

FCC Radio Test Report

FCC ID: RYK-WNFQ258ACNBT

This report concerns (check one): ☐ Original Grant ☐ Class I Change ☒ Class II Change

Project No. : 1708083
Equipment : 802.11ac/b/g/n WiFi + Bluetooth M.2 Card
Test Model : WNFQ-258ACN(BT)
Series Model : N/A
Applicant : SparkLAN Communications, Inc.
Address : 8F., No.257, Sec.2, Tiding-Blvd., Neihu District, Taipei
City 11493, Taiwan (R.O.C.)

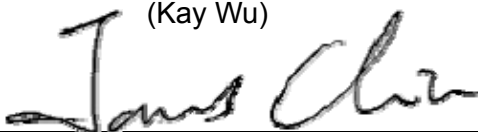
Date of Receipt : Aug. 21, 2017
Date of Test : Aug. 21, 2017 ~ Oct. 03, 2017
Issued Date : Oct. 11, 2017
Tested by : BTL Inc.

Testing Engineer



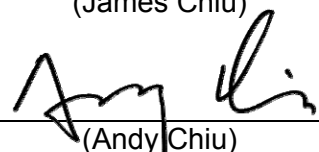
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Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

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Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

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REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-1-1708083	Original Issue.	Oct. 11, 2017

1. CERTIFICATION

Equipment : 802.11ac/b/g/n WiFi + Bluetooth M.2 Card
Brand Name : Sparklan
Test Model : WNFAQ-258ACN(BT)
Series Model : N/A
Applicant : SparkLAN Communications, Inc.
Manufacturer : SparkLAN Communications, Inc.
Address : 8F., No.257, Sec.2, Tiding-Blvd., Neihu District, Taipei City 11493, Taiwan (R.O.C.)
Date of Test : Aug. 21, 2017 ~ Oct. 03, 2017
Test Sample : Engineering Sample
Standard(s) : FCC Part15, Subpart C (15.247)
ANSI C63.10-2013

The above equipment has been tested and found in compliance with the requirement of the relative standards by BTL Inc.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-1-1708083) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

Test results included in this report is only for the Bluetooth EDR part.

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

Applied Standard(s): FCC Part15, Subpart C (15.247)			
Standard(s) Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	-----
15.247(d) 15.209	Radiated emission	PASS	-----
15.203	Antenna Requirement	PASS	-----

Note:

- (1) "N/A" denotes test is not applicable in this test report
- (2) Accord to the EUT((Report Number: RF150107E06Z-2 and model: WNFQ-258ACN(BT)) has been certificated, Conducted and Radiated emission were criticized and reconfirmed in this report.
- (3) Compared with the previous report (RF150107E06Z-2), Added two new different type (Dipole) antennas.

2.1 TEST FACILITY

The test facilities used to collect the test data in this report:

Conducted emission Test:

C05: (VCCI RN: C-4742; FCC RN:965108; FCC DN:TW1082)

No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

Radiated emission Test (Below 1 GHz):

CB15: (FCC RN:674415; FCC DN:TW0659)

No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

Radiated emission Test (Above 1 GHz):

CB15: (FCC RN:674415; FCC DN:TW0659)

No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. The BTL measurement uncertainty is less than the CISPR 16-4-2 U_{CISPR} requirement.

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

A. Conducted emission test:

Test Site	Method	Measurement Frequency Range	U , (dB)
C05	CISPR	150 kHz ~ 30MHz	2.68

B. Radiated emission test:

Test Site	Method	Measurement Frequency Range	U , (dB)
CB15 (3m)	CISPR	9kHz ~ 150kHz	2.82
		150kHz ~ 30MHz	2.58

Test Site	Method	Measurement Frequency Range	Ant. H / V	U , (dB)
CB15 (3m)	CISPR	30MHz ~ 200MHz	V	4.20
		30MHz ~ 200MHz	H	3.64
		200MHz ~ 1,000MHz	V	4.56
		200MHz ~ 1,000MHz	H	3.90

Test Site	Method	Measurement Frequency Range	Ant. H / V	U , (dB)
CB15 (3m)	CISPR	1GHz ~ 6GHz	V	4.46
		1GHz ~ 6GHz	H	4.40
		6GHz ~ 18GHz	V	3.88
		6GHz ~ 18GHz	H	4.00

Test Site	Method	Measurement Frequency Range	U , (dB)
CB15 (1m)	CISPR	18 ~ 26.5 GHz	4.62
		26.5 ~ 40 GHz	5.12

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	802.11ac/b/g/n WiFi + Bluetooth M.2 Card	
Brand Name	Sparklan	
Test Model	WNFQ-258ACN(BT)	
Series Model	N/A	
Model Difference	N/A	
Product Description	Operation Frequency	2402~2480 MHz
	Modulation Technology	GFSK(1Mbps) π /4-DQPSK(2Mbps)
	Bit Rate of Transmitter	8-DPSK(3Mbps)
EUT Power Rating	3.3Vdc form host equipment	
Products Covered	N/A	

Note:

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

2. Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	27	2429	54	2456
01	2403	28	2430	55	2457
02	2404	29	2431	56	2458
03	2405	30	2432	57	2459
04	2406	31	2433	58	2460
05	2407	32	2434	59	2461
06	2408	33	2435	60	2462
07	2409	34	2436	61	2463
08	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471
16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454		
26	2428	53	2455		

3. Table for Filed Antenna:

Ant.	Brand	Model	Type	Connector	Gain (dBi)				
					2.4 GHz	Band 1	Band 2	Band 3	Band 4
1	Wanshin	R3410110203 WSS003	Dipole	RP-SMA	2.02	1.93	1.93	2.03	2.03
2	Long Cheng	FDE_ACBSMA-BGP	Dipole	RP-SMA	3.27	5.436	5.436	5.436	5.96

3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	TX Mode

The EUT system operated these modes were found to be the worst case during the pre-scanning test as following:

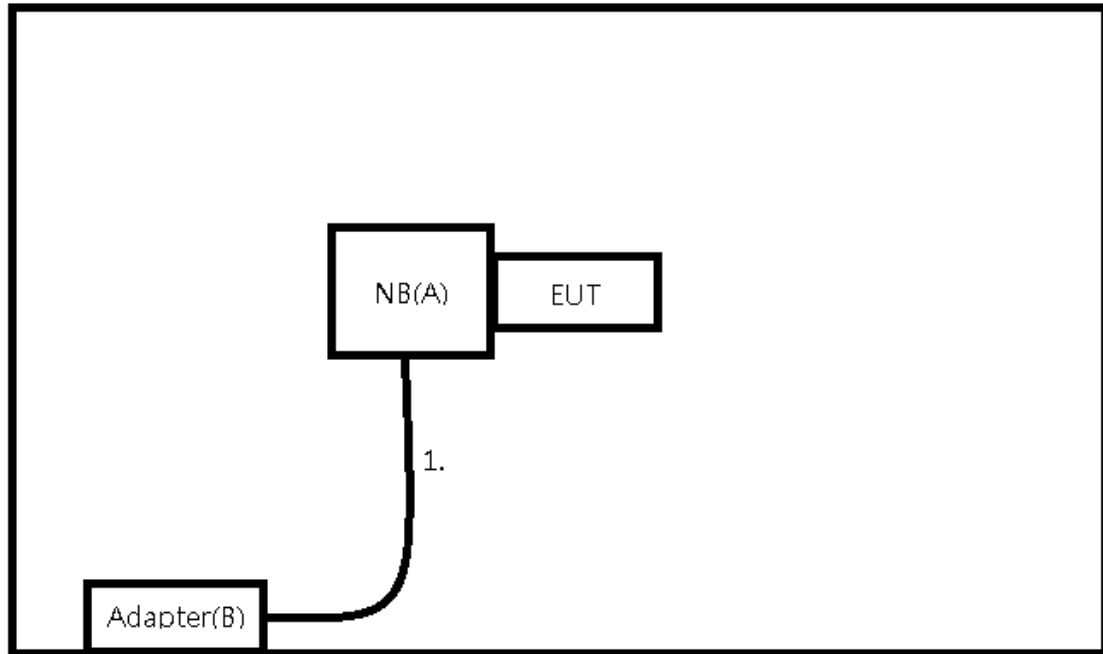
For Conducted Emission	
Final Test Mode	Description
Mode 1	TX Mode

For Radiated Emission	
Final Test Mode	Description
Mode 1	TX Mode

Note:

- (1) The measurements are performed at the high, middle, low available channels.

3.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.
A	NB	Lenovo	P50	N/A	N/A
B	Adapter	Lenovo	ADL170NDC2A	N/A	N/A

Item	Shielded Type	Ferrite Core	Length	Note
1	YES	YES	1.5m	Power Cable

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 POWER LINE CONDUCTED EMISSION LIMITS (Frequency Range 150KHz-30MHz)

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	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 limit of " * " decreases with the logarithm of the frequency
- (2) The test result calculated as following:
 Measurement Value = Reading Level + Correct Factor
 Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use)
 Margin Level = Measurement Value - Limit Value

The following table is the setting of the receiver

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

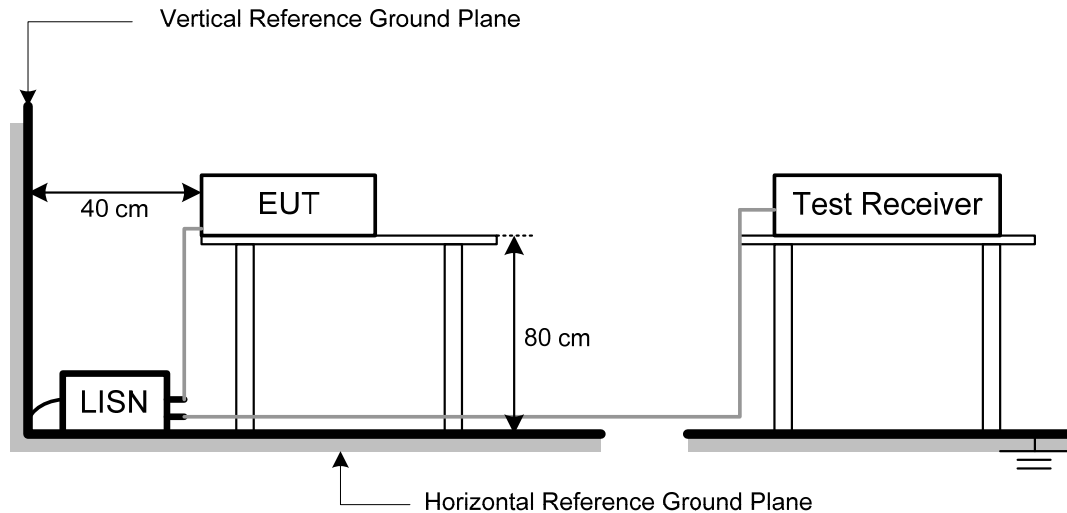
4.1.2 TEST PROCEDURE

- 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.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP



4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical function (as a customer would normally use it), EUT was programmed to be in continuously transmitting/receiving data or hopping on mode.

4.1.6 EUT TEST CONDITIONS

Temperature: 25°C

Relative Humidity: 55%

Test Voltage: AC 120V/60Hz

4.1.7 TEST RESULTS

Please refer to the Appendix A.

Remark:

- (1) All readings are QP Mode value unless otherwise stated AVG in column of Note. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a " * " marked in AVG Mode column of Interference Voltage Measured.
- (2) Measuring frequency range from 150KHz to 30MHz.
- (3) " N/A " denotes test is not applicable to this device.

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS (Frequency Range 9KHz -1000MHz)

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

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
960~1000	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

Frequency (MHz)	(dBuV/m) (at 3 m)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC Part 15, Subpart C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).
- (4) The test result calculated as following:
 Measurement Value = Reading Level + Correct Factor
 Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
 Margin Level = Measurement Value - Limit Value

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Spectrum Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9KHz ~90KHz for PK/AVG detector
Start ~ Stop Frequency	90KHz ~110KHz for QP detector
Start ~ Stop Frequency	110KHz ~490KHz for PK/AVG detector
Start ~ Stop Frequency	490KHz ~30MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector

4.2.2 TEST PROCEDURE

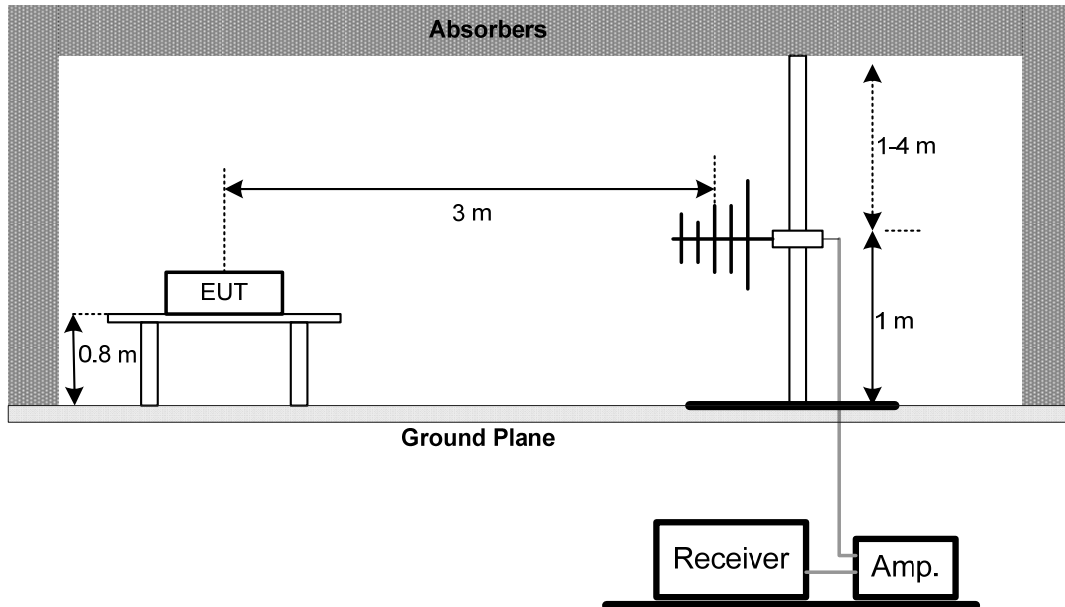
- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 m above the ground at a 3 m semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 m above the ground at a 3 m semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
- 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.
- 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).
- 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.
- 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.
- 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)
- 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)
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.3 DEVIATION FROM TEST STANDARD

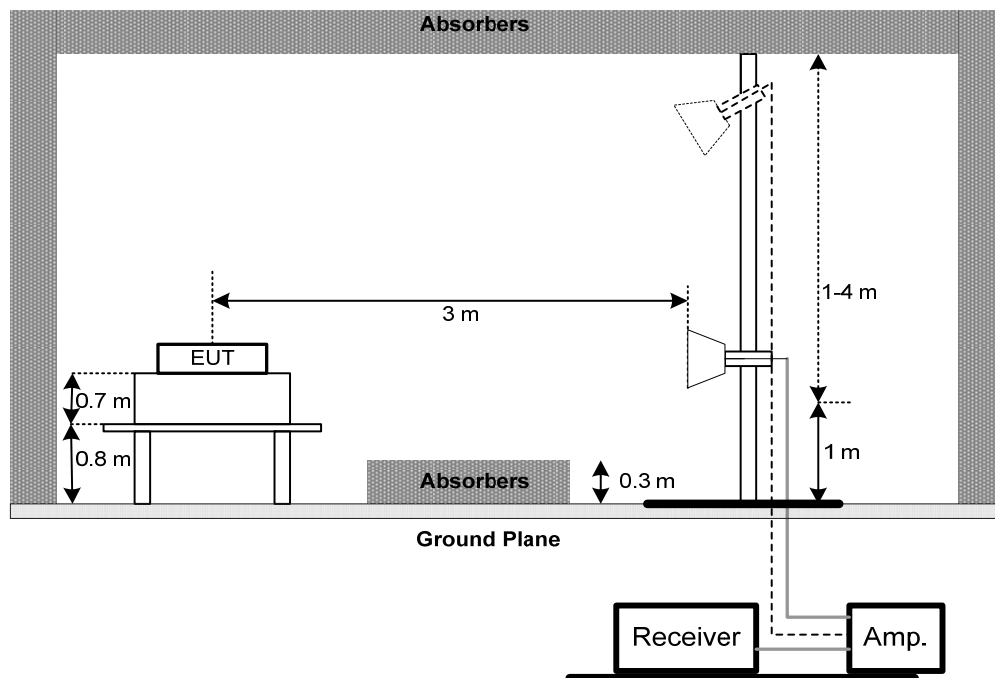
No deviation

4.2.4 TEST SETUP

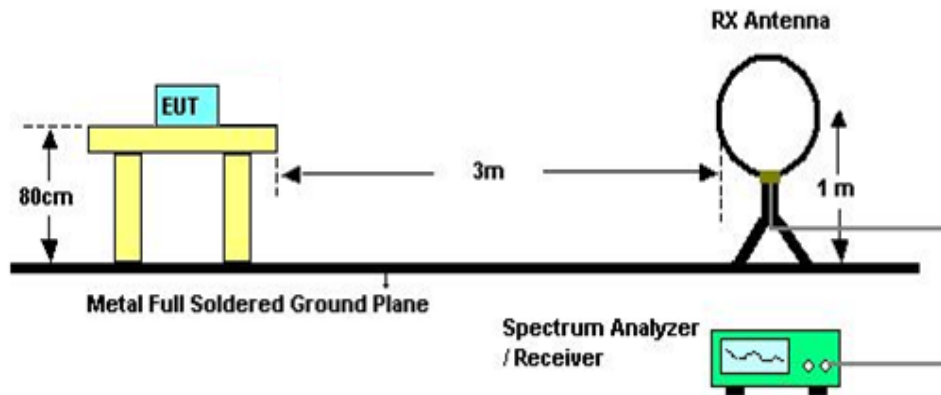
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz



(C) For Radiated Emissions Below 30MHz



4.2.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.2.6 EUT TEST CONDITIONS

Temperature: 23°C/25°C Relative Humidity: 70%/45% Test Voltage: AC 120V/60Hz

4.2.7 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the Appendix B.

Remark:

- (1) The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
- (2) Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB).
- (3) Limit line = specific limits (dBuV) + distance extrapolation factor.

4.2.8 TEST RESULTS (30MHZ TO 1000 MHZ)

Please refer to the Appendix C.

4.2.9 TEST RESULTS (ABOVE 1000 MHZ)

Please refer to the Appendix D.

Remark:

- (1) No limit: This is fundamental signal, the judgment is not applicable.
For fundamental signal judgment was referred to Peak output test.

5. MEASUREMENT INSTRUMENTS LIST

Conducted Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	TWO-LINE V-NETWORK	R&S	ENV216	101050	Jan. 25, 2018
2	Test Cable	TIMES	CFD300-NL	C02	Jun. 14, 2018
3	EMI Test Receiver	R&S	ESR7	101433	Dec. 09, 2017
4	Measurement Software	EZ	EZ EMC (Version NB-03A)	N/A	N/A

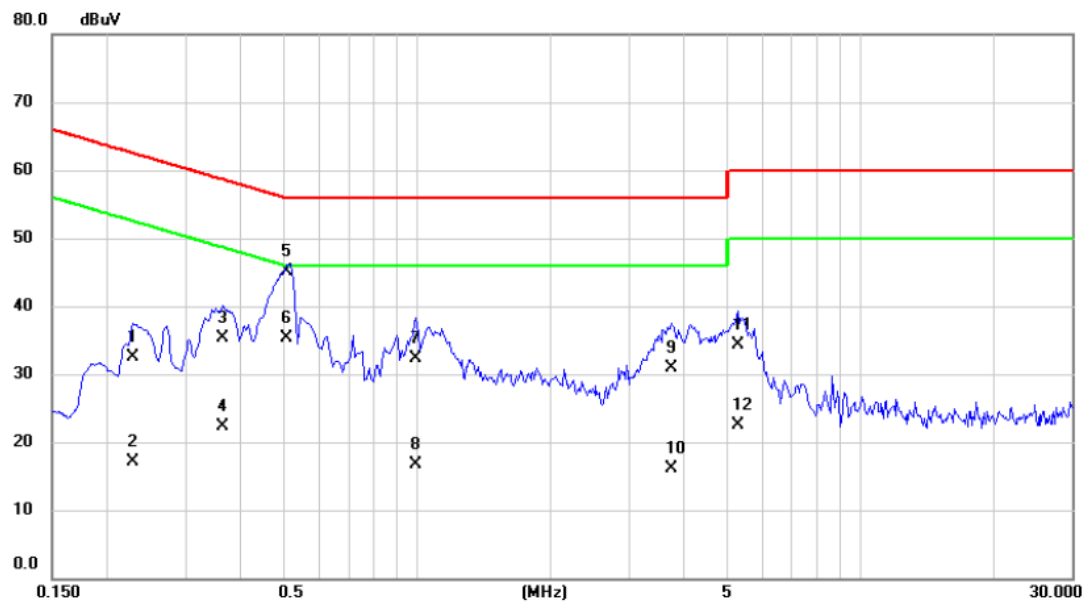
Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Preamplifier	EMCI	012645B	980267	Feb. 28, 2018
2	Preamplifier	EMCI	EMC02325	980217	Dec. 29, 2017
3	Preamplifier	EMCI	EMC2654045	980030	Feb. 14, 2018
4	Test Cable	EMCI	EMC104-SM-S M-8000	8m	Jan. 04, 2018
5	Test Cable	EMCI	EMC104-SM-S M-800	150207	Jan. 04, 2018
6	Test Cable	EMCI	EEMC104-SM-S M-3000	151205	Jan. 04, 2018
7	MXE EMI Receiver	Agilent	N9038A	MY55420127	Jan. 09, 2018
8	Signal Analyzer	Agilent	N9010A	MY52220990	Feb. 22, 2018
9	Loop Ant	EMCO	6502	42960	Nov. 24, 2017
10	Horn Ant	SCHWARZBECK	BBHA 9120D	9120D-1342	Feb. 28, 2018
11	Horn Ant	Schwarzbeck	BBHA 9170	187	Dec. 07, 2017
12	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-548	Jan. 16, 2018
13	5dB Attenuator	EMCI	EMCI-N-6-05	AT-N0623	Jan. 16, 2018

Remark: "N/A" denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

APPENDIX A – CONDUCTED EMISSION

Test Mode: TX Mode

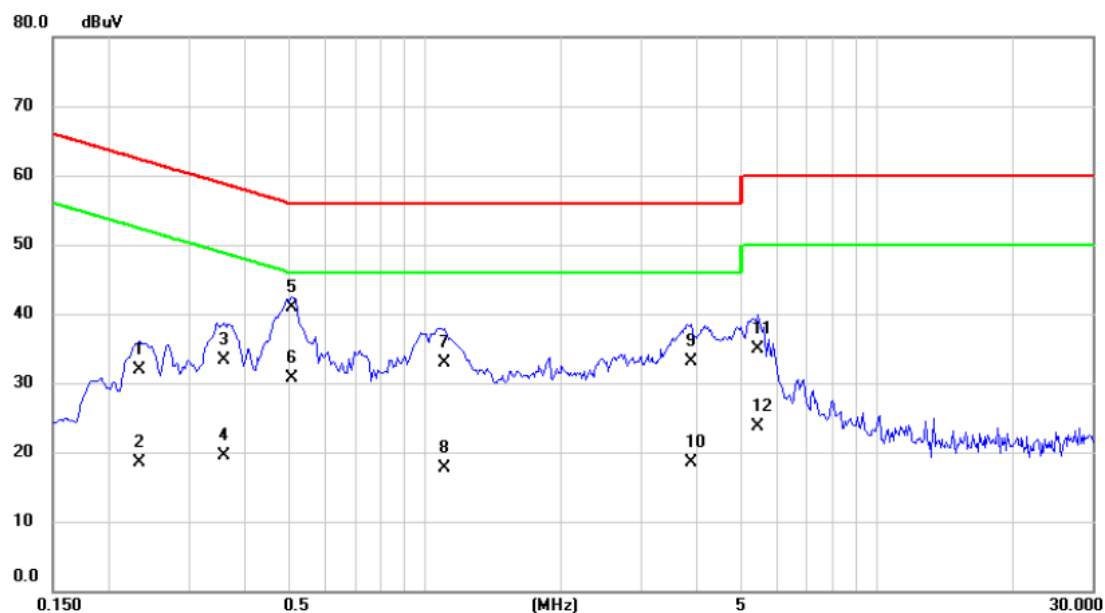
Line



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.2291	22.70	9.72	32.42	62.48	-30.06	QP	
2		0.2291	7.40	9.72	17.12	52.48	-35.36	AVG	
3		0.3641	25.50	9.73	35.23	58.63	-23.40	QP	
4		0.3641	12.60	9.73	22.33	48.63	-26.30	AVG	
5		0.5090	35.40	9.74	45.14	56.00	-10.86	QP	
6	*	0.5090	25.50	9.74	35.24	46.00	-10.76	AVG	
7		0.9950	22.50	9.74	32.24	56.00	-23.76	QP	
8		0.9950	7.00	9.74	16.74	46.00	-29.26	AVG	
9		3.7580	21.10	9.80	30.90	56.00	-25.10	QP	
10		3.7580	6.30	9.80	16.10	46.00	-29.90	AVG	
11		5.3000	24.50	9.84	34.34	60.00	-25.66	QP	
12		5.3000	12.60	9.84	22.44	50.00	-27.56	AVG	

Test Mode:	TX Mode
------------	---------

Neutral



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.2340	22.20	9.66	31.86	62.31	-30.45	QP	
2		0.2340	8.80	9.66	18.46	52.31	-33.85	AVG	
3		0.3586	23.60	9.67	33.27	58.76	-25.49	QP	
4		0.3586	9.80	9.67	19.47	48.76	-29.29	AVG	
5	*	0.5090	31.20	9.68	40.88	56.00	-15.12	QP	
6		0.5090	21.00	9.68	30.68	46.00	-15.32	AVG	
7		1.1030	23.30	9.69	32.99	56.00	-23.01	QP	
8		1.1030	8.00	9.69	17.69	46.00	-28.31	AVG	
9		3.8840	23.40	9.76	33.16	56.00	-22.84	QP	
10		3.8840	8.70	9.76	18.46	46.00	-27.54	AVG	
11		5.4500	25.10	9.80	34.90	60.00	-25.10	QP	
12		5.4500	14.00	9.80	23.80	50.00	-26.20	AVG	

APPENDIX B – RADIATED EMISSION (9KHZ TO 30MHZ)

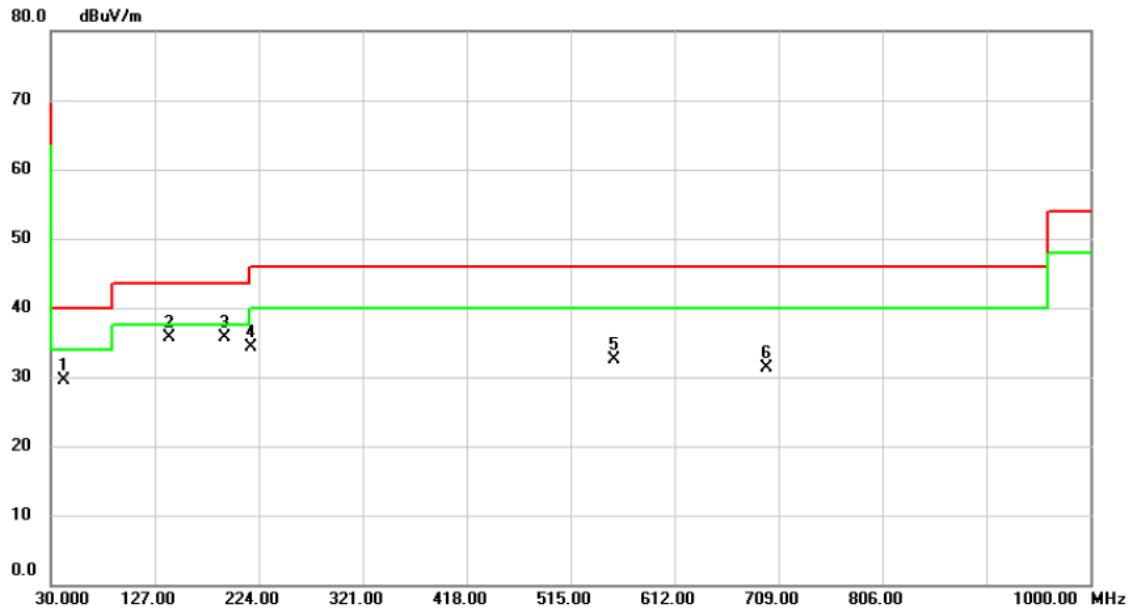
Test Mode: N/A

Note: "N/A" denotes test is not applicable to this device.

APPENDIX C – RADIATED EMISSION (30MHZ TO 1000MHZ)

Test Mode: TX 2441MHz _CH39_3Mbps

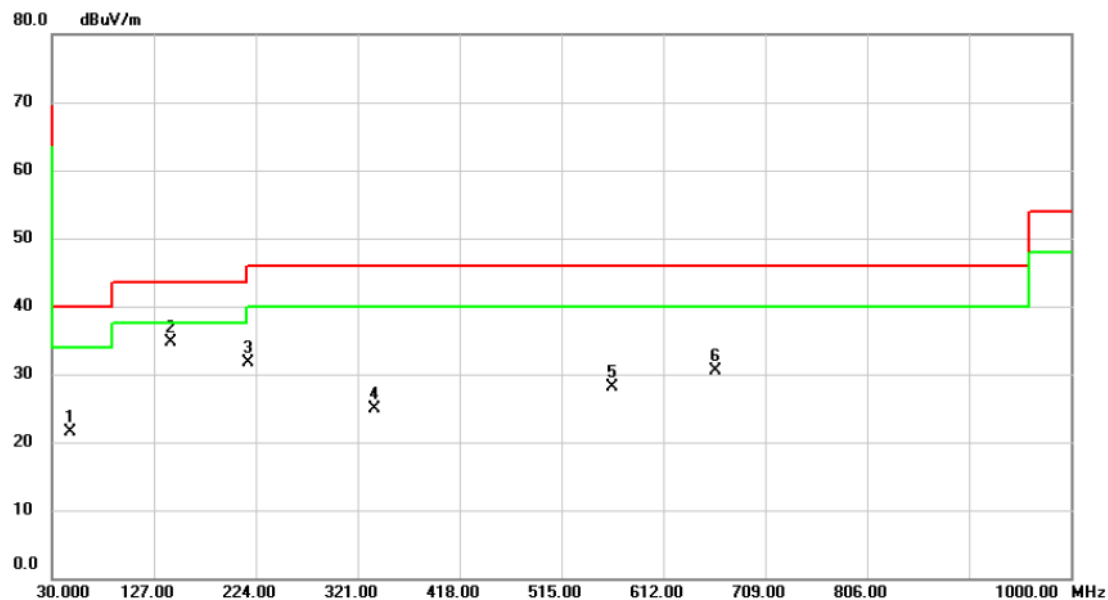
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		42.6100	37.95	-8.54	29.41	40.00	-10.59	peak	
2		140.5800	44.82	-9.15	35.67	43.50	-7.83	peak	
3	*	191.9900	46.09	-10.40	35.69	43.50	-7.81	peak	
4		216.2400	45.26	-10.87	34.39	46.00	-11.61	peak	
5		555.7400	34.09	-1.57	32.52	46.00	-13.48	peak	
6		697.3600	30.57	0.81	31.38	46.00	-14.62	peak	

Test Mode: TX 2441MHz _CH39_3Mbps

Horizontal

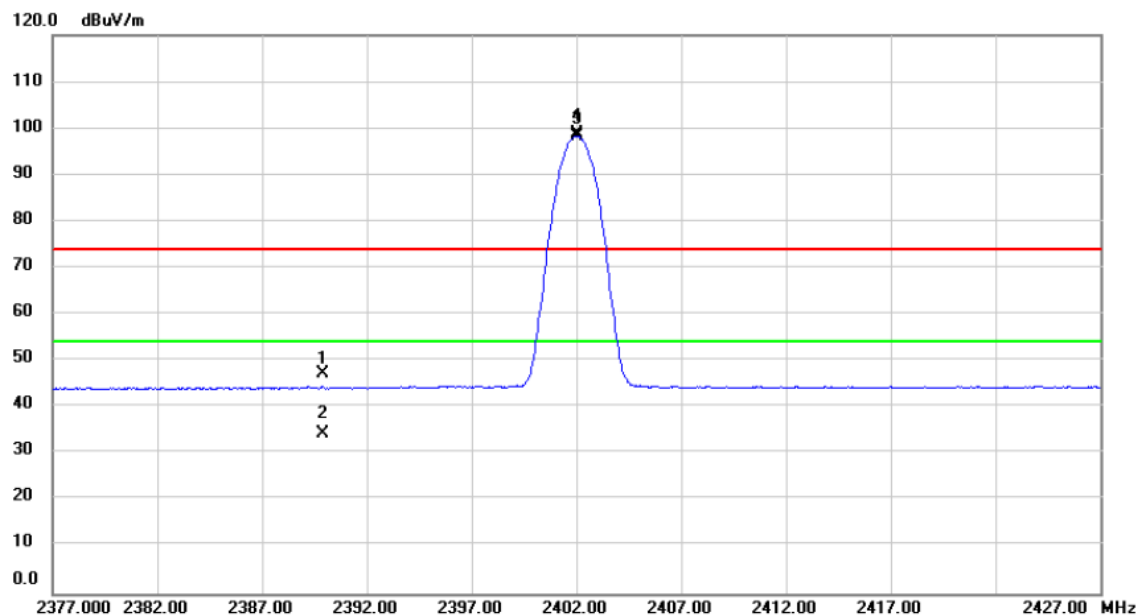


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		47.4600	29.87	-8.44	21.43	40.00	-18.57	peak	
2	*	142.5200	43.85	-9.11	34.74	43.50	-8.76	peak	
3		216.2400	42.52	-10.87	31.65	46.00	-14.35	peak	
4		336.5200	31.53	-6.57	24.96	46.00	-21.04	peak	
5		563.5000	29.44	-1.37	28.07	46.00	-17.93	peak	
6		661.4700	30.35	0.17	30.52	46.00	-15.48	peak	

APPENDIX D – RADIATED EMISSION (ABOVE 1000MHZ)

Test Mode : TX 2402MHz_CH00_1Mbps

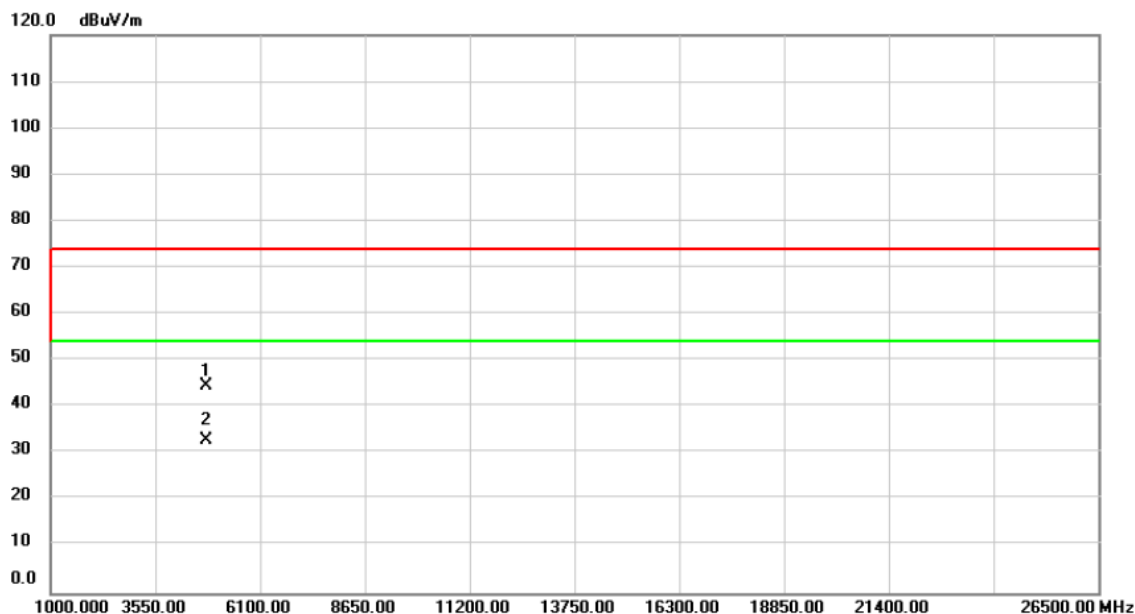
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2389.922	16.33	31.06	47.39	74.00	-26.61	peak	
2		2389.922	3.41	31.06	34.47	54.00	-19.53	AVG	
3	X	2402.000	67.89	31.11	99.00	74.00	25.00	peak	No Limit
4	*	2402.000	67.17	31.11	98.28	54.00	44.28	AVG	No Limit

Test Mode :	TX 2402MHz _CH00_1Mbps
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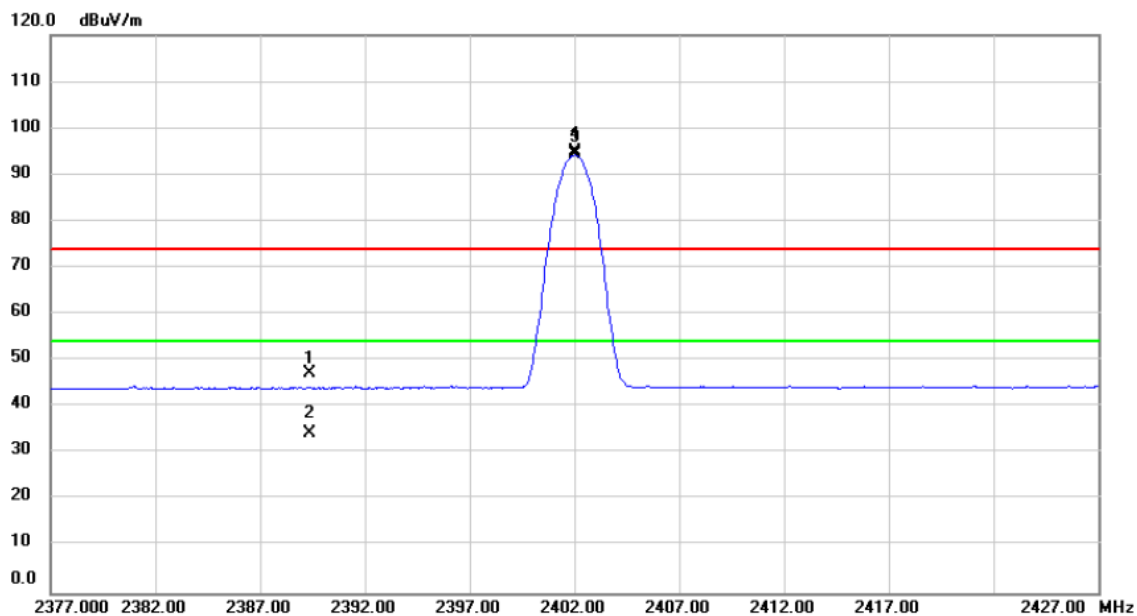
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4804.000	56.02	-11.40	44.62	74.00	-29.38	peak	
2	*	4804.000	44.18	-11.40	32.78	54.00	-21.22	AVG	

Test Mode : TX 2402MHz _CH00_1Mbps

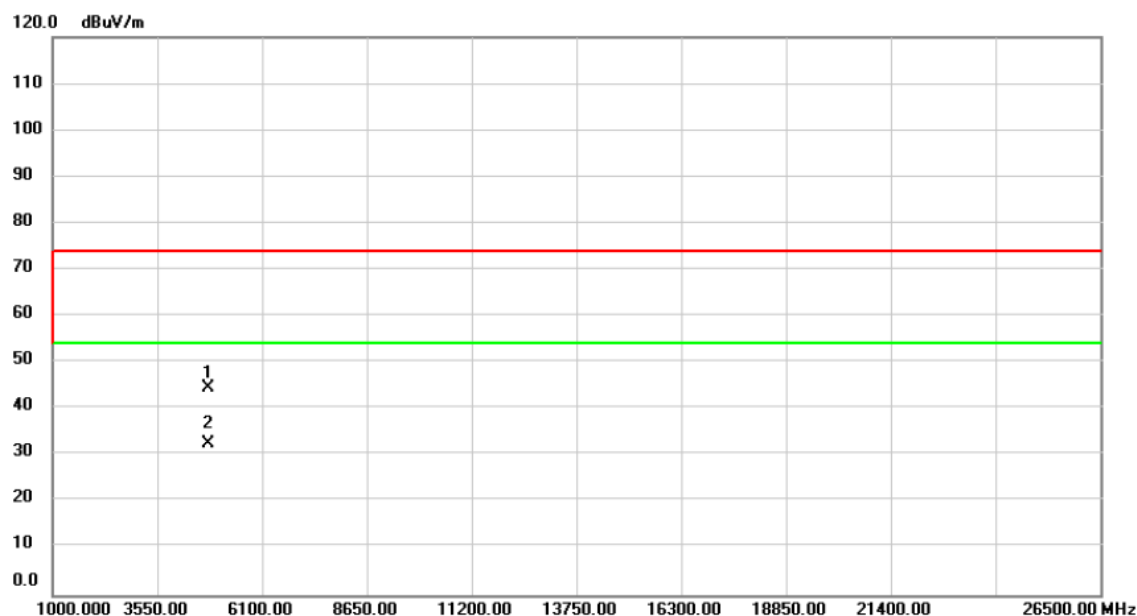
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2389.337	16.20	31.06	47.26	74.00	-26.74	peak	
2		2389.337	3.31	31.06	34.37	54.00	-19.63	AVG	
3	X	2402.000	63.87	31.11	94.98	74.00	20.98	peak	No Limit
4	*	2402.000	63.11	31.11	94.22	54.00	40.22	AVG	No Limit

Test Mode :	TX 2402MHz _CH00_1Mbps
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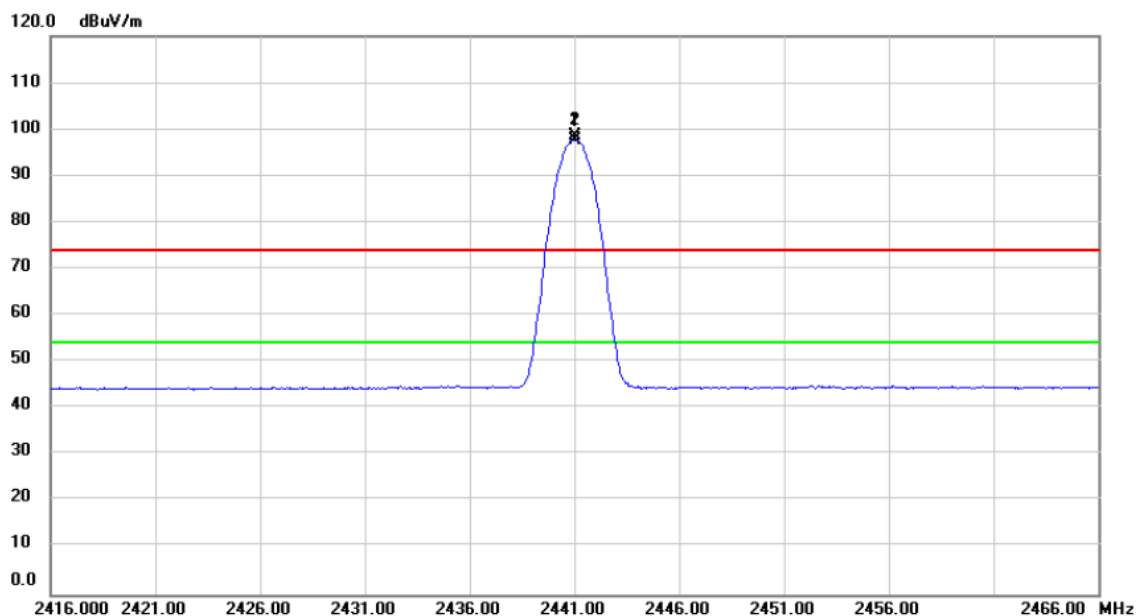
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4804.000	55.87	-11.40	44.47	74.00	-29.53	peak	
2	*	4804.000	44.03	-11.40	32.63	54.00	-21.37	AVG	

Test Mode :	TX 2441MHz _CH39_ 1Mbps
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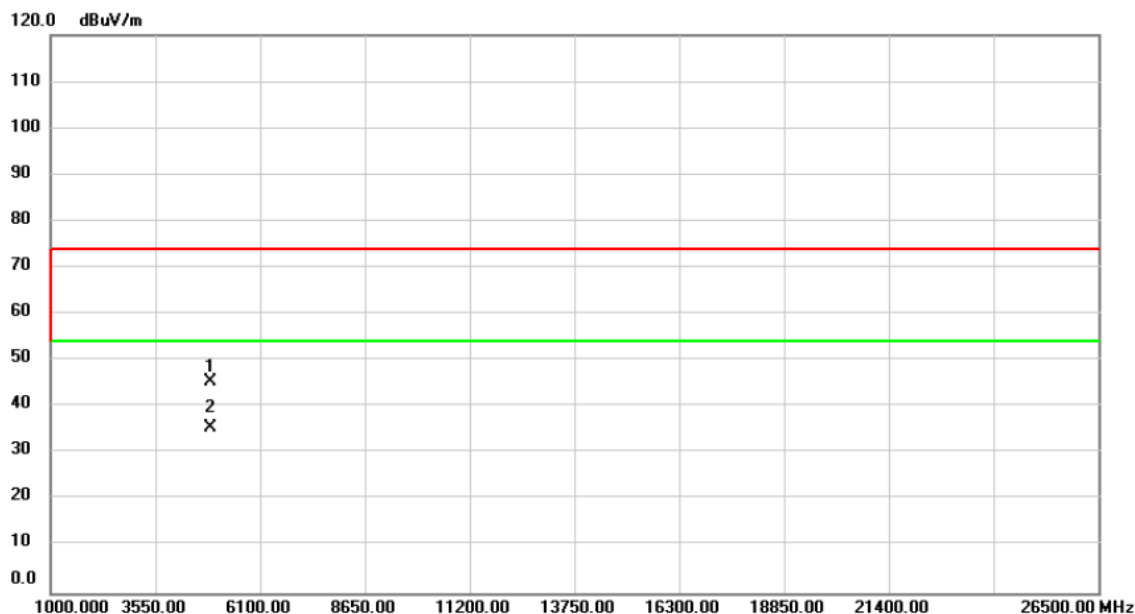
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2441.000	67.31	31.25	98.56	74.00	24.56	peak	No Limit
2	*	2441.000	66.55	31.25	97.80	54.00	43.80	AVG	No Limit

Test Mode :	TX 2441MHz _CH39_1Mbps
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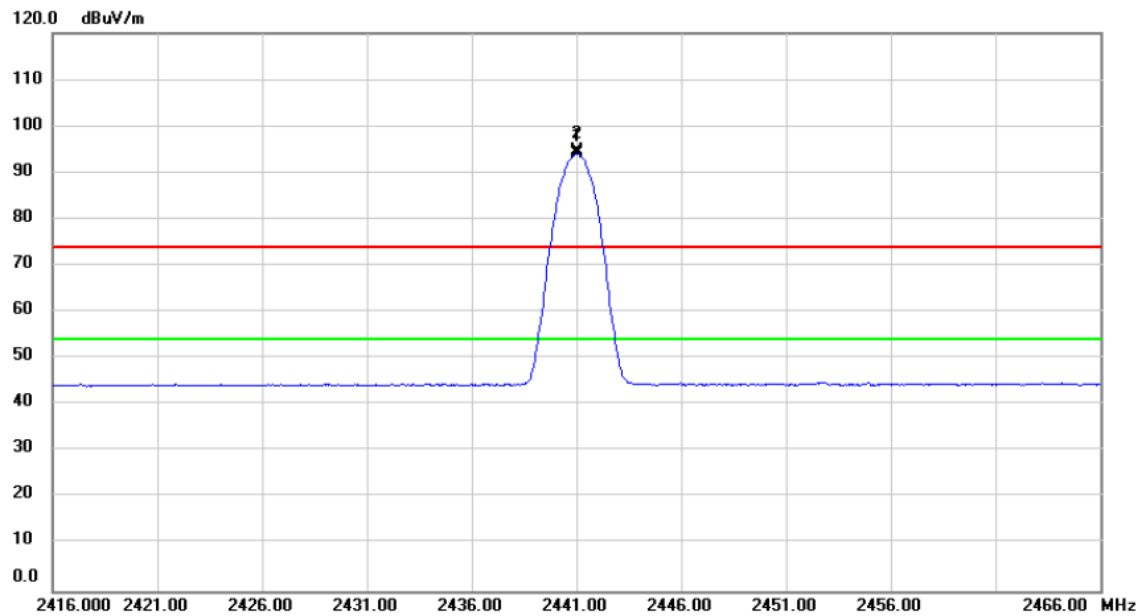
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4882.000	56.79	-11.28	45.51	74.00	-28.49	peak	
2	*	4882.000	46.92	-11.28	35.64	54.00	-18.36	AVG	

Test Mode :	TX 2441MHz _CH39_1Mbps
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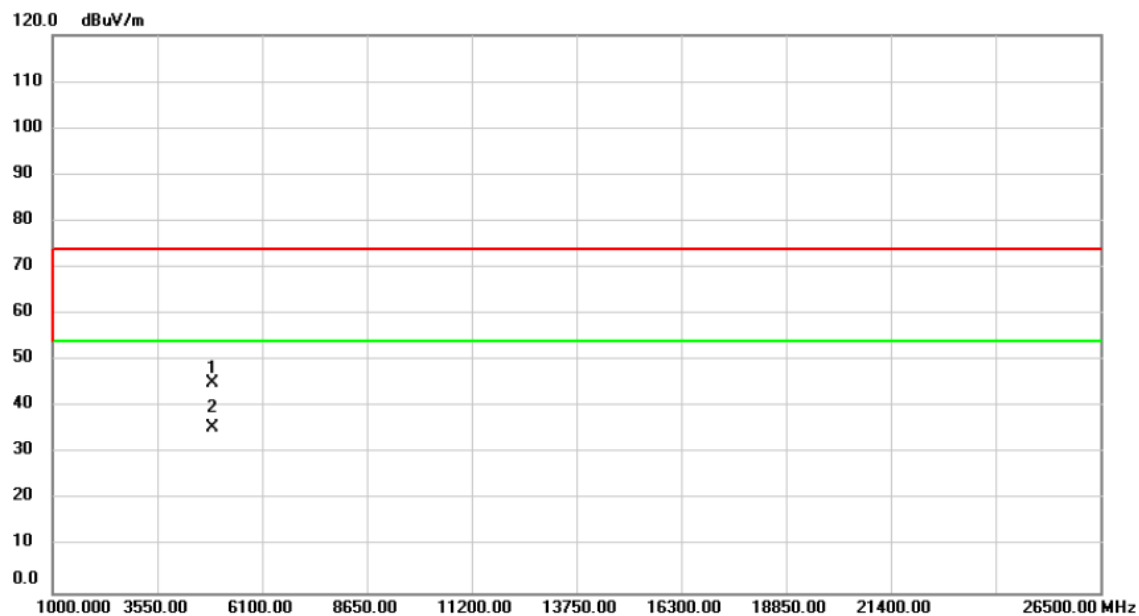
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2441.000	63.51	31.25	94.76	74.00	20.76	peak	No Limit
2	*	2441.000	62.72	31.25	93.97	54.00	39.97	AVG	No Limit

Test Mode :	TX 2441MHz _CH39_1Mbps
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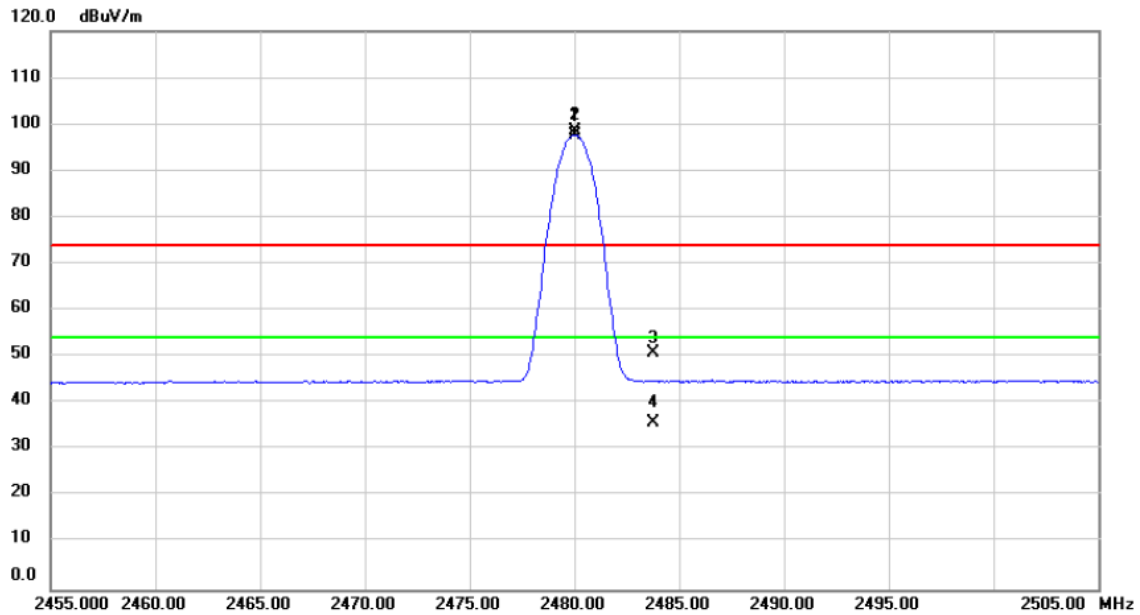
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4882.000	56.39	-11.28	45.11	74.00	-28.89	peak	
2	*	4882.000	46.71	-11.28	35.43	54.00	-18.57	AVG	

Test Mode : TX 2480MHz _CH78_1Mbps

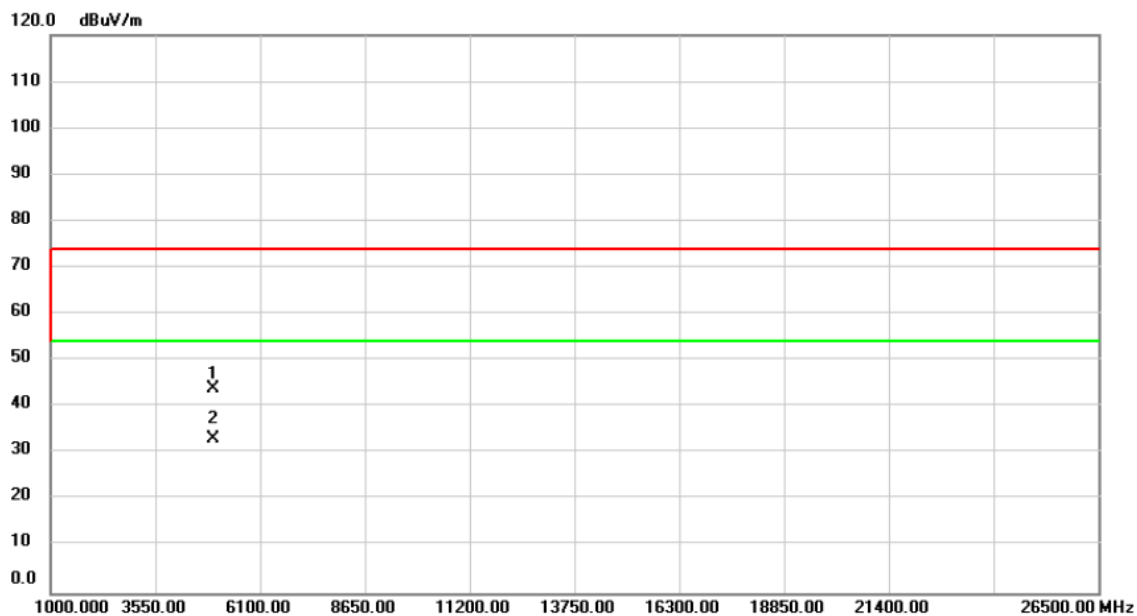
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2480.000	67.05	31.39	98.44	74.00	24.44	peak	No Limit
2	*	2480.000	66.29	31.39	97.68	54.00	43.68	AVG	No Limit
3		2483.736	19.56	31.41	50.97	74.00	-23.03	peak	
4		2483.736	4.59	31.41	36.00	54.00	-18.00	AVG	

Test Mode :	TX 2480MHz _CH78_1Mbps
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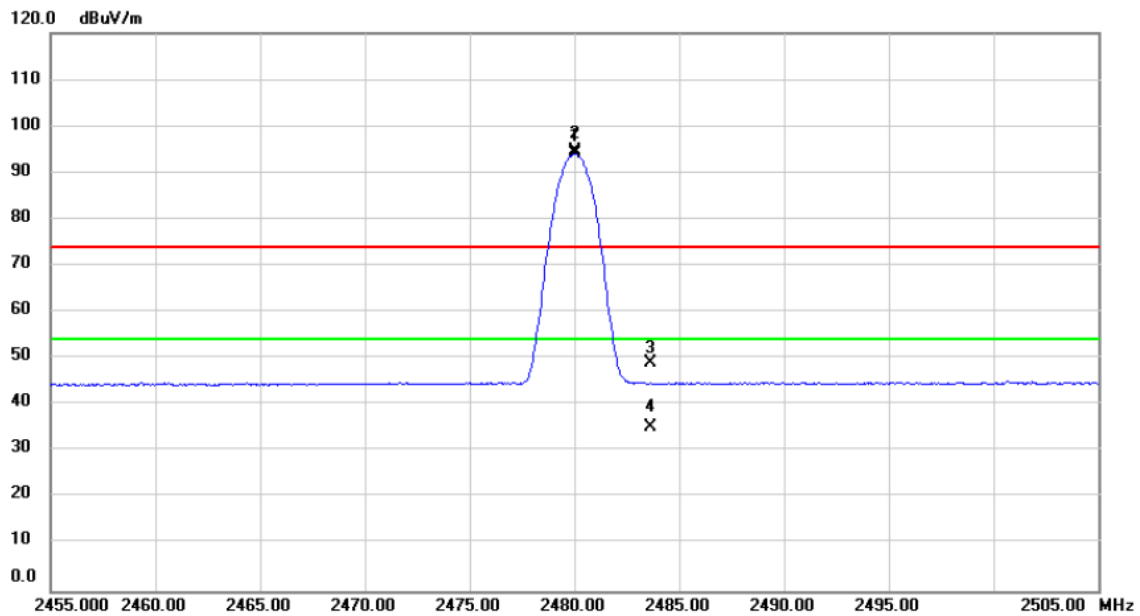
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4960.000	55.01	-11.15	43.86	74.00	-30.14	peak	
2	*	4960.000	44.18	-11.15	33.03	54.00	-20.97	AVG	

Test Mode :	TX 2480MHz _CH78_1Mbps
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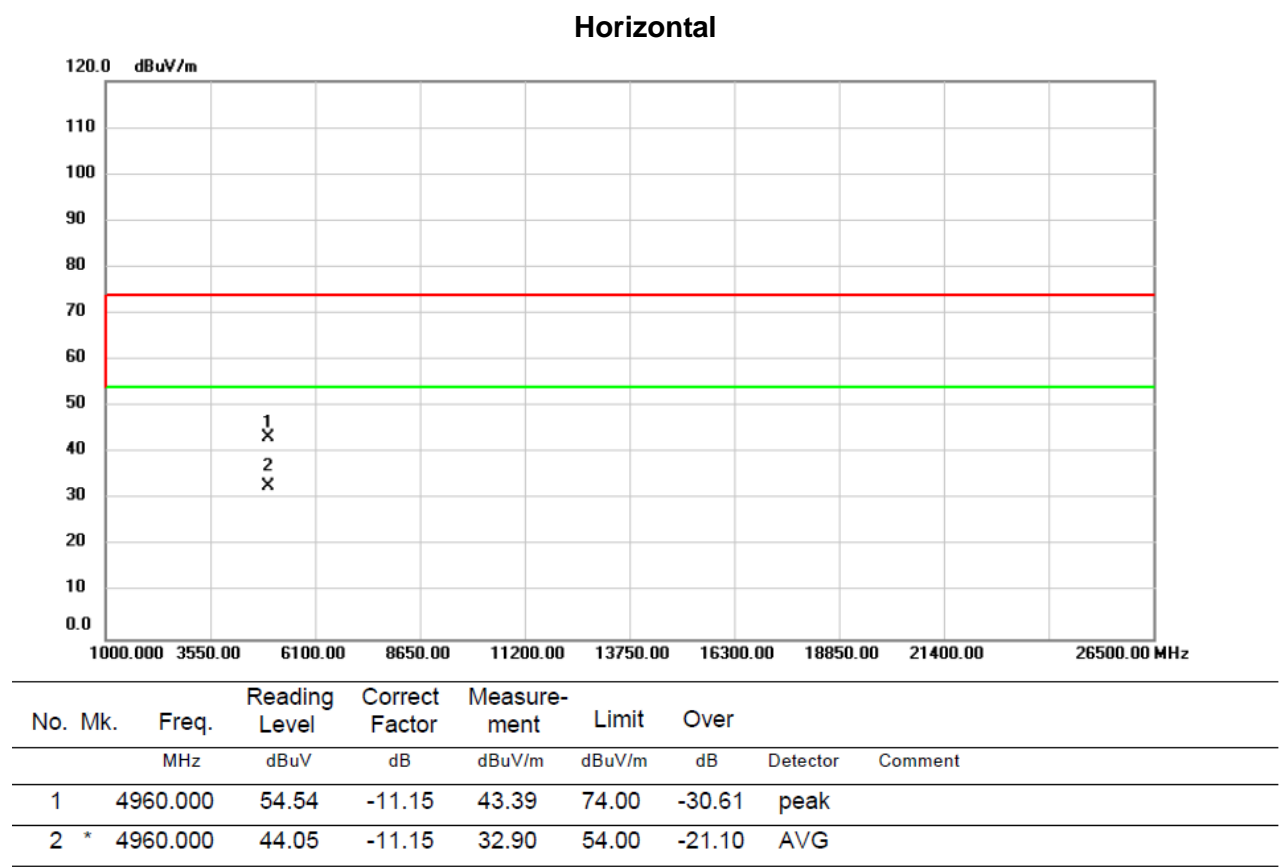
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2480.000	63.39	31.39	94.78	74.00	20.78	peak	No Limit
2	*	2480.000	62.59	31.39	93.98	54.00	39.98	AVG	No Limit
3		2483.629	17.54	31.41	48.95	74.00	-25.05	peak	
4		2483.629	3.83	31.41	35.24	54.00	-18.76	AVG	

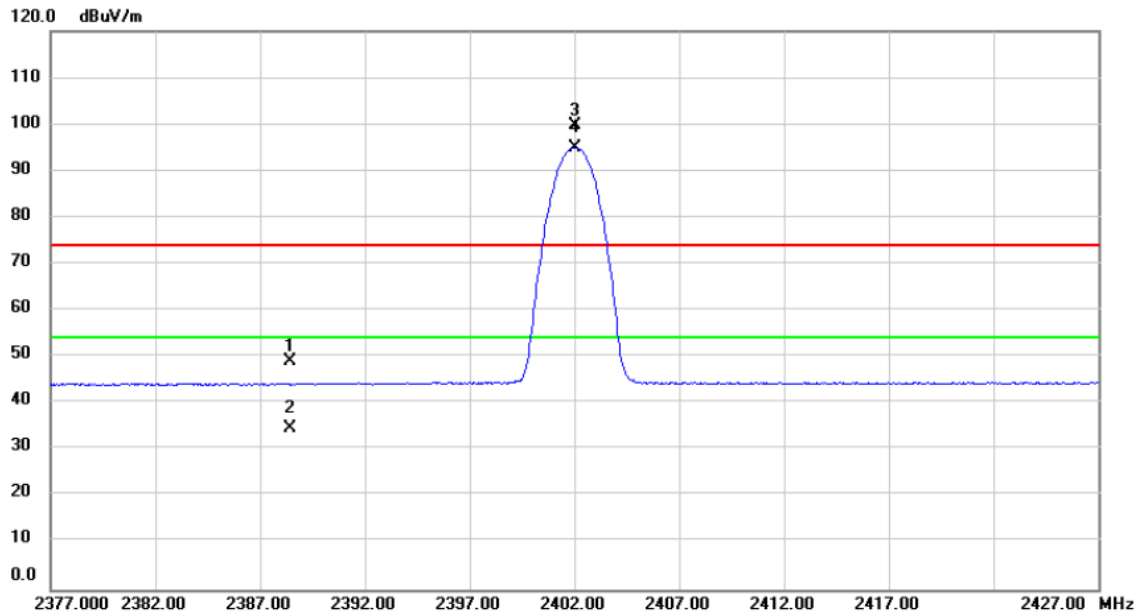
Test Mode :

TX 2480MHz _CH78_1Mbps



Test Mode : TX 2402MHz _CH00_ 3Mbps

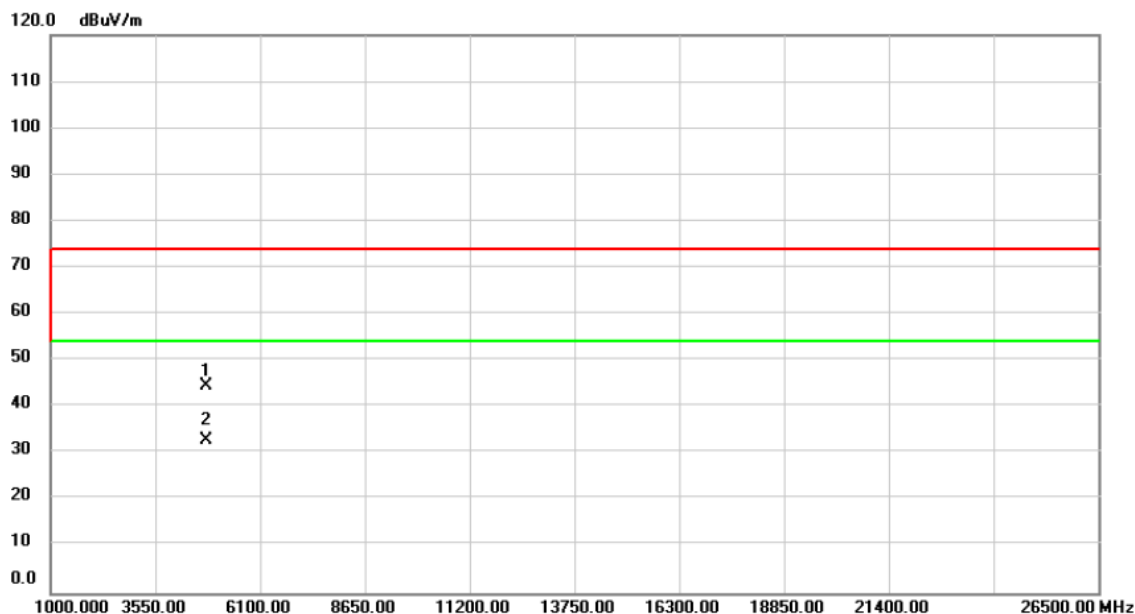
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2388.427	17.90	31.06	48.96	74.00	-25.04	peak	
2		2388.427	3.47	31.06	34.53	54.00	-19.47	AVG	
3	X	2402.000	68.66	31.11	99.77	74.00	25.77	peak	No Limit
4	*	2402.000	63.98	31.11	95.09	54.00	41.09	AVG	No Limit

Test Mode :	TX 2402MHz _CH00_3Mbps
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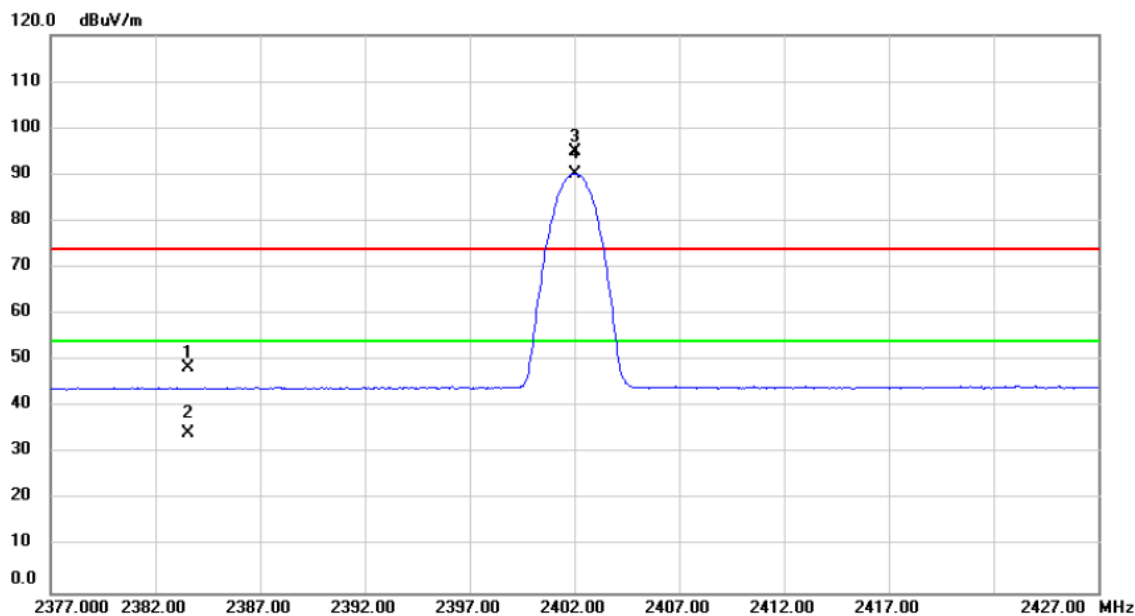
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4804.000	56.04	-11.40	44.64	74.00	-29.36	peak	
2	*	4804.000	44.26	-11.40	32.86	54.00	-21.14	AVG	

Test Mode : TX 2402MHz _CH00_3Mbps

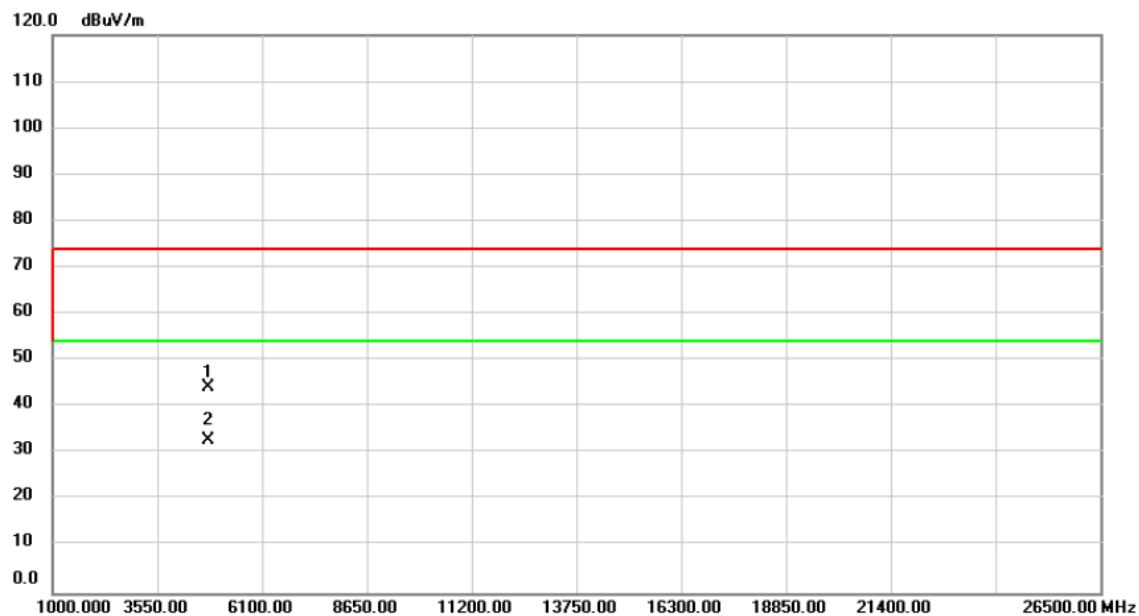
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2383.591	17.53	31.04	48.57	74.00	-25.43	peak	
2		2383.591	3.35	31.04	34.39	54.00	-19.61	AVG	
3	X	2402.000	63.85	31.11	94.96	74.00	20.96	peak	No Limit
4	*	2402.000	59.14	31.11	90.25	54.00	36.25	AVG	No Limit

Test Mode : TX 2402MHz _CH00_3Mbps

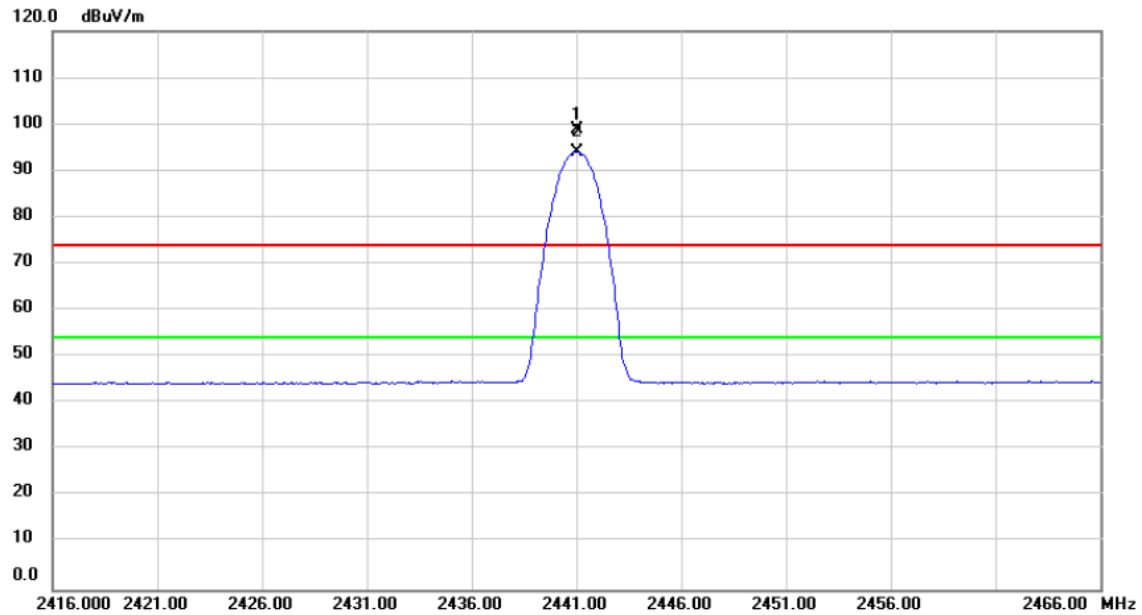
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4804.000	55.68	-11.40	44.28	74.00	-29.72	peak	
2	*	4804.000	44.25	-11.40	32.85	54.00	-21.15	AVG	

Test Mode : TX 2441MHz _CH39_3Mbps

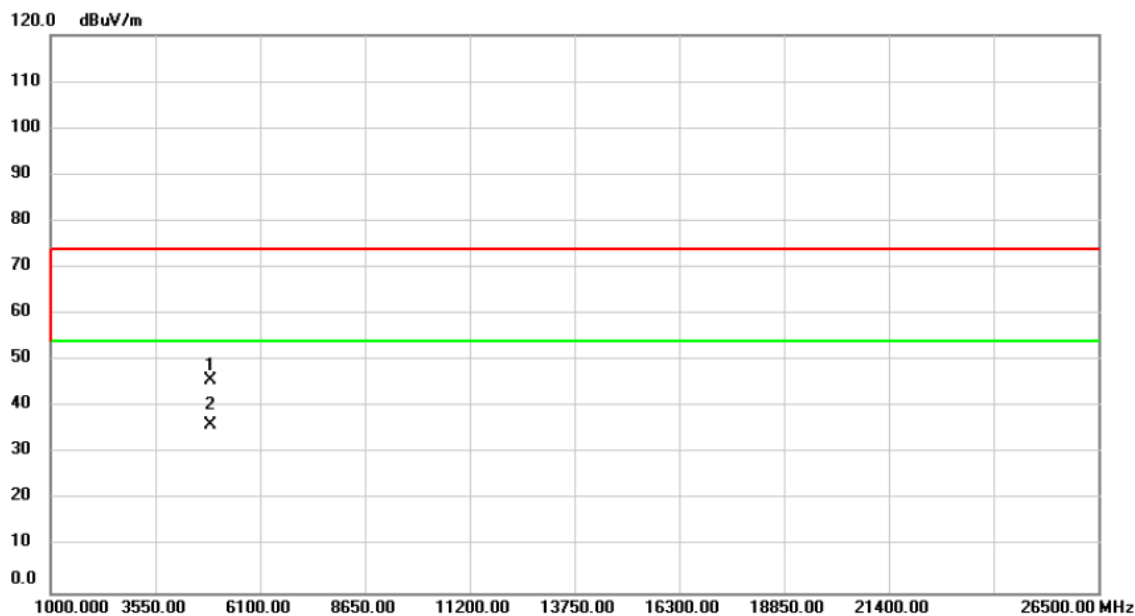
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2441.000	67.61	31.25	98.86	74.00	24.86	peak	No Limit
2	*	2441.000	62.90	31.25	94.15	54.00	40.15	AVG	No Limit

Test Mode :	TX 2441MHz _CH39_3Mbps
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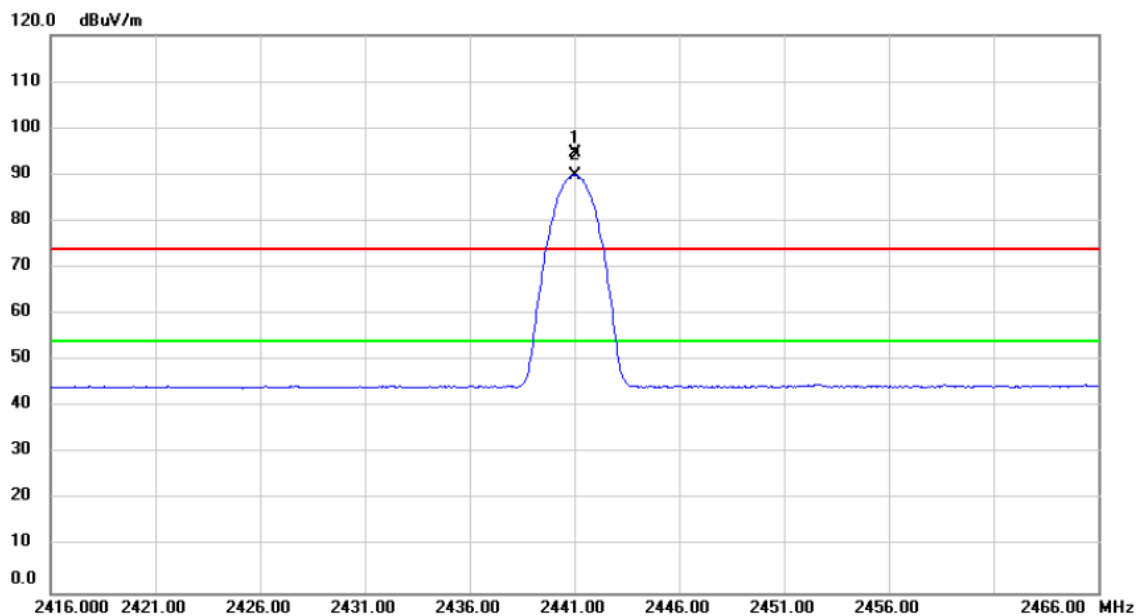
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4882.000	57.07	-11.28	45.79	74.00	-28.21	peak	
2	*	4882.000	47.30	-11.28	36.02	54.00	-17.98	AVG	

Test Mode : TX 2441MHz _CH39_3Mbps

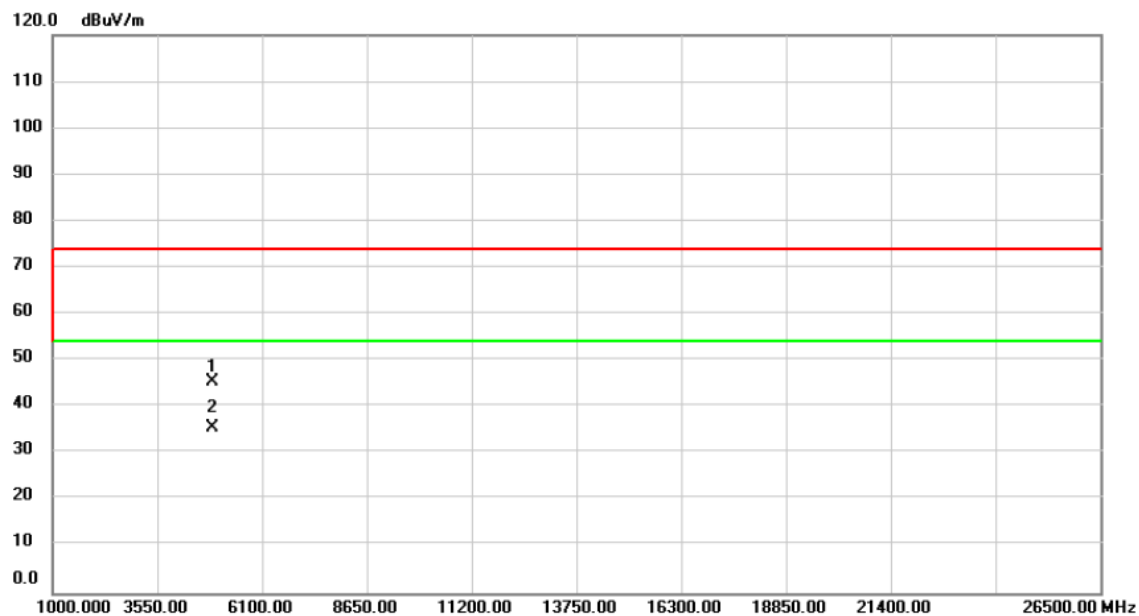
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2441.000	63.34	31.25	94.59	74.00	20.59	peak	No Limit
2	*	2441.000	58.62	31.25	89.87	54.00	35.87	AVG	No Limit

Test Mode :	TX 2441MHz _CH39_3Mbps
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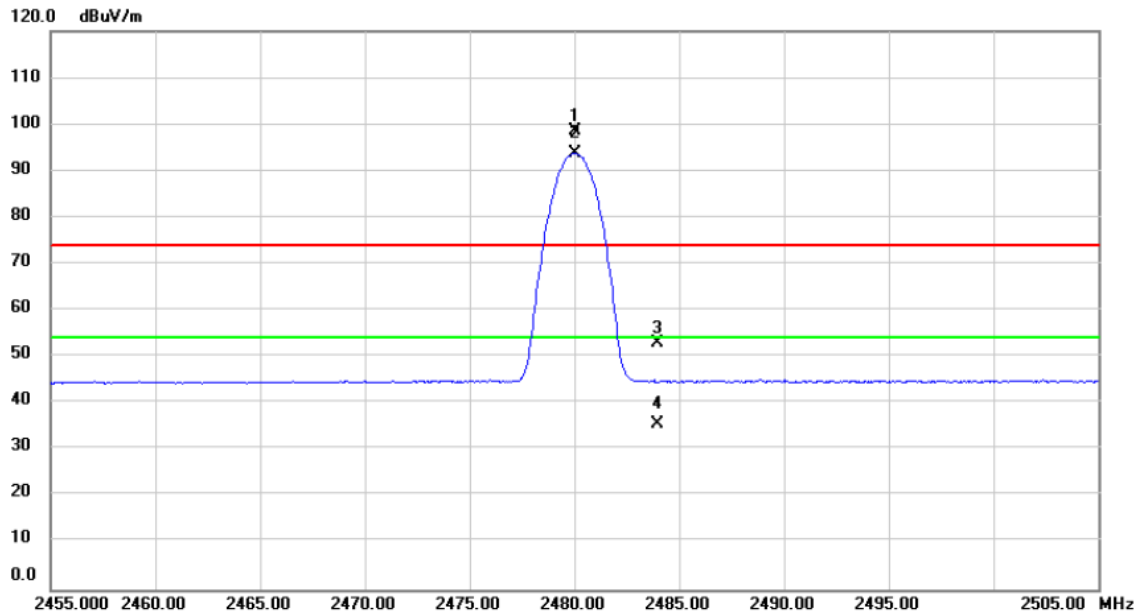
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4882.000	56.64	-11.28	45.36	74.00	-28.64	peak	
2	*	4882.000	46.89	-11.28	35.61	54.00	-18.39	AVG	

Test Mode : TX 2480MHz _CH78_3Mbps

Vertical

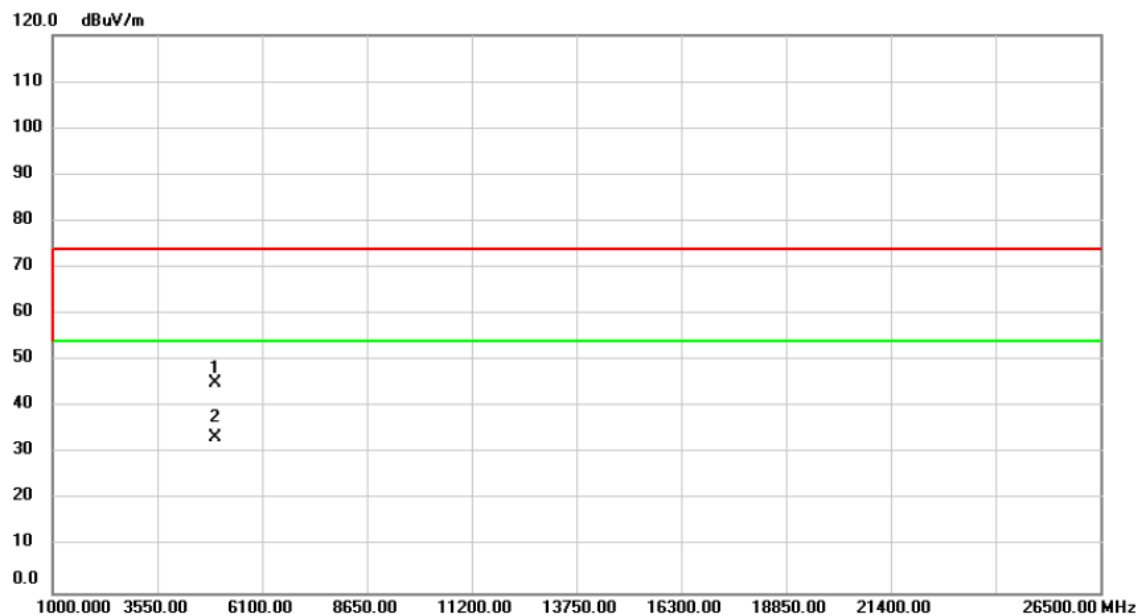


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2480.000	67.05	31.39	98.44	74.00	24.44	peak	No Limit
2	*	2480.000	62.33	31.39	93.72	54.00	39.72	AVG	No Limit
3		2483.951	21.64	31.42	53.06	74.00	-20.94	peak	
4		2483.951	4.22	31.42	35.64	54.00	-18.36	AVG	

Test Mode :

TX 2480MHz _CH78_3Mbps

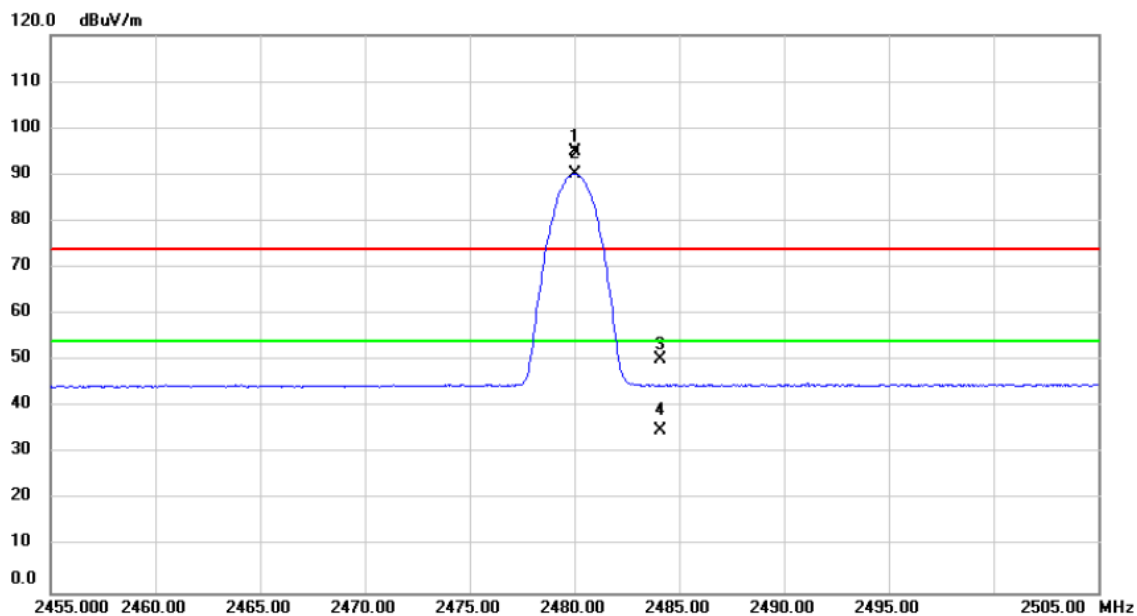
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4960.000	56.26	-11.15	45.11	74.00	-28.89	peak	
2	*	4960.000	44.53	-11.15	33.38	54.00	-20.62	AVG	

Test Mode : TX 2480MHz _CH78_3Mbps

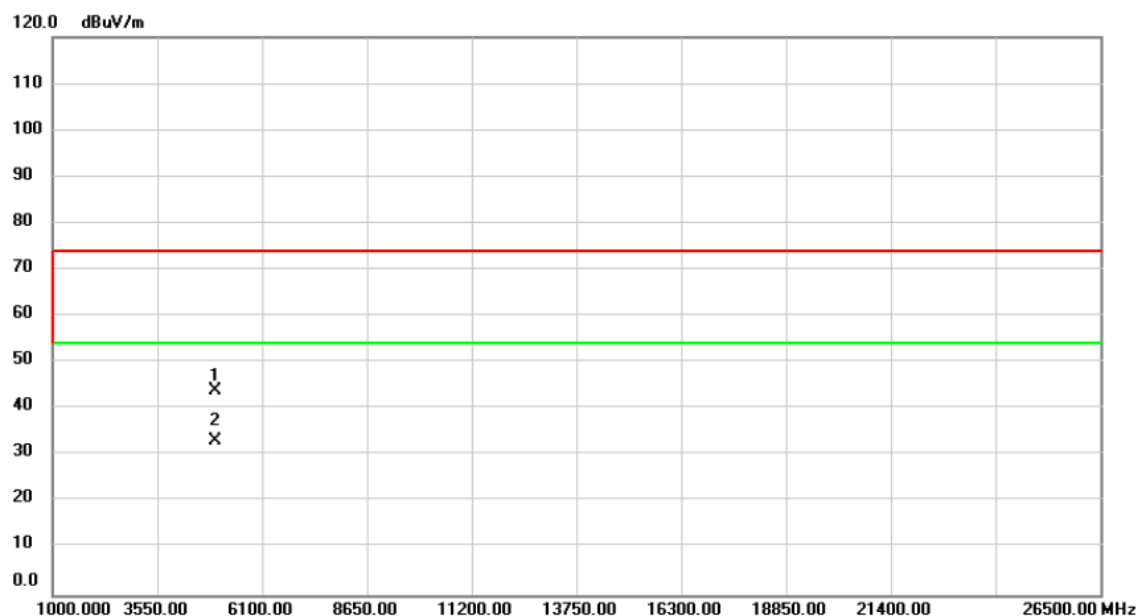
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2480.000	63.43	31.39	94.82	74.00	20.82	peak	No Limit
2	*	2480.000	58.70	31.39	90.09	54.00	36.09	AVG	No Limit
3		2484.080	18.71	31.42	50.13	74.00	-23.87	peak	
4		2484.080	3.64	31.42	35.06	54.00	-18.94	AVG	

Test Mode :	TX 2480MHz _CH78_3Mbps
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Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4960.000	55.21	-11.15	44.06	74.00	-29.94	peak	
2	*	4960.000	44.17	-11.15	33.02	54.00	-20.98	AVG	