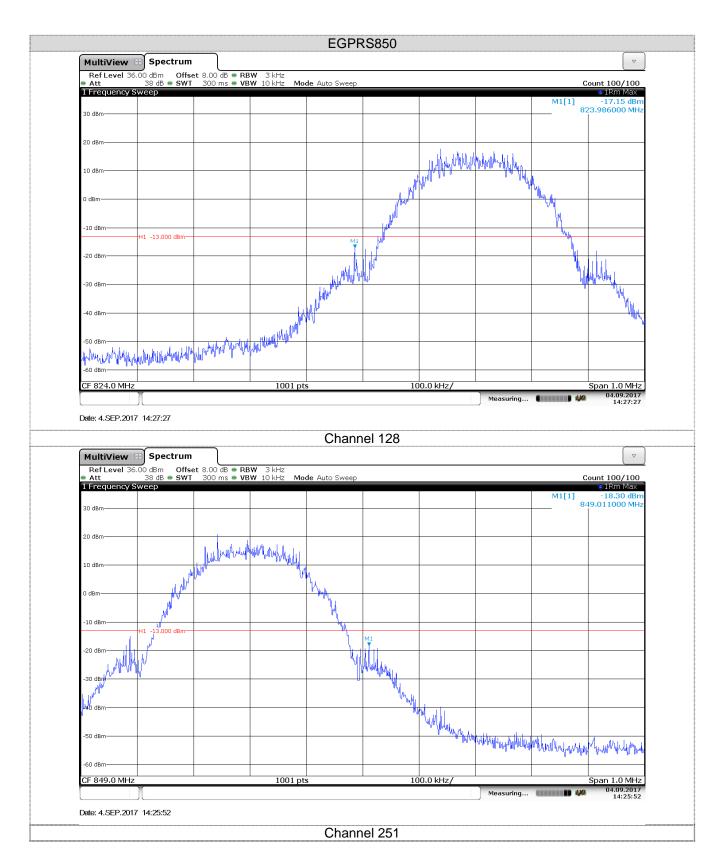
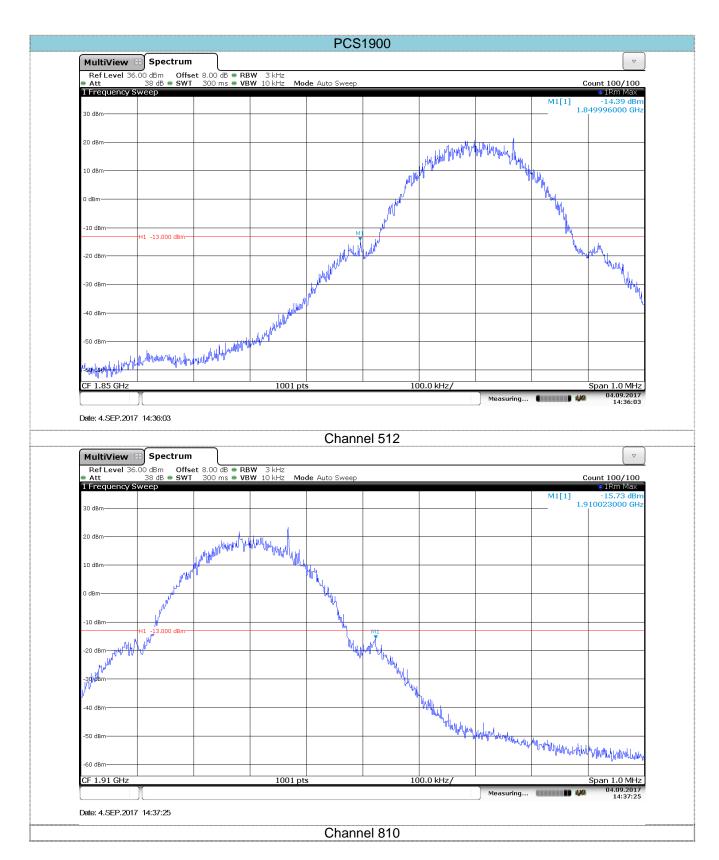
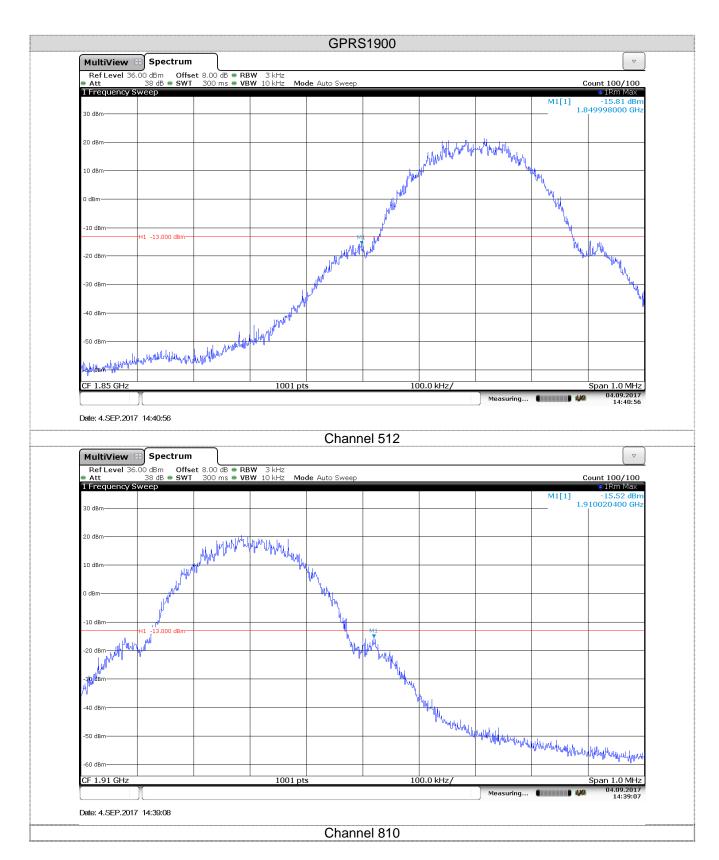
Report No.: TRE1708019401 Page: 33 of 62 Issued: 2017-09-14



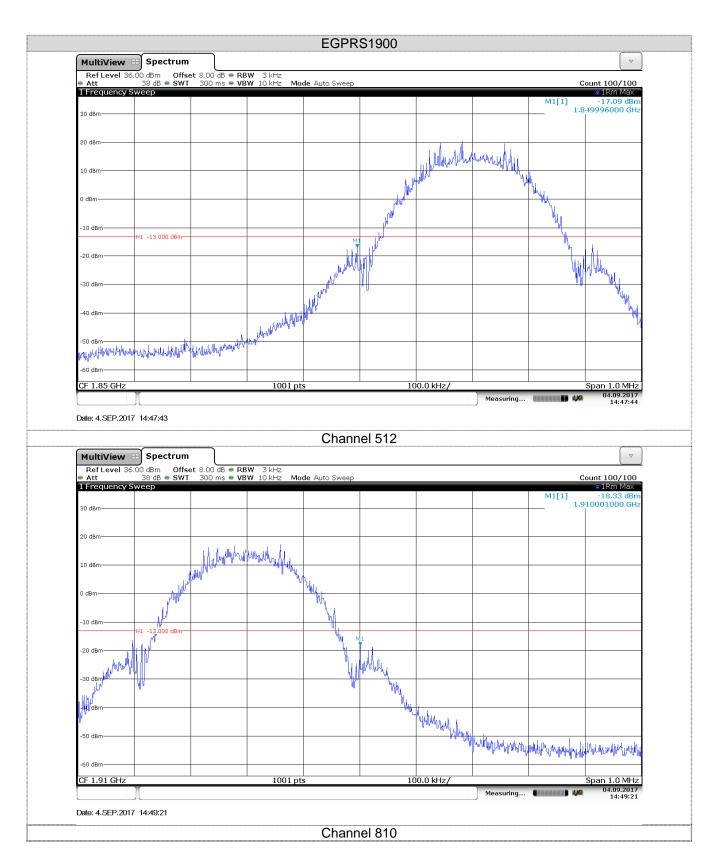
Report No.: TRE1708019401 Page: 34 of 62 Issued: 2017-09-14



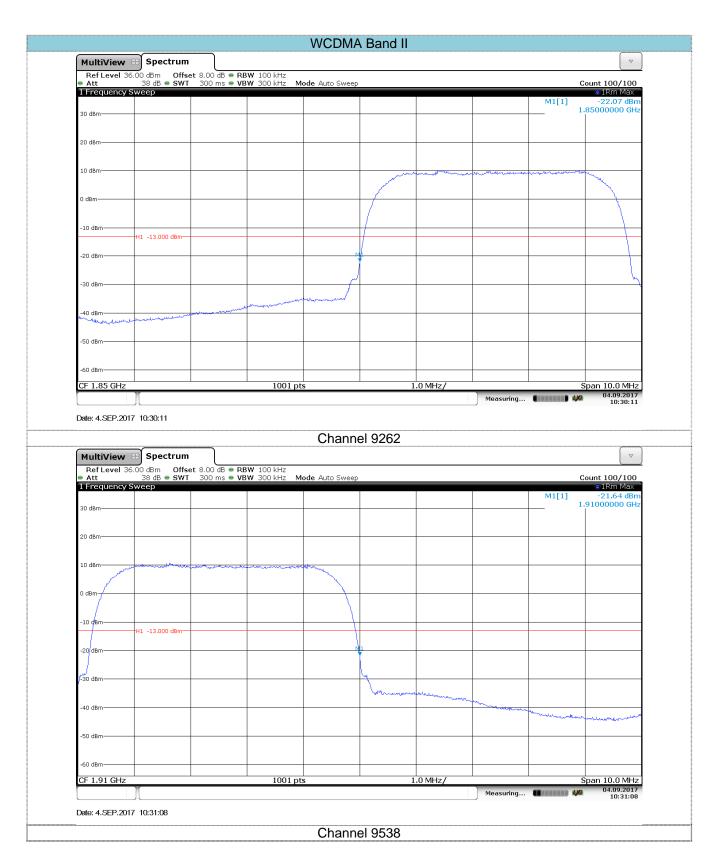
Report No.: TRE1708019401 Page: 35 of 62 Issued: 2017-09-14

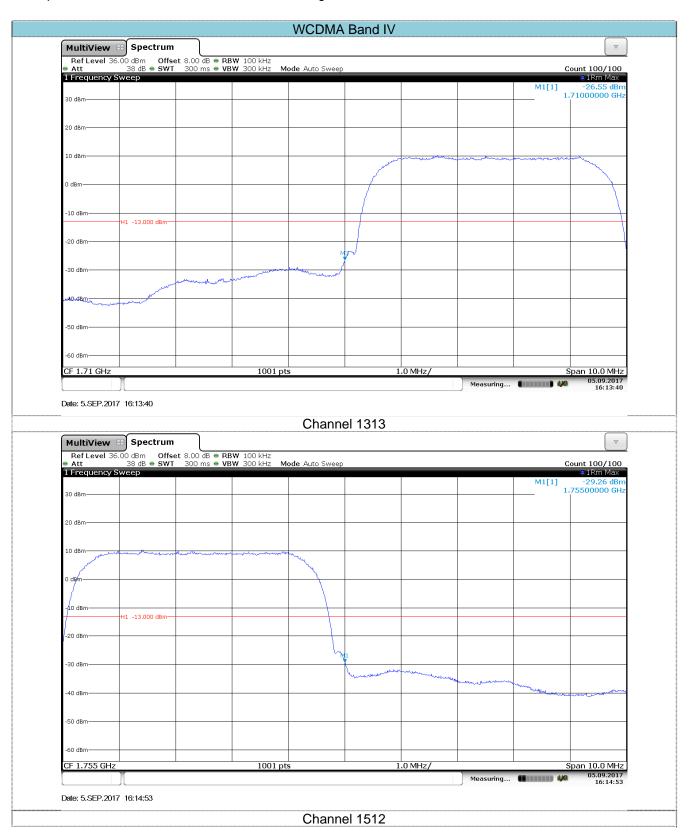


Report No.: TRE1708019401 Page: 36 of 62 Issued: 2017-09-14

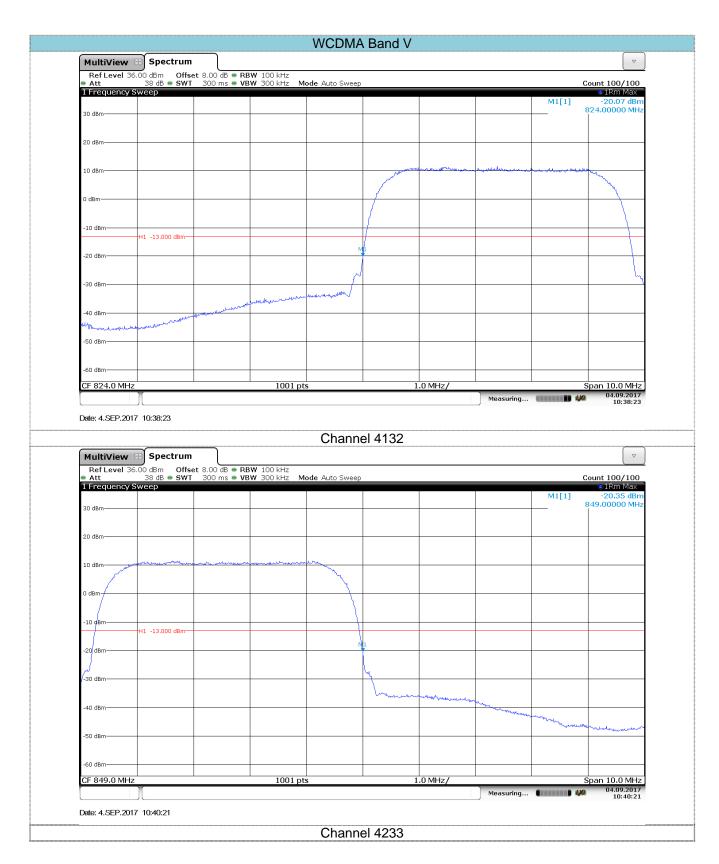


Report No.: TRE1708019401 Page: 37 of 62 Issued: 2017-09-14





Report No.: TRE1708019401 Page: 39 of 62 Issued: 2017-09-14



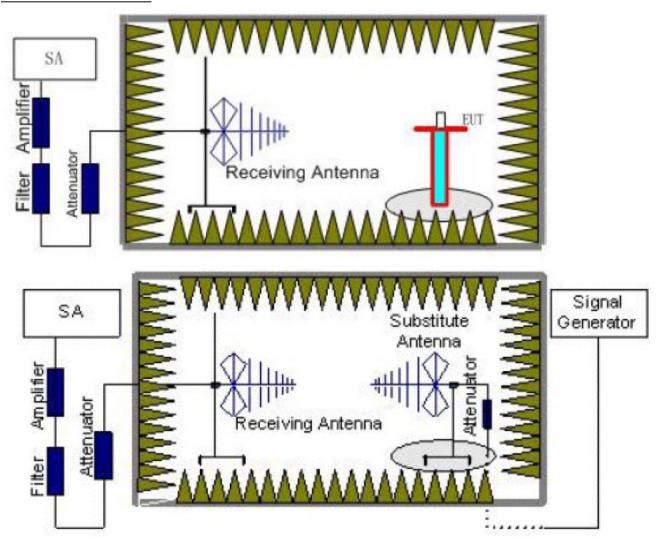
Report No.: TRE1708019401 Page: 40 of 62 Issued: 2017-09-14

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

- 1. 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

Report No.: TRE1708019401 Page: 41 of 62 Issued: 2017-09-14

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.
- 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
	128	V	31.32		
	120	Н	23.58		
GSM850	190	V	32.49	38.45	Pass
GSIVIOSO	190	Н	24.64	30.43	F 435
	251	V	31.36		
	231	Н	23.52		
	128	V	31.28		Pass
	120	Н	23.43	38.45	
GPRS850	190 	V	32.38		
0110000		Н	24.52		
		V	31.32		
	231	Н	23.46		
	128	V	27.22		
	120	Н	18.52		
EGPRS850	190	V	27.32	38.45	Pass
EGFN3000	190	Н	18.36	30.40	F 033
	251	V	27.52		
	201	Н	18.33		

Report No.: TRE1708019401 Page: 42 of 62 Issued: 2017-09-14

Mode	Channel	Antenna Pol.	EIRP	Limit (dBm)	Result
	512	V	29.98		
	312	Н	26.12		
PCS1900	661	V	29.34	33.00	Pass
F C3 1900	001	Н	26.22	33.00	r ass
	810	V	29.28		
	010	Н	26.17		
	512	V	29.78		Pass
	012	Н	26.31	33.00	
GPRS1900	661	V	29.58		
GFR31900		Н	26.43		
	810	V	29.55		
	010	Н	26.46		
	512	V	25.14		
	312	Н	20.55		
EGPRS1900	661	V	25.36	33.00	Pass
LGFN31900	001	Н	20.17	33.00	1 033
	810	V	25.11		
	010	Н	20.43		

Mode	Channel	Antenna Pol.	EIRP	Limit (dBm)	Result
	9262	V	19.47		Pass
	3202	Н	17.52		
WCDMA Band II	0.400	V	19.43	33.00	
WODIWI CBarra II	9400	Н	17.32	00.00	
	9538	V	19.88]	
		Н	17.25		

Mode	Channel	Antenna Pol.	EIRP	Limit (dBm)	Result
	1313	V	22.52		Pass
	1313	Н	19.36		
WCDMA Band IV	1450	V	22.47	30.00	
WODIVIA Ballu IV	1430	Н	19.36	30.00	
	1512	V	22.33	_	
		Н	19.58		

Mode	Channel	Antenna Pol.	ERP	Limit (dBm)	Result
	4132	V	21.41		Pass
	4132	Н	17.55		
WCDMA Band V	4183	V	21.86	38.45	
WODIVIA Ballu V	4103	Н	18.52	36.43	r ass
	4233 -	V	21.38		
		Н	18.43		

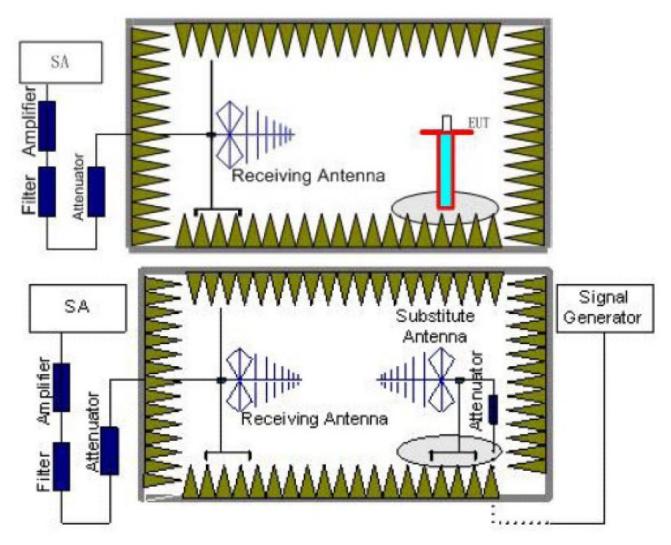
Report No.: TRE1708019401 Page: 43 of 62 Issued: 2017-09-14

5.6. Radiated Spurious Emission

LIMIT

-13dBm

TEST CONFIGURATION



TEST RESULTS

- 1. 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

Report No.: TRE1708019401 Page: 44 of 62 Issued: 2017-09-14

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.
- 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

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

Report No.: TRE1708019401 Page: 45 of 62 Issued: 2017-09-14

		GS	M850		
Channal	Frequency	Spurious	Emission	Limeit (alDine)	Desuit
Channel	(MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
	33.10	Vertical	-66.32		
	156.09	V	-69.26		
	1648.51	V	-46.12	40.00	Dana
	2203.18	V	-51.39	-13.00	Pass
	5106.01	V	-50.87		
400	8216.16	V	-46.09		
128	159.98	Horizontal	-71.76		
	200.36	Н	-66.28		
	1648.51	Н	-50.71	40.00	D
	2058.11	Н	-51.01	-13.00	Pass
	4895.72	Н	-53.60		
	8240.03	Н	-47.03		
	33.57	Vertical	-64.33		
	259.91	V	-60.75		Pass
	1674.06	V	-48.52	42.00	
	1747.34	V	-46.56	-13.00	Pass
	3295.11	V	-56.70		
400	7433.79	V	-47.37		
190	33.22	Horizontal	-66.23		
	259.91	Н	-63.96		Pass
	1013.27	Н	-53.43	40.00	
	1674.06	Н	-50.09	-13.00	
	3825.99	Н	-57.07		
	6183.30	Н	-52.30		
	33.22	Vertical	-65.28		
	233.89	V	-66.66		
	1698.14	V	-54.49	40.00	Deser
	2547.01	V	-53.32	-13.00	Pass
	4113.73	V	-53.71		
054	8569.08	V	-45.61		
251	41.61	Horizontal	-75.47		
	200.36	Н	-67.39		
	1698.14	Н	-53.10	40.00	D.
	2547.01	Н	-56.02	-13.00	Pass
	4113.73	Н	-53.71		
ł	8569.08	Н	-45.61	j	

- 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.

Report No.: TRE1708019401 Page: 46 of 62 Issued: 2017-09-14

		PC	S1900		
Channel	Frequency	Spurious	Emission	Limit (dBm)	Result
Charmer	(MHz)	Polarization	Level (dBm)	Limit (ubm)	Nesuit
	33.10	Vertical	-67.02		
	259.91	V	-59.25		
	1419.72	V	-53.86	42.00	Dana
	2058.11	V	-50.09	-13.00	Pass
	3700.48	V	-51.99		
E40	5554.08	V	-43.06		
512	33.93	Horizontal	-73.18		
	259.91	Н	-60.52		
	1508.15	Н	-54.14	42.00	Dage
	2442.87	Н	-50.02	-13.00	Pass
	3842.67	Н	-55.83		
	5554.08	Н	-46.96		
	33.22	Vertical	-66.85		
	259.91	V	-60.52	-13.00	Pass
	1384.29	V	-54.19		
	2294.58	V	-49.90		Pass
	3759.98	V	-52.56		
004	7127.62	V	-49.55		
661	33.22	Horizontal	-66.85		Pass
	259.91	Н	-60.52		
	1764.70	Н	-48.37	40.00	
	2254.60	Н	-50.75	-13.00	
	3759.98	Н	-48.45		
	5643.40	Н	-47.04		
	33.10	Vertical	-67.55		
	182.21	V	-62.69		
	1513.13	V	-53.88	40.00	Dana
	2058.11	V	-47.98	-13.00	Pass
	3820.45	V	-50.23		
040	7433.79	V	-48.52		
810	159.98	Horizontal	-69.50		
	259.91	Н	-57.70		
	1425.97	Н	-54.66	40.00	Dage
	2586.49	Н	-40.75	-13.00	Pass
	3820.45	Н	-53.19		
	7273.82	Н	-48.56		

- 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.

Report No.: TRE1708019401 Page: 47 of 62 Issued: 2017-09-14

		WCDM	A Band II		
Channel	Frequency	Spurious I	Emission	Limit (dDm)	Result
Channel	(MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
	41.46	Vertical	-77.11		
	245.69	V	-70.87		
	1933.18	V	-50.07	-13.00	Pass
	2580.81	V	-55.96	-13.00	Pa55
	3705.85	V	-53.63		
9262	8027.71	V	-47.61		
9202	33.22	Horizontal	-66.65		
	266.39	Н	-54.90		
	1320.42	Н	-63.05	12.00	Door
	1933.18	Н	-47.76	-13.00	Pass
	4309.14	Н	-54.35		
	9015.27	Н	-46.55		
	33.10	Vertical	-73.15		
	266.39	V	-61.71		
	1960.99	V	-42.47	-13.00	Pass
	2519.18	V	-47.62	-13.00	Pa55
	3759.98	V	-53.31		
9400	6629.07	V	-50.01		
9400	41.61	Horizontal	-79.40		Pass
	245.69	Н	-70.89		
	1078.75	Н	-55.80	-13.00	
	1960.99	Н	-37.92	-13.00	
	3759.98	Н	-51.96		
	6552.61	Н	-50.33		
	33.10	Vertical	-68.09		
	266.39	V	-56.22		
	1351.24	V	-52.63	-13.00	Pass
	2519.18	V	-45.35	-13.00	Fa55
	3809.38	V	-51.39		
9538	8168.64	V	-46.34		
3000	33.22	Horizontal	-68.82		
	266.39	Н	-70.80		
	1511.46	Н	-52.85	-13.00	Pass
	2519.18	Н	-49.02	-13.00	1 ⁻ d>5
	3814.91	Н	-54.00		
	8445.71	Н	-47.07		

- 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.

Report No.: TRE1708019401 Page: 48 of 62 2017-09-14 Issued:

Channel Frequency (MHz) Spurious Emission Polarization Limit (dBm) Result 200.36 Vertical -71.11 -71.11 -71.11 -71.11 -71.11 -71.11 -71.11 -71.11 -71.30			WCDM	A Band IV		
1313	Channal	Frequency	Spurious	Emission	Limit (dDm)	Dogult
1313 414.90	Channel		Polarization	Level (dBm)	Limit (dBm)	Result
1339.41		200.36	Vertical	-71.11		
1313 2108.46		414.90	V	-62.10		
1313 1313		1339.41	V	-55.12	40.00	Dana
1313 8556.66		2108.46	V	-51.21	-13.00	Pass
1313 51.38		3759.98	V	-55.53		
1450 1450 1572.44	4040	8556.66	V	-46.55		
1572.44	1313	51.38	Horizontal	-71.39		
1450 Pass Pass Pass Pass		177.78	Н	-72.52		
1450 A		1572.44	Н	-52.28	42.00	Door
9949.65 H -44.33 30.97 Vertical -55.03 266.39 V -62.69 1363.16 V -54.54 2058.11 V -49.56 3759.98 V -55.53 7900.66 V -47.68 43.10 Horizontal -66.11 266.39 H -61.77 1320.42 H -54.89 2480.73 H -49.73 5010.65 H -53.51 7843.58 H -46.99 1253.97 Vertical -55.03 266.39 V -62.69 1253.97 V -55.52 2519.18 V -45.68 4680.49 V -55.87 7900.66 V -47.68 157.75 Horizontal -76.66 388.08 H -75.48 1320.42 H -54.89 1320.42 H -54.89 1320.42 H -54.89 1320.42 H -75.48		2335.27	Н	-50.77	-13.00	Pass
1450 1363.16		4113.73	Н	-56.89		
1450		9949.65	Н	-44.33		
1450		30.97	Vertical	-55.03		
1450 2058.11		266.39	V	-62.69		
1450 2058.11		1363.16	V	-54.54	-13.00	Door
1450 7900.66 V -47.68 43.10 Horizontal -66.11 266.39 H -61.77 1320.42 H -54.89 2480.73 H -49.73 5010.65 H -53.51 7843.58 H -46.99 30.97 Vertical -55.03 266.39 V -62.69 1253.97 V -55.52 2519.18 V -45.68 4680.49 V -55.87 7900.66 V -47.68 157.75 Horizontal -76.66 388.08 H -75.48 1320.42 H -54.89 2058.11 H -49.68 4321.66 H -55.81		2058.11	V	-49.56		Pass
1450 43.10 Horizontal 266.39 H -61.77 1320.42 H -54.89 2480.73 H -49.73 5010.65 H -53.51 7843.58 H -46.99 30.97 Vertical -55.03 266.39 V -62.69 1253.97 V -55.52 2519.18 V -45.68 4680.49 V -55.87 7900.66 V -47.68 157.75 Horizontal -76.66 388.08 H -75.48 1320.42 H -54.89 2058.11 H -49.68 4321.66 H -55.81		3759.98	V	-55.53		
43.10 Horizontal -66.11 266.39 H -61.77 1320.42 H -54.89 2480.73 H -49.73 5010.65 H -53.51 7843.58 H -46.99 30.97 Vertical -55.03 266.39 V -62.69 1253.97 V -55.52 2519.18 V -45.68 4680.49 V -55.87 7900.66 V -47.68 157.75 Horizontal -76.66 388.08 H -75.48 1320.42 H -54.89 2058.11 H -49.68 4321.66 H -55.81	1450	7900.66	V	-47.68		
1320.42	1450	43.10	Horizontal	-66.11		Pass
1512		266.39	Н	-61.77		
1512 2480.73		1320.42	Н	-54.89	12.00	
1512		2480.73	Н	-49.73	-13.00	
1512 30.97 Vertical -55.03 266.39 V -62.69 1253.97 V -55.52 2519.18 V -45.68 4680.49 V -55.87 7900.66 V -47.68 157.75 Horizontal -76.66 388.08 H -75.48 1320.42 H -54.89 2058.11 H -49.68 4321.66 H -55.81 Pass		5010.65	Н	-53.51		
1512		7843.58	Н	-46.99		
1253.97 V -55.52 2519.18 V -45.68 4680.49 V -55.87 7900.66 V -47.68 157.75 Horizontal -76.66 388.08 H -75.48 1320.42 H -54.89 2058.11 H -49.68 4321.66 H -55.81		30.97	Vertical	-55.03		
2519.18		266.39	V	-62.69		
2519.18 V -45.68 4680.49 V -55.87 7900.66 V -47.68 157.75 Horizontal -76.66 388.08 H -75.48 1320.42 H -54.89 2058.11 H -49.68 4321.66 H -55.81		1253.97	V	-55.52	40.00	Dana
7900.66 V -47.68 157.75 Horizontal -76.66 388.08 H -75.48 1320.42 H -54.89 2058.11 H -49.68 4321.66 H -55.81		2519.18	V	-45.68	-13.00	Pass
1512		4680.49	V	-55.87		
157.75 Horizontal -76.66 388.08 H -75.48 1320.42 H -54.89 2058.11 H -49.68 4321.66 H -55.81		7900.66	V	-47.68		
388.08 H -75.48 1320.42 H -54.89 2058.11 H -49.68 4321.66 H -55.81	1512	157.75	Horizontal	-76.66		
1320.42 H -54.89 2058.11 H -49.68 4321.66 H -55.81			Н	-75.48		
2058.11 H -49.68 4321.66 H -55.81			+			_
4321.66 H -55.81					-13.00	Pass
, 0000101 11 0010 <u>E</u>		6609.87	Н	-50.52		

- 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.

Report No.: TRE1708019401 Page: 49 of 62 Issued: 2017-09-14

		WCDM	A Band V		
Channel	Frequency	Spurious	Emission	Limit (dDm)	Dooult
Channel	(MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
	33.22	Vertical	-67.97		
	266.39	V	-58.25		
	1298.84	V	-54.27	-13.00	Daga
	1987.01	V	-39.54	-13.00	Pass
	3814.91	V	-49.53		
4400	7775.62	V	-48.02		
4132	245.69	Horizontal	-70.48		
	698.18	Н	-67.87		
	1283.24	Н	-56.27	12.00	Daga
	2274.50	Н	-49.58	-13.00	Pass
	3814.91	Н	-49.52		
	7553.33	Н	-48.21		
	33.22	Vertical	-68.04		
	245.69	V	-62.94		Pass
	1747.34	V	-41.09	-13.00	
	2519.18	V	-45.59		Pass
	3668.42	V	-56.00		
4400	8757.54	V	-45.07		
4183	33.10	Horizontal	-70.50		
	266.39	Н	-61.00		Pass
	1747.34	Н	-40.60	40.00	
	2646.85	Н	-49.12	-13.00	
	4653.42	Н	-54.05		
	8757.54	Н	-45.07		
	33.22	Vertical	-66.44		
	266.39	V	-62.30		
	1357.19	V	-53.13	40.00	Dana
	1764.70	V	-43.69	-13.00	Pass
	4346.80	V	-54.64		
4000	7477.04	V	-47.53		
4233	41.31	Horizontal	-77.41		
	245.69	Н	-68.72		
	1690.69	Н	-53.19	42.00	Dess
	2580.81	Н	-47.08	-13.00	Pass
	5069.12	Н	-54.31		
	7348.04	Н	-47.57		

- 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.

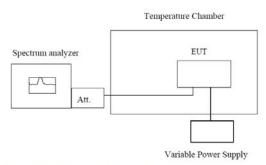
Report No.: TRE1708019401 Page: 50 of 62 Issued: 2017-09-14

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.
- 5. 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

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

Report No.: TRE1708019401 Page: 51 of 62 Issued: 2017-09-14

Reference Frequency: GSM850 Middle channel=190 channel=836.6MHz									
Power supplied	Temperature (°C)	Frequer	cy error	Limit (ppm)	Result				
(Vdc)	Temperature (O)	Hz	ppm	Еппт (ррпп)	rtoodit				
	-30	6.62	0.008						
	-20	7.97	0.010						
	-10	7.39	0.009						
	0	4.94	0.006						
3.80	10	6.84	0.008	2.50	Pass				
	20	11.98	0.014						
	30	16.79	0.020						
	40	8.01	0.010						
	50	15.98	0.019						
Refe	erence Frequency: Po	CS1900 Middle ch	annel=661 chanr	nel=1880MHz					
Power supplied	Tomporature (°C)	°C) Frequency error		Limit (nnm)	Result				
(Vdc)	Temperature (°C)	Hz	ppm	Limit (ppm)	Resuit				
	-30	22.08	0.012						
	-20	22.34	0.012						
	-10	29.8	0.016						
	0	37.65	0.020						
3.80	10	32.32	0.017	2.50	Pass				
	20	35.9	0.019]					
	30	39.74	0.021]					
	40	34.22	0.018]					
	50	39.49	0.021	1					

Reference Frequency: WCDMA Band II Middle channel=9400 channel=1880MHz								
Power supplied	Temperature (°C)	Frequency error		Limit (nnm)	Result			
(Vdc)	remperature (C)	Hz	ppm	Limit (ppm)	Result			
	-30	16.62	0.009					
	-20	17.97	0.010					
	-10	15.39	0.008					
	0	14.94	0.008					
3.80	10	16.84	0.009	2.50	Pass			
	20	9.68	0.005					
	30	7.23	0.004					
	40	9.82	0.005					
	50	13.89	0.007					
Reference	ce Frequency: WCDM	AA Band IV Middle	channel=1450 c	hannel=1740MH	Z			
Power supplied	Tomporatura (°C)	Frequency error		Limit (nnm)	Decult			
(Vdc)	Temperature (°C)	Hz	ppm	Limit (ppm)	Result			
	-30	1.68	0.010					
	-20	6.41	0.008					
	-10	3.15	0.008					
	0	4.52	0.010					
3.80	10	3.84	0.009	2.50	Pass			
	20	2.26	0.009					
	30	4.99	0.008					
	40	2.73	0.008					
	50	3.48	0.009					

Report No.: TRE1708019401 Page: 52 of 62 Issued: 2017-09-14

Reference Frequency: WCDMA Band V Middle channel=4182 channel=836.6MHz						
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (nnm)	Result	
		Hz	ppm	Limit (ppm)	Nesult	
	-30	12.08	0.014		Pass	
	-20	21.34	0.026	2.50		
	-10	19.8	0.024			
	0	17.65	0.021			
3.85	10	9.32	0.011			
	20	11.69	0.014			
	30	16.32	0.020			
	40	12.27	0.015			
	50	15.48	0.019			

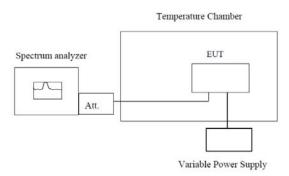
Report No.: TRE1708019401 Page: 53 of 62 Issued: 2017-09-14

5.8. Frequency stability V.S. Voltage measurement

LIMIT

2.5ppm

TEST CONFIGURATION



Note: Measurement setup for testing on Antenna connector

TEST PROCEDURE

- 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, recordthe maximum frequency change.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

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

Report No.: TRE1708019401 Page: 54 of 62 Issued: 2017-09-14

Doforonoo	Fraguenov: CCMOE	O (CCM link) Mida	lla ahannal—100 a	shannal 926 GM		
Reierence	Frequency: GSM85	,			14	
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result	
	4.35		ppm 0.014			
25		11.98		2.50	Pass	
25	3.80	16.79	0.020			
	3.60	8.01	0.010			
Reference	Frequency: PCS190	,		channel=1880Ml	HZ	
Temperature (°C)	Power supplied	Frequency error		Limit (ppm)	Result	
, ,	(Vdc)	Hz	ppm	W1 /		
	4.35	35.9	0.019		Pass	
25	3.85	39.74	0.021	2.50		
	3.60	34.22	0.018			
Reference Frequency: WCDMA Band II Middle channel=9400 channel=1880MHz						
Temperature (°C)	Power supplied	Frequency error		Limit (ppm)		
remperature (C)	(Vdc)	Hz	ppm	Res	Result	
	4.35	9.68	0.005			
25	3.85	7.23	0.004	2.50	Pass	
	3.60	9.82	0.005			
Reference Frequency: WCDMA Band IV Middle channel=1450 channel=1740MHz						
Tamparatura (90)	Power supplied	Frequency error		Limit (mmm)	Decult	
Temperature (°C)	(Vdc)	Hz	ppm	Limit (ppm)	Result	
	4.35	2.26	0.009	2.50	Pass	
25	3.80	4.99	0.008			
	3.60	2.73	0.008			
Referenc	e Frequency: WCDM		channel=4183 ch	nannel=836.6MH	Z	
	Power supplied	Frequer				
Temperature (°C)	(Vdc)	Hz	ppm	Limit (ppm)	Result	
	4.35	11.69	0.014		Pass	
25	3.80	16.32	0.020	2.50		
20	3.60	12.27	0.015	1		

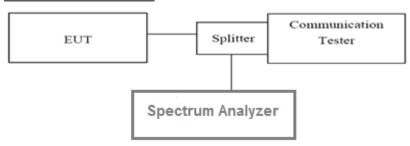
Report No.: TRE1708019401 Page: 55 of 62 Issued: 2017-09-14

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 whichthetransmitter 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	2.52	13.00	Pass
	661	1880.0	2.65	13.00	Pass
	810	1909.8	2.79	13.00	Pass

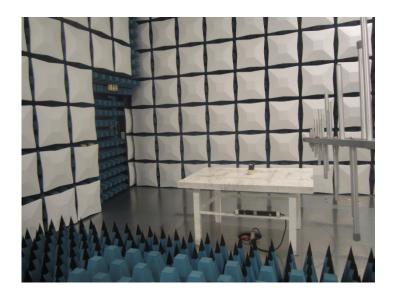
Band	Channel	Frequency(MHz)	PAR	Limit(dB)	Result
WCDMA BAND	9262	1852.4	2.78	13.00	Pass
	9400	1880.0	2.58	13.00	Pass
	9538	1907.6	2.84	13.00	Pass

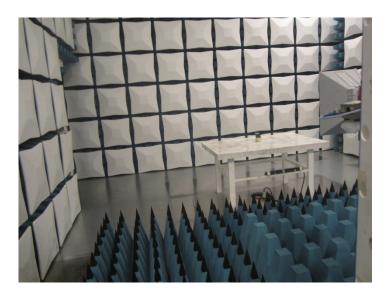
Band	Channel	Frequency(MHz)	PAR	Limit(dB)	Result
WCDMA BAND	1313	1712.6	3.16	13.00	Pass
	1450	1740.0	3.06	13.00	Pass
	1512	1752.4	3.10	13.00	Pass

Report No.: TRE1708019401 Page: 56 of 62 Issued: 2017-09-14

6. Test Setup Photos of the EUT

Radiated emission:





Report No.: TRE1708019401 Page: 57 of 62 Issued: 2017-09-14

7. External and Internal Photos of the EUT

External photos of the EUT







Report No.: TRE1708019401 Page: 58 of 62 Issued: 2017-09-14

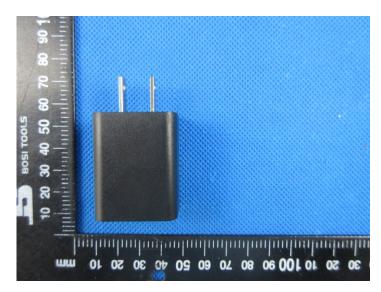






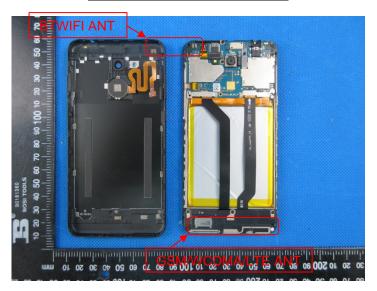
Report No.: TRE1708019401 Page: 59 of 62 Issued: 2017-09-14

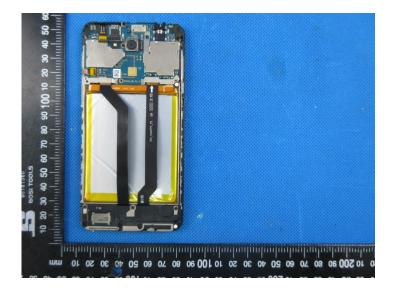


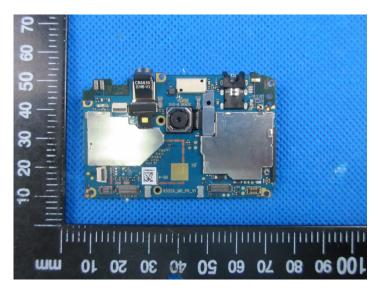


Report No.: TRE1708019401 Page: 60 of 62 Issued: 2017-09-14

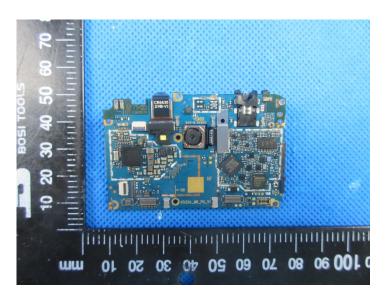
Internal photos of the EUT

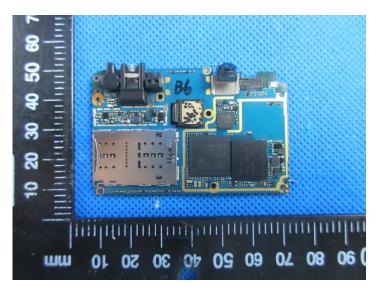






Report No.: TRE1708019401 Page: 61 of 62 Issued: 2017-09-14

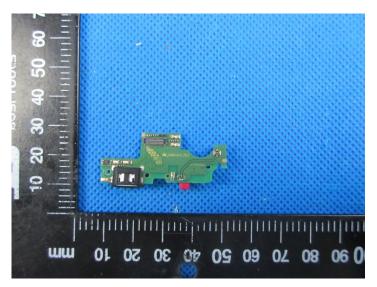


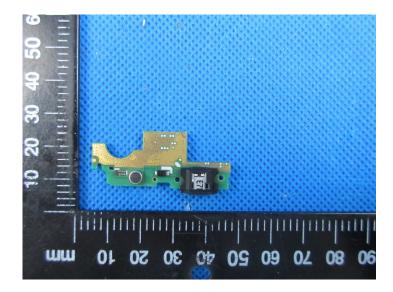




Report No.: TRE1708019401 Page: 62 of 62 Issued: 2017-09-14







.....End of Report.....