ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

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

OF

Product Name:	**RM-595**
Brand Name:	**NOKIA**
Model Name:	**RM-595**
Report No.:	**EH/2009/90035**
Issue Date:	**Oct. 8, 2009**
FCC Rule Part:	**Part 15 B, Class B**
Filing Type:	**Certification**
Prepared for:	**Nokia Inc.** **12278 Scripps Summit Dr.** **San Diego, CA 92131, USA**
Prepared by:	**SGS Taiwan Ltd.** **Electronics & Communication Laboratory** **No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei County, Taiwan**

VERIFICATION OF COMPLIANCE

Applicant:	Nokia Inc. 12278 Scripps Summit Dr., San Diego, CA 92131, USA
Manufacturer:	Compal Communications (Nanjing) Co. Ltd Nanjing Jiangning Export Processing Zone (South Area) No.68-2 Suyuan Street
Product Name:	RM-595
Brand Name:	NOKIA
Model Name:	RM-595
Model Difference:	N/A
File Number:	EH/2009/90035
Date of test:	Sep. 18, 2009 ~ Sep. 30, 2009
Date of EUT Receive:	Sep. 18, 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:	Nick Lin	***Date:***	Oct. 8, 2009
	Nick Lin/Engineer		
Prepared By:	Alex Chen	***Date:***	Oct. 8, 2009
	Alex Chen/Engineer-P		
Approved By:	Vincent Su	***Date:***	Oct. 8, 2009
	Vincent Su/Manager		

Version

Version No.	Date	Description
00	Oct. 5, 2009	Initial creation of document
01	Oct. 8, 2009	1. Correct the Date of EUT receive to Sep. 18,2009. on Page 2. 2. Revised MEID in Hexadecimal and Record the Headset type , correct adaptor model , revised the conducted power on Page 5. 3. Revised CE L1 plots for Peak point. 4. Correct the Remark measuring frequency to "30MHz to 1GHz" on Page18 and 19. 5. Add measurement uncertainty on Page 8. 6. Remove incorrect distance on Page18 and 19

Table of Contents

1. GENERAL INFORMATION

1.1 Product Description

General:

Type Name:	RM-595	
Brand Name:	NOKIA	
Model Name:	RM-595	
Model Difference:	N/A	
USB Cable	Model No.:CA-101, Supplier : NOKIA	
Simple Hands-Free (SHF):	Model: HS-125, Brand: Nokia	
Power Supply:	3.7 Vdc re-chargeable battery or 5Vdc by AC/DC power adapter	
	Battery Model:	BL-4C, Brand: NOKIA
	Adaptor Model:	AC-6U, Brand: NOKIA

CDMA:

Cellular Phone Standards Frequency Range and Power:	CDMA2000 Cellular	824.70 ~ 848.31MHz	24.59 dBm
	CDMA2000 PCS	1851.25 ~ 1908.75 MHz	24.44 dBm
	EVDO Cellular	824.70 ~ 848.31MHz	24.63 dBm
	EVDO PCS	1851.25 ~ 1908.75 MHz	24.41 dBm
Type of Emission:	1M25F9W		
MEID:	A00000018B01B7A		
Software Version:	SN_2250B_TCL		
Hardware Version:	3200		

Bluetooth:

Frequency Range:	2402 – 2480MHz
Bluetooth Version:	V2.1 + EDR (GFSK + π/4DQPSK + 8DPSK)
Channel number:	79 channels
Transmit Power:	3.57 dBm (Peak)
Modulation type:	Frequency Hopping Spread Spectrum
Antenna Designation:	Chip Antenna, -0.11dBi.

1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID: QMNRM-595** filing to comply with Part15 Subpart B, class B of the FCC CFR 47 Rules.

1.3 Test Methodology

Both conducted and radiated testing were 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. 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. 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.

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 Nokia Celluar CDMA Phone FCC ID:QMNRM-595 Was Tested With a notebook 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 fele (AT commands) to the phone using HyperTermnial . 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 and 13 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 and 13 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. 3.The measurement uncertainty is ± 2.586 dB.		

(2) Radiated Emission

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

Frequency (MHz)	Field strength µV/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.
3. The measurement uncertainty is ± 4.22 dB

2.5 Configuration of Tested System

Fig. 2-1 Configuration of Tested System
(Data Link Mode)

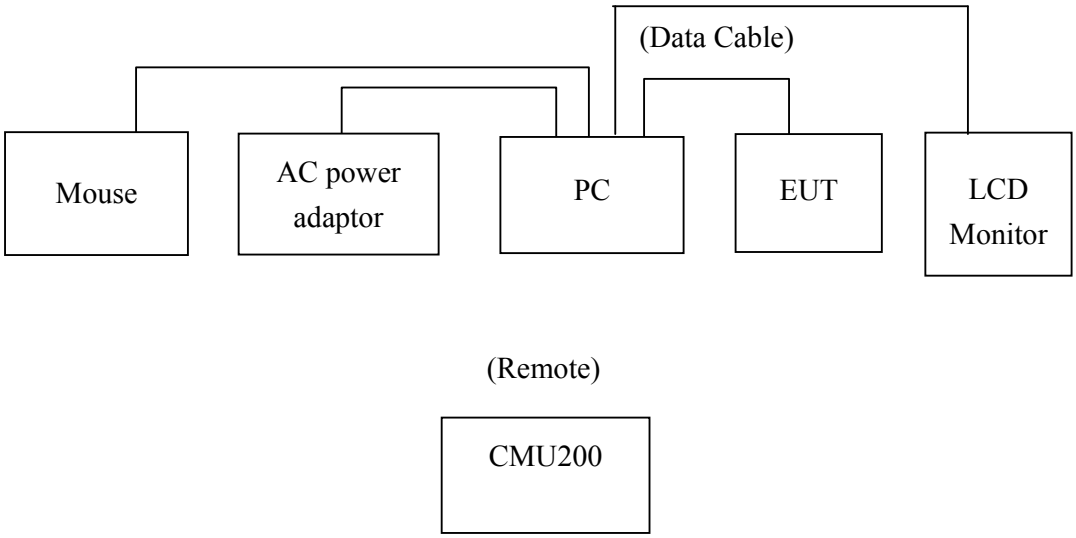


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1.	EUT	RM-595	RM-595	N/A	N/A	N/A
2.	Battery	NOKIA	BL-4C	N/A	N/A	N/A
3.	USB Cable	NOKIA	CA-101	N/A	Shielded	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.	PC	HP	T278D	TWL33500K4	Shielded	Un-shielded
2.	USB Mouse	BENQ	M106-C2W	99Q3188C2W48C044 22SA0000	Shielded,	N/A
3.	Radio Communication Analyzer	R&S	CMU200	102189	Shielded	Un-shielded
4.	LCD Monitor	HP	Vf51	TWTFG01092	Shielded	Un-shielded
5.	USB Keyboard	HP	5181	BE22316922	Shielded	Un-shielded

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.

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

Test Plan
Conducted Emission
1. Data link with PC

Radiated Emission
1. Data link with PC

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)

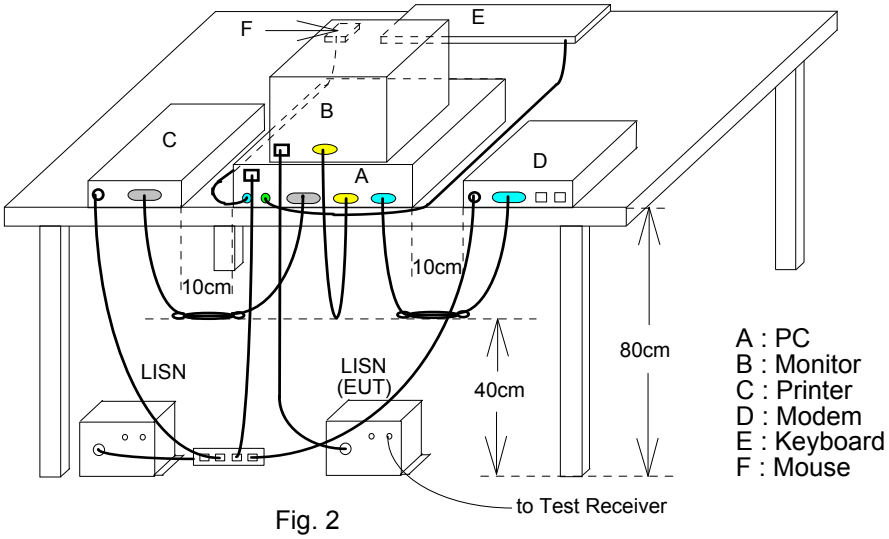


Fig. 2

5.3 Measurement Equipment Used:

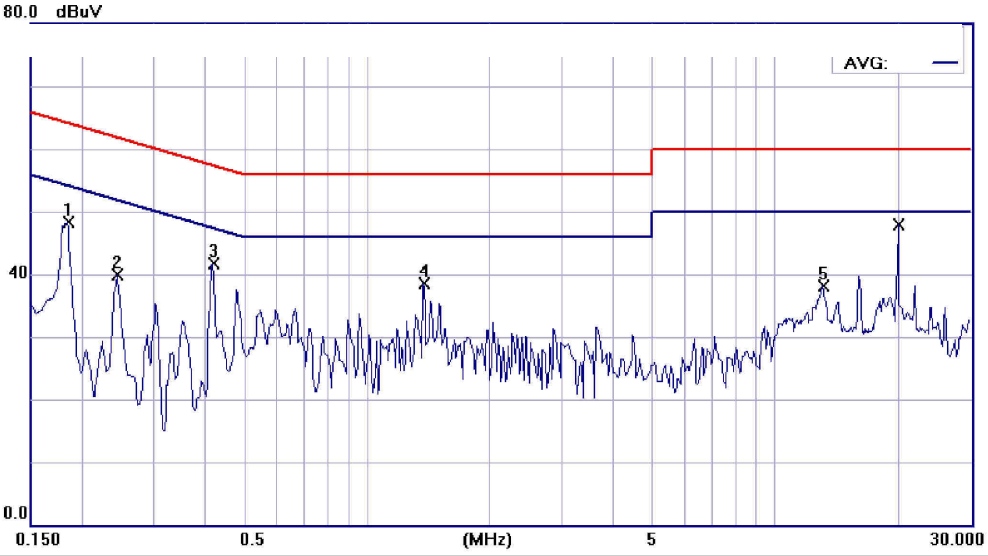
Conducted Emission Test Site					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
EMC Analyzer	HP	8594EM	3624A00203	09/02/2009	09/03/2010
EMI Test Receiver	R&S	ESCS30	828985/004	06/09/2009	06/10/2010
Transient Limiter	HP	11947A	3107A02062	09/02/2009	09/03/2010
LISN	Rolf-Heine	NNB-2/16Z	99012	12/31/2008	12/30/2009
LISN	Rolf-Heine	NNB-2/16Z	99013	01/10/2009	01/09/2010
Coaxial Cables	FCC	FCC-LISN-50/250-25-2-01	04034	01/11/2009	01/10/2010

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:	Data LINK with PC			Test Date:	Sep. 25, 2009
Temperature:	23 ℃	Humidity:	57 %	Test By:	Nick



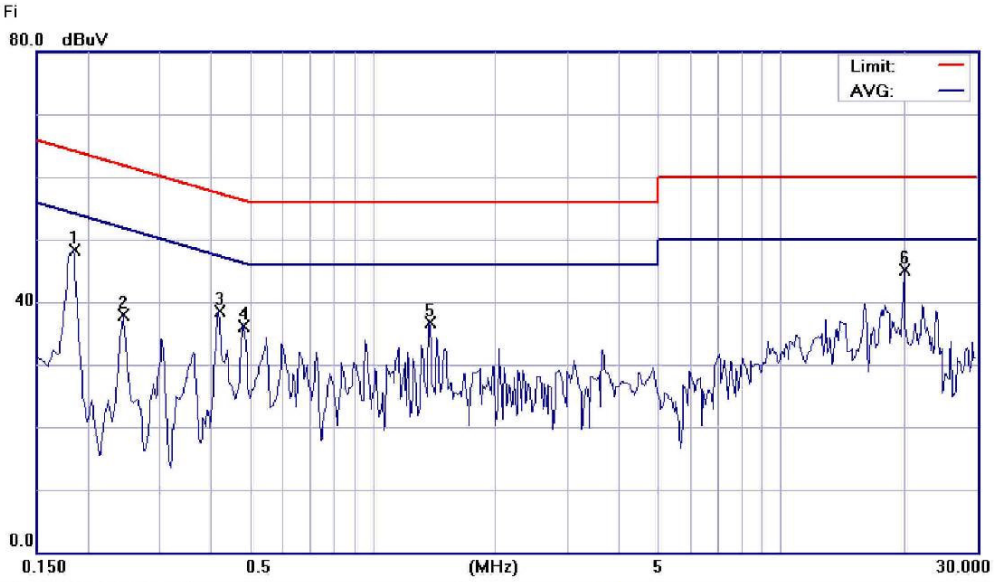
Site SGS CONDUCTED #1
Limit: FCC Class B Conduction(QP)
EUT: RM-595
M/N: RM-595
Note: DATA link

Phase: *L1*
Power: AC 110V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 57 %
Air Pressure: hpa

No.	Mk.	Freq.	Reading Level	Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1850	48.16	0.14	48.30	64.26	-15.96	peak	
2		0.2450	39.89	0.11	40.00	61.92	-21.92	peak	
3	*	0.4200	41.58	0.08	41.66	57.45	-15.79	peak	
4		1.3800	38.35	0.11	38.46	56.00	-17.54	peak	
5		13.0600	37.62	0.41	38.03	60.00	-21.97	peak	
6		20.1150	40.25	0.23	40.48	60.00	-19.52	QP	
7		20.1150	32.25	0.23	32.48	50.00	-17.52	AVG	

Conducted Emission Measurement



Site SGS CONDUCTED #1	Phase: N	Temperature:	23 ℃
Limit: FCC Class B Conduction(QP)	Power: AC 110V/60Hz	Humidity:	57 %
EUT: RM-595	Distance:	Air Pressure:	hpa
M/N: RM-595			
Note: DATA link			

No.	Mk.	Freq.	Reading Level	Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1850	48.16	0.16	48.32	64.26	-15.94	peak	
2		0.2450	37.68	0.13	37.81	61.92	-24.11	peak	
3		0.4200	38.31	0.11	38.42	57.45	-19.03	peak	
4		0.4800	36.10	0.10	36.20	56.34	-20.14	peak	
5		1.3800	36.55	0.13	36.68	56.00	-19.32	peak	
6	*	20.1200	44.80	0.24	45.04	60.00	-14.96	peak	

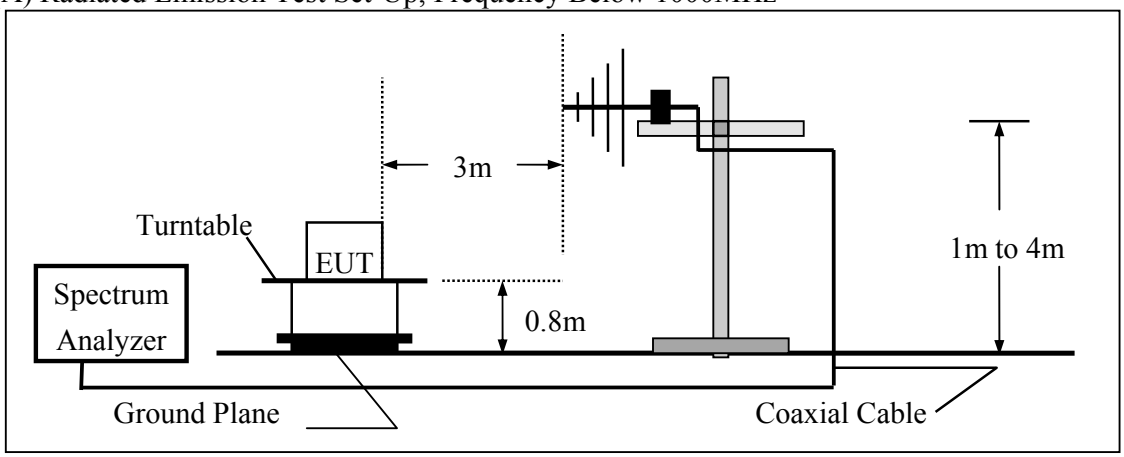
6. Radiated Emission Test

6.1 Measurement Procedure

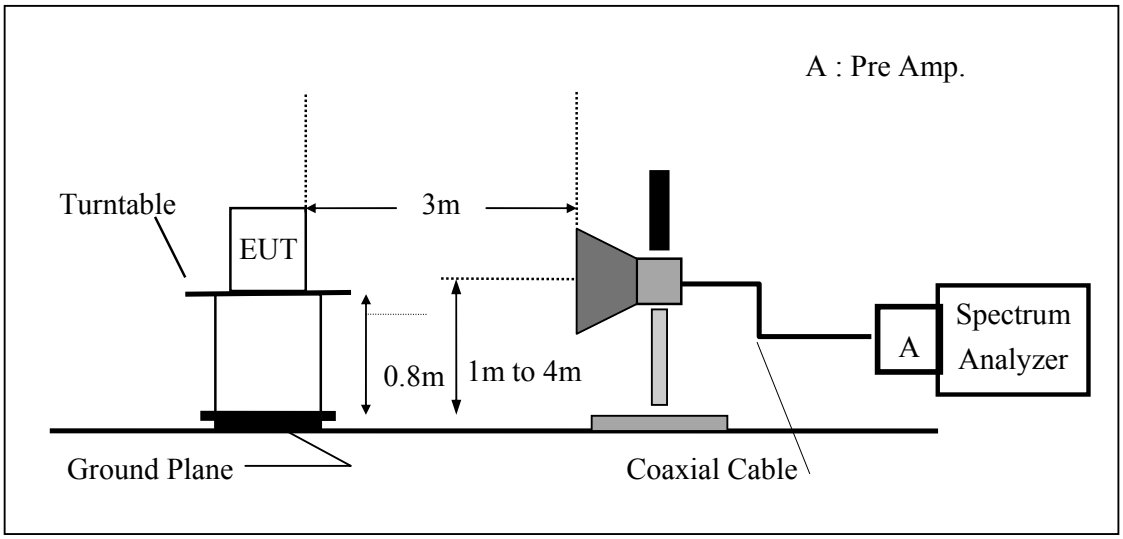
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above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



6.3 Measurement Equipment Used:

966 Chamber					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2009	07/03/2010
Loop Antenna	Messtec	FLA30	03/10086	03/06/2009	03/05/2010
Bilog Antenna	SCHWAZBECK	VULB9160	3224	10/17/2008	10/16/2009
Pre-Amplifier	HP	8447D	2944A09469	07/19/2009	07/18/2010
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	10/09/2008	10/08/2009
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	10/09/2008	10/08/2009
Site NSA	SGS	966 chamber	N/A	11/17/2008	11/16/2009

6.4 Field Strength Calculation

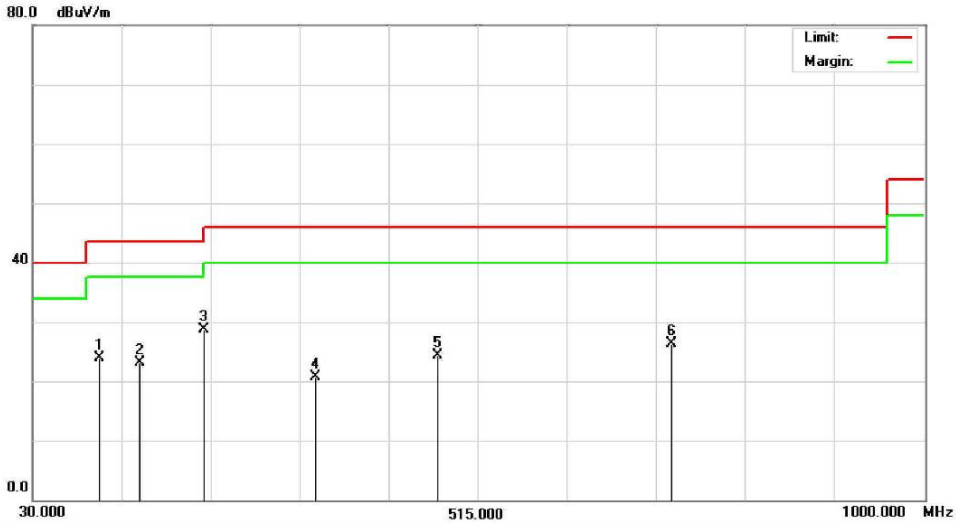
The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

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

6.5 Measurement Result

Test Mode:	Data Link Mode	Test Date :	Sep 25, 2009
Frequency Range:	30MHz-1GHz	Test By:	Nick
Temperature :	24 ℃	Humidity :	58 %



Site : 9*6*6 Chamber	Polarization: *Vertical*	Temperature: 24 ℃
Limit: FCC Class B 3M Radiation	Power: AC 110V/60Hz	Humidity: 58%
EUT: RM-595	Distance:	Air Pressure: hpa
M/N: RM-595		
Note: DATAlink		

No.	Mk.	Freq.	Reading Level	Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		102.7500	43.96	-20.03	23.93	43.50	-19.57	QP	
2		146.4000	38.34	-15.25	23.09	43.50	-20.41	QP	
3	*	216.0030	45.96	-17.23	28.73	46.00	-17.27	QP	
4		337.9750	35.90	-15.29	20.61	46.00	-25.39	QP	
5		471.3500	38.73	-14.36	24.37	46.00	-21.63	QP	
6		725.9750	37.30	-11.07	26.23	46.00	-19.77	QP	

Remark：

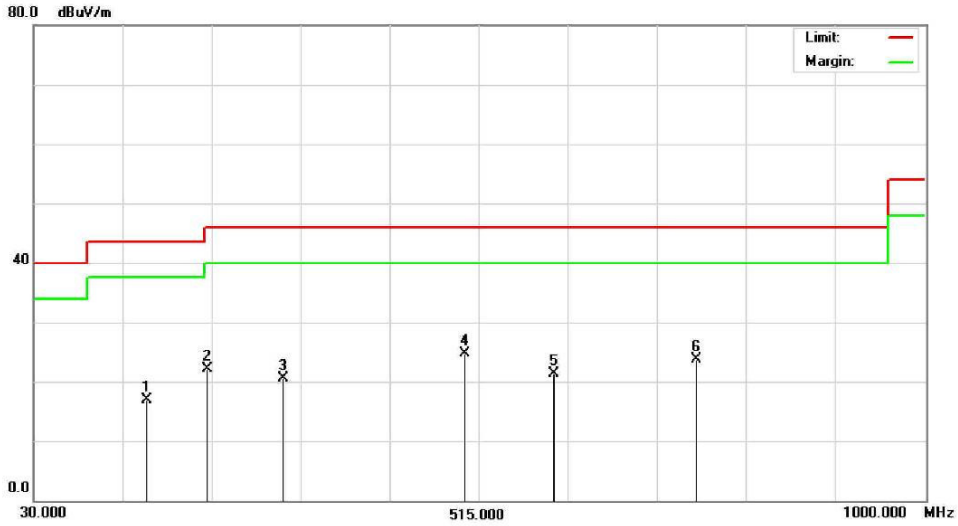
(1) Measuring frequencies from 30 MHz to the 1GHz。

(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

Test Mode: Data Link Mode
Frequency Range: 30MHz-1GHz
Temperature : 24 ℃

Test Date : Sep 25, 2009
Test By: Nick
Humidity : 58 %



Site : 9*6*6 Chamber
Limit: FCC Class B 3M Radiation
EUT: RM-595
M/N: RM-595
Note: DATAlink

Polarization: *Horizontal*
Power: AC 110V/60Hz
Distance:

Temperature: 24 ℃
Humidity: 58%
Air Pressure: hpa

No.	Mk.	Freq.	Reading Level	Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		153.6750	40.00	-23.15	16.85	43.50	-26.65	QP	
2		219.1500	44.07	-21.96	22.11	46.00	-23.89	QP	
3		301.6000	39.81	-19.28	20.53	46.00	-25.47	QP	
4	*	500.4500	38.01	-13.21	24.80	46.00	-21.20	QP	
5		597.4500	31.73	-10.42	21.31	46.00	-24.69	QP	
6		752.6500	33.43	-9.65	23.78	46.00	-22.22	QP	

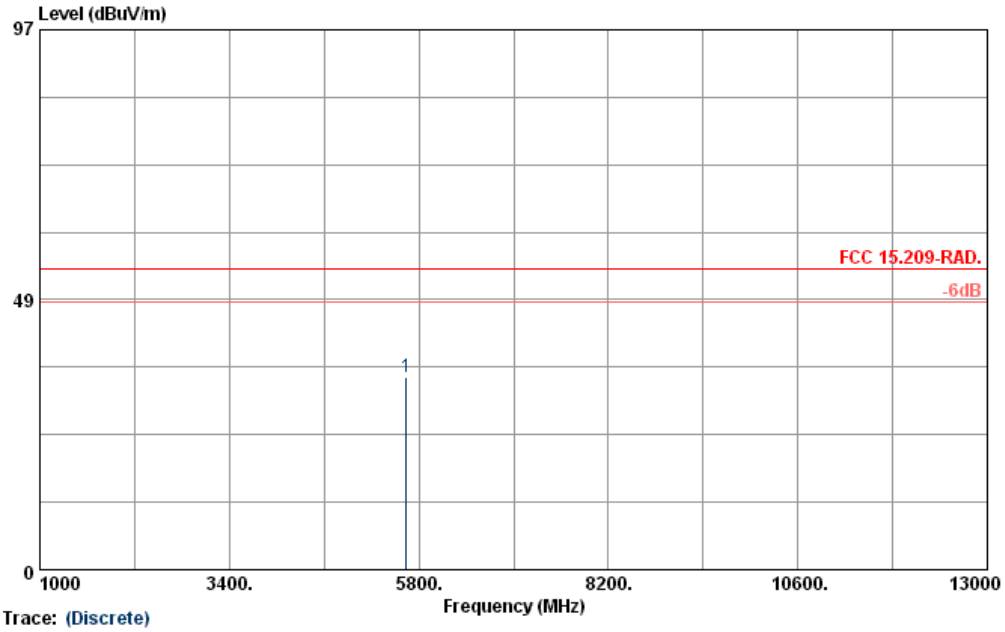
Remark：

(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

Test Mode:	Data Link Mode	Test Date :	Sep 25, 2009
Frequency Range:	1GHz-13GHz	Test By:	Nick
Temperature :	24 ℃	Humidity :	58 %



Trace: (Discrete)

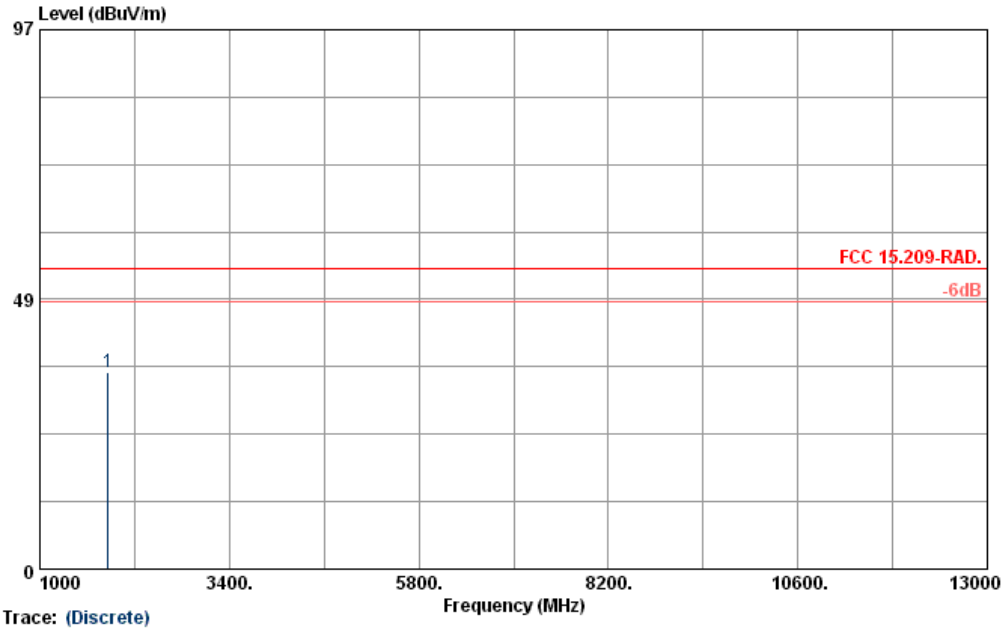
Site : RF SITE
Condition : FCC 15.209-RAD. 3m BBHA9120D VERTICAL
Project No. : EH-2009-90034-36
Applicant : Nokia Inc.
EUT Description : RM-595
EUT Model : RM-595
Test Mode : DATA link
Temp./Humid. : 24/60
Operator : Nick

	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB/m	dBuV/m	dBuV/m	dB	
1 p	5644.00	26.74	32.10	8.66	32.97	7.79	34.53	54.00	-19.47	Peak

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

Test Mode:	Data Link Mode	Test Date :	Sep 25, 2009
Frequency Range:	1GHz-13GHz	Test By:	Nick
Temperature :	24 ℃	Humidity :	58 %



Trace: (Discrete)

Site : RF SITE
Condition : FCC 15.209-RAD. 3m BBHA9120D HORIZONTAL
Project No. : EH-2009-90034-36
Applicant : Nokia Inc.
EUT Description : RM-595
EUT Model : RM-595
Test Mode : DATA link
Temp./Humid. : 24/60
Operator : Nick

	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB/m	dBuV/m	dBuV/m	dB	
1 p	1864.00	39.65	25.63	4.52	34.28	-4.13	35.52	54.00	-18.48	Peak

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