



# FCC PART 15.249 TEST REPORT

On Behalf of

**Feit Electric company Inc.**

4901 Gregg Road Pico Rivera, Ca 90660

**FCC ID: SYW-S135FLMM**

Model: S13.5FLMMBKHDCAN, S13.5FL/MM/BZ,  
 TF1180/15000DM/83065LEDC/P180MW/5WY-DTZ,  
 TF1180/15000DM/83065LEDC/P180MW/5WYG2-DTB,  
 TF1180/15000DM/83065LEDC/P180MW/5WYG2-DTZ

August 28, 2024

<b>This Report Concerns:</b>	<b>Equipment Type:</b>
<input checked="" type="checkbox"/> Derived Report	SINGLE HEAD COMMERCIAL SECURITY FLOOD LIGHT
<b>Test Engineer:</b> <u>LBi Li / LBi Li</u>	
<b>Report Number:</b> <u>QCT24HR-1961E-01</u>	
<b>Test Date:</b> <u>August 22~28, 2024</u>	
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### Revision History of This Test Report

Report Number	Description	Issued Date
QCT24DR-1443E-01	Initial Issue	2024-4-11
QCT24HR-1961E-01	Change: #1: Add Model No ; #2: The difference between the new and old power supply boards: the patch resistance of 100r is more than r52, the patch resistance of 10r is more, the Bp5929 is changed to a photocouple, and a diode is added.	2024-8-28
<p>Remark: Edition No: QCT24HR-1961E-01</p> <ol style="list-style-type: none"> <li>This report is an derived report with original report number QCT24DR-1443E-01, Please refer to the above table for the differences between this report and the original report.</li> <li>Compared with the original report QCT24DR-1443E-01, The difference between the new and old power supply boards: the patch resistance of 100r is more than r52, the patch resistance of 10r is more, the Bp5929 is changed to a photocouple, and a diode is added., add the test data of the Conducted Emission and spurious emission(30MHz – 1GHz) of the S13.5FLMMBKHDCAN prototype.</li> <li>This report is based on report of QCT24DR-1443E-01.</li> </ol>		



## 1. GENERAL INFORMATION

### 1.1 Product Description for Equipment under Test (EUT)

EUT Description	SINGLE HEAD COMMERCIAL SECURITY FLOOD LIGHT
Model No.	S13.5FLMMBKHDCA, S13.5FL/MM/BZ, TF1180/15000DM/83065LEDC/P180MW/5WY-DTZ TF1180/15000DM/83065LEDC/P180MW/5WYG2-DTB TF1180/15000DM/83065LEDC/P180MW/5WYG2-DTZ
Tested Model	S13.5FLMMBKHDCA
Sample(s) Status	Engineer sample
Operation Frequency:	5745.6MHz
Channel numbers:	1
Modulation type:	FSK
Antenna Type:	Microwave antenna
Antenna gain*1:	5.22dBi
Power supply:	AC 120/277V, 50/60Hz
Trade Mark:	Feit Electric, Naspil, Commercial Electric
Applicant	Feit Electric company Inc.
Address	4901 Gregg Road Pico Rivera, Ca 90660
Manufacturer	Feit Electric company Inc.
Address	4901 Gregg Road Pico Rivera, Ca 90660
Sample No.	Y24H1961E01WC

Note: \*1This information provided by Manufacturer, SZ QC Lab is not responsible for the accuracy of this information.

### 1.2 System Test Configuration

1.2.1 Support Equipment  
N/A

1.2.2 Test mode and voltage

Transmitting mode: Keep the EUT in continuously transmitting.

Test voltage: AC 120V/60Hz



### 1.3 Test Facility

Test Firm : Shenzhen QC Testing Laboratory Co., Ltd.

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19. The testing quality system of our laboratory meets with ISO/IEC-17025 requirements. This approval result is accepted by MRA of APLAC.

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

CNAS – Registration No.: L8464

The EMC Laboratory has been accredited by CNAS, and in compliance with ISO/IEC 17025:2017 General Requirements for testing Laboratories.

A2LA Certificate Number: 6759.01

The EMC Laboratory has been accredited by A2LA, and in compliance with ISO/IEC 17025:2017 General Requirements for testing Laboratories.

FCC Registration Number: 561109

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission.

IC Registration Number: 29628

CAB identifier: CN0141

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada.

### 1.4 Measurement Uncertainty

Parameter	Uncertainty
Occupied Channel Bandwidth	$\pm 1.42 \times 10^{-4}\%$
RF output power, conducted	$\pm 1.06\text{dB}$
Power Spectral Density, conducted	$\pm 1.06\text{dB}$
Unwanted Emissions, conducted	$\pm 2.51\text{dB}$
AC Power Line Conducted Emission	$\pm 1.80\text{dB}$
Radiated Spurious Emission test (9kHz-30MHz)	$\pm 2.66\text{dB}$
Radiated Spurious Emission test (30MHz-1000MHz)	$\pm 4.04\text{dB}$
Radiated Spurious Emission test (1000MHz-18000MHz)	$\pm 4.70 \text{ dB}$
Radiated Spurious Emission test (18GHz-40GHz)	$\pm 4.80\text{dB}$
Temperature	$\pm 0.8^\circ\text{C}$
Humidity	$\pm 3.2\%$
DC and low frequency voltages	$\pm 0.1\%$
Time	$\pm 5\%$
Duty cycle	$\pm 5\%$

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2



## 2. Summary of Test Results

Test Item	Section	Result
Antenna Requirement	15.203	Pass
Conduction Emission	15.207	Pass
Radiated Emissions	15.205, 15.209, 15.249	Pass
20dB Bandwidth	15.215 (c)	Pass

- Note:
1. Pass: The EUT complies with the essential requirements in the standard.
  2. Test according to ANSI C63.10:2013
  - 3.. All indications of Pass/Fail in this report are opinions expressed by Shenzhen QC Testing Laboratory Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.



### 3. List of Test and Measurement Instruments

#### 3.1 Conducted Emission Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due
1	EMI Test Receiver	Rohde&Schwarz	ESIB 7	2277573376	2024.03.14	2025.03.13
2	EMI Test Receiver	Rohde&Schwarz	ESCI3	101820	2024.08.06	2025.08.05
3	Artificial Mains Network	SCHWARZBECK	NSLK8126	8126200	2024.08.06	2025.08.05
4	PULSE LIMITER	Rohde&Schwarz	ESH3-Z2	100058	2024.03.14	2025.03.13

Conducted Emission Measurement Software: TS+ JS32-CE Ver 5.0.0

#### 3.2 Radiated Emission Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due
1.	EMI Test Receiver	R&S	ESIB 7	2277573376	2024.03.14	2025.03.13
2.	EMI Test Receiver	ESPI3	ESPI3	101131	2024.03.14	2025.03.13
3.	Spectrum Analyzer	Rohde&Schwarz	FSV 40	101458	2024.03.14	2025.03.13
4.	TRILOG Broadband Test-Antenna	SCHWARZBECK	VULB9168	VULB9168-588	2023.04.01	2025.03.31
5.	Loop Antenna	EMCO	6502	2133	2023.03.18	2025.03.17
6.	horn antenna	SCHWARZBECK	BBHA9120D	2069	2023.04.01	2025.03.31
7.	Horn Antenna	COM-MW	ZLB7-18-40G-950	12221225	2023.01.12	2025.01.09
8.	Pre-amplifier	MITEQ	TTA0001-18	2063645	2024.03.27	2025.03.26
9.	Pre-amplifier	COM-MW	DLAN-18000-40000-02	10229104	2024.03.14	2025.03.13
10.	966 Camber	ZhongYU	9*6*6	/	2023.05.08	2026.05.07

Radiated Emission Measurement Software: EZ\_EMG Ver QCT03A2 RE+



3.3 RF Conducted test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due
1.	Wideband Radio Communication Tester	Rohde & Schwarz	CW500	151583	2024.03.14	2025.03.13
2.	Spectrum Analyzer	ROHDE&SCHWARZ	FSV 40	101458	2024.03.14	2025.03.13
3.	Signal Generator	Agilent	N5182A	MY50141563	2024.03.14	2025.03.13
4.	RF Automatic Test System	MW	MW100-RFCB/ MW100-PSB	MW2007004	2024.03.14	2025.03.13

RF Conducted Measurement Software: MTS 8310 Ver 2.0.0.0





## 4. Antenna requirement

**Standard requirement:** FCC Part15 C Section 15.203

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:** The antenna is Microwave antenna, reference to the Internal Photos for details.

## 5. Conducted Emissions

### 5.1 Applicable Standard

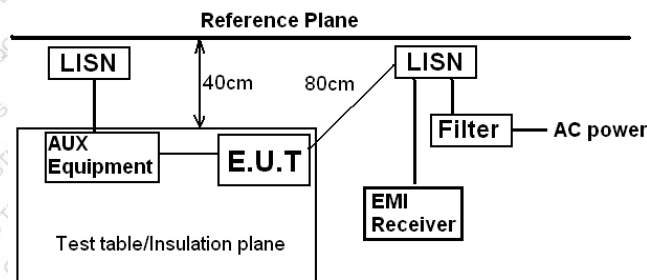
FCC Part15 C Section 15.207

### 5.2 Limit

Frequency range (MHz)	Limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

Note \*: The level decreases linearly with the logarithm of the frequency.

### 5.3 Test setup



Remark  
 E.U.T: Equipment Under Test  
 LISN: Line Impedance Stabilization Network  
 Test table height=0.8m

### 5.4 EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.  
 RBW=9 kHz, VBW=30 kHz, Sweep time=auto

### 5.5 Test procedure

1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.
2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).
3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

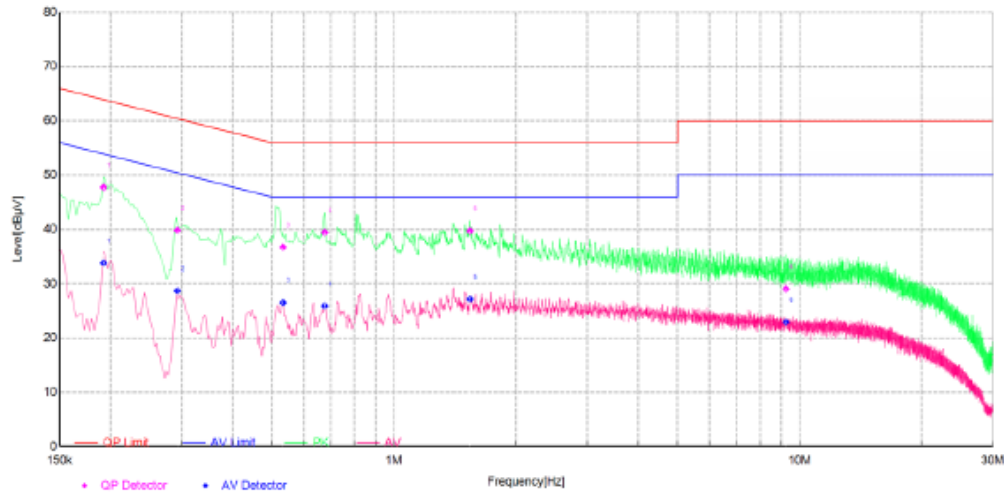
### 5.6 Test Data

Temperature	23°C	Humidity	55%
ATM Pressure	101.1kPa	Antenna Gain	5.22dBi
Test by	LBi Li	Test result	PASS



Measurement data:

Line:

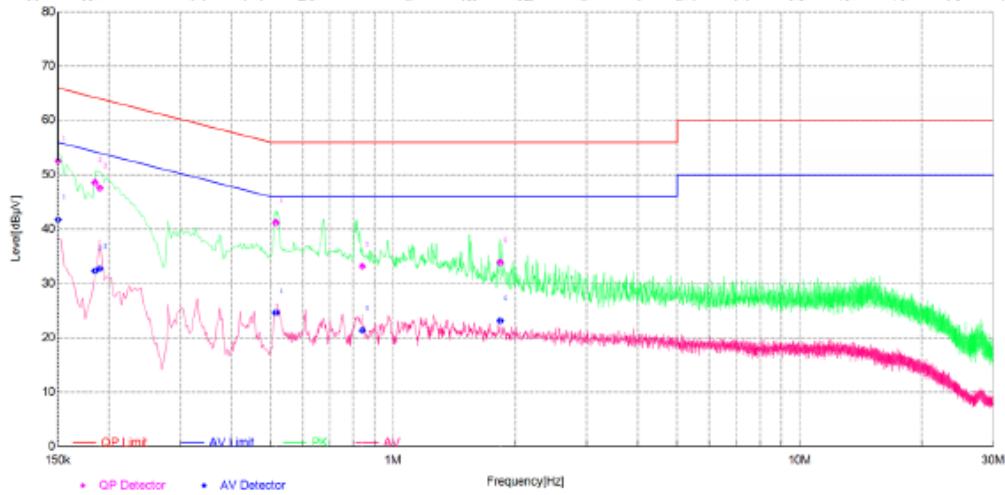


Final Data List

NO.	Freq. [MHz]	Factor[dB]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Phase	Verdict
1	0.1925	10.66	47.78	63.93	16.15	33.82	53.93	20.11	L	PASS
2	0.2925	10.69	39.86	60.45	20.59	28.89	50.45	21.76	L	PASS
3	0.5325	10.73	36.73	56.00	19.27	26.54	46.00	19.46	L	PASS
4	0.6750	10.77	39.48	56.00	16.52	25.92	46.00	20.08	L	PASS
5	1.5400	10.67	39.73	56.00	16.27	27.19	46.00	18.81	L	PASS
6	9.2540	10.78	29.05	60.00	30.95	22.98	50.00	27.02	L	PASS



Neutral:



### Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Phase	Verdict
1	0.1500	10.48	52.54	66.00	13.46	41.74	56.00	14.26	N	PASS
2	0.1850	10.48	48.56	64.26	15.70	32.33	54.26	21.93	N	PASS
3	0.1900	10.49	47.58	64.04	16.46	32.73	54.04	21.31	N	PASS
4	0.5150	10.80	41.20	56.00	14.80	24.62	46.00	21.38	N	PASS
5	0.8400	10.70	33.15	56.00	22.85	21.38	46.00	24.62	N	PASS
6	1.8350	10.65	33.85	56.00	22.15	23.16	46.00	22.84	N	PASS

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.

## 6. Radiated Emission Method

### 6.1 Applicable Standard

FCC Part15 C Section 15.249

### 6.2 Limit

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

As per FCC Section 15.249

(c) Field strength limits are specified at a distance of 3 meters.

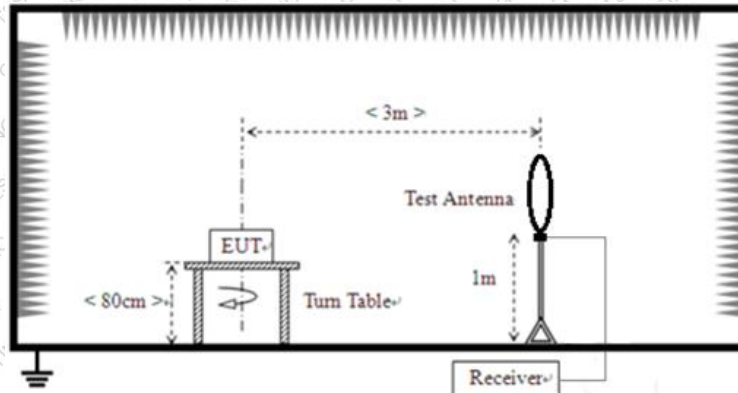
(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

### 6.3 Receiver setup

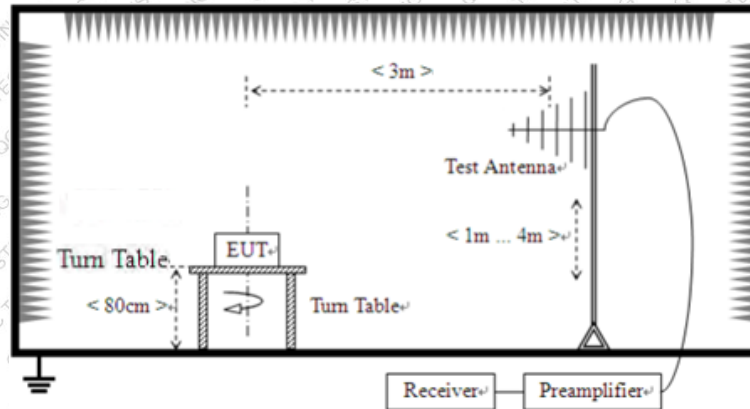
Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

### 6.4 Test setup

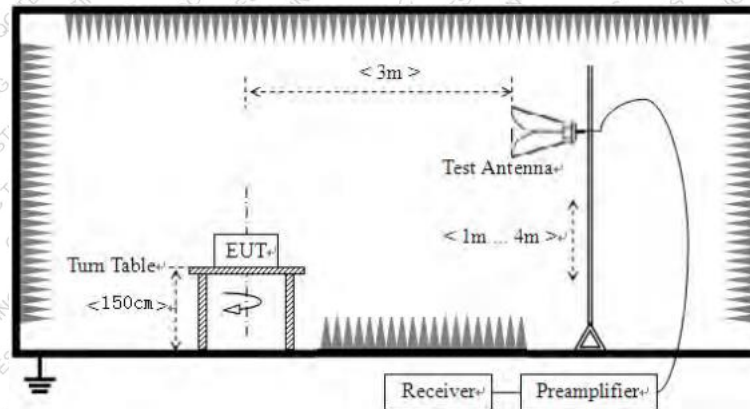
For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



## 6.5 Test Procedure

1. The EUT was placed on the top of a rotating table (0.8 meters 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.



### 6.6 Test Data

Temperature	25-26°C	Humidity	50-54%
ATM Pressure	101.1kPa	Antenna Gain	5.22dBi
Test by	LBi Li	Test result	PASS

**Remarks:**

Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.

**Measurement data:**

9 kHz ~ 30 MHz

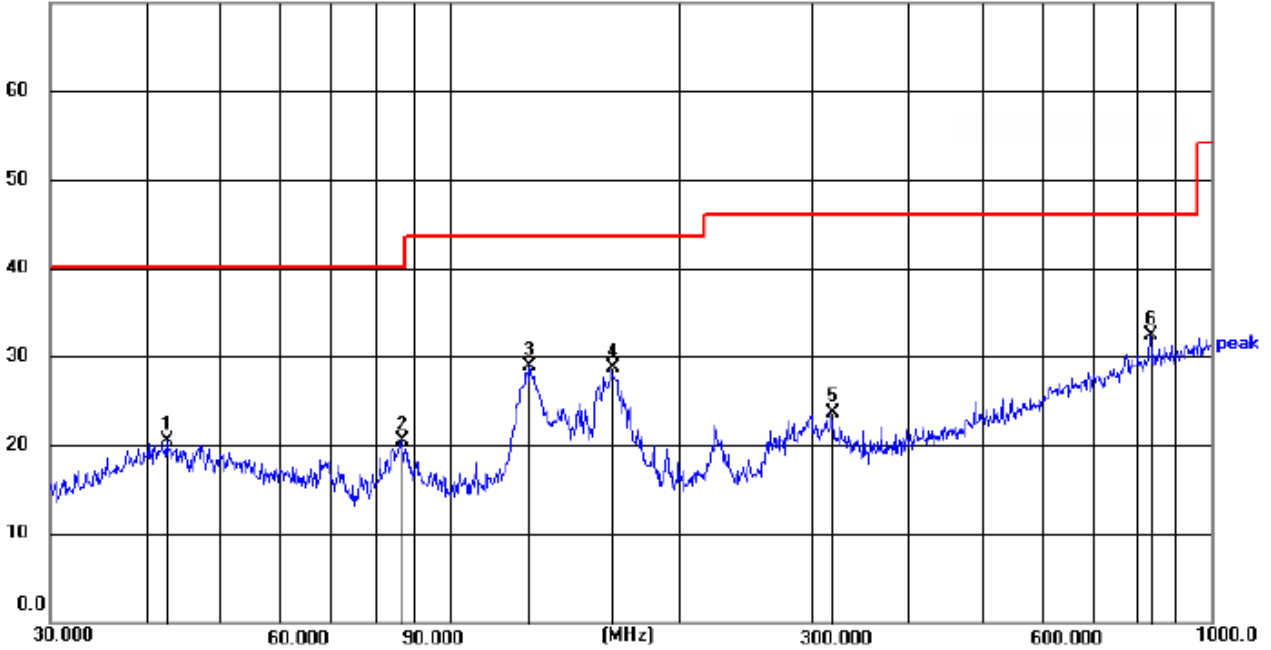
The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.



Below 1GHz:

Horizontal

70.0 dBuV/m



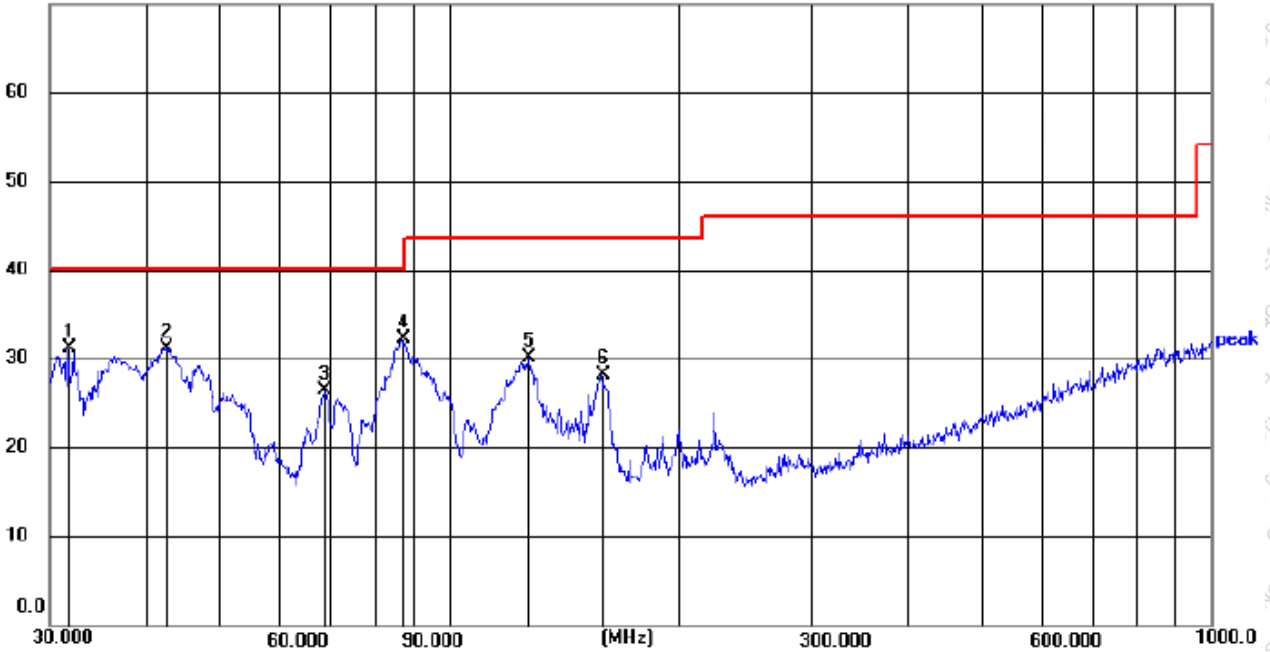
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	42.6000	6.07	14.55	20.62	40.00	19.38	QP
2	86.5029	10.64	9.99	20.63	40.00	19.37	QP
3	127.6645	15.32	13.57	28.89	43.50	14.61	QP
4	163.1818	14.71	14.05	28.76	43.50	14.74	QP
5	317.7011	8.78	14.85	23.63	46.00	22.37	QP
6 *	830.4002	7.38	25.17	32.55	46.00	13.45	QP





Vertical

70.0 dB $\mu$ V/m



No.	Frequency (MHz)	Reading (dB $\mu$ V)	Factor (dB/m)	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Detector
1	31.6202	18.46	12.75	31.21	40.00	8.79	QP
2	42.6000	16.75	14.55	31.30	40.00	8.70	QP
3	68.8721	14.54	12.04	26.58	40.00	13.42	QP
4 *	86.8068	22.28	10.00	32.28	40.00	7.72	QP
5	127.6645	16.64	13.57	30.21	43.50	13.29	QP
6	158.6677	13.91	14.41	28.32	43.50	15.18	QP

----- THE END OF TEST REPORT -----