Shenzhen Huatongwei International Inspection Co., Ltd.



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FCC REPORT

Report Reference No.....:: TRE1810020701 R/C.....: 18553

FCC ID.....:: QRP-SP-002

Applicant's name: Azumi S.A

Address..... Avenida Aquilino de la Guardia con Calle 47, PH Ocean Plaza, Piso

16 of. 16-01, Marbella, Ciudad de Panama City, Rep. Panama.

Manufacturer..... **AZUMI HK LTD**

FLAT/RM 18 BLK 1 14/F GOLDEN INDUSTRIAL BUILDING 16-26 Address....:

KWAI TAK STREET KWAI CHUNG,HK.

Mobile Phone Test item description:

AZUMI Trade Mark:

Model/Type reference.....: IKU A55

AKANE Listed Model(s)

FCC CFR Title 47 Part 2 Standard::

> FCC CFR Title 47 Part 22 FCC CFR Title 47 Part 24

Date of receipt of test sample.....: Oct 24,2018

Date of testing..... Oct 25,2018- Nov 06,2018

Date of issue....: Nov 07,2018

Result....: **Pass**

Compiled by

(position+printedname+signature)...: File administrators Silvia Li

Supervised by

(position+printedname+signature)....: Project Engineer Aaron Fang Silvia Li Aaron.Fang

Approved by

(position+printedname+signature)....: Manager Hans Hu

Testing Laboratory Name: Shenzhen Huatongwei International Inspection Co., Ltd.

Address....: 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao,

Gongming, Shenzhen, China

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The test report merely correspond to the test sample.

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1. TEST STANDARDS AND REPORT VERSION

1.1. Applicable Standards

The tests were performed according to following standards:

FCC Rules Part 2: FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

FCC Rules Part 22: PUBLIC MOBILE SERVICES

FCC Rules Part 24: PERSONAL COMMUNICATIONS SERVICES

<u>TIA/EIA 603 E March 2016:</u> Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

ANSI C63.26-2015: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

KDB 971168 D01 Power Meas License Digital Systems v03: MEASUREMENT GUIDANCE FOR CERTIFICATION OF LICENSED DIGITAL TRANSMITTERS

1.2. Report version information

Revision No.	Date of issue	Description
N/A	2018-11-07	Original

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2. Test Description

Test Item	Section in CFR 47	Result	Test Engineer
	Part 2.1046		
Conducted Output Power	Part 22.913(a)	Pass	Jiongsheng Feng
	Part 24.232(c)		
Peak-to-Average Ratio	Part 24.232	Pass	Jiongsheng Feng
000/ 0	Part 2.1049		
99% Occupied Bandwidth & 26 dB Bandwidth	Part 22.917(b)	Pass	Jiongsheng Feng
Baridwidtii	Part 24.238(b)		
	Part 2.1051		
Band Edge	Part 22.917	Pass	Jiongsheng Feng
	Part 24.238		
	Part 2.1051		
Conducted Spurious Emissions	Part 22.917	Pass	Jiongsheng Feng
	Part 24.238		
	Part 2.1055(a)(1)(b)		
Frequency stability VS Temperature	Part 22.355	Pass	Jiongsheng Feng
	Part 24.235		
	Part 2.1055(d)(1)(2)		
Frequency stability VS Voltage	Part 22.355	Pass	Jiongsheng Feng
	Part 24.235		
ERP and EIRP	Part 22.913(a)	Pass	Shower dai
ERP and EIRP	Part 24.232(b)	Pass	Snower dai
	Part 2.1053		
Radiated Spurious Emissions	Part 22.917	Pass	Shower dai
	Part 24.238		

Note: The measurement uncertainty is not included in the test result.

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3. **SUMMARY**

3.1. Client Information

Applicant:	Azumi S.A
Address:	Avenida Aquilino de la Guardia con Calle 47, PH Ocean Plaza, Piso 16 of. 16-01, Marbella, Ciudad de Panama City, Rep. Panama.
Manufacturer:	AZUMI HK LTD
Address:	FLAT/RM 18 BLK 1 14/F GOLDEN INDUSTRIAL BUILDING 16-26 KWAI TAK STREET KWAI CHUNG,HK .

3.2. Product Description

3.2. I Toddet Description				
Name of EUT:	Mobile Phone	Mobile Phone		
Trade Mark:	AZUMI			
Model No.:	IKU A55	IKU A55		
Listed Model(s):	AKANE			
IMEI Code:	Conducted: 357 Radiated: 35712			
SIM Information:	Support Two SI	M Card		
Hardware version:	PCB V00			
Software version:	Azumi_AKANE_	_V1_20181010		
Power supply:	DC 3.8V			
Adapter information:	Model:NOBU A55 Input:100-240Va.c. 50/60Hz 0.2A Output:5.0Vd.c. 1A			
•				
2G:				
2G: Support Network:	GSM, GPRS			
	GSM, GPRS GSM850, PCS1	900		
Support Network:		900 GMSK		
Support Network: Support Band:	GSM850, PCS1			
Support Network: Support Band: Modulation:	GSM850, PCS1 GSM/GPRS:	GMSK		
Support Network: Support Band: Modulation:	GSM850, PCS1 GSM/GPRS: GSM850:	GMSK 824.20MHz-848.80MHz		
Support Network: Support Band: Modulation: Transmit Frequency:	GSM850, PCS1 GSM/GPRS: GSM850: PCS1900:	GMSK 824.20MHz-848.80MHz 1850.20MHz-1909.80MHz		
Support Network: Support Band: Modulation: Transmit Frequency:	GSM850, PCS1 GSM/GPRS: GSM850: PCS1900: GSM850:	GMSK 824.20MHz-848.80MHz 1850.20MHz-1909.80MHz 869.20MHz-893.80MHz		
Support Network: Support Band: Modulation: Transmit Frequency: Receive Frequency:	GSM850, PCS1 GSM/GPRS: GSM850: PCS1900: GSM850: PCS1900:	GMSK 824.20MHz-848.80MHz 1850.20MHz-1909.80MHz 869.20MHz-893.80MHz		
Support Network: Support Band: Modulation: Transmit Frequency: Receive Frequency: GPRS Multislot Class:	GSM850, PCS1 GSM/GPRS: GSM850: PCS1900: GSM850: PCS1900:	GMSK 824.20MHz-848.80MHz 1850.20MHz-1909.80MHz 869.20MHz-893.80MHz		

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3.3. Operation state

Test frequency list

GSM850		PCS	1900
Channel Frequency (MHz)		Channel	Frequency (MHz)
128	824.20	512	1850.20
190	836.60	661	1880.00
251	848.80	810	1909.80

> Test mode

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas. License Digital Systems v03 and ANSI C63.26-2015 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 10th harmonic for GSM850, PCS1900.

The Test EUT support two SIM card(SIM1,SIM2),so all the tests are performed at each SIM card (SIM1,SIM2) mode, the datum recorded is the worst case for all the mode at SIM1 Card mode.

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	Conducted		
GSM 850	■ GSM link ■ GPRS Class 8 link	■ GSM link ■ GPRS Class 8 link		
PCS 1900	■ GSM link ■ GPRS Class 8 link	■ GSM link ■ GPRS Class 8 link		

3.4. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

- supplied by the manufacturer
- supplied by the lab

	,	Manufacturer:	/
0	1	Model No.:	/
	1	Manufacturer:	/
		Model No.:	/

3.5. Modifications

No modifications were implemented to meet testing criteria.

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4. TEST ENVIRONMENT

4.1. Address of the test laboratory

Laboratory: Shenzhen Huatongwei International Inspection Co., Ltd.

Address: 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China

4.2. Test Facility

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No.: 3902.01

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 762235

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files.

IC-Registration No.:5377B-1

Two 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No.: 5377B-1.

ACA

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

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4.3. Equipments Used during the Test

RF Co	RF Conducted Test					
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal. (mm-dd-yy)	Next Cal. (mm-dd-yy)
1	Universal Radio Communication	Rohde&Schwarz	CMU200	112012	11/11/2017	11/11/2018
2	Wide Radio communication tester	Rohde&Schwarz	CMW500	137688	10/25/2018	10/24/2019
3	Spectrum Analyzer	Rohde&Schwarz	FSW26	103440	11/11/2017	11/10/2018
4	MXA Signal Analyzer	Agilent	N9020A	MY5050187	11/10/2017	11/09/2018
5	Splitter	Mini-Circuit	ZAPD-4	400059	03/19/2018	03/18/2019
6	Climate Chamber	ESPEC	EL-10KA	05107008	11/10/2017	11/09/2018

Radia	Radiated Emissions					
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal. (mm-dd-yy)	Next Cal. (mm-dd-yy)
1	EMI Test Receiver	R&S	ESCI	101247	11/11/2017	11/10/2018
2	Loop Antenna	R&S	HFH2-Z2	100020	11/20/2017	11/19/2018
3	Ultra-Broadband Antenna	SCHWARZBECK	VULB9163	538	04/05/2017	04/04/2020
4	Preamplifier	SCHWARZBECK	BBV 9743	9743-0022	10/17/2018	10/16/2019
5	RF Connection Cable	HUBER+SUHNER	RE-7-FL	N/A	11/21/2017	11/20/2018
6	EMI Test Software	R&S	ESK1	N/A	N/A	N/A
7	Spectrum Analyzer	R&S	FSP40	100597	11/11/2017	11/10/2018
8	Horn Antenna	SCHWARZBECK	9120D	1011	03/27/2017	03/26/2020
9	Horn Antenna	SCHWARZBECK	BBHA9170	25841	03/27/2017	03/26/2020
10	Broadband Preamplifier	SCHWARZBECK	BBV 9718	9718-248	10/17/2018	10/16/2019
11	High pass filter	Compliance Direction systems	BSU-6	34202	11/11/2017	11/10/2018
12	RF Connection Cable	HUBER+SUHNER	RE-7-FH	N/A	11/21/2017	11/20/2018
13	Signal Generator	Rohde&Schwarz	SMB100A	114360	06/12/2018	06/11/2019
14	Universal Radio Communication	Rohde&Schwarz	CMU200	112012	11/11/2017	11/11/2018
15	Wide Radio communication tester	Rohde&Schwarz	CMW500	137688	10/25/2018	10/24/2019
16	EMI Test Software	Audix	E3	N/A	N/A	N/A
17	Turntable	MATURO	TT2.0	N/A	N/A	N/A
18	Antenna Mast	MATURO	TAM-4.0-P	N/A	N/A	N/A

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4.4. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

	VN=Nominal Voltage	DC 3.6V
Voltage	VL=Lower Voltage	DC 3.8V
	VH=Higher Voltage	DC 4.2V
Tomporoturo	TN=Normal Temperature	25 °C
Temperature	Extreme Temperature	From -30° to + 50° centigrade
Humidity	30~60 %	
Air Pressure	950-1050 hPa	

4.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01"Electromagnetic compatibilityand Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics;Part 1"and TR-100028-02 "Electromagnetic compatibilityand Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics;Part 2 " and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test Items	Measurement Uncertainty	Notes
Transmitter power conducted	0.63 dB	(1)
Transmitter power Radiated	2.38dB for <1GHz 3.45dB for >1GHz	(1)
Conducted spurious emissions 9kHz~40GHz	0.63 dB	(1)
Radiated spurious emissions	2.38dB for <1GHz	(1)
radiated sparious critissions	3.45dB for >1GHz	(1)
Occupied Pandwidth	18Hz for <1GHz	(1)
Occupied Bandwidth	69Hz for >1GHz	(1)
Eroquoney error	18Hz for <1GHz	(1)
Frequency error	69Hz for >1GHz	(1)

⁽¹⁾ This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

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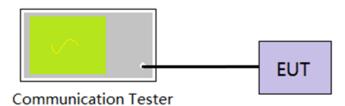
5. TEST CONDITIONS AND RESULTS

5.1. Conducted Output Power

LIMIT

N/A

TEST CONFIGURATION



TEST PROCEDURE

- 1. The EUT output port was connected to communication tester.
- 2. Set EUT at maximum power through communication tester.
- 3. Select lowest, middle, and highest channels for each band and different modulation.
- 4. Measure the maximum burst average power.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

Refer to appendix A on the section 8 appendix report

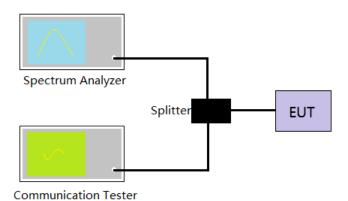
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5.2. Peak-to-Average Ratio

LIMIT

13dB

TEST CONFIGURATION



TEST PROCEDURE

- 1. The EUT was connected to the spectrum analyzer and communication tester via a power splitter
- 2. Set EUT in maximum power output.
- 3. Center Frequency = Carrier frequency, RBW > Emission bandwidth of signal
- 4. The signal analyzer was set to collect one million samples to generate the CCDF curve
- 5. The measurement interval was set depending on the type of signal analyzed.
 - i. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms.
 - ii. For bursttransmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that issynced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in whichthetransmitter is operating at maximum power
- 6. Record the maximum PAPR level associated with a probability of 0.1%.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

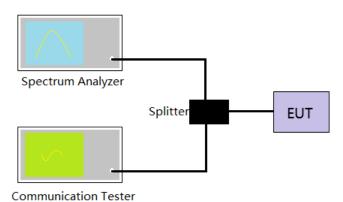
Refer to appendix B on the section 8 appendix report

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5.3. 99% Occupied Bandwidth & 26 dB Bandwidth

LIMIT N/A

TEST CONFIGURATION



TEST PROCEDURE

- 1. The EUT was connected to the spectrum analyzer and communication tester via a power splitter
- 2. Set EUT in maximum power output.
- 3. Spectrum analyzer setting as follow:

Center Frequency= Carrier frequency, RBW=1% to 5% of anticipated OBW, VBW= 3 * RBW, Detector=Peak,

Trace maximum hold.

4. Record the value of 99% Occupied bandwidth and -26dB bandwidth.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

Refer to appendix C on the section 8 appendix report

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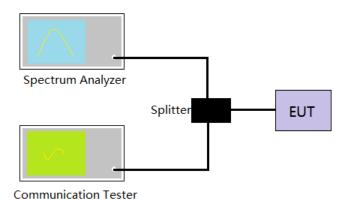
5.4. Band Edge

LIMIT

Part 24.238 and Part 22.917 specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

TEST CONFIGURATION



TEST PROCEDURE

- 1. The EUT was connected to the spectrum analyzer and communication tester via a power splitter
- 2. Set EUT in maximum power output.
- 3. The band edges of low and high channels were measured.
- Spectrum analyzer setting as follow:
 RBW=3KHz, VBW = 10KHz, Sweep time= Auto
- 5. Record the test plot.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

Refer to appendix D on the section 8 appendix report

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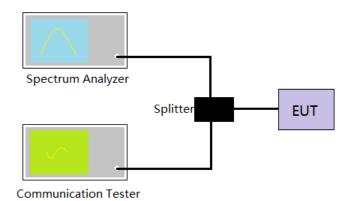
5.5. Conducted Spurious Emissions

LIMIT

Part 24.238 and Part 22.917 specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

TEST CONFIGURATION



TEST PROCEDURE

- 1. The EUT was connected to the spectrum analyzer and communication tester via a power splitter
- 2. Set EUT in maximum power output.
- 3. Spectrum analyzer setting as follow:

Below 1GHz, RBW=100KHz, VBW = 300KHz, Detector=Peak, Sweep time= Auto Above 1GHz, RBW=1MHz, VBW=3MHz, Detector=Peak, Sweep time= Auto Scan frequency range up to 10th harmonic.

4. Record the test plot.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

Refer to appendix E on the section 8 appendix report

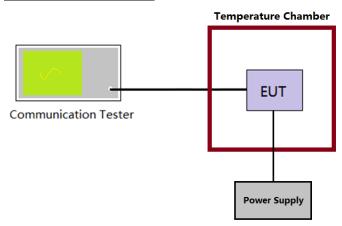
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5.6. Frequency stability VS Temperature measurement

LIMIT

2.5ppm

TEST CONFIGURATION



TEST PROCEDURE

- 1. The equipment under test was connected to an external DC power supply and input rated voltage.
- 2. The EUT output port was connected to communication tester.
- 3. The EUT was placed inside the temperature chamber.
- 4. Turn EUT off and set the chamber temperature to −30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency.
- 5. Repeat step 4 measure with 10°C increased per stage until the highest temperature of +50°C reached.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

Refer to appendix F on the section 8 appendix report

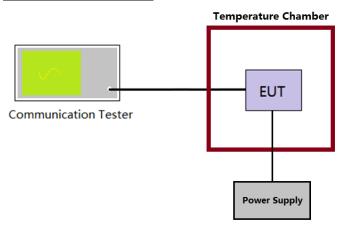
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5.7. Frequency stability VS Voltage measurement

LIMIT

2.5ppm

TEST CONFIGURATION



TEST PROCEDURE

- 1. The equipment under test was connected to an external DC power supply and input rated voltage.
- 2. The EUT output port was connected to communication tester.
- 3. The EUT was placed inside the temperature chamber at 25°C
- 4. The power supply voltage to the EUT was varied $\pm 15\%$ of the nominal value measured at the input to the EUT
- 5. Record the maximum frequency change.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

Refer to appendix F on the section 8 appendix report

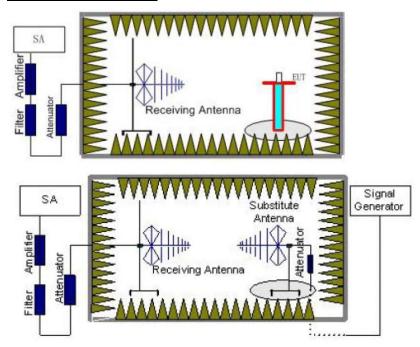
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5.8. ERP and EIRP

LIMIT

GSM850: 7W (38.45dBm) ERP PCS1900: 2W (33dBm) EIRP

TEST CONFIGURATION



TEST PROCEDURE

- 1. EUT was placed on a 0.8 meter for below 1GHz and 1.5 meter for above 1GHz high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.0m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
- 2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
- 3. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=1MHz, VBW=3MHz for above 1GHz and RBW=100kHz, VBW=300kHz for 30MHz to 1GHz,, And the maximum value of the receiver should be recorded as (Pr).
- 4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest isconnected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
- 5. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.

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6. The measurement results are obtained as described below:

Power(EIRP)=PMea- PAg - Pcl + Ga

We used SMF100A micowave signal generator which signal level can up to 33dBm,so we not used power Amplifier for substituation test; The measurement results are amend as described below:

Power(EIRP)=PMea- Pcl + Ga

7. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.

ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

Mode	Channel	Antenna Pol.	ERP	Limit (dBm)	Result
GSM850	128	V	31.14	<38.45	Pass
		Н	26.79		
	190	V	29.54		
		Н	26.11		
	251	V	30.90		
		Н	26.73		
GPRS850	128	V	31.35	<38.45	Pass
		Н	26.81		
	190	V	29.68		
		Н	26.37		
	251	V	31.22		
		Н	26.84		

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Mode	Channel	Antenna Pol.	EIRP	Limit (dBm)	Result
PCS1900	512	V	29.82	<33.00	Pass
		Н	24.23		
	661	V	29.59		
		Н	24.57		
	810	V	30.14		
		Н	25.23		
GPRS1900	512	V	29.94	<33.00	Pass
		Н	24.61		
	661	V	29.68		
		Н	24.42		
	810	V	30.30		
		Н	25.71		

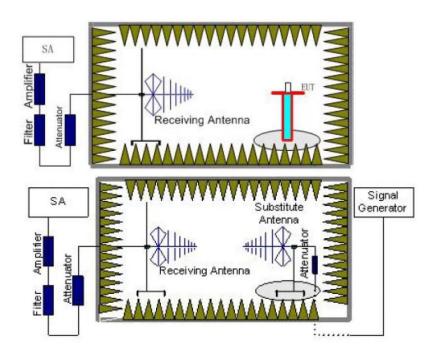
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5.9. Radiated Spurious Emission

LIMIT

-13dBm

TEST CONFIGURATION



TEST PROCEDURE

- 1. EUT was placed on a 0.8 meter for below 1GHz and 1.5 meter for above 1GHz high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.0m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
- 2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
- 3. The EUT is then put into continuously transmitting mode at its maximum power level during the test.Set Test Receiver or Spectrum RBW=1MHz,VBW=3MHz for above 1GHz and RBW=100kHz,VBW=300kHz for 30MHz to 1GHz, And the maximum value of the receiver should be recorded as (Pr).
- 4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest isconnected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
- 5. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (PcI) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.

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6. The measurement results are obtained as described below:

Power(EIRP)=PMea- PAg - Pcl + Ga

- We used SMF100A micowave signal generator which signal level can up to 33dBm,so we not used power Amplifier for substituation test; The measurement results are amend as described below: Power(EIRP)=PMea- Pcl + Ga
- 7. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
 - ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

⊠ Passed	☐ Not Applicable
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Note: Worst case at GSM850/PCS1900

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		GS	M850		
01 1	Frequency	Spurious Emission		L'::((ID)	5 "
Channel	(MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
	156.09	Vertical	-55.02		Pass
	259.91	V	-46.14		
	1260.88	V	-52.74	40.00	
	1648.51	V	-52.45	<-13.00	
	4945.67	V	-51.28		
400	7423.01	V	-40.85		
128	156.09	Horizontal	-52.70		
	259.91	Н	-47.92		
	1648.51	Н	-52.49	40.00	Pass
	2150.57	Н	-52.27	<-13.00	
	4113.73	Н	-57.18		
	7423.01	Н	-46.24		
	182.21	Vertical	-57.83		Pass
	259.91	V	-48.87		
	1674.06	V	-58.84	<-13.00	
	1899.50	V	-59.44		
	5017.92	V	-50.70		
190	7531.45	V	-46.43		
190	156.09	Horizontal	-51.65	<-13.00	Pass
	259.91	Н	-46.97		
	1674.06	Н	-58.98		
	2577.97	Н	-53.68		
	5017.92	Н	-50.57		
	6696.71	Н	-45.95		
	233.89	Vertical	-55.45	<-13.00	Pass
	259.91	V	-49.72		
	1901.59	V	-46.17		
	2632.35	V	-36.07		
	4113.73	V	-59.83		
251	5945.86	V	-47.78		
	156.09	Horizontal	-54.14	<-13.00 Pa	
	259.91	Н	-50.67		
	1698.14	Н	-48.68		
	2592.17	Н	-37.07		Fa55
	3652.49	Н	-59.53		
	7117.29	Н	-50.41		

Remark:

- 1. The emission behaviour belongs to narrowband spurious emission.
- 2. The emission levels of not record in the report are very lower than the limit and not show in test report.

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		PCS	S1900		
Channal	Frequency Spuri		Emission	Limit (dDm)	D !!
Channel	(MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
	184.14	Vertical	-59.97		Pass
	266.39	V	-47.72		
	1451.26	V	-51.83	. 42.00	
	2058.11	V	-50.49	<-13.00	
	5083.85	V	-56.74		
540	7337.39	V	-49.11		
512	143.46	Horizontal	-59.92		Pass
	266.39	Н	-48.90		
	1260.88	Н	-54.01	40.00	
	2886.84	Н	-49.69	<-13.00	
	6696.71	Н	-51.40		
	9107.26	Н	-45.74		
	182.21	Vertical	-54.07		Pass
	259.91	V	-54.26		
	1262.26	V	-55.70	<-13.00	
	2595.02	V	-45.88		
	3759.98	V	-58.36		
004	7520.54	V	-45.25		
661	156.09	Horizontal	-55.52		Pass
	259.91	Н	-55.14	<-13.00	
	1259.49	Н	-50.36		
	2589.33	Н	-48.01		
	4520.38	Н	-58.85		
	7520.54	Н	-44.86		
	182.21	Vertical	-53.01	<-13.00	Pass
	259.91	V	-50.97		
	1260.88	V	-56.20		
	2849.03	V	-50.09		
810	5054.44	V	-56.51		
	7641.47	V	-45.54		
	182.21	Horizontal	-53.83		
	259.91	Н	-52.75	<-13.00 Pass	
	1260.88	Н	-55.94		Doce
	2222.63	Н	-52.16		rass
	5725.84	Н	-51.29		
	7641.47	Н	-44.91		

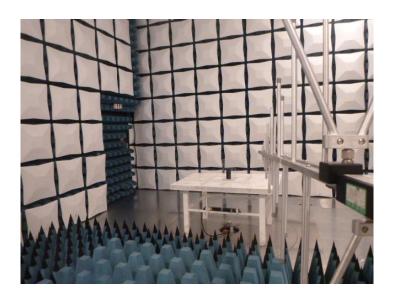
Remark:

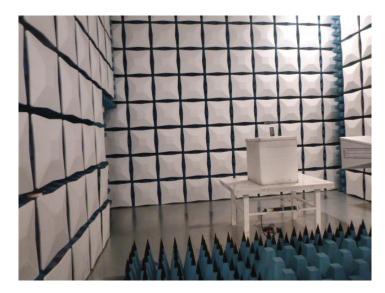
- 1. The emission behaviour belongs to narrowband spurious emission.
- 2. The emission levels of not record in the report are very lower than the limit and not show in test report.

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6. TEST SETUP PHOTOS OF THE EUT

Radiated emission:



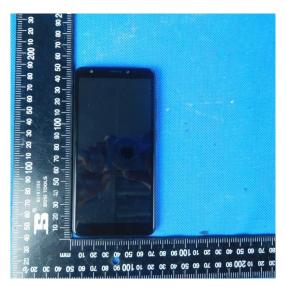


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7. EXTERNAL AND INTERNAL PHOTOS OF THE EUT

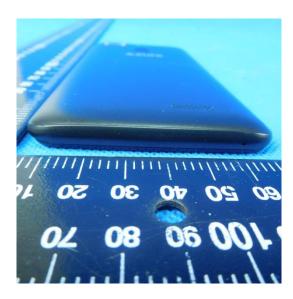
External photos of the EUT

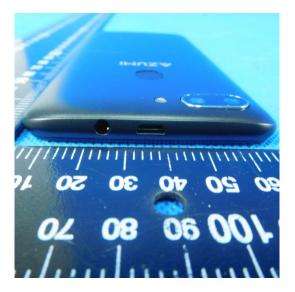


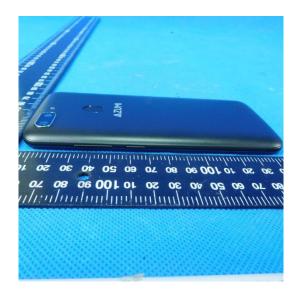




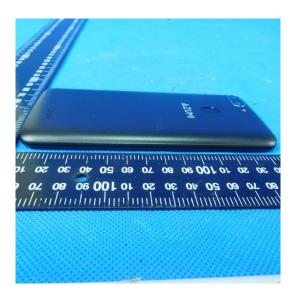
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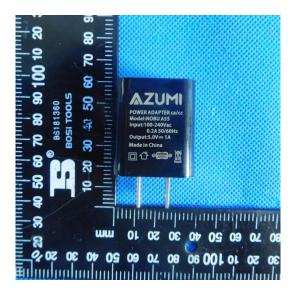






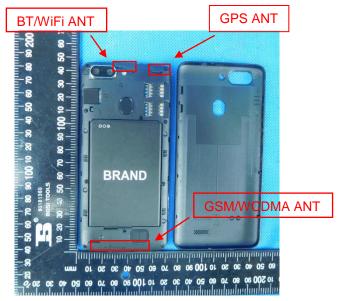
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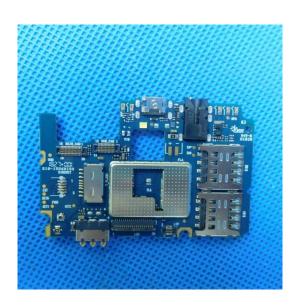
Internal photos of the EUT

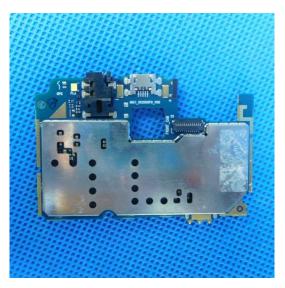






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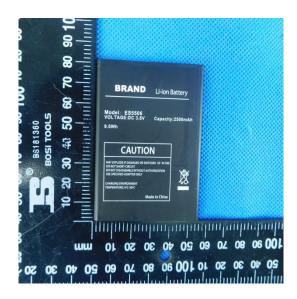




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8. APPENDIX REPORT