

FCC Radio Test Report

FCC ID: P27SWPIR03N

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

Project No. : 1610105
Equipment : Z-Wave Motion Sensor
Model Name : SW-PIR03Nxxxxxxxx (the 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, "blank" or ,for marketing purpose)
Applicant : Sercomm Corporation
Address : 8F, No. 3-1, YuanQu St., NanKang, Taipei, Taiwan 115

Date of Receipt : Oct. 12, 2016
Date of Test : Oct. 12, 2016 ~ Nov. 07, 2016
Issued Date : Nov. 07, 2016
Tested by : BTL Inc.

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Declaration

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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-1-1610105	Original Issue.	Nov. 07, 2016

1. CERTIFICATION

Equipment : Z-Wave Motion Sensor
Brand Name : Sercomm
Model Name : SW-PIR03Nxxxxxxxx (the 1st x should be “blank” or “-” ; the rest x could be 0 to 9, A to Z, “blank” or ,for marketing purpose)
Applicant : Sercomm Corporation
Date of Test : Oct. 12, 2016 ~ Nov. 07, 2016
Test Sample : Engineering Sample
Standard(s) : FCC Part15, Subpart C(15.249)/ ANSI C63.10-2013

The above equipment has been tested and found 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-1-1610105) 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).

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part15, Subpart C (15.249)			
StandardSection	Test Item	Judgment	Remark
15.207	Conducted Emission	N/A	NOTE (1)
15.209 15.249	Radiated Spurious Emission	PASS	
-	Bandwidth	PASS	

NOTE:

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

2.1 TEST FACILITY

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

Radiated emission Test (Below 1GHz):

CB15: (VCCI RN: R-4260; FCC RN:949005; FCC DN:TW1082; IC Assigned Code:20088)
No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

Radiated emission Test (Above 1GHz):

CB15: (VCCI RN: G-868; FCC RN:949005; FCC DN:TW1082; IC Assigned Code:20088)
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. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	U , (dB)
CB15 (3m)	CISPR	9kHz ~ 150kHz	2.96
		150kHz ~ 30MHz	2.74

Test Site	Method	Measurement Frequency Range	Ant.	U , (dB)
CB15 (3m)	CISPR	30MHz ~ 200MHz	V	4.76
		30MHz ~ 200MHz	H	4.28
		200MHz ~ 1,000MHz	V	5.08
		200MHz ~ 1,000MHz	H	4.50

Test Site	Method	Measurement Frequency Range	Ant.	U , (dB)
CB15 (3m)	CISPR	1GHz ~ 6GHz	V	4.48
		1GHz ~ 6GHz	H	4.50
		6GHz ~ 18GHz	V	4.30
		6GHz ~ 18GHz	H	4.14

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

Our calculated Measurement Instrumentation Uncertainty is shown in the tables above. These are our U_{lab} values in CISPR 16-4-2 terminology.

Since Table 1 of CISPR 16-4-2 has values of measurement instrumentation uncertainty, called U_{CISPR} , as follows:

Conducted Disturbance (mains port) – 150 kHz – 30 MHz : 3.6 dB

Radiated Disturbance (electric field strength on an open area test site or alternative test site) – 30 MHz – 1000 MHz : 5.2 dB

It can be seen that our U_{lab} values are smaller than U_{CISPR} .

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT


Equipment	Z-Wave Motion Sensor	
Brand Name	Sercomm	
Model Name	SW-PIR03Nxxxxxxxx (the 1st x should be “blank” or “-” ; the rest x could be 0 to 9, A to Z, “blank” or ,for marketing purpose)	
Model Difference	Differ in marketing purpose.	
Product Description	Operation Frequency	908.4~916 MHz
	Modulation Technology	GFSK
	Data rate	9.6, 40, 100 Kbps
	Field Strength	91.85 dBuV/m
PowerSource	DC Voltage supplied from Battery. Model: a. GP / CR123A b. EVE / CR123A	
Power Rating	DC 3V (CR123A*1)	

Note:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- Channel List:

Channel	Frequency (MHz)
01	908.4
02	916

Table for Filed Antenna:

Ant.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)
1		SW-PIR03N	Internal	Soldered	-1

3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based 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

Final Test Mode	Description
Mode 1	TX Mode

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.
-	-	-	-	-	-

Item	Shielded Type	Ferrite Core	Length	Note
-	-	-	-	-

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 POWER LINE CONDUCTED EMISSION (FREQUENCY RANGE 150KHZ-30MHZ)

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 -0.5	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

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

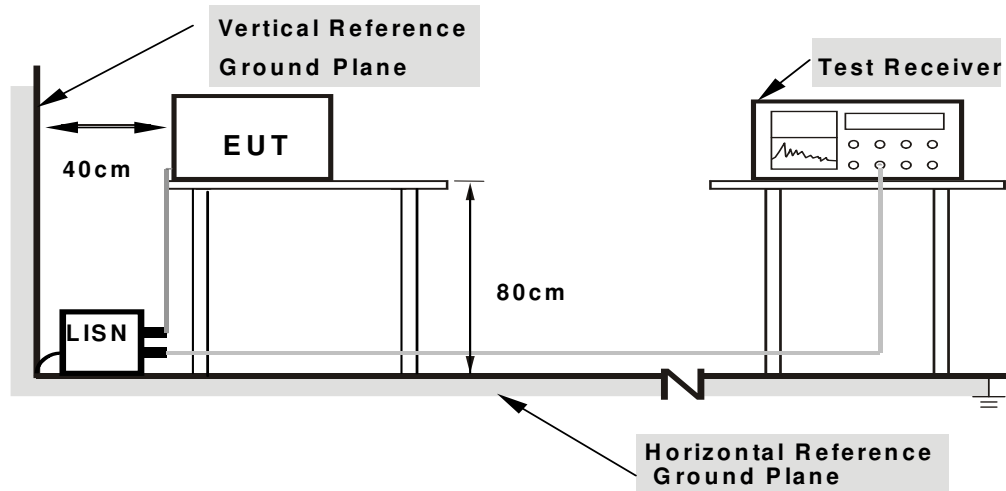
4.1.2 TESTPROCEDURE

- 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 equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the groundplane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- 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.
- LISN at least 80 cm from nearest part of EUT chassis.
- 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 TESTSETUP



- Note:**
- 1.Support units were connected to second LISN.
 - 2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

4.1.5EUT OPERATING 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 mode.

4.1.6EUT TEST CONDITIONS

Temperature: N/A

Relative Humidity: N/A

Test Voltage: N/A

4.1.7 TEST RESULTS

Please refer to the Attachment 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.

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS (FCC 15.209)

Frequencies (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

Harmonic emissions limits comply with below 54dBuV/m at 3m. Other emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or comply with the radiated emissions limits specified in section 15.209(a) limit in the table below has to be followed.

Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission level (dBuV/m)=20log Emission level (uV/m).

LIMITS OF RADIATED EMISSION MEASUREMENT (FCC 15.209)

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

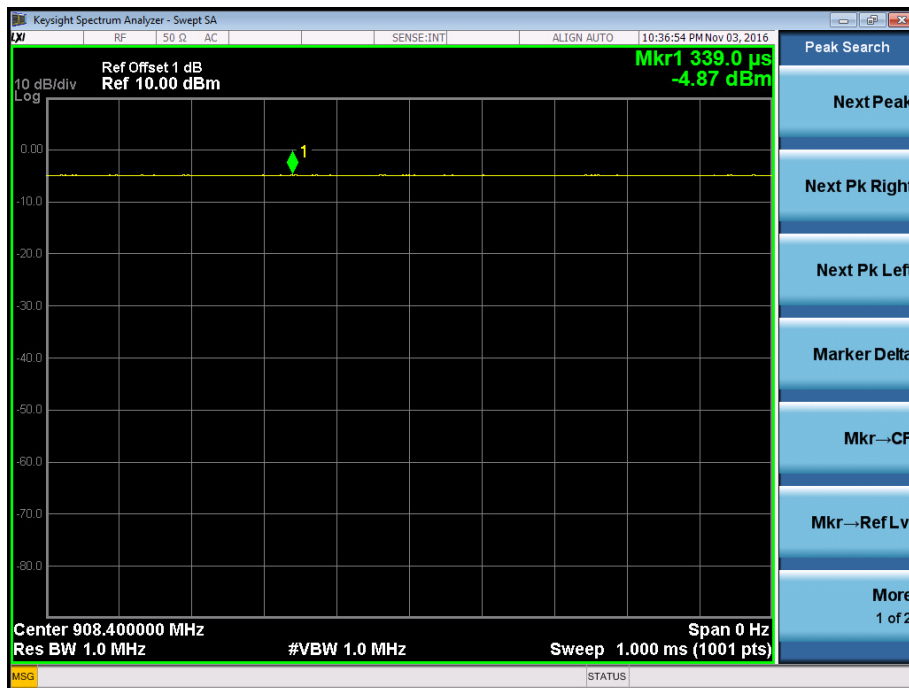
Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic

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

DWELL TIME OF PERIODIC OPERATION MEASUREMENT



4.2.2 TESTPROCEDURE

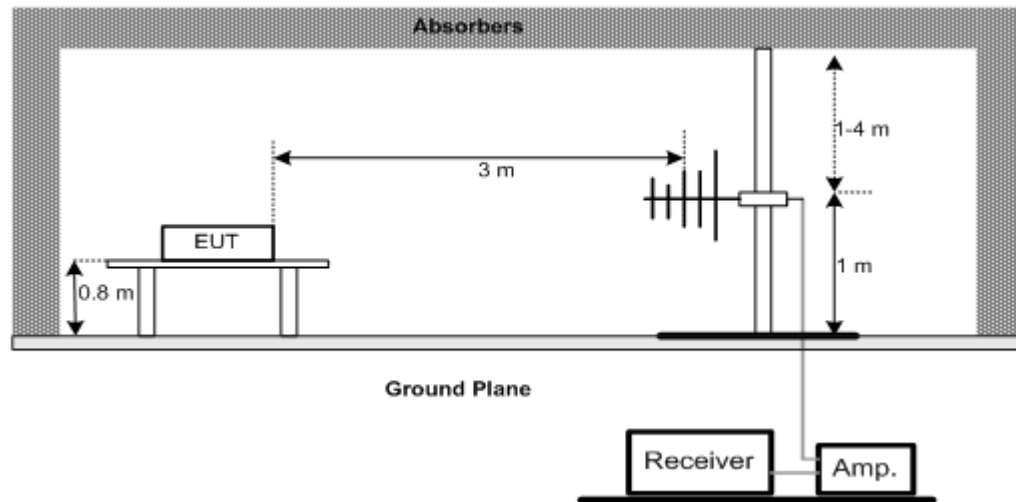
- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The measuring distance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

4.2.3DEVIATIONFROMTESTSTANDARD

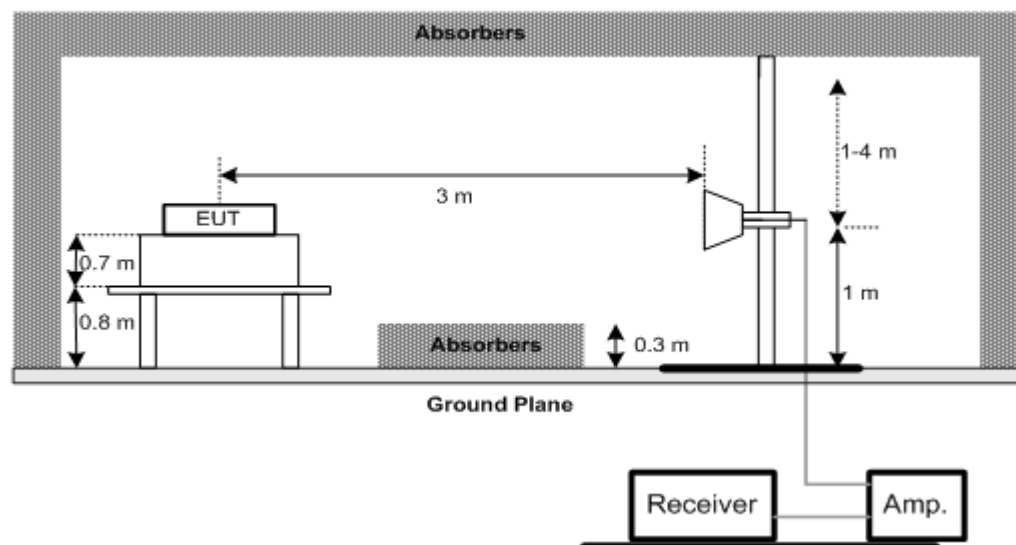
No deviation

4.2.4 TESTSETUP

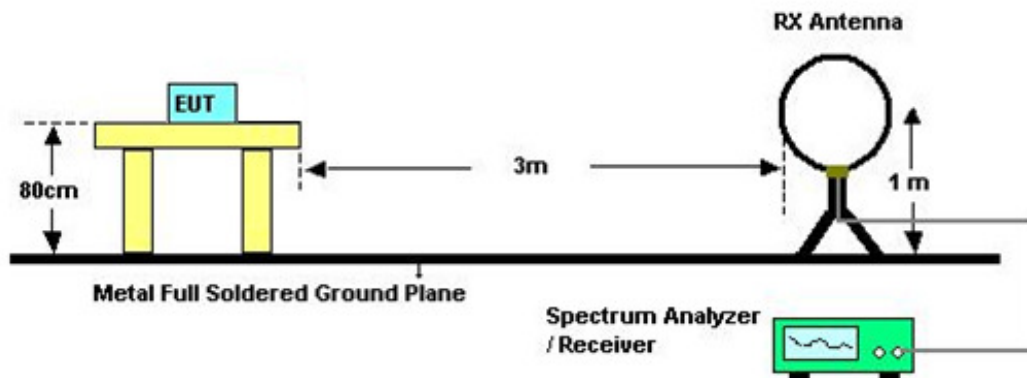
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



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



(C) For radiated emissions below 30MHz



4.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

4.2.6 EUT TEST CONDITIONS

Temperature: 25°C
Relative Humidity: 65%
Test Voltage: DC 3V

4.2.7 TEST RESULTS (BELOW 30MHz)

Please refer to the Attachment 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 (30 TO 1000 MHz)

Please refer to the Attachment C

4.2.9 TEST RESULTS (ABOVE 1000 MHz)

Please refer to the Attachment D

Remark:

- (1) EUT Orthogonal Axis:
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (2) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

5.BANDWIDTH TEST

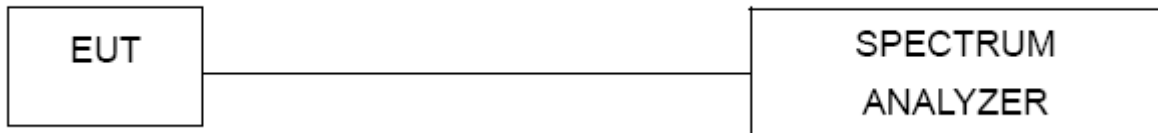
5.1TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- b. Spectrum Setting: RBW= 3kHz, VBW=3kHz, Sweep time = Auto.

5.2DEVIATION FROM STANDARD

No deviation.

5.3TEST SETUP



5.4EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

5.5EUT TEST CONDITIONS

Temperature: 25°C
Relative Humidity: 60%
Test Voltage: DC 3V

5.6 TEST RESULTS

Please refer to the Attachment E

6.MEASUREMENT INSTRUMENTS LIST AND SETTING

Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB9168-352	9168-352	Feb. 04, 2017
2	Horn Antenna	Schwarzbeck	BBHA 9120	D-546	Nov. 05, 2017
3	Pre-Amplifier	HP	8447D	2944A08891	Mar. 09 2017
4	Pre-Amplifier	Agilent	8449B	3008A02331	Jan. 24, 2017
5	Test Cable	EMCI	EMC8D-NM-NM-8000	150301	Mar. 09, 2017
6	Test Cable	EMCI	EMC104-SM-SM-2500	150303	Mar. 09, 2017
7	Test Cable	EMCI	EMC104-NM-SM-1000	150304	Mar. 09, 2017
8	Test Cable	EMCI	EMC104-SM-SM-5000	150302	Mar. 29, 2017
9	Test Cable	EMCI	EMC104-SM-SM-800	150305	Mar. 29, 2017
10	EXA Spectrum Analyzer	Agilent	N9010A	MY52220990	Feb. 24, 2017
11	EMI Test Receiver	Agilent	N9038A	MY51210215	Jan. 08, 2017
12	Loop Antenna	EMCO	6502	00042960	Nov. 05. 2017

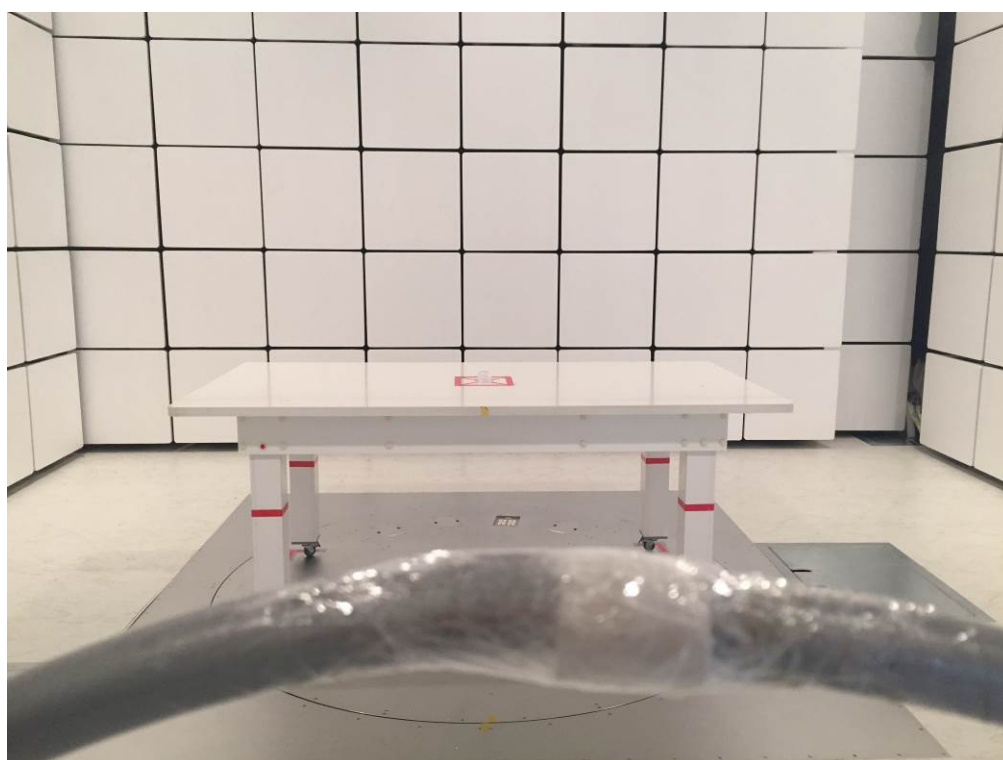
Bandwidth					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Jan. 18, 2017

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

7.EUT TEST PHOTO

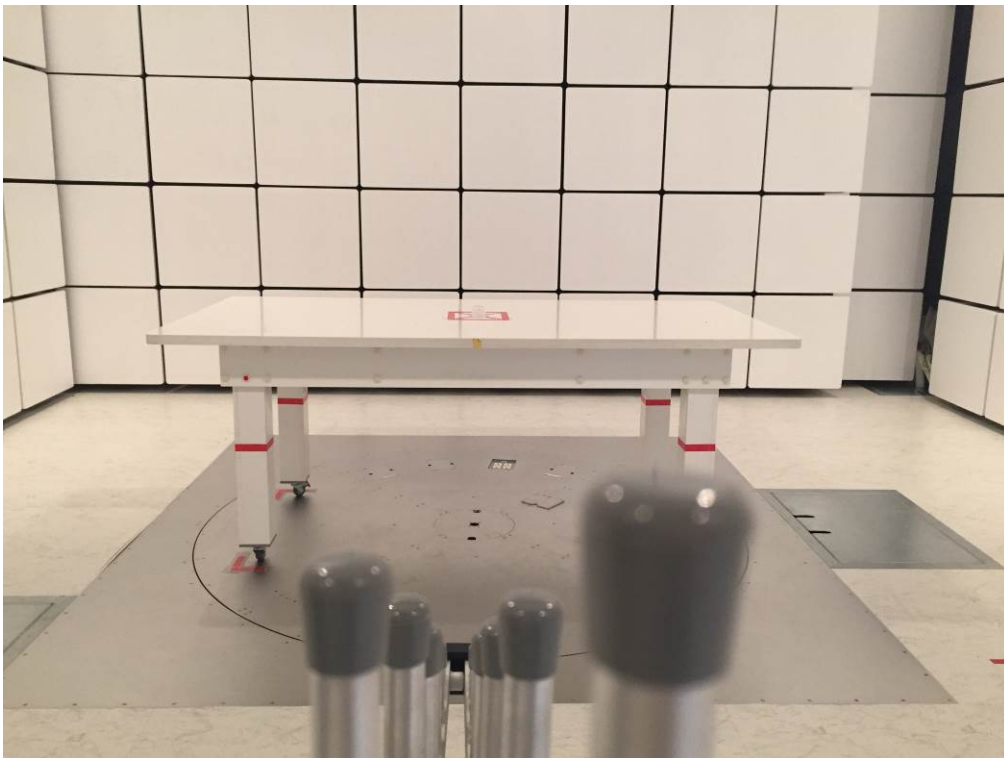
Radiated Measurement Photos

9KHz to 30MHz



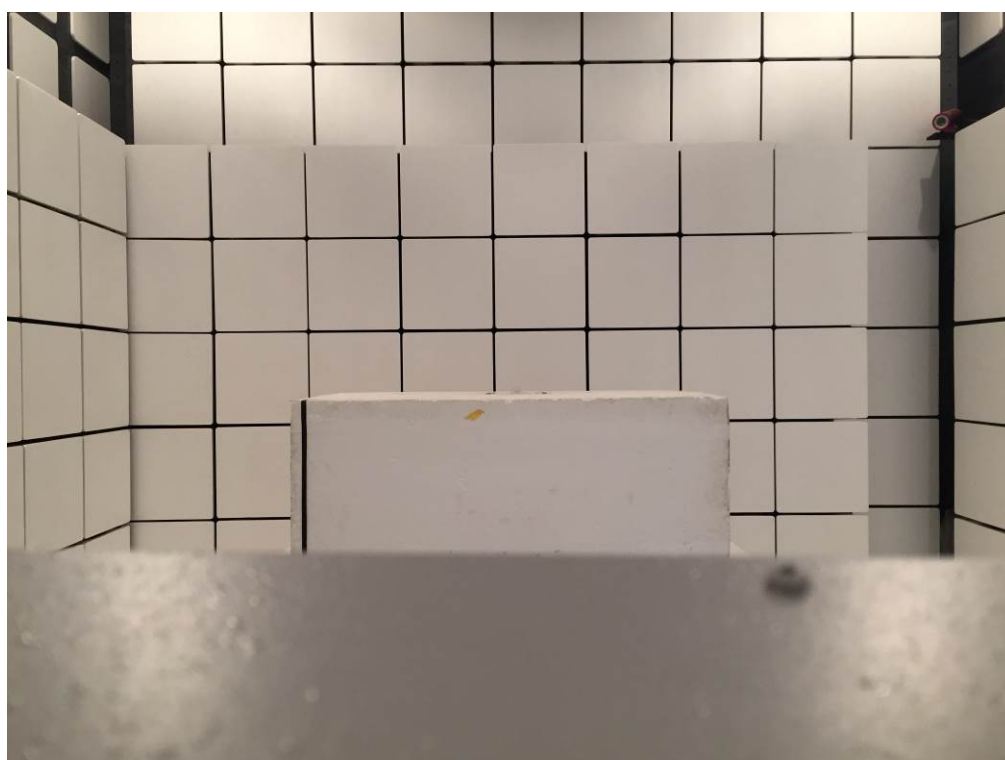
Radiated Measurement Photos

30MHz to 1000MHz



Radiated Measurement Photos

Above 1000MHz



Radiated Measurement Photos



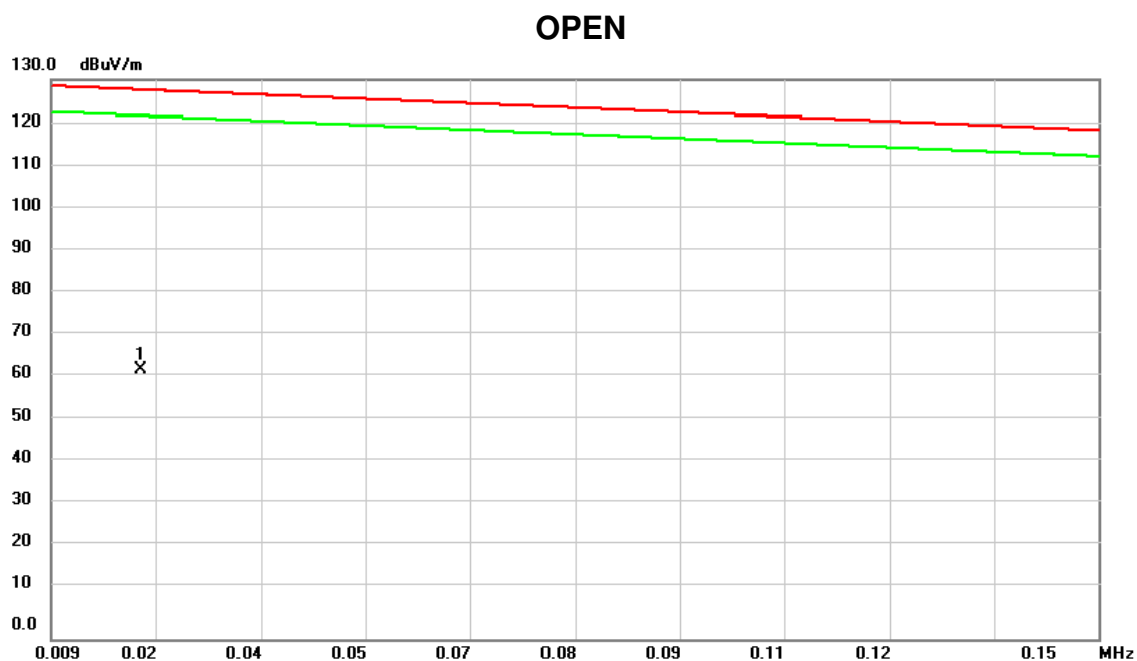
ATTACHMENT A - CONDUCTED EMISSION

Test Mode: N/A

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

ATTACHMENT B -RADIATED EMISSION (9KHZ to 30MHZ)

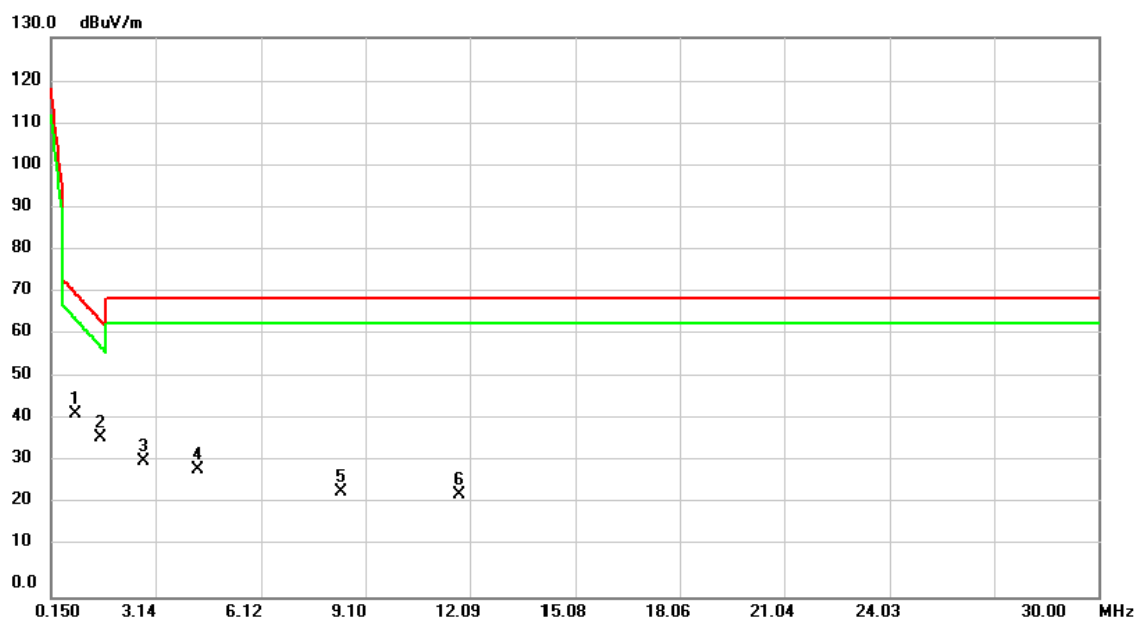
Test Mode:	TX Mode_908.4MHz_9.6k
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No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	0.0212	45.16	17.42	62.58	127.64	-65.06	peak	

Test Mode:	TX Mode_908.4MHz_9.6k
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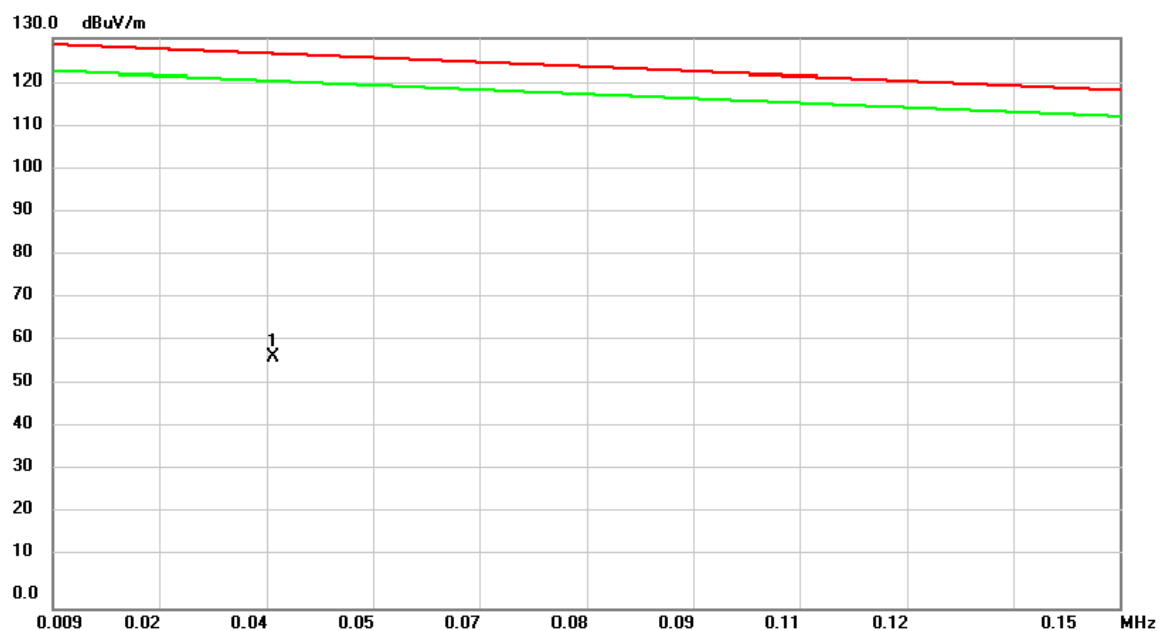
OPEN



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.8660	30.84	11.95	42.79	70.45	-27.66	peak	
2	*	1.5530	25.58	11.75	37.33	64.32	-26.99	peak	
3		2.8065	20.46	11.19	31.65	69.54	-37.89	peak	
4		4.3290	18.38	11.30	29.68	69.54	-39.86	peak	
5		8.4184	13.23	11.33	24.56	69.54	-44.98	peak	
6		11.7911	12.65	11.25	23.90	69.54	-45.64	peak	

Test Mode:	TX Mode_908.4MHz_9.6k
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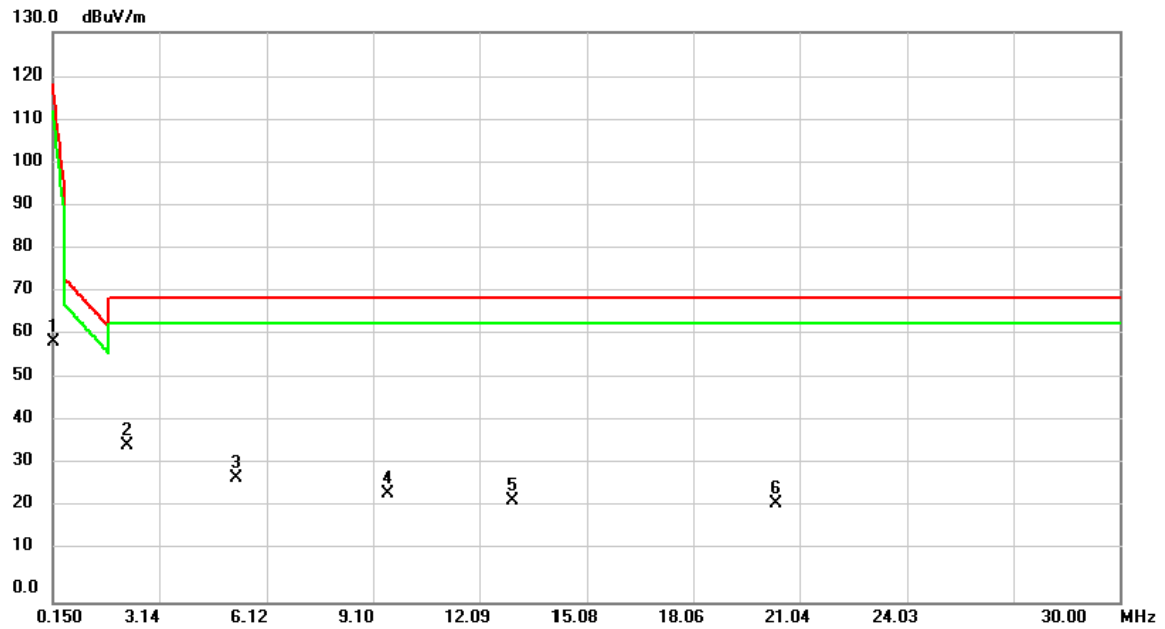
CLOSE



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0380	43.20	14.20	57.40	126.43	-69.03	peak	

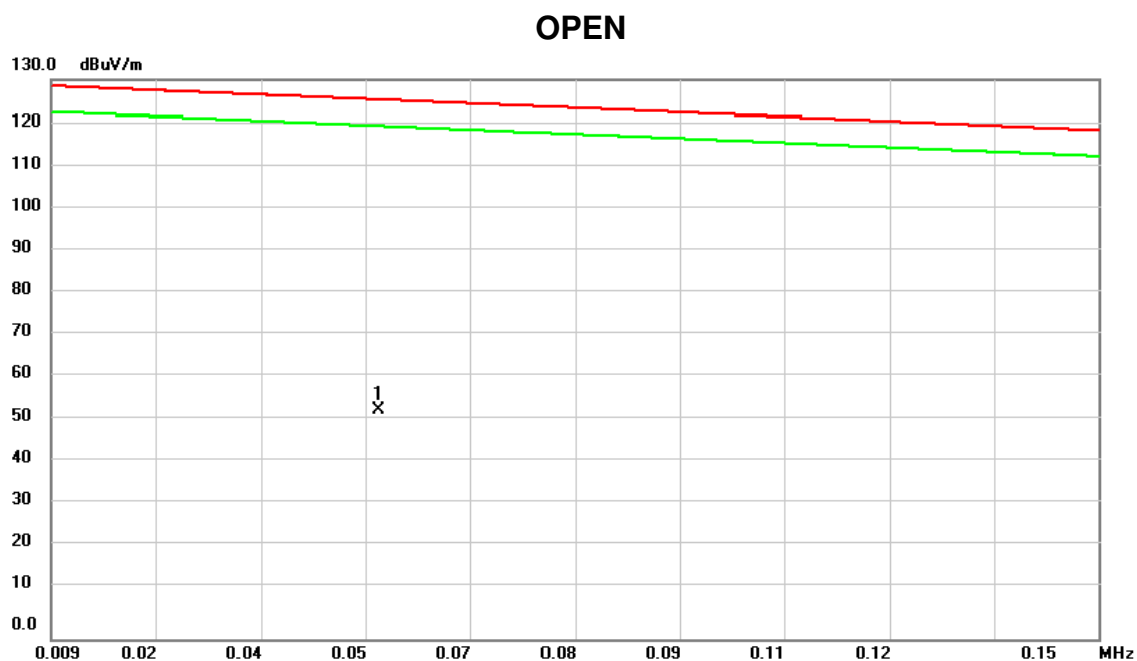
Test Mode:	TX Mode_908.4MHz_9.6k
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CLOSE



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.1500	47.16	12.03	59.19	118.34	-59.15	peak	
2	*	2.2395	24.62	11.44	36.06	69.54	-33.48	peak	
3		5.2842	16.97	11.39	28.36	69.54	-41.18	peak	
4		9.5228	13.44	11.31	24.75	69.54	-44.79	peak	
5		13.0152	12.08	11.21	23.29	69.54	-46.25	peak	
6		20.3883	11.79	10.93	22.72	69.54	-46.82	peak	

Test Mode:	TX Mode_908.4MHz_40k
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No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0530	40.57	12.95	53.52	125.34	-71.82	peak	

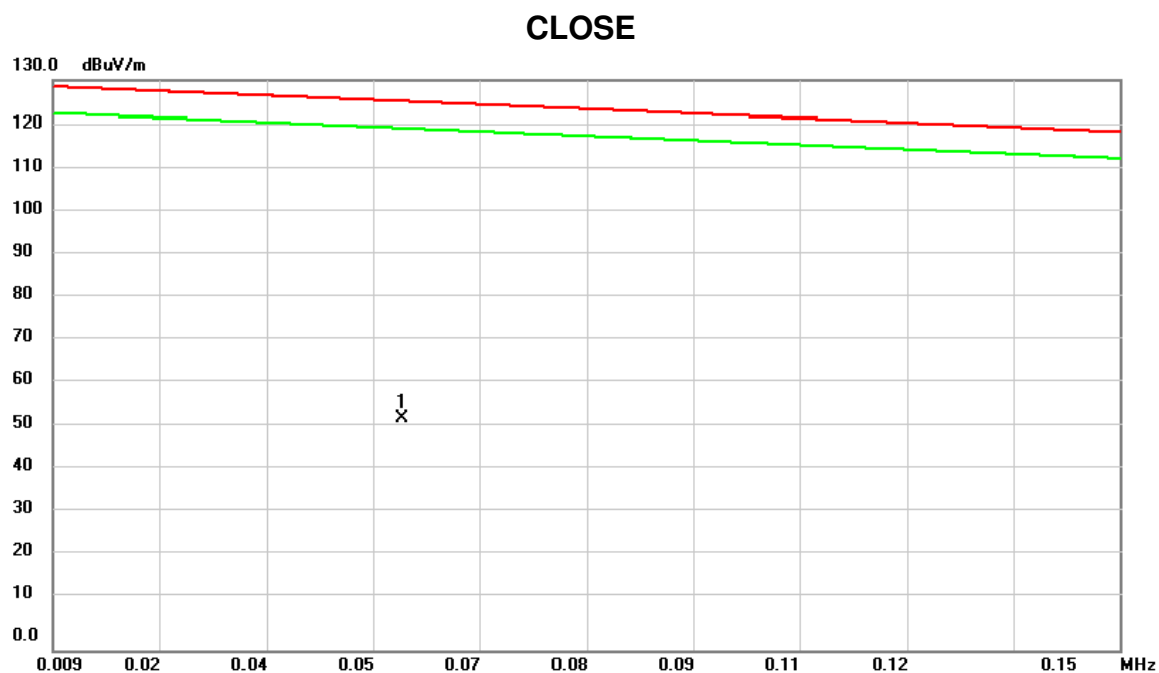
Test Mode:	TX Mode_908.4MHz_40k
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OPEN



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.1800	44.87	11.98	56.85	116.18	-59.33	peak	
2	*	1.7020	25.41	11.68	37.09	63.00	-25.91	peak	
3		4.8066	16.98	11.37	28.35	69.54	-41.19	peak	
4		7.2244	13.53	11.36	24.89	69.54	-44.65	peak	
5		11.7911	12.65	11.25	23.90	69.54	-45.64	peak	
6		16.1794	11.63	11.11	22.74	69.54	-46.80	peak	

Test Mode:	TX Mode_908.4MHz_40k
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No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0551	40.21	12.91	53.12	125.19	-72.07	peak	

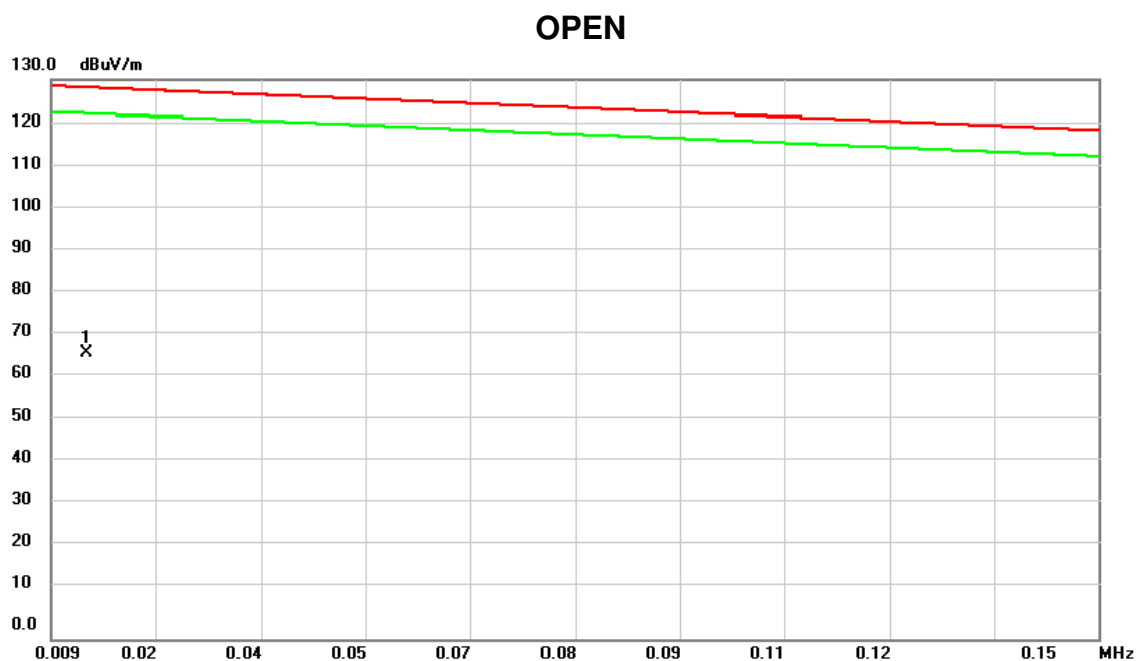
Test Mode:	TX Mode_908.4MHz_40k
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CLOSE



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.1500	47.16	12.03	59.19	118.34	-59.15	peak	
2	*	2.2395	24.62	11.44	36.06	69.54	-33.48	peak	
3		3.1051	20.33	11.12	31.45	69.54	-38.09	peak	
4		4.6573	16.56	11.35	27.91	69.54	-41.63	peak	
5		5.2842	16.97	11.39	28.36	69.54	-41.18	peak	
6		12.1493	12.61	11.24	23.85	69.54	-45.69	peak	

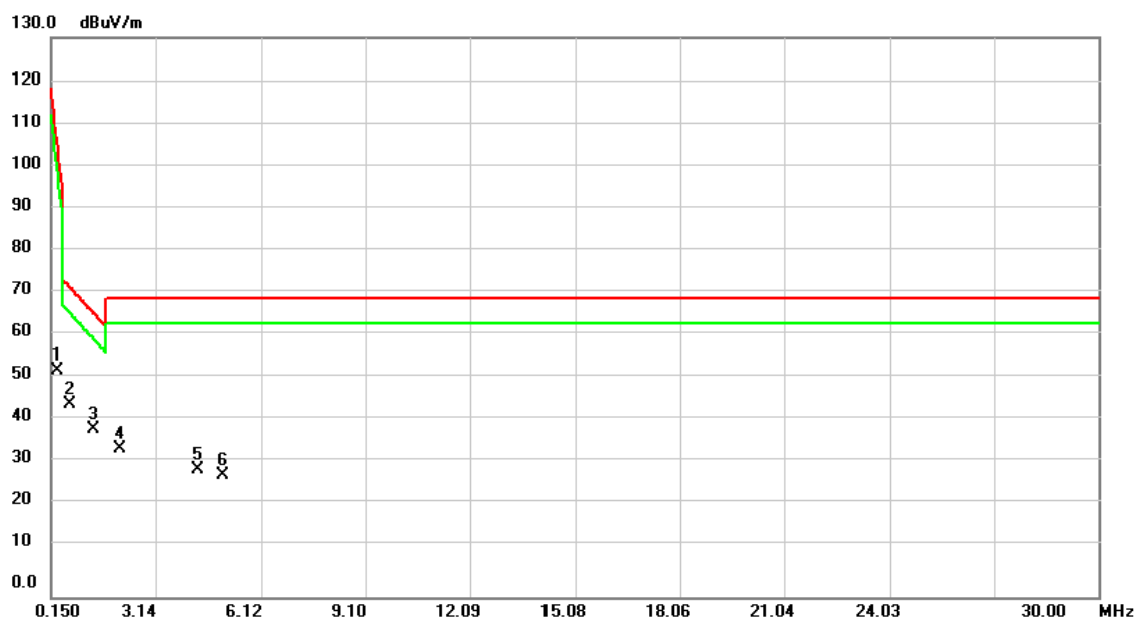
Test Mode:	TX Mode_916MHz_100k
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No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0137	47.07	19.48	66.55	128.18	-61.63	peak	

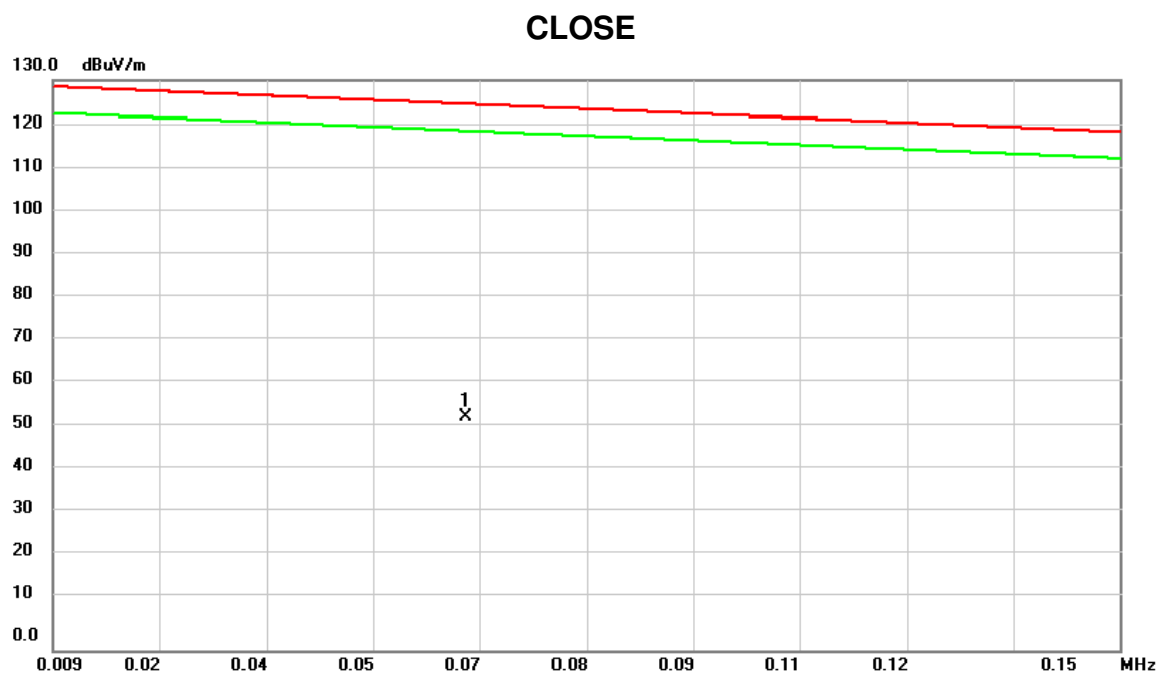
Test Mode:	TX Mode_916MHz_100k
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OPEN



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.3291	40.93	11.80	52.73	105.41	-52.68	peak	
2	*	0.6873	33.26	11.87	45.13	72.04	-26.91	peak	
3		1.3440	27.36	11.85	39.21	66.19	-26.98	peak	
4		2.1200	23.06	11.50	34.56	69.54	-34.98	peak	
5		4.3290	18.38	11.30	29.68	69.54	-39.86	peak	
6		5.0750	16.98	11.40	28.38	69.54	-41.16	peak	

Test Mode:	TX Mode_916MHz_100k
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No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0637	40.61	12.75	53.36	124.57	-71.21	peak	

Test Mode:	TX Mode_916MHz_100k
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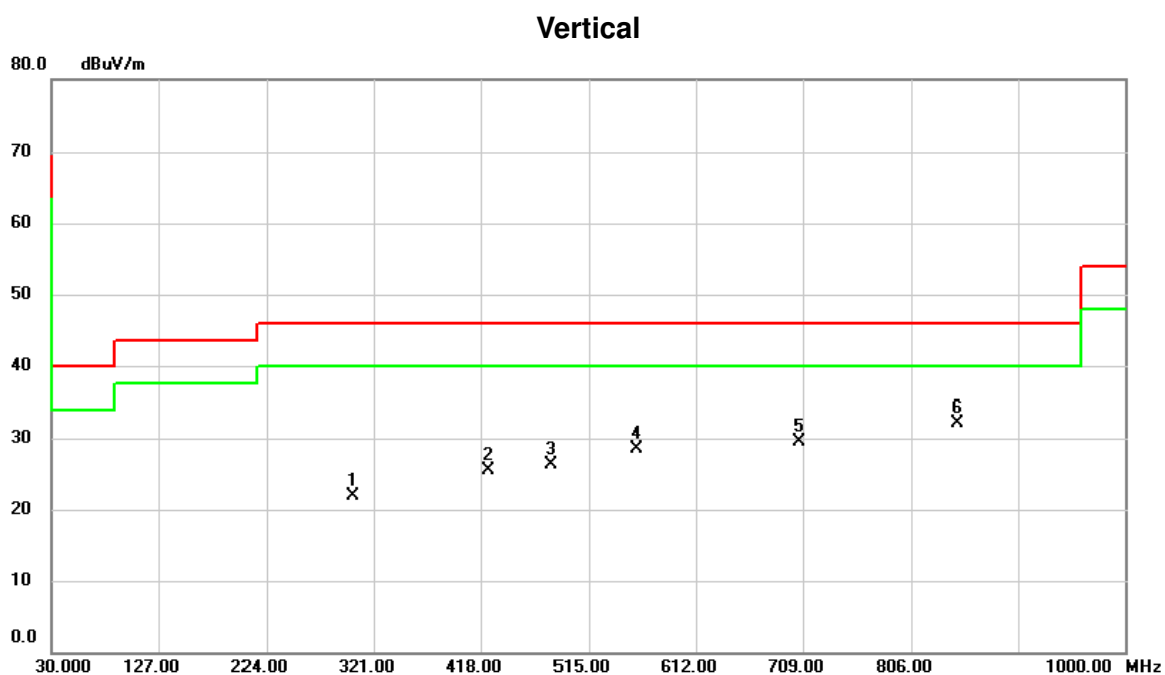
CLOSE



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	2.2395	24.62	11.44	36.06	69.54	-33.48	peak	
2		2.9560	21.26	11.12	32.38	69.54	-37.16	peak	
3		5.2842	16.97	11.39	28.36	69.54	-41.18	peak	
4		9.5228	13.44	11.31	24.75	69.54	-44.79	peak	
5		12.1493	12.61	11.24	23.85	69.54	-45.69	peak	
6		20.3883	11.79	10.93	22.72	69.54	-46.82	peak	

ATTACHMENT C -RADIATED EMISSION (30MHZ TO 1000MHZ)

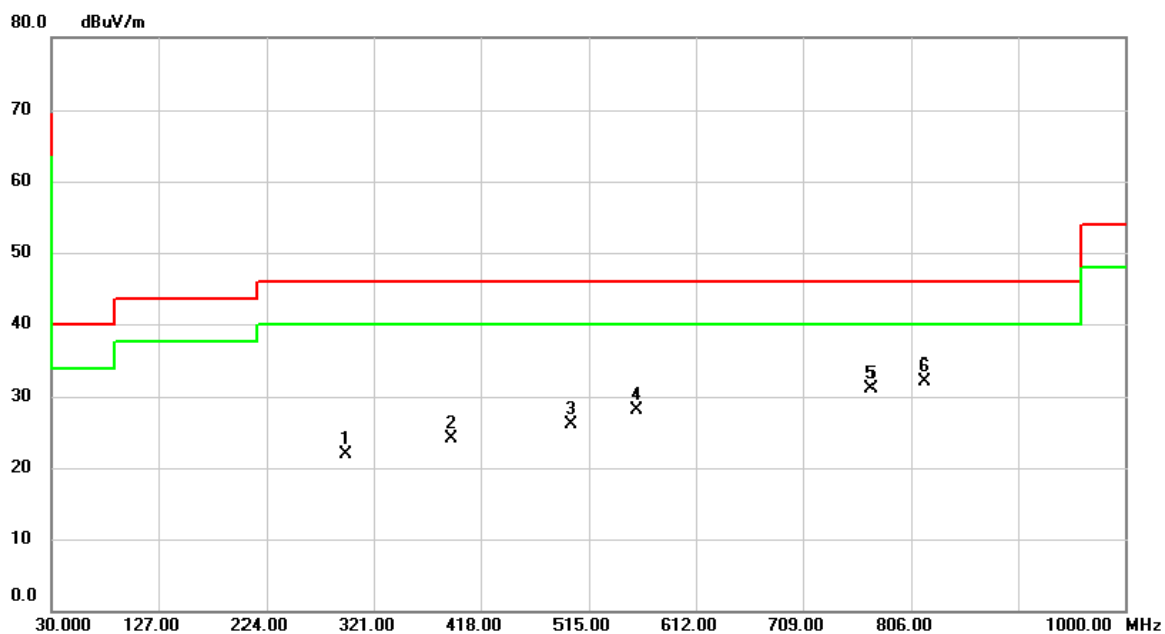
Test Mode:	TX Mode_908.4MHz_9.6k
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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		302.5700	29.61	-7.72	21.89	46.00	-24.11	peak	
2		424.7900	30.09	-4.56	25.53	46.00	-20.47	peak	
3		482.0200	29.69	-3.34	26.35	46.00	-19.65	peak	
4		558.6500	30.21	-1.69	28.52	46.00	-17.48	peak	
5		706.0900	28.60	0.99	29.59	46.00	-16.41	peak	
6	*	847.7100	28.92	3.09	32.01	46.00	-13.99	peak	

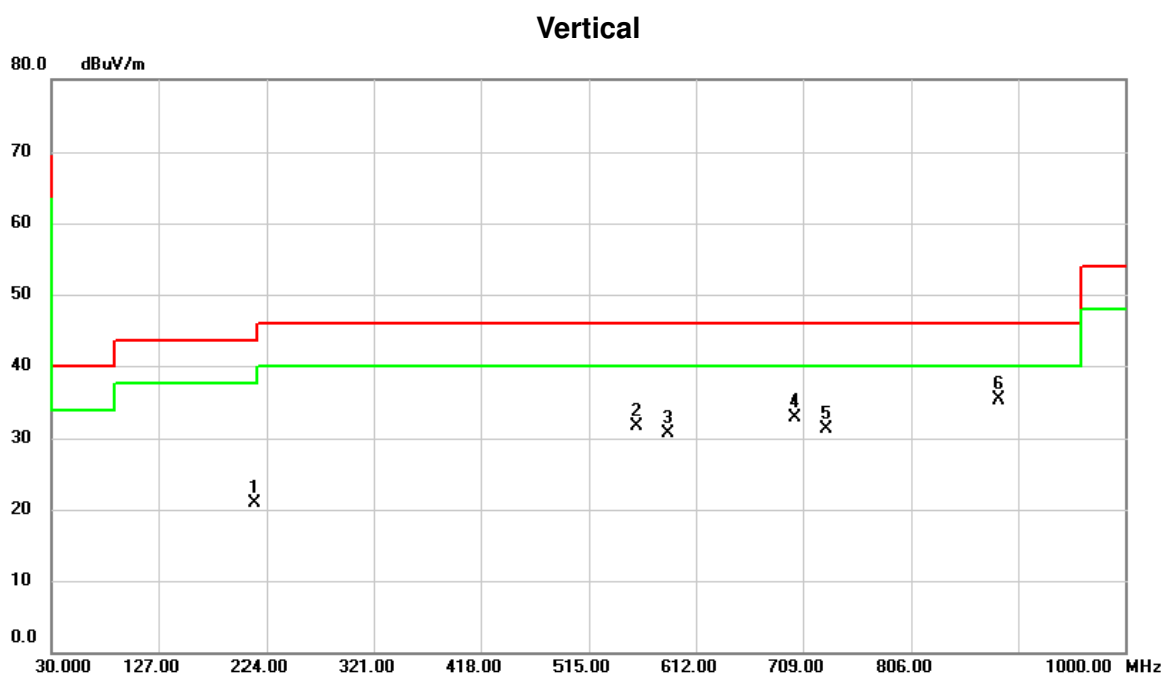
Test Mode: TX Mode_908.4MHz_9.6k

Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		295.7800	29.67	-7.84	21.83	46.00	-24.17	peak	
2		391.8100	29.54	-5.41	24.13	46.00	-21.87	peak	
3		498.5100	29.06	-3.05	26.01	46.00	-19.99	peak	
4		558.6500	29.70	-1.69	28.01	46.00	-17.99	peak	
5		770.1100	29.02	2.10	31.12	46.00	-14.88	peak	
6	*	818.6100	29.32	2.69	32.01	46.00	-13.99	peak	

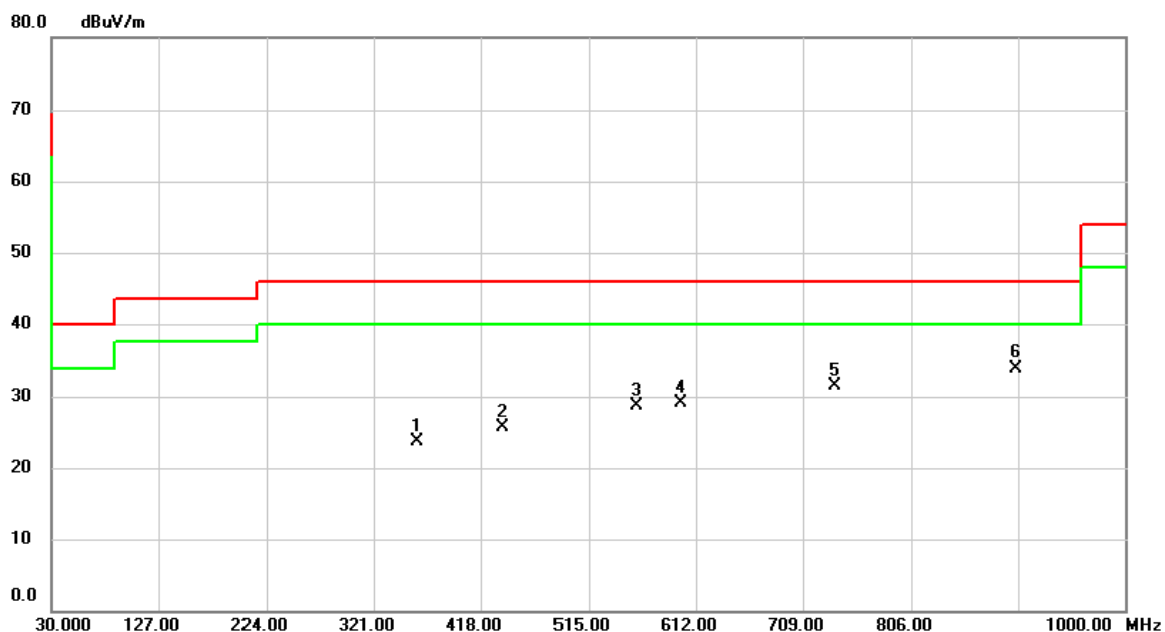
Test Mode:	TX Mode_908.4MHz_40k
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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		213.3300	32.10	-11.13	20.97	43.50	-22.53	peak	
2		558.6500	33.42	-1.69	31.73	46.00	-14.27	peak	
3		586.7800	31.61	-0.97	30.64	46.00	-15.36	peak	
4		701.2400	32.06	0.88	32.94	46.00	-13.06	peak	
5		730.3400	29.79	1.49	31.28	46.00	-14.72	peak	
6	*	885.5400	31.53	3.83	35.36	46.00	-10.64	peak	

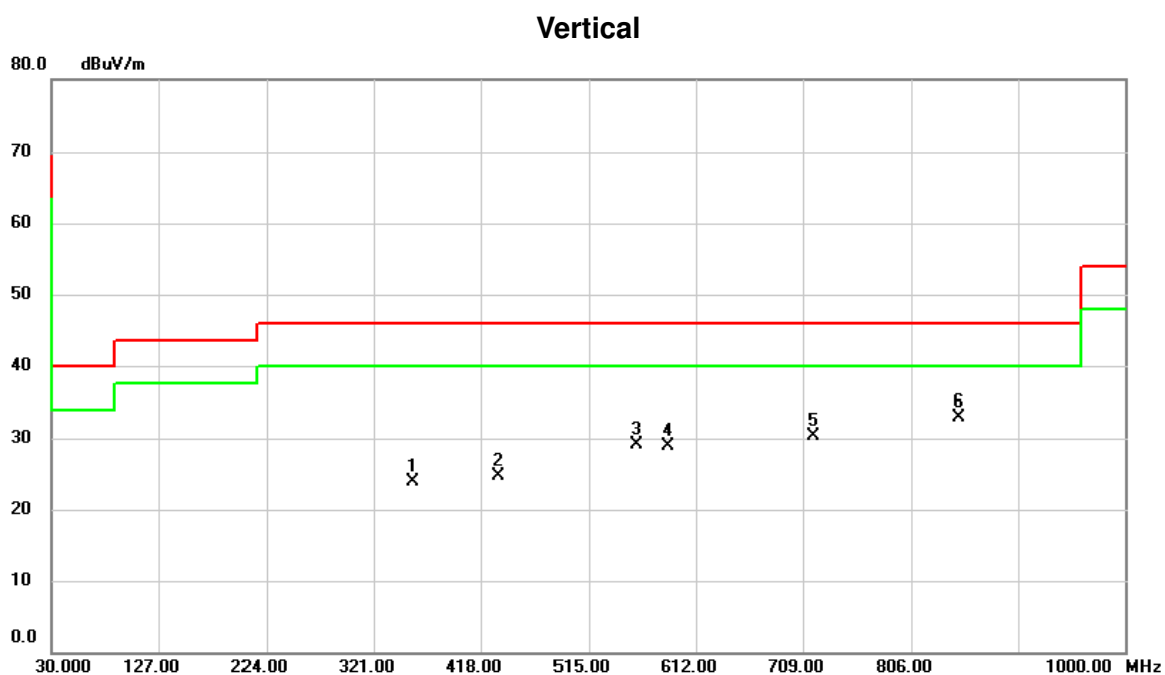
Test Mode:	TX Mode_908.4MHz_40k
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Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		360.7700	29.77	-6.10	23.67	46.00	-22.33	peak	
2		437.4000	29.94	-4.21	25.73	46.00	-20.27	peak	
3		558.6500	30.39	-1.69	28.70	46.00	-17.30	peak	
4		598.4200	29.80	-0.66	29.14	46.00	-16.86	peak	
5		738.1000	29.81	1.64	31.45	46.00	-14.55	peak	
6	*	901.0600	29.70	4.13	33.83	46.00	-12.17	peak	

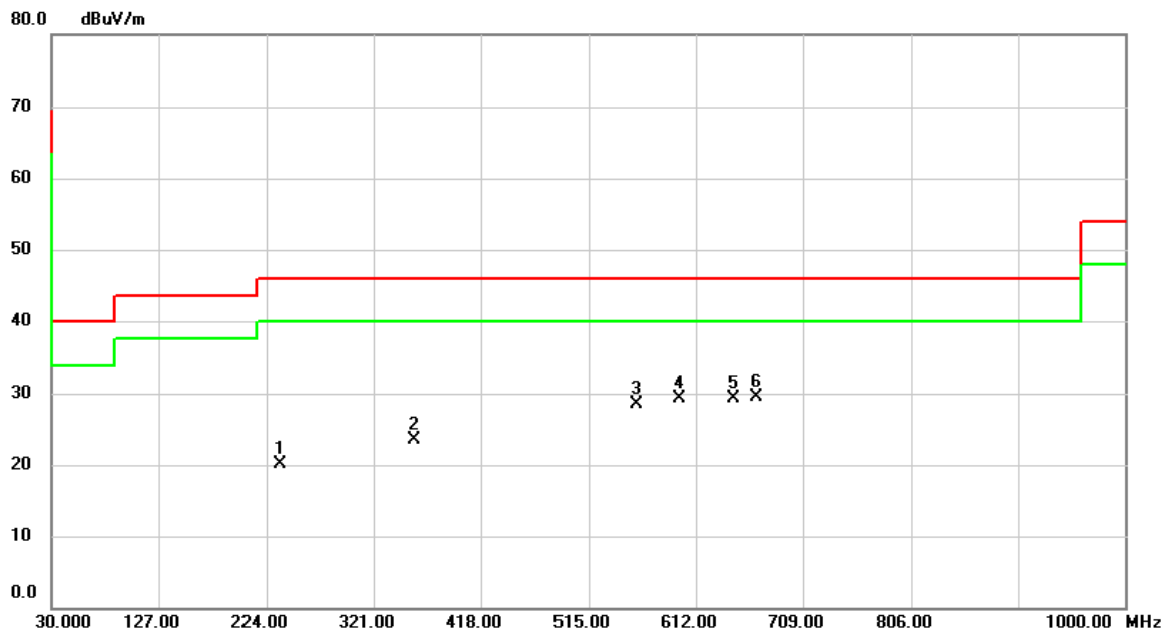
Test Mode:	TX Mode_916MHz_100k
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No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		356.8900	30.09	-6.19	23.90	46.00	-22.10	peak	
2		433.5200	29.11	-4.32	24.79	46.00	-21.21	peak	
3		558.6500	30.70	-1.69	29.01	46.00	-16.99	peak	
4		586.7800	29.90	-0.97	28.93	46.00	-17.07	peak	
5		718.7000	29.05	1.24	30.29	46.00	-15.71	peak	
6	*	848.6800	29.77	3.11	32.88	46.00	-13.12	peak	

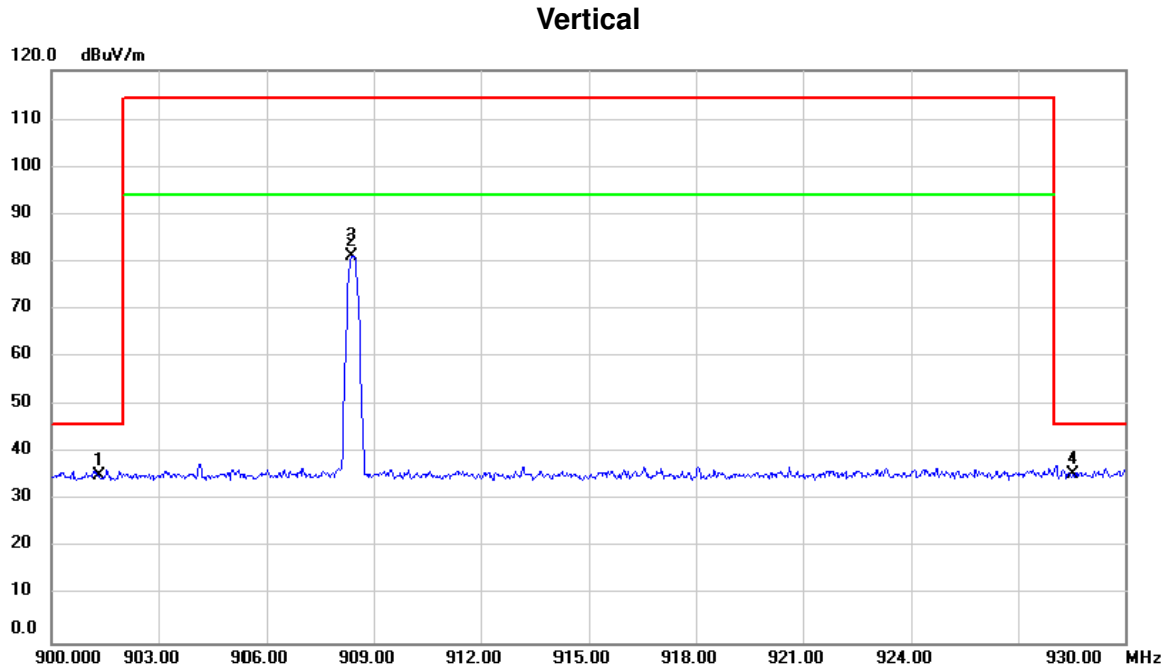
Test Mode: TX Mode_916MHz_100k

Horizontal



ATTACHMENT D -RADIATED EMISSION (ABOVE 1000MHZ)

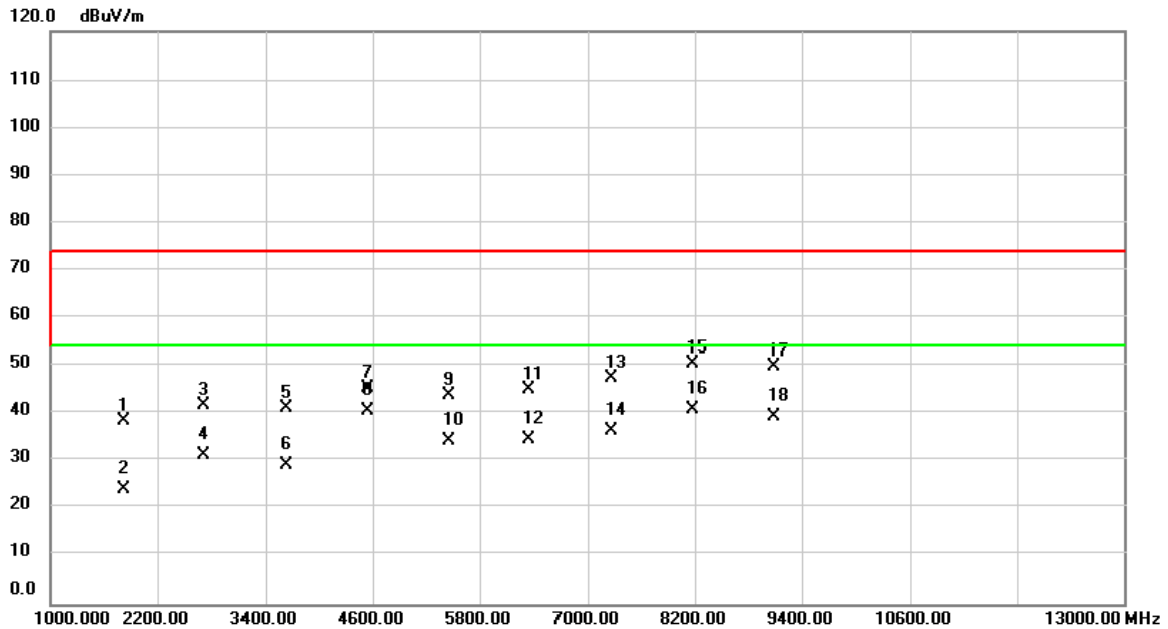
Orthogonal Axis :	X
Test Mode :	TX Mode_908.4MHz_9.6k



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		901.3240	4.10	31.17	35.27	46.00	-10.73	peak	
2		908.4000	49.97	31.26	81.23	114.00	-32.77	peak	
3		908.4000	49.91	31.26	81.17	94.00	-12.83	AVG	
4	*	928.5540	4.09	31.53	35.62	46.00	-10.38	peak	

Orthogonal Axis :	X
Test Mode :	TX Mode_908.4MHz_9.6k

Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		1816.000	57.76	-19.27	38.49	74.00	-35.51	peak	
2		1816.000	43.44	-19.27	24.17	54.00	-29.83	AVG	
3		2724.000	57.50	-15.76	41.74	74.00	-32.26	peak	
4		2724.000	47.12	-15.76	31.36	54.00	-22.64	AVG	
5		3632.000	55.37	-13.98	41.39	74.00	-32.61	peak	
6		3632.000	43.27	-13.98	29.29	54.00	-24.71	AVG	
7		4540.000	57.51	-11.92	45.59	74.00	-28.41	peak	
8		4540.000	52.60	-11.92	40.68	54.00	-13.32	AVG	
9		5448.000	54.77	-10.78	43.99	74.00	-30.01	peak	
10		5448.000	45.26	-10.78	34.48	54.00	-19.52	AVG	
11		6356.000	53.39	-8.09	45.30	74.00	-28.70	peak	
12		6356.000	42.88	-8.09	34.79	54.00	-19.21	AVG	
13		7264.000	52.94	-5.25	47.69	74.00	-26.31	peak	

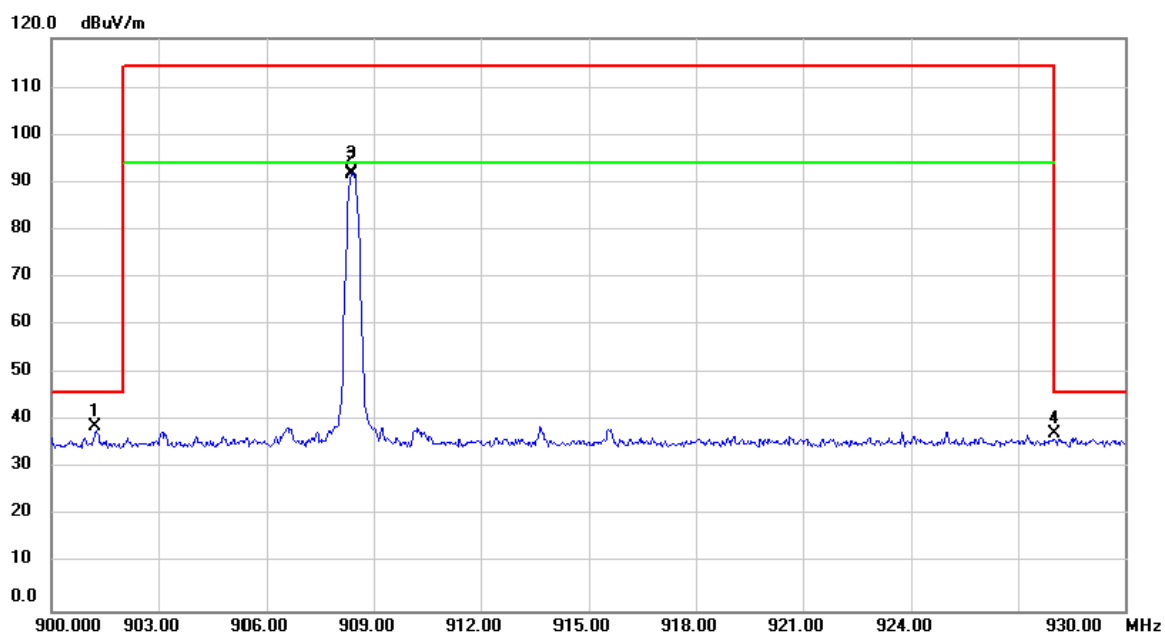
Orthogonal Axis :	X
Test Mode :	TX Mode_908.4MHz_9.6k

Vertical

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
14		7264.000	41.76	-5.25	36.51	54.00	-17.49	AVG	
15		8172.000	52.78	-2.25	50.53	74.00	-23.47	peak	
16	*	8172.000	43.10	-2.25	40.85	54.00	-13.15	AVG	
17		9080.000	51.04	-0.95	50.09	74.00	-23.91	peak	
18		9080.000	40.37	-0.95	39.42	54.00	-14.58	AVG	

Orthogonal Axis :	X
Test Mode :	TX Mode_908.4MHz_9.6k

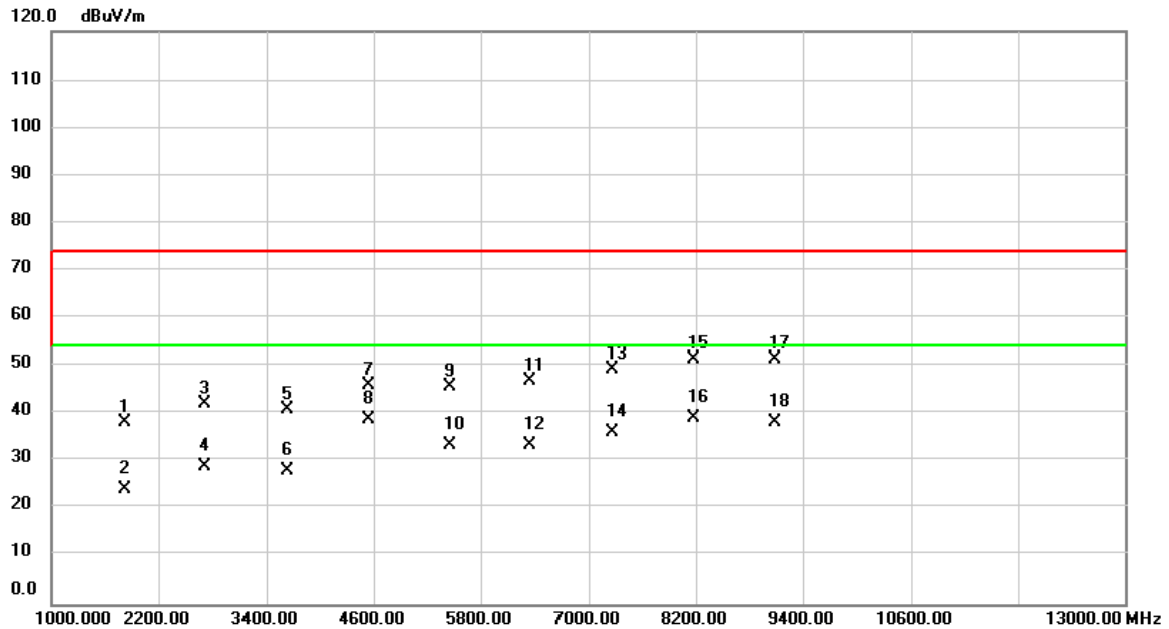
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		901.2380	7.74	31.16	38.90	46.00	-7.10	peak	
2		908.4000	60.59	31.26	91.85	114.00	-22.15	peak	
3	*	908.4000	60.31	31.26	91.57	94.00	-2.43	AVG	
4		928.0280	5.80	31.53	37.33	46.00	-8.67	peak	

Orthogonal Axis :	X
Test Mode :	TX Mode_908.4MHz_9.6k

Horizontal



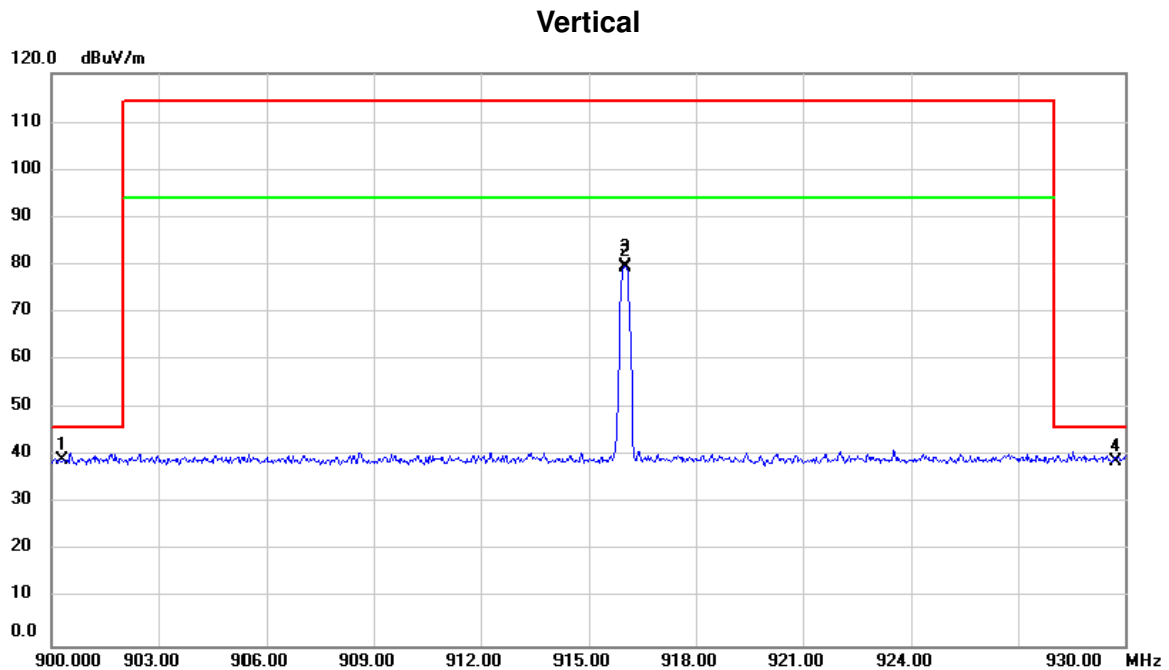
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		1816.000	57.66	-19.27	38.39	74.00	-35.61	peak	
2		1816.000	43.46	-19.27	24.19	54.00	-29.81	AVG	
3		2724.000	57.79	-15.76	42.03	74.00	-31.97	peak	
4		2724.000	44.81	-15.76	29.05	54.00	-24.95	AVG	
5		3632.000	54.94	-13.98	40.96	74.00	-33.04	peak	
6		3632.000	41.91	-13.98	27.93	54.00	-26.07	AVG	
7		4540.000	58.04	-11.92	46.12	74.00	-27.88	peak	
8		4540.000	50.77	-11.92	38.85	54.00	-15.15	AVG	
9		5448.000	56.61	-10.78	45.83	74.00	-28.17	peak	
10		5448.000	44.10	-10.78	33.32	54.00	-20.68	AVG	
11		6356.000	54.95	-8.09	46.86	74.00	-27.14	peak	
12		6356.000	41.63	-8.09	33.54	54.00	-20.46	AVG	
13		7264.000	54.53	-5.25	49.28	74.00	-24.72	peak	

Orthogonal Axis :	X
Test Mode :	TX Mode_908.4MHz_9.6k

Horizontal

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
14		7264.000	41.31	-5.25	36.06	54.00	-17.94	AVG	
15		8172.000	53.62	-2.25	51.37	74.00	-22.63	peak	
16	*	8172.000	41.38	-2.25	39.13	54.00	-14.87	AVG	
17		9080.000	52.52	-0.95	51.57	74.00	-22.43	peak	
18		9080.000	39.07	-0.95	38.12	54.00	-15.88	AVG	

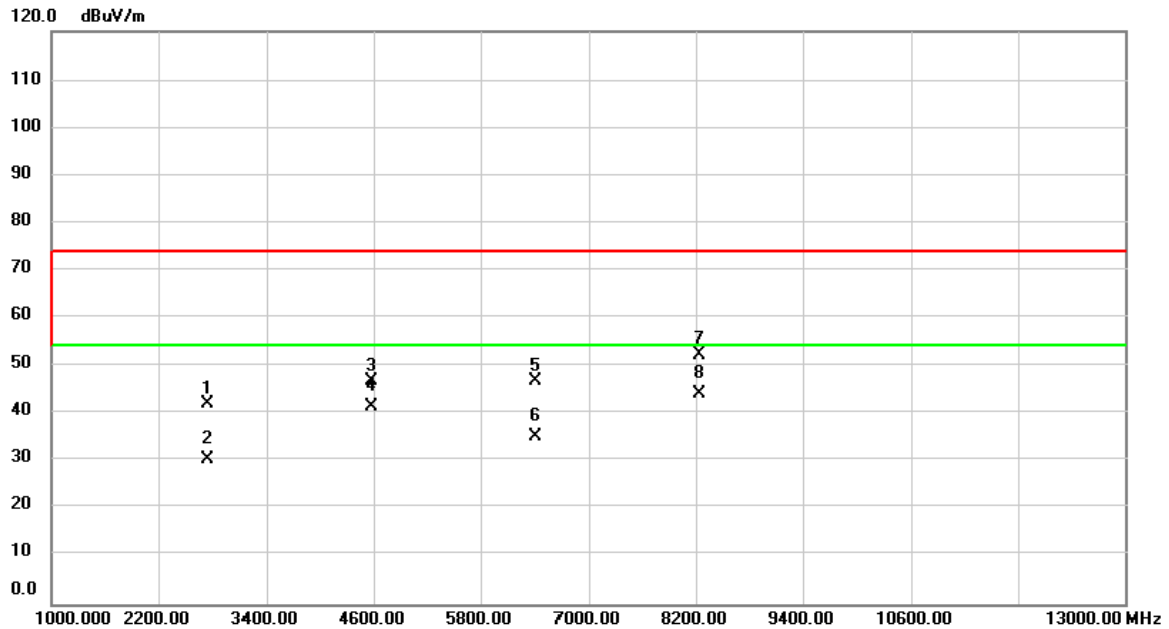
Orthogonal Axis :	X
Test Mode :	TX Mode_916MHz_100k



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	900.2940	8.03	31.15	39.18	46.00	-6.82	peak	
2		916.0000	48.30	31.36	79.66	114.00	-34.34	peak	
3		916.0000	48.02	31.36	79.38	94.00	-14.62	AVG	
4		929.7440	7.24	31.55	38.79	46.00	-7.21	peak	

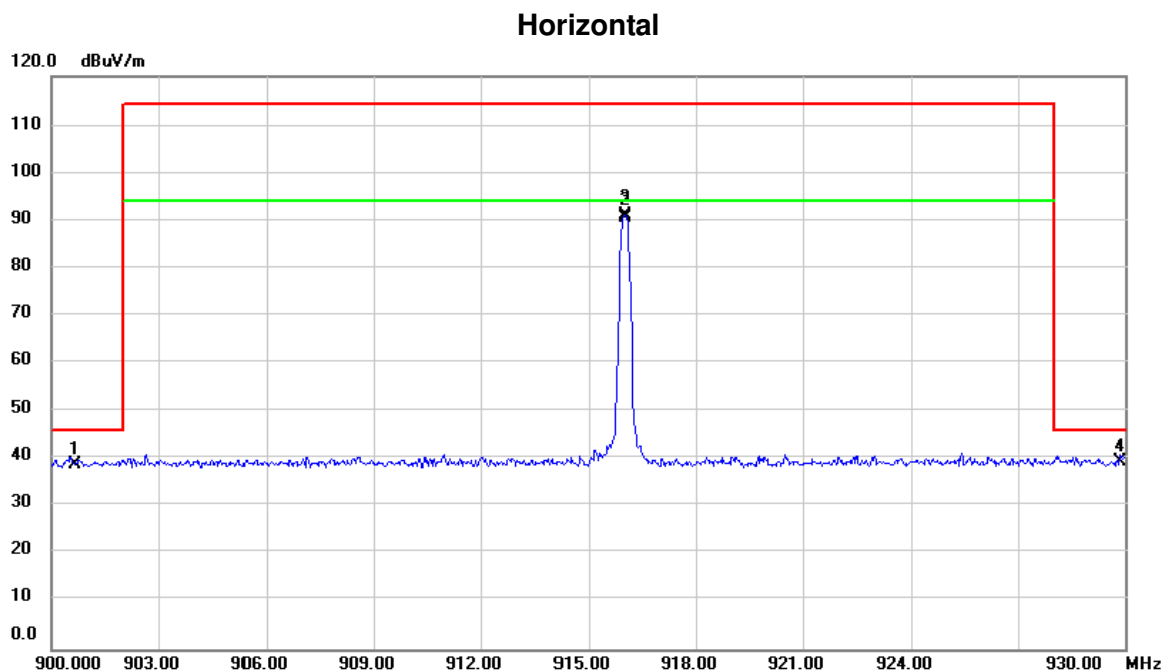
Orthogonal Axis :	X
Test Mode :	TX Mode_916MHz_100k

Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2748.000	57.85	-15.67	42.18	74.00	-31.82	peak	
2		2748.000	46.16	-15.67	30.49	54.00	-23.51	AVG	
3		4580.000	58.80	-11.84	46.96	74.00	-27.04	peak	
4		4580.000	53.26	-11.84	41.42	54.00	-12.58	AVG	
5		6412.000	54.73	-7.92	46.81	74.00	-27.19	peak	
6		6412.000	43.18	-7.92	35.26	54.00	-18.74	AVG	
7		8244.000	54.72	-2.23	52.49	74.00	-21.51	peak	
8	*	8244.000	46.50	-2.23	44.27	54.00	-9.73	AVG	

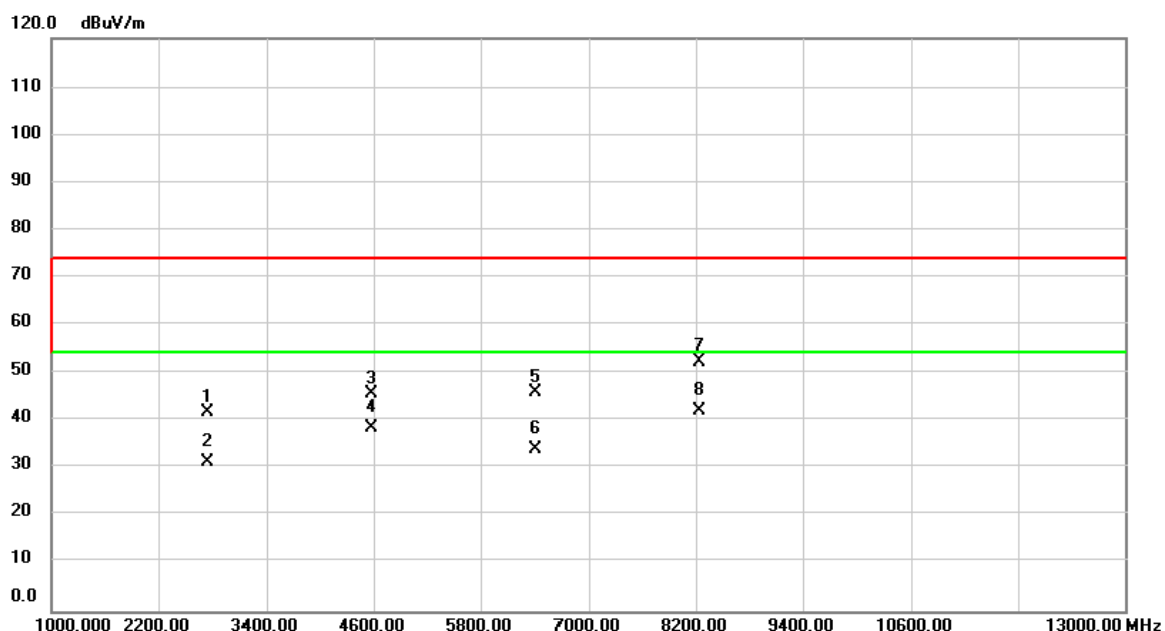
Orthogonal Axis :	X
Test Mode :	TX Mode_916MHz_100k



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		900.6480	7.54	31.16	38.70	46.00	-7.30	peak	
2		916.0000	59.67	31.36	91.03	114.00	-22.97	peak	
3	*	916.0000	59.07	31.36	90.43	94.00	-3.57	AVG	
4		929.8580	8.00	31.55	39.55	46.00	-6.45	peak	

Orthogonal Axis :	X
Test Mode :	TX Mode_916MHz_100k

Horizontal



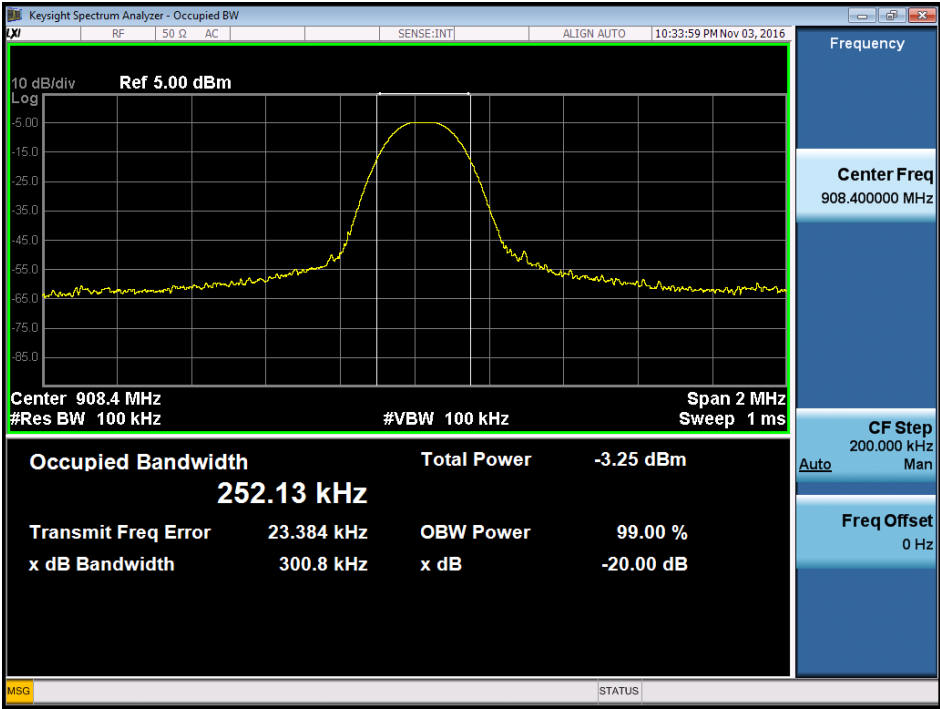
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2748.000	57.65	-15.67	41.98	74.00	-32.02	peak	
2		2748.000	47.11	-15.67	31.44	54.00	-22.56	AVG	
3		4580.000	57.70	-11.84	45.86	74.00	-28.14	peak	
4		4580.000	50.26	-11.84	38.42	54.00	-15.58	AVG	
5		6412.000	54.10	-7.92	46.18	74.00	-27.82	peak	
6		6412.000	41.95	-7.92	34.03	54.00	-19.97	AVG	
7		8244.000	54.43	-2.23	52.20	74.00	-21.80	peak	
8	*	8244.000	44.42	-2.23	42.19	54.00	-11.81	AVG	

ATTACHMENT E - BANDWIDTH

Test Mode :	TX Mode_908.4MHz
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Frequency (MHz)	20dB Bandwidth (MHz)	99% Occupied BW (MHz)
908.4	0.30	0.25

TX Mode



Test Mode :	TX Mode_916MHz
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Frequency (MHz)	20dB Bandwidth (MHz)	99% Occupied BW (MHz)
916	0.32	0.27

TX Mode

