TCT 通测检测 TESTING CENTRE TECHNOLOGY

Test Report

Test Report No. .....:	TCT231117E017
Date of issue .....:	Dec. 28, 2023
Testing laboratory.....:	Shenzhen TCT Testing Technology Co., Ltd.
Testing location/ address:	2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Applicant's name .....:	Shenzhen Huafurui Technology Co., Ltd.
Address .....:	Unit 601-03, 6/F, Block A, Building 1, Ganfeng Technology Building, No. 993 Jiaxian Road, Xiangjiaotang Community, Bantian Street, Longgang District, Shenzhen, P.R. China
Manufacturer's name ....:	Shenzhen Huafurui Technology Co., Ltd.
Address .....:	Unit 601-03, 6/F, Block A, Building 1, Ganfeng Technology Building, No. 993 Jiaxian Road, Xiangjiaotang Community, Bantian Street, Longgang District, Shenzhen, P.R. China
Standard(s).....:	ETSI EN 301 489-52 V1.2.1 (2021-11) ETSI EN 301 489-19 V2.2.1 (2022-09) ETSI EN 301 489-17 V3.2.4 (2020-09) ETSI EN 301 489-1 V2.2.3 (2019-11)
Product Name .....:	Smartphone
Trade Mark.....:	CUBOT
Model/Type reference .....:	A1
Rating(s) .....:	Refer to EUT description of page 3
Date of receipt of test item .....:	Nov. 17, 2023
Date (s) of performance of test .....:	Nov. 17, 2023 - Dec. 28, 2023
Tested by (+signature)....:	Rleo LIU
Check by (+signature) ....:	Beryl ZHAO
Approved by (+signature):	Tomsin

General disclaimer:

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1. General Product Information

1.1. EUT description

Product Name ..... :	Smartphone
Model/Type reference ..... :	A1
Hardware Version ..... :	E97C_V1.0X
Software Version..... :	CUBOT_A1_E041_V01
Operation Frequency..... :	For BT/BLE: 2402MHz~2480MHz For 2.4G WIFI: 2412MHz~2472MHz (802.11b/802.11g/802.11n(HT20)) For FM: 87.5MHz – 108MHz For GSM: E-GSM 900/GPRS 900/EGPRS 900: TX: 880MHz~915MHz; RX: 925MHz~960MHz GSM 1800/GPRS 1800/EGPRS 1800: TX: 1710MHz~1785MHz; RX: 1805MHz~1880MHz For GNSS: GPS: 1.57542GHz GLONASS: 1.602GHz Galileo: 1.561098 GHz For WCDMA: UTRA Band I: TX:1920MHz~1980MHz; RX: 2110MHz~2170MHz UTRA Band VIII: TX: 880MHz~915MHz; RX: 925MHz~960MHz For LTE: LTE Band 1: (UL)1920MHz~1980MHz, (DL)2110MHz~2170MHz LTE Band 3: (UL)1710MHz~1785MHz, (DL)1805MHz~1880MHz LTE Band 7: (UL)2500MHz~2570MHz, (DL)2620MHz~2690MHz LTE Band 8: (UL)880MHz~915MHz, (DL)925MHz~960MHz LTE Band 20: (UL)832MHz~862MHz, (DL)791MHz~821MHz
Modulation Type ..... :	For BT: GFSK, π/4-DQPSK, 8DPSK For BLE: GFSK For 2.4G WIFI: DSSS(802.11b), OFDM (802.11g/802.11n) For FM: FM For GSM: GSM/GPRS: GMSK EGPRS: 8PSK

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	For GNSS: GPS: BPSK GLONASS: FDMA Galileo: BPSK For WCDMA:16QAM for HSDPA and HSUPA For LTE: QPSK, 16-QAM
Antenna Type ..... :	Internal Antenna
Antenna Gain ..... :	For BT/BLE/2.4G WIFI: 1.6dBi For GSM: E-GSM 900/GPRS 900/EGPRS 900: -0.09dBi GSM 1800/GPRS 1800/EGPRS 1800: 0.73dBi For GNSS:: 1.7dBi For WCDMA: WCDMA Band I: 0.76dBi WCDMA Band VIII: -0.09dBi For LTE: LTE band 1: 0.76dBi LTE band 3: 0.73Bi LTE band 7: 0.81dBi LTE band 8: -0.09dBi LTE band 20: -0.24dBi
Rating(s) ..... :	Adapter Information: Model: HJ-0502000W2-EU Input: AC 100–240 V, 50/ 60 Hz, 0.3 A Output: DC 5.0 V, 2.0 A Output Power: 10.0 W Rechargeable Li-ion Battery DC 3.87V

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

1.2. Model(s) list

None.

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2. Test Result Summary

EMI Test				
Test Item	**Test Requirement**	**Test Method**	**Application**	**Result**
Radiated Emission	ETSI EN301 489-1; EN 55032	EN 55032	Enclosure	PASS
Conducted Emission	ETSI EN301 489-1; EN 55032	EN 55032	AC port	PASS
Harmonic Current Emissions	ETSI EN301 489-1	EN 61000-3-2	AC port	N/A
Voltage Fluctuations and Flicker	ETSI EN301 489-1	EN 61000-3-3	AC port	PASS
EMS Test				
ESD (Electrostatic Discharge)	ETSI EN301 489-1	EN 61000-4-2	Enclosure	PASS
Radiated Immunity	ETSI EN301 489-1	EN 61000-4-3	Enclosure	PASS
EFT (Electrical Fast Transients)	ETSI EN301 489-1	EN 61000-4-4	AC port	PASS
Surge Immunity	ETSI EN301 489-1	EN 61000-4-5	AC port	PASS
Injected Currents	ETSI EN301 489-1	EN 61000-4-6	AC port	PASS
Voltage Dips and Interruptions	ETSI EN301 489-1	EN 61000-4-11	AC port	PASS
transients and surges	ETSI EN301 489-1	ISO 7637-2	DC port	N/A

Note:

1 PASS: Test item meets the requirement.

2. N/A: Test case does not apply to the test object.

3. The test result judgment is decided by the limit of test standard.

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3. General Information

3.1. Test environment and mode

Item	Normal condition
Temperature	+25ºC
Voltage	AC 230 V/ 50 Hz, DC 5V(Notebook Computer Input AC 230V/50Hz)
Humidity	56%
Atmospheric Pressure:	1008 mbar
Test Mode:	
TM1	GSM 900 Link + BT Link + WIFI Link + GPS + Camera Shooting + Charging
TM2	GSM 1800 Link + BT Link + WIFI Link + GPS + Camera Shooting + Charging
TM3	GSM 900 Idle + BT Link + WIFI Link + GPS + TF Card Playing + Charging
TM4	GSM 1800 Idle + BT Link + WIFI Link + GPS + TF Card Playing + Charging
TM5	GSM 900 Idle + BT Link + WIFI Link + GPS + FM + Charging
TM6	GSM 1800 Idle + BT Link + WIFI Link + GPS + FM + Charging
TM7	GSM 900 Idle + BT Link + WIFI Link + GPS + Data Transmitting
TM8	GSM 1800 Idle+ BT Link + WIFI Link + GPS + Data Transmitting
TM9	WCDMA I Link + BT Link + WIFI Link + GPS + Camera Shooting + Charging
TM10	WCDMA VIII Link + BT Link + WIFI Link + GPS + Camera Shooting + Charging
TM11	WCDMA I Idle + BT Link + WIFI Link + GPS + TF Card Playing + Charging
TM12	WCDMA VIII Idle + BT Link + WIFI Link + GPS + TF Card Playing + Charging
TM13	WCDMA I Idle + BT Link + WIFI Link + GPS + FM + Charging
TM14	WCDMA VIII Idle + BT Link + WIFI Link + GPS + FM + Charging
TM15	WCDMA I Idle + BT Link + WIFI Link + GPS + Data Transmitting
TM16	WCDMA VIII Idle + BT Link + WIFI Link + GPS + Data Transmitting
TM17	LTE 1 Link + BT Link + WIFI Link + GPS + Camera Shooting + Charging
TM18	LTE 3 Link + BT Link + WIFI Link + GPS + Camera Shooting + Charging

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TM19	LTE 7 Link + BT Link + WIFI Link + GPS + Camera Shooting + Charging
TM20	LTE 8 Link + BT Link + WIFI Link + GPS + Camera Shooting + Charging
TM21	LTE 20 Link + BT Link + WIFI Link + GPS + Camera Shooting + Charging
TM22	LTE 1 Idle + BT Link + WIFI Link + GPS + TF Card Playing + Charging
TM23	LTE 3 Idle + BT Link + WIFI Link + GPS + TF Card Playing + Charging
TM24	LTE 7 Idle + BT Link + WIFI Link + GPS + TF Card Playing + Charging
TM25	LTE 8 Idle + BT Link + WIFI Link + GPS + TF Card Playing + Charging
TM26	LTE 20 Idle + BT Link + WIFI Link + GPS + TF Card Playing + Charging
TM27	LTE 1 Idle + BT Link + WIFI Link + GPS + FM + Charging
TM28	LTE 3 Idle + BT Link + WIFI Link + GPS + FM + Charging
TM29	LTE 7 Idle + BT Link + WIFI Link + GPS + FM + Charging
TM30	LTE 8 Idle + BT Link + WIFI Link + GPS + FM + Charging
TM31	LTE 20 Idle + BT Link + WIFI Link + GPS + FM + Charging
TM32	LTE 1 Idle + BT Link + WIFI Link + GPS + Data Transmitting
TM33	LTE 3 Idle + BT Link + WIFI Link + GPS + Data Transmitting
TM34	LTE 7 Idle + BT Link + WIFI Link + GPS + Data Transmitting
TM35	LTE 8 Idle + BT Link + WIFI Link + GPS + Data Transmitting
TM36	LTE 20 Idle + BT Link + WIFI Link + GPS + Data Transmitting
Remark	The worst mode (TM1) reported only for Conducted emission test The worst mode (TM7) reported only for Radiated emission(30MHz----1000MHz) test; The worst mode (TM1) reported only for Radiated emission(1000MHz----6000MHz) test;

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3.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
Notebook Computer	G3 3500	00342-36088-99832-AAOEM	/	DELL
Power Supply	HA130PM190	CN-0CY0JM-CH200-0B6-7405-A01	/	DELL
DAB/FM Signal Generator	SABRE	K3256003	/	Telce
TF Card	SDCS2/32GB	2210B814822	/	/

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

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3.3. Test Instruments List

Equipment	Manufacturer	Model No.	Serial No.	Cal. Due
Disturbance voltage at mains terminals				
EMI Test Receiver	R&S	ESCI3	100898	2024/06/29
Line Impedance Stabilisation Newtork(LISN)	Schwarzbeck	NSLK 8126	8126453	2024/02/20
Attenuator	N/A	10 dB	164080	2024/06/29
Disturbance voltage at telecommunication terminals				
EMI Test Receiver	R&S	ESCI3	100898	2024/06/29
Line Impedance Stabilisation Newtork(LISN)	Schwarzbeck	NSLK 8126	8126453	2024/02/20
ISN	Schwarzbeck	CAT5 8158	151	2024/02/20
ISN	Schwarzbeck	CAT3 8158	00191	2024/05/22
ISN	Schwarzbeck	NTFM 8158	00334	2024/05/22
Radiated emission (30 MHz to 1 GHz)				
Broadband Antenna	Schwarzbeck	VULB9163	340	2024/07/01
EMI Test Receiver	R&S	ESIB7	100197	2024/06/29
Pre-amplifier	HP	8447D	2727A05017	2024/06/27
Radiated emission (1 GHz to 6 GHz)				
Horn Antenna	Schwarzbeck	BBHA 9120 D	02372	2024/02/24
EMI Test Receiver	R&S	FSQ40	200061	2024/06/29
Pre-amplifier	SKET	LNPA_0118G-45	SK2021012102	2024/02/20
Harmonic current emissions & Voltage Fluctuations and Flicker				
AC Power Supply	KIKUSUI	PCR4000M	UC002552	2024/02/20
Harmonic/Flicker Analyzer	KIKUSUI	KHA1000	UD002324	2024/06/28
Line Impedance Network	KIKUSUI	LIN1020JF	UC001738	2024/06/28
Electrostatic discharge immunity (ESD)				
Electrostatic Discharge Generator	3ctest	EDS 30T	ES031000122077	2024/06/01
Radiated, radio-frequency, electromagnetic field immunity (RS)				
Antenna	SKET	STLP 9129_Plus	/	/

Signal Generator	Agilent	N5181A	MY50141997	2024/02/20
Amplifier	SKET	HAP_80M01G-250W	202105183	2024/06/29
Amplifier	SKET	HAP_01G06G-80W	202305501	2024/08/08
Field Probe	Narda	EP-601	811ZX01057	2024/07/02
USB Power Sensor	Agilent	U2000A	MY53410013	2024/02/21
USB Power Sensor	Agilent	U2001A	MZ54330012	2024/02/21
Electrical fast transient/burst immunity (EFT/B)				
Fast Transient Burst Simulator	Prima	EFT61004BG	PR12074375	2024/06/28
Capacitive Coupling folder	Prima	EFT-CLAMP	/	2024/07/04
Surge immunity				
Lightning Surge Generator	Prima	SUG61005BG	PR12125534	2024/06/28
Immunity to conducted disturbances, induced by radio-frequency fields (CS)				
Conducted Immunity Test System	Schloder	CDG-6000-75	126B1290/2014	2024/05/22
CDN	Schloder	CDN M2+M3-16	A2210281/2014	2024/06/28
EM-Clamp	Schloder	EMCL-20	132A1194/2014	2024/06/29
RF Attenuator	PE	75W 6dB	/	2024/06/28
Voltage dips, short interruptions and voltage variations immunity (DIPS)				
Cycle Sag Simulator	Prima	DRP61011AG	PR12106201	2024/06/28
Other				
Audio Analyzer	R&S	UPL	N/A	2024/02/20
Wideband Radio Communication Tester	CMW500	R&S	165017	2024/03/12

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4. Facilities and Accreditations

4.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

- FCC - Registration No.: 645098

  SHENZHEN TONGCE TESTING LAB

  Designation Number: CN1205

  The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC - Registration No.: 10668A-1

  SHENZHEN TONGCE TESTING LAB

  CAB identifier: CN0031

  The testing lab has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

4.2. Location

Shenzhen TCT Testing Technology Co., Ltd.

Address: 2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

TEL: +86-755-27673339

4.3. Measurement Uncertainty

The reported uncertainty of measurement y ± U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

No.	Item	MU
1	Temperature	±0.1℃
2	Humidity	±1.0 %
3	Spurious Emissions, Conducted	±3.10 dB
4	All Emissions, Radiated (30 MHz to 1 GHz)	±4.56 dB
5	All Emissions, Radiated (1 GHz to 6 GHz)	±4.22 dB

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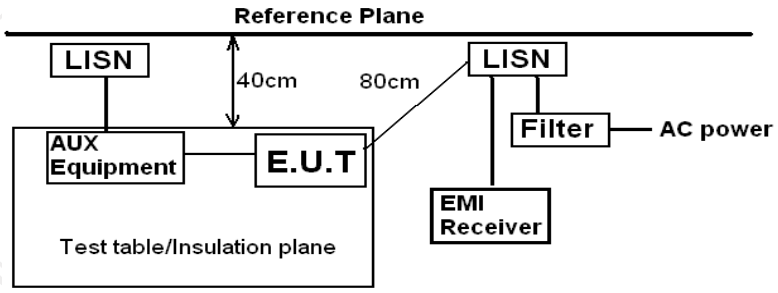
5. Emission Test

5.1. Conducted Emission

5.1.1. Test Specification

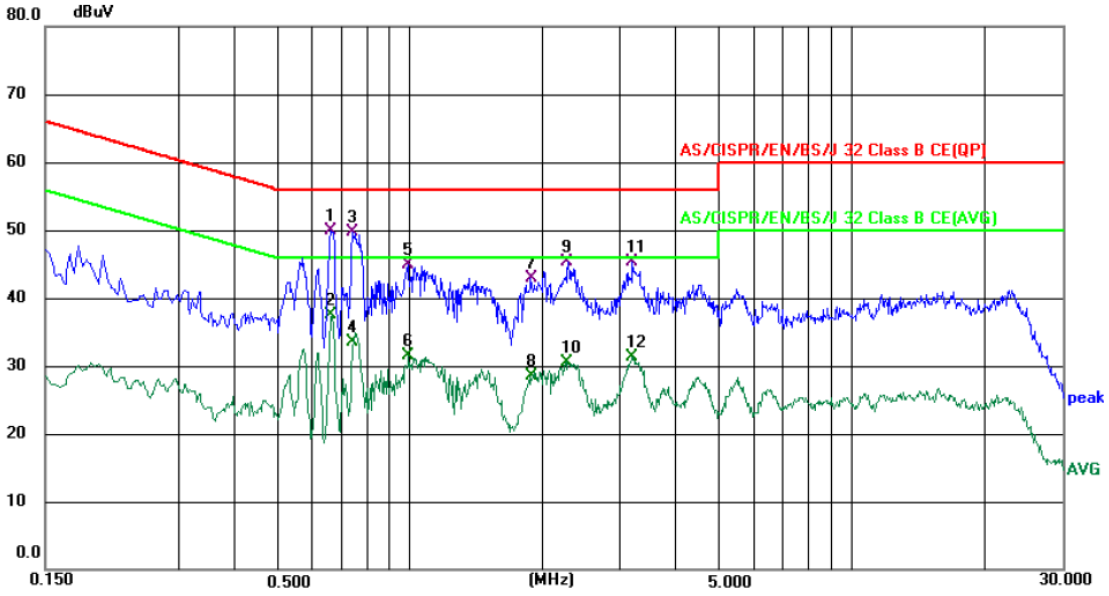
<table>
<tr><td>Test Requirement:</td><td>ETSI EN 301 489-1; EN 55032</td></tr>
<tr><td>Test Method:</td><td>EN 55032</td></tr>
<tr><td>Test Frequency Range:</td><td>150kHz to 30MHz</td></tr>
<tr><td>Class / Severity:
Class B</td><td>Class B</td></tr>
<tr><td>Receiver Setup:</td><td>RBW=9kHz, VBW=30kHz</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>5-30</td><td>60</td><td>50</td></tr>
</table>
* Decreases with the logarithm of the frequency.
</td></tr>
<tr><td>Test Setup:</td><td> 

Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m</td></tr>
<tr><td>Test Procedure</td><td>The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to EN55032 Class B on conducted measurement.</td></tr>
<tr><td>Test Instrument:</td><td>Refer to section 3.3 for details</td></tr>
<tr><td>Test Mode:</td><td>Refer to section 3.1 for details</td></tr>
<tr><td>Test Results:</td><td>PASS</td></tr>
</table>

5.1.2. Test Data

Please refer to following diagram for individual

Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)



Site 844 Shielding Room Phase: *L1* Temperature: 23.5 (℃) Humidity: 52 %

Limit: AS/CISPR/EN/BS/J 32 Class B CE(QP) Power: AC 230 V/50 Hz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.6620	40.58	9.30	49.88	56.00	-6.12	QP	
2		0.6620	28.17	9.30	37.47	46.00	-8.53	AVG	
3		0.7459	40.40	9.21	49.61	56.00	-6.39	QP	
4		0.7459	24.30	9.21	33.51	46.00	-12.49	AVG	
5		0.9900	35.82	8.99	44.81	56.00	-11.19	QP	
6		0.9900	22.43	8.99	31.42	46.00	-14.58	AVG	
7		1.8818	32.96	10.01	42.97	56.00	-13.03	QP	
8		1.8818	18.43	10.01	28.44	46.00	-17.56	AVG	
9		2.2780	35.36	10.03	45.39	56.00	-10.61	QP	
10		2.2780	20.57	10.03	30.60	46.00	-15.40	AVG	
11		3.1979	35.20	10.04	45.24	56.00	-10.76	QP	
12		3.1979	21.17	10.04	31.21	46.00	-14.79	AVG	

Note:

Freq. = Emission frequency in MHz

Reading level (dBμV) = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement (dBμV) = Reading level (dBμV) + Corr. Factor (dB)

Limit (dBμV) = Limit stated in standard

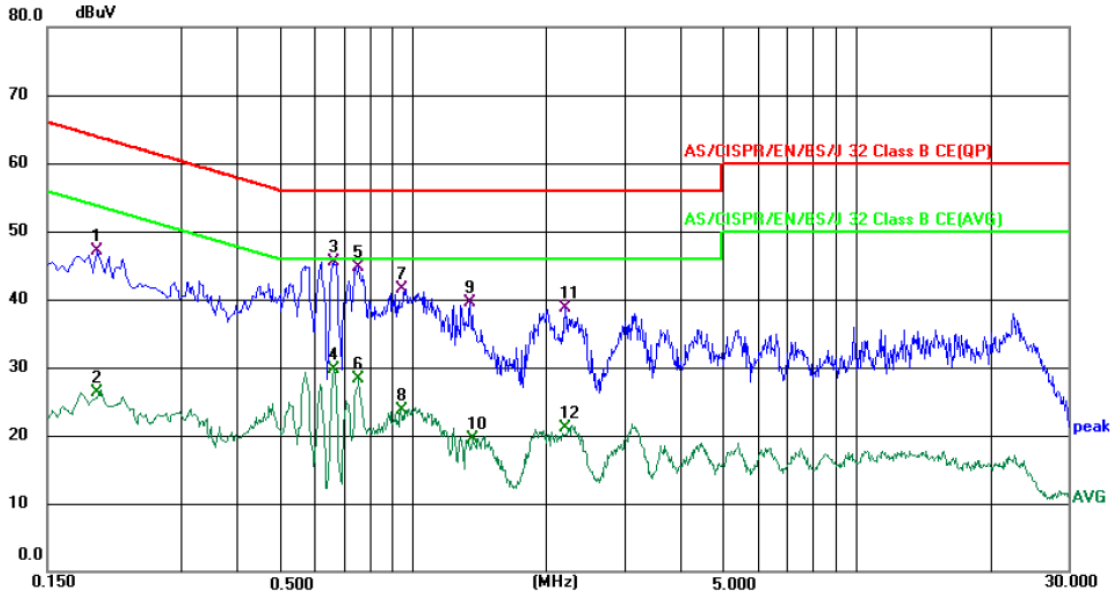
Margin (dB) = Measurement (dBμV) – Limits (dBμV)

Q.P. =Quasi-Peak

AVG =average

** is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.*

Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)



Site 844 Shielding Room Phase: N Temperature: 23.5 (℃) Humidity: 52 %

Limit: AS/CISPR/EN/BS/J 32 Class B CE(QP) Power: AC 230 V/50 Hz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1940	37.06	10.14	47.20	63.86	-16.66	QP	
2		0.1940	16.17	10.14	26.31	53.86	-27.55	AVG	
3	*	0.6620	36.10	9.31	45.41	56.00	-10.59	QP	
4		0.6620	20.39	9.31	29.70	46.00	-16.30	AVG	
5		0.7539	35.47	9.22	44.69	56.00	-11.31	QP	
6		0.7539	19.04	9.22	28.26	46.00	-17.74	AVG	
7		0.9418	32.43	9.05	41.48	56.00	-14.52	QP	
8		0.9418	14.71	9.05	23.76	46.00	-22.24	AVG	
9		1.3500	29.55	10.01	39.56	56.00	-16.44	QP	
10		1.3660	9.54	10.01	19.55	46.00	-26.45	AVG	
11		2.2058	28.72	10.02	38.74	56.00	-17.26	QP	
12		2.2058	11.12	10.02	21.14	46.00	-24.86	AVG	

Note:

Freq. = Emission frequency in MHz

Reading level (dBμV) = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement (dBμV) = Reading level (dBμV) + Corr. Factor (dB)

Limit (dBμV) = Limit stated in standard

Margin (dB) = Measurement (dBμV) – Limits (dBμV)

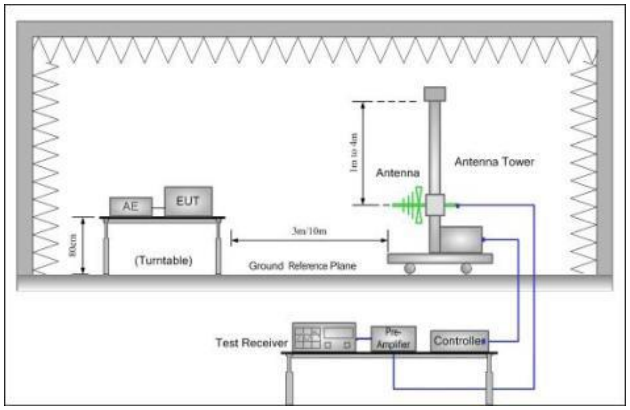
Q.P. =Quasi-Peak

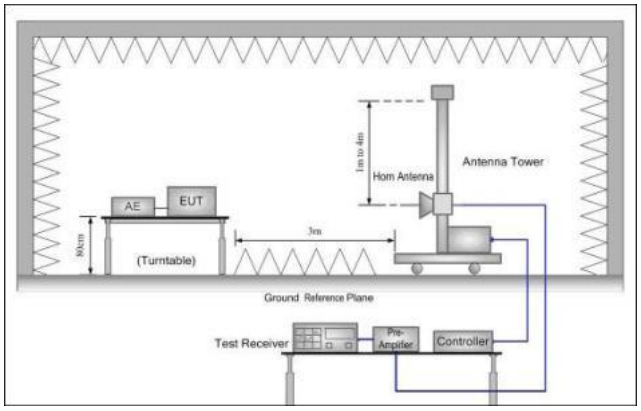
AVG =average

** is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.*

5.2. Radiated Emission

5.2.1. Test Specification

<table>
<tr><td>Test Requirement:</td><td>ETSI EN 301 489-1; EN 55032</td></tr>
<tr><td>Test Method:</td><td>EN 55032</td></tr>
<tr><td>Test Frequency Range:</td><td>30MHz to 6GHz</td></tr>
<tr><td>Test Site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver Setup:</td><td>
<table>
<tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>Average</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td>30MHz-230MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr>
<tr><td>230MHz-1GHz</td><td>47.0</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">1GHz-6GHz</td><td>54.0</td><td>Average Value</td></tr>
<tr><td>74.0</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Test Setup:</td><td>Below 1GHz
 

Above 1GHz
 

For 3m distance description:</td></tr>
</table>

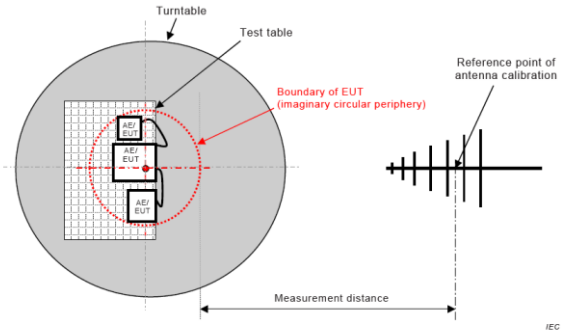


Figure C.1 – Measurement distance

Test Procedure:

From 30MHz to 1GHz:

1. The radiated emissions test was conducted in a semi-anechoic chamber.
2. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
3. Before final measurements of radiated emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emissions spectrum plots of the EUT.
4. The frequencies of maximum emission were determined in the final radiated emissions measurement. At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum disturbance. Measurements were performed for both horizontal and vertical antenna polarization.

Above 1GHz:

1. The radiated emissions test was conducted in a fully-anechoic chamber.
2. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
3. Before final measurements of radiated emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emission spectrum plots of the EUT.
4. The frequencies of maximum emission were determined in the final radiated emissions measurement. At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum disturbance. Measurements were performed for both horizontal and vertical antenna polarization.

Test Instrument:	Refer to section 3.3 for details
Test Mode:	Refer to section 3.1 for details
Test Results:	PASS

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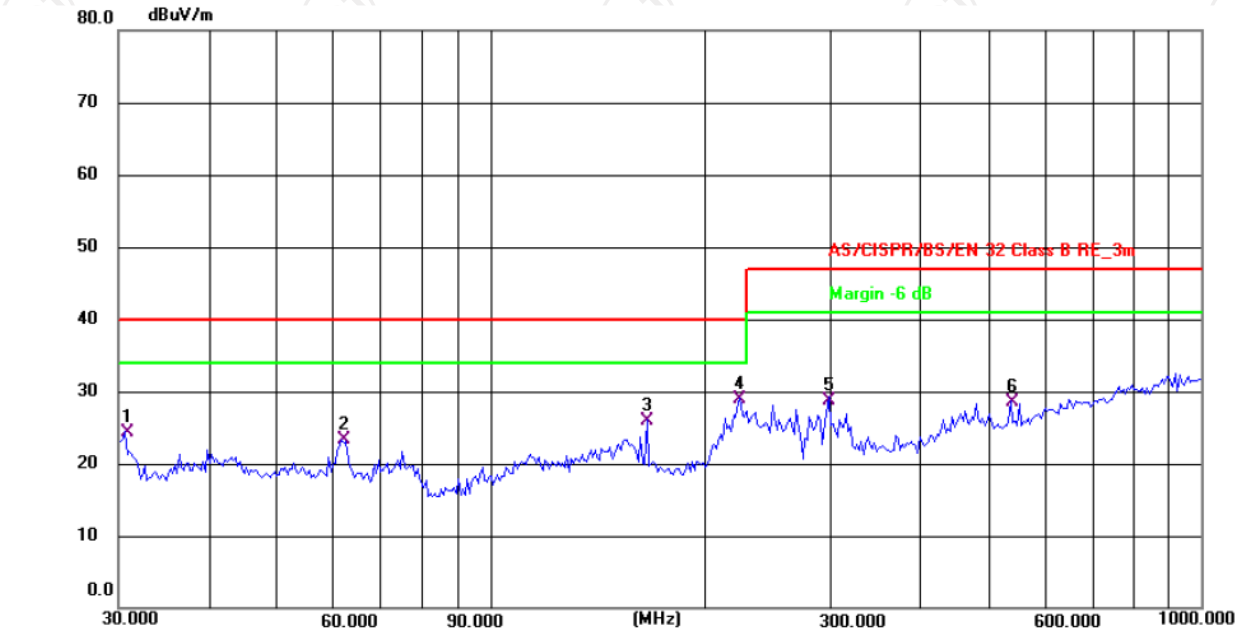
5.2.2. Test Data

Radiated Emission In Horizontal (30MHz----1000MHz)



Site: #1 3m Anechoic Chamber Polarization: *Horizontal* Temperature: 24.1(C) Humidity: 53 %

Limit: AS/CISPR/BS/EN 32 Class B RE_3m Power: DC 5V(Notebook Computer Input AC 230V/50Hz)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	30.6378	11.33	13.00	24.33	40.00	-15.67	QP	P	
2	61.7780	10.64	12.61	23.25	40.00	-16.75	QP	P	
3	166.0680	11.81	14.00	25.81	40.00	-14.19	QP	P	
4 *	224.5192	17.19	11.66	28.85	40.00	-11.15	QP	P	
5	299.3158	14.67	13.98	28.65	47.00	-18.35	QP	P	
6	539.4775	9.41	19.13	28.54	47.00	-18.46	QP	P	

Note:

Freq. = Emission frequency in MHz

Reading level (dBμV) = Receiver reading

Corr. Factor (dB) = Antenna factor + Cable loss

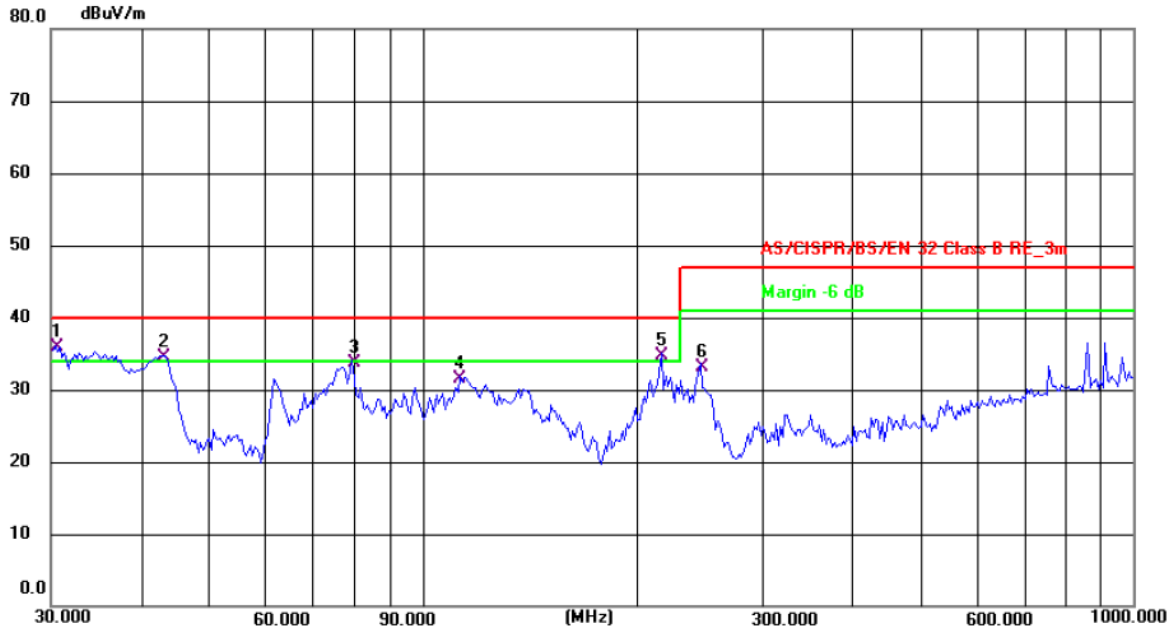
Measurement (dBμV) = Reading level (dBμV) + Corr. Factor (dB)

Limit (dBμV) = Limit stated in standard

Margin (dB) = Measurement (dBμV) – Limits (dBμV)

** is meaning the worst frequency has been tested in the test frequency range*

Radiated Emission In Vertical (30MHz----1000MHz)



Site: #1 3m Anechoic Chamber Polarization: *Vertical* Temperature: 24.1(C) Humidity: 53 %

Limit: AS/CISPR/BS/EN 32 Class B RE_3m Power: DC 5V(Notebook Computer Input AC 230V/50Hz)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	30.4238	22.81	13.00	35.81	40.00	-4.19	QP	P	
2 !	42.8998	20.68	13.85	34.53	40.00	-5.47	QP	P	
3	79.5209	24.13	9.62	33.75	40.00	-6.25	QP	P	
4	112.9196	19.73	11.77	31.50	40.00	-8.50	QP	P	
5 !	216.7828	23.52	11.15	34.67	40.00	-5.33	QP	P	
6	245.9509	20.82	12.35	33.17	47.00	-13.83	QP	P	

Note:

Freq. = Emission frequency in MHz

Reading level (dBμV) = Receiver reading

Corr. Factor (dB) = Antenna factor + Cable loss

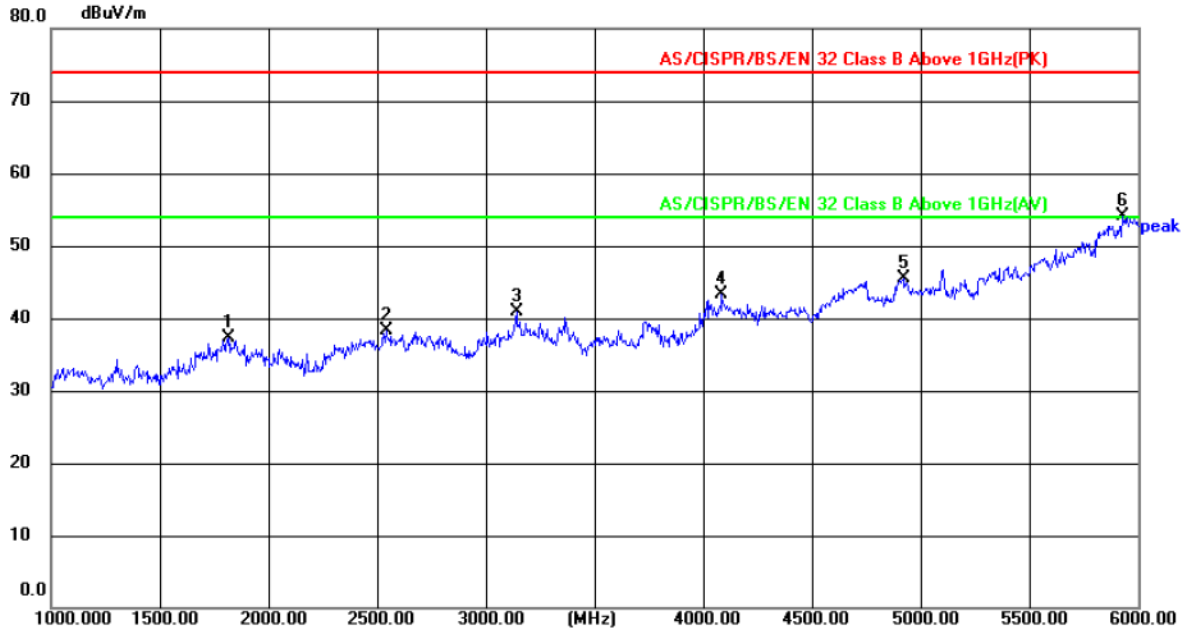
Measurement (dBμV) = Reading level (dBμV) + Corr. Factor (dB)

Limit (dBμV) = Limit stated in standard

Margin (dB) = Measurement (dBμV) – Limits (dBμV)

** is meaning the worst frequency has been tested in the test frequency range*

Radiated Emission In Horizontal (1000MHz----6000MHz)

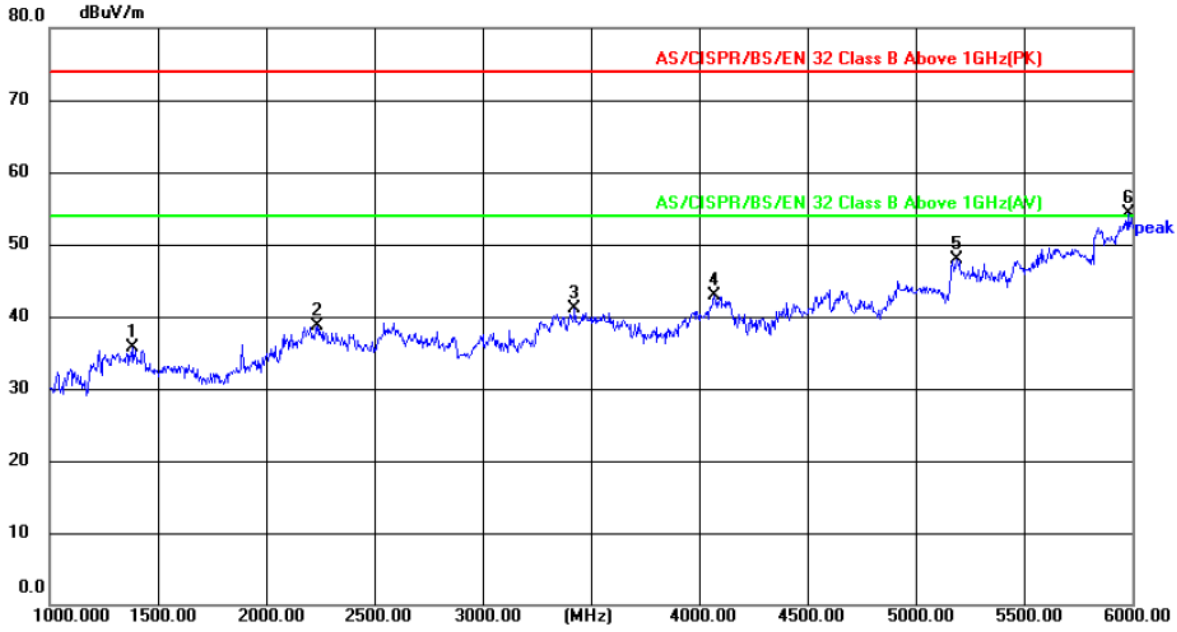


Site: #3 3m Anechoic Chamber Polarization: ***Horizontal*** Temperature: 25.3(℃) Humidity: 50 %

Limit: AS/CISPR/BS/EN 32 Class B Above 1GHz(PK) Power:AC 230 V/ 50 Hz

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1815.000	56.86	-19.59	37.27	74.00	-36.73	peak	P	
2	2544.500	54.67	-16.41	38.26	74.00	-35.74	peak	P	
3	3144.500	56.48	-15.62	40.86	74.00	-33.14	peak	P	
4	4089.000	55.95	-12.65	43.30	74.00	-30.70	peak	P	
5	4921.500	55.53	-10.09	45.44	74.00	-28.56	peak	P	
6 *	5934.500	61.57	-7.54	54.03	74.00	-19.97	peak	P	

Radiated Emission In Vertical (1000MHz----6000MHz)



Site: #3 3m Anechoic Chamber Polarization: *Vertical* Temperature: 25.3(℃) Humidity: 50 %

Limit: AS/CISPR/BS/EN 32 Class B Above 1GHz(PK) Power:AC 230 V/ 50 Hz

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1386.500	55.47	-19.86	35.61	74.00	-38.39	peak	P	
2	2235.500	55.47	-16.70	38.77	74.00	-35.23	peak	P	
3	3427.000	56.27	-15.24	41.03	74.00	-32.97	peak	P	
4	4073.500	55.61	-12.70	42.91	74.00	-31.09	peak	P	
5	5194.000	57.29	-9.38	47.91	74.00	-26.09	peak	P	
6 *	5984.000	61.96	-7.59	54.37	74.00	-19.63	peak	P	

Note:

Any value more than 10dB below limit have not been specifically reported.

5.3. Harmonic Current Emissions

Test Result:	Not applicable (The Max rated power of EUT is less than 75W)

5.4. Flicker and Voltage Fluctuation

5.4.1. Test Specification

Test Requirement:	ETSI EN 301 489-1
Test Method:	EN 61000-3-3
Test Mode:	Refer to Section 3.3 for Details
Test conclusion:	Refer to Section 3.1 for Details
Test result:	PASS

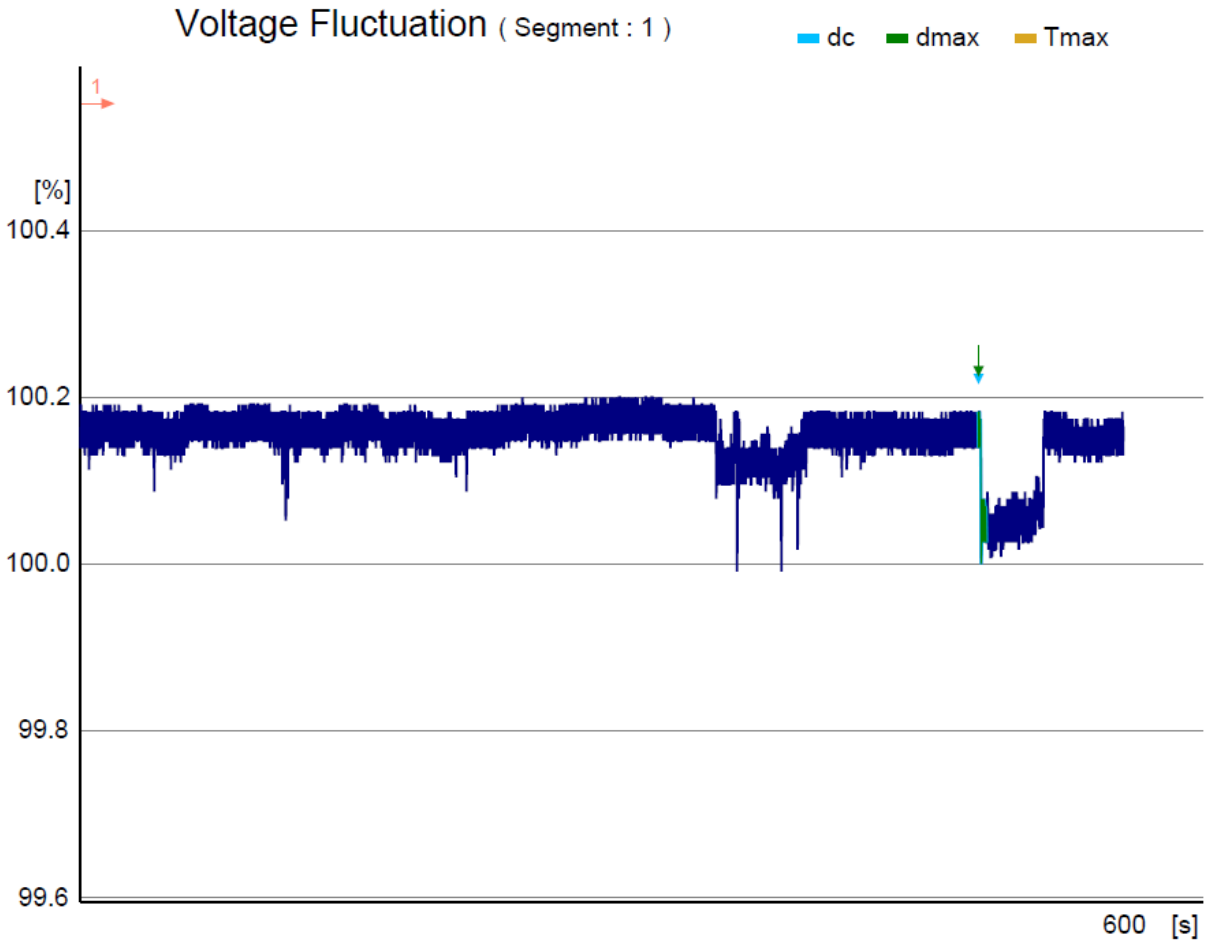
Test Plot as Following:

Test Data of Voltage Fluctuation and Flicker

Final Test Result	Pass
Nominal Voltage	230 V
Nominal Frequency	50 Hz
Plt Test Duration	600 s
Flicker Margin	100 %
d Measurement Margin	100 %

Segment	Pst	dmax(%)	dc(%)	Tmax(ms)	Judge
Limit	1.000	4.000	3.300	500	
Seg. 1	0.042	0.170	0.113	0	Pass

Plt	Value	Judge
Limit	0.650	
Measurement	0.018	Pass



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6. Immunity Test

6.1. Performance Criteria

Performance Criteria of ETSI EN 301 489-1, sub clause 6

Criteria	Performance Criteria
CT/CR	During and after the test, the apparatus shall continue to operate as intended. No degradation of performance or loss of function is allowed below a permissible performance level specified by the manufacturer when the apparatus is used as intended. In some cases this permissible performance level may be replaced by a permissible loss of performance.
TT/TR	After the test, the apparatus shall continue to operate as intended. No degradation of performance or loss of function is allowed below a permissible performance level specified by the manufacturer, when the apparatus is used as intended. In some cases this permissible performance level may be replaced by a permissible loss of performance.

Performance Criteria of ETSI EN 301 489-17, sub clause 6

Criteria	Performance Criteria
CT/CR	The performance criteria A shall apply. Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does not occur. In systems using acknowledgement signals, it is recognized that an acknowledgement (ACK) or Not acknowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.
TT/TR	The performance criteria B shall apply, except for voltage dips of 100 ms and voltage interruptions of 5 000 ms duration, for which performance criteria C shall apply. Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does not occur. In systems using acknowledgement signals, it is recognized that an acknowledgement (ACK) or not-acknowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

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Performance Criteria of ETSI EN 301 489-19, sub clause 6

Criteria	Performance Criteria
CT/CR	The performance criteria A shall apply. Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does not occur. In systems using acknowledgement signals, it is recognized that an acknowledgement (ACK) or Not acknowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.
TT/TR	The performance criteria B shall apply, except for voltage dips of 100 ms and voltage interruptions of 5 000 ms duration, for which performance criteria C shall apply. Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does not occur. In systems using acknowledgement signals, it is recognized that an acknowledgement (ACK) or not-acknowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

Performance Criteria of ETSI EN 301 489-52, sub clause 6

Criteria	Performance Criteria
CT/CR	A communication link shall be established at the start of the test, and maintained during the test, see clauses 4.2.2 to 4.2.5. During the test, the uplink speech output level shall be at least 35 dB less than the previously recorded reference levels, when measured through an audio band pass filter of width 200 Hz, centred on 1 kHz (audio breakthrough check). NOTE: When there is a high level background noise present the filter bandwidth can be reduced down to a minimum of 40 Hz. At the conclusion of the test, the EUT shall operate as intended with no loss of user control functions or stored data, and he communication link shall have been maintained. In addition to confirming the above performance during a call, the test shall also be performed in idle mode, and the transmitter shall not unintentionally operate.
TT/TR	A communications link shall be established at the start of the test, see clauses 4.2.2 to 4.2.5. At the conclusion of each exposure the EUT shall operate with no user noticeable loss of the communication link. At the conclusion of the total test comprising the series of individual exposures, the EUT shall operate as intended with no loss of user control functions or stored data, as declared by the manufacturer, and the communication link shall have been maintained. In addition to confirming the above performance during a call, the test shall also be performed in idle mode, and the transmitter shall not unintentionally operate.

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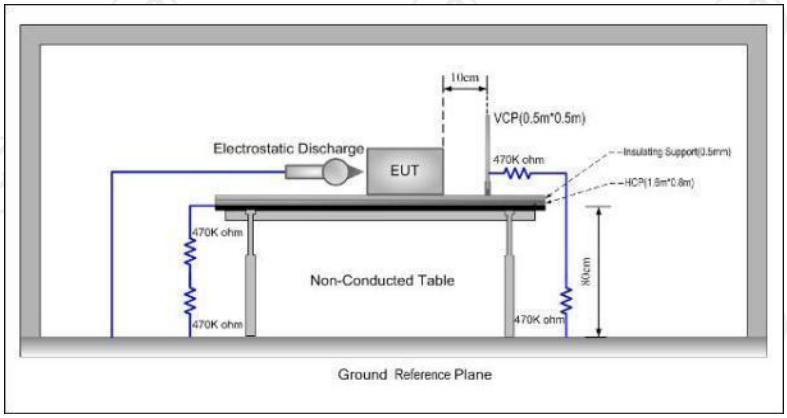
6.2. Electrostatic Discharge

6.2.1. Test Specification

Test Requirement:	ETSI EN 301489-1
Test Method:	EN 61000-4-2
Discharge Voltage:	Contract Discharge: ±2kV, ±4kV Air Discharge: ±2kV, ±4kV, ±8kV HCP/VCP: ±2kV, ±4kV
Polarity:	Positive & Negative
Number of Discharge:	Contact Discharge: Minimum 25 times at each test point, Air Discharge: Minimum 10 times at each test point.
Discharge Mode:	Single Discharge
Discharge Period:	1 second minimum
Test Setup:	
Test Procedure:	**1) Air discharge:** The test was applied on non-conductive surfaces of EUT. The round discharge tip of the discharge electrode was approached as fast as possible to touch the EUT. After each discharge, the discharge electrode was removed from the EUT. The generator was re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure was repeated until all the air discharge completed **2) Contact Discharge:** The test was applied on conductive surfaces of EUT. the generator was re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. the tip of the discharge electrode was touch the EUT before the discharge switch was operated. **3) Indirect discharge for horizontal coupling plane** At least 10 single discharges shall be applied at the front edge of each HCP opposite the centre point of each unit of the EUT and 0.1m from the front of the EUT. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge. Consideration should be given to exposing all sides of the EUT.

	4) Indirect discharge for vertical coupling plane At least 10 single discharges were applied to the centre of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, was placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges were applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.
Test Instrument:	Refer to Section 3.3 for Details
Test Mode:	Refer to Section 3.1 for Details
Test Results:	PASS

6.2.2. Test data

Test points:	I: Please refer to red arrows as below plots
	II: Please refer to yellow arrows as below plots

Air Discharge				
Discharge Voltage (KV)	**Type of discharge**	**Test points**	**Observation Criterion**	**Result**
± 2, ± 4	Contact	II	N/A	N/A
± 2, ± 4, ± 8	Air	I	A	PASS

Indirect Discharge				
Discharge Voltage (KV)	**Type of discharge**	**Test points**	**Observation Criterion**	**Result**
± 2, ± 4	HCP-Bottom/Top/ Front/Back/Left/ Right	Edge of the HCP	A	PASS
± 2, ± 4	VCP-Front/Back /Left/Right	Centre of the VCP	A	PASS

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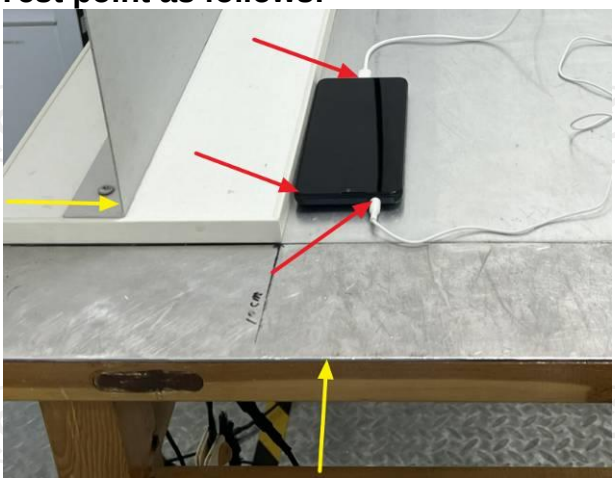
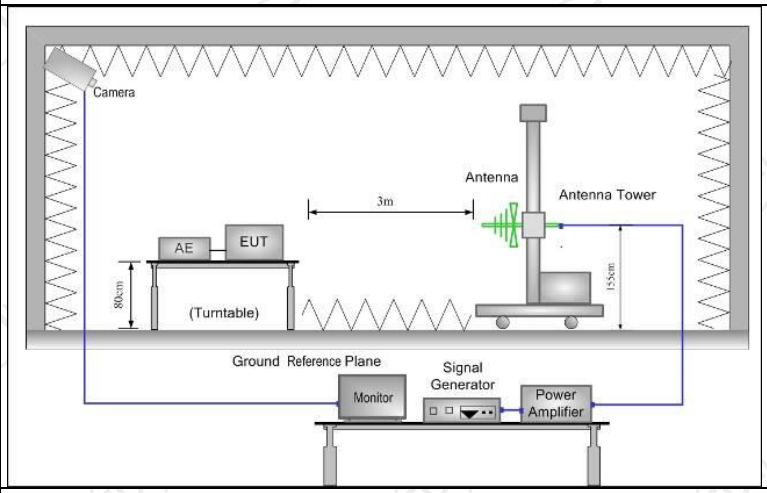
Test point as follows:



6.3. Radio-frequency Electromagnetic Field Amplitude Modulated (RS)

6.3.1. Test Specification

Test Requirement:	ETSI EN 301 489-1
Test Method:	EN 61000-4-3
Frequency Range:	80MHz to 6.0GHz
Test Level:	3V/m
Modulation:	80%, 1kHz Amplitude Modulation
Test Setup:	
Test Procedure:	1. For table-top equipment, the EUT was placed in the chamber on a non-conductive table 0.8m high. For arrangement of floor-standing equipment, the EUT was mounted on a non-conductive support 0.1m above the supporting plane. For human body-mounted equipment, the EUT may be tested in the same manner as table top items. 2. If possible, a minimum of 1 m of cable is exposed to the electromagnetic field. Excess length of cables interconnecting units of the EUT shall be bundled low-inductively in the approximate centre of the cable to form a bundle 30 cm to 40 cm in length. 3. The EUT was initially placed with one face coincident with the calibration plane. The EUT face being illuminated was contained within the UFA (Uniform Field Area). 4. The frequency ranges to be considered were swept with the signal modulated and pausing to adjust the RF signal level or to switch oscillators and antennas as necessary. Where the frequency range was swept incrementally, the step size was not exceeding 1 % of the preceding frequency value. 5. The dwell time of the amplitude modulated carrier at each frequency was not be less than the time necessary for the EUT to be exercised and to respond, and was not less than 0,5 s.

	6. The test normally was performed with the generating antenna facing each side of the EUT. 7. The polarization of the field generated by each antenna necessitates testing each selected side twice, once with the antenna positioned vertically and again with the antenna positioned horizontally. The EUT was performed in a configuration to actual installation conditions, a video camera and/or audio monitor were used to monitor the performance of the EUT.
Test Instrument:	Refer to Section 3.3 for Details
Test Mode:	Refer to Section 3.1 for Details
Test Result:	PASS

6.3.2. Test data

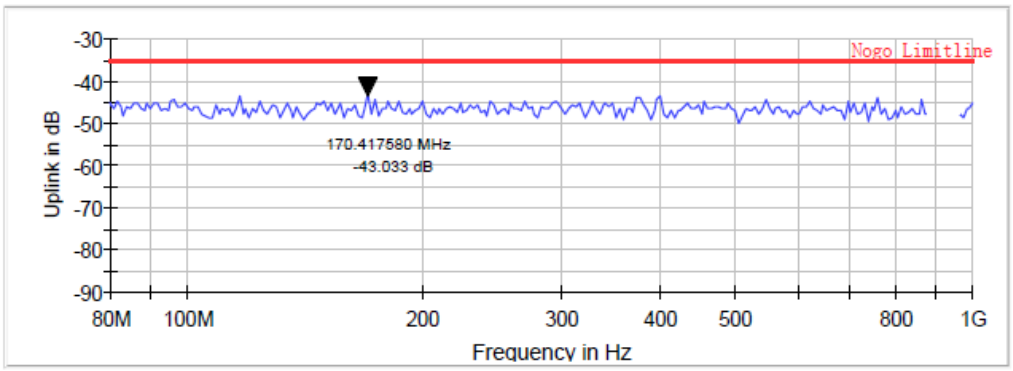
Frequency	Level	Modulation	Antenna Polarization	EUT Face	Observation Criterion
80MHz-6.0GHz	3 V/m	1 kHz, 80 % Amp. Mod, 1 % increment, dwell time=3 seconds	V	Front	A
			H		
			V	Rear	
			H		
			V	Left	
			H		
			V	Right	
			H		
			V	Top	
			H		
			V	Bottom	
			H		

Remark: Only the worst mode plots are shown and the PER for BT and WIFI has been monitored is 0.65% and 0.77%.

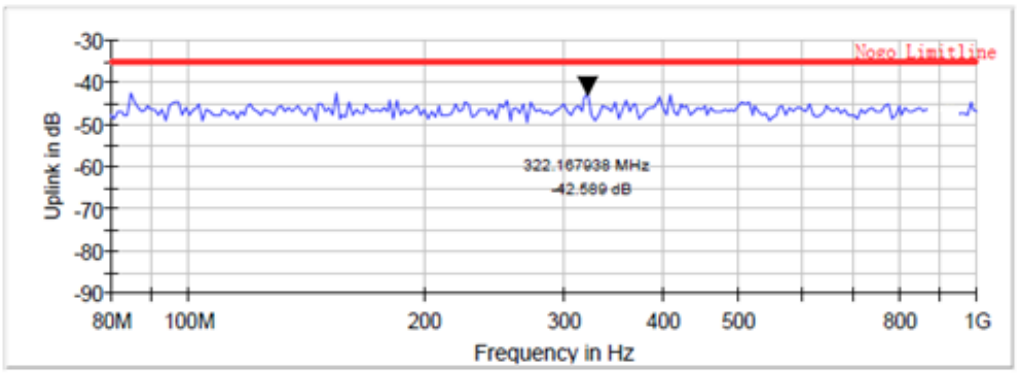
Data of below 1G:

EUT operating Mode		Polarity	Max. value	Frequency (MHz)	Result
GSM 900	Uplink	H	-43.03	170.42	PASS
		V	-42.59	322.17	
	Downlink	H	-66.67	509.17	
		V	-67.36	345.41	
	RX Quality	H	0	1000	
		V	0	1000	

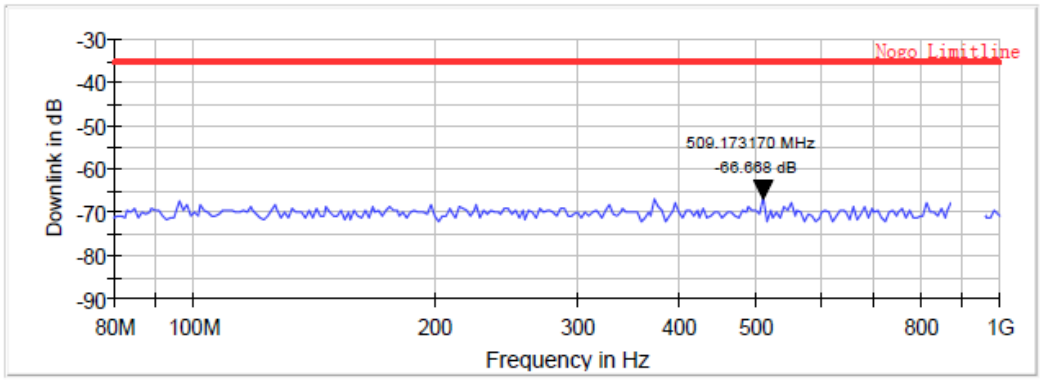
Uplink



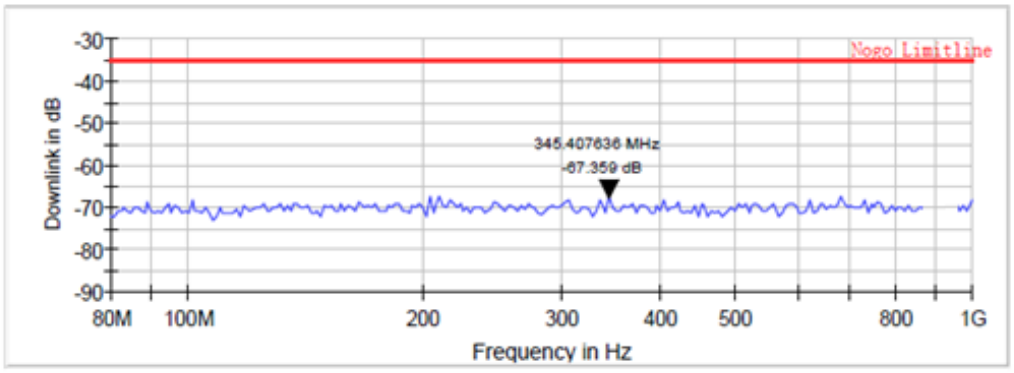
Uplink



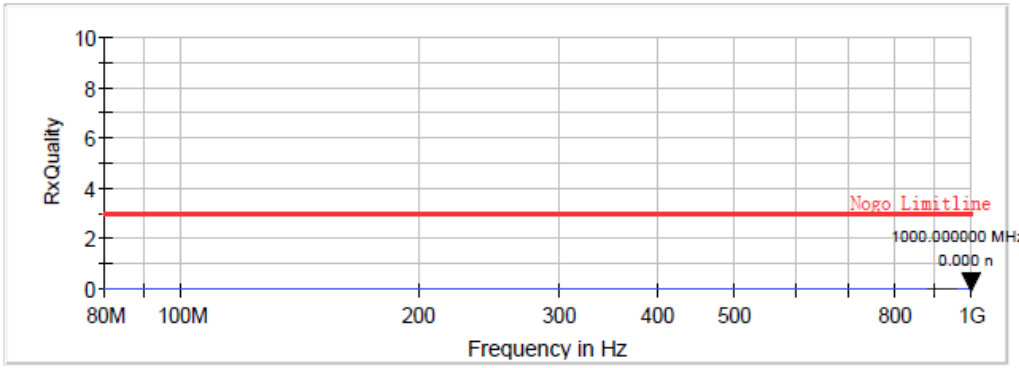
Downlink



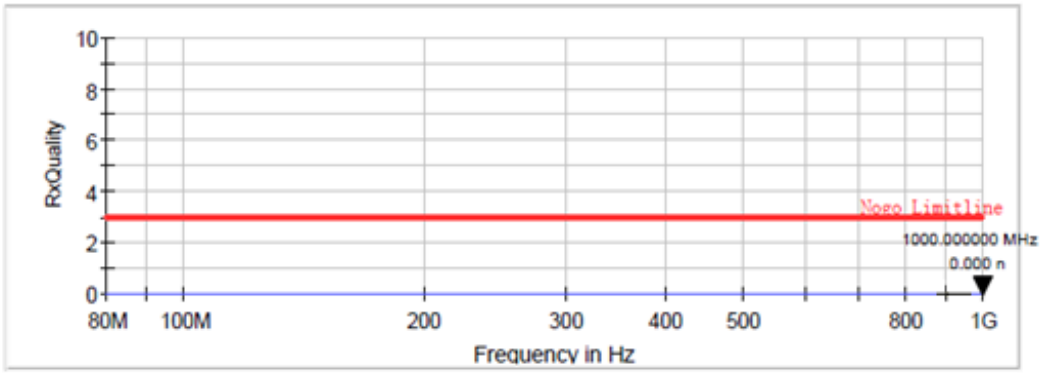
Downlink



RxQuality



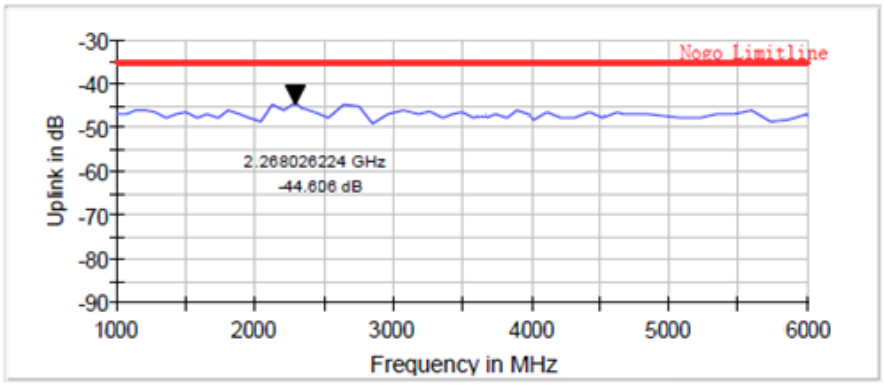
RxQuality



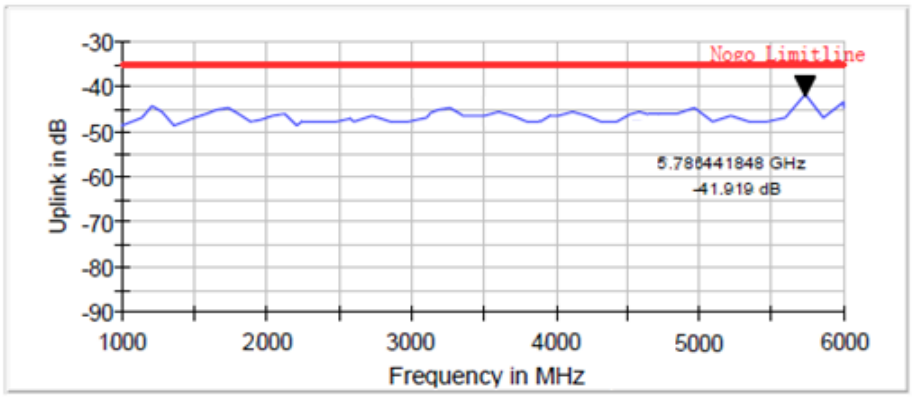
Data of above 1G:

EUT operating Mode		Polarity	Max. value	Frequency (MHz)	Result
GSM 900	Uplink	H	-44.61	2268.03	PASS
		V	-41.92	5786.44	
	Downlink	H	-66.72	2904.41	
		V	-65.67	1819.93	
	RX Quality	H	0	6000	
		V	0	6000	

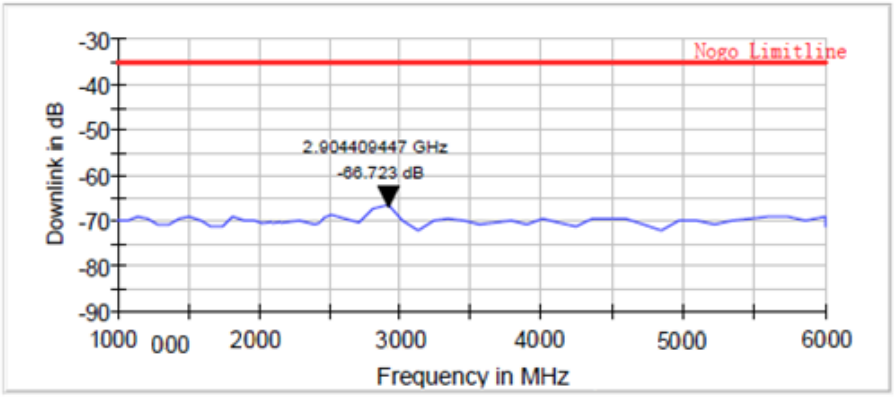
Uplink



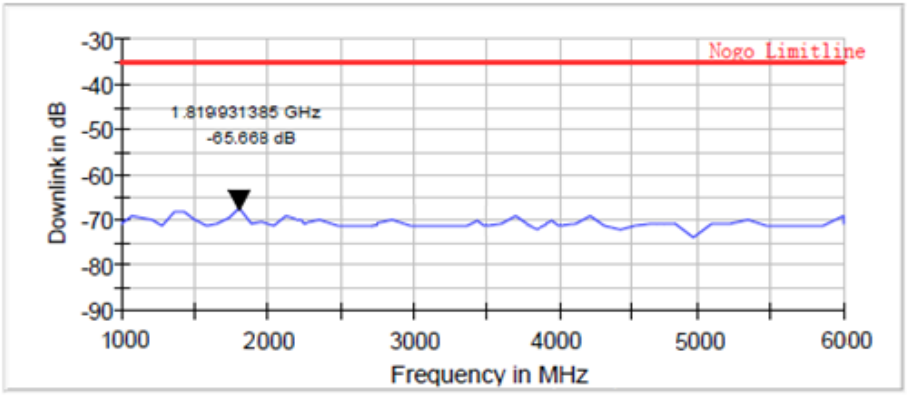
Uplink



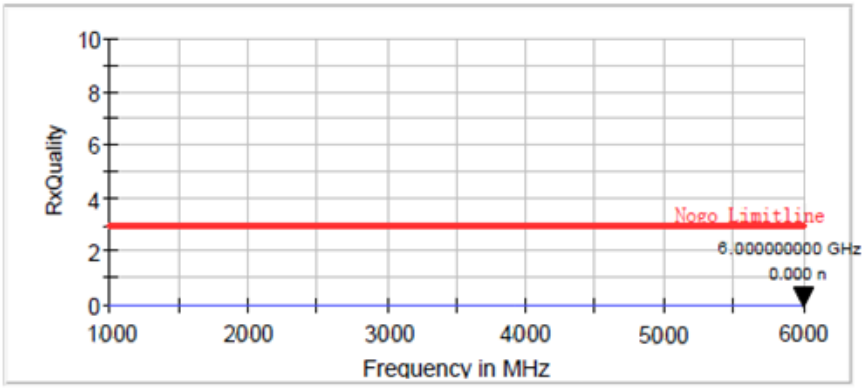
Downlink



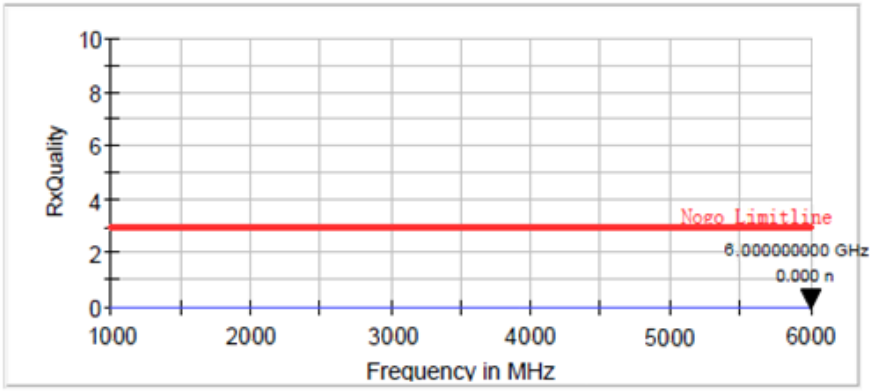
Downlink



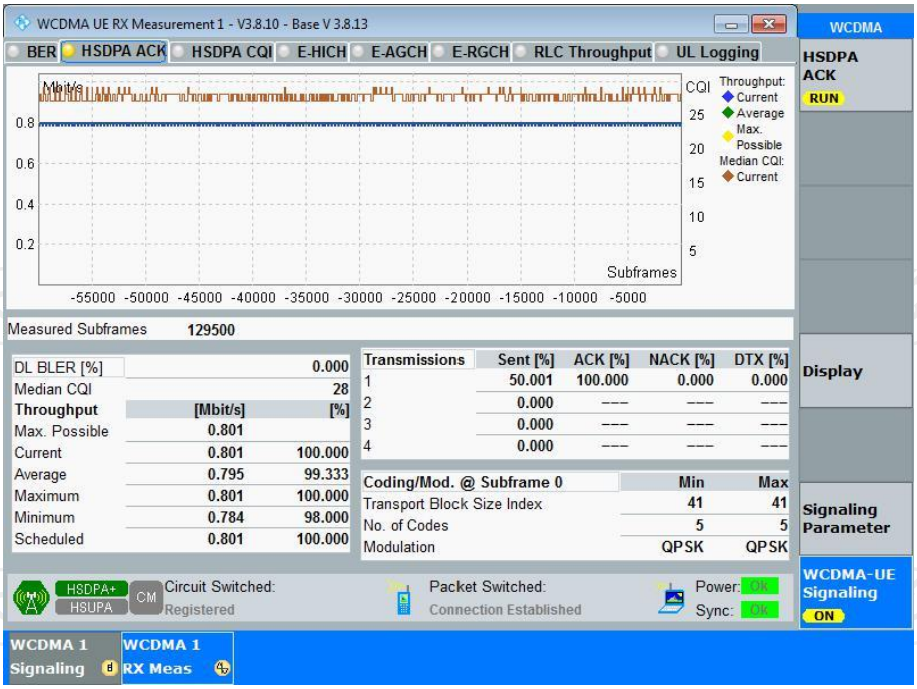
RxQuality

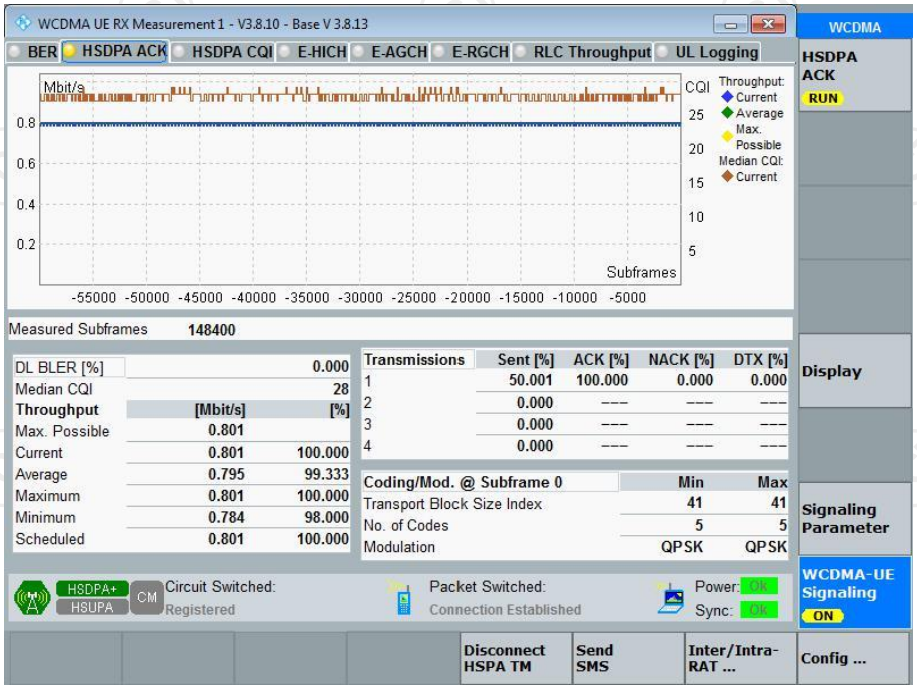


RxQuality

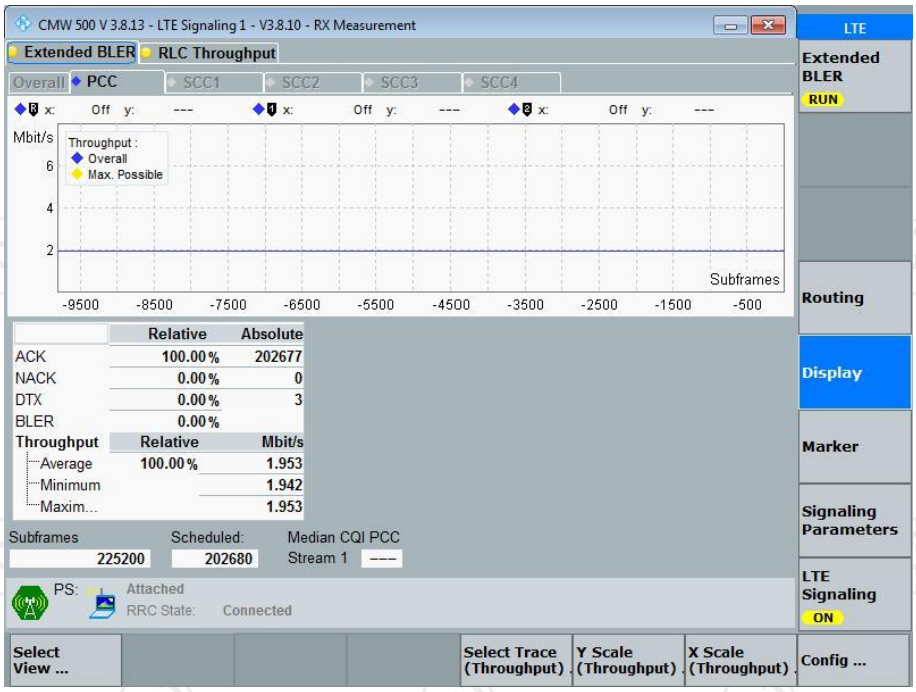


WCDMA:

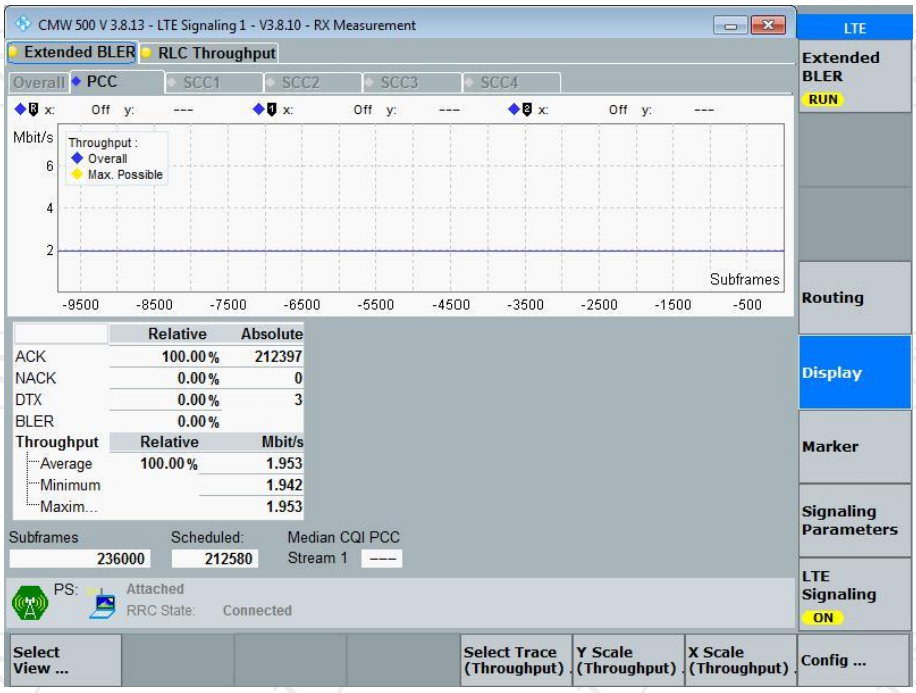

WCDMA UE RX Measurement 1 - V3.8.10 - Base V 3.8.13
BER HSDPA ACK HSDPA CQI E-HICH E-AGCH E-RGCH RLC Throughput UL Logging
WCDMA
HSDPA ACK
RUN
Mbit/s
CQI
Throughput: Current Average Max. Possible
Median CQI: Current
Subframes
-55000 -50000 -45000 -40000 -35000 -30000 -25000 -20000 -15000 -10000 -5000
Measured Subframes 129500
DL BLER [%] 0.000
Median CQI 28
Throughput [Mbit/s] [%]
Max. Possible 0.801
Current 0.801 100.000
Average 0.795 99.333
Maximum 0.801 100.000
Minimum 0.784 98.000
Scheduled 0.801 100.000
Transmissions Sent [%] ACK [%] NACK [%] DTX [%]
1 50.001 100.000 0.000 0.000
2 0.000 --- --- ---
3 0.000 --- --- ---
4 0.000 --- --- ---
Coding/Mod. @ Subframe 0 Min Max
Transport Block Size Index 41 41
No. of Codes 5 5
Modulation QPSK QPSK
Display
Signaling Parameter
WCDMA-UE Signaling
ON
HSDPA+ HSUPA CM Circuit Switched: Registered
Packet Switched: Connection Established
Power: OK Sync: OK
WCDMA 1 Signaling
WCDMA 1 RX Meas


WCDMA UE RX Measurement 1 - V3.8.10 - Base V 3.8.13
BER HSDPA ACK HSDPA CQI E-HICH E-AGCH E-RGCH RLC Throughput UL Logging
WCDMA
HSDPA ACK
RUN
Mbit/s
CQI
Throughput: Current Average Max. Possible
Median CQI: Current
Subframes
-55000 -50000 -45000 -40000 -35000 -30000 -25000 -20000 -15000 -10000 -5000
Measured Subframes 148400
DL BLER [%] 0.000
Median CQI 28
Throughput [Mbit/s] [%]
Max. Possible 0.801
Current 0.801 100.000
Average 0.795 99.333
Maximum 0.801 100.000
Minimum 0.784 98.000
Scheduled 0.801 100.000
Transmissions Sent [%] ACK [%] NACK [%] DTX [%]
1 50.001 100.000 0.000 0.000
2 0.000 --- --- ---
3 0.000 --- --- ---
4 0.000 --- --- ---
Coding/Mod. @ Subframe 0 Min Max
Transport Block Size Index 41 41
No. of Codes 5 5
Modulation QPSK QPSK
Display
Signaling Parameter
WCDMA-UE Signaling
ON
HSDPA+ HSUPA CM Circuit Switched: Registered
Packet Switched: Connection Established
Power: OK Sync: OK
Disconnect HSPA TM
Send SMS
Inter/Intra-RAT ...
Config ...

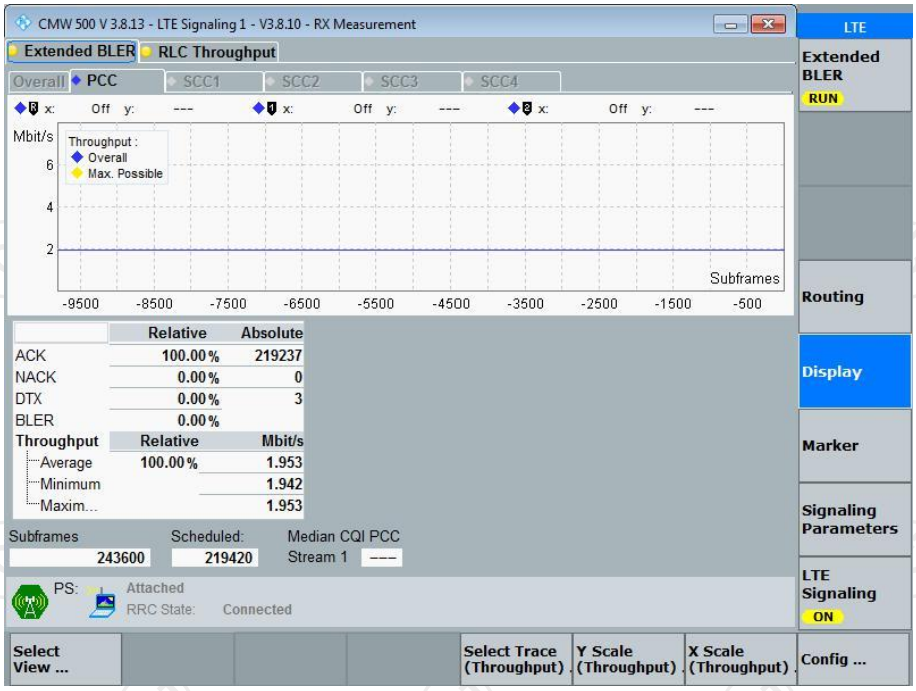
LTE Band 1



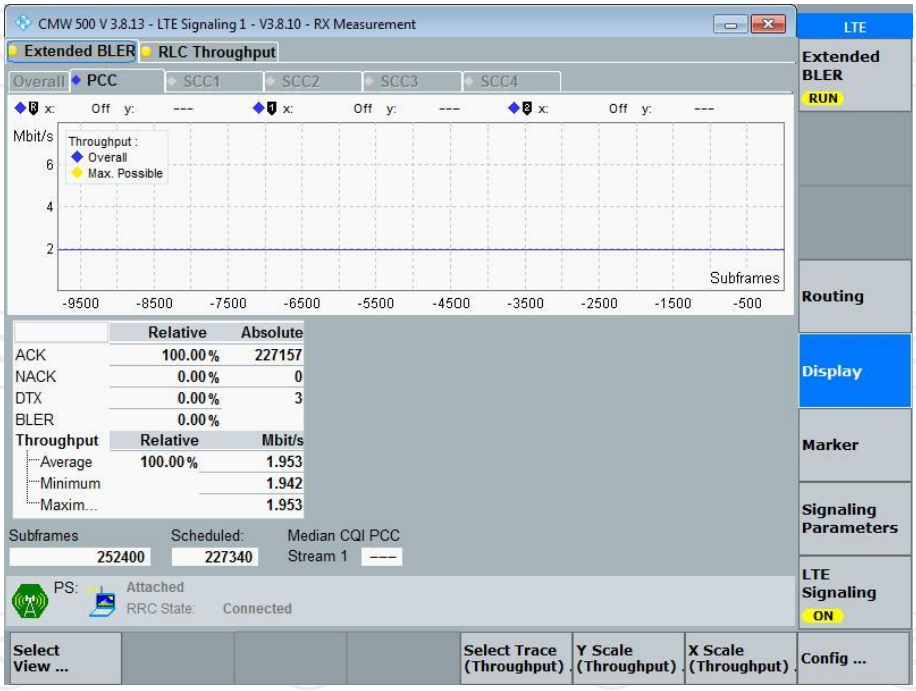
LTE Band 3



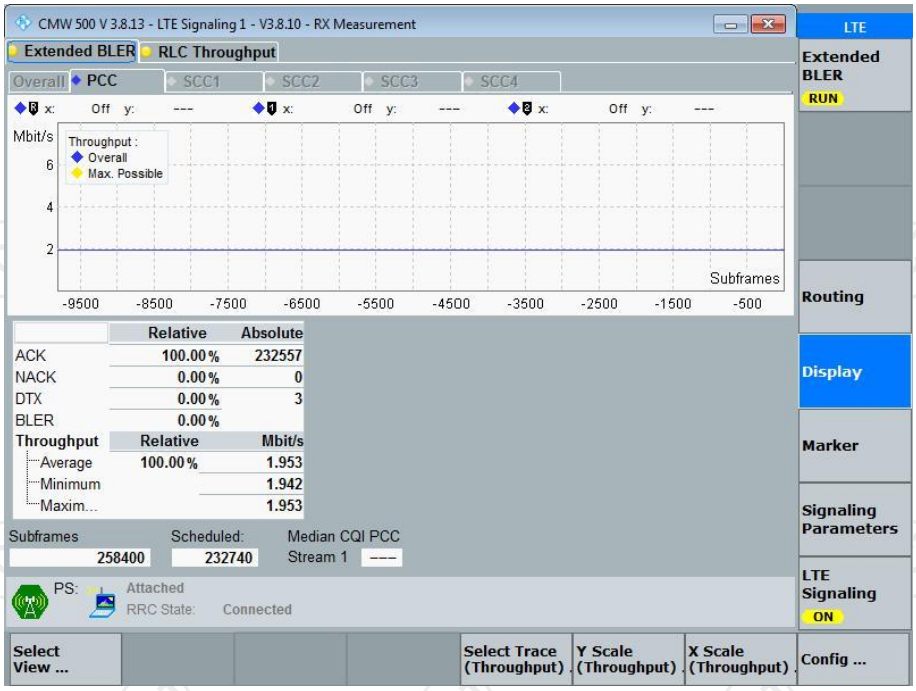
LTE Band 7



LTE Band 8

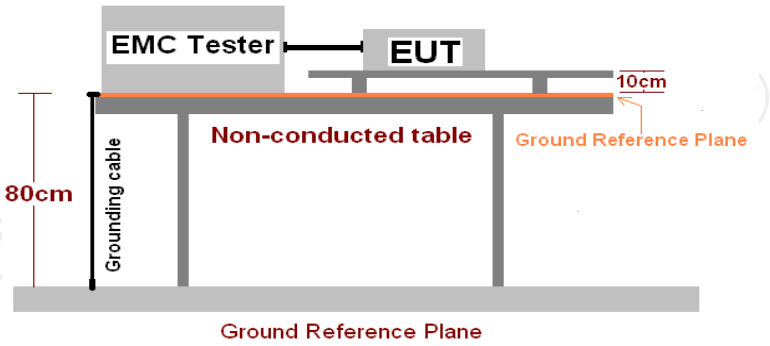


LTE Band 20


CMW 500 V 3.8.13 - LTE Signaling 1 - V3.8.10 - RX Measurement
Extended BLER
RLC Throughput
Overall
PCC
SCC1
SCC2
SCC3
SCC4
Mbit/s
Throughput :
Overall
Max. Possible
Subframes
-9500 -8500 -7500 -6500 -5500 -4500 -3500 -2500 -1500 -500
Relative Absolute
ACK 100.00 % 232557
NACK 0.00 % 0
DTX 0.00 % 3
BLER 0.00 %
Throughput Relative Mbit/s
Average 100.00 % 1.953
Minimum 1.942
Maxim... 1.953
Subframes Scheduled: Median CQI PCC
258400 232740 Stream 1 ---
PS: Attached
RRC State: Connected
Select View ...
Select Trace (Throughput)
Y Scale (Throughput)
X Scale (Throughput)
Config ...
LTE
Extended BLER
RUN
Routing
Display
Marker
Signaling Parameters
LTE Signaling
ON

6.4. Surges

6.4.1. Test Specification

Test Requirement:	ETSI EN 301 489-1
Test Method:	EN 61000-4-5
Test Level:	±1kV Live to Neutral: Differential mode ±2kV Live to Earth or Neutral to Earth: Common mode
Test Setup:	60s between each surge
No. of surges:	5 positive, 5 negative at 0°, 90°, 180°, 270°.
Performance Criterion:	B
Test Setup:	
Test Procedure:	1. For line-to-line coupling mode, provide a 1kV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points, and for active line / neutral lines to ground are same except test level is 2kV. 2. At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are applied during test. 3. Different phase angles are done individually. Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.
Test Instrument:	Refer to Section 3.3 for Details
Test Mode:	Refer to Section 3.1 for Details
Test Result:	PASS

6.4.2. Test Data

Location	Level(kV)	Pulse No	Surge Interval	Phase(deg)	Observation Criterion	Result
L-N	± 1	5	60s	0°	A	PASS
				90°		
				180°		
				270°		

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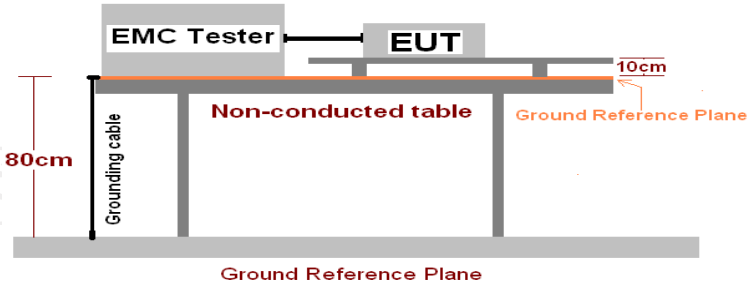
6.5. Electrical Fast Transient (EFT)

6.5.1. Test Specification

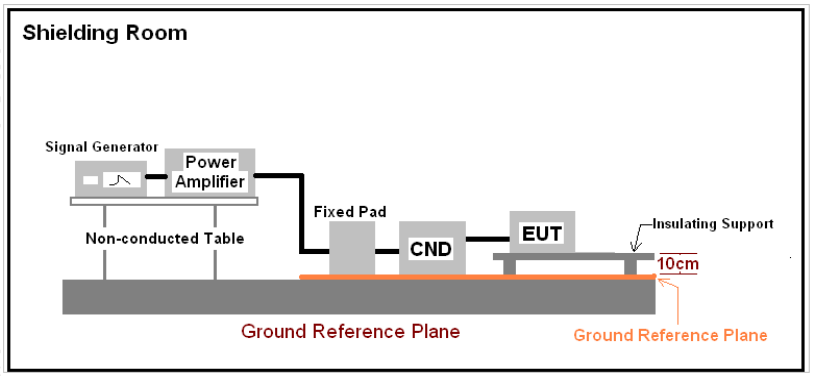
Test Requirement:	ETSI EN 301 489-1
Test Method:	EN 61000-4-4
Test Level:	1.0kV on AC port
Polarity:	Positive & Negative
Repetition Frequency:	5kHz
Burst Duration:	15ms
Burst Period:	300ms
Test Duration:	2 minute per level & polarity
Test setup:	
Test Procedure:	The EUT and its simulators were placed on the ground reference plane and were insulated from it by a wood support 0.1m + 0.01m thick. The ground reference plane was 1m*1m metallic sheet with 0.65mm minimum thickness. This reference ground plane was project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane was more than 0.5m. All cables to the EUT was placed on the wood support, cables not subject to EFT/B was routed as far as possible from the cable under test to minimize the coupling between the cables. Test on Signal Ports, Telecommunication Ports and Control Ports: The EFT interference signal is through a coupling clamp device couples to the signal and control lines of the EUT with burst noise for 2 minutes. Test on power supply ports: The EUT is connected to the power mains through a coupling device that directly couples the EFT/B interference signal. Each of the Line and Neutral conductors is impressed with burst noise for 2 minutes. The length of the signal and power lines between the coupling device and the EUT is 0.5m
Test Instrument:	Refer to Section 3.3 for Details
Test Mode:	Refer to Section 3.1 for Details
Test Result:	PASS

6.5.2. Test Data

Lead under Test	Level (±kV)	Coupling Direct/Clamp	Observation Criterion	Result
L	± 1.0	Direct	A	PASS
N	± 1.0	Direct	A	PASS
L-N	± 1.0	Direct	A	PASS

6.6. Radio-frequency Continuous Conducted (CS)

6.6.1. Test Specification

Test Requirement:	ETSI EN 301489-1
Test Method:	EN 61000-4-6
Frequency Range:	0.15MHz to 80MHz
Test Level:	3V rms on AC Ports (unmodulated emf into 150 Ω)
Modulation	80%, 1kHz Amplitude Modulation
Test setup:	
Test Procedure:	1. Let the EUT work in test mode and test it. 2. The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible). 3. The disturbance signal described below is injected to EUT through CDN. 4. The EUT operates within its operational mode(s) under intended climatic conditions after power on. 5. The frequency range is swept from 0.150MHz to 80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1 Hz sine wave. 6. The rate of sweep shall not exceed 1.5*10-3decades/s. Where the frequency is swept incrementally; the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value. Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.
Test Instrument:	Refer to Section 3.3 for Details
Test Mode:	Refer to Section 3.1 for Details
Test Result:	PASS

6.6.2. Test Data

Frequency	Injected Position	Test Level	Modulation	Step Size	Dwell Time	Observation Criterion	Result
150kHz to 80MHz	AC Main	3Vrms	80%, 1kHz Amp. Mod.	1%	2s	A	PASS

Remark: Only the worst mode plots are shown

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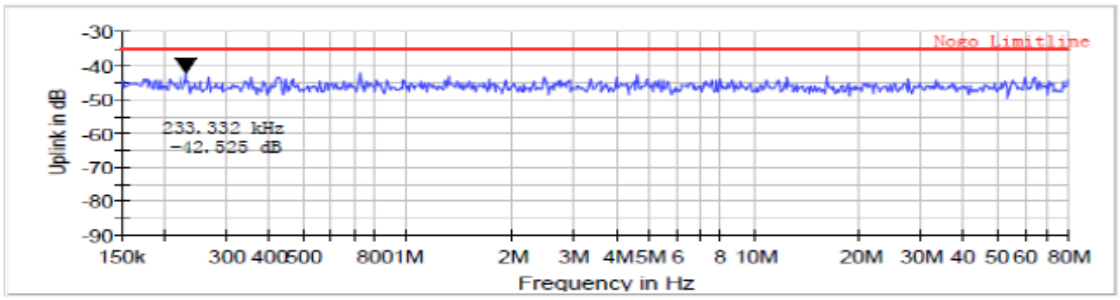
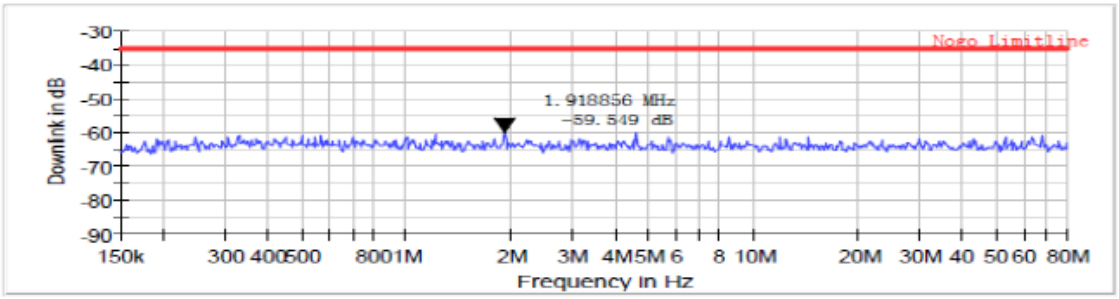
EUT operating Mode		Max. value	Frequency (MHz)	Result
GSM 900	Uplink	-42.53	0.23	PASS
	Downlink	-59.55	1.92	
	RX Quality	0	80	

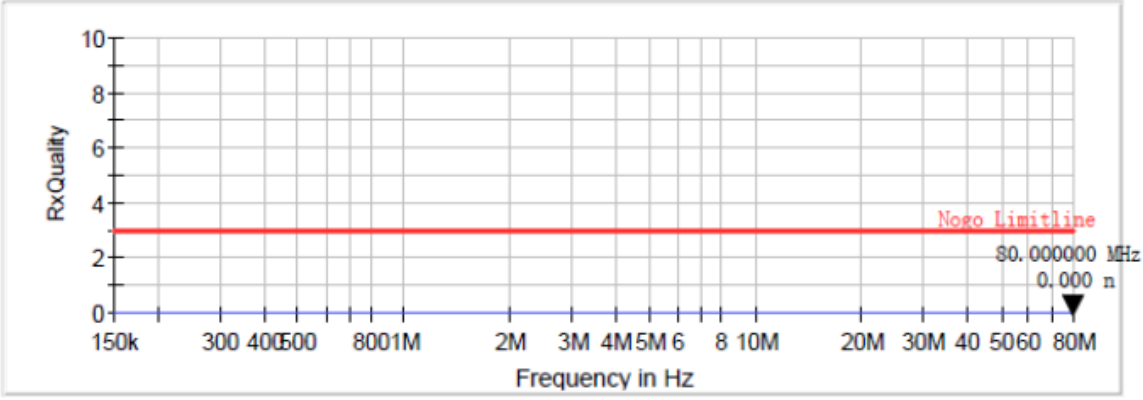
Uplink



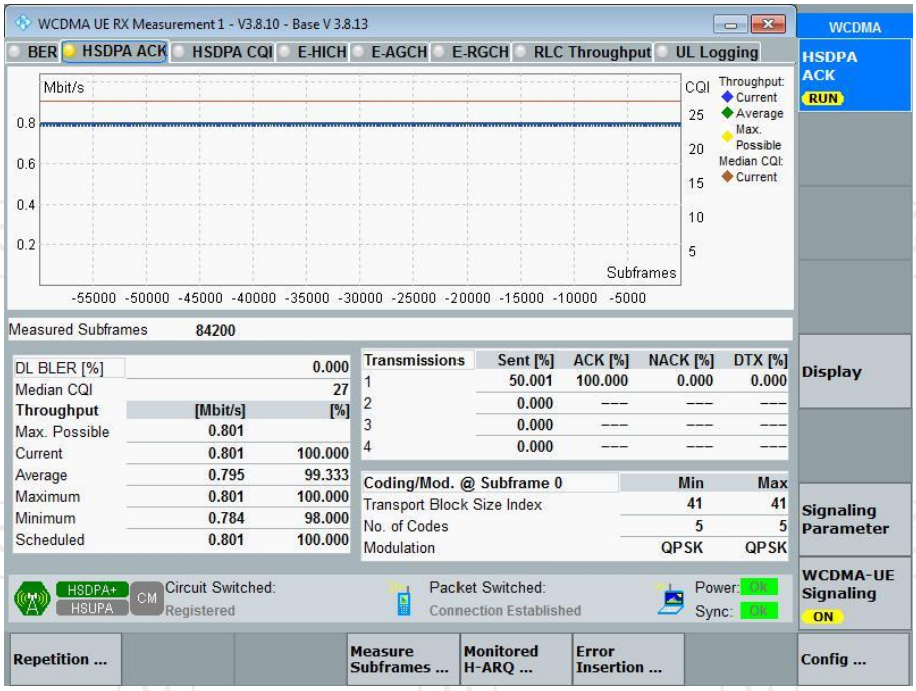
Downlink

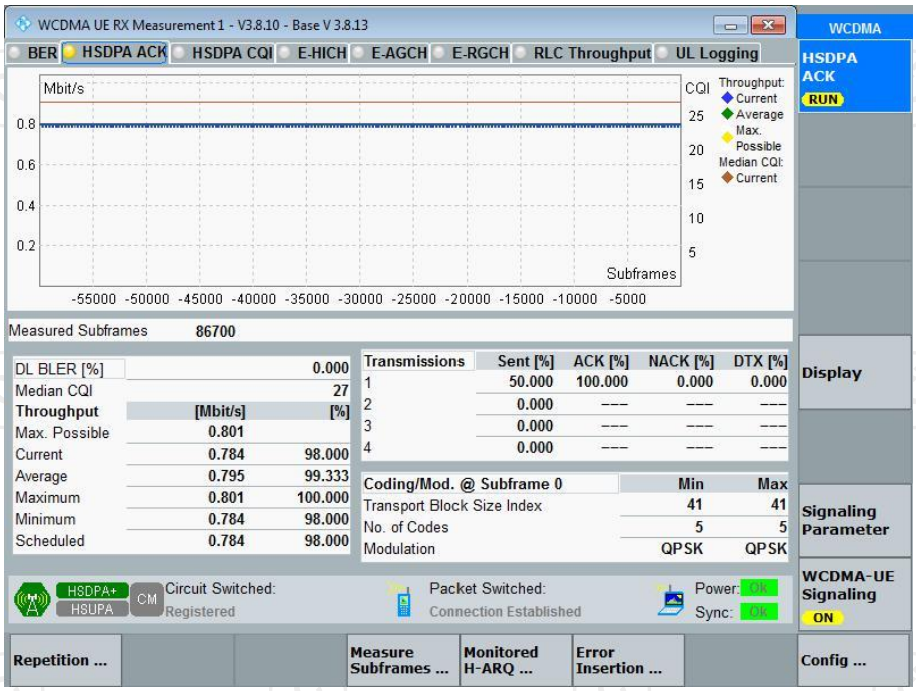


RxQuality

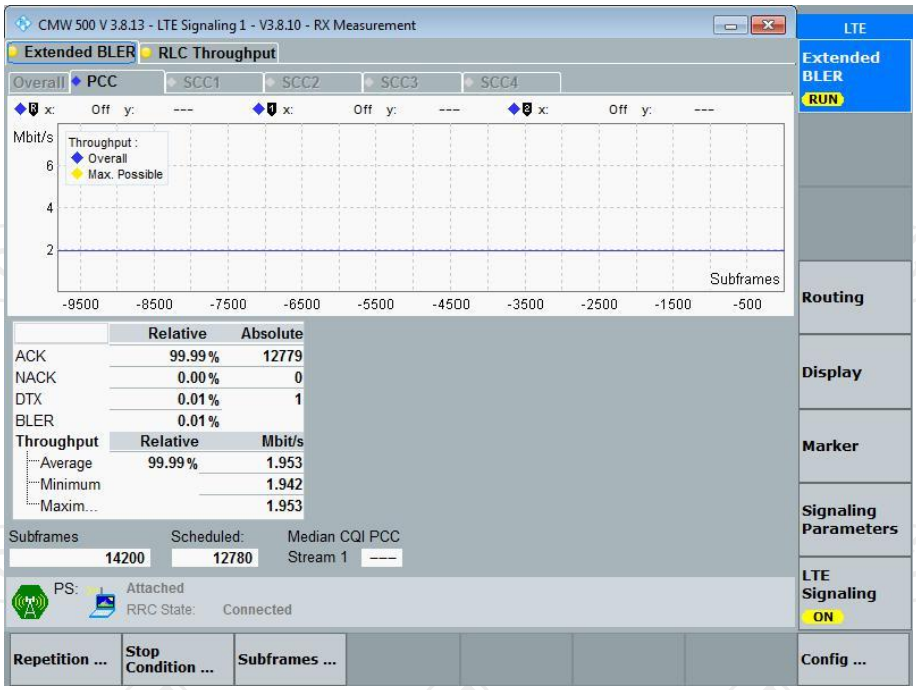


WCDMA:

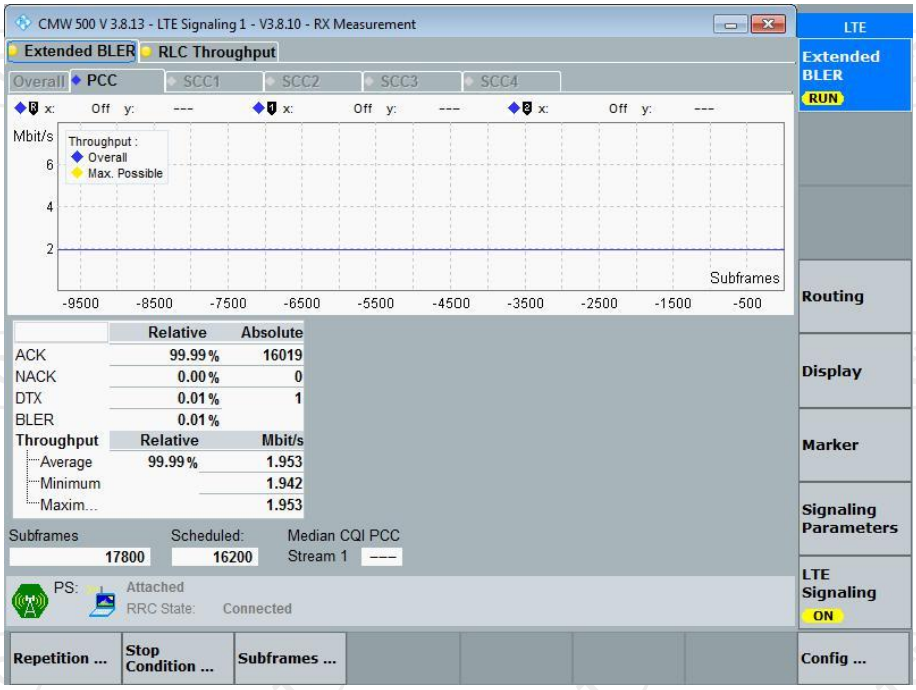

WCDMA UE RX Measurement 1 - V3.8.10 - Base V 3.8.13
BER HSDPA ACK HSDPA CQI E-HICH E-AGCH E-RGCH RLC Throughput UL Logging
WCDMA
HSDPA ACK
RUN
Mbit/s
CQI
Throughput: Current Average Max. Possible
Median CQI: Current
Subframes
-55000 -50000 -45000 -40000 -35000 -30000 -25000 -20000 -15000 -10000 -5000
Measured Subframes 84200
DL BLER [%] 0.000
Median CQI 27
Throughput [Mbit/s] [%]
Max. Possible 0.801
Current 0.801 100.000
Average 0.795 99.333
Maximum 0.801 100.000
Minimum 0.784 98.000
Scheduled 0.801 100.000
Transmissions Sent [%] ACK [%] NACK [%] DTX [%]
1 50.001 100.000 0.000 0.000
2 0.000 --- --- ---
3 0.000 --- --- ---
4 0.000 --- --- ---
Coding/Mod. @ Subframe 0 Min Max
Transport Block Size Index 41 41
No. of Codes 5 5
Modulation QPSK QPSK
HSDPA+ HSUPA CM
Circuit Switched: Registered
Packet Switched: Connection Established
Power: Ok
Sync: Ok
Display
Signaling Parameter
WCDMA-UE Signaling
ON
Repetition ...
Measure Subframes ...
Monitored H-ARQ ...
Error Insertion ...
Config ...


WCDMA UE RX Measurement 1 - V3.8.10 - Base V 3.8.13
BER HSDPA ACK HSDPA CQI E-HICH E-AGCH E-RGCH RLC Throughput UL Logging
WCDMA
HSDPA ACK
RUN
Mbit/s
CQI
Throughput: Current Average Max. Possible
Median CQI: Current
Subframes
-55000 -50000 -45000 -40000 -35000 -30000 -25000 -20000 -15000 -10000 -5000
Measured Subframes 86700
DL BLER [%] 0.000
Median CQI 27
Throughput [Mbit/s] [%]
Max. Possible 0.801
Current 0.784 98.000
Average 0.795 99.333
Maximum 0.801 100.000
Minimum 0.784 98.000
Scheduled 0.784 98.000
Transmissions Sent [%] ACK [%] NACK [%] DTX [%]
1 50.000 100.000 0.000 0.000
2 0.000 --- --- ---
3 0.000 --- --- ---
4 0.000 --- --- ---
Coding/Mod. @ Subframe 0 Min Max
Transport Block Size Index 41 41
No. of Codes 5 5
Modulation QPSK QPSK
HSDPA+ HSUPA CM
Circuit Switched: Registered
Packet Switched: Connection Established
Power: Ok
Sync: Ok
Display
Signaling Parameter
WCDMA-UE Signaling
ON
Repetition ...
Measure Subframes ...
Monitored H-ARQ ...
Error Insertion ...
Config ...

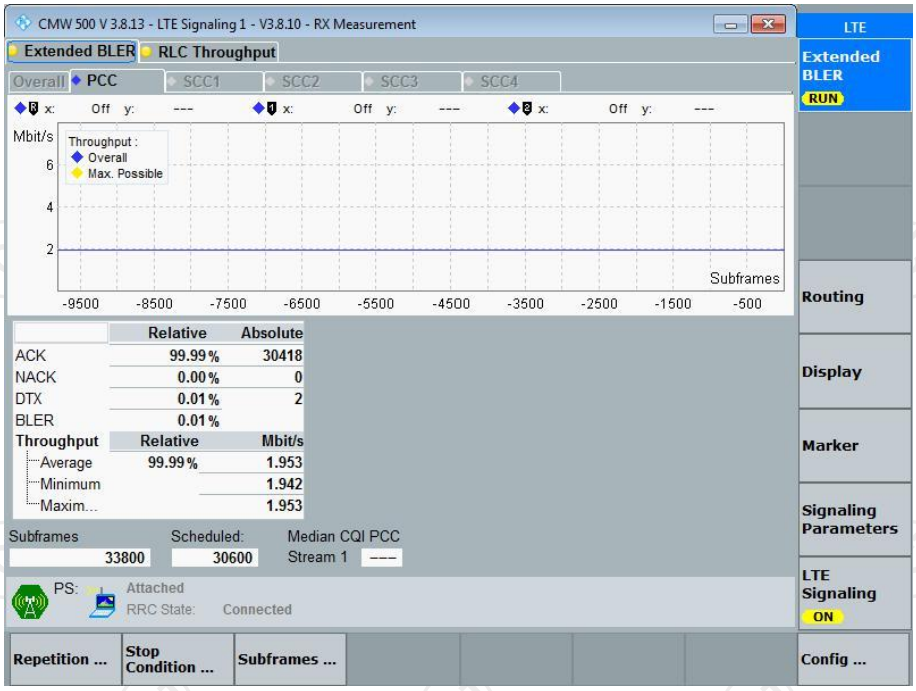
LTE Band 1



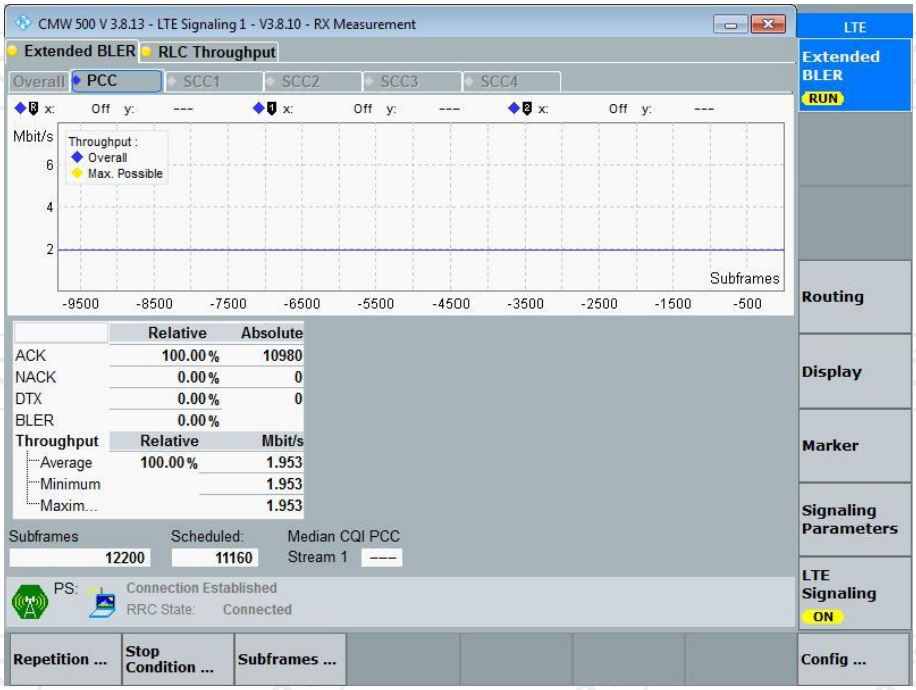
LTE Band 3



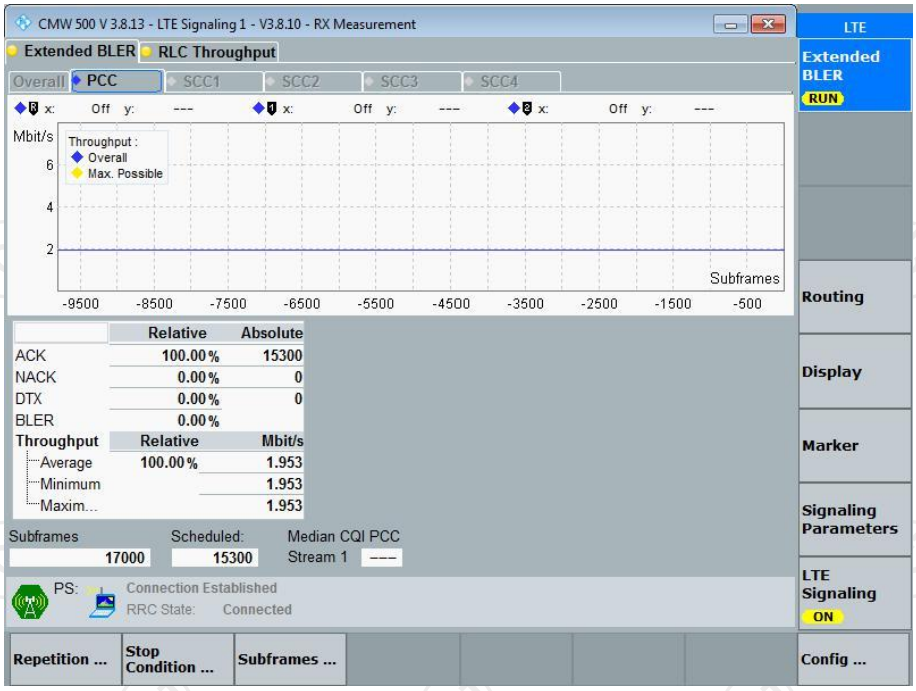
LTE Band 7



LTE Band 8

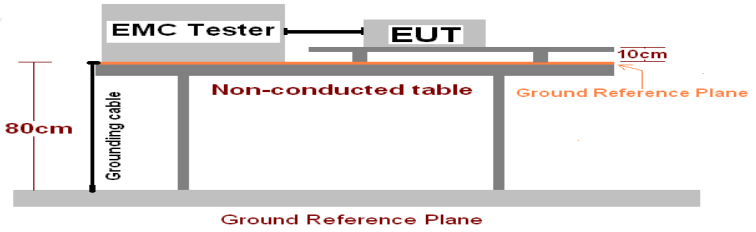


LTE Band 20



6.7. Voltage Dips and Voltage Interruption

6.7.1. Test Specification

Test Requirement:	ETSI EN 301489-1
Test Method:	EN 61000-4-11
Test Level:	0% of VT(Supply Voltage) for 0.5 period 0% of VT(Supply Voltage) for 1.0 period 70% of VT(Supply Voltage) for 25 period 0% of VT(Supply Voltage) for 250 period
No. of Dips / Interruptions:	3 per Level
Test setup:	
Test Procedure:	1. The EUT and test generator were setup as shown on above setup photo. 2. The interruptions are introduced at selected phase angles with specified duration. 3. Record any degradation of performance.
Test Instrument:	Refer to Section 3.3 for Details
Test Mode:	Refer to Section 3.1 for Details
Test Result:	PASS

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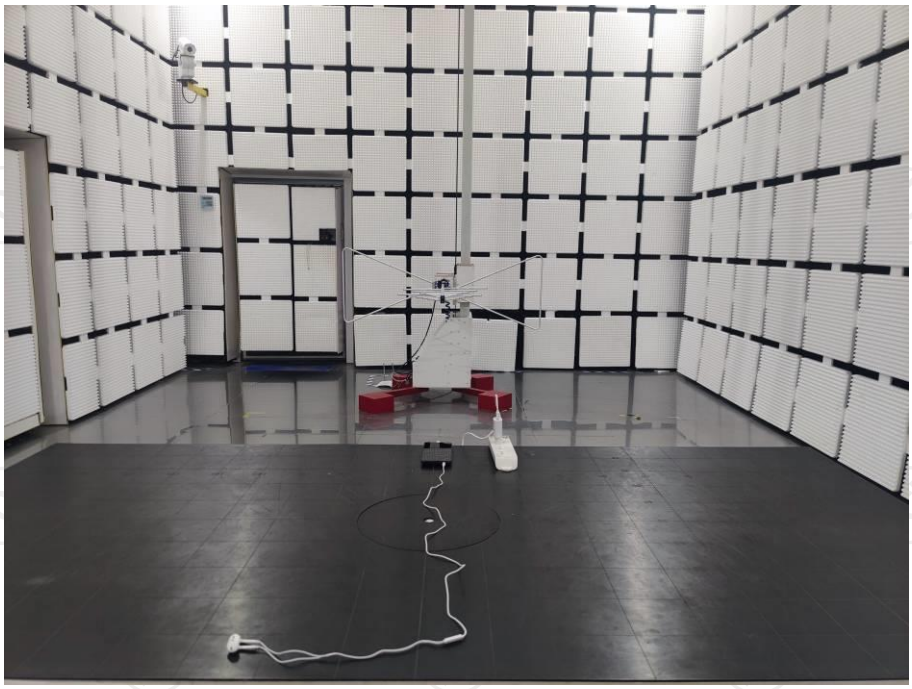
6.7.2. Test Data

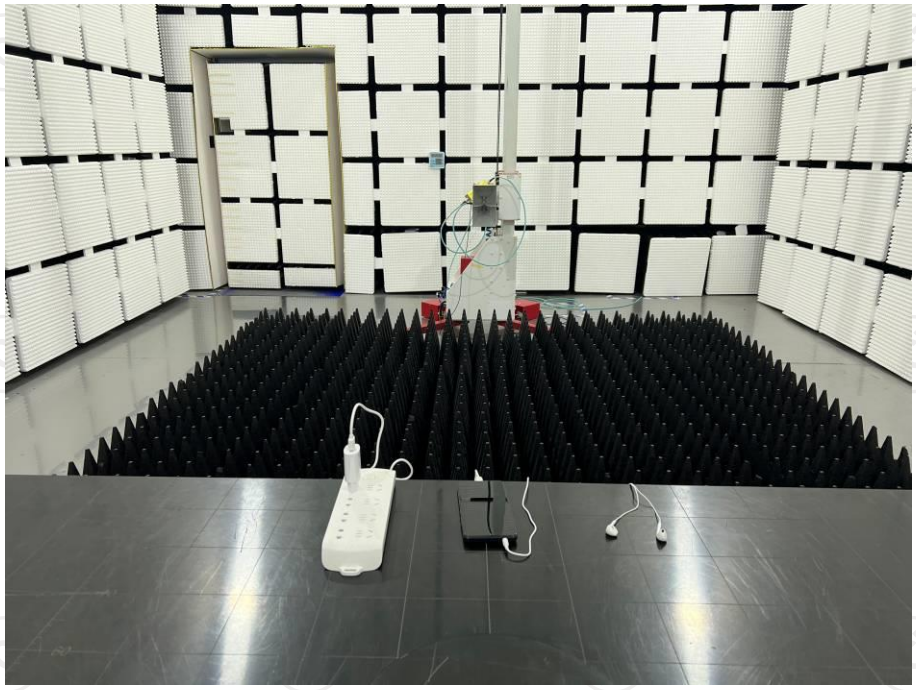
Test Level % U_T	Duration (Periods)	Phase angle	No of dropout	Time between dropout	Observation Criterion	Result
0	0.5	0°, 90°, 180°, 270°	3	10s	B	PASS
0	1	0°, 90°, 180°, 270°	3	10s		
70	25	0°, 90°, 180°, 270°	3	10s		
0	250	0°, 90°, 180°, 270°	3	10s		

Note: *When testing, the charging function had been interrupted. After testing, this function recovered automatically.*

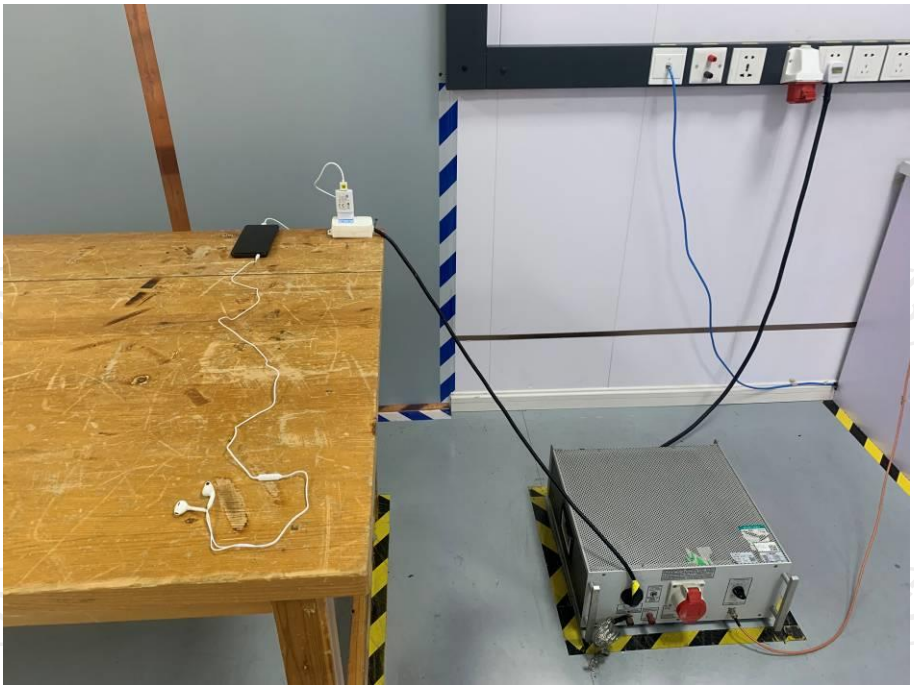
7. Photographs of Test Configuration

Radiated Emission





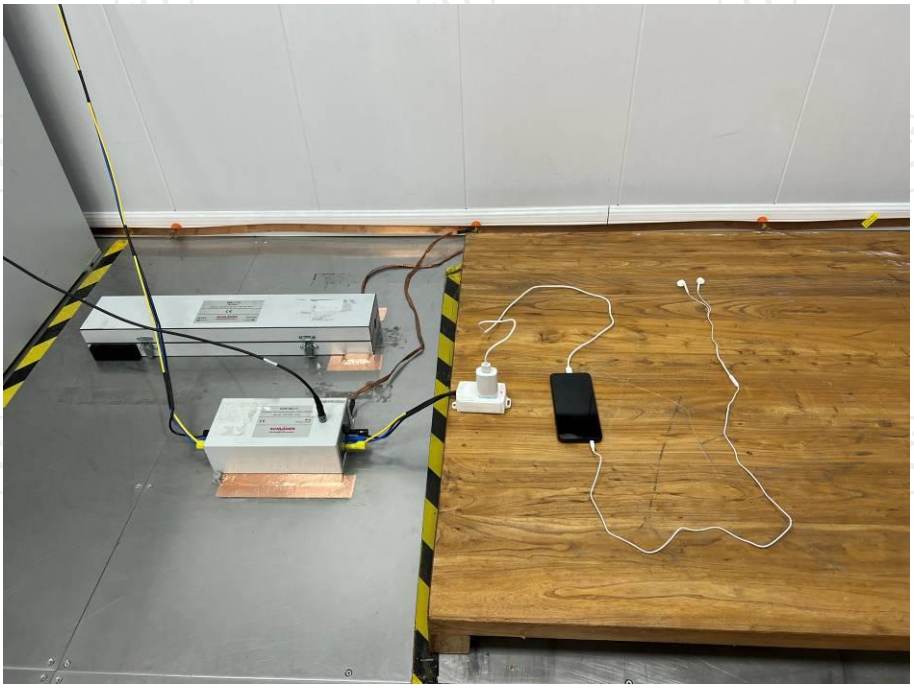
CE



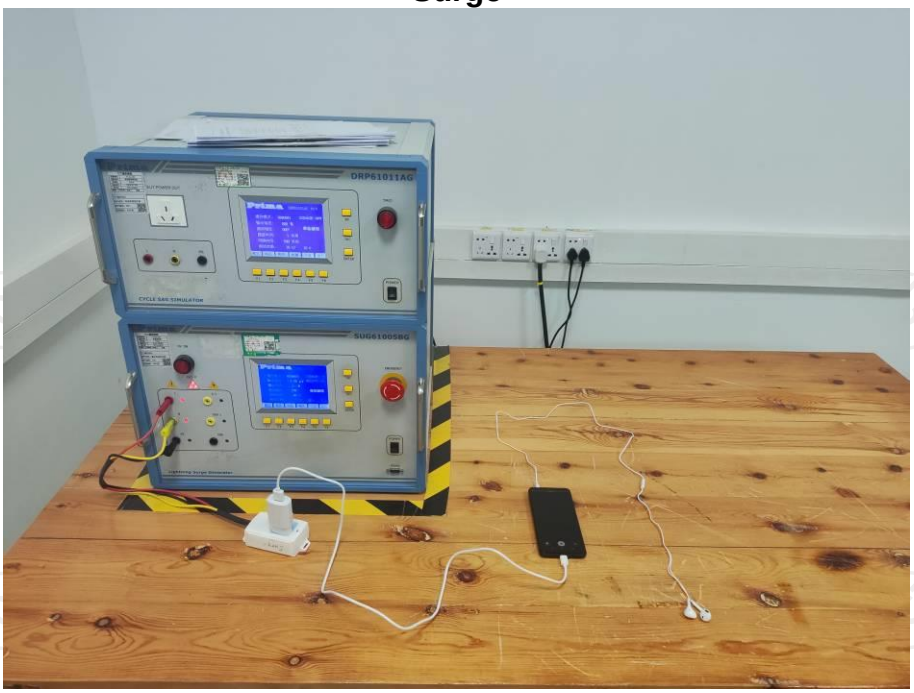
ESD

Flicker

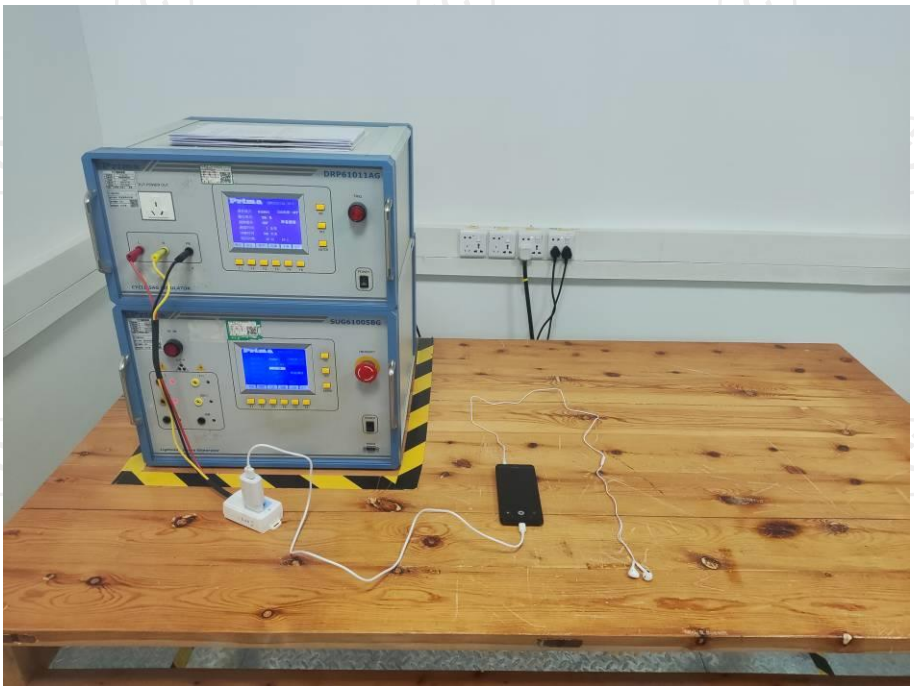
CS



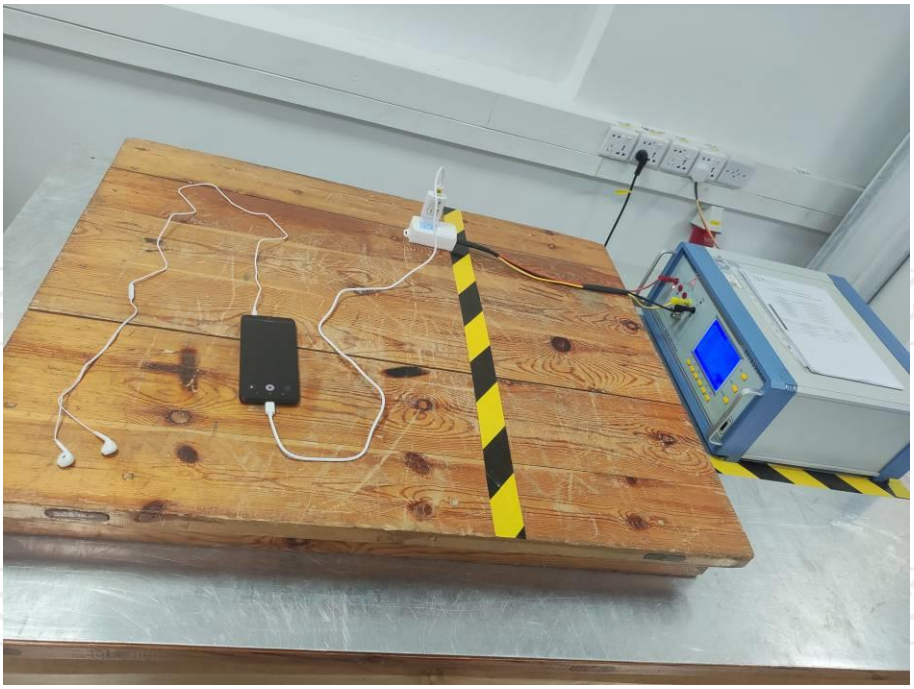
Surge



DIPS



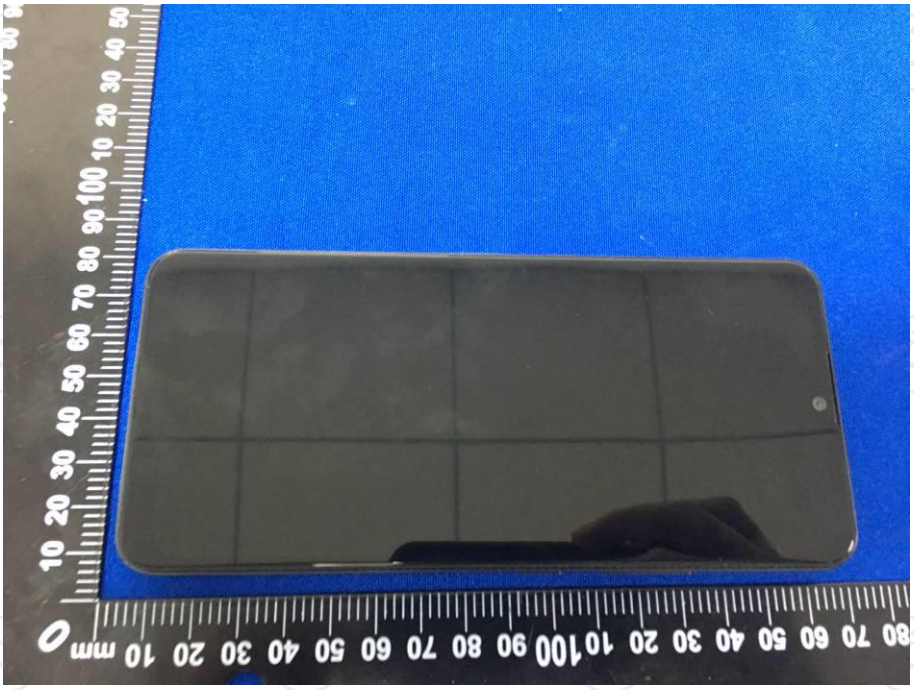
EFT



RS

8. Photographs of EUT

Outside View



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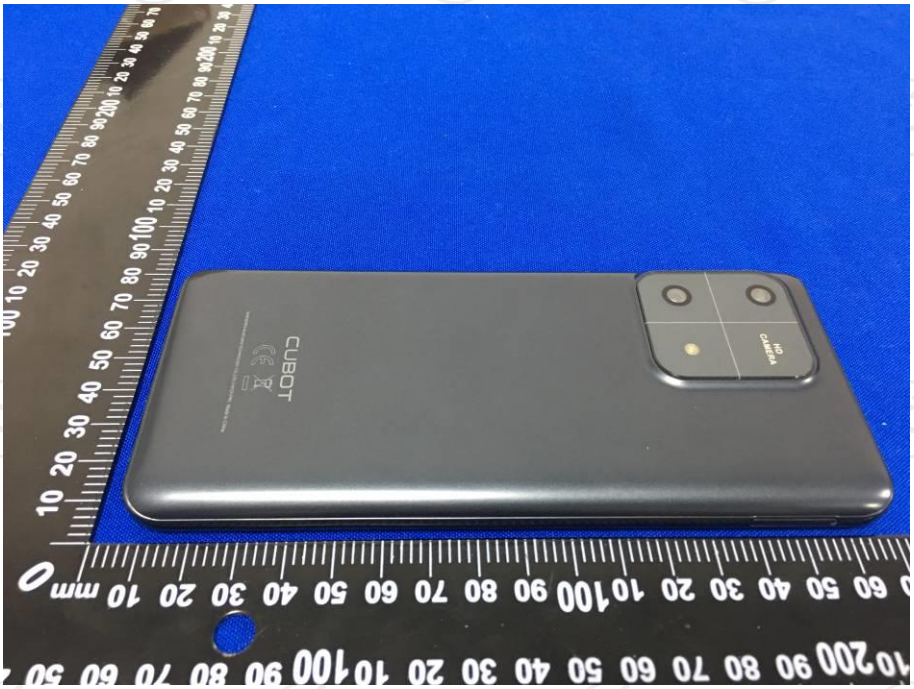
CUBOT
HD CAMERA


CUBOT
HD CAMERA

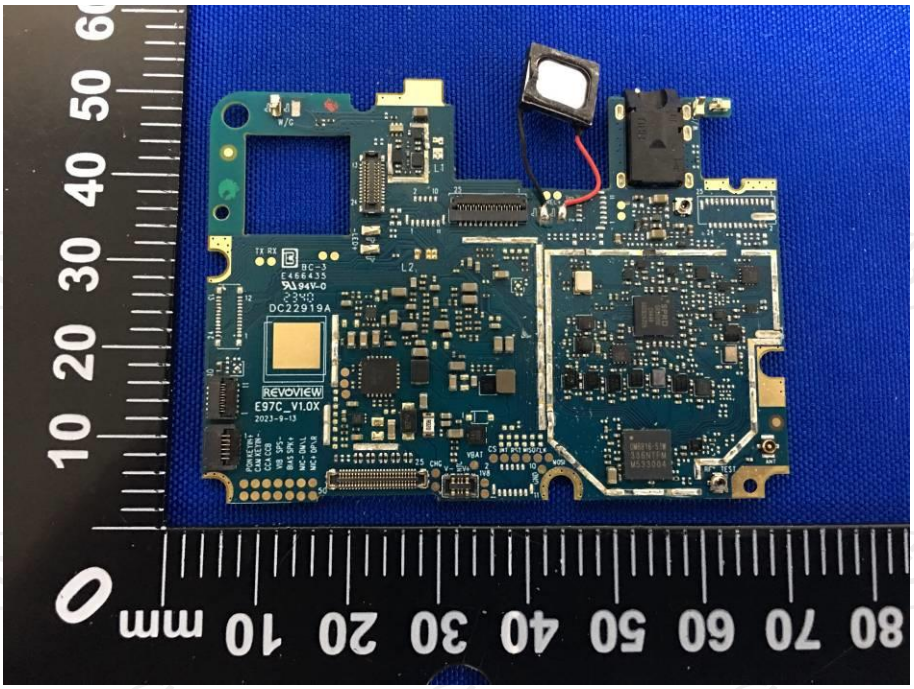

CUBOT

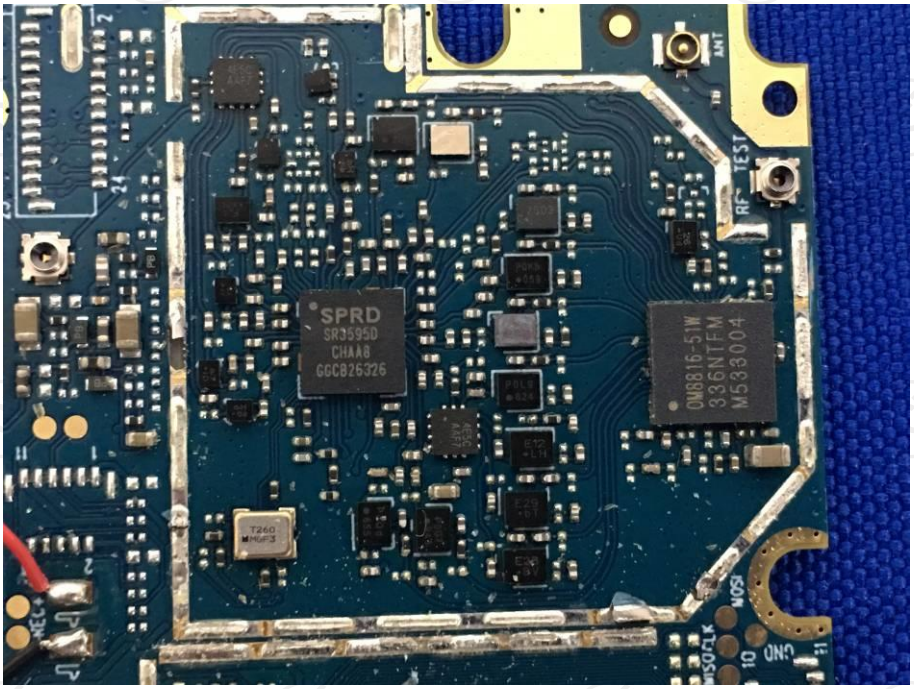

CUBOT
HD CAMERA

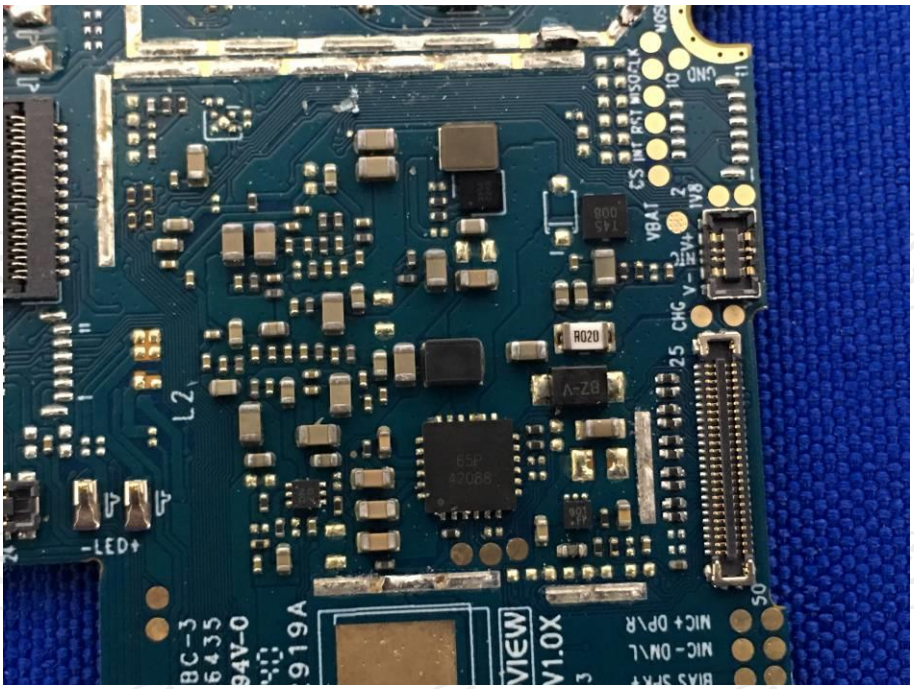

CUBOT
HD CAMERA

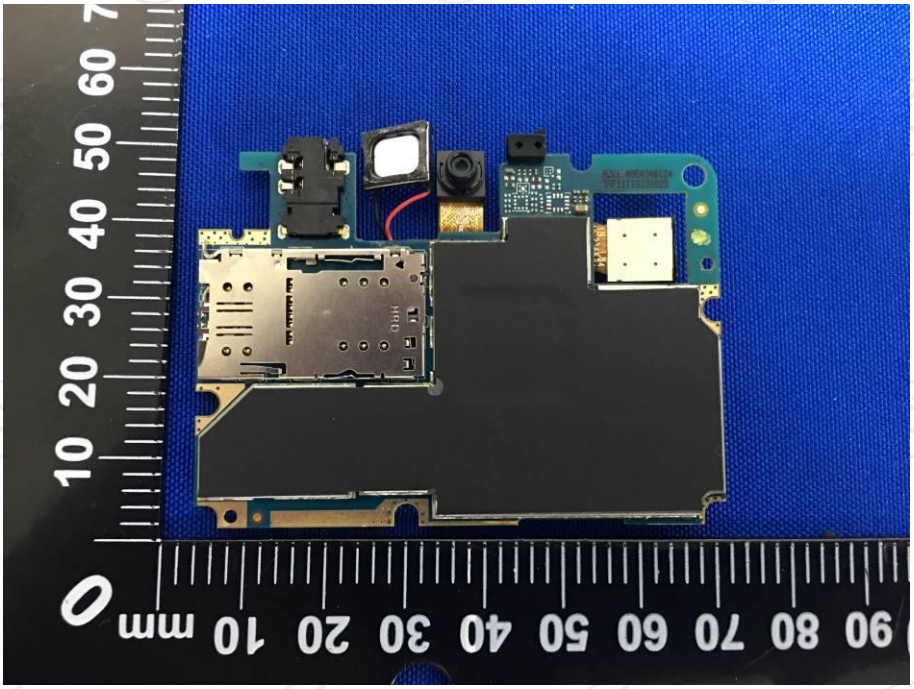

AC Power Adapter
Model: HJ-0502000W2-EU
Input: 100-240V~50/60Hz 0.3A
Output: 5.0V ⎓ 2.0A
Output Power:10.0W
MADE IN CHINA
ShenZhen HuaJin Electronics CO.,LTD

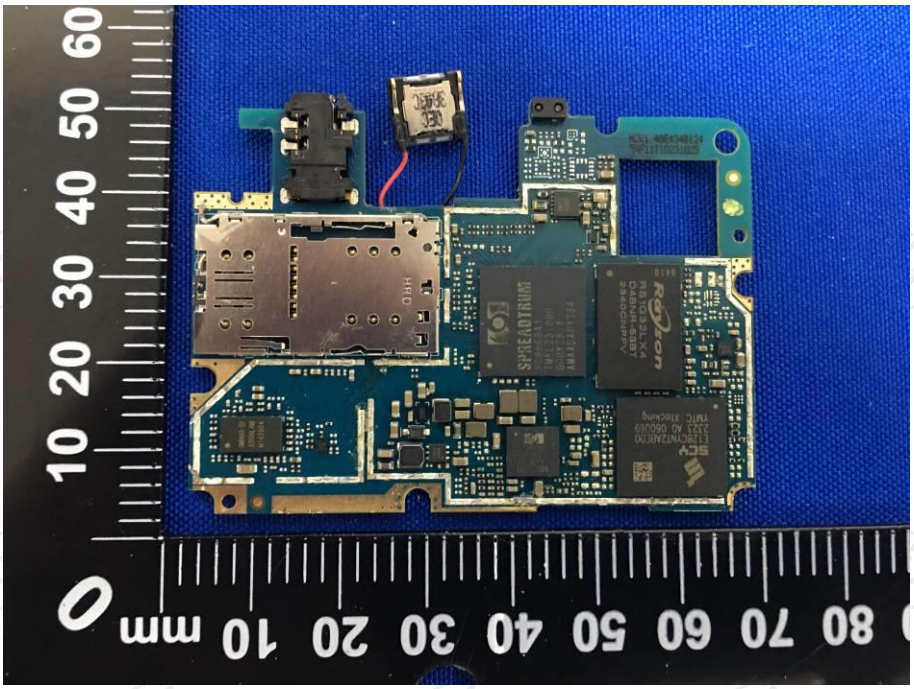
Inside View

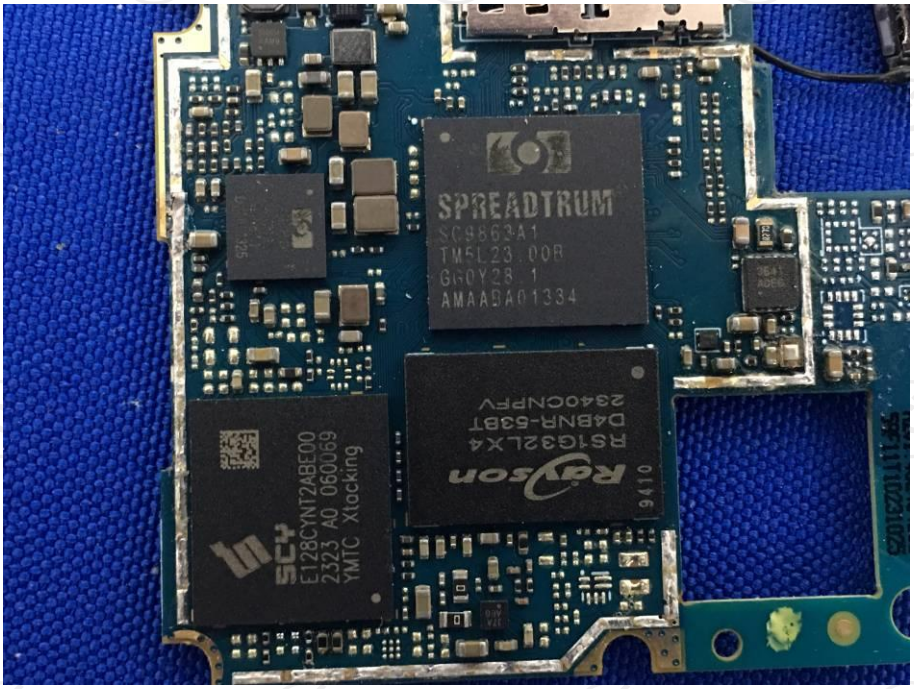

REVOVIEW
E97C_V1.0X
2023-9-13
DC22919A

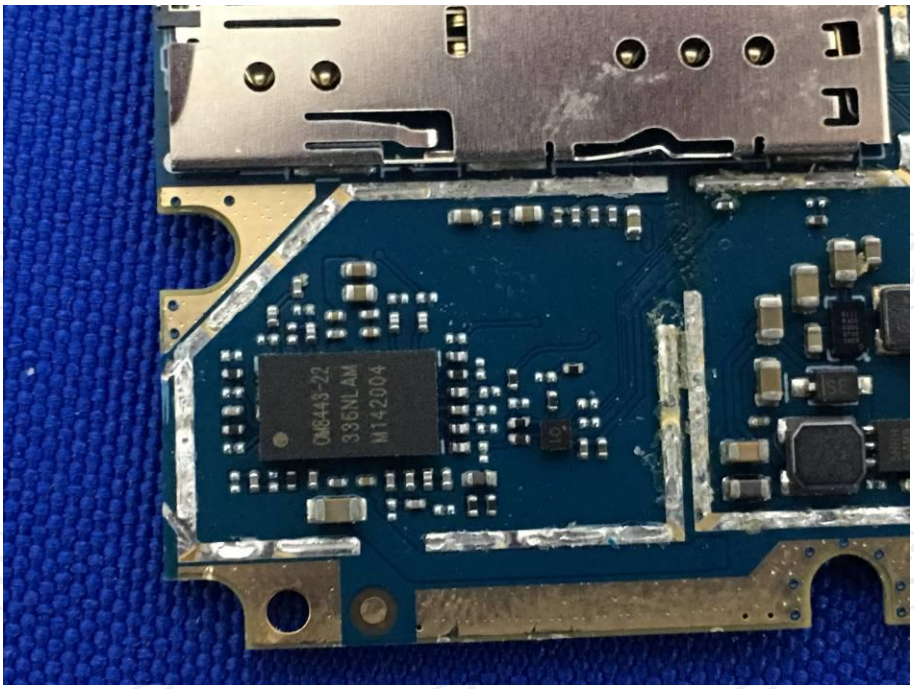

SPRD
SR3595D
CHAA8
GCC826326
QM8816-51W
336NTFM
M533004
RF_TEST
ANT

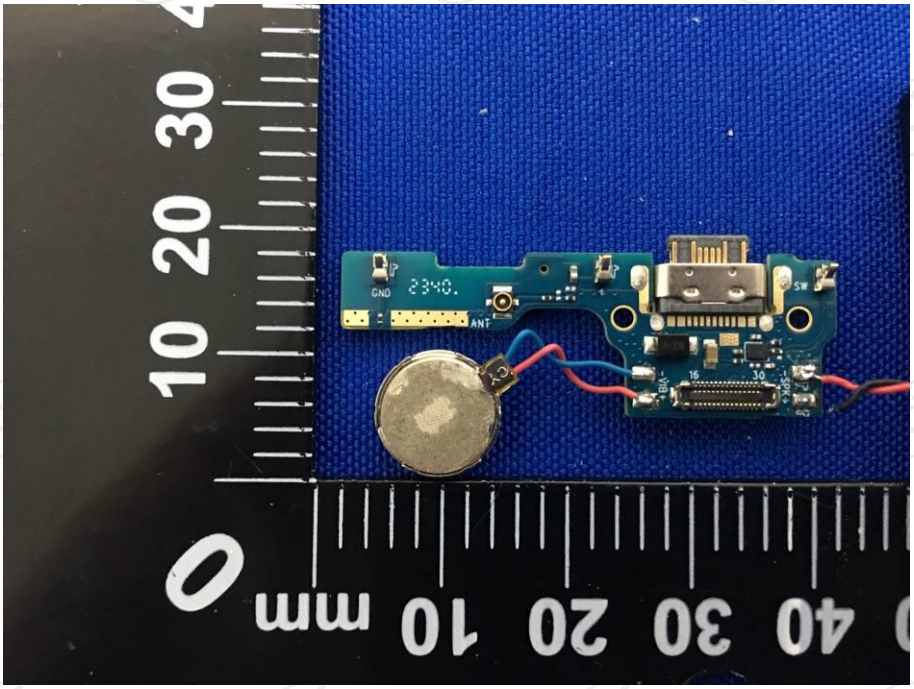

-LED+
L2
R020
VBAT
CHG
V1.0X

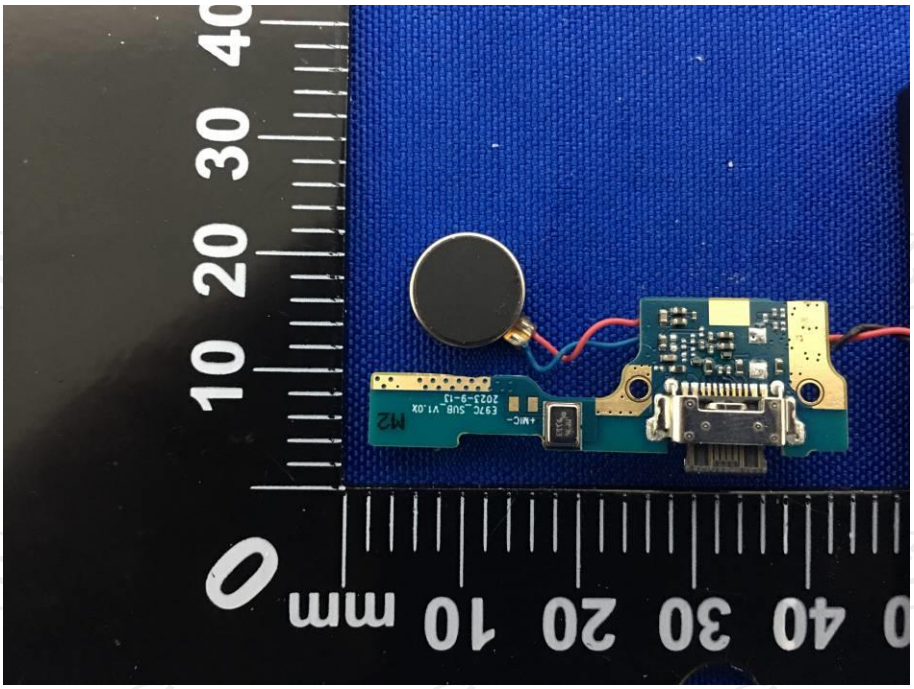

mm
0
10
20
30
40
50
60
70
80
90



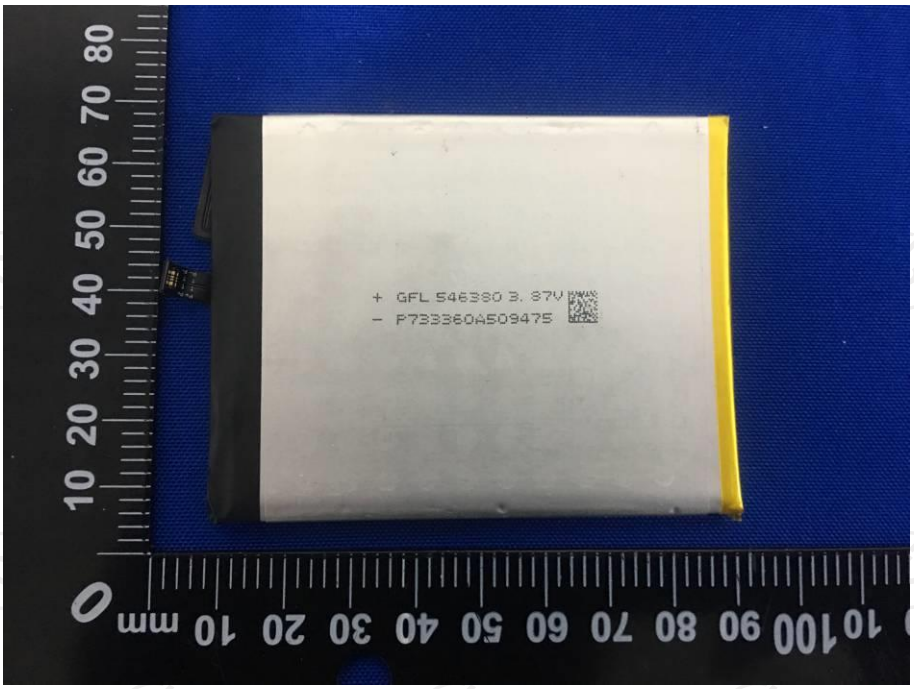



CM6443-22
336NLAM
M142004


0
10
20
30
mm
10
20
30
40
GND
2340.
ANT




MODEL : C48
1ICP6/63/82
Rechargeable Li-polymer battery
Rated Capacity :5100 mAh/19.74Wh
Nominal Voltage:3.87V
Charging Limit Voltage:4.45V
Shenzhenshi jiuliyuan electronic technology co.,LTD
CAUTION
Do not charge or expose battery pack out of the temperature range 0℃-45℃
Use the authorized charger only
Do not disassemble this battery
Do not short-circuit this battery
Do not expose battery to open flames
Dispose of the battery appropriately
SN: JLYD1212023112500213
Standard: GB 31241-2014
Made in China
Li-Polymer



*****END OF REPORT*****

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