

FCC CERTIFICATION
On Behalf of
Pelican Accessories

PS2 Nerf Wireless Controller
Model No.: PL-6681D, PL-6677D

FCC ID: 07X-NERFPS2-03

Prepared for : Pelican Accessories
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Test Report Certification

Applicant : Pelican Accessories
Manufacturer : Ciponic Industrial (HK) Ltd.
EUT Description : PS2 Nerf Wireless Controller
(A) MODEL NO.: PL-6681D, PL-6677D
(B) SERIAL NO.: N/A
(C) POWER SUPPLY: DC 3.6V (Power by PS2)

Measurement Procedure Used:

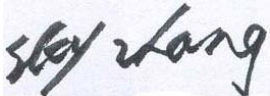
FCC Rules and Regulations Part 15 Subpart C Section 15.249:2007 & ANSI C63.4: 2003

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.249 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test : November 21, 2007

Prepared by :



(Engineer)

Reviewer :



(Quality Manager)

Approved & Authorized Signer :



(Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT	:	PS2 Nerf Wireless Controller
Model Number	:	PL-6681D, PL-6677D
		(Note: Model PL-6677D is identical to model PL-6681D, except appearance color are difference. Therefore only model PL-6681D is tested.)
Power Supply	:	DC 3.6V (Power by PS2)
Operate Frequency	:	2410M-2470MHz
Channel Number	:	57
PS2	:	Manufacturer: SONY
		Model No.: SCPH-70006
		S/N: FE4617797
Applicant	:	Pelican Accessories
Address	:	1840 East 27 th Street, Vernon, CA 90058, USA
Manufacturer	:	Ciponic Industrial (HK) Ltd.
Address	:	Room 16, 10/F., Profit Ind. Bldg., 1-15 Kwai Fung St., Kwai Fong, Hong Kong
Date of sample received	:	November 09, 2007
Date of Test	:	November 14, 2007

1.2. Description of Test Facility

EMC Lab	:	Listed by FCC
		The Registration Number is 274801
		Listed by Industry Canada
		The Registration Number is IC4174
		Accredited by China National Accreditation Committee for Laboratories
		The Certificate Registration Number is L0579
Name of Firm	:	Shenzhen Academy of Metrology & Quality Inspection
Site Location	:	Bldg. Metrology & Quality Inspection, Longzhu Road, Nanshan, Shenzhen, Guangdong, P.R. China

1.3. Measurement Uncertainty

Conducted emission expanded uncertainty	=	3.5dB, k=2
Radiated emission expanded uncertainty	=	4.5dB, k=2

2. MEASURING DEVICE AND TEST EQUIPMENT

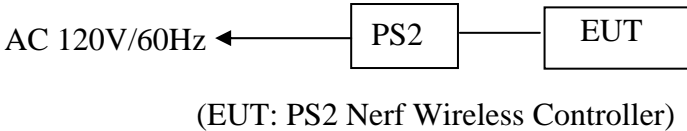
Table 1: List of Test and Measurement Equipment

Kind of equipment	Manufacturer	Type	S/N	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	03.31.2008
EMI Test Receiver	Rohde&Schwarz	ESI26	838786/013	01.24.2008
Bilog Antenna	Schwarzbeck	VULB9163	9163-194	03.31.2008
Bilog Antenna	Chase	CBL6112B	2591	01.24.2008
Horn Antenna	Rohde&Schwarz	HF906	100013	01.24.2008
Spectrum Analyzer	Anritsu	MS2651B	6200238856	03.31.2008
Pre-Amplifier	Agilent	8447D	2944A10619	03.31.2008
L.I.S.N.	Rohde&Schwarz	ESH3-Z5	100305	03.31.2008
L.I.S.N.	Rohde&Schwarz	ESH3-Z5	100310	03.31.2008

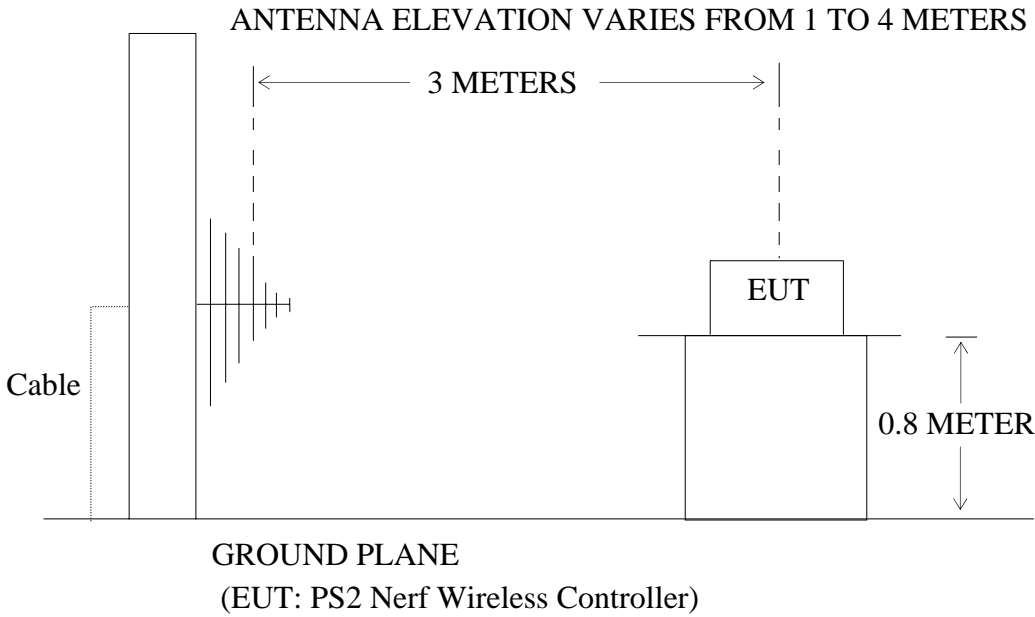
3. FUNDAMENTAL AND HARMONICS RADIATED EMISSION MEASUREMENT

3.1. Block Diagram of Test Setup

3.1.1. Block diagram of connection between the EUT and simulators



3.1.2. Anechoic Chamber Test Setup Diagram



3.2. The Emission Limit

3.2.1 For intentional radiators, According to section 15.249(a), Operation within the frequency band of 2.4 to 2.4835GHz, The fundamental field strength shall not exceed 94 dBμV/m and the harmonics shall not exceed 54 dBμV/m.

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

3.2.2 According to section 15.249(e), as shown in section 15.35(b), The peak field strength

of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

3.3. Configuration of EUT on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

3.3.1. PS2 Nerf Wireless Controller (EUT)

Model Number : PL-6681D
Serial Number : N/A
Manufacturer : Ciponic Industrial (HK) Ltd.

3.4. Operating Condition of EUT

3.4.1. Setup the EUT and simulator as shown as Section 3.1.

3.4.2. Turn on the power of all equipment.

3.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2410MHz -2470MHz. We are select 2410MHz, 2440MHz, 2470MHz TX frequency to transmitted.

3.5. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated emission measurement.

The bandwidth of test receiver (R&S ESI26) is set at 1MHz.

3.6. The Field Strength of Radiation Emission Measurement Results

PASS.

Date of Test:	November 21, 2007	Temperature:	24°C
EUT:	PS2 Nerf Wireless Controller	Humidity:	47%
Model No.:	PL-6681D	Power Supply:	AC 120V/60Hz
Test Mode:	TX 2410MHz	Test Engineer:	Fen

Fundamental Radiated Emissions

Frequency (MHz)	Reading(dBμV/m)		Factor(dB) Corr.	Result(dBμV/m)		Limit(dBμV/m)		Margin(dBμV/m)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
2410.015	53.8	82.4	-3.6	50.2	78.8	94	114	43.8	35.2	Vertical
2410.015	52.7	80.6	-3.6	49.1	77.0	94	114	44.9	37.0	Horizontal

Harmonics Radiated Emissions

Frequency (MHz)	Reading(dBμV/m)		Factor(dB) Corr.	Result(dBμV/m)		Limit(dBμV/m)		Margin(dBμV/m)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
*4820.180	36.7	44.5	2.1	38.8	46.6	54	74	15.2	27.4	Vertical
*4820.180	29.8	45.2	2.1	31.9	47.3	54	74	22.1	26.7	Horizontal

The spectral diagrams in appendix I display the measurement of peak values.

Note:

1. The emission emitted by the EUT is too low to be measured except the emission listed above.
2. *: Denotes restricted band of operation.
3. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$

$$\text{Where Corrected Factor} = \text{Antenna Factor} + \text{Cable Loss} + \text{High Pass Filter Loss} - \text{Amplifier Gain}$$

Date of Test:	November 21, 2007	Temperature:	24°C
EUT:	PS2 Nerf Wireless Controller	Humidity:	47%
Model No.:	PL-6681D	Power Supply:	AC 120V/60Hz
Test Mode:	TX 2440MHz	Test Engineer:	Fen

Fundamental Radiated Emissions

Frequency (MHz)	Reading(dBμV/m)		Factor(dB) Corr.	Result(dBμV/m)		Limit(dBμV/m)		Margin(dBμV/m)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
2440.095	54.6	83.3	-3.5	51.1	79.8	94	114	42.9	34.2	Vertical
2440.095	51.7	78.5	-3.5	48.2	75.0	94	114	45.8	39.0	Horizontal

Harmonics Radiated Emissions

Frequency (MHz)	Reading(dBμV/m)		Factor(dB) Corr.	Result(dBμV/m)		Limit(dBμV/m)		Margin(dBμV/m)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
*4879.571	37.2	44.6	2.2	39.4	46.8	54	74	14.6	27.2	Vertical
*4879.571	32.5	46.1	2.2	34.7	48.3	54	74	19.3	25.7	Horizontal

The spectral diagrams in appendix I display the measurement of peak values.

Note:

1. The emission emitted by the EUT is too low to be measured except the emission listed above.
2. *: Denotes restricted band of operation.
3. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$

$$\text{Where Corrected Factor} = \text{Antenna Factor} + \text{Cable Loss} + \text{High Pass Filter Loss} - \text{Amplifier Gain}$$

Date of Test:	November 21, 2007	Temperature:	24°C
EUT:	PS2 Nerf Wireless Controller	Humidity:	47%
Model No.:	PL-6681D	Power Supply:	AC 120V/60Hz
Test Mode:	TX 2470MHz	Test Engineer:	Fen

Fundamental Radiated Emissions

Frequency (MHz)	Reading(dBμV/m)		Factor(dB) Corr.	Result(dBμV/m)		Limit(dBμV/m)		Margin(dBμV/m)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
2470.070	55.2	84.3	-3.4	51.8	80.9	94	114	42.2	33.1	Vertical
2470.070	49.8	79.3	-3.4	46.4	75.9	94	114	47.6	38.1	Horizontal

Harmonics Radiated Emissions

Frequency (MHz)	Reading(dBμV/m)		Factor(dB) Corr.	Result(dBμV/m)		Limit(dBμV/m)		Margin(dBμV/m)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
*4939.509	34.2	46.0	2.2	36.4	48.2	54	74	17.6	25.8	Vertical
*4939.509	23.1	35.3	2.2	25.3	37.5	54	74	28.7	36.5	Horizontal

The spectral diagrams in appendix I display the measurement of peak values.

Note:

1. The emission emitted by the EUT is too low to be measured except the emission listed above.
2. *: Denotes restricted band of operation.
3. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$

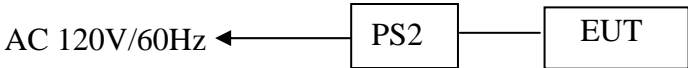
$$\text{Where Corrected Factor} = \text{Antenna Factor} + \text{Cable Loss} + \text{High Pass Filter Loss} - \text{Amplifier Gain}$$

4. CONDUCTED EMISSION FOR FCC PART 15 SECTION

15.207(A)

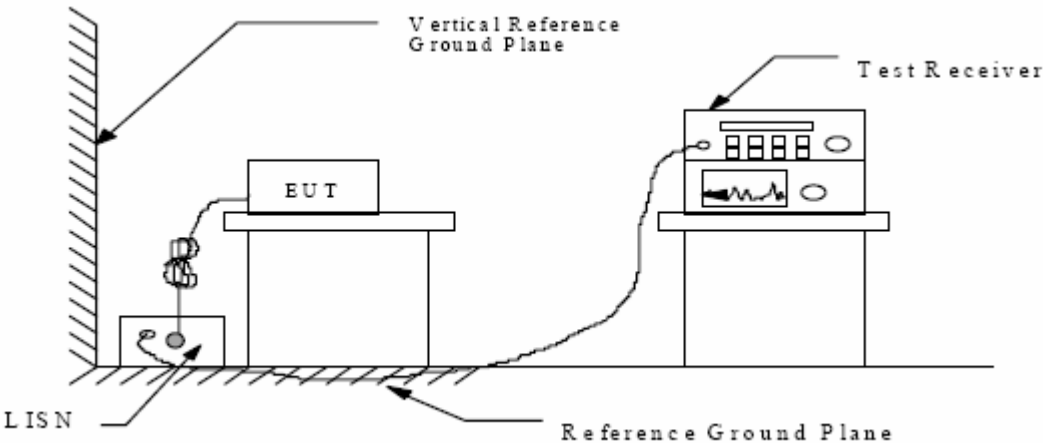
4.1. Block Diagram of Test Setup

4.1.1. Block diagram of connection between the EUT and simulators



(EUT: PS2 Nerf Wireless Controller)

4.1.2. Shielding Room Test Setup Diagram



(EUT: PS2 Nerf Wireless Controller)

4.2. The Emission Limit For Section 15.207(a)

3.2.1 Radiation Emission Measurement Limits According to Section 15.207(a)

Frequency (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 - 5	56	46
5 - 30	60	50

* Decreases with the logarithm of the frequency.

4.3.EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.3.1. PS2 Nerf Wireless Controller (EUT)

Model Number : PL-6681D
Serial Number : N/A
Manufacturer : Ciponic Industrial (HK) Ltd.

4.4.Operating Condition of EUT

4.4.1. Setup the EUT and simulator as shown as Section 4.1.

4.4.2. Turn on the power of all equipment.

4.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2410MHz -2470MHz. We are select 2410MHz, 2440MHz, 2470MHz TX frequency to transmitted.

4.5.Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2003 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

All the scanning waveforms are attached in Appendix I.

4.6. Power Line Conducted Emission Measurement Results

PASS.

The frequency range from 150kHz to 30MHz is checked.

Date of Test:	November 21, 2007	Temperature:	25°C
EUT:	PS2 Nerf Wireless Controller	Humidity:	48%
Model No.:	PL-6681D	Power Supply:	AC 120V/60Hz
Test Mode:	TX 2410MHz	Test Engineer:	Fen

Test Line	Frequency MHz	Emission Level(dBμV)		Limits(dBμV)		Margin(dBμV)	
		QP	AV	QP	AV	QP	AV
Va	0.200	50.0	39.8	63.6	53.6	13.6	13.8
Va	0.270	42.5	32.9	61.1	51.1	18.6	18.2
Va	0.470	37.1	36.0	56.5	46.5	19.4	10.5
Vb	0.200	48.4	39.4	63.6	53.6	15.2	14.2
Vb	0.270	41.1	33.9	61.1	51.1	20.0	17.2
Vb	0.470	37.5	37.3	56.5	46.5	19.0	9.2

The spectral diagrams in appendix I display the measurement of peak values.

Date of Test:	November 21, 2007	Temperature:	25°C
EUT:	PS2 Nerf Wireless Controller	Humidity:	48%
Model No.:	PL-6681D	Power Supply:	AC 120V/60Hz
Test Mode:	TX 2440MHz	Test Engineer:	Fen

Test Line	Frequency MHz	Emission Level(dBµV)		Limits(dBµV)		Margin(dBµV)	
		QP	AV	QP	AV	QP	AV
Va	0.200	46.6	36.8	63.6	53.6	17.0	16.8
Va	0.270	39.6	31.1	61.1	51.1	21.5	20.0
Va	0.470	36.5	36.3	56.5	46.5	20.0	10.2
Vb	0.200	47.5	38.9	63.6	53.6	16.1	14.7
Vb	0.270	40.6	33.5	61.1	51.1	20.5	17.6
Vb	0.470	37.5	37.3	56.5	46.5	19.0	9.2

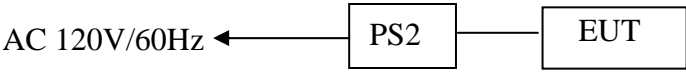
Date of Test:	<u>November 21, 2007</u>	Temperature:	<u>25°C</u>
EUT:	<u>PS2 Nerf Wireless Controller</u>	Humidity:	<u>48%</u>
Model No.:	<u>PL-6681D</u>	Power Supply:	<u>AC 120V/60Hz</u>
Test Mode:	<u>TX 2470MHz</u>	Test Engineer:	<u>Fen</u>

Test Line	Frequency MHz	Emission Level(dBμV)		Limits(dBμV)		Margin(dBμV)	
		QP	AV	QP	AV	QP	AV
Va	0.200	44.6	34.8	63.6	53.6	19.0	18.8
Va	0.270	36.9	28.2	61.1	51.1	24.2	22.9
Va	0.470	35.8	34.9	56.5	46.5	20.7	11.6
Vb	0.200	45.1	36.1	63.6	53.6	18.5	17.5
Vb	0.270	37.9	31.1	61.1	51.1	23.2	20.0
Vb	0.470	36.7	36.2	56.5	46.5	19.8	10.3

5. RADIATED EMISSION FOR FCC PART 15 SECTION 15.249(D)

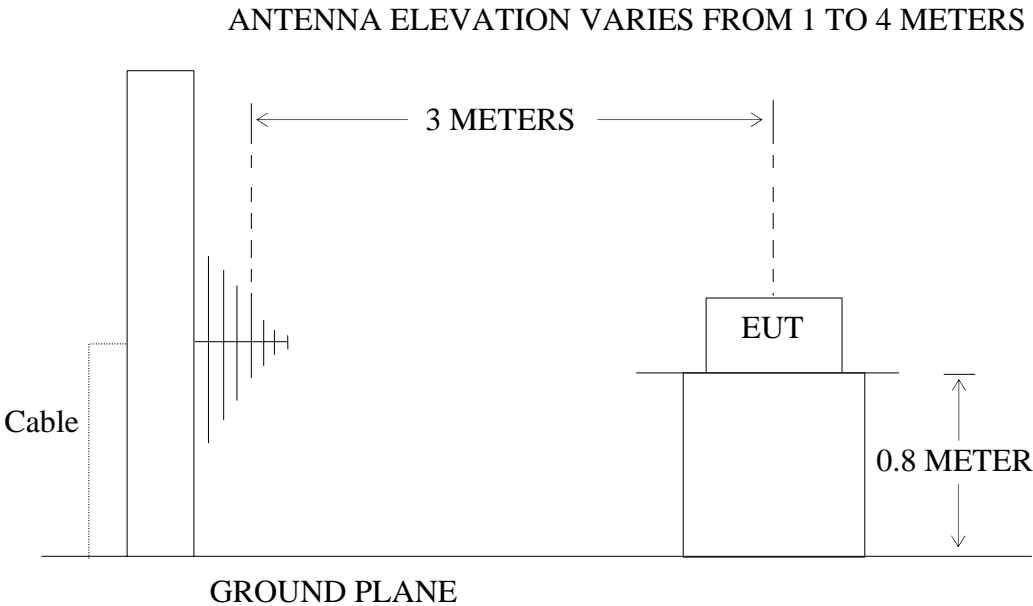
5.1. Block Diagram of Test Setup

5.1.1. Block diagram of connection between the EUT and simulators



(EUT: PS2 Nerf Wireless Controller)

5.1.2. Anechoic Chamber Test Setup Diagram



(EUT: PS2 Nerf Wireless Controller)

5.2. The Emission Limit For Section 15.249(d)

4.2.1 Emission radiated outside of the specified frequency bands, except for harmonics, shall be comply with the general radiated emission limits in Section 15.209.

Radiation Emission Measurement Limits According to Section 15.209

Frequency (MHz)	Limit,		
	Field Strength of Quasi-peak Value (microvolts/m)	Field Strength of Quasi-peak Value (dBμV/m)	The final measurement in band 9-90kHz, 110-490kHz and above 1000MHz is performed with Average detector.
30 - 88	100	40	

88 - 216	150	43.5	Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.
216 - 960	200	46	
Above 960	500	54	

5.3.EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

5.3.1. PS2 Nerf Wireless Controller (EUT)

Model Number : PL-6681D
 Serial Number : N/A
 Manufacturer : Ciponic Industrial (HK) Ltd.

5.4.Operating Condition of EUT

5.4.1. Setup the EUT and simulator as shown as Section 4.1.

5.4.2. Turn on the power of all equipment.

5.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2410MHz -2470MHz. We are select 2410MHz, 2440MHz, 2470MHz TX frequency to transmitted.

5.5.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated emission measurement.

The bandwidth of test receiver (R&S ESI26) is set at 120KHz in 30-1000MHz. and set at 1MHz in above 1000MHz.

The frequency range from 30MHz to 25000MHz is checked.

The final measurement in band 9-90kHz, 110-490kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

5.6.The Emission Measurement Result

PASS.

Date of Test:	November 21, 2007	Temperature:	24°C
EUT:	PS2 Nerf Wireless Controller	Humidity:	47%
Model No.:	PL-6681D	Power Supply:	AC 120V/60Hz
Test Mode:	TX 2410MHz	Test Engineer:	Fen

Below 1GHz

Frequency (MHz)	Reading (dBμV/m)	Factor(dB) Corr.	Result (dBμV/m)	Limit (dBμV/m)	Margin (dBμV/m)	Polarization
	QP		QP	QP	QP	
105.085	46.8	-21.3	25.5	43.5	18.0	Vertical
*136.426	47.9	-21.3	26.6	43.5	16.9	Vertical
589.816	53.3	-14.4	38.9	46	7.1	Vertical
786.416	53.1	-12.5	40.6	46	5.4	Vertical
393.335	52.6	-16.5	36.1	46	9.9	Horizontal
589.827	52.9	-14.4	38.5	46	7.5	Horizontal
786.429	52.8	-12.5	40.3	46	5.7	Horizontal

Above 1GHz

Frequency (MHz)	Reading(dBμV/m)		Factor(dB) Corr.	Result(dBμV/m)		Limit(dBμV/m)		Margin(dBμV/m)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
*1179.669	46.1	50.2	-7.7	38.4	42.5	54	74	15.6	31.5	Vertical
1966.090	49.0	52.1	-5.1	43.9	47.0	54	74	10.1	27.0	Vertical
3145.749	36.3	44.8	-1.4	34.9	43.4	54	74	19.1	30.6	Vertical
*3932.136	40.2	46.4	0.8	41.0	47.2	54	74	13.0	26.8	Vertical
5504.987	38.9	46.4	3.8	42.7	50.2	54	74	11.3	23.8	Vertical
1179.669	42.0	47.6	-7.7	34.3	39.9	54	74	19.7	34.1	Horizontal
1966.096	46.5	50.4	-5.1	41.4	45.3	54	74	12.6	28.7	Horizontal
*3932.136	38.9	46.1	0.8	39.7	46.9	54	74	14.3	27.1	Horizontal

Date of Test:	November 21, 2007	Temperature:	24°C
EUT:	PS2 Nerf Wireless Controller	Humidity:	47%
Model No.:	PL-6681D	Power Supply:	AC 120V/60Hz
Test Mode:	TX 2440MHz	Test Engineer:	Fen

Below 1GHz

Frequency (MHz)	Reading (dBμV/m)	Factor(dB) Corr.	Result (dBμV/m)	Limit (dBμV/m)	Margin (dBμV/m)	Polarization
	QP		QP	QP	QP	
102.698	47.9	-21.5	26.4	43.5	17.1	Vertical
*135.718	50.1	-21.3	28.8	43.5	14.7	Vertical
393.205	53.9	-16.5	37.4	46	8.6	Vertical
491.549	52.1	-15.4	36.7	46	9.3	Vertical
552.992	50.2	-14.5	35.7	46	10.3	Vertical
589.826	54.0	-14.4	39.6	46	6.4	Vertical
294.917	56.2	-19.6	36.6	46	9.4	Horizontal
393.195	53.5	-16.5	37.0	46	9.0	Horizontal
491.524	53.6	-15.4	38.2	46	7.8	Horizontal
589.816	55.6	-14.4	41.2	46	4.8	Horizontal
786.416	50.0	-12.5	37.5	46	8.5	Horizontal

Above 1GHz

Frequency (MHz)	Reading(dBμV/m)		Factor(dB) Corr.	Result(dBμV/m)		Limit(dBμV/m)		Margin(dBμV/m)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
*1179.651	45.9	49.7	-7.7	38.2	42.0	54	74	15.8	32.0	Vertical
1966.065	48.4	52.0	-5.1	43.3	46.9	54	74	10.7	27.1	Vertical
*3932.155	39.2	46.6	0.8	40.0	47.4	54	74	14.0	26.6	Vertical
5505.012	38.7	46.3	3.8	42.5	50.1	54	74	11.5	23.9	Vertical
*1179.661	41.6	47.0	-7.7	33.9	39.3	54	74	20.1	34.7	Horizontal
1966.070	45.7	50.2	-5.1	40.6	45.1	54	74	13.4	28.9	Horizontal
*3932.170	38.3	45.8	0.8	39.1	46.6	54	74	14.9	27.4	Horizontal

Date of Test:	November 21, 2007	Temperature:	24°C
EUT:	PS2 Nerf Wireless Controller	Humidity:	47%
Model No.:	PL-6681D	Power Supply:	AC 120V/60Hz
Test Mode:	TX 2470MHz	Test Engineer:	Fen

Below 1GHz

Frequency (MHz)	Reading (dBμV/m)	Factor(dB) Corr.	Result (dBμV/m)	Limit (dBμV/m)	Margin (dBμV/m)	Polarization
	QP		QP	QP	QP	
102.980	46.1	-21.5	24.6	43.5	18.9	Vertical
*135.608	50.2	-21.3	28.9	43.5	14.6	Vertical
589.826	51.7	-14.4	37.3	46	8.7	Vertical
294.912	54.0	-19.6	34.4	46	11.6	Horizontal
393.225	48.7	-16.5	32.2	46	13.8	Horizontal
491.504	49.8	-15.4	34.4	46	11.6	Horizontal
589.836	52.5	-14.4	38.1	46	7.9	Horizontal
786.416	50.0	-12.5	37.5	46	8.5	Horizontal

Above 1GHz

Frequency (MHz)	Reading(dBμV/m)		Factor(dB) Corr.	Result(dBμV/m)		Limit(dBμV/m)		Margin(dBμV/m)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
*1179.671	45.9	49.6	-7.7	38.2	41.9	54	74	15.8	32.1	Vertical
1966.070	47.2	51.2	-5.1	42.1	46.1	54	74	11.9	27.9	Vertical
*3932.130	39.4	46.4	0.8	40.2	47.2	54	74	13.8	26.8	Vertical
5505.008	39.0	45.9	3.8	42.8	49.7	54	74	11.2	24.3	Vertical
*1179.661	41.9	46.9	-7.7	34.2	39.2	54	74	19.8	34.8	Horizontal
1966.090	45.1	49.6	-5.1	40.0	44.5	54	74	14.0	29.5	Horizontal
*3932.150	38.6	45.5	0.8	39.4	46.3	54	74	14.6	27.7	Horizontal

The spectral diagrams in appendix I display the measurement of peak values.

Note:

1. The emission emitted by the EUT is too low to be measured except the emission listed above.
2. *: Denotes restricted band of operation.
3. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$

$$\text{Where Corrected Factor} = \text{Antenna Factor} + \text{Cable Loss} + \text{High Pass Filter Loss} - \text{Amplifier Gain}$$

6. BAND EDGES

6.1. The Requirement

- 5.1.1. Band Edge from 2400MHz to 2483.5MHz. Emission 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.

6.2. EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.2.1. PS2 Nerf Wireless Controller (EUT)

Model Number : PL-6681D
 Serial Number : N/A
 Manufacturer : Ciponic Industrial (HK) Ltd.

6.3. Operating Condition of EUT

6.3.1. Setup the EUT and simulator as shown as Section 4.1.

6.3.2. Turn on the power of all equipment.

6.3.3. Let the EUT work in TX modes measure it. The transmit frequency are 2410MHz -2470MHz. We are select 2410MHz, 2470MHz TX frequency to transmitted.

6.4. Test Procedure

5.4.1. Measure the fundamental amplitude appearing on spectral display and set it as a reference level. measure the lower band edge amplitude. Get the delta amplitude and edge frequency.

5.4.2. Repeat above procedures , Measure the fundamental amplitude appearing on spectral display and set it as a reference level. measure the upper band edge amplitude. Get the delta amplitude and edge frequency.

6.5. The Measurement Result

Pass

5.5.1 Lower band edge: Emission radiated outside of the lower band edge are 43.4 dB below the level of the fundamental.

The emission of carrier power strength (dBμV/m)	The maximum field strength in restrict band (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
78.8	35.4	74	38.6	Peak
50.2	6.8	54	47.2	Average

5.5.2 Upper band edge: Emission radiated outside of the upper band edge are 41.5 dB below the level of the fundamental.

The emission of carrier power strength (dBμV/m)	The maximum field strength in restrict band (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
80.9	39.4	74	34.6	Peak
51.8	10.3	54	43.7	Average

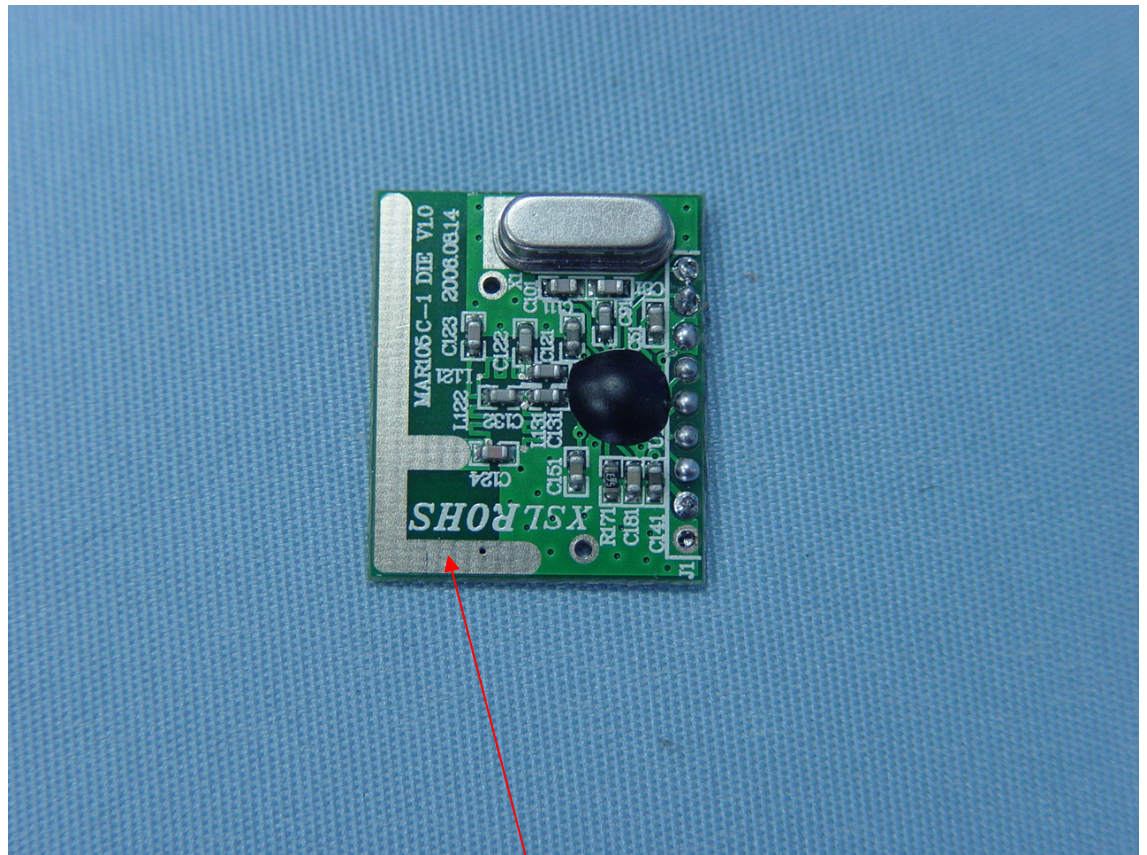
7. ANTENNA REQUIREMENT

7.1. The Requirement

7.1.1. According to Section 15.203, 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.

7.2. Antenna Construction

The antenna is PCB Layout antenna, no consideration of replacement.



Antenna

APPENDIX I

(Test Curves)

CONDUCTION EMISSION STANDARD FCC PART 15B

EUT: PS2 Nerf Wireless Controller
 Manuf: Pelican
 Op Cond: TX 2410MHz
 Operator: Feng
 Test Spec: Va 120V/60Hz
 Comment: Tem25 C Humi48%
 M/N:PL-6681D Sample No.:075163 Report No.:ATE20072806

Scan Settings (3 Ranges)

Frequencies			Receiver Settings			
Start	Stop	Step	IF BW	Detector	M-Time	Atten Preamp
150k	2M	5k	9k	PK+AV	10ms AUTO	LN OFF
2M	10M	10k	9k	PK+AV	10ms AUTO	LN OFF
10M	30M	25k	9k	PK+AV	1ms AUTO	LN OFF

Final Measurement: x QP / + AV

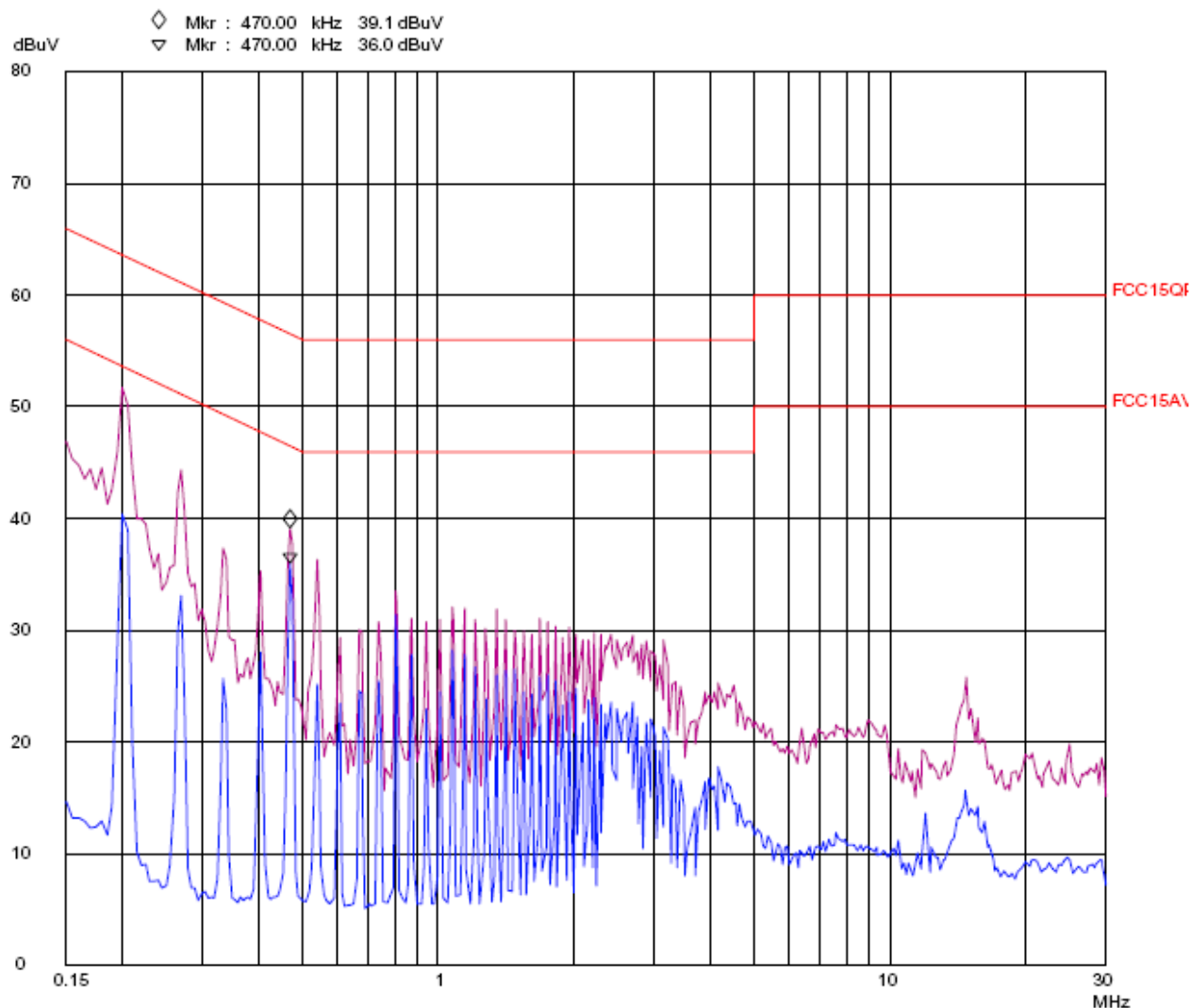
Meas Time: 1 s

Subranges: 25

Acc Margin: 6dB

Transducer No. Start Stop Name

1 9k 30M confac



CONDUCTION EMISSION STANDARD FCC PART15B

EUT: PS2 Nerf Wireless Controller
 Manuf: Pelican
 Op Cond: TX 2410MHz
 Operator: Feng
 Test Spec: Vb 120V/60Hz
 Comment: Tem25 C Humi48%
 M/N:PL-6681D Sample No.:075163 Report No.:ATE20072806

Scan Settings (3 Ranges)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	2M	5k	9k	PK+AV	10ms	AUTO	LN OFF
2M	10M	10k	9k	PK+AV	10ms	AUTO	LN OFF
10M	30M	25k	9k	PK+AV	1ms	AUTO	LN OFF

Final Measurement: x QP / + AV

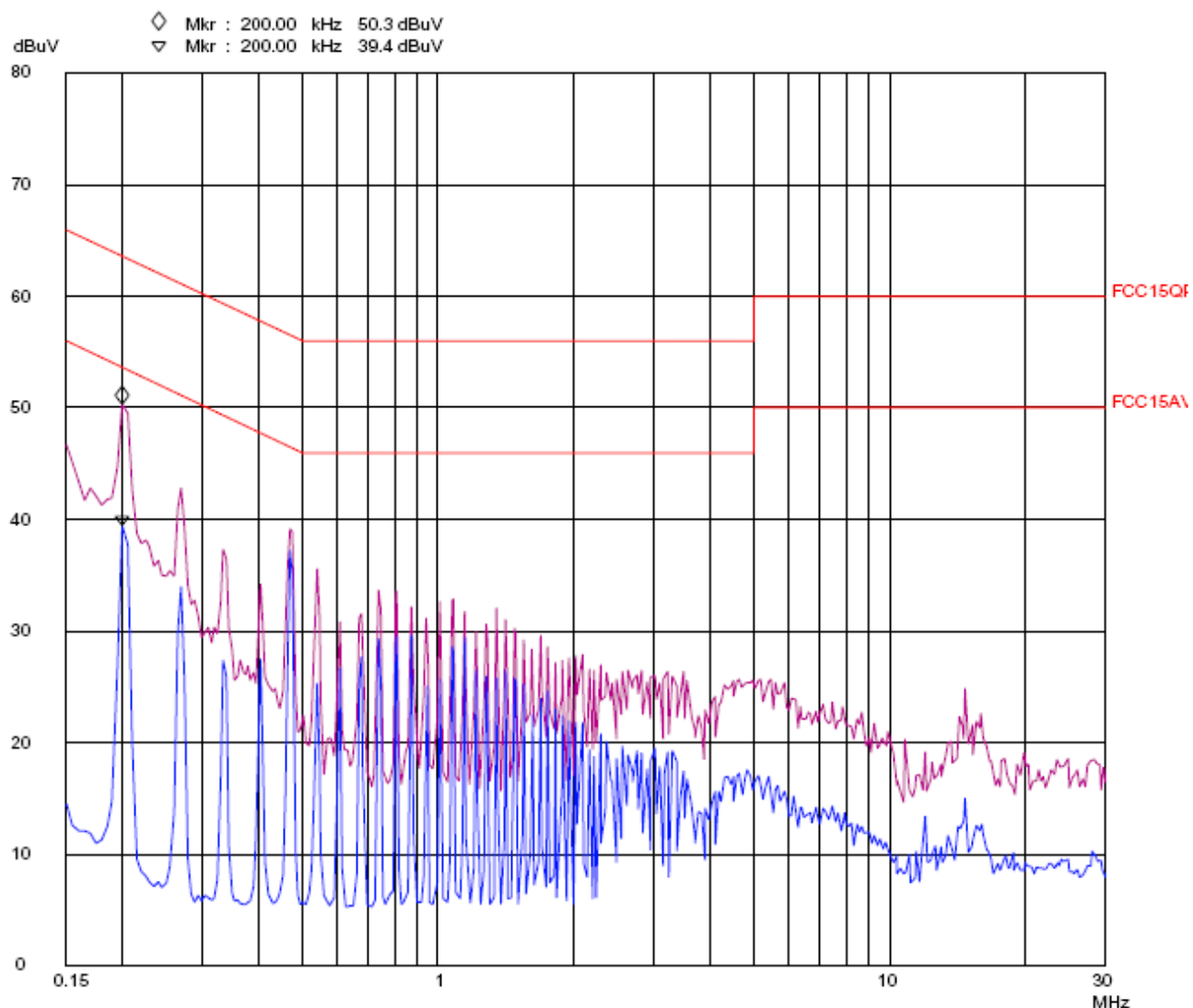
Meas Time: 1 s

Subranges: 25

Acc Margin: 6dB

Transducer No. Start Stop Name

1 9k 30M confac



CONDUCTION EMISSION STANDARD FCC PART15B

EUT: PS2 Nerf Wireless Controller
 Manuf: Pelican
 Op Cond: TX 2440MHz
 Operator: Feng
 Test Spec: Vb 120V/60Hz
 Comment: Tem25°C Humi48%
 M/N:PL-6681D Sample No.:075164 Report No.:ATE20072806

Scan Settings (3 Ranges)

Frequencies			Receiver Settings			
Start	Stop	Step	IF BW	Detector	M-Time	Atten Preamp
150k	2M	5k	9k	PK+AV	10ms AUTO LN	OFF
2M	10M	10k	9k	PK+AV	10ms AUTO LN	OFF
10M	30M	25k	9k	PK+AV	1ms AUTO LN	OFF

Final Measurement: x QP / + AV

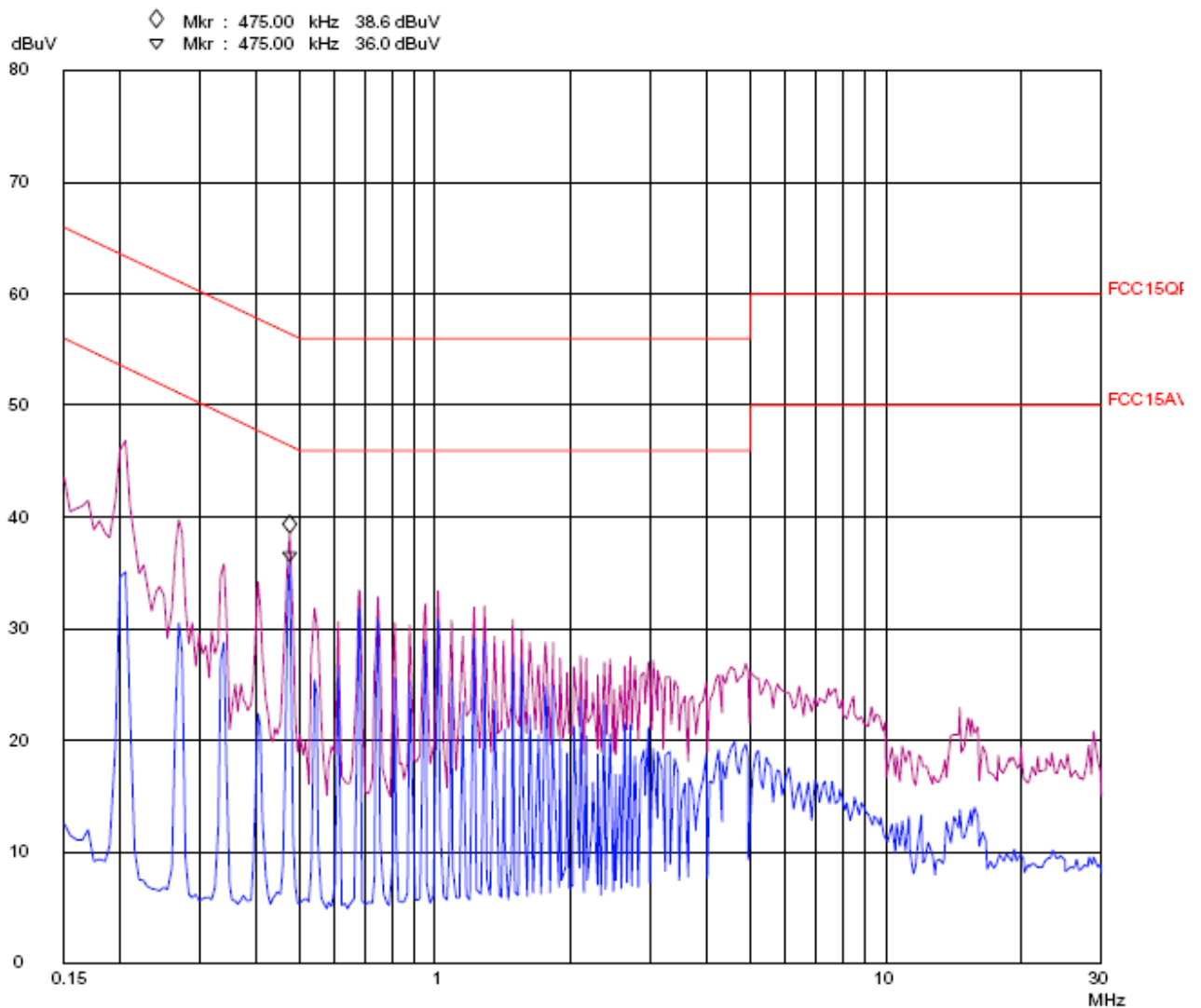
Meas Time: 1 s

Subranges: 25

Acc Margin: 6dB

Transducer No. Start Stop Name

1 9k 30M confac



CONDUCTION EMISSION STANDARD FCC PART 15B

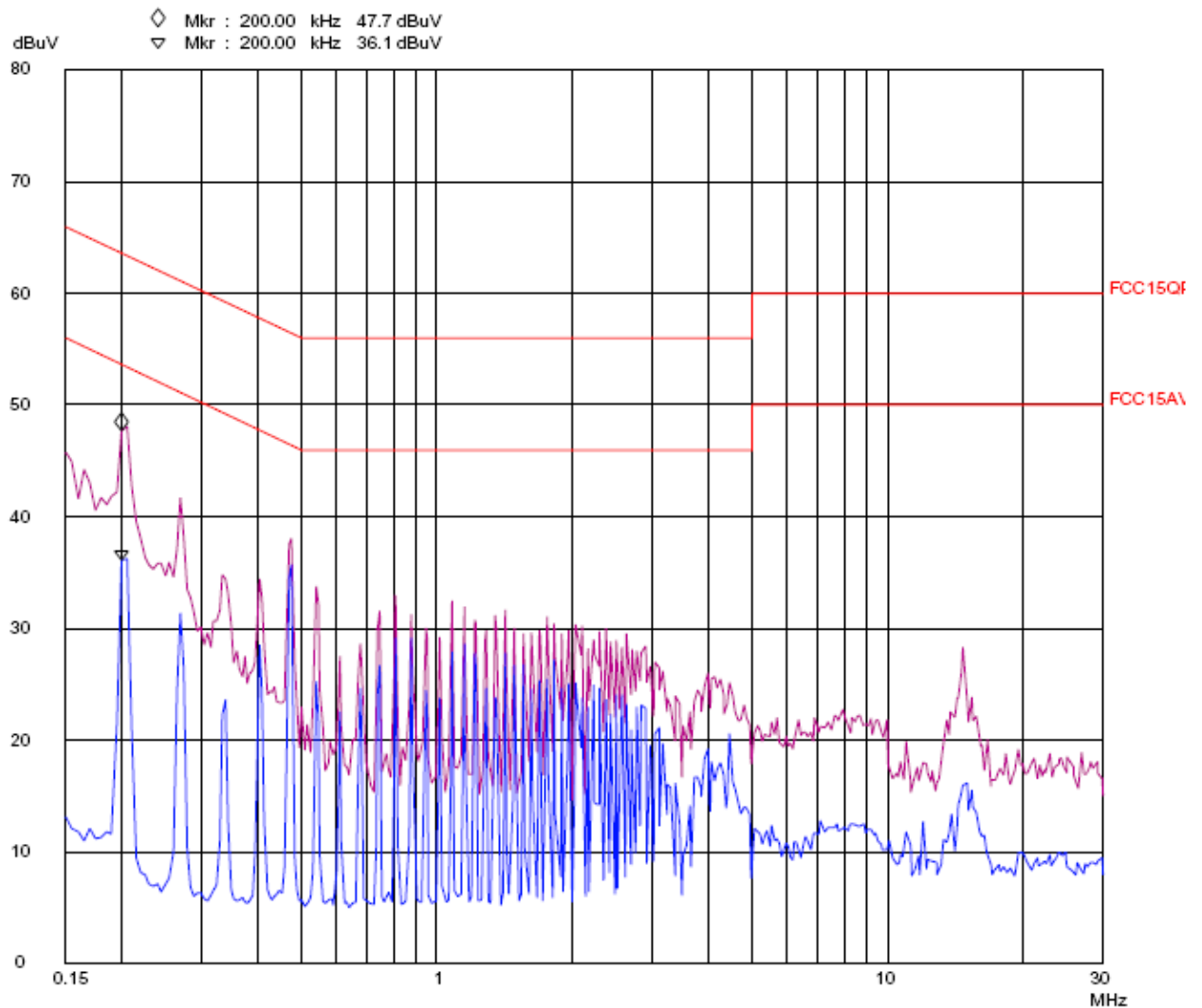
EUT: PS2 Nerf Wireless Controller
 Manuf: Pelican
 Op Cond: TX 2440MHz
 Operator: Feng
 Test Spec: Va 120V/60Hz
 Comment: Tem25 C Humi48%
 M/N:PL-6681D Sample No.:075164 Report No.:ATE20072806

Scan Settings (3 Ranges)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	2M	5k	9k	PK+AV	10ms	AUTO	LN OFF
2M	10M	10k	9k	PK+AV	10ms	AUTO	LN OFF
10M	30M	25k	9k	PK+AV	1ms	AUTO	LN OFF

Final Measurement: x QP / + AV
 Meas Time: 1 s
 Subranges: 25
 Acc Margin: 6dB

Transducer No. Start Stop Name
 1 9k 30M confac



CONDUCTION EMISSION STANDARD FCC PART15B

EUT: PS2 Nerf Wireless Controller
 Manuf: Pelican
 Op Cond: TX 2470MHz
 Operator: Feng
 Test Spec: Vb 120V/60Hz
 Comment: Tem25°C Humi48%
 M/N:PL-6681D Sample No.:075165 Report No.:ATE20072806

Scan Settings (3 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	
150k	2M	5k	9k	PK+AV	10ms	AUTO	LN	OFF
2M	10M	10k	9k	PK+AV	10ms	AUTO	LN	OFF
10M	30M	25k	9k	PK+AV	1ms	AUTO	LN	OFF

Final Measurement: x QP / + AV

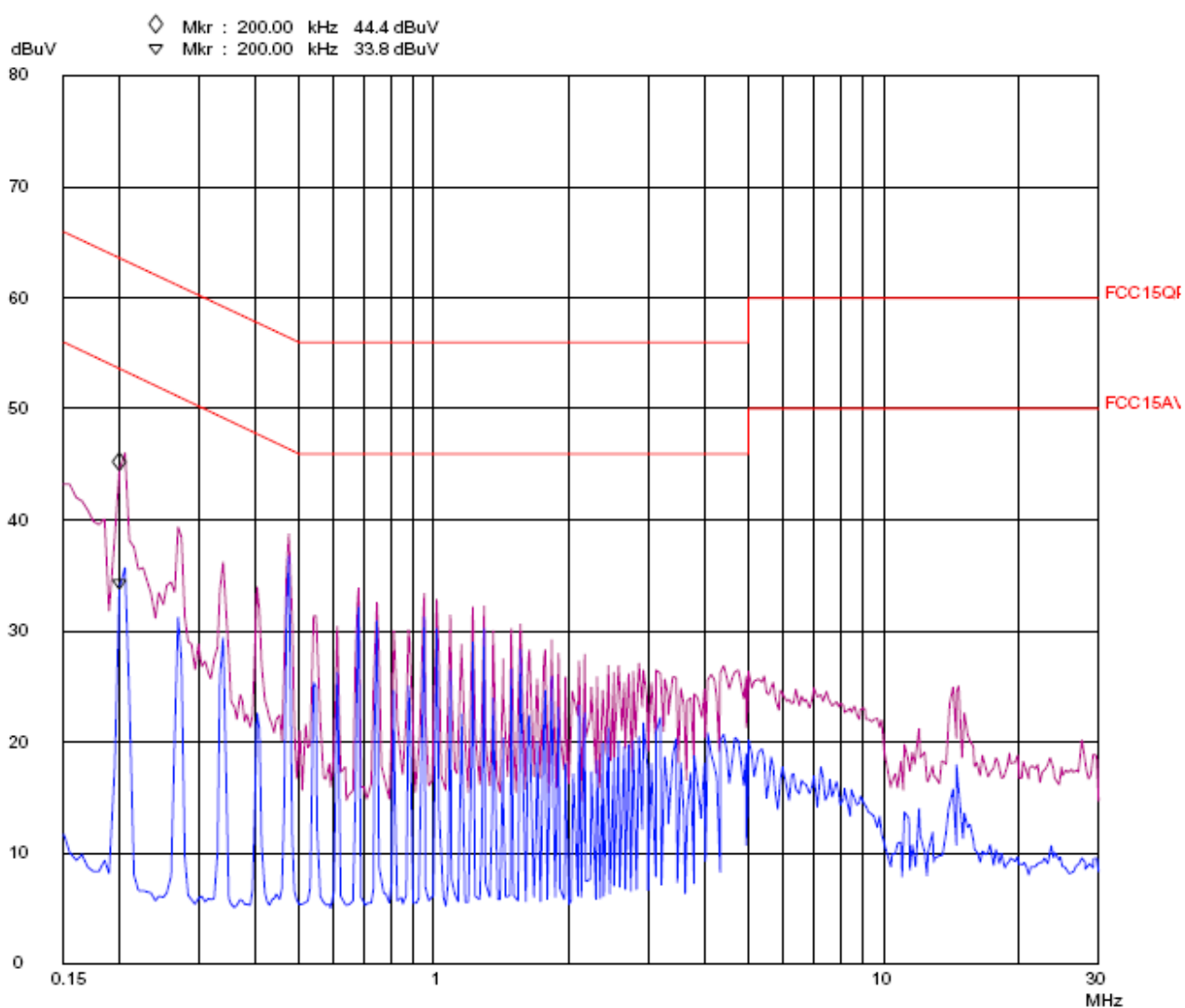
Meas Time: 1 s

Subranges: 25

Acc Margin: 6dB

Transducer No. Start Stop Name

1 9k 30M confac



CONDUCTION EMISSION STANDARD FCC PART15B

EUT: PS2 Nerf Wireless Controller
 Manuf: Pelican
 Op Cond: TX 2470MHz
 Operator: Feng
 Test Spec: Va 120V/60Hz
 Comment: Tem25°C Humi48%
 M/N:PL-6681D Sample No.:075165 Report No.:ATE20072806

Scan Settings (3 Ranges)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	2M	5k	9k	PK+AV	10ms	AUTO	LN OFF
2M	10M	10k	9k	PK+AV	10ms	AUTO	LN OFF
10M	30M	25k	9k	PK+AV	1ms	AUTO	LN OFF

Final Measurement: x QP / + AV

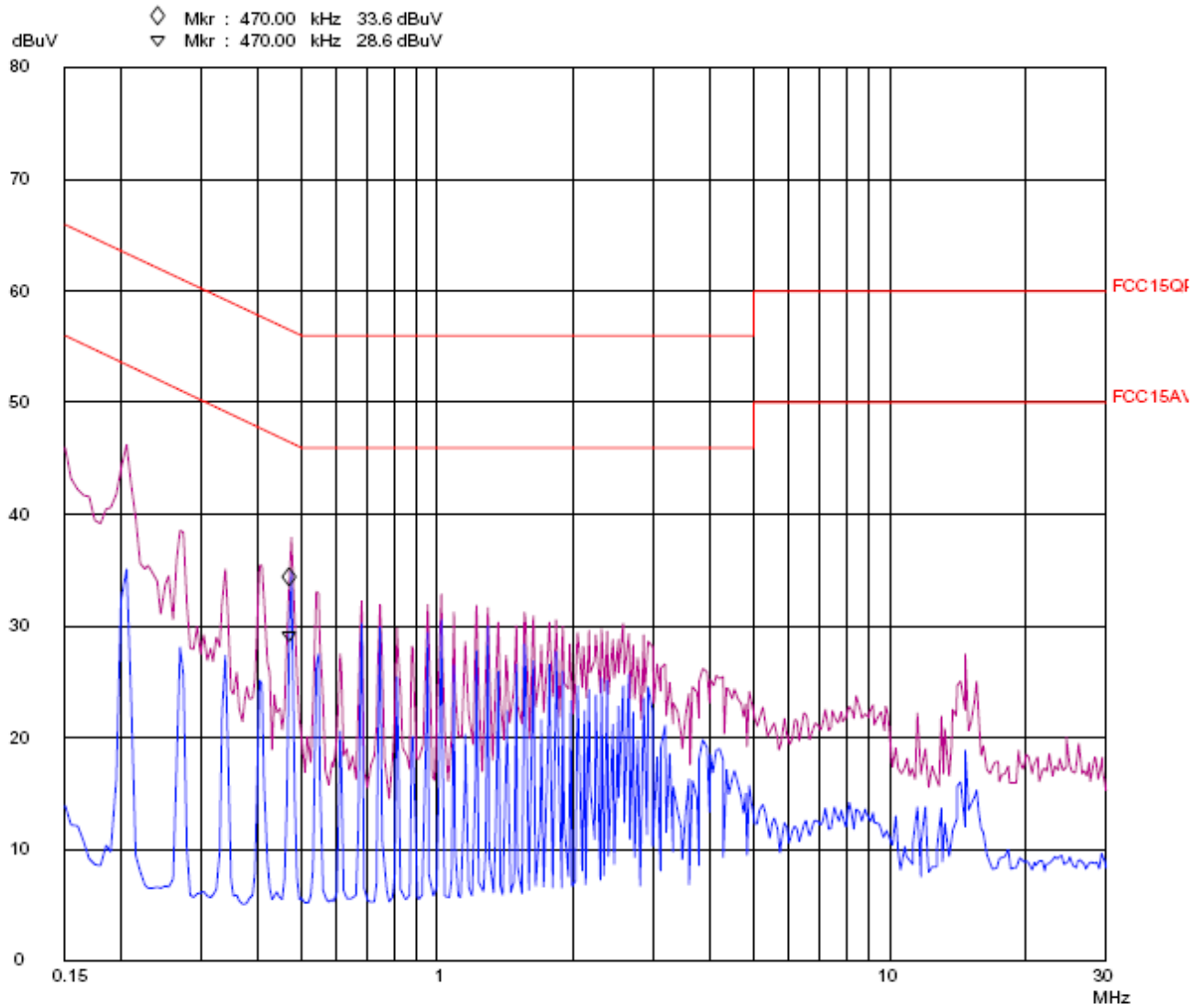
Meas Time: 1 s

Subranges: 25

Acc Margin: 6dB

Transducer No. Start Stop Name

1 9k 30M confac

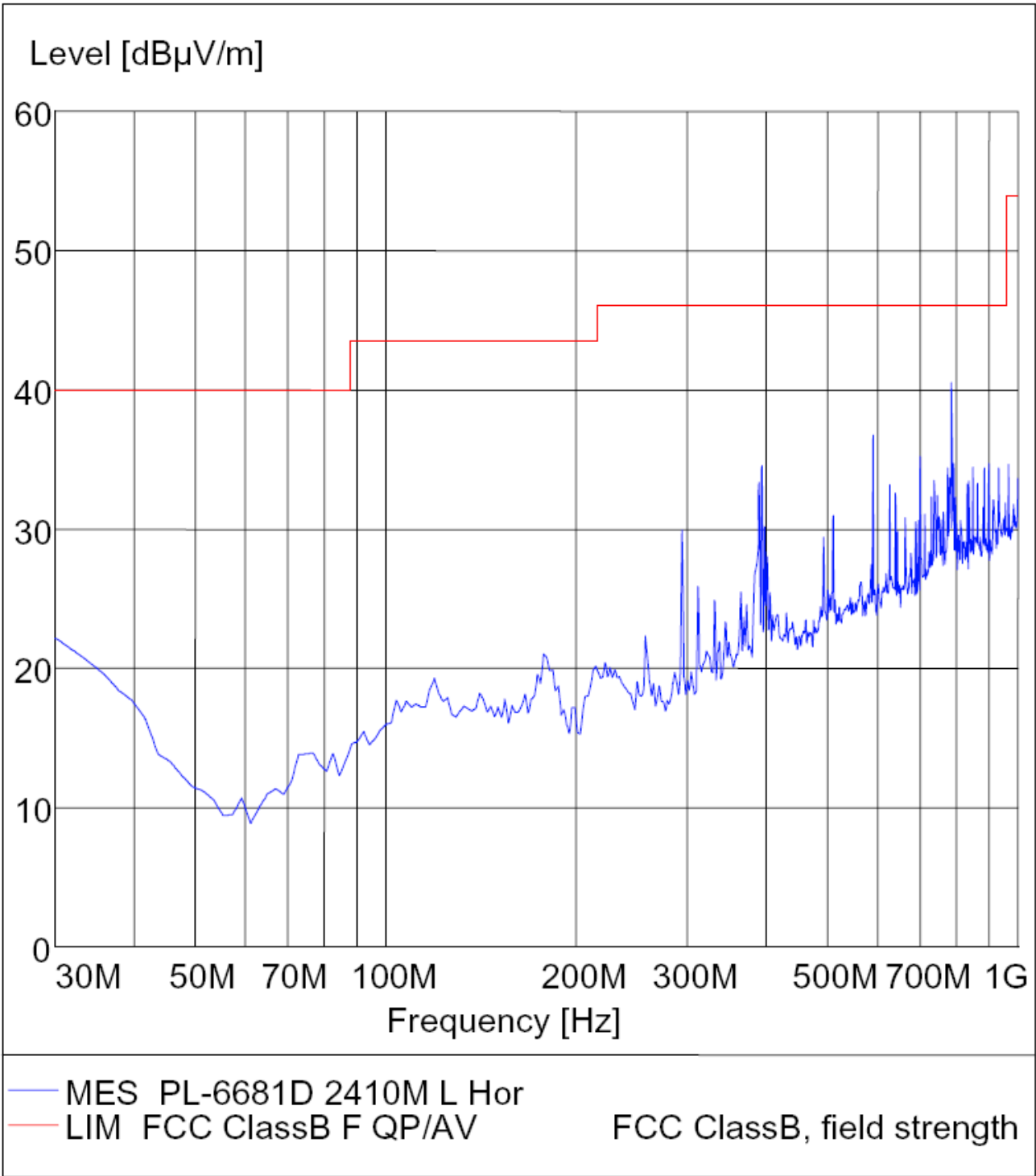


Radiated Disturbance

FCC Part 15

EUT: PS2 Nerf Wireless Controller
Manufacturer: Ciponic Industrial (HK) Ltd.
Operating Condition: TX 2410MHz
Test Site: ATC EMC Lab.SAC
Status: Fen
Test Specification: Horizontal
Comment : AC 120V/60Hz

M/N:PL-6681D

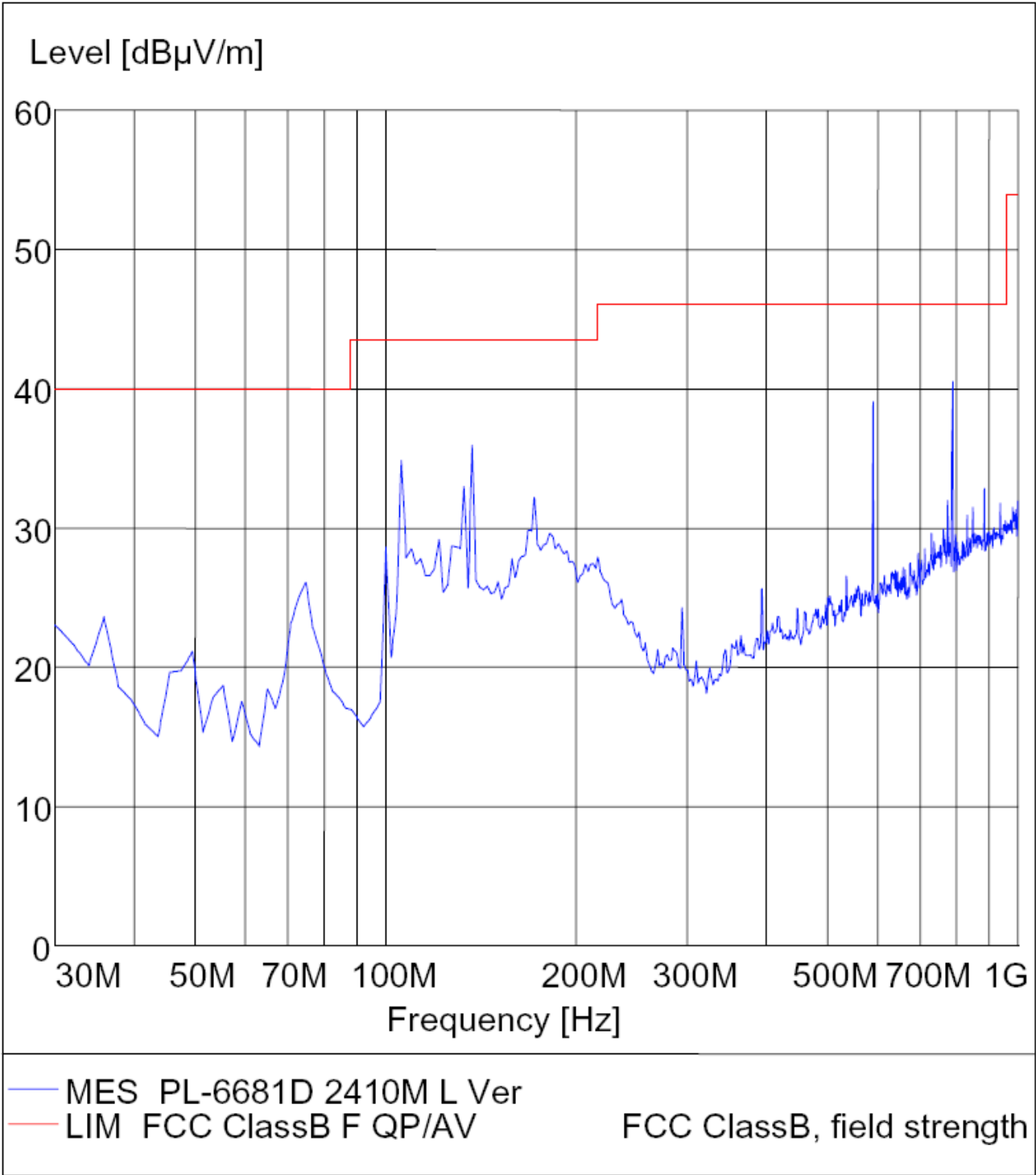


Radiated Disturbance

FCC Part 15

EUT: PS2 Nerf Wireless Controller
Manufacturer: Ciponic Industrial (HK) Ltd.
Operating Condition: TX 2410MHz
Test Site: ATC EMC Lab.SAC
Status: Fen
Test Specification: Vertical
Comment : AC 120V/60Hz

M/N:PL-6681D

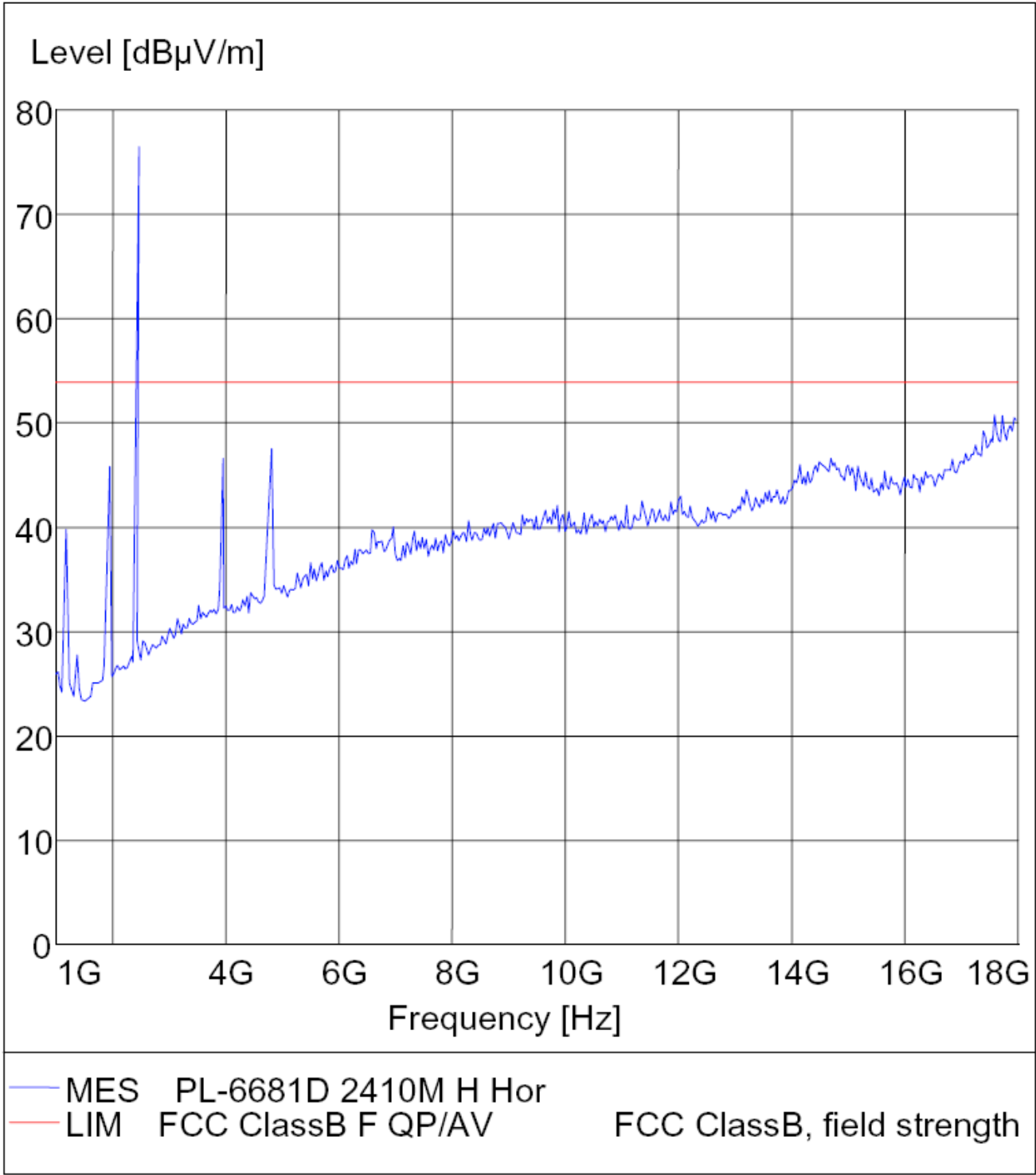


Radiated Disturbance

FCC Part 15

EUT: PS2 Nerf Wireless Controller
Manufacturer: Ciponic Industrial (HK) Ltd.
Operating Condition: TX 2410MHz
Test Site: ATC EMC Lab.SAC
Status: Fen
Test Specification: Horizontal
Comment: AC 120V/60Hz

M/N:PL-6681D

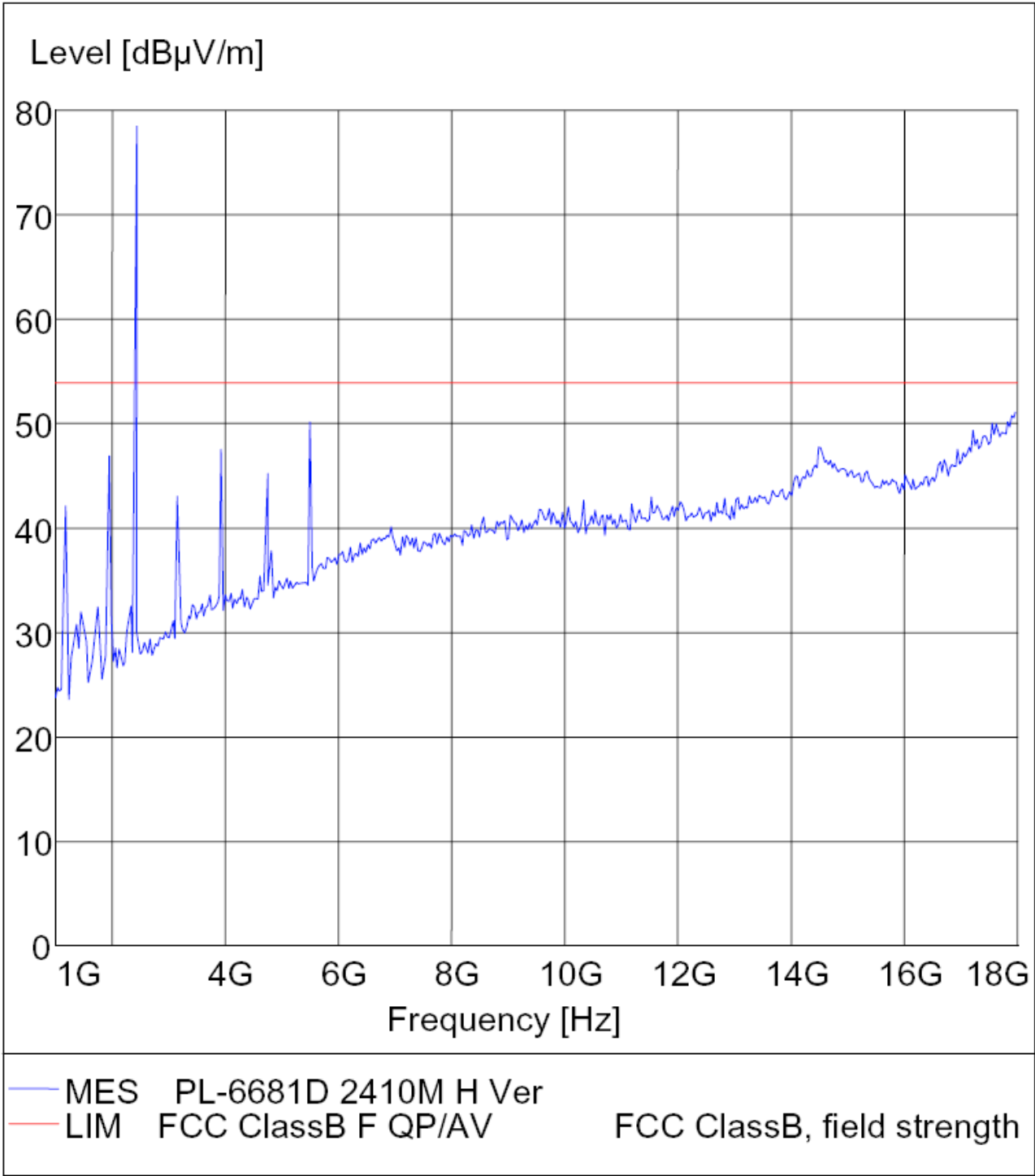


Radiated Disturbance

FCC Part 15

EUT: PS2 Nerf Wireless Controller
Manufacturer: Ciponic Industrial (HK) Ltd.
Operating Condition: TX 2410MHz
Test Site: ATC EMC Lab.SAC
Status: Fen
Test Specification: Vertical
Comment: AC 120V/60Hz

M/N:PL-6681D



Radiated Disturbance

FCC Part 15

EUT: PS2 Nerf Wireless ControllerM/N: PL-6681D

Manufacturer: Ciponic Industrial (HK) Ltd.

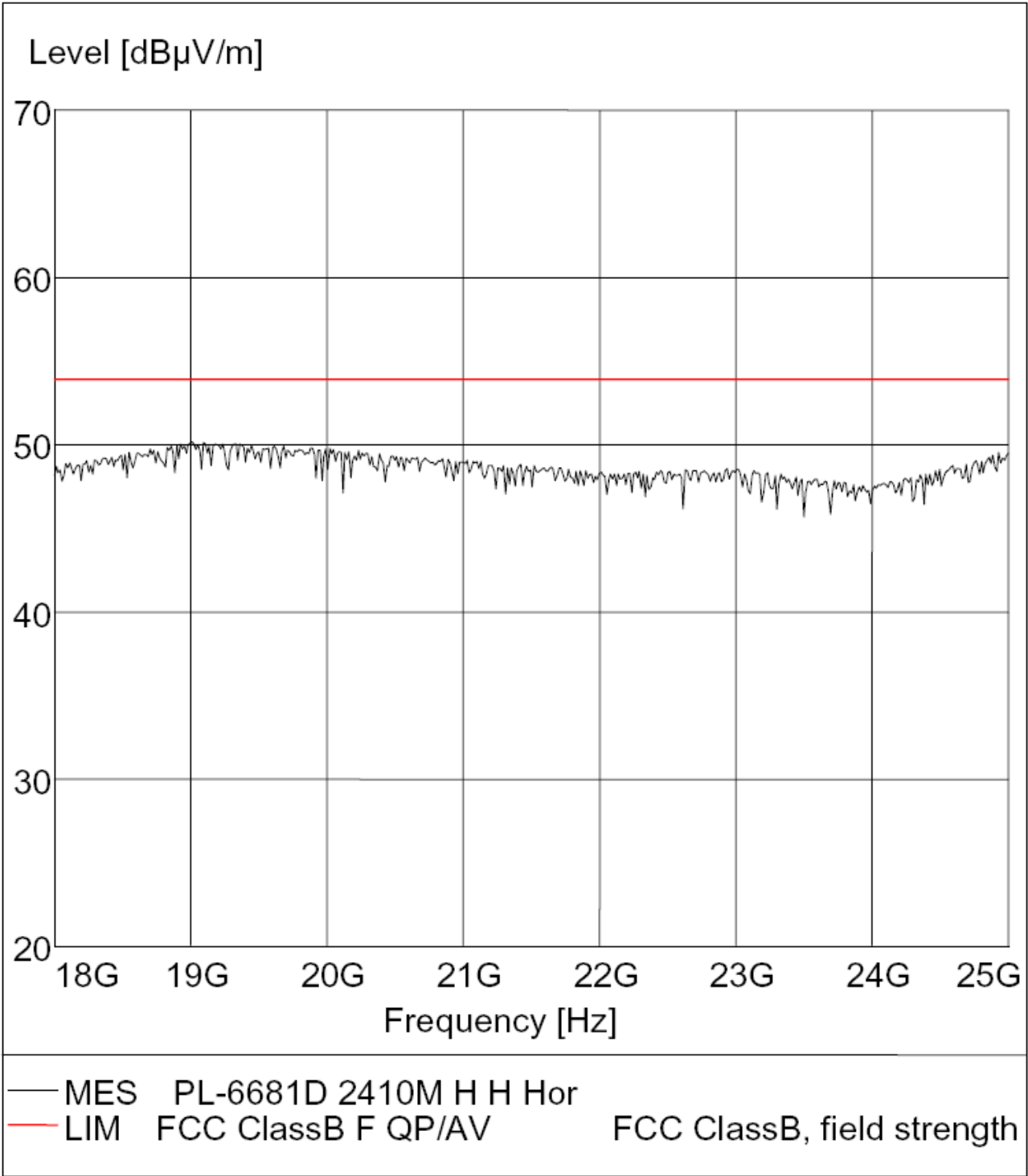
Operating Condition: TX 2410MHz

Test Site: ATC EMC Lab.SAC

Status: Fen

Test Specification: Horizontal

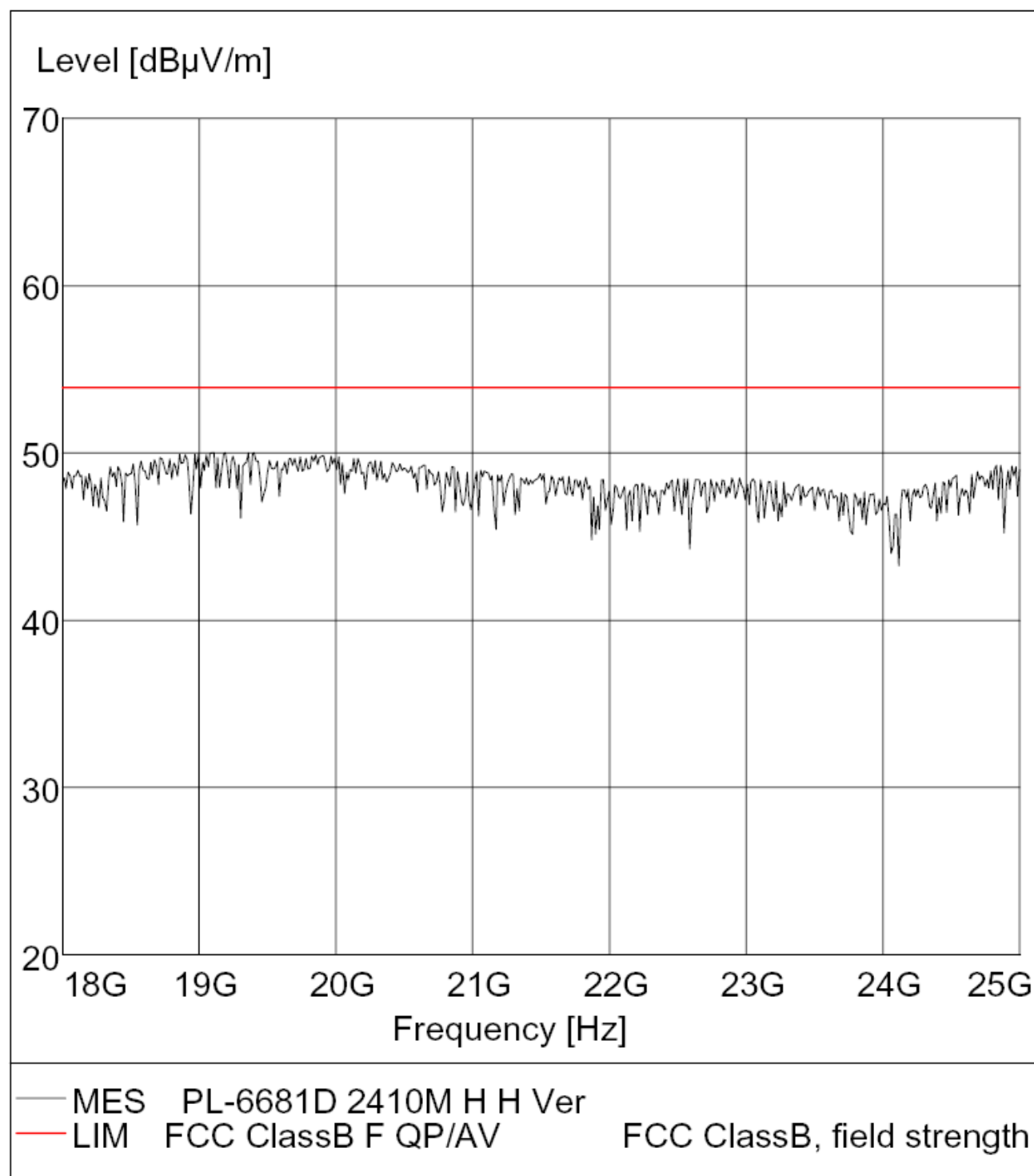
Comment: AC 120V/60Hz



Radiated Disturbance

FCC Part 15

EUT: PS2 Nerf Wireless Controller M/N: PL-6681D
Manufacturer: Ciponic Industrial (HK) Ltd.
Operating Condition: TX 2410MHz
Test Site: ATC EMC Lab.SAC
Status: Fen
Test Specification: Vertical
Comment: AC 120V/60Hz

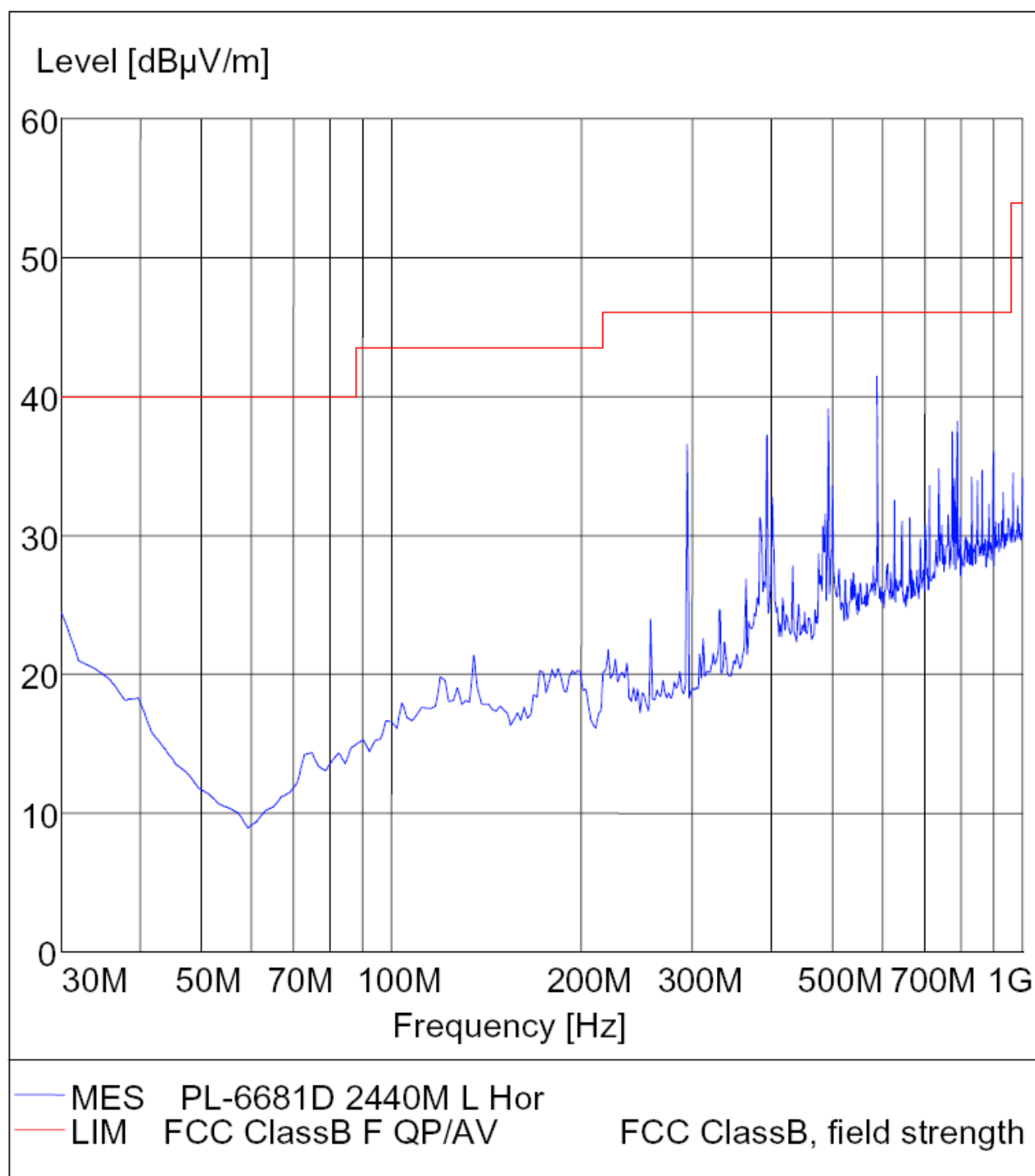


Radiated Disturbance

FCC Part 15

EUT: PS2 Nerf Wireless Controller
 Manufacturer: Ciponic Industrial (HK) Ltd.
 Operating Condition: TX 2440MHz
 Test Site: ATC EMC Lab.SAC
 Status: Fen
 Test Specification: Horizontal
 Comment : AC 120V/60Hz

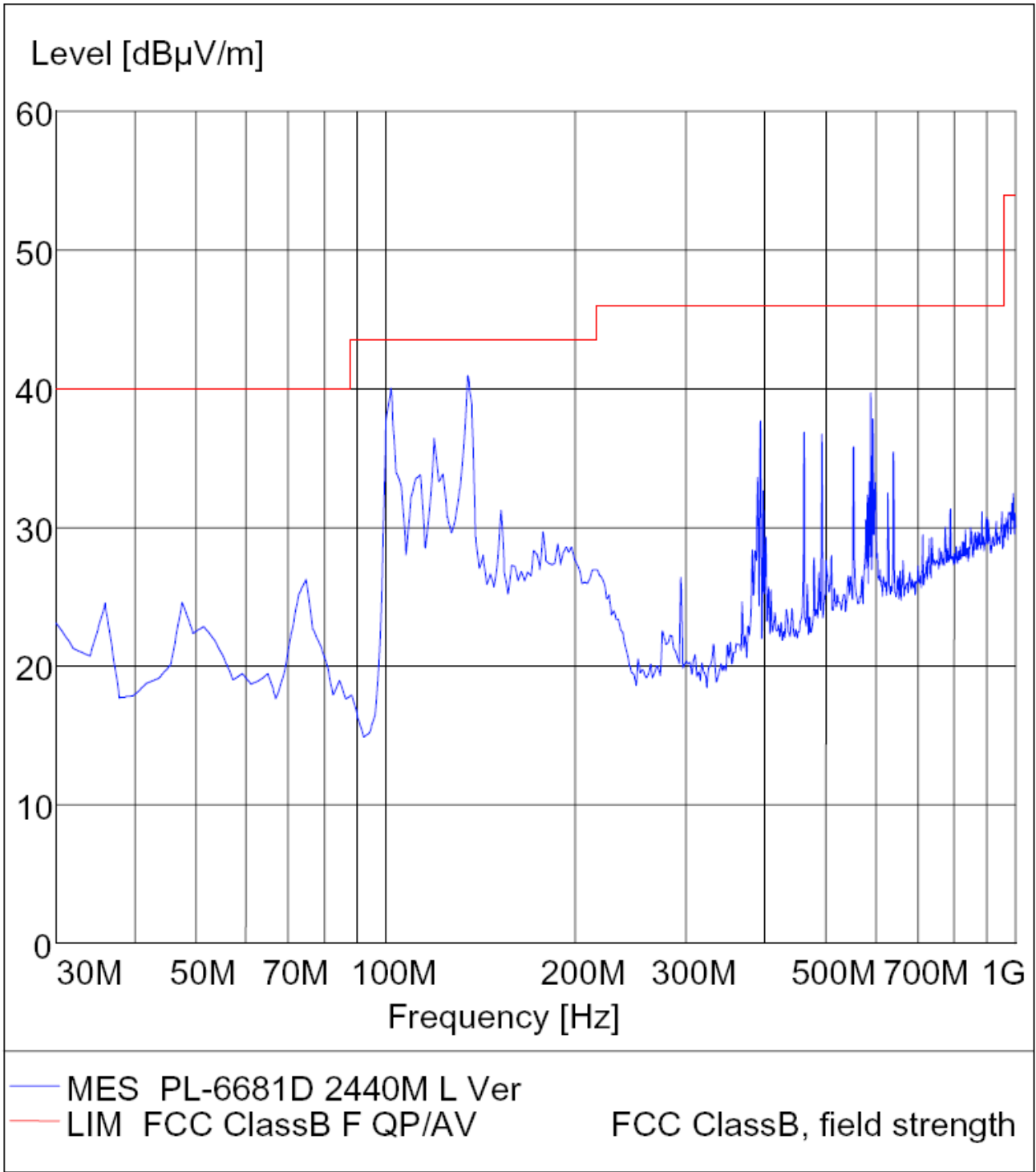
M/N:PL-6681D



Radiated Disturbance

FCC Part 15

EUT: PS2 Nerf Wireless Controller
Manufacturer: Ciponic Industrial (HK) Ltd.
Operating Condition: TX 2440MHz
Test Site: ATC EMC Lab.SAC
Status: Pass
Test Specification: Vertical
Comment : AC 120V/60Hz

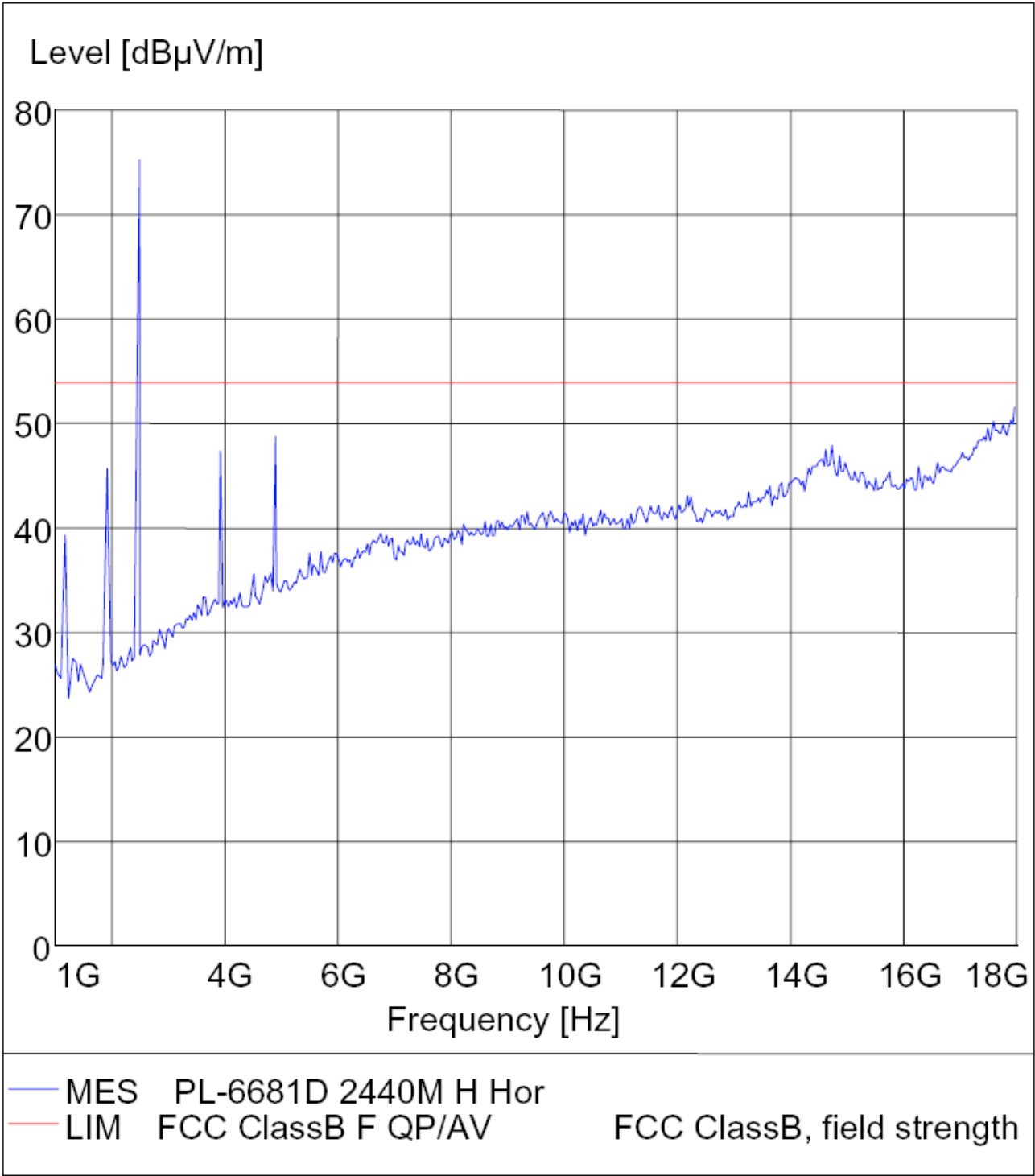


Radiated Disturbance

FCC Part 15

EUT: PS2 Nerf Wireless Controller
Manufacturer: Ciponic Industrial (HK) Ltd.
Operating Condition: TX 2440MHz
Test Site: ATC EMC Lab.SAC
Status: Fen
Test Specification: Horizontal
Comment: AC 120V/60Hz

M/N:PL-6681D

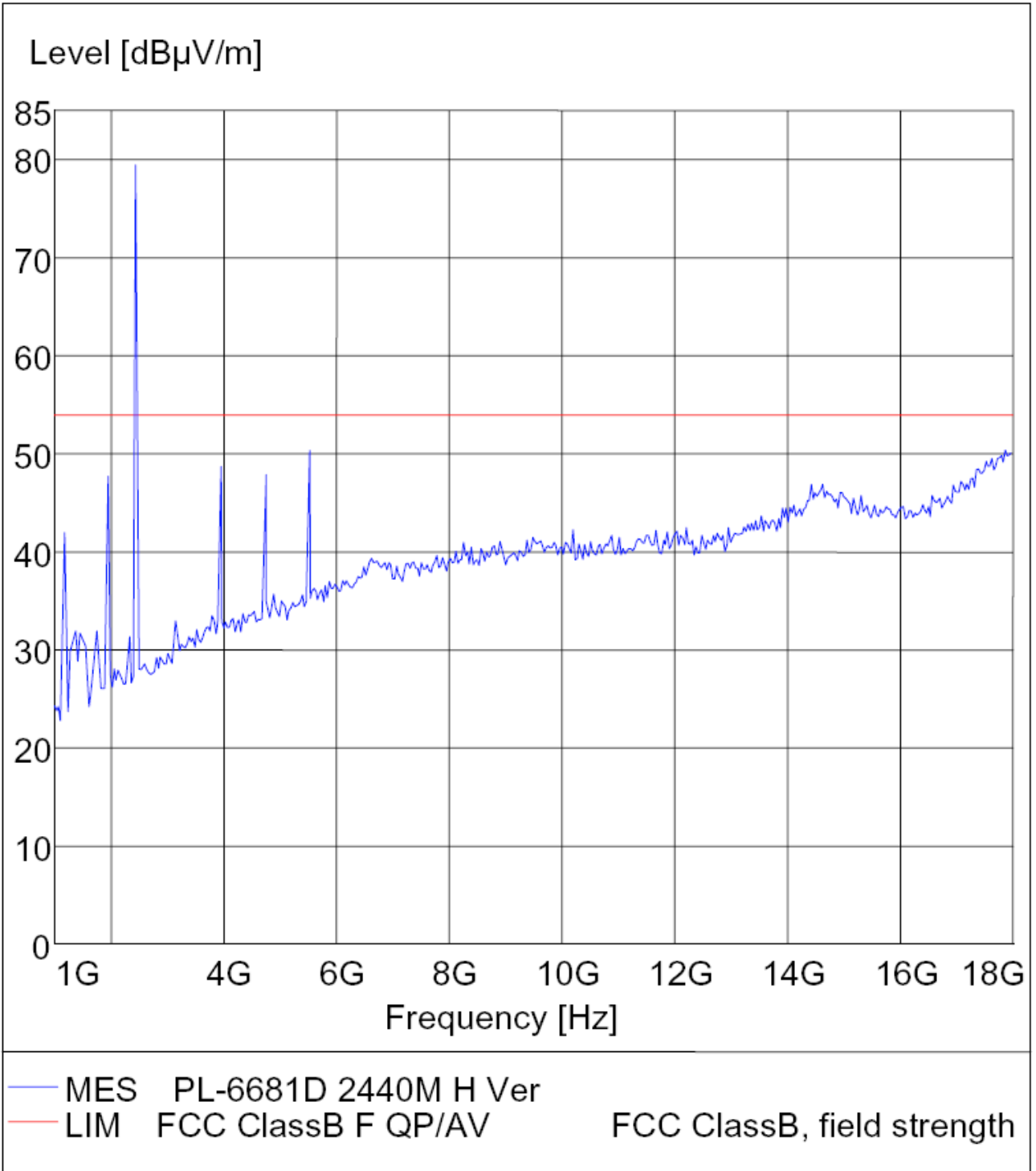


Radiated Disturbance

FCC Part 15

EUT: PS2 Nerf Wireless Controller
Manufacturer: Ciponic Industrial (HK) Ltd.
Operating Condition: TX 2440MHz
Test Site: ATC EMC Lab.SAC
Status: Fen
Test Specification: Vertical
Comment: AC 120V/60Hz

M/N:PL-6681D

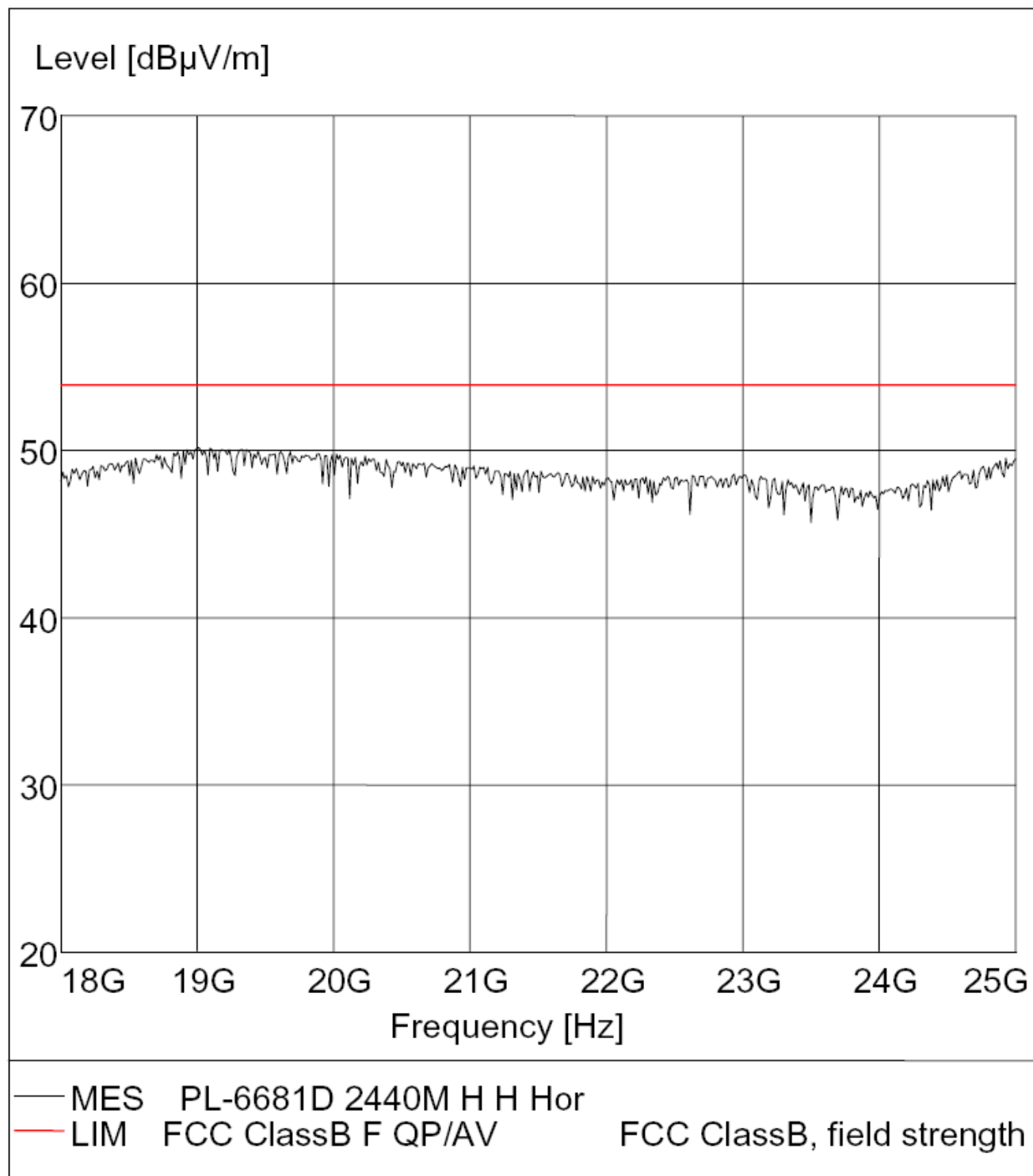


Radiated Disturbance

FCC Part 15

EUT: PS2 Nerf Wireless Controller
 Manufacturer: Ciponic Industrial (HK) Ltd.
 Operating Condition: TX 2440MHz
 Test Site: ATC EMC Lab.SAC
 Status: Fen
 Test Specification: Horizontal
 Comment: AC 120V/60Hz

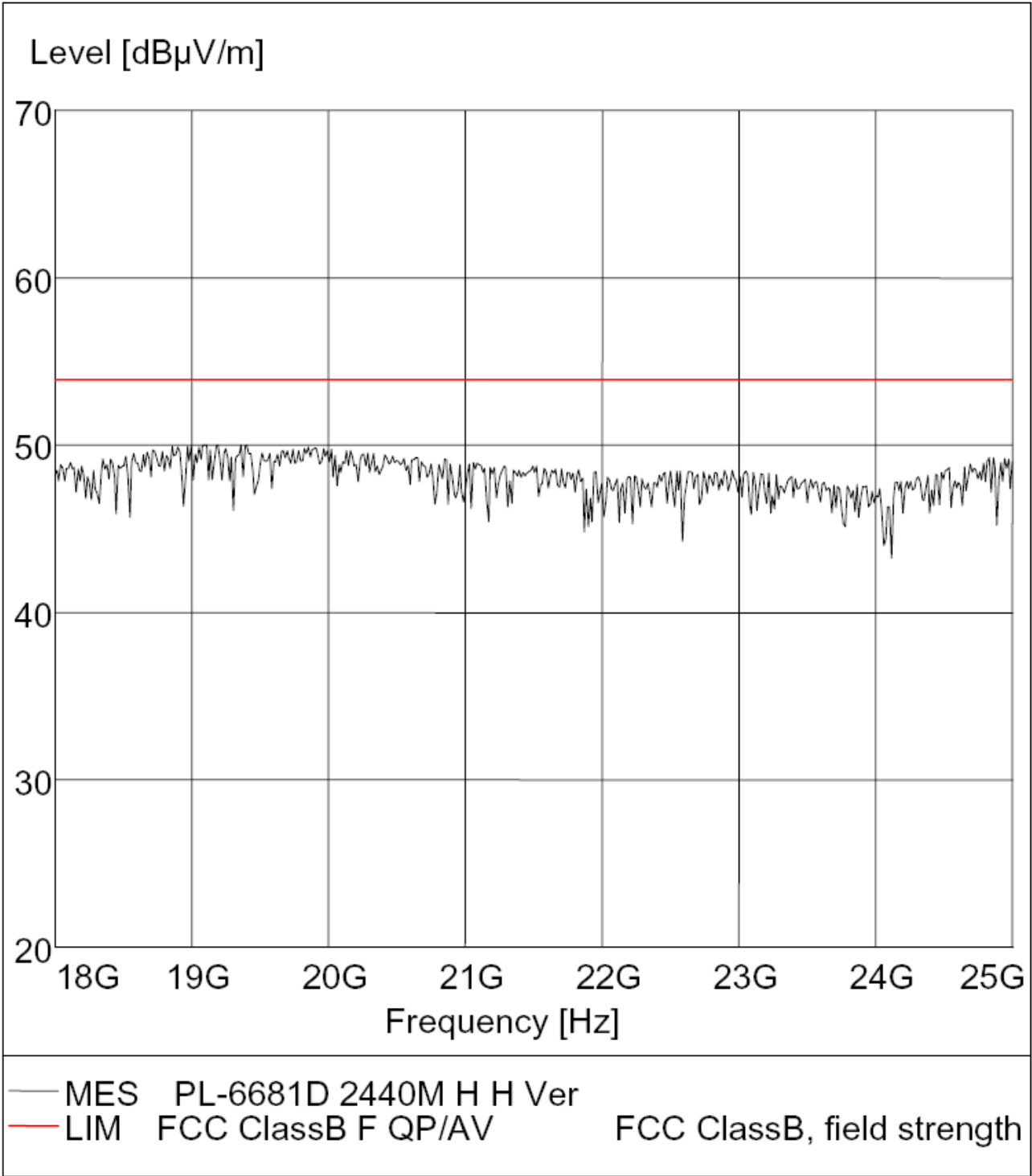
M/N:PL-6681D



Radiated Disturbance

FCC Part 15

EUT: PS2 Nerf Wireless Controller M/N: PL-6681D
Manufacturer: Ciponic Industrial (HK) Ltd.
Operating Condition: TX 2440MHz
Test Site: ATC EMC Lab.SAC
Status: Fen
Test Specification: Vertical
Comment: AC 120V/60Hz

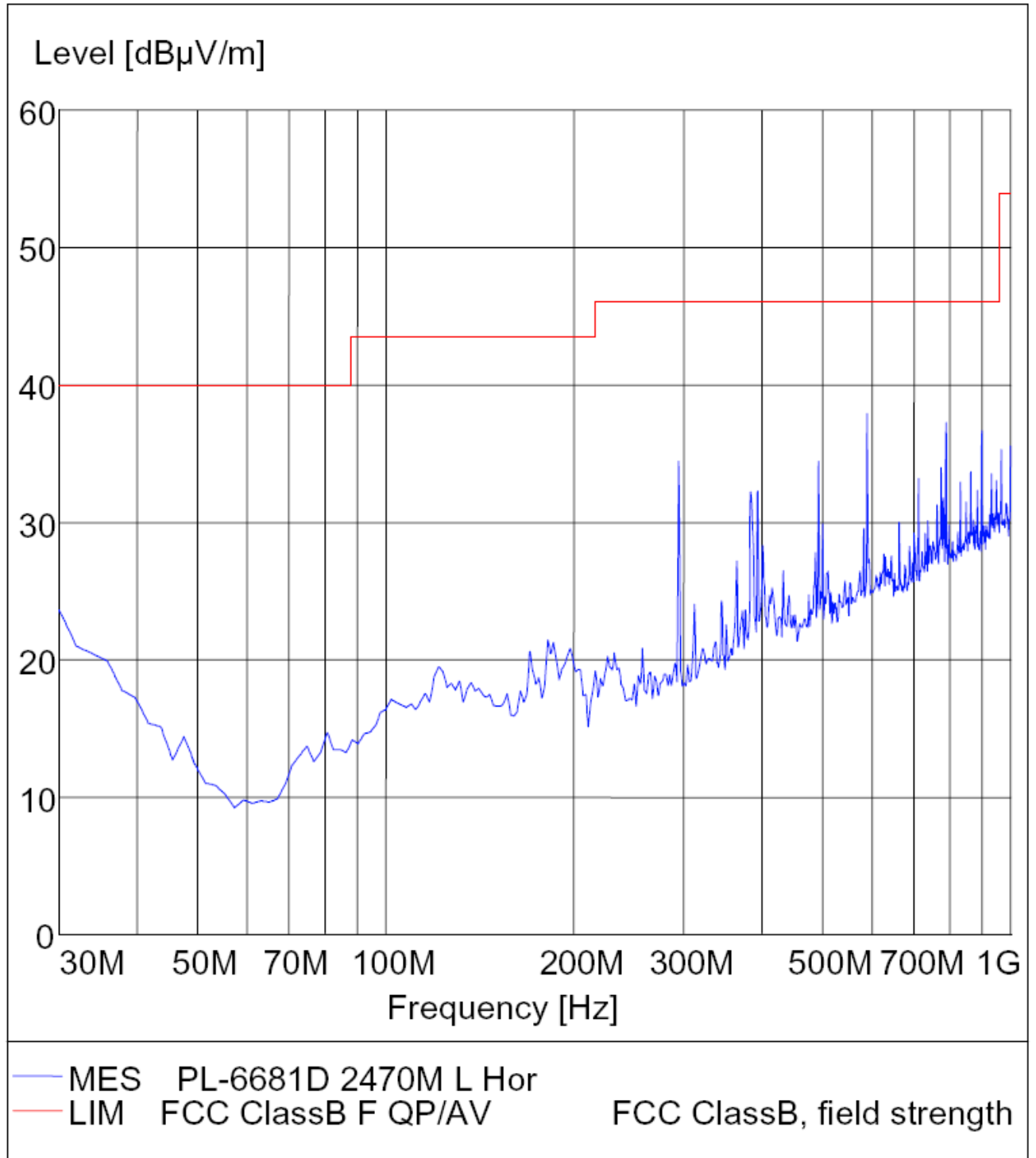


Radiated Disturbance

FCC Part 15

EUT: PS2 Nerf Wireless Controller
 Manufacturer: Ciponic Industrial (HK) Ltd.
 Operating Condition: TX 2470MHz
 Test Site: ATC EMC Lab.SAC
 Status: Fen
 Test Specification: Horizontal
 Comment : AC 120V/60Hz

M/N:PL-6681D

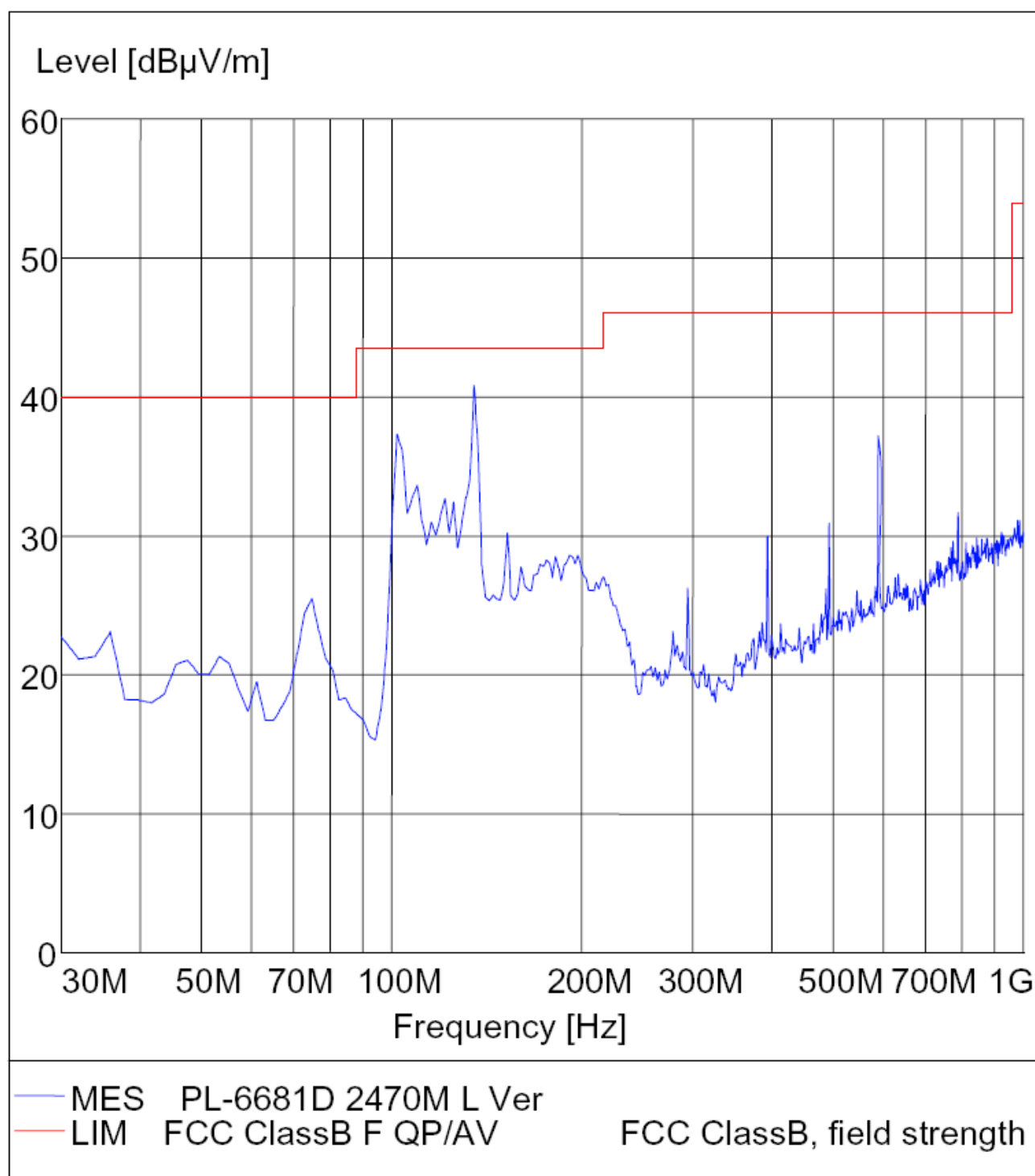


Radiated Disturbance

FCC Part 15

EUT: PS2 Nerf Wireless Controller
 Manufacturer: Ciponic Industrial (HK) Ltd.
 Operating Condition: TX 2470MHz
 Test Site: ATC EMC Lab.SAC
 Status: Fen
 Test Specification: Vertical
 Comment : AC 120V/60Hz

M/N:PL-6681D



Radiated Disturbance

FCC Part 15

EUT: PS2 Nerf Wireless ControllerM/N: PL-6681D

Manufacturer: Ciponic Industrial (HK) Ltd.

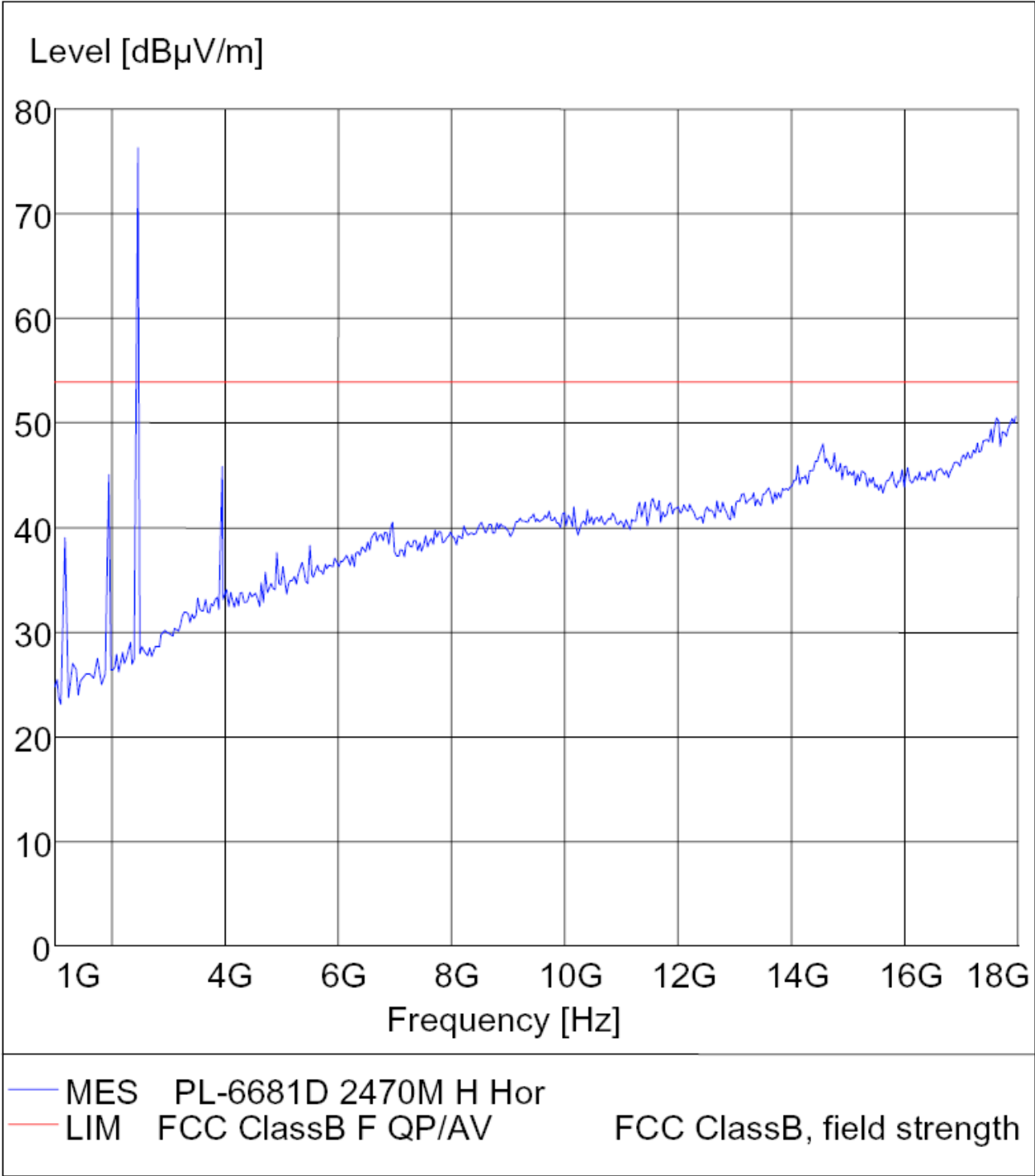
Operating Condition: TX 2470MHz

Test Site: ATC EMC Lab.SAC

Status: Fen

Test Specification: Horizontal

Comment: AC 120V/60Hz

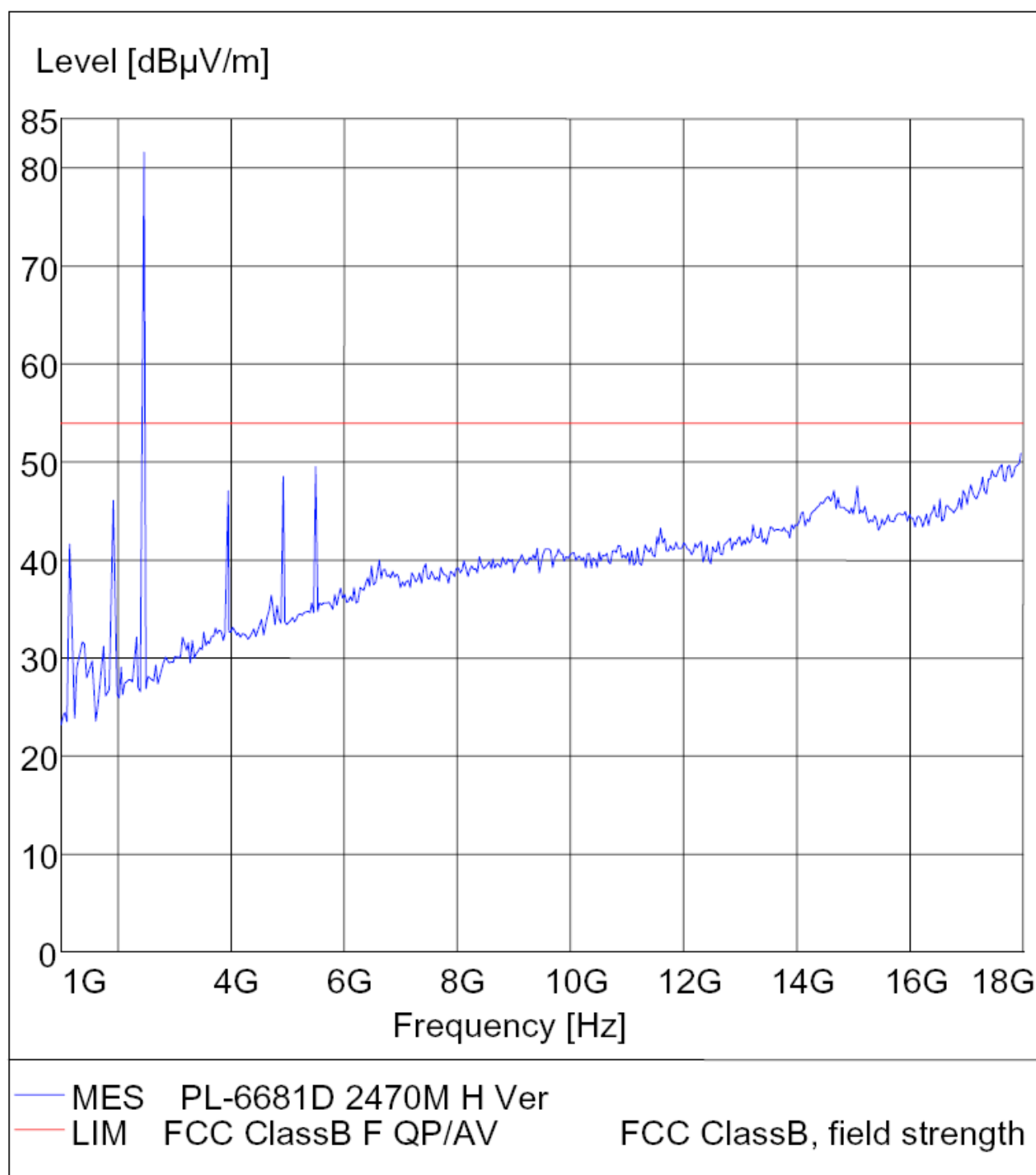


Radiated Disturbance

FCC Part 15

EUT: PS2 Nerf Wireless Controller
 Manufacturer: Ciponic Industrial (HK) Ltd.
 Operating Condition: TX 2470MHz
 Test Site: ATC EMC Lab.SAC
 Status: Fen
 Test Specification: Vertical
 Comment: AC 120V/60Hz

M/N:PL-6681D



Radiated Disturbance

FCC Part 15

EUT: PS2 Nerf Wireless ControllerM/N: PL-6681D

Manufacturer: Ciponic Industrial (HK) Ltd.

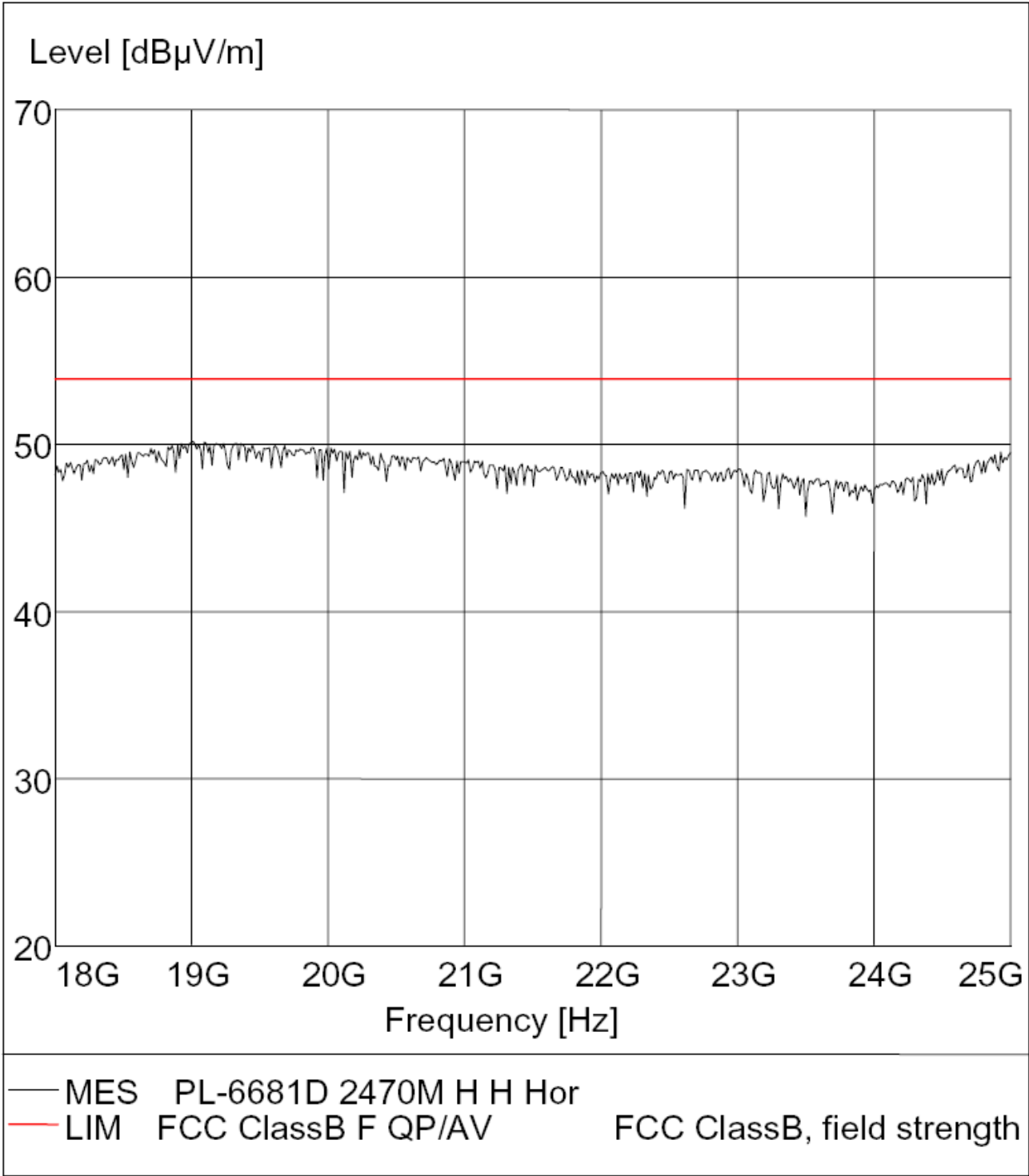
Operating Condition: TX 2470MHz

Test Site: ATC EMC Lab.SAC

Status: Fen

Test Specification: Horizontal

Comment: AC 120V/60Hz

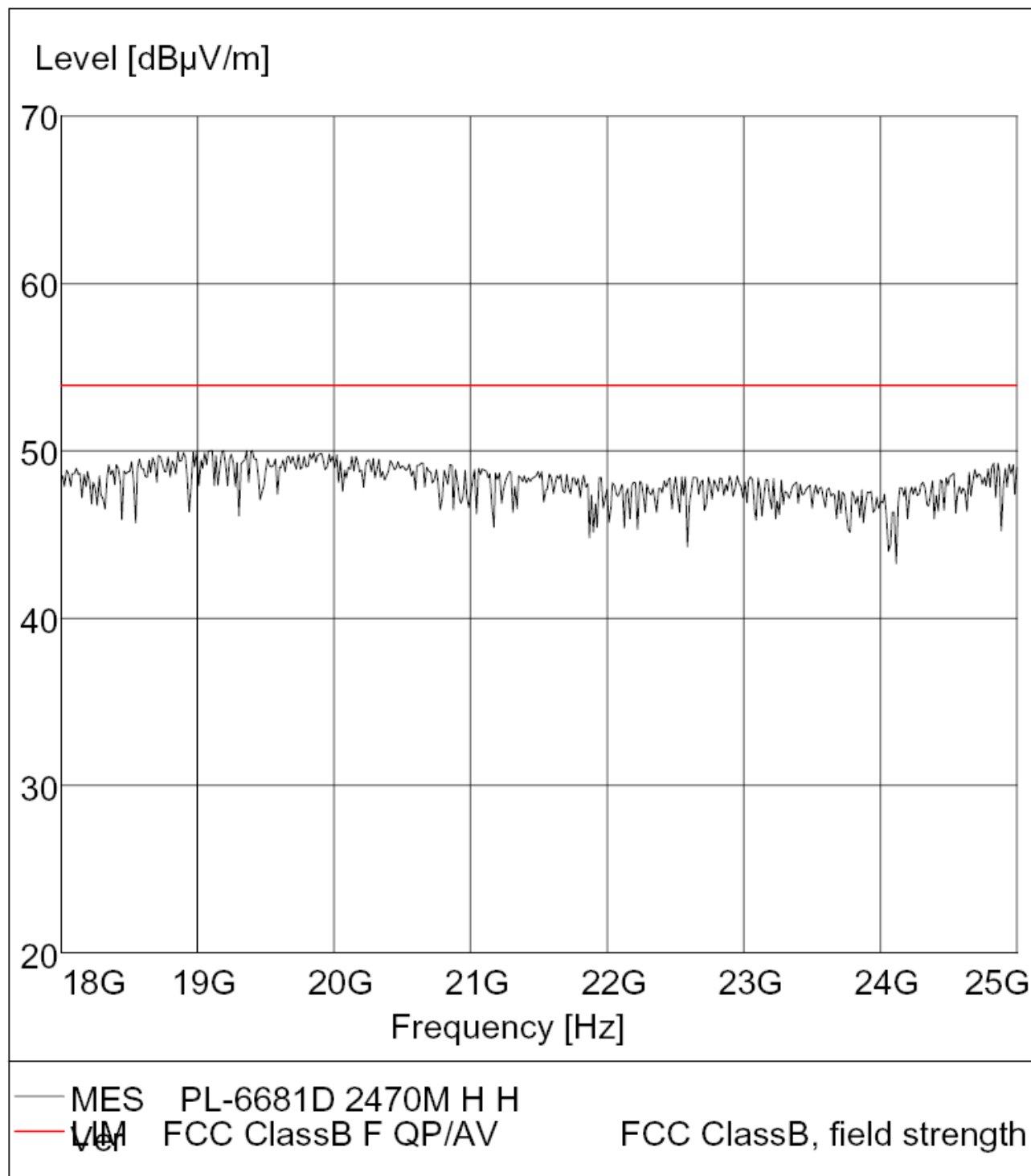


Radiated Disturbance

FCC Part 15

EUT: PS2 Nerf Wireless Controller
Manufacturer: Ciponic Industrial (HK) Ltd.
Operating Condition: TX 2470MHz
Test Site: ATC EMC Lab.SAC
Status: Fen
Test Specification: Vertical
Comment: AC 120V/60Hz

M/N:PL-6681D





1 PK
VIEW

