



FCC RF Test Report

APPLICANT : Panasonic Mobile Communications Development of Europe Ltd
EQUIPMENT : Mobile Phone
BRAND NAME : NTT docomo
MODEL NAME : Panasonic EB-4070
MARKETING NAME : P-01J
FCC ID : UCE216065A
STANDARD : FCC 47 CFR Part 2, 22(H)
CLASSIFICATION : Licensed Non-Broadcast Transmitter Held to Ear(TNE)

The product was received on Jul. 13, 2016 and testing was completed on Jul. 22, 2016. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA / EIA-603-D-2010 and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG671309	Rev. 01	Initial issue of report	Aug. 18, 2016

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	-
3.5	§2.1049 §22.917(b)	Occupied Bandwidth	Reporting Only	-
3.6	§2.1051 §22.917(a)	Band Edge Measurement	$< 43+10\log_{10}(P[\text{Watts}])$	-
3.7	§2.1051 §22.917(a)	Conducted Emission	$< 43+10\log_{10}(P[\text{Watts}])$	-
3.8	§2.1055 §22.355	Frequency Stability for Temperature & Voltage	< 2.5 ppm for Part 22	-
	§2.1055		Within Authorized Band	
4.4	§22.913(a)(2)	Effective Radiated Power	< 7 Watts	-
4.5	§2.1053 §22.917(a)	Field Strength of Spurious Radiation	$< 43+10\log_{10}(P[\text{Watts}])$	Under limit 43.06 dB at 1696.000 MHz

1 General Description

1.1 Applicant

Panasonic Mobile Communications Development of Europe Ltd
Willoughby Road, Bracknell, Berkshire RG12 8FP, UK

1.2 Manufacturer

Panasonic Mobile Communications Development of Europe Ltd
Willoughby Road, Bracknell, Berkshire RG12 8FP, UK

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	NTT docomo
Model Name	Panasonic EB-4070
Marketing Name	P-01J
FCC ID	UCE216065A
EUT supports Radios application	WCDMA/HSPA/NFC WLAN 11b/g/n HT20 Bluetooth v4.1 EDR/LE
HW Version	Rev C
SW Version	ACPU: amethyst-lp-12-0088, CCPU: AMET.1200C1100034.1013.00
EUT Stage	Production Unit

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Specification of Accessory		
AC Adapter	Brand Name	NTT docomo
	Model Name	AC Adaptor 04
Battery	Brand Name	Sanyo
	Model Name	P33
Earphone	Brand Name	NTT docomo
	Model Name	Stereo Earphone Type 02
USB Cable	Brand Name	NTT docomo
	Model Name	Micro USB Cable Type 01

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	WCDMA: Band V: 826.4 MHz ~ 846.6 MHz
Rx Frequency	WCDMA: Band V: 871.4 MHz ~ 891.6 MHz
Maximum Output Power to Antenna	WCDMA: Band V: 22.94 dBm
Antenna Type	Monopole Antenna
Antenna Gain	Cellular Band: 2.50 dBi
Type of Modulation	WCDMA: QPSK (Uplink) HSDPA: 16QAM (Uplink) HSUPA: QPSK (Uplink)

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Maximum ERP/EIRP Power, Frequency Tolerance, and Emission Designator

FCC Rule	System	Type of Modulation	Maximum ERP/EIRP (W)	Frequency Tolerance (ppm)	Emission Designator
Part 22	WCDMA Band V RMC 12.2Kbps	QPSK	0.1194	0.0120 ppm	4M15F9W

1.7 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1022 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	Sporton Site No.	
	TH03-HY	03CH07-HY

1.8 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 2, 22(H)
- ANSI / TIA / EIA-603-D-2010
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r02

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas. License Digital Systems v02r02 with maximum output power.

Radiated measurements were performed with rotating EUT in different three orthogonal test planes to find the maximum emission.

Radiated emissions were investigated as following frequency range:

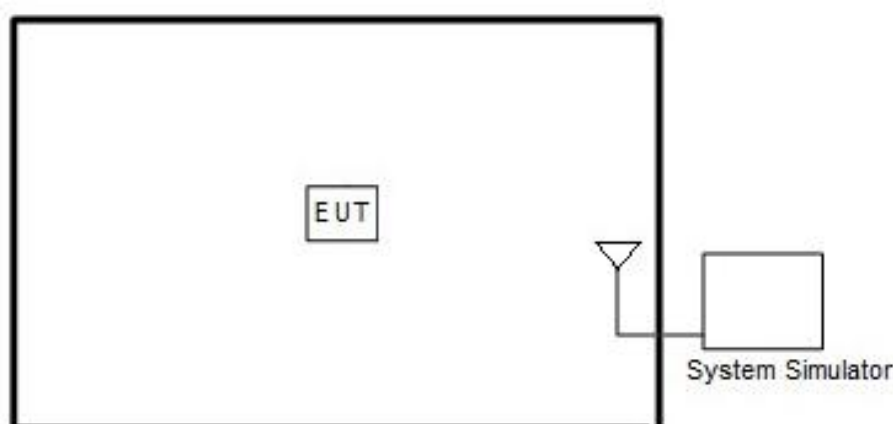
30 MHz to 9000 MHz for WCDMA Band V.

All modes and data rates and positions were investigated.

Test modes are chosen to be reported as the worst case configuration below:

Test Modes		
Band	Radiated TCs	Conducted TCs
WCDMA Band V	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

The following shows an offset computation example with RF cable loss 4.2 dB and a 10dB attenuator.

Example :

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 4.2 + 10 = 14.2 \text{ (dB)}\end{aligned}$$

2.5 Frequency List of Low/Middle/High Channels

WCDMA Band V Channel and Frequency List			
Channel/Frequency(MHz)	Lowest	Middle	Highest
Channel	4132	4182	4233
Frequency	826.4	836.4	846.6

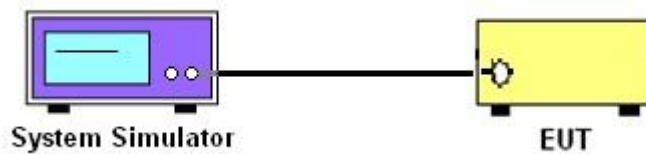
3 Conducted Test Result

3.1 Measuring Instruments

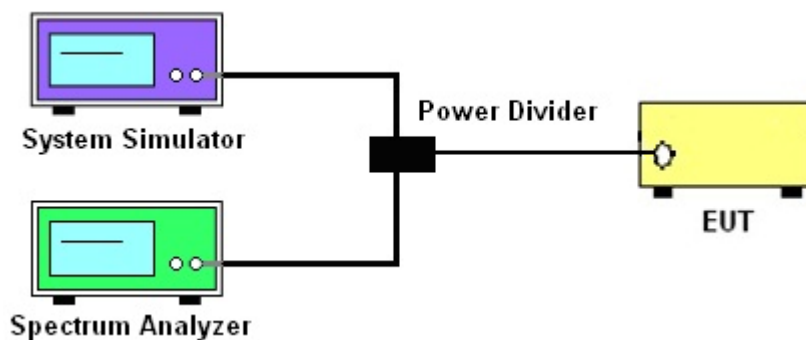
See list of measuring instruments of this test report.

3.2 Test Setup

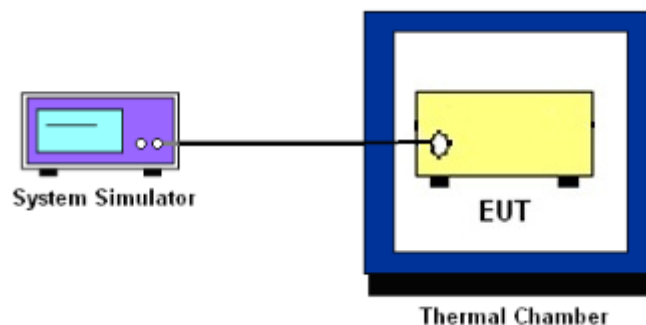
3.2.1 Conducted Output Power



3.2.2 Peak-to-Average Ratio, Occupied Bandwidth, Conducted Band-Edge and Conducted Spurious Emission



3.2.3 Frequency Stability



3.3 Test Result of Conducted Test

Please refer to Appendix A.



3.4 Conducted Output Power

3.4.1 Description of the Conducted Output Power

A system simulator was used to establish communication with the EUT. Its parameters were set to enforce EUT transmitting at the maximum power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

3.4.2 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure the maximum burst average power for GSM and maximum average power for other modulation signal.

3.5 99% Occupied Bandwidth and 26dB Bandwidth Measurement

3.5.1 Description of 99% Occupied Bandwidth and 26dB Bandwidth Measurement

The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

3.5.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 4.2.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
4. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
5. Set the detection mode to peak, and the trace mode to max hold.
6. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace.
(this is the reference value)
7. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
8. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “-X dB down amplitude” determined in step 6. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
9. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

3.6 Conducted Band Edge

3.6.1 Description of Conducted Band Edge Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.

3.6.2 Test Procedures

1. The testing follows FCC KDB 971168 D01 v02r02 Section 6.0.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by an RF cable and attenuator.
The path loss was compensated to the results for each measurement.
4. The band edges of low and high channels for the highest RF powers were measured.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
6. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)] \text{ (dB)}$
 $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$
 $= -13\text{dBm}.$

3.7 Conducted Spurious Emission

3.7.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

3.7.2 Test Procedures

1. The testing follows FCC KDB 971168 D01 v02r02 Section 6.0.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by an RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. The middle channel for the highest RF power within the transmitting frequency was measured.
5. The conducted spurious emission for the whole frequency range was taken.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
= $P(W) - [43 + 10\log(P)]$ (dB)
= $[30 + 10\log(P)]$ (dBm) - $[43 + 10\log(P)]$ (dB)
= -13dBm.

3.8 Frequency Stability

3.8.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ ($\pm 2.5\text{ppm}$) of the center frequency.

3.8.2 Test Procedures for Temperature Variation

1. The testing follows FCC KDB 971168 D01 v02r02 Section 9.0.
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4. With power OFF, the temperature was raised in 10°C steps up to 50°C . The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.8.3 Test Procedures for Voltage Variation

1. The testing follows FCC KDB 971168 D01 v02r02 Section 9.0.
2. The EUT was placed in a temperature chamber at $20\pm 5^{\circ}\text{C}$ and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
4. The variation in frequency was measured for the worst case.

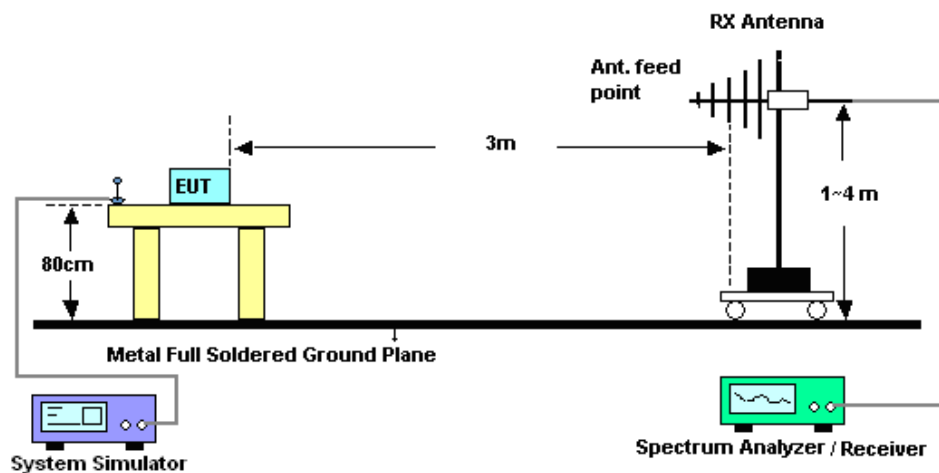
4 Radiated Test Items

4.1 Measuring Instruments

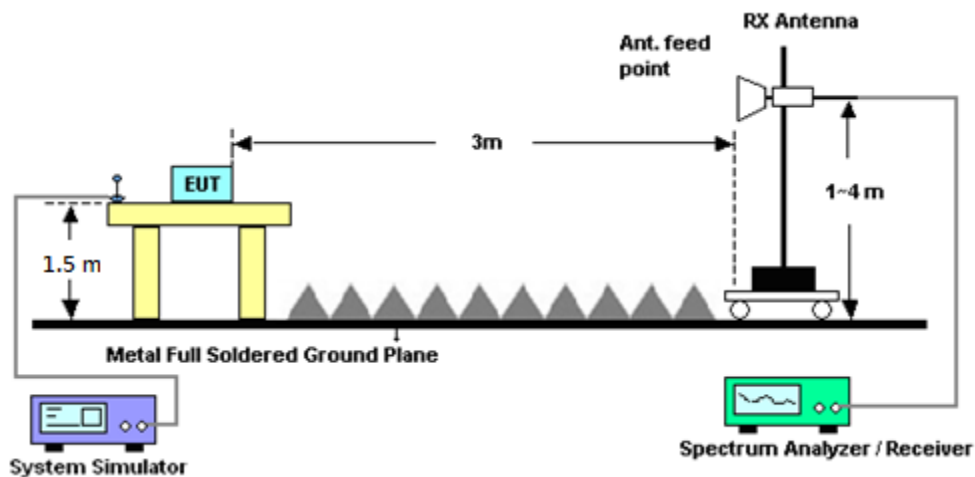
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated test from 30MHz to 1GHz



4.2.2 For radiated test above 1GHz



4.3 Test Result of Radiated Test

Please refer to Appendix B.

4.4 Effective Radiated Power and Effective Isotropic Radiated Power Measurement

4.4.1 Description of the ERP/EIRP Measurement

The substitution method, in ANSI / TIA / EIA-603-D-2010, was used for ERP/EIRP measurement, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v02r02. The ERP of mobile transmitters must not exceed 7 Watts (Cellular Band).

4.4.2 Test Procedures

1. The testing follows FCC KDB 971168 D01 v02r02 Section 5.2.1. (for CDMA/WCDMA), Section 5.2.2.2 (for GSM/GPRS/EDGE) and ANSI / TIA-603-D-2010 Section 2.2.17.
2. The EUT was placed on a non-conductive rotating platform (0.8 meters for frequency below 1GHz and 1.5 meter for frequency above 1GHz) in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RMS detector per section 5. of KDB 971168 D01.
3. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power. The maximum emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
4. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-D. The EUT was replaced by the substitution antenna at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP was calculated with the correction factor, $EIRP = LVL + \text{Correction factor}$ and $ERP = EIRP - 2.15$. Take the record of the output power at substitution antenna.

	GSM/GPRS/EDGE	WCDMA/HSPA
SPAN	500kHz	10MHz
RBW	10kHz	100kHz
VBW	30kHz	300kHz
Detector	RMS	RMS
Trace	Average	Average
Average Type	Power	Power
Sweep Count	100	100

4.5 Field Strength of Spurious Radiation Measurement

4.5.1 Description of Field Strength of Spurious Radiated Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.5.2 Test Procedures

1. The testing follows FCC KDB 971168 D01 v02r02 Section 5.8 and ANSI / TIA-603-D-2010 Section 2.2.12.
2. The EUT was placed on a rotatable wooden table 0.8 meters for frequency below 1GHz and 1.5 meter for frequency above 1GHz above the ground.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between one meter and four meters to search for the maximum spurious emission for both horizontal and vertical polarizations.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
9. Taking the record of output power at antenna port.
10. Repeat step 7 to step 8 for another polarization.
11. $EIRP \text{ (dBm)} = S.G. \text{ Power} - Tx \text{ Cable Loss} + Tx \text{ Antenna Gain}$
12. $ERP \text{ (dBm)} = EIRP - 2.15$
13. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
14. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)] \text{ (dB)}$
 $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$
 $= -13\text{dBm}.$



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	Rohde & Schwarz	FSP30	101329	9kHz~30GHz	Jun. 27, 2016	Jul. 18, 2016	Jun. 26, 2017	Conducted (TH03-HY)
Temperature Chamber	ESPEC	SU-641	92013721	-30℃ ~70℃	Nov. 20, 2015	Jul. 18, 2016	Nov. 19, 2016	Conducted (TH03-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL883644	Voltage:0~20V;Current:0~5A	Nov. 26, 2015	Jul. 18, 2016	Nov. 25, 2016	Conducted (TH03-HY)
Base Station(Measu	Rohde & Schwarz	CMU200	117995	GSM / GPRS / WCDMA / CDMA	Jul. 26, 2015	Jul. 18, 2016	Jul. 25, 2016	Conducted (TH03-HY)
Bilog Antenna	TESEQ	CBL 6111D	35419	30MHz to 1GHz	Jan. 13, 2016	Jul. 22 ,2016	Jan. 12, 2017	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 21, 2015	Jul. 22 ,2016	Aug. 20, 2016	Radiation (03CH07-HY)
EMI Test Receiver	Keysight	N9038A (MXE)	MY54130085	20Hz ~ 8.4GHz	Nov. 04, 2015	Jul. 22 ,2016	Nov. 03, 2016	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-00 101800-30-1	1590075	1GHz ~ 18GHz	Apr. 15, 2016	Jul. 22 ,2016	Apr. 14, 2017	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz-1GHz	Mar. 18, 2016	Jul. 22 ,2016	Mar. 17, 2017	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Feb. 27, 2016	Jul. 22 ,2016	Feb. 26, 2017	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	N/A	Jul. 22 ,2016	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Jul. 22 ,2016	N/A	Radiation (03CH07-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1328	1GHz ~ 18GHz	Nov. 02, 2015	Jul. 22 ,2016	Nov. 01, 2017	Radiation (03CH07-HY)
Signal Generator	Rohde & Schwarz	SMF100A	101107	100kHz~40GHz	May 22, 2016	Jul. 22 ,2016	May 21, 2017	Radiation (03CH07-HY)



6 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.60
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.50
-------------------------------------------------------------------------	------



Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

Conducted Power (*Unit: dBm)			
Band	WCDMA Band V		
Channel	4132	4182	4233
Frequency	826.4	836.4	846.6
RMC 12.2K	22.94	22.88	22.81
HSDPA Subtest-1	21.53	21.36	21.53
HSDPA Subtest-2	21.54	21.45	21.41
HSDPA Subtest-3	21.50	21.43	21.42
HSDPA Subtest-4	21.71	21.50	21.45
HSUPA Subtest-1	21.05	21.75	21.39
HSUPA Subtest-2	20.73	20.50	20.50
HSUPA Subtest-3	20.32	20.37	20.55
HSUPA Subtest-4	21.25	21.40	21.56
HSUPA Subtest-5	21.63	21.38	21.27



A2. WCDMA

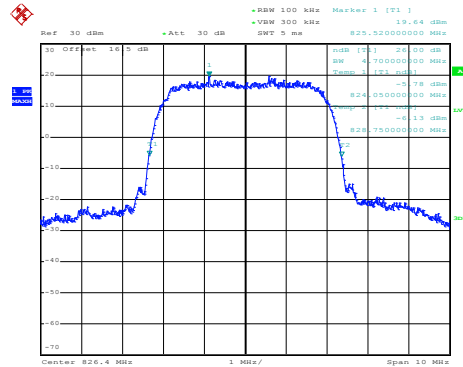
26dB Bandwidth

Mode	WCDMA Band V		
Mod.	Channel	Frequency(MHz)	RMC 12.2Kbps
Lowest	4132	826.4	4.70
Middle	4182	836.4	4.73
Highest	4233	846.6	4.73



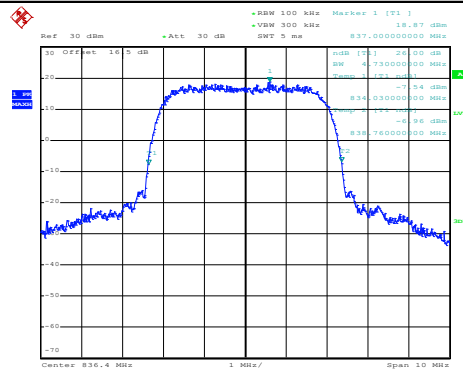
WCDMA Band V (RMC 12.2Kbps)

Lowest Channel



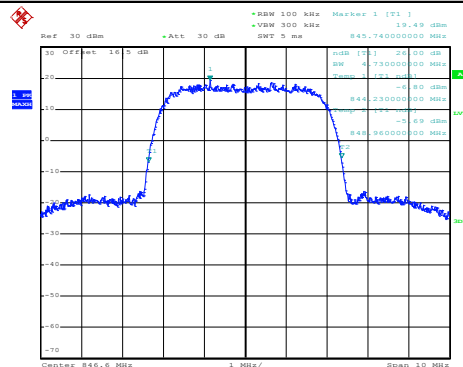
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Middle Channel



Date: 18.JUL.2016 14:48:34

Highest Channel



Date: 18.JUL.2016 14:49:02



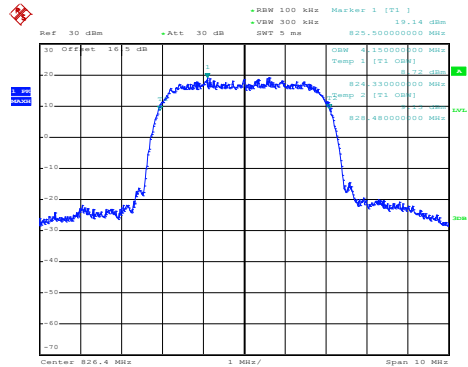
Occupied Bandwidth

Mode	WCDMA Band V		
Mod.	Channel	Frequency(MHz)	RMC 12.2Kbps
Lowest	4132	826.4	4.15
Middle	4182	836.4	4.15
Highest	4233	846.6	4.15



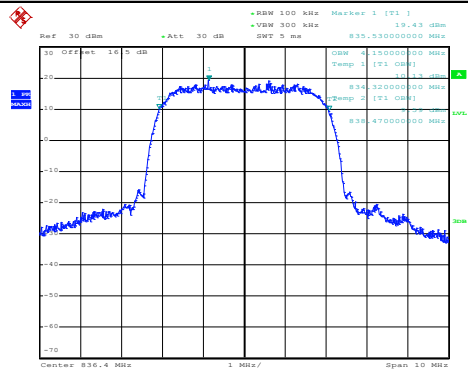
WCDMA Band V (RMC 12.2Kbps)

Lowest Channel



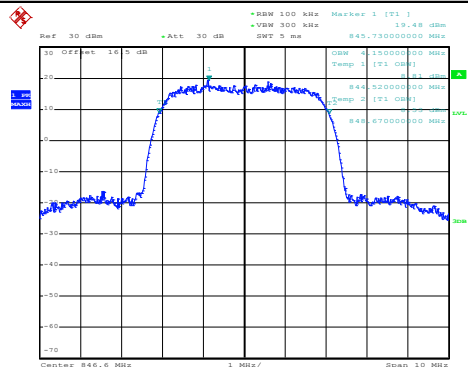
Date: 18.JUL.2016 14:49:50

Middle Channel

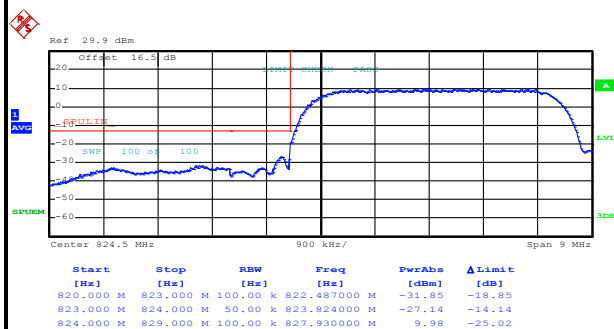


Date: 18.JUL.2016 14:50:18

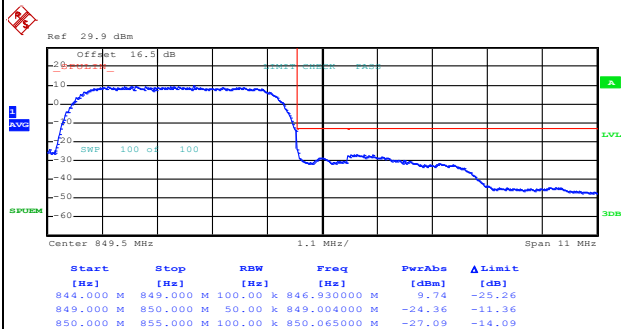
Highest Channel



Date: 18.JUL.2016 14:50:46

**Conducted Band Edge****WCDMA Band V (RMC 12.2Kbps)****Lowest Band Edge**

Date: 18.JUL.2016 14:54:24

Highest Band Edge

Date: 18.JUL.2016 14:57:06

Lowest Band Edge

Start(Hz)	Stop(Hz)	RBW(Hz)	Frequency(Hz)	PwrAbs(dBm)	ΔLimit(dB)	Result
820 M	823 M	100 k	822.487 M	-31.85	-18.85	Pass
823 M	824 M	50 k	823.824 M	-27.14	-14.14	Pass
824 M	829 M	100 k	827.930 M	9.98	-25.02	-

Highest Band Edge

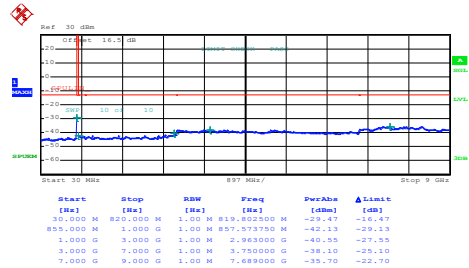
Start(Hz)	Stop(Hz)	RBW(Hz)	Frequency(Hz)	PwrAbs(dBm)	ΔLimit(dB)	Result
844 M	849 M	100 k	846.930 M	9.74	-25.26	-
849 M	850 M	50 k	849.004 M	-24.36	-11.36	Pass
850 M	855 M	100 k	850.065 M	-27.09	-14.09	Pass



Conducted Spurious Emission

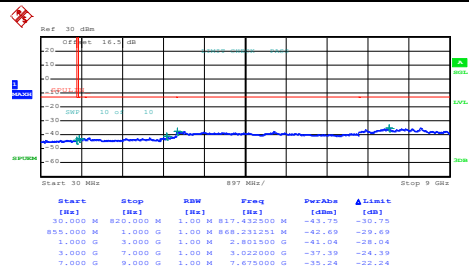
WCDMA Band V (RMC 12.2Kbps)

Lowest Channel



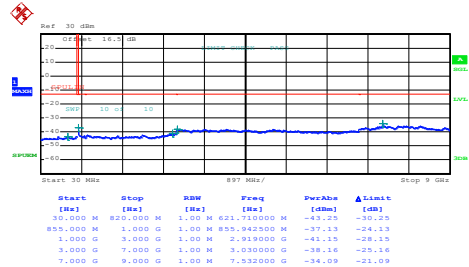
Date: 18.JUL.2016 14:45:21

Middle Channel



Date: 18.JUL.2016 14:46:06

Highest Channel



Date: 18.JUL.2016 14:46:52



Lowest Channel						
Start(Hz)	Stop(Hz)	RBW(Hz)	Frequency(Hz)	PwrAbs(dBm)	Δ Limit(dB)	Result
30 M	820 M	1 M	819.80250 M	-29.47	-16.47	Pass
855 M	1 G	1 M	857.57375 M	-42.13	-29.13	Pass
1 G	3 G	1 M	2.963000 G	-40.55	-27.55	Pass
3 G	7 G	1 M	3.75000 G	-38.10	-25.10	Pass
7 G	9 G	1 M	7.689000 G	-35.70	-22.70	Pass

Middle Channel						
Start(Hz)	Stop(Hz)	RBW(Hz)	Frequency(Hz)	PwrAbs(dBm)	Δ Limit(dB)	Result
30 M	820 M	1 M	817.432500 M	-43.75	-30.75	Pass
855 M	1 G	1 M	868.231251 M	-42.69	-29.69	Pass
1 G	3 G	1 M	2.8015 G	-41.04	-28.04	Pass
3 G	7 G	1 M	3.0220 G	-37.39	-24.39	Pass
7 G	9 G	1 M	7.6750 G	-35.24	-22.24	Pass

Highest Channel						
Start(Hz)	Stop(Hz)	RBW(Hz)	Frequency(Hz)	PwrAbs(dBm)	Δ Limit(dB)	Result
30 M	820 M	1 M	621.7100 M	-43.25	-30.25	Pass
855 M	1 G	1 M	855.9425 M	-37.13	-24.13	Pass
1 G	3 G	1 M	2.919 G	-41.15	-28.15	Pass
3 G	7 G	1 M	3.030 G	-38.16	-25.16	Pass
7 G	9 G	1 M	7.532 G	-34.09	-21.09	Pass

**Frequency Stability**

Test Conditions	Middle Channel	WCDMA Band V (RMC 12.2Kbps)	Limit 2.5ppm
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0036	PASS
40	Normal Voltage	0.0012	
30	Normal Voltage	0.0024	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0024	
0	Normal Voltage	0.0012	
-10	Normal Voltage	0.0024	
-20	Normal Voltage	0.0012	
-30	Normal Voltage	0.0012	
20	Maximum Voltage	0.0024	
20	Normal Voltage	0.0108	
20	Battery End Point	0.0120	

Note:

1. Normal Voltage = 3.8V. ; Battery End Point (BEP) = 3.4 V. ; Maximum Voltage =4.2 V
2. The frequency fundamental emissions stay within the authorized frequency block.



Appendix B. Test Results of Radiated Test

ERP/EIRP

Channel	Mode	Horizontal		Vertical	
		ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	WCDMA Band V	2.81	0.0019	20.77	0.1194
Middle	RMC 12.2Kbps	3.01	0.0020	20.37	0.1089
Highest		2.79	0.0019	20.23	0.1054

**Radiated Spurious Emission**

WCDMA Band V(RMC 12.2Kbps)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1656	-67.28	-13	-54.28	-55.02	-69.01	0.98	4.86	H
	2480	-64.14	-13	-51.14	-57.31	-66.05	1.28	5.34	H
	3296	-64.36	-13	-51.36	-59.37	-67.77	1.54	7.10	H
	1656	-60.86	-13	-47.86	-48.95	-62.59	0.98	4.86	V
	2480	-60.97	-13	-47.97	-54.5	-62.88	1.28	5.34	V
	3296	-64.08	-13	-51.08	-59.56	-67.49	1.54	7.10	V
Middle	1672	-67.01	-13	-54.01	-55.11	-68.69	0.99	4.82	H
	2504	-63.56	-13	-50.56	-56.82	-65.52	1.29	5.40	H
	3344	-64.05	-13	-51.05	-59.35	-67.66	1.56	7.31	H
	1672	-58.57	-13	-45.57	-47	-60.25	0.99	4.82	V
	2512	-60.91	-13	-47.91	-54.56	-62.88	1.29	5.41	V
	3344	-63.98	-13	-50.98	-59.45	-67.59	1.56	7.31	V
Highest	1696	-64.66	-13	-51.66	-52.86	-66.26	1.00	4.75	H
	2536	-63.74	-13	-50.74	-57.04	-65.72	1.30	5.43	H
	3393	-63.63	-13	-50.63	-59.22	-67.44	1.57	7.53	H
	1696	-56.06	-13	-43.06	-44.67	-57.66	1.00	4.75	V
	2544	-60.93	-13	-47.93	-54.76	-62.91	1.30	5.44	V
	3393	-63.63	-13	-50.63	-59.21	-67.44	1.57	7.53	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.