

# **RADIO TEST REPORT**

# Report No: STS1610071F01

S T S

A

Issued for

Bytech NY Inc.

2585 West 13th Street, Brooklyn, NY 11223, New York, USA

Product Name:	WCDMA Smart phone
Brand Name:	BYTECH
Model Name:	Be One
Series Model:	S31
FCC ID:	2AHN6-BEONE
Test Standard:	FCC Part 22H and 24E

Any reproduction of this document must be done in full. No single part of this document may be reproduced without permission from STS, All Test Data Presented in this report is only applicable to presented Test sample VAL





# **TEST RESULT CERTIFICATION**

Applicant's name:	Bytech NY Inc.
Address:	2585 West 13th Street, Brooklyn, NY 11223, New York, USA
Manufacture's Name	Shenzhen Rainbow Times Technology CO.,Ltd
Address:	Room 905, Changhong Technology Building, Nanshan District, Shenzhen, China
Product name:	WCDMA Smart phone
Brand name:	BYTECH
Model and/or type reference:	Be One
Standards	FCC Part 22H and 24E
Test procedure	. ANSI/TIA 603-D (2010)

This device described above has been tested by STS and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

This report shall not be reproduced except in full, without the written approval of STS, this document may be altered or revised by STS, personal only, and shall be noted in the revision of the document.

Date of Test

Date of performance of tests ...... 14 Oct. 2016~19 Oct. 2016

Date of Issue ...... 20 Oct. 2016

Test Result..... Pass

Testing Engineer :	Junter
Technical Manager :	(Tony Liu) (Vita Li)
Authorized Signatory :	(Bovey Yang)
t Services Co., Ltd.	1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China Tel: + 86-755 3688 6288 Fax:+ 86-755 3688 6277 Http://www.stsapp.com E-mail: sts@stsapp.com

Shenzhen STS Test Services Co., Ltd.



TABLE OF CONTENTSP	age
1 INTRODUCTION	6
1.1 TEST FACTORY	6
1.2 MEASUREMENT UNCERTAINTY	6
2 PRODUCT INFORMATION	7
3 TEST CONFIGURATION OF EQUIPMENT UNDER TEST	8
4 MEASUREMENT INSTRUMENTS	9
5 TEST ITEMS	10
5.1 CONDUCTED OUTPUT POWER	10
5.2 PEAK TO AVERAGE RATIO	11
5.3 TRANSMITTER RADIATED POWER (EIRP/ERP)	12
5.4 OCCUPIED BANDWIDTH	13
5.5 FREQUENCY STABILITY	14
5.6 SPURIOUS EMISSIONS AT ANTENNA TERMINALS	15
5.7 BAND EDGE	16
5.8 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT	17
APPENDIX ATESTRESULT	19
A1CONDUCTED OUTPUT POWER	19
A2 PEAK-TO-AVERAGE RADIO	22
A3 TRANSMITTER RADIATED POWER (EIRP/ERP)	23
A4 OCCUPIED BANDWIDTH(99% OCCUPIED BANDWIDTH/26DB BANDWIDTH)	26
A5 FREQUENCY STABILITY	36
A6 SPURIOUS EMISSIONS AT ANTENNA TERMINALS	41
A7 BAND EDGE	49
A8 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT	57
APPENDIX BPHOTOS OF TEST SETUP	65

=#



Report No.: STS1610071F01

# **Revision History**

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	20 Oct. 2016	STS1610071F01	ALL	Initial Issue



Shenzhen STS Test Services Co., Ltd.



# SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

The radiated emission testing was performed according to the procedures of ANSI/TIA-603-D:

2010,KDB 971168 D01 v02r02 and KDB 648474 D03 v01r04

FCC Rules	Test Description	Test Limit	Test Result	Reference
2.1049	Conducted OutputPower	Reporting Only	PASS	
2.0146 24.232	Peak-to-AverageRatio	< 13 dB	PASS	
2.1046 22.913 24.232	Effective Radiated Pow- er/Equivalent Isotropic Radiated Power	< 7 Watts max. ERP(Part 22) < 2 Watts max. EIRP(Part 24)	PASS	
2.1049 22.917 24.238	Occupied Bandwidth	Reporting Only	PASS	
2.1055 22.355 24.235	Frequency Stability	< 2.5 ppm (Part 22) Emission must remain in band (Part 24)	PASS	
2.1051 22.917 24.238	Spurious Emission at Antenna Terminals	< 43+10log10(P[Watts])	PASS	
2.1053 22.917 24.238	Field Strength of Spurious Radiation	< 43+10log10(P[Watts])	PASS	
2.1051 22.917 24.238	Band Edge	< 43+10log10(P[Watts])	PASS	



1 INTRODUCTION 1.1 TEST FACTORY Shenzhen STS Test Services Co., Ltd. Add. : 1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China CNAS Registration No.: L7649; FCC Registration No.: 842334; IC Registration No.: 12108A-1

### **1.2 MEASUREMENT UNCERTAINTY**

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014. All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95% level of confidence. The measurement data shown herein meets or exceeds the UCISPR measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

No.	Item	Uncertainty
1	RF power,conducted	±0.70dB
2	Spurious emissions, conducted	±1.19dB
5	All emissions,radiated(<1G) 30MHz-200MHz	±2.83dB
6	All emissions,radiated(<1G) 200MHz-1000MHz	±2.94dB
7	All emissions,radiated(>1G)	±3.03dB
8	Temperature	±0.5°C
9	Humidity	±2%



Report No.: STS1610071F01

# **2 PRODUCT INFORMATION**

Draduct D	
Product Designation:	WCDMA Smart phone
Hardware version number:	V128-V2.0
Software version number:	V128_FWVGA_V2.0_20160810_1508_V1.0.6_B25_ CS_S31E_BYTECH_BEONE
FCC ID:	2AHN6-BEONE
	GSM/GPRS/EDGE:
	850: 824.2 MHz ~ 848.8 MHz
Tx Frequency:	1900: 1850.2 MHz ~ 1909.8MHz
TX Trequency.	WCDMA:
	Band V: 826.4 MHz ~ 846.6 MHz
	Band II: 1852.4 MHz ~ 1907.6 MHz
	GSM/GPRS/EDGE:
	850: 869.2 MHz ~ 893.8 MHz
Rx Frequency:	1900: 1930.2 MHz ~ 1989.8 MHz
	WCDMA:
	Band V: 871.4 MHz ~ 891.6 MHz
	Band II: 1932.4 MHz ~ 1987.6 MHz
Max RF Output Power:	GSM850:31.35dBm,PCS1900:29.21dBm GPRS850:31.37dBm,GPRS1900:29.19dBm EDGE850:31.69dBm,EDGE1900:29.15dBm WCDMABand V:21.49dBm,WCDMA Band II:20.96dBm
Type of Emission:	GSM(850): 321KGXW; GSM(1900): 322KGXW GPRS(850): 318KGXW; GPRS(1900): 316KGXW EDGE(850): 322KG7W; EDGE(1900): 320KG7W WCDMA850: 4M66F9W WCDMA1900: 4M67F9W
SIM Card:	SIM 1 and SIM 2 is a chipset unit and tested as single chipset,SIM 1 is used to tested
Antenna:	PIFA Antenna
-	GSM 850: -0.9dBi ,PCS 1900: -0.7dBi
Antenna gain: WCDMA 850: -0.9dBi, WCDMA1900: -0.5dBi	
Power Supply:	DC 3.7V by battery
Battery parameter:	Capacity: 1200mAh, Rated Voltage: 3.7V
GPRS/EDGE Class:	Multi-Class12
Extreme Vol. Limits:	DC3.5 V to 4.2 V (Nominal DC3.7V)
Extreme Temp. Tolerance:	-20℃ to +45℃
•••	2.2 V and Low Voltage 3.5 V was declared by manufacturer, The

EUT couldn't be operate normally with higher or lower voltage.

Shenzhen STS Test Services Co., Ltd.





3 TEST CONFIGURATION OF EQUIPMENT UNDER TEST

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas. License Digital Systems v02r02 with maximum output power.

Radiated measurements were performed with rotating EUT in different three orthogonal test planes to find the maximum emission.

Radiated emissions were investigated as following frequency range:

- 1. 30 MHz to 10th harmonic for GSM850 and WCDMA Band V.
- 2. 30 MHz to 10th harmonic for WCDMA Band IV.
- 3. 30 MHz to 10th harmonic for GSM1900 and WCDMA Band II.

All modes and data rates and positions were investigated.

Test modes are chosen to be reported as the worst case configuration below:

	TEST MODES		
BAND	RADIATED TCS	CONDUCTED TCS	
GSM 850	GSM LINK GPRS/EDGE CLASS 12 LINK	GSM LINK GPRS/EDGE CLASS 12 LINK	
GSM 1900	GSM LINK GPRS/EDGE CLASS 12 LINK	GSM LINK GPRS/EDGE CLASS 12 LINK	
WCDMA BAND V	RMC 12.2KBPS LINK	RMC 12.2KBPS LINK	
WCDMA BAND II	RMC 12.2KBPS LINK	RMC 12.2KBPS LINK	



# Report No.: STS1610071F01

# **4 MEASUREMENT INSTRUMENTS**

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
Spectrum Analyzer	Agilent	E4407B	MY50140340	2015.10.25	2016.10.24
Signal Analyzer	Agilent	N9020A	MY49100060	2015.11.18	2016.11.17
Test Receiver	R&S	ESCI	101427	2015.10.25	2016.10.24
Communication Tester	Agilent	8960	MY48360751	2015.11.20	2016.11.19
Communication Tester	R&S	CMU200	112012	2015.10.25	2016.10.24
Test Receiver	R&S	ESCI	102086	2015.10.25	2016.10.24
Bilog Antenna	TESEQ	CBL6111D	34678	2015.11.25	2016.11.24
Bilog Antenna (Calibration antenna)	TESEQ	CBL6111D	34678	2015.11.25	2016.11.24
Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-1343	2016.03.06	2017.03.05
Horn Antenna (Calibration antenna)	Schwarzbeck	BBHA 9170D	9120D-1344	2016.03.06	2017.03.05
MXA SIGNAL Analyzer	Agilent	N9020A	MY49100060	2015.10.25	2016.10.24
Double Ridge Horn An- tenna	COM-POWER CORPORATION	AH-840	AHA-840	2016.03.06	2017.03.05
Low frequency cable	N/A	R01	N/A	N/A	N/A
High frequency cable	SCHWARZBECK	AK9515H	SN-96286/96287	N/A	N/A
Vector signal generator	Agilent	E8257D-521	MY45141029	2015.10.16	2016.10.14
Power amplifier	DESAY	ZHL-42W	9638	2015.10.24	2016.10.23

Equipment with a calibration date of "N/A" shown in this list was not used to make direct calibrated measurements.



# 5 TEST ITEMS 5.1 CONDUCTED OUTPUT POWER

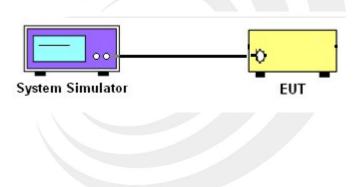
#### Test overview

A system simulator was used to establish communication with the EUT. Its parameters were set to enforce EUT transmitting at the maximum power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

### Test procedures

- 1. The transmitter output port was connected to the system simulator.
- 2. Set eut at maximum power through the system simulator.
- 3. Select lowest, middle, and highest channels for each band and different modulation.
- 4. Measure and record the power level from the system simulator.

### Test setup





## 5.2 PEAK TO AVERAGE RATIO

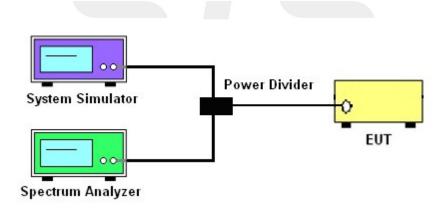
### TEST OVERVIEW

According to §24.232(d), power measurements for transmissions by stations authorized under this section may be made either in accordance with a commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of §24.51. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 db.

### TEST PROCEDURES

- 1. The testing follows fcckdb 971168 v02r02 section
- 2. The eut was connected to the and peak and av system simulator& spectrum analysis reads
- 3. Select lowest, middle, and highest channels for each band and different modulation.
- 4. Set the test probe and measure average power of the spectrum analysis

### TEST SETUP



Shenzhen STS Test Services Co., Ltd.



# 5.3 TRANSMITTER RADIATED POWER (EIRP/ERP) TEST OVERVIEW

Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI/TIA-603-D-2010 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically polarized broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

# TEST PROCEDURE

 The testing follows FCC KDB 971168 D01 Section 5.2.1. (for CDMA/WCDMA), Section 5.2.2 (for GSM/GPRS/EDGE) and ANSI / TIA-603-D-2010 Section 2.2.17.
 The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.

3. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

4. The frequency range up to tenth harmonic of the fundamental frequency was investigated.

5. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a nonradiating cable. The absolute levels of the spurious emissions were measured by the substitution.

6. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-D. The EUT was replaced by the substitution antenna at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP/ERP was calculated with the correction factor,

ERP/EIRP = P.SG + GT - LC

ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as PMe as, typically dBW or dBm);

PMeas(PK) = measured transmitter output power or PSD, in dBm or dBW;

GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.



# 5.4 OCCUPIED BANDWIDTH

### TEST OVERVIEW

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

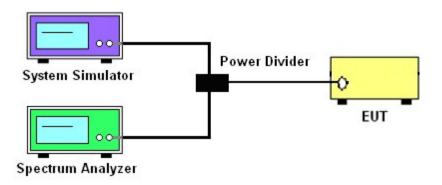
All modes of operation were investigated and the worst case configuration results are reported in this section.

# TEST PROCEDURE

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.

- 2. RBW = 1 5% of the expected OBW
- 3. VBW ≥ 3 x RBW
- 4. Detector = Peak
- 5. Trace mode = max hold
- 6. Sweep = auto couple
- 7. The trace was allowed to stabilize
- 8. If necessary, steps 2 7 were repeated after changing the RBW such that it would be within
- 1-5% of the 99% occupied bandwidth observed in Step 7

### TEST SETUP





# 5.5 FREQUENCY STABILITY Test Overview

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-D-2010. The frequency stability of the transmitter is measured by:

14 of 65

a.) Temperature: The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.

b.) Primary Supply Voltage: The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

For Part 22, the frequency stability of the transmitter shall be maintained within  $\pm 0.00025\%$  ( $\pm 2.5$  ppm) of the center frequency. For Part 24 the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

# Test Procedure

**Temperature Variation** 

1. The testing follows fcckdb 971168 D01 section 9.0

2. The EUT was set up in the thermal chamber and connected with the system simulator.

3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing.

Power was applied and the maximum change in frequency was recorded within one minute.

4. With power OFF, the temperature was raised in 10°C steps up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

Voltage Variation

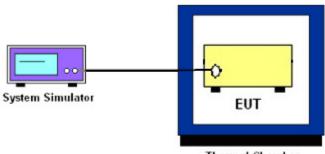
1. The testing follows FCC KDB 971168 D01 Section 9.0.

2. The EUT was placed in a temperature chamber at 25±5° C and connected with the system simulator.

3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.

4. The variation in frequency was measured for the worst case.

# TEST SETUP



Thermal Chamber





# 5.6 SPURIOUS EMISSIONS AT ANTENNA TERMINALS Test Overview

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

# Test procedure

1. The testing follows FCC KDB 971168 D01 v02r02 Section 6.0.

2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.

3. The RF output of EUT was connected to the spectrum analyzer by an RF cable and

attenuator. The path loss was compensated to the results for each measurement.

4. The middle channel for the highest RF power within the transmitting frequency was measured.

5. The conducted spurious emission for the whole frequency range was taken.

6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

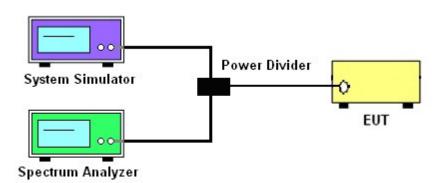
7. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

= P(W) - [43 + 10log(P)] (dB)

= [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)

= -13dBm.

Test Setup







# 5.7 BAND EDGE

### **OVERVIEW**

All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

The minimum permissible attenuation level of any spurious emission is 43 + log10(P[Watts]), where P is the transmitter power in Watts.

### TEST PROCEDURE

1. Start and stop frequency were set such that the band edge would be placed in the center of the Plot.

2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.

3. The RF output of EUT was connected to the spectrum analyzer by an RF cable and attenuator.

The path loss was compensated to the results for each measurement.

4. The band edges of low and high channels for the highest RF powers were measured.

5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

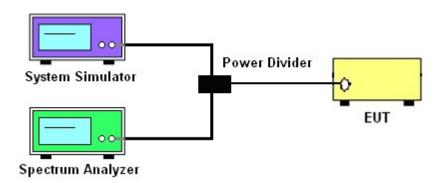
6.The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

= P(W) - [43 + 10log(P) ] (dB)

= [30 + 10log(P)] (dBm) - [43 + 10log(P) ] (dB)

= -13dBm.

# TEST SETUP







# 5.8 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT Test overview

Radiated spurious emissions measurements are performed using the substitution method described inANSI/TIA-603-D-2010 with the EUT transmitting into an integral antenna. Measurements on signalsoperating below 1GHz are performed using horizontally and vertically polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized horn antennas. All measurements are performed as peak measurements while the EUT isoperating at maximum power and at the appropriate frequencies.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

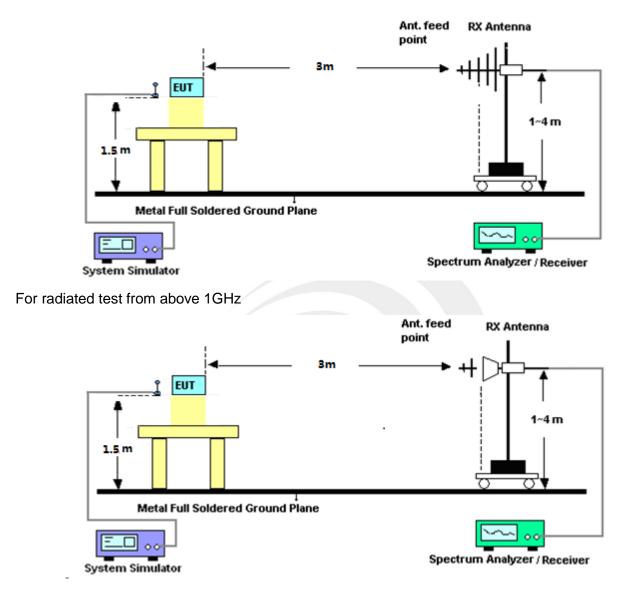
# Test procedure

1. The testing follows FCC KDB 971168 D01 Section 5.8 and ANSI/TIA-603-D-2010 – Section 2.2.12

- 2. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
- 3. VBW  $\geq$  3 x RBW
- 4. Span = 1.5 times the OBW
- 5.No. of sweep points > 2 x span/RBW
- 6. Detector = Peak
- 7. Trace mode = max hold
- 8. The trace was allowed to stabilize



For radiated test from 30MHz to 1GHz



18 of 65

Report No.: STS1610071F01

Shenzhen STS Test Services Co., Ltd.



Report No.: STS1610071F01

# APPENDIX ATESTRESULT A1CONDUCTED OUTPUT POWER

GSM 850:

Mode	Frequency (MHz)	AVG Power
GSM850	824.2	31.29
	836.6	31.35
	848.8	31.33
GPRS850	824.2	31.31
	836.6	31.37
	848.8	31.36
EDGE850 (1 Slot)	824.2	31.58
	836.6	31.63
	848.8	31.69

PCS 1900:

Mode	Frequency (MHz)	AVG Power
/	1850.2	28.59
GSM1900	1880	28.91
	1909.8	29.21
	1850.2	28.53
GPRS1900	1880	28.86
	1909.8	29.19
	1850.2	28.55
EDGE1900 (1 Slot)	1880	28.88
	1909.8	29.15

Shenzhen STS Test Services Co., Ltd.



Report No.: STS1610071F01

UMTS BAND V

Mode	Frequency(MHz)	AVG Power
	826.4	21.41
WCDMA 850 RMC	836.6	21.49
RMC	846.6	21.22
	826.4	21.38
HSDPA Subtest 1	836.6	21.48
Sublest	846.6	21.25
	826.4	20.96
HSDPA Subtest 2	836.6	21.08
Sublesi 2	846.6	20.81
	826.4	20.54
HSDPA Subtest 3	836.6	20.67
Sublesi S	846.6	20.35
	826.4	20.07
HSDPA	836.6	20.27
Subtest 4	846.6	20.04
	826.4	21.29
HSUPA Subtest 1	836.6	21.40
Sublesi	846.6	20.80
	826.4	20.43
HSUPA Subtest 2	836.6	20.48
Sublesi 2	846.6	19.83
	826.4	20.24
HSUPA Subtest 3	836.6	19.99
SUDIESI 3	846.6	19.34
	826.4	19.77
HSUPA Subtest 4	836.6	19.68
Subtest 4	846.6	18.89
	826.4	18.30
HSUPA	836.6	18.19
Subtest 5	846.6	17.44

Shenzhen STS Test Services Co., Ltd.



Report No.: STS1610071F01

UMTS BAND II

Mode	Frequency(MHz)	AVG Power
	1852.4	20.32
WCDMA 1900 RMC	1880	20.13
RIMC	1907.6	20.96
10000	1852.4	20.28
HSDPA Subtest 1	1880	20.12
Sublest	1907.6	20.89
10000	1852.4	19.84
HSDPA Subtest 2	1880	19.67
Sublest 2	1907.6	20.45
1000	1852.4	19.38
HSDPA Subtest 3	1880	19.26
Sublest 5	1907.6	20.13
110000	1852.4	18.95
HSDPA Subtest 4	1880	18.86
Sublest 4	1907.6	19.63
	1852.4	20.24
HSUPA Subtest 1	1880	20.03
Sublest	1907.6	20.49
	1852.4	19.31
HSUPA Subtest 2	1880	19.04
Sublest 2	1907.6	19.54
	1852.4	19.15
HSUPA Subtest 3	1880	18.57
Sublest 3	1907.6	19.17
	1852.4	18.82
HSUPA	1880	18.21
Subtest 4	1907.6	18.76
	1852.4	17.42
HSUPA	1880	16.76
Subtest 5	1907.6	17.34

Shenzhen STS Test Services Co., Ltd.

F



Report No.: STS1610071F01

# A2 PEAK-TO-AVERAGE RADIO

PCS 1900:

Mode	Frequency (MHz)	PEAK Power	AVG Power	PAR
	1850.2	28.91	28.59	0.32
PCS1900	1880	28.99	28.91	0.08
	1909.8	29.34	29.21	0.13
	1850.2	28.73	28.53	0.20
GPRS1900	1880	28.88	28.86	0.02
	1909.8	29.46	29.19	0.27
EDGE1900 (1 Slot)	1850.2	28.73	28.55	0.18
	1880	28.88	28.88	0.00
	1909.8	29.36	29.15	0.21

#### UMTS BAND II:

Mode	Frequency (MHz)	PEAK Power	AVG Power	PAR
	1852.4	22.99	20.32	2.67
WCDMA 1900 RMC	1880	22.85	20.13	2.72
	1907.6	23.83	20.96	2.87
HSDPA 1900	1852.4	22.95	20.28	2.67
	1880	22.81	20.12	2.69
	1907.6	23.79	20.89	2.90
HSUPA 1900	1852.4	22.89	20.24	2.65
	1880	22.78	20.03	2.75
	1907.6	23.68	20.49	3.19

Shenzhen STS Test Services Co., Ltd.



Report No.: STS1610071F01

### A3 TRANSMITTER RADIATED POWER (EIRP/ERP)

	Radiated Power (ERP) for GSM 850 MHZ						
				Re	esult		
Mode	Frequency	S G.Level (dBm)	Cable loss	Gain (dBi)	PMeas E.R.P(dBm)	Polarization Of Max. ERP	Conclusion
	824.2	22.79	0.44	6.5	28.85	Horizontal	Pass
	824.2	24.66	0.44	6.5	30.72	Vertical	Pass
0014050	836.6	23.00	0.45	6.5	29.05	Horizontal	Pass
GSM850	836.6	24.76	0.45	6.5	30.81	Vertical	Pass
	848.8	22.82	0.46	6.5	28.86	Horizontal	Pass
	848.8	24.74	0.46	6.5	30.78	Vertical	Pass
	824.2	22.72	0.44	6.5	28.78	Horizontal	Pass
	824.2	24.45	0.44	6.5	30.51	Vertical	Pass
	836.6	23.05	0.45	6.5	29.10	Horizontal	Pass
GPRS850	836.6	24.58	0.45	6.5	30.63	Vertical	Pass
	848.8	23.02	0.46	6.5	29.06	Horizontal	Pass
	848.8	24.50	0.46	6.5	30.54	Vertical	Pass
	824.2	22.83	0.44	6.5	28.89	Horizontal	Pass
	824.2	24.55	0.44	6.5	30.61	Vertical	Pass
	836.6	22.84	0.45	6.5	28.89	Horizontal	Pass
EDGE850	836.6	24.56	0.45	6.5	30.61	Vertical	Pass
	848.8	22.87	0.46	6.5	28.91	Horizontal	Pass
	848.8	24.70	0.46	6.5	30.74	Vertical	Pass

Shenzhen STS Test Services Co., Ltd.



Report No.: STS1610071F01

	Radiated Power (EIRP) for PCS 1900 MHZ							
			Result					
Mode	Frequency	S G.Level	Cable	Gain	PMeas	Polarization	Conclusion	
		(dBm)	loss	(dBi)	E.I.R.P.(dBm)	Of Max.EIRP.		
	1850.2	18.04	2.41	10.35	25.98	Horizontal	Pass	
	1850.2	19.95	2.41	10.35	27.89	Vertical	Pass	
PCS1900	1880.0	18.52	2.42	10.35	26.45	Horizontal	Pass	
PC31900	1880.0	20.38	2.42	10.35	28.31	Vertical	Pass	
	1909.8	19.05	2.43	10.35	26.97	Horizontal	Pass	
	1909.8	20.8	2.43	10.35	28.72	Vertical	Pass	
	1850.2	18.17	2.41	10.35	26.11	Horizontal	Pass	
	1850.2	19.81	2.41	10.35	27.75	Vertical	Pass	
GPRS1900	1880.0	18.58	2.42	10.35	26.51	Horizontal	Pass	
GPRS1900	1880.0	20.17	2.42	10.35	28.1	Vertical	Pass	
	1909.8	18.96	2.43	10.35	26.88	Horizontal	Pass	
	1909.8	20.55	2.43	10.35	28.47	Vertical	Pass	
	1850.2	17.96	2.41	10.35	25.9	Horizontal	Pass	
	1850.2	19.7	2.41	10.35	27.64	Vertical	Pass	
	1880.0	18.56	2.42	10.35	26.49	Horizontal	Pass	
EDGE1900	1880.0	20.11	2.42	10.35	28.04	Vertical	Pass	
	1909.8	18.85	2.43	10.35	26.77	Horizontal	Pass	
	1909.8	20.79	2.43	10.35	28.71	Vertical	Pass	

╡



# Report No.: STS1610071F01

Radiated Power (ERP) for WCDMA Band V								
			Result					
Mode	Frequency	S G.Level	Cable	Gain	PMeas E.R.P	Polarization	Conclusion	
		(dBm)	loss (dBi)	(dBm)	Of Max.ERP			
	826.4	13.24	0.44	6.5	19.30	Horizontal	Pass	
	826.4	15.04	0.44	6.5	21.10	Vertical	Pass	
Band V	836.6	13.31	0.45	6.5	19.36	Horizontal	Pass	
Danu V	836.6	15.10	0.45	6.5	21.15	Vertical	Pass	
	846.6	13.12	0.46	6.5	19.16	Horizontal	Pass	
	846.6	14.99	0.46	6.5	21.03	Vertical	Pass	

Radiated Power (EIRP) for WCDMA Band II								
			Result					
Mode	Frequency	S G.Level	Cable	Gain	PMeas	Polarization	Conclusion	
		(dBm)	loss (dBi)	(dBi)	E.I.R.P.(dBm)	Of Max.EIRP		
	1852.4	10.28	2.41	10.35	18.22	Horizontal	Pass	
	1852.4	12.18	2.41	10.35	20.12	Vertical	Pass	
Band II	1880.0	10.35	2.42	10.35	18.28	Horizontal	Pass	
Danu II	1880.0	12.15	2.42	10.35	20.08	Vertical	Pass	
	1907.6	10.89	2.43	10.35	18.81	Horizontal	Pass	
	1907.6	12.66	2.43	10.35	20.58	Vertical	Pass	

Shenzhen STS Test Services Co., Ltd.

╡



Report No.: STS1610071F01

# A4 OCCUPIED BANDWIDTH(99% OCCUPIED BANDWIDTH/26DB BANDWIDTH)

Occupied Bandwidth for GSM 850 band					
Mode		Occupied Bandwidth	Emission Bandwidth		
Widde	Frequency(MHz)	(99%)( kHz)	(-26dBc)( kHz)		
Low Channel	824.2	249.00	319.9		
Middle Channel	836.6	246.40	321.2		
High Channel	848.8	246.56	314.5		
	Occupied Band	width for GPRS 850 band			
Mode	Frequency(MHz)	Occupied Bandwidth	Emission Bandwidth		
Widde		(99%)( kHz)	(-26dBc)( kHz)		
Low Channel	824.2	243.21	315.5		
Middle Channel	836.6	244.31	318.0		
High Channel	848.8	244.17	314.7		
	Occupied Bandv	vidth for EGPRS 850 band			
Mode		Occupied Bandwidth	Emission Bandwidth		
wode	Frequency(MHz)	(99%)( kHz)	(-26dBc)( kHz)		
Low Channel	824.2	245.68	313.6		
Middle Channel	836.6	24383	322.0		
High Channel	848.8	244.57	317.8		



Report No.: STS1610071F01

Occupied Bandwidth for GSM1900 band					
Mode	Frequency(MHz)	Occupied Bandwidth	Emission Bandwidth		
Widde	Frequency(MHZ)	(99%)( kHz)	(-26dBc)( kHz)		
Low Channel	1850.2	246.46	316.8		
Middle Channel	1880.0	241.06	311.6		
High Channel	1909.8	246.45	321.7		
	Occupied Bandw	vidth for GPRS 1900 band			
Mode	Frequency(MHz)	Occupied Bandwidth	Emission Bandwidth		
Widde		(99%)( kHz)	(-26dBc)( kHz)		
Low Channel	1850.2	244.61	313.9		
Middle Channel	1880.0	242.87	316.3		
High Channel	1909.8	244.34	313.4		
	Occupied Bandw	vidth for EDGE 1900 band			
Mode		Occupied Bandwidth	Emission Bandwidth		
wode	Frequency(MHz)	(99%)( kHz)	(-26dBc)( kHz)		
Low Channel	1850.2	243.20	311.9		
Middle Channel	1880.0	246.36	320.3		
High Channel	1909.8	247.99	319.8		

Occupied Bandwidth for UMTS band V						
Mode		Occupied Bandwidth				
Mode	Frequency(MHz)	(99%)( MHz)	(-26dBc)( MHz)			
Low Channel	826.4	4.1494	4.653			
Middle Channel	836.6	4.1496	4.661			
High Channel	846.6	4.1244	4.636			

Occupied Bandwidth for UMTS band II						
Mode		Occupied Bandwidth	Emission Bandwidth			
wode	Frequency(MHz)	(99%)( MHz)	(-26dBc)( MHz)			
Low Channel	1852.4	4.1540	4.663			
Middle Channel	1880	4.1636	4.651			
High Channel	1907.6	4.1599	4.674			

=#



#### Report No.: STS1610071F01

### GSM 850 CH 128



GSM 850 CH 190

RL	RF 50 Ω AC		SENSE:INT	ALIGNAUTO	08:43:35 AM Oct 19, 2
nter Fre	q 836.600000 M	Hz	Center Freq: 836.600 Trig: Free Run	000 MHz Avg Hold>10/10	Radio Std: None
		#IFGain:Low	#Atten: 46 dB	AvgiHold>10/10	Radio Device: BTS
dB/div	Ref Offset 8.5 dB Ref 36.00 dBm				
			and a marked	m.	
			Mar		
0					
0		1			
0		Warman		Marine	
0	- M	N*		1	<b>^√</b>
	and				Mr.
	- MAR -				manner
- Aller	We we have				
0					
nter 830 es BW			#VBW 30 k	u-	Span 1 M Sweep 12.4
es DW			#VEW JUK	Π2	Sweep 12.41
Occupi	ed Bandwidth	1			
	24	6.40 kHz			
Transm	it Freq Error	53 Hz	OBW Power	99.00 %	
v dB Ba	ndwidth	321.2 kHz	x dB	-26.00 dB	



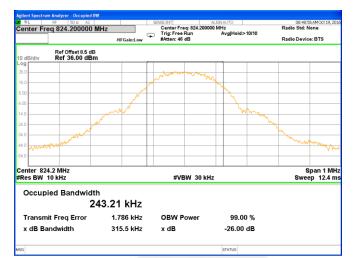
#### GSM 850 CH 251

### Shenzhen STS Test Services Co., Ltd.



#### Report No.: STS1610071F01

#### GPRS 850 CH 128



#### GPRS 850 CH 190





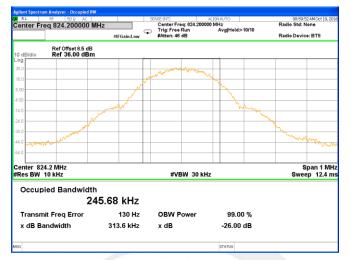
#### GPRS 850 CH 251

### Shenzhen STS Test Services Co., Ltd.



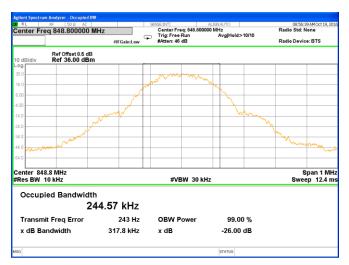
#### Report No.: STS1610071F01

### EDGE 850 CH 128



#### EDGE 850 CH 190





#### EDGE 850 CH 251

### Shenzhen STS Test Services Co., Ltd.



#### Report No.: STS1610071F01

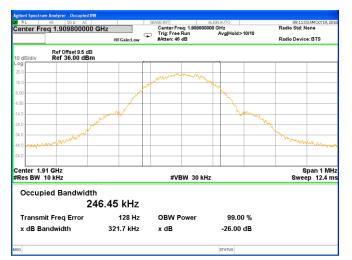
### PCS 1900 CH 512



# PCS 1900 CH 661



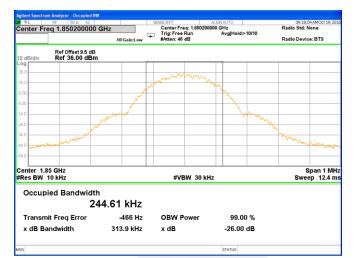
# PCS 1900 CH 810





#### Report No.: STS1610071F01

### GPRS 1900 CH 512



#### GPRS 1900 CH 661

RL RF 50.0 AC		SENSE:INT	ALIGNAUTO	09:19:40 AM Oct 19, 2
enter Freg 1.880000000 GHz		Center Freq: 1.8800000	Radio Std: None	
		Trig: Free Run #Atten: 46 dB	Avg Hold:>10/10	Radio Device: BTS
	an ounicow			
dB/div Ref Offset 9.5 dB				
9				
0		1 Mar 11		
0		mann		
			m	
0				
0			1	
	m		- Un	
	martin		- MA	
0				1
0 And A				- 2-A-MAA
1 martine the				manager
0				
0				
nter 1.88 GHz				Span 1 M
es BW 10 kHz		#VBW 30 kH	7	Sweep 12.4
			-	
Occupied Bandwidth				
24	2.87 kHz			
24	2.07 KHZ			
Transmit Freg Error	1.043 kHz	OBW Power	99.00 %	
x dB Bandwidth	316.3 kHz	x dB	-26.00 dB	
	310.3 KHZ		-20.00 dB	



#### GPRS 1900 CH 810

Shenzhen STS Test Services Co., Ltd.

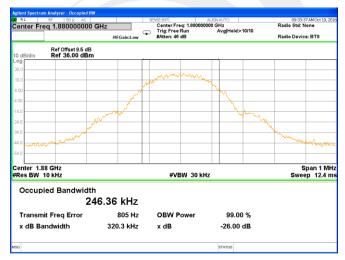


#### Report No.: STS1610071F01

#### EDGE 1900 CH 512



### EDGE 1900 CH 661





# EDGE 1900 CH 810

Shenzhen STS Test Services Co., Ltd.



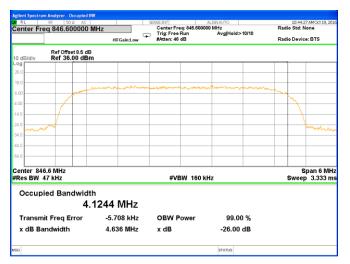
### UMTS BAND V CH 4132



### UMTS BAND V CH 4183

0 dB/div	Ref Offset 8 Ref 36.00						
.og	Rel 30.00	ubili					1
16.0							
6.0			-	manna			
				and the second	and a second	mann	~
	~						~
1.0							$\mathbf{X}$
Part 1							er and a second
1.0							
4.0							
1.0							
antar P	36.6 MHz						Span 6 Mi
Res BW				#VBW 1	60 kHz		Sweep 3.333 n
Occup	oied Bandw	vidth					
		4.1496 MH	lz				
Transr	nit Freq Erro	or -15.484 k	Hz	OBW Power	99.00	%	
x dB Bandwidth 4.661 MHz			x dB	-26.00 d			

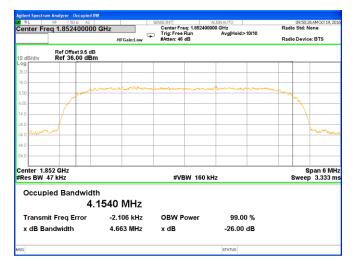
### UMTS BAND V CH 4233



Shenzhen STS Test Services Co., Ltd.

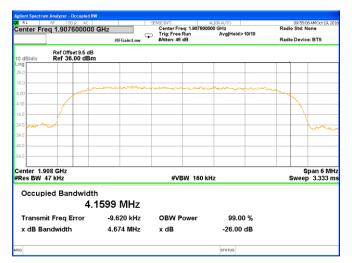


### UMTS BAND II CH 9262



# UMTS BAND II CH 9400

ilent Spectrum Analyzer - Occupied I RL RF SD Ω AC		SENSE:INT	ALIGNAUTO	09:53:17 AM Oct 19.2
enter Freq 1.88000000	) GHz	Center Freq: 1.8800000 Trig: Free Run #Atten: 46 dB		Radio Std: None Radio Device: BTS
Ref Offset 9.5 dE dB/div Ref 36.00 dB				
99 5.0				
10	unn han mar	mannan	m	
				- The second sec
.0				
0				
.0				~~~~
.0				
.0				
enter 1.88 GHz Res BW 47 kHz		#VBW 160 k	Hz	Span 6 M Sweep 3.333
Occupied Bandwid	th			
	1636 MHz			
Transmit Freq Error	-5.211 kHz	OBW Power	99.00 %	
x dB Bandwidth	4.651 MHz	x dB	-26.00 dB	
			STATUS	



#### UMTS BAND II CH 9538

# Shenzhen STS Test Services Co., Ltd.



Report No.: STS1610071F01

# A5 FREQUENCY STABILITY

Normal Voltage = 3.7V. ; Battery End Point (BEP) = 3.5 V.; Maximum Voltage = 4.2 V

GSM 850 Middle Channel/836.6MHz							
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result		
50		23.05	0.276	2.5ppm	PASS		
40		30.28	0.362				
30		22.25	0.266				
20	Normal Voltage	21.20	0.253				
10		24.24	0.290				
0		17.59	0.210				
-10		13.33	0.159				
-20		19.57	0.234				
-30	/	36.45	0.436				
25	Maximum Voltage	36.04	0.431				
25	BEP	18.52	0.221				

GPRS 850 Middle Channel/836.6MHz							
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result		
50		28.85	0.345				
40		33.85	0.405				
30		29.56	0.353				
20		32.00	0.383				
10	Normal Voltage	26.49	0.317				
0		15.56	0.186	2.5ppm	PASS		
-10		17.26	0.206				
-20		20.27	0.242				
-30		34.77	0.416	1			
25	Maximum Voltage	33.16	0.024				
25	BEP	14.01	0.014				



Report No.: STS1610071F01

	EDGE	850 Middle Cha	nnel/836.6MHz		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		28.53	0.341		PASS
40		35.47	0.424		
30		33.08	0.395		
20		21.10	0.252	2.5ppm	
10	Normal Voltage	22.80	0.273		
0		18.08	0.216		
-10		29.49	0.352		
-20		16.50	0.197		
-30		27.63	0.330		
25	Maximum Voltage	36.31	0.024		
25	BEP	13.91	0.014		



Shenzhen STS Test Services Co., Ltd.



Report No.: STS1610071F01

	GSM <sup>·</sup>	1900 Middle Cha	nnel/1880MHz		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50	-	32.65	0.017		PASS
40	Normal Voltage	35.85	0.019		
30		19.63	0.010		
20		19.53	0.010	_ Within Au- thorized	
10		19.89	0.011		
0		33.56	0.018		
-10		17.09	0.009	Band	
-20		20.33	0.011		
-30		19.26	0.010		
25	Maximum Voltage	17.95	0.010		
25	BEP	34.78	0.019		

	GPRS	1900 Middle Cha	annel/1880MHz		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		19.17	0.010		
40		23.03	0.012		
30		14.10	0.008		
20	Normal Voltage	20.73	0.011	Within Au- thorized Band	PASS
10		15.48	0.008		
0		26.71	0.014		
-10		33.03	0.018		
-20		16.07	0.009		
-30		22.92	0.012		
25	Maximum Voltage	30.06	0.016		
25	BEP	33.59	0.018		

╡



Report No.: STS1610071F01

	EDGE	1900 Middle Cha	annel/1880MHz		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		31.53	0.017		PASS
40		27.06	0.014		
30		20.11	0.011		
20		24.05	0.013	Within Au-	
10	Normal Voltage	34.97	0.019		
0		26.40	0.014		
-10		32.29	0.017	Band	
-20		26.54	0.014		
-30		13.11	0.007		
25	Maximum Voltage	14.98	0.008		
25	BEP	34.41	0.018		



Shenzhen STS Test Services Co., Ltd.



Report No.: STS1610071F01

	WCDN	IA V Middle Cha	nnel/836.6MHz		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		20.41	0.244		PASS
40	Normal Voltage	14.04	0.168		
30		16.26	0.194		
20		27.39	0.327	 2.5ppm	
10		26.74	0.320		
0		21.95	0.262		
-10		25.20	0.301		
-20		25.97	0.310		
-30		12.40	0.148		
25	Maximum Voltage	20.00	0.239		
25	BEP	18.03	0.216		

1. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

	WCDM	IA II Middle Cha	nnel/1880MHz		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		21.62	0.012		PASS
40		14.45	0.008		
30		35.21	0.019		
20		27.82	0.015	Within Au-	
10	Normal Voltage	29.21	0.016		
0		17.26	0.009		
-10		11.56	0.006	Band	
-20		20.63	0.011		
-30		28.25	0.015		
25	Maximum Voltage	17.46	0.009		
25	BEP	31.91	0.017		

1. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

Shenzhen STS Test Services Co., Ltd.



# A6 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

GSM 850 BAND

# Lowest Channel



## Middle Channel

gilent Spectrum Analyzer RL RF						
enter Freq 4.51	PN	0: Fast Tris ain:Low #At	g:FreeRun ten:36 dB	ALIGNAUTO Avg Typ	e: Log-Pwr	08:44:05 AMOct 19 TRACE 1 2 3 TYPE MIMM DET P P P
Ref Offs 0 dB/div Ref 34.	et 8.5 dB .50 dBm					Mkr1 836.9 M 30.404 dl
og Trace 1 P1s						
4.5						
.50						
.50						
5.5					_	
5.5					2	
6.5	A DESCRIPTION OF THE OWNER OF THE	ALCONTRACTOR DESCRIPTION		terrori terrori	and the second second	A DESCRIPTION OF THE OWNER OF THE
5.5						
6.5						
tart 30 MHz Res BW 1.0 MHz		#VBW 3.0	MHz		Swee	Stop 9.000 ( p 16.0 ms (20001
KR MODE TRC SCL	× 836.9 MHz	30,404 dBm	FUNCTION	FUNCTION WIDTH	F	UNCTION VALUE
2 N 1 f 3	6.057 8 GHz	-34.627 dBm				
4						
5						
7						
8 9 0						
1						
2						

## **Highest Channel**

		IQ AC	SENSE:INT	AL	IGNAUTO			08 AM Oct 19, 20
enter	Freq 4.515	000000 GHz PN IFG	0: Fast Trig: Fr ain:Low #Atten:	ee Run 36 dB	Avg Type:	Log-Pwr	1	TYPE MWWWW DET P P P P
0 dB/div	Ref Offset							49.0 MH .368 dB
	ace 1 F1s							
14.5								
50								
50								
5.5								
5.5						A2		
5.5						Q.,		
5.5								
6.6								
tart 30						_	Stop	9.000 GI
	W 1.0 MHz		#VBW 3.0 M				p 16.0 ms	(20001 p
				FUNCTION FUNCT	ION WIDTH	FL	INCTION VALUE	
KR MODE	TRC SCL	× 849.0 MHz	30.368 dBm					
1000 1 N 2 N	TRC SOL 1 f 1 f							
1 N 2 N 3	1 1	849.0 MHz	30.368 dBm					
75 12005 1 N 2 N 3 4 5 6	1 1	849.0 MHz	30.368 dBm					
8 1009 1 N 2 N 3 4 5 6 7	1 1	849.0 MHz	30.368 dBm					
4 5 7 9	1 1	849.0 MHz	30.368 dBm					
KR MODE	1 1	849.0 MHz	30.368 dBm					

Shenzhen STS Test Services Co., Ltd.

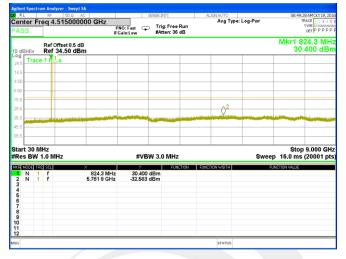
 1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China

 Tel: + 86-755
 3688
 6287
 Http://www.stsapp.com
 E-mail: sts@stsapp.com



## GPRS 850 BAND

## Lowest Channel



# Middle Channel

			R AC	SENSE	INT	ALIGNAUTO			3 AM Oct 19, 2
enter	r Fre	q 4.5150		IO: Fast Tr ain:Low #A	rig: Free Run Atten: 36 dB	Avg Type	: Log-Pwr		IACE 1 2 3 4 TYPE MWWW DET P P P P
0 dB/di		Ref Offset 8. Ref 34.50						Mkr1 8 30.	36.9 MI 388 dB
og 24.5	race 1	1 pls							
4.6									
.50									
.50		-							
5.6									
5.6								~2	
5.5				and the second second		and the second second	and the second second	Q	
5.6									
5.6									
tart 3								Stop	9.000 G
Res P	W 1.	0 MHz		#VBW 3.	.0 MHz		Swee	0 16.0 ms	(20001
		SCL	× 836.9 MHz	30,388 dBm		FUNCTION WIDTH	A	INCTION VALUE	
	E TRC								
1 N 2 N	e TRC 1 1	1	7.932 6 GHz	-35.491 dBm					
1 N 2 N 3	e Tric 1 1	f	7.932 6 GHz	-35.491 dBm					
1 N 2 N 3 4	1 1 1	ł	836.9 MHz 7.932 6 GHz	-35.491 dBm					
1 N 2 N 3 4 5 6 7	1	ŕ	7.932 6 GHz	-35.491 dBm					
1 N 2 N 3 4 5 6 7 8 9	1	ł	7.932 6 GHz	-35.491 dBm					
2 N 3 4 5 6 7 8 9 0	1	F	7,932 6 GHz	-35,491 dBm					
1 N 2 N 3 4 5 6 7 8 9		ł	836.9 MHz 7.932 6 GHz	-35.491 dBm					

## **Highest Channel**

RL RF 50	D Q AC	SENSE: INT	ALIGN AU		08:54:06 AM Oct 19, 20
nter Freq 4.515	PNC	:Fast Trig:Fro	ee Run	g Type: Log-Pwr	TRACE 1 2 3 4 TYPE MMMMM DET P P P P
Ref Offset dB/div Ref 34.5					Mkr1 849.0 MH 30.356 dB
Trace 1 F1s					
.6					
50					
0					
.5					
5				$\langle \rangle^2$	the true
5					
.5					
art 30 MHz					Stop 9.000 GI
es BW 1.0 MHz		#VBW 3.0 MI	łz	Swee	p 16.0 ms (20001 p
R MODE TRC SCL	× 849.0 MHz	30.356 dBm	UNCTION FUNCTION WI	отн ғ	UNCTION VALUE
N 1 F	6.380 8 GHz	-35.204 dBm			
:					
3					

Shenzhen STS Test Services Co., Ltd.

 1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China

 Tel: + 86-755
 3688
 6287
 Http://www.stsapp.com
 E-mail: sts@stsapp.com



# EDGE 850 BAND

# Lowest Channel

	um Analyzer - Swe								
Center F	RF 50 Ω req 4.51500	0000 GHz		ENSE:INT		IGNAUTO Avg Type:	Log-Pwr	T	2 AMOct 19, 201 RACE 1 2 3 4 5
PASS		P	NO: Fast 😱 Gain:Low	Trig: Free R #Atten: 36 d	un B				DET P P P P P
10 dB/div	Ref Offset 8.5 Ref 34.50 d								24.3 MHz 384 dBm
Log 24.5 Trac	e 1 P <mark>1</mark> Js								
14.6									
4.50									
-5.50									
-15.5									
-35.5						Q <sup>2</sup>	all the states in	-	
-45.5									
-55.5									
Start 30 M #Res BW			#VBV	V 3.0 MHz			Swee	Stop p 16.0 ms	9.000 GHz (20001 pts
MKR MODE T		X	Y	FUNCT	ION FUNCT	TION WIDTH	R	INCTION VALUE	
1 N 1 2 N 1	f f	824.3 MHz 5.950 2 GHz	30.384 c -35.127 c	IBm IBm					
2 N 1 3 4 5 6 7 8 9 10									
5 6									
7									
9 10									
11 12									
MSG						STATUS			

### Middle Channel

ilent Spectrum Analyzer - Sc RL RF Sc enter Freq 4.515	000000 GHz	SENSE:IM 0: Fast Trig: ain:Low #Atte	Free Run en: 36 dB	ALIGNAUTO Avg Type	: Log-Pwr	08:59	TRACE
Ref Offset: dB/div Ref 34.50	8.5 dB	anelow would					36.9 MI .406 dB
Trace 1 P1s							
1.5							
50					_		-
60							
i.5							
i.5						Q <sup>2</sup>	
i.5		State of the local division of the local div					and the second second
5							
art 30 MHz Res BW 1.0 MHz		#VBW 3.0	MHz		Swe	Sto ep 16.0 ms	9.000 G (20001 p
R MODE TRO SCL N 1 f 2 N 1 f	× 836.9 MHz 7.394.4 GHz	30.406 dBm -33.092 dBm	FUNCTION	FUNCTION WIDTH		FUNCTION VALUE	
3	1,004 4 0112	00.002 00.00					
4 5 7							
3							
2				STATUS			

### **Highest Channel**

	AC	SENSE: INT		ALIGNAUTO		08:57:09 AM Oct
er Freq 4.51500	PN	): Fast 🖵 Trig: Fr in:Low #Atten:	ee Run 36 dB	Avg Type: Lo	g-Pwr	TYPE M
Ref Offset 8.0 Idiv Ref 34.50						Mkr1 849.0 30.370
Trace 1 F 1s						
				0 <sup>2</sup>		
and the second	Contraction of the local division of the loc	and the second designation of the second designation of the second designation of the second designation of the	and the second second			
30 MHz BW 1.0 MHz		#VBW 3.0 MI	Hz		Sweep	Stop 9.00 16.0 ms (2000
ide tric scl N 1 f	× 849.0 MHz	30.370 dBm	UNCTION FUI	NCTION WIDTH	FUN	CTION VALUE
N 1 F	5.932 3 GHz	-35.722 dBm				
				STATUS		

Shenzhen STS Test Services Co., Ltd.

 1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China

 Tel: + 86-755
 3688
 6288
 Fax:+ 86-755
 3688
 6277
 Http://www.stsapp.com
 E-mail: sts@stsapp.com



# GSM1900 BAND(30M-20G)

## Lowest Channel

	rum Analyzer - Sv								
DO RL		R AC		ENSE:INT	AL	IGNAUTO Avg Type:	Lan Dum		BAMOct 19, 2016
Center F	req 10.015		'NO: Fast 🖵 Gain:Low	Trig: Free #Atten: 36	Run dB	Avg type:	Log-Pwr		TYPE MWANAAAA DET P P P P P P
			Guinzow					Mkr1 1.8	50 3 GHz
10 dB/div	Ref Offset 9 Ref 35.50								604 dBm
Log 25.5 Trac	e 1 Als								
15.5									
5.50									
-4.50									
-14.5								•	
-24.5								2	an and the second
-34.5		State of Concession, State							
-44.5									
-54.5									
Start 30 I #Res BW				N 3.0 MHz	-	-		Stop 2	20.000 GHz
#Res BW			#VB			TION WIDTH		ep 50.7 ms	(40001 pts)
1 N 1	f	× 1.850 3 GHz	27.604	dBm	TION FUNC	TION WIDTH		UNCTION VALUE	
2 N 3	f	16.225 7 GHz	-29.898	dBm					
4									
2 N 1 3 4 5 6 7									
9 10									
10									
11 12									
MSG						STATUS			

### Middle Channel

	um Analyzer - Swi							
enter Fr		AC		g:FreeRun ten:36 dB	ALIGNAUTO Avg Type	e: Log-Pwr		21 AMOct 19, 2 RACE 1 2 3 4 TYPE MWWWW DET P P P P
) dB/div	Ref Offset 9.6 Ref_35.50 d	5 dB	sain:Low #Pu	ten. 30 ub			Mkr1 1.8 28	80 2 GI
5.6 Trace	e 1 F <mark>2</mark> 1s							
5.6	-							
50	-							
50								
.5							2	
5		a constant	11	ج ي بيد محمد م		And the second second	and the second	-
.5						T		
.5								
art 30 M Res BW			#VBW 3.0	) MHz		Swee	Stop ep 50.7 ms	20.000 G (40001 p
RIMODE TR N 1 2 N 1 3	f f	× 1.880 2 GHz 16.585 1 GHz	28.044 dBm -27.904 dBm	FUNCTION	FUNCTION WIDTH		FUNCTION VALUE	
2					STATUS			

## **Highest Channel**

Agilent Spectrum Analyzer - Swept SA			
Center Freq 10.015000000 GHz	SENSE:INT	ALIGNAUTO Avg Type:	09:11:33 AM Oct 19, 2016 Log-Pwr TRACE 1 2 3 4 5 6
PASS	NO: Fast 😱 Trig: Free Gain:Low #Atten: 36	dB	DET P P P P P
Ref Offset 9.5 dB			Mkr1 1.910 2 GHz 28.188 dBm
			20.100 0.011
20.0			
15.6			
5.50			
-4.50			
-14.5			^2
-24.5			and the second s
-44.5			
-54.5			
Start 30 MHz #Res BW 1.0 MHz	#VBW 3.0 MHz		Stop 20.000 GHz Sweep 50.7 ms (40001 pts)
MKR MODE TRC SCL X		CTION FUNCTION WIDTH	FUNCTION VALUE
1 N 1 f 1.910 2 GHz 2 N 1 f 16.685 0 GHz	28.188 dBm -30.407 dBm		
2 N 1 f 16.6850 GHz 3 4 5 6 7 8 9 10			
5			
7			
9			
10			
12			
MSG		STATUS	

Shenzhen STS Test Services Co., Ltd.

 1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China

 Tel: + 86-755
 3688
 6288
 Fax:+ 86-755
 3688
 6277
 Http://www.stsapp.com
 E-mail: sts@stsapp.com



# GPRS1900 BAND(30M-20G)

# Lowest Channel

	um Analyzer - Swep								
RL	RF 50 Ω		5	ENSE:INT	1	AVg Type:	Lan Dum		35 AM Oct 19, 201
Center F PASS	req 10.01500	P	NO: Fast 😱 Gain:Low	Trig: Free   #Atten: 36	Run dB	Avg Type:	Log-Pwr		TYPE MWWWWW DET P P P P P
10 dB/div	Ref Offset 9.5 Ref 35.50 dl								350 3 GH .588 dBn
Log 25.6 Trac	e 1 Als								
15.6									
-4.50									
-14.5								2	
-34.5	and the second second	-			فعلميتحصاده	-			
-44.5									
Start 30 M									20.000 GH:
#Res BW			#VB\	W 3.0 MHz				ep 50.7 ms	(40001 pts
MKE MODE TE	f f	× 1.850 3 GHz 16.385 4 GHz	27.588	dBm	CTION FUN	CTION WIDTH		FUNCTION VALUE	
2 N 1 3 4									
6 7									
4 5 6 7 8 9									
10 11 12									
MSG						STATUS			

### Middle Channel

RL RF	50 Q /	AC	SENSE		ALIGNAUTO Avg Typ	e: Log-Pwr		:19 AM Oct 19, 2 TRACE 1 2 3 4
ASS		P		rig: Free Run Atten: 36 dB		-		DET P P P P
dB/div Re	f Offset 9.5 d f 35.50 dB	B m					Mkr1 1.8 26	380 2 GI 120 dE
Trace 1 P	1 <u>s</u>							
5.6								
50								
50								
4.5						_	^2	
1.5						-		A. C. C. Martin
1.5	-	a superior and the second s	and the second second	البيانة فتتراجيهم	and the second se	No. of Concession, Name		
4.5								
1.5								
art 30 MHz Res BW 1.0 I	MHz		#VBW 3.	0 MHz		Swe	Stop ep 50.7 ms	20.000 G (40001 p
r mode tro sci		× 1.880 2 GHz	26.120 dBm	FUNCTION	FUNCTION WIDTH		FUNCTION VALUE	
N 1 f 2 N 1 f 3		16.585 1 GHz	-25.951 dBm					
5								
7								
9								
1								
2								
1					STATUS			

### **Highest Channel**

Agilent Spectrum Analyzer - Swept SA			
OC RL RF 50 Ω AC Center Freq 10.015000000 GHz	SENSE:INT	ALIGNAUTO Avg Type:	09:24:08 AM Oct 19, 2016
PASS	NO: Fast 😱 Trig: Free Gain:Low #Atten: 36	dB	DET PPPP
Ref Offset 9.5 dB 10 dB/div Ref 35.50 dBm			Mkr1 1.909 7 GHz 26.307 dBm
Log 25.5 Trace 1 Ft 13			
15.6			
5.50			
-4.50			
-14.5			2
345		and the second	and the second sec
-44.5			
-54.5			
Start 30 MHz #Res BW 1.0 MHz	#VBW 3.0 MHz		Stop 20.000 GHz Sweep 50.7 ms (40001 pts)
MKR MODE TRC SCL X		TION FUNCTION WIDTH	EUNCTION VALUE
1 N 1 f 1.909 7 GHz 2 N 1 f 16.545 2 GHz	26.307 dBm -28.765 dBm		
2 N 1 f 16.5462 GHz 4 5 6 7 9 9 10			
5			
8			
9			
11 12			
MSG		STATUS	

Shenzhen STS Test Services Co., Ltd.

 1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China

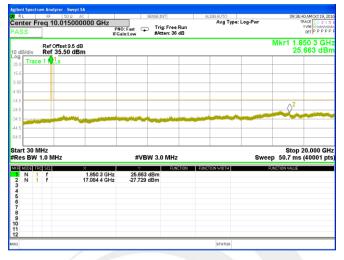
 Tel: + 86-755
 3688
 6288
 Fax:+ 86-755
 3688
 6277
 Http://www.stsapp.com
 E-mail: sts@stsapp.com



# Report No.: STS1610071F01

# EDGE 1900 BAND(30M-20G)

## Lowest Channel



# Middle Channel

RL	RF		AC	SENSE:1	NT	ALIGNAUTO		09:3	14:09 AM Oct 19,
enter ASS	Freq	10.0150		0: Fast 🖵 Tri ain:Low #At	g: Free Run ten: 36 dB	Avg Ty	e: Log-Pwr		TYPE MWWW DET P P P
) dB/di	v Re	f Offset 9.5 f 35.50 d	dB Bm						.880 2 G 6.195 dE
5 6 Tr	race 1 P	<u>1</u> s							
5.6									
50									
50									
4.5									_
4.5								2	
15				and the second second	ور المراجع ال	and the second second	No. of Concession, Name		( And a state of the
.5	and the second second								
	0 MHz W 1.0	MHz		#VBW 3.0	MHz		Swe	Stop ep 50.7 m	o 20.000 G Is (40001 j
R MODE			× 1.880 2 GHz	26,195 dBm	FUNCTION	FUNCTION WIDTH		FUNCTION VALUE	-
2 N	1 1		16.365 5 GHz	-29.294 dBm					
4									
4									
4 5 6 7									
4 5 7 8									
3 4 5 6 7 8 9 0									

# **Highest Channel**

RL RF	lyzer - Swept SA 50 Ω AC		SENS	E:INT	ALIGNAUTO			:00 AM Oct 19, 2
nter Freq 1	10.01500000	PNO:	:Fast 🖵	frig: Free Run Atten: 36 dB	Avg Typ	e: Log-Pwr		TRACE 1 2 3 4 TYPE MUMMU DET P P P P
dB/div Ref	Offset 9.5 dB 35.50 dBm							910 2 GH 3.383 dB
Trace 1 F	1,							
5.6								
50						_		-
50								
1.5								
1.5	and a lot of	and the second second			and the second second	No. of Concession, Name		موا <b>ل</b> اليونامي
4.5								
1.5								
art 30 MHz Res BW 1.0 M	ЛНz		#VBW :	3.0 MHz		Swe	Stop ep 50.7 ms	20.000 GH s (40001 pt
R MODE TRC SCL	×		Y	FUNCTION	FUNCTION WIDTH		FUNCTION VALUE	
N 1 f 2 N 1 f		910 2 GHz 405 4 GHz	26.383 dBr -26.266 dBr	n				
5								
3								
)								
1								
3					STATUS			

Shenzhen STS Test Services Co., Ltd.

 1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China

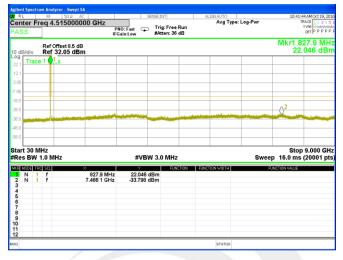
 Tel: + 86-755
 3688
 6287
 Http://www.stsapp.com
 E-mail: sts@stsapp.com



# Report No.: STS1610071F01

# WCDMA Band V (RMC 12.2Kbps)

## Lowest Channel



# Middle Channel

	RF	50 Q AC	SENSE: INT		ALIGNAUTO			3 AM Oct 19, 2
enter	Freq 4.51		0: Fast 🖵 Trig: F ain:Low #Atten	ree Run : 36 dB	Avg Type:	Log-Pwr		ACE 1 2 3 4 TYPE MUMMUM DET P P P P
0 dB/di	Ref Offse						Mkr1 83 22.	35.5 MI 188 dB
	race 1 🚺 s							
2.2								
19								
81								
.8								
.8			and the state of the		a s los a contratorias	and an enter of the second	and the state	-
.8								
							Stop	9.000 G
art 3	0 MHz							
	0 MHZ W 1.0 MHZ		#VBW 3.0 N	IHz		Swee	p 16.0 m s	20001 p
R MOD	W 1.0 MHz	*	Y		UNCTION WIDTH		p 16.0 ms	(20001 p
Res B E 12000 1 N 2 N	W 1.0 MHz	× 835.5 MHz 6.048 9 GHz	#VBW 3.0 N 22.188 dBm -31.685 dBm		UNCTION WIDTH			20001 p
Res B N N 2 N	W 1.0 MHz	835.5 MHz	22.188 dBm		UNCTION WIDTH			20001 p
Res B 1 N 2 N 3 4	W 1.0 MHz	835.5 MHz	22.188 dBm		UNCTION WIDTH			20001 p
Res B 1 N 2 N 3 4 5 6 7	W 1.0 MHz	835.5 MHz	22.188 dBm		UNCTION WIDTH			20001 p
Res B 1 N 2 N 3 4 5 6 7	W 1.0 MHz	835.5 MHz	22.188 dBm		JINCTION WIDTH			20001 p
Res B 1 N 2 N 3 4 5 6 7 8 9 0	W 1.0 MHz	835.5 MHz	22.188 dBm		UNCTION WIDTH			20001 p
Res B 1 N 2 N 3 4 5 6 7 8 9	W 1.0 MHz	835.5 MHz	22.188 dBm		INCTION WIDTH			20001 p

## **Highest Channel**

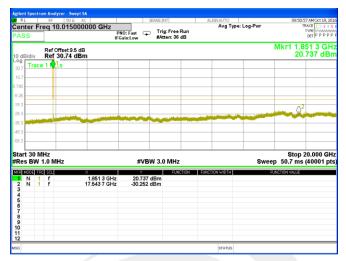
RL RF	50 Q AC		SENSE: INT	ALIGNAUTO		10:44:58 AM Oct 19, 2
nter Freq 4 SS	1.515000000 GHz	PNO: Fast	Trig: Free Run #Atten: 36 dB	Avg Type:	Log-Pwr	TYPE MWWWW DET P P P P
dB/div Ref	Offset 8.5 dB 31.55 dBm					Mkr1 845.8 MH 21.549 dB
Trace 1	1 <sub>s</sub>					
6						
5						
6						
5						
5		ويستلبا والمتحدين أللارد			()2	
S CONTRACTOR OF STREET	in the second distance of the second distance			a interest of the life of the second s		and the second design of the s
5						
5						
nt 30 MHz es BW 1.0 M	ЛНz	#VB	W 3.0 MHz		Sweep	Stop 9.000 GH
MODE TRC SCL	×	Y	FUNCTION	FUNCTION WIDTH		ICTION VALUE
N 1 f	845.8 M 6.954 8 G	IHz 21.549 IHz -34.403	dBm dBm			

Shenzhen STS Test Services Co., Ltd.



# WCDMA Band II (RMC 12.2Kbps)(30M-20G)

## Lowest Channel



### Middle Channel

gilent Spectrum Ar	solution Connect CA							-
RL RF			SENSE: INT		ALIGNAUTO		00.53	49 AMOct 19.
	10.015000000	GHz PNO: Fas IFGain:Los	Trig:	Free Run n: 36 dB		pe:Log-Pwr		TYPE MWW DET P P P
dB/div Re	f Offset 9.5 dB f 30.88 dBm						Mkr1 1.8 20	78 7 G .880 d
Trace 1	1 <sub>s</sub>							
0.0								
0.9								
80								
12				_			_	
u —								~
		and the state of the	atiles to a second			-	and the second second	None of
1 and a second state						And the second sec		
u								
art 30 MHz Res BW 1.0	MHz		#VBW 3.0	٨Hz		Swe	Stop ep 50.7 ms	20.000 ( (40001
R MODE TRC SCI			Y	FUNCTION	FUNCTION WIDTH		FUNCTION VALUE	
N 1 f 2 N 1 f	1.87	87GHz 2	0.880 dBm 0.140 dBm					
3	15.00		0.140 0.011					
5								
7								
3								
1								
2								

# **Highest Channel**

enter Freq 10.0 ASS	PN	0: Fast 😱 Trig: Fre ain:Low #Atten: 3	Avg Type e Run 86 dB	DET P	PPPP
Ref Offse 0 dB/div Ref 31.	t9.5 dB 71 dBm			Mkr1 1.906 7 21.708	
og 21.7 Trace 1 F					
11.7					
1.71					
8.3				~2	
8.3				Q	
8.3	and the second	Station of the second	and the state of the state of the		
8.3					
8.3					
tart 30 MHz Res BW 1.0 MHz		#VBW 3.0 MH	łz	Stop 20.00 Sweep 50.7 ms (4000	0 GH 01 pt
KR MODE TRC SCL	×		JNCTION FUNCTION WIDTH	FUNCTION VALUE	
1 N 1 f 2 N 1 f	1.906 7 GHz 16.565 2 GHz	21.708 dBm -25.371 dBm			
3 4					
5					
7 8					
9					

Shenzhen STS Test Services Co., Ltd.

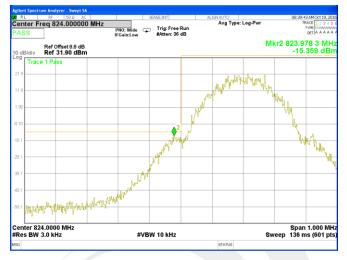
 1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China

 Tel: + 86-755
 3688
 6287
 Http://www.stsapp.com
 E-mail: sts@stsapp.com



### GSM 850

#### Lowest Band Edge



Note:Offset=Cable loss(8.5)+10log(3.2/3)=8.5+0.3=8.8 dB

#### Highest Band Edge



Note:Offset=Cable loss(8.5)+10log(3.2/3)=8.5+0.3=8.8 dB

Shenzhen STS Test Services Co., Ltd.



## **GPRS 850**

## Lowest Band Edge



Note:Offset=Cable loss(8.5)+10log(3.2/3)=8.5+0.3=8.8 dB

### **Highest Band Edge**



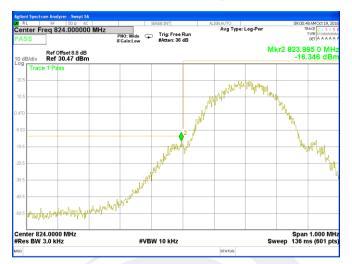
Note:Offset=Cable loss(8.5)+10log(3.2/3)=8.5+0.3=8.8 dB

Shenzhen STS Test Services Co., Ltd.



## EDGE 850

#### Lowest Band Edge



Note:Offset=Cable loss(8.5)+10log(3.2/3)=8.5+0.3=8.8 dB

#### **Highest Band Edge**



Note:Offset=Cable loss(8.5)+10log(3.2/3)=8.5+0.3=8.8 dB

Shenzhen STS Test Services Co., Ltd.



GSM 1900

### Lowest Band Edge



Note:Offset=Cable loss(9.5)+10log(3.2/3)=9.5+0.3=9.8 dB

## Highest Band Edge



Note:Offset=Cable loss(9.5)+10log(3.2/3)=9.5+0.3=9.8 dB

Shenzhen STS Test Services Co., Ltd.

 1/F., Building B, Zhuoke Science Park, No. 190, Chongqing Road, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China

 Tel: + 86-755
 3688
 6288
 Fax:+ 86-755
 3688
 6277
 Http://www.stsapp.com
 E-mail: sts@stsapp.com



**GPRS 1900** 

### Lowest Band Edge



Note:Offset=Cable loss(9.5)+10log(3.2/3)=9.5+0.3=9.8 dB

## Highest Band Edge



Note:Offset=Cable loss(9.5)+10log(3.2/3)=9.5+0.3=9.8 dB

Shenzhen STS Test Services Co., Ltd.



# EDGE 1900

### Lowest Band Edge



Note:Offset=Cable loss(9.5)+10log(3.2/3)=9.5+0.3=9.8 dB

## Highest Band Edge



Note:Offset=Cable loss(9.5)+10log(3.2/3)=9.5+0.3=9.8 dB

Shenzhen STS Test Services Co., Ltd.



### WCDMA Band VRMC 12.2Kbps

### Lowest Band Edge



Note:Offset=Cable loss(8.5)+10log(47/47)=8.5+0=8.5 dB

## Highest Band Edge



Note:Offset=Cable loss(8.5)+10log(47/47)=8.5+0=8.5 dB

Shenzhen STS Test Services Co., Ltd.



## WCDMA Band IIRMC 12.2Kbps

### Lowest Band Edge



Note:Offset=Cable loss(9.5)+10log(47/47)=9.5+0=9.5 dB

## Highest Band Edge



Note:Offset=Cable loss(9.5)+10log(47/47)=9.5+0=9.5 dB

Shenzhen STS Test Services Co., Ltd.



# A8 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

# GSM 850: (30-9000)MHz

GSM 850: (30-9000)MHz								
The Worst Test Results Channel 128/824.2 MHz								
	S G.Lev			PMea	Limit	Margin	Delority	
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dBm)	Polarity	
1648.15	-40.18	9.40	4.75	-35.53	-13.00	-22.53	Н	
2472.68	-40.43	10.60	8.39	-38.22	-13.00	-25.22	Н	
3296.92	-30.92	12.00	11.79	-30.71	-13.00	-17.71	Н	
1648.24	-43.16	9.40	4.75	-38.51	-13.00	-25.51	V	
2472.56	-44.29	10.60	8.39	-42.08	-13.00	-29.08	V	
3296.68	-43.89	12.00	11.79	-43.68	-13.00	-30.68	V	
The Worst Test Results Channel 190/836.6 MHz								
Frequency(MHz)	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity	
Frequency(MHZ)	(dBm)	Ani(ubi)	L055	(dBm)	(dBm)	(dBm)	rolanty	
1673.25	-40.32	9.50	4.76	-35.58	-13.00	-22.58	Н	
2509.52	-39.98	10.70	8.40	-37.68	-13.00	-24.68	Н	
3346.21	-32.12	12.20	11.80	-31.72	-13.00	-18.72	Н	
1673.05	-43.52	9.40	4.75	-38.87	-13.00	-25.87	V	
2509.68	-44.27	10.60	8.39	-42.06	-13.00	-29.06	V	
3346.00	-43.29	12.20	11.82	-42.91	-13.00	-29.91	V	
	The W	orst Test R	esults Ch	annel 251/	848.8 MHz			
Frequency(MHz)	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity	
Trequency(IMLIZ)	(dBm)	Аш(аы)	L055	(dBm)	(dBm)	(dBm)	Folanty	
1697.40	-40.86	9.60	4.77	-36.03	-13.00	-23.03	Н	
2546.44	-39.34	10.80	8.50	-37.04	-13.00	-24.04	Н	
3394.89	-31.57	12.50	11.90	-30.97	-13.00	-17.97	Н	
1697.29	-43.72	9.60	4.77	-38.89	-13.00	-25.89	V	
2546.18	-44.10	10.80	8.50	-41.80	-13.00	-28.80	V	
3394.88	-43.26	12.50	11.90	-42.66	-13.00	-29.66	V	

**Note:** (1)Below 30MHz no Spurious found is the worst condition.

(2)Above 3.5GHz amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has.



## Report No.: STS1610071F01

#### GPRS 850: (30-9000)MHz

GPRS 850: (30-9000)MHz									
The Worst Test Results Channel 128/824.2 MHz									
	S G.Lev			PMea	Limit	Margin	Delerity		
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dBm)	Polarity		
1648.34	-40.86	9.40	4.75	-36.21	-13.00	-23.21	Н		
2472.67	-40.11	10.60	8.39	-37.90	-13.00	-24.90	Н		
3296.66	-31.36	12.00	11.79	-31.15	-13.00	-18.15	Н		
1648.01	-43.84	9.40	4.75	-39.19	-13.00	-26.19	V		
2472.38	-44.69	10.60	8.39	-42.48	-13.00	-29.48	V		
3296.90	-43.59	12.00	11.79	-43.38	-13.00	-30.38	V		
The Worst Test Results Channel 190/836.6 MHz									
Frequency(MHz)	S G.Lev	Ant(dBi)	Loco	PMea	Limit	Margin	Polarity		
Frequency(MHZ)	(dBm)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dBm)	Polarity	
1673.00	-40.48	9.50	4.76	-35.74	-13.00	-22.74	Н		
2509.72	-39.84	10.70	8.40	-37.54	-13.00	-24.54	Н		
3346.11	-32.05	12.20	11.80	-31.65	-13.00	-18.65	Н		
1672.90	-44.18	9.40	4.75	-39.53	-13.00	-26.53	V		
2509.79	-44.20	10.60	8.39	-41.99	-13.00	-28.99	V		
3346.13	-43.31	12.20	11.82	-42.93	-13.00	-29.93	V		
	The W	orst Test R	esults Ch	annel 251/	848.8 MHz				
	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity		
Frequency(MHz)	(dBm)	Ant(dBi)	LUSS	(dBm)	(dBm)	(dBm)	Polarity		
1697.38	-41.34	9.60	4.77	-36.51	-13.00	-23.51	Н		
2546.24	-39.98	10.80	8.50	-37.68	-13.00	-24.68	Н		
3394.90	-31.46	12.50	11.90	-30.86	-13.00	-17.86	Н		
1697.45	-44.20	9.60	4.77	-39.37	-13.00	-26.37	V		
2546.32	-45.19	10.80	8.50	-42.89	-13.00	-29.89	V		
3394.88	-43.69	12.50	11.90	-43.09	-13.00	-30.09	V		

Note: (1)Below 30MHz no Spurious found is the worst condition.

(2)Above 3.5GHz amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has.



## Report No.: STS1610071F01

# EDGE 850: (30-9000)MHz

EGPRS 850: (30-9000)MHz									
The Worst Test Results Channel 128/824.2 MHz									
	S G.Lev	Ant(dBi)		PMea	Limit	Margin	Delerity		
Frequency(MHz)	(dBm)	Апциы)	Loss	(dBm)	(dBm)	(dBm)	Polarity		
1648.33	-40.98	9.40	4.75	-36.33	-13.00	-23.33	Н		
2472.43	-39.56	10.60	8.39	-37.35	-13.00	-24.35	Н		
3296.43	-31.87	12.00	11.79	-31.66	-13.00	-18.66	Н		
1648.01	-43.37	9.40	4.75	-38.72	-13.00	-25.72	V		
2472.27	-44.11	10.60	8.39	-41.90	-13.00	-28.90	V		
3296.69	-43.59	12.00	11.79	-43.38	-13.00	-30.38	V		
The Worst Test Results Channel 190/836.6 MHz									
	S G.Lev	Ant(dBi)		PMea	Limit	Margin	Delerity		
Frequency(MHz)	(dBm)		Ant(dBi) Loss	(dBm)	(dBm)	(dBm)	Polarity		
1673.00	-40.41	9.50	4.76	-35.67	-13.00	-22.67	Н		
2509.59	-39.90	10.70	8.40	-37.60	-13.00	-24.60	Н		
3346.28	-31.88	12.20	11.80	-31.48	-13.00	-18.48	Н		
1672.80	-43.36	9.40	4.75	-38.71	-13.00	-25.71	V		
2509.55	-44.48	10.60	8.39	-42.27	-13.00	-29.27	V		
3346.31	-43.69	12.20	11.82	-43.31	-13.00	-30.31	V		
	The W	orst Test R	esults Ch	annel 251/	848.8 MHz				
	S G.Lev	Ant(dDi)		PMea	Limit	Margin	Delerity		
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dBm)	Polarity		
1697.46	-40.49	9.60	4.77	-35.66	-13.00	-22.66	Н		
2546.09	-40.59	10.80	8.50	-38.29	-13.00	-25.29	Н		
3394.88	-31.45	12.50	11.90	-30.85	-13.00	-17.85	Н		
1697.53	-44.54	9.60	4.77	-39.71	-13.00	-26.71	V		
2546.53	-44.97	10.80	8.50	-42.67	-13.00	-29.67	V		
3395.28	-43.41	12.50	11.90	-42.81	-13.00	-29.81	V		

Note: (1)Below 30MHz no Spurious found is the worst condition.

(2)Above 3.5GHz amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has.



## Report No.: STS1610071F01

### PCS 1900: (30-20000)MHz

	DCS 1900: (30-20000)MHz								
The Worst Test Results for Channel 512/1850.2MHz									
	S G.Lev			PMea	Limit	Margin	Delerity		
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dBm)	Polarity		
3700.10	-34.23	12.60	12.93	-34.56	-13.00	-21.56	Н		
5550.29	-34.70	13.10	17.11	-38.71	-13.00	-25.71	Н		
7400.72	-33.28	11.50	22.20	-43.98	-13.00	-30.98	Н		
3700.51	-35.17	12.60	12.93	-35.50	-13.00	-22.50	V		
5550.32	-34.30	13.10	17.11	-38.31	-13.00	-25.31	V		
7400.63	-33.08	11.50	22.20	-43.78	-13.00	-30.78	V		
The Worst Test Results for Channel 661/1880.0MHz									
Frequency(MHz)	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity		
Frequency(MHZ)	(dBm)	(dBm)	LUSS	(dBm)	(dBm)	(dBm)	Polanty		
3759.83	-33.60	12.60	12.93	-33.93	-13.00	-20.93	Н		
5639.84	-34.40	13.10	17.11	-38.41	-13.00	-25.41	Н		
7520.05	-33.55	11.50	22.20	-44.25	-13.00	-31.25	Н		
3760.07	-34.81	12.60	12.93	-35.14	-13.00	-22.14	V		
5639.91	-34.34	13.10	17.11	-38.35	-13.00	-25.35	V		
7519.82	-33.01	11.50	22.20	-43.71	-13.00	-30.71	V		
	The Wor	st Test Res	sults for C	hannel 810	)/1909.8MH	z			
Frequency(MHz)	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity		
Frequency(MHZ)	(dBm)	Ani(ubi)	L055	(dBm)	(dBm)	(dBm)	Folanty		
3819.57	-33.76	12.60	12.93	-34.09	-13.00	-21.09	Н		
5729.49	-34.80	13.10	17.11	-38.81	-13.00	-25.81	Н		
7639.24	-33.49	11.50	22.20	-44.19	-13.00	-31.19	Н		
3819.39	-34.64	12.60	12.93	-34.97	-13.00	-21.97	V		
5729.20	-34.97	13.10	17.11	-38.98	-13.00	-25.98	V		
7639.06	-32.35	11.50	22.20	-43.05	-13.00	-30.05	V		

Note: (1)Below 30MHz no Spurious found is the worst condition.

(2)Above 8GHz amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has.



## Report No.: STS1610071F01

### GPRS 1900: (30-20000)MHz

GPRS1900: (30-20000)MHz									
The Worst Test Results for Channel 512/1850.2MHz									
Frequency(MHz)	S G.Lev	Ant(dBi)		PMea	Limit	Margin	Polarity		
Frequency(MHZ)	(dBm)	Ani(ubi)	Loss	(dBm)	(dBm)	(dBm)	Foldrity		
3700.32	-34.50	12.60	12.93	-34.83	-13.00	-21.83	Н		
5550.40	-34.08	13.10	17.11	-38.09	-13.00	-25.09	Н		
7400.72	-33.32	11.50	22.20	-44.02	-13.00	-31.02	Н		
3700.51	-35.08	12.60	12.93	-35.41	-13.00	-22.41	V		
5550.44	-35.07	13.10	17.11	-39.08	-13.00	-26.08	V		
7400.93	-32.10	11.50	22.20	-42.80	-13.00	-29.80	V		
The Worst Test Results for Channel 661/1880.0MHz									
	S G.Lev	Ant(dBi)		PMea	Limit	Margin	Delority		
Frequency(MHz)	(dBm)		Loss	(dBm)	(dBm)	(dBm)	Polarity		
3759.90	-34.76	12.60	12.93	-35.09	-13.00	-22.09	Н		
5639.99	-35.23	13.10	17.11	-39.24	-13.00	-26.24	Н		
7520.10	-32.75	11.50	22.20	-43.45	-13.00	-30.45	Н		
3760.12	-35.14	12.60	12.93	-35.47	-13.00	-22.47	V		
5640.00	-34.22	13.10	17.11	-38.23	-13.00	-25.23	V		
7520.05	-32.65	11.50	22.20	-43.35	-13.00	-30.35	V		
	The Wor	st Test Res	sults for C	hannel 810	)/1909.8MH	z			
Frequency(MHz)	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity		
Frequency(MHZ)	(dBm)	Ani(ubi)	L055	(dBm)	(dBm)	(dBm)	Folding		
3819.39	-34.43	12.60	12.93	-34.76	-13.00	-21.76	Н		
5729.05	-34.37	13.10	17.11	-38.38	-13.00	-25.38	Н		
7638.96	-32.39	11.50	22.20	-43.09	-13.00	-30.09	Н		
3819.36	-35.10	12.60	12.93	-35.43	-13.00	-22.43	V		
5729.48	-34.39	13.10	17.11	-38.40	-13.00	-25.40	V		
7639.29	-32.09	11.50	22.20	-42.79	-13.00	-29.79	V		

Note: (1)Below 30MHz no Spurious found is the worst condition.

(2)Above 8GHz amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has.



## Report No.: STS1610071F01

### EDGE 1900: (30-20000)MHz

	EGPRS 1900: (30-20000)MHz							
The Worst Test Results for Channel 512/1850.2MHz								
	S G.Lev			PMea	Limit	Margin	Delerity	
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dBm)	Polarity	
3700.45	-33.67	12.60	12.93	-34.00	-13.00	-21.00	Н	
5550.39	-34.91	13.10	17.11	-38.92	-13.00	-25.92	Н	
7400.94	-32.61	11.50	22.20	-43.31	-13.00	-30.31	Н	
3700.51	-35.71	12.60	12.93	-36.04	-13.00	-23.04	V	
5550.63	-34.46	13.10	17.11	-38.47	-13.00	-25.47	V	
7400.51	-32.63	11.50	22.20	-43.33	-13.00	-30.33	V	
The Worst Test Results for Channel 661/1880.0MHz								
Frequency(MHz)	S G.Lev	Apt(dDi)		PMea	Limit	Margin	Delarity	
Frequency(MHZ)	(dBm)	Ant(dBi)	(dBi) Loss -	(dBm)	(dBm)	(dBm)	Polarity	
3759.79	-33.98	12.60	12.93	-34.31	-13.00	-21.31	Н	
5639.85	-34.86	13.10	17.11	-38.87	-13.00	-25.87	Н	
7520.28	-32.92	11.50	22.20	-43.62	-13.00	-30.62	Н	
3759.94	-35.79	12.60	12.93	-36.12	-13.00	-23.12	V	
5640.31	-34.37	13.10	17.11	-38.38	-13.00	-25.38	V	
7520.02	-32.01	11.50	22.20	-42.71	-13.00	-29.71	V	
	The Wor	st Test Res	sults for C	hannel 810	)/1909.8MH	z		
Frequency(MHz)	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity	
Frequency(MHZ)	(dBm)	Ani(ubi)	L055	(dBm)	(dBm)	(dBm)	Folanty	
3819.30	-34.04	12.60	12.93	-34.37	-13.00	-21.37	Н	
5729.31	-35.04	13.10	17.11	-39.05	-13.00	-26.05	Н	
7639.28	-32.48	11.50	22.20	-43.18	-13.00	-30.18	Н	
3819.58	-35.55	12.60	12.93	-35.88	-13.00	-22.88	V	
5729.46	-34.29	13.10	17.11	-38.30	-13.00	-25.30	V	
7639.10	-32.13	11.50	22.20	-42.83	-13.00	-29.83	V	

Note: (1)Below 30MHz no Spurious found is the worst condition.

(2)Above 8GHz amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has.



## Report No.: STS1610071F01

### UMTS band V(30-9000)MHz

WCDMA Band V: (30-9000)MHz									
The wost testresults channel 4132/826.4MHz									
	S G.Lev			PMea	Limit	Margin	Delerity		
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dBm)	Polarity		
1652.02	-41.10	9.40	4.75	-36.45	-13.00	-23.45	Н		
2479.26	-40.28	10.60	8.39	-38.07	-13.00	-25.07	Н		
3305.92	-31.54	12.00	11.79	-31.33	-13.00	-18.33	Н		
1652.48	-44.09	9.40	4.75	-39.44	-13.00	-26.44	V		
2479.29	-44.24	10.60	8.39	-42.03	-13.00	-29.03	V		
3305.89	-43.93	12.00	11.79	-43.72	-13.00	-30.72	V		
The Worst Test Results Channel 4183/836.6MHz									
	S G.Lev			PMea	Limit	Margin	Delerity		
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dBm)	Polarity		
1673.12	-40.49	9.50	4.76	-35.75	-13.00	-22.75	Н		
2509.69	-39.55	10.70	8.40	-37.25	-13.00	-24.25	Н		
3346.26	-31.15	12.20	11.80	-30.75	-13.00	-17.75	Н		
1673.07	-43.18	9.40	4.75	-38.53	-13.00	-25.53	V		
2509.53	-45.15	10.60	8.39	-42.94	-13.00	-29.94	V		
3346.25	-43.55	12.20	11.82	-43.17	-13.00	-30.17	V		
	The Wo	orst Test R	esults Cha	annel 4233	/846.6MHz				
	S G.Lev	A pt(dDi)		PMea	Limit	Margin	Delarity		
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dBm)	Polarity		
1693.45	-41.59	9.60	4.77	-36.76	-13.00	-23.76	Н		
2539.30	-39.38	10.80	8.50	-37.08	-13.00	-24.08	Н		
3386.03	-32.14	12.50	11.90	-31.54	-13.00	-18.54	Н		
1693.22	-44.24	9.60	4.77	-39.41	-13.00	-26.41	V		
2539.09	-45.33	10.80	8.50	-43.03	-13.00	-30.03	V		
3386.06	-42.86	12.50	11.90	-42.26	-13.00	-29.26	V		

Note: (1)Below 30MHz no Spurious found is the worst condition.

(2)Above 3GHz amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has.



## Report No.: STS1610071F01

### UMTS band II(30-20000)MHz

	WCDMA Band II: (30-20000)MHz								
The Worst Test Results for Channel 9262/1852.4MHz									
	S G.Lev	Lev		PMea	Limit	Margin	Delerity		
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dBm)	Polarity		
3704.26	-34.51	12.60	12.93	-34.84	-13.00	-21.84	Н		
5557.67	-35.48	13.10	17.11	-39.49	-13.00	-26.49	Н		
7409.70	-32.93	11.50	22.20	-43.63	-13.00	-30.63	Н		
3704.05	-34.81	12.60	12.93	-35.14	-13.00	-22.14	V		
5557.45	-34.80	13.10	17.11	-38.81	-13.00	-25.81	V		
7409.86	-32.35	11.50	22.20	-43.05	-13.00	-30.05	V		
The Worst Test Results for Channel 9400/1880MHz									
	S G.Lev	Ant(dBi)		PMea	Limit	Margin	Polarity		
Frequency(MHz)	(dBm)	Апциы)	Loss	(dBm)	(dBm)	(dBm)	Polarity		
3760.17	-34.58	12.60	12.93	-34.91	-13.00	-21.91	Н		
5639.86	-34.28	13.10	17.11	-38.29	-13.00	-25.29	Н		
7519.89	-32.99	11.50	22.20	-43.69	-13.00	-30.69	Н		
3760.19	-35.12	12.60	12.93	-35.45	-13.00	-22.45	V		
5640.28	-35.02	13.10	17.11	-39.03	-13.00	-26.03	V		
7520.03	-33.17	11.50	22.20	-43.87	-13.00	-30.87	V		
	The Wors	st Test Res	ults for Ch	nannel 953	8/1907.6M <b>⊦</b>	lz			
Frequency(MHz)	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity		
Frequency(MHZ)	(dBm)	Ani(ubi)	L055	(dBm)	(dBm)	(dBm)	Fulanty		
3815.35	-34.87	12.60	12.93	-35.20	-13.00	-22.20	Н		
5722.50	-34.42	13.10	17.11	-38.43	-13.00	-25.43	Н		
7629.87	-32.96	11.50	22.20	-43.66	-13.00	-30.66	Н		
3815.59	-35.54	12.60	12.93	-35.87	-13.00	-22.87	V		
5722.45	-34.23	13.10	17.11	-38.24	-13.00	-25.24	V		
7630.29	-32.30	11.50	22.20	-43.00	-13.00	-30.00	V		

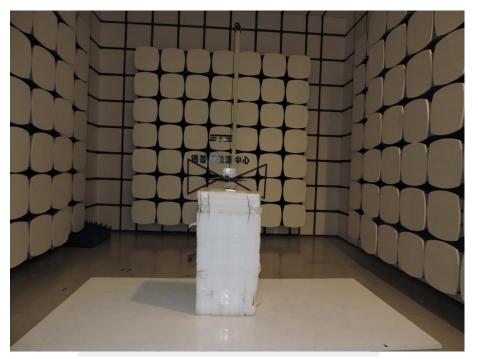
Note: (1)Below 30MHz no Spurious found is the worst condition.

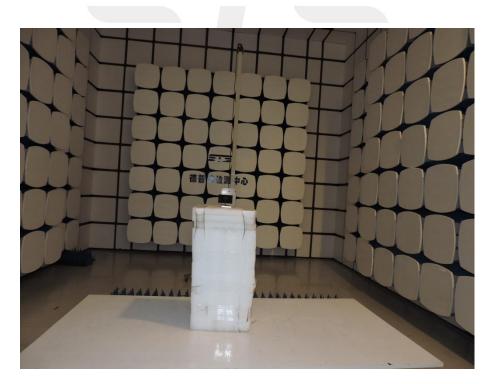
(2)Above 6GHz amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has.



# APPENDIX BPHOTOS OF TEST SETUP

RADIATED SPURIOUS EMISSION





Shenzhen STS Test Services Co., Ltd.