

RF TEST REPORT



Report No.: 14021149-FCC-R1

Supersede Report No.: N/A

Applicant	Beneworld International (HK) Co., Limited	
Product Name	7inch Tablet PC	
Main Model	BW9	
Test Standard	FCC Part 22(H) & FCC Part 24(E): 2014	
Test Date	November 14 to November 26, 2014	
Issue Date	November 26, 2014	
Test Result	☒ Pass ☐ Fail	
Equipment complied with the specification	☒	
Equipment did not comply with the specification	☐	
		
Deon Dai Test Engineer	Alex Liu Checked By	
This test report may be reproduced in full only Test result presented in this test report is applicable to the tested sample only		

Issued by:

SIEMIC (Nanjing-China) Laboratories

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Laboratories Introduction

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Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety

Test Report No.	14021149-FCC-R1
Page	3 of 47

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CONTENTS

1. REPORT REVISION HISTORY	5
2. CUSTOMER INFORMATION.....	5
3. TEST SITE INFORMATION	5
4. EQUIPMENT UNDER TEST (EUT) INFORMATION	6
5. TEST SUMMARY	8
6. MEASUREMENTS, EXAMINATION AND DERIVED RESULTS	9
6.1 RF EXPOSURE (SAR).....	9
6.2 RF OUTPUT POWER	10
6.4 OCCUPIED BANDWIDTH.....	15
6.5 SPURIOUS EMISSIONS AT ANTENNA TERMINALS	20
6.6 SPURIOUS RADIATED EMISSIONS	23
6.7 BAND EDGE	27
6.8 FREQUENCY STABILITY	29
ANNEX A. TEST INSTRUMENT	32
ANNEX B. EUT AND TEST SETUP PHOTOGRAPHS.....	33
ANNEX C. TEST SETUP AND SUPPORTING EQUIPMENT	44
ANNEX D. USER MANUAL / BLOCK DIAGRAM / SCHEMATICS / PARTLIST	46
ANNEX E. DECLARATION OF SIMILARITY	47

Test Report No.	14021149-FCC-R1
Page	5 of 47

1. Report Revision History

Report No.	Report Version	Description	Issue Date
14021149-FCC-R1	NONE	Original	November 26, 2014

2. Customer information

Applicant Name	Beneworld International (HK) Co., Limited
Applicant Add	Unit 04, 7/F, Bright Way Tower, No. 33 Mong Kok Road, Kowloon, Hong Kong
Manufacturer	Shenzhen Beneworld Technology Co. Ltd.
Manufacturer Add	Building 3, Huangtian Industrial Park, Xixiang, Baoan District, Shenzhen, Guangdong, China

3. Test site information

Lab performing tests	SIEMIC (Nanjing-China) Laboratories
Lab Address	2-1 Longcang Avenue Yuhua Economic and Technology Development Park, Nanjing, China
FCC Test Site No.	986914
IC Test Site No.	4842B-1
Test Software	LabView of SIEMIC version 1.0

4. Equipment under Test (EUT) Information

Description of EUT:	7inch Tablet PC
Main Model:	BW9
Serial Model:	BW7D9, BW7D19, BW7D29, BW7D61, BW7D62, BW7D66, BW7D68, BW7D69, BW7D70, BW7D71
Date EUT received:	November 03, 2014
Test Date(s):	November 14 to November 26, 2014
Maximum Conducted AV Power to Antenna	GSM850: 30.75 dBm PCS1900: 28.60 dBm UMTS-FDD Band II : 22.44 dBm
Maximum Radiated ERP/EIRP	GSM850: 27.71 dBm / ERP PCS1900: 24.67 dBm / EIRP UMTS-FDD Band II : 21.11 dBm / EIRP
Antenna Gain:	GSM850: -0.46 dBi PCS1900: 1.19 dBi UMTS-FDD Band II: 1.3 dBi Bluetooth/ WIFI&BLE: 1.56 dBi
Type of Modulation:	GSM / GPRS: GMSK UMTS-FDD: QPSK 802.11b/g/n: DSSS/OFDM Bluetooth: GFSK&π/4DQPSK&8DPSK BLE: GFSK
RF Operating Frequency (ies):	GSM850 TX : 824.2 ~ 848.8 MHz; RX : 869.2 ~ 893.8 MHz PCS1900 TX : 1850.2 ~ 1909.8 MHz; RX : 1930.2 ~ 1989.8 MHz UMTS-FDD Band II TX : 1852.4 ~ 1907.6 MHz; RX : 1932.4 ~ 1987.6 MHz 802.11b/g/n(20M): 2412-2462 MHz(TX/RX) 802.11n(40M): 2422-2452 MHz (TX/RX) Bluetooth&BLE: 2402-2480 MHz(TX/RX)
Number of Channels:	299CH (PCS1900) and 124CH (GSM850) UMTS-FDD Band II : 277CH 802.11b/g/n(20M): 11CH 802.11n(40M): 7CH Bluetooth: 79CH BLE: 40CH
Port:	Earphone Port, USB Port
Input Power:	Adapter: Model: XHY050200UUCH Input: AC 100-240V 50/60Hz 0.5A MAX Output: DC 5V 2.0A BATTERY: 3.7V 5200mAh

Test Report No.	14021149-FCC-R1
Page	7 of 47

Trade Name : N/A

FCC ID: 2AANC-BENEWORLD-BW9

Note: the difference between these models please refer to Annex E. DECLARATION OF SIMILARITY.

5. Test Summary

The product was tested in accordance with the following specifications.
All testing has been performed according to below product classification:

FCC Rules	Description of Test	Result
§ 1.1307, § 2.1093	RF Exposure (SAR)	Compliance
§ 2.1046; § 22.913 (a); § 24.232 (c)	RF Output Power	Compliance
§ 2.1047	Modulation Characteristics	Compliance
§ 2.1049; § 22.905; § 22.917; § 24.238	99% & -26 dB Occupied Bandwidth	Compliance
§ 2.1051; § 22.917 (a); § 24.238 (a)	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053; § 22.917 (a); § 24.238 (a)	Field Strength of Spurious Radiation	Compliance
§ 22.917 (a); § 24.238 (a)	Out of band emission, Band Edge	Compliance
§ 2.1055; § 22.355; § 24.235	Frequency stability vs. temperature Frequency stability vs. voltage	Compliance

Note: Testing was performed by configuring EUT to maximum output power status, the declared output power class for different
Measurement Uncertainty

Test Item	Description	Uncertainty
Radiated Spurious Emissions	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	3.952dB

Test Report No.	14021149-FCC-R1
Page	9 of 47

6. MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

6.1 RF Exposure (SAR)

Test Result: Pass

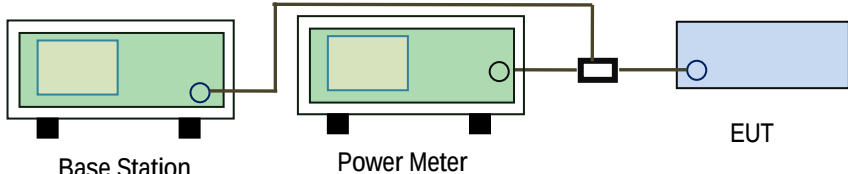
The EUT is a portable device, thus requires SAR evaluation;
Please refer to SAR Report: 14021149-FCC-H.

6.2 RF Output Power

Temperature	20°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar
Test date :	November 26, 2014
Tested By :	Deon Dai

Requirement(s):

Spec	Item	Requirement	Applicable
§22.913 (a)	a)	ERP:38.45dBm	☒
§24.232 (c)	b)	EIRP:33dBm	☒

Test Setup	 Base Station Power Meter EUT
Test Procedure	For Conducted Power: - The transmitter output port was connected to base station. - Set EUT at maximum power through base station. - Select lowest, middle, and highest channels for each band and different test mode. For ERP/EIRP: - The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable. - The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis. - The frequency range up to tenth harmonic of the fundamental frequency was investigated. - Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution. - Spurious emissions in dB = $10 \lg (\text{TXpwr in Watts}/0.001)$ – the absolute level - Spurious attenuation limit in dB = $43 + 10 \text{ Log}_{10} (\text{power out in Watts})$.
Remark	
Result	☒ Pass ☐ Fail
Test Data	☒ Yes ☐ N/A
Test Plot	☐ Yes (See below) ☒ N/A

Conducted Power

GSM Mode:

Burst Average Power (dBm);								
Band	GSM850				GSM1900			
Channel	128	190	251	Tune up Power tolerant	512	661	810	Tune up Power tolerant
Frequency (MHz)	824.2	836.6	848.8	/	1850.2	1880	1909.8	/
GSM Voice (1 uplink),GMSK	30.53	30.75	30.73	30±1	28.60	28.58	28.56	28±1
GPRS Multi-Slot Class 8 (1 uplink),GMSK	30.48	30.71	30.65	30±1	28.59	28.58	28.55	28±1
GPRS Multi-Slot Class 10 (2 uplink),GMSK	29.76	29.88	30.12	30±1	27.77	27.79	27.80	27±1
GPRS Multi-Slot Class 12 (4 uplink),GMSK	28.25	28.57	28.80	28±1	25.80	25.93	25.92	25±1
Remark : GPRS, CS1 coding scheme. Multi-Slot Class 8 , Support Max 4 downlink, 1 uplink , 5 working link Multi-Slot Class 10 , Support Max 4 downlink, 2 uplink , 5 working link Multi-Slot Class 12 , Support Max 4 downlink, 4 uplink , 5 working link								

Note: Since GSM mode has higher power, so the test items below were not performed to GPRS mode.

UMTS Mode:

UMTS-FDD Band II

Band/ Time Slot configuration	Channel	Frequency	Average power (dBm)
RMC 12.2kbps	9262	1852.4	22.26
	9400	1880	22.41
	9538	1907.6	22.34
HSDPA Subtest1	9262	1852.4	22.25
	9400	1880	22.40
	9538	1907.6	22.33
HSDPA Subtest2	9262	1852.4	22.27
	9400	1880	22.42
	9538	1907.6	22.32
HSDPA Subtest3	9262	1852.4	22.23
	9400	1880	22.38
	9538	1907.6	22.31
HSDPA Subtest4	9262	1852.4	22.24
	9400	1880	22.41
	9538	1907.6	22.30
HSUPA Subtest1	9262	1852.4	22.28
	9400	1880	22.43
	9538	1907.6	22.32
HSUPA Subtest2	9262	1852.4	22.27
	9400	1880	22.42
	9538	1907.6	22.28
HSUPA Subtest3	9262	1852.4	22.29
	9400	1880	22.44
	9538	1907.6	22.27
HSUPA Subtest4	9262	1852.4	22.20
	9400	1880	22.42
	9538	1907.6	22.31
HSUPA Subtest5	9262	1852.4	22.25
	9400	1880	22.40
	9538	1907.6	22.35

ERP & EIRP
ERP for Cellular Band (Part 22H)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
824.20	22.32	V	6.2	1.67	26.85	38.45
824.20	20.83	H	6.2	1.67	25.36	38.45
836.60	23.14	V	6.2	1.67	27.67	38.45
836.60	21.18	H	6.2	1.67	25.71	38.45
848.80	23.08	V	6.3	1.67	27.71	38.45
848.80	20.99	H	6.3	1.67	25.62	38.45

EIRP for PCS Band (Part 24E)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1850.20	17.65	V	8.6	2.66	23.59	33
1850.20	15.25	H	8.6	2.66	21.19	33
1880.00	18.41	V	8.6	2.34	24.67	33
1880.00	15.17	H	8.6	2.34	21.43	33
1909.80	16.99	V	8.6	2.17	23.42	33
1909.80	15.18	H	8.6	2.17	21.61	33

EIRP for UMTS-FDD Band II (Part 24E)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1852.40	14.52	V	8.6	2.66	20.46	38.45
1852.40	13.94	H	8.6	2.66	19.88	38.45
1880.00	14.25	V	8.6	2.34	20.51	38.45
1880.00	13.23	H	8.6	2.34	19.49	38.45
1907.60	14.68	V	8.6	2.17	21.11	38.45
1907.60	13.09	H	8.6	2.17	19.52	38.45

Test Report No.	14021149-FCC-R1
Page	14 of 47

6.3 Modulation Characteristic

According to FCC § 2.1047(d), Part 22H & 24E there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

6.4 Occupied Bandwidth

Temperature	20°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar
Test date :	November 26, 2014
Tested By :	Deon Dai

Requirement(s):

Spec	Item	Requirement	Applicable
§2.1049, §22.917, §22.905 §24.238	a)	99% Occupied Bandwidth(kHz)	☒
	b)	26 dB Bandwidth(kHz)	☒
Test Setup	Base Station Power Meter EUT		
Test Procedure	- The EUT was connected to Spectrum Analyzer and Base Station via power divider. - The 99% and 26 dB occupied bandwidth (BW) of the middle channel for the highest RF powers.		
Remark			
Result	☒ Pass ☐ Fail		
Test Data	☒ Yes ☐ N/A		
Test Plot	☒ Yes (See below) ☐ N/A		

Cellular Band (Part 22H) result

Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
128	824.2	242.0	322.0
190	836.6	246.0	320.0
251	848.8	244.0	320.0

PCS Band (Part 24E) result

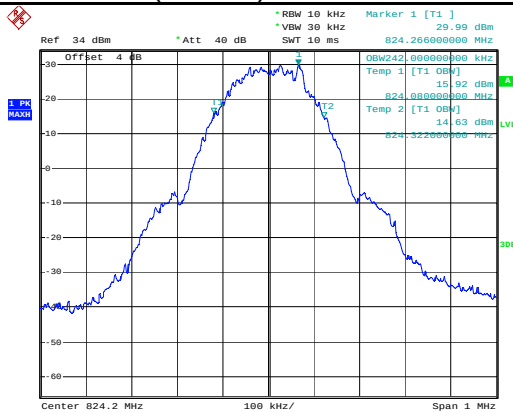
Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
512	1850.2	246.0	316.0
661	1880.0	245.0	322.0
810	1909.8	244.0	320.0

UMTS-FDD Band II (Part 24E)

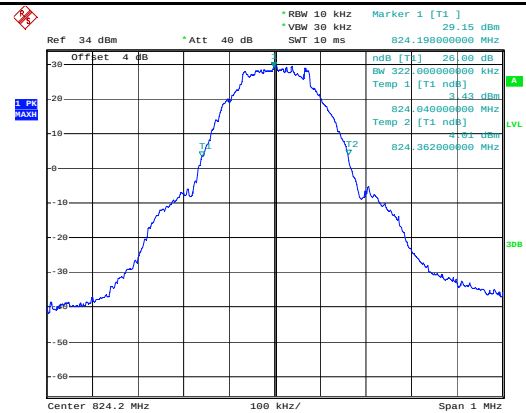
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
9262	1852.4	4.152	4.680
9400	1880.0	4.152	4.680
9538	1907.6	4.164	4.704

Test Plots

Cellular Band (Part 22H) result

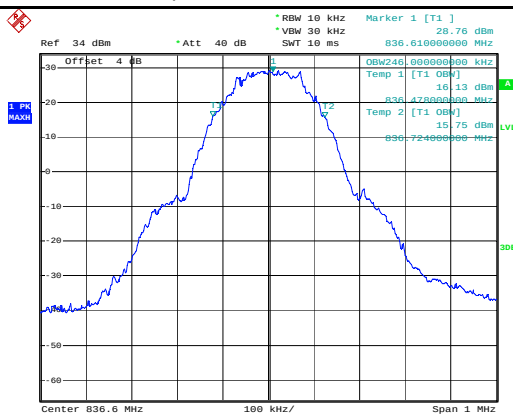


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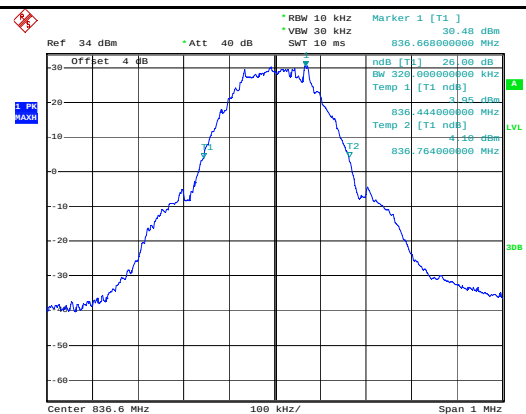
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99% Occupied Bandwidth - Low CH 824.2MHz



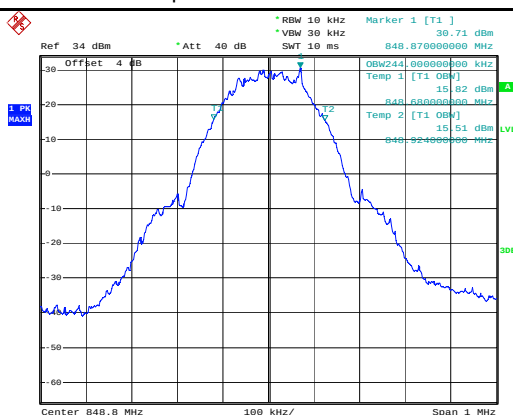
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26 dB Bandwidth - Low CH 824.2MHz



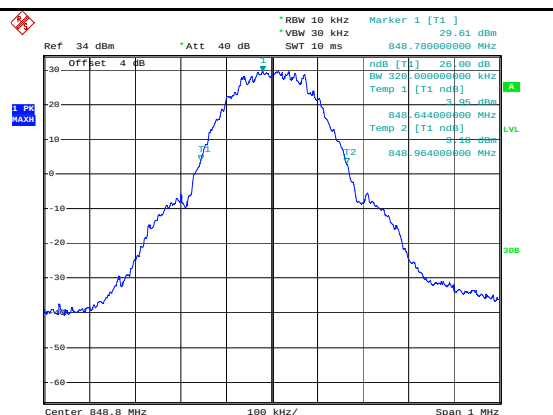
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99% Occupied Bandwidth - MID CH 836.6MHz



Date: 26.NOV.2014 09:43:11

26 dB Bandwidth - MID CH 836.6MHz

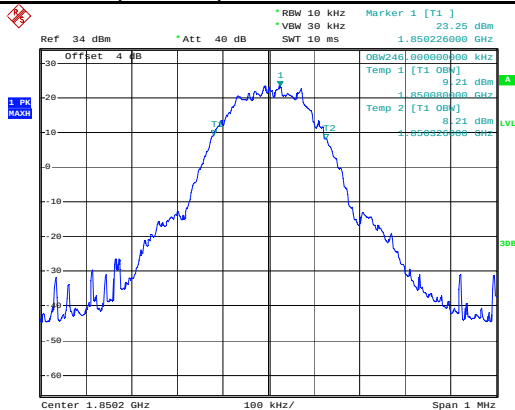


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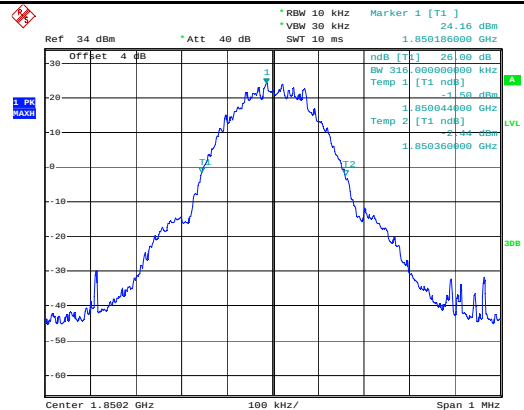
99% Occupied Bandwidth - High CH 848.8MHz

26 dB Bandwidth - High CH 848.8MHz

PCS Band (Part 24E) result

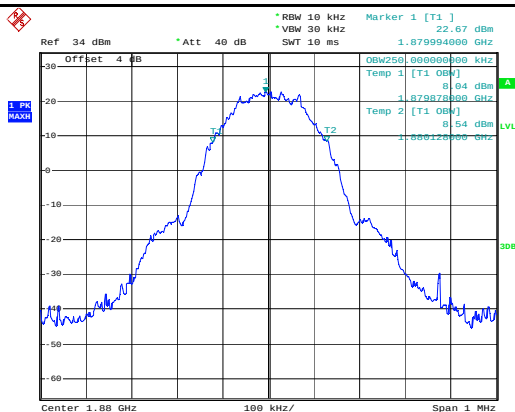


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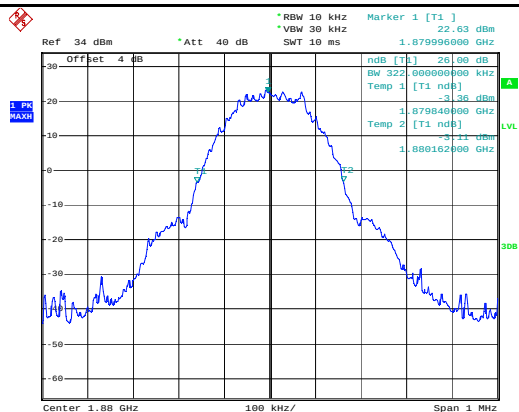
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99% Occupied Bandwidth - Low CH 1850.2MHz



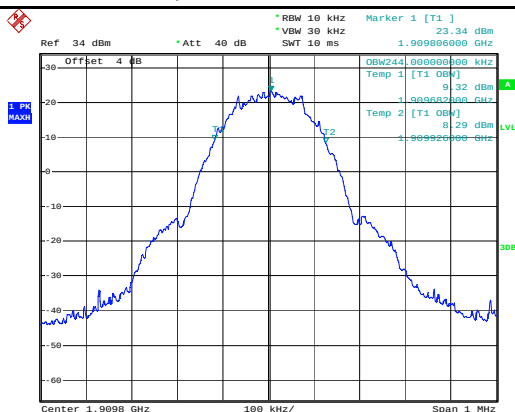
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26 dB Bandwidth - Low CH 1850.2MHz



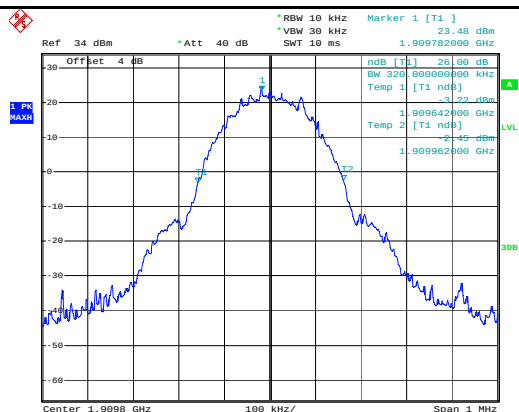
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99% Occupied Bandwidth - MID CH 1880MHz



Date: 26.NOV.2014 12:22:47

26 dB Bandwidth - MID CH 1880MHz

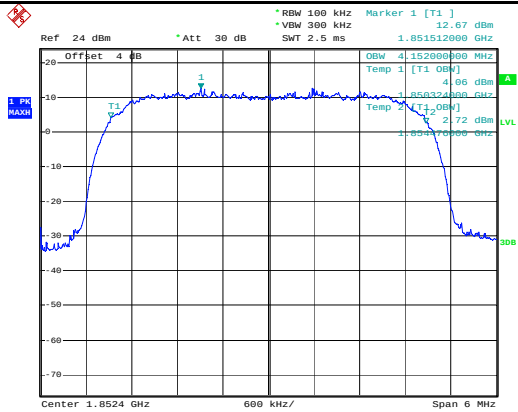


Date: 26.NOV.2014 12:21:25

99% Occupied Bandwidth - High CH 1909.8MHz

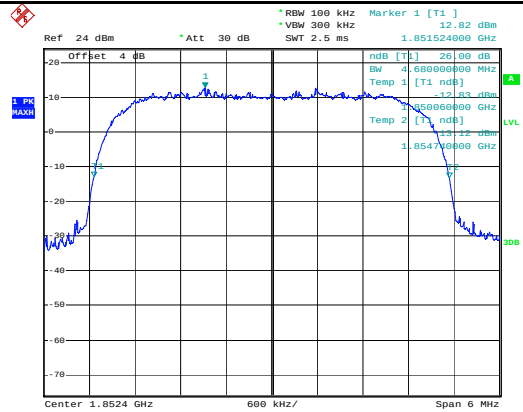
26 dB Bandwidth - High CH 1909.8MHz

UMTS-FDD Band II (Part 24E)



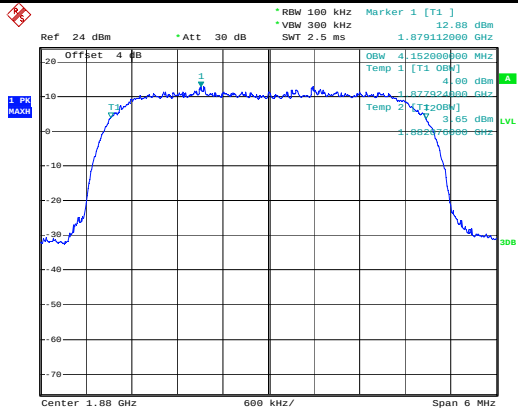
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99% Occupied Bandwidth - Low CH 1852.4MHz



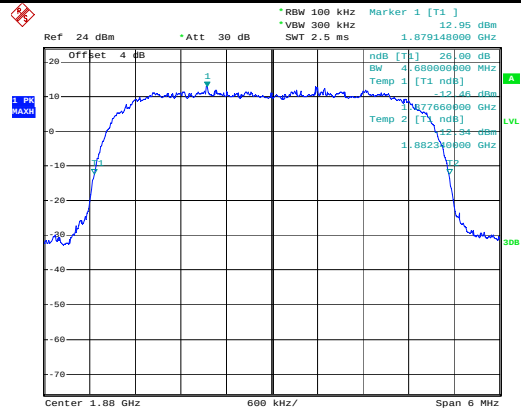
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26 dB Bandwidth - Low CH 1852.4MHz



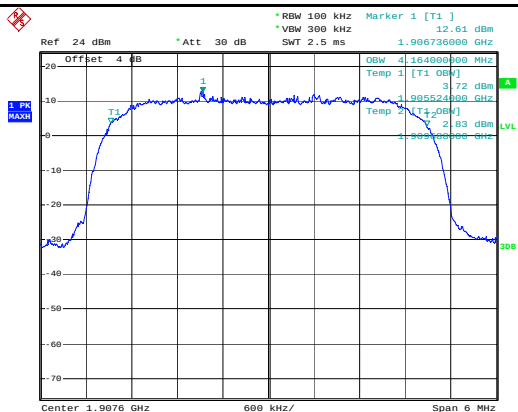
Date: 26.NOV.2014 10:23:44

99% Occupied Bandwidth - MID CH 1880MHz



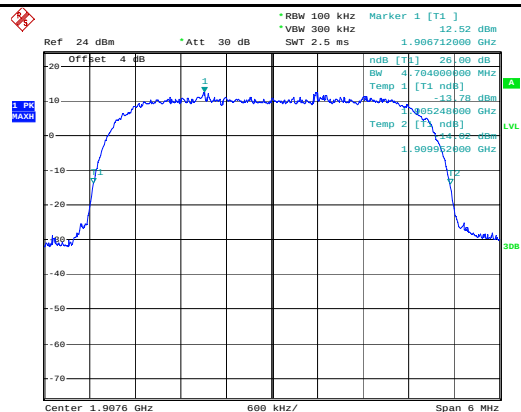
Date: 26.NOV.2014 10:22:50

26 dB Bandwidth - MID CH 1880MHz



Date: 26.NOV.2014 10:24:38

99% Occupied Bandwidth - High CH 1907.6MHz



Date: 26.NOV.2014 10:25:29

26 dB Bandwidth - High CH 1907.6MHz

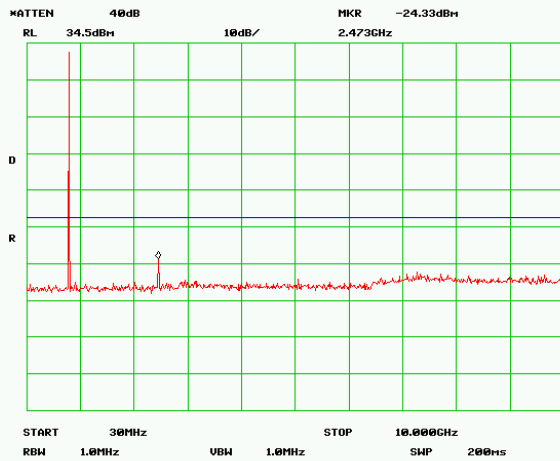
6.5 Spurious Emissions at Antenna Terminals

Temperature	20°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar
Test date :	November 14, 2014
Tested By :	Deon Dai

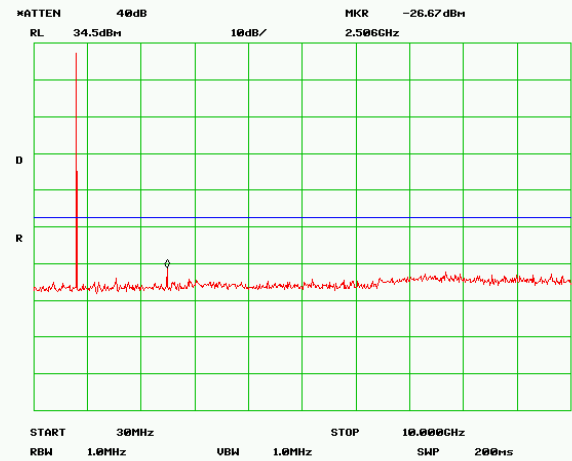
Requirement(s):

Spec	Item	Requirement	Applicable
§2.1051, §22.917(a)& §24.238(a)	a)	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	☒
Test Setup	Base Station Power Meter EUT		
Test Procedure	- The EUT was connected to Spectrum Analyzer and Base Station via power divider. - The Band Edges of low and high channels for the highest RF powers were measured. - Setting RBW as roughly BW/100.		
Remark			
Result	☒ Pass ☐ Fail		
Test Data	☐ Yes ☒ N/A		
Test Plot	☒ Yes (See below) ☐ N/A		

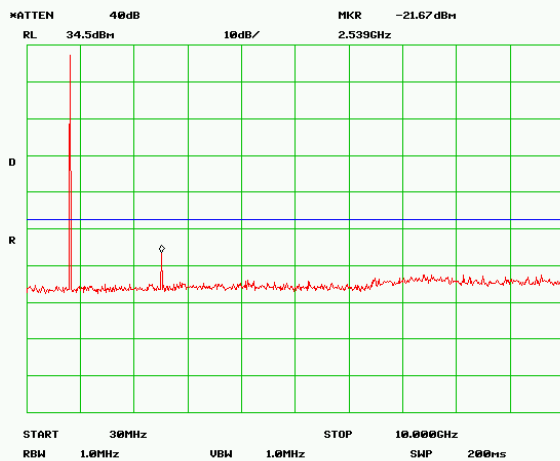
Test Plots



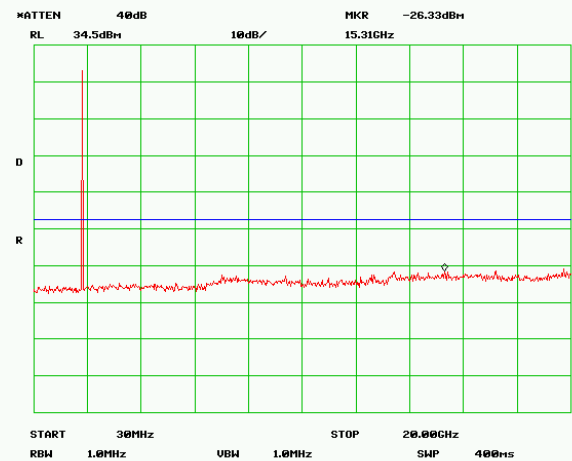
30MHz-10G GSM850 - Low CH 824.2MHz



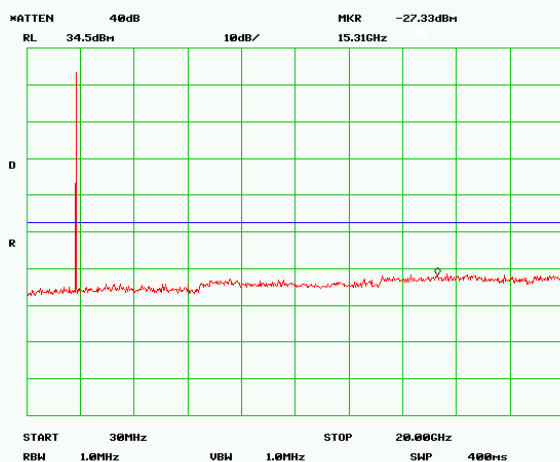
30MHz-10G GSM850 - MID CH 836.6MHz



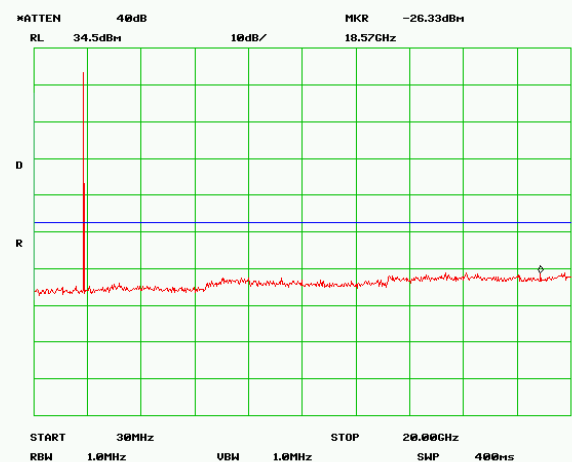
30MHz-10G GSM850 - High CH 848.8MHz



30MHz-20G PCS1900 - Low CH 1850.2MHz

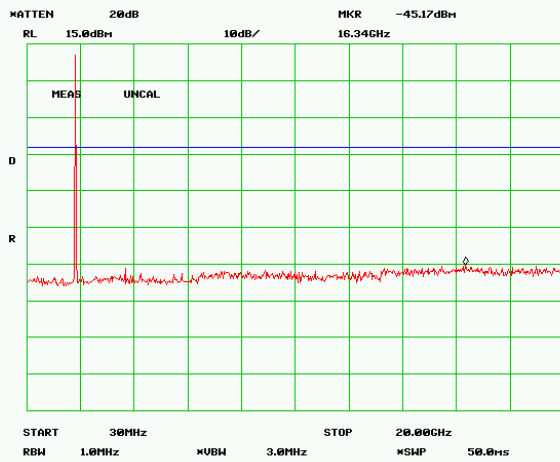


30MHz-20G PCS1900 - MID CH 1880MHz

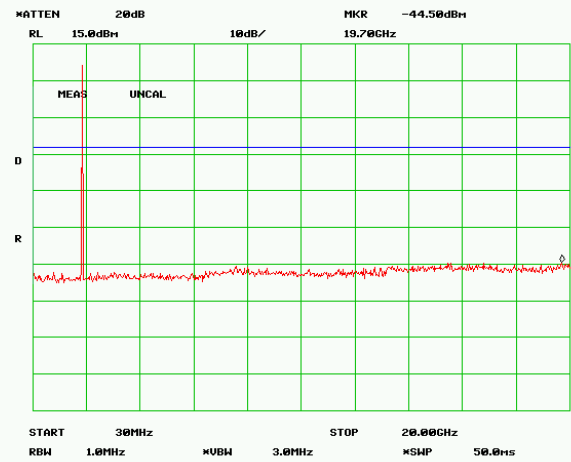


30MHz-20G PCS1900 - High CH 1909.8MHz

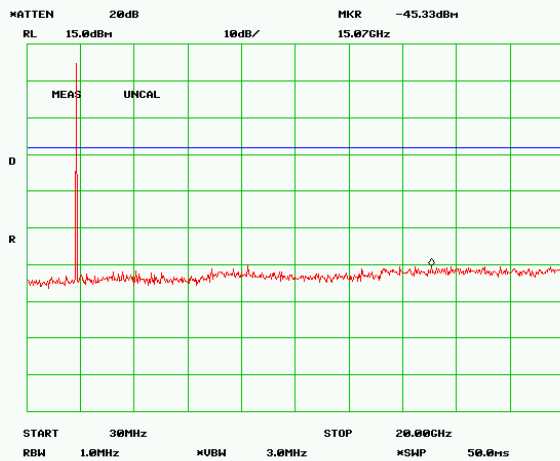
UMTS-FDD Band II (Part 24E)



30MHz-20G Band II - Low CH 1852.4MHz



30MHz-20G Band II - MID CH 1880MHz

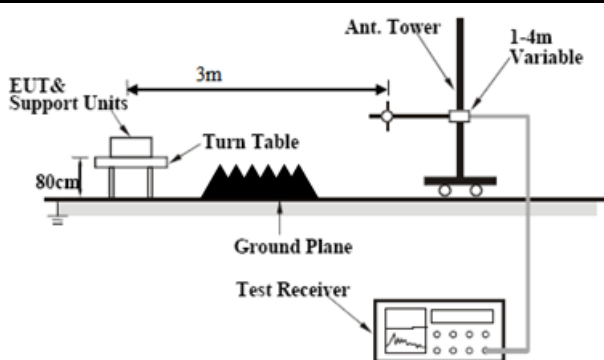


30MHz-20G Band II - High CH 1907.6MHz

6.6 Spurious Radiated Emissions

Temperature	20°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar
Test date :	November 14, 2014
Tested By :	Deon Dai

Requirement(s):

Spec	Item	Requirement	Applicable
§2.1053, §22.917 & §24.238	a)	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.	☒
Test setup			
Test Procedure	- Equipment was setup in a semi-anechoic chamber. For measurements above 1 GHz an average measurement was taken with a 10Hz video bandwidth. The EUT was tested at low, mid and high with the highest output power. An emission was scan up to 10th harmonic of the operating frequency. - Sample Calculation: EUT Field Strength = Raw Amplitude (dBμV/m) – Amplifier Gain (dB) + Antenna Factor (dB) + Cable Loss (dB) + Filter Attenuation (dB, if used)		
Remark			
Result	☒ Pass ☐ Fail		
Test Data	☒ Yes ☐ N/A		
Test Plot	☐ Yes (See below) ☒ N/A		

Cellular Band (Part 22H) result

Low channel

Frequency (MHz)	Substituted level (dBm)	Direction (degree)	Height (cm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1648.4	-22.29	159	100	V	6.6	2.2	0	-17.89	-13	-4.89
1648.4	-26.23	269	200	H	6.6	2.2	0	-21.83	-13	-8.83
638.32	-43.4	14	102	V	6.1	1.67	0	-38.97	-13	-25.97
564.47	-46.29	199	200	H	6.5	1.5	0	-41.29	-13	-28.29

Middle channel

Frequency (MHz)	Substituted level (dBm)	Direction (degree)	Height (cm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1673.2	-24.29	198	110	V	6.3	2.2	0	-20.19	-13	-7.19
1673.2	-25.28	250	198	H	6.3	2.2	0	-21.18	-13	-8.18
644.25	-42.21	360	100	V	6.1	1.67	0	-37.78	-13	-24.78
561.22	-43.13	135	200	H	6.3	1.5	0	-38.33	-13	-25.33

High channel

Frequency (MHz)	Substituted level (dBm)	Direction (degree)	Height (cm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1697.6	-25.78	33	105	V	6.3	2.3	0	-21.78	-13	-8.78
1697.6	-24.11	265	199	H	6.3	2.3	0	-20.11	-13	-7.11
567.35	-41.05	200	100	V	6.3	1.5	0	-36.25	-13	-23.25
573.45	-45.05	211	190	H	6.1	1.5	0	-40.45	-13	-27.45

PCS Band (Part24E) result

Low channel

Frequency (MHz)	Substituted level (dBm)	Direction (degree)	Height (cm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3700.4	-23.35	101	100	V	5.6	3.1	0	-20.85	-13	-7.85
3700.4	-24.68	299	200	H	5.6	3.1	0	-22.18	-13	-9.18
567.55	-41.24	0	100	V	6.3	1.5	0	-36.44	-13	-23.44
573.69	-43.38	244	198	H	6.1	1.34	0	-38.62	-13	-25.62

Middle channel

Frequency (MHz)	Substituted level (dBm)	Direction (degree)	Height (cm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3760	-20.08	99	105	V	5.4	3.2	0	-17.88	-13	-4.88
3760	-23.04	233	200	H	5.4	3.2	0	-20.84	-13	-7.84
638.52	-39.11	198	105	V	6.1	1.67	0	-34.68	-13	-21.68
565.24	-39.02	16	200	H	6.3	1.5	0	-34.22	-13	-21.22

High channel

Frequency (MHz)	Substituted level (dBm)	Direction (degree)	Height (cm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3819.6	-19.91	216	101	V	5.4	3.3	0	-17.81	-13	-4.81
3819.6	-22.17	219	200	H	5.4	3.3	0	-20.07	-13	-7.07
567.35	-37.15	139	100	V	6.3	1.5	0	-32.35	-13	-19.35
552.59	-39.98	288	200	H	6.3	1.5	0	-35.18	-13	-22.18

UMTS-FDD Band II (Part 24E)

Low channel

Frequency (MHz)	Substituted level (dBm)	Direction (degree)	Height (cm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3704.8	-24.59	199	102	V	6.6	2.2	0	-20.19	-13	-7.19
3704.8	-28.53	211	200	H	6.6	2.2	0	-24.13	-13	-11.13
641.18	-42.16	222	100	V	6.1	1.67	0	-37.73	-13	-24.73
567.34	-45.05	198	200	H	6.3	1.5	0	-40.25	-13	-27.25

Middle channel

Frequency (MHz)	Substituted level (dBm)	Direction (degree)	Height (cm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3760	-25.79	144	101	V	6.3	2.2	0	-21.69	-13	-8.69
3760	-26.62	360	200	H	6.3	2.2	0	-22.52	-13	-9.52
564.2	-41.19	211	102	V	6.3	1.5	0	-36.39	-13	-23.39
573.2	-42.12	188	198	H	6.1	1.5	0	-37.52	-13	-24.52

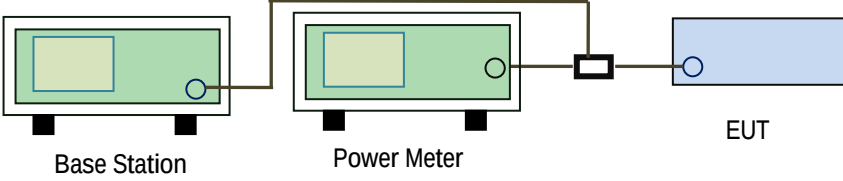
High channel

Frequency (MHz)	Substituted level (dBm)	Direction (degree)	Height (cm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3815.2	-25.43	210	110	V	6.3	2.3	0	-21.43	-13	-8.43
3815.2	-26.33	114	200	H	6.3	2.3	0	-22.33	-13	-9.33
638.33	-39.72	198	100	V	6.1	1.67	0	-35.29	-13	-22.29
534.29	-43.76	133	200	H	6.2	1.5	0	-39.06	-13	-26.06

6.7 Band Edge

Temperature	20°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar
Test date :	November 26, 2014
Tested By :	Deon Dai

Requirement(s):

Spec	Item	Requirement	Applicable
§22.917(a) & §24.238(a)	a)	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.	☒
Test setup	 Base Station Power Meter EUT		
Procedure	- The EUT was connected to Spectrum Analyzer and Base Station via power divider. - The Band Edges of low and high channels for the highest RF powers were measured. Setting RBW as roughly BW/100.		
Remark			
Result	☒ Pass ☐ Fail		
Test Data	☒ Yes ☐ N/A		
Test Plot	☒ Yes (See below) ☐ N/A		

Cellular Band (Part 22H) result

Frequency (MHz)	Emission (dBm)	Limit (dBm)
823.998	-14.96	-13
849.022	-15.23	-13

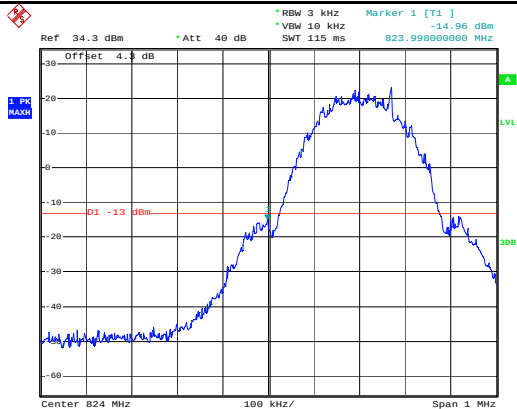
PCS Band (Part 24E) result

Frequency (MHz)	Emission (dBm)	Limit (dBm)
1849.996	-18.76	-13
1910.022	-16.70	-13

UMTS-FDD Band II (Part 24E)

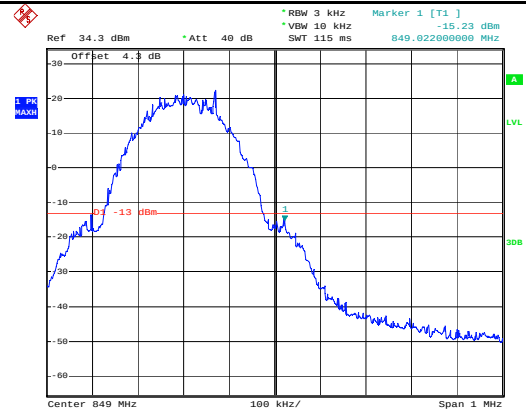
Frequency (MHz)	Emission (dBm)	Limit (dBm)
1849.98	-24.86	-13
1910.02	-22.85	-13

Test Plots



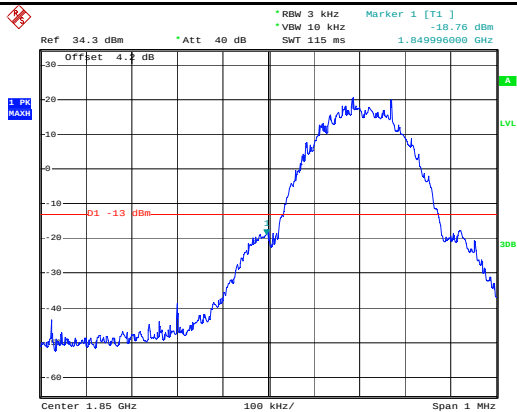
Date: 26.NOV.2014 09:50:42

Cellular Band, Low Channel(Offset See Note1)



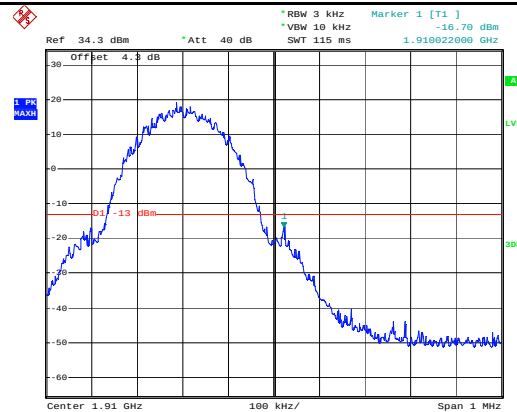
Date: 26.NOV.2014 09:47:48

Cellular Band, High Channel(Offset See Note2)



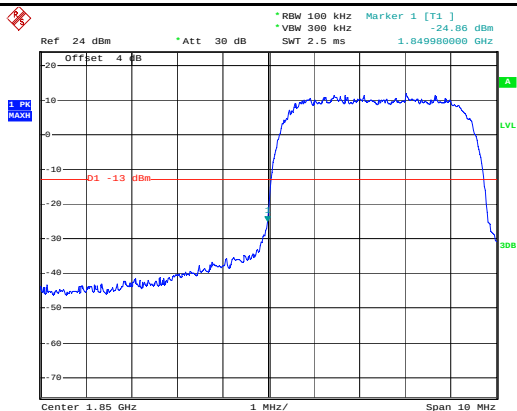
Date: 26.NOV.2014 12:25:33

PCS Band, Low Channel(Offset See Note3)



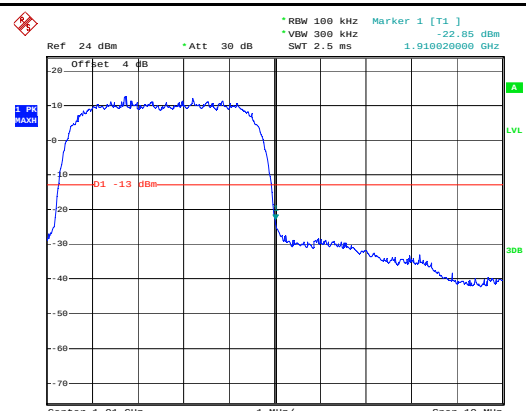
Date: 26.NOV.2014 12:24:04

PCS Band, High Channel(Offset See Note4)



Date: 26.NOV.2014 10:30:10

UMTS-FDD Band II, Low Channel



Date: 26.NOV.2014 10:26:24

UMTS-FDD Band II, High Channel

Note1: Offset=Cable loss (4.0) + 10log (3.22/3)=4.0+0.3=4.3 dB

Note2: Offset=Cable loss (4.0) + 10log (3.20/3)=4.0+0.3=4.3 dB

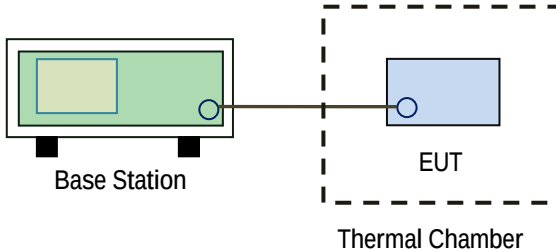
Note3: Offset=Cable loss (4.0) + 10log (3.16/3)=4.0+0.2=4.2 dB

Note4: Offset=Cable loss (4.0) + 10log (3.20/3)=4.0+0.3=4.3 dB

6.8 Frequency Stability

Temperature	20°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar
Test date :	November 14, 2014
Tested By :	Deon Dai

Requirement(s):

Spec	Item	Requirement	Applicable																																
§2.1055, §22.355 & §24.235	a)	According to §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table below: Frequency Tolerance for Transmitters in the Public Mobile Services <table border="1"> <thead> <tr> <th>Frequency Range (MHz)</th><th>Base, fixed (ppm)</th><th>Mobile ≤ 3 watts (ppm)</th><th>Mobile ≤ 3 watts (ppm)</th></tr> </thead> <tbody> <tr> <td>25 to 50</td><td>20.0</td><td>20.0</td><td>50.0</td></tr> <tr> <td>50 to 450</td><td>5.0</td><td>5.0</td><td>50.0</td></tr> <tr> <td>450 to 512</td><td>2.5</td><td>5.0</td><td>5.0</td></tr> <tr> <td>821 to 896</td><td>1.5</td><td>2.5</td><td>2.5</td></tr> <tr> <td>928 to 929.</td><td>5.0</td><td>N/A</td><td>N/A</td></tr> <tr> <td>929 to 960.</td><td>1.5</td><td>N/A</td><td>N/A</td></tr> <tr> <td>2110 to 2220</td><td>10.0</td><td>N/A</td><td>N/A</td></tr> </tbody> </table> According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized frequency block.	Frequency Range (MHz)	Base, fixed (ppm)	Mobile ≤ 3 watts (ppm)	Mobile ≤ 3 watts (ppm)	25 to 50	20.0	20.0	50.0	50 to 450	5.0	5.0	50.0	450 to 512	2.5	5.0	5.0	821 to 896	1.5	2.5	2.5	928 to 929.	5.0	N/A	N/A	929 to 960.	1.5	N/A	N/A	2110 to 2220	10.0	N/A	N/A	☒
Frequency Range (MHz)	Base, fixed (ppm)	Mobile ≤ 3 watts (ppm)	Mobile ≤ 3 watts (ppm)																																
25 to 50	20.0	20.0	50.0																																
50 to 450	5.0	5.0	50.0																																
450 to 512	2.5	5.0	5.0																																
821 to 896	1.5	2.5	2.5																																
928 to 929.	5.0	N/A	N/A																																
929 to 960.	1.5	N/A	N/A																																
2110 to 2220	10.0	N/A	N/A																																
Test setup	 The diagram illustrates the test setup. On the left, a green rectangular box represents the 'Base Station'. A horizontal line connects it to a blue rectangular box labeled 'EUT' (Equipment Under Test). The 'EUT' is enclosed within a dashed-line rectangular box labeled 'Thermal Chamber'.																																		
Procedure	A communication link was established between EUT and base station. The frequency error was monitored and measured by base station under variation of ambient temperature and variation of primary supply voltage. Limit: The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ ($\pm 2.5\text{ppm}$) of the center frequency.																																		
Remark																																			
Result	☒ Pass ☐ Fail																																		
Test Data	☒ Yes ☐ N/A																																		
Test Plot	☐ Yes (See below) ☒ N/A																																		

Cellular Band (Part 22H) result

Middle Channel, $f_0 = 836.6$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	1	0.0011	2.5
0		5	0.0060	2.5
10		7	0.0084	2.5
20		-3	-0.0036	2.5
30		8	0.0096	2.5
40		9	0.0108	2.5
50		12	0.0143	2.5
55		6	0.0072	2.5
25	4.2	11	0.0131	2.5
	3.5	8	0.0096	2.5

PCS Band (Part 24E) result

Middle Channel, $f_0 = 1880$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	3	0.0016	2.5
0		7	0.0037	2.5
10		12	0.0064	2.5
20		-4	-0.0021	2.5
30		8	0.0043	2.5
40		9	0.0048	2.5
50		10	0.0053	2.5
55		6	0.0032	2.5
25	4.2	11	0.0059	2.5
	3.5	8	0.0043	2.5

UMTS-FDD Band II (Part 24E)

Middle Channel, $f_0 = 1880$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	2	0.0011	2.5
0		5	0.0027	2.5
10		10	0.0053	2.5
20		-2	-0.0011	2.5
30		7	0.0037	2.5
40		8	0.0043	2.5
50		12	0.0064	2.5
55		9	0.0048	2.5
25	4.2	6	0.0032	2.5
	3.5	7	0.0037	2.5

Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Due	In use
RF conducted test					
Hp Spectrum Analyzer	8563E	3821A09023	09/27/2014	09/26/2015	☒
Power Splitter	1#	1#	02/02/2014	02/01/2015	☒
Temperature/Humidity Chamber	1007H	N/A	01/08/2014	01/07/2015	☒
DC Power Supply	PS-305D	010943059	02/22/2014	02/21/2015	☒
Radiated Emissions					
Hp Spectrum Analyzer	8563E	3821A09023	09/27/2014	09/26/2015	☒
R&S EMI Receiver	ESPI3	101216	09/27/2014	09/26/2015	☒
Antenna (30MHz~6GHz)	JB6	A121411	04/15/2014	04/14/2015	☒
ETS-Lindgren Antenna (1 ~18GHz)	3115	N/A	10/09/2014	10/08/2015	☒
INFOMW Antenna (1 ~18GHz)	JXTXLB-10180	J2031081120092	10/09/2014	10/08/2015	☒
Horn Antenna (18~40GHz)	AH-840	101013	04/22/2014	04/21/2015	☒
Microwave Pre-Amp (18~40GHz)	PA-840	181250	05/30/2014	05/29/2015	☒
Hp Agilent Pre-Amplifier	8447F	1937A01160	11/03/2014	11/02/2015	☒
MITEQ Pre-Amplifier (0.1 ~ 18GHz)	AMF-7D-00101800-30-10P	1451710	11/03/2014	11/02/2015	☒
Chamber	3m	N/A	04/13/2014	04/12/2015	☒

Annex B. EUT And Test Setup Photographs

Annex B.i. Photograph EUT Internal Photo



All Packages – Front View

Test Report No.	14021149-FCC-R1
Page	34 of 47



Front View of EUT



Rear View of EUT

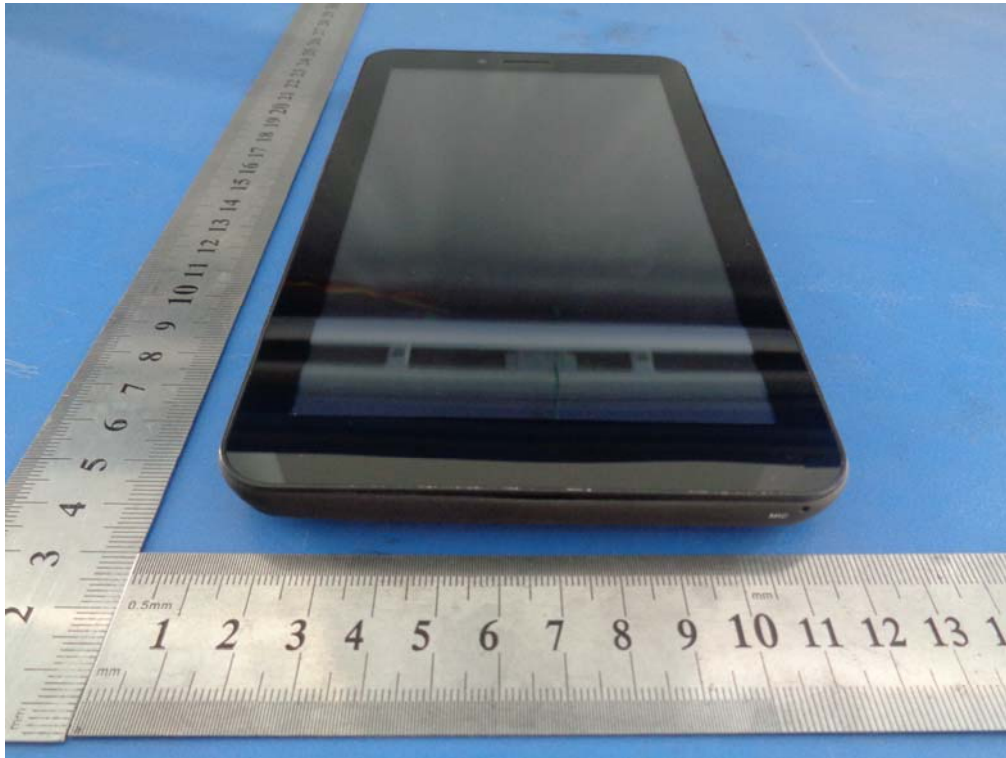


Top View of EUT

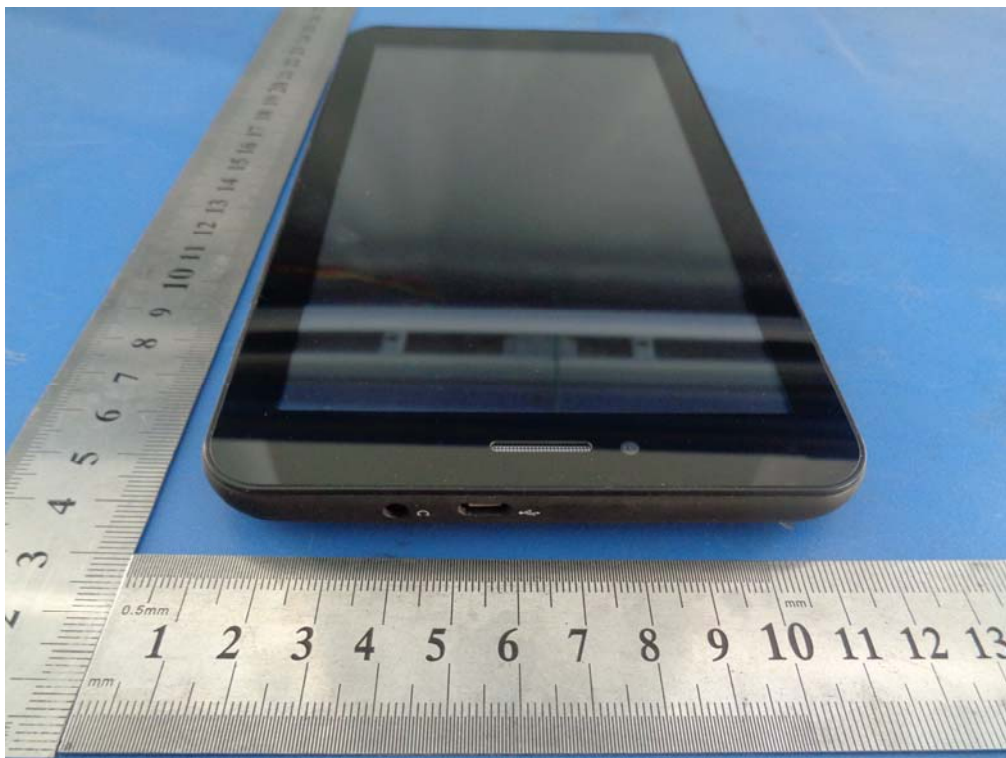


Bottom View of EUT

Test Report No.	14021149-FCC-R1
Page	36 of 47



Left View of EUT

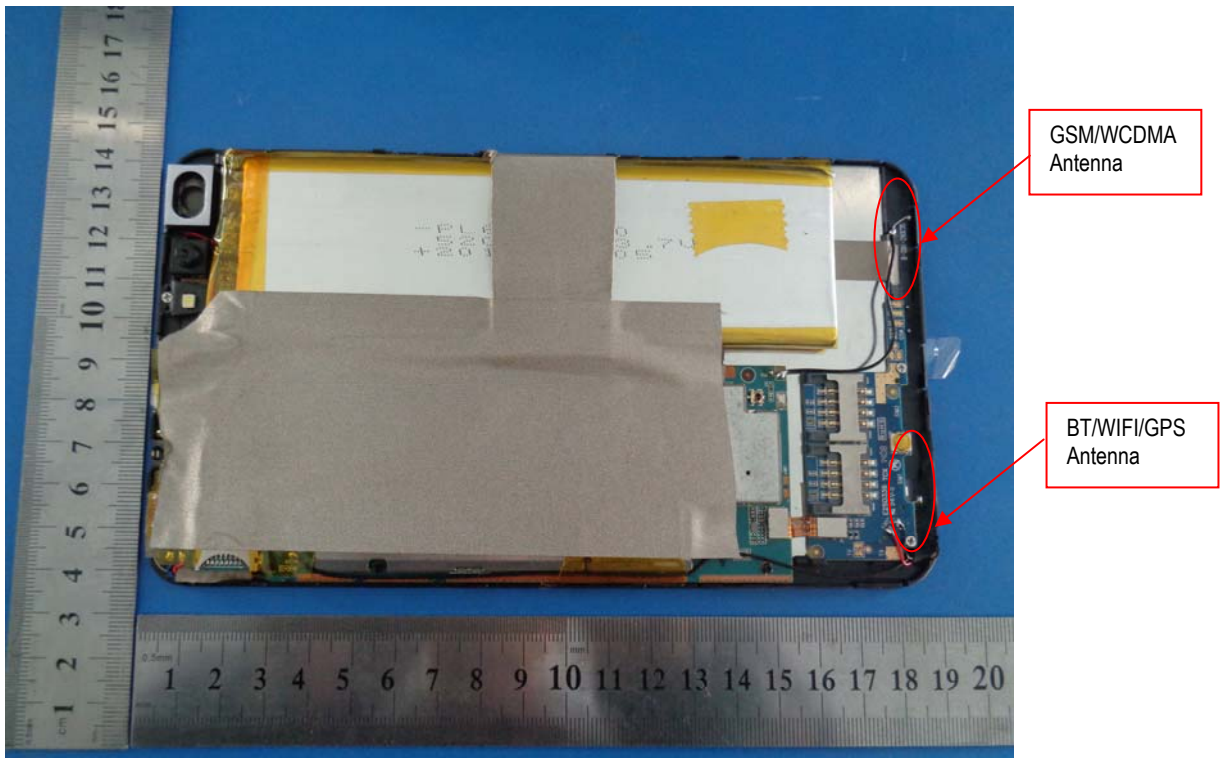


Right View of EUT

Annex B.ii. Photograph EUT Internal Photo



Uncover- Front View 1

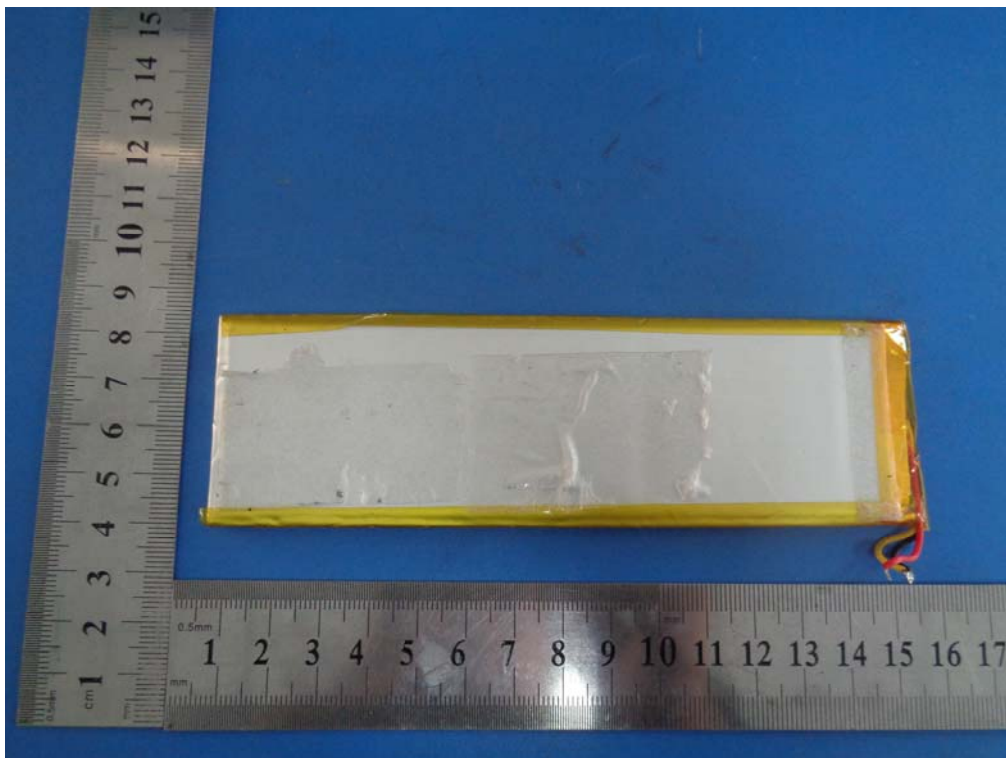


Uncover- Front View 2

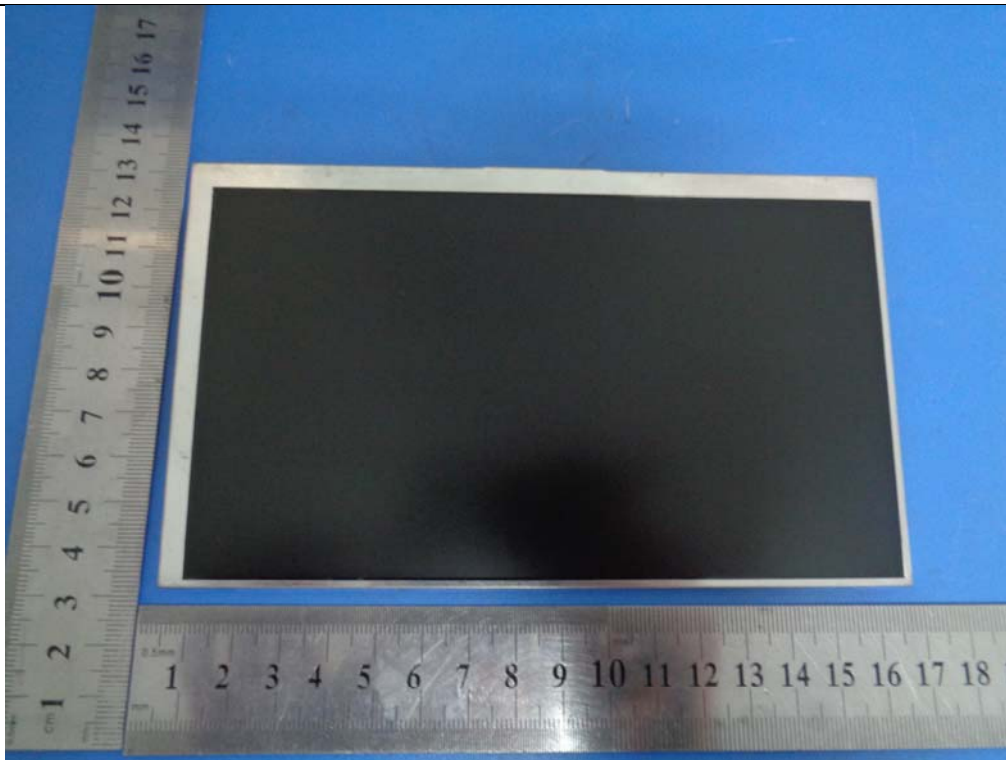
Test Report No.	14021149-FCC-R1
Page	38 of 47



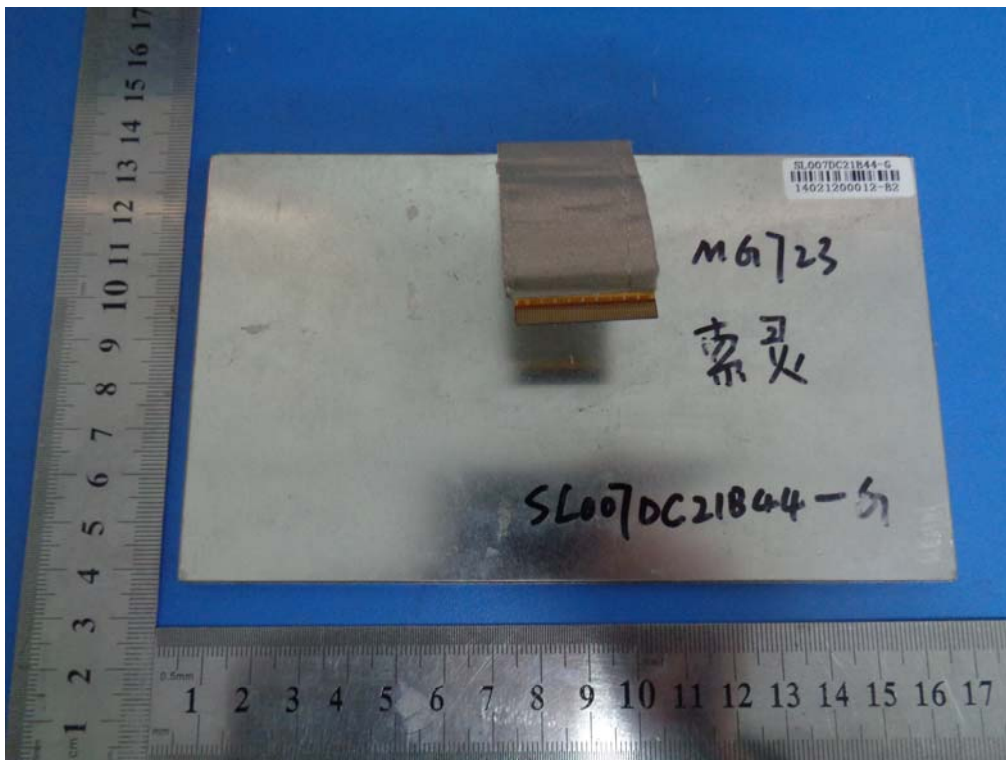
Battery- Front View



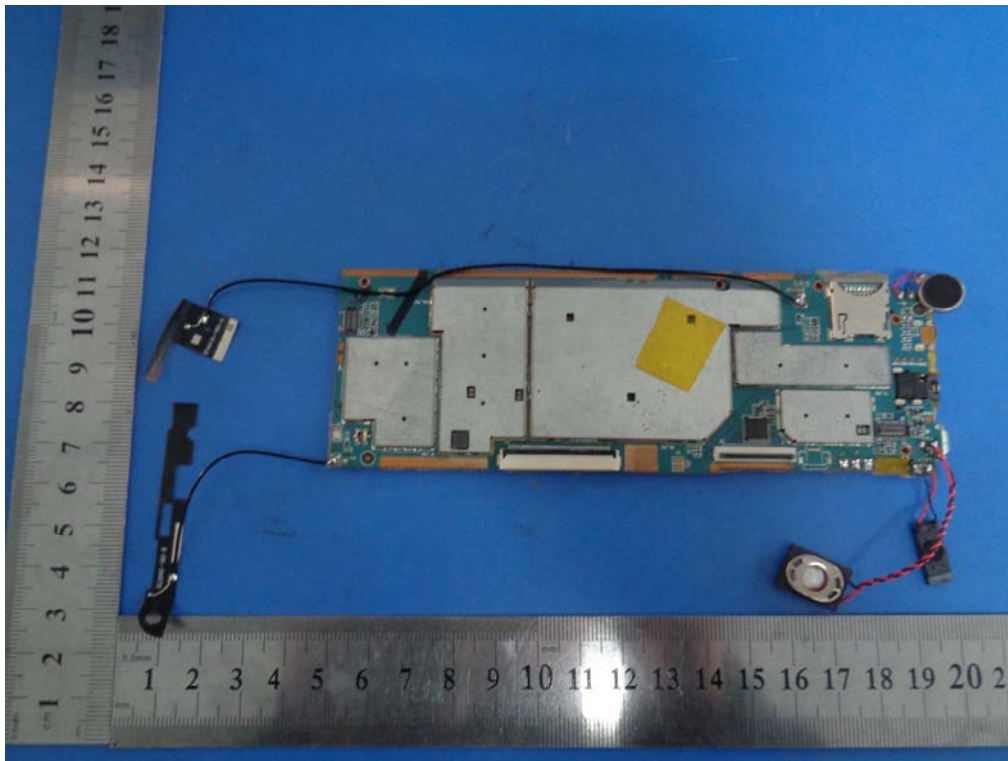
Battery- Rear View



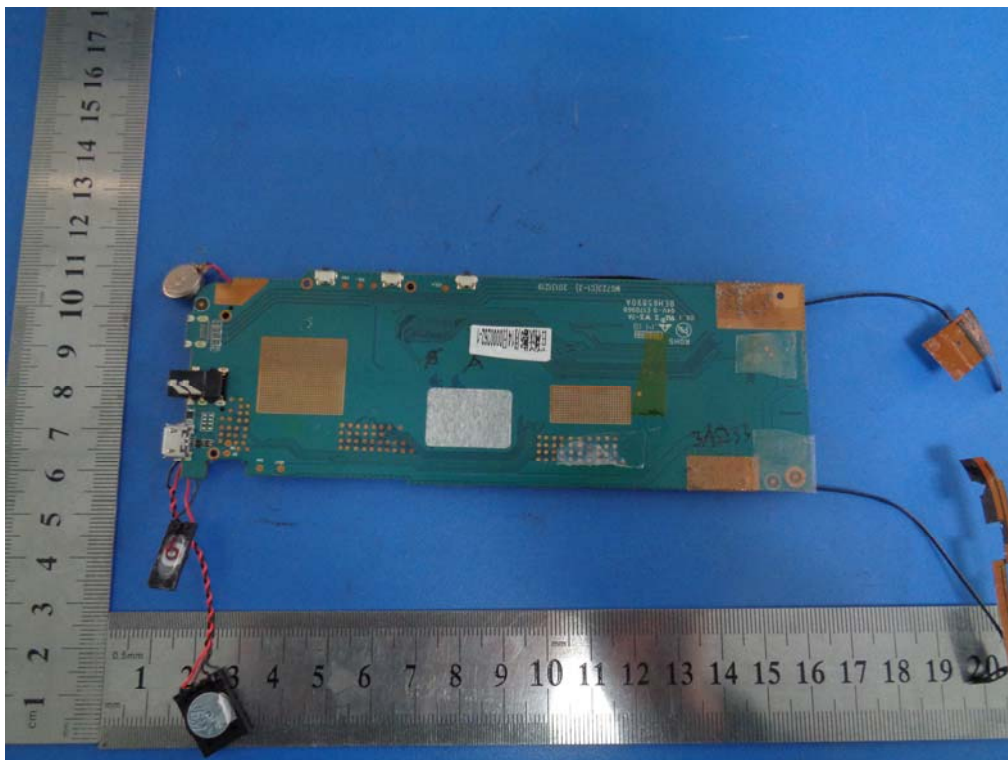
LCD – Front View



LCD – Rear View

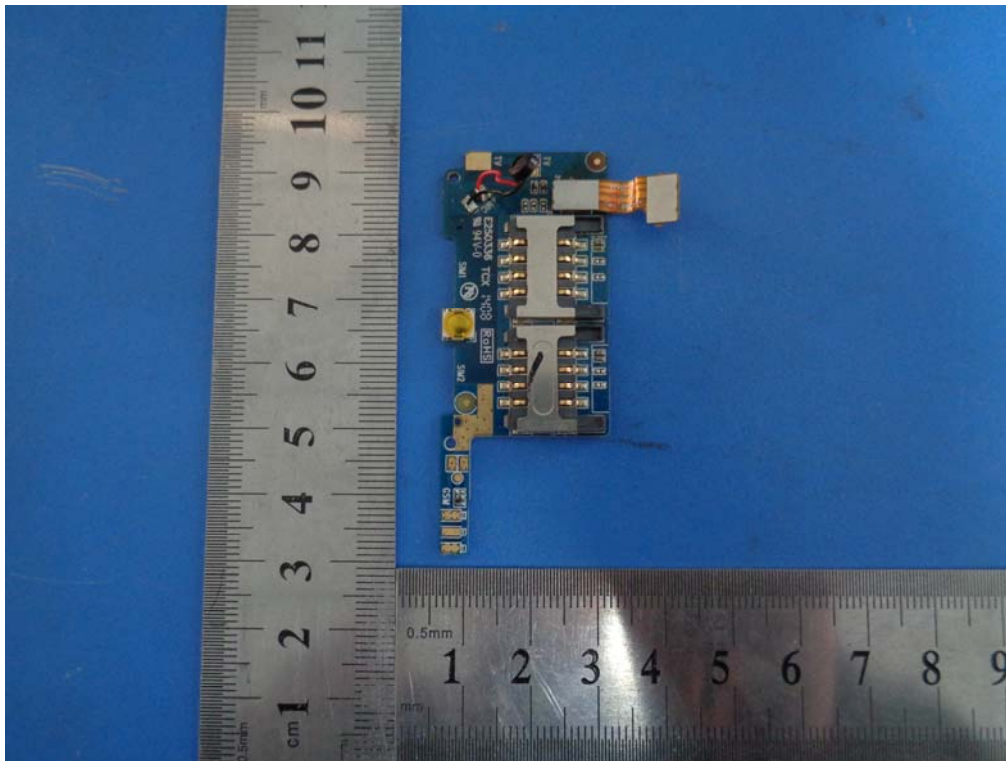


EUT PCB 1 – Front View

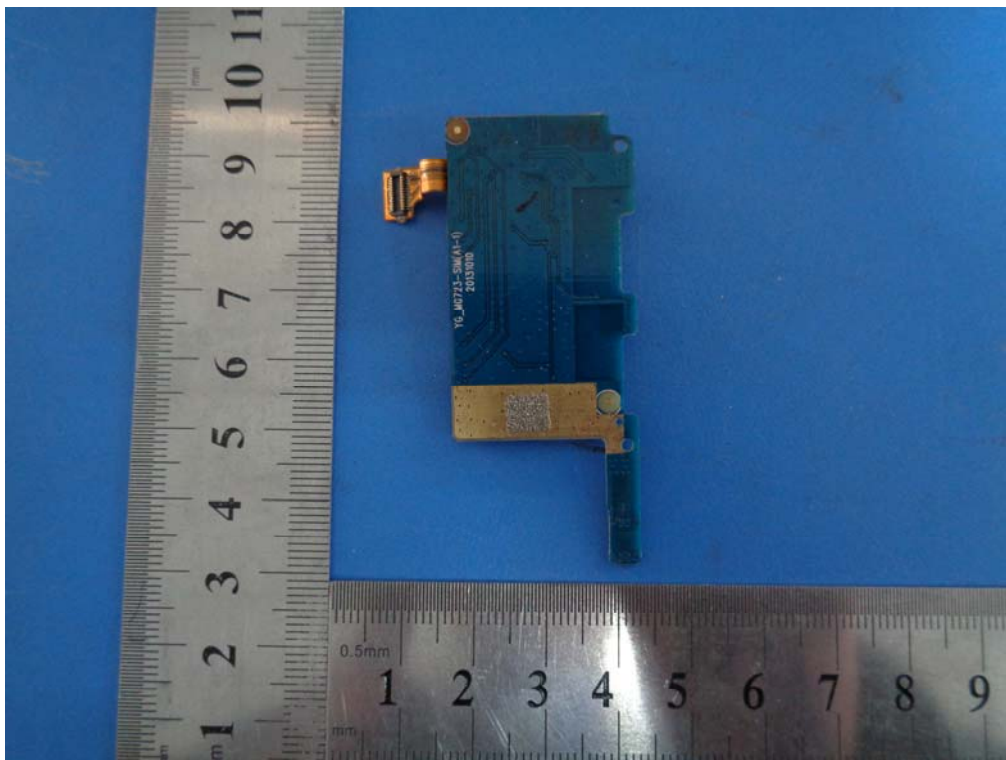


EUT PCB 1 – Rear View

Test Report No.	14021149-FCC-R1
Page	41 of 47

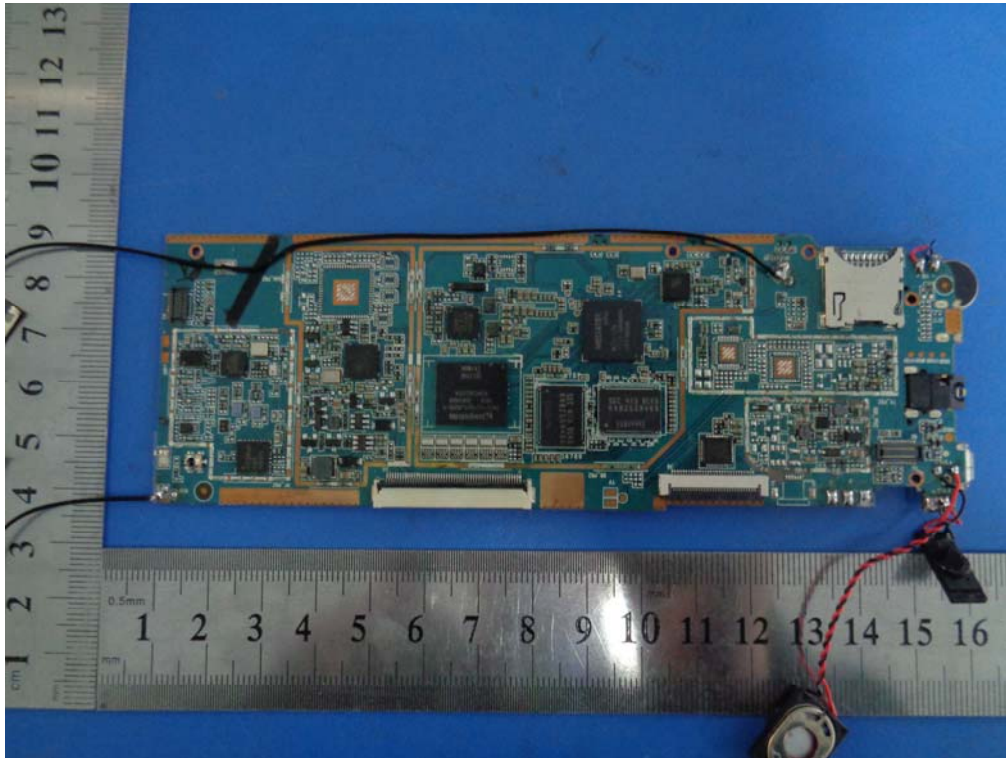


EUT PCB 2 – Front View



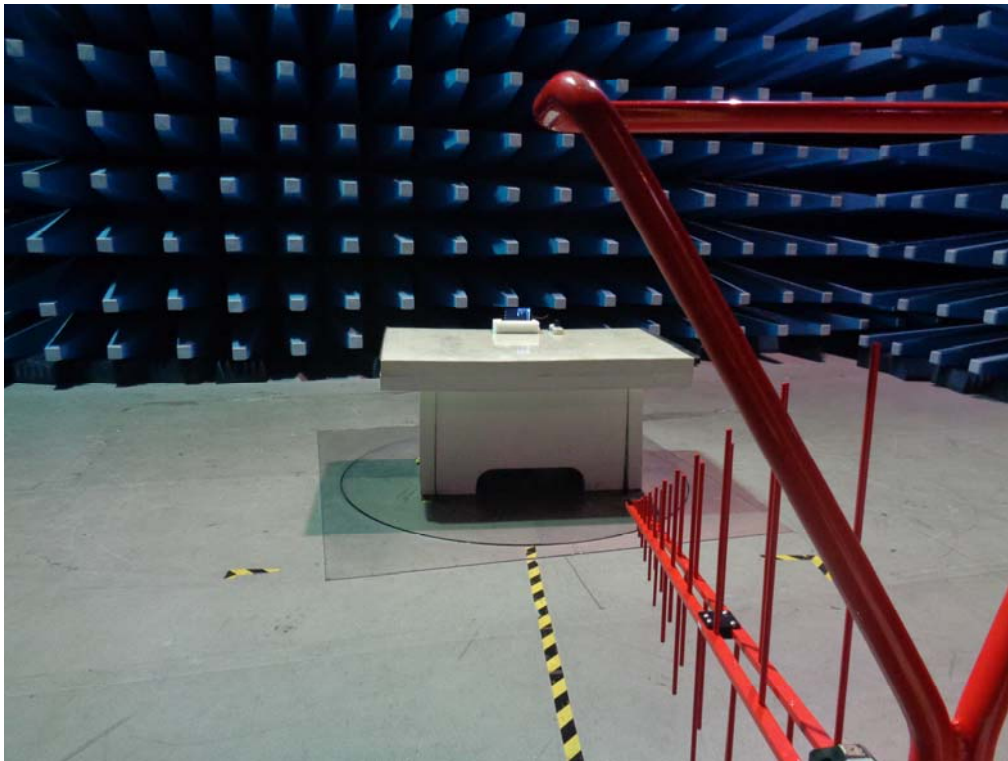
EUT PCB 2 – Rear View

Test Report No.	14021149-FCC-R1
Page	42 of 47



EUT PCB 1 – Without Shielding Front View

Annex B.iii. Photograph: Test Setup Photo



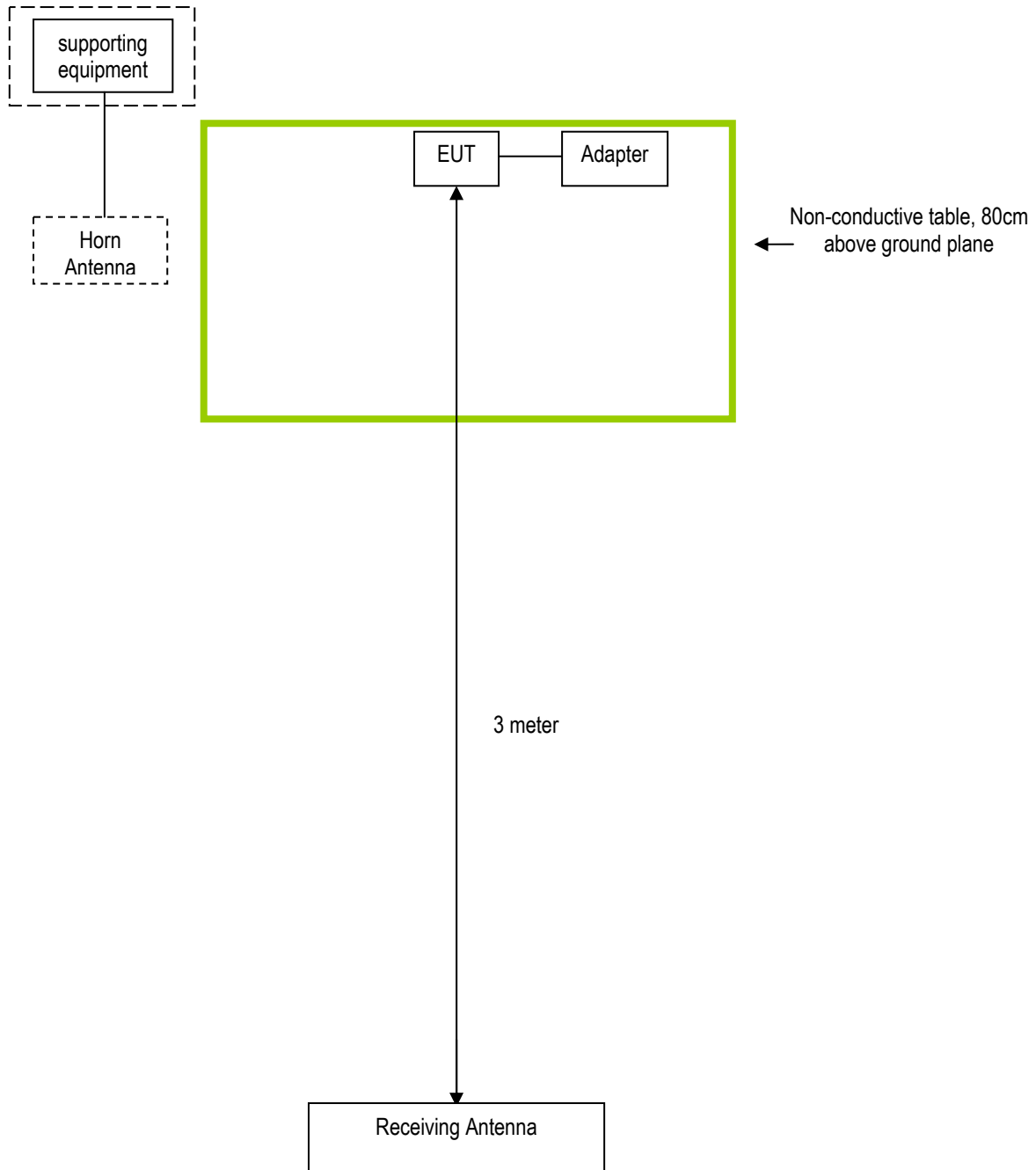
Radiated Spurious Emissions Test Setup Below 1GHz - Front View



Radiated Spurious Emissions Test Setup Above 1GHz -Front View

Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.i. TEST SET UP BLOCK



Test Report No.	14021149-FCC-R1
Page	45 of 47

Annex C. ii. SUPPORTING EQUIPMENT DESCRIPTION

The following is a description of supporting equipment and details of cables used with the EUT.

Manufacturer	Equipment Description	Model	Calibration Date	Calibration Due Date
A-INFOMW	Horn Antenna	JTXLB-10180	10/09/2014	10/08/2015
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	09/27/2014	09/26/2015

Test Report No.	14021149-FCC-R1
Page	46 of 47

Annex D. User Manual / Block Diagram / Schematics / Partlist

Please see attachment

Test Report No.	14021149-FCC-R1
Page	47 of 47

Annex E. DECLARATION OF SIMILARITY

Beneworld International(HK) Co., Limited

HK: Unit 04, 7/F, Bright Way Tower, No. 33 Mong Kok Road, Kowloon, Hong Kong
TEL: +852-69172443/ 30772819 **FAX:** +852-30772819

Statement

To whom it may concern

Date: November 18, 2014

We hereby state that the 7inch Tablet PC of our model number **BW9** and serial numbers **BW7D9, BW7D19, BW7D29, BW7D61, BW7D62, BW7D66, BW7D68, BW7D69, BW7D70, BW7D71** have the same constructions, circuit diagram and PCB layout. Only model name are different.

Sincerely,

Stephen Tang