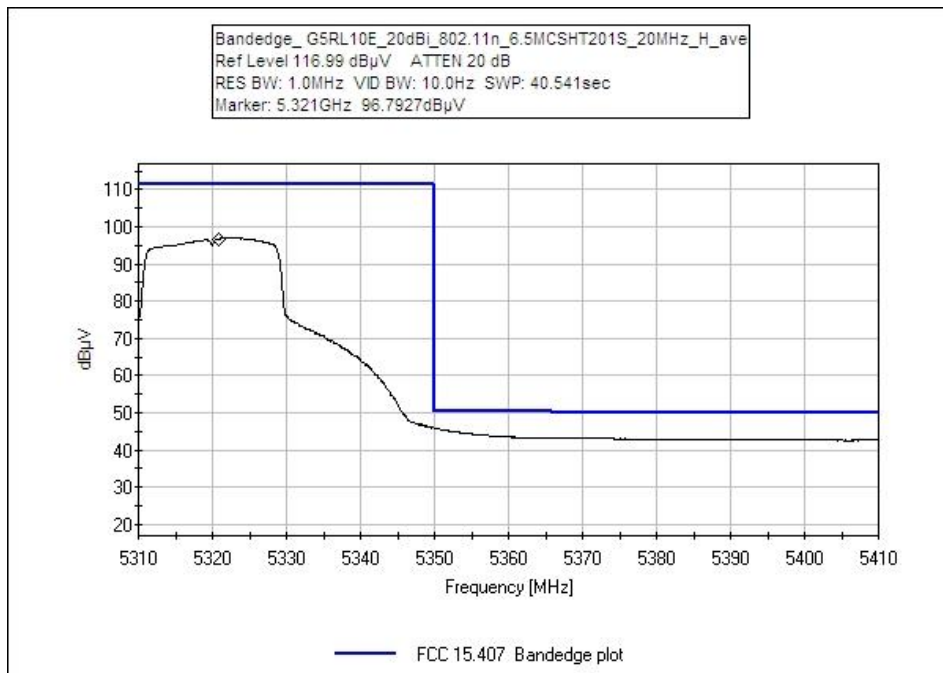
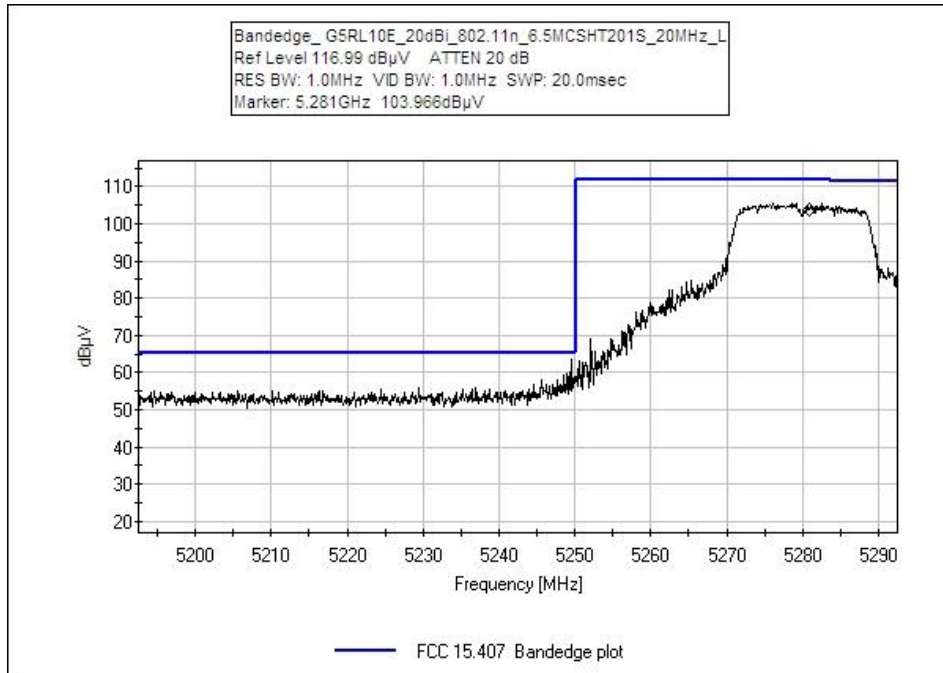


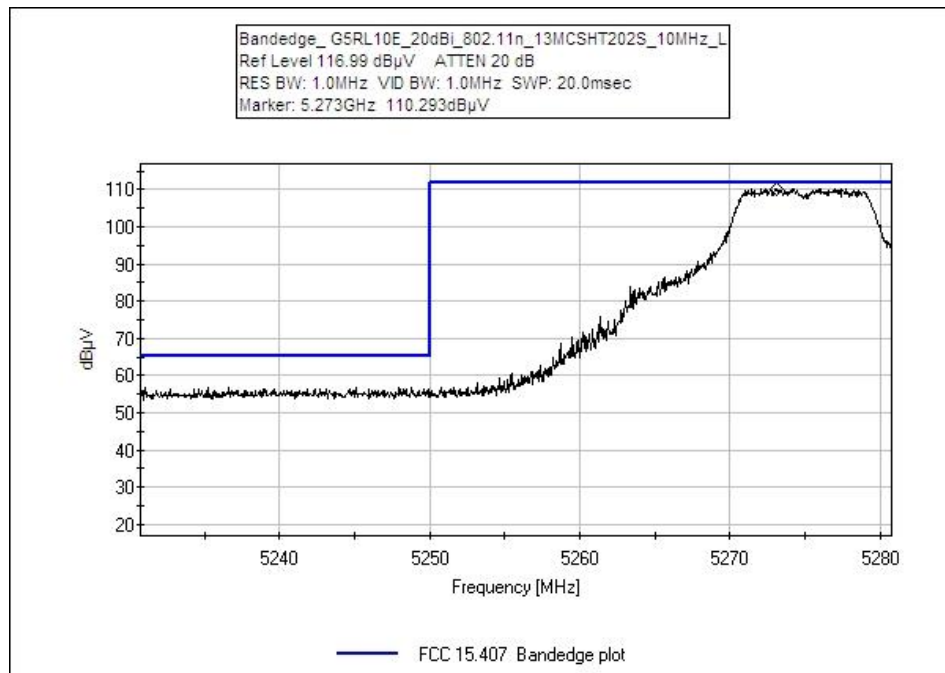
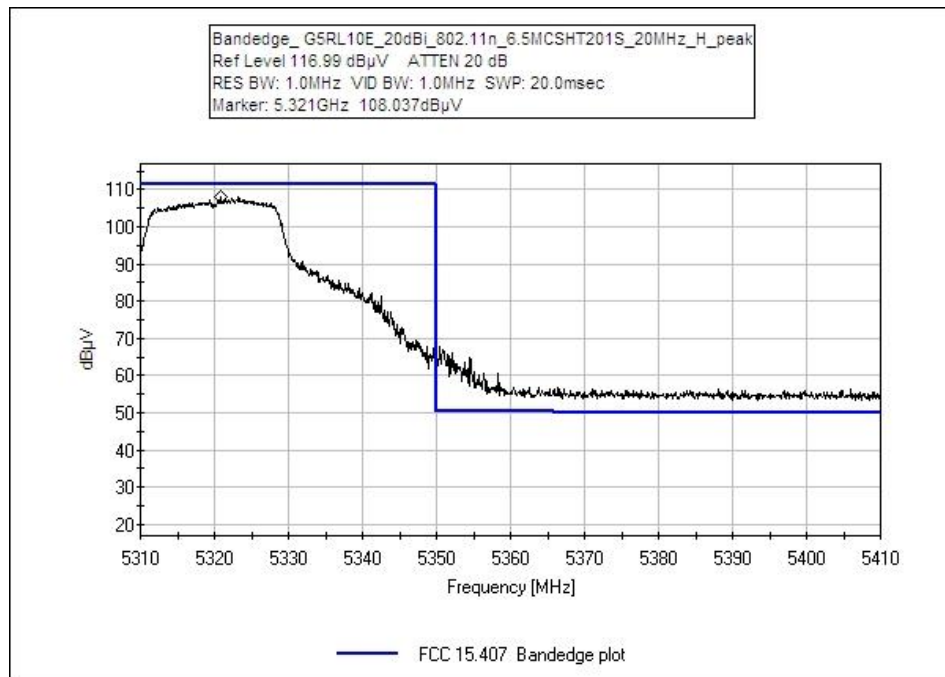
G5RL10E_20dBi Sector

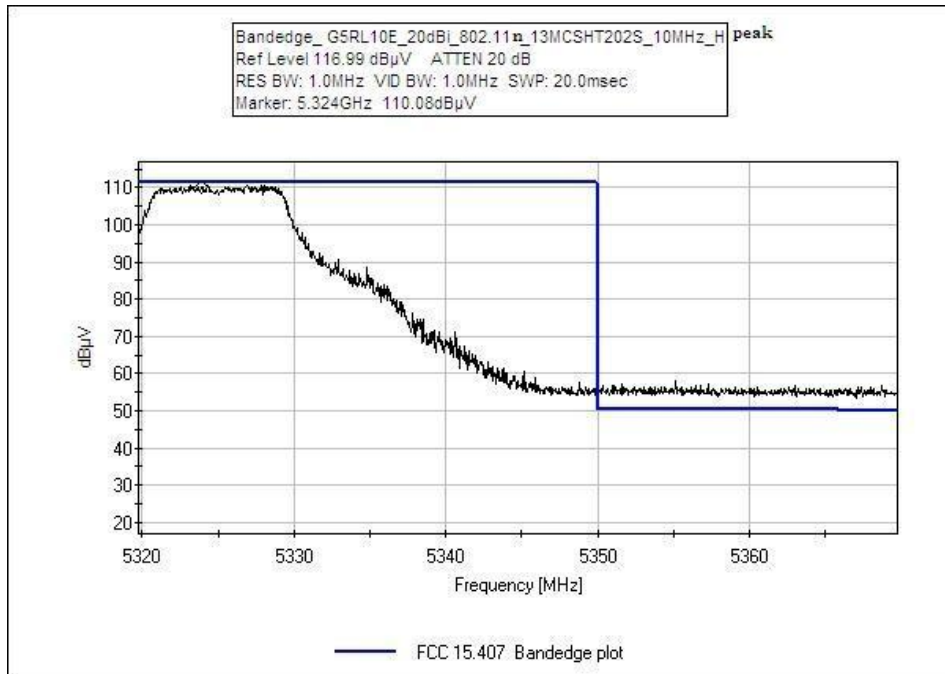
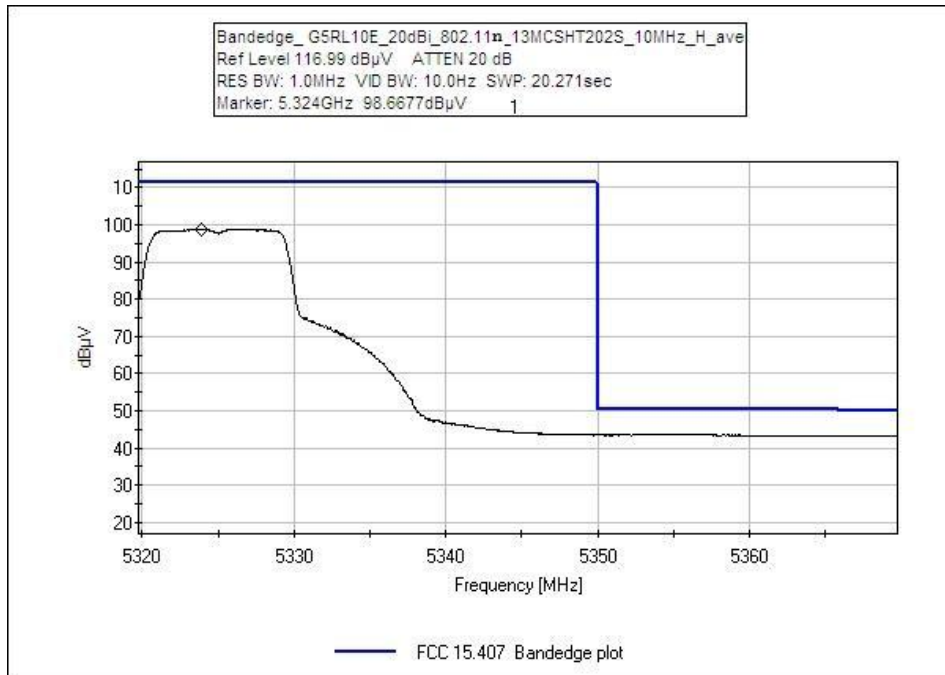


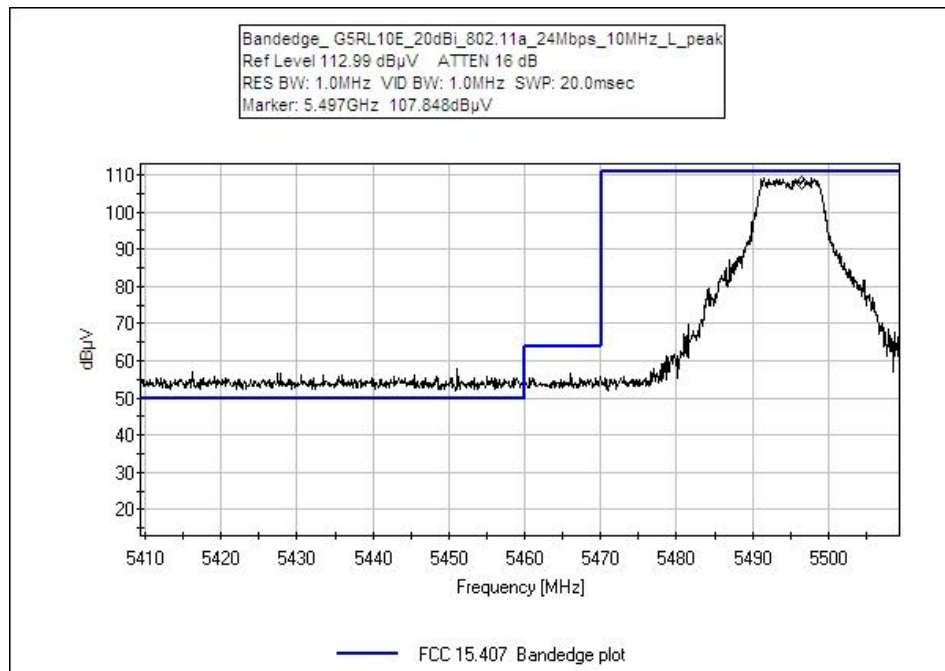
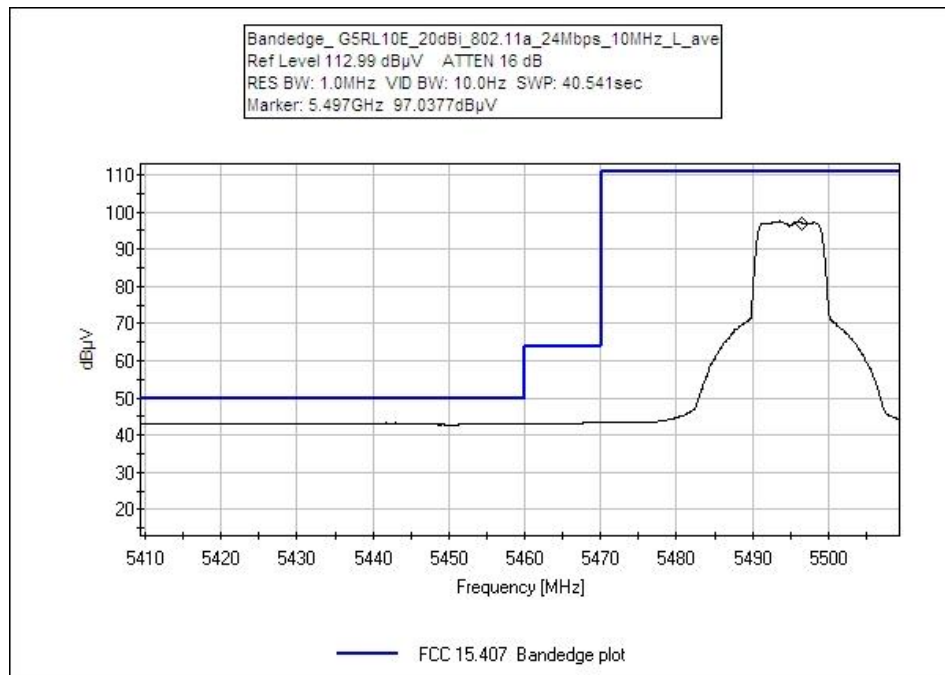


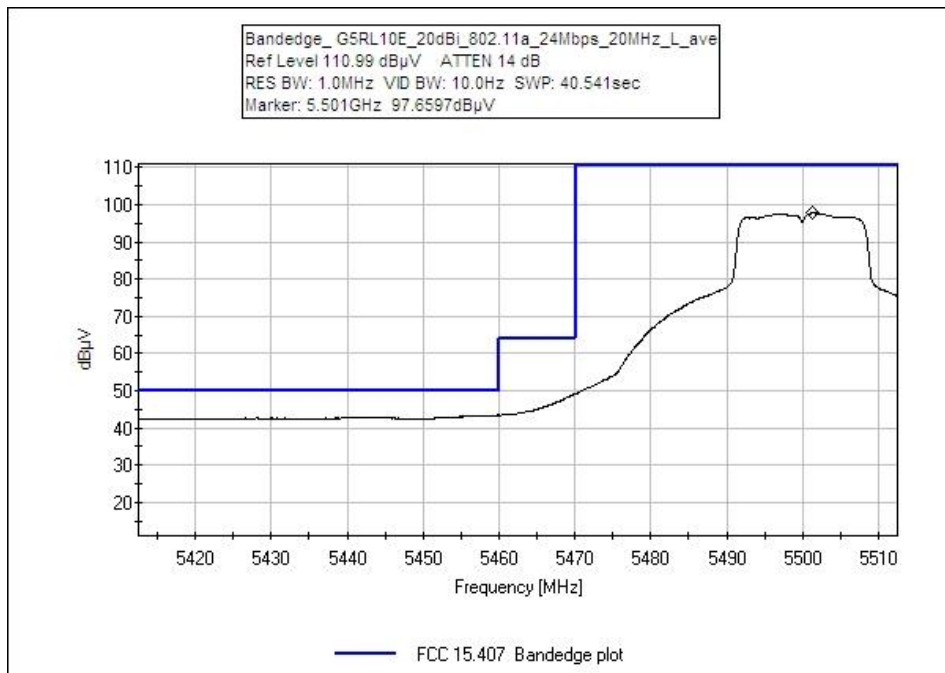
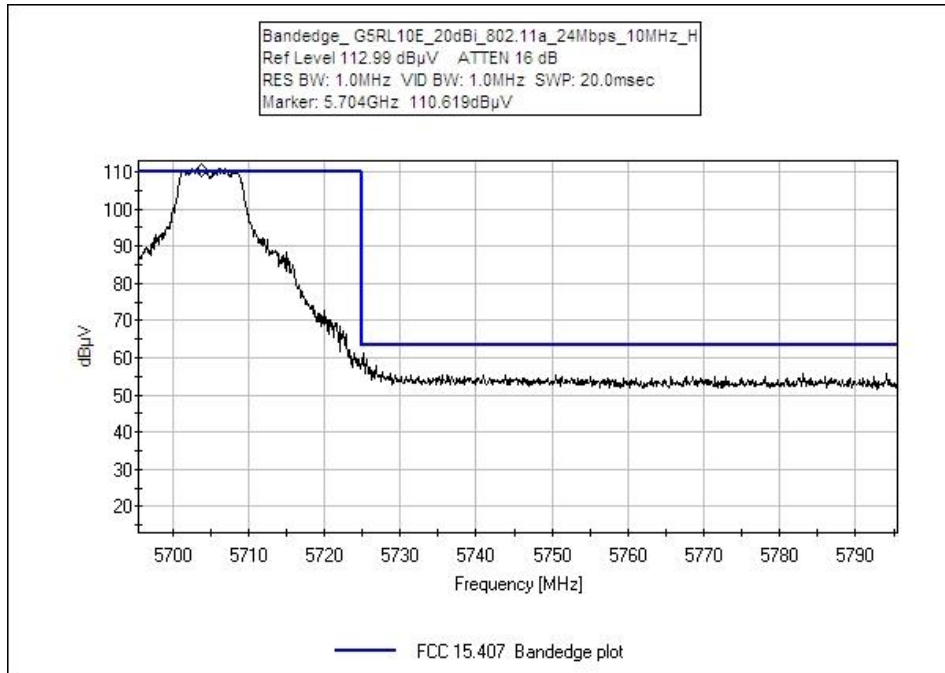


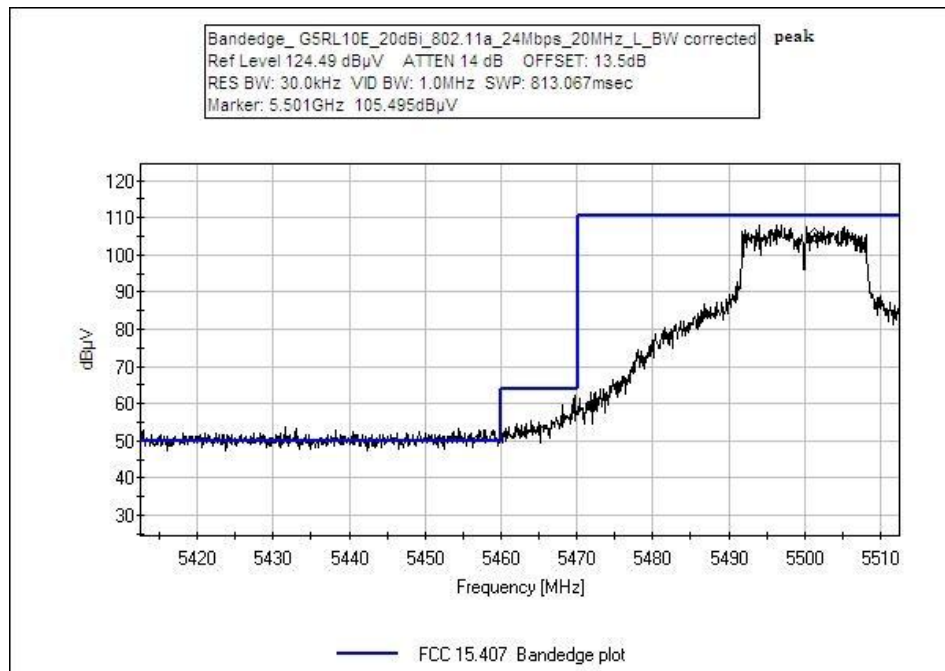
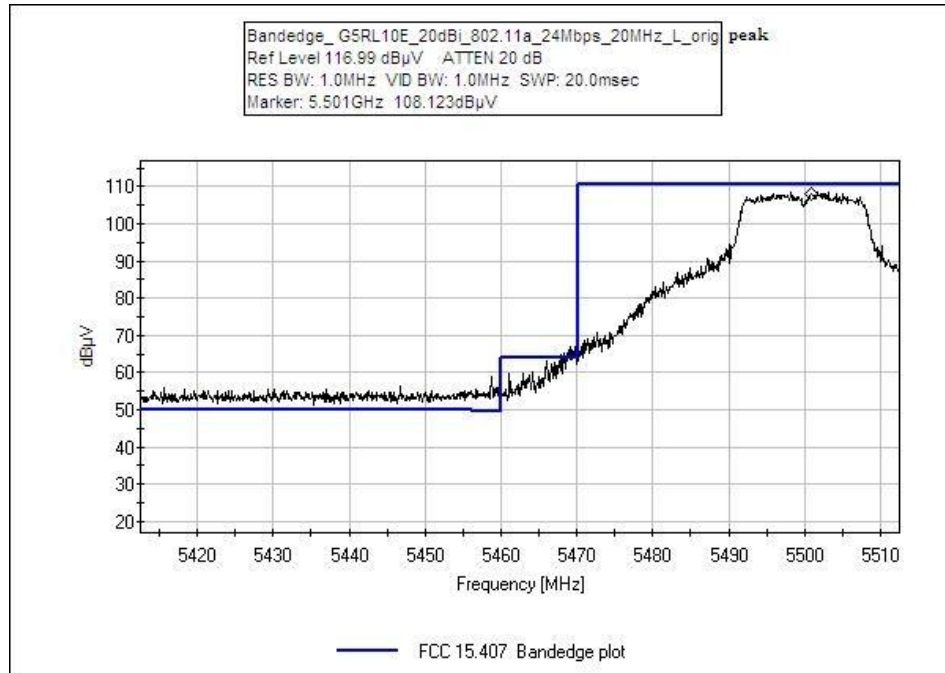


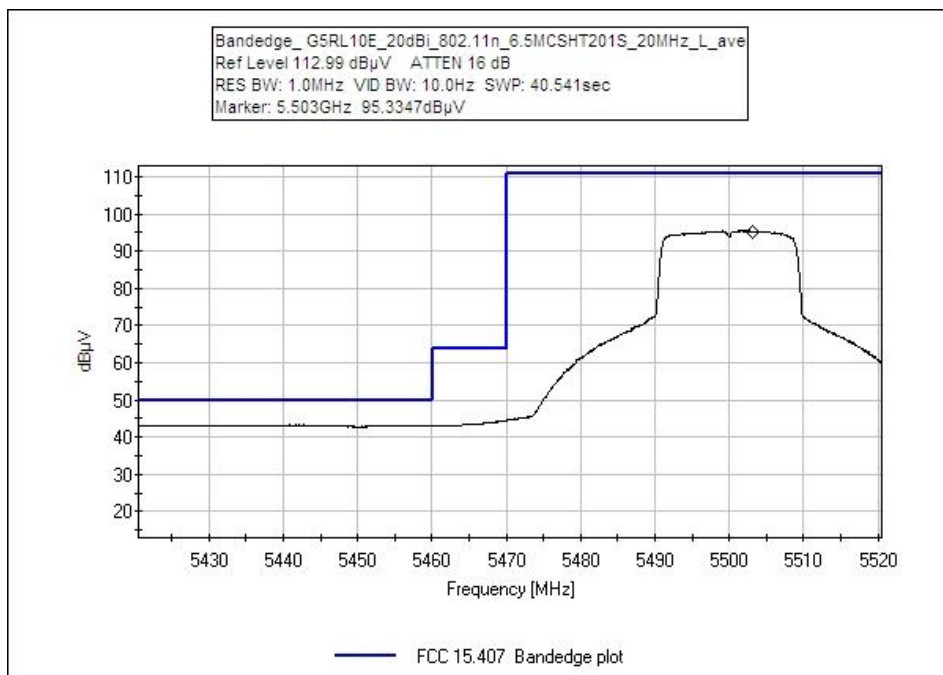
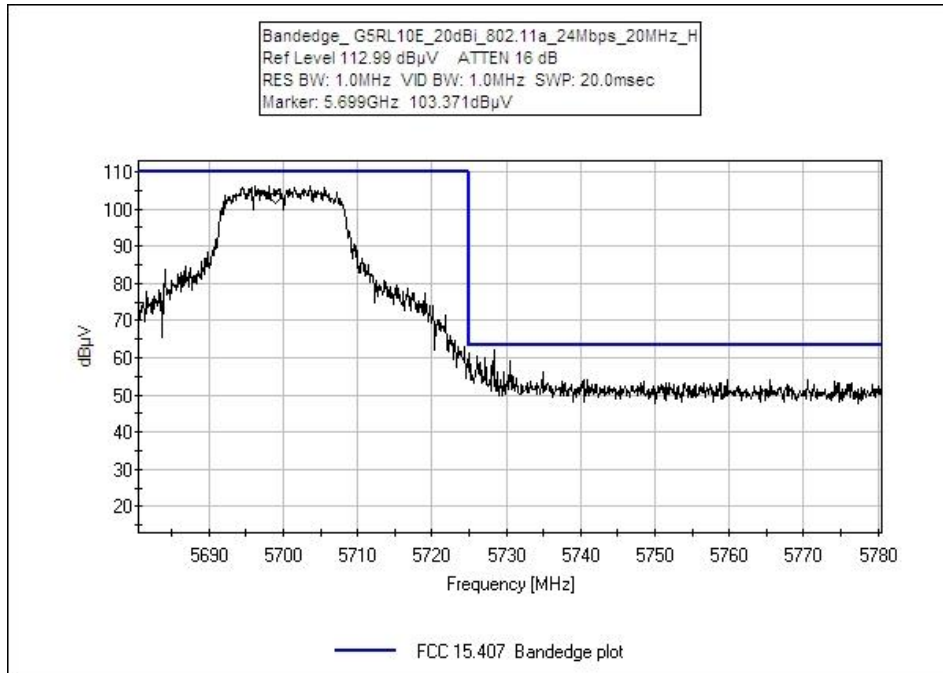


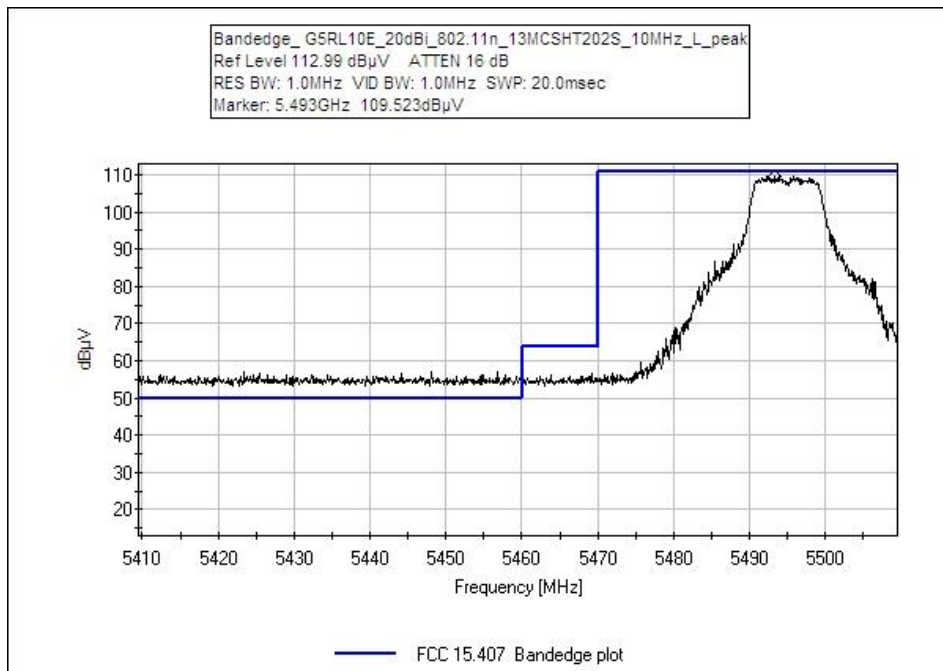
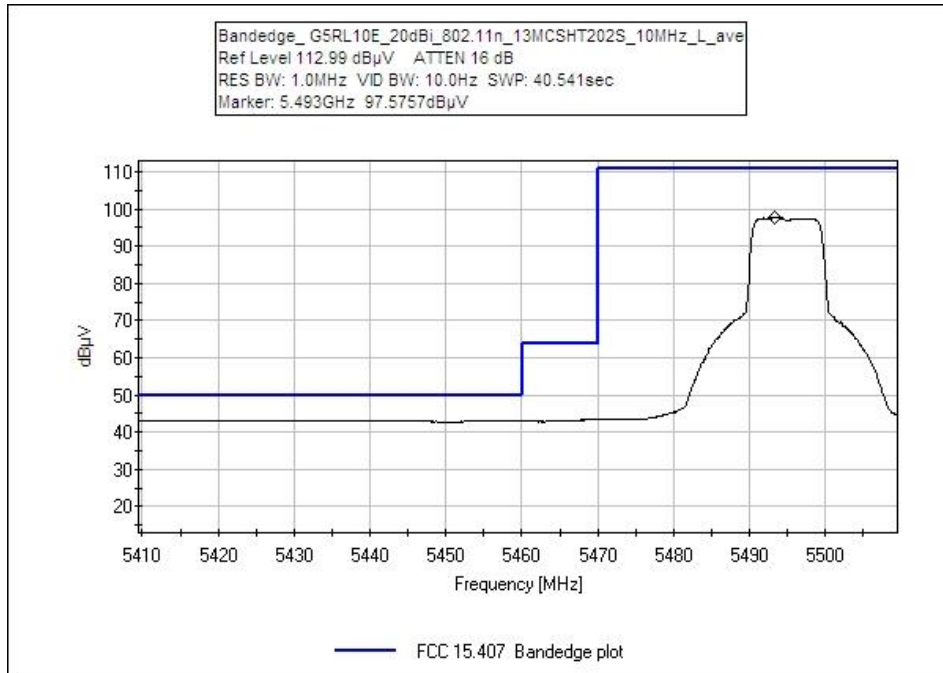


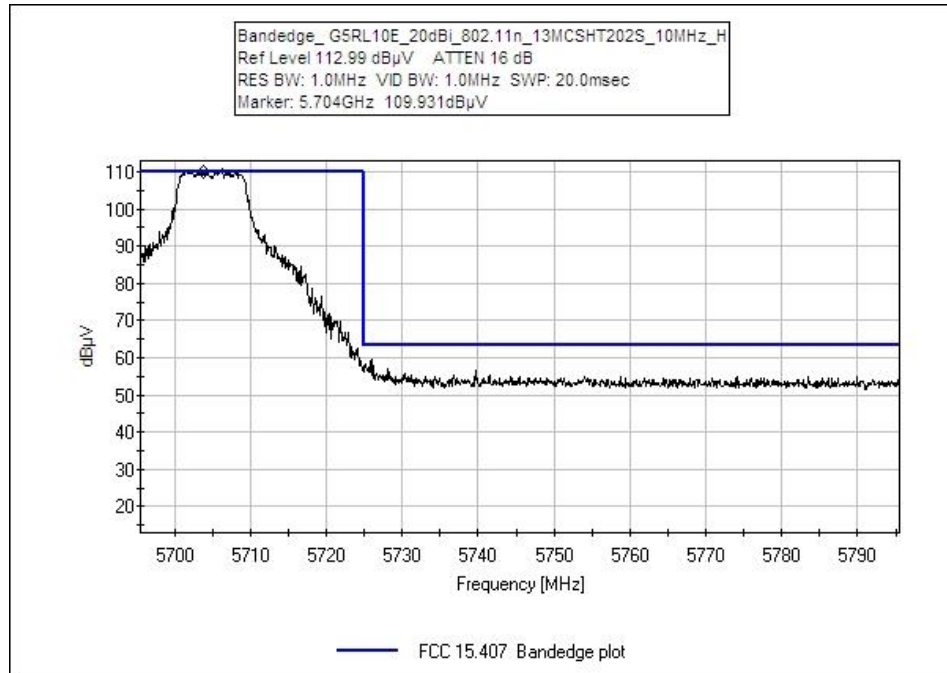




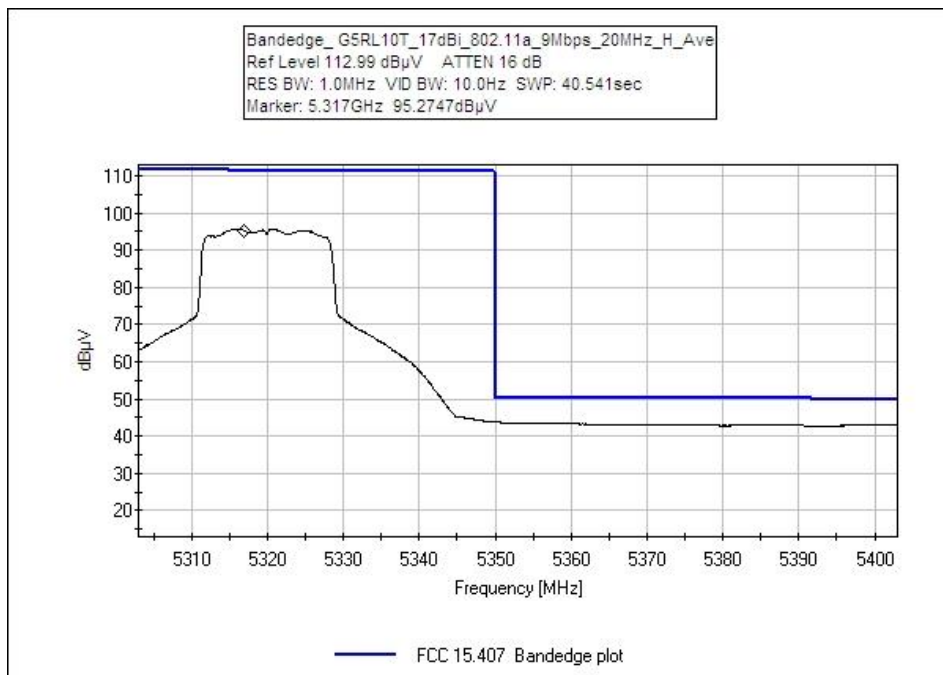
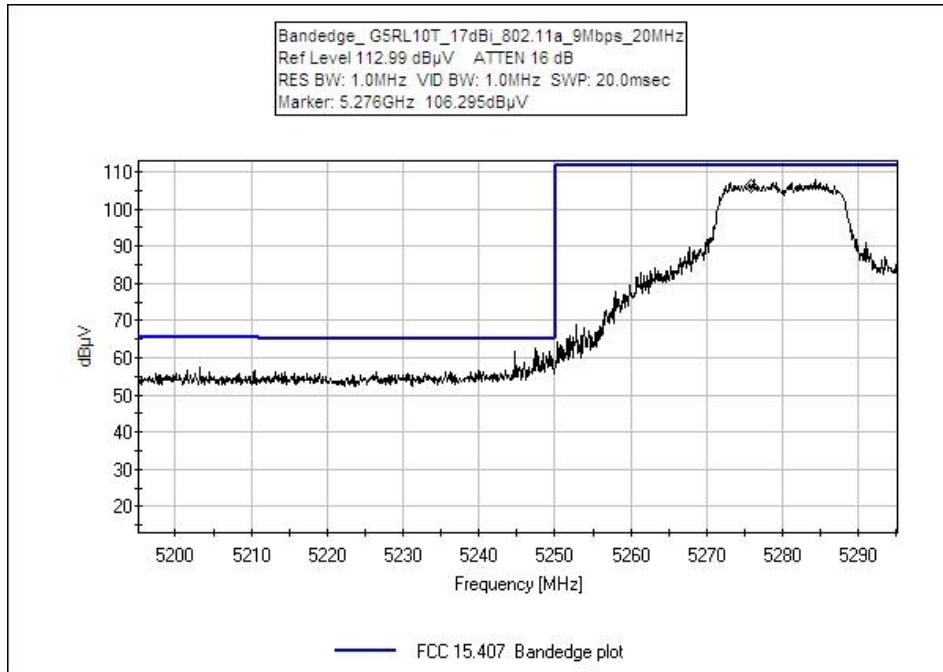


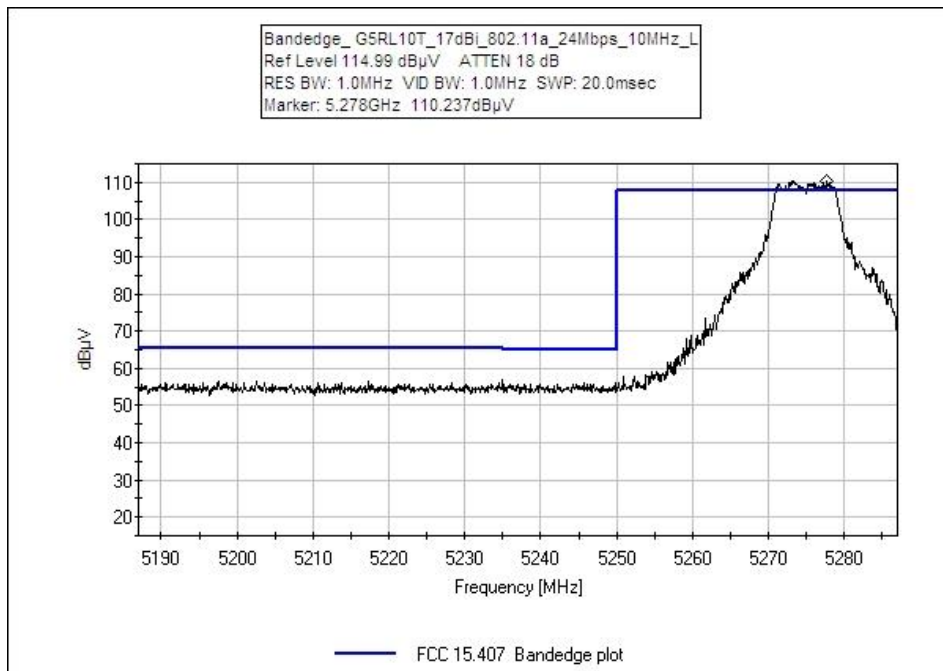
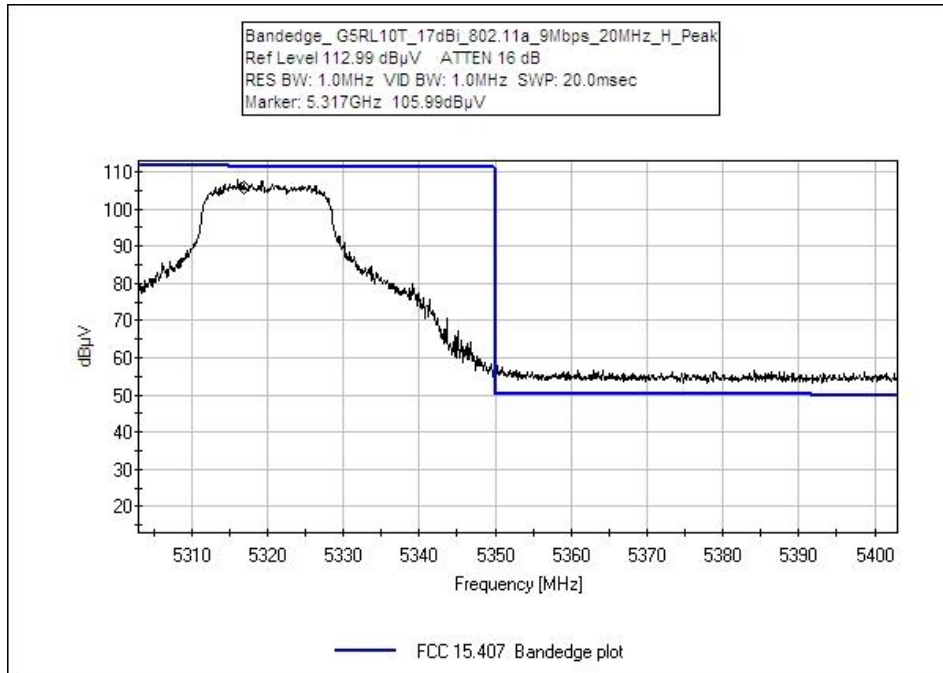


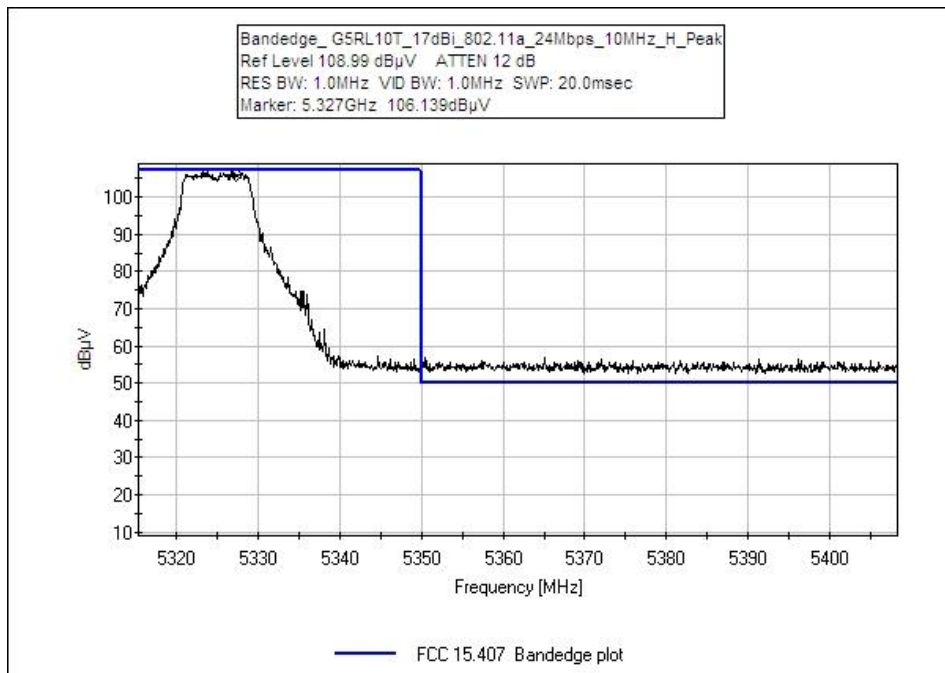
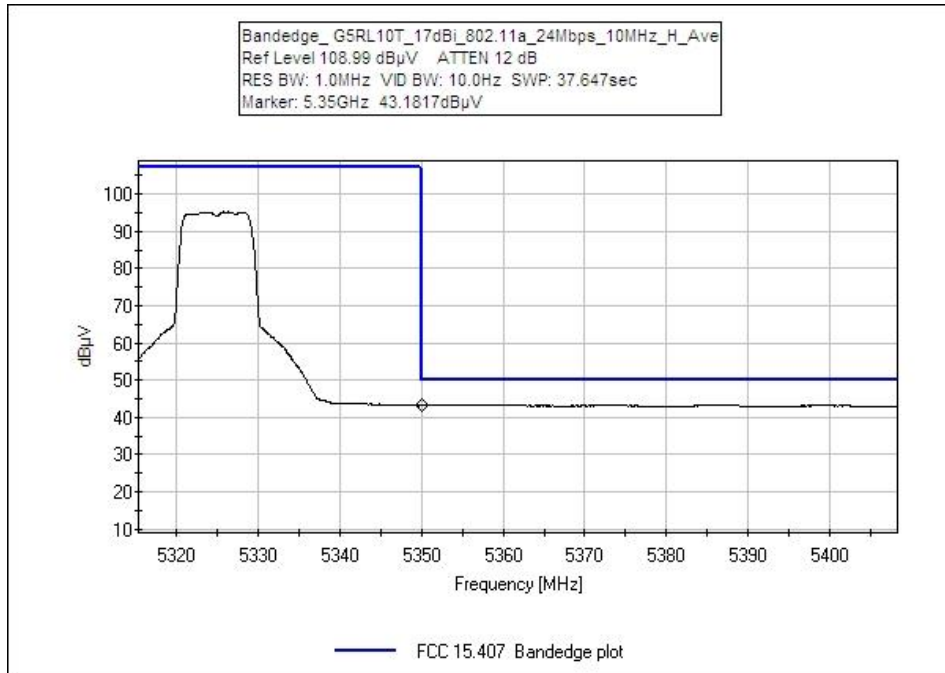


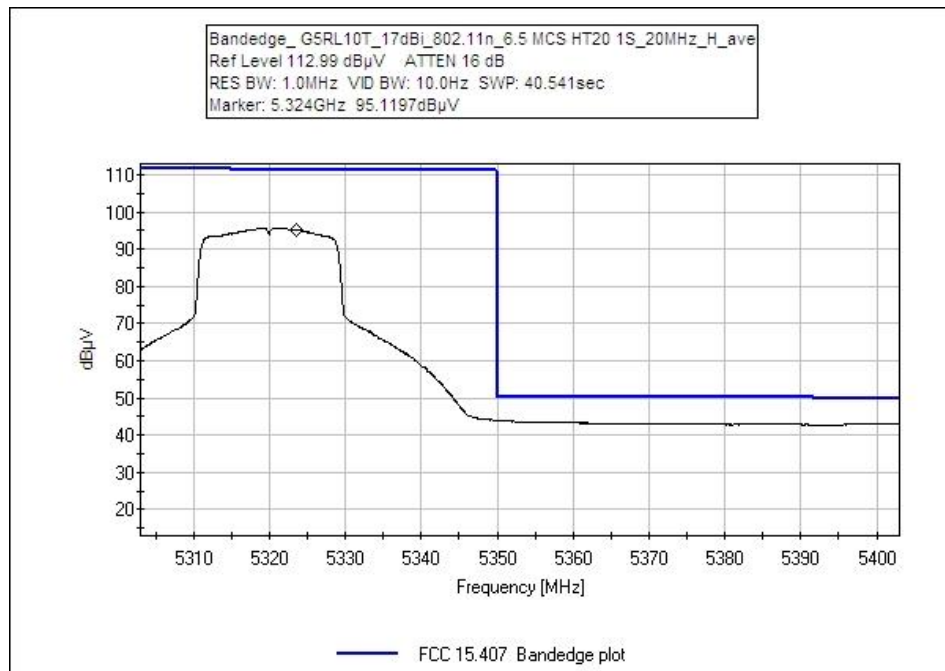
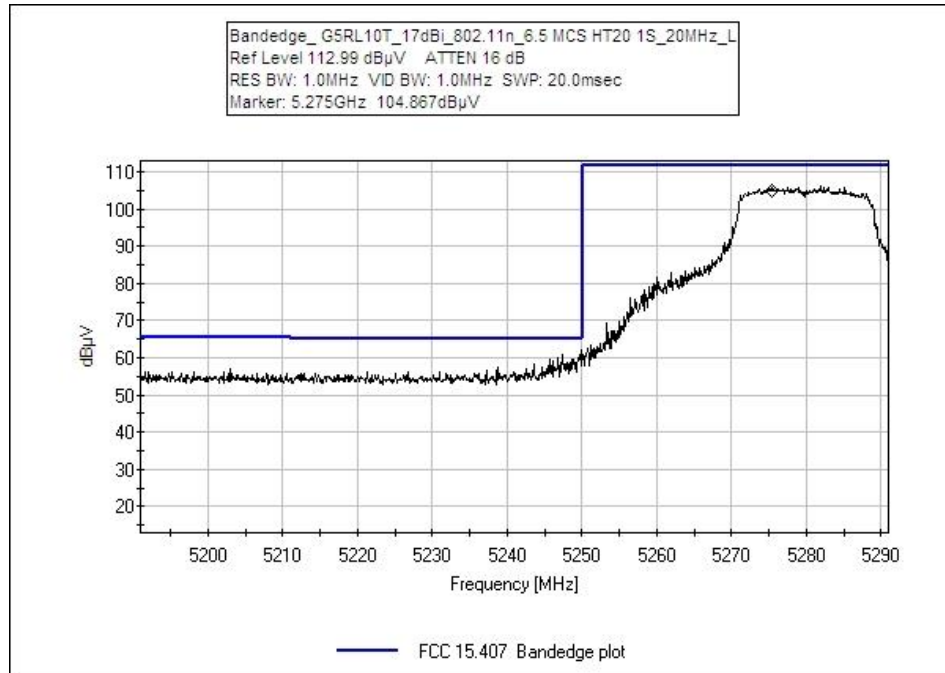


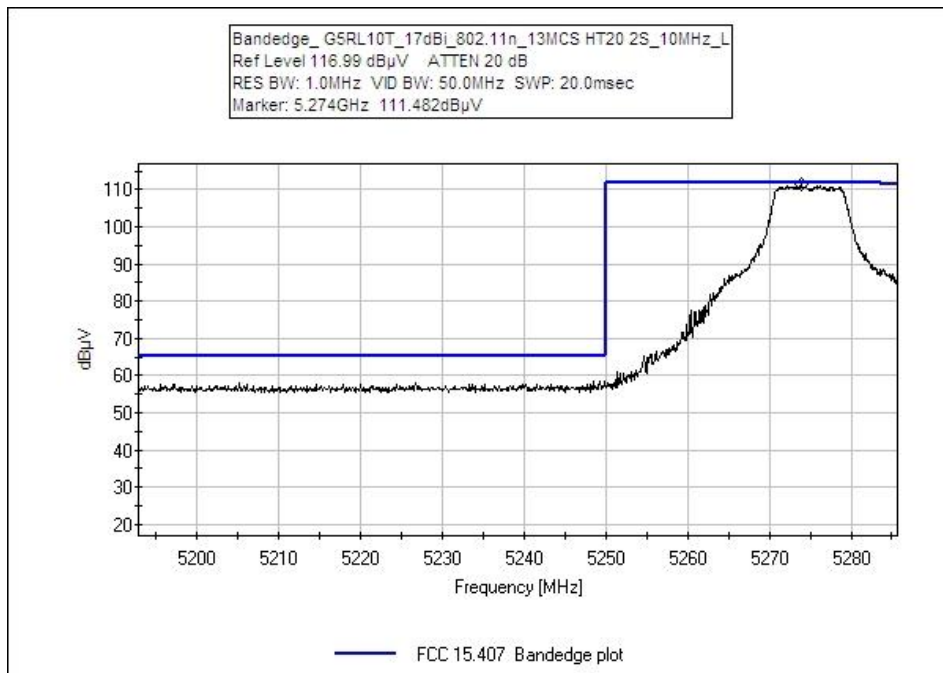
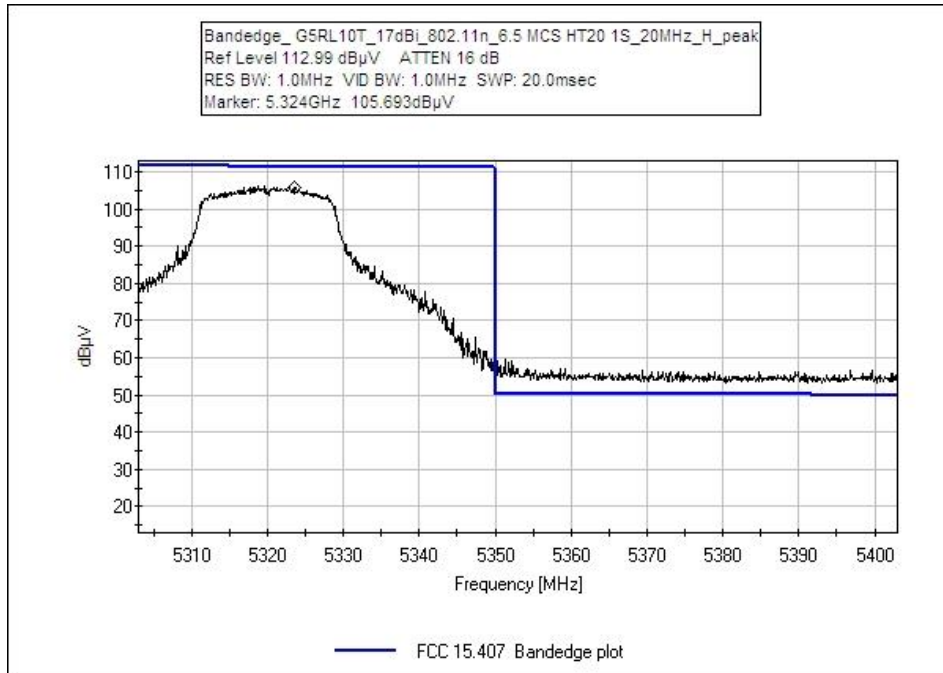
G5RL10T_17dBi Sector

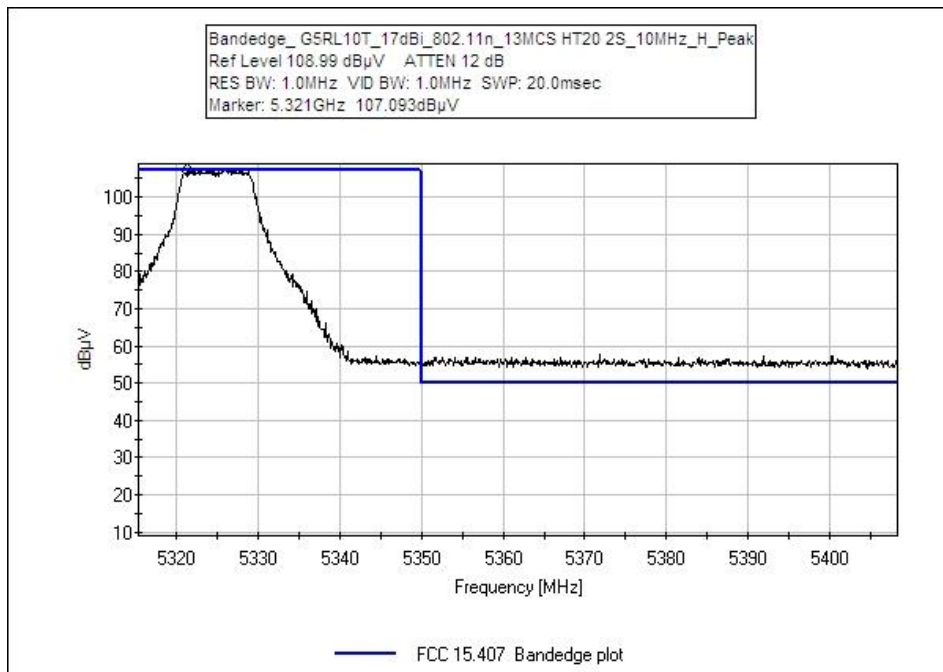
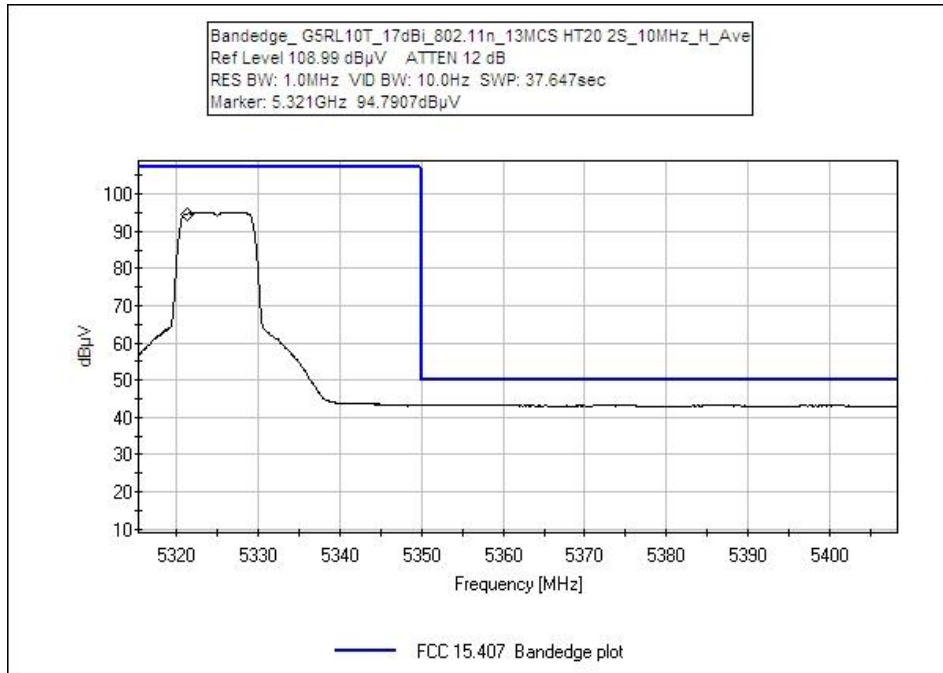


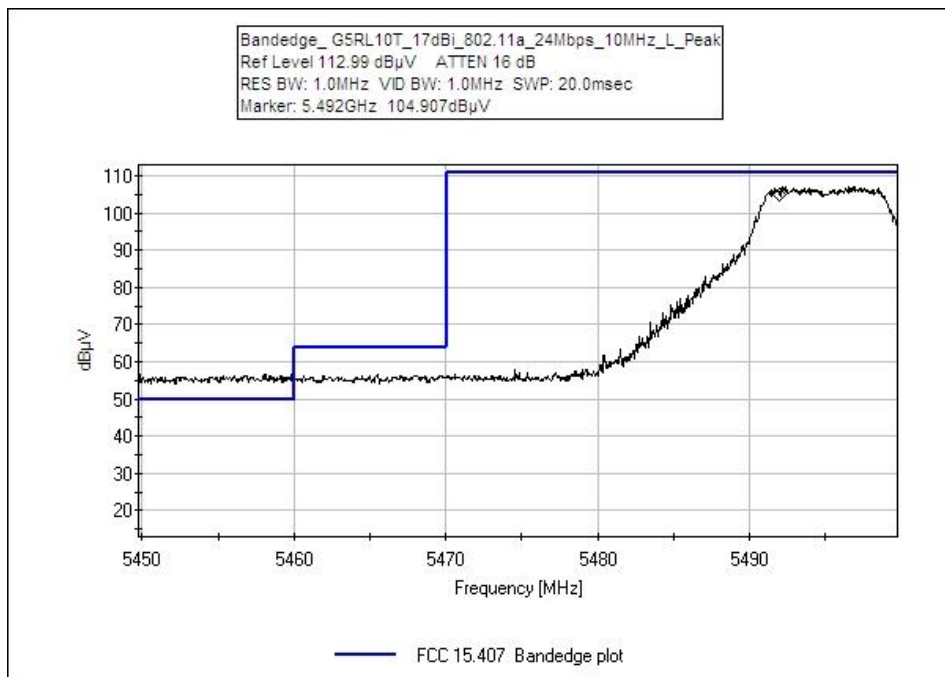
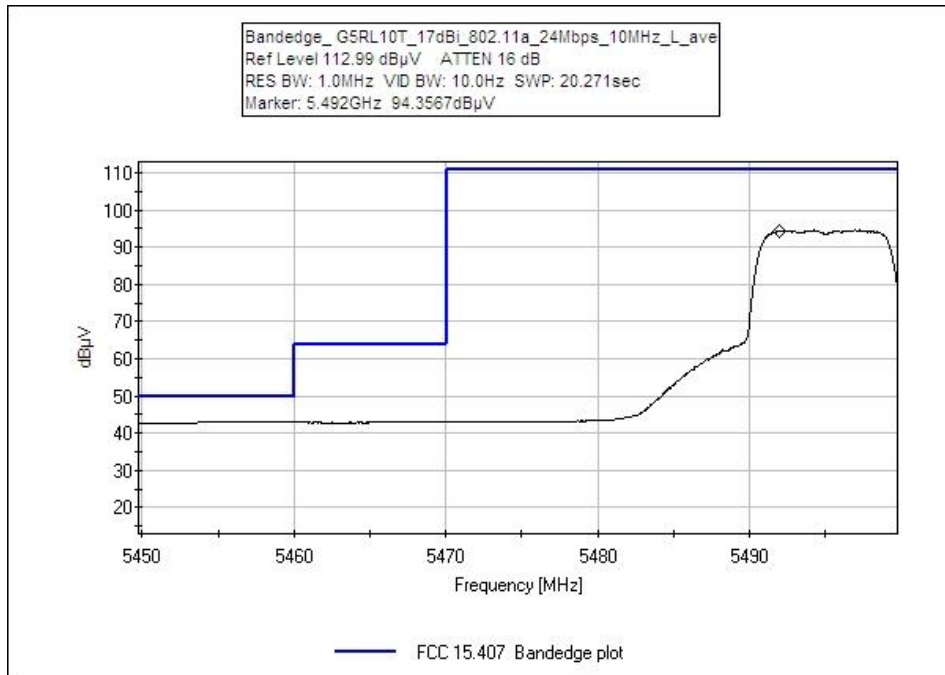


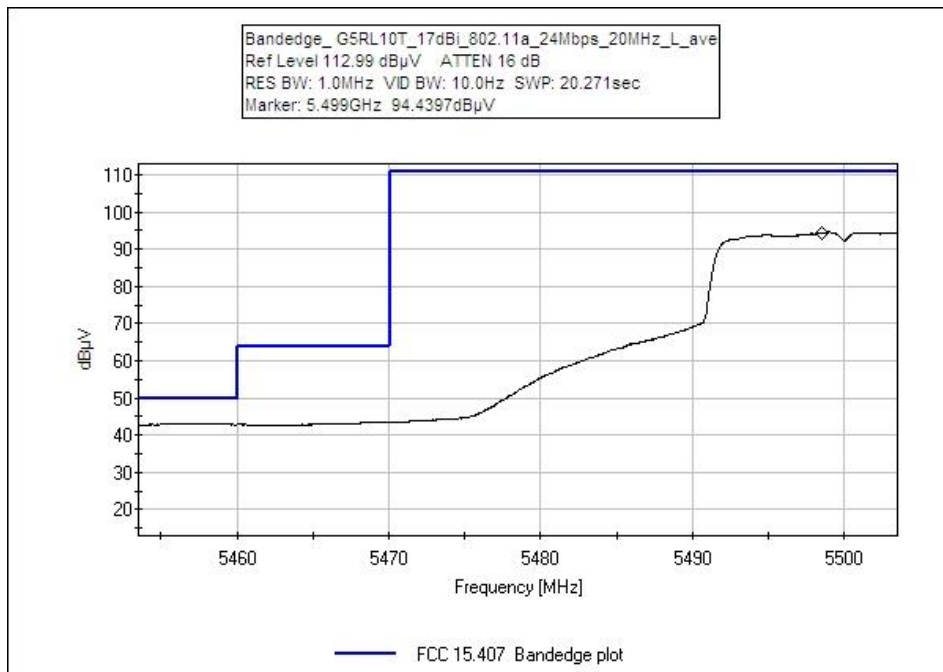
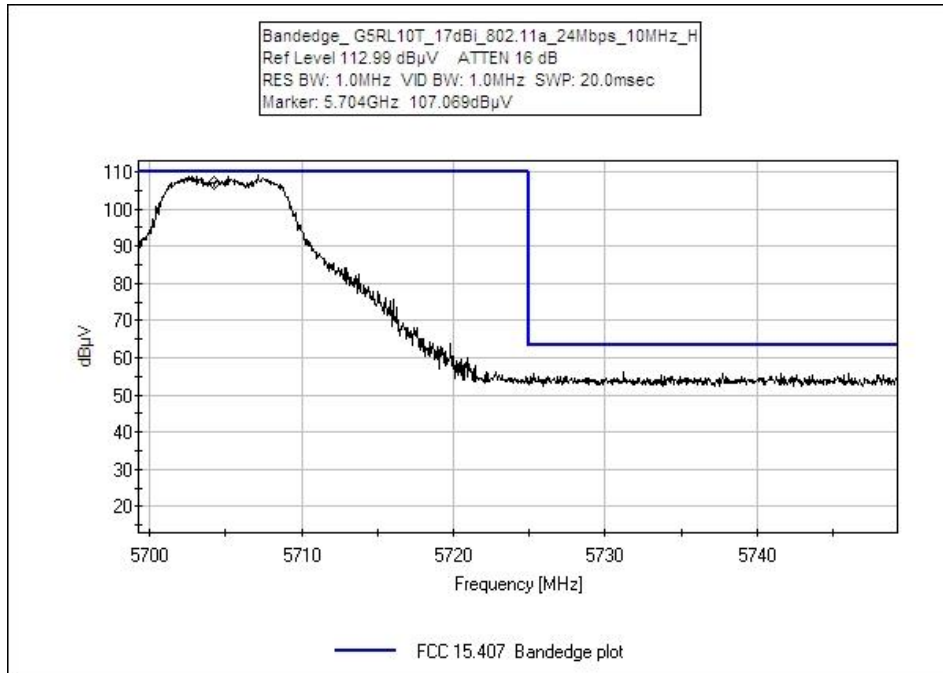


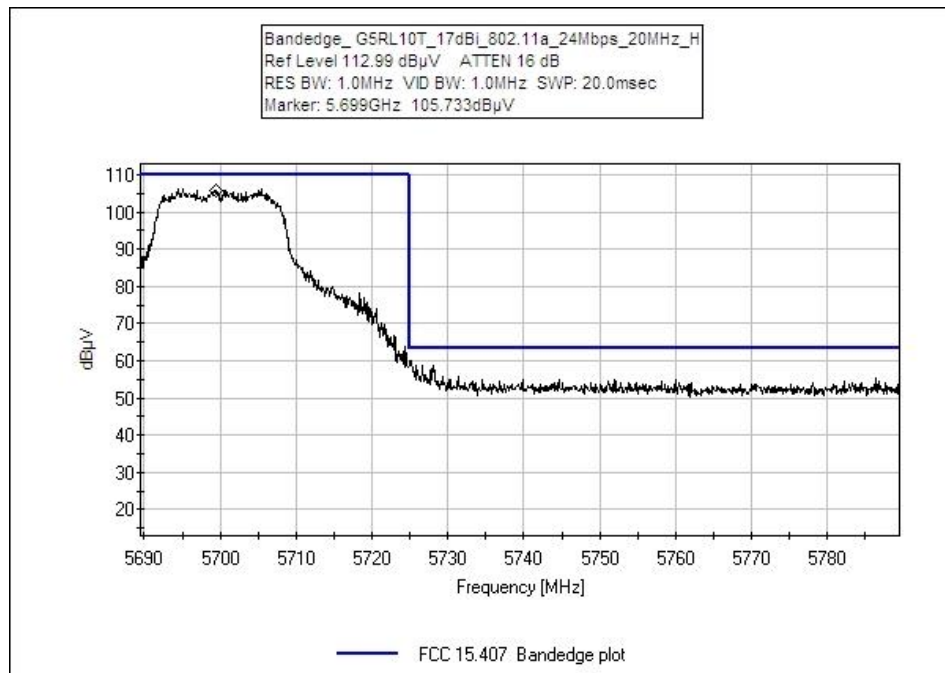
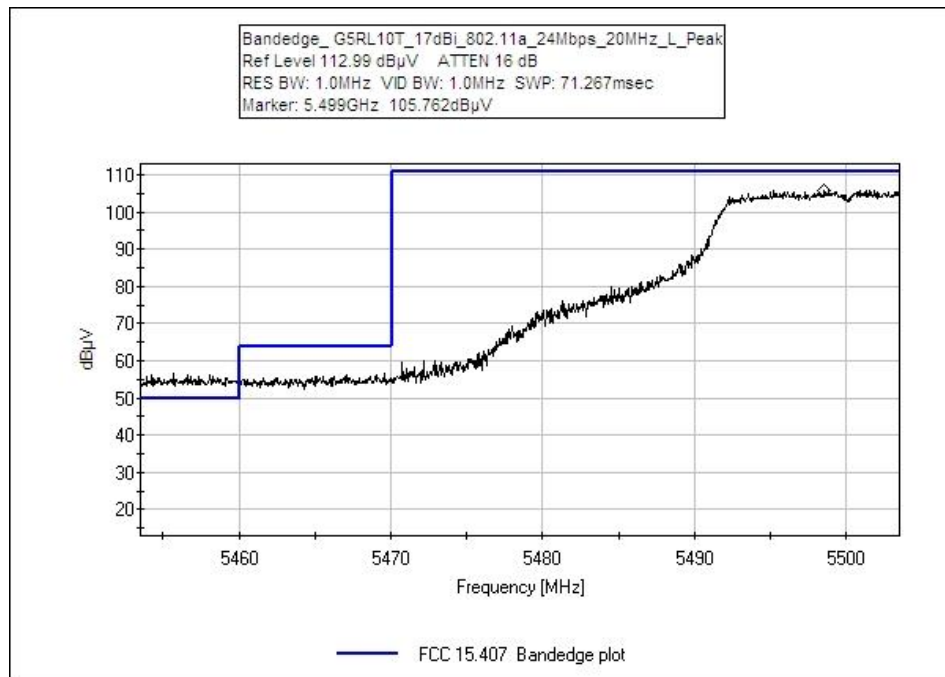


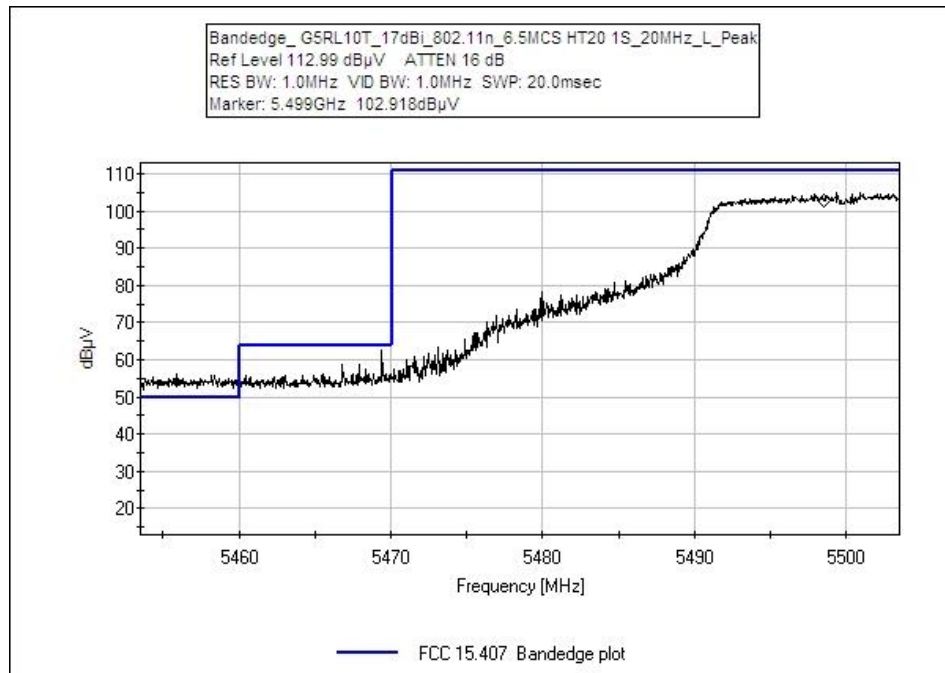
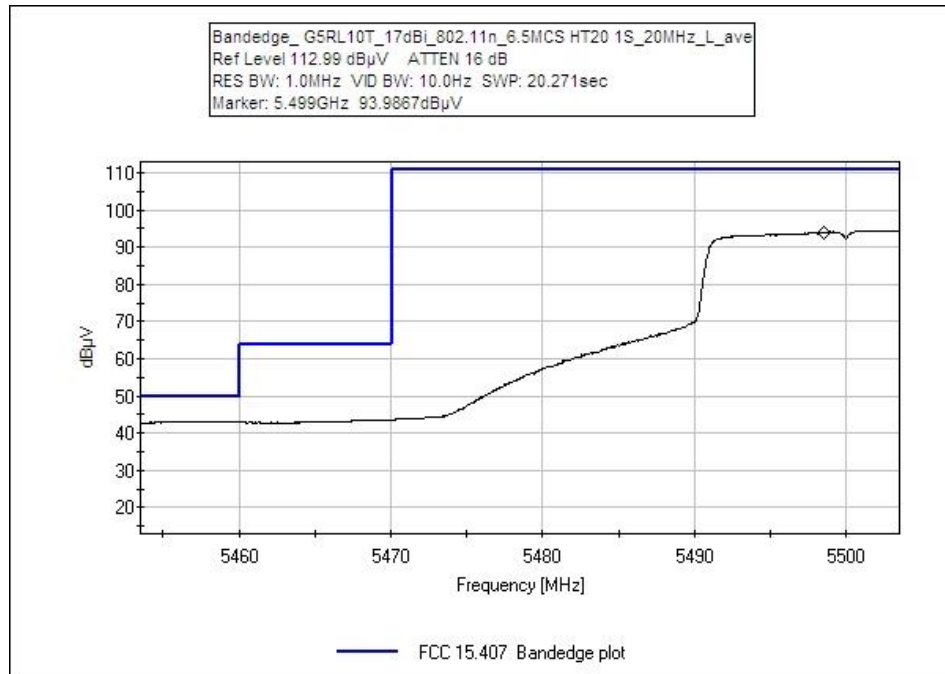


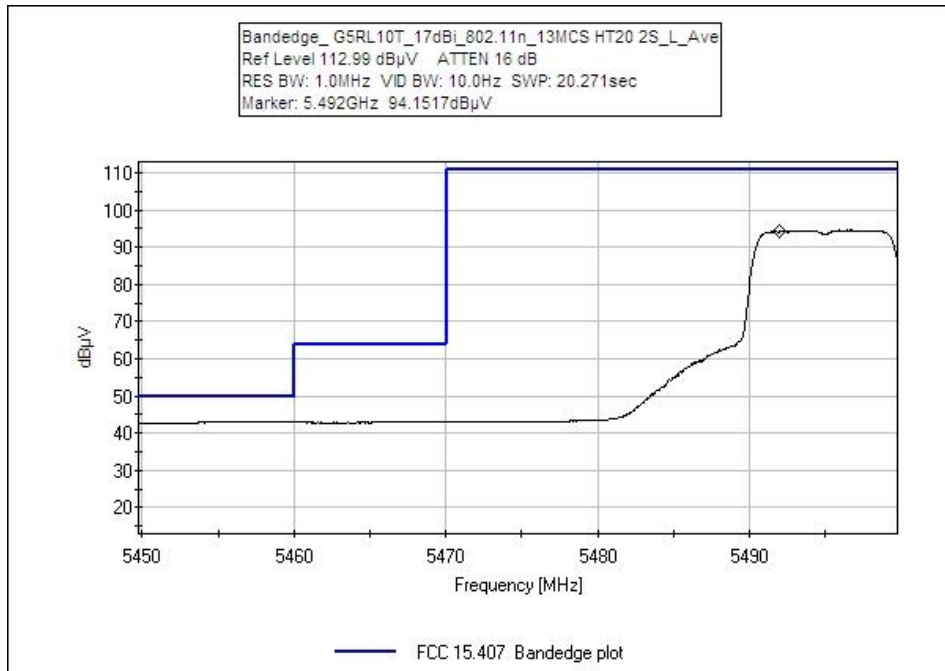
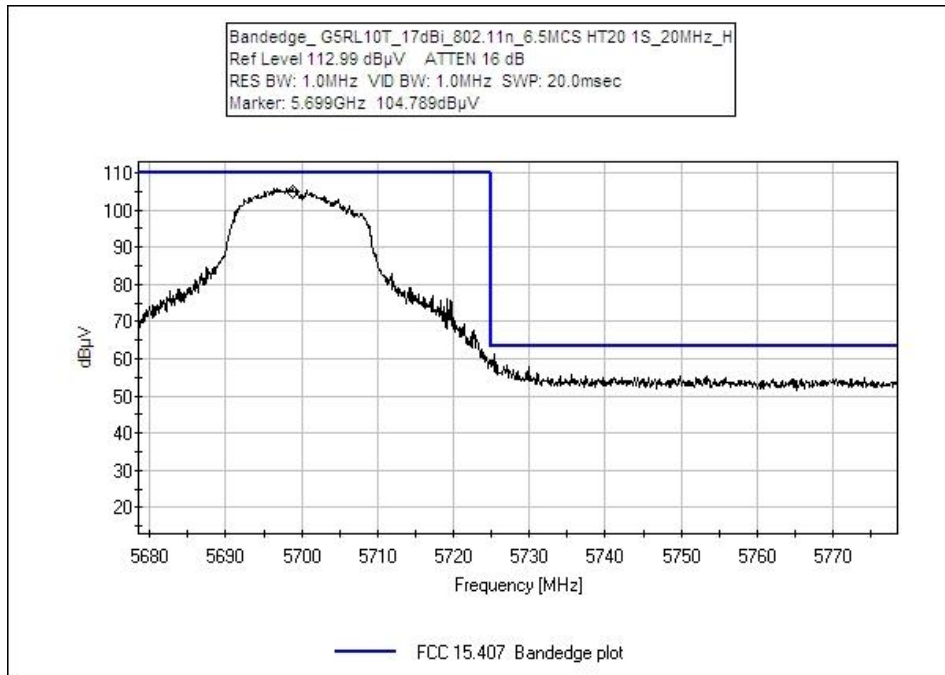


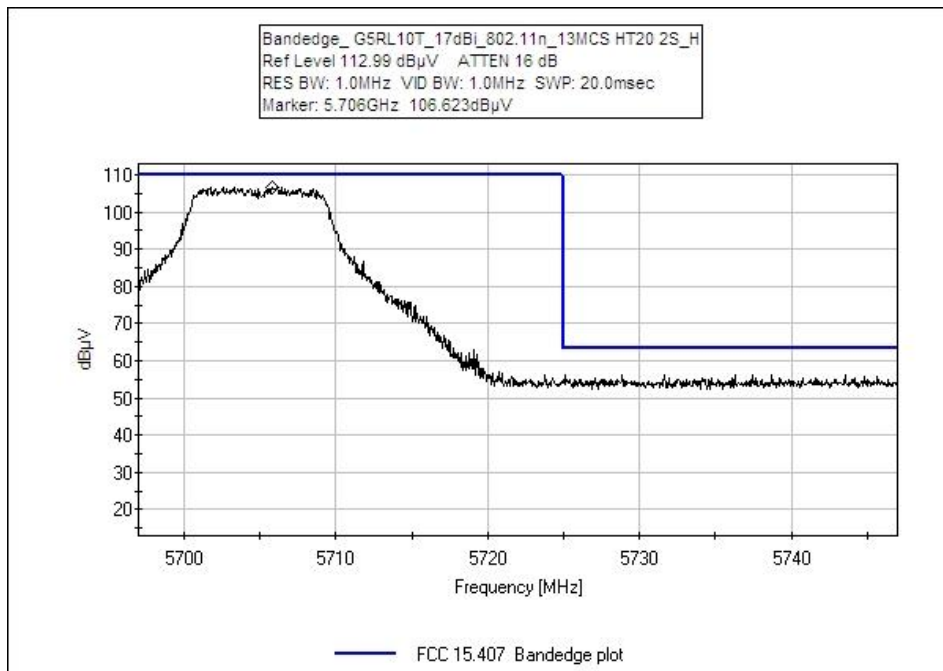
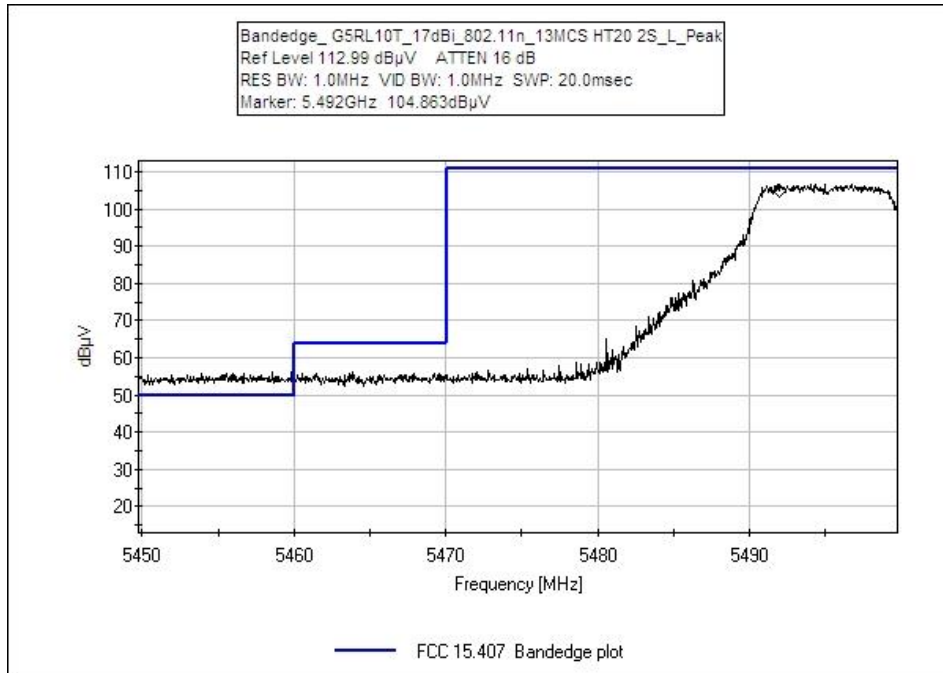




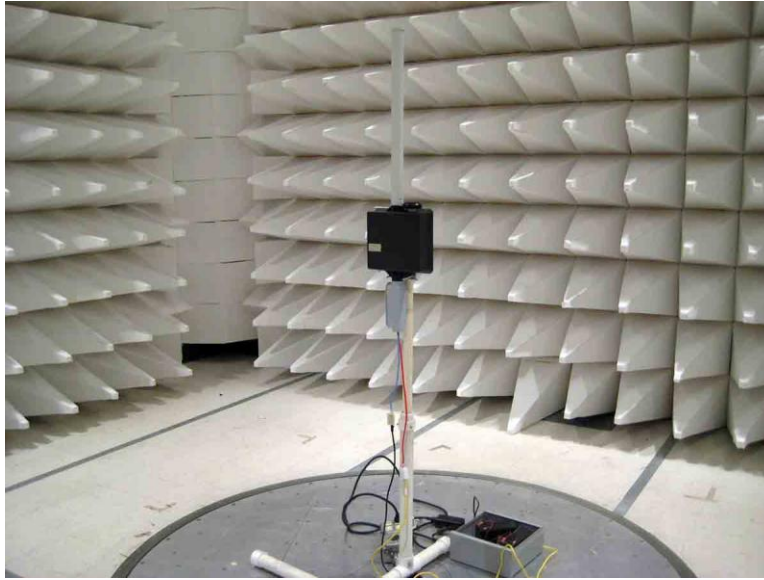




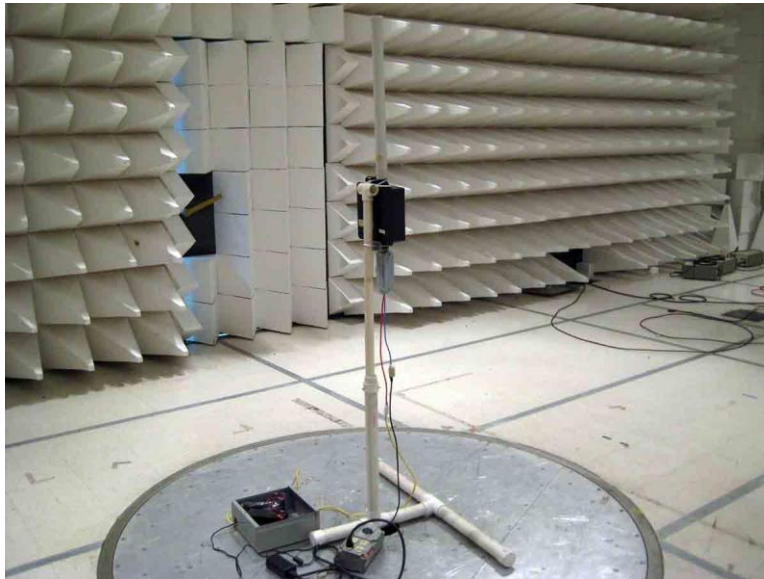




Test Setup Photos



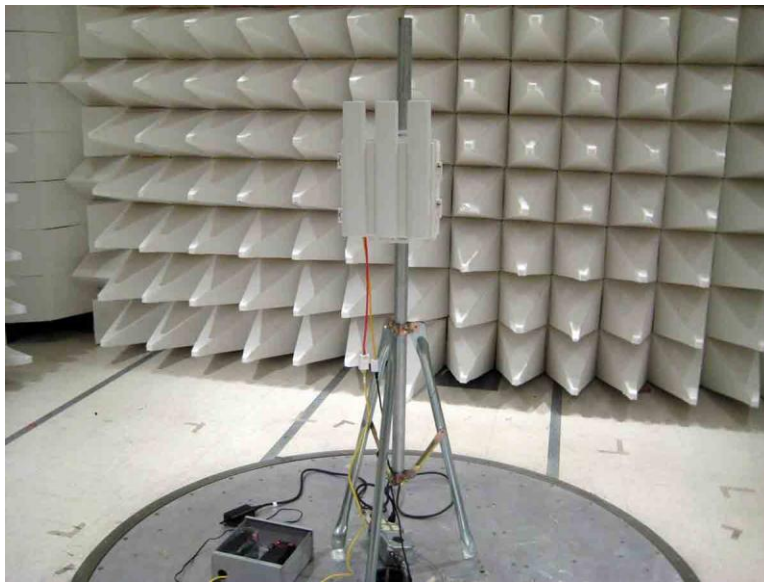
18dB, 11dBi.



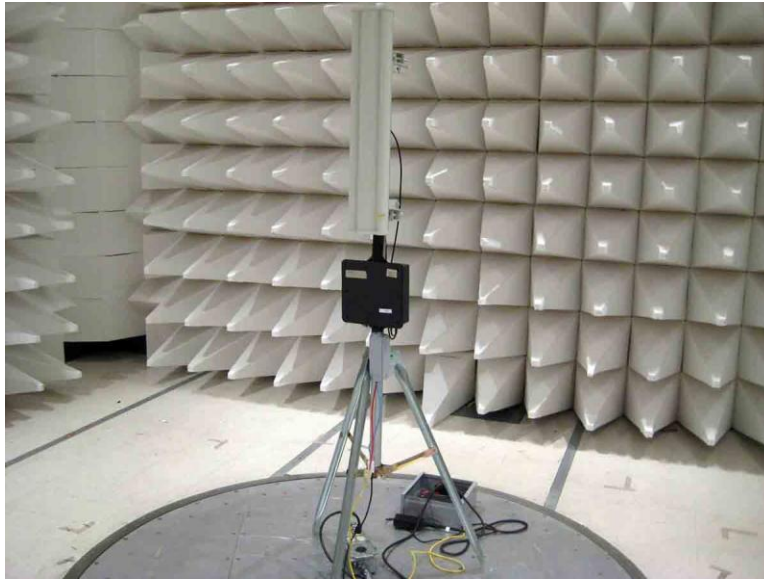
18dBi, 11dBi.



17dBi Sector



17dBi Sector



20dBi Sector



20dBi Sector