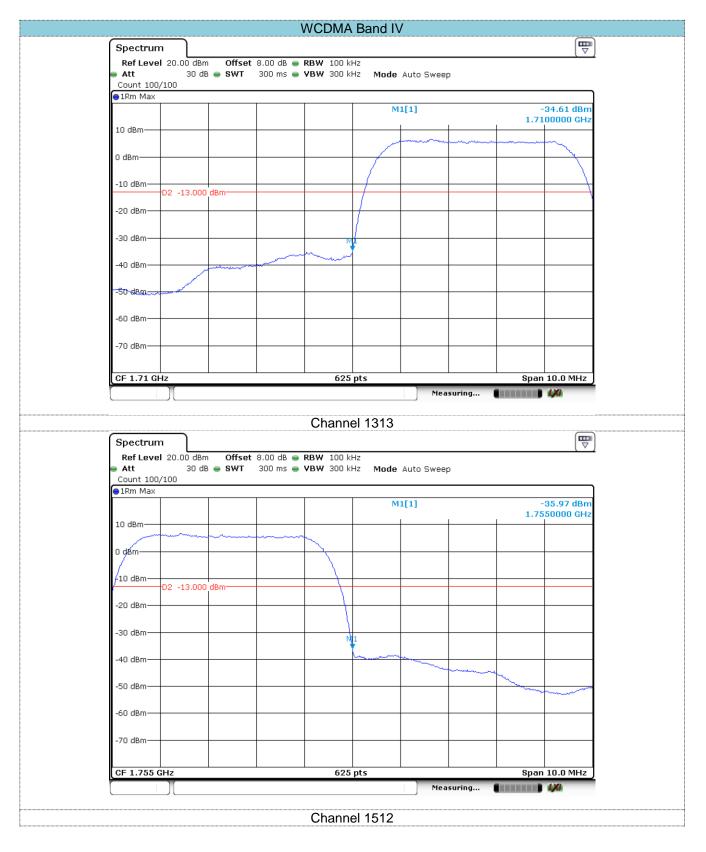


				WCDMA		1			
Spectrum									
Ref Level Att				RBW 100 kł VBW 300 kł		Auto Sweer	1		
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Spectrum									
	20.00 dBr			<b>RBW</b> 100 kł	Hz	Auto Sweep	)		<b>™</b> ⊽
Ref Level Att Count 100/	20.00 dBr 30 dI				Hz	Auto Sweep	)		<b>₩</b> V
Ref Level Att	20.00 dBr 30 dI			<b>RBW</b> 100 kł	Hz Hz <b>Mode</b>	Auto Sweep	)		( ▼ 18.94 dBm
Ref Level Att Count 100/ 1Rm Max	20.00 dBr 30 dI			<b>RBW</b> 100 kł	Hz Hz <b>Mode</b>		)		
Ref Level Att Count 100/	20.00 dBr 30 dI			<b>RBW</b> 100 kł	Hz Hz <b>Mode</b>		)		•18.94 dBm
Ref Level Att Count 100/ 1Rm Max	20.00 dBr 30 dI			<b>RBW</b> 100 kł	Hz Hz <b>Mode</b>		)		•18.94 dBm
Ref Level Att Count 100/ 1Rm Max 10 dBm 0 dBm	20.00 dBr 30 dI			<b>RBW</b> 100 kł	Hz Hz <b>Mode</b>		)		•18.94 dBm
Ref Level Att Count 100/ IRm Max 10 dBm 0 dBm -10 dBm	20.00 dBr 30 dI	3 • SWT		<b>RBW</b> 100 kł	Hz Hz <b>Mode</b>		,		•18.94 dBm
Ref Level Att Count 100/ IRm Max 10 dBm 0 dBm -10 dBm	20.00 dBr 30 dl (100	3 • SWT		<b>RBW</b> 100 kł	Hz Hz <b>Mode</b>		)		•18.94 dBm
Ref Level           Att           Count 100/           1Rm Max           10 dBm           0 dBm           -10 dBm           -20 dBm	20.00 dBr 30 dl (100	3 • SWT		<b>RBW</b> 100 kł	Hz Hz <b>Mode</b>				•18.94 dBm
Ref Level           Att           Count 100/           1Rm Max           10 dBm           0 dBm           -10 dBm	20.00 dBr 30 dl (100	3 • SWT		<b>RBW</b> 100 kł	Hz Hz <b>Mode</b>				•18.94 dBm
Ref Level           Att           Count 100/           1Rm Max           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm	20.00 dBr 30 dl (100	3 • SWT		<b>RBW</b> 100 kł	Hz Hz <b>Mode</b>				•18.94 dBm
Ref Level           Att           Count 100/           1Rm Max           10 dBm           0 dBm           -10 dBm           -20 dBm	20.00 dBr 30 dl (100	3 • SWT		<b>RBW</b> 100 kł	Hz Hz <b>Mode</b>		,		•18.94 dBm
Ref Level           Att           Count 100/           1Rm Max           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm	20.00 dBr 30 dl (100	3 • SWT		<b>RBW</b> 100 kł	Hz Hz <b>Mode</b>				•18.94 dBm
Ref Level           Att           Count 100/           1Rm Max           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm	20.00 dBr 30 dl (100	3 • SWT		<b>RBW</b> 100 kł	Hz Hz <b>Mode</b>				•18.94 dBm
Ref Level           Att           Count 100/           1Rm Max           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm	20.00 dBr 30 dl (100	3 • SWT		<b>RBW</b> 100 kł	Hz Hz <b>Mode</b>				•18.94 dBm
Ref Level           Att           Count 100/           1Rm Max           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm	20.00 dBr 30 dl (100	3 • SWT		<b>RBW</b> 100 kł	Hz Hz <b>Mode</b>				•18.94 dBm
Ref Level           Att           Count 100/           1Rm Max           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -50 dBm           -60 dBm	20.00 dBr 30 dl (100	3 • SWT		<b>RBW</b> 100 kł	Hz Hz <b>Mode</b>				•18.94 dBm
Ref Level           Att           Count 100/           1Rm Max           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -50 dBm           -60 dBm	20.00 dBr 30 dl /100 D2 -13.000	3 • SWT		<b>RBW</b> 100 kł	Hz Hz Mode			Span	18.94 dBm 00000 GHz
Ref Level           Att           Count 100/           1Rm Max           10 dBm           0 dBm/           -10 dBm/           -20 dBm/           -30 dBm/           -50 dBm/           -60 dBm/	20.00 dBr 30 dl /100 D2 -13.000	3 • SWT		RBW 100 kł	Hz Hz Mode			1.91	18.94 dBm 00000 GHz

Page: 38 of 65

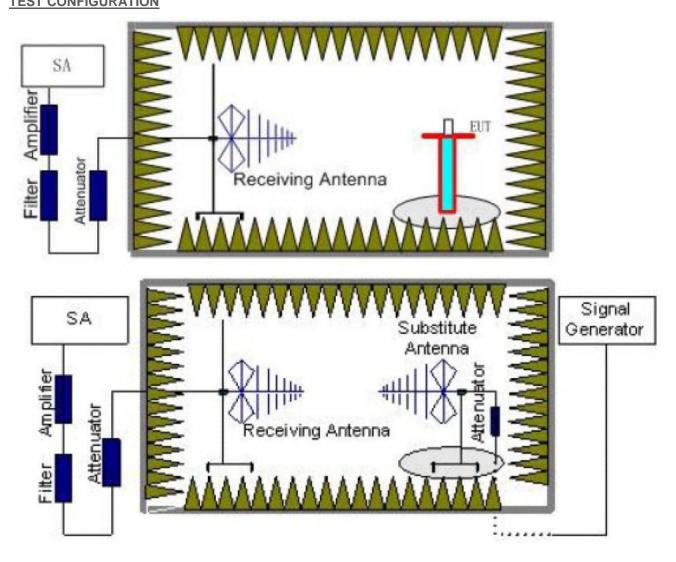
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CF 824.01	 MHz			625	nts			Snan	10.0 MHz
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Spectrum		n Offset	8 00 dB 🗨						
Ref Leve Att	l 20.00 dBr 30 d	n Offset B e SWT	8.00 dB 👄 300 ms 🖷	Channe RBW 100 kH VBW 300 kH	Hz	Auto Swee	p		
Ref Leve	l 20.00 dBr 30 d	n Offset B 👄 SWT	8.00 dB 👄 300 ms 🖷	<b>RBW</b> 100 kH	Hz Hz <b>Mode</b>		p		
Ref Leve Att Count 100	l 20.00 dBr 30 d	n Offset B e SWT	8.00 dB 👄 300 ms 👄	<b>RBW</b> 100 kH	Hz Hz <b>Mode</b>	Auto Swee	p		-16.00 dBm
Ref Leve Att Count 100	l 20.00 dBr 30 d	n Offset B e SWT	8.00 dB 300 ms	<b>RBW</b> 100 kH	Hz Hz <b>Mode</b>		p 		
Ref Leve Att Count 100 1Rm Max	l 20.00 dBr 30 d	n Offset B e SWT	8.00 dB 300 ms	<b>RBW</b> 100 kH	Hz Hz <b>Mode</b>		p		-16.00 dBm
Ref Leve Att Count 100 1Rm Max	l 20.00 dBr 30 d	m Offset B e SWT	8.00 dB 300 ms	<b>RBW</b> 100 kH	Hz Hz <b>Mode</b>		p		-16.00 dBm
Ref Leve Att Count 100 1Rm Max	1 20.00 dBr 30 d /100	B SWT	8.00 dB 300 ms 	<b>RBW</b> 100 kH	Hz Hz <b>Mode</b>		p		-16.00 dBm
Ref Leve Att Count 100 1Rm Max 10 dBm 0 dBm -10 dBm	l 20.00 dBr 30 d	B SWT	8.00 dB e 300 ms e	<b>RBW</b> 100 kH	Hz Hz <b>Mode</b>		p		-16.00 dBm
Ref Leve Att Count 100 IRm Max 10 dBm 0 dBm	1 20.00 dBr 30 d /100	B SWT	8.00 dB 300 ms 	<b>RBW</b> 100 kH	Hz Hz <b>Mode</b>		p		-16.00 dBm
Ref Leve Att Count 100 1Rm Max 10 dBm 0 dBm -10 dBm -20 dBm	1 20.00 dBr 30 d /100	B SWT	8.00 dB  300 ms	<b>RBW</b> 100 kH	Hz Hz <b>Mode</b>		p		-16.00 dBm
Ref Leve Att Count 100 1Rm Max 10 dBm 0 dBm -10 dBm	1 20.00 dBr 30 d /100	B SWT	8.00 dB  300 ms	<b>RBW</b> 100 kH	Hz Hz <b>Mode</b>		p		-16.00 dBm
Ref Leve Att Count 100 1Rm Max 10 dBm 0 dBm -10 dBm -20 dBm	1 20.00 dBr 30 d /100	B SWT	8.00 dB  300 ms	<b>RBW</b> 100 kH	Hz Hz <b>Mode</b>		p		-16.00 dBm
Ref Leve Att Count 100 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm	1 20.00 dBr 30 d /100	B SWT	8.00 dB  300 ms	<b>RBW</b> 100 kH	Hz Hz <b>Mode</b>		p		-16.00 dBm
Ref Leve Att Count 100 1Rm Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm	1 20.00 dBr 30 d /100	B SWT	8.00 dB  300 ms	<b>RBW</b> 100 kH	Hz Hz <b>Mode</b>		P		-16.00 dBm
Ref Leve           Att           Count 100           IRm Max           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm	1 20.00 dBr 30 d /100	B SWT	8.00 dB  300 ms	<b>RBW</b> 100 kH	Hz Hz <b>Mode</b>		p		-16.00 dBm
Ref Leve Att Count 100 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm	1 20.00 dBr 30 d /100	B SWT	8.00 dB   300 ms	<b>RBW</b> 100 kH	Hz Hz <b>Mode</b>		p		-16.00 dBm
Ref Leve           Att           Count 100           IRm Max           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm	1 20.00 dBr 30 d /100	B SWT	8.00 dB  300 ms	<b>RBW</b> 100 kH	Hz Hz <b>Mode</b>		P		-16.00 dBm
Ref Leve Att Count 100 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -30 dBm -50 dBm -60 dBm	1 20.00 dBr 30 d /100	B SWT	8.00 dB  300 ms	<b>RBW</b> 100 kH	Hz Hz <b>Mode</b>		P		-16.00 dBm
Ref Leve Att Count 100 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -30 dBm -50 dBm -60 dBm	20.00 dBr 30 d /100	B SWT	8.00 dB  300 ms 300 ms 30	<b>RBW</b> 100 kH	Hz Hz Mode		P	849	-16.00 dBm
Ref Leve           Att           Count 100           IRm Max           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm           -70 dBm	20.00 dBr 30 d /100	B SWT	8.00 dB  300 ms		Hz Hz Mode			849	16.00 dBm ,0000 MHz

## 5.5. ERP and EIRP

LIMIT GSM850/WCDMA Band V: 7W ERP PCS1900/WCDMA Band II: 2W EIRP WCDMA Band V: 1W EIRP TEST CONFIGURATION



## TEST PROCEDURE

- EUT was placed on a 0.8 meter 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.

- 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.
- 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
- 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

Mode	Channel	Antenna Pol.	ERP	Limit (dBm)	Result
	128	V	31.43		
	120	Н	28.65		
GSM850	190	V	31.22	38.45	Pass
GSIMOSU	190	Н	28.37	36.45	Fa55
	251	V	31.65		
	201	Н	28.77		
	128	V	31.45		
	120	Н	28.64	38.45	Pass
GPRS850	190	V	31.35		
GFK3030		Н	28.65		
	251	V	31.47		
	251	Н	28.33		
	128	V	31.66		
	120	Н	28.64		
EGPRS850	190	V	31.37	38.45	Pass
LGFR0000	190	Н	28.65	38.45	Pass
	251	V	31.65		
	201	Н	28.33		

Page: 42 of 65

Issued: 2017-08-11

Mode	Channel	Antenna Pol.	EIRP	Limit (dBm)	Result
	512	V	30.64		
	512	Н	27.43		
PCS1900	661	V	30.64	22.00	Deee
PC31900	001	Н	27.38	33.00	Pass
	910	V	30.36		
	810	Н	27.52		
	510	V	30.64		Pass
	512	Н	27.55	- 33.00	
GPRS1900	004	V	30.46		
GFK31900	661	Н	27.52		
	810	V	30.38		
	010	Н	27.64		
	512	V	30.33		
	512	Н	27.52		
EGPRS1900	661	V	30.43	33.00	Page
EGFK31900		Н	27.52	33.00	Pass
	810	V	30.64		
	010	Н	27.64		

Mode	Channel	Antenna Pol.	EIRP	Limit (dBm)	Result
	9262	V	20.58		
	5202	Н	18.55		
WCDMA Band II	0400	V	20.36	33.00	Pass
	9400	Н	18.43		
	9538	V	20.33		
	9000	Н	18.45		

Mode	Channel	Antenna Pol.	EIRP	Limit (dBm)	Result
	1010	V	21.52		Page
	1313	Н	19.33		
WCDMA Band IV	1450	V	21.24	- 30.00	
	1450	Н	19.52		Pass
		V	21.36		
	1512	Н	19.58		

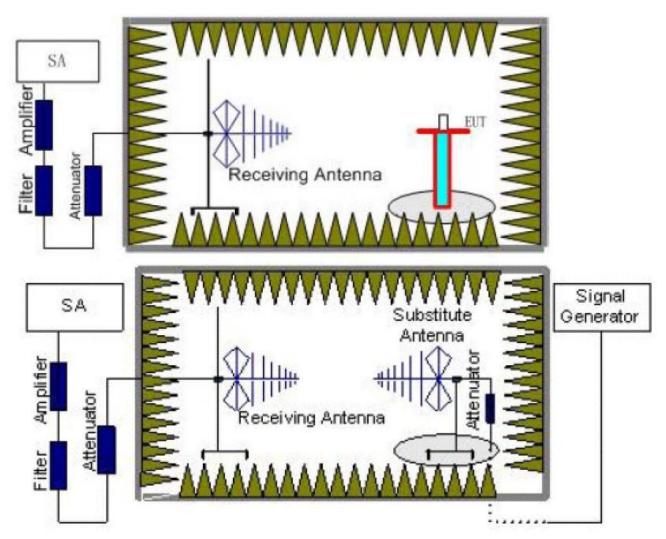
Mode	Channel	Antenna Pol.	ERP	Limit (dBm)	Result
	4422	V	19.75		
	4132	Н	16.33		
	4492	V	19.43	- 38.45	Deee
WCDMA Band V	4183 -	Н	16.52		Pass
		V	19.38		
		Н	16.52		

## 5.6. Radiated Spurious Emission

LIMIT

-13dBm

**TEST CONFIGURATION** 



## TEST RESULTS

- EUT was placed on a 0.8 meter 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.
- 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
- 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

Note: Worst case at GSM850/PCS1900/WCDMA B2/B4/B5

Page: 45 of 65

2017-08-11 Issued:

		GS	M850		
	Frequency	Spurious	Emission		Dec. It
Channel	(MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
	41.46	Vertical	-56.33		
	259.91	V	-61.19		
	1747.34	V	-35.41	10.00	_
	2475.28	V	-48.62	-13.00	Pass
	3295.11	V	-53.84		
100	4119.70	V	-44.08		
128	78.08	Horizontal	-63.97		
	259.91	Н	-56.85		
	1762.77	Н	-29.41	10.00	_
	2577.97	Н	-38.86	-13.00	Pass
	3295.11	Н	-51.93		
	4119.70	Н	-44.76		
	40.74	Vertical	-58.04		Pass
	259.91	V	-60.25		
	1672.22	V	-50.06	-13.00	
	2212.88	V	-52.80		
	3343.25	V	-45.37		
100	4179.88	V	-45.66		
190	78.08	Horizontal	-63.66		Pass
	182.21	Н	-59.02		
	1674.06	Н	-48.44	10.00	
	1762.77	Н	-34.68	-13.00	
	3343.25	Н	-48.50		
	4179.88	Н	-44.09		
	41.46	Vertical	-56.93		
	259.91	V	-58.81		
	1745.42	V	-36.57	10.00	Pass
	2547.01	V	-40.39	-13.00	
	3392.09	V	-51.11		
054	4240.94	V	-47.57		
251	78.08	Horizontal	-63.66		
	259.91	Н	-56.87		
	1745.42	Н	-39.76	40.00	Deet
	2547.01	Н	-44.36	-13.00	Pass
	3392.09	Н	-47.20		
	4240.94	Н	-48.87		

Remark:

1.

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

Page: 46 of 65

2017-08-11 Issued:

		PCS	\$1900		
	Frequency	Spurious	Spurious Emission		Desult
Channel	(MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
	47.39	Vertical	-60.62		
	259.91	V	-63.25		
	1764.70	V	-40.09	10.00	5
	1852.10	V	-47.44	-13.00	Pass
	3700.48	V	-45.12		
540	9253.71	V	-26.00		
512	41.46	Horizontal	-58.01		
	182.21	Н	-65.93		
	1764.70	Н	-40.49	10.00	Dese
	1850.07	Н	-36.61	-13.00	Pass
	3700.48	Н	-49.19		
	9253.71	Н	-27.74		
	41.46	Vertical	-57.55		Pass
	414.90	V	-66.65		
	1762.77	V	-41.04	-13.00	
	1880.81	V	-36.46		
	5643.40	V	-37.82		
004	9402.51	V	-32.36		
661	47.22	Horizontal	-62.13		Dere
	156.09	Н	-67.77		
	1764.70	Н	-43.39	12.00	
	1880.81	Н	-39.53	-13.00	Pass
	5643.40	Н	-37.20		
	9402.51	Н	-23.66		
	47.55	Vertical	-62.59		
	259.91	V	-59.48		_
	1764.70	V	-37.48	12.00	
	1909.96	V	-46.34	-13.00	Pass
	5725.84	V	-41.91		
040	9553.71	V	-33.90		
810	259.91	Horizontal	-59.70		
	414.90	Н	-66.65		
	1747.34	Н	-45.45	40.00	Dees
	1909.96	н	-49.78	-13.00	Pass
	5725.84	н	-36.33		
	7641.47	Н	-44.10		

Remark:

1.

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

Page: 47 of 65

Issued: 2017-08-11

		WCDM	A Band II		
Channel	Frequency	Spurious	Emission	Limit (dDm)	Decult
Channel	(MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
	39.61	Vertical	-57.89		
	266.39	V	-63.49		
	1852.10	V	-40.35	12.00	Deee
	1933.18	V	-38.44	-13.00	Pass
	3705.85	V	-53.09		
0000	9041.46	V	-47.05		
9262	38.64	Horizontal	-61.03		
	266.39	н	-63.87		
	1852.10	н	-41.59	10.00	Dava
	1933.18	н	-49.83	-13.00	Pass
	3700.48	н	-47.87		
	7969.71	Н	-48.61		
	41.75	Vertical	-59.96		Pass
	179.04	V	-69.54		
	1880.81	V	-39.74	-13.00	
	1960.99	V	-39.36		
	3754.53	V	-43.55		
0.400	8581.52	V	-46.12		
9400	78.08	Horizontal	-65.97		Pass
	266.39	н	-62.15		
	1880.81	н	-42.13	10.00	
	1960.99	н	-47.13	-13.00	
	3754.53	н	-45.87		
	8950.13	н	-45.82		
	47.22	Vertical	-60.61		
	429.75	V	-76.19		
	1887.02	V	-44.60	12.00	Deee
	1987.01	V	-40.98	-13.00	Pass
	3809.38	V	-50.99		
0500	8593.97	V	-45.81		
9538	78.08	Horizontal	-64.74		
	266.39	Н	-60.56		
	1989.20	Н	-49.41	40.00	Dee
	2580.81	Н	-46.45	-13.00	Pass
	3814.91	Н	-49.16		
	7630.40	Н	-47.21		

Remark:

1.

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

Page: 48 of 65

Issued: 2017-08-11

		WCDM	A Band IV		
Channel	Frequency	Spurious	Emission	Linsit (dDms)	Result
Channel	(MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
	41.46	Vertical	-57.66		
	180.93	V	-65.99		
	1425.97	V	-55.11	-13.00	Pass
	2113.10	V	-47.05	-13.00	F d S S
	4107.77	V	-53.80		
1313	9094.06	V	-46.27		
1313	47.06	Horizontal	-63.73		
	245.69	Н	-64.19		
	1360.17	Н	-54.88	12.00	Deee
	2580.81	Н	-46.61	-13.00	Pass
	4107.77	Н	-55.55		
	8924.21	Н	-47.23		
	41.46	Vertical	-58.09		Pass
	182.21	V	-66.35		
	1337.94	V	-55.07	-13.00	
	2141.14	V	-50.42		
	5218.30	V	-51.97		
4.450	9949.65	V	-45.48		
1450	77.80	Horizontal	-64.77		Pass
	176.54	Н	-63.79		
	1355.70	Н	-55.26	-13.00	
	2141.14	Н	-48.89	-13.00	
	5225.88	Н	-52.08		
	8593.97	Н	-45.77		
	38.24	Vertical	-59.71		
	245.69	V	-64.18		
	2155.30	V	-47.16	40.00	5
	2577.97	V	-31.33	-13.00	Pass
	5256.28	V	-49.83		
. – .	8004.46	V	-47.41		
1512	77.80	Horizontal	-65.09		
	266.39	Н	-63.07		
	1307.43	H	-54.82		
	2519.18	Н	-47.97	-13.00	Pass
	5256.28	Н	-50.99		
	9595.37	Н	-45.88		

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.

		WCDM	A Band V		
Channel	Frequency	Spurious	Emission	Linsit (dDns)	Decult
Channel	(MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
	39.47	Vertical	-57.43		
	78.08	V	-67.04		-
	1891.17	V	-37.33	12.00	
	2519.18	V	-47.50	-13.00	Pass
	4474.73	V	-55.35		
4400	9595.37	V	-43.97		
4132	38.52	Horizontal	-63.75		
	78.37	Н	-64.66		
	1892.45	н	-35.85	10.00	Pass
	2517.52	н	-38.47	-13.00	Pass
	4476.38	н	-55.36		
	9594.58	Н	-49.48		
	40.88	Vertical	-57.42		Pass
	266.39	V	-65.44		
	1747.34	V	-34.61	-13.00	
	2577.97	V	-37.54		
	4107.77	V	-53.70		
44.00	8457.96	V	-46.80		
4183	90.50	Horizontal	-64.60		Dece
	182.21	Н	-63.87		
	1747.34	Н	-34.61	10.00	
	2577.97	Н	-37.54	-13.00	Pass
	4107.77	н	-53.70		
	7843.58	н	-48.58		
	41.46	Vertical	-56.41		
	91.79	V	-67.02		
	1747.34	V	-29.62	40.00	Deet
	2384.53	V	-50.78	-13.00	Pass
	4107.77	V	-53.59		
10	7958.16	V	-47.66		
4233	182.21	Horizontal	-63.22		
	266.39	Н	-62.45		
	1747.34	Н	-39.27		
	2519.18	Н	-50.30	-13.00	Pass
	4107.77	н	-53.59		
	8963.12	Н	-46.43		

Remark:

3.

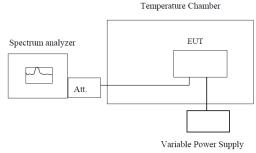
The emission behaviour belongs to narrowband spurious emission. The emission levels of not record in the report are very lower than the limit and not show in test report. 4.

## 5.7. Frequency stability V.S. Temperature measurement

LIMIT

2.5ppm

#### **TEST CONFIGURATION**



Note: Measurement setup for testing on Antenna connector

#### TEST PROCEDURE

- 1. The equipment under test was connected to an external DC power supply and input rated voltage.
- 2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators.
- 3. The EUT was placed inside the temperature chamber.
- 4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°Coperating frequency as reference frequency.
- Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency.
- 6. Repeat step 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**

☑ Passed □ Not Applicable

Note:Worst case at GSM850/PCS1900/WCDMA B2/B4/B5 mid channel

Reference Frequency: GSM850 Middle channel=190 channel=836.6MHz						
Power supplied	Temperature (°C)	Frequency error		Limit (ppm)	Result	
(Vdc)		Hz	ppm	Einin (ppin)	Result	
	-30	16	0.019			
	-20	15	0.018			
	-10	18	0.022			
	0	17	0.020			
3.80	10	16	0.019	2.50	Pass	
	20	15	0.018			
	30	17	0.020	-		
	40	15	0.018			
	50	17	0.020			
Refe	erence Frequency: PO	CS1900 Middle ch	annel=661 chan	nel=1880MHz		
Power supplied	Temperature (°C)	Frequency error		Limit (ppm)	Result	
(Vdc)	Temperature ( C)	Hz	ppm	Linit (ppin)	Result	
	-30	15	0.008	2.50		
	-20	14	0.007			
	-10	13	0.007			
	0	15	0.008			
3.80	10	16	0.009		Pass	
	20	14	0.007			
	30	16	0.009			
	40	13	0.007			
	50	14	0.007			

Reference Frequency: WCDMA Band II Middle channel=9400 channel=1880MHz							
Power supplied	Temperature (°C)	Frequency error		Limit (ppm)	Result		
(Vdc)		Hz	ppm		Result		
	-30	8	0.004	l			
	-20	9	0.005				
	-10	6	0.003				
	0	5	0.003				
3.80	10	8	0.004	2.50	Pass		
	20	4	0.002				
	30	8	0.004	-			
	40	9	0.005				
	50	7	0.004				
Reference	ce Frequency: WCDM	IA Band IV Middle	e channel=1450 cl	nannel=1740MH	z		
Power supplied	Temperature (°C)	Frequency error		Limit (ppm)	Result		
(Vdc)	Temperature ( C)	Hz	ppm	Limit (ppm)	Result		
	-30	11	0.006				
	-20	12	0.007				
	-10	13	0.007	2.50			
	0	15	0.009				
3.80	10	14	0.008		Pass		
	20	12	0.007				
	30	16	0.009				
	40	13	0.007				
	50	14	0.008				

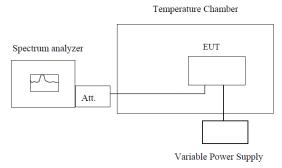
Reference Frequency: WCDMA Band V Middle channel=4182 channel=836.6MHz							
Power supplied		Frequency error		Limit (ppm)	Popult		
(Vdc)	Temperature (°C)	Hz	ppm	Limit (ppm)	Result		
	-30	6	0.007	2.50	Pass		
	-20	8	0.010				
	-10	9	0.011				
	0	7	0.008				
3.80	10	8	0.010				
	20	6	0.007				
	30	4	0.005				
	40	8	0.010				
	50	7	0.008				

## 5.8. Frequency stability V.S. Voltage measurement

LIMIT

2.5ppm

#### **TEST CONFIGURATION**



Note: Measurement setup for testing on Antenna connector

#### TEST PROCEDURE

- 1. Set chamber temperature to 25°C. Use a variable DC power source topower the EUT and set the voltage to rated voltage.
- 2. Set the spectrum analyzer RBW lowenough to obtain the desired frequency resolution and recorded the frequency.
- 3. Reduce the input voltage to specified extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.

#### **TEST MODE:**

Please refer to the clause 3.3

#### TEST RESULTS

🛛 Passed

Not Applicable

Note:Worst case at GSM850/PCS1900/WCDMA B2/B4/B5 mid channel

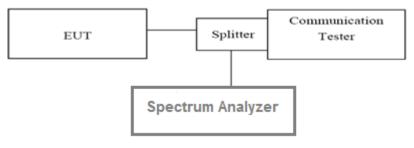
Reference	e Frequency: GSM85	0 (GSM link) Midd	le channel=190	channel=836.6MF	lz		
Temperature (°C)	Power supplied	Frequency error		Limit (ppm)	Result		
	(Vdc)	Hz	ppm				
	4.35	16	0.019	_			
25	3.80	18	0.022	2.50	Pass		
	3.60	17	0.020				
Reference	e Frequency: PCS190	00 (GSM link) Mide	dle channel=661	channel=1880MH	łz		
Temperature (°C)	Power supplied	Frequen	cy error	Limit (ppm)	Result		
remperature ( C)	(Vdc)	Hz	ppm	Einin (ppin)	Result		
	4.35	15	0.008				
25	3.80	14	0.007	2.50	Pass		
	3.60	13	0.007				
Reference Frequency: WCDMA Band II Middle channel=9400 channel=1880MHz							
Tomporature (%C)	Power supplied	Frequency error		Limit (ppm)			
Temperature (°C)	(Vdc)	Hz	ppm	Res	ult		
	4.35	8	0.004	2.50			
25	3.80	9	0.005		Pass		
	3.60	7	0.004				
Reference	e Frequency: WCDM	IA Band IV Middle	channel=1450 c	channel=1740MH	Z		
Tomporature (%C)	Power supplied	Frequency error		Limit (name)	Desult		
Temperature (°C)	(Vdc)	Hz	ppm	Limit (ppm)	Result		
	4.35	11	0.006				
25	3.80	12	0.007	2.50	Pass		
	3.60	13	0.007				
Reference Frequency: WCDMA Band V Middle channel=4183 channel=836.6MHz							
Terrer construct (CO)	Power supplied	Frequency error		Lippit (mmm)			
Temperature (°C)	(Vdc)	Hz	ppm	Limit (ppm)	Result		
	4.35	6	0.007	2.50 Pass			
25	3.80	7	0.008		Pass		
	3.60	9	0.011				

## 5.9. Peak-Average Ratio

LIMIT

13dB

#### **TEST CONFIGURATION**



#### TEST PROCEDURE

According with KDB 971168

- 1. The signal analyzer's CCDF measurement profile is enabled
- 2. Frequency = carrier center frequency
- 3. Measurement BW > 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. Forcontinuoussignals(>98% duty cycle), the measurement interval was set to 1ms. 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 which the transmitter is operating at maximum power

#### TEST MODE:

Please refer to the clause 3.3

#### TEST RESULTS

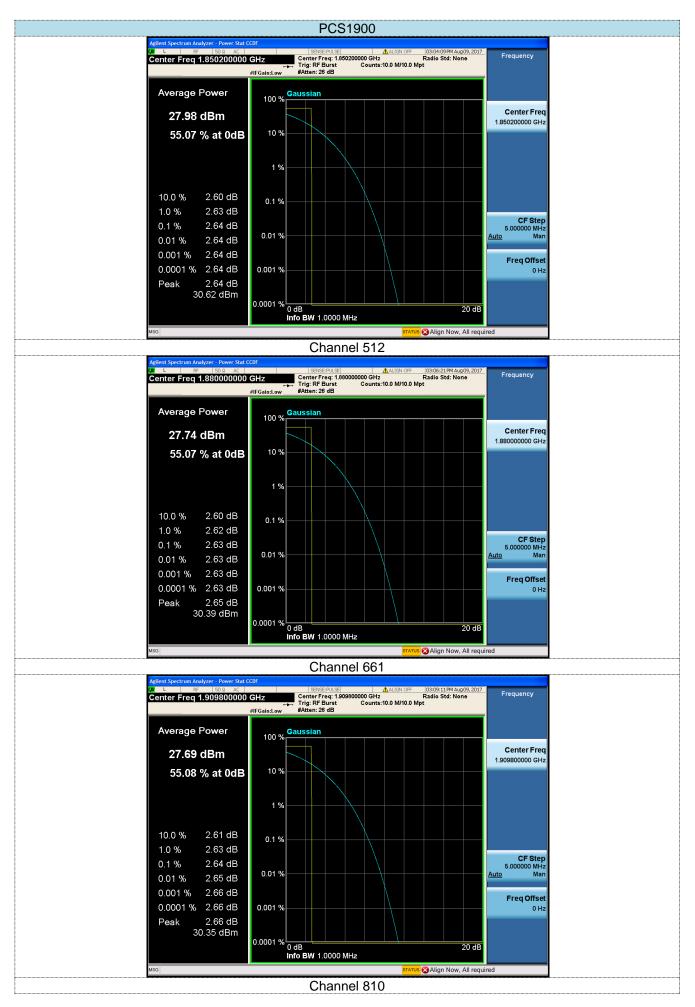
#### 

Note:Worst case PCS1900,WCDMA BAND1900, WCDMA BAND1700

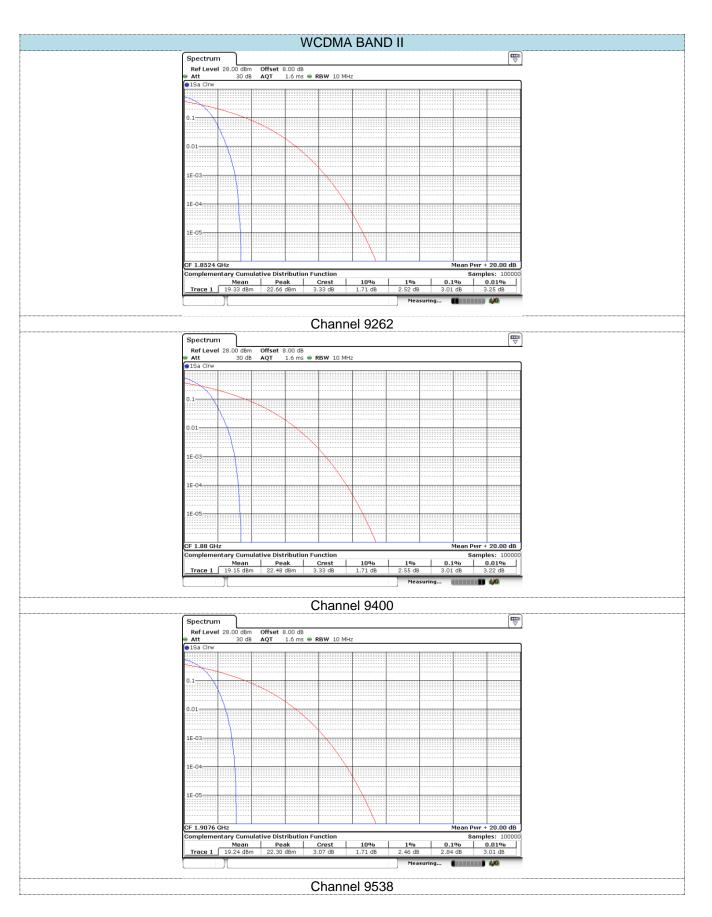
Band	Channel	Frequency(MHz)	PAR	Limit(dB)	Result
PCS1900	512	1850.2	2.64	13.00	Pass
	661	1880.0	2.63	13.00	Pass
	810	1909.8	2.64	13.00	Pass

Band	Channel	Frequency(MHz)	PAR	Limit(dB)	Result
WCDMA BAND II	9262	1852.4	3.01	13.00	Pass
	9400	1880.0	3.01	13.00	Pass
	9538	1907.6	2.84	13.00	Pass

Band	Channel	Frequency(MHz)	PAR	Limit(dB)	Result
WCDMA BAND IV	1313	1712.6	3.58	13.00	Pass
	1450	1740.0	3.47	13.00	Pass
	1512	1752.4	3.08	13.00	Pass

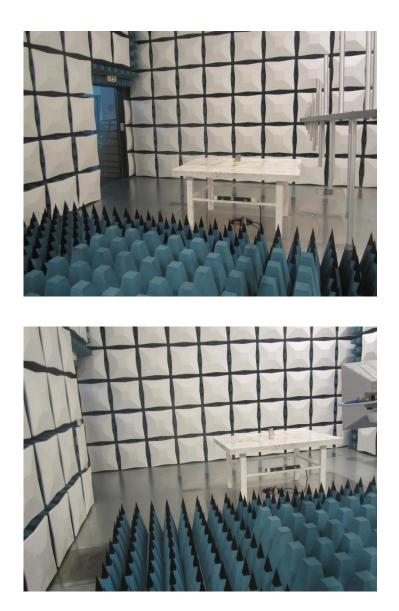


Report Template Version: H00 (2016-08)



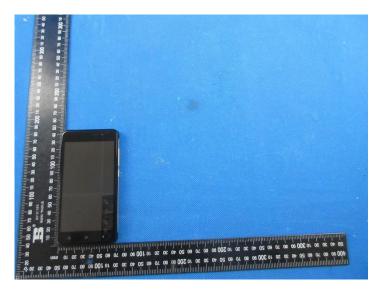
# 6. Test Setup Photos of the EUT

### Radiated emission:



## 7. External and Internal Photos of the EUT

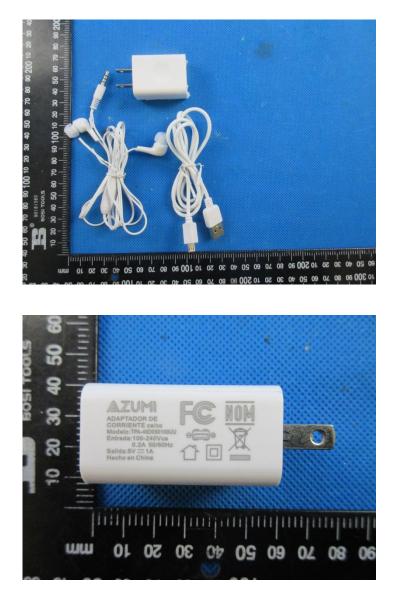
## External photos of the EUT







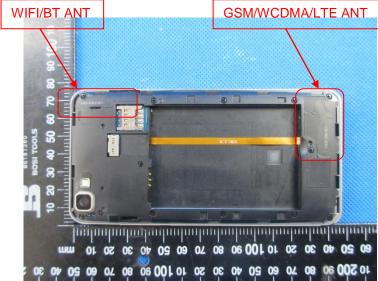




## Internal photos of the EUT







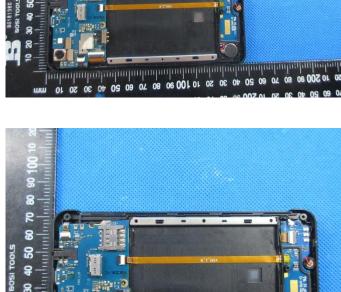


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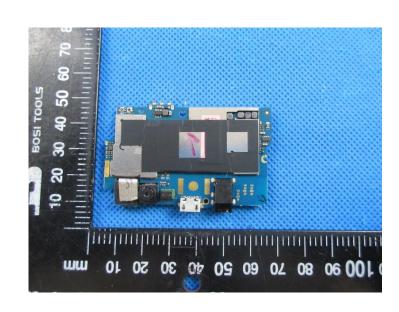
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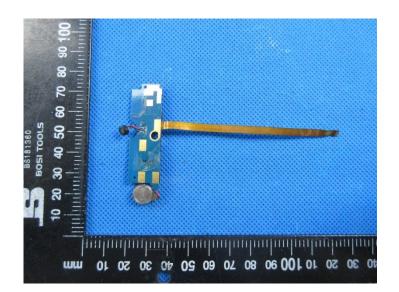
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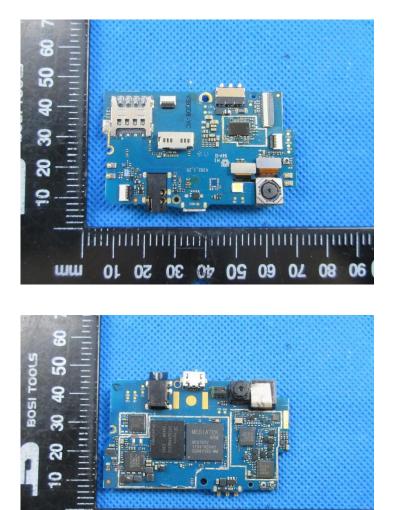


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