

# TEST REPORT

**Applicant:** Grandex International Corporation

**Address of Applicant:** 4F, No.527, Zhongzheng Rd., Xindian Dist., New Taipei City 23148, Taiwan (R.O.C.)

**Manufacturer/Factory:** Grandex International Corporation

**Address of Manufacturer/Factory:** 4F, No.527, Zhongzheng Rd., Xindian Dist., New Taipei City 23148, Taiwan (R.O.C.)

**Equipment Under Test (EUT)**

Product Name: Wireless Smart Charger

Model No.: TC300ex, PS881ex(PS880+TC300ex), PS891ex(PS890+TC300ex)

Trade Mark: Grandex/The MeatStick

**FCC ID:** 2AHDSTC300-01

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.249

**Date of sample receipt:** July 23, 2020

**Date of Test:** July 24-August 03, 2020

**Date of report issued:** August 04, 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	August 04, 2020	Original

**Prepared By:**

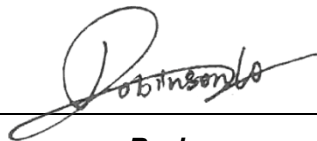


**Date:**

August 04, 2020

**Project Engineer**

**Check By:**



**Date:**

August 04, 2020

**Reviewer**

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## 4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
Band edge	15.249 (d)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

Remarks:

1. Test according to ANSI C63.10: 2013.
2. Pass: The EUT complies with the essential requirements in the standard.

### 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:	Wireless Smart Charger
Model No.:	TC300ex, PS881ex(PS880+TC300ex), PS891ex(PS890+TC300ex)
Test Model No:	TC300ex
Remark:All above models are identical in the same PCB layout, interior structure and electrical circuits. The differences are color, package and model name for commercial purpose.	
Hardware Version:	MPB-TC300XX-01A-MAXN MPB-TC300XX-01A-KBXN
Software Version:	TC300EX_v0.0.25.0.1_200713.hex
Test sample(s) ID:	GTS202007000213-1
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 3V(1*1.5V size "AA")battery

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: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data. the new battery was used</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)	91.23	92.54	92.01

## 5.3 Description of Support Units

None.
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## 5.4 Deviation from Standards

None.
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## 5.5 Abnormalities from Standard Conditions

None.
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## 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 command provided by 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. 02 2020	July. 01 2025
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. 25 2020	June. 24 2021
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 25 2020	June. 24 2021
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 25 2020	June. 24 2021
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 25 2020	June. 24 2021
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 25 2020	June. 24 2021
9	Coaxial Cable	GTS	N/A	GTS211	June. 25 2020	June. 24 2021
10	Coaxial cable	GTS	N/A	GTS210	June. 25 2020	June. 24 2021
11	Coaxial Cable	GTS	N/A	GTS212	June. 25 2020	June. 24 2021
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 25 2020	June. 24 2021
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 25 2020	June. 24 2021
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 25 2020	June. 24 2021
15	Band filter	Amindeon	82346	GTS219	June. 25 2020	June. 24 2021
16	Power Meter	Anritsu	ML2495A	GTS540	June. 25 2020	June. 24 2021
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 25 2020	June. 24 2021
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 25 2020	June. 24 2021
19	Splitter	Agilent	11636B	GTS237	June. 25 2020	June. 24 2021
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 25 2020	June. 24 2021
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. 25 2020	June. 24 2021

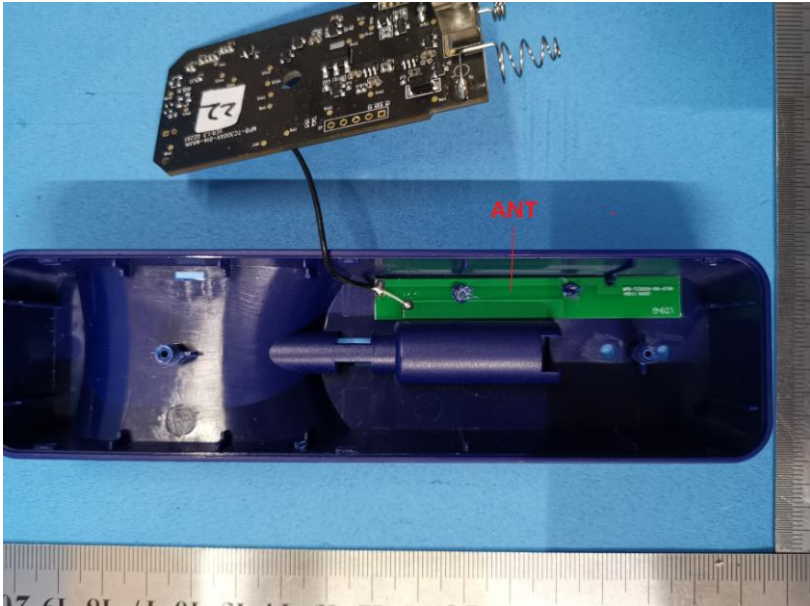


RF Conducted Test:						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 25 2020	June. 24 2021
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 25 2020	June. 24 2021
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 25 2020	June. 24 2021
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 25 2020	June. 24 2021
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 25 2020	June. 24 2021
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 25 2020	June. 24 2021
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 25 2020	June. 24 2021
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 25 2020	June. 24 2021

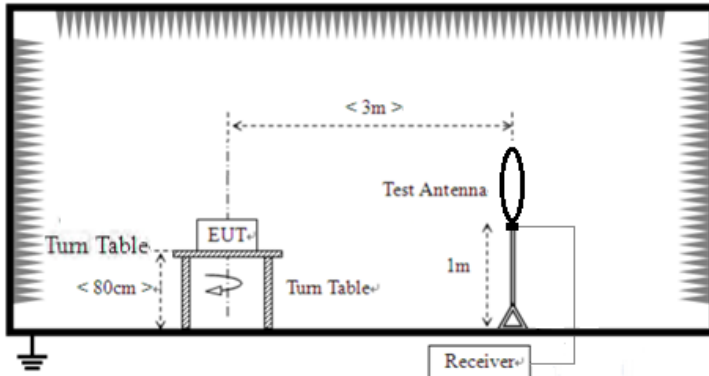
General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 25 2020	June. 24 2021
2	Barometer	ChangChun	DYM3	GTS255	June. 25 2020	June. 24 2021

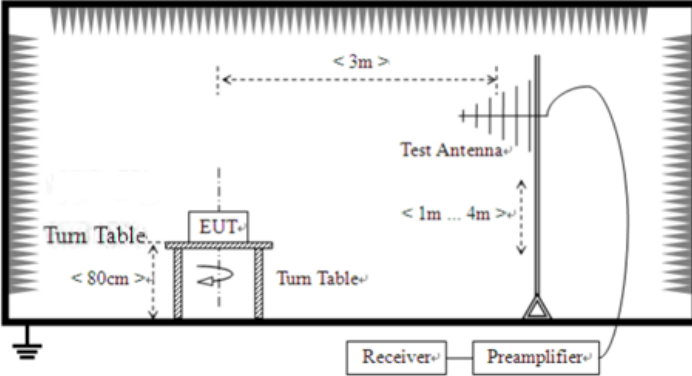
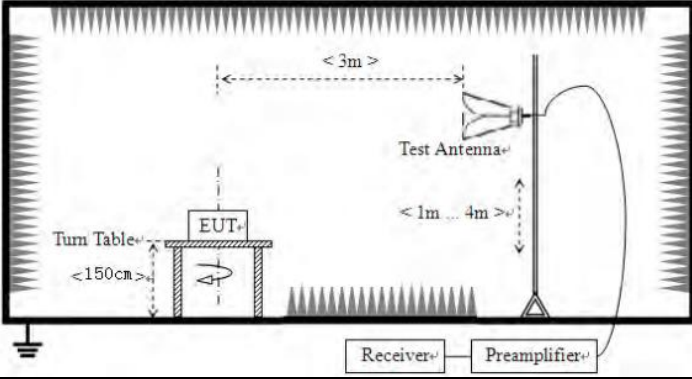
## 7 Test results and Measurement Data

### 7.1 Antenna requirement

<b>Standard requirement:</b>	FCC Part15 C Section 15.203
<p><b>15.203 requirement:</b></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><b>15.247(c) (1)(i) requirement:</b></p> <p>(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.</p>	
<b>EUT Antenna:</b>	
<p><i>The antenna is Integral antenna; the best case gain of the antenna is 0dBi.</i></p> 	

## 7.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209				
Test Method:	ANSI C63.10:2013				
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:	<div>For radiated emissions from 9kHz to 30MHz</div> <div></div> <div>For radiated emissions from 30MHz to 1GHz</div>				

	 <p>For radiated emissions above 1GHz</p> 
Test Procedure:	<ol style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>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.</li> </ol>
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test environment:	Temp.: 25 °C    Humid.: 52%    Press.: 1012mbar
Test voltage:	DC 3V
Test results:	Pass

**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	92.48	27.41	2.91	30.26	92.54	114	-21.46	Vertical
2402.00	90.37	27.41	2.91	30.26	90.43	114	-23.57	Horizontal
2440.00	90.42	27.53	2.96	30.14	90.77	114	-23.23	Vertical
2440.00	88.73	27.53	2.96	30.14	89.08	114	-24.92	Horizontal
2480.00	87.74	27.64	2.99	30.08	88.29	114	-25.71	Vertical
2480.00	86.07	27.64	2.99	30.08	86.62	114	-27.38	Horizontal

**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	71.18	27.41	2.91	30.26	71.24	94	-22.76	Vertical
2402.00	69.07	27.41	2.91	30.26	69.13	94	-24.87	Horizontal
2440.00	70.08	27.53	2.96	30.14	70.43	94	-23.57	Vertical
2440.00	69.15	27.53	2.96	30.14	69.5	94	-24.5	Horizontal
2480.00	68.84	27.64	2.99	30.08	69.39	94	-24.61	Vertical
2480.00	69.11	27.64	2.99	30.08	69.66	94	-24.34	Horizontal

## 7.2.2 Spurious emissions

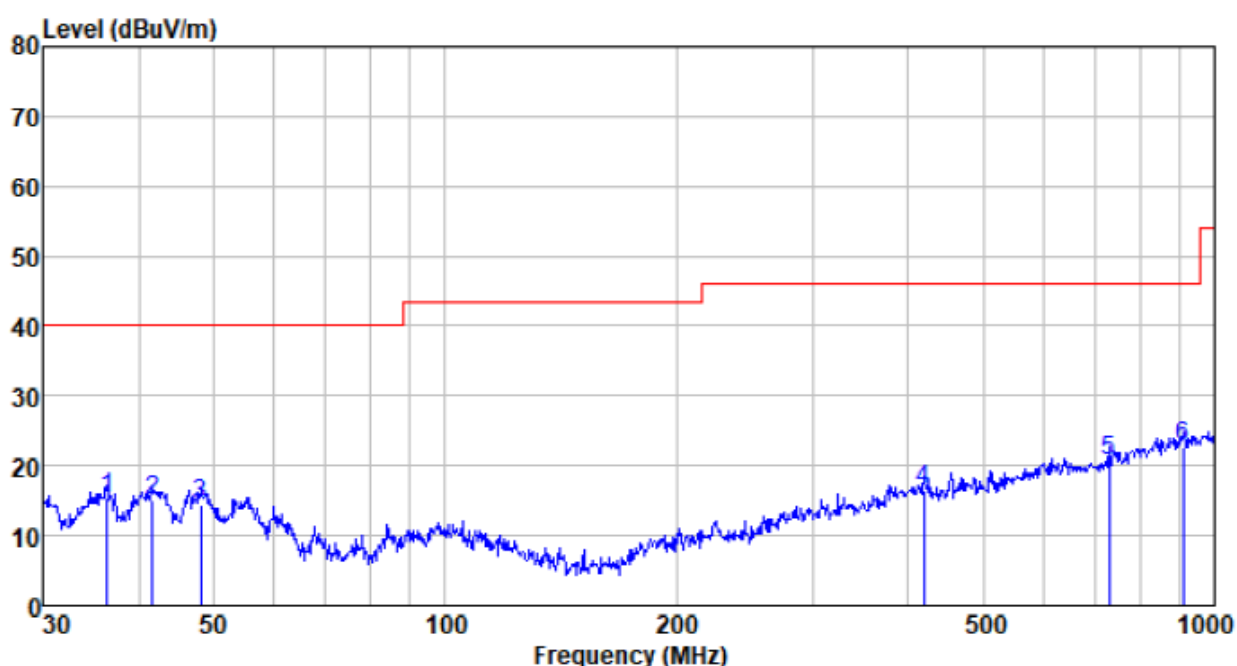
### ■ Below 30MHz

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), the test result no need to reported.

### ■ Below 1GHz

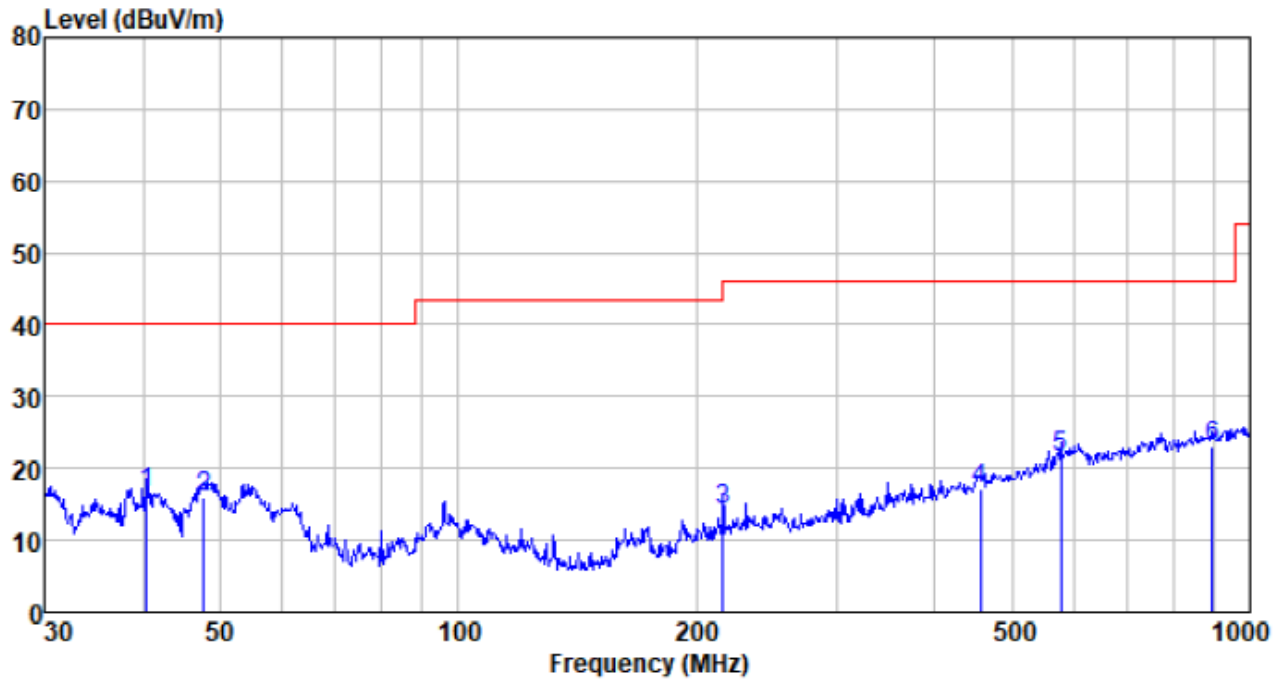
Pre-scan all test modes, found worst case at 2480MHz, and so only show the test result of 2480MHz

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
36.381	38.48	11.58	0.62	35.45	15.23	40.00	-24.77	QP
41.713	37.84	12.22	0.68	35.76	14.98	40.00	-25.02	QP
48.163	37.50	12.28	0.75	36.09	14.44	40.00	-25.56	QP
419.108	35.32	15.75	2.94	37.52	16.49	46.00	-29.51	QP
729.358	33.93	20.16	4.19	37.63	20.65	46.00	-25.35	QP
909.667	33.06	22.34	4.88	37.59	22.69	46.00	-23.31	QP

Vertical:

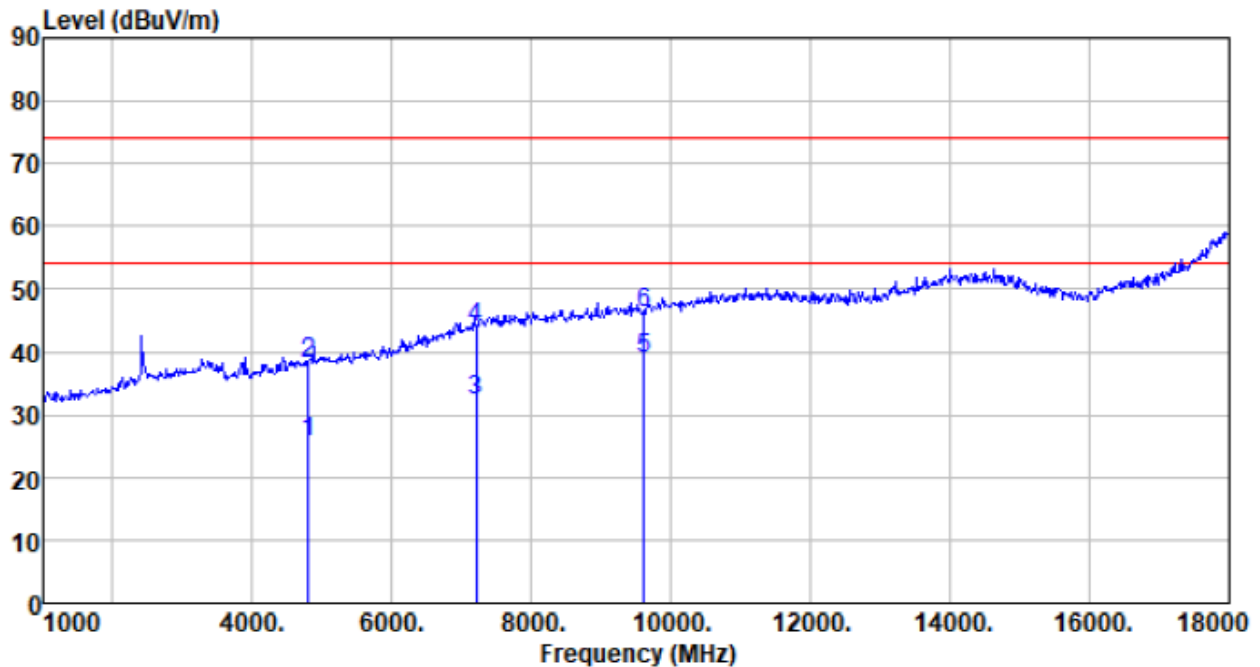


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
40.417	39.33	12.21	0.66	35.69	16.51	40.00	-23.49	QP
47.659	39.03	12.28	0.75	36.07	15.99	40.00	-24.01	QP
216.024	38.51	11.02	1.93	37.35	14.11	46.00	-31.89	QP
455.906	34.90	16.48	3.11	37.51	16.98	46.00	-29.02	QP
576.644	36.39	19.00	3.63	37.53	21.49	46.00	-24.51	QP
896.997	33.63	22.27	4.83	37.60	23.13	46.00	-22.87	QP

■ Above 1GHz

Test channel:	Lowest channel
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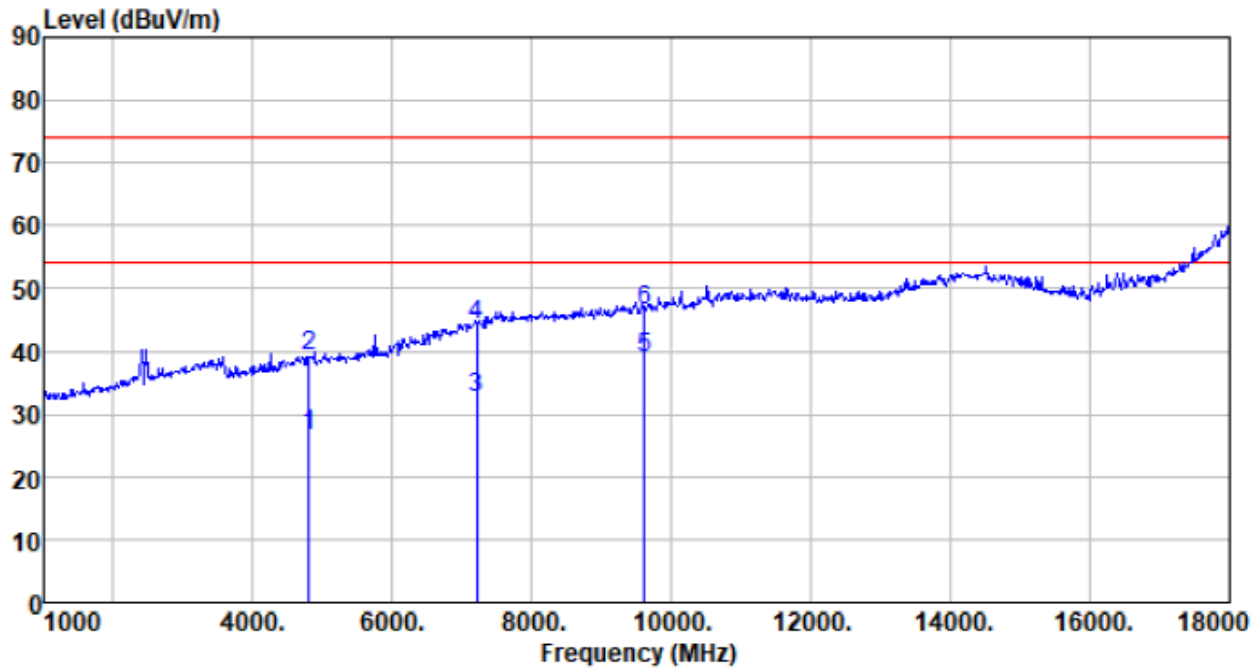
Horizontal:



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	24.65	31.20	4.61	34.75	25.71	54.00	-28.29	Average
4804.000	37.17	31.20	4.61	34.75	38.23	74.00	-35.77	Peak
7206.000	24.36	36.16	6.48	34.90	32.10	54.00	-21.90	Average
7206.000	36.04	36.16	6.48	34.90	43.78	74.00	-30.22	Peak
9608.000	28.10	37.93	7.97	35.06	38.94	54.00	-15.06	Average
9608.000	35.32	37.93	7.97	35.06	46.16	74.00	-27.84	Peak



Vertical:

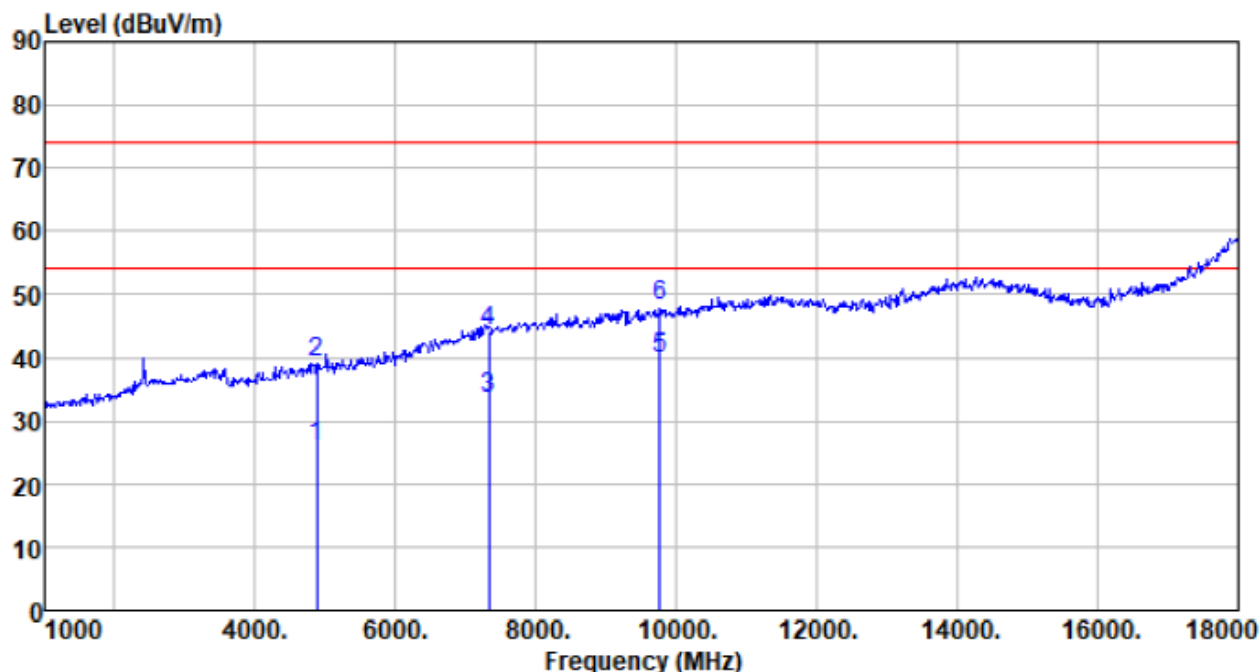


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4804.000	25.40	31.20	4.61	34.75	26.46	54.00	-27.54	Average
4804.000	38.04	31.20	4.61	34.75	39.10	74.00	-34.90	Peak
7206.000	24.73	36.16	6.48	34.90	32.47	54.00	-21.53	Average
7206.000	36.57	36.16	6.48	34.90	44.31	74.00	-29.69	Peak
9608.000	27.98	37.93	7.97	35.06	38.82	54.00	-15.18	Average
9608.000	35.70	37.93	7.97	35.06	46.54	74.00	-27.46	Peak

Remark: Final Level=Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

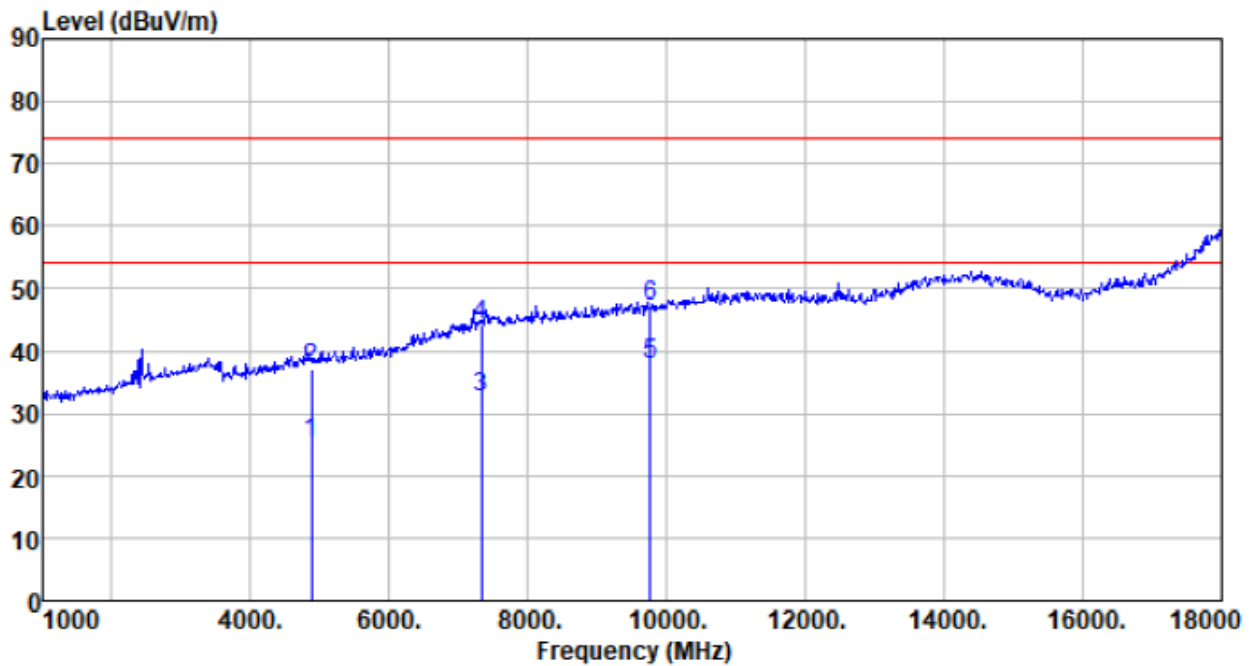
Test channel:	Middle
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Horizontal:



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	24.58	31.31	4.69	34.75	25.83	54.00	-28.17	Average
4880.000	37.95	31.31	4.69	34.75	39.20	74.00	-34.80	Peak
7320.000	25.35	36.43	6.63	34.91	33.50	54.00	-20.50	Average
7320.000	36.04	36.43	6.63	34.91	44.19	74.00	-29.81	Peak
9760.000	28.79	38.10	8.03	35.07	39.85	54.00	-14.15	Average
9760.000	37.18	38.10	8.03	35.07	48.24	74.00	-25.76	Peak

Vertical:

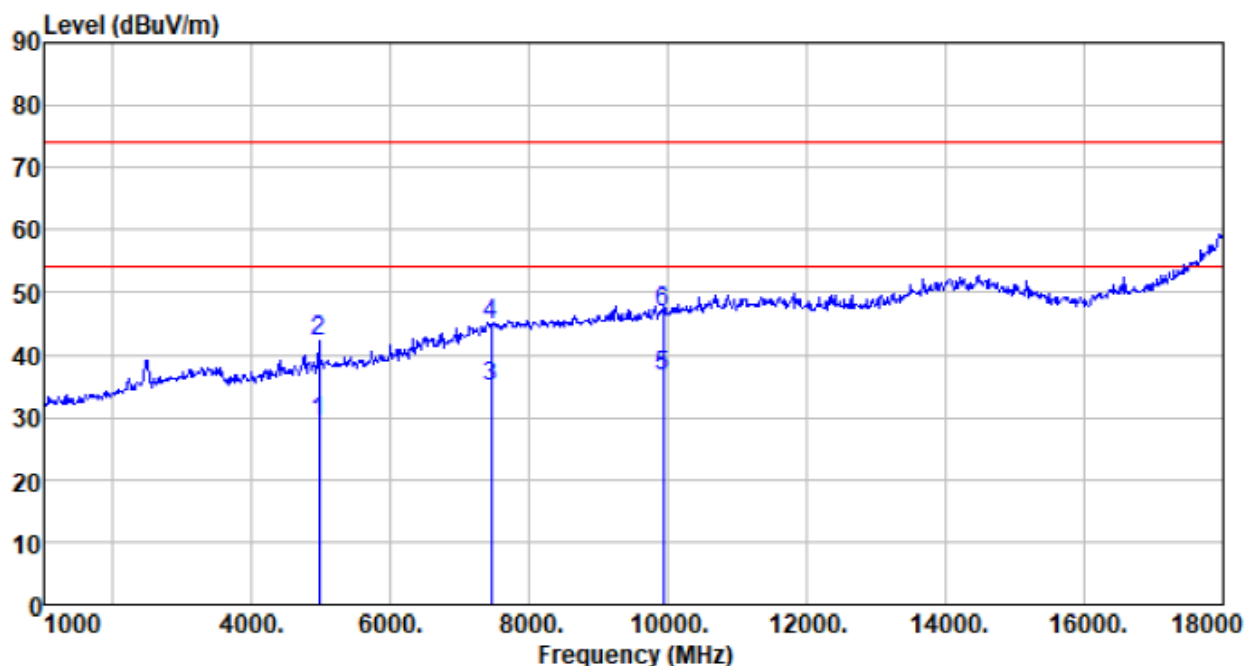


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4880.000	23.93	31.31	4.69	34.75	25.18	54.00	-28.82	Average
4880.000	36.09	31.31	4.69	34.75	37.34	74.00	-36.66	Peak
7320.000	24.35	36.43	6.63	34.91	32.50	54.00	-21.50	Average
7320.000	36.04	36.43	6.63	34.91	44.19	74.00	-29.81	Peak
9760.000	26.68	38.10	8.03	35.07	37.74	54.00	-16.26	Average
9760.000	35.94	38.10	8.03	35.07	47.00	74.00	-27.00	Peak

Remark: Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

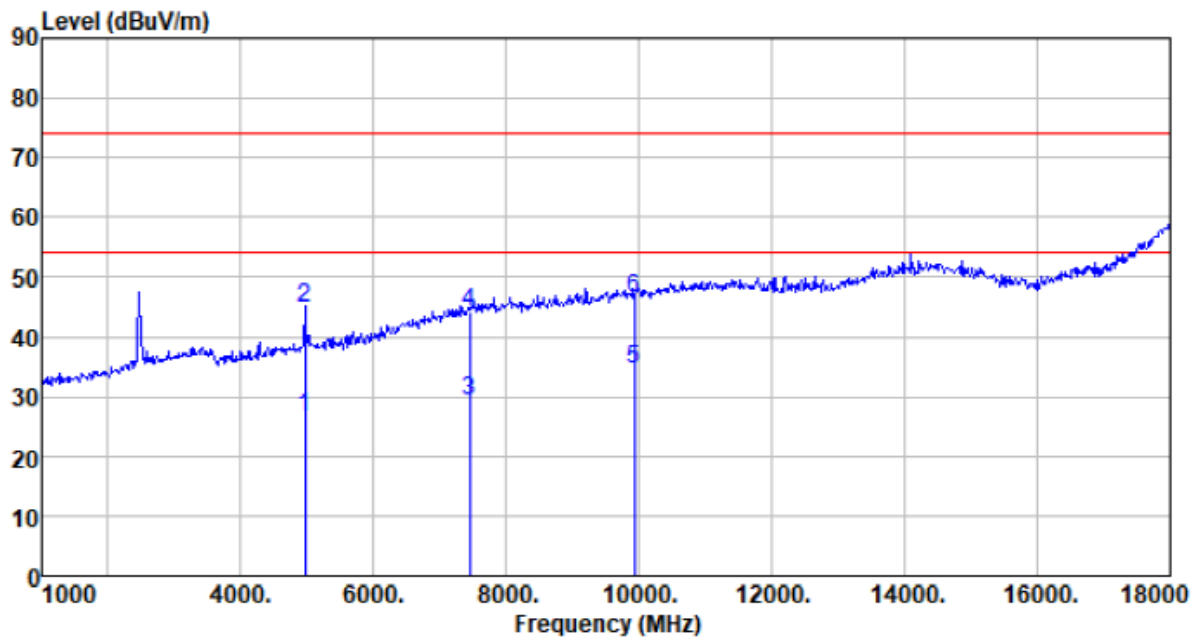
Test channel:	Highest
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Horizontal:



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	27.78	31.44	4.79	34.76	29.25	54.00	-24.75	Average
4960.000	40.68	31.44	4.79	34.76	42.15	74.00	-31.85	Peak
7440.000	26.39	36.66	6.77	34.92	34.90	54.00	-19.10	Average
7440.000	36.24	36.66	6.77	34.92	44.75	74.00	-29.25	Peak
9920.000	25.20	38.30	8.09	35.08	36.51	54.00	-17.49	Average
9920.000	35.53	38.30	8.09	35.08	46.84	74.00	-27.16	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	25.24	31.44	4.79	34.76	26.71	54.00	-27.29	Average
4960.000	43.42	31.44	4.79	34.76	44.89	74.00	-29.11	Peak
7440.000	20.79	36.66	6.77	34.92	29.30	54.00	-24.70	Average
7440.000	35.68	36.66	6.77	34.92	44.19	74.00	-29.81	Peak
9920.000	23.34	38.30	8.09	35.08	34.65	54.00	-19.35	Average
9920.000	35.24	38.30	8.09	35.08	46.55	74.00	-27.45	Peak

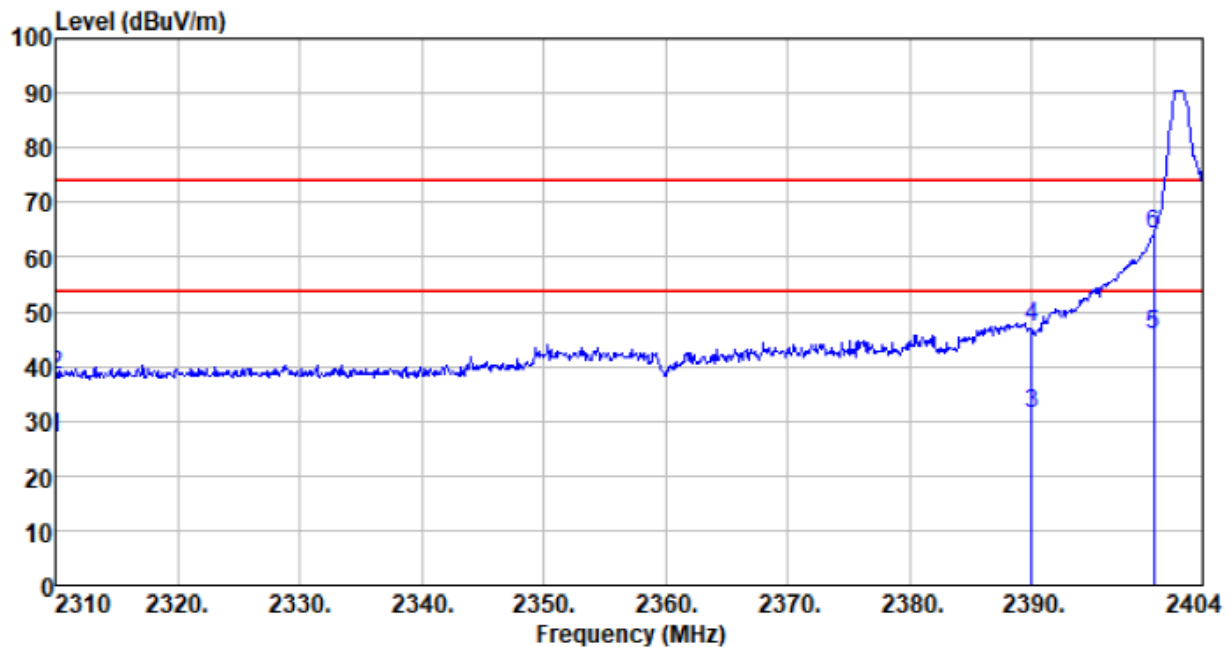
Remark: Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

## 7.2.3 Bandedge emissions

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

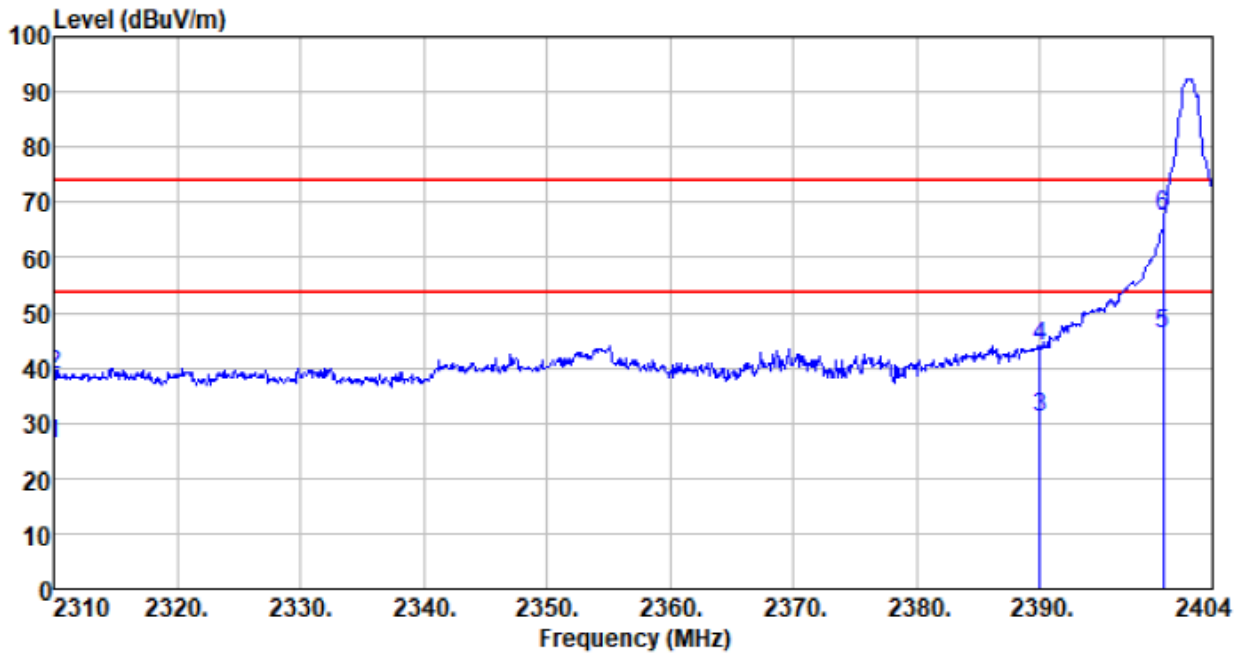
Test channel:	Lowest channel
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Horizontal:



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	27.33	27.14	2.81	30.43	26.85	54.00	-27.15	Average
2310.000	38.83	27.14	2.81	30.43	38.35	74.00	-35.65	Peak
2390.000	31.39	27.37	2.91	30.24	31.43	54.00	-22.57	Average
2390.000	47.14	27.37	2.91	30.24	47.18	74.00	-26.82	Peak
2400.000	45.59	27.41	2.91	30.26	45.65	54.00	-8.35	Average
2400.000	64.06	27.41	2.91	30.26	64.12	74.00	-9.88	Peak

Vertical:

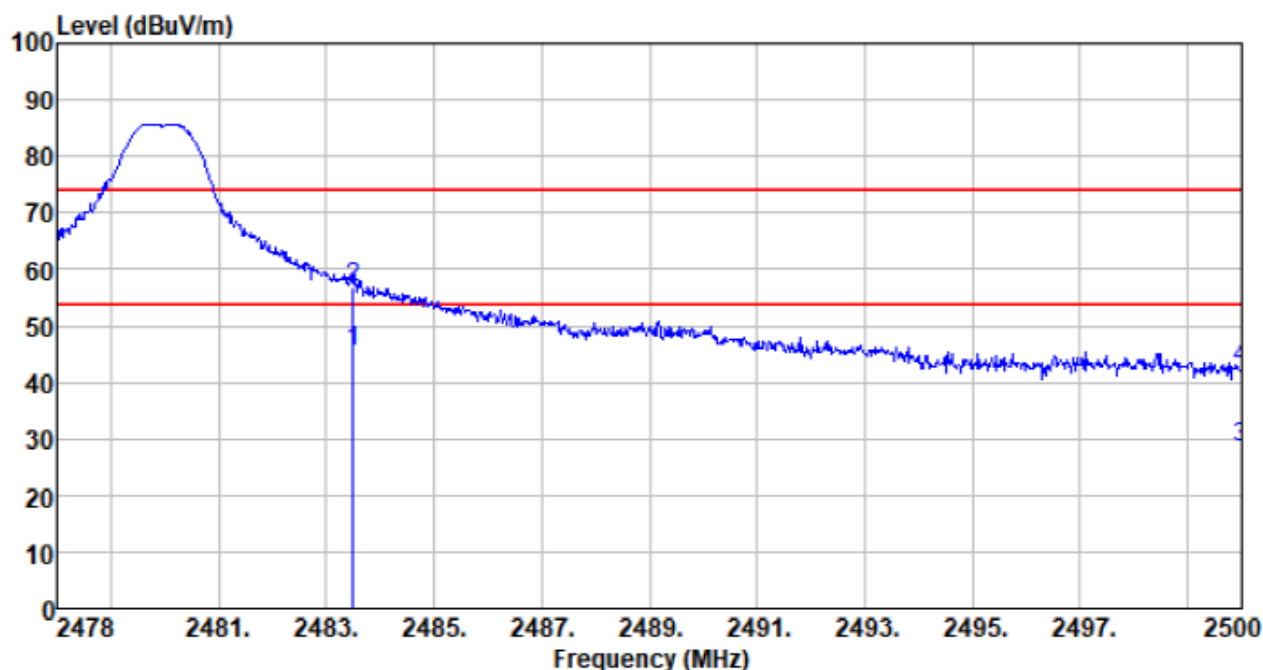


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
2310.000	26.85	27.14	2.81	30.43	26.37	54.00	-27.63	Average
2310.000	39.10	27.14	2.81	30.43	38.62	74.00	-35.38	Peak
2390.000	31.12	27.37	2.91	30.24	31.16	54.00	-22.84	Average
2390.000	44.00	27.37	2.91	30.24	44.04	74.00	-29.96	Peak
2400.000	46.21	27.41	2.91	30.26	46.27	54.00	-7.73	Average
2400.000	67.33	27.41	2.91	30.26	67.39	74.00	-6.61	Peak

Remark: Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

Test channel:	Highest channel
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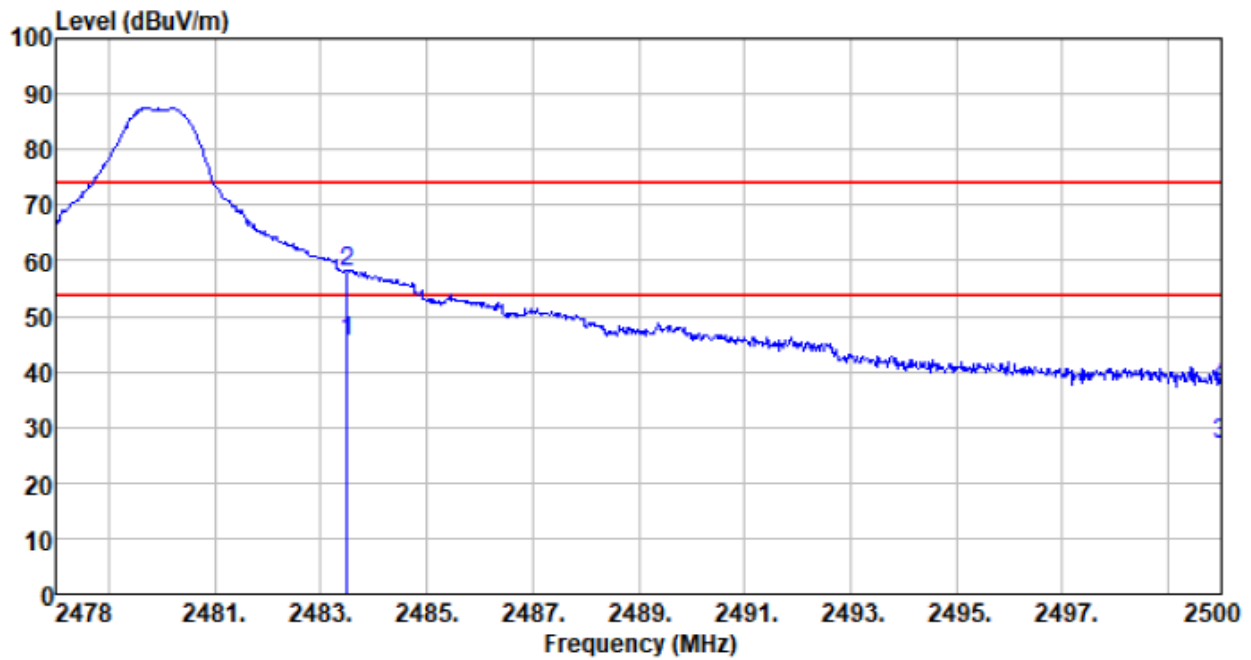
Horizontal:



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	44.75	27.66	2.99	30.12	45.28	54.00	-8.72	Average
2483.500	56.18	27.66	2.99	30.12	56.71	74.00	-17.29	Peak
2500.000	27.71	27.70	3.01	30.13	28.29	54.00	-25.71	Average
2500.000	41.87	27.70	3.01	30.13	42.45	74.00	-31.55	Peak



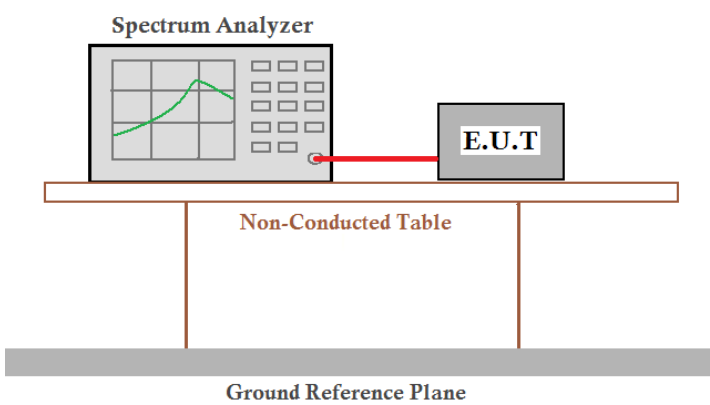
Vertical:



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	44.94	27.66	2.99	30.12	45.47	54.00	-8.53	Average
2483.500	57.50	27.66	2.99	30.12	58.03	74.00	-15.97	Peak
2500.000	26.44	27.70	3.01	30.13	27.02	54.00	-26.98	Average
2500.000	36.54	27.70	3.01	30.13	37.12	74.00	-36.88	Peak

Remark: Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

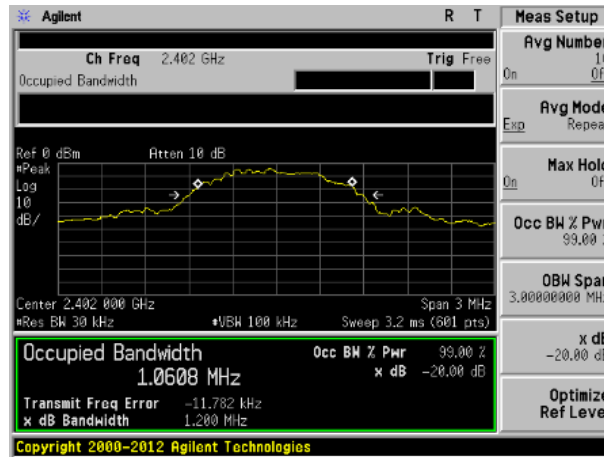
## 7.3 20dB Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.10:2013
Limit:	Operation Frequency range 2400MHz~2483.5MHz
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T are placed on a Non-Conducted Table. The table is supported by 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	1.200	Pass
Middle	1.201	Pass
Highest	1.192	Pass

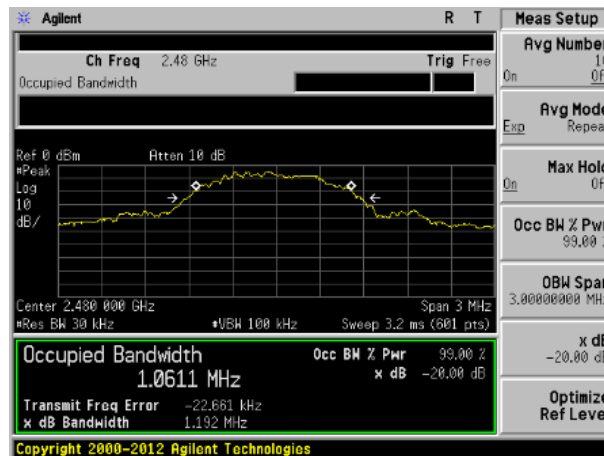
Test plot as follows:



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-----