TEST REPORT

For

Cellular Phone

In conformity with

FCC Part22H (01 Oct, 2009)

Model:	**CDMA CA007**
FCC ID:	**TYK-RAO1172**
Test Item:	**Cellular Phone**
Report No:	**RY1102P14R1**
Issue Date:	**14 Feb, 2011**

Prepared for

NEC CASIO Mobile Communications, Ltd.
1753, Shimonumabe, Nakahara-Ku, Kawasaki, Kanagawa
211-8666, Japan

Prepared by

RF Technologies Ltd.
472, Nippa-cho, Kohoku-ku, Yokohama, 223-0057, Japan
Telephone: +81+(0)45- 534-0645
FAX: +81+(0)45- 534-0646

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RF Technologies Ltd. is managed to ISO17025 and has the necessary knowledge and test facilities for testing according to the referenced standards.

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History

Report No.	Issue Date	Revision Contents	Issued by
RY1102P14R1	14 Feb, 2011	Initial Issue	T.Kato

1 General information

1.1 *Product description*

Test item	: Cellular phone
Manufacturer 1	: FLEXTRONICS INDUSTRIAL CO., LTD.
Address 1	: Xin Qing Science & Technology Industrial Park, Jing An, Doumen, Zhuhai, Guangdong, P.R. China
Manufacturer 2	: TOKAI TEC CO., LTD.
Address 2	: 1410, Inada, Hitachinaka-shi, Ibaraki, Japan
Model	: CDMA CA007
FCC ID	: TYK-RAO1172
Operating frequency range	: TX 824.70-848.31 MHz (CDMA2000 BC0) : RX 869.70-893.31 MHz (CDMA2000 BC0)
Type of Modulation	: QPSK/HPSK
Receipt date of EUT	: 04 Feb, 2011
Nominal power voltages	: 3.7VDC (Lithium-ion battery)
Power Class	: Maximum power +24dBm nominal
Antenna Type	: Integral antenna
Serial numbers	: SCAEN000302 (for Radiated test) SCAEP000335 (for Conducted test)

1.2 *Test(s) performed/ Summary of test result*

Applicable Standard(s)	: FCC Part22H (01 Oct, 2009)
Test(s) started	: 05 Feb, 2011
Test(s) completed	: 10 Feb, 2011
Purpose of test(s)	: Certification of FCC
Summary of test result	: Complied

Note: The above judgment is only based on the measurement data and it does not include the measurement uncertainty. Accordingly, the statement below is applied to the test result.
The EUT complies with the limit required in the standard in case that the margin is not less than the measurement uncertainty in the Laboratory.
Compliance of the EUT is more probable than non-compliance is case that the margin is less than the measurement uncertainty in the Laboratory.

Test engineer : T. Kato
T. Kato (Engineer, EMC testing department)

Reviewer : K. Ohnishi
K.Ohnishi (Manager, EMC testing department)

1.3 *Test facility*

The Federal Communications Commission has reviewed the technical characteristics of the test facilities at RF Technologies Ltd., located in 472, Nippa-cho, Kohoku-ku, Yokohama, 223-0057, Japan, and has found these test facilities to be in compliance with the requirements of 47 CFR Part 15, section 2.948, per 01 October, 2009.
The description of the test facilities has been filed under registration number 319924 at the Office of the Federal Communications Commission. The facility has been added to the list of laboratories performing these test services for the public on a fee basis.
The list of all public test facilities is available on the Internet at http://www.fcc.gov.

Registered by Voluntary Control Council for Interference by Information Technology Equipment (VCCI).
Each registered facility number is as follows;
Test site (Semi-anechoic chamber 3m) R-2393
Test site (Shielded room) C-2617

Registered by Industry Canada (IC). The registered facility number is as follows;
Test site No.1(Semi-anechoic chamber 3m) : 6974A-1

Accredited by **National Voluntary Laboratory Accreditation Program** (NVLAP) for the emission tests stated in the scope of the certificate under Certificate Number 200780-0

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

NVLAP LAB CODE 200780-0

1.4 *Measurement uncertainty*

The treatment of uncertainty is based on the general matters on the definition of uncertainty in “Guide to the expression of uncertainty in measurement (GUM)” published by ISO. The Lab’s uncertainty is determined by referring UKAS Publication LAB34: 2002 “The Expression of Uncertainty in EMC Testing” and CISPR16-4-2: 2003 “Uncertainty in EMC Measurements”.
The uncertainty of the measurement result in the level of confidence of approximately 95% (k=2) is as follows;

RF frequency: ± 1 x 10^{-7}
RF power conducted: ± 1.1 dB
AC Power line emission: ± 1.9 dB
Radiated emission (30MHz - 1000MHz): ± 5.9 dB
Radiated emission (1GHz - 18GHz): ± 5.8 dB
Temperature: ± 1 degree
Humidity: ± 5 %

1.5 *Description of essencial requirements and test results*

An overview of radio requirements, as laid out in FCC Part22 are given below.

1.5.1 Transmitter requirements

Test Description	Section in this report	Applicable	Result
Carrier Output Power (Conducted)	2.1	Yes	Pass
Carrier Output Power (Radiated)	2.2	Yes	Pass
Frequency Stability (Temp. Variation)	2.3	Yes	Pass
Frequency Stability (Voltage Variation)	2.4	Yes	Pass
Occupied Bandwidth	2.5	Yes	Pass
Out of Band Emissions (Conducted)	2.6	Yes	Pass
Out of Band Emissions (Radiated)	2.7	Yes	Pass
Band Edge Emissions	2.8	Yes	Pass

1.5.2 AC Power Line Parameters

Test Description	Section in this report	Applicable	Result
AC power line Spurious Emissions (Traffic mode)	2.9	Yes	Pass

1.5.3 Normal test conditions

Temperature(*) : +15 degC to +35 degC
Relative humidity(*) : 20 % to 75 %
Supply voltage : 3.7 VDC (Nominal)
Measurement Frequency : 824.70 MHz(1013ch), 836.52 MHz(384ch), 848.31 MHz(777ch)

* When it is impracticable to carry out tests under these conditions, a note to this effect, stating the ambient temperature and relative humidity during the tests, must be stated separately.

1.5.4 Extreme test conditions

Temperature : -30 °C (min) to +50 °C (max)
Supply voltage : 3.4 VDC (min) to 4.2 VDC (max)
The equipment has a function that it is automatically turned off when min. battery voltage (3.4 V) is detected.

1.6 *Setup of equipment under test (EUT)*

1.6.1 Test configuration of EUT

Equipment(s) under test:

	Item	Brand	Model No.	Serial No.
A	Cellular phone	NEC CASIO	CDMA CA007	SCAEN000302
B	Cellular phone	NEC CASIO	CDMA CA007 (RF cable is attached instead of integral antenna)	SCAEP000335
C	Lithium-ion battery (3.7V)	NEC CASIO	63CAUAA	None
D	AC Adaptor	MITSUMI ELECTRIC	0203PQA	None

Support Equipment(s):

	Item	Brand	Model No.	Serial No.	FCC ID
-	-	-	-	-	-

Connected cable(s):

No.	Item	Brand	Shielded Yes / No	Ferrite Core Yes / No	Connector Shielded Yes / No	Length (m)
1	DC power cable	-	No	No	No	1.5

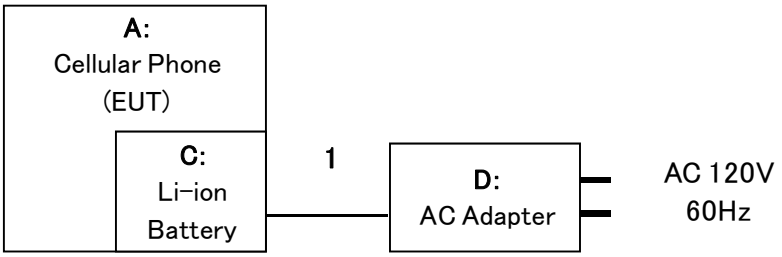
1.6.2 Operating condition:

Traffic mode : EUT is connected with RF tester in Max power level.
RC3/SO55 with Power Control Bit “ALL UP” was worst condition in all test items.

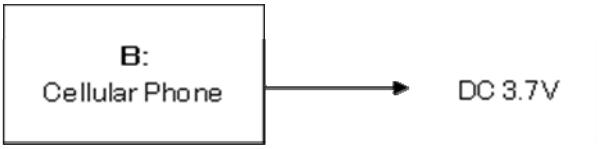
Idle mode : EUT is under idle mode, no output power is transmitted.

1.6.3 Setup diagram of tested system:

[Configuration Ⅰ]



[Configuration Ⅱ]



1.7 *Equipment modifications*

No modifications have been made to the equipment in order to achieve compliance with the applicable standards described in clause 1.2.

1.8 *Deviation from the standard*

No deviations from the standards described in clause 1.2.

2 Test procedure and result

2.1 *Carrier Output Power (Conducted)*

Reference Standard
Part22.913, 2.1046

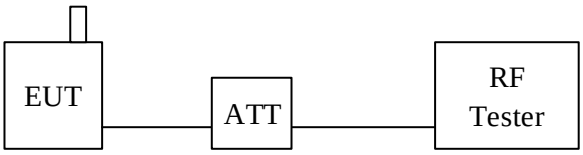
Test Conditions

Date:	07 Feb, 2011
Ambient Temperature:	23 degC
Relative humidity:	57 %
Test Voltage:	3.7 V

Test Sample
Configuration Ⅱ

Test Method
a) EUT is connected to RF tester with pseudo random data modulation and set to maximum output power level.
b) The output power is measured with RF tester (CMU200 etc.).

Test Setup



Test Results

Channel	Frequency [MHz]	Output Power [dBm]
Bottom (1013ch)	824.70	23.90
Middle (384ch)	836.52	23.99
Top (777ch)	848.31	23.57

Test Equipment Used

Equipment name	RFT ID No.
RF tester	RC02
RF cable	CL27

2.2 *Carrier Output Power (Radiated)*

Reference Standard
Part22.913, 2.1046

Test Conditions

Date:	05 Feb, 2011
Ambient Temperature:	16 degC
Relative humidity:	28 %
Test Voltage:	3.7 V

Test Sample
Configuration Ⅰ

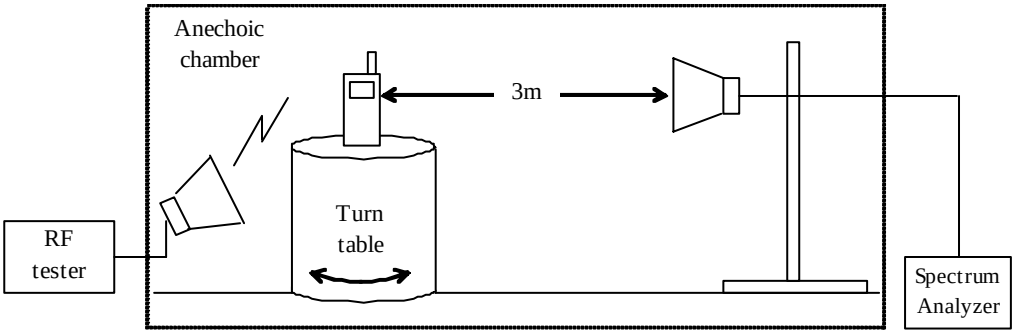
Test Method
Substitution method is used for this test.
a) EUT is set on non-conducting table and the output power is set to the maximum level.
b) As a receive antenna, Horn antenna is used.
c) Maximum power is measured by a spectrum analyzer (SA) in below conditions.
Turntable is rotated 360 degrees.
The height of receive antenna is changed from 1m to 4m.
Receive antenna polarization is set to vertical and horizontal.
This maximum power is recorded.
During this measurement, receive antenna is adjusted the direction to keep the EUT within the beamwidth of receive antenna.
d) Reference antenna is replaced with EUT, and connected with signal generator (SG).
SG output power is adjusted to get same level as the recorded maximum radiated EUT power by SA.

e) Radiated output power (Pout) is calculated with adjusted SG output (Psg) [dBm], reference antenna gain (Gref) [dBd] and cable loss between SG and reference antenna (Lcab) [dB].

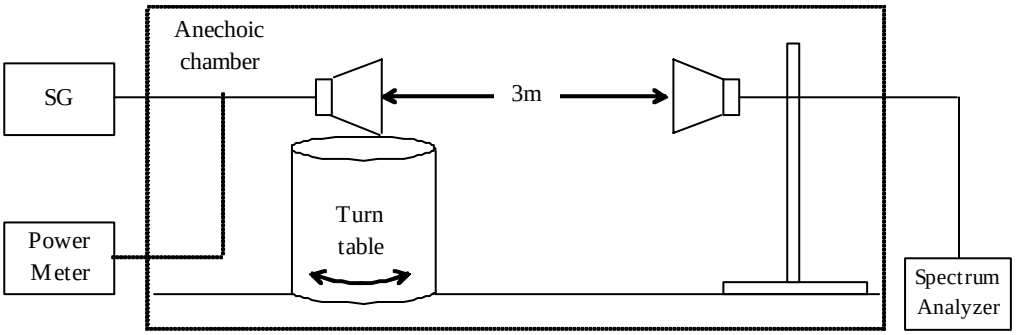
Pout [dBm e.r.p] = Psg + Gref + Lcab

Test Setup

[Measurement]



[Substitution]



Test Results

Channel	Frequency [MHz]	Output Power [dBm e.r.p]	Limit [dBm e.r.p]	Result
Bottom (1013ch)	824.70	21.13	38.4	Pass
Middle (384ch)	836.52	20.55	38.4	Pass
Top (777ch)	848.31	21.40	38.4	Pass

Test Equipment Used

Equipment name	RFT ID No.	Equipment name	RFT ID No.
Spectrum Analyzer	TR06	Signal Generator	SG05
Receive Antenna	DH01	Power Meter	PM03, PU03
Reference Antenna	LA02	RF tester	RC02
RF Cable	CL24		

Final Result

The EUT met the requirements of the standard for this test.

2.3 *Frequency Stability (Temperature)*

Reference Standard
Part22.355, 2.1055

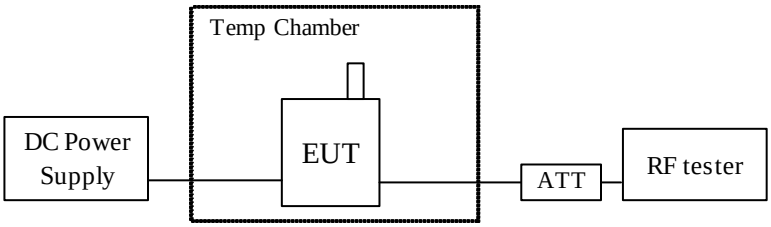
Test Conditions

Date:	10 Feb, 2011
Ambient Temperature:	15 degC
Relative humidity:	36 %
Test Voltage:	3.7 V

Test Sample
Configuration Ⅱ

Test Method
To measure the carrier frequency, “Frequency error measurement” function of RF tester is used.
a) EUT is hold about 30 minutes under measurement temperature condition.
b) EUT is powered on with nominal voltage.
c) EUT is connected to RF tester with Max transmit power level.
d) Frequency error is measured by RF tester for 10 minutes.
e) Process a) to d) is repeated at 10deg increments from -30 to +50degC.

Test Setup



Test Results

Middle Channel (384ch, Nominal Freq.:836.52MHz)

Temperature [deg C]	Frequency Error [Hz]	Frequency Error [ppm]	Limit [ppm]	Result
-30	- 6	- 0.01	± 2.5	Pass
-20	+ 6	+ 0.01	± 2.5	Pass
-10	+ 5	+ 0.01	± 2.5	Pass
0	- 10	- 0.01	± 2.5	Pass
10	+ 11	+ 0.01	± 2.5	Pass
20	+ 11	+ 0.01	± 2.5	Pass
30	- 13	- 0.02	± 2.5	Pass
40	- 7	- 0.01	± 2.5	Pass
50	+ 5	+ 0.01	± 2.5	Pass

Test Equipment Used

Equipment name	RFT ID No.
RF tester	RC02
Temp Chamber	TC01

Final Result

The EUT met the requirements of the standard for this test

2.4 *Frequency Stability (Voltage)*

Reference Standard
Part22.355, 2.1055

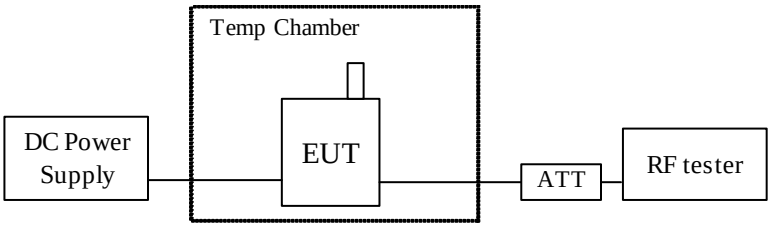
Test Conditions

Date:	10 Feb, 2011
Ambient Temperature:	15 degC
Relative humidity:	36 %
Test Voltage:	3.4 V to 4.2 V

Test Sample
Configuration Ⅱ

Test Method
To measure the carrier frequency, “Frequency error measurement” function of RF tester is used.
a) EUT is powered on with nominal voltage. Temperature is 20degC.
b) EUT is connected to RF tester with Max transmitter power level.
c) Frequency error is measured by RF tester for 10 minutes.
d) Process a) to c) is repeated at minimum and maximum voltage condition.

Test Setup



Test Results

Middle Channel (384ch, Nominal Freq.:836.52MHz)

Voltage [V]	Frequency Error [Hz]	Frequency Error [ppm]	Limit [ppm]	Result
3.4	+ 8	+ 0.01	± 2.5	Pass
3.7	+ 11	+ 0.01	± 2.5	Pass
4.2	+ 7	+ 0.01	± 2.5	Pass

Test Equipment Used

Equipment name	RFT ID No.
RF tester	RC02
Temp chamber	TC01

Final Result

The EUT met the requirements of the standard for this test

2.5 *Occupied Bandwidth*

Reference Standard
Part2.1049

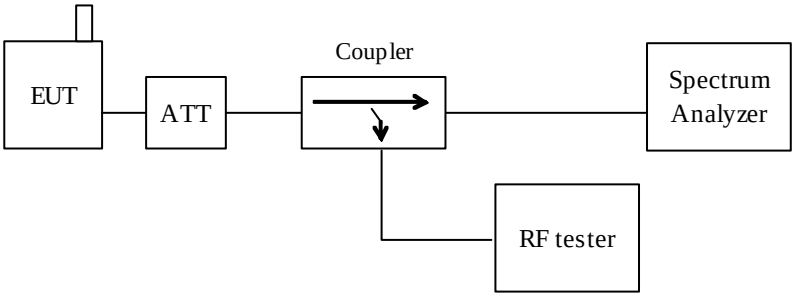
Test Conditions

Date:	07 Feb, 2011
Ambient Temperature:	23 degC
Relative humidity:	57 %
Test Voltage:	3.7 V

Test Sample
Configuration Ⅱ

Test Method
a) EUT is connected to RF tester with Max transmitter power level.
b) 26dB bandwidth is measured by Spectrum Analyzer.
c) 99% occupied bandwidth of transmitter spectrum is measured by Spectrum Analyzer.

Test Setup



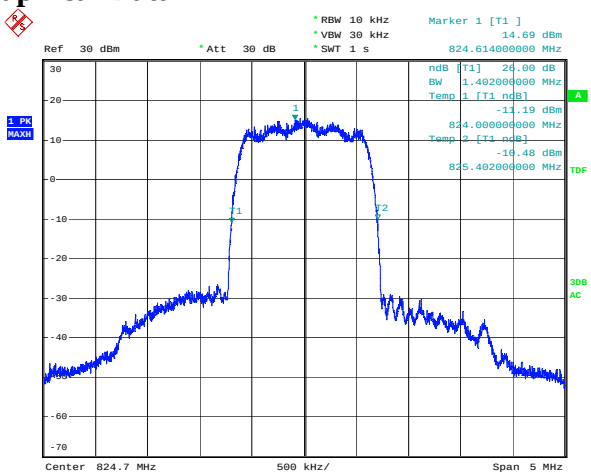
Test Results

Channel	Frequency [MHz]	26dB Bandwidth [MHz]	99% Bandwidth [MHz]
Bottom (1013ch)	824.70	1.402	1.248
Middle (384ch)	836.52	1.390	1.246
Top (777ch)	848.31	1.394	1.250

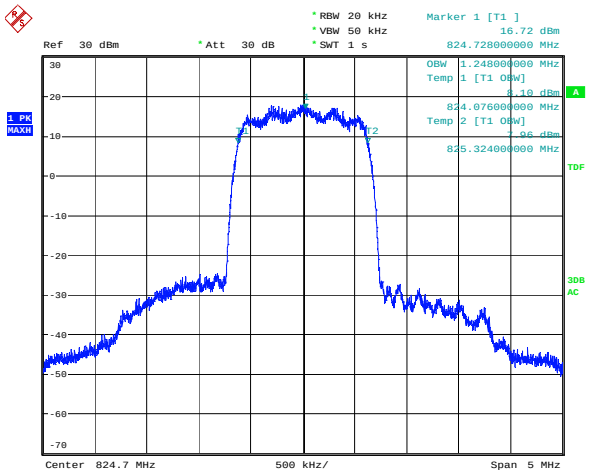
Test Equipment Used

Equipment name	RFT ID No.
Spectrum Analyzer	TR06
RF tester	RC02
RF cable	CL27
Directional coupler	DC03

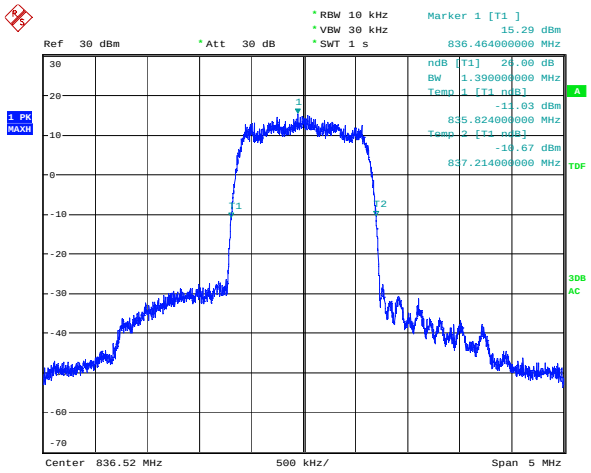
Graphical Data



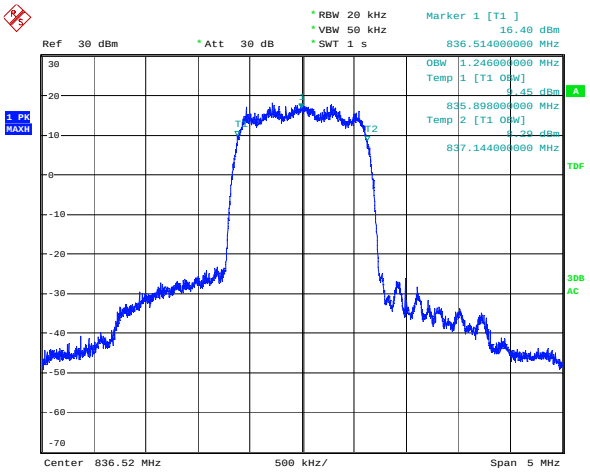
1013ch 26dB Bandwidth



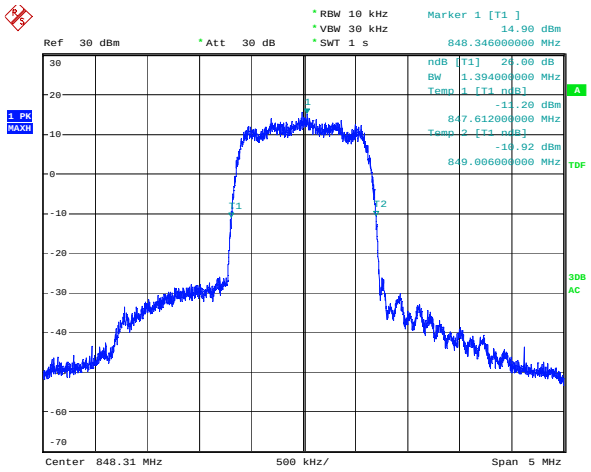
1013ch 99% Bandwidth



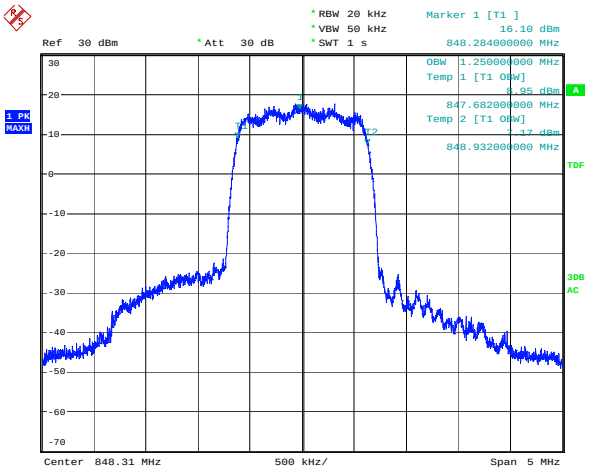
384ch 26dB Bandwidth



384ch 99% Bandwidth



777ch 26dB Bandwidth



777ch 99% Bandwidth

2.6 *Transmitter Out of Band Spurious Emissions (Conducted)*

Reference Standard
Part22.917

Test Conditions

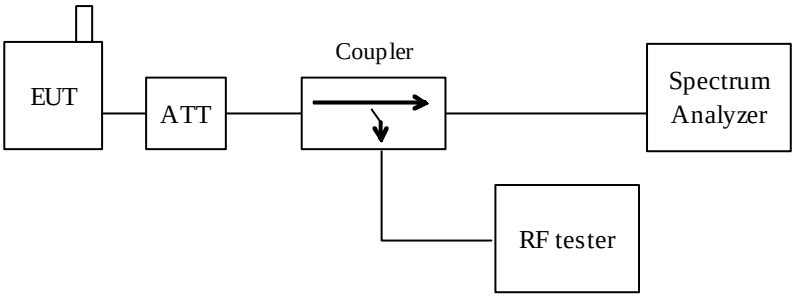
Date:	07 Feb, 2011
Ambient Temperature:	23 degC
Relative humidity:	57 %
Test Voltage:	3.7 V

Test Sample
Configuration Ⅱ

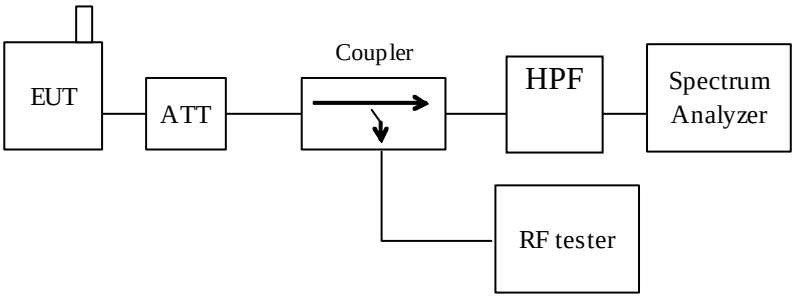
Test Method
a) EUT is connected to RF tester with Max transmitter power level.
b) Out of band Spurious is measured by Spectrum Analyzer.
c) Resolution band width of spectrum analyzer is set to 1MHz (above 1GHz) or 100kHz (below 1GHz).

Test Setup

30MHz to 1500MHz



above 1500MHz



Test Results

Bottom Channel (1013ch, Nominal Freq.:824.70MHz)

Measurement Frequency [MHz]	Measurement Bandwidth [MHz]	Emission Level [dBm]	Limit [dBm]	Result Pass/Fail
1649.40	1	-43.4	-13.0	Pass
2474.10	1	-53.7	-13.0	Pass
3298.80	1	-43.1	-13.0	Pass
4123.50	1	-42.3	-13.0	Pass
4948.20	1	-55.4	-13.0	Pass
5772.90	1	-60.1	-13.0	Pass
6597.60	1	-57.7	-13.0	Pass
7422.30	1	-55.7	-13.0	Pass
8247.00	1	-56.0	-13.0	Pass
others		-	-13.0	Pass

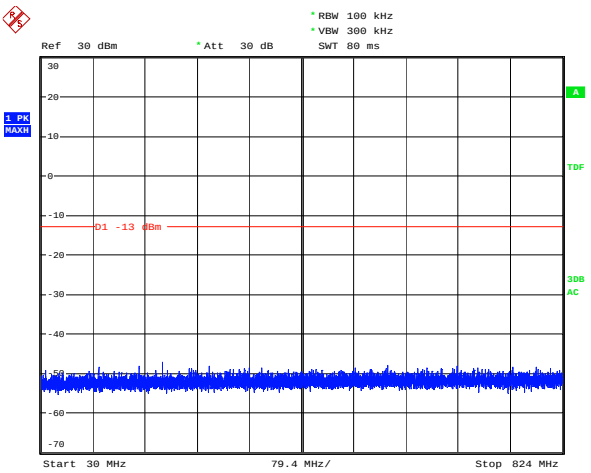
Middle Channel (384ch, Nominal Freq.:836.52MHz)

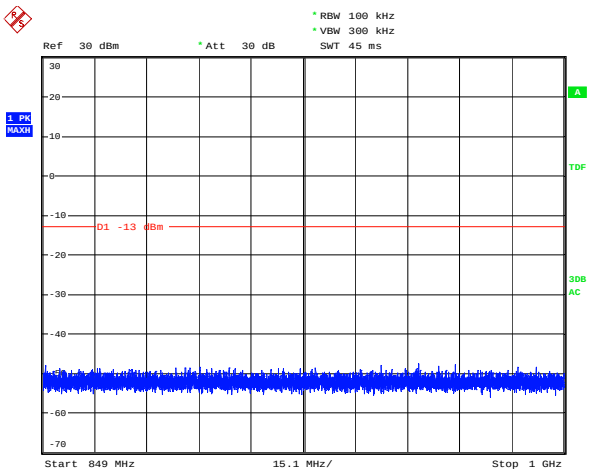
Measurement Frequency [MHz]	Measurement Bandwidth [MHz]	Emission Level [dBm]	Limit [dBm]	Result Pass/Fail
1673.04	1	-45.2	-13.0	Pass
2509.56	1	-51.9	-13.0	Pass
3346.08	1	-41.8	-13.0	Pass
4182.60	1	-42.2	-13.0	Pass
5019.12	1	-56.4	-13.0	Pass
5855.64	1	-59.4	-13.0	Pass
6692.16	1	-56.4	-13.0	Pass
7528.68	1	-54.0	-13.0	Pass
8365.20	1	-55.2	-13.0	Pass
others		-	-13.0	Pass

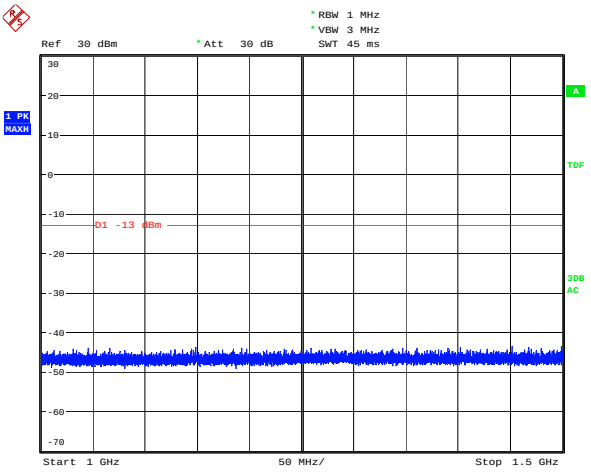
Top Channel (777ch, Nominal Freq.:848.31MHz)

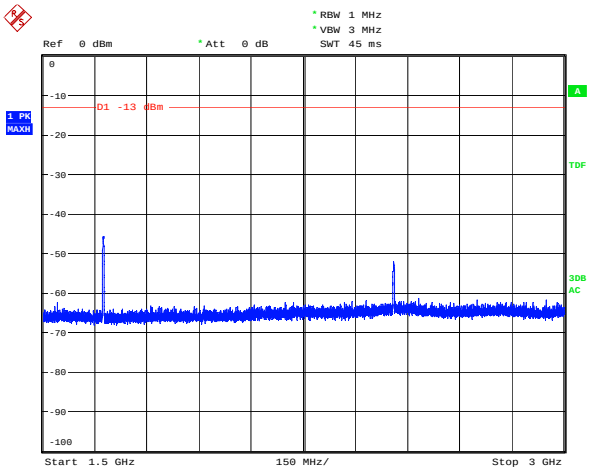
Measurement Frequency [MHz]	Measurement Bandwidth [MHz]	Emission Level [dBm]	Limit [dBm]	Result Pass/Fail
1696.62	1	-44.7	-13.0	Pass
2544.93	1	-52.4	-13.0	Pass
3393.24	1	-42.0	-13.0	Pass
4241.55	1	-41.3	-13.0	Pass
5089.86	1	-58.0	-13.0	Pass
5938.17	1	-58.5	-13.0	Pass
6786.48	1	-55.8	-13.0	Pass
7634.79	1	-54.4	-13.0	Pass
8483.10	1	-56.1	-13.0	Pass
others		-	-13.0	Pass

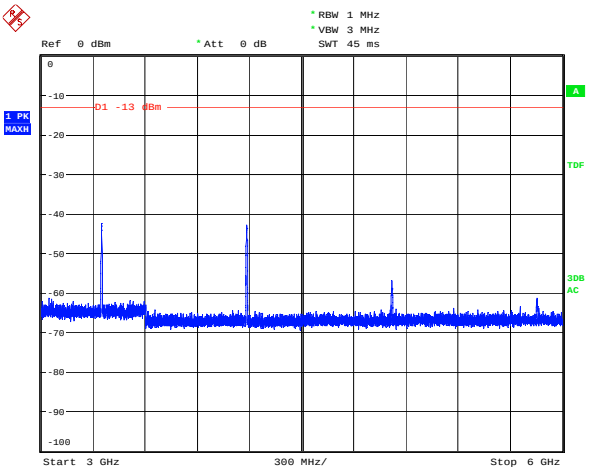
Graphical Data (384ch, Pre-scan)

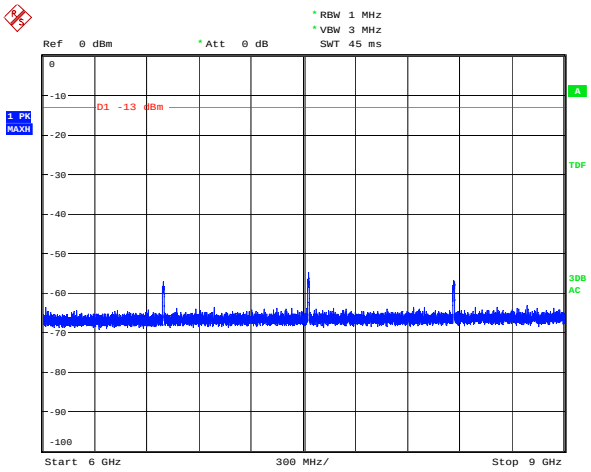












Test Equipment Used

Equipment name	RFT ID No.
Spectrum Analyzer	TR06
RF tester	RC02
RF cable	CL27
Directional coupler	DC03
High pass filter	HPF2

Final Result

The EUT met the requirements of the standard for this test.

2.7 *Transmitter Out of Band Spurious Emissions (Radiated)*

Reference Standard
Part22.917

Test Conditions

Date:	05 Feb, 2011
Ambient Temperature:	16 degC
Relative humidity:	28 %
Test Voltage:	3.7 V

Test Sample
Configuration Ⅰ

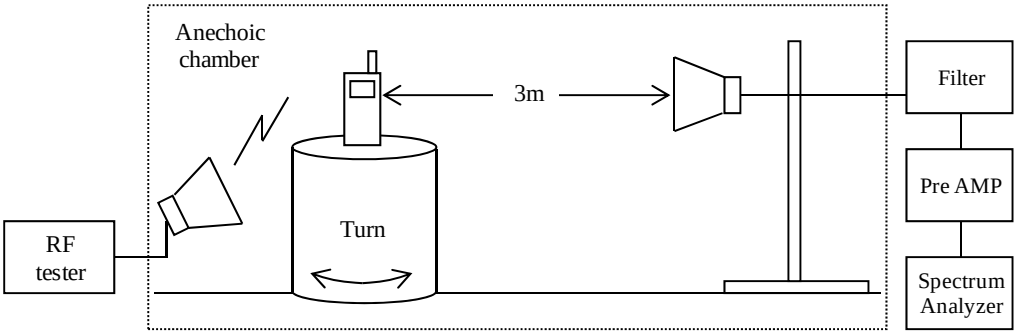
Test Method
Substitution method is used for this test.
a) EUT is set on non-conducting table and the output power is set to the maximum level.
b) As a receive antenna, Horn antenna is used for high frequency range (above 1GHz), and Bilogical antenna is used for low frequency range (30MHz to 1GHz).
c) The maximum level of each spurious emission is measured by a spectrum analyzer (SA) in below conditions.
Turntable is rotated 360 degrees.
The height of receive antenna is changed from 1m to 4m.
Receive antenna polarization is set to vertical and horizontal.
EUT was placed at three different orientations (X, Y and Z axis) in order to find the worst orientation.
This emission level is recorded.
During this measurement, receive antenna is adjusted the direction to keep the EUT within the beamwidth of receive antenna.
d) Reference antenna is replaced with EUT, and connected with signal generator (SG). SG output power is adjusted to get same level as the recorded maximum radiated EUT power by SA.

e) Radiated output power (Pout) is calculated with adjusted SG output (Psg) [dBm], reference antenna gain (Gref) [dBd] and cable loss between SG and reference antenna (Lcab) [dB].

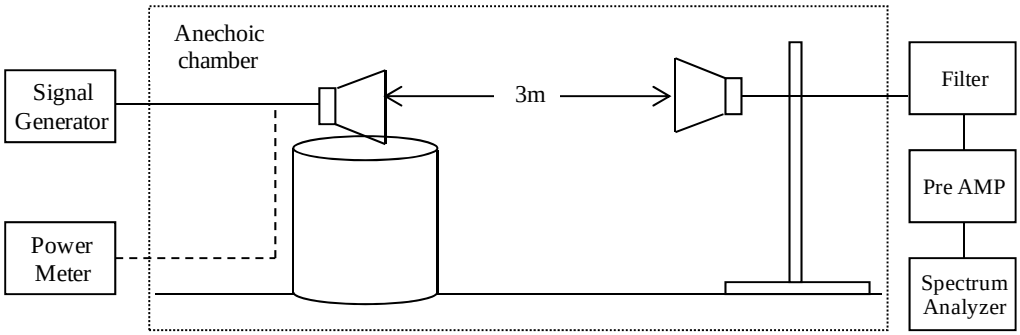
Pout [dBm e.r.p] = Psg + Gref + Lcab

Test Setup

[Measurement]



[Substitution]



Test Results

Bottom Channel (1013ch, Nominal Freq.:824.70MHz)

Measurement Frequency [MHz]	Measurement Bandwidth [MHz]	Emission Level [dBm]		Limit [dBm]	Result Pass/Fail
		Vertical	Horizontal		
1649.40	1	-44.0	-43.0	-13.0	Pass
2474.10	1	< -54.0	< -54.0	-13.0	Pass
3298.80	1	-44.7	-45.0	-13.0	Pass
4123.50	1	-40.5	-40.6	-13.0	Pass
4948.20	1	< -47.3	< -47.3	-13.0	Pass
5772.90	1	< -46.3	< -46.3	-13.0	Pass
6597.60	1	< -44.6	< -44.6	-13.0	Pass
7422.30	1	< -44.6	< -44.6	-13.0	Pass
8247.00	1	< -43.9	< -43.9	-13.0	Pass
others	-	-	-	-	-

Middle Channel (384ch, Nominal Freq.:836.52MHz)

Measurement Frequency [MHz]	Measurement Bandwidth [MHz]	Emission Level [dBm]		Limit [dBm]	Result Pass/Fail
		Vertical	Horizontal		
1673.04	1	-38.7	-36.6	-13.0	Pass
2509.56	1	-43.9	-42.8	-13.0	Pass
3346.08	1	-40.8	-37.2	-13.0	Pass
4182.60	1	-40.6	-38.6	-13.0	Pass
5019.12	1	< -47.7	< -47.7	-13.0	Pass
5855.64	1	< -45.6	< -45.6	-13.0	Pass
6692.16	1	< -45.1	< -45.1	-13.0	Pass
7528.68	1	< -44.5	< -44.5	-13.0	Pass
8365.20	1	< -44.0	< -44.0	-13.0	Pass
others	-	-	-	-	-

Top Channel (777ch, Nominal Freq.:848.31MHz)

Measurement Frequency [MHz]	Measurement Bandwidth [MHz]	Emission Level [dBm]		Limit [dBm]	Result Pass/Fail
		Vertical	Horizontal		
1696.62	1	-43.4	-41.9	-13.0	Pass
2544.93	1	-48.7	-47.7	-13.0	Pass
3393.24	1	-45.3	-44.3	-13.0	Pass
4241.55	1	-41.4	-40.3	-13.0	Pass
5089.86	1	< -47.3	< -47.3	-13.0	Pass
5938.17	1	< -45.0	< -45.0	-13.0	Pass
6786.48	1	< -45.2	< -45.2	-13.0	Pass
7634.79	1	< -45.0	< -45.0	-13.0	Pass
8483.10	1	< -44.0	< -44.0	-13.0	Pass
others	-	-	-	-	-

Test Equipment Used

Equipment name	RFT ID No.
Spectrum Analyzer	TR06
Receive Antenna	BA04, DH01
Reference Antenna	DH06
Pre AMP	PR12
Filter	BRF4, HPF2
Signal Generator	SG05
Power Meter	PM03, PU03
RF tester	RC02
RF Cable	CL11, CL23, CL24, CL27

Final Result

The EUT met the requirements of the standard for this test.

2.8 *Band Edge Emissions*

Reference Standard
Part22.917

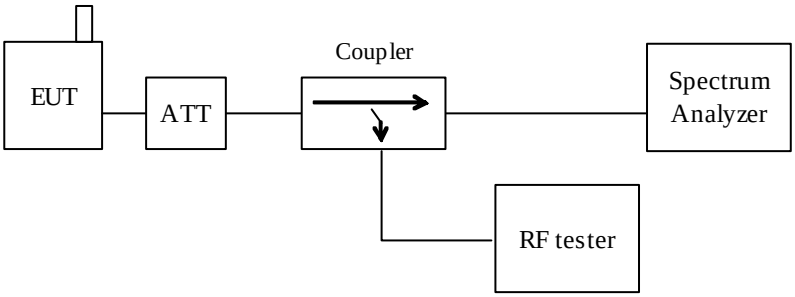
Test Conditions

Date:	07 Feb, 2011
Ambient Temperature:	23 degC
Relative humidity:	57 %
Test Voltage:	3.7 V

Test Sample
Configuration Ⅱ

Test Method
a) EUT is connected to RF tester with Max transmitter power level.
b) Lower band edge level is measured in bottom channel transmission.
c) Higher band edge level is measured in top channel transmission.
d) 1% of band width is used for resolution band width for spectrum analyzer.

Test Setup



Test Results

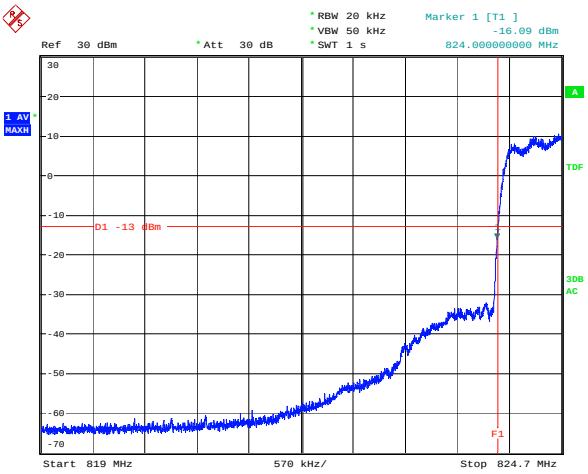
Bottom Band Edge

Measured Frequency [MHz]	Peak Level [dBm]	Limit [dBm]	Result
824.000	-16.0	-13.0	Pass

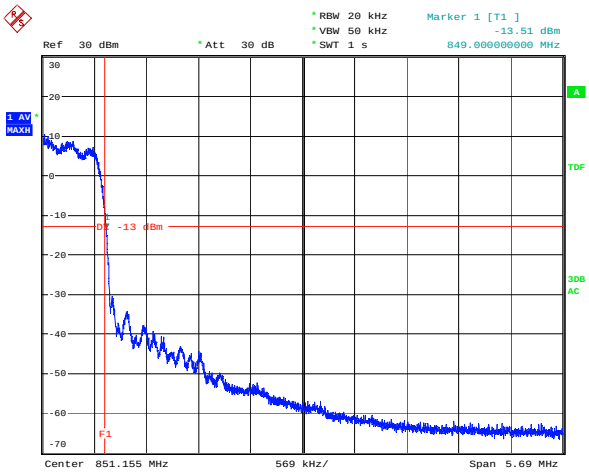
Top Band Edge

Measured Frequency [MHz]	Peak Level [dBm]	Limit [dBm]	Result
849.000	-13.5	-13.0	Pass

Graphical Data



Bottom Band Edge



Top Band Edge

Test Equipment Used

Equipment name	RFT ID No.
Spectrum Analyzer	TR06
RF tester	RC02
RF cable	CL27
Directional coupler	DC03

Final Result

The EUT met the requirements of the standard for this test.

2.9 *Transmitter AC Power Line Emission requirement*

Reference Standard
Part15.207

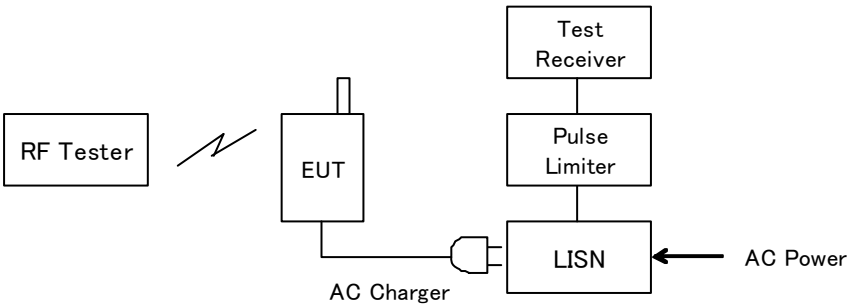
Test Conditions

Date:	07 Feb, 2011
Ambient Temperature:	23 degC
Relative humidity:	57 %
Test Voltage:	3.7 V

Test Sample
Configuration Ⅰ

Test Method
a) EUT is connected to RF tester with Max transmitter power level.
b) AC power is supplied to AC charger through LISN.
c) AC charger is connected to EUT.
d) AC Line conducted emission is measured by EMI receiver.
Both Va/Vb line are measured emission level.

Test Setup



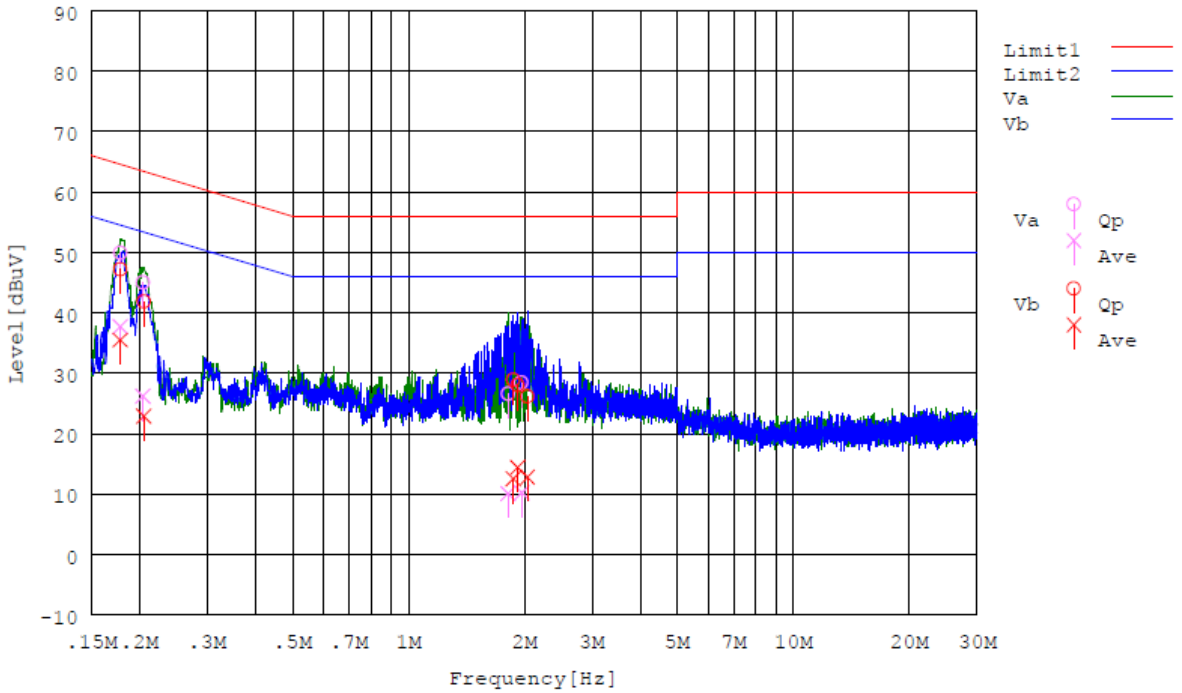
Limit

Frequency [MHz]	Limit QP [dBμV]	Limit AVE [dBμV]
0.15 - 0.5	66 - 56	56 - 46
0.5 - 5	56	46
5 - 30	60	50

Test Results

No.	Frequency [MHz]	Reading QP [dBµV]	Reading Ave [dBµV]	Factor [dB]	Result QP [dBµV]	Result Ave [dBµV]	Limit QP [dBµV]	Limit Ave [dBµV]	Line	Result
1	0.178	39.8	27.6	10.1	49.9	37.7	64.6	54.6	Va	Pass
2	0.204	34.9	16.1	10.1	45.0	26.2	63.4	53.4	Va	Pass
3	1.812	16.6	0.1	10.0	26.6	10.1	56.0	46.0	Va	Pass
4	1.967	18.4	0.2	10.0	28.4	10.2	56.0	46.0	Va	Pass
5	0.178	37.1	25.4	10.1	47.2	35.5	64.6	54.6	Vb	Pass
6	0.205	31.7	12.8	10.1	41.8	22.9	63.4	53.4	Vb	Pass
7	1.871	18.9	2.5	10.0	28.9	12.5	56.0	46.0	Vb	Pass
8	1.919	18.0	4.4	10.0	28.0	14.4	56.0	46.0	Vb	Pass
9	2.035	16.1	2.8	10.0	26.1	12.8	56.0	46.0	Vb	Pass

Graphical Data



Test Equipment Used

Equipment name	RFT ID No.
EMI Receiver	TR06
LISN	LN05
RF tester	RC02
RF Cable	CL18

Final Result

The EUT met the requirements of the standard for this test.

4 List of utilized test equipment/ calibration

RFT ID No.	Kind of Equipment and Precision	Manufacturer	Model No.	Serial Number	Calibration Date	Calibrated until
AC01(EM)	Anechoic Chamber (1st test room)	JSE	203397C	-	2010/4/10	2011/4/30
AC01(EG)	Anechoic Chamber (1st test room)	JSE	203397C	-	2010/11/13	2011/11/30
BA04	Bilogical Antenna	SCHAFFNER	CA2855	2903	2011/1/26	2012/1/31
BRF4	Band Reject Filter (WCDMA850)	M-City	BRF0835-01	RF0004	2010/4/22	2011/4/30
CL11	Antenna Cable for RE	RFT	-	-	2010/10/19	2011/10/31
CL18	Antenna Cable for CE	RFT	-	-	2010/5/15	2011/5/31
CL23	RF Cable 0.5m	SUHNER	SUCOFLEX104PE	48773	2010/6/15	2011/6/30
CL24	RF Cable 5.0m	SUHNER	SUCOFLEX104PE	48775	2010/6/15	2011/6/30
CL27	RF Cable 0.5m	SUHNER	SUCOFLEX104	230286	2010/6/15	2011/6/30
DC03	Directional Coupler	Merrimac	CWM-10R-10.2G	83263	2010/7/2	2011/7/31
DH01	DRG Horn Antenna	A.H. Systems	SAS-571	785	2010/1/20	2012/1/31
DH06	DRG Horn Antenna	A.H. Systems	SAS-571	1339	2010/6/4	2012/6/30
HPF2	High Pass Filter (1500MHz)	M-City	HPF0900-01	RF0003-01	2010/6/15	2011/6/30
LA02	Logperiodic Antenna	SCHWARZBECK	USLP 9143	339	2010/7/21	2011/7/31
LN05	LISN	Kyoritsu	KNW-407F	8-1773-2	2010/5/21	2011/5/31
PM03	Power Meter	Anritsu	ML2438A	99070001	2010/7/7	2011/7/31
PU03	Power Sensor (CW)	Anritsu	MA2472A	990103	2010/7/7	2011/7/31
PR12	Pre. Amplifier (1-26G)	Agilent Technologies	8449B	3008A02513	2011/1/18	2012/1/31
TR06	Test Receiver (F/W : 3.93 SP2)	Rohde & Schwarz	ESU26	100002	2010/9/2	2011/9/30
SG05	Signal Generator	Rohde & Schwarz	SMR20	100905	2010/6/3	2011/6/30
TC01	Temperature Chamber	ESPEC	SH-641	92000964	2010/11/19	2011/11/30

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.