FCC/ISED RF TESTREPORT

ISSUED BY Shenzhen BALUN Technology Co., Ltd.



FOR

Rugged Smart Phone

ISSUED TO

Shenzhen UniStrong Science & Technology Co., Ltd.

B,4-4Factory, Zhengcheng Road, FuyongBaoan District, Shenzhen, China





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Revision History

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1 ADMINISTRATIVE DATA (GENERAL INFORMATION)

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Addross	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road,
Audress	Nanshan District, Shenzhen, Guangdong Province, P. R. China.
Phone Number	+86 755 6685 0100

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.	
Addross	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road,	
Address	Nanshan District, Shenzhen, Guangdong Province, P. R. China.	
	The laboratory has been listed by Industry Canada to perform	
	electromagnetic emission measurements. The recognition numbers of	
	test site are 11524A-1.	
	The laboratory is a testing organization accredited by FCC as an	
	accredited testing laboratory. The designation number is CN1196.	
Accreditation Certificate	The laboratory is a testing organization accredited by American	
	Association for Laboratory Accreditation(A2LA) according to ISO/IEC	
	17025. The accreditation certificate number is 4344.01.	
	The laboratory is a testing organization accredited by China National	
	Accreditation Service for Conformity Assessment (CNAS) according to	
	ISO/IEC 17025. The accreditation certificate number is L6791.	
	All measurement facilities used to collect the measurement data are	
Description	located at Block B, FL 1, Baisha Science and Technology Park, Shahe	
Description	Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R.	
	China 518055	

1.3 Laboratory Condition

Ambient Temperature	20 °C to 35 °C
Ambient Relative Humidity	30 % to 60 %
Ambient Pressure	98 kPa to 102 kPa



1.4 Announce

- (1) The test report reference to the report template version v1.3.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
- (5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.
- (6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.



2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Shenzhen UniStrong Science & Technology Co.,Ltd.		
Addroop	B,4-4Factory, Zhengcheng Road, FuyongBaoan District, Shenzhen,		
Audress	China		

2.2 Manufacturer Information

Manufacturer	Shenzhen UniStrong Science & Technology Co.,Ltd.
Addross	B,4-4Factory, Zhengcheng Road, FuyongBaoan District, Shenzhen,
Address	China

2.3 Factory Information

Factory	N/A
Address	N/A

2.4 General Description for Equipment under Test (EUT)

EUT Name	Rugged Smart Phone	
Model Name Under Test	UT12	
Series Model Name	N/A	
Description of Model	N/A	
name differentiation	N/A	
Hardware Version	N/A	
Software Version	N/A	
Dimensions (Approx.)	N/A	
Weight (Approx.)	N/A	



2.5 Ancillary Equipment

	Battery		
	Brand Name	SJYEnergy	
	Model No.	BA7800	
Ancillary Equipment 1	Serial No.	N/A	
	Capacity	8000 mAh	
	Rated Voltage	3.8 V	
	Limit Charge Voltage	4.35 V	
	Adapter		
	Brand Name	N/A	
Apoillany Equipment 2	Model No.	ASUC71W	
	Serial No.	N/A	
	Rated Input	100-240 V~, 0.7 A, 50/60 Hz	
	Rated Output	5 V= 3 A	
	USB Cable		
Ancillary Equipment 3	Model No.	N/A	
	Length (Approx.)	1.0 m	





2.6 Technical Information

	GSM/GPRS/EGPRS 850/900/1800/1900 MHz;	
	CDMA Band Class 0;	
All Network and	EVDO Rel. 0/Rev. A Band Class 0;	
Wireless connectivity	WCDMA/HSDPA/HSUPA Band 1/2/5/8;	
for EUT	LTE FDD Band 1/2/3/4/5/7/8/17/20/28;	
	LTE TDD Band 38/40/41;	
	Bluetooth, GPS, GLONASS, NFC, BDS	
About the Product	The equipment is Smart Phone, intended for used with information	
About the Product	technology equipment.	
Note 1:		
The EUT is a smart phone, supporting dual SIM card slots under the same transceiver. Both SIM		

card slots support GSM, WCDMA and LTE. And both SIM card slots share the same transceiver, so only SIM1 is tested in this report.

The requirement for the following technical information of the EUT was tested in this report:

	GSM/GPRS/EGPRS 850/1900		
	CDMA Band Class 0		
Operating Panda	EVDO Rel. 0/Rev. A Band Class 0		
Operating bands	WCDMA/HSDPA/HSUPA Band 2/5		
	LTE FDD Band 2/4/5/7/17		
	LTE TDD Band 41		
	GSM/GPRS	GMSK	
	EGPRS	8PSK	
	CDMA 1x	O-QPSK, H-PSK, QPSK	
	EVDO	QPSK, 8PSK, 16-QAM	
Modulation Type	WCDMA	QPSK	
	HSDPA	QPSK	
	/HSUPA	16QAM	
	LTE	QPSK	
		16QAM	
	GSM/GPRS/EGPRS 850: 824 MHz ~ 849 MHz		
	GSM/GPRS/EGPRS 1900: 1850 MHz ~ 1910 MHz		
	CDMA/EVDO BC 0: 824.025 MHz ~ 848.985 MHz		
	WCDMA/HSDPA/HSUPA Band 2: 1850 MHz ~ 1910 MHz		
	WCDMA/HSDPA/HSUPA Band 5: 824 MHz ~ 849 MHz		
TX Frequency Range	FDD LTE Band 2: 1850 MHz ~ 1910 MHz		
	FDD LTE Band 4: 1710 MHz ~ 1755 MHz		
	FDD LTE Band 5: 824 MHz ~ 849 MHz		
	FDD LTE Band 7: 2500 MHz ~ 2570 MHz		
	FDD LTE Band 17: 704 MHz ~ 716 MHz		
	TDD LTE Band 41: 2555 MHz - 2655 MHz		
Rx Frequency Range	GSM/GPRS/EGPRS 850: 869 MHz ~ 894 MHz		



	GSM/GPRS/EGPRS 1900: 1930 MHz ~ 1990 MHz
	CDMA/EVDO BC 0: 869.025 MHz ~ 893.985 MHz
	WCDMA/HSDPA/HSUPA Band 2: 1930 MHz ~ 1990 MHz
	WCDMA/HSDPA/HSUPA Band 5: 869 MHz ~ 894 MHz
	FDD LTE Band 2: 1930 MHz ~ 1990 MHz
	FDD LTE Band 4: 2110 MHz ~ 2155 MHz
	FDD LTE Band 5: 869 MHz ~ 894 MHz
	FDD LTE Band 7: 2620 MHz ~ 2690 MHz
	FDD LTE Band 17: 734 MHz ~ 746 MHz
	TDD LTE Band 41: 2555 MHz - 2655 MHz
	GSM/GPRS 850: 4
	GSM/GPRS 1900: 1
	EGPRS 850/1900: E2
	CDMA/EVDO BC 0: 3
	WCDMA/HSDPA/HSUPA Band 2: 3
Power Class	WCDMA/HSDPA/HSUPA Band 5: 3
	FDD LTE Band 2: 3
	FDD LTE Band 4: 3
	FDD LTE Band 5: 3
	FDD LTE Band 7: 3
	FDD LTE Band 17: 3
	TDD LTE Band 41: 3
Multislot Class	GPRS/EGPRS: 12
Antenna Type	PIFA Antenna
	GSM/GPRS/EGPRS 850: -1.4 dBi
	GSM/GPRS/EGPRS 1900: 0.13 dBi
	CDMA/EVDO BC0: -0.89 dBi
	WCDMA/HSDPA/HSUPA Band 2: 0.13 dBi
	WCDMA/HSDPA/HSUPA Band 5: -1.4 dBi
Antenna Gain	FDD LTE Band 2: -0.17 dBi
	FDD LTE Band 4: -0.12 dBi
	FDD LTE Band 5: -0.16 dBi
	FDD LTE Band 7: -0.45 dBi
	FDD LTE Band 17: -1.23 dBi
	TDD LTE Band 41: 0.42 dBi

Note 1: The EUT information are declared by manufacturer. For more detailed features description, please refer to the manufacturer's specifications or user's manual.



3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters;
Ι	(10-1-17 Edition)	General Rules and Regulations
	47 CFR Part 22	
2	Subpart H	Cellular Radiotelephone Service
	(10-1-17 Edition)	
	47 CFR Part 24	
3	Subpart E	Broadband PCS
	(10-1-17 Edition)	
4	47 CFR Part 27	Miscellaneous Wireless Communications Services
-	(10-1-17 Edition)	
5	RSS-Gen Issue5	General Requirements and Information for the Certification of
5	(April 2018)	Radio Apparatus
6	RSS-130 Issue2	Equipment Operating in the Frequency Bands 617-652 MHz,
Ū	(February 2019)	663-698 MHz, 698-756 MHz and 777-787 MHz
7	RSS-132 Issue3	Cellular Telephone Systems Operating in the Bands 824-849
,	(January 2013)	MHz and 869-894 MHz
8	RSS-133 Issue6	2 GHz Personal Communications Services
0	(January 2018)	
Q	RSS-139 Issue3	Advanced Wireless Services (AWS) Equipment Operating in
5	(July 2015)	the Bands 1710-1780 MHz and 2110-2180 MHz
10	RSS-199 Issue3	Broadband Radio Service (BRS) Equipment Operating in the
10	(December 2016)	Band 2500-2690 MHz
11	4NSI/TIA-603-E-2016	Land Mobile FM or PM Communications Equipment
11	ANGI/ 11A-003-L-2010	Measurement and Performance Standards
12	KDB 971168	Measurement Guidance for Certification of Licensed Digital
12	D01 v03r01	Transmitters



3.2 Test Verdict

No.	Description	FCC Part No.	ISED Part No.	Test Result	Verdict		
			RSS-Gen 6.13				
		2.1053	RSS-130 4.7				
1	Field Strength of Spurious	22.917	RSS-132 5.5		Pass		
1	Radiation	24.238	RSS-133 6.5	AININEA A. I			
		27.53	RSS-139 6.6				
			RSS-199 4.5				
Note 1:	FCC Class II Permissive Change						
New Model: Turn off the WIFI function of 2.4GHz and 5GHz by blocking the software and remove the							
underlying WIFI driver of android. The other transmitter module itself has not changed.							
Note 2:	Note 2: Only the worst test mode were recorded in this report.						



4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

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

	NV (Normal Voltage)	3.8 V
Test Voltage of the EUT	LV (Low Voltage)	3.7 V
	HV (High Voltage)	4.35 V
	NT (Normal Temperature)	+25 °C
Test Temperature of the EUT	LT (Low Temperature)	-20 °C
	HT (High Temperature)	+45 °C

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Software /Firmware Version	Cal. Date	Cal. Due
Conducted Test Sys	stem					
Test Software 1	R&S	CMUgo	N/A	V2.0.1	N/A	N/A
Test Software 2	R&S	CMWRun	N/A	V1.8.9	N/A	N/A
Test Software 3	BALUN	BL410R	N/A	V2.1.1.38 4	N/A	N/A
Universal Radio						
Communication	R&S	CMU 200	119280	V5.13	2019.02.28	2020.02.27
Tester						
Wideband Radio						
Communication	R&S	CMW 500	127794	V3.5.137	2018.06.15	2019.06.14
Tester						
Wideband Radio						
Communication	R&S	CMW 500	120598	V3.5.137	2019.02.28	2020.02.27
Tester						
Spectrum Analyzer	R&S	FSV-30	103118	2.30.SP1	2018.06.15	2019.06.14
Spectrum Analyzer	Agilent	E4440A	MY45304434	A.11.21	2018.11.01	2019.10.31
Spectrum Analyzer	Agilent	E4440A	MY46181663	A.11.21	2018.11.01	2019.10.31
Temperature		8020	1410	NI/A	2019 06 15	2010 06 14
Chamber	АПК	3820	1412	IN/A	2016.00.15	2019.00.14
		ITEREZA	6000140106	NI/A	2019 06 14	2010 06 12
DC Fower Supply	ПЕСП	110003A	87210020	IN/A	2018.00.14	2019.00.13
Power Sensor	Agilent	E9304A H18	MY41497164	N/A	2018.11.01	2019.10.31
Power Splitter	KMW	DCPD- LDC	1305003215	N/A	N/A	N/A
Attenuator (20 dB)	KMW	ZA-S1-201	110617091	N/A	N/A	N/A
Attenuator (6 dB)	KMW	ZA-S1-61	1305003189	N/A	N/A	N/A



Description	Manufacturer	Model	Serial No.	Software /Firmware Version	Cal. Date	Cal. Due
Radiated Test Syste	em					
Test Software	BALUN	BL410_E	N/A	V16.921	N/A	N/A
Test Antenna- Bi-Log (30 MHz-3 GHz)	Schwarzbeck	VULB 9163	9163-624	N/A	2017.07.22	2019.07.21
Test Antenna- Horn(1-18 GHz)	Schwarzbeck	BBHA 9120D	9120D-1600	N/A	2018.07.11	2020.07.10
Test Antenna- Horn(18-40 GHz)	A-INFO	LB- 180400KF	J211060273	N/A	2019.01.05	2021.01.04
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	N/A	2017.02.21	2020.02.20
Shielded Enclosure	ChangNing	CN- 130701	130703	N/A	N/A	N/A
EMI Receiver	KEYSIGHT	N9038A	MY53220118	A.14.16	2018.11.07	2019.11.06
Spectrum Analyzer	R&S	FSV-30	103118	2.30.SP1	2018.06.15	2019.06.14
Wideband Radio Communication Tester	R&S	CMW 500	121551	V3.2.73	2018.05.07	2019.05.06



4.3 Test Configurations

Toot Itoma	Toot Mode	Test Channel			
Test tierns	Test Mode	LCH	MCH	HCH	
Field Strength of Spurious Radiation	GSM 850	v			
	GSM 1900			v	
	CDMA BC 0	v			
	WCDMA Band 5		v		
Note 1: The mark "v" means that this configuration is chosen for testing.					

Test Mode	UL Channel	UL Channel No.	UL Frequency (MHz)
	Low Channel	128	824.2
GSM/GPRS/EGPRS 850	Middle Channel	190	836.6
	High Channel	251	848.8
	Low Channel	512	1850.2
GSM/GPRS/EGPRS 1900	Middle Channel	661	1880.0
	High Channel	810	1909.8
	Low Channel	1013	824.70
CDMA/EVDO BC 0	Middle Channel	384	836.52
	High Channel	777	848.31
	Low Channel	9262	1852.4
WCDMA Band 2	Middle Channel	9400	1880.0
	High Channel	9538	1907.6
	Low Channel	4132	826.4
WCDMA Band 5	Middle Channel	4182	836.4
	High Channel	4233	846.6

LTE	Bandwidth (MHz)			Modula	ation Type	RB#		Test Channel						
Band	1.4	3	5	10	15	20	QPSK	16-QAM	1	Half	Full	LCH	MCH	HCH
	Field Strength of Spurious Radiation													
7	n	n	v				V		v			v		
Note 1: The mark "v" means that this configuration is chosen for testing.														
Note 2: The mark "n" means that this bandwidth is not supported.														



Test Mode	UL Channel	Channel Bandwidth (MHz)	UL Channel No.	UL Frequency (MHz)
		1.4	18607	1850.7
		3	18615	1851.5
		5	18625	1852.5
	Low Range	10	18650	1855
		15	18675	1857.5
		20	18700	1860
LTE Band 2	Middle Range	1.4/3/5/10/15/20	18900	1880
		1.4	19193	1909.3
		3	19185	1908.5
		5	19175	1907.5
	High Range	10	19150	1905
		15	19125	1902.5
		20	19100	1900
		1.4	19957	1710.7
		3	19965	1711.5
	Leve Deven	5	19975	1712.5
	Low Range	10	20000	1715
		15	20025	1717.5
		20	20050	1720
LTE Band 4	Middle Range	1.4/3/5/10/15/20	20175	1732.5
		1.4	20393	1754.3
		3	20385	1753.5
	High Range	5	20375	1752.5
		10	20350	1750
		15	20325	1747.5
		20	20300	1745
		1.4	20407	824.7
	Low Papao	3	20415	825.5
	Low Range	5	20425	826.5
		10	20450	829
LTE Band 5	Middle Range	1.4/3/5/10	20525	836.5
		1.4	20643	848.3
	High Dange	3	20635	847.5
	r light Kalige	5	20625	846.5
		10	20600	844
	Low Pange	5	23755	706.5
	Low Range	10	23780	709
LTE Band 7	Middle Range	5/10	23790	710
	High Pange	5	23825	713.5
		10	23800	711
ITE Pond 17		5	23755	706.5
	LOW Range	10	23780	709



Test Mode	UL Channel	Channel Bandwidth (MHz)	UL Channel No.	UL Frequency (MHz)
	Middle Range	5/10	23790	710
	High Dongo	5	23825	713.5
	nigh Kange	10	23800	711
		5	40265	2557.5
	Low Range	10	40290	2560
		15	40315	2562.5
		20	40340	2565
LTE Band 41	Middle Range	5/10/15/20	40740	2605
		5	41215	2652.5
	High Dongo	10	41190	2650
	High Range	15	41165	2647.5
		20	41140	2645





4.4 Test Setup

4.4.1 For Antenna Port Test



(Diagram 1)

4.4.2 For Frequency Stability Test





4.4.3 For Radiated Test (30 MHz ~ 1 GHz)



4.4.4 For Radiated Test (Above 1 GHz)





5 TEST ITEMS

5.1 Field Strength of Spurious Radiation

5.1.1 Limit

FCC § 2.1053 & 22.917(a) & 24.238(a) & 27.53(c) & 27.53(g) & 27.53(h) & 27.53(m)

RSS-Gen § 6.13 & RSS-130 § 4.7 & RSS-132 § 5.5 & RSS-133 § 6.5 & RSS-139 § 6.6 & RSS-199 § 4.5

FCC § 22.917(a) & 24.238(a) & RSS-132 § 5.5 & RSS-133 § 6.5

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 is calculated to be -13 dBm.

FCC § 27.53(c)

For operations in the 746–758 MHz band and the 776–788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(1) On any frequency outside the 746–758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(2) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(3) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations;

(4) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;

(5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater.

However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

(6) Compliance with the provisions of paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

FCC § 27.53(g)

For operations in the 600MHz band and the 698-746MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43+10*log(P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.



FCC § 27.53(h) (1) & RSS-139 § 6.6

Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}$ (P) dB.

FCC § 27.53(m) (4) & RSS-199 § 4.5

For mobile digital stations (BRS and EBS stations), the attenuation factor shall be not less than:

• 40+10logP dB (-10 dBm, 100 nW) on all frequencies between the channel edge and 5 MHz from the channel edge.

ougo.

• 43+10logP dB (-13 dBm, 50 nW) on all frequencies between 5 MHz and X MHz from the channel edge,

• 55+10logP dB (-25 dBm, 3 nW) on all frequencies more than X MHz from the channel edge, where X is the

greater of 6 MHz or the actual emission bandwidth (26 dB).

In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

RSS-130 § 4.7

The unwanted emissions in any 100 kHz bandwidth on any frequency outside the low frequency edge and the high frequency edge of each frequency block range(s), shall be attenuated below the transmitter power, P (dBW), by at least 43 + 10Log₁₀(P) (watts), dB. However, in the 100 kHz band immediately outside of the equipment's frequency block range, a resolution bandwidth of 30 kHz may be employed.

5.1.2 Test Setup

The section 4.4.3 and 4.4.4 (Diagram 3, 4) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.1.3 Test Procedure

1. On a test site, the EUT shall be placed at 80cm height on a turn table, and in the position close to normal use as declared by the applicant.

2. The test antenna shall be oriented initially for vertical polarization located 3 m from EUT to correspond to

the fundamental frequency of the transmitter.

3. The output of the test antenna shall be connected to the measuring receiver and the peak detector is used



for the measurement.

4. During the measurement of the EUT, the resolution bandwidth was to 1 MHz and the average bandwidth was set to 1 MHz.

5. The transmitter shall be switched on; the measuring receiver shall be tuned to the frequency of the transmitter under test.

6. The test antenna shall be raised and lowered through the specified range of height until the maximum signal level is detected by the measuring receiver.

7. The transmitter shall be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.

8. The test antenna shall be raised and lowered again through the specified range of height until the

maximum signal level is detected by the measuring receiver.

9. The maximum signal level detected by the measuring receiver shall be noted.

10. The EUT was replaced by half-wave dipole (824 ~ 849 MHz) or horn antenna (1 850 ~ 1 910 MHz) connected to a signal generator.

11. In necessary, the input attenuator setting on the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.

12. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.

13. The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring received, which is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.

14. The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.

15. The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarization.

Final measurement calculation as below:

The relevant equation for determining the ERP/EIRP from the radiated RF output power is:

ERP/EIRP (dBm) = SA Read Value (dBm) + Correction Factor (dB)

where:



ERP/EIRP = effective or equivalent radiated power, in dBm;

SA Read Value = measured transmitter power received by EMI receiver or spectrum analyzer, in dBm; Correction Factor = total correction factor including cable loss, in dB;

During the test, the data of Correction Factor (dB) is added in the EMI receiver or spectrum analyzer, so SA Read Value (dBm) is the final values which contains the data of Correction Factor (dB).

For example:

In the ERP test, when SA read value for GSM850 is 21dBm, and correction factor is 8dB, then final ERP value for GSM850 is:

ERP(dBm) = 21dBm + 8dB = 29dBm

5.1.4 Test Result

Please refer to ANNEX A.1.



ANNEX A TEST RESULTS

- A.1 Field Strength of Spurious Radiation
- Note 1: The frequencies of verdict which are marked by "N/A" should be ignored because they are UE carrier frequency.
- Note 2: When measurement frequency is above 18GHz, there is only noise floor of test system existing. So that frequency above 18GHz is not tested, and there is no test data above 18GHz in the report.
- Note 3: Test plots please refer to the document "Annex No.: BL-EC1930222-501 Data Part 1.pdf".

GSM, CDMA and WCDMA Mode Test Verdict

Test Band	Test Channel	Refer to Plot ^{Note3}	Verdict
GSM 850	LCH	1.1	Pass
GSM 1900	HCH	2.1	Pass
CDMA BC0	LCH	3.1	Pass
WCDMA Band 5	MCH	4.1	Pass

LTE Mode Test Verdict

Test	Test	Test	Test	Test RB	Refer to	Verdict
Band	Bandwidth	Channel	Mode	(Size#Offset)	Plot ^{Note3}	
Band 7	5 MHz	LCH	QPSK	RB1#0	5.1	Pass



ANNEX B TEST SETUP PHOTOS

Please refer to the document "BL-EC1930222-AR.PDF".

ANNEX C EUT EXTERNAL PHOTOS

Please refer to the document "BL-EC1930222-AW.PDF".

ANNEX D EUT INTERNAL PHOTOS

Please refer to the document "BL-EC1930222-AI.PDF".

--END OF REPORT--