

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT****UN-INTENTIONAL RADIATOR CERTIFICATION TO  
FCC PART 15 SUBPART B CLASS II CHANGE CERTIFICATION  
REQUIREMENT**

OF

**Product Name:** CDMA TSX01

**Brand Name:** N/A

**Marketing Name:** Dots Obsession, Full Happiness With Dots

**Model:** Dot

**Model Difference:** N/A

**Report No.:** EI/2009/40009

**Issue Date:** May 11, 2009

**FCC Rule Part:** Part 15 B, Class B

**Filing Type:** Certification

**Prepared for:** Toshiba Corporation, Mobile Communications  
Co., Quality Management Division  
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**Prepared by:** SGS Taiwan Ltd.  
Electronics & Communication Laboratory  
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## VERIFICATION OF COMPLIANCE

**Applicant /** Toshiba Corporation, Mobile Communications Co., Quality  
**Manufacturer:** Management Division  
1-1, Asahigaoka 3-Chome, Hino-Shi, Tokyo, 191-8555, Japan  
**Product Name:** CDMA TSX01  
**FCC ID:** WVS-CN10-J01  
**Brand Name:** N/A  
**Marketing Name:** Dots Obsession, Full Happiness With Dots  
**Model:** Dot  
**Model Difference:** N/A  
**File Number:** EI/2009/40009  
**Date of test:** Dec. 11, 2008 ~ May 08, 2008  
**Date of EUT Receive:** Dec. 11, 2008

## 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:

Nick Lin

Date:

May 11, 2009

Nick Lin / Engineer

Prepared By:

Eva Kao

Date:

May 11, 2009

Eva Kao / Asst. Supervisor

Approved By:

Vincent Su

Date:

May 11, 2009

Vincent Su/Manager

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## Version

Version No.	Date	Description
00	May 11, 2009	Initial creation of document

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## 1. GENERAL INFORMATION

### 1.1 General:

Type Name:	CDMA TSX01	
Brand Name:	N/A	
Marketing Name:	Dots Obsession, Full Happiness With Dots	
Model:	Dot	
Model Difference:	N/A	
Data Cable (USB)	N/A	
Simple Hands-free (SHF)	N/A	
Power Supply:	3.7 Vdc re-chargeable battery or 5Vdc by AC/DC power adapter	
	Battery Model:	61TSUAA, Brand: KDDI

### CDMA 2000:

DUT Standards and Power:	CDMA2000	Frequency Range		Maximum Output Power	
	BC0	TX:	824.70-848.31 MHz	24.09 dBm	
		RX:	869.70-893.37 MHz		
Final Amplifier Voltage and Current Information				DC voltage (V)	DC current (mA)
		CDMA 2000 Cellular		3.7Vdc	920
Type of Emission		1M25F9W			
MEID		A1000006E707D5			
Software Version		N/A			
Hardware Version		CS sample			
Antenna Type		PIFA			

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# Bluetooth:

Bluetooth Version	<input type="checkbox"/> V1.1 (GFSK) <input type="checkbox"/> V1.2 (GFSK) <input type="checkbox"/> V2.0 (GFSK) <input checked="" type="checkbox"/> V2.0 + EDR (GFSK + $\pi/4$ DQPSK + 8DPSK) <input type="checkbox"/> V2.1 + EDR (GFSK + $\pi/4$ DQPSK + 8DPSK)
Frequency Range	2402 – 2480MHz
Channel number	79 channels max., 1MHz step
Rated Power	0.41 dBm (Peak)
Modulation type	Frequency Hopping Spread Spectrum
Antenna Designation	Metal Antenna / 2.1dBi.
Type of Emission	1M28FXD

The EUT is compliance with Bluetooth 2.0 with EDR.

This test report applies for CDMA 2000 and BT function.



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

This submittal(s) (test report) is intended for **FCC ID: WVS-CN10-J01** 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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## 2. 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-J01 was tested with CMU200.

### 2.3 Test Procedure

#### 2.3.1 Conducted Emissions

The EUT is placed on a 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.



## 2.4 Limitation

### (1) Conducted Emission

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

Frequency range MHz	Class B Limits dB (uV)	
	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		
1.The lower limit shall apply at the transition frequencies		
2.The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

### (2) Radiated Emission

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

Frequency (MHz)	Field strength $\mu\text{V/m}$	Distance (m)	Field strength at 3m $\text{dB}\mu\text{V/m}$
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  $\text{dB}\mu\text{V/m}=20 \log (\mu\text{V/m})$

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

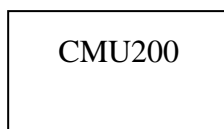
## 2.5 Configuration of Tested System

**Fig. 2-2 Configuration of Tested System**



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

(Remote Side)



**Table 2-1 Equipment Used in Tested System**

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1.	EUT	N/A	T001	N/A	90cm, shielded	N/A
2.	Battery	KDDI	61TSUAA	N/A	N/A	N/A

**Table 2-2 Support Equipment Used in Tested System**

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1.	Radio Communication Analyzer	R&S	CMU200	102189	N/A	Un-shielded
2.	Adapter	MITSUMI	0203PQA			

### 3. Summary of Test Results

FCC Rules	Description Of Test	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.

Test Plan:

1.Charge Mode

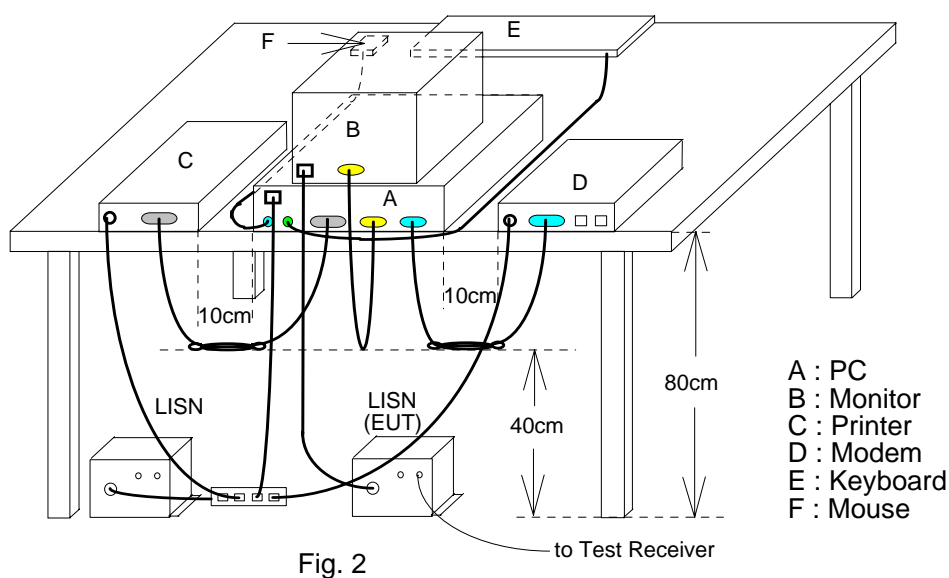
Mid channel of cellular band was worst case for both Conducted Emission and Radiated Emission test.

## 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 TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EMI Test Receiver	R&S	ESCS30	828985/004	09/16/2008	09/15/2009
LISN	Rolf-Heine	NNB-2/16Z	99012	02/18/2008	02/17/2009
LISN	FCC	FCC-LISN-50/250-25-2-01	04034	02/18/2008	02/17/2009
Transient Limiter	R&S	ESH3Z2	357.8810.52	05/19/2008	05/18/2009
50 Ohms terminator	N/A	EMC-049-1	N/A	06/04/2008	06/03/2009
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.

## AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	Charge Mode		Test Date:	Dec. 11, 2008	
Temperature:	26 °C	Humidity:	61 %	Test By:	Jazz

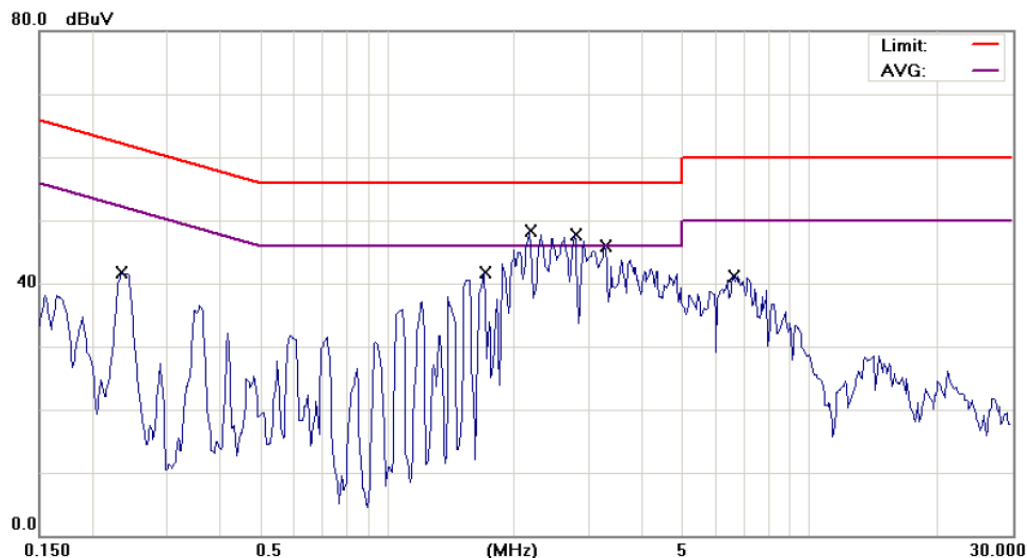
### Conducted Emission Measurement

File :toshiba

Data :#5

Date: 2008/12/11

Time: 下午 07:57:13



Site SGS CONDUCTED #1

Phase: L1

Temperature: 26 °C

Limit: FCC Class B Conduction(QP)

Power: AC 120V/60Hz

Humidity: 61 %

EUT: CDMA TS001

Distance:

Air Pressure: hpa

M/N: T001

Note: charge mode

No.	Mk.	Freq. MHz	Reading Level dBuV	Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.2350	39.50	0.15	39.65	62.27	-22.62	QP	
2		0.2350	29.20	0.15	29.35	52.27	-22.92	AVG	
3		1.7000	39.50	0.04	39.54	56.00	-16.46	QP	
4		1.7000	21.20	0.04	21.24	46.00	-24.76	AVG	
5		2.1800	45.70	0.04	45.74	56.00	-10.26	QP	
6		2.1800	23.90	0.04	23.94	46.00	-22.06	AVG	
7	*	2.7900	45.90	0.04	45.94	56.00	-10.06	QP	
8		2.7900	24.20	0.04	24.24	46.00	-21.76	AVG	
9		3.2900	44.30	0.05	44.35	56.00	-11.65	QP	
10		3.2900	25.40	0.05	25.45	46.00	-20.55	AVG	
11		6.6200	34.20	0.09	34.29	60.00	-25.71	QP	
12		6.6200	18.20	0.09	18.29	50.00	-31.71	AVG	

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## Conducted Emission Measurement

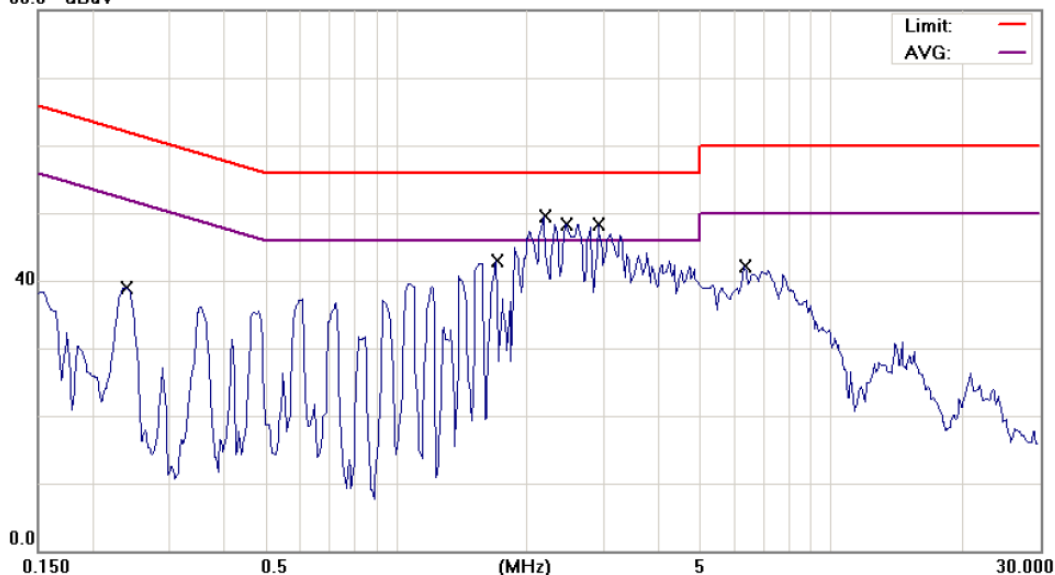
File :toshiba

Data :#6

Date: 2008/12/11

Time: 下午 08:05:14

80.0 dBuV



Site SGS CONDUCTED #1

Phase: N

Temperature: 26 °C

Limit: FCC Class B Conduction(QP)

Power: AC 120V/60Hz

Humidity: 61 %

EUT: CDMA TS001

Distance:

Air Pressure: hpa

M/N: T001

Note: charge mode

No.	Mk.	Freq.	Reading Level	Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.2400	37.10	0.13	37.23	62.10	-24.87	QP	
2		0.2400	25.00	0.13	25.13	52.10	-26.97	AVG	
3		1.7000	41.70	0.03	41.73	56.00	-14.27	QP	
4		1.7000	21.20	0.03	21.23	46.00	-24.77	AVG	
5	*	2.1900	47.60	0.03	47.63	56.00	-8.37	QP	
6		2.1900	25.60	0.03	25.63	46.00	-20.37	AVG	
7		2.4500	45.80	0.03	45.83	56.00	-10.17	QP	
8		2.4500	22.20	0.03	22.23	46.00	-23.77	AVG	
9		2.9200	45.20	0.03	45.23	56.00	-10.77	QP	
10		2.9200	25.40	0.03	25.43	46.00	-20.57	AVG	
11		6.3200	35.80	0.11	35.91	60.00	-24.09	QP	
12		6.3200	20.80	0.11	20.91	50.00	-29.09	AVG	

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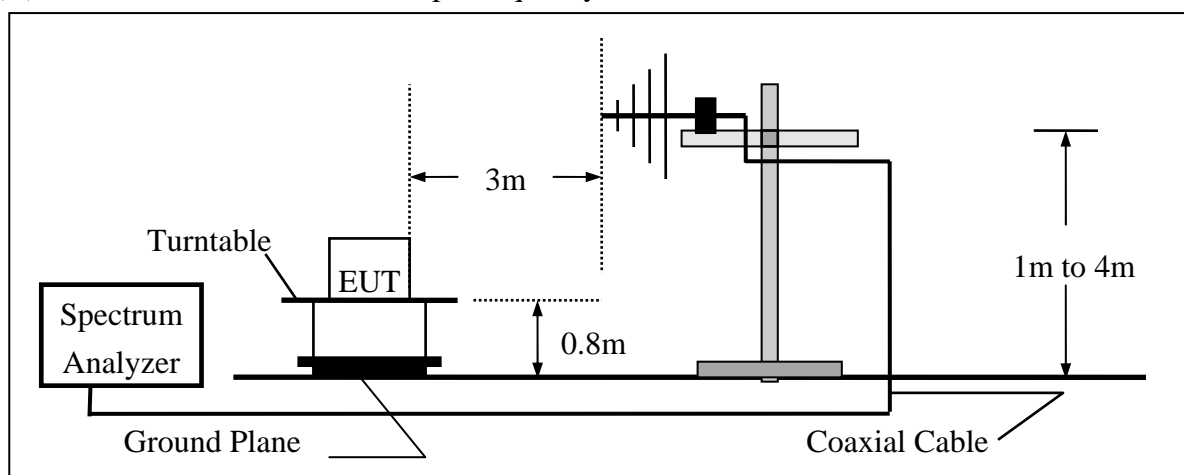
## 6. Radiated Emission Test

### 6.1 Measurement Procedure

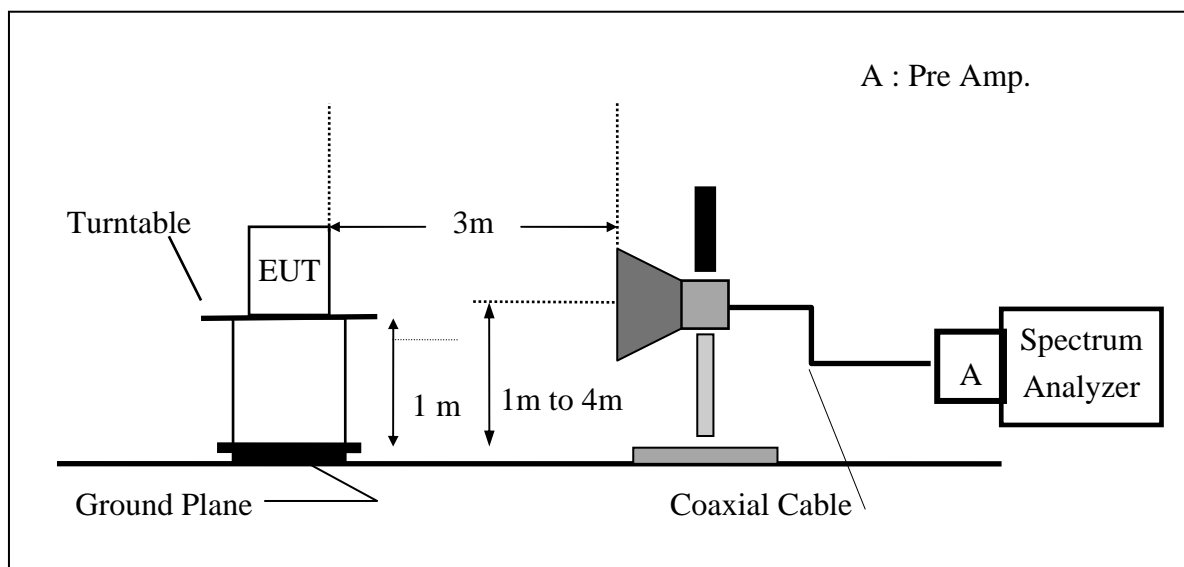
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above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

966 Chamber					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
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-673	05/09/2008	05/08/2010
Pre-Amplifier	Agilent	8447D	1937A02834	11/30/2008	11/29/2009
Pre-Amplifier	Agilent	8449B	3008A01973	01/05/2009	01/04/2010
Radio Communication Analyzer	R & S	CMU200	102189	05/13/2008	05/12/2010
Radio Communication Analyzer	Anritsu	MT8820A	6200307563	04/16/2008	04/15/2010
DC Block	Agilent	BLK-18	155452	07/05/2008	07/04/2009
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
3m Site	SGS	966 chamber	N/A	11/08/2008	11/09/2009

### 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:

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

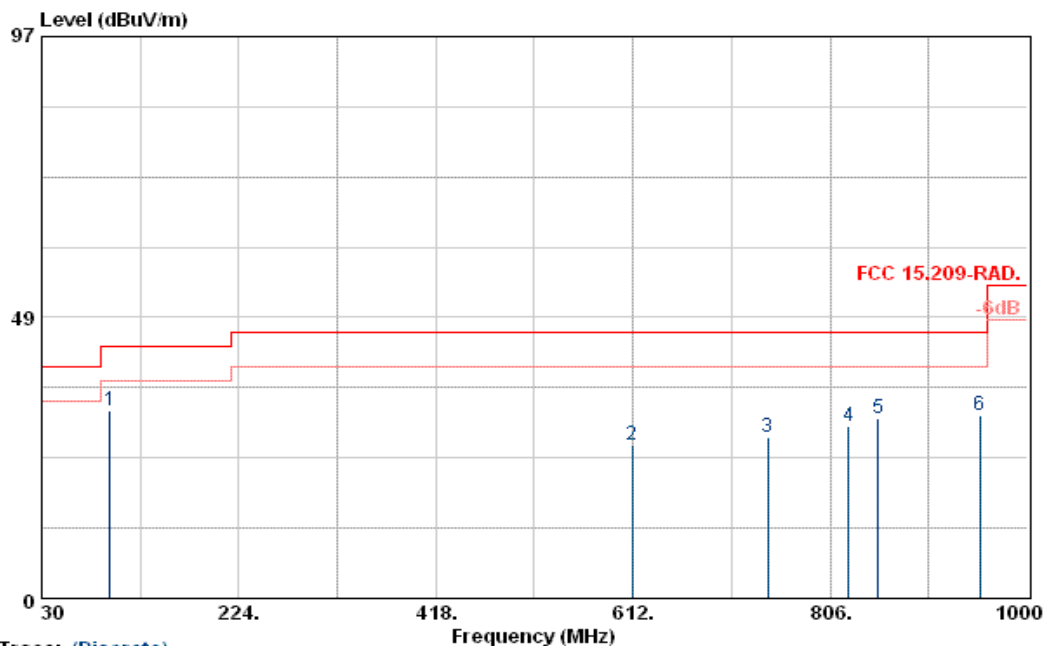
Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

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## 6.5 Measurement Result (below 1G)

Test Mode: Charge Mode  
Frequency Range: 30MHz-1GHz  
Temperature : 25 °C

Test Date : May 08, 2009  
Test By: Nick  
Humidity : 65 %



Trace: (Discrete)

Site : RF SITE  
Condition : FCC 15.209-RAD. 3m VULB9160-09 VERTICAL 149cm 360deg  
Project No. : EH/2009/40021  
Applicant : Toshiba  
EUT Description : KDFO KYI  
EUT Model : CN10-J01  
Test Mode : CHARGE MODE  
Temp./Humid. : 25/65  
Operator : nick

	Freq	Read	Factor	Level	Limit	Over	Remark
	MHz	Level			Line	Limit	
		dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	96.93	50.25	-17.91	32.34	43.50	-11.16	Peak
2	611.03	31.96	-5.39	26.57	46.00	-19.43	Peak
3	744.89	31.04	-3.12	27.92	46.00	-18.08	Peak
4	824.43	31.05	-1.41	29.64	46.00	-16.36	Peak
5	853.53	32.23	-1.29	30.94	46.00	-15.06	Peak
6	953.44	31.00	0.51	31.51	46.00	-14.49	Peak

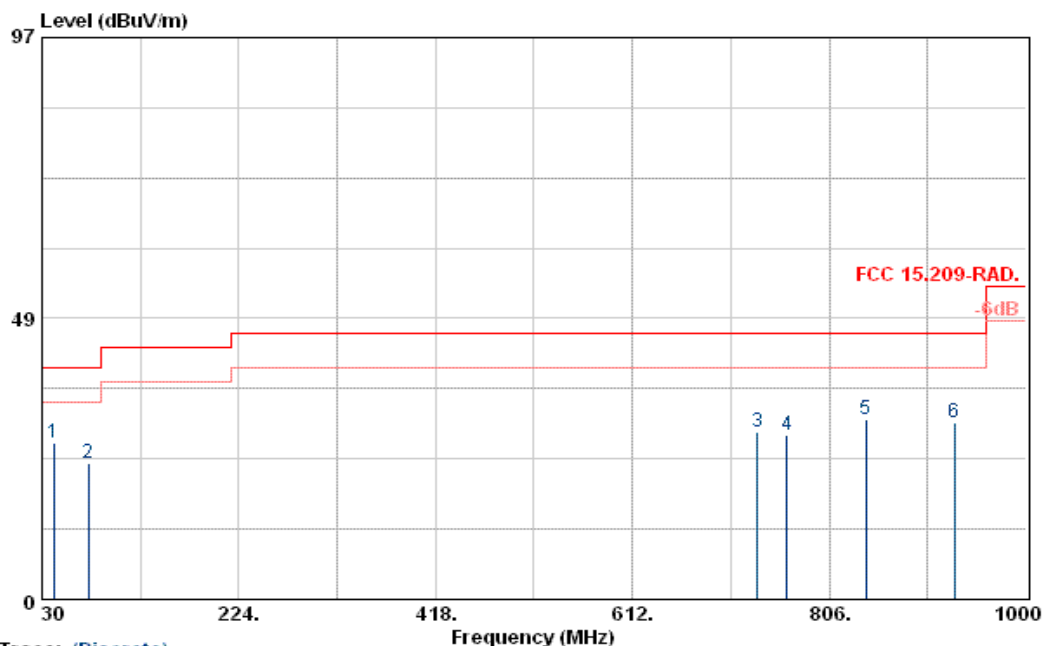
Remark :

- (1) Measuring frequencies from 30 MHz to the 1GHz .
- (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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Test Mode: Charge Mode  
Frequency Range: 30MHz-1GHz  
Temperature : 25 °C

Test Date : May 08, 2009  
Test By: Nick  
Humidity : 65 %



Trace: (Discrete)  
Site : RF SITE  
Condition : FCC 15.209-RAD. 3m VULB9160-09 HORIZONTAL 149cm 0deg  
Project No. : EH/2009/40021  
Applicant : Toshiba  
EUT Description : KDFC KYI  
EUT Model : CN10-J01  
Test Mode : CHARGE MODE  
Temp./Humid. : 25/65  
Operator : nick

	Freq	Read	Factor	Level	Limit	Over	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	41.64	41.45	-14.49	26.96	40.00	-13.04	Peak
2	75.59	40.41	-17.03	23.38	40.00	-16.62	Peak
3	735.19	32.12	-3.33	28.79	46.00	-17.21	Peak
4	764.29	31.40	-2.99	28.41	46.00	-17.59	Peak
5	841.89	32.28	-1.29	30.99	46.00	-15.01	Peak
6	929.19	31.29	-0.78	30.51	46.00	-15.49	Peak

## Remark :

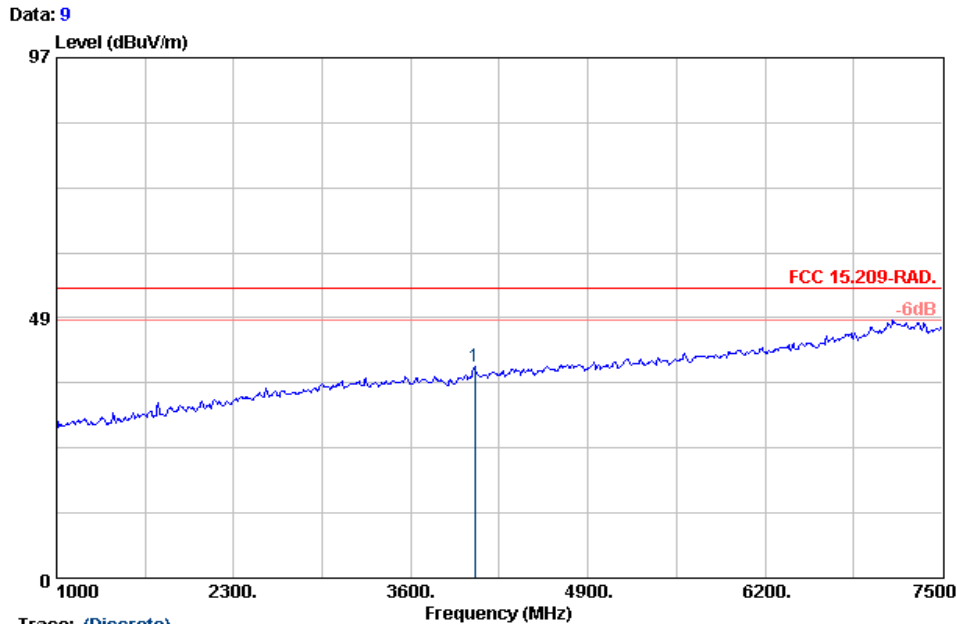
- (1) Measuring frequencies from 30 MHz to the 1GHz .
- (2) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurement as necessary.
- (3) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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## Measurement Result (above 1G)

Test Mode: Charge Mode  
 Frequency Range: 1GHz – 7.5GHz  
 Temperature : 25 °C

Test Date : Dec. 25, 2008  
 Test By: Jazz  
 Humidity : 65 %



Site : RF SITE  
 Condition : FCC 15.209-RAD. 3m BBHA9120D VERTICAL  
 Project No. : EI/2008/C0003  
 Applicant : Toshiba  
 EUT Description : CDMA TS001  
 EUT Model : T001  
 Test Mode : charge mode  
 Temp./Humid. : 25/65  
 Operator : Jazz

	Freq	Read Level	Antenna Factor	Preamplifier Factor	Cable Loss	Factor	Level	Limit	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB/m	dBuV/m	dBuV/m	dB	
1	4068.00	35.60	29.79	33.18	7.28	3.89	39.49	54.00	-14.51	Peak

## 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

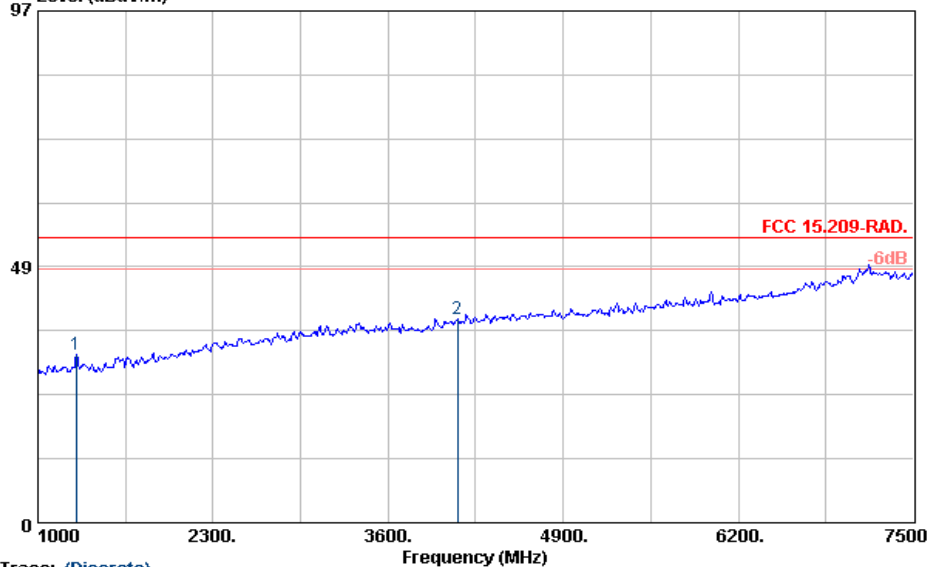
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Test Mode: Charge Mode  
 Frequency Range: 1GHz – 7.5GHz  
 Temperature : 25 °C

Test Date : Dec. 25, 2008  
 Test By: Jazz  
 Humidity : 65 %

Data: 10

Level (dBuV/m)



Trace: (Discrete)

Site : RF SITE  
 Condition : FCC 15.209-RAD. 3m BBHA9120D HORIZONTAL  
 Project No. : EI/2008/C0003  
 Applicant : Toshiba  
 EUT Description : CDMA TS001  
 EUT Model : T001  
 Test Mode : charge mode  
 Temp./Humid. : 25/65  
 Operator : Jazz

	Freq	Read	Antenna	Preamp	Cable		Level	Limit	Over	
	MHz	Level	Factor	Factor	Loss	Factor	dBuV/m	Line	Limit	Remark
		dBuV						dBuV/m		
1	1286.00	38.78	24.63	35.19	3.71	-6.85	31.93	54.00	-22.07	Peak
2	4113.50	34.56	29.88	33.15	7.31	4.04	38.60	54.00	-15.40	Peak

## 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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