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检测
TESTING
CNAS L2264

RF TEST REPORT

Applicant	OBSERVA Telecom.
FCC ID	2AI24QCI4NU
Product	POE ROUTER
Brand	observatelecom
Model	QCI4NU
Report No.	RXA1608-0170RF01R1
Issue Date	September 20, 2016

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15C (2015)**. 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 *Reviewed by: Kai Xu*

TA Technology (Shanghai) Co., Ltd.

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TABLE OF CONTENT

Summary of measurement results

Number	Summary of measurements of results	Clause in FCC rules	Verdict
1	Maximum peak 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: August 11, 2016 – August 22, 2016			

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
City:	Shanghai
Post code:	201201
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2. General Description of Equipment under Test

Client Information

Applicant	OBSERVA Telecom.
Applicant address	Monte Esquinza, 28 – 1st floor – Right hand
Manufacturer	OBSERVA Telecom.
Manufacturer address	Monte Esquinza, 28 – 1st floor – Right hand

General information

Model:	QCI4NU
SN:	6212015520400363
Hardware Version:	QCI4U V1.0
Software Version:	QCI4NU-1.2.5-R12-ARGENTINA
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	Antennna 1: 12.14 dBm Antennna 2: 13.45 dBm MIMO: 10.52 dBm
Operating Frequency Range(s)	2400 ~ 2483.5 MHz
EUT Accessory	
Adapter	Manufacturer: AQUILSTAR PRECISION INDUSTRIAL (SHENZHEN) CO., LTD Model: ASSA55D-120100

Ethernet cables	Model : UTP CAT5E
Note: The information of the EUT is declared by the manufacturer. Please refer to the specifications or user manual for details.	

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 (2015) 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

5. Test Case Results

5.1. Peak Power Output –Conducted

Ambient condition

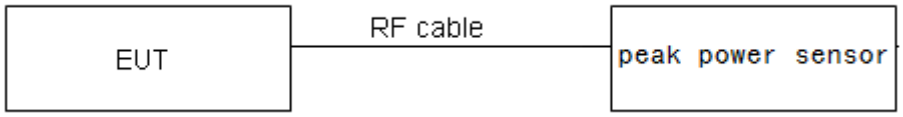
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

During the process of the testing, The EUT was connected to peak power meter with a known loss. The EUT is max power transmission with proper modulation. The peak detector is used. We use Maximum Peak Conducted Output Power Level Method in KDB 558074 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."

Peak Output Power	≤ 1W (30dBm)

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

Packet Type	Antenna 1 Power Index			Antenna 2 Power Index		
	CH1	CH6	CH11	CH1	CH6	CH11
802.11b	15	15	15	15	15	15
802.11g	15	15	15	15	15	15
802.11n HT20	15	15	15	15	15	15
Packet Type	**CH3**	**CH6**	**CH9**	**CH3**	**CH6**	**CH9**
802.11n HT40	15	15	15	15	15	15
Packet Type	**MIMO /Antenna 1 Power Index**			**MIMO /Antenna 2 Power Index**		
	CH1	CH6	CH11	CH1	CH6	CH11
802.11n HT20	15	15	15	15	15	15
Packet Type	**CH3**	**CH6**	**CH9**	**CH3**	**CH6**	**CH9**
802.11n HT40	15	15	15	15	15	15

Antenna 1

Network Standards	Carrier frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)	Conclusion
802.11b	2412	8.96	30	PASS
	2437	9.28	30	PASS
	2462	12.14	30	PASS
802.11g	2412	10.56	30	PASS
	2437	9.40	30	PASS
	2462	10.22	30	PASS
802.11n HT20	2412	8.42	30	PASS
	2437	9.42	30	PASS
	2462	9.50	30	PASS
802.11n HT40	2422	-0.59	30	PASS
	2437	-0.32	30	PASS
	2452	-0.38	30	PASS

Antenna 2

Network Standards	Carrier frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)	Conclusion
802.11b	2412	11.09	30	PASS
	2437	11.72	30	PASS
	2462	13.45	30	PASS
802.11g	2412	8.69	30	PASS
	2437	9.48	30	PASS
	2462	11.16	30	PASS
802.11n HT20	2412	9.93	30	PASS
	2437	9.62	30	PASS
	2462	12.16	30	PASS
802.11n HT40	2422	-0.21	30	PASS
	2437	1.77	30	PASS
	2452	1.05	30	PASS

MIMO

Network Standards	Carrier frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)	Conclusion
802.11n HT20	2412	8.65	30	PASS
	2437	9.46	30	PASS
	2462	10.52	30	PASS
802.11n HT40	2422	-0.86	30	PASS
	2437	0.40	30	PASS
	2452	0.64	30	PASS

5.2. 6dB Bandwidth

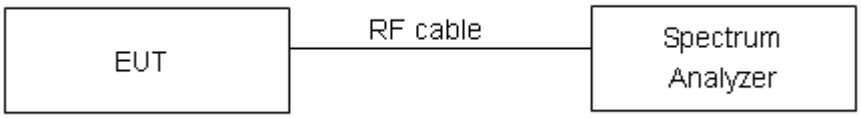
Ambient condition

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

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

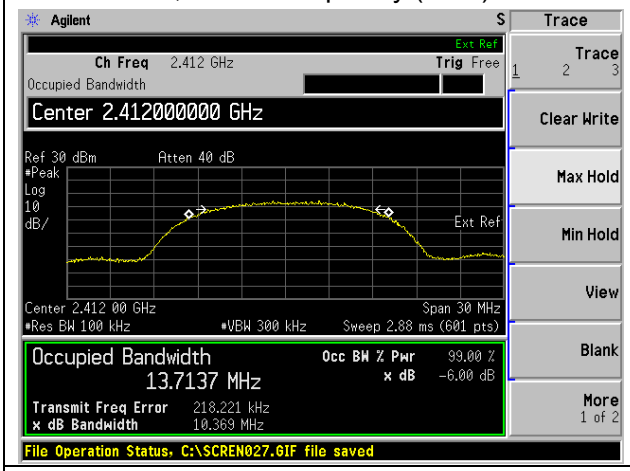
Network Standards	Carrier frequency (MHz)	Minimum 6 dB bandwidth (MHz)	Limit(kHz)	Conclusion
802.11b	2412	10.369	500	PASS
	2437	10.327	500	PASS
	2462	10.063	500	PASS
802.11g	2412	17.806	500	PASS
	2437	16.562	500	PASS
	2462	17.790	500	PASS
802.11n HT20	2412	17.815	500	PASS
	2437	17.803	500	PASS
	2462	17.841	500	PASS
802.11n HT40	2422	36.618	500	PASS
	2437	36.629	500	PASS
	2452	36.667	500	PASS

Antenna 2

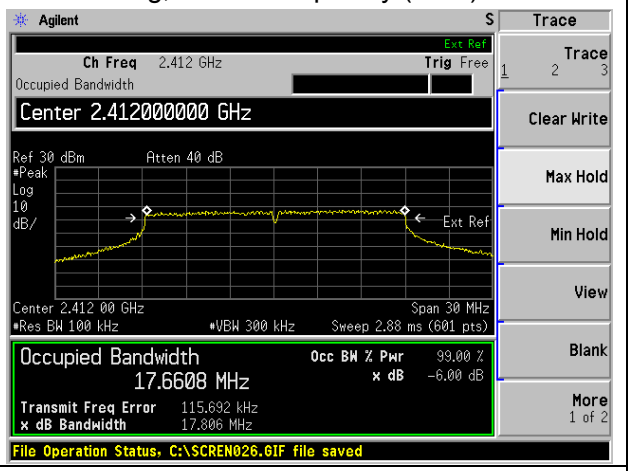
Network Standards	Carrier frequency (MHz)	Minimum 6 dB bandwidth (MHz)	Limit(kHz)	Conclusion
802.11b	2412	10.484	500	PASS
	2437	10.481	500	PASS
	2462	9.872	500	PASS
802.11g	2412	16.493	500	PASS
	2437	16.577	500	PASS
	2462	16.534	500	PASS
802.11n HT20	2412	17.753	500	PASS
	2437	16.536	500	PASS
	2462	17.771	500	PASS
802.11n HT40	2422	36.560	500	PASS
	2437	36.639	500	PASS
	2452	36.581	500	PASS

Antenna 1

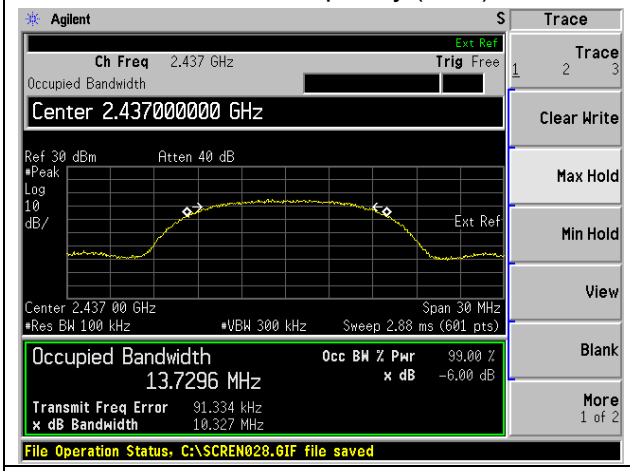
802.11b, Carrier frequency (MHz): 2412



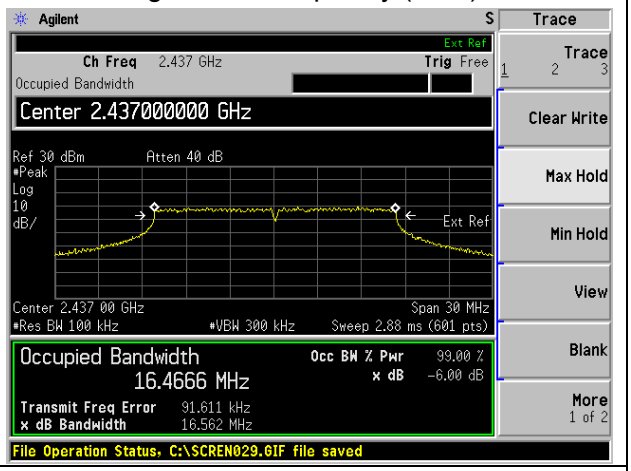
802.11g, Carrier frequency (MHz): 2412



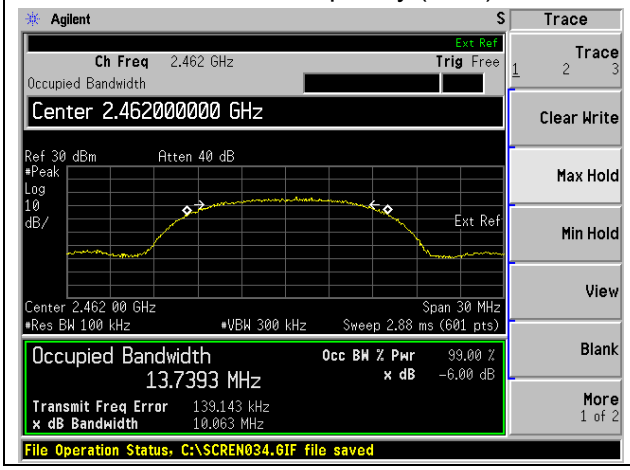
802.11b, Carrier frequency (MHz): 2437



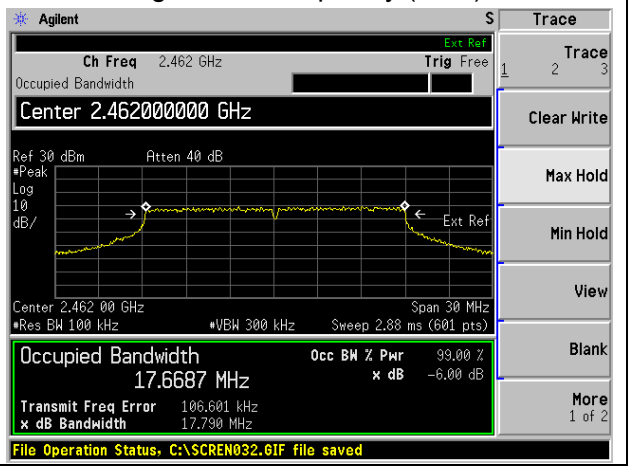
802.11g, Carrier frequency (MHz): 2437



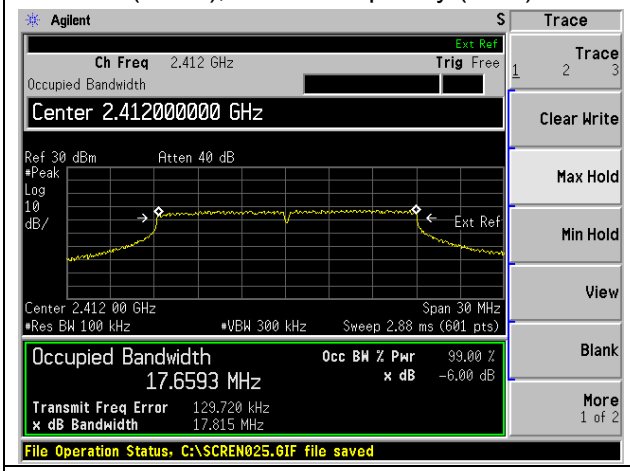
802.11b, Carrier frequency (MHz):2462



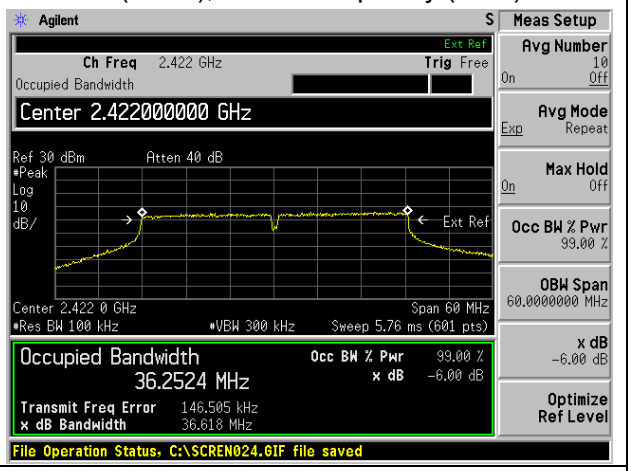
802.11g, Carrier frequency (MHz):2462



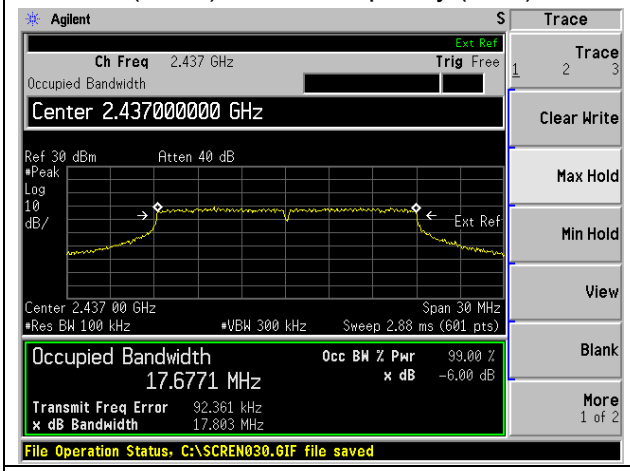
802.11n(HT20), Carrier frequency (MHz): 2412



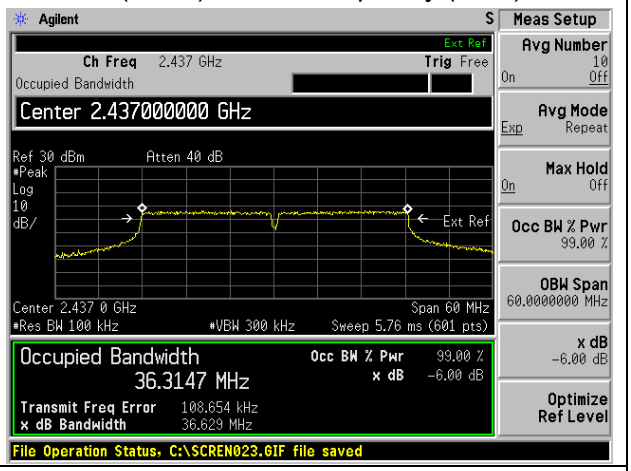
802.11n(HT40), Carrier frequency (MHz): 2422



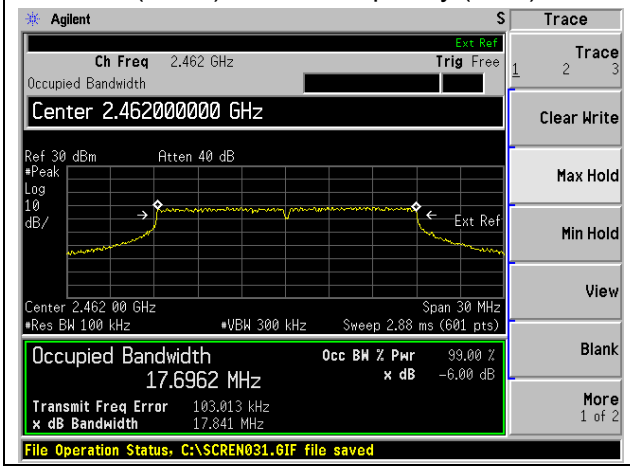
802.11n(HT20), Carrier frequency (MHz): 2437



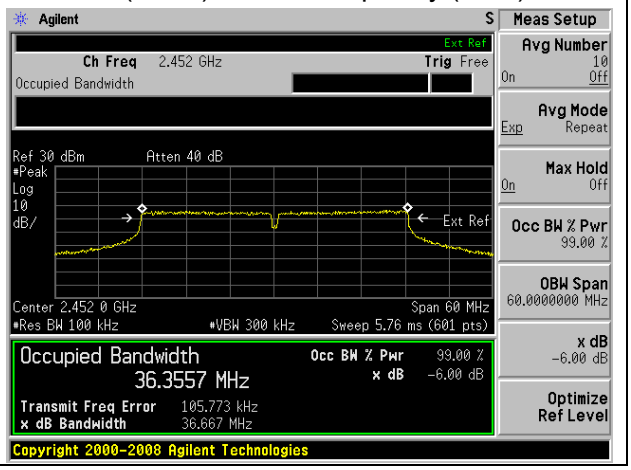
802.11n(HT40), Carrier frequency (MHz): 2437



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

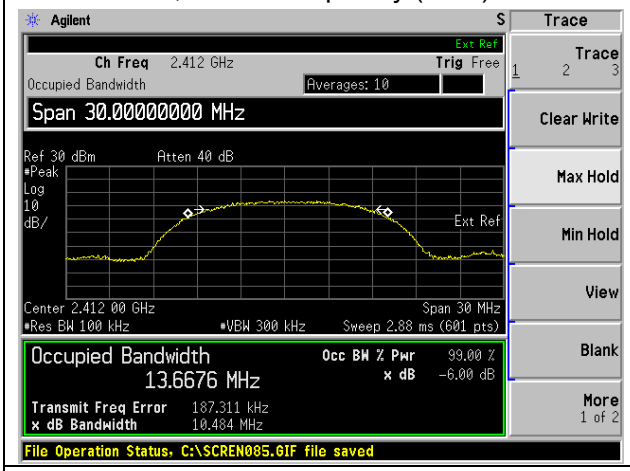


802.11n(HT40), Carrier frequency (MHz):2452

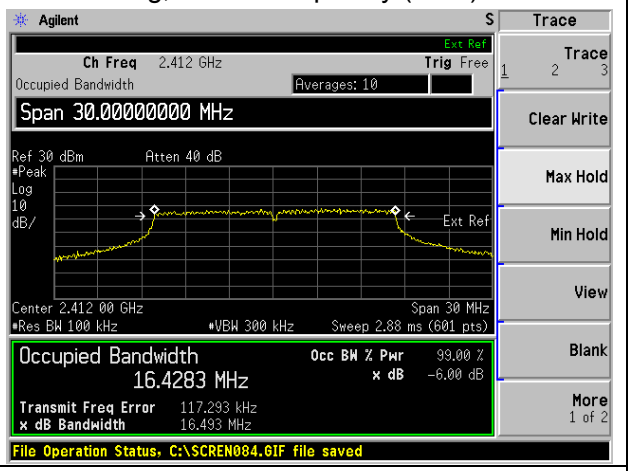


Antenna 2

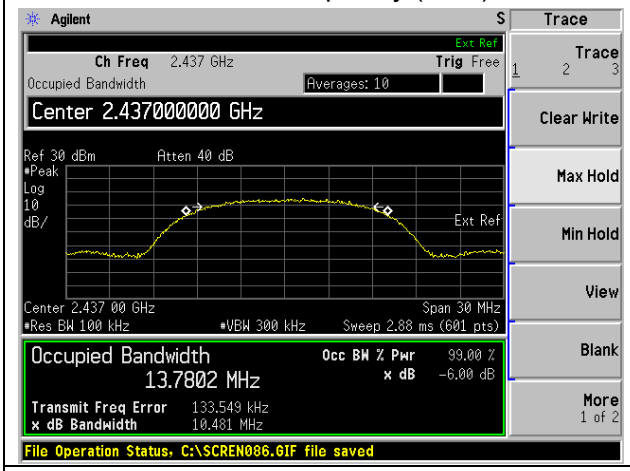
802.11b, Carrier frequency (MHz): 2412



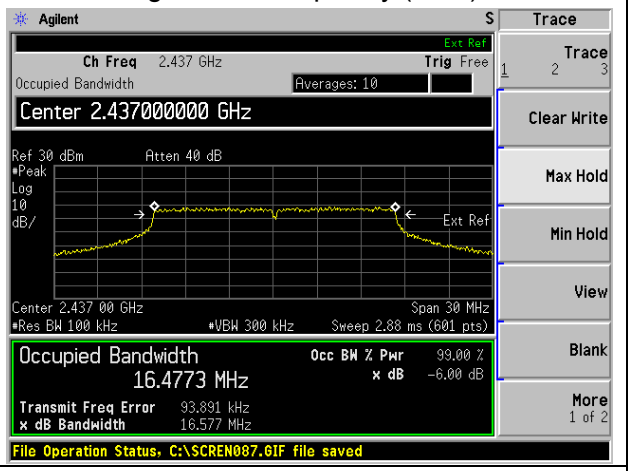
802.11g, Carrier frequency (MHz): 2412



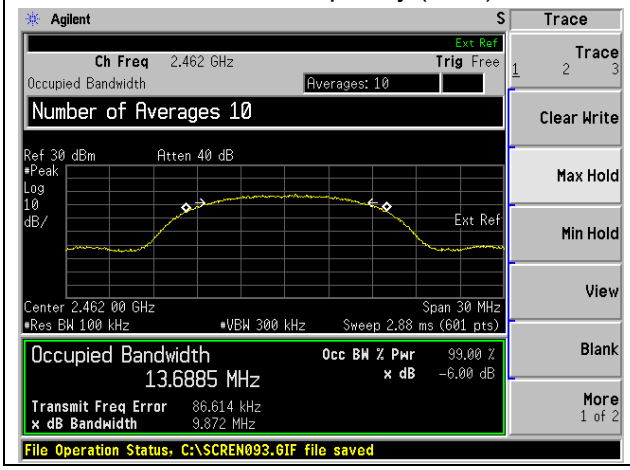
802.11b, Carrier frequency (MHz): 2437



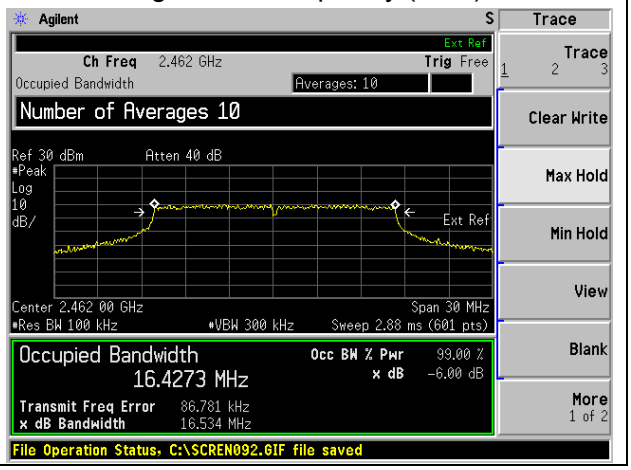
802.11g, Carrier frequency (MHz): 2437



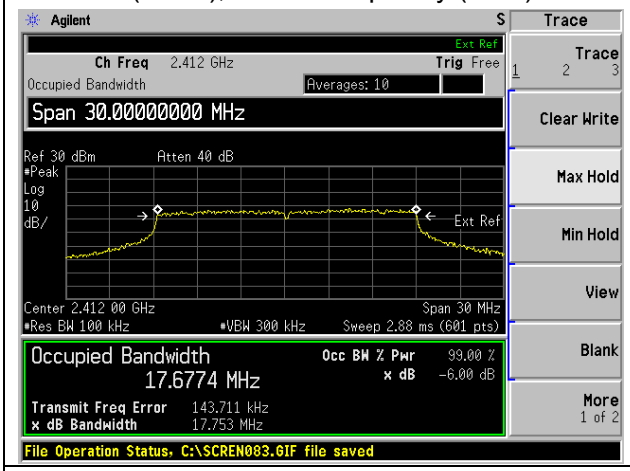
802.11b, Carrier frequency (MHz):2462



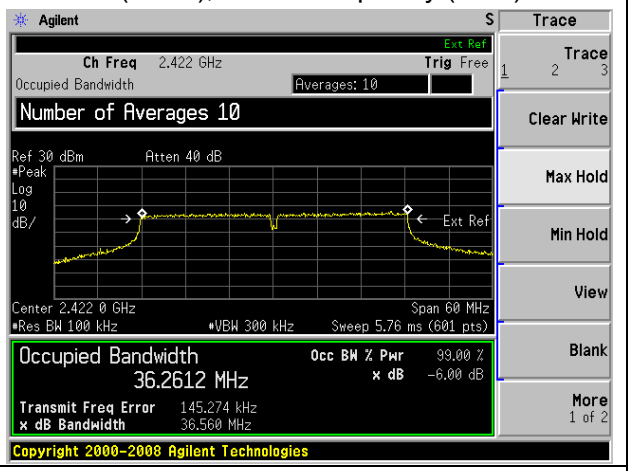
802.11g, Carrier frequency (MHz):2462



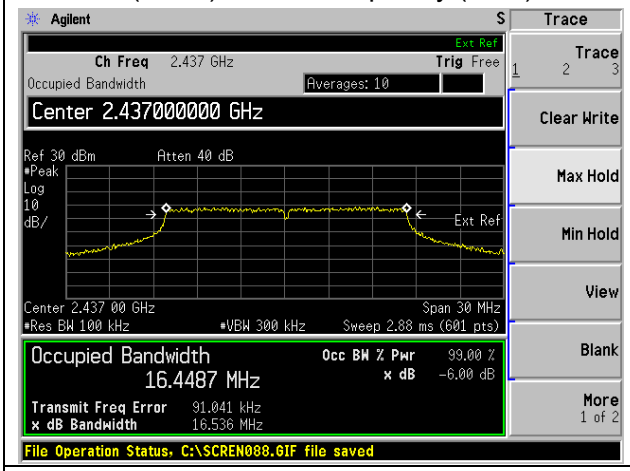
802.11n(HT20), Carrier frequency (MHz): 2412



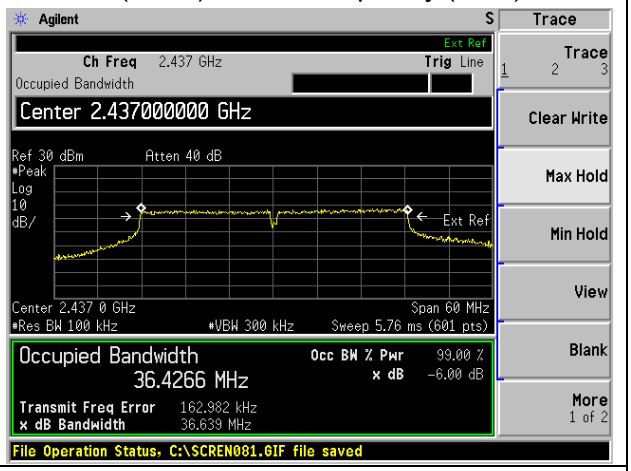
802.11n(HT40), Carrier frequency (MHz): 2422



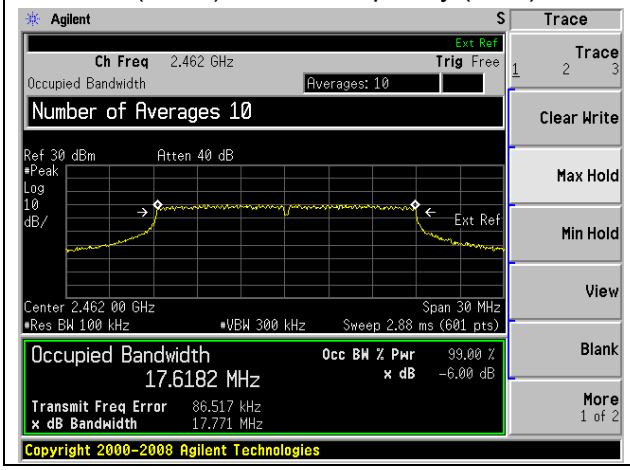
802.11n(HT20), Carrier frequency (MHz): 2437



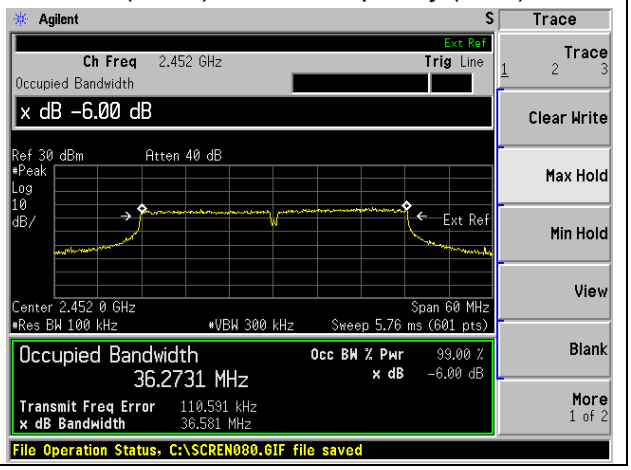
802.11n(HT40), Carrier frequency (MHz): 2437



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



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



5.3. Band Edge

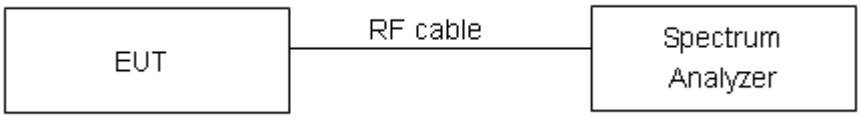
Ambient condition

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.”

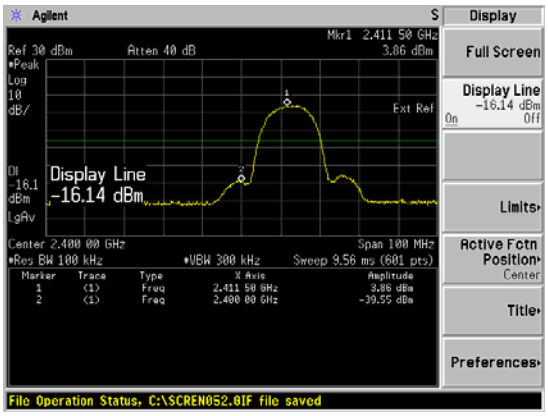
Measurement Uncertainty

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

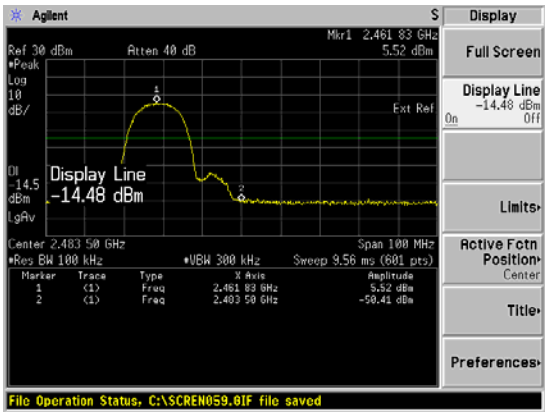
Frequency	Uncertainty
2GHz-3GHz	1.407 dB

Test Results: Antenna 1

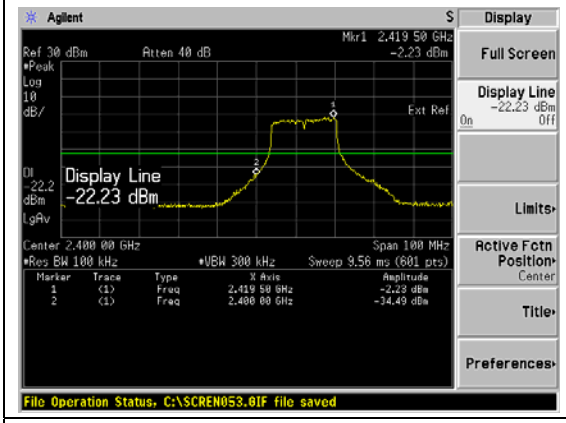
802.11b, Channel No.: 1



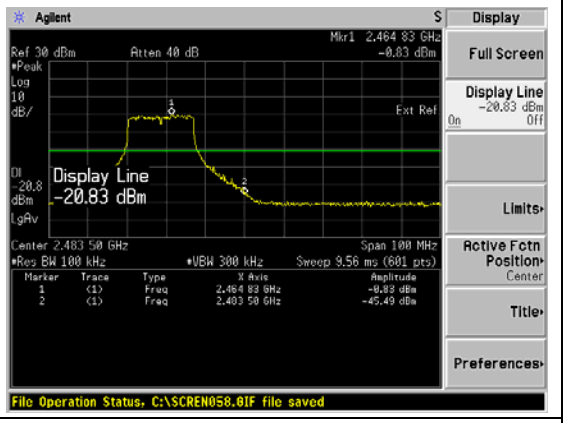
802.11b, Channel No.: 11



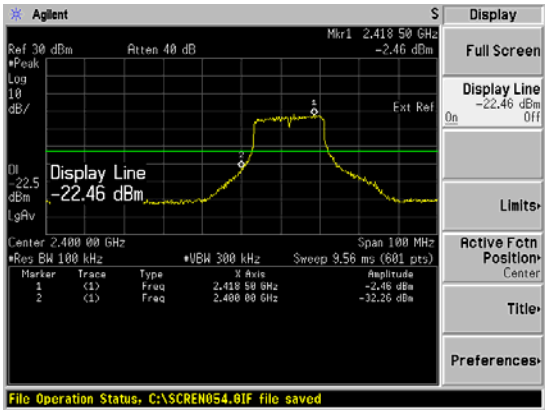
802.11g, Channel No.: 1



802.11g, Channel No.: 11



802.11n(HT20), Channel No.: 1



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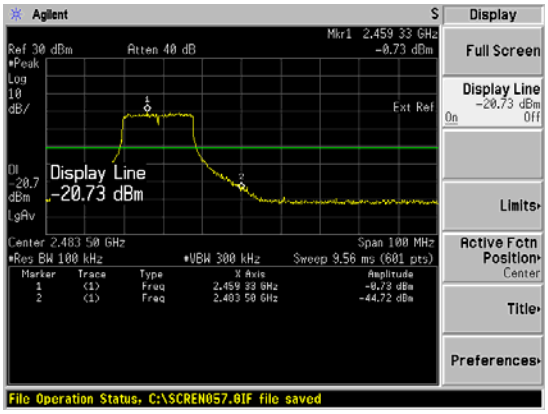
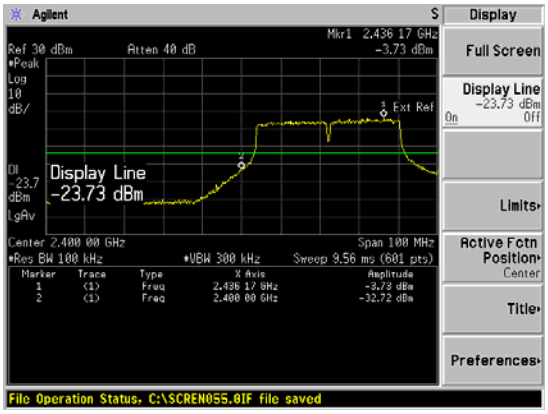


802.11n(HT40), Channel No.: 3



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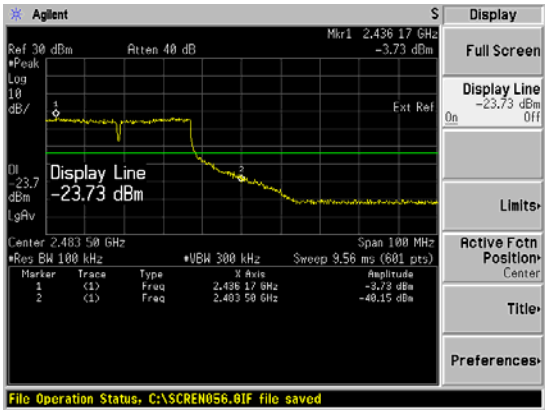
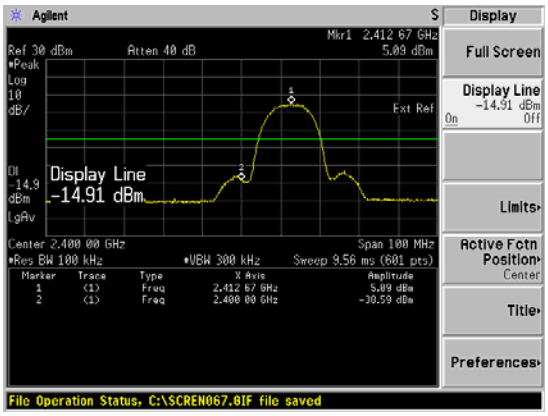
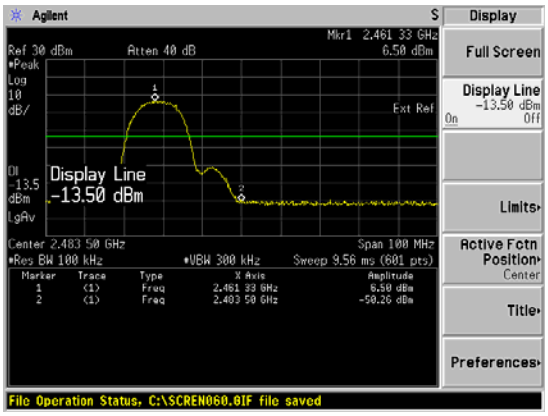


Antenna 2

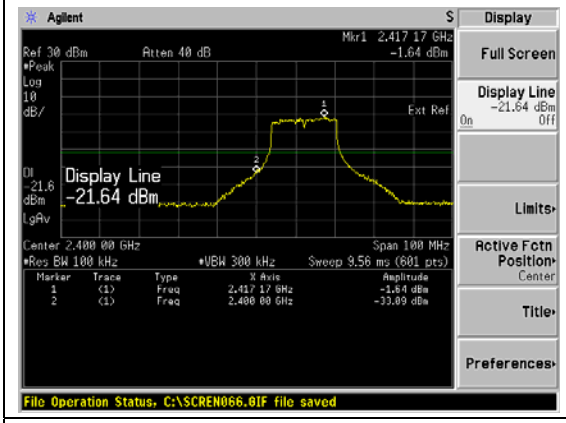
802.11b, Channel No.: 1



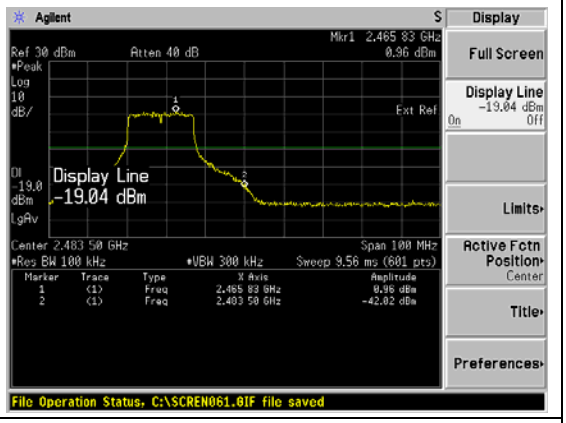
802.11b, Channel No.: 11



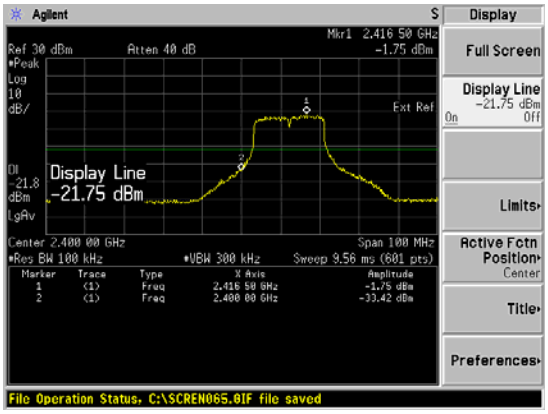
802.11g, Channel No.: 1



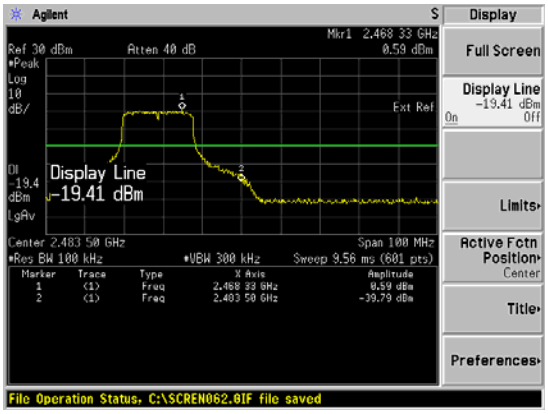
802.11g, Channel No.: 11



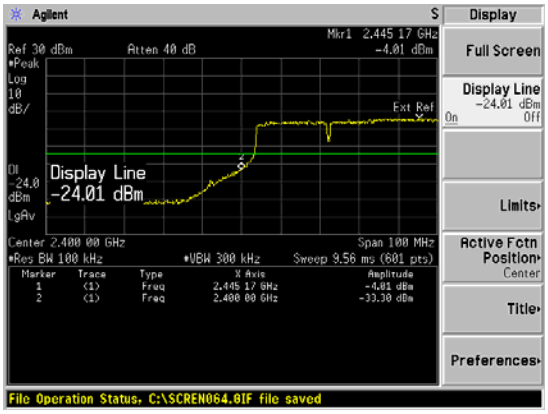
802.11n(HT20), Channel No.: 1



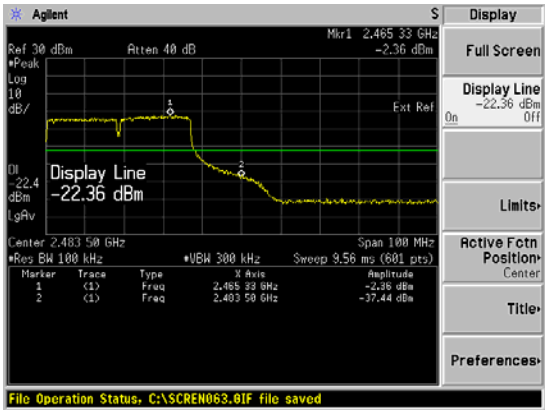
802.11n(HT20), Channel No.: 11



802.11n(HT40), Channel No.: 3



802.11n(HT40), Channel No.: 9



5.4. Power Spectral Density

Ambient condition

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

Method of Measurement

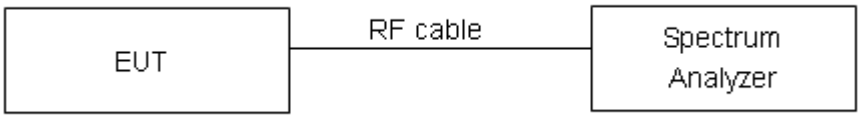
The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.

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 peak 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

Measurement Uncertainty

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

Test Results:

Antenna 1

Network Standards	Channel Number	Power Spectral Density (dBm / 3kHz)	Limit (dBm / 3kHz)	Conclusion
802.11b	1	-8.97	8	PASS
	6	-7.70	8	PASS
	11	-5.84	8	PASS
802.11g	1	-15.54	8	PASS
	6	-13.15	8	PASS
	11	-13.59	8	PASS
802.11n HT20	1	-14.43	8	PASS
	6	-13.55	8	PASS
	11	-13.07	8	PASS
802.11n HT40	3	-16.72	8	PASS
	6	-16.36	8	PASS
	9	-16.70	8	PASS

Antenna 2

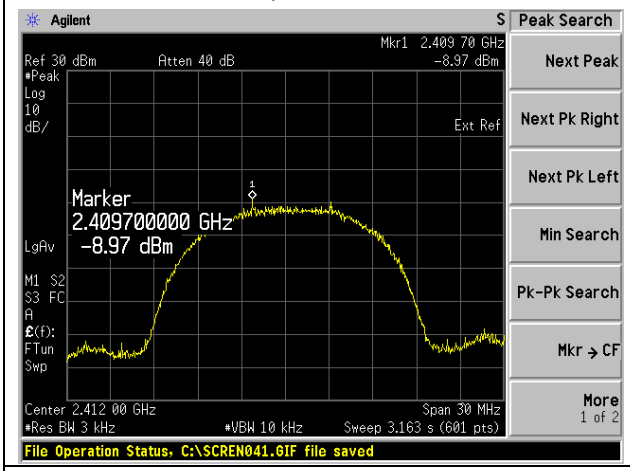
Network Standards	Channel Number	Power Spectral Density (dBm / 3kHz)	Limit (dBm / 3kHz)	Conclusion
802.11b	1	-10.24	8	PASS
	6	-5.96	8	PASS
	11	-5.61	8	PASS
802.11g	1	-14.29	8	PASS
	6	-14.09	8	PASS
	11	-11.79	8	PASS
802.11n HT20	1	-15.22	8	PASS
	6	-13.73	8	PASS
	11	-11.39	8	PASS
802.11n HT40	3	-17.57	8	PASS
	6	-15.61	8	PASS
	9	-14.97	8	PASS

MIMO

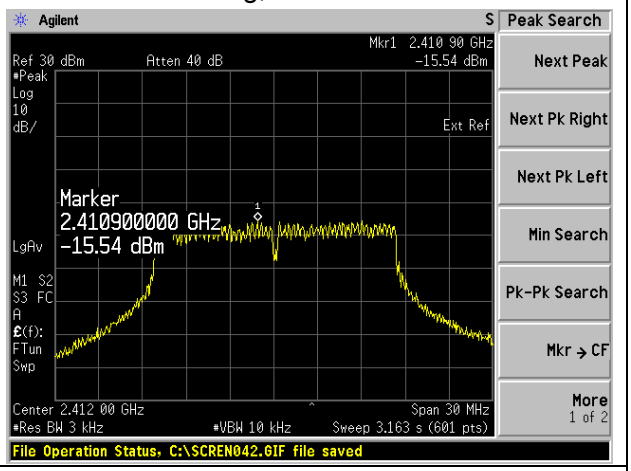
Network Standards	Channel Number	Power Spectral Density (dBm / 3kHz)	Limit (dBm / 3kHz)	Conclusion
802.11n HT20	1	-15.61	8	PASS
	6	-14.29	8	PASS
	11	-13.23	8	PASS
802.11n HT40	3	-24.67	8	PASS
	6	-22.61	8	PASS
	9	-23.47	8	PASS

Antenna 1

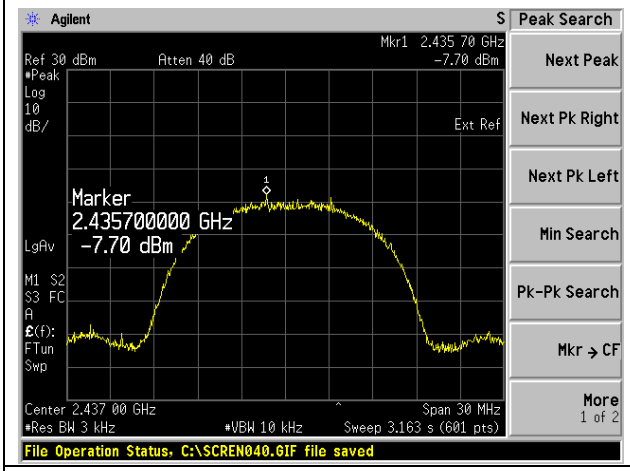
802.11b, Channel No.: 1



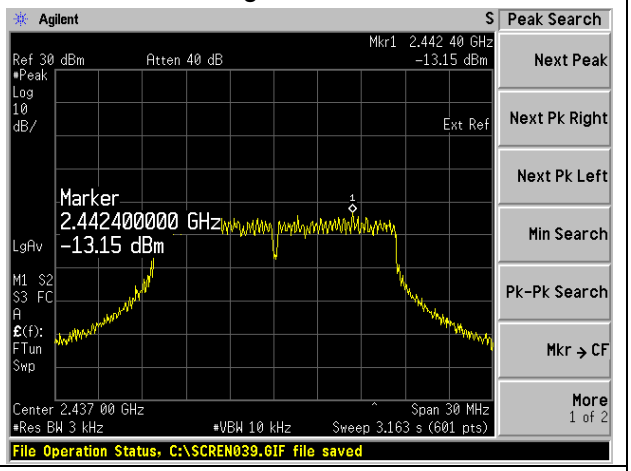
802.11g, Channel No.: 1



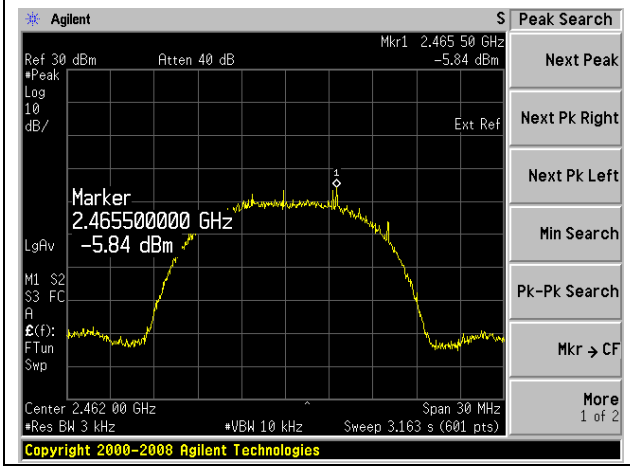
802.11b, Channel No.: 6



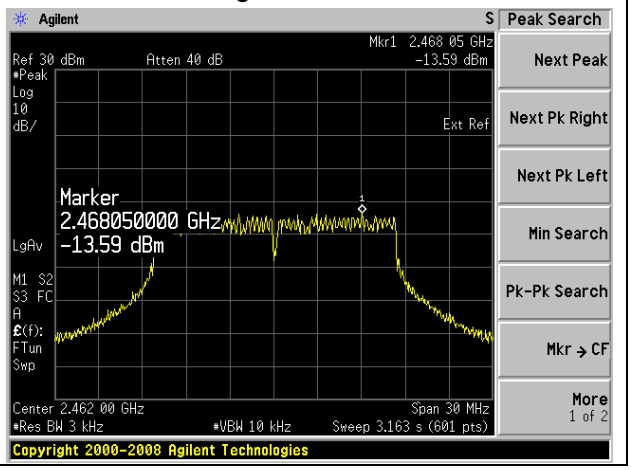
802.11g, Channel No.: 6



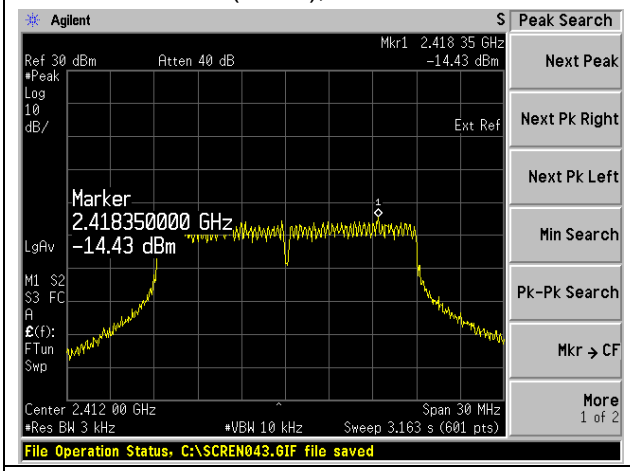
802.11b, Channel No.: 11



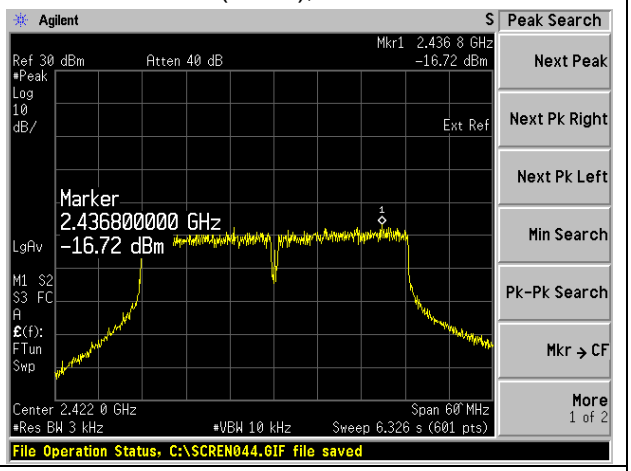
802.11g, Channel No.: 11



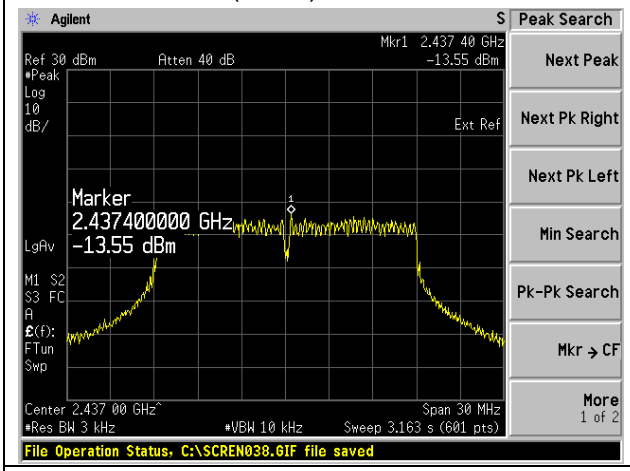
802.11n(HT20), Channel No. 1



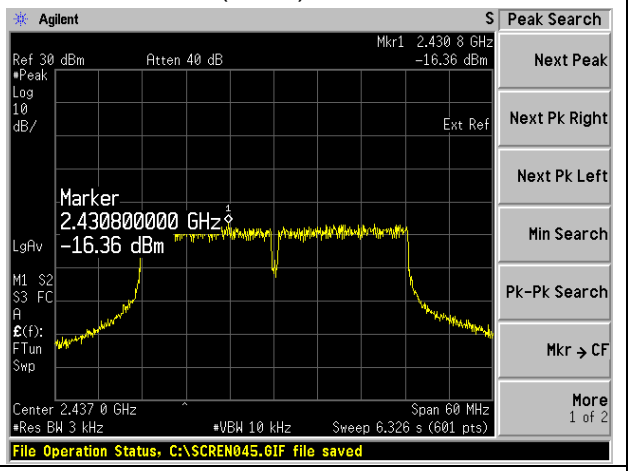
802.11n(HT40), Channel No. 3



802.11n(HT20), Channel No. 6



802.11n(HT40), Channel No. 6



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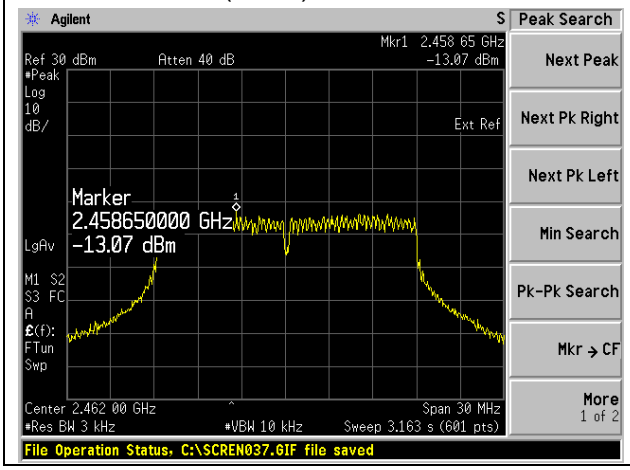
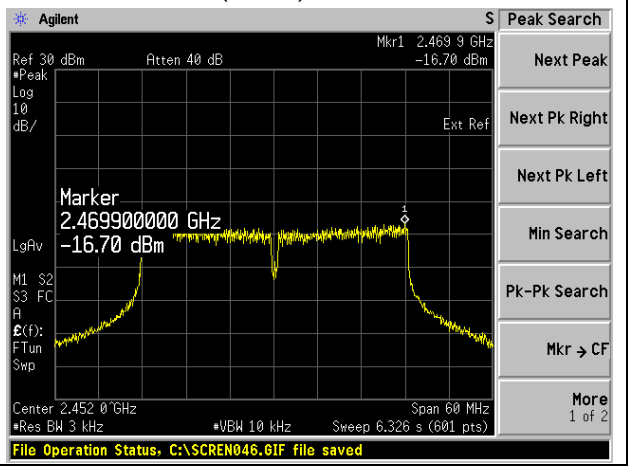
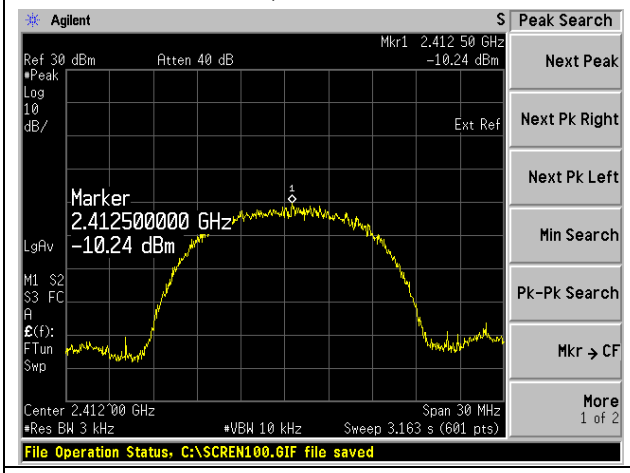


802.11n(HT40), Channel No. 9

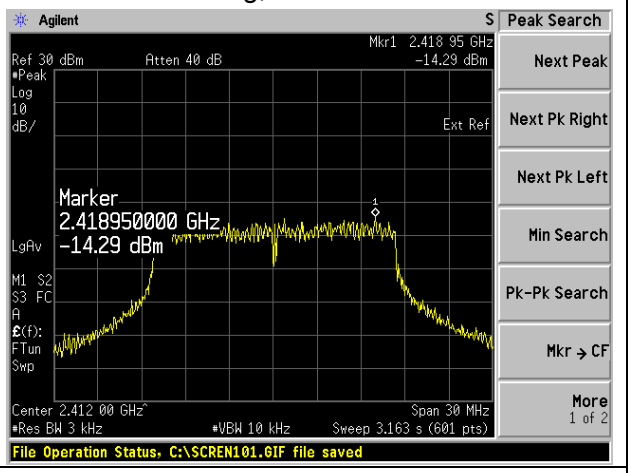


Antenna 2

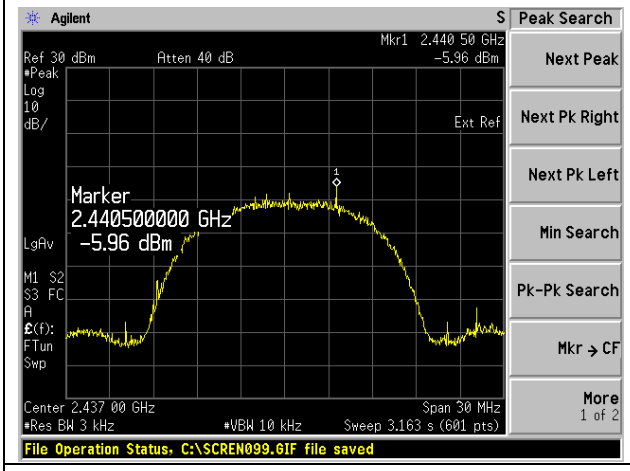
802.11b, Channel No.: 1



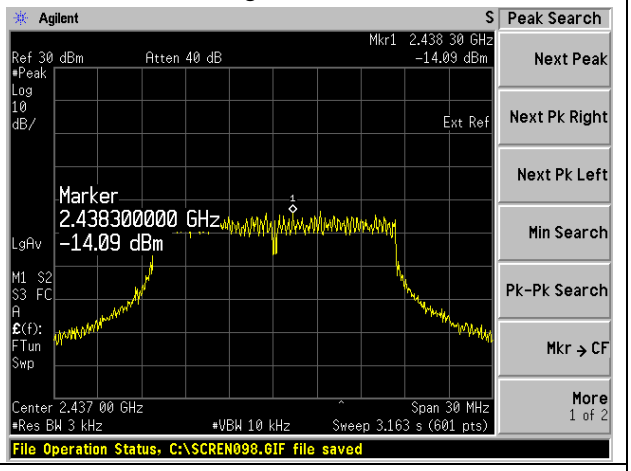
802.11g, Channel No.: 1



802.11b, Channel No.: 6



802.11g, Channel No.: 6



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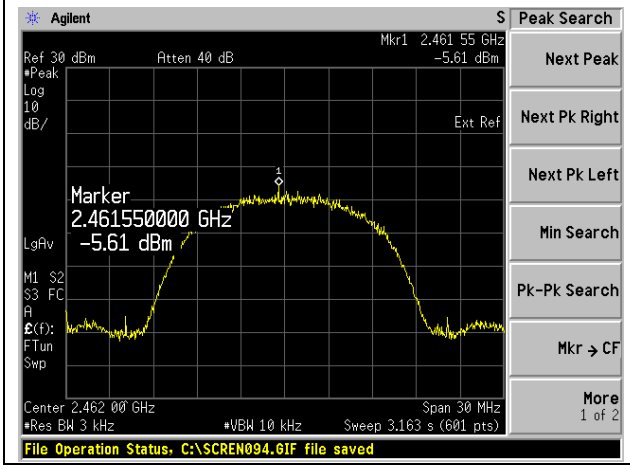

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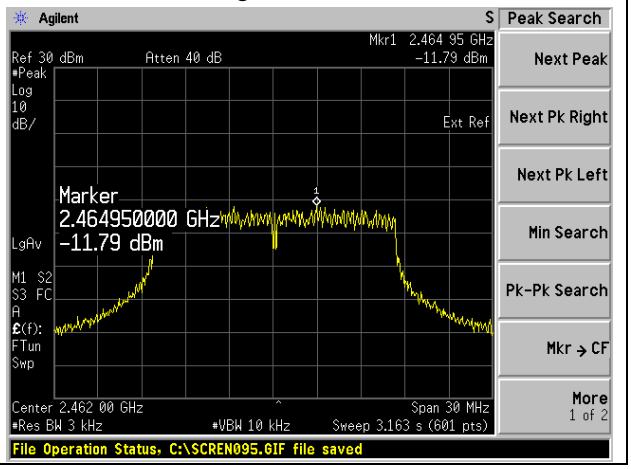
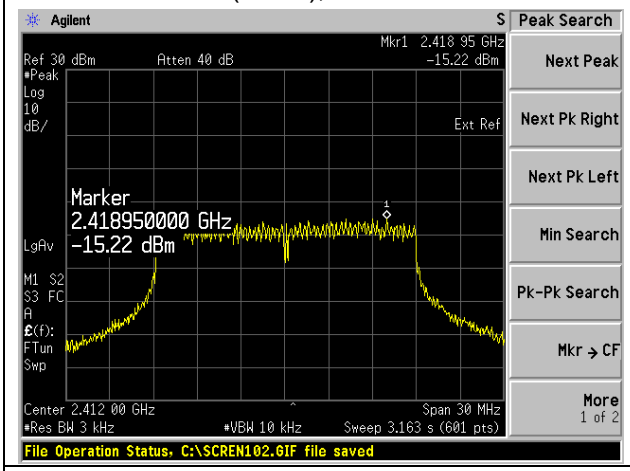
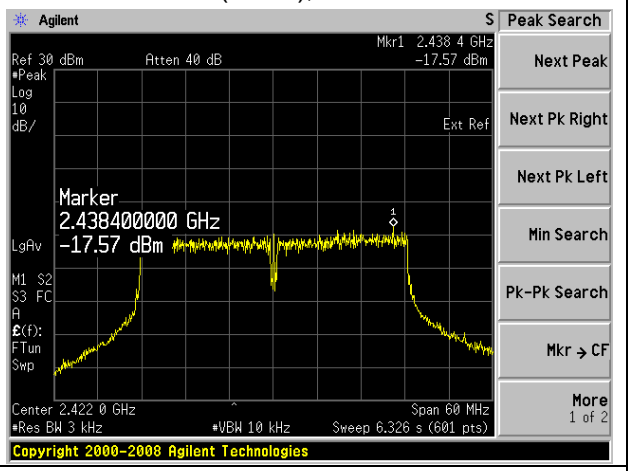


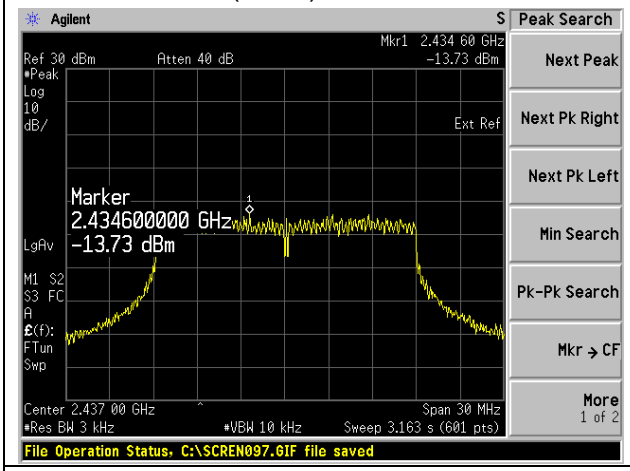
802.11n(HT20), Channel No. 1



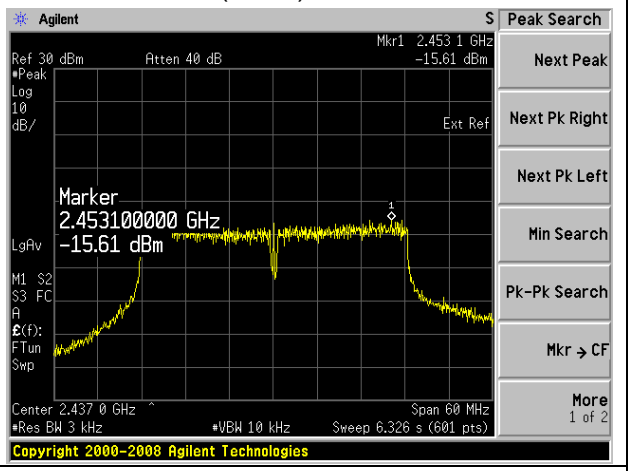
802.11n(HT40), Channel No. 3



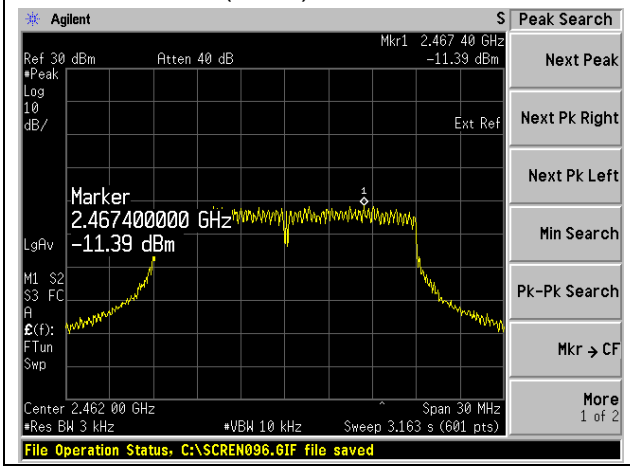
802.11n(HT20), Channel No. 6



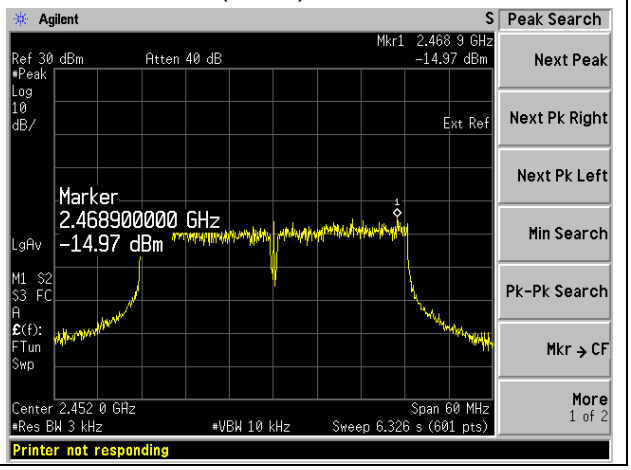
802.11n(HT40), Channel No. 6



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	0.697	-19.303
		2437	-1.884	-21.880
		2462	-2.496	-22.500
	802.11g	2412	-4.576	-24.580
		2437	-6.172	-26.170
		2462	-5.921	-25.920
	802.11n HT20	2412	-6.919	-26.920
		2437	-7.089	-27.090
		2462	-5.897	-25.900
	802.11n HT40	2422	-9.015	-29.020
		2437	-7.633	-27.630
		2452	-8.581	-28.580
Antenna 2	802.11b	2412	0.447	-19.550
		2437	-1.202	-21.200
		2462	1.415	-18.590
	802.11g	2412	-6.599	-26.600

		2437	-6.929	-26.930
		2462	-2.685	-22.690
	802.11n HT20	2412	-7.411	-27.410
		2437	-6.789	-26.790
		2462	-3.239	-23.240
	802.11n HT40	2422	-9.994	-29.990
		2437	-6.281	-26.280
		2452	-5.179	-25.180
MIMO	802.11n HT20	2412	-10.790	-30.790
		2437	-9.1430	-29.140
		2462	-8.230	-28.230
	802.11n HT40	2422	-13.560	-33.560
		2437	-10.750	-30.750
		2452	-10.220	-30.220

Measurement Uncertainty

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

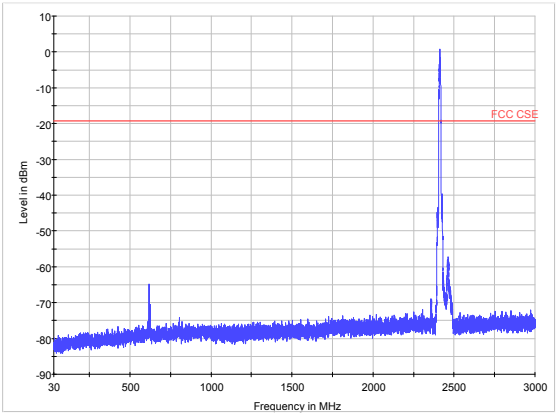
Frequency	Uncertainty
100kHz-2GHz	0.684 dB
2GHz-26GHz	1.407 dB

Test Results:

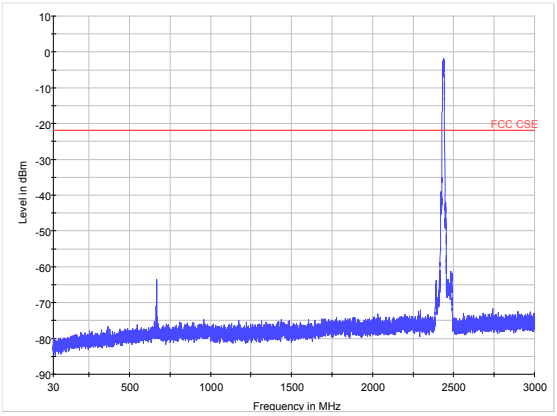
If disturbances were found more than 20dB below limit line, the mark is not required for the EUT.

The signal beyond the limit is carrier.

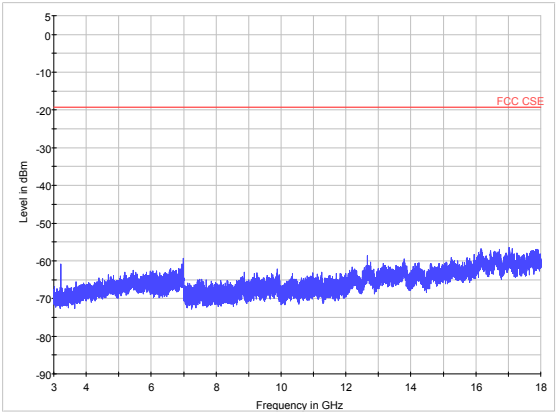
Antenna 1



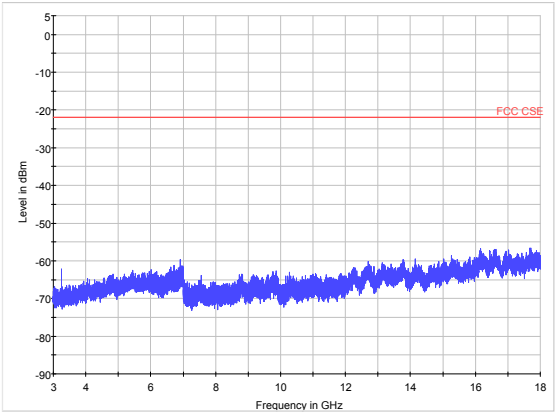
802.11b CH1 30MHz to 3GHz



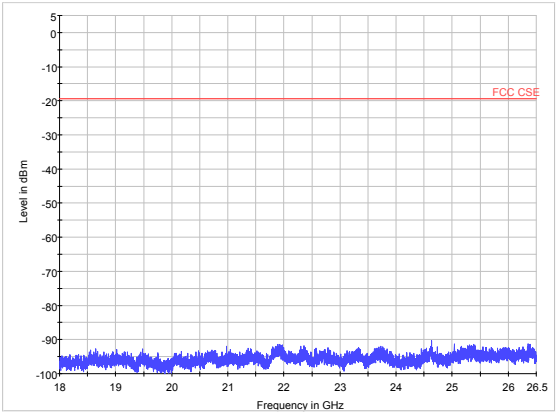
802.11b CH6 30MHz to 3GHz



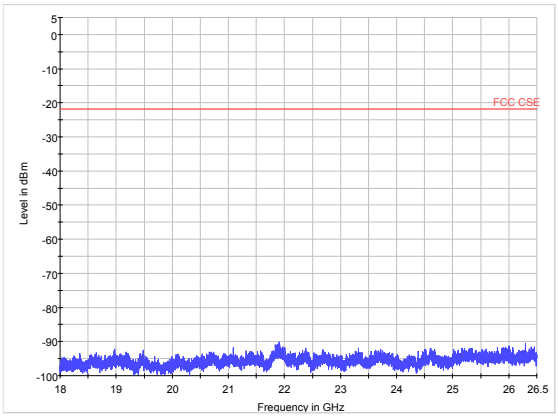
802.11b CH1 3GHz to 18GHz



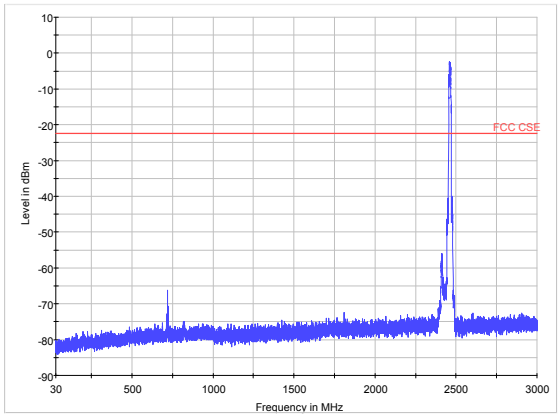
802.11b CH6 3GHz to 18GHz



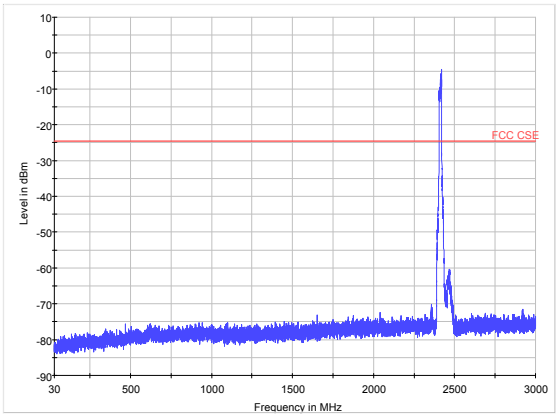
802.11b CH1 18GHz to 26.5GHz



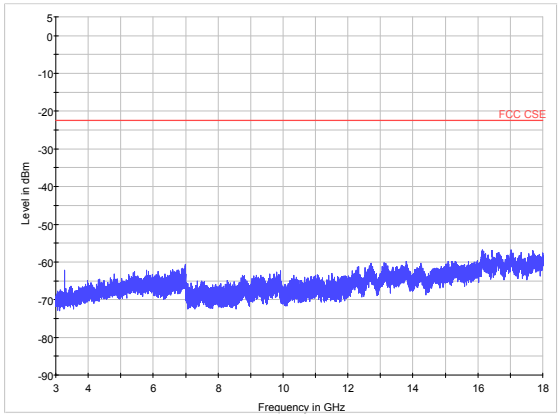
802.11b CH6 18GHz to 26.5GHz



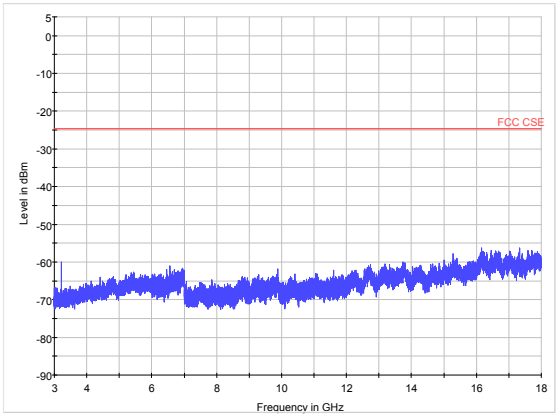
802.11b CH11 30MHz to 3GHz



802.11g CH1 30MHz to 3GHz



802.11b CH11 3GHz to 18GHz



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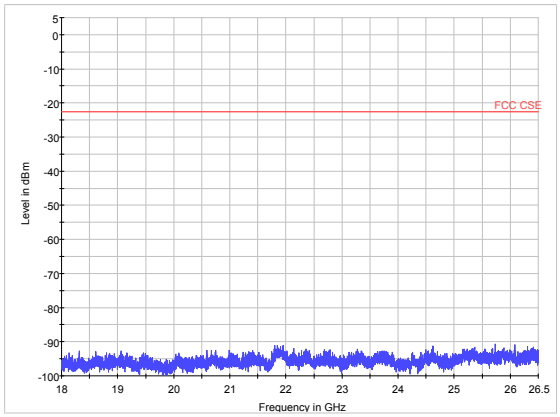
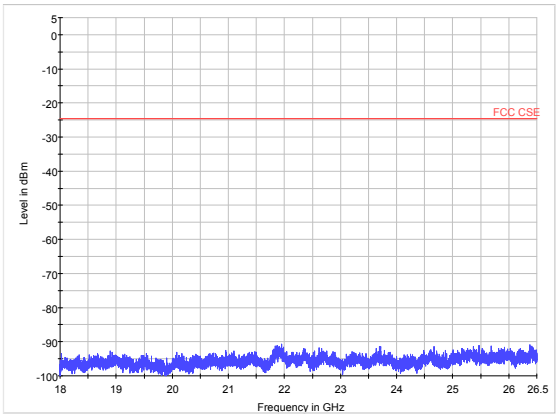


802.11b CH11 18GHz to 26.5GHz



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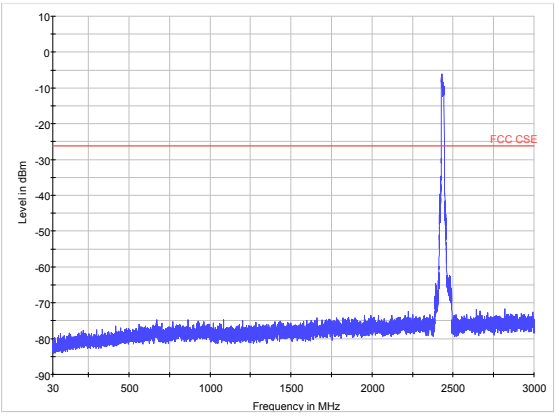
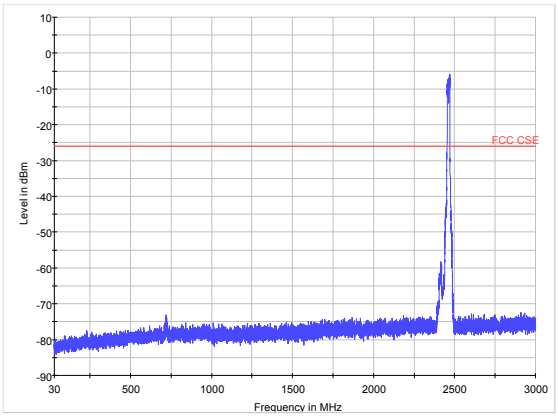


802.11g CH6 30MHz to 3GHz



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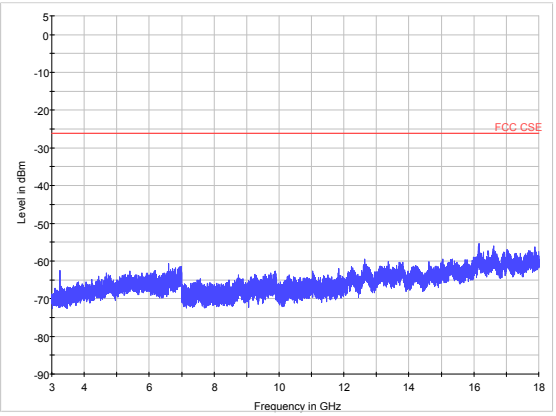

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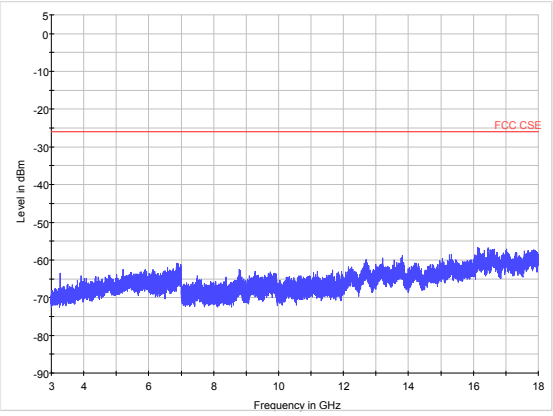

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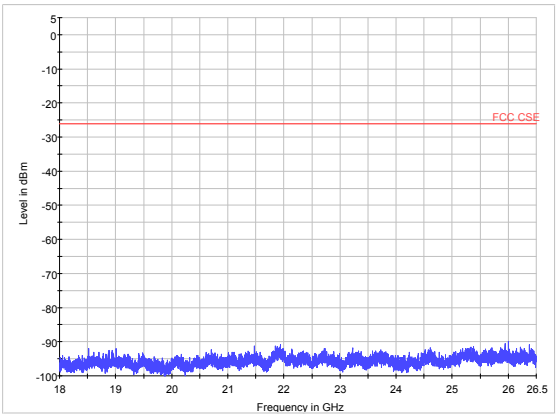
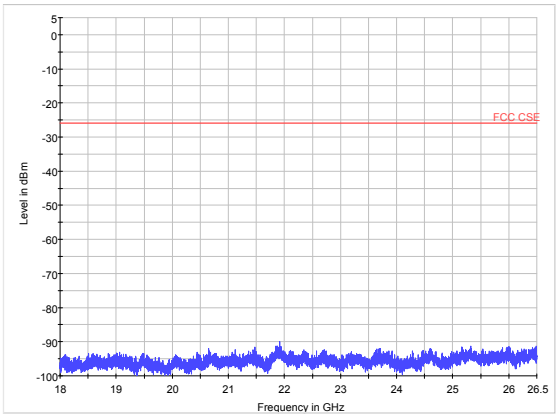
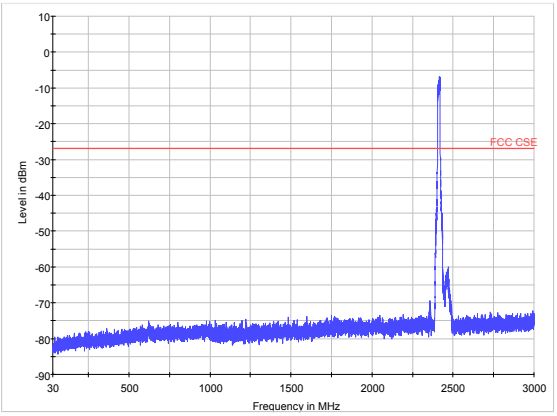


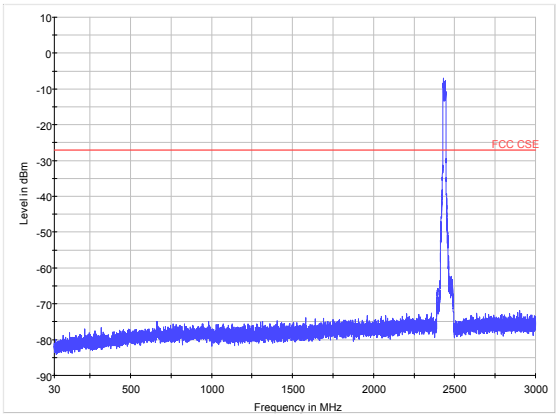
802.11g CH6 18GHz to 26.5GHz



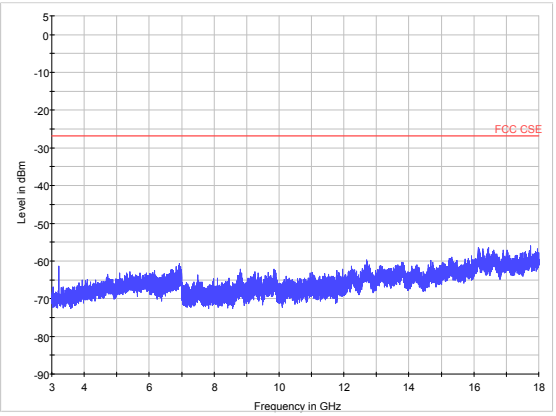
802.11g CH11 18GHz to 26.5GHz



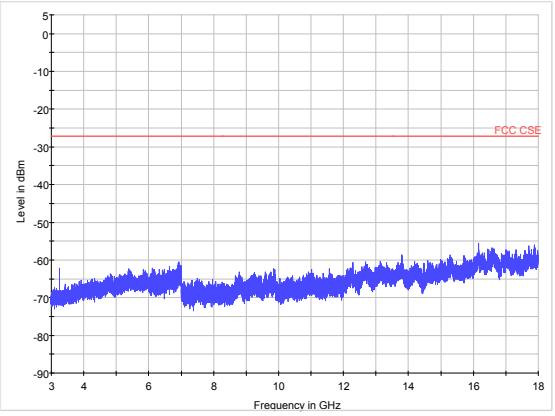
802.11n (HT20) CH1 30MHz to 3GHz



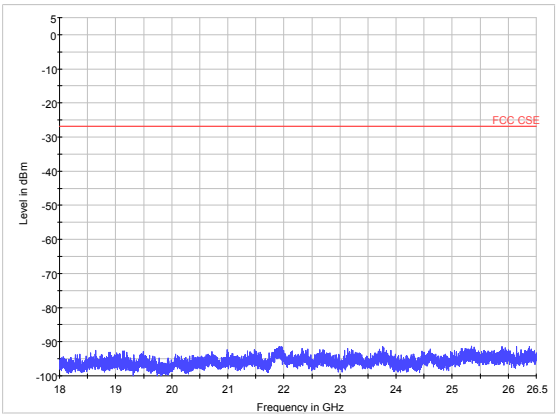
802.11n (HT20) CH6 30MHz to 3GHz



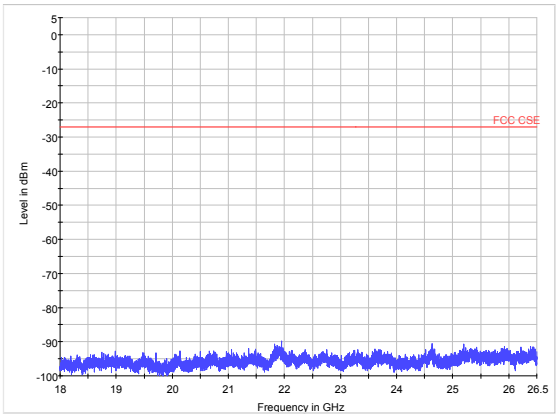
802.11n (HT20) CH1 3GHz to 18GHz



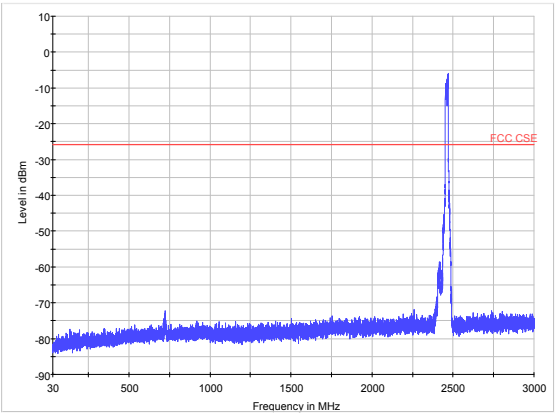
802.11n (HT20) CH6 3GHz to 18GHz



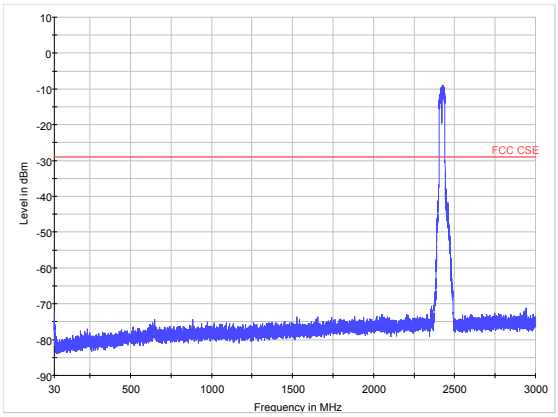
802.11n (HT20) CH1 18GHz to 26.5GHz



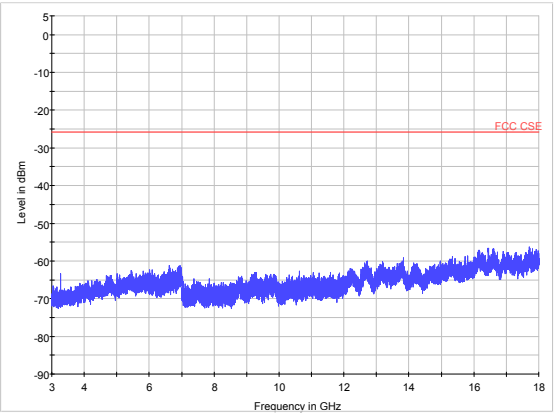
802.11n (HT20) CH6 18GHz to 26.5GHz



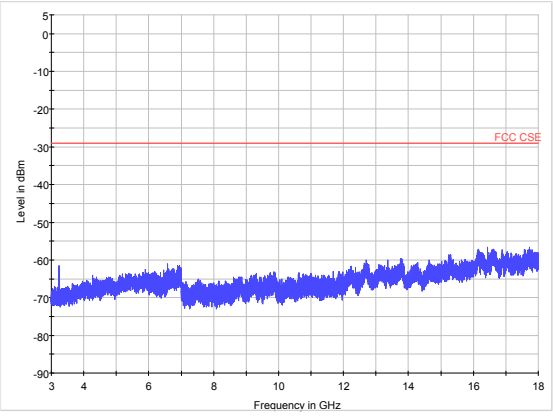
802.11n (HT20) CH11 30MHz to 3GHz



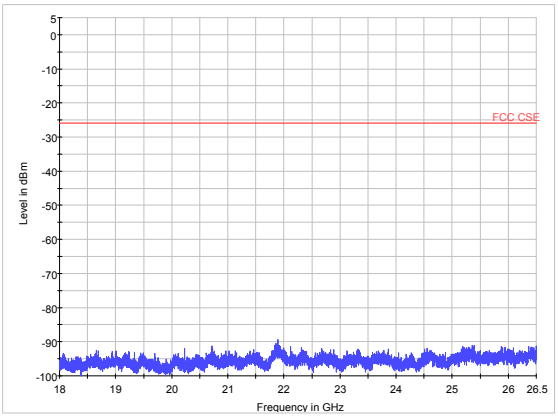
802.11n (HT40) CH3 30MHz to 3GHz



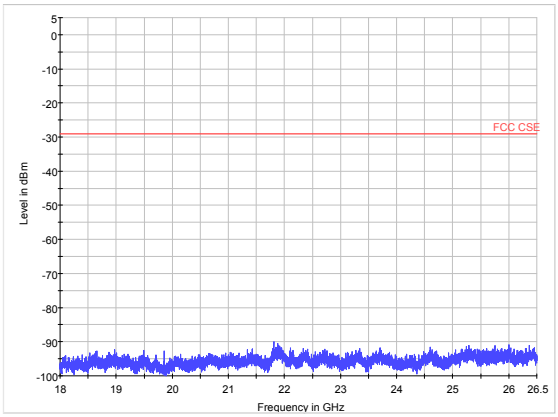
802.11n (HT20) CH11 3GHz to 18GHz



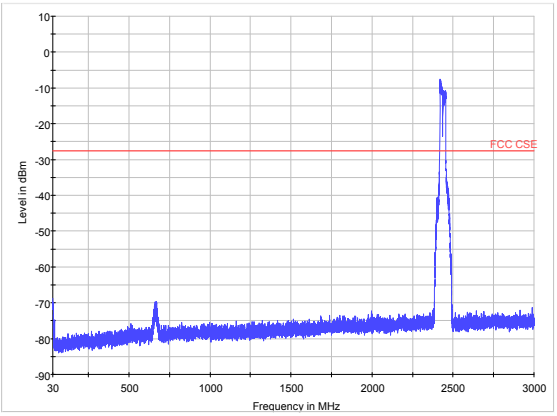
802.11n (HT40) CH3 3GHz to 18GHz



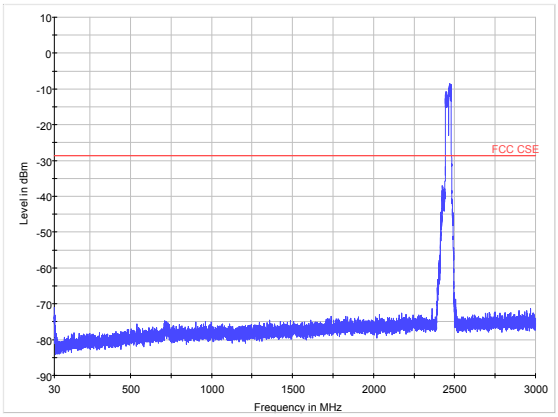
802.11n (HT20) CH11 18GHz to 26.5GHz



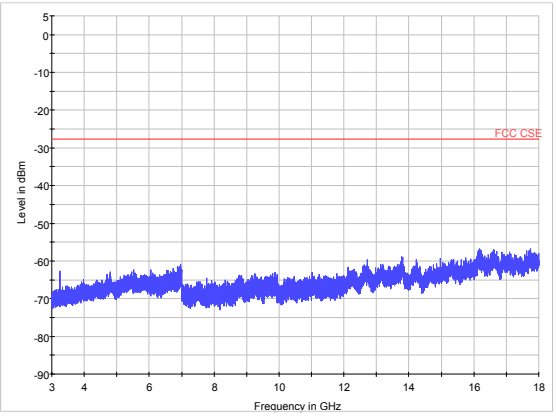
802.11n (HT40) CH3 18GHz to 26.5GHz



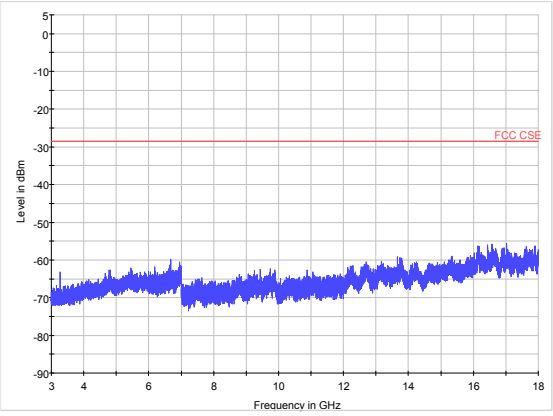
802.11n (HT40) CH6 30MHz to 3GHz



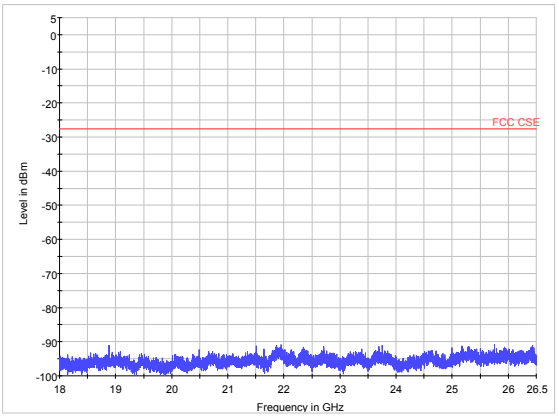
802.11n (HT40) CH9 30MHz to 3GHz



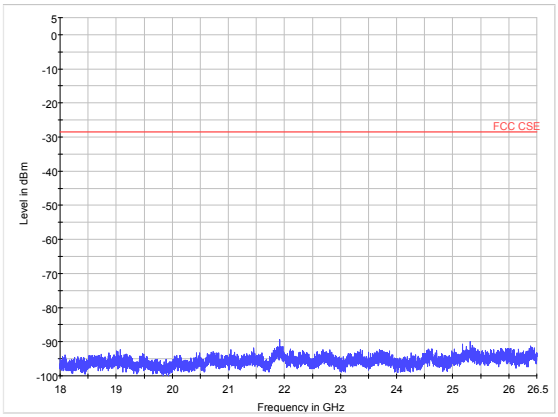
802.11n (HT40) CH6 3GHz to 18GHz



802.11n (HT40) CH9 3GHz to 18GHz

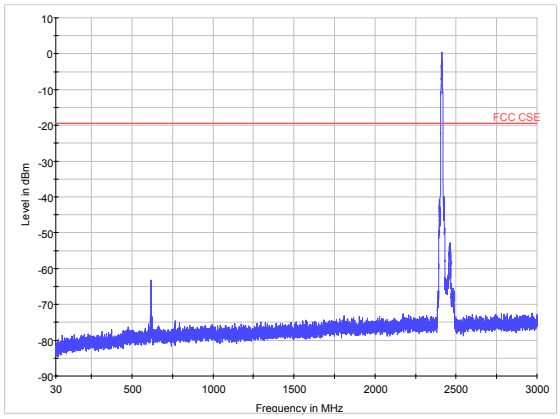


802.11n (HT40) CH6 18GHz to 26.5GHz

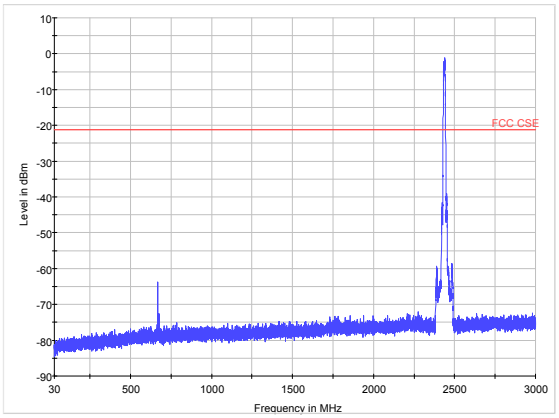


802.11n (HT40) CH9 18GHz to 26.5GHz

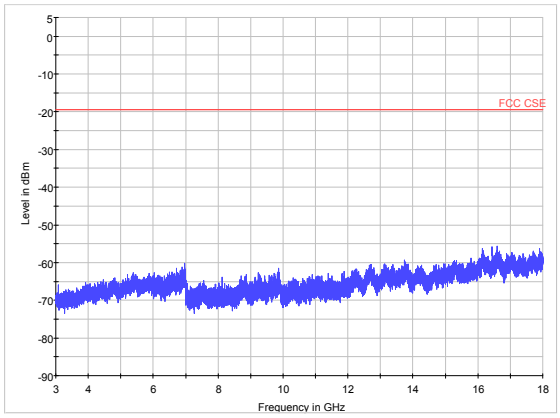
Antenna 2



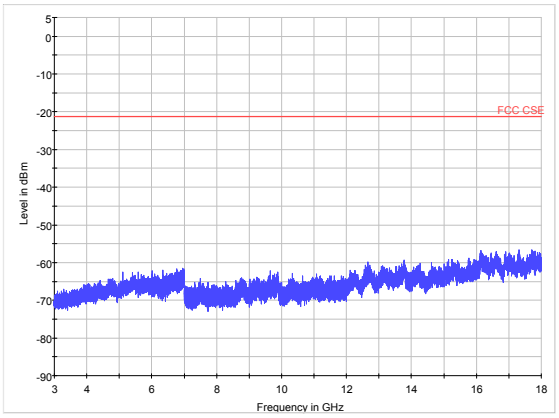
802.11b CH1 30MHz to 3GHz



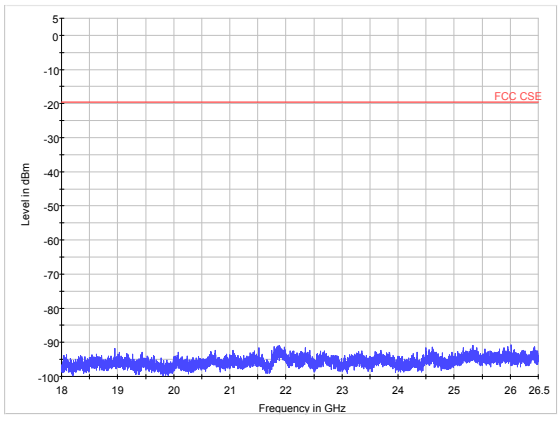
802.11b CH6 30MHz to 3GHz



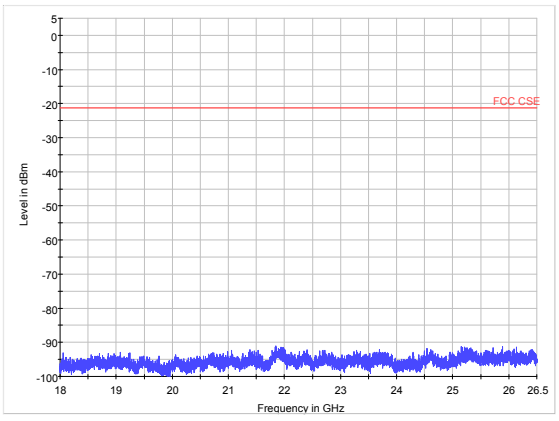
802.11b CH1 3GHz to 18GHz



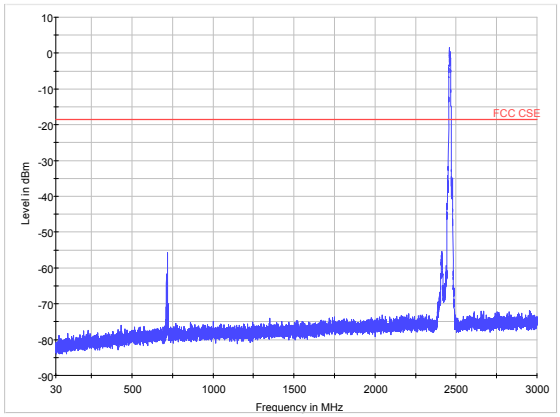
802.11b CH6 3GHz to 18GHz



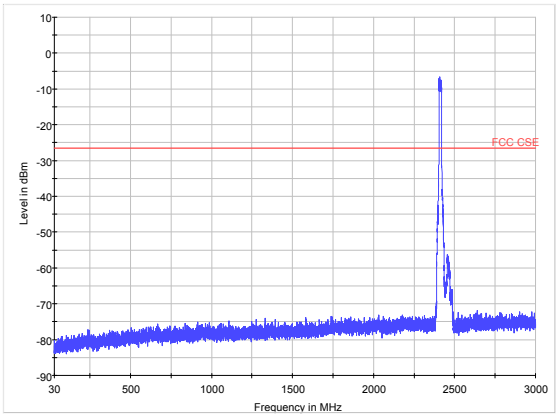
802.11b CH1 18GHz to 26.5GHz



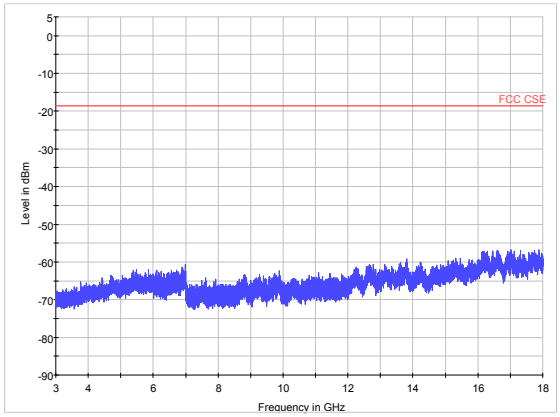
802.11b CH6 18GHz to 26.5GHz



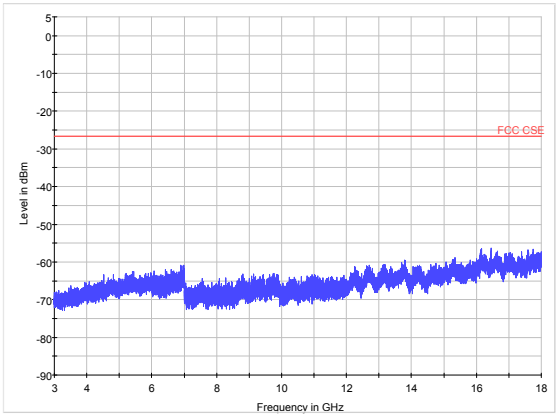
802.11b CH11 30MHz to 3GHz



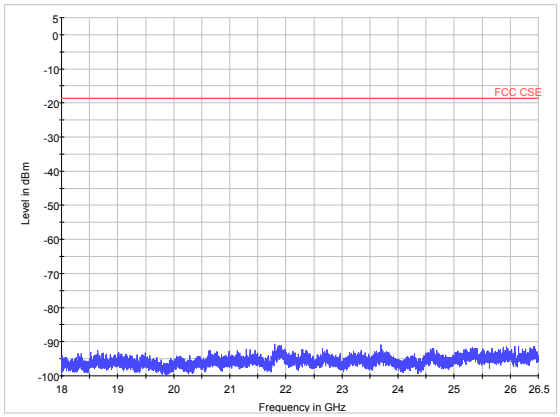
802.11g CH1 30MHz to 3GHz



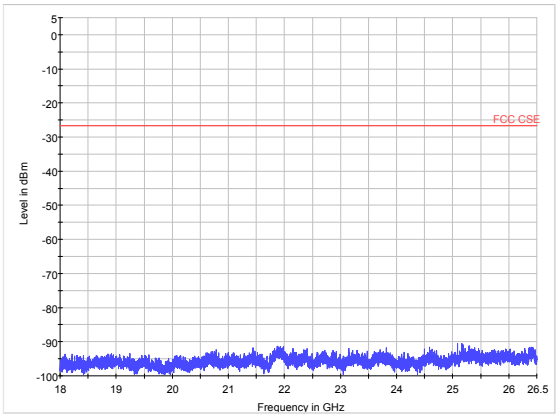
802.11b CH11 3GHz to 18GHz



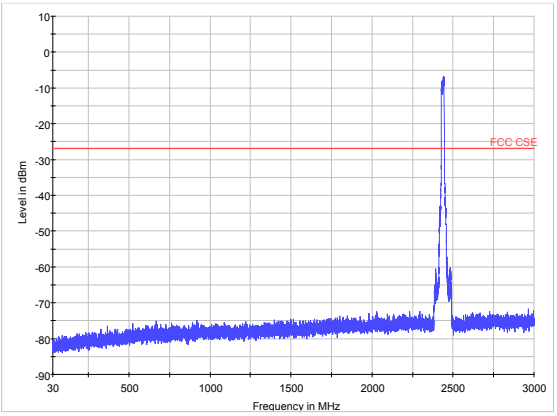
802.11g CH1 3GHz to 18GHz



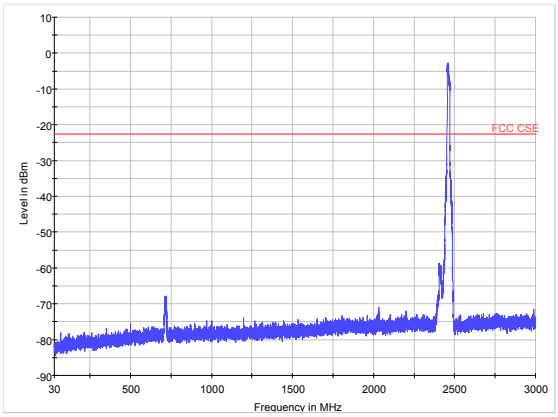
802.11b CH11 18GHz to 26.5GHz



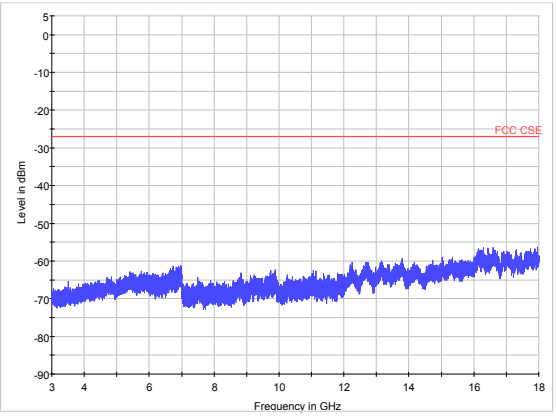
802.11g CH1 18GHz to 26.5GHz



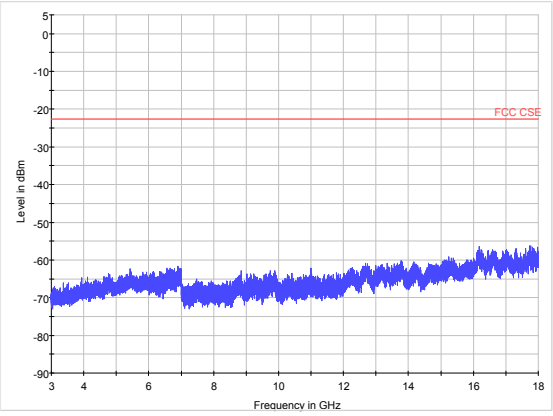
802.11g CH6 30MHz to 3GHz



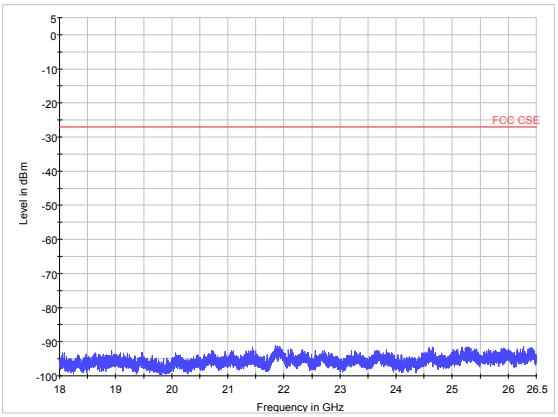
802.11g CH11 30MHz to 3GHz



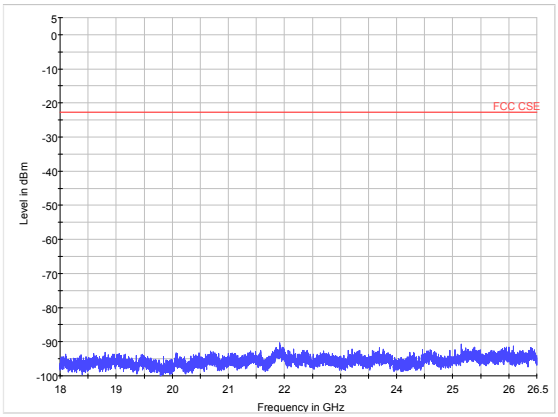
802.11g CH6 3GHz to 18GHz



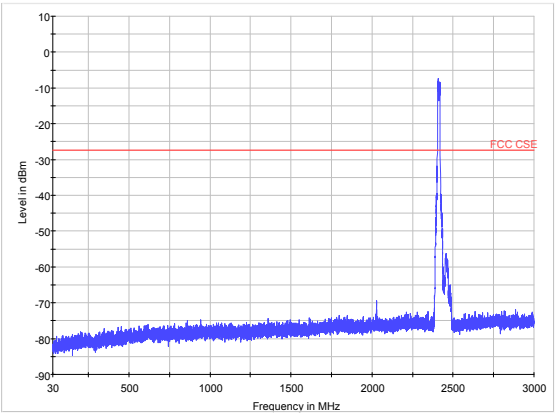
802.11g CH11 3GHz to 18GHz



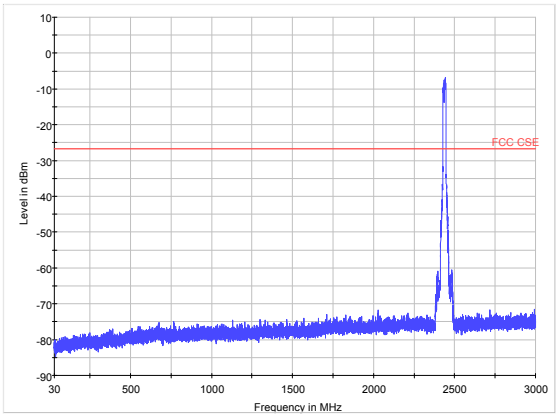
802.11g CH6 18GHz to 26.5GHz



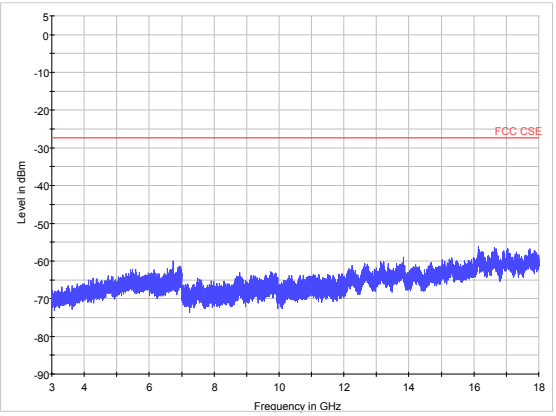
802.11g CH11 18GHz to 26.5GHz



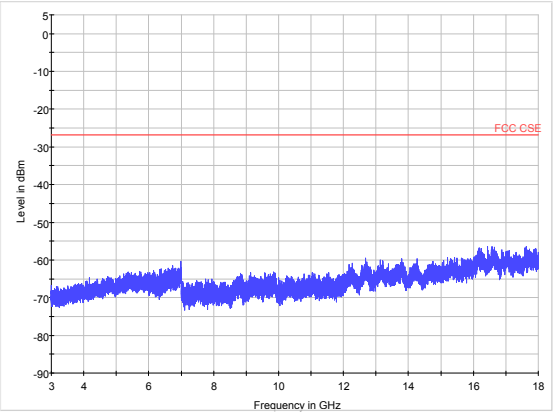
802.11n (HT20) CH1 30MHz to 3GHz



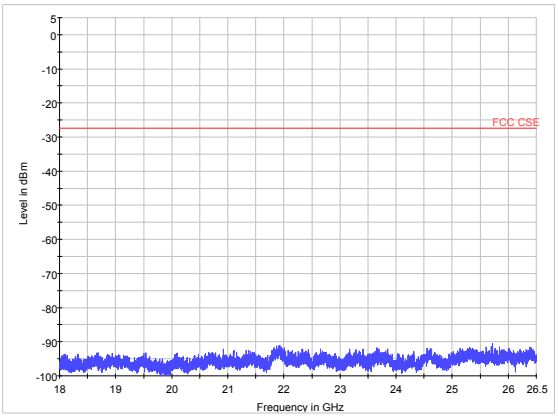
802.11n (HT20) CH6 30MHz to 3GHz



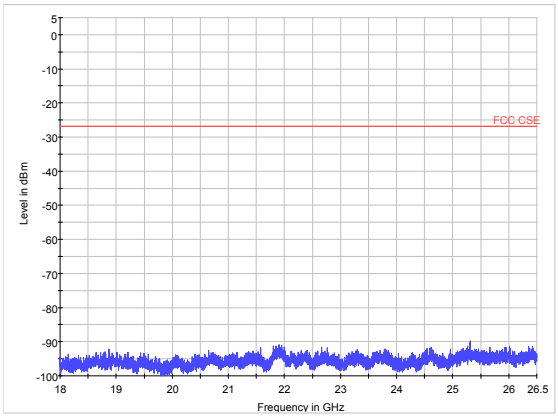
802.11n (HT20) CH1 3GHz to 18GHz



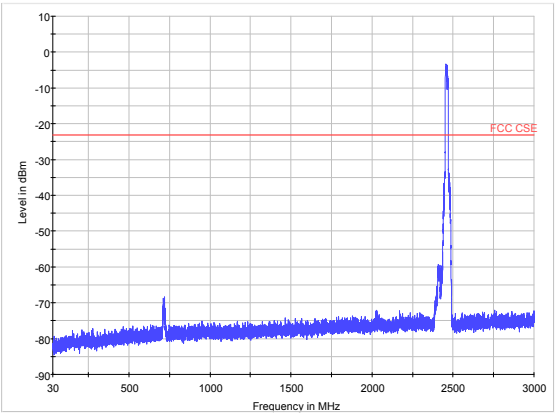
802.11n (HT20) CH6 3GHz to 18GHz



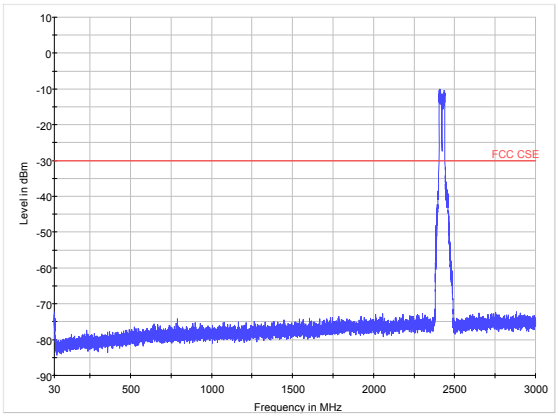
802.11n (HT20) CH1 18GHz to 26.5GHz



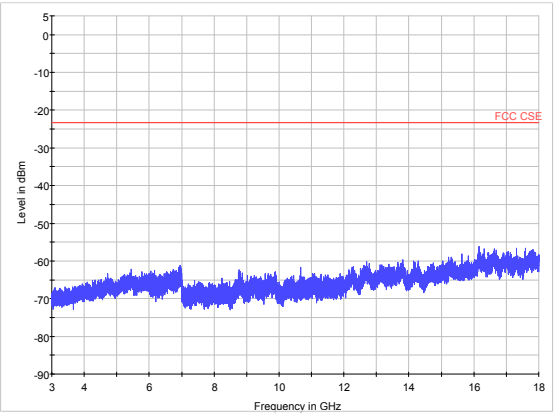
802.11n (HT20) CH6 18GHz to 26.5GHz



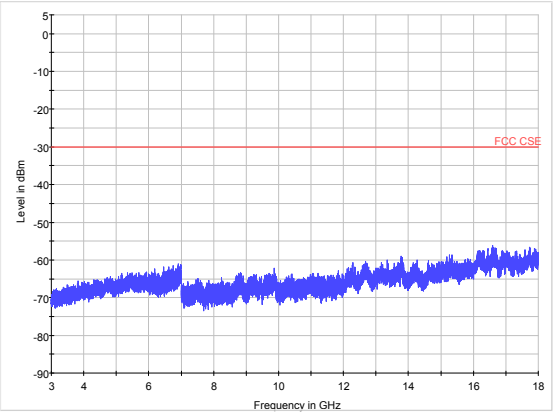
802.11n (HT20) CH11 30MHz to 3GHz



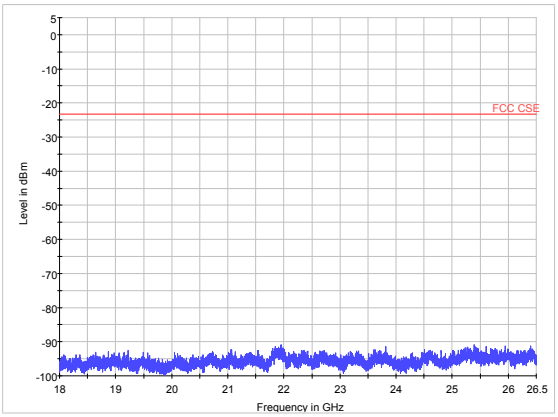
802.11n (HT40) CH3 30MHz to 3GHz



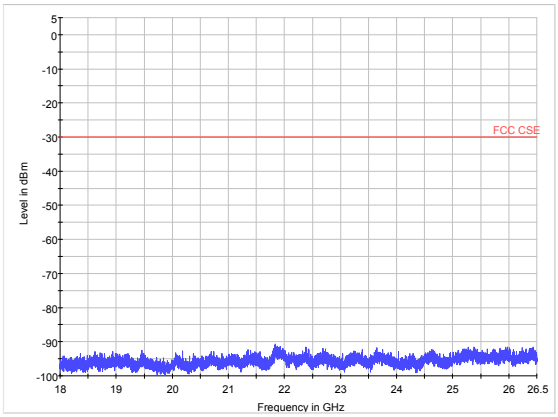
802.11n (HT20) CH11 3GHz to 18GHz



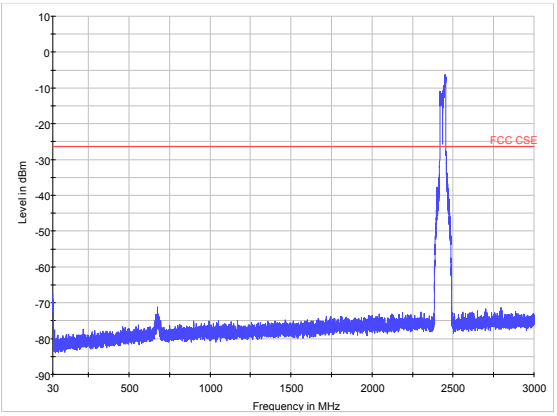
802.11n (HT40) CH3 3GHz to 18GHz



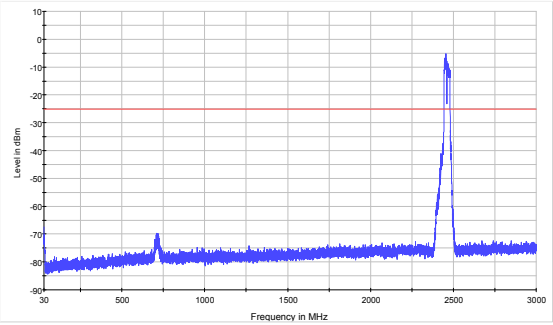
802.11n (HT20) CH11 18GHz to 26.5GHz



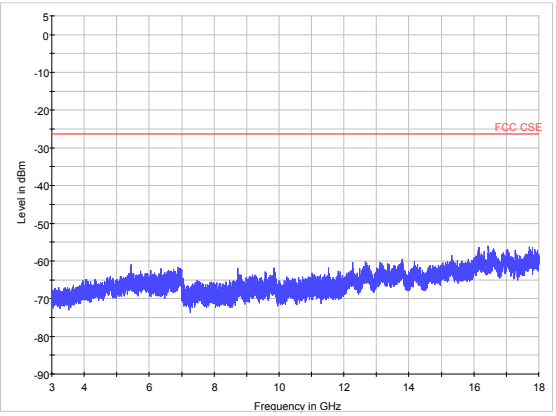
802.11n (HT40) CH3 18GHz to 26.5GHz



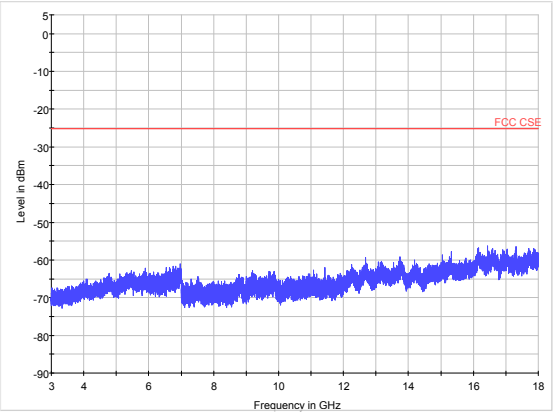
802.11n (HT40) CH6 30MHz to 3GHz



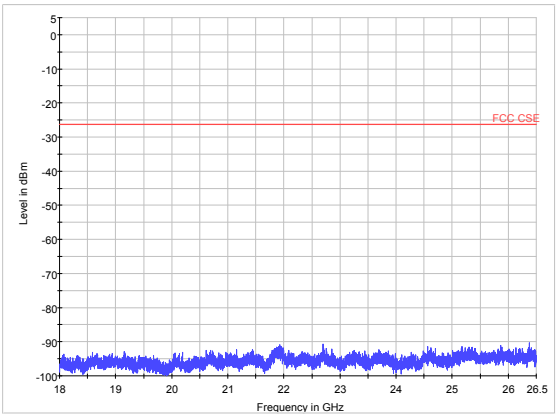
802.11n (HT40) CH9 30MHz to 3GHz



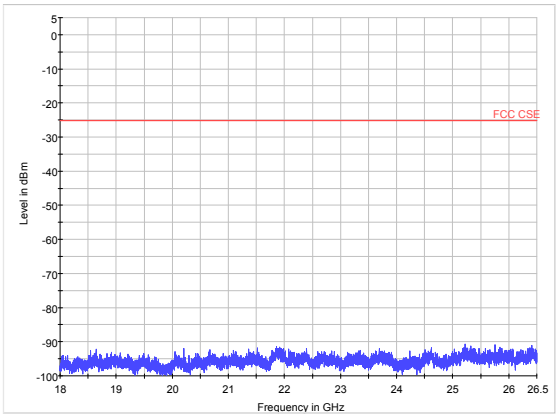
802.11n (HT40) CH6 3GHz to 18GHz



802.11n (HT40) CH9 3GHz to 18GHz

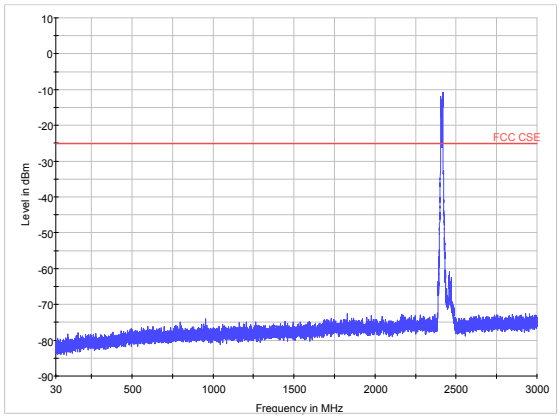


802.11n (HT40) CH6 18GHz to 26.5GHz

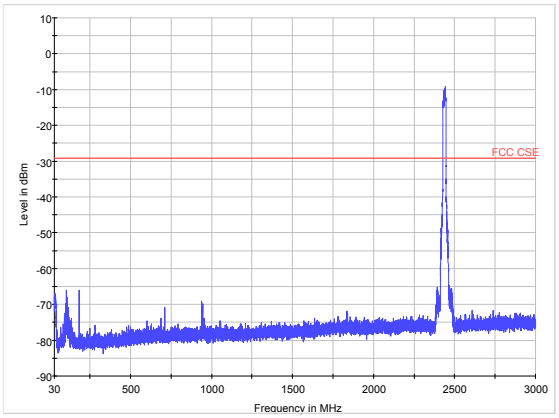


802.11n (HT40) CH9 18GHz to 26.5GHz

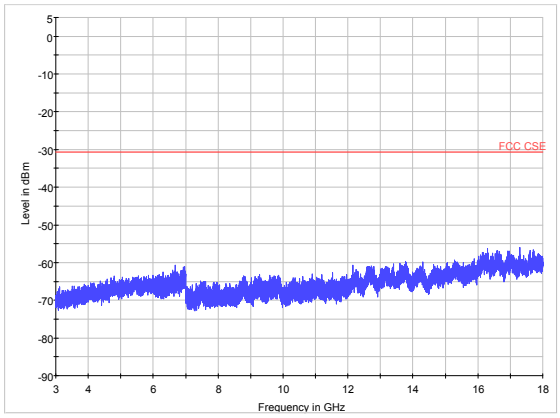
MIMO



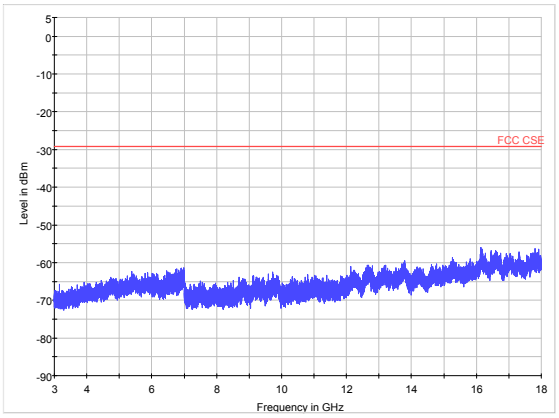
802.11n (HT20) CH1 30MHz to 3GHz



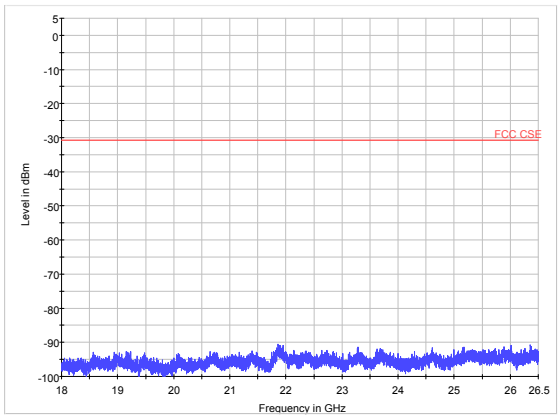
802.11n (HT20) CH6 30MHz to 3GHz



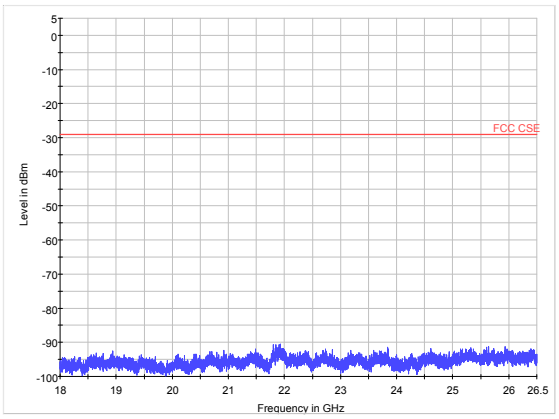
802.11n (HT20) CH1 3GHz to 18GHz



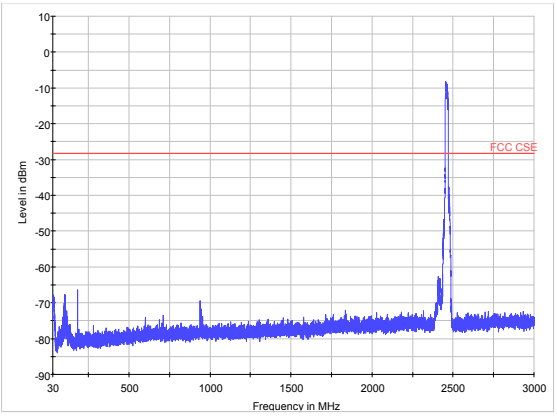
802.11n (HT20) CH6 3GHz to 18GHz



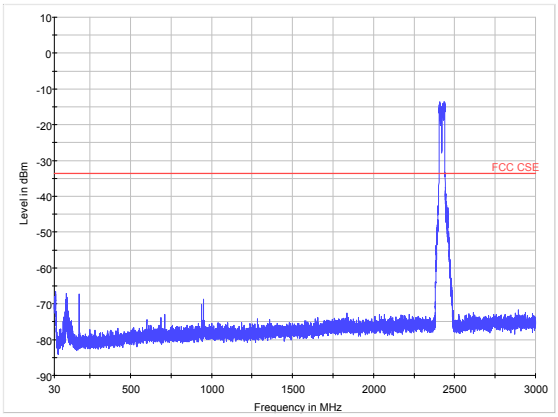
802.11n (HT20) CH1 18GHz to 26.5GHz



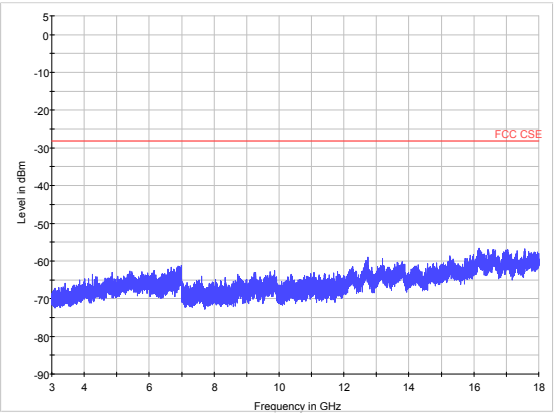
802.11n (HT20) CH6 18GHz to 26.5GHz



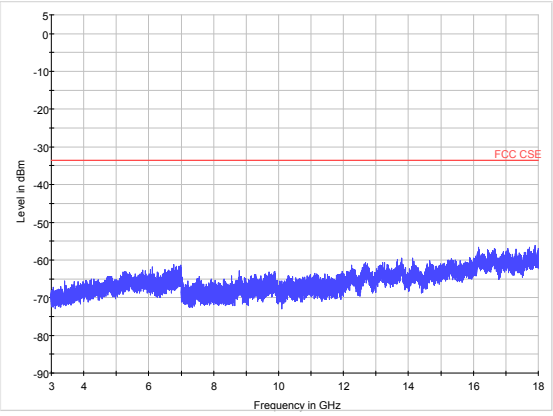
802.11n (HT20) CH11 30MHz to 3GHz



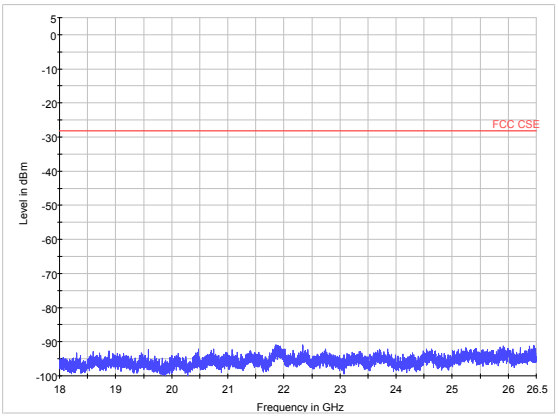
802.11n (HT40) CH3 30MHz to 3GHz



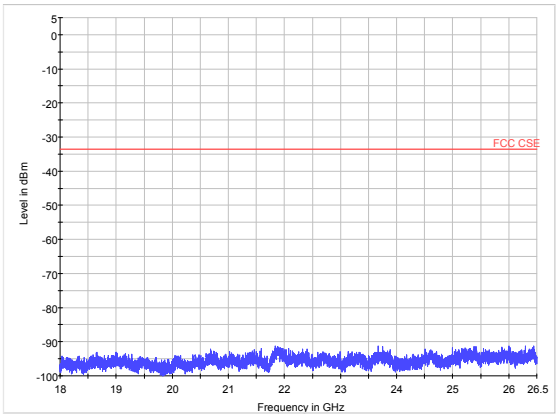
802.11n (HT20) CH11 3GHz to 18GHz



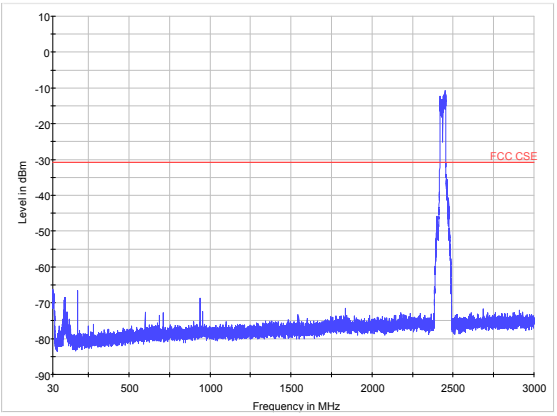
802.11n (HT40) CH3 3GHz to 18GHz



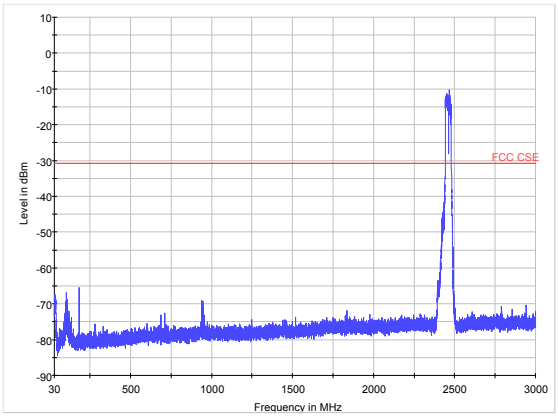
802.11n (HT20) CH11 18GHz to 26.5GHz



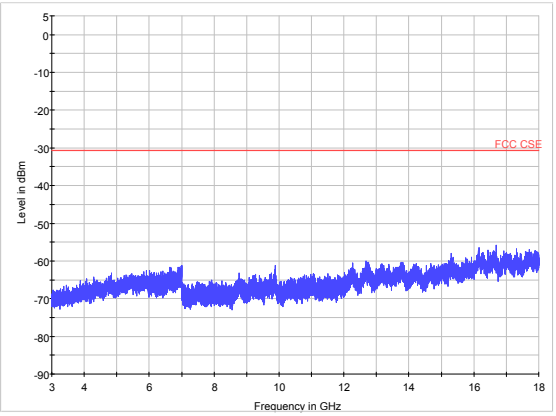
802.11n (HT40) CH3 18GHz to 26.5GHz



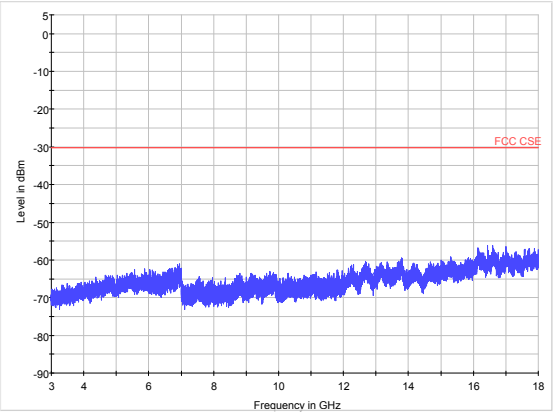
802.11n (HT40) CH6 30MHz to 3GHz



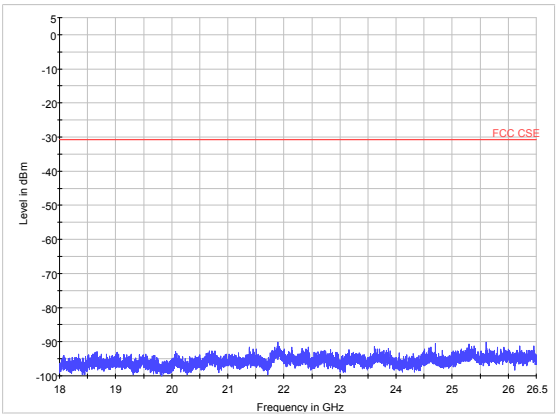
802.11n (HT40) CH9 30MHz to 3GHz



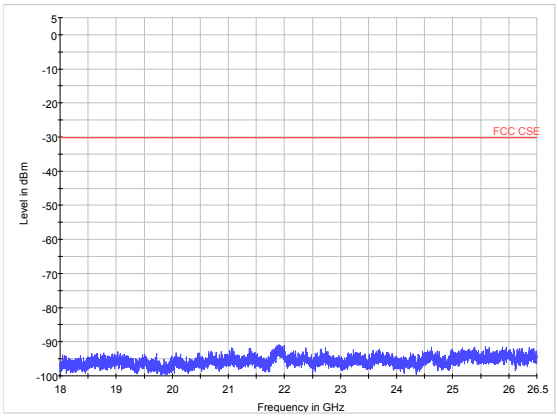
802.11n (HT40) CH6 3GHz to 18GHz



802.11n (HT40) CH9 3GHz to 18GHz



802.11n (HT40) CH6 18GHz to 26.5GHz



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

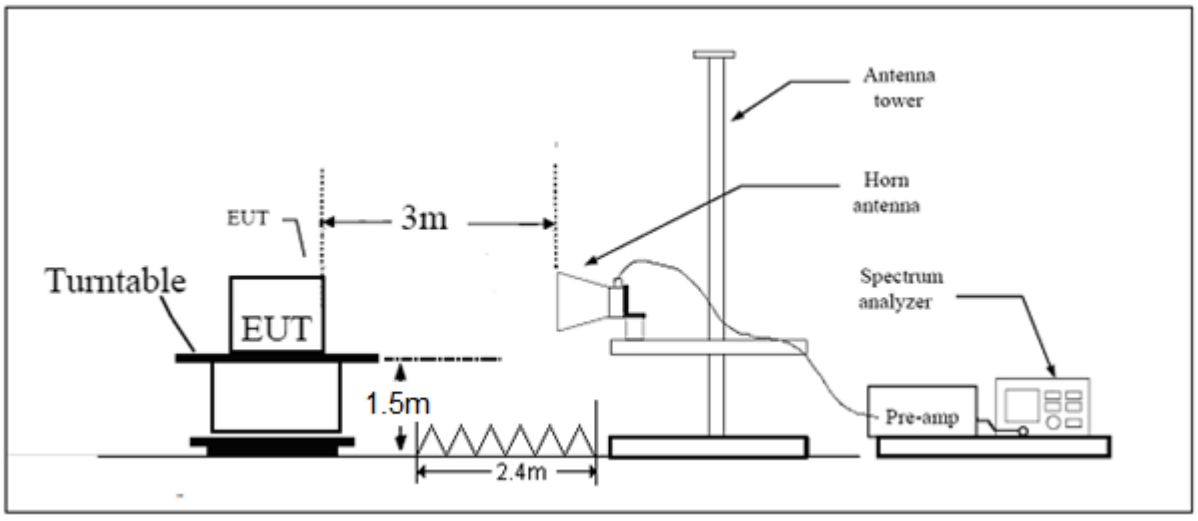
The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. 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

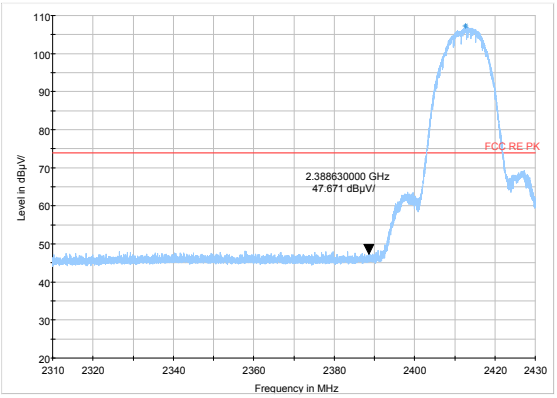
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96, U= 3.55 dB.

Test Results:

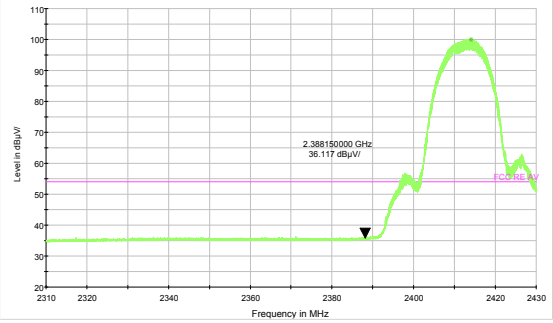
The signal beyond the limit is carrier.

Antenna 1

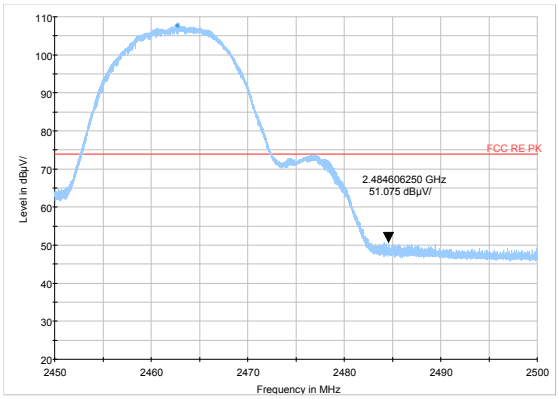
802.11b-Channel 1: Peak



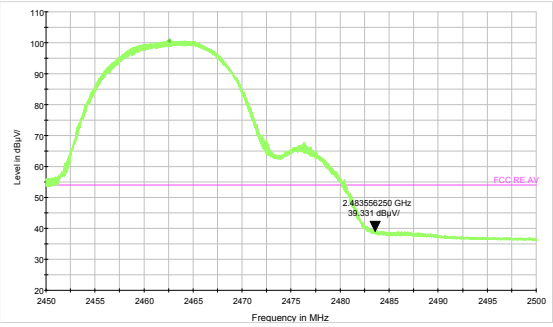
802.11b-Channel 1: Average



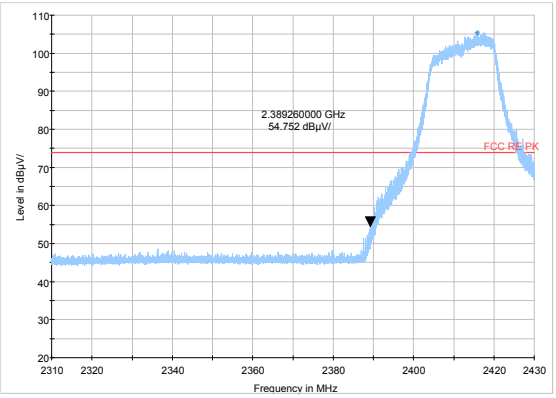
802.11b-Channel 11: Peak



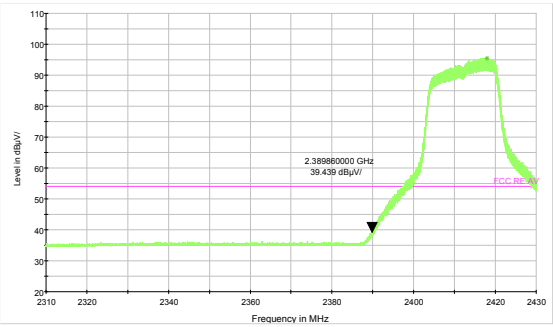
802.11b-Channel 11: Average



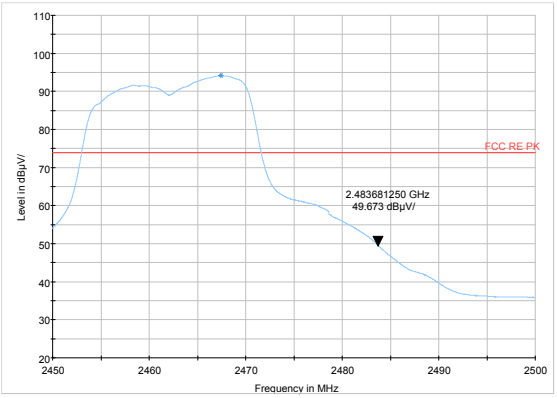
802.11g-Channel 1: Peak



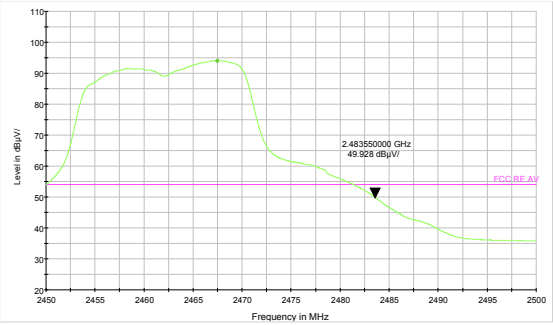
802.11g-Channel 1: Average



802.11g-Channel 11: Peak

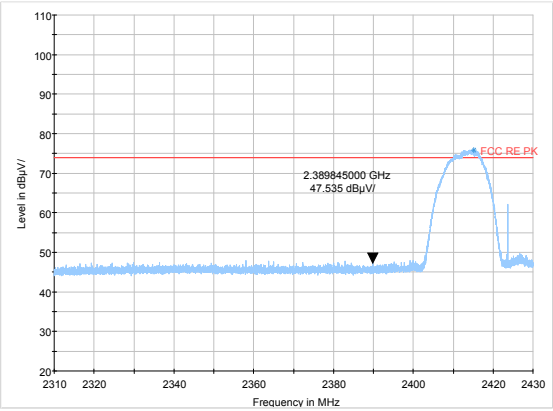


802.11g-Channel 11: Average

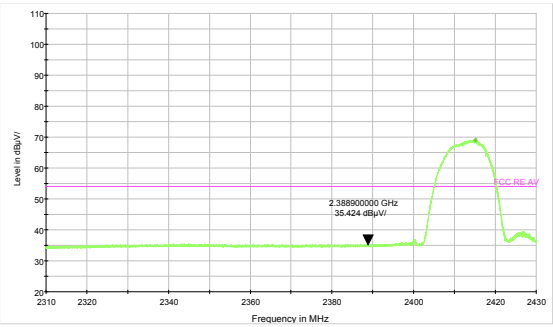


Antenna 2

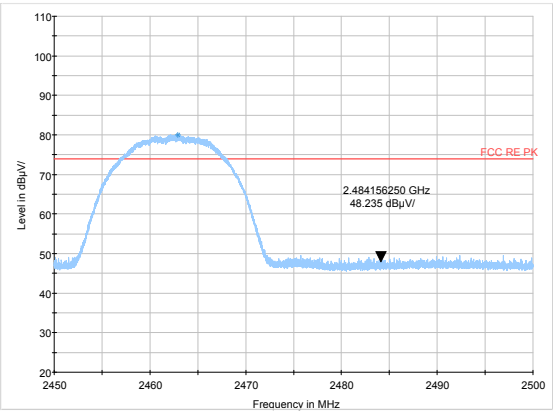
802.11b-Channel 1: Peak



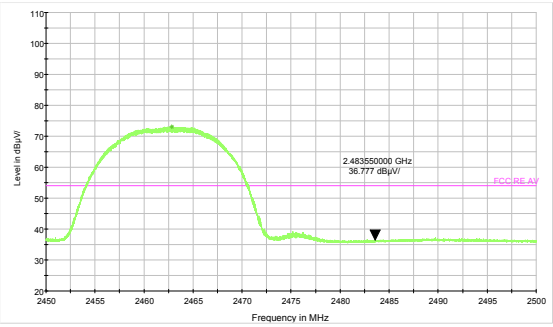
802.11b-Channel 1: Average

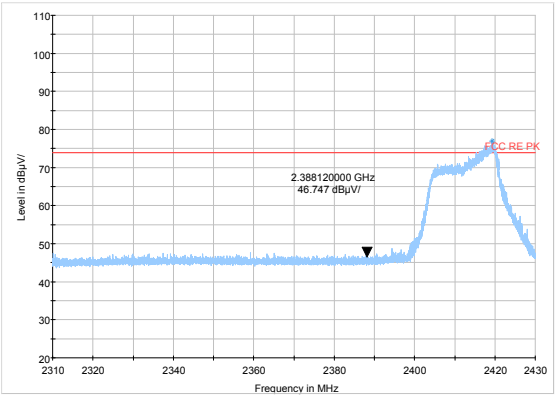
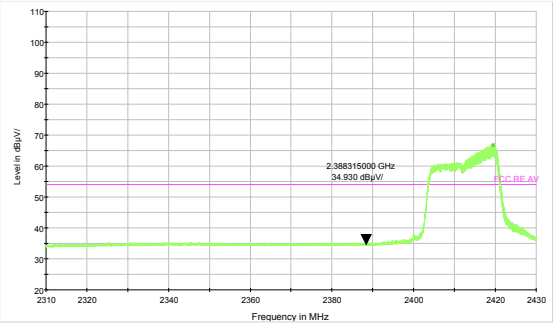
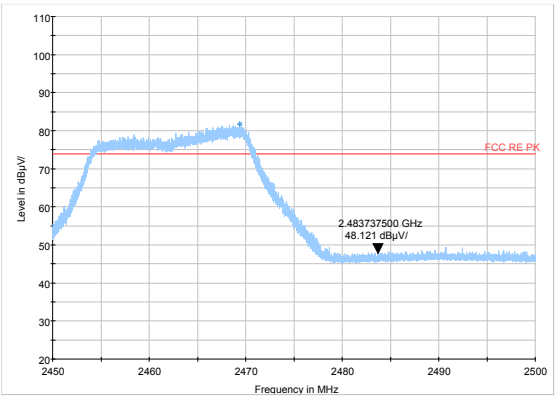
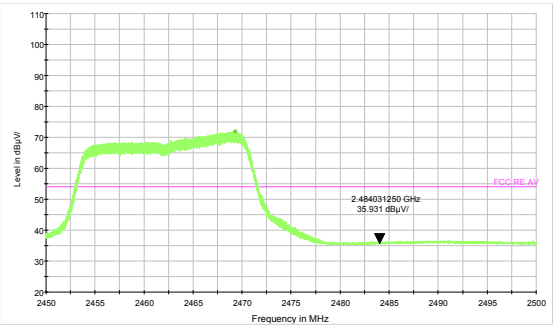


802.11b-Channel 11: Peak

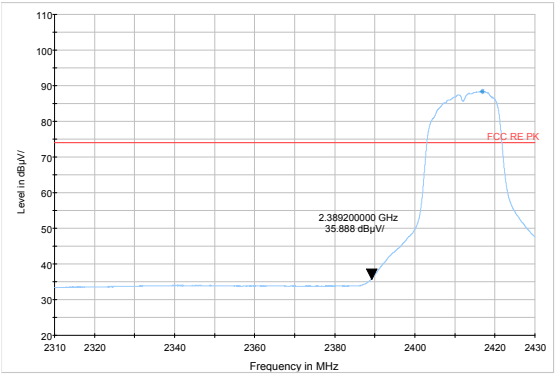
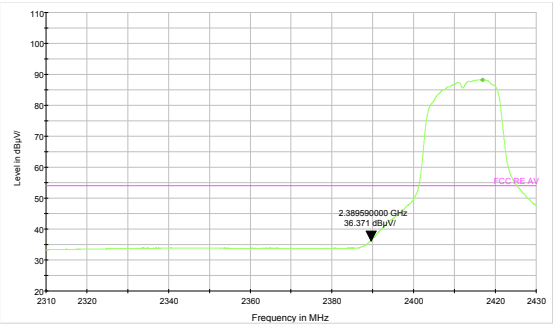


802.11b-Channel 11: Average

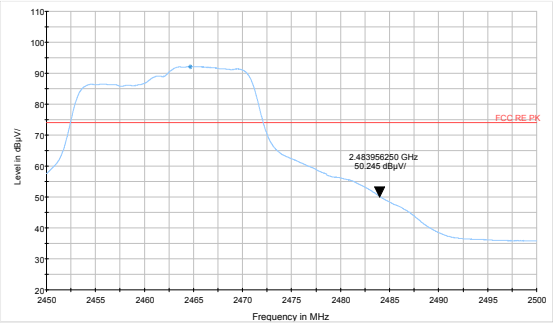


802.11g-Channel 1: Peak	802.11g-Channel 1: Average
	
802.11g-Channel 11: Peak	**802.11g-Channel 11: Average**
	

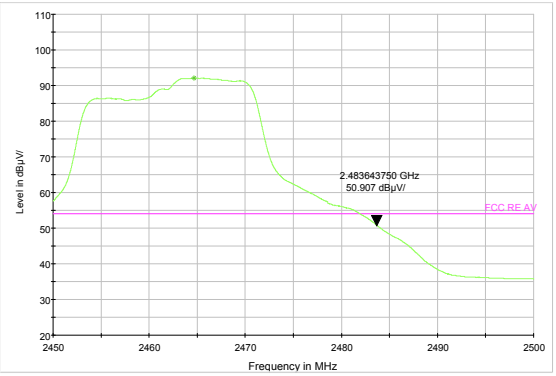
MIMO

802.11n HT20 -Channel 1: Peak	802.11n HT20-Channel 1: Average
	

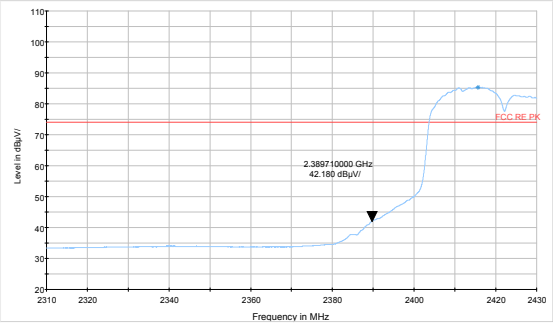
802.11n HT20-Channel 11: Peak



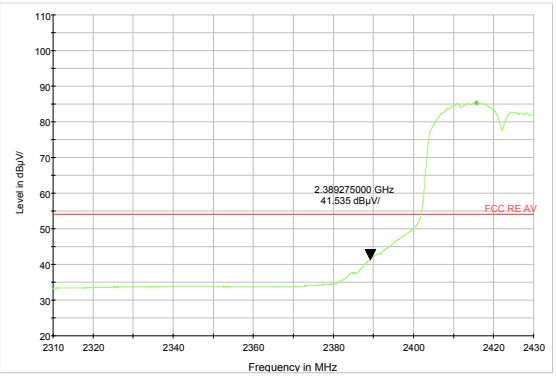
802.11n HT20-Channel 11: Average



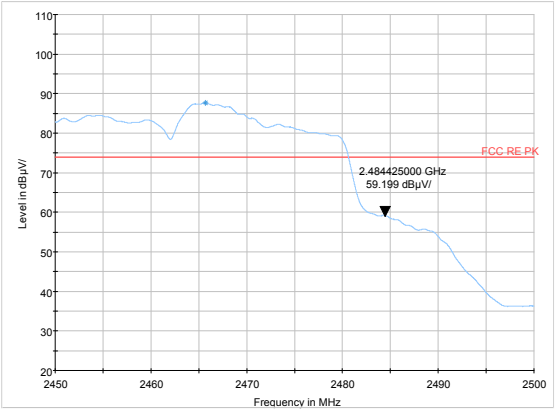
802.11n HT40 -Channel 3: Peak



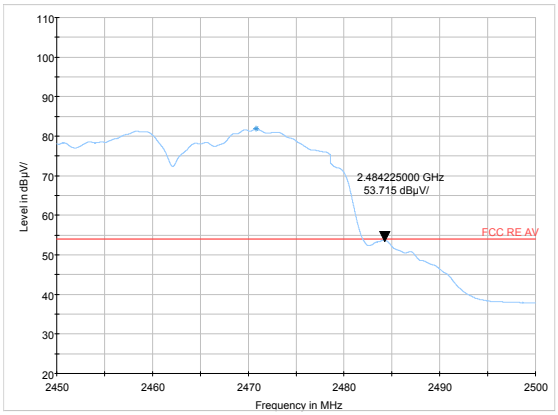
802.11n HT40-Channel 3: Average



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.

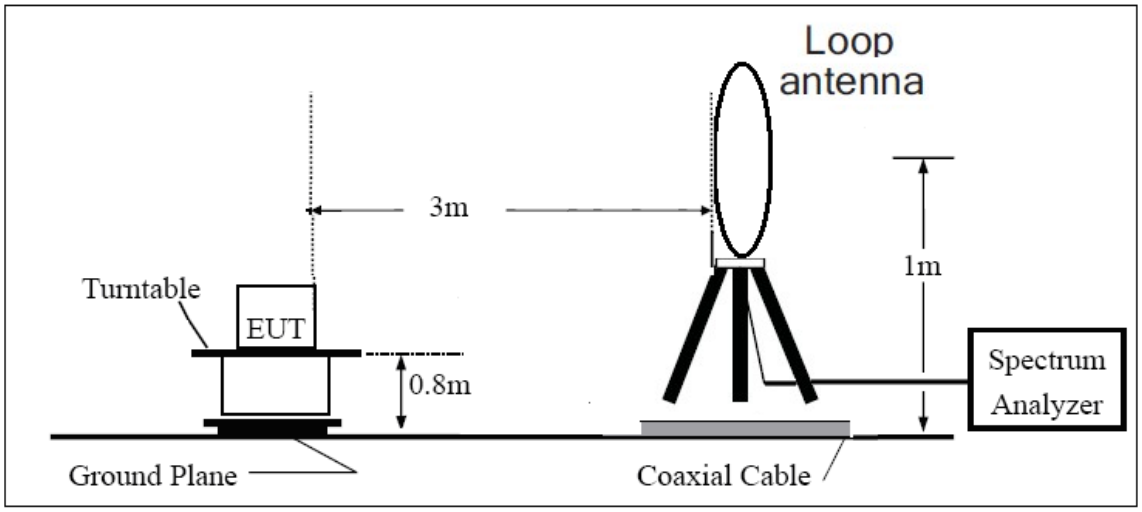
During the test, below 30MHz, the center of the loop shall be 1 meters; above 30MHz, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum 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.

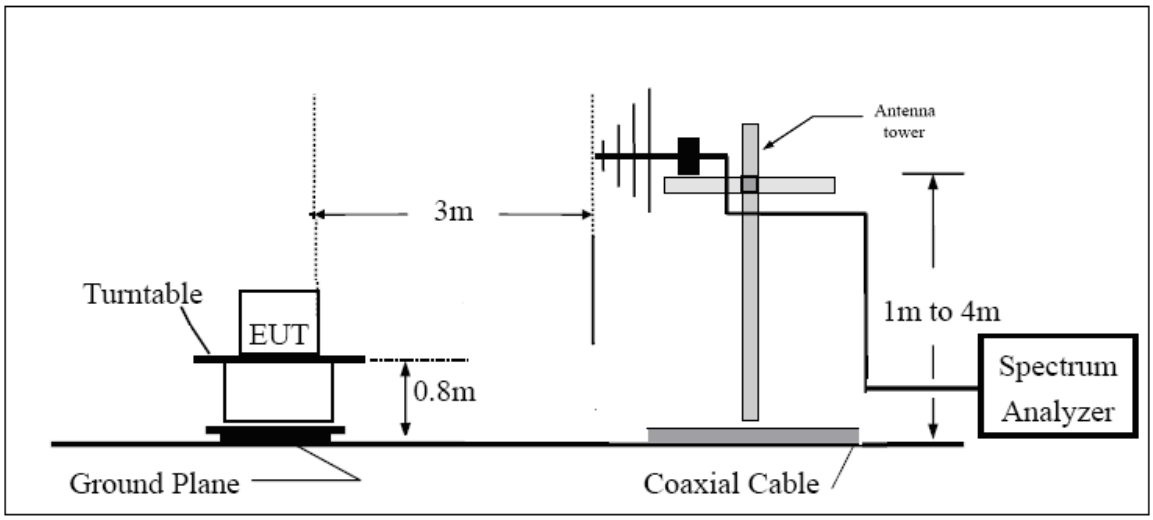
The test is in transmitting mode.

Test setup

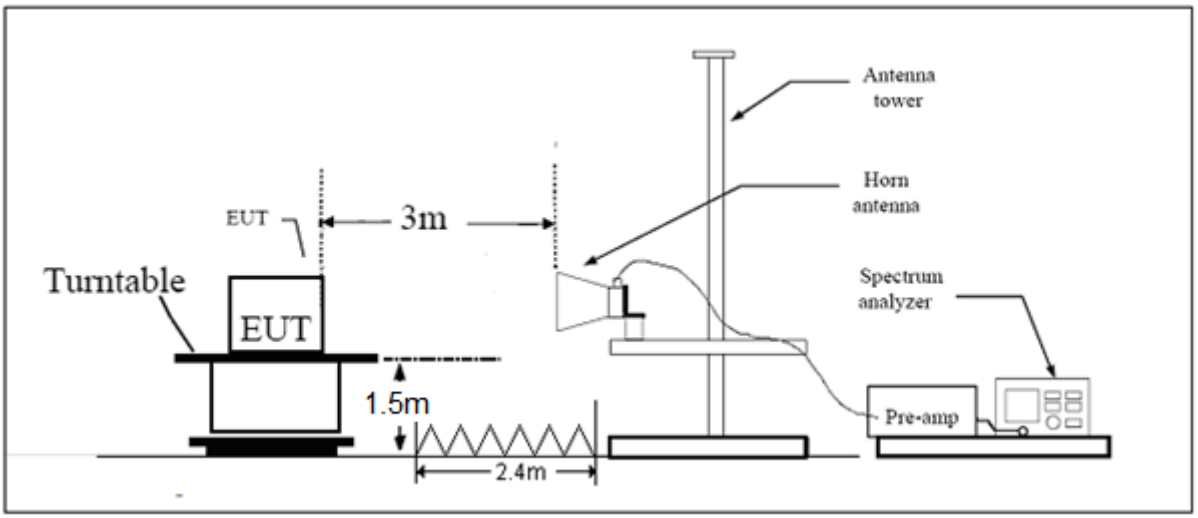
9KHz~~~ 30MHz



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.

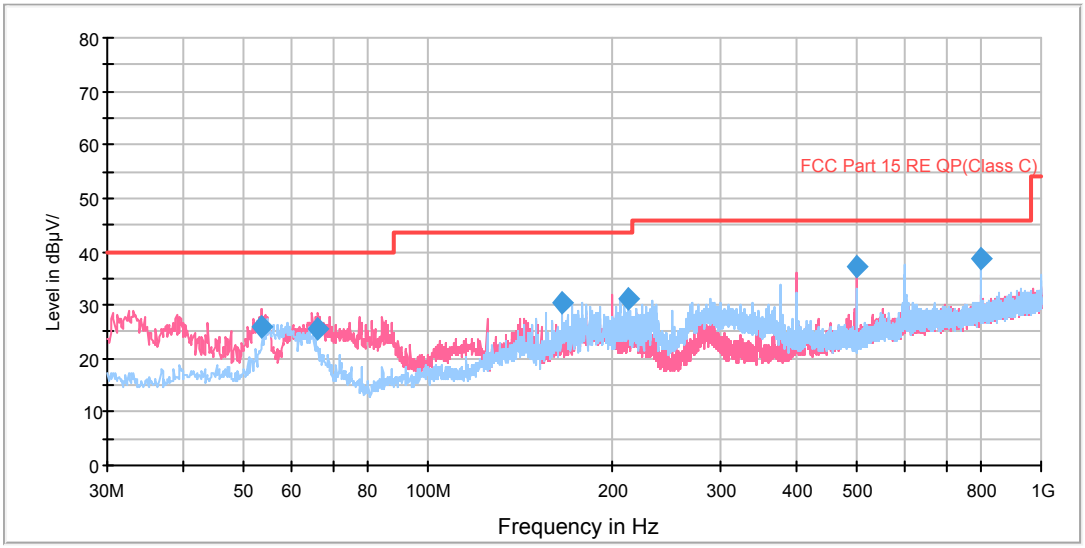
The following graphs display the maximum values of horizontal and vertical by software.

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

Antenna 1

802.11b CH1

FCC RE 0.03-1GHz QP Class C



Radiates Emission from 30MHz to 1GHz

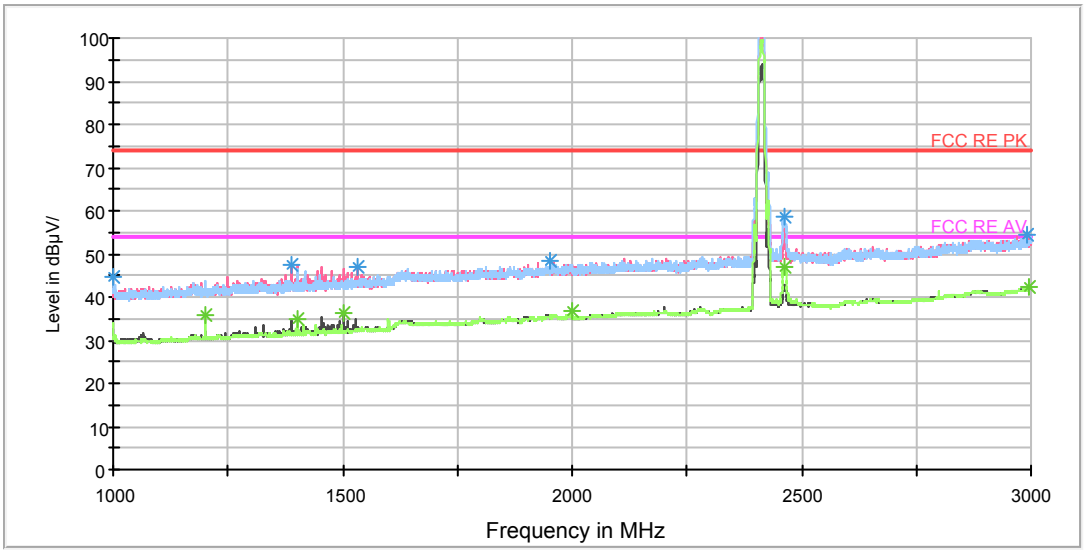
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
53.562500	26.0	100.0	V	283.0	38.8	12.8	14.0	40.0
66.293750	25.4	100.0	V	93.0	35.4	10.0	14.6	40.0
165.637500	30.3	125.0	H	26.0	40.3	10.0	13.2	43.5
212.481250	31.3	125.0	H	42.0	43.9	12.6	12.2	43.5
500.005000	37.2	100.0	V	20.0	57.1	19.9	8.8	46.0
800.018750	38.6	100.0	H	4.0	63.0	24.4	7.4	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

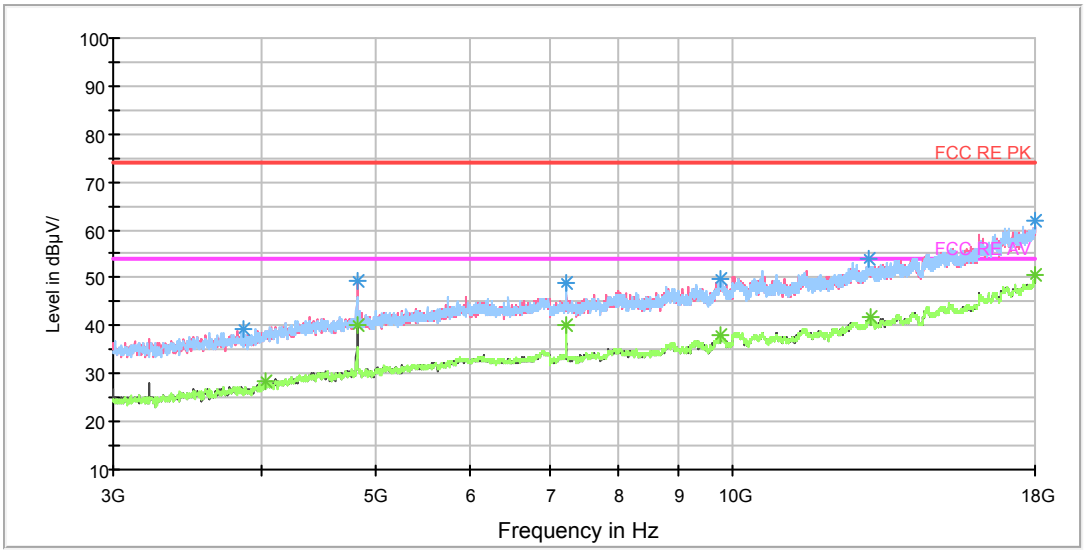
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	44.5	201.0	H	357.0	53.7	-9.2	29.5	74
1388.250000	47.4	101.0	V	267.0	54.4	-7.0	26.6	74
1533.500000	47.1	101.0	V	356.0	53.5	-6.4	26.9	74
1952.500000	48.6	300.0	H	93.0	52.2	-3.6	25.4	74
2462.750000	58.7	201.0	H	213.0	59.2	-0.5	15.3	74
2990.250000	54.3	400.0	V	15.0	56.5	2.2	19.7	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	35.7	201.0	H	40.0	43.9	-8.2	18.3	54
1400.250000	34.7	201.0	H	252.0	41.8	-7.1	19.3	54
1502.250000	36.3	101.0	V	279.0	42.9	-6.6	17.7	54
2000.000000	36.9	201.0	H	331.0	40.3	-3.4	17.1	54
2464.500000	47.2	201.0	H	199.0	47.7	-0.5	6.8	54
2997.750000	42.2	400.0	H	227.0	44.5	2.3	11.8	54

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

RE 3-18GHz PK+AV



Radiates Emission from 3GHz to 18GHz

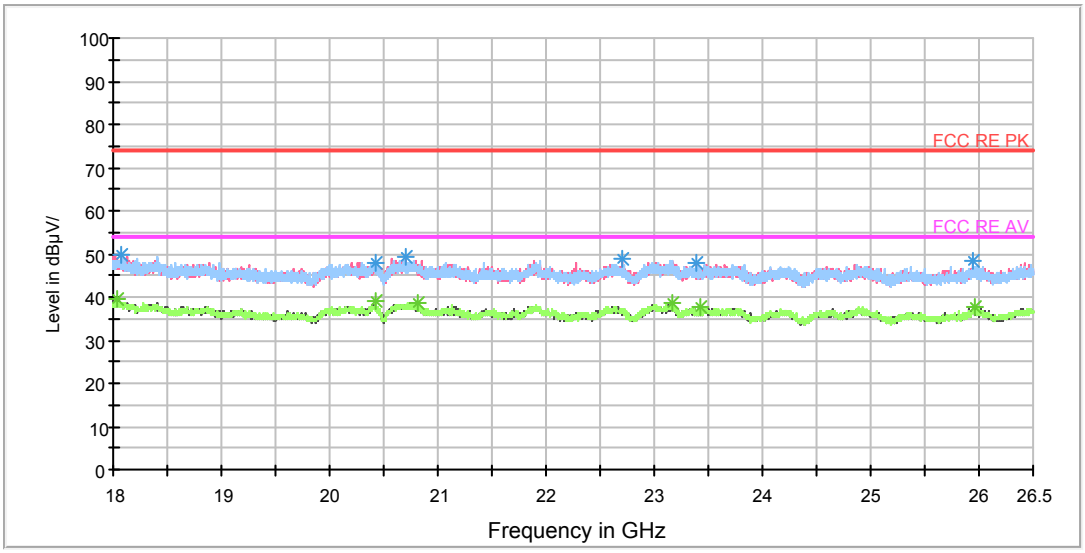
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3871.875000	39.4	101.0	H	263.0	39.7	-0.3	34.6	74
4822.500000	49.2	101.0	V	174.0	51.9	2.7	24.8	74
7241.250000	48.8	101.0	H	186.0	57.5	8.7	25.2	74
9774.375000	50.0	101.0	V	296.0	62.0	12.0	24.0	74
13012.500000	54.1	101.0	H	201.0	70.3	16.2	19.9	74
18000.000000	61.8	101.0	V	174.0	87.2	25.4	12.2	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)
4035.000000	28.3	101.0	H	4.0	28.9	0.6	25.7	54
4824.375000	40.0	101.0	V	174.0	42.8	2.8	14.0	54
7235.625000	40.1	101.0	H	186.0	48.8	8.7	13.9	54
9774.375000	38.0	101.0	V	296.0	50.0	12.0	16.0	54
13063.125000	41.8	101.0	V	0.0	58.0	16.2	12.2	54
17998.125000	50.6	101.0	H	296.0	76.0	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)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18066.937500	49.9	101.0	V	180.0	52.0	-2.1	24.1	74
20425.687500	48.1	101.0	H	0.0	54.2	-6.1	25.9	74
20696.625000	49.2	101.0	V	151.0	55.9	-6.7	24.8	74
22699.437500	48.9	101.0	V	55.0	55.5	-6.6	25.1	74
23392.187500	47.9	101.0	V	173.0	53.8	-5.9	26.1	74
25936.875000	48.4	101.0	V	180.0	53.8	-5.4	25.6	74

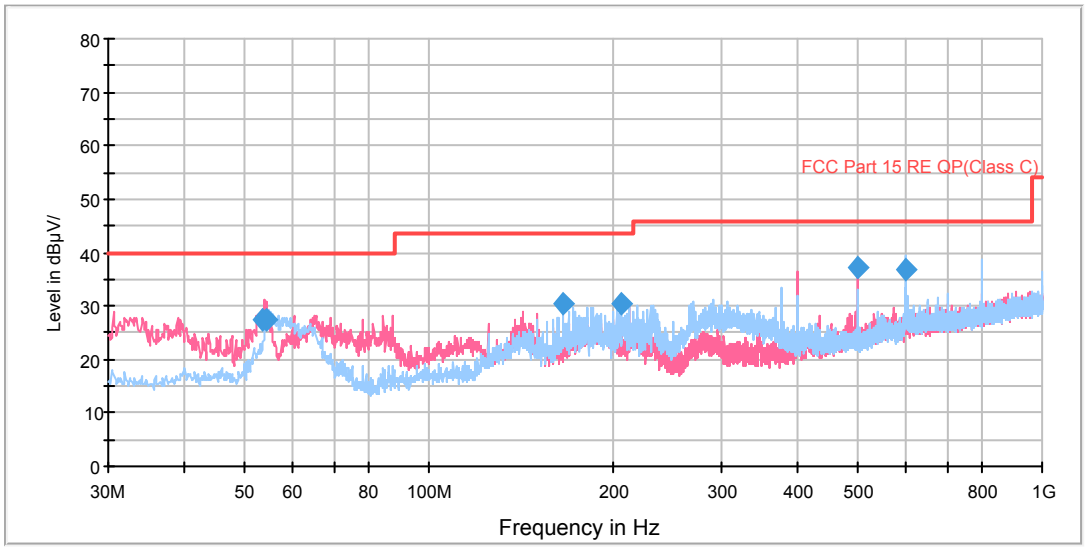
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18040.375000	39.5	101.0	H	61.0	41.5	-2.0	14.5	54
20426.750000	38.9	101.0	H	159.0	45.0	-6.1	15.1	54
20806.062500	38.6	101.0	V	151.0	45.5	-6.9	15.4	54
23163.750000	38.4	101.0	H	121.0	44.5	-6.1	15.6	54
23420.875000	37.5	101.0	H	88.0	43.4	-5.9	16.5	54
25967.687500	37.6	101.0	V	88.0	43.0	-5.4	16.4	54

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

802.11b CH6

FCC RE 0.03-1GHz QP Class C



Radiates Emission from 30MHz to 1GHz

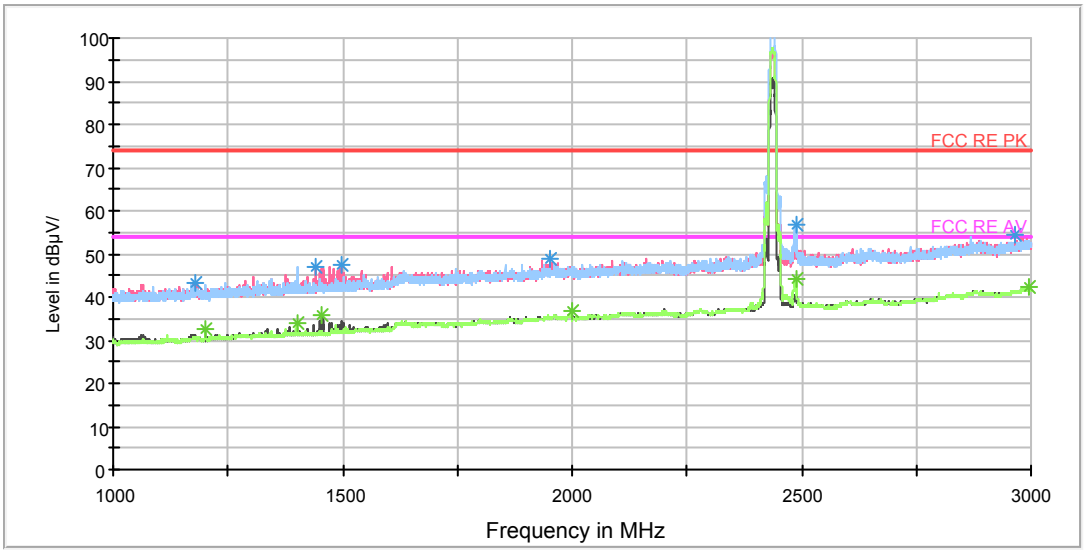
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
53.562500	27.2	100.0	V	286.0	40.0	12.8	12.8	40.0
54.207500	27.4	100.0	V	286.0	40.2	12.8	12.6	40.0
165.638750	30.4	114.0	H	22.0	40.4	10.0	13.1	43.5
206.256250	30.5	125.0	H	44.0	42.8	12.3	13.0	43.5
500.006250	37.2	100.0	V	22.0	57.1	19.9	8.8	46.0
599.997500	36.8	125.0	H	10.0	59.0	22.2	9.2	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

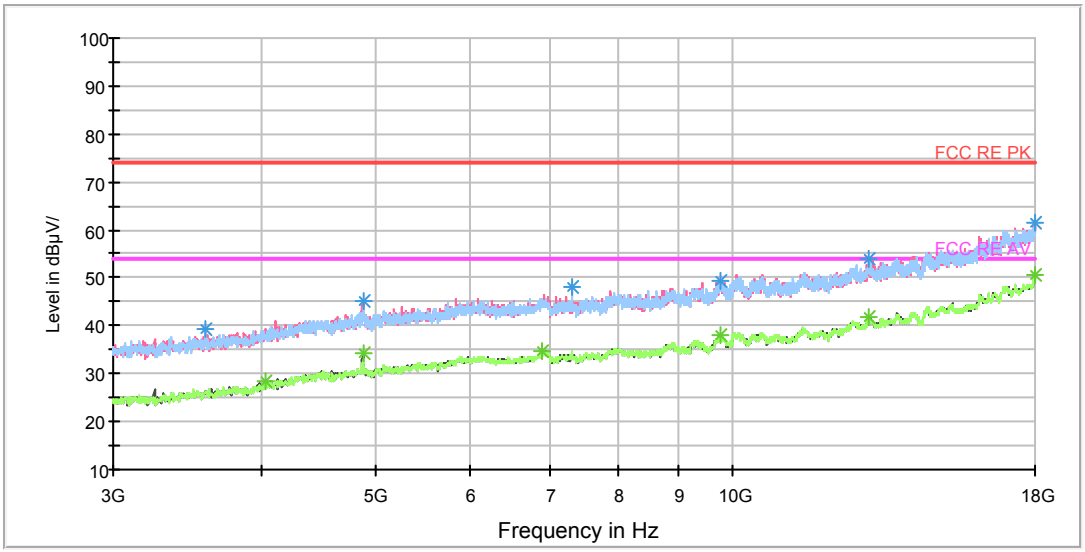
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1179.500000	43.5	101.0	V	222.0	51.5	-8.0	30.5	74
1441.000000	47.0	101.0	V	117.0	53.9	-6.9	27.0	74
1497.000000	47.5	101.0	V	222.0	54.2	-6.7	26.5	74
1951.250000	48.8	101.0	V	174.0	52.4	-3.6	25.2	74
2487.750000	56.5	101.0	H	151.0	56.6	0.1	17.5	74
2963.250000	54.3	101.0	V	313.0	56.4	2.1	19.7	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)
1199.750000	32.6	101.0	H	1.0	40.8	-8.2	21.4	54
1400.000000	33.9	101.0	H	36.0	41.0	-7.1	20.1	54
1456.250000	35.7	101.0	V	290.0	42.5	-6.8	18.3	54
2000.000000	36.5	101.0	H	0.0	39.9	-3.4	17.5	54
2487.750000	44.1	101.0	H	151.0	44.2	0.1	9.9	54
2994.750000	42.1	101.0	V	256.0	44.4	2.3	11.9	54

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

RE 3-18GHz PK+AV



Radiates Emission from 3GHz to 18GHz

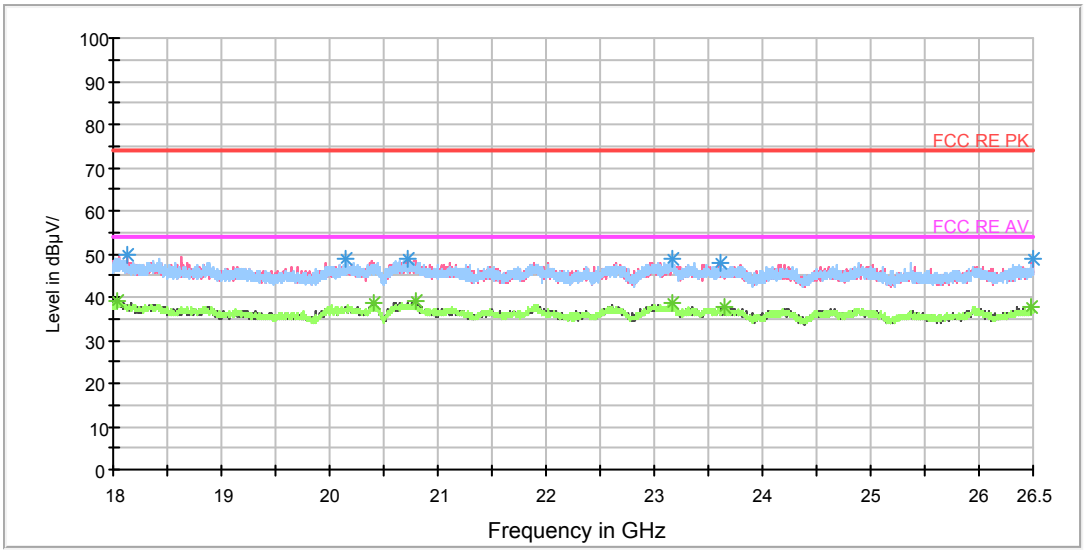
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3585.000000	39.5	101.0	H	65.0	40.3	-0.8	34.5	74
4876.875000	45.1	101.0	V	204.0	48.1	3.0	28.9	74
7314.375000	48.3	101.0	H	187.0	56.9	8.6	25.7	74
9755.625000	49.5	101.0	H	35.0	61.2	11.7	24.5	74
13048.125000	53.8	101.0	H	0.0	70.0	16.2	20.2	74
18000.000000	61.6	101.0	V	312.0	87.0	25.4	12.4	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)
4040.625000	28.2	101.0	V	357.0	28.8	0.6	25.8	54
4873.125000	34.2	101.0	V	174.0	37.2	3.0	19.8	54
6901.875000	34.9	101.0	V	312.0	41.9	7.0	19.1	54
9759.375000	38.1	101.0	V	357.0	49.9	11.8	15.9	54
13044.375000	41.7	101.0	H	172.0	57.9	16.2	12.3	54
18000.000000	50.5	101.0	H	280.0	75.9	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)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18126.437500	49.6	101.0	V	278.0	51.9	-2.3	24.4	74
20153.687500	49.0	101.0	H	28.0	54.8	-5.8	25.0	74
20729.562500	48.9	101.0	V	254.0	55.7	-6.8	25.1	74
23175.437500	48.9	101.0	H	89.0	55.0	-6.1	25.1	74
23613.187500	47.9	101.0	V	30.0	53.8	-5.9	26.1	74
26495.750000	48.6	101.0	V	74.0	54.0	-5.4	25.4	74

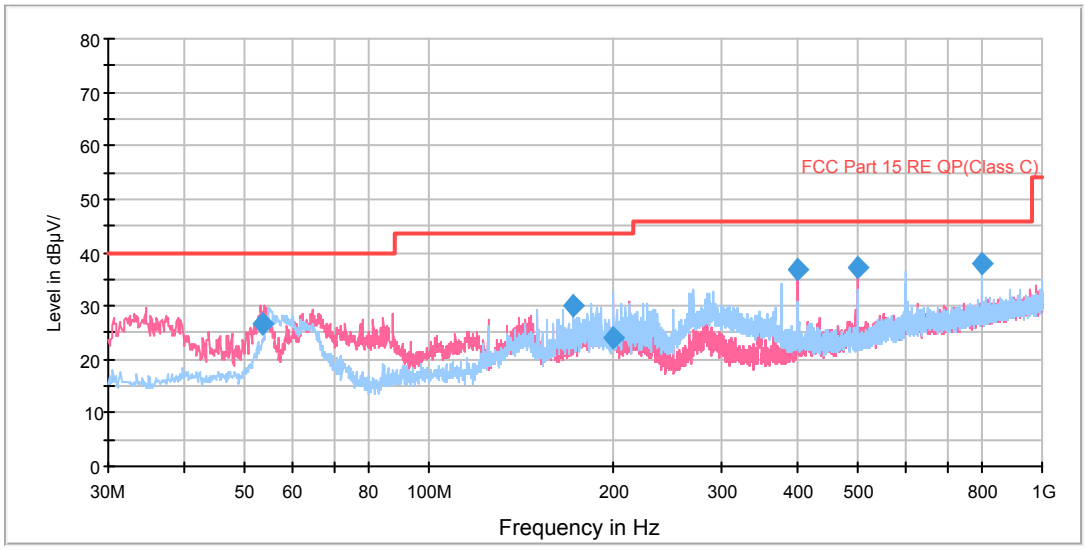
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18045.687500	39.3	101.0	H	0.0	41.3	-2.0	14.7	54
20406.562500	38.4	101.0	V	290.0	44.5	-6.1	15.6	54
20788.000000	38.8	101.0	H	101.0	45.7	-6.9	15.2	54
23161.625000	38.6	101.0	H	0.0	44.7	-6.1	15.4	54
23642.937500	37.6	101.0	H	77.0	43.5	-5.9	16.4	54
26480.875000	37.9	101.0	V	74.0	43.3	-5.4	16.1	54

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

802.11b CH11

FCC RE 0.03-1GHz QP Class C



Radiates Emission from 30MHz to 1GHz

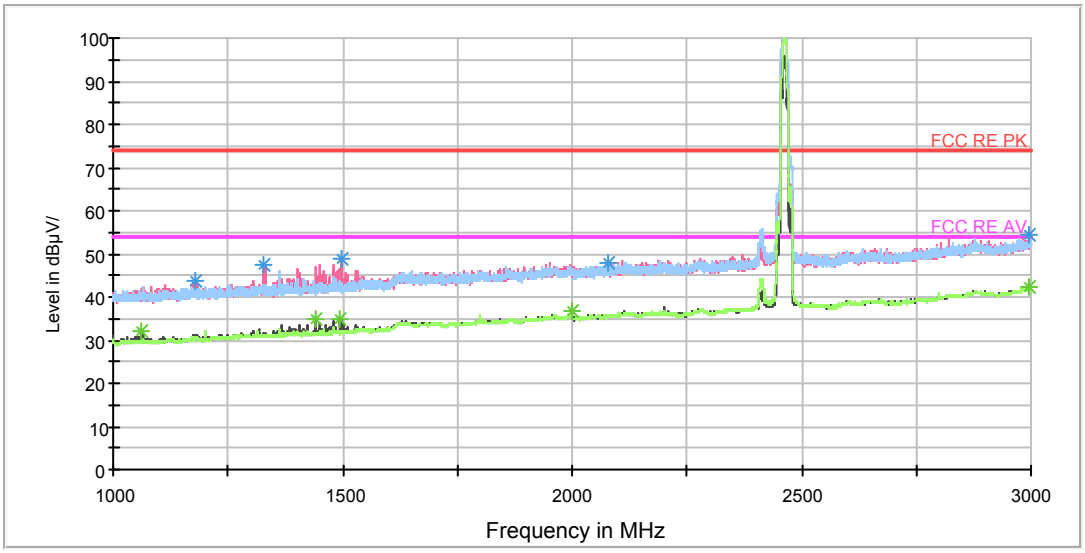
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
53.566250	26.6	100.0	V	261.0	39.4	12.8	13.4	40.0
171.862500	30.1	125.0	H	25.0	40.5	10.4	13.4	43.5
199.952500	23.9	125.0	H	42.0	35.9	12.0	19.6	43.5
400.015000	36.9	125.0	V	356.0	54.8	17.9	9.1	46.0
500.005000	37.1	100.0	V	20.0	57.0	19.9	8.9	46.0
800.018750	37.9	100.0	H	11.0	62.3	24.4	8.1	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

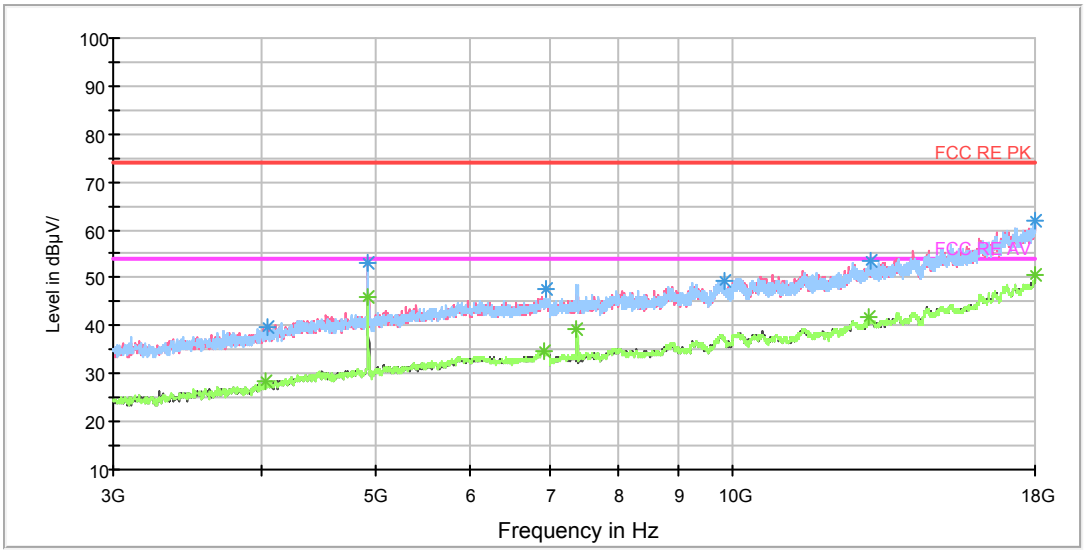
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1180.000000	43.8	101.0	V	221.0	51.8	-8.0	30.2	74
1327.750000	47.6	101.0	V	233.0	55.0	-7.4	26.4	74
1496.000000	48.7	101.0	V	112.0	55.4	-6.7	25.3	74
2077.750000	48.0	101.0	V	336.0	51.0	-3.0	26.0	74
2996.000000	54.4	101.0	H	28.0	56.7	2.3	19.6	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)
1063.250000	32.0	101.0	V	210.0	40.9	-8.9	22.0	54
1441.500000	34.9	101.0	V	280.0	41.8	-6.9	19.1	54
1495.250000	35.0	101.0	V	280.0	41.7	-6.7	19.0	54
2000.000000	36.7	101.0	H	323.0	40.1	-3.4	17.3	54
2997.250000	42.3	101.0	V	325.0	44.6	2.3	11.7	54

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

RE 3-18GHz PK+AV



Radiates Emission from 3GHz to 18GHz

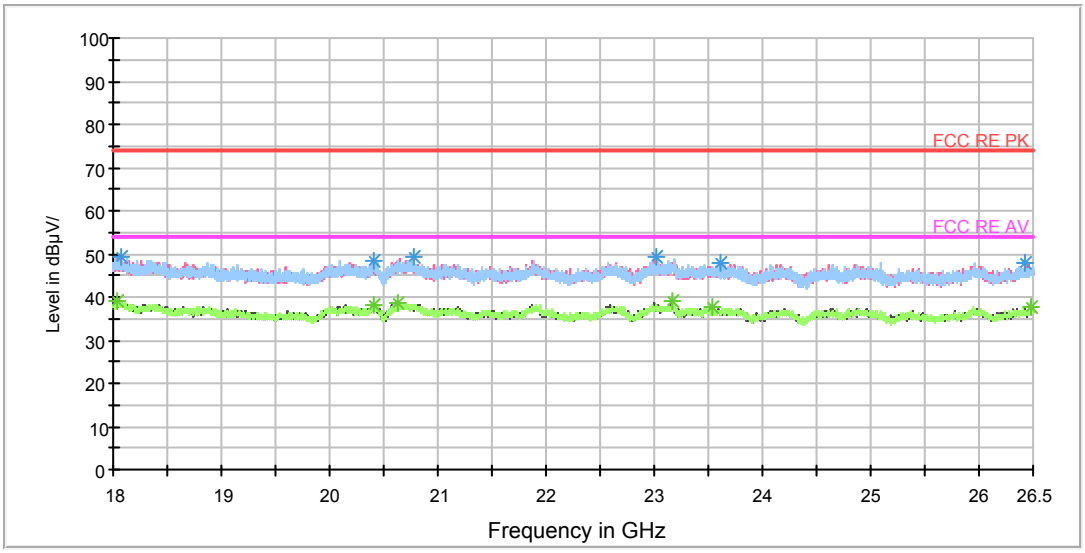
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4042.500000	39.5	101.0	V	0.0	40.1	0.6	34.5	74
4923.750000	53.3	101.0	V	192.0	56.4	3.1	20.7	74
6958.125000	47.6	101.0	V	175.0	54.2	6.6	26.4	74
9832.500000	49.3	101.0	V	159.0	61.2	11.9	24.7	74
13061.250000	53.7	101.0	H	65.0	69.9	16.2	20.3	74
18000.000000	61.8	101.0	V	208.0	87.2	25.4	12.2	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)
4036.875000	28.3	101.0	V	0.0	28.9	0.6	25.7	54
4923.750000	46.1	101.0	V	192.0	49.2	3.1	7.9	54
6918.750000	34.9	101.0	V	0.0	41.8	6.9	19.1	54
7387.500000	39.2	101.0	H	296.0	47.1	7.9	14.8	54
13021.875000	41.6	101.0	H	126.0	57.8	16.2	12.4	54
17994.375000	50.5	101.0	H	313.0	75.8	25.3	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)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18079.687500	49.1	101.0	H	65.0	51.2	-2.1	24.9	74
20408.687500	48.3	101.0	H	319.0	54.4	-6.1	25.7	74
20769.937500	49.3	101.0	V	342.0	56.2	-6.9	24.7	74
23024.562500	49.2	101.0	H	128.0	55.3	-6.1	24.8	74
23613.187500	47.7	101.0	V	256.0	53.6	-5.9	26.3	74
26433.062500	48.1	101.0	H	292.0	53.5	-5.4	25.9	74

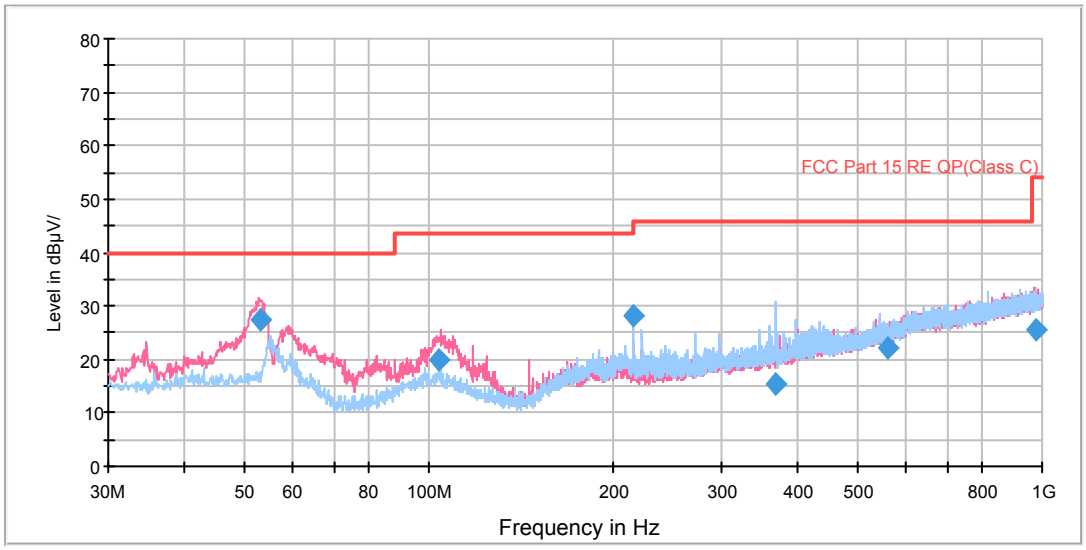
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18043.562500	39.3	101.0	H	28.0	41.3	-2.0	14.7	54
20410.812500	38.2	101.0	V	359.0	44.3	-6.1	15.8	54
20636.062500	38.7	101.0	V	181.0	45.2	-6.5	15.3	54
23159.500000	38.9	101.0	V	132.0	45.0	-6.1	15.1	54
23538.812500	37.6	101.0	V	306.0	43.5	-5.9	16.4	54
26479.812500	37.6	101.0	H	349.0	43.0	-5.4	16.4	54

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

802.11g CH1

RE 0.03-1GHz QP Class B



Radiates Emission from 30MHz to 1GHz

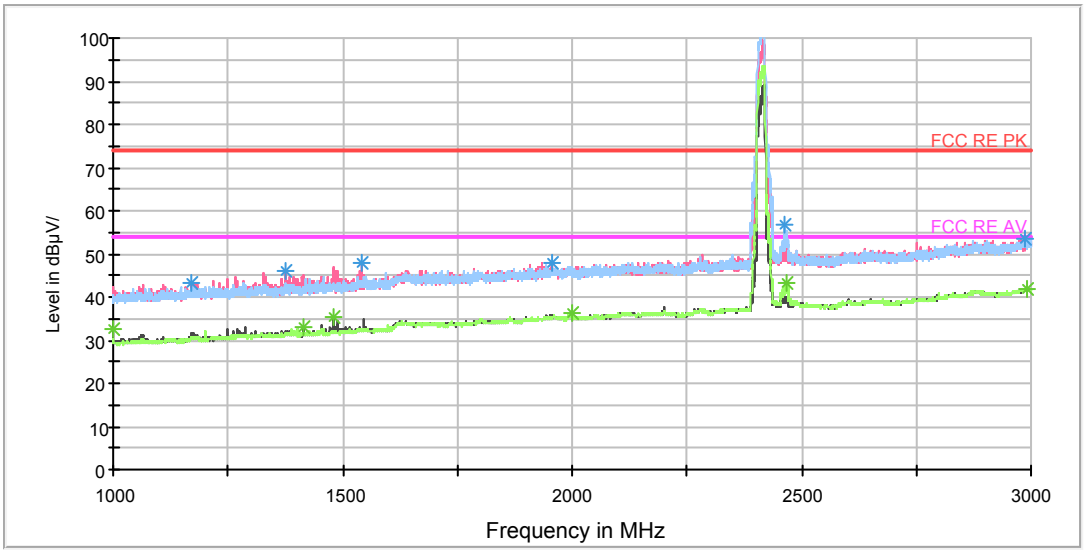
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
53.235000	27.5	100.0	V	262.0	40.3	12.8	12.5	40.0
104.208750	19.7	100.0	V	0.0	32.6	12.9	20.3	40.0
215.997500	28.3	125.0	H	321.0	41.0	12.7	11.7	40.0
367.323750	15.6	100.0	H	253.0	32.7	17.1	31.4	47.0
558.292500	22.2	125.0	H	126.0	43.4	21.2	24.8	47.0
977.401250	25.4	125.0	H	260.0	51.7	26.3	21.6	47.0

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

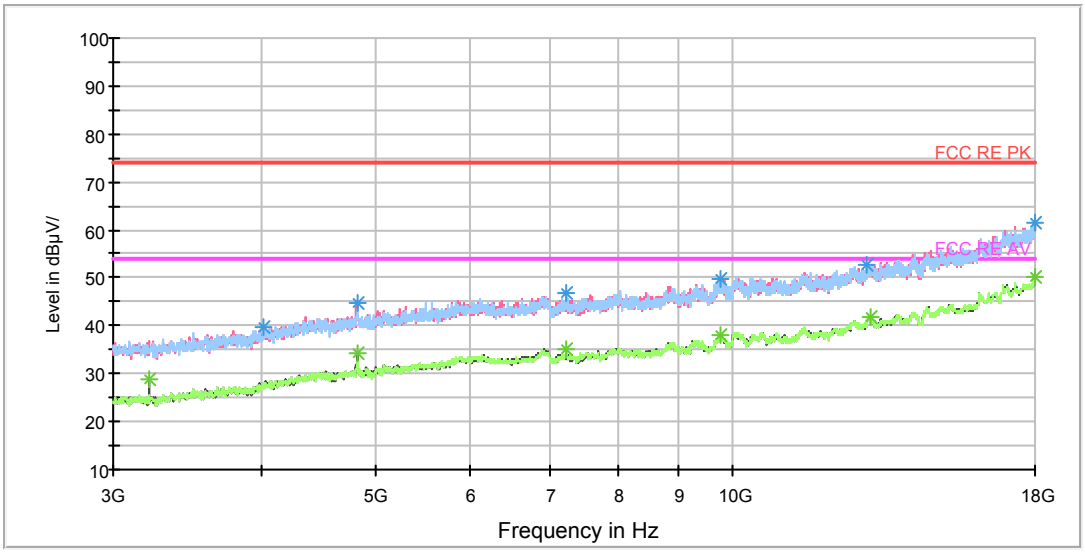
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1171.500000	43.4	101.0	V	217.0	51.5	-8.1	30.6	74
1375.750000	46.1	101.0	V	75.0	53.2	-7.1	27.9	74
1542.500000	47.8	101.0	V	101.0	54.1	-6.3	26.2	74
1954.250000	48.0	101.0	V	318.0	51.6	-3.6	26.0	74
2464.000000	56.7	101.0	H	193.0	57.3	-0.6	17.3	74
2985.500000	53.6	101.0	V	194.0	55.8	2.2	20.4	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)
1000.000000	32.6	101.0	V	251.0	41.8	-9.2	21.4	54
1413.000000	33.2	101.0	V	205.0	40.3	-7.1	20.8	54
1481.500000	35.2	101.0	V	239.0	41.7	-6.5	18.8	54
2000.000000	36.4	101.0	H	0.0	39.8	-3.4	17.6	54
2467.500000	43.4	101.0	H	147.0	43.8	-0.4	10.6	54
2993.250000	42.1	101.0	H	228.0	44.3	2.2	11.9	54

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

RE 3-18GHz PK+AV



Radiates Emission from 3GHz to 18GHz

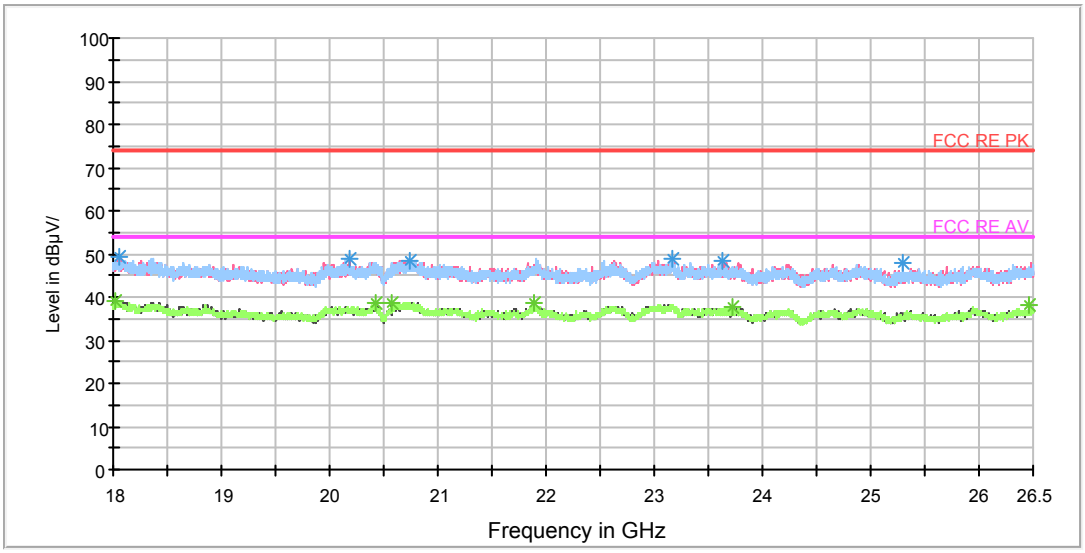
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4021.875000	39.7	101.0	H	0.0	40.2	0.5	34.3	74
4820.625000	44.6	101.0	V	190.0	47.3	2.7	29.4	74
7237.500000	46.7	101.0	H	187.0	55.4	8.7	27.3	74
9774.375000	49.6	101.0	V	81.0	61.6	12.0	24.4	74
13001.250000	52.9	101.0	V	0.0	69.1	16.2	21.1	74
17992.500000	61.7	101.0	H	234.0	87.0	25.3	12.3	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)
3215.625000	28.7	101.0	V	0.0	30.4	-1.7	25.3	54
4824.375000	34.4	101.0	V	190.0	37.2	2.8	19.6	54
7237.500000	35.0	101.0	H	187.0	43.7	8.7	19.0	54
9772.500000	38.1	101.0	H	82.0	50.0	11.9	15.9	54
13061.250000	41.6	101.0	H	0.0	57.8	16.2	12.4	54
17990.625000	50.3	101.0	H	0.0	75.6	25.3	3.7	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)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18061.625000	49.5	101.0	V	133.0	51.6	-2.1	24.5	74
20180.250000	48.8	101.0	V	309.0	54.6	-5.8	25.2	74
20733.812500	48.6	101.0	H	99.0	55.4	-6.8	25.4	74
23170.125000	49.0	101.0	V	334.0	55.1	-6.1	25.0	74
23630.187500	48.3	101.0	V	0.0	54.2	-5.9	25.7	74
25297.250000	48.1	101.0	H	149.0	53.9	-5.8	25.9	74

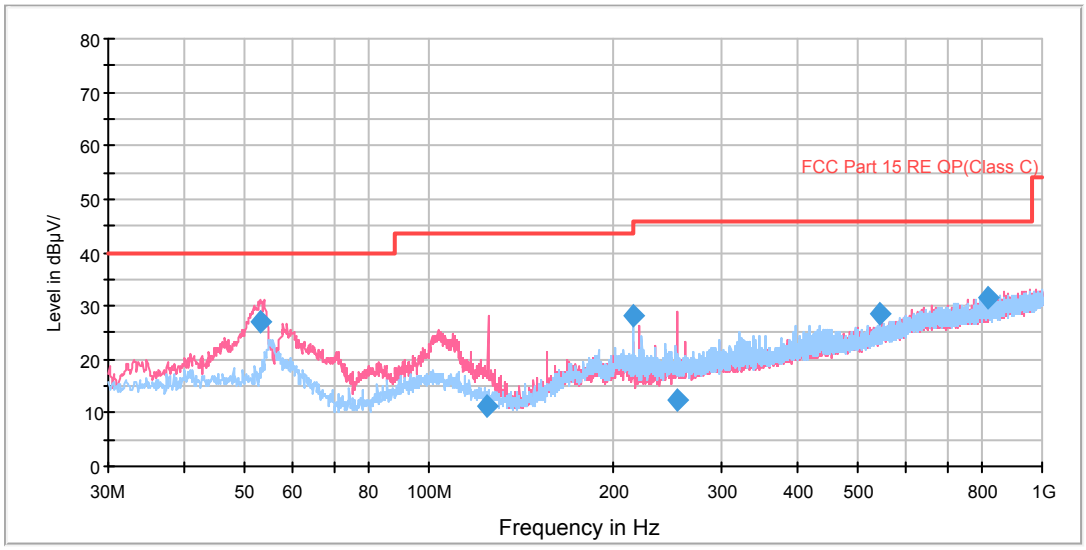
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18020.187500	39.1	101.0	H	86.0	41.0	-1.9	14.9	54
20419.312500	38.7	101.0	V	171.0	44.8	-6.1	15.3	54
20582.937500	38.7	101.0	V	223.0	45.1	-6.4	15.3	54
21891.937500	38.4	101.0	H	86.0	46.4	-8.0	15.6	54
23713.062500	37.5	101.0	H	149.0	43.4	-5.9	16.5	54
26471.312500	38.0	101.0	H	49.0	43.4	-5.4	16.0	54

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

802.11g CH6

RE 0.03-1GHz QP Class B



Radiates Emission from 30MHz to 1GHz

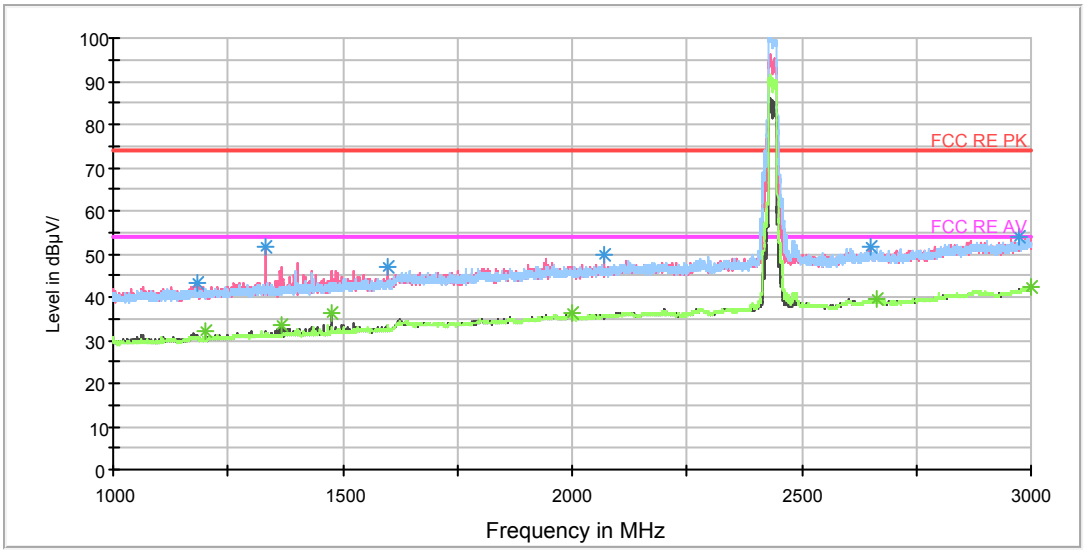
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
53.237500	27.2	100.0	V	298.0	40.0	12.8	12.8	40.0
124.378750	11.4	100.0	V	174.0	21.4	10.0	28.6	40.0
215.997500	28.0	125.0	H	308.0	40.7	12.7	12.0	40.0
254.277500	12.6	100.0	V	174.0	26.8	14.2	34.4	47.0
544.503750	28.7	125.0	H	234.0	49.6	20.9	18.3	47.0
816.751250	31.7	100.0	H	299.0	56.3	24.6	15.3	47.0

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

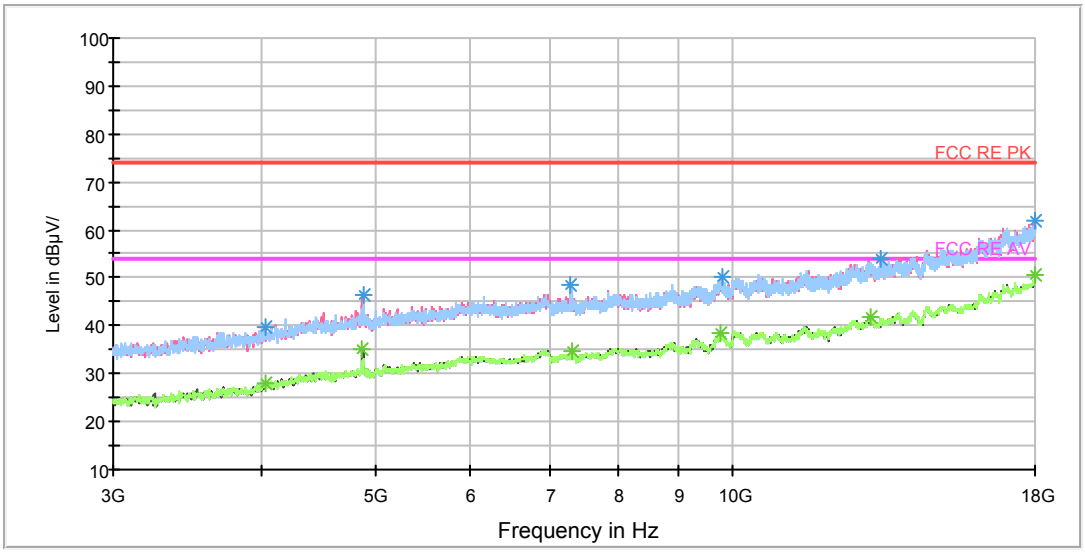
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1181.250000	43.3	101.0	V	185.0	51.3	-8.0	30.7	74
1332.000000	51.5	101.0	V	220.0	58.9	-7.4	22.5	74
1598.000000	46.8	101.0	V	300.0	53.2	-6.4	27.2	74
2070.500000	49.7	101.0	V	335.0	52.8	-3.1	24.3	74
2649.500000	51.8	101.0	V	0.0	52.2	0.4	22.2	74
2973.750000	53.8	101.0	V	346.0	56.0	2.2	20.2	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)
1199.750000	32.3	101.0	H	8.0	40.5	-8.2	21.7	54
1366.000000	33.4	101.0	V	288.0	40.7	-7.3	20.6	54
1477.500000	36.4	101.0	V	288.0	42.9	-6.5	17.6	54
2000.000000	36.5	101.0	H	0.0	39.9	-3.4	17.5	54
2662.250000	39.5	101.0	H	42.0	39.8	0.3	14.5	54
2998.000000	42.2	101.0	V	254.0	44.5	2.3	11.8	54

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

RE 3-18GHz PK+AV



Radiates Emission from 3GHz to 18GHz

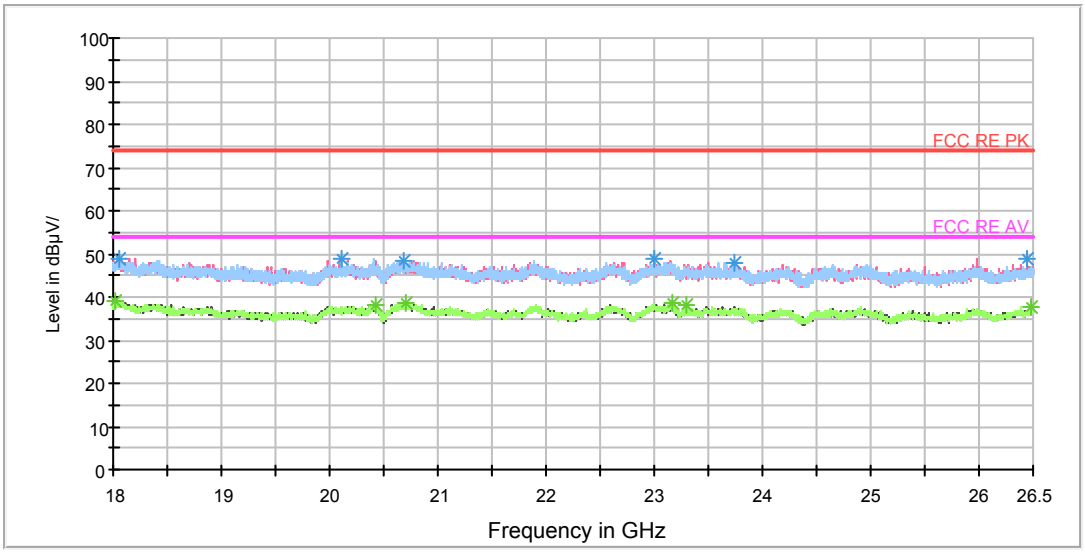
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4035.000000	39.7	100.0	V	250.0	40.3	0.6	34.3	74
4875.000000	46.3	100.0	V	13.0	49.3	3.0	27.7	74
7305.000000	48.7	100.0	H	313.0	57.3	8.6	25.3	74
9798.750000	50.2	100.0	H	18.0	62.5	12.3	23.8	74
13350.000000	53.9	100.0	H	3.0	69.7	15.8	20.1	74
17983.125000	61.7	100.0	H	3.0	86.9	25.2	12.3	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)
4038.750000	28.1	100.0	H	108.0	28.7	0.6	25.9	54
4871.250000	35.0	100.0	V	174.0	38.0	3.0	19.0	54
7308.750000	34.8	100.0	H	184.0	43.4	8.6	19.2	54
9748.125000	38.3	100.0	H	63.0	49.9	11.6	15.7	54
13061.250000	41.9	100.0	H	123.0	58.1	16.2	12.1	54
17992.500000	50.6	100.0	V	174.0	75.9	25.3	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)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18049.937500	49.0	101.0	V	177.0	51.0	-2.0	25.0	74
20115.437500	48.8	101.0	H	38.0	54.6	-5.8	25.2	74
20689.187500	48.5	101.0	V	0.0	55.2	-6.7	25.5	74
22995.875000	49.0	101.0	V	250.0	55.2	-6.2	25.0	74
23747.062500	48.0	101.0	V	314.0	53.9	-5.9	26.0	74
26439.437500	48.7	101.0	V	264.0	54.1	-5.4	25.3	74

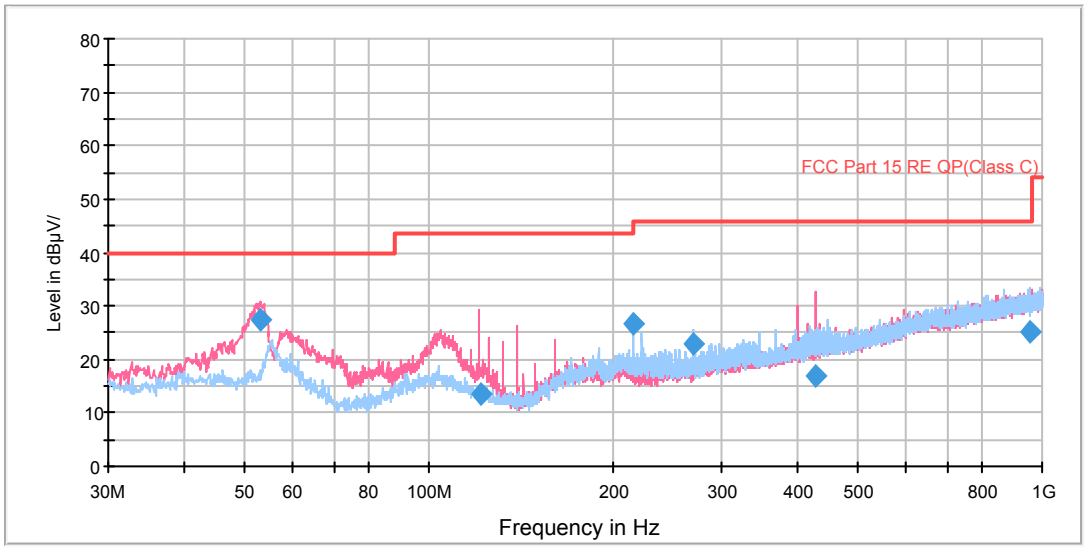
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18027.625000	39.3	101.0	V	138.0	41.2	-1.9	14.7	54
20431.000000	38.2	101.0	H	226.0	44.3	-6.1	15.8	54
20694.500000	38.7	101.0	V	0.0	45.4	-6.7	15.3	54
23158.437500	38.8	101.0	H	226.0	44.9	-6.1	15.2	54
23302.937500	37.9	101.0	V	276.0	43.9	-6.0	16.1	54
26476.625000	37.9	101.0	H	99.0	43.3	-5.4	16.1	54

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

802.11g CH11

RE 0.03-1GHz QP Class B



Radiates Emission from 30MHz to 1GHz

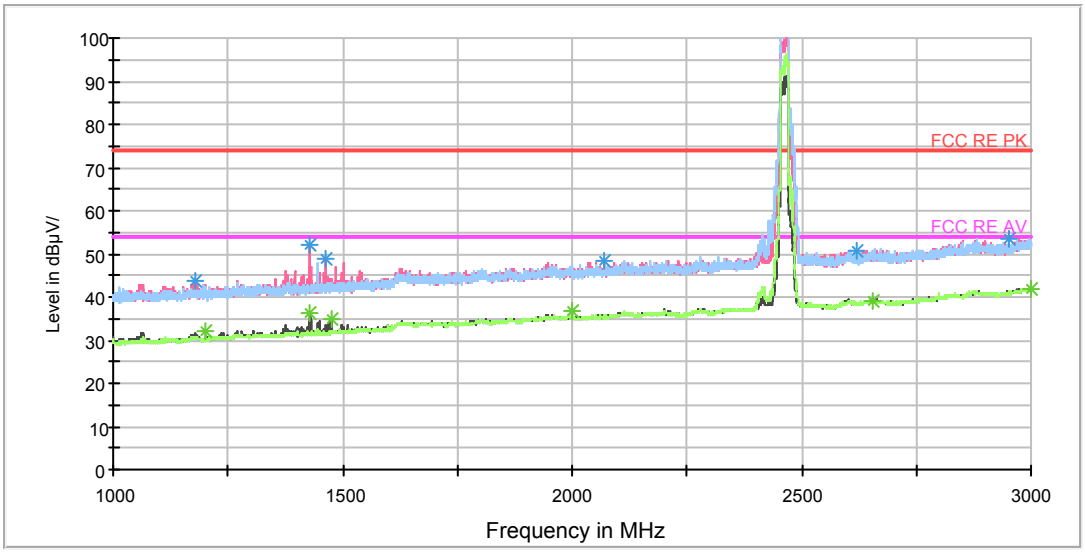
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
53.198750	27.4	100.0	V	276.0	40.2	12.8	12.6	40.0
121.297500	13.7	100.0	V	38.0	24.1	10.4	26.3	40.0
215.997500	26.7	125.0	H	316.0	39.4	12.7	13.3	40.0
269.993750	23.0	100.0	H	270.0	37.7	14.7	24.0	47.0
426.331250	17.0	125.0	V	52.0	35.5	18.5	30.0	47.0
958.130000	25.2	100.0	H	326.0	51.4	26.2	21.8	47.0

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

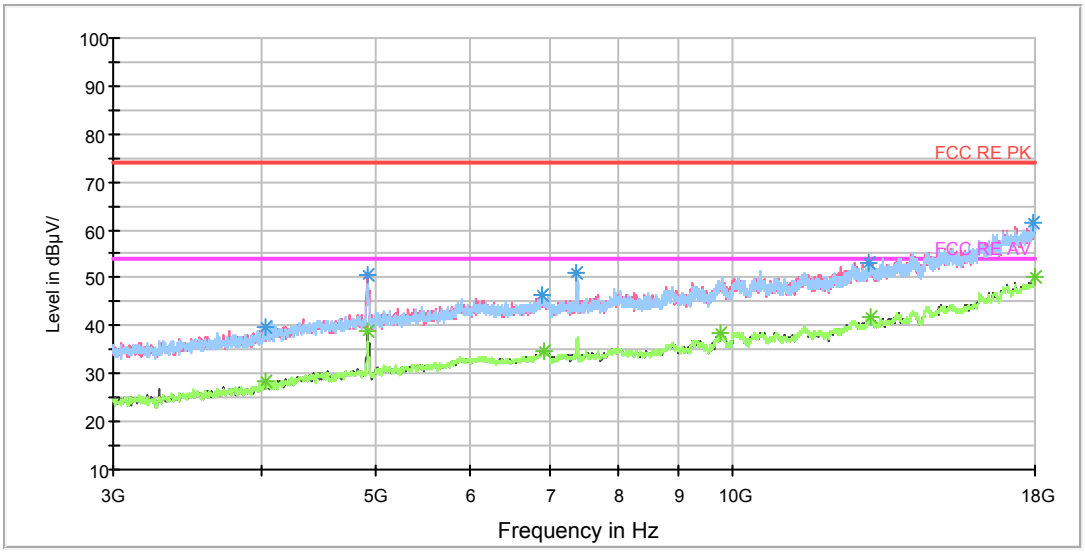
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1180.750000	43.6	101.0	V	226.0	51.6	-8.0	30.4	74
1428.500000	52.2	101.0	V	283.0	59.1	-6.9	21.8	74
1462.250000	48.7	101.0	V	204.0	55.5	-6.8	25.3	74
2068.250000	48.4	101.0	V	283.0	51.5	-3.1	25.6	74
2622.000000	50.7	101.0	V	192.0	50.8	-0.1	23.3	74
2952.500000	53.7	101.0	H	168.0	55.8	2.1	20.3	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)
1200.000000	32.1	101.0	V	99.0	40.3	-8.2	21.9	54
1430.000000	36.4	101.0	V	215.0	43.3	-6.9	17.6	54
1477.000000	35.0	101.0	V	134.0	41.6	-6.6	19.0	54
2000.000000	36.7	101.0	H	0.0	40.1	-3.4	17.3	54
2654.750000	39.1	101.0	V	0.0	39.5	0.4	14.9	54
2999.250000	42.0	101.0	H	192.0	44.3	2.3	12.0	54

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

RE 3-18GHz PK+AV



Radiates Emission from 3GHz to 18GHz

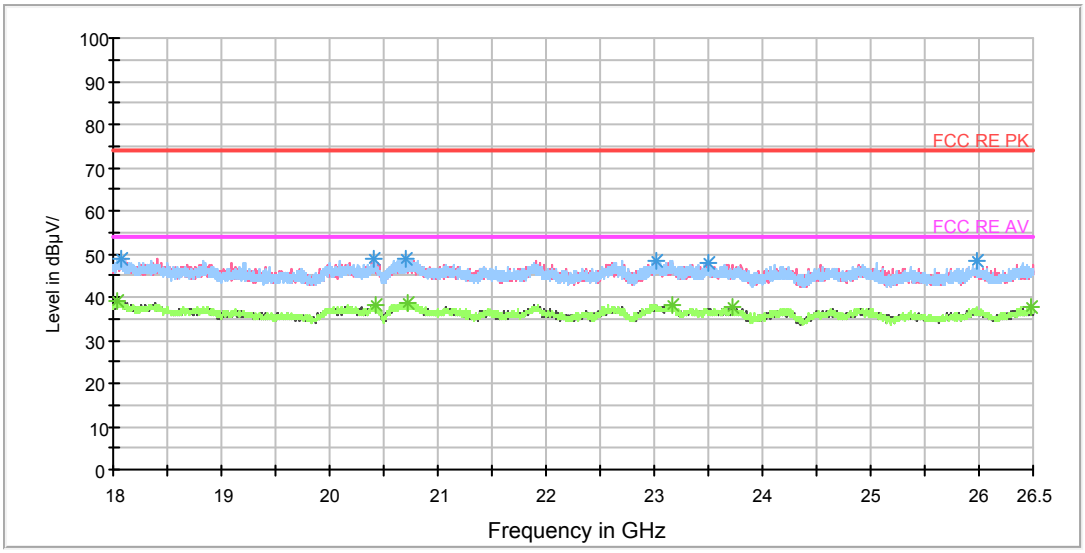
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4031.250000	39.8	100.0	H	50.0	40.4	0.6	34.2	74
4921.875000	50.8	100.0	V	173.0	53.9	3.1	23.2	74
6901.875000	46.4	100.0	H	0.0	53.4	7.0	27.6	74
7389.375000	51.1	100.0	H	187.0	59.0	7.9	22.9	74
13051.875000	53.2	100.0	V	0.0	69.4	16.2	20.8	74
17960.625000	61.7	100.0	V	328.0	86.6	24.9	12.3	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)
4036.875000	28.4	100.0	H	0.0	29.0	0.6	25.6	54
4921.875000	39.0	100.0	V	173.0	42.1	3.1	15.0	54
6928.125000	34.9	100.0	H	0.0	41.7	6.8	19.1	54
9755.625000	38.3	100.0	H	0.0	50.0	11.7	15.7	54
13061.250000	41.8	100.0	V	188.0	58.0	16.2	12.2	54
18000.000000	50.4	100.0	V	0.0	75.8	25.4	3.6	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)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18066.937500	49.0	101.0	V	173.0	51.1	-2.1	25.0	74
20409.750000	48.7	101.0	H	109.0	54.8	-6.1	25.3	74
20712.562500	48.6	101.0	H	0.0	55.3	-6.7	25.4	74
23017.125000	48.4	101.0	V	71.0	54.5	-6.1	25.6	74
23500.562500	48.0	101.0	V	0.0	53.9	-5.9	26.0	74
25979.375000	48.3	101.0	H	0.0	53.7	-5.4	25.7	74

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

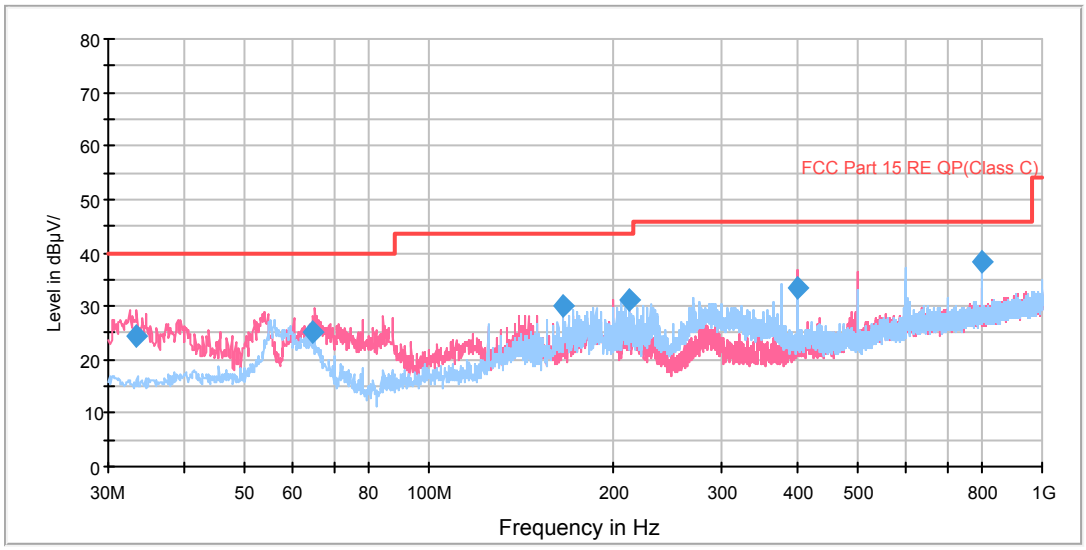
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18031.875000	39.2	101.0	V	0.0	41.1	-1.9	14.8	54
20431.000000	38.3	101.0	H	290.0	44.4	-6.1	15.7	54
20726.375000	38.7	101.0	V	235.0	45.5	-6.8	15.3	54
23161.625000	38.2	101.0	H	225.0	44.3	-6.1	15.8	54
23721.562500	37.5	101.0	V	235.0	43.4	-5.9	16.5	54
26480.875000	37.7	101.0	V	13.0	43.1	-5.4	16.3	54

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

Antenna 2

802.11b CH1

FCC RE 0.03-1GHz QP Class C



Radiates Emission from 30MHz to 1GHz

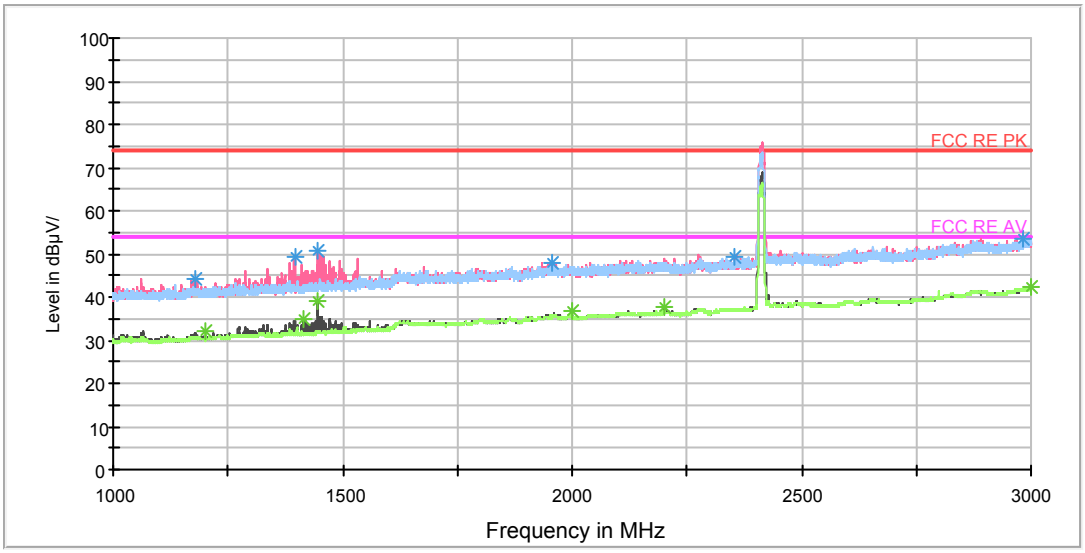
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
33.435000	24.6	100.0	V	76.0	36.5	11.9	15.4	40.0
64.803750	25.3	100.0	V	286.0	35.9	10.6	14.7	40.0
165.637500	30.1	125.0	H	29.0	40.1	10.0	13.4	43.5
212.481250	31.3	125.0	H	44.0	43.9	12.6	12.2	43.5
399.975000	33.5	100.0	V	0.0	51.4	17.9	12.5	46.0
800.018750	38.3	100.0	H	9.0	62.7	24.4	7.7	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

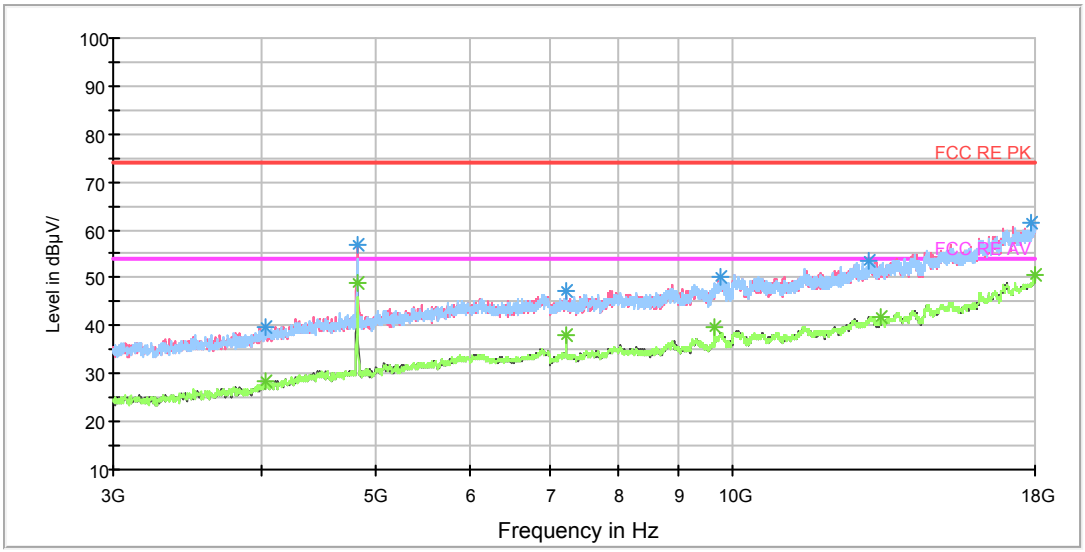
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1179.250000	44.3	102.0	V	118.0	52.3	-8.0	29.7	74
1395.250000	49.1	102.0	V	0.0	56.2	-7.1	24.9	74
1445.000000	50.7	102.0	V	185.0	57.5	-6.8	23.3	74
1955.500000	48.1	102.0	V	185.0	51.6	-3.5	25.9	74
2352.750000	49.5	102.0	V	332.0	50.9	-1.4	24.5	74
2980.750000	53.7	102.0	H	194.0	55.9	2.2	20.3	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)
1200.000000	32.3	102.0	H	0.0	40.5	-8.2	21.7	54
1413.250000	34.9	102.0	V	0.0	42.0	-7.1	19.1	54
1445.000000	38.9	102.0	V	185.0	45.7	-6.8	15.1	54
2000.000000	36.6	102.0	H	8.0	40.0	-3.4	17.4	54
2200.000000	37.6	102.0	V	314.0	39.6	-2.0	16.4	54
3000.000000	42.4	102.0	V	0.0	44.7	2.3	11.6	54

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

RE 3-18GHz PK+AV



Radiates Emission from 3GHz to 18GHz

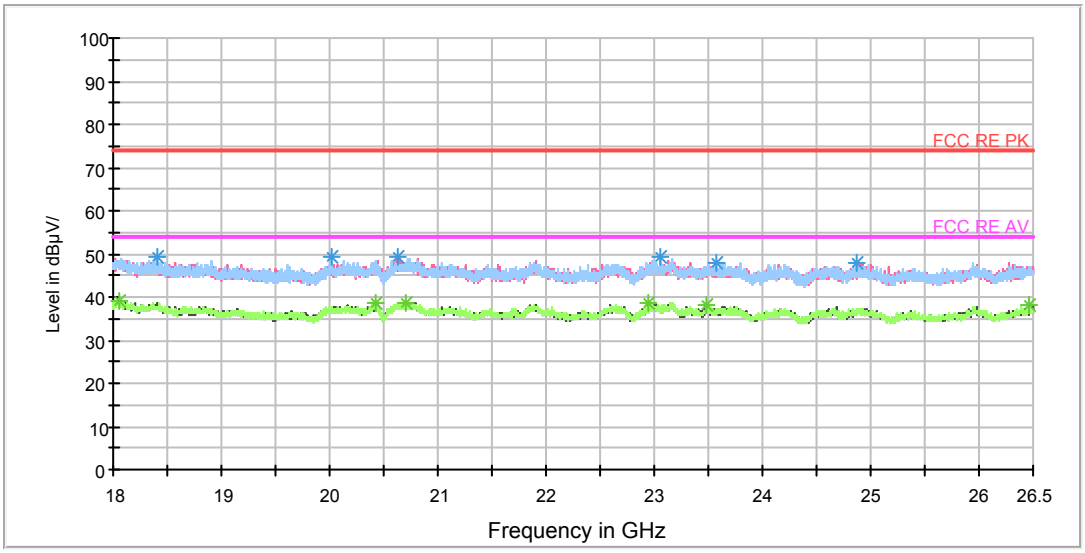
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4036.875000	39.7	102.0	H	92.0	40.3	0.6	34.3	74
4824.375000	57.0	102.0	V	207.0	59.8	2.8	17.0	74
7233.750000	47.3	102.0	H	152.0	56.0	8.7	26.7	74
9753.750000	50.1	102.0	H	0.0	61.8	11.7	23.9	74
13029.375000	53.5	102.0	V	267.0	69.7	16.2	20.5	74
17889.375000	61.7	102.0	H	76.0	85.9	24.2	12.3	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)
4036.875000	28.2	102.0	H	92.0	28.8	0.6	25.8	54
4824.375000	48.9	102.0	V	207.0	51.7	2.8	5.1	54
7233.750000	38.0	102.0	H	152.0	46.7	8.7	16.0	54
9648.750000	39.8	102.0	H	107.0	50.3	10.5	14.2	54
13348.125000	41.7	102.0	V	0.0	57.5	15.8	12.3	54
17983.125000	50.4	102.0	V	298.0	75.6	25.2	3.6	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)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18410.125000	49.1	101.0	H	2.0	52.6	-3.5	24.9	74
20021.937500	49.2	101.0	H	15.0	54.9	-5.7	24.8	74
20621.187500	49.1	101.0	V	115.0	55.6	-6.5	24.9	74
23062.812500	49.2	101.0	H	121.0	55.3	-6.1	24.8	74
23565.375000	48.0	101.0	H	38.0	53.9	-5.9	26.0	74
24868.000000	48.0	101.0	H	81.0	53.9	-5.9	26.0	74

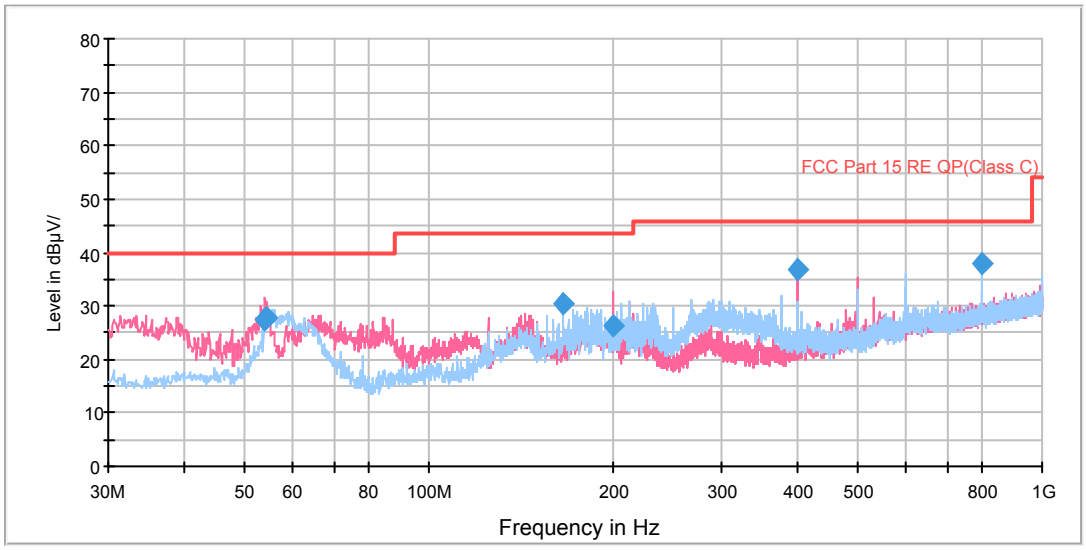
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18057.375000	38.9	101.0	H	81.0	40.9	-2.0	15.1	54
20421.437500	38.5	101.0	H	108.0	44.6	-6.1	15.5	54
20694.500000	38.6	101.0	V	133.0	45.3	-6.7	15.4	54
22943.812500	38.6	101.0	V	160.0	44.8	-6.2	15.4	54
23474.000000	38.2	101.0	H	63.0	44.1	-5.9	15.8	54
26460.687500	38.1	101.0	H	58.0	43.5	-5.4	15.9	54

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

802.11b CH6

FCC RE 0.03-1GHz QP Class C



Radiates Emission from 30MHz to 1GHz

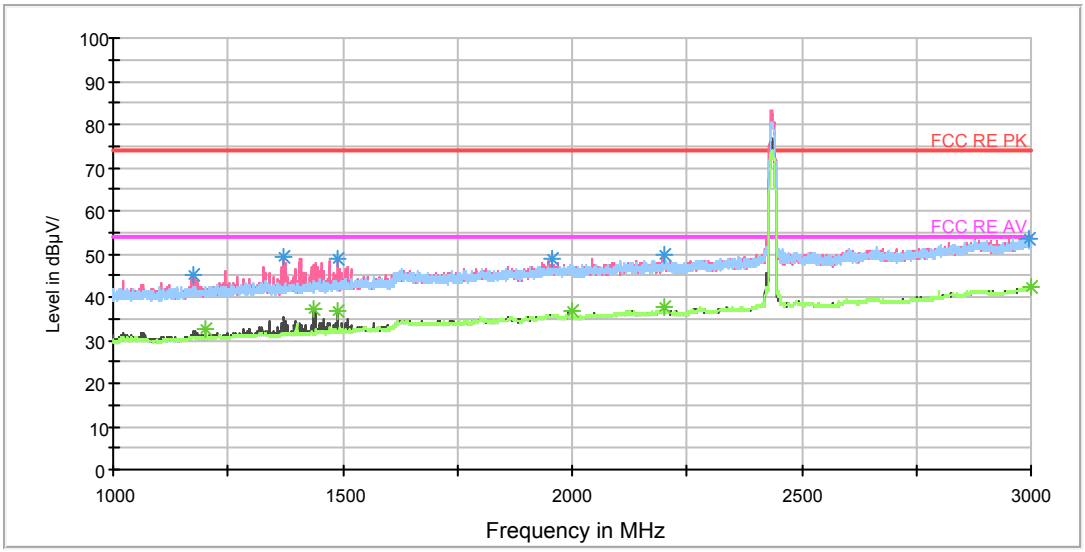
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
53.840000	27.4	100.0	V	285.0	40.2	12.8	12.6	40.0
54.168750	27.8	100.0	V	285.0	40.6	12.8	12.2	40.0
165.637500	30.3	125.0	H	12.0	40.3	10.0	13.2	43.5
200.032500	26.4	114.0	V	164.0	38.4	12.0	17.1	43.5
400.015000	36.7	125.0	V	341.0	54.6	17.9	9.3	46.0
800.018750	37.9	100.0	H	10.0	62.3	24.4	8.1	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

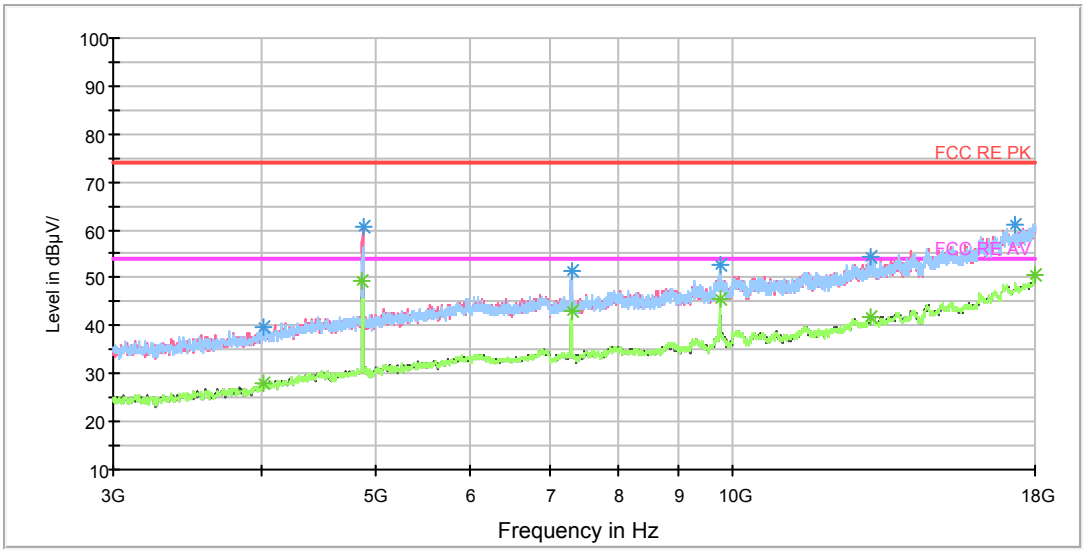
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1173.000000	45.2	102.0	V	127.0	53.3	-8.1	28.8	74
1373.000000	49.3	102.0	V	183.0	56.5	-7.2	24.7	74
1490.750000	49.0	102.0	V	192.0	55.7	-6.7	25.0	74
1957.250000	48.8	102.0	V	220.0	52.2	-3.4	25.2	74
2202.250000	49.9	102.0	V	0.0	52.0	-2.1	24.1	74
2994.500000	53.7	102.0	V	323.0	56.0	2.3	20.3	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)
1200.000000	32.5	102.0	H	0.0	40.7	-8.2	21.5	54
1434.750000	37.0	102.0	V	0.0	43.9	-6.9	17.0	54
1490.500000	36.7	102.0	V	192.0	43.4	-6.7	17.3	54
2000.000000	36.7	102.0	H	8.0	40.1	-3.4	17.3	54
2200.000000	37.8	102.0	V	211.0	39.8	-2.0	16.2	54
2999.750000	42.3	102.0	H	220.0	44.6	2.3	11.7	54

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

RE 3-18GHz PK+AV



Radiates Emission from 3GHz to 18GHz

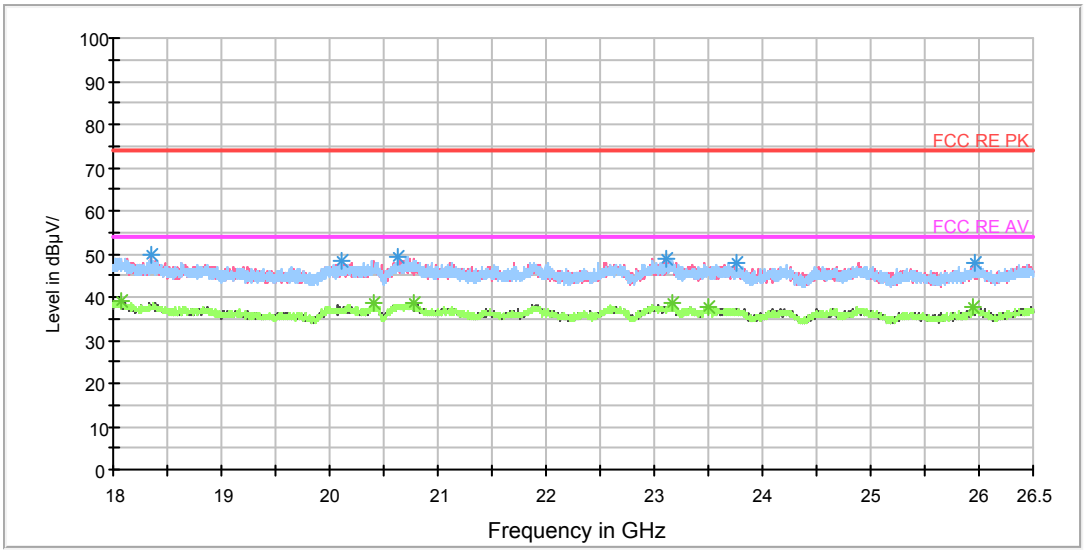
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4021.875000	39.6	102.0	V	0.0	40.1	0.5	34.4	74
4873.125000	60.7	102.0	V	173.0	63.7	3.0	13.3	74
7310.625000	51.4	102.0	H	123.0	60.0	8.6	22.6	74
9748.125000	52.8	102.0	H	108.0	64.4	11.6	21.2	74
13085.625000	54.3	102.0	V	0.0	70.5	16.2	19.7	74
17319.375000	61.1	102.0	H	123.0	84.8	23.7	12.9	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)
4023.750000	28.2	102.0	H	61.0	28.8	0.6	25.8	54
4871.250000	49.4	102.0	V	173.0	52.4	3.0	4.6	54
7310.625000	42.9	102.0	H	123.0	51.5	8.6	11.1	54
9748.125000	45.5	102.0	H	108.0	57.1	11.6	8.5	54
13078.125000	41.8	102.0	H	232.0	58.0	16.2	12.2	54
17998.125000	50.6	102.0	V	96.0	76.0	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)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18343.187500	49.6	101.0	V	163.0	52.8	-3.2	24.4	74
20118.625000	48.6	101.0	H	40.0	54.4	-5.8	25.4	74
20627.562500	49.4	101.0	H	40.0	55.9	-6.5	24.6	74
23111.687500	48.8	101.0	H	0.0	54.9	-6.1	25.2	74
23753.437500	47.9	101.0	H	102.0	53.8	-5.9	26.1	74
25967.687500	47.8	101.0	H	4.0	53.2	-5.4	26.2	74

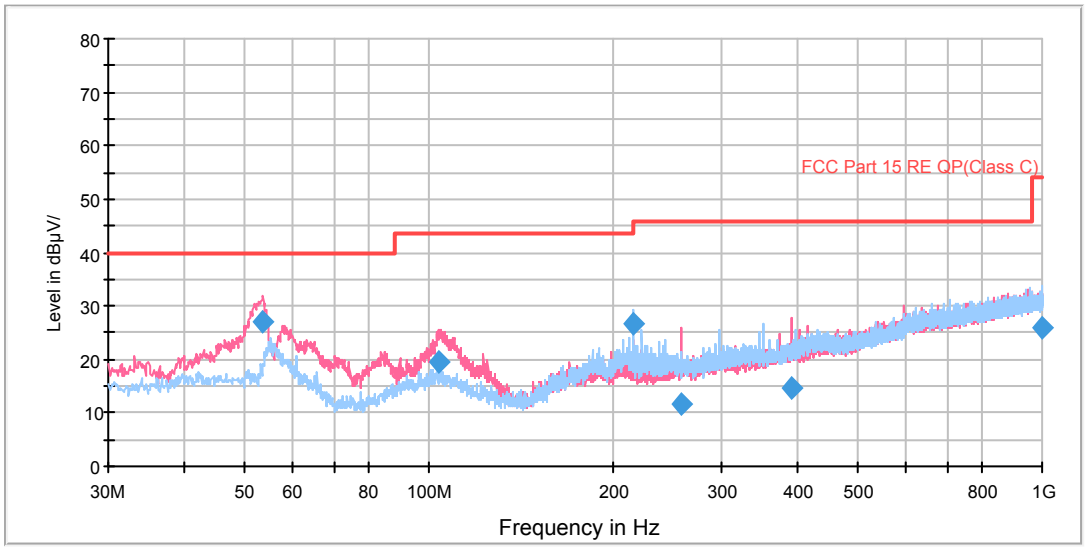
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18076.500000	39.2	101.0	H	164.0	41.3	-2.1	14.8	54
20414.000000	38.4	101.0	H	305.0	44.5	-6.1	15.6	54
20785.875000	38.7	101.0	H	127.0	45.6	-6.9	15.3	54
23161.625000	38.5	101.0	H	139.0	44.6	-6.1	15.5	54
23502.687500	37.8	101.0	V	86.0	43.7	-5.9	16.2	54
25950.687500	37.7	101.0	H	0.0	43.1	-5.4	16.3	54

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

802.11b CH11

RE 0.03-1GHz QP Class B



Radiates Emission from 30MHz to 1GHz

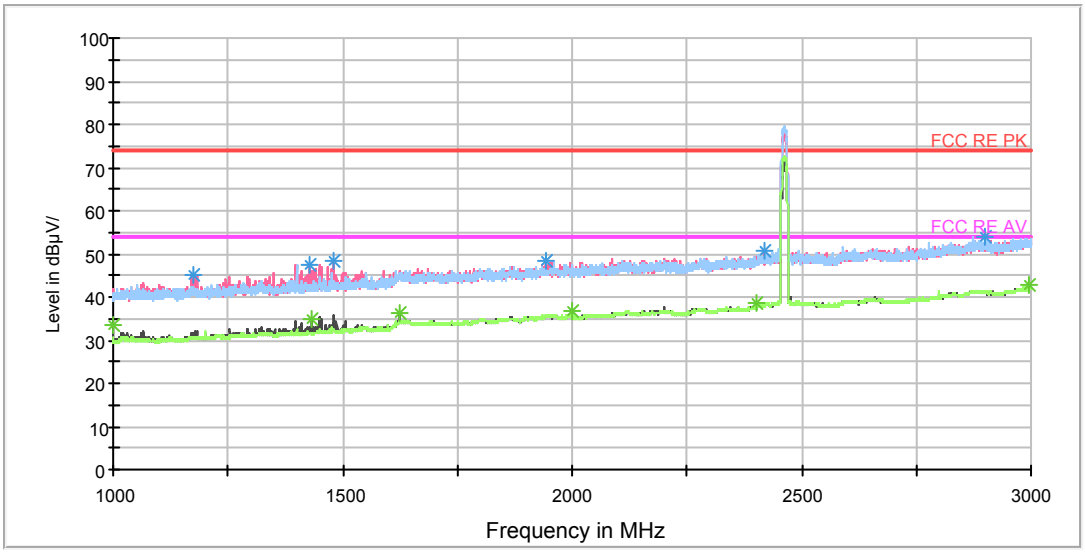
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
53.483750	27.1	100.0	V	304.0	39.9	12.8	12.9	40.0
103.926250	19.7	100.0	V	22.0	32.6	12.9	20.3	40.0
215.997500	26.6	100.0	H	326.0	39.3	12.7	13.4	40.0
258.232500	11.6	100.0	V	163.0	25.9	14.3	35.4	47.0
390.436250	14.8	114.0	V	163.0	32.5	17.7	32.2	47.0
999.600000	25.9	100.0	H	70.0	52.4	26.5	21.1	47.0

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

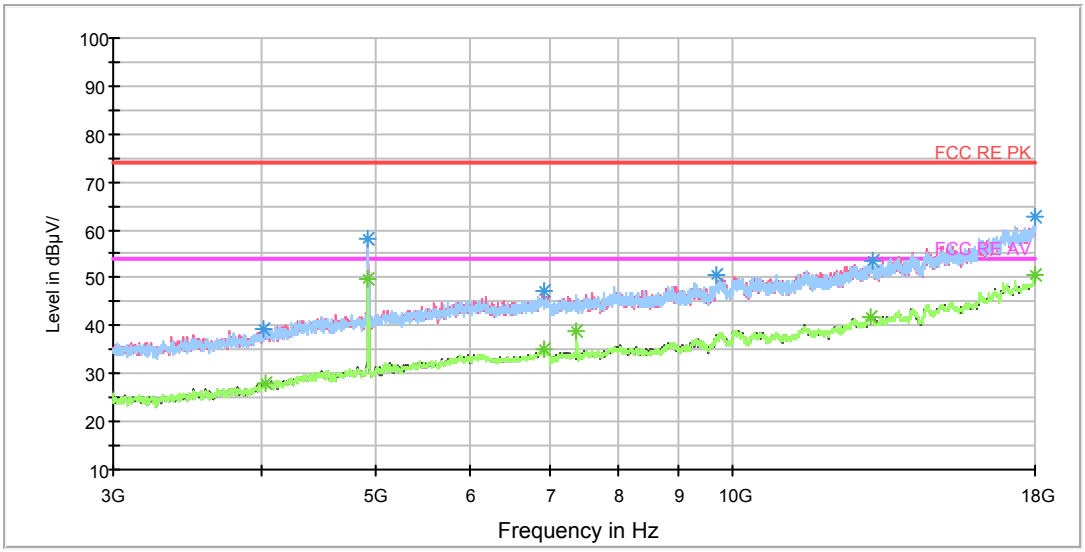
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1172.500000	45.2	102.0	V	128.0	53.3	-8.1	28.8	74
1429.500000	47.7	102.0	V	0.0	54.6	-6.9	26.3	74
1479.500000	48.1	102.0	V	138.0	54.6	-6.5	25.9	74
1941.250000	48.2	102.0	V	52.0	51.7	-3.5	25.8	74
2419.500000	50.5	102.0	V	146.0	51.1	-0.6	23.5	74
2901.000000	53.9	102.0	H	101.0	55.9	2.0	20.1	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)
1000.000000	33.5	102.0	V	0.0	42.7	-9.2	20.5	54
1433.500000	34.7	102.0	V	9.0	41.6	-6.9	19.3	54
1625.500000	36.1	102.0	V	128.0	40.9	-4.8	17.9	54
1999.750000	36.8	102.0	V	156.0	40.2	-3.4	17.2	54
2400.500000	38.7	102.0	V	175.0	39.9	-1.2	15.3	54
2996.500000	42.6	102.0	H	101.0	44.9	2.3	11.4	54

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

RE 3-18GHz PK+AV



Radiates Emission from 3GHz to 18GHz

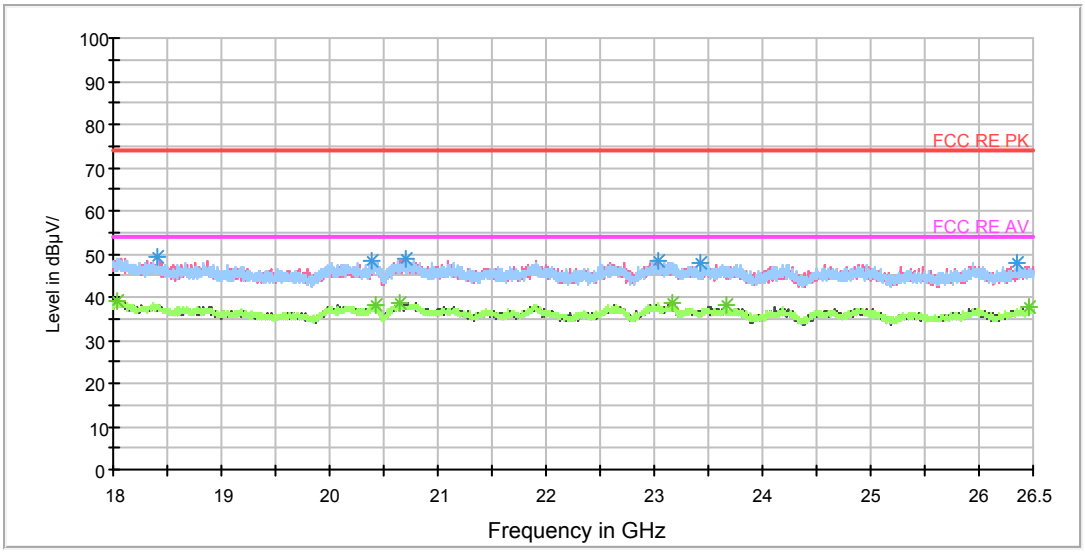
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4025.625000	39.5	102.0	V	281.0	40.1	0.6	34.5	74
4923.750000	58.0	102.0	H	168.0	61.1	3.1	16.0	74
6941.250000	47.3	102.0	H	75.0	54.0	6.7	26.7	74
9693.750000	50.8	102.0	H	217.0	61.8	11.0	23.2	74
13125.000000	53.7	102.0	H	1.0	69.6	15.9	20.3	74
18000.000000	62.7	102.0	V	0.0	88.1	25.4	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)
4036.875000	28.0	102.0	H	0.0	28.6	0.6	26.0	54
4923.750000	49.9	102.0	H	168.0	53.0	3.1	4.1	54
6926.250000	35.2	102.0	V	0.0	42.0	6.8	18.8	54
7383.750000	39.0	102.0	H	122.0	47.0	8.0	15.0	54
13087.500000	42.0	102.0	H	0.0	58.2	16.2	12.0	54
18000.000000	50.5	102.0	V	0.0	75.9	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)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18405.875000	49.4	101.0	H	172.0	52.9	-3.5	24.6	74
20395.937500	48.2	101.0	H	85.0	54.3	-6.1	25.8	74
20696.625000	49.1	101.0	H	0.0	55.8	-6.7	24.9	74
23045.812500	48.6	101.0	V	230.0	54.7	-6.1	25.4	74
23421.937500	47.8	101.0	V	339.0	53.7	-5.9	26.2	74
26344.875000	48.1	101.0	V	303.0	53.5	-5.4	25.9	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)
18041.437500	39.1	101.0	H	197.0	41.1	-2.0	14.9	54
20417.187500	38.1	101.0	V	206.0	44.2	-6.1	15.9	54
20656.250000	38.8	101.0	V	168.0	45.4	-6.6	15.2	54
23170.125000	38.5	101.0	V	29.0	44.6	-6.1	15.5	54
23672.687500	38.2	101.0	H	265.0	44.1	-5.9	15.8	54
26471.312500	37.5	101.0	H	184.0	42.9	-5.4	16.5	54

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