FCC ID: SL9NLS-MT65

Report No.: LCS1508191108E

FCC TEST REPORT				
		For		
F	ujia	n Newland Auto-ID Tech Co., Ltd.		
		Portable Data Collector		
		Model No.: NLS-MT65		
Prepared for	:	Fujian Newland Auto-ID Tech Co., Ltd.		
Address	:	Newland Science & Technology Park, No.1 Rujiang West Rd., Mawei district, Fuzhou, Fujian, 350015, China		
Prepared by	:	Shenzhen LCS Compliance Testing Laboratory Ltd.		
Address	:	1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China		
Tel	:	(+86)755-82591330		
Fax	:	(+86)755-82591332		
Web	:	www.LCS-cert.com		
Mail	:	webmaster@LCS-cert.com		
Date of receipt of test sample	:	August 19, 2015		
Number of tested samples	:	1		
Serial number	:	Prototype		
Date of Test	:	August 19, 2015 – September 17, 2015		
Date of Report	:	September 17, 2015		

SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD.

FCC TEST REPORT FCC CFR 47 PART 22 SUBPART H AND PART 24 SUBPART E			
Report Reference No	LCS1508191108E		
Date of Issue	September 17, 2015		
Testing Laboratory Name	Shenzhen LCS Compliance Testing	g Laboratory Ltd.	
Address	1/F., Xingyuan Industrial Park, Tor Bao'an District, Shenzhen, Guangdor	ig, Cillia	
Testing Location/ Procedure	Full application of Harmonised stand Partial application of Harmonised sta Other standard testing method □		
Applicant's Name	Fujian Newland Auto-ID Tech Co.	, Ltd.	
Address	Newland Science & Technology Parl Mawei district, Fuzhou, Fujian, 3500		
Test Specification			
Standard	FCC CFR 47 PART 2, FCC CFR 47 AND PART 24 SUBPART E	PART 22 SUBPART H	
Test Report Form No	LCSEMC-1.0		
TRF Originator	: Shenzhen LCS Compliance Testing Laboratory Ltd.		
Master TRF	Dated 2011-03		
This publication may be reproduced Shenzhen LCS Compliance Testing of the material. Shenzhen LCS Com	ng Laboratory Ltd. All rights reserv I in whole or in part for non-commerci Laboratory Ltd. is acknowledged as c npliance Testing Laboratory Ltd. takes es resulting from the reader's interpreta ontext.	al purposes as long as the opyright owner and source no responsibility for and	
Test Item Description	Portable Data Collector		
Trade Mark	Newland		
Model/ Type reference	NLS-MT65		
Ratings	DC 3.7V, 3700mAh		
Result	mput. 100 240 V Me, 50/00112, 0.55	A; Output: DC 5V, 2A	
Compiled by:	Supervised by:	Approved by:	

Jacky Li

Jacky Li/ File administrators

Com h

Javino Lia

Gavin Liang/ Manager

Glin Lu/ Technique principal

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 2 of 47 SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD.

FCC ID: SL9NLS-MT65

Report No.: LCS1508191108E

FCC -- TEST REPORT

Test Report No. : LCS1508191108E

September 17, 2015

Date of issue

Type / Model	: NLS-MT65	
EUT	: Portable Data Collector	
Applicant	: Fujian Newland Auto-ID Tech Co., Ltd.	
Address	: Newland Science & Technology Park, No.1 Rujiang West Rd.,	
	Mawei district, Fuzhou, Fujian, 350015, China	
Telephone	: 0591-83979235	
Fax	: 0591-83979250	
Manufacturer	: Fujian Newland Auto-ID Tech Co., Ltd.	
Address	: Newland Science & Technology Park, No.1 Rujiang West Rd.,	
	Mawei district, Fuzhou, Fujian, 350015, China	
Telephone	: 0591-83979235	
Fax	: 0591-83979250	
-		
Factory	: Fujian Newland Auto-ID Tech Co., Ltd.	
Address	: Newland Science & Technology Park, No.1 Rujiang West Rd.,	
	Mawei district, Fuzhou, Fujian, 350015, China	
Telephone	: 0591-83979235	
Fax	: 0591-83979250	

Test Result

Positive

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

TABLE OF CONTENTS

1. GENERAL INFORMATION	5
1.1. DESCRIPTION OF DEVICE (EUT)	5
1.2. HOST SYSTEM CONFIGURATION LIST AND DETAILS	5
1.3. External I/O Cable	
1.4. DESCRIPTION OF TEST FACILITY	
1.5. STATEMENT OF THE MEASUREMENT UNCERTAINTY	
1.6. Measurement Uncertainty	
1.7. Test environment	6
2. TEST METHODOLOGY	7
2.1. EUT CONFIGURATION	7
2.2. Objective	
2.3. GENERAL TEST PROCEDURES	7
2.4. Test Mode	8
3. SYSTEM TEST CONFIGURATION	9
3.1. JUSTIFICATION	9
3.2. EUT Exercise Software	9
3.3. Special Accessories	9
3.4. BLOCK DIAGRAM/SCHEMATICS	
3.5. Equipment Modifications	
3.6. TEST SETUP	9
4. SUMMARY OF TEST RESULTS	10
5. TEST RESULT	11
5.1. RF OUTPUT POWER	11
5.3. SPURIOUS AND HARMONIC EMISSION AT ANTENNA TERMINAL	21
5.4. RADIATED SPURIOUS EMISSIONS MEASUREMENT	
5.5. POWER LINE CONDUCTED EMISSIONS	
5.6.MODULATION CHARACTERISTIC	
5.7. FREQUENCY STABILITY OVER TEMPERATURE AND VOLTAGE VARIATIONS	
5.8. PEAK-TO-AVERAGE RATIO	44
6. LIST OF MEASURING EQUIPMENTS	

SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD.

FCC ID: SL9NLS-MT65

Report No.: LCS1508191108E

1. GENERAL INFORMATION

1.1. Description of Device (EUT)			
EUT	: Portable Data Collector		
Test Model	: NLS-MT65		
Power Supply	DC 3.7V, 3700mAh : Input: 100~240V AC, 50/60Hz, 0.35A; Output: DC 5V, 2A		
	GSM 850 (U.SBand) PCS 1900 (U.SBand)		
Support Band	: UMTS FDD Band II (U.SBand)		
	UMTS FDD Band V (U.SBand)		
I Inlink	GSM 850: 824.2MHz ~ 848.8MHz		
Uplink	PCS 1900: 1850.2MHz ~ 1909.8MHz		
~	GSM 850: 869.2MHz ~ 893.8MHz		
Downlink	: PCS 1900: 1930.2MHz ~ 1989.8MHz		
Type Of Modulation	: GSM/GPRS:GMSK; EGPRS: 8-PSK		
Antenna Description	: Internal Antenna, 2.0 dBi		
Software Version	: V1.0		
Hardware Version	: GMT80MBV1.2		

1.2. Host System Configuration List and Details

Manufacturer	Description	Model	Serial Number	Certificate
	Adapter	TEKA012-050 2000XX		VOC

1.3. External I/O Cable

I/O Port Description	Quantity	Cable
USB	1	1.2m, Shielded
Earphone	1	N/A

1.4. Description of Test Facility

Site Description		
EMC Lab.	CNAS Registration Number. is L4595.	
	FCC Registration Number. is 899208.	
	Industry Canada Registration Number. is 9642A-1.	
	VCCI Registration Number. is C-4260 and R-3804.	
	ESMD Registration Number. is ARCB0108.	
	UL Registration Number. is 100571-492.	
	TUV SUD Registration Number. is SCN1081.	
	TUV RH Registration Number. is UA 50296516-001	

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 5 of 47

1.5. Statement of The Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

1.6. Measurement Uncertainty

Test Item		Frequency Range	Uncertainty	Note
		9KHz~30MHz	±3.10dB	(1)
Dediction Uncentainty	:	30MHz~200MHz	±2.96dB	(1)
Radiation Uncertainty		200MHz~1000MHz	±3.10dB	(1)
		1GHz~26.5GHz	±3.80dB	(1)
Conduction Uncertainty	:	150kHz~30MHz	±1.63dB	(1)
Power disturbance	:	30MHz~300MHz	± 1.60 dB	(1)

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.7. Test environment

All tests were performed under the following environmental conditions:

Condition	Minimum value	Maximum value
Barometric pressure	86kPa	106kPa
Temperature	15 °C	30 °C
Relative Humidity	20 %	75 %
Power supply range	±5% of rated voltages	

2. TEST METHODOLOGY

All tests and measurements indicated in this document were performed in accordance with FCC CFR 47 part 2, FCC CFR 47 part 22 subpart H and part 24 subpart E.

Applicable Standards: TIA/EIA603-D, ANSI C63.4-2003.The radiated testing was performed at an antenna-to-EUT distance of 3 meters. All radiated and conducted emissions measurement was performed at Shenzhen LCS Compliance Testing Laboratory Ltd..

2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

2.2. Objective

This type approval report is prepared on behalf of **Fujian Newland Auto-ID Tech Co., Ltd.** in accordance with FCC CFR 47 part 2, FCC CFR 47 part 22 subpart H and part 24 subpart E.

The objective is to determine compliance with FCC rules for RF output power, modulation characteristics, occupied bandwidth, spurious emissions at antenna terminal, field strength of spurious radiation, frequency stability, band edge, and conducted and radiated margin.

2.3. General Test Procedures

2.3.1 Conducted Emissions

According to the requirements in Section 6.2 of TIA/EIA603-D, AC power-line conducted emissions shall be measured in the frequency range between 0.15 MHz and 30MHz using Quasi-peak and average detector modes.

2.3.2 Radiated Emissions

The EUT is placed on a turn table and the turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 6.3 of TIA/EIA603-D.

2.4. Test Mode

GSM / GPRS/EGRS 850: Channel Low (CH128), Channel Mid (CH190) and Channel High (CH251) were chosen for full testing. The test PCL(Power Control Level)/Class is level 5/class 3(For GPRS/EGRS).

PCS / GPRS/ EGRS 1900: Channel Low (CH512), Channel Mid (CH661) and Channel High (CH810) were chosen for full testing. The test PCL(Power Control Level)/Class is level 0/class 3(For GPRS/EGRS).

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz and power line conducted emissions below 30MHz, which worst case was in normal link mode only.

For the field strength of spurious emission, the worst emission was found in lie-down position (X axis) for GSM /GPRS/EGPRS 850, lie-down position (X axis) for PCS /GPRS/EGPRS 1900 and the worst case was recorded.

3. SYSTEM TEST CONFIGURATION

3.1. Justification

The EUT had been tested under operating condition. EUT staying in continuous transmitting mode.

3.2. EUT Exercise Software

N/A.

3.3. Special Accessories

N/A.

3.4. Block Diagram/Schematics

Please refer to the related document

3.5. Equipment Modifications

Shenzhen LCS Compliance Testing Laboratory Ltd. has not done any modification on the EUT.

3.6. Test Setup

Please refer to the test setup photo.

4. SUMMARY OF TEST RESULTS

Applied Standard: 47 CFR FCC Part 22 Subpart H, Part 24 Subpart E				
FCC Rules	Description of Test		Result	
§2.1046, §22.913, §24.232	RF Output Power	Conducted Output Power	Compliant	
§2.1040, §22.713, §24.232	Ki [*] Output I Ower	Radiated Output Power	Compliant	
§2.1049, §22.905	Occupi	ad Bandwidth	Compliant	
§2.917, §24.238	Occupied Bandwidth		Compliant	
§2.1053, §2.917, §24.238	Spurious Radiated Emissions		Compliant	
§2.1051, §2.917, §24.238	Spurious Emissions at Antenna Terminals		Compliant	
\$2.917, \$24.238	Band Edge		Compliant	
§2.1055, §22.355, §24.235	Frequency Stability		Compliant	
§15.107 / §15.207	AC power line conducted emissions		Compliant	
§2.1047	Modulation Characteristics		Compliant	
§1.1310, §2.1091	RF Exposure Information		Compliant	
§24.232(d)	Peak-to-	-Average Ratio	Compliant	

5. TEST RESULT

5.1. RF OUTPUT POWER

5.1.1. Standard Applicable

According to FCC §2.1046 and §22.913, the maximum effective radiated power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

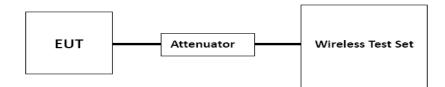
According to FCC §2.1046 and §22.232, mobile and portable stations are limited to 2 Watts and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

5.1.2. Measuring Instruments

Please refer to section 6 of equipments list in this report.

5.1.3. Test Procedures

Conducted method:



Radiated method:

TIA 603-D section 2.2.17

SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD.

FCC ID: SL9NLS-MT65

Report No.: LCS1508191108E

5.1.4. Test Results

Temperature	25°C	Humidity	60%
ATM Pressure:	101.4kPa	Test Engineer	Jacky

Conducted	Dower
Conducted	Power:

Mode	Channel	Frequency	Output Power	Limit
	Channel	(MHz)	(Average, dBm)	(dBm)
	128	824.2	32.44	38.45
GSM 850	190	836.6	32.57	38.45
	251	848.8	32.55	38.45
GPRS 850	128	824.2	32.12	38.45
	190	836.6	32.15	38.45
(Slot 1)	251	848.8	32.13	38.45
	128	824.2	31.25	38.45
GPRS 850	190	836.6	31.14	38.45
(Slot 2)	251	848.8	31.20	38.45
	128	824.2	29.31	38.45
GPRS 850 (Slot 3)	190	836.6	29.27	38.45
(3013)	251	848.8	29.37	38.45
GPRS 850	128	824.2	27.36	38.45
	190	836.6	27.22	38.45
(Slot 4)	251	848.8	27.31	38.45
EGPRS 850	128	824.2	26.52	38.45
	190	836.6	26.44	38.45
(Slot 1)	251	848.8	26.56	38.45
	128	824.2	25.45	38.45
EGPRS 850	190	836.6	25.33	38.45
(Slot 2)	251	848.8	25.51	38.45
	128	824.2	24.62	38.45
EGPRS 850	190	836.6	24.63	38.45
(Slot 3)	251	848.8	24.58	38.45
	128	824.2	24.14	38.45
EGPRS 850	190	836.6	24.17	38.45
(Slot 4)	251	848.8	24.15	38.45

SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD.

FCC ID: SL9NLS-MT65

Report No.: LCS1508191108E

Mode		Frequency	Output Power	Limit
Widde	Channel	(MHz)	(Average, dBm)	(dBm)
	512	1850.2	29.55	33
PCS 1900	661	1880.0	29.59	33
	810	1909.8	29.63	33
	512	1850.2	29.24	33
GPRS 1900	661	1880.0	29.28	33
(Slot 1)	810	1909.8	29.31	33
0000 4000	512	1850.2	28.66	33
GPRS 1900	661	1880.0	28.68	33
(Slot 2)	810	1909.8	28.62	33
0000 4000	512	1850.2	26.51	33
GPRS 1900	661	1880.0	26.57	33
(Slot 3)	810	1909.8	26.53	33
0000 4000	512	1850.2	24.41	33
GPRS 1900	661	1880.0	24.29	33
(Slot 4)	810	1909.8	24.36	33
	512	1850.2	24.45	33
EGPRS 1900	661	1880.0	24.40	33
(Slot 1)	810	1909.8	24.52	33
	512	1850.2	23.35	33
EGPRS 1900	661	1880.0	23.44	33
(Slot 2)	810	1909.8	23.55	33
	512	1850.2	22.52	33
EGPRS 1900	661	1880.0	22.66	33
(Slot 3)	810	1909.8	22.57	33
	512	1850.2	22.25	33
EGPRS 1900	661	1880.0	22.31	33
(Slot 4)	810	1909.8	22.22	33

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 13 of 47
 SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD.
 FCC ID: SL9NLS-MT65

Radiated Power:

The worst test data as follow:

			Test Resu	lt	
Mode	Channel	Frequency (MHz)	Max. Peak ERP (dBm)	Polarization	Limit (dBm)
	128	824.2	33.91	Н	38.45
GSM 850	190	836.6	33.98	Н	38.45
	251	848.8	34.02	Н	38.45

			Test Result		
Mode	Channel	Frequency (MHz)	Max. Peak ERP (dBm)	Polarization	Limit (dBm)
	128	824.2	28.42	Н	38.45
EGPRS 850	190	836.6	28.35	Н	38.45
	251	848.8	28.51	Н	38.45

			Test Resu	lt	
Mode	Channel	Frequency (MHz)	Max. Peak EIRP (dBm)	Polarization	Limit (dBm)
	512	1850.2	31.37	Н	33
PCS 1900	661	1880.0	31.35	Н	33
	810	1909.8	31.42	Н	33

			Test Result		
Mode	Channel	Frequency (MHz)	Max. Peak EIRP (dBm)	Polarization	Limit (dBm)
	512	1850.2	26.25	Н	33
EGPRS 1900	661	1880.0	26.34	Н	33
	810	1909.8	26.38	Н	33

NOTE: All conditions have been tested and we only record the worst results in each bands.

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 14 of 47

FCC ID: SL9NLS-MT65

Report No.: LCS1508191108E

5.2. OCCUPIED BANDWIDTH

5.2.1. Standard Applicable

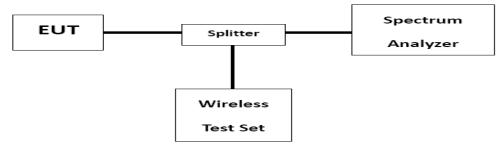
FCC §2.1049, §22.917, §22.905 and §24.238.

5.2.2. Measuring Instruments

Please refer to section 6 of equipments list in this report.

5.2.3. Test Procedures

The RF output of the transmitter was connected to the wireless communication tester and spectrum analyzer through attenuation.



The -26dB & 99% bandwidth was recorded.

Report No.: LCS1508191108E

5.2.4. Test Results

Temperature	25°C	Humidity	60%
ATM Pressure:	101.4kPa	Test Engineer	Jacky

The worst test data as follow:

Mode	Channel	Frequency (MHz)	Emission Bandwidth (-26dBc) (kHz)	Occupied Bandwidth (99%) (kHz)
	128	824.2	319.10	243.28
GSM 850	190	836.6	316.30	246.42
	251	848.8	319.30	244.96

Mode	Channel	Frequency (MHz)	Emission Bandwidth (-26dBc) (kHz)	Occupied Bandwidth (99%) (kHz)
	128	824.2	323.80	248.65
EGPRS 850	190	836.6	319.80	246.44
	251	848.8	318.00	249.51

Mode	Channel	Frequency (MHz)	Emission Bandwidth (-26dBc) (kHz)	Occupied Bandwidth (99%) (kHz)
	512	1850.2	311.10	240.93
PCS 1900	661	1880.0	321.40	242.57
	810	1909.8	313.20	241.56

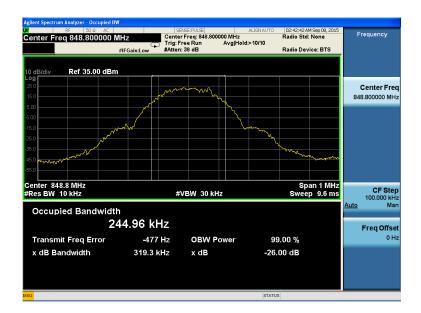
Mode	Channel	Frequency (MHz)	Emission Bandwidth (-26dBc) (kHz)	Occupied Bandwidth (99%) (kHz)
	512	1850.2	314.40	243.75
EGPRS 1900	661	1880.0	296.20	238.80
	810	1909.8	306.00	238.25

NOTE: All conditions have been tested and we only record the worst results in each bands.

Test Plots For GSM 850







This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 17 of 47

Test Plots For EGPRS 850

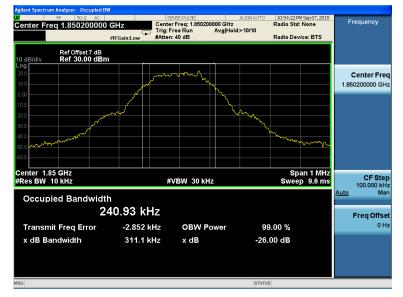






This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 18 of 47

Test Plots For PCS 1900

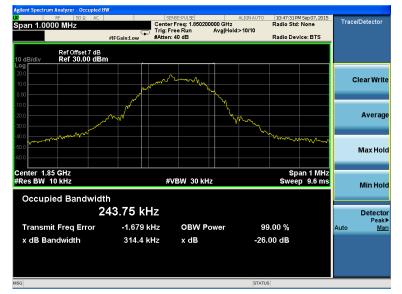






This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 19 of 47

Test Plots For EGPRS 1900







This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 20 of 47

FCC ID: SL9NLS-MT65

5.3. SPURIOUS AND HARMONIC EMISSION AT ANTENNA TERMINAL

5.3.1. Standard Applicable

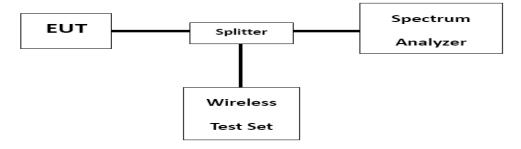
FCC §2.1051, §22.917 and §24.238.

5.3.2. Measuring Instruments

Please refer to section 6 of equipments list in this report.

5.3.3. Test Procedures

The RF output of the transmitter was connected to the wireless communication tester and spectrum analyzer through attenuation.



5.3.4. Test Results

Please refer to the following plots.

Transmitting Mode, CH 128, GSM 850

XI I	um Analyzer - Sw RF 50 © 976.69669	AC	SENSE:P	Avg tun Avg	ALIGNAUTO Type: Log-Pwr Hold>100/100	02:18:06 AM Sep 08, 2015 TRACE 1 2 3 4 5 0 TYPE MWWWWW DET P N N N N	Peak Search
10 dB/div	Ref Offset 7 Ref 35.00	dB			N	/lkr1 976.7 MHz -33.919 dBm	
- 09 25.0 15.0 5.00							Next Pk Righ
-5.00						-13.00 dBm	Next Pk Let
-35.0 -45.0 -55.0	Many and a start	an a	ala ge Maria - a stran fan at a dirak strakter	م بر روم والاور روا الار وروا الار وروا الار الم	alath airright de fran t-du		Marker Delt
Start 30.0 #Res BW	1.0 MHz	X	VBW 3.0 MHz	FUNCTION	Sweep 1	Stop 1.0000 GHz .066 ms (1000 pts) FUNCTION VALUE	Mkr→C
1 N 1 2 3 4 5 6	f	976.7 MHz	-33.919 dBn				Mkr→RefLv
7 8 9 10 11							Mor 1 of
< ISG					STATUS	s	

	SENSE:PULSE		02:20:42 AM Sep 08, 2015	Peak Search
arker 3 4.12312312312	PNO: Fast Trig: Free Run IEGain: Low Atten: 24 dB	Avg Type: Log-Pwr Avg Hold>100/100	TRACE 123456 TYPE MUNICIPAL DET PNNNNN	r cak ocarerr
Ref Offset 7 dB dB/div Ref 20.00 dBm		Ν	/kr3 4.123 GHz -43.626 dBm	Next Pea
				Next Pk Rig
	3			Next Pk Le
0 .0	Angeneral and an an and an	ist former of the first season of the product of th	Anna and the second	Marker De
art 1.000 GHz tes BW 1.0 MHz	#VBW 3.0 MHz		Stop 9.000 GHz 3.39 ms (1000 pts)	Mkr→C
R MODE TRC SCL X	2.473 GHz -26.787 dBm 1.649 GHz -27.267 dBm 4.123 GHz -43.626 dBm	FUNCTION FUNCTION WDTH	FUNCTION VALUE	Mkr→RefL
				Мо

Transmitting Mode, CH 190, GSM 850

RF 50 Q AC		SENSE:PULSE		ALIGN AUTO	02:18:36 AM Sep 08, 2015	
arker 1 945.625625626	MHz PNO: Fast G IFGain:Low		Avg	g Type: Log-Pwr Hold≫100/100	TRACE 123456 TYPE MUMUUUU DET P N N N N N	Peak Search
Ref Offset 7 dB dB/div Ref 35.00 dBm				N	lkr1 945.6 MHz -35.465 dBm	NextPea
9 .0 .0						Next Pk Righ
.0					-13.00 dBm	Next Pk Le
.0 .0			nen an	ynynagyn as gygdawyddwy	and househouse an ereal solar with	Marker Del
art 30.0 MHz tes BW 1.0 MHz	#VBV	V 3.0 MHz		Sweep 1	Stop 1.0000 GHz .066 ms (1000 pts)	Mkr→C
R MODE TRC SCL X	945.6 MHz	-35.465 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	
						Mkr→RefL
						Mo 1 of
						1 01

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 22 of 47
 SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD.
 FCC ID: SL9NLS-MT65

Report No.: LCS1508191108E

	AC	SENSE:PULSE	ALIGNAUTO	02:20:06 AM Sep 08, 2015	Peak Search
arker 1 2.5135135	13514 GHz PNO: Fast IFGain:Low	Trig: Free Run Atten: 24 dB	Avg Type: Log-Pwr Avg Hold≫100/100	TRACE 123456 TYPE MUMMUM DET PINNNNN	
Ref Offset 7 dB/div Ref 20.00 d			IV	lkr1 2.514 GHz -30.436 dBm	NextPea
9 0.0 00				-13.00 dBm	Next Pk Rig
1.0 2 1.0 2 1.0	1				Next Pk Le
1.0 \\	Hannall Handshert Courses		ann hef halen Ale tal lan yn afferet a yn Alestad	treastad 200 may and a second	Marker De
				Stop 9.000 GHz	
art 1.000 GHz Res BW 1.0 MHz	#VE	3W 3.0 MHz	Sweep 1	3.39 ms (1000 pts)	Mkr→C
R MODE TRC SCL	×	Y	Sweep 1	3.39 ms (1000 pts)	Mkr→C
tes BW 1.0 MHz				3.39 ms (1000 pts)	Mkr→0 Mkr→RefL

Transmitting Mode, CH 251, GSM 850

larker 1 955.335335	AC 335 MHz PNO: Fast	SENSE:PULSE	Avg T	ALIGNAUTO ype: Log-Pwr bld>100/100	TYPE	123456 Minterference	Peak Search
Ref Offset 7 dE	IFGain:Low	Atten: 38 dB			ьет kr1 955. -35.16	9 dBm	Next Pea
-09 25.0 15.0 5.00							Next Pk Rig
5.00						-13.00 dBm	Next Pk Le
35.0	-timetre -formalistantisch	1998, J. 1993, Same Stare Sta	an a	al Phase of the second s		****************	Marker De
tart 30.0 MHz Res BW 1.0 MHz	#VB	SW 3.0 MHz		Sweep 1.	Stop 1.00 066 ms (1		Mkr⊸
IKR MODE TRC SCL	Х	Y	FUNCTION	FUNCTION WIDTH	FUNCTION	VALUE	
	× 955.3 MHz	-35.169 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION	VALUE	Mkr→RefL

	RF	50.Ω AC			SENSE	PULSE		ALIGN AUTO		4 Sep 08, 2015	Peak Search
arker 2	1.6966	9669669	97 GHz PNO: IFGain	Fast 🕞	Trig: Free Atten: 24		Avg Avg H	Type: Log-Pwr Hold≫100/100	TYI	E 123456 E MANNAN F P N N N N N	Peak Search
) dB/div	Ref Offs Ref 20	et 7 dB .00 dBm						I	/lkr2 1.6 -33.0	97 GHz 30 dBm	Next Pea
										-13.00 dDm	Next Pk Rig
0.0 0.0 0.0	2	1 									Next Pk L
0.0 0.0 0.0	ann a li ann ann ann ann ann ann ann ann ann an			ر و بیادالی و اور اور اور اور اور اور اور اور اور ا	and an and a second	And Sector A	Auros 10-4940-0	den son gestier versen der	and a sol Anna da a	and yn de hei an de hei	Marker De
	1.0 MHz			#VBW	3.0 MHz			Sweep 1	Stop 9 3.39 ms (.000 GHz 1000 pts)	Mkr⊸(
KR MODE T		×	2.546 G		√ -32.423 dB	m	JNCTION	FUNCTION WIDTH	FUNCTIO	IN VALUE	
2 N 3 3 4 5 5	1 f		1.697 G	Hz	-33.080 dB	m				-	Mkr→Refl
											Mo

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 23 of 47

Transmitting Mode, CH 128, EGPRS 850

la nel 1	RF 50 Q A 772.79279279		SENSE:PUL	Avg	ALIGNAUTO Type: Log-Pwr Hold>100/100	02:26:39 AM Sep 08 TRACE 2 3 TYPE MWWA DET P N N	456	Peak Search
0 dB/div	Ref Offset 7 dB Ref 35.00 dBi	IFGain:Low	Atten: 38 dB		Ň	Ikr1 772.8 M -33.737 d		NextPea
25.0								Next Pk Rig
5.00					.1	-13)	0 dBm	Next Pk Lo
5.0	and and an an alternative strategy and an alternative strategy and an alternative strategy and an alternative s		an a	unter nor and and a	function of the state of the st			Marker De
tart 30.0 Res BW	1.0 MHz	#V	BW 3.0 MHz	FUNCTION	Sweep 1	Stop 1.0000 (.066 ms (1000	pts)	Mkr→
KR MODE T			-33.737 dBm	Tonenon	Tonenon wibini	TORCHOR WEDE		
KR MODE TI 2 3 4 5		772.8 MHz	-55.157 0611					Mkr→Refl
1 N 1 2 3 4		772.8 MHz						Mkr→RefL Mo 1 o

	RF 50Ω A		SENSE:PUL		ALIGN AUTO	02:23:26 AM Sep 08, 2015	Peak Search
arker 3	4.123123123 [.]	123 GHz PNO: Fast IFGain:Low	Trig: Free Ru Atten: 24 dB		g Type: Log-Pwr Hold≫100/100	TRACE 2 3 4 5 6 TYPE MUNICIPAL DET P N N N N N	
) dB/div	Ref Offset 7 dB Ref 20.00 dB	m			N	1kr3 4.123 GHz -44.798 dBm	Next Pea
							Next Pk Righ
0.0	$\langle \rangle^2 \qquad \langle \rangle^1$		3				Next Pk Le
i0.0 in a standard i0.0 in a standard i0.0 in a standard	and the second sec	Angelen and Start Long and Start	ak ala ana ana ana ana ana ana ana ana ana	et.syslandaroorge	Holizandra dina minangan di Mangangan dina minangan di	en algester konflikter anneren gehande konflikter	Marker Del
tart 1.00 Res BW	1.0 MHz		BW 3.0 MHz			Stop 9.000 GHz 3.39 ms (1000 pts)	Mkr→C
KR MODE TR	C SCL f f	× 2.473 GHz 1.649 GHz	Y -36.001 dBm -35.458 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	
3 N 1 4 5 6	f	4.123 GHz	-44.798 dBm			-	Mkr→RefL
7							Мо
8							1 01

Transmitting Mode, CH 190, EGPRS 850

larker 1 9	RF 50 Q AC 154.364364364	MHz PNO: Fast (IFGain:Low	Trig: Free Rur Atten: 38 dB	Avg	ALIGNAUTO Type: Log-Pwr Hold>100/100	02:27:27 AM Sep 08, 2015 TRACE 1 2:3 4 5 6 TYPE MWWWWW DET PINNINN	Peak Search
0 dB/div	Ref Offset 7 dB Ref 35.00 dBm				N	1kr1 954.4 MHz -34.181 dBm	NextPea
og 25.0 15.0							Next Pk Rig
.00 5.0 5.0						-13.00 dBm	Next Pk Le
5.0	Sheet will be for a first first of the last	and here a factor of the	endelanangkan di marang	**************************************	**************************************	and have a second as the second	Marker De
tart 30.0 I Res BW 1		#VB	W 3.0 MHz		Sweep 1	Stop 1.0000 GHz .066 ms (1000 pts)	Mkr→C
KR MODE TRC 1 N 1 2 3 4 5		954.4 MHz	Y -34.181 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	Mkr→RefL
6 7 8 9							M o 1 o

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 24 of 47
 SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD.
 FCC ID: SL9NLS-MT65

Report No.: LCS1508191108E

	50 Q AC	SENSE:PULS		ALIGNAUTO	02:24:08 AM Sep 08, 2015	Peak Search
arker 2 2.5135	13513514 GHz PNO: Fast IFGain:Lov		Avg' N Avg ⊢	Type: Log-Pwr Iold:>100/100	TRACE 2 3 4 5 6 TYPE MOMMANN DET P N N N N N	
	set 7 dB).00 dBm			N	lkr2 2.514 GHz -39.126 dBm	NextPea
9 						Next Pk Rig
	2					Next Pk Le
1.0	and a second and a s	Harris Barris and Branch	- Laver A ()	arm lag, and less and and	angen de bellefinnte en parte programmet des	Marker De
art 1.000 GHz tes BW 1.0 MH	z #\	/BW 3.0 MHz		Sweep 1	Stop 9.000 GHz 3.39 ms (1000 pts)	Mkr→C
R MODE TRC SCL	×	Y OL ODE UD	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	
N 1 F N 1 F	<u>1.673 GHz</u> 2.514 GHz	-31.005 dBm -39.126 dBm				Mkr→RefL
						Мо

Transmitting Mode, CH 251, EGPRS 850

Peak Search	Sep 08, 2015 E 1 2 3 4 5 6 E Ministricture	TRACE	ALIGN AUTO :: Log-Pwr >100/100			SENSE:F	z NO: Fast 🔾	2 AC 51061 MH			a
Next Pea	.1 MHz 07 dBm	kr1 931				Atten: 38 d	Gain:Low	dB	ef Offset 7 ef 35.00		10 dB
Next Pk Rig											- og 25.0 15.0
Next Pk Le	-13.00 dBm										5.00 - 5.00 - 15.0 - 25.0 -
Marker De				ang	مۇ ^{يى} رىكى ئېرلىر _{چىرى}	and the second	نامالەمبىرىيەن يېرىغ	and a constitution of the second s	and an an an an a	مى _{لى} دۇنىيە مىلە	
Mkr→C	000 pts)	Stop 1.0 066 ms (1 FUNCTION	Sweep 1.	TION FI	FUN	3.0 MHz Y	#VBW	×) MHz	30.0 N BW 1.	Res
Mkr→RefL					1	-33.607 dBr	1 MHz	931	f	N 1	2345
Мо 1 о											6 7 8 9 0
	>		STATUS			10					

	RF		AC			SENSE	PULSE		ALIGN AUTO		VM Sep 08, 201		Manlana
arker 1	2.54	554554	15546			Trig: Free	D		/pe:Log-Pwr old>100/100	TRA	CE 1 2 3 4 5	6	Marker
				PNO: F IFGain:I		Atten: 24		Avgino	sia:>100/100		DET PINNN	N	
_	_			ii Ouinia						Alend O	546 GH		Select Marker
0 dB/div		Offset 7 c 20.00 c							I	-41.4	92 dBn		1
og													
													Norm
.00													
).0											-13.00 dB		
0.0													
0.0	_0 ŕ _	_	1										Del
0.0			<u>`</u>										
		and the second		moundary		مىلاھىرىيەلىر	menergule	An mary	handreament	- Andrewson and the second	and management		
0.0													F ire d
													Fixed
0.0													
tart 1.00	00 GH	z								Stop	.000 GH	2	
Res BW				;	#VBW	/ 3.0 MHz			Sweep 1	3.39 ms	(1000 pts)	0
KR MODE TI			×			Y		ICTION	FUNCTION WIDTH	FUNCT	ION VALUE	I	
1 N 1 2 N 1				2.546 GH		-41.492 dE -34.033 dE	3m						
3				1.097 GF	12	-34.033 dE	SITI						
4													Properties
5 6													
7													
8													Mo
9												-	1 of
9													
9						II							

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 25 of 47

FCC ID: SL9NLS-MT65

Report No.: LCS1508191108E

Transmitting Mode, CH 512, PCS 1900

									Analyzer - Sv	Spectrur	gilent
Peak Search	1 Sep 07, 2015 E 1 2 3 4 5 6	TRAC	ALIGNAUTO : Log-Pwr	Avg Typ		SENSE		∞ AC 0000 MHz		(er 1 3	4 Mark
NextPeak	0.0 MHz	DE Mkr1 30		Avg Hold		Trig: Free Atten: 28	NO: Fast 🕞 Gain:Low	P IF	Ref Offset 7 Ref 25.00		10 dB
Next Pk Righ											15.0 5.00
Next Pk Lef	-13.00 dBm									1	-15.0 -25.0 -35.0
Marker Delta	nteresty means year	an an tha an	ماسي مەرمىر ا مىرلىيىتى	nulaharre	a fafilina a daga	and a factor of the second	an a share a s	nin warde statione	Rossierine Josef	U	-45.0 -55.0 - -65.0 -
Mkr→CF	1000 GHz 1000 pts)	.066 ms (Sweep 1			3.0 MHz	#VBW	×	O MHZ	t 30.0 f 5 BW 1 10de tro N 1	#Res
Mkr→RefLv											23456
More 1 of 2	-										7 8 9 10 11
		1	STATUS	_							ISG

arker 2		DQ AC		SENSE:PULSE		ALIGN AUTO	11:09:39 PM Sep 07,3	
	2 5.792792	2792793 GHz	:Fast 😱 Tri	ig: Free Run	Avg	Type: Log-Pwr Hold:>100/100	TRACE 123 TYPE Moder	456
		IFGai		tten: 34 dB			DET P N N	NNN
	-					Ν	1kr2 5.793 G	Next P
0 dB/div	Ref Offset Ref 30.0						-32.019 di	
.og								
20.0								Next Pk R
10.0								
.00								
10.0							-10.0	0 dBm
20.0	1	ا ور مع ک						Next Pk
30.0	<u> </u>	<mark>♦</mark> 2						
an n	andres	and the second second	and a second	M. Anardena	monter	and a second and a s	and a second and a s	
50.0								MarkerD
60.0								
tart 1.0	00 GHz						Stop 20.000 G	2H7
				MHZ		Swoon A	2 5 5	
	1.0 MHz		#VBW 3.0	101112		aweep 4	7.55 ms (1000 j	DIS) Mkr-
		×		Y Y	FUNCTION	FUNCTION WIDTH	7.55 ms (1000 p	ots) Mkr-
Res BW	TRC SCL	2.445 (GHz -27.	Y 850 dBm	FUNCTION			Dts) Mkr-
Res BW	TRC SCL		GHz -27.	Y	FUNCTION			
Res BW	TRC SCL	2.445 (GHz -27.	Y 850 dBm	FUNCTION			
Res BW	TRC SCL	2.445 (GHz -27.	Y 850 dBm	FUNCTION			
Res BW	TRC SCL	2.445 (GHz -27.	Y 850 dBm	FUNCTION			Mkr→Re
Res BW	TRC SCL	2.445 (GHz -27.	Y 850 dBm	FUNCTION			
Res BW	TRC SCL	2.445 (GHz -27.	Y 850 dBm	FUNCTION			Mkr→Re

Transmitting Mode, CH 661, PCS 1900

		SENSE:PULSE		ALIGN AUTO	11:11:48 PM Sep 07, 2015	
arker 1 31.941941942 M	NHZ PNO: Fast IEGain:Low	Trig: Free Run Atten: 28 dB		j Type:Log-Pwr Hold:>100/100	TRACE 123456 TYPE Middleton	Peak Search
Ref Offset 7 dB dB/div Ref 25.00 dBm	IFGain:Low	Atten: 20 dB			Mkr1 31.9 MHz -38.610 dBm	NextPea
9						Next Pk Rig
5.0 5.0 5.0 2					-13.00 dBm	Next Pk Lo
5.0 Harring and the second sec	normaliza ere anterar	-tailmanethtann-tilfailanni	hajnature (juarda)	normalis construction	n	Marker De
art 30.0 MHz Res BW 1.0 MHz	#VB	W 3.0 MHz		Sweep 1	Stop 1.0000 GHz .066 ms (1000 pts)	Mkr→0
R MODE TRC SCL X	31.9 MHz	۲ -38.610 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	
					=	Mkr→RefL
7						Mc 1 o

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 26 of 47

SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD.

FCC ID: SL9NLS-MT65

Report No.: LCS1508191108E

	RF	50.Ω AC		SENSE:PUI		ALIGN AUTO	11:10:24 PM Sep 07, 2015	
arker 2	2 6.1351	35135135	5 GHz PNO: Fast	Trig: Free Ru		Type: Log-Pwr Hold:>100/100	TRACE 12345 TYPE MWWWWW DET P N N N N	
			IFGain:Low	Atten: 34 dB			001	Select Trace
dB/div	Ref Offs Ref 30	et7 dB .00 dBm				N	1kr2 6.135 GH: -36.067 dBm	2
0.0								Clear Wr
00								
).0							-10.00 dDr	
1.0	1							Trace Avera
1.0	<u> </u>		2					
10			and the second second	mound	وبهتعملهمتمنيس	-water and a start of the start	mentother	•
0.0								Max Ho
0.0								Maxino
tart 1.00	00 GHz 1.0 MHz		#\/D	W 3.0 MHz		Swoon 4	Stop 20.000 GHz 7.55 ms (1000 pts	Ballio I I a
			# V L					
(R MODE T	1 f	×	2.445 GHz	-27.704 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	
2 N '			6.135 GHz	-36.067 dBm				View Blank
								Trace O
3								
3								
34444								
3 4 5 6 7 8 9								
2 N 3 4 5 5 6 7 8 9 9 0								M o 1 o

Transmitting Mode, CH 810, PCS 1900

									nalyzer - S		t Spect
Peak Search	1 Sep 07, 2015 E 1 2 3 4 5 6 E Ministration	TRAC	ALIGNAUTO e: Log-Pwr d:>100/100	Avg T Avg H	Run		NO: Fast 🔾	826 MH		⊪ 35.	ker 1
Next Pea	8 MHz 8 dBm	Mkr1 35				Atten: 28	Gain:Low	dB	f Offset 7 ef 25.00		3/div
Next Pk Rig											
Next Pk Le	-13.00 dBm										1
Marker Del		ng the trade of grade of g	Jan Jacob and Street of States	mandeneer	110-140 (h.a.).	s,dylg,cant ^{ti} r vianitys	Leverth-Q178070000	an bei en der Balanen er	an fred for the second	Lagrand and	Hura
Mkr→C		Stop 1.0 .066 ms (FUNCTIO	Sweep 1	NCTION	FL	3.0 MHz Y	#VBW	×	MHz	1.0	t 30.0 s BW
Mkr→RefL					3m	-39.268 dE	.8 MHz	3		1 f	N
Mo 1 of											
	~					111					

		AC	SENSE		ALIGN AUTO	11:10:53PM Sep 07, 2015	Trace/Detector
larker 2	2 5.3933933	PNO: F	ast 👝 Trig: Free	Run Avg	g Type: Log-Pwr Hold: 80/100	TRACE 123456 TYPE MWWWWWW DET PNNNNN	Trace/Detector
		IFGain:	Low Atten: 34	dB			Select Trac
0 dB/div	Ref Offset 7 Ref 30.00				N	/kr2 5.393 GHz -35.904 dBm	
og 20.0							
10.0							Clear Wr
0.00							
10.0						-13.00 dBm	Trace Avera
20.0	1	• 2					TTace Avera
30.0	Y II			and the second sec	and the second second	monum	
40.0 www.	and the second s	and the second s	and the second and the second				
50.0							Max Ho
							Max Ho
60.0							MaxHo
	00 GHz					Stop 20 000 GHz	MaxHo
tart 1.00	00 GHz / 1.0 MHz		#VBW 3.0 MHz		Sweep 4	Stop 20.000 GHz 7.55 ms (1000 pts)	
50.0 Start 1.00 Res BW	/ 1.0 MHz	×	#VBW 3.0 MHz	FUNCTION	Sweep 4	Stop 20.000 GHz 7.55 ms (1000 pts)	Max Ho
Itart 1.00 Res BW	I 1.0 MHZ	× 2.445 Gł	۲ -31.056 d⊟	3m		7.55 ms (1000 pts)	
tart 1.00 Res BW	I 1.0 MHZ	×	۲ -31.056 d⊟	3m		7.55 ms (1000 pts)	Min Ho
tart 1.00 Res BW KR MODE T 1 N 2 N 3 4	I 1.0 MHZ	× 2.445 Gł	۲ -31.056 d⊟	3m		7.55 ms (1000 pts)	Min Ho View Blan
tart 1.00 Res BW KR MODE T 1 N 2 N 3 4 5 6	I 1.0 MHZ	× 2.445 Gł	۲ -31.056 d⊟	3m		7.55 ms (1000 pts)	Min Ho View Blan
tart 1.00 Res BW KR MODE T 1 N 2 N 3 4 5	I 1.0 MHZ	× 2.445 Gł	۲ -31.056 d⊟	3m		7.55 ms (1000 pts)	Min Ho View Blani Trace O
tart 1.00 Res BW	I 1.0 MHZ	× 2.445 Gł	۲ -31.056 d⊟	3m		7.55 ms (1000 pts)	Min Ho View Blan Trace O Mo
Itart 1.00 Res BW	I 1.0 MHZ	× 2.445 Gł	۲ -31.056 d⊟	3m		7.55 ms (1000 pts)	

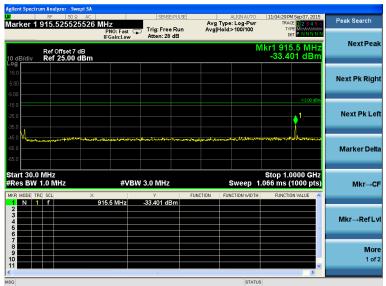
This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 27 of 47

Transmitting Mode, CH 512, EGPRS 1900

RF 50 Q larker 1 30.000000	AC 000 MHz PNO: Fast	SENSE:PUL	Avg	ALIGNAUTO Type: Log-Pwr Hold>100/100	TYPE	23456	Peak Search
Ref Offset 7 0 dB/div Ref 25.00	IFGain:Low				Mkr1 30.0 -35.231	MHz dBm	NextPea
.og 15.0 5.00							Next Pk Rig
5.00 15.0 25.0 - 1 35.0 - 1						-13.00 dBm	Next Pk Le
45.0 55.0 65.0		And and the construction of the	Wraphile and and	ution of a second s		******	Marker Del
Start 30.0 MHz Res BW 1.0 MHz KKR MODE TRC SCL	×	BW 3.0 MHz	FUNCTION	Sweep 1	Stop 1.000 .066 ms (100 FUNCTION W	00 pts)	Mkr→C
1 N 1 f 2 3 4 5 6	30.0 MHz	-35.231 dBm				=	Mkr→RefL
7 8 9 10 11							Mo 1 of
		10				×	

Trace/Detector	1 Sep 07, 2015 E 1 2 3 4 5 6 E Montrolation	TRAC	ALIGNAUTO	Avg Ty Avg Ho	:PULSE			r - Swept SA 50 & AC 45445445	RF	xi
Select Trace 1	45 GHz 33 dBm	DE		Avgino		Atten: 28	PNO: Fast 🕞 IFGain:Low	set 7 dB .00 dBm	Ref (10 dB/div
Clear Wri										15.0 5.00
Trace Avera	-13.00 dBm								1	15.0
Max Ho		Wwp	and the second	and the second	hter gerret	an a		hay reterented and	hulmun	45.0 55.0 65.0
Min Ho	.000 GHz 1000 pts)		Sweep 4	CTION F		/ 3.0 MHz	#VBV	2 ×	000 GH: N 1.0 M	
View Blan Trace O					im	-30.383 dE	445 GHz	2	1 f	1 N 2 3 4 5 6
M c 1 c										7 8 9 10
	>		STATUS			Ш				G

Transmitting Mode, CH 661, EGPRS 1900



This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 28 of 47
 SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD.
 FCC ID: SL9NLS-MT65

Report No.: LCS1508191108E

	RF 50 Ω A		SENSE:PU		ALIGN AUTO	11:06:26 PM Sep 07, 2015	Trace/Detecto
arker 1	2.4454454454	445 GHz PNO: Fast IFGain:Low		un Avg	j Type: Log-Pwr Hold: 65/100	TRACE 123456 TYPE MUNANNA DET P NNNNN	
dB/div	Ref Offset 7 dB Ref 25.00 dBi	m			N	lkr1 2.445 GHz -33.347 dBm	
5.0 .00							Clear Wr
5.0						-13.00 dBm	
5.0	•1						Trace Avera
5.0 5.0 	a martine and a state way	M. Marganeters Marson	and the second	لسيهم بمستجر ومالي	an service and a	Maglor of the other states and	
5.0							Max H
art 1.00 Res BW	00 GHz 1.0 MHz	#V	BW 3.0 MHz		Sweep 4	Stop 20.000 GHz 7.55 ms (1000 pts)	
R MODE T	1.0 MHz	X	Y	FUNCTION	Sweep 4		
tes BW	1.0 MHz					7.55 ms (1000 pts)	

Transmitting Mode, CH 810, EGPRS 1900

Peak Search	1Sep 07, 2015 E 1 2 3 4 5 6 E MUUUUUUUU	TRAC	ALIGN AUTO :: Log-Pwr >100/100			Trig: Free	PNO: Fast 🗔	R AC 0971 MHz			a
Next Pea	<u> </u>	Mkr1 31			dB	Atten: 28	Gain:Low	dB	ef Offset 7 ef 25.00		10 dB/c
Next Pk Rig											15.0 -
Next Pk Le	-13.00 dBm										-15.0 -25.0 -35.0
Marker Del	~	ate Protonga and the		angerand to game of the	an din tradiciona	ingenallyngebod en old	nin ladin takan kara	nte granne (de condição)	a a a a a a a a a a a a a a a a a a a	*****	45.0 🗛 55.0 — 65.0 —
Mkr→C	1000 pts)	Stop 1.0 .066 ms (1 FUNCTIO	Sweep 1	CTION		3.0 MHz Y		X	MHz	W 1.0	Start 3 Res I
Mkr→RefL	=					-38.550 dE	.0 MHz	3'		1	1 2 3 4 5 6
Mo 1 of											7 8 9 10
			STATUS			10					G

	50 Q AC		SENSE	PULSE		ALIGNAUTO	11:05:52 PM		Peak Search
2.44544	PN	IO: Fast					TYP	MINNAMA	Feak Search
	t7dB	ain:Low_	Atten: 20			IV	lkr1 2.4 -33.70	15 GHz 6 dBm	Next Pea
									Next Pk Rig
•1								-13.00 dBm	Next Pk Lo
un lease days	م _{وا} قب مانان محمور موادم می	enda dest	and the production	and the second second	4	hingt ^h ugalan		an the second	Marker De
00 GHz 1.0 MHz		#VB	W 3.0 MHz			Sweep 4	7.55 ms (1	000 pts)	Mkr→
RC SCL	× 2.44	5 GHz	۲ -33.706 dB		ION FUN	NCTION WIDTH	FUNCTIO	N VALUE	
								-	Mkr→Refl
									Mo
	Ref Offse Ref 25.1	Ref Offset 7 dB Ref 25.00 dBm	Ref Offset 7 dB Ref 25.00 dBm	PRO: Fast Trig: Free Atten: 28	PNO: Fast Tig: Free Run Ref Offset 7 dB Ref 25.00 dBm	RE SCL X Y EUCTON FUT	PHO: Frast Tig: Free Run Avg Hold: 81/100 Ref Offset 7 dB Ref 25.00 dBm	PHO: Feat Trig: Free Run AvgiHoid: 81/100 Trig: Free Run Atten: 28 dB AvgiHoid: 81/100 Trig: 70 dB AvgiHoid: 81	PHO: Fast: Trig: Free Run Atten: Avg Heid: Strift Provide Ref Offset 7 dB Mkr1 2.445 GHz

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 29 of 47

FCC ID: SL9NLS-MT65

Test Result of Band Edge Emissions, GSM 850





Test Result of Band Edge Emissions, EGPRS 850



This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 30 of 47



Test Result of Band Edge Emissions, PCS 1900





This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 31 of 47

FCC ID: SL9NLS-MT65

Test Result of Band Edge Emissions, EGPRS 1900





NOTE: All conditions have been tested and we only record the worst results in each bands.

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 32 of 47

5.4. RADIATED SPURIOUS EMISSIONS MEASUREMENT

5.4.1. Standard Applicable

FCC §2.1053, §22.917 and §24.238.

5.4.2. Measuring Instruments

Please refer to section 6 of equipments list in this report.

5.4.3. Test Procedures

The EUT was placed on a non-conductive, the measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

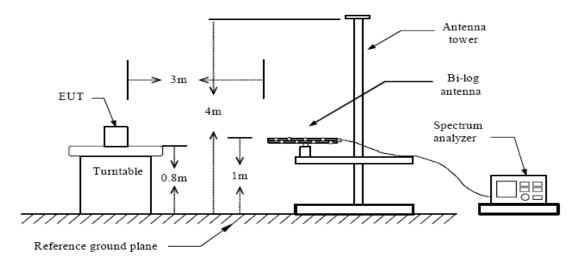
The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission were identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

ERP = S.G. output (dBm) + Antenna Gain (dBd) - Cable (dB)

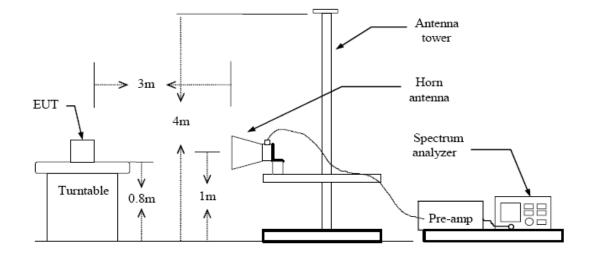
EIRP = S.G. output (dBm) + Antenna Gain (dBi) - Cable (dB)

For radiated spurious emissions below 1GHz

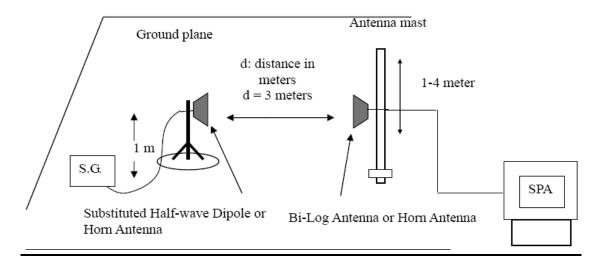


FCC ID: SL9NLS-MT65

For radiated spurious emissions above 1GHz



Substituted Method



5.4.4. Test Results

The worst test data as follow: 30MHz~10GHz

	The Worst Test Result For GSM 850, CH 128										
Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Result	Polarity							
951.50	-66.57										
1648.57	-19.69	-13	Pass	н							
2472.69	-23.23										
47.46	-63.28										
1648.57	-22.41	-13	Pass	V							
2472.69	-25.25										

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 34 of 47
 SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD.
 FCC ID: SL9NLS-MT65

Report No.: LCS1508191108E

The Worst Test Result For GSM 850, CH 190				
Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Result	Polarity
951.50	-65.78	-13		
1673.29	-20.36	-13	Pass	н
2509.88	-24.02	-13		
47.46	-64.41	-13		
1673.29	-22.78	-13	Pass	V
2509.88	-24.39	-13		

	The Worst Test Result For GSM 850, CH 251				
Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Result	Polarity	
951.50	-65.41	-13			
1697.51	-19.78	-13	Pass	Н	
2546.23	-24.22	-13			
47.46	-62.15	-13			
1697.51	-21.74	-13	Pass	V	
2546.23	-24.96	-13			

30MHz~10GHz

The Worst Test Result For GSM 850, CH 128				
Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Result	Polarity
951.50	-65.45			
1648.42	-24.61	-13	Pass	н
2472.55	-26.72			
47.46	-64.45			
1648.42	-24.11	-13	Pass	V
2472.55	-28.36			

	The Worst Test Result For GSM 850, CH 190			
Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Result	Polarity
951.50	-65.74	-13		
1673.21	-23.89	-13	Pass	Н
2509.85	-27.06	-13	7	
47.46	-64.12	-13		
1673.21	-24.81	-13	Pass	V
2509.85	-28.42	-13		

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 35 of 47

SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD.

FCC ID: SL9NLS-MT65

Report No.: LCS1508191108E

The Worst Test Result For GSM 850, CH 251				
Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Result	Polarity
951.50	-64.46	-13		
1697.44	-23.87	-13	Pass	Н
2546.39	-28.63	-13		
47.46	-65.11	-13		
1697.44	-25.75	-13	Pass	V
2546.39	-29.54	-13		

30MHz~20GHz

The Worst Test Result For PCS 1900, CH 512				
Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Result	Polarity
951.50	-65.37	-13		
3700.44	-26.11	-13	Pass	Н
5550.26	-29.26	-13		
47.46	-64.41	-13		
3700.44	-28.78	-13	Pass	V
5550.26	-30.46	-13		

	The Worst Test Result For PCS 1900, CH 661			
Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Result	Polarity
951.50	-65.63	-13		
3760.36	-26.42	-13	Pass	Н
5640.41	-29.55	-13		
47.46	-65.36	-13		
3760.36	-28.12	-13	Pass	V
5640.41	-30.74	-13		

	The Worst Test Result For PCS 1900, CH 810				
Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Result	Polarity	
951.50	-65.74	-13			
3819.17	-26.35	-13	Pass	Н	
5729.23	-29.18	-13			
47.46	-64.22	-13			
3819.17	-28.64	-13	Pass	V	
5729.23	-30.58	-13			

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 36 of 47
 SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD.
 FCC ID: SL9NLS-MT65

Report No.: LCS1508191108E

	The Worst Test Result For PCS 1900, CH 512			
Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Result	Polarity
951.50	-65.86	-13		
3700.36	-29.12	-13	Pass	н
5550.58	-31.74	-13		
47.46	-63.25	-13		
3700.36	-30.43	-13	Pass	V
5550.58	-33.85	-13		

30MHz~20GHz

The Worst Test Result For PCS 1900, CH 661				
Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Result	Polarity
951.50	-65.55	-13		
3760.21	-29.16	-13	Pass	Н
5640.26	-31.94	-13		
47.46	-63.29	-13		
3760.21	-30.36	-13	Pass	V
5640.26	-33.41	-13		

	The Worst Test Result For PCS 1900, CH 810			
Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Result	Polarity
951.50	-65.74	-13		
3819.45	-29.38	-13	Pass	Н
5729.37	-31.22	-13		
47.46	-63.45	-13		
3819.45	-30.77	-13	Pass	V
5729.37	-33.86	-13		

NOTE : The result below 30MHz is too low, there is only base environmental noise. We Only record the worst results above 30MHz.

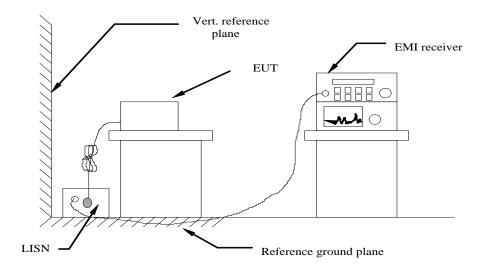
5.5. POWER LINE CONDUCTED EMISSIONS

5.5.1 Standard Applicable

According to \$15.107 (a): For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolt (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency Range	Limits (dBµV)		
(MHz)	Quasi-peak	Average	
0.15 to 0.50	66 to 56	56 to 46	
0.50 to 5	56	46	
5 to 30	60	50	

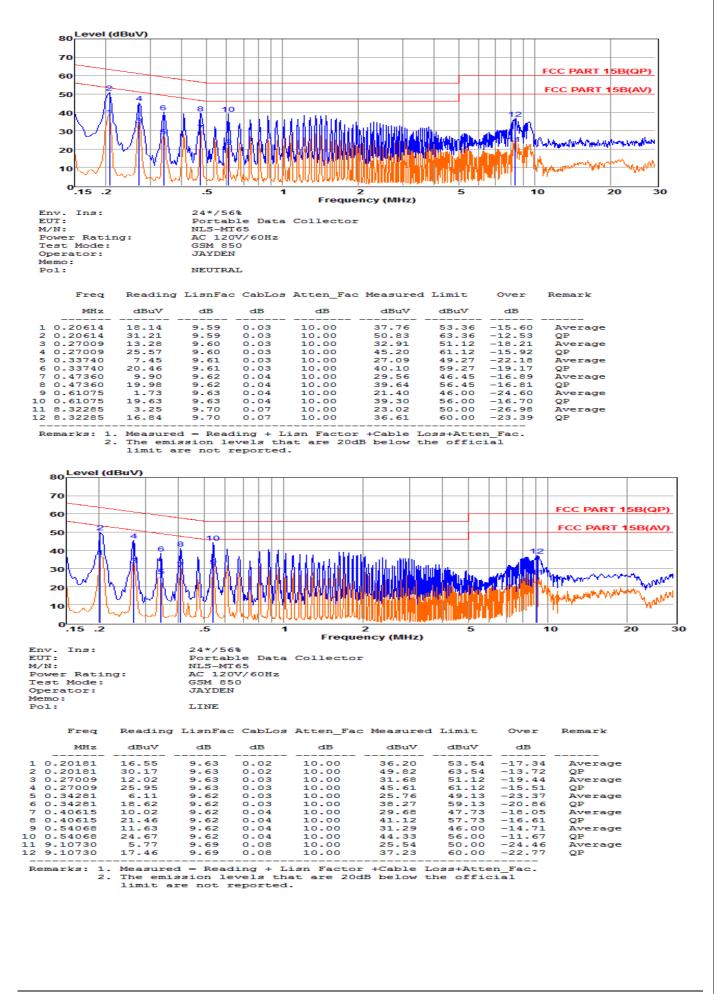
5.5.2 Block Diagram of Test Setup



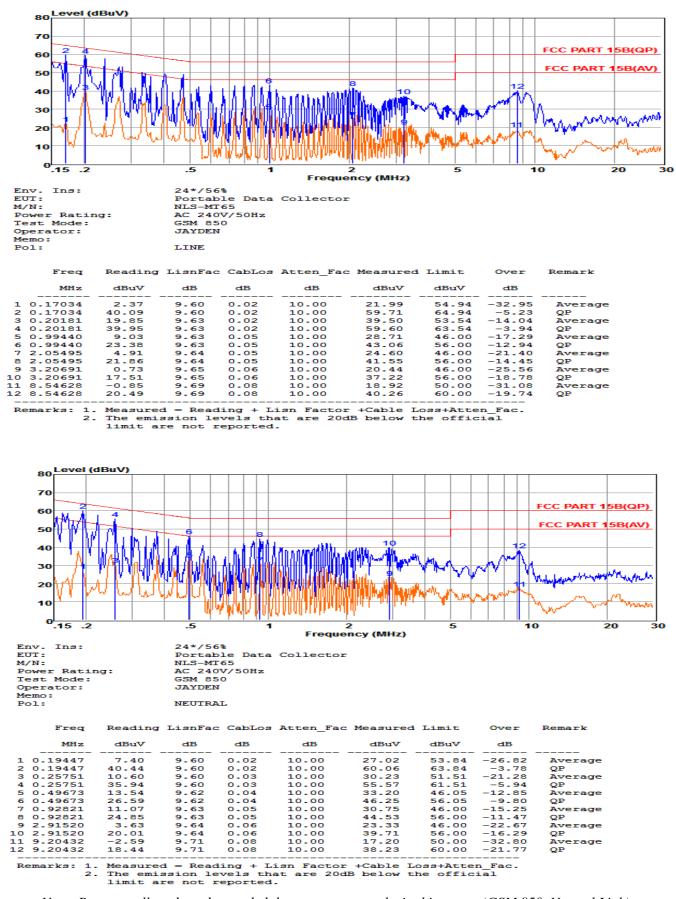
5.5.3 Test Results

PASS.

The test data please refer to following page.



This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 39 of 47



Note: Pre-scan all mode and recorded the worst case results in this report (GSM 850, Normal Link)

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 40 of 47

5.6.MODULATION CHARACTERISTIC

According to FCC §2.1047(d), Part 22H & 24E there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

5.7. FREQUENCY STABILITY OVER TEMPERATURE AND VOLTAGE

VARIATIONS

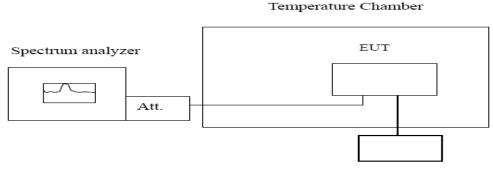
5.7.1. Standard Applicable

FCC §2.1055, §22.355 and §24.235, Frequency Tolerance: 2.5ppm

5.7.2. Test Procedures

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency.

Turn EUT off and set the chamber temperature to -30° C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10° C increased per stage until the highest temperature of $+50^{\circ}$ C reached.



Variable Power Supply

5.7.3. Test Results

Pass

SHENZHEN	LCS	COMP	LIANCE	TESTING	LABORAT	ORY LTD.

FCC ID: SL9NLS-MT65 Re

Report No.: LCS1508191108E

The worst test data as follow:

R		SM850 Mide	lle channel=190 channel=	836.6MHz	
Power supplied (Vdc)	Temperature (℃)	F	requency error	Limit (ppm)	Result
III III III III III III III III III II	I ,	Hz	ppm		
	-30	5	0.0060		
	-20	2	0.0024		
	-10	6	0.0072		
	0	5	0.0060		
3.70	10	4	0.0048	2.5	Pass
	20	2	0.0024		
	30	6	0.0072		
	40	3	0.0036		
	50	4	0.0048		
R	Reference Frequency: P	CS1900 Mid	dle channel=661 channel=	=1880MHz	
Power supplied (Vdc)	Temperature (℃)		requency error		Result
· · · · ·	-	Hz	ppm		
	-30	3	0.0016		
	-20	5	0.0026		
	-10	7	0.0037		
	0	6	0.0032		
3.70	10	2	0.0011	2.5	Pass
	20	4	0.0021		
	30	6	0.0032		
	40	4	0.0021		
	50	5	0.0026		

Reference Frequency: GSM850 Middle channel=190 channel=836.6MHz							
Temperature (℃)	Power supplied	Frequer	cy error	Limit (ppm)	Result		
F	(Vdc)	Hz	ppm				
	4.25	3	0. 0036				
25	3.70	7	0. 0083	2.5	Pass		
	3.40	5	0. 0060				
F	Reference Frequency: P	CS1900 Middle cha	nnel=661 channel=	=1880MHz			
Temperature (℃)	Power supplied	Frequency error		Limit (ppm)	Result		
. I , ,	(Vdc)	Hz	ppm				
	4.25	6	0. 0072				
25	3.70	4	0. 0048	2.5	Pass		
	3.40	4	0. 0048				

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 42 of 47 SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD.

FCC ID: SL9NLS-MT65

Report No.: LCS1508191108E

Reference Frequency: EGPRS 850 Middle channel=190 channel=836.6MHz							
Power supplied (Vdc)	Temperature (℃)	F	requency error	Limit (ppm)	Result		
	Temperature (0)	Hz	ppm				
	-30	5	0.0060				
	-20	3	0.0036				
	-10	4	0.0048				
	0	2	0.0024				
3.70	10	7	0.0083	2.5	Pass		
	20	6	0.0072				
	30	4	0.0048				
	40	5	0.0060				
	50	3	0.0036				
Ret	ference Frequency: EG	PRS 1900 M	iddle channel=661 channe	el=1880MHz			
Power supplied (Vdc)	Temperature (℃)		requency error		Result		
	1 , ,	Hz	ppm				
	-30	6	0.0032				
	-20	4	0.0021				
	-10	5	0.0026				
	0	7	0.0037				
3.70	10	4	0.0021	2.5	Pass		
	20	5	0.0026				
	30	2	0.0011				
	40	4	0.0021				
	50	3	0.0016				

	eference Frequency: EGI			F	
Temperature (°C)	Power supplied	Freque	ncy error	Limit (ppm)	Result
remperator (0)	(Vdc)	Hz	ppm	Zinni (ppin)	
	4.25	3	0. 0036		Pass
25	3.70	5	0. 0060	2.5	
	3.40	4	0. 0048		
Re	ference Frequency: EGF	RS 1900 Middle	channel=661 chann	el=1880MHz	
Temperature (℃)	Power supplied	Frequency error		Limit (ppm)	
I I I I I I I I I I	(Vdc)	Hz	ppm	(FF)	Result
	4.25	4	0. 0021		
25	4.25 3.70	4	0. 0021	2.5	Pass

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 43 of 47

5.8. PEAK-TO-AVERAGE RATIO

5.8.1. Standard Applicable

According to FCC \$2.1046 and \$24.232(d), the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

5.8.2. Measuring Instruments

Please refer to section 6 of equipments list in this report.

5.8.3. Test Procedures

The following steps outline the procedure used to measure the Peak-to-Average Ratio from the EUT.

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.

2. For GSM/EGPRS operating modes:

a. Set the RBW = 1MHz, VBW = 1MHz, Peak detector in spectrum analyzer.

b. Set EUT in maximum power output, and triggered the burst signal.

c. Measured respectively the Peak level and Mean level, and the deviation was recorded as Peak to Average Ratio.

3. For UMTS operating modes:

a. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.

b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.

5.8.4. Test Resu	llts					
Modes	PCS 1900					
Channal	512	661	810			
Channel	Low	Mid	High			
Frequency(MHz)	1850.2	1880	1909.8			
Peak-To-Average Ratio (dB)	0.43	0.55	0.37			

Modes	EGPRS 1900					
Channel	512	661	810			
Channel	Low	Mid	High			
Frequency(MHz)	1850.2	1880	1909.8			
Peak-To-Average Ratio (dB)	0.62	0.52	0.44			

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 45 of 47

SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD.

FCC ID: SL9NLS-MT65

Report No.: LCS1508191108E

6. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Cal Date	Due Date
EMC Receiver	R&S	ESCS 30	100174	9kHz – 2.75GHz	June 18, 2015	June 17, 2016
Signal analyzer	Agilent	E4448A(External mixers to 40GHz)	US44300469	9kHz~40GHz	July 18, 2015	July 17, 2016
Signal analyzer	Agilent	N9020A	MY50510140	9kHz~26.5GHz	October 27, 2014	October 26, 2015
LISN	MESS Tec	NNB-2/16Z	99079	9KHz-30MHz	June 25, 2015	June 24, 2016
LISN	EMCO	3819/2NM	9703-1839	9KHz-30MHz	June 25, 2015	June 24, 2016
RF Cable-CON	UTIFLEX	3102-26886-4	CB049	9KHz-30MHz	June 25, 2015	June 24, 2016
ISN	SCHAFFNER	ISN ST08	21653	9KHz-30MHz	June 25, 2015	June 24, 2016
3m Semi Anechoic	SIDT	SAC-3M	03CH03-HY	30M-1GHz	June 18, 2015	June 17, 2016
Amplifier	SCHAFFNER	COA9231A	18667	9kHz-2GHzz	June 16, 2015	June 15, 2016
Amplifier	Agilent	8449B	3008A02120	1GHz-26.5GHz	July 16, 2015	July 15, 2016
Amplifier	MITEQ	AMF-6F-260400	9121372	26.5GHz-40GHz	July 16, 2015	July 15, 2016
Loop Antenna	R&S	HFH2-Z2	860004/001	9k-30MHz	June 16, 2015	June 15, 2016
Loop Antenna	R&S	HFH2-Z2	860024/003	9k-30MHz	June 16, 2015	June 15, 2016
By-log Antenna	SCHWARZBECK	VULB9163	9163-470	30MHz-1GHz	June 16, 2015	June 15, 2016
By-log Antenna	SCHWARZBECK	VULB9163	9163-475	30MHz-1GHz	June 16, 2015	June 15, 2016
Horn Antenna	EMCO	3115	6741	1GHz-18GHz	June 16, 2015	June 15, 2016
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15GHz-40GHz	June 16, 2015	June 15, 2016
RF Cable-R03m	Jye Bao	RG142	CB021	30MHz-1GHz	June 25, 2015	June 24, 2016
RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	1GHz-40GHz	June 25, 2015	June 24, 2016
Spectrum Meter	R&S	FSP 30	100023	9kHz-30GHz	July 16, 2015	July 15, 2016
Power Meter	R&S	NRVS	100444	DC-40GHz	June 18, 2015	June 17, 2016
Power Sensor	R&S	NRV-Z51	100458	DC-30GHz	June 18, 2015	June 17, 2016
Power Sensor	R&S	NRV-Z32	10057	30MHz-6GHz	June 18, 2015	June 17, 2016
AC Power Source	HPC	HPA-500E	HPA-9100024	AC 0~300V	June 18, 2015	June 17, 2016
DC power Soure	GW	GPC-6030D	C671845	DC 1V-60V	June 18, 2015	June 17, 2016
Temp. and	Giant Force	GTH-225-20-S	MAB0103-00	N/A	June 18, 2015	June 17, 2016
RF CABLE-1m	JYE Bao	RG142	CB034-1m	20MHz-7GHz	June 25, 2015	June 24, 2016
RF CABLE-2m	JYE Bao	RG142	CB)35-2m	20MHz-1GHz	June 25, 2015	June 24, 2016
Vector signal	R&S	SMU200A	102098	100kHz~6GHz	June 18, 2015	June 17, 2016
Signal Generator	R&S	SMR40	10016	10MHz~40GHz	July 16, 2015	July 15, 2016

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd.. Page 46 of 47

<u>SHENZHEN LCS C</u>	OMPLIANCE TEST	ING LABORATORY	LTD. FC	CC ID: SL9NLS-MT65	Report No	.: LCS1508191108E
Universal Radio	R&S	CMU200	112012	N/A	July 18, 2015	July 17, 2016
Note: All equipment	through GRGT EST ca	libration		·		
		THE	END OF RE	PORT		