8.4 FREQUENCY STABILITY

8.4.1 Applicable Standard

According to FCC Part 15.407(g)
ANSI C63.10 Section 6.8

8.4.2 Conformance Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

8.4.3 Test Configuration

Test according to clause 6.1 radio frequency test setup

8.4.4 Test Procedure

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
Set to the maximum power setting and enable the EUT transmit continuously
Set RBW = 10 kHz.
Set the video bandwidth (VBW) =30 kHz.
Set Span= Entire absence of modulation emissions bandwidth
Set Detector = Peak.
Set Trace mode = max hold.
Set Sweep = auto couple.
Allow the trace to stabilize.
The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.
Beginning at each temperature level specified in user manual , the frequency shall be measured within one minute after application of primary power to the transmitter and at intervals of no more than one minute thereafter until ten minutes have elapsed or until sufficient measurements are obtained to indicate clearly that the frequency has stabilized within the applicable tolerance, whichever time period is greater. During each test, the ambient temperature shall not be allowed to rise more than 10° centigrade above the respective beginning ambient temperature level
Measure and record the results in the test report.

8.4.5 Test Results

802.11a mode		5180	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5180	less than 10ppm	Pass
	-10	5180	less than 10ppm	Pass
	0	5180	less than 10ppm	Pass
	10	5180	less than 10ppm	Pass
	20	5180	less than 10ppm	Pass
	30	5180	less than 10ppm	Pass
	40	5180	less than 10ppm	Pass
	50	5180	less than 10ppm	Pass
85% Vnom	20	5180	less than 10ppm	Pass
115% Vnom	20	5180	less than 10ppm	Pass

802.11a mode		5200	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5200	less than 10ppm	Pass
	-10	5200	less than 10ppm	Pass
	0	5200	less than 10ppm	Pass
	10	5200	less than 10ppm	Pass
	20	5200	less than 10ppm	Pass
	30	5200	less than 10ppm	Pass
	40	5200	less than 10ppm	Pass
	50	5200	less than 10ppm	Pass
85% Vnom	20	5200	less than 10ppm	Pass
115% Vnom	20	5200	less than 10ppm	Pass

802.11a mode		5240	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5240	less than 10ppm	Pass
	-10	5240	less than 10ppm	Pass
	0	5240	less than 10ppm	Pass
	10	5240	less than 10ppm	Pass
	20	5240	less than 10ppm	Pass
	30	5240	less than 10ppm	Pass
	40	5240	less than 10ppm	Pass
	50	5240	less than 10ppm	Pass
85% Vnom	20	5240	less than 10ppm	Pass
115% Vnom	20	5240	less than 10ppm	Pass

802.11a mode		5260	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5260	less than 10ppm	Pass
	-10	5260	less than 10ppm	Pass
	0	5260	less than 10ppm	Pass
	10	5260	less than 10ppm	Pass
	20	5260	less than 10ppm	Pass
	30	5260	less than 10ppm	Pass
	40	5260	less than 10ppm	Pass
	50	5260	less than 10ppm	Pass
85% Vnom	20	5260	less than 10ppm	Pass
115% Vnom	20	5260	less than 10ppm	Pass

802.11a mode		5280	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5280	less than 10ppm	Pass
	-10	5280	less than 10ppm	Pass
	0	5280	less than 10ppm	Pass
	10	5280	less than 10ppm	Pass
	20	5280	less than 10ppm	Pass
	30	5280	less than 10ppm	Pass
	40	5280	less than 10ppm	Pass
	50	5280	less than 10ppm	Pass
85% Vnom	20	5280	less than 10ppm	Pass
115% Vnom	20	5280	less than 10ppm	Pass

802.11a mode		5320	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5320	less than 10ppm	Pass
	-10	5320	less than 10ppm	Pass
	0	5320	less than 10ppm	Pass
	10	5320	less than 10ppm	Pass
	20	5320	less than 10ppm	Pass
	30	5320	less than 10ppm	Pass
	40	5320	less than 10ppm	Pass
	50	5320	less than 10ppm	Pass
85% Vnom	20	5320	less than 10ppm	Pass
115% Vnom	20	5320	less than 10ppm	Pass

802.11a mode		5500	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5500	less than 10ppm	Pass
	-10	5500	less than 10ppm	Pass
	0	5500	less than 10ppm	Pass
	10	5500	less than 10ppm	Pass
	20	5500	less than 10ppm	Pass
	30	5500	less than 10ppm	Pass
	40	5500	less than 10ppm	Pass
	50	5500	less than 10ppm	Pass
85% Vnom	20	5500	less than 10ppm	Pass
115% Vnom	20	5500	less than 10ppm	Pass

802.11a mode		5600	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5600	less than 10ppm	Pass
	-10	5600	less than 10ppm	Pass
	0	5600	less than 10ppm	Pass
	10	5600	less than 10ppm	Pass
	20	5600	less than 10ppm	Pass
	30	5600	less than 10ppm	Pass
	40	5600	less than 10ppm	Pass
	50	5600	less than 10ppm	Pass
85% Vnom	20	5600	less than 10ppm	Pass
115% Vnom	20	5600	less than 10ppm	Pass

802.11a mode		5700	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5700	less than 10ppm	Pass
	-10	5700	less than 10ppm	Pass
	0	5700	less than 10ppm	Pass
	10	5700	less than 10ppm	Pass
	20	5700	less than 10ppm	Pass
	30	5700	less than 10ppm	Pass
	40	5700	less than 10ppm	Pass
	50	5700	less than 10ppm	Pass
85% Vnom	20	5700	less than 10ppm	Pass
115% Vnom	20	5700	less than 10ppm	Pass

802.11a mode		5745	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5745	less than 10ppm	Pass
	-10	5745	less than 10ppm	Pass
	0	5745	less than 10ppm	Pass
	10	5745	less than 10ppm	Pass
	20	5745	less than 10ppm	Pass
	30	5745	less than 10ppm	Pass
	40	5745	less than 10ppm	Pass
	50	5745	less than 10ppm	Pass
85% Vnom	20	5745	less than 10ppm	Pass
115% Vnom	20	5745	less than 10ppm	Pass

802.11a mode		5785	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5785	less than 10ppm	Pass
	-10	5785	less than 10ppm	Pass
	0	5785	less than 10ppm	Pass
	10	5785	less than 10ppm	Pass
	20	5785	less than 10ppm	Pass
	30	5785	less than 10ppm	Pass
	40	5785	less than 10ppm	Pass
	50	5785	less than 10ppm	Pass
85% Vnom	20	5785	less than 10ppm	Pass
115% Vnom	20	5785	less than 10ppm	Pass

802.11a mode		5825	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5825	less than 10ppm	Pass
	-10	5825	less than 10ppm	Pass
	0	5825	less than 10ppm	Pass
	10	5825	less than 10ppm	Pass
	20	5825	less than 10ppm	Pass
	30	5825	less than 10ppm	Pass
	40	5825	less than 10ppm	Pass
	50	5825	less than 10ppm	Pass
85% Vnom	20	5825	less than 10ppm	Pass
115% Vnom	20	5825	less than 10ppm	Pass

802.11n(VHT20) mode		5180	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5180	less than 10ppm	Pass
	-10	5180	less than 10ppm	Pass
	0	5180	less than 10ppm	Pass
	10	5180	less than 10ppm	Pass
	20	5180	less than 10ppm	Pass
	30	5180	less than 10ppm	Pass
	40	5180	less than 10ppm	Pass
	50	5180	less than 10ppm	Pass
85% Vnom	20	5180	less than 10ppm	Pass
115% Vnom	20	5180	less than 10ppm	Pass

802.11n(VHT20) mode		5200	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5200	less than 10ppm	Pass
	-10	5200	less than 10ppm	Pass
	0	5200	less than 10ppm	Pass
	10	5200	less than 10ppm	Pass
	20	5200	less than 10ppm	Pass
	30	5200	less than 10ppm	Pass
	40	5200	less than 10ppm	Pass
	50	5200	less than 10ppm	Pass
85% Vnom	20	5200	less than 10ppm	Pass
115% Vnom	20	5200	less than 10ppm	Pass

802.11n(VHT20) mode		5240	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5240	less than 10ppm	Pass
	-10	5240	less than 10ppm	Pass
	0	5240	less than 10ppm	Pass
	10	5240	less than 10ppm	Pass
	20	5240	less than 10ppm	Pass
	30	5240	less than 10ppm	Pass
	40	5240	less than 10ppm	Pass
	50	5240	less than 10ppm	Pass
85% Vnom	20	5240	less than 10ppm	Pass
115% Vnom	20	5240	less than 10ppm	Pass

802.11n(VHT20) mode		5260	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5260	less than 10ppm	Pass
	-10	5260	less than 10ppm	Pass
	0	5260	less than 10ppm	Pass
	10	5260	less than 10ppm	Pass
	20	5260	less than 10ppm	Pass
	30	5260	less than 10ppm	Pass
	40	5260	less than 10ppm	Pass
	50	5260	less than 10ppm	Pass
85% Vnom	20	5260	less than 10ppm	Pass
115% Vnom	20	5260	less than 10ppm	Pass

802.11n(VHT20) mode		5280	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5280	less than 10ppm	Pass
	-10	5280	less than 10ppm	Pass
	0	5280	less than 10ppm	Pass
	10	5280	less than 10ppm	Pass
	20	5280	less than 10ppm	Pass
	30	5280	less than 10ppm	Pass
	40	5280	less than 10ppm	Pass
	50	5280	less than 10ppm	Pass
85% Vnom	20	5280	less than 10ppm	Pass
115% Vnom	20	5280	less than 10ppm	Pass

802.11n(VHT20) mode		5320	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5320	less than 10ppm	Pass
	-10	5320	less than 10ppm	Pass
	0	5320	less than 10ppm	Pass
	10	5320	less than 10ppm	Pass
	20	5320	less than 10ppm	Pass
	30	5320	less than 10ppm	Pass
	40	5320	less than 10ppm	Pass
	50	5320	less than 10ppm	Pass
85% Vnom	20	5320	less than 10ppm	Pass
115% Vnom	20	5320	less than 10ppm	Pass

802.11n(VHT20) mode		5500	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5500	less than 10ppm	Pass
	-10	5500	less than 10ppm	Pass
	0	5500	less than 10ppm	Pass
	10	5500	less than 10ppm	Pass
	20	5500	less than 10ppm	Pass
	30	5500	less than 10ppm	Pass
	40	5500	less than 10ppm	Pass
	50	5500	less than 10ppm	Pass
85% Vnom	20	5500	less than 10ppm	Pass
115% Vnom	20	5500	less than 10ppm	Pass

802.11n(VHT20) mode		5600	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5600	less than 10ppm	Pass
	-10	5600	less than 10ppm	Pass
	0	5600	less than 10ppm	Pass
	10	5600	less than 10ppm	Pass
	20	5600	less than 10ppm	Pass
	30	5600	less than 10ppm	Pass
	40	5600	less than 10ppm	Pass
	50	5600	less than 10ppm	Pass
85% Vnom	20	5600	less than 10ppm	Pass
115% Vnom	20	5600	less than 10ppm	Pass

802.11n(VHT20) mode		5700	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5700	less than 10ppm	Pass
	-10	5700	less than 10ppm	Pass
	0	5700	less than 10ppm	Pass
	10	5700	less than 10ppm	Pass
	20	5700	less than 10ppm	Pass
	30	5700	less than 10ppm	Pass
	40	5700	less than 10ppm	Pass
	50	5700	less than 10ppm	Pass
85% Vnom	20	5700	less than 10ppm	Pass
115% Vnom	20	5700	less than 10ppm	Pass

802.11n(VHT20) mode		5745	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5745	less than 10ppm	Pass
	-10	5745	less than 10ppm	Pass
	0	5745	less than 10ppm	Pass
	10	5745	less than 10ppm	Pass
	20	5745	less than 10ppm	Pass
	30	5745	less than 10ppm	Pass
	40	5745	less than 10ppm	Pass
	50	5745	less than 10ppm	Pass
85% Vnom	20	5745	less than 10ppm	Pass
115% Vnom	20	5745	less than 10ppm	Pass

802.11n(VHT20) mode		5785	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5785	less than 10ppm	Pass
	-10	5785	less than 10ppm	Pass
	0	5785	less than 10ppm	Pass
	10	5785	less than 10ppm	Pass
	20	5785	less than 10ppm	Pass
	30	5785	less than 10ppm	Pass
	40	5785	less than 10ppm	Pass
	50	5785	less than 10ppm	Pass
85% Vnom	20	5785	less than 10ppm	Pass
115% Vnom	20	5785	less than 10ppm	Pass

802.11n(VHT20) mode		5825	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5825	less than 10ppm	Pass
	-10	5825	less than 10ppm	Pass
	0	5825	less than 10ppm	Pass
	10	5825	less than 10ppm	Pass
	20	5825	less than 10ppm	Pass
	30	5825	less than 10ppm	Pass
	40	5825	less than 10ppm	Pass
	50	5825	less than 10ppm	Pass
85% Vnom	20	5825	less than 10ppm	Pass
115% Vnom	20	5825	less than 10ppm	Pass

802.11ac(VHT20) mode		5180	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5180	less than 10ppm	Pass
	-10	5180	less than 10ppm	Pass
	0	5180	less than 10ppm	Pass
	10	5180	less than 10ppm	Pass
	20	5180	less than 10ppm	Pass
	30	5180	less than 10ppm	Pass
	40	5180	less than 10ppm	Pass
	50	5180	less than 10ppm	Pass
85% Vnom	20	5180	less than 10ppm	Pass
115% Vnom	20	5180	less than 10ppm	Pass

802.11ac(VHT20) mode		5200	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5200	less than 10ppm	Pass
	-10	5200	less than 10ppm	Pass
	0	5200	less than 10ppm	Pass
	10	5200	less than 10ppm	Pass
	20	5200	less than 10ppm	Pass
	30	5200	less than 10ppm	Pass
	40	5200	less than 10ppm	Pass
	50	5200	less than 10ppm	Pass
85% Vnom	20	5200	less than 10ppm	Pass
115% Vnom	20	5200	less than 10ppm	Pass

802.11ac(VHT20) mode		5240	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5240	less than 10ppm	Pass
	-10	5240	less than 10ppm	Pass
	0	5240	less than 10ppm	Pass
	10	5240	less than 10ppm	Pass
	20	5240	less than 10ppm	Pass
	30	5240	less than 10ppm	Pass
	40	5240	less than 10ppm	Pass
	50	5240	less than 10ppm	Pass
85% Vnom	20	5240	less than 10ppm	Pass
115% Vnom	20	5240	less than 10ppm	Pass

802.11ac(VHT20) mode		5260	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5260	less than 10ppm	Pass
	-10	5260	less than 10ppm	Pass
	0	5260	less than 10ppm	Pass
	10	5260	less than 10ppm	Pass
	20	5260	less than 10ppm	Pass
	30	5260	less than 10ppm	Pass
	40	5260	less than 10ppm	Pass
	50	5260	less than 10ppm	Pass
85% Vnom	20	5260	less than 10ppm	Pass
115% Vnom	20	5260	less than 10ppm	Pass

802.11ac(VHT20) mode		5280	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5280	less than 10ppm	Pass
	-10	5280	less than 10ppm	Pass
	0	5280	less than 10ppm	Pass
	10	5280	less than 10ppm	Pass
	20	5280	less than 10ppm	Pass
	30	5280	less than 10ppm	Pass
	40	5280	less than 10ppm	Pass
	50	5280	less than 10ppm	Pass
85% Vnom	20	5280	less than 10ppm	Pass
115% Vnom	20	5280	less than 10ppm	Pass

802.11ac(VHT20) mode		5320	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5320	less than 10ppm	Pass
	-10	5320	less than 10ppm	Pass
	0	5320	less than 10ppm	Pass
	10	5320	less than 10ppm	Pass
	20	5320	less than 10ppm	Pass
	30	5320	less than 10ppm	Pass
	40	5320	less than 10ppm	Pass
	50	5320	less than 10ppm	Pass
85% Vnom	20	5320	less than 10ppm	Pass
115% Vnom	20	5320	less than 10ppm	Pass

c		5500	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5500	less than 10ppm	Pass
	-10	5500	less than 10ppm	Pass
	0	5500	less than 10ppm	Pass
	10	5500	less than 10ppm	Pass
	20	5500	less than 10ppm	Pass
	30	5500	less than 10ppm	Pass
	40	5500	less than 10ppm	Pass
	50	5500	less than 10ppm	Pass
85% Vnom	20	5500	less than 10ppm	Pass
115% Vnom	20	5500	less than 10ppm	Pass

802.11ac(VHT20) mode		5600	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5600	less than 10ppm	Pass
	-10	5600	less than 10ppm	Pass
	0	5600	less than 10ppm	Pass
	10	5600	less than 10ppm	Pass
	20	5600	less than 10ppm	Pass
	30	5600	less than 10ppm	Pass
	40	5600	less than 10ppm	Pass
	50	5600	less than 10ppm	Pass
85% Vnom	20	5600	less than 10ppm	Pass
115% Vnom	20	5600	less than 10ppm	Pass

802.11ac(VHT20) mode		5700	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5700	less than 10ppm	Pass
	-10	5700	less than 10ppm	Pass
	0	5700	less than 10ppm	Pass
	10	5700	less than 10ppm	Pass
	20	5700	less than 10ppm	Pass
	30	5700	less than 10ppm	Pass
	40	5700	less than 10ppm	Pass
	50	5700	less than 10ppm	Pass
85% Vnom	20	5700	less than 10ppm	Pass
115% Vnom	20	5700	less than 10ppm	Pass

802.11ac(VHT20) mode		5745	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5745	less than 10ppm	Pass
	-10	5745	less than 10ppm	Pass
	0	5745	less than 10ppm	Pass
	10	5745	less than 10ppm	Pass
	20	5745	less than 10ppm	Pass
	30	5745	less than 10ppm	Pass
	40	5745	less than 10ppm	Pass
	50	5745	less than 10ppm	Pass
85% Vnom	20	5745	less than 10ppm	Pass
115% Vnom	20	5745	less than 10ppm	Pass

802.11ac(VHT20) mode		5785	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5785	less than 10ppm	Pass
	-10	5785	less than 10ppm	Pass
	0	5785	less than 10ppm	Pass
	10	5785	less than 10ppm	Pass
	20	5785	less than 10ppm	Pass
	30	5785	less than 10ppm	Pass
	40	5785	less than 10ppm	Pass
	50	5785	less than 10ppm	Pass
85% Vnom	20	5785	less than 10ppm	Pass
115% Vnom	20	5785	less than 10ppm	Pass

802.11ac(VHT20) mode		5825	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5825	less than 10ppm	Pass
	-10	5825	less than 10ppm	Pass
	0	5825	less than 10ppm	Pass
	10	5825	less than 10ppm	Pass
	20	5825	less than 10ppm	Pass
	30	5825	less than 10ppm	Pass
	40	5825	less than 10ppm	Pass
	50	5825	less than 10ppm	Pass
85% Vnom	20	5825	less than 10ppm	Pass
115% Vnom	20	5825	less than 10ppm	Pass

802.11n(VHT40) mode		5190	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5190	less than 10ppm	Pass
	-10	5190	less than 10ppm	Pass
	0	5190	less than 10ppm	Pass
	10	5190	less than 10ppm	Pass
	20	5190	less than 10ppm	Pass
	30	5190	less than 10ppm	Pass
	40	5190	less than 10ppm	Pass
	50	5190	less than 10ppm	Pass
85% Vnom	20	5190	less than 10ppm	Pass
115% Vnom	20	5190	less than 10ppm	Pass

802.11n(VHT40) mode		5230	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5230	less than 10ppm	Pass
	-10	5230	less than 10ppm	Pass
	0	5230	less than 10ppm	Pass
	10	5230	less than 10ppm	Pass
	20	5230	less than 10ppm	Pass
	30	5230	less than 10ppm	Pass
	40	5230	less than 10ppm	Pass
	50	5230	less than 10ppm	Pass
85% Vnom	20	5230	less than 10ppm	Pass
115% Vnom	20	5230	less than 10ppm	Pass

802.11n(VHT40) mode		5270	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5270.025713	less than 10ppm	Pass
	-10	5270.025716	less than 10ppm	Pass
	0	5270.025316	less than 10ppm	Pass
	10	5270.025169	less than 10ppm	Pass
	20	5270.025348	less than 10ppm	Pass
	30	5270.025369	less than 10ppm	Pass
	40	5270.025452	less than 10ppm	Pass
	50	5270.025013	less than 10ppm	Pass
85% Vnom	20	5270.025403	less than 10ppm	Pass
115% Vnom	20	5270.025156	less than 10ppm	Pass

802.11n(VHT40) mode		5310	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5310	less than 10ppm	Pass
	-10	5310	less than 10ppm	Pass
	0	5310	less than 10ppm	Pass
	10	5310	less than 10ppm	Pass
	20	5310	less than 10ppm	Pass
	30	5310	less than 10ppm	Pass
	40	5310	less than 10ppm	Pass
	50	5310	less than 10ppm	Pass
85% Vnom	20	5310	less than 10ppm	Pass
115% Vnom	20	5310	less than 10ppm	Pass

802.11n(VHT40) mode		5510	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5510	less than 10ppm	Pass
	-10	5510	less than 10ppm	Pass
	0	5510	less than 10ppm	Pass
	10	5510	less than 10ppm	Pass
	20	5510	less than 10ppm	Pass
	30	5510	less than 10ppm	Pass
	40	5510	less than 10ppm	Pass
	50	5510	less than 10ppm	Pass
85% Vnom	20	5510	less than 10ppm	Pass
115% Vnom	20	5510	less than 10ppm	Pass

802.11n(VHT40) mode		5590	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5590	less than 10ppm	Pass
	-10	5590	less than 10ppm	Pass
	0	5590	less than 10ppm	Pass
	10	5590	less than 10ppm	Pass
	20	5590	less than 10ppm	Pass
	30	5590	less than 10ppm	Pass
	40	5590	less than 10ppm	Pass
	50	5590	less than 10ppm	Pass
85% Vnom	20	5590	less than 10ppm	Pass
115% Vnom	20	5590	less than 10ppm	Pass

802.11n(VHT40) mode		5670	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5670	less than 10ppm	Pass
	-10	5670	less than 10ppm	Pass
	0	5670	less than 10ppm	Pass
	10	5670	less than 10ppm	Pass
	20	5670	less than 10ppm	Pass
	30	5670	less than 10ppm	Pass
	40	5670	less than 10ppm	Pass
	50	5670	less than 10ppm	Pass
85% Vnom	20	5670	less than 10ppm	Pass
115% Vnom	20	5670	less than 10ppm	Pass

802.11n(VHT40) mode		5755	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5755	less than 10ppm	Pass
	-10	5755	less than 10ppm	Pass
	0	5755	less than 10ppm	Pass
	10	5755	less than 10ppm	Pass
	20	5755	less than 10ppm	Pass
	30	5755	less than 10ppm	Pass
	40	5755	less than 10ppm	Pass
	50	5755	less than 10ppm	Pass
85% Vnom	20	5755	less than 10ppm	Pass
115% Vnom	20	5755	less than 10ppm	Pass

802.11n(VHT40) mode		5795	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5795	less than 10ppm	Pass
	-10	5795	less than 10ppm	Pass
	0	5795	less than 10ppm	Pass
	10	5795	less than 10ppm	Pass
	20	5795	less than 10ppm	Pass
	30	5795	less than 10ppm	Pass
	40	5795	less than 10ppm	Pass
	50	5795	less than 10ppm	Pass
85% Vnom	20	5795	less than 10ppm	Pass
115% Vnom	20	5795	less than 10ppm	Pass

802.11ac(VHT40) mode		5190	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5190	less than 10ppm	Pass
	-10	5190	less than 10ppm	Pass
	0	5190	less than 10ppm	Pass
	10	5190	less than 10ppm	Pass
	20	5190	less than 10ppm	Pass
	30	5190	less than 10ppm	Pass
	40	5190	less than 10ppm	Pass
	50	5190	less than 10ppm	Pass
85% Vnom	20	5190	less than 10ppm	Pass
115% Vnom	20	5190	less than 10ppm	Pass

802.11ac(VHT40) mode		5230	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5230	less than 10ppm	Pass
	-10	5230	less than 10ppm	Pass
	0	5230	less than 10ppm	Pass
	10	5230	less than 10ppm	Pass
	20	5230	less than 10ppm	Pass
	30	5230	less than 10ppm	Pass
	40	5230	less than 10ppm	Pass
	50	5230	less than 10ppm	Pass
85% Vnom	20	5230	less than 10ppm	Pass
115% Vnom	20	5230	less than 10ppm	Pass

802.11ac(VHT40) mode		5270	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5270	less than 10ppm	Pass
	-10	5270	less than 10ppm	Pass
	0	5270	less than 10ppm	Pass
	10	5270	less than 10ppm	Pass
	20	5270	less than 10ppm	Pass
	30	5270	less than 10ppm	Pass
	40	5270	less than 10ppm	Pass
	50	5270	less than 10ppm	Pass
85% Vnom	20	5270	less than 10ppm	Pass
115% Vnom	20	5270	less than 10ppm	Pass

802.11ac(VHT40) mode		5310	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5310	less than 10ppm	Pass
	-10	5310	less than 10ppm	Pass
	0	5310	less than 10ppm	Pass
	10	5310	less than 10ppm	Pass
	20	5310	less than 10ppm	Pass
	30	5310	less than 10ppm	Pass
	40	5310	less than 10ppm	Pass
	50	5310	less than 10ppm	Pass
85% Vnom	20	5310	less than 10ppm	Pass
115% Vnom	20	5310	less than 10ppm	Pass

802.11ac(VHT40) mode		5510	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5510	less than 10ppm	Pass
	-10	5510	less than 10ppm	Pass
	0	5510	less than 10ppm	Pass
	10	5510	less than 10ppm	Pass
	20	5510	less than 10ppm	Pass
	30	5510	less than 10ppm	Pass
	40	5510	less than 10ppm	Pass
	50	5510	less than 10ppm	Pass
85% Vnom	20	5510	less than 10ppm	Pass
115% Vnom	20	5510	less than 10ppm	Pass

802.11ac(VHT40) mode		5590	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5590	less than 10ppm	Pass
	-10	5590	less than 10ppm	Pass
	0	5590	less than 10ppm	Pass
	10	5590	less than 10ppm	Pass
	20	5590	less than 10ppm	Pass
	30	5590	less than 10ppm	Pass
	40	5590	less than 10ppm	Pass
	50	5590	less than 10ppm	Pass
85% Vnom	20	5590	less than 10ppm	Pass
115% Vnom	20	5590	less than 10ppm	Pass

802.11ac(VHT40) mode		5670	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5670	less than 10ppm	Pass
	-10	5670	less than 10ppm	Pass
	0	5670	less than 10ppm	Pass
	10	5670	less than 10ppm	Pass
	20	5670	less than 10ppm	Pass
	30	5670	less than 10ppm	Pass
	40	5670	less than 10ppm	Pass
	50	5670	less than 10ppm	Pass
85% Vnom	20	5670	less than 10ppm	Pass
115% Vnom	20	5670	less than 10ppm	Pass

802.11ac(VHT40) mode		5755	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5755	less than 10ppm	Pass
	-10	5755	less than 10ppm	Pass
	0	5755	less than 10ppm	Pass
	10	5755	less than 10ppm	Pass
	20	5755	less than 10ppm	Pass
	30	5755	less than 10ppm	Pass
	40	5755	less than 10ppm	Pass
	50	5755	less than 10ppm	Pass
85% Vnom	20	5755	less than 10ppm	Pass
115% Vnom	20	5755	less than 10ppm	Pass

802.11ac(VHT40) mode		5795	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5795	less than 10ppm	Pass
	-10	5795	less than 10ppm	Pass
	0	5795	less than 10ppm	Pass
	10	5795	less than 10ppm	Pass
	20	5795	less than 10ppm	Pass
	30	5795	less than 10ppm	Pass
	40	5795	less than 10ppm	Pass
	50	5795	less than 10ppm	Pass
85% Vnom	20	5795	less than 10ppm	Pass
115% Vnom	20	5795	less than 10ppm	Pass

802.11ac(VHT80) mode		5210	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5210	less than 10ppm	Pass
	-10	5210	less than 10ppm	Pass
	0	5210	less than 10ppm	Pass
	10	5210	less than 10ppm	Pass
	20	5210	less than 10ppm	Pass
	30	5210	less than 10ppm	Pass
	40	5210	less than 10ppm	Pass
	50	5210	less than 10ppm	Pass
85% Vnom	20	5210	less than 10ppm	Pass
115% Vnom	20	5210	less than 10ppm	Pass

802.11ac(VHT80) mode		5290	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5290	less than 10ppm	Pass
	-10	5290	less than 10ppm	Pass
	0	5290	less than 10ppm	Pass
	10	5290	less than 10ppm	Pass
	20	5290	less than 10ppm	Pass
	30	5290	less than 10ppm	Pass
	40	5290	less than 10ppm	Pass
	50	5290	less than 10ppm	Pass
85% Vnom	20	5290	less than 10ppm	Pass
115% Vnom	20	5290	less than 10ppm	Pass

802.11ac(VHT80) mode		5530	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5530	less than 10ppm	Pass
	-10	5530	less than 10ppm	Pass
	0	5530	less than 10ppm	Pass
	10	5530	less than 10ppm	Pass
	20	5530	less than 10ppm	Pass
	30	5530	less than 10ppm	Pass
	40	5530	less than 10ppm	Pass
	50	5530	less than 10ppm	Pass
85% Vnom	20	5530	less than 10ppm	Pass
115% Vnom	20	5530	less than 10ppm	Pass

802.11ac(VHT80) mode		5610	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5610	less than 10ppm	Pass
	-10	5610	less than 10ppm	Pass
	0	5610	less than 10ppm	Pass
	10	5610	less than 10ppm	Pass
	20	5610	less than 10ppm	Pass
	30	5610	less than 10ppm	Pass
	40	5610	less than 10ppm	Pass
	50	5610	less than 10ppm	Pass
85% Vnom	20	5610	less than 10ppm	Pass
115% Vnom	20	5610	less than 10ppm	Pass

802.11ac(VHT80) mode		5775	
Temperature :	--	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong

Voltage(V)	Temp(℃)	Test Frequency (MHz)	Max. Deviation	Verdict
Vnom	-20	5775	less than 10ppm	Pass
	-10	5775	less than 10ppm	Pass
	0	5775	less than 10ppm	Pass
	10	5775	less than 10ppm	Pass
	20	5775	less than 10ppm	Pass
	30	5775	less than 10ppm	Pass
	40	5775	less than 10ppm	Pass
	50	5775	less than 10ppm	Pass
85% Vnom	20	5775	less than 10ppm	Pass
115% Vnom	20	5775	less than 10ppm	Pass

8.5 UNDESIRABLE RADIATED SPURIOUS EMISSION

8.5.1 Applicable Standard

According to FCC Part 15.407 (b)
According to 789033 D02 Section II(G)

8.5.2 Conformance Limit

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.
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.
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.
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.
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.
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209
The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 15.209(a):

Restricted Frequency(MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance
0.009-0.490	2400/F(KHz)	20 log (uV/m)	300
0.490-1.705	2400/F(KHz)	20 log (uV/m)	30
1.705-30	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

The provisions of §15.205 apply to intentional radiators operating under this section,15.205 Restricted bands of operation

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

Remark: 1. Emission level in dBuV/m=20 log (uV/m)
2. Measurement was performed at an antenna to the closed point of EUT distance of meters.
3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of ξ 15.205, and the emissions located in restricted bands also comply with 15.209 limit.

8.5.3 Test Configuration

Test according to clause 6.2 radio frequency test setup

8.5.4 Test Procedure

■ Unwanted Emissions Measurements below 1000 MHz

Compliance shall be demonstrated using CISPR quasi-peak detection; however, peak detection is permitted as an alternative to quasi-peak detection.
The EUT was placed on a turn table which is 0.8m above ground plane.
And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
Repeat above procedures until all frequency measured was complete.
We use software control the EUT, Let EUT hopping on and transmit with highest power, All the modes have been tested and the worst result was reported.
Use the following spectrum analyzer settings:
Set RBW=120kHz for f < 1 GHz(30MHz to 1GHz), 200Hz for f<150KHz(9KHz to 150KHz), 9KHz for <30MHz (150KHz to 30KHz).
Set the VBW > RBW.
Detector = Peak.
Trace mode = max hold.
Follow the guidelines in ANSI C63.10-2013 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified in Section 15.35(b). Submit this data.
Repeat above procedures until all frequency measured was complete.

■ Unwanted Maximum peak Emissions Measurements above 1000 MHz

Maximum emission levels are measured by setting the analyzer as follows:
RBW = 1 MHz.
VBW ≥ 3 MHz.
Detector = Peak.
Sweep time = auto.
Trace mode = max hold.
Allow sweeps to continue until the trace stabilizes. Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately 1/x, where x is the duty cycle. For example, at 50 percent duty cycle, the measurement time will increase by a factor of two relative to measurement time for continuous transmission.

■ Unwanted Average Emissions Measurements above 1000 MHz

Method VB (Averaging using reduced video bandwidth): Alternative method.
RBW = 1 MHz.
Video bandwidth. • If the EUT is configured to transmit with duty cycle ≥ 98 percent, set VBW ≤ RBW/100 (i.e., 10 kHz) but not less than 10 Hz.
• If the EUT duty cycle is < 98 percent, set VBW ≥ 1/T, where T is defined in section II.B.1.a).
Video bandwidth mode or display mode • The instrument shall be set to ensure that video filtering is applied in the power domain. Typically, this requires setting the detector mode to RMS and setting the Average-VBW Type to Power (RMS).
• As an alternative, the analyzer may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some analyzers require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to “Voltage” regardless of the display mode.
Detector = Peak.
Sweep time = auto.
Trace mode = max hold.
Allow max hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 percent duty cycle. For lower duty cycles, increase the minimum number of traces by a factor of 1/x, where x is the duty cycle. For example, use at least 200 traces if the duty cycle is 25 percent. (If a specific emission is demonstrated to be continuous—i.e., 100 percent duty cycle—rather than turning on and off with the transmit cycle, at least 50 traces shall be averaged.)

■ Band edge measurements.

Unwanted band-edge emissions may be measured using either of the special band-edge measurement techniques (the marker-delta or integration methods) described below. Note that the marker-delta method is primarily a radiated measurement technique that requires the 99% occupied bandwidth edge to be within 2 MHz of the authorized band edge, whereas the integration method can be used in either a radiated or conducted measurement without any special requirement with regards to the displacement of the unwanted emission(s) relative to the authorized bandwidth.

Marker-Delta Method.

The marker-delta method, as described in ANSI C63.10, can be used to perform measurements of the radiated unwanted emissions level of emissions provided that the 99% occupied bandwidth of the fundamental is within 2 MHz of the authorized band-edge.

8.5.5 Test Results

■ ☒For Undesirable radiated Spurious Emission in UNII Band I

All the modes 802.11a/n/ac has been tested and the worst result 802.11a recorded as below:

- ☒Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5180

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
8054.86	V	50.45	-44.78	-27.00	-17.78
10743.21	V	55.27	-39.96	-27.00	-12.96
14123.88	V	62.43	-32.80	-27.00	-5.80
7918.79	H	54.04	-41.19	-27.00	-14.19
11287.31	H	55.44	-39.79	-27.00	-12.79
14310.80	H	65.30	-29.93	-27.00	-2.93

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5220

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
8053.52	V	49.69	-45.54	-27.00	-18.54
10744.36	V	54.84	-40.39	-27.00	-13.39
14124.93	V	65.38	-29.85	-27.00	-2.85
7917.43	H	50.20	-45.03	-27.00	-18.03
11288.35	H	55.01	-40.22	-27.00	-13.22
14309.42	H	64.75	-30.48	-27.00	-3.48

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5240

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
8051.97	V	51.73	-43.50	-27.00	-16.50
10742.91	V	54.58	-40.65	-27.00	-13.65
14123.42	V	64.16	-31.07	-27.00	-4.07
7915.94	H	50.55	-44.68	-27.00	-17.68
11286.91	H	55.12	-40.11	-27.00	-13.11
14308.00	H	64.07	-31.16	-27.00	-4.16

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3)EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

- ☒Undesirable radiated Spurious Emission in Restricted Band (4500-5100MHz)

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5180

Freq. (MHz)	Ant.Pol. H/V	PK (dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Margin (dB)	PK (dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Margin (dB)
5031.05	H	46.22	74.00	-27.78	32.56	54.00	-21.44
4975.15	V	46.79	74.00	-27.21	33.16	54.00	-20.84

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5240

Freq. (MHz)	Ant.Pol. H/V	PK (dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Margin (dB)	PK (dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Margin (dB)
5051.20	H	44.80	74.00	-29.20	32.59	54.00	-21.41
5092.15	V	46.13	74.00	-27.87	33.57	54.00	-20.43

- ☒Undesirable radiated Spurious Emission in Restricted Band (5350-5460MHz)

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5180

Freq. (MHz)	Ant.Pol. H/V	PK (dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Margin (dB)	PK (dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Margin (dB)
5359.24	H	45.50	74.00	-28.50	30.10	54.00	-23.90
5351.98	V	45.83	74.00	-28.17	30.45	54.00	-23.55

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5240

Freq. (MHz)	Ant.Pol. H/V	PK (dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Margin (dB)	PK (dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Margin (dB)
5359.57	H	46.52	74.00	-27.48	34.96	54.00	-19.04
5359.57	V	46.38	74.00	-27.62	34.19	54.00	-19.81

- ☒Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5180

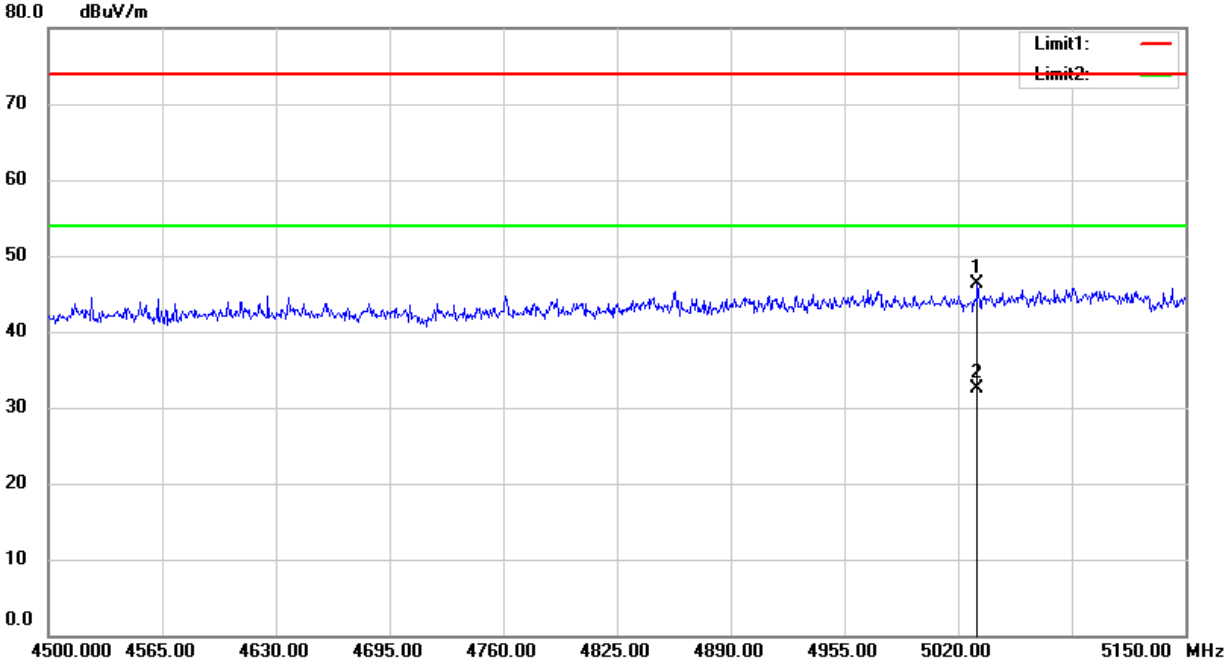
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5144.60	H	49.29	-45.94	-27	Pass
5145.40	V	52.11	-43.12	-27	Pass

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5240

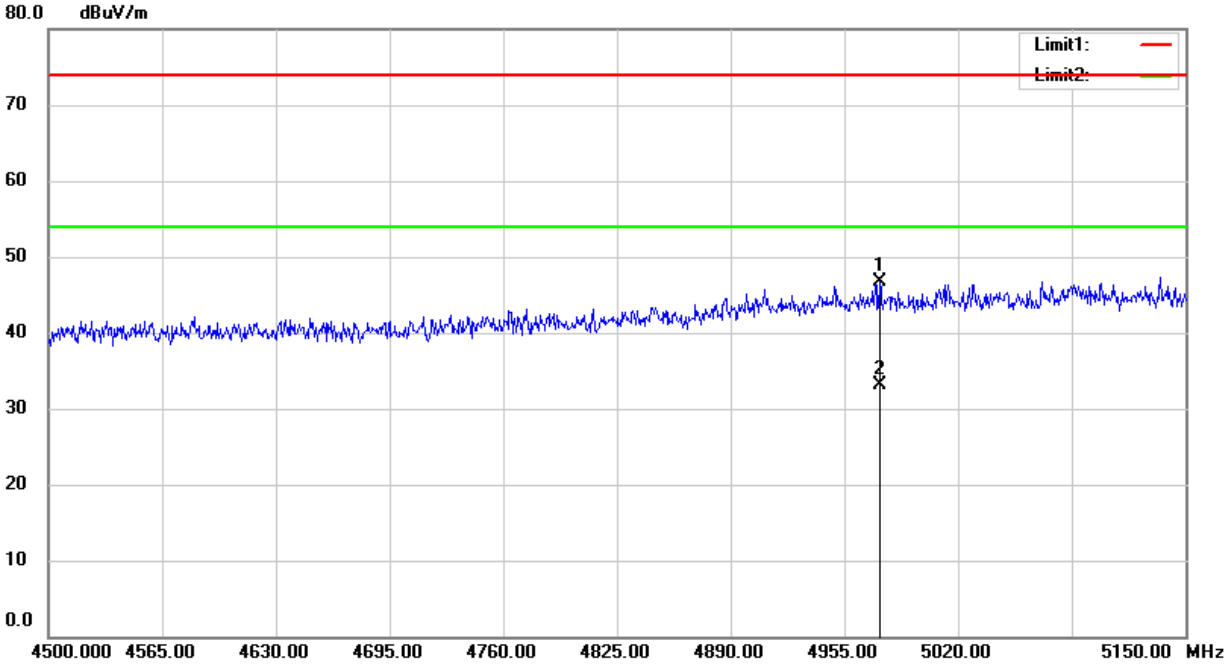
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5350.30	H	55.49	-39.74	-27	Pass
5353.70	V	57.88	-37.35	-27	Pass

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3)EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

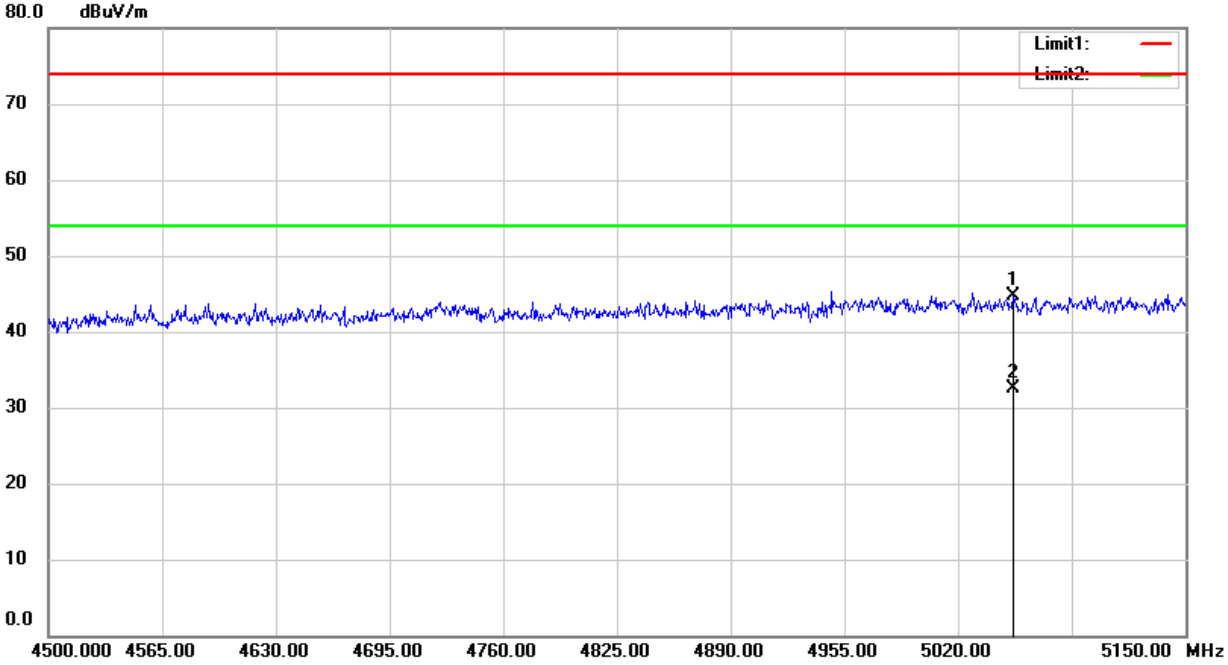
Test Model	UNII Band I Undesirable radiated Spurious Emission in Restricted Band (4500-5100MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5180 ☐5200 ☐5240 Ant.Pol H



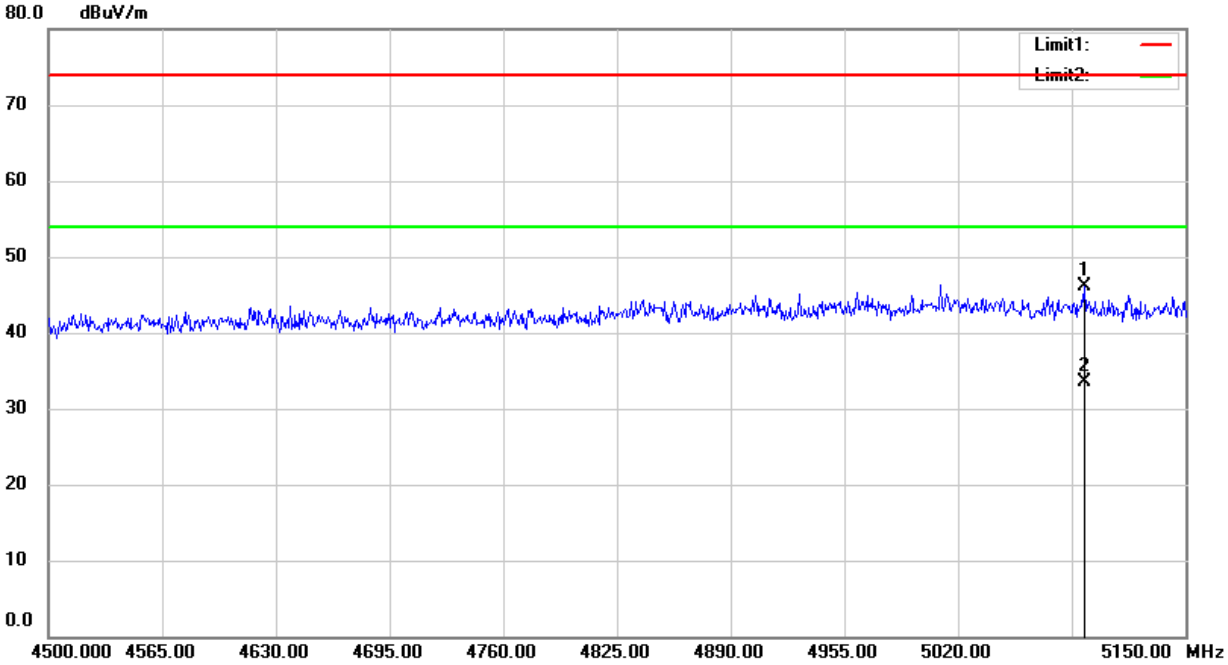
Test Model	UNII Band I Undesirable radiated Spurious Emission in Restricted Band (4500-5100MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5180 ☐5200 ☐5240 Ant.Pol V



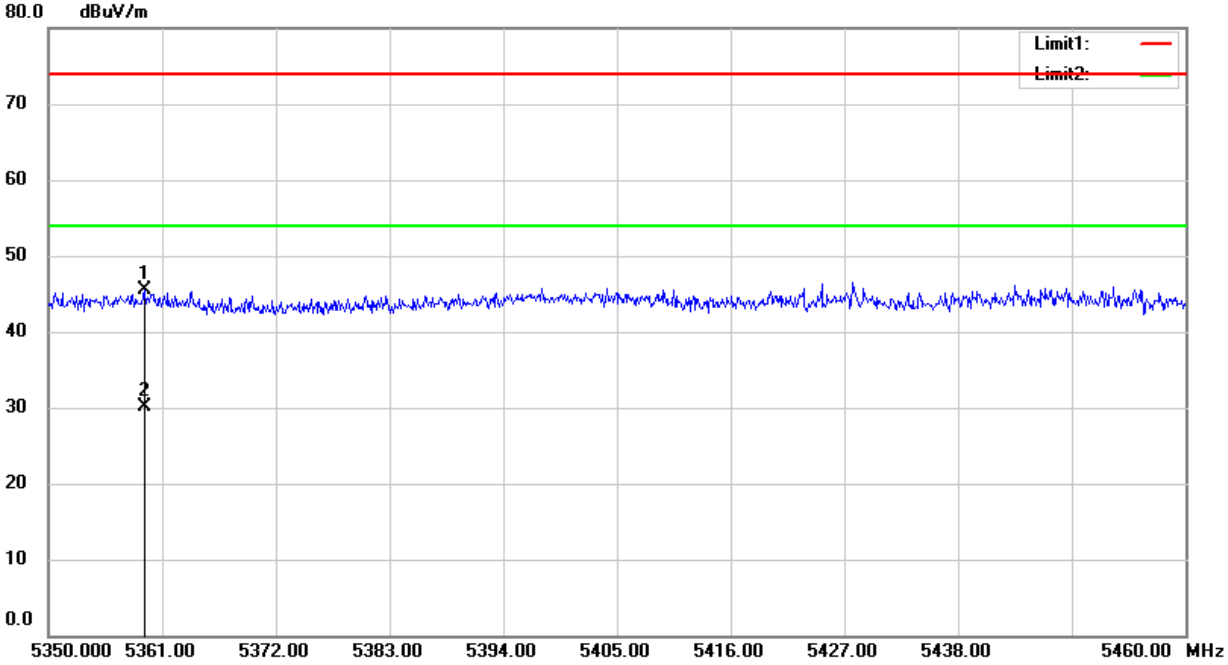
Test Model	UNII Band I Undesirable radiated Spurious Emission in Restricted Band (4500-5100MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☐5180 ☐5200 ☒5240 Ant.Pol H



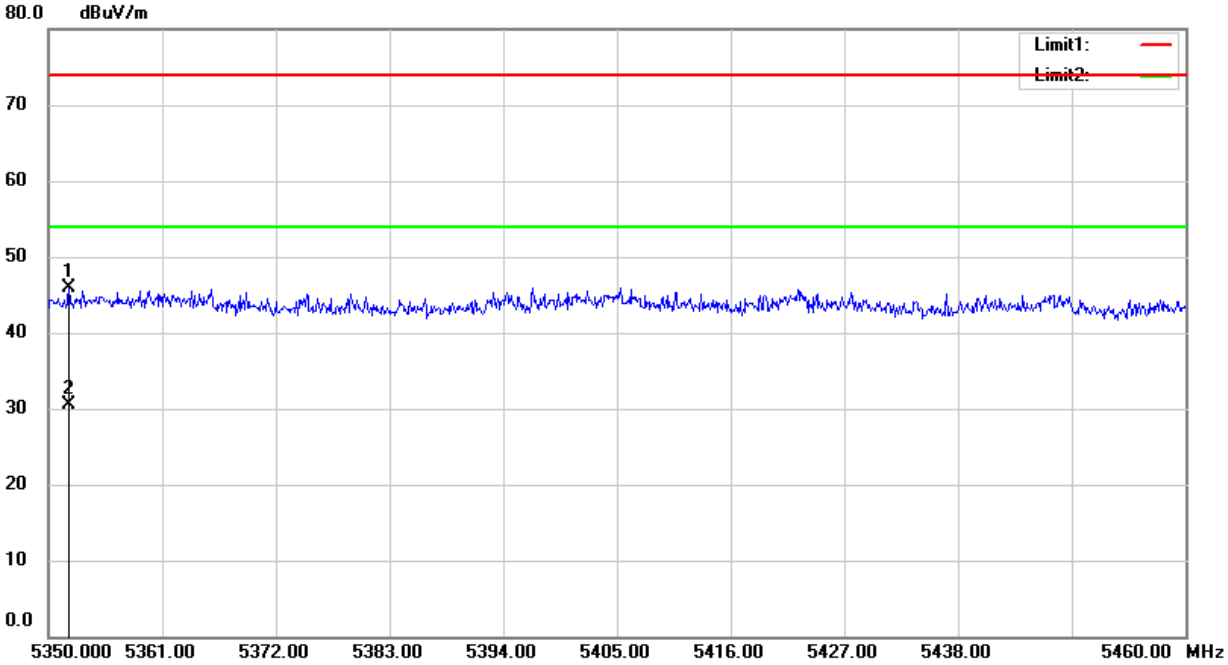
Test Model	UNII Band I Undesirable radiated Spurious Emission in Restricted Band (4500-5100MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☐5180 ☐5200 ☒5240 Ant.Pol V



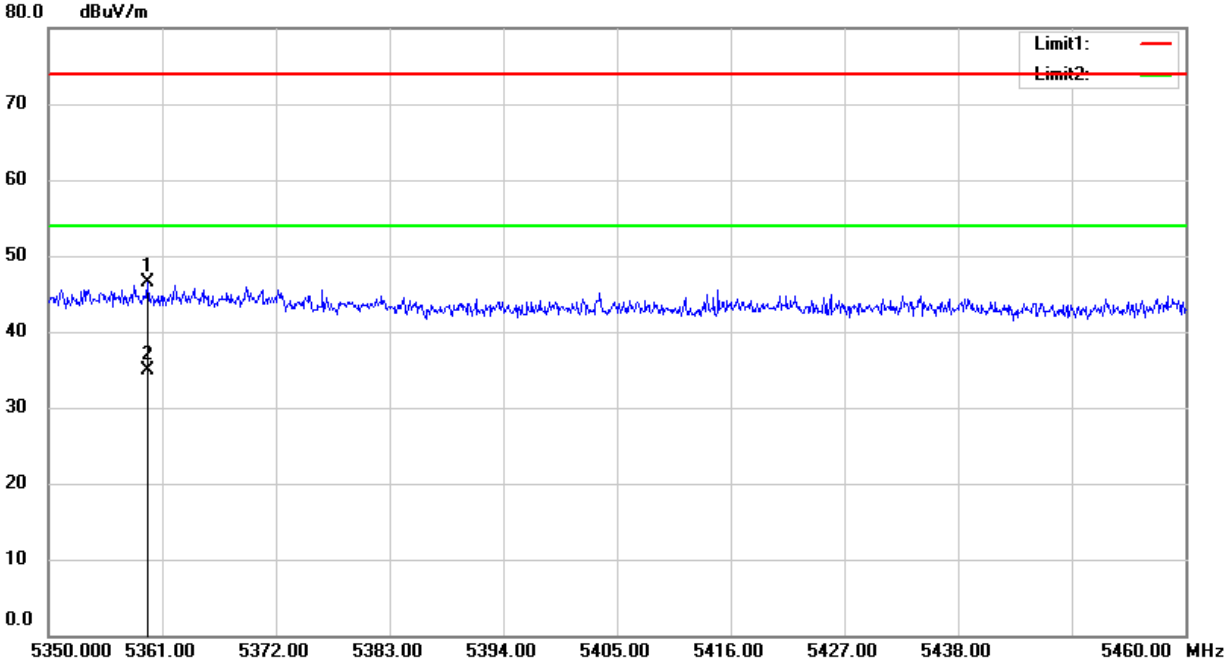
Test Model	UNII Band I Undesirable radiated Spurious Emission in Restricted Band (5350-5460MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5180 ☐5200 ☐5240 Ant.Pol H



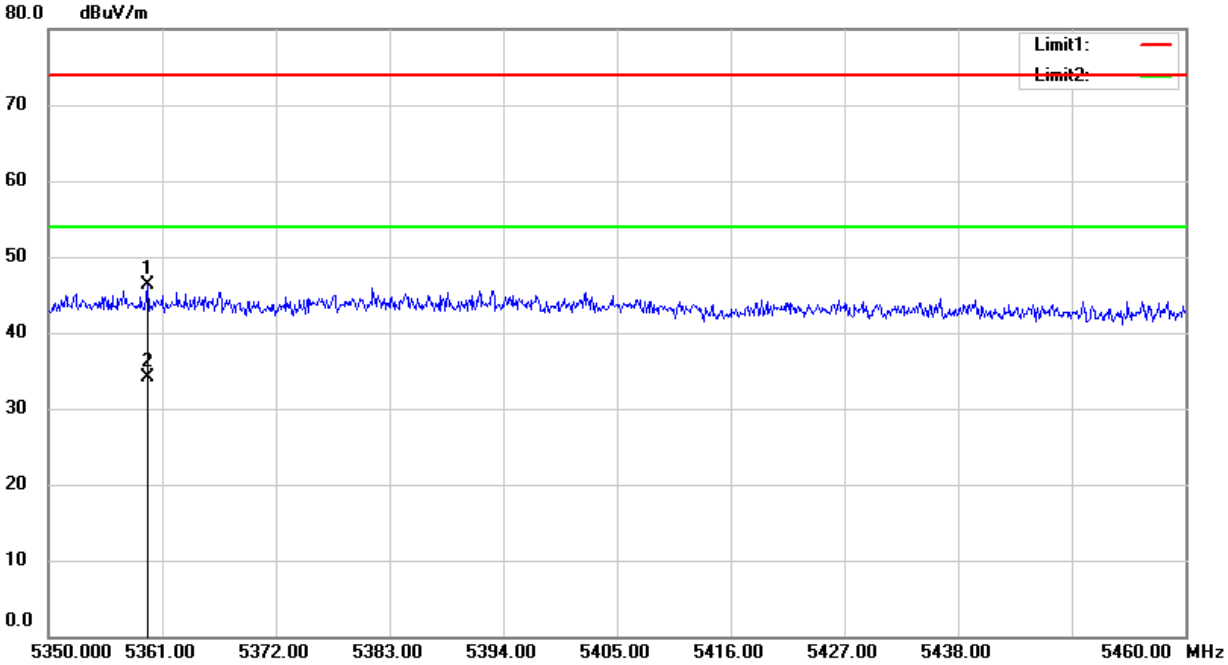
Test Model	UNII Band I Undesirable radiated Spurious Emission in Restricted Band (5350-5460MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5180 ☐5200 ☐5240 Ant.Pol V



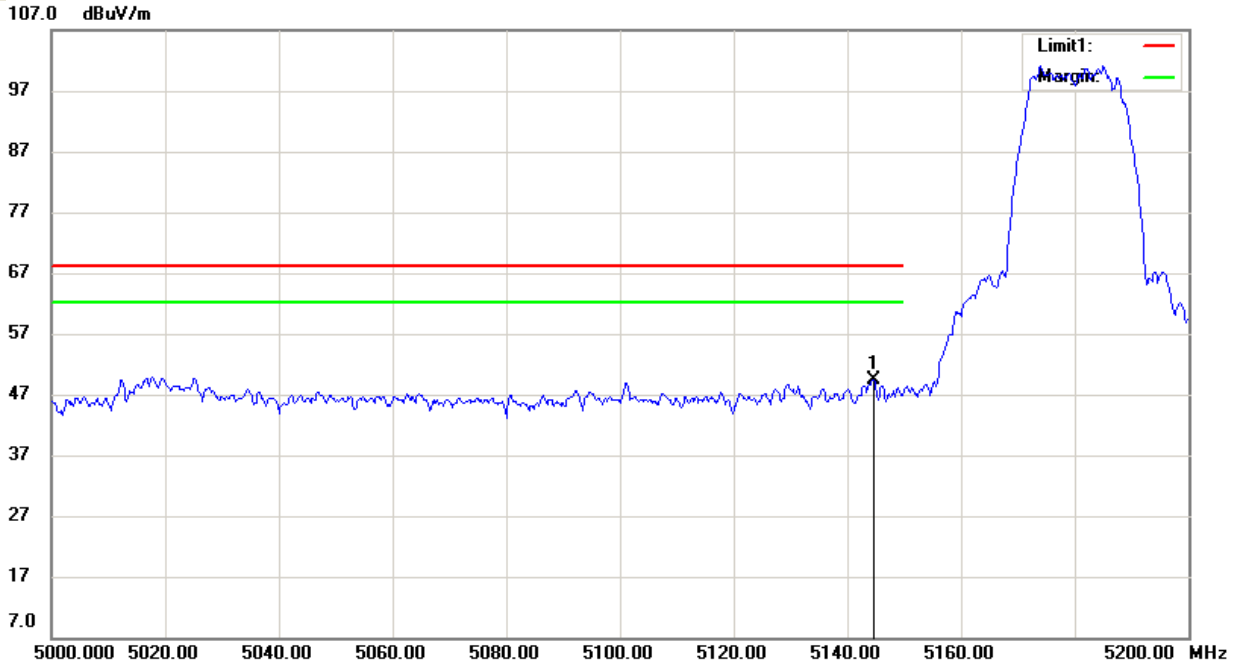
Test Model	UNII Band I Undesirable radiated Spurious Emission in Restricted Band (5350-5460MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☐5180 ☐5200 ☒5240 Ant.Pol H



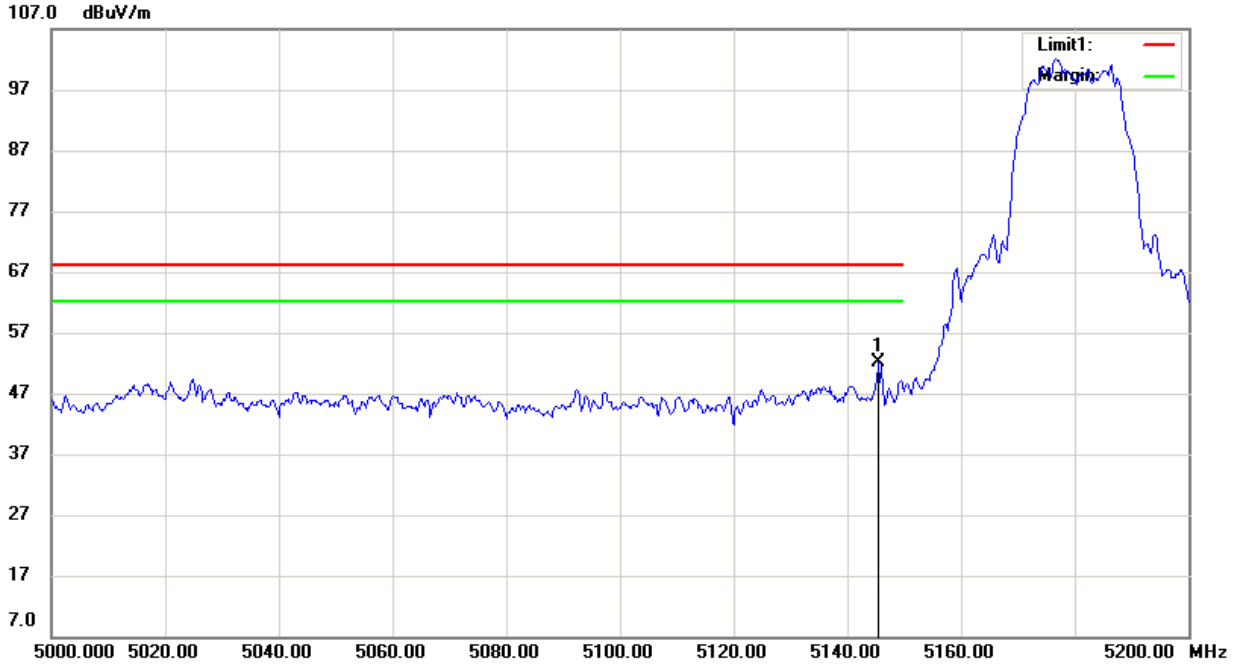
Test Model	UNII Band I Undesirable radiated Spurious Emission in Restricted Band (5350-5460MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☐5180 ☐5200 ☒5240 Ant.Pol V



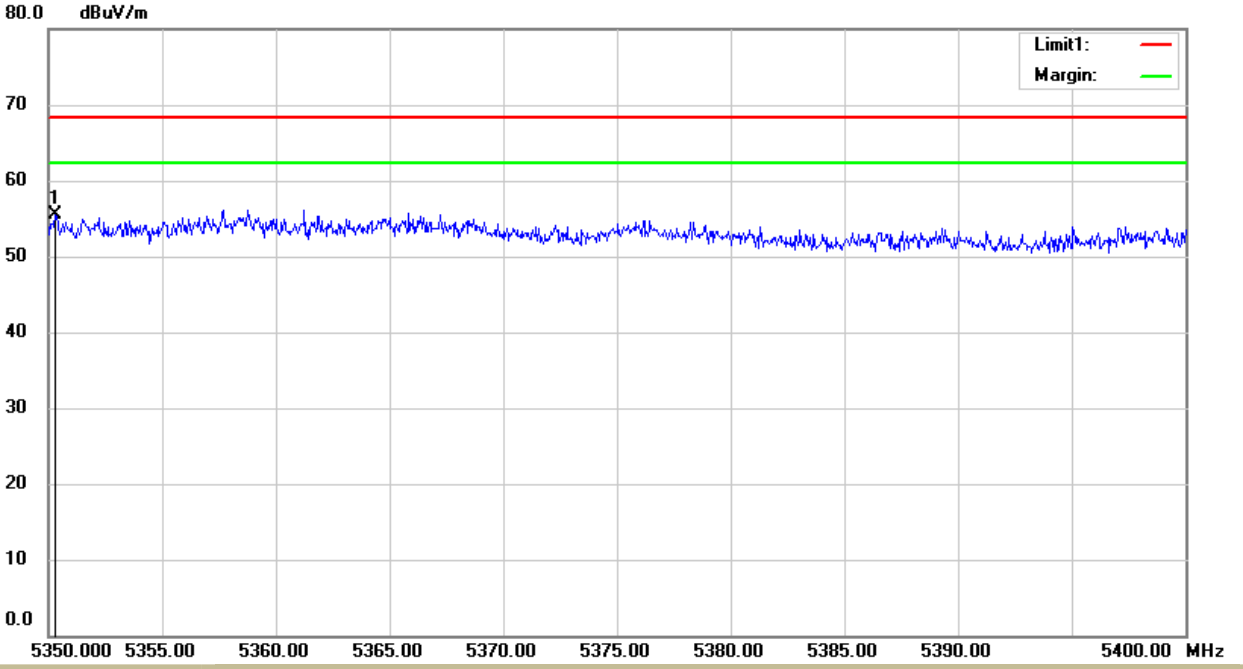
Test Model	UNII Band I Undesirable radiated Undesirable radiated Spurious Emission in Band Edge ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5180 Ant.Pol H



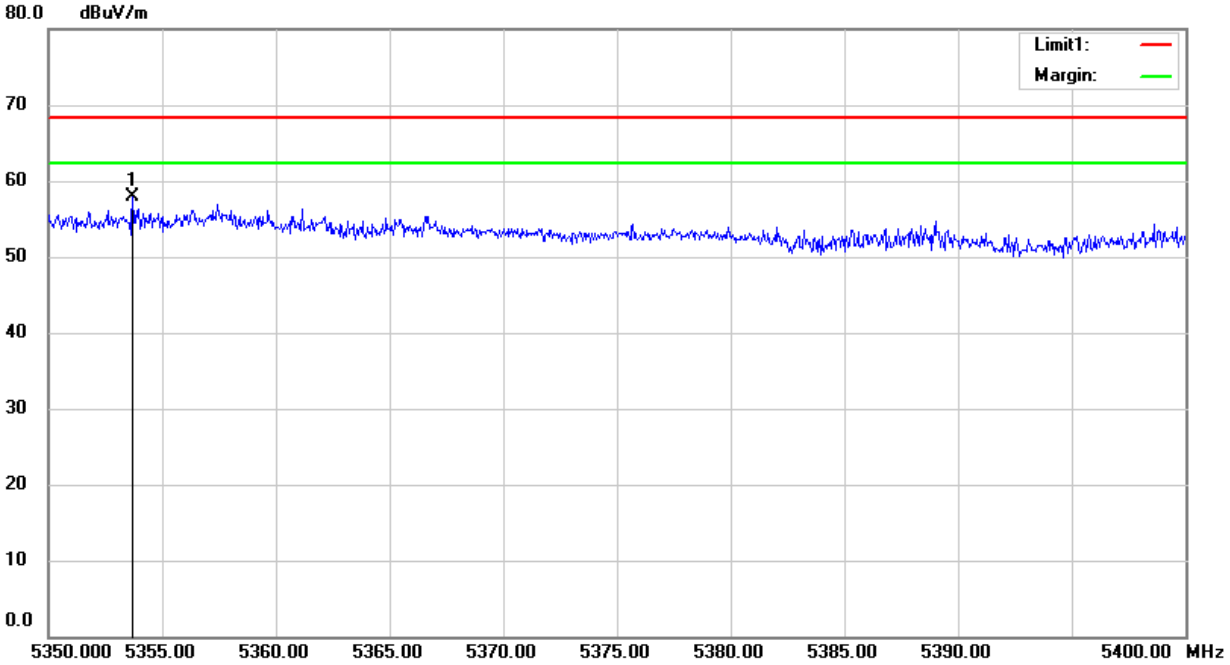
Test Model	UNII Band I Undesirable radiated Undesirable radiated Spurious Emission in Band Edge ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5180 Ant.Pol V



Test Model	UNII Band I Undesirable radiated Undesirable radiated Spurious Emission in Band Edge ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5240 Ant.Pol H



Test Model	UNII Band I Undesirable radiated Undesirable radiated Spurious Emission in Band Edge ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5240 Ant.Pol V



■ ☒For Undesirable radiated Spurious Emission in UNII Band II-A
All the modes 802.11a/n/ac has been tested and the worst result 802.11a recorded as below:

- ☒Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5260

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
8052.42	V	50.86	-44.37	-27.00	-17.37
10743.24	V	55.53	-39.70	-27.00	-12.70
14121.39	V	63.40	-31.83	-27.00	-4.83
7916.29	H	51.77	-43.46	-27.00	-16.46
11287.34	H	56.58	-38.65	-27.00	-11.65
14308.30	H	62.67	-32.56	-27.00	-5.56

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5280

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
8051.01	V	50.68	-44.55	-27.00	-17.55
10744.26	V	55.50	-39.73	-27.00	-12.73
14120.00	V	62.77	-32.46	-27.00	-5.46
7914.81	H	51.17	-44.06	-27.00	-17.06
11288.28	H	56.05	-39.18	-27.00	-12.18
14306.79	H	62.32	-32.91	-27.00	-5.91

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5320

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
8049.63	V	50.14	-45.09	-27.00	-18.09
10745.30	V	55.17	-40.06	-27.00	-13.06
14118.58	V	62.11	-33.12	-27.00	-6.12
7915.82	H	50.73	-44.50	-27.00	-17.50
11289.34	H	55.79	-39.44	-27.00	-12.44
14305.46	H	61.67	-33.56	-27.00	-6.56

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3)EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

- ☒Undesirable radiated Spurious Emission in Restricted Band (4500-5100MHz)

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5260

Freq. (MHz)	Ant.Pol. H/V	PK (dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Margin (dB)	PK (dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Margin (dB)
5027.80	H	45.02	74.00	-28.98	31.47	54.00	-22.53
5092.15	V	46.13	74.00	-27.87	34.15	54.00	-19.85

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5320

Freq. (MHz)	Ant.Pol. H/V	PK (dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Margin (dB)	PK (dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Margin (dB)
4555.68	H	45.39	74.00	-28.61	33.62	54.00	-20.38
5141.28	V	46.50	74.00	-27.50	32.16	54.00	-21.84

- ☒Undesirable radiated Spurious Emission in Restricted Band (5350-5460MHz)

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5260

Freq. (MHz)	Ant.Pol. H/V	PK (dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Margin (dB)	PK (dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Margin (dB)
5359.57	H	46.02	74.00	-27.98	32.85	54.00	-21.15
5359.57	V	46.88	74.00	-27.12	34.25	54.00	-19.75

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5320

Freq. (MHz)	Ant.Pol. H/V	PK (dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Margin (dB)	PK (dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Margin (dB)
5352.35	H	45.30	74.00	-22.90	29.86	54.00	-24.14
5351.30	V	44.45	74.00	-23.75	30.12	54.00	-23.88

- ☒Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5260

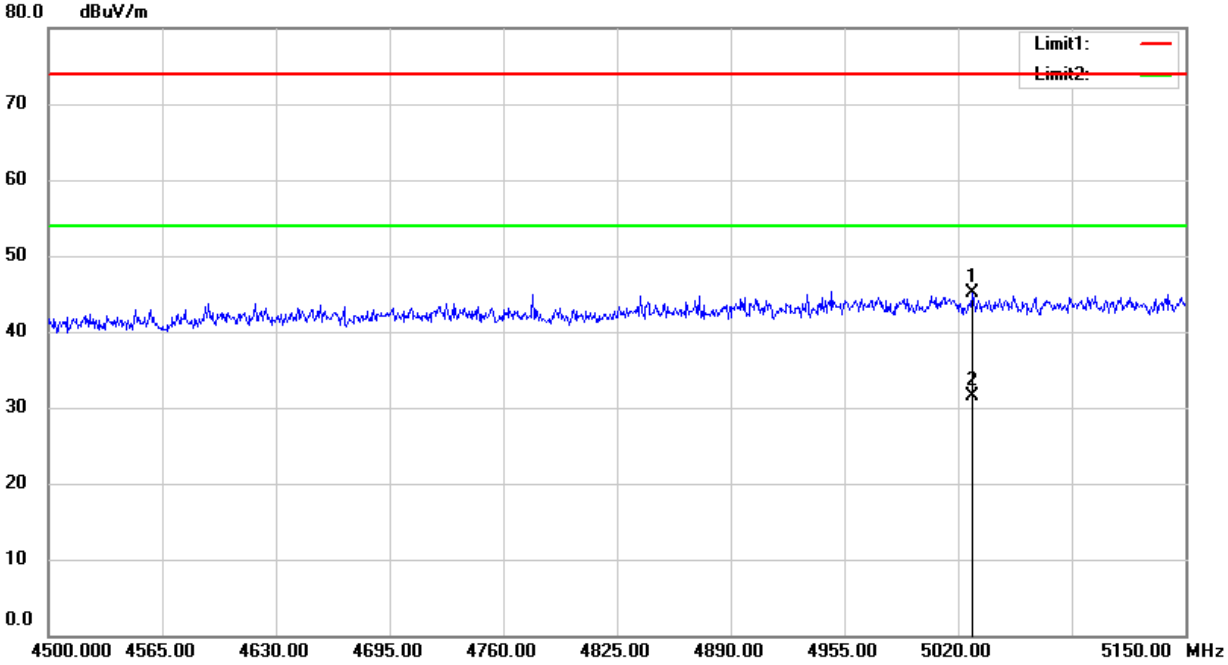
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5147.00	H	57.15	-38.08	-27	Pass
5146.00	V	56.67	-38.56	-27	Pass

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5320

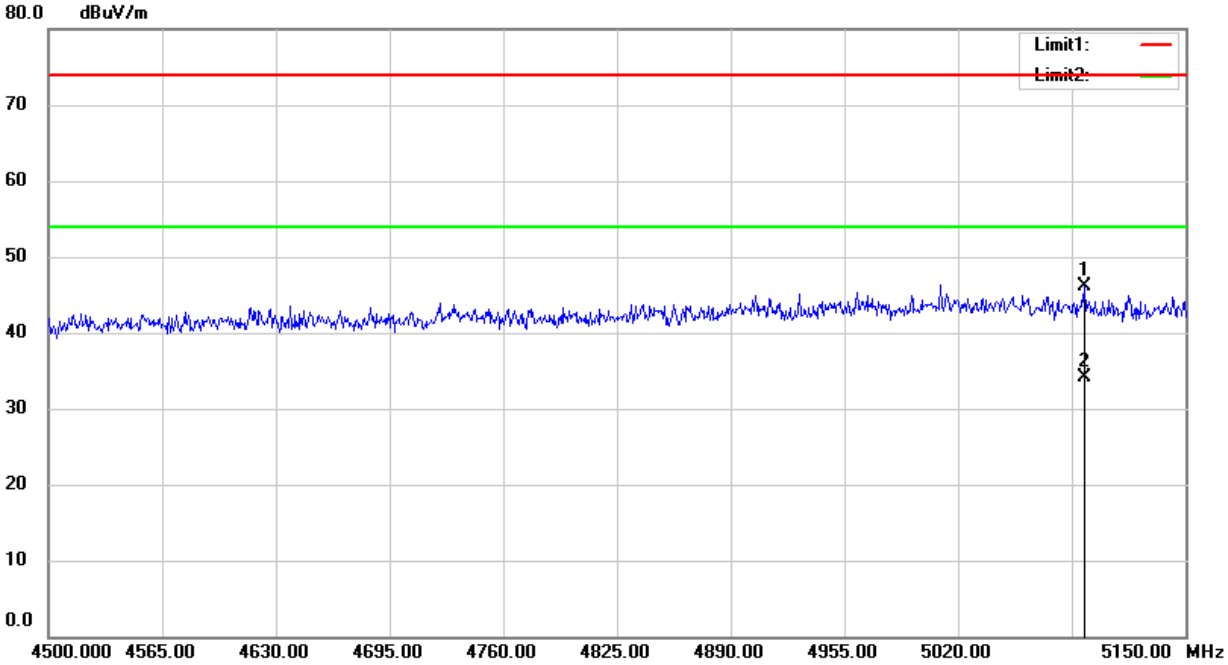
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5351.80	H	52.55	-42.68	-27	Pass
5352.20	V	51.85	-43.38	-27	Pass

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3)EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

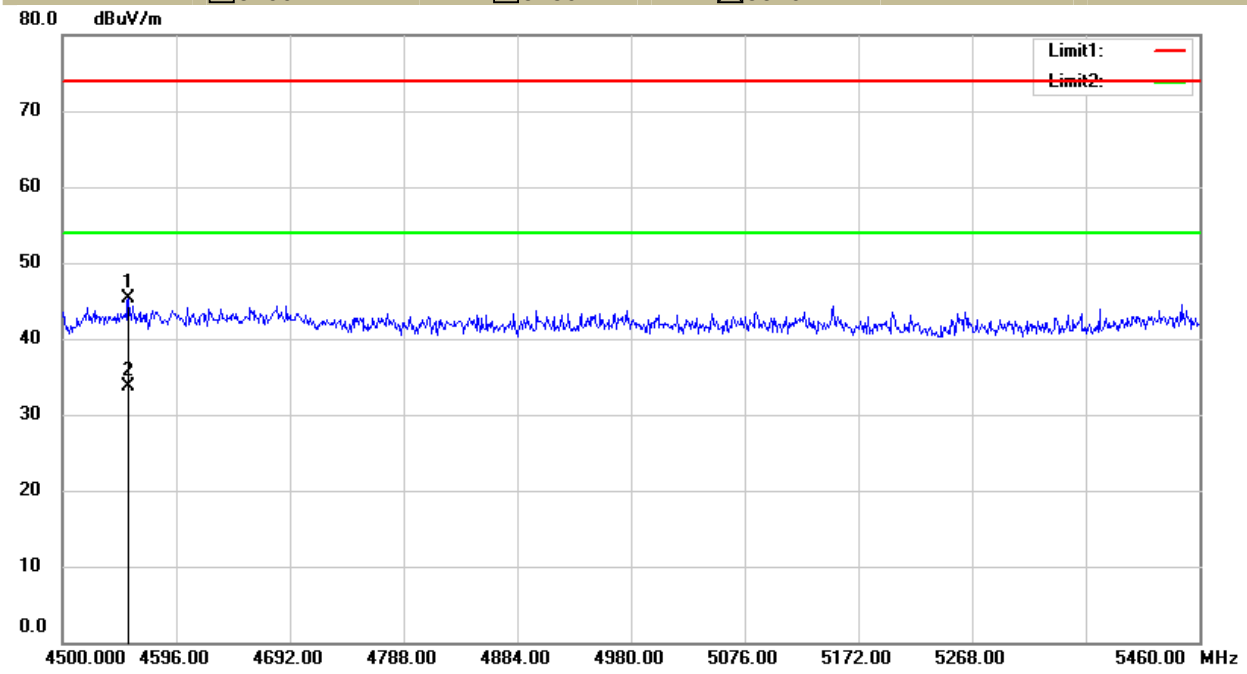
Test Model	UNII Band II-A Undesirable radiated Spurious Emission in Restricted Band (4500-5100MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5260 ☐5280 ☐5320 Ant.Pol H



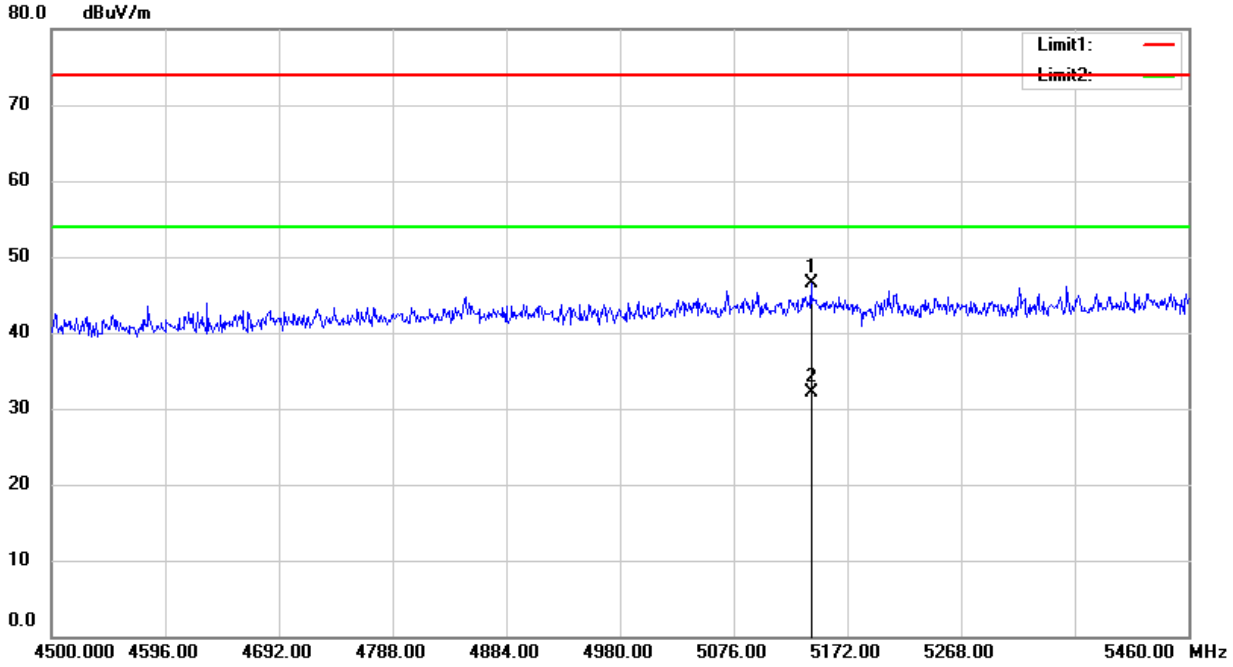
Test Model	UNII Band II-A Undesirable radiated Spurious Emission in Restricted Band (4500-5100MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5260 ☐5280 ☐5320 Ant.Pol V



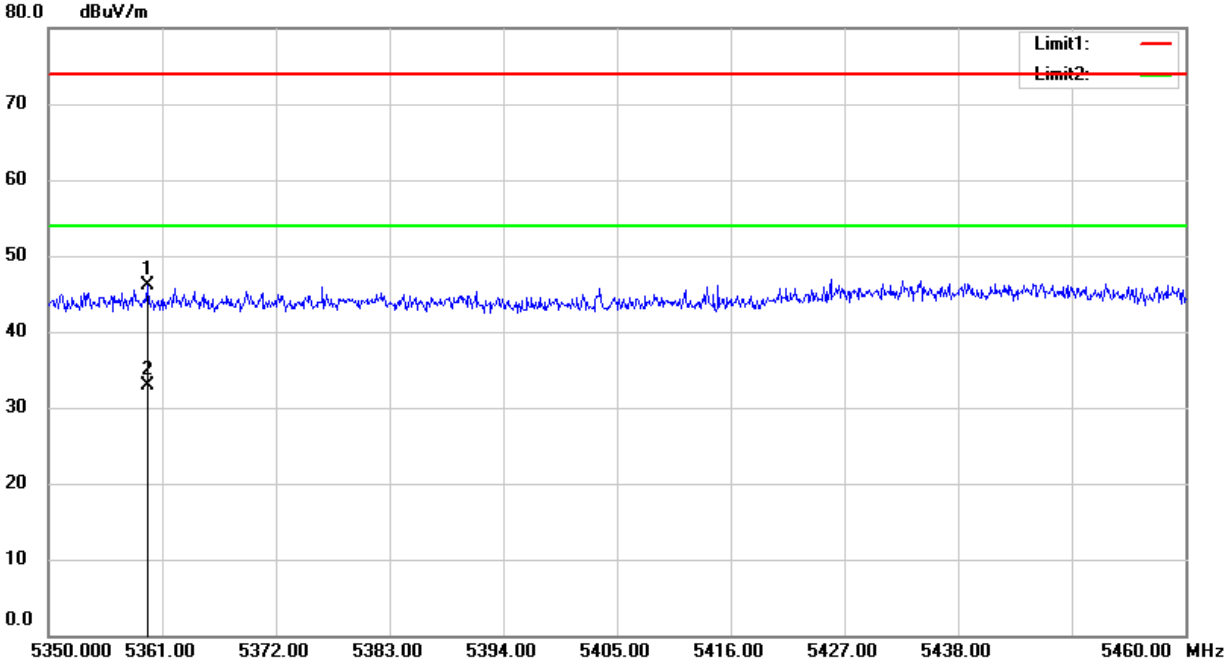
Test Model	UNII Band II-A Undesirable radiated Spurious Emission in Restricted Band (4500-5100MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☐5260 ☐5280 ☒5320 Ant.Pol H



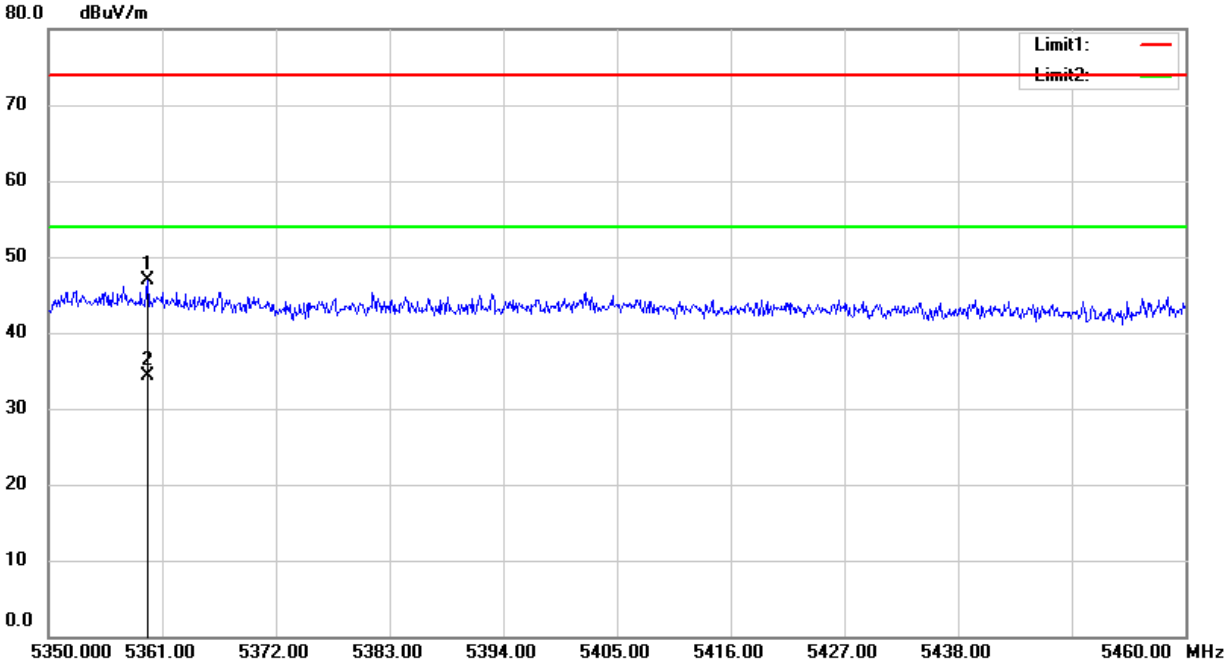
Test Model	UNII Band II-A Undesirable radiated Spurious Emission in Restricted Band (4500-5100MHz) ☐802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☐5260 ☐5280 ☒5320 Ant.Pol V



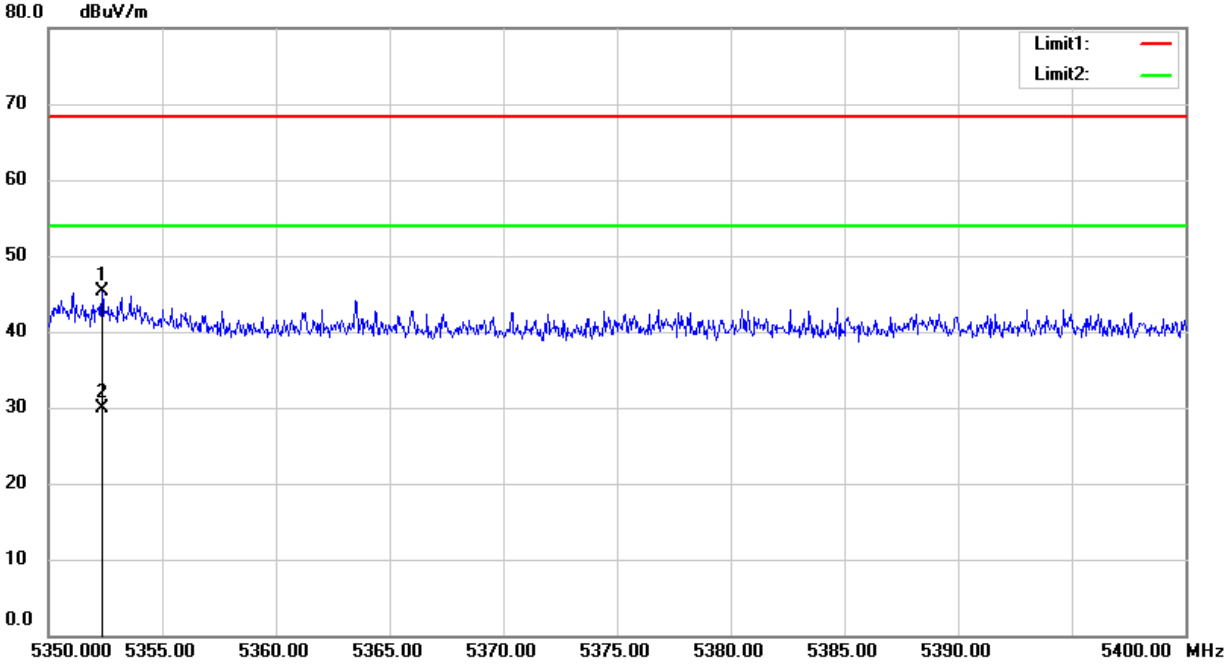
Test Model	UNII Band II-A Undesirable radiated Spurious Emission in Restricted Band (5350-5460MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5260 ☐5280 ☐5320 Ant.Pol H



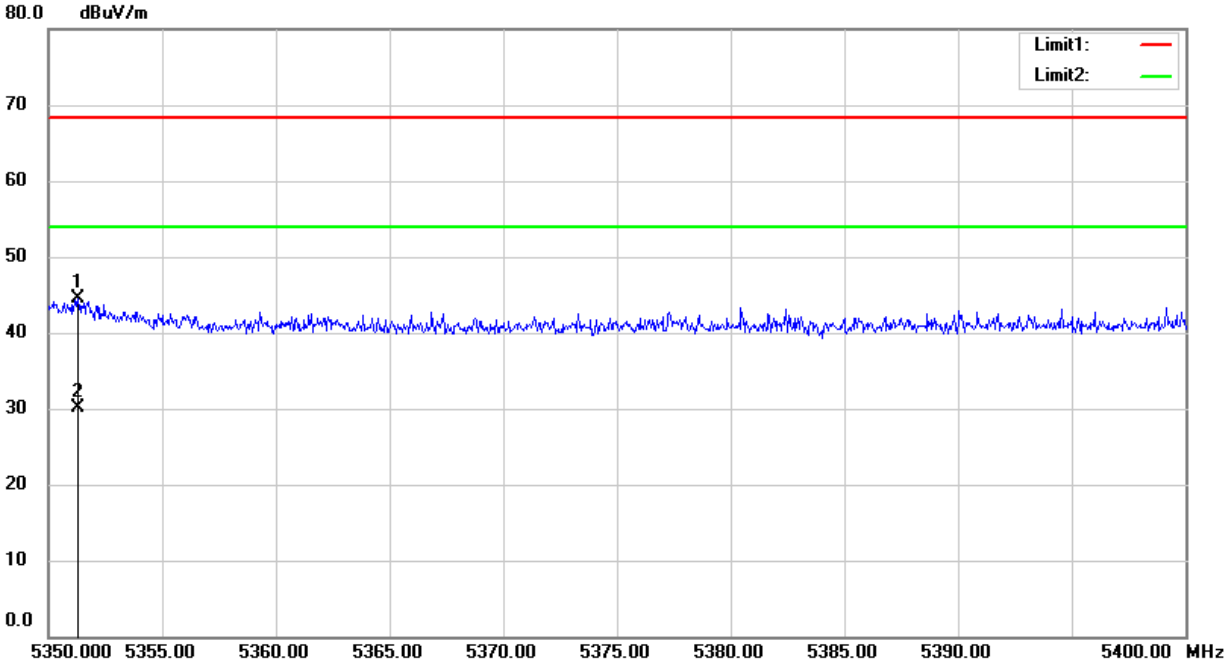
Test Model	UNII Band II-A Undesirable radiated Spurious Emission in Restricted Band (5350-5460MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5260 ☐5280 ☐5320 Ant.Pol V



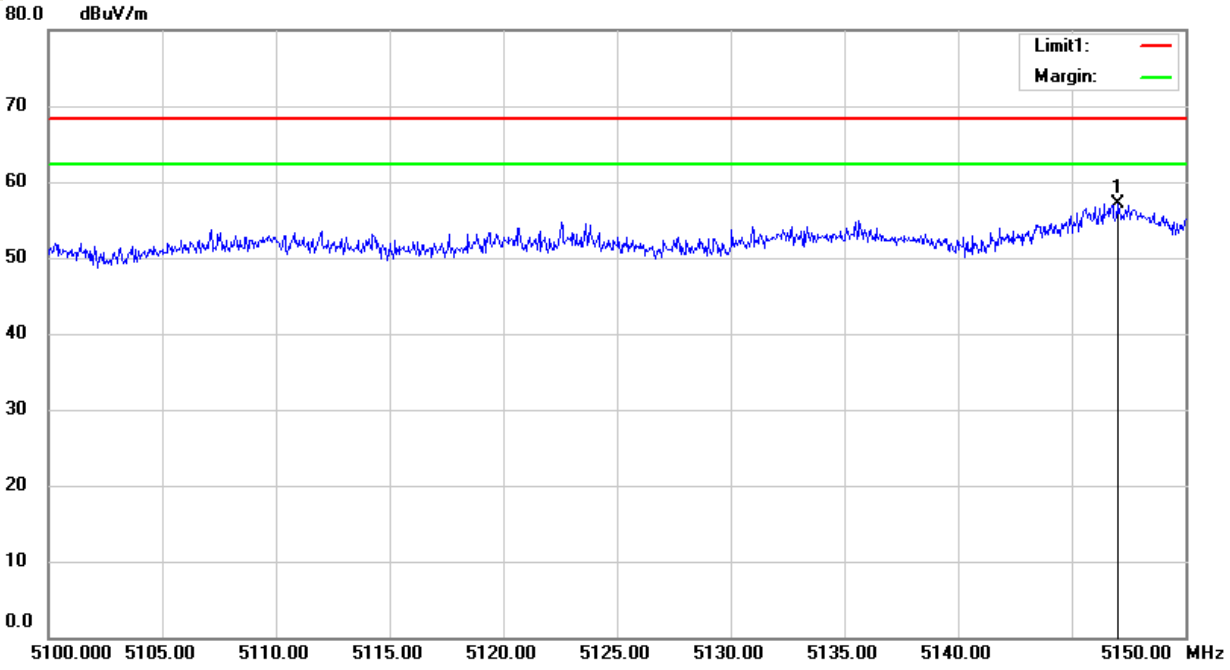
Test Model	UNII Band II-A Undesirable radiated Spurious Emission in Restricted Band (5350-5460MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☐5260 ☐5280 ☒5320 Ant.Pol H



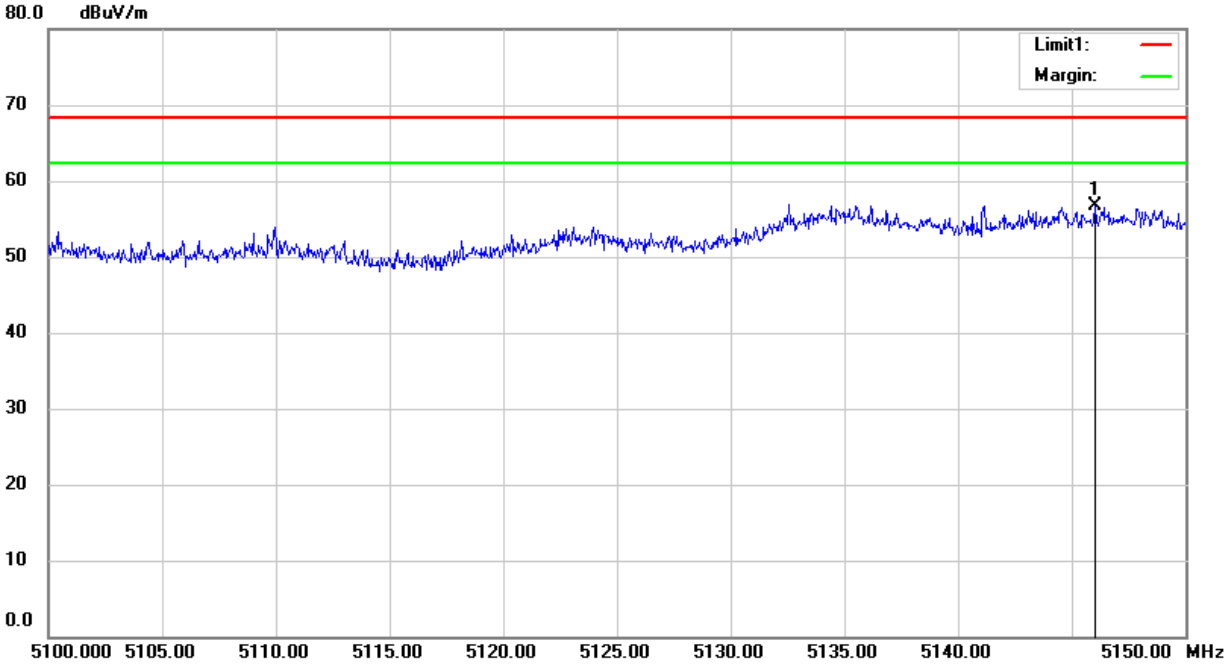
Test Model	UNII Band II-A Undesirable radiated Spurious Emission in Restricted Band (5350-5460MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5260 ☐5280 ☒5320 Ant.Pol V



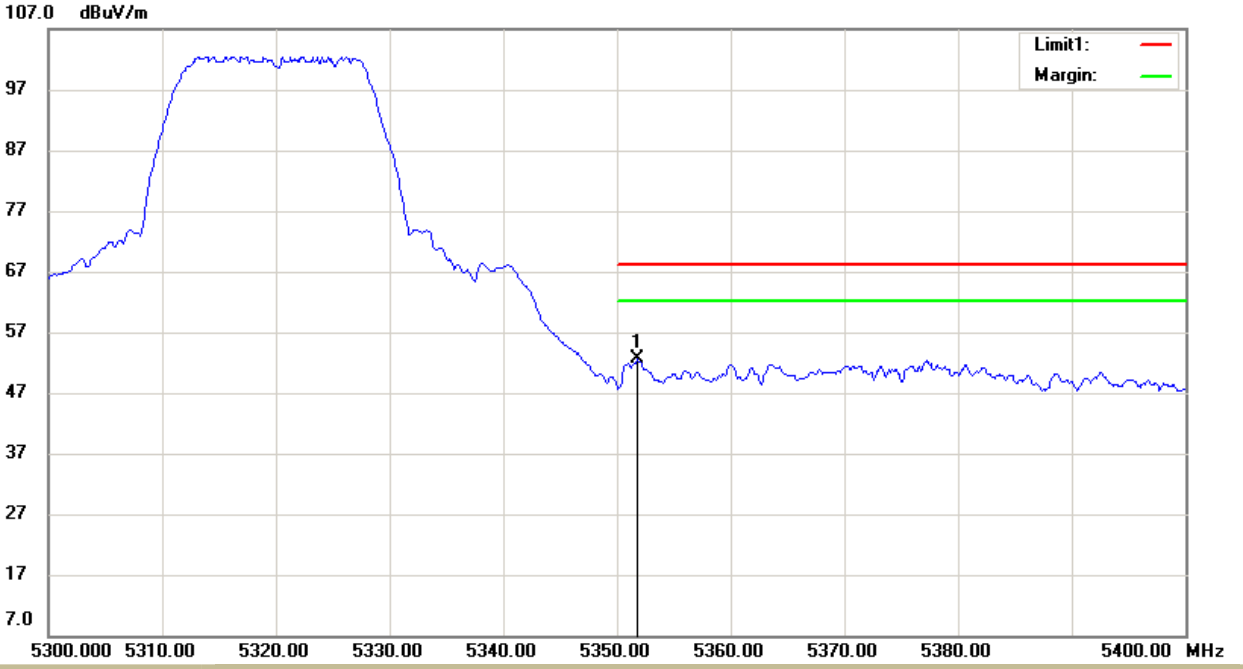
Test Model	UNII Band II-A Undesirable radiated Undesirable radiated Spurious Emission in Band Edge ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5260 Ant.Pol H



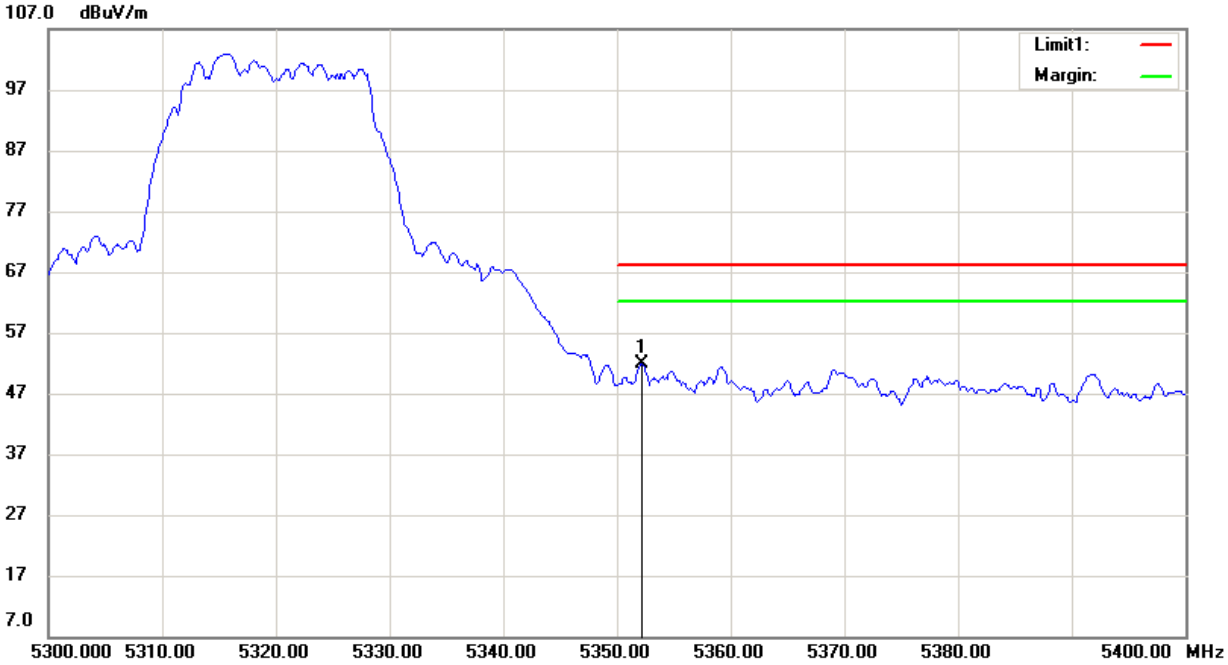
Test Model	UNII Band II-A Undesirable radiated Undesirable radiated Spurious Emission in Band Edge ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5260 Ant.Pol V



Test Model	UNII Band II-A Undesirable radiated Undesirable radiated Spurious Emission in Band Edge ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5320 Ant.Pol H



Test Model	UNII Band II-A Undesirable radiated Undesirable radiated Spurious Emission in Band Edge ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5320 Ant.Pol V



■ ☒For Undesirable radiated Spurious Emission in UNII Band II-C
All the modes 802.11a/n/ac has been tested and the worst result 802.11a recorded as below:

- ☒Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5500

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
8051.88	V	50.61	-44.62	-27.00	-17.62
10742.76	V	55.00	-40.23	-27.00	-13.23
14120.88	V	62.12	-33.11	-27.00	-6.11
7913.27	H	51.13	-44.10	-27.00	-17.10
11286.79	H	55.65	-39.58	-27.00	-12.58
14307.74	H	62.14	-33.09	-27.00	-6.09

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5600

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
8050.51	V	49.89	-45.34	-27.00	-18.34
10743.80	V	54.57	-40.66	-27.00	-13.66
14121.96	V	61.85	-33.38	-27.00	-6.38
7911.91	H	50.49	-44.74	-27.00	-17.74
11287.85	H	54.78	-40.45	-27.00	-13.45
14306.37	H	61.93	-33.30	-27.00	-6.30

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5700

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
8051.58	V	49.46	-45.77	-27.00	-18.77
10742.34	V	53.86	-41.37	-27.00	-14.37
14122.93	V	60.85	-34.38	-27.00	-7.38
7910.48	H	50.13	-45.10	-27.00	-18.10
11286.34	H	54.23	-41.00	-27.00	-14.00
14307.41	H	61.49	-33.74	-27.00	-6.74

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3)EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

- ☒Undesirable radiated Spurious Emission in Restricted Band (4500-5100MHz and 5350-5460MHz)

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5500

Freq. (MHz)	Ant.Pol. H/V	PK (dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Margin (dB)	PK (dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Margin (dB)
4864.80	H	44.95	74.00	-29.05	35.16	54.00	-18.84
5311.20	V	44.98	74.00	-29.02	36.15	54.00	-17.85

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5700

Freq. (MHz)	Ant.Pol. H/V	PK (dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Margin (dB)	PK (dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Margin (dB)
5147.04	H	45.85	74.00	-28.15	32.06	54.00	-21.94
5303.52	V	45.34	74.00	-28.66	31.85	54.00	-22.15

- ☒Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5500

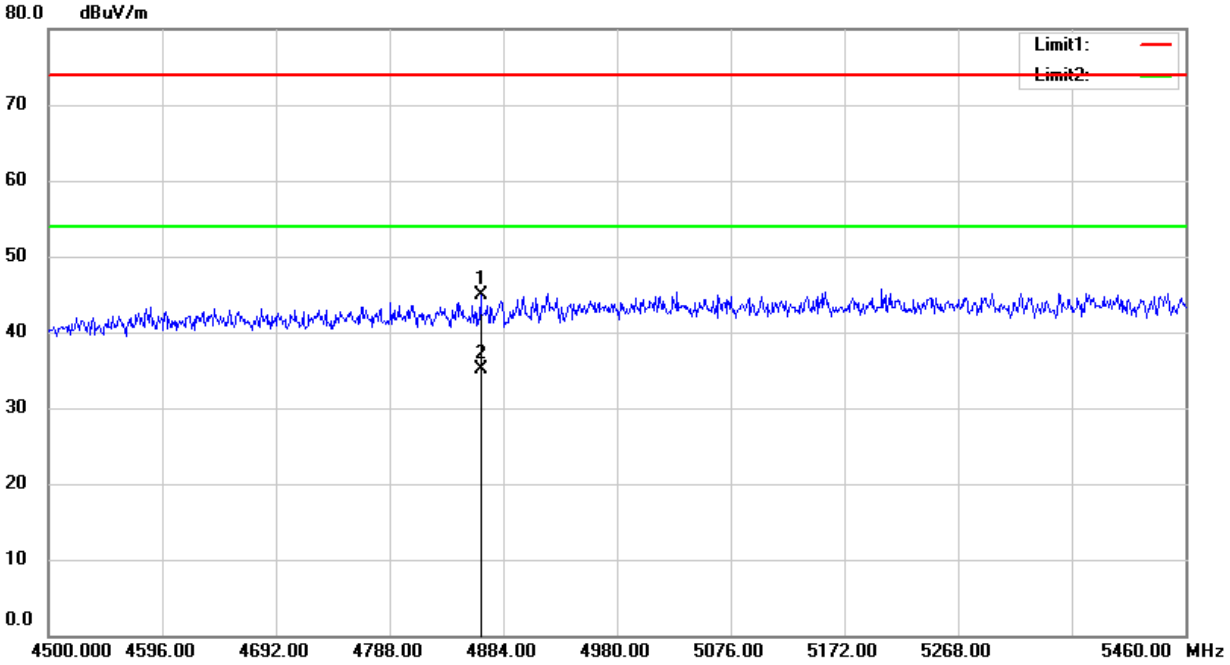
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5465.60	H	52.34	-42.89	-27	Pass
5467.90	V	51.32	-43.91	-27	Pass

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5700

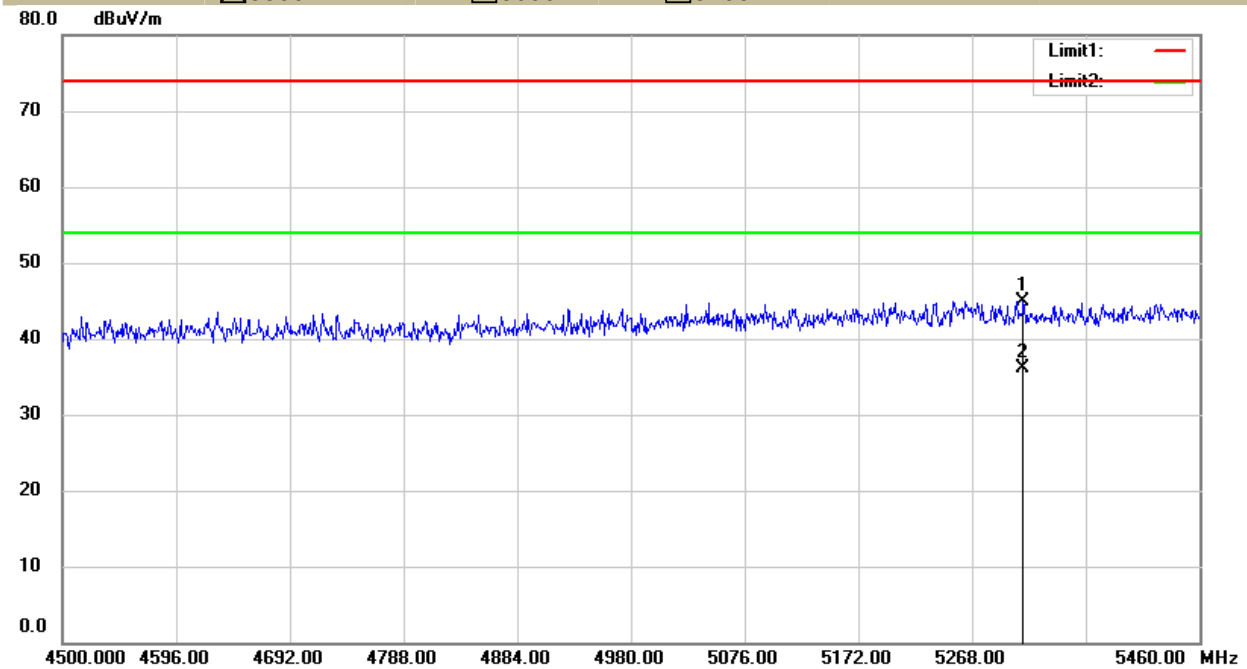
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5729.82	H	50.15	-45.08	-27	Pass
5735.88	V	46.59	-48.64	-27	Pass

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3)EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

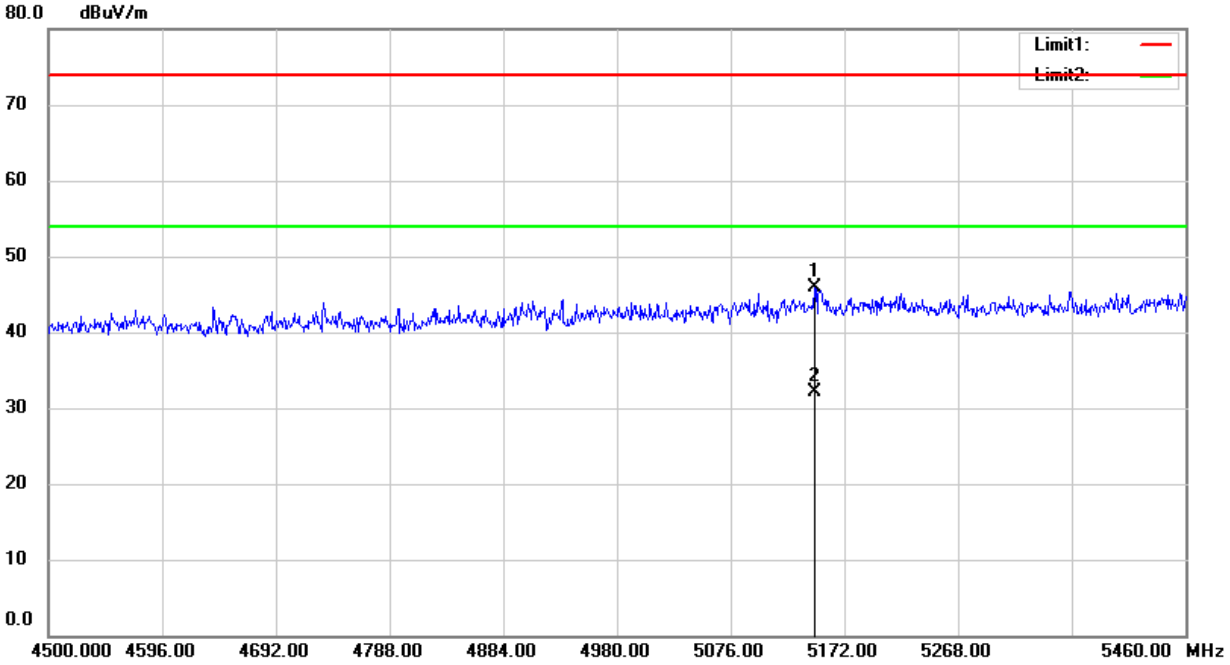
Test Model	UNII Band II-C Undesirable radiated Spurious Emission in Restricted Band (4500-5100MHz and 5350-5460MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5500 ☐5600 ☐5700 Ant.Pol H



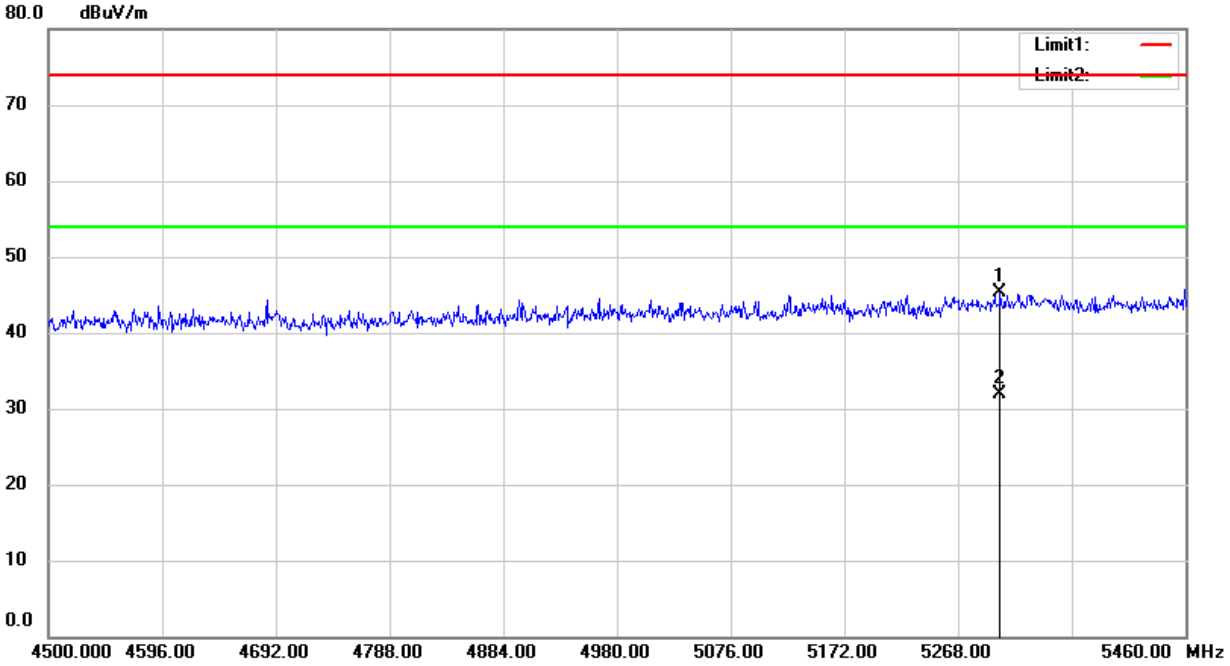
Test Model	UNII Band II-C Undesirable radiated Spurious Emission in Restricted Band (4500-5100MHz and 5350-5460MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5500 ☐5600 ☐5700 Ant.Pol V



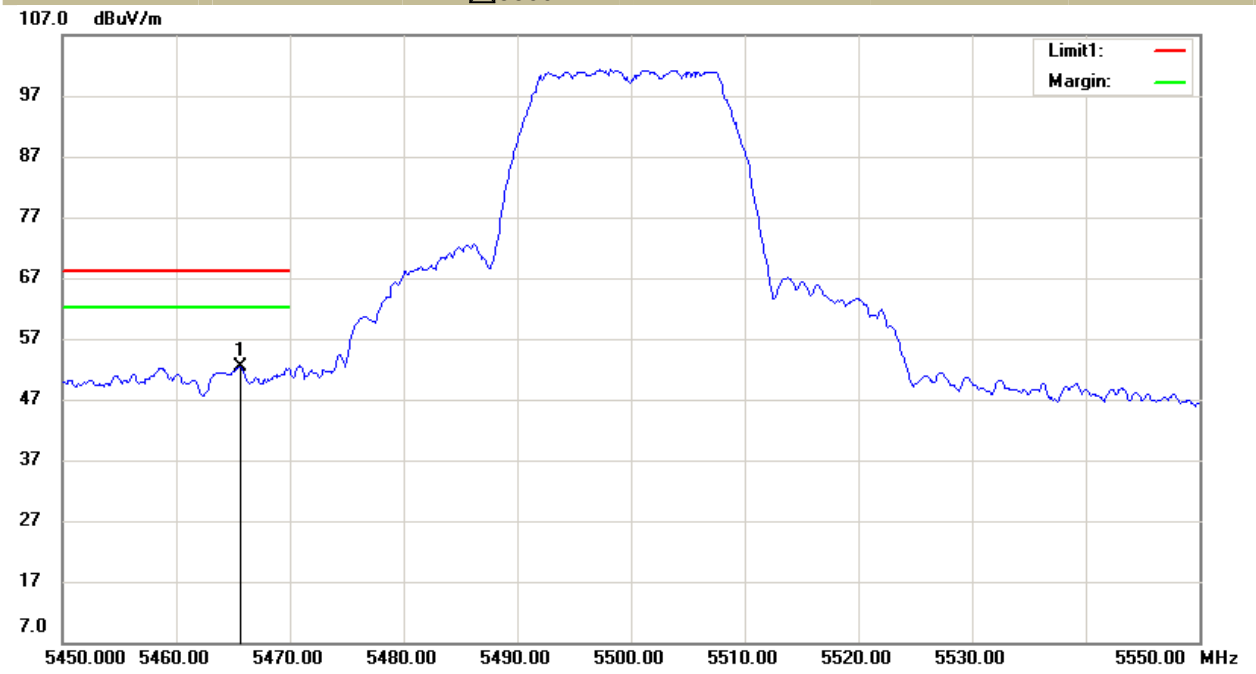
Test Model	UNII Band II-C Undesirable radiated Spurious Emission in Restricted Band (4500-5100MHz and 5350-5460MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☐5500 ☐5600 ☒5700 Ant.Pol H



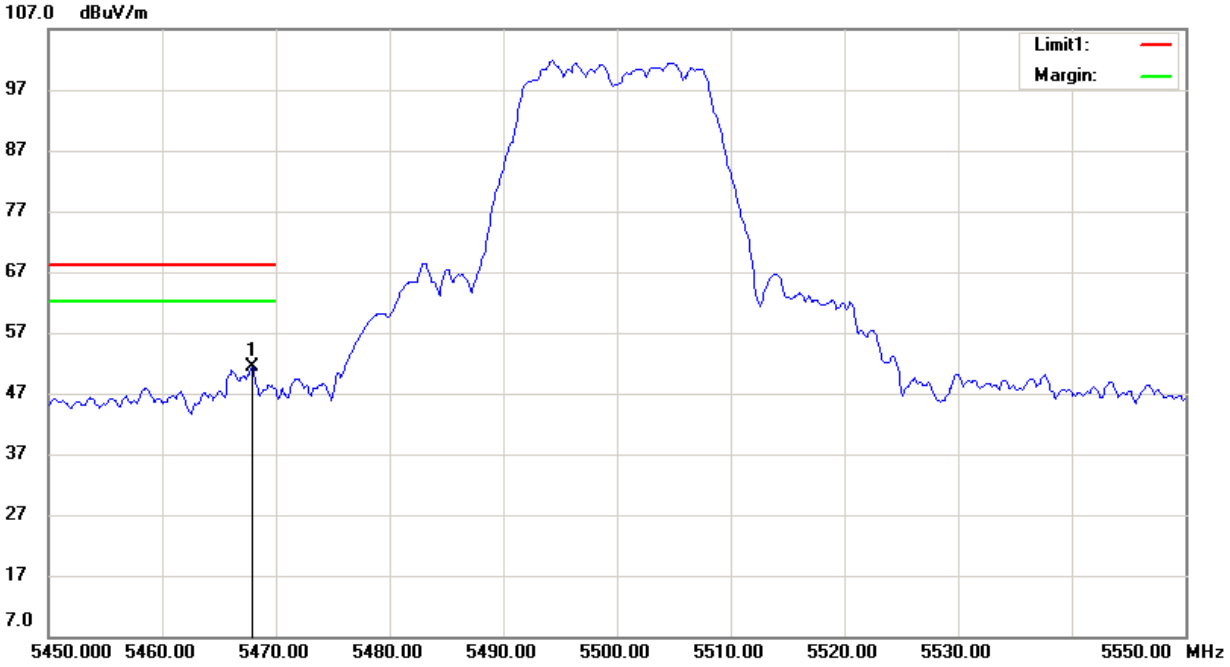
Test Model	UNII Band II-C Undesirable radiated Spurious Emission in Restricted Band (4500-5100MHz and 5350-5460MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☐5500 ☐5600 ☒5700 Ant.Pol V



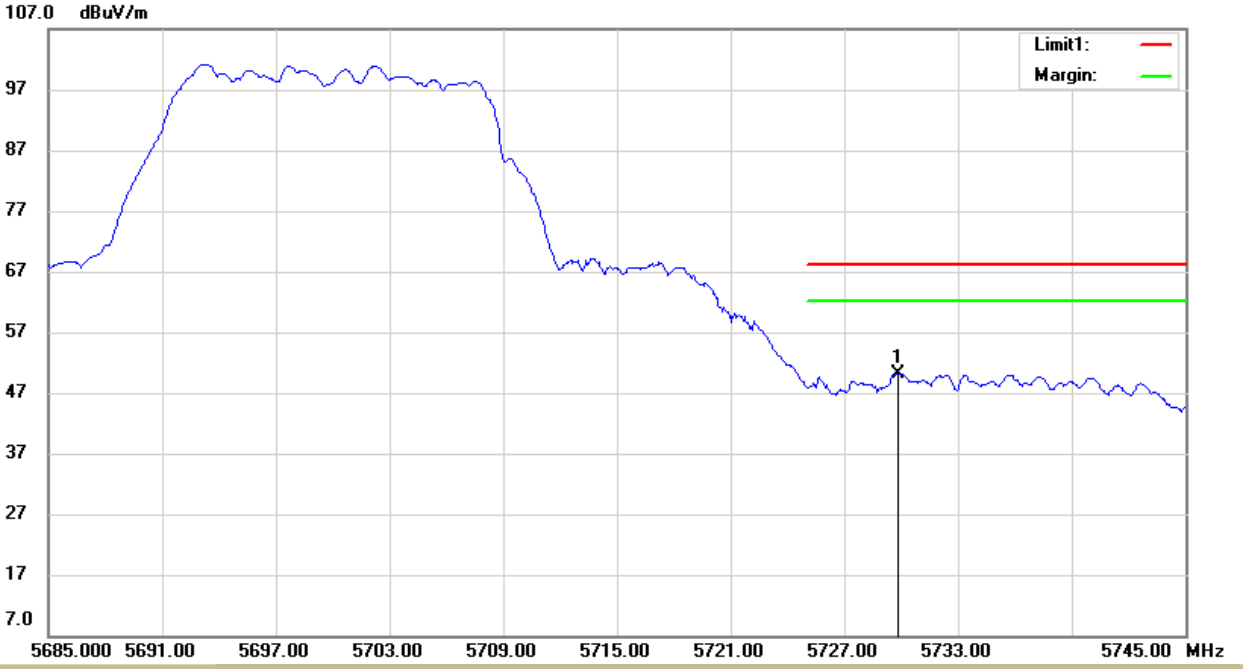
Test Model	UNII Band II-C Undesirable radiated Undesirable radiated Spurious Emission in Band Edge ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5500 Ant.Pol H



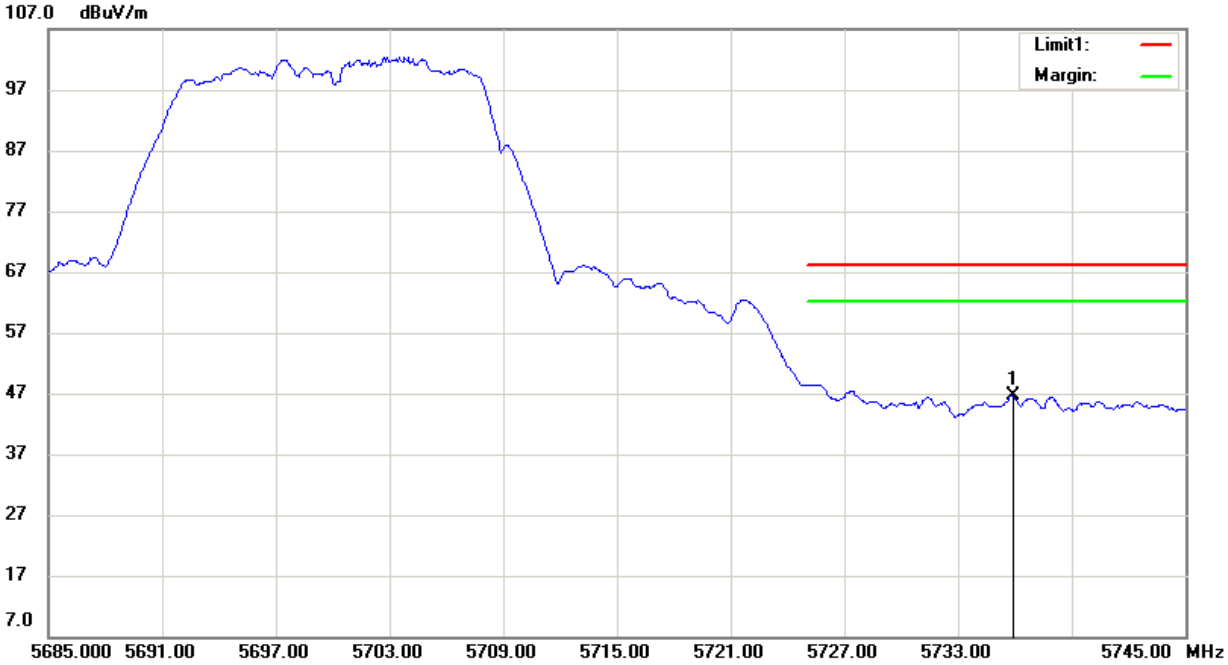
Test Model	UNII Band II-C Undesirable radiated Undesirable radiated Spurious Emission in Band Edge ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5500 Ant.Pol V



Test Model	UNII Band II-C Undesirable radiated Undesirable radiated Spurious Emission in Band Edge ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5700 Ant.Pol H



Test Model	UNII Band II-C Undesirable radiated Undesirable radiated Spurious Emission in Band Edge ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5700 Ant.Pol V



■ ☒For Undesirable radiated Spurious Emission in UNII Band III

All the modes 802.11a/n/ac has been tested and the worst result 802.11a recorded as below:

● ☒Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5745

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
8049.06	V	49.21	-46.02	-27.00	-19.02
10744.78	V	53.56	-41.67	-27.00	-14.67
14120.49	V	61.46	-33.77	-27.00	-6.77
7910.43	H	49.96	-45.27	-27.00	-18.27
11288.88	H	54.31	-40.92	-27.00	-13.92
14304.86	H	61.10	-34.13	-27.00	-7.13

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5785

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
8047.76	V	49.05	-46.18	-27.00	-19.18
10743.39	V	52.97	-42.26	-27.00	-15.26
14121.58	V	61.10	-34.13	-27.00	-7.13
7911.48	H	49.57	-45.66	-27.00	-18.66
11287.40	H	53.58	-41.65	-27.00	-14.65
14305.83	H	60.10	-35.13	-27.00	-8.13

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5825

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
8048.79	V	48.72	-46.51	-27.00	-19.51
10741.98	V	52.29	-42.94	-27.00	-15.94
14122.65	V	60.67	-34.56	-27.00	-7.56
7912.56	H	49.32	-45.91	-27.00	-18.91
11286.09	H	52.96	-42.27	-27.00	-15.27
14306.89	H	59.30	-35.93	-27.00	-8.93

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3)EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

- ☒Undesirable radiated Spurious Emission in Restricted Band (4500-5100MHz and 5350-5460MHz)

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5745

Freq. (MHz)	Ant.Pol. H/V	PK (dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Margin (dB)	PK (dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Margin (dB)
4782.24	H	45.46	74.00	-28.54	33.62	54.00	-20.38
5352.48	V	46.31	74.00	-27.69	33.09	54.00	-20.91

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5825

Freq. (MHz)	Ant.Pol. H/V	PK (dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Margin (dB)	PK (dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Margin (dB)
5364.00	H	45.44	74.00	-28.56	34.58	54.00	-19.42
5316.96	V	45.85	74.00	-28.15	33.84	54.00	-20.16

- ☒Undesirable radiated Spurious Emission in band edge

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency:	5745

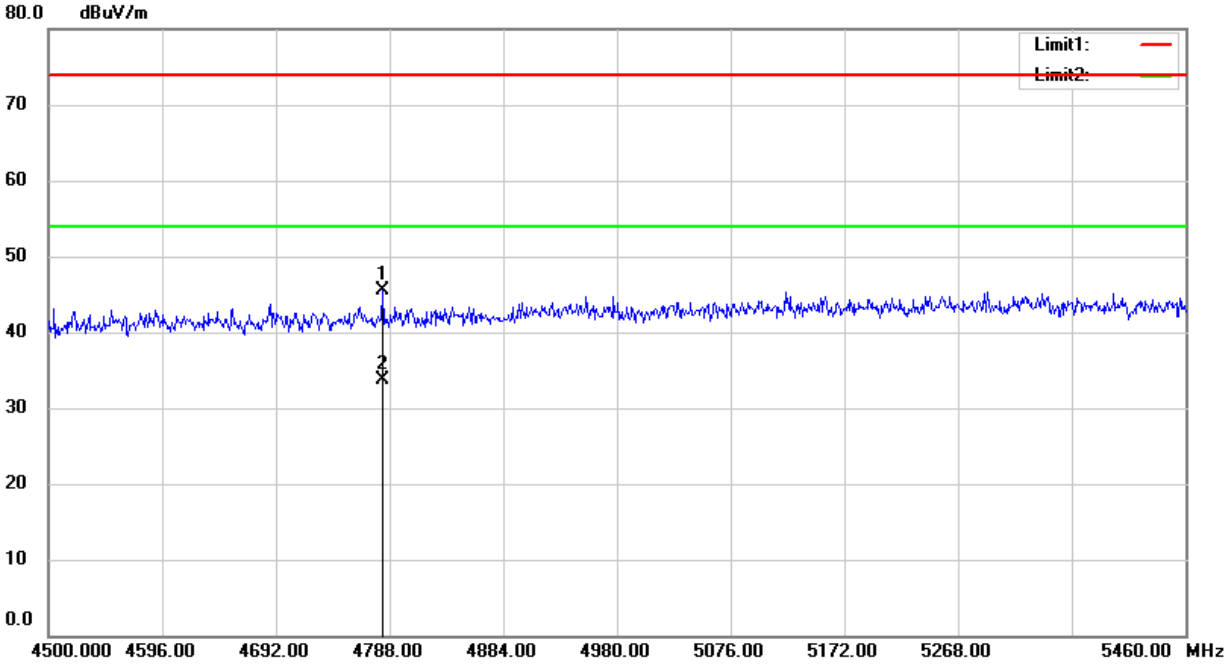
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5714.90	H	49.50	-45.73	-27	PASS
5725.00	H	60.37	-34.86	-17	PASS
5713.45	V	47.73	-47.50	-27	PASS
5724.90	V	62.53	-32.70	-17	PASS

Temperature :	28℃	Test Date :	June 23, 2016
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency:	5825

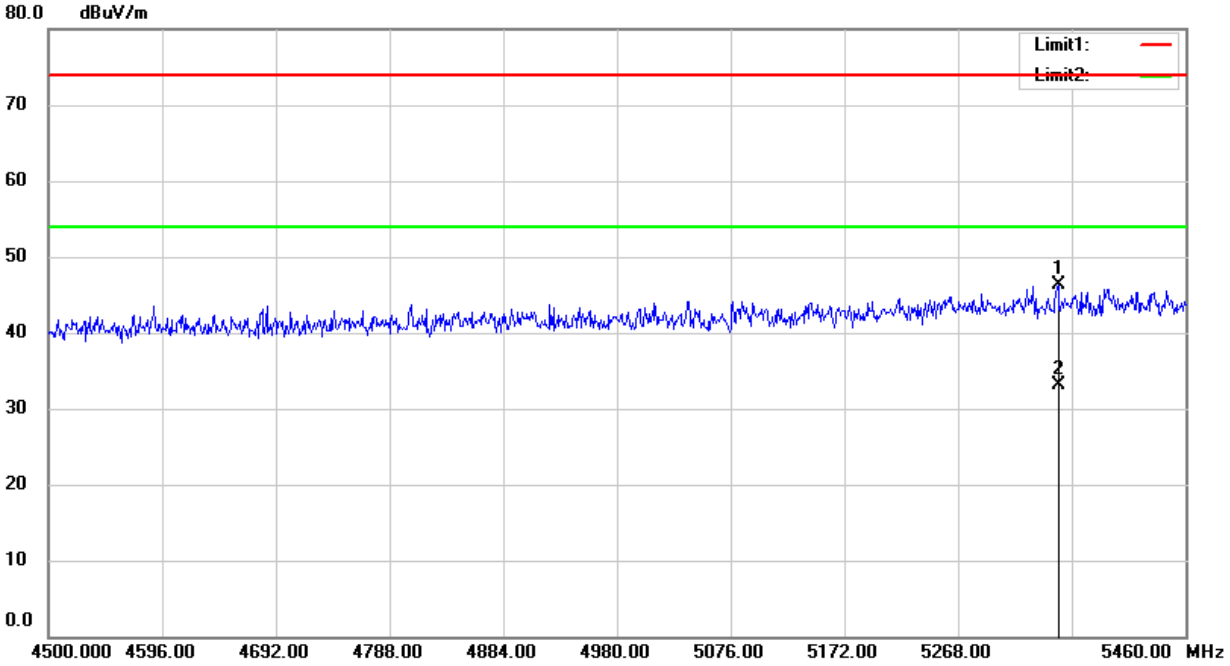
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5714.90	H	49.50	-45.73	-17	PASS
5862.400	H	60.37	-34.86	-27	PASS
5852.16	V	49.56	-45.67	-17	PASS
5862.40	V	48.02	-47.21	-27	PASS

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3)EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

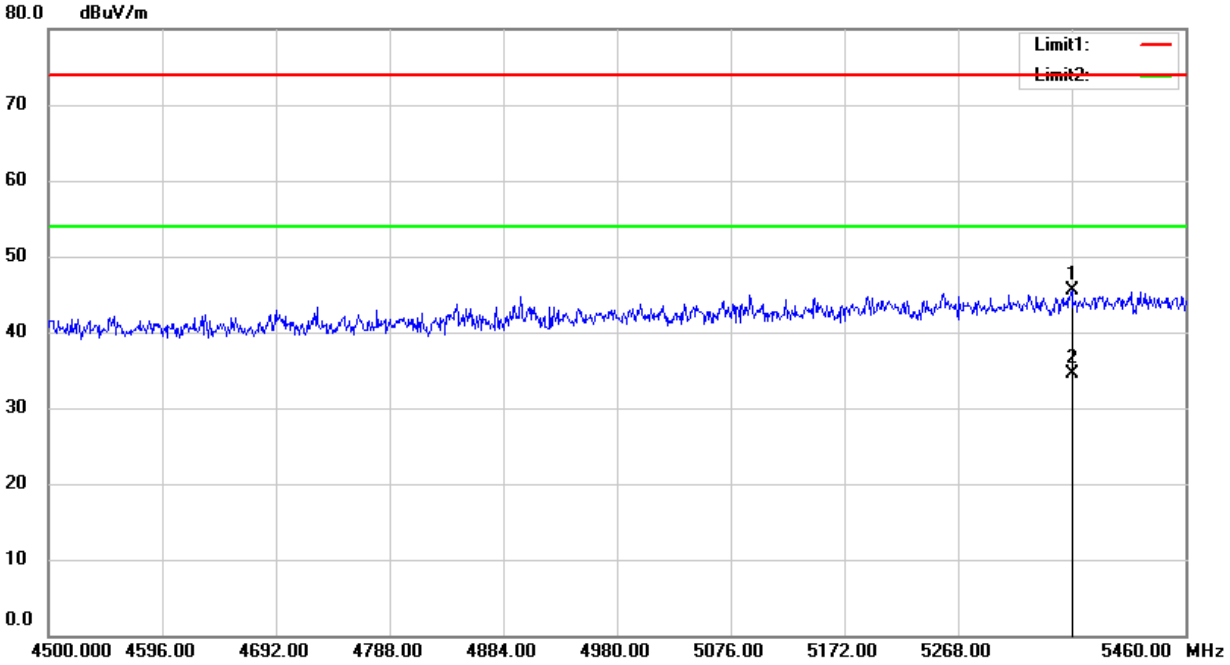
Test Model	UNII Band III Undesirable radiated Spurious Emission in Restricted Band (4500-5100MHz and 5350-5460MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5745 ☐5785 ☐5825 Ant.Pol H



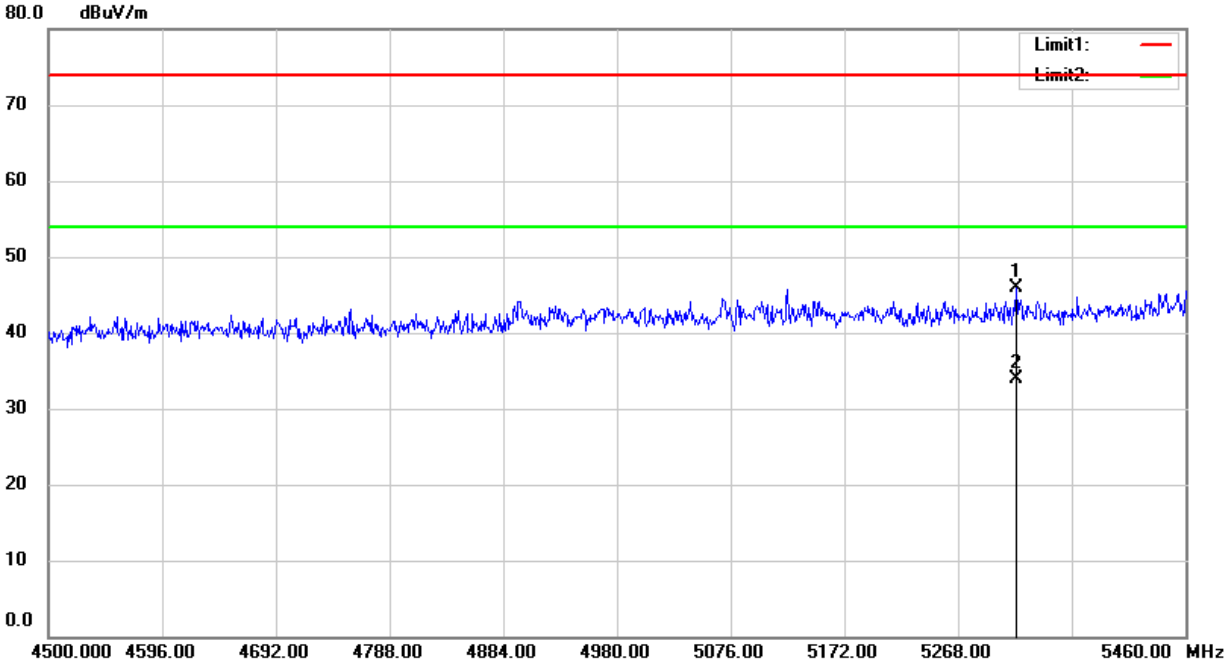
Test Model	UNII Band III Undesirable radiated Spurious Emission in Restricted Band (4500-5100MHz and 5350-5460MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5745 ☐5785 ☐5825 Ant.Pol V



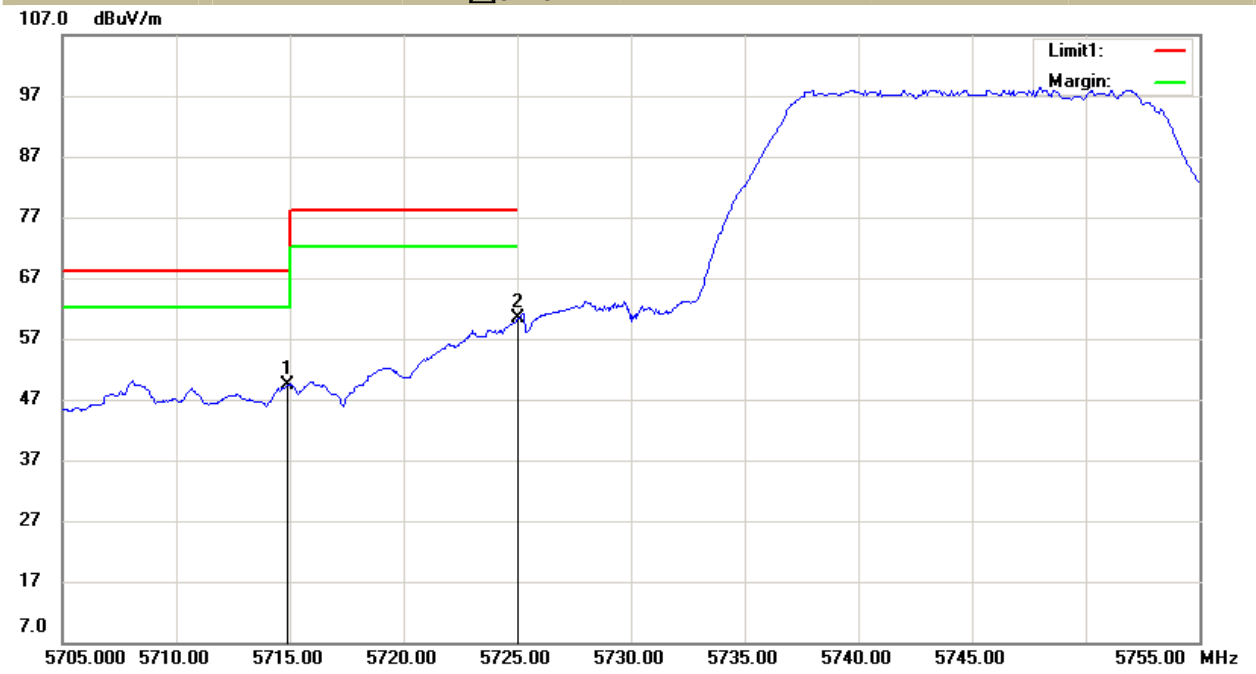
Test Model	UNII Band III Undesirable radiated Spurious Emission in Restricted Band (4500-5100MHz and 5350-5460MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☐5745 ☐5785 ☒5825 Ant.Pol H



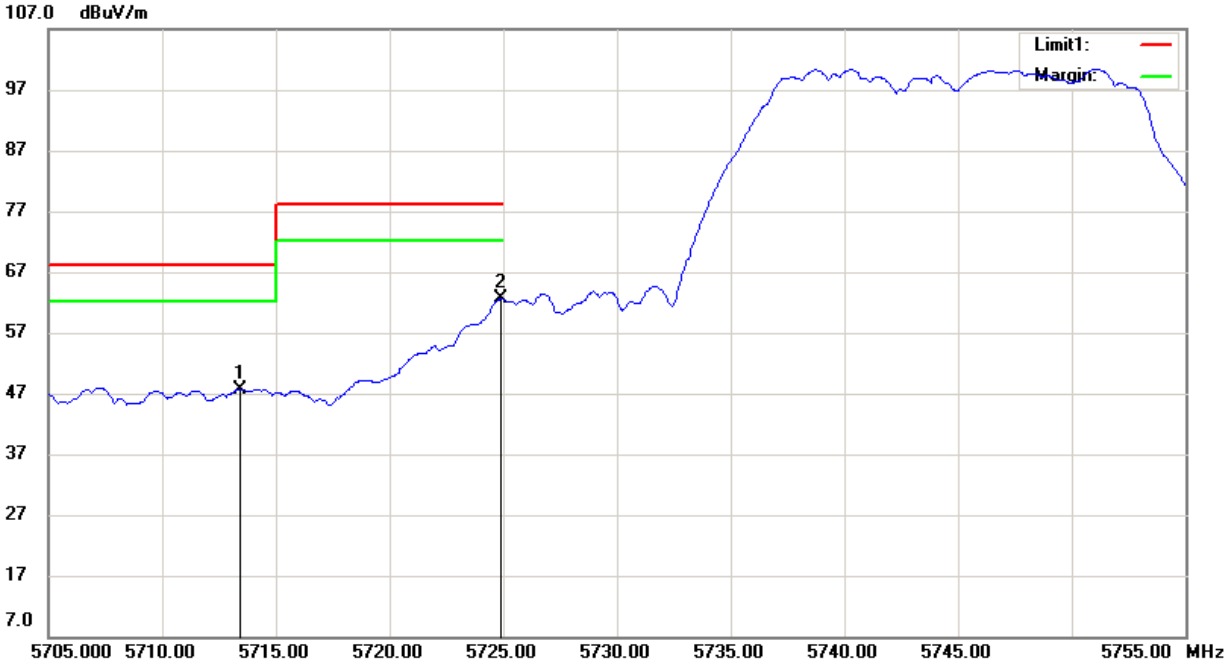
Test Model	UNII Band III Undesirable radiated Spurious Emission in Restricted Band (4500-5100MHz and 5350-5460MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☐5745 ☐5785 ☒5825 Ant.Pol V



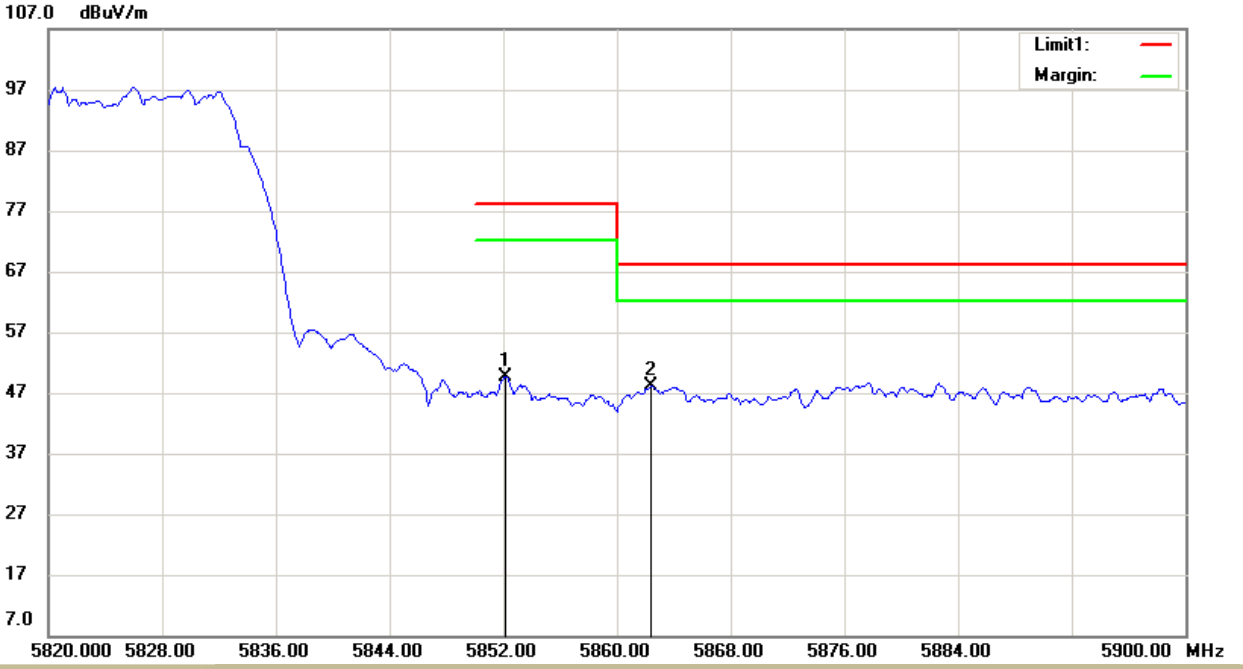
Test Model	UNII Band III Undesirable radiated Undesirable radiated Spurious Emission in Band Edge ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5745 Ant.Pol H



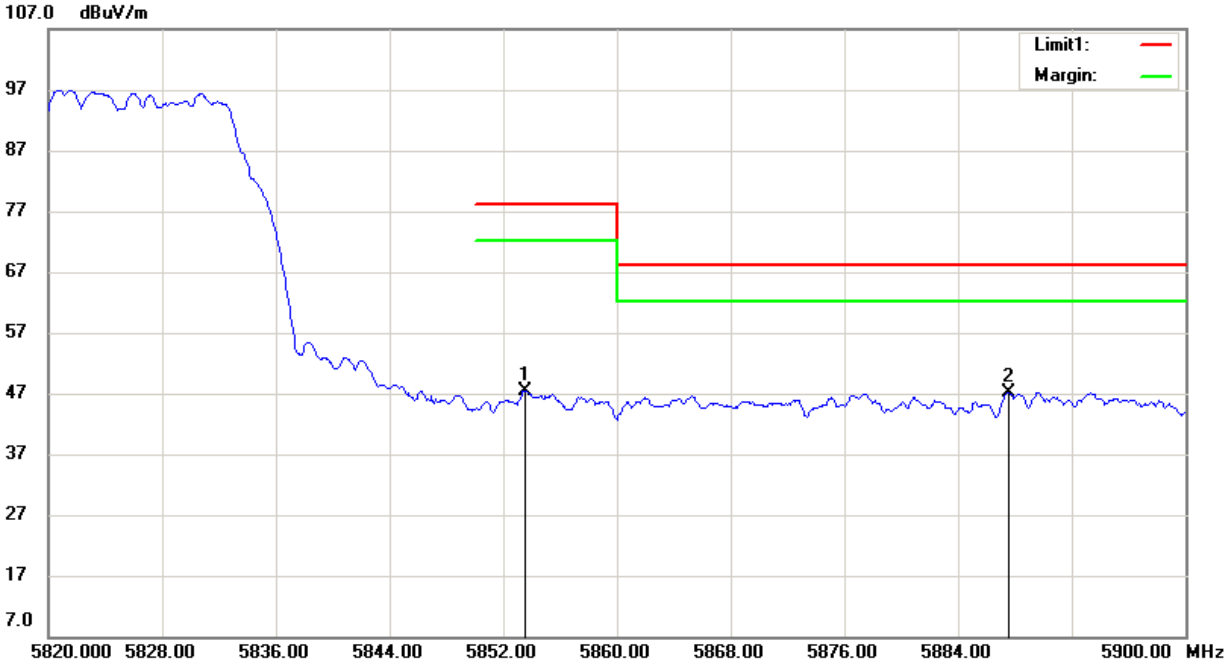
Test Model	UNII Band III Undesirable radiated Undesirable radiated Spurious Emission in Band Edge ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5745 Ant.Pol V



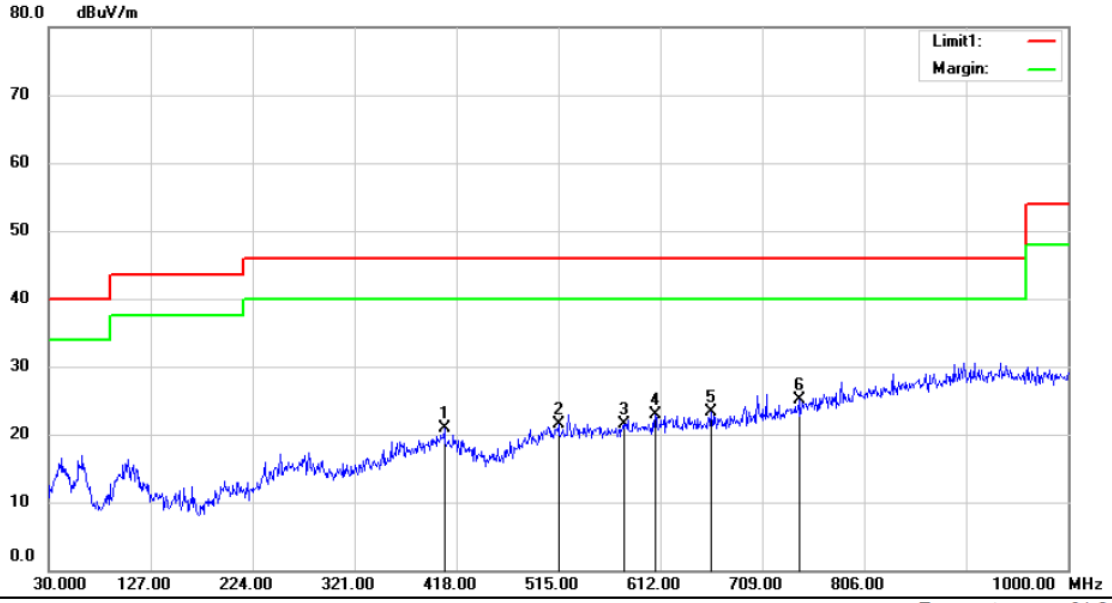
Test Model	UNII Band III Undesirable radiated Undesirable radiated Spurious Emission in Band Edge ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5825 Ant.Pol H



Test Model	UNII Band III Undesirable radiated Undesirable radiated Spurious Emission in Band Edge ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5825 Ant.Pol V



- Undesirable radiated Spurious Emission below 1GHz (30MHz to 1GHz)



Site 3m Chamber #3 Polarization: *Horizontal* Temperature: 24 C

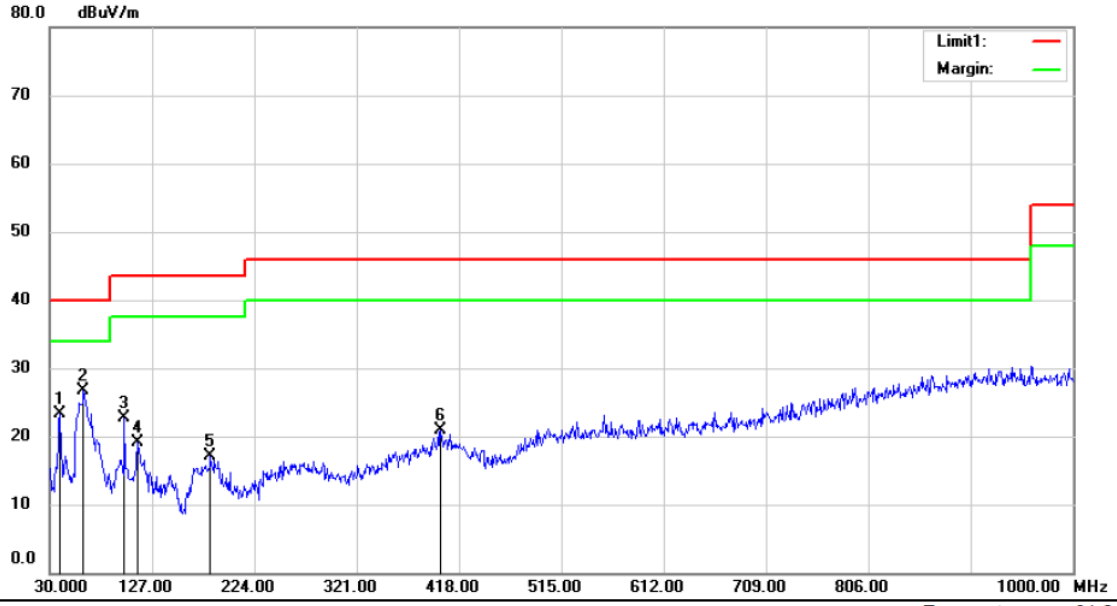
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %

Mode:11A 5180

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		406.3600	29.87	-9.04	20.83	46.00	-25.17	QP			
2		515.0000	29.17	-7.67	21.50	46.00	-24.50	QP			
3		577.0800	28.70	-7.17	21.53	46.00	-24.47	QP			
4		607.1500	29.77	-6.91	22.86	46.00	-23.14	QP			
5		660.5000	29.69	-6.38	23.31	46.00	-22.69	QP			
6	*	743.9200	29.63	-4.62	25.01	46.00	-20.99	QP			

*:Maximum data x:Over limit I:over margin Operator: XLX



Site 3m Chamber #3 Polarization: *Vertical* Temperature: 24 C

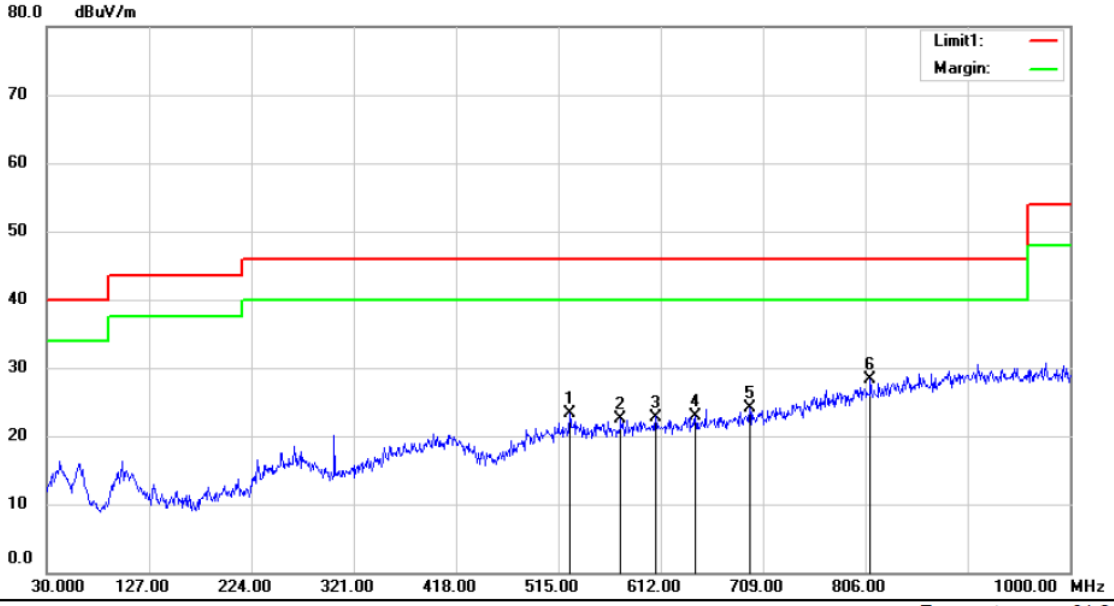
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %

Mode:11A 5180

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		39.7000	36.34	-12.95	23.39	40.00	-16.61	QP			
2	*	62.0100	42.74	-16.12	26.62	40.00	-13.38	QP			
3		100.8100	36.64	-14.02	22.62	43.50	-20.88	QP			
4		113.4200	33.98	-14.94	19.04	43.50	-24.46	QP			
5		182.2900	35.68	-18.58	17.10	43.50	-26.40	QP			
6		400.5400	29.79	-8.89	20.90	46.00	-25.10	QP			

*:Maximum data x:Over limit !:over margin Operator: XLX



Site 3m Chamber #3 Polarization: *Horizontal* Temperature: 24 C

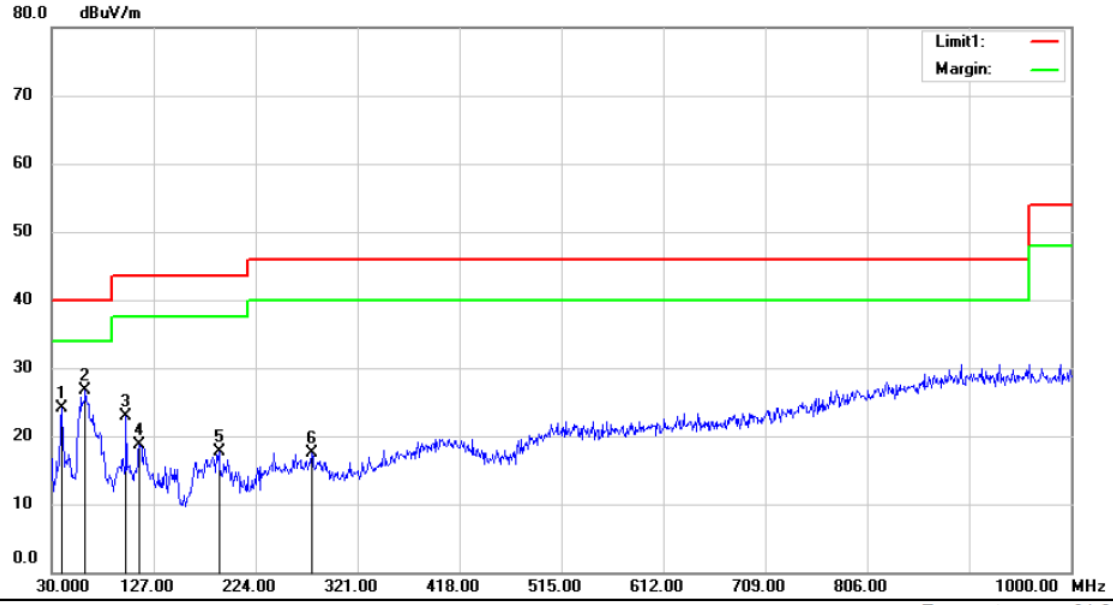
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %

Mode:11A 5220

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		525.6700	30.87	-7.58	23.29	46.00	-22.71	QP			
2		574.1700	29.78	-7.20	22.58	46.00	-23.42	QP			
3		607.1500	29.71	-6.91	22.80	46.00	-23.20	QP			
4		644.9800	29.51	-6.54	22.97	46.00	-23.03	QP			
5		696.3900	30.22	-6.02	24.20	46.00	-21.80	QP			
6	*	810.8500	30.84	-2.62	28.22	46.00	-17.78	QP			

*:Maximum data x:Over limit !:over margin Operator: XLX



Site 3m Chamber #3 Polarization: *Vertical* Temperature: 24 C

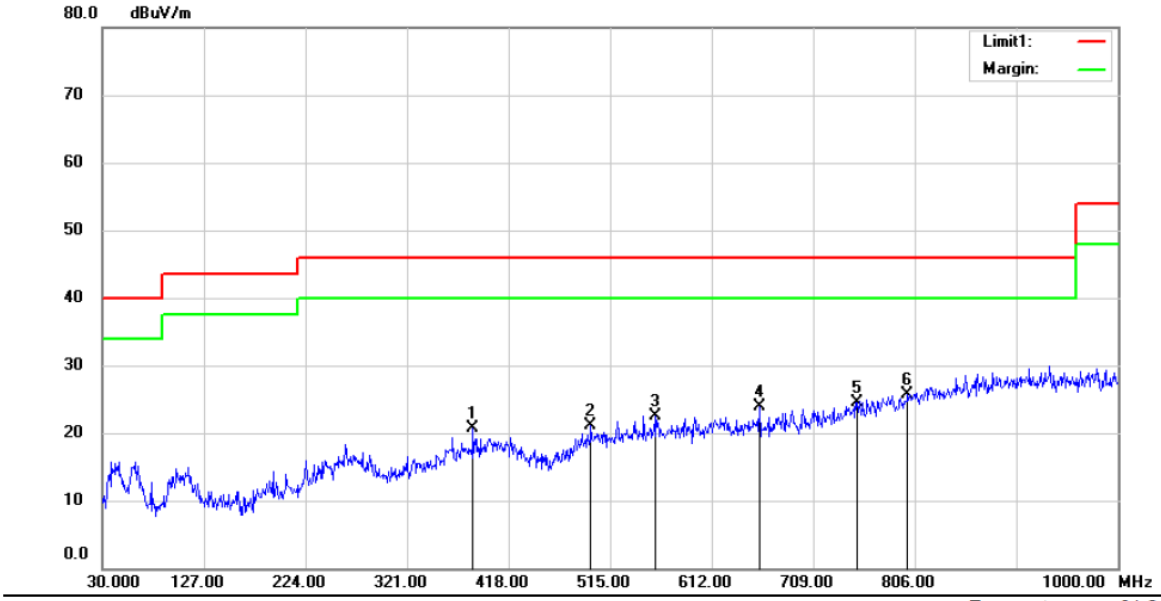
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %

Mode:11A 5220

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		39.7000	37.13	-12.95	24.18	40.00	-15.82	QP			
2	*	62.0100	42.73	-16.12	26.61	40.00	-13.39	QP			
3		100.8100	36.87	-14.02	22.85	43.50	-20.65	QP			
4		113.4200	33.70	-14.94	18.76	43.50	-24.74	QP			
5		189.0800	35.06	-17.44	17.62	43.50	-25.88	QP			
6		277.3500	30.08	-12.60	17.48	46.00	-28.52	QP			

*:Maximum data x:Over limit !:over margin Operator: XLX



Site 3m Chamber #3 Polarization: *Horizontal* Temperature: 24 C

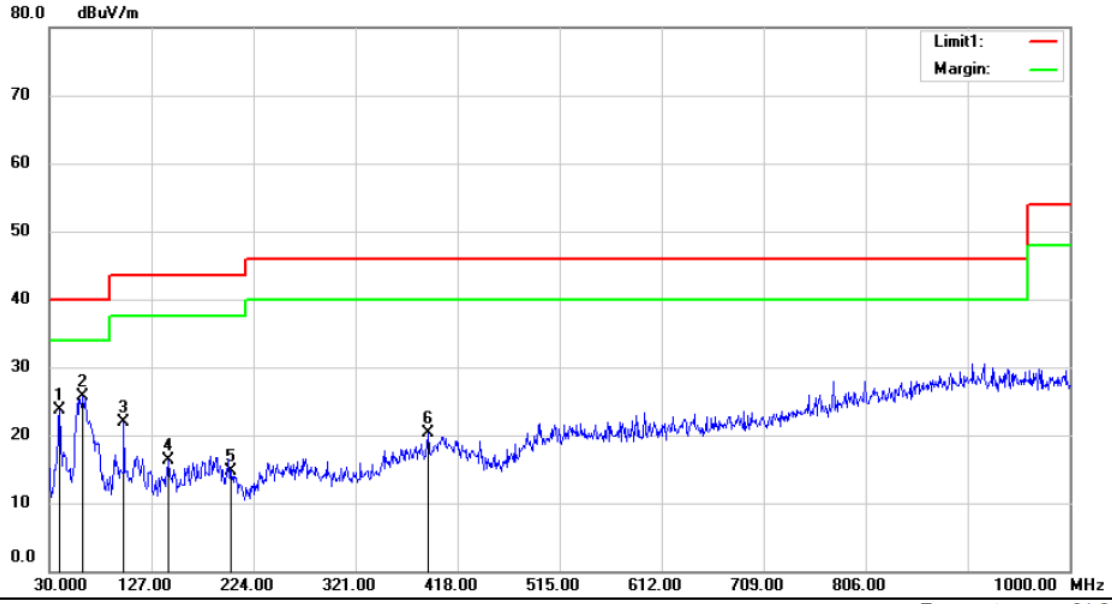
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %

Mode:11A 5240

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		384.0500	30.52	-9.77	20.75	46.00	-25.25	QP			
2		496.5700	29.22	-8.09	21.13	46.00	-24.87	QP			
3		557.6800	29.75	-7.34	22.41	46.00	-23.59	QP			
4		657.5900	30.24	-6.40	23.84	46.00	-22.16	QP			
5		750.7100	28.97	-4.40	24.57	46.00	-21.43	QP			
6	*	799.2100	28.55	-2.89	25.66	46.00	-20.34	QP			

*:Maximum data x:Over limit !:over margin Operator: XLX



Site 3m Chamber #3 Polarization: *Vertical* Temperature: 24 C

Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %

Mode: 11A 5240

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		39.7000	36.71	-12.95	23.76	40.00	-16.24	QP			
2	*	62.0100	41.74	-16.12	25.62	40.00	-14.38	QP			
3		100.8100	35.84	-14.02	21.82	43.50	-21.68	QP			
4		143.4900	34.16	-17.88	16.28	43.50	-27.22	QP			
5		202.6600	31.03	-16.40	14.63	43.50	-28.87	QP			
6		389.8700	29.74	-9.44	20.30	46.00	-25.70	QP			

*:Maximum data x:Over limit !:over margin Operator: XLX

8.6 POWER LINE CONDUCTED EMISSIONS

8.6.1 Applicable Standard

According to FCC Part 15.207(a)

8.6.2 Conformance Limit

	Conducted Emission Limit	
Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

8.6.3 Test Configuration

Test according to clause 6.3 conducted emission test setup

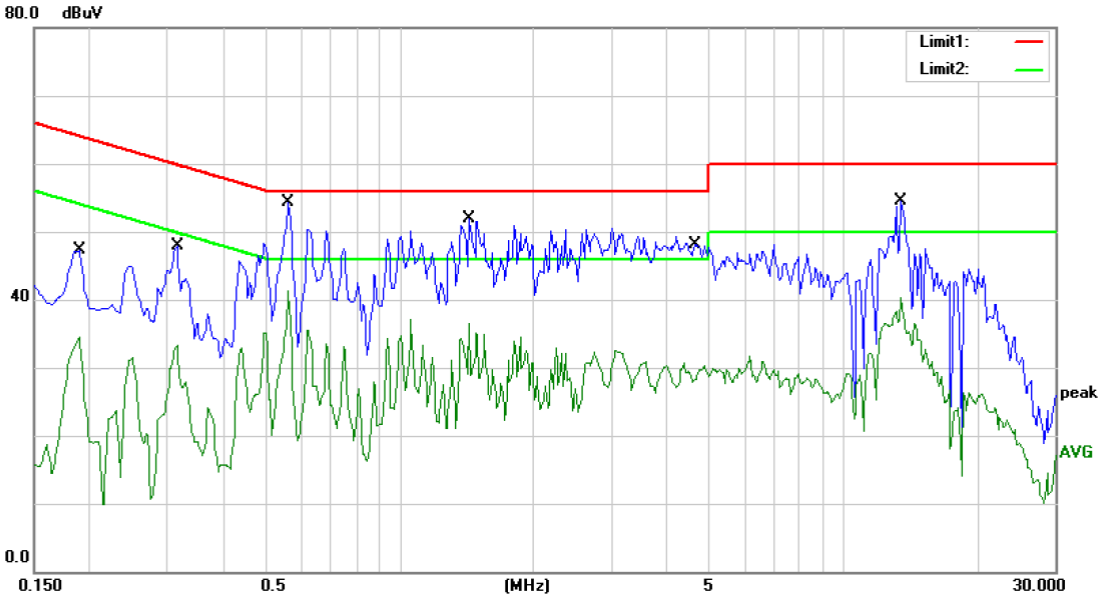
8.6.4 Test Procedure

The EUT was placed on a table which is 0.8m above ground plane.
Maximum procedure was performed on the highest emissions to ensure EUT compliance.
Repeat above procedures until all frequency measured were complete.

8.6.5 Test Results

Pass

We test the EUT at 120V and 240V, and show the worst result as bellow.



Site Conduction #2 Phase: *L1* Temperature: 26

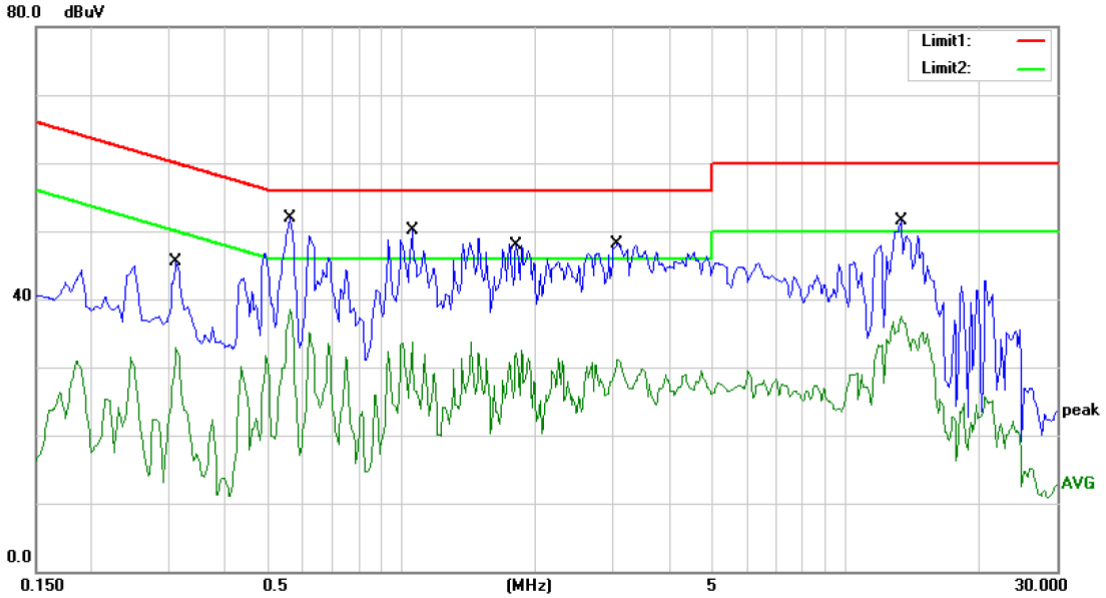
Limit: (CE)FCC PART 15 class C QP Power: AC 120V/60Hz Humidity: 55 %

Mode: WIFI 5G

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1900	47.25	0.00	47.25	64.04	-16.79	QP	
2		0.1900	34.46	0.00	34.46	54.04	-19.58	AVG	
3		0.3150	48.00	0.00	48.00	59.84	-11.84	QP	
4		0.3150	33.39	0.00	33.39	49.84	-16.45	AVG	
5		0.5600	50.70	0.00	50.70	56.00	-5.30	QP	
6	*	0.5600	41.29	0.00	41.29	46.00	-4.71	AVG	
7		1.4350	49.20	0.00	49.20	56.00	-6.80	QP	
8		1.4350	36.49	0.00	36.49	46.00	-9.51	AVG	
9		4.6400	48.14	0.00	48.14	56.00	-7.86	QP	
10		4.6400	30.65	0.00	30.65	46.00	-15.35	AVG	
11		13.4750	54.55	0.00	54.55	60.00	-5.45	QP	
12		13.4750	40.29	0.00	40.29	50.00	-9.71	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: CSL



Site Conduction #2 Phase: *N* Temperature: 26

Limit: (CE)FCC PART 15 class C_QP Power: AC 120V/60Hz Humidity: 55 %

Mode: WIFI 5G

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3100	45.56	0.00	45.56	59.97	-14.41	QP	
2		0.3100	32.93	0.00	32.93	49.97	-17.04	AVG	
3	*	0.5600	48.60	0.00	48.60	56.00	-7.40	QP	
4		0.5600	38.54	0.00	38.54	46.00	-7.46	AVG	
5		1.0550	48.30	0.00	48.30	56.00	-7.70	QP	
6		1.0550	33.66	0.00	33.66	46.00	-12.34	AVG	
7		1.8100	45.90	0.00	45.90	56.00	-10.10	QP	
8		1.8100	32.43	0.00	32.43	46.00	-13.57	AVG	
9		3.0600	46.80	0.00	46.80	56.00	-9.20	QP	
10		3.0600	31.10	0.00	31.10	46.00	-14.90	AVG	
11		13.3500	51.45	0.00	51.45	60.00	-8.55	QP	
12		13.3500	37.49	0.00	37.49	50.00	-12.51	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: CSL

8.7 ANTENNA APPLICATION

8.7.1 Antenna Requirement

Standard	Requirement
FCC CRF Part 15.203	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.407 (a), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

8.7.2 Result

PASS.

The EUT has 1 antenna: a Monolithic SMD antenna for BT, the gain is 5 dBi;
The EUT has 1 antenna: a Monolithic SMD antenna for WIFI, the gain is 5 dBi;
The EUT has 1 antenna: a Monolithic SMD antenna for WIFI, the gain is 5 dBi;

Note: ☒ Antenna use a permanently attached antenna which is not replaceable.
☐ Not using a standard antenna jack or electrical connector for antenna replacement
☐ The antenna has to be professionally installed (please provide method of installation)

which in accordance to section 15.203, please refer to the internal photos.