

Spectrum REPORT

Applicant: DANLAW Inc
Address of Applicant: 41131 Vincenti Court, Novi, Michigan 48375, United States
Manufacturer: Asiatelco Technologies Co.
Address of Manufacturer: #289 Bisheng Road, Building-8, 3F, Zhangjiang Hi-tech Park, Pudong Shanghai 201204 China
Equipment Under Test (EUT)
Product Name: OBDII Datalogger
Model No.: DL980QT
FCC ID: 2AD9I-DL980QT
Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.249
Date of sample receipt: March 01, 2019
Date of Test: March 01-14, 2019
Date of report issued: March 14, 2019
Test Result : PASS *

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

Authorized Signature:

A handwritten signature in black ink is written over a circular blue stamp. The stamp contains the text "GTS" in the center, "GLOBAL UNITED TECHNOLOGY SERVICES CO., LTD." around the perimeter, and "EST. 2004" at the bottom.

Robinson Lo

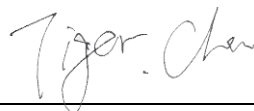
Laboratory Manager

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	March 14, 2019	Original

Prepared By:

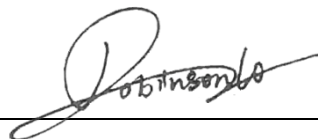


Date:

March 14, 2019

Project Engineer

Check By:



Date:

March 14, 2019

Reviewer

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4 Test Summary

Test Item	Section	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	N/A
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 / 99% 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.
3. N/A: Not applicable.

4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz ~ 30MHz	$\pm 4.54\text{dB}$	(1)
Radiated Emission	30MHz ~ 1000MHz	$\pm 5.34\text{dB}$	(1)
Radiated Emission	1GHz ~ 26.5GHz	$\pm 5.34\text{dB}$	(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:	OBDII Datalogger
Model No.:	DL980QT
Serial No.:	9042601001
Hardware version:	p5
Software version:	v1.0
Test sample(s) ID:	GTS201904000001-1
Sample(s) Status	Engineered sample
Operation Frequency:	2402MHz~2480MHz
Channel numbers:	40
Channel separation:	2MHz
Modulation type:	GFSK
Antenna Type:	Integral antenna
Antenna gain:	0.5dBi
Power supply:	DC 12V

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402MHz	11	2422MHz	21	2442MHz	31	2462MHz
2	2404MHz	12	2424MHz	22	2444MHz	32	2464MHz
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
9	2418MHz	19	2438MHz	29	2458MHz	39	2478MHz
10	2420MHz	20	2440MHz	30	2460MHz	40	2480MHz

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 dutycycle >98%, 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.</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)	89.75	94.93	87.34

5.3 Description of Support Units

Manufacturer	Description	Model	Serial Number
GS	Lead-Acid battery	S5D26R-MFZ	9442804454
IBM Thinkpad	Notebook PC	2374	L3-G0686

5.4 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.

• Industry Canada (IC) —Registration No.: 9079A-2

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-2.

• 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

5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

5.6 Additional Instructions

Test Software	Special test command provided by manufacturer
Software name	Adb_bt_command
Software version	V1.0
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. 27 2018	June. 26 2019
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 27 2018	June. 26 2019
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 27 2018	June. 26 2019
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 27 2018	June. 26 2019
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 27 2018	June. 26 2019
9	Coaxial Cable	GTS	N/A	GTS211	June. 27 2018	June. 26 2019
10	Coaxial cable	GTS	N/A	GTS210	June. 27 2018	June. 26 2019
11	Coaxial Cable	GTS	N/A	GTS212	June. 27 2018	June. 26 2019
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 27 2018	June. 26 2019
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 27 2018	June. 26 2019
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 27 2018	June. 26 2019
15	Band filter	Amindeon	82346	GTS219	June. 27 2018	June. 26 2019
16	Power Meter	Anritsu	ML2495A	GTS540	June. 27 2018	June. 26 2019
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 27 2018	June. 26 2019
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 27 2018	June. 26 2019
19	Splitter	Agilent	11636B	GTS237	June. 27 2018	June. 26 2019
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 27 2018	June. 26 2019
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 20 2018	Oct. 19 2019
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 20 2018	Oct. 19 2019
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 20 2018	Oct. 19 2019
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 27 2018	June. 26 2019

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. 27 2018	June. 26 2019
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 27 2018	June. 26 2019
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 27 2018	June. 26 2019
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 27 2018	June. 26 2019
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 27 2018	June. 26 2019
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 27 2018	June. 26 2019
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 27 2018	June. 26 2019

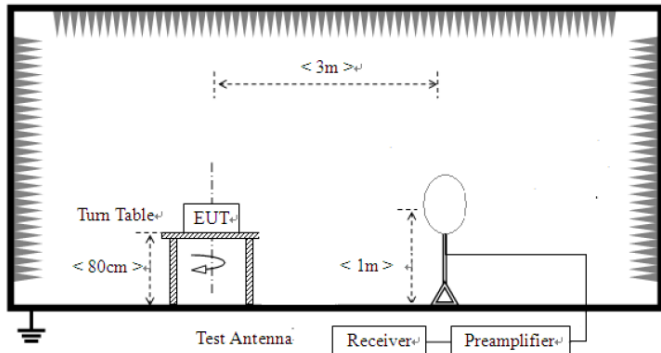
General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Barometer	ChangChun	DYM3	GTS257	June 27 2018	June 26 2019

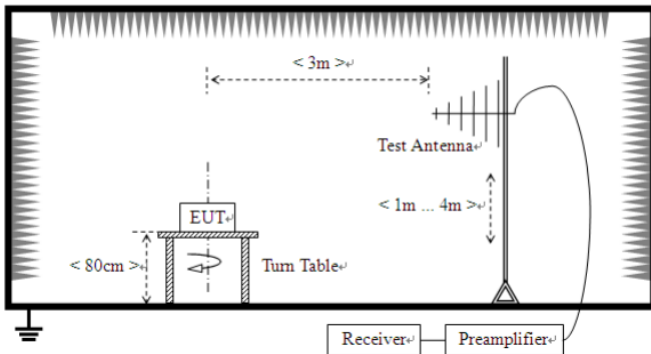
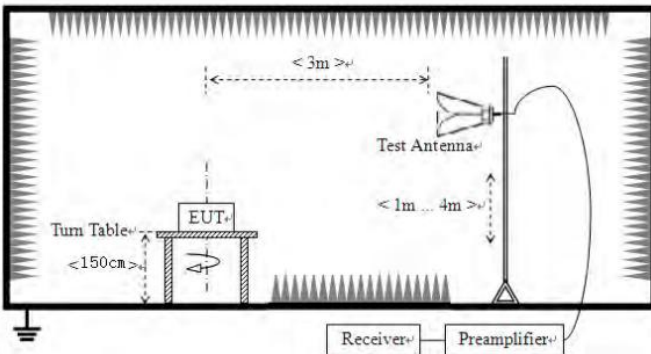
7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement:
FCC part 15.203 requirement: 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.
EUT Antenna:
<i>The antenna is integral antenna, the best case gain of the antenna is 0.5dBi, reference to the appendix II for details</i>

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>				

	<div>Report No.: CTG201004000007-02</div> <div></div> <div>For radiated emissions above 1GHz</div> <div></div>					
Test Procedure:	<div><div>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.</div><div>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.</div><div>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.</div><div>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.</div><div>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</div><div>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.</div></div>					
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 12V					
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	89.96	27.58	5.39	34.01	88.92	114.00	-25.08	Vertical
2402.00	95.73	27.58	5.39	34.01	94.69	114.00	-19.31	Horizontal
2440.00	89.68	27.48	5.43	33.96	88.63	114.00	-25.37	Vertical
2440.00	94.82	27.48	5.43	33.96	93.77	114.00	-20.23	Horizontal
2480.00	87.19	27.52	5.47	33.92	86.26	114.00	-27.74	Vertical
2480.00	95.86	27.52	5.47	33.92	94.93	114.00	-19.07	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	77.88	27.58	5.39	34.01	76.84	94.00	-17.16	Vertical
2402.00	83.70	27.58	5.39	34.01	82.66	94.00	-11.34	Horizontal
2440.00	77.71	27.48	5.43	33.96	76.66	94.00	-17.34	Vertical
2440.00	82.70	27.48	5.43	33.96	81.65	94.00	-12.35	Horizontal
2480.00	75.01	27.52	5.47	33.92	74.08	94.00	-19.92	Vertical
2480.00	83.73	27.52	5.47	33.92	82.80	94.00	-11.20	Horizontal

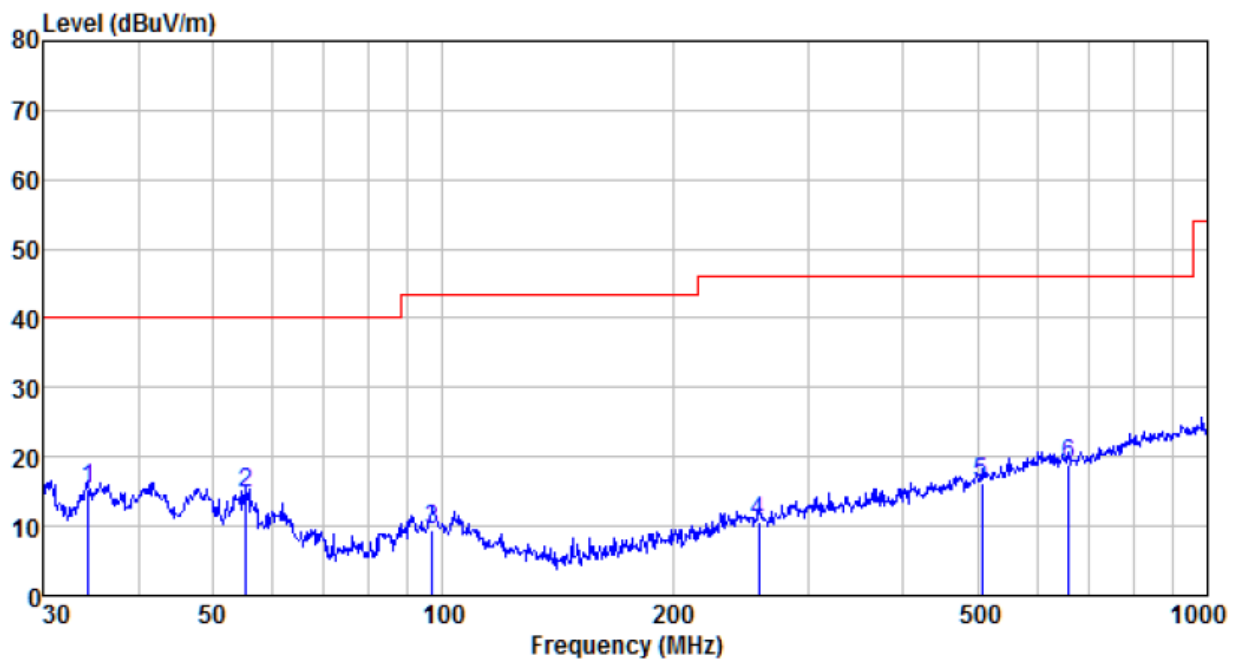
7.2.2 Spurious emissions

■ 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) & RSS-Gen 6.13, the test result no need to reported.

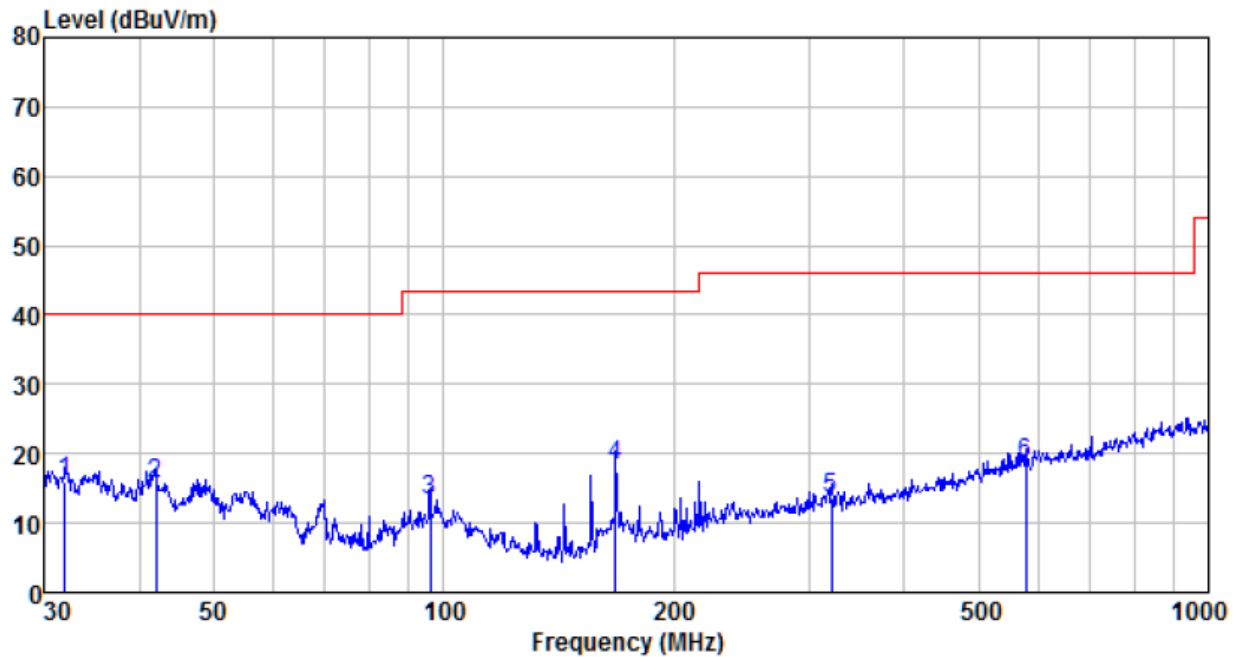
■ Below 1GHz

Horizontal:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
34.396	38.82	11.29	0.60	35.32	15.39	40.00	-24.61	QP
55.221	38.55	11.78	0.82	36.26	14.89	40.00	-25.11	QP
96.775	33.38	11.72	1.17	36.69	9.58	43.50	-33.92	QP
259.234	33.48	12.44	2.17	37.39	10.70	46.00	-35.30	QP
506.479	33.03	17.47	3.33	37.51	16.32	46.00	-29.68	QP
658.836	32.85	19.56	3.94	37.59	18.76	46.00	-27.24	QP

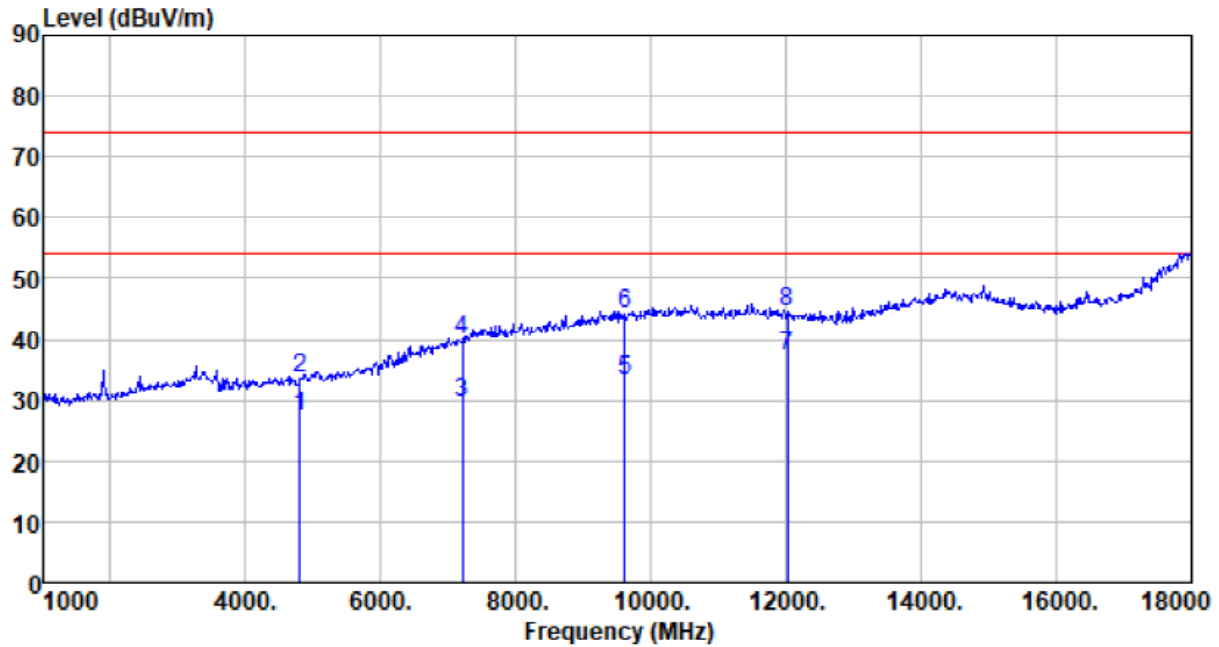
Vertical:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
31.955	39.32	11.24	0.57	35.15	15.98	40.00	-24.02	QP
42.007	38.54	12.22	0.69	35.78	15.67	40.00	-24.33	QP
96.099	37.05	11.65	1.16	36.69	13.17	43.50	-30.33	QP
167.824	45.31	8.46	1.67	37.18	18.26	43.50	-25.24	QP
321.061	34.66	14.01	2.47	37.44	13.70	46.00	-32.30	QP
576.644	33.54	19.00	3.63	37.53	18.64	46.00	-27.36	QP

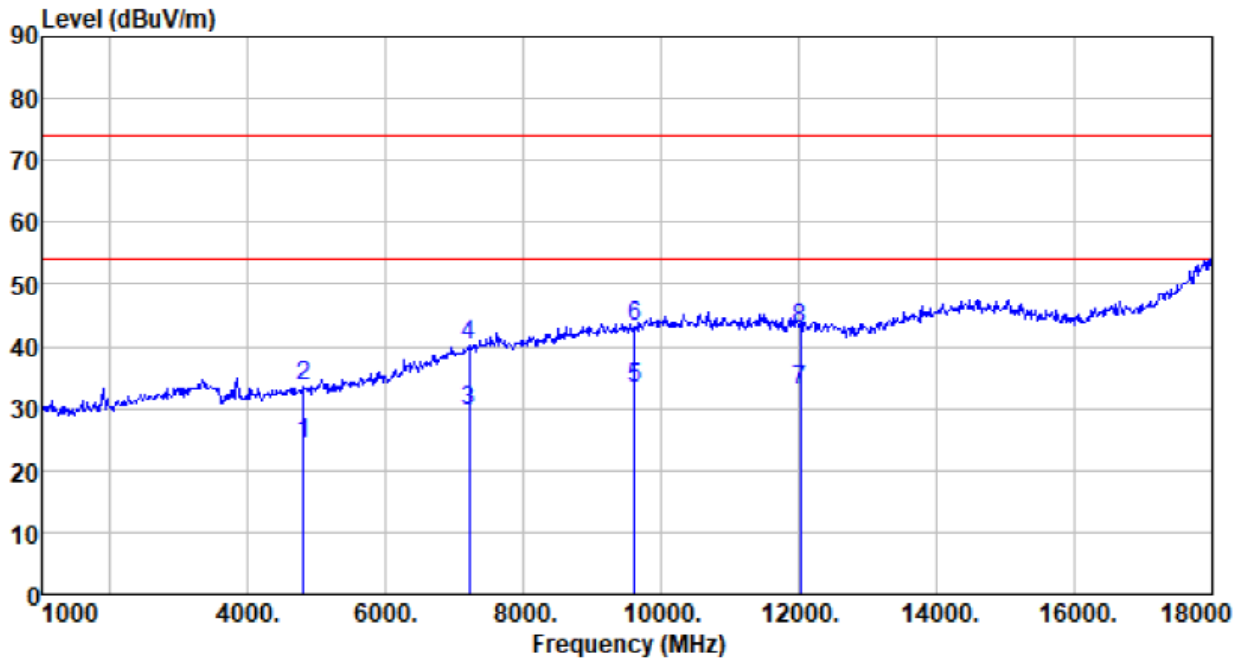
■ Above 1GHz

Lowest channel	Horizontal
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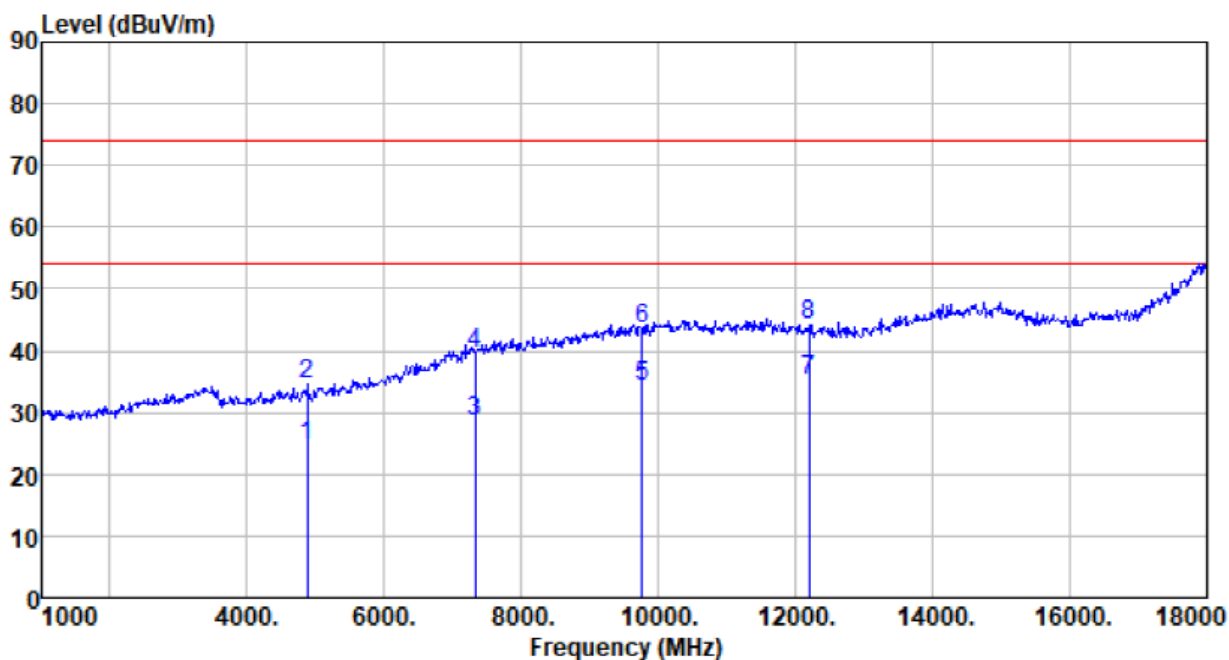
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4804.000	28.99	31.20	4.61	37.73	27.07	54.00	-26.93	Average
4804.000	35.61	31.20	4.61	37.73	33.69	74.00	-40.31	Peak
7206.000	22.42	36.16	6.48	35.63	29.43	54.00	-24.57	Average
7206.000	32.99	36.16	6.48	35.63	40.00	74.00	-34.00	Peak
9608.000	22.26	37.93	7.97	34.94	33.22	54.00	-20.78	Average
9608.000	33.23	37.93	7.97	34.94	44.19	74.00	-29.81	Peak
12010.000	25.87	38.50	8.94	36.20	37.11	54.00	-16.89	Average
12010.000	33.26	38.50	8.94	36.20	44.50	74.00	-29.50	Peak

Lowest channel	Vertical
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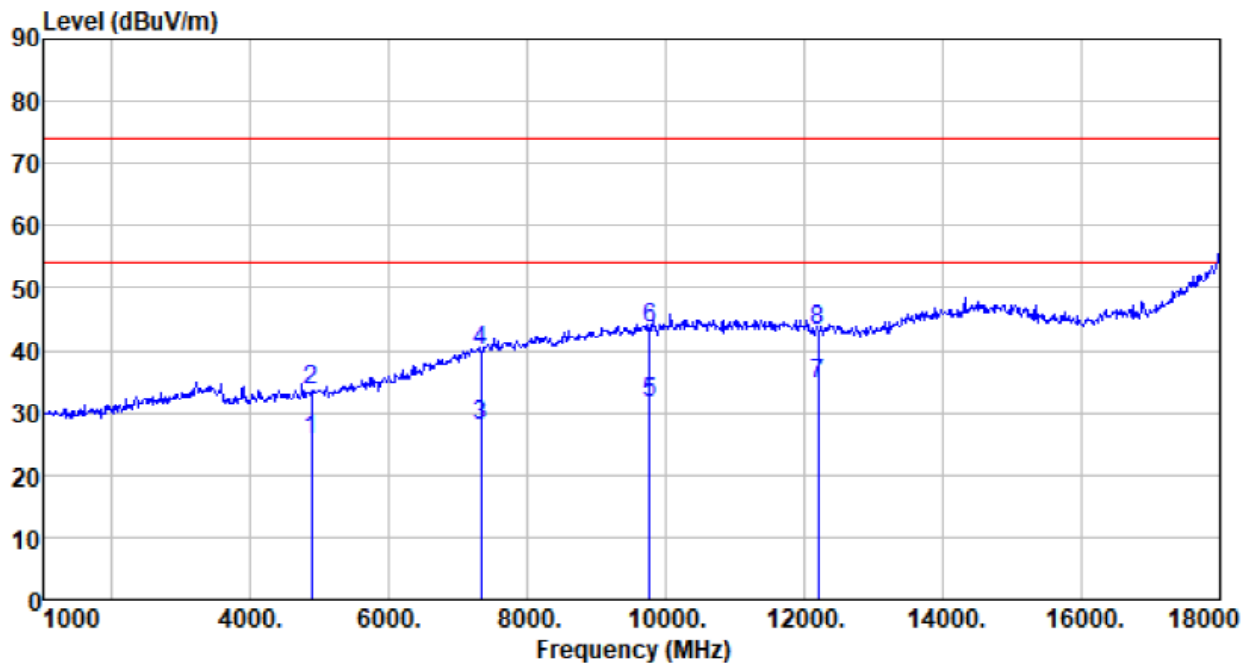
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4804.000	26.15	31.20	4.61	37.73	24.23	54.00	-29.77	Average
4804.000	35.42	31.20	4.61	37.73	33.50	74.00	-40.50	Peak
7206.000	22.48	36.16	6.48	35.63	29.49	54.00	-24.51	Average
7206.000	33.01	36.16	6.48	35.63	40.02	74.00	-33.98	Peak
9608.000	22.36	37.93	7.97	34.94	33.32	54.00	-20.68	Average
9608.000	32.21	37.93	7.97	34.94	43.17	74.00	-30.83	Peak
12010.000	21.57	38.50	8.94	36.20	32.81	54.00	-21.19	Average
12010.000	31.59	38.50	8.94	36.20	42.83	74.00	-31.17	Peak

Middle channel	Horizontal
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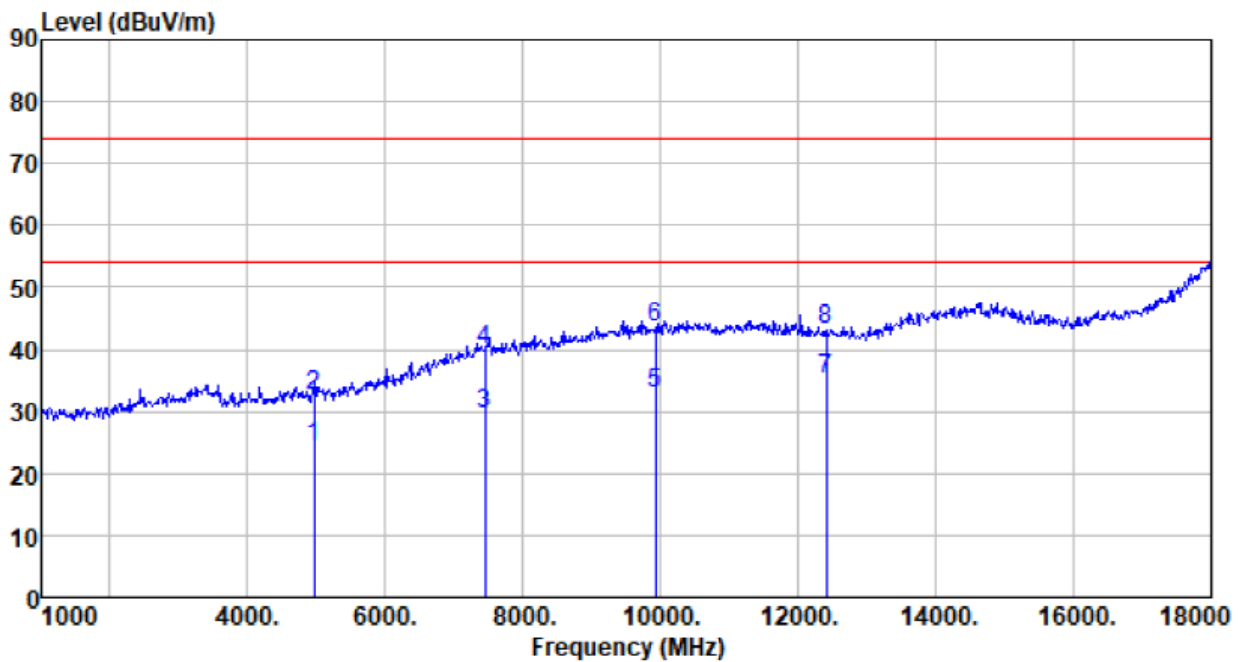
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4880.000	26.20	31.31	4.69	37.75	24.45	54.00	-29.55	Average
4880.000	36.18	31.31	4.69	37.75	34.43	74.00	-39.57	Peak
7320.000	21.09	36.43	6.63	35.60	28.55	54.00	-25.45	Average
7320.000	32.19	36.43	6.63	35.60	39.65	74.00	-34.35	Peak
9760.000	23.11	38.10	8.03	35.03	34.21	54.00	-19.79	Average
9760.000	32.57	38.10	8.03	35.03	43.67	74.00	-30.33	Peak
12200.000	23.85	38.57	8.96	36.31	35.07	54.00	-18.93	Average
12200.000	33.07	38.57	8.96	36.31	44.29	74.00	-29.71	Peak

Middle channel	Vertical
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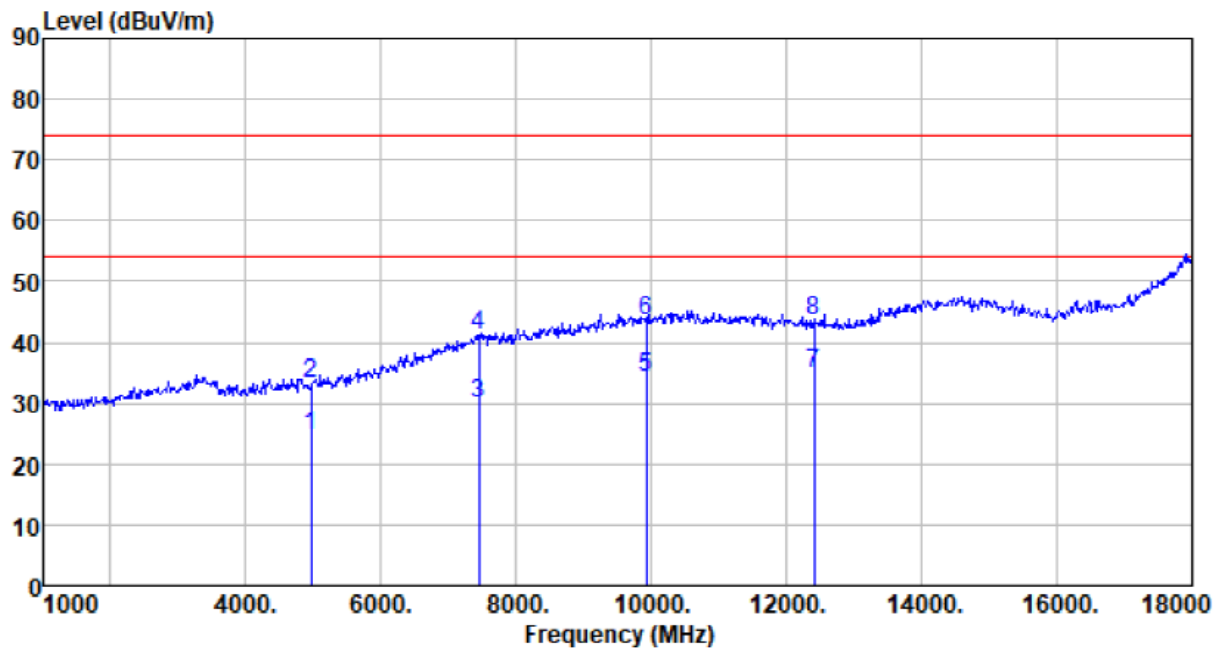
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4880.000	27.29	31.31	4.69	37.75	25.54	54.00	-28.46	Average
4880.000	35.28	31.31	4.69	37.75	33.53	74.00	-40.47	Peak
7320.000	20.28	36.43	6.63	35.60	27.74	54.00	-26.26	Average
7320.000	32.40	36.43	6.63	35.60	39.86	74.00	-34.14	Peak
9760.000	20.48	38.10	8.03	35.03	31.58	54.00	-22.42	Average
9760.000	32.32	38.10	8.03	35.03	43.42	74.00	-30.58	Peak
12200.000	23.23	38.57	8.96	36.31	34.45	54.00	-19.55	Average
12200.000	31.88	38.57	8.96	36.31	43.10	74.00	-30.90	Peak

Highest channel	Horizontal
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Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4960.000	25.70	31.44	4.79	37.78	24.15	54.00	-29.85	Average
4960.000	34.04	31.44	4.79	37.78	32.49	74.00	-41.51	Peak
7440.000	21.65	36.66	6.77	35.56	29.52	54.00	-24.48	Average
7440.000	31.98	36.66	6.77	35.56	39.85	74.00	-34.15	Peak
9920.000	21.70	38.30	8.09	35.14	32.95	54.00	-21.05	Average
9920.000	32.22	38.30	8.09	35.14	43.47	74.00	-30.53	Peak
12400.000	23.94	38.66	8.97	36.44	35.13	54.00	-18.87	Average
12400.000	32.09	38.66	8.97	36.44	43.28	74.00	-30.72	Peak

Highest channel	Vertical
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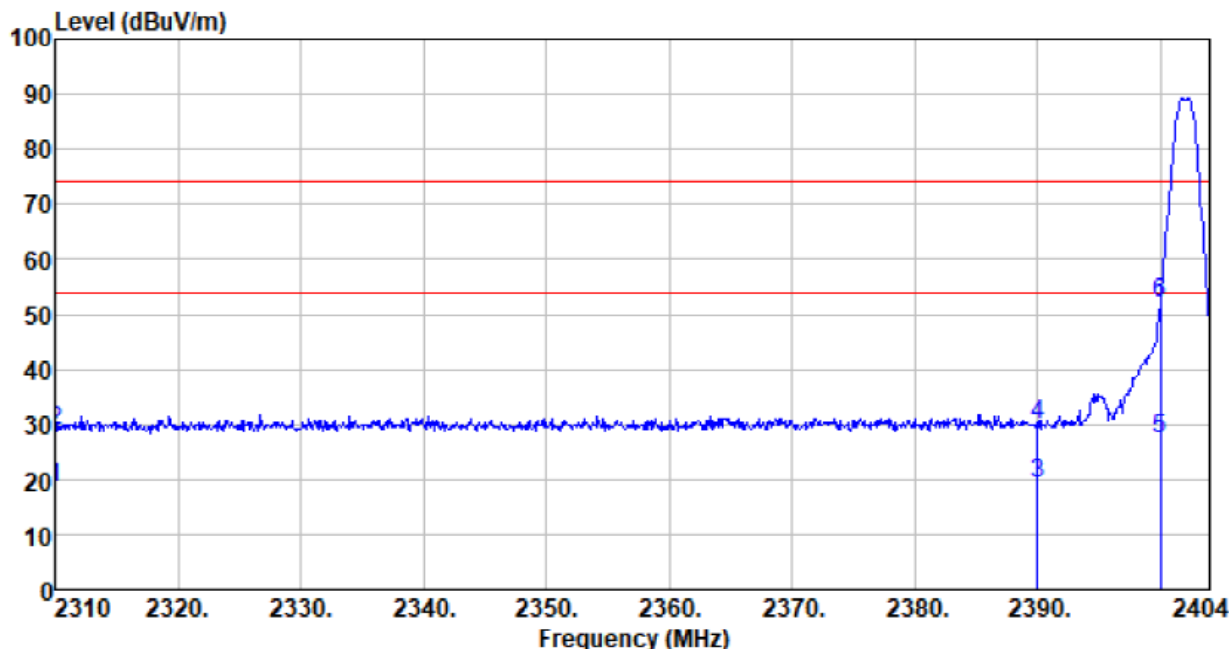


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4960.000	26.06	31.44	4.79	37.78	24.51	54.00	-29.49	Average
4960.000	34.62	31.44	4.79	37.78	33.07	74.00	-40.93	Peak
7440.000	22.16	36.66	6.77	35.56	30.03	54.00	-23.97	Average
7440.000	33.15	36.66	6.77	35.56	41.02	74.00	-32.98	Peak
9920.000	23.08	38.30	8.09	35.14	34.33	54.00	-19.67	Average
9920.000	32.18	38.30	8.09	35.14	43.43	74.00	-30.57	Peak
12400.000	23.74	38.66	8.97	36.44	34.93	54.00	-19.07	Average
12400.000	32.38	38.66	8.97	36.44	43.57	74.00	-30.43	Peak

7.2.3 Bandedge emissions

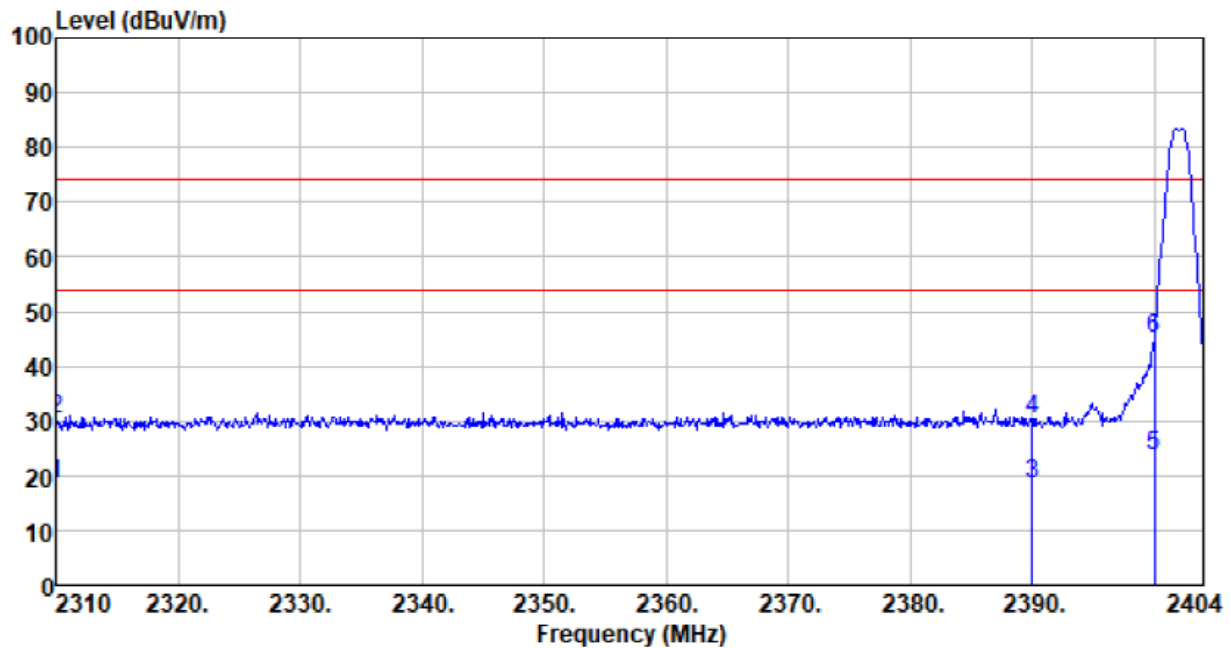
All of the restriction bands were tested, and only the data of worst case was exhibited.

Lowest channel	Horizontal
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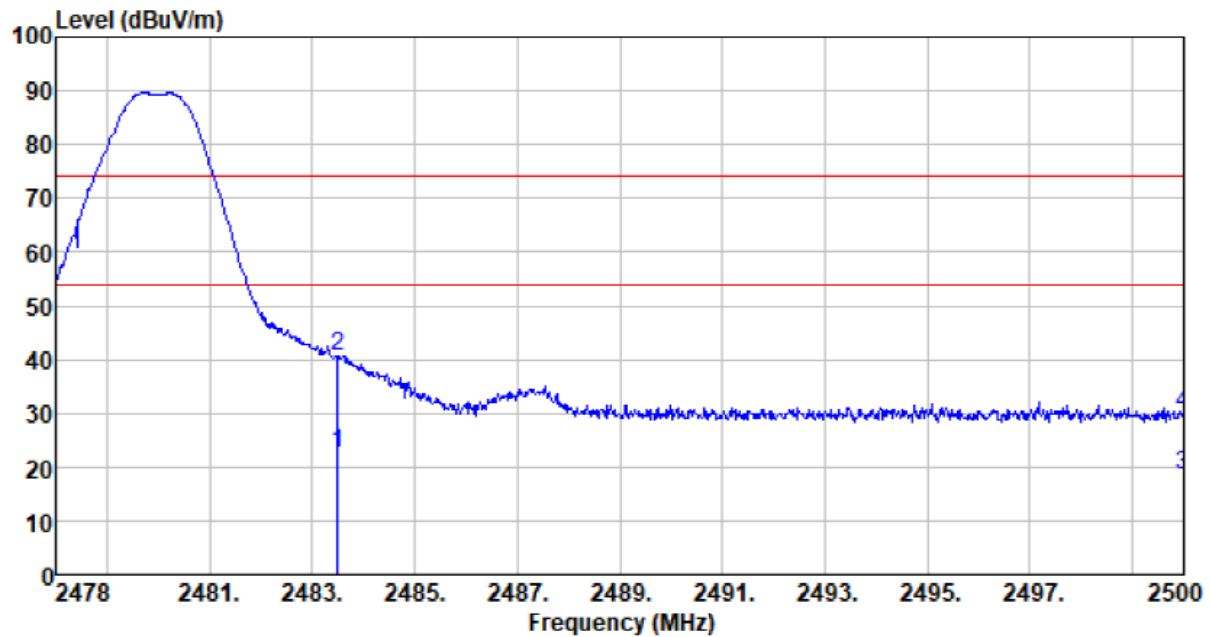
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
2310.000	25.33	27.14	2.81	36.79	18.49	54.00	-35.51	Average
2310.000	35.60	27.14	2.81	36.79	28.76	74.00	-45.24	Peak
2390.000	25.59	27.37	2.91	36.85	19.02	54.00	-34.98	Average
2390.000	36.47	27.37	2.91	36.85	29.90	74.00	-44.10	Peak
2400.000	33.70	27.41	2.91	36.86	27.16	54.00	-26.84	Average
2400.000	58.69	27.41	2.91	36.86	52.15	74.00	-21.85	Peak

Lowest channel	Vertical
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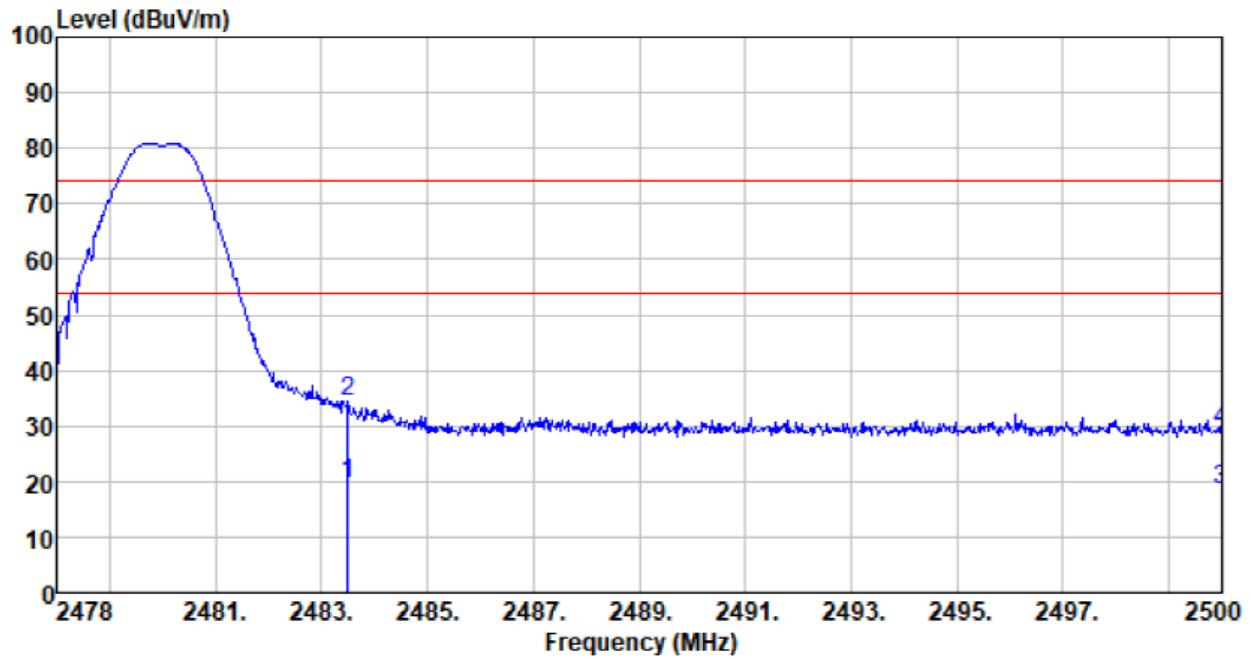
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
2310.000	25.15	27.14	2.81	36.79	18.31	54.00	-35.69	Average
2310.000	37.11	27.14	2.81	36.79	30.27	74.00	-43.73	Peak
2390.000	25.19	27.37	2.91	36.85	18.62	54.00	-35.38	Average
2390.000	36.68	27.37	2.91	36.85	30.11	74.00	-43.89	Peak
2400.000	30.10	27.41	2.91	36.86	23.56	54.00	-30.44	Average
2400.000	51.58	27.41	2.91	36.86	45.04	74.00	-28.96	Peak

Highest channel	Horizontal
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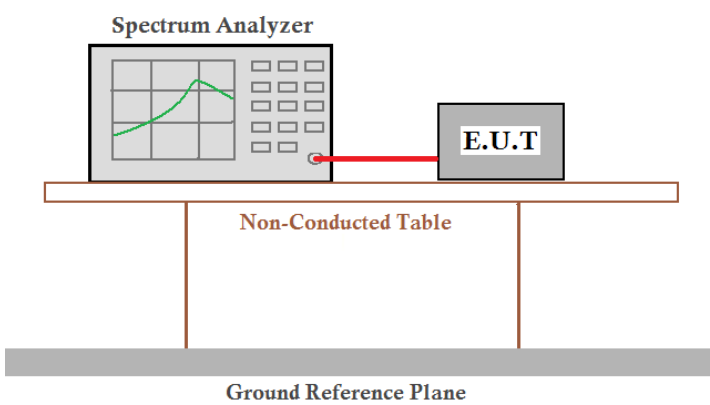
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
2483.500	28.66	27.66	2.99	36.93	22.38	54.00	-31.62	Average
2483.500	46.87	27.66	2.99	36.93	40.59	74.00	-33.41	Peak
2500.000	24.81	27.70	3.01	36.94	18.58	54.00	-35.42	Average
2500.000	36.05	27.70	3.01	36.94	29.82	74.00	-44.18	Peak

Highest channel	Vertical
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Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
2483.500	25.90	27.66	2.99	36.93	19.62	54.00	-34.38	Average
2483.500	40.74	27.66	2.99	36.93	34.46	74.00	-39.54	Peak
2500.000	24.78	27.70	3.01	36.94	18.55	54.00	-35.45	Average
2500.000	35.41	27.70	3.01	36.94	29.18	74.00	-44.82	Peak

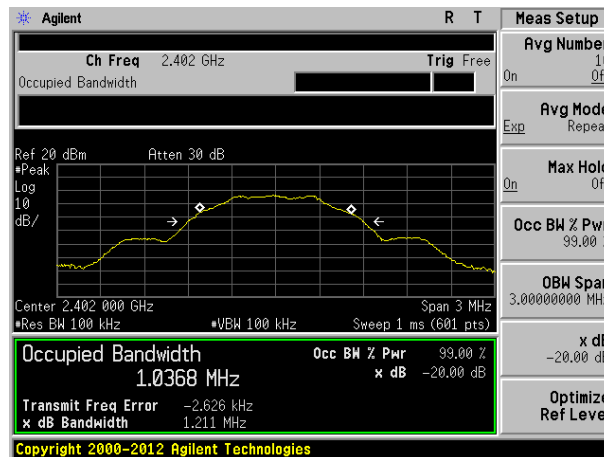
7.3 Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215 & RSS-Gen 6.6
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 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

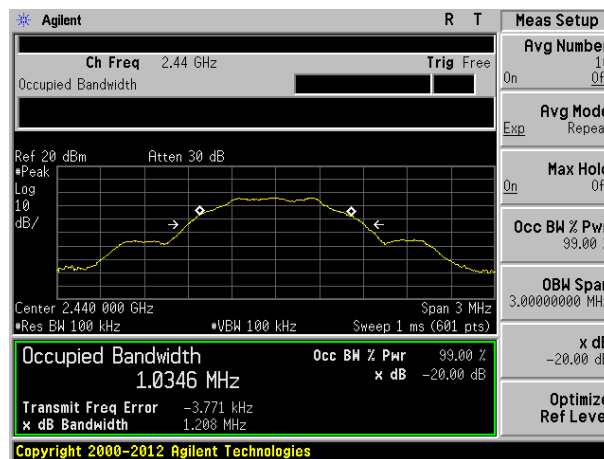
Measurement Data

Test channel	20dB bandwidth(MHz)	Result
Lowest	1.211	Pass
Middle	1.208	Pass
Highest	1.210	Pass

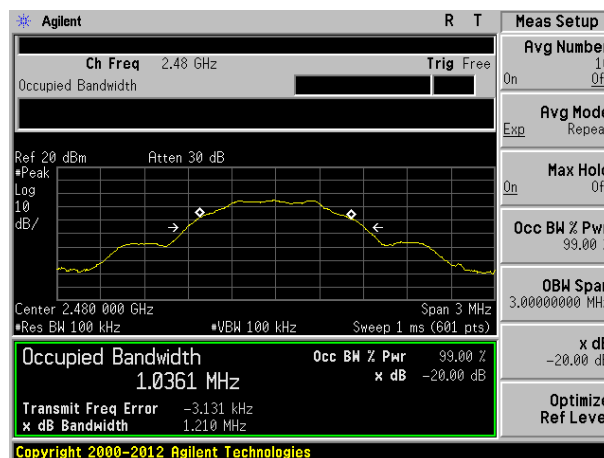
Test plot as follows:



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-----