

TEST REPORT

Reference No..... : WTX22X03055161E
FCC ID SYW-FLD30RGB
Applicant FEIT ELECTRIC COMPANY
Address 4901 GREGG ROAD,PICO RIVERA,CA 90660 U.S.A
Manufacturer FEIT ELECTRIC COMPANY
Address 4901 GREGG ROAD,PICO RIVERA,CA 90660 U.S.A
Product Name Luminaire
Model No..... FLD30/RGB
Standards **FCC PART15 SUBPART B**
Date of Receipt sample 2022-03-30
Date of Test..... 2022-03-30 to 2022-03-30
Date of Issue 2022-04-09
Test Report Form No. WTX_FCC PART15B_001
Test Result..... **Pass**

Remarks:

The 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 approver.

Prepared By:

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Tested by:



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Approved by:



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TABLE OF CONTENTS

1. GENERAL INFORMATION.....	3
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT).....	3
1.2 TEST STANDARDS.....	4
1.3 TEST METHODOLOGY.....	4
1.4 TEST FACILITY	4
1.5 EUT SETUP AND OPERATION MODE	5
1.6 MEASUREMENT UNCERTAINTY	6
1.7 TEST EQUIPMENT LIST AND DETAILS	7
2. SUMMARY OF TEST RESULTS	8
3. CONDUCTED EMISSIONS	9
3.1 TEST PROCEDURE.....	9
3.2 BASIC TEST SETUP BLOCK DIAGRAM.....	9
3.3 ENVIRONMENTAL CONDITIONS	9
3.4 SUMMARY OF TEST RESULTS	9
4. RADIATED EMISSION	12
4.1 TEST PROCEDURE.....	12
4.2 BLOCK DIAGRAM OF TEST SETUP	12
4.3 TEST RECEIVER SETUP	13
4.4 CORRECTED AMPLITUDE & MARGIN CALCULATION.....	13
4.5 ENVIRONMENTAL CONDITIONS	13
4.6 SUMMARY OF TEST RESULTS	13
EXHIBIT 1 - PRODUCT LABELING	18
PROPOSED FCC LABEL FORMAT	18
PROPOSED LABEL LOCATION ON EUT	18
EXHIBIT 2 - EUT PHOTOGRAPHS.....	19
EXHIBIT 3 - EUT INTERNAL PHOTOGRAPHS.....	22
EXHIBIT 4 - TEST SETUP PHOTOGRAPHS	25
EXHIBIT 5 - USERS MANUAL	27

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	Luminaire
Trade Name:	Feit Electric
Model No.:	FLD30/RGB
Adding Model(s):	FLD30/RGB/RP, FLD30/RGB/LED
<i>Note: The test data is gathered from a production sample, provided by the manufacturer. The appearance of others models listed in the report is different from main-test model FLD30/RGB, but the circuit and the electronic construction do not change, declared by the manufacturer.</i>	

Technical Characteristics of EUT	
Rated Voltage:	AC 100-240V 50-60Hz
Rated Current:	/
Rated Power:	/
Power Adapter Model:	/
Lowest Internal Frequency:	/
Highest Internal Frequency:	Above 108MHz
Classification of ITE:	Class B

1.2 Test Standards

The tests were performed according to following standards:

FCC Rules Part 15 Subpart B:Unintentional Radiators.

ANSI C63.4-2014:American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

1.4 Test Facility

Address of the test laboratory

Laboratory: Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road, Block 70 Bao'an District, Shenzhen, Guangdong, China

FCC – Registration No.: 125990

Waltek Testing Group (Shenzhen) Co., Ltd. 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 our files. The Designation Number is CN5010, and Test Firm Registration Number is 125990.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Waltek Testing Group (Shenzhen) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List			
Test Mode	Description	Remark	Power Supply Mode
TM1	Working	Maximum power condition	AC120V60Hz

EUT Cable List and Details				
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite	With / Without Chip
Cable	0.8	/	Without Ferrite	Without Chip

Special Cable List and Details				
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite	With / Without Chip
/	/	/	/	/

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
/	/	/	/

1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Conducted Emissions	Conducted	9-150kHz $\pm 3.74\text{dB}$
		0.15-30MHz $\pm 3.34\text{dB}$
Radiated Emissions	Radiated	30-200MHz $\pm 4.52\text{dB}$
		0.2-1GHz $\pm 5.56\text{dB}$
		1-6GHz $\pm 3.84\text{dB}$
		6-18GHz $\pm 3.92\text{dB}$

1.7 Test Equipment List and Details

Description	Manufacturer	Model	Serial No.	Cal Date	Due Date
☒ Chamber A:Below 1GHz					
Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2022-03-22	2023-03-21
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2022-03-22	2023-03-21
Trilog Broadband Antenna	Schwarz beck	VULB9163	9163-333	2021-03-20	2023-03-19
Loop Antenna	Schwarz beck	FMZB 1516	9773	2021-03-20	2023-03-19
Amplifier	HP	8447F	2805A03475	2022-01-07	2023-01-06
☒ Chamber A:Above 1GHz					
Amplifier	C&D	PAP-1G18	2002	2022-03-22	2023-03-21
Horn Antenna	ETS	3117	00086197	2021-03-19	2023-03-18
☐ Chamber B:Below 1GHz					
Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2021-04-09	2023-04-08
Amplifier	Agilent	8447D	2944A10179	2022-03-22	2023-03-21
EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2022-03-25	2023-03-24
☐ Chamber C:Below 1GHz					
EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2022-01-07	2023-01-06
Trilog Broadband Antenna	Schwarz beck	VULB 9168	1194	2021-05-28	2023-05-27
Amplifier	HP	8447F	2944A03869	2022-03-22	2023-03-21
☒ Conducted Room 1#					
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2022-03-22	2023-03-21
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2022-03-25	2023-03-24
AC LISN	Schwarz beck	NSLK8126	8126-224	2022-03-22	2023-03-21
8-WIRE LISN	Schwarz beck	8158	CAT3-8158-0059	2022-03-22	2023-03-21
8-WIRE LISN	Schwarz beck	8158	CAT5-8158-0117	2022-03-22	2023-03-21
☐ Conducted Room 2#					
EMI Test Receiver	Rohde & Schwarz	ESPI	10129	2022-03-22	2023-03-21
LISN	Rohde & Schwarz	ENV 216	100097	2022-03-22	2023-03-21

Software List			
Description	Manufacturer	Model	Version
EMI Test Software (Radiated Emission)*	Farad	EZ-EMC	RA-03A1
EMI Test Software (Conducted Emission)*	Farad	EZ-EMC	RA-03A1

*Remark: indicates software version used in the compliance certification testing.

2. SUMMARY OF TEST RESULTS

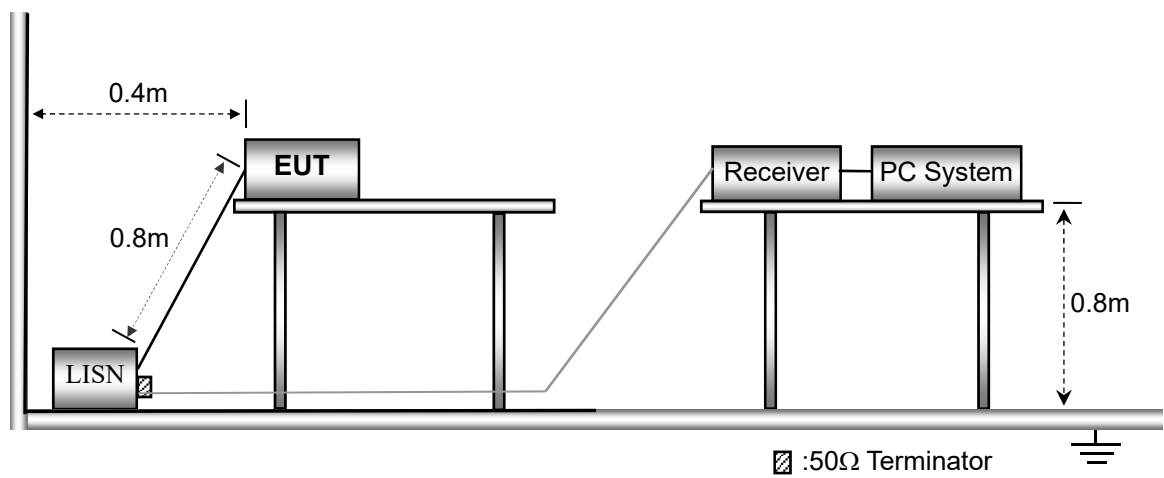
Description of Test	Result
§15.107(a) Conducted Emission	Compliant
§15.109(a) Radiated Emission	Compliant

3. Conducted Emissions

3.1 Test Procedure

Test is conducting under the description of ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

3.2 Basic Test Setup Block Diagram



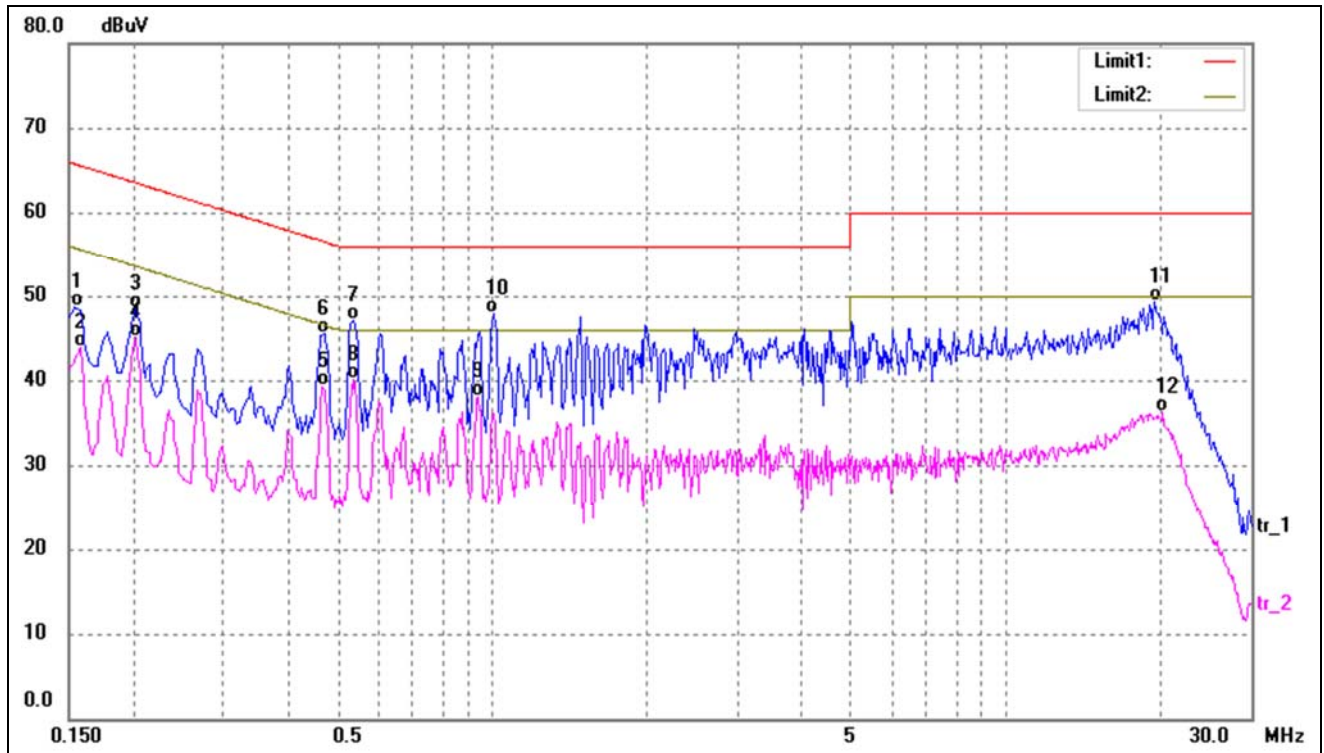
3.3 Environmental Conditions

Temperature:	23.5 °C
Relative Humidity:	51 %
ATM Pressure:	1014 mbar

3.4 Summary of Test Results

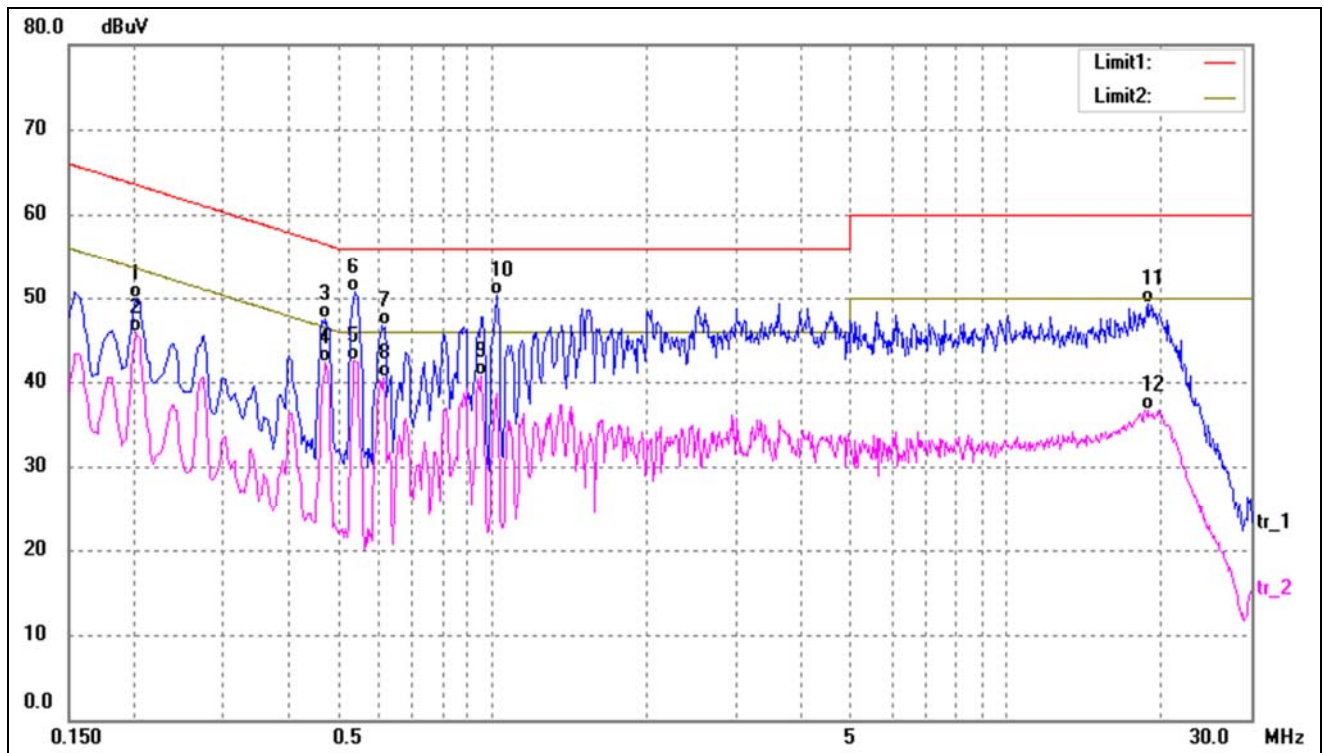
Please find the results below:

Test mode:	TM1	Polarity:	Line
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1539	48.65	0.00	48.65	65.78	-17.13	QP
2	0.1580	43.99	0.00	43.99	55.56	-11.57	AVG
3	0.2020	48.49	0.00	48.49	63.52	-15.03	QP
4	0.2020	45.04	0.00	45.04	53.52	-8.48	AVG
5	0.4660	39.37	0.00	39.37	46.58	-7.21	AVG
6	0.4699	45.52	0.00	45.52	56.52	-11.00	QP
7	0.5340	47.12	0.00	47.12	56.00	-8.88	QP
8*	0.5340	40.10	0.00	40.10	46.00	-5.90	AVG
9	0.9419	38.04	0.00	38.04	46.00	-7.96	AVG
10	1.0100	47.87	0.00	47.87	56.00	-8.13	QP
11	19.4379	49.29	0.00	49.29	60.00	-10.71	QP
12	20.1858	36.23	0.00	36.23	50.00	-13.77	AVG

Test mode:	TM1	Polarity:	Neutral
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.2020	49.85	0.00	49.85	63.52	-13.67	QP
2	0.2020	45.82	0.00	45.82	53.52	-7.70	AVG
3	0.4739	47.59	0.00	47.59	56.45	-8.86	QP
4	0.4739	42.31	0.00	42.31	46.45	-4.14	AVG
5*	0.5380	42.51	0.00	42.51	46.00	-3.49	AVG
6	0.5420	50.68	0.00	50.68	56.00	-5.32	QP
7	0.6099	46.63	0.00	46.63	56.00	-9.37	QP
8	0.6139	40.53	0.00	40.53	46.00	-5.47	AVG
9	0.9579	40.73	0.00	40.73	46.00	-5.27	AVG
10	1.0260	50.39	0.00	50.39	56.00	-5.61	QP
11	18.8939	49.39	0.00	49.39	60.00	-10.61	QP
12	18.8939	36.72	0.00	36.72	50.00	-13.28	AVG

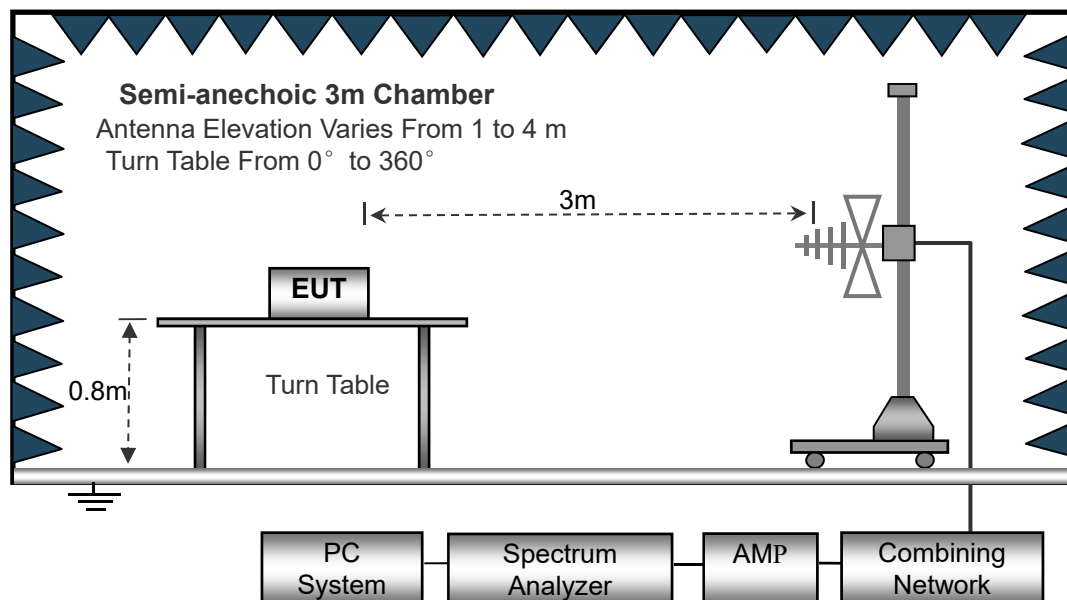
4. RADIATED EMISSION

4.1 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15.109 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle. The spacing between the peripherals was 10 cm.

4.2 Block Diagram of Test Setup



4.3 Test Receiver Setup

Frequency :9kHz-30MHz

RBW=10KHz,

VBW =30KHz

Sweep time= Auto

Trace = max hold

Detector function = peak

Frequency :30MHz-1GHz

RBW=120KHz,

VBW=300KHz

Sweep time= Auto

Trace = max hold

Detector function = peak, QP

Frequency :Above 1GHz

RBW=1MHz,

VBW=3MHz(Peak), 10Hz(AV)

Sweep time= Auto

Trace = max hold

Detector function = peak, AV

4.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\begin{aligned}\text{Corr. Ampl.} &= \text{Indicated Reading} + \text{Correct} \\ \text{Correct} &= \text{Ant. Factor} + \text{Cable Loss} - \text{Ampl. Gain}\end{aligned}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for a Class B device. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15.109(a) Limit}$$

4.5 Environmental Conditions

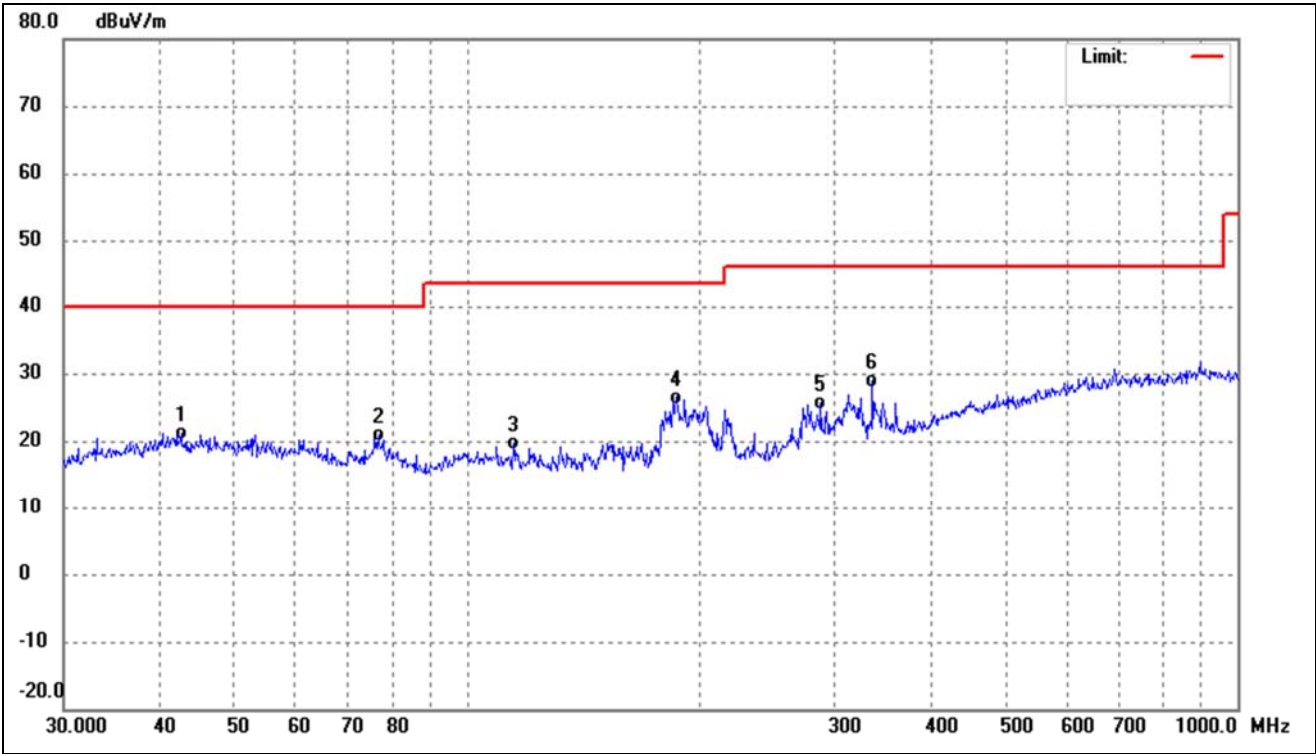
Temperature:	22.5 °C
Relative Humidity:	52 %
ATM Pressure:	1011 mbar

4.6 Summary of Test Results

Please find the results below:

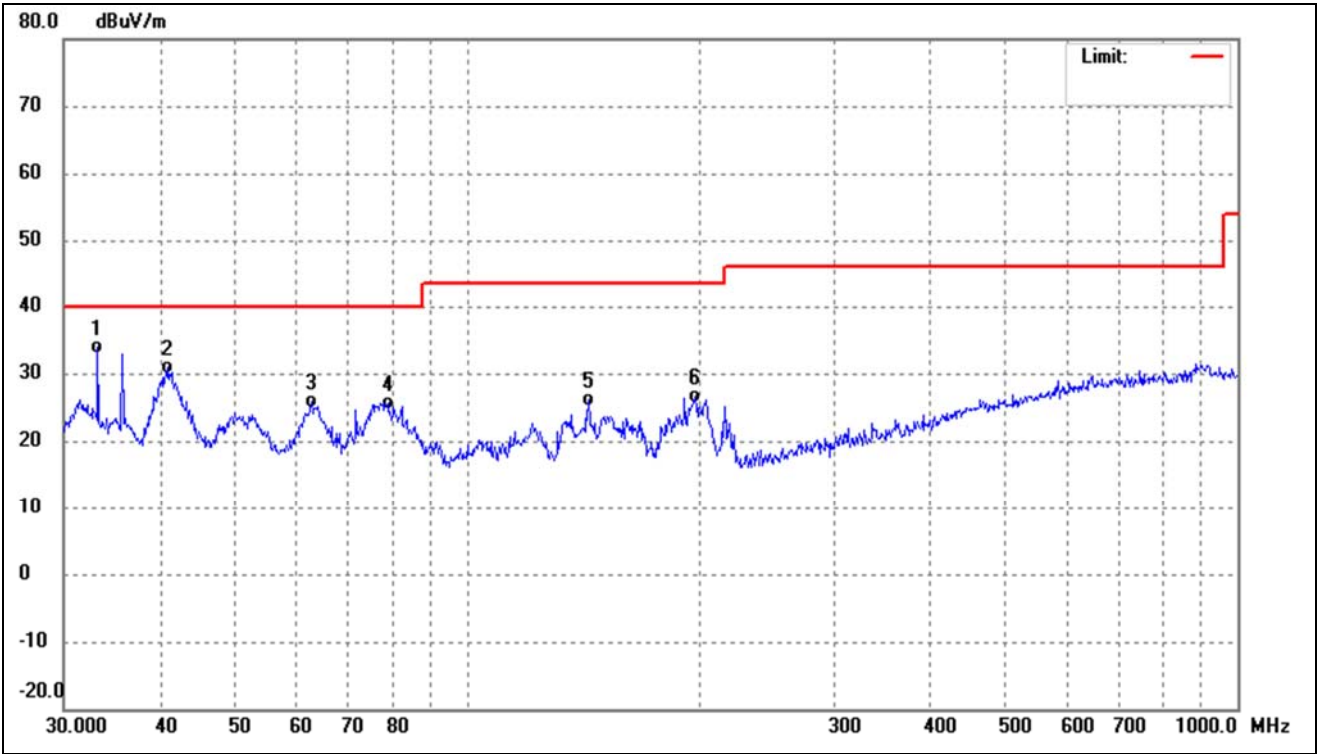
Below 1GHz

Test mode:	TM1	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	42.6000	28.15	-6.99	21.16	40.00	-18.84	219	100	QP
2	76.7808	31.56	-10.56	21.00	40.00	-19.00	91	100	QP
3	114.9169	28.88	-9.23	19.65	43.50	-23.85	157	100	QP
4	187.0958	36.90	-10.40	26.50	43.50	-17.00	96	100	QP
5	287.9904	32.95	-7.28	25.67	46.00	-20.33	237	100	QP
6	336.0352	34.78	-5.83	28.95	46.00	-17.05	136	100	QP

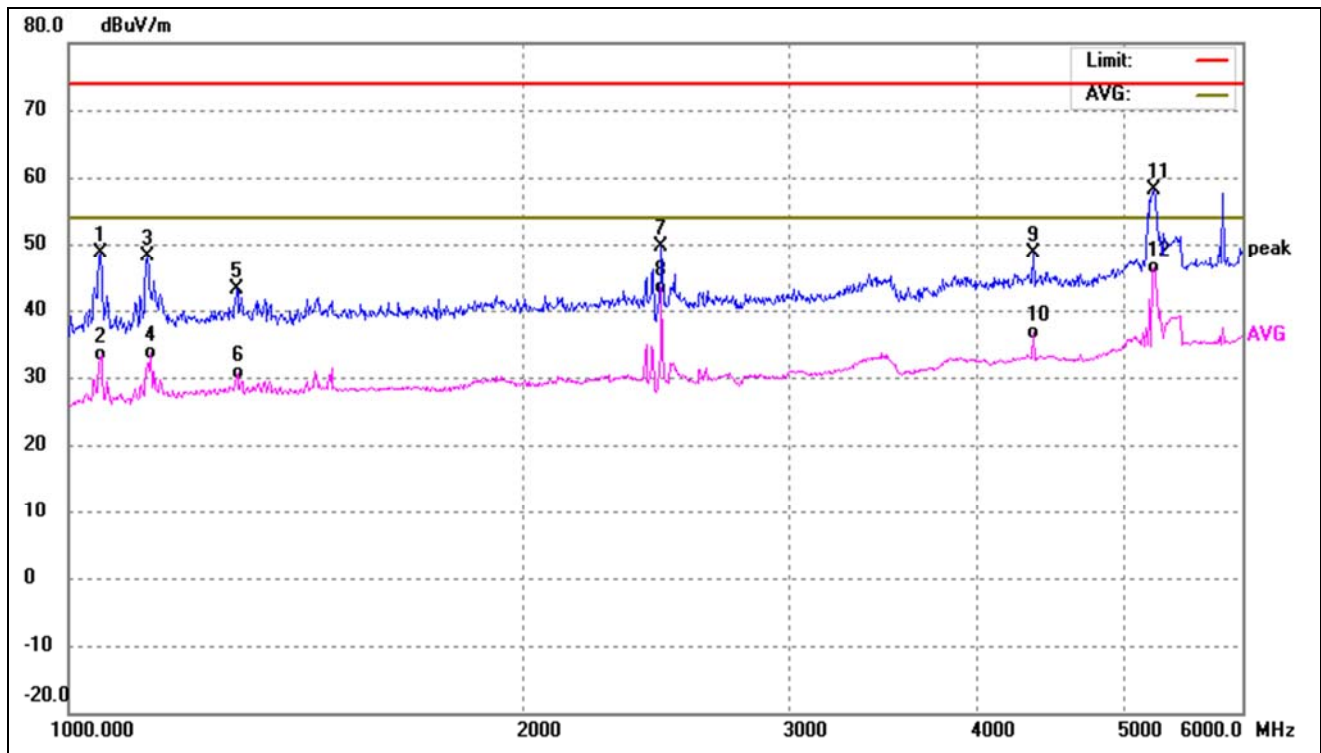
Test mode:	TM1	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	33.2112	42.51	-8.67	33.84	40.00	-6.16	273	100	QP
2	40.9881	37.88	-7.00	30.88	40.00	-9.12	95	100	QP
3	62.8708	34.70	-8.93	25.77	40.00	-14.23	294	100	QP
4	78.9652	36.37	-10.67	25.70	40.00	-14.30	100	100	QP
5	143.8295	38.48	-12.40	26.08	43.50	-17.42	183	100	QP
6	197.8928	36.47	-9.76	26.71	43.50	-16.79	314	100	QP

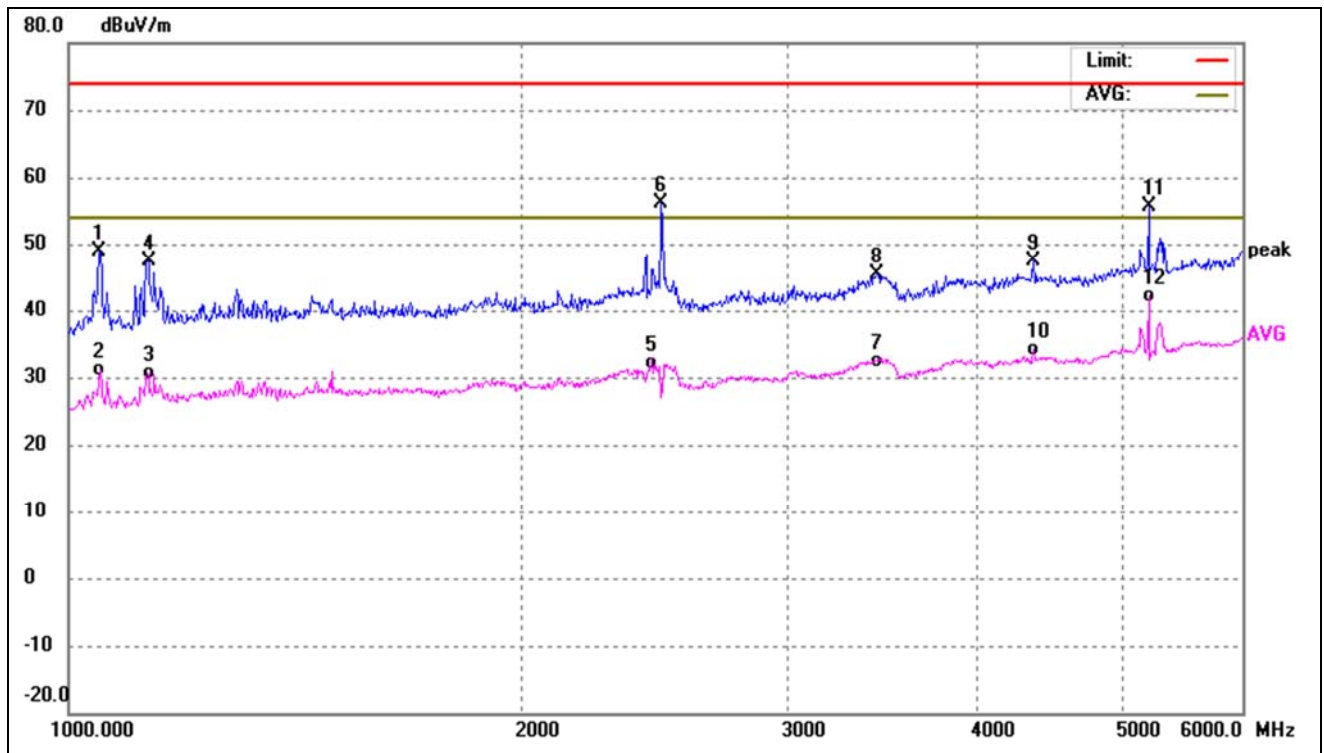
Above 1GHz

Test mode:	TM1	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	1049.567	63.63	-14.93	48.70	74.00	-25.30	256	100	peak
2	1051.449	48.28	-14.92	33.36	54.00	-20.64	128	100	AVG
3	1127.551	62.71	-14.55	48.16	74.00	-25.84	62	100	peak
4	1133.628	48.05	-14.52	33.53	54.00	-20.47	185	100	AVG
5	1292.039	56.93	-13.71	43.22	74.00	-30.78	351	100	peak
6	1294.356	44.25	-13.70	30.55	54.00	-23.45	124	100	AVG
7	2471.533	60.23	-10.59	49.64	74.00	-24.36	161	100	peak
8	2471.533	54.08	-10.59	43.49	54.00	-10.51	182	100	AVG
9	4361.545	55.79	-7.15	48.64	74.00	-25.36	140	100	peak
10	4361.545	43.71	-7.15	36.56	54.00	-17.44	146	100	AVG
11	5245.536	63.25	-5.16	58.09	74.00	-15.91	211	100	peak
12	5245.536	51.62	-5.16	46.46	54.00	-7.54	92	100	AVG

Test mode:	TM1	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	1047.688	63.89	-14.95	48.94	74.00	-25.06	278	100	peak
2	1049.567	46.09	-14.93	31.16	54.00	-22.84	204	100	AVG
3	1127.551	45.28	-14.55	30.73	54.00	-23.27	90	100	AVG
4	1129.573	61.88	-14.54	47.34	74.00	-26.66	155	100	peak
5	2440.728	42.87	-10.63	32.24	54.00	-21.76	117	100	AVG
6	2471.533	66.77	-10.59	56.18	74.00	-17.82	144	100	peak
7	3418.313	40.93	-8.47	32.46	54.00	-21.54	59	100	AVG
8	3430.584	53.88	-8.46	45.42	74.00	-28.58	146	100	peak
9	4361.545	54.65	-7.15	47.50	74.00	-26.50	102	100	peak
10	4361.545	41.40	-7.15	34.25	54.00	-19.75	136	100	AVG
11	5198.752	60.83	-5.24	55.59	74.00	-18.41	287	100	peak
12	5198.752	47.31	-5.24	42.07	54.00	-11.93	200	100	AVG