

FCC TEST REPORT

(FOR FM)

REPORT NO.: RF971021L11-1

MODEL NO.: CS8136 (Refer to item 3.1 for more detail)

RECEIVED: Oct. 21, 2008

TESTED: Nov. 24, 2008

ISSUED: Dec. 02, 2008

APPLICANT: In-Tech Electronics Ltd.

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ISSUED BY: Bureau Veritas Consumer Products Services (H.K.)
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1. CERTIFICATION

PRODUCT: Bluetooth FM Handsfree Kit
MODEL NO.: CS8136 (Refer to item 3.1 for more detail)
BRAND NAME: Abe
APPLICANT: In-Tech Electronics Ltd.
TESTED: Nov. 24, 2008
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: **FCC Part 15, Subpart C (Section 15.239)**
ANSI C63.4-2003

The above equipment (model: CS8136) have been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Ivy Lin , **DATE:** Dec. 02, 2008
Ivy Lin / Specialist

TECHNICAL ACCEPTANCE : Long Chen , **DATE:** Dec. 02, 2008
Responsible for RF Long Chen / Senior Engineer

APPROVED BY : Gary Chang , **DATE:** Dec. 02, 2008
Gary Chang / Assistant Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.207	AC Power Conducted Emission	NA	Power supply is 5Vdc from car charger or 3.6Vdc from battery
15.239, 15.209	Radiated Emission Test	PASS	Meet the requirement of limit. Minimum passing margin is -2.59dB at 107.90MHz.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Radiated emissions	30MHz ~ 200MHz	3.34 dB
	200MHz ~1000MHz	3.35 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

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

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3. GENERAL INFORMATION

3.1. GENERAL DESCRIPTION OF EUT

EUT	Bluetooth FM Handsfree Kit
MODEL NO.	CS8136 (Refer to note for more detail)
FCC ID	NV6-CS8136
POWER SUPPLY	5Vdc from car charger 3.6Vdc from battery
MODULATION TYPE	GFSK, FM
MODULATION TECHNOLOGY	FHSS
TRANSFER RATE	723.2kbps
FREQUENCY RANGE	For bluetooth: 2400 ~ 2483.5MHz For FM: 88.0~108MHz
NUMBER OF CHANNEL	For bluetooth: 79 For FM: 199
CHANNEL SPACING	For bluetooth: 1MHz For FM:100kHz
OUTPUT POWER	For bluetooth: 4.699mW
ANTENNA TYPE	For bluetooth: PCB antenna with 0dBi gain For FM: Wire antenna with 0dBi gain
DATA CABLE	0.35m non-shielded audio cable without core
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Car Charger, battery

NOTE:

1. The EUT is a Bluetooth FM Handsfree Kit. The functions of EUT listed as below:

	TEST STANDARD	REFERENCE REPORT
BLUETOOTH	FCC Part 15	RF971021L11
FM		RF971021L11-1

2. The models as below are identical to each other except for their accessory device difference.

Brand Name	Model No.	Accessory Device
Abe	CS8136	Battery and Car charger
	CS8139	Only Car charger

3. The EUT was powered by the following car charger and battery:

Car Charger	
INPUT POWER	12Vdc
OUTPUT POWER	5Vdc, 500mA
POWER LINE	1.5m non-shielded cable without core

3AAA RECHARGTABLE BATTERY * 3	
POWER RATING	1.2Vdc

4. Bluetooth technology is used in this EUT.
5. This EUT has transmission function during the charging mode.
6. 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.

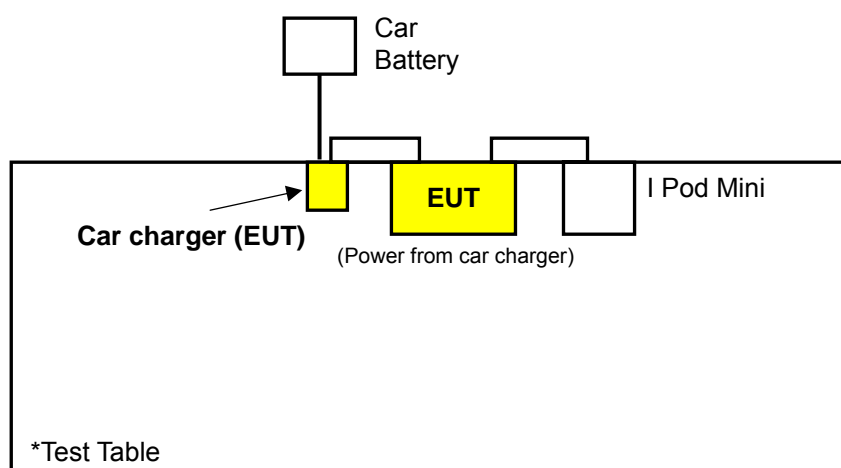
3.2. DESCRIPTION OF TEST MODES

The tuning range has been manually verified and the device can work only within 88.0 ~ 108MHz band.

Three channels were provided to this EUT.

CHANNEL	FREQUENCY (MHz)
Low channel (L)	88.1MHz
Middle channel (M)	98.0MHz
High channel (H)	107.9MHz

3.2.1. CONFIGURATION OF SYSTEM UNDER TEST



3.2.2. TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	Applicable to			Description
	PLC	RE<1G	EB	
-	NOTE	√	√	-

Where **PLC**: Power Line Conducted Emission **RE<1G**: Radiated Emission below 1GHz
EB: Emission Band Measurement

NOTE: No need to concern of Conducted Emission due to the EUT is powered by car charger.

RADIATED EMISSION TEST (BELOW 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and XYZ Axis.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	TESTED CHANNEL	MODULATION TYPE	AXIS
-	L, M, H	FM	Z

EMISSION BAND MEASUREMENT:

- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	TESTED CHANNEL	MODULATION TYPE
-	L, M, H	FM

3.2.3. GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is the transmitter part of a 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.

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

3.2.4. 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	IPOD MINI	apple	A1051	YM5270EZS41	FCC DoC Approved

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA

NOTE: All power cords of the above support units are non shielded (1.8m).

4. TEST TYPES AND RESULTS

4.1. CONDUCTED EMISSION MEASUREMENT

NA

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

Field strength limits are at the distance of 3 meters, 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(kHz)	300
0.490-1.705	24000/F(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 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESI7	100033	Jun. 30, 2008	Jun. 29, 2009
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Apr. 22, 2008	Apr. 21, 2009
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	May 02, 2008	May 01, 2009
HORN Antenna SCHWARZBECK	9120D	9120D-209	Jun. 24, 2008	Jun. 23, 2009
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 25, 2007	Dec. 24, 2008
Preamplifier Agilent	8447D	2944A10633	Nov. 03, 2008	Nov. 02, 2009
Preamplifier Agilent	8449B	3008A01964	Oct. 23, 2008	Oct. 22, 2009
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	238141/4	May 20, 2008	May 19, 2009
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	12738/6	May 20, 2008	May 19, 2009
Software ADT.	ADT_Radiated_V7.6	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA	NA
Turn Table ADT.	TT100.	TT93021703	NA	NA
Turn Table Controller ADT.	SC100.	SC93021703	NA	NA

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 3.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 988962.
5. The IC Site Registration No. is IC7450F-3.

4.2.3. TEST PROCEDURES

- 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 lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak method or average method as specified and then reported in data sheet.

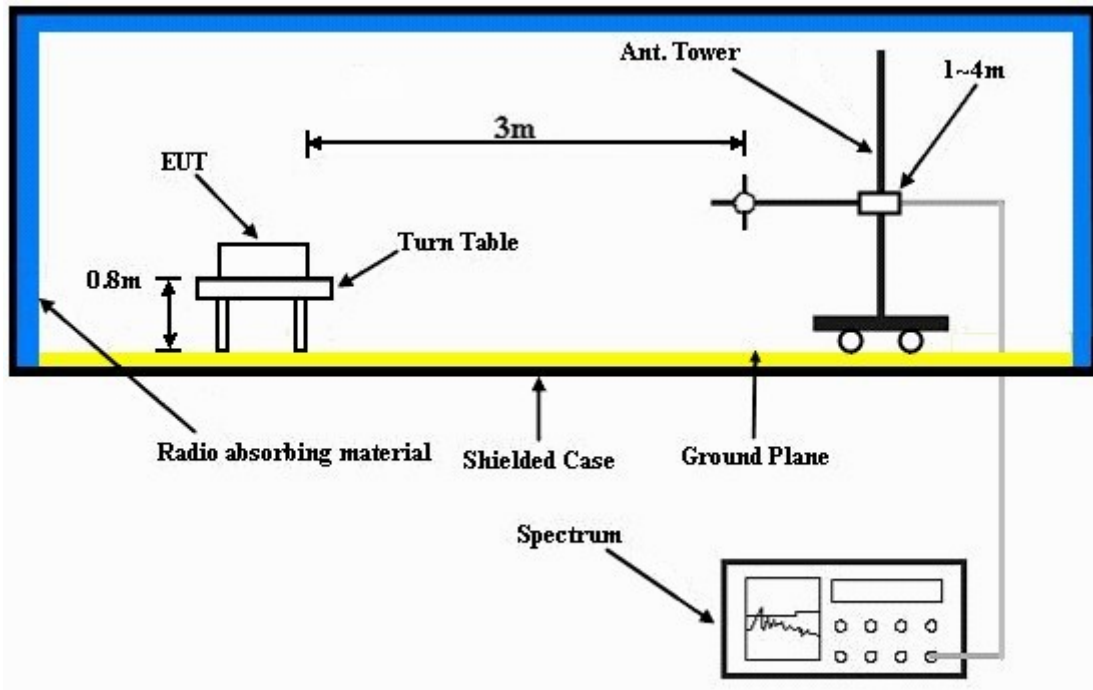
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection (PK) 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 attached file (Test Setup Photo).

4.2.6. EUT OPERATING CONDITIONS

- I-Pod plays a mp3 file and send the music to EUT through audio cable.
- Volume of I-Pod is tuned to max setting.
- EUT sends the music out at low, middle or high channel.

4.2.7. TEST RESULTS

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Low Channel	FREQUENCY RANGE	88 ~ 108MHz
MODULATION TYPE	FM	DETECTOR FUNCTION	Peak (PK) Average (AV)
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH, 1026hPa
TESTED BY	Mark Liao		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*88.10	39.00 PK	67.96	-28.96	2.20 H	168	30.69	8.30
2	*88.10	37.74 AV	47.96	-10.22	2.20 H	168	29.43	8.30

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*88.10	29.12 PK	67.96	-38.84	1.00 V	97	20.81	8.30
2	*88.10	28.12 AV	47.96	-19.84	1.00 V	97	19.81	8.30

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Middle Channel	FREQUENCY RANGE	88 ~ 108MHz
MODULATION TYPE	FM	DETECTOR FUNCTION	Peak (PK) Average (AV)
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH, 1026hPa
TESTED BY	Mark Liao		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*98.00	46.44 PK	67.96	-21.52	2.14 H	322	35.20	11.24
2	*98.00	45.33 AV	47.96	-2.63	2.14 H	322	34.09	11.24

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*98.00	35.99 PK	67.96	-31.97	1.16 V	84	24.73	11.24
2	*98.00	35.27 AV	47.96	-12.69	1.16 V	84	24.03	11.24

- REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	High Channel	FREQUENCY RANGE	88 ~ 108MHz
MODULATION TYPE	FM	DETECTOR FUNCTION	Peak (PK) Average (AV)
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH, 1026hPa
TESTED BY	Mark Liao		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*107.90	46.39 PK	67.96	-21.57	2.86 H	0	34.49	11.90
2	*107.90	45.37 AV	47.96	-2.59	2.86 H	0	33.47	11.90

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*107.90	39.36 PK	67.96	-28.60	1.90 V	86	27.46	11.90
2	*107.90	38.67 AV	47.96	-9.29	1.90 V	86	26.77	11.90

- REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Low Channel	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	FM	DETECTOR FUNCTION	Quasi-Peak
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH, 1026hPa
TESTED BY	Mark Liao		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	239.88	18.58 QP	46.00	-27.42	1.25 H	190	4.84	13.74
2	352.65	29.38 QP	46.00	-16.62	1.00 H	187	12.54	16.84
3	515.97	23.32 QP	46.00	-22.68	1.75 H	1	1.49	21.82
4	630.69	23.04 QP	46.00	-22.96	1.25 H	247	-1.48	24.52
5	704.57	27.81 QP	46.00	-18.19	1.25 H	349	1.27	26.55
6	893.16	29.18 QP	46.00	-16.82	1.50 H	184	-0.56	29.74
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	230.16	16.21 QP	46.00	-29.79	2.50 V	13	3.13	13.08
2	323.49	17.40 QP	46.00	-28.60	1.00 V	10	1.90	15.50
3	512.08	20.42 QP	46.00	-25.58	2.50 V	76	-1.32	21.74
4	572.36	22.69 QP	46.00	-23.31	1.25 V	310	-0.37	23.06
5	727.90	25.30 QP	46.00	-20.70	2.75 V	229	-1.50	26.80
6	842.61	27.51 QP	46.00	-18.49	1.50 V	166	-1.05	28.56

- REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Middle Channel	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	FM	DETECTOR FUNCTION	Quasi-Peak
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH, 1026hPa
TESTED BY	Mark Liao		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	239.88	18.93 QP	46.00	-27.07	1.00 H	70	5.19	13.74
2	391.54	35.75 QP	46.00	-10.25	1.00 H	184	17.18	18.56
3	539.30	23.41 QP	46.00	-22.59	2.00 H	190	1.07	22.34
4	759.01	26.92 QP	46.00	-19.08	2.00 H	184	-0.22	27.13
5	883.44	28.22 QP	46.00	-17.78	1.00 H	31	-1.29	29.51
6	961.21	30.56 QP	54.00	-23.44	1.00 H	112	0.02	30.54
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	146.56	13.69 QP	43.50	-29.81	1.25 V	223	-0.45	14.14
2	286.55	16.74 QP	46.00	-29.26	1.50 V	199	2.32	14.42
3	391.54	27.09 QP	46.00	-18.91	1.00 V	70	8.53	18.56
4	517.92	20.71 QP	46.00	-25.29	2.50 V	346	-1.16	21.87
5	708.46	26.21 QP	46.00	-19.79	1.50 V	193	-0.38	26.59
6	881.50	29.24 QP	46.00	-16.76	1.00 V	103	-0.23	29.47

- REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	High Channel	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	FM	DETECTOR FUNCTION	Quasi-Peak
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH, 10262hPa
TESTED BY	Mark Liao		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	185.44	22.70 QP	43.50	-20.80	2.50 H	166	10.88	11.82
2	323.49	20.53 QP	46.00	-25.47	1.00 H	343	5.04	15.50
3	432.37	37.87 QP	46.00	-8.13	1.00 H	214	18.16	19.71
4	624.85	24.87 QP	46.00	-21.13	1.25 H	208	0.51	24.36
5	708.46	26.36 QP	46.00	-19.64	1.25 H	10	-0.23	26.59
6	864.00	39.77 QP	46.00	-6.23	1.50 H	271	10.71	29.06
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	66.84	17.42 QP	40.00	-22.58	1.00 V	247	3.92	13.50
2	166.00	23.68 QP	43.50	-19.82	1.75 V	166	9.20	14.48
3	286.55	17.47 QP	46.00	-28.53	1.75 V	151	3.05	14.42
4	430.42	36.72 QP	46.00	-9.28	2.50 V	232	17.05	19.67
5	755.12	26.32 QP	46.00	-19.68	1.75 V	37	-0.77	27.10
6	864.00	34.43 QP	46.00	-11.57	1.50 V	241	5.37	29.06

- REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
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.

4.3. EMISSION BAND MEASUREMENT

4.3.1. LIMITS OF EMISSION BAND MEASUREMENT

Emissions from the intentional radiator shall be confined within a bands 200kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88 to 108MHz.

4.3.2. TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100041	Apr. 22, 2008	Apr. 21, 2009

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

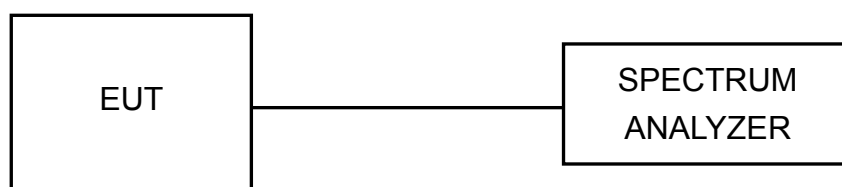
4.3.3. TEST PROCEDURES

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 20dBc bandwidth and plotted the graph. Audio input was set to max during the test.

4.3.4. DEVIATION FROM TEST STANDARD

No deviation.

4.3.5. TEST SETUP



4.3.6. EUT OPERATING CONDITIONS

- a. I-Pod plays a mp3 file and send the music to EUT through audio cable.
- b. Volume of I-Pod is tuned to max setting.
- c. EUT sends the music out at low, middle or high channel.



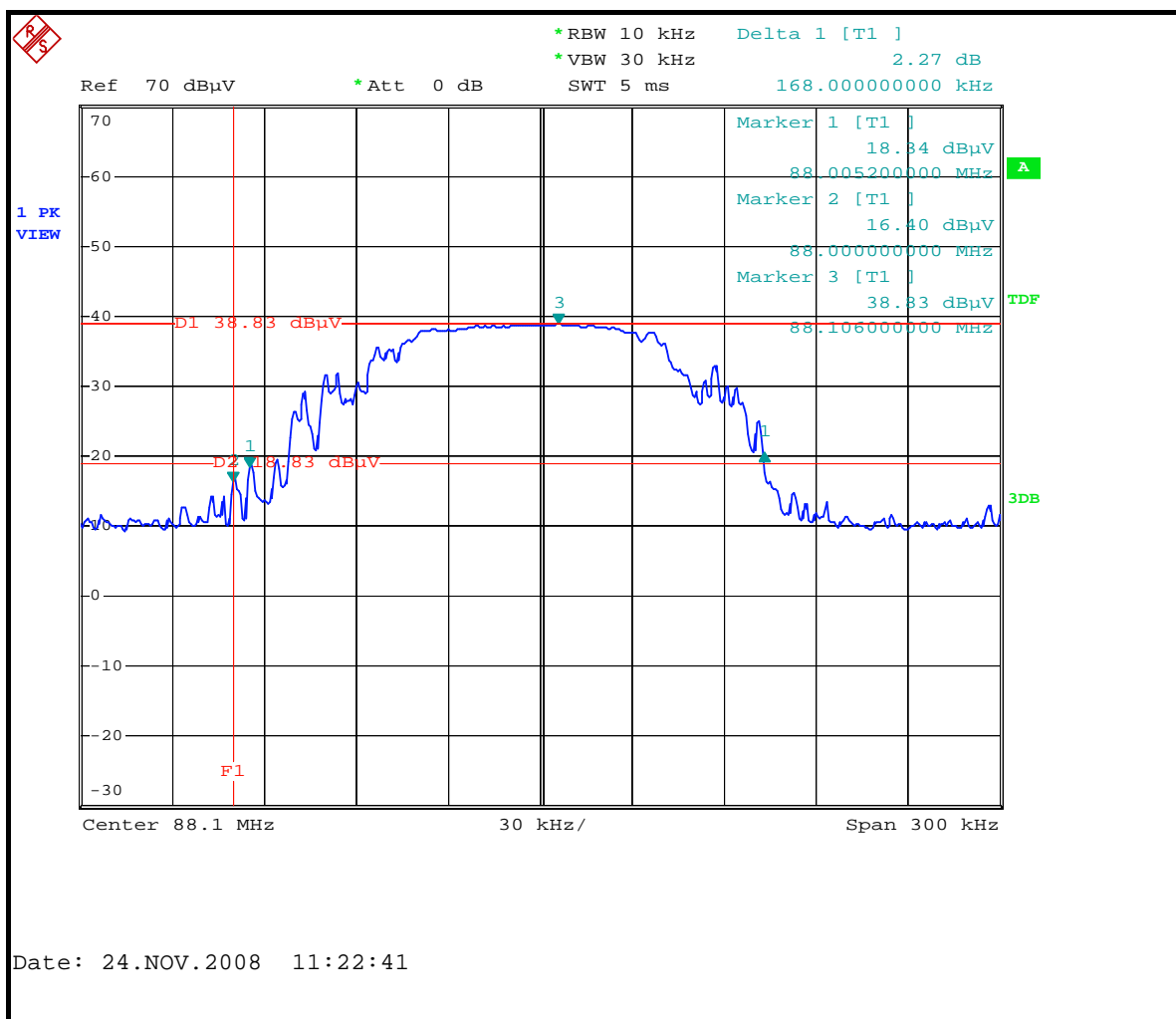
A D T

4.3.7. TEST RESULTS

CHANNEL	Low, Middle, High Channel	MODULATION TYPE	FM
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH, 1026hPa
TESTED BY	Mark Liao		

CHANNEL	CHANNEL FREQUENCY (MHz)	20 dB BANDWIDTH (kHz)	MAXIMUM LIMIT (kHz)	PASS/FAIL
Low	88.10	168.00	200	PASS
Middle	98.00	188.40	200	PASS
High	107.90	167.40	200	PASS

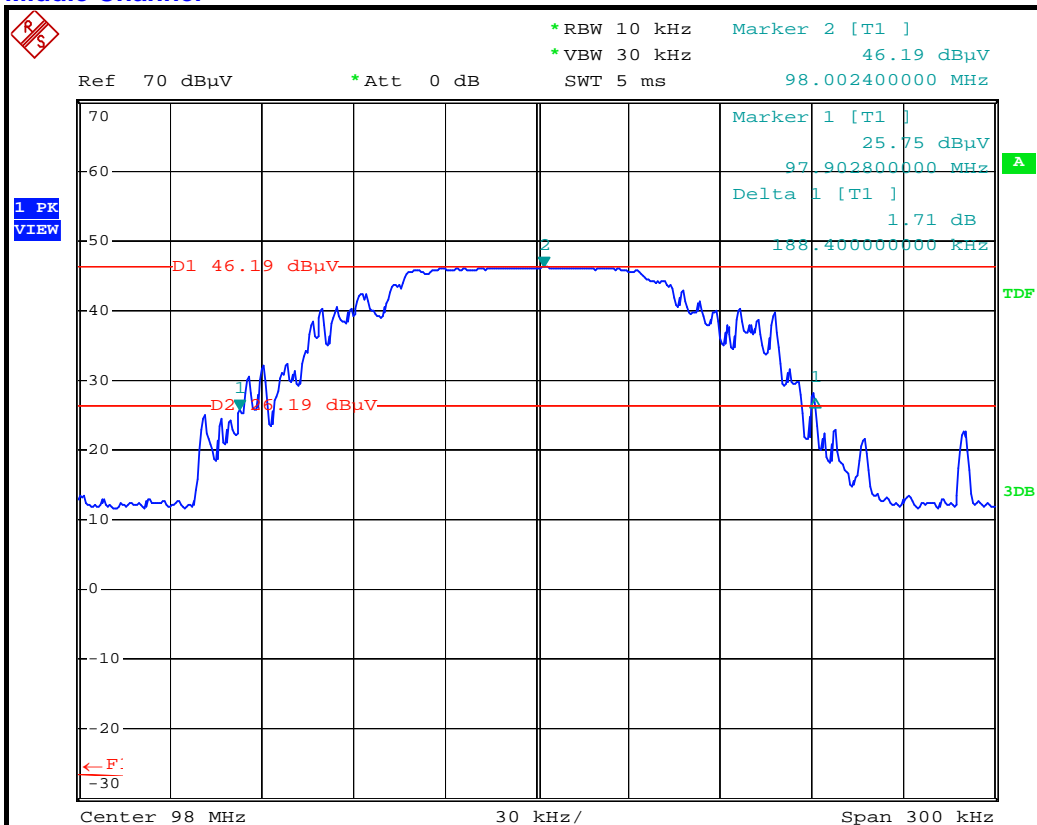
Low Channel





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Middle Channel

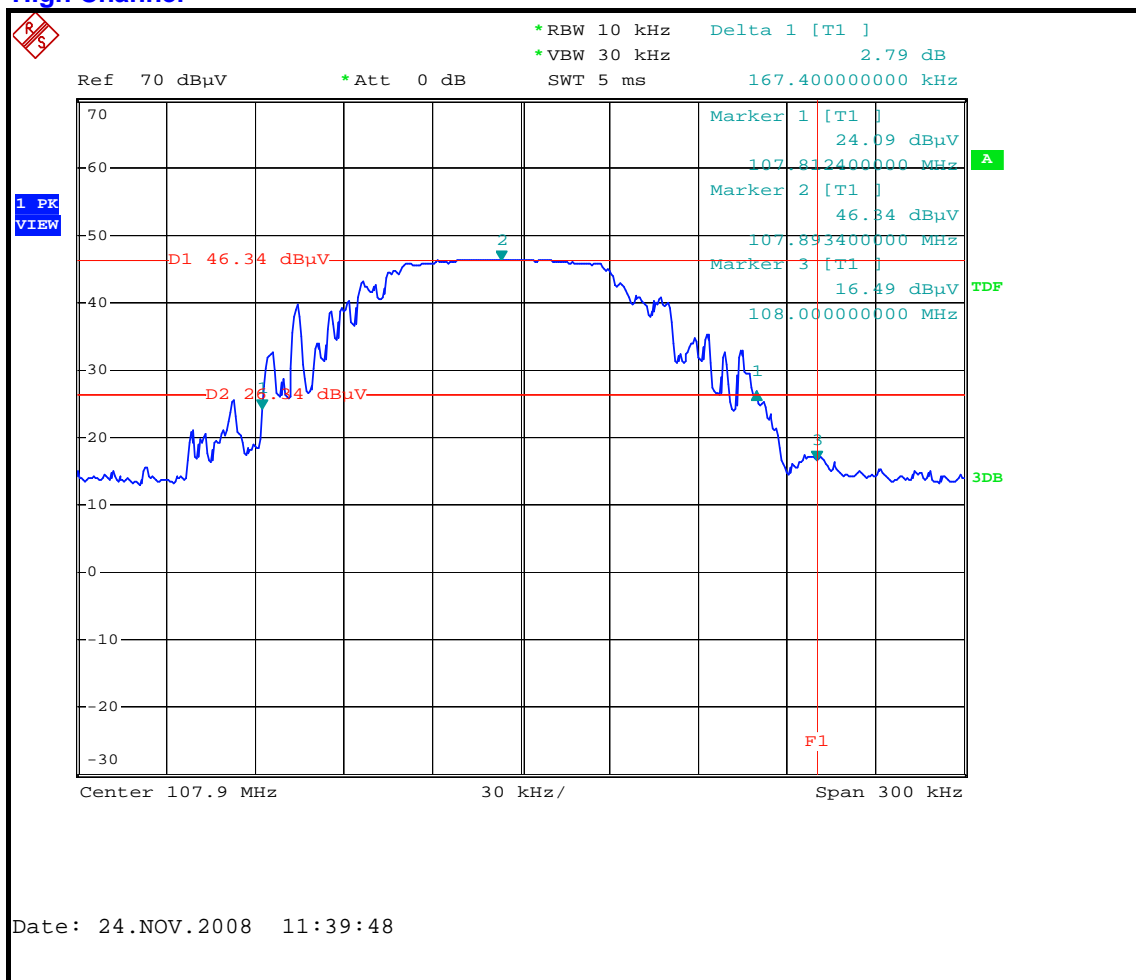


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High Channel



5. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

6. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 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.

USA	FCC, UL, NVLAP
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA , CSA
R.O.C.	TAF, BSMI, NCC
Netherlands	Telefication
Singapore	GOST-ASIA(MOU)
Russia	CERTIS(MOU)

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site:

www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:

Tel: 886-3-3183232

Fax: 886-3-3185050

Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.

7. APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

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