



TEST REPORT

APPLICANT : Bullitt Group

PRODUCT NAME : 4G Mobile Phone

MODEL NAME : S62

BRAND NAME : CAT

FCC ID : ZL5S62

STANDARD(S) : 47 CFR Part 22 Subpart H
47 CFR Part 24 Subpart E
47 CFR Part 27 Subpart L

RECEIPT DATE : 2021-06-04

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Change History		
Version	Date	Reason for change
1.0	2021-08-20	First edition





1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Bullitt Group
Applicant Address:	One Valpy, Valpy Street, Reading, Berkshire, RG1 1AR, United Kingdom
Manufacturer:	Bullitt Group
Manufacturer Address:	One Valpy, Valpy Street, Reading, Berkshire, RG1 1AR, United Kingdom

1.2. Equipment Under Test (EUT) Description

Product Name:	4G Mobile Phone	
Sample No.:	1#	
Hardware Version:	Q190_V1	
Software Version:	LTE_S02111.10_N_S62_0	
Modulation Type:	GSM/GPRS Mode with GMSK Modulation EDGE Mode with 8PSK Modulation WCDMA Mode with QPSK Modulation HSDPA Mode with QPSK Modulation HSUPA Mode with QPSK Modulation HSPA+ Mode with 16QAM Modulation	
Operating Frequency Range:	GSM 850MHz	Tx: 824MHz-849MHz
		Rx: 869MHz-894MHz
	GSM 1900MHz	Tx: 1850MHz-1910MHz
		Rx: 1930MHz-1990MHz
	WCDMA Band V	Tx: 824MHz-849MHz
		Rx: 869MHz-894MHz
WCDMA Band IV	Tx: 1710MHz-1755MHz	
	Rx: 2110MHz-2155MHz	
WCDMA Band II	Tx: 1850MHz-1910MHz	
	Rx: 1930MHz-1990MHz	





Antenna Type:	Fixed Internal Antenna	
Antenna Gain:	GSM 850:	-1.10dBi
	GSM1900:	-2.00dBi
	WCDMA Band V:	-1.10dBi
	WCDMA Band IV:	-0.10dBi
	WCDMA Band II:	-2.00dBi
Accessory Information:	Battery	
	Brand Name:	Gaoyuan Battery
	Model No.:	XQ6602G
	Serial No.:	N/A
	Capacity:	4000mAh
	Rated Voltage:	3.8V
	Charge Limit:	4.35V
	Manufacturer:	Hunan Gaoyuan Battery Co., Ltd.
	AC Adapter 1	
	Brand Name:	AOHAI
	Model No.:	A138-120150C-US1
	Serial No.:	N/A
	Rated Output:	5V=3A, 9V=2A, 12V=1.5A 3.3-5.9V=3A, 3.3-11V=2A
	Rated Input:	100-240V~50/60Hz, 0.5A
	Manufacturer:	Jiangxi Jian Aohai Technology Co.,Ltd.
	AC Adapter 2	
	Brand Name:	N/A
	Model No.:	ZSS-018U120150
	Serial No.:	N/A
	Rated Output:	5V=3A, 9V=2A, 12V=1.5A 3.3-5.9V=3A, 3.3-11V=2A
	Rated Input:	100-240V~50/60Hz, 0.5A
	Manufacturer:	Zhuzhou Zopoise Technology Co., Ltd





Note 1: This is a variant report to request a Class II Permissive change for the original report (Report No.: XM20070009W02, FCC ID: ZL5S62) which issued on Feb 19, 2021 by XIAMEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.

Based on the similarity between before, modify the antenna and add an adapter. Antenna optimization, antenna pattern, antenna matching and antenna gain are different. The antenna type remains unchanged. Due to the above changes, we have evaluated and retested conducted power and worst case of radiated spurious emissions, the test results are better than before, all other test items are no need to be retested. We only recorded the conducted power, E.I.P.R./E.R.P. and worse case of radiated spurious emissions in this report.

Note 2: The transmitter (Tx) frequency arrangement of the Cellular 850MHz band used by the EUT can be represented with the formula $F(n)=824.2+0.2*(n-128)$, $128 \leq n \leq 251$; the lowest, middle, highest channel numbers (ARFCHs) used and tested in this report are separately 128 (824.2MHz), 189 (836.4MHz) and 251 (848.8MHz).

Note 3: The transmitter (Tx) frequency arrangement of the PCS 1900MHz band used by the EUT can be represented with the formula $F(n)=1850.2+0.2*(n-512)$, $512 \leq n \leq 810$; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 512 (1850.2MHz), 661 (1880.0MHz) and 810 (1909.8MHz).

Note 4: The transmitter (Tx) frequency arrangement of the WCDMA Band V used by the EUT can be represented with the formula $F(n)=826.4+0.2*(n-4132)$, $4132 \leq n \leq 4233$; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 4132 (826.4MHz), 4182(836.4MHz) and 4233 (846.6MHz).

Note 5: The transmitter (Tx) frequency arrangement of the WCDMA IV band used by the EUT can be represented with the formula $F(n)=1712.4+0.2*(n-1312)$, $1312 \leq n \leq 1513$; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 1312 (1712.4MHz), 1413 (1732.6MHz) and 1513 (1752.6MHz).

Note 6: The transmitter (Tx) frequency arrangement of the WCDMA Band II used by the EUT can be represented with the formula $F(n)=1852.4+0.2*(n-9262)$, $9262 \leq n \leq 9538$; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 9262 (1852.4MHz), 9400 (1880MHz) and 9538 (1907.6MHz).

Note 7: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.





1.3. Maximum E.R.P./E.I.R.P.

Test Mode	Maximum E.R.P./E.I.R.P. (W)
GSM850(GSM)	0.736
GSM850(EDGE)	0.172
GSM1900(GSM)	0.562
GSM1900(EDGE)	0.214
WCDMA Band V	0.110
WCDMA Band IV	0.144
WCDMA Band II	0.086



1.4. Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 2, Part 22, Part 24 and Part 27 for the EUT FCC ID Certification:

No.	Identity	Document Title
1	47 CFR Part 2 (10-1-12 Edition)	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22 (10-1-12 Edition)	Public Mobile Services
3	47 CFR Part 24 (10-1-12 Edition)	Personal Communications Services
4	47 CFR Part 27 (10-1-12 Edition)	Miscellaneous Wireless Communications Services

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Test Date	Test Engineer	Result	Method Determination/ Remark
1	2.1046	Conducted RF Output Power	Aug 16, 2021	Liang Yumei	PASS	No deviation
2	22.913(a), 24.232(c) 27.50(d)	Transmitter Radiated Power (EIPR/E.R.P.)	Aug 17, 2021	Huang Zhiye	PASS	No deviation
3	2.1051, 22.917(a), 24.238(a), 27.53(h)	Radiated Out of Band Emissions	Jul 04, 2021	Lin Jiayong	PASS	No deviation

Note 1: The test results of all test items please refer to the original test report (Report No.: XM20070009W02, FCC ID: ZL5S62) which issued on Feb 19, 2021 by XIAMEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.

Note 2: Additions to, deviation, or exclusions from the method shall be judged in the "method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.

Note 3: When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% confidence intervals.

1.5. Environmental Conditions

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

Temperature (°C):	15-35
Relative Humidity (%):	30-60
Atmospheric Pressure (kPa):	86-106



2.47 CFR Part 2, Part 22H , 24E&27L Requirements

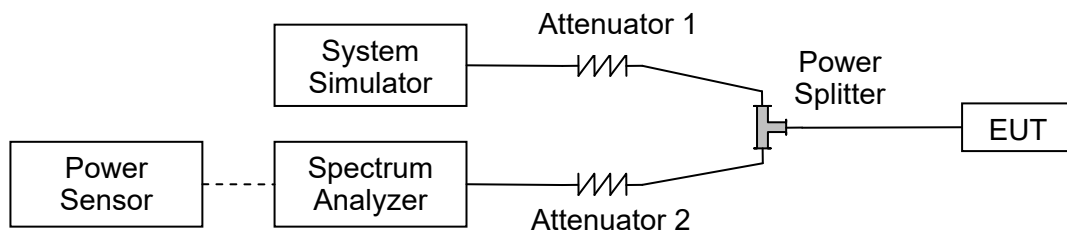
2.1. Conducted RF Output Power

2.1.1. Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

2.1.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS.



**2.1.3. Test Results**

GSM850	Average Power (dBm)		
TX Channel	128	189	251
Frequency (MHz)	824.2	836.4	848.8
GSM 1 Tx slot	31.92	31.70	31.77
GPRS 1 Tx slot	31.88	31.66	31.69
GPRS 2 Tx slots	31.52	31.51	31.50
GPRS 3 Tx slots	31.14	31.11	31.10
GPRS 4 Tx slots	30.62	30.64	30.74
EDGE 1 Tx slot	25.61	25.39	25.41
EDGE 2 Tx slots	25.21	25.16	25.11
EDGE 3 Tx slots	25.05	25.13	24.97
EDGE 4 Tx slots	24.39	24.30	24.35

GSM1900	Average Power (dBm)		
TX Channel	512	661	810
Frequency (MHz)	1850.2	1880	1909.8
GSM 1 Tx slot	29.32	29.36	29.50
GPRS 1 Tx slot	29.23	29.31	29.40
GPRS 2 Tx slots	25.86	25.96	26.15
GPRS 3 Tx slots	24.50	24.54	24.61
GPRS 4 Tx slots	23.24	23.31	23.54
EDGE 1 Tx slot	25.29	25.28	25.31
EDGE 2 Tx slots	23.19	23.02	23.35
EDGE 3 Tx slots	21.42	21.35	21.58
EDGE 4 Tx slots	20.32	20.12	20.55





WCDMA Band V	Average Power (dBm)		
TX Channel	4132	4182	4233
Frequency (MHz)	826.4	836.4	846.6
RMC 12.2Kbps	23.65	23.52	23.48
HSDPA Subtest-1	22.71	22.59	22.76
HSDPA Subtest-2	22.31	22.35	22.62
HSDPA Subtest-3	21.62	21.25	21.63
HSDPA Subtest-4	21.10	21.44	21.61
HSUPA Subtest-1	21.98	21.81	22.25
HSUPA Subtest-2	19.69	20.49	20.47
HSUPA Subtest-3	21.49	20.95	21.17
HSUPA Subtest-4	20.36	19.97	20.15
HSUPA Subtest-5	21.94	21.63	22.19
HSPA+ (16QAM) Subtest-1	19.05	19.22	19.54

WCDMA Band IV	Average Power (dBm)		
TX Channel	1312	1413	1513
Frequency (MHz)	1712.4	1732.6	1752.6
RMC 12.2Kbps	21.67	21.51	21.59
HSDPA Subtest-1	21.53	21.41	21.64
HSDPA Subtest-2	21.40	21.29	21.33
HSDPA Subtest-3	20.43	20.15	20.29
HSDPA Subtest-4	20.13	19.97	20.11
HSUPA Subtest-1	20.79	20.69	21.08
HSUPA Subtest-2	19.27	19.18	18.73
HSUPA Subtest-3	20.16	20.08	20.28
HSUPA Subtest-4	19.00	19.20	19.14
HSUPA Subtest-5	20.69	20.84	20.96
HSPA+ (16QAM) Subtest-1	18.25	17.88	18.75





WCDMA Band II	Average Power (dBm)		
	9262	9400	9538
TX Channel	9262	9400	9538
Frequency (MHz)	1852.4	1880.0	1907.6
RMC 12.2Kbps	21.35	21.06	21.12
HSDPA Subtest-1	21.24	21.00	20.91
HSDPA Subtest-2	21.04	20.92	20.80
HSDPA Subtest-3	20.17	19.90	19.86
HSDPA Subtest-4	20.12	19.82	19.77
HSUPA Subtest-1	20.88	20.64	20.82
HSUPA Subtest-2	18.73	18.71	18.87
HSUPA Subtest-3	19.70	19.54	19.56
HSUPA Subtest-4	18.48	18.66	18.90
HSUPA Subtest-5	20.59	20.44	20.15
HSPA+ (16QAM) Subtest-1	18.24	18.04	18.34



2.2. Determining E.R.P. and/or E.I.R.P. from conducted RF output power measurements

2.2.1. Requirement

According to FCC section 22.913, the Effective Radiated Power (E.R.P.) of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

According to FCC section 24.232, the broadband PCS mobile station is limited to 2 Watts e.i.r.p. peak power.

According to FCC section 27.50, mobile, and portable (hand-held) stations is limited to 1 Watts e.i.r.p. peak power.

2.2.2. Test Description

The test setups refer to section 2.1.3

A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power (i.e. GSM850MHz band Power Control Level (PCL) = 5/19 and Power Class = 4, GSM1900MHz band Power Control Level (PCL) = 0/15 and Power Class = 1), and only the test result of the maximum output power was recorded. Please refer to section 2.1.3 of this report.

The relevant equation for determining the maximum E.R.P. or E.I.R.P. from the measured RF output power is given in Equation (1) as follows:

$$\text{E.R.P. or E.I.R.P.} = P_{\text{Meas}} + G_{\text{T}}$$

Where:

E.R.P. or E.I.R.P. effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas} , e.g., dBm or dBW)

P_{Meas} measured transmitter output power or PSD, in dBm or dBW

G_{T} gain of the transmitting antenna, in dBd (E.R.P.) or dBi (E.I.R.P.)

For devices utilizing multiple antennas, see ANSI C63.25-2015 6.4 for guidance with respect to determining the effective array transmit antenna gain term to be used in the above equation.

The following equations demonstrate the mathematical relationship between E.R.P. and E.I.R.P.:

a) E.R.P. = E.I.R.P. - 2.15, where E.R.P. and E.I.R.P. are expressed in consistent units.

b) E.I.R.P. = E.R.P. + 2.15, where E.R.P. and E.I.R.P. are expressed in consistent units.





2.2.3.Test Result

GSM850								
Band	Channel	Frequency (MHz)	PCL	Measured E.R.P.		Limit		Verdict
				dBm	W	dBm	W	
GSM	128	824.20	5	28.67	0.736	38.5	7	PASS
	189	836.40	5	28.45	0.700			PASS
	251	848.80	5	28.52	0.711			PASS
GPRS	128	824.20	5	28.63	0.729	38.5	7	PASS
	189	836.40	5	28.41	0.693			PASS
	251	848.80	5	28.44	0.698			PASS
EDGE	128	824.20	5	22.36	0.172	38.5	7	PASS
	189	836.40	5	22.14	0.164			PASS
	251	848.80	5	22.16	0.164			PASS

Note 1: For the GPRS and EDGE mode, all the slots were tested and just the worst data were recorded in this report.

GSM1900								
Band	Channel	Frequency (MHz)	PCL	Measured E.I.R.P.		Limit		Verdict
				dBm	W	dBm	W	
GSM	512	1850.2	0	27.32	0.540	33	2	PASS
	661	1880.0	0	27.36	0.545			PASS
	810	1909.8	0	27.50	0.562			PASS
GPRS	512	1850.2	0	27.23	0.528	33	2	PASS
	661	1880.0	0	27.31	0.538			PASS
	810	1909.8	0	27.40	0.550			PASS
EDGE	512	1850.2	0	23.29	0.213	33	2	PASS
	661	1880.0	0	23.28	0.213			PASS
	810	1909.8	0	23.31	0.214			PASS

Note 1: For the GPRS and EDGE mode, all the slots were tested and just the worst data were recorded in this report.



WCDMA Band V							
Band	Channel	Frequency (MHz)	Measured E.R.P.		Limit		Verdict
			dBm	W	dBm	W	
WCDMA	4132	826.4	20.40	0.110	38.5	7	PASS
	4182	836.4	20.27	0.106			PASS
	4233	846.6	20.23	0.105			PASS
HSDPA	4132	826.4	19.46	0.088	38.5	7	PASS
	4182	836.4	19.34	0.086			PASS
	4233	846.6	19.51	0.089			PASS
HSUPA	4132	826.4	18.73	0.075	38.5	7	PASS
	4182	836.4	18.56	0.072			PASS
	4233	846.6	19.00	0.079			PASS
HSPA+	4132	826.4	15.80	0.038	38.5	7	PASS
	4182	836.4	15.97	0.040			PASS
	4233	846.6	16.29	0.043			PASS

Note 1: For the HSDPA and HSUPA mode, all the subtests were tested and just the worst data were recorded in this report.

WCDMA Band IV							
Band	Channel	Frequency (MHz)	Measured E.I.R.P.		Limit		Verdict
			dBm	W	dBm	W	
WCDMA	1312	1712.4	21.57	0.144	30	1	PASS
	1413	1732.6	21.41	0.138			PASS
	1513	1752.6	21.49	0.141			PASS
HSDPA	1312	1712.4	21.46	0.140	30	1	PASS
	1413	1732.6	21.31	0.135			PASS
	1513	1752.6	21.54	0.143			PASS
HSUPA	1312	1712.4	20.69	0.117	30	1	PASS
	1413	1732.6	20.59	0.115			PASS
	1513	1752.6	20.98	0.125			PASS
HSPA+	1312	1712.4	18.15	0.065	30	1	PASS
	1413	1732.6	17.78	0.060			PASS
	1513	1752.6	18.65	0.073			PASS

Note 1: For the HSDPA and HSUPA mode, all the subtests were tested and just the worst data were recorded in this report.





WCDMA Band II							
Band	Channel	Frequency (MHz)	Measured E.I.R.P.		Limit		Verdict
			dBm	W	dBm	W	
WCDMA	9262	1852.4	19.35	0.086	33	2	PASS
	9400	1880.0	19.06	0.081			PASS
	9538	1907.6	19.12	0.082			PASS
HSDPA	9262	1852.4	19.24	0.084	33	2	PASS
	9400	1880.0	19.00	0.079			PASS
	9538	1907.6	18.91	0.078			PASS
HSUPA	9262	1852.4	18.88	0.077	33	2	PASS
	9400	1880.0	18.64	0.073			PASS
	9538	1907.6	18.82	0.076			PASS
HSPA+	9262	1852.4	16.24	0.042	33	2	PASS
	9400	1880.0	16.04	0.040			PASS
	9538	1907.6	16.34	0.043			PASS

Note 1: For the HSDPA and HSUPA mode, all the subtests were tested and just the worst data were recorded in this report.

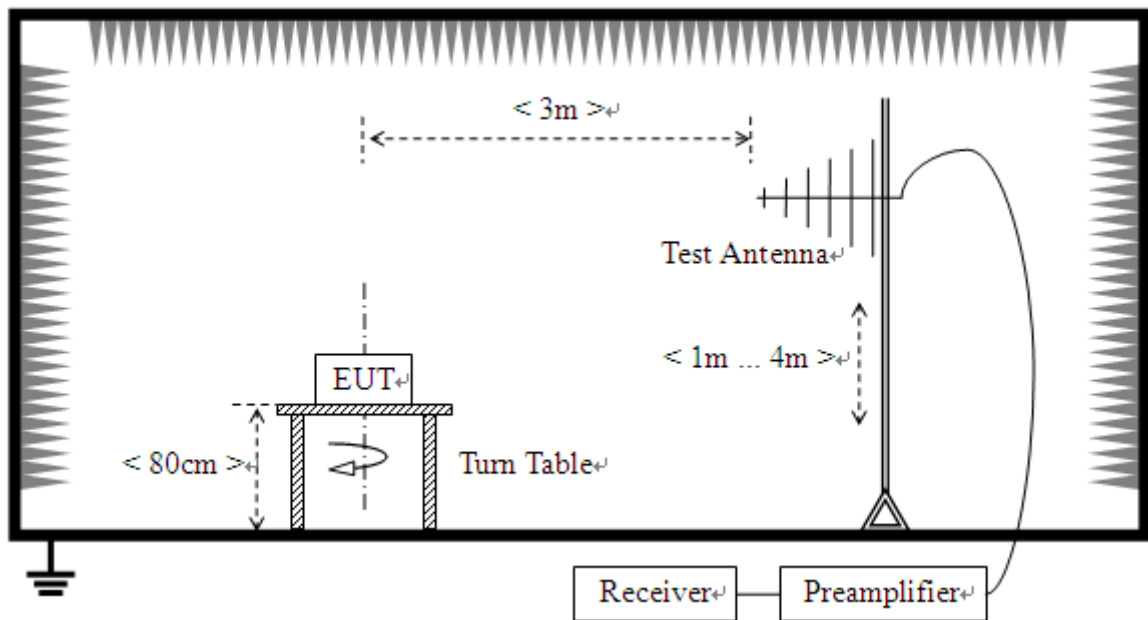


2.3. Radiated Out of Band Emissions

2.3.1. Requirement

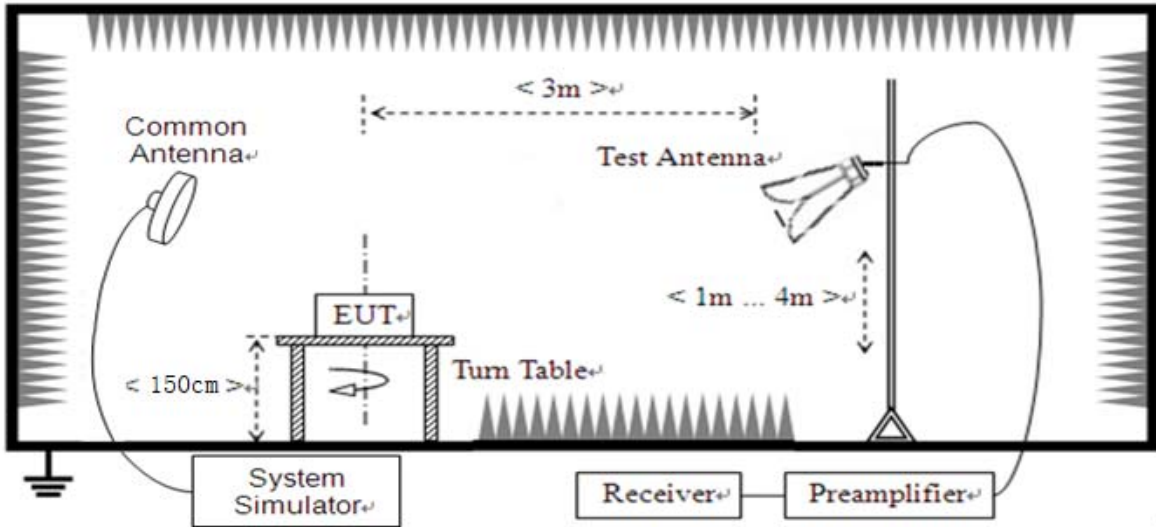
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43+10*\log(P)$ dB. This calculated to be -13dBm. The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency.

2.3.2. Test Description



(For the test frequency from 30MHz to 1GHz)





(For the test frequency above 1GHz)

The EUT is located in a 3m Full-Anechoic Chamber, the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading. A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power and only the test result of the maximum output power was recorded.

In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground and the Turn Table is actuated to turn from 0° to 360° to determine the maximum value of the radiated power. The emission levels at both horizontal and vertical polarizations should be tested. The Filters consists of Notch Filters and High Pass Filter.

Note: When doing measurements above 1GHz, the EUT has been within the 3dB cone width of the horn antenna during horizontal antenna.

2.3.3. Test Procedure

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements.

For measurements above 1GHz the resolution bandwidth is set to 1MHz, the video band width is set to 3MHz for peak measurements.





2.3.4. Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested to verify the out of band emissions.

The substitution corrections are obtained as described below:

$$A_{\text{SUBST}} = P_{\text{SUBST_TX}} - P_{\text{SUBST_RX}} - L_{\text{SUBST_CABLES}} + G_{\text{SUBST_TX_ANT}}$$

$$A_{\text{TOT}} = L_{\text{CABLES}} + A_{\text{SUBST}}$$

Where A_{SUBST} is the final substitution correction including receive antenna gain.

$P_{\text{SUBST_TX}}$ is signal generator level,

$P_{\text{SUBST_RX}}$ is receiver level,

$L_{\text{SUBST_CABLES}}$ is cable losses including TX cable,

$G_{\text{SUBST_TX_ANT}}$ is substitution antenna gain.

A_{TOT} is total correction factor including cable loss and substitution correction

During the test, the data of A_{TOT} was added in the test spectrum analyze, so spectrum analyze reading is the final values which contain the data of A_{TOT} .

Note1: The power of the EUT transmitting frequency should be ignored.

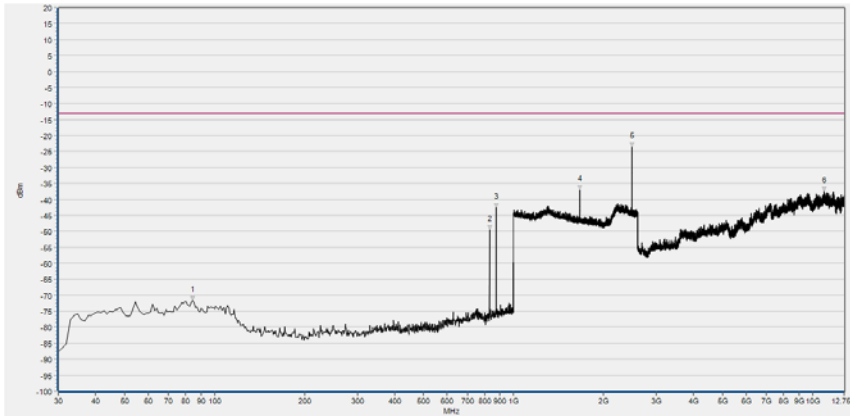
Note2: All test mode and condition mentioned were considered and evaluated respectively by performing full test, only the worst data were recorded and reported.

Note3: All spurious emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Note 4: N/A means the frequency is the basic frequency or the base station frequency, they are no need to verdict.

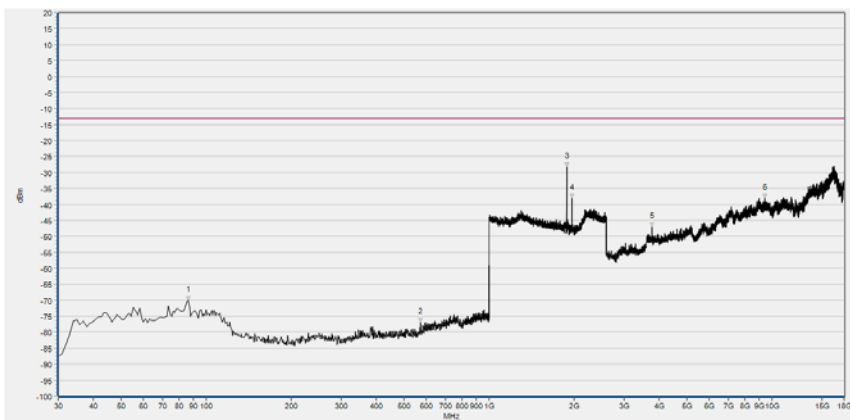


GSM850(GSM), Mid Channel



No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	84.320	-71.56	-13.00	Horizontal	PASS
2	830.250	-49.40	-13.00	Horizontal	N/A
3	875.840	-42.58	-13.00	Horizontal	N/A
4	1661.385	-37.06	-13.00	Horizontal	PASS
5	2492.437	-23.63	-13.00	Horizontal	PASS
6	10918.976	-37.44	-13.00	Horizontal	PASS

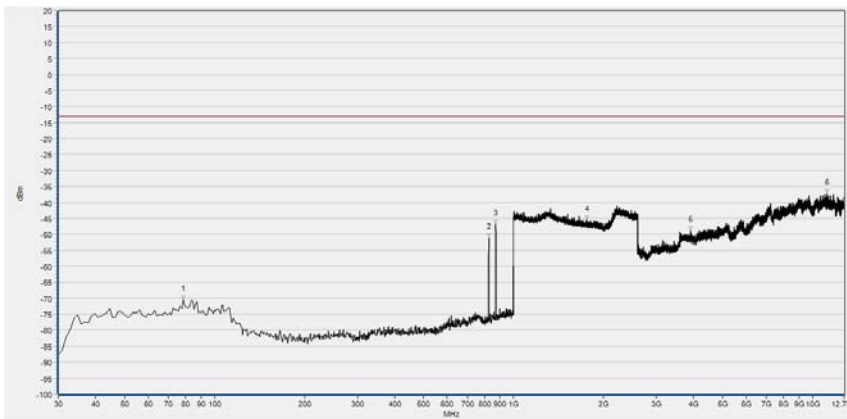
GSM1900(GSM), Mid Channel



No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	86.260	-70.04	-13.00	Horizontal	PASS
2	573.200	-77.09	-13.00	Horizontal	PASS
3	1880.352	-28.31	-13.00	Horizontal	N/A
4	1960.384	-38.00	-13.00	Horizontal	N/A
5	3759.411	-46.94	-13.00	Horizontal	PASS
6	9441.644	-38.16	-13.00	Horizontal	PASS

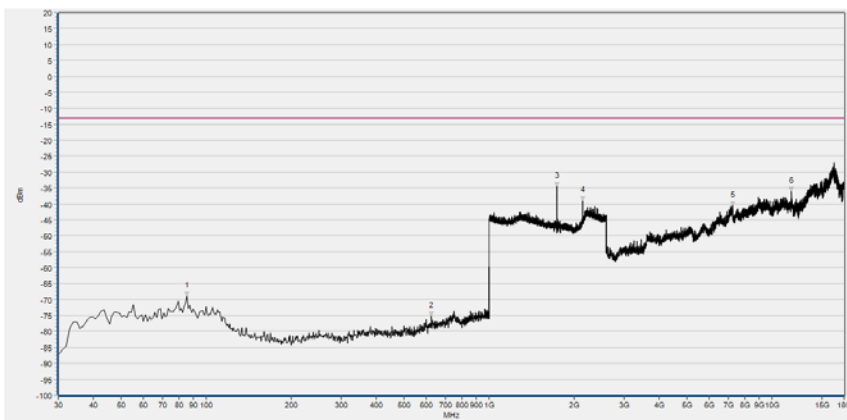


WCDMA Band V(WCDMA), Low Channel



No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	78.500	-70.50	-13.00	Horizontal	PASS
2	827.340	-51.04	-13.00	Horizontal	N/A
3	870.990	-46.81	-13.00	Horizontal	N/A
4	1759.984	-45.49	-13.00	Horizontal	PASS
5	3899.436	-48.78	-13.00	Horizontal	PASS
6	11179.233	-37.26	-13.00	Horizontal	PASS

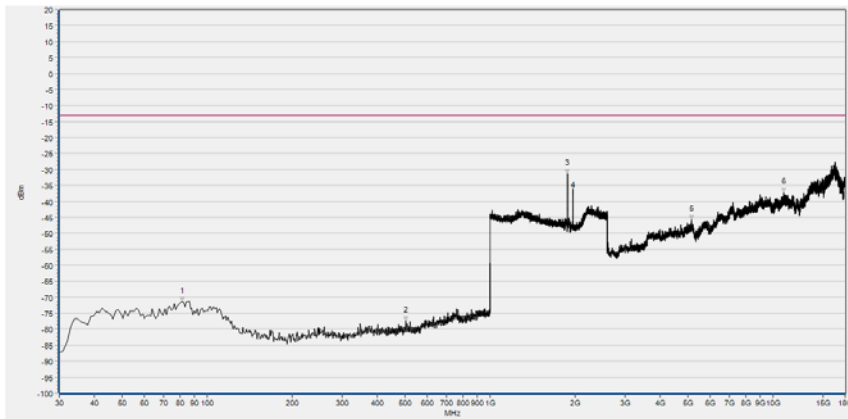
WCDMA Band IV(WCDMA), Mid Channel



No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	85.290	-69.01	-13.00	Horizontal	PASS
2	625.580	-75.13	-13.00	Horizontal	PASS
3	1739.496	-34.52	-13.00	Horizontal	PASS
4	2139.656	-38.96	-13.00	Horizontal	PASS
5	7246.045	-40.66	-13.00	Horizontal	PASS
6	11738.061	-36.10	-13.00	Horizontal	PASS



WCDMA Band II(WCDMA), Mid Channel



No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	81.410	-71.49	-13.00	Horizontal	PASS
2	503.360	-77.48	-13.00	Horizontal	PASS
3	1879.072	-31.40	-13.00	Horizontal	N/A
4	1961.024	-36.14	-13.00	Horizontal	N/A
5	5162.466	-45.74	-13.00	Horizontal	PASS
6	10889.507	-37.24	-13.00	Horizontal	PASS





Annex A Test Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

Test Items	Uncertainty
Output Power	$\pm 2.22\text{dB}$
Radiated Emission	$\pm 2.95\text{dB}$

This uncertainty represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.





Annex B Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10-2013 and CISPR Publication 22; the FCC designation number is CN1192, the test firm registration number is 226174.





4. Test Equipments Utilized

4.1 Conducted Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Power Splitter	NW521	1506A	Weinschel	N/A	N/A
Attenuator 1	(N/A.)	10dB	Resnet	N/A	N/A
Attenuator 2	(N/A.)	3dB	Resnet	N/A	N/A
EXA Signal Analyzer	MY51511149	N9020A	Agilent	2020.07.27	2021.07.26
				2021.07.26	2022.07.25
System Simulator	6200995016	MT8820C	Anritsu	2020.10.28	2021.10.27
RF Cable (30MHz-26GHz)	CB01	RF01	Morlab	N/A	N/A
Coaxial Cable	CB02	RF02	Morlab	N/A	N/A
SMA Connector	CN01	RF03	HUBER-SUHNER	N/A	N/A
Temperature Chamber	20171112102	HZ-2019	Dongguan Lixian Instrument Technology Co., Ltd	2020.10.26	2021.10.25
Computer	T430i	Think Pad	Lenovo	N/A	N/A

4.2 List of Software Used

Description	Manufacturer	Software Version
Morlab FCC Test System	MORLAB	V2.8
MORLAB EMCR V1.2	MORLAB	V1.0





4.3 Radiated Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
System Simulator	152038	CMW500	R&S	2020.11.19	2021.11.18
Receiver	MY54130016	N9038A	Agilent	2020.07.21	2021.07.20
				2021.07.16	2022.07.15
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2019.05.24	2022.05.23
Test Antenna - Horn	9170C-531	BBHA9170	Schwarzbeck	2019.07.26	2022.07.25
Test Antenna - Horn	01774	BBHA 9120D	Schwarzbeck	2019.07.26	2022.07.25
Coaxial cable (N male) (9kHz-30MHz)	CB04	EMC04	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB02	EMC02	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB03	EMC03	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-40GHz)	CB05	EMC05	Morlab	N/A	N/A
1-18GHz pre-Amplifier	61171/61172	S020180L3203	Tonscend	2020.07.21	2021.07.20
				2021.07.16	2022.07.15
18-26.5GHz pre-Amplifier	46732	S10M100L3802	Tonscend	2020.07.21	2021.07.20
				2021.07.16	2022.07.15
26-40GHz pre-Amplifier	56774	S40M400L4002	Tonscend	2020.07.21	2021.07.20
				2021.07.16	2022.07.15
Notch Filter	N/A	WRCG-GSM 850	Wainwright	2020.07.21	2021.07.20
				2021.07.16	2022.07.15
Notch Filter	N/A	WRCG-GSM 1900	Wainwright	2020.07.21	2021.07.20
				2021.07.16	2022.07.15
Notch Filter	N/A	WRCGV-W Band V	Wainwright	2020.07.21	2021.07.20
				2021.07.16	2022.07.15
Notch Filter	N/A	WRCGV-W Band II	Wainwright	2020.07.21	2021.07.20
				2021.07.16	2022.07.15





Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Notch Filter	N/A	WRCGV-W Band IV	Wainwright	2020.07.21	2021.07.20
				2021.07.16	2022.07.15
Anechoic Chamber	N/A	9m*6m*6m	CRT	2019.07.13	2022.07.12

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