

TEST REPORT

Application No.: SUCR2602000119TL
Applicant: Shanghai Sunmi Technology Co.,Ltd.
Address of Applicant: Room 505,No.388,Song Hu Road,Yang Pu District,Shanghai,China
Manufacturer: Shanghai Sunmi Technology Co.,Ltd.
Address of Manufacturer: Room 505,No.388,Song Hu Road,Yang Pu District,Shanghai,China
Equipment Under Test (EUT):
EUT Name: Wireless Data Terminal
Model No.: TF41A
Trade Mark: SUNMI
FCC ID: 2AH25M3WN
Standard(s) : 47 CFR Part 15, Subpart C 15.247
Date of Receipt: 2026-02-04
Date of Test: 2026-02-28 to 2026-03-05
Date of Issue: 2026-03-09

Test Result:
Pass*

* In the configuration tested, the EUT complied with the standards specified above.

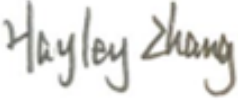
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Revision Record			
Version	Description	Date	Remark
01	Original	2026-03-09	/

Authorized for issue by:			
Tested By			
		Hayley Zhang/Project Engineer	
Approved By			
		Cedar Cheng /Reviewer	



2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)	Pass

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.247	ANSI C63.10-2020/Cor1-2023 Section 6.10.5 & 11.12	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Below 1GHz		ANSI C63.10-2020/Cor1-2023 Section 6.4,6.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Above 1GHz		ANSI C63.10-2020/Cor1-2023 Section 6.6 & 11.12	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass

Remark:

This test report (Report No.: SUCR260200011904 issue on 2026-03-09) is based on the original test report (Report No.: SUCR251100108007 issue on December 5, 2025).

Review this report and original report, this report just changing the parts according to the declaration letter from client.

Considering to the difference, pre-scan were performed on the sample in this report to find the items which can be influential to the result in the original test report for fully retest.

Therefore in this report Radiated Emissions which fall in the restricted bands and Radiated Spurious Emissions were fully tested in this report, and other items data please refer to the previous report with report number SUCR251100108007 issue on December 5, 2025.

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4 General Information

4.1 Details of E.U.T.

Power supply:	Adapter1: CK18W02U Input: AC100-240V 50/60Hz 0.5A Output: DC5V3A/9V2A/12V1.5A Adapter2: TD-661G120167UF01 Input: AC100-240V 50/60Hz 0.6A Output: DC5V3A/9V2.22A/12V1.67A
Operation Frequency:	802.11b/g/n(HT20)/ax(HE20): 2412MHz to 2462MHz
Modulation Type:	802.11b: DSSS (DBPSK, DQPSK, CCK); 802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM); 802.11ax: OFDM/OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
Number of Channels:	802.11b/g/n(HT20)/ax(HE20): 11
Channel Spacing:	5MHz
Antenna Type:	FPC Antenna
Antenna Gain:	0.76dBi(Ant3); 2.64dBi(Ant2)
Smart System:	SISO: 802.11b/g; MIMO: 802.11n/ax: 2Tx & 2Rx

4.2 Environment Parameter

Environment Parameter	Selected Values During Tests	
Relative Humidity	43-44%	
Value	Temperature(°C)	Voltage(V)
NTNV	23	3.87
Note: NV:Normal Voltage LV:Low Extreme Test Voltage HV:High Extreme Test Voltage NT:Normal Temperature LT:Low Extreme Test Temperature HT:High Extreme Test Temperature		

4.3 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
--	--	--	--
The EUT has been tested as an independent unit.			

4.4 Measurement Uncertainty & Decision Rule

No.	Item	Measurement Uncertainty
1	RF Radiated power	$\pm 1.56\text{dB}$ (9KHz-30MHz)
		$\pm 4.80\text{dB}$ (30MHz-1GHz)
		$\pm 4.80\text{dB}$ (1GHz-18GHz)
		$\pm 4.80\text{dB}$ (18GHz-40GHz)
2	Temperature test	$\pm 1^{\circ}\text{C}$
3	Humidity test	$\pm 3\%$
4	Supply voltages	$\pm 1\%$
5	Time	$\pm 3\%$
Remark: The U_{lab} (lab Uncertainty) is less than $U_{\text{CISPR/ETSI}}$ (CISPR/ETSI Uncertainty), so the test results – compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit; – non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.		

4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu)
Pilot Free Trade Zone

No tests were sub-contracted.

Note:

1.SGS is not responsible for wrong test results due to incorrect information (e.g., max. internal working frequency, antenna gain, cable loss, etc) is provided by the applicant. (If applicable).

2.SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (If applicable).

3. Sample source: sent by customer.

4.6 Test Facility

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

• **A2LA (Certificate No. 6336.01)**

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.is accredited by the American Association for Laboratory Accreditation (A2LA).

• **FCC (Designation Number: CN1312)**

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. has been recognized as an accredited testing laboratory. Test Firm Registration Number:717327

• **ISED (CAB Identifier: CN0120)**

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory.

Company Number: 27594

4.7 Deviation from Standards

None

4.8 Abnormalities from Standard Conditions

None

5 Equipment List

Item	Equipment	Manufacturer	Model	Inventory No	Cal Date	Cal. Due Date
RF Radiated Test						
1	Semi-Anechoic Chamber	Brilliant-emc	N/A	SUWI-04-02-01	6/3/2023	6/2/2026
2	Signal Analyzer	ROHDE&SCHWARZ	FSW43	SUWI-01-02-04	1/14/2026	1/13/2027
3	Signal Analyzer	KEYSIGHT	N9020A	SUWI-01-02-09	11/21/2025	11/20/2026
4	Test receiver	ROHDE&SCHWARZ	ESR7	SUWI-01-10-01	1/14/2026	1/13/2027
5	Signal Generator	ROHDE&SCHWARZ	SMW100A	SUWI-01-18-01	1/14/2026	1/13/2027
6	Receiving antenna	SCHWRZBECK MESS-ELEKTRONIK	VULB 9168	SUWI-01-11-04	9/10/2025	9/9/2027
7	Receiving antenna	SCHWRZBECK MESS-ELEKTRONIK	BBHA 9120D	SUWI-01-11-02	5/7/2025	5/6/2027
8	Receiving antenna	SCHWRZBECK MESS-ELEKTRONIK	BBHA 9170	SUWI-01-11-03	5/7/2025	5/6/2027
9	Active Loop Antenna	SCHWRZBECK MESS-ELEKTRONIK	FMZB 1519B	SUWI-01-21-01	5/7/2025	5/6/2027
10	Amplifier	Tonscend	TAP9K3G40	SUWI-01-14-01	1/14/2026	1/13/2027
11	Amplifier	Tonscend	TAP01018050	SUWI-01-14-02	1/14/2026	1/13/2027
12	Amplifier	Tonscend	TAP18040048	SUWI-01-14-03	1/14/2026	1/13/2027
13	Wideband Radio Communication Tester	Anritsu	MT8820C	SUWI-01-26-01	11/21/2025	11/20/2026
14	Wideband Radio Communication Tester	Anritsu	MT8821C	SUWI-01-26-03	8/25/2025	8/24/2026
15	Wideband Radio Communication Tester	ROHDE&SCHWARZ	CMW500	SUWI-01-16-09	8/26/2025	8/25/2026
16	Radio Communication Analyzer	StarPoint	SP9500E	SUWI-01-28-02	11/21/2025	11/20/2026
17	Signal Generator	ROHDE&SCHWARZ	SMB100A	SUWI-01-08-01	1/14/2026	1/13/2027
18	DC Power Supply	HYELEC	HY3005B	SUWI-01-18-01	1/14/2026	1/13/2027
19	Temperature and humidity meter	MingGao	TH101B	SUWI-01-01-05	2/11/2026	2/10/2027
20	Measurement Software	Tonscend	JS32-RE 4.0.0.0	SUWI-02-09-06	NCR	NCR
21	RF Control unit	Tonscend	JS0806-1	SUWI-02-20-01	NCR	NCR
22	RFCables	Tonscend	NA	SUWI-01-03-02	NCR	NCR

Remark: NCR=No Calibration Requirement.

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)

6.1.2 Conclusion

Standard 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(b) (4) requirement: The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:

The antenna is FPC Antenna and no consideration of replacement. The best case gain of the antenna is 0.76dBi(Ant3); 2.64dBi(Ant2).

Antenna location: Refer to internal photo.

Cyclic Delay Diversity (CDD) System:

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

If all antennas have the same gain, G_{ANT} , Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

- For power spectral density (PSD) measurements on all devices,
 $Array\ Gain = 10 \log(N_{ANT}/N_{SS}=1) \text{ dB}$.
- For power measurements on IEEE 802.11 devices:
 $Array\ Gain = 0 \text{ dB}$ (i.e., no array gain) for $N_{ANT} \leq 4$;

For power, the directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain.

For PSD, the directional gain calculation is following F2)f)ii) of KDB 662911 D01 v02r01.

The Power and PSD limit should be modified if the directional gain of eut is over 6dbi.

The EUT supports CDD System.

All antennas have the Unequal antenna gain:

ANT Gain3 (dBi)	ANT Gain2 (dBi)	Power DG (dBi)	PSD DG (dBi)	Power Limit Reduction(dB)	PSD Limit Reduction(dB)
0.76	2.64	2.64	4.76	0	0

Power Limit Reduction = Directional gain – 6dBi, (Directional gain < 6dBi) =0

PSD Limit Reduction = Directional gain – 6dBi, (Directional gain < 6dBi) =0

7 Radio Spectrum Matter Test Results

7.1 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10-2020/Cor1-2023 Section 6.10.5 & 11.12

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23 °C

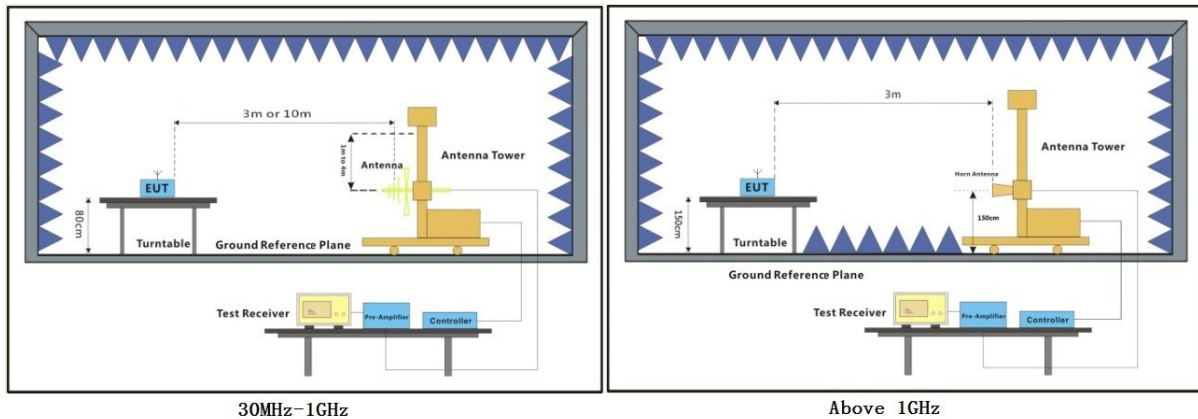
Humidity: 44 % RH

Atmospheric Pressure: 1023 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ MCS0 is the worst case of IEEE 802.11n/ax 20, final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.1.3 Test Setup Diagram



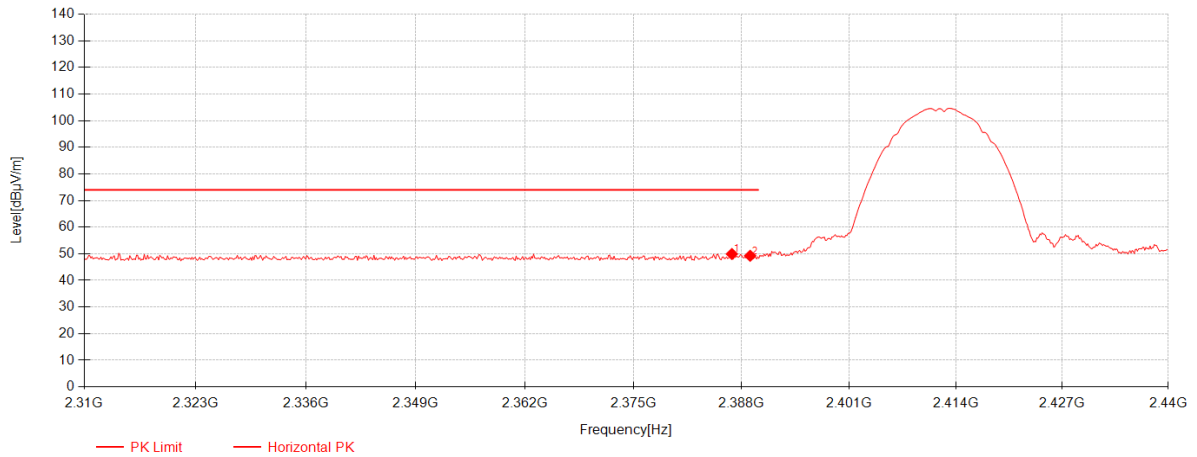
7.1.4 Measurement Procedure and Data

- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- 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 the EUT in the lowest channel, the middle channel, the Highest channel.
- The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

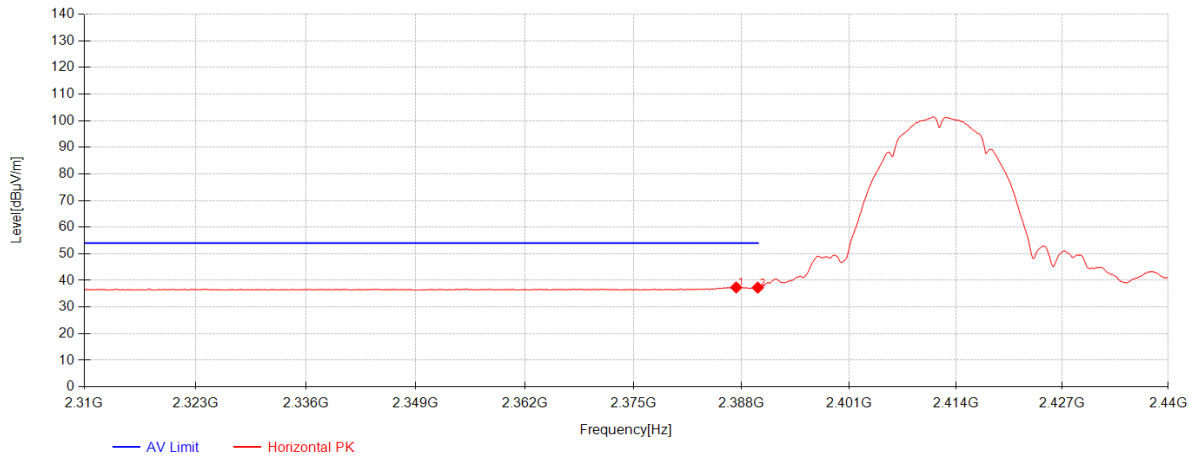
11b_TX_CH_01_Horizontal_Peak_worst ANT2



Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	2386.83	40.26	27.23	-17.56	49.93	74.00	24.07	Horizontal
2	2389.04	39.59	27.22	-17.56	49.25	74.00	24.75	Horizontal

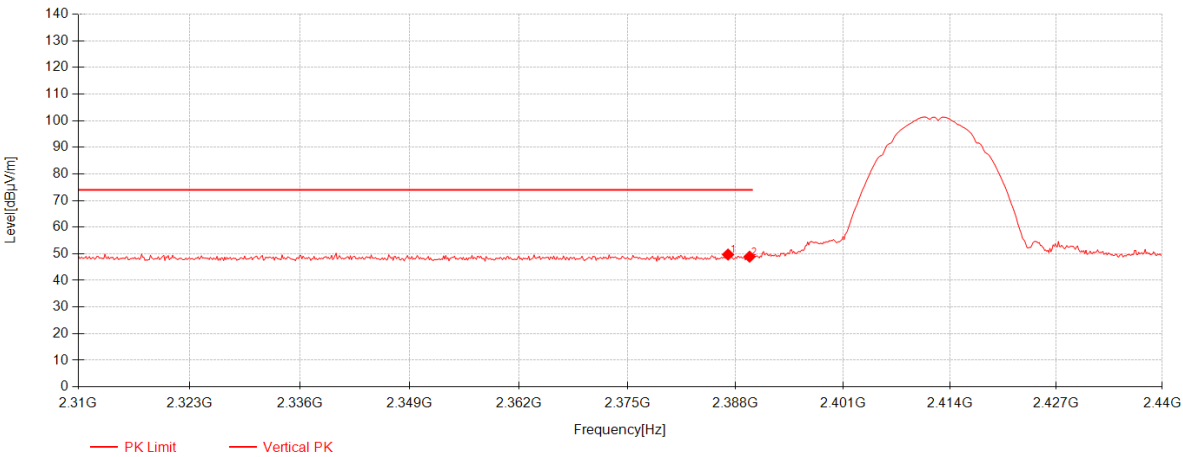


11b_TX_CH_01_Horizontal_Average_worst ANT2



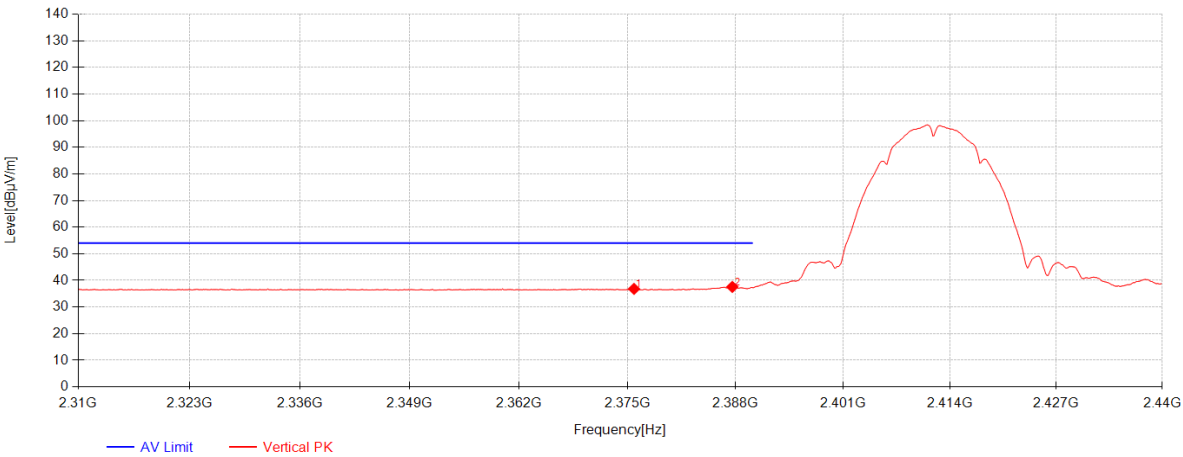
Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	2387.35	27.69	27.23	-17.56	37.36	54.00	16.64	Horizontal
2	2389.95	27.62	27.22	-17.56	37.28	54.00	16.72	Horizontal

11b_TX_CH_01_Vertical_Peak_worst ANT2



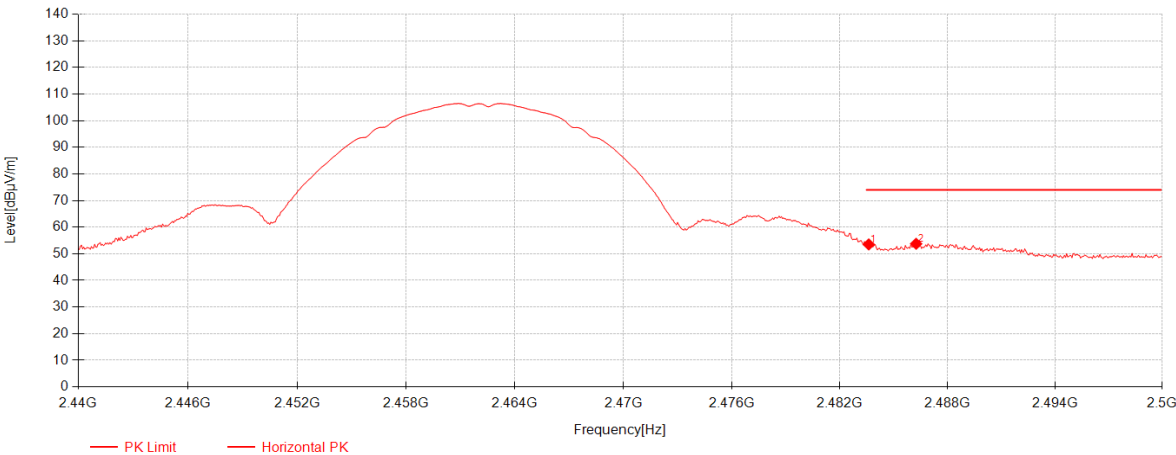
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1	2387.09	40.05	27.23	-17.56	49.72	74.00	24.28	Vertical
2	2389.69	39.25	27.22	-17.56	48.91	74.00	25.09	Vertical

11b_TX_CH_01_Vertical_Average_worst ANT2



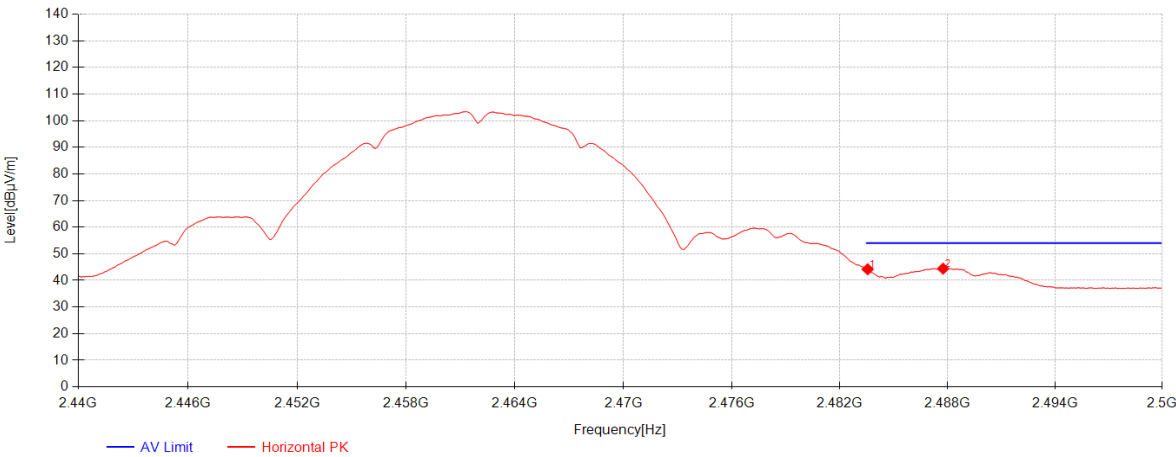
Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	2375.78	27.15	27.25	-17.58	36.82	54.00	17.18	Vertical
2	2387.61	27.90	27.22	-17.56	37.56	54.00	16.44	Vertical

11b_TX_CH_11_Horizontal_Peak_worst ANT2



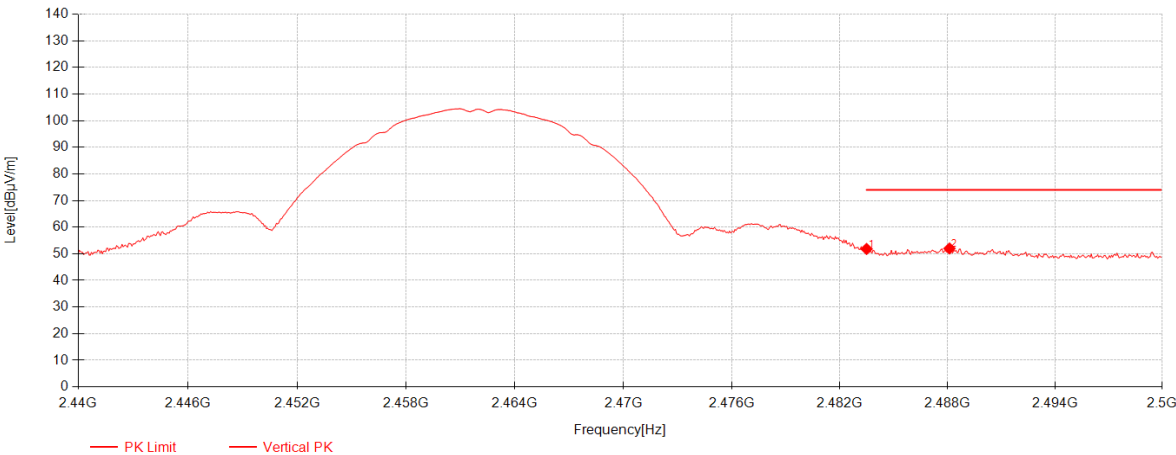
Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	2483.62	43.43	27.63	-17.55	53.51	74.00	20.49	Horizontal
2	2486.26	43.66	27.65	-17.55	53.76	74.00	20.24	Horizontal

11b_TX_CH_11_Horizontal_Average_worst ANT2



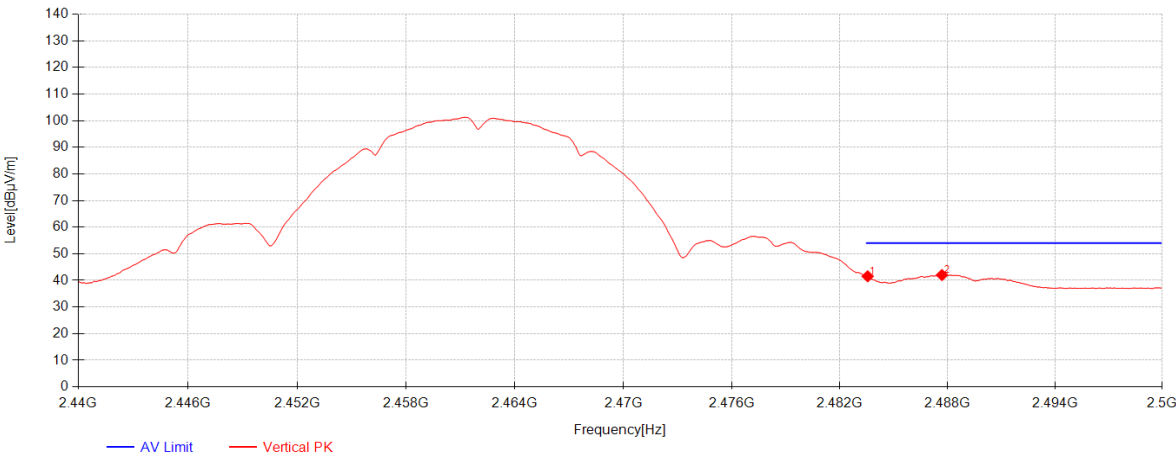
Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	2483.56	34.11	27.63	-17.55	44.19	54.00	9.81	Horizontal
2	2487.76	34.32	27.65	-17.55	44.42	54.00	9.58	Horizontal

11b_TX_CH_11_Vertical_Peak_worst ANT2



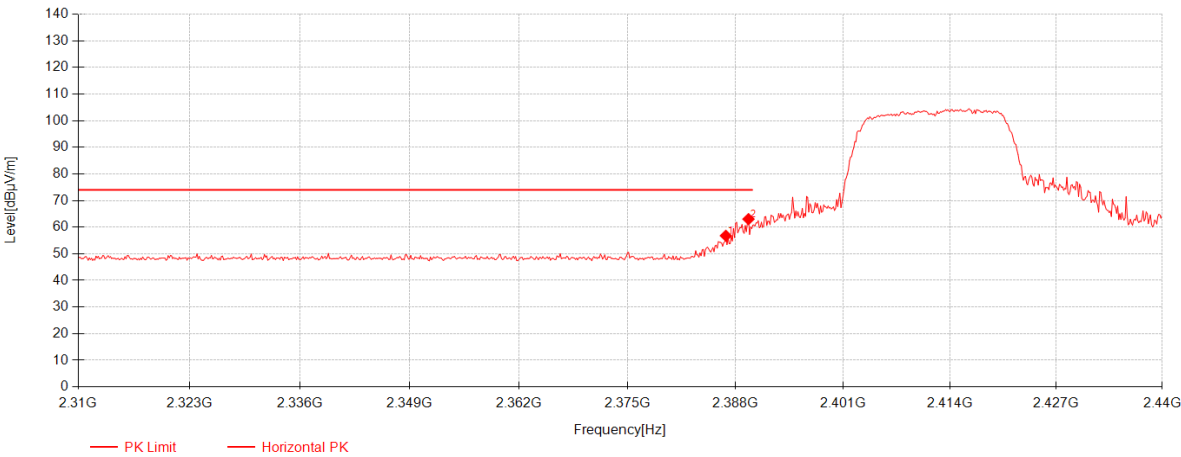
Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	2483.5	41.74	27.63	-17.55	51.82	74.00	22.18	Vertical
2	2488.12	41.91	27.65	-17.55	52.01	74.00	21.99	Vertical

11b_TX_CH_11_Vertical_Average_worst ANT2



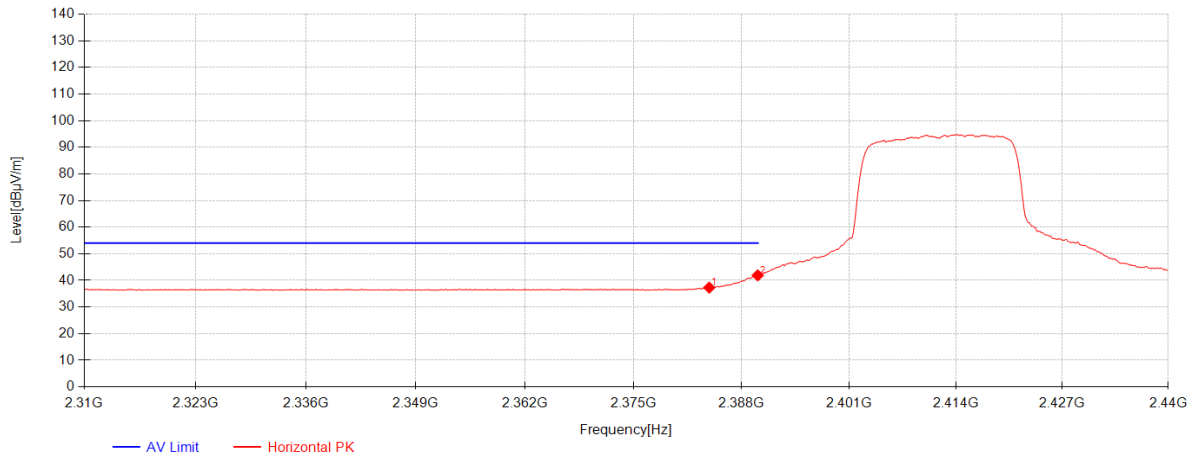
Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	2483.56	31.46	27.63	-17.55	41.54	54.00	12.46	Vertical
2	2487.7	31.93	27.65	-17.55	42.03	54.00	11.97	Vertical

11ax(HE20)_TX_CH_01_Horizontal_Peak_MIMO



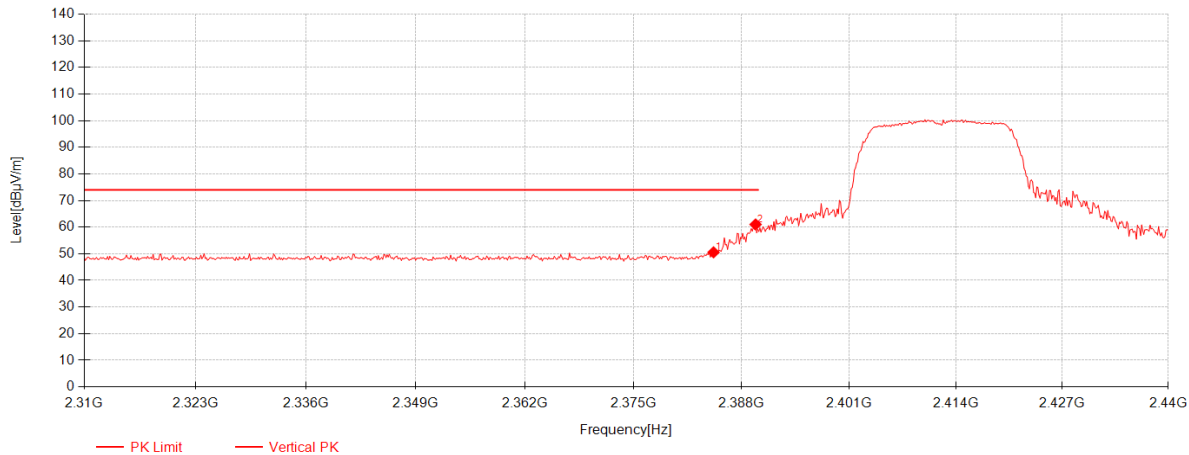
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1	2386.83	47.11	27.23	-17.56	56.78	74.00	17.22	Horizontal
2	2389.56	53.37	27.22	-17.56	63.03	74.00	10.97	Horizontal

11ax(HE20)_TX_CH_01_Horizontal_Average_MIMO



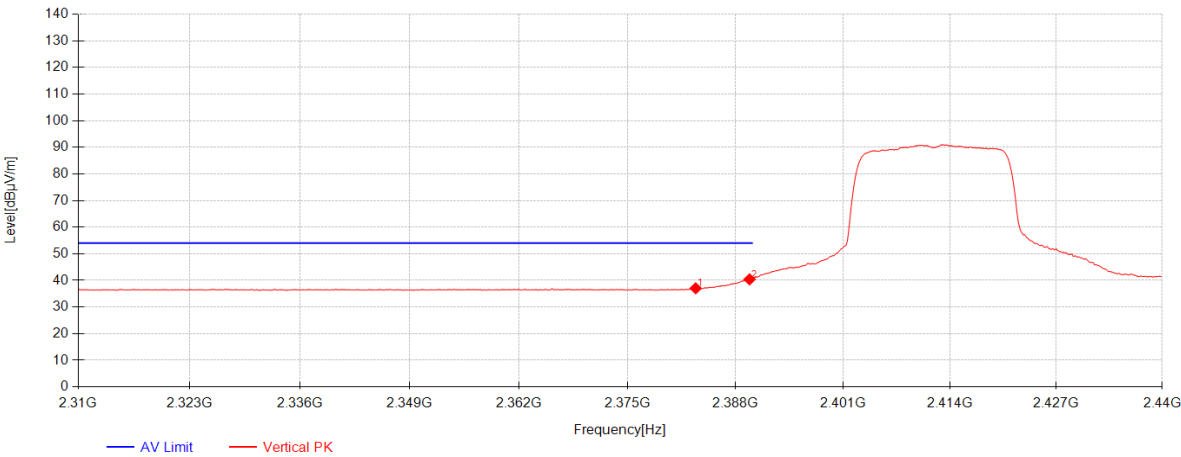
Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	2384.1	27.63	27.23	-17.57	37.29	54.00	16.71	Horizontal
2	2389.95	32.23	27.22	-17.56	41.89	54.00	12.11	Horizontal

11ax(HE20)_TX_CH_01_Veritical_Peak_MIMO



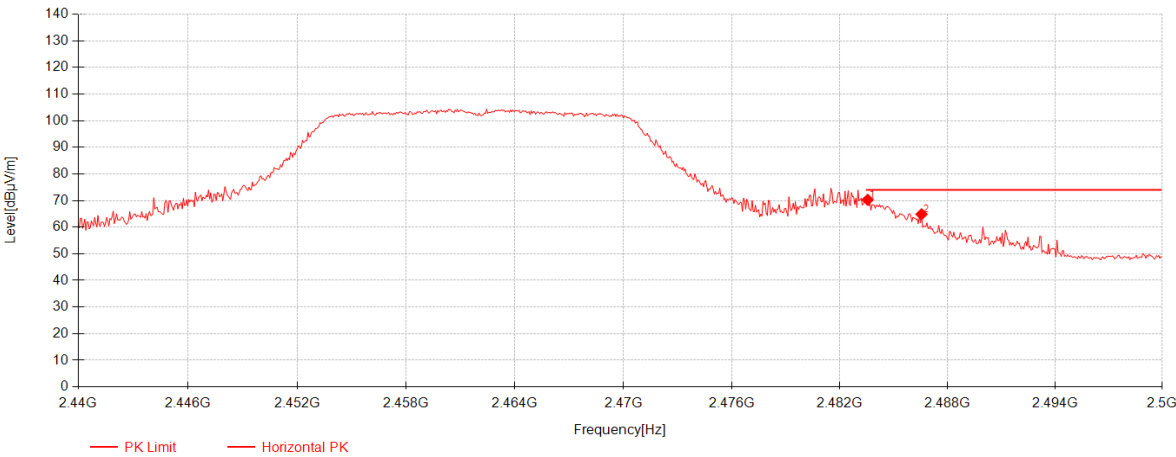
Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	2384.62	40.90	27.23	-17.57	50.56	74.00	23.44	Vertical
2	2389.69	51.35	27.22	-17.56	61.01	74.00	12.99	Vertical

11ax(HE20)_TX_CH_01_Veritical_Average_MIMO



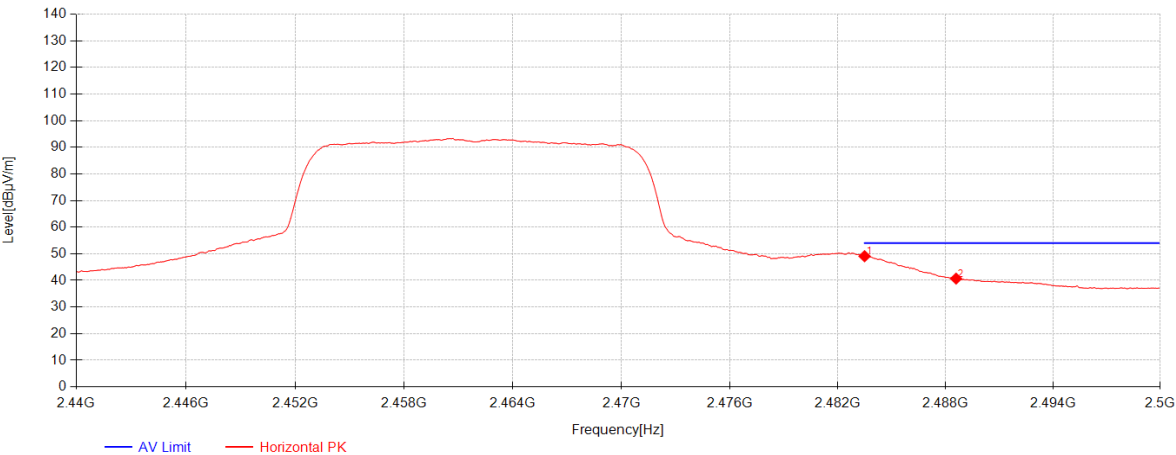
Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	2383.19	27.37	27.23	-17.57	37.03	54.00	16.97	Vertical
2	2389.69	30.74	27.22	-17.56	40.40	54.00	13.60	Vertical

11ax(HE20)_TX_CH_11_Horizontal_Peak_MIMO



Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	2483.56	60.23	27.63	-17.55	70.31	74.00	3.69	Horizontal
2	2486.56	54.75	27.65	-17.55	64.85	74.00	9.15	Horizontal

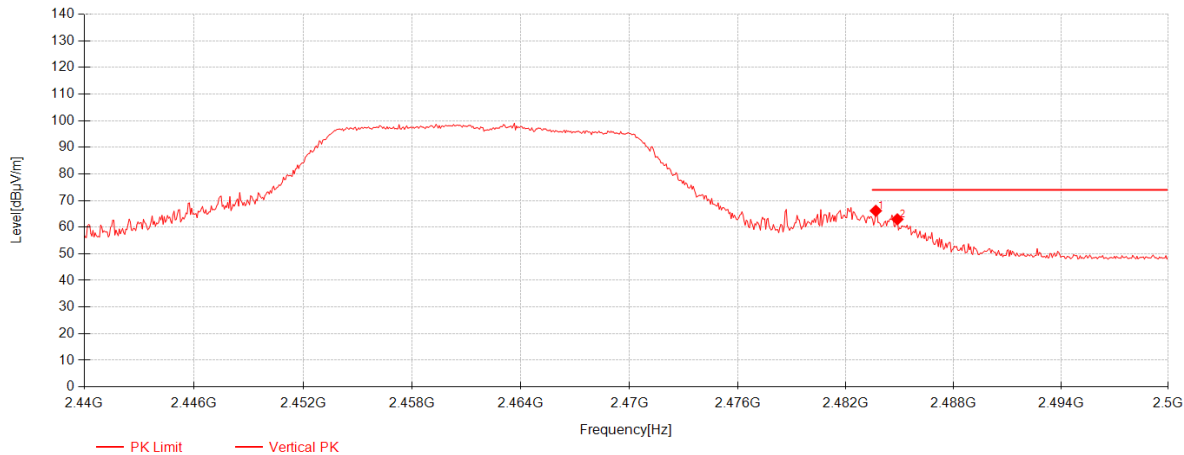
11ax(HE20)_TX_CH_11_Horizontal_Average_MIMO



Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	2483.5	39.02	27.63	-17.55	49.10	54.00	4.90	Horizontal
2	2488.6	30.58	27.65	-17.55	40.68	54.00	13.32	Horizontal

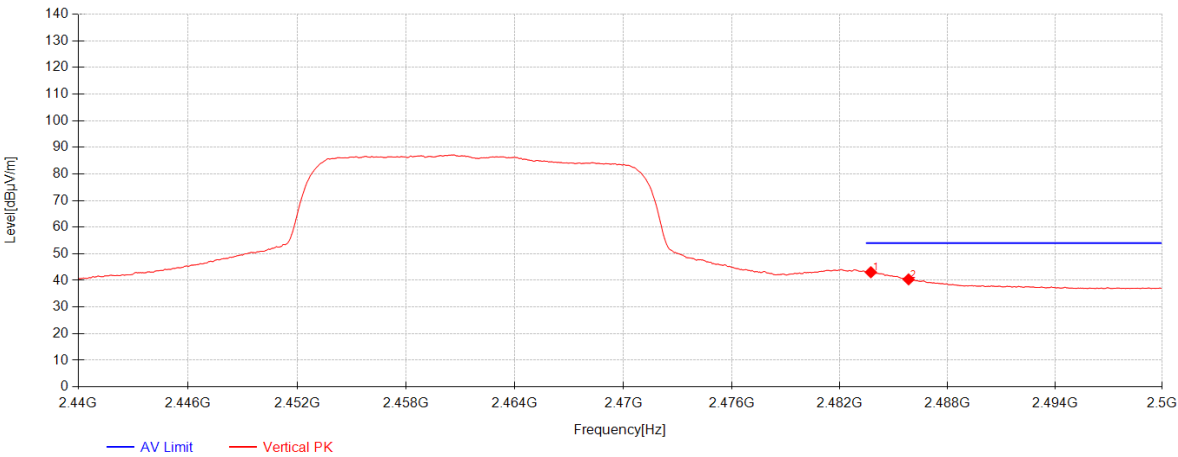


11ax(HE20)_TX_CH_11_Veritical_Peak_MIMO



Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	2483.68	56.08	27.63	-17.55	66.16	74.00	7.84	Vertical
2	2484.88	52.87	27.64	-17.55	62.96	74.00	11.04	Vertical

11ax(HE20)_TX_CH_11_Veritical_Average_MIMO



Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	2483.74	32.99	27.63	-17.55	43.07	54.00	10.93	Vertical
2	2485.84	30.30	27.64	-17.55	40.39	54.00	13.61	Vertical



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7.2 Radiated Spurious Emissions Below 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10-2020/Cor1-2023 Section 6.4,6.5

Limit:

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)	Field strength (dBμV/m@3m)
0.009-0.490	2400/F(kHz)	300	128.5 to 93.8
0.490-1.705	24000/F(kHz)	30	73.8 to 62.9
1.705-30.0	30	30	69.60
30-88	100	3	40.0
88-216	150	3	43.5
216-960	200	3	46.0
960-1000	500	3	54.0

Note :The emission limits for the range 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23 °C

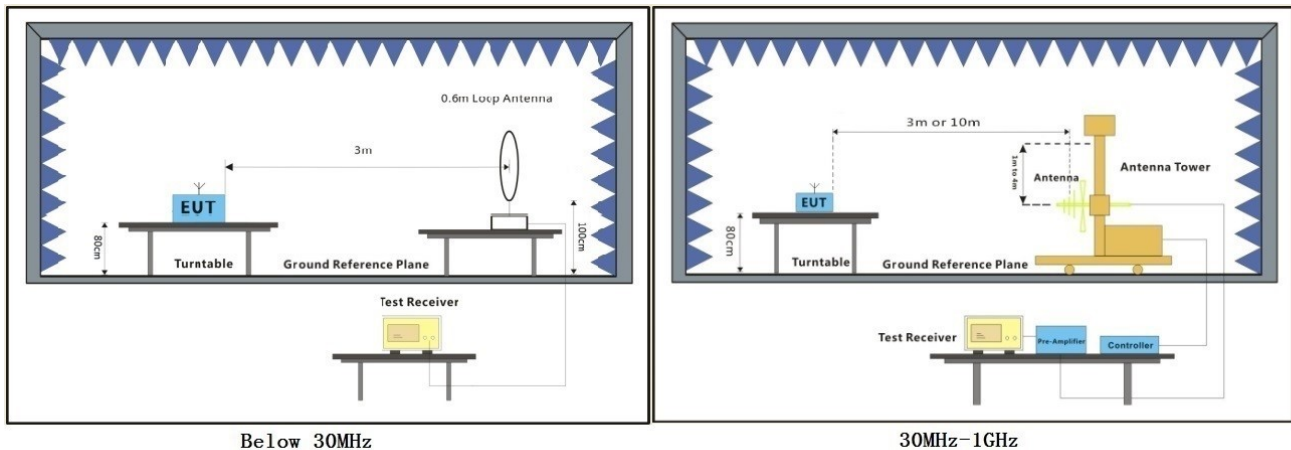
Humidity: 44 % RH

Atmospheric Pressure: 1023 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ MCS0 is the worst case of IEEE 802.11n/ax 20, final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.2.3 Test Setup Diagram



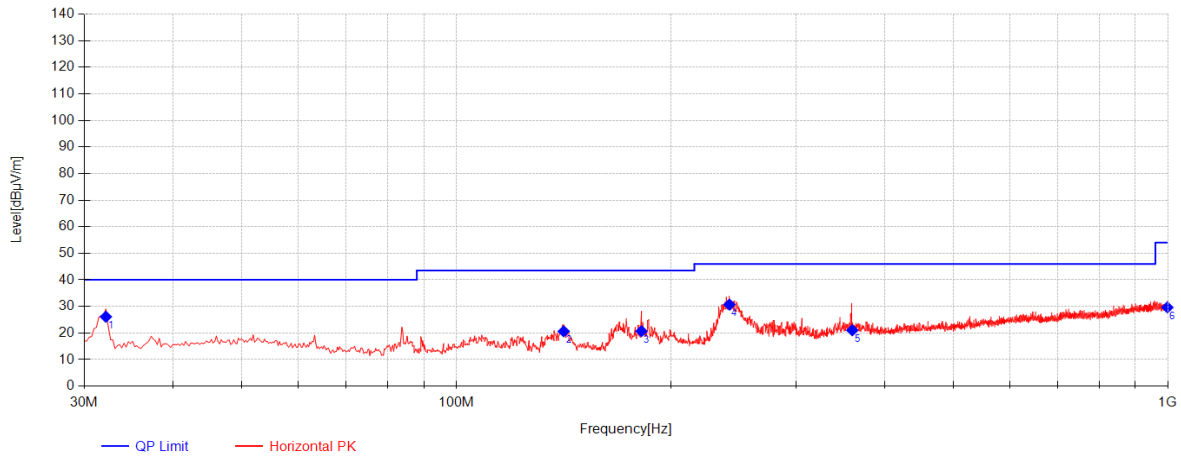
7.2.4 Measurement Procedure and Data

- For below 1GHz, the EUT was placed on the top of a rotating table 0.8m above the ground at a semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3m or 10m away from the interference-receiving antenna, which was mounted on the variable-height antenna tower.
- The antenna height is varied from 1m to 4m 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.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1m to 4m (for the test frequency of below 30MHz, the antenna was tuned to heights 1m) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- 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 quasi-peak method as specified and then reported in a data sheet.
- Test the EUT in the lowest channel, the middle channel, the Highest channel.
- The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- Repeat above procedures until all frequencies measured was complete.

Remark:

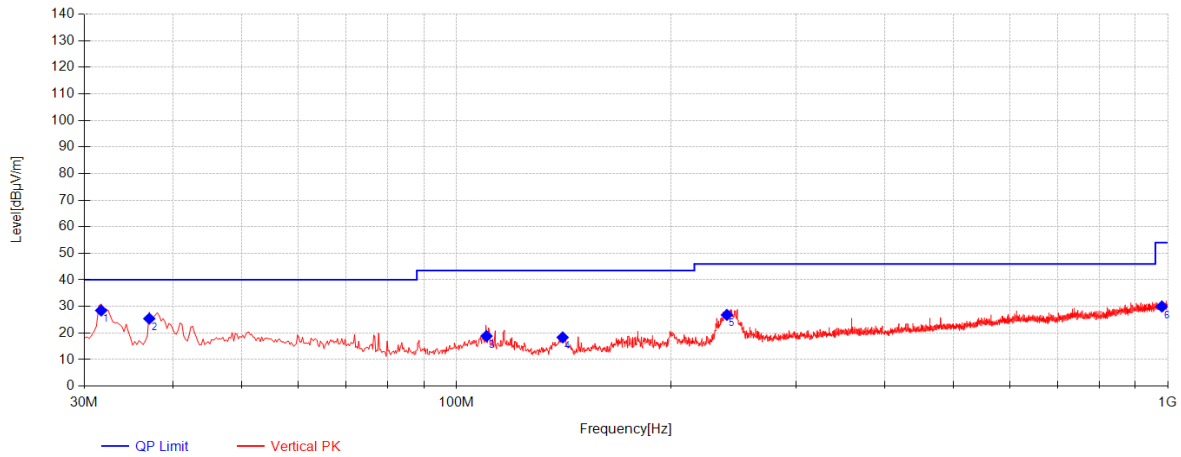
- The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the worst-case test curve is displayed.

11b_TX_CH_01_Horizontal_worst ANT2



Final Data List										
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	32.1825	50.44	17.02	-41.35	26.11	40.00	13.89	107	345	Horizontal
2	141.55	41.54	18.93	-39.84	20.63	43.50	22.87	188	54	Horizontal
3	182.0475	48.59	16.40	-39.30	20.69	43.50	17.81	192	261	Horizontal
4	241.945	51.75	18.64	-38.70	30.69	46.00	14.31	134	2	Horizontal
5	360.0425	46.33	20.60	-37.90	21.03	46.00	16.97	126	17	Horizontal
6	998.06	35.23	28.10	-33.70	29.63	54.00	24.37	168	196	Horizontal

11b_TX_CH_01_Vertical_worst ANT2



Final Data List										
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	31.6975	52.79	17.03	-41.36	28.46	40.00	11.54	115	238	Vertical
2	37.0325	48.53	18.12	-41.25	25.40	40.00	14.60	132	132	Vertical
3	110.2675	42.72	18.27	-40.14	18.85	43.50	22.65	153	187	Vertical
4	141.065	39.02	19.17	-39.85	18.34	43.50	25.16	186	108	Vertical
5	240.005	46.94	18.60	-38.73	26.81	46.00	19.19	141	345	Vertical
6	980.3575	36.33	27.41	-33.79	29.95	54.00	24.05	177	48	Vertical

7.3 Radiated Spurious Emissions Above 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10-2020/Cor1-2023 Section 6.6 & 11.12

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
Above 1000	500	3

Note:

At Above 18GHz, measurements may be performed at a distance shorter than that specified in the regulations

Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor+ Aux Factor (if applicable)

The aux factor needs to be added when measurements are performed at a distance other than the limit distance provided.

EX. Above 18GHz, Aux Factor = 20 dB/decade of distance, the aux factor is $20\log(1/3) = -9.54\text{dB}$ (for 1m test distance).

7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 23 °C

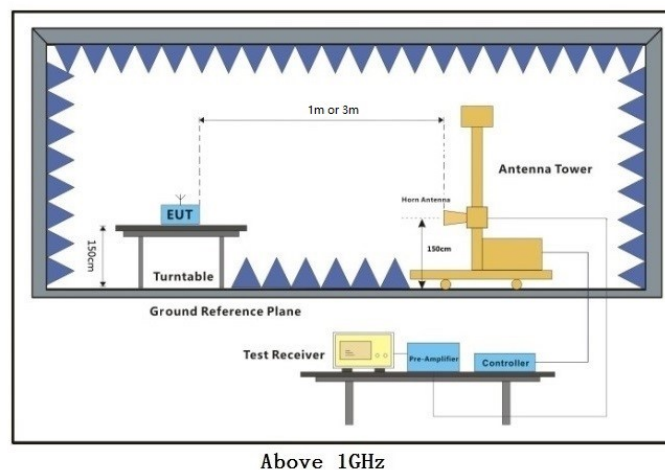
Humidity: 43 % RH

Atmospheric Pressure: 1023 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ MCS0 is the worst case of IEEE 802.11n/ax 20, final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.3.3 Test Setup Diagram



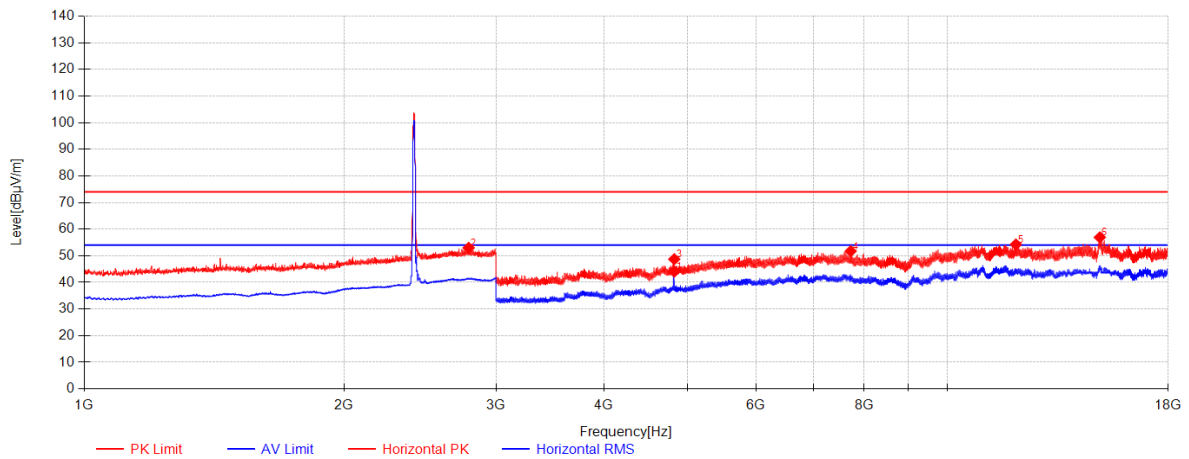
7.3.4 Measurement Procedure and Data

- a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5m above the ground at a 3m fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 3m away from the interference-receiving antenna from 1GHz to 18GHz, and 1m away from the interference-receiving antenna above 18GHz.
- b. The interference-receiving antenna was mounted on the variable-height antenna tower, with its boresight facing the EUT throughout the test.
- c. The antenna height is varied from 1m to 4m 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.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1m to 4m and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- g. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- h. Repeat above procedures until all frequencies measured was complete.

Remark:

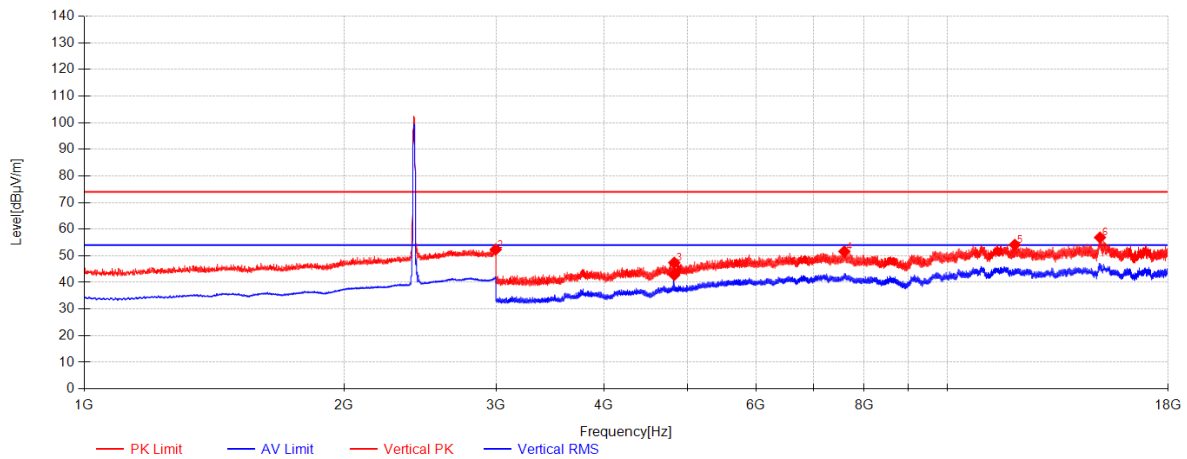
1. Scan from 1GHz to 10th harmonic of the highest frequency or 40 GHz, whichever is lower.
2. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.
3. For the frequency above 18GHz, testing had been executed under all test modes, only the worst-case test curve is displayed in the report.
4. For devices with multiple operating modes, measurements on the middle channel is used to determine the worst-case mode(s). Only the worst-case mode with the highest output power and the mode with the highest output power spectral density for each modulation family (e.g., OFDM and direct sequence spread spectrum) is recorded in the test report.

11b_TX_CH_01_Horizontal_worst ANT2



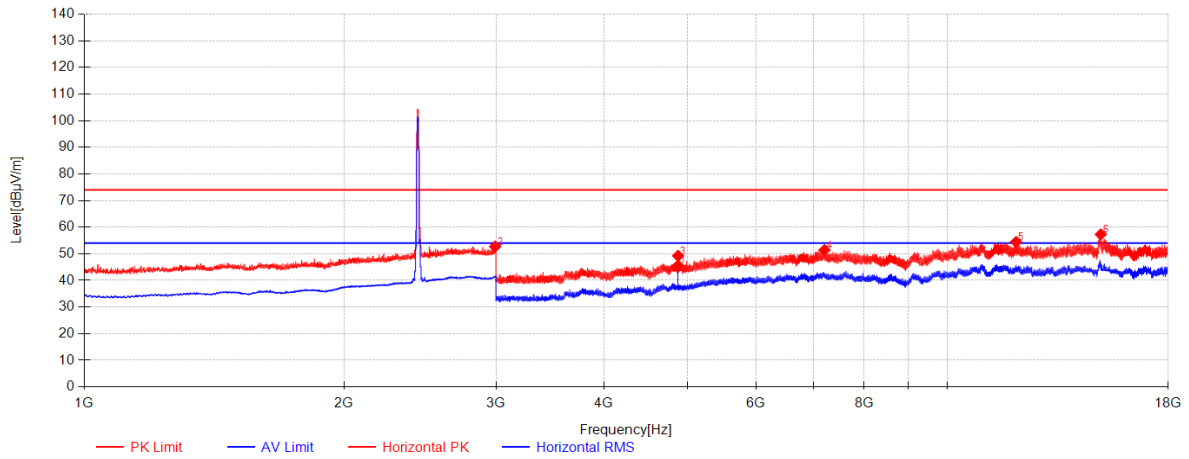
Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	4824.375	55.07	31.00	-42.02	44.05	54.00	9.95	Horizontal
2	2788	41.15	28.48	-16.65	52.98	74.00	21.02	Horizontal
3	4824	59.74	31.00	-42.02	48.72	74.00	25.28	Horizontal
4	7721.625	55.42	36.59	-40.28	51.73	74.00	22.27	Horizontal
5	11997.375	54.66	39.89	-40.29	54.26	74.00	19.74	Horizontal
6	15005.625	51.82	40.98	-35.88	56.92	74.00	17.08	Horizontal

11b_TX_CH_01_Vertical_ worst ANT2



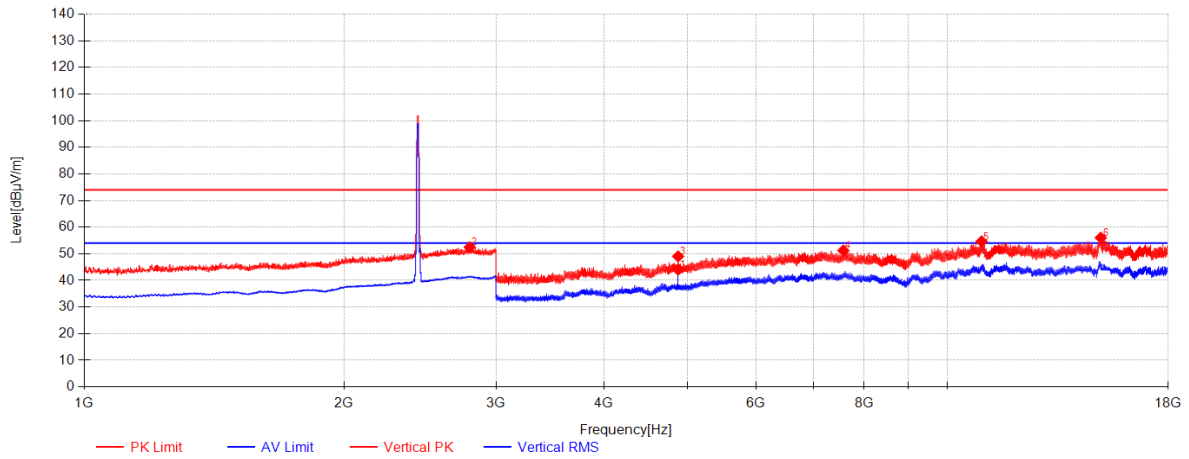
Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	4824.375	53.79	31.00	-42.02	42.77	54.00	11.23	Vertical
2	2997	40.04	28.87	-16.54	52.37	74.00	21.63	Vertical
3	4824	58.44	31.00	-42.02	47.42	74.00	26.58	Vertical
4	7593.375	55.34	36.87	-40.59	51.62	74.00	22.38	Vertical
5	11962.5	54.77	39.79	-40.42	54.14	74.00	19.86	Vertical
6	15013.875	51.81	40.94	-35.87	56.88	74.00	17.12	Vertical

11b_TX_CH_06_Horizontal_worst ANT2



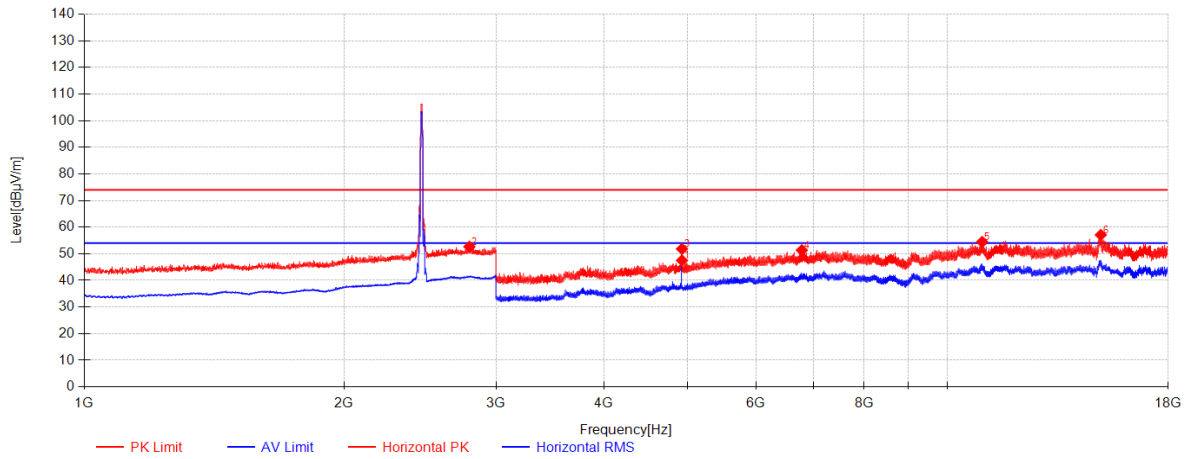
Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	4874.625	56.52	31.05	-41.99	45.58	54.00	8.42	Horizontal
2	2991.5	40.45	28.82	-16.55	52.72	74.00	21.28	Horizontal
3	4873.875	60.18	31.04	-41.99	49.23	74.00	24.77	Horizontal
4	7200.75	55.32	36.30	-40.21	51.41	74.00	22.59	Horizontal
5	12004.5	54.81	39.90	-40.27	54.44	74.00	19.56	Horizontal
6	15046.125	52.30	40.82	-35.84	57.28	74.00	16.72	Horizontal

11b_TX_CH_06_Vertical_worst ANT2



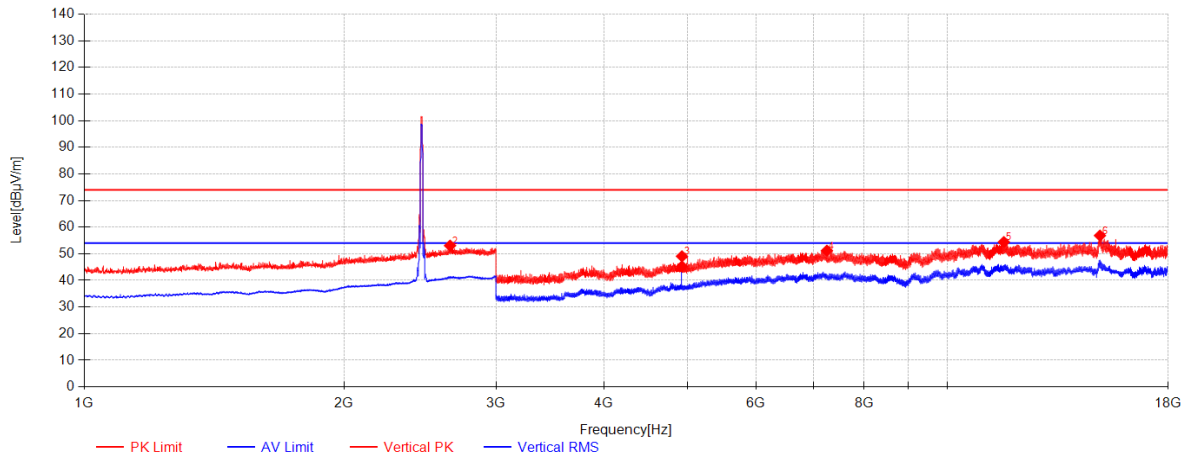
Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	4874.25	54.98	31.05	-41.99	44.04	54.00	9.96	Vertical
2	2796	40.57	28.49	-16.60	52.46	74.00	21.54	Vertical
3	4873.875	59.99	31.04	-41.99	49.04	74.00	24.96	Vertical
4	7572	55.06	36.79	-40.64	51.21	74.00	22.79	Vertical
5	10948.125	55.02	40.14	-40.51	54.65	74.00	19.35	Vertical
6	15046.125	51.07	40.82	-35.84	56.05	74.00	17.95	Vertical

11b_TX_CH_11_Horizontal_worst ANT2



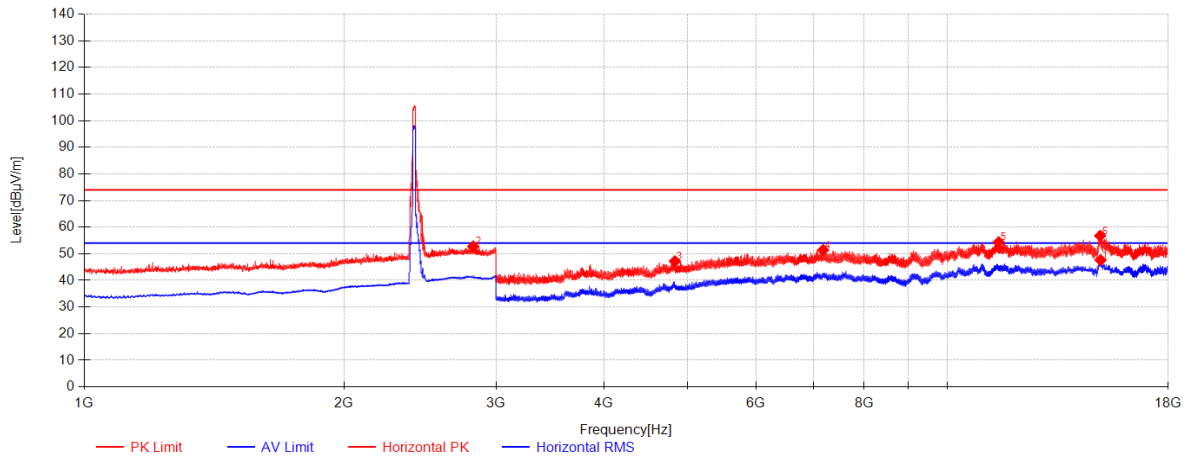
Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	4924.5	58.41	30.96	-41.86	47.51	54.00	6.49	Horizontal
2	2793.5	40.78	28.49	-16.61	52.66	74.00	21.34	Horizontal
3	4924.125	62.73	30.96	-41.86	51.83	74.00	22.17	Horizontal
4	6779.625	55.89	35.62	-40.16	51.35	74.00	22.65	Horizontal
5	10966.125	54.68	40.23	-40.45	54.46	74.00	19.54	Horizontal
6	15046.125	52.10	40.82	-35.84	57.08	74.00	16.92	Horizontal

11b_TX_CH_11_Vertical_worst ANT2



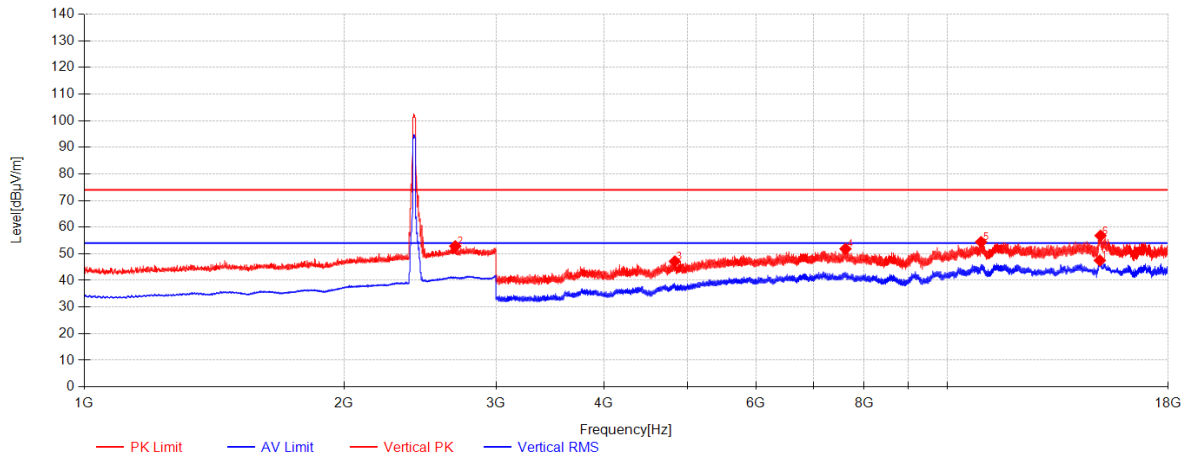
Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	4924.125	56.16	30.96	-41.86	45.26	54.00	8.74	Vertical
2	2653	42.20	28.11	-17.24	53.07	74.00	20.93	Vertical
3	4924.125	59.96	30.96	-41.86	49.06	74.00	24.94	Vertical
4	7247.25	54.99	36.58	-40.40	51.17	74.00	22.83	Vertical
5	11619	54.74	40.52	-40.84	54.42	74.00	19.58	Vertical
6	15012.375	51.77	40.95	-35.87	56.85	74.00	17.15	Vertical

11ax(HE20)_TX_CH_01_Horizontal_MIMO



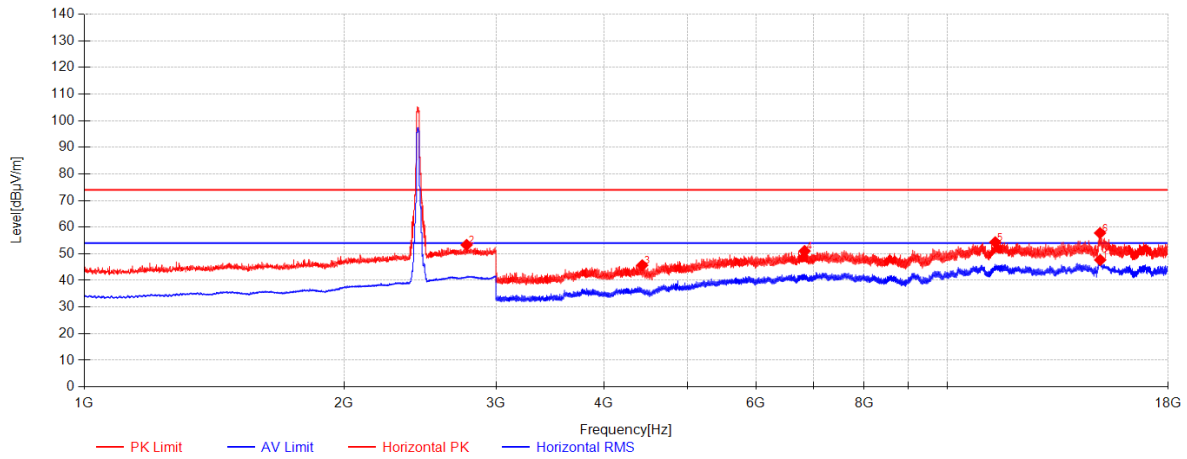
Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	15037.5	42.63	40.85	-35.85	47.63	54.00	6.37	Horizontal
2	2822.5	40.81	28.55	-16.59	52.77	74.00	21.23	Horizontal
3	4831.875	58.23	30.97	-42.01	47.19	74.00	26.81	Horizontal
4	7174.875	55.52	36.20	-40.33	51.39	74.00	22.61	Horizontal
5	11458.5	54.43	40.54	-40.62	54.35	74.00	19.65	Horizontal
6	15021	51.72	40.92	-35.86	56.78	74.00	17.22	Horizontal

11ax(HE20)_TX_CH_01_Vertical_MIMO



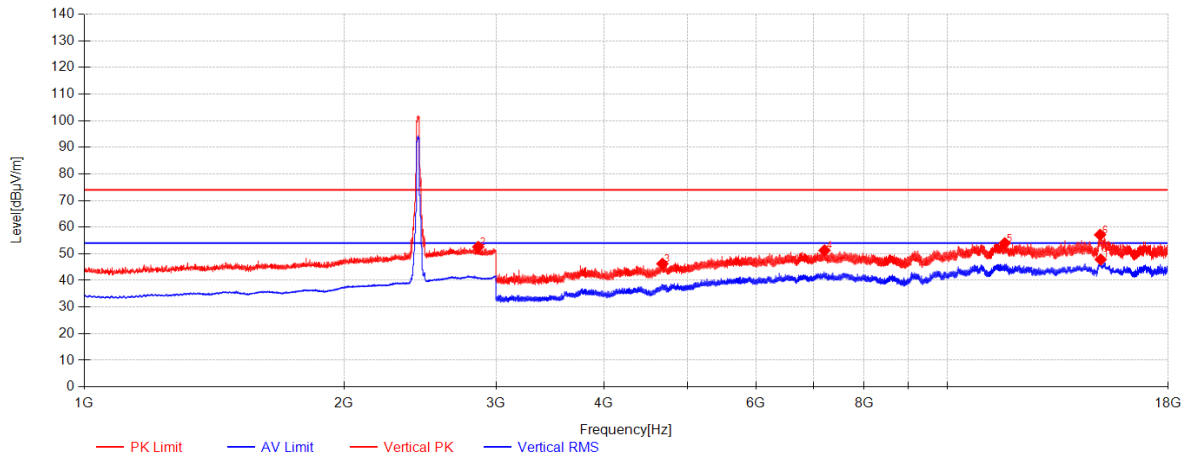
Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	15006.375	42.42	40.97	-35.87	47.52	54.00	6.48	Vertical
2	2690.5	41.83	28.26	-17.22	52.87	74.00	21.13	Vertical
3	4830.75	58.18	30.98	-42.01	47.15	74.00	26.85	Vertical
4	7616.25	55.49	36.87	-40.51	51.85	74.00	22.15	Vertical
5	10935	54.89	40.08	-40.54	54.43	74.00	19.57	Vertical
6	15035.625	51.83	40.86	-35.85	56.84	74.00	17.16	Vertical

11ax(HE20)_TX_CH_06_Horizontal_MIMO



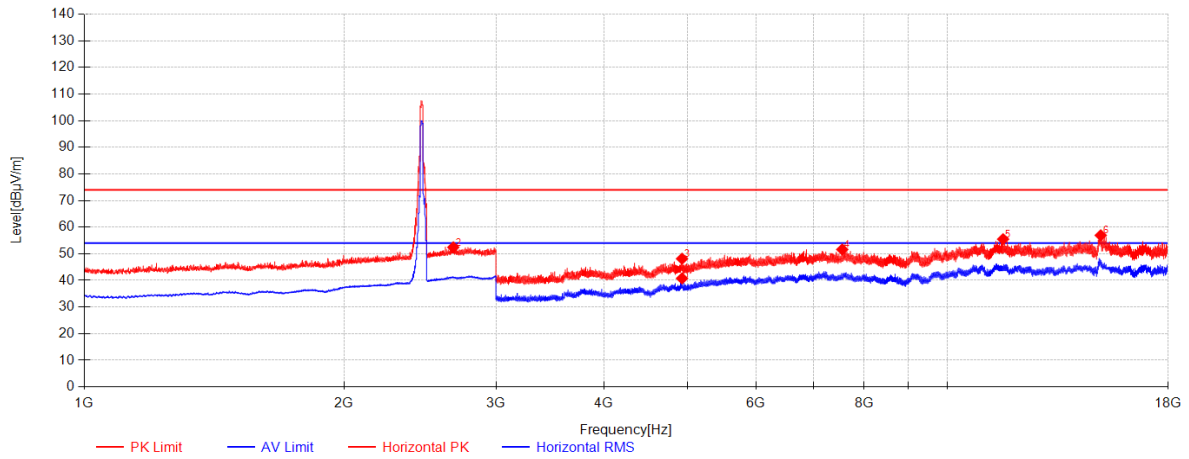
Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	15023.625	42.63	40.91	-35.86	47.68	54.00	6.32	Horizontal
2	2773	41.63	28.45	-16.74	53.34	74.00	20.66	Horizontal
3	4428.75	58.01	30.13	-42.46	45.68	74.00	28.32	Horizontal
4	6829.5	55.49	35.82	-40.28	51.03	74.00	22.97	Horizontal
5	11356.5	54.51	40.51	-40.69	54.33	74.00	19.67	Horizontal
6	15015.75	52.73	40.94	-35.87	57.80	74.00	16.20	Horizontal

11ax(HE20)_TX_CH_06_Veritical_MIMO



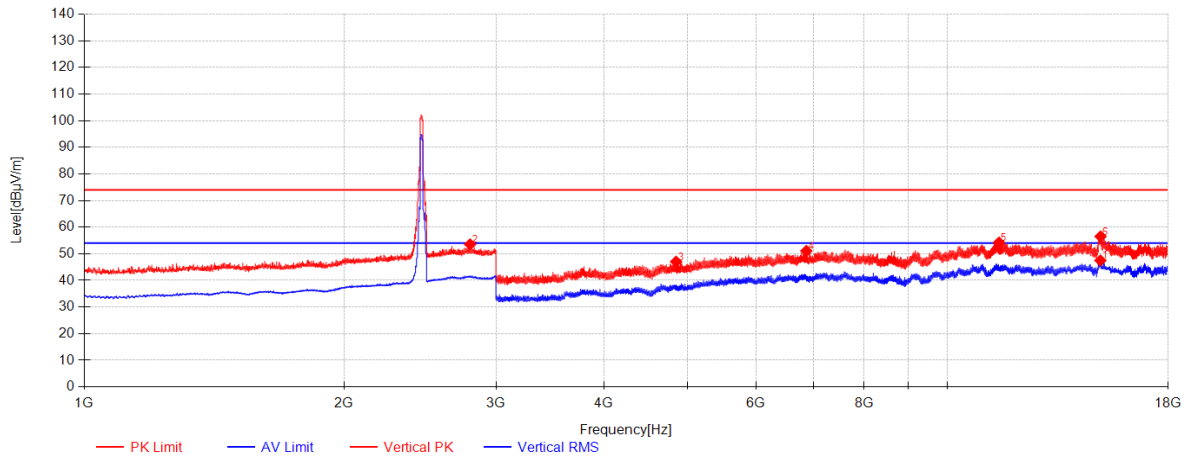
Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	15045.75	42.87	40.82	-35.84	47.85	54.00	6.15	Vertical
2	2860	40.72	28.52	-16.63	52.61	74.00	21.39	Vertical
3	4673.25	57.88	30.69	-42.32	46.25	74.00	27.75	Vertical
4	7201.5	55.19	36.31	-40.22	51.28	74.00	22.72	Vertical
5	11646.75	54.23	40.41	-40.64	54.00	74.00	20.00	Vertical
6	15016.5	52.08	40.93	-35.87	57.14	74.00	16.86	Vertical

11ax(HE20)_TX_CH_11_Horizontal_MIMO



Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	4925.625	51.67	30.94	-41.85	40.76	54.00	13.24	Horizontal
2	2676	41.46	28.20	-17.22	52.44	74.00	21.56	Horizontal
3	4925.25	59.05	30.95	-41.85	48.15	74.00	25.85	Horizontal
4	7551	55.60	36.70	-40.69	51.61	74.00	22.39	Horizontal
5	11595	55.86	40.60	-40.97	55.49	74.00	18.51	Horizontal
6	15042.375	51.95	40.83	-35.85	56.93	74.00	17.07	Horizontal

11ax(HE20)_TX_CH_11_Veritical_MIMO



Data List								
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	15030	42.48	40.88	-35.86	47.50	54.00	6.50	Vertical
2	2798.5	41.62	28.50	-16.58	53.54	74.00	20.46	Vertical
3	4847.625	58.15	30.91	-42.01	47.05	74.00	26.95	Vertical
4	6861	55.77	35.86	-40.55	51.08	74.00	22.92	Vertical
5	11468.625	54.39	40.53	-40.69	54.23	74.00	19.77	Vertical
6	15036	51.50	40.86	-35.85	56.51	74.00	17.49	Vertical



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8 Test Setup Photo

Refer to Appendix_Test Setup Photo for SUCR2602000119TL

9 EUT Constructional Details (EUT Photos)

Refer to Appendix_External Photos for SUCR2602000119TL and Appendix_Internal Photos for SUCR2602000119TL

- End of the Report -