

FCC TEST REPORT  
for  
Shanghai Shenchang Electronics Technology Co., Ltd.  
  
Radio Frequency Identification System Equipment  
Model No.: SCC200\CSR100\SCT120

Prepared for : Shanghai Shenchang Electronics Technology Co., Ltd.  
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Date of Report : Dec. 04, 2012

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**Appendix I (External Photos) (2 pages)**

**Appendix II (Internal Photos) (3 pages)**

## TEST REPORT

Applicant : Shanghai Shenchang Electronics Technology Co., Ltd.  
Manufacturer : Shanghai Shenchang Electronics Technology Co., Ltd.  
EUT : Radio Frequency Identification System Equipment  
Model No. : SCC200\CSR100\SCT120  
Rating : AC 120V/60Hz  
Trade Mark : N.A.

## Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart B 2011 & FCC / ANSI C63.4-2009

The device described above is tested by Anbotek Compliance Laboratory Limited To determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B Class B limits both radiated and conducted emissions. The measurement results are contained in this test report and Anbotek Compliance Laboratory Limited 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 Anbotek Compliance Laboratory Limited

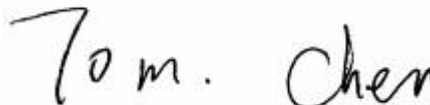
Date of Test : Nov. 27 to Dec. 04, 2012



Prepared by : (Tested Engineer / Rock Zeng )



Reviewer : (Project Manager / Andy Chen )



Approved & Authorized Signer : (Manager / Tom Chen)

## 1. GENERAL INFORMATION

### 1.1. Description of Device (EUT)

Description	: Radio Frequency Identification System Equipment
Model Number	: SCC200\CSR100\SCT120
Test Power Supply	: AC 120V/60Hz
Applicant	: Shanghai Shenchang Electronics Technology Co., Ltd.
Address	: Room 806, Area C, 666 Beijing East Road, Shanghai
Manufacturer	: Shanghai Shenchang Electronics Technology Co., Ltd.
Address	: Room 806, Area C, 666 Beijing East Road, Shanghai
Date of Sample received	: Nov. 27, 2012
Date of Test	: Nov. 27 to Dec. 04, 2012

## 2. POWER LINE CONDUCTED MEASUREMENT

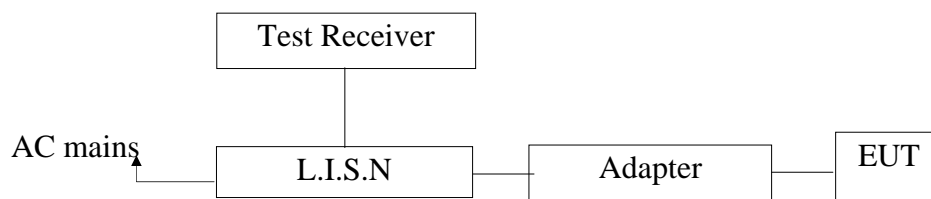
### 2.1. Test Equipment

The following test equipments are used during the power line conducted measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Apr.25, 2012	1 Year
2.	Two-Line V-network	Rohde & Schwarz	ENV216	10055	Apr.25, 2012	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Apr.25, 2012	1 Year
4.	EMI Test Software	ES-K1	N/A	N/A	N/A	N/A

### 2.2. Block Diagram of Test Setup

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



(EUT: Radio Frequency Identification System Equipment)

### 2.3. Power Line Conducted Emission Measurement Limits (FCC Part 15

#### Class B)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. \*Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

## 2.4. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

EUT	:	Radio Frequency Identification System Equipment
Model Number	:	SCC200\CSR100\SCT120
Applicant	:	Shanghai Shenchang Electronics Technology Co., Ltd.

## 2.5. Operating Condition of EUT

- 2.5.1. Setup the EUT and simulator as shown as Section 2.2.
- 2.5.2. Turn on the power of all equipment.
- 2.5.3. Let the EUT work measure it.

## 2.6. Test Procedure

The EUT system 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 line 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 FCC ANSI C63.4-2009 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9KHz.

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

The test result are reported on Section 2.7.

## 2.7. Power Line Conducted Emission Measurement Results

**PASS.**

The frequency range from 150KHz to 30 MHz is investigated.

The test curves are shown in the following pages.

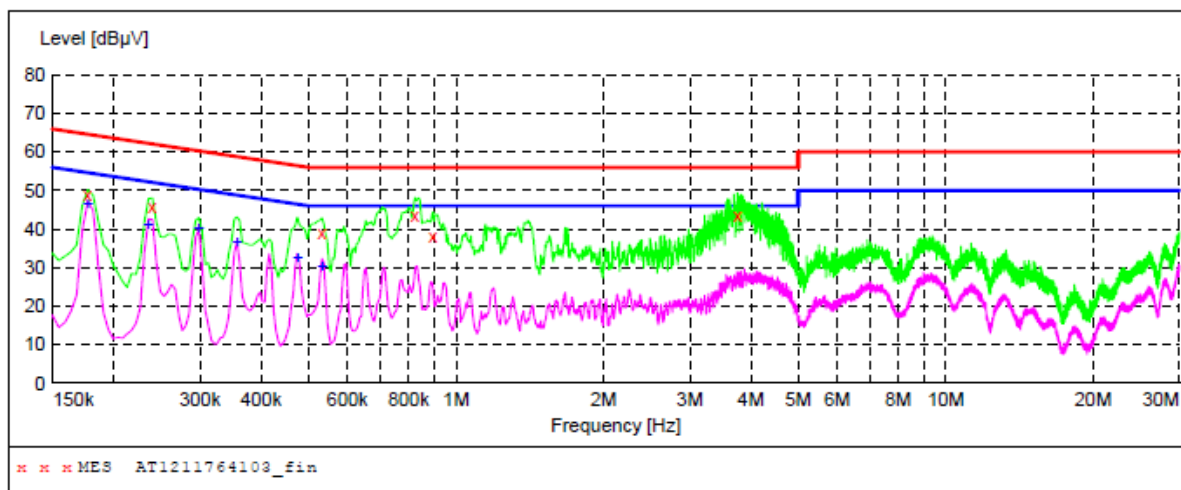
**CONDUCTED EMISSION TEST DATA**

EUT: Radio Frequency Identification System Equipment M/N: SCC200

Operating Condition: ON  
Test Site: 1# Shielded Room  
Operator: Rock Zeng  
Test Specification: AC 120V/60Hz  
Comment: L  
Tem:25°C Hum:50%

**SCAN TABLE: "Voltage (150K~30M) FIN"**

Short Description: 150K-30M Disturbance Voltages

**MEASUREMENT RESULT: "AT1211764103\_fin"**

11/27/2012 11:05AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.177000	49.10	10.1	65	15.5	QP	L1	GND
0.240000	45.80	10.1	62	16.3	QP	L1	GND
0.532500	38.80	10.1	56	17.2	QP	L1	GND
0.825000	43.40	10.1	56	12.6	QP	L1	GND
0.897000	38.10	10.1	56	17.9	QP	L1	GND
3.754000	43.30	10.4	56	12.7	QP	L1	GND

**MEASUREMENT RESULT: "AT1211764103\_fin2"**

11/27/2012 11:05AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.177000	46.70	10.1	55	7.9	AV	L1	GND
0.235500	41.40	10.1	52	10.9	AV	L1	GND
0.298500	40.30	10.1	50	10.0	AV	L1	GND
0.357000	36.90	10.1	49	11.9	AV	L1	GND
0.474000	32.50	10.1	46	13.9	AV	L1	GND
0.532500	30.50	10.1	46	15.5	AV	L1	GND

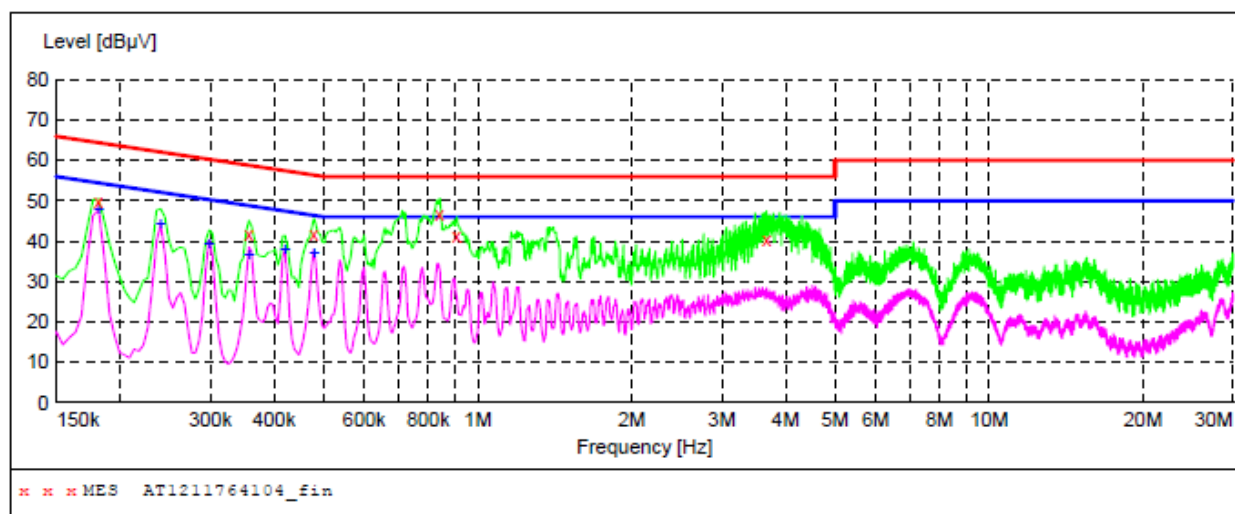
**CONDUCTED EMISSION TEST DATA**

EUT: Radio Frequency Identification System Equipment M/N:SCC200

Operating Condition: ON  
 Test Site: 1# Shielded Room  
 Operator: Rock Zeng  
 Test Specification: AC 120V/60Hz  
 Comment: N  
 Tem:25°C Hum:50%

**SCAN TABLE: "Voltage (150K~30M) FIN"**

Short Description: 150K-30M Disturbance Voltages

**MEASUREMENT RESULT: "AT1211764104\_fin"**

11/27/2012 11:08AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.181500	49.90	10.1	64	14.5	QP	N	GND
0.357000	41.90	10.1	59	16.9	QP	N	GND
0.478500	41.60	10.1	56	14.8	QP	N	GND
0.843000	46.60	10.1	56	9.4	QP	N	GND
0.910500	41.40	10.1	56	14.6	QP	N	GND
3.668500	40.40	10.4	56	15.6	QP	N	GND

**MEASUREMENT RESULT: "AT1211764104\_fin2"**

11/27/2012 11:08AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.181500	48.10	10.1	54	6.3	AV	N	GND
0.240000	44.30	10.1	52	7.8	AV	N	GND
0.298500	39.40	10.1	50	10.9	AV	N	GND
0.357000	36.70	10.1	49	12.1	AV	N	GND
0.420000	38.20	10.1	47	9.2	AV	N	GND
0.478500	37.10	10.1	46	9.3	AV	N	GND



### 3. RADIATED EMISSION MEASUREMENT

#### 3.1. Test Equipment

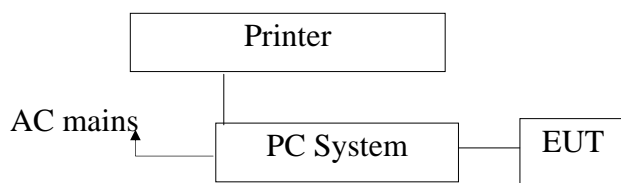
The following test equipments are used during the radiated emission measurement:

##### 3.1.1. For Anechoic Chamber

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	Rohde & Schwarz	ESCI	101604	Apr.25, 2012	1 Year
2.	Bilog Antenna	Schwarzbeck	VULB9163	100015	Apr.25, 2012	1 Year
3.	Pre-amplifier	Compliance Direction	PAP-0203	22008	Apr.25, 2012	1 Year
4.	EMI Test Software	SHURPLE	N/A	N/A	N/A	N/A
5.	Coaxial cable	ANBOTEK	N/A	N/A	N/A	N/A

#### 3.2. Block Diagram of Test Setup

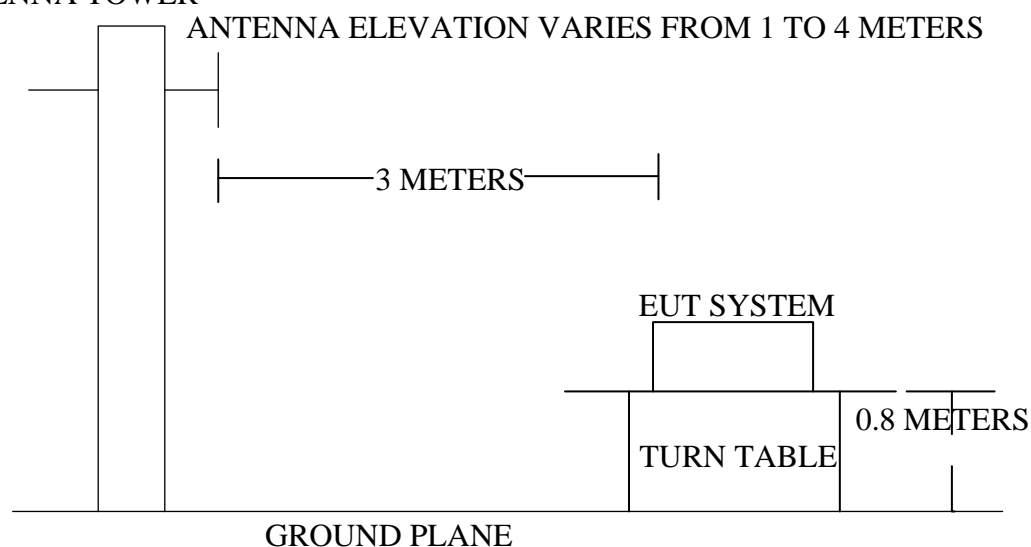
##### 3.2.1. Block diagram of connection between the EUT and simulators



(EUT: Radio Frequency Identification System Equipment)

##### 3.2.2. Anechoic Chamber Test Setup Diagram

ANTENNA TOWER



(EUT: Radio Frequency Identification System Equipment)

### 3.3. Radiated Emission Limit (Subpart B Class B)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V})/\text{m}$
30~88	3	100	40.0
88~216	3	150	43.5
216~960	3	200	46.0
960~1000	3	500	54.0

- Remark :
- (1) Emission level  $(\text{dB})\mu\text{V} = 20 \log \text{Emission level } \mu\text{V/m}$
  - (2) The smaller limit shall apply at the cross point between two frequency bands.
  - (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

### 3.4. EUT Configuration on Measurement

The following equipments 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.

EUT : Radio Frequency Identification System Equipment  
 Model Number : SCC200  
 Applicant : Shanghai Shenchang Electronics Technology Co., Ltd.

### 3.5. Operating Condition of EUT

3.5.1. Setup the EUT as shown in Section 3.2.

3.5.2. Let the EUT work measure it.

### 3.6. Test Procedure

EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table 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 a 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 (Trilog Broadband 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 C63.4-2009 on radiated emission measurement.

The bandwidth of the EMI test receiver (ESPI) is set at 120kHz.

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

The test mode (ON) is tested in chamber and all the test results are listed in Section 3.7.

### 3.7. Radiated Emission Measurement Results

**PASS.**

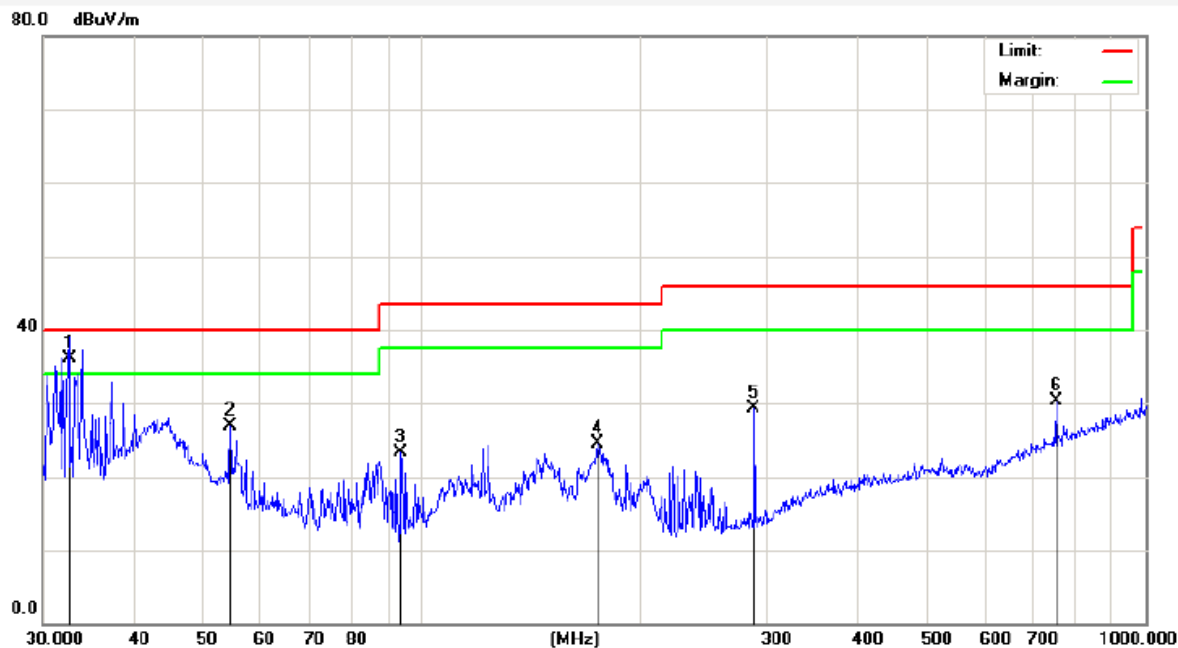
The test curves are shown in the following pages.

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<b>Job No.:</b>	AT1211764(I)/F	<b>Polarziation:</b>	Horizontal
<b>Standard:</b>	(RE)FCC PART15 B _3m	<b>Power Source:</b>	AC 120V/60Hz
<b>Test item:</b>	Radiation Test	<b>Date:</b>	2012/11/28
<b>Temp.(C)/Hum.(%RH):</b>	24.3( C)/55%RH	<b>Time:</b>	11:06:24
<b>EUT:</b>	Radio Frequency Identification System	<b>Test By:</b>	Rock Zeng
<b>Model:</b>	SCC200	<b>Distance:</b>	3m
<b>Note:</b>	ON		



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	32.6340	51.75	-15.55	36.20	40.00	-3.80	QP	300	0	
2	54.4516	41.70	-14.88	26.82	40.00	-13.18	peak			
3	93.7685	44.78	-21.48	23.30	43.50	-20.20	peak			
4	175.0368	46.67	-22.20	24.47	43.50	-19.03	peak			
5	287.9904	47.26	-18.01	29.25	46.00	-16.75	peak			
6	752.7432	37.72	-7.41	30.31	46.00	-15.69	peak			

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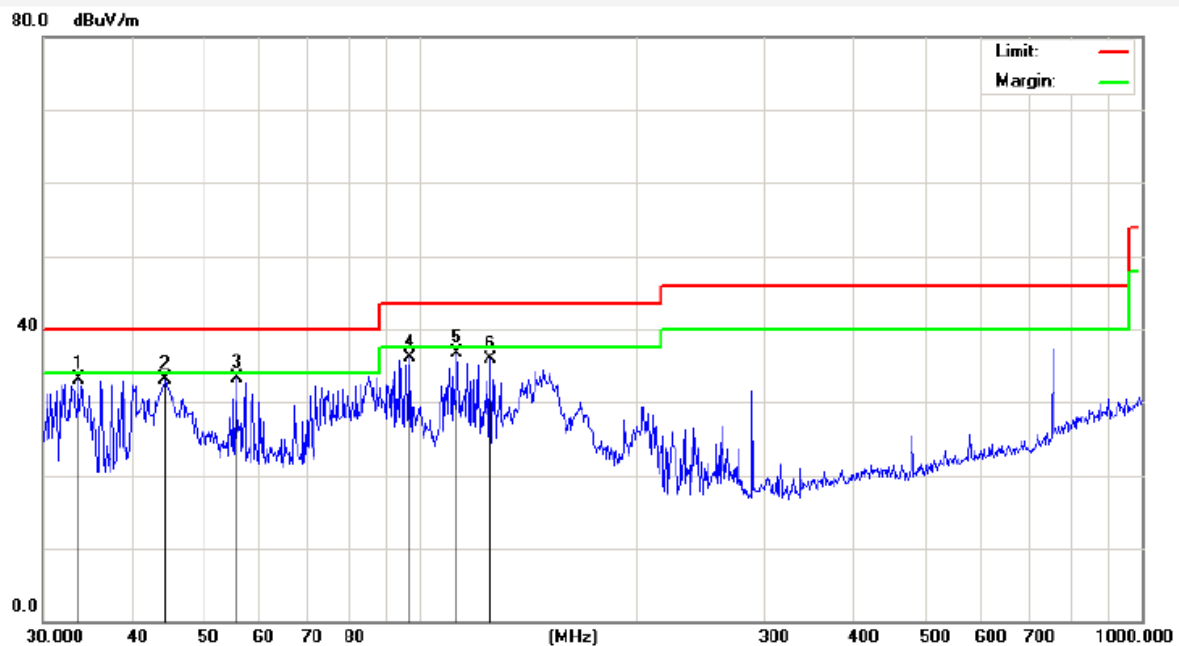
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<b>Job No.:</b>	AT1211764(I)/F	<b>Polarization:</b>	Vertical
<b>Standard:</b>	(RE)FCC PART15 B _3m	<b>Power Source:</b>	AC 120V/60Hz
<b>Test item:</b>	Radiation Test	<b>Date:</b>	2012/11/28
<b>Temp.(C)/Hum.(%RH):</b>	24.3( C)/55%RH	<b>Time:</b>	11:11:28
<b>EUT:</b>	Radio Frequency Identification System Equipment	<b>Test By:</b>	Rock Zeng
<b>Model:</b>	SCC200	<b>Distance:</b>	3m
<b>Note:</b>	ON		



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	33.5623	48.09	-15.06	33.03	40.00	-6.97	peak			
2	44.2751	45.16	-12.05	33.11	40.00	-6.89	peak			
3	55.6094	48.20	-14.99	33.21	40.00	-6.79	peak			
4	96.7749	51.98	-15.93	36.05	43.50	-7.45	peak			
5	112.5243	52.43	-15.80	36.63	43.50	-6.87	peak			
6	125.0066	53.03	-17.08	35.95	43.50	-7.55	peak			