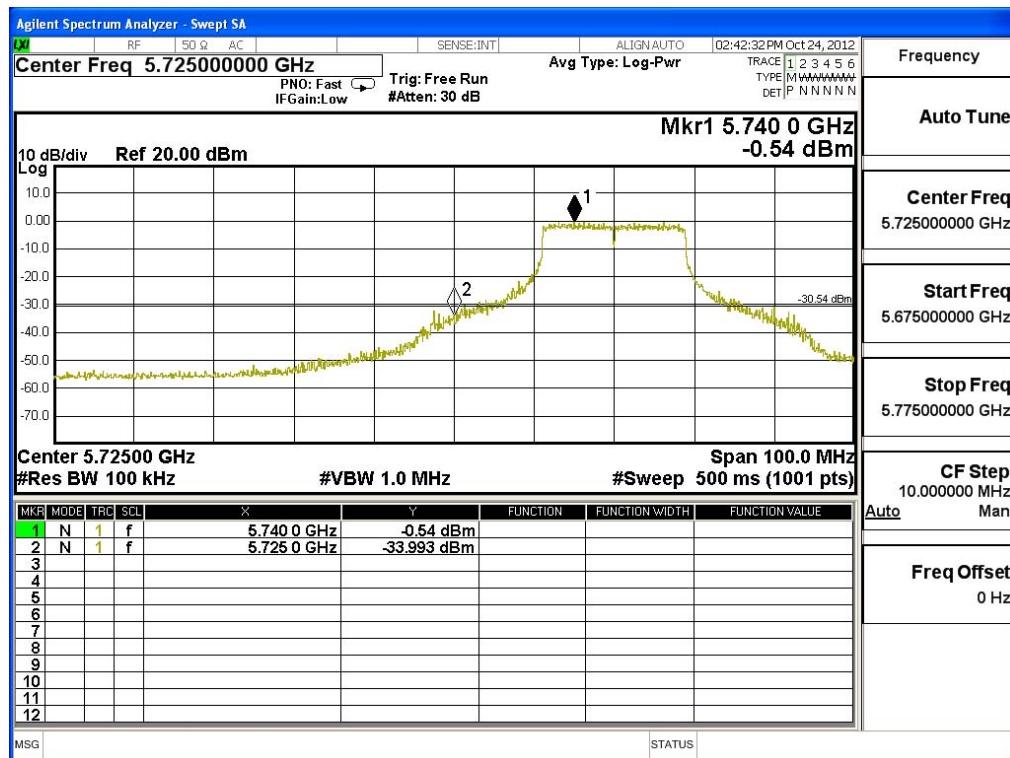


Product : SpectraGuardR Access Point / Sensor
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 13: Transmit - 802.11n-20BW_21.7Mbps(5G Band)(PIFA Antenna)

Chain A

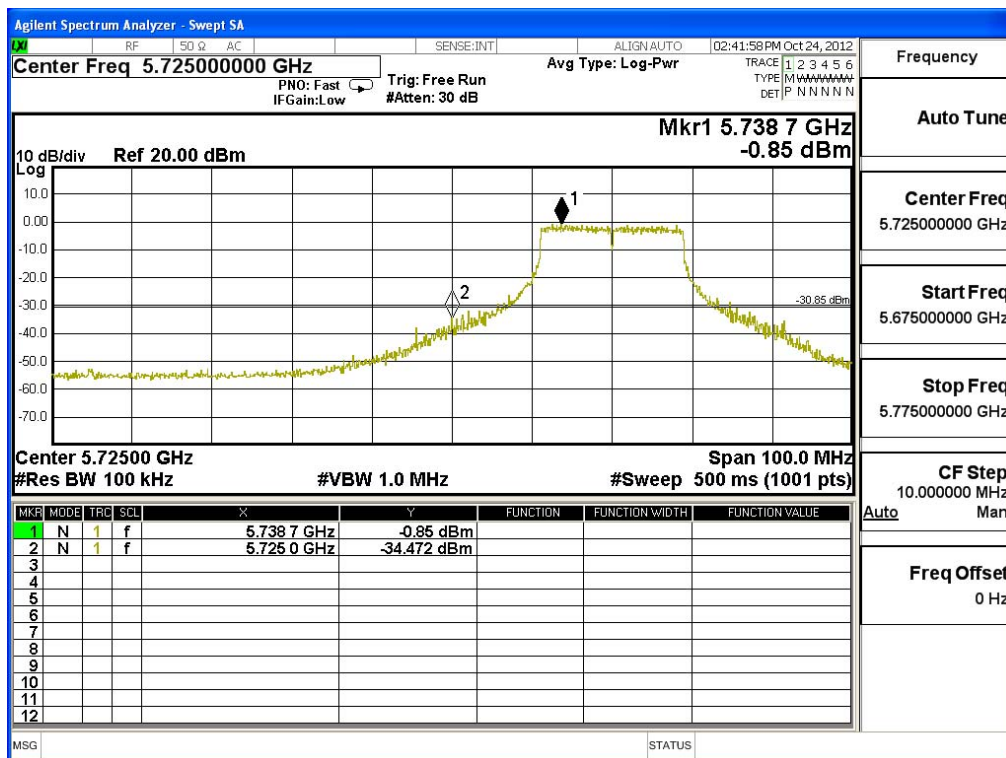
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5745	34.533	>30	PASS



Product : SpectraGuardR Access Point / Sensor
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 13: Transmit - 802.11n-20BW_21.7Mbps(5G Band)(PIFA Antenna)

Chain B

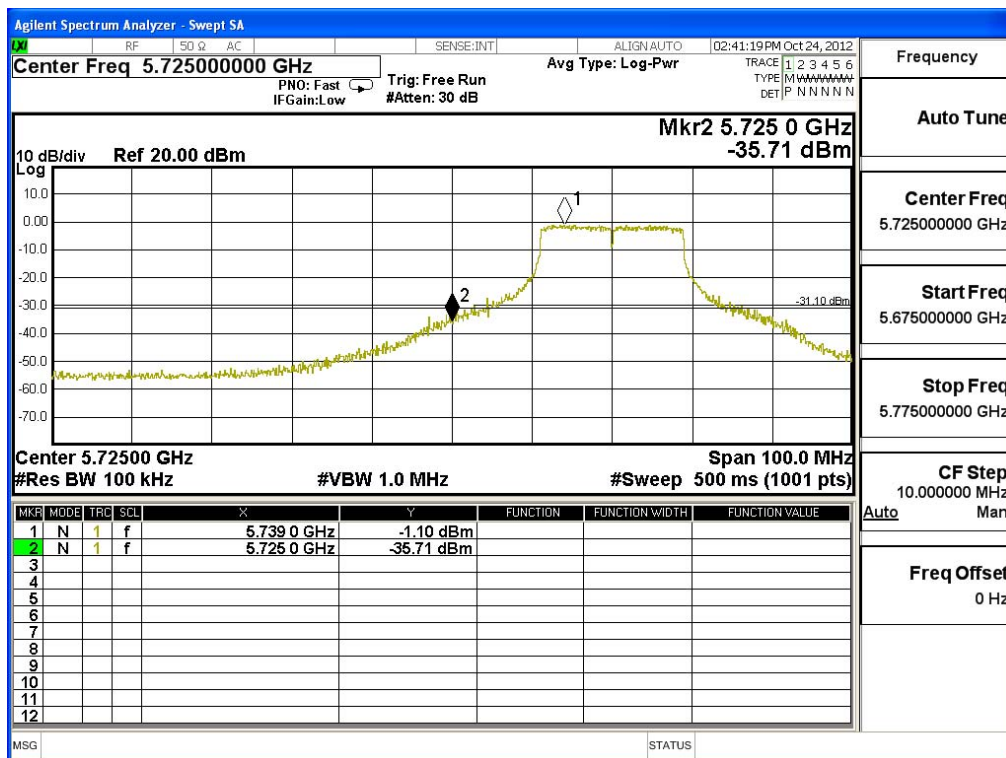
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5745	33.622	>30	PASS



Product : SpectraGuardR Access Point / Sensor
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 13: Transmit - 802.11n-20BW_21.7Mbps(5G Band)(PIFA Antenna)

Chain C

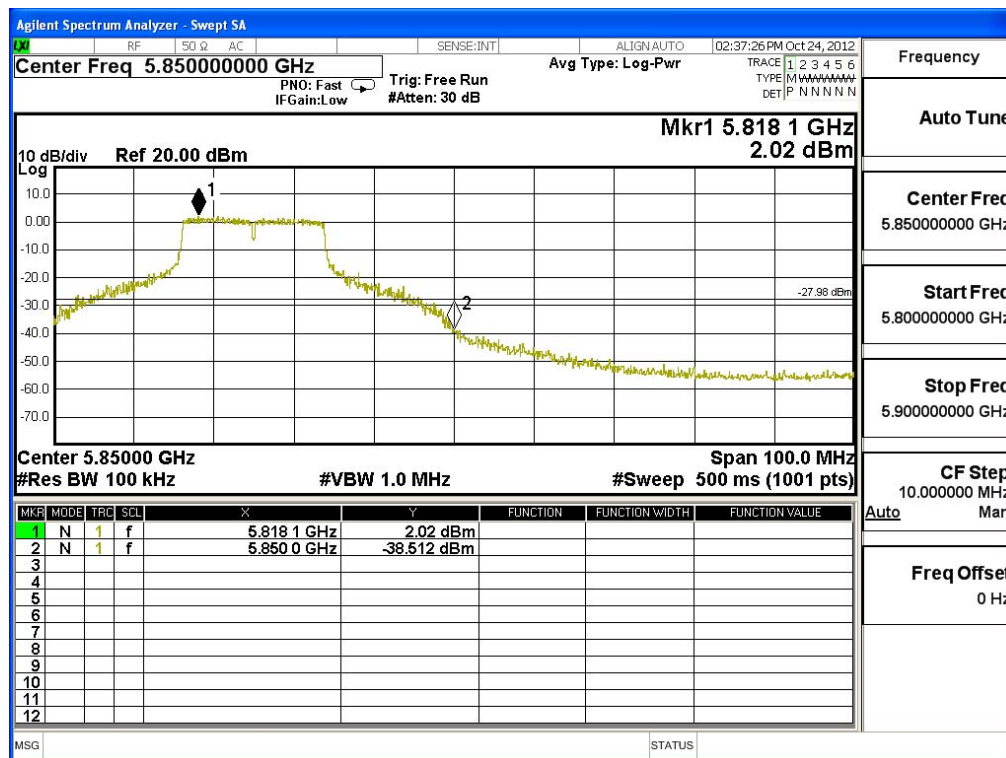
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5745	36.81	>30	PASS



Product : SpectraGuardR Access Point / Sensor
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 13: Transmit - 802.11n-20BW_21.7Mbps(5G Band)(PIFA Antenna)

Chain A

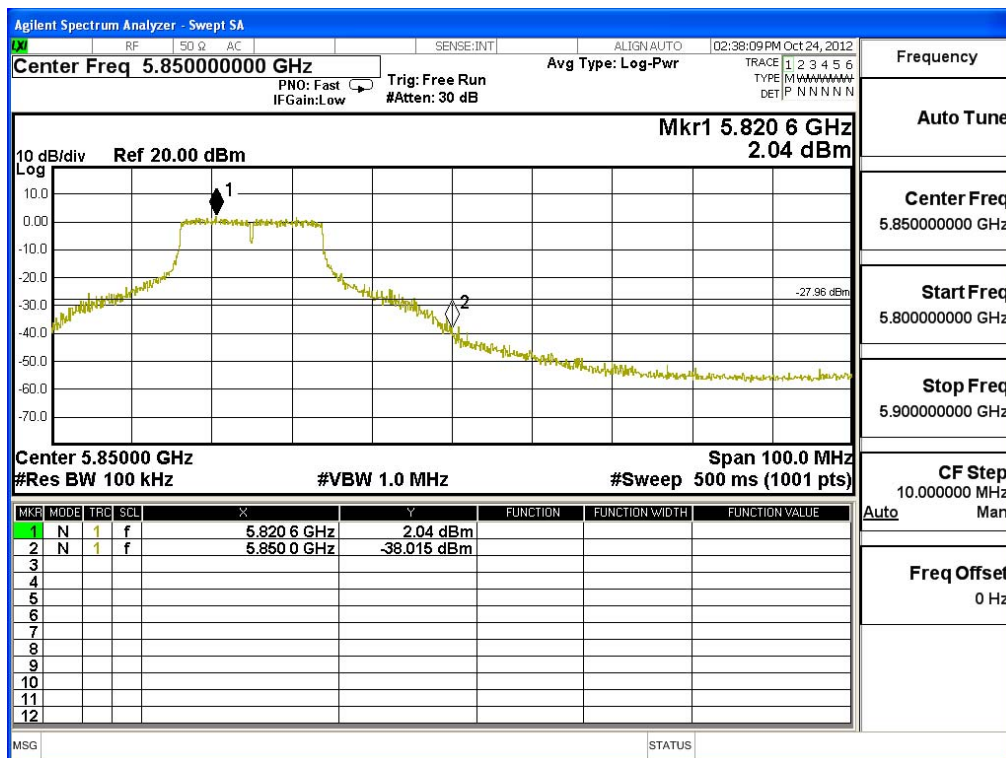
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5825	40.532	>30	PASS



Product : SpectraGuardR Access Point / Sensor
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 13: Transmit - 802.11n-20BW_21.7Mbps(5G Band)(PIFA Antenna)

Chain B

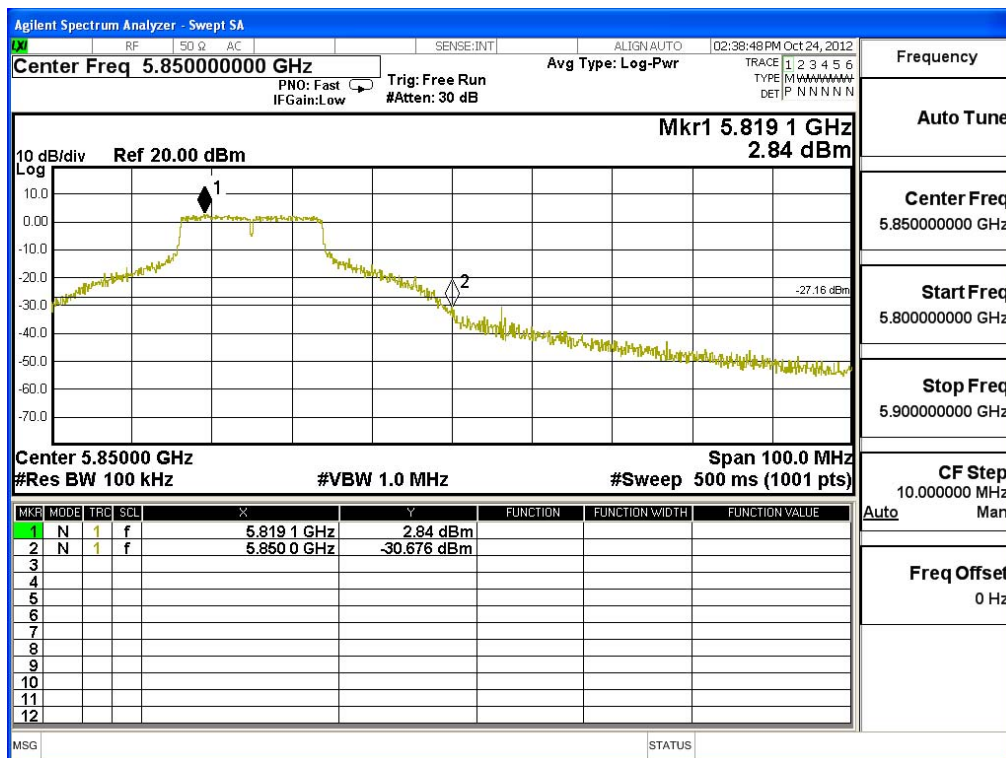
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5825	40.055	>30	PASS



Product : SpectraGuardR Access Point / Sensor
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 13: Transmit - 802.11n-20BW_21.7Mbps(5G Band)(PIFA Antenna)

Chain C

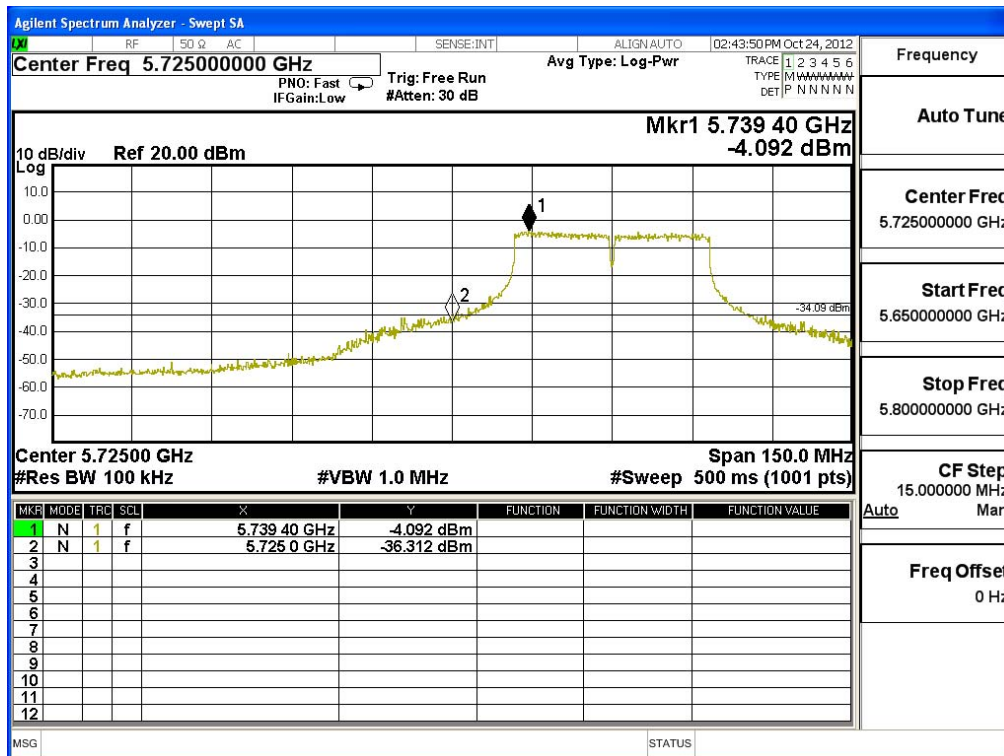
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5825	33.516	>30	PASS



Product : SpectraGuardR Access Point / Sensor
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 14: Transmit - 802.11n-40BW_45Mbps(5G Band)(PIFA Antenna)

Chain A

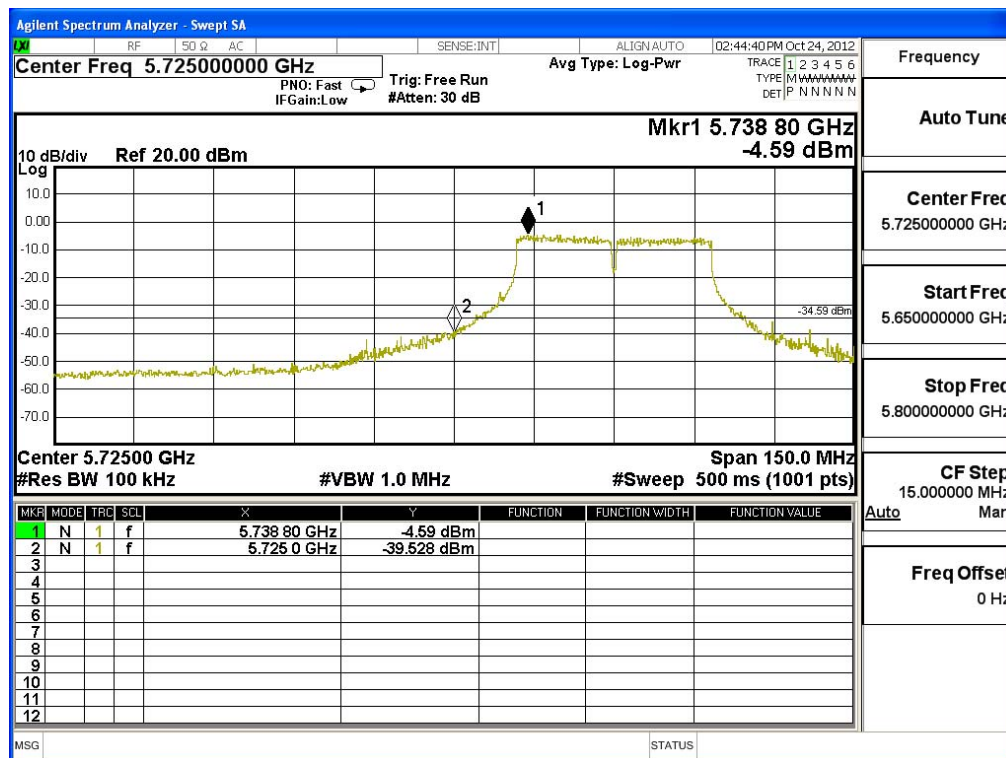
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5755	32.22	>30	PASS



Product : SpectraGuardR Access Point / Sensor
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 14: Transmit - 802.11n-40BW_45Mbps(5G Band)(PIFA Antenna)

Chain B

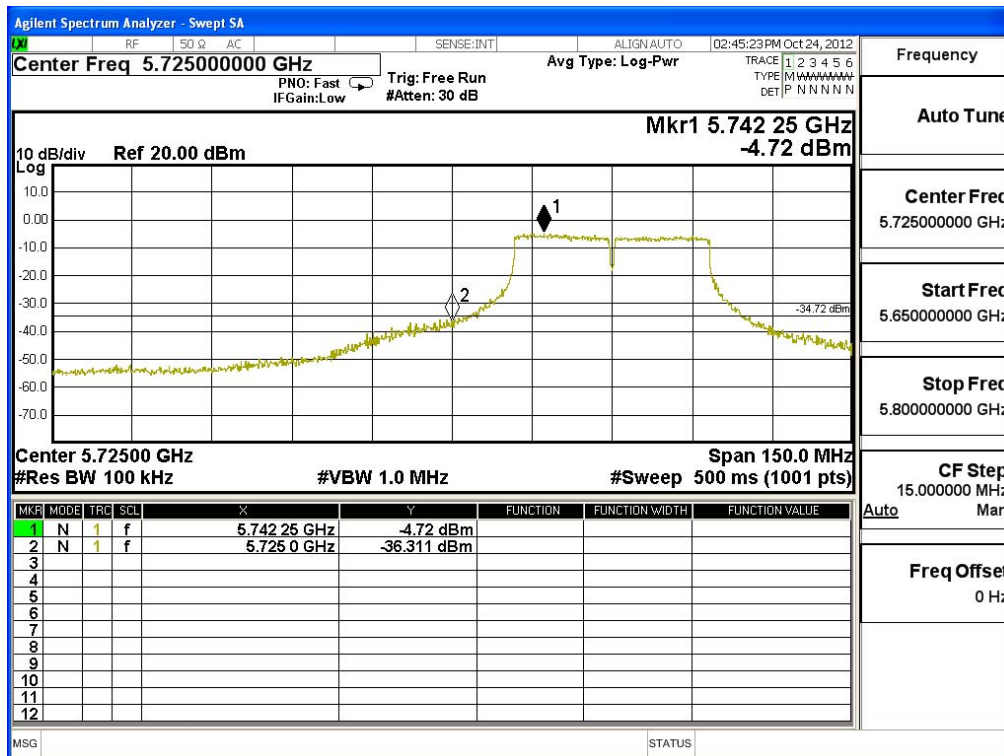
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5755	34.938	>30	PASS



Product : SpectraGuardR Access Point / Sensor
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 14: Transmit - 802.11n-40BW_45Mbps(5G Band)(PIFA Antenna)

Chain C

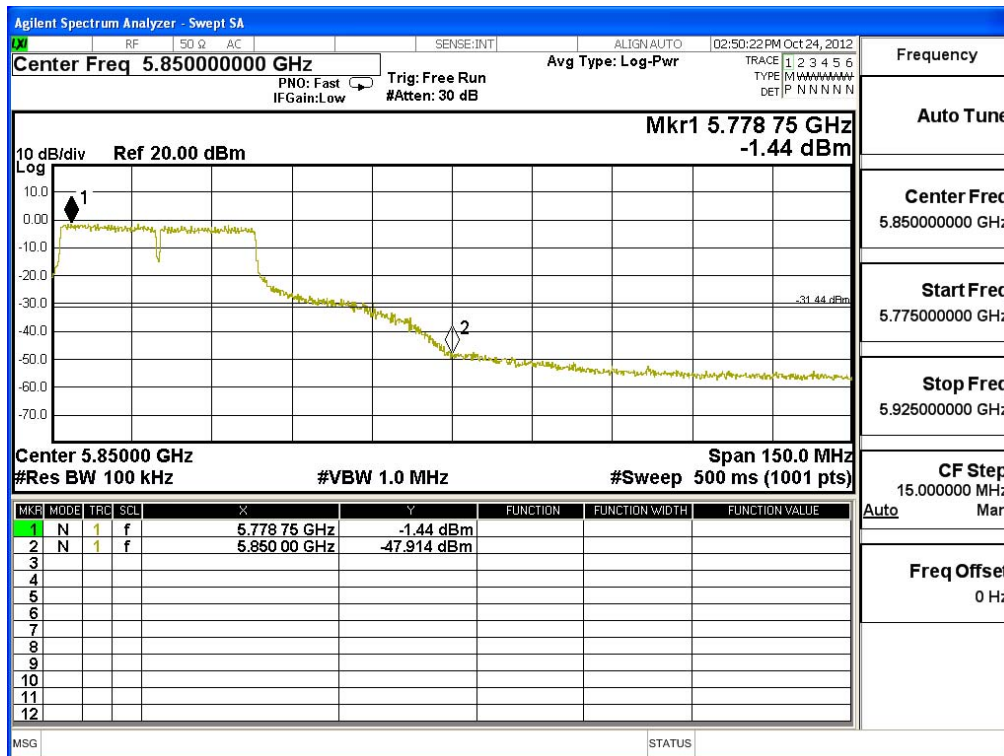
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5755	31.591	>30	PASS



Product : SpectraGuardR Access Point / Sensor
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 14: Transmit - 802.11n-40BW_45Mbps(5G Band)(PIFA Antenna)

Chain A

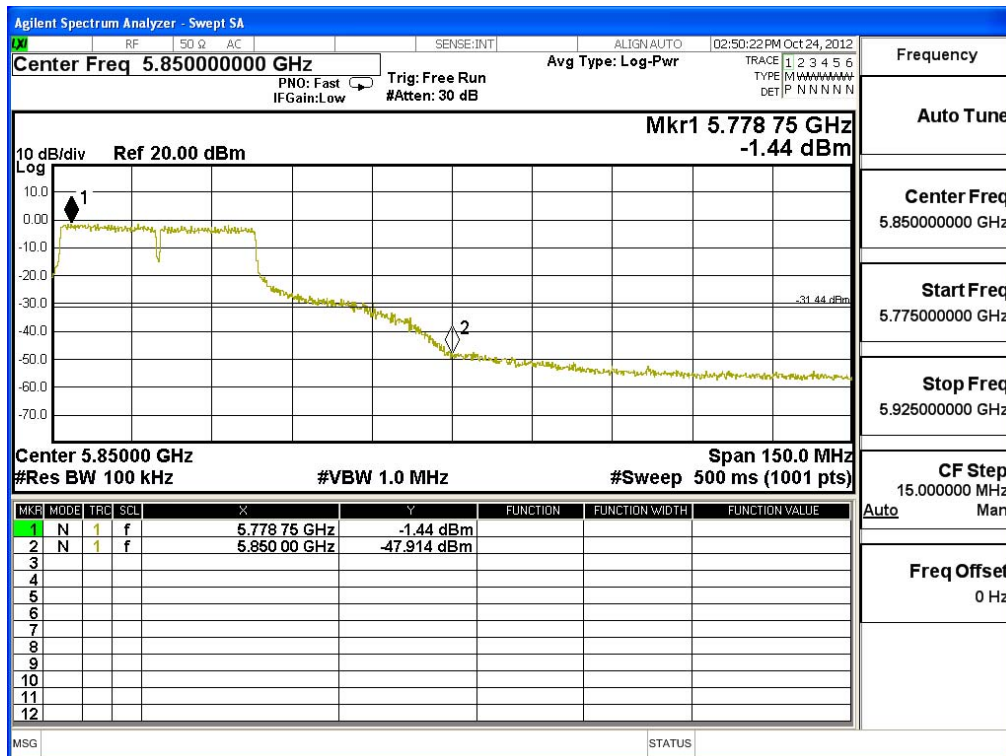
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5795	46.474	>30	PASS



Product : SpectraGuardR Access Point / Sensor
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 14: Transmit - 802.11n-40BW_45Mbps(5G Band)(PIFA Antenna)

Chain B

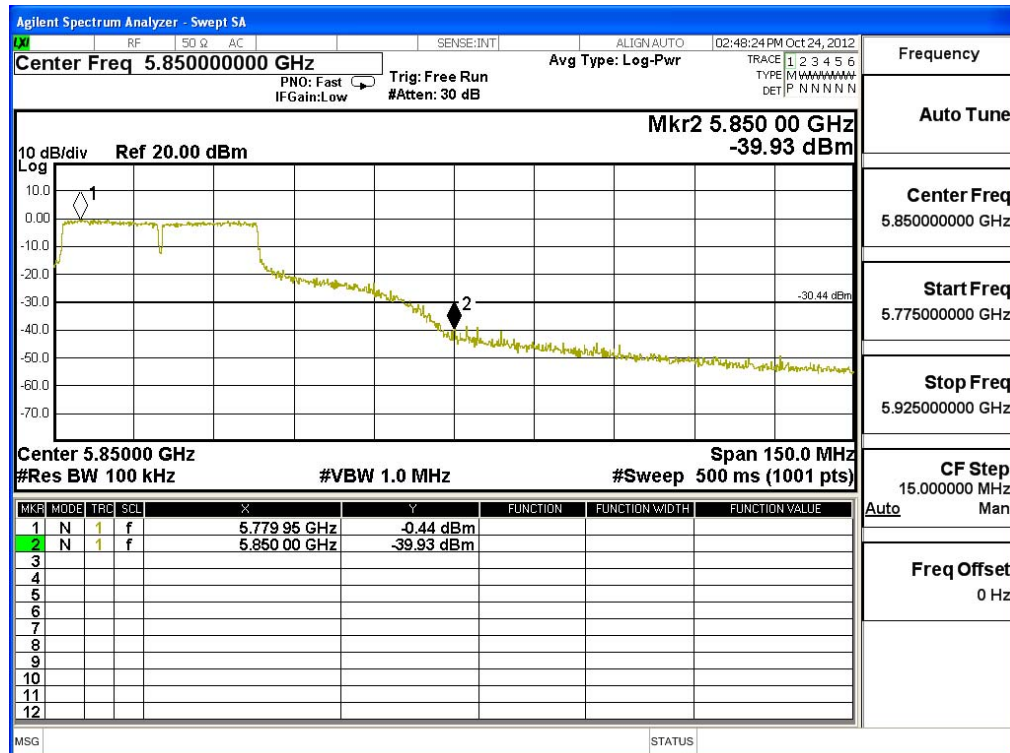
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5795	46.847	>30	PASS



Product : SpectraGuardR Access Point / Sensor
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 14: Transmit - 802.11n-40BW_45Mbps(5G Band)(PIFA Antenna)

Chain C

Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5795	39.49	>30	PASS



7. Occupied Bandwidth

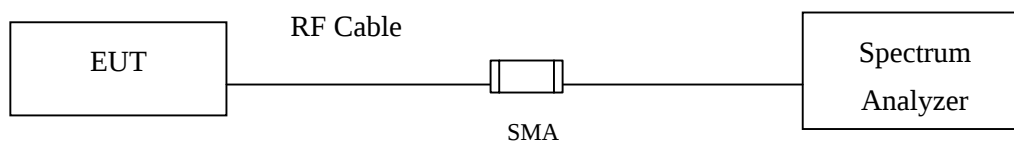
7.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2012
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2012
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2012

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

7.2. Test Setup



7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

7.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003; tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 1-5% of the emission bandwidth, VBW $\geq$ 3*RBW

7.5. Uncertainty

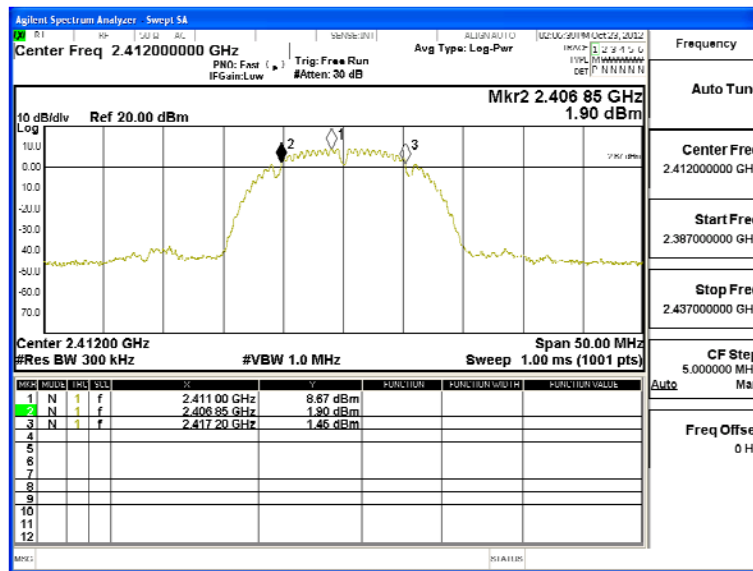
$\pm 150\text{Hz}$

7.6. Test Result of Occupied Bandwidth

Product : SpectraGuardR Access Point / Sensor
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)(Dipole Antenna) (2412MHz)

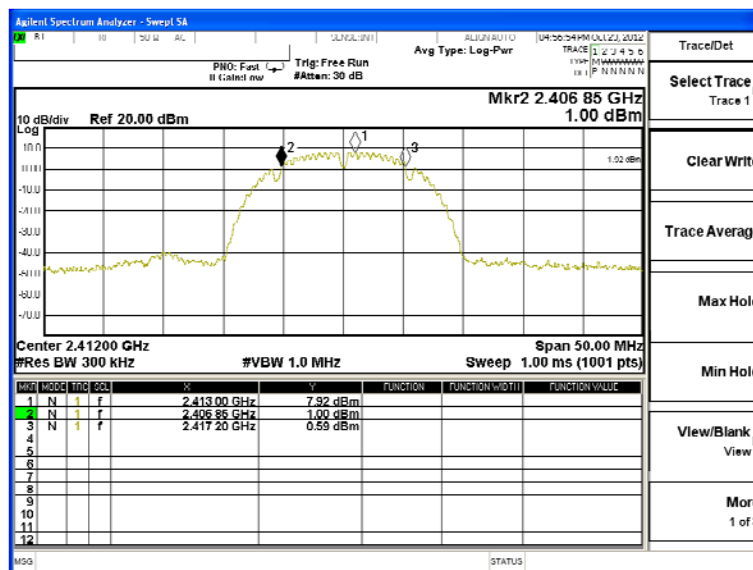
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	10350	>500	Pass

Figure Channel 1: (Chain A)



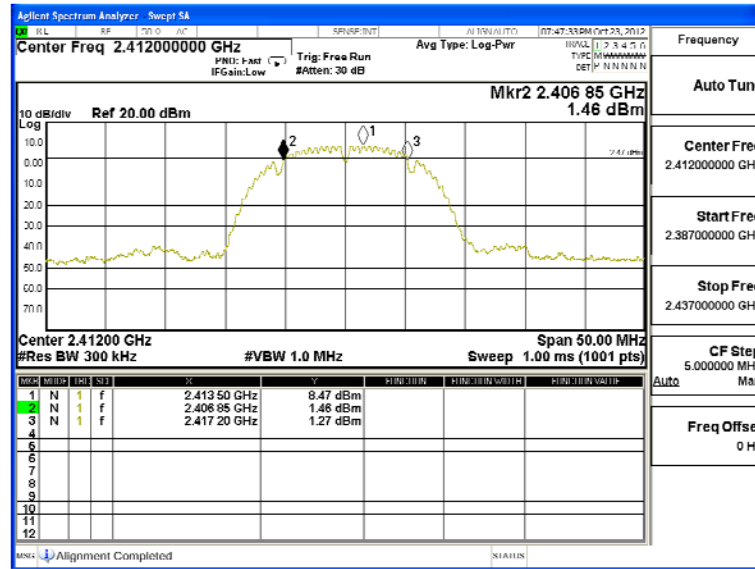
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	10350	>500	Pass

Figure Channel 1: (Chain B)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	10350	>500	Pass

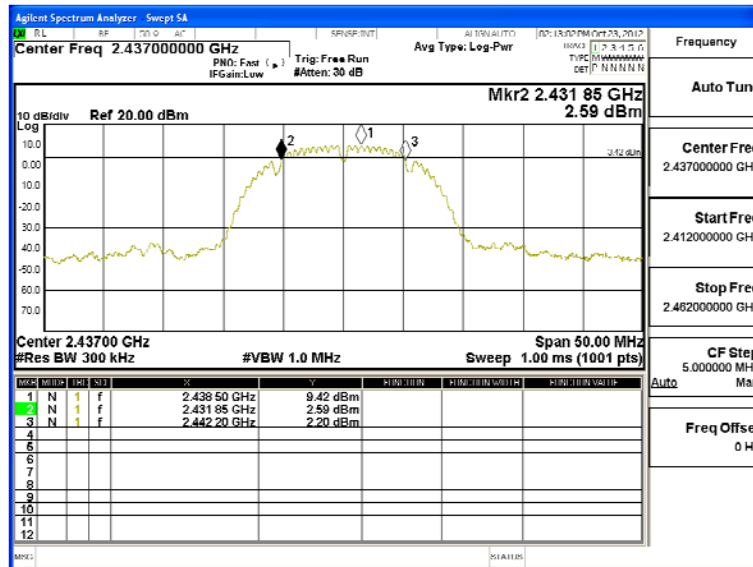
Figure Channel 1: (Chain C)



Product : SpectraGuardR Access Point / Sensor
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)(Dipole Antenna) (2437MHz)

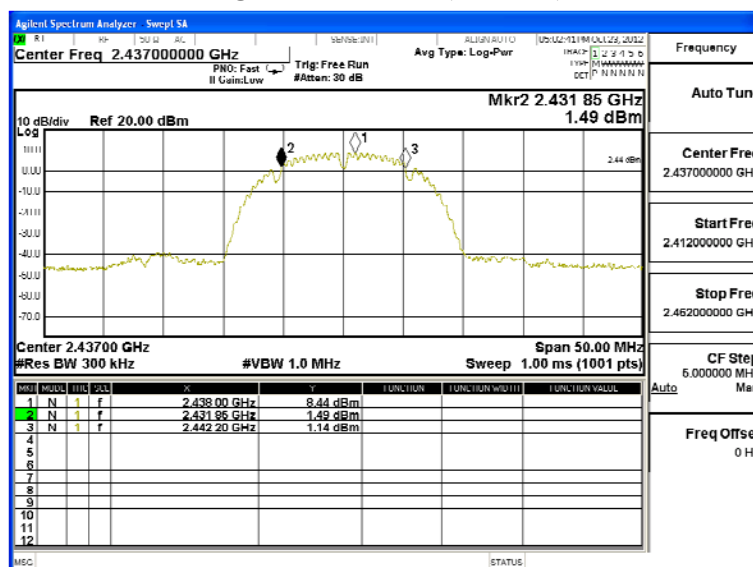
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	10350	>500	Pass

Figure Channel 6: (Chain A)



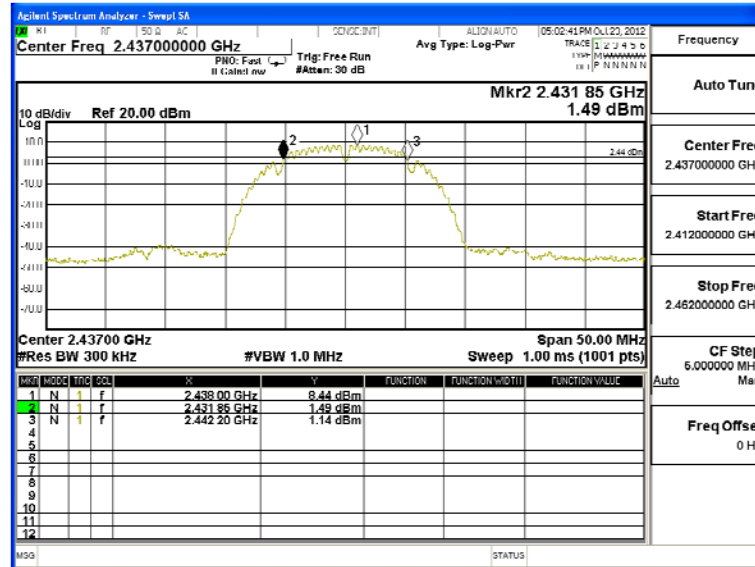
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	10350	>500	Pass

Figure Channel 6: (Chain B)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	10350	>500	Pass

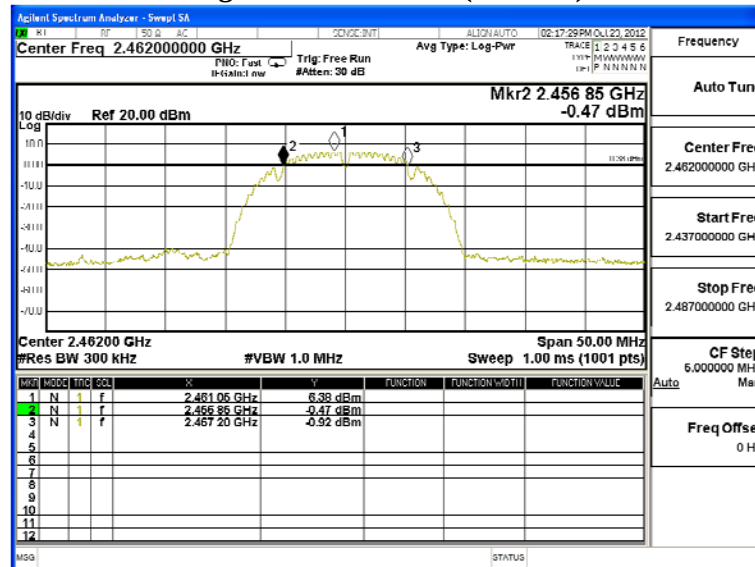
Figure Channel 6: (Chain C)



Product : SpectraGuardR Access Point / Sensor
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)(Dipole Antenna) (2462MHz)

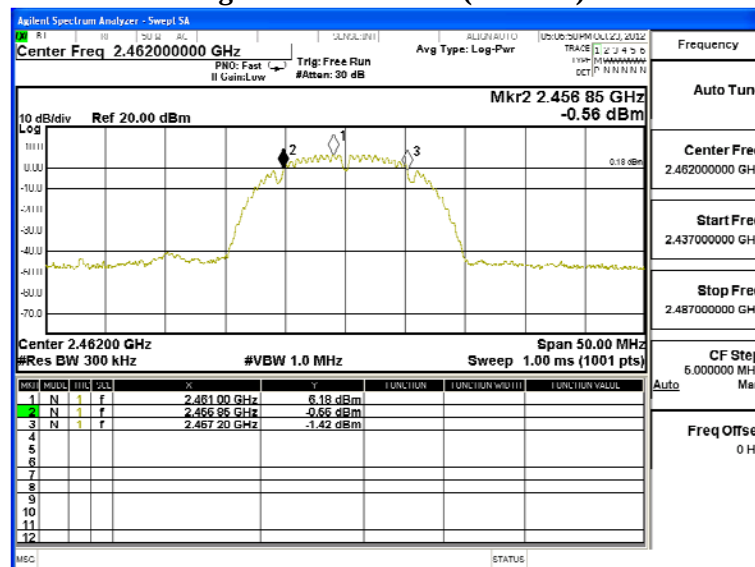
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	10350	>500	Pass

Figure Channel 11: (Chain A)



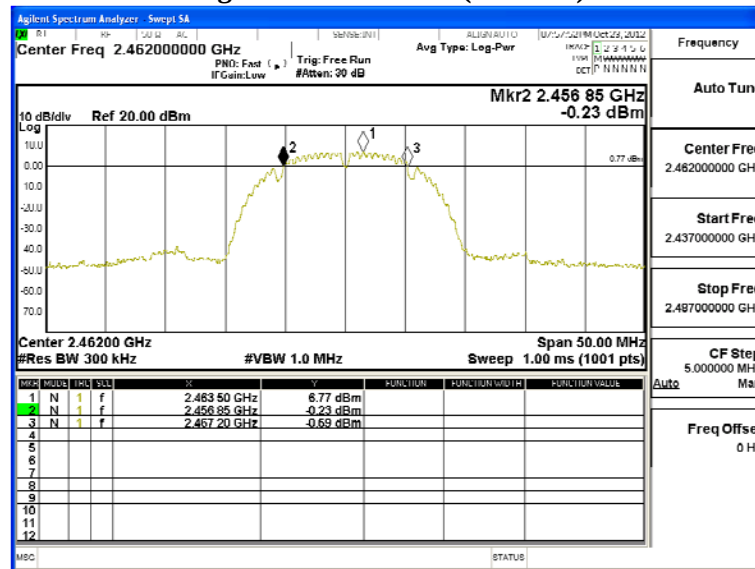
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	10350	>500	Pass

Figure Channel 11: (Chain B)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	10350	>500	Pass

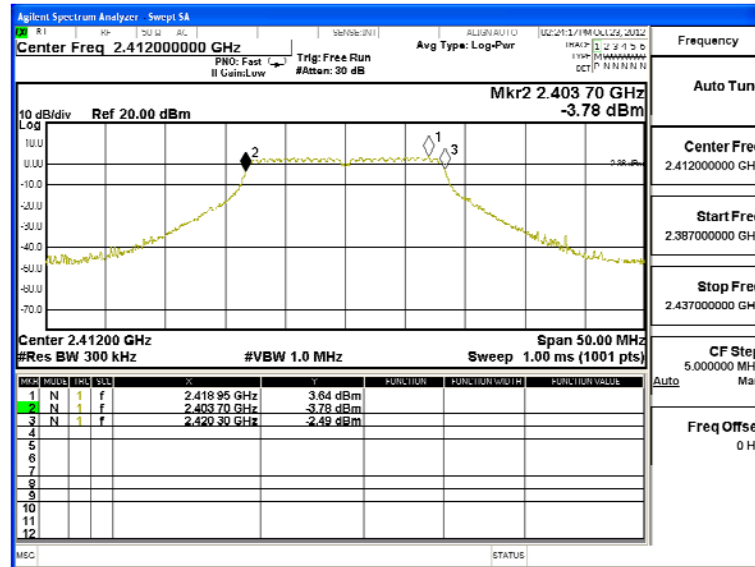
Figure Channel 11: (Chain C)



Product : SpectraGuardR Access Point / Sensor
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)(Dipole Antenna) (2412MHz)

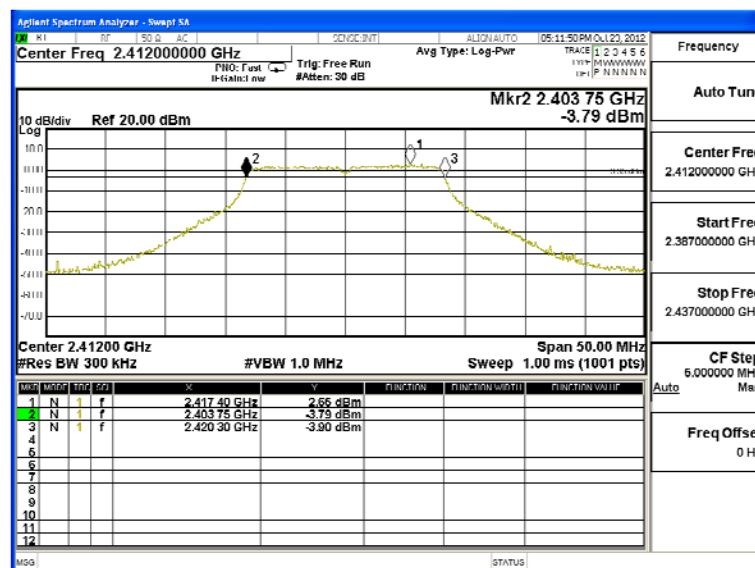
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	16600	>500	Pass

Figure Channel 1: (Chain A)



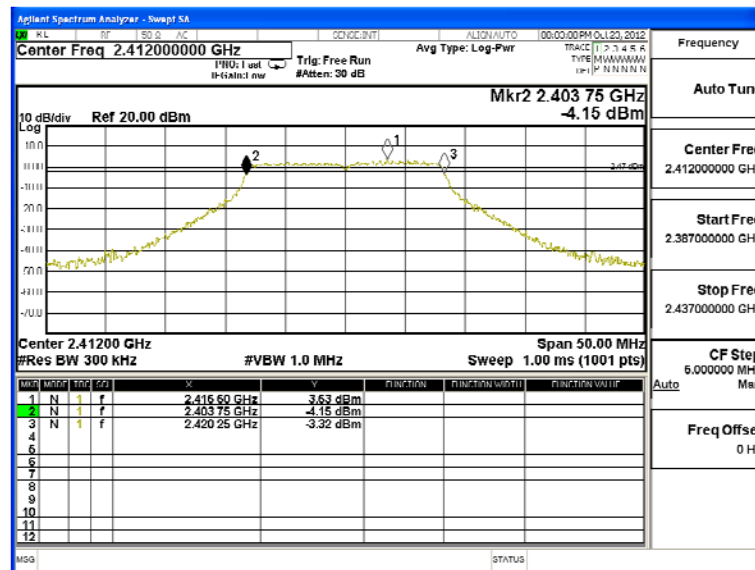
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	16550	>500	Pass

Figure Channel 1: (Chain B)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	16500	>500	Pass

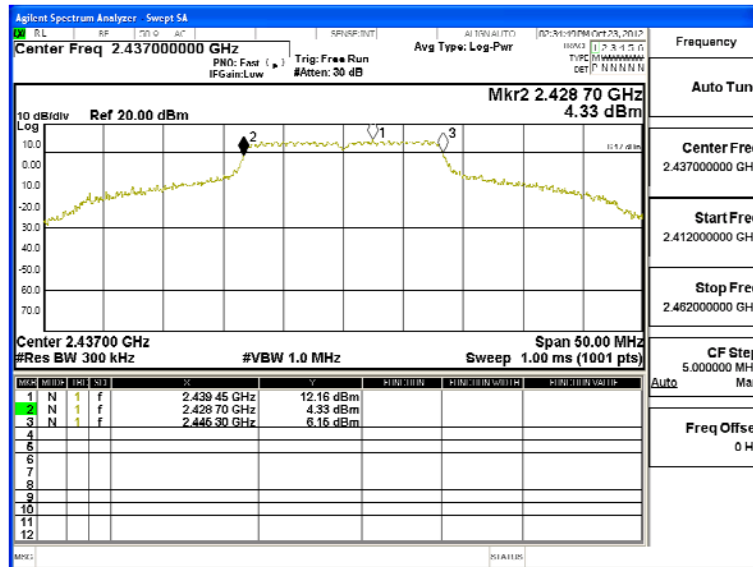
Figure Channel 1: (Chain C)



Product : SpectraGuardR Access Point / Sensor
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)(Dipole Antenna) (2437MHz)

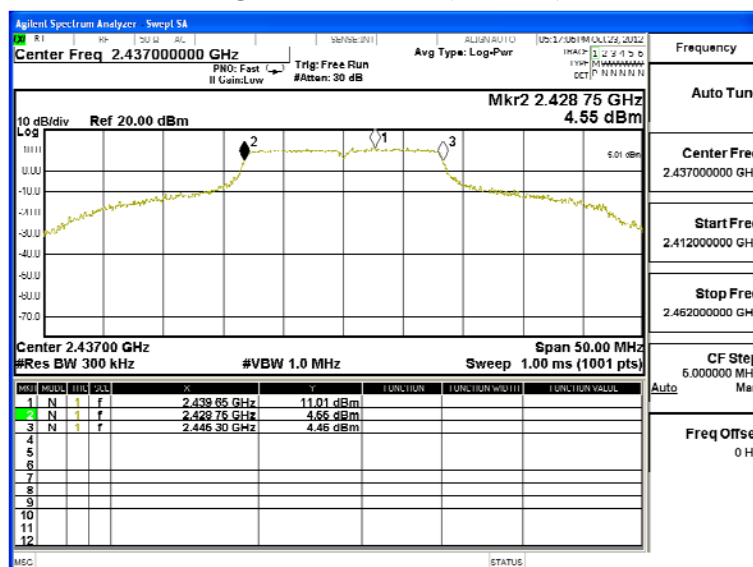
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	16600	>500	Pass

Figure Channel 6: (Chain A)



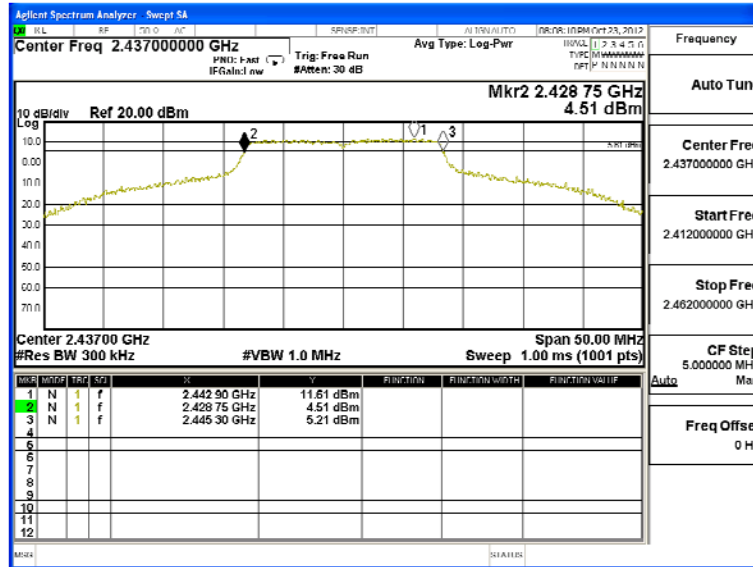
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	16550	>500	Pass

Figure Channel 6: (Chain B)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	16550	>500	Pass

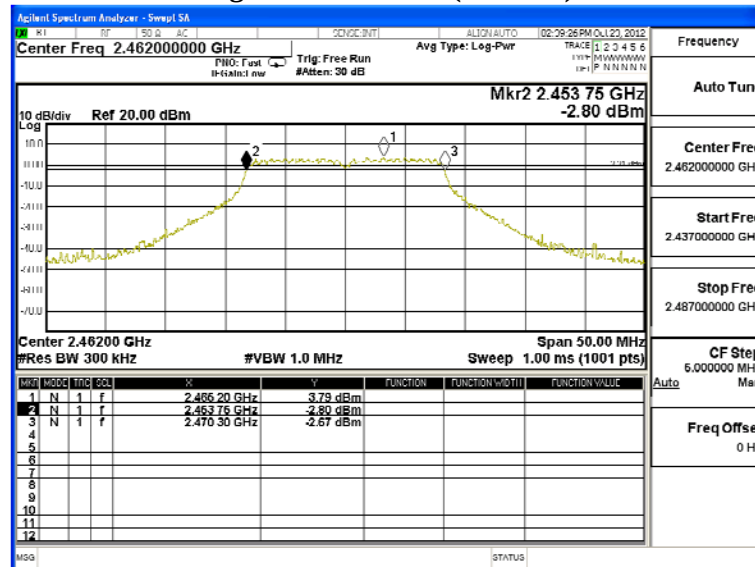
Figure Channel 6: (Chain C)



Product : SpectraGuardR Access Point / Sensor
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)(Dipole Antenna) (2462MHz)

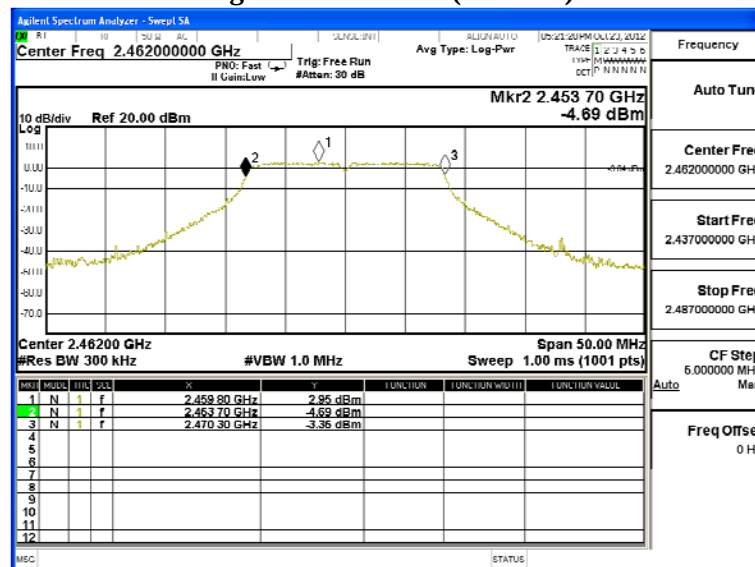
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	16550	>500	Pass

Figure Channel 11: (Chain A)



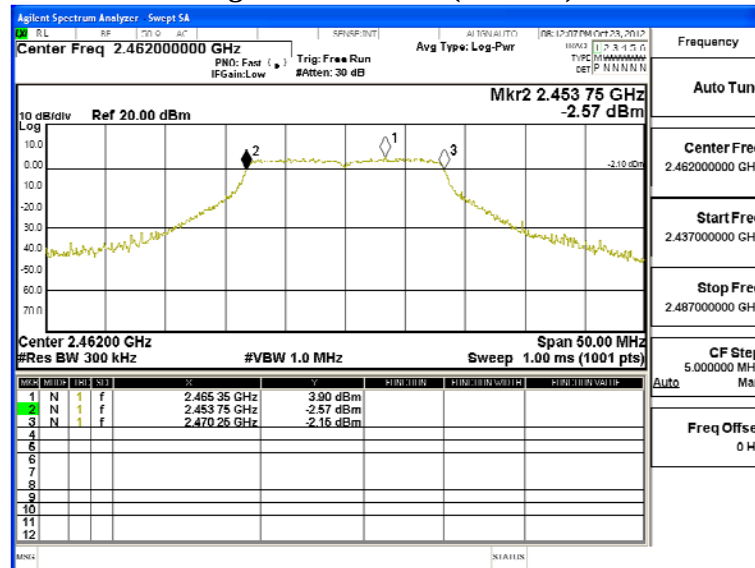
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	16600	>500	Pass

Figure Channel 11: (Chain B)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	16500	>500	Pass

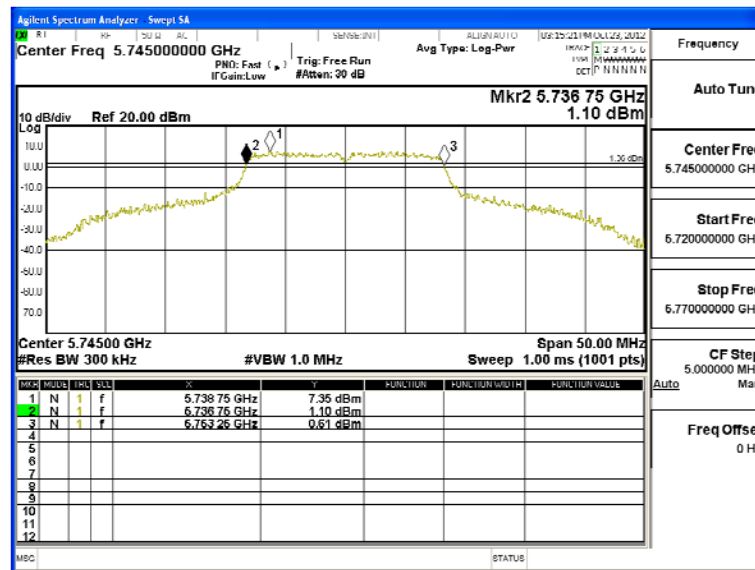
Figure Channel 11: (Chain C)



Product : SpectraGuardR Access Point / Sensor
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit - 802.11a 6Mbps(Dipole Antenna) (5745MHz)

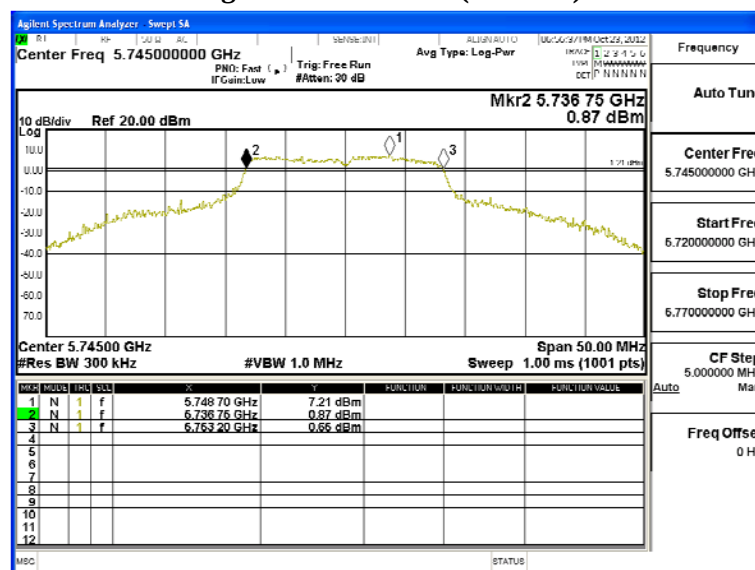
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745.00	16500	>500	Pass

Figure Channel 149: (Chain A)



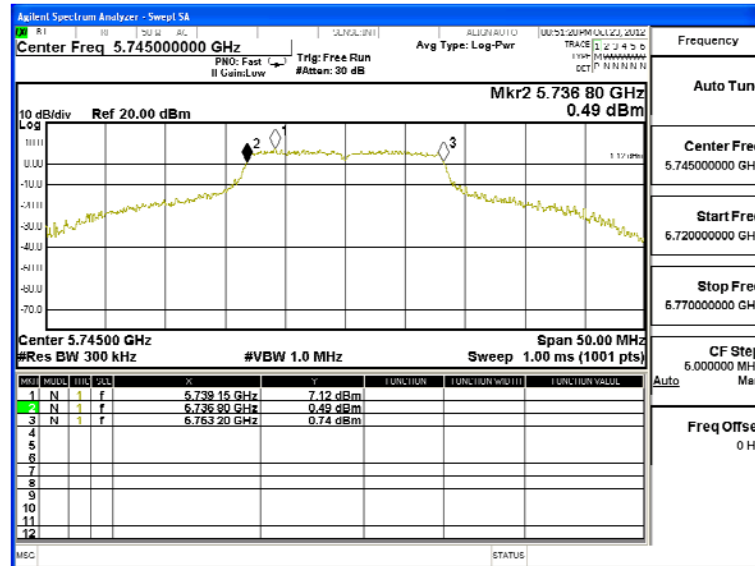
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745.00	16450	>500	Pass

Figure Channel 149: (Chain B)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745.00	16400	>500	Pass

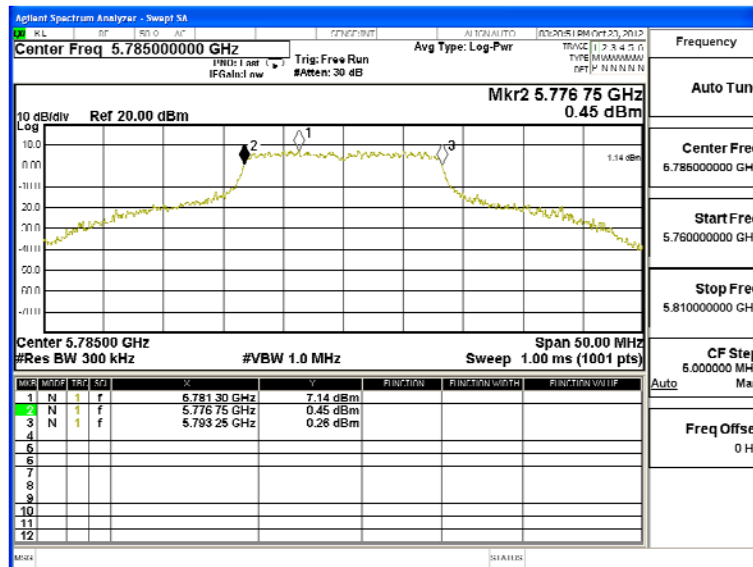
Figure Channel 149: (Chain C)



Product : SpectraGuardR Access Point / Sensor
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit - 802.11a 6Mbps(Dipole Antenna) (5785MHz)

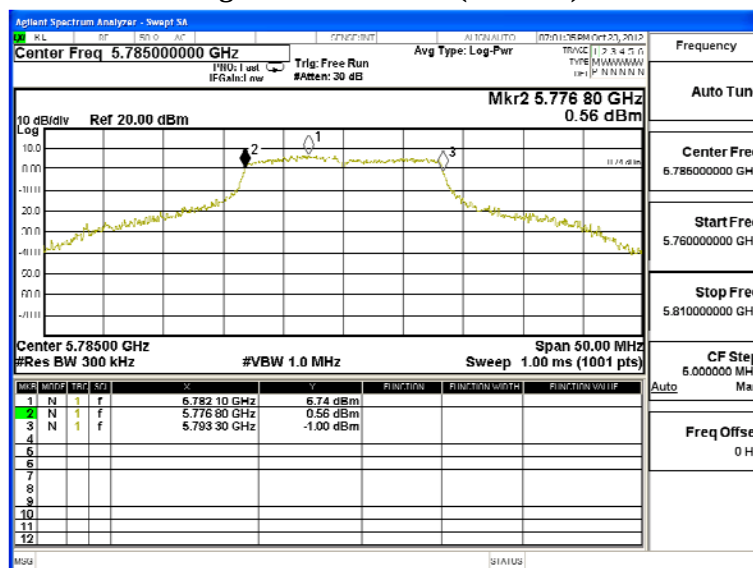
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
157	5785.00	16500	>500	Pass

Figure Channel 157: (Chain A)



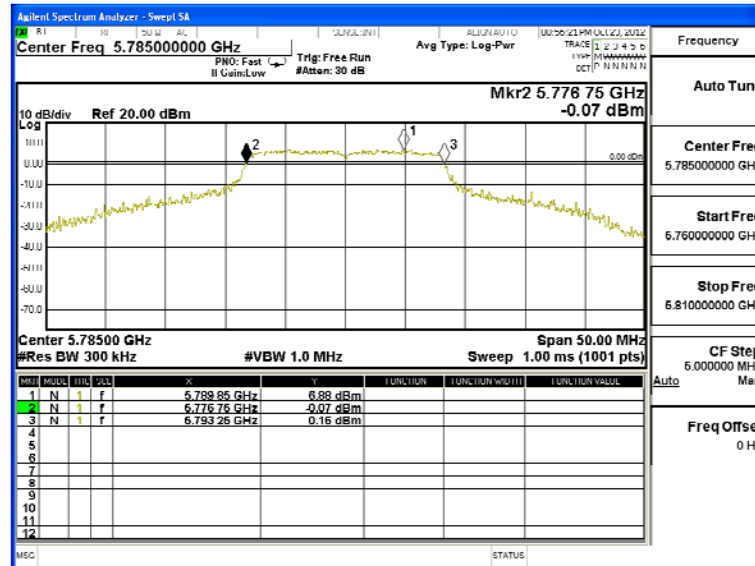
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
157	5785.00	16500	>500	Pass

Figure Channel 157: (Chain B)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
157	5785.00	16500	>500	Pass

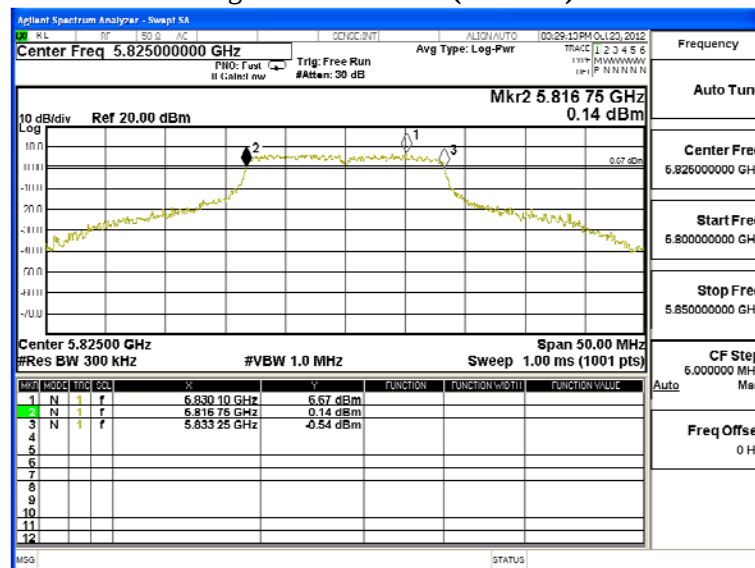
Figure Channel 157: (Chain C)



Product : SpectraGuardR Access Point / Sensor
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit - 802.11a 6Mbps(Dipole Antenna) (5825MHz)

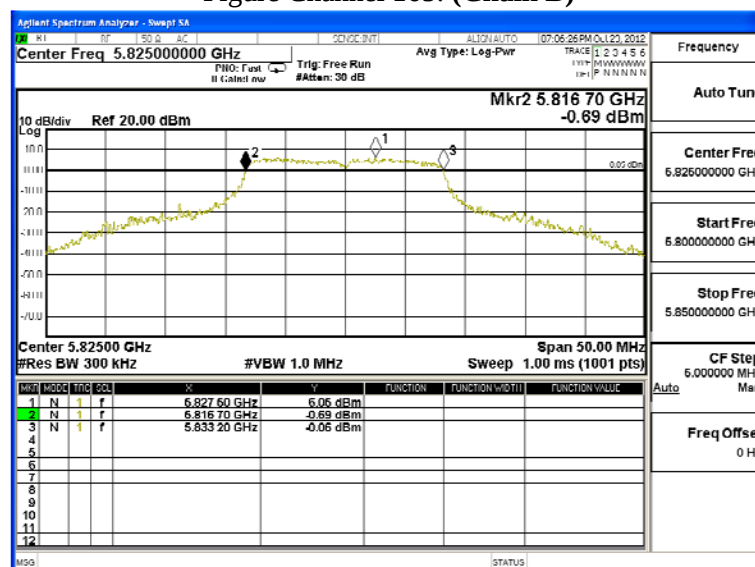
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
165	5825.00	16500	>500	Pass

Figure Channel 165: (Chain A)



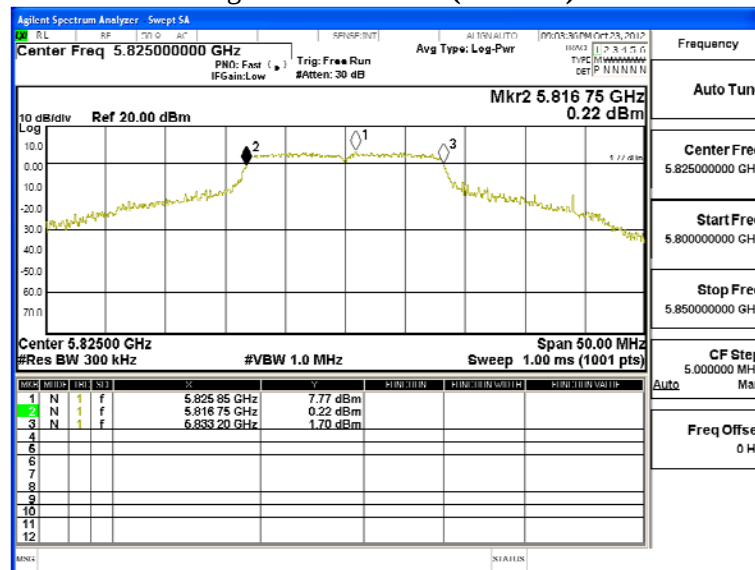
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
165	5825.00	16500	>500	Pass

Figure Channel 165: (Chain B)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
165	5825.00	16450	>500	Pass

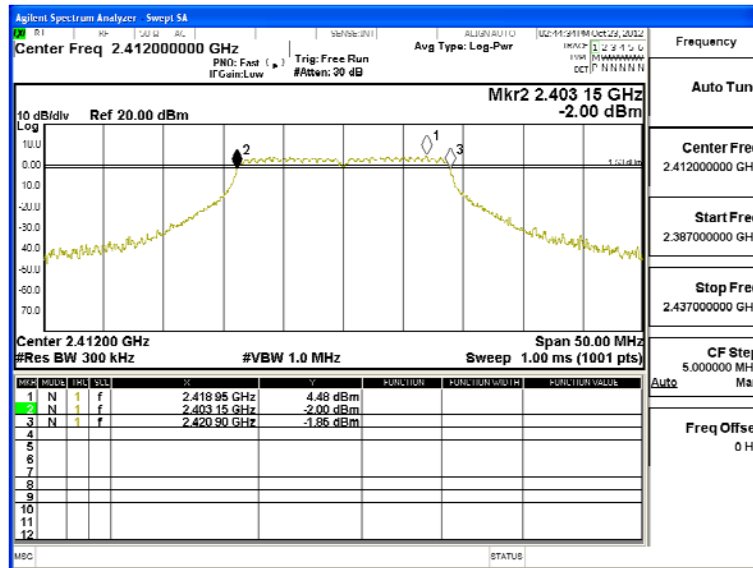
Figure Channel 165: (Chain C)



Product : SpectraGuardR Access Point / Sensor
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit - 802.11n-20BW_21.7Mbps(2.4G Band)(Dipole Antenna) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	17750	>500	Pass

Figure Channel 1: (Chain A)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	17800	>500	Pass

Figure Channel 1: (Chain B)

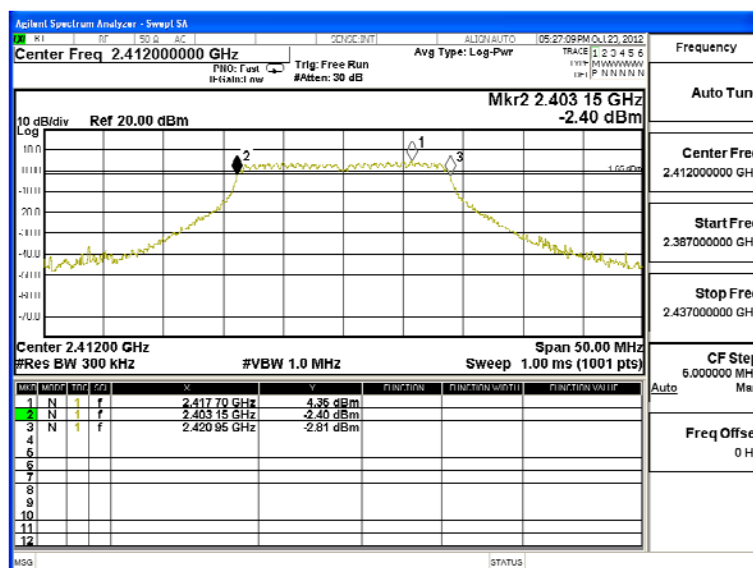
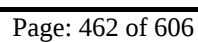


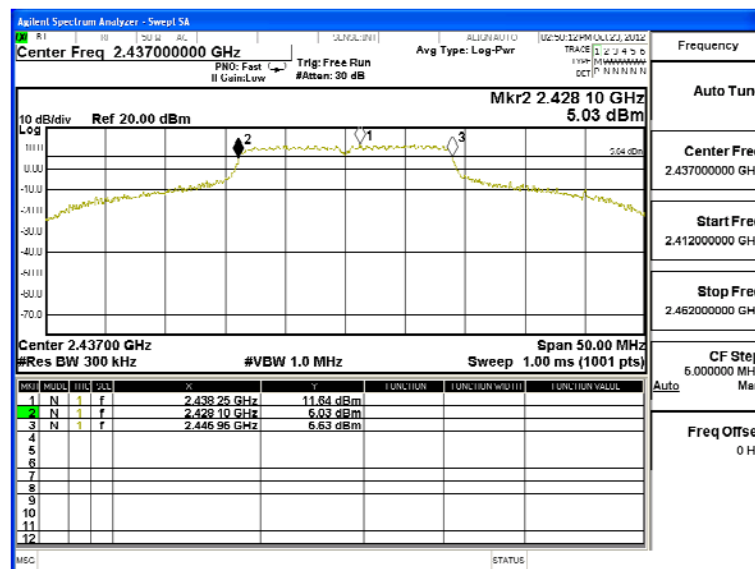
Figure Channel 1: (Chain C)



Product : SpectraGuardR Access Point / Sensor
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit - 802.11n-20BW_21.7Mbps(2.4G Band)(Dipole Antenna) (2437MHz)

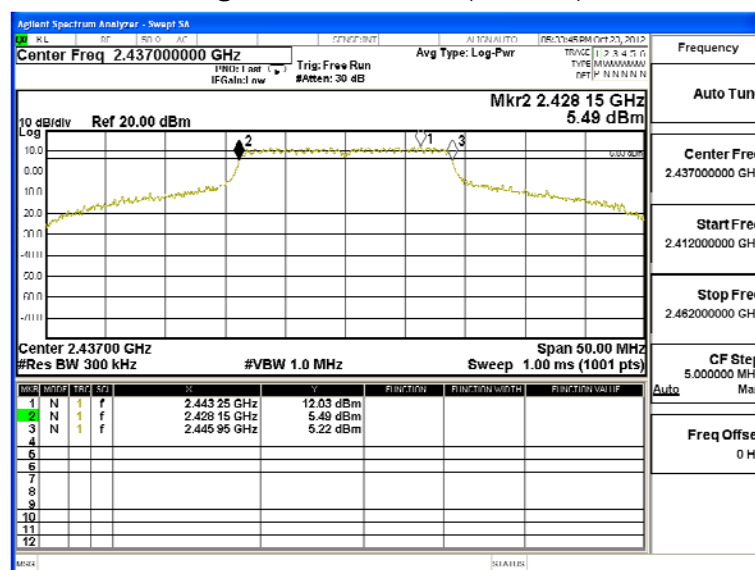
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	17850	>500	Pass

Figure Channel 6: (Chain A)



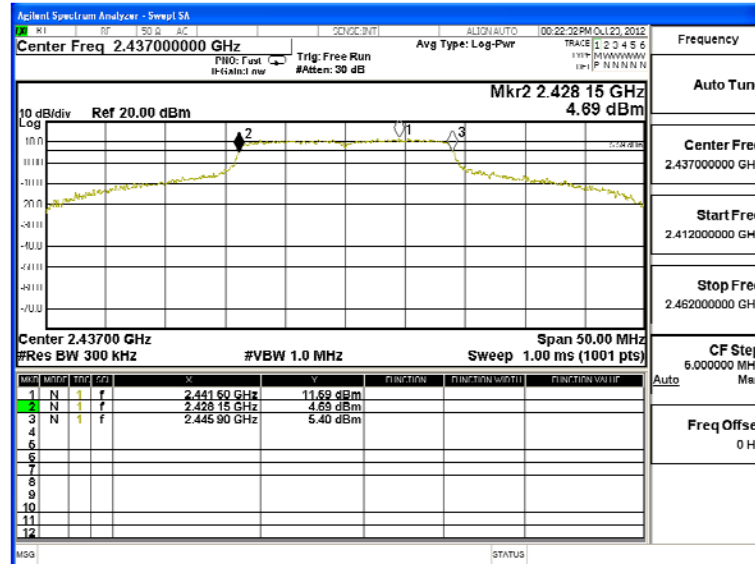
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	17800	>500	Pass

Figure Channel 6: (Chain B)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	17750	>500	Pass

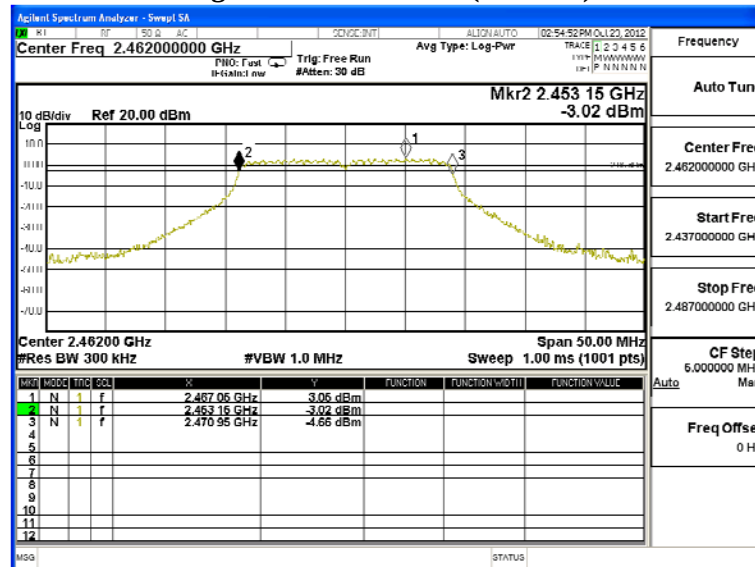
Figure Channel 6: (Chain C)



Product : SpectraGuardR Access Point / Sensor
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit - 802.11n-20BW_21.7Mbps(2.4G Band)(Dipole Antenna) (2462MHz)

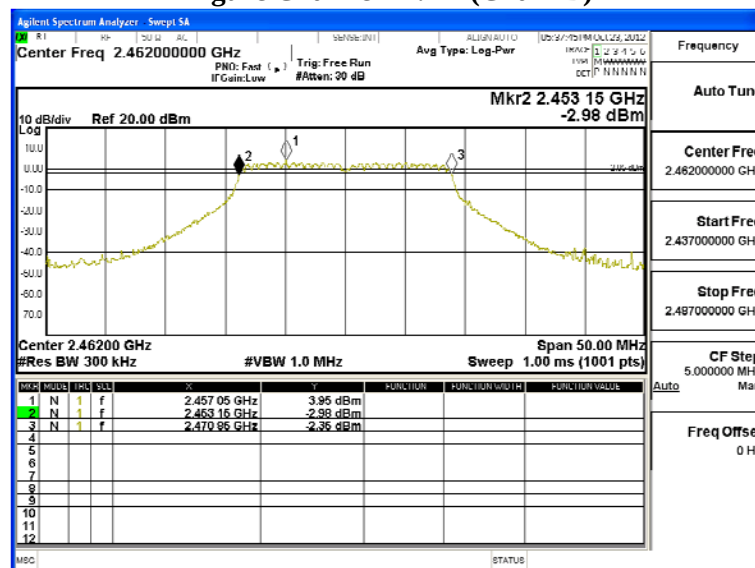
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	17800	>500	Pass

Figure Channel 11: (Chain A)



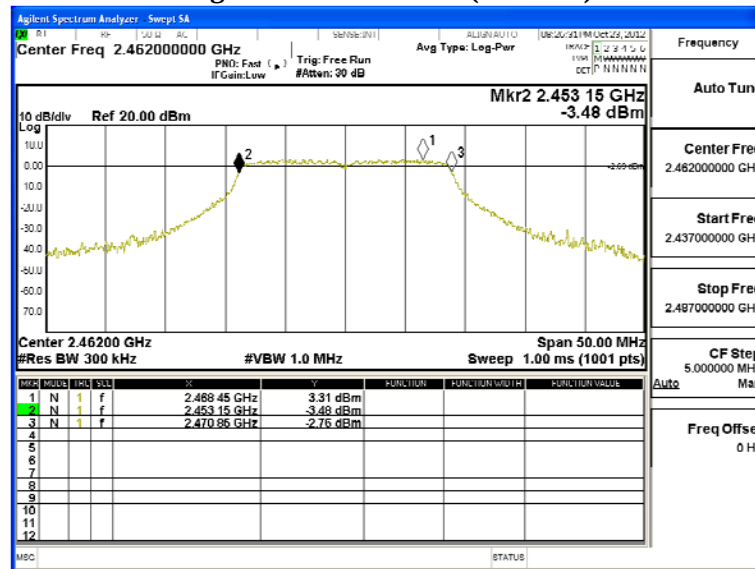
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	17700	>500	Pass

Figure Channel 11: (Chain B)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	17700	>500	Pass

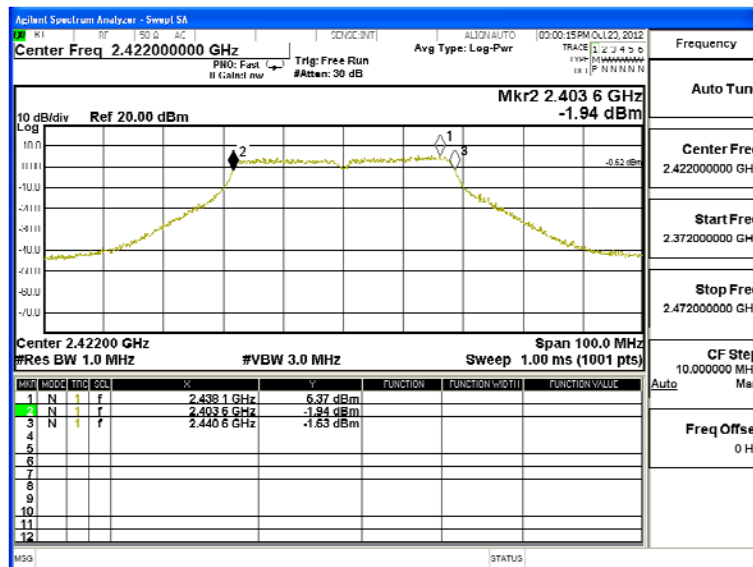
Figure Channel 11: (Chain C)



Product : SpectraGuardR Access Point / Sensor
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit - 802.11n-40BW_45Mbps(2.4G Band)(Dipole Antenna) (2422MHz)

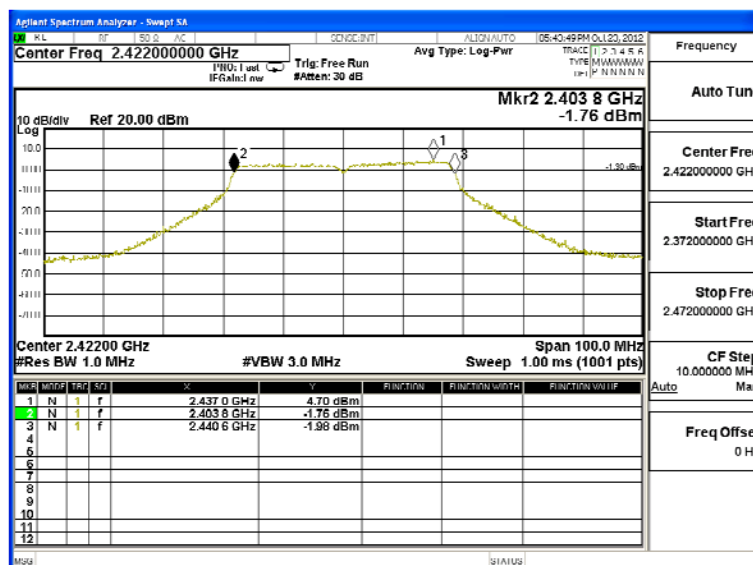
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2422.00	37000	>500	Pass

Figure Channel 1: (Chain A)



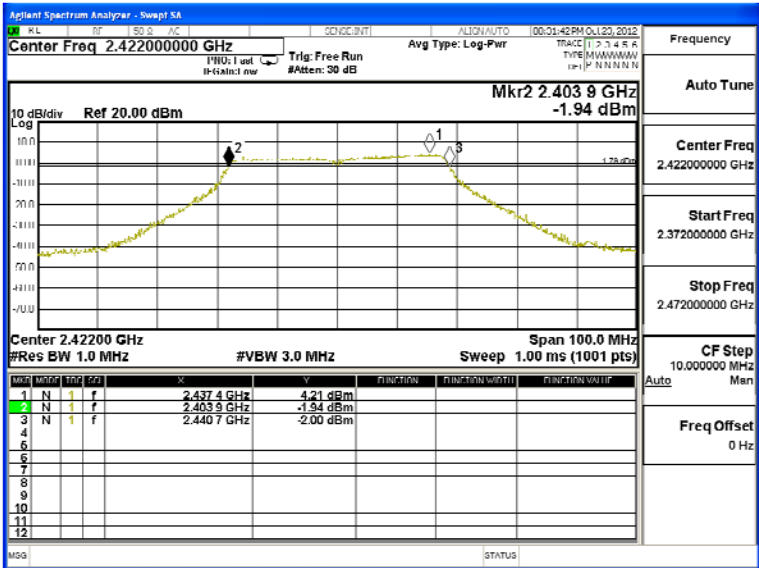
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2422.00	36800	>500	Pass

Figure Channel 1: (Chain B)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2422.00	36800	>500	Pass

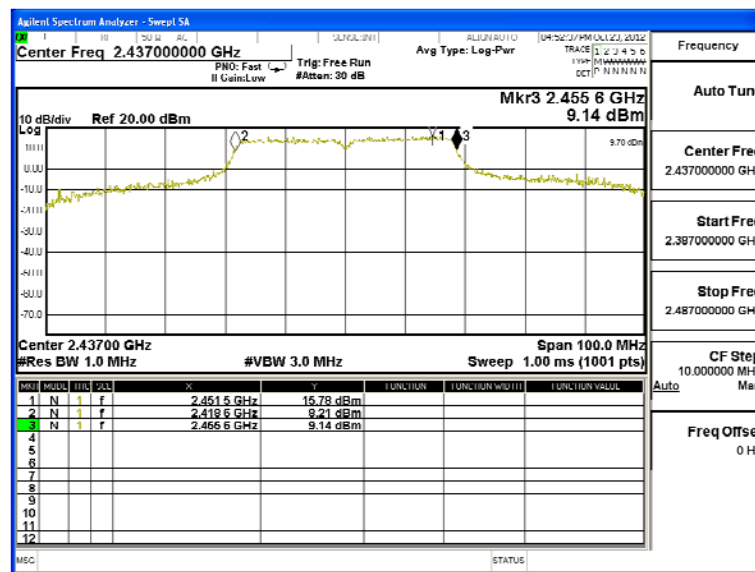
Figure Channel 1: (Chain C)



Product : SpectraGuardR Access Point / Sensor
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit - 802.11n-40BW_45Mbps(2.4G Band)(Dipole Antenna) (2437MHz)

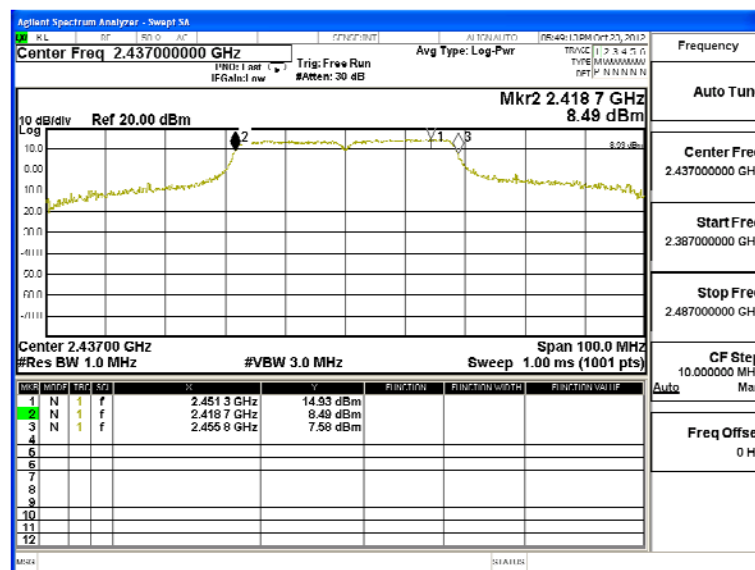
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
4	2437.00	37000	>500	Pass

Figure Channel 4: (Chain A)



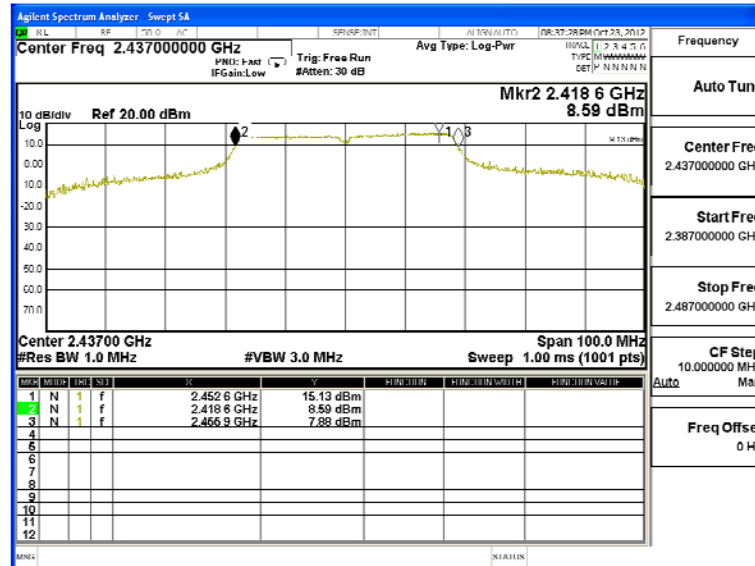
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
4	2437.00	37100	>500	Pass

Figure Channel 4: (Chain B)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
4	2437.00	37300	>500	Pass

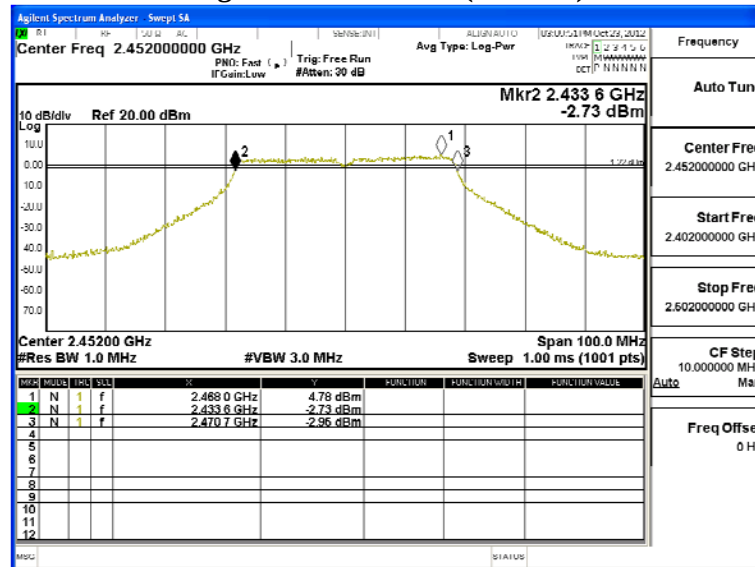
Figure Channel 4: (Chain C)



Product : SpectraGuardR Access Point / Sensor
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit - 802.11n-40BW_45Mbps(2.4G Band)(Dipole Antenna) (2452MHz)

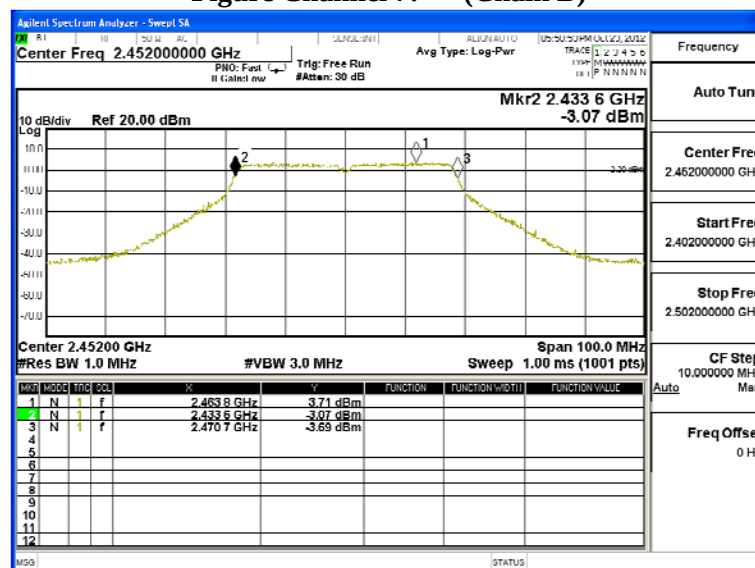
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
7	2452.00	37100	>500	Pass

Figure Channel 7: (Chain A)



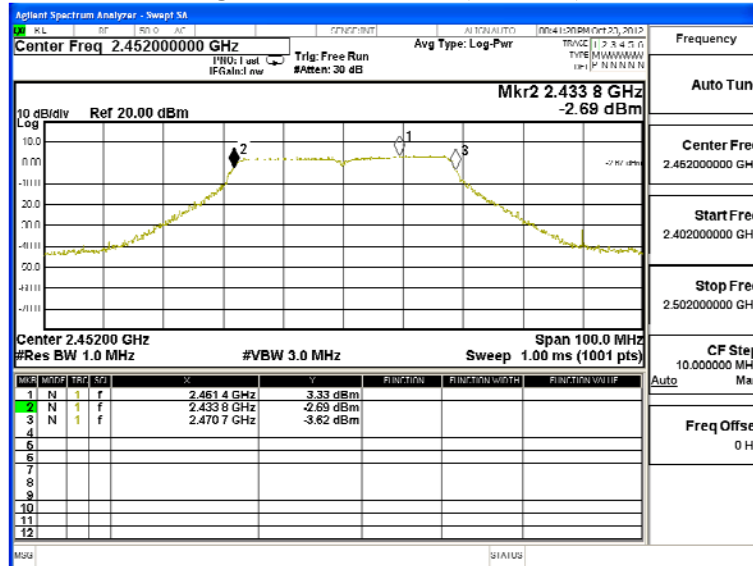
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
7	2452.00	37100	>500	Pass

Figure Channel 7: (Chain B)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
7	2452.00	36900	>500	Pass

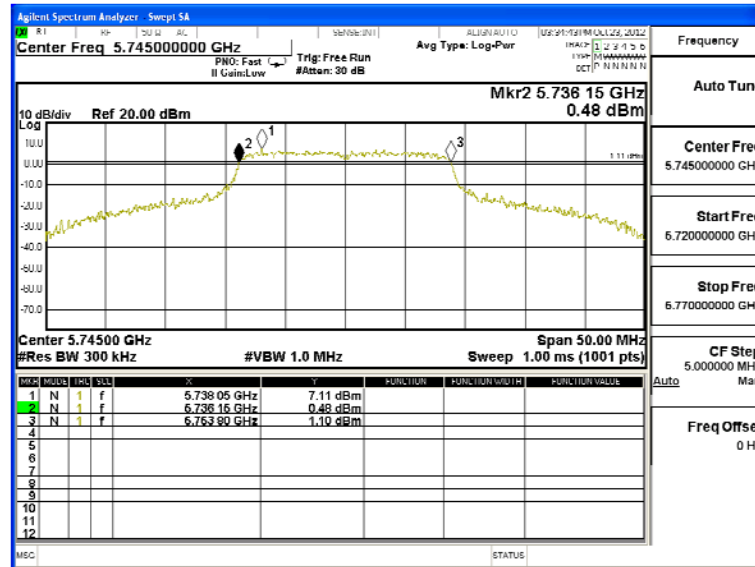
Figure Channel 7: (Chain C)



Product : SpectraGuardR Access Point / Sensor
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit - 802.11n-20BW_21.7Mbps(5G Band)(Dipole Antenna) (5745MHz)

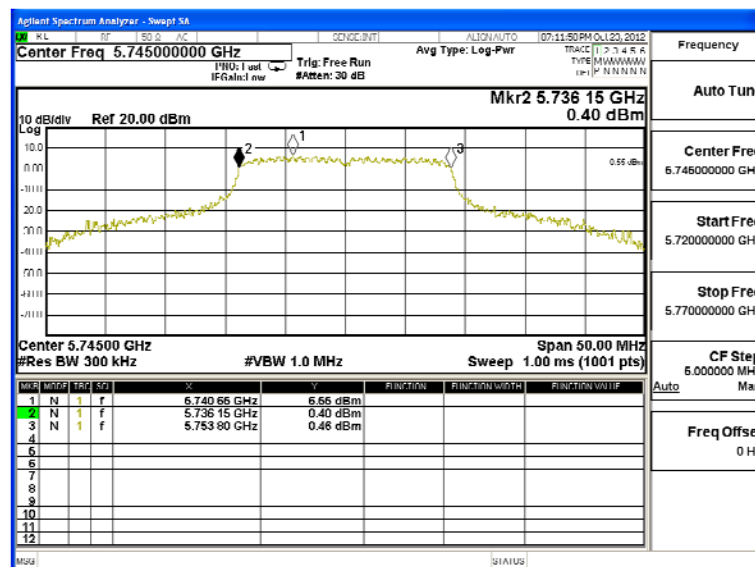
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745.00	17650	>500	Pass

Figure Channel 149: (Chain A)



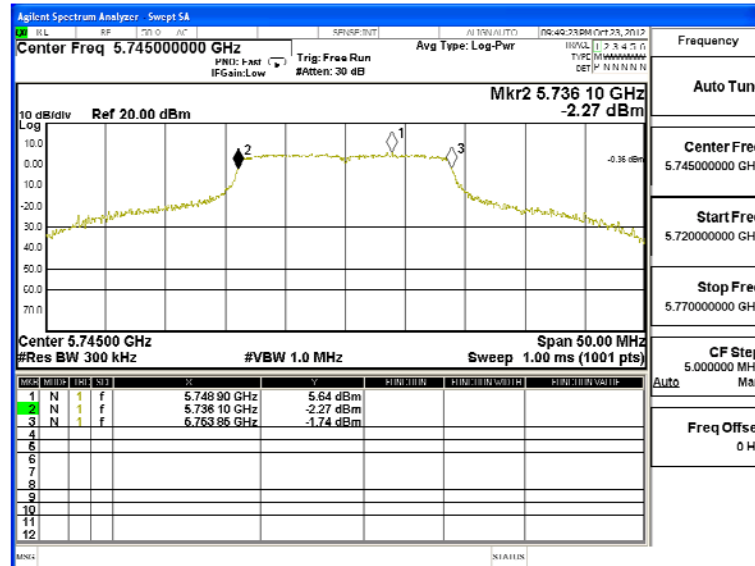
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745.00	17650	>500	Pass

Figure Channel 149: (Chain B)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745.00	17750	>500	Pass

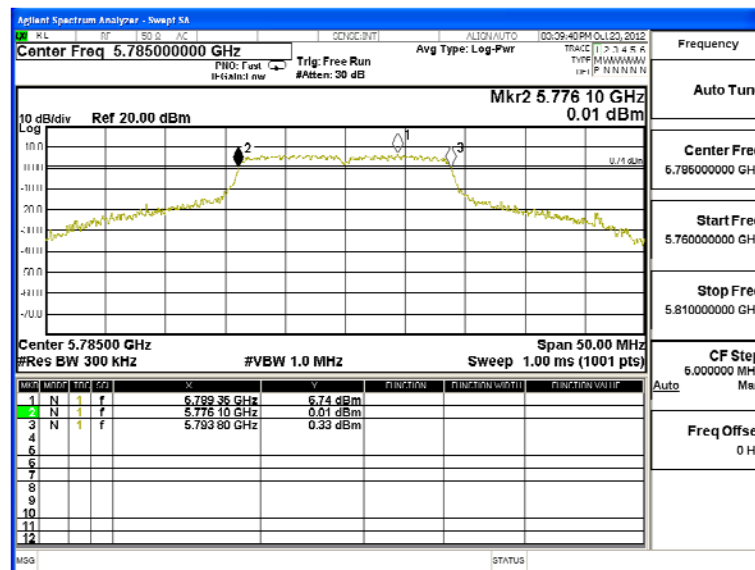
Figure Channel 149: (Chain C)



Product : SpectraGuardR Access Point / Sensor
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 7: Transmit - 802.11n-40BW_45Mbps(5G Band)(Dipole Antenna) (5785MHz)

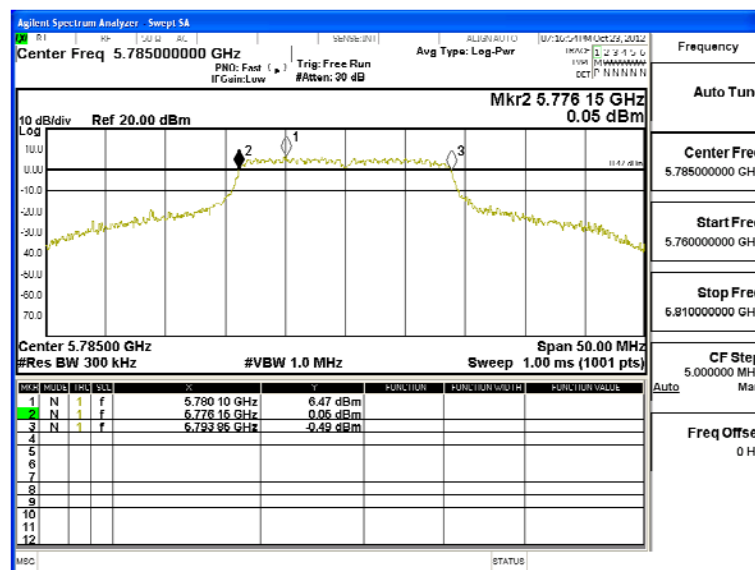
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
157	5785.00	17700	>500	Pass

Figure Channel 157: (Chain A)



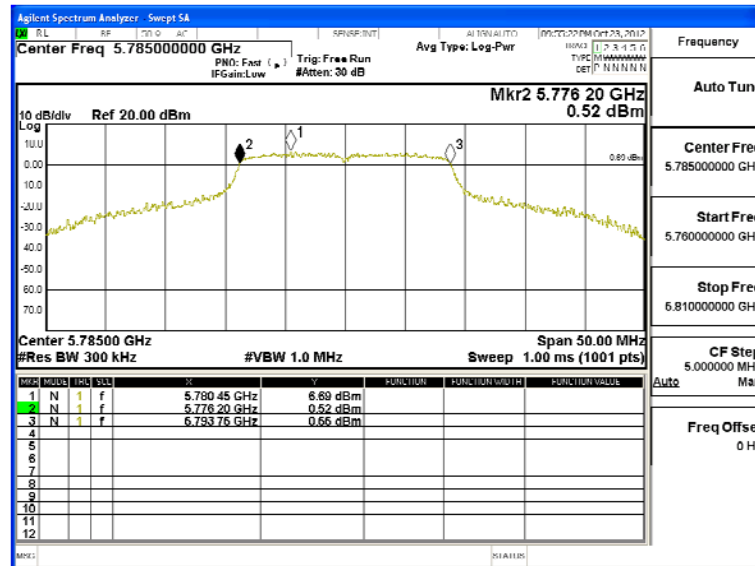
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
157	5785.00	17700	>500	Pass

Figure Channel 157: (Chain B)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
157	5785.00	17550	>500	Pass

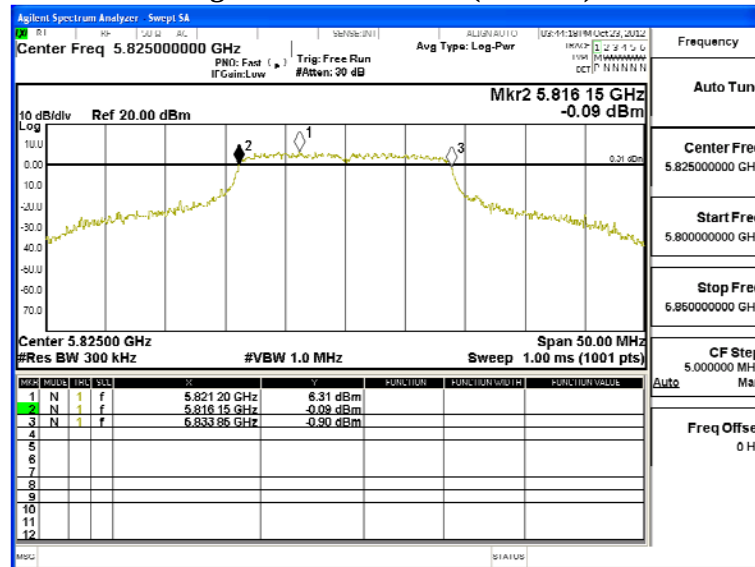
Figure Channel 157: (Chain C)



Product : SpectraGuardR Access Point / Sensor
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 7: Transmit - 802.11n-40BW_45Mbps(5G Band)(Dipole Antenna) (5825MHz)

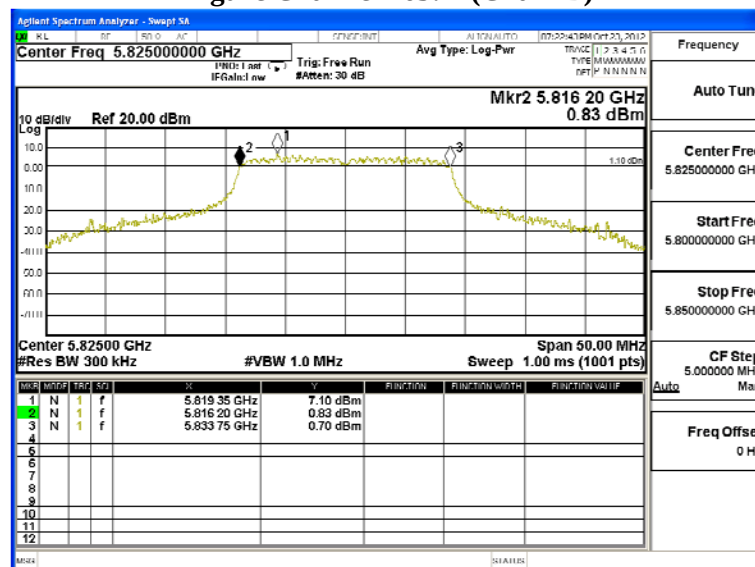
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
165	5825.00	17700	>500	Pass

Figure Channel 165: (Chain A)



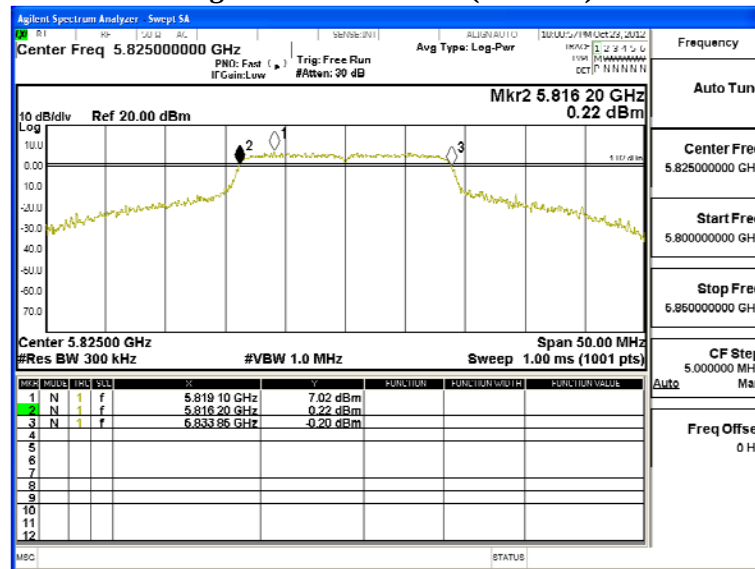
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
165	5825.00	17550	>500	Pass

Figure Channel 165: (Chain B)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
165	5825.00	17650	>500	Pass

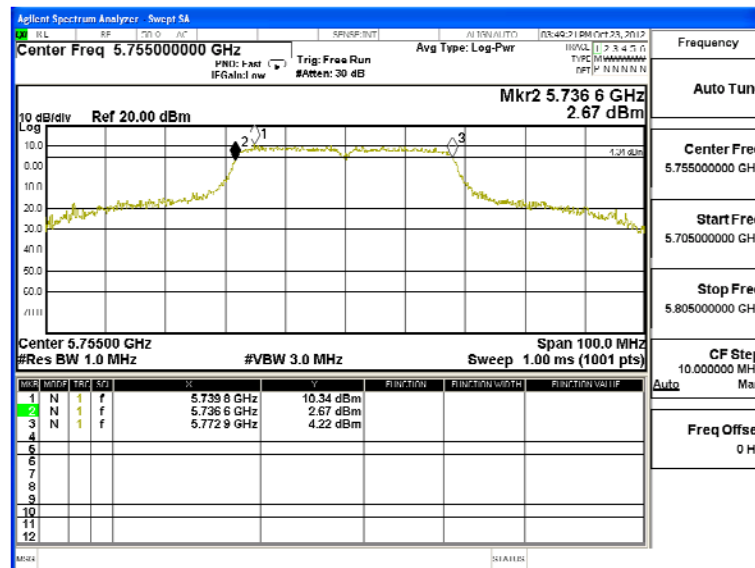
Figure Channel 165: (Chain C)



Product : SpectraGuardR Access Point / Sensor
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 7: Transmit - 802.11n-40BW_45Mbps(5G Band)(Dipole Antenna) (5755MHz)

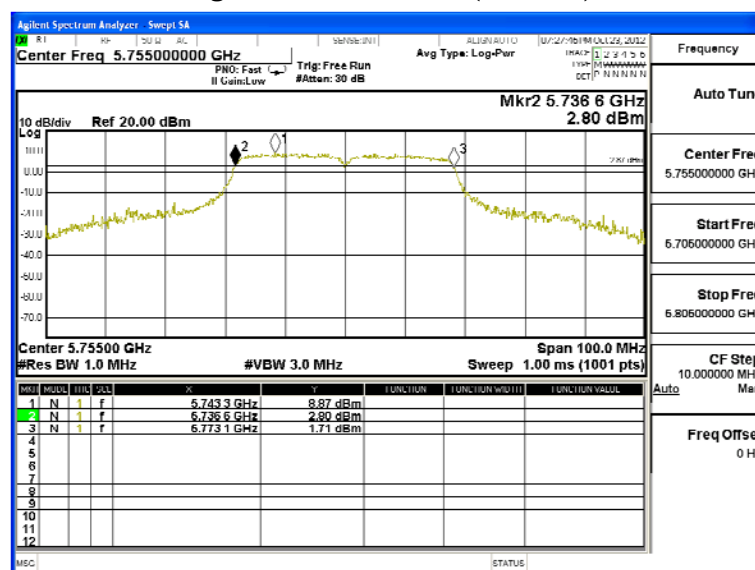
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
151	5755.00	36300	>500	Pass

Figure Channel 151: (Chain A)



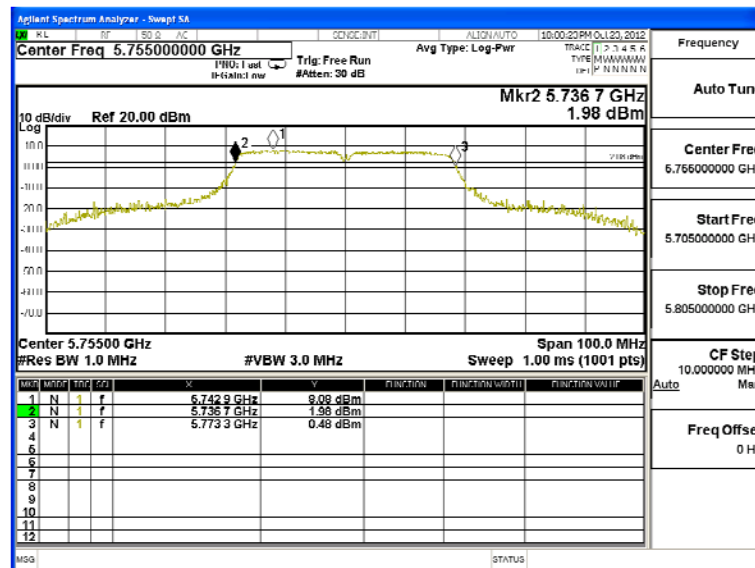
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
151	5755.00	36500	>500	Pass

Figure Channel 151: (Chain B)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
151	5755.00	36600	>500	Pass

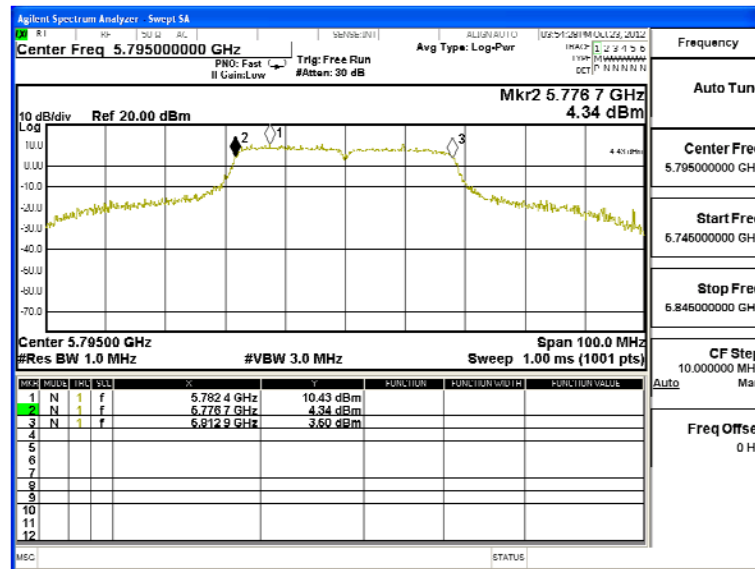
Figure Channel 151: (Chain C)



Product : SpectraGuardR Access Point / Sensor
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 7: Transmit - 802.11n-40BW_45Mbps(5G Band)(Dipole Antenna) (5795MHz)

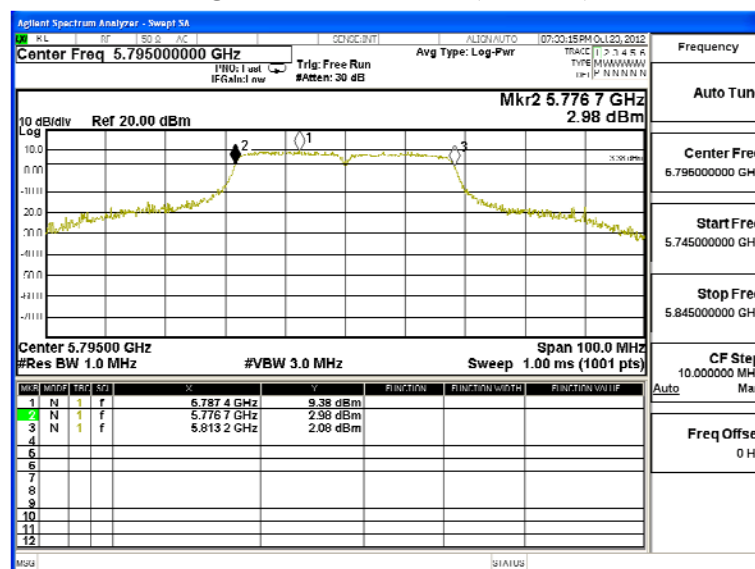
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
159	5795.00	36200	>500	Pass

Figure Channel 159: (Chain A)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
159	5795.00	36500	>500	Pass

Figure Channel 159: (Chain B)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
159	5795.00	36800	>500	Pass

Figure Channel 159: (Chain C)

