



中国认可
国际互认
检测
TESTING
CNAS L2264

RF TEST REPORT

Applicant ZTE Corporation
FCC ID SRQ-WF821
Product LTE router
Brand ZTE
Model WF821/WF821+
Report No. RXA1701-0006RF02R1
Issue Date April 13, 2017

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15C (2016)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Performed by: Xianqing Li

Approved by: Kai Xu

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Summary of measurement results

Number	Summary of measurements of results	Clause in FCC rules	Verdict
1	Maximum Average conducted output power	15.247(b)(3)	PASS
2	6 dB bandwidth	15.247(a)(2)	PASS
3	Maximum power spectral density	15.247(e)	PASS
4	Band Edge	15.247(d)	PASS
5	Spurious RF Conducted Emissions	15.247(d)	PASS
6	Radiated Emissions in restricted frequency bands	15.247(d),15.205,15.209	PASS
7	Radiated Emissions	15.247(d),15.205,15.209	PASS
8	Conducted Emissions	15.207	PASS
Date of Testing: February 16, 2017 ~ March 1, 2017			



1. Test Laboratory

1.1. Notes of the test report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein .Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above. This report must not be used by the client to claim product certification, approval, or endorsement by CNAS or any government agencies.

1.2. Test facility

CNAS (accreditation number: L2264)

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS).

FCC (recognition number is 428261)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

IC (recognition number is 8510A)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement.

VCCI (recognition number is C-4595, T-2154, R-4113, G-766)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Japan to perform electromagnetic emission measurement.

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.



1.3. Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong
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Website: <http://www.ta-shanghai.com>
E-mail: xukai@ta-shanghai.com

2. General Description of Equipment under Test

Client Information

Applicant	ZTE Corporation
Applicant address	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen Guangdong P.R.China
Manufacturer	ZTE Corporation
Manufacturer address	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen Guangdong P.R.China

General information

EUT Description	
Model:	WF821/WF821+
Product SN:	6611016350400055
Hardware Version:	v3.3
Software Version:	OLO_PER_WF821+V1.0.0B03
Power Supply:	AC adapter
Antenna Type:	Internal Antenna
Antenna Connector:	A permanently attached antenna (meet with the standard FCC Part 15.203 requirement)
Antenna Gain:	Antenna 1: 2.5 dBi Antenna 2: 2.5 dBi
Directional Gain:	2.5 dBi
additional beamforming gain:	0 dB
Test Mode:	802.11b 802.11g, 802.11n(HT20/HT40);
Modulation Type:	802.11b: DSSS; 802.11g/n(HT20/HT40): OFDM
Max. Conducted Power	Wi-Fi 2.4G : 14.07dBm
Operating Frequency Range(s)	802.11b/g/n(HT20/HT40): 2412 ~ 2462 MHz 802.11n(HT40): 2422 ~ 2452 MHz
EUT Accessory	
Adapter 1	Manufacturer: AQUILSTAR PRECISION INDUSTRIAL (SHENZHEN) CO., LTD Model: ASSA65A-120100
Adapter 2	Manufacturer: TRANSIN Model: TS-A012-120010A8H
Cable	Model: UTP CAT5E
<p>Note: 1. The information of the EUT is declared by the manufacturer. Please refer to the specifications or user manual for details.</p> <p>2. There is more than one adapter, each one should be applied throughout the compliance test respectively, however, only the worst case (Adapter 1) will be recorded in this report.</p>	



3. Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standards

- **FCC CFR47 Part 15C (2016) Radio Frequency Devices**
- **ANSI C63.10 (2013)**
- **KDB 558074 D01 DTS Meas Guidance v03r05**
- **KDB 662911 D01 Multiple Transmitter Output v02r01**

4. Test Configuration

Test Mode

The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded.

In order to find the worst case condition, Pre-tests are needed at the presence of different data rate. Preliminary tests have been done on all the configuration for confirming worst case. Data rate below means worst-case rate of each test item.

Worst-case data rates are shown as following table.

Band	Data Rate		
	Antenna 1	Antenna 2	MIMO
802.11b	1 Mbps	1 Mbps	/
802.11g	6 Mbps	6 Mbps	/
802.11n HT20	MCS0	MCS0	MCS8
802.11n HT40	MCS0	MCS0	MCS8

The worst case Antenna mode for each of the following tests for Wi-Fi:

Test Cases	SISO		MIMO
	Antenna 1	Antenna 2	
Peak conducted output power	802.11b/g	802.11b/g	802.11n HT20/40
6 dB bandwidth	802.11b/g	802.11b/g	802.11n HT20/40
Maximum power spectral density	802.11b/g	802.11b/g	802.11n HT20/40
Band Edge	802.11b/g	802.11b/g	802.11n HT20/40
Spurious RF Conducted Emissions	802.11b/g	802.11b/g	802.11n HT20/40
Radiated Emissions in restricted frequency bands	802.11 b/g	---	802.11n HT20/40
Radiated Emissions	802.11 b/g	---	802.11n HT20/40
Conducted Emissions	802.11 b/g	---	

5. Test Case Results

5.1. Average Power Output –Conducted

Ambient condition

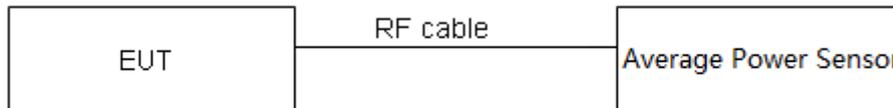
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

During the process of the testing, The EUT was connected to Average power meter with a known loss. The EUT is max power transmission with proper modulation. The Average detector is used. We use Maximum Average Conducted Output Power Level Method in KDB 558074 D01/KDB662911 D01 for this test.

The conducted Power is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically.

Test Setup



Limits

Rule Part 15.247 (b) (3) specifies that " For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz: 1 Watt."

Average Output Power	$\leq 1W$ (30dBm)
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.44$ dB.

Test Results

Antenna 1

Network Standards		Carrier frequency (MHz)	Average Output Power (dBm)	Limit (dBm)	Conclusion
SISO	802.11b	2412	11.54	30	PASS
		2437	13.01	30	PASS
		2462	12.20	30	PASS
	802.11g	2412	8.24	30	PASS
		2437	9.90	30	PASS
		2462	9.28	30	PASS

Antenna 2

Network Standards		Carrier frequency (MHz)	Average Output Power (dBm)	Limit (dBm)	Conclusion
SISO	802.11b	2412	10.76	30	PASS
		2437	11.66	30	PASS
		2462	14.07	30	PASS
	802.11g	2412	7.62	30	PASS
		2437	8.55	30	PASS
		2462	10.73	30	PASS

MIMO

Network Standards	Carrier frequency (MHz)	Average Output Power (dBm)			Limit (dBm)	Conclusion
		Antenna 1	Antenna 2	MIMO		
802.11n HT20	2412	7.54	6.52	10.07	30	PASS
	2437	8.92	7.81	11.41	30	PASS
	2462	8.49	9.42	11.99	30	PASS
802.11n HT40	2422	8.54	7.46	11.04	30	PASS
	2437	8.71	8.31	11.52	30	PASS
	2452	8.09	9.42	11.82	30	PASS

5.2. 6dB Bandwidth

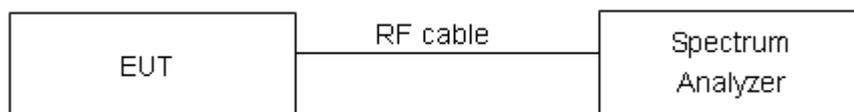
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable. RBW is set to 100 kHz; VBW is set to 300 kHz on spectrum analyzer.

Test Setup



Limits

Rule Part 15.247 (a) (2) specifies that “Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.”

minimum 6 dB bandwidth	≥ 500 kHz
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 936$ Hz.

Test Results:

Antenna 1

Network Standards		Carrier frequency (MHz)	Minimum 6 dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Conclusion
SISO	802.11b	2412	10.11	13.962	500	PASS
		2437	10.10	13.954	500	PASS
		2462	10.10	14.029	500	PASS
	802.11g	2412	16.16	16.543	500	PASS
		2437	16.13	16.518	500	PASS
		2462	16.13	16.545	500	PASS
MIMO	802.11n HT20	2412	16.72	17.695	500	PASS
		2437	17.32	17.685	500	PASS
		2462	16.73	17.712	500	PASS
	802.11n HT40	2422	35.79	36.165	500	PASS
		2437	35.97	36.245	500	PASS
		2452	36.50	36.471	500	PASS

Antenna 2

Network Standards		Carrier frequency (MHz)	Minimum 6 dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Conclusion
SISO	802.11b	2412	9.625	13.744	500	PASS
		2437	10.12	14.038	500	PASS
		2462	10.08	13.970	500	PASS
	802.11g	2412	15.77	16.478	500	PASS
		2437	16.40	16.554	500	PASS
		2462	15.93	16.431	500	PASS
MIMO	802.11n HT20	2412	16.38	17.629	500	PASS
		2437	17.61	17.717	500	PASS
		2462	16.36	17.594	500	PASS
	802.11n HT40	2422	35.83	36.114	500	PASS
		2437	36.14	36.376	500	PASS
		2452	35.80	36.166	500	PASS



Antenna 1

SISO

802.11b, Carrier frequency (MHz): 2412



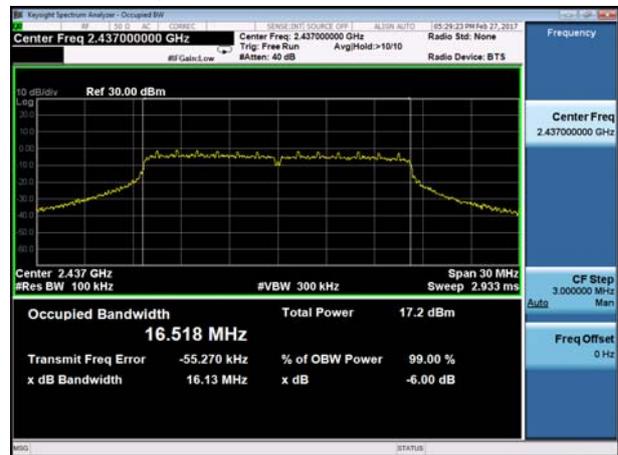
802.11g, Carrier frequency (MHz): 2412



802.11b, Carrier frequency (MHz): 2437



802.11g, Carrier frequency (MHz): 2437



802.11b, Carrier frequency (MHz): 2462



802.11g, Carrier frequency (MHz): 2462



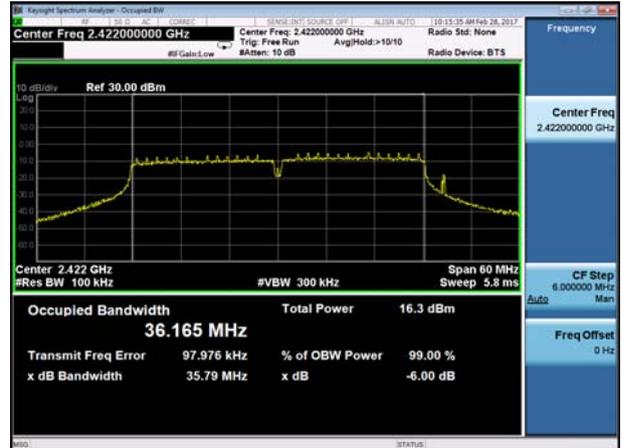


MIMO

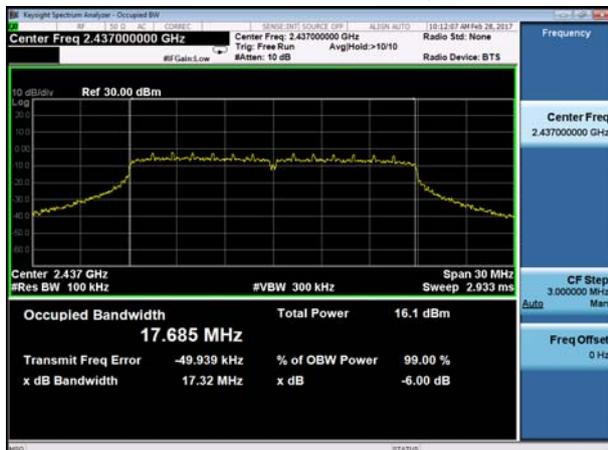
802.11n(HT20), Carrier frequency (MHz): 2412



802.11n(HT40), Carrier frequency (MHz): 2422



802.11n(HT20), Carrier frequency (MHz): 2437



802.11n(HT40), Carrier frequency (MHz): 2437



802.11n(HT20), Carrier frequency (MHz):2462



802.11n(HT40), Carrier frequency (MHz):2452





Antenna 2

SISO

802.11b, Carrier frequency (MHz): 2412



802.11g, Carrier frequency (MHz): 2412



802.11b, Carrier frequency (MHz): 2437



802.11g, Carrier frequency (MHz): 2437



802.11b, Carrier frequency (MHz): 2462



802.11g, Carrier frequency (MHz): 2462





MIMO

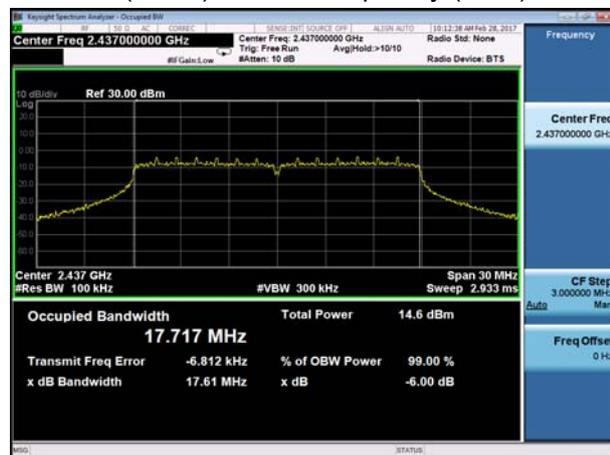
802.11n(HT20), Carrier frequency (MHz): 2412



802.11n(HT40), Carrier frequency (MHz): 2422



802.11n(HT20), Carrier frequency (MHz): 2437



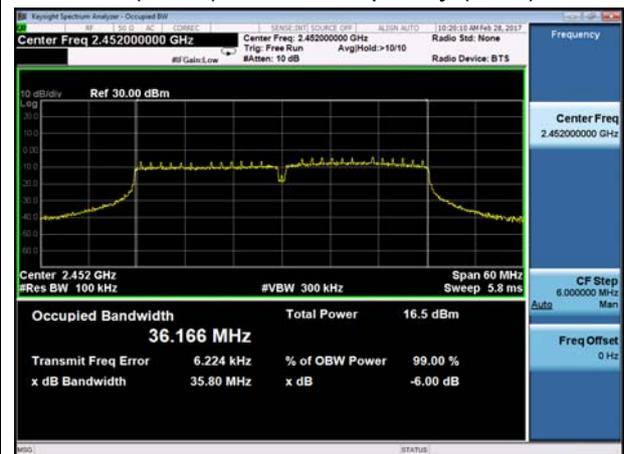
802.11n(HT40), Carrier frequency (MHz): 2437



802.11n(HT20), Carrier frequency (MHz):2462



802.11n(HT40), Carrier frequency (MHz):2452



5.3. Band Edge

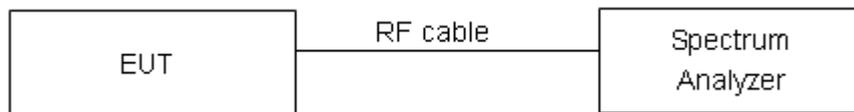
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable the band edge of the lowest and highest channels were measured. The peak detector is used and RBW is set to 100 kHz and VBW is set to 300 kHz on spectrum analyzer. Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

Rule Part 15.247(d) specifies that “In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.”

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
2GHz-3GHz	1.407 dB

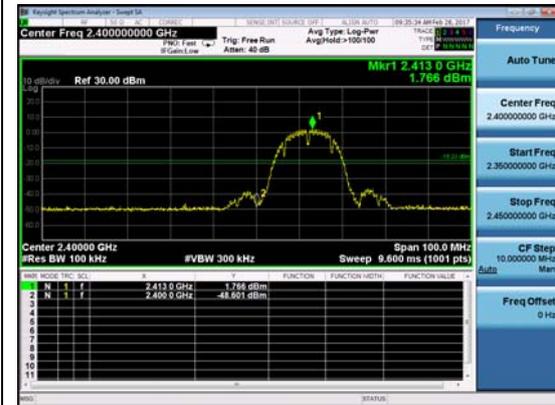


Test Results: PASS

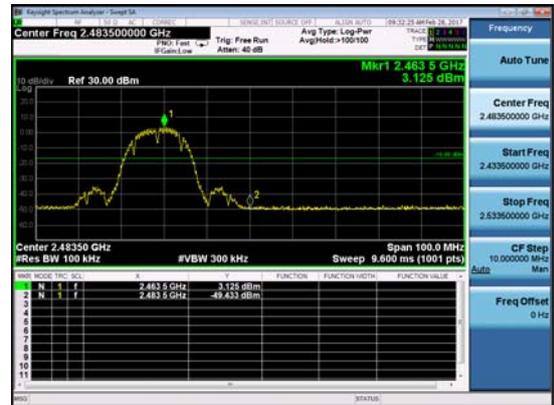
Antenna 1

SISO

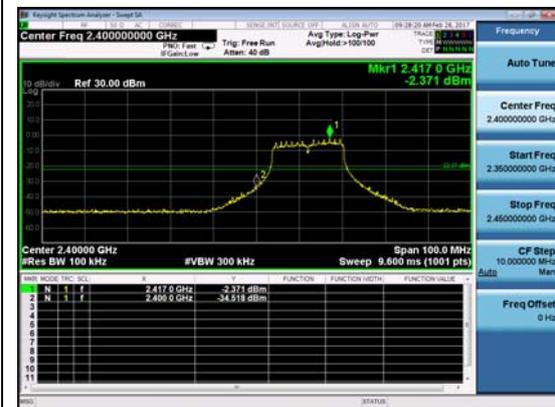
802.11b, Channel No.: 1



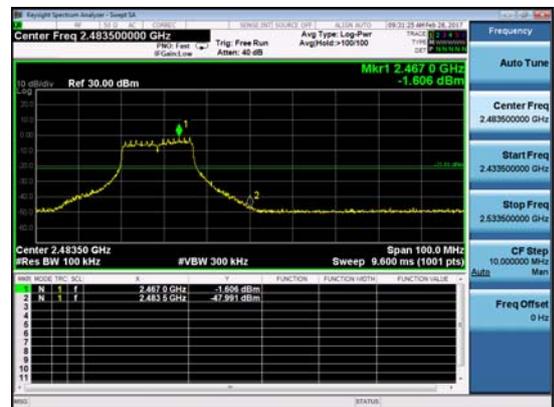
802.11b, Channel No.: 11



802.11g, Channel No.: 1

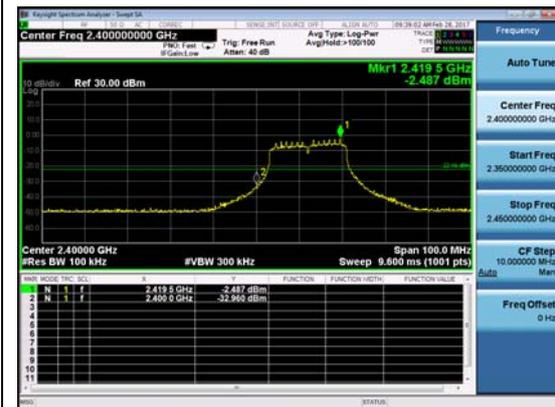


802.11g, Channel No.: 11



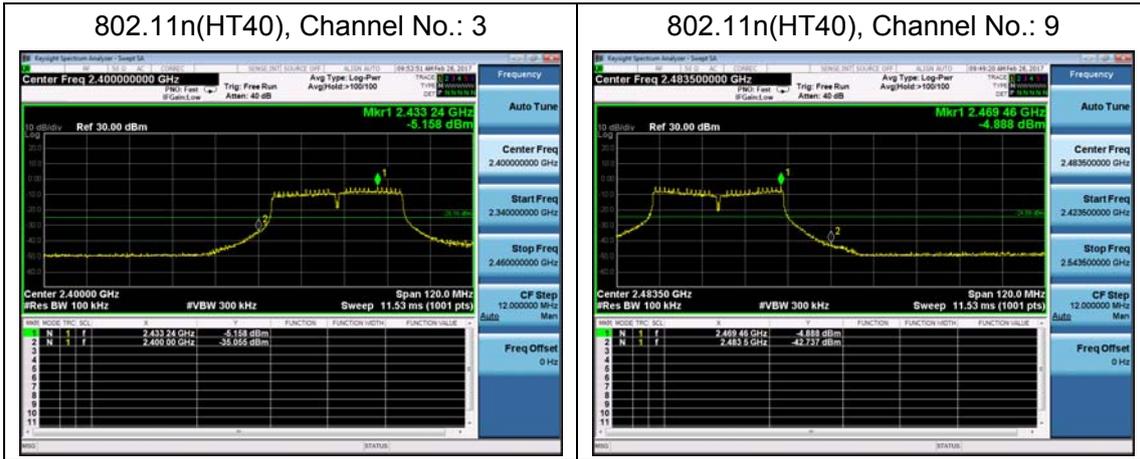
MIMO

802.11n(HT20), Channel No.: 1

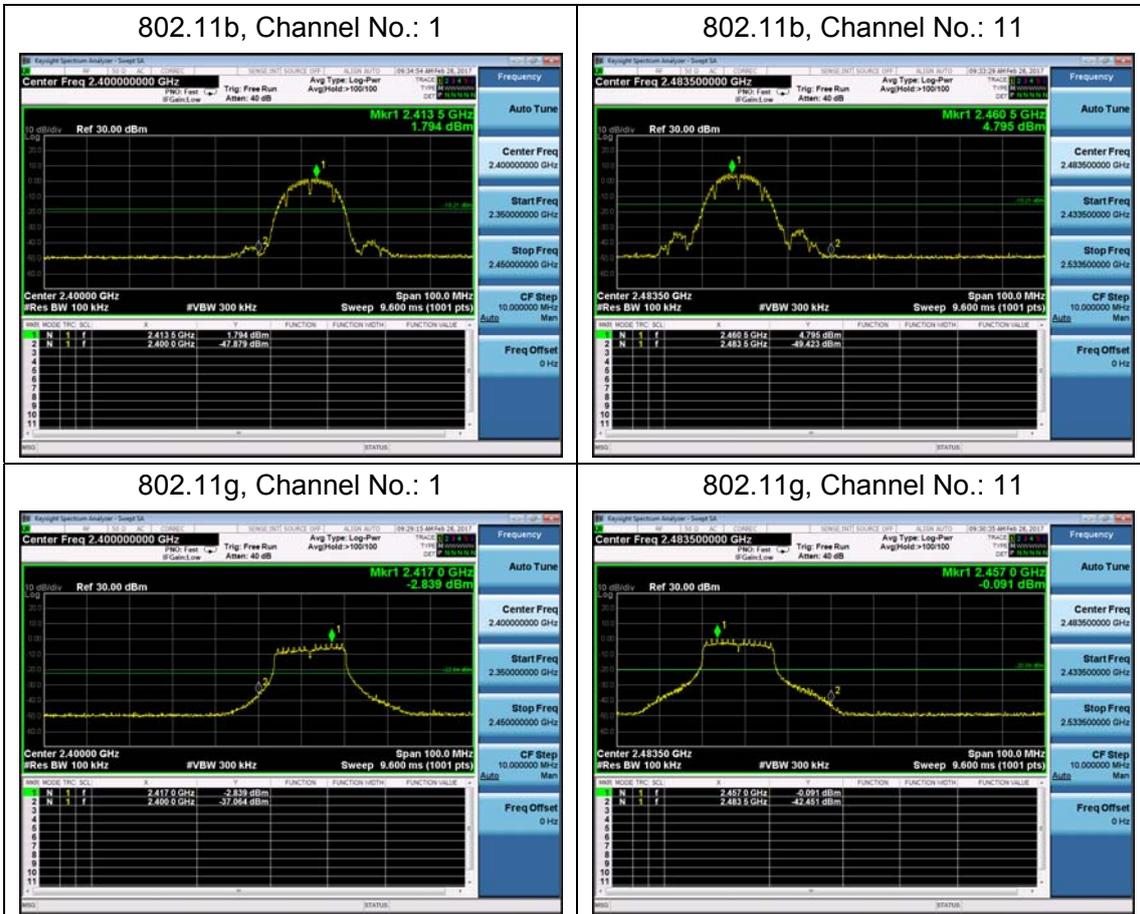


802.11n(HT20), Channel No.: 11



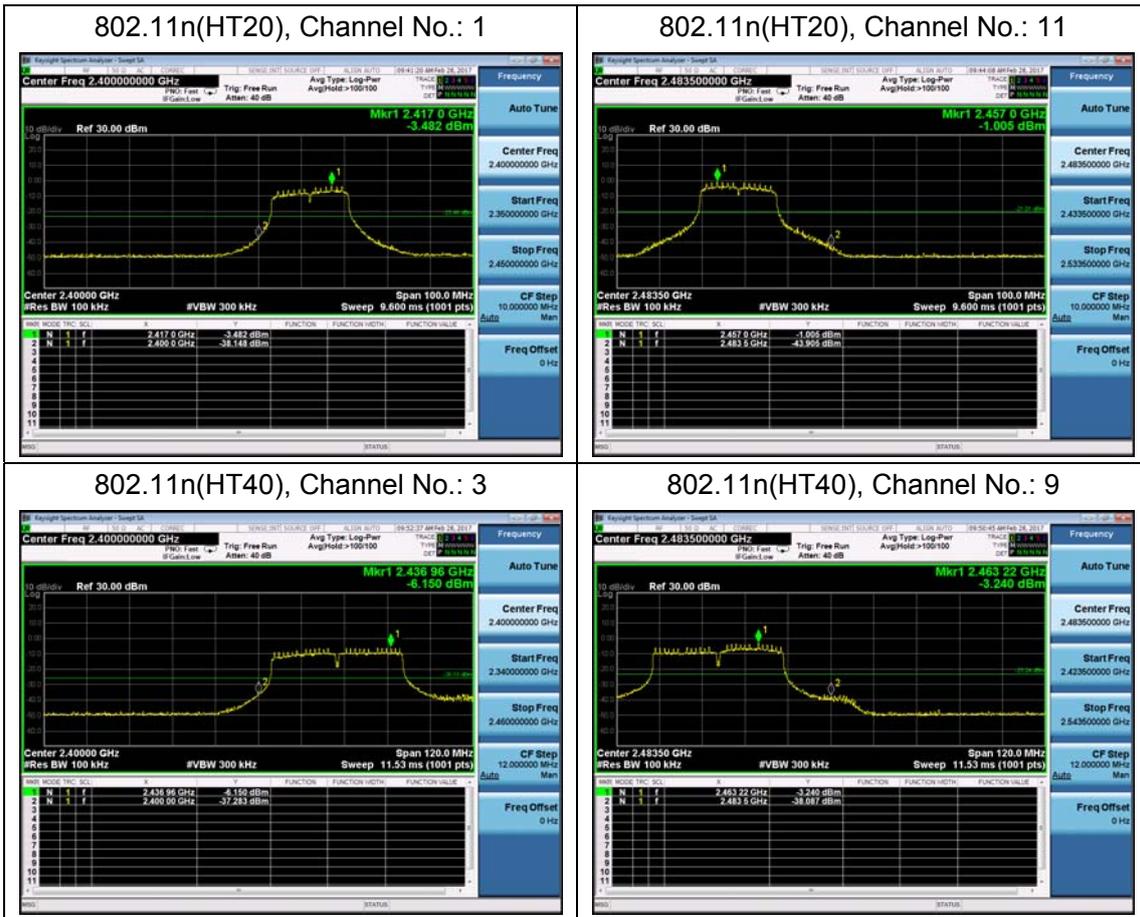


Antenna 2
SISO





MIMO



5.4. Power Spectral Density

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

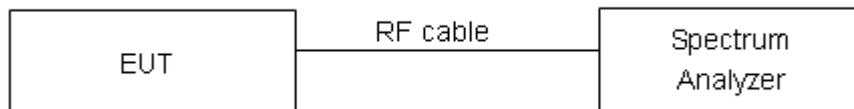
The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.

RBW is set to 3 kHz and VBW is set to 10 kHz for BLE/ Wi-Fi 2.4G on spectrum analyzer.

Set the span to 1.5 times the DTS channel bandwidth. Sweep time = auto couple. Trace mode = max hold. The Average power spectral density is recorded.

The conducted Power is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically.

Test setup



Limits

Rule Part 15.247(e) specifies that” For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. ”

Limits	≤ 8 dBm / 3kHz
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.75\text{dB}$.

**Test Results:****Antenna 1**

Network Standards		Channel Number	Power Spectral Density (dBm / 3kHz)	Limit (dBm / 3kHz)	Conclusion
SISO	802.11b	1	-21.911	8	PASS
		6	-20.595	8	PASS
		11	-21.110	8	PASS
	802.11g	1	-26.518	8	PASS
		6	-25.406	8	PASS
		11	-25.370	8	PASS

Antenna 2

Network Standards		Channel Number	Power Spectral Density (dBm / 3kHz)	Limit (dBm / 3kHz)	Conclusion
SISO	802.11b	1	-22.769	8	PASS
		6	-21.999	8	PASS
		11	-19.428	8	PASS
	802.11g	1	-27.185	8	PASS
		6	-26.719	8	PASS
		11	-24.405	8	PASS

**MIMO**

Antenna 1	802.11n HT20	1	-27.678	8	PASS
		6	-26.365	8	PASS
		11	-26.476	8	PASS
	802.11n HT40	3	-29.290	8	PASS
		6	-29.551	8	PASS
		9	-29.389	8	PASS
Antenna 2	802.11n HT20	1	-28.216	8	PASS
		6	-28.073	8	PASS
		11	-25.578	8	PASS
	802.11n HT40	3	-30.804	8	PASS
		6	-28.896	8	PASS
		9	-28.607	8	PASS
SUM	802.11n HT20	1	-24.928	8	PASS
		6	-24.125	8	PASS
		11	-22.994	8	PASS
	802.11n HT40	3	-26.971	8	PASS
		6	-26.201	8	PASS
		9	-25.970	8	PASS

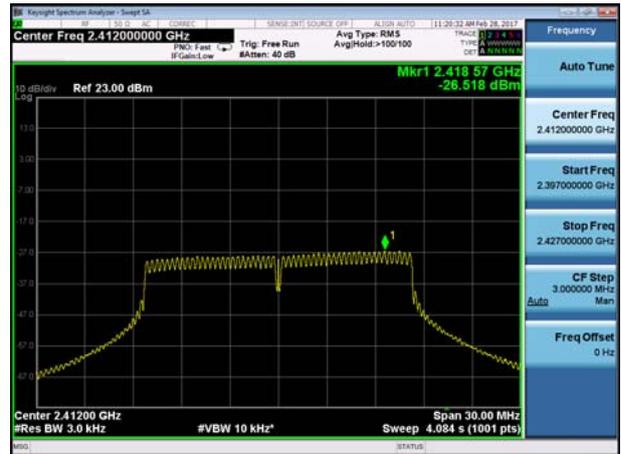


Antenna 1

802.11b, Channel No.: 1



802.11g, Channel No.: 1



802.11b, Channel No.: 6



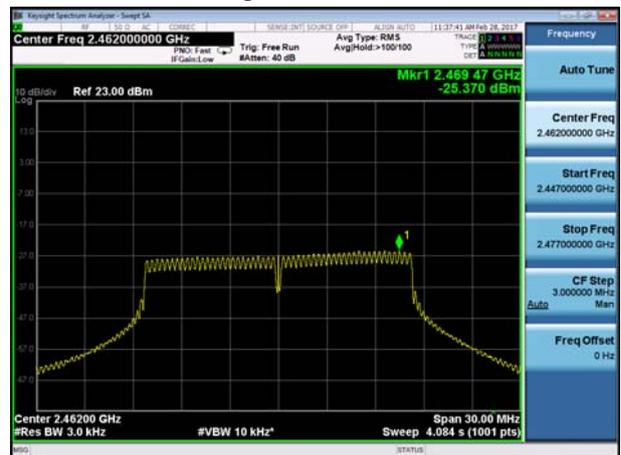
802.11g, Channel No.: 6



802.11b, Channel No.: 11

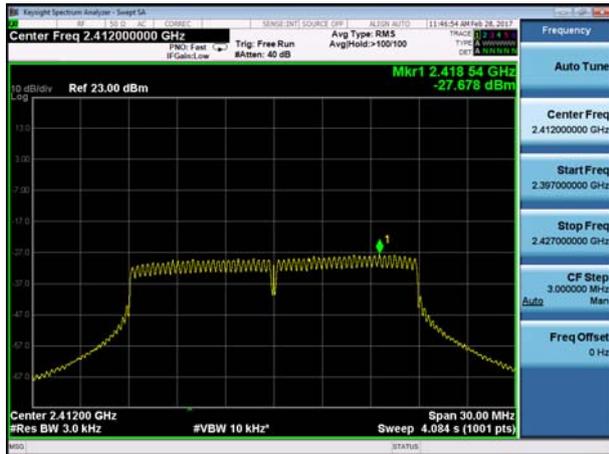


802.11g, Channel No.: 11

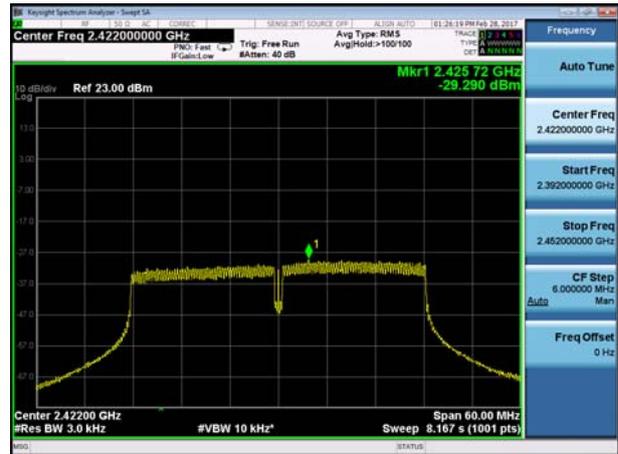




802.11n(HT20), Channel No. 1



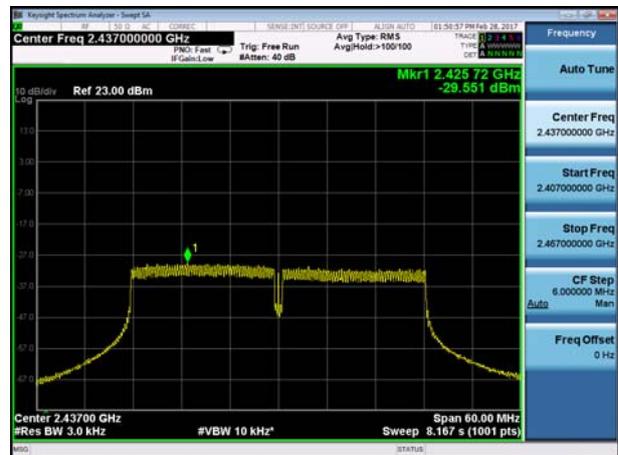
802.11n(HT40), Channel No. 3



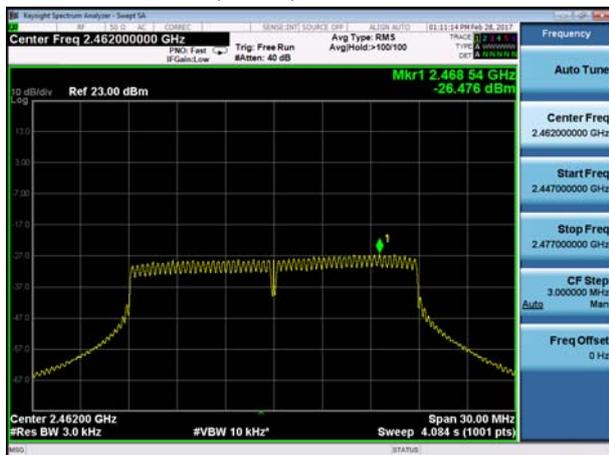
802.11n(HT20), Channel No. 6



802.11n(HT40), Channel No. 6



802.11n(HT20), Channel No. 11



802.11n(HT40), Channel No. 9



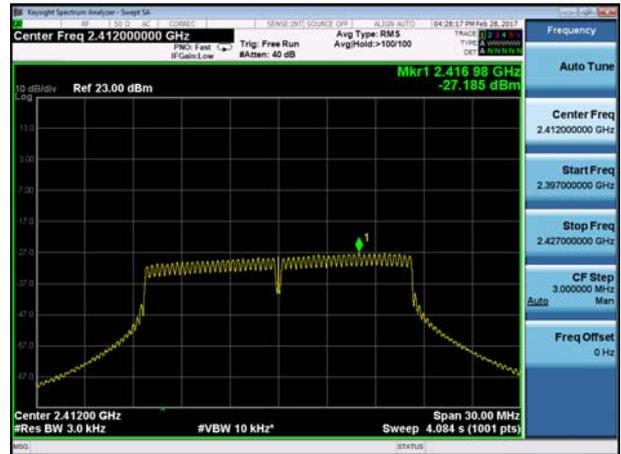


Antenna 2

802.11b, Channel No.: 1



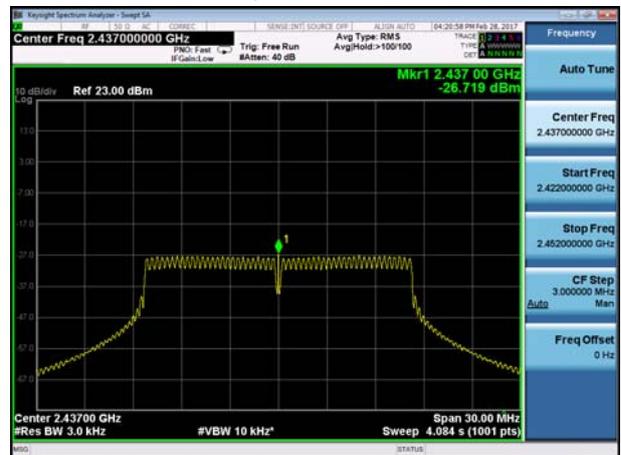
802.11g, Channel No.: 1



802.11b, Channel No.: 6



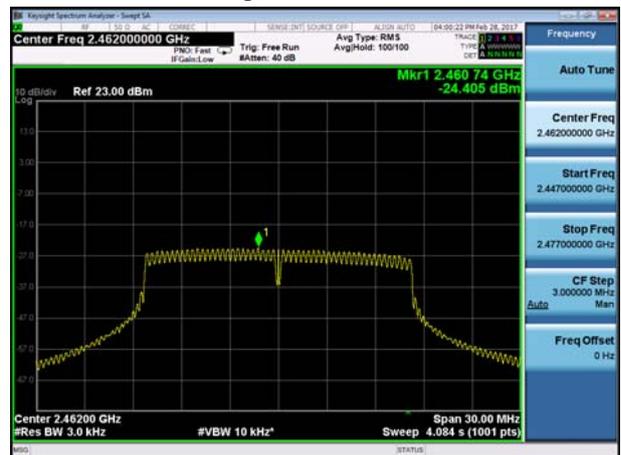
802.11g, Channel No.: 6



802.11b, Channel No.: 11

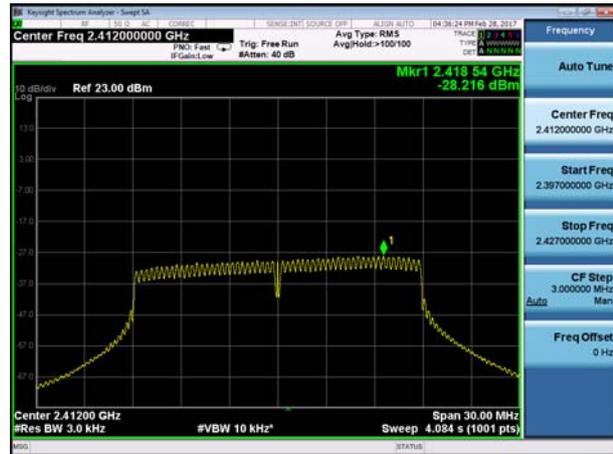


802.11g, Channel No.: 11

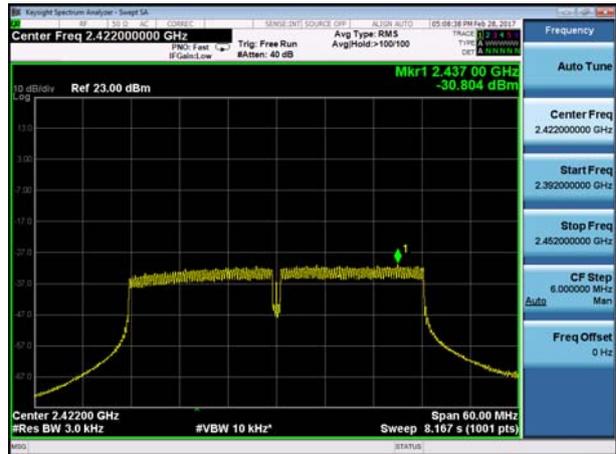




802.11n(HT20), Channel No. 1



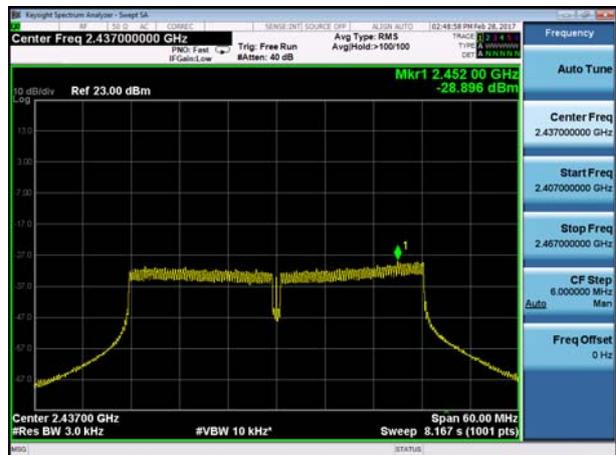
802.11n(HT40), Channel No. 3



802.11n(HT20), Channel No. 6



802.11n(HT40), Channel No. 6



802.11n(HT20), Channel No. 11



802.11n(HT40), Channel No. 9



5.5. Spurious RF Conducted Emissions

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer with a known loss. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. The peak detector is used. RBW and VBW are set to 100 kHz, Sweep is set to ATUO.

The test is in transmitting mode.

Test setup



Limits

Rule Part 15.247(d) pacifies that “In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.”

Network Standards		Carrier frequency (MHz)	Reference value (dBm)	Limit
Antenna 1	802.11b	2412	-9.135	-29.135
		2437	-12.951	-32.951
		2462	1.980	-18.020
	802.11g	2412	-4.577	-24.577
		2437	-4.970	-24.970
		2462	-2.813	-22.813
	802.11n HT20	2412	-6.914	-26.914
		2437	-5.042	-25.042
		2462	-3.275	-23.275
	802.11n HT40	2422	-6.702	-26.702
		2437	-6.528	-26.528
		2452	-5.016	-25.016
Antenna 2	802.11b	2412	-0.330	-20.330
		2437	0.430	-19.570
		2462	2.231	-17.769



	802.11g	2412	-5.320	-25.320
		2437	-4.855	-24.855
		2462	-2.525	-22.525
	802.11n HT20	2412	-5.279	-25.279
		2437	-3.888	-23.888
		2462	-2.364	-22.364
	802.11n HT40	2422	-7.008	-27.008
		2437	-4.583	-24.583
		2452	-4.055	-24.055
MIMO	802.11n HT20	2412	-7.130	-27.130
		2437	-4.503	-24.503
		2462	-4.483	-24.483
	802.11n HT40	2422	-7.845	-27.845
		2437	-6.630	-26.630
		2452	-7.787	-27.787

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
100kHz-2GHz	0.684 dB
2GHz-26GHz	1.407 dB

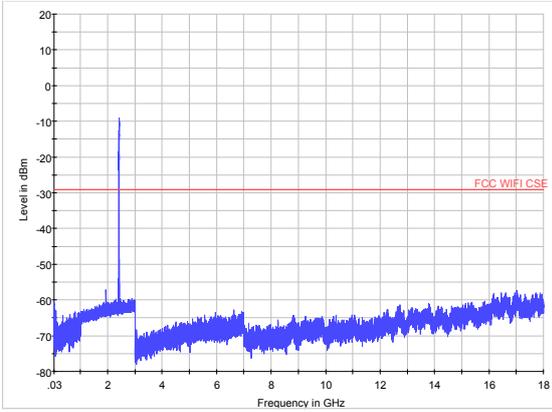


Test Results:

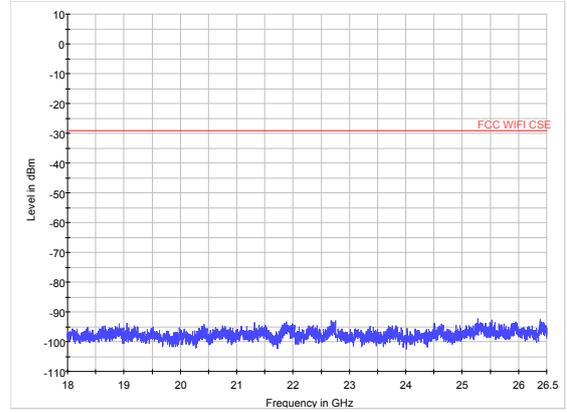
If disturbances were found more than 20dB below limit line, the mark is not required for the EUT.
The signal beyond the limit is carrier.

The signal beyond the limit is carrier

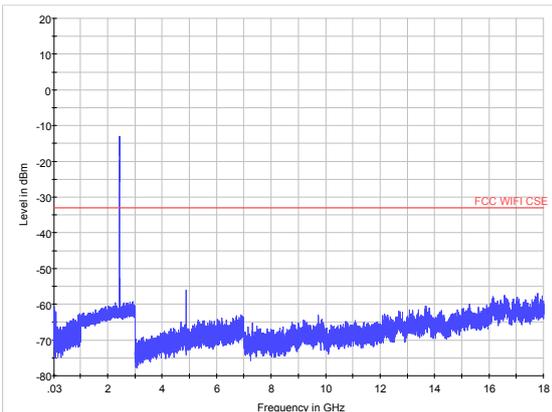
Antenna 1



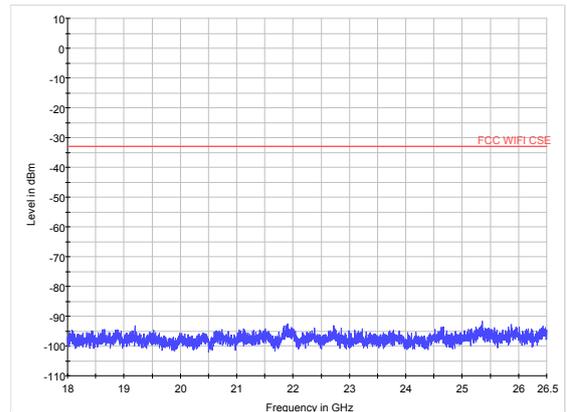
802.11b CH1 30MHz to 18GHz



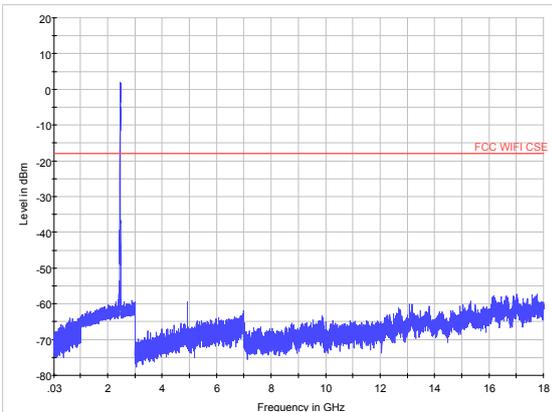
802.11b CH1 18GHz to 26.5GHz



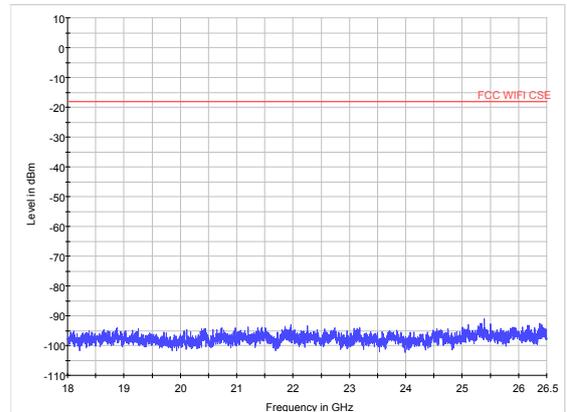
802.11b CH6 30MHz to 18GHz



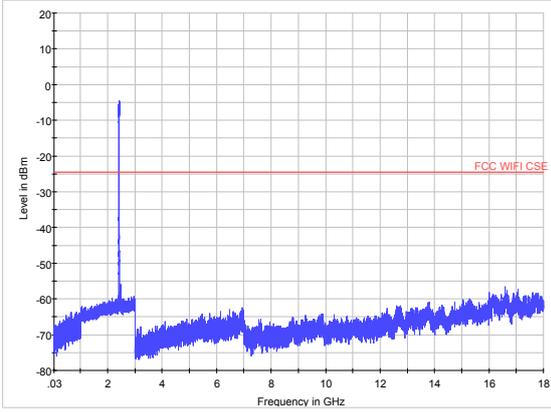
802.11b CH6 18GHz to 26.5GHz



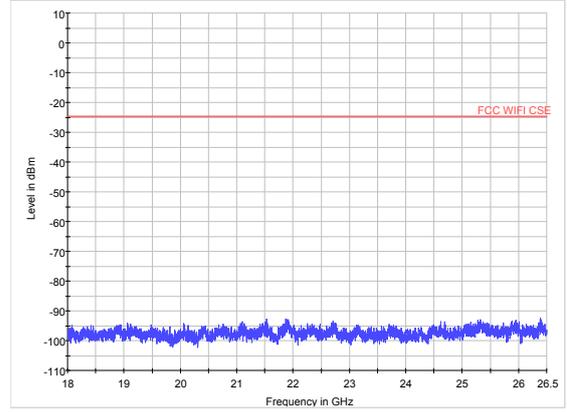
802.11b CH11 30MHz to 18GHz



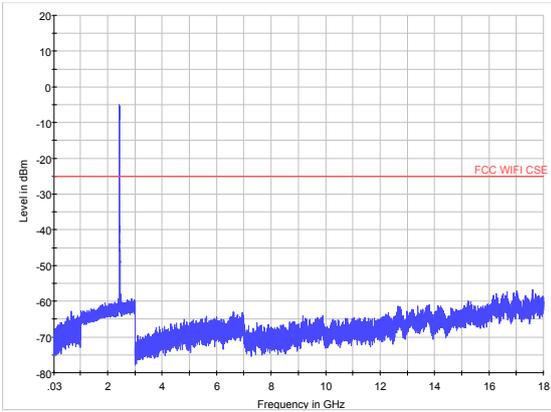
802.11b CH11 18GHz to 26.5GHz



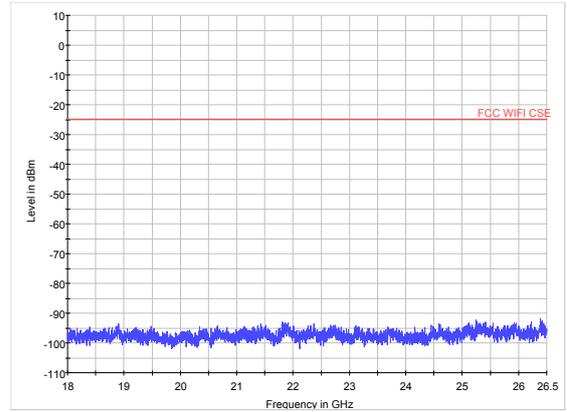
802.11g CH1 30MHz to 18GHz



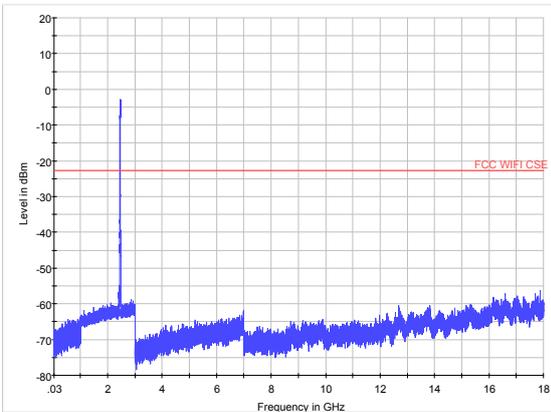
802.11g CH1 18GHz to 26.5GHz



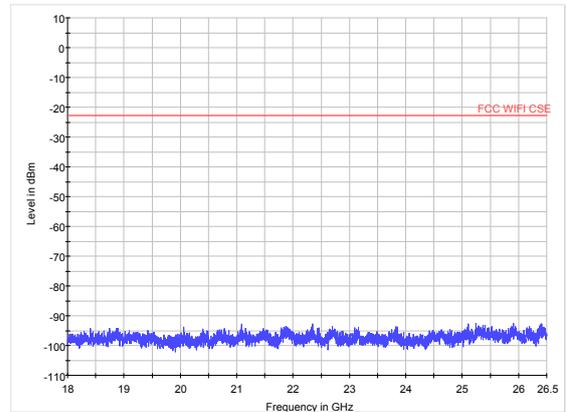
802.11g CH6 30MHz to 18GHz



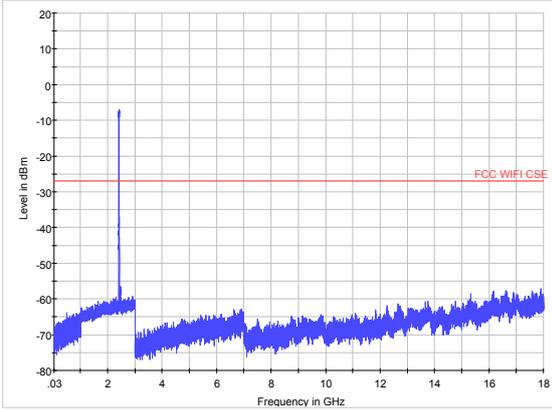
802.11g CH6 18GHz to 26.5GHz



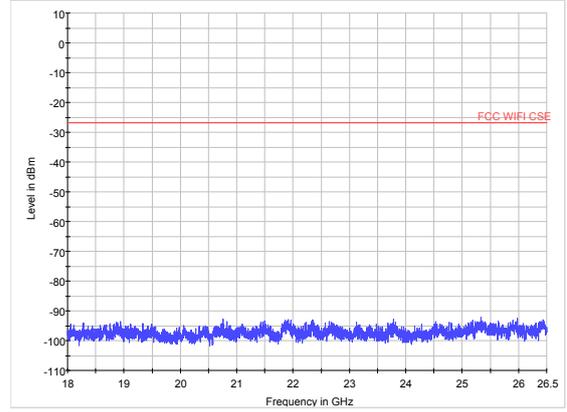
802.11g CH11 30MHz to 18GHz



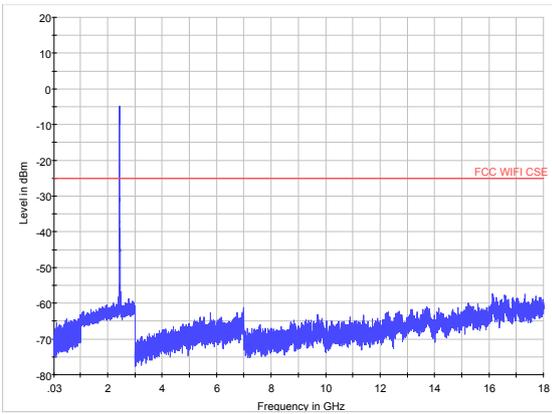
802.11g CH11 18GHz to 26.5GHz



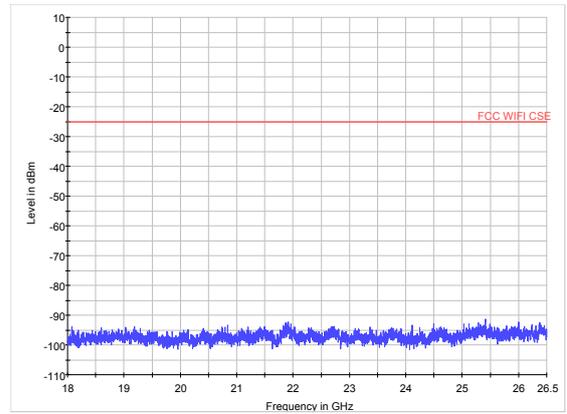
802.11n (HT20) CH1 30MHz to 18GHz



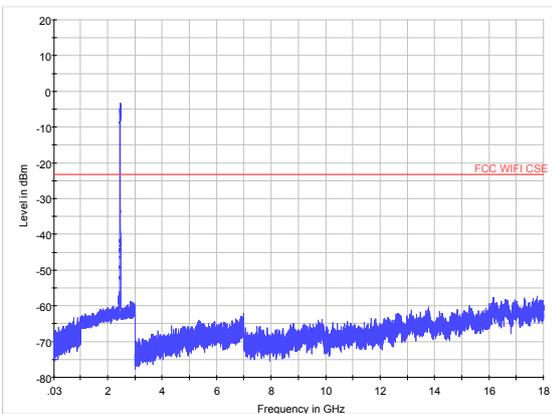
802.11n (HT20) CH1 18GHz to 26.5GHz



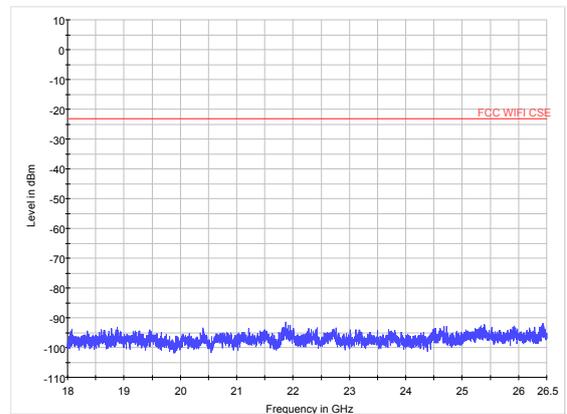
802.11n (HT20) CH6 30MHz to 18GHz



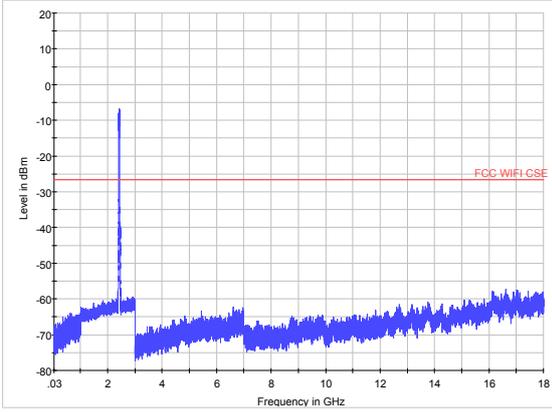
802.11n (HT20) CH6 18GHz to 26.5GHz



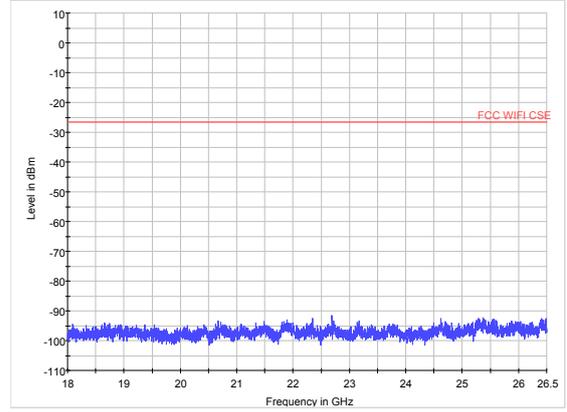
802.11n (HT20) CH11 30MHz to 18GHz



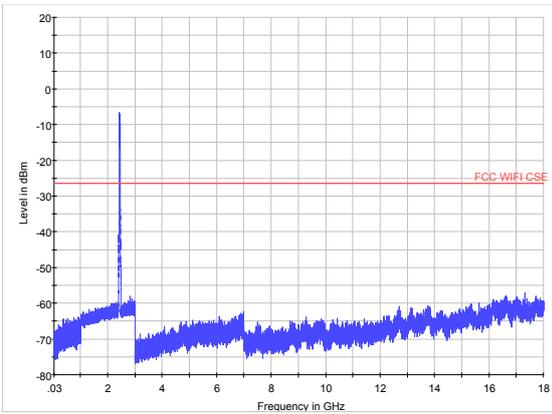
802.11n (HT20) CH11 18GHz to 26.5GHz



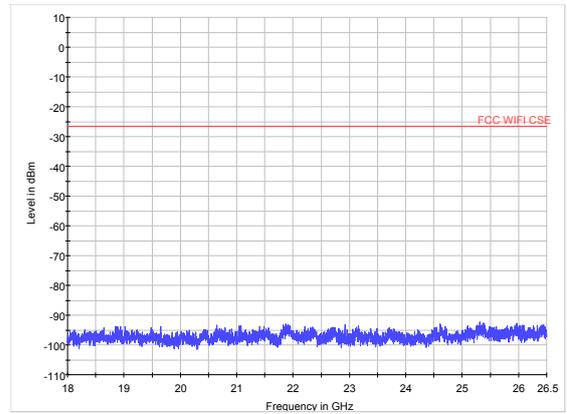
802.11n (HT40) CH3 30MHz to 18GHz



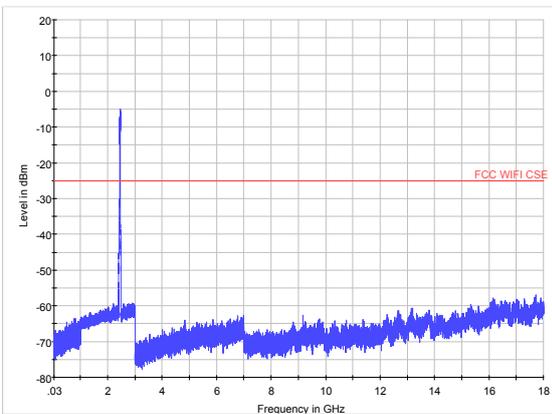
802.11n (HT40) CH3 18GHz to 26.5GHz



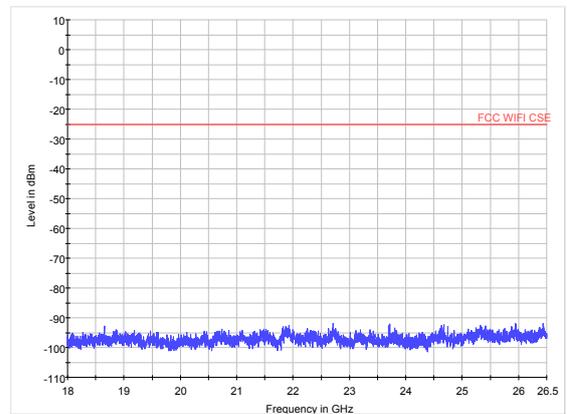
802.11n (HT40) CH6 30MHz to 18GHz



802.11n (HT40) CH6 18GHz to 26.5GHz



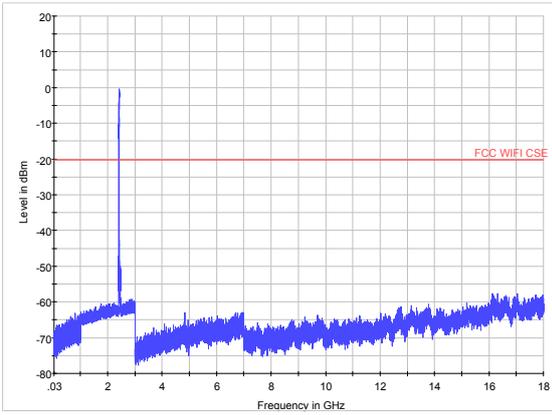
802.11n (HT40) CH9 30MHz to 18GHz



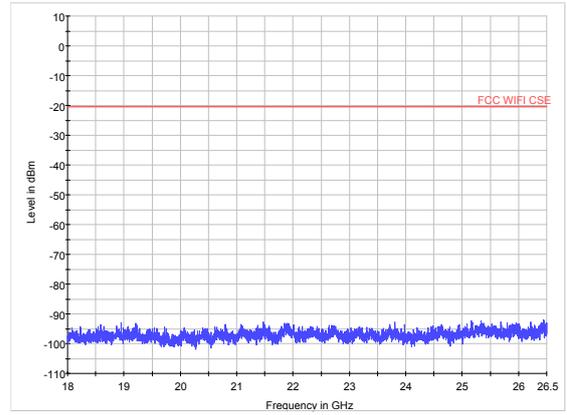
802.11n (HT40) CH9 18GHz to 26.5GHz



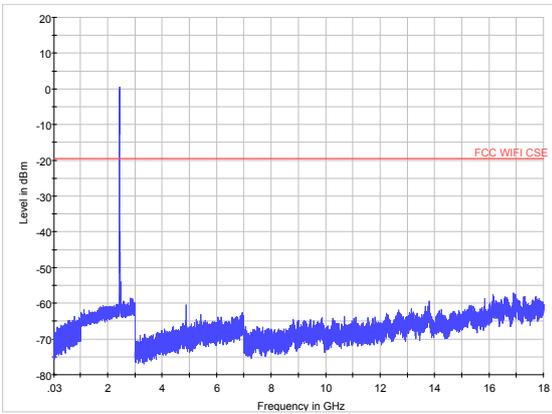
Antenna 2



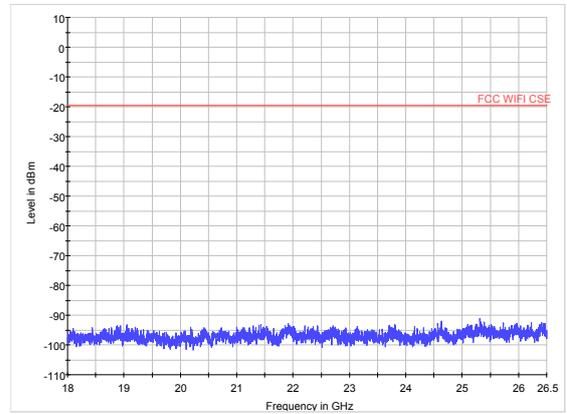
802.11b CH1 30MHz to 18GHz



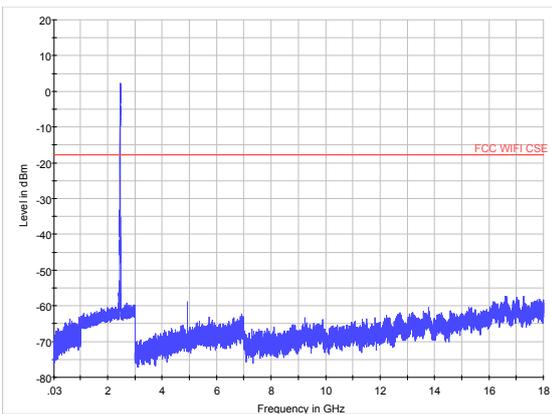
802.11b CH1 18GHz to 26.5GHz



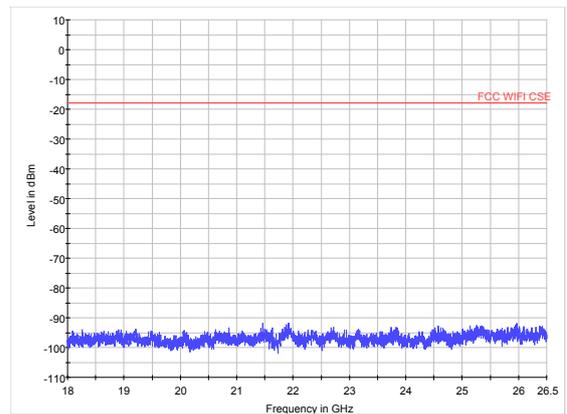
802.11b CH6 30MHz to 18GHz



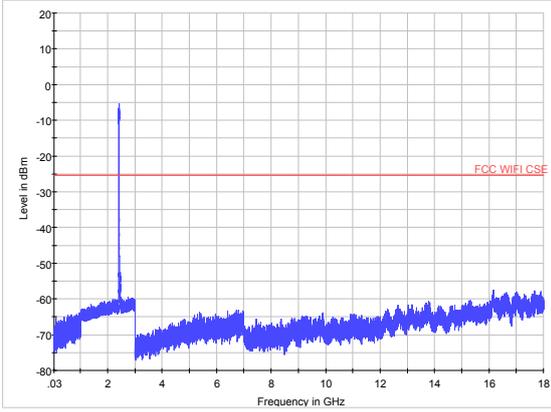
802.11b CH6 18GHz to 26.5GHz



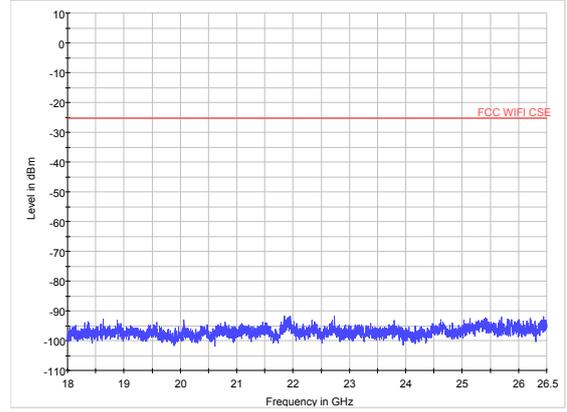
802.11b CH11 30MHz to 18GHz



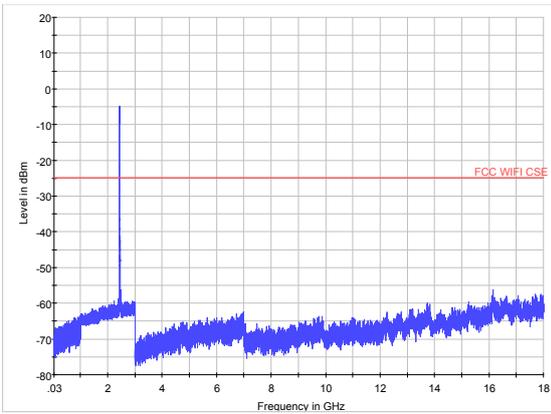
802.11b CH11 18GHz to 26.5GHz



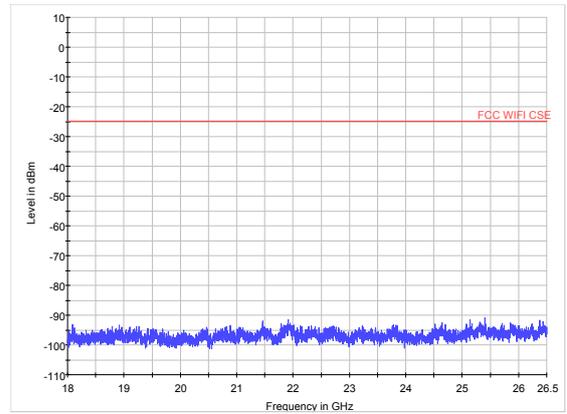
802.11g CH1 30MHz to 18GHz



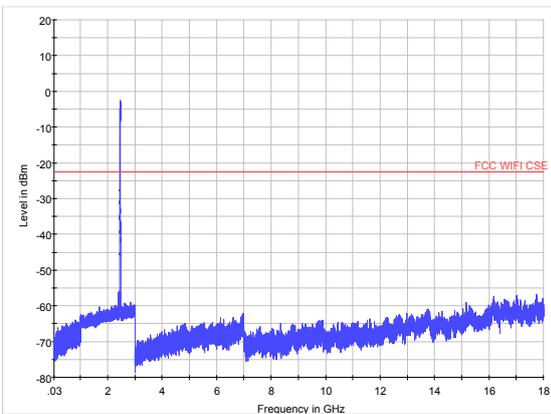
802.11g CH1 18GHz to 26.5GHz



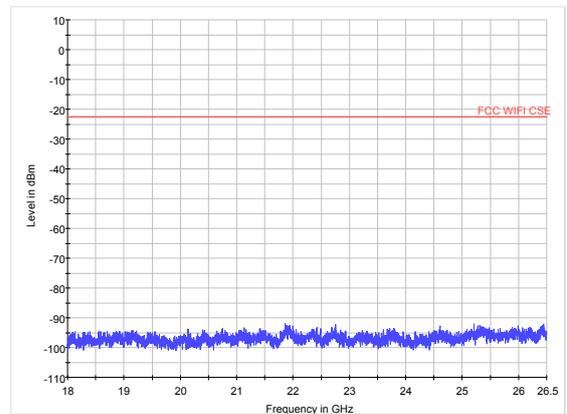
802.11g CH6 30MHz to 18GHz



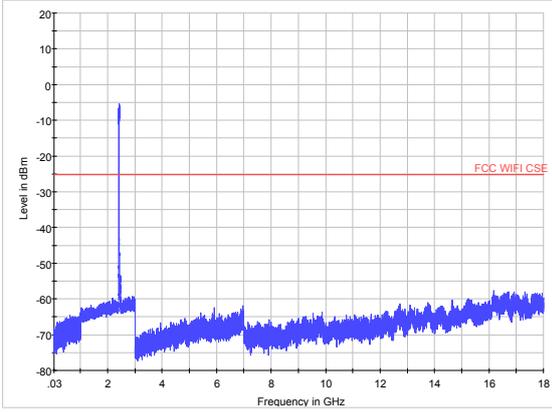
802.11g CH6 18GHz to 26.5GHz



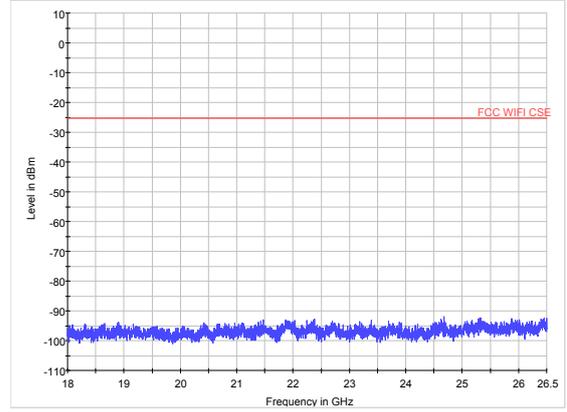
802.11g CH11 30MHz to 18GHz



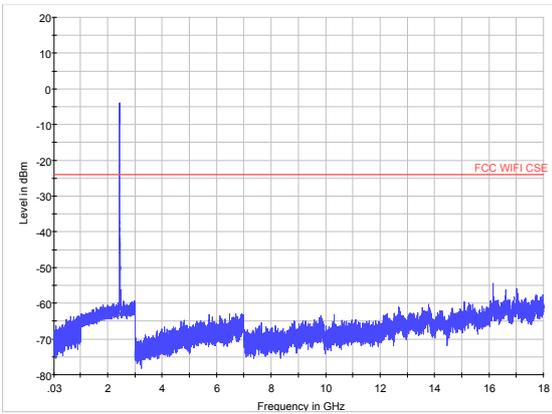
802.11g CH11 18GHz to 26.5GHz



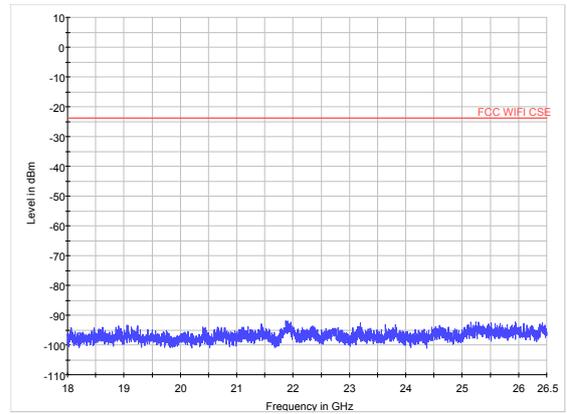
802.11n (HT20) CH1 30MHz to 18GHz



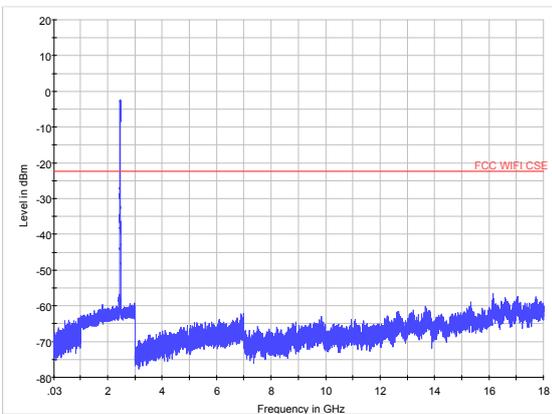
802.11n (HT20) CH1 18GHz to 26.5GHz



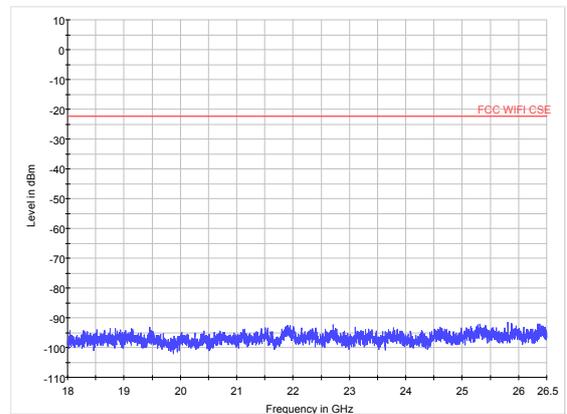
802.11n (HT20) CH6 30MHz to 18GHz



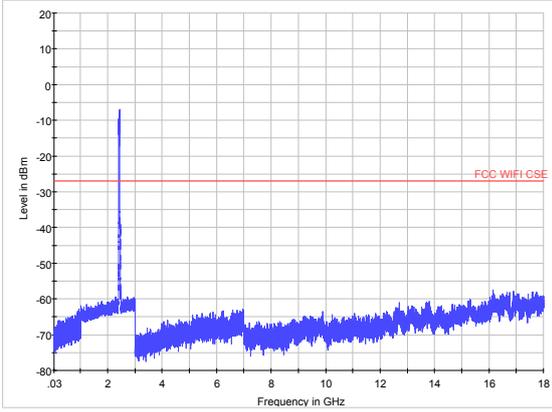
802.11n (HT20) CH6 18GHz to 26.5GHz



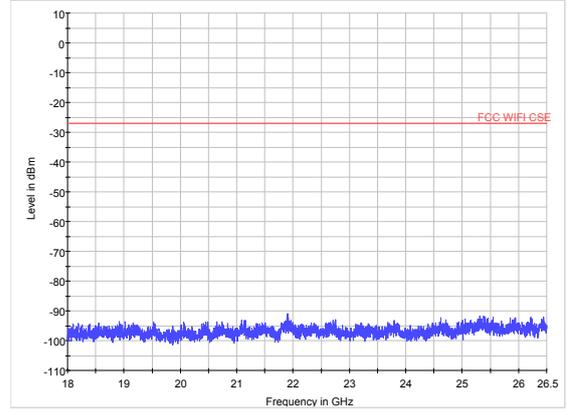
802.11n (HT20) CH11 30MHz to 18GHz



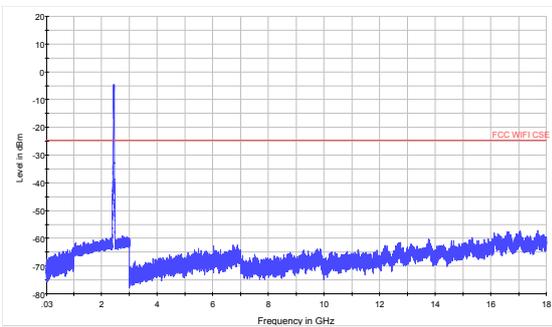
802.11n (HT20) CH11 18GHz to 26.5GHz



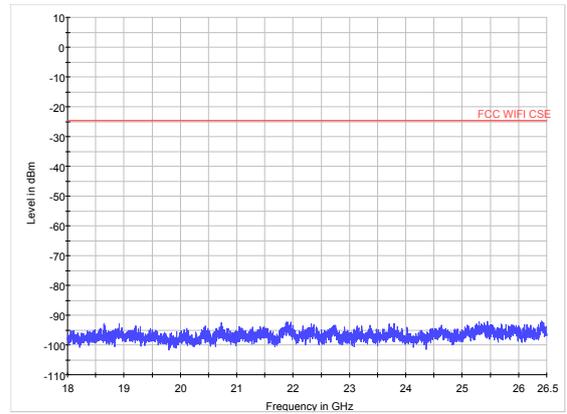
802.11n (HT40) CH3 30MHz to 18GHz



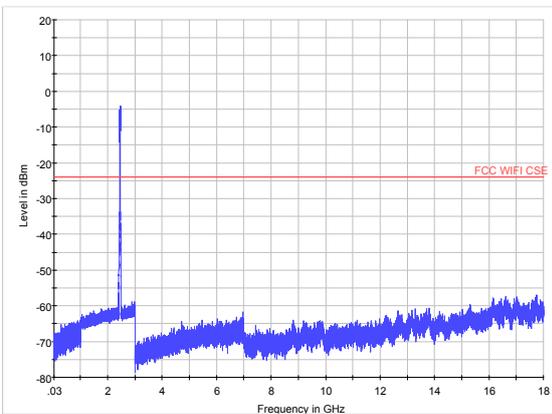
802.11n (HT40) CH3 18GHz to 26.5GHz



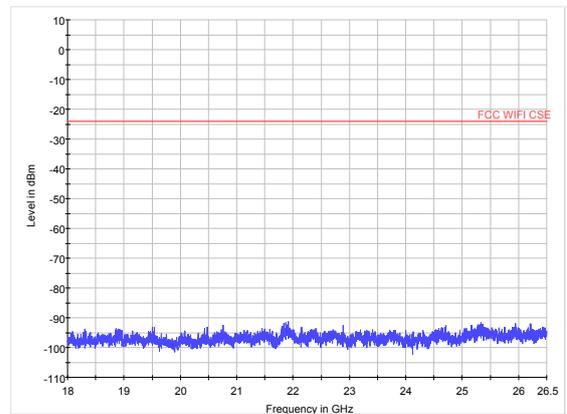
802.11n (HT40) CH6 30MHz to 18GHz



802.11n (HT40) CH6 18GHz to 26.5GHz

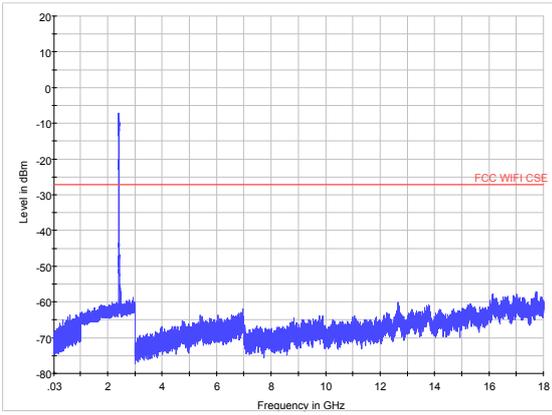


802.11n (HT40) CH9 30MHz to 18GHz

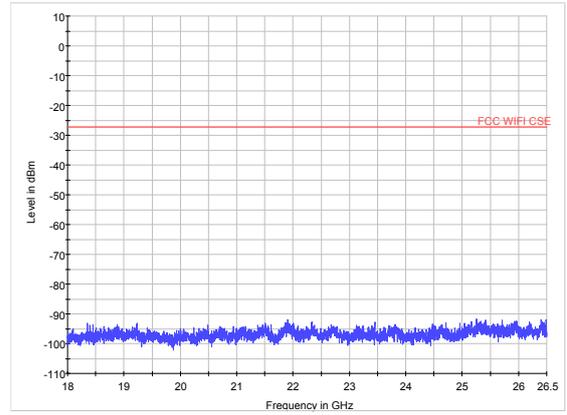


802.11n (HT40) CH9 18GHz to 26.5GHz

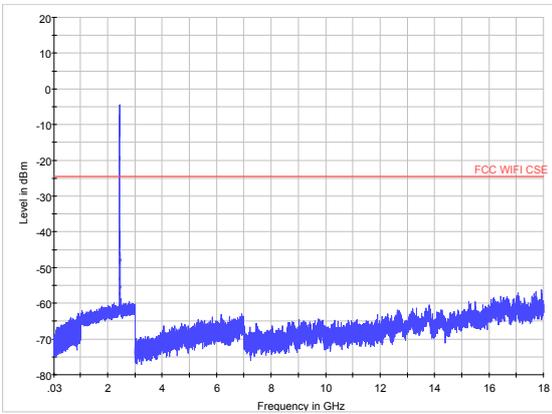
MIMO



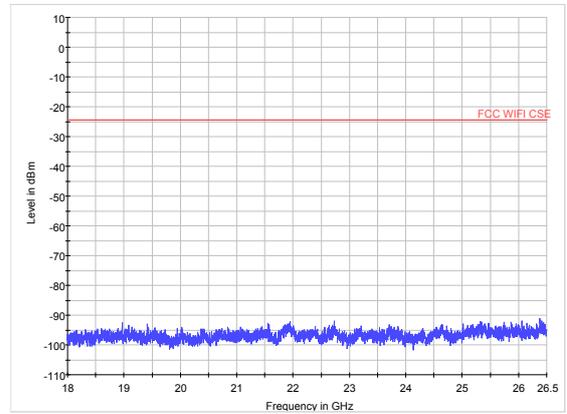
802.11n (HT20) CH1 30MHz to 18GHz



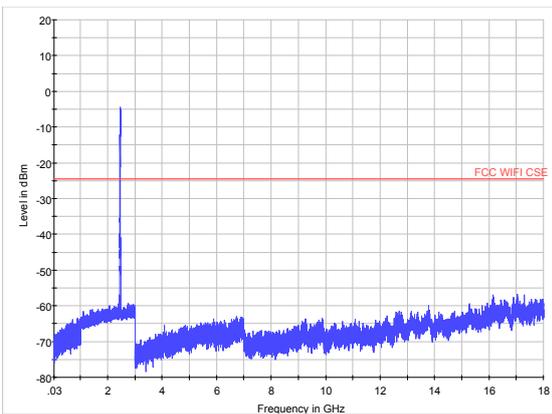
802.11n (HT20) CH1 18GHz to 26.5GHz



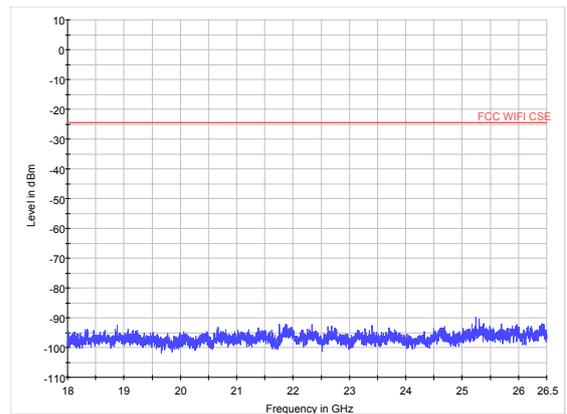
802.11n (HT20) CH6 30MHz to 18GHz



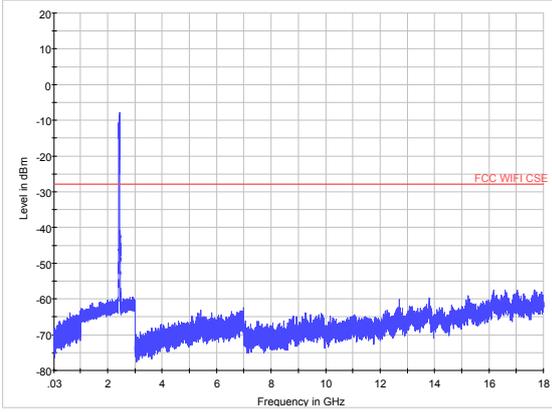
802.11n (HT20) CH6 18GHz to 26.5GHz



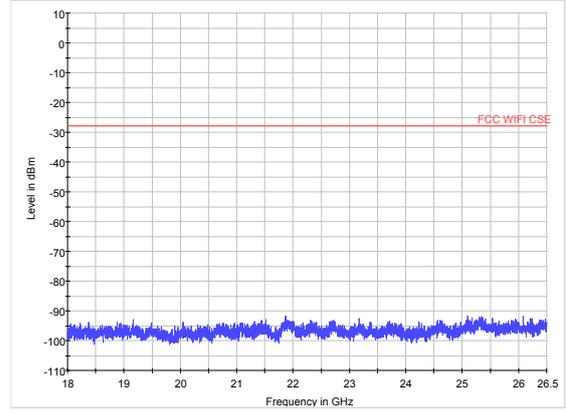
802.11n (HT20) CH11 30MHz to 18GHz



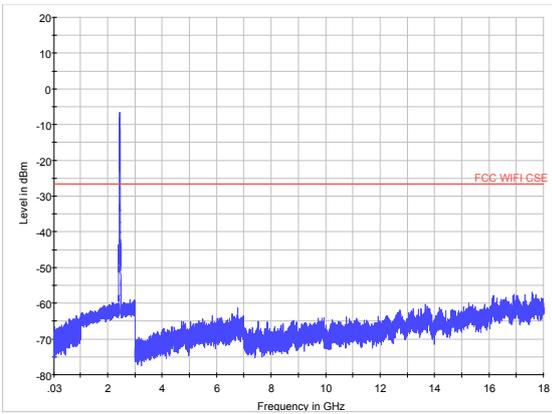
802.11n (HT20) CH11 18GHz to 26.5GHz



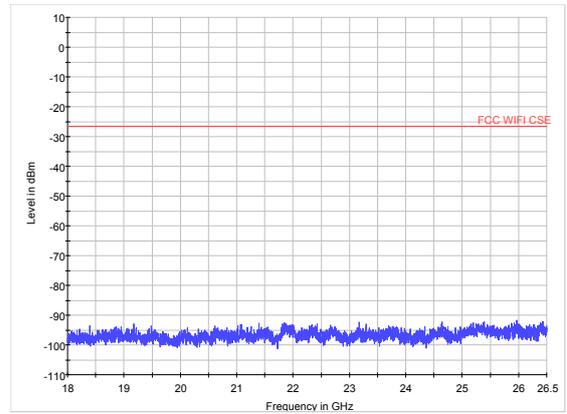
802.11n (HT40) CH3 30MHz to 18GHz



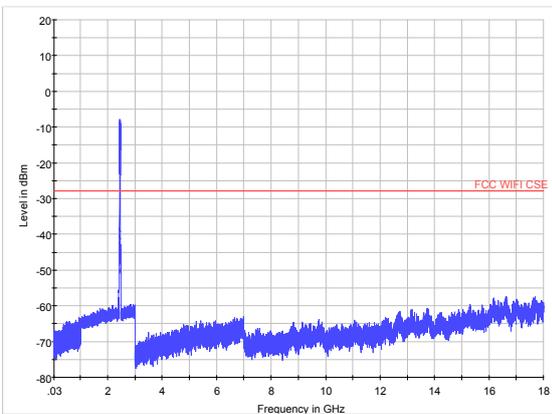
802.11n (HT40) CH3 18GHz to 26.5GHz



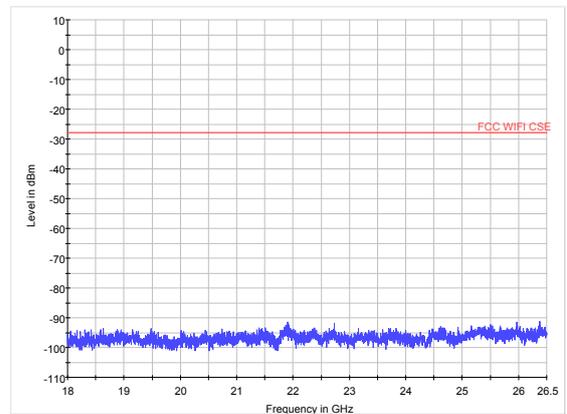
802.11n (HT40) CH6 30MHz to 18GHz



802.11n (HT40) CH6 18GHz to 26.5GHz



802.11n (HT40) CH9 30MHz to 18GHz



802.11n (HT40) CH9 18GHz to 26.5GHz

5.6. Radiated Emissions in the Restricted Band

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. RBW is set to 100kHz. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing. Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

Set the spectrum analyzer in the following:

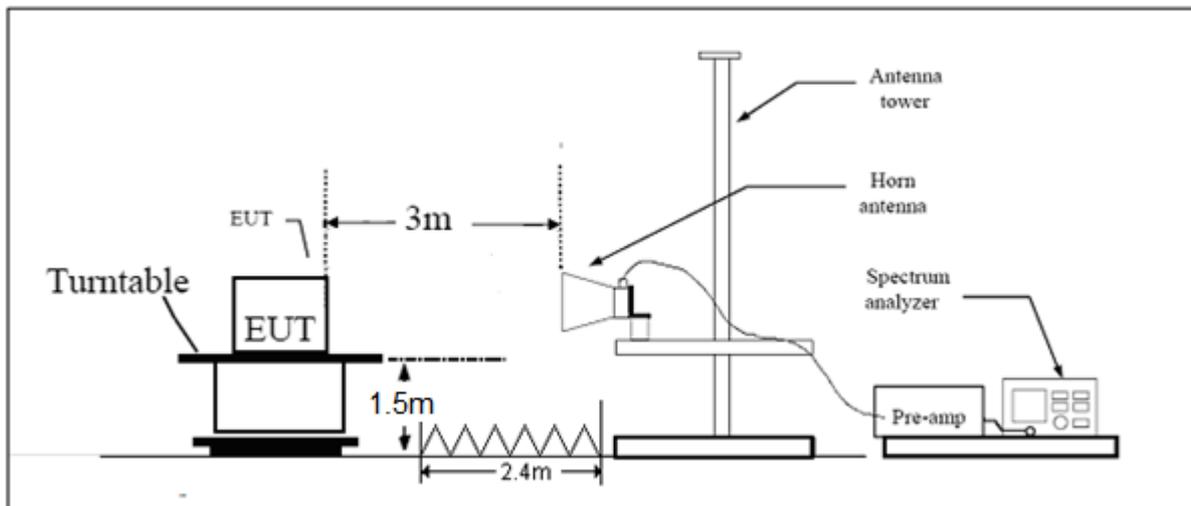
- (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
- (b) AVERAGE: RBW=1MHz / VBW=1MHz / Sweep=AUTO

This setting method can refer to **KDB 558074**.

The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Y axis) and the antenna is vertical.

The test is in transmitting mode.

Test setup



Note: Area side: 2.4mX3.6m

Limits

Spurious Radiated Emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 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	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	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			

Limit in restricted band

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above960	500	54

§15.35(b)

There is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

Peak Limit=74 dBuV/m

Average Limit=54 dBuV/m

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U = 3.55$ dB.



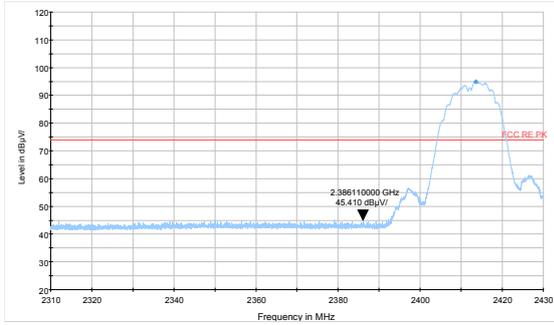
Test Results: PASS

The signal beyond the limit is carrier.

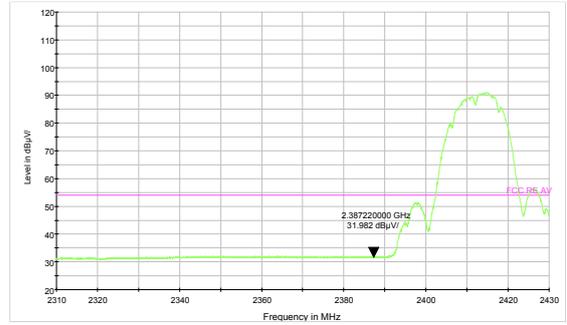
Antenna 1

SISO

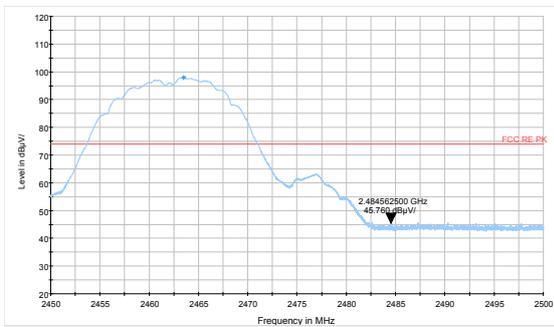
802.11b-Channel 1: Peak



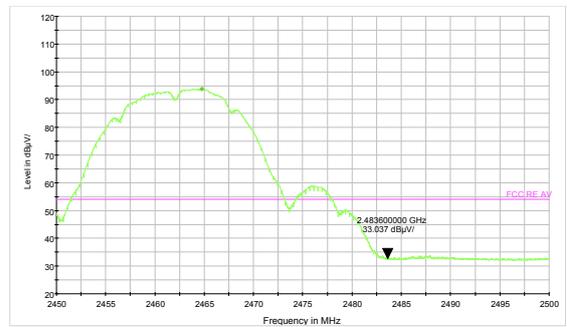
802.11b-Channel 1: Average



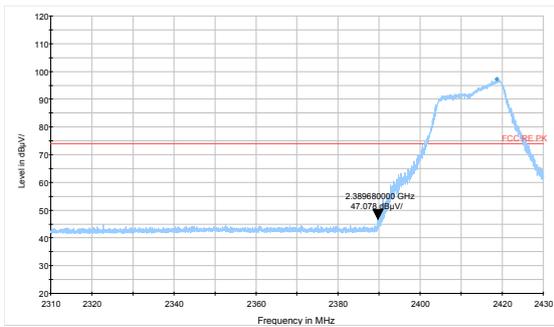
802.11b-Channel 11: Peak



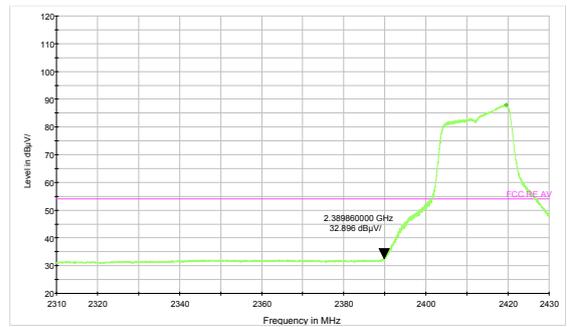
802.11b-Channel 11: Average



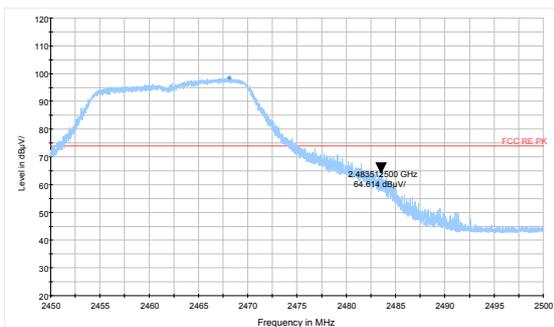
802.11g-Channel 1: Peak



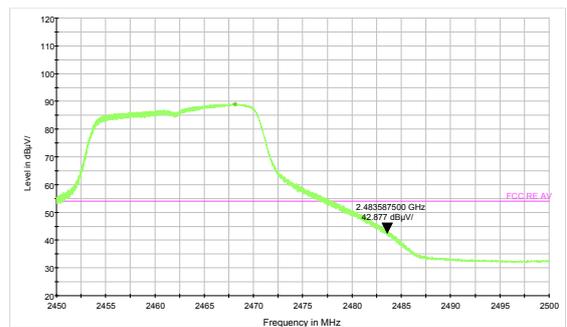
802.11g-Channel 1: Average



802.11g-Channel 11: Peak



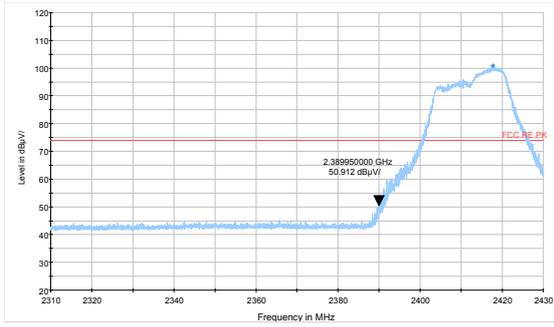
802.11g-Channel 11: Average



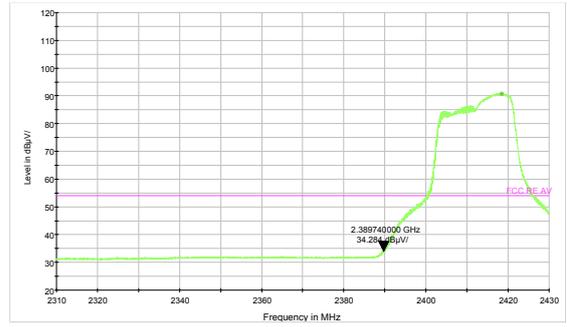


MIMO

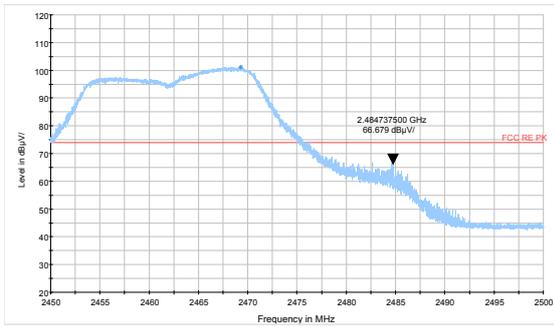
802.11n HT20 -Channel 1: Peak



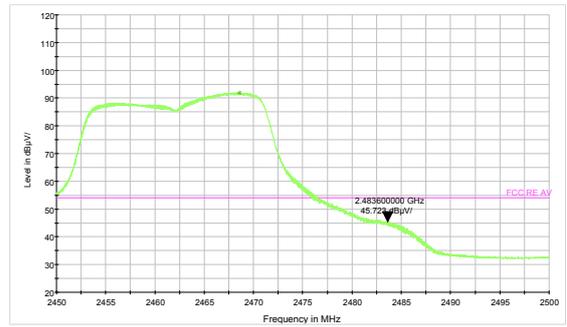
802.11n HT20-Channel 1: Average



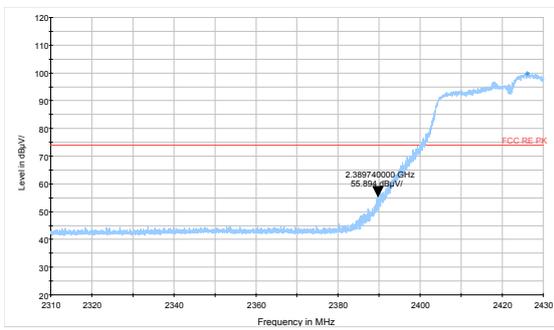
802.11n HT20-Channel 11: Peak



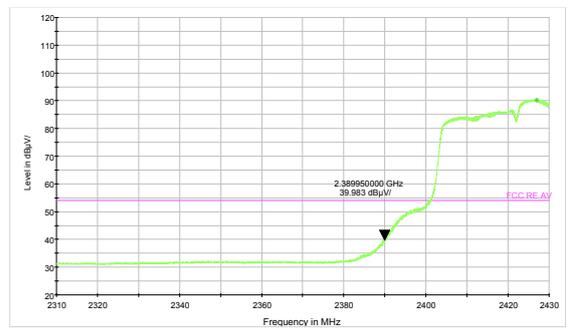
802.11n HT20-Channel 11: Average



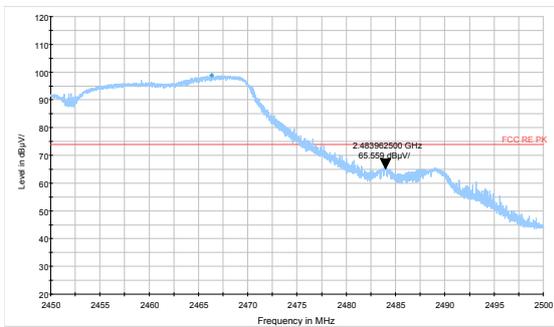
802.11n HT40 -Channel 3: Peak



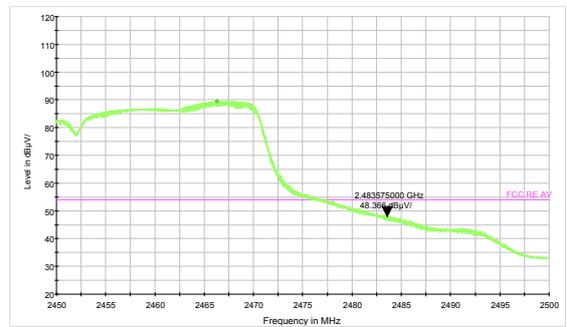
802.11n HT40-Channel 3: Average



802.11n HT40-Channel 9: Peak



802.11n HT40-Channel 9: Average



5.7. Radiates Emission

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	102.5kPa

Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.10-2013. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration.

Sweep the whole frequency band through the range from 9 kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

During the test, below 30MHz, the center of the loop shall be 1 meters; above 30MHz, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Set the spectrum analyzer in the following:

Below 1GHz (detector: Peak and Quasi-Peak)

RBW=100 kHz / VBW=300 kHz / Sweep=AUTO

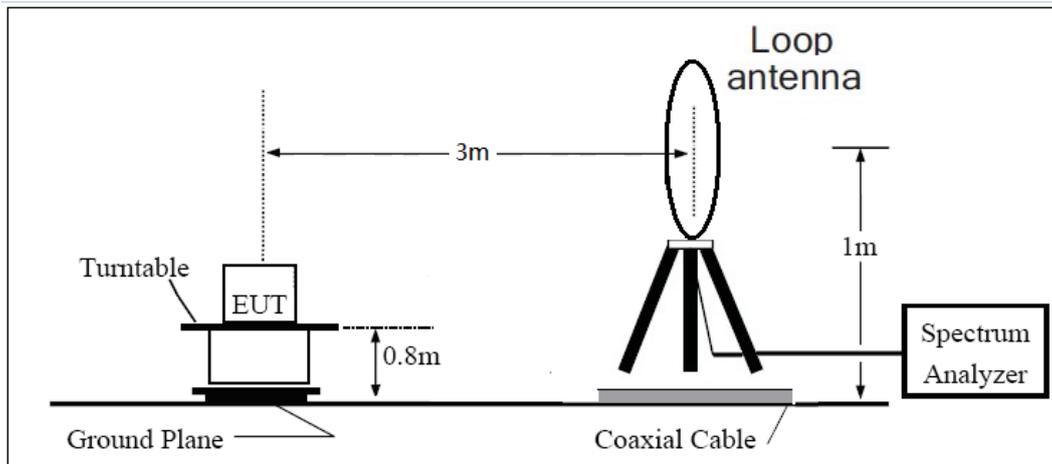
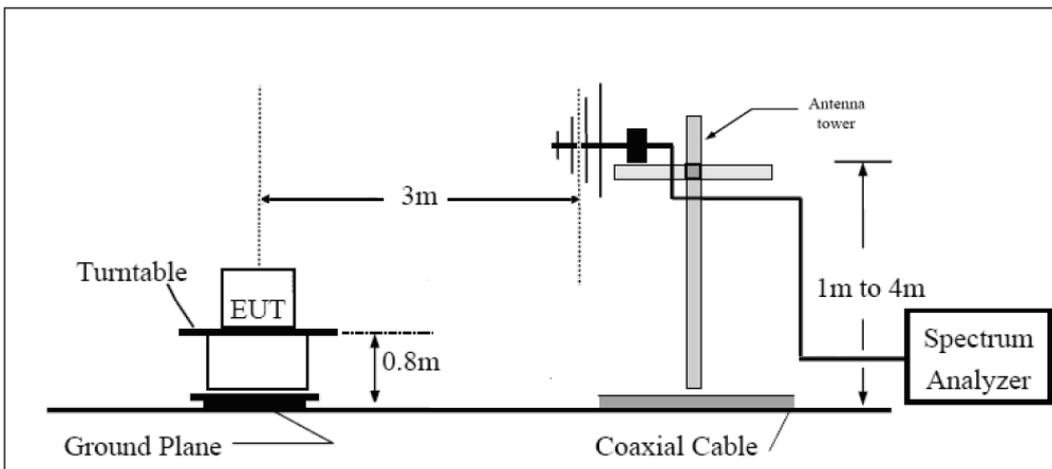
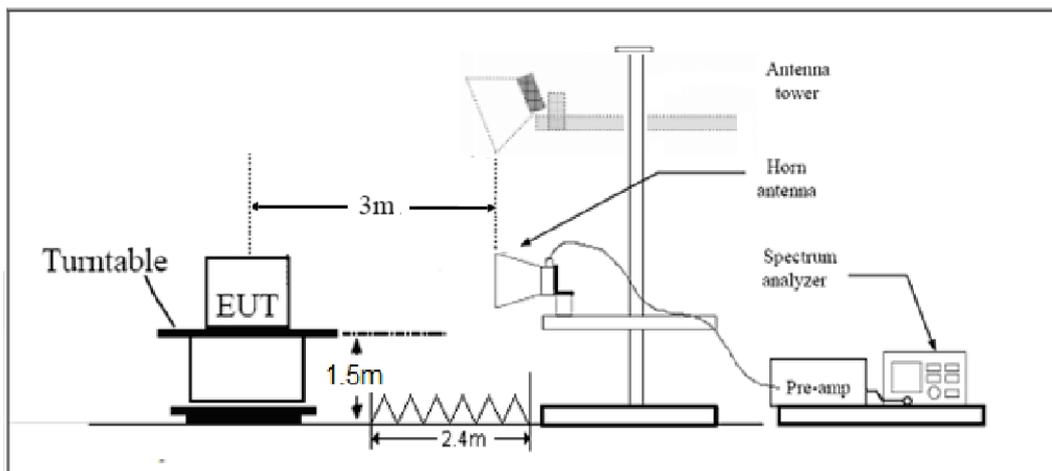
Above 1GHz (detector: Peak):

(a) PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO

(b) AVERAGE: RBW=1MHz / VBW=3MHz / Sweep=AUTO

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded.

The test is in transmitting mode.

Test setup**9KHz ~ 30MHz****30MHz ~ 1GHz****Above 1GHz**

Note: Area side:2.4mX3.6m

**Limits**

Rule Part 15.247(d) specifies that “In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).”

Limit in restricted band

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
0.009–0.490	2400/F(kHz)	/
0.490–1.705	24000/F(kHz)	/
1.705–30.0	30	/
30-88	100	40
88-216	150	43.5
216-960	200	46
Above960	500	54

§15.35(b)

There is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
9KHz-30MHz	3.55 dB
30MHz-200MHz	4.19 dB
200MHz-1GHz	3.63 dB
Above 1GHz	3.68 dB

Test result

Sweep from 9 kHz to 30MHz, and the emissions more than 20 dB below the permissible value are not reported.

The following graphs display the maximum values of horizontal and vertical by software.

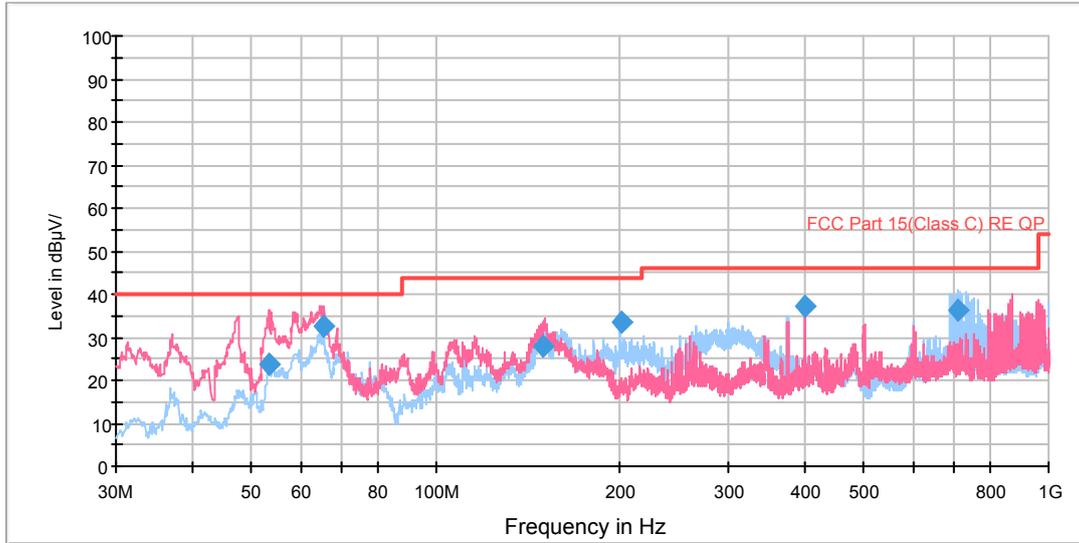
For above 1GHz, Blue trace uses the peak detection, Green trace uses the average detection.

Antenna 1

SISO

802.11b CH1

RE 30M-1GHz QP



Radiates Emission from 30MHz to 1GHz

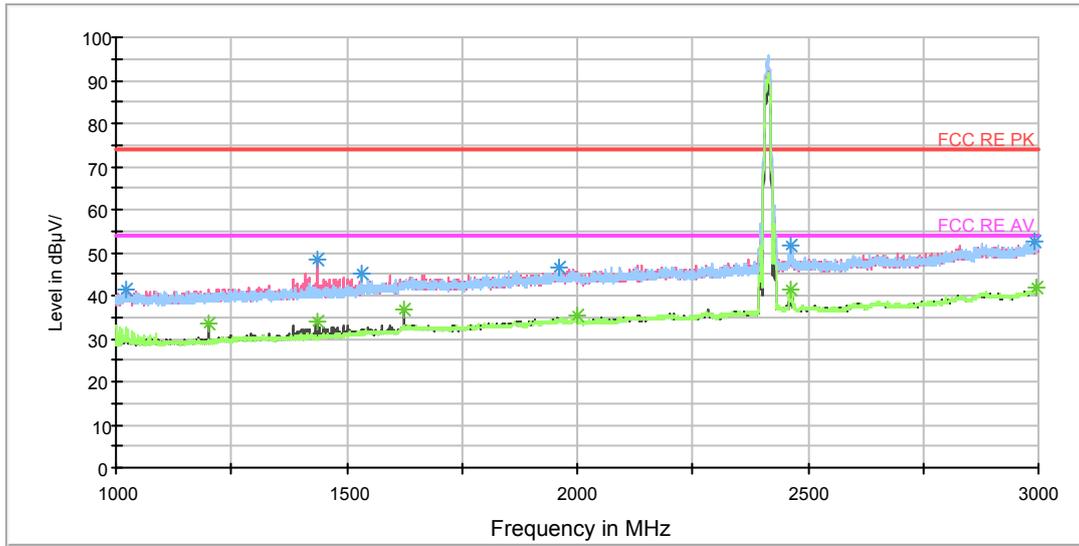
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
53.306800	23.6	101.0	V	109.0	44.3	-20.7	16.4	40.0
65.643382	32.4	105.0	V	164.0	56.6	-24.2	7.6	40.0
149.902406	27.9	105.0	V	39.0	57.1	-29.2	15.6	43.5
200.012519	33.3	130.0	H	34.0	59.6	-26.3	10.2	43.5
400.015000	37.2	122.0	V	78.0	58.0	-20.8	8.8	46.0
709.955000	36.1	105.0	H	0.0	51.2	-15.1	9.9	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss (cable loss+amplifier gain)

3. Margin = Limit – Quasi-Peak

RE 1G-3GHz PK+AV



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1023.250000	41.5	105.0	H	40.0	50.6	-9.1	32.5	74
1437.750000	48.4	105.0	V	111.0	55.3	-6.9	25.6	74
1534.250000	45.3	105.0	V	0.0	51.7	-6.4	28.7	74
1962.000000	46.6	105.0	H	0.0	49.9	-3.3	27.4	74
2463.750000	51.6	105.0	H	140.0	52.2	-0.6	22.4	74
2990.000000	52.6	105.0	V	261.0	50.4	2.2	21.4	74

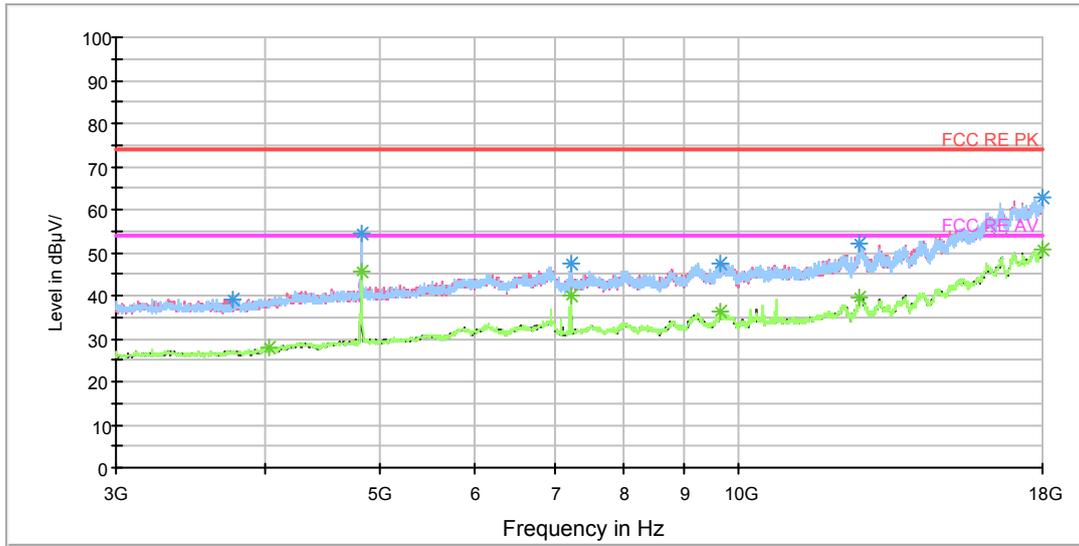
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1200.000000	33.3	105.0	V	42.0	41.5	-8.2	20.7	54
1437.750000	34.2	105.0	V	111.0	41.1	-6.9	19.8	54
1625.750000	36.9	105.0	V	261.0	41.7	-4.8	17.1	54
2000.000000	35.5	105.0	V	184.0	38.9	-3.4	18.5	54
2463.250000	41.2	105.0	H	202.0	41.7	-0.5	12.8	54
2997.500000	41.9	105.0	H	0.0	39.6	2.3	12.1	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



RE 3-18GHz PK+AV



Radiates Emission from 3GHz to 18GHz

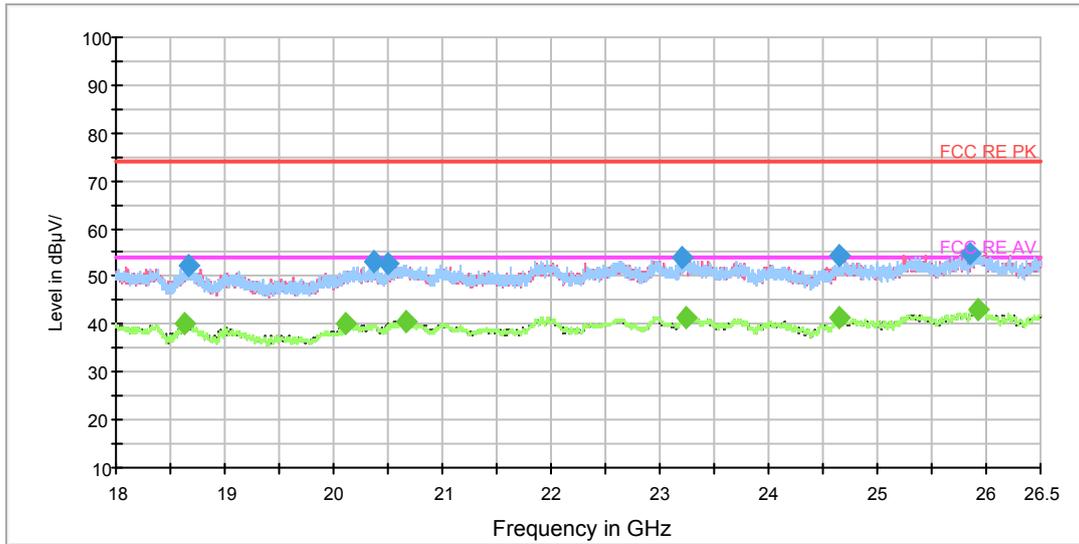
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3765.000000	39.3	102.0	H	177.0	41.0	-1.7	34.7	74
4824.375000	54.4	102.0	H	316.0	53.0	1.4	19.6	74
7237.500000	47.3	102.0	H	293.0	40.4	6.9	26.7	74
9648.750000	47.6	102.0	H	86.0	37.8	9.8	26.4	74
12641.250000	51.9	102.0	V	0.0	37.4	14.5	22.1	74
18000.000000	62.7	102.0	H	20.0	37.2	25.5	11.3	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4035.000000	27.9	102.0	V	0.0	28.9	-1.0	26.1	54
4822.500000	45.7	102.0	H	316.0	44.4	1.3	8.3	54
7237.500000	40.1	102.0	H	293.0	33.2	6.9	13.9	54
9648.750000	36.4	102.0	H	86.0	26.6	9.8	17.6	54
12639.375000	39.8	102.0	H	0.0	25.3	14.5	14.2	54
17998.125000	50.5	102.0	H	0.0	25.1	25.4	3.5	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18660.875000	52.3	H	0.0	56.6	-4.3	21.7	74.0
20372.562500	53.2	H	0.0	59.3	-6.1	20.8	74.0
20507.500000	52.6	H	173.0	58.8	-6.2	21.4	74.0
23207.312500	54.0	V	25.0	60.0	-6.0	20.0	74.0
24656.562500	54.2	V	0.0	60.2	-6.0	19.8	74.0
25856.125000	54.9	V	135.0	60.4	-5.5	19.1	74.0

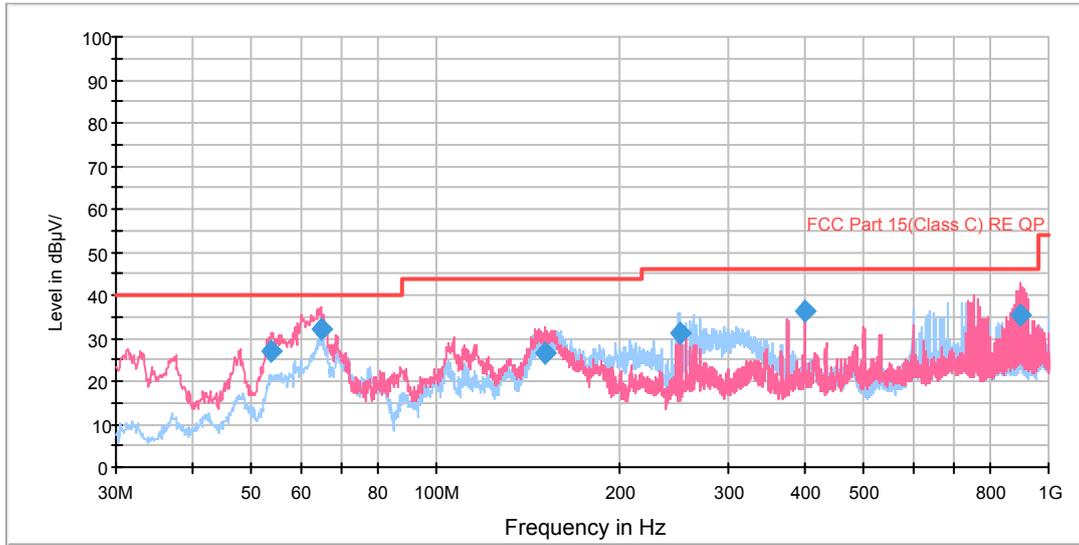
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18630.062500	40.0	V	0.0	44.2	-4.2	14.0	54.0
20109.062500	40.0	V	0.0	45.8	-5.8	14.0	54.0
20673.250000	40.6	H	42.0	47.2	-6.6	13.4	54.0
23231.750000	41.5	H	16.0	47.5	-6.0	12.5	54.0
24654.437500	41.4	V	161.0	47.4	-6.0	12.6	54.0
25917.750000	43.1	H	68.0	48.5	-5.4	10.9	54.0

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11b CH6

RE 30M-1GHz QP

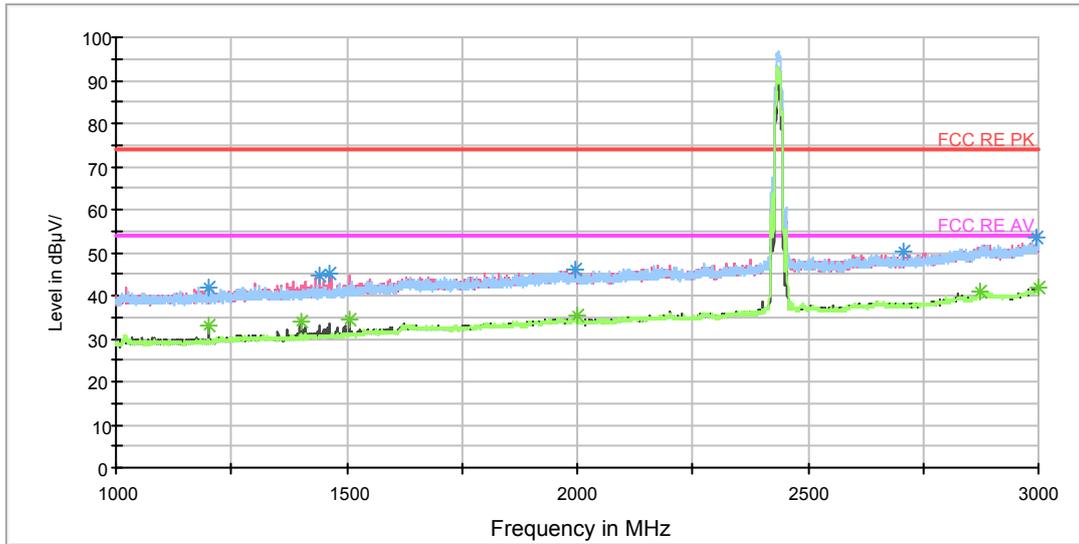


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
53.870588	26.9	101.0	V	120.0	47.7	-20.8	13.1	40.0
64.796753	32.3	105.0	V	196.0	56.0	-23.7	7.7	40.0
150.709981	26.7	104.0	V	46.0	55.9	-29.2	16.8	43.5
249.196250	31.2	101.0	H	0.0	56.0	-24.8	14.8	46.0
400.015000	36.4	105.0	V	7.0	57.2	-20.8	9.6	46.0
901.088250	35.4	104.0	V	81.0	48.3	-12.9	10.6	46.0

- Remark:**
1. Quasi-Peak = Reading value + Correction factor
 2. Correction Factor = Antenna factor+ Insertion loss (cable loss+amplifier gain)
 3. Margin = Limit – Quasi-Peak

RE 1G-3GHz PK+AV



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1200.250000	41.9	105.0	V	45.0	50.1	-8.2	32.1	74
1440.750000	44.8	105.0	V	341.0	51.7	-6.9	29.2	74
1461.500000	45.1	105.0	V	305.0	51.9	-6.8	28.9	74
1996.250000	46.1	105.0	H	257.0	49.4	-3.3	27.9	74
2706.750000	50.4	105.0	V	0.0	50.3	0.1	23.6	74
2997.000000	53.3	105.0	H	189.0	51.0	2.3	20.7	74

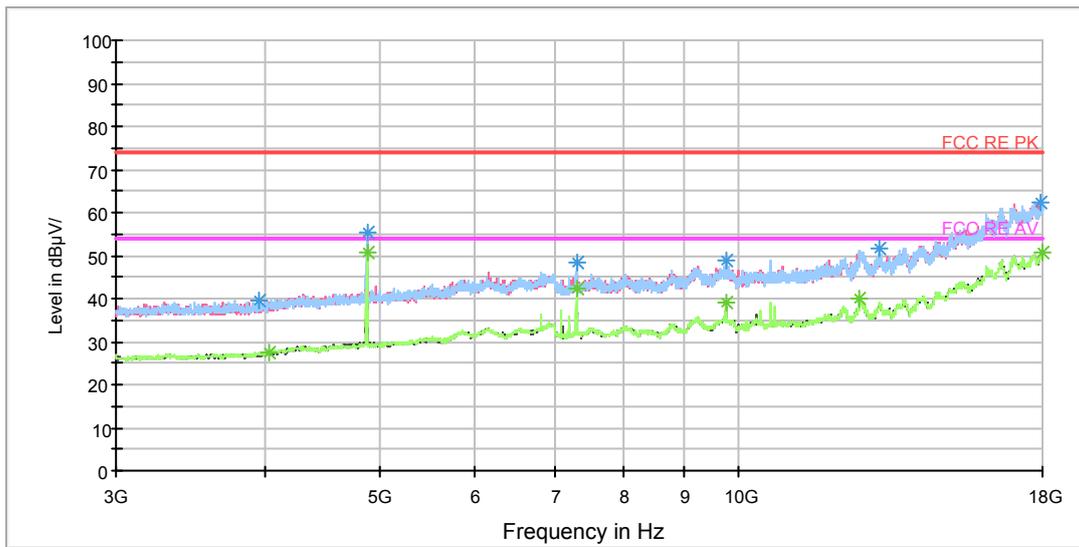
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1200.000000	32.8	105.0	V	158.0	41.0	-8.2	21.2	54
1400.250000	33.8	105.0	V	182.0	40.9	-7.1	20.2	54
1507.750000	34.3	105.0	V	127.0	40.8	-6.5	19.7	54
1999.750000	35.4	105.0	V	358.0	38.8	-3.4	18.6	54
2875.500000	40.8	105.0	V	176.0	38.5	2.3	13.2	54
3000.000000	41.8	105.0	H	8.0	39.5	2.3	12.2	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



RE 3-18GHz PK+AV



Radiates Emission from 3GHz to 18GHz

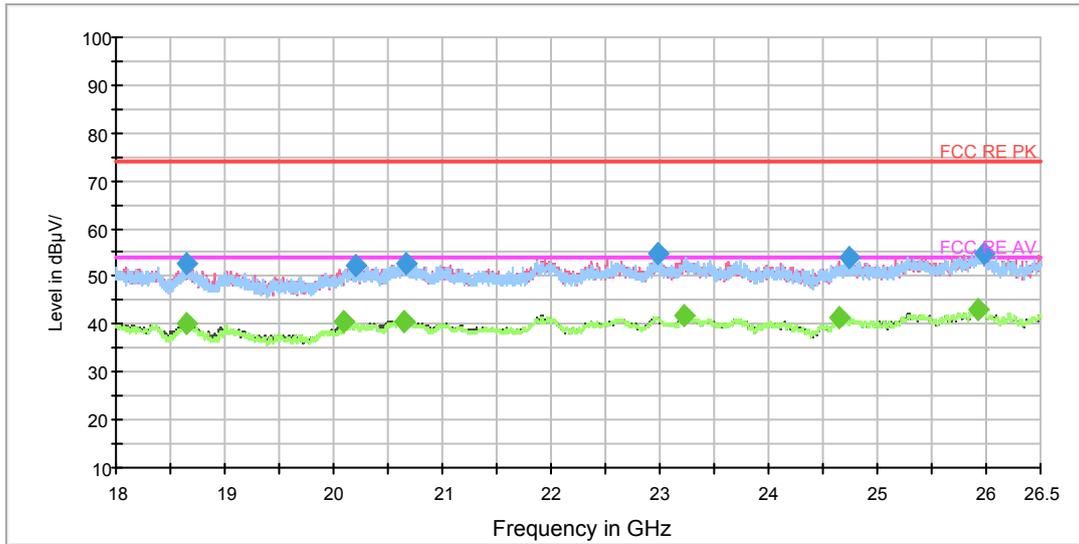
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3956.250000	39.7	102.0	H	85.0	40.7	-1.0	34.3	74
4873.125000	55.6	102.0	H	316.0	53.8	1.8	18.4	74
7308.750000	48.6	102.0	H	130.0	41.6	7.0	25.4	74
9748.125000	48.7	102.0	H	245.0	38.9	9.8	25.3	74
13141.875000	51.6	102.0	H	0.0	37.2	14.4	22.4	74
17923.125000	62.3	102.0	H	0.0	36.6	25.7	11.7	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4036.875000	27.6	102.0	H	0.0	28.6	-1.0	26.4	54
4873.125000	50.6	102.0	H	316.0	48.8	1.8	3.4	54
7308.750000	42.5	102.0	H	130.0	35.5	7.0	11.5	54
9748.125000	39.1	102.0	H	245.0	29.3	9.8	14.9	54
12639.375000	39.9	102.0	V	91.0	25.4	14.5	14.1	54
18000.000000	50.7	102.0	V	239.0	25.2	25.5	3.3	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18639.625000	52.7	V	209.0	56.9	-4.2	21.3	74.0
20204.687500	52.3	H	94.0	58.2	-5.9	21.7	74.0
20671.125000	52.8	V	209.0	59.4	-6.6	21.2	74.0
22985.250000	54.7	V	339.0	60.9	-6.2	19.3	74.0
24738.375000	53.8	V	262.0	59.8	-6.0	20.2	74.0
25979.375000	55.0	V	314.0	60.4	-5.4	19.0	74.0

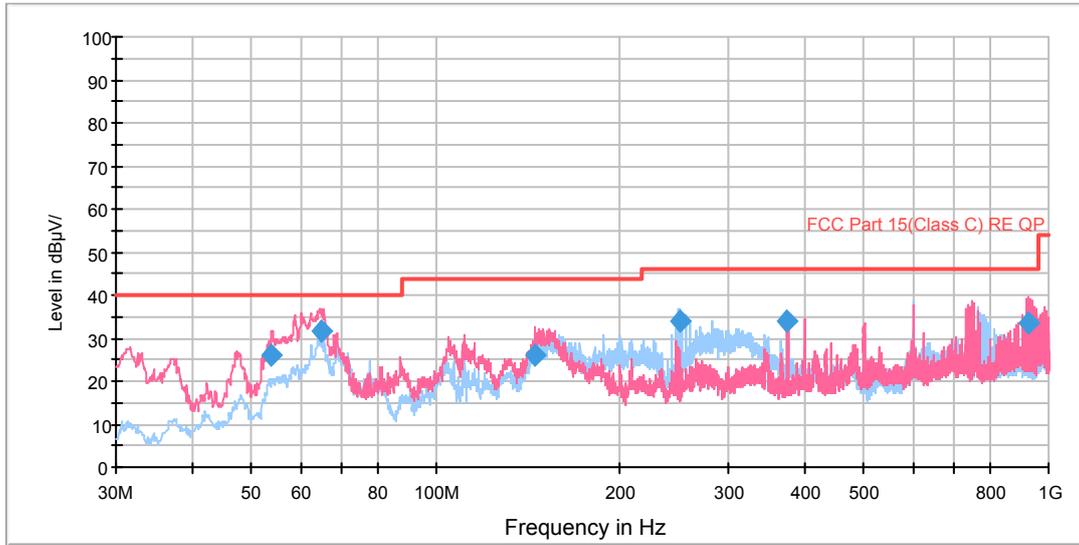
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18649.187500	40.1	V	77.0	44.3	-4.2	13.9	54.0
20099.500000	40.7	V	0.0	46.5	-5.8	13.3	54.0
20656.250000	40.7	H	39.0	47.3	-6.6	13.3	54.0
23226.437500	41.7	H	254.0	47.7	-6.0	12.3	54.0
24656.562500	41.2	H	0.0	47.2	-6.0	12.8	54.0
25929.437500	43.1	H	0.0	48.5	-5.4	10.9	54.0

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

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RE 30M-1GHz QP

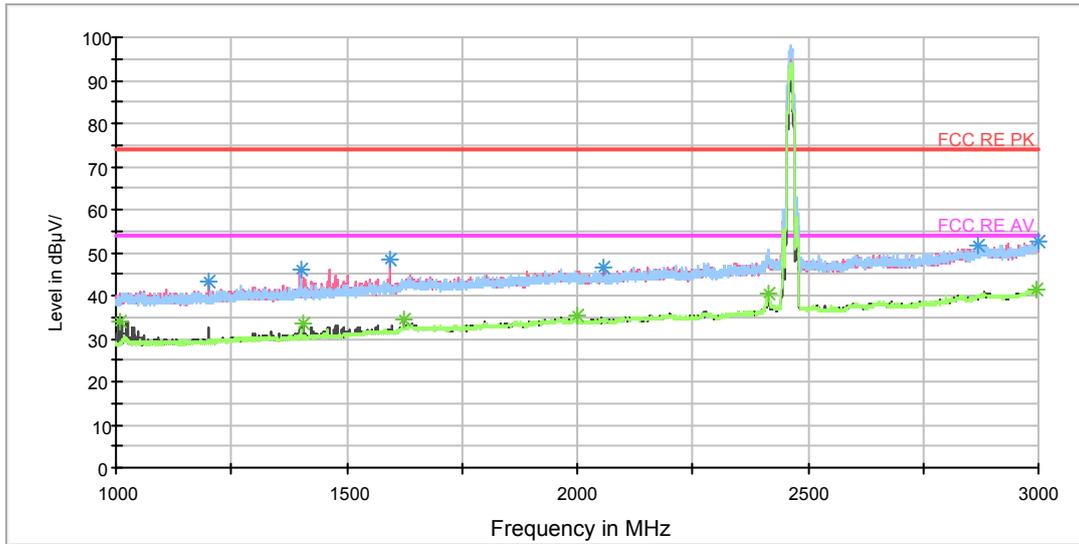


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
53.750588	26.1	101.0	V	90.0	46.9	-20.8	13.9	40.0
64.755806	31.7	124.0	V	202.0	55.4	-23.7	8.3	40.0
144.700744	26.1	104.0	V	34.0	55.9	-29.8	17.4	43.5
249.157000	34.1	101.0	H	286.0	58.9	-24.8	11.9	46.0
375.018750	34.0	130.0	V	2.0	55.9	-21.9	12.0	46.0
928.461500	33.5	101.0	V	219.0	46.5	-13.0	12.5	46.0

- Remark: 1. Quasi-Peak = Reading value + Correction factor
 2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)
 3. Margin = Limit – Quasi-Peak

RE 1G-3GHz PK+AV



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

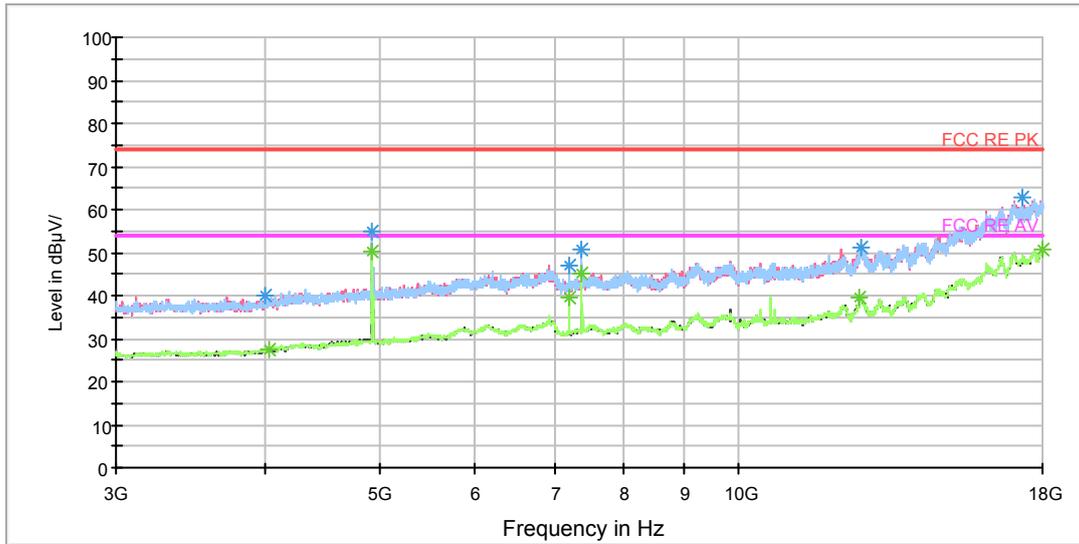
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1200.250000	43.1	105.0	V	220.0	51.3	-8.2	30.9	74
1400.000000	46.0	105.0	V	337.0	53.1	-7.1	28.0	74
1593.750000	48.6	105.0	V	190.0	55.0	-6.4	25.4	74
2058.250000	46.5	105.0	V	307.0	49.7	-3.2	27.5	74
2871.000000	51.7	105.0	H	218.0	49.5	2.2	22.3	74
2999.000000	52.8	105.0	H	32.0	50.5	2.3	21.2	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1006.750000	34.1	105.0	V	123.0	43.4	-9.3	19.9	54
1405.750000	33.5	105.0	V	111.0	40.6	-7.1	20.5	54
1625.500000	34.3	105.0	V	0.0	39.1	-4.8	19.7	54
2000.250000	35.2	105.0	V	220.0	38.6	-3.4	18.8	54
2414.250000	40.4	105.0	H	147.0	40.9	-0.5	13.6	54
2995.250000	41.5	105.0	H	262.0	39.2	2.3	12.5	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

RE 3-18GHz PK+AV



Radiates Emission from 3GHz to 18GHz

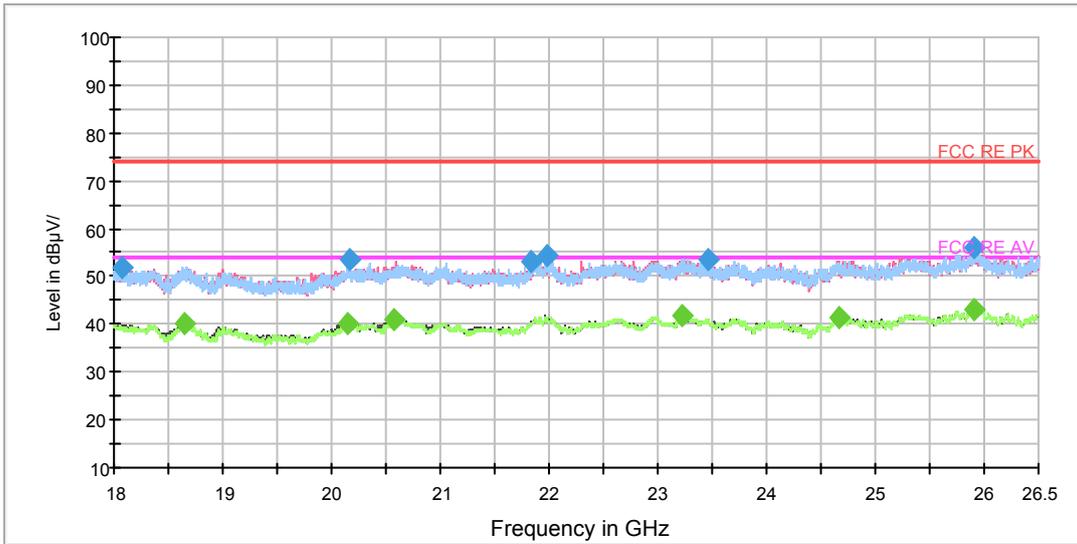
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4001.250000	39.9	102.0	H	0.0	41.0	-1.1	34.1	74
4923.750000	55.1	102.0	H	312.0	53.2	1.9	18.9	74
7198.125000	47.0	102.0	H	103.0	40.6	6.4	27.0	74
7387.500000	50.5	102.0	H	125.0	43.5	7.0	23.5	74
12676.875000	51.2	102.0	V	0.0	37.0	14.2	22.8	74
17319.375000	62.6	102.0	H	0.0	38.3	24.3	11.4	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4029.375000	27.5	102.0	H	0.0	28.6	-1.1	26.5	54
4923.750000	50.1	102.0	H	312.0	48.2	1.9	3.9	54
7198.125000	39.7	102.0	H	103.0	33.3	6.4	14.3	54
7387.500000	44.9	102.0	H	125.0	37.9	7.0	9.1	54
12639.375000	39.7	102.0	V	297.0	25.2	14.5	14.3	54
17998.125000	50.6	102.0	V	137.0	25.2	25.4	3.4	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18065.875000	52.0	H	0.0	54.1	-2.1	22.0	74.0
20159.000000	53.5	V	0.0	59.3	-5.8	20.5	74.0
21839.875000	53.1	H	311.0	61.1	-8.0	20.9	74.0
21980.125000	54.4	V	21.0	62.4	-8.0	19.6	74.0
23465.500000	53.4	H	229.0	59.3	-5.9	20.6	74.0
25898.625000	55.9	V	319.0	61.3	-5.4	18.1	74.0

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

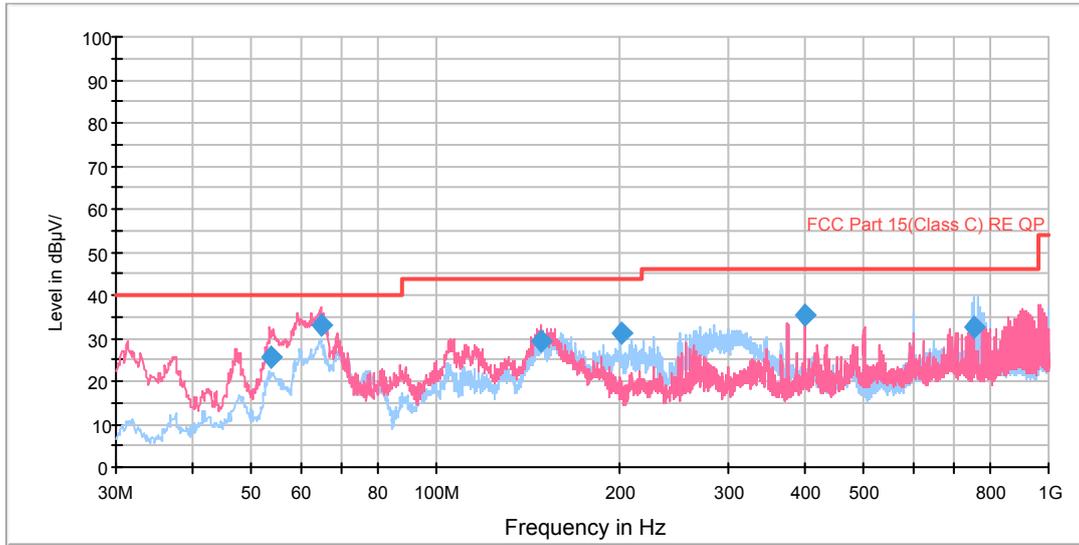
Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18649.187500	40.2	V	0.0	44.4	-4.2	13.8	54.0
20155.812500	40.1	V	0.0	45.9	-5.8	13.9	54.0
20568.062500	40.8	V	0.0	47.2	-6.4	13.2	54.0
23228.562500	41.7	H	0.0	47.7	-6.0	12.3	54.0
24661.875000	41.3	V	0.0	47.3	-6.0	12.7	54.0
25908.187500	43.0	V	77.0	48.4	-5.4	11.0	54.0

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



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RE 30M-1GHz QP



Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
53.548694	25.4	101.0	V	82.0	46.2	-20.8	14.6	40.0
64.796753	33.2	105.0	V	175.0	56.9	-23.7	6.8	40.0
148.127256	29.1	104.0	V	36.0	58.5	-29.4	14.4	43.5
200.012519	31.2	130.0	H	25.0	57.5	-26.3	12.3	43.5
400.013750	35.1	101.0	V	3.0	55.9	-20.8	10.9	46.0
757.729250	32.7	105.0	H	38.0	47.5	-14.8	13.3	46.0

- Remark: 1. Quasi-Peak = Reading value + Correction factor
 2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)
 3. Margin = Limit – Quasi-Peak