HCT CO., LTD.

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EMI CERTIFICATION REPORT

Applicant:
CASIO HITACHI Mobile Communications Co., Ltd.
2-229-1, Sakuragaoka, Higashiyamato-shi,
Tokyo 207-8501, Japan

Date of Issue: April 30, 2010
Test Report No.: HCTE1004FE31
Test Site: HCT CO., LTD.
HCT FRN: 0005-8664-21

FCC ID: **TYKNX9300**

Rule Part(s) / Standard(s)	: FCC PART 15 Subpart B / CISPR 22 Class B
Equipment Type	: Dual-Band CDMA/EVDO Phone with Bluetooth
Model Name	: C751
Port / Connector(s)	: USB Data Port / Headset Port

The device bearing the trade name and model specified above, has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-2003. (See Test Report if any modifications were made for compliance)
I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

HCT certifies that no party to application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C 862.

Report prepared by
: Dong Sup Kim
Test Engineer of EMC Tech. Part

Approved by
: Jin Pyo Hong
Manager of EMC Tech. Part

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1. GENERAL INFORMATION

1.1 Product Description

Equipment Under Test (E.U.T) is **Dual-Band CDMA/EVDO Phone with Bluetooth, Model: C751** manufactured by **CASIO HITACHI Mobile Communications Co., Ltd.** Its basic purpose is used for communications.

FCC Model	C751
FCC ID	TYKNX9300
E.U.T Type	Dual-Band CDMA/EVDO Phone with Bluetooth
TX Frequency	824.70 ㎒ to 848.31 ㎒ (CDMA 835) 1 851.25 ㎒ to 1 908.75 ㎒ (CDMA 1 900)
RX Frequency	869.70 ㎒ to 893.31 ㎒ (CDMA 835) 1 931.25 ㎒ to 1 988.75 ㎒ (CDMA 1 900**)**
Channel	Middle: 384 (CDMA 835) Middle: 600 (PCS 1 900)

1.2 Related Submittal(s) / Grant(s)

Original submittal only.

1.3 Tested System Details

All equipment descriptions used in the tested system (including inserted cards) are:

Device Type	Manufacturer	Model Number/ Part Number	FCC ID / DoC	Connected To
Dual-Band CDMA /EVDO Phone with Bluetooth	CASIO HITACHI	C751	TYKNX9300	Notebook PC
Notebook PC	HP	Compaq6730b	DoC	E.U.T
Notebook PC adaptor	Hipro Electronics	PPP014Y-S	-	Notebook PC
Mouse	Microsoft	Intellimouse optical USB and PS/2 compatible	DoC	Notebook PC
USB Cable	-	-	-	Notebook PC E.U.T
Headset	-	-	-	E.U.T

1.4 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (M)
Dual-Band CDMA /EVDO Phone with Bluetooth	Headset jack	-	N	(D)1.4
	USB data	Y	Y	(P,D)1.0
Notebook PC	USB (Mouse)	-	Y	(D)1.8

* The marked "(D)" means the data cable and "(P)" means the power cable.

1.5 Noise Suppression Parts on Cable. (I/O cable)

Product Name	Port	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
Dual-Band CDMA /EVDO Phone with Bluetooth	Headset jack	N	-	Y	E.U.T End
	USB data	N	-	Y	Both End
Notebook PC	USB (Mouse)	Y	Notebook PC End	Y	Notebook PC End

1.6 Test Methodology

Both Conducted and Radiated testing was performed according to the procedures in ANSI C63.4/2003. Radiated testing was performed at an antenna to E.U.T distance of 3 ㎜

1.7 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data are located at the 254-1, Maekok-ri, Hobup-myun, Ichon-si, Kyoungki-do, 467-701, KOREA. The site is constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. Detailed description of test facility was submitted to the Commission and accepted dated June 10, 2009. (Registration Number: 90661)

1.8 Frequency Range of Radiated Measurements

An unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a Radiated Emission limit is specified, up to the frequency shown in the following table

Highest frequency generated or used in the device or on which the device operates or tunes (㎒)	**Upper frequency of measurement range** (㎒)
Below 1.705	30
1.705 to 108	1 000
108 to 500	2 000
500 to 1 000	5 000
Above 1 000	5^{th} harmonic of the highest frequency or 40 ㎓, whichever is lower

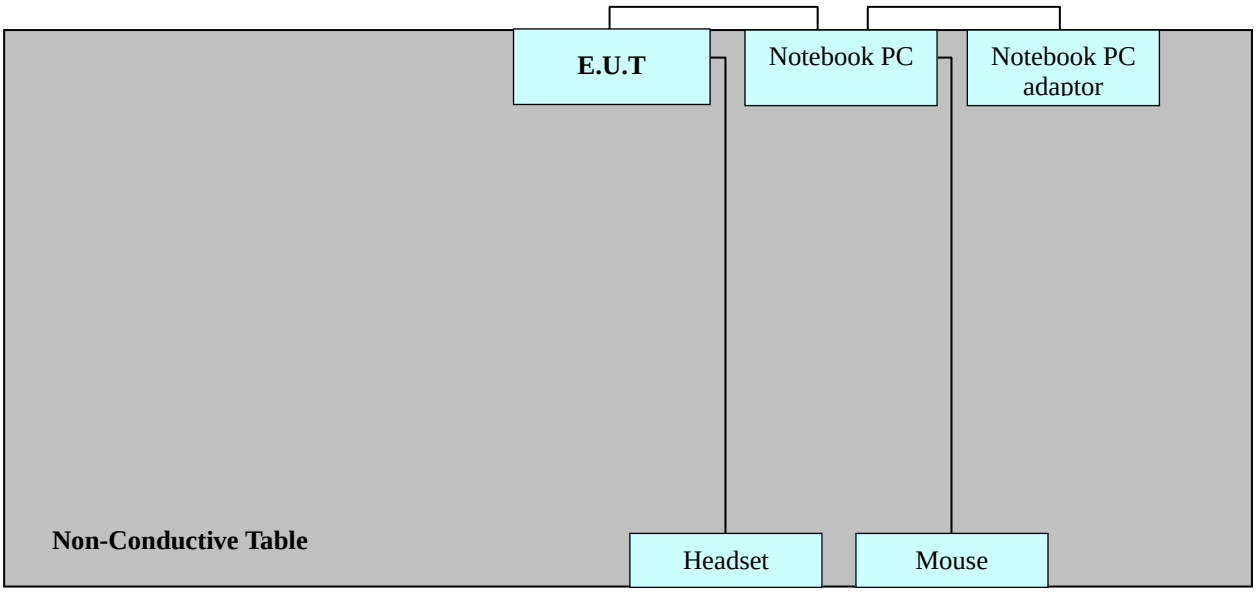
2. SYSTEM TEST CONFIGURATION

2.1 Configuration of Test System

Power Line Conducted test : E.U.T was connected to LISN via Notebook PC adaptor. Preliminary Power Line Conducted Emission tests were performed by using the procedure in ANSI C63.4/2003 7.2.3 to determine the worst operating conditions.

Radiated Emission test : Preliminary Radiated Emission tests were performed by using the procedure in ANSI C63.4/2003 8.3.1.1 to determine the worst operating condition. Final Radiated Emission tests were performed at 3 m open area test site.

[Configuration of Tested System]



Power Line: 110 VAC

3. PRELIMINARY TEST

3.1 Conducted Emission Test

During preliminary tests, the following operating mode was investigated:

Operation Mode	The Worst Operating Condition
Data Communication	○

3. 2 Radiated Emission Test

During preliminary tests, the following operating mode was investigated:

Operation Mode	The Worst Operating Condition
Data Communication	○
Camera	
MP3	

4. CONDUCTED AND RADIATED EMISSION TEST SUMMARY

4.1 Conducted Emission Test

The following table shows the highest levels of conducted emissions on both polarization of hot and neutral line.

Limit apply to	: CISPR 22 Class B
Result	: Passed by 6.5 dB
Operating condition	: Data Communication mode
Detector	: Quasi-Peak, Average (6 dB Bandwidth: 9 ㎑)
Temperature	: 26.5 °C
Humidity level	: 35.4 %
Test date	: April 12, 2010

Power Line Conducted Emissions			CISPR 22 Class B		
Frequency (MHz)	**Amplitude** (dB㎶)	**Conductor**	**Result**	**Limit** (dB㎶)	**Margin** (dB)
0.1500	54.6	HOT	Quasi-Peak	66.0	11.4
0.1500	53.1	NEUTRAL	Quasi-Peak	66.0	12.9
0.7360	39.5	NEUTRAL	Average	46.0	6.5
0.7400	38.8	HOT	Average	46.0	7.2

※ **NOTE:** Refer to page 10 to page 13 for details.

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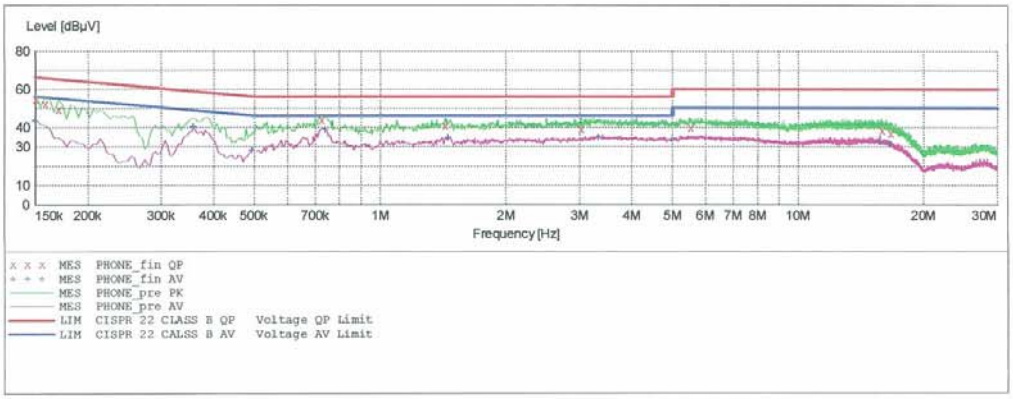
EUT: C751
Manufacturer: CASIO HITACHI MOBILE COMMUNICATIONS CO
Operating Condition: DATA MODE
Test Site: SHIELD ROOM
Operator: DS-KIM
Test Specification: CISPR22 CLASS B
Comment: H

SCAN TABLE: "CISPR22 CLASS B"

Short Description: CISPR22 CLASS B

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	500.0 kHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	ESH3 (20100210)
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	ESH3 (20100210)
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	ESH3 (20100210)



MEASUREMENT RESULT: "PHONE_fin QP"

4/12/2010 5:03PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150001	54.60	10.1	66	11.4	---	---
0.158001	52.10	10.1	66	13.4	---	---
0.170001	49.30	10.1	65	15.7	---	---
0.724000	44.00	10.1	56	12.0	---	---
1.428000	40.90	10.1	56	15.1	---	---
3.028000	38.90	10.3	56	17.1	---	---
5.528000	39.80	10.5	60	20.2	---	---
15.860000	38.40	11.3	60	21.6	---	---
16.652000	36.80	11.4	60	23.2	---	---

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MEASUREMENT RESULT: "PHONE_fin AV"

4/12/2010 5:03PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150001	43.20	10.1	56	12.8	---	---
0.358001	40.20	10.1	49	8.6	---	---
0.494001	28.10	10.1	46	18.0	---	---
0.740000	38.80	10.1	46	7.2	---	---
1.456000	34.70	10.1	46	11.3	---	---
3.336000	34.70	10.3	46	11.3	---	---
5.000000	33.60	10.4	46	12.4	---	---
15.716000	32.50	11.3	50	17.5	---	---
16.612000	31.30	11.4	50	18.7	---	---

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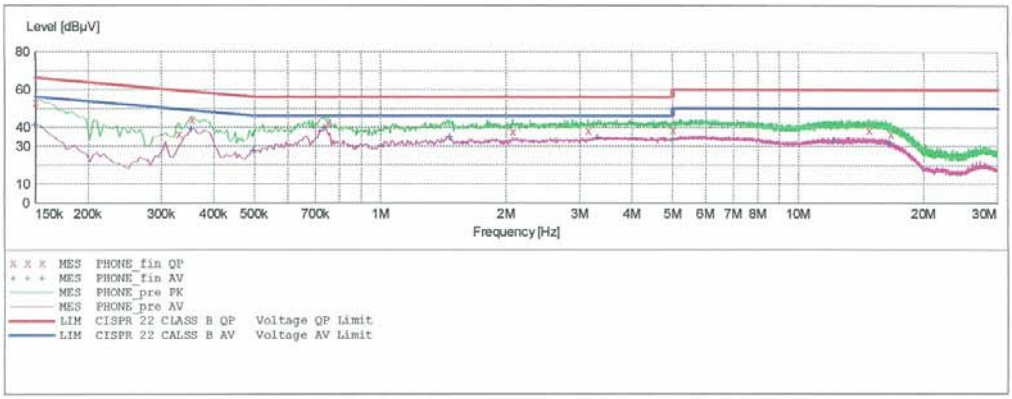
EMC

EUT: C751
Manufacturer: CASIO HITACHI MOBILE COMMUNICATIONS CO
Operating Condition: DATA MODE
Test Site: SHIELD ROOM
Operator: DS-KIM
Test Specification: CISPR22 CLASS B
Comment: N

SCAN TABLE: "CISPR22 CLASS B"

Short Description: CISPR22 CLASS B

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	500.0 kHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	ESH3 (20100210)
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	ESH3 (20100210)
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	ESH3 (20100210)



MEASUREMENT RESULT: "PHONE_fin QP"

4/12/2010 5:06PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150001	53.10	10.1	66	12.9	---	---
0.330001	36.30	10.0	60	23.2	---	---
0.354001	43.80	10.1	59	15.1	---	---
0.748000	42.60	10.1	56	13.4	---	---
2.072000	37.80	10.2	56	18.2	---	---
3.136000	38.30	10.3	56	17.7	---	---
5.000000	38.50	10.4	56	17.5	---	---
14.780000	38.50	11.2	60	21.5	---	---
16.660000	36.40	11.4	60	23.6	---	---

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MEASUREMENT RESULT: "PHONE_fin AV"

4/12/2010 5:06PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150001	41.00	10.1	56	15.0	---	---
0.354001	38.90	10.1	49	10.0	---	---
0.498001	27.70	10.1	46	18.3	---	---
0.736000	39.50	10.1	46	6.5	---	---
1.468000	34.80	10.1	46	11.2	---	---
3.316000	34.30	10.3	46	11.7	---	---
5.000000	33.30	10.4	46	12.7	---	---
12.172000	32.90	11.0	50	17.1	---	---
16.556000	31.30	11.4	50	18.7	---	---

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4.2 Radiated Emission Test

The following table shows the highest levels of Radiated Emissions on both polarization of horizontal and vertical.

Limit apply to	: FCC PART 15 Subpart B
Result	: Passed by 7.5 dB
Operating condition	: Data Communication mode
Detector	: Quasi-Peak (6 dB Bandwidth: 120 ㎑)
Temperature	: 13.0 °C
Humidity level	: 37.8 %
Test date	: April 29, 2010

Frequency	Reading	Ant. Factor	Cable Loss	Ant. POL	Total	Limit	Margin
㎒	dB㎶	dB/m	dB	(H/V)	dB㎶/m	dB㎶/m	dB
40.6	19.7	12.1	0.7	V	32.5	40.0	7.5
55.2	14.3	12.3	0.7	V	27.3	40.0	12.7
137.6	13.5	12.1	1.3	H	26.9	43.5	16.6
285.1	13.8	12.6	1.8	H	28.2	46.0	17.8
350.1	15.2	14.1	2.0	H	31.3	46.0	14.7
732.2	7.6	21.5	3.0	V	32.1	46.0	13.9

5. FIELD STRENGTH CALCULATION

The field strength is calculated by adding the antenna factor and cable factor.
The basic equation with a sample calculation is as follows:

FS = RA + AF + CF

Where FS = Field Strength

RA = Receiver Amplitude

AF = Antenna Factor

CF = Cable Attenuation Factor

Assume a receiver reading of 21.5 dBμV is obtained. The antenna factor of 7.4 dB/m and a cable factor of 1.1 dB are added. The 30 dBμV/m value is mathematically converted to its corresponding level in μV/m.

FS = 21.5 + 7.4 + 1.1 = 30 dBμV/m

[Radiated Emission Limits]

Frequency of Emission (㎒)	Field Strength	
	μV/m	dBμV/m
30 to 88	100	40.0
88 to 216	150	43.5
216 to 960	200	46.0
Above 960	500	54.0

6. TEST EQUIPMENT

	Type	Manufacturer	Model Number	Next CAL Date
Conducted Emission				
☒	EMI Test Receiver	Rohde & Schwarz	ESCI	2010.06.02
☒	LISN	Rohde & Schwarz	ESH3-Z5	2011.02.05
☐	LISN	Rohde & Schwarz	ENV216	2011.04.06
☒	Attenuator	Rohde & Schwarz	ESH3-Z2	2010.10.30
Radiated Emission				
☒	EMI Test Receiver	Rohde & Schwarz	ESI40	2010.10.30
☒	Trilog Antenna	Schwarzbeck	VULB9160	2010.12.18
☒	Antenna Master	HD	MA240	-
☒	Turn Table	EMCO	1060	-
☐	Communication Antenna	TDK	LPDA-0802	-
☐	Antenna Position Tower	HD	240/520/00	-
☐	Base Station	Rohde & Schwarz	CMU 200	2011.02.17
☒	Horn Antenna	Schwarzbeck	BBHA 9120D	2011.03.26
☒	RF-Amplifier	MITEQ	AMF-6D-00101800 -35.20P.PS	2010.05.20
☐	Bluetooth Base Station	TESCOM	TC-3000A	2011.01.07

7. CONCLUSION

The data collected shows that the **CASIO HITACHI Mobile Communications Co., Ltd. Dual-Band CDMA/EVDO Phone with Bluetooth, Model: C751, FCC ID: TYKNX9300** complies with §15.107 and §15.109 of the FCC rules.