

RF TEST REPORT

Applicant iRay Technology Co., Ltd.

FCC ID 2ACHK-01070189

Product Wireless Digital Flat Panel Detector

Model NDT1417MA

Report No. R2305A0584-R1

Issue Date August 17, 2023

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15C (2022)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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Summary of Measurement Results

Number	Test Case	Clause in FCC rules	Verdict
1	Maximum output power	15.247(b)(3)	Not Required ^{Note 1}
2	6 dB bandwidth	15.247(a)(2)	Not Required ^{Note 1}
3	Power spectral density	15.247(e)	Not Required ^{Note 1}
4	Band Edge	15.247(d)	Not Required ^{Note 1}
5	Spurious RF Conducted Emissions	15.247(d)	Not Required ^{Note 1}
6	Unwanted Emissions	15.247(d), 15.205, 15.209	(802.11b CH11, 802.11g CH11, 802.11n (HT20) CH11, 802.11n (HT40) CH9) PASS
7	Conducted Emissions	15.207	Not Required ^{Note 1}

Date of Testing: June 15, 2023 ~June 21, 2023
 Date of Sample Received: May 30, 2023

Note:

1. Not Required means after evaluation, test items are no need to recorded, the test results please refers to Original Report.
2. All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.

NDT1417MA (Report No.: R2305A0584-R1) is a variant model of Mars1417X (Report No.: R2006A0398-R1).

Tested case refers to the following table.

Test Case	Variant (NDT1417MA)
Maximum output power	Verify Maximum output power. Power of new variant is varied due to measurement uncertainty, and sample tolerance of the acceptance range, so they were not recorded in the report.
Power spectral density	Verify Power spectral density, and did not worsen, so they were not recorded in the report.
Unwanted Emission	Tested Unwanted Emissions (802.11b CH11, 802.11g CH11, 802.11n (HT20) CH11, 802.11n (HT40) CH9), and recorded in the report.

This report is used in conjunction with the original report (Report No.: R2006A0398-R1).

The detailed product change description please refers to the FCC class II permissive change application letter.

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.

1.2. Test Facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

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

A2LA (Certificate Number: 3857.01)

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

1.3. Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
Address: Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China
City: Shanghai
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E-mail: xukai@ta-shanghai.com

2. General Description of Equipment Under Test

2.1. Applicant and Manufacturer Information

Applicant	iRay Technology Co., Ltd.
Applicant address	RM 202, Building 7, No. 590, Ruiqing RD., Pudong, Shanghai, China
Manufacturer	iRay Technology Taicang Ltd.
Manufacturer address	No.33 Xinggang Road, Taicang Port Economic and Technological Development Zone, Taicang, 215434 Jiangsu, China

2.2. General Information

EUT Description	
Model	NDT1417MA
Lab internal SN	R2305A0584/S01
Hardware Version	A0
Software Version	SDK: 4.4.0.8885 ARM: Core: 2.1.30.18 Kernel: 1.0.5.7 FPGA: 2.11.7.7 MCU: 2.10.0.14
Power Supply	Battery / 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: 4.96 dBi Antenna 2: 6.54 dBi
Additional Beamforming Gain	NA
Operating Frequency Range(s)	802.11b/g/n(HT20): 2412 ~ 2462 MHz 802.11n(HT40): 2422 ~ 2452 MHz
Modulation Type	802.11b: DSSS 802.11g/n: OFDM
EUT Accessory	
Battery	Manufacturer: iRay Technology Co., Ltd. Model: BATTERY-KV Ratings: 10.8Vdc, 4125mAh
Adapter	Manufacturer: Shenzhen Longxc Power Supply Co., LTD Model: LXCP120-0240500
Charger	Manufacturer: iRay Technology Taicang Ltd. Model: CHARGER-COMBO
DC cable	Manufacturer: iRay Technology Co. Ltd. 15m
Note: 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.	

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 (2022) Radio Frequency Devices

ANSI C63.10-2013

Reference standard:

KDB 558074 D01 15.247 Meas Guidance v05r02

KDB 662911 D01 Multiple Transmitter Output v02r01

4. Test Configuration

Test Mode

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 lie-down position (X axis) and the loop antenna is vertical, the others are vertical and horizontal. 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.

The test software is used MTS8310 V2.0.0.0.

Worst-case data rates are shown as following table.

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

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

Test Cases	Antenna 1	Antenna 2	MIMO
Unwanted Emissions	802.11b/g	-	802.11n HT20 802.11n HT40

According to RF Output power results in Original Report, MIMO was selected as the worst antenna for 802.11n HT20/ HT40. SISO Antenna 1 was selected as the worst SISO antenna for 802.11b/g.

4.1. Unwanted Emission

Ambient Condition

Temperature	Relative humidity
20°C ~ 25°C	45% ~ 50%

Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.10.

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. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing. Sweep the Restricted Band and the emissions less than 20 dB below the permissible value are reported.

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.

This method refer to ANSI C63.10.

The procedure for peak unwanted emissions measurements above 1000 MHz is as follows:

Set the spectrum analyzer in the following:

9kHz~150 kHz

RBW=200Hz, VBW=1kHz/ Sweep=AUTO

150 kHz~30MHz

RBW=9KHz, VBW=30KHz,/ Sweep=AUTO

Below 1GHz

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

a) Peak emission levels are measured by setting the instrument as follows:

Above 1GHz

PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO

b) Average emission levels are measured by setting the instrument as follows:

Above 1GHz

AVERAGE: RBW=1MHz / VBW=3MHz / Sweep=AUTO

c) Detector: The measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

d) Averaging type = power (i.e., rms) (As an alternative, the detector and averaging type may be set for linear voltage averaging. Some instruments require linear display mode to use linear voltage

averaging. Log or dB averaging shall not be used.)

e) Sweep time = auto.

f) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, then the number of traces shall be increased by a factor of $1 / D$, where D is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific emission is demonstrated to be continuous—i.e., 100% duty cycle—then rather than turning ON and OFF with the transmit cycle, at least 100 traces shall be averaged.)

g) If tests are performed with the EUT transmitting at a duty cycle less than 98%, then a correction factor shall be added to the measurement results prior to comparing with the emission limit, to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:

1) If power averaging (rms) mode was used in the preceding step e), then the correction factor is $[10 \log (1 / D)]$, where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 3 dB shall be added to the measured emission levels.

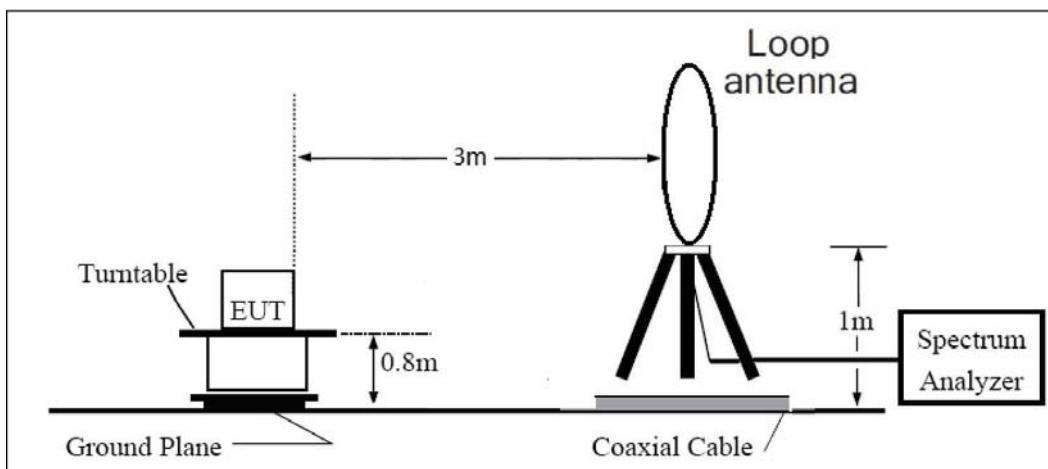
2) If linear voltage averaging mode was used in the preceding step e), then the correction factor is $[20 \log (1 / D)]$, where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB shall be added to the measured emission levels.

3) If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission.

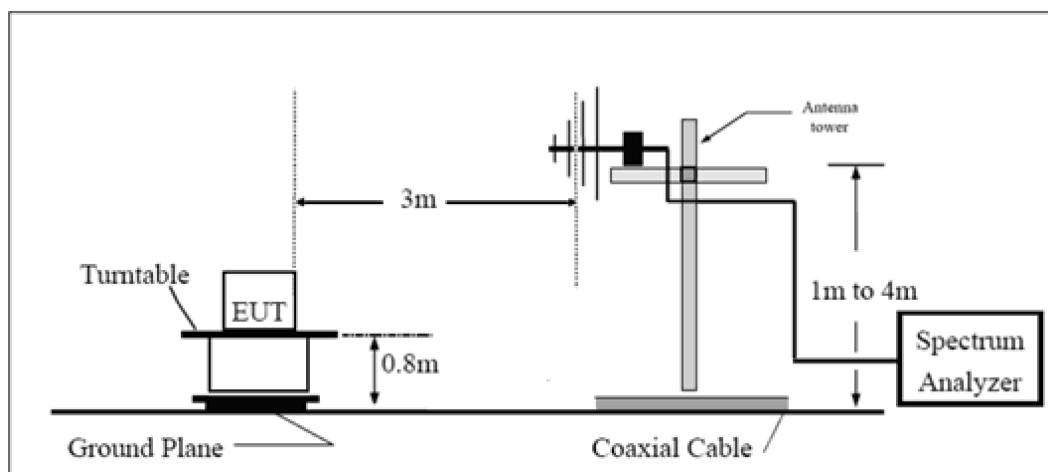
The test is in transmitting mode.

Test Setup

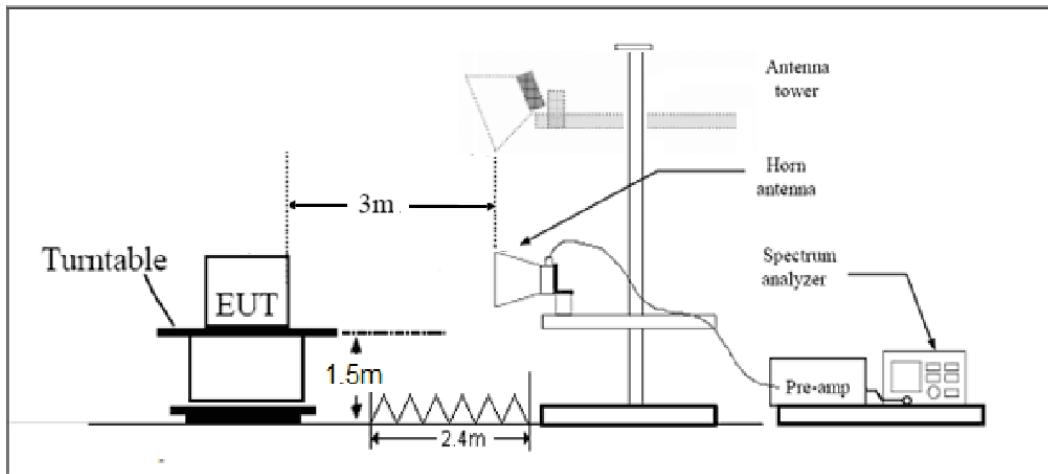
9KHz~ 30MHz



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(μ V/m)	Field strength(dB μ V/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.

Peak Limit=74 dB μ V/m

Average Limit=54 dB μ V/m

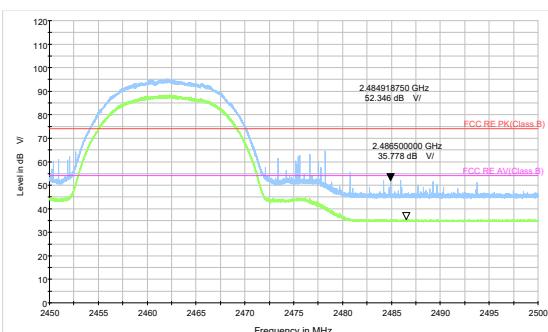
Spurious Radiated Emissions are permitted in any of the frequency bands listed below:

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			

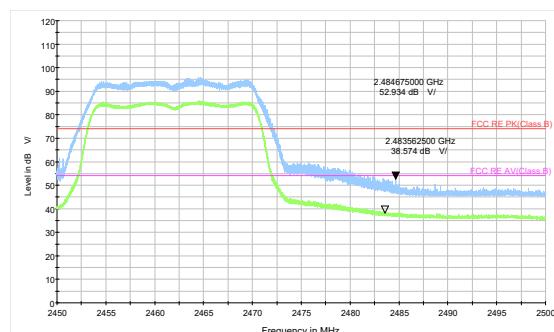
Measurement Uncertainty

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

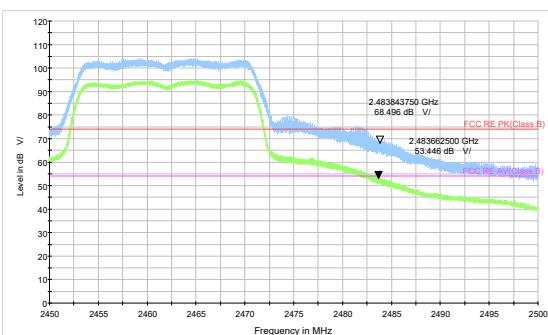
Frequency	Uncertainty
9KHz-30MHz	3.55 dB
30MHz-200MHz	4.17 dB
200MHz-1GHz	4.84 dB
1-18GHz	4.35 dB
18-26.5GHz	5.90 dB
26.5GHz~40GHz	5.92 dB

Test Results:


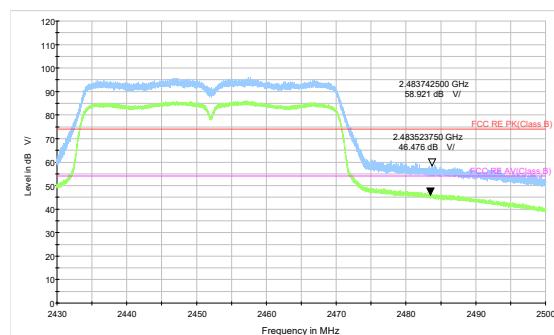
802.11b-Channel 11 Peak+ Average



802.11g-Channel 11 Peak+ Average



802.11n HT20 -Channel 11 Peak+ Average



802.11n HT40 –Channel 9 Peak+ Average

Result of RE

Test result

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the Emissions in the frequency band 9kHz-30MHz are more than 20dB below the limit are not reported.

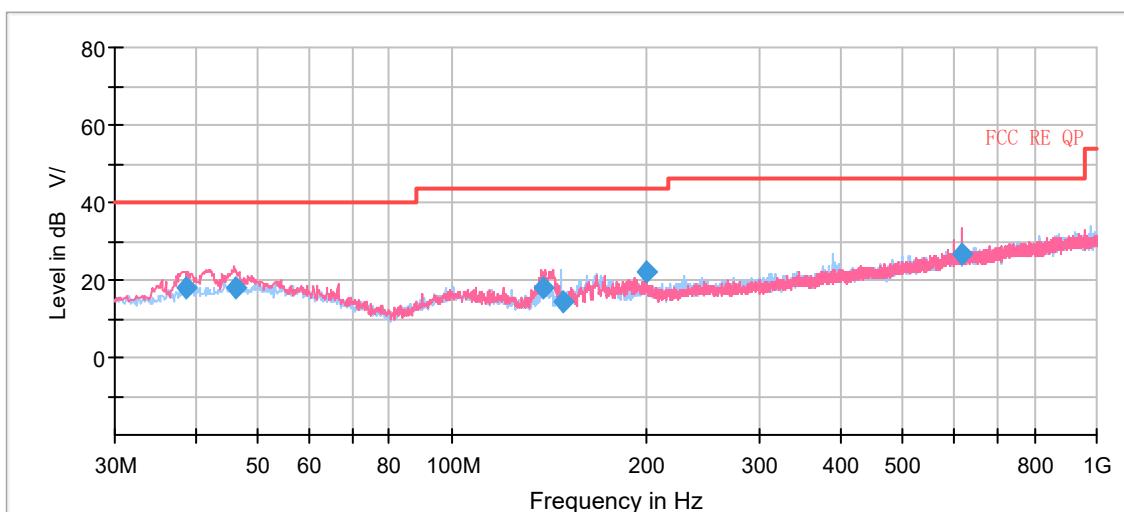
The following graphs display the maximum values of horizontal and vertical by software. For above 1GHz, Blue trace uses the peak detection, Green trace uses the average detection.

Continuous TX mode:

Wi-Fi 2.4G

During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels, 802.11n (HT20), Channel 11 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

A symbol ($\text{dB } \text{V/}$) in the test plot below means (dB μ V/m)

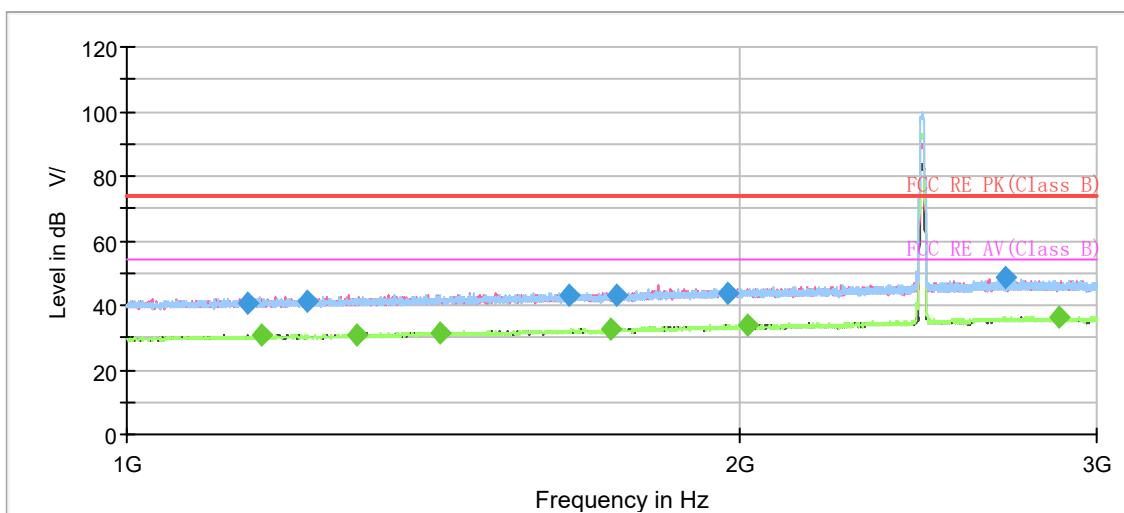


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
38.685000	18.16	40.00	21.84	100.0	V	219.0	19.1
46.285000	18.15	40.00	21.85	100.0	V	178.0	20.4
138.512500	18.20	43.50	25.30	100.0	V	127.0	14.9
148.216250	14.13	43.50	29.37	125.0	H	270.0	14.7
199.992500	22.26	43.50	21.24	100.0	V	150.0	17.9
618.387500	26.79	46.00	19.21	175.0	V	290.0	26.9

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

2. Margin = Limit – Quasi-Peak



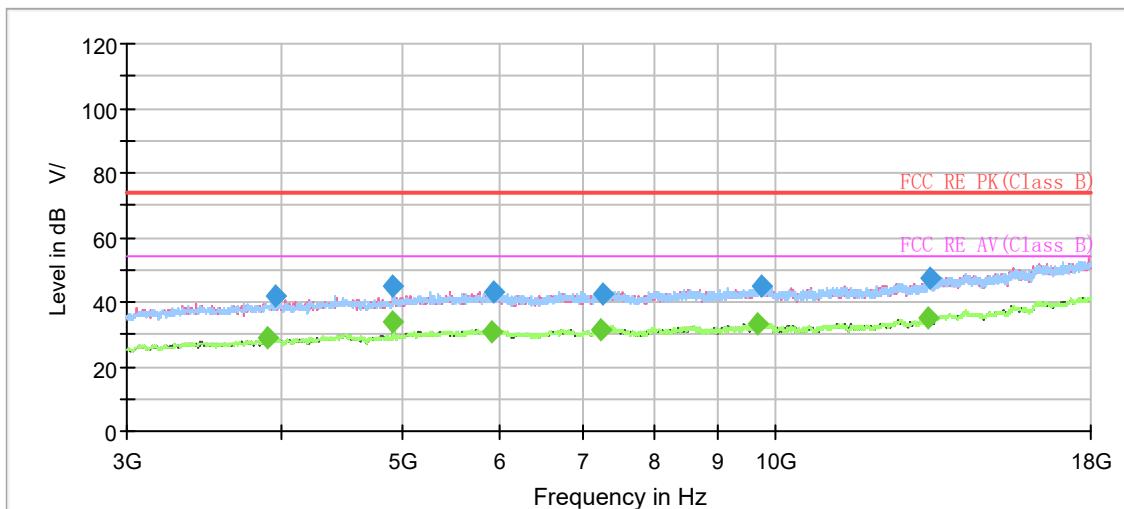
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1147.750000	40.65	---	74.00	33.35	500.0	100.0	H	122.0	-8.1
1165.000000	---	30.63	54.00	23.37	500.0	200.0	H	0.0	-8.0
1228.000000	40.96	---	74.00	33.04	500.0	100.0	V	7.0	-7.6
1297.500000	---	31.05	54.00	22.95	500.0	200.0	V	348.0	-7.2
1427.000000	---	31.68	54.00	22.32	500.0	100.0	H	273.0	-6.3
1650.250000	43.01	---	74.00	30.99	500.0	200.0	V	320.0	-5.2
1729.000000	---	32.88	54.00	21.12	500.0	100.0	V	66.0	-4.8
1742.250000	42.78	---	74.00	31.22	500.0	200.0	V	6.0	-4.8
1977.250000	43.73	---	74.00	30.27	500.0	100.0	V	250.0	-3.5
2021.250000	---	34.09	54.00	19.91	500.0	200.0	H	4.0	-3.3
2704.750000	48.39	---	74.00	25.61	500.0	100.0	V	189.0	-0.1
2875.250000	---	36.38	54.00	17.62	500.0	200.0	H	0.0	0.2

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

2. Margin = Limit -MAX Peak/ Average



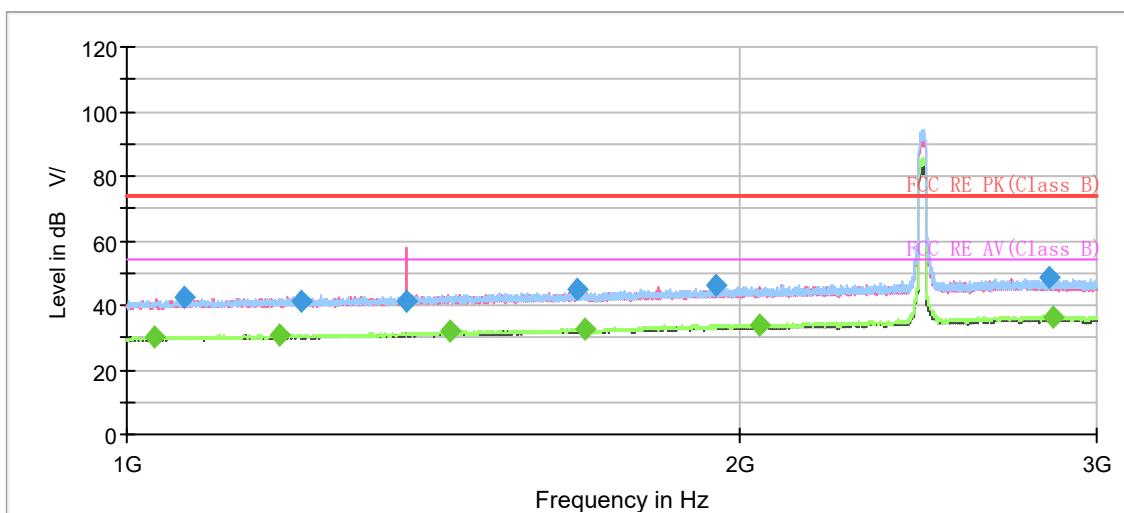
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3903.750000	---	28.93	54.00	25.07	500.0	200.0	H	152.0	-5.7
3956.250000	41.81	---	74.00	32.19	500.0	200.0	V	62.0	-5.6
4923.750000	45.03	---	74.00	28.97	500.0	100.0	H	120.0	-3.8
4925.625000	---	33.92	54.00	20.08	500.0	200.0	H	90.0	-3.8
5904.375000	---	30.97	54.00	23.03	500.0	100.0	V	193.0	-2.0
5923.125000	43.37	---	74.00	30.63	500.0	200.0	V	247.0	-2.0
7250.625000	---	31.47	54.00	22.53	500.0	100.0	H	229.0	-0.8
7260.000000	42.66	---	74.00	31.34	500.0	200.0	H	101.0	-0.8
9675.000000	---	33.12	54.00	20.88	500.0	200.0	V	0.0	1.2
9768.750000	45.16	---	74.00	28.84	500.0	200.0	H	54.0	1.5
13295.625000	---	35.22	54.00	18.78	500.0	200.0	V	216.0	5.0
13340.625000	47.37	---	74.00	26.63	500.0	100.0	H	142.0	5.0

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

2. Margin = Limit -MAX Peak/ Average

802.11g CH11



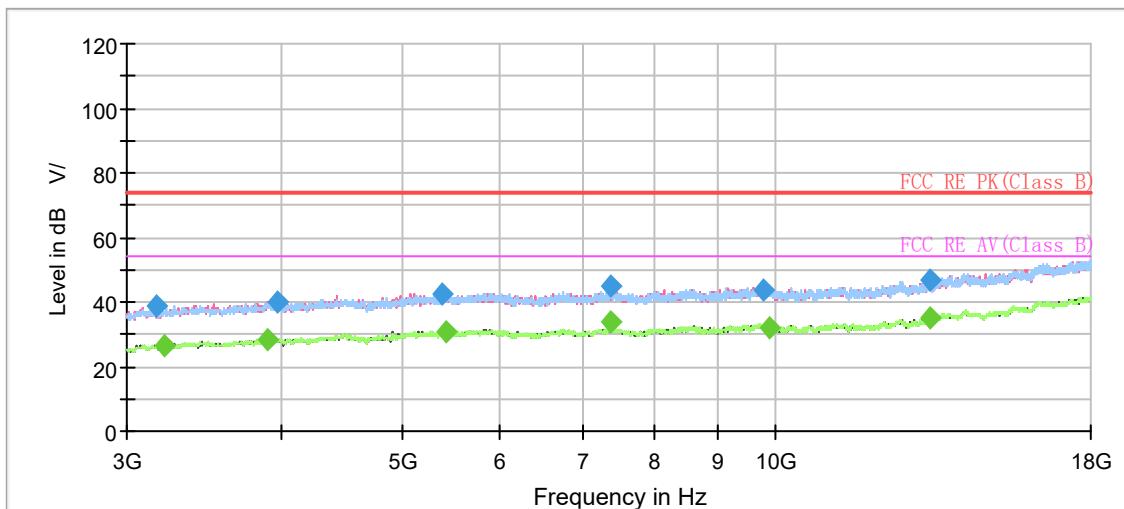
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1031.500000	---	29.85	54.00	24.15	500.0	200.0	H	240.0	-8.9
1068.000000	42.43	---	74.00	31.57	500.0	200.0	V	0.0	-8.6
1189.500000	---	30.80	54.00	23.20	500.0	200.0	H	286.0	-7.8
1219.250000	41.09	---	74.00	32.91	500.0	200.0	H	171.0	-7.6
1374.000000	41.26	---	74.00	32.74	500.0	200.0	H	286.0	-6.7
1441.250000	---	31.83	54.00	22.17	500.0	200.0	H	347.0	-6.2
1666.500000	44.67	---	74.00	29.33	500.0	200.0	H	347.0	-5.1
1679.250000	---	32.73	54.00	21.27	500.0	200.0	H	235.0	-5.0
1947.250000	45.86	---	74.00	28.14	500.0	100.0	V	245.0	-3.7
2046.750000	---	34.09	54.00	19.91	500.0	200.0	H	331.0	-3.2
2841.250000	48.38	---	74.00	25.62	500.0	200.0	H	249.0	0.1
2855.500000	---	36.57	54.00	17.43	500.0	200.0	H	0.0	0.2

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

2. Margin = Limit -MAX Peak/ Average



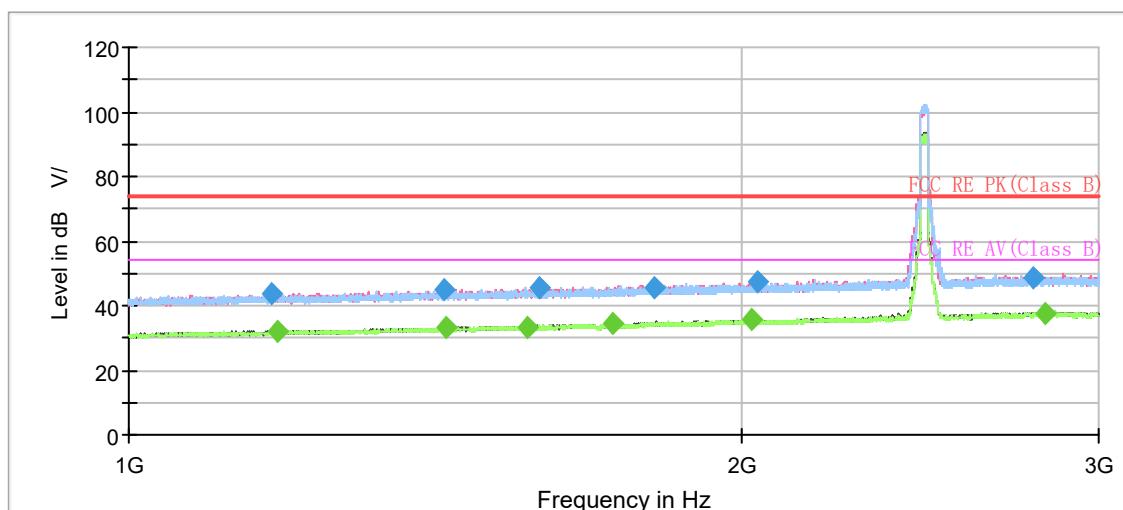
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3168.750000	38.81	---	74.00	35.19	500.0	100.0	V	239.0	-8.9
3211.875000	---	26.24	54.00	27.76	500.0	200.0	H	58.0	-8.6
3900.000000	---	28.58	54.00	25.42	500.0	200.0	H	38.0	-5.7
3976.875000	39.92	---	74.00	34.08	500.0	200.0	H	236.0	-5.5
5388.750000	42.33	---	74.00	31.67	500.0	200.0	H	194.0	-2.6
5426.250000	---	30.79	54.00	23.21	500.0	100.0	V	209.0	-2.5
7387.500000	45.18	---	74.00	28.82	500.0	200.0	H	23.0	-0.7
7387.500000	---	33.92	54.00	20.08	500.0	200.0	H	23.0	-0.7
9796.875000	43.85	---	74.00	30.15	500.0	100.0	H	283.0	1.4
9898.125000	---	32.15	54.00	21.85	500.0	100.0	V	219.0	1.2
13340.625000	---	35.03	54.00	18.97	500.0	200.0	H	0.0	5.0
13340.625000	46.83	---	74.00	27.17	500.0	100.0	V	21.0	5.0

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

2. Margin = Limit -MAX Peak/ Average

802.11n (HT20) CH11



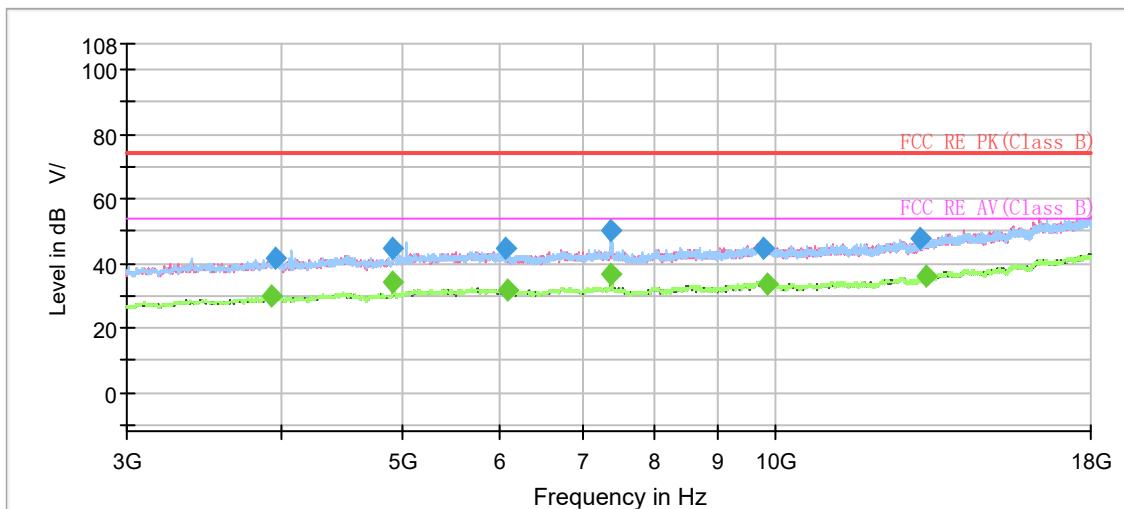
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1174.750000	43.39	---	74.00	30.61	500.0	200.0	V	216.0	-7.9
1183.000000	---	32.26	54.00	21.74	500.0	200.0	H	47.0	-7.8
1429.750000	44.70	---	74.00	29.30	500.0	100.0	H	219.0	-6.3
1431.750000	---	33.01	54.00	20.99	500.0	100.0	H	314.0	-6.3
1570.750000	---	33.22	54.00	20.78	500.0	200.0	V	41.0	-5.6
1592.750000	45.85	---	74.00	28.15	500.0	200.0	H	52.0	-5.5
1730.750000	---	34.20	54.00	19.80	500.0	200.0	H	250.0	-4.8
1814.500000	45.41	---	74.00	28.59	500.0	100.0	V	66.0	-4.4
2026.750000	---	35.43	54.00	18.57	500.0	200.0	V	68.0	-3.3
2040.500000	47.48	---	74.00	26.52	500.0	200.0	H	315.0	-3.3
2786.250000	48.71	---	74.00	25.29	500.0	100.0	H	270.0	0.0
2821.500000	---	37.60	54.00	16.40	500.0	100.0	V	75.0	0.1

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

2. Margin = Limit -MAX Peak/ Average



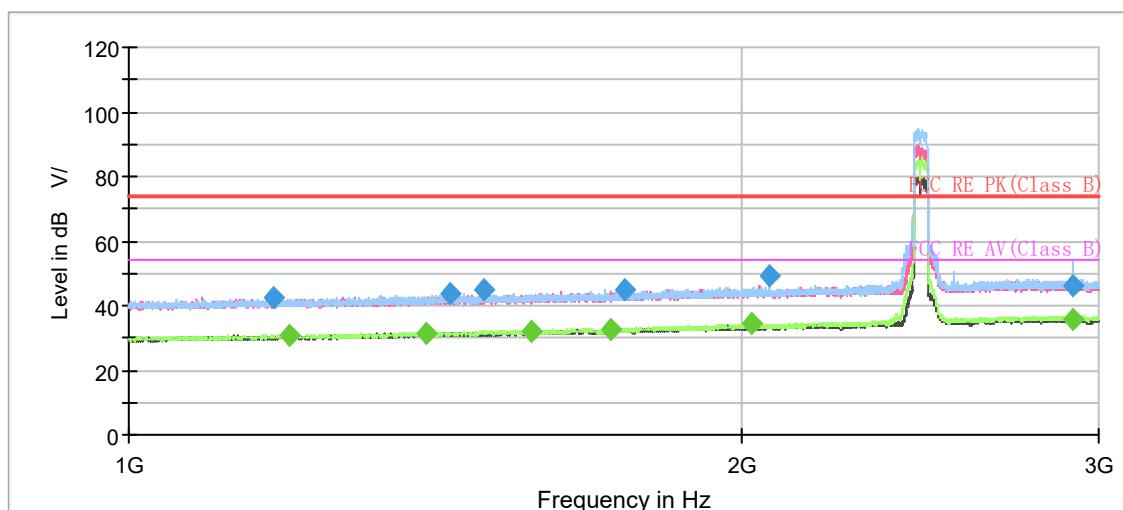
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3920.625000	---	29.91	54.00	24.09	500.0	200.0	V	165.0	-5.6
3961.875000	41.51	---	74.00	32.49	500.0	200.0	V	1.0	-5.6
4923.750000	---	34.22	54.00	19.78	500.0	100.0	V	240.0	-3.8
4923.750000	44.53	---	74.00	29.47	500.0	100.0	V	240.0	-3.8
6061.875000	44.31	---	74.00	29.69	500.0	100.0	H	290.0	-1.9
6078.750000	---	31.49	54.00	22.51	500.0	100.0	V	245.0	-1.9
7381.875000	---	36.58	54.00	17.42	500.0	100.0	H	194.0	-0.7
7385.625000	50.44	---	74.00	23.56	500.0	100.0	H	199.0	-0.7
9808.125000	44.87	---	74.00	29.13	500.0	200.0	H	222.0	1.4
9851.250000	---	33.69	54.00	20.31	500.0	200.0	V	48.0	1.3
13102.500000	47.77	---	74.00	26.23	500.0	200.0	V	58.0	4.9
13256.250000	---	35.81	54.00	18.19	500.0	200.0	H	324.0	5.0

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

2. Margin = Limit -MAX Peak/ Average

802.11n (HT40) CH9



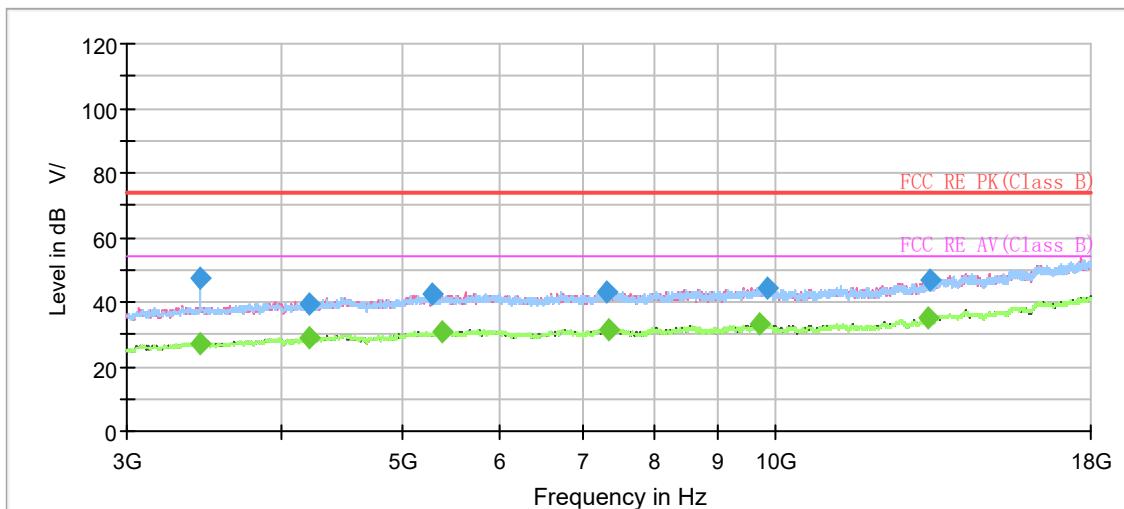
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1179.250000	42.35	---	74.00	31.65	500.0	100.0	V	231.0	-7.9
1200.250000	---	30.94	54.00	23.06	500.0	200.0	H	129.0	-7.7
1400.000000	---	31.64	54.00	22.36	500.0	200.0	H	315.0	-6.5
1439.250000	43.40	---	74.00	30.60	500.0	200.0	H	202.0	-6.2
1495.750000	44.63	---	74.00	29.37	500.0	200.0	H	52.0	-6.0
1576.500000	---	31.72	54.00	22.28	500.0	200.0	V	174.0	-5.6
1726.250000	---	32.91	54.00	21.09	500.0	200.0	H	256.0	-4.8
1752.250000	44.93	---	74.00	29.07	500.0	100.0	V	142.0	-4.7
2026.750000	---	34.16	54.00	19.84	500.0	200.0	H	319.0	-3.3
2068.000000	49.14	---	74.00	24.86	500.0	200.0	H	247.0	-3.1
2912.000000	---	35.97	54.00	18.03	500.0	200.0	H	337.0	0.3
2913.750000	45.86	---	74.00	28.14	500.0	100.0	V	74.0	0.3

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

2. Margin = Limit -MAX Peak/ Average



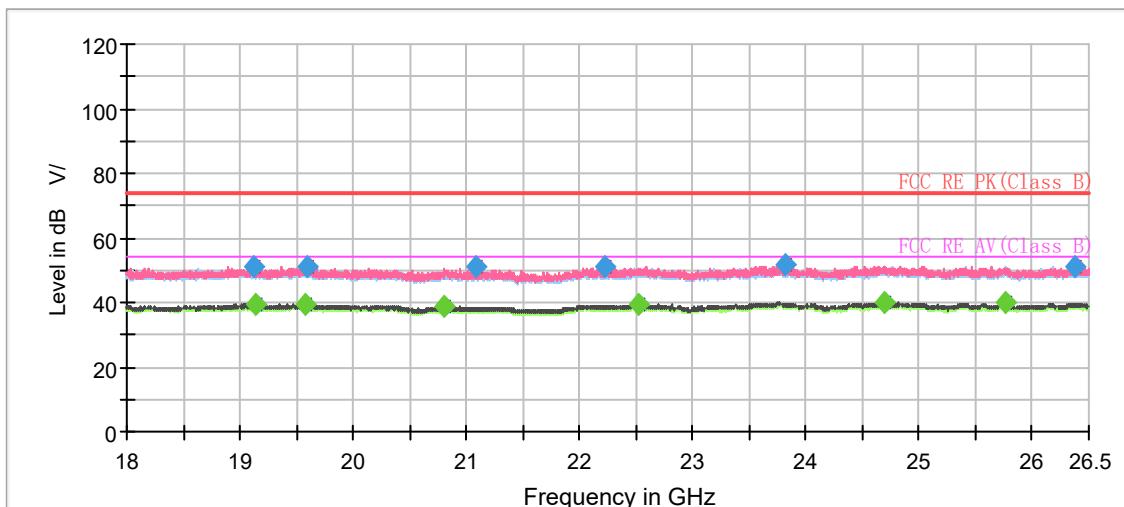
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3440.625000	47.17	---	74.00	26.83	500.0	100.0	H	226.0	-7.7
3444.375000	---	27.31	54.00	26.69	500.0	100.0	V	103.0	-7.6
4216.875000	39.37	---	74.00	34.63	500.0	100.0	V	61.0	-5.3
4218.750000	---	28.74	54.00	25.26	500.0	100.0	V	27.0	-5.3
5298.750000	42.46	---	74.00	31.54	500.0	200.0	V	196.0	-2.5
5385.000000	---	30.79	54.00	23.21	500.0	200.0	V	80.0	-2.6
7318.125000	43.18	---	74.00	30.82	500.0	200.0	H	115.0	-0.7
7348.125000	---	31.47	54.00	22.53	500.0	200.0	H	161.0	-0.7
9727.500000	---	33.01	54.00	20.99	500.0	200.0	V	163.0	1.4
9881.250000	44.51	---	74.00	29.49	500.0	100.0	V	76.0	1.3
13314.375000	---	34.88	54.00	19.12	500.0	200.0	V	59.0	5.0
13342.500000	46.61	---	74.00	27.39	500.0	200.0	H	244.0	5.0

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

2. Margin = Limit -MAX Peak/ Average

During the test, the Radiates Emission from 18GHz to 26.5GHz was performed in all modes with all channels, 802.11n (HT20), Channel 11 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.



Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
19118.812500	51.03	---	74.00	22.97	500.0	200.0	V	274.0	-5.7
19141.125000	---	39.19	54.00	14.81	500.0	100.0	V	43.0	-5.7
19582.062500	---	39.62	54.00	14.38	500.0	100.0	V	206.0	-5.3
19596.937500	51.16	---	74.00	22.84	500.0	100.0	V	105.0	-5.3
20799.687500	---	38.66	54.00	15.34	500.0	100.0	V	285.0	-5.1
21089.750000	50.78	---	74.00	23.22	500.0	100.0	V	62.0	-5.1
22222.375000	50.92	---	74.00	23.08	500.0	200.0	V	299.0	-4.1
22522.000000	---	39.48	54.00	14.52	500.0	100.0	V	125.0	-3.9
23820.375000	51.82	---	74.00	22.18	500.0	100.0	H	25.0	-2.5
24700.125000	---	40.05	54.00	13.95	500.0	100.0	V	129.0	-2.1
25762.625000	---	39.81	54.00	14.19	500.0	100.0	V	181.0	-2.6
26382.062500	51.26	---	74.00	22.74	500.0	100.0	V	266.0	-2.3

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

2. Margin = Limit -MAX Peak/ Average

5. Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Spectrum Analyzer	R&S	FSV40	101298	2023-05-12	2024-05-11
EMI Test Receiver	R&S	ESCI3	100948	2023-05-12	2024-05-11
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2023-04-16	2026-04-15
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	01111	2022-10-25	2025-10-24
Horn Antenna	Schwarzbeck	BBHA 9120D	430	2021-07-26	2024-07-25
Horn Antenna	ETS-Lindgren	3160-09	00102643	2021-10-10	2024-10-09
Software	R&S	EMC32	9.26.0	/	/

ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.

ANNEX B: Test Setup Photos

The Test Setup Photos are submitted separately.

ANNEX C: FCC class II permissive change application letter

The FCC class II permissive change application letter are submitted separately.

***** END OF REPORT *****