FCC Report

WIFI

Product Description: MID

Trade Mark: QUO

Model No.: QD3Gme-710-SL, QD3Gme-710-GD

FCC ID: 2AAPW-QD3GME-710-SL

Applicant: KBX GROUP

Address: AVENIDA 1ERA. CALLE B Y C MANZANA 58, FRANCE FIELD COLON PANAMA

Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247:2014
Test Date:	08 ~ 26 May, 2015
Issued Date:	26 May, 2015
Test Result:	Complied

James Wu
Laboratory Manager

The test result in this test report relate only to the tested samples in this report .

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2 Version

Version No.	Date	Description
00	26 May, 2015	Original

Prepared By:	Young Li Project Engineer	**Date:**	26 May, 2015
Check By:	Dixon Hao Reviewer	**Date:**	26 May, 2015

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4 Test Summary

Test Item	Test Method	Result
Antenna requirement	15.203/15.247 (c)	Complied
AC Power Line Conducted Emission	15.207	Complied
Conducted Peak Output Power	15.247 (b)(3)	Complied
6dB Occupied Bandwidth	15.247 (a)(2)	Complied
Power Spectral Density	15.247 (e)	Complied
Band Edge	15.247(d)	Complied
Spurious Emission	15.205/15.209	Complied

Complied: The EUT has complied with the essential requirements in the standard.

5 General Information

5.1 Client Information

Applicant:	KBX GROUP
Address:	AVENIDA 1ERA. CALLE B Y C MANZANA 58, FRANCE FIELD COLON PANAMA
Manufacturer:	KBX GROUP
Address:	AVENIDA 1ERA. CALLE B Y C MANZANA 58, FRANCE FIELD COLON PANAMA

5.2 General Description of EUT

Product Name:	MID
Brand Mark:	QUO
Model No.:	QD3Gme-710-SL, QD3Gme-710-GD
Test model No.:	QD3Gme-710-SL
Software Version:	V1.0
Hardware Version:	V1.0
WIFI	
Support Protocol:	802.11b/g/n(H20)/n(H40)
Operation Frequency:	802.11b/g/n(H20): 2412MHz~2462MHz 802.11n(H40): 2422MHz~2452MHz
Channel numbers:	802.11b/g/n(H20): 11 802.11n(H40): 7
Channel separation:	5MHz
Modulation technology:	802.11b: Direct Sequence Spread Spectrum (DSSS) 802.11g/n(H20)/n(H40): Orthogonal Frequency Division Multiplexing(OFDM)
Antenna Type:	Integral Antenna
Antenna Gain:	1dBi
AC Adapter:	Model: JHD-AP012U-050200AB Input: AC 100~240V 50/60Hz 0.35A Output: DC 5.0V 2.0A
Power supply:	lithium-ion charge battery 3.7V

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Test channel	Frequency (MHz)	
	802.11b/802.11g/802.11n(HT20)	802.11n(HT40)
Lowest channel	2412MHz	2422MHz
Middle channel	2437MHz	2437MHz
Highest channel	2462MHz	2452MHz

5.3 Test Mode

Transmitting mode	Keep the EUT in continuously transmitting mode

Remark:

1. During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.
2. We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

   802.11b: 1Mbps; 802.11g: 6Mbps; 802.11n(H20): 6.5Mbps; 802.11n(H40): 13Mbps

5.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS —Registration No.: CNAS L5775**

  CNAS has accredited Global United Technology Services Co., Ltd. to ISO/IEC 17025 General Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **FCC —Registration No.: 600491**

  Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fuly described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491

- **Industry Canada (IC) —Registration No.: 9079A-1**

  The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-1.

5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China

6 Test Instruments list

Instrument	Manufacturer	Model No.	Inventory No.	Next Cal. Date
3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	Mar. 27 2016
Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A
EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jun. 30 2015
BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Feb. 22 2016
Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 26 2015
Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 27 2016
EMI Test Software	AUDIX	E3	N/A	N/A
Coaxial Cable	GTS	N/A	GTS213	Mar. 27 2016
Coaxial Cable	GTS	N/A	GTS211	Mar. 27 2016
Coaxial cable	GTS	N/A	GTS210	Mar. 27 2016
Coaxial Cable	GTS	N/A	GTS212	Mar. 27 2016
Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jun. 30 2015
Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jun. 30 2015
Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 26 2015
Band filter	Amindeon	82346	GTS219	Mar. 27 2016
Universal radio communication tester	Rohde & Schwarz	CMU200	GTS235	Mar. 27 2016
Signal Generator	Rohde & Schwarz	SML03	GTS236	Mar. 27 2016
Temp. Humidity/ Barometer	Oregon Scientific	BA-888	GTS248	Mar. 27 2016
D.C. Power Supply	Instek	PS-3030	GTS232	NA
Splitter	Agilent	11636B	GTS237	Mar. 27 2016

Conducted Emission

Instrument	Manufacturer	Model No.	Inventory No.	Next Cal. Date
Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0(H)	GTS264	Sep. 06 2015
EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	Jun. 30 2015
10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	Jun. 30 2015
Coaxial Switch	ANRITSU CORP	MP59B	GTS225	Jun. 30 2015
LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	Jun. 30 2015
Coaxial Cable	GTS	N/A	GTS227	Jun. 30 2015
EMI Test Software	AUDIX	E3	N/A	N/A

7 Measurement Data and Test Results

7.1 Antenna requirement

☞ **Standard requirement**

According to Standard: FCC Part15 C Section 15.203 /247(c)

15.203 requirement:

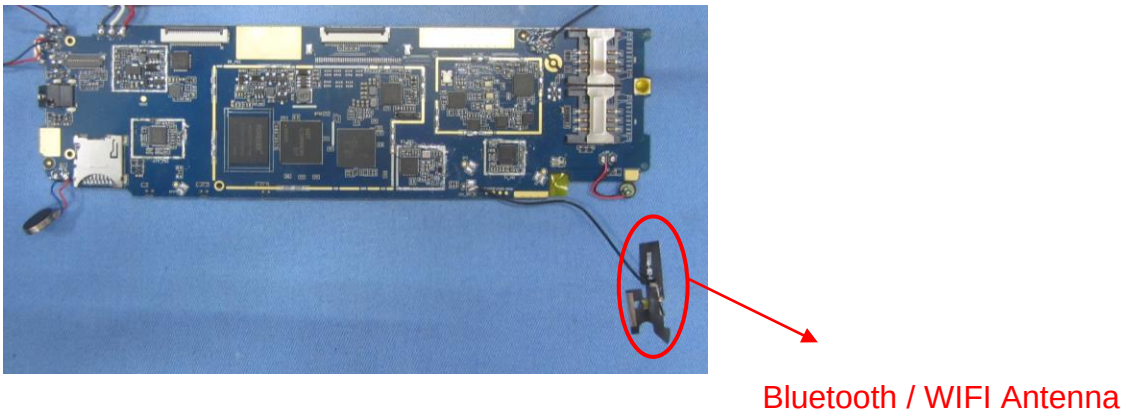
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(c) (1)(i) requirement:

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

☞ **EUT Antenna:**

The antenna is unique integral antenna, the typical gain of the antenna is 1dBi.



7.2 Conducted Emissions

☞ **Standard requirement**

FCC Part15 C Section 15.207

☞ **Test method**

ANSI C63.4:2009

☞ **Receiver set**

RBW=9KHz, VBW=30KHz, Sweep time=auto

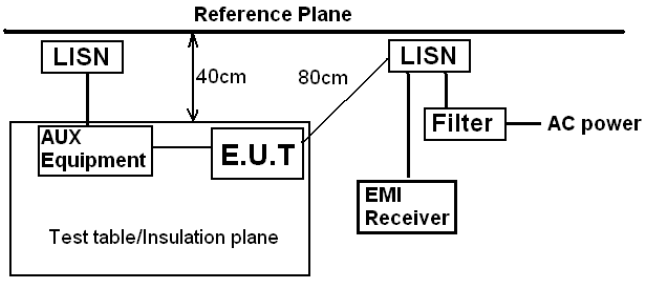
☞ **Limit**

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

☞ **Test mode**

Refer to section 5.3 for details

☞ **Test setup**



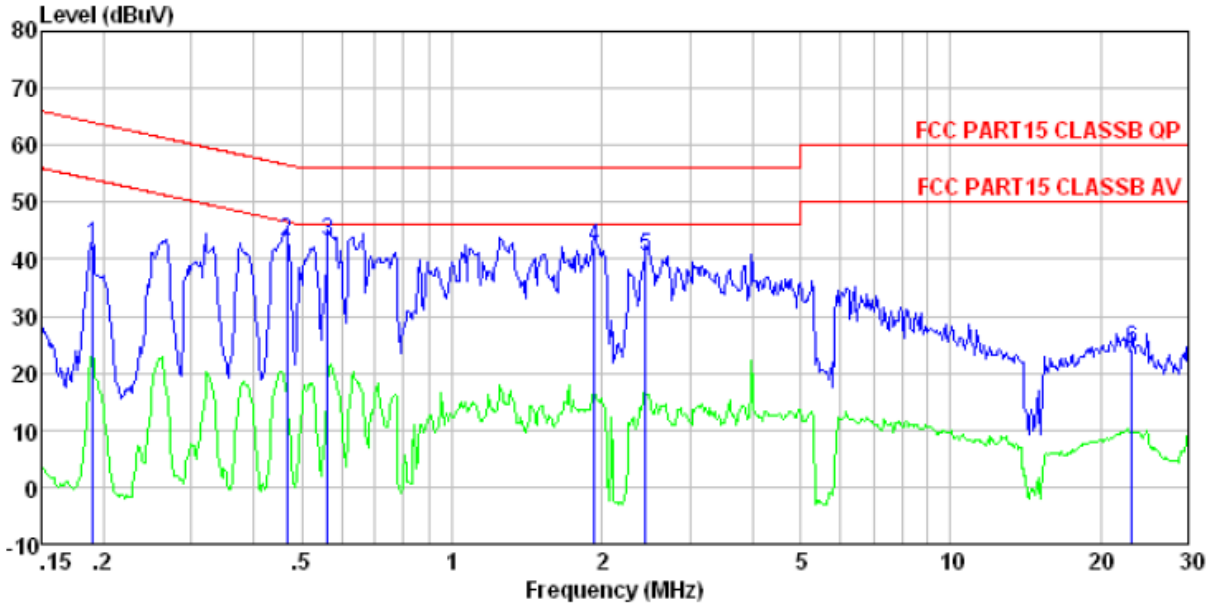
Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m

☞ **Test mode**

1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.
2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).
3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2009 on conducted measurement.

☞ **Test Result** **Complied**

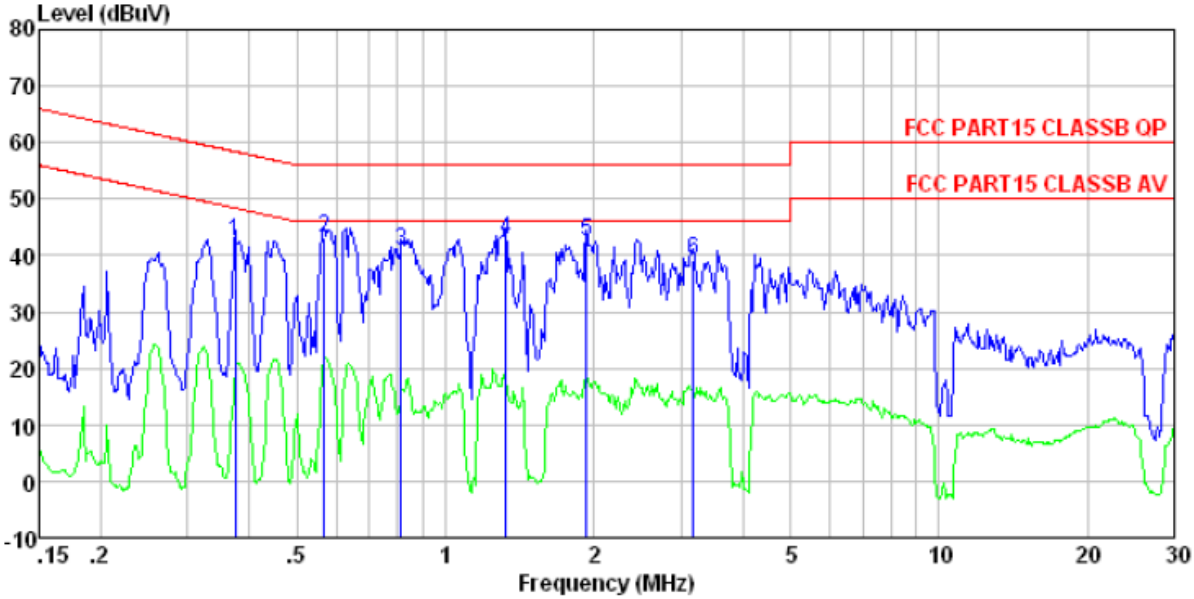
Test mode:	WIFI mode	Temperature:	24~26℃
Phase Polarity:	Line	Relative Humidity:	50~53%



Condition: FCC PART15 CLASSB QP LISN-2013 LINE
Test mode: WiFi mode

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.190	42.12	0.14	0.13	42.39	64.02	-21.63	QP
2	0.466	42.88	0.12	0.11	43.11	56.58	-13.47	QP
3	0.564	42.75	0.13	0.12	43.00	56.00	-13.00	QP
4	1.928	41.80	0.12	0.14	42.06	56.00	-13.94	QP
5	2.448	40.14	0.13	0.15	40.42	56.00	-15.58	QP
6	23.140	23.07	0.98	0.23	24.28	60.00	-35.72	QP

Test mode:	WIFI mode	Temperature:	24~26℃
Phase Polarity:	Nertral	Relative Humidity:	50~53%



Condition: FCC PART15 CLASSB QP LISN-2013 NEUTRAL
Test mode: WiFi mode

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.375	42.28	0.06	0.10	42.44	58.39	-15.95	QP
2	0.567	42.85	0.07	0.12	43.04	56.00	-12.96	QP
3	0.813	40.76	0.07	0.13	40.96	56.00	-15.04	QP
4	1.324	42.43	0.09	0.13	42.65	56.00	-13.35	QP
5	1.928	42.11	0.09	0.14	42.34	56.00	-13.66	QP
6	3.173	38.99	0.12	0.15	39.26	56.00	-16.74	QP

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss

7.3 Conducted Peak Output Power

☞ **Standard requirement**

FCC Part15 C Section 15.247 (b)(3)

☞ **Test method**

ANSI C63.4:2009 and KDB 558074 D01 DTS Meas Guidance V03r02

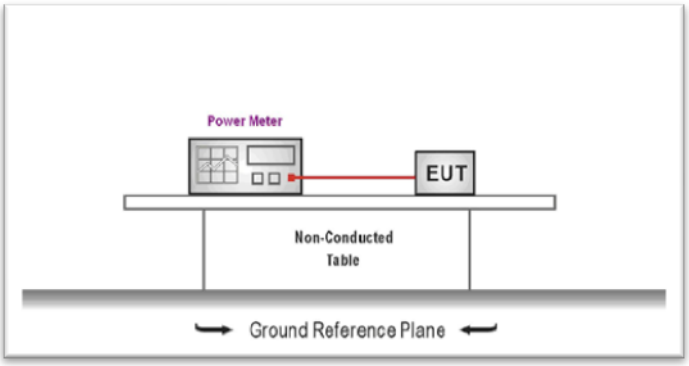
☞ **Limit**

30dBm

☞ **Test mode**

Refer to section 5.3 for details

☞ **Test setup**



☞ **Test Result** **Complied**

Peak power

Test CH	Peak Output Power (dBm)				Limit(dBm)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	16.24	13.24	13.10	10.12	30.00	Pass
Middle	16.42	13.25	13.69	10.35		
Highest	16.48	13.65	13.90	10.40		

Average power

Test CH	Average Output Power (dBm)				Limit(dBm)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	11.27	9.46	9.37	7.45	30.00	Pass
Middle	11.43	10.23	10.11	8.76		
Highest	12.58	10.05	10.07	7.67		

7.4 Channel Bandwidth

☞ **Standard requirement**

FCC Part15 C Section 15.247 (a)(2)

☞ **Test method**

ANSI C63.4:2009 and KDB 558074 D01 DTS Meas Guidance V03r02

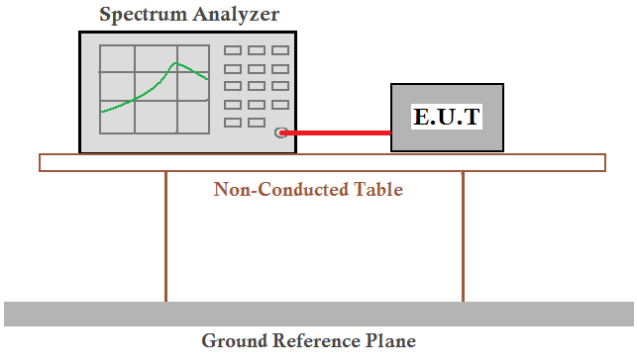
☞ **Limit**

>500KHz

☞ **Test mode**

Refer to section 5.3 for details

☞ **Test setup**



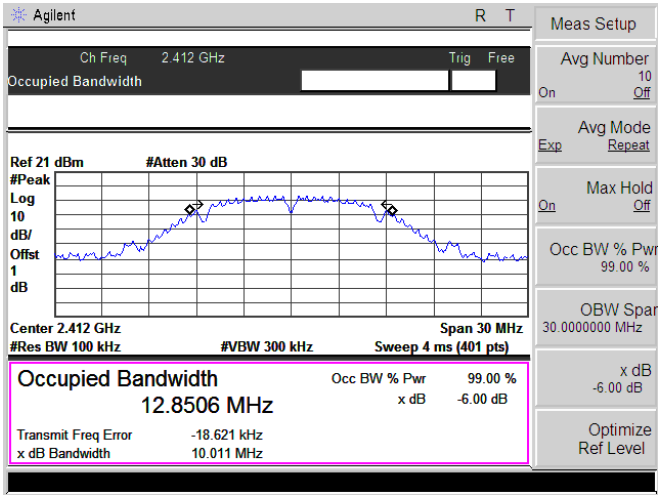
☞ **Test Result** **Complied**

Measurement Data

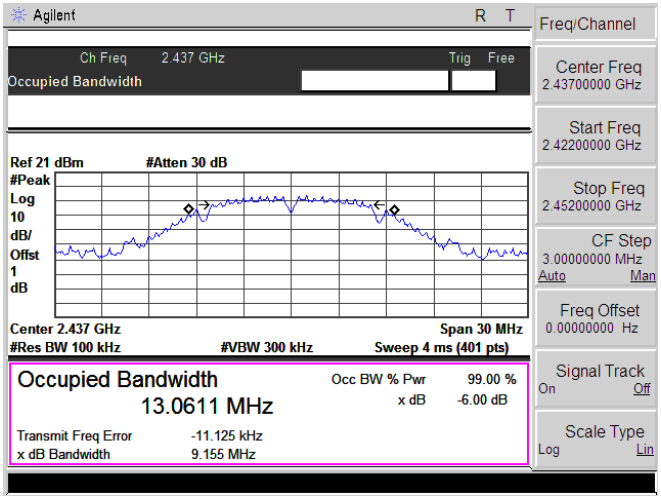
Test CH	Channel Bandwidth (MHz)				Limit(KHz)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	10.01	15.81	16.99	35.33	>500	Pass
Middle	9.15	15.86	15.29	35.10		
Highest	10.13	15.19	16.30	35.34		

Mode	802.11b

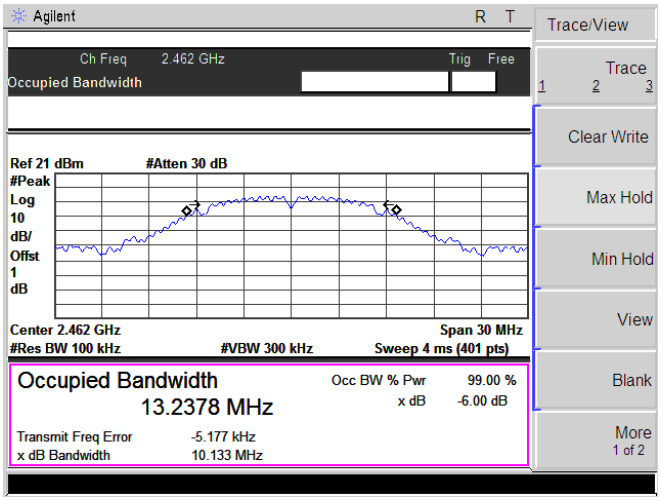
Lowest channel:



Middle channel:

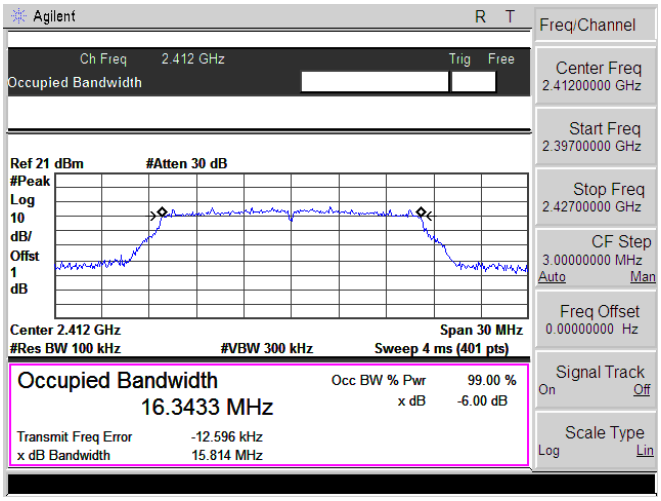


Highest channel:

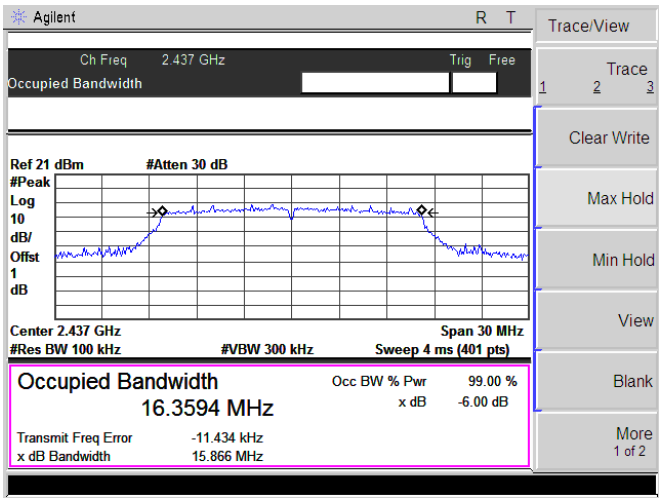


Mode	802.11g

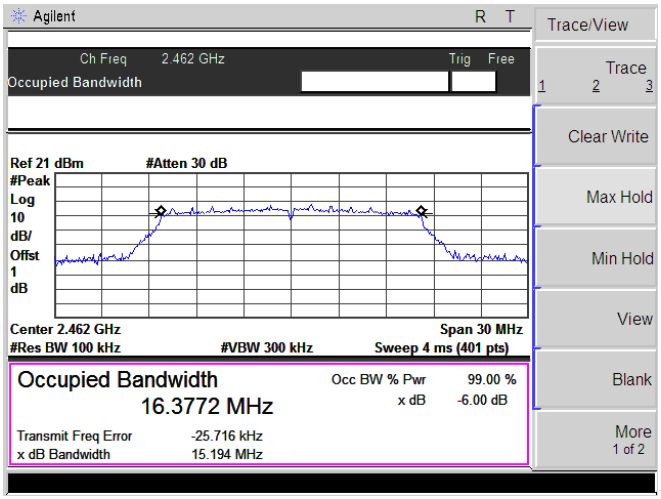
Lowest channel:



Middle channel:

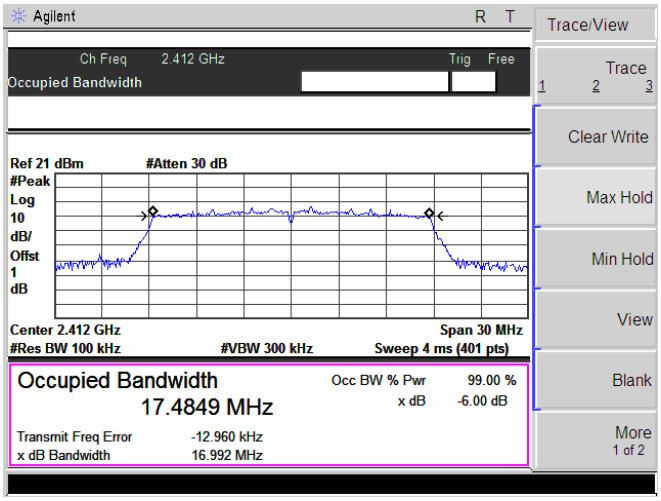


Highest channel:

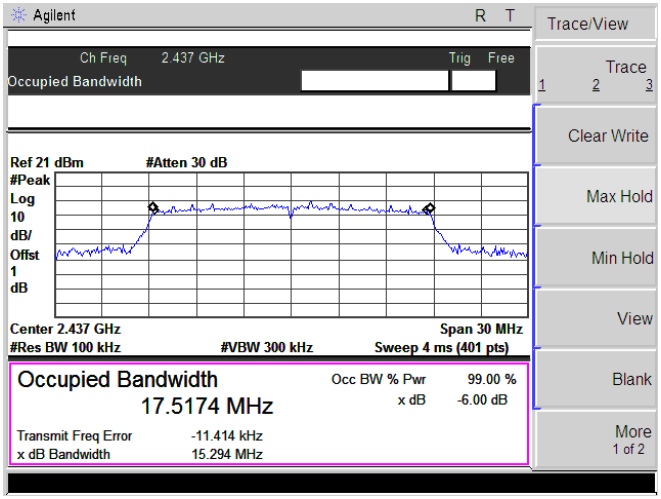


Mode	802.11n(H20)

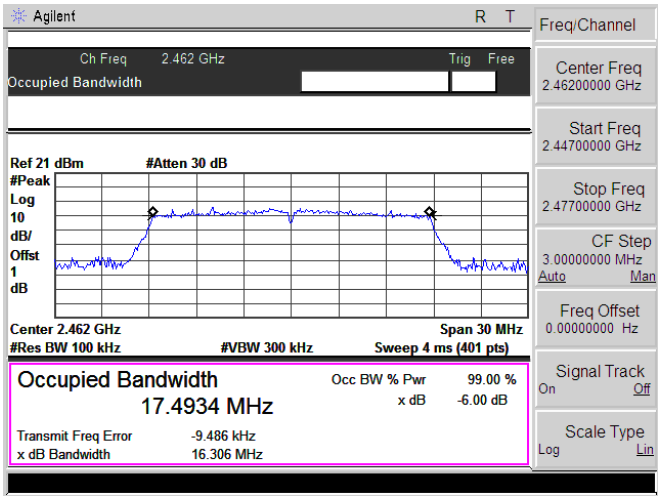
Lowest channel:



Middle channel:

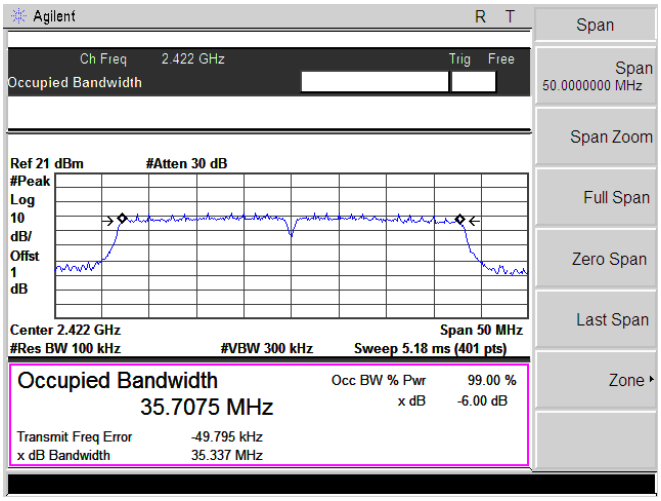


Highest channel:

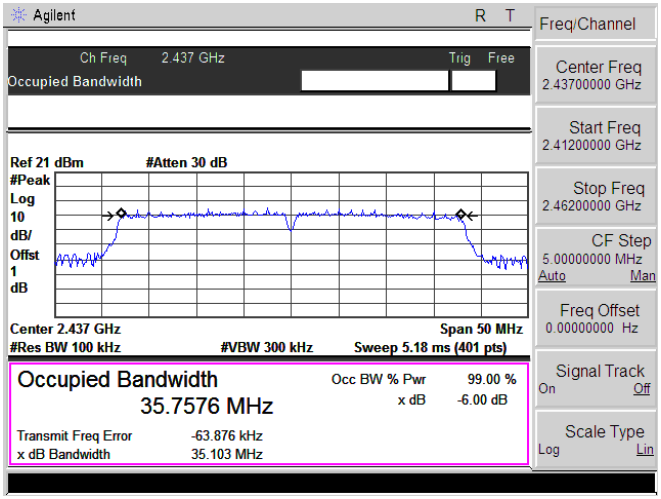


Mode	802.11n(H40)

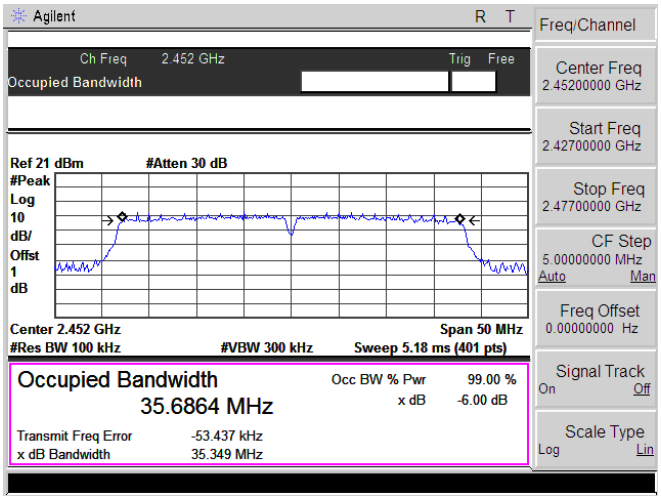
Lowest channel:



Middle channel:



Highest channel:



7.5 Power Spectral Density

☞ **Standard requirement**

FCC Part15 C Section 15.247 (e)

☞ **Test method**

ANSI C63.4:2009 and KDB 558074 D01 DTS Meas Guidance V03r02

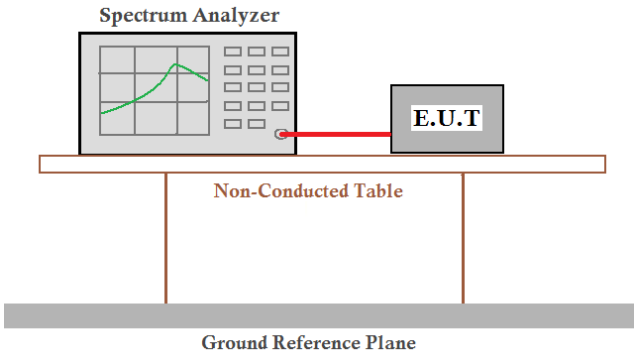
☞ **Limit**

8dBm

☞ **Test mode**

Refer to section 5.3 for details

☞ **Test setup**



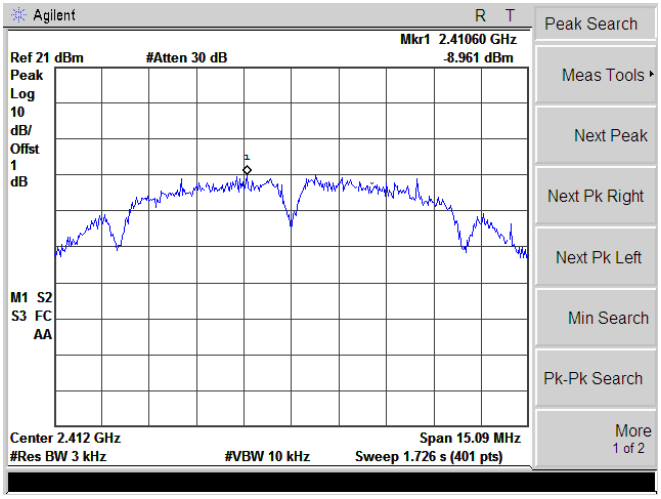
☞ **Test Result** **Complied**

Measurement Data

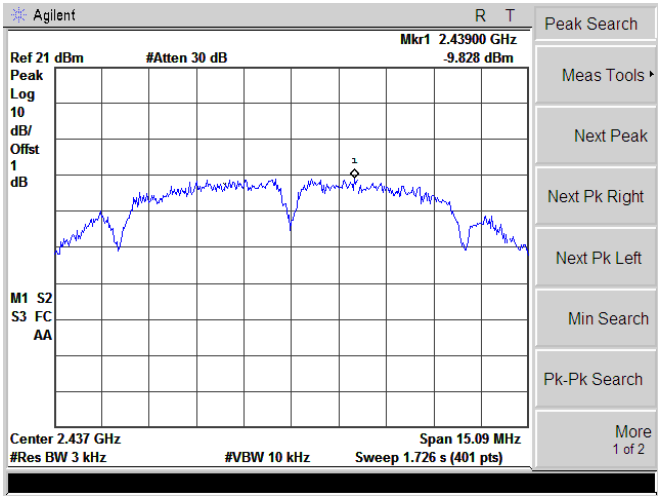
Test CH	Power Spectral Density (dBm)				Limit(dBm/3kHz)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	-8.96	-16.24	-16.31	-21.10	8.00	Pass
Middle	-9.82	-14.75	-16.69	-19.56		
Highest	-8.79	-16.25	-15.23	-20.37		

Mode	802.11b

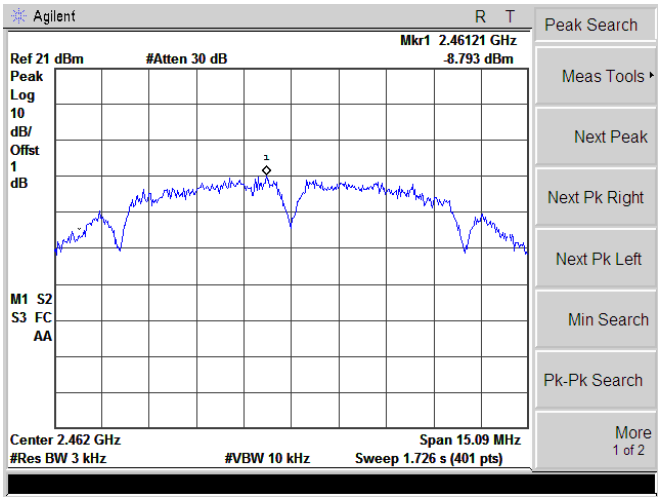
Lowest channel:



Middle channel:

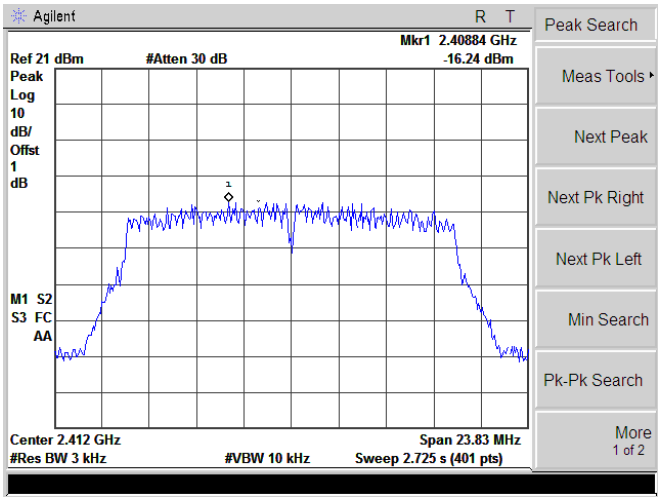


Highest channel:

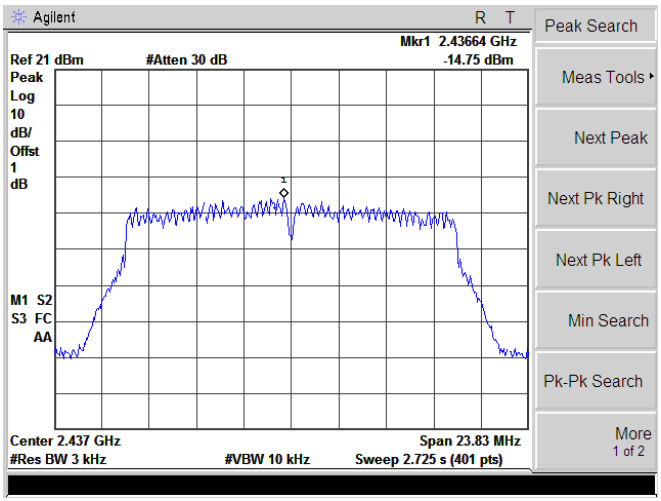


Mode	802.11g

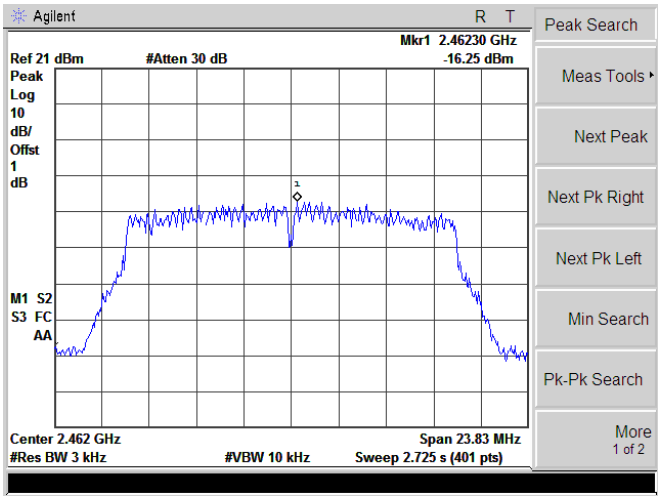
Lowest channel:



Middle channel:

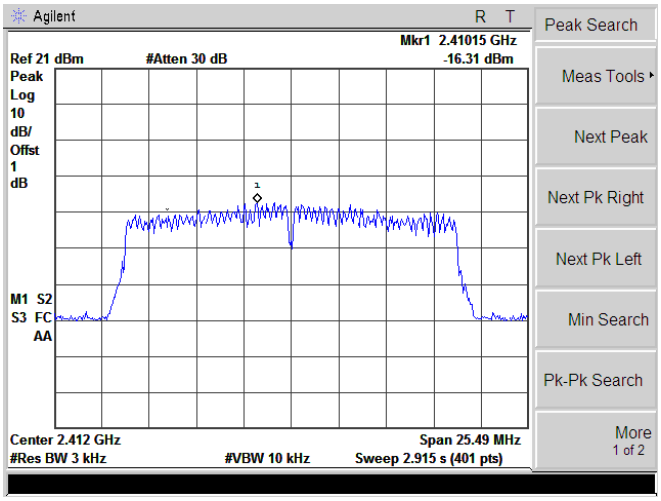


Highest channel:

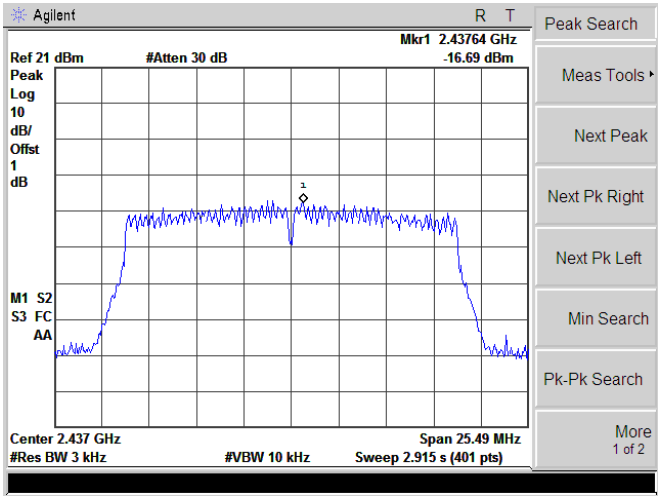


Mode	802.11n(H20)

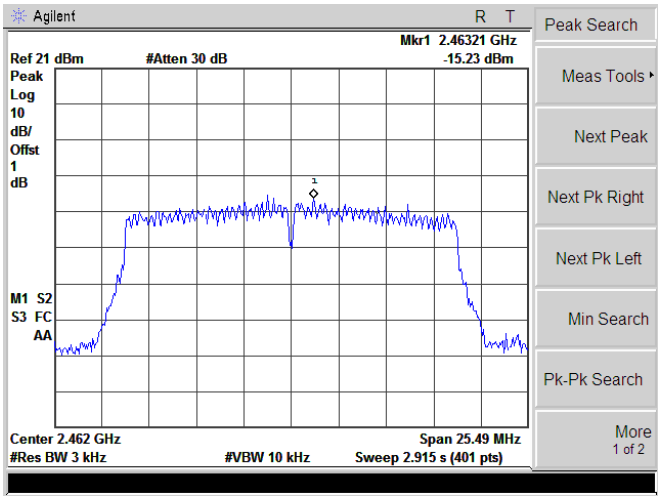
Lowest channel:



Middle channel:

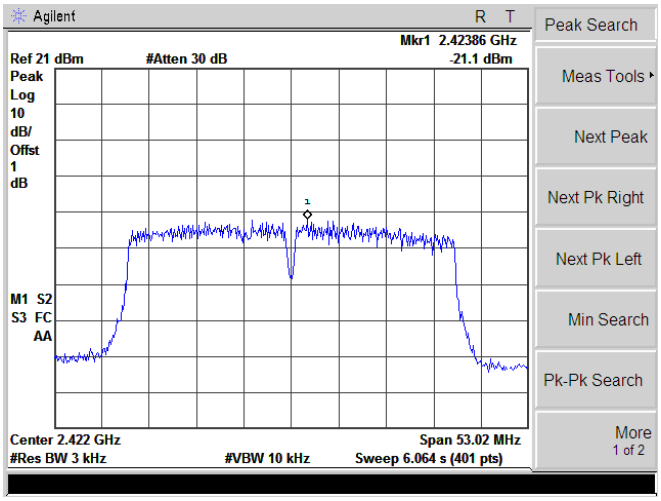


Highest channel:

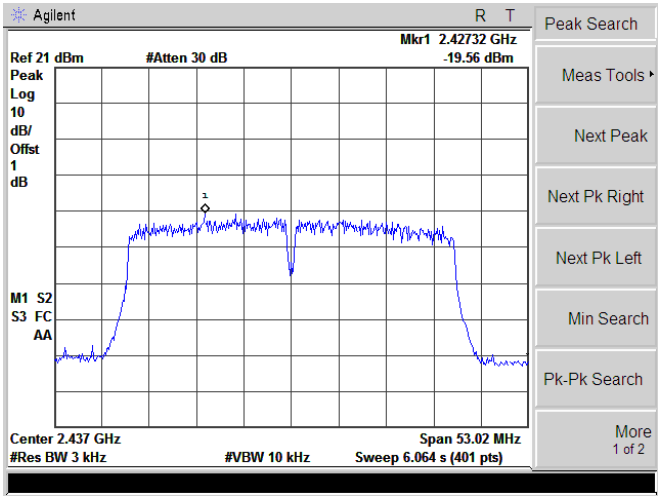


Mode	802.11n(H40)

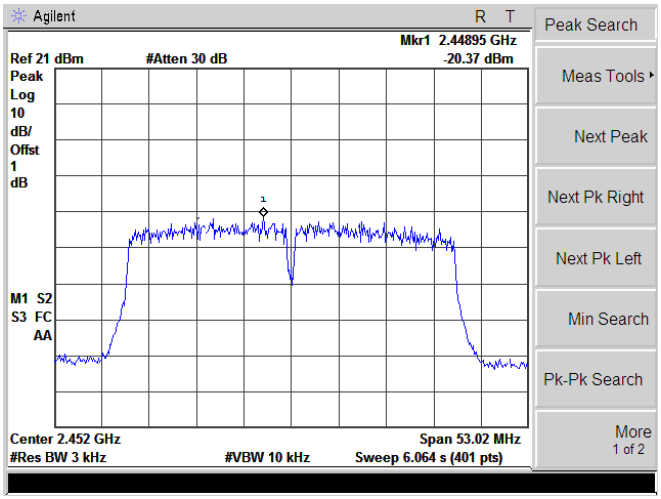
Lowest channel:



Middle channel:



Highest channel:



7.6 Band Edge

7.6.1 Conducted Emission Method

☞ **Test method**

FCC Part15 C Section 15.247 (d)

☞ **Test method**

ANSI C63.4:2009 and KDB 558074 D01 DTS Meas Guidance V03r02

☞ **Receiver set**

RBW=100kHz, VBW=300kHz, Detector=Peak

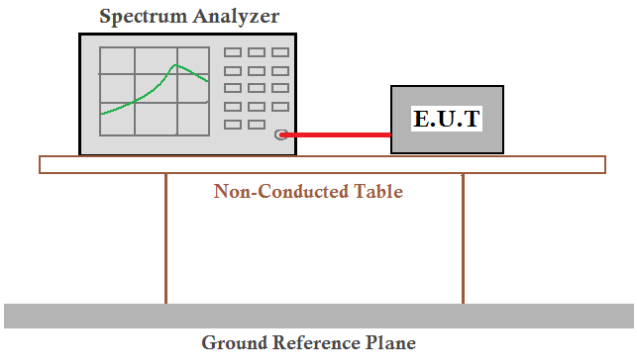
☞ **Limit**

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, based on either an RF conducted or a radiated measurement.

☞ **Test mode**

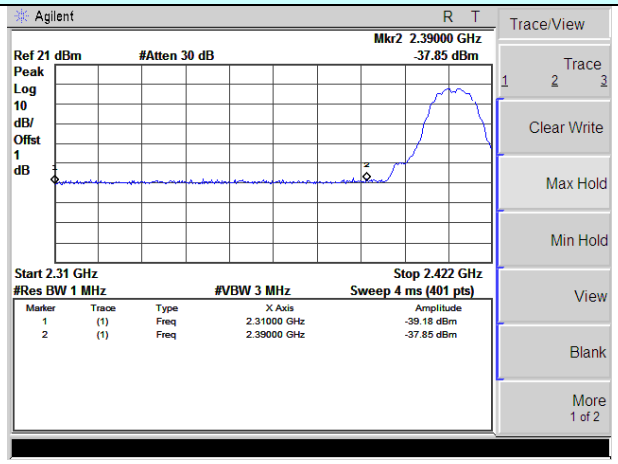
Refer to section 5.3 for details

☞ **Test setup**

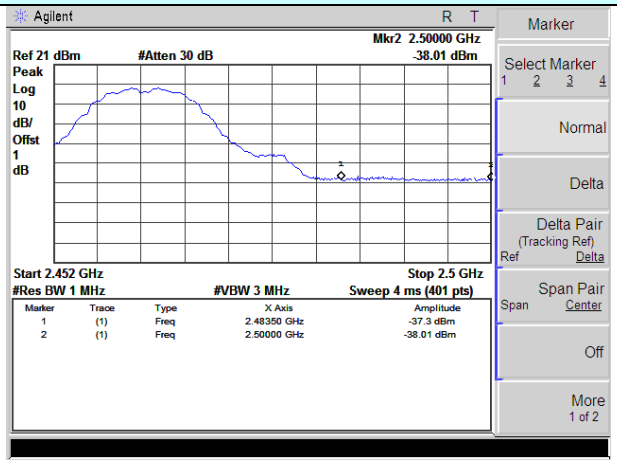


☞ **Test Result** **Complied**

Mode	802.11b

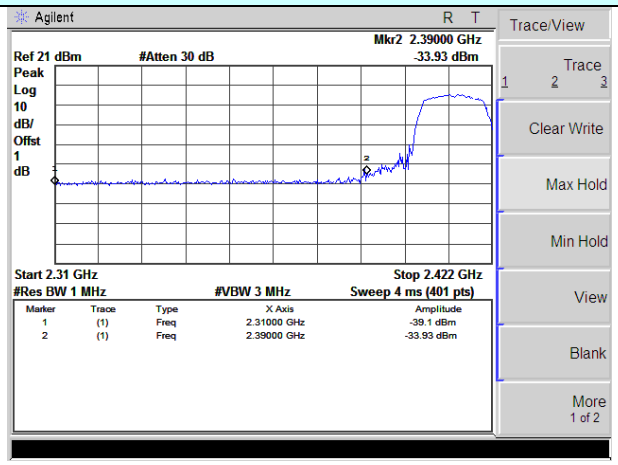


Lowest channel

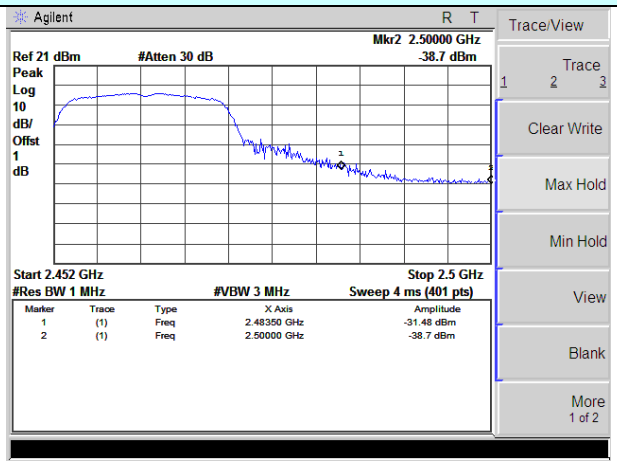


Highest channel

Mode	802.11g

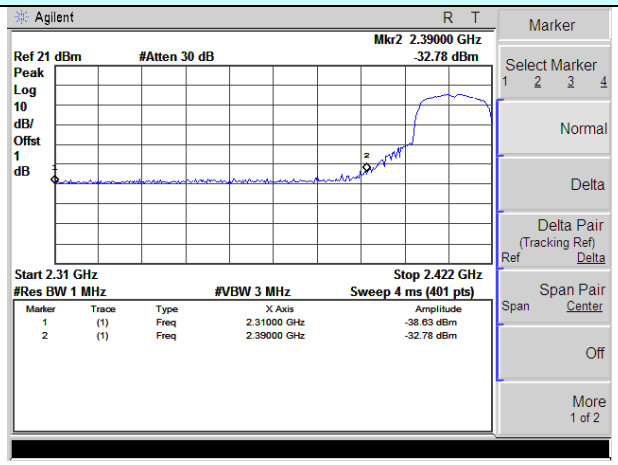


Lowest channel

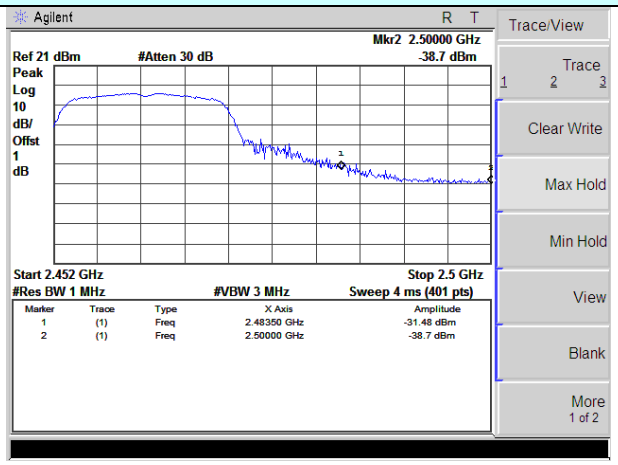


Highest channel

Mode	802.11n(H20)

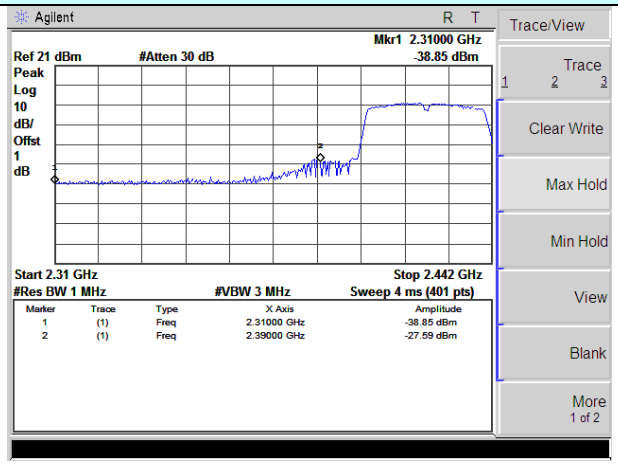


Lowest channel

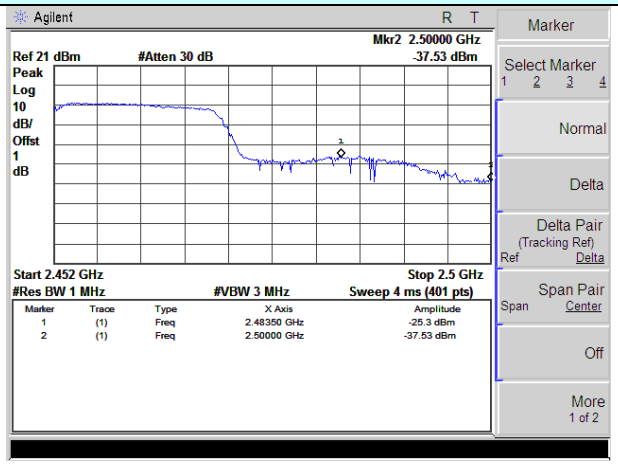


Highest channel

Mode	802.11n(H40)



Lowest channel



Highest channel

7.6.2 Radiated Emission Method

☞ **Test method**

FCC Part15 C Section 15.209 and 15.205

☞ **Test method**

ANSI C63.4:2009

☞ **Receiver set**

Frequency	Detector	RBW	VBW	Remark
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	Peak	1MHz	10Hz	Average Value

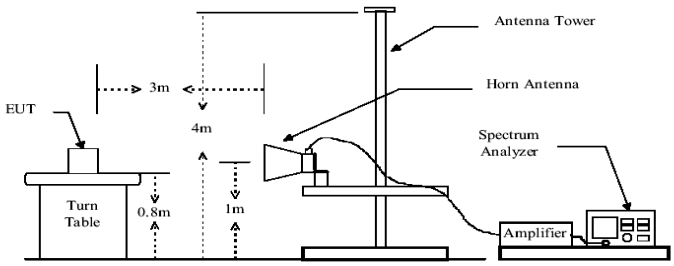
☞ **Limit**

Frequency	Limit (dBuV/m @3m)	Remark
Above 1GHz	54.00	Average Value
	74.00	Peak Value

☞ **Test mode**

Refer to section 5.3 for details

☞ **Test setup**



☞ **Test Procedure**

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

☞ **Test Result** **Complied**

Remark:

During the test, pre-scan the GFSK, Pi/4QPSK, 8DPSK modulation, and found the GFSK modulation which it is worse case, so only show the test data of worse case modulation on the test report.

Test mode:	802.11b	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	46.73	27.03	5.30	38.91	40.15	74.00	-33.85	Vertical
2390.00	53.83	27.29	5.38	38.99	47.51	74.00	-26.49	Vertical
2310.00	44.76	27.03	5.30	38.91	38.18	74.00	-35.82	Horizontal
2390.00	51.67	27.29	5.38	38.99	45.35	74.00	-28.65	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	31.88	27.03	5.30	38.91	25.30	54.00	-28.70	Vertical
2390.00	37.68	27.29	5.38	38.99	31.36	54.00	-22.64	Vertical
2310.00	29.18	27.03	5.30	38.91	22.60	54.00	-31.40	Horizontal
2390.00	35.70	27.29	5.38	38.99	29.38	54.00	-24.62	Horizontal

Test mode:	802.11b	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	51.84	27.55	5.47	39.07	45.79	74.00	-28.21	Vertical
2500.00	48.28	27.60	5.49	39.09	42.28	74.00	-31.72	Vertical
2483.50	49.78	27.55	5.47	39.07	43.73	74.00	-30.27	Horizontal
2500.00	45.34	27.60	5.49	39.09	39.34	74.00	-34.66	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	40.35	27.55	5.47	39.07	34.30	54.00	-19.70	Vertical
2500.00	36.64	27.60	5.49	39.09	30.64	54.00	-23.36	Vertical
2483.50	38.23	27.55	5.47	39.07	32.18	54.00	-21.82	Horizontal
2500.00	33.82	27.60	5.49	39.09	27.82	54.00	-26.18	Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test mode:	802.11g	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	45.79	27.03	5.30	38.91	39.21	74.00	-34.79	Vertical
2390.00	52.75	27.29	5.38	38.99	46.43	74.00	-27.57	Vertical
2310.00	43.87	27.03	5.30	38.91	37.29	74.00	-36.71	Horizontal
2390.00	50.64	27.29	5.38	38.99	44.32	74.00	-29.68	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	31.24	27.03	5.30	38.91	24.66	54.00	-29.34	Vertical
2390.00	36.92	27.29	5.38	38.99	30.60	54.00	-23.40	Vertical
2310.00	28.60	27.03	5.30	38.91	22.02	54.00	-31.98	Horizontal
2390.00	34.99	27.29	5.38	38.99	28.67	54.00	-25.33	Horizontal

Test mode:	802.11g	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	50.80	27.55	5.47	39.07	44.75	74.00	-29.25	Vertical
2500.00	47.31	27.60	5.49	39.09	41.31	74.00	-32.69	Vertical
2483.50	48.79	27.55	5.47	39.07	42.74	74.00	-31.26	Horizontal
2500.00	44.43	27.60	5.49	39.09	38.43	74.00	-35.57	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	39.54	27.55	5.47	39.07	33.49	54.00	-20.51	Vertical
2500.00	35.50	27.60	5.49	39.09	29.50	54.00	-24.50	Vertical
2483.50	37.24	27.55	5.47	39.07	31.19	54.00	-22.81	Horizontal
2500.00	32.50	27.60	5.49	39.09	26.50	54.00	-27.50	Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test mode:	802.11n (H20)	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	48.03	27.03	5.30	38.91	41.45	74.00	-32.55	Vertical
2390.00	55.22	27.29	5.38	38.99	48.90	74.00	-25.10	Vertical
2310.00	46.06	27.03	5.30	38.91	39.48	74.00	-34.52	Horizontal
2390.00	53.04	27.29	5.38	38.99	46.72	74.00	-27.28	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	36.08	27.03	5.30	38.91	29.50	54.00	-12.55	Vertical
2390.00	41.24	27.29	5.38	38.99	34.92	54.00	-5.10	Vertical
2310.00	39.58	27.03	5.30	38.91	33.00	54.00	-14.52	Horizontal
2390.00	42.21	27.29	5.38	38.99	35.89	54.00	-7.28	Horizontal

Test mode:	802.11n(H20)	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	53.40	27.55	5.47	39.07	47.35	74.00	-26.65	Vertical
2500.00	49.82	27.60	5.49	39.09	43.82	74.00	-30.18	Vertical
2483.50	51.33	27.55	5.47	39.07	45.28	74.00	-28.72	Horizontal
2500.00	46.85	27.60	5.49	39.09	40.85	74.00	-33.15	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	41.57	27.55	5.47	39.07	35.52	54.00	-18.48	Vertical
2500.00	37.42	27.60	5.49	39.09	31.42	54.00	-22.58	Vertical
2483.50	39.19	27.55	5.47	39.07	33.14	54.00	-20.86	Horizontal
2500.00	34.32	27.60	5.49	39.09	28.32	54.00	-25.68	Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test mode:	802.11n (H40)	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	43.92	27.03	5.30	38.91	37.34	74.00	-36.66	Vertical
2390.00	52.38	27.29	5.38	38.99	46.06	74.00	-27.94	Vertical
2310.00	41.43	27.03	5.30	38.91	34.85	74.00	-39.15	Horizontal
2390.00	49.85	27.29	5.38	38.99	43.53	74.00	-30.47	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	29.96	27.03	5.30	38.91	23.38	54.00	-30.62	Vertical
2390.00	36.90	27.29	5.38	38.99	30.58	54.00	-23.42	Vertical
2310.00	26.60	27.03	5.30	38.91	20.02	54.00	-33.98	Horizontal
2390.00	34.55	27.29	5.38	38.99	28.23	54.00	-25.77	Horizontal

Test mode:	802.11n(H40)	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	48.73	27.55	5.47	39.07	42.68	74.00	-31.32	Vertical
2500.00	44.14	27.60	5.49	39.09	38.14	74.00	-35.86	Vertical
2483.50	46.11	27.55	5.47	39.07	40.06	74.00	-33.94	Horizontal
2500.00	40.66	27.60	5.49	39.09	34.66	74.00	-39.34	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	37.93	27.55	5.47	39.07	31.88	54.00	-22.12	Vertical
2500.00	32.71	27.60	5.49	39.09	26.71	54.00	-27.29	Vertical
2483.50	34.97	27.55	5.47	39.07	28.92	54.00	-25.08	Horizontal
2500.00	29.06	27.60	5.49	39.09	23.06	54.00	-30.94	Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

7.7 Spurious Emission

7.7.1 Conducted Emission Method

☞ **Test method**

FCC Part15 C Section 15.247 (d)

☞ **Test method**

ANSI C63.4:2009 and KDB 558074 D01 DTS Meas Guidance V03r02

☞ **Receiver set**

RBW=100kHz, VBW=300kHz, Detector=Peak

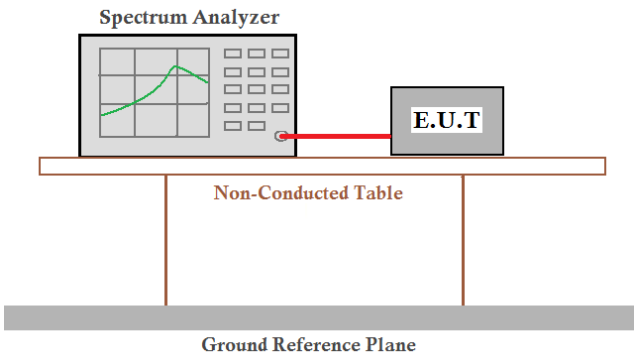
☞ **Limit**

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, based on either an RF conducted or a radiated measurement.

☞ **Test mode**

Refer to section 5.3 for details

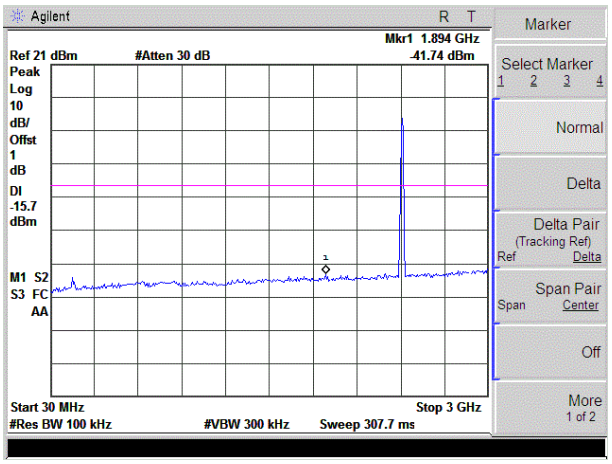
☞ **Test setup**



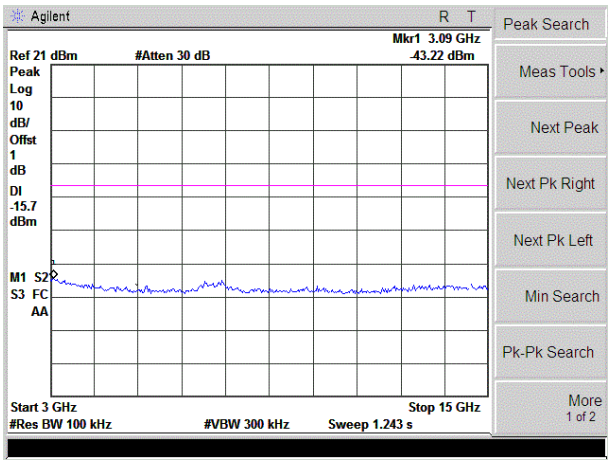
☞ **Test Result** **Complied**

Test mode:	802.11b

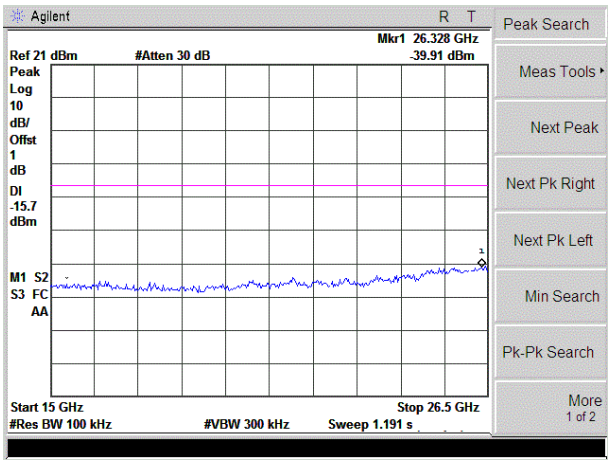
Lowest channel



30MHz~3GHz

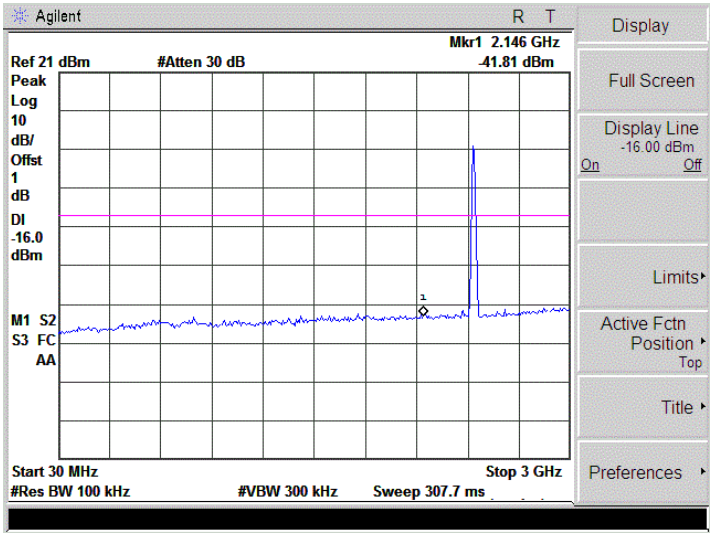


3GHz~15GHz

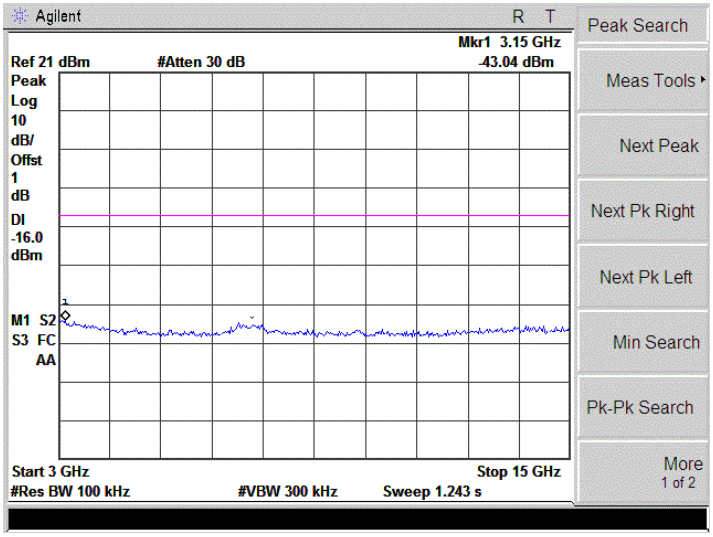


15GHz~26.5GHz

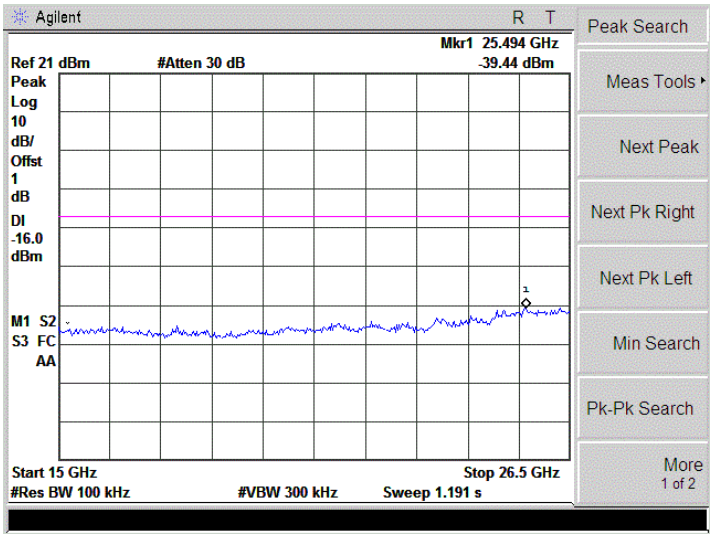
Middle channel



30MHz~3GHz

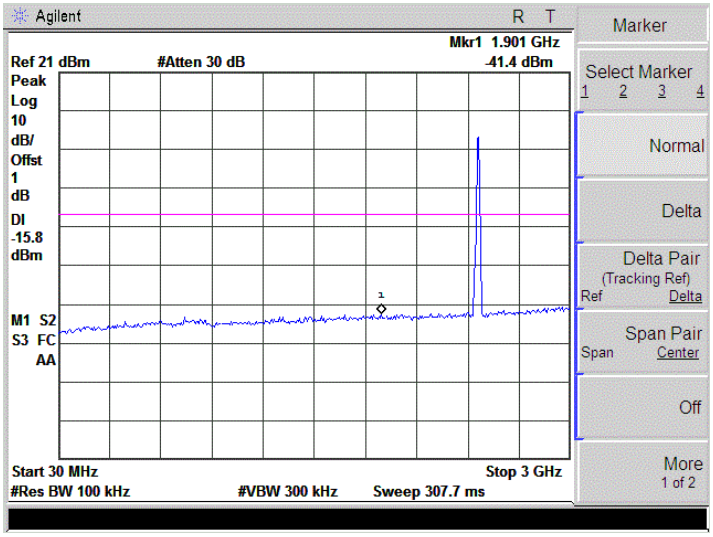


3GHz~15GHz

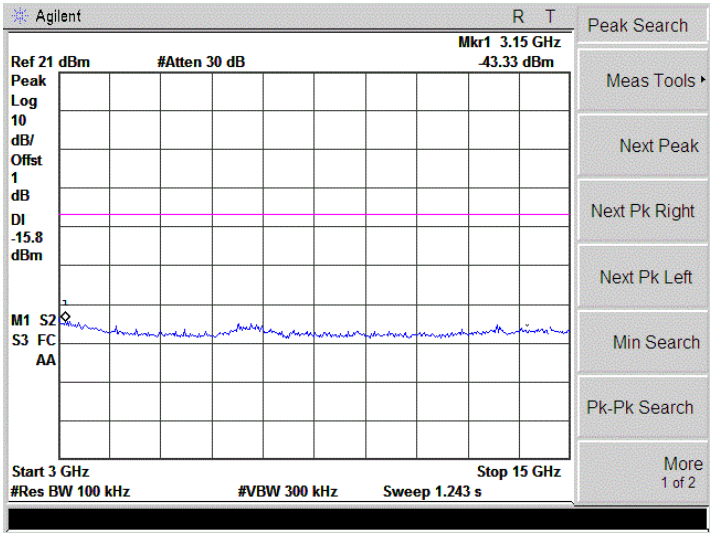


15GHz~26.5GHz

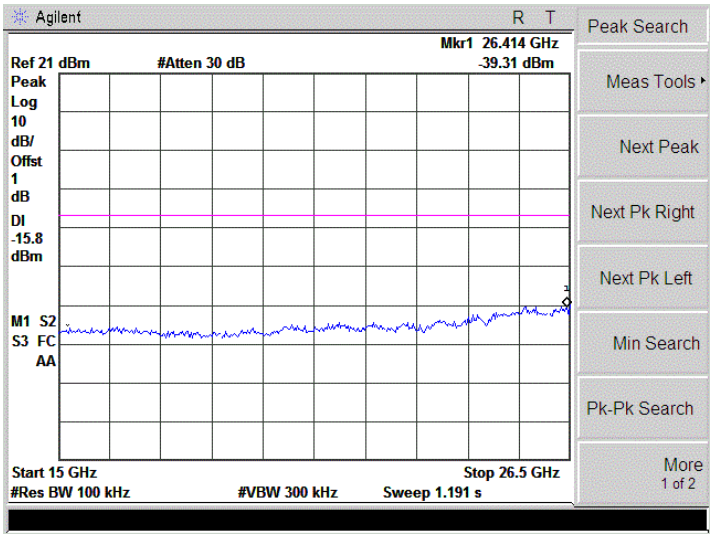
Highest channel



30MHz~3GHz



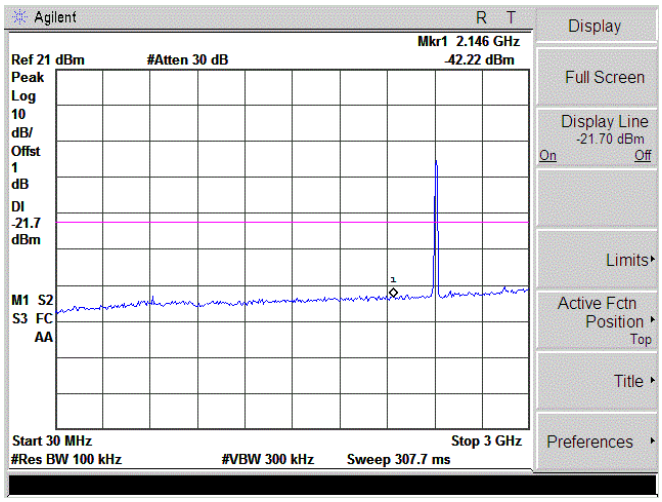
3GHz~15GHz



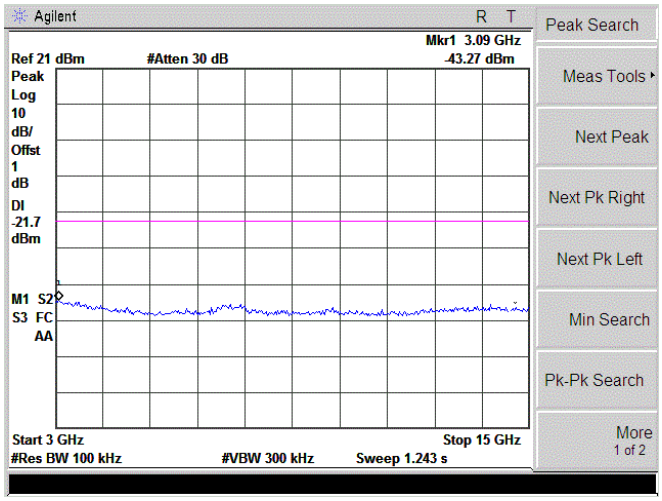
15GHz~26.5GHz

Test mode:	802.11g

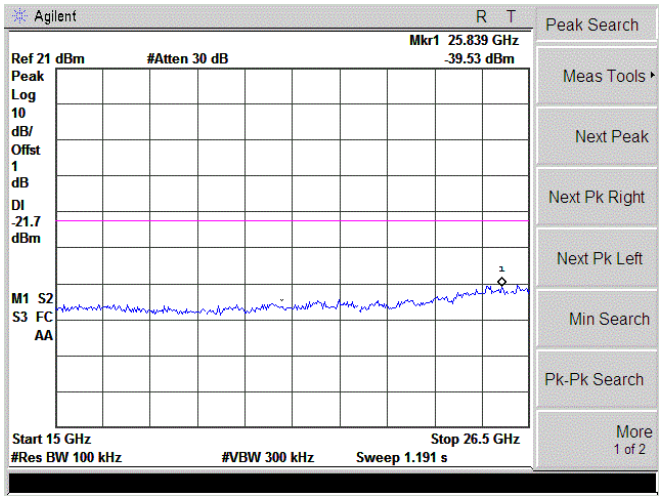
Lowest channel



30MHz~3GHz

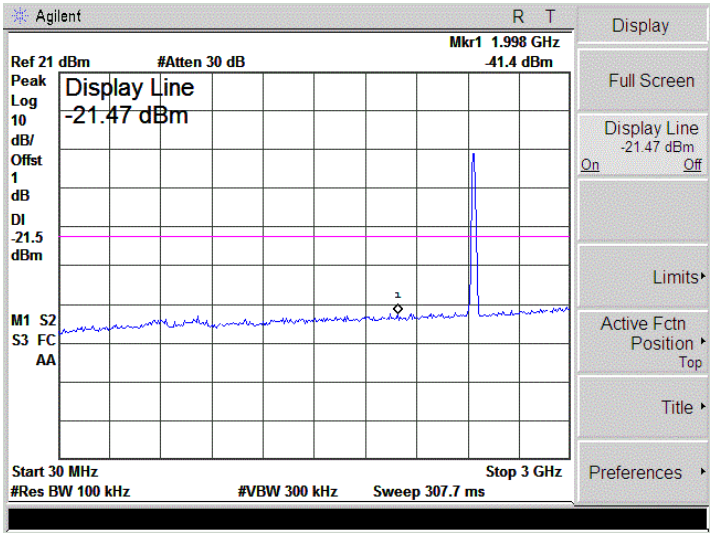


3GHz~15GHz

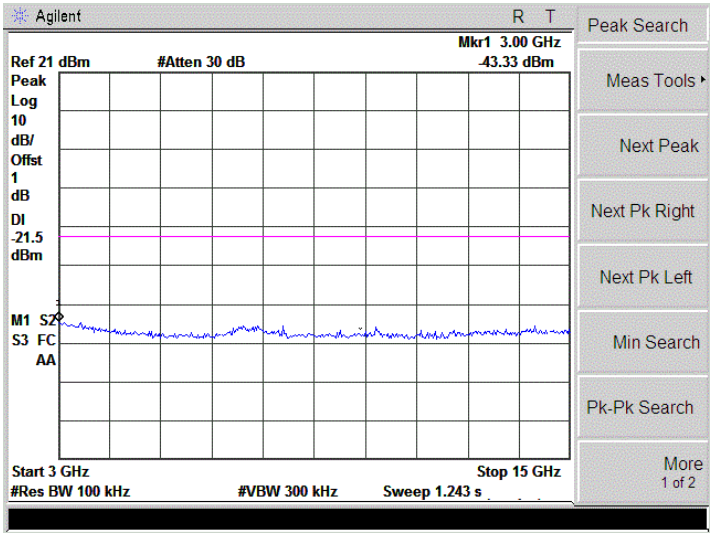


15GHz~26.5GHz

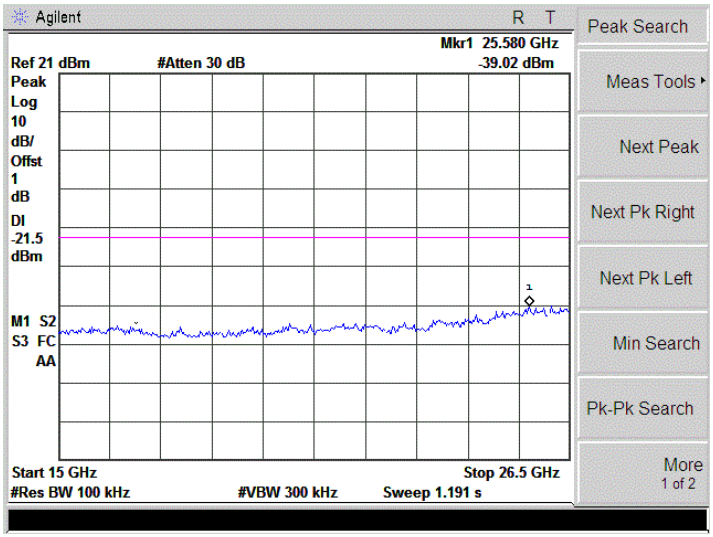
Middle channel



30MHz~3GHz

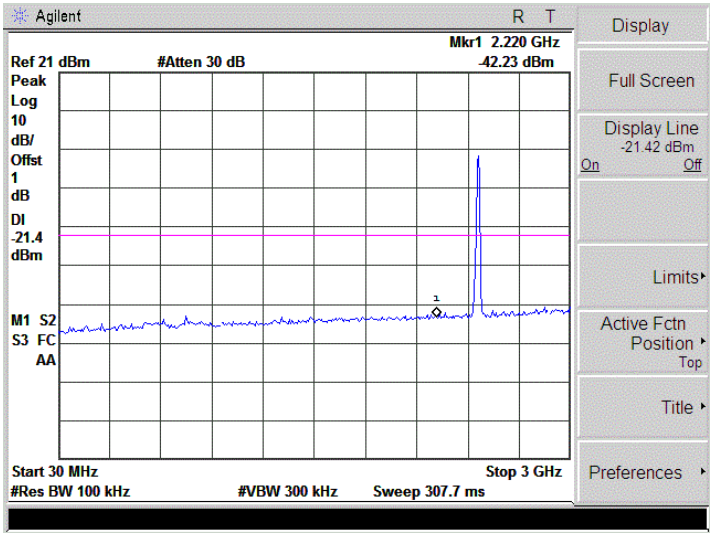


3GHz~15GHz

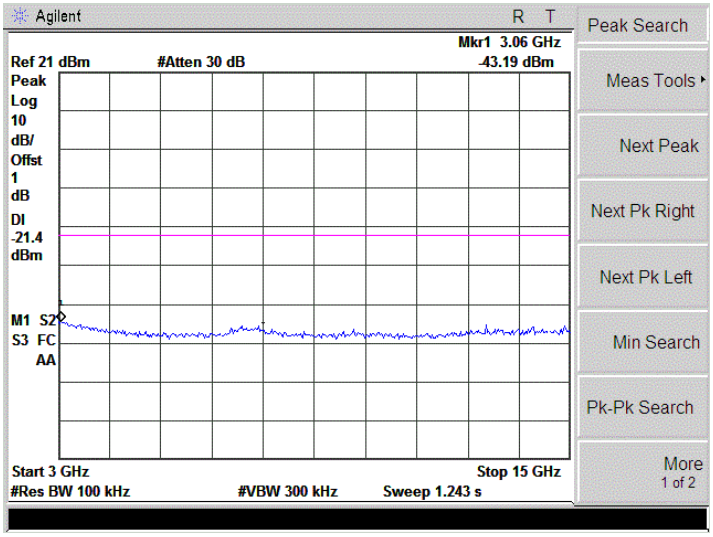


15GHz~26.5GHz

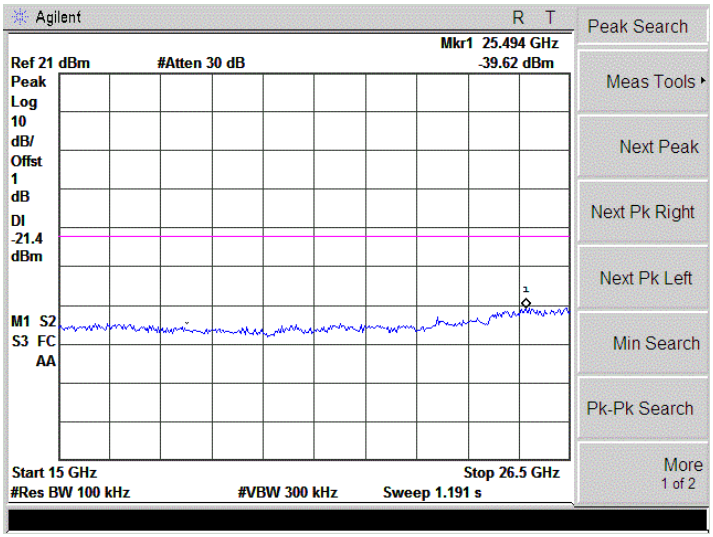
Highest channel



30MHz~3GHz



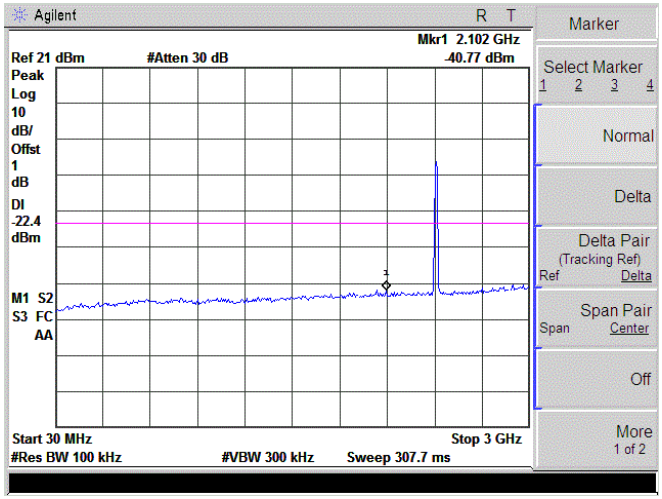
3GHz~15GHz



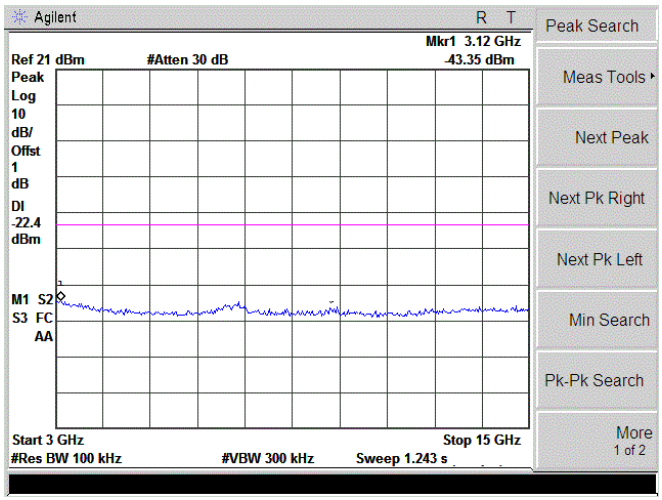
15GHz~26.5GHz

Test mode:	802.11n(H20)

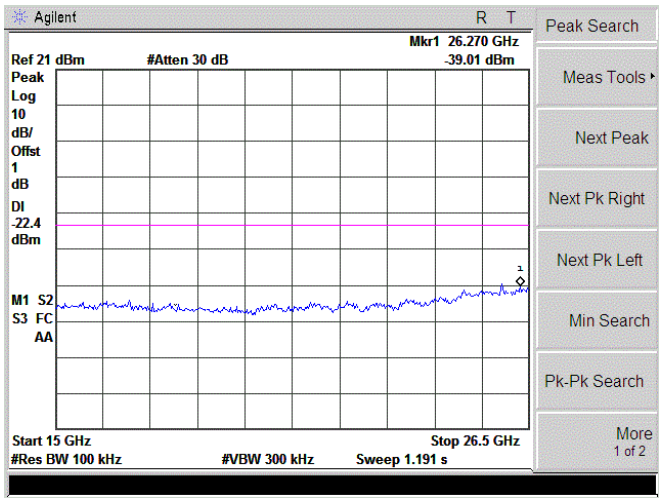
Lowest channel



30MHz~3GHz

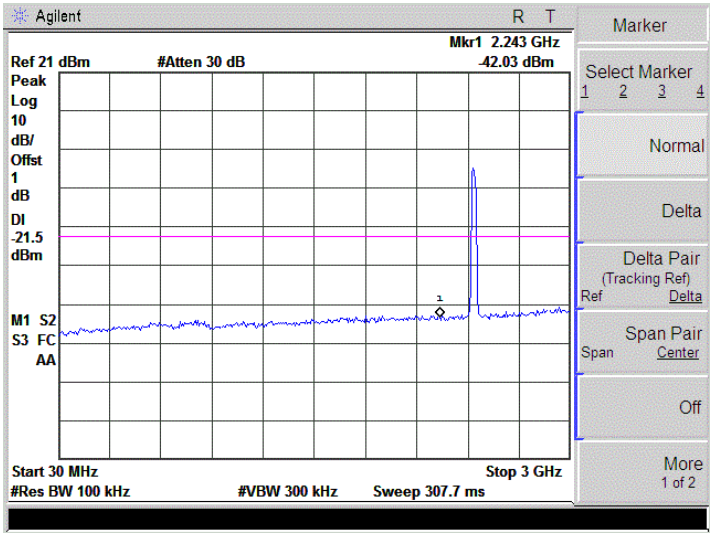


3GHz~15GHz

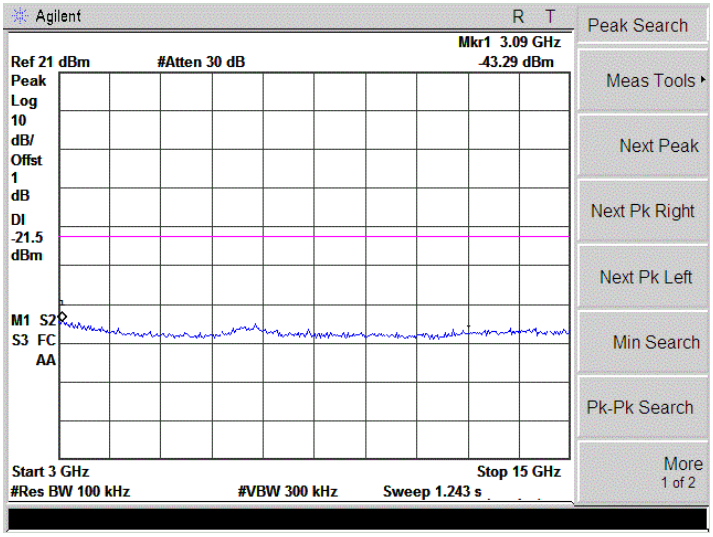


15GHz~26.5GHz

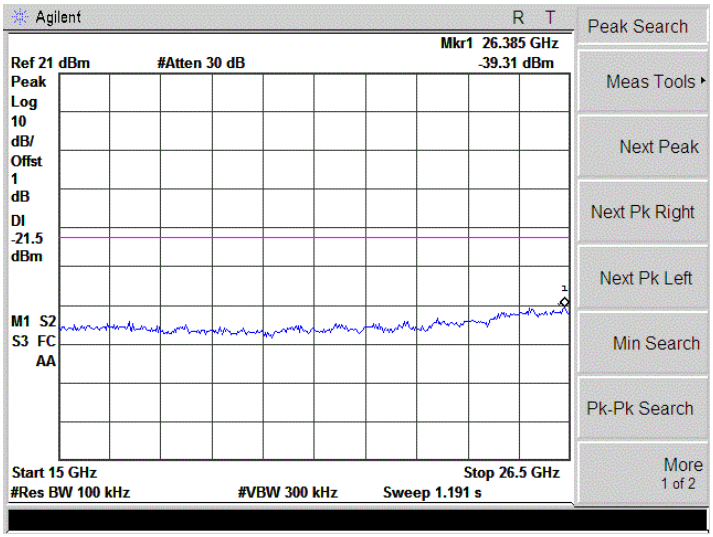
Middle channel



30MHz~3GHz

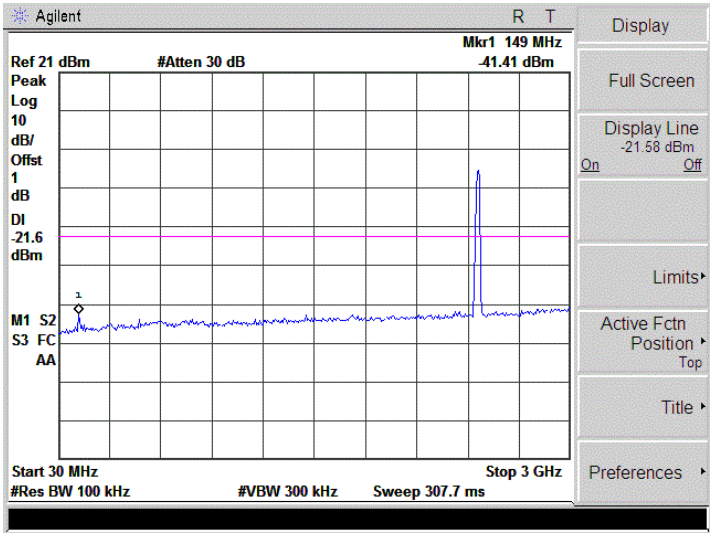


3GHz~15GHz

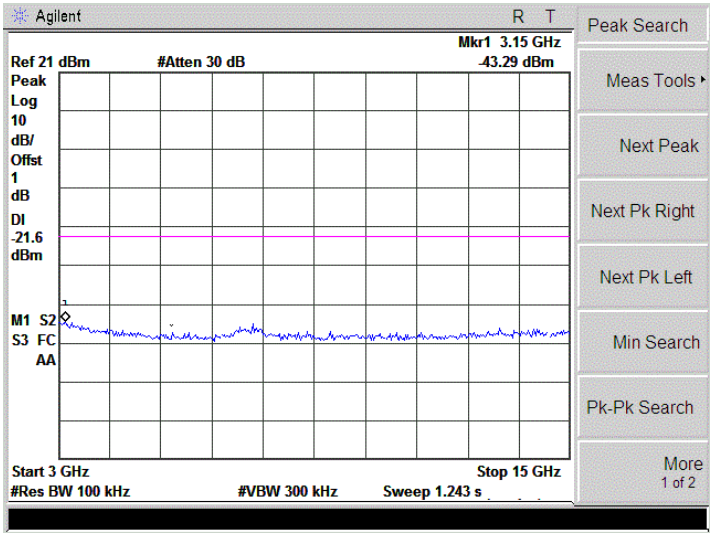


15GHz~26.5GHz

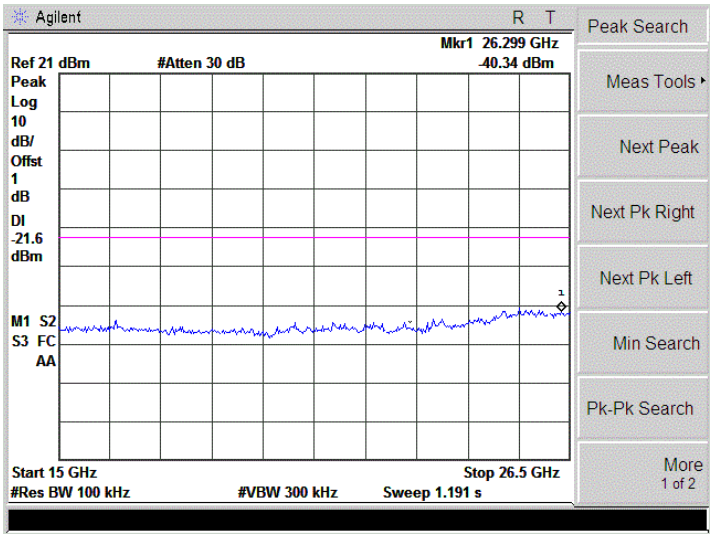
Highest channel



30MHz~3GHz



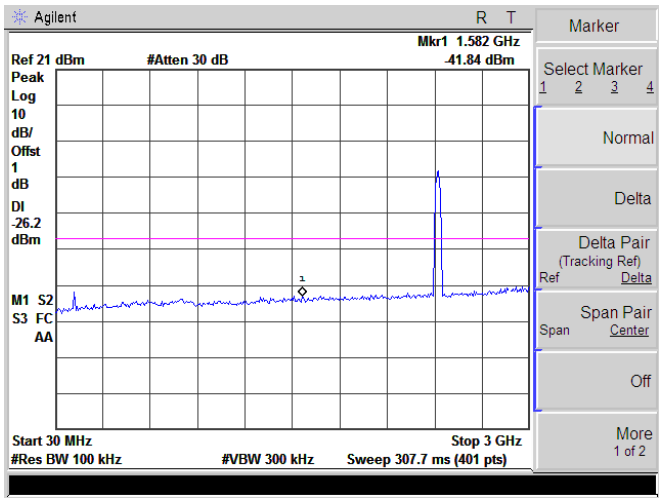
3GHz~15GHz



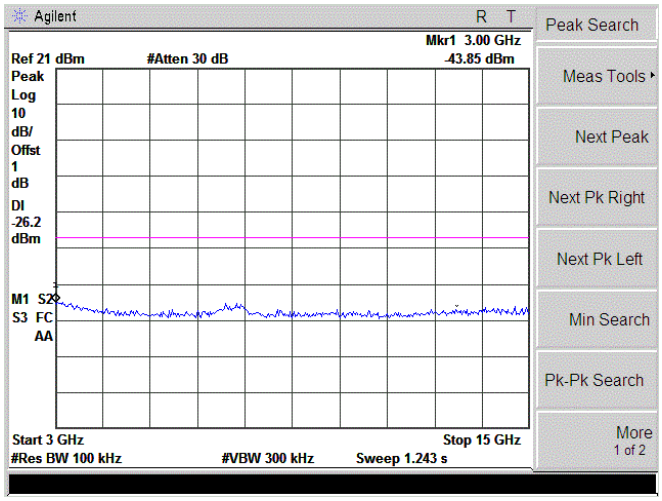
15GHz~26.5GHz

Test mode:	802.11n(H40)

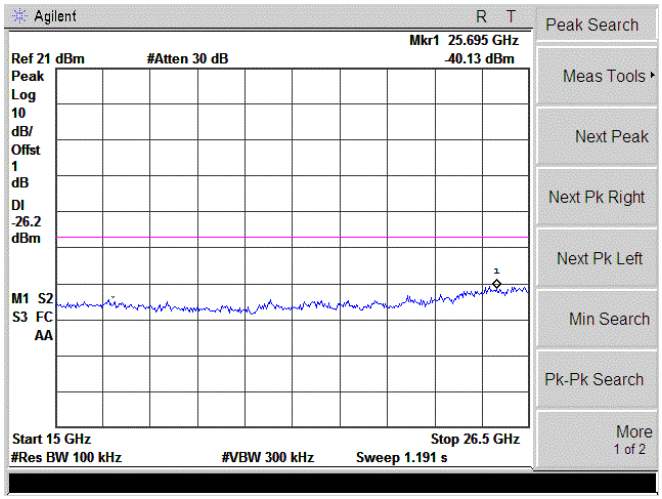
Lowest channel



30MHz~3GHz

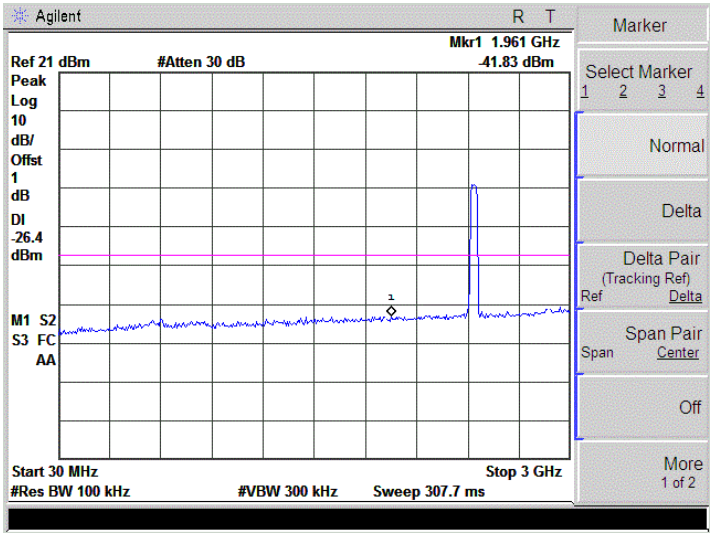


3GHz~15GHz

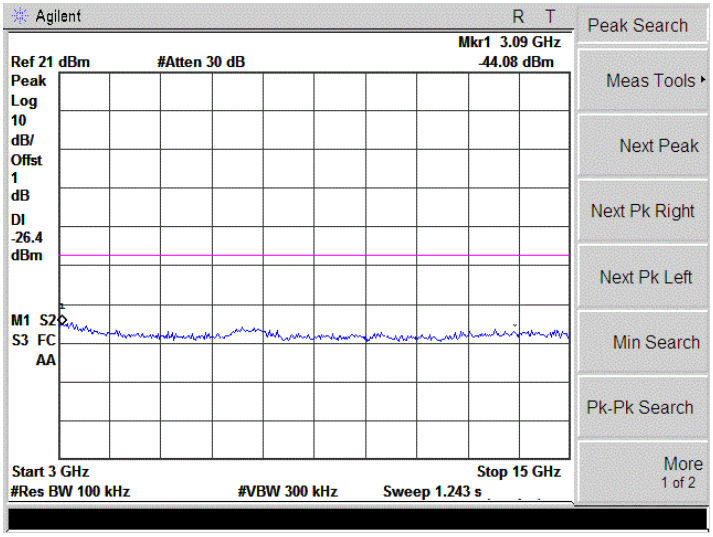


15GHz~26.5GHz

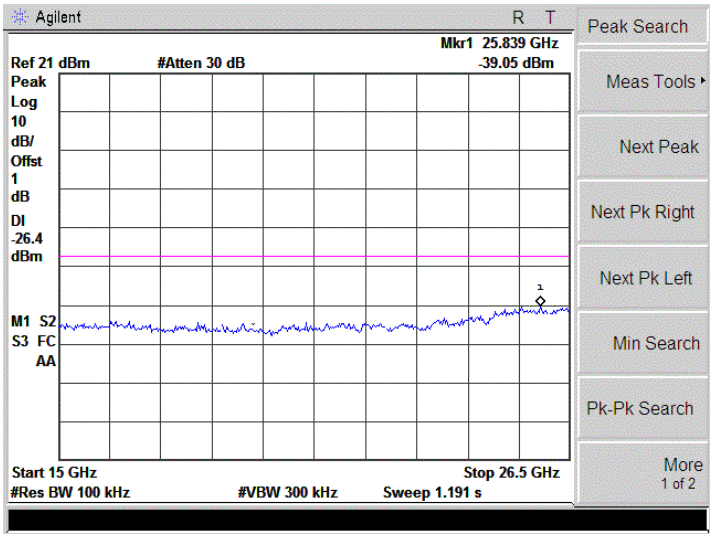
Middle channel



30MHz~3GHz

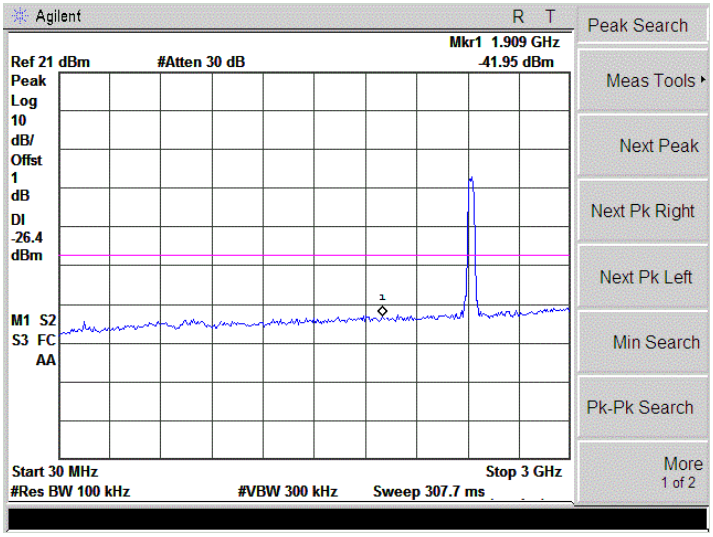


3GHz~15GHz

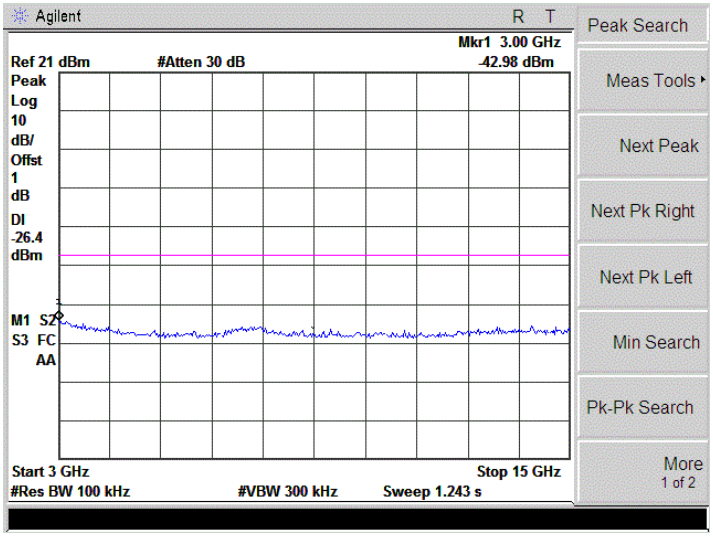


15GHz~26.5GHz

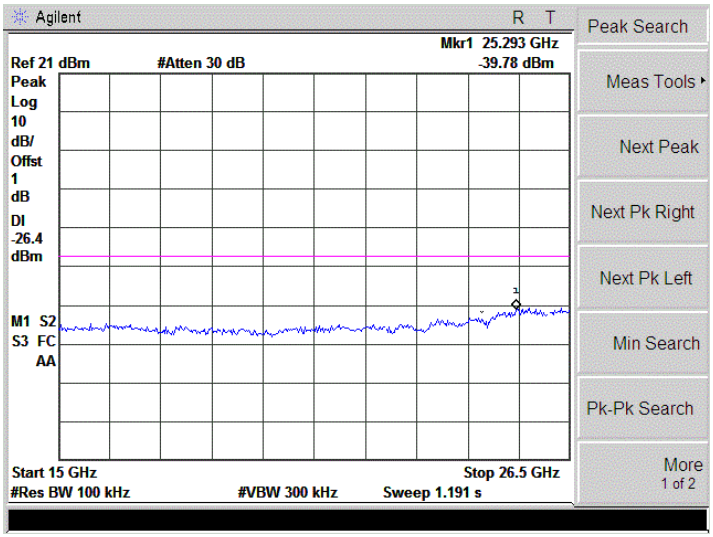
Highest channel



30MHz~3GHz



3GHz~15GHz



15GHz~26.5GHz

7.7.2 Radiated Emission Method

☞ **Test method**

FCC Part15 C Section 15.209 and 15.205

☞ **Test method**

ANSI C63.4:2009

☞ **Receiver set**

Frequency	Detector	RBW	VBW	Remark
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	Peak	1MHz	10Hz	Average Value

☞ **Limit**

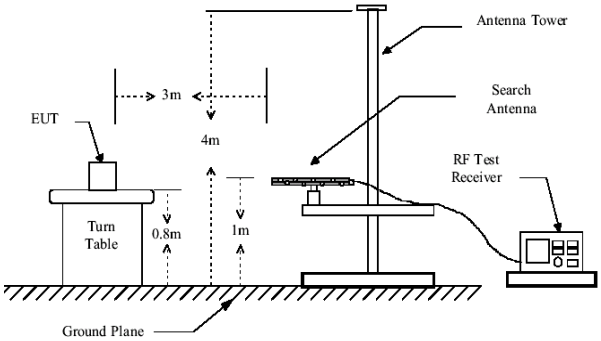
Frequency	Limit (dBuV/m @3m)	Remark
30MHz-88MHz	40.00	Quasi-peak Value
88MHz-216MHz	43.50	Quasi-peak Value
216MHz-960MHz	46.00	Quasi-peak Value
960MHz-1GHz	54.00	Quasi-peak Value
Above 1GHz	54.00	Average Value
	74.00	Peak Value

☞ **Test mode**

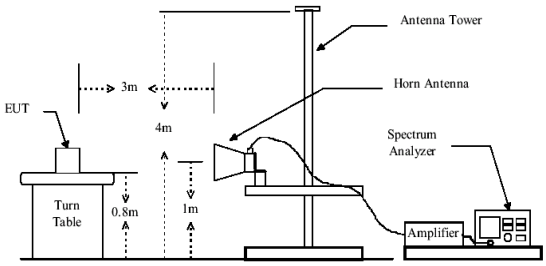
Refer to section 5.3 for details

☞ **Test setup**

Below 1GHz



Above 1GHz



☞ **Test Procedure**

6. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
7. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
8. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
9. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
10. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
11. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

☞ **Test Result** **Complied**

Remark:

During the test, pre-scan the GFSK, Pi/4QPSK, 8DPSK modulation, and found the GFSK modulation which it is worse case, so only show the test data of worse case modulation on the test report.

Measurement data:

■ **Below 1GHz**

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
36.29	48.31	14.33	0.55	32.06	31.13	40.00	-8.87	Vertical
47.87	45.62	15.58	0.66	32.06	29.80	40.00	-10.20	Vertical
71.15	45.08	14.73	0.86	31.94	28.73	40.00	-11.27	Vertical
82.15	49.98	11.20	0.93	31.89	30.22	40.00	-9.78	Vertical
125.13	39.13	14.73	1.23	31.78	23.31	43.50	-20.19	Vertical
288.27	39.83	14.09	2.08	32.16	23.84	46.00	-22.16	Vertical
49.93	38.87	15.57	0.68	32.04	23.08	40.00	-16.92	Horizontal
69.92	39.29	14.80	0.85	31.94	23.00	40.00	-17.00	Horizontal
107.99	39.53	13.99	1.11	31.72	22.91	43.50	-20.59	Horizontal
281.28	40.44	13.83	2.05	32.16	24.16	46.00	-21.84	Horizontal
487.80	38.99	17.22	2.89	31.86	27.24	46.00	-18.76	Horizontal
687.83	38.09	20.03	3.63	31.17	30.58	46.00	-15.42	Horizontal

■ **Above 1GHz**

Mode:	802.11b	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4824.00	42.56	31.77	8.61	39.55	43.39	74.00	-30.61	Vertical
7236.00	35.85	38.09	11.68	36.29	49.33	74.00	-24.67	Vertical
9648.00	38.16	37.44	14.16	37.28	52.48	74.00	-21.52	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
4824.00	40.09	31.77	8.61	39.55	40.92	74.00	-33.08	Horizontal
7236.00	34.56	38.09	11.68	36.29	48.04	74.00	-25.96	Horizontal
9648.00	35.38	37.44	14.16	37.28	49.70	74.00	-24.30	Horizontal
12060.00	*					74.00		Horizontal
14472.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4824.00	31.71	31.77	8.61	39.55	32.54	54.00	-21.46	Vertical
7236.00	24.86	38.09	11.68	36.29	38.34	54.00	-15.66	Vertical
9648.00	27.22	37.44	14.16	37.28	41.54	54.00	-12.46	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
4824.00	29.19	31.77	8.61	39.55	30.02	54.00	-23.98	Horizontal
7236.00	23.55	38.09	11.68	36.29	37.03	54.00	-16.97	Horizontal
9648.00	24.39	37.44	14.16	37.28	38.71	54.00	-15.29	Horizontal
12060.00	*					54.00		Horizontal
14472.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Mode:	802.11b	Test channel:	Middle

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	43.84	31.75	8.66	39.54	44.71	74.00	-29.29	Vertical
7311.00	36.79	38.15	11.71	36.23	50.42	74.00	-23.58	Vertical
9748.00	39.21	37.34	14.25	37.44	53.36	74.00	-20.64	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
4874.00	41.24	31.75	8.66	39.54	42.11	74.00	-31.89	Horizontal
7311.00	35.44	38.15	11.71	36.23	49.07	74.00	-24.93	Horizontal
9748.00	36.30	37.34	14.25	37.44	50.45	74.00	-23.55	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	32.98	31.75	8.66	39.54	33.85	54.00	-20.15	Vertical
7311.00	25.72	38.15	11.71	36.23	39.35	54.00	-14.65	Vertical
9748.00	28.22	37.34	14.25	37.44	42.37	54.00	-11.63	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
4874.00	30.31	31.75	8.66	39.54	31.18	54.00	-22.82	Horizontal
7311.00	24.33	38.15	11.71	36.23	37.96	54.00	-16.04	Horizontal
9748.00	25.22	37.34	14.25	37.44	39.37	54.00	-14.63	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Mode:	802.11b	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4924.00	41.71	31.73	8.70	39.52	42.62	74.00	-31.38	Vertical
7386.00	34.53	38.22	11.76	36.15	48.36	74.00	-25.64	Vertical
9848.00	37.00	37.26	14.31	37.57	51.00	74.00	-23.00	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
4924.00	39.06	31.73	8.70	39.52	39.97	74.00	-34.03	Horizontal
7386.00	33.15	38.22	11.76	36.15	46.98	74.00	-27.02	Horizontal
9848.00	34.03	37.26	14.31	37.57	48.03	74.00	-25.97	Horizontal
12310.00	*					74.00		Horizontal
14772.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4924.00	30.44	31.73	8.70	39.52	31.35	54.00	-22.65	Vertical
7386.00	23.05	38.22	11.76	36.15	36.88	54.00	-17.12	Vertical
9848.00	25.59	37.26	14.31	37.57	39.59	54.00	-14.41	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
4924.00	27.72	31.73	8.70	39.52	28.63	54.00	-25.37	Horizontal
7386.00	21.63	38.22	11.76	36.15	35.46	54.00	-18.54	Horizontal
9848.00	22.54	37.26	14.31	37.57	36.54	54.00	-17.46	Horizontal
12310.00	*					54.00		Horizontal
14772.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Mode:	802.11g	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4824.00	40.86	31.77	8.61	39.55	41.69	74.00	-32.31	Vertical
7236.00	34.28	38.09	11.68	36.29	47.76	74.00	-26.24	Vertical
9648.00	36.54	37.44	14.16	37.28	50.86	74.00	-23.14	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
4824.00	38.43	31.77	8.61	39.55	39.26	74.00	-34.74	Horizontal
7236.00	33.02	38.09	11.68	36.29	46.50	74.00	-27.50	Horizontal
9648.00	33.83	37.44	14.16	37.28	48.15	74.00	-25.85	Horizontal
12060.00	*					74.00		Horizontal
14472.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4824.00	32.34	31.77	8.61	39.55	33.17	54.00	-20.83	Vertical
7236.00	25.63	38.09	11.68	36.29	39.11	54.00	-14.89	Vertical
9648.00	27.94	37.44	14.16	37.28	42.26	54.00	-11.74	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
4824.00	29.87	31.77	8.61	39.55	30.70	54.00	-23.30	Horizontal
7236.00	24.35	38.09	11.68	36.29	37.83	54.00	-16.17	Horizontal
9648.00	25.17	37.44	14.16	37.28	39.49	54.00	-14.51	Horizontal
12060.00	*					54.00		Horizontal
14472.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Mode:	802.11g	Test channel:	Middle

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	42.08	31.75	8.66	39.54	42.95	74.00	-31.05	Vertical
7311.00	35.18	38.15	11.71	36.23	48.81	74.00	-25.19	Vertical
9748.00	37.55	37.34	14.25	37.44	51.70	74.00	-22.30	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
4874.00	39.54	31.75	8.66	39.54	40.41	74.00	-33.59	Horizontal
7311.00	33.85	38.15	11.71	36.23	47.48	74.00	-26.52	Horizontal
9748.00	34.70	37.34	14.25	37.44	48.85	74.00	-25.15	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	33.64	31.75	8.66	39.54	34.51	54.00	-19.49	Vertical
7311.00	26.52	38.15	11.71	36.23	40.15	54.00	-13.85	Vertical
9748.00	28.97	37.34	14.25	37.44	43.12	54.00	-10.88	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
4874.00	31.02	31.75	8.66	39.54	31.89	54.00	-22.11	Horizontal
7311.00	25.16	38.15	11.71	36.23	38.79	54.00	-15.21	Horizontal
9748.00	26.03	37.34	14.25	37.44	40.18	54.00	-13.82	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Mode:	802.11g	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4924.00	40.04	31.73	8.70	39.52	40.95	74.00	-33.05	Vertical
7386.00	33.00	38.22	11.76	36.15	46.83	74.00	-27.17	Vertical
9848.00	35.42	37.26	14.31	37.57	49.42	74.00	-24.58	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
4924.00	37.45	31.73	8.70	39.52	38.36	74.00	-35.64	Horizontal
7386.00	31.65	38.22	11.76	36.15	45.48	74.00	-28.52	Horizontal
9848.00	32.52	37.26	14.31	37.57	46.52	74.00	-27.48	Horizontal
12310.00	*					74.00		Horizontal
14772.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4924.00	31.05	31.73	8.70	39.52	31.96	54.00	-22.04	Vertical
7386.00	23.80	38.22	11.76	36.15	37.63	54.00	-16.37	Vertical
9848.00	26.30	37.26	14.31	37.57	40.30	54.00	-13.70	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
4924.00	28.38	31.73	8.70	39.52	29.29	54.00	-24.71	Horizontal
7386.00	22.41	38.22	11.76	36.15	36.24	54.00	-17.76	Horizontal
9848.00	23.30	37.26	14.31	37.57	37.30	54.00	-16.70	Horizontal
12310.00	*					54.00		Horizontal
14772.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Mode:	802.11n(H20)	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4824.00	39.58	31.77	8.61	39.55	40.41	74.00	-33.59	Vertical
7236.00	32.73	38.09	11.68	36.29	46.21	74.00	-27.79	Vertical
9648.00	35.09	37.44	14.16	37.28	49.41	74.00	-24.59	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
4824.00	37.06	31.77	8.61	39.55	37.89	74.00	-36.11	Horizontal
7236.00	31.42	38.09	11.68	36.29	44.90	74.00	-29.10	Horizontal
9648.00	32.26	37.44	14.16	37.28	46.58	74.00	-27.42	Horizontal
12060.00	*					74.00		Horizontal
14472.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4824.00	32.34	31.77	8.61	39.55	33.17	54.00	-20.83	Vertical
7236.00	25.36	38.09	11.68	36.29	38.84	54.00	-15.16	Vertical
9648.00	27.76	37.44	14.16	37.28	42.08	54.00	-11.92	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
4824.00	29.77	31.77	8.61	39.55	30.60	54.00	-23.40	Horizontal
7236.00	24.02	38.09	11.68	36.29	37.50	54.00	-16.50	Horizontal
9648.00	24.88	37.44	14.16	37.28	39.20	54.00	-14.80	Horizontal
12060.00	*					54.00		Horizontal
14472.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Mode:	802.11n(H20)	Test channel:	Middle

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	40.77	31.75	8.66	39.54	41.64	74.00	-32.36	Vertical
7311.00	33.58	38.15	11.71	36.23	47.21	74.00	-26.79	Vertical
9748.00	36.05	37.34	14.25	37.44	50.20	74.00	-23.80	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
4874.00	38.12	31.75	8.66	39.54	38.99	74.00	-35.01	Horizontal
7311.00	32.20	38.15	11.71	36.23	45.83	74.00	-28.17	Horizontal
9748.00	33.08	37.34	14.25	37.44	47.23	74.00	-26.77	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	33.64	31.75	8.66	39.54	34.51	54.00	-19.49	Vertical
7311.00	26.23	38.15	11.71	36.23	39.86	54.00	-14.14	Vertical
9748.00	28.78	37.34	14.25	37.44	42.93	54.00	-11.07	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
4874.00	30.91	31.75	8.66	39.54	31.78	54.00	-22.22	Horizontal
7311.00	24.82	38.15	11.71	36.23	38.45	54.00	-15.55	Horizontal
9748.00	25.72	37.34	14.25	37.44	39.87	54.00	-14.13	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Mode:	802.11n(H20)	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4924.00	38.79	31.73	8.70	39.52	39.70	74.00	-34.30	Vertical
7386.00	31.46	38.22	11.76	36.15	45.29	74.00	-28.71	Vertical
9848.00	33.98	37.26	14.31	37.57	47.98	74.00	-26.02	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
4924.00	36.09	31.73	8.70	39.52	37.00	74.00	-37.00	Horizontal
7386.00	30.06	38.22	11.76	36.15	43.89	74.00	-30.11	Horizontal
9848.00	30.96	37.26	14.31	37.57	44.96	74.00	-29.04	Horizontal
12310.00	*					74.00		Horizontal
14772.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4924.00	31.05	31.73	8.70	39.52	31.96	54.00	-22.04	Vertical
7386.00	23.51	38.22	11.76	36.15	37.34	54.00	-16.66	Vertical
9848.00	26.10	37.26	14.31	37.57	40.10	54.00	-13.90	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
4924.00	28.27	31.73	8.70	39.52	29.18	54.00	-24.82	Horizontal
7386.00	22.06	38.22	11.76	36.15	35.89	54.00	-18.11	Horizontal
9848.00	22.99	37.26	14.31	37.57	36.99	54.00	-17.01	Horizontal
12310.00	*					54.00		Horizontal
14772.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Mode:	802.11n(H40)	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4844.00	40.43	31.76	8.63	39.55	41.27	74.00	-32.73	Vertical
7266.00	33.65	38.12	11.69	36.26	47.20	74.00	-26.80	Vertical
9688.00	35.99	37.41	14.21	37.33	50.28	74.00	-23.72	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
4844.00	37.93	31.76	8.63	39.55	38.77	74.00	-35.23	Horizontal
7266.00	32.35	38.12	11.69	36.26	45.90	74.00	-28.10	Horizontal
9688.00	33.18	37.41	14.21	37.33	47.47	74.00	-26.53	Horizontal
12060.00	*					74.00		Horizontal
14472.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4844.00	30.12	31.76	8.63	39.55	30.96	54.00	-23.04	Vertical
7266.00	23.21	38.12	11.69	36.26	36.76	54.00	-17.24	Vertical
9688.00	25.59	37.41	14.21	37.33	39.88	54.00	-14.12	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
4844.00	27.58	31.76	8.63	39.55	28.42	54.00	-25.58	Horizontal
7266.00	21.88	38.12	11.69	36.26	35.43	54.00	-18.57	Horizontal
9688.00	22.73	37.41	14.21	37.33	37.02	54.00	-16.98	Horizontal
12060.00	*					54.00		Horizontal
14472.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Mode:	802.11n(H40)	Test channel:	Middle

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	43.26	31.75	8.66	39.54	44.13	74.00	-29.87	Vertical
7311.00	36.14	38.15	11.71	36.23	49.77	74.00	-24.23	Vertical
9748.00	38.59	37.34	14.25	37.44	52.74	74.00	-21.26	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
4874.00	40.64	31.75	8.66	39.54	41.51	74.00	-32.49	Horizontal
7311.00	34.78	38.15	11.71	36.23	48.41	74.00	-25.59	Horizontal
9748.00	35.65	37.34	14.25	37.44	49.80	74.00	-24.20	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	31.93	31.75	8.66	39.54	32.80	54.00	-21.20	Vertical
7311.00	24.60	38.15	11.71	36.23	38.23	54.00	-15.77	Vertical
9748.00	27.13	37.34	14.25	37.44	41.28	54.00	-12.72	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
4874.00	29.23	31.75	8.66	39.54	30.10	54.00	-23.90	Horizontal
7311.00	23.20	38.15	11.71	36.23	36.83	54.00	-17.17	Horizontal
9748.00	24.10	37.34	14.25	37.44	38.25	54.00	-15.75	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Mode:	802.11n(H40)	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4904.00	41.24	31.73	8.68	39.53	42.12	74.00	-31.88	Vertical
7356.00	33.99	38.19	11.74	36.18	47.74	74.00	-26.26	Vertical
9808.00	36.48	37.29	14.29	37.52	50.54	74.00	-23.46	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
4904.00	38.57	31.73	8.68	39.53	39.45	74.00	-34.55	Horizontal
7356.00	32.60	38.19	11.74	36.18	46.35	74.00	-27.65	Horizontal
9808.00	33.49	37.29	14.29	37.52	47.55	74.00	-26.45	Horizontal
12310.00	*					74.00		Horizontal
14772.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4904.00	31.03	31.73	8.68	39.53	31.91	54.00	-22.09	Vertical
7356.00	23.56	38.19	11.74	36.18	37.31	54.00	-16.69	Vertical
9808.00	26.13	37.29	14.29	37.52	40.19	54.00	-13.81	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
4904.00	28.28	31.73	8.68	39.53	29.16	54.00	-24.84	Horizontal
7356.00	22.13	38.19	11.74	36.18	35.88	54.00	-18.12	Horizontal
9808.00	23.04	37.29	14.29	37.52	37.10	54.00	-16.90	Horizontal
12310.00	*					54.00		Horizontal
14772.00	*					54.00		Horizontal

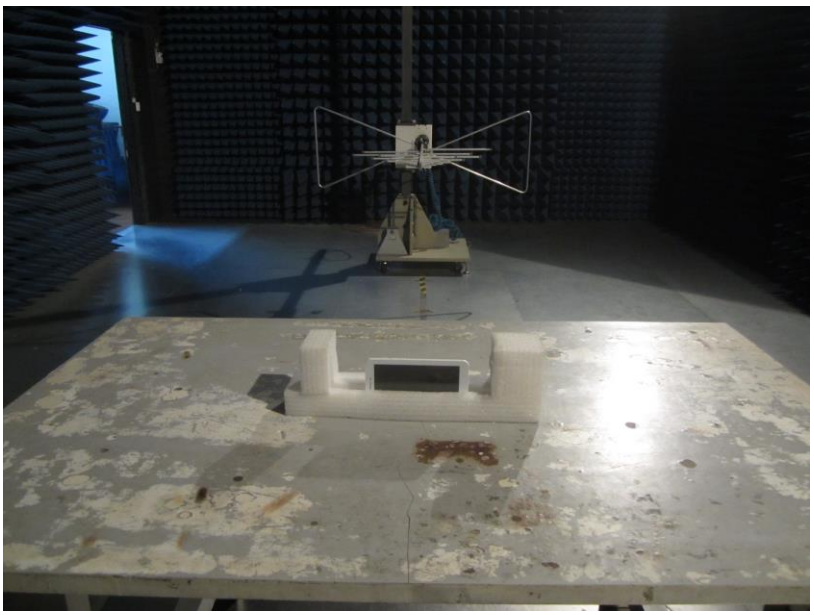
Remark:

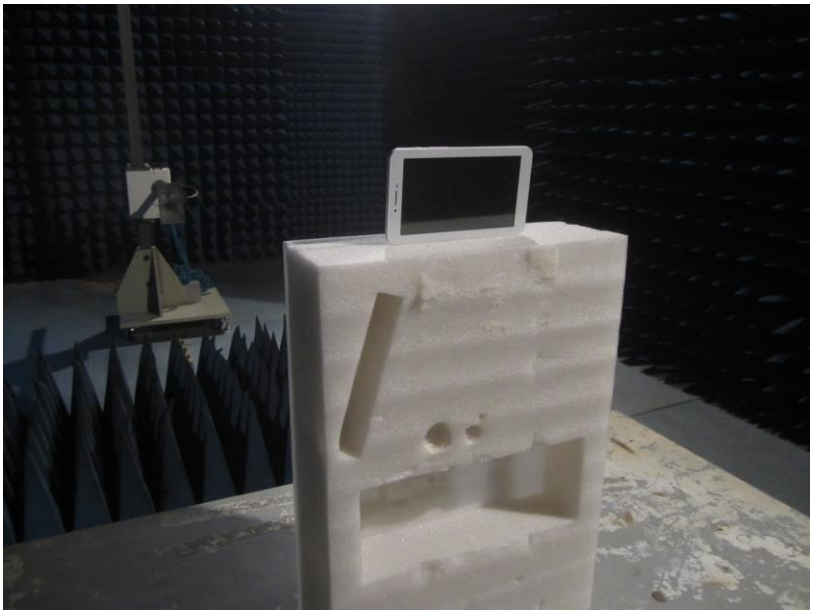
1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

8 Test Setup Photo

Conducted emissions:

Radiated emissions:





9 EUT Constructional Details

Reference to the test report No.: TMC1505036501

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