

APPLICATION CERTIFICATION FCC Part 15B  
On Behalf of  
Daza Technology Electronics

FM MODULATOR  
Model No.: F-194A

FCC ID: UK3-F194A

Prepared for : Daza Technology Electronics  
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Shenzhen, 518000, China

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Report Number : ATE20091312-2  
Date of Test : June 24, 2009  
Date of Report : June 28, 2009

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## Test Report Certification

Applicant : Daza Technology Electronics

Manufacturer : Daza Technology Electronics

EUT Description : FM MODULATOR

(A) MODEL NO.: F-194A

(B) SERIAL NO.: N/A

(C) POWER SUPPLY: DC 12V

Measurement Procedure Used:

**FCC Rules and Regulations Part 15 Subpart B**  
**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 B 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.

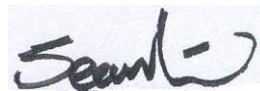
Date of Test : June 24, 2009

Prepared by :



(Engineer)

Approved & Authorized Signer :



(Manager)

## 1. GENERAL INFORMATION

### 1.1. Description of Device (EUT)

EUT	:	FM MODULATOR
Model Number	:	F-194A
Frequency Band	:	88.1-107.9MHz (step 0.1MHz)
Power Supply	:	DC 12V
PC System	:	Manufacturer: DELL M/N: DCNE Serial No.: 6CQSC2X
Printer	:	Manufacturer: Canon Model No.: BJC-1000SP
Applicant	:	Daza Technology Electronics
Address	:	Room 1410-1411, Block A, Jiahe Bldg, Shennan Mid-r Shenzhen, 518000, China
Manufacturer	:	Daza Technology Electronics
Address	:	Room 1410-1411, Block A, Jiahe Bldg, Shennan Mid-r Shenzhen, 518000, China
Date of sample received	:	June 14, 2009
Date of Test	:	June 24, 2009

## 1.2. Description of Test Facility

EMC Lab : Accredited by TUV Rheinland Shenzhen

Listed by FCC  
The Registration Number is 752051

Listed by Industry Canada  
The Registration Number is 5077A-2

Accredited by China National Accreditation Committee  
for Laboratories  
The Certificate Registration Number is L3193

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 = 3.08dB, k=2  
(9kHz-30MHz)

Radiated emission expanded uncertainty = 4.42dB, k=2  
(30MHz-1000MHz)

Radiated emission expanded uncertainty = 4.06dB, k=2  
(Above 1GHz)

## 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	Jan. 9, 2010
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 9, 2010
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 9, 2010
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 9, 2010
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 9, 2010
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 9, 2010
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 9, 2010
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 9, 2010
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 9, 2010
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 9, 2010

### 3. OPERATION OF EUT DURING TESTING

#### 3.1.Operating Mode

The mode is used: Connect to PC

#### 3.2.Configuration and peripherals

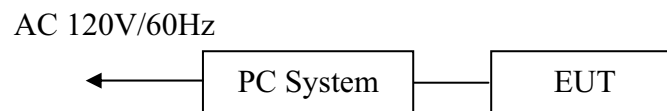


Figure 1 Setup: Connect to PC

(EUT: FM MODULATOR)

#### 4. TEST PROCEDURES AND RESULTS

FCC Rules	Description of Test	Result
Section 15.107	Conducted Emission Test	Compliant
Section 15.109	Radiated Emission Test	Compliant

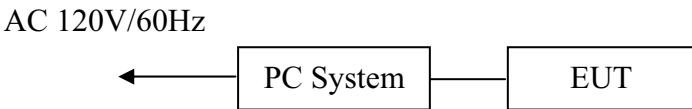


## 5. CONDUCTED EMISSION FOR FCC PART 15 SECTION

### 15.107(A)

#### 5.1. Block Diagram of Test Setup

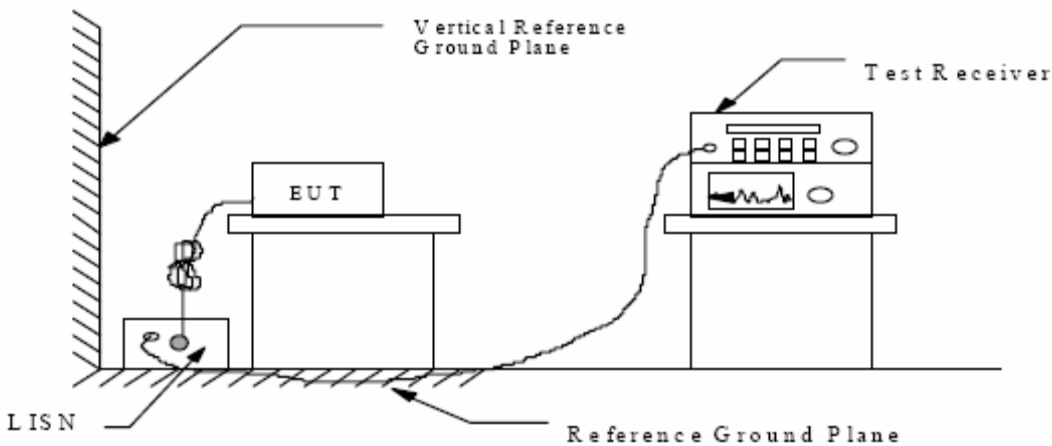
##### 5.1.1. Block diagram of connection between the EUT and simulators



Setup: Connect to PC

(EUT: FM MODULATOR)

##### 5.1.2. Shielding Room Test Setup Diagram



(EUT: FM MODULATOR)

#### 5.2. The Emission Limit

##### 5.2.1. Conducted Emission Measurement Limits According to Section 15.107(a)

Frequency (MHz)	Limit dB(μV)	
	Quasi-peak Level	Average Level
0.15 - 0.50	66.0 – 56.0 *	56.0 – 46.0 *
0.50 - 5.00	56.0	46.0
5.00 - 30.00	60.0	50.0

\* Decreases with the logarithm of the frequency.

### 5.3.Configuration of EUT on Measurement

The following equipment are installed on the Conducted 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.FM MODULATOR (EUT)

Model Number	:	F-194A
Serial Number	:	N/A
Manufacturer	:	Daza Technology Electronics

### 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 Connect to PC mode measure it.

### 5.5.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.

## 5.6. Power Line Conducted Emission Measurement Results

### PASS.

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

Date of Test:	June 24, 2010	Temperature:	25°C
EUT:	FM MODULATOR	Humidity:	50%
Model No.:	F-194A	Power Supply:	PC power: AC 120V/60Hz
Test Mode:	Connect to PC	Test Engineer:	Joe

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.199152	52.50	11.2	64	11.1	QP	L1	GND
0.498814	45.80	12.0	56	10.2	QP	L1	GND
2.099304	42.20	11.6	56	13.8	QP	L1	GND
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.200748	46.40	11.2	54	7.2	AV	L1	GND
0.498814	39.70	12.0	46	6.3	AV	L1	GND
2.099304	38.80	11.6	46	7.2	AV	L1	GND
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.198359	53.30	11.2	64	10.4	QP	N	GND
0.496827	45.60	12.0	56	10.5	QP	N	GND
2.090941	41.60	11.7	56	14.4	QP	N	GND
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.198359	47.10	11.2	54	6.6	AV	N	GND
0.498814	39.20	12.0	46	6.8	AV	N	GND
2.090941	38.00	11.7	46	8.0	AV	N	GND

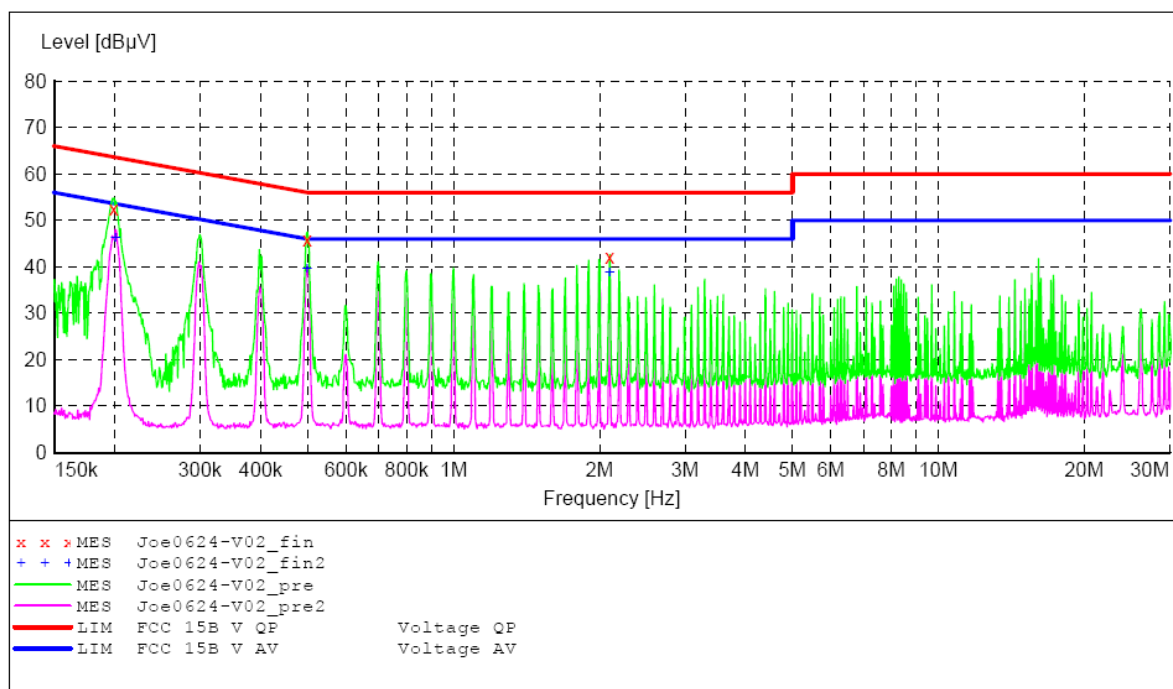
Emissions attenuated more than 20 dB below the permissible value are not reported.  
The spectral diagrams are attached as below.

**ACCURATE TECHNOLOGY CO.,LTD****CONDUCTED EMISSION STANDARD FCC 15 Part B**

EUT: FM MODULATOR M/N:F-194A  
 Manufacturer: Daza Technology Electronics  
 Operating Condition: Connect to PC  
 Test Site: 1#Shielding Room  
 Operator: Joe  
 Test Specification: L 120V/60Hz  
 Comment: Sample No.:101487 Report No.:ATE20101312  
 Start of Test: 6/24/2010 / 11:14:12AM

**SCAN TABLE: "V 150K-30MHz fin"**

Short Description: \_SUB\_STD\_VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 150.0 kHz 30.0 MHz 0.8 % QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average

**MEASUREMENT RESULT: "Joe0624-V02\_fin"**

6/24/2010 11:16AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.199152	52.50	11.2	64	11.1	QP	L1	GND
0.498814	45.80	12.0	56	10.2	QP	L1	GND
2.099304	42.20	11.6	56	13.8	QP	L1	GND

**MEASUREMENT RESULT: "Joe0624-V02\_fin2"**

6/24/2010 11:16AM

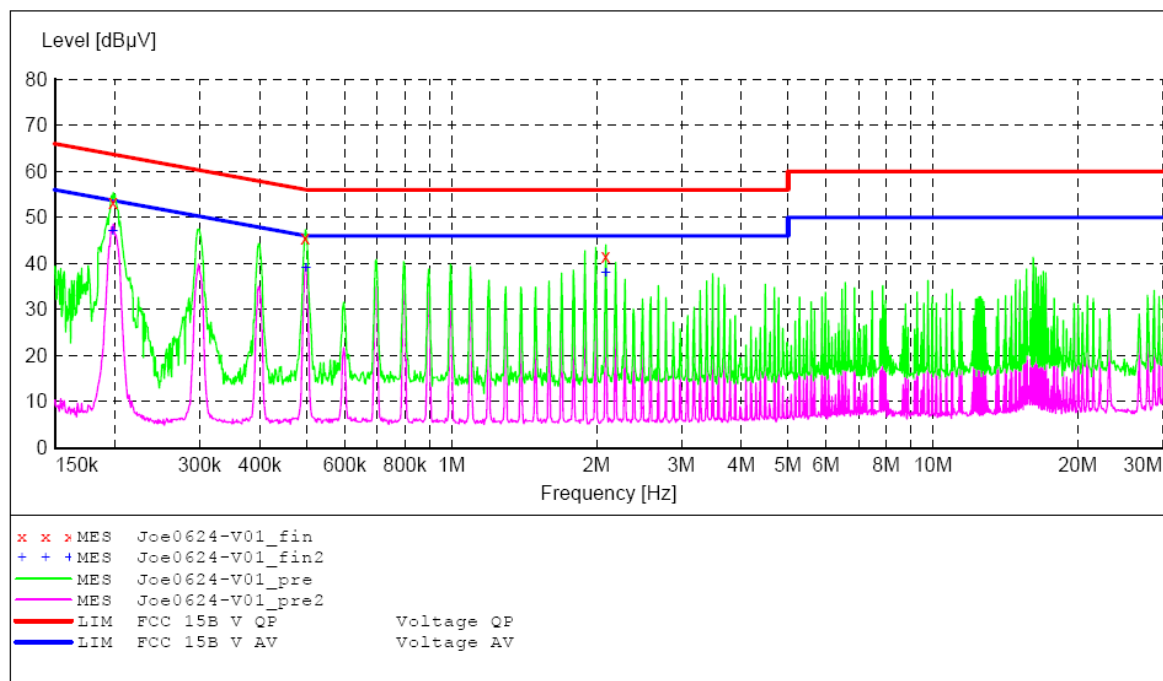
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.200748	46.40	11.2	54	7.2	AV	L1	GND
0.498814	39.70	12.0	46	6.3	AV	L1	GND
2.099304	38.80	11.6	46	7.2	AV	L1	GND

**ACCURATE TECHNOLOGY CO.,LTD****CONDUCTED EMISSION STANDARD FCC 15 Part B**

EUT: FM MODULATOR M/N:F-194A  
 Manufacturer: Daza Technology Electronics  
 Operating Condition: Connect to PC  
 Test Site: 1#Shielding Room  
 Operator: Joe  
 Test Specification: N 120V/60Hz  
 Comment: Sample No.:101487 Report No.:ATE20101312  
 Start of Test: 6/24/2010 / 11:10:28AM

**SCAN TABLE: "V 150K-30MHz fin"**

Short Description: \_SUB\_STD\_VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 150.0 kHz 30.0 MHz 0.8 % QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average

**MEASUREMENT RESULT: "Joe0624-V01\_fin"**

6/24/2010 11:12AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.198359	53.30	11.2	64	10.4	QP	N	GND
0.496827	45.60	12.0	56	10.5	QP	N	GND
2.090941	41.60	11.7	56	14.4	QP	N	GND

**MEASUREMENT RESULT: "Joe0624-V01\_fin2"**

6/24/2010 11:12AM

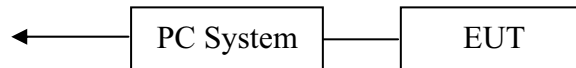
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.198359	47.10	11.2	54	6.6	AV	N	GND
0.498814	39.20	12.0	46	6.8	AV	N	GND
2.090941	38.00	11.7	46	8.0	AV	N	GND

## 6. RADIATED EMISSION FOR FCC PART 15 SECTION 15.109(A)

### 6.1. Block Diagram of Test Setup

#### 6.1.1. Block diagram of connection between the EUT and simulators

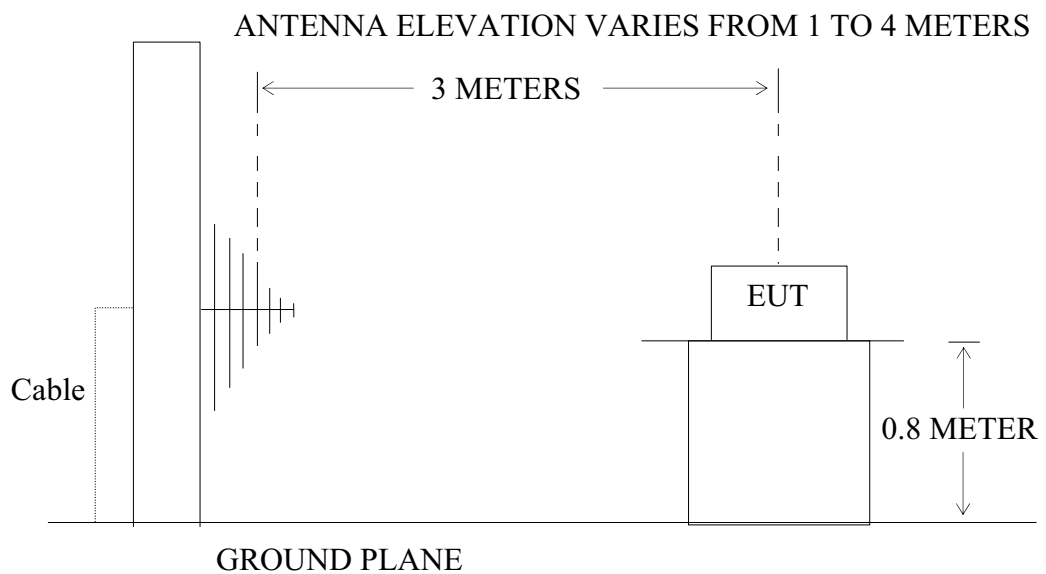
AC 120V/60Hz



Setup: Connect to PC

(EUT: FM MODULATOR)

#### 6.1.2. Semi-Anechoic Chamber Test Setup Diagram



(EUT: FM MODULATOR)

## 6.2.The Emission Limit For Section 15.109 (a)

### 6.2.1.Radiation Emission Measurement Limits According to Section 15.109 (a).

Frequency (MHz)	Limit	
	Field Strength of Quasi-peak Value (microvolts/m)	Field Strength of Quasi-peak Value (dBμV/m)
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

## 6.3.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.

### 6.3.1.FM MODULATOR (EUT)

Model Number : F-194A  
 Serial Number : N/A  
 Manufacturer : Daza Technology Electronics

## 6.4.Operating Condition of EUT

6.4.1.Setup the EUT and simulator as shown as Section 6.1.

6.4.2.Turn on the power of all equipment.

6.4.3. Let the EUT work in Connect to PC mode measure it.

## 6.5. 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 is set at 120kHz in 30-1000MHz.

The frequency range from 30MHz to 1000MHz is checked.

The final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.



## 6.6.The Emission Measurement Result

### PASS.

Date of Test:	June 24, 2010	Temperature:	25°C
EUT:	FM MODULATOR	Humidity:	50%
Model No.:	F-194A	Power Supply:	Connect to PC use USB terminal PC power: AC 120V/60Hz
Test Mode:	Connect to PC	Test Engineer:	Joe

Frequency (MHz)	Reading (dBμV/m)	Factor(dB) Corr.	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
	QP		QP	QP	QP	
123.5021	25.45	14.94	40.39	43.50	-3.11	Vertical
176.0146	24.89	15.76	40.65	43.50	-2.85	Vertical
258.0224	24.59	18.31	42.90	46.00	-3.10	Vertical
316.5482	23.98	19.23	43.21	46.00	-2.79	Vertical
166.5011	25.46	14.98	40.44	43.50	-3.06	Horizontal
179.0950	25.05	15.77	40.82	43.50	-2.68	Horizontal
258.0224	24.63	18.31	42.94	46.00	-3.06	Horizontal
303.9988	24.09	18.81	42.90	46.00	-3.10	Horizontal

#### Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
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:

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

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

3. The spectral diagrams are attached as below display the measurement of peak values.


**ACCURATE TECHNOLOGY CO., LTD.**

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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: RTTE #5316

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 50 %

EUT: FM MODULATOR

Mode: Connect to PC

Model: F-194A

Manufacturer: Daza Technology Electronics

Polarization: Horizontal

Power Source: DC 5V

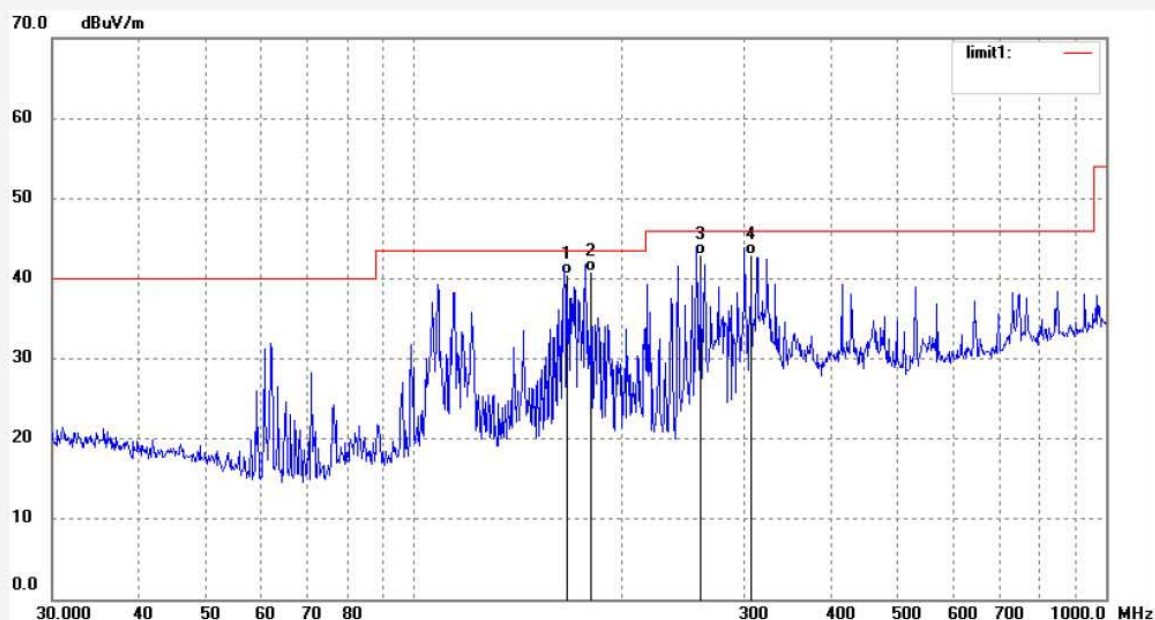
Date: 10/06/24/

Time: 9/14/27

Engineer Signature: Joe

Distance: 3m

Note: Sample No.:101487 Report No.:ATE20101312



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	166.5011	25.46	14.98	40.44	43.50	-3.06	QP			
2	179.0950	25.05	15.77	40.82	43.50	-2.68	QP			
3	258.0224	24.63	18.31	42.94	46.00	-3.06	QP			
4	303.9988	24.09	18.81	42.90	46.00	-3.10	QP			


**ACCURATE TECHNOLOGY CO., LTD.**

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: RTTE #5317

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 50 %

EUT: FM MODULATOR

Mode: Connect to PC

Model: F-194A

Manufacturer: Daza Technology Electronics

Polarization: Vertical

Power Source: DC 5V

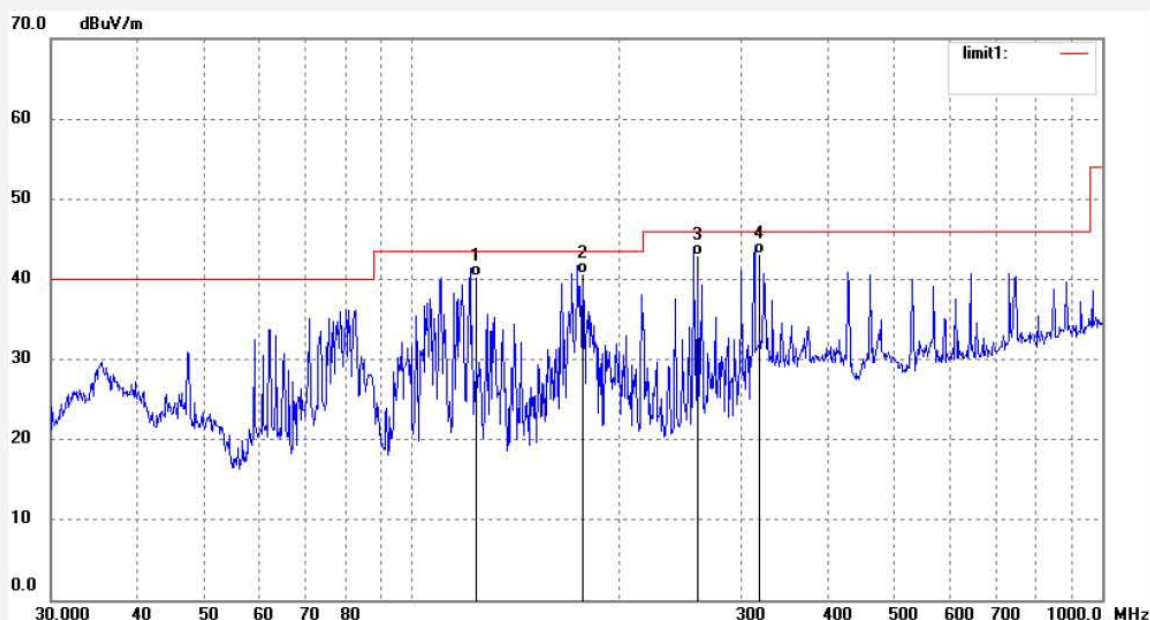
Date: 10/06/24/

Time: 9/18/37

Engineer Signature: Joe

Distance: 3m

Note: Sample No.:101487 Report No.:ATE20101312



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	123.5021	25.45	14.94	40.39	43.50	-3.11	QP			
2	176.0146	24.89	15.76	40.65	43.50	-2.85	QP			
3	258.0224	24.59	18.31	42.90	46.00	-3.10	QP			
4	316.5482	23.98	19.23	43.21	46.00	-2.79	QP			