


FCC Radio Test Report


FCC ID: OXM000088

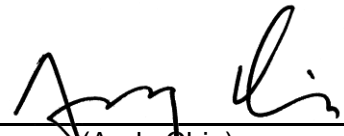
This report concerns: Original Grant

Project No. : 1805T015
Equipment : Wireless Receiver
Test Model : AMP30R
Series Model : N/A
Applicant : Targus International LLC
Address : 1211 North Miller Street Anaheim, CA 92806 USA

Date of Receipt : May 14, 2018
Date of Test : May 14, 2018 ~ Jun. 29, 2018
Issued Date : Jul. 03, 2018
Tested by : BTL Inc.

Testing Engineer : 
(Kay Wu)

Technical Manager : 
(James Chiu)

Authorized Signatory : 
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Declaration

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BTL's laboratory quality assurance procedures are in compliance with the **ISO Guide 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements in all the possible configurations as representative of its intended use.

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

Issue No.	Description	Issued Date
BTL-FCCP-1-1805T015	Original Issue.	Jul. 03, 2018

1 CERTIFICATION

Equipment : Wireless Receiver
Brand Name : Targus
Test Model : AMP30R
Series Model : N/A
Applicant : Targus International LLC
Manufacturer : Targus International LLC
Address : 1211 North Miller Street Anaheim, CA 92806 USA
Factory : (1) Dongguan Shengyih Electronics Co., Ltd.
(2) Shengyih Technologies Co., Ltd.
Address : (1) The Second Industrial Park, Eastern Industrial Park, Changping Town,
Dongguan City, Guangdong Province, China
(2) 3F-2., No.13, Wu Chuan 1st Rd., Xinzhuang Dist., New Taipei City 24892,
Taiwan
Date of Test : May 14, 2018 ~ Jun. 29, 2018
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-1-1805T015) 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 standards.

FCC Part15, Subpart C (§15.247)				
FCC Clause No	Description	Test Result	Judgement	Remark
15.207	Conducted Emissions	APPENDIX A	Pass	-----
15.209/15.205	Transmitter Radiated Emissions	APPENDIX B APPENDIX C APPENDIX D	Pass	-----
15.247(a)(2)	6 dB Bandwidth	APPENDIX E	Pass	-----
15.247(b)(3)	Peak Output Power	APPENDIX F	Pass	-----
15.247(d)	Antenna Conducted Spurious Emissions	APPENDIX G	Pass	-----
15.247(e)	Power Spectral Density	APPENDIX H	Pass	-----
15.203	Antenna Requirement	-----	Pass	-----

NOTE:

- (1) "N/A" denotes test is not applicable in this Test Report.
- (2)

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:674415; FCC DN:TW0659)

No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)

Radiated emission Test (Below 1 GHz):

CB15: (VCCI RN: R-20020; FCC RN:674415; FCC DN:TW0659; ISED Assigned Code:20088-5)

No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)

Radiated emission Test (Above 1 GHz):

CB15: (VCCI RN: G-20031; FCC RN:674415; FCC DN:TW0659; ISED Assigned Code:20088-5)

No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)

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.	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.	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

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

3 GENERAL INFORMATION

3.1 DESCRIPTION OF EUT

Equipment	Wireless Receiver
Brand Name	Targus
Test Model	AMP30R
Series Model	N/A
Model Difference	N/A
Power Source	Supplied from USB Port.
Power Rating	DC 5 V
Operation Frequency	2416 MHz, 2468 MHz
Modulation Type	GFSK
Bit Rate of Transmitter	1 Mbps
Maximum Output Power	-0.35 dBm

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)
00	2416
01	2468

- (3) Table for Filed Antenna:

Ant.	Brand	Model	Type	Connector	Gain (dBi)
1	N/A	N/A	PCB	N/A	3.00

3.2 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 possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

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

Conducted Emissions Test	
Test Mode	Description
1	Transmitting

Radiated Emissions Test	
Test Mode	Description
1	Transmitting

Conducted Test	
Test Mode	Description
1	Transmitting

NOTE:

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

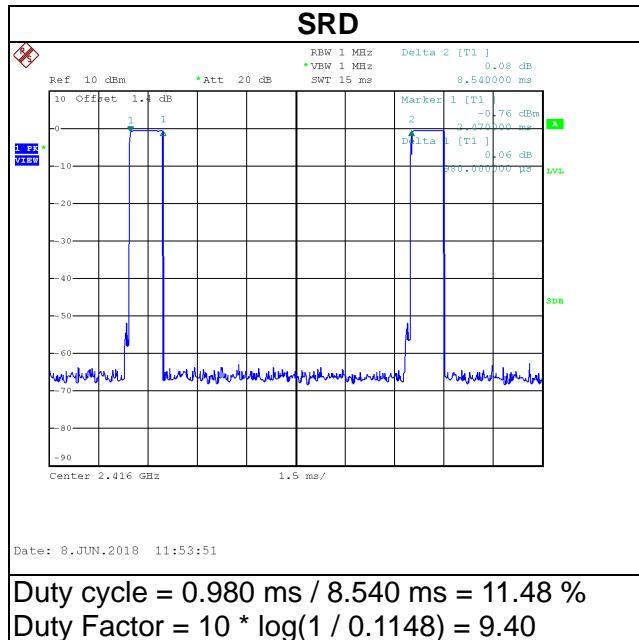
3.3 PARAMETERS OF TEST SOFTWARE

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Test Software Version	N/A	
Frequency (MHz)	2416	2468
Parameter	DEF	DEF

3.4 DUTY CYCLE

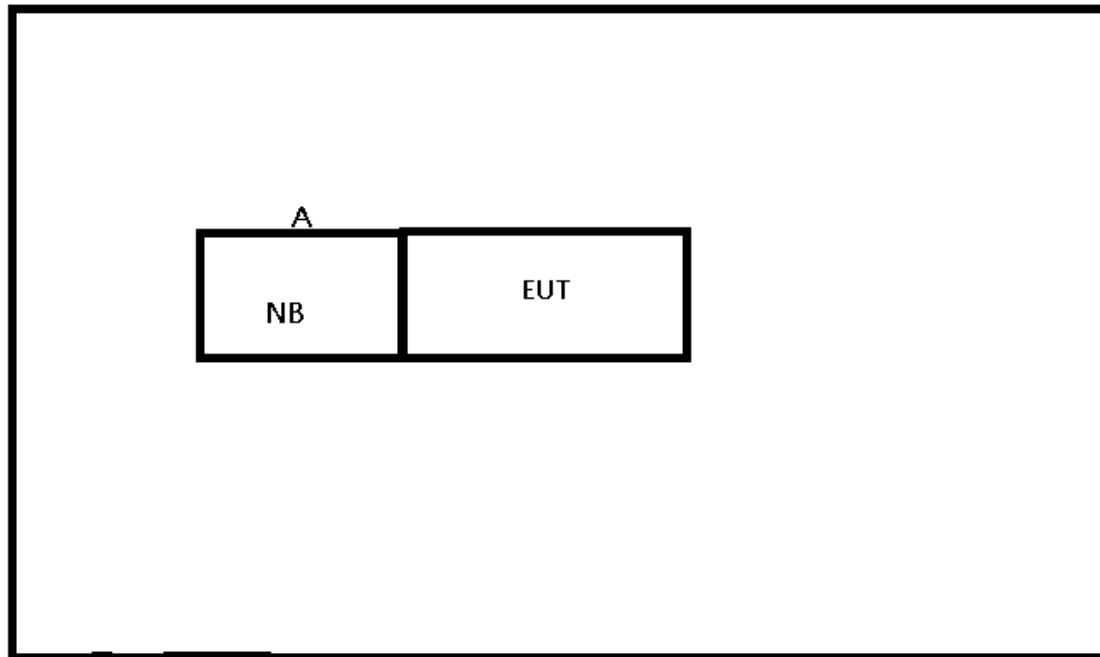
If duty cycle is $\geq 98\%$, duty factor is not required.
If duty cycle is $< 98\%$, duty factor shall be considered.



Note:

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 $< 98\%$).

3.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.6 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	Brand	Model/Type No.	FCC ID	Series No.
A	NB	HP	TPN-I119	-	5CG7032BNS

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

4 CONDUCTED EMISSIONS TEST

4.1 LIMIT

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

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 -0.	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 - Amplifier Gain(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

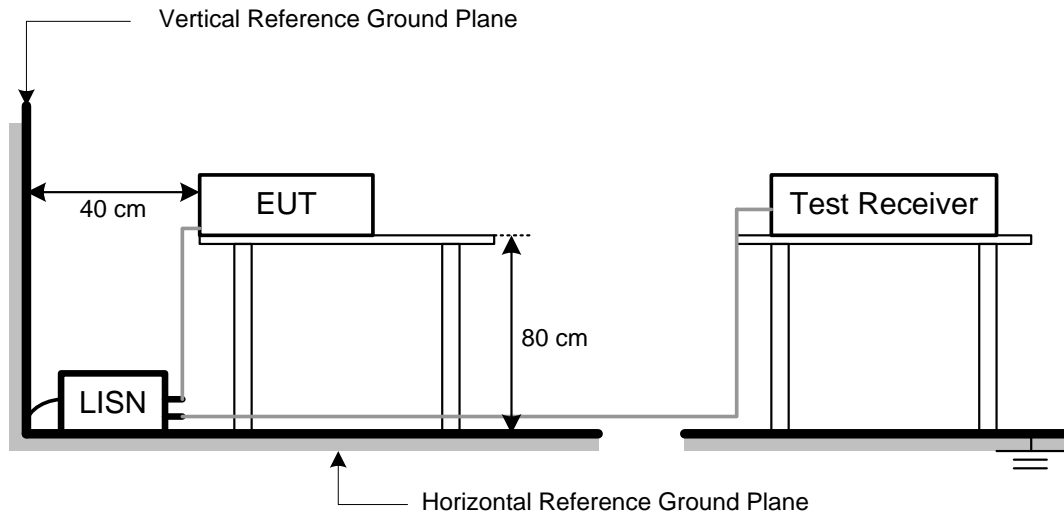
4.2 TEST PROCEDURE

- 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 equipments 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
- 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.

4.3 DEVIATION FROM TEST STANDARD

No deviation.

4.4 TEST SETUP



4.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.6 TEST RESULT

Temperature: 25 °C Relative Humidity: 45 % Test Voltage: AC 120V/60Hz (System)

Please refer to the APPENDIX B.

5 TRANSMITTER RADIATED EMISSIONS TEST

5.1 LIMIT

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.

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

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 EMISSIONS MEASUREMENT (Above 1000 MHz)

Frequency (MHz)	Radiated Emissions (dBuV/m)		Measurement Distance (meters)
	Peak	Average	
Above 1000	74	54	3

NOTE:

- (3) The limit for radiated test was performed according to FCC Part 15, Subpart C.
- (4) The tighter limit applies at the band edges.
- (5) Emission level (dBuV/m)=20log Emission level (uV/m).
- (6) 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

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average

Spectrum 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

5.2 TEST PROCEDURE

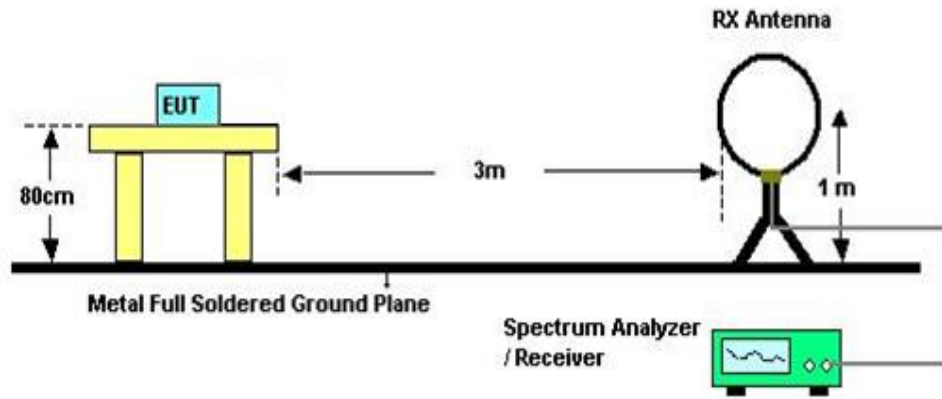
- f. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- g. The measuring distance 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)
- h. The height of the equipment or of the substitution antenna shall be 0.8 m or 1.5 m, 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.
- i. 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).
- j. 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.
- k. 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.
- l. 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)
- m. 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)
- n. For the actual test configuration, please refer to the related Item –EUT Test Photos.

5.3 DEVIATION FROM TEST STANDARD

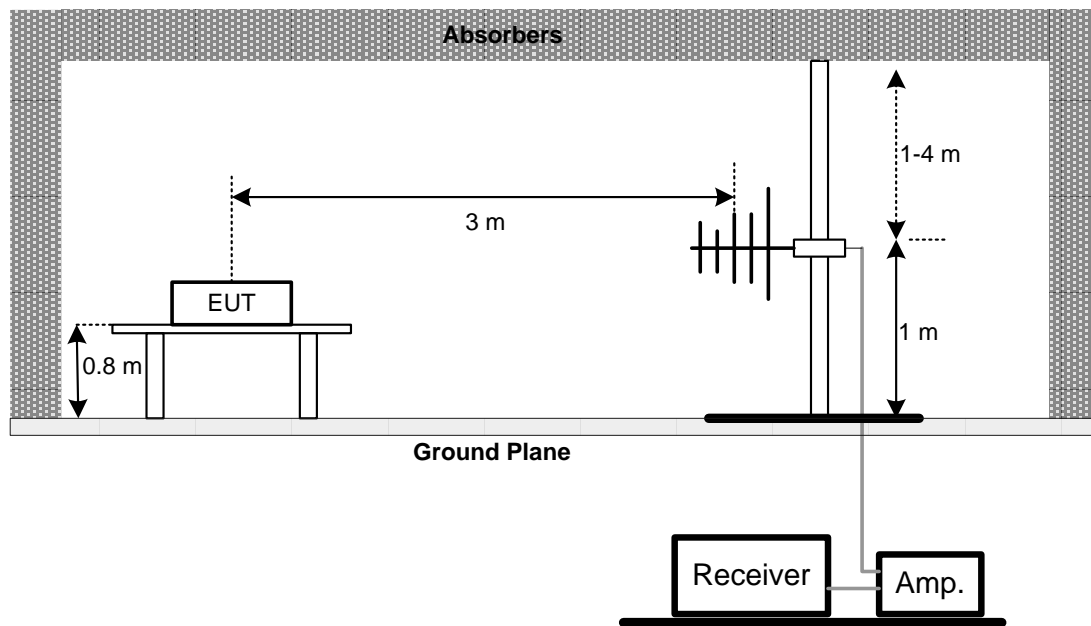
No deviation.

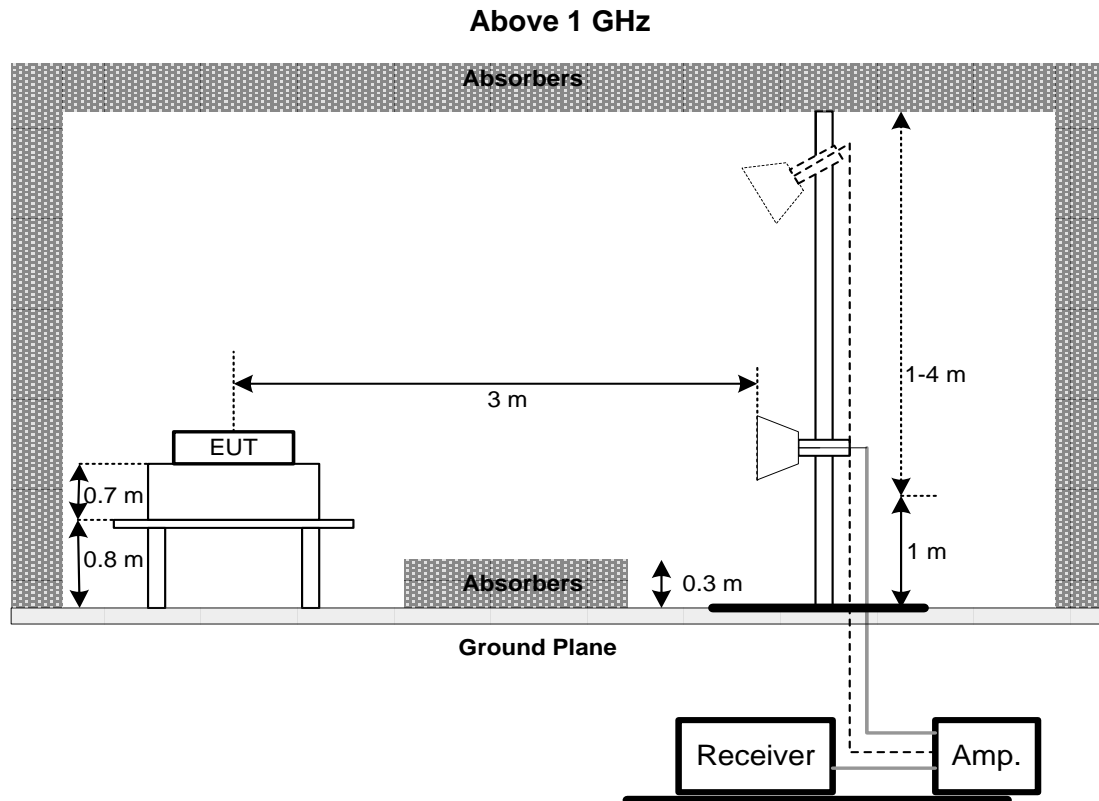
5.4 TEST SETUP

Below 30 MHz



30 MHz to 1 GHz





5.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULT – 9 KHZ TO 30 MHZ

Temperature: 23 °C Relative Humidity: 70 % Test Voltage: AC 120V/60Hz (System)

Please refer to the APPENDIX B.

NOTE:

- (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.

5.7 TEST RESULT – 30MHZ TO 1000 MHZ

Temperature: 23 °C Relative Humidity: 70 % Test Voltage: AC 120V/60Hz (System)

Please refer to the APPENDIX C.

5.8 TEST RESULT – ABOVE 1000 MHZ

Temperature: 23 °C Relative Humidity: 70 % Test Voltage: AC 120V/60Hz (System)

Please refer to the APPENDIX D.

NOTE:

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

6 6 DB BANDWIDTH TEST

6.1 LIMIT

FCC Part15, Subpart C (§15.247)			
Section	Test Item	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	2400-2483.5	PASS

6.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- Spectrum Setting: RBW= 100KHz, VBW=300KHz, Sweep time = 2.5 ms.

6.3 DEVIATION FROM TEST STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 TEST RESULT

Please refer to the APPENDIX E.

7 PEAK OUTPUT POWER TEST

7.1 LIMIT

FCC Part15, Subpart C (§15.247)				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Maximum Output Power	1 Watt or 30dBm	2400-2483.5	PASS

7.2 TEST PROCEDURE

- The EUT was directly connected to the power meter and antenna output port as show in the block diagram below.
- The maximum peak conducted output power was performed in accordance with method 9.1.2 of FCC KDB 558074 D01 DTS Meas Guidance.

7.3 DEVIATION FROM TEST STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.6 TEST RESULT

Please refer to the APPENDIX F.

8 ANTENNA CONDUCTED SPURIOUS EMISSIONS TEST

8.1 LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits.

8.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- Spectrum Setting: RBW = 100 kHz, VBW=300 kHz, Sweep time = Auto.
- Offset = antenna gain + cable loss.

8.3 DEVIATION FROM TEST STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.6 TEST RESULT

Please refer to the APPENDIX G.

9 POWER SPECTRAL DENSITY

9.1 LIMIT

FCC Part15, Subpart C (§15.247)				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(e)	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

9.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- Spectrum Setting: RBW=3KHz, VBW=10KHz, Sweep time = Auto.

9.3 DEVIATION FROM TEST STANDARD

No deviation.

9.4 TEST SETUP



9.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

9.6 TEST RESULT

Please refer to the APPENDIX H.

10 LIST OF MEASURING EQUIPMENTS

Conducted Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	TWO-LINE V-NETWORK	R&S	ENV216	101339	Feb. 28, 2019
2	Test Cable	EMCI	EMCCFD300-BM-BMR-6000	170714	Aug. 08, 2018
3	EMI Test Receiver	R&S	ESR3	101854	Dec. 17, 2018
4	Measurement Software	Farad	EZ EMC (Version NB-03A)	N/A	N/A

Transmitter Radiated Emissions					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Preamplifier	EMCI	012645B	980267	Feb. 27, 2019
2	Preamplifier	EMCI	EMC02325	980217	Dec. 27, 2019
3	Preamplifier	EMCI	EMC2654045	980030	Feb. 13, 2019
4	Test Cable	EMCI	EMC104-SM-SM-8000	8m	Jan. 03, 2019
5	Test Cable	EMCI	EMC104-SM-SM-800	150207	Jan. 03, 2019
6	Test Cable	EMCI	EEMC104-SM-SM-3000	151205	Jan. 03, 2019
7	MXE EMI Receiver	Agilent	N9038A	MY55420127	Jan. 08, 2019
8	Signal Analyzer	Agilent	N9010A	MY52220990	Feb. 21, 2019
9	Loop Ant	EMCI	LPA600	274	May 03, 2019
10	Horn Ant	SCHWARZBECK	BBHA 9120D	9120D-1342	Feb. 27, 2019
11	Horn Ant	Schwarzbeck	BBHA 9170	187	Dec. 05, 2018
12	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-548	Jan. 15, 2019
13	5dB Attenuator	EMCI	EMCI-N-6-05	AT-N0623	Jan. 15, 2019

6 dB Bandwidth					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	R&S/FSP30	100854	May 24, 2019

Peak Output Power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	Anritsu	ML2495A	1128008	Aug. 16, 2018
2	Power Sensor	Anritsu	MA2411B	1126001	Aug. 16, 2018

Antenna Conducted Spurious Emissions					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	R&S/FSP30	100854	May 24, 2019

Power Spectral Density					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	R&S/FSP30	100854	May 24, 2019

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

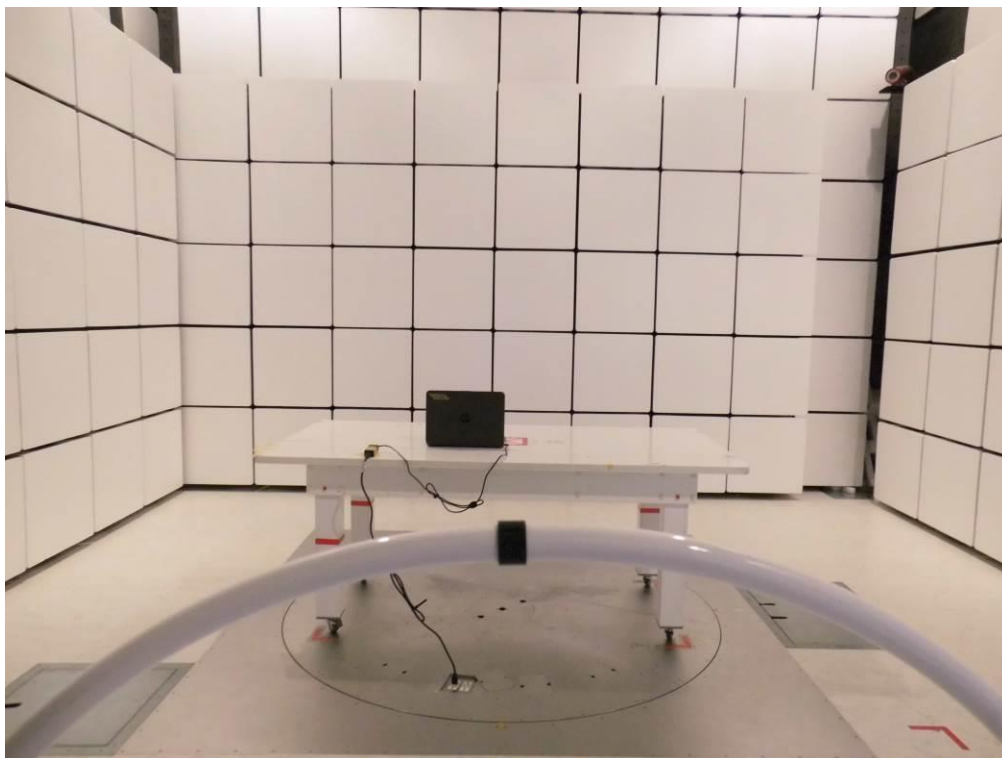
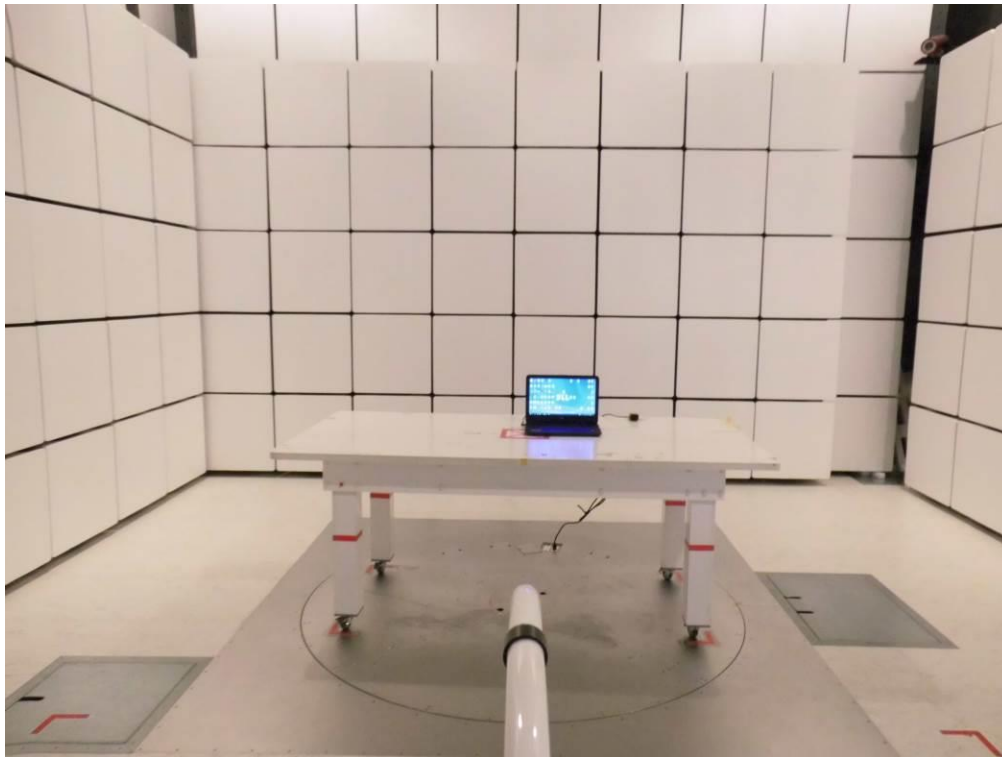
11 EUT TEST PHOTO

Conducted Emission Test Photos



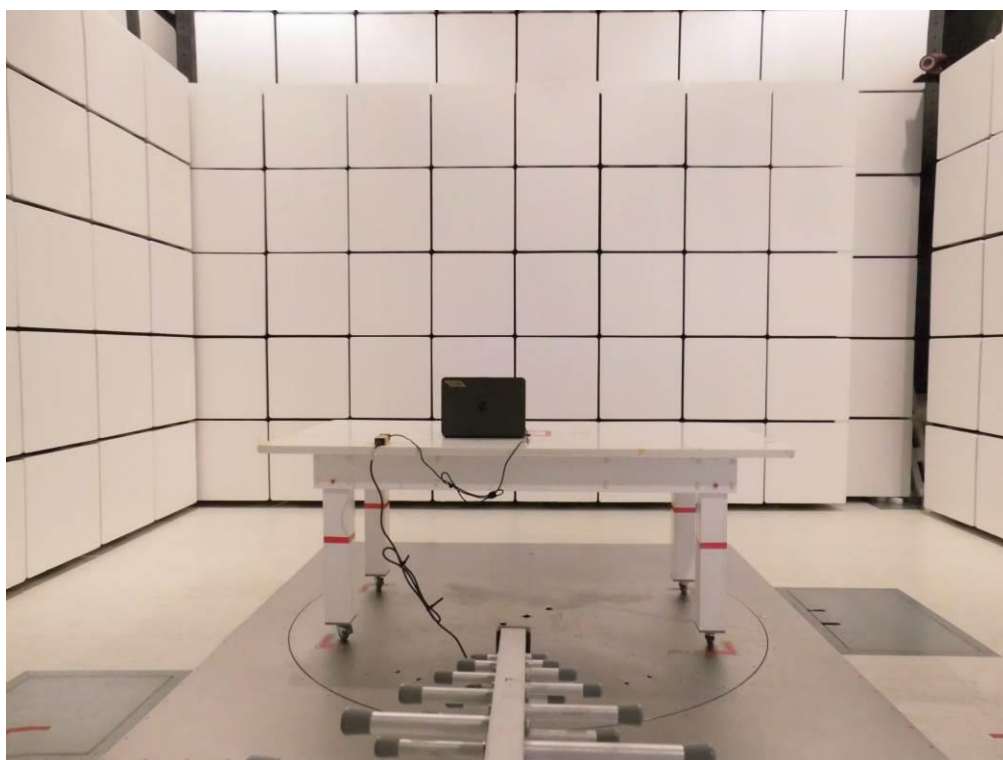
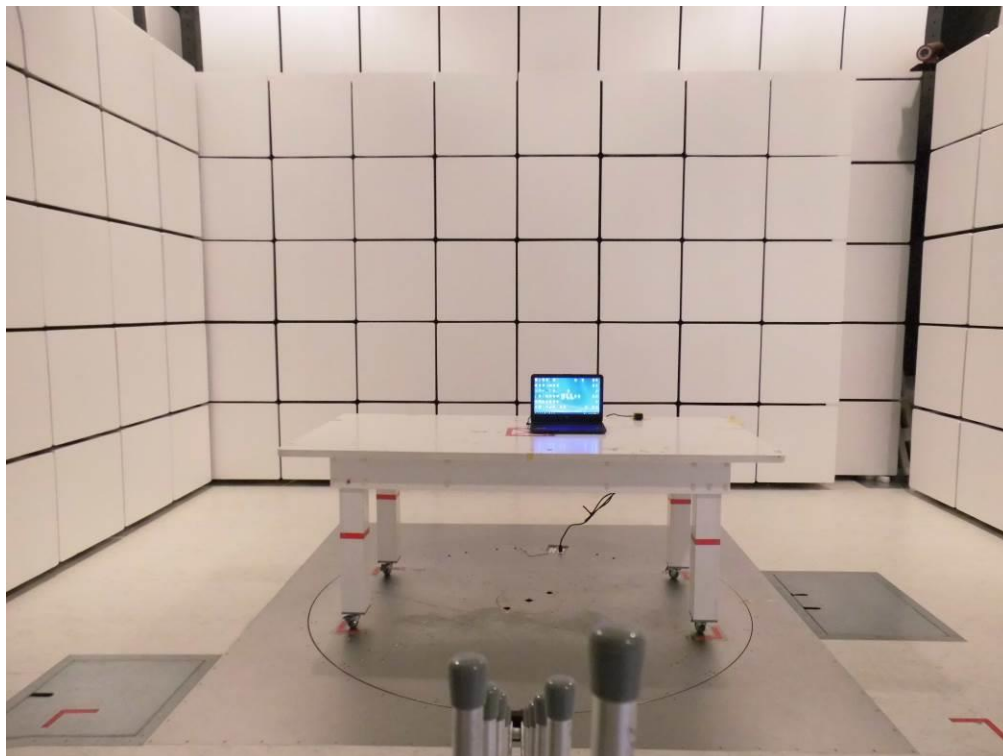
Transmitter Radiated Emissions Test Photos

9 kHz to 30 MHz



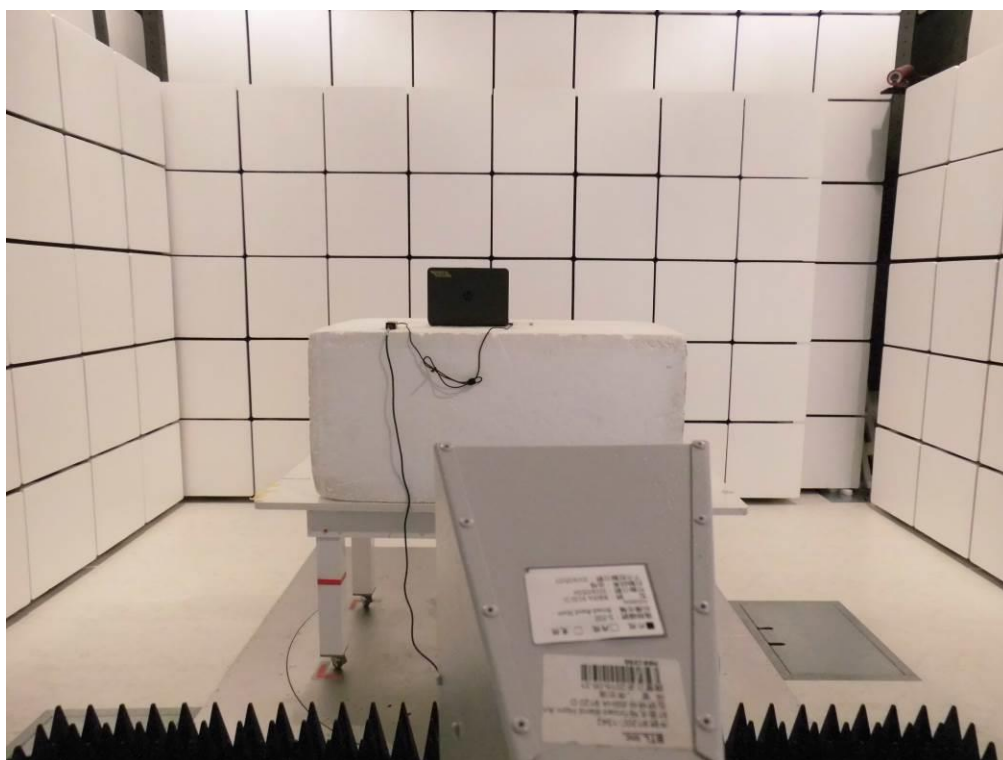
Transmitter Radiated Emissions Test Photos

30 MHz to 1000 MHz

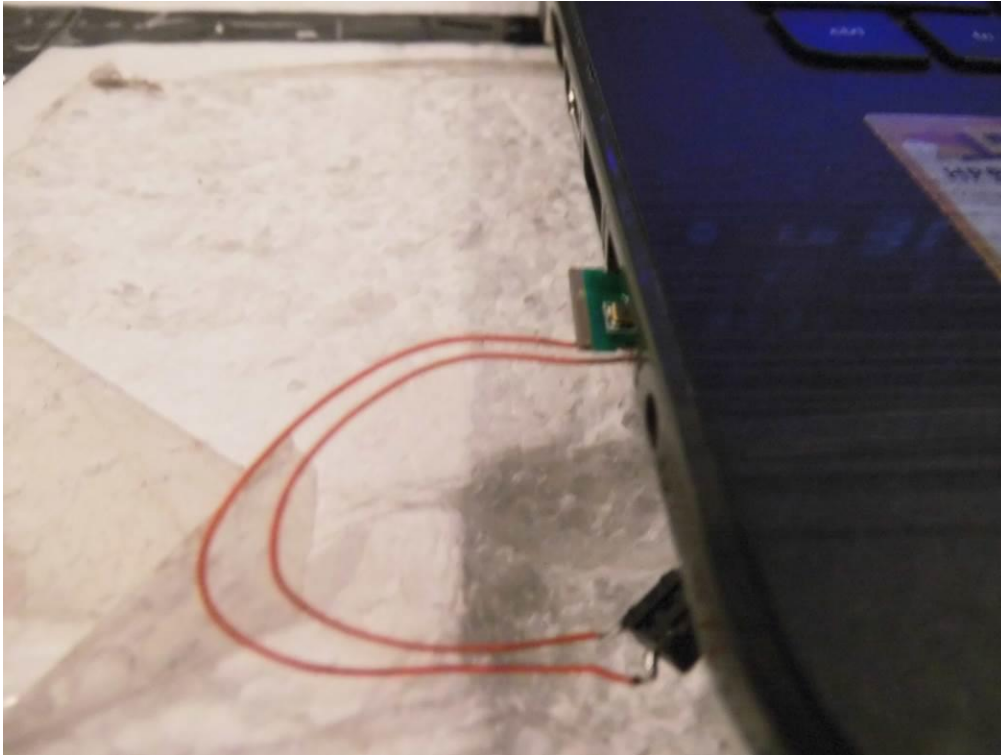


Transmitter Radiated Emissions Test Photos

Above 1000 MHz



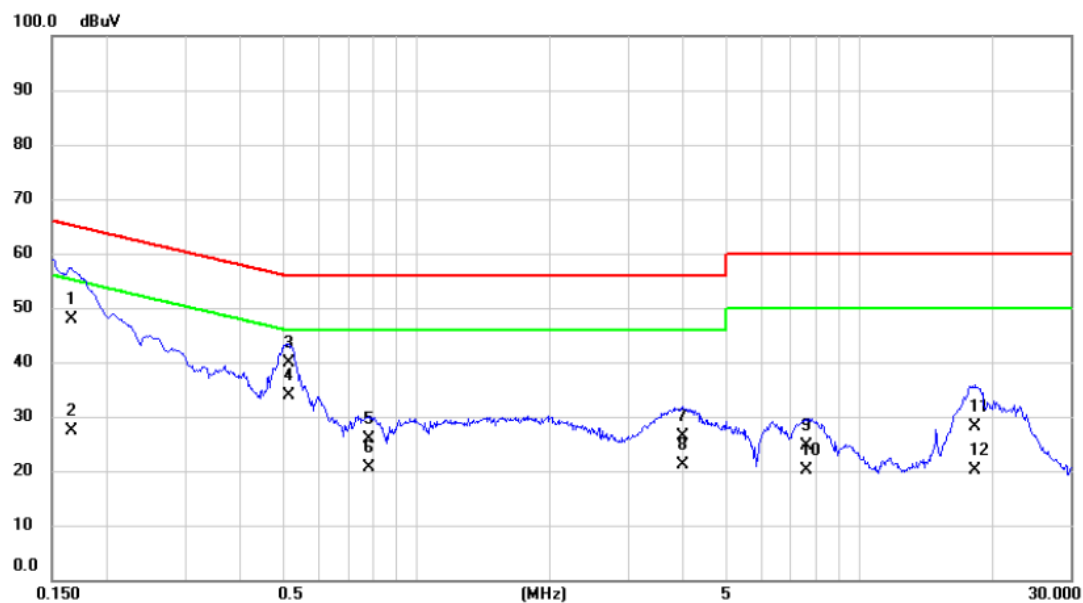
Transmitter Radiated Emissions Test Photos



APPENDIX A CONDUCTED EMISSION

Test Mode: TX Mode

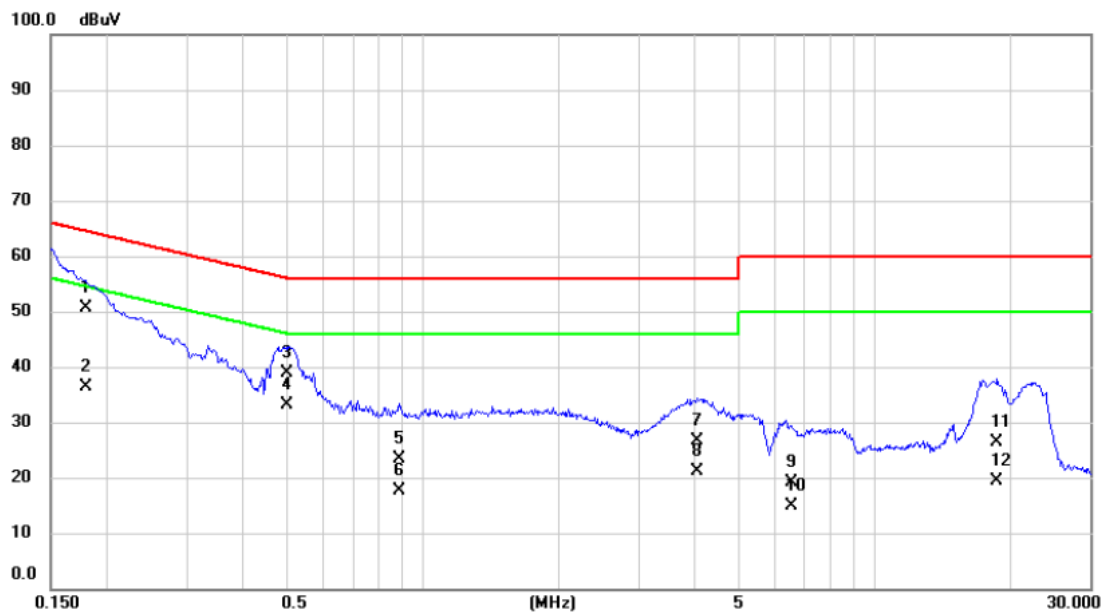
Line



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1658	38.20	9.63	47.83	65.17	-17.34	QP	
2		0.1658	17.70	9.63	27.33	55.17	-27.84	AVG	
3		0.5144	30.10	9.66	39.76	56.00	-16.24	QP	
4	*	0.5144	24.10	9.66	33.76	46.00	-12.24	AVG	
5		0.7800	16.10	9.67	25.77	56.00	-30.23	QP	
6		0.7800	11.00	9.67	20.67	46.00	-25.33	AVG	
7		4.0020	16.60	9.74	26.34	56.00	-29.66	QP	
8		4.0020	11.50	9.74	21.24	46.00	-24.76	AVG	
9		7.5795	14.70	9.84	24.54	60.00	-35.46	QP	
10		7.5795	10.20	9.84	20.04	50.00	-29.96	AVG	
11		18.2783	18.20	9.96	28.16	60.00	-31.84	QP	
12		18.2783	10.10	9.96	20.06	50.00	-29.94	AVG	

Test Mode: TX Mode

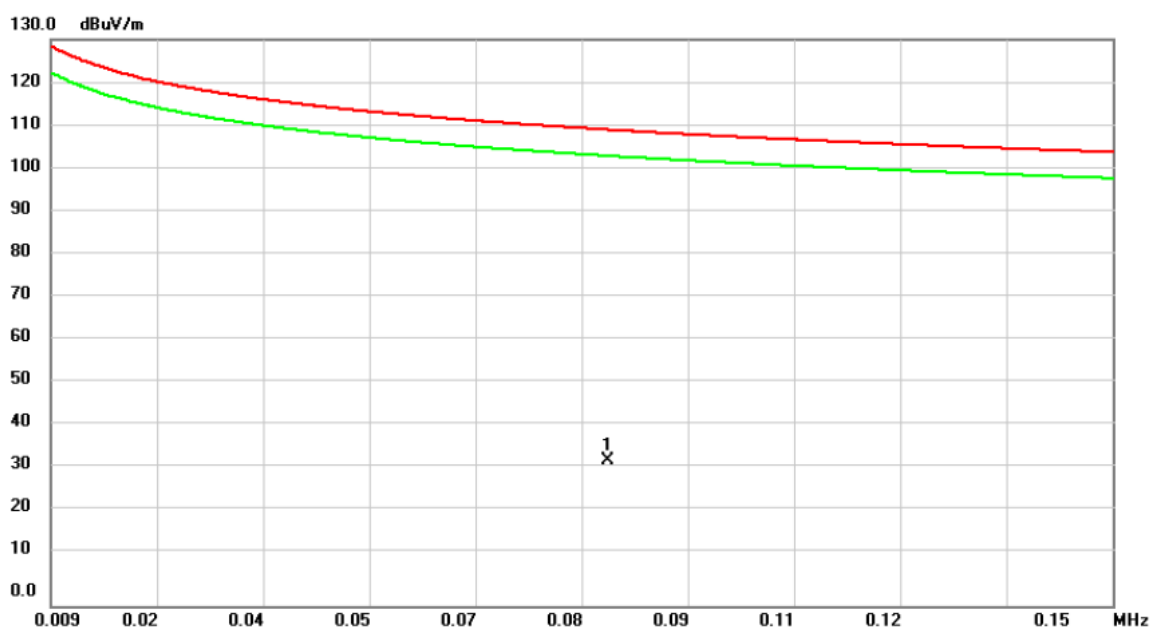
Neutral



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	Level	Factor	ment			Detector	Comment
			dBuV	dB	dBuV	dBuV	dB		
1		0.1793	40.90	9.61	50.51	64.52	-14.01	QP	
2		0.1793	26.80	9.61	36.41	54.52	-18.11	AVG	
3		0.5010	29.20	9.65	38.85	56.00	-17.15	QP	
4	*	0.5010	23.60	9.65	33.25	46.00	-12.75	AVG	
5		0.8857	13.60	9.66	23.26	56.00	-32.74	QP	
6		0.8857	8.00	9.66	17.66	46.00	-28.34	AVG	
7		4.0538	16.90	9.73	26.63	56.00	-29.37	QP	
8		4.0538	11.30	9.73	21.03	46.00	-24.97	AVG	
9		6.5558	9.20	9.81	19.01	60.00	-40.99	QP	
10		6.5558	5.10	9.81	14.91	50.00	-35.09	AVG	
11		18.6878	16.30	9.97	26.27	60.00	-33.73	QP	
12		18.6878	9.30	9.97	19.27	50.00	-30.73	AVG	

APPENDIX B TRANSMITTER RADIATED EMISSIONS - 9 KHZ TO 30 MHZ

Test Mode	Mode 1_90	Polarization	Vertical
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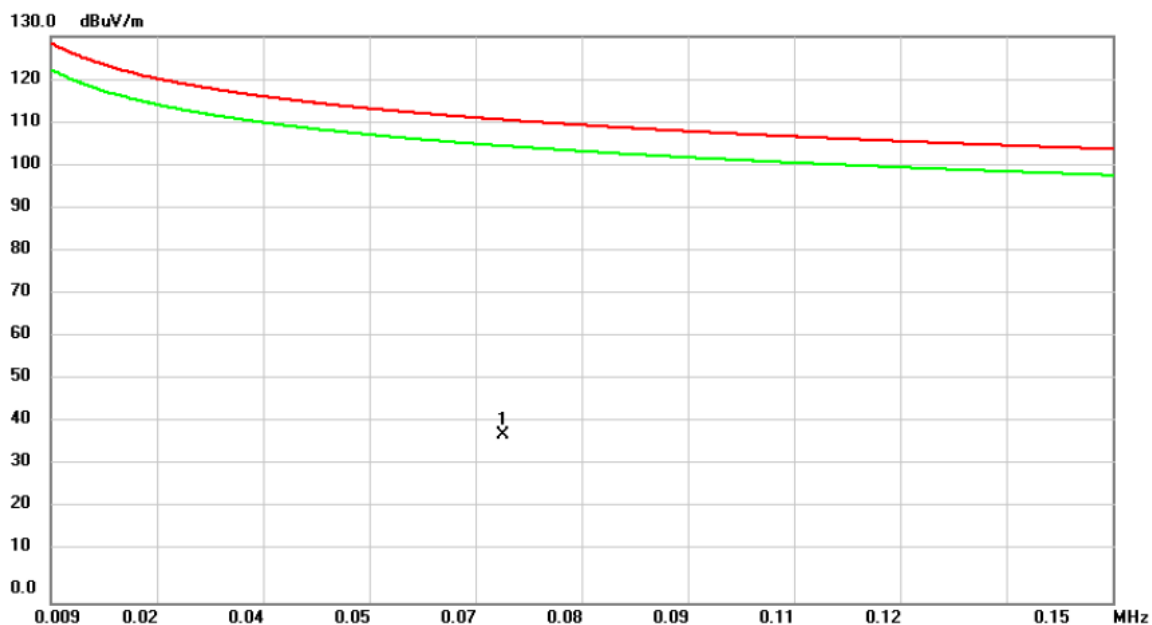
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0830	15.47	17.94	33.41	109.22	-75.81	peak	

Test Mode	Mode 1_90	Polarization	Vertical
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No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.2694	30.01	8.03	38.04	99.00	-60.96	peak	
2	*	1.0256	29.01	-0.41	28.60	67.38	-38.78	peak	
3		2.3390	28.73	-3.19	25.54	69.54	-44.00	peak	
4		3.8116	29.80	-3.77	26.03	69.54	-43.51	peak	
5		6.1200	29.73	-4.04	25.69	69.54	-43.85	peak	
6		8.9060	29.11	-4.67	24.44	69.54	-45.10	peak	

Test Mode	Mode 1_0	Polarization	Horizontal
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No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0690	19.11	19.45	38.56	110.83	-72.27	peak	

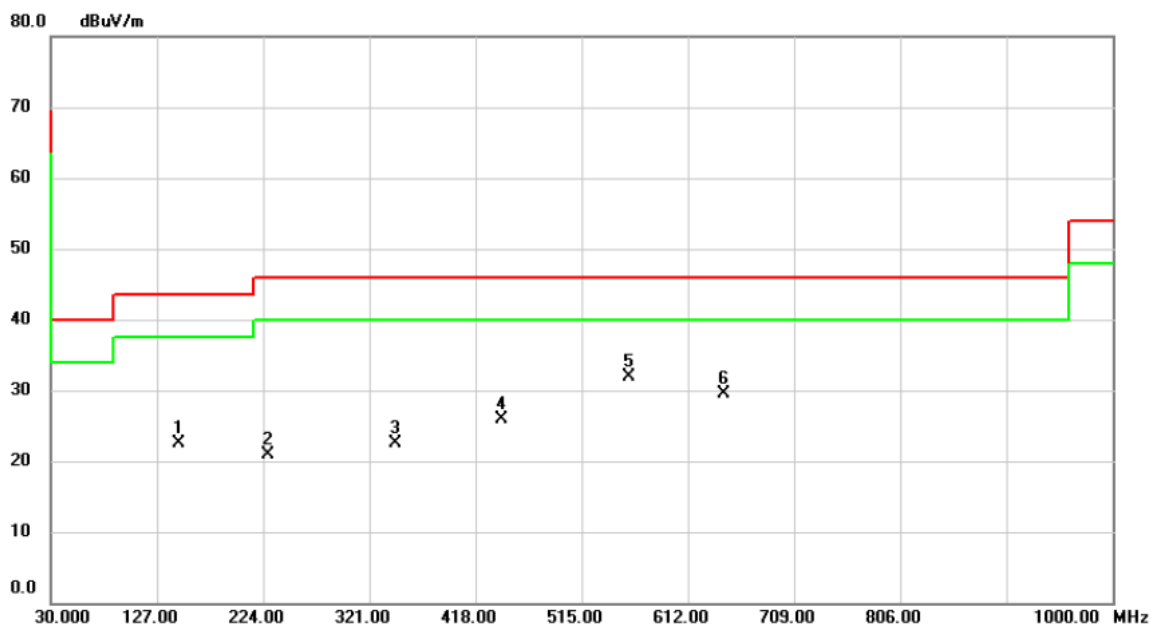
Test Mode	Mode 1_0	Polarization	Horizontal
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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		0.3490	29.69	5.95	35.64	96.75	-61.11	peak	
2	*	0.8266	29.67	0.40	30.07	69.26	-39.19	peak	
3		1.9012	29.29	-2.68	26.61	69.54	-42.93	peak	
4		3.3738	27.96	-3.71	24.25	69.54	-45.29	peak	
5		7.3538	28.57	-4.20	24.37	69.54	-45.17	peak	
6		11.0552	28.85	-4.81	24.04	69.54	-45.50	peak	

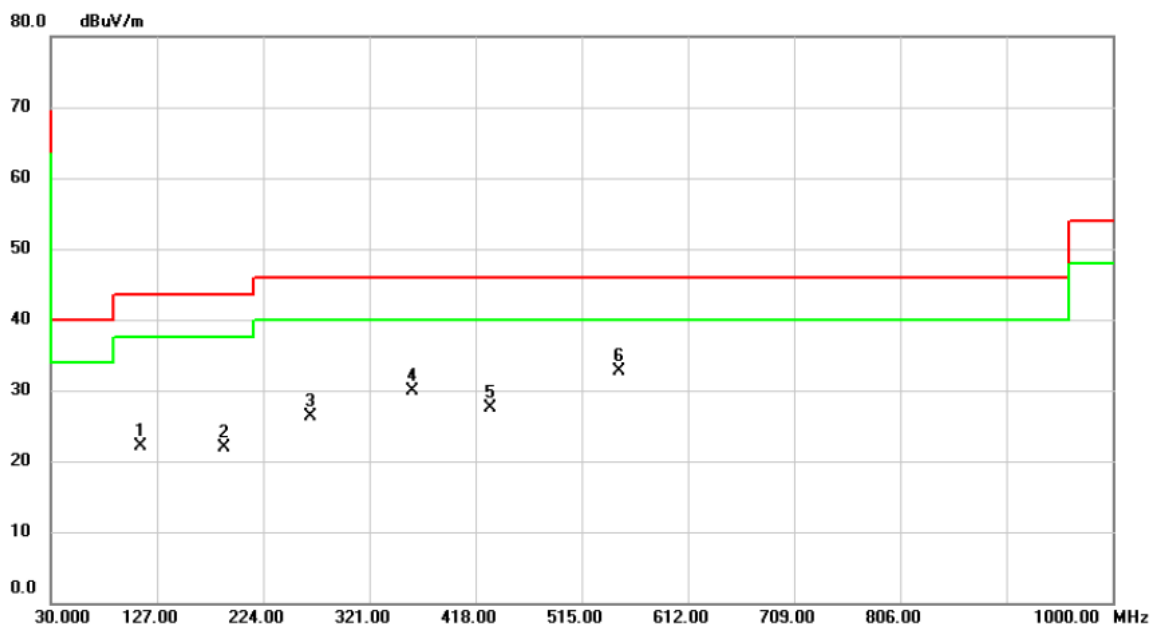
APPENDIX C TRANSMITTER RADIATED EMISSIONS - 30 MHZ TO 1000 MHZ

Test Mode	Mode 1_2468 MHz	Polarization	Vertical
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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		147.3700	31.22	-8.67	22.55	43.50	-20.95	peak	
2		228.8500	30.62	-9.68	20.94	46.00	-25.06	peak	
3		344.2800	28.89	-6.35	22.54	46.00	-23.46	peak	
4		441.2800	29.87	-4.01	25.86	46.00	-20.14	peak	
5	*	558.6500	33.65	-1.73	31.92	46.00	-14.08	peak	
6		644.9800	29.38	0.13	29.51	46.00	-16.49	peak	

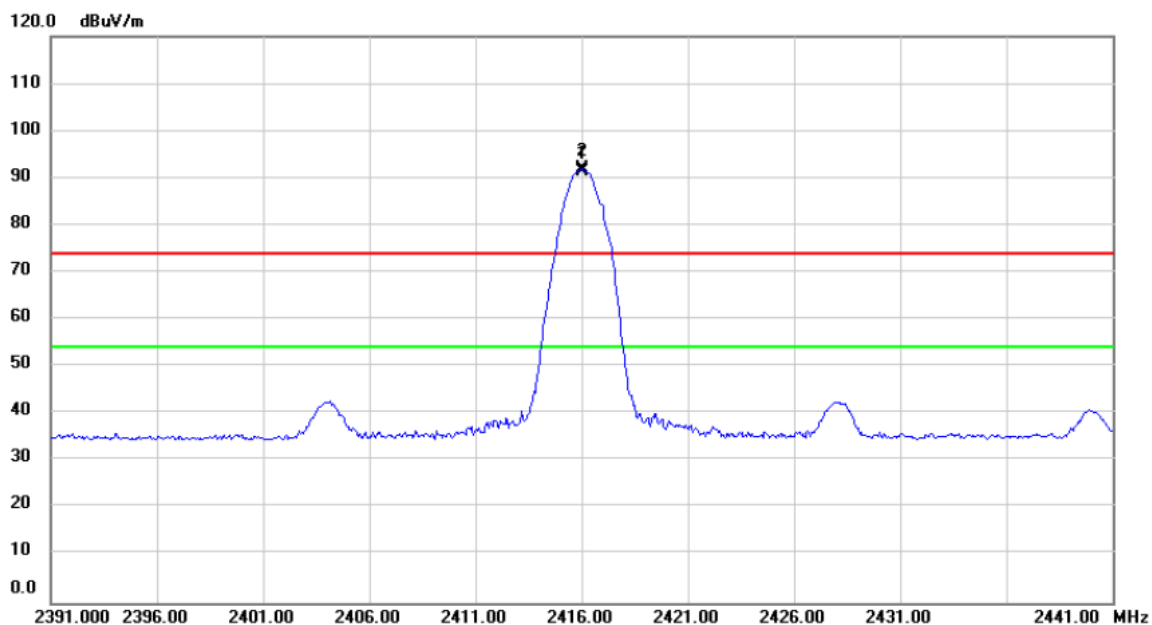
Test Mode	Mode 1_2468 MHz	Polarization	Horizontal
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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		111.4800	33.20	-11.15	22.05	43.50	-21.45	peak	
2		188.1100	32.53	-10.64	21.89	43.50	-21.61	peak	
3		267.6500	34.48	-8.17	26.31	46.00	-19.69	peak	
4		359.8000	35.96	-5.97	29.99	46.00	-16.01	peak	
5		431.5800	31.84	-4.27	27.57	46.00	-18.43	peak	
6	*	549.9200	34.73	-2.02	32.71	46.00	-13.29	peak	

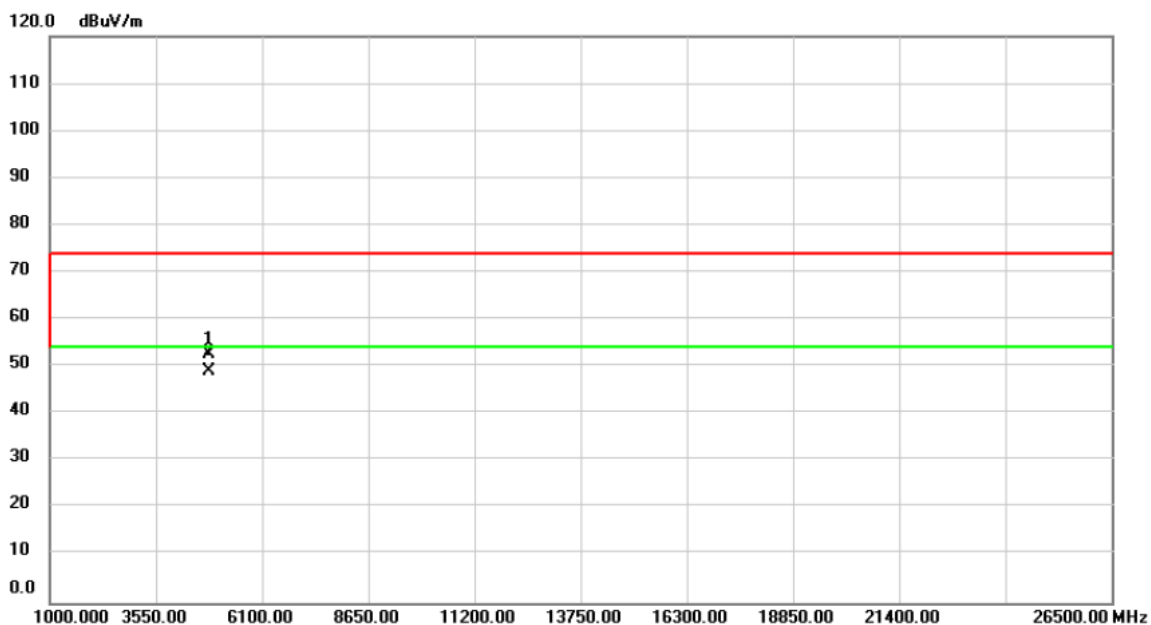
APPENDIX D TRANSMITTER RADIATED EMISSIONS - ABOVE 1000 MHZ

Test Mode	Mode 1_2416 MHz	Polarization	Vertical
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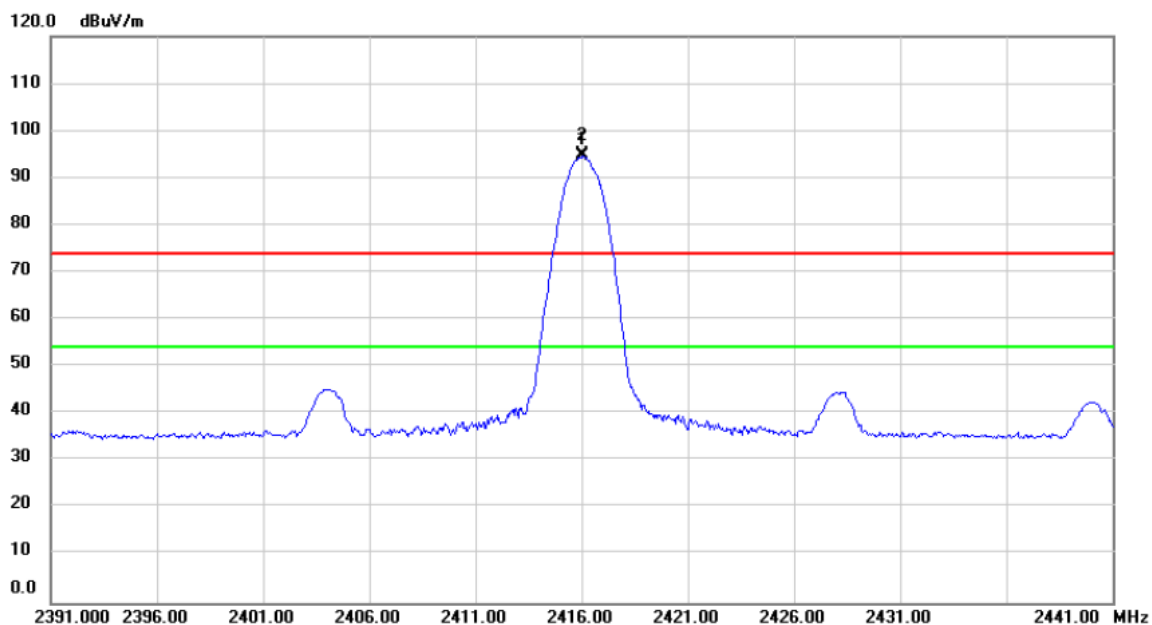
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2416.000	60.92	30.93	91.85	74.00	17.85	peak	No Limit
2	*	2416.000	60.37	30.93	91.30	54.00	37.30	A/VG	No Limit

Test Mode	Mode 1_2416 MHz	Polarization	Vertical
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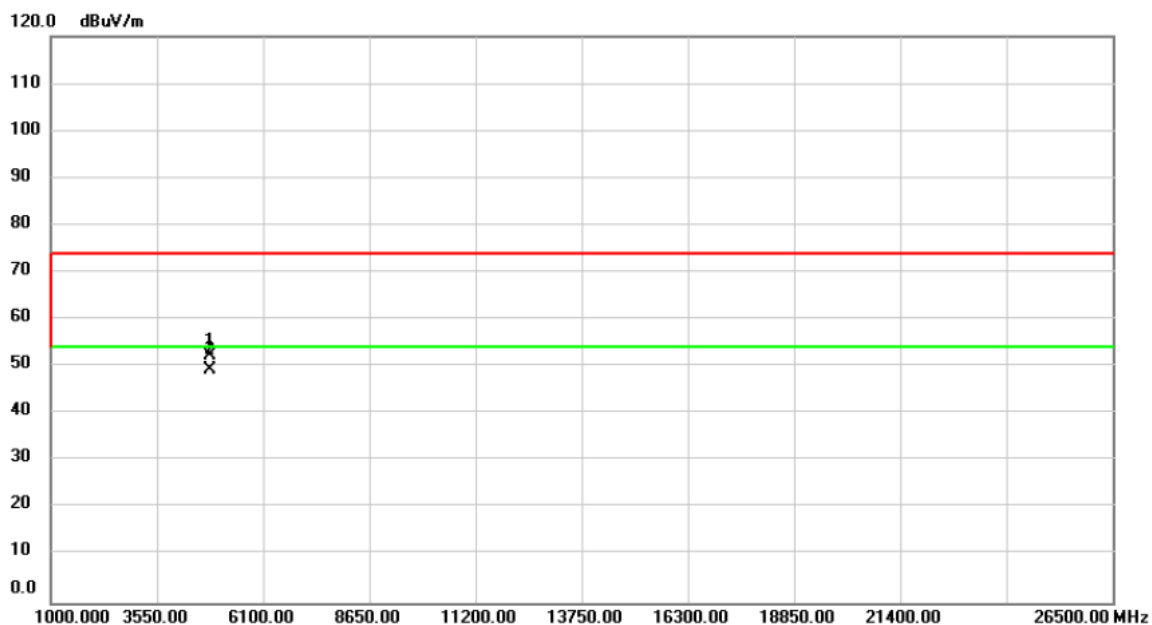
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4832.000	64.22	-11.47	52.75	74.00	-21.25	peak	
2	*	4832.000	60.57	-11.47	49.10	54.00	-4.90	AVG	

Test Mode	Mode 1_2416 MHz	Polarization	Horizontal
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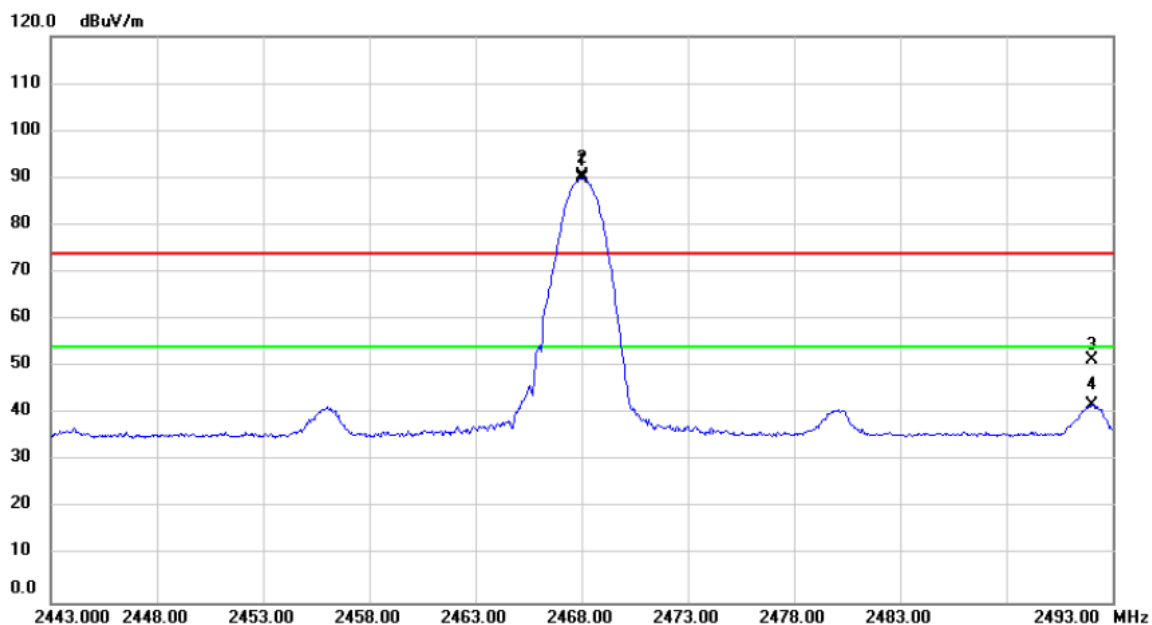
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2416.000	64.08	30.93	95.01	74.00	21.01	peak	No Limit
2	*	2416.000	63.67	30.93	94.60	54.00	40.60	A/VG	No Limit

Test Mode	Mode 1_2416 MHz	Polarization	Horizontal
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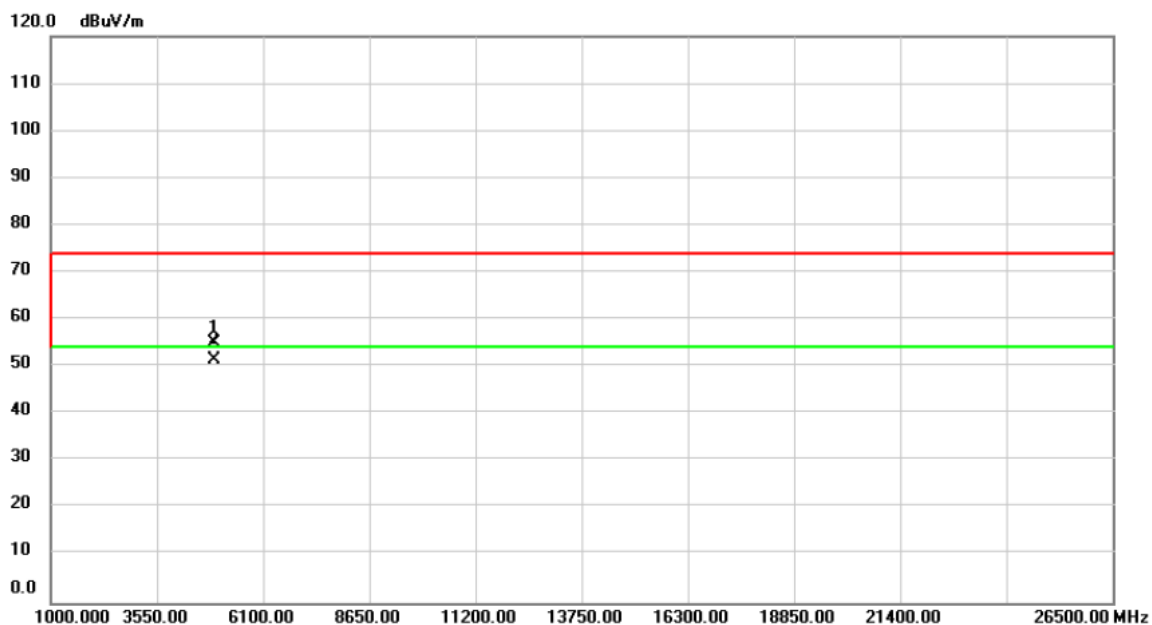
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4832.000	63.88	-11.47	52.41	74.00	-21.59	peak	
2	*	4832.000	60.88	-11.47	49.41	54.00	-4.59	AVG	

Test Mode	Mode 1_2468 MHz	Polarization	Vertical
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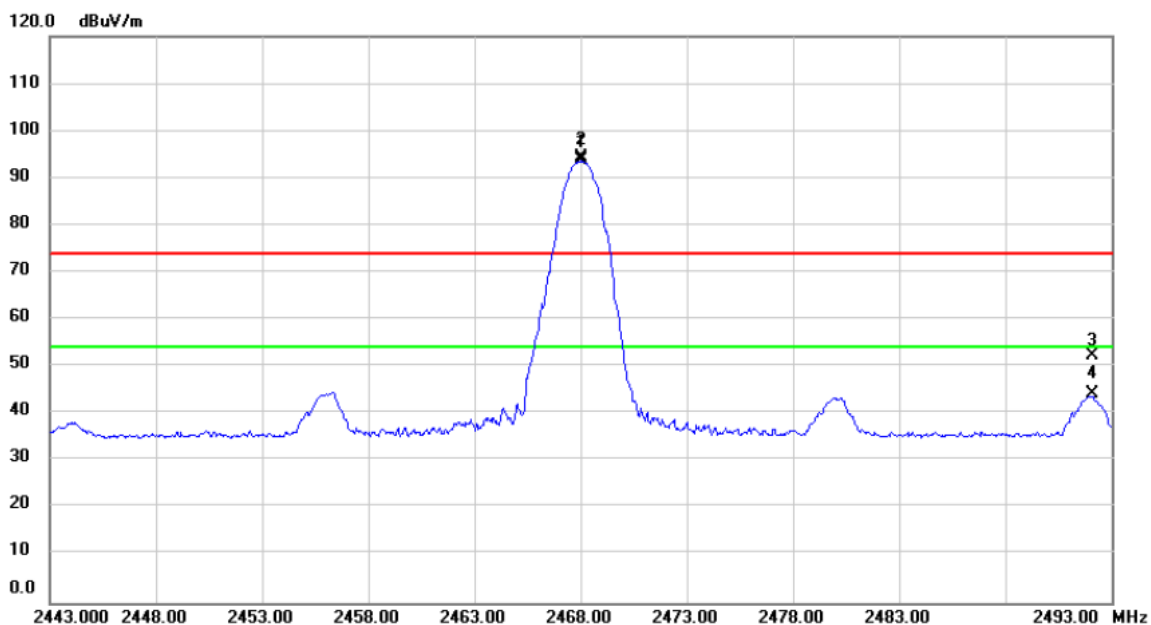
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2468.000	59.37	31.12	90.49	74.00	16.49	peak	No Limit
2	*	2468.000	58.74	31.12	89.86	54.00	35.86	AVG	No Limit
3		2492.021	20.27	31.20	51.47	74.00	-22.53	peak	
4		2492.021	10.51	31.20	41.71	54.00	-12.29	AVG	

Test Mode	Mode 1_2468 MHz	Polarization	Vertical
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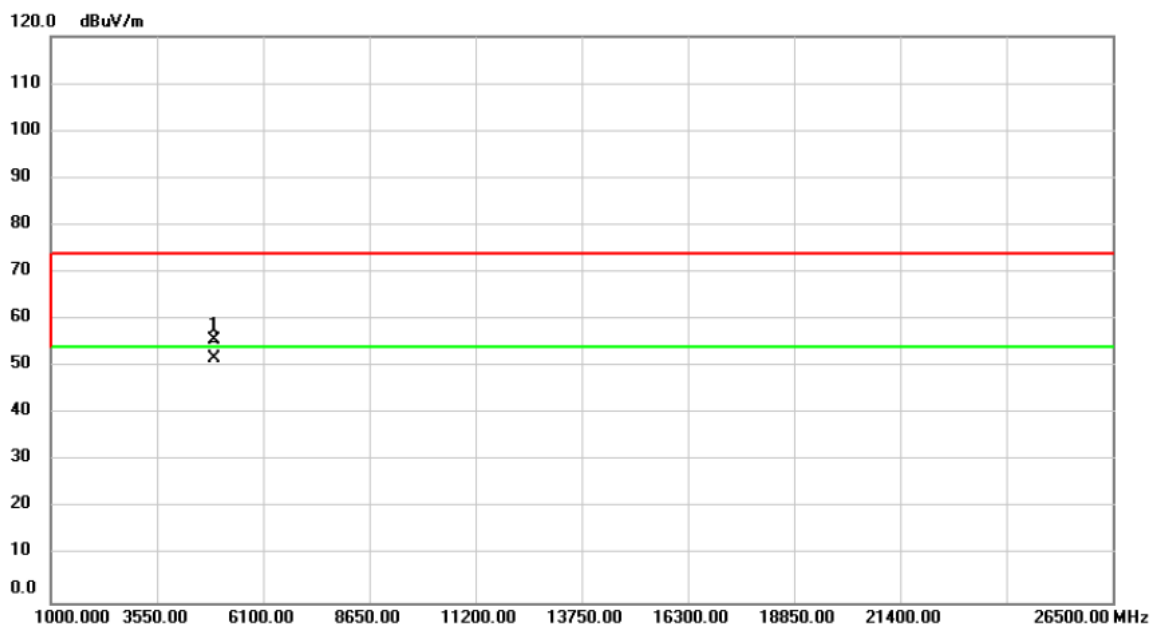
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4936.000	66.37	-11.36	55.01	74.00	-18.99	peak	
2	*	4936.000	62.94	-11.36	51.58	54.00	-2.42	AVG	

Test Mode	Mode 1_2468 MHz	Polarization	Horizontal
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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2468.000	63.14	31.12	94.26	74.00	20.26	peak	No Limit
2	*	2468.000	62.60	31.12	93.72	54.00	39.72	AVG	No Limit
3		2492.107	21.30	31.20	52.50	74.00	-21.50	peak	
4		2492.107	12.99	31.20	44.19	54.00	-9.81	AVG	

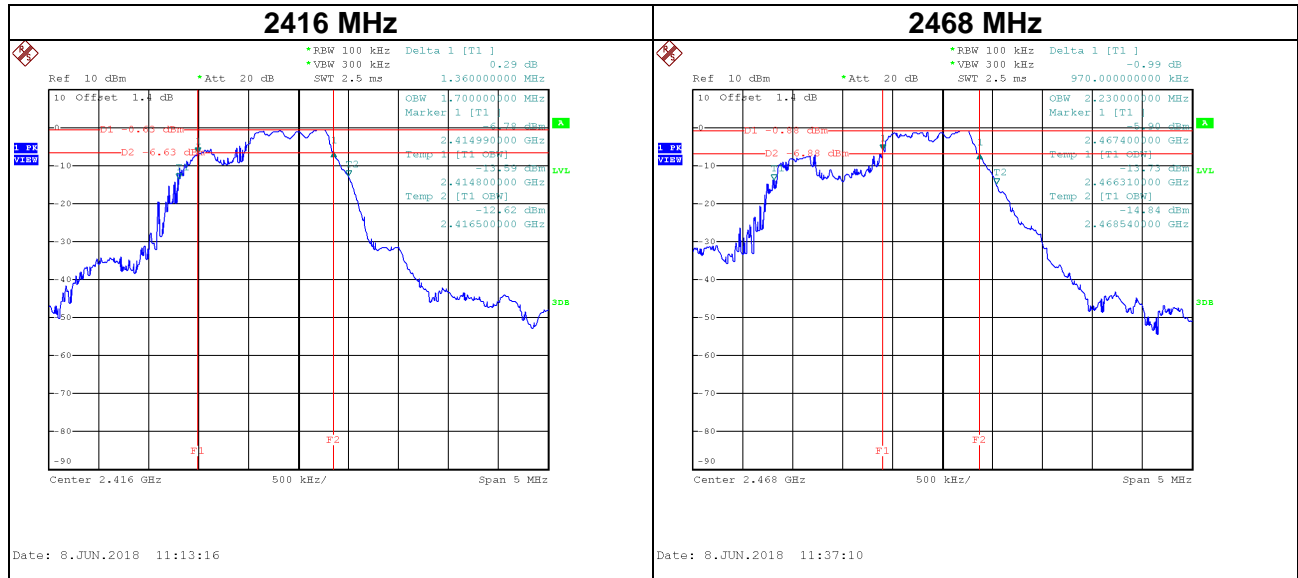
Test Mode	Mode 1_2468 MHz	Polarization	Horizontal
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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4936.000	67.01	-11.36	55.65	74.00	-18.35	peak	
2	*	4936.000	63.22	-11.36	51.86	54.00	-2.14	AVG	

APPENDIX E 6 DB BANDWIDTH

Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied BW (MHz)	6 dB BW Min. Limit (kHz)	Result
2416	1.36	1.70	500	Complies
2468	0.97	2.23	500	Complies

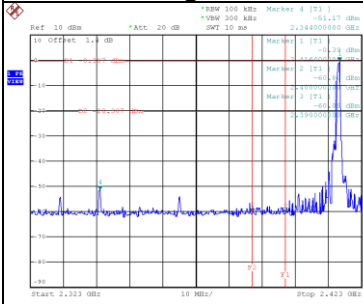


APPENDIX F PEAK OUTPUT POWER

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2416	-0.35	0.0009	30.00	1.0000	Complies
2468	-0.46	0.0009	30.00	1.0000	Complies

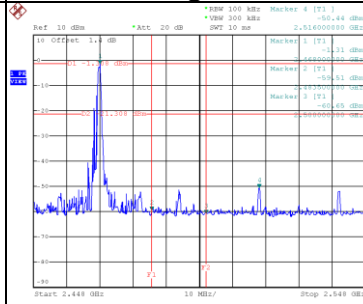
APPENDIX G ANTENNA CONDUCTED SPURIOUS EMISSIONS

Bandedge-2416 MHz



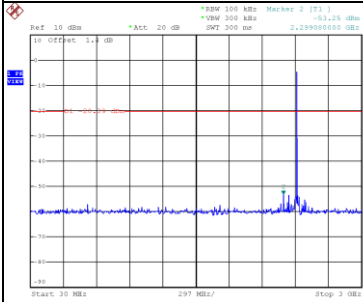
Date: 6/JUN/2018 12:09:13

Bandedge-2468 MHz

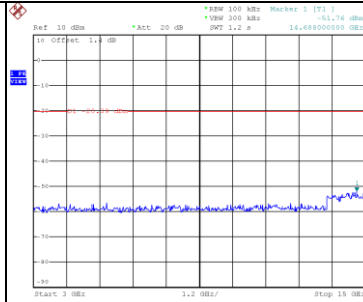


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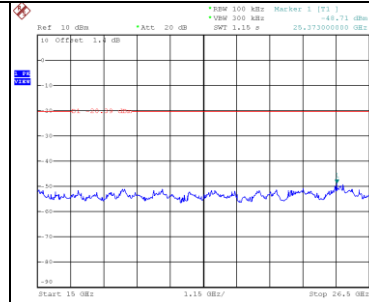
2416 MHz – 10 Harmonics



Date: 6/JUN/2018 12:09:32

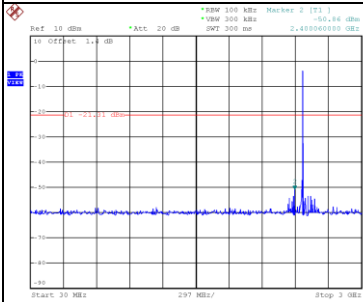


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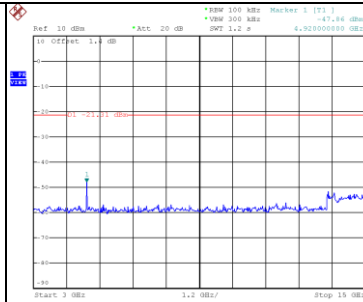


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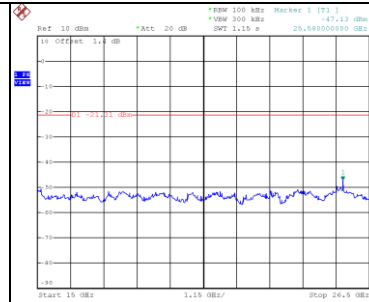
2468 MHz – 10 Harmonics



Date: 6/JUN/2018 12:13:07



Date: 6/JUN/2018 12:13:20



Date: 6/JUN/2018 12:13:32

APPENDIX H POWER SPECTRAL DENSITY

Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
2416	-12.92	8	Complies
2468	-13.91	8	Complies

