

Report No.: EI/2009/80001 Issue Date: Aug. 21, 2009

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## ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

# UN-INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART B CERTIFICATION REQUIREMENT

0F

Product Name: CDMA TS003

FCC ID: WVS-CN10-J03

**Report No.:** EI/2009/80003

**Issue Date:** Aug. 21, 2009

FCC Rule Part: Part 15 B, Class B

Filing Type: Certification

Prepared for: Toshiba Corporation, Mobile

**Communications Co., Quality Management** 

**Division** 

1-1, Asahigaoka 3-Chome, Hino-Shi, Tokyo,

191-8555, Japan

Prepared by: SGS Taiwan Ltd.

**Electronics & Communication Laboratory** 

No. 134, Wu Kung Rd., Wuku Industrial

**Zone, Taipei County, Taiwan** 





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## VERIFICATION OF COMPLIANCE

**Applicant:** Toshiba Corporation, Mobile Communications Co., Quality

Management Division

1-1, Asahigaoka 3-Chome, Hino-Shi, Tokyo, 191-8555, Japan

**Manufacturer:** Toshiba Corporation, Mobile Communications Co., Quality

Management Division

1-1, Asahigaoka 3-Chome, Hino-Shi, Tokyo, 191-8555, Japan

**Product Name:** CDMA TS003

FCC ID: WVS-CN10-J03

File Number: EI/2009/70003

Date of test: Aug. 06, 2009 ~ Aug. 20, 2009

**Date of EUT Receive:** Aug. 06, 2009

## We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15B, Class B. The test results of this report relate only to the tested sample identified in this report.

Test By:	Eur Su	Date:	Aug. 21, 2009	
,	Eric Su / Asst. Supervisor			
Prepared By:	Evaloro	Date:	Aug. 21, 2009	
	Eva Kao / Asst. Supervisor			
Approved By:	Timent Su	Date:	Aug. 21, 2009	
	Vincent Su / Manager			

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## Version

Version No.	Date	Description
00	Aug. 21, 2009	Initial creation of document

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## 1. GENERAL INFORMATION

#### General:

ochciai.				
Product Name:	CDMA TS003			
FCC ID:	WVS-CN10-J03			
Software Version:	N/A	N/A		
Hardware Version:	Ver.2.0			
Data Cable:	N/A			
Simple Hands-free (SHF)	N/A			
Power Supply:	3.7 Vdc re-chargeable battery or 5Vdc by AC/DC power adapter			
i ower suppry.	Battery: Model: ES036A; Supplier: SANYO GS			

## CDMA:

DUT Standards	CDMA2000	Frequency Range		Rated Maximum ERP/EIRP Power	
And Power:	Cellular	TX:	824.70-848.31 MHz	25.69	dBm
	Cellular		869.70-893.31 MHz	23.09 UDIII	
Type of Emission		CDM	CDMA2000 Cellular: 1M25F9W		
Antenna Type		Print Type			
MEID:		A1000006F70820			

**Final Amplifier Voltage and Current Information:** 

Test Mode	DC voltage (V)	DC current (mA)
CDMA2000 Cellular	5.0Vdc	980

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#### Bluetooth:

Frequency Range:	2402 – 2480MHz
Bluetooth Version:	V2.1 + EDR (GFSK + $\pi$ /4DQPSK + 8DPSK)
Channel number:	79 channels
Transmit Power:	4.4 dBm (Peak)
Modulation type:	Frequency Hopping Spread Spectrum
Antenna Designation:	Chip Antenna, -2dBi.

The EUT is compliance with Bluetooth 2.1 + EDR Standard.

## FeliCa:

FeliCa Receive Frequency:	13.56MHz
---------------------------	----------

The FeliCa only support receiving function.



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#### 1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID:** <u>WVS-CN10-J03</u> filing to comply with Part15 Subpart B, class B of the FCC CFR 47 Rules.

## 1.3 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 EUT distance 3 meters.

## 1.4 Test Facility

The measurement facilities used to collect the 3m Radiated Emission and AC power line conducted data are located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003. FCC Registration Number are: 990257 and 236194, Canada Registration Number: 4620A-1

The 10 m Open Area Test Sites located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No. 29, Pau-Tou-Tsuo Valley Chia-Pau Tsuen, Linkou Hsiang, Taipei county, which is constructed and calibrated to meet the CISPR 22/EN 55022 requirements. SGS Site No. 1(3 & 10 meters) and FCC Registration Number: 94644

## 1.5 Special Accessories

Not available for this EUT intended for grant.

## 1.6 Equipment Modifications

Not available for this EUT intended for grant.



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## **System Test Configuration**

## 2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

#### 2.2 EUT Exercise

The Toshiba CDMA cellular phone FCC ID: WVS-CN10-J03 was tested with a computer connected via USB interface port. The Phone drivers were installed on the computer to be able to communicate with the phone by continuously sending a querying text file (AT commands) to the phone using HyperTerminal. For more information please see section 5.4 and section 6.5 for test data and APPENDIX 1 for set-up photographs.

#### 2.3 Test Procedure

#### 2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the requirements in Section 7 of ANSI C63.4-2003. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode.

## 2.3.2 Radiated Emissions

The EUT is placed on a turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 8 of ANSI C63.4-2003.

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#### 2.4 Limitation

#### **(1) Conducted Emission**

According to section 15.107(a), Conducted Emission Class B Limits is as following.

Frequency range	Class B Limits dB (uV)				
MHz	Quasi-peak	Average			
0.15 to 0.50	66 to 56	56 to 46			
0.50 to 5	56	46			
5 to 30	60	50			

#### Note

## (2) Radiated Emission

According to section 15.109(a), Radiated Emission Class B Limits is as following:

Frequency (MHz)	Field strength $\mu V/m$	Distance (m)	Field strength at 3m dBµV/m
30-88	100	3	40
88-216	150	3	43.5
216-960	200	3	46
Above 960	500	3	54

Remark: 1. Emission level in dBuV/m=20 log (uV/m)

2. Measurement was performed at an antenna to the closed point of EUT distance of 3 meters.

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<sup>1.</sup> The lower limit shall apply at the transition frequencies

<sup>2.</sup> The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.



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## 2.5 Configuration of Tested System

Fig. 2-1 Configuration of Tested System (config 1, 3)

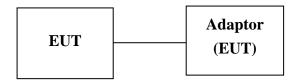


Fig. 2-2 Configuration of Tested System (config 2)



Fig. 2-3 Configuration of Tested System (config 4)

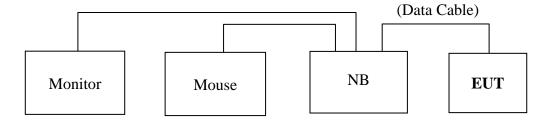


Fig. 2-4 Configuration of Tested System (Remote Side)

**CMU200** 

Table 2-1 Support Equipment Used in Tested System

	Table 2 1 Support Equipment Osca in Testea System						
Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	<b>Power Cord</b>	
1.	Notebook	IBM	T43	L3LKVL9	Shielded	Un-shielded	
2.	Mouse	HP	MO42KOA	0307012110	Shielded	N/A	
3.	Monitor	HP	HSTND-2F02	CND7122S7B	Shielded	Un-shielded	
4.	USB Cable	N/A	N/A	N/A	1.1m, Shielded	N/A	
5.	Radio Communication Analyzer	R&S	CMU200	102189	N/A	Un-shielded	

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## 3. Summary of Test Results

FCC Rules	<b>Description Of Test</b>	Result
§15.107	Conducted Emission Class B	Compliant
§15.109	Radiated Emission Class B	Compliant

## 4. Description of test modes

The EUT was stayed in normal operation mode with CMU200 and continues receiving for Felica function.

The data cable was connected to notebook PC and data transferred by program.

#### Test Plan:

	Config 1	Config 2	Config 3	Config 4	
Applicable standard (FCC)		Part	15B		
Accessories	UE	UE	UE	UE	
	+ Battery	Battery + Battery		+ Battery	
	+ AC Adaptor		+ AC Adaptor	+ USB cable	
Description	Au	dio	Video	Data	
radiated emission (30-1G &	Dlavina	Dlavina	Camera REC	Data link	
1G above)	Playing	Playing	Camera REC	Data link	
conducted emission (AC	Dlavina	N/A	Camera REC	Data link	
Power)	Playing	IN/A	Camera REC	Data link	



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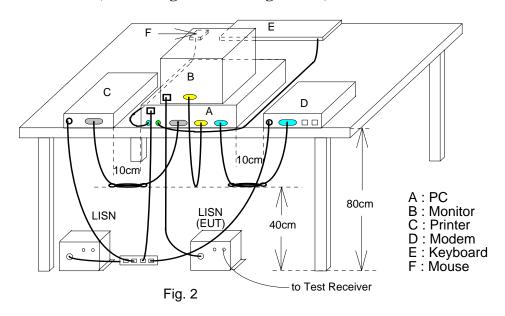
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## 5. Conducted Emissions Test

#### **5.1** Measurement Procedure:

- 1. The EUT was placed on a table which is 0.8m above ground plane.
- 2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 3. Repeat above procedures until all frequency measured were complete.

## **5.2** Test SET-UP (Block Diagram of Configuration)



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## 5.3 Measurement Equipment Used:

	Conducted Emission Test Site											
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.							
TYPE		NUMBER	NUMBER	CAL.								
EMI Test Receiver	R&S	ESCS30	828985/004	09/16/2008	09/15/2009							
LISN	Rolf-Heine	NNB-2/16Z	99012	02/18/2009	02/17/2010							
LISN	FCC	FCC-LISN-50/250-25-2-01	04034	02/18/2009	02/17/2010							
Coaxial Cables	N/A	WK CE Cable	N/A	10/30/2008	10/29/2009							

#### **5.4** Measurement Result

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

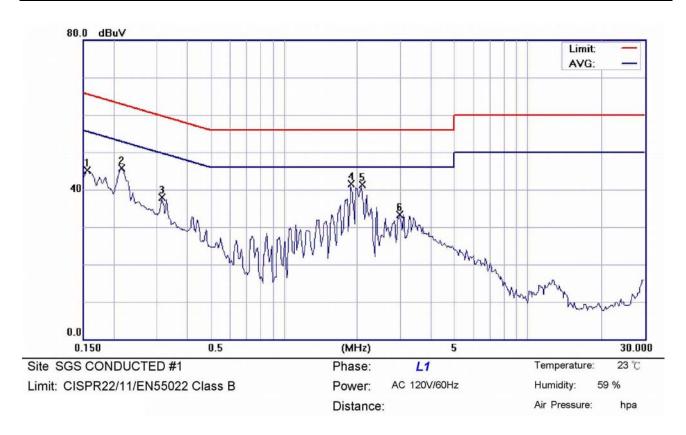


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## AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	Config 1	Test Date:	Aug. 06, 2009
		Test By:	Eric



Note: Charge + play 1KHz mode (UE + battery + adaptor; UE: No.4 STSGB002283 64)

No. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1550	44.93	0.17	45.10	65.73	-20.63	peak	
2	0.2150	45.65	0.12	45.77	63.01	-17.24	peak	
3	0.3150	37.75	0.10	37.85	59.84	-21.99	peak	
4 *	1.8800	41.39	0.13	41.52	56.00	-14.48	peak	
5	2.0900	41.25	0.13	41.38	56.00	-14.62	peak	
6	2.9800	33.21	0.14	33.35	56.00	-22.65	peak	

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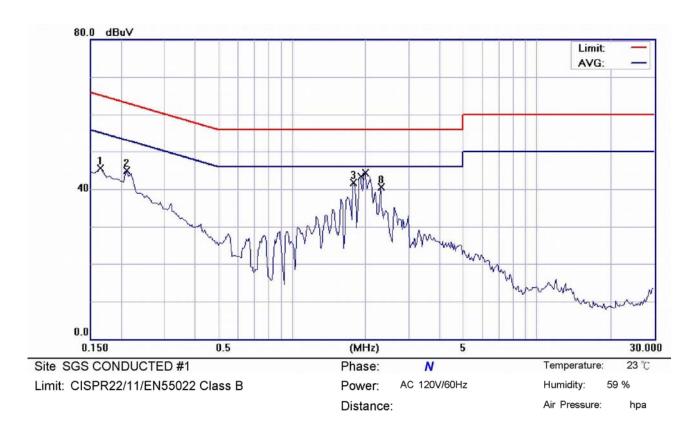
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Note: Charge + play 1KHz mode (UE + battery + adaptor; UE: No.4 STSGB002283 64)

No. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1650	45.28	0.18	45.46	65.21	-19.75	peak	
2	0.2100	44.85	0.14	44.99	63.21	-18.22	peak	
3 *	1.7800	41.66	0.14	41.80	56.00	-14.20	peak	
4	1.8939	39.85	0.15	40.00	56.00	-16.00	QP	
5	1.8939	20.00	0.15	20.15	46.00	-25.85	AVG	
6	1.9879	40.45	0.15	40.60	56.00	-15.40	QP	
7	1.9879	16.11	0.15	16.26	46.00	-29.74	AVG	
8	2.3000	40.44	0.15	40.59	56.00	-15.41	peak	

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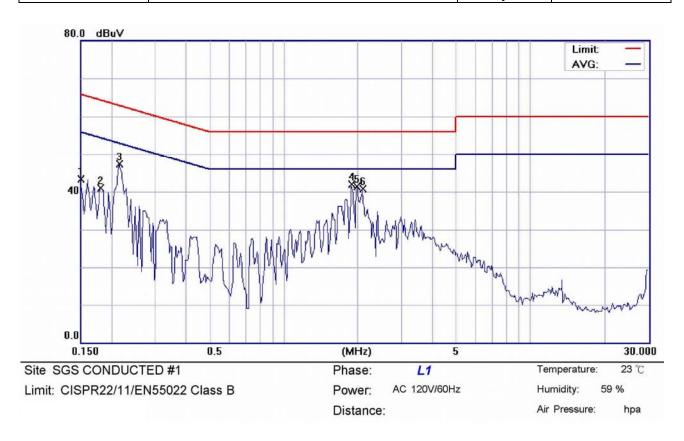


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## AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	Config 3	Test Date:	Aug. 06, 2009
		Test By:	Eric



Note: Charge + camera REC mode (UE + battery + adaptor; UE: No.4 STSGB002283 64)

No. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1500	43.17	0.18	43.35	66.00	-22.65	peak	
2	0.1800	40.76	0.14	40.90	64.49	-23.59	peak	
3	0.2150	47.23	0.12	47.35	63.01	-15.66	peak	
4 *	1.8800	41.73	0.13	41.86	56.00	-14.14	peak	
5	1.9800	41.24	0.13	41.37	56.00	-14.63	peak	
6	2.0900	40.57	0.13	40.70	56.00	-15.30	peak	

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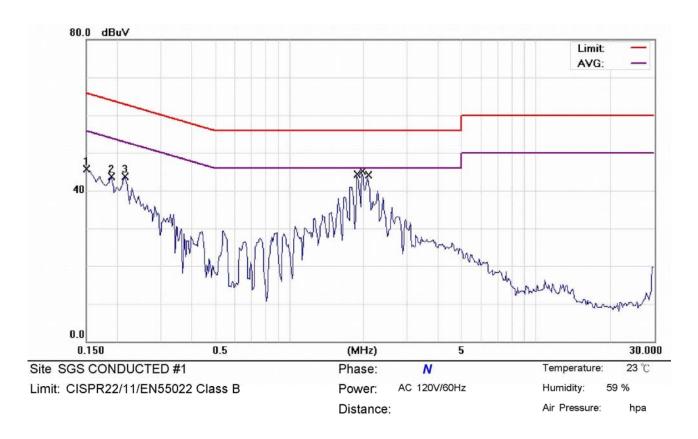
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Note: Charge + camera REC mode (UE + battery + adaptor; UE: No.4 STSGB002283 64)

No. N	۱k.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	45.49	0.20	45.69	66.00	-20.31	peak	
2		0.1900	43.63	0.15	43.78	64.04	-20.26	peak	
3		0.2150	43.65	0.14	43.79	63.01	-19.22	peak	
4		1.8852	39.61	0.15	39.76	56.00	-16.24	QP	
5		1.8852	21.14	0.15	21.29	46.00	-24.71	AVG	
6 *		1.9877	40.09	0.15	40.24	56.00	-15.76	QP	
7		1.9877	17.78	0.15	17.93	46.00	-28.07	AVG	
8		2.0891	38.45	0.15	38.60	56.00	-17.40	QP	
9		2.0891	16.06	0.15	16.21	46.00	-29.79	AVG	

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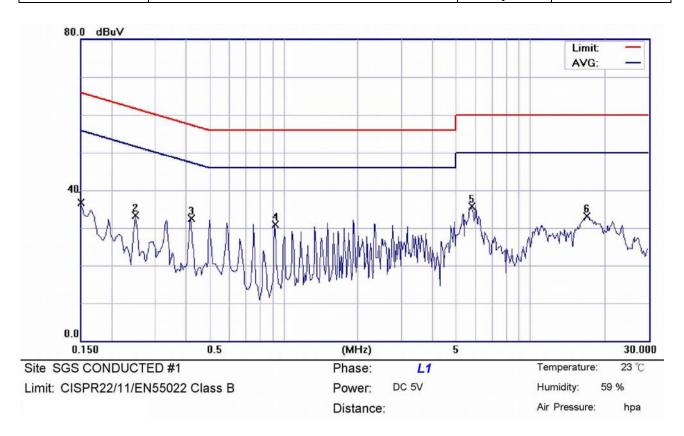


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## AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	Config 4	Test Date:	Aug. 06, 2009
		Test By:	Eric



Note: Data link (UE + battery + USB cable; UE: No.4 STSGB002283 64)

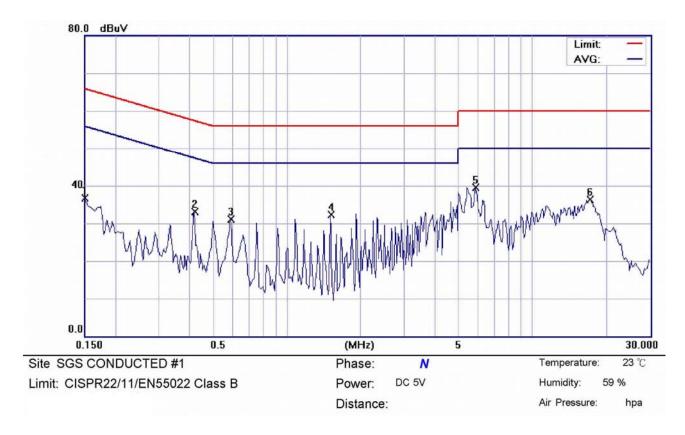
No. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1500	36.23	0.41	36.64	66.00	-29.36	peak	
2	0.2500	33.16	0.14	33.30	61.76	-28.46	peak	
3	0.4200	32.35	0.08	32.43	57.45	-25.02	peak	
4	0.9200	30.86	0.04	30.90	56.00	-25.10	peak	
5 *	5.7800	35.72	0.07	35.79	60.00	-24.21	peak	
6	17.0000	33.00	0.14	33.14	60.00	-26.86	peak	

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Note: Data link (UE + battery + USB cable; UE: No.4 STSGB002283 64)

No. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over			
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment	
1	0.1500	36.27	0.40	36.67	66.00	-29.33	peak		
2	0.4200	33.03	0.07	33.10	57.45	-24.35	peak		
3	0.5900	31.07	0.05	31.12	56.00	-24.88	peak		
4	1.5050	32.20	0.03	32.23	56.00	-23.77	peak		
5 *	5.8600	39.51	0.09	39.60	60.00	-20.40	peak		
6	17.1600	36.04	0.20	36.24	60.00	-23.76	peak		

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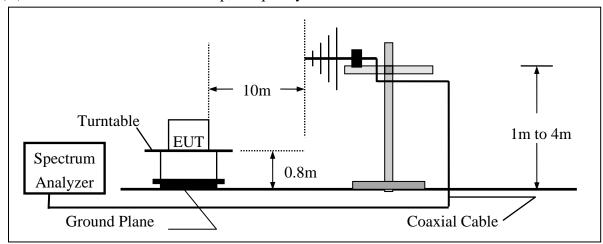
## 6. Radiated Emission Test

## **6.1** Measurement Procedure

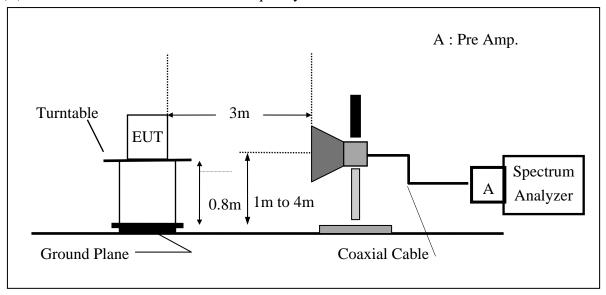
- 1. The EUT was placed on a turn table which is 0.8m above ground plane.
- 2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- And also, each emission was to be maximized by changing the polarization of 3. receiving antenna both horizontal and vertical.
- 4. Repeat above procedures until all frequency measured were complete.

## **6.2** Test SET-UP (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



## (B) Radiated Emission Test Set-UP Frequency Over 1 GHz



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## 6.3 Measurement Equipment Used:

	10m Open Area Test Site											
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.							
TYPE		NUMBER	NUMBER	CAL.								
EMI Test Receiver	R&S	ESCI	100335	02/05/2009	02/04/2010							
RF-Amplifier	Agilent	8447D	2944A09469	11/30/2008	11/29/2009							
Broadband Antenna	SCHWAZBECK	VULB9160	9160-3224	03/11/2009	03/02/2010							
Turn Table	HD	DT420	420/542	N/A	N/A							
Antenna Master	HD	MA 240	240/515	N/A	N/A							
Controller	HD	HD 100	100/589	N/A	N/A							
Low Loss Cable	N/A	OS RE Cable	N/A	11/30/2008	11/29/2009							

		966 Chamber			
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
TYPE		NUMBER	NUMBER	CAL.	
Spectrum Analyzer	R&S	FSP 40	100034	02/12/2009	02/11/2010
Bilog Antenna	SCHWAZBECK	VULB9160	9160-3136	11/15/2008	11/14/2009
Horn antenna	SCHWAZBECK	BBHA 9120D	9120D-320	03/14/2009	03/13/2010
Pre-Amplifier	Agilent	8447D	1937A02834	11/30/2008	11/29/2009
Pre-Amplifier	Agilent	8449B	3008A01973	01/05/2009	01/04/2010
Turn Table	HD	DT420	N/A	N.C.R	N.C.R
Antenna Tower	HD	MA240-N	240/657	N.C.R	N.C.R
Controller	HD	HD100	N/A	N.C.R	N.C.R
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-10M	10m	01/05/2009	01/04/2010
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	01/05/2009	01/04/2010

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## 6.4 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

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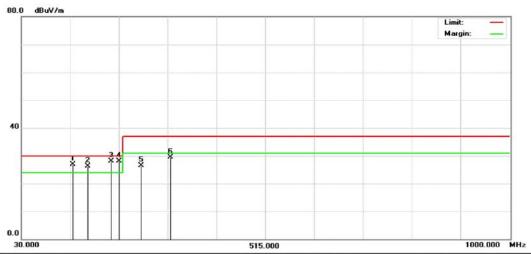
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## 6.5 Measurement Result (below 1G)

Test Mode: Config 1 Test Date: Aug. 20, 2009

Frequency Range: 30MHz-1GHz Test By: Eric



Site :10M Open Site
Limit: CISPR22\CISPR11\EN55022 Class B 10M

Polarization: Vertical
Power: AC120V/60Hz

Distance: 10m

Temperature: 27 °C Humidity: 62%

Humidity: 62%
AirPressure: hpe

Note: Charge + play 1KHz mode (UE + battery + adaptor; UE: No.4 STSGB002283 64)

No.	Mk	k. Freq.	Reading Level	Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dВ	dBuV/m	dBuV/m	dВ	Detector	Comment	
1	!	132.8200	42.45	-15.58	26.87	30.00	-3.13	QΡ		
2	!	161.9200	40.87	-14.56	26.31	30.00	-3.69	QP		
3	*	208.1000	45.36	-17.26	28.10	30.00	-1.90	QР		
4	!	224.0000	44.21	-16.16	28.05	30.00	-1.95	QP		
5		268.6200	40.17	-13.76	26.41	37.00	-10.59	QР		
6		326.8200	41.23	-11.76	29.47	37.00	-7.53	QР		

#### Remark:

- (1) Measuring frequencies from 30 MHz to the 10GHz  $\circ$
- (2) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurement as necessary.
- (3) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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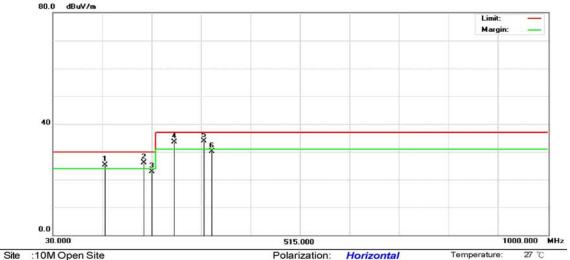


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Test Mode: Config 1 Test Date: Aug. 20, 2009

Test By: Frequency Range: 30MHz-1GHz Eric



Limit: CISPR22\CISPR11\EN55022 Class B 10M Power: AC120V/60Hz Humidity: 62% Distance: 10m AirPressure: hpa

Note: Charge + play 1KHz mode (UE + battery + adaptor ; UE : No.4 STSGB002283 64)

No.	Mk	. Freq.	Reading Level	Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dВ	dBuV/m	dBuV/m	dВ	Detector	Comment	
1	!	132.8200	40.94	-15.58	25.36	30.00	-4.64	QР		
2	!	208.4800	43.30	-17.25	26.05	30.00	-3.95	QP		
3		224.0000	39.13	-16.16	22.97	30.00	-7.03	QP		
4	!	268.2400	47.24	-13.78	33.46	37.00	-3.54	QP		
5	*	326.8200	45.64	-11.76	33.88	37.00	-3.12	QР		
6		342.3400	41.66	-11.48	30.18	37.00	-6.82	QP		

## Remark:

- (1) Measuring frequencies from 30 MHz to the 10GHz •
- (2) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurement as necessary.
- (3) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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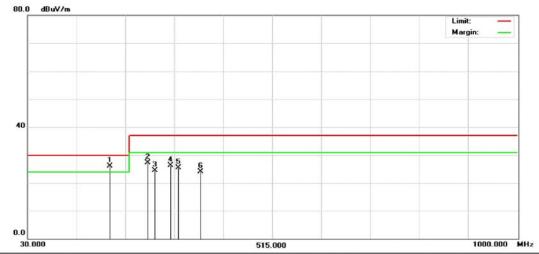


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Test Mode: Config 2 Test Date: Aug. 20, 2009

Frequency Range: 30MHz-1GHz Test By: Eric



Site :10M Open Site
Limit: CISPR22\CISPR11\EN55022 Class B 10M

Polarization: Vertical

Temperature: 27 ℃

Power: DC3.7V Distance: 10m Humidity: 62%
AirPressure: hpa

Note: Play 1KHz (UE + battery; UE: No.4 STSGB002283 64)

No.	Mk	. Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dВ	dBuV/m	dBuV/m	dВ	Detector	Comment
1	*	192.4800	43.22	-17.05	26.17	30.00	-3.83	QР	
2		268.6200	41.14	-13.76	27.38	37.00	-9.62	QΡ	
3		282.2000	37.63	-13.09	24.54	37.00	-12.46	QР	
4		313.2400	38.24	-12.00	26.24	37.00	-10.76	QP	
5		328.7600	37.20	-11.72	25.48	37.00	-11.52	QP	
6		373.3800	35.11	-10.92	24.19	37.00	-12.81	QР	

#### Remark:

- (1) Measuring frequencies from 30 MHz to the 10GHz  $\circ$
- (2) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurement as necessary.
- (3) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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Report No.: EI/2009/80001 Issue Date: Aug. 21, 2009

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Test Mode: Config 2 Test Date: Aug. 20, 2009

Test By: Frequency Range: 30MHz-1GHz Eric



Note: Play 1KHz (UE + battery; UE: No.4 STSGB002283 64)

			Reading		Measure-				
No.	Mk	k. Freq.	Level	Factor	ment	Limit	Over		
		MHz	dBuV	dΒ	dBuV/m	dBuV/m	dВ	Detector	Comment
1	*	208.4800	43.65	-17.25	26.40	30.00	-3.60	QP	
2	!	224.0000	42.11	-16.16	25.95	30.00	-4.05	QP	
3		268.2000	44.76	-13.78	30.98	37.00	-6.02	QP	
4		328.7600	42.50	-11.72	30.78	37.00	-6.22	QР	
5	!	342.3400	42.89	-11.48	31.41	37.00	-5.59	QP	
6		373.3800	40.06	-10.92	29.14	37.00	-7.86	QР	

## Remark:

- (1) Measuring frequencies from 30 MHz to the 10GHz •
- (2) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurement as necessary.
- (3) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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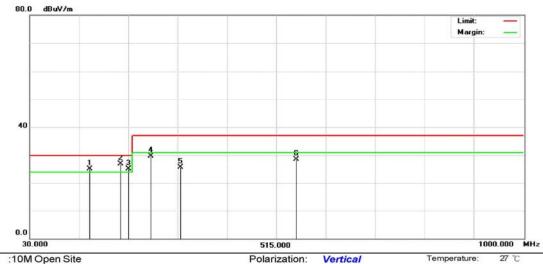


Report No.: EI/2009/80001 Issue Date: Aug. 21, 2009

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Test Mode: Config 3 Test Date: Aug. 20, 2009

Frequency Range: 30MHz-1GHz Test By: Eric



Limit: CISPR22\CISPR11\EN55022 Class B 10M

Polarization: Vertical
Power: AC120V/60Hz
Distance: 10m

Temperature: 27 °C
Humidity: 62%
AirPressure: hpa

Note: Charge + camera REC mode (UE + battery + adaptor; UE : No.4 STSGB002283 64)

			Reading		Measure-	-				
No.	Mk	. Freq.	Level	Factor	ment	Limit	Over			
		MHz	dBuV	dВ	dBuV/m	dBuV/m	dВ	Detector	Comment	
1	!	148.3400	40.02	-14.94	25.08	30.00	-4.92	QP		
2	*	207.6200	44.21	-17.26	26.95	30.00	-3.05	QP		
3	!	224.0000	41.32	-16.16	25.16	30.00	-4.84	QP		
4		268.6200	43.55	-13.76	29.79	37.00	-7.21	QP		
5		326.8200	37.47	-11.76	25.71	37.00	-11.29	QP		
6		553 8000	35.56	-7.04	28 52	37.00	-8 48	OP		

#### Remark:

- (1) Measuring frequencies from 30 MHz to the 10GHz  $\circ$
- (2) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurement as necessary.
- (3) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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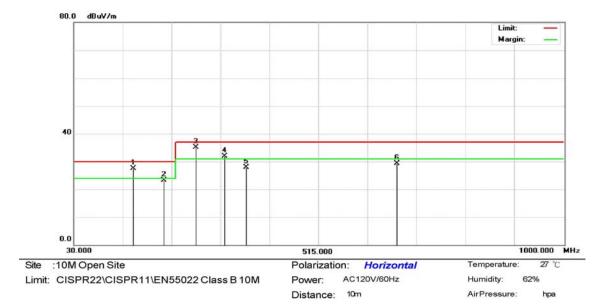


Report No.: EI/2009/80001 Issue Date: Aug. 21, 2009

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Test Mode: Config 3 Test Date: Aug. 20, 2009

Test By: Frequency Range: 30MHz-1GHz Eric



Note: Charge + camera REC mode (UE + battery + adaptor ; UE : No.4 STSGB002283 64)

No.	Mk	. Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dВ	dBuV/m	dBuV/m	dВ	Detector	Comment
1	!	148.3400	42.44	-14.94	27.50	30.00	-2.50	QP	
2		208.4800	40.63	-17.25	23.38	30.00	-6.62	QP	
3	*	271.4200	48.77	-13.61	35.16	37.00	-1.84	QP	
4	!	328.7600	43.55	-11.72	31.83	37.00	-5.17	QP	
5		371.4400	38.78	-10.95	27.83	37.00	-9.17	QР	
6		670.2000	33.41	-4.18	29.23	37.00	-7.77	QP	

## Remark:

- (1) Measuring frequencies from 30 MHz to the 10GHz •
- (2) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurement as necessary.
- (3) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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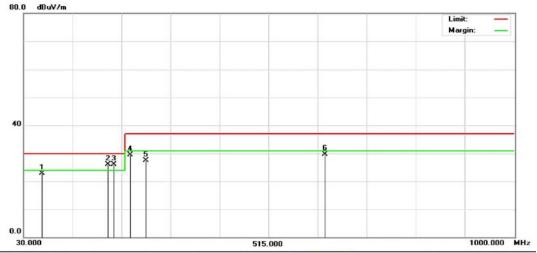


Report No.: EI/2009/80001 Issue Date: Aug. 21, 2009

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Test Mode: Config 4 Test Date: Aug. 20, 2009

Test By: Frequency Range: 30MHz-1GHz Eric



:10M Open Site Limit: CISPR22\CISPR11\EN55022 Class B 10M

Polarization: Vertical Power: DC5V

Distance: 10m

Temperature 27 °C Humidity: 62% AirPressure:

Note: Data link (UE + battery +USB cable ; UE : No.4 STSGB002283 64)

No.	Mk	. Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dВ	dBuV/m	dBuV/m	dВ	Detector	Comment
1		64.5400	40.51	-17.65	22.86	30.00	-7.14	QP	
2	*	196.3600	43.36	-17.20	26.16	30.00	-3.84	QP	
3	!	207.7400	43.27	-17.26	26.01	30.00	-3.99	QP	
4		240.1200	44.49	-14.96	29.53	37.00	-7.47	QΡ	
5		270.1100	41.11	-13.68	27.43	37.00	-9.57	QΡ	
6		624.2400	34.64	-4.92	29.72	37.00	-7.28	QР	

#### Remark:

- (1) Measuring frequencies from 1GHz to the 13GHz •
- (2) All Readings above 1GHz are Peak and Average measurement as necessary.
- (3) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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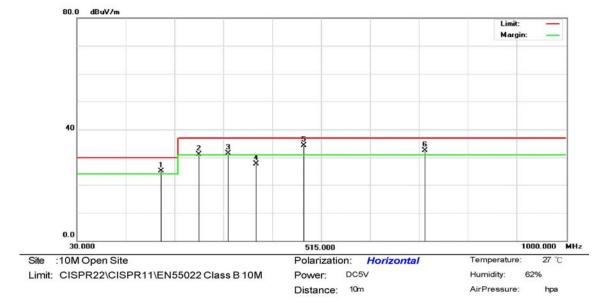


Report No.: EI/2009/80001 Issue Date: Aug. 21, 2009

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Test Mode: Config 4 Test Date: Aug. 20, 2009

Test By: Frequency Range: 30MHz-1GHz Eric



Note: Data link (UE + battery +USB cable ; UE : No.4 STSGB002283 64)

No.	Mk	. Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dВ	dBuV/m	dBuV/m	dВ	Detector	Comment
1	!	196.6200	42.34	-17.21	25.13	30.00	-4.87	QΡ	
2	!	270.1200	44.71	-13.68	31.03	37.00	-5.97	QP	
3	!	328.6200	43.30	-11.72	31.58	37.00	-5.42	QP	
4		386.4700	38.47	-10.69	27.78	37.00	-9.22	QP	
5	*	481.0500	42.73	-8.41	34.32	37.00	-2.68	QΡ	
6	!	720.0600	35.65	-3.06	32.59	37.00	-4.41	QP	

## Remark:

- (1) Measuring frequencies from 1GHz to the 13GHz •
- (2) All Readings above 1GHz are Peak and Average measurement as necessary.
- (3) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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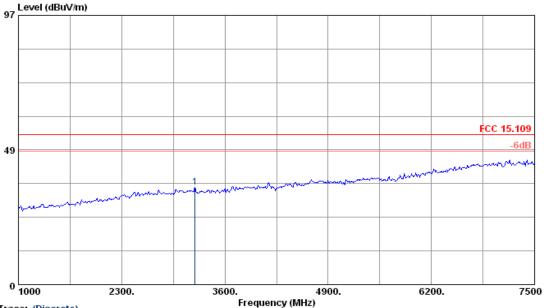


Report No.: EI/2009/80001 Issue Date: Aug. 21, 2009

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Test Mode: Aug. 20, 2009 Config 1 Test Date:

Frequency Range: 1GHz – 7.5GHz Test By: Nick



Trace: (Discrete)

: FCC 15.109 3m BBHA9120D VERTICAL Condition

Project No. EI-2009-80001 Applicant : Toshiba

EUT Description

EUT Model Test Mode Charge + play 1 KHz (UE+battery+adaptor)

Temp./Humid. Operator

: (No.4 STSGB002283 64)

Limit Read Freq Pol/Phase Level Factor Level MHz dBuV dB/m dBuV/m dBuV/m 1 p 3223.00 VERTICAL 45.65 -10.41 35.24 54.00 -18.76

#### Remark:

- (1) Measuring frequencies from 1GHz to the 7.5GHz •
- (2) All Readings above 1GHz are Peak and Average measurement as necessary.
- (3) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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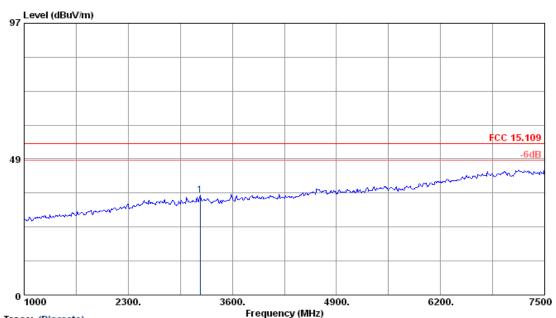


Report No.: EI/2009/80001 Issue Date: Aug. 21, 2009

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Test Mode: Aug. 20, 2009 Config 1 Test Date:

Frequency Range: 1GHz – 7.5GHz Test By: Nick



Trace: (Discrete)

Condition FCC 15:109 3m BBHA9120D HORIZONTAL

: EI-2009-80001 Project No. Applicant : Toshiba EUT Description

**EUT Model** 

Test Mode Charge + play 1 KHz (UE+battery+adaptor)

Temp./Humid. 24/60 Operator Nick

: (No.4 STSGB002283 64)

Read Over Freq Pol/Phase Level Factor Level MHz dBuV dB/m dBuV/m dBuV/m 1 p 3197.00 HORIZONTAL 46.16 -10.40 35.76 54.00 -18.24

#### Remark:

- (1) Measuring frequencies from 1GHz to the 7.5GHz.
- (2) All Readings above 1GHz are Peak and Average measurement as necessary.
- (3) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, consist of the Company is stated time less taken the less report carrier to enjoy of the sample(s) less than the state and such as a feet that the sample(s) less than the sa

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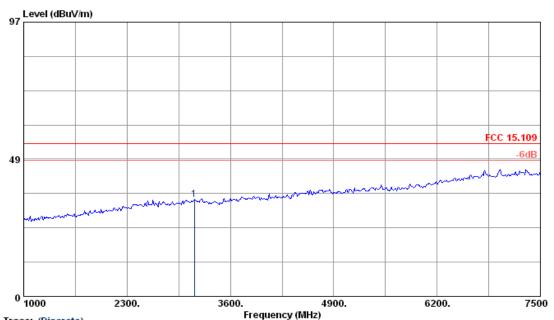


Report No.: EI/2009/80001 Issue Date: Aug. 21, 2009

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Test Mode: Aug. 20, 2009 Config 2 Test Date:

Frequency Range: 1GHz – 7.5GHz Test By: Nick



Trace: (Discrete)

Condition FCC 15.109 3m BBHA9120D VERTICAL

Project No. : El-2009-80001 Applicant · Toshiba

**EUT Description** EUT Model

Test Mode : Play 1 KHz (UE+battery+adaptor)

Temp:/Humid. : 24/60 Operator : Nick

: (No.4 STSGB002283 64)

Freq Pol/Phase Level Factor Level MHz dB/m dBuV/m dBuV/m dBuV

1 p 3145.00 VERTICAL 44.79 -10.38 34.41 54.00 -19.59

#### Remark:

- (1) Measuring frequencies from 1GHz to the 7.5GHz •
- (2) All Readings above 1GHz are Peak and Average measurement as necessary.
- (3) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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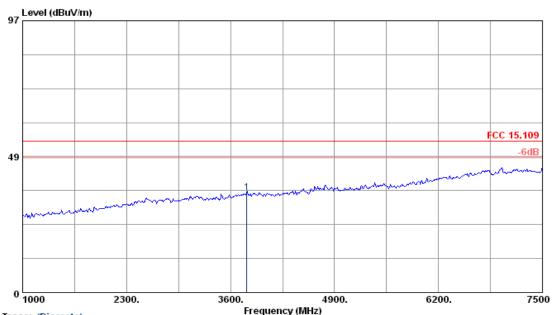


Report No.: EI/2009/80001 Issue Date: Aug. 21, 2009

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Test Mode: Aug. 20, 2009 Config 2 Test Date:

Frequency Range: 1GHz – 7.5GHz Test By: Nick



Trace: (Discrete)

Condition FCC 15:109 3m BBHA9120D HORIZONTAL

EI-2009-80001 Project No.

Applicant Toshiba

EUT Description EUT Model

Test Mode Play 1 KHz (UE+battery+adaptor)

Temp./Humid. 24/60

Operator Nick

: (No.4 STSGB002283 64)

Freq Pol/Phase Level Factor Level dBuV dB/m dBuV/m dBuV/m MHz 1 p 3801.50 HORIZONTAL 44.22 -8.59 35.63 54.00 -18.37

## Remark:

- (1) Measuring frequencies from 1GHz to the 7.5GHz.
- (2) All Readings above 1GHz are Peak and Average measurement as necessary.
- (3) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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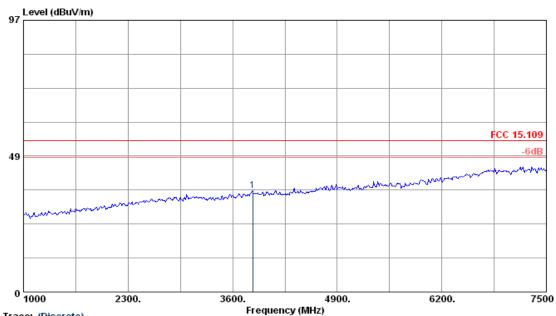


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Test Mode: Aug. 20, 2009 Config 3 Test Date:

Frequency Range: 1GHz – 7.5GHz Test By: Nick



Trace: (Discrete) Condition

FCC 15.109 3m BBHA9120D VERTICAL

Project No. El-2009-80001

Applicant Toshiba

EUT Description **EUT Model** 

Test Mode Charge +camera REC (UE+battery+adaptor)

Temp./Humid. : Nick

Operator

: (No.4 STSGB002283 64)

Limit Over Freq Pol/Phase Level Factor Level MHz dBuV dB/m dBuV/m dBuV/m

44.89 -8.60 36.29 54.00 -17.71 1 p 3847.00 VERTICAL

#### Remark:

- (1) Measuring frequencies from 1GHz to the 7.5GHz •
- (2) All Readings above 1GHz are Peak and Average measurement as necessary.
- (3) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, consist of the Company is stated time less taken the less report carrier to enjoy of the sample(s) less than the state and such as a feet that the sample(s) less than the sa

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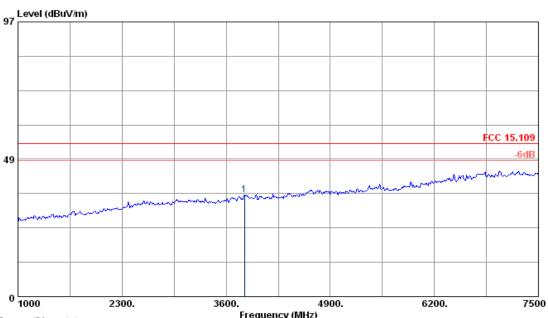


Report No.: EI/2009/80001 **Issue Date: Aug. 21, 2009** 

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Test Mode: Aug. 20, 2009 Config 3 Test Date:

Frequency Range: 1GHz – 7.5GHz Test By: Nick



Trace: (Discrete)

: FCC 15.109 3m BBHA9120D HORIZONTAL Condition

FI-2009-80001 Project No. Applicant Toshiba

EUT Description EUT Model

Test Mode Charge + camera REC (UE+battery+adaptor)

Temp./Humid. 24/60 Operator Nick

: (No.4 STSGB002283 64)

Limit Over Read Freq Pol/Phase Level Factor Level MHz dBuV dB/m dBuV/m dBuV/m

1 p 3827.50 HORIZONTAL 44.67 -8.64 36.03 54.00 -17.97

#### Remark:

- (1) Measuring frequencies from 1GHz to the 7.5GHz.
- (2) All Readings above 1GHz are Peak and Average measurement as necessary.
- (3) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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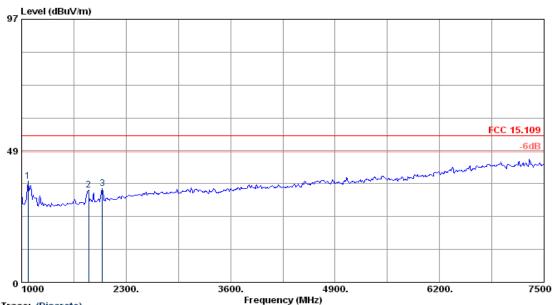


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Test Mode: Config 4 Aug. 20, 2009 Test Date:

Frequency Range: 1GHz – 7.5GHz Test By: Nick



Trace: (Discrete)

Condition FCC 15:109 3m BBHA9120D VERTICAL

Project No. El-2009-80001 Toshiba Applicant

**EUT Description EUT Model** 

: Data link mode (UE+battery+USB cable) Test Mode

Temp./Humid. : 24/60 Operator Nick

: (No.4 STSGB002283 64) Read

	`	Pol/Phase	Read	Factor	Level	Limit Line	Over Limit
-	MHz		dBu∀	dB/m	$\overline{dBuV/m}$	$\overline{dBuV/m}$	dB
1 p 2 3	1832.00	VERTICAL VERTICAL VERTICAL	47.29	-15.90 -13.19 -12.64	34.10	54.00	-19.90

#### Remark:

- (1) Measuring frequencies from 1GHz to the 7.5GHz •
- (2) All Readings above 1GHz are Peak and Average measurement as necessary.
- (3) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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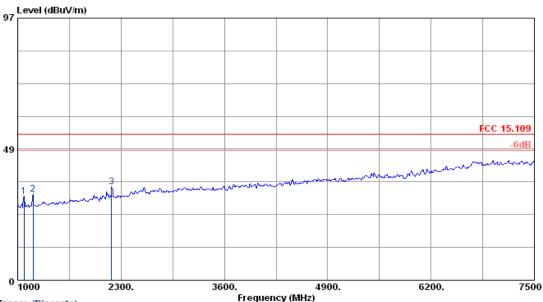


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Test Mode: Aug. 20, 2009 Config 4 Test Date:

Frequency Range: 1GHz – 7.5GHz Test By: Nick



Trace: (Discrete) Condition

: FCC 15.109 3m BBHA9120D HORIZONTAL

EI-2009-80001 Project No. Applicant Toshiba

EUT Description EUT Model

Test Mode : Data link mode (UE+battery+USB cable)

Temp./Humid. Operator

: (No.4 STSGB002283 64)

		Freq	Pol/Phase	Read Level		Level	Limit Line	Over Limit
		MHz		dBu∀	dB/m	$\overline{dBuV/m}$	$\overline{dBuV/m}$	dB
1 2 3	1	195.00	HORIZONTAL HORIZONTAL HORIZONTAL	47.41	-15.61	31.80	54.00	-22.20

#### Remark:

- (1) Measuring frequencies from 1GHz to the 7.5GHz.
- (2) All Readings above 1GHz are Peak and Average measurement as necessary.
- (3) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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