FCC & ISED Radio Test Report

FCC ID: 2AC23-W5Y
IC:12290A-W5Y

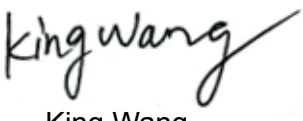
The report concerns: Original Grant

Report Reference No. ..... :	19EFAS12121 0081
Date Sample(s) Received ..... :	2019-12-24
Date of Tested ..... :	2019-12-24 to 2020-01-07
Date of issue ..... :	2020-01-07
Testing Laboratory..... :	DongGuan ShuoXin Electronic Technology Co., Ltd.
Address ..... :	Zone A, 1F, No. 6, XinGang Road YuanGang Street, XinAn District, ChangAn Town, DongGuan City, GuangDong, China
Applicant's name ..... :	Hui Zhou Gaoshengda Technology Co., LTD
Address ..... :	NO.75 Zhongkai Development Area, Huizhou, Guangdong
Manufacturer ..... :	Hui Zhou Gaoshengda Technology Co., LTD
Equipment ..... :	WIFI Module
Trade Mark ..... :	GSD
Model ..... :	W5YM2511
Ratings ..... :	I/P: DC 3.3V

Responsible Engineer :

Smile Wang

Authorized Signatory:



King Wang

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1. TEST REPORT DECLARE

Applicant	Hui Zhou Gaoshengda Technology Co., LTD
Address	NO.75 Zhongkai Development Area, Huizhou, Guangdong
Manufacturer	Hui Zhou Gaoshengda Technology Co., LTD
Address	NO.75 Zhongkai Development Area, Huizhou, Guangdong
Factory	Hui Zhou Gaoshengda Technology Co., LTD
Address	NO.75 Zhongkai Development Area, Huizhou, Guangdong
Equipment	WIFI Module
Model No.	W5YM2511
Trade Mark	GSD
Standard	FCC Part15, Subpart E(15.407) RSS-247 Issue 2, Feb. 2017 RSS-Gen Issue 5, Apr. 2018 ANSI C63.10-2013 FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01

We Declare:

The equipment described above is tested by DongGuan ShuoXin Electronic Technology Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and DongGuan ShuoXin Electronic Technology Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

2. SUMMARY OF TEST RESULTS

The EUT have been tested according to the applicable standards as referenced below:

Standard(s) Section		Test Item	Judgment	Remark
FCC	IC			
15.207 15.407(b)	RSS-GEN 8.8	AC Power Line Conducted Emissions	PASS	------
15.407(b) 15.205(a) 15.209(a)	RSS-247 6.2.1.2 RSS-247 6.2.4.2 RSS-GEN 8.9 RSS-GEN 8.10	Radiated Emissions	PASS	------
15.407(a) 15.407(e)	RSS-247 6.2.1.1 RSS-247 6.2.2.1 RSS-247 6.2.3.1 RSS-247 6.2.4.1 RSS-GEN 6.7	Spectrum Bandwidth	PASS	------
15.407(a)	RSS-247 6.2.1.1 RSS-247 6.2.2.1 RSS-247 6.2.3.1 RSS-247 6.2.4.1	Maximum Output Power	PASS	------
15.407(a)	RSS-247 6.2.1.1 RSS-247 6.2.2.1 RSS-247 6.2.3.1 RSS-247 6.2.4.1	Power Spectral Density	PASS	------
15.407(g)	RSS-GEN 6.11	Frequency Stability	PASS	------
15.203	RSS-247 6.4(a)	Antenna Requirements	PASS	Note(4)
15.407(c)	RSS-GEN 8.8	Automatically Discontinue Transmission	PASS	Note(2)

Note:

(1) "N/A" denotes test is not applicable in this test report.

(2) During no any information transmission, the EUT can automatically discontinue transmission and become standby mode for power saving. the EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

(3) For UNII-1 this device was functioned as a
☐ Access point device ☒Client device

(4) The device what use a permanently attached antenna were considered sufficient to comply with the provisions of 15.203.

2.1 MEASUREMENT UNCERTAINTY

Test Item	Uncertainty
Uncertainty for Conduction emission test (9kHz-150kHz)	3.7 dB
Uncertainty for Conduction emission test (150kHz-30MHz)	3.3 dB
Uncertainty for Radiation Emission test (30MHz-200MHz)	4.60 dB (Polarize: V)
	4.60 dB (Polarize: H)
Uncertainty for Radiation Emission test (200MHz-1GHz)	6.10 dB (Polarize: V)
	5.08 dB (Polarize: H)
Uncertainty for Radiation Emission test (1GHz-6GHz)	5.01 dB (Polarize: V)
	5.01 dB (Polarize: H)
Uncertainty for Radiation Emission test (6GHz-18GHz)	5.26 dB (Polarize: V)
	5.26 dB (Polarize: H)
Uncertainty for Radiation Emission test (18GHz-40GHz)	5.06 dB (Polarize: V)
	5.06 dB (Polarize: H)
Uncertainty for radio frequency	±0.048kHz
Uncertainty for conducted RF Power	±0.32dB

Note:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	WIFI Module	
Brand Name	GSD	
Test Model	W5YM2511	
Series Model	N/A	
Model Difference(s)	N/A	
Hardware Version	V1.0	
Software Version	V1.0	
Power Source	Supplied from USB.	
Power Rating	DC 3.3V	
Operation Frequency Bands	UNII-1: 5150 MHz~5250 MHz UNII-3: 5725 MHz~5850 MHz	
Modulation Type	OFDM	
Bit Rate of Transmitter	Up to 866.6Mbps	
Operating Mode	IEEE 802.11a: 1TX(Ant 1 or Ant 2) IEEE 802.11n (HT20): 2TX(Ant 1+Ant 2) IEEE 802.11n (HT40): 2TX(Ant 1+Ant 2)	
Antenna Information	Antenna Type: PCB	Maximum Peak Gain: 3dBi(Ant 1) 3dBi(Ant 2)
Maximum Output Power for UNII-1 For FCC	IEEE 802.11a: 16.37dBm (0.0434W) IEEE 802.11n (HT20): 18.14dBm (0.0651 W) IEEE 802.11n (HT40): 17.55dBm (0.0570 W)	
Maximum EIRP Output Power for UNII-1 For IC	IEEE 802.11a: 19.37dBm (0.0865W) IEEE 802.11n (HT20): 21.14dBm (0.1300 W) IEEE 802.11n (HT40): 20.55dBm (0.1135 W)	
Maximum Output Power for UNII-3	IEEE 802.11a: 16.89dBm (0.0489 W) IEEE 802.11n (HT20): 18.95dBm (0.0786 W) IEEE 802.11n (HT40): 18.25dBm (0.0669 W)	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. Channel List:

IEEE 802.11a IEEE 802.11n (HT20)		IEEE 802.11n (HT40)	
UNII-1		UNII-1	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	38	5190
40	5200	46	5230
44	5220		
48	5240		

IEEE 802.11a IEEE 802.11n (HT20)		IEEE 802.11n (HT40)	
UNII-3		UNII-3	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	151	5755
153	5765	159	5795
157	5785		
161	5805		
165	5825		

3.2 TEST MODES

The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

Pretest Mode	Description
Mode 1	TX A Mode / CH36, CH40, CH48 (UNII-1)
Mode 2	TX N (HT20) Mode / CH36, CH40, CH48 (UNII-1)
Mode 3	TX N (HT40) Mode / CH38, CH46 (UNII-1)
Mode 4	TX A Mode / CH149,CH157,CH165 (UNII-3)
Mode 5	TX N (HT20) Mode / CH149,CH157,CH165 (UNII-3)
Mode 6	TX N (HT40) Mode / CH151,CH159 (UNII-3)
Mode 7	TX N (HT20) Mode / CH165 (UNII-3)

Following mode(s) as (were) found to be the worst case(s) and selected for the final test.

AC power line conducted emissions test	
Final Test Mode	Description
Mode 7	TX N (HT20) Mode / CH165 (UNII-3)

Radiated emissions test - Below 1GHz	
Final Test Mode	Description
Mode 7	TX N (HT20) Mode / CH165 (UNII-3)

Radiated emissions test - Above 1GHz	
Final Test Mode	Description
Mode 1	TX A Mode / CH36, CH40, CH48 (UNII-1)
Mode 2	TX N (HT20) Mode / CH36, CH40, CH48 (UNII-1)
Mode 3	TX N (HT40) Mode / CH38, CH46 (UNII-1)
Mode 4	TX A Mode / CH149,CH157,CH165 (UNII-3)
Mode 5	TX N (HT20) Mode / CH149,CH157,CH165 (UNII-3)
Mode 6	TX N (HT40) Mode / CH151,CH159 (UNII-3)

Conducted test	
Final Test Mode	Description
Mode 1	TX A Mode / CH36, CH40, CH48 (UNII-1)
Mode 2	TX N (HT20) Mode / CH36, CH40, CH48 (UNII-1)
Mode 3	TX N (HT40) Mode / CH38, CH46 (UNII-1)
Mode 4	TX A Mode / CH149,CH157,CH165 (UNII-3)
Mode 5	TX N (HT20) Mode / CH149,CH157,CH165 (UNII-3)
Mode 6	TX N (HT40) Mode / CH151,CH159 (UNII-3)

Note:

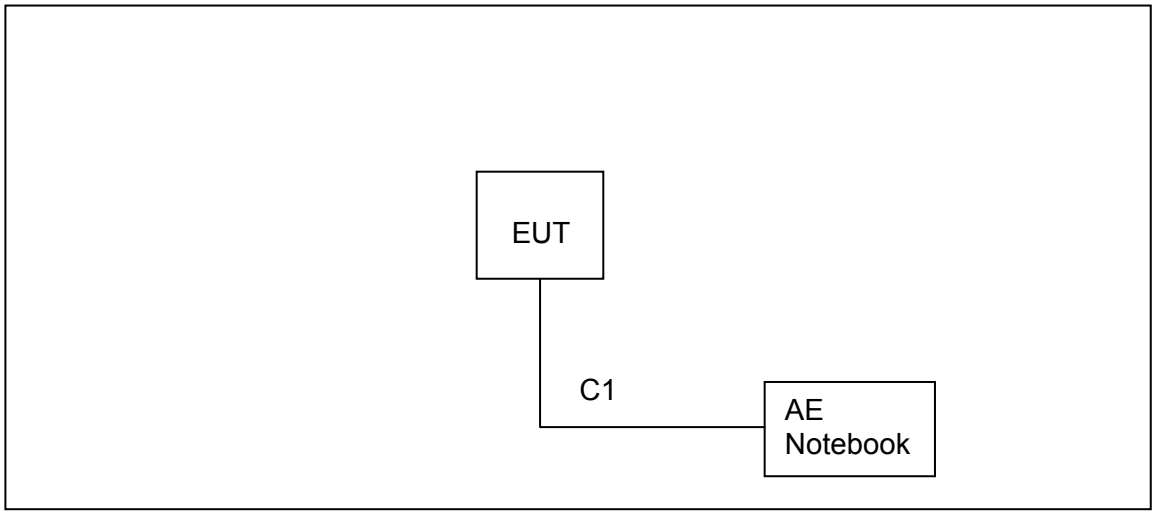
(1) For radiated emission below 1 GHz and AC power line conducted emissions test, the IEEE 802.11N20 channel 165 is found to be the worst case and recorded.

3.3 PARAMETERS OF TEST SOFTWARE

UNII-1			
Test Software	MT7668 QA 0.0.1.92		
Test Frequency (MHz)	5180	5200	5240
IEEE 802.11a	1F	1F	1F
IEEE 802.11n (HT20)	1F	1F	1F
Test Frequency (MHz)	5190	5230	
IEEE 802.11n (HT40)	1F	1F	
Test Frequency (MHz)	5210		

UNII-3			
Test Software	MT7668 QA 0.0.1.92		
Test Frequency (MHz)	5745	5785	5825
IEEE 802.11a	1F	1F	1F
IEEE 802.11n (HT20)	1F	1F	1F
Test Frequency (MHz)	5755	5795	
IEEE 802.11n (HT40)	1F	1F	
Test Frequency (MHz)	5775		

3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.5 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.
AE	Notebook	ACER	MS2367	32807810766

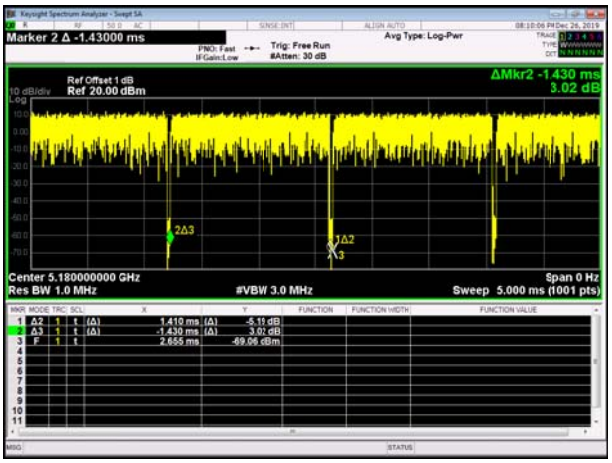
Item	Cable Type	Shielded Type	Ferrite Core	Length
C1	DC Cable	NO	NO	1m

3.6 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage
AC Power Line Conducted Emissions	25°C	53%	DC 3.3V
Radiated Emissions-9K-30MHz	25°C	60%	DC 3.3V
Radiated Emissions-30 MHz to 1GHz	24°C	68%	DC 3.3V
Radiated Emissions-Above 1000 MHz	24°C	68%	DC 3.3V
Spectrum Bandwidth	25.3°C	44.8%	DC 3.3V
Maximum Output Power	25.3°C	44.8%	DC 3.3V
Power Spectral Density	25.3°C	44.8%	DC 3.3V
Frequency Stability	Normal, Extreme	44.8%	Normal, Extreme

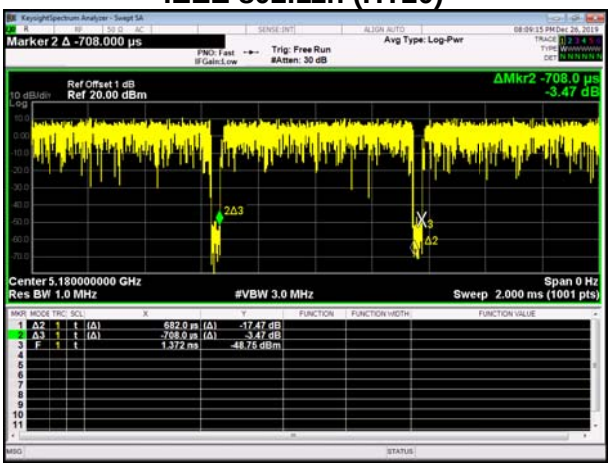
3.7 DUTY CYCLE

IEEE 802.11a



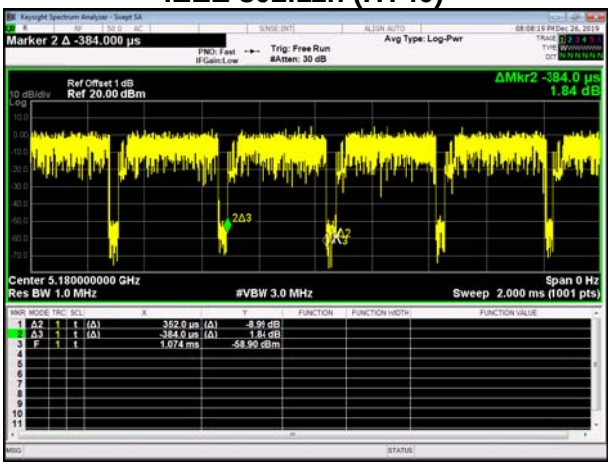
Duty cycle = 1.410ms / 1.430ms = 98.601%
Duty Factor = 10 log(1 / Duty cycle) = 0.00

IEEE 802.11n (HT20)



Duty cycle = 0.682 ms / 0.708ms = 96.328%
Duty Factor = 10 log(1 / Duty cycle) = 0.16

IEEE 802.11n (HT40)



Duty cycle = 0.352ms / 0.384ms = 91.667%
Duty Factor = 10 log(1 / Duty cycle) = 0.38
If duty cycle is ≥ 98 %, duty factor is not required.
If duty cycle is < 98 %, duty factor shall be considered, the Duty Factor =10 log(1/Duty cycle), the output power= measured power + duty factor, the result of duty factor as below table:

IEEE 802.11a	IEEE 802.11n (HT20)	IEEE 802.11n (HT40)
0.00	0.16	0.38

NOTE:
For IEEE 802.11a,IEEE 802.11n (HT20)
For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 1 kHz (Duty cycle < 98%).
For IEEE 802.11n (HT40)
For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 2 kHz (Duty cycle < 98%).

4. AC POWER LINE CONDUCTED EMISSIONS TEST

4.1 LIMIT

Frequency (MHz)	Limit (dBμV)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56*	56 to 46*
0.50 - 5.0	56	46
5.0 - 30.0	60	50

NOTE:
(1) The tighter limit applies at the band edges.
(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameter	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

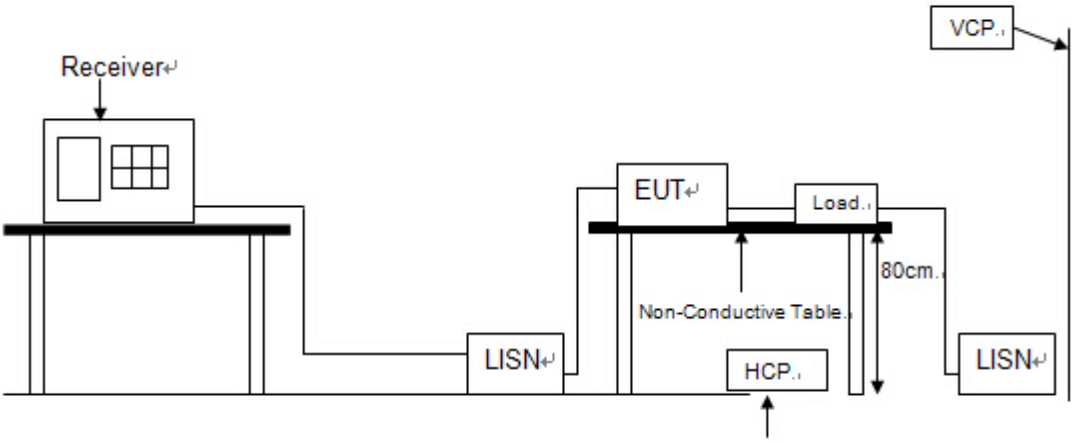
4.2 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.

4.3 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Pulse Limiter	MTS-system technik	MTS-IMP-136	261115-010-0024	12/11/2020
2	EMI Test Receiver	R&S	ESCI	101308	12/12/2020
3	LISN	AFJ	LS16	16011103219	06/09/2020
4	LISN	Schwarzbeck	NSLK 8127	8127-432	12/11/2020
5	Measurement Software	Farad	EZ-EMC (Ver.ATT-03A)	N/A	N/A

4.4 TESTSETUP



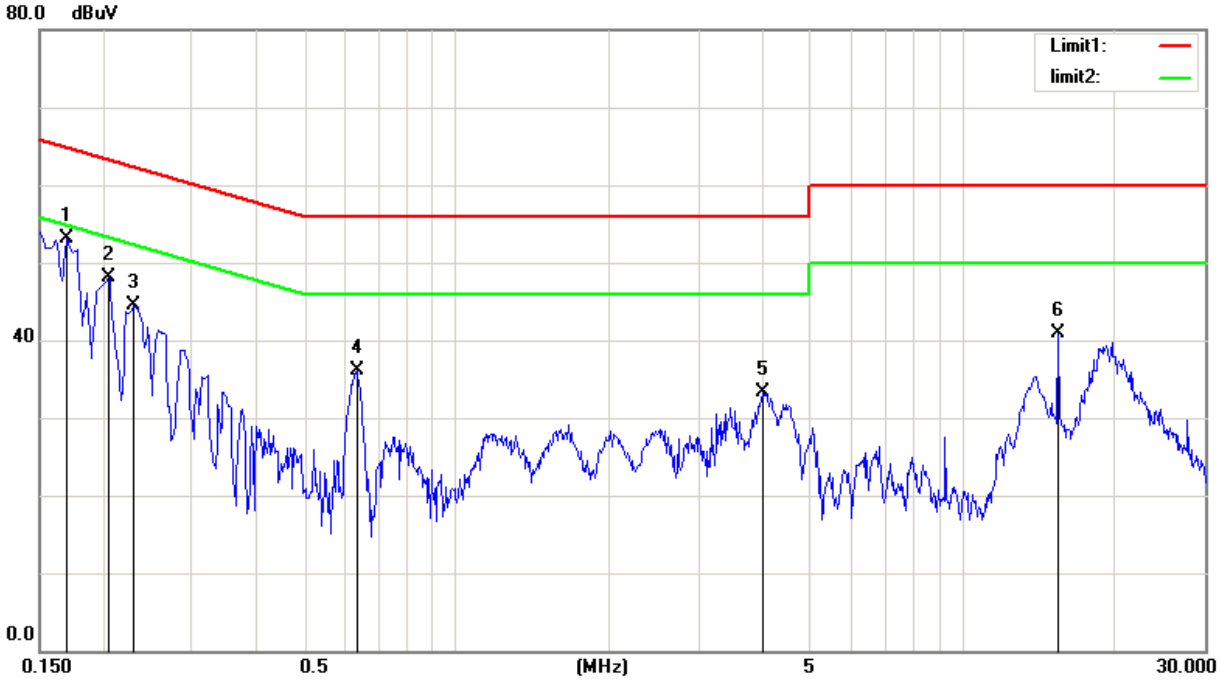
4.5 EUT OPERATION CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it).The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.
The EUT was programmed to be in continuously transmitting/TX mode.

4.6 TEST RESULTS

Test Mode:	TX N (HT20) Mode / CH165 (UNII-3)

Line

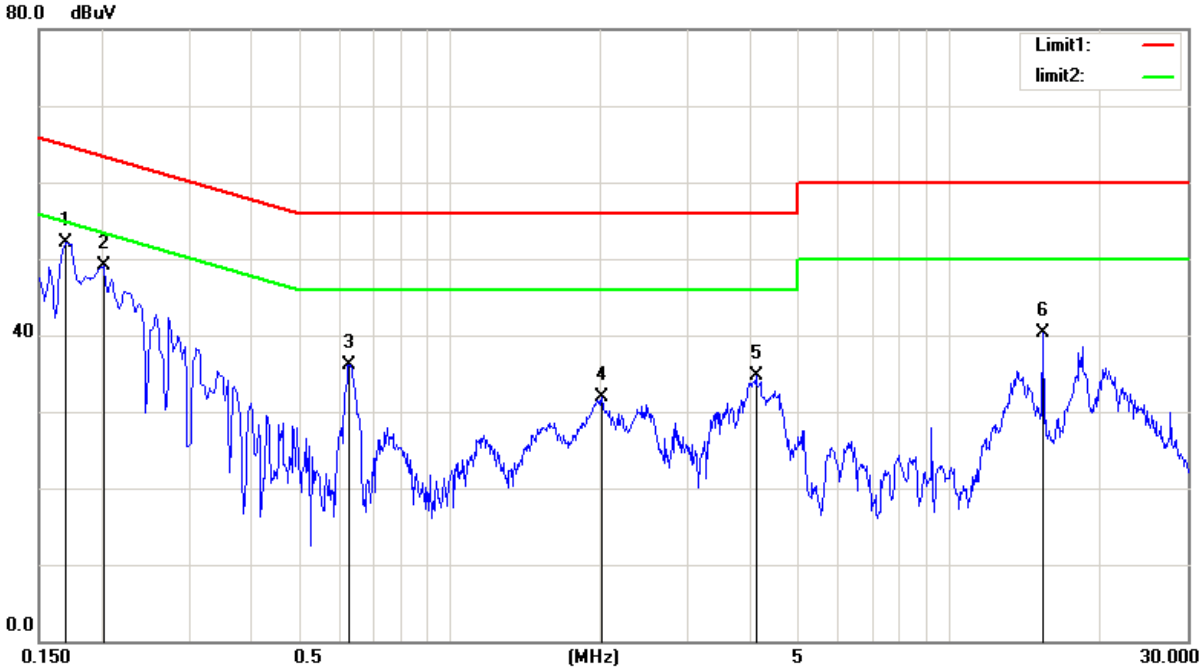


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1700	41.72	11.33	53.05	64.96	-11.91	peak
2	0.2060	37.01	11.08	48.09	63.36	-15.27	peak
3	0.2300	33.51	10.92	44.43	62.45	-18.02	peak
4	0.6340	25.91	10.14	36.05	56.00	-19.95	peak
5	4.0100	23.08	10.14	33.22	56.00	-22.78	peak
6	15.4060	30.82	10.17	40.99	60.00	-19.01	peak

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode:	TX N (HT20) Mode / CH165 (UNII-3)

Neutral



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1700	40.86	11.33	52.19	64.96	-12.77	peak
2	0.2020	37.97	11.11	49.08	63.52	-14.44	peak
3	0.6300	26.01	10.14	36.15	56.00	-19.85	peak
4	2.0220	21.70	10.11	31.81	56.00	-24.19	peak
5	4.1060	24.63	10.14	34.77	56.00	-21.23	peak
6	15.3980	30.07	10.17	40.24	60.00	-19.76	peak

Remarks:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

5. RADIATED EMISSIONSTEST

5.1 LIMIT

In case the emission fall within the restricted band specified on 15.205(a)&RSS-Gen 8.10, then the 15.209(a)&RSS-Gen 8.9 limit in the table below has to be followed.

LIMITS OF RADIATED EMISSIONS MEASUREMENT (9 kHz to 1000MHz)

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

LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

Frequency (MHz)	EIRP Limit (dBm/MHz)	Equivalent Field Strength at 3m (dBμV/m)
5150-5250	-27	68.3
5250-5350	-27	68.3
5470-5725	-27	68.3
5725-5850	-27 Note(2)	68.3
	10 Note(2)	105.3
	15.6 Note(2)	110.9
	27 Note(2)	122.3

Note:

(1) The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength: $E = \frac{1000000\sqrt{30P}}{3}$ μV/m, where P is the eirp (Watts)

(2) According to 15.407(b)(4)(i), all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27dBm/MHz at the band edge.

(3) Radiation larger than 26.5GHz is background, so the following data only measures the maximum 26.5GHz

(4) Duty Cycle compensation less than 98% has been compensated in the test software prior to the implementation of the test

5.2 TEST PROCEDURE

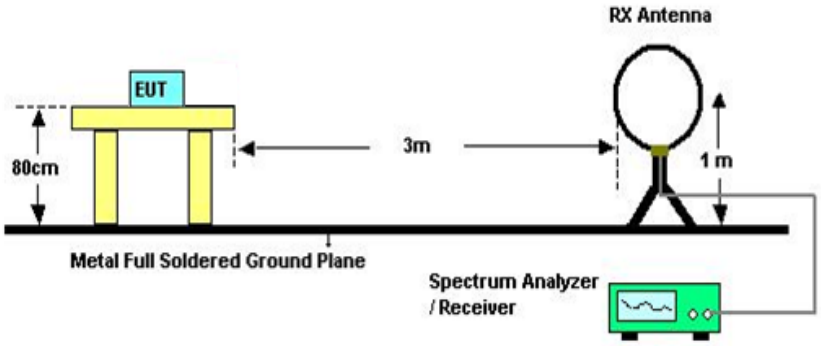
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
c. The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. 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 find the maximum reading (used Bore sight function).
e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn‘t perform. (below 1GHz)
h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn‘t perform. (above 1GHz)
i. The test result is calculated as the following:
(1) Result = Reading + Correct Factor
(2) Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain + Attenuator
(3) Margin = Result - Limit

5.3 MEASUREMENT INSTRUMENTS LIST

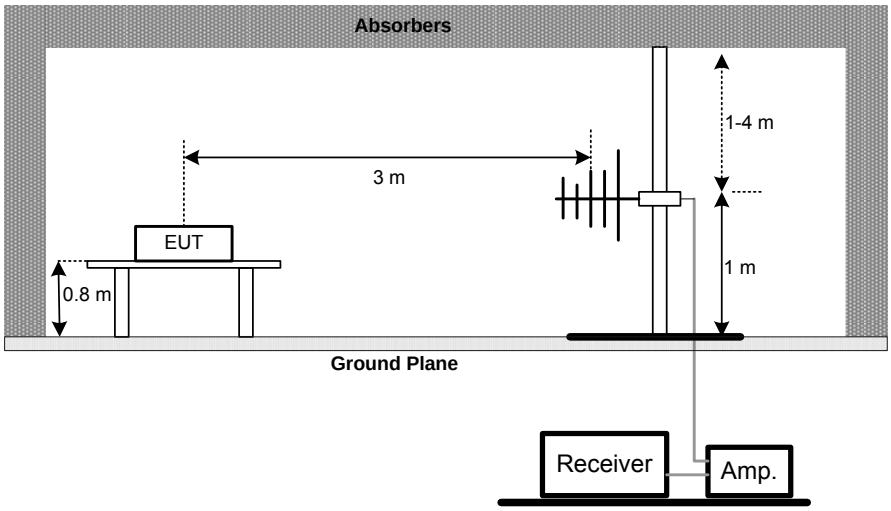
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EMI Test Receiver	R&S	ESCI	101307	2020/12/12
2	Spectrum Analyzer	Agilent	E4407B	US40240708	2020/11/17
3	Spectrum analyzer	R&S	FSU	1166.1660.26	2020/12/11
4	Loop antenna	TESEQ	HLA6120	20129	2020/12/14
5	Broadband Antenna	Schwarzbeck	VULB9168	VULB9168-192	2020/03/22
6	Double Ridged Horn Antenna	Schwarzbeck	BBHA9120D	9120D 1065	2020/04/22
7	Horn Antenna	Schwarzbeck	BBHA 9170	9170 1248	2020/12/11
8	Pre-amplifier	A.H.	PAM-1840VH	562	2020/12/11
9	Pre-amplifier	CY	EMC011830	980136	2020/12/11
10	Pre-Amplifier	HP	8447F	3113A05680	2020/12/11
11	RF Cable	R&S	Test Cable 4	4	2020/12/11
12	RF Cable	R&S	Test Cable 5	5	2020/12/11
13	RF Cable	R&S	Test Cable 9	9	2020/04/22
14	RF Cable	R&S	Test Cable 10	10	2020/12/11

5.4 TESTSETUP

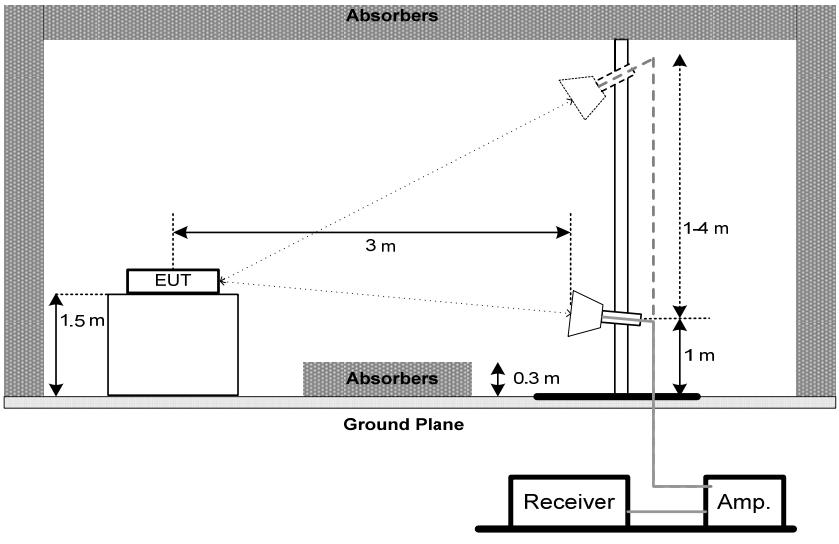
9 kHz to 30 MHz



30 MHz to 1 GHz



Above 1 GHz



5.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULTS - 9 KHZ to 30MHZ

Test Mode:	TX N (HT20) Mode / CH165 (UNII-3)

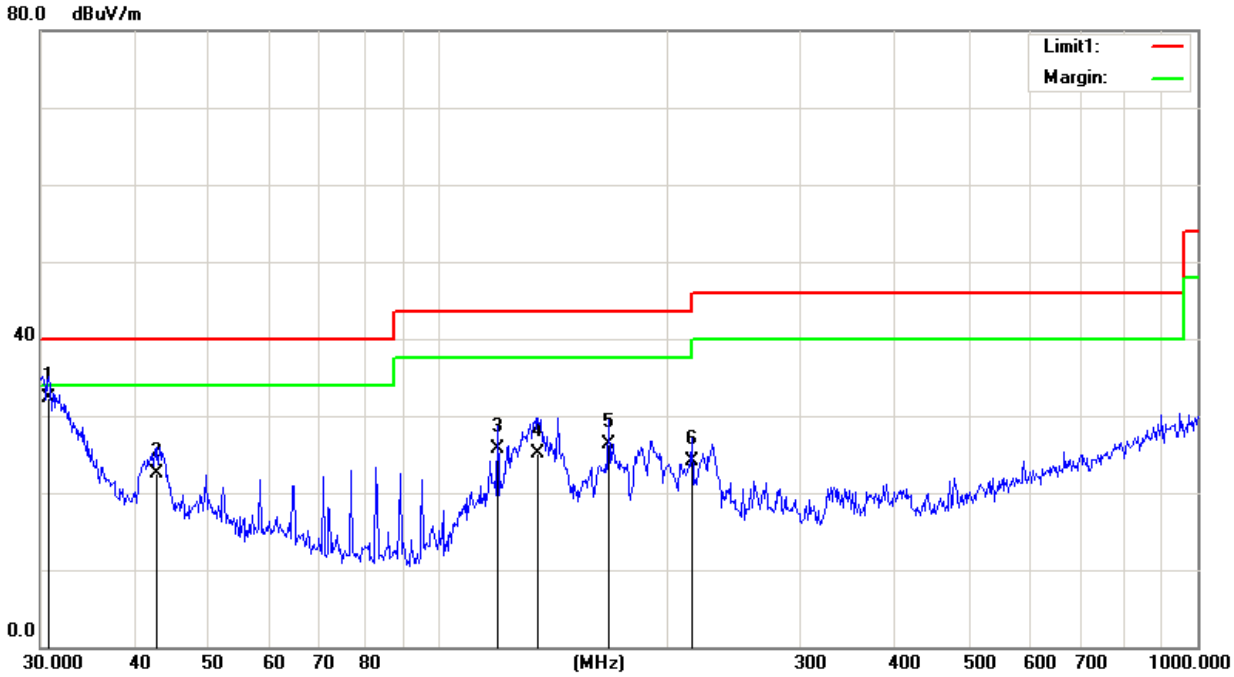
Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	P
--	--	--	--	P

Note:
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =20 log (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor

5.7 TEST RESULTS - 30 MHz TO 1000 MHz

Test Mode:	TX N (HT20) Mode / CH165 (UNII-3)

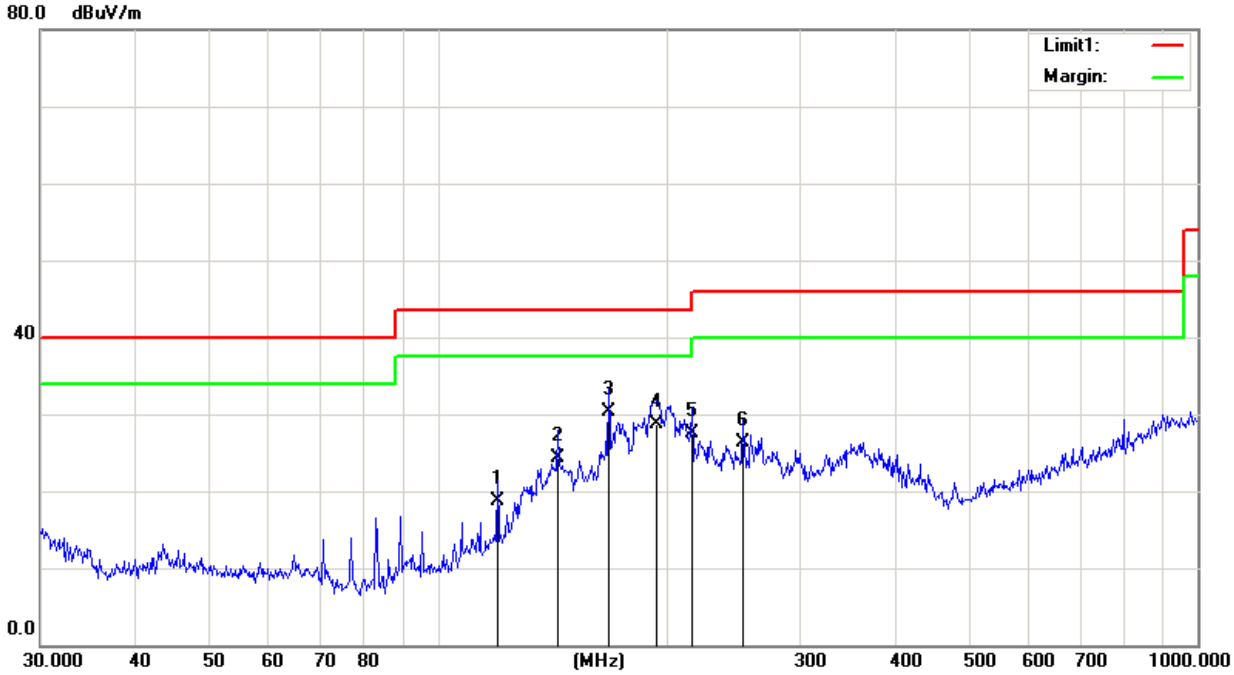
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.7455	43.80	-11.52	32.28	40.00	-7.72	QP
2	42.6000	35.98	-13.44	22.54	40.00	-17.46	QP
3	119.8556	38.58	-12.89	25.69	43.50	-17.81	QP
4	135.5062	37.17	-11.99	25.18	43.50	-18.32	QP
5	167.8243	36.73	-10.48	26.25	43.50	-17.25	QP
6	216.0240	34.72	-10.58	24.14	46.00	-21.86	QP

Test Mode:	TX N (HT20) Mode / CH165 (UNII-3)

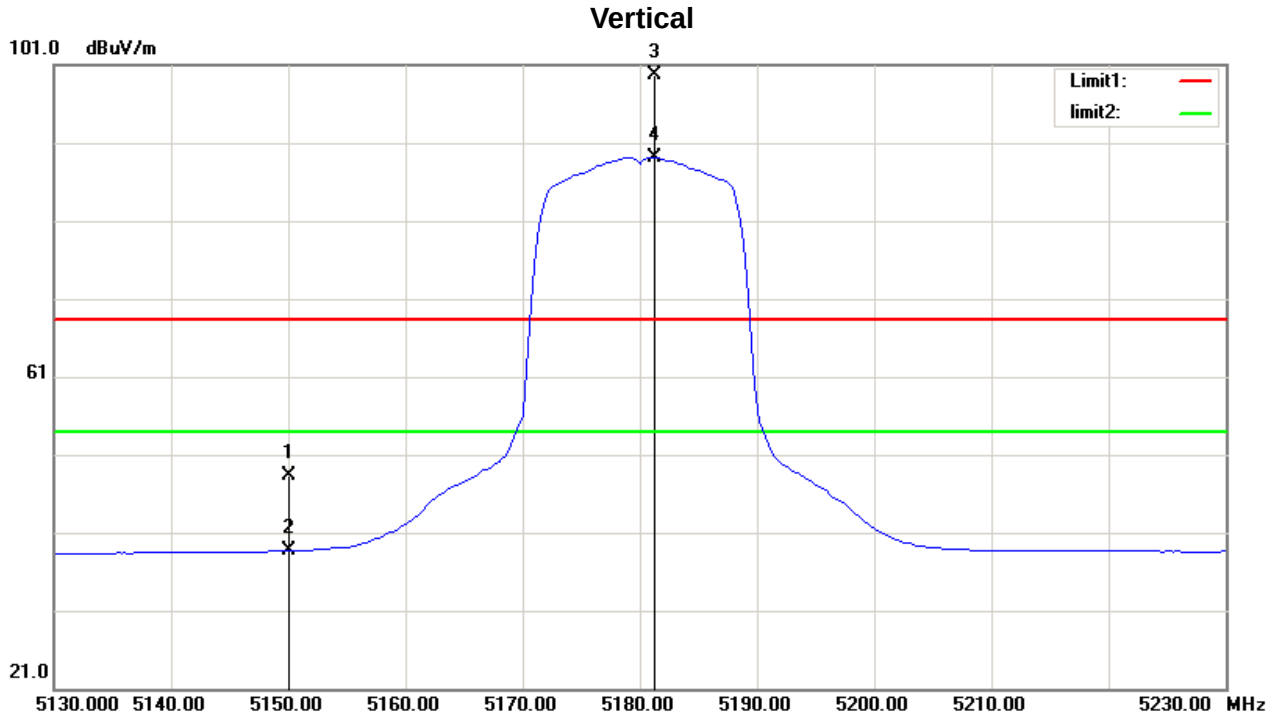
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	119.8556	32.60	-13.89	18.71	43.50	-24.79	QP
2	143.8295	37.09	-12.73	24.36	43.50	-19.14	QP
3	167.8243	41.29	-10.91	30.38	43.50	-13.12	QP
4	194.4534	38.31	-9.67	28.64	43.50	-14.86	QP
5	216.0240	36.92	-9.38	27.54	46.00	-18.46	QP
6	252.0627	32.36	-6.03	26.33	46.00	-19.67	QP

5.8 TEST RESULTS - ABOVE1000 MHz(BAND EDGE)

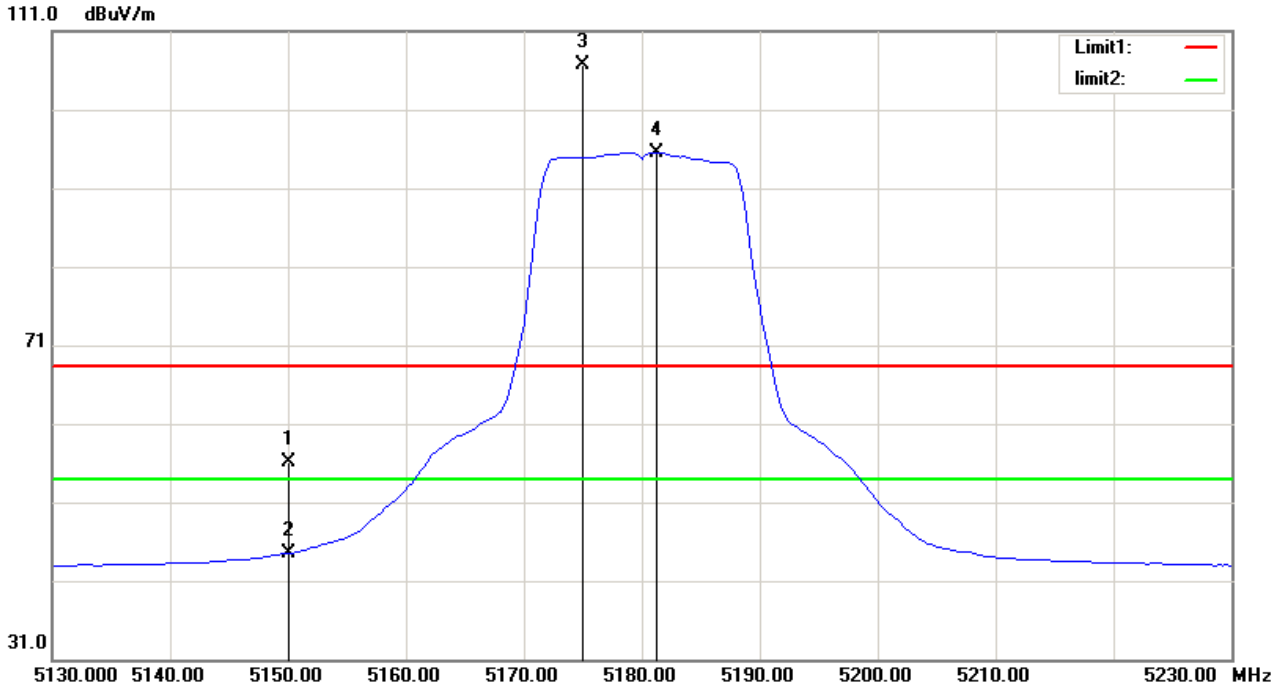
Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5180 MHz



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	9.22	39.09	48.31	68.30	-19.99	peak
2	5150.000	-0.40	39.09	38.69	54.00	-15.31	AVG
3	5181.250	60.45	39.19	99.64	/	/	peak
4	5181.250	49.97	39.19	89.16	/	/	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5180 MHz

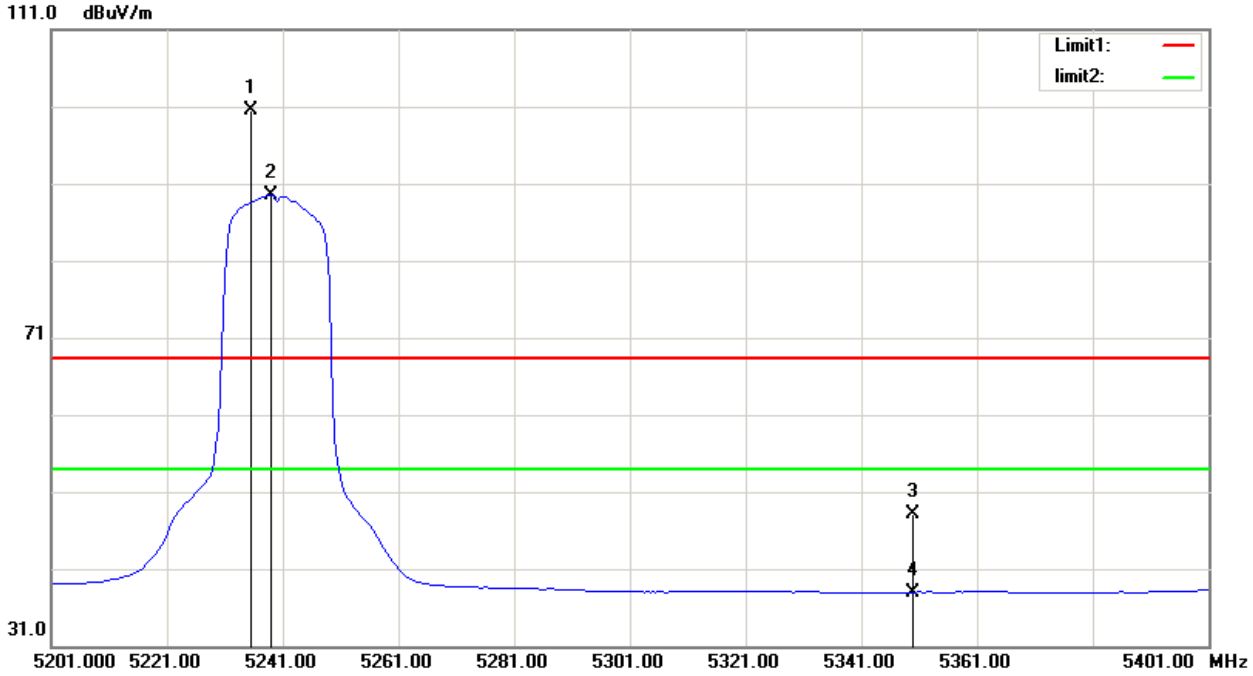
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	17.10	39.09	56.19	68.30	-12.11	peak
2	5150.000	5.39	39.09	44.48	54.00	-9.52	AVG
3	5175.000	67.53	39.17	106.70	/	/	peak
4	5181.250	56.37	39.19	95.56	/	/	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5240 MHz

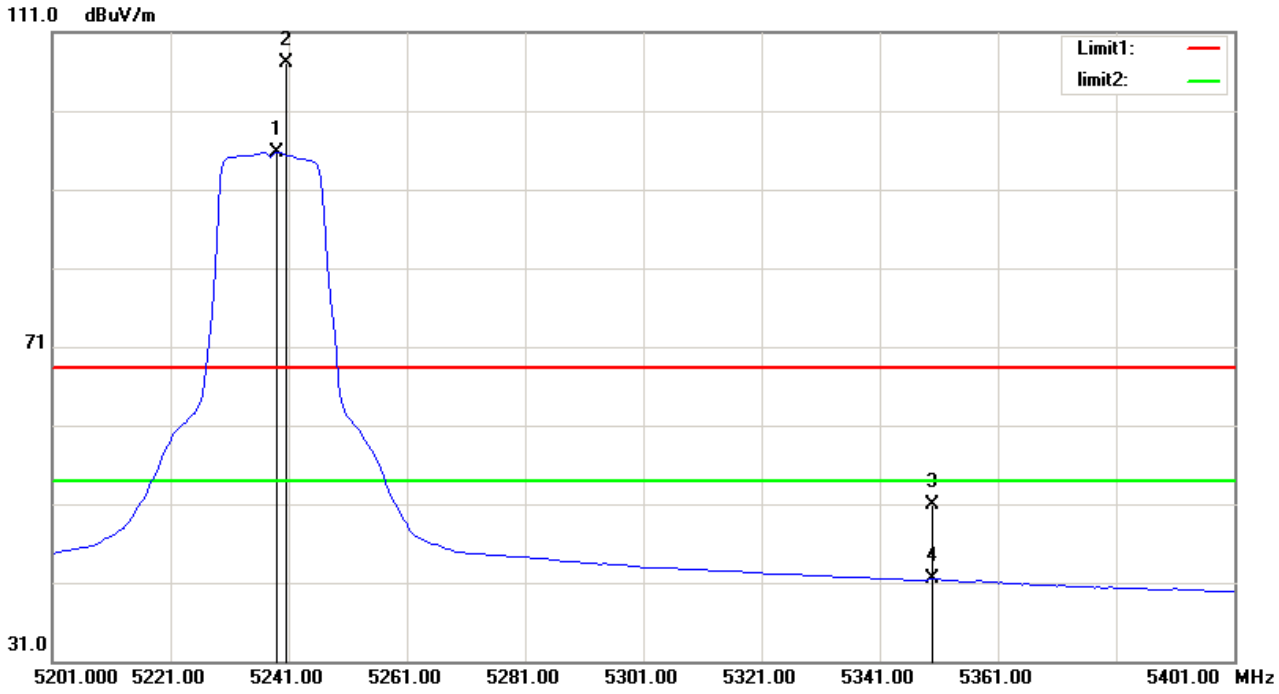
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5235.500	61.06	39.37	100.43	/	/	peak
2	5239.000	50.17	39.38	89.55	/	/	AVG
3	5350.000	8.39	39.74	48.13	68.30	-20.17	peak
4	5350.000	-1.79	39.74	37.95	54.00	-16.05	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5240 MHz

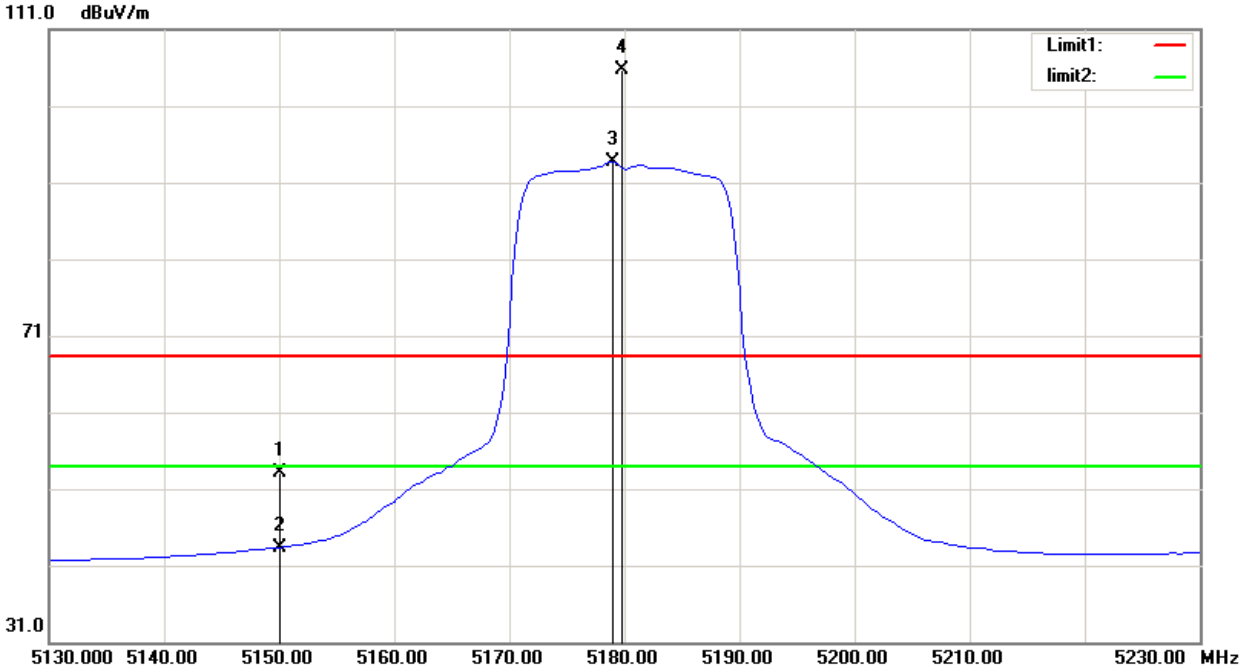
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5239.000	56.31	39.38	95.69	/	/	AVG
2	5240.500	67.66	39.39	107.05	/	/	peak
3	5350.000	11.14	39.74	50.88	68.30	-17.42	peak
4	5350.000	1.71	39.74	41.45	54.00	-12.55	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX N (HT20) Mode 5180 MHz

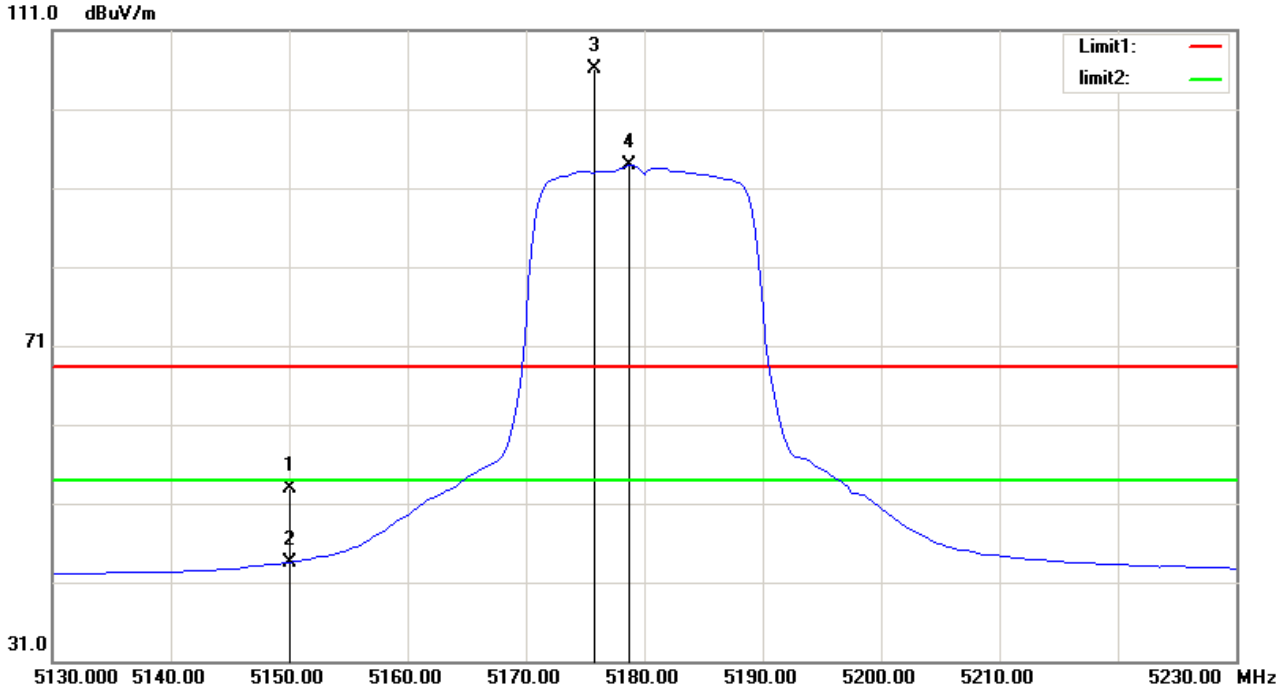
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	14.10	39.09	53.19	68.30	-15.11	peak
2	5150.000	4.26	39.09	43.35	54.00	-10.65	AVG
3	5179.000	54.45	39.19	93.64	/	/	AVG
4	5179.750	66.58	39.19	105.77	/	/	peak

Orthogonal Axis	X
Test Mode	UNII-1_TX N (HT20) Mode 5180 MHz

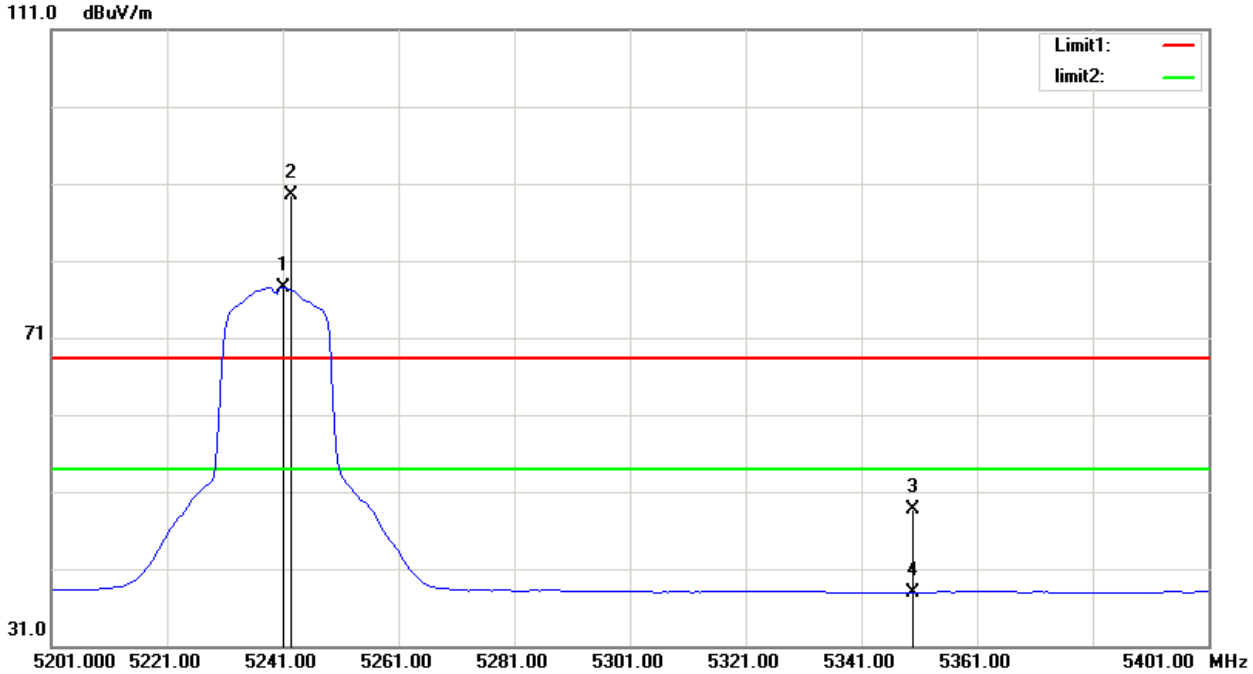
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	13.74	39.09	52.83	68.30	-15.47	peak
2	5150.000	4.42	39.09	43.51	54.00	-10.49	AVG
3	5175.750	66.85	39.17	106.02	/	/	peak
4	5178.750	54.63	39.19	93.82	/	/	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX N (HT20) Mode 5240 MHz

Vertical

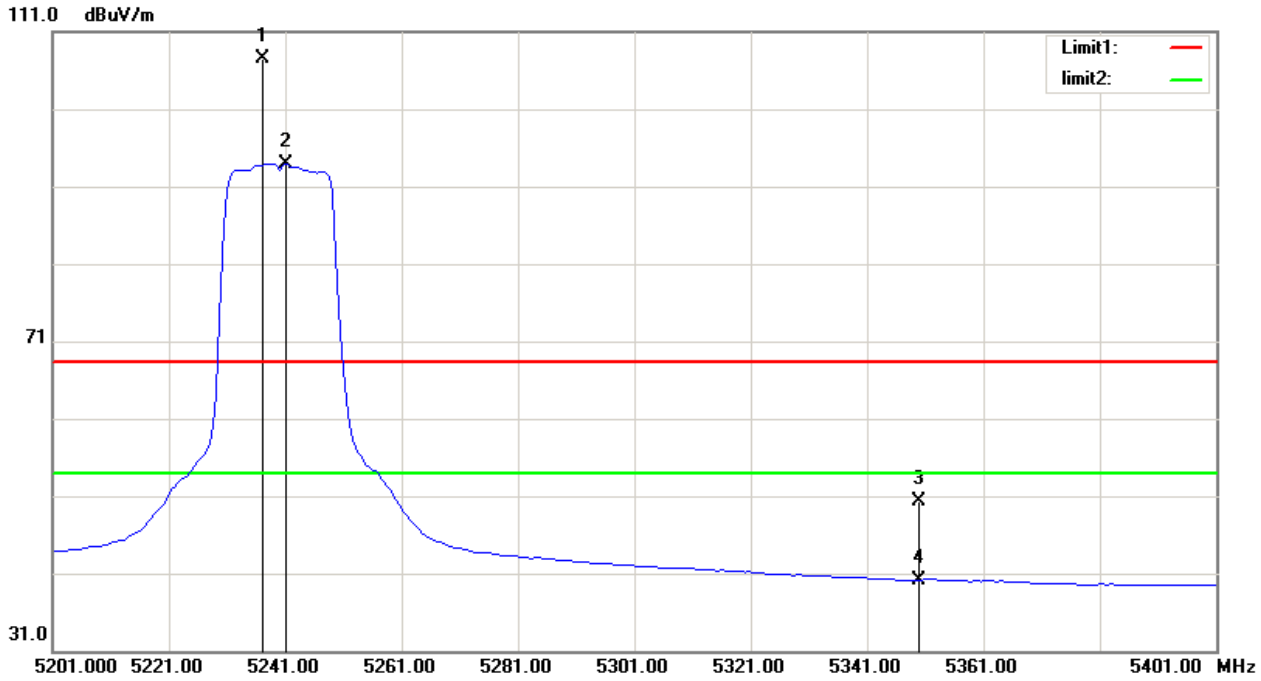


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5241.000	38.21	39.39	77.60	/	/	AVG
2	5242.500	50.05	39.39	89.44	/	/	peak
3	5350.000	9.00	39.74	48.74	68.30	-19.56	peak
4	5350.000	-1.77	39.74	37.97	54.00	-16.03	AVG

.

Orthogonal Axis	X
Test Mode	UNII-1_TX N (HT20) Mode 5240 MHz

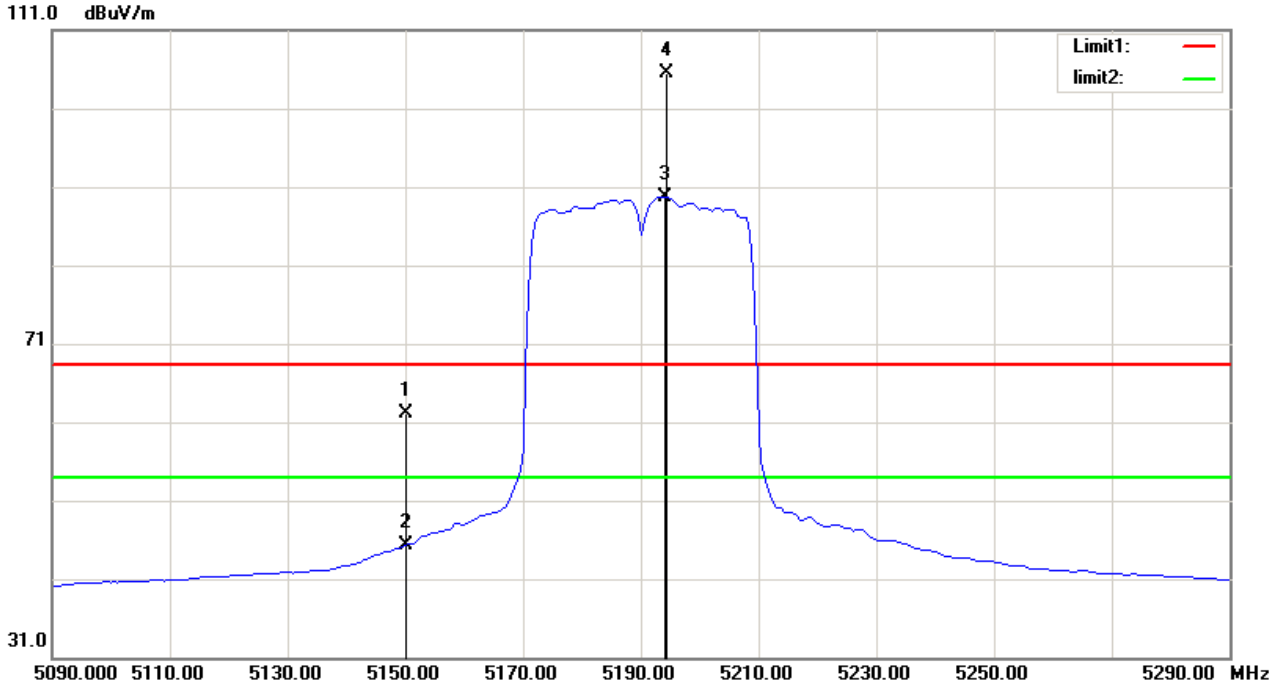
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5237.000	68.21	39.37	107.58	/	/	peak
2	5241.000	54.55	39.39	93.94	/	/	AVG
3	5350.000	10.65	39.74	50.39	68.30	-17.91	peak
4	5350.000	0.39	39.74	40.13	54.00	-13.87	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX N (HT40) Mode 5190 MHz

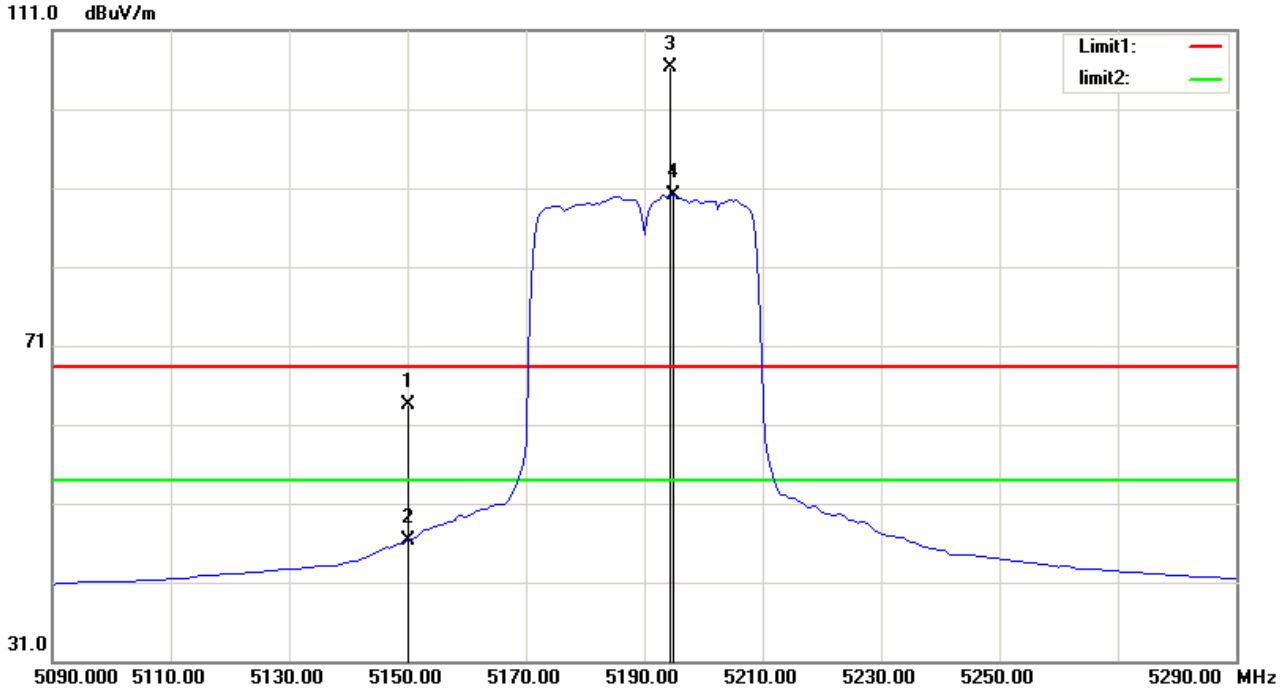
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	22.96	39.09	62.05	68.30	-6.25	peak
2	5150.000	6.19	39.09	45.28	54.00	-8.72	AVG
3	5194.000	50.39	39.24	89.63	/	/	AVG
4	5194.500	66.20	39.24	105.44	/	/	peak

Orthogonal Axis	X
Test Mode	UNII-1_TX N (HT40) Mode 5190 MHz

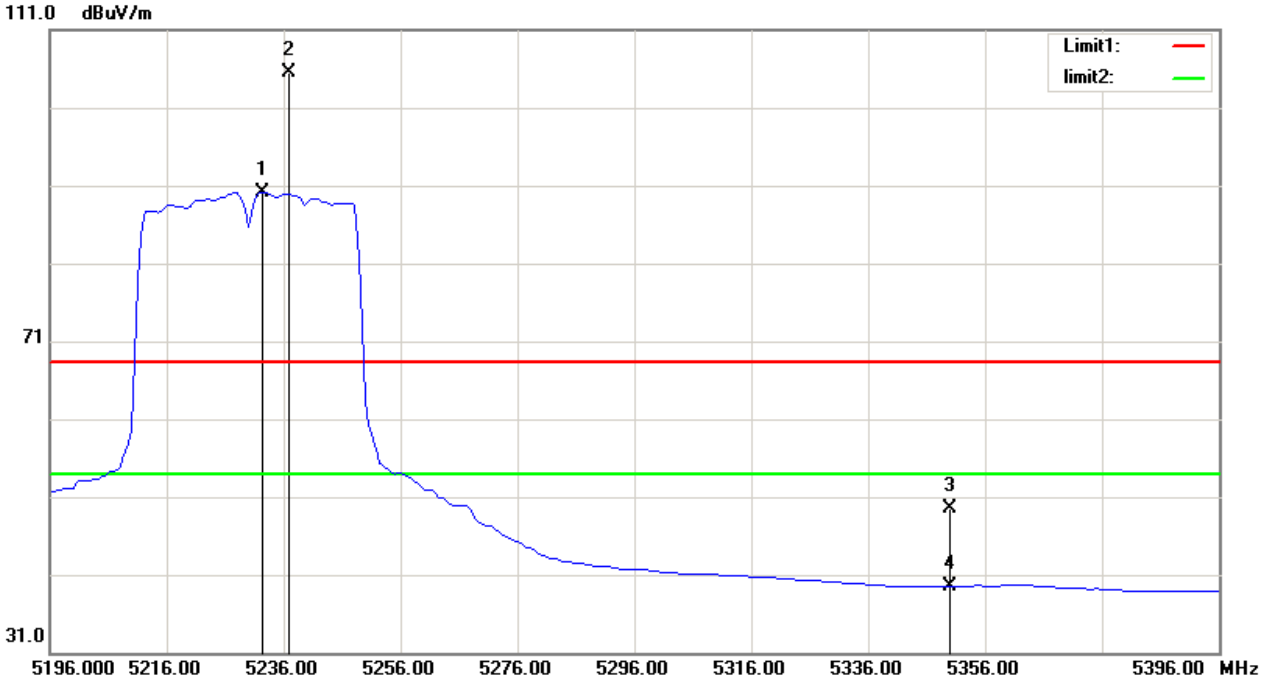
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	24.46	39.09	63.55	68.30	-4.75	peak
2	5150.000	7.19	39.09	46.28	54.00	-7.72	AVG
3	5194.500	67.04	39.24	106.28	/	/	peak
4	5195.000	50.85	39.24	90.09	/	/	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX N (HT40) Mode 5230 MHz

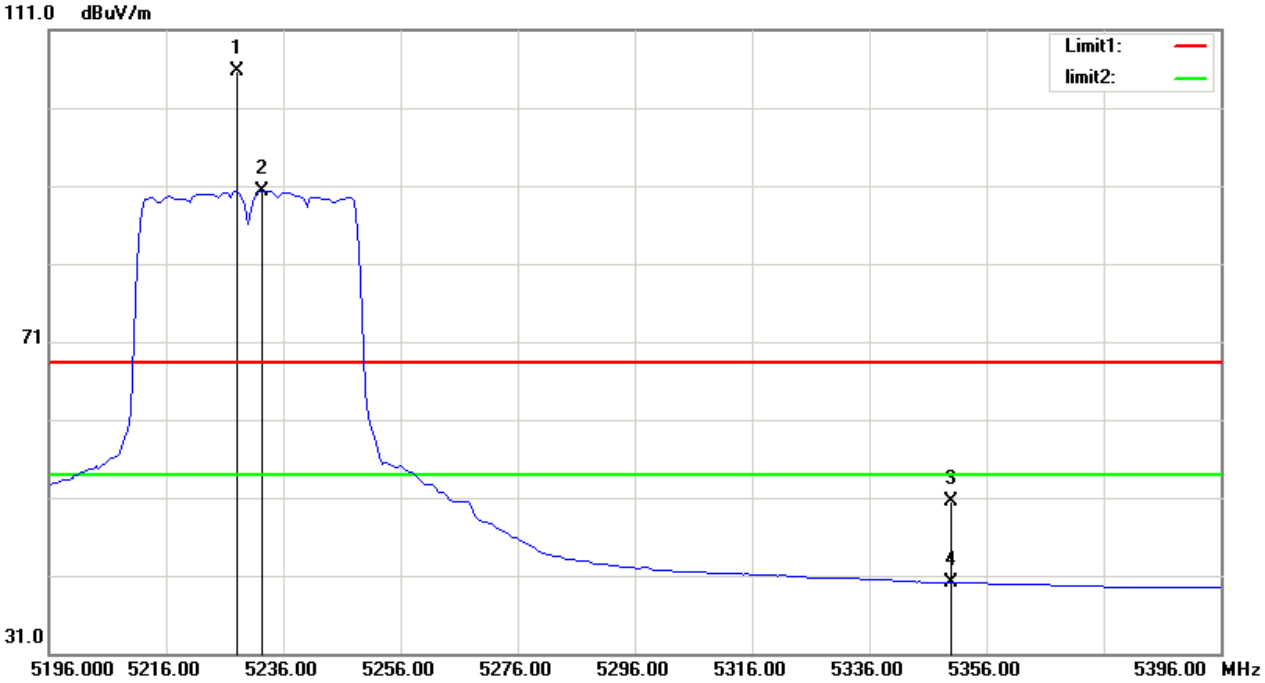
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5232.500	50.80	39.36	90.16	/	/	AVG
2	5237.000	66.23	39.37	105.60	/	/	peak
3	5350.000	9.71	39.74	49.45	68.30	-18.85	peak
4	5350.000	-0.22	39.74	39.52	54.00	-14.48	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX N (HT40) Mode 5230 MHz

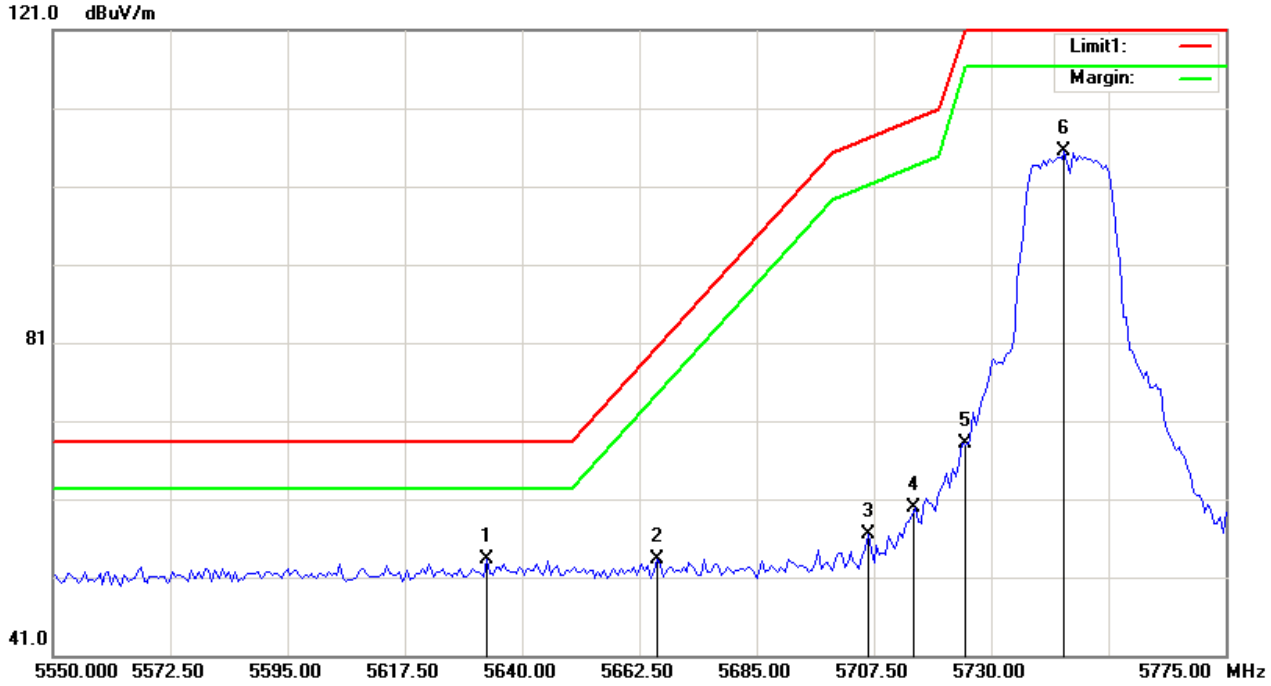
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5228.000	66.33	39.35	105.68	/	/	peak
2	5232.500	51.02	39.36	90.38	/	/	AVG
3	5350.000	10.85	39.74	50.59	68.30	-17.71	peak
4	5350.000	0.36	39.74	40.10	54.00	-13.90	AVG

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5745 MHz

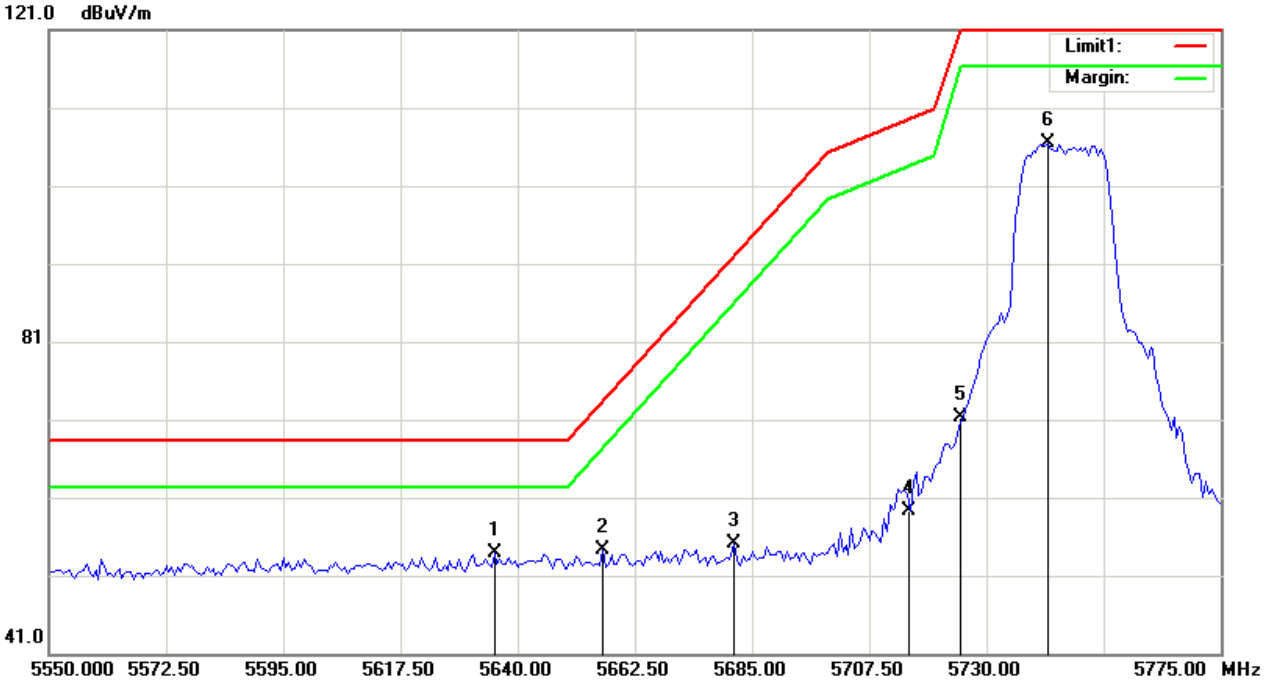
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5633.250	12.96	40.28	53.24	68.30	-15.06	peak
2	5665.875	12.94	40.29	53.23	80.05	-26.82	peak
3	5706.375	16.23	40.31	56.54	107.08	-50.54	peak
4	5715.000	19.57	40.31	59.88	109.50	-49.62	peak
5	5725.000	27.84	40.31	68.15	122.30	-54.15	peak
6	5744.063	65.18	40.32	105.50	122.30	-16.80	peak

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5745 MHz

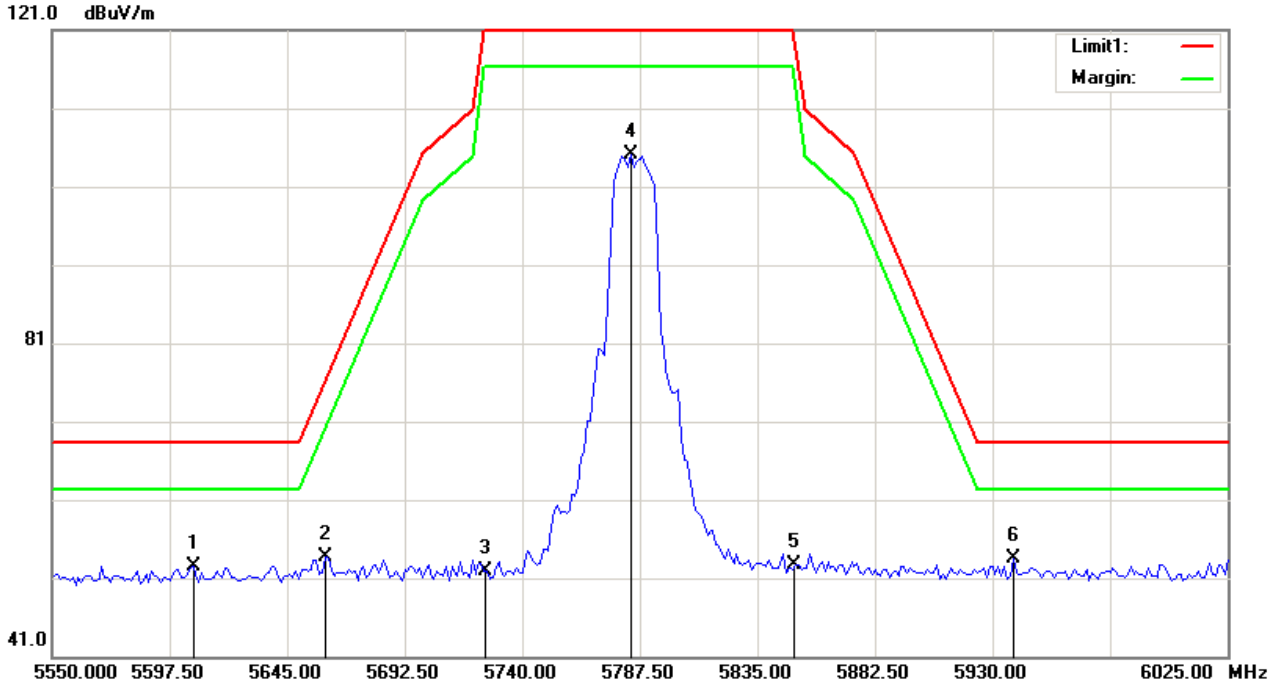
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5635.500	13.69	40.28	53.97	68.30	-14.33	peak
2	5656.313	13.98	40.29	54.27	72.97	-18.70	peak
3	5681.625	14.79	40.30	55.09	91.70	-36.61	peak
4	5715.000	19.05	40.31	59.36	109.50	-50.14	peak
5	5725.000	31.03	40.31	71.34	122.30	-50.96	peak
6	5741.813	66.12	40.32	106.44	122.30	-15.86	peak

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5785 MHz

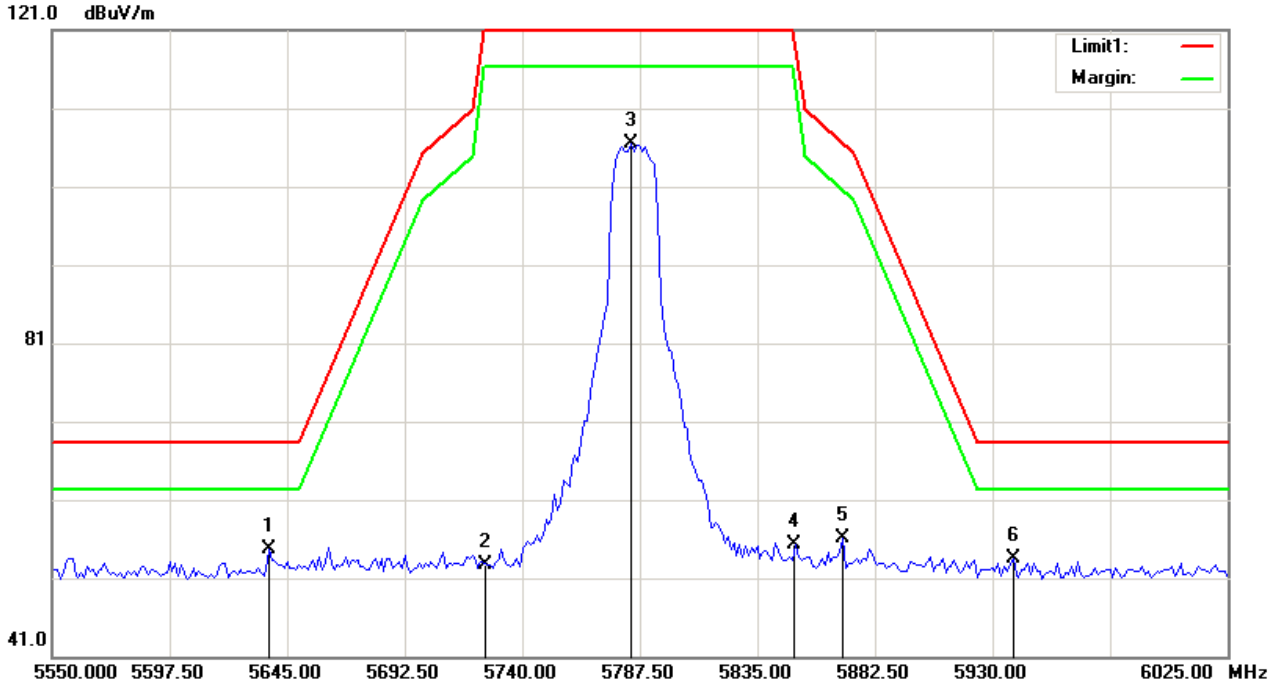
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5607.000	12.28	40.27	52.55	68.30	-15.75	peak
2	5660.438	13.33	40.29	53.62	76.02	-22.40	peak
3	5725.000	11.52	40.31	51.83	122.30	-70.47	peak
4	5783.938	64.81	40.34	105.15	122.30	-17.15	peak
5	5850.000	12.38	40.37	52.75	122.30	-69.55	peak
6	5938.313	13.15	40.40	53.55	68.30	-14.75	peak

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5785 MHz

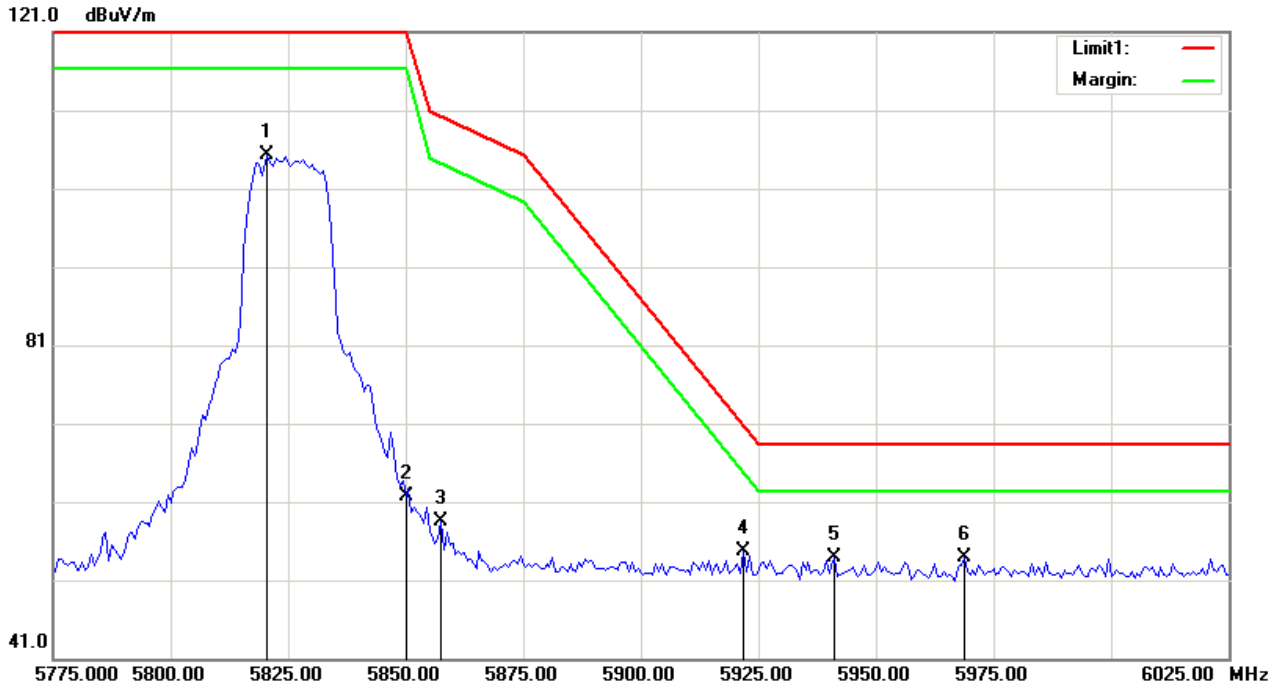
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5637.875	14.43	40.27	54.70	68.30	-13.60	peak
2	5725.000	12.39	40.31	52.70	122.30	-69.60	peak
3	5783.938	66.08	40.34	106.42	122.30	-15.88	peak
4	5850.000	14.87	40.37	55.24	122.30	-67.06	peak
5	5869.438	15.75	40.37	56.12	106.86	-50.74	peak
6	5938.313	13.19	40.40	53.59	68.30	-14.71	peak

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5825 MHz

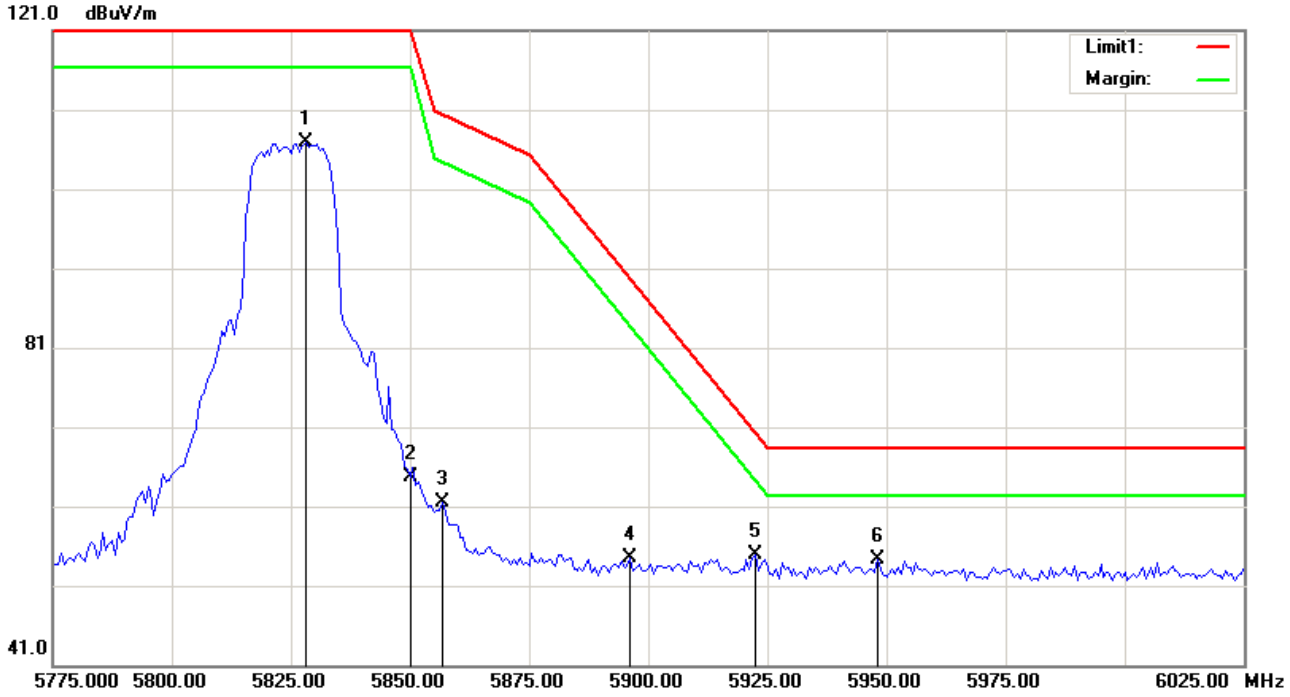
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5820.625	64.86	40.35	105.21	122.30	-17.09	peak
2	5850.000	21.32	40.37	61.69	122.30	-60.61	peak
3	5857.500	18.13	40.37	58.50	110.20	-51.70	peak
4	5921.875	14.24	40.40	54.64	70.61	-15.97	peak
5	5941.250	13.46	40.40	53.86	68.30	-14.44	peak
6	5968.750	13.50	40.41	53.91	68.30	-14.39	peak

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5825 MHz

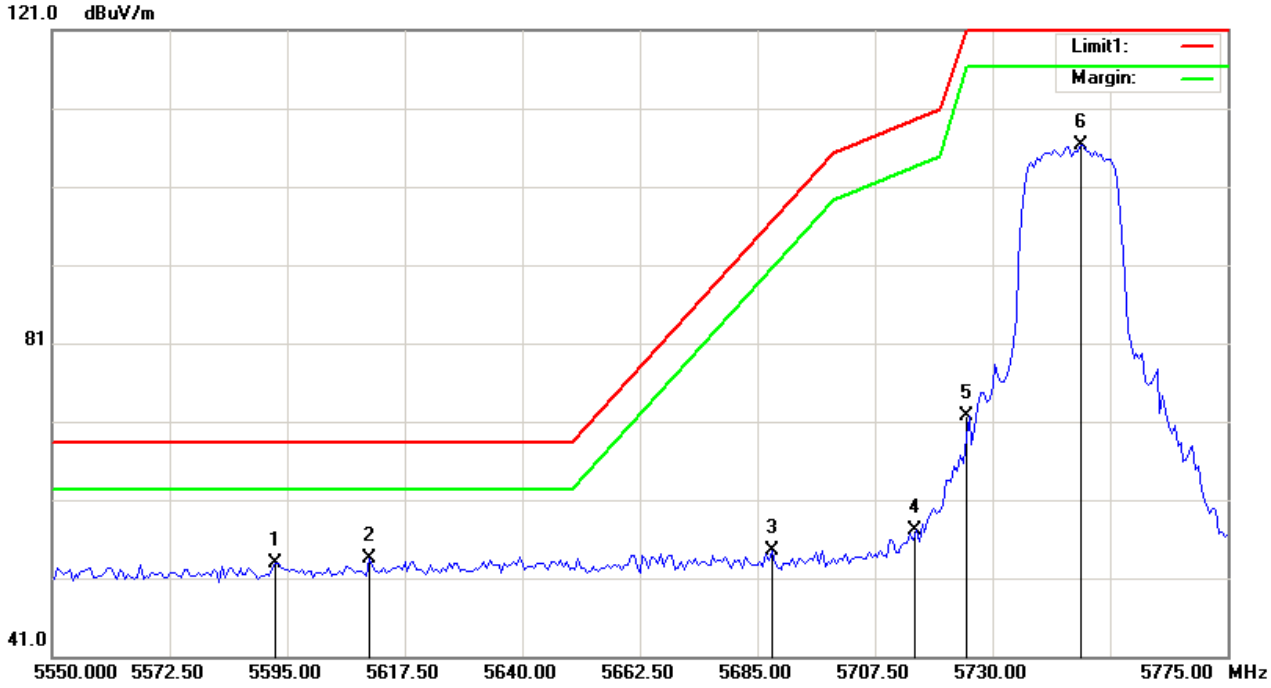
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5828.125	66.45	40.36	106.81	122.30	-15.49	peak
2	5850.000	24.42	40.37	64.79	122.30	-57.51	peak
3	5856.875	21.09	40.37	61.46	110.37	-48.91	peak
4	5896.250	14.16	40.38	54.54	89.57	-35.03	peak
5	5922.500	14.55	40.40	54.95	70.15	-15.20	peak
6	5948.125	13.88	40.41	54.29	68.30	-14.01	peak

Orthogonal Axis	X
Test Mode	UNII-3_TX N (HT20) Mode 5745 MHz

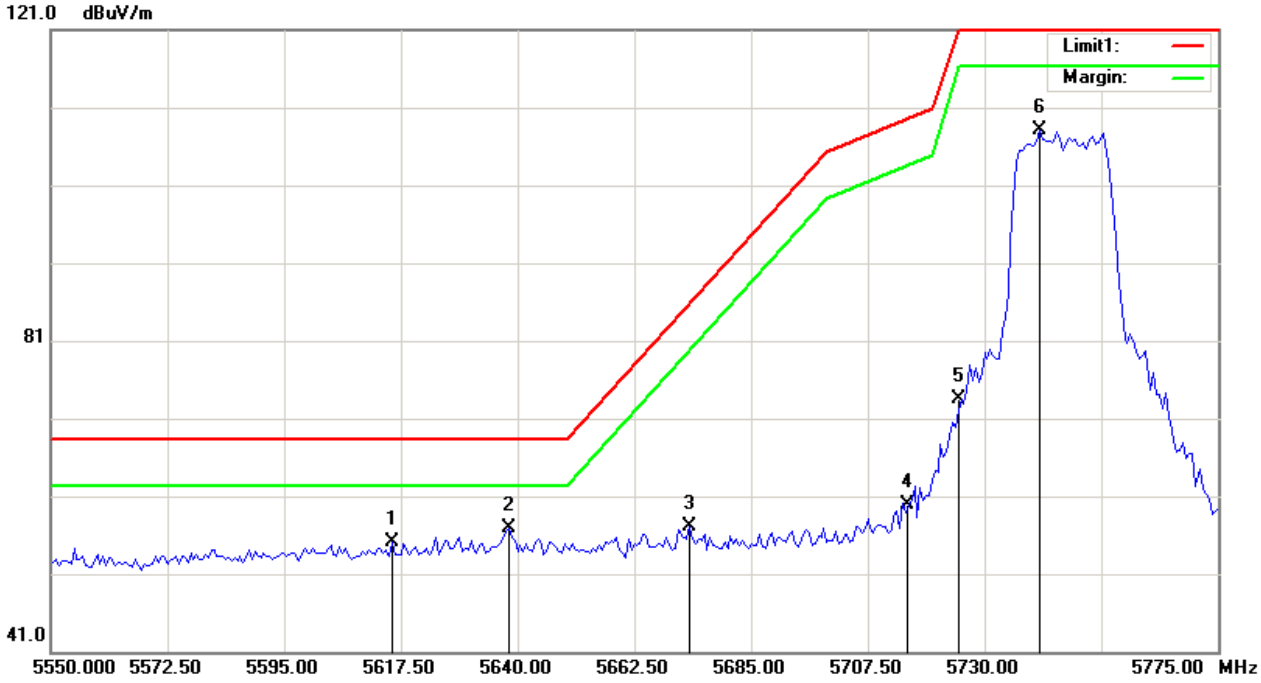
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5592.750	12.74	40.26	53.00	68.30	-15.30	peak
2	5610.750	13.32	40.27	53.59	68.30	-14.71	peak
3	5687.813	14.24	40.29	54.53	96.28	-41.75	peak
4	5715.000	16.85	40.31	57.16	109.50	-52.34	peak
5	5725.000	31.47	40.31	71.78	122.30	-50.52	peak
6	5746.875	66.01	40.32	106.33	122.30	-15.97	peak

Orthogonal Axis	X
Test Mode	UNII-3_TX N (HT20) Mode 5745 MHz

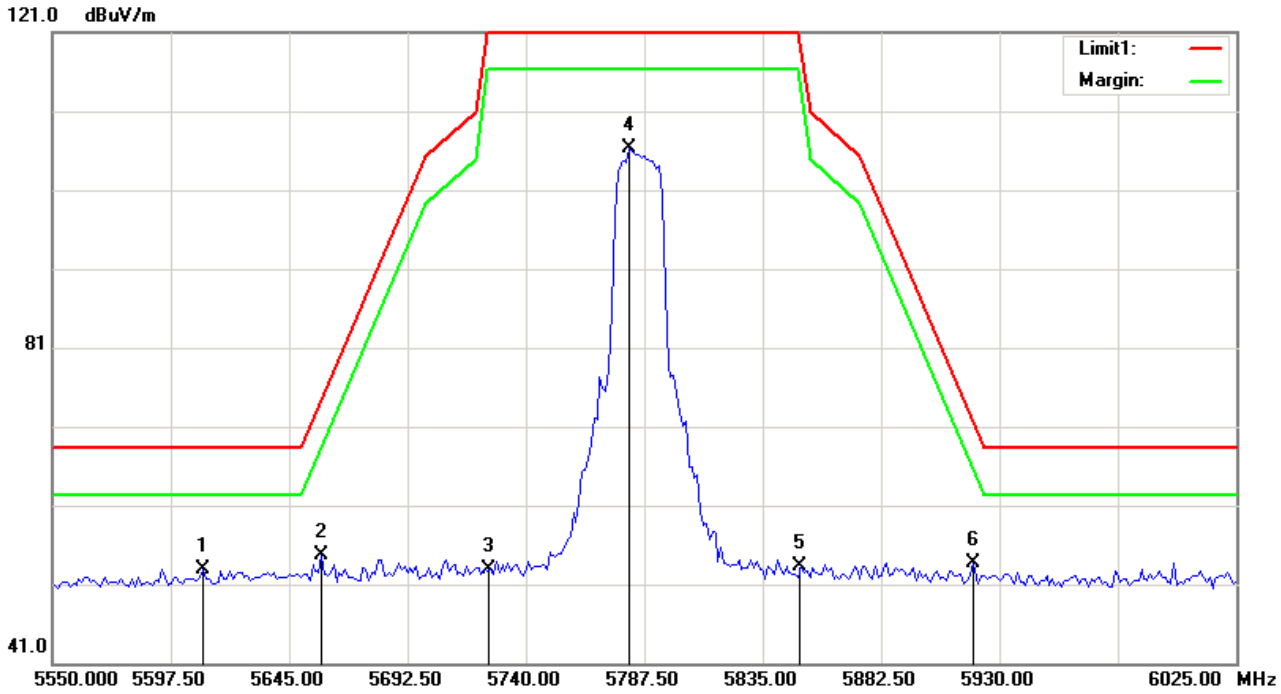
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5615.813	14.82	40.26	55.08	68.30	-13.22	peak
2	5638.313	16.68	40.27	56.95	68.30	-11.35	peak
3	5673.188	16.87	40.29	57.16	85.46	-28.30	peak
4	5715.000	19.53	40.31	59.84	109.50	-49.66	peak
5	5725.000	33.12	40.31	73.43	122.30	-48.87	peak
6	5740.688	67.72	40.32	108.04	122.30	-14.26	peak

Orthogonal Axis	X
Test Mode	UNII-3_TX N (HT20) Mode 5785 MHz

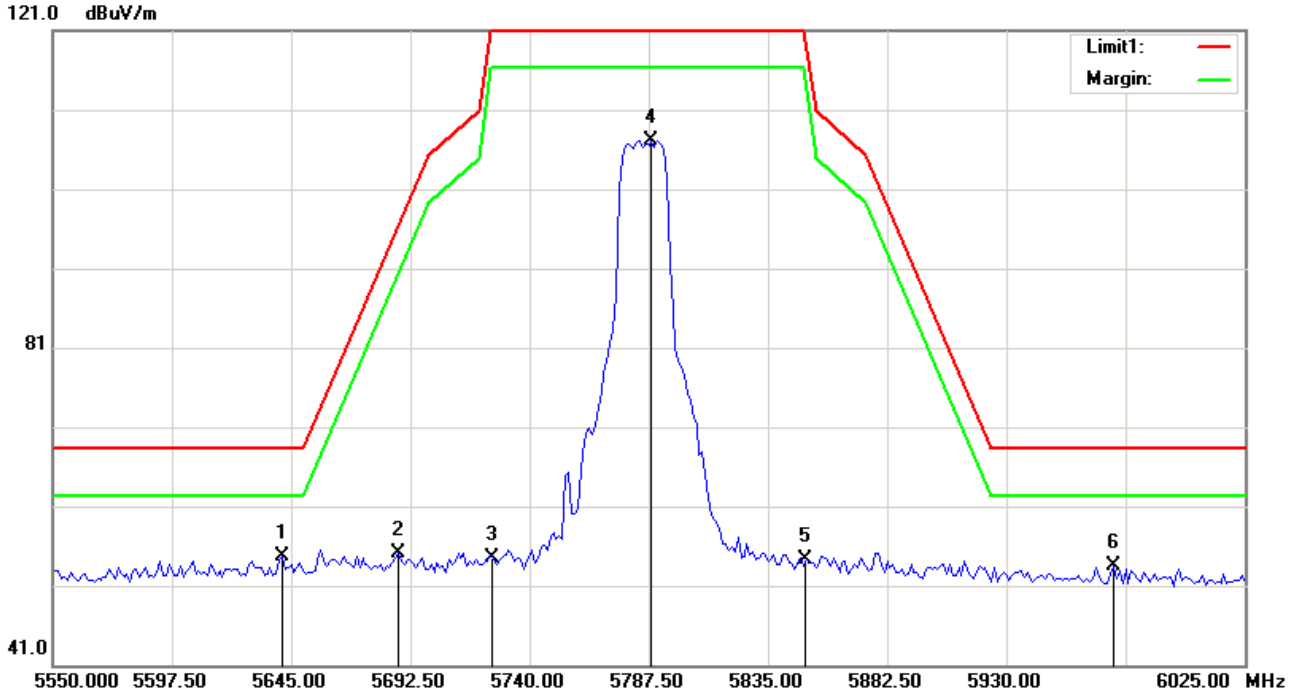
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5610.563	12.73	40.27	53.00	68.30	-15.30	peak
2	5658.063	14.44	40.29	54.73	74.27	-19.54	peak
3	5725.000	12.63	40.31	52.94	122.30	-69.36	peak
4	5781.563	65.93	40.34	106.27	122.30	-16.03	peak
5	5850.000	12.92	40.37	53.29	122.30	-69.01	peak
6	5919.313	13.27	40.39	53.66	72.51	-18.85	peak

Orthogonal Axis	X
Test Mode	UNII-3_TX N (HT20) Mode 5785 MHz

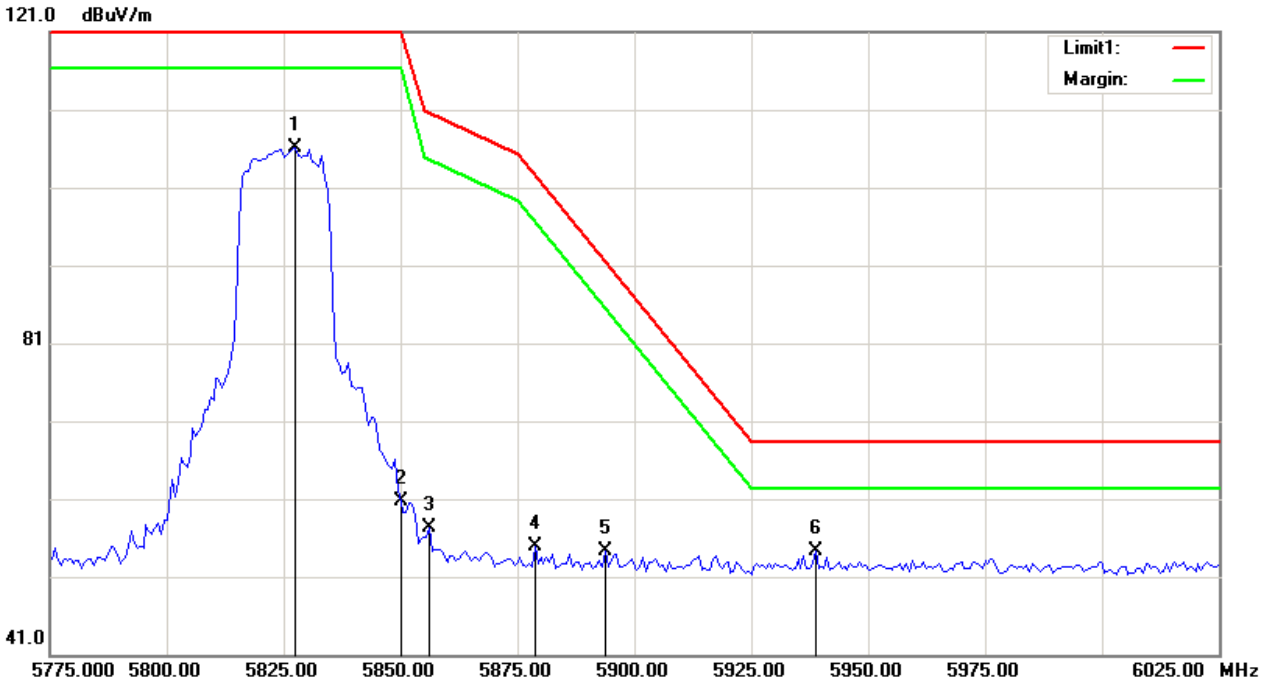
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5641.438	14.39	40.28	54.67	68.30	-13.63	peak
2	5687.750	14.86	40.29	55.15	96.23	-41.08	peak
3	5725.000	14.23	40.31	54.54	122.30	-67.76	peak
4	5788.688	66.80	40.34	107.14	122.30	-15.16	peak
5	5850.000	13.95	40.37	54.32	122.30	-67.98	peak
6	5972.750	13.00	40.42	53.42	68.30	-14.88	peak

Orthogonal Axis	X
Test Mode	UNII-3_TX N (HT20) Mode 5825 MHz

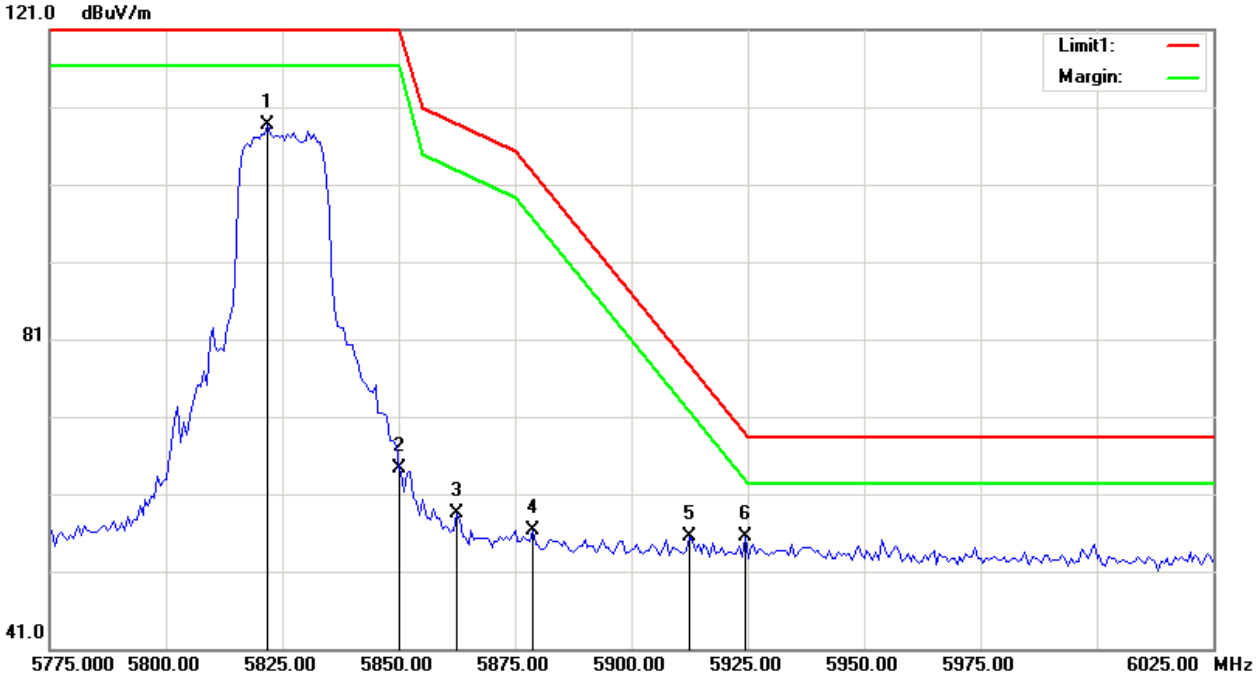
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5827.500	65.73	40.36	106.09	122.30	-16.21	peak
2	5850.000	20.34	40.37	60.71	122.30	-61.59	peak
3	5856.250	16.97	40.37	57.34	110.55	-53.21	peak
4	5878.750	14.61	40.38	54.99	102.52	-47.53	peak
5	5893.750	13.97	40.38	54.35	91.42	-37.07	peak
6	5938.750	13.80	40.40	54.20	68.30	-14.10	peak

Orthogonal Axis	X
Test Mode	UNII-3_TX N (HT20) Mode 5825 MHz

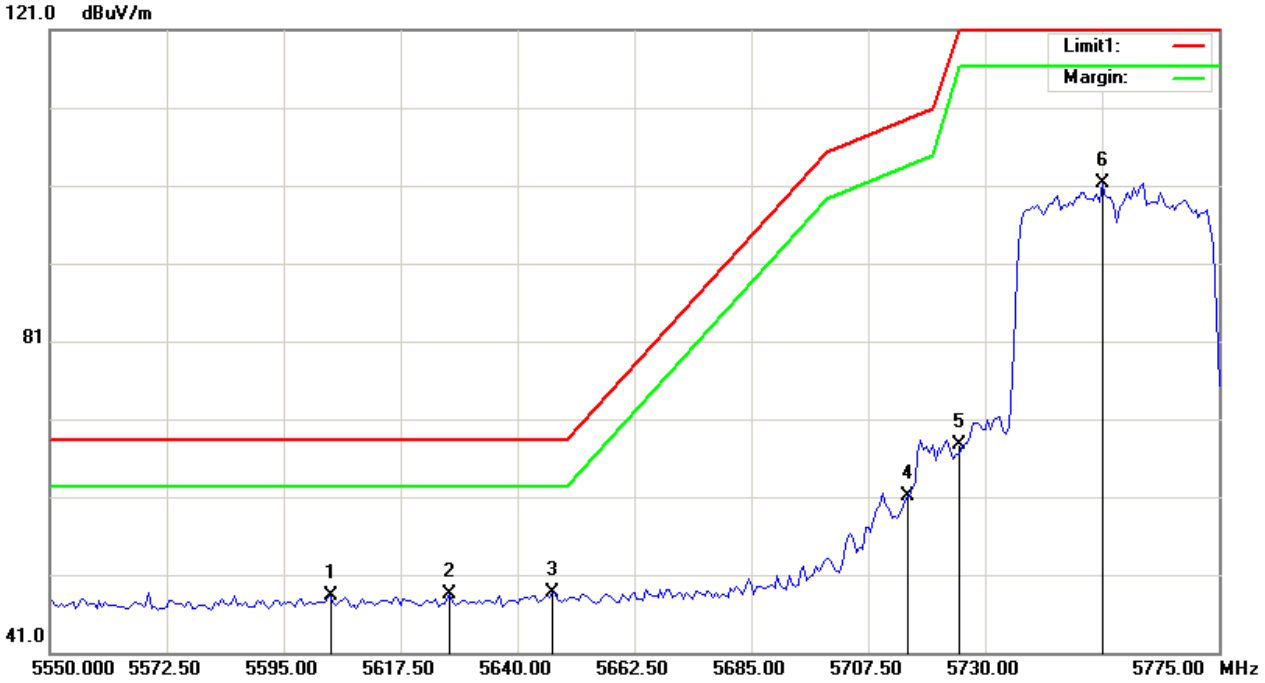
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5821.875	68.27	40.35	108.62	122.30	-13.68	peak
2	5850.000	23.86	40.37	64.23	122.30	-58.07	peak
3	5862.500	18.15	40.37	58.52	108.80	-50.28	peak
4	5878.750	15.89	40.38	56.27	102.52	-46.25	peak
5	5912.500	15.19	40.39	55.58	77.55	-21.97	peak
6	5924.375	15.11	40.40	55.51	68.76	-13.25	peak

Orthogonal Axis	X
Test Mode	UNII-3_TX N (HT40) Mode 5755 MHz

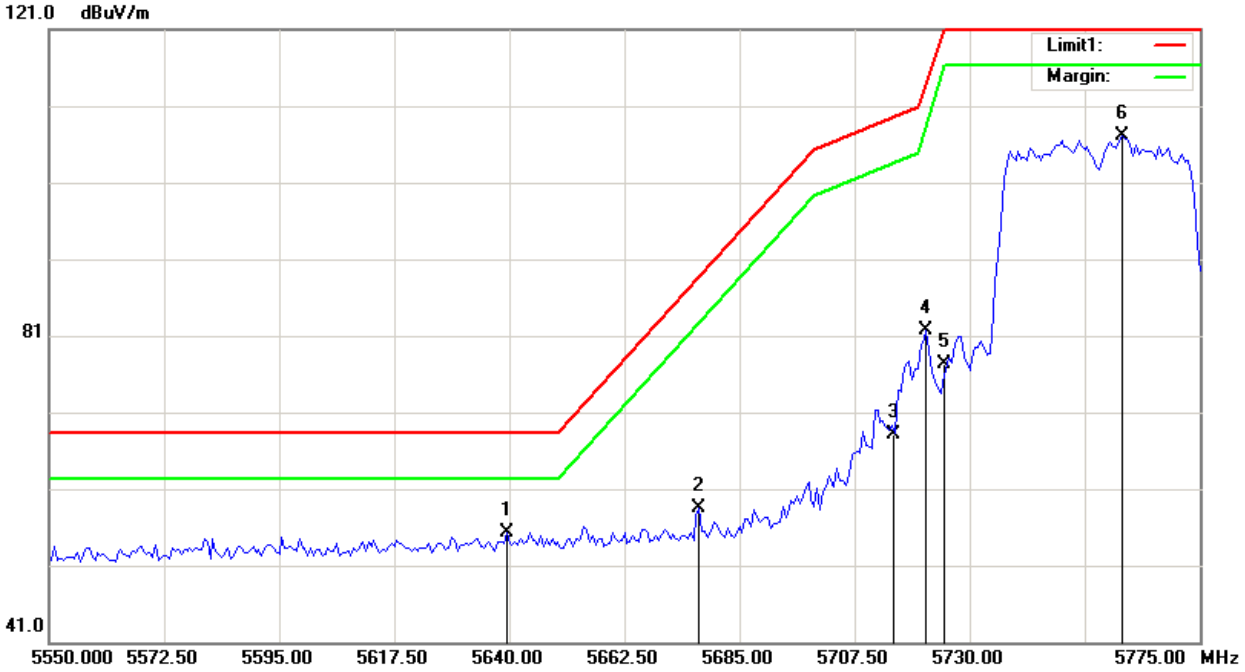
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5604.000	8.10	40.27	48.37	68.30	-19.93	peak
2	5627.063	8.14	40.27	48.41	68.30	-19.89	peak
3	5646.750	8.48	40.28	48.76	68.30	-19.54	peak
4	5715.000	20.85	40.31	61.16	109.50	-48.34	peak
5	5725.000	27.33	40.31	67.64	122.30	-54.66	peak
6	5752.500	60.95	40.33	101.28	122.30	-21.02	peak

Orthogonal Axis	X
Test Mode	UNII-3_TX N (HT40) Mode 5755 MHz

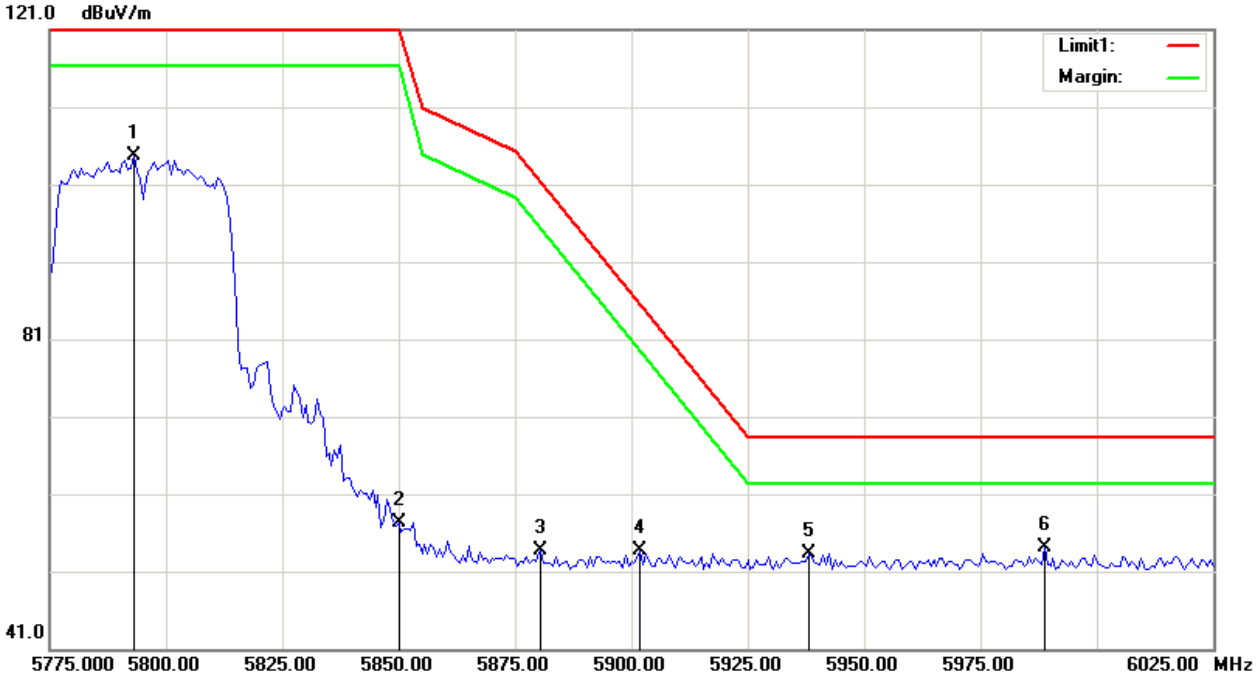
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5639.438	14.94	40.27	55.21	68.30	-13.09	peak
2	5677.125	18.16	40.30	58.46	88.37	-29.91	peak
3	5715.000	27.89	40.31	68.20	109.50	-41.30	peak
4	5721.563	41.39	40.31	81.70	114.46	-32.76	peak
5	5725.000	36.97	40.31	77.28	122.30	-45.02	peak
6	5759.813	66.82	40.33	107.15	122.30	-15.15	peak

Orthogonal Axis	X
Test Mode	UNII-3_TX N (HT40) Mode 5795 MHz

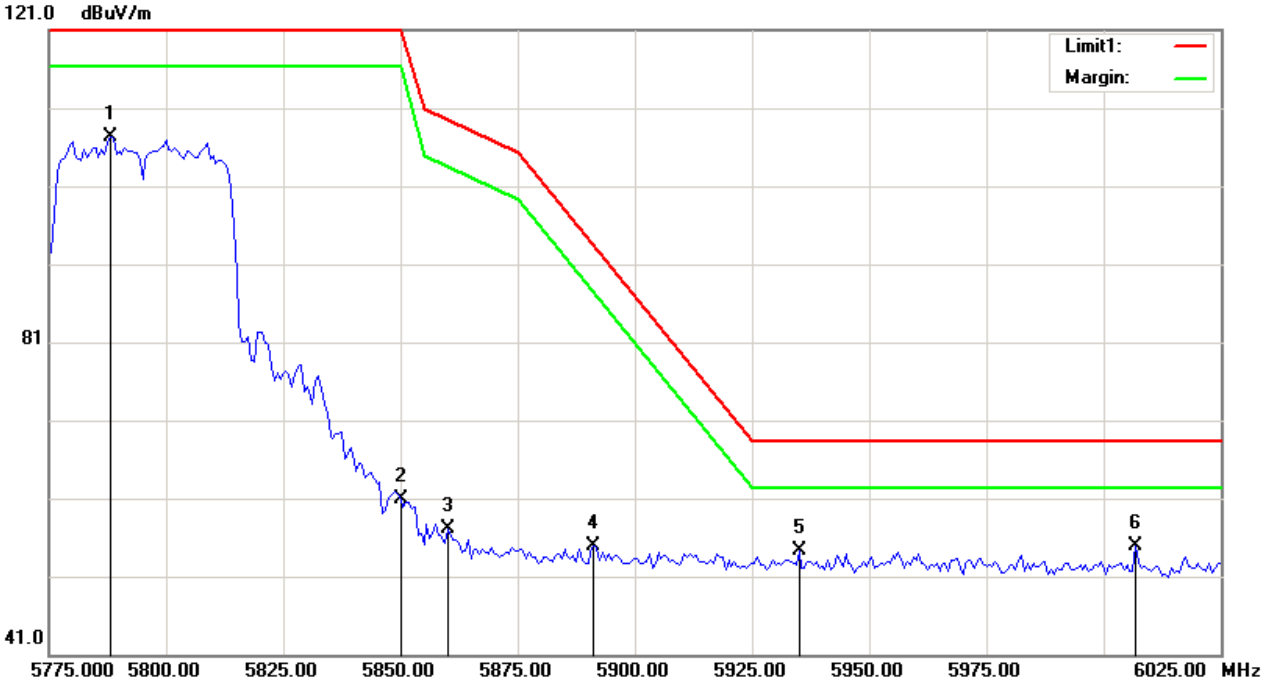
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5793.125	64.44	40.34	104.78	122.30	-17.52	peak
2	5850.000	17.01	40.37	57.38	122.30	-64.92	peak
3	5880.625	13.33	40.38	53.71	101.14	-47.43	peak
4	5901.875	13.28	40.39	53.67	85.41	-31.74	peak
5	5938.125	12.86	40.40	53.26	68.30	-15.04	peak
6	5988.750	13.60	40.42	54.02	68.30	-14.28	peak

Orthogonal Axis	X
Test Mode	UNII-3_TX N (HT40) Mode 5795 MHz

Horizontal

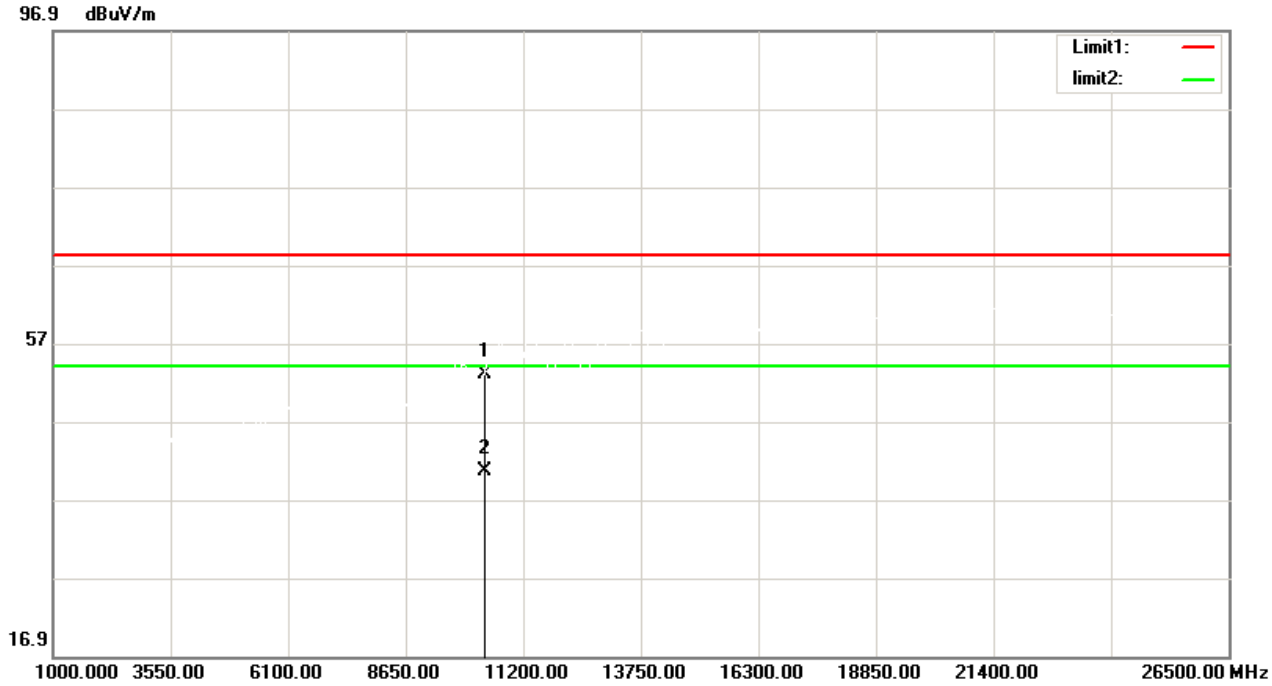


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5788.125	66.96	40.34	107.30	122.30	-15.00	peak
2	5850.000	20.51	40.37	60.88	122.30	-61.42	peak
3	5860.000	16.71	40.38	57.09	109.50	-52.41	peak
4	5891.250	14.47	40.38	54.85	93.27	-38.42	peak
5	5935.000	13.87	40.41	54.28	68.30	-14.02	peak
6	6006.875	14.40	40.46	54.86	68.30	-13.44	peak

5.9 TEST RESULTS - ABOVE1000 MHz (HARMONIC)

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5180 MHz

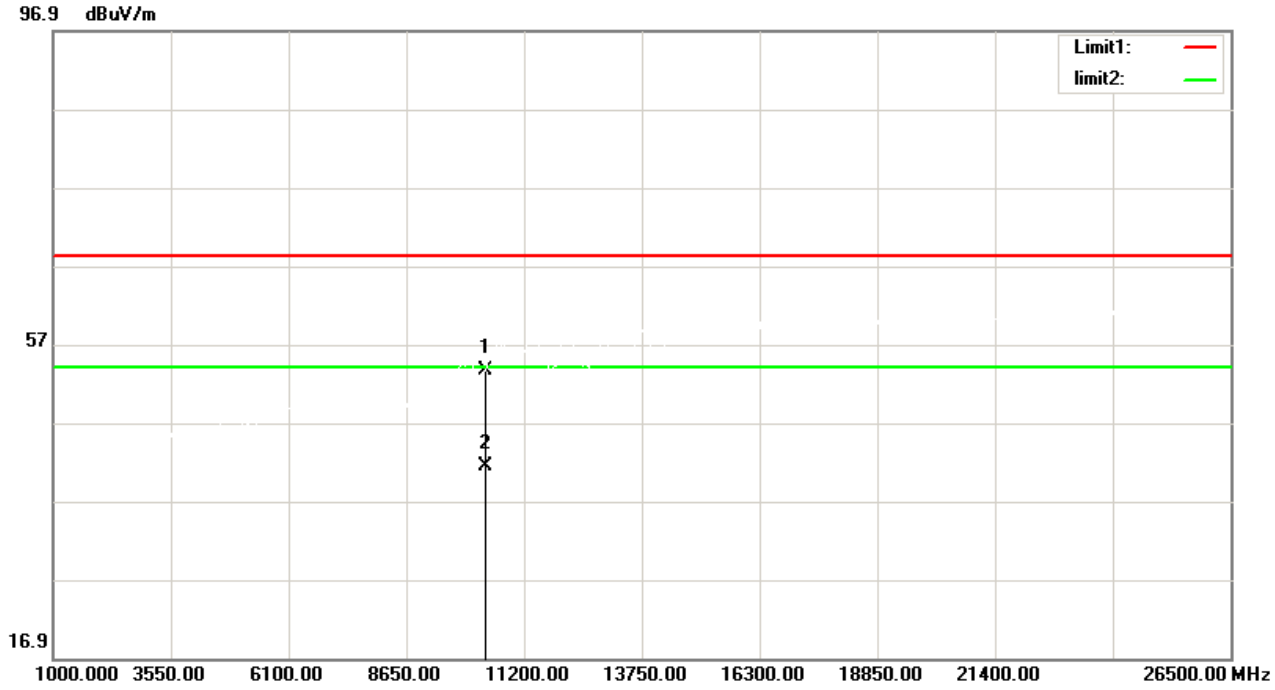
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10360.000	40.54	12.43	52.97	68.30	-15.33	peak
2	10360.000	28.15	12.43	40.58	54.00	-13.42	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5180 MHz

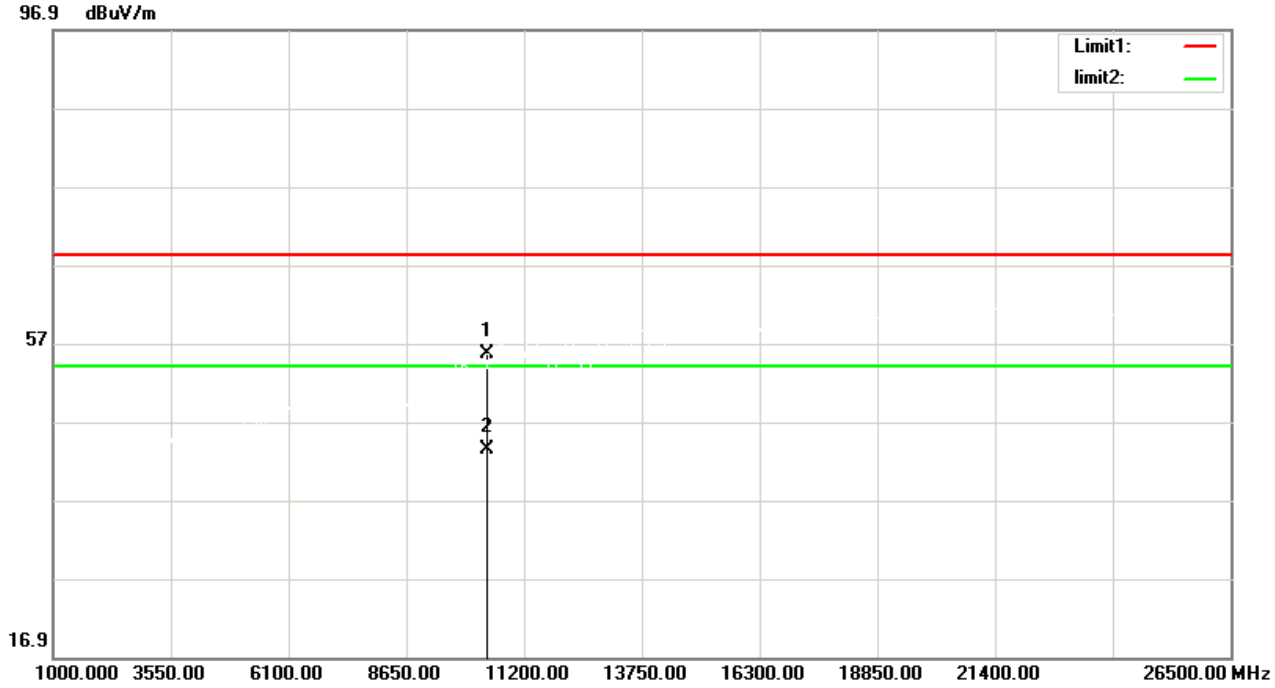
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10360.000	41.12	12.43	53.55	68.30	-14.75	peak
2	10360.000	28.88	12.43	41.31	54.00	-12.69	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5200 MHz

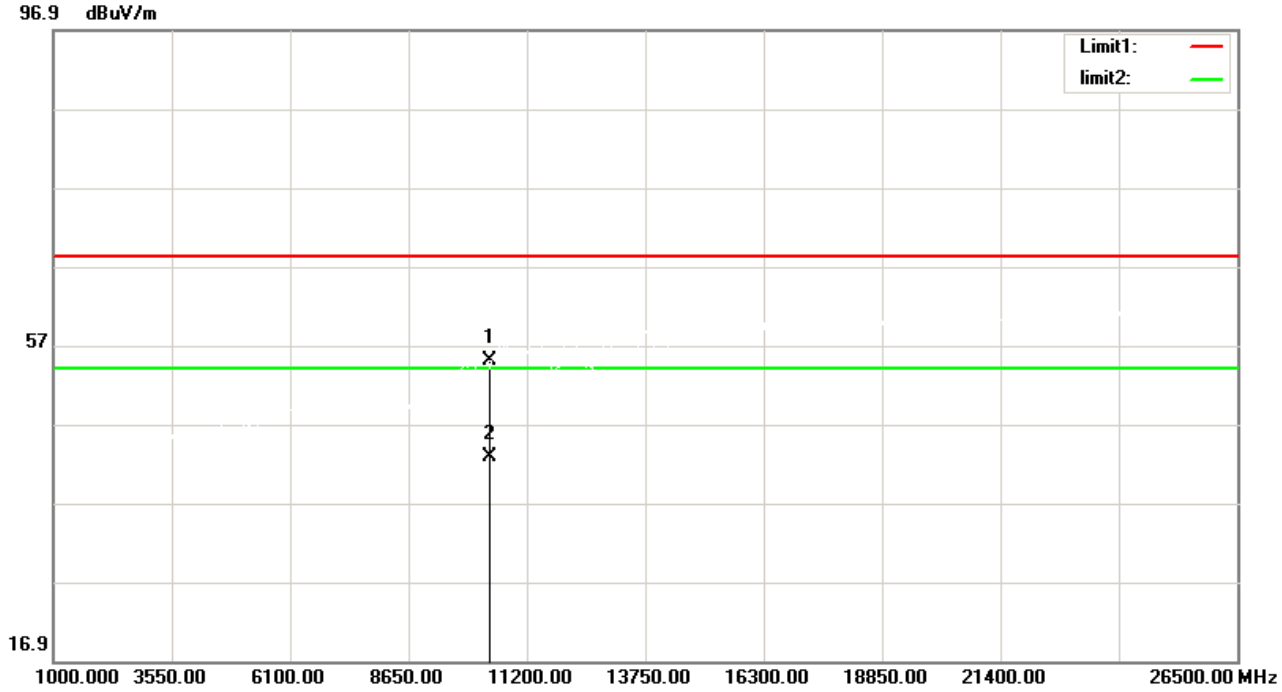
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10400.000	43.01	12.58	55.59	68.30	-12.71	peak
2	10400.000	30.75	12.58	43.33	54.00	-10.67	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5200 MHz

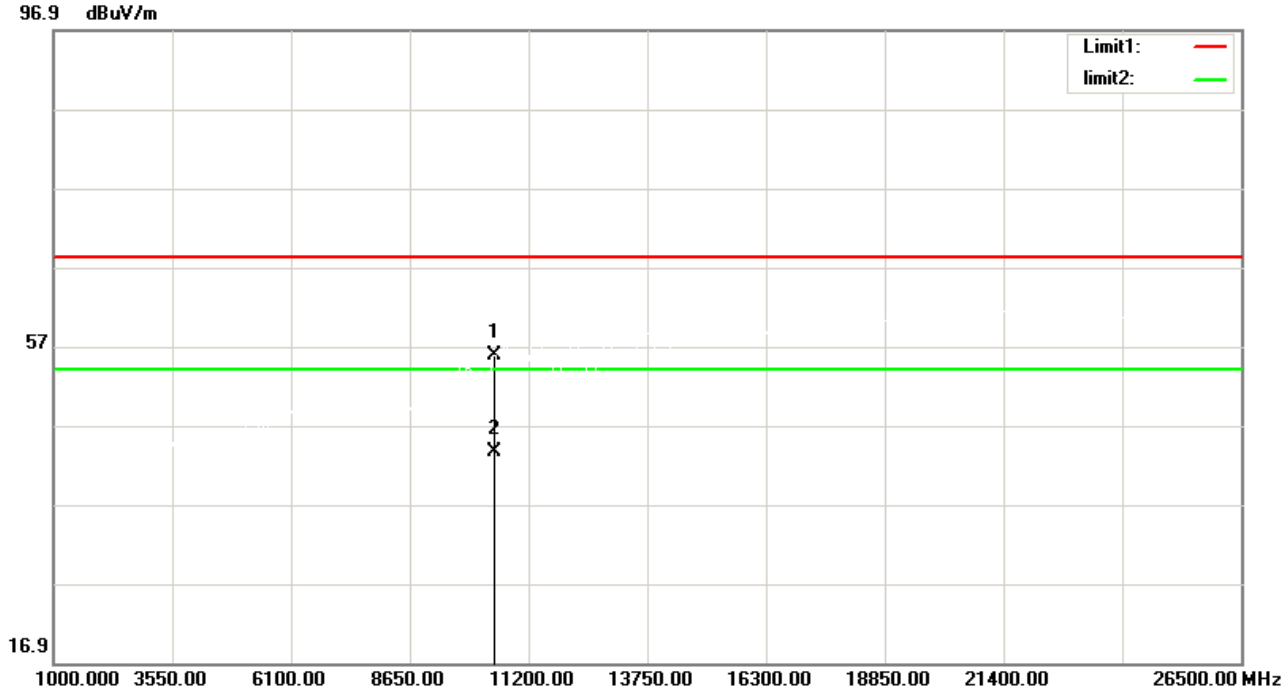
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10400.000	42.44	12.58	55.02	68.30	-13.28	peak
2	10400.000	30.16	12.58	42.74	54.00	-11.26	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5240 MHz

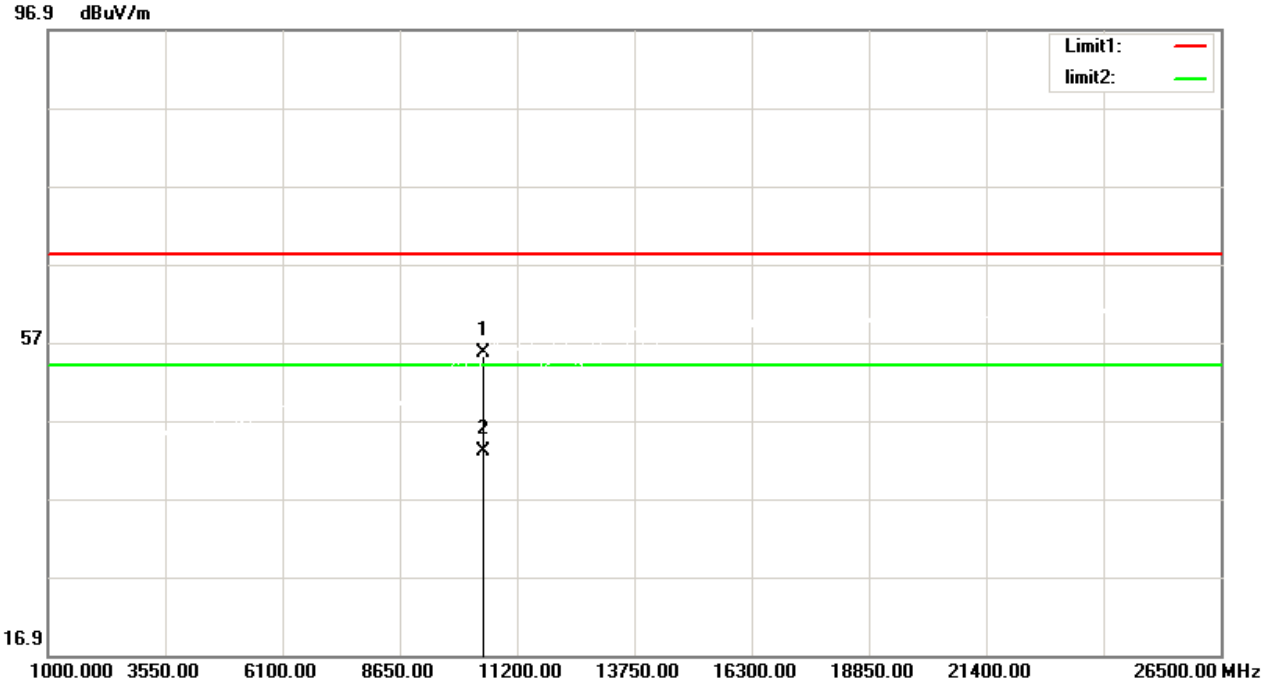
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10480.000	42.95	12.90	55.85	68.30	-12.45	peak
2	10480.000	30.74	12.90	43.64	54.00	-10.36	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5240 MHz

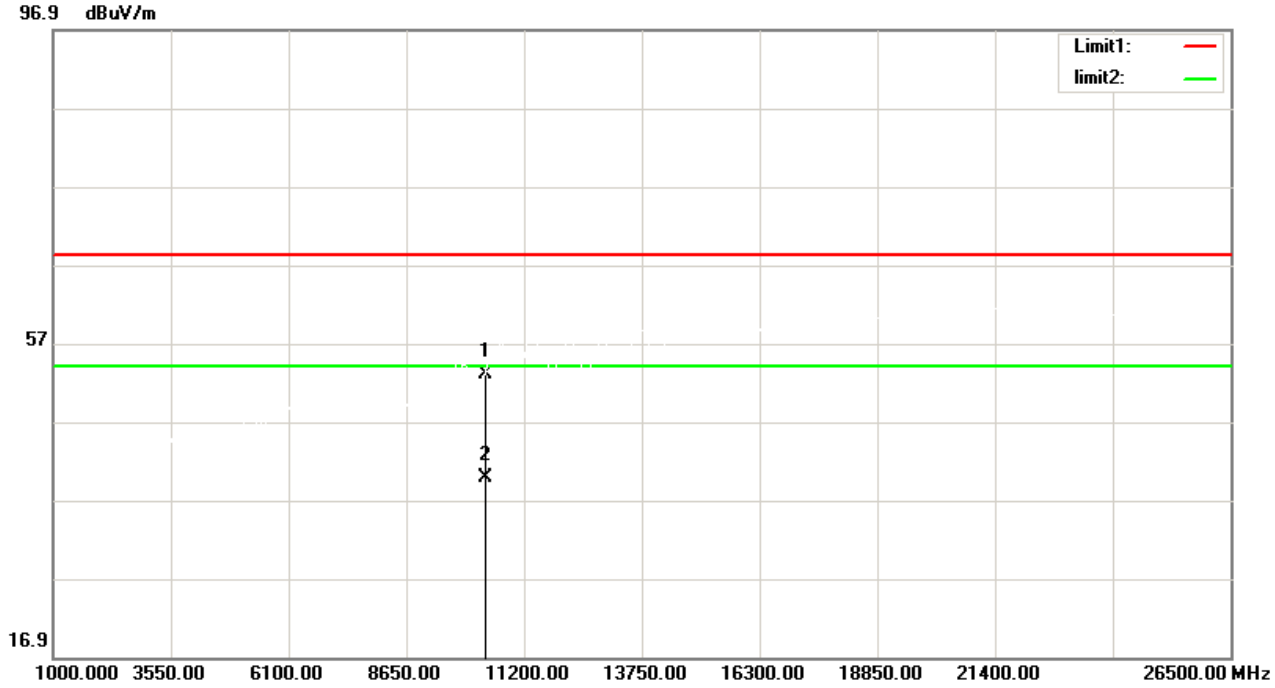
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10480.000	42.70	12.90	55.60	68.30	-12.70	peak
2	10480.000	30.18	12.90	43.08	54.00	-10.92	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX N (HT20) Mode 5180 MHz

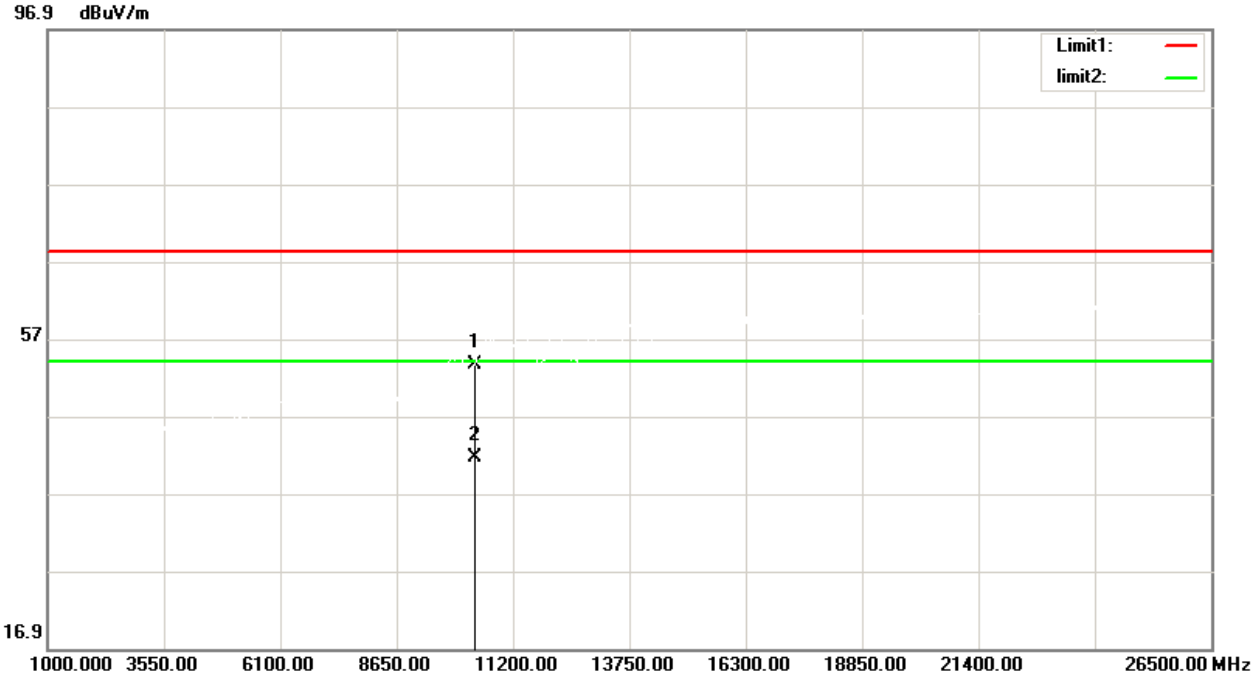
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10360.000	40.54	12.43	52.97	68.30	-15.33	peak
2	10360.000	27.38	12.43	39.81	54.00	-14.19	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX N (HT20) Mode 5180 MHz

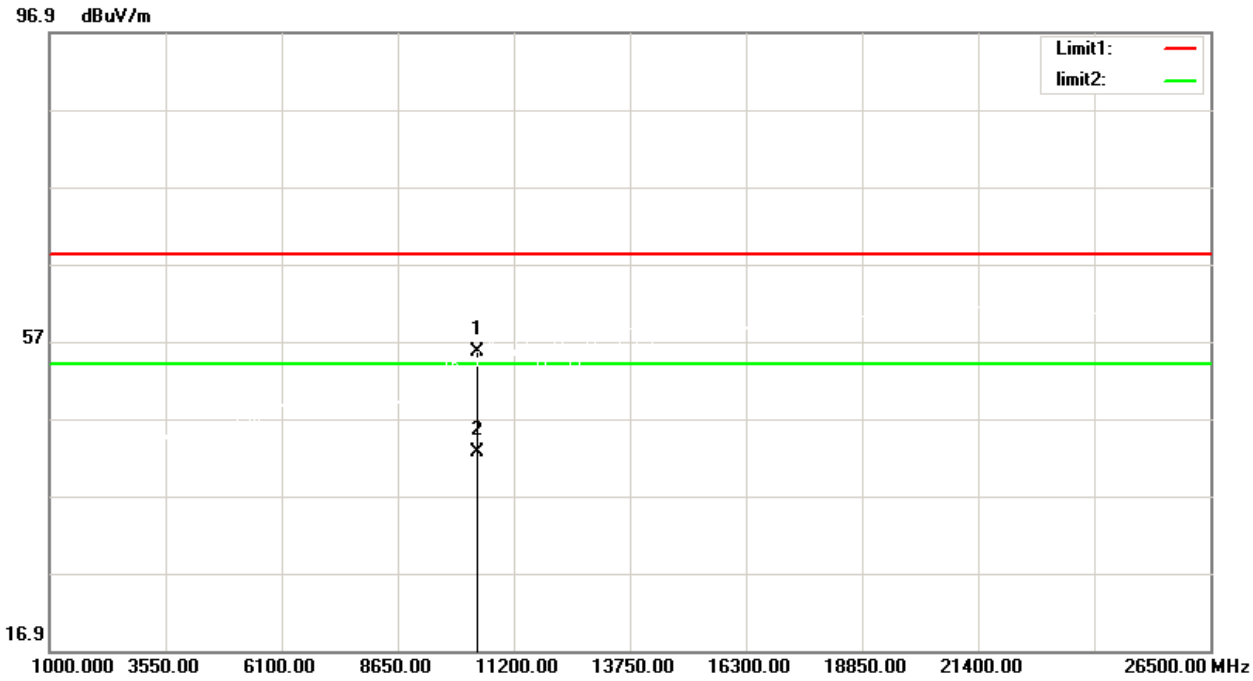
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10360.000	41.12	12.43	53.55	68.30	-14.75	peak
2	10360.000	29.26	12.43	41.69	54.00	-12.31	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX N (HT20) Mode 5200 MHz

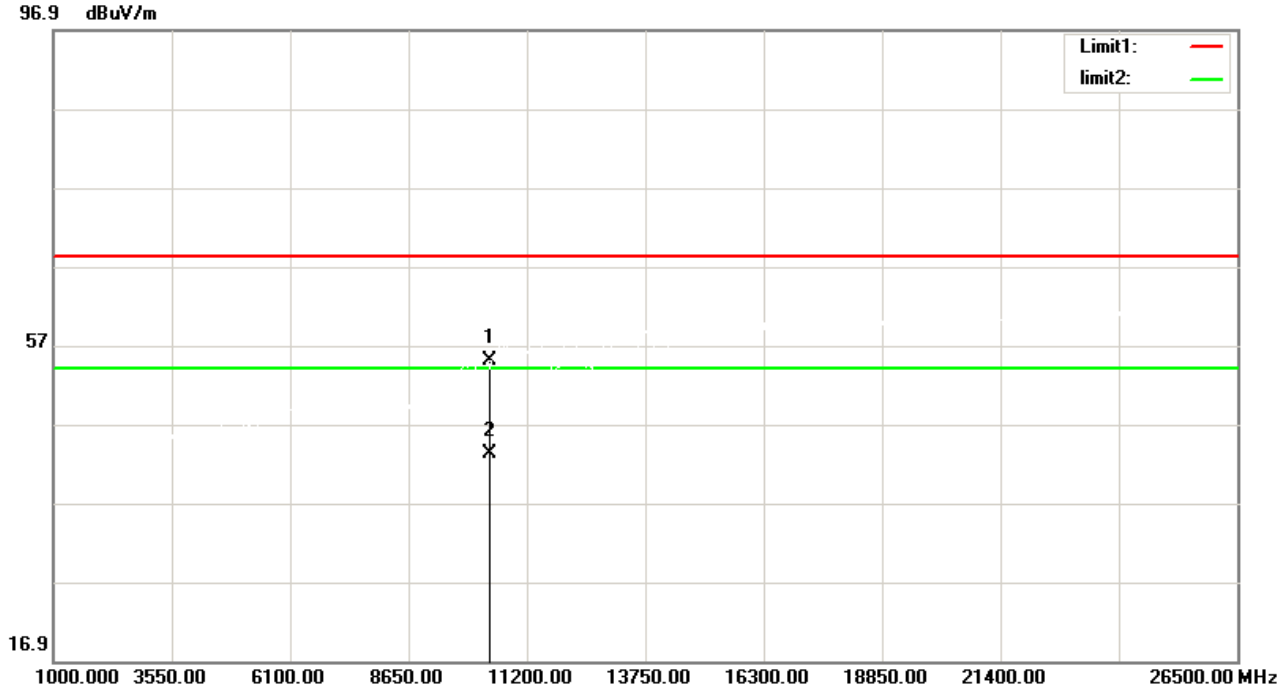
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10400.000	43.01	12.58	55.59	68.30	-12.71	peak
2	10400.000	29.93	12.58	42.51	54.00	-11.49	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX N (HT20) Mode 5200 MHz

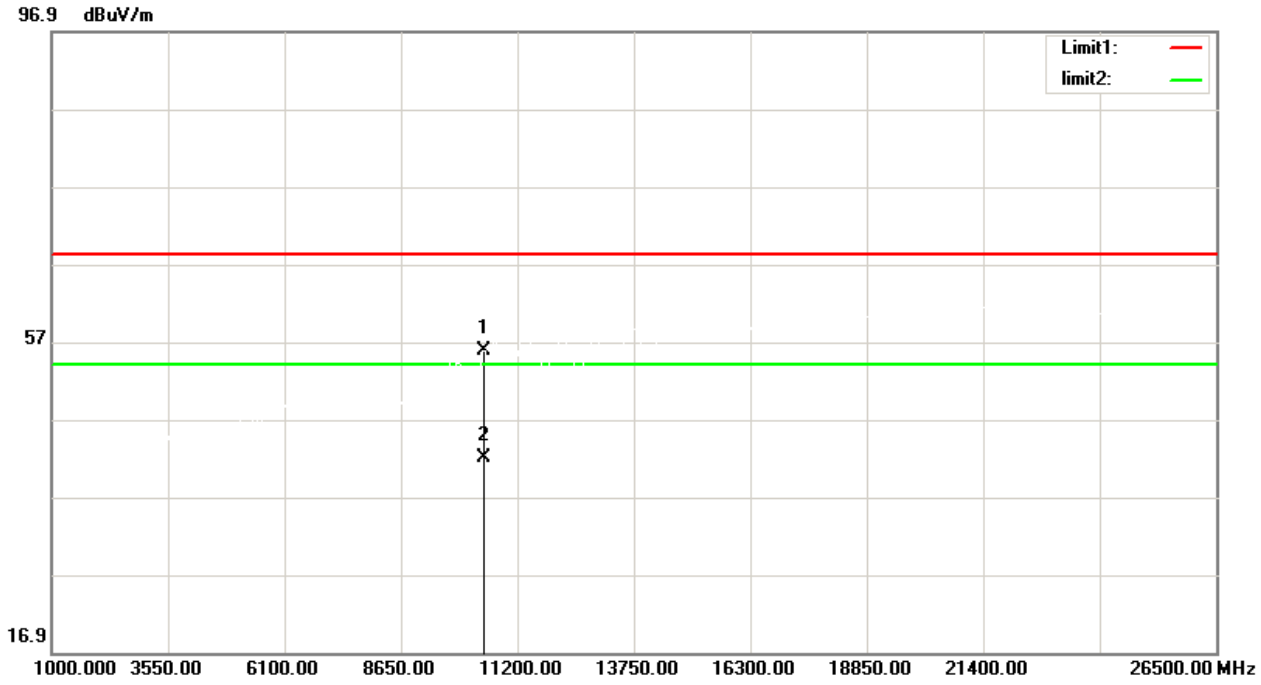
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10400.000	42.44	12.58	55.02	68.30	-13.28	peak
2	10400.000	30.57	12.58	43.15	54.00	-10.85	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX N (HT20) Mode 5240 MHz

Vertical



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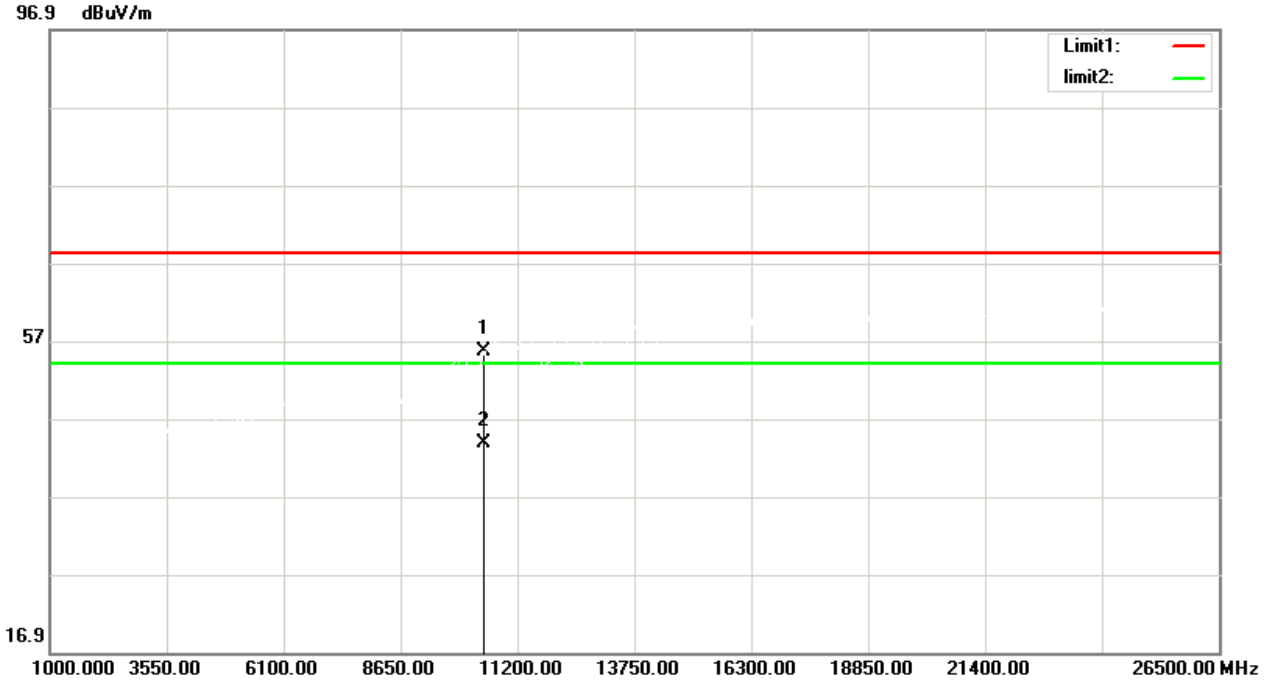
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10480.000	42.95	12.90	55.85	68.30	-12.45	peak
2	10480.000	29.07	12.90	41.97	54.00	-12.03	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX N (HT20) Mode 5240 MHz

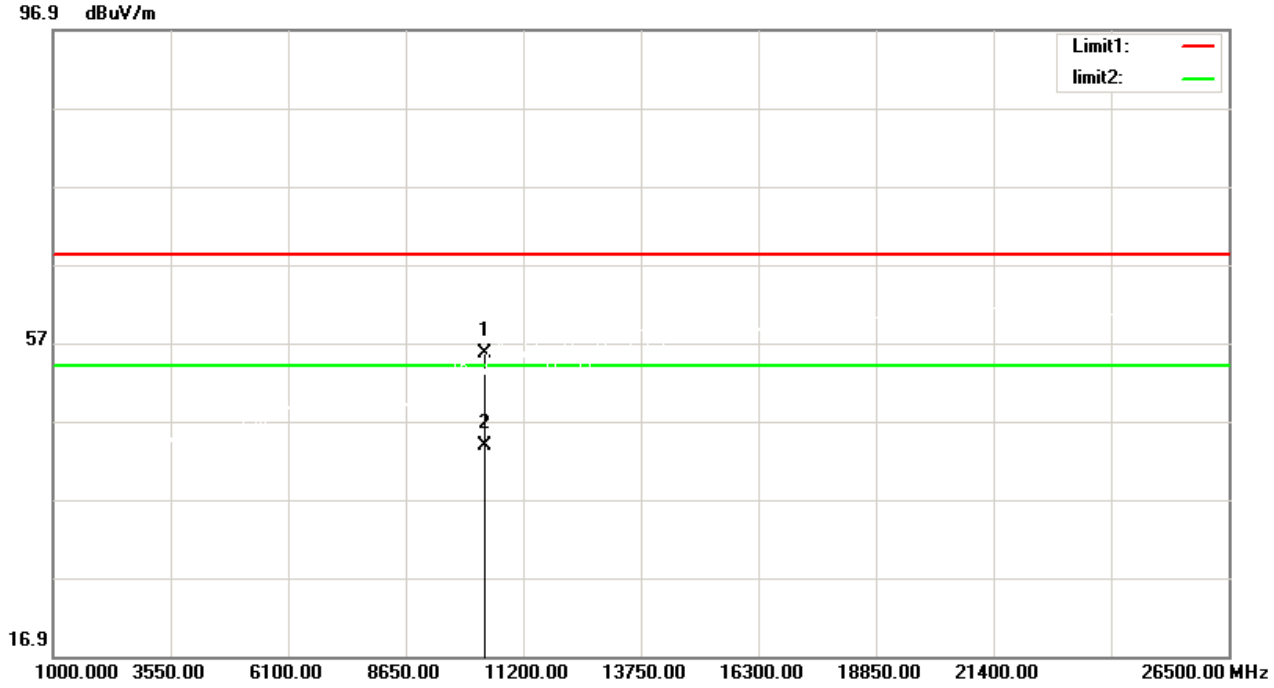
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10480.000	42.70	12.90	55.60	68.30	-12.70	peak
2	10480.000	30.97	12.90	43.87	54.00	-10.13	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX N (HT40) Mode 5190 MHz

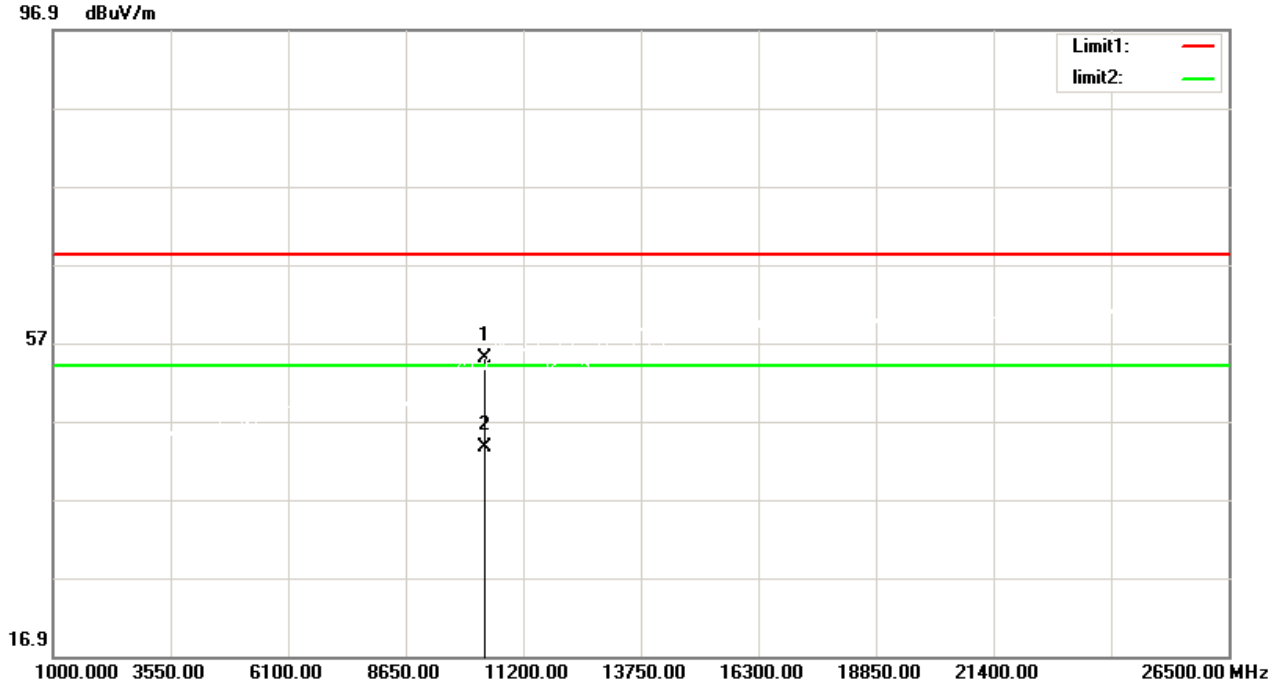
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10380.000	43.08	12.51	55.59	68.30	-12.71	peak
2	10380.000	31.26	12.51	43.77	54.00	-10.23	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX N (HT40) Mode 5190 MHz

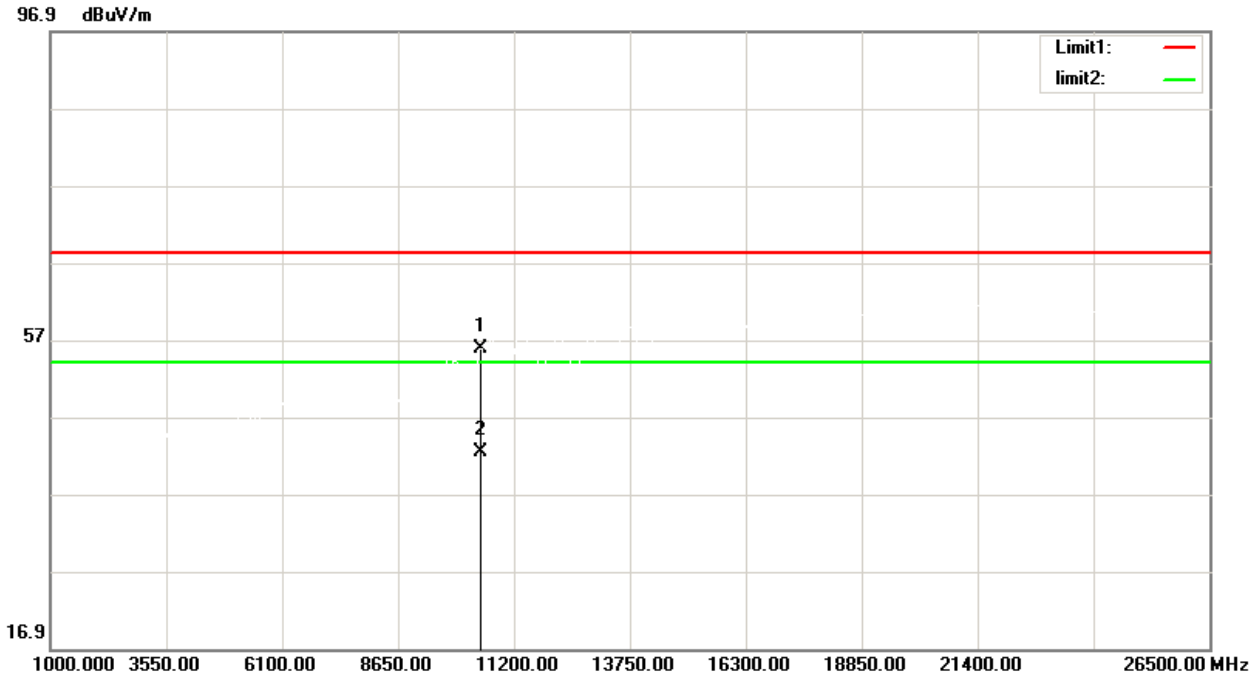
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10380.000	42.51	12.51	55.02	68.30	-13.28	peak
2	10380.000	31.13	12.51	43.64	54.00	-10.36	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX N (HT40) Mode 5230 MHz

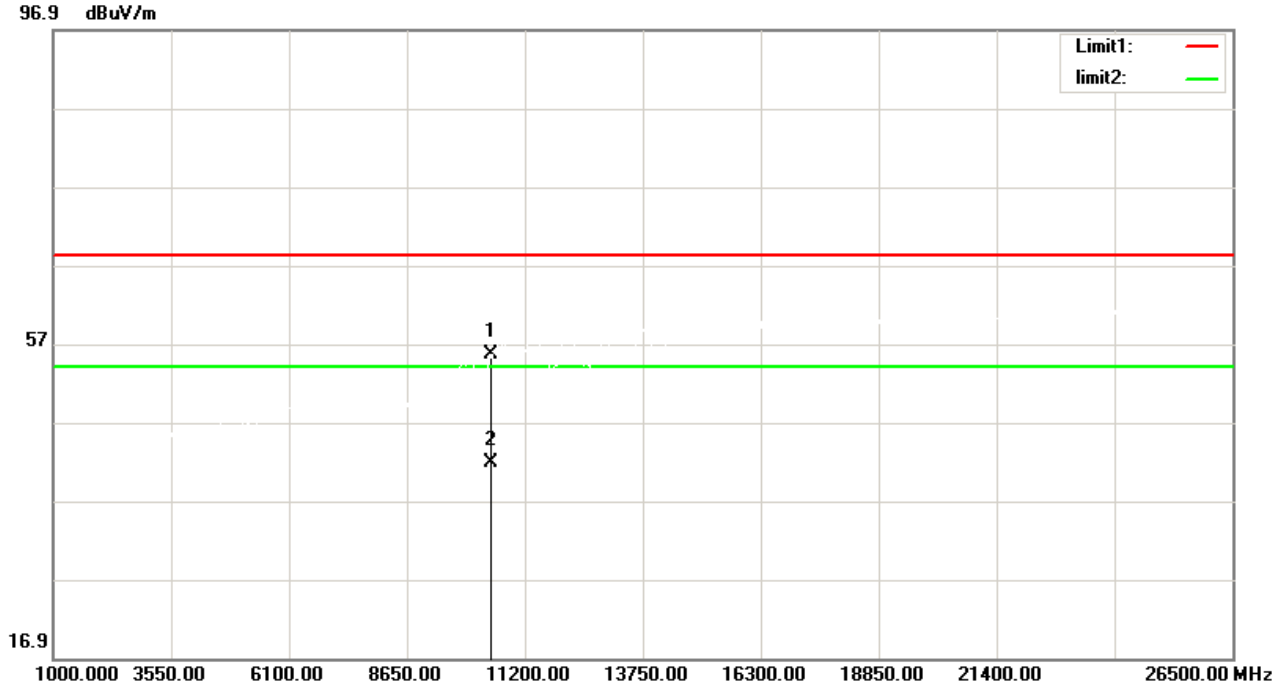
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10460.000	43.04	12.81	55.85	68.30	-12.45	peak
2	10460.000	29.55	12.81	42.36	54.00	-11.64	AVG

Orthogonal Axis	X
Test Mode	UNII-1_TX N (HT40) Mode 5230 MHz

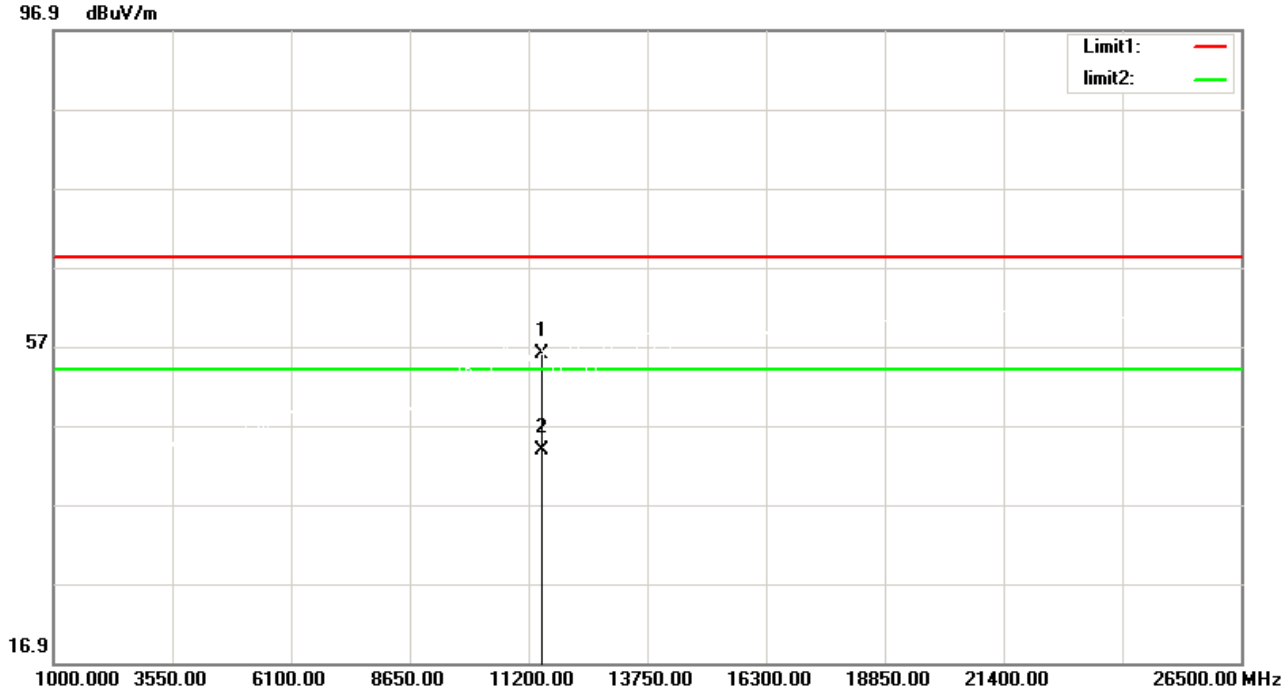
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10460.000	42.79	12.81	55.60	68.30	-12.70	peak
2	10460.000	29.01	12.81	41.82	54.00	-12.18	AVG

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5745 MHz

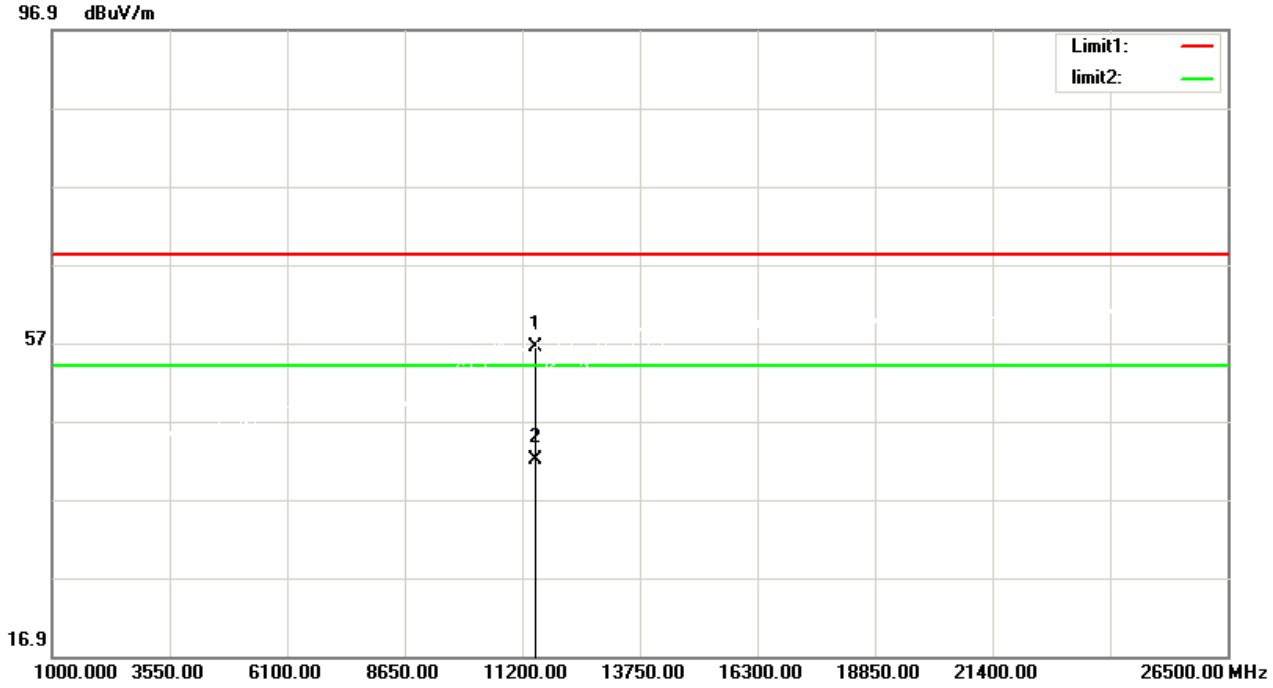
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11490.000	41.18	14.87	56.05	68.30	-12.25	peak
2	11490.000	28.90	14.87	43.77	54.00	-10.23	AVG

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5745 MHz

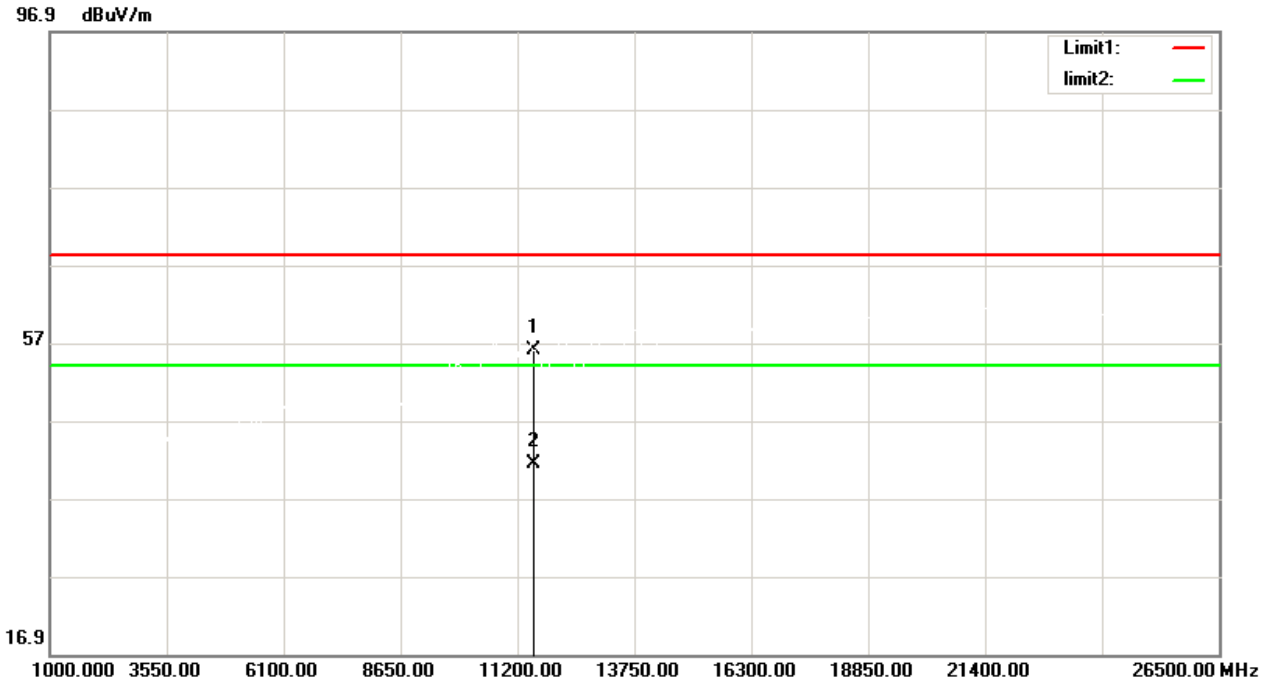
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11490.000	41.51	14.87	56.38	68.30	-11.92	peak
2	11490.000	27.17	14.87	42.04	54.00	-11.96	AVG

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5785 MHz

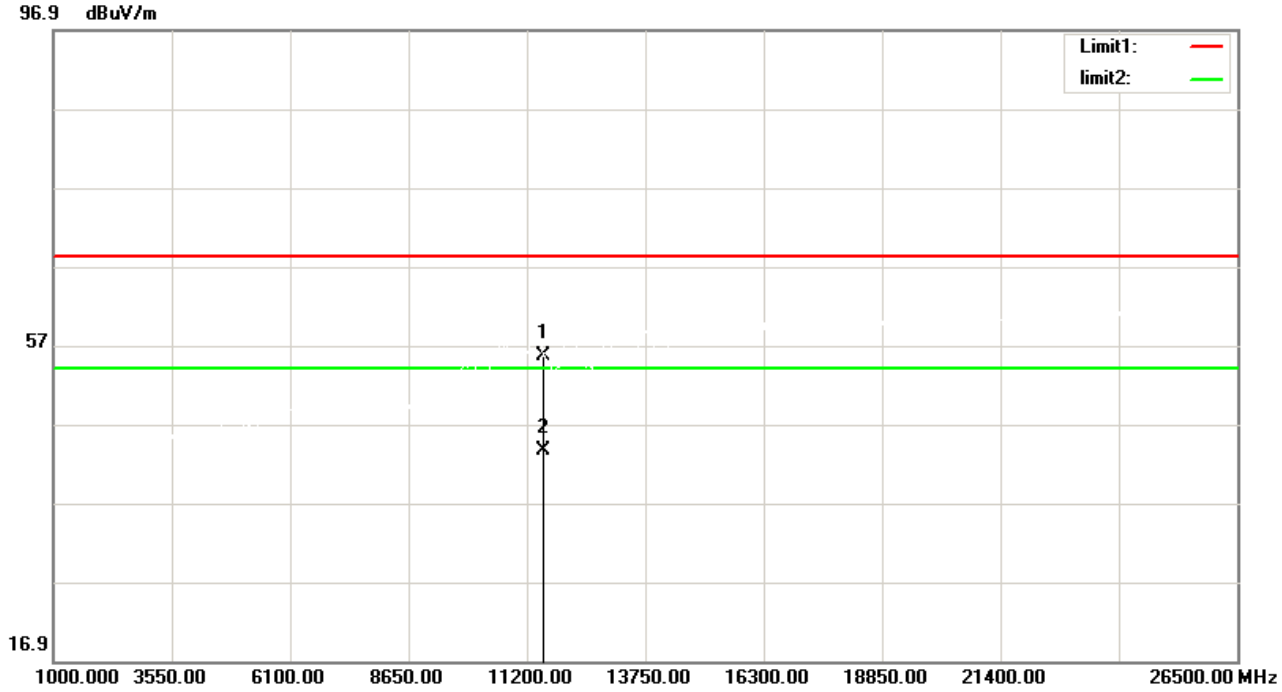
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11570.000	41.25	14.85	56.10	68.30	-12.20	peak
2	11570.000	26.59	14.85	41.44	54.00	-12.56	AVG

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5785 MHz

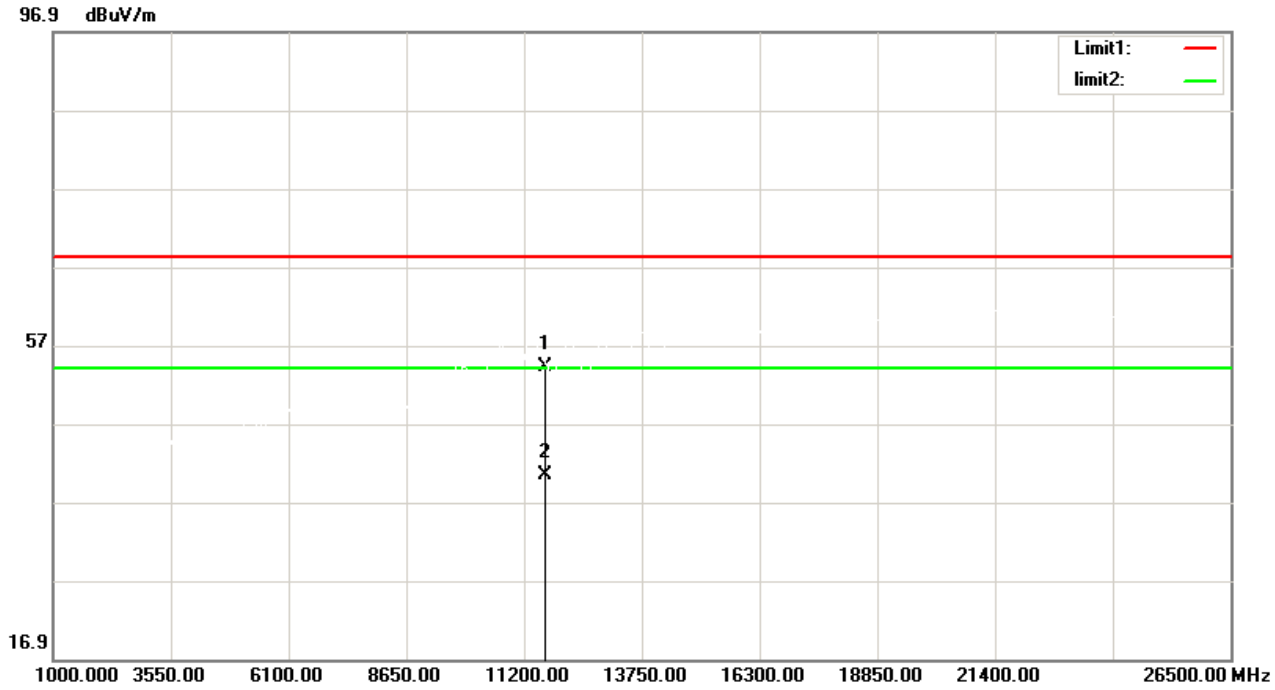
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11570.000	40.84	14.85	55.69	68.30	-12.61	peak
2	11570.000	28.84	14.85	43.69	54.00	-10.31	AVG

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5825 MHz

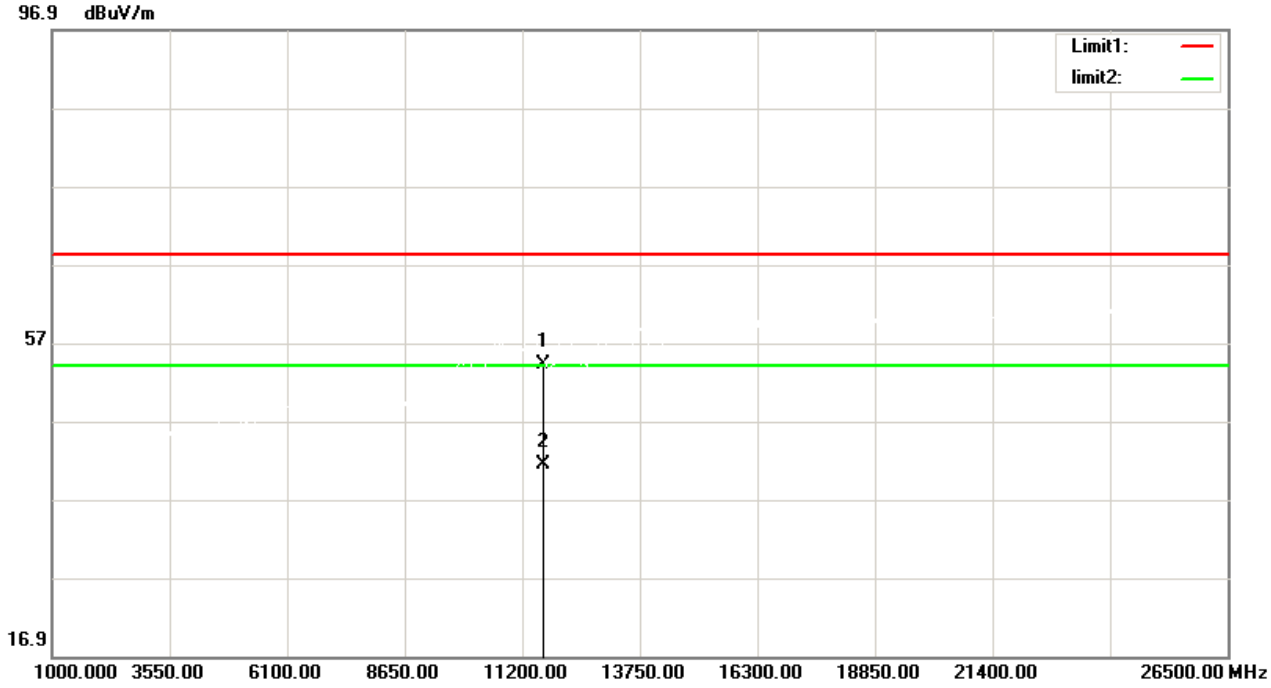
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11650.000	39.38	14.85	54.23	68.30	-14.07	peak
2	11650.000	25.53	14.85	40.38	54.00	-13.62	AVG

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5825 MHz

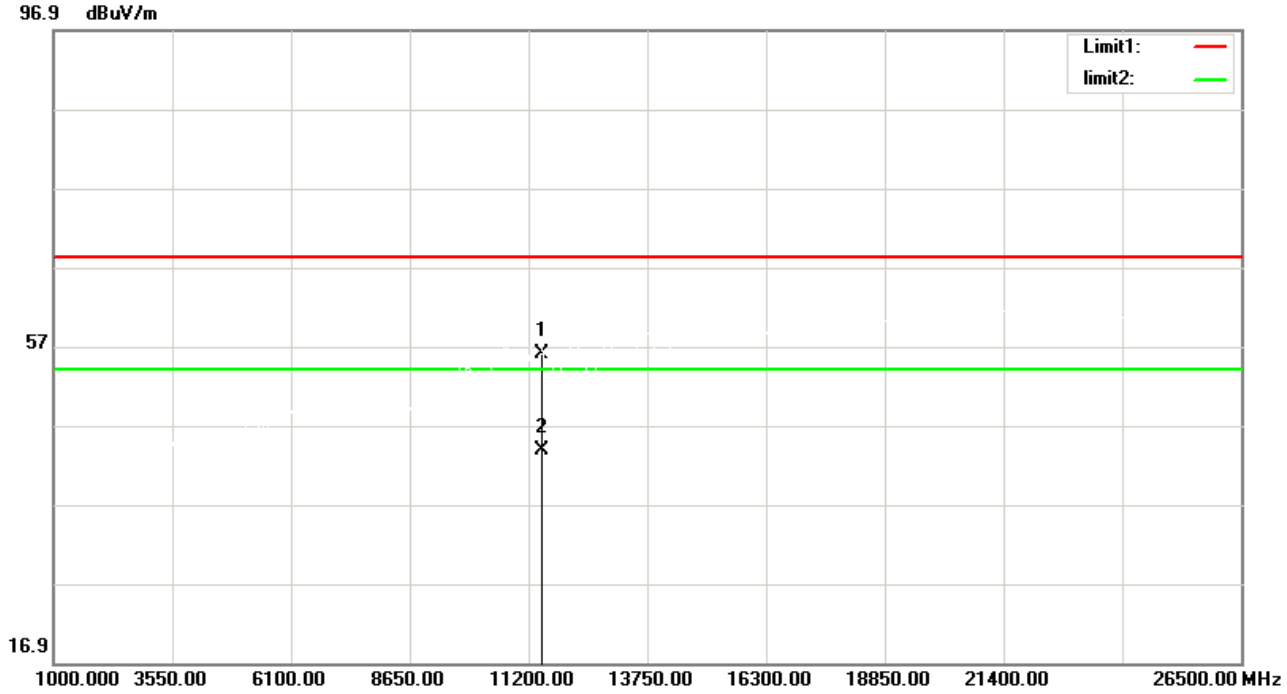
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11650.000	39.27	14.85	54.12	68.30	-14.18	peak
2	11650.000	26.51	14.85	41.36	54.00	-12.64	AVG

Orthogonal Axis	X
Test Mode	UNII-3_TX N (HT20) Mode 5745 MHz

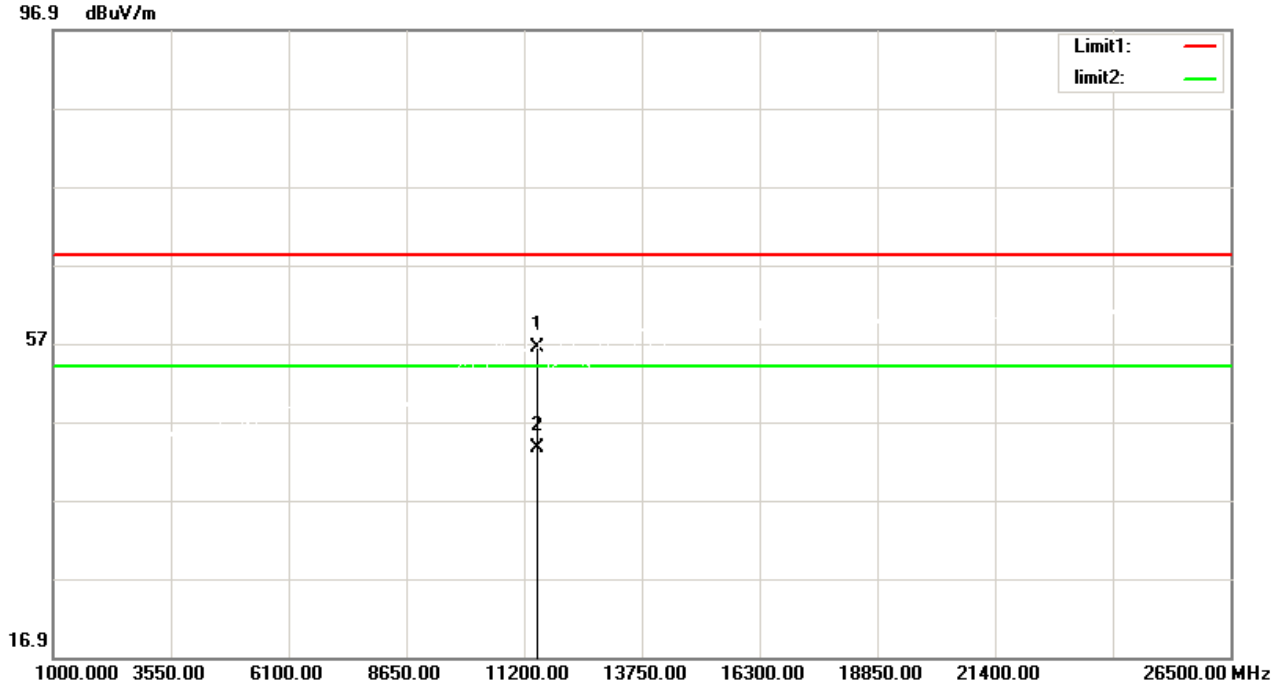
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11490.000	41.18	14.87	56.05	68.30	-12.25	peak
2	11490.000	28.84	14.87	43.71	54.00	-10.29	AVG

Orthogonal Axis	X
Test Mode	UNII-3_TX N (HT20) Mode 5745 MHz

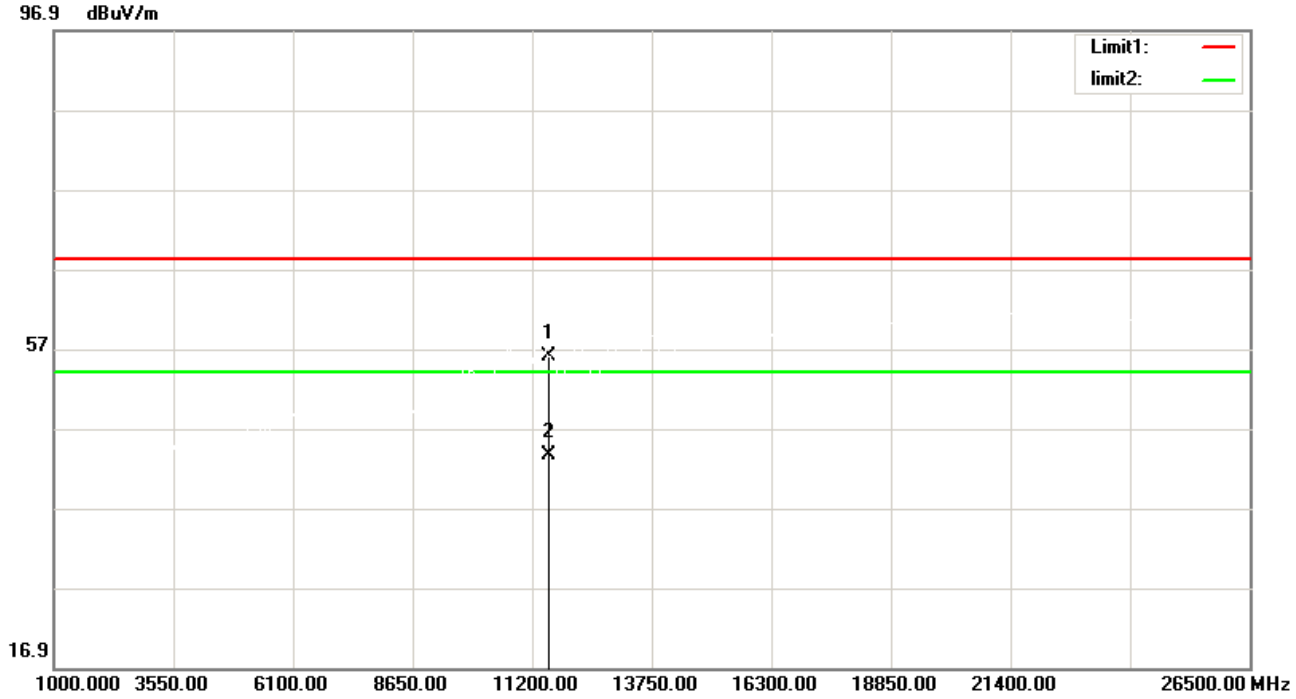
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11490.000	41.51	14.87	56.38	68.30	-11.92	peak
2	11490.000	28.81	14.87	43.68	54.00	-10.32	AVG

Orthogonal Axis	X
Test Mode	UNII-3_TX N (HT20) Mode 5785 MHz

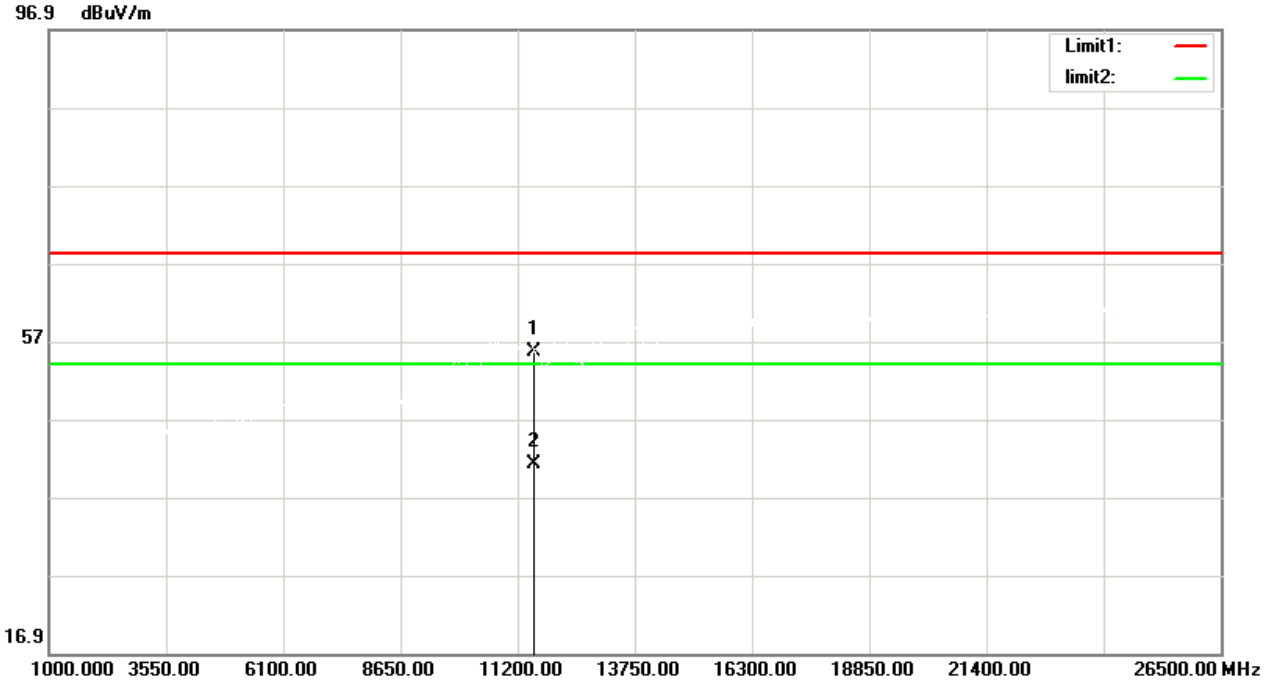
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11570.000	41.25	14.85	56.10	68.30	-12.20	peak
2	11570.000	28.82	14.85	43.67	54.00	-10.33	AVG

Orthogonal Axis	X
Test Mode	UNII-3_TX N (HT20) Mode 5785 MHz

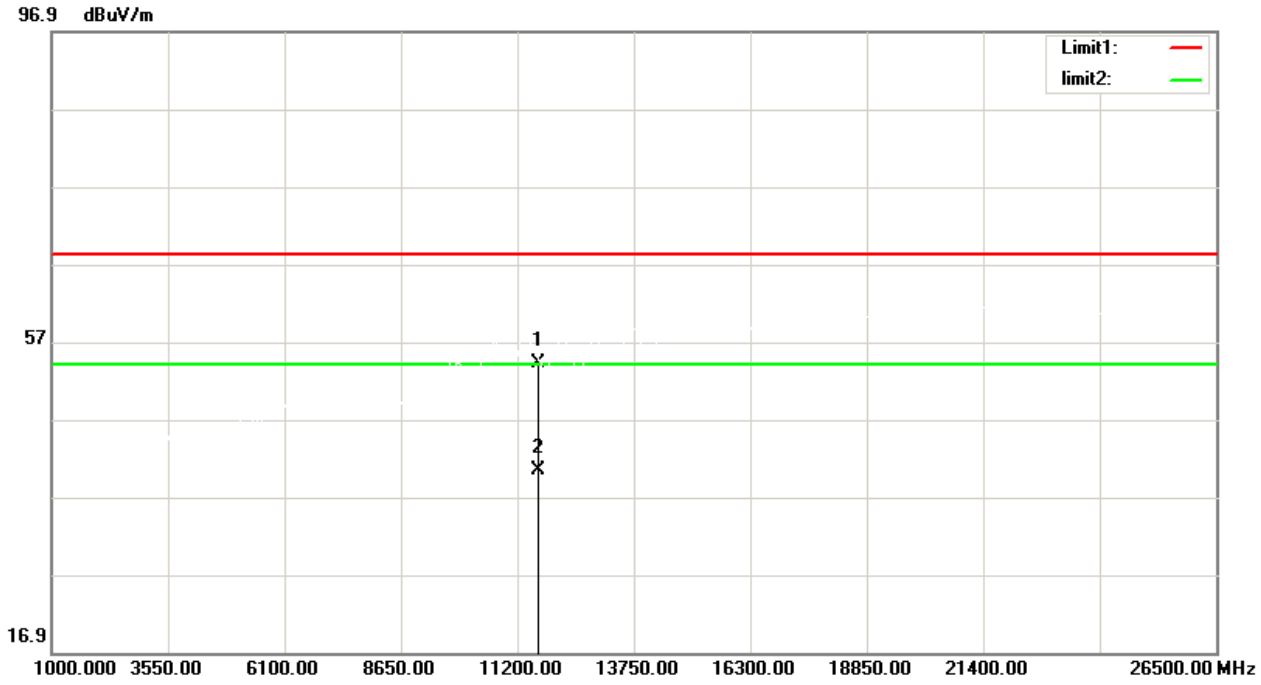
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11570.000	40.84	14.85	55.69	68.30	-12.61	peak
2	11570.000	26.43	14.85	41.28	54.00	-12.72	AVG

Orthogonal Axis	X
Test Mode	UNII-3_TX N (HT20) Mode 5825 MHz

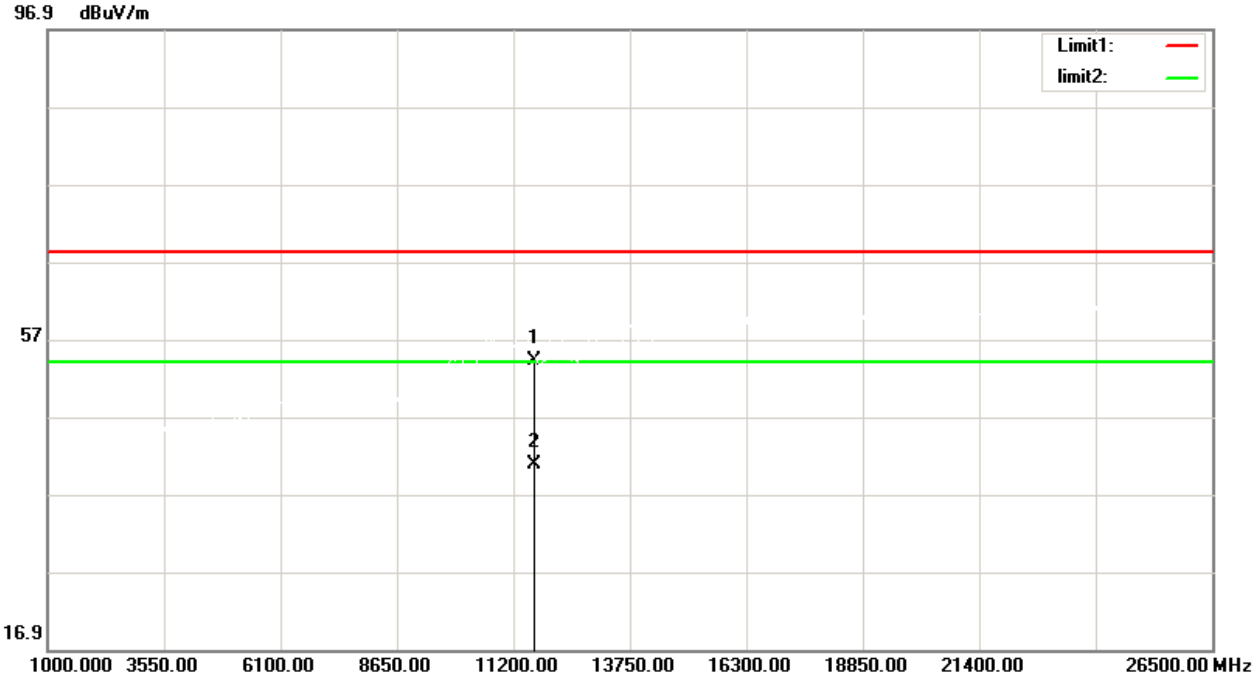
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11650.000	39.38	14.85	54.23	68.30	-14.07	peak
2	11650.000	25.46	14.85	40.31	54.00	-13.69	AVG

Orthogonal Axis	X
Test Mode	UNII-3_TX N (HT20) Mode 5825 MHz

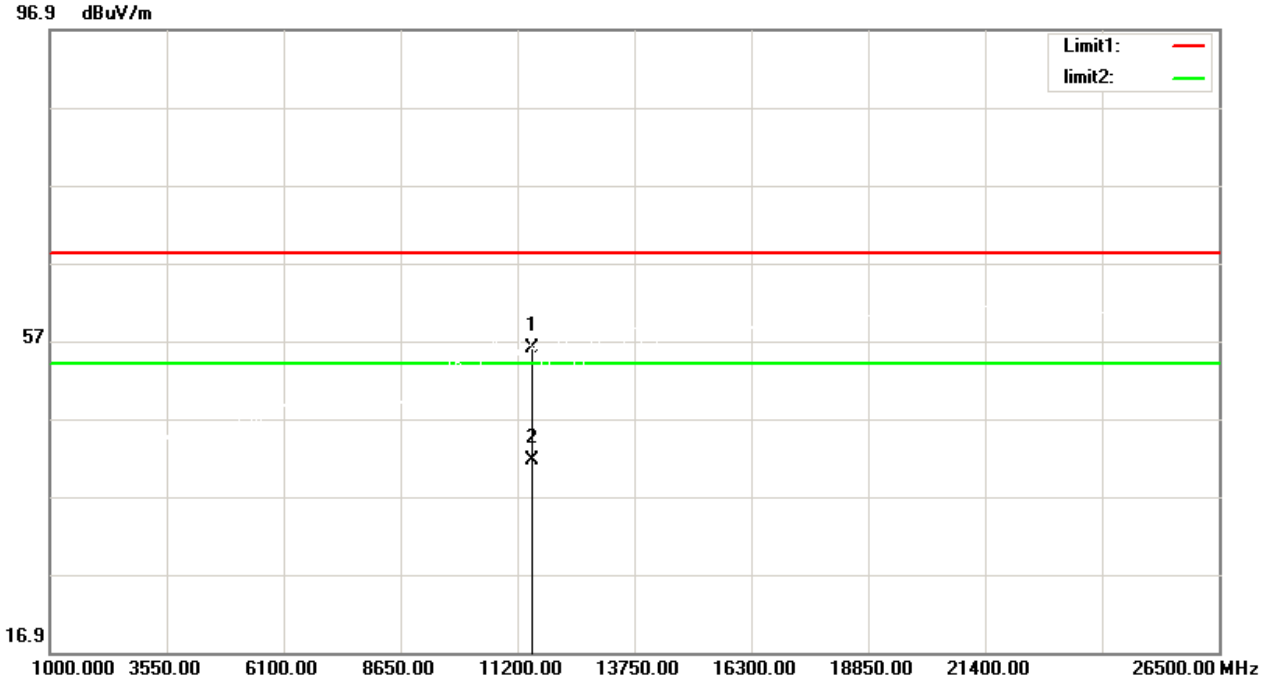
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11650.000	39.27	14.85	54.12	68.30	-14.18	peak
2	11650.000	25.89	14.85	40.74	54.00	-13.26	AVG

Orthogonal Axis	X
Test Mode	UNII-3_TX N (HT40) Mode 5755 MHz

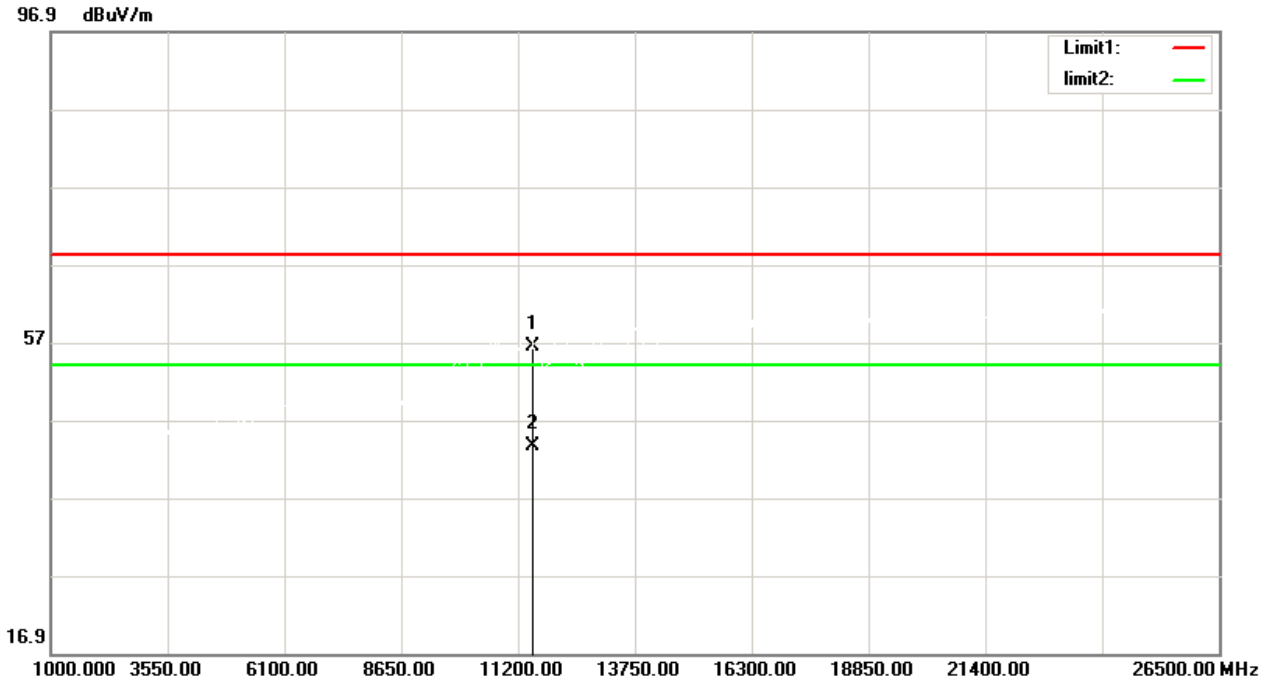
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11510.000	41.20	14.85	56.05	68.30	-12.25	peak
2	11510.000	26.69	14.85	41.54	54.00	-12.46	AVG

Orthogonal Axis	X
Test Mode	UNII-3_TX N (HT40) Mode 5755 MHz

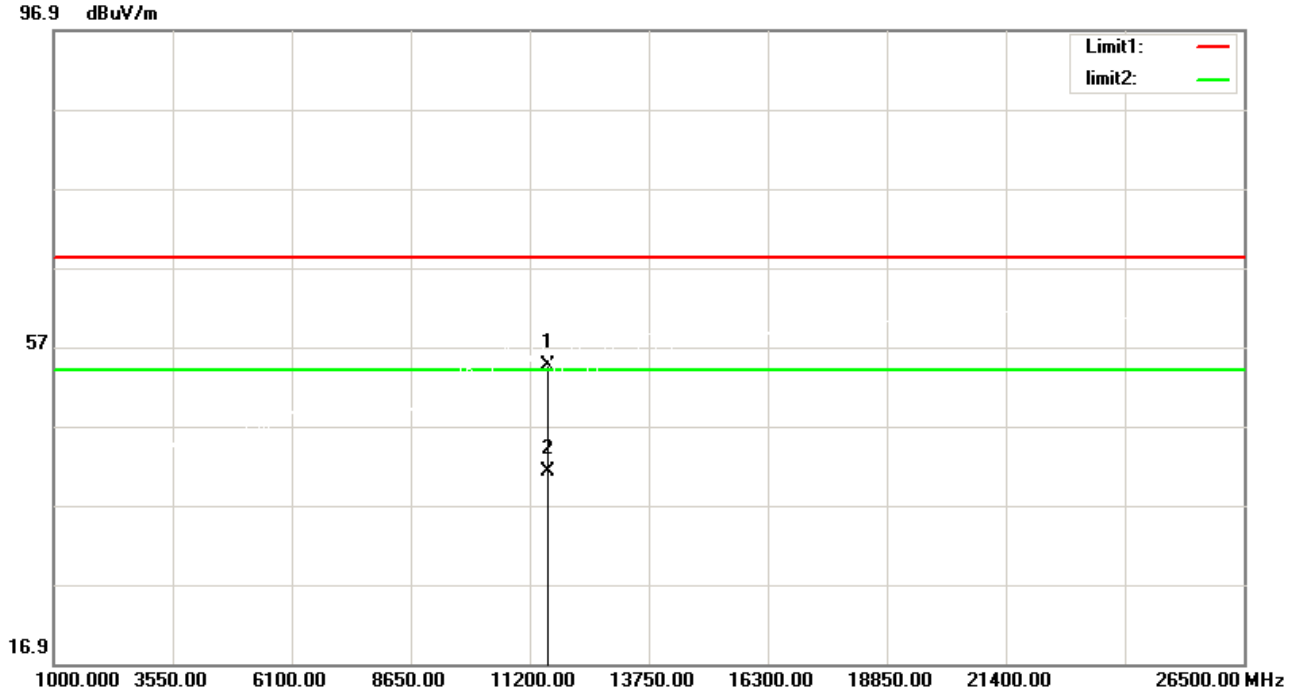
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11510.000	41.53	14.85	56.38	68.30	-11.92	peak
2	11510.000	28.67	14.85	43.52	54.00	-10.48	AVG

Orthogonal Axis	X
Test Mode	UNII-3_TX N (HT40) Mode 5795 MHz

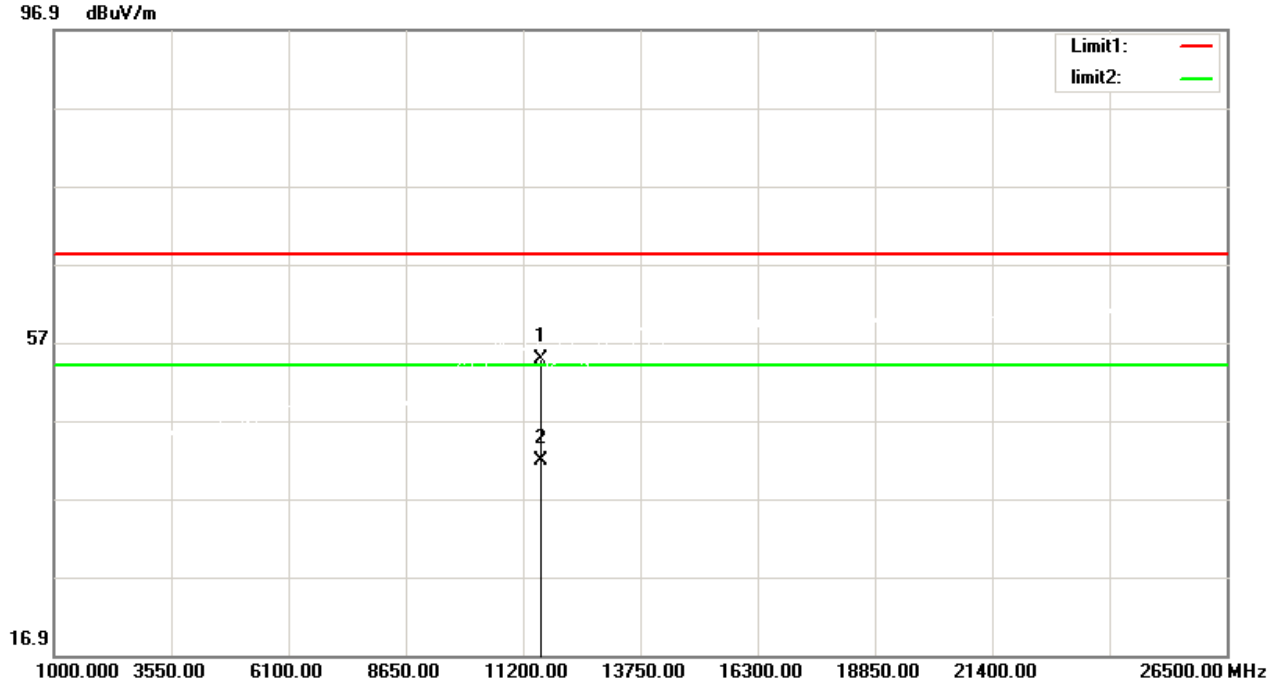
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11590.000	39.74	14.86	54.60	68.30	-13.70	peak
2	11590.000	26.39	14.86	41.25	54.00	-12.75	AVG

Orthogonal Axis	X
Test Mode	UNII-3_TX N (HT40) Mode 5795 MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11590.000	39.86	14.86	54.72	68.30	-13.58	peak
2	11590.000	27.02	14.86	41.88	54.00	-12.12	AVG

6. BANDWIDTH TEST

6.1 LIMIT

FCC Part15, Subpart E (15.407) RSS-Gen and RSS-247			
Section	Test Item	Limit	Frequency Range (MHz)
15.407(a) 15.407(e) RSS-247 6.2.1.1 RSS-247 6.2.4.1	26 dB Bandwidth	-	5150-5250
	6dB Bandwidth	Minimum 500 kHz	5725-5850

6.2 TEST PROCEDURE AND SETTING

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below

b. Spectrum Setting:

For UNII-1:

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> 26dB Bandwidth
RBW	300 kHz (Bandwidth 20 MHz) 1 MHz (Bandwidth 40 MHz and 80 MHz)
VBW	1 MHz (Bandwidth 20 MHz) 3 MHz (Bandwidth 40 MHz and 80 MHz)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

For UNII-3:

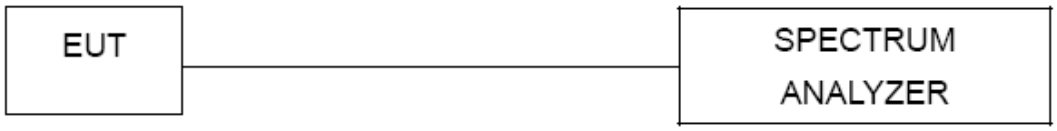
Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	6dB Bandwidth
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

c. Measured the spectrum width with power higher than 26dB / 6dB below carrier.

6.3 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum analyzer	KEYSIGHT	N9010A	MY55150427	2020/05/27
2	Attenuator	Mini-Circuits	BW-S10W2	101109	2020/12/11
3	RF Cable	Mi-cable	C10-01-01-1	100309	2020/12/11

6.4 TEST SETUP



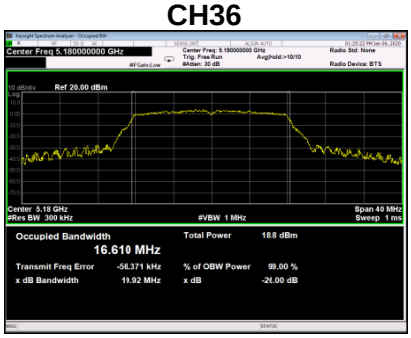
6.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

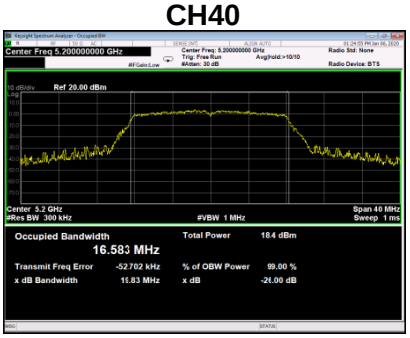
6.6 TEST RESULTS

UNII-1_TX A Mode			
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)
36	5180	19.92	16.610
40	5200	19.83	16.583
48	5240	19.70	16.627

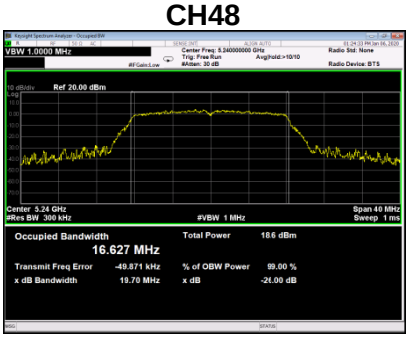
CH36



CH40

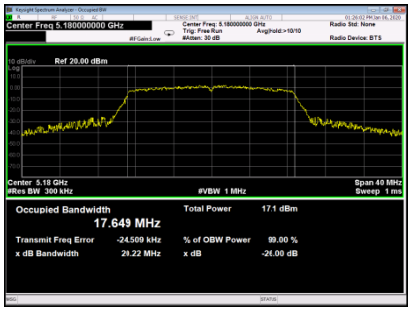


CH48

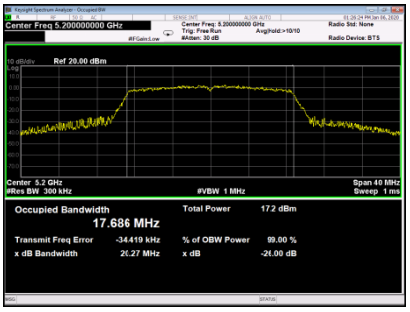


UNII-1_TX N (HT20) Mode			
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)
36	5180	20.22	17.649
40	5200	20.27	17.686
48	5240	20.28	17.643

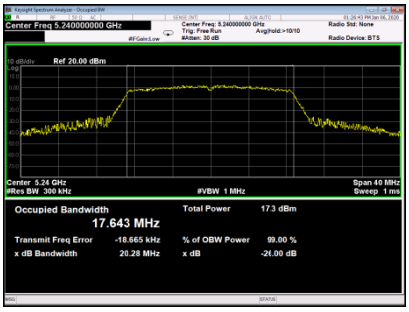
CH36



CH40

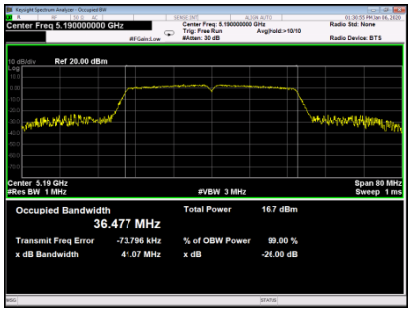


CH48

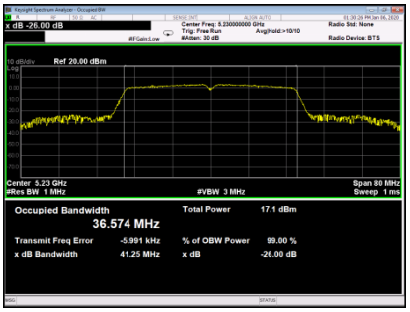


UNII-1_TX N (HT40) Mode			
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)
38	5190	41.07	36.477
46	5230	41.25	36.574

CH38



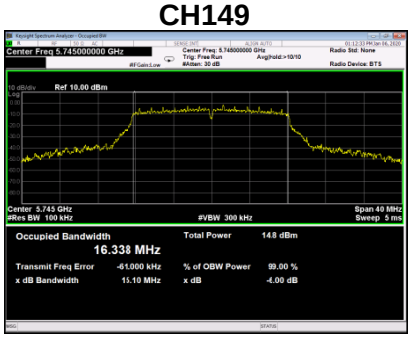
CH46



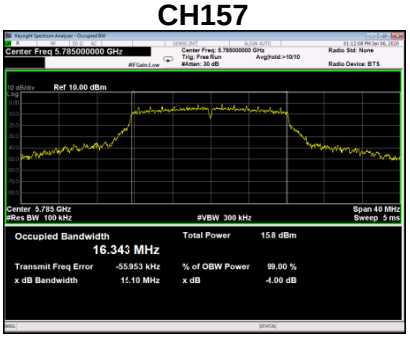
UNII-3_TX A Mode					
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99% Emission Bandwidth(MHz)	6dB Bandwidth Min. Limit(kHz)	Result
149	5745	15.10	16.779	500	PASS
157	5785	15.10	16.673	500	PASS
165	5825	15.12	16.619	500	PASS

6 dB Bandwidth

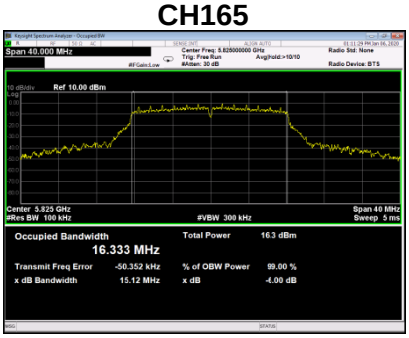
CH149



CH157

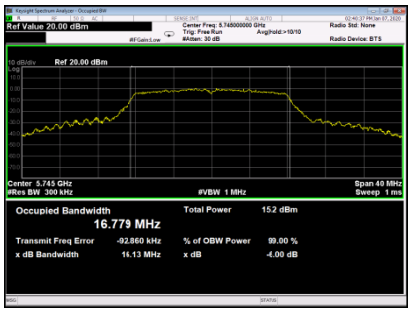


CH165



99% Emission Bandwidth

CH149



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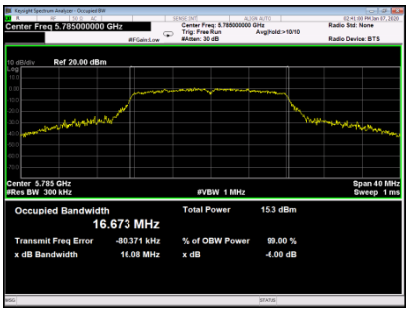
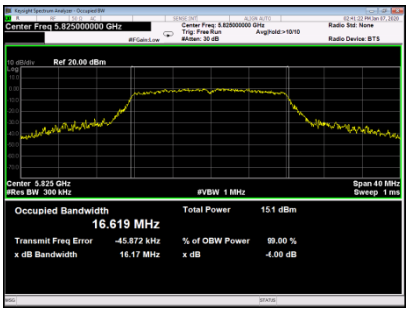


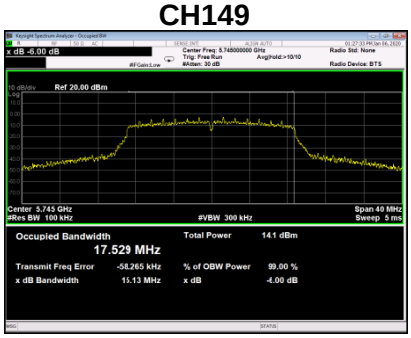
CH165



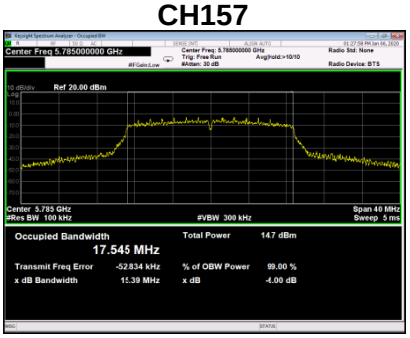
UNII-3_TX N (HT20) Mode					
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99% Emission Bandwidth(MHz)	6dB Bandwidth Min. Limit(kHz)	Result
149	5745	15.13	17.659	500	PASS
157	5785	15.39	17.688	500	PASS
165	5825	15.38	17.665	500	PASS

6 dB Bandwidth

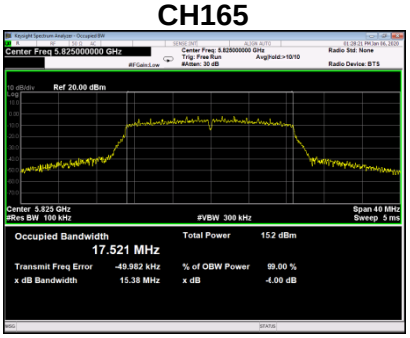
CH149



CH157

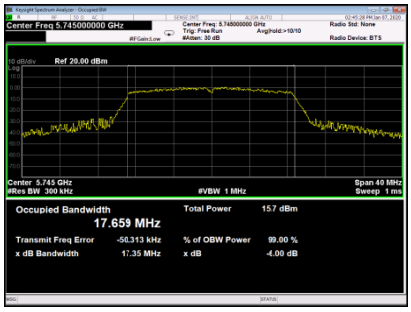


CH165

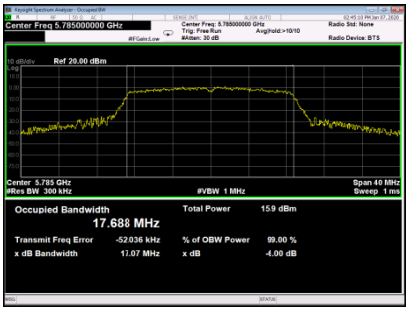


99% Emission Bandwidth

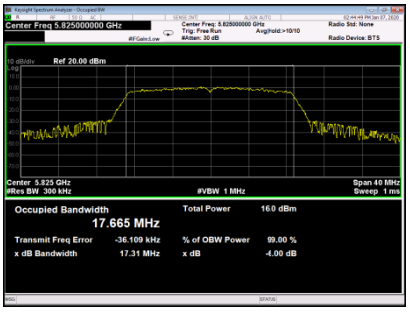
CH149



CH157



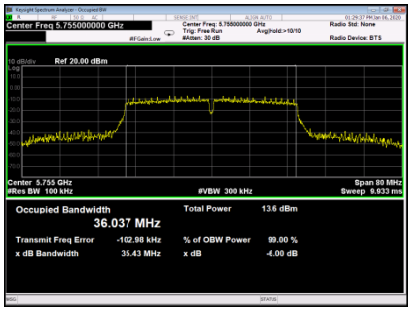
CH165



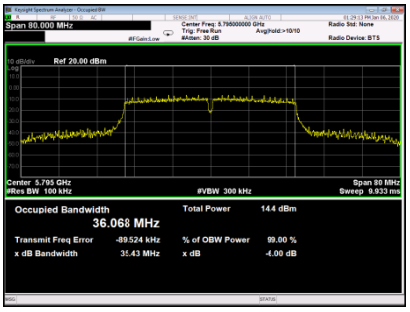
UNII-3_TX N (HT40) Mode					
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99% Emission Bandwidth(MHz)	6dB Bandwidth Min. Limit(kHz)	Result
151	5755	35.43	36.417	500	PASS
159	5795	35.43	36.482	500	PASS

6 dB Bandwidth

CH151

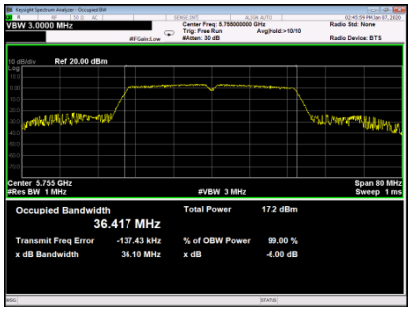


CH159

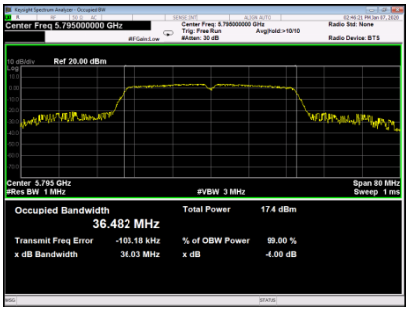


99% Emission Bandwidth

CH151



CH159



7. MAXIMUM OUTPUT POWER TEST

7.1 LIMIT

FCC Part15, Subpart E (15.407)&RSS-247			
Section	Test Item	Limit	Frequency Range (MHz)
RSS-247 6.2.1.1	EIRP Output Power	not exceed 200 mW or 10 + 10 logB, dBm, whichever power is less	5150-5250
15.407(a)	Maximum Output Power	AP device:1 Watt (30dBm) Client device: 250mW (24dBm)	5150-5250
15.407(a) RSS-247 6.2.4.1	Maximum Output Power	1 Watt (30dBm)	5725-5850

Note:

a. For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

b. B is the 99% emission bandwidth in megahertz.

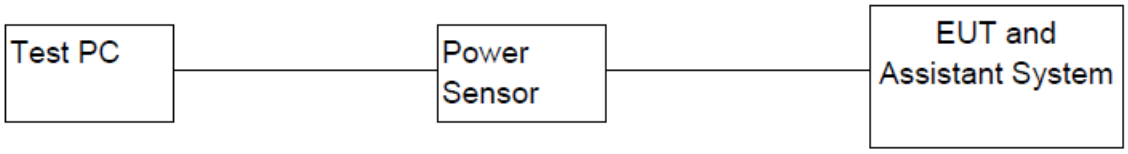
7.2 TEST PROCEDURE AND SETTING

a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below.
b. Test was performed in accordance with method of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

7.3 MEASUREMENT INSTRUMENTS LIST

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Power Sensor	KEYSIGHT	U2021XA	MY55240009	05/27/2020
2	Attenuator	Mini-Circuits	BW-S10W2	101109	2020/12/11
3	RF Cable	Mi-cable	C10-01-01-1	100309	2020/12/11
4	Test Software	KEYSIGHT	Power Panel	V3.11	N/A

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.6 TEST RESULTS

UNII-1_TX A Mode_Ant 1 For FCC							
Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
36	5180	15.56	0.00	15.56	24.00	0.25	PASS
40	5200	16.19	0.00	16.19	24.00	0.25	PASS
48	5240	16.37	0.00	16.37	24.00	0.25	PASS

UNII-1_TX A Mode_Ant 2 For FCC							
Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
36	5180	14.44	0.00	14.44	24.00	0.25	PASS
40	5200	14.99	0.00	14.99	24.00	0.25	PASS
48	5240	15.23	0.00	15.23	24.00	0.25	PASS

UNII-1_TX A Mode_Ant 1 For ISED							
Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	EIRP + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
36	5180	15.56	0.00	18.56	23.00	0.2	PASS
40	5200	16.19	0.00	19.19	23.00	0.2	PASS
48	5240	16.37	0.00	19.37	23.00	0.2	PASS

UNII-1_TX A Mode_Ant 2 For ISED							
Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	EIRP + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
36	5180	14.44	0.00	17.44	23.00	0.2	PASS
40	5200	14.99	0.00	17.99	23.00	0.2	PASS
48	5240	15.23	0.00	18.23	23.00	0.2	PASS

UNII-1_TX N (HT20) Mode _Ant 1							
Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
36	5180	14.73	0.16	14.89	24.00	0.25	PASS
40	5200	15.25	0.16	15.41	24.00	0.25	PASS
48	5240	15.49	0.16	15.65	24.00	0.25	PASS

UNII-1_TX N (HT20) Mode _Ant 2							
Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
36	5180	13.36	0.16	13.52	24.00	0.25	PASS
40	5200	13.85	0.16	14.01	24.00	0.25	PASS
48	5240	14.37	0.16	14.53	24.00	0.25	PASS

UNII-1_TX N (HT20) Mode _Total For FCC					
Channel	Frequency (MHz)	Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
36	5180	17.27	24.00	0.25	PASS
40	5200	17.78	24.00	0.25	PASS
48	5240	18.14	24.00	0.25	PASS

UNII-1_TX N (HT20) Mode _Total For ISED					
Channel	Frequency (MHz)	EIRP Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
36	5180	20.27	23.00	0.2	PASS
40	5200	20.78	23.00	0.2	PASS
48	5240	21.14	23.00	0.2	PASS

UNII-1_TX N (HT40) Mode_Ant 1							
Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
38	5190	14.07	0.38	14.45	24.00	0.25	PASS
46	5230	14.66	0.38	15.04	24.00	0.25	PASS

UNII-1_TX N (HT40) Mode_Ant 2							
Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
38	5190	12.87	0.38	13.25	24.00	0.25	PASS
46	5230	13.61	0.38	13.99	24.00	0.25	PASS

UNII-1_TX N (HT40) Mode_Total For FCC					
Channel	Frequency (MHz)	Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
38	5190	16.90	24.00	0.25	PASS
46	5230	17.55	24.00	0.25	PASS

UNII-1_TX N (HT40) Mode_Total For ISED					
Channel	Frequency (MHz)	EIRP Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
38	5190	19.90	23.00	0.2	PASS
46	5230	20.55	23.00	0.2	PASS

UNII-3_TX A Mode_Ant 1							
Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
149	5745	15.93	0	15.93	30.00	1.00	PASS
157	5785	16.08	0	16.08	30.00	1.00	PASS
165	5825	16.59	0	16.59	30.00	1.00	PASS

UNII-3_TX A Mode_Ant 2							
Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
149	5745	16.89	0	16.89	30.00	1.00	PASS
157	5785	16.76	0	16.76	30.00	1.00	PASS
165	5825	16.73	0	16.73	30.00	1.00	PASS

UNII-3_TX N (HT20) Mode_Ant1							
Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
149	5745	15.10	0.16	15.26	30.00	1.00	PASS
157	5785	15.26	0.16	15.42	30.00	1.00	PASS
165	5825	15.71	0.16	15.87	30.00	1.00	PASS

UNII-3_TX N (HT20) Mode _Ant 2							
Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
149	5745	15.96	0.16	16.12	30.00	1.00	PASS
157	5785	15.73	0.16	15.89	30.00	1.00	PASS
165	5825	15.85	0.16	16.01	30.00	1.00	PASS

UNII-3_TX N (HT20) Mode_Total					
Channel	Frequency (MHz)	Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
149	5745	18.72	30.00	1.00	PASS
157	5785	18.67	30.00	1.00	PASS
165	5825	18.95	30.00	1.00	PASS

UNII-3_TX N (HT40) Mode_Ant 1							
Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
151	5755	14.22	0.38	14.60	30.00	1.00	PASS
159	5795	14.66	0.38	15.04	30.00	1.00	PASS

UNII-3_TX N (HT40) Mode_Ant 2							
Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
151	5755	15.13	0.38	15.51	30.00	1.00	PASS
159	5795	15.06	0.38	15.44	30.00	1.00	PASS

UNII-3_TX N (HT40) Mode_Total					
Channel	Frequency (MHz)	Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
151	5755	18.09	30.00	1.00	PASS
159	5795	18.25	30.00	1.00	PASS

8. POWER SPECTRAL DENSITY TEST

8.1 LIMIT

FCC Part15, Subpart E (15.407)&RSS-247			
Section	Test Item	Limit	Frequency Range (MHz)
RSS-247 6.2.1.2	EIRP Power Spectral Density	10dBm/MHz	5150-5250
15.407(a)	Power Spectral Density	AP device:17dBm/MHz Client device:11dBm/MHz	5150-5250
15.407(a) RSS-247 6.2.4.2	Power Spectral Density	30dBm/500kHz	5725-5850

8.2 TEST PROCEDURE ANS SETTING

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.

b. Spectrum Setting:

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	= 1MHz.
VBW	≥ 3MHz.
Detector	RMS
Trace average	100 trace
Sweep Time	Auto

Note:

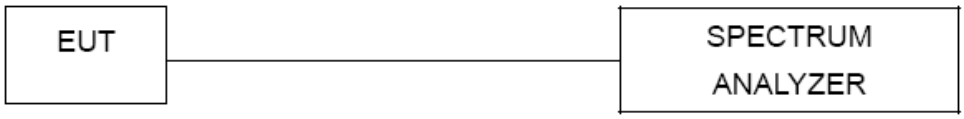
1.For UNII-3, according to KDB publication 789033 D02 General UNII Test Procedures New Rules v02r01, section II.F.5., it is acceptable to set RBW at 1MHz and VBW at 3MHz if the spectrum analyzer does not have 500kHz RBW.

2.The value measured with RBW=1MHz is to be added with 10log(500kHz/1MHz) which is -3dB. For example, if the measured value is +10dBm using RBW=1MHz (that is +10dBm/MHz), then the converted value will be +7dBm/500kHz.

8.3 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum analyzer	KEYSIGHT	N9010A	MY55150427	2020/05/27
2	Attenuator	Mini-Circuits	BW-S10W2	101109	2020/12/11
3	RF Cable	Mi-cable	C10-01-01-1	100309	2020/12/11

8.4 TEST SETUP



8.5 EUT OPERATION CONDITIONS

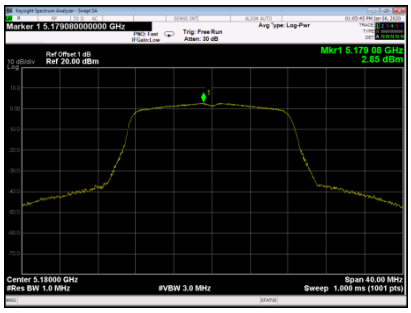
The EUT was programmed to be in continuously transmitting mode.

8.6 TEST RESULTS

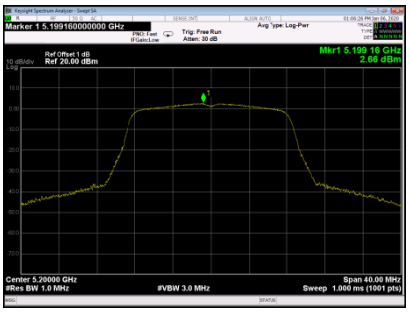
UNII-1_TX A Mode_Ant 1 For FCC						
Channel	Frequency (MHz)	Power Spectral Density (dBm/MHz)	Duty Factor	Power Spectral Density + Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180	2.85	0.00	2.85	11.00	PASS
40	5200	2.66	0.00	2.66	11.00	PASS
48	5240	2.98	0.00	2.98	11.00	PASS

UNII-1_TX A Mode_Ant 1 For ISED						
Channel	Frequency (MHz)	Power Spectral Density (dBm/MHz)	Duty Factor	EIRP Power Spectral Density + Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180	2.85	0.00	5.85	10.00	PASS
40	5200	2.66	0.00	5.66	10.00	PASS
48	5240	2.98	0.00	5.98	10.00	PASS

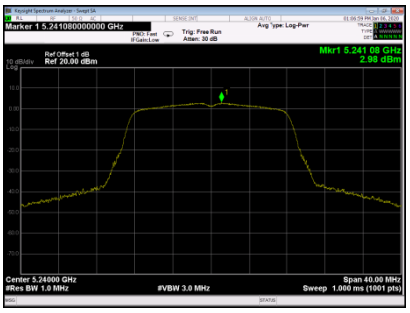
CH36



CH40



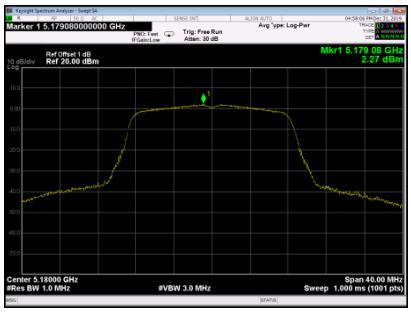
CH48



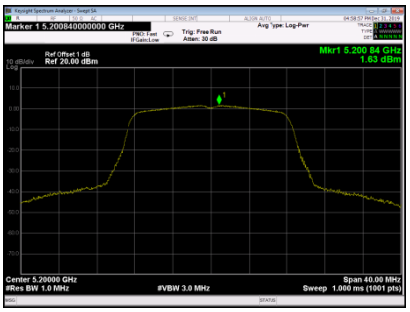
UNII-1_TX A Mode_Ant2 For FCC						
Channel	Frequency (MHz)	Power Spectral Density (dBm/MHz)	Duty Factor	Power Spectral Density + Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180	2.27	0.00	2.27	11.00	PASS
40	5200	1.63	0.00	1.63	11.00	PASS
48	5240	2.11	0.00	2.11	11.00	PASS

UNII-1_TX A Mode_Ant2 For ISED						
Channel	Frequency (MHz)	Power Spectral Density (dBm/MHz)	Duty Factor	EIRP Power Spectral Density + Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180	2.27	0.00	5.27	10.00	PASS
40	5200	1.63	0.00	4.63	10.00	PASS
48	5240	2.11	0.00	5.11	10.00	PASS

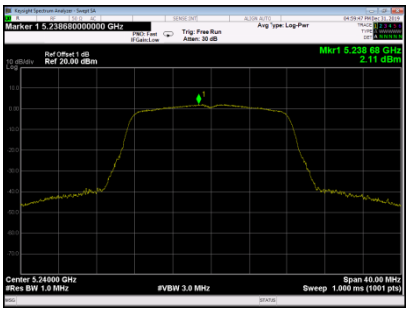
CH36



CH40

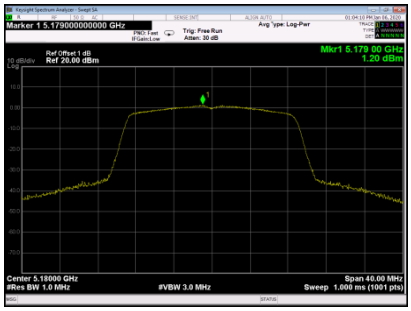


CH48

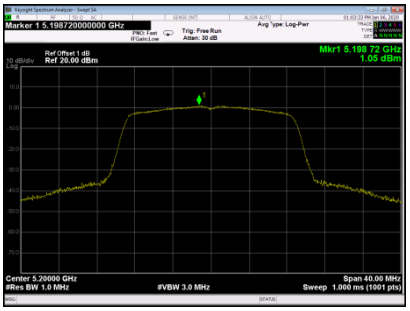


UNII-1_TX N (HT20) Mode_Ant 1						
Channel	Frequency (MHz)	Power Spectral Density (dBm/MHz)	Duty Factor	Power Spectral Density + Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180	1.20	0.16	1.36	11.00	PASS
40	5200	1.05	0.16	1.21	11.00	PASS
48	5240	1.18	0.16	1.34	11.00	PASS

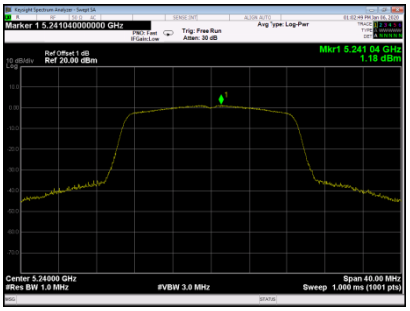
CH36



CH40

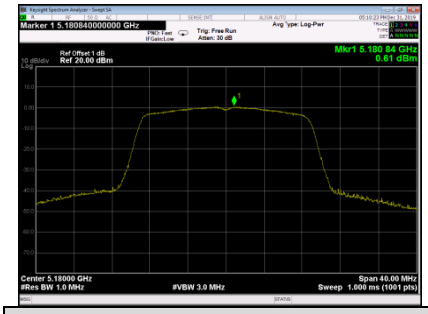


CH48

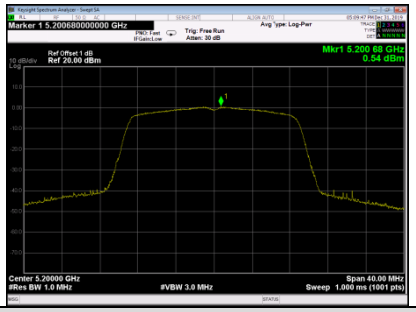


UNII-1_TX N (HT20) Mode_Ant 2						
Channel	Frequency (MHz)	Power Spectral Density (dBm/MHz)	Duty Factor	Power Spectral Density + Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180	0.61	0.16	0.77	11.00	PASS
40	5200	0.54	0.16	0.70	11.00	PASS
48	5240	0.66	0.16	0.82	11.00	PASS

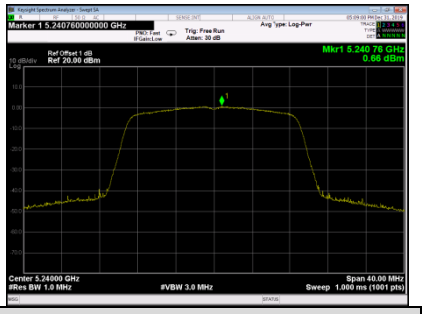
CH36



CH40



CH48

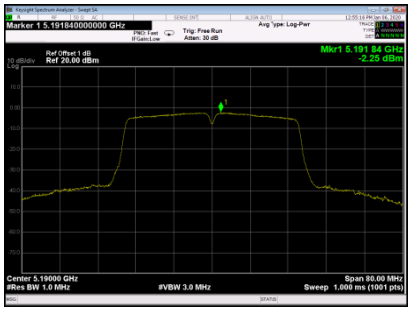


UNII-1_TX N (HT20) Mode_Total For FCC				
Channel	Frequency (MHz)	Power Spectral Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180	4.09	11.00	PASS
40	5200	3.98	11.00	PASS
48	5240	4.10	11.00	PASS

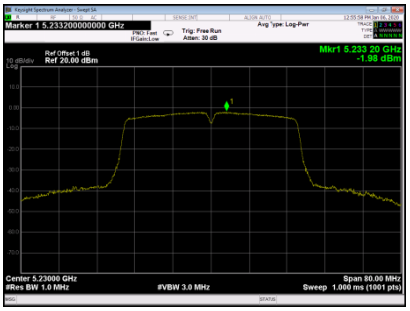
UNII-1_TX N (HT20) Mode_Total For ISED				
Channel	Frequency (MHz)	EIRP Power Spectral Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180	7.09	10.00	PASS
40	5200	6.98	10.00	PASS
48	5240	7.10	10.00	PASS

UNII-1_TX N (HT40) Mode_Ant 1						
Channel	Frequency (MHz)	Power Spectral Density (dBm/MHz)	Duty Factor	Power Spectral Density + Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Result
38	5190	-2.25	0.38	-1.87	11.00	PASS
46	5230	-1.98	0.38	-1.60	11.00	PASS

CH38

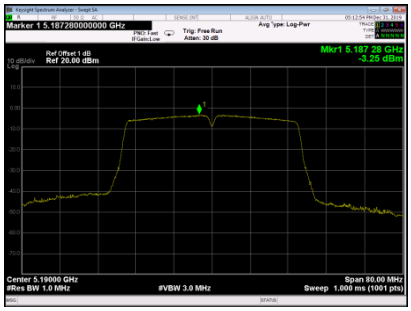


CH46

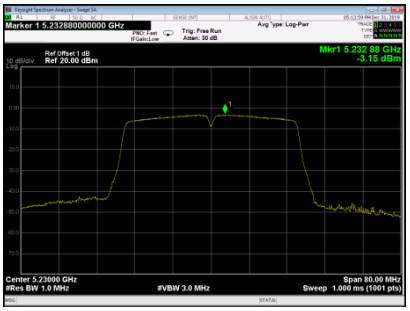


UNII-1_TX N (HT40) Mode_Ant2						
Channel	Frequency (MHz)	Power Spectral Density (dBm/MHz)	Duty Factor	Power Spectral Density + Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Result
38	5190	-3.25	0.38	-2.87	11.00	PASS
46	5230	-3.15	0.38	-2.77	11.00	PASS

CH38



CH46

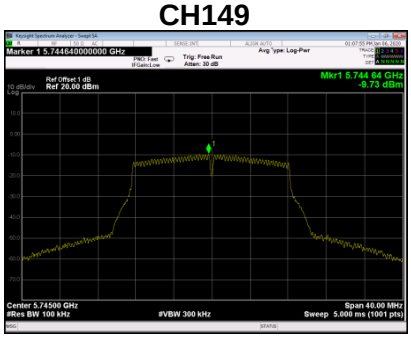


UNII-1_TX N (HT40) Mode _Total For FCC				
Channel	Frequency (MHz)	Power Spectral Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
38	5190	1.17	11.00	PASS
46	5230	1.22	11.00	PASS

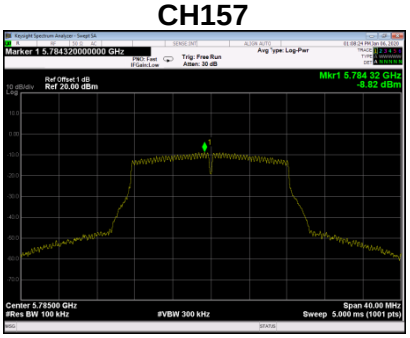
UNII-1_TX N (HT40) Mode _Total For IC				
Channel	Frequency (MHz)	EIRP Power Spectral Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
38	5190	4.17	10.00	PASS
46	5230	4.22	10.00	PASS

UNII-3_TX A Mode_Ant 1						
Channel	Frequency (MHz)	Power Spectral Density (dBm/500 kHz)	Duty Factor	Power Spectral Density + Duty Factor (dBm/500 kHz)	Max. Limit (dBm/500 kHz)	Result
149	5745	-9.73	0.00	-9.73	30.00	PASS
157	5785	-8.82	0.00	-8.82	30.00	PASS
165	5825	-8.26	0.00	-8.26	30.00	PASS

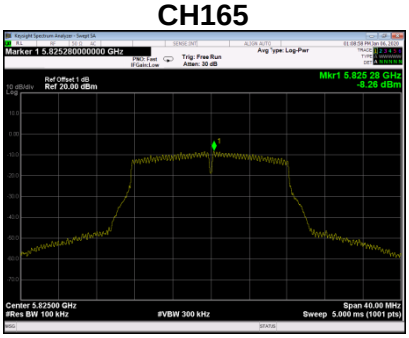
CH149



CH157

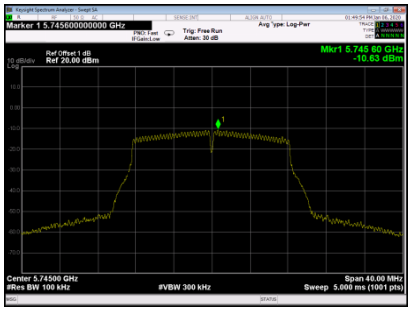


CH165



UNII-3_TX A Mode_Ant2						
Channel	Frequency (MHz)	Power Spectral Density (dBm/500 kHz)	Duty Factor	Power Spectral Density + Duty Factor (dBm/500 kHz)	Max. Limit (dBm/500 kHz)	Result
149	5745	-10.63	0.00	-10.63	30.00	PASS
157	5785	-10.45	0.00	-10.45	30.00	PASS
165	5825	-10.36	0.00	-10.36	30.00	PASS

CH149



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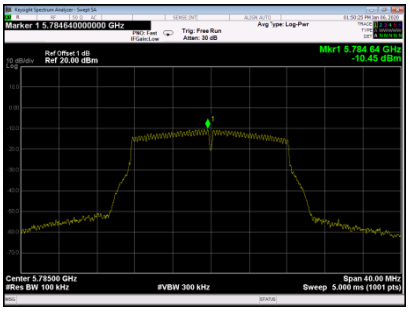
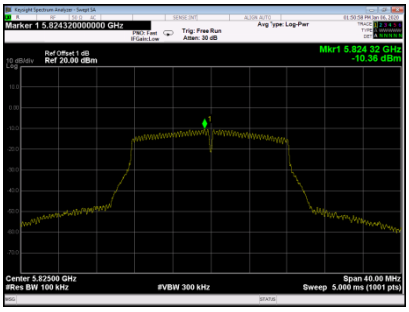
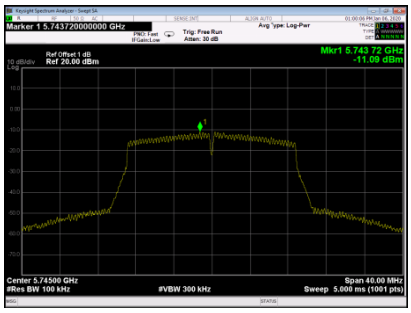


CH165

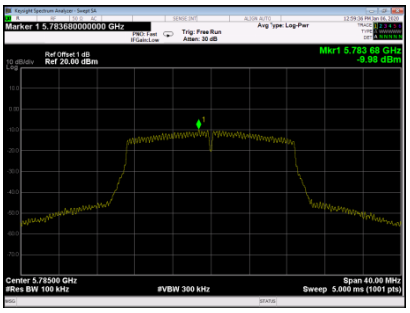


UNII-3_TX N (HT20) Mode_Ant 1						
Channel	Frequency (MHz)	Power Spectral Density (dBm/500 kHz)	Duty Factor	Power Spectral Density + Duty Factor (dBm/500 kHz)	Max. Limit (dBm/500 kHz)	Result
149	5745	-11.09	0.16	-10.93	30.00	PASS
157	5785	-9.98	0.16	-9.82	30.00	PASS
165	5825	-9.78	0.16	-9.62	30.00	PASS

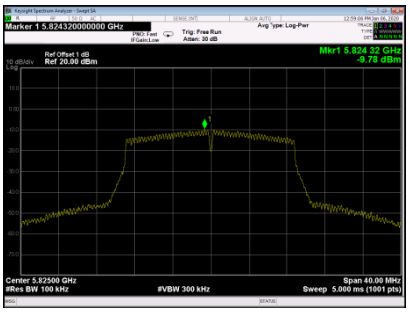
CH149



CH157

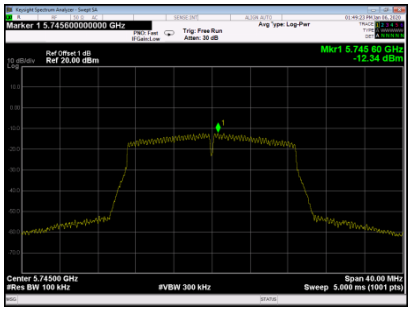


CH165

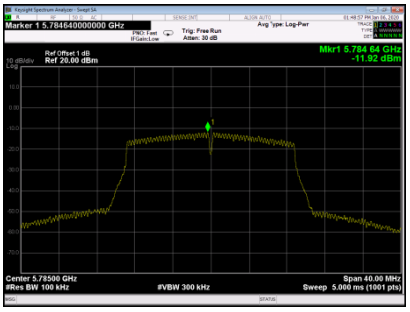


UNII-3_TX N (HT20) Mode_Ant2						
Channel	Frequency (MHz)	Power Spectral Density (dBm/500 kHz)	Duty Factor	Power Spectral Density + Duty Factor (dBm/500 kHz)	Max. Limit (dBm/500 kHz)	Result
149	5745	-12.34	0.16	-12.18	30.00	PASS
157	5785	-11.92	0.16	-11.76	30.00	PASS
165	5825	-12.51	0.16	-12.35	30.00	PASS

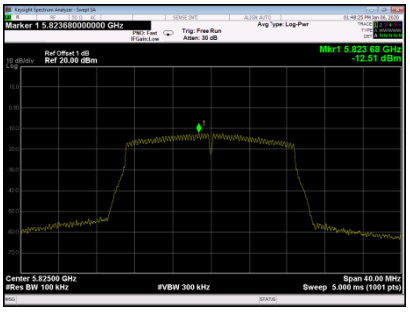
CH149



CH157



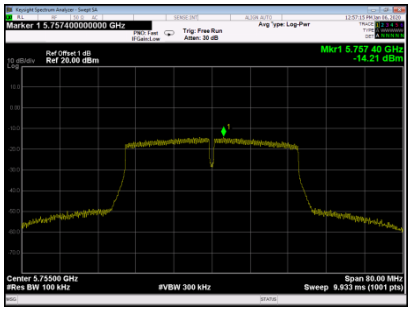
CH165



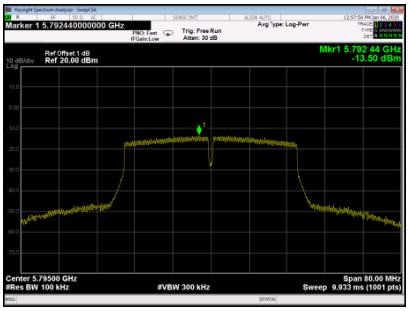
UNII-3_TX N (HT20) Mode_Total				
Channel	Frequency (MHz)	Power Spectral Density (dBm/MHz)	Max. Limit (dBm/500 kHz)	Result
149	5745	-8.50	30.00	PASS
157	5785	-7.67	30.00	PASS
165	5825	-7.76	30.00	PASS

UNII-3_TX N (HT40) Mode_Ant 1						
Channel	Frequency (MHz)	Power Spectral Density (dBm/500 kHz)	Duty Factor	Power Spectral Density + Duty Factor (dBm/500 kHz)	Max. Limit (dBm/500 kHz)	Result
151	5755	-14.21	0.38	-13.83	30.00	PASS
159	5795	-13.50	0.38	-12.12	30.00	PASS

CH151

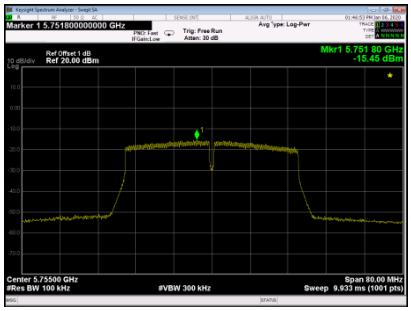


CH159

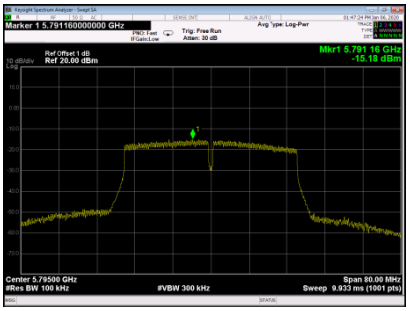


UNII-3_TX N (HT40) Mode_Ant2						
Channel	Frequency (MHz)	Power Spectral Density (dBm/500 kHz)	Duty Factor	Power Spectral Density + Duty Factor (dBm/500 kHz)	Max. Limit (dBm/500 kHz)	Result
151	5755	-15.45	0.38	-15.07	30.00	PASS
159	5795	-15.18	0.38	-14.80	30.00	PASS

CH151



CH159



UNII-3_TX N (HT40) Mode_Total				
Channel	Frequency (MHz)	Power Spectral Density (dBm/MHz)	Max. Limit (dBm/500 kHz)	Result
151	5755	-11.40	30.00	PASS
159	5795	-10.87	30.00	PASS

9. FREQUENCY STABILITY MEASUREMENT

9.1 LIMIT

FCC Part15, Subpart E (15.407)&RSS-GEN			
Section	Test Item	Limit	Frequency Range (MHz)
15.407(g) RSS-GEN 6.11	Frequency Stability	Specified in the user's manual	5150-5250
			5725-5850

9.2 TEST PROCEDURE AND SETTING

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.

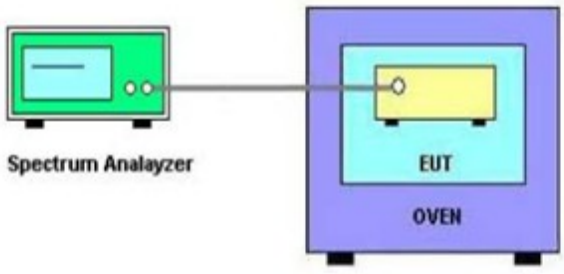
b. Spectrum Setting:

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Entire absence of modulation emissions bandwidth
RBW	10 kHz
VBW	10kHz
Sweep Time	Auto

9.3 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum analyzer	KEYSIGHT	N9010A	MY55150427	2020/05/27
2	Attenuator	Mini-Circuits	BW-S10W2	101109	2020/12/11
3	RF Cable	Mi-cable	C10-01-01-1	100309	2020/12/11
4	Temperature conditioning	Guan Jian.HTH1000	-20-130℃	GJ1000-10D001	2020/12/11
5	DC Power Supply	G.KE	IPR-10010D	010931954	2020/12/11

9.4 TEST SETUP



9.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

9.6 TEST RESULTS

	Temperature vs. Frequency Stability	
Voltage	Temperature	Measurement Frequency (MHz)
3.3V	(℃)	5180
	-20	5179.9750
	25	5179.9592
	50	5179.9580
2.5V	25	5179.9582
Max. Deviation (MHz)		-0.042
Max. Deviation (ppm)		-8.11

	Temperature vs. Frequency Stability	
Voltage	Temperature	Measurement Frequency (MHz)
3.3V	(℃)	5745
	-20	5744.9536
	25	5744.9530
	50	5744.9548
2.5V	25	5744.9540
Max. Deviation (MHz)		-0.047
Max. Deviation (ppm)		-8.18

Note: 2.5V is the end point voltage, and products below 2.5V will cease working.

END OF TEST REPORT