



# FCC TEST REPORT

**REPORT NO.:** 060406FIA01

**MODEL NO.:** FM20XXXXXXXXX

**RECEIVED:** Sept. 1, 2006

**TESTED:** Sept. 1 ~ Sept. 6, 2006

**ISSUED:** Sept. 6, 2006

**APPLICANT:** CM Precision Technology LTD

**ADDRESS:** West of Zhenan Hi-Tech Industrial park,  
Zhenan Rd., Changan town, Dongguan City,  
Guangdong Province, China

**ISSUED BY:** ADT (Shanghai) Corporation

**ADDRESS:** 2F, Building C, No.1618, Yishan Rd., 201103,  
Shanghai, China

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**ADT (Shanghai) Corporation**



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## 1 CERTIFICATION

**PRODUCT:** Full Band FM Transmitter  
**MODEL NO.:** FM20XXXXXXXXX  
**APPLICANT:** CM Precision Technology LTD  
**TESTED:** Sept. 1 ~ Sept. 6, 2006  
**TEST ITEM:** Engineering Sample  
**STANDARDS:** FCC Part 15, Subpart C (Section 15.239),  
ANSI C63.4-2003

We, **ADT (Shanghai) Corporation**, declare that the equipment above has been tested in our facility and found compliance with the requirement limits of applicable standards. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate under the standards herein specified.

### TECHNICAL

**ACCEPTANCE** : \_\_\_\_\_ , **DATE:** SEPT. 6, 2006  
Bright Tong  
Engineering Supervisor

**APPROVED BY** : \_\_\_\_\_ , **DATE:** SEPT. 6, 2006  
Wallace Pan  
Director of Operations

## 2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C			
STANDARD PARAGRAPH	TEST TYPE	RESULT	REMARK
15.207	Conducted Emission Test	N/A	Refer to 4.1.2
15.239	Radiated Emission Test (88.1 MHz)	PASS	Minimum passing margin is -2.88 dB at 88.00 MHz
	Radiated Emission Test (98.1 MHz)	PASS	Minimum passing margin is -4.20 dB at 196.00 MHz
	Radiated Emission Test (107.9 MHz)	PASS	Minimum passing margin is -11.59 dB at 216.00 MHz
15.239(c)	Emission Bandwidth Test	PASS	Meet the requirements

**NOTE:** The information of measurement uncertainty is available upon the customer's request.

### 2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz ~ 30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.73 dB
	200MHz ~ 1000MHz	3.74 dB
	1GHz ~ 18GHz	2.20 dB
	18GHz ~ 40GHz	1.88 dB

### 3 GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>PRODUCT</b>	FULL BAND FM TRANSMITTER
<b>MODEL NO.</b>	FM20XXXXXXXXX
<b>POWER SUPPLY</b>	13.5Vdc
<b>MODULATION TYPE</b>	FM
<b>CARRIER FREQUENCY OF EACH CHANNEL</b>	88.1 ~ 107.9 MHz
<b>NUMBER OF CHANNELS</b>	199
<b>BANDWIDTH</b>	0.1 MHz
<b>ANTENNA TYPE</b>	Printed
<b>ANTENNA JOINT TYPE</b>	N/A
<b>DATA CABLE</b>	N/A
<b>I/O PORTS</b>	N/A
<b>ASSOCIATED DEVICES</b>	Ipod Nano

**Note:** 1. "X" refers to 0-9 or A-Z space. Different "X" can stand for the different shell and output connector while circuit is always the same. The followings are the specified definitions for the model number:

1-2 digits	FM	FM Transmitter
3-6 digits	20XX	Stand for CLA connector head, the same circuit but the different shell
7-9 digits	XXX	Stand for FM box, the same circuit but the different shell
10 digit	X	Stand for the kind of the end of the connector head, EX: 1: JAE con 2. Foxlink con 3. share-tooling connector head 4. 3.5mm DC head
11 digit	X	Stand for frequency range, EX: 0. Occident radio frequency 1. Japan radio frequency
12 digit	X	Stand for device color, EX: B: Black cable W: White cable

2. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

### 3.2 DESCRIPTION OF TEST MODES

199 channels are provided to this EUT.

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	88.1	41	92.1	81	96.1	121	100.1	161	104.1
2	88.2	42	92.2	82	96.2	122	100.2	162	104.2
3	88.3	43	92.3	83	96.3	123	100.3	163	104.3
4	88.4	44	92.4	84	96.4	124	100.4	164	104.4
5	88.5	45	92.5	85	96.5	125	100.5	165	104.5
6	88.6	46	92.6	86	96.6	126	100.6	166	104.6
7	88.7	47	92.7	87	96.7	127	100.7	167	104.7
8	88.8	48	92.8	88	96.8	128	100.8	168	104.8
9	88.9	49	92.9	89	96.9	129	100.9	169	104.9
10	89.0	50	93.0	90	97.0	130	101.0	170	105.0
11	89.1	51	93.1	91	97.1	131	101.1	171	105.1
12	89.2	52	93.2	92	97.2	132	101.2	172	105.2
13	89.3	53	93.3	93	97.3	133	101.3	173	105.3
14	89.4	54	93.4	94	97.4	134	101.4	174	105.4
15	89.5	55	93.5	95	97.5	135	101.5	175	105.5
16	89.6	56	93.6	96	97.6	136	101.6	176	105.6
17	89.7	57	93.7	97	97.7	137	101.7	177	105.7
18	89.8	58	93.8	98	97.8	138	101.8	178	105.8
19	89.9	59	93.9	99	97.9	139	101.9	179	105.9
20	90.0	60	94.0	100	98.0	140	102.0	180	106.0
21	90.1	61	94.1	101	98.1	141	102.1	181	106.1
22	90.2	62	94.2	102	98.2	142	102.2	182	106.2
23	90.3	63	94.3	103	98.3	143	102.3	183	106.3
24	90.4	64	94.4	104	98.4	144	102.4	184	106.4
25	90.5	65	94.5	105	98.5	145	102.5	185	106.5
26	90.6	66	94.6	106	98.6	146	102.6	186	106.6
27	90.7	67	94.7	107	98.7	147	102.7	187	106.7
28	90.8	68	94.8	108	98.8	148	102.8	188	106.8
29	90.9	69	94.9	109	98.9	149	102.9	189	106.9
30	91.0	70	95.0	110	99.0	150	103.0	190	107.0
31	91.1	71	95.1	111	99.1	151	103.1	191	107.1
32	91.2	72	95.2	112	99.2	152	103.2	192	107.2
33	91.3	73	95.3	113	99.3	153	103.3	193	107.3
34	91.4	74	95.4	114	99.4	154	103.4	194	107.4
35	91.5	75	95.5	115	99.5	155	103.5	195	107.5
36	91.6	76	95.6	116	99.6	156	103.6	196	107.6
37	91.7	77	95.7	117	99.7	157	103.7	197	107.7
38	91.8	78	95.8	118	99.8	158	103.8	198	107.8
39	91.9	79	95.9	119	99.9	159	103.9	199	107.9
40	92.0	80	96.0	120	100.0	160	104.0		

**NOTE:** 1. The channel 1, 101 and 199 were tested individually.

2. The tuning controls can be manually adjusted from 88.1MHz to 107.9MHz.

### 3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is the Full Band FM Transmitter. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC Part 15, Subpart C (15.239)**

**ANSI C63.4-2003**

All test items have been performed and recorded as per the above standards.

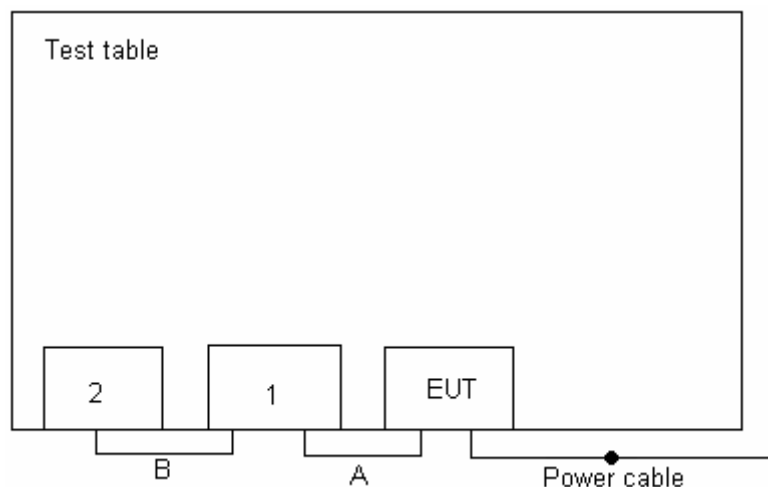
### 3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	MP3 player	Apple	A1137	5U621XFCUPK	FCC DoC Approved
2	Earphone	Apple	N/A	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
A	0.2m shielded MP3 line of connection.
B	1.2m non-shielded earphone cable.

### 3.5 CONFIGURATION OF SYSTEM UNDER TEST



## 4 TEST TYPES AND RESULTS

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB $\mu$ V)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

- NOTES:**
- (1) The lower limit shall apply at the transition frequencies.
  - (2) The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
  - (3) All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

#### 4.1.2 TEST RESULTS

Since the EUT neither has AC port nor intends to be connected to the AC power source and is powered by the battery, so the test item is not applicable.



## 4.2 Radiated Emission Measurement

### 4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

According to 15.239 the field strength of emissions from intentional radiators operated under these frequencies bands shall not exceed the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (dBuV/m)	
	Peak	Average
88 to 108	67.96	47.96

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	$2400/F(\text{kHz})$	300
0.490-1.705	$24000/F(\text{kHz})$	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

## 4.2.2 TEST INSTRUMENT

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	E1R1001	Apr. 19, 2007
BILOG Antenna SCHWARZBECK	VULB9168	E1A1001	Sept. 26, 2006
Preamplifier Agilent	8447D	E1A2001	Jan. 27, 2007
Preamplifier Agilent	8449B	E1A2002	Jan. 27, 2007
Double Ridged Broadband Horn Antenna Schwarzbeck	BBHA 9120D	E1A1002	Feb. 15, 2007
*Spectrum Analyzer Agilent	E4403B	E1S1001	Jan. 13, 2007
*Spectrum Analyzer ROHDE & SCHWARZ	FSP30	E1S1002	May. 15, 2007
RF signal cable Woken	RG-402	E1CBH01	May. 30, 2007
RF signal cable Woken	RG-402	E1CBH02	May. 30, 2007
RF signal cable Woken	RG-402	E1CBH03	May. 30, 2007
RF signal cable Woken	RG-412	E1CBL02	May. 30, 2007
RF signal cable Woken	RG-412	E1CBL03	May. 30, 2007
RF signal cable Woken	RG-412	E1CBL04	May. 30, 2007
Software ADT	ADT_Radiated_V7.5	N/A	N/A

- NOTE:**
1. The calibration interval of the above test instruments is 12 months.
  2. "\*" = These equipment are used for the final measurement.
  3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
  4. The Spectrum Analyzer (model: FSP30) and RF signal cable (SERIAL: E1CBH05&E1CBH07) are used only for the measurement of emission frequency above 1GHz if tested.

#### 4.2.3 TEST PROCEDURE

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.

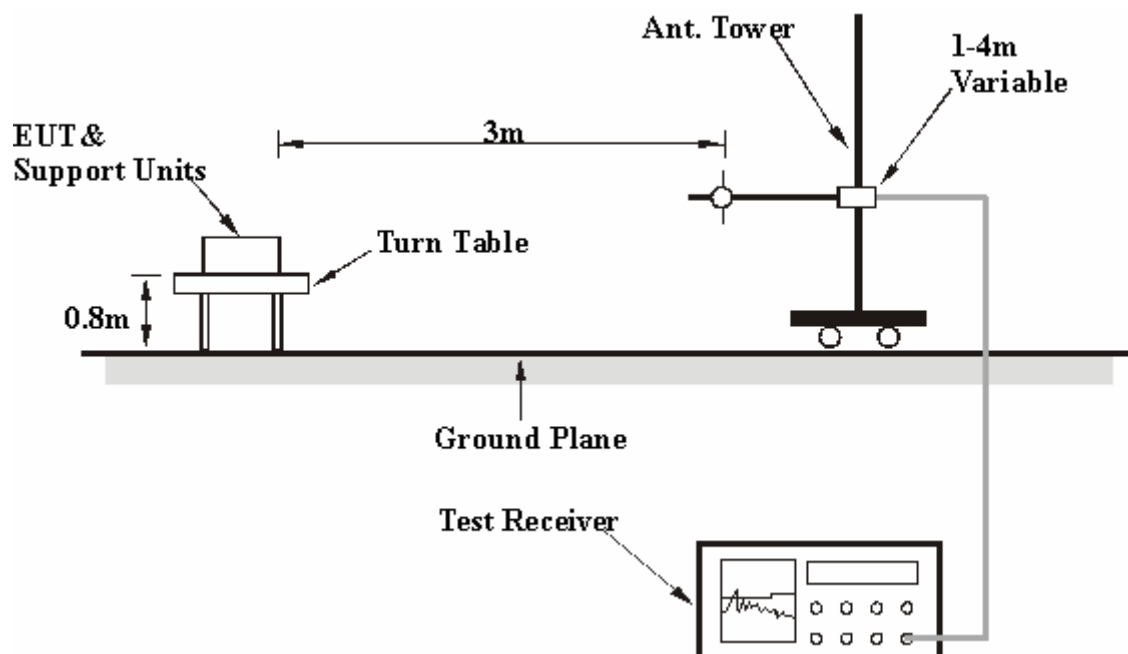
**NOTE:**

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

#### 4.2.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.2.5 TEST SETUP



For the actual test configuration, please refer to the related item in this test report - Photographs of the Test Configuration.

#### 4.2.6 EUT OPERATING CONDITION

- Put the EUT on the centre of the test table and power it on.
- Adjust the working frequency and pull out the antenna to the maximum length.

## 4.2.7 TEST RESULT

<b>EUT</b>	Full Band FM Transmitter	<b>MODEL NO.</b>	FM20XXXXXXXXX
<b>CHANNEL</b>	1	<b>INPUT POWER</b>	13.5 Vdc
<b>FREQUENCY RANGE</b>	Below 2000 MHz	<b>DETECTOR FUNCTION &amp; BANDWIDTH</b>	Peak(PK) Average (AV) Quasi-Peak
<b>ENVIRONMENTAL CONDITIONS</b>	21 deg. C, 76 % RH, 1005 hPa	<b>TESTED BY:</b> BRIGHT	

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1*	88.00 PK	11.73	41.21	52.93	68.00	-15.07	291.00	189.00
1*	88.00 AV	11.73	26.48	38.21	48.00	-9.79	291.00	189.00
2	176.00 QP	15.23	17.33	32.56	43.50	-10.94	162.00	306.00
3	264.00 QP	15.27	15.83	31.11	46.00	-14.89	99.00	349.00
4	352.00 QP	17.53	5.83	23.36	46.00	-22.64	99.00	20.00
5	441.00 QP	19.89	8.53	28.42	46.00	-17.58	100.00	159.00
6	529.00 QP	21.51	5.90	27.40	46.00	-18.60	134.00	355.00
7	617.00 QP	23.45	4.86	28.31	46.00	-17.69	110.00	346.00
8	705.00 QP	24.68	5.35	30.03	46.00	-15.97	106.00	129.00
9	793.00 QP	25.76	4.94	30.71	46.00	-15.29	118.00	49.00
10	881.00 QP	26.71	4.72	31.44	46.00	-14.56	167.00	201.00

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1*	88.00 PK	11.73	47.66	59.39	68.00	-8.61	199.00	97.00
1*	<b>88.00 AV</b>	<b>11.73</b>	<b>33.39</b>	<b>45.12</b>	<b>48.00</b>	<b>-2.88</b>	<b>199.00</b>	<b>97.00</b>
2	176.00 QP	15.23	14.33	29.56	43.50	-13.94	100.00	291.00
3	264.00 QP	15.27	11.98	27.25	46.00	-18.75	146.00	0.00
4	352.00 QP	17.53	6.24	23.76	46.00	-22.24	105.00	19.00
5	441.00 QP	19.89	6.43	26.32	46.00	-19.68	99.00	351.00
6	529.00 QP	21.51	5.81	27.32	46.00	-18.68	99.00	313.00
7	617.00 QP	23.45	5.03	28.48	46.00	-17.52	99.00	242.00
8	705.00 QP	24.68	5.27	29.95	46.00	-16.05	128.00	230.00
9	793.00 QP	25.76	6.38	32.15	46.00	-13.85	149.00	156.00
10	881.00 QP	26.71	5.77	32.49	46.00	-13.51	153.00	92.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. "\*" = Fundamental frequency.

<b>EUT</b>	Full Band FM Transmitter	<b>MODEL NO.</b>	FM20XXXXXXXXXX
<b>CHANNEL</b>	101	<b>INPUT POWER</b>	13.5 Vdc
<b>FREQUENCY RANGE</b>	Below 2000 MHz	<b>DETECTOR FUNCTION &amp; BANDWIDTH</b>	Peak(PK) Average (AV) Quasi-Peak
<b>ENVIRONMENTAL CONDITIONS</b>	21 deg. C, 76 % RH, 1005 hPa	<b>TESTED BY:</b> BRIGHT	

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1*	98.00 PK	12.40	33.44	45.85	68.00	-22.15	119.00	123.00
1*	98.00 AV	12.40	19.58	31.98	48.00	-16.02	119.00	123.00
2	196.00 QP	13.15	25.50	38.65	43.50	-4.85	210.00	29.00
3	294.00 QP	16.35	12.78	29.13	46.00	-16.87	134.00	158.00
4	392.00 QP	18.49	5.43	23.92	46.00	-22.08	156.00	157.00
5	490.00 QP	20.73	6.07	26.79	46.00	-19.21	115.00	49.00
6	589.00 QP	22.91	7.50	30.40	46.00	-15.60	138.00	197.00
7	687.00 QP	24.37	4.98	29.35	46.00	-16.65	157.00	117.00
8	785.00 QP	25.70	5.13	30.83	46.00	-15.17	226.00	96.00
9	883.00 QP	26.77	5.60	32.37	46.00	-13.63	230.00	89.00
10	981.00 QP	27.72	5.24	32.95	54.00	-21.05	249.00	19.00

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1*	98.00 PK	12.40	38.04	50.44	68.00	-17.56	154.00	28.00
1*	98.00 AV	12.40	24.44	36.84	48.00	-11.16	154.00	28.00
<b>2</b>	<b>196.00 QP</b>	<b>13.15</b>	<b>26.16</b>	<b>39.30</b>	<b>43.50</b>	<b>-4.20</b>	<b>193.00</b>	<b>147.00</b>
3	294.00 QP	16.35	10.58	26.93	46.00	-19.07	184.00	60.00
4	392.00 QP	18.49	4.86	23.35	46.00	-22.65	240.00	79.00
5	491.00 QP	20.74	4.75	25.49	46.00	-20.51	210.00	28.00
6	589.00 QP	22.91	5.67	28.57	46.00	-17.43	118.00	163.00
7	687.00 QP	24.37	4.33	28.70	46.00	-17.30	283.00	37.00
8	785.00 QP	25.70	4.70	30.40	46.00	-15.60	174.00	55.00
9	883.00 QP	26.77	5.31	32.08	46.00	-13.92	109.00	172.00
10	981.00 QP	27.72	5.54	33.26	54.00	-20.74	137.00	163.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. "\*" = Fundamental frequency.

<b>EUT</b>	Full Band FM Transmitter	<b>MODEL NO.</b>	FM20XXXXXXXXXX
<b>CHANNEL</b>	199	<b>INPUT POWER</b>	13.5 Vdc
<b>FREQUENCY RANGE</b>	Below 2000 MHz	<b>DETECTOR FUNCTION &amp; BANDWIDTH</b>	Peak(PK) Average (AV) Quasi-Peak
<b>ENVIRONMENTAL CONDITIONS</b>	21 deg. C, 76 % RH, 1005 hPa	<b>TESTED BY:</b> BRIGHT	

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1*	108.00 PK	13.36	32.98	46.34	68.00	-21.66	208	203
1*	108.00 AV	13.36	19.41	32.77	48.00	-15.23	208	203
<b>2</b>	<b>216.00 QP</b>	<b>13.56</b>	<b>18.36</b>	<b>31.91</b>	<b>43.50</b>	<b>-11.59</b>	<b>222</b>	<b>124</b>
3	324.00 QP	17.12	12.20	29.32	46.00	-16.68	131	114
4	432.00 QP	19.66	11.69	31.34	46.00	-14.66	143	192
5	539.00 QP	21.77	4.39	26.16	46.00	-19.84	255	189
6	647.00 QP	23.86	5.14	28.99	46.00	-17.01	171	281
7	755.00 QP	25.39	5.40	30.79	46.00	-15.21	177	141
8	863.00 QP	26.34	5.15	31.49	46.00	-14.51	144	32
9	971.00 QP	27.73	5.94	33.67	54.00	-20.33	112	330

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1*	108.00 PK	13.36	35.53	48.89	68.00	-19.11	117	23
1*	108.00 AV	13.36	20.90	34.26	48.00	-13.74	117	23
2	216.00 QP	13.56	14.44	28.00	43.50	-15.50	120	174
3	324.00 QP	17.12	7.44	24.55	46.00	-21.45	143.00	89.00
4	432.00 QP	19.66	8.89	28.55	46.00	-17.45	104	135
5	539.00 QP	21.77	4.84	26.61	46.00	-19.39	201.00	115.00
6	647.00 QP	23.86	4.76	28.61	46.00	-17.39	158	17
7	755.00 QP	25.39	4.82	30.21	46.00	-15.79	118.00	49.00
8	863.00 QP	26.34	5.77	32.12	46.00	-13.88	167	224
9	971.00 QP	27.73	5.22	32.95	54.00	-21.05	106.00	187.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. "\*" = Fundamental frequency.

## 4.3 EMISSION BAND MEASUREMENT

### 4.3.1 LIMITS OF EMISSION BAND MEASUREMENT

Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency ranges of 88.1 ~ 107.9 MHz.

### 4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER R&S	FSP30	E1S1002	May. 15, 2007

**NOTE:** The calibration interval of the above test instruments is 12 months.

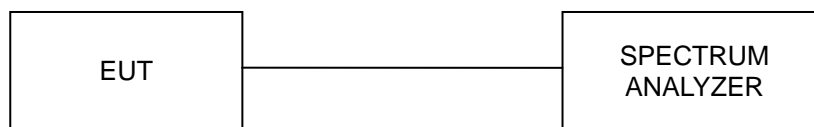
### 4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 10 kHz RBW and 30 kHz VBW. Measured the 26dBc bandwidth and plotted the graph.

### 4.3.4 DEVIATION FROM TEST STANDARD

No deviation

### 4.3.5 TEST SETUP



### 4.3.6 EUT OPERATING CONDITIONS

Same as 4.2.6

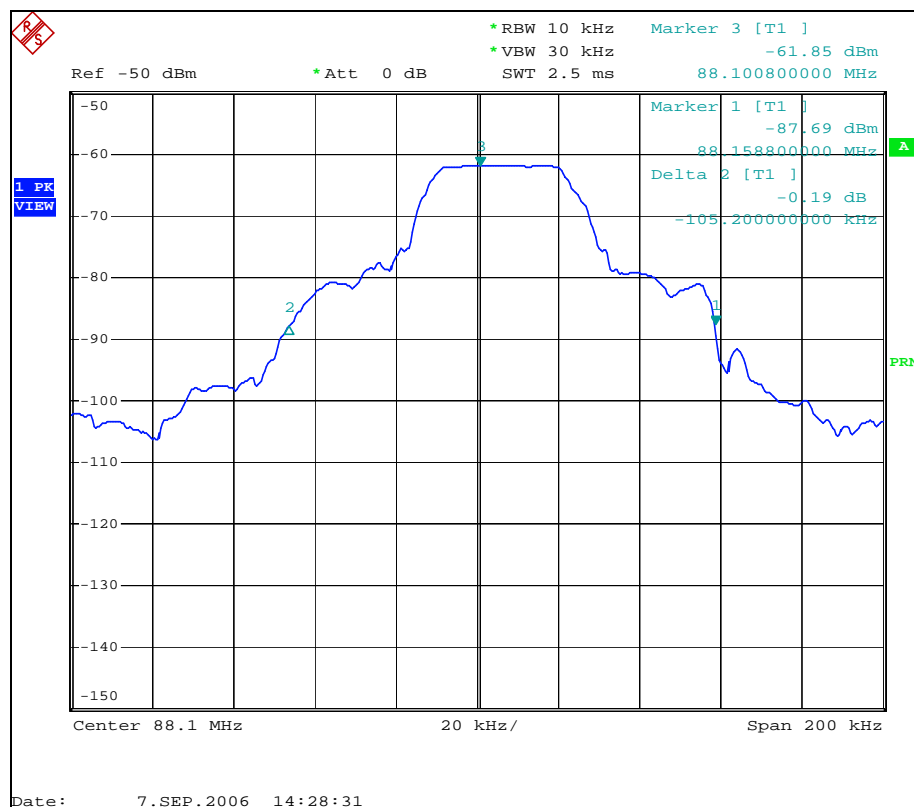


## 4.3.7 TEST RESULTS

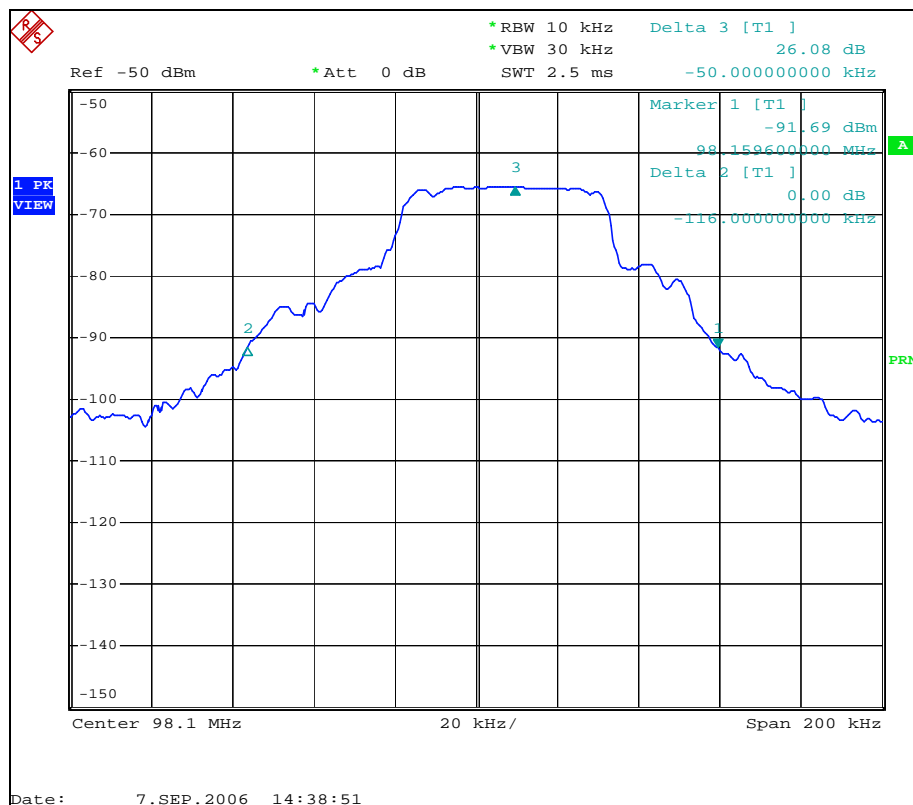
<b>EUT</b>	Full Band FM Transmitter	<b>MODEL NO.</b>	FM20XXXXXXXXX
<b>INPUT POWER (SYSTEM)</b>	13.5Vdc	<b>ENVIRONMENTAL CONDITIONS</b>	22deg. C, 74%RH, 991 hPa
<b>TEST BY</b>	BRIGHT		

CHANNEL	CHANNEL FREQUENCY (MHz)	26 dB BANDWIDTH (kHz)	MAXIMUM LIMIT (kHz)	PASS/FAIL
1	88.1MHz	105.2	200	PASS
101	98.1MHz	116.0	200	PASS
199	107.9MHz	111.2	200	PASS

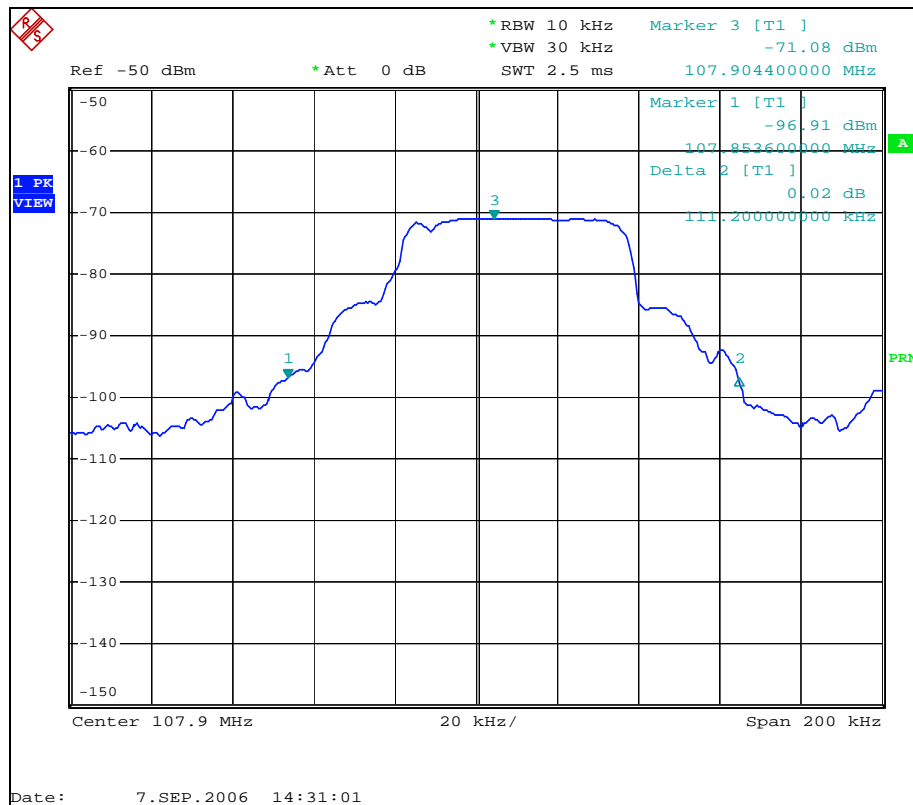
CH1



## CH101



## CH199



## 5 APPENDIX - INFORMATION ON THE TESTING LABORATORY

We, ADT (Shanghai) Corp., were founded in 2003 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

<b>JAPAN</b>	VCCI
<b>USA</b>	FCC, A2LA
<b>Norway</b>	DNV



Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: [www.cnadt.com](http://www.cnadt.com)

If you have any comments, please feel free to contact us at the following:

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