CERTIFICATION
On Behalf of
Guangzhou Jincheng Electronic Technology Co., Ltd.

Wireless Backup System
Model No.: ACA250

FCC ID: UZRACA250

Prepared for	:	Guangzhou Jincheng Electronic Technology Co., Ltd.
Address	:	Building 4, No.3, South Road, Yongshan Village(Industrial Area), Shiji, Panyu, Guangzhou, Guangdong, P.R.China 511450
Prepared by	:	Accurate Technology Co., Ltd.
Address	:	F1, Bldg. A, Changyuan New Material Port, Keyuan Rd. Science & Industry Park, Nanshan, Shenzhen, Guangdong P.R. China Tel: (0755) 26503290 Fax: (0755) 26503396

Report Number	:	ATE20080708
Date of Test	:	April 28, 2008
Date of Report	:	April 29, 2008

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Description Page

Test Report Certification

Applicant	:	Guangzhou Jincheng Electronic Technology Co., Ltd.
Manufacturer	:	Guangzhou Jincheng Electronic Technology Co., Ltd.
EUT Description	:	Wireless Backup System
		(A) MODEL NO.: ACA250
		(B) SERIAL NO.: N/A
		(C) POWER SUPPLY: DC 12V

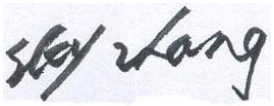
Measurement Procedure Used:

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

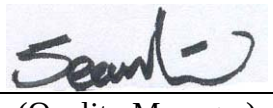
The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section15.249 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY 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 : April 28, 2008

Prepared by : 

(Engineer)

Reviewer : 

(Quality Manager)

Approved & Authorized Signer : 

(Manager)

1. GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT	:	Wireless Backup System
Model Number	:	ACA250
Power Supply	:	DC12V
Operate Frequency	:	2468MHz
Channel Number	:	1
Applicant	:	Guangzhou Jincheng Electronic Technology Co., Ltd.
Address	:	Building 4, No.3, South Road, Yongshan Village(Industrial Area), Shiji, Panyu, Guangzhou, Guangdong, P.R.China 511450
Manufacturer	:	Guangzhou Jincheng Electronic Technology Co., Ltd.
Address	:	Building 4, No.3, South Road, Yongshan Village(Industrial Area), Shiji, Panyu, Guangzhou, Guangdong, P.R.China 511450
Date of sample received	:	April 25, 2008
Date of Test	:	April 28, 2008

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

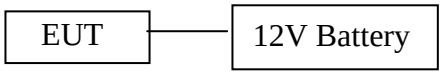
Table 1: List of Test and Measurement Equipment

Kind of equipment	Manufacturer	Type	S/N	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	03.29.2009
EMI Test Receiver	Rohde&Schwarz	ESI26	838786/013	01.23.2009
Bilog Antenna	Schwarzbeck	VULB9163	9163-194	03.31.2009
Bilog Antenna	Chase	CBL6112B	2591	01.23.2009
Horn Antenna	Rohde&Schwarz	HF906	100013	01.23.2009
Spectrum Analyzer	Anritsu	MS2651B	6200238856	03.29.2009
Pre-Amplifier	Agilent	8447D	2944A10619	03.29.2009
L.I.S.N.	Rohde&Schwarz	ESH3-Z5	100305	03.29.2009
L.I.S.N.	Rohde&Schwarz	ESH3-Z5	100310	03.29.2009

3. FUNDAMENTAL AND HARMONICS RADIATED EMISSION MEASURMENT

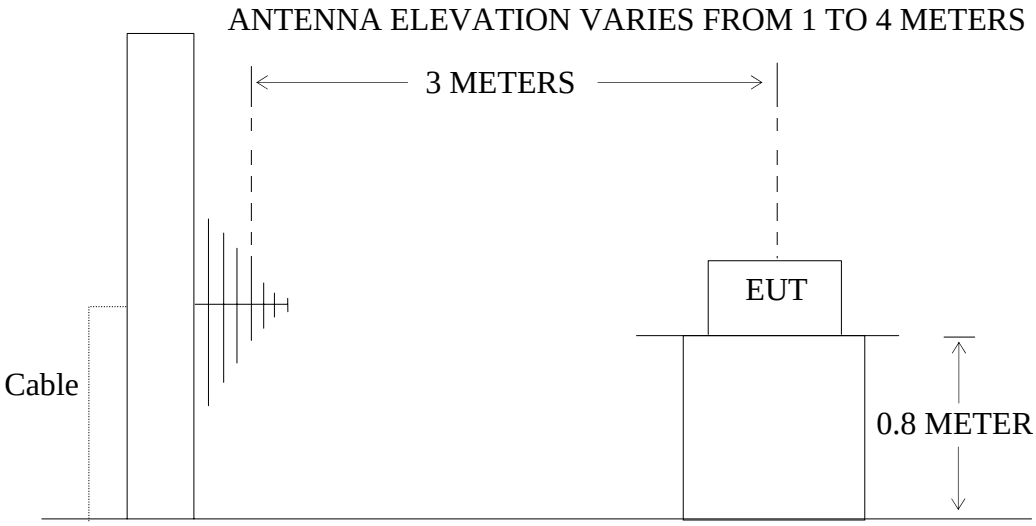
3.1.Block Diagram of Test Setup

3.1.1.Block diagram of connection between the EUT and simulators



(EUT: Wireless Backup System)

3.1.2.Anechoic Chamber Test Setup Diagram



(EUT: Wireless Backup System)

3.2.The Emission Limit

3.2.1 FCC Part 15 Subpart C 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

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.

3.2.2 Restricted Band Radiation Emission Measurement Limits According to FCC part 15 Section 15.205 and Section15.209.

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. Wireless Backup System (EUT)

Model Number	:	ACA250
Serial Number	:	N/A
Manufacturer	:	Guangzhou Jincheng Electronic Technology Co., 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.

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:	April 28, 2008	Temperature:	23°C
EUT:	Wireless Backup System	Humidity:	57%
Model No.:	ACA250	Power Supply:	DC 12V
Test Mode:	TX	Test Engineer:	Feng

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	
2468.048	86.4	94.5	-3.4	83.0	91.1	94	114	11.0	22.9	Vertical
2468.328	90.0	97.7	-3.4	86.6	94.3	94	114	7.4	19.7	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	
*4936.693	47.4	60.4	2.2	49.6	62.6	54	74	4.4	11.4	Vertical
*4936.659	47.7	60.4	2.2	49.9	62.6	54	74	4.1	11.4	Horizontal
*7404.509	24.2	35.7	7.4	31.6	43.1	54	74	22.4	30.9	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:

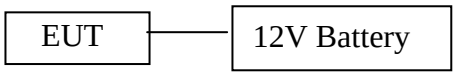
Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss – Amplifier Gain

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

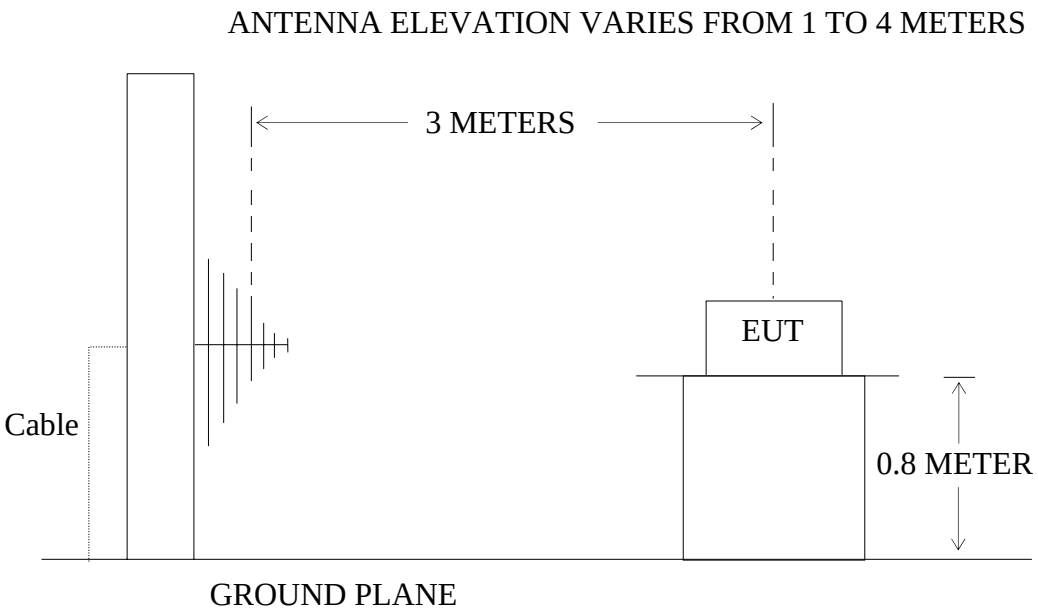
4.1.Block Diagram of Test Setup

4.1.1.Block diagram of connection between the EUT and simulators



(EUT: Wireless Backup System)

4.1.2.Anechoic Chamber Test Setup Diagram



(EUT: Wireless Backup System)

4.2.The Emission Limit

4.2.1 FCC Part 15 Subpart C Section 15.249(d): Emission radiated outside of the specified frequency bands, except for harmonics, shall be comply with the general radiated emission limits in 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	

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. Wireless Backup System (EUT)

Model Number	:	ACA250
Serial Number	:	N/A
Manufacturer	:	Guangzhou Jincheng Electronic Technology Co., 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.

4.5.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.

4.6.The Emission Measurement Result

PASS.

Date of Test:	April 28, 2008	Temperature:	23°C
EUT:	Wireless Backup System	Humidity:	57%
Model No.:	ACA250	Power Supply:	DC 12V
Test Mode:	TX	Test Engineer:	Feng

Frequency (MHz)	Reading (dBμV/m)	Factor(dB) Corr.	Result (dBμV/m)	Limit (dBμV/m)	Margin (dBμV/m)	Polarization
-	-	-	-	-	-	Vertical
-	-	-	-	-	-	Horizontal

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

Note:

1. **-:** Denotes the output Field Strength of all the spurious frequency is at least 15dB down to the limit.
2. 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:

   Result = Reading + Corrected Factor

   Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss – Amplifier Gain

5. BAND EDGES

5.1.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 FCC part 15 Section 15.209 limit, whichever is the lesser attenuation.

5.2.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.

5.2.1. Wireless Backup System (EUT)

Model Number	:	ACA250
Serial Number	:	N/A
Manufacturer	:	Guangzhou Jincheng Electronic Technology Co., Ltd.

5.3.Operating Condition of EUT

5.3.1.Setup the EUT and simulator as shown as Section 5.1.

5.3.2.Turn on the power of all equipment.

5.3.3. Let the EUT work in TX modes measure it.

5.4.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.

5.5.The Measurement Result

Pass

5.5.1 Lower band edge: Emission radiated outside of the lower band edge are 46.3 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
94.3	48.0	74	26	Peak
86.6	40.3	54	13.7	Average

5.5.2 Upper band edge: Emission radiated outside of the upper band edge are 44.7 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
94.3	49.6	74	24.4	Peak
86.6	41.9	54	12.1	Average

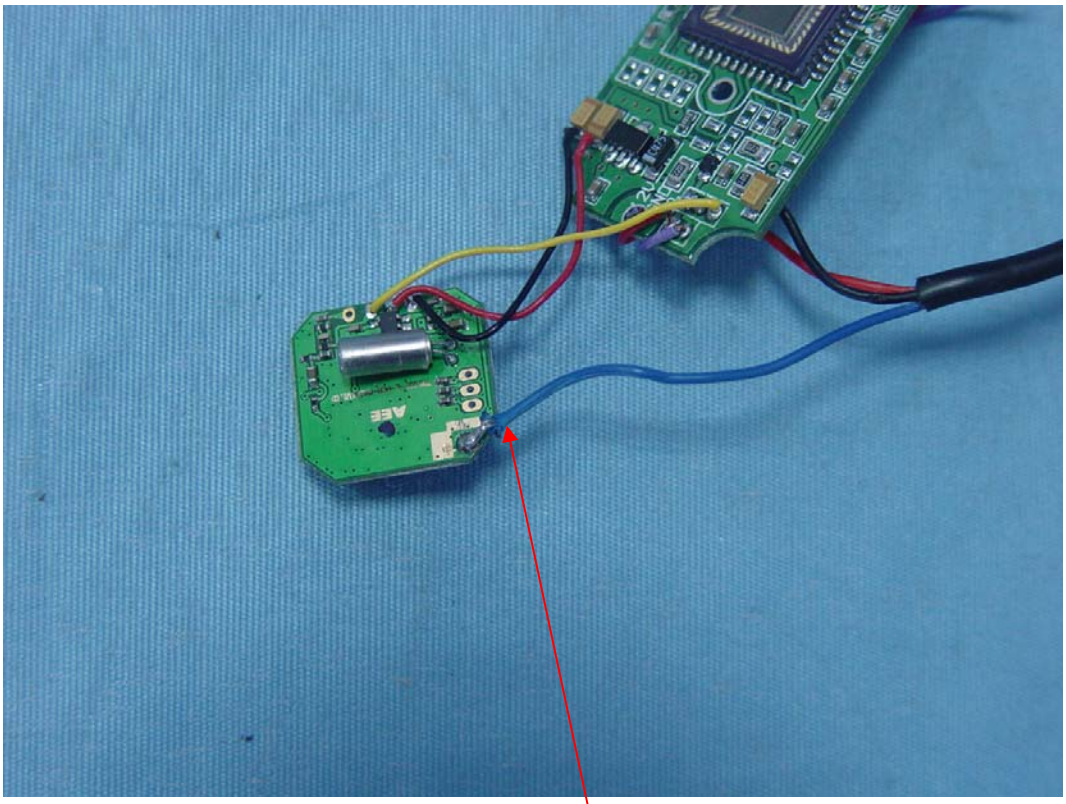
6. ANTENNA REQUIREMENT

6.1.The Requirement

6.1.1. 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.

6.2.Antenna Construction

The transmitter utilizes dipole antenna. The antenna (blue wire) was solder to PCB. The antenna is 1 meter in length along with DC power wire (red & black wire) both be wrapped into black insulation tube. The antenna is not connected to DC +, - polarity. It is not considered to be user replaceable.

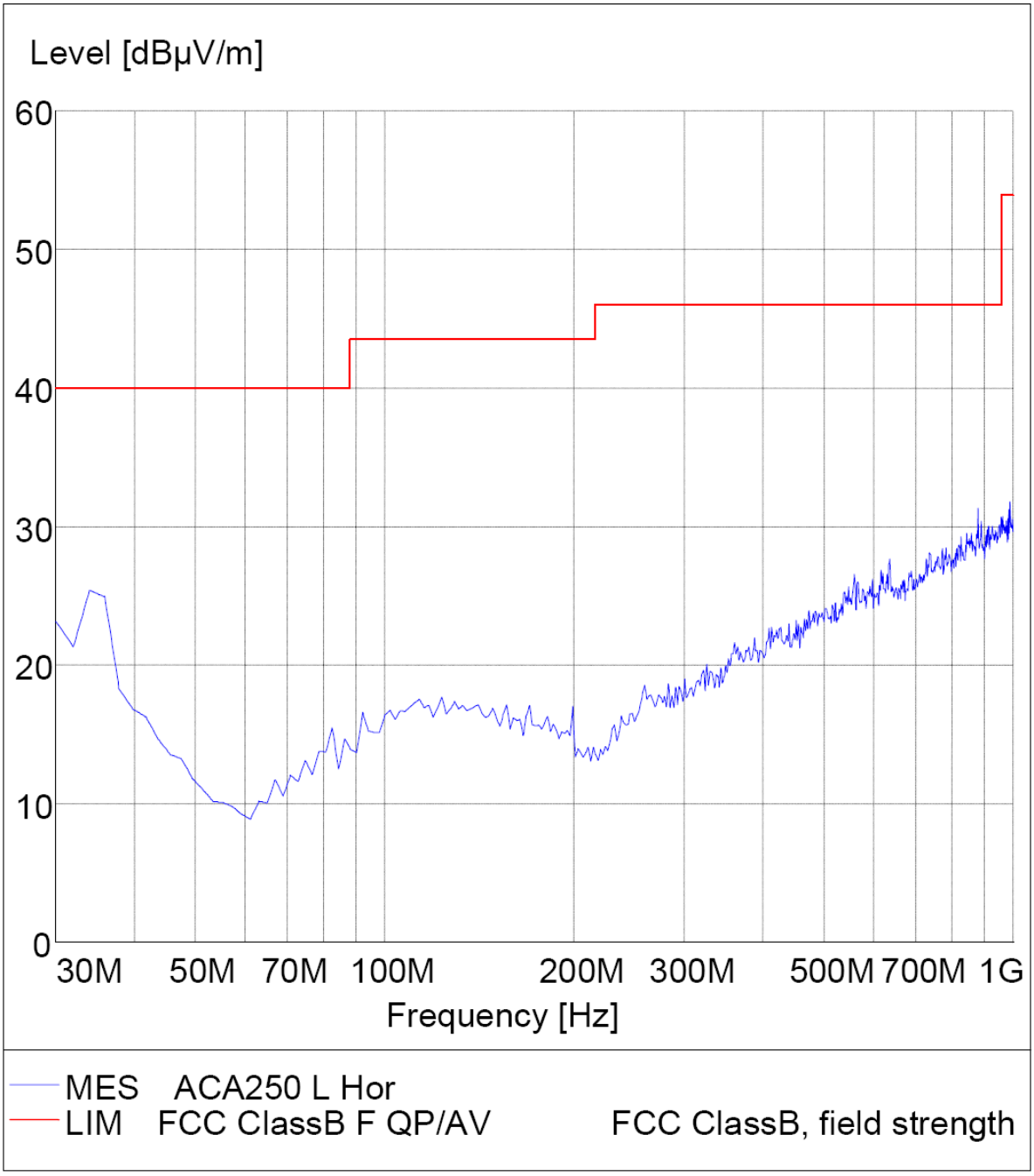


APPENDIX I
(Test Curves)

Radiated Disturbance

FCC Part 15

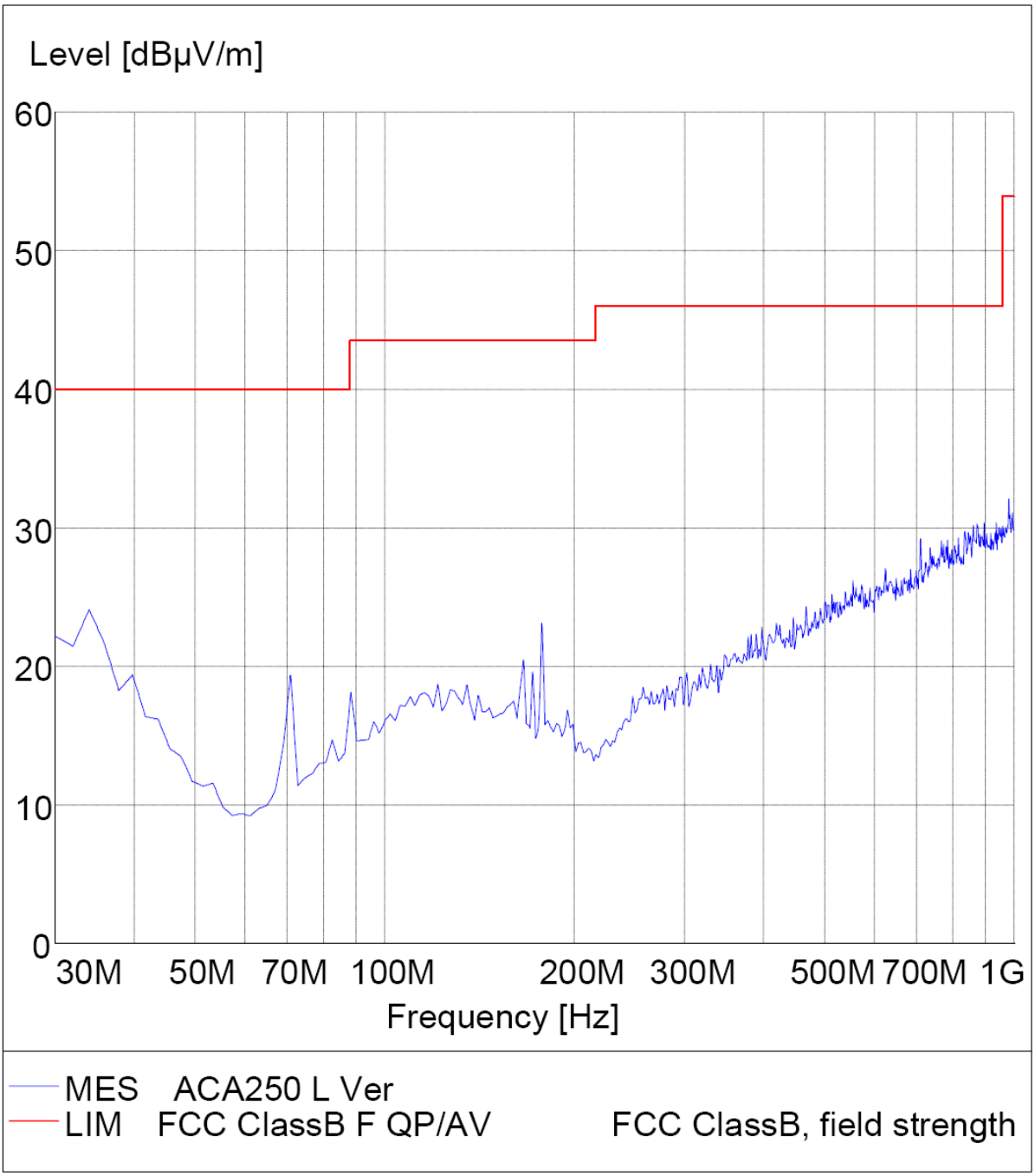
EUT: Wireless Backup System M/N: ACA250
Manufacturer: Guangzhou Jincheng Electronic Technology Co., Ltd.
Operating Condition: TX
Test Site: ATC EMC Lab.SAC
Operator: Feng
Test Specification: Horizontal
Comment: DC 12V



Radiated Disturbance

FCC Part 15

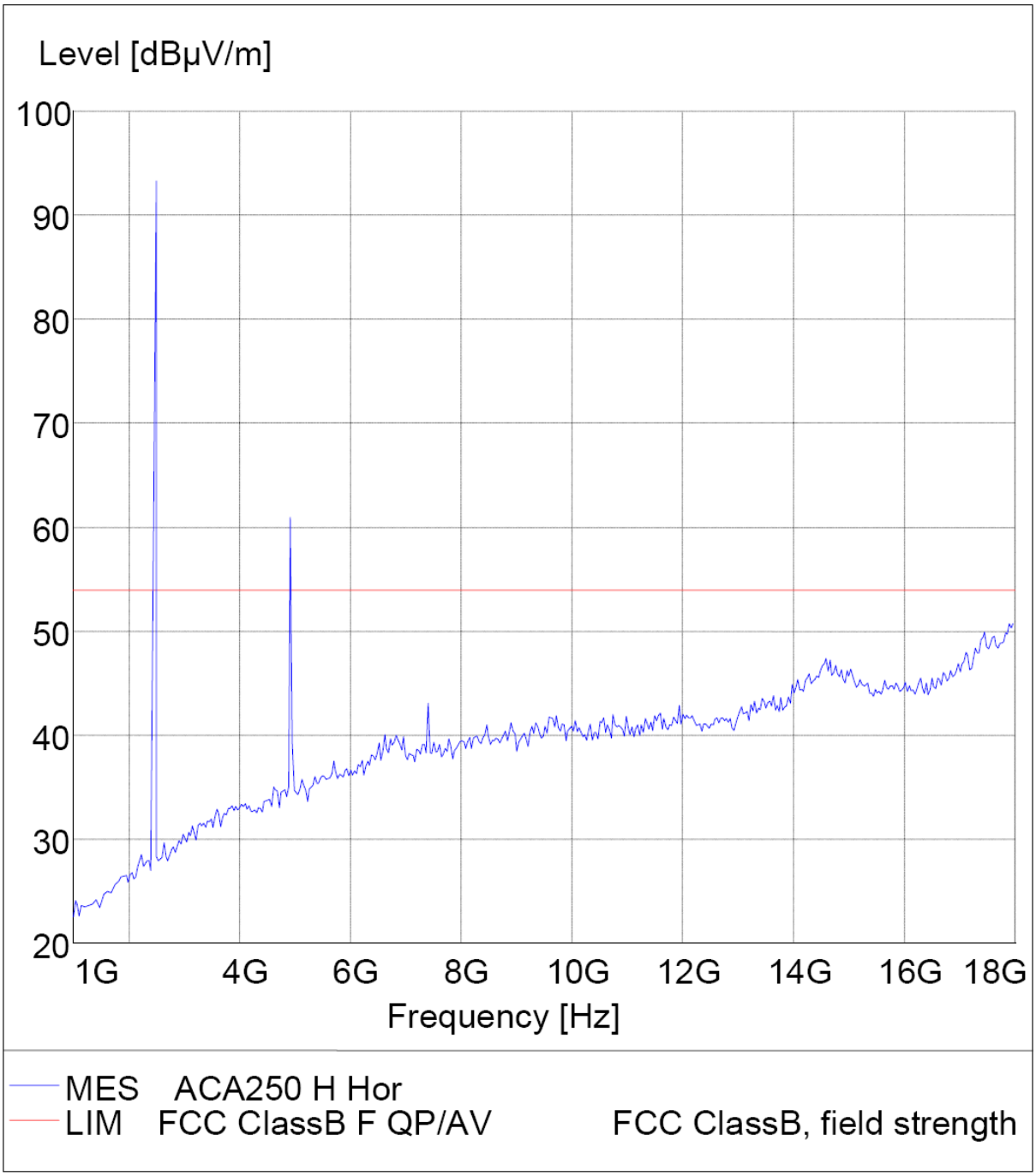
EUT: Wireless Backup System M/N: ACA250
Manufacturer: Guangzhou Jincheng Electronic Technology Co., Ltd.
Operating Condition: TX
Test Site: ATC EMC Lab.SAC
Operator: Feng
Test Specification: Vertical
Comment : DC 12V



Radiated Disturbance

FCC Part 15

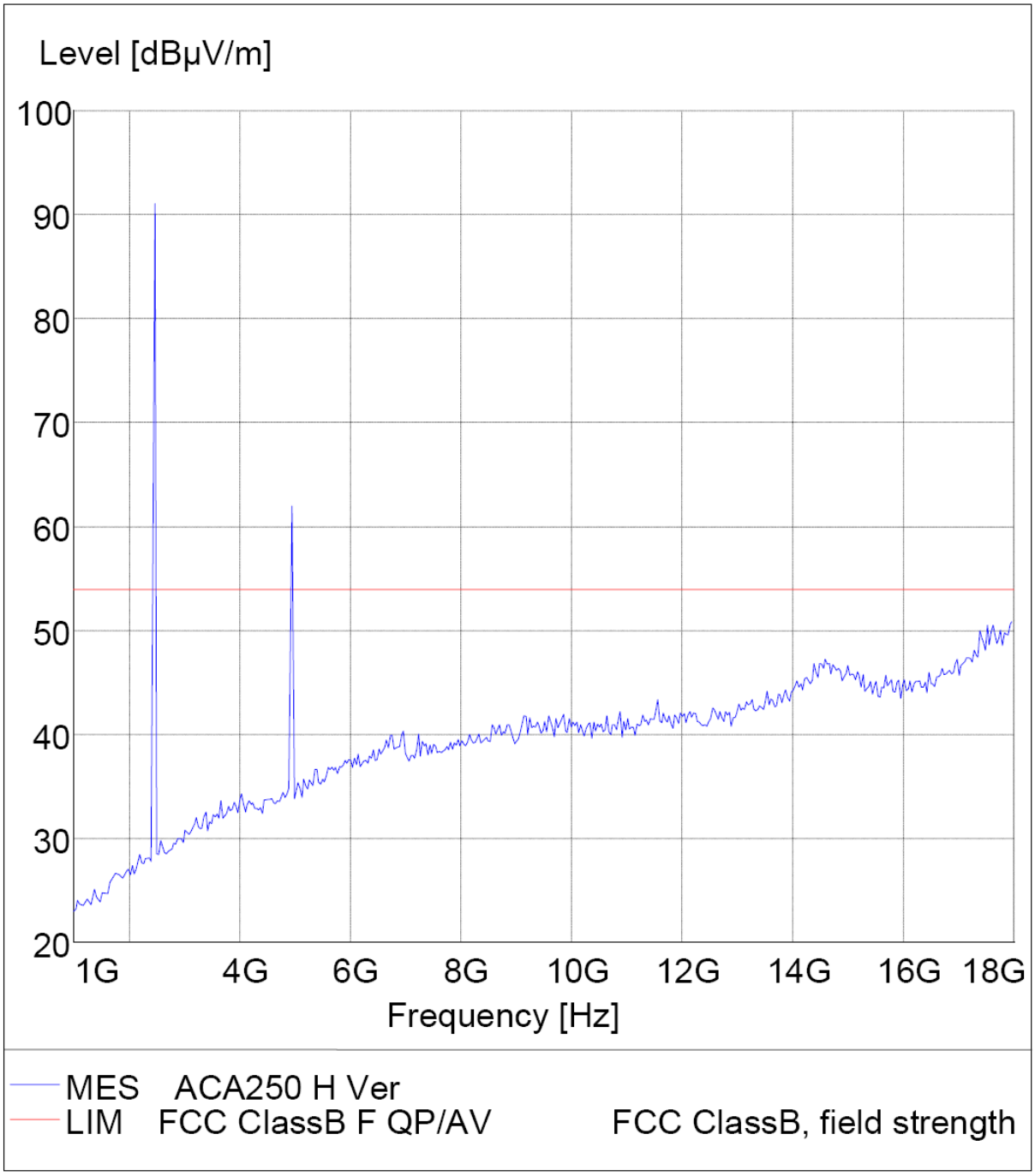
EUT: Wireless Backup System M/N: ACA250
Manufacturer: Guangzhou Jincheng Electronic Technology Co., Ltd.
Operating Condition: TX
Test Site: ATC EMC Lab.SAC
Operator: Feng
Test Specification: Horizontal
Comment: DC 12V



Radiated Disturbance

FCC Part 15

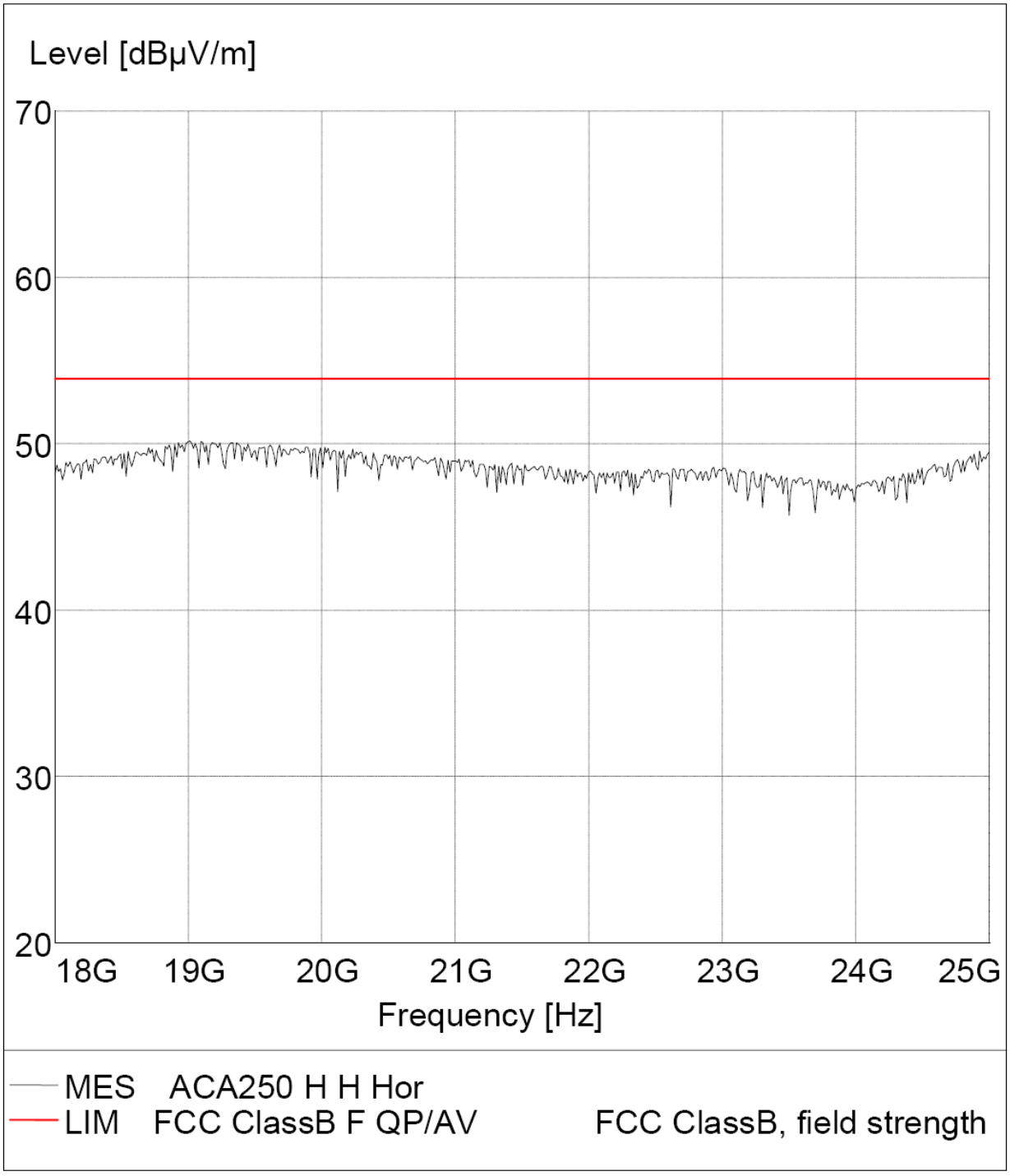
EUT: Wireless Backup System M/N: ACA250
Manufacturer: Guangzhou Jincheng Electronic Technology Co., Ltd.
Operating Condition: TX
Test Site: ATC EMC Lab.SAC
Operator: Feng
Test Specification: Vertical
Comment: DC 12V



Radiated Disturbance

FCC Part 15

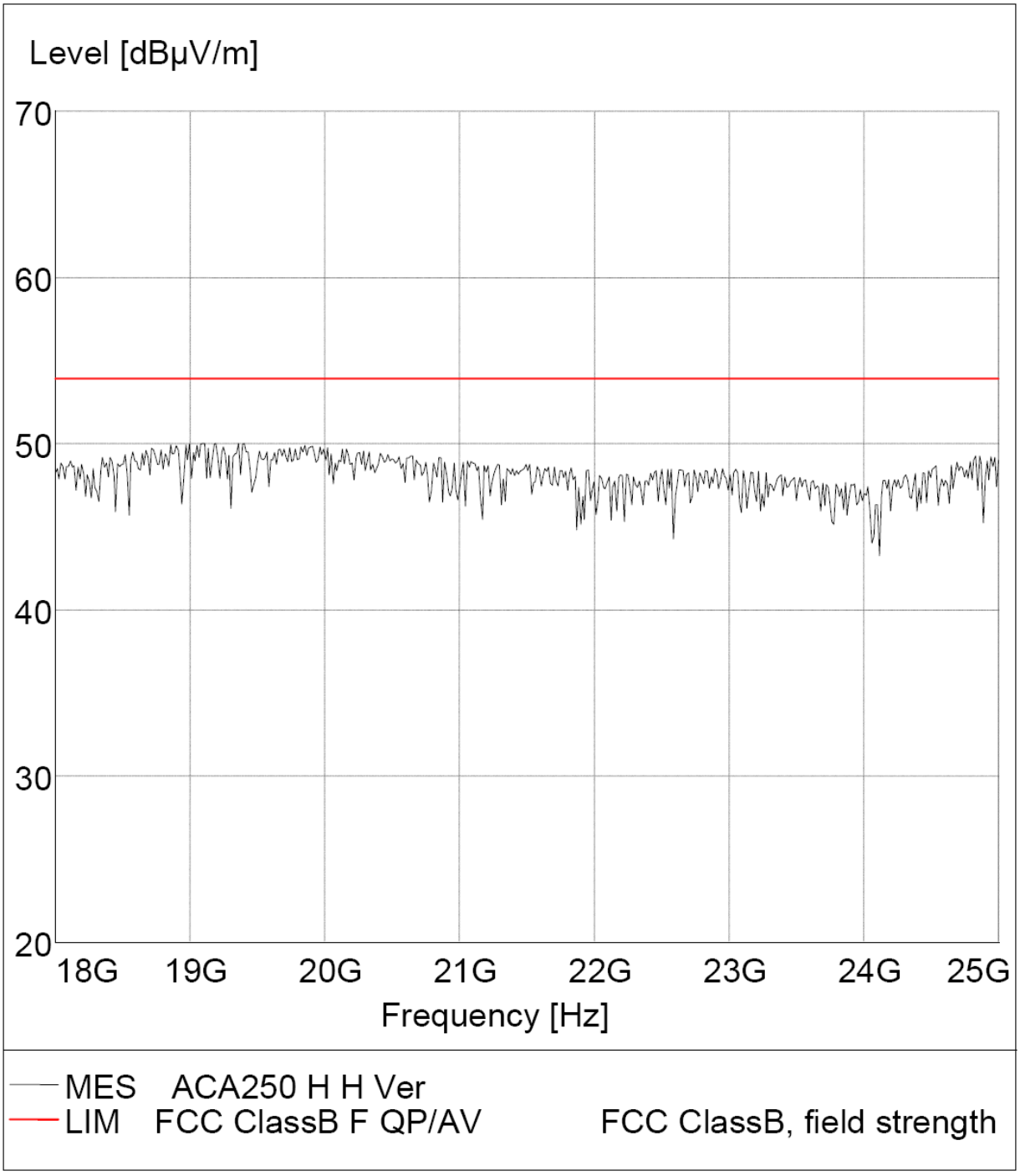
EUT: Wireless Backup System M/N: ACA250
Manufacturer: Guangzhou Jincheng Electronic Technology Co., Ltd.
Operating Condition: TX
Test Site: ATC EMC Lab.SAC
Operator: Feng
Test Specification: Horizontal
Comment: DC 12V

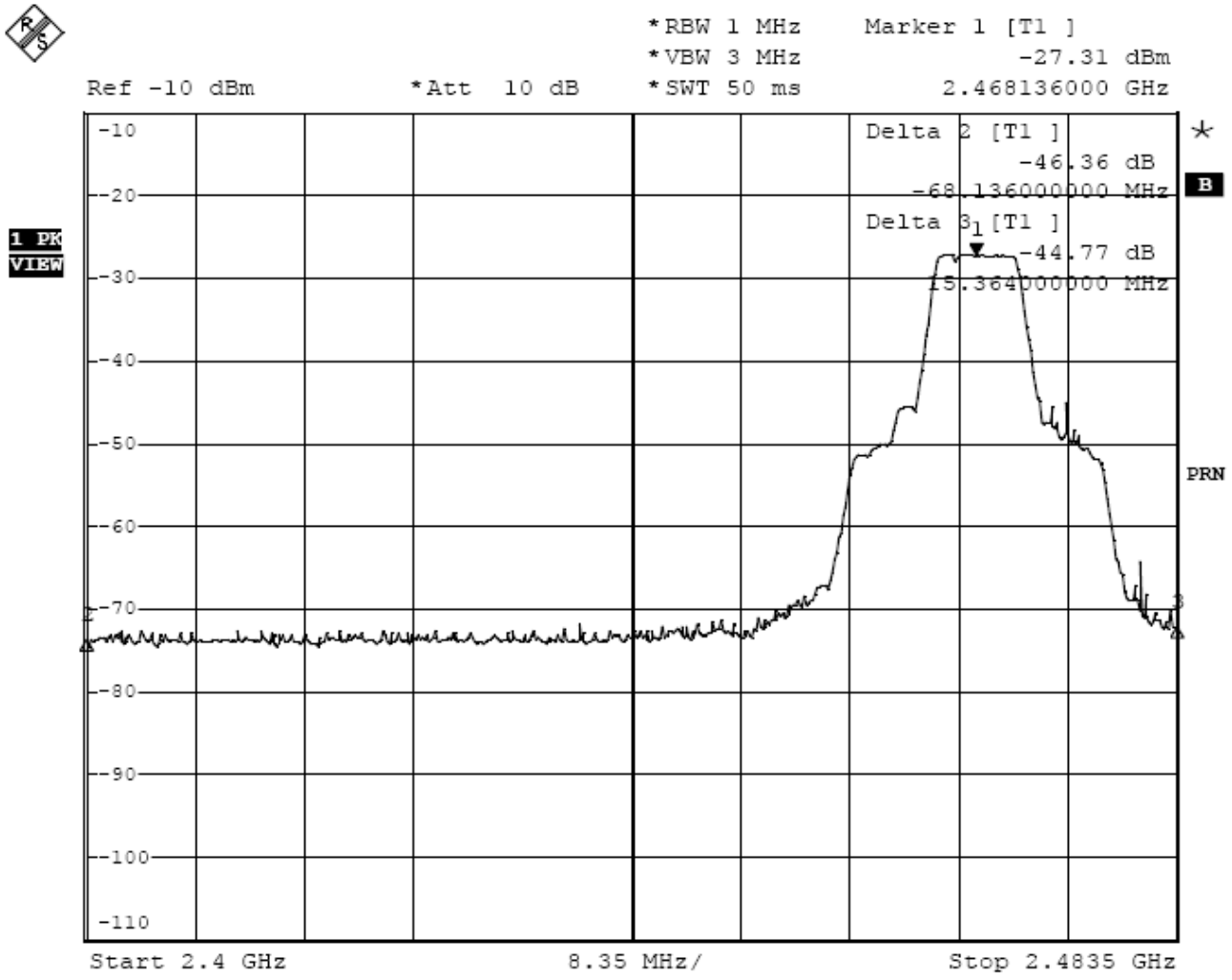


Radiated Disturbance

FCC Part 15

EUT: Wireless Backup System M/N: ACA250
Manufacturer: Guangzhou Jincheng Electronic Technology Co., Ltd.
Operating Condition: TX
Test Site: ATC EMC Lab.SAC
Operator: Feng
Test Specification: Vertical
Comment: DC 12V

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*VBW 3 MHz
*SWT 50 ms
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-27.31 dBm
2.468136000 GHz
Ref -10 dBm
*Att 10 dB
Delta 2 [T1]
-46.36 dB
-68.136000000 MHz
Delta 3 [T1]
-44.77 dB
15.364000000 MHz
1 PK
VIEW
B
PRN
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
Start 2.4 GHz
8.35 MHz/
Stop 2.4835 GHz