FCC CERTIFICATION
On Behalf of
Chia Wei Electric Co., Ltd.

Transmitter
Model No.: FAN-25T

FCC ID: L3HFAN25T

Prepared for	:	Chia Wei Electric Co., Ltd.
Address	:	No.27, Lane 24, Ta Lain North St., Taichung, Taiwan
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
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Report Number	:	ATE20061865
Date of Test	:	September 22, 2006
Date of Report	:	September 25, 2006

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Description Page

Test Report Certification

Applicant	:	Chia Wei Electric Co., Ltd.
Manufacturer	:	Chien Wei(Zhongshan) Electronic Co., Ltd.
EUT Description	:	Transmitter
		(A) MODEL NO.: FAN-25T
		(B) SERIAL NO.: N/A
		(C) POWER SUPPLY: 6.0V DC ("Lithium Cell" battery Type×2)

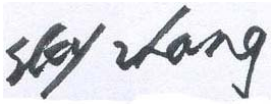
Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.231: 2004 & ANSI C63.4: 2003

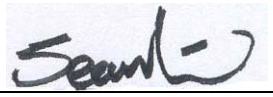
The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.231 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY 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 : September 22, 2006

Prepared by : 

(Engineer)

Reviewer : 

(Quality Manager)

Approved & Authorized Signer : 

(Manager)

1. GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT	:	Transmitter
Model Number	:	FAN-25T
Power Supply	:	6.0V DC ("Lithium Cell" battery Type×2)
Applicant	:	Chia Wei Electric Co., Ltd.
Address	:	No.27, Lane 24, Ta Lain North St., Taichung, Taiwan
Manufacturer	:	Chien Wei(Zhongshan) Electronic Co., Ltd.
Address	:	6th Industrial Area, Nan Lang Town, Zhongshan City, Guangdong, P.R.China
Date of sample received	:	September 18, 2006
Date of Test	:	September 22, 2006

1.2.Description of Test Facility

EMC Lab	:	Accredited by TUV Rheinland Shenzhen, May 10, 2004 Accredited by FCC, May 10, 2004 The Certificate Registration Number is 253065 Accredited by Industry Canada, May 18, 2004 The Certificate Registration Number is IC 5077
Name of Firm	:	ACCURATE TECHNOLOGY CO. LTD
Site Location	:	F1, Bldg. A, Changyuan New Material Port, Keyuan Rd. Science & Industry Park, Nanshan, Shenzhen, Guangdong P.R. China

1.3.Measurement Uncertainty

Conducted emission expanded uncertainty	=	2.23dB, k=2
Radiated emission expanded uncertainty	=	4.12dB, 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	03.31.2007
EMI Test Receiver	Rohde&Schwarz	ESI26	838786/013	01.02.2007
Bilog Antenna	Schwarzbeck	VULB9163	9163-194	03.31.2007
Bilog Antenna	Chase	CBL6112B	2591	03.31.2007
Horn Antenna	Rohde&Schwarz	HF906	100013	01.02.2007
Spectrum Analyzer	Anritsu	MS2651B	6200238856	03.31.2007
Pre-Amplifier	Agilent	8447D	2944A10619	03.31.2007

3. THE FIELD STRENGTH OF RADIATION EMISSION

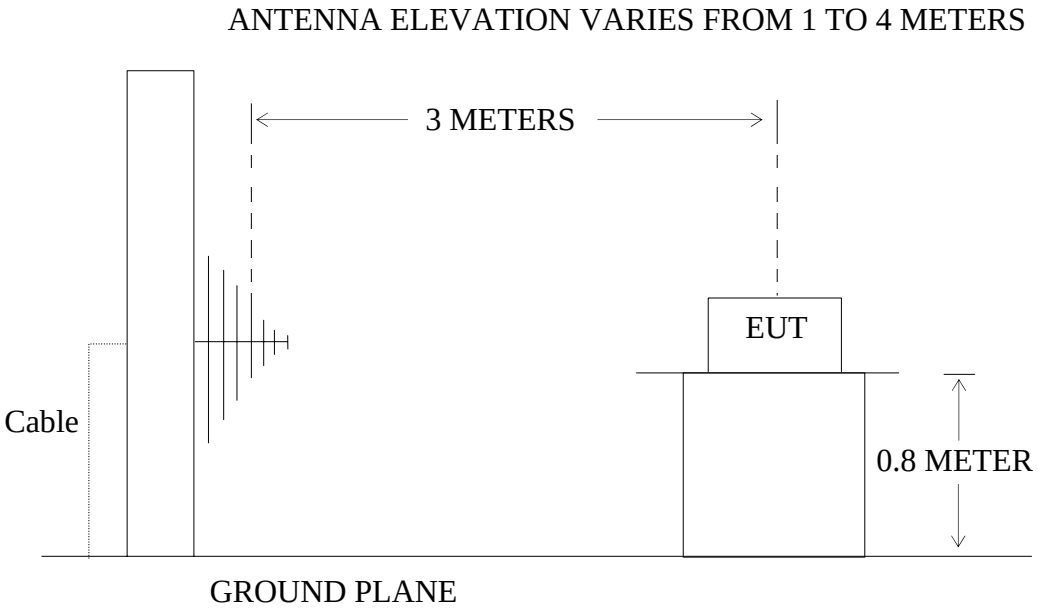
3.1.Block Diagram of Test Setup

3.1.1.Block diagram of connection between the EUT and simulators

EUT

(EUT: Transmitter)

3.1.2.Anechoic Chamber Test Setup Diagram



(EUT: Transmitter)

3.2.The Field Strength of Radiation Emission Measurement Limits

3.2.1 Radiation Emission Measurement Limits According to Section 15.231(b)

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission [Average] [μV/m]	Field Strength of Spurious Emission [Average] [μV/m]
40.66-40.70	2250	225
70-130	1250	125
130-174	1250-3750	125-375
174-260	3750	375
260-470	3750-12500	375-1250
Above 470	12500	1250

Where F is the frequency in MHz, The formulas for calculating the maximum permitted fundamental

field strengths are as follows: for the band 130-174MHz, μV/m at 3 meters=56.81818(F)-6136.3636; For the band 260-470MHz, μV/m at 3 meters=41.6667(F)-7083.3333. The maximum permissible unwanted emission level is 20dB below the maximum permitted fundamental level.

3.2.2 Restricted Band Radiation Emission Measurement Limits According to 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. Transmitter (EUT)

Model Number	**:**	FAN-25T
Serial Number	**:**	N/A
Manufacturer	**:**	Chien Wei(Zhongshan) Electronic 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 measuring modes (TX) 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 bi-log 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 EUT location must be manipulated according to ANSI 63.4 on radiated emission measurement.

The bandwidth of test receiver (R&S ESI26) is set at 120KHz in 30-1000MHz, and 1MHz in 1000-4000MHz.
The frequency range from 30MHz to 4000MHz is checked.

3.6. The Field Strength of Radiation Emission Measurement Results

PASS.

The frequency range 315MHz to 3150MHz is investigated.

Date of Test:	September 22, 2006	Temperature:	25°C
EUT:	Transmitter	Humidity:	54%
Model No.:	FAN-25T	Power Supply:	6.0V DC ("Lithium Cell" battery Type×2)
Test Mode:	TX	Test Engineer:	Andy

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	
303.899	82.4	86.3	-19.2	63.2	67.1	74.9	94.9	11.7	7.8	Horizontal
607.798	57.5	61.4	-14.1	43.4	47.3	54.9	74.9	11.5	27.6	
911.697	60.1	63.8	-11.9	48.2	51.9	54.9	74.9	6.7	23.0	
*1215.596	51.1	54.7	-7.5	43.6	47.2	54	74	10.4	26.8	
*1519.495	50.5	54.0	-6.4	44.1	47.6	54	74	9.9	26.4	
1823.394	48.4	51.8	-5.5	42.9	46.3	54.9	74.9	12.0	28.6	
2127.293	49.7	53.0	-4.6	45.1	48.4	54.9	74.9	9.8	26.5	
2431.192	45.4	48.6	-3.5	41.9	45.1	54.9	74.9	13.0	29.8	
*2735.091	46.8	49.9	-2.6	44.2	47.3	54	74	9.8	26.7	
3038.988	45.9	49.0	-1.8	44.1	47.2	54.9	74.9	10.8	27.7	
3342.887	37.9	41.1	-0.8	37.1	40.3	54.9	74.9	17.8	34.6	
*3646.786	45.9	49.2	0.1	46.0	49.3	54	74	8.0	24.7	
*3950.684	37.8	41.2	0.9	38.7	42.1	54	74	15.3	31.9	
303.899	78.0	81.9	-19.2	58.8	62.7	74.9	94.9	16.1	32.2	Vertical
607.798	60.1	63.9	-14.1	46.0	49.8	54.9	74.9	8.9	25.1	
911.697	59.0	62.7	-11.9	47.1	50.8	54.9	74.9	7.8	24.1	
*1215.596	48.5	52.2	-7.5	41.0	44.7	54	74	13.0	29.3	
*1519.495	50.3	54.0	-6.4	43.9	47.6	54	74	10.1	26.4	
1823.394	49.2	52.8	-5.5	43.7	47.3	54.9	74.9	11.2	27.6	
2127.293	52.8	56.3	-4.6	48.2	51.7	54.9	74.9	6.7	23.2	
2431.192	45.9	49.3	-3.5	42.4	45.8	54.9	74.9	12.5	29.1	
*2735.091	50.8	54.1	-2.6	48.2	51.5	54	74	5.8	22.5	
3038.988	43.4	46.5	-1.8	41.6	44.7	54.9	74.9	13.3	30.2	
3342.887	37.5	40.7	-0.8	36.7	39.9	54.9	74.9	18.2	35	
*3646.786	45.1	48.4	0.1	45.2	48.5	54	74	8.8	25.5	
*3950.684	39.0	42.5	0.9	39.9	43.4	54	74	14.1	30.6	

Note:

1. *: Denotes restricted band of operation.
   Measurements were made using a peak detector and average detector. Any emission Above 1000MHz and falling within the restricted bands of FCC Part 15 Section 15.205 were compliance with the emission limit of FCC Part 15 Section 15.209.

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

3. FCC Limit for Average Measurement = 41.6667(303.9)-7083.3333 = 5579.1768μV/m
   =74.9dBμV/m

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

Reviewer **:** 

4. OCCUPIED BANDWIDTH

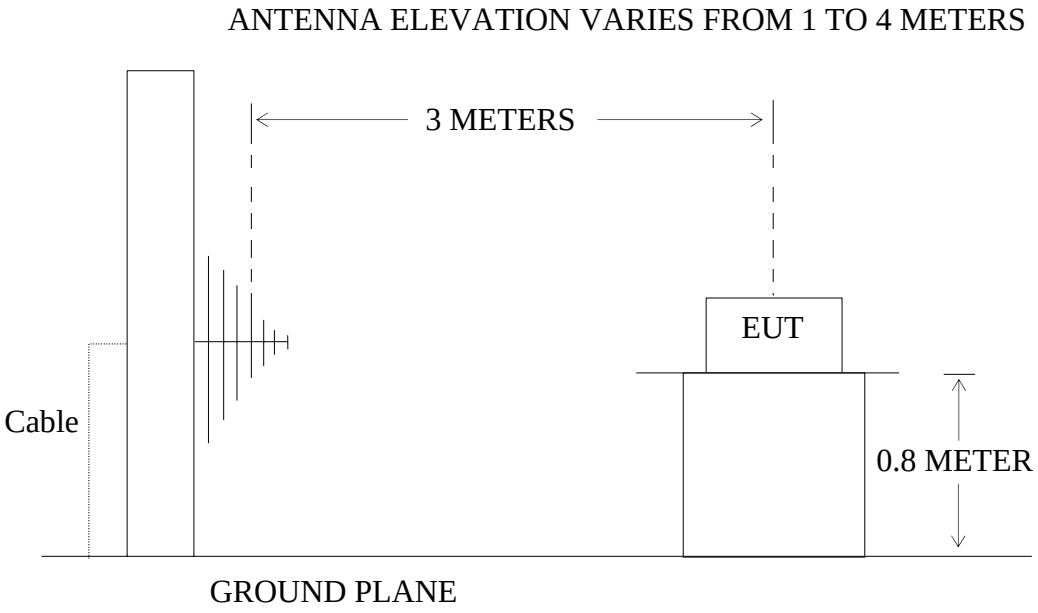
4.1.Block Diagram of Test Setup

4.1.1.Block diagram of connection between the EUT and simulators

EUT

(EUT: Transmitter)

4.1.2.Anechoic Chamber Test Setup Diagram



(EUT: Transmitter)

4.2.The Bandwidth of Emission Limit According To Section 15.231(c)

The bandwidth of emission shall be no wider than 0.25% of the center frequency. Therefore, the bandwidth of the emission limit is 303.9MHz×0.25% = 759.75KHz.
Bandwidth is determined at the two points 20 dB down from the top of modulated carrier.

4.3.EUT Configuration on Measurement

The following equipment are installed on the bandwidth of 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.Transmitter (EUT)

Model Number	**:**	FAN-25T
Serial Number	**:**	N/A
Manufacturer	**:**	Chien Wei(Zhongshan) Electronic 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 measuring mode (TX) measure it.

4.5.Test Procedure

4.5.1. Set SPA Center Frequency = Fundamental frequency, RBW = 10kHz, VBW = 10kHz, Span = 200kHz.

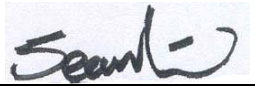
4.5.2. Set SPA Max hold. Mark peak, -20dB

4.6. Measurement Result

The EUT does meet the FCC requirement.

-20dB bandwidth = 51.2KHz < 759.75KHz.

The spectral diagrams in appendix I.

Reviewer **:** 

5. RELEASE TIME MEASUREMENT

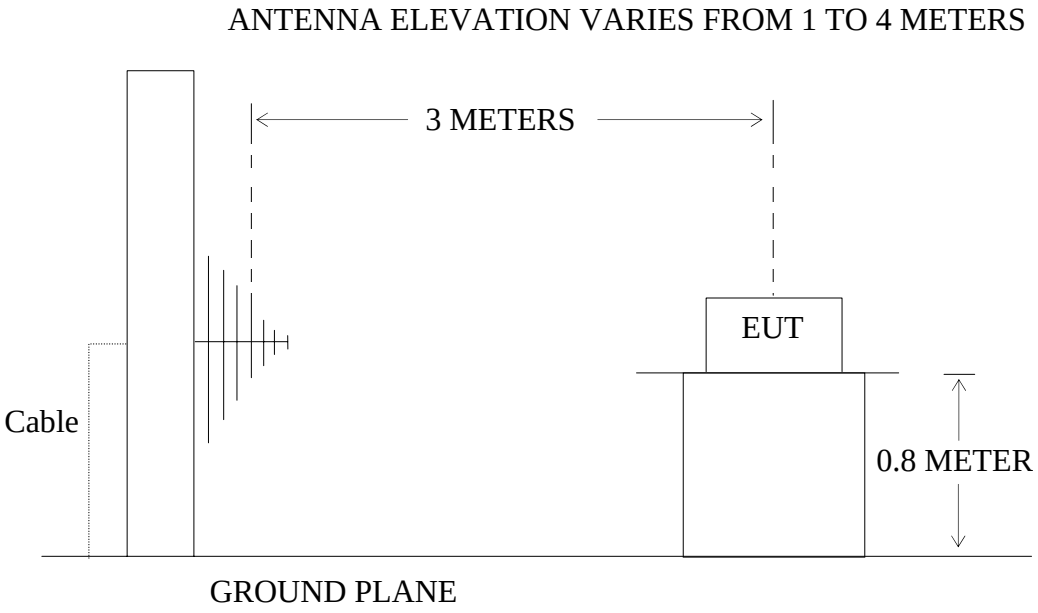
5.1.Block Diagram of Test Setup

5.1.1.Block diagram of connection between the EUT and simulators

EUT

(EUT: Transmitter)

5.1.2.Anechoic Chamber Test Setup Diagram



(EUT: Transmitter)

5.2.Release Time Measurement According To Section 15.231(a)

Section 15.231(a) (1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

5.3.EUT Configuration on Measurement

The following equipment are installed on Release Time 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.Transmitter (EUT)

Model Number	**:**	FAN-25T
Serial Number	**:**	N/A
Manufacturer	**:**	Chien Wei(Zhongshan) Electronic Co., Ltd.

5.4.Operating Condition of EUT

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

5.4.2.Turn on the power of all equipment.

5.4.3.Let the EUT work in measuring mode (TX) measure it.

5.5.Test Procedure

5.5.1. Set SPA Center Frequency = Fundamental frequency, RBW = 100kHz, VBW = 100kHz, Span = 0Hz. Sweep time = 4seconds.

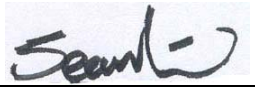
5.5.2. Set EUT as normal operation and press Transmitter button.

5.5.3. Set SPA View. Delta Mark time.

5.6. Measurement Result

The release time less than 5 seconds.

The spectral diagrams in appendix I.

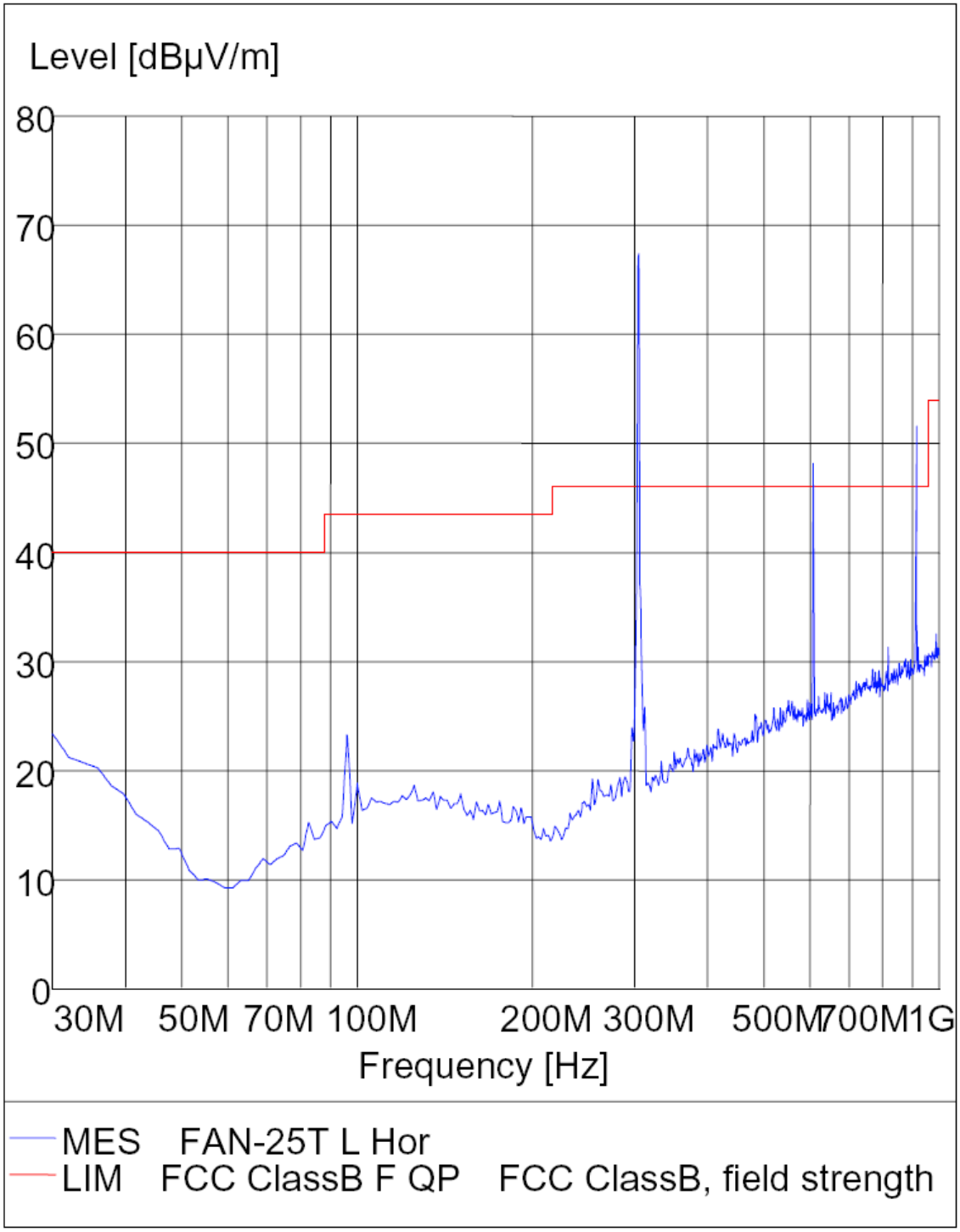
Reviewer **:** 

APPENDIX I
(Test Curves)

Radiated Disturbance

FCC Part 15

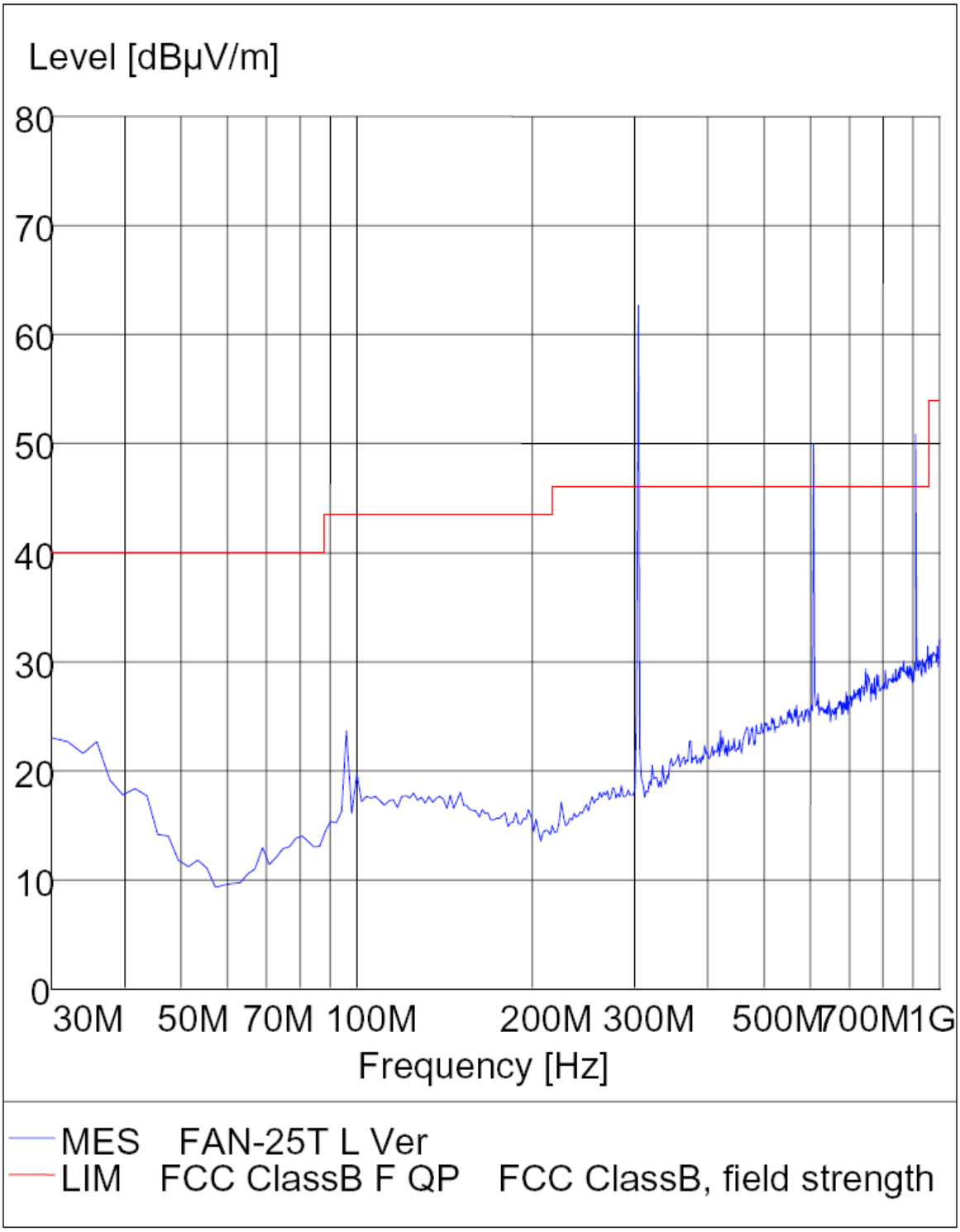
```
EUT: Transmitter                M/N:FAN-25T
Manufacturer:        Chien Wei(Zhongshan)Electronic Co., Ltd.
Operating Condition: TX
Test Site:           ATC EMC Lab.SAC
Operator::           Andy
Test Specification:  Horizontal
Comment:             DC 6.0V
```



Radiated Disturbance

FCC Part 15

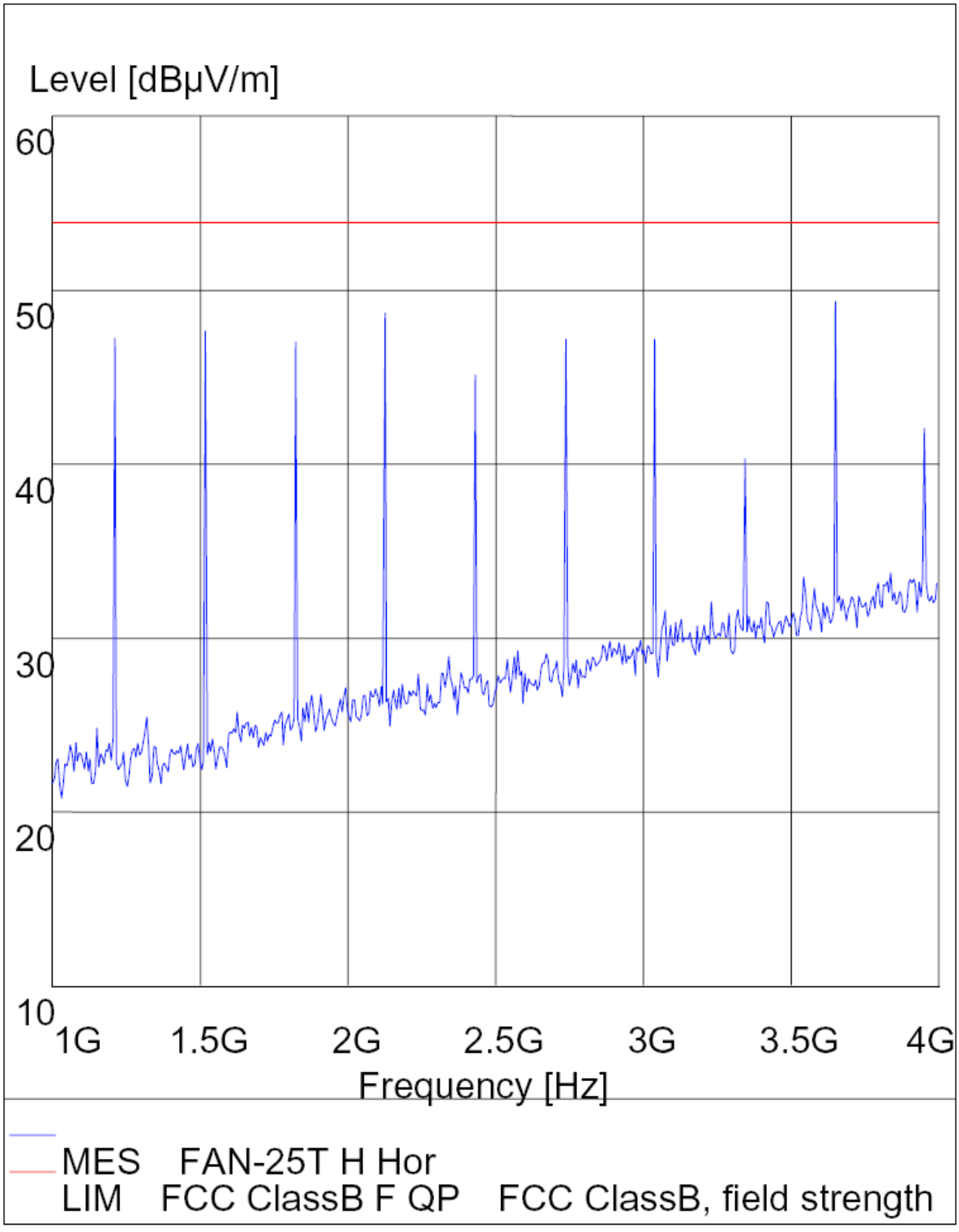
EUT: Transmitter M/N:FAN-25T
Manufacturer: Chien Wei(Zhongshan)Electronic Co., Ltd.
Operating Condition: TX
Test Site: ATC EMC Lab.SAC
Operator:: Andy
Test Specification: Vertical
Comment: DC 6.0V



Radiated Disturbance

FCC Part 15

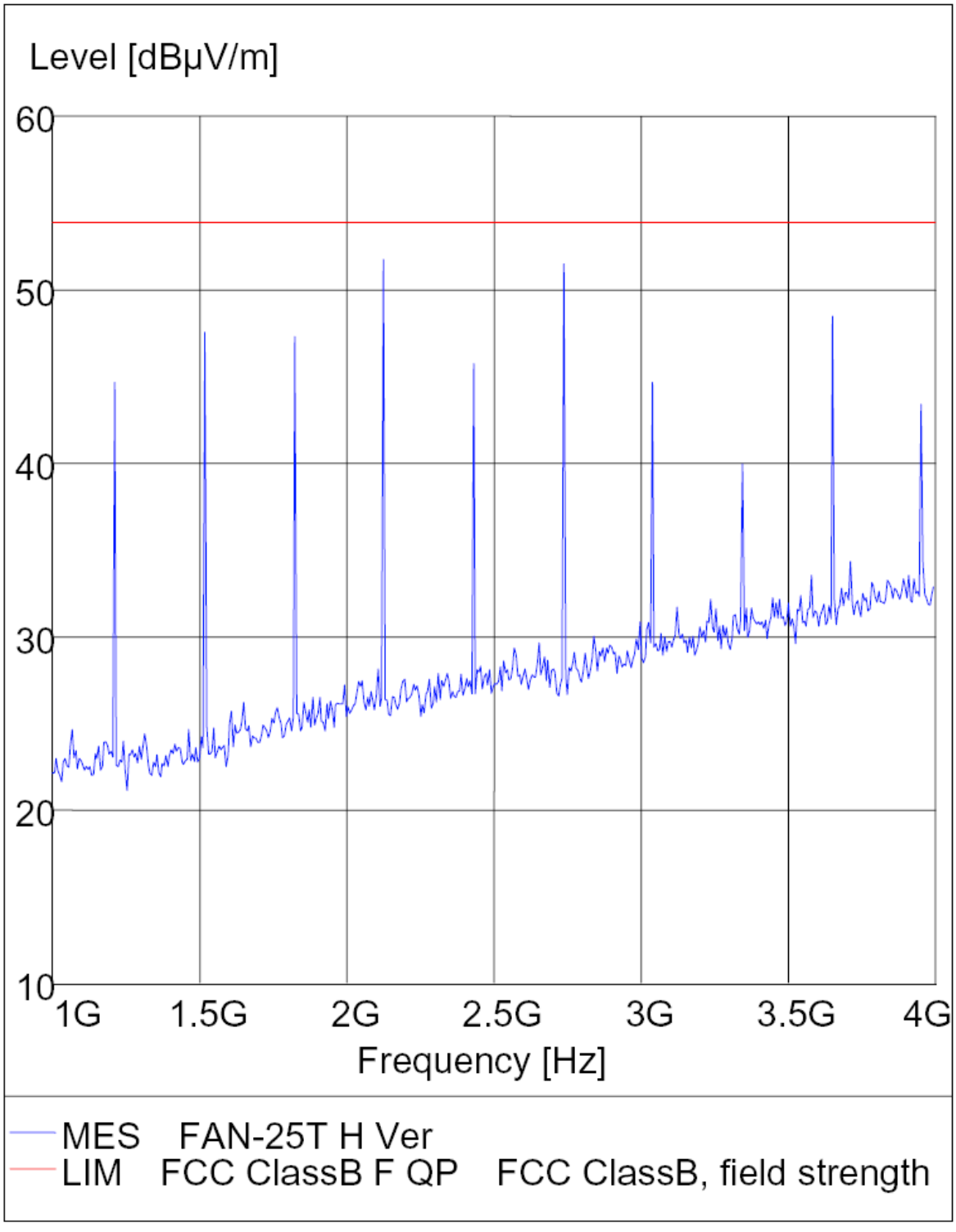
EUT: Transmitter M/N:FAN-25T
Manufacturer: Chien Wei(Zhongshan)Electronic Co., Ltd.
Operating Condition: TX
Test Site: ATC EMC Lab.SAC
Operator:: Andy
Test Specification: Horizontal
Comment: DC 6.0V

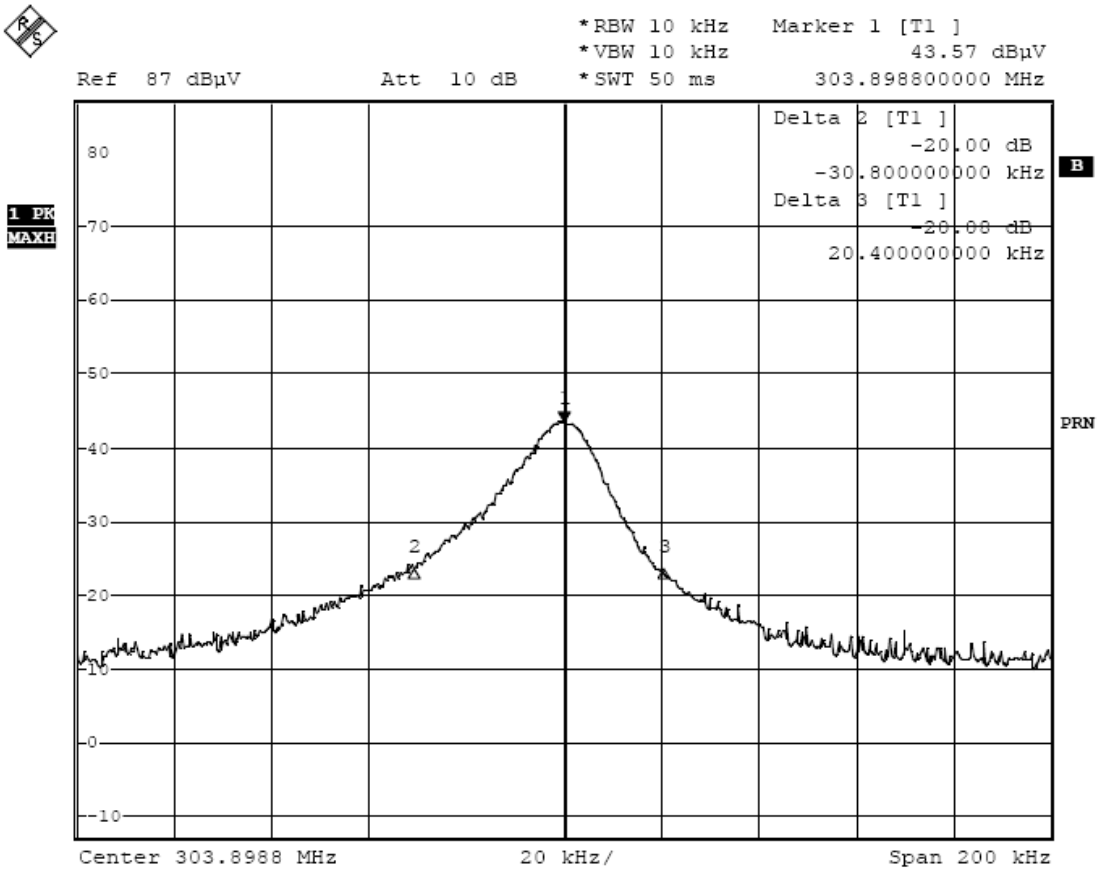


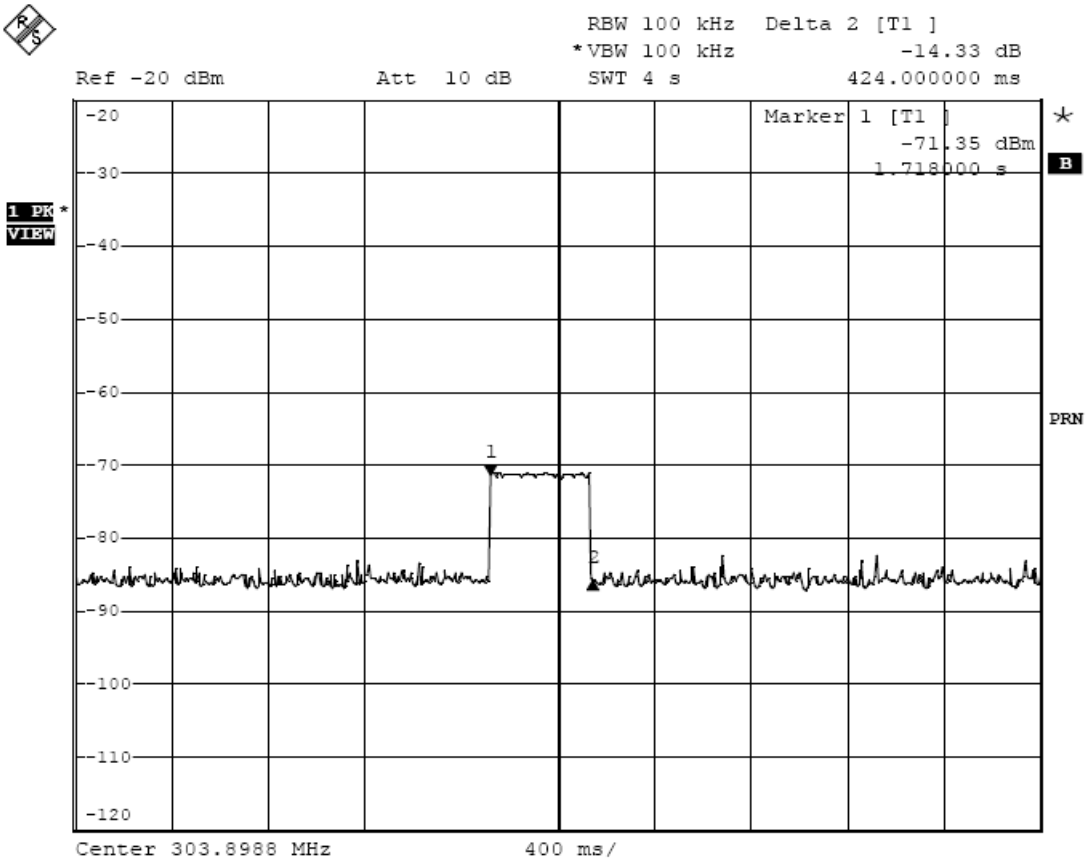
Radiated Disturbance

FCC Part 15

EUT: Transmitter M/N:FAN-25T
Manufacturer: Chien Wei(Zhongshan)Electronic Co., Ltd.
Operating Condition: TX
Test Site: ATC EMC Lab.SAC
Operator:: Andy
Test Specification: Vertical
Comment: DC 6.0V




*RBW 10 kHz
*VBW 10 kHz
*SWT 50 ms
Marker 1 [T1]
43.57 dBµV
303.898800000 MHz
Ref 87 dBµV
Att 10 dB
Delta 2 [T1]
-20.00 dB
-30.800000000 kHz
Delta 3 [T1]
-20.00 dB
20.400000000 kHz
1 PK
MAXH
B
PRN
80
70
60
50
40
30
20
10
0
-10
Center 303.8988 MHz
20 kHz/
Span 200 kHz


RBW 100 kHz
*VBW 100 kHz
SWT 4 s
Delta 2 [T1]
-14.33 dB
424.000000 ms
Ref -20 dBm
Att 10 dB
Marker 1 [T1]
-71.35 dBm
1.718000 s
1 PK*
VIEW
B
PRN
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
Center 303.8988 MHz
400 ms/