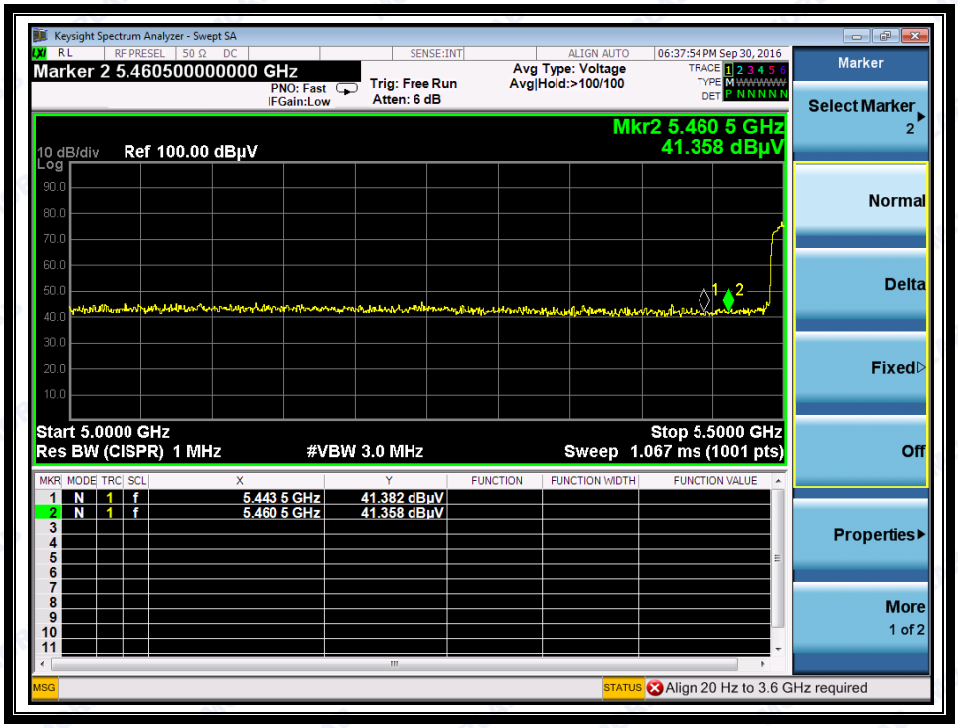
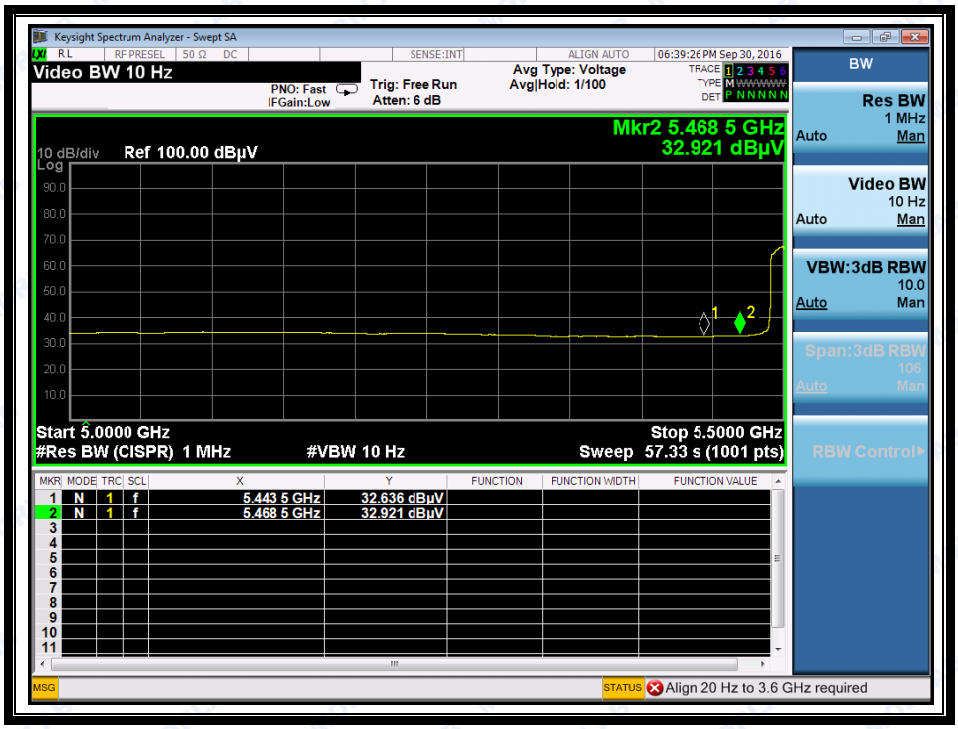
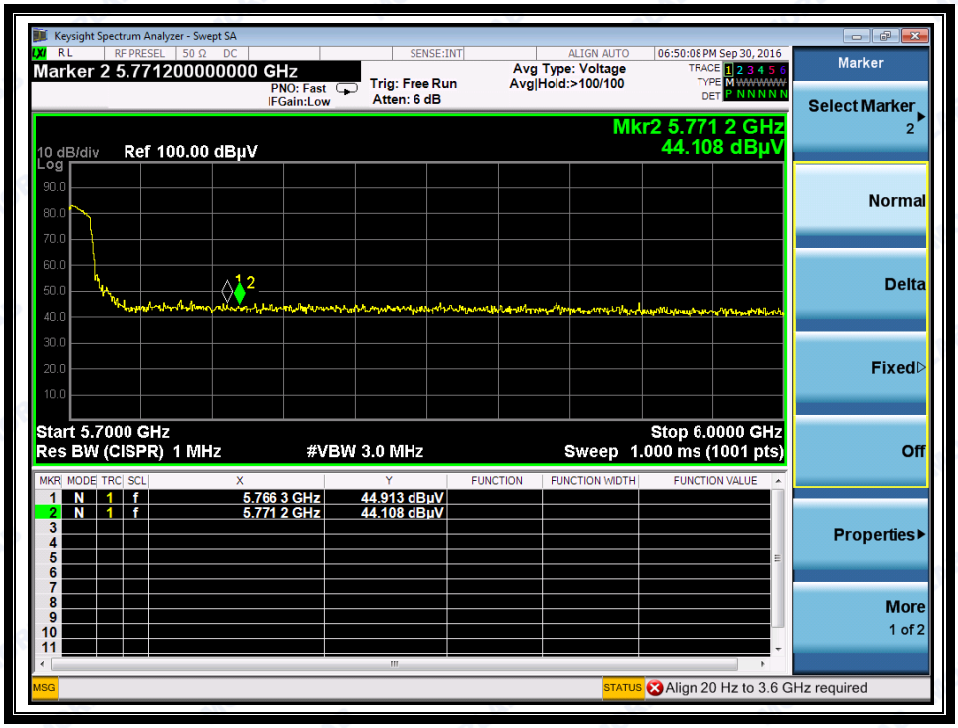


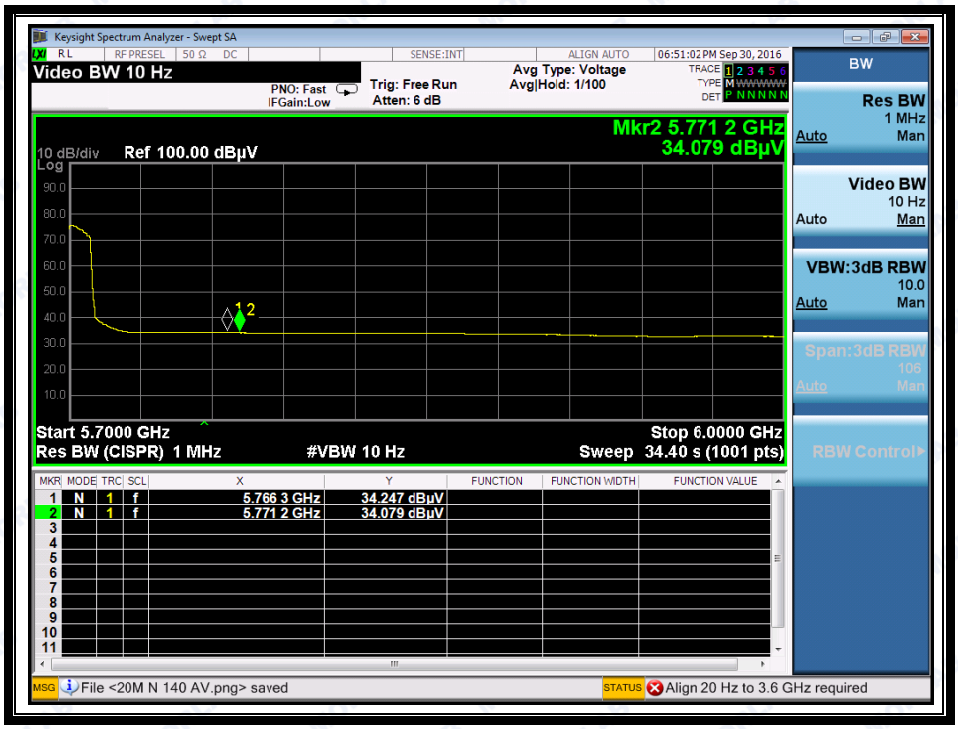
(Channel = 100 PEAK @ 802.11n 20MHz)



(Channel =100 AVG @802.11n 20MHz)



(Channel = 140 PEAK @802.11n 20MHz)



(Channel = 140 AVG @ 802.11n 20MHz)

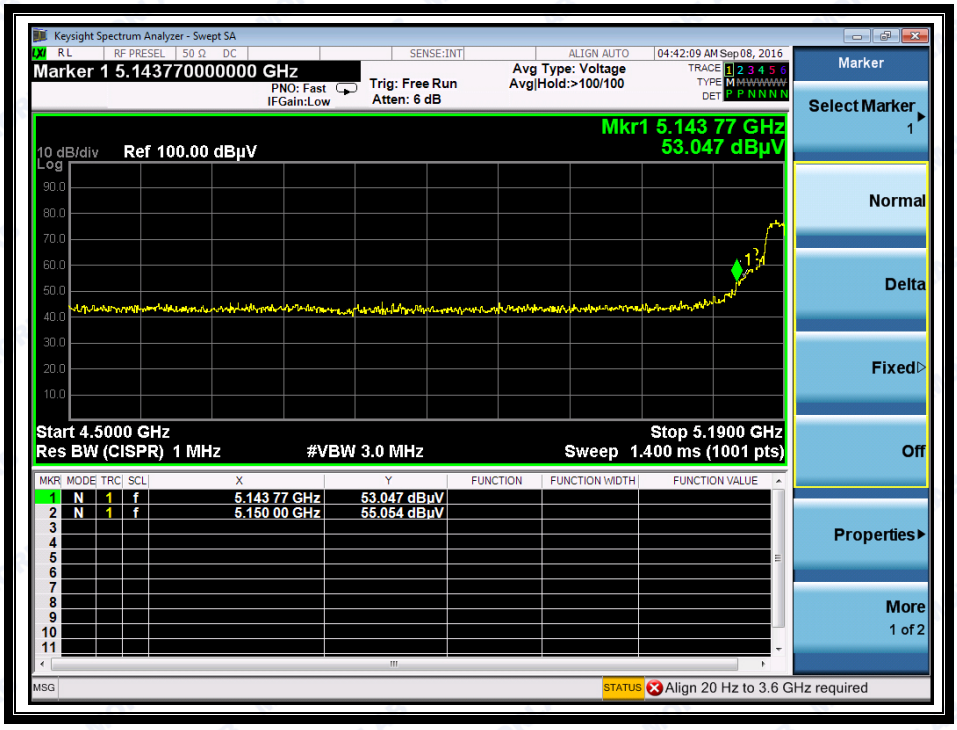
2.5.3.6 802.11n-40MHz Test mode

The lowest and highest channels are tested to verify the band edge emissions.

A. Test Verdict:

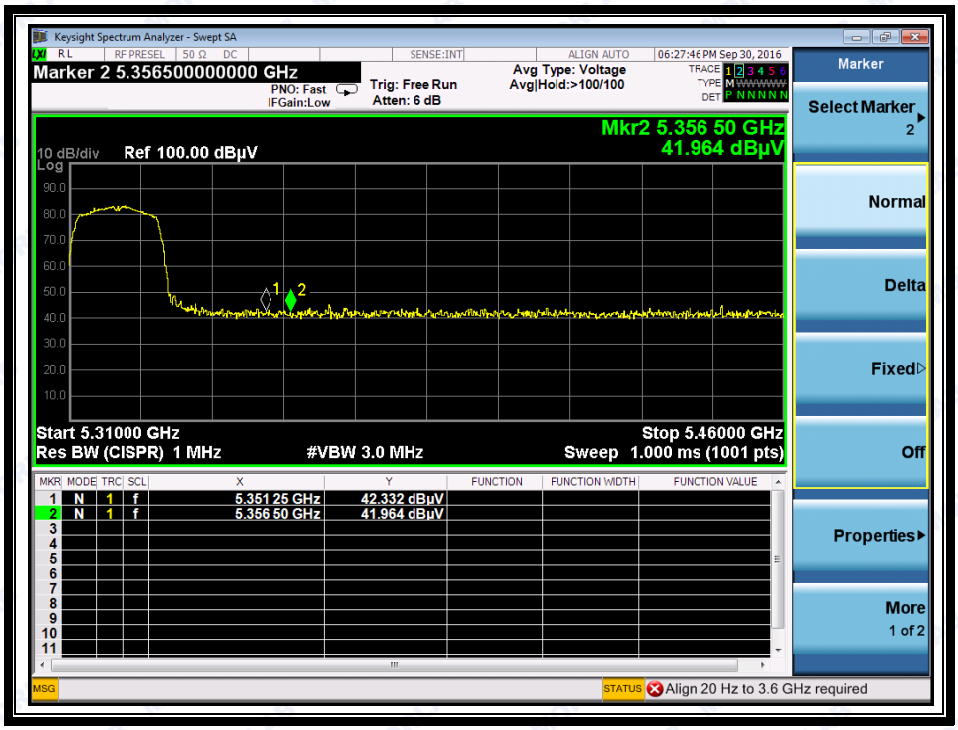
Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
38	5143.77	PK	53.05	-50.65	32.11	34.51	74	Pass
38	5123.07	AV	38.21	-50.65	32.11	19.67	54	Pass
62	5356.50	PK	41.96	-50.65	32.11	23.42	74	Pass
62	5356.50	AV	32.82	-50.65	32.11	14.28	54	Pass
102	5454.57	PK	41.21	-50.65	32.11	22.67	74	Pass
102	5454.57	AV	32.72	-50.65	32.11	14.18	54	Pass
142	5735.90	PK	45.66	-50.65	32.11	27.12	74	Pass
142	5735.90	AV	35.97	-50.65	32.11	17.43	54	Pass

B. Test Plots:

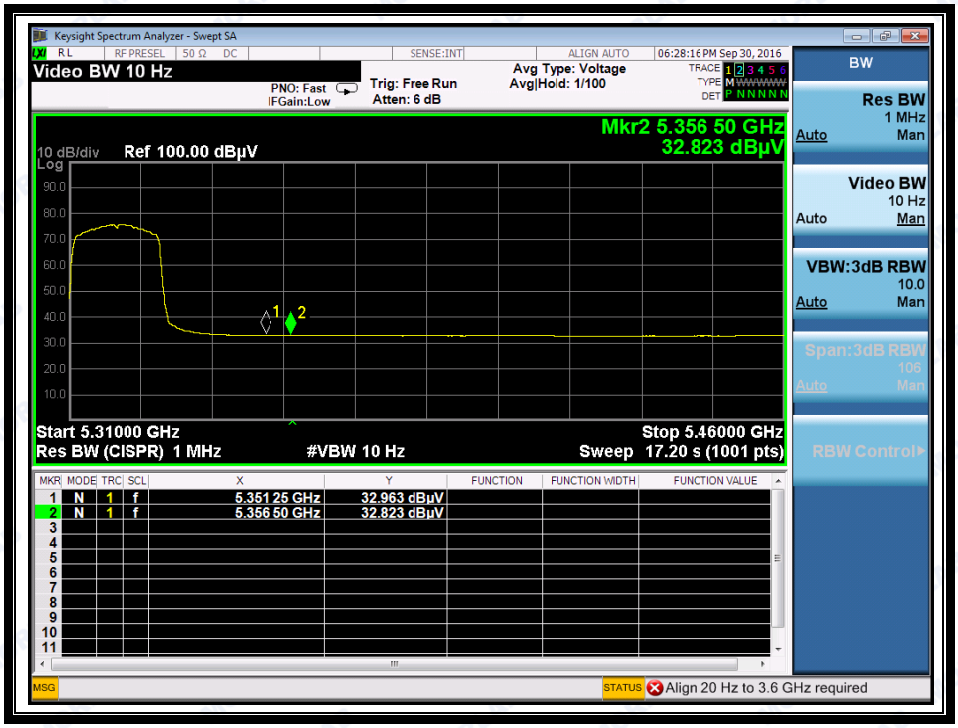


(Channel = 38 PEAK @ 802.11n 40MHz)

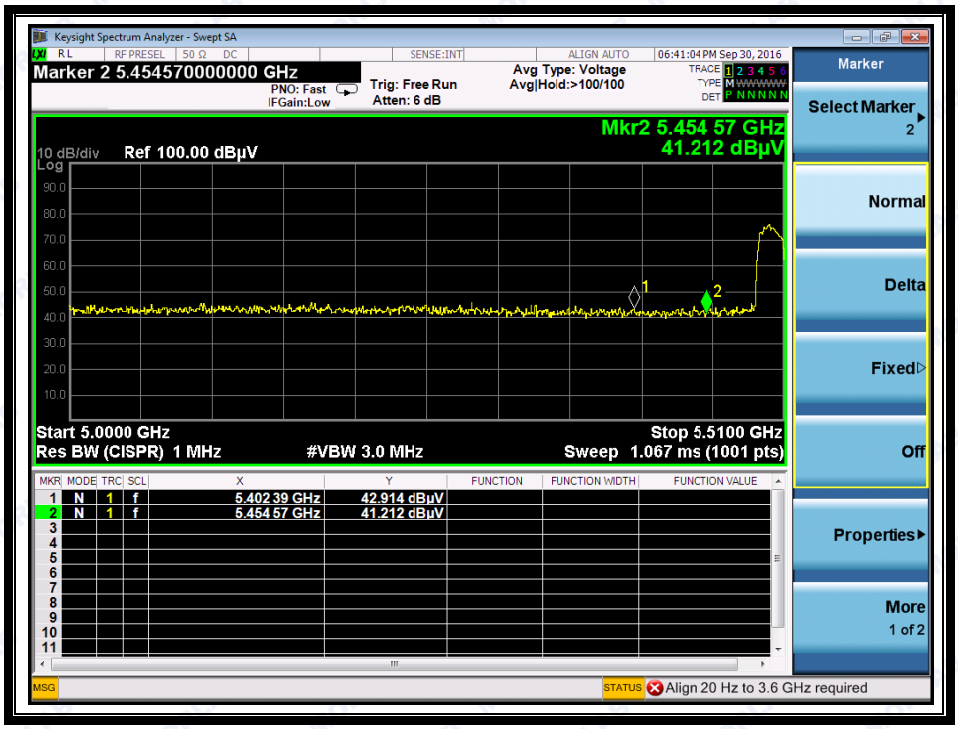
(Channel = 38 AVG @ 802.11n 40MHz)



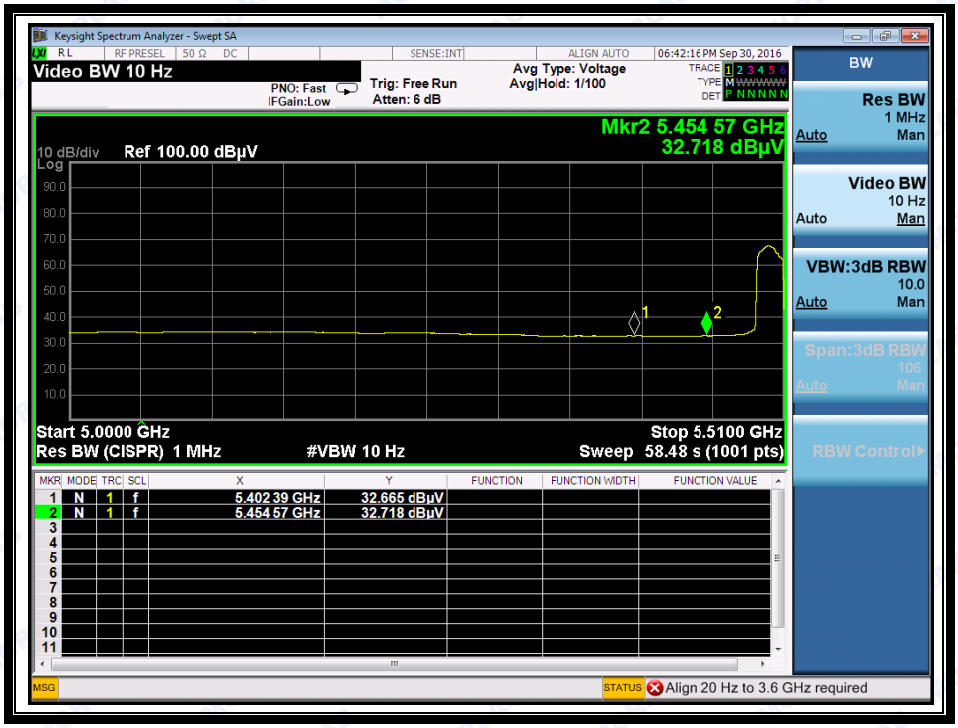
(Channel = 62 PEAK @ 802.11n 40MHz)



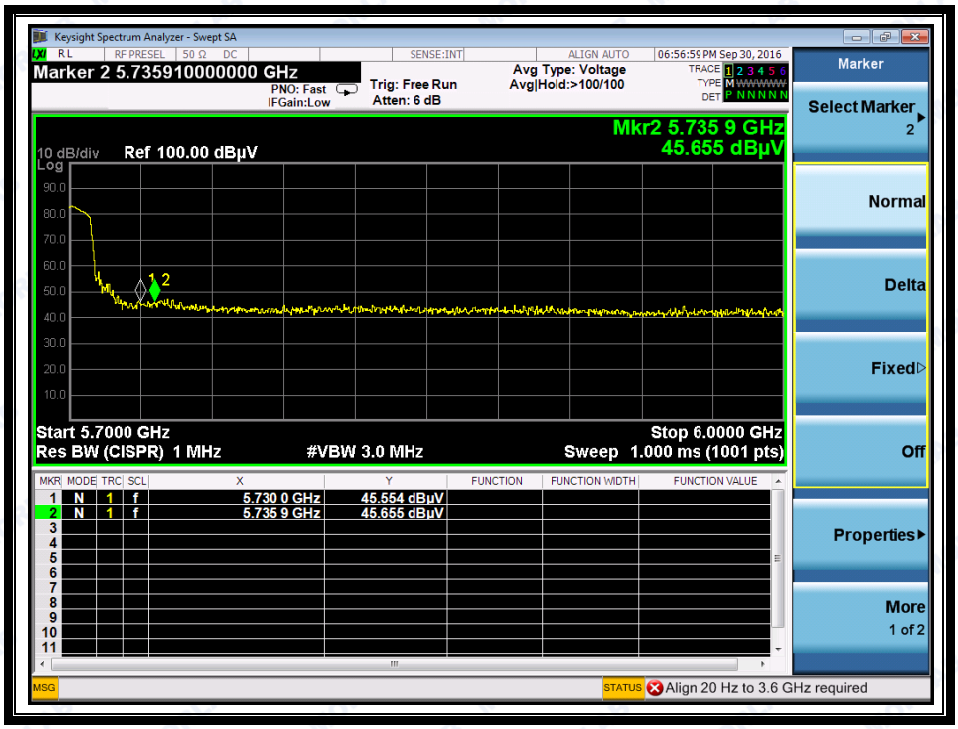
(Channel = 62 AVG @ 802.11n 40MHz)



(Channel =102 PEAK @ 802.11n 40MHz)



(Channel = 102AVG @ 802.11n 40MHz)



(Channel = 142 PEAK @ 802.11n 40MHz)

(Channel = 142 AVG @ 802.11n 40MHz)

2.6 Frequency Stability

2.6.1 Requirement

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 user's manual.

2.6.2 Test Procedure

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between -30°C and +50°C. The temperature was incremented by 10° intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded. Data for the worst case channel is shown below.

2.6.3 Test Result

Frequency Stability Measurements for UNII Band 1 (Ch. 36)

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq Dev. (Hz)	Deviation (%)
100%	3.7	+20(Ref)	5,179,999,992	8	0.00000015
100%		-30	5,180,000,001	1	0.00000002
100%		-20	5,180,000,014	14	0.00000027
100%		-10	5,179,999,947	53	0.00000102
100%		0	5,179,999,995	5	0.00000010
100%		+10	5,180,000,021	21	0.00000041
100%		+20	5,179,999,996	4	0.00000008
100%		+30	5,179,999,989	11	0.00000021
100%		+40	5,180,000,025	25	0.00000048
100%		+50	5,180,000,025	25	0.00000048
85%	3.55	+20	5,180,000,011	11	0.00000021
115%	4.35	+20	5,179,999,989	11	0.00000021

Frequency Stability Measurements for UNII Band 2A (Ch. 52)

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq Dev. (Hz)	Deviation (%)
100%	3.7	+20(Ref)	5,259,999,996	4	0.00000008
100%		-30	5,260,000,021	21	0.00000040
100%		-20	5,260,000,036	36	0.00000068
100%		-10	5,259,999,988	12	0.00000023
100%		0	5,259,999,979	21	0.00000040
100%		+10	5,260,000,015	15	0.00000029
100%		+20	5,260,000,025	25	0.00000048
100%		+30	5,259,999,985	15	0.00000029
100%		+40	5,259,999,996	4	0.00000008
100%		+50	5,260,000,095	95	0.00000181
85%	3.55	+20	5,260,000,012	12	0.00000023
115%	4.35	+20	5,259,999,974	26	0.00000049

Frequency Stability Measurements for UNII Band 2C (Ch. 100)

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq Dev. (Hz)	Deviation (%)
100%	3.7	+20(Ref)	5,500,000,014	14	0.00000025
100%		-30	5,499,999,996	4	0.00000007
100%		-20	5,500,000,023	23	0.00000042
100%		-10	5,499,999,996	4	0.00000007
100%		0	5,500,000,025	25	0.00000045
100%		+10	5,499,999,986	14	0.00000025
100%		+20	5,500,000,006	6	0.00000011
100%		+30	5,500,000,028	28	0.00000051
100%		+40	5,500,000,036	36	0.00000065
100%		+50	5,499,999,982	18	0.00000033
85%	3.55	+20	5,500,000,045	45	0.00000082
115%	4.35	+20	5,499,999,996	4	0.00000007

Frequency Stability Measurements for UNII Band 3 (Ch. 149)

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq Dev. (Hz)	Deviation (%)
100%	3.7	+20(Ref)	5,744,999,976	24	0.00000042
100%		-30	5,744,999,985	15	0.00000026
100%		-20	5,745,000,021	21	0.00000037
100%		-10	5,744,999,977	23	0.00000040
100%		0	5,745,000,036	36	0.00000063
100%		+10	5,745,000,011	11	0.00000019
100%		+20	5,745,000,002	2	0.00000003
100%		+30	5,745,000,012	12	0.00000021
100%		+40	5,744,999,986	14	0.00000024
100%		+50	5,745,000,011	11	0.00000019
85%	3.55	+20	5,745,000,014	14	0.00000024
115%	4.35	+20	5,744,999,968	32	0.00000056

Note: Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

2.7 Transmit Power Control (TPC) and Dynamic Frequency Selection (DFS)

2.7.1 Requirement

According to FCC section 15.407(h), (1) Transmit power control (TPC). U-NII devices operating in the 5.25-5.35 GHz band and the 5.47-5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

(2) Radar Detection Function of Dynamic Frequency Selection (DFS). U-NII devices operating with any part of its 26 dB emission bandwidth in the 5.25-5.35 GHz and 5.47-5.725 GHz bands shall employ a DFS radar detection mechanism to detect the presence of radar systems and to avoid co-channel operation with radar systems. Operators shall only use equipment with a DFS mechanism that is turned on when operating in these bands. The device must sense for radar signals at 100 percent of its emission bandwidth. The minimum DFS detection threshold for devices with a maximum e.i.r.p. of 200 mW to 1 W is −64 dBm. For devices that operate with less than 200 mW e.i.r.p. and a power spectral density of less than 10 dBm in a 1 MHz band, the minimum detection threshold is −62 dBm. The detection threshold is the received power averaged over 1 microsecond referenced to a 0 dBi antenna. For the initial channel setting, the manufacturers shall be permitted to provide for either random channel selection or manual channel selection.

A U-NII network will employ a DFS function to detect signals from radar systems and to avoid co-channel operation with these systems. This applies to the 5250-5350 MHz and/or 5470-5725 MHz bands.1

Within the context of the operation of the DFS function, a U-NII device will operate in either Master Mode or Client Mode. U-NII devices operating in Client Mode can only operate in a network controlled by a U-NII device operating in Master Mode.2

Tables 1 and 2 shown below summarize the information contained in sections 5.1.1 and 5.1.2.

Table 1: Applicability of DFS Requirements Prior to Use of a Channel

Requirement	Operational Mode		
	Master	Client Without Radar Detection	Client With Radar Detection
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode	
	Master	Client Without Radar Detection
DFS Detection Threshold	Yes	Not required
Channel Closing Transmission Time	Yes	Yes
Channel Move Time	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required

Additional requirements for devices with multiple bandwidth modes	Master Device or Client with Radar Detection	Client Without Radar Detection
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required
Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency.		

The operational behavior and individual DFS requirements that are associated with these modes are as follows:

2.7.1.1 Master Devices

a) The Master Device will use DFS in order to detect Radar Waveforms with received signal strength above the DFS Detection Threshold in the 5250 − 5350 MHz and 5470 − 5725 MHz bands. DFS is not required in the 5150 − 5250 MHz or 5725 − 5825 MHz bands.

b) Before initiating a network on a Channel, the Master Device will perform a Channel Availability Check for a specified time duration (Channel Availability Check Time) to ensure that there is no radar system operating on the Channel, using DFS described under subsection a) above.

c) The Master Device initiates a U-NII network by transmitting control signals that will enable other U-NII devices to Associate with the Master Device.

d) During normal operation, the Master Device will monitor the Channel (In-Service Monitoring) to ensure that there is no radar system operating on the Channel, using DFS described under a).

e) If the Master Device has detected a Radar Waveform during In-Service Monitoring as described under d), the Operating Channel of the U-NII network is no longer an Available Channel. The Master Device will instruct all associated Client Device(s) to stop transmitting on this Channel within the Channel Move Time. The transmissions during the Channel Move Time will be limited to

the Channel Closing Transmission Time.

f) Once the Master Device has detected a Radar Waveform it will not utilize the Channel for the duration of the Non-Occupancy Period. 3

g) If the Master Device delegates the In-Service Monitoring to a Client Device, then the combination will be tested to the requirements described under d) through f) above.

2.7.1.2 Client Devices

a) A Client Device will not transmit before having received appropriate control signals from a Master Device.

b) A Client Device will stop all its transmissions whenever instructed by a Master Device to which it is associated and will meet the Channel Move Time and Channel Closing Transmission Time requirements. The Client Device will not resume any transmissions until it has again received control signals from a Master Device.

c) If a Client Device is performing In-Service Monitoring and detects a Radar Waveform above the DFS Detection Threshold, it will inform the Master Device. This is equivalent to the Master Device detecting the Radar Waveform and d) through f) of section 5.1.1 apply.

d) Irrespective of Client Device or Master Device detection the Channel Move Time and Channel Closing Transmission Time requirements remain the same.

e) The client test frequency must be monitored to ensure no transmission of any type has occurred for 30 minutes. Note: If the client moves with the master, the device is considered compliant if nothing appears in the client non-occupancy period test. For devices that shut down (rather than moving channels), no beacons should appear.

2.7.1.3 DFS Detection Thresholds

Table 3 below provides the DFS Detection Thresholds for Master Devices as well as Client Devices incorporating In-Service Monitoring.

Table 3: DFS Detection Thresholds for Master Devices and Client Devices With Radar Detection

Maximum Transmit Power	Value (See Notes 1, 2, and 3)
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna. Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response. Note3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.	

2.7.1.4 Response Requirements

Table 4 provides the response requirements for Master and Client Devices incorporating DFS.

Table 4: DFS Response Requirement Values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.

Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.

Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

2.7.2 Test Description

Section 7.2 of KDB 905462 D02 V01R01

B. Test Setup:

B .1 Setup for Master with injection at the Master

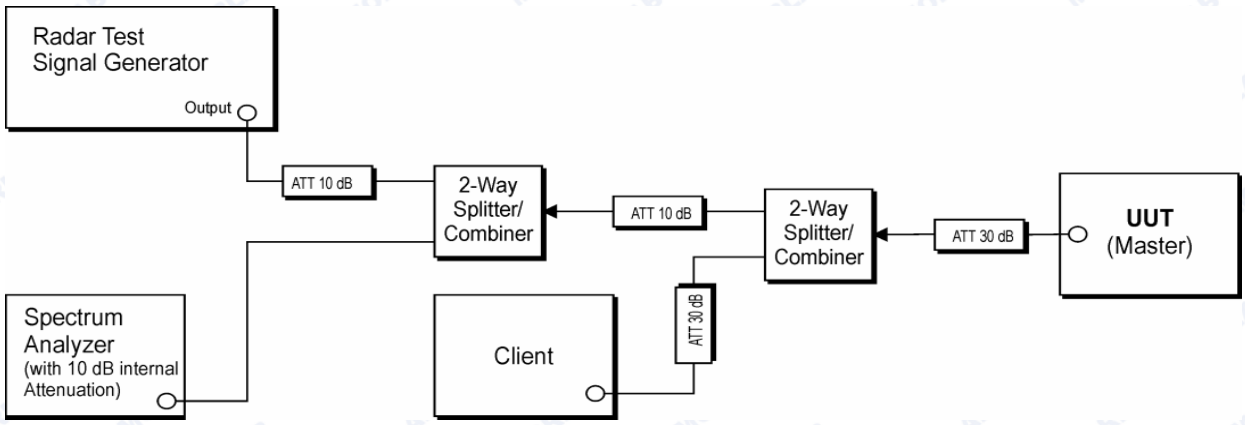


Figure 2: Example Conducted Setup where UUT is a Master and Radar Test Waveforms are injected into the Master

B.2 Setup for Client with injection at the Master

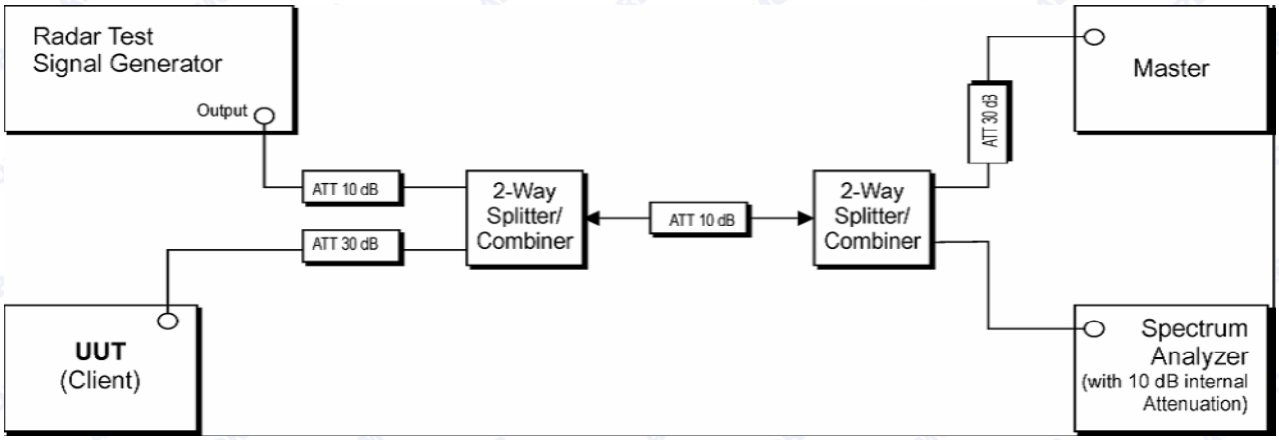


Figure 3: Example Conducted Setup where UUT is a Client and Radar Test Waveforms are injected into the Master

B.3 Setup for Client with injection at the Client

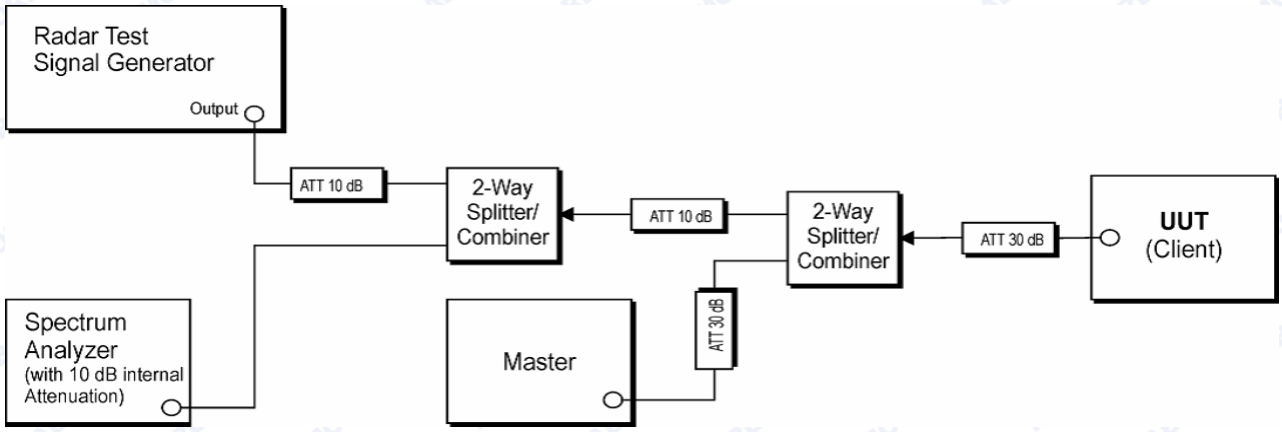


Figure 4: Example Conducted Setup where UUT is a Client and Radar Test Waveforms are injected into the Client

2.7.3 Test Result

2.7.3.1 Radar Test Waveforms are injected into the Master：

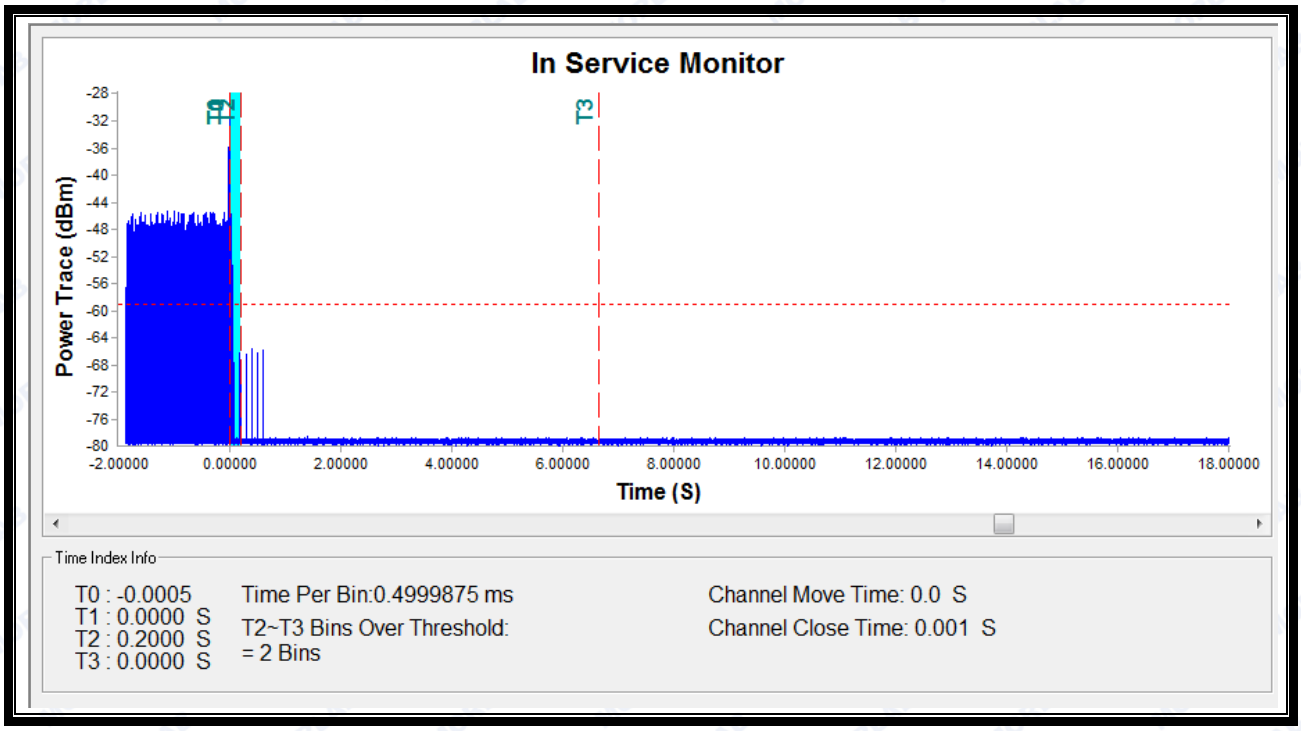
2.7.3.2 EUT is a Client Device Without Radar Detection :

Channel & Bandwidth	Requirement	Operational Mode: Client Without Radar Detection	Test Result	Limit	Verdict
20MHz 5260MHz	Channel Move Time	Yes	8.47s	＜10s	Pass
	Channel Closing Transmission Time	Yes	0.03s	＜1s	Pass
	Non-occupancy period	Yes	≥30	≥30 Minutes	Pass
40MHz 5510MHz	Channel Move Time	Yes	3.48s	＜10s	Pass
	Channel Closing Transmission Time	Yes	0.08s	＜1s	Pass
	Non-occupancy period	Yes	≥30	≥30 Minutes	Pass

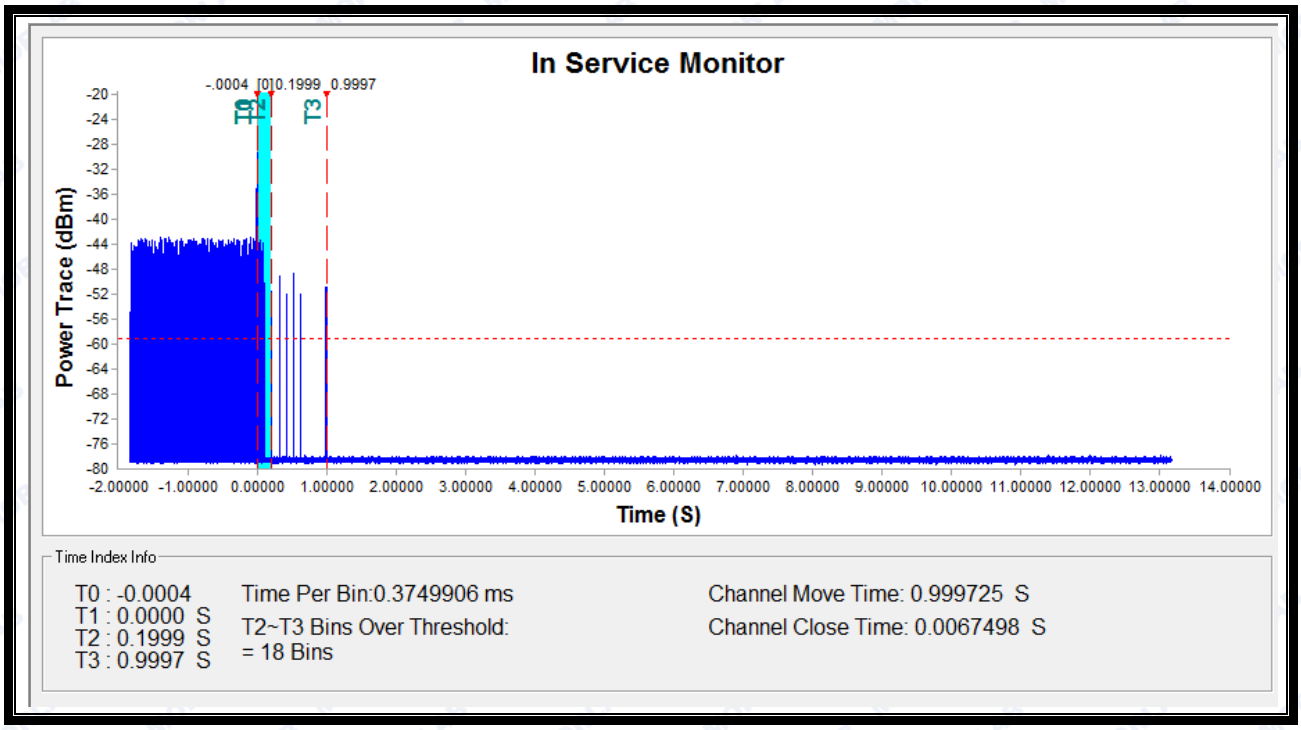
2.7.3.3 Test Plots

Note:T0 denotes the start time of the Radar single transmitted,T1 denotes the end time of the Radar single transmit end. T2 denotes the data transmission time of 200ms from T1. T3 denotes the end of the Channel Move Time, the time of T3 from T1 is less than 12s.

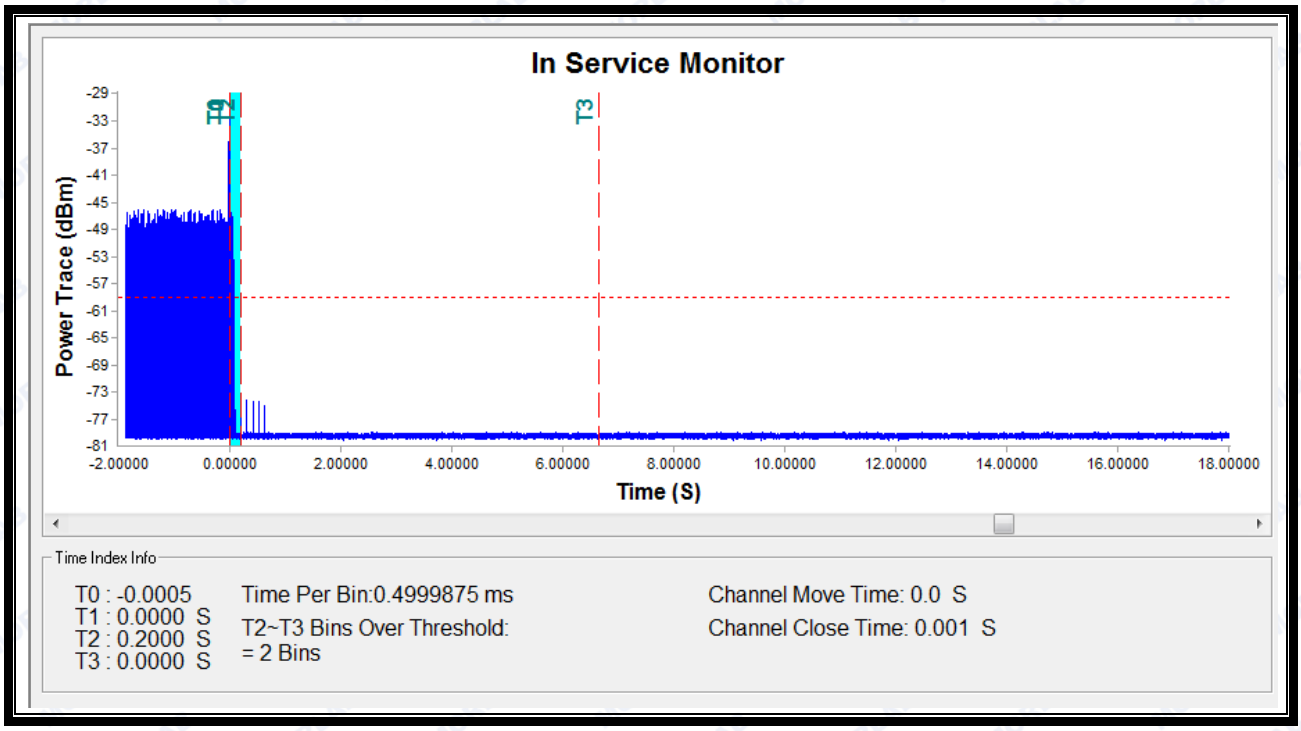
20MHz/5260MHz:



40MHz/5510MHz:



80MHz/5290MHz:



2.7.3.4 Test Photo for DFS

2.8 Conducted Emission

2.8.1 Requirement

According to FCC section 15.207, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50μH/50Ω line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dBμV)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

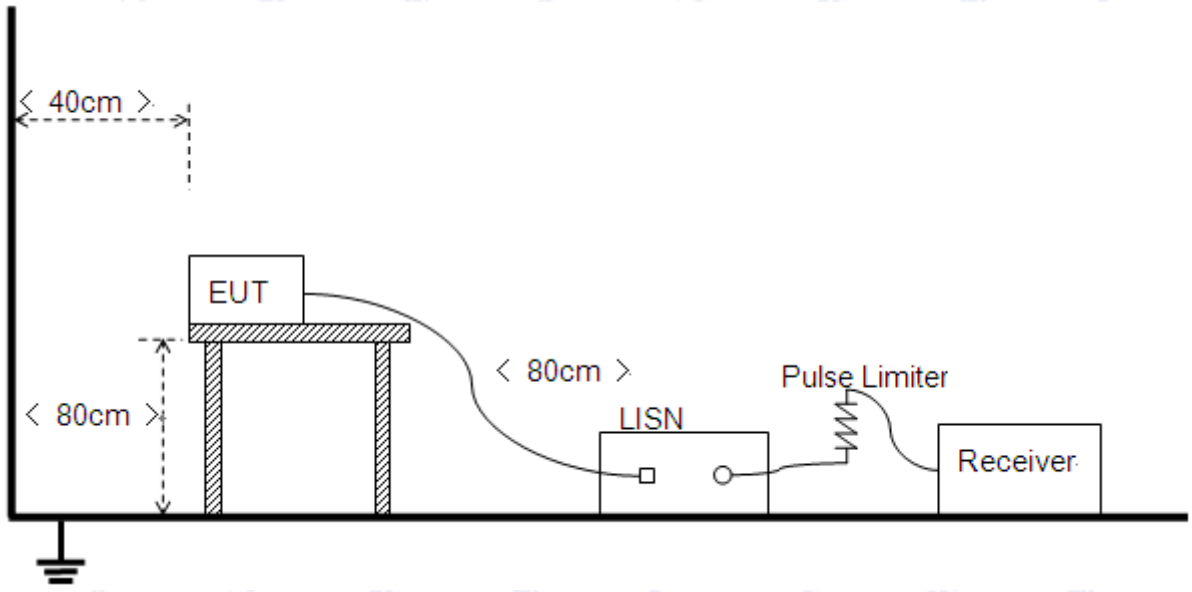
NOTE:

(a) The lower limit shall apply at the band edges.

(b) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

2.8.2 Test Description

A. Test Setup:



The Table-top EUT was placed upon a non-metallic table 0.8m above the horizontal metal reference ground plane. EUT was connected to LISN and LISN was connected to reference Ground Plane. EUT was 80cm from LISN. The set-up and test methods were according to ANSI C63.10: 2013.

The EUT is powered by the Battery charged with the AC Adapter which is powered by 120V, 60Hz AC mains supply. The factors of the site are calibrated to correct the reading. During the

measurement, the EUT is activated and controlled by the Wi-Fi Service Supplier (SS) via a Common Antenna.

2.8.3 Test Result

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.

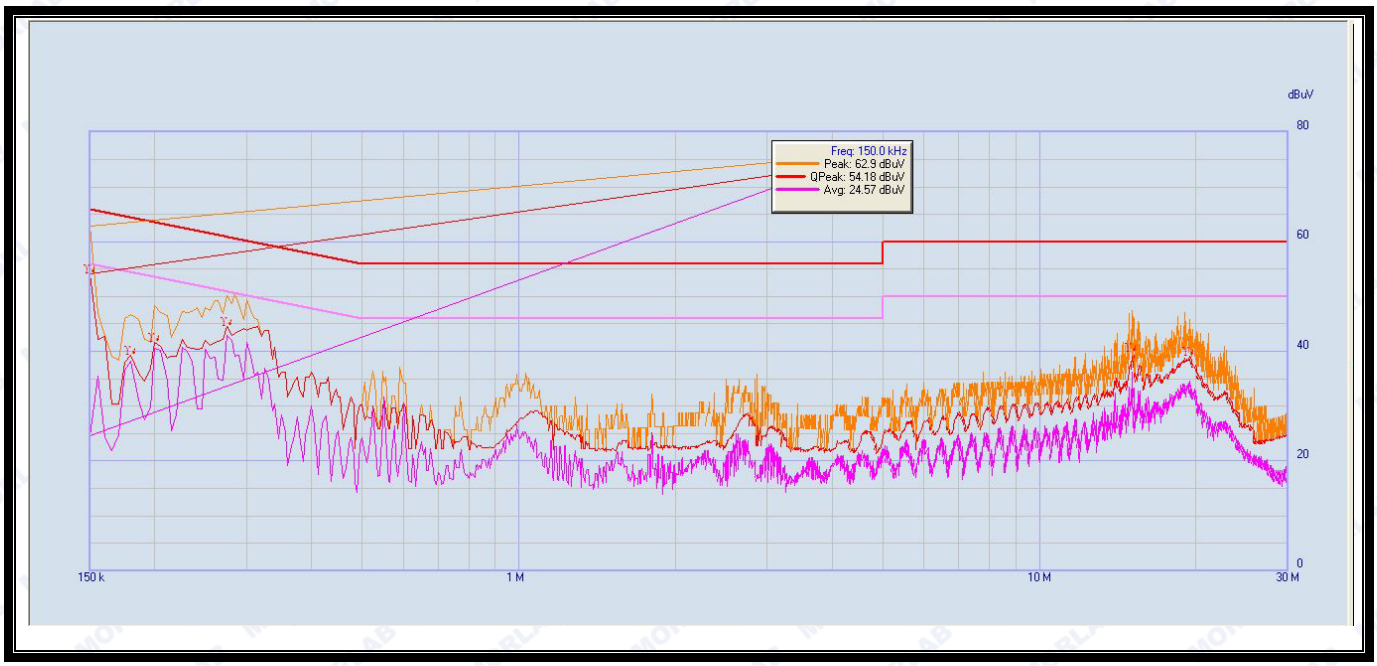
Note: All test modes are performed, only the worst case is recorded in this report.

A. Test setup:

The EUT configuration of the emission tests is EUT + Link.

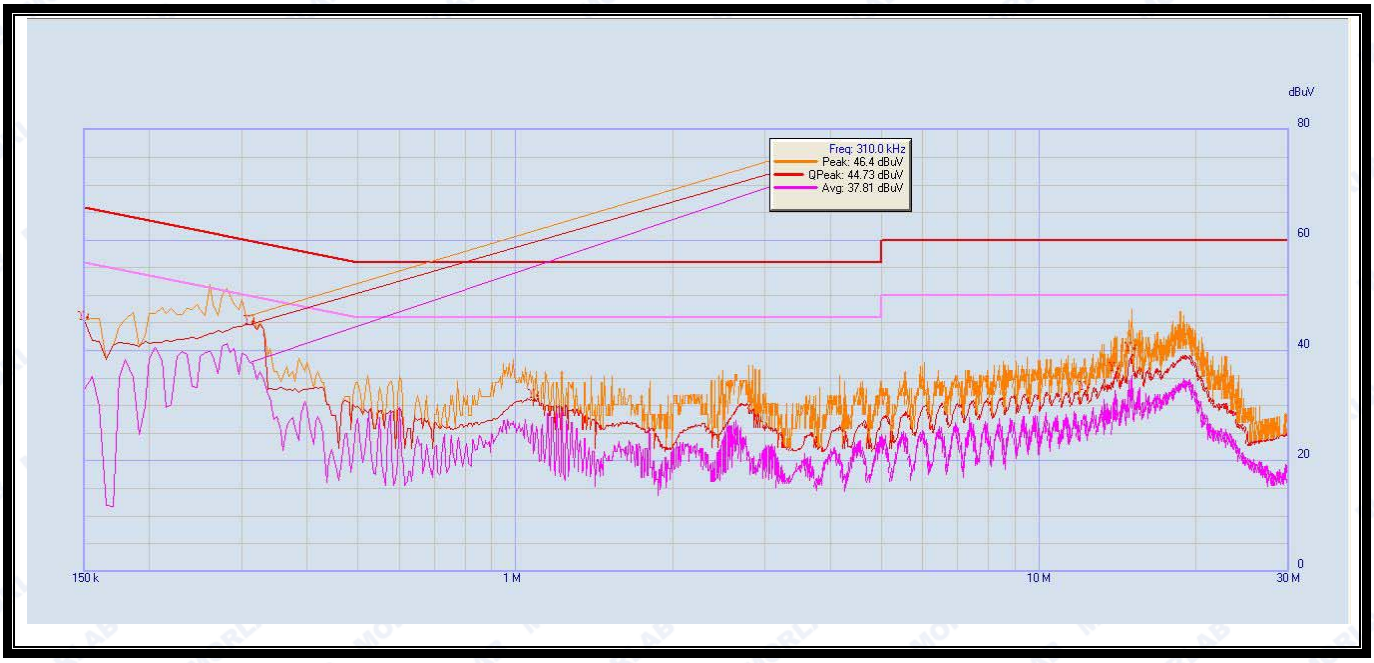
Note: The test voltage is AC 120V/60Hz.

B. Test Plots:



(Plot A: L Phase)

NO.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.15	54.18	24.57	66	56	Line	PASS
2	0.18	39.24	38.12	65.14	55.14		PASS
3	0.2	41.61	40.59	64.57	54.57		PASS
4	0.275	44.50	42.92	62.43	52.43		PASS
5	15	39.05	35.03	60	50		PASS
6	19.305	38.40	33.14	60	50		PASS



(Plot B: N Phase)

NO.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.15	45.45	32.91	66	56	Neutral	PASS
2	0.31	44.73	37.81	61.43	51.43		PASS
3	1.09	31.33	22.30	39.14	29.14		PASS
4	12.225	32.72	27.91	60	50		PASS
5	13.96	35.41	31.96	60	50		PASS
6	14.985	38.99	35.23	60	50		PASS

2.9 Radiated Emission

2.9.1 Requirement

The peak emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27dBm/MHz.

(2) For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27dBm/MHz.

(3) For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of -27dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.

The following formula is used to convert the equipment isotropic radiated power(eirp) to field strength (dBμV/m);

$$E = 1000000 \times \sqrt{30P}/3 \ \mu V/m$$

where P is the EIRP in Watts

Therefore: -27 dBm/MHz = 68.23 dBuV/m

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209. According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

Note:

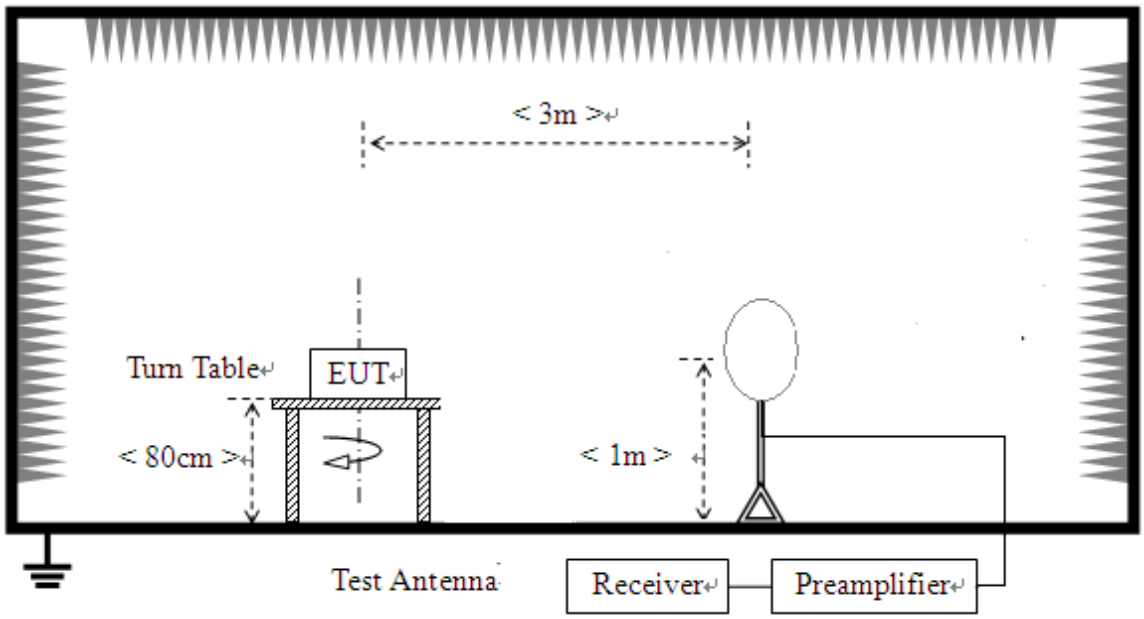
For Above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.

In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a)(above table)

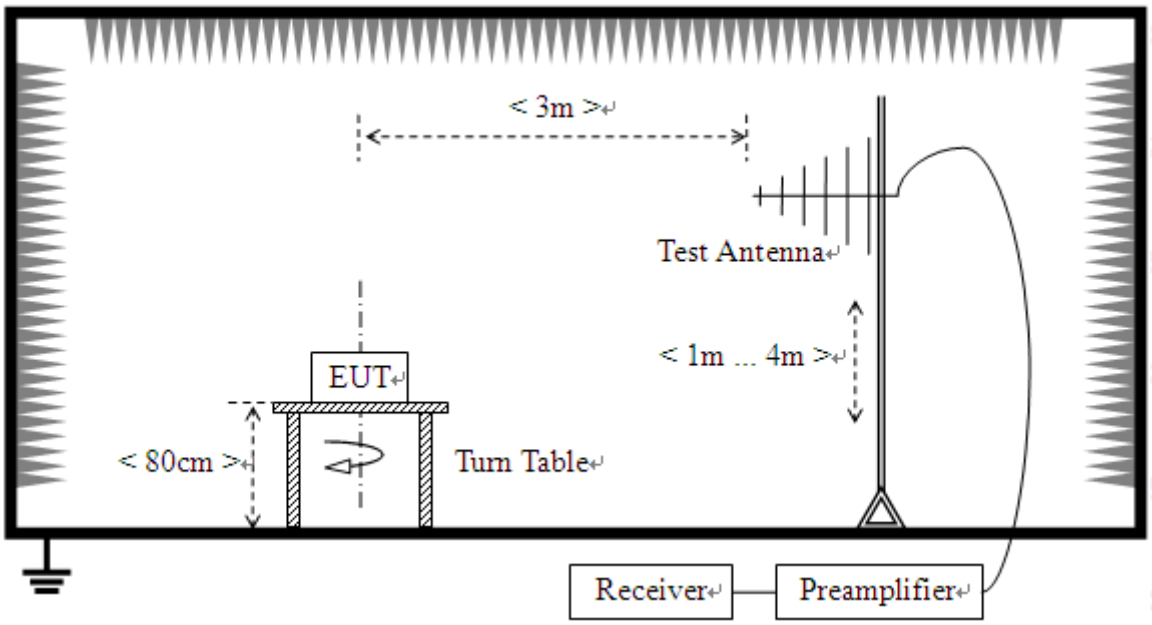
2.9.2 Test Description

A. Test Setup:

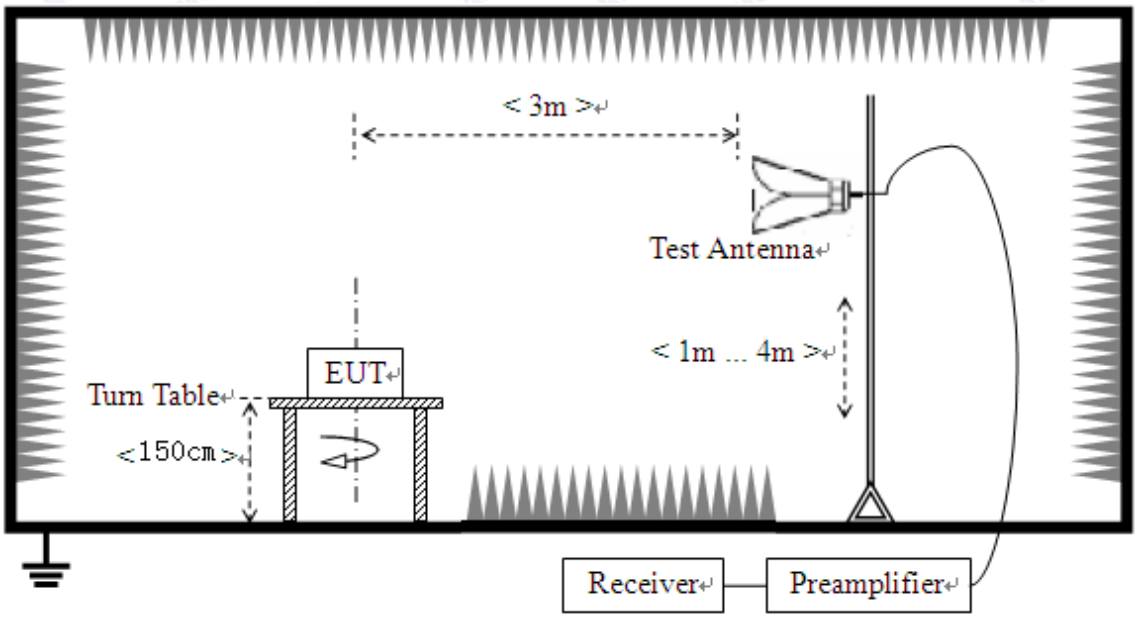
1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to1GHz



3) For radiated emissions above 1GHz



The RF absorbing material used on the reference ground plane and on the turntable have a maximum height (thickness) of 30 cm (12 in) and have a minimum-rated attenuation of 20 dB at all frequencies from 1 GHz to 18 GHz. Test site have a minimum area of the ground plane covered with RF absorbing material as specified in Figure 6 of ANSI C63.4: 2014.

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to

the standards: ANSI C63.10 (2013). For radiated emissions below or equal to 1GHz, The EUT was set-up on insulator 80cm above the Ground Plane, For radiated emissions above 1GHz, The EUT was set-up on insulator 150cm above the Ground Plane. The set-up and test methods were according to ANSI C63.10

For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

The EUT is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading

For the Test Antenna:

(a) In the frequency range of 9kHz to 30MHz, magnetic field is measured with Loop Test Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.
(b) In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Place the test antenna at 3m away from area of the EUT, while keeping the test antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The test antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final test antenna elevation shall be that which maximizes the emissions. The test antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. The emission levels at both horizontal and vertical polarizations should be tested.

2.9.3 Test Result

According to ANSI C63.4 selection 4.2.2, because of peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak (or average) detector, the measurement data from a spectrum analyzer peak detector will represent the worst-case results, if the peak measured value complies with the quasi-peak limit, it is unnecessary to perform an quasi-peak measurement.

The measurement results are obtained as below:

$E\ [dB\mu V/m] = U_R + A_T + A_{Factor}\ [dB]$; $A_T = L_{Cable\ loss}\ [dB] - G_{preamp}\ [dB]$

A_T: Total correction Factor except Antenna

U_R: Receiver Reading

G_{preamp}: Preamplifier Gain

A_{Factor}: Antenna Factor at 3m

During the test, the total correction Factor A_T and A_{Factor} were built in test software.

Note1: All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

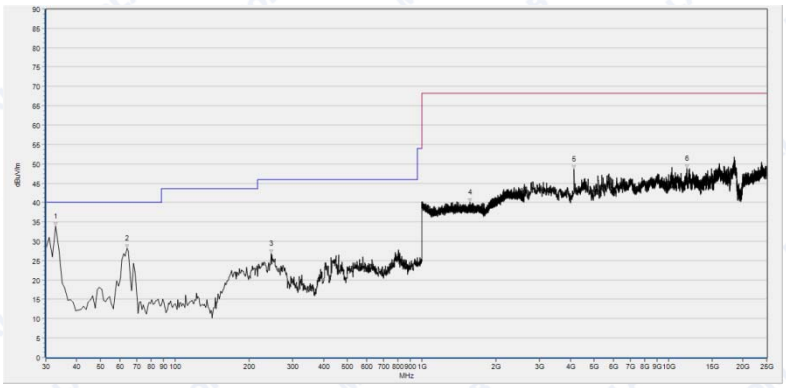
Note2: The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

For the frequency, which started from 25G to 40G, was pre-scanned and the result which was 10dB lower than the limit.

2.9.3.1 802.11a-20MHz Test mode

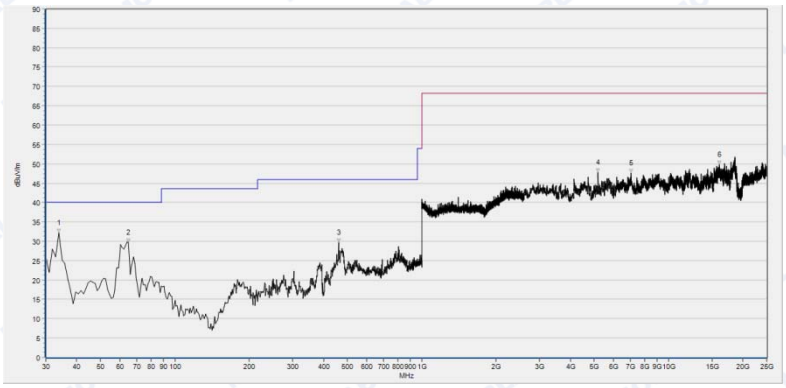
A. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 36



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
32.913	33.78	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
63.984	28.08	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
245.556	26.87	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1570.323	40.06	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
4145.909	48.65	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
11853.051	48.74	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

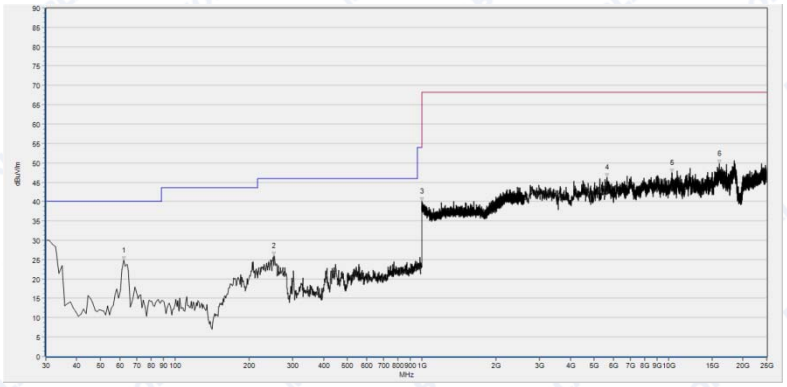
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
33.884	32.11	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
64.955	29.60	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
460.140	29.60	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
5176.515	47.81	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
7049.530	47.57	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
16033.727	49.74	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

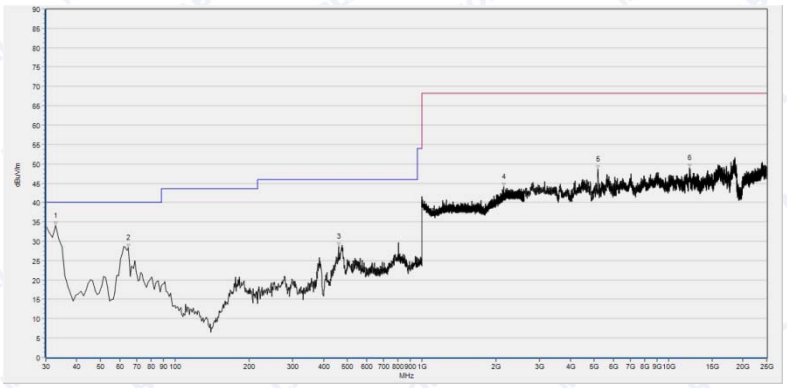
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 44



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
62.042	24.76	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
252.352	25.93	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1002.668	40.06	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5638.048	46.28	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
10338.508	47.48	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
16038.208	49.80	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

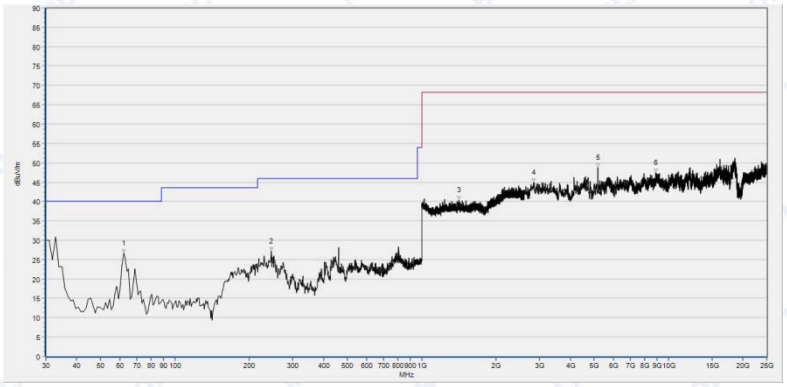
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
32.913	36.11	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
64.955	28.25	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
460.140	28.73	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2154.518	44.14	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5185.477	48.67	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
12148.790	48.87	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

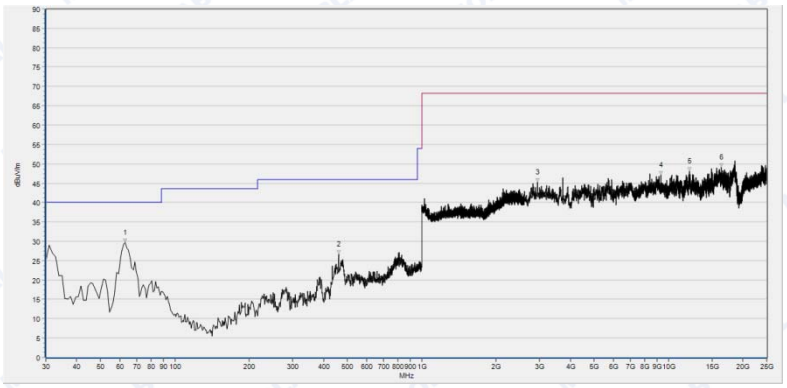
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 48



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
62.042	26.70	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
245.556	27.20	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1417.206	40.32	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
2841.968	44.84	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5176.515	48.73	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
8873.255	47.35	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

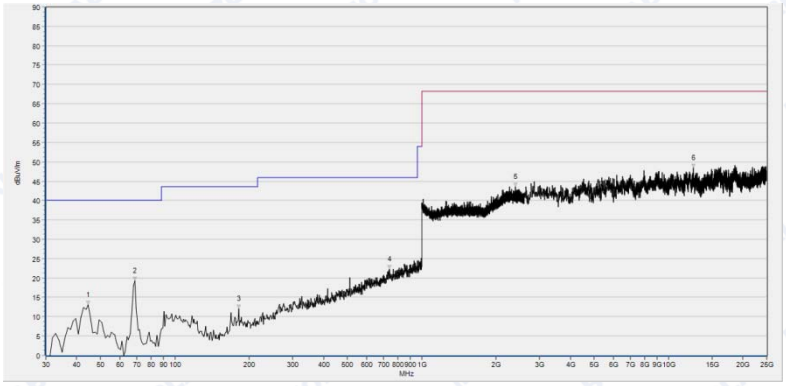
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
63.013	29.61	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
460.140	26.63	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2940.548	45.32	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
9321.344	47.17	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
12148.790	48.14	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
16374.275	49.10	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

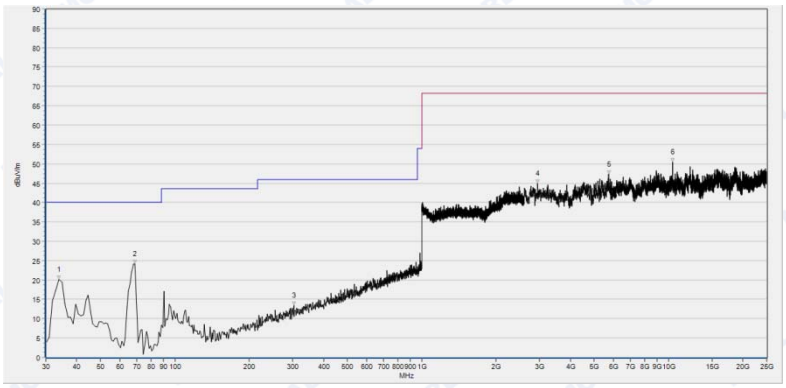
(Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 52



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
44.565	13.11	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
68.839	19.24	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
181.471	12.14	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
738.809	22.23	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2397.799	43.63	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
12587.918	48.51	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

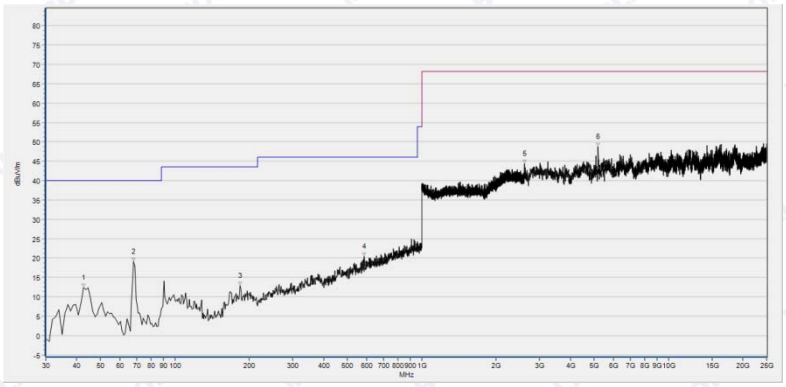
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
33.884	20.12	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
68.839	24.21	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
302.843	13.36	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2949.510	44.87	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5718.704	47.23	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
10365.393	50.50	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

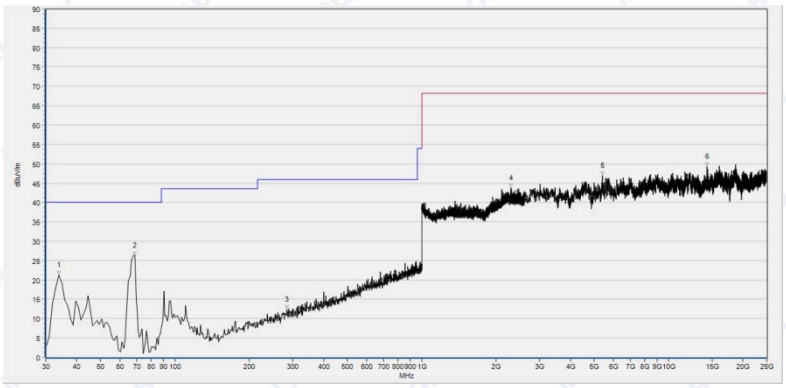
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 60



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
42.623	12.29	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
67.868	18.99	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
183.413	12.81	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
585.395	20.39	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2604.481	44.45	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5185.477	48.81	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

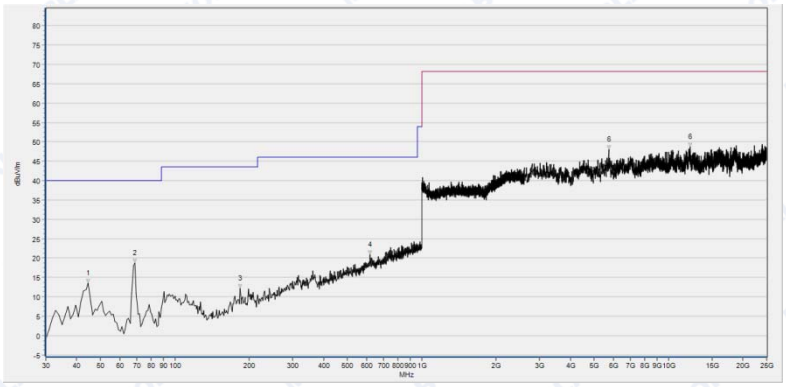
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
33.884	21.29	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
68.839	26.29	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
283.423	12.37	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2294.298	43.68	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5405.041	46.95	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
14353.391	49.35	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

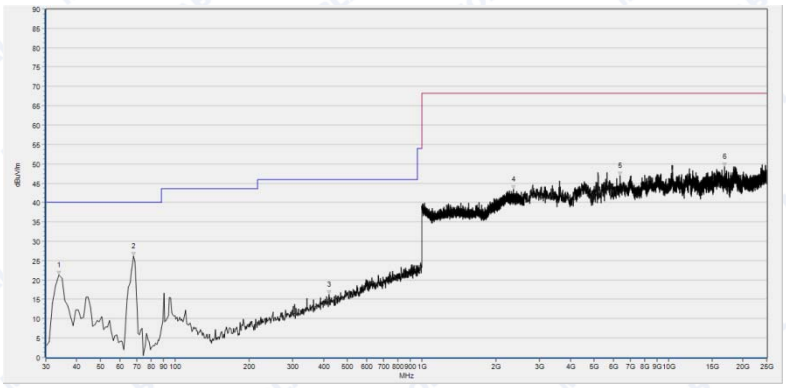
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 64



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
44.565	13.60	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
68.839	18.75	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
183.413	12.19	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
617.437	20.87	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
12207.041	48.76	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5723.185	48.11	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

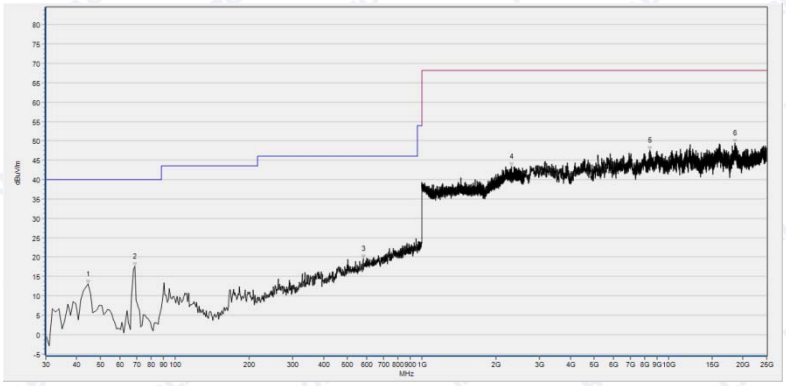
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
33.884	21.24	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
67.868	26.23	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
420.330	16.34	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2347.649	43.45	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
6372.915	46.97	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
16826.845	49.36	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

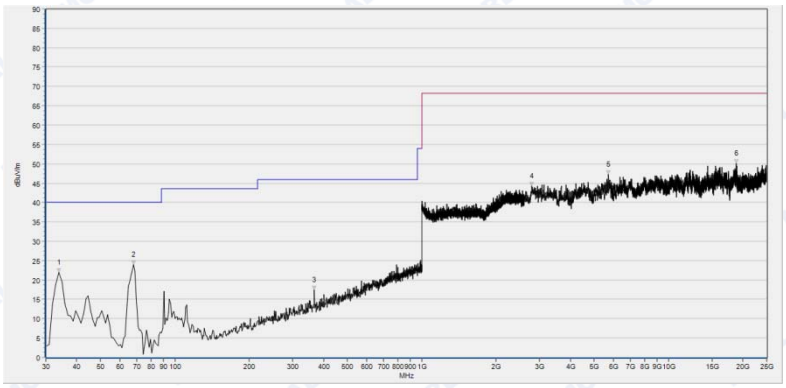
(Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 100



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
44.565	12.96	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
68.839	17.48	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
579.570	19.63	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2306.035	43.38	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
8393.799	47.55	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18596.799	49.35	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

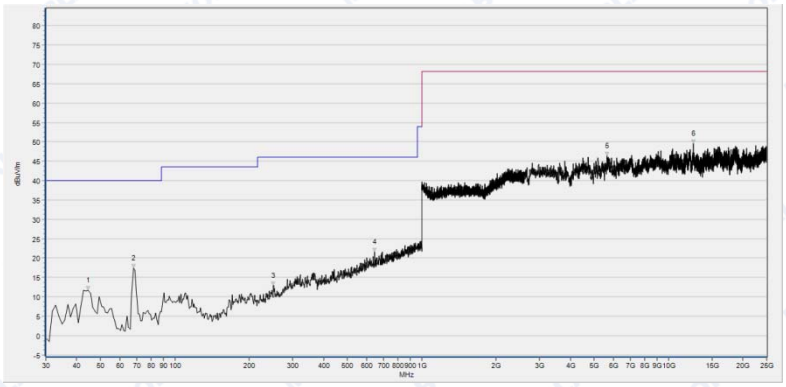
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
33.884	21.90	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
67.868	23.98	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
366.927	17.35	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2792.679	44.20	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5714.223	47.26	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
18847.730	50.17	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

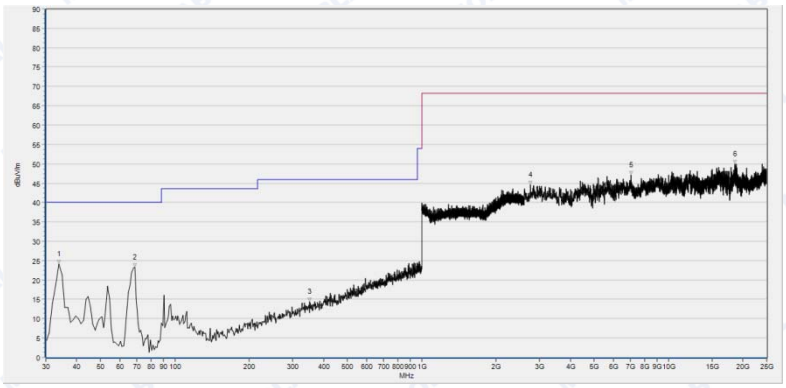
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 120



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
44.565	11.64	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
67.868	17.36	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
250.410	12.94	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
644.625	21.63	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
5642.529	46.40	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
12610.322	49.65	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

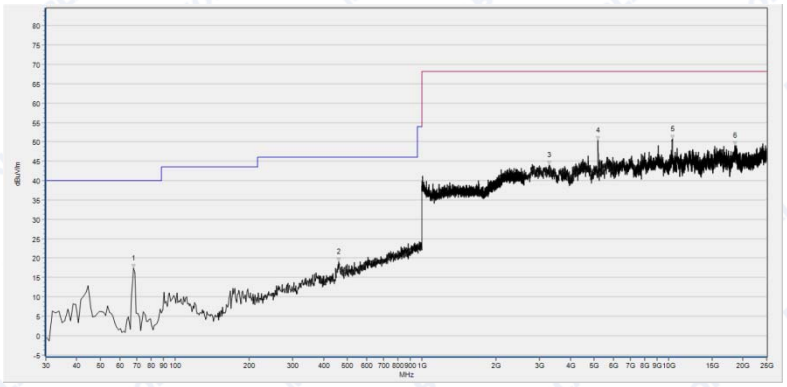
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
33.884	24.17	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
68.839	23.31	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
351.391	14.42	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2761.312	44.63	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
7049.530	47.08	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
18574.395	49.94	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

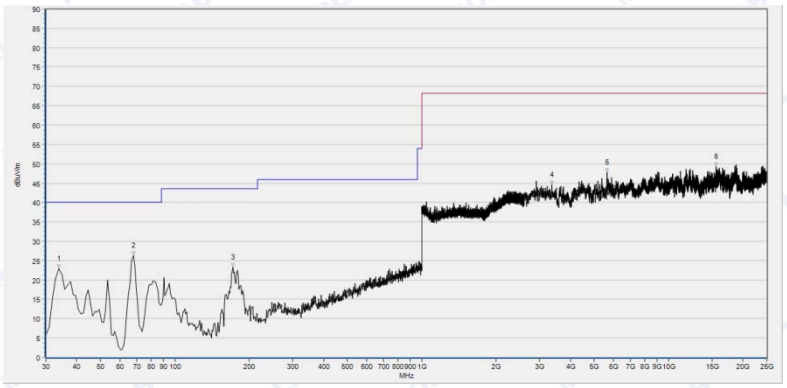
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 140



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
67.868	17.35	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
461.111	19.03	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
3276.615	44.01	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5176.515	50.43	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
10356.431	50.82	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18578.876	49.04	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



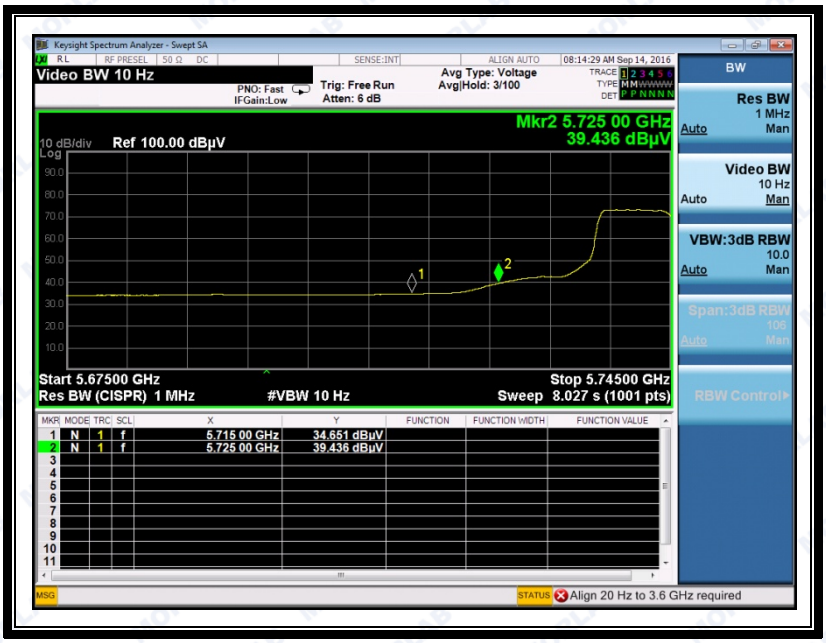
Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
33.884	22.89	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
67.868	26.26	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
171.762	23.35	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
3361.752	44.53	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5642.529	47.70	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
15554.271	49.29	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

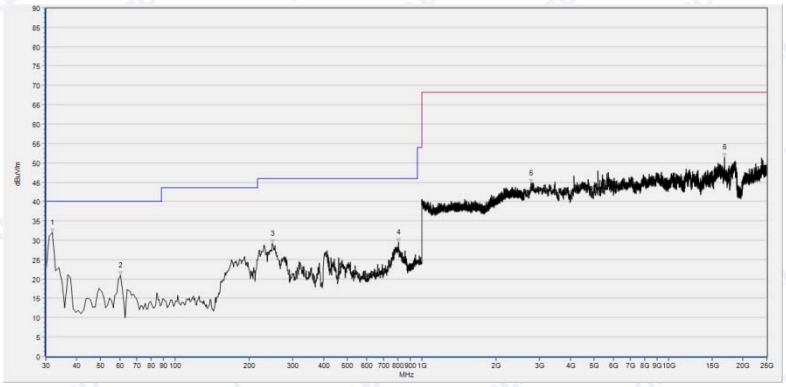
Plots for Channel = 149

Channel	Frequency (MHz)	Antenna Horiz./ Vert.	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
149	5725.00	Horizontal	55.86	-50.65	32.11	37.32	78.2	Pass
149	5725.00	Vertical	39.44	-50.65	32.11	20.90	78.2	Pass

(Channel = 149 Horizontal @ 802.11a)

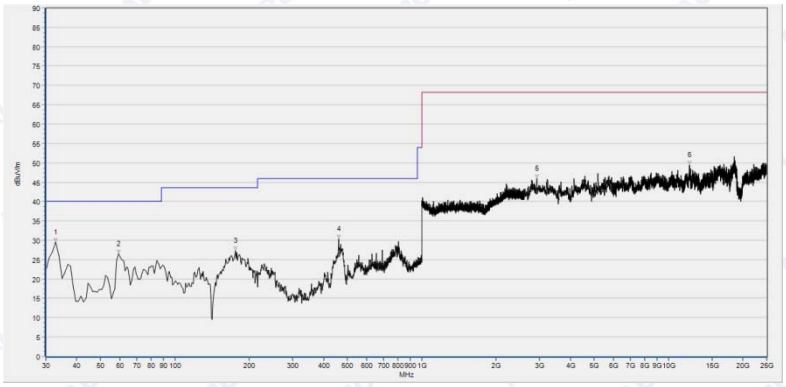


(Channel = 149 Vertical @ 802.11a)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
31.942	31.96	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
60.100	20.90	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
248.468	29.23	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
804.835	29.46	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2774.755	44.76	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
16862.693	51.49	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

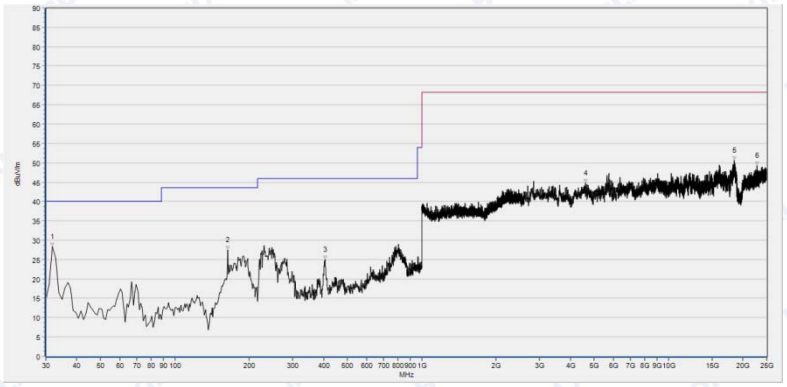
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
32.913	29.53	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
59.129	26.49	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
175.646	27.39	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
460.140	30.29	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2922.625	45.86	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
12153.271	49.45	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

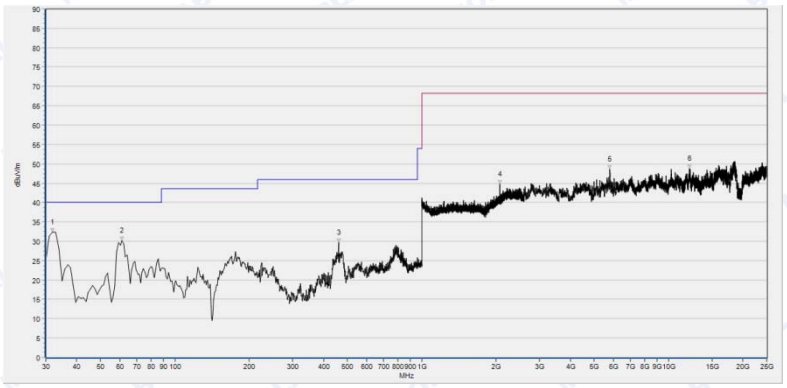
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 157



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
31.942	28.28	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
163.994	27.56	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
405.766	24.95	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
4602.961	44.82	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18431.006	50.61	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
22893.979	49.22	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
31.942	32.27	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
61.071	30.24	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
460.140	29.62	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2077.693	44.69	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5785.917	48.62	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
12135.347	48.75	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

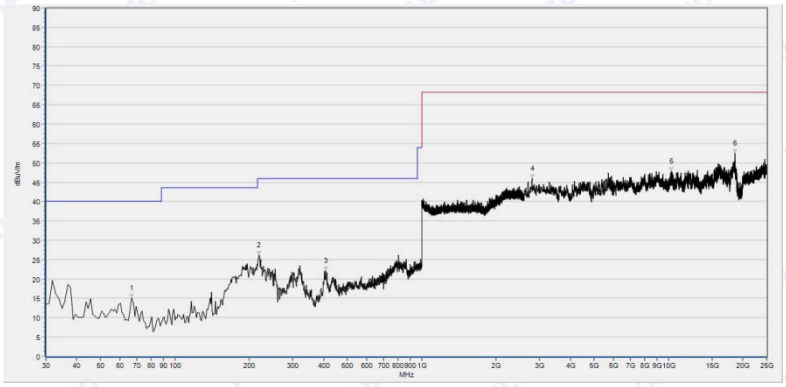
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 165

Channel	Frequency (MHz)	Antenna Horiz./ Vert.	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
165	5850.00	Horizontal	46.42	-50.65	32.11	26.74	78.2	Pass
165	5850.00	Vertical	35.48	-50.65	32.11	15.42	78.2	Pass

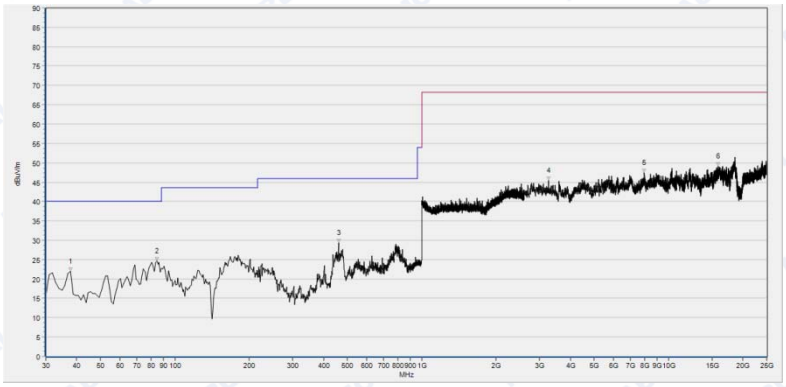
(Channel = 165 Horizontal @ 802.11a)

(Channel = 165 Vertical @ 802.11a)



Fre. (MHz)	Pk (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
66.897	15.10	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
219.339	26.22	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
407.708	22.08	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2797.159	45.85	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
10284.737	47.74	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18578.876	52.44	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



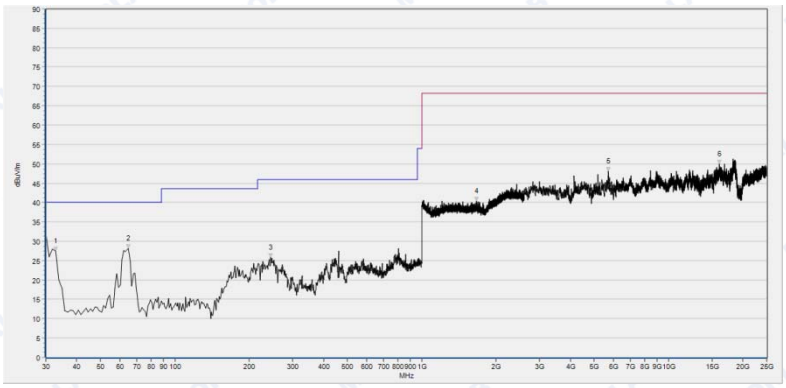
Fre. (MHz)	Pk (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
37.768	21.94	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
84.374	24.68	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
460.140	29.41	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
3263.173	45.37	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
7977.075	47.45	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
15903.781	49.06	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

2.9.3.2 802.11ac-20MHz Test mode

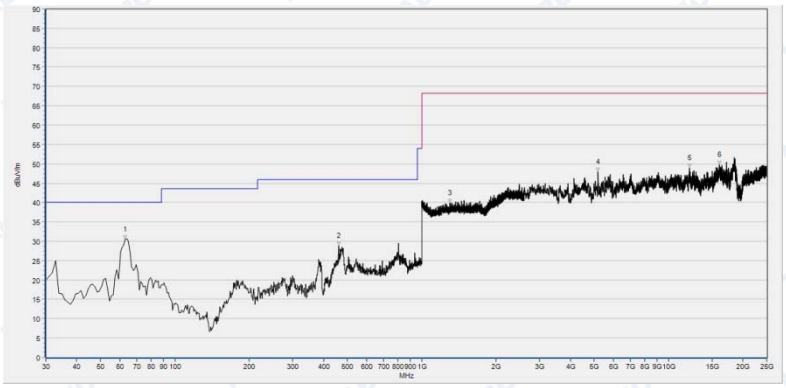
A. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 36



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
32.913	27.41	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
64.955	28.13	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
244.585	25.75	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1663.688	40.35	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5714.223	48.04	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
16038.208	49.96	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

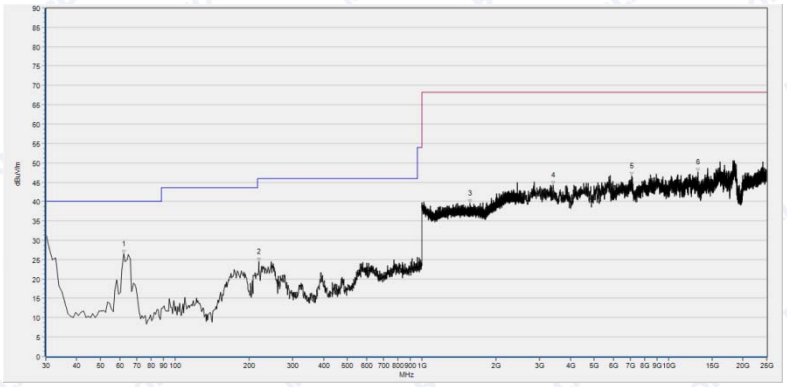
(Antenna Horizontal, 30MHz to 40GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
63.013	30.55	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
460.140	28.86	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
1299.833	39.89	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5180.996	47.92	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
12166.713	48.86	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
16024.765	49.79	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

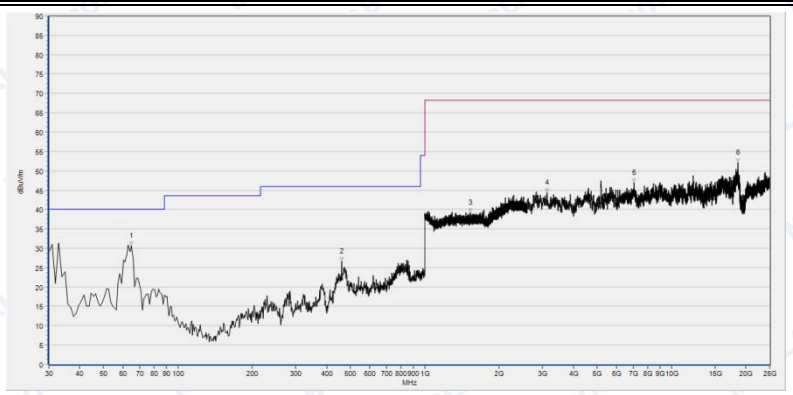
(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 44



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
62.042	26.47	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
218.368	24.47	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1567.122	39.53	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
3415.523	44.25	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
7107.782	46.65	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
13165.953	47.66	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

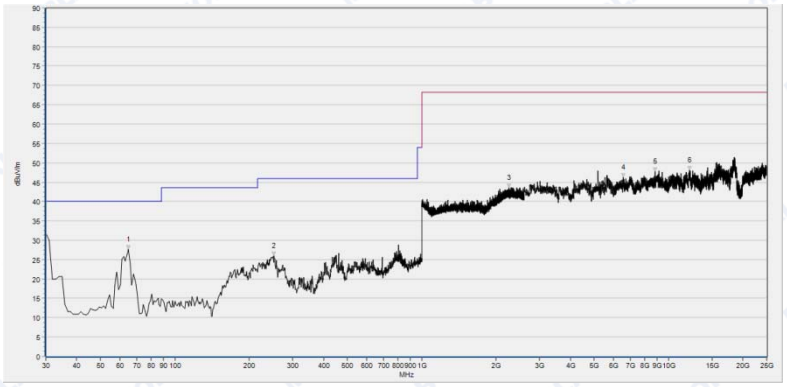
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
64.955	30.62	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
460.140	26.62	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
1535.112	39.22	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
3124.265	44.44	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
7067.453	46.95	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
18583.357	52.08	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

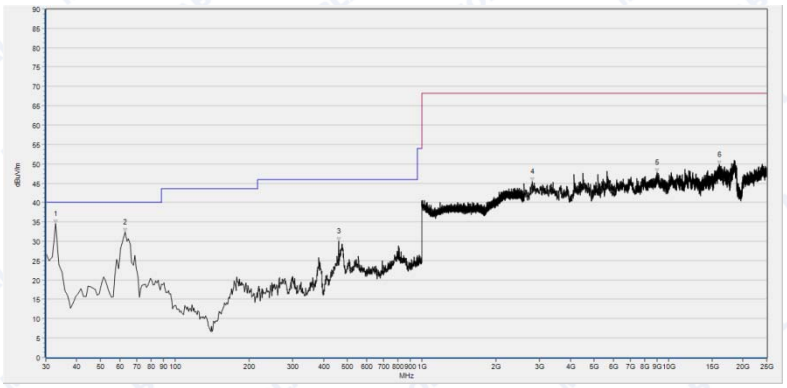
(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 48



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
64.955	27.62	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
252.352	25.97	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2261.220	43.61	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
6570.074	46.22	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
8810.522	47.70	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
12171.194	48.03	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

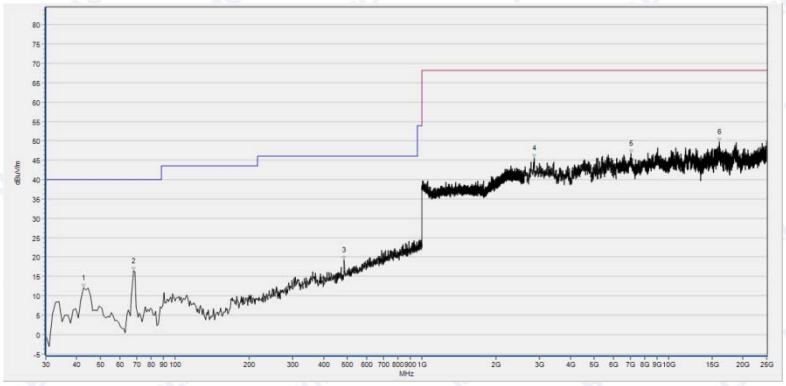
(Antenna Horizontal, 30MHz to 40GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
32.913	34.47	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
63.013	32.36	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
460.140	29.96	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2810.602	45.48	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
8998.720	47.82	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
16083.017	49.73	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

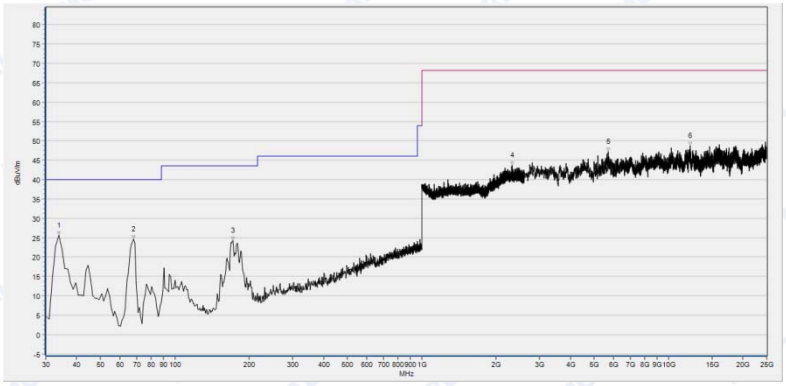
(Antenna Vertical, 30MHz to 40GHz)

Plots for Channel = 52



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
42.623	12.09	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
67.868	16.43	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
485.385	19.15	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2850.930	45.57	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
7045.049	46.79	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
16096.459	49.77	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

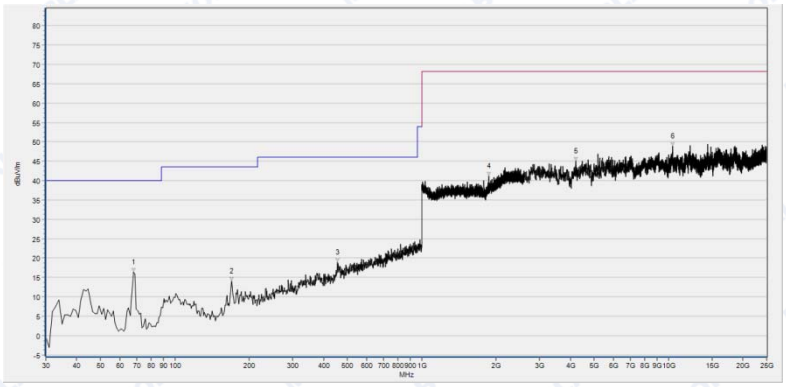
(Antenna Horizontal, 30MHz to 40GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
33.884	25.61	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
67.868	24.58	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
171.762	24.24	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
2323.641	43.74	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5709.742	47.18	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
12260.812	48.77	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

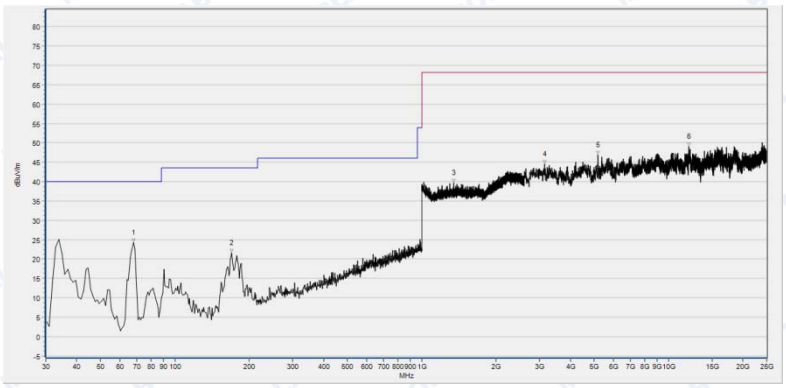
(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 60



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
67.868	16.43	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
169.820	14.02	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
454.314	18.88	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1870.157	41.19	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
4208.642	45.04	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
10360.912	48.88	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

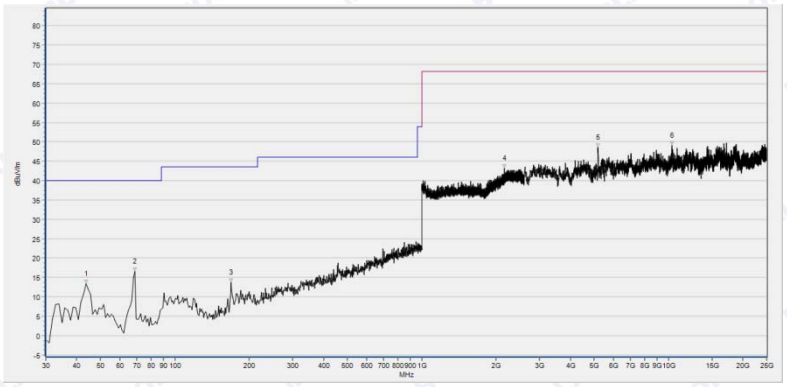
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
67.868	24.34	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
169.820	21.57	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
1350.517	39.63	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
3142.188	44.58	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5185.477	46.87	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
12090.538	49.02	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

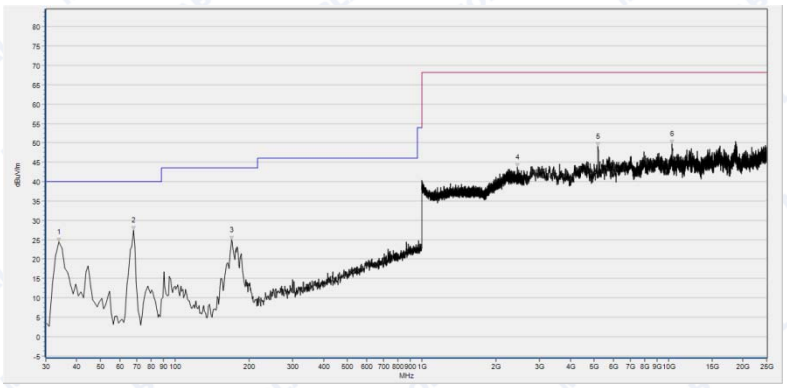
(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 64



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
44.565	12.72	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
67.868	15.30	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
445.576	17.15	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2413.805	44.94	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
4517.824	46.14	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
10275.775	48.24	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

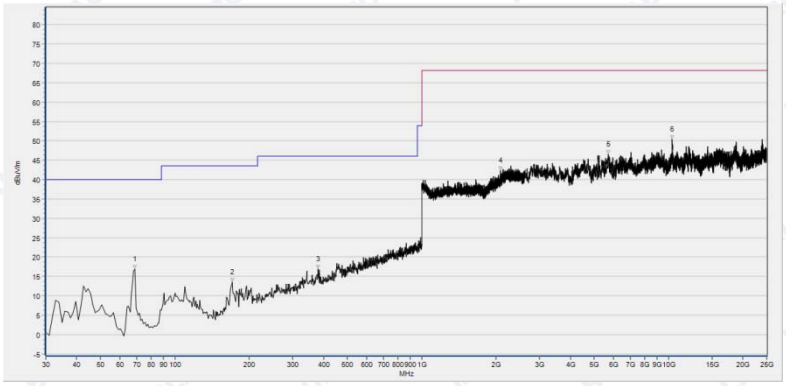
(Antenna Horizontal, 30MHz to 40GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
33.884	24.44	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
67.868	27.52	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
169.820	24.91	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
2441.014	43.79	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5180.996	49.15	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
10347.469	49.71	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

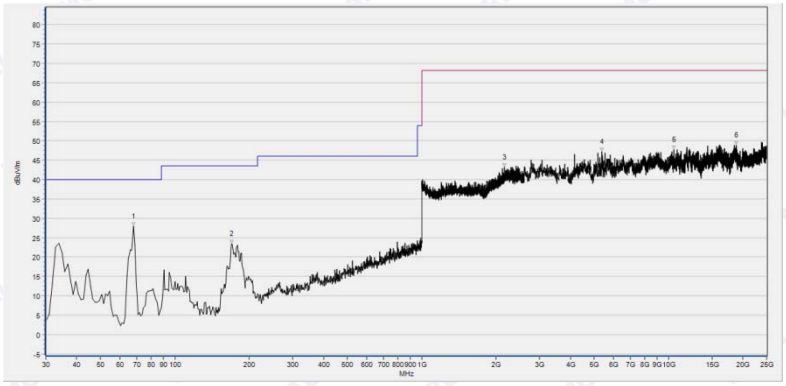
(Antenna Vertical, 30MHz to 40GHz)

Plots for Channel = 100



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
68.839	16.92	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
170.791	13.57	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
380.521	16.97	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2090.497	42.41	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5709.742	46.53	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
10351.950	50.33	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

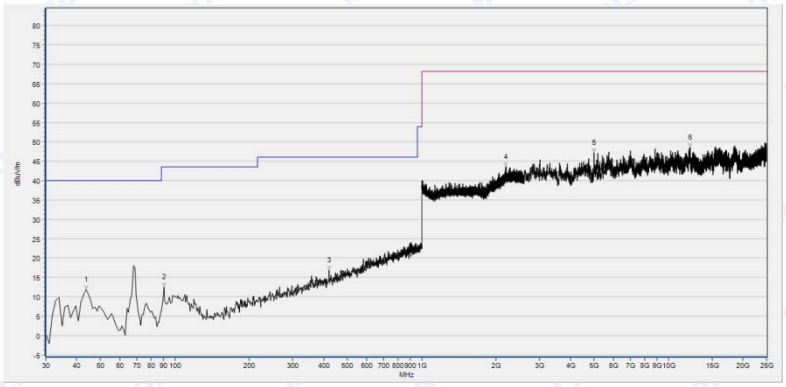
(Antenna Horizontal, 30MHz to 40GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
67.868	27.89	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
169.820	23.48	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
2156.119	43.14	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5364.713	47.16	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
10526.705	47.68	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
18771.554	48.86	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

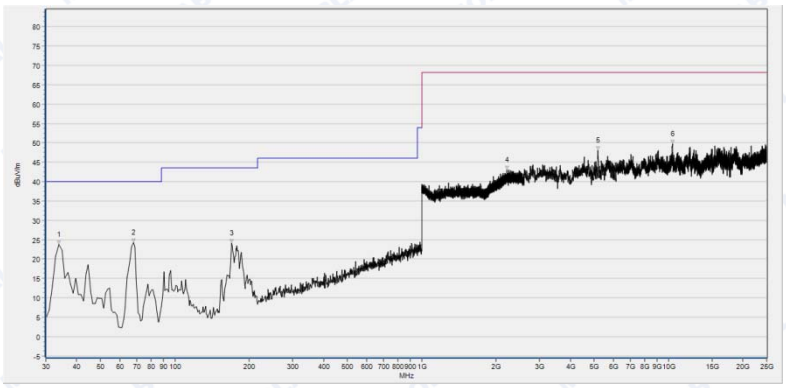
(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 120



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
43.594	11.91	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
90.200	12.46	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
421.301	16.83	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2194.532	43.59	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
4992.799	47.21	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
12247.369	48.58	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

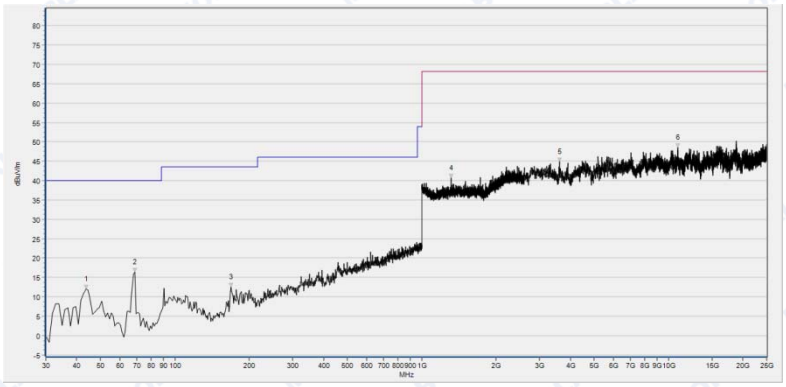
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
33.884	23.84	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
67.868	24.23	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
169.820	24.03	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
2216.939	43.09	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5180.996	48.09	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
10360.912	49.72	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

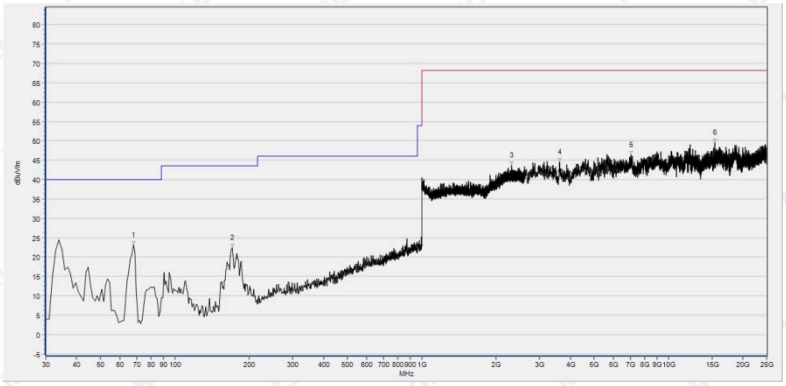
(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 140



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
43.594	12.01	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
68.839	16.39	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
168.849	12.54	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
1315.839	40.68	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
3608.202	44.85	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
10912.062	48.64	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



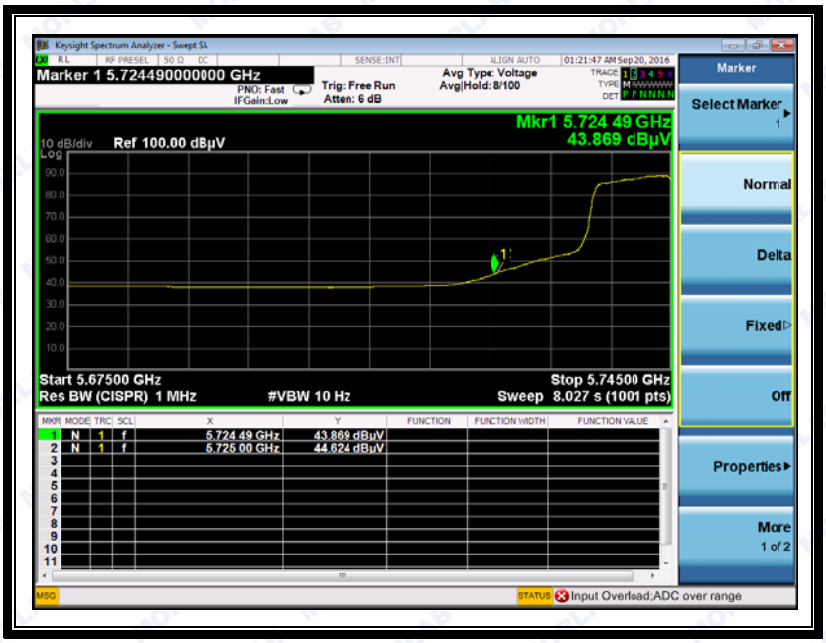
Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
67.868	23.17	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
170.791	22.43	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
2317.239	43.76	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
3626.125	44.50	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
7067.453	46.37	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
15383.997	49.53	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

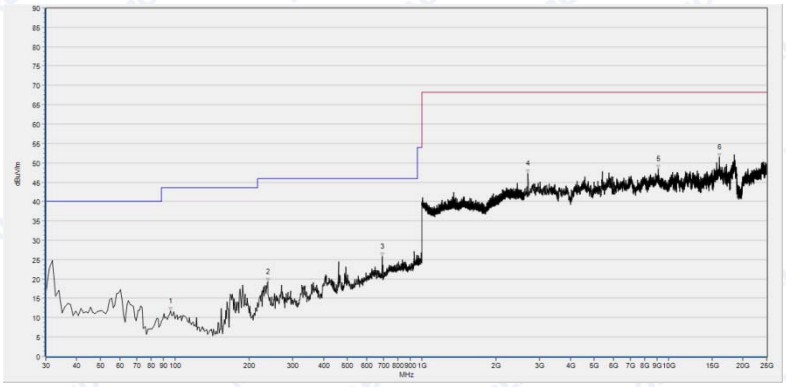
Plots for Channel = 149

Channel	Frequency (MHz)	Antenna Horiz./ Vert.	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
149	5724.63	Horizontal	60.42	-50.65	32.11	41.88	78.2	Pass
149	5724.49	Vertical	43.87	-50.65	32.11	25.33	78.2	Pass

(Channel = 149 Horizontal @ 802.11ac)

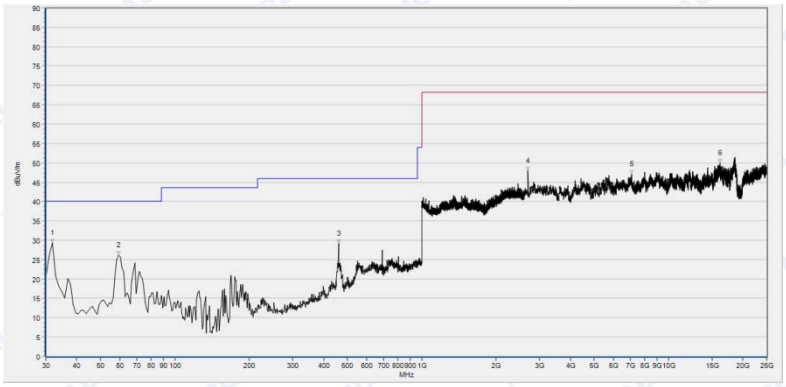


(Channel = 149 Vertical @ 802.11ac)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
96.026	11.66	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
237.788	19.20	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
690.260	25.88	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2694.099	47.20	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
9106.261	48.37	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
16033.727	51.46	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

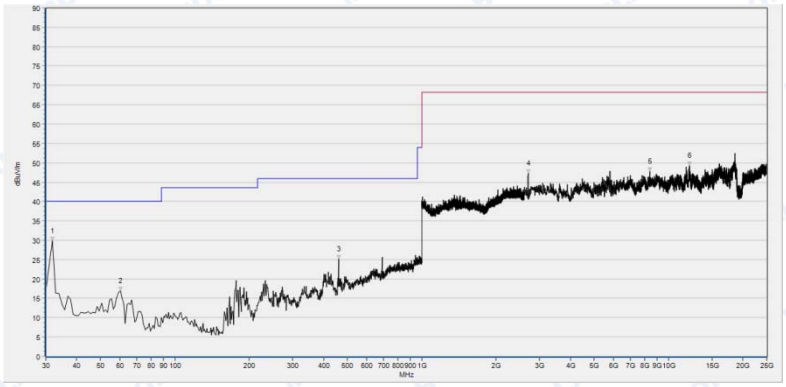
(Antenna Horizontal, 30MHz to 40GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
31.942	29.33	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
59.129	26.14	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
460.140	29.17	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2694.099	47.87	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
7076.415	47.05	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
16195.039	50.01	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

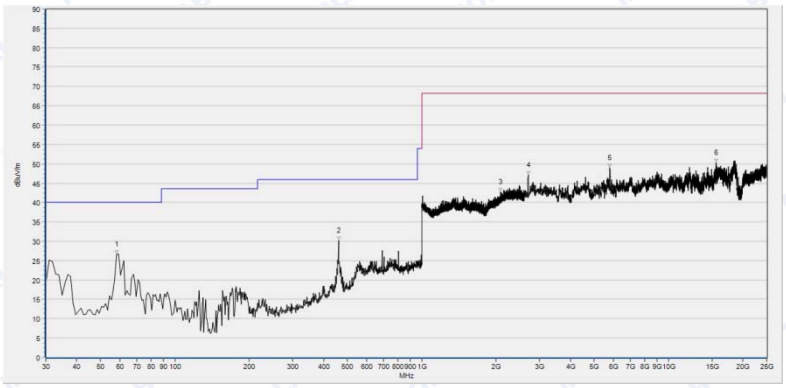
(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 157



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
31.942	29.81	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
60.100	17.00	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
460.140	25.17	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2698.580	47.33	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
8375.875	47.70	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
12135.347	49.35	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
58.158	26.63	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
460.140	30.09	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2086.229	42.70	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
2698.580	47.06	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5785.917	49.02	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
15540.828	50.21	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)