

TEST REPORT

FCC ID Applicant: Kohler Co.
FCC ID Address of Applicant: 444 Highland Drive, Kohler, Wisconsin 53044, United States
ISED Applicant: KOHLER CO.
ISED Address of Applicant: 444 Highland Dr. Kohler WI 53044 United States Of America
Manufacturer: Computime Ltd.
Address of Manufacturer: 6/F, Building 20E, Phase 3, Hong Kong Science Park, 20 Science Park East Avenue Shatin, New Territories Hongkong
Equipment Under Test (EUT)
Product Name: Control System for Touchless Response Technology
Model No.: 1329429, 1346448
Remark: 1329429 is Control Unit with Short Output, 1346448 is Control Unit with Tall Output
Trade Mark: Kohler
FCC ID: N82-KOHLER040
IC: 4554A-KOHLER040
Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.249
RSS-Gen Issue 5
RSS-210 Issue 10
Date of sample receipt: June 12, 2020
Date of Test: June 12-18, 2020
Date of report issued: June 18, 2020
Test Result : PASS *

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

Authorized Signature:

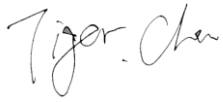
Robinson Lo

Laboratory Manager

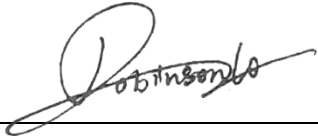
This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

2 Version

Version No.	Date	Description
00	June 18, 2020	Original

Prepared By:  **Date:** June 18, 2020

Project Engineer

Check By:  **Date:** June 18, 2020

Reviewer

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4 Test Summary

Test Item	Section	Result
Antenna requirement	15.203 RSS-Gen Section 6.8	Pass
AC Power Line Conducted Emission	15.207 RSS-Gen Section 8.8	N/A
Field strength of the fundamental signal	15.249 (a) RSS-210 B10(a)	Pass
Spurious emissions	15.249 (a) (d)/15.209 RSS-210 B10(b)& RSS-Gen Clause 8.9&8.10	Pass
Band edge	15.249 (d)/15.205 RSS-210 B10(b)& RSS-Gen Clause 8.9&8.10	Pass
20dB Occupied Bandwidth 99% Occupied Bandwidth	15.215 (c) RSS-Gen 6.7	Pass

Remarks:

1. Test according to ANSI C63.10: 2013.
2. Pass: The EUT complies with the essential requirements in the standard.
3. N/A: Not applicable.

4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	30MHz-200MHz	3.8039dB	(1)
Radiated Emission	200MHz-1GHz	3.9679dB	(1)
Radiated Emission	1GHz-18GHz	4.29dB	(1)
Radiated Emission	18GHz-40GHz	3.30dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	3.44dB	(1)

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

5 General Information

5.1 General Description of EUT

Product Name:	Control System for Touchless Response Technology
Model No.:	1329429, 1346448 Remark: 1329429 is Control Unit with Short Output, 1346448 is Control Unit with Tall Output
Test Model No.:	1329429
Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The differences are dimension and model name for commercial purpose.	
Serial No.:	202014000071
Hardware version:	1329518 Rev-
Software version:	1340810 Rev-
Test sample(s) ID:	GTS202006000132-1
Sample(s) Status	Engineered sample
Operation Frequency:	2402MHz~2480MHz
Channel numbers:	40
Channel separation:	2MHz
Modulation type:	GFSK
Antenna Type:	Integral antenna
Antenna gain:	0dBi(declare by applicant)
Power supply:	DC 6.4V

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402 MHz	11	2422 MHz	21	2442 MHz	31	2462 MHz
2	2404 MHz	12	2424 MHz	22	2444 MHz	32	2464 MHz
3	2406 MHz	13	2426 MHz	23	2446 MHz	33	2466 MHz
4	2408 MHz	14	2428 MHz	24	2448 MHz	34	2468 MHz
5	2410 MHz	15	2430 MHz	25	2450 MHz	35	2470 MHz
6	2412 MHz	16	2432 MHz	26	2452 MHz	36	2472 MHz
7	2414 MHz	17	2434 MHz	27	2454 MHz	37	2474 MHz
8	2416 MHz	18	2436 MHz	28	2456 MHz	38	2476 MHz
9	2418 MHz	19	2438 MHz	29	2458 MHz	39	2478 MHz
10	2420 MHz	20	2440 MHz	30	2460 MHz	40	2480 MHz

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	2402MHz
The middle channel	2440MHz
The Highest channel	2480MHz

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode.
<i>Remark: Full battery is used during all test.</i>	

Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

Axis	X	Y	Z
Field Strength(dBuV/m)	81.45	82.45	80.26

5.3 Description of Support Units

None.

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 Test Facility

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

- **FCC —Registration No.: 381383**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 381383.

- **IC —Registration No.: 9079A**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A.

- **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). LAB CODE:600179-0

5.7 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

5.8 Additional Instructions

Test Software	Special test software pre built inby manufacturer
Power level setup	Default

6 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 03 2015	July. 02 2020
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 26 2019	June. 25 2020
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 26 2019	June. 25 2020
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 26 2019	June. 25 2020
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 26 2019	June. 25 2020
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 26 2019	June. 25 2020
9	Coaxial Cable	GTS	N/A	GTS211	June. 26 2019	June. 25 2020
10	Coaxial cable	GTS	N/A	GTS210	June. 26 2019	June. 25 2020
11	Coaxial Cable	GTS	N/A	GTS212	June. 26 2019	June. 25 2020
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 26 2019	June. 25 2020
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 26 2019	June. 25 2020
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 26 2019	June. 25 2020
15	Band filter	Amindeon	82346	GTS219	June. 26 2019	June. 25 2020
16	Power Meter	Anritsu	ML2495A	GTS540	June. 26 2019	June. 25 2020
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 26 2019	June. 25 2020
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 26 2019	June. 25 2020
19	Splitter	Agilent	11636B	GTS237	June. 26 2019	June. 25 2020
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 26 2019	June. 25 2020
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 19 2019	Oct. 18 2020
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 19 2019	Oct. 18 2020
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 19 2019	Oct. 18 2020
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 26 2019	June. 25 2020

RF Conducted Test:						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 26 2019	June. 25 2020
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 26 2019	June. 25 2020
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 26 2019	June. 25 2020
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 26 2019	June. 25 2020
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 26 2019	June. 25 2020
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 26 2019	June. 25 2020
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 26 2019	June. 25 2020
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 26 2019	June. 25 2020

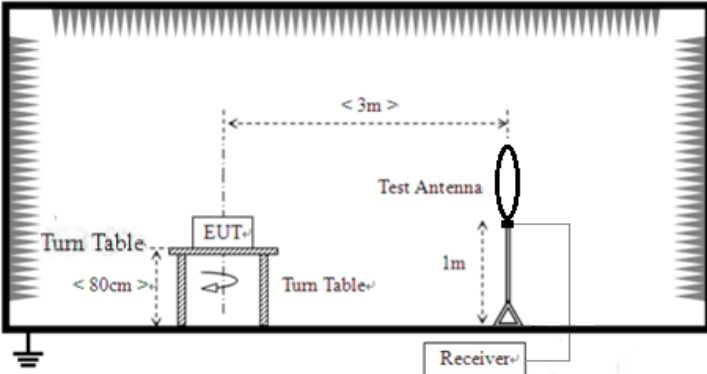
General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 26 2019	June. 25 2020
2	Barometer	ChangChun	DYM3	GTS255	June. 26 2019	June. 25 2020

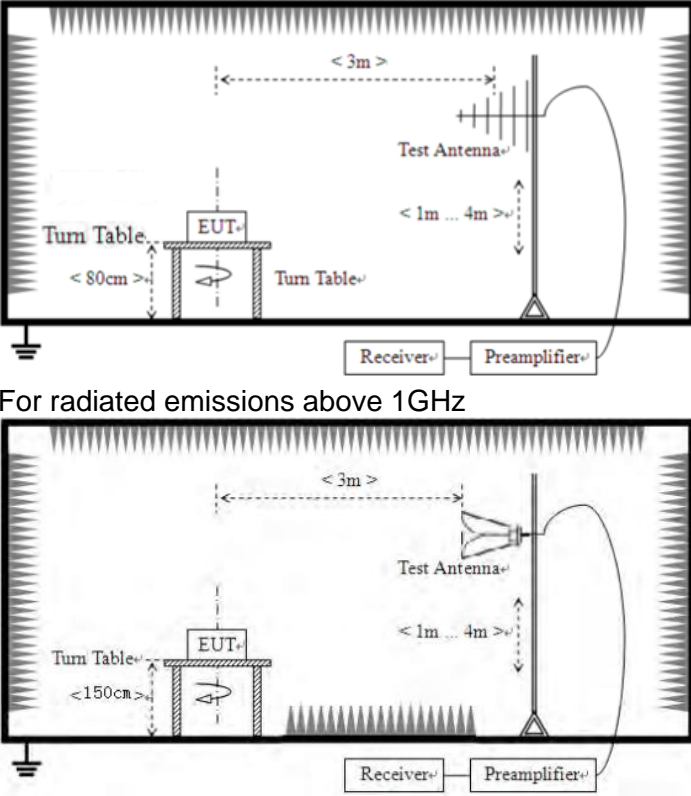
7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement:
<p>FCC part 15.203 requirement:</p> <p>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.</p>
<p>RSS-Gen 6.8:</p> <p>The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.</p> <p>For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).</p>
EUT Antenna:
<i>The antenna is integral antenna, the best case gain of the antenna is 0dBi, reference to the appendix II for details</i>

7.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 RSS-210 B10(a)& RSS-210 B10(b)& RSS-Gen Clause 8.9&8.10				
Test Method:	ANSI C63.10: 2013 & RSS-Gen				
Test Frequency Range:	9kHz to 25GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	9kHz-150kHz	Quasi-peak	200Hz	300Hz	Quasi-peak Value
	150kHz-30MHz	Quasi-peak	9kHz	10kHz	Quasi-peak Value
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		Peak	1MHz	10Hz	Average Value
Limit: (Field strength of the fundamental signal)	Frequency	Limit (dBuV/m @3m)		Remark	
	2400MHz-2483.5MHz	94.00		Average Value	
		114.00		Peak Value	
Limit: (Spurious Emissions)	Frequency	Limit (uV/m)		Remark	
	0.009MHz-0.490MHz	2400/F(kHz) @300m		Quasi-peak Value	
	0.490MHz-1.705MHz	24000/F(kHz) @30m		Quasi-peak Value	
	1.705MHz-30.0MHz	30 @30m		Quasi-peak Value	
	30MHz-88MHz	100 @3m		Quasi-peak Value	
	88MHz-216MHz	150 @3m		Quasi-peak Value	
	216MHz-960MHz	200 @3m		Quasi-peak Value	
	960MHz-1GHz	500 @3m		Quasi-peak Value	
	Above 1GHz	500 @3m		Average Value	
		5000 @3m		Peak Value	
Limit: (band edge)	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 to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.				
Test setup:	<p>For radiated emissions from 9kHz to 30MHz</p>  <p>For radiated emissions from 30MHz to 1GHz</p>				

	 <p>For radiated emissions above 1GHz</p>						
<p>Test Procedure:</p>	<ol style="list-style-type: none"> 1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. 						
<p>Test Instruments:</p>	<p>Refer to section 6.0 for details</p>						
<p>Test mode:</p>	<p>Refer to section 5.2 for details</p>						
<p>Test environment:</p>	<table border="1"> <tr> <td>Temp.:</td> <td>25 °C</td> <td>Humid.:</td> <td>52%</td> <td>Press.:</td> <td>1012mbar</td> </tr> </table>	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar
Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar		
<p>Test voltage:</p>	<p>AC 120V, 60Hz</p>						
<p>Test results:</p>	<p>Pass</p>						

Measurement data:

7.2.1 Field Strength of The Fundamental Signal

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2402.00	88.99	27.41	2.91	36.86	82.45	114.00	-31.55	Horizontal
2402.00	86.21	27.41	2.91	36.86	79.67	114.00	-34.33	Vertical
2440.00	90.28	27.53	2.96	36.89	83.88	114.00	-30.12	Horizontal
2440.00	85.95	28.53	3.96	37.89	80.55	114.00	-33.45	Vertical
2480.00	87.29	27.64	2.99	36.97	80.95	114.00	-33.05	Horizontal
2480.00	82.75	28.64	3.99	37.97	77.41	114.00	-36.59	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2402.00	76.36	27.41	2.91	36.86	69.82	94.00	-24.18	Horizontal
2402.00	73.48	27.41	2.91	36.86	66.94	94.00	-27.06	Vertical
2440.00	79.68	27.53	2.96	36.89	73.28	94.00	-20.72	Horizontal
2440.00	74.35	28.53	3.96	37.89	68.95	94.00	-25.05	Vertical
2480.00	76.82	27.64	2.99	36.97	70.48	94.00	-23.52	Horizontal
2480.00	72.03	28.64	3.99	37.97	66.69	94.00	-27.31	Vertical

Note: *RBW > 20dB BW, VBW > RBW, PK detector is for PK value, RMS detector is for AV value.*

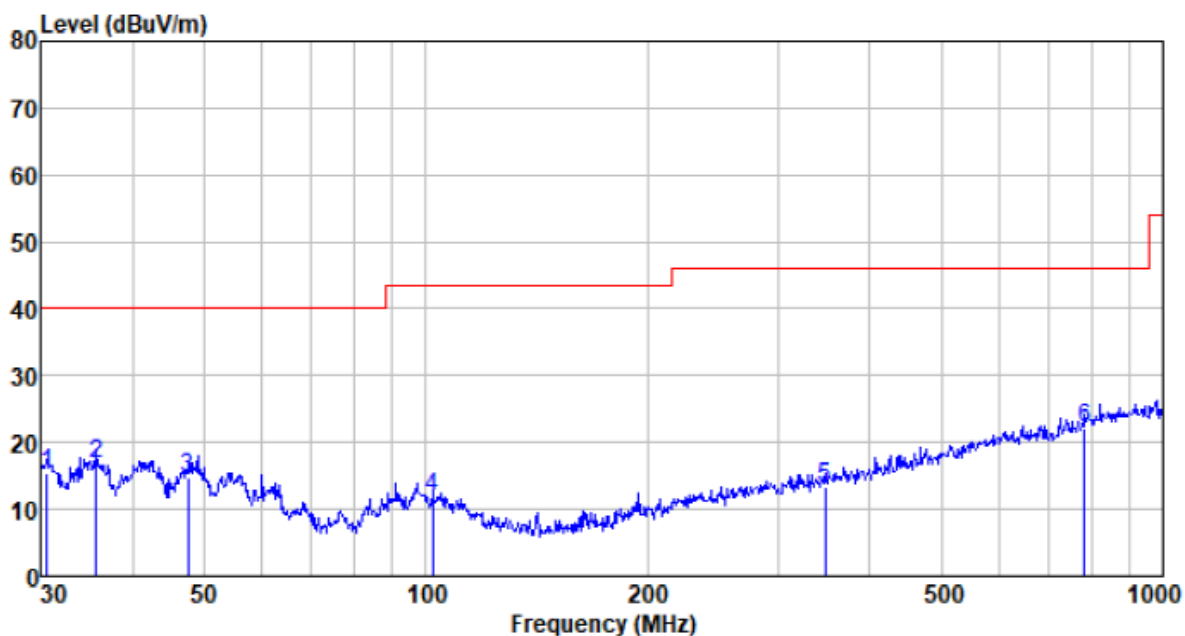
7.2.2 Spurious emissions

■ Below 30MHz

The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

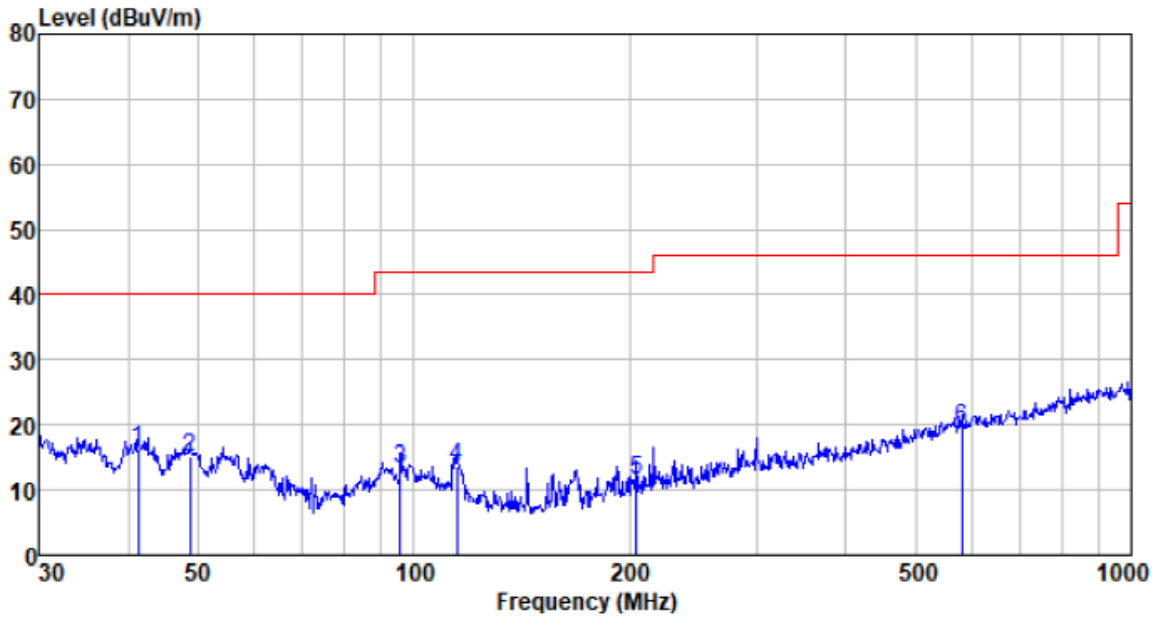
■ Below 1GHz

Horizontal:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
30.638	38.61	11.22	0.56	35.05	15.34	40.00	-24.66	QP
35.749	40.04	11.46	0.62	35.41	16.71	40.00	-23.29	QP
47.492	37.77	12.28	0.74	36.06	14.73	40.00	-25.27	QP
102.001	35.30	11.94	1.21	36.74	11.71	43.50	-31.79	QP
348.027	33.79	14.48	2.61	37.47	13.41	46.00	-32.59	QP
782.345	34.23	21.09	4.40	37.62	22.10	46.00	-23.90	QP

Vertical:

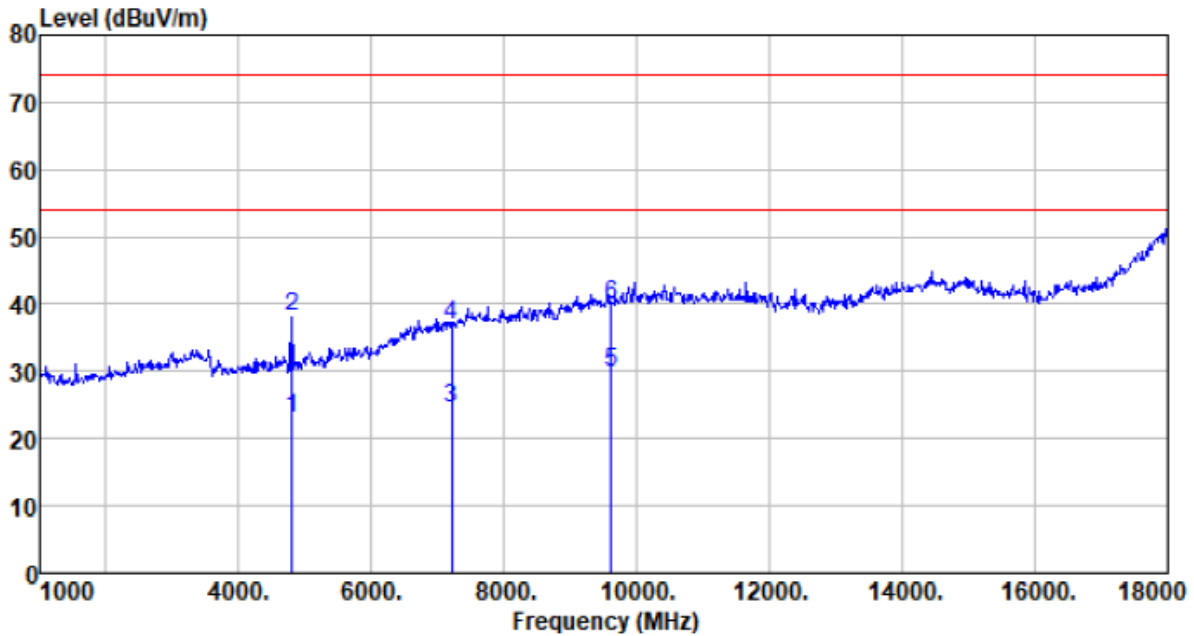


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
41.277	39.08	12.21	0.68	35.74	16.23	40.00	-23.77	QP
48.672	38.05	12.29	0.76	36.12	14.98	40.00	-25.02	QP
95.762	37.19	11.59	1.16	36.69	13.25	43.50	-30.25	QP
114.917	38.87	10.26	1.32	36.84	13.61	43.50	-29.89	QP
204.238	36.34	10.58	1.86	37.33	11.45	43.50	-32.05	QP
580.703	34.44	19.06	3.65	37.53	19.62	46.00	-26.38	QP

■ Above 1GHz

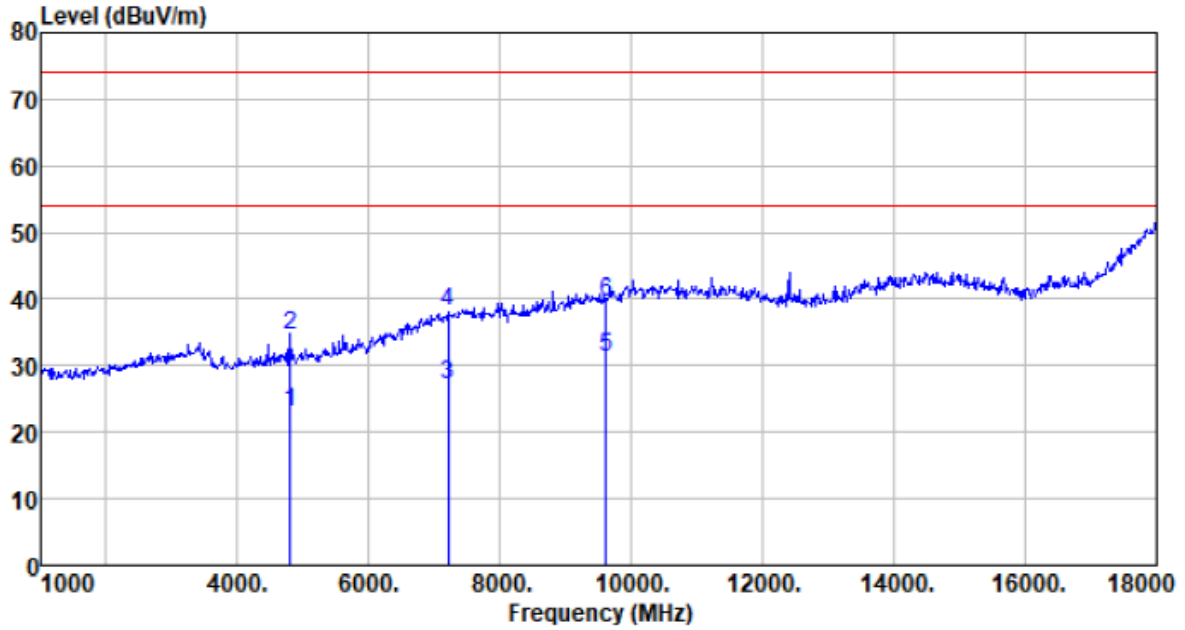
Test channel:	Lowest channel
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Horizontal



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4804.000	24.98	31.20	4.61	37.73	23.06	54.00	-30.94	Average
4804.000	39.91	31.20	4.61	37.73	37.99	74.00	-36.01	Peak
7206.000	17.38	36.16	6.48	35.63	24.39	54.00	-29.61	Average
7206.000	29.79	36.16	6.48	35.63	36.80	74.00	-37.20	Peak
9608.000	18.81	37.93	7.97	34.94	29.77	54.00	-24.23	Average
9608.000	28.79	37.93	7.97	34.94	39.75	74.00	-34.25	Peak

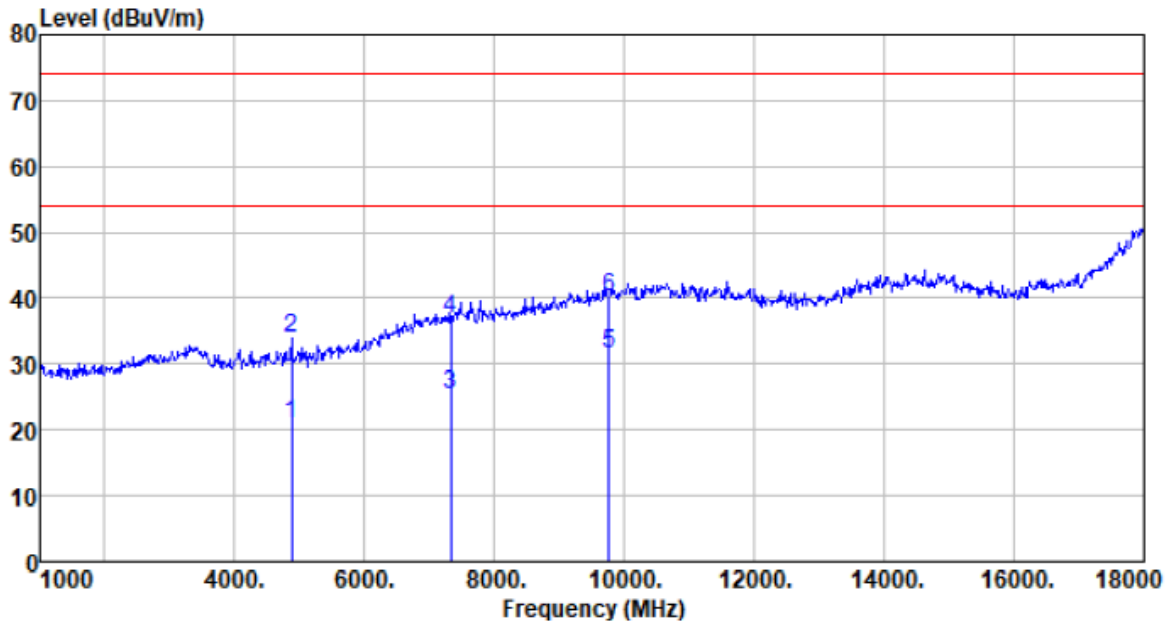
Vertical



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4804.000	24.95	31.20	4.61	37.73	23.03	54.00	-30.97	Average
4804.000	36.38	31.20	4.61	37.73	34.46	74.00	-39.54	Peak
7206.000	20.03	36.16	6.48	35.63	27.04	54.00	-26.96	Average
7206.000	30.99	36.16	6.48	35.63	38.00	74.00	-36.00	Peak
9608.000	20.24	37.93	7.97	34.94	31.20	54.00	-22.80	Average
9608.000	28.53	37.93	7.97	34.94	39.49	74.00	-34.51	Peak

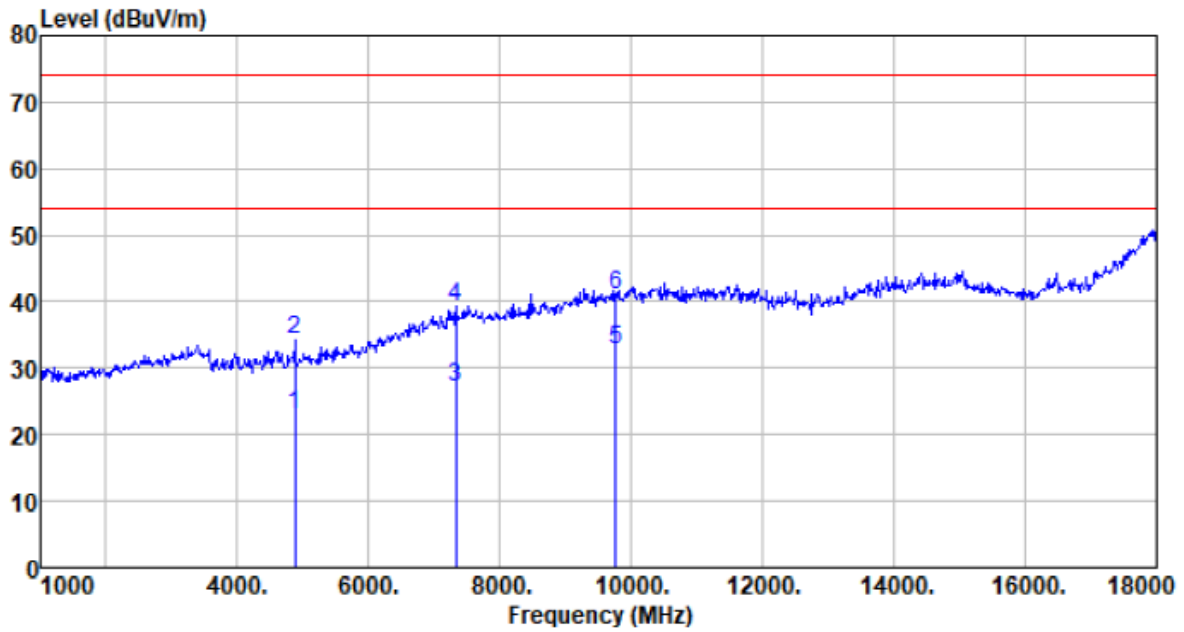
Test channel:	Middle channel
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Horizontal



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4880.000	22.79	31.31	4.69	37.75	21.04	54.00	-32.96	Average
4880.000	35.77	31.31	4.69	37.75	34.02	74.00	-39.98	Peak
7320.000	18.03	36.43	6.63	35.60	25.49	54.00	-28.51	Average
7320.000	29.41	36.43	6.63	35.60	36.87	74.00	-37.13	Peak
9760.000	20.62	38.10	8.03	35.03	31.72	54.00	-22.28	Average
9760.000	28.96	38.10	8.03	35.03	40.06	74.00	-33.94	Peak

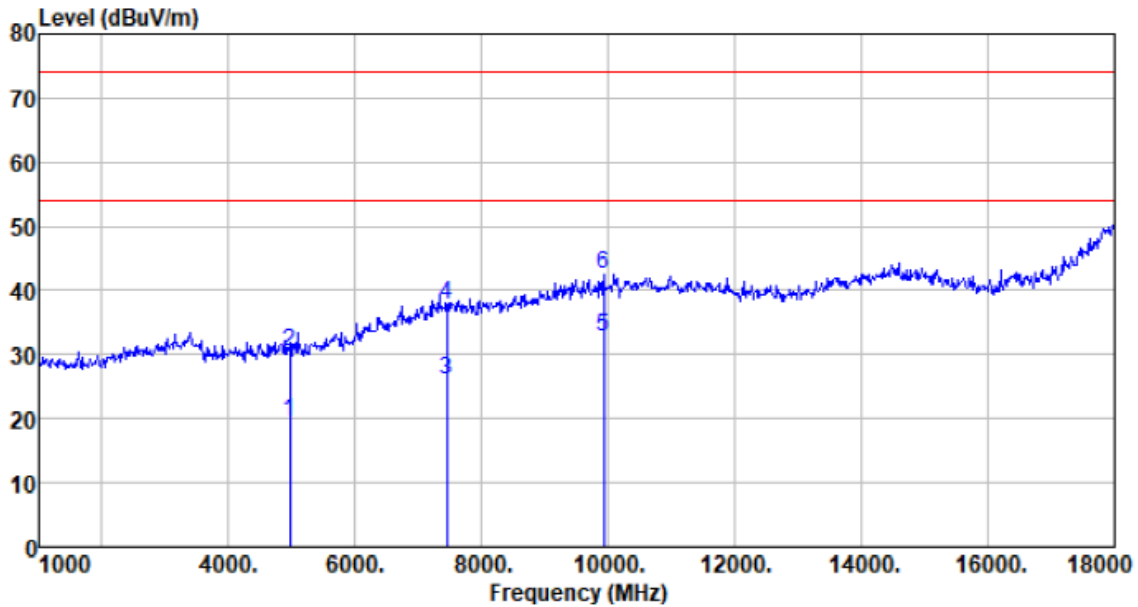
Vertical



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4880.000	24.69	31.31	4.69	37.75	22.94	54.00	-31.06	Average
4880.000	35.96	31.31	4.69	37.75	34.21	74.00	-39.79	Peak
7320.000	19.84	36.43	6.63	35.60	27.30	54.00	-26.70	Average
7320.000	31.69	36.43	6.63	35.60	39.15	74.00	-34.85	Peak
9760.000	21.52	38.10	8.03	35.03	32.62	54.00	-21.38	Average
9760.000	29.95	38.10	8.03	35.03	41.05	74.00	-32.95	Peak

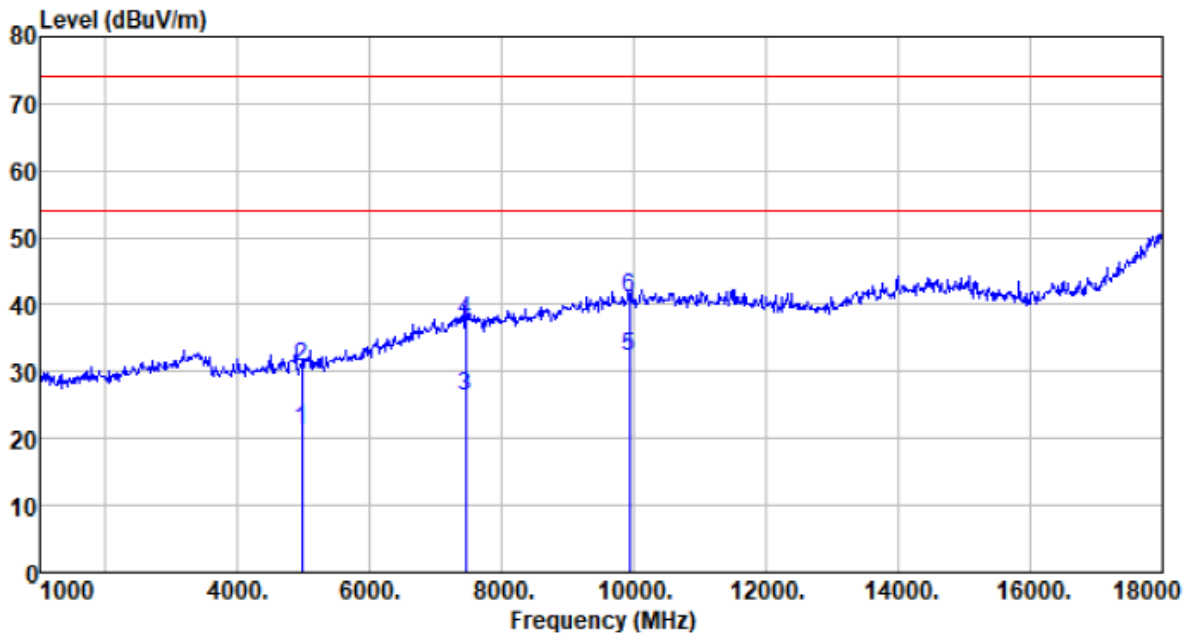
Test channel:	Highest channel
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Horizontal



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4960.000	21.08	31.44	4.79	37.78	19.53	54.00	-34.47	Average
4960.000	32.00	31.44	4.79	37.78	30.45	74.00	-43.55	Peak
7440.000	17.97	36.66	6.77	35.56	25.84	54.00	-28.16	Average
7440.000	29.98	36.66	6.77	35.56	37.85	74.00	-36.15	Peak
9920.000	21.55	38.30	8.09	35.14	32.80	54.00	-21.20	Average
9920.000	31.26	38.30	8.09	35.14	42.51	74.00	-31.49	Peak

Vertical



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4960.000	22.95	31.44	4.79	37.78	21.40	54.00	-32.60	Average
4960.000	32.39	31.44	4.79	37.78	30.84	74.00	-43.16	Peak
7440.000	18.47	36.66	6.77	35.56	26.34	54.00	-27.66	Average
7440.000	29.55	36.66	6.77	35.56	37.42	74.00	-36.58	Peak
9920.000	20.80	38.30	8.09	35.14	32.05	54.00	-21.95	Average
9920.000	29.68	38.30	8.09	35.14	40.93	74.00	-33.07	Peak

Remark:

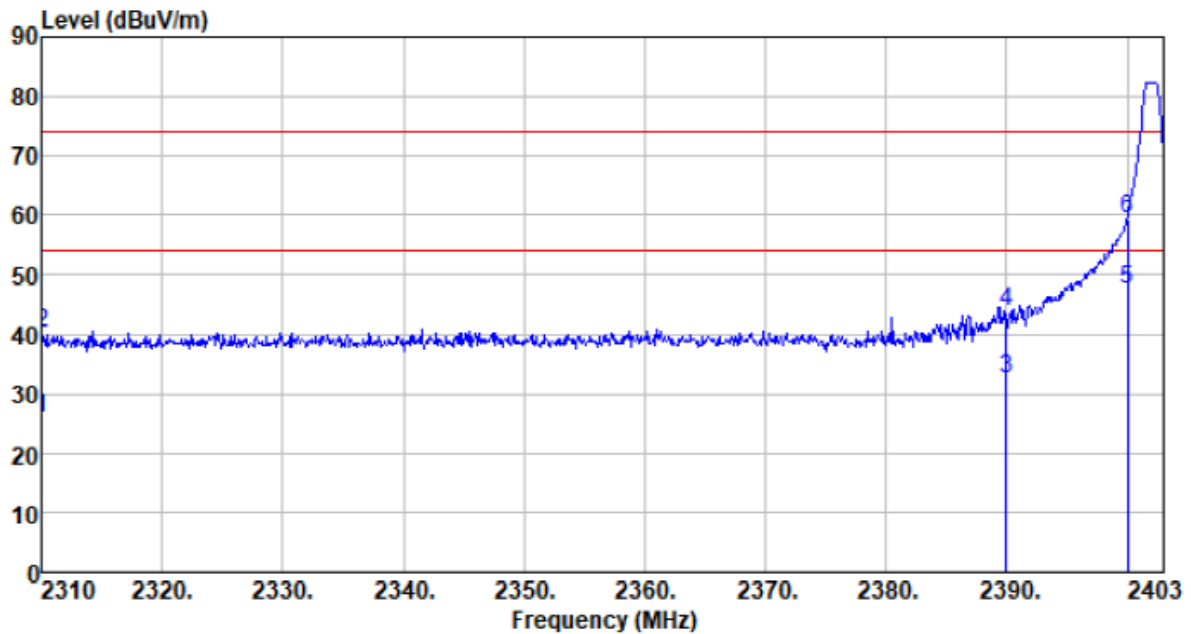
1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. “*”, means this data is the too weak instrument of signal is unable to test.

7.2.3 Bandedge emissions

All of the restriction bands were tested, and only the data of worst case was exhibited.

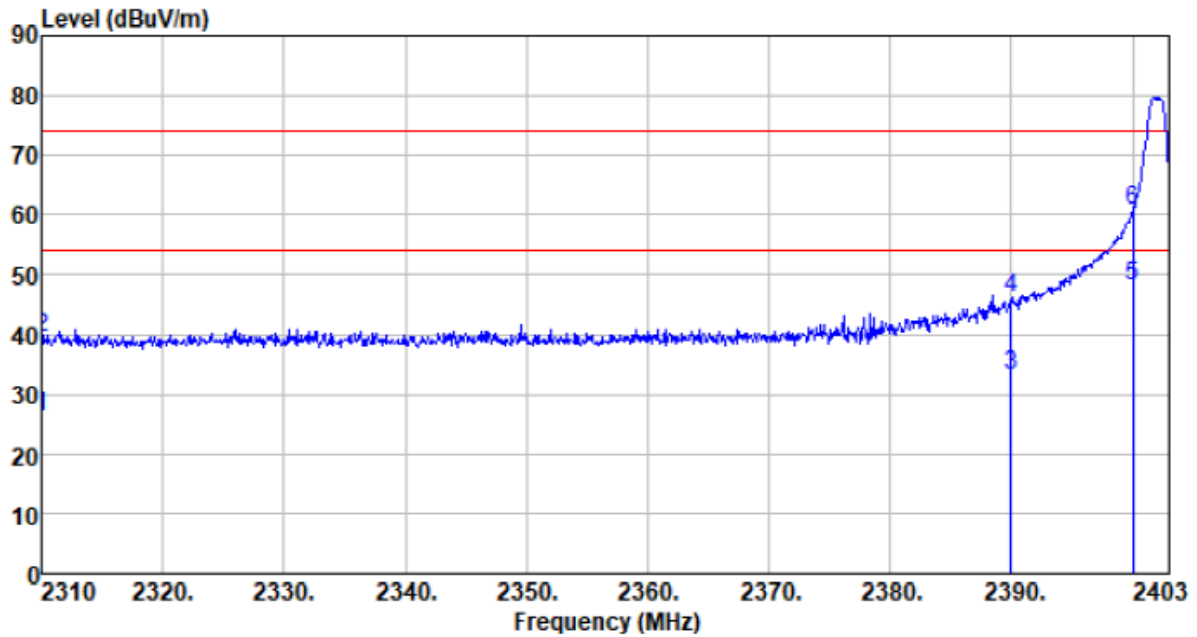
Test channel:	Lowest channel
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Horizontal



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
2310.000	32.84	27.14	2.81	36.79	26.00	54.00	-28.00	Average
2310.000	47.18	27.14	2.81	36.79	40.34	74.00	-33.66	Peak
2390.000	38.96	27.37	2.91	36.85	32.39	54.00	-21.61	Average
2390.000	50.47	27.37	2.91	36.85	43.90	74.00	-30.10	Peak
2400.000	54.11	27.41	2.91	36.86	47.57	54.00	-6.43	Average
2400.000	65.90	27.41	2.91	36.86	59.36	74.00	-14.64	Peak

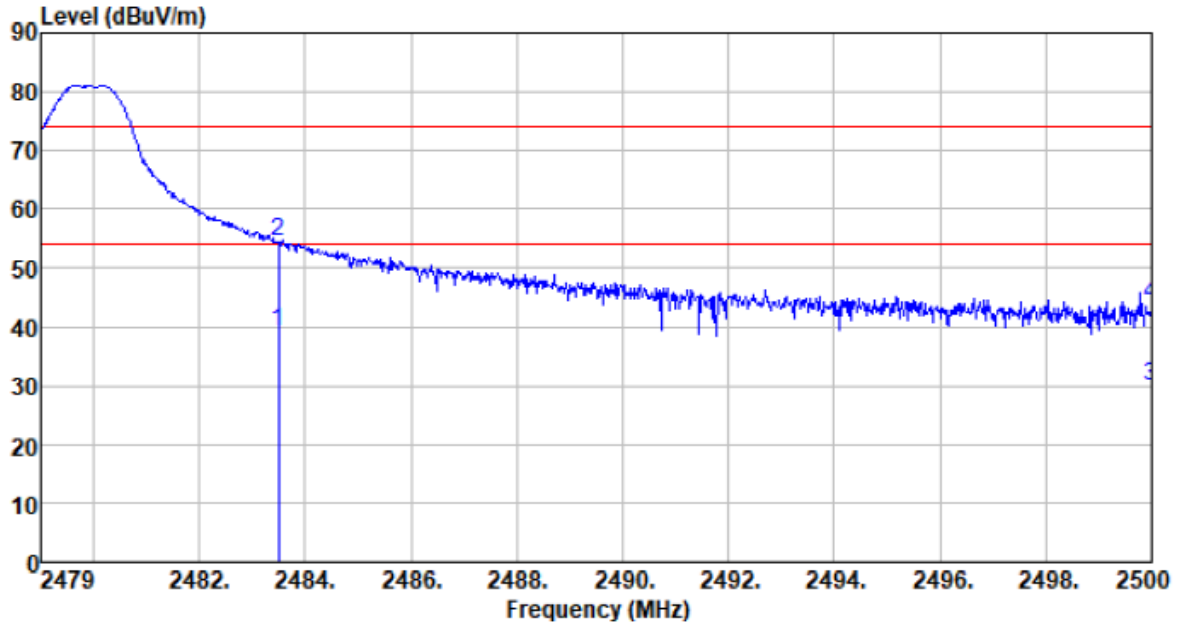
Vertical



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
2310.000	33.11	27.14	2.81	36.79	26.27	54.00	-27.73	Average
2310.000	46.25	27.14	2.81	36.79	39.41	74.00	-34.59	Peak
2390.000	39.84	27.37	2.91	36.85	33.27	54.00	-20.73	Average
2390.000	52.70	27.37	2.91	36.85	46.13	74.00	-27.87	Peak
2400.000	54.72	27.41	2.91	36.86	48.18	54.00	-5.82	Average
2400.000	67.35	27.41	2.91	36.86	60.81	74.00	-13.19	Peak

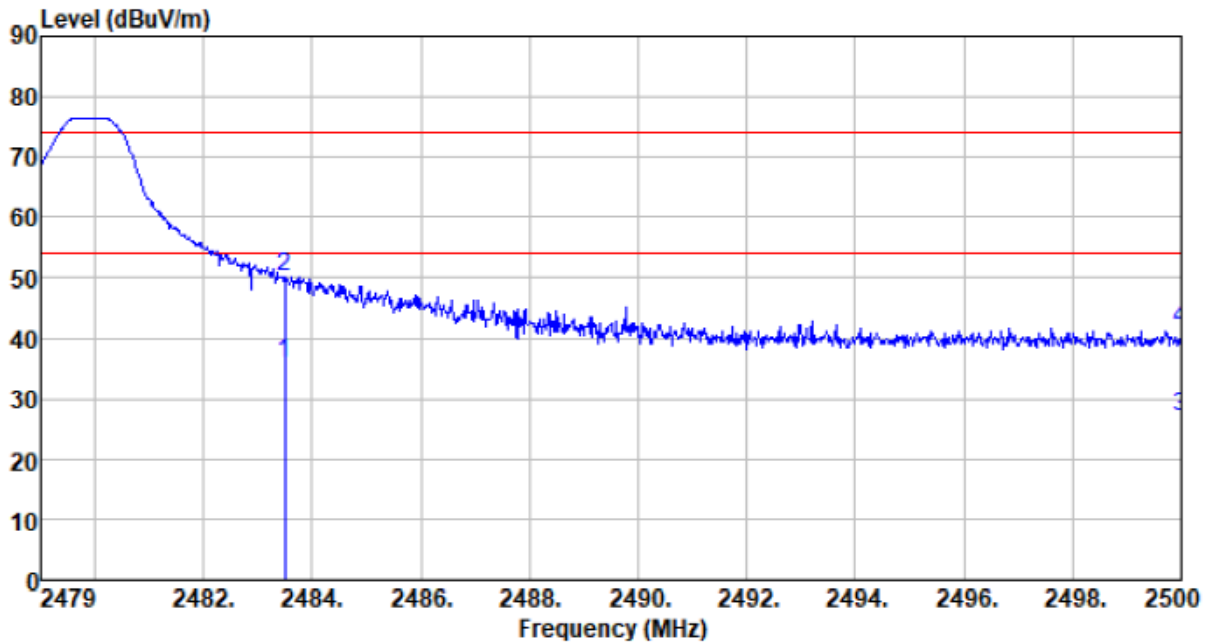
Test channel:	Highest channel
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Horizontal



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
2483.500	45.33	27.66	2.99	36.93	39.05	54.00	-14.95	Average
2483.500	60.83	27.66	2.99	36.93	54.55	74.00	-19.45	Peak
2500.000	36.21	27.70	3.01	36.94	29.98	54.00	-24.02	Average
2500.000	50.08	27.70	3.01	36.94	43.85	74.00	-30.15	Peak

Vertical

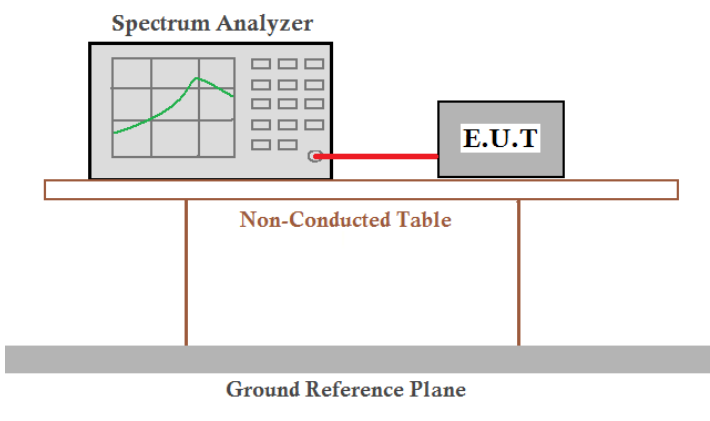


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
2483.500	42.24	27.66	2.99	36.93	35.96	54.00	-18.04	Average
2483.500	56.47	27.66	2.99	36.93	50.19	74.00	-23.81	Peak
2500.000	33.09	27.70	3.01	36.94	26.86	54.00	-27.14	Average
2500.000	47.82	27.70	3.01	36.94	41.59	74.00	-32.41	Peak

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

7.3 20dB Occupy Bandwidth and 99% bandwidth

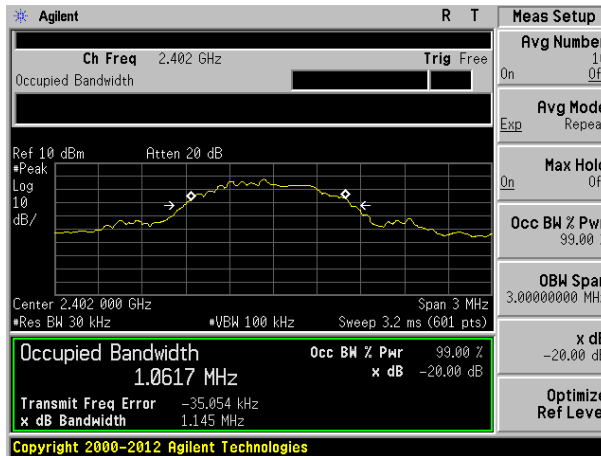
Test Requirement:	FCC Part15 C Section 15.249/15.215 RSS-Gen Section 6.7
Test Method:	ANSI C63.10:2013 and RSS-Gen
Limit:	Operation Frequency range 2400MHz~2483.5MHz
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected via a red cable to an E.U.T. (Equipment Under Test). Both are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.</p>
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

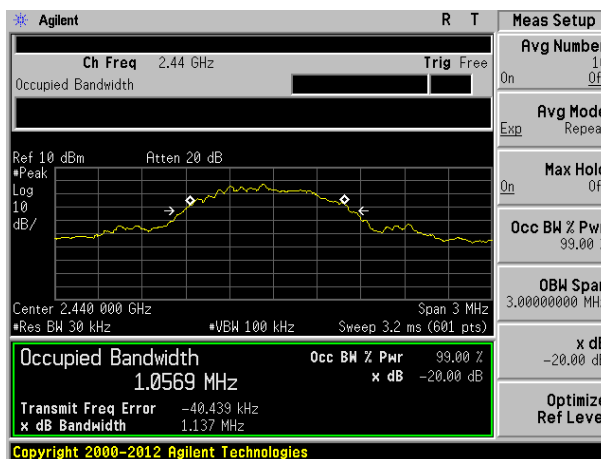
Test channel	20dB bandwidth(MHz)	Result
Lowest	1.145	Pass
Middle	1.137	Pass
Highest	1.142	Pass

Test channel	99% bandwidth(MHz)	Result
Lowest	1.0617	Pass
Middle	1.0569	
Highest	1.0588	

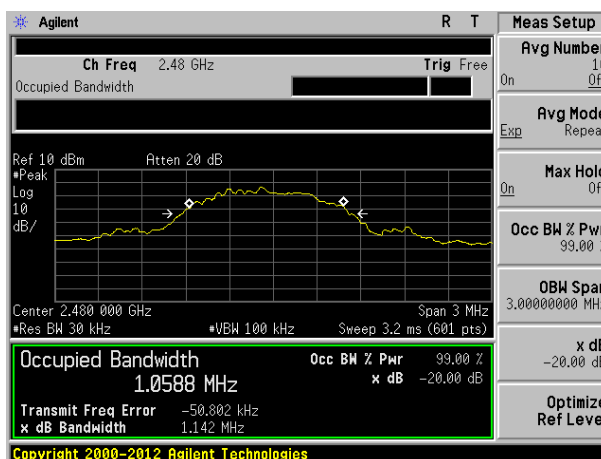
Test plot as follows:



Lowest channel



Middle channel



Highest channel

8 Test Setup Photo

Reference to the **appendix I** for details.

9 EUT Constructional Details

Reference to the **appendix II** for details.

-----End-----