

# **RADIO TEST REPORT**

# Report No:STS1812037W01

S T S

Issued for

XTR S.A.C.

Av. Camino Real 1225 Of 201-A San Isidro Lima, Peru

Product Name:	Smart phone
Brand Name:	EKS
Model Name:	T4
Series Model:	N/A
FCC ID:	2AGAK-T4
Test Standard:	FCC Part 22H and 24E

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## **TEST RESULT CERTIFICATION**

Applicant's name:	XTR S.A.C.
Address	Av. Camino Real 1225 Of 201-A San Isidro Lima, Peru
Manufacture's Name	ENCORP LIMITED
Address	6th Floor, Fuhua Technology Mansion A, Beihuan Boulevard No. 9116, Nanshan District, Shenzhen, China.
Product discription	
Product Name:	Smart phone
Brand Name:	EKS
Model Name:	Τ4
Series Model:	N/A
Test Standards	FCC Part 22H and 24E
Test procedure	.KDB 971168 D01 v03r01,ANSI C63.26( 2015)
under test (EUT) is in complian sample identified in the report. This report shall not be reprodu only be altered or revised by ST	as been tested by STS and the test results show that the equipment ace with the FCC requirements. And it is applicable only to the tested aced except in full, without the written approval of STS, this document is, personal only, and shall be noted in the revision of the document.
Date of Test	
Date of performance of tests	
Date of Issue	27 Dec. 2018
Test Result	Pass
Testing Engine	eer : Chris chen (Chris chen)
Technical Mar	( Sunday Hu )
Authorized Sig	gnatory :(Vita Li)

Shenzhen STS Test Services Co., Ltd.

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#### **Revision History**

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	27 Dec. 2018	STS1812037W01	ALL	Initial Issue



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## SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

The radiated emission testing was performed according to the procedures of KDB 971168 D01 v03r01 and ANSI C63.26( 2015)

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	



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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 FCC Registration No.: 625569 IC Registration No.: 12108A; A2LA Certificate No.: 4338.01;

## **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.<sub>o</sub>

No.	Item	Uncertainty
1	RF output power, conducted	±0.71dB
2	Unwanted Emissions,conducted	±0.63dB
3	All emissions,radiated 30-200MHz	±3.43dB
4	All emissions, radiated 200MHz-1GHz	±3.57dB
5	All emissions,radiated>1G	±4.13dB
6	Conducted Emission(9KHz-150KHz)	±3.18dB
7	Conducted Emission(150KHz-30MHz)	±2.70dB



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## **2 PRODUCT INFORMATION**

Product Name	Smart phone
Trade Name	EKS
Model Name	Τ4
Series Model	N/A
Model Difference	N/A
	GSM/GPRS/EDGE:
	850: 824 MHz ~ 849MHz
T. F.	1900: 1850 MHz ~ 1910MHz
Tx Frequency:	WCDMA:
	Band V: 824 MHz ~ 849 MHz
	Band II: 1850 MHz ~ 1910 MHz
	GSM/GPRS/EDGE:
	850: 869 MHz ~ 894 MHz
	1900: 1930 MHz ~ 1990MHz
Rx Frequency:	WCDMA:
	Band V: 869 MHz ~ 894 MHz
	Band II: 1930 MHz ~ 1990 MHz
Max RF Output Power:	GSM850:32.02dBm, PCS1900:29.42dBm GPRS850(1-Slot):31.92dBm, GPRS1900(1-Slot):29.25dBm GPRS850(2-Slot):31.52dBm, GPRS1900(2-Slot):28.82Bm GPRS850(3-Slot):31.06dBm, GPRS1900(3-Slot):28.40dBm GPRS850(4-Slot):30.58dBm, GPRS1900(4-Slot):27.94dBm EDGE 850(1-Slot):26.06dBm, EDGE 1900(4-Slot):27.94dBm EDGE 850(2-Slot):25.33dBm, EDGE 1900(2-Slot):23.77dBm EDGE 850(3-Slot):24.60dBm, EDGE 1900(3-Slot):23.07dBm EDGE 850(4-Slot):23.81dBm, EDGE 1900(4-Slot):22.32dBm WCDMABand V:22.07dBm, WCDMA Band II:21.55dBm
Type of Emission:	GSM(850): 317KGXW; GSM(1900): 321KGXW GPRS(850): 322KGXW; GPRS(1900): 314KGXW EDGE(850): 403KG7W; EDGE(1900): 316KG7W WCDMA850: 4M65F9W WCDMA1900: 4M69F9W
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
Antonno a in	GSM 850: 0dBi ,PCS 1900:0dBi
Antenna gain:	WCDMA 850: 0dBi, WCDMA1900: 0dBi
Power Supply:	DC 3.7V by battery
Battery parameter:	Capacity: 1400mAh, Rated Voltage: 3.7V

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Adaptor:	Input: AC100-240V, 150mA,50/60Hz	
Adapter:	Output: DC5V,500mA	
GPRS/EDGE Class:	Multi-Class12	
Extreme Vol. Limits:	DC 3.5 V to 4.2 V (Nominal DC3.7V )	
Extreme Temp. Tolerance:	-30℃ to +50℃	
Hardware version number:	S9B_80MB_V3.0	
Software version number:	N/A	
** Note: The High Voltage 4.2V and Low Voltage 3.5 V was declared by manufacturer, The EUT		
couldn't be operate normally with higher or lower voltage.		



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3 TEST CONFIGURATION OF EQUIPMENT UNDER TEST

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 and ANSI C63.26 2015 Power Meas. License Digital Systems 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 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	



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## 4 MEASUREMENT INSTRUMENTS

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibra- tion	Calibrated Until
EMI Test Receiver	R&S	ESCI	101427	2018.10.13	2019.10.12
MXA Signal analyzer	Agilent	N9020A	MY49100060	2018.10.13	2019.10.12
Universal Radio Com- munication Tester	R&S	CMW500	131428	2018.03.11	2019.03.10
Bilog Antenna	TESEQ	CBL6111D	34678	2017.11.02	2020.11.01
Horn Antenna	Schwarzbeck	BBHA 9120D(1201)	9120D-1343	2017.10.27	2020.10.26
SHF-EHF Horn Antenna (18G-40GHz)	A-INFO	LB-180400-KF	N/A	2018.03.11	2021.03.10
Low frequency cable	EM	R01	N/A	2018.03.11	2019.03.10
Low frequency cable	EM	R06	N/A	2018.03.11	2019.03.10
High frequency cable	SCHWARZBECK	R04	N/A	2018.03.11	2019.03.10
High frequency cable	SCHWARZBECK	R02	N/A	2018.03.11	2019.03.10
Pre-mplifier (0.1M-3GHz)	EM	EM330	N/A	2018.03.09	2019.03.08
PreAmplifier (1G-18GHz)	SKET	LNPA-01018G-45	SK2018080901	2018.10.13	2019.10.12
turn table	EM	SC100_1	60531	N/A	N/A
Antenna mast	EM	SC100	N/A	N/A	N/A

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

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## 5 TEST ITEMS 5.1 CONDUCTED OUTPUT POWER

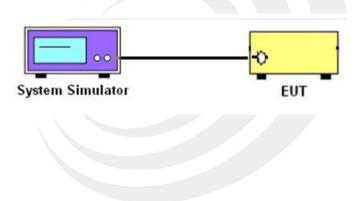
#### Test overview

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





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## 5.2 PEAK TO AVERAGE RATIO

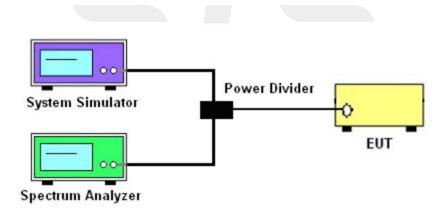
#### TEST OVERVIEW

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 v03r01 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



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## 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 C63.26 2015 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

1. The testing follows FCC KDB 971168 D01 Section 5.2.1. (for CDMA/WCDMA), Section 5.2.2 (for GSM/GPRS/EDGE) and ANSI C63.26-2015 Section 5.2.

2. 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 ANSI C63.26-2015. 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.

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## 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.

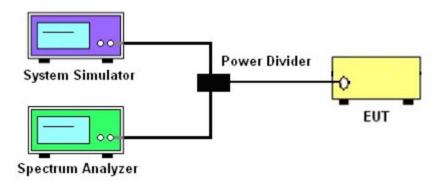
All modes of operation were investigated and the worst case configuration results are reported in this section.

## 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



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## 5.5 FREQUENCY STABILITY Test Overview

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26 2015. The frequency stability of the transmitter is measured by:

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

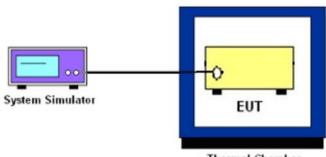
1. The testing follows FCC KDB 971168 D01 Section 9.0.

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

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## 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 FCC KDB 971168 D01 v03r01 Section 6.0. and ANSI C63.26-2015-Section 5.5

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.

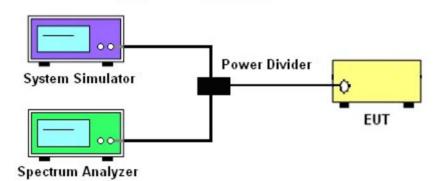
5. The conducted spurious emission for the whole frequency range was taken.

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



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## 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. The testing FCC KDB 971168 D01 v03r01 Section 6.0. and ANSI C63.26-2015-Section 5.7

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

- 3. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
- 4. 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.

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

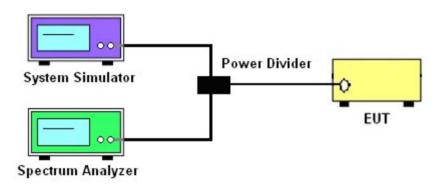
6.The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

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







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5.8 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT Test overview

Radiated spurious emissions measurements are performed using the substitution method described in ANSI C63.26-2015 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 polarizedhorn 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 FCC KDB 971168 D01 Section 5.8 and ANSI C63.26-2015-Section 5.5.

- 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

9. Effective Isotropic Spurious Radiation 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 PMeas, t ypically dBW or dBm);

P.SG = measured transmitter output power or PSD, in dBm or dBW;

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

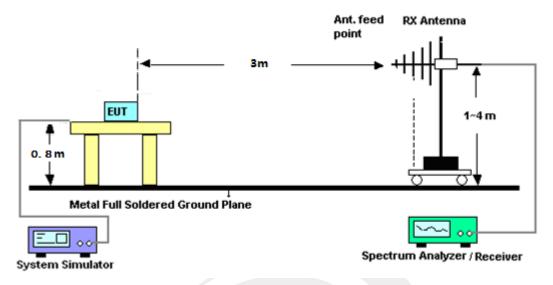
LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.



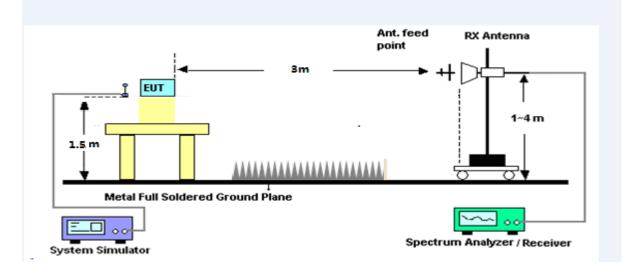
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## TEST SETUP

For radiated test from 30MHz to 1GHz



For radiated test from above 1GHz





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## APPENDIX A.TESTRESULT A1.CONDUCTED OUTPUT POWER

GSM 850:

Mode	Frequency (MHz)	AVG Power(dBm)
	824.2	<mark>32.02</mark>
GSM	836.6	32.00
	848.8	31.95
	824.2	31.87
GPRS(GMSK,1-Slot)	836.6	31.92
	848.8	31.73
	824.2	31.42
GPRS(GMSK,2-Slot)	836.6	31.52
	848.8	31.28
	824.2	31.00
GPRS(GMSK,3-Slot)	836.6	31.06
	848.8	30.79
	824.2	30.58
GPRS(GMSK,4-Slot)	836.6	30.57
	848.8	30.29
	824.2	26.06
EGPRS(GMSK,1-Slot)	836.6	25.90
	848.8	25.66
	824.2	25.33
EGPRS(GMSK,2-Slot)	836.6	25.18
	848.8	24.92
	824.2	24.60
EGPRS(GMSK,3-Slot)	836.6	24.47
	848.8	24.17
	824.2	23.81
EGPRS(GMSK,4-Slot)	836.6	23.68
	848.8	23.40



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PCS 1900:

Mode	Frequency (MHz)	AVG Power(dBm)
	1850.2	<mark>29.42</mark>
GSM	1880.0	29.03
	1909.8	28.48
	1850.2	29.25
GPRS(GMSK,1-Slot)	1880.0	28.89
	1909.8	28.28
	1850.2	28.82
GPRS(GMSK,2-Slot)	1880.0	28.49
	1909.8	27.87
	1850.2	28.40
GPRS(GMSK,3-Slot)	1880.0	28.02
	1909.8	27.41
	1850.2	27.94
GPRS(GMSK,4-Slot)	1880.0	27.56
	1909.8	26.97
	1850.2	24.03
EGPRS(GMSK,1-Slot)	1880.0	23.94
	1909.8	24.52
	1850.2	23.26
EGPRS(GMSK,2-Slot)	1880.0	23.15
	1909.8	23.77
	1850.2	22.46
EGPRS(GMSK,3-Slot)	1880.0	22.38
	1909.8	23.07
	1850.2	21.70
EGPRS(GMSK,4-Slot)	1880.0	21.60
	1909.8	22.32

Shenzhen STS Test Services Co., Ltd.

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UMTS BAND V

Mode	Frequency(MHz)	AVG Power
WCDMA 850 RMC	826.4	<mark>22.07</mark>
	836.6	22.05
RMC	846.6	21.96
	826.4	21.86
HSDPA Subtest 1	836.6	21.88
Sublest	846.6	21.76
	826.4	21.40
HSDPA Subtest 2	836.6	21.47
Subtest 2	846.6	21.31
	826.4	20.96
HSDPA Subtest 3	836.6	21.03
Sublest 5	846.6	20.95
	826.4	20.61
HSDPA	836.6	20.70
Subtest 4	846.6	20.56
	826.4	21.81
HSUPA Subtest 1	836.6	21.87
Sublest	846.6	21.34
	826.4	20.84
HSUPA Subtest 2	836.6	20.92
Sublest 2	846.6	20.37
	826.4	20.81
HSUPA Subtest 3	836.6	20.51
Sublesi S	846.6	19.90
	826.4	20.46
HSUPA Subtest 4	836.6	20.08
<b>JUDIESI 4</b>	846.6	19.41
	826.4	19.00
HSUPA	836.6	18.61
Subtest 5	846.6	17.92

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Report No.: STS1812037W01

UMTS BAND II

Mode	Frequency(MHz)	AVG Power	
	1852.4	<mark>21.55</mark>	
WCDMA 1900 RMC	1880	21.52	
RIVIC	1907.6	21.34	
	1852.4	21.16	
HSDPA Subtest 1	1880	21.20	
Sublest	1907.6	21.08	
	1852.4	20.73	
HSDPA Subtest 2	1880	20.80	
Sublest 2	1907.6	20.62	
	1852.4	20.24	
HSDPA Subtest 3	1880	20.40	
Sublest 5	1907.6	20.14	
	1852.4	19.93	
HSDPA Subtest 4	1880	20.09	
Sublest 4	1907.6	19.74	
	1852.4	21.13	
HSUPA Subtest 1	1880	21.18	
Sublest	1907.6	20.58	
	1852.4	20.32	
HSUPA Subtest 2	1880	20.19	
Sublest 2	1907.6	19.67	
	1852.4	20.28	
HSUPA Subtest 3	1880	19.73	
	1907.6	19.35	
	1852.4	19.85	
HSUPA Subtest 4	1880	19.36	
Sublest 4	1907.6	18.95	
	1852.4	18.36	
HSUPA Subtest 5	1880	17.94	
Sublest 5	1907.6	17.55	

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Report No.: STS1812037W01

#### A2. PEAK-TO-AVERAGE RADIO

	Frequency	PAR
Mode	(MHz)	(dB)
	824.2	0.17
GSM850	836.6	0.17
	848.8	0.18
	824.2	0.16
GPRS850	836.6	0.17
	848.8	0.14
	824.2	0.36
EDGE850(8PSK)	836.6	0.41
	848.8	0.47
	1850.2	0.15
PCS1900	1880	0.14
	1909.8	0.11
	1850.2	0.14
GPRS1900	1880	0.14
	1909.8	0.13
	1850.2	0.11
EDGE1900(8PSK)	1880	0.11
	1909.8	0.11

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Mode	Frequency	PAR
Widde	(MHz)	(dB)
	826.4	3.07
WCDMA 850 RMC	836.6	3.05
	846.6	3.39
	826.4	3.42
HSDPA 850	836.6	3.28
	846.6	4.00
	826.4	3.46
HSUPA 850	836.6	3.32
	846.6	3.99
	1852.4	2.83
WCDMA 1900 RMC	1880	2.78
	1907.6	2.64
	1852.4	3.49
HSDPA 1900	1880	3.57
	1907.6	3.29
	1852.4	3.19
HSUPA 1900	1880	3.27
	1907.6	3.24
HSUPA 1900	1852.4 1880	3.19 3.27

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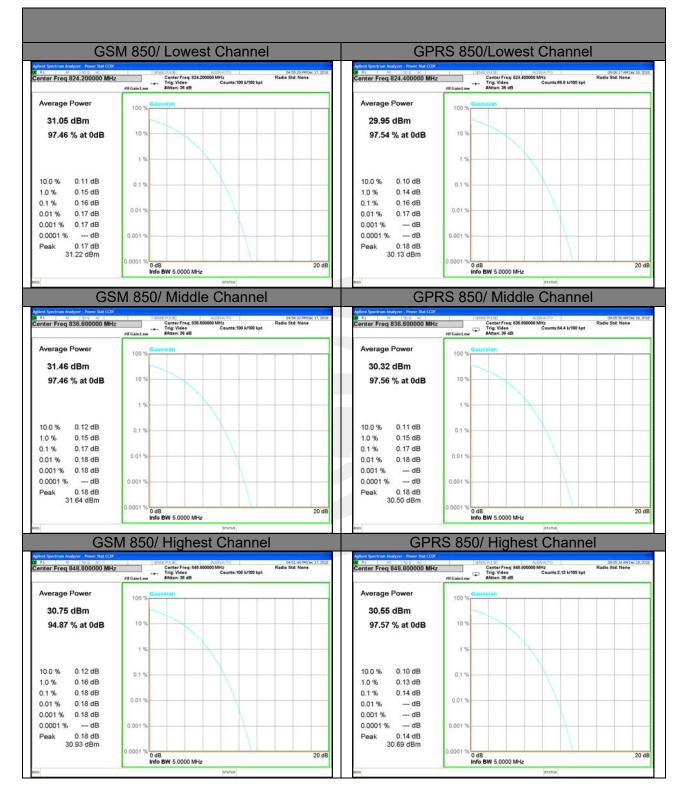
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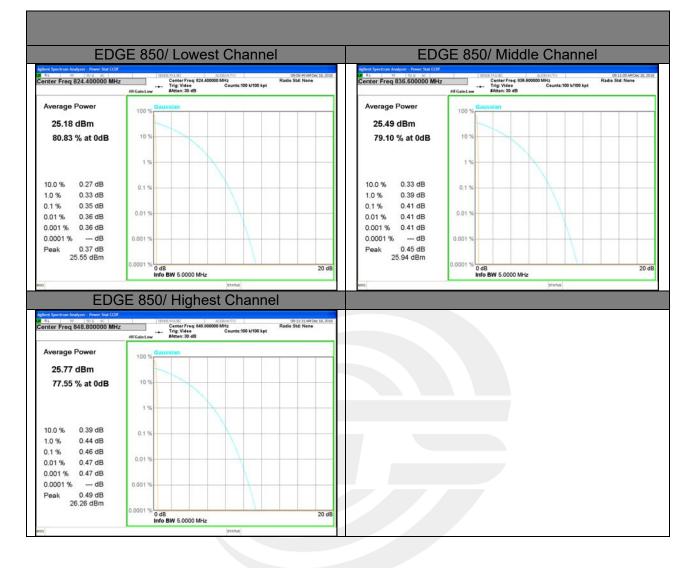
GSM 850





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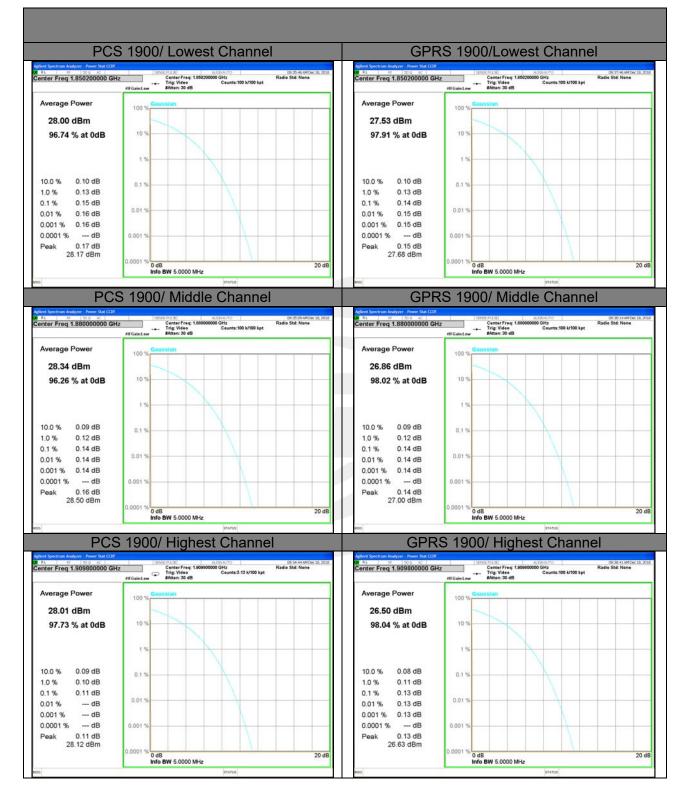




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#### Report No.: STS1812037W01

PCS 1900



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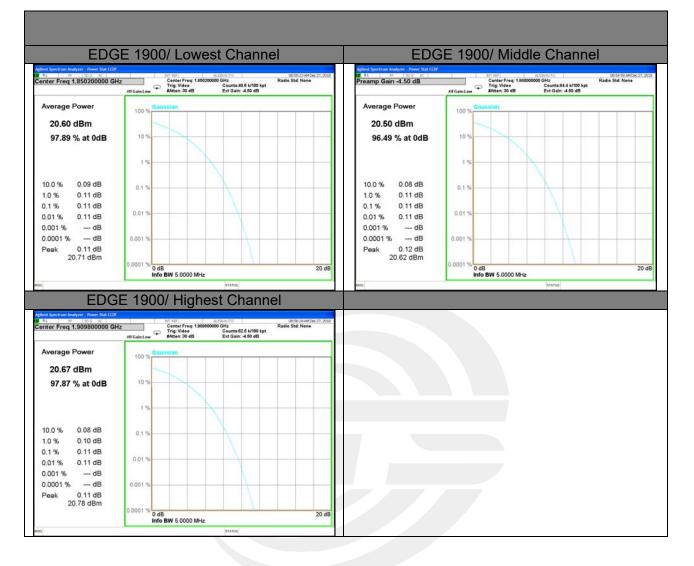
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#### Report No.: STS1812037W01

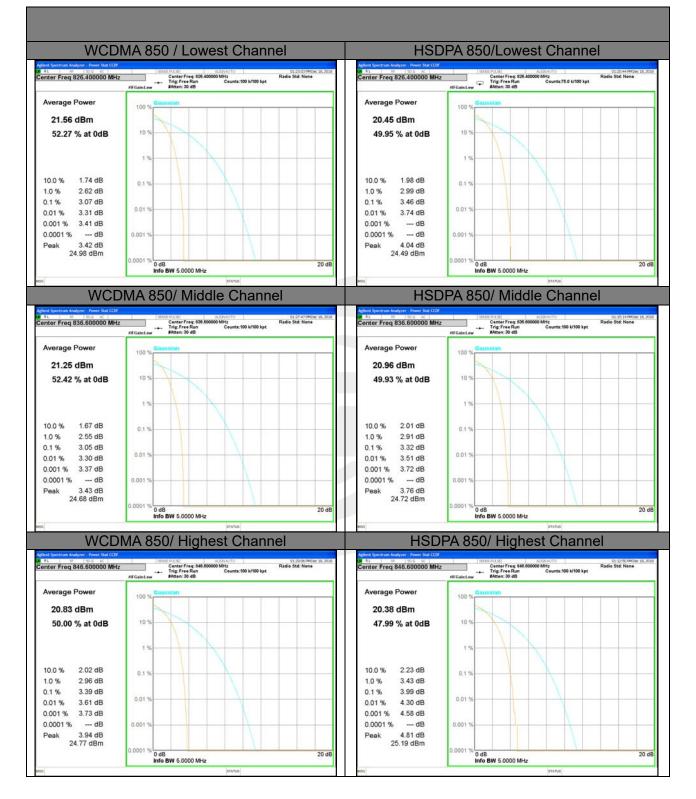




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#### Report No.: STS1812037W01

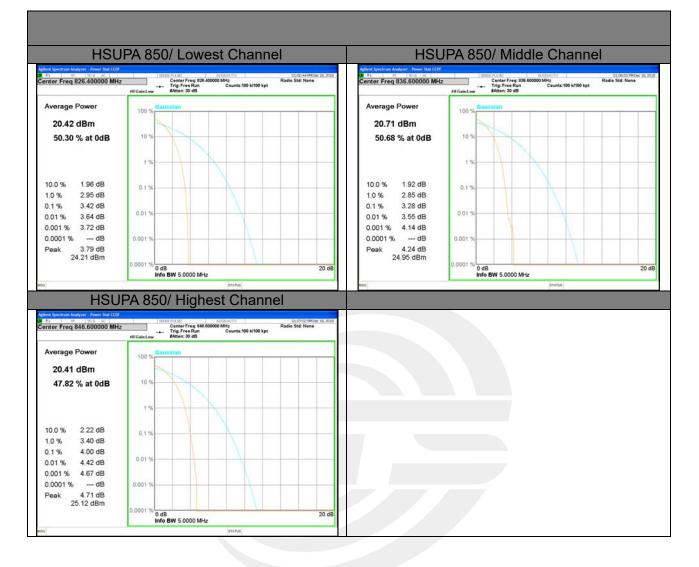
#### WCDMA BAND V





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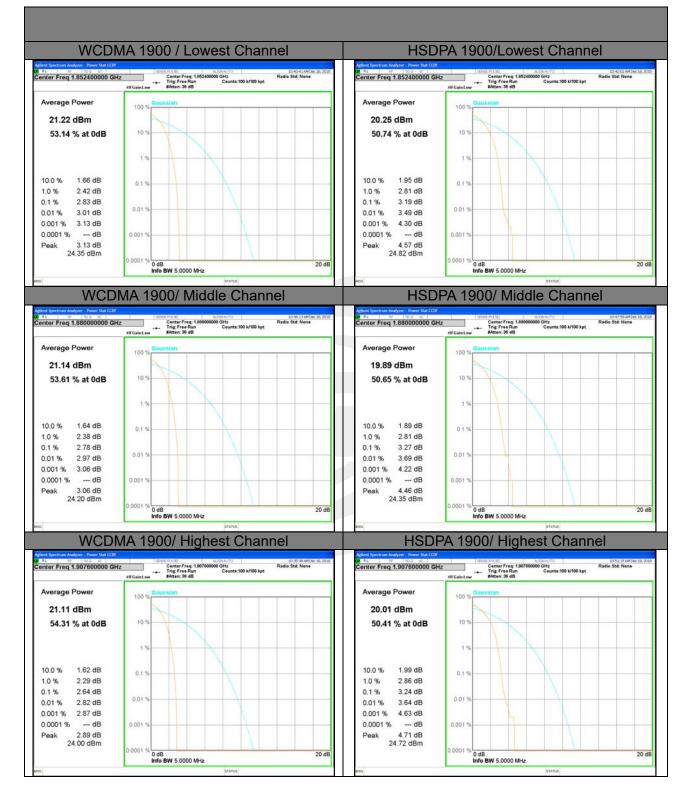
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#### Report No.: STS1812037W01

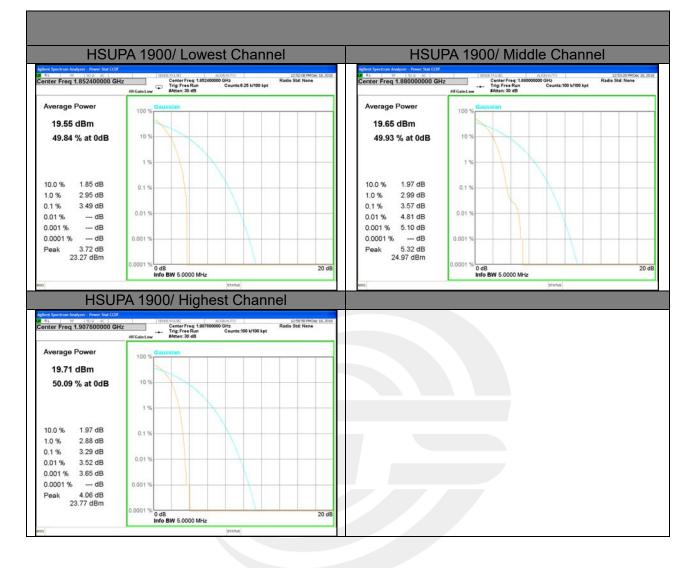
#### WCDMA BAND II





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

Radiated Power (ERP) for GSM 850 MHZ								
Mode	Frequency	S G.Level (dBm)	Cable loss	Gain (dBi)	PMeas E.R.P(dBm)	Polarization Of Max. ERP	Conclusion	
	824.2	23.69	0.44	6.5	29.75	Horizontal	Pass	
	824.2	25.42	0.44	6.5	<mark>31.48</mark>	Vertical	Pass	
0014050	836.6	23.54	0.45	6.5	29.59	Horizontal	Pass	
GSM850	836.6	25.31	0.45	6.5	31.36	Vertical	Pass	
	848.8	23.43	0.46	6.5	29.47	Horizontal	Pass	
	848.8	25.23	0.46	6.5	31.27	Vertical	Pass	
	824.2	23.44	0.44	6.5	29.50	Horizontal	Pass	
	824.2	25.32	0.44	6.5	<mark>31.38</mark>	Vertical	Pass	
GPRS850	836.6	23.42	0.45	6.5	29.47	Horizontal	Pass	
GPR3030	836.6	25.13	0.45	6.5	31.18	Vertical	Pass	
	848.8	23.36	0.46	6.5	29.40	Horizontal	Pass	
	848.8	25.15	0.46	6.5	31.19	Vertical	Pass	
	824.2	18.72	0.44	6.5	24.78	Horizontal	Pass	
	824.2	20.39	0.44	6.5	<mark>26.45</mark>	Vertical	Pass	
	836.6	18.61	0.45	6.5	24.66	Horizontal	Pass	
EDGE850	836.6	20.03	0.45	6.5	26.08	Vertical	Pass	
	848.8	18.50	0.46	6.5	24.54	Horizontal	Pass	
	848.8	20.15	0.46	6.5	26.19	Vertical	Pass	
Limit	E.R.P<7W=38.45dBm							

Note:Test is divided into three directions, X/Y/Z. X pattern for the worst.



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Report No.: STS1812037W01

Radiated Power (EIRP) for PCS 1900 MHZ								
Mode	Frequency	S G. Level (dBm)	Cable loss	Gain (dBi)	PMeas E.I.R.P.(dBm)	Polarization Of Max. EIRP.	Conclusion	
	1850.2	19.04	2.41	10.35	26.98	Horizontal	Pass	
	1850.2	20.9	2.41	10.35	<mark>28.84</mark>	Vertical	Pass	
PCS1900	1880	18.45	2.42	10.35	26.38	Horizontal	Pass	
FC31900	1880	20.42	2.42	10.35	28.35	Vertical	Pass	
	1909.8	18.17	2.43	10.35	26.09	Horizontal	Pass	
	1909.8	19.93	2.43	10.35	27.85	Vertical	Pass	
	1850.2	19.14	2.41	10.35	27.08	Horizontal	Pass	
	1850.2	20.6	2.41	10.35	<mark>28.54</mark>	Vertical	Pass	
GPRS1900	1880	18.44	2.42	10.35	26.37	Horizontal	Pass	
GFK31900	1880	20.31	2.42	10.35	28.24	Vertical	Pass	
	1909.8	18.03	2.43	10.35	25.95	Horizontal	Pass	
	1909.8	19.77	2.43	10.35	27.69	Vertical	Pass	
	1850.2	14.13	2.41	10.35	22.07	Horizontal	Pass	
	1850.2	15.69	2.41	10.35	<mark>23.63</mark>	Vertical	Pass	
EDGE1900	1880	13.58	2.42	10.35	21.51	Horizontal	Pass	
EDGE 1900	1880	15.24	2.42	10.35	23.17	Vertical	Pass	
	1909.8	13.01	2.43	10.35	20.93	Horizontal	Pass	
	1909.8	14.7	2.43	10.35	22.62	Vertical	Pass	
Limit	E.I.R.P<2W=33dBm							

Note:Test is divided into three directions, X/Y/Z. X pattern for the worst.

Shenzhen STS Test Services Co., Ltd.



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Report No.: STS1812037W01

Radiated Power (ERP) for WCDMA Band V								
Mode	Frequency	S G. Level (dBm)	Cable loss	Gain (dBi)	PMeas E.R.P (dBm)	Polarization Of Max.ERP	Conclusion	
	826.4	13.38	0.44	6.5	19.44	Horizontal	Pass	
	826.4	15.21	0.44	6.5	<mark>21.27</mark>	Vertical	Pass	
Band V	836.6	13.45	0.45	6.5	19.50	Horizontal	Pass	
Danu v	836.6	15.20	0.45	6.5	21.25	Vertical	Pass	
	846.4	13.20	0.46	6.5	19.24	Horizontal	Pass	
	846.4	15.12	0.46	6.5	21.16	Vertical	Pass	
Limit	E.R.P<7W=38.45dBm							

Radiated Power (EIRP) for WCDMA Band II									
		Result							
Mode	Frequency	S G. Level (dBm)	Cable loss	Gain (dBi)	PMeas E.I.R.P.(dBm)	Polarization Of Max.EIRP	Conclusion		
	1852.4	11.01	2.41	10.35	18.95	Horizontal	Pass		
	1852.4	12.81	2.41	10.35	<mark>20.75</mark>	Vertical	Pass		
Band II	1880	10.89	2.42	10.35	18.82	Horizontal	Pass		
Danu II	1880	12.79	2.42	10.35	20.72	Vertical	Pass		
	1907.4	10.68	2.43	10.35	18.6	Horizontal	Pass		
	1907.4	12.62	2.43	10.35	20.54	Vertical	Pass		
Limit	E.I.R.P<2W=33dBm								

Note:Test is divided into three directions, X/Y/Z. X pattern for the worst.



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## A4. OCCUPIED BANDWIDTH (99% OCCUPIED BANDWIDTH/26dB BANDWIDTH)

Occupied Bandwidth for GSM 850 band						
Mode	Frequency(MHz)	Occupied Bandwidth	Emission Bandwidth			
Mode	Fiequency(winz)	(99%)( kHz)	(-26dBc)( kHz)			
Low Channel	824.2	242.11	317.0			
Middle Channel	836.6	245.97	311.2			
High Channel	848.8	246.88	309.1			
Occupied Bandwidth for GPRS 850 band						
Mode		Occupied Bandwidth	Emission Bandwidth			
wode	Frequency(MHz)	(99%)( kHz)	(-26dBc)( kHz)			
Low Channel	824.2	239.40	312.1			
Middle Channel	836.6	240.29	321.5			
High Channel	848.8	240.03	309.7			
	Occupied Bandw	vidth for EGPRS 850 band				
Mode		Occupied Bandwidth	Emission Bandwidth			
wode	Frequency(MHz)	(99%)( kHz)	(-26dBc)( kHz)			
Low Channel	824.2	310.29	402.7			
Middle Channel	836.6	301.35	382.7			
High Channel	848.8	289.99	369.1			



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Occupied Bandwidth for GSM1900 band						
Mode		Occupied Bandwidth	Emission Bandwidth			
Mode	Frequency(MHz)	(99%)( kHz)	(-26dBc)( kHz)			
Low Channel	1850.2	240.23	311.1			
Middle Channel	1880.0	246.67	318.5			
High Channel	1909.8	248.06	320.7			
Occupied Bandwidth for GPRS 1900 band						
Mode	Frequency(MHz)	Occupied Bandwidth	Emission Bandwidth			
Mode		(99%)( kHz)	(-26dBc)( kHz)			
Low Channel	1850.2	239.95	311.2			
Middle Channel	1880.0	240.08	312.3			
High Channel	nel 1909.8 242.98		314.2			
	Occupied Bandy	width for EDGE 1900 band				
Mode	Fraguenov(MHz)	Occupied Bandwidth	Emission Bandwidth			
wode	Frequency(MHz)	(99%)( kHz)	(-26dBc)( kHz)			
Low Channel	1850.2	242.88	316.1			
Middle Channel	1880.0	244.13	311.9			
High Channel	1909.8	239.25	309.7			

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Occupied Bandwidth for UMTS band V					
Mode	Frequency(MHz)	Occupied Bandwidth	Emission Bandwidth		
Mode	Frequency(IVIHZ)	(99%)( MHz)	(-26dBc)( MHz)		
Low Channel	826.4	4.1389	4.641		
Middle Channel	836.6	4.1510	4.654		
High Channel	846.6	4.1265	4.624		

Occupied Bandwidth for UMTS band II					
Mode	Frequency(MHz)	Occupied Bandwidth	Emission Bandwidth		
Mode	Frequency(MHz)	(99%)( MHz)	(-26dBc)( MHz)		
Low Channel	1852.4	4.1557	4.683		
Middle Channel	1880	4.1567	4.668		
High Channel	1907.6	4.1568	4.688		



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### Report No.: STS1812037W01

## GSM 850 CH 128



### GSM 850 CH 190



# GSM 850 CH 251



Shenzhen STS Test Services Co., Ltd.



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## GPRS 850 CH 128



#### GPRS 850 CH 190



## GPRS 850 CH 251



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#### Report No.: STS1812037W01

## EDGE 850 CH 128



#### EDGE 850 CH 190

enter Freq 836.600000 M		Center Freq: 835.5000	AUGNAUTO 00 MHz AvgiHeld>10/10	09:18:33 AM Dec 18, 201 Radio Std: None
	#IFGain:Low	#Atten: 46 dB		Radio Device: BTS
0 dB/div Ref 36.00 dBm				
og 6.0				
6.0		anna		
00	and and	-	15mm -	
00	m		all some	
10 martin and and and				Jan Martin Martin
40				
4.0				
4.D				
4.0				
enter 836.6 MHz Res BW 10 kHz		#VBW 30 kH	Iz	Span 1 MH Sweep 12.4 m
Occupied Bandwidth	í	Total Power	32.7 dBm	
30	1.35 kHz			
Transmit Freq Error	7.861 kHz	<b>OBW Power</b>	99.00 %	
x dB Bandwidth	382.7 kHz	x dB	-26.00 dB	
ig .			STATUS	

### EDGE 850 CH 251





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#### Report No.: STS1812037W01

## PCS 1900 CH 512



### PCS 1900 CH 661



### PCS 1900 CH 810



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### Report No.: STS1812037W01

## GPRS 1900 CH 512



### GPRS 1900 CH 661



### GPRS 1900 CH 810

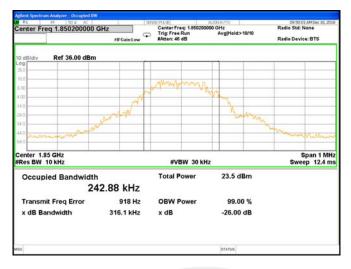




# Page 45 of 77

### Report No.: STS1812037W01

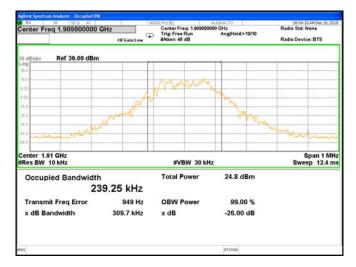
## EDGE 1900 CH 512



## EDGE 1900 CH 661



### EDGE 1900 CH 810



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### Report No.: STS1812037W01

## UMTS BAND V CH 4132



### UMTS BAND V CH 4183

Center Freq 836.600000 N		Center Freq: 836.60000	ALIGNAUTO DO MHz AvglHeld>10/10	01:25:53 PMDec 18, 201 Radio Std: None
	#IFGain:Low	#Atten: 46 dB	10	Radio Device: BTS
0 dB/div Ref 36.00 dBm	2			
.og				
60				
100	monteren		mannen .	
00				1
4.0				
40				han
10				
0.10				
Center 836.6 MHz Res BW 51 kHz		#VBW 160 k	Hz	Span 6 MH Sweep 2.867 m
Occupied Bandwidth	1	Total Power	26.4 dBm	
4.1	1510 MHz			
Transmit Freq Error	3.388 kHz	<b>OBW Power</b>	99.00 %	
x dB Bandwidth	4.654 MHz	x dB	-26.00 dB	
50			STATUS	

## UMTS BAND V CH 4233



Shenzhen STS Test Services Co., Ltd.

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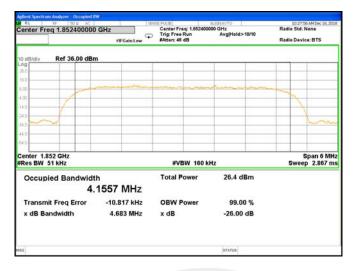
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### Report No.: STS1812037W01

## UMTS BAND II CH 9262



## UMTS BAND II CH 9400

Center Freq 1.88000			Center Freq: 1.8800000	AUSWAUTO 000 GHz AvgiHeld>10/10	10.29:48 AM Dec 18, 2018 Radio Std: None
	*1	Gain:Low	#Atten: 46 dB		Radio Device: BTS
10 dB/div Ref 36.0	0 dBm				
.og					
16.0					
00	- mart			Annon and the second	
00					
10					
10					
10 months	_				Mon
4.0					
4.0					
enter 1.88 GHz Res BW 51 kHz			#VBW 160 k		Span 6 MH
Res BW 51 KHZ			#VBW 160 K	HZ	Sweep 2.867 m
Occupied Band	width		Total Power	26.2 dBm	
	4.1567	MHz			
Transmit Freq Err	or -7.7	44 kHz	OBW Power	99.00 %	
x dB Bandwidth	4.66	88 MHz	x dB	-26.00 dB	

#### Center Freq 1.907600000 GHz Center Freq 1.907600000 GHz FrGaint.ew FrGaint.ew 10:31:42 AM Dec 18,3 Radio Std: None Radio Device: BTS Ref 36.00 dBm Span 6 MHz Sweep 2.867 ms Center 1.908 GHz #Res BW 51 kHz #VBW 160 kHz Occupied Bandwidth **Total Power** 26.3 dBm 4.1568 MHz -6.178 kHz **OBW Power** 99.00 % Transmit Freq Error 4.688 MHz -26.00 dB x dB Bandwidth x dB

### UMTS BAND II CH 9538

MS



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Report No.: STS1812037W01

## A5.FREQUENCY STABILITY

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

GSM 850 Middle Channel/836.6MHz					
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		19.54	0.023		
40		35.14	0.042		
30		21.41	0.026	_	
20		32.29	0.039	_	
10	Normal Voltage	17.99	0.022		
0		32.40	0.039	2.5ppm	PASS
-10		20.05	0.024	_	
-20		12.30	0.015		
-30		32.23	0.039	_	
25	Maximum Voltage	13.80	0.016		
25	BEP	34.97	0.042		

GPRS 850 Middle Channel/836.6MHz					
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		15.83	0.019		
40		30.32	0.036		
30		35.38	0.042		
20		12.04	0.014		
10	Normal Voltage	22.24	0.027		
0		16.61	0.020	2.5ppm	PASS
-10		33.26	0.040		
-20		15.89	0.019		
-30		27.38	0.033		
25	Maximum Voltage	14.88	0.018		
25	BEP	26.91	0.032		



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Report No.: STS1812037W01

EDGE 850 Middle Channel/836.6MHz					
Temperature	Voltage	Freq. Dev.	Freq. Dev.	Limit	Result
(°C)	(Volt)	(Hz)	(ppm)		
50		27.63	0.033		
40		31.37	0.037		
30		24.62	0.029		
20		22.40	0.027		
10	Normal Voltage	20.13	0.024		
0		29.24	0.035	2.5ppm	PASS
-10		21.24	0.025		
-20		21.95	0.026		
-30		29.59	0.035		
25	Maximum Voltage	35.02	0.042		
25	BEP	30.31	0.036		



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Shenzhen STS Test Services Co., Ltd.



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Report No.: STS1812037W01

GSM 1900 Middle Channel/1880MHz					
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		31.77	0.017		
40		12.24	0.007		
30		23.13	0.012		
20		11.81	0.006		
10	Normal Voltage	23.92	0.013	Within Au-	
0		16.22	0.009	thorized	PASS
-10		33.31	0.018	Band	
-20		16.66	0.009		
-30		15.48	0.008		
25	Maximum Voltage	15.89	0.008		
25	BEP	17.36	0.009		

GPRS	1900	Middle	Channel/1880MHz
01110		maaro	

	1			1 1	
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		31.58	0.017		
40		34.72	0.018		
30		13.20	0.007		
20		30.49	0.016		
10	Normal Voltage	32.56	0.017	Within Au-	
0	-	21.29	0.011	thorized	PASS
-10	_	29.45	0.016	Band	
-20		25.11	0.013		
-30		32.79	0.017		
25	Maximum Voltage	35.12	0.019		
25	BEP	12.96	0.007		

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Report No.: STS1812037W01

	EDGE	1900 Middle Cha	annel/1880MHz		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50	-	12.46	0.007		
40		18.03	0.010		
30		22.61	0.012		
20		26.21	0.014		
10	Normal Voltage	12.21	0.006	Within Au-	
0		17.48	0.009	thorized	PASS
-10		31.05	0.017	Band	
-20		32.64	0.017		
-30		32.47	0.017		
25	Maximum Voltage	17.72	0.009		
25	BEP	15.46	0.008		



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Shenzhen STS Test Services Co., Ltd.



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Report No.: STS1812037W01

	WCDN	IA V Middle Cha	nnel/836.6MHz		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		17.64	0.021		
40		17.55	0.021		
30		16.27	0.019		
20	Normal Voltage	14.47	0.017		
10		21.15	0.025		
0		19.99	0.024	2.5ppm	PASS
-10		18.96	0.023		
-20		24.05	0.029		
-30		15.31	0.018		
25	Maximum Voltage	12.98	0.016		
25	BEP	29.07	0.035		

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

	WCDM	MA II Middle Cha	nnel/1880MHz		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		12.26	0.007		
40		22.32	0.012	_	
30		29.63	0.016		
20		24.01	0.013		
10	Normal Voltage	12.73	0.007	Within Au-	
0	_	20.55	0.011	thorized	PASS
-10		20.24	0.011	Band	
-20		33.89	0.018		
-30		29.37	0.016		
25	Maximum Voltage	13.19	0.007		
25	BEP	24.45	0.013		

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.



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# Report No.: STS1812037W01

# A6. SPURIOUS EMISSIONS AT ANTENNA TERMINALS

## GSM 850 BAND

## Lowest Channel



## Middle Channel

RL		2 AC	SENSE PUL	E.	AUGNAUTO			MDec 17, 201
Center I PASS	Freq 4.5150	PNC	: Fast Trig	: Free Run en: 36 dB	Avg Type:	Log-Pwr	TRAC TVI D	CE 12345 PE Multimute ET P P P P P
10 dB/div	Ref Offset 8 Ref 34.50	.5 dB dBm					Mkr1 837 27.3	7.3 MH 98 dBr
Tra	ce 1 1s							
116								
4.50								
5.50								
15.5								
255					A2			
35.5					A STATE	and the second second		
45.5	Section of the sectio							
88.5								
Start 30	MHz V 1.0 MHz		#VBW 3.0	MHz		Sweep	Stop 9 16.00 ms (2	.000 GH 0001 pt
NUE MODE		837.3 MHz	27.398 dBm	PUNCTION	FUNCTION WIDTH	PL	NCTION VALUE	
1234567	11	5.704 0 GHz	-32.351 dBm					
7 8 9 10 11								
sa					STATUS			3

## **Highest Channel**

ASS	4.515000000 ef Offset 8.5 dB ef 34.50 dBm	PNC	h: Fast	Frig: Free Run Atten: 36 dB	Avg Type	: Log-Pwr	Mkr1 84	ACE DE SALES E TYPE DE PPPPP DET PPPPPI 19.4 MHz 799 dBm
0 dB/div R 00 Trace 1 14.5 4.50	ef 34.50 dBm							
12.5 4.50	P.1.s							
4.50								
						-		
5.50								
35					A2			
55		-	-		2			
5.5								
5.5								
tart 30 MHz Res BW 1.0			#VBW :	3.0 MHz		Sweep	Stop 16.00 ms	9.000 GHz 20001 pts
N 1 1	f I	849.4 MHz	27.799 dB	m	FUNCTION WIDTH	6	UNCTION VALUE	
2 N 1 1 3 4	r 5.	517 4 GHz	-31.859 dB	m				
5 6 7								
8								
10								
				-				

Shenzhen STS Test Services Co., Ltd.



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# Report No.: STS1812037W01

## GPRS 850 BAND

#### Lowest Channel

RL		0 AC	SEN	(年月八年)	ALIGNAUTO		08:58:53 AM Dec 18, 201
Center F	reg 4.5150	00000 GHz			Avg Type: Lo	g-Pwr	TRACE 1 3 4 5
ASS		Ph IFG	iain:Low	Trig: Free Run #Atten: 36 dB			DET P P P P
10 dB/div	Ref Offset 8 Ref 34.50	.5 dB dBm					Mkr1 824.7 MH 27.552 dBn
og Trac	e 1 Ls						
14.5	_						
4.50	_				_		
5.50							
255					02		
15.5	No. of Lot of Lo	and the second second second			Y III	Sector Sector	And the Owner of the
45.5							
Start 30 I	MHz 1.0 MHz		#VBV	V 3.0 MHz		Sweep '	Stop 9.000 GH 16.00 ms (20001 pts
NUE MODE T	RC 501	*	¥		FUNCTION WIDTH	FUN	NIN WALKE
1 N 2 N 3	11	824.7 MHz 5.913 0 GHz	27.552 c -32.153 c				
4 5							
7							
5 6 7 8 9							
11							
96					STATUS		

### Middle Channel

Center F		00000 GHz PN0 IFG4	SERVE PAU 2: Fast - Trig In:Low #Att	Free Run en: 36 dB	AUGNAUTO Avg Type: L	.og-Pwr	1	AM Dec 18, 2018 RACE 1 3 4 5 TYPE M HAMMAN DET P P P P P
10 dB/div	Ref Offset 8 Ref 34.50							37.3 MH 923 dBn
og Trac	e 1 1s							
14.5					_			-
4.50								
5.50								
15.5				_				
25.5					$Q^2$			
15.5	Real Property lies	State of the local division in which the local division in the loc	of the local division in which the local division in the local div	and the second second	and a second	and the support of th	the state of the s	-
45.5				_				
0.0								
Start 30 M	MHz 1.0 MHz		#VBW 3.0	MHz		Sweep	Stop 16.00 ms	9.000 GH (20001 pt
1 N 1 2 N	60 500 1 f	837.3 MHz	27.923 dBm	PUNCTION	FUNCTION WIDTH		UNCTION VALUE	
2 N 1 3		5.908 0 GHz	-32.242 dBm					
5								
7								
9 10								
11								
99					STATUS			

### **Highest Channel**

RL		Q AC	SENSEPULTE		ALIGNAUTO		09:02:4	5 AM Dec 18, 201
Center F	req 4.5150	100000 GHz PNO	): Fast Trig: F in:Low #Atten	ree Run 36 dB	Avg Type: L	.og-Pwr		DET P P P P P
10 dB/div	Ref Offset 6 Ref 34.50							49.4 MH 223 dBr
0.0	e 1 Als							
14.5								
4.50	_						_	
5.50	-							
15.5								
25.5					0			
45.5		and the second s					Contraction of the local division of the loc	Contraction of the local division of the loc
55.5								
Start 30 P	/Hz						Stor	9.000 GH
Res BW	1.0 MHz		#VBW 3.0 N	Hz		Sweep	16.00 ms	(20001 pt
1 N 1 2 N	f Sta	849.4 MHz	28.223 dBm	PUNCTION	FUNCTION WIDTH		FUNCTION VALUE	
3		5.563 6 GHz	-32.943 dBm					
4 5								
67								
8								
10								

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## EDGE 850 BAND

### Lowest Channel

RL		1 AG		INT HEF	ALIGNAUTO		04:08:00	PMDec 26, 201
Center F	req 4.5150	00000 GHz			Avg Type: L	og-Pwr	19	ACE 1 3 4 S
PASS		PN IFG	in:Low	Trig: Free Run #Atten: 36 dB			14	DET P P P P P
10 dB/div	Ref Offset 8 Ref 34.50	.5 dB dBm						24.7 MH: 061 dBn
og Trac	e 1 1.s							
14.5	_							
4.50	_							
5.50								
25.5			_		02			_
15.5	Andrews	and the owner of the	-	-	No. of Concession, Name	No. of Concession, Name		
45.5								
Res BW	MHZ 1.0 MHZ		#VBV	V 3.0 MHz		Sweep	Stop 16.00 ms	9.000 GH 20001 pts
	66 501	824.7 MHz	25.061		FUNCTION WIDTH		UNCTION VALUE	_
1 N 2 N 3	11	5.501 3 GHz	-31.562 0					
4								
6								
5 6 7 8 9								
10								
1								3
PG .					STATUS			

### Middle Channel

RL	115	50.0			1 (127)	AL.	Avg Type		04:07:1	1 PMDec 26, 201
PASS	Freq 4	.515000	DOOO GHZ	0: Fast 🗭	frig: Free Run Atten: 36 dB		Avg Type	Log-Pwr		TYPE Mutania
10 dB/div		Offset 8.5 34.50 d								37.3 MH .595 dBr
	ce 1	1.5								
taš										
4.50										
5.50	_									
15.5	-		_						-	-
5.5						02				
15.5	-		-	-	-	- Y	a la constante de la constante	- Managing and	-	-
45.5						_				
55.5		-								-
start 30		NHz		#VBW 3	3.0 MHz			Sweep	Stop 16.00 ms	9.000 GH (20001 pt
	160 503		837.3 MHz	25,595 dB	PUNCTION	FUNC	TION WIDTH		PUNCTION VALUE	
1 N 2 N	11		5.167 1 GHz	-32.286 dB						
3 4										
5 6 7										
8										
9										
ii										
80							STATUS			1

# **Highest Channel**

RL	1F.	50.0			INT HEF	ALIGNAUTO	1	04:08:39 PMDec	
Center F	req 4	.515000	PN	D: Fast 🗭	Trig: Free Run #Atten: 36 dB	Avg Ty	pe:Log-Pwr	TYPE ME	3 4 1
0 dB/div		Offset 8.5 d 34.50 dB						Mkr1 849.4 25.515	
og 24.6 Trac	e 1 A	1.5							
4.5	-								
50									
5.5	-					-			
55						\$2			
5.5									-
5.5									-
tart 30 I Res BW		NHz		#VBW	3.0 MHz		Sweep	Stop 9.000 16.00 ms (2000	) G 1 p
N N N			849,4 MHz 5,878 0 GHz	25.515 di -32.037 di	Bm	FUNCTION WIDTH	-	UNCTION VALUE	
3 4			5.676 U GHZ	-32.037 di	bm				
5 6 7									
/ 8 9									
0									
1									

Shenzhen STS Test Services Co., Ltd.



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# GSM1900 BAND(30M-20G)

## Lowest Channel

RL		2 AC	SEN	经户入策	ALIGNAUTO			8 AM Dec 18, 201
Center Fi	req 10.015	000000 GHz PN	0: Fast 🗭	Trig: Free Run #Atten: 36 dB	Avg Type: I	Log-Pwr		TYPE MUMMM
10 dB/div	Ref Offset 9 Ref 35.50						Mkr1 1.8 25	50 8 GH 641 dBr
256 Trac	e 1 Als							
15.5	-							
5.50								
14.5	_							
24.5							-	0-
14.5		No. of Concession, Name		Contraction of the Owner, or t		-		
54.5								
start 30 N							Stop	20.000 GH
Res BW				V 3.0 MHz	FUNCTION WIDTH		50.67 ms	(40001 pt
1 N 1 2 N 1 3	f	1.950 8 GHz 18.998 0 GHz	25.641 c -25.454 c	1Bm	PONCTION WOTH		ONUTION VALUE	
4 5								
6 7 8								
9								
ii i								3

### Middle Channel

Center F		0000000 GHz PN0 IFG8	SERVE PULS	Free Run in: 36 dB	AUGNAUTO Avg Type:	Log-Pwr	09:31:	TRACE
10 dB/div	Ref Offset S Ref 34.98							380 2 GH: .978 dBn
250 Tra	e 1 Mis							
15.0								
4.90								
5.02								
15.0	_			_				A2
25.0								0
35.0	and the second second	Name of Concession, or other Designation of the local division of	and the other designment of the local division of the local divisi	-	and the second second	-		
45.0								
55.0		_			_			
Start 30 #Res BW	MHz 1.0 MHz		#VBW 3.0	MHz		Swee	Stop p 50.67 ms	20.000 GH (40001 pt
MUE MODE	IRC SEL	1.880 2 GHz	24.978 dBm	PUNCTION	FUNCTION WIDTH		FUNCTION VALUE	
1 23456789 1011	1	19.000 0 GHz	-25.603 dBm		STATUS			

# **Highest Channel**

Agilent Spect	RF SO Q		I SENSE PLAS	-1	AUGNAUTO	00.32	19 AM Dec 18, 2018
	req 10.0150	00000 GHz	:Fast 😱 Trig	Free Run	Avg Type: Log-P	WT	TRACE 12345
-MSS		IFGa	in:Low #Atte	en: 36 dB			
10 dB/div	Ref Offset 9.5 Ref 34.60 d						10 2 GH: .604 dBn
24.6 Trac	e 1 R 1:						
14.5							
4.60							
5.40							
-15.4	_					A2	
25.4	_					Q-	-
35.4	and a state of the local division of	No. of Concession, name	and the second se	-	and the second day of	and the second designed to the second designe	
45.4		100 C 100 C					
-55.4							
Start 30 I #Res BW			#VBW 3.0	MHz	5	Stop Sweep 50.67 ms	20.000 GH (40001 pts
MORE MODE 1	RC 501	×	v	PUNCTION	FUNCTION WIDTH	FUNCTION VALUE	
1 N 2 3	1	1.910 2 GHz 16.483 8 GHz	24.604 dBm -25.960 dBm				
5 6 7							
8							
10							
¢				-			
4SG					STATUS		

Shenzhen STS Test Services Co., Ltd.



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# GPRS1900 BAND(30M-20G)

## Lowest Channel

RL	RF. 501		SEN	经户从审	ALIGNAUTO		09:45:0	5 AM Dec 18, 201
Center Fi	req 10.015	000000 GHz PN	0: Fast 🗭	Trig: Free Run #Atten: 36 dB	Avg Type: L	og-Pwr		TYPE MUMMMM
10 dB/div	Ref Offset 9 Ref 35.50						Mkr1 1.8 25.	50 8 GH 636 dBr
25.6 Trac	e 1 1.1.s							
15.5	-							
4.50								
14.5							_	2
24.5								Q <sup>2</sup>
11.5 milde	and the second	Ningland Street, Station	No. of Lot of Lo	Name and Address of	and the second s	and the second second		
44.5								
Start 30 M	AH2						Stop	20.000 GH
Res BW			#VBV	V 3.0 MHz		Swee	p 50.67 ms	(40001 pt
1 N 1 2 N 1	8 503 f	1.950 8 GHz	25.636	1Bm	FUNCTION WIDTH		PUNCTION VALUE	
2 N 1 3	1	19.033 0 GHz	-25.627 0	iBm				
5 6								
7 8								
9								
11								
					STATUS			

### Middle Channel

AL Center F	req 10.015	5000000 GHz	D: Fast - Tris	: Free Run en: 36 dB	AUGNAUTO Avg Type	: Log-Pwr		IN AM Dec 18, 201 TRACE
0 dB/div	Ref Offset 9 Ref 34.92		a da Porta da					80 2 GH: .917 dBn
Trac	e 1 Kls							
14.9								
4.92	_					-	_	
.08	_							
15.1						-		A2
5.1		10 10			100	in the second		V
16.1	and the second se		State State State State	and the second	and the second s			
45.1								
5.1								
Res BW	MHz 1.0 MHz		#VBW 3.0	MHz		Swee	Stop p 50.67 ms	20.000 GH (40001 pt
1 N 2 N	ne sel 1 f	1.880 2 GHz	24.917 dBm	FUNCTION	FUNCTION WIDTH		PUNCTION VALUE	
2 N	1 1	19.181 7 GHz	-26.000 dBm					
5								
6 7 8								
9								
11								
89					STATUS			3

# **Highest Channel**

	um Analyzer - S							
AL Contor E		5000000 GHz	SENSE PULIE	-	AUGNAUTO Avg Type: L	og-Par	09:43:4	SAM Dec 18, 203
PASS	req 10.01	PNO	D: Fast Trig: Fr in:Low #Atten:	e Run 36 dB				DET P P P P P
10 dB/div	Ref Offset						Mkr1 1.8 25.	50 8 GH 643 dBr
25.6 Trac	e 1 1 s							
15.5	_							
5.50	_							
4.50								
34.5								$Q^2$
34.5		Manager and Statement		-	and the second second	-	the second second	-
44.5								
54.5								
Start 30 I Res BW			#VBW 3.0 MI	łz		Sweep	Stop 3 50.67 ms	20.000 GH (40001 pt
	RC 561	1.950 8 GHz	25.643 dBm	UNCTION	FUNCTION WIDTH	,	UNCTION VALUE	_
1 N 2 N 3	1	18.915 1 GHz	-25.311 dBm					
4 5								
67								
8								
10								
¢ (					Second 1			
ISG					STATUS			

Shenzhen STS Test Services Co., Ltd.



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# EDGE 1900 BAND(30M-20G)

### Lowest Channel

RL	IF. 50 G		1NT HEF		ALIGNAUTO		08:00:3	1 AM Dec 27, 201
Center F	req 10.015	000000 GHz	: Fast Trig: I	ree Run : 36 dB	Avg Type: L	og-Pwr	,	TYPE MUMMM
10 dB/div	Ref Offset 9. Ref 28.64	6 dB					Mkr1 1.8 18.	50 8 GH
18.6 Trac	e 1 Als							
8.64								
1.36								
21.4								$\Diamond^2$
31.4	-		No. of Concession, Name	-	and the second of	- Contraction of the		
51.4		_						
61.4								
Start 30 I	MHz 1.0 MHz		#VBW 3.0 M	IHz		Sweep	Stop 3 50.67 ms	20.000 GH (40001 pts
	RE 501	1.950 8 GHz	18.635 dBm	PUNCTION	FUNCTION WIDTH		UNCTION VALUE	
2 N	1	19.108 3 GHz	-25.759 dBm					
4 5								
6 7 8								
9								
11								
96					STATUS			

### Middle Channel

RL			40		467	AUGNAUTO		08:02:3	11 AM Dec 27, 201
Center PASS	r Freq	10.015	000000 GHz PNO	): Fast 🖵 T	rig: Free Run Atten: 36 dB	Avg Type	Log-Pur		TYPE NUMMER DET P P P P
10 dB/d		of Offset 9. ef 29.46						Mkr1 1.8 19	80 2 GH 459 dBr
19.6	race 1	1.5							
0.46									
0.54									
10.5		1							
315									$\wedge^2$
30.5		-						and the second	L V
40.5	-	Contraction of the local division of the loc	Contraction of the local division of the loc	the state of the second	Carlot Party States	A COLORIDA			
50.5		-	-						
80.5									
	0 MHz 3W 1.0			#VBW 3	.0 MHz		Swee	Stop p 50.67 ms	20.000 GH
	E TAC SI	8	×	Y		FUNCTION WIDTH		PUNCTION VALUE	_
NN NN	1		1.880 2 GHz 18.841 7 GHz	19.459 dBr -26.204 dBr	n 1				
6 7 8 9 10									
£									3

## **Highest Channel**

RL RL	um Analyzer - S	R AC	217 85	1 1	AUGNAUTO		09.02	1 AM Dec 27, 201
		000000 GHz	Trig	Free Run en: 36 dB	Avg Type:	Log-Pwr	08.03	TRACE 1 3 4 5 TYPE DET P P P P
10 dB/div	Ref Offset S						Mkr1 1.9 20	10 2 GH
-0.5	e 1 Pela							
10.3								
0.72								02
29.7		-		-	-	-		V
49.7								
Start 30 P	ЛНz						Stop	20.000 GH
Res BW	1.0 MHz		#VBW 3.0	MHz		Sweep	50.67 ms	(40001 pt
1 N 2 N	f f	1.910 2 GHz 18.659 0 GHz	20.276 dBm -26.344 dBm	PUNCTION	FUNCTION WIDTH	5	UNCTION VALUE	
3 4 5								
6 7 8 9								
9 10 11								
P (					STATUS			3

Shenzhen STS Test Services Co., Ltd.



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# Report No.: STS1812037W01

# WCDMA Band V (RMC 12.2Kbps)

## Lowest Channel

Center F	req 4.			Trig: Free Run	AUGNAUTO Avg Type:	Log-Pur	01:24:1	PPMDec 18, 2018
A55	0.40	ffset 8.5 dB	FGain:Low	#Atten: 36 dB			Mkr1 8	26.1 MH
10 dB/div		27.49 dBm					17	487 dBm
Trac	e 1 🚺	.5						
7.09								
2.51								
125								
225					.2			
32.5			-		0-	1.1		
42.6	-	and the state of t		States of the local dates of the	and the second second second		Contraction of the local distance of the loc	State States
52.5								
825								
Start 30	ALLA						Ctor	9.000 GH
Res BW		Hz	#VBW	3.0 MHz		Sweep	16.00 ms	
MAR MODE	RC SEL	x	Y Y		FUNCTION WIDTH		FUNCTION VALUE	-
1 N 2 N	1 1	826.1 MHz 5.869 0 GHz	17.487 dE					
3 4								
5								
67								
8								
10								
£ (				100				
pg					STATUS			

### Middle Channel

RL		0 AC	SENSE: PUL	()	ALIGNAUTO		01:26:2	RACE
PASS	req 4.5150		D: Fast Trig	: Free Run en: 36 dB	Avg Type:	Log-Pur		TYPE Mutation
10 dB/div	Ref Offset 8 Ref 28.01							36.0 MH 005 dBr
teo Trac	e 1 1.s							
8.01								
1.99								
12.0							_	
22.0					A2	-	-	-
32.0		C. C. Committee Prov			Y	-	and the second division of	and and
42.0	No. of Concession, Name							
520								
62.0								
Start 30 Res BW	MHz / 1.0 MHz		#VBW 3.0	MHz		Swee	Stop 16.00 ms	9.000 GH (20001 pt
1 N	ini sili	836.0 MHz	18.005 dBm	FUNCTION	FUNCTION WIDTH		PUNCTION VALUE	
2 N 3	1.4	5.416 9 GHz	-32.408 dBm					
5								
7								
8 9 10								
11								
sa					STATUS			

### **Highest Channel**

RL	1F 50	10 .40	SENSE PUL(#)		ALIGNAUTO		01:30:21	PMDec 18, 2018
Center F	req 4.515	000000 GHz PNO	t: Fast Trig: Fi in:Low #Atten	ee Run 36 dB	Avg Type: Log	-Рит		ACE 1 3 4 5 1 YPE DOMESTIC
10 dB/div	Ref Offset Ref 28.5		yar este				Mkr1 84 18.	6.3 MHz 63 dBm
18.6 Trac	e 1 🚺 s							
8.56	-							
-1.44								_
-21.4					.2			
31.4			Martin and a second		$\Diamond^2$		all states	10-11-1
-41.4	and the second							
-61.4								
Start 30 M #Res BW			#VBW 3.0 M	Hz		Sweep	Stop 16.00 ms (	9.000 GHz 20001 pts
1 N 1 2 N	1 50.	846.3 MHz 5.491 4 GHz	18.563 dBm -32.094 dBm	PUNCTION	FUNCTION WIDTH	A.	INCTION VALUE	
3 4		5,4314 GHZ	-52.034 dbm					
5 6 7								
7 8 9								
10								
0								

Shenzhen STS Test Services Co., Ltd.



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# Report No.: STS1812037W01

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

# Lowest Channel

RL.		50 Q AC	SENSE PULS	£) (3	ALIGNAUTO		36 AM Dec 18, 2018
Center I	Freq 10.0*		D: Fast Trig	Free Run en: 36 dB	Avg Type: Log-Pwr		TRACE
10 dB/div	Ref Offse Ref 29.3						852 3 GH 1.759 dBn
19.10 Tra	ce 1 Als						
9.78							
0.24							
10.2							
						_	^2
20.2							N.V.
30.2	-	and the second statement of th	Statistics in the local division of	and the second second	and the second day of		
40.2							
50.2	_			_			
80.2							
Start 30 Res BV	MHz V 1.0 MHz		#VBW 3.0	MHz	Swe	Stop sep 50.67 ms	20.000 GH (40001 pt
		1.852 3 GHz	19.759 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	
2 N	1 1	18.937 6 GHz	-25.779 dBm				
3							
5							
6 7							
8							
10							
1							3
					STATUS		

## Middle Channel

	tef Offset 9.5 Ref 28.04 dl						A	DET P P P P P
18.0 Trace 1	1.5							79 2 GH: .042 dBm
0.04								
		_				_		
1.96	_					_	_	
12.0	-							- 2
22.0							-	Q=
32.0	a laster	All and a state of the state of		-	and the second	Contraction of the local division of the loc	and the second division of the second divisio	Charles and the second second
42.0								
52.0								
62.0								
Res BW 1.0			#VBW 3.0	MHz		Sweep	Stop 50.67 ms	20.000 GH (40001 pt
ALL MODE THE	501	1.879 2 GHz	18.042 dBm	PUNCTION	FUNCTION WIDTH	_	RUNCTION VALUE	
1 N 1 2 N 1 3	1	19.145 3 GHz	-25.546 dBm					
4 5								
67								
8								
10								
16								3

# **Highest Channel**

Agilent Spect	rum Anal	yzer - Swept SA		SENSE	da e deri	AUGNAUTO		10.32.2	2 AM Dec 18, 2018
		0.01500000	00 GHz	-	Trig: Free Run #Atten: 36 dB	Avg Type:	Log-Pwr		TYPE DEMONSTRACE
10 dB/div		offset 9.5 dB 27.95 dBm						Mkr1 1.9 17.	06 7 GH: 949 dBn
18.0 Trac	e 1 R	1.							
7.95	-								-
-2.05	-								
-22.1	1								$O^2$
32.1	1011	and the state of the	-	Contractor of the	and the second	-	-	-	and the second second
42.1	-								
52.1 62.1									
Start 30 I		Hz		#VBW	3.0 MHz		Sweep	Stop 3 50.67 ms	20.000 GH (40001 pt
1 N 2 N		1	.906 7 GHz	17.949 dB -25.731 dB	m	FUNCTION WIDTH	5	UNCTION VALUE	
3 4			Carla C Griz	20.701 00					
5 6 7									
7 8 9									
10									
¢ į						Territoria (			
sG						STATUS			

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### GSM 850

### Lowest Band Edge



## Highest Band Edge



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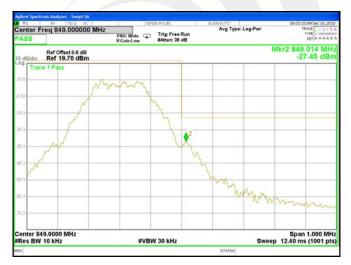
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**GPRS 850** 

### Lowest Band Edge



### Highest Band Edge



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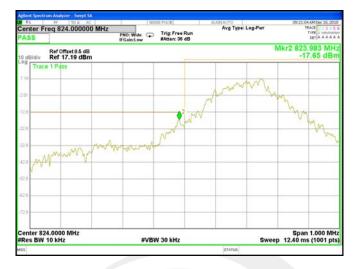
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### EDGE 850

### Lowest Band Edge



### Highest Band Edge



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# Report No.: STS1812037W01

GSM 1900

### Lowest Band Edge



## Highest Band Edge

RL	11F 50 Q AC	SBISE PULTE	ALIGNAUTO Avg Type: Log-Pwr	09:33:19 AM Dec 18, 2018
Center Freq 1.910000000 GHz		PNO: Wide Trig: Free Run IFGain:Low #Atten: 36 dB	Avg Type: Log-Fer	TYPE A MANA
0 dB/div	Ref Offset 9.5 dB Ref 15.97 dBm		M	cr2 1.910 005 GH -32.19 dBn
Trac	e 1 Pass			
5.97	AL AL	www.		
4.0	N			
74.0	1			
34.0	m	mar 2		
40			M.	
54.0			A Norwanning	
4.0			. wy have	man
4.0				
enter 1. Res BW	9100000 GHz	#VBW 30 kHz	Sweet	Span 1.000 MH 12.40 ms (1001 pt
ia la			STATUS	internation pr

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Shenzhen STS Test Services Co., Ltd.



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# Report No.: STS1812037W01

**GPRS 1900** 

### Lowest Band Edge



## Highest Band Edge

Center Fi	reg 1.910000000 GH	SENSE PUL SE	AUGNAUTO Avg Type: Log-Pwr	09:40:26 AM Dec 18, 2018 TRACE 1 2 3 4 5
ASS		PNO: Wide Trig: Free Run IFGain:Low #Atten: 36 dB		DET A A A A
0 dB/div	Ref Offset 9.5 dB Ref 15.29 dBm		м	kr2 1.910 008 GH -31.29 dBr
Trac	e 1 Pass			
5.29	1	www		
47	1			
4.7	N	7		
	and .	V.	A	
47 0	ſ		WMM.	
17			Mar	
4.7			mm	my
4.7.				
enter 1.9	9100000 GHz	#VBW 30 kHz	Swaa	Span 1.000 MH p 12.40 ms (1001 pt
ia Div	TO KH2	WY DAY 20 KHZ	STATUS	p 12.40 ms (1001 pc

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Shenzhen STS Test Services Co., Ltd.



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# Report No.: STS1812037W01

EDGE 1900

### Lowest Band Edge



### **Highest Band Edge**



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### WCDMA Band VRMC 12.2Kbps

### Lowest Band Edge



## Highest Band Edge

RL # 500 MC		ALIGNAUTO Avg Type: Log-Pwr	01:30:48 PM Dec 18, 2018	
Center Freq 849.000000 PASS	PNO: Wide Trig: Free Run IFGain:Low #Atten: 36 dB		DET A A A A A	
Ref Offset 8.5 dB Ref 10.30 dBm			49.000 MH: -35.37 dBn	
Trace 1 Pass				
e 70				
13.7				
29.7	2			
37				
		- marine	m	
43.7				
40.7				
G 7				
79.7				
Center 849.000 MHz			Span 5.000 MH	
#Res BW 68 kHz	#VBW 220 kHz	Swee	p 1.333 ms (1001 pts	

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## WCDMA Band IIRMC 12.2Kbps

### Lowest Band Edge

RL	num Analyzer - Swept SA RF 50.0 AC		PARE	ADGNAUTO	10:29:04 AM Dec 18, 2018
Center F PASS	req 1.850000000 GHz	PNO: Wide	Trig: Free Run #Atten: 36 dB	Avg Type: Log-Pwr	TYPE A MANA A A
10 dB/div	Ref Offset 9.5 dB Ref 11.79 dBm		_	0	Mkr2 1.850 000 GHz -31.81 dBm
Trac	e 1 Pass		1		
1.79					
8.21			- /		
-18.2					
-28.2			2		
38.2			$\sim$		
48.2					
58.2					
68.2					
78.2		_			
Center 1. #Res BW	850000 GHz 68 kHz	#VBW	220 kHz	Sw	Span 5.000 MH eep 1.333 ms (1001 pts
MSG				STATUS	

# Highest Band Edge

RL	#F. 50.9 AC		VSE PULCE	ALIGNAUTO Avg Type: Log-Put	10:32:49 AM Dec 18, 2018 TRACE
Center Freq 1.910000000 GH		PNO: Wide Gif Gain:Low	Trig: Free Run #Atten: 36 dB	Avg Type: Log-rwr	DET A A A A A
0 dB(div	Ref Offset 9.5 dB Ref 10.82 dBm				Mkr2 1.910 000 GH: -30.16 dBn
Trace	e 1 Pass				
820	······································	m			-
9,10					
19.2					
			2		
9.2					
9.2				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
9.2					
82					
9.2					
9.2					
enter 1.9	10000 GHz	#\/81	W 220 kHz		Span 5.000 MH weep 1.333 ms (1001 pts
sa BW	08 KH2	FVB	W 220 KHZ	STATUS	weep 1.355 ms (1001 pts

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## A8. FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT GSM 850: (30-9000)MHz

		GSM 8	850: (30-9	000)MHz			
	The Wo	rst Test R	esults Ch	annel 128	/824.2 MHz		
	S G.Lev			PMea	Limit	Margin	Delevity
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dB)	Polarity
1648.45	-40.76	9.40	4.75	-36.11	-13.00	-23.11	Н
2472.63	-40.32	10.60	8.39	-38.11	-13.00	-25.11	Н
3296.57	-31.49	12.00	11.79	<mark>-31.28</mark>	-13.00	-18.28	Н
1648.40	-43.60	9.40	4.75	-38.95	-13.00	-25.95	V
2472.58	-45.19	10.60	8.39	-42.98	-13.00	-29.98	V
3296.79	-42.53	12.00	11.79	-42.32	-13.00	-29.32	V
	The Wo	rst Test R	esults Ch	annel 190	/836.6 MHz		
Frequency(MHz)	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
Frequency(IVIFIZ)	(dBm)	Аш(аы)	L055	(dBm)	(dBm)	(dB)	Folanty
1673.18	-41.55 /	9.50	4.76	-36.81	-13.00	-23.81	Н
2509.51	-40.13	10.70	8.40	-37.83	-13.00	-24.83	Н
3346.02	-32.16	12.20	11.80	<mark>-31.76</mark>	-13.00	-18.76	Н
1673.28	-43.92	9.40	4.75	-39.27	-13.00	-26.27	V
2509.78	-44.58	10.60	8.39	-42.37	-13.00	-29.37	V
3346.38	-43.83	12.20	11.82	-43.45	-13.00	-30.45	V
	The Wo	rst Test R	esults Ch	annel 251	/848.8 MHz		
Frequency(MHz)	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
	(dBm)	Аш(аы)	L035	(dBm)	(dBm)	(dB)	Folanty
1697.47	-40.19	9.60	4.77	-35.36	-13.00	-22.36	Н
2546.24	-39.30	10.80	8.50	-37.00	-13.00	-24.00	Н
3394.94	-32.29	12.50	11.90	<mark>-31.69</mark>	-13.00	-18.69	Н
1697.61	-44.42	9.60	4.77	-39.59	-13.00	-26.59	V
2546.27	-44.09	10.80	8.50	-41.79	-13.00	-28.79	V
3394.96	-42.54	12.50	11.90	-41.94	-13.00	-28.94	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



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Report No.: STS1812037W01

## GPRS 850: (30-9000)MHz

	GPRS 850: (30-9000)MHz								
	The Wo	rst Test R	esults Ch	annel 128	/824.2 MHz				
	S G.Lev	A set(dDi)		PMea	Limit	Margin	Delerity		
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dB)	Polarity		
1648.03	-41.23	9.40	4.75	-36.58	-13.00	-23.58	Н		
2472.52	-40.24	10.60	8.39	-38.03	-13.00	-25.03	Н		
3296.55	-31.77	12.00	11.79	<mark>-31.56</mark>	-13.00	-18.56	Н		
1648.11	-43.48	9.40	4.75	-38.83	-13.00	-25.83	V		
2472.34	-45.18	10.60	8.39	-42.97	-13.00	-29.97	V		
3296.61	-43.31	12.00	11.79	-43.10	-13.00	-30.10	V		
	The Wo	rst Test R	esults Ch	annel 190	/836.6 MHz				
	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity		
Frequency(MHz)	(dBm)	Апциы)	LUSS	(dBm)	(dBm)	(dB)	Folanty		
1673.24	-41.22	9.50	4.76	-36.48	-13.00	-23.48	Н		
2509.69	-39.31	10.70	8.40	-37.01	-13.00	-24.01	Н		
3346.16	-31.38	12.20	11.80	<mark>-30.98</mark>	-13.00	-17.98	Н		
1673.16	-44.21	9.40	4.75	-39.56	-13.00	-26.56	V		
2509.59	-45.09	10.60	8.39	-42.88	-13.00	-29.88	V		
3345.96	-43.50	12.20	11.82	-43.12	-13.00	-30.12	V		
	The Wo	rst Test R	esults Ch	annel 251	/848.8 MHz				
Frequency(MHz)	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity		
Frequency(iviriz)	(dBm)	Аш(аы)	L055	(dBm)	(dBm)	(dB)	Folanty		
1697.43	-41.24	9.60	4.77	-36.41	-13.00	-23.41	Н		
2546.33	-39.41	10.80	8.50	-37.11	-13.00	-24.11	Н		
3394.94	-31.67	12.50	11.90	<mark>-31.07</mark>	-13.00	-18.07	Н		
1697.45	-43.94	9.60	4.77	-39.11	-13.00	-26.11	V		
2546.35	-44.42	10.80	8.50	-42.12	-13.00	-29.12	V		
3395.34	-43.86	12.50	11.90	-43.26	-13.00	-30.26	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



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## EDGE 850: (30-9000)MHz

		EGPRS	6 850: (30-	9000)MHz					
	The W	orst Test R	esults Ch	annel 128/	824.2 MHz				
	S G.Lev	Ant(dDi)		PMea	Limit	Margin	Delerity		
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dB)	Polarity		
1648.03	-40.74	9.40	4.75	-36.09	-13.00	-23.09	Н		
2472.66	-40.23	10.60	8.39	-38.02	-13.00	-25.02	Н		
3296.56	-31.54	12.00	11.79	<mark>-31.33</mark>	-13.00	-18.33	Н		
1648.31	-44.56	9.40	4.75	-39.91	-13.00	-26.91	V		
2472.33	-44.07	10.60	8.39	-41.86	-13.00	-28.86	V		
3296.91	-43.19	12.00	11.79	-42.98	-13.00	-29.98	V		
	The Worst Test Results Channel 190/836.6 MHz								
	S G.Lev	Apt(dDi)		PMea	Limit	Margin	Delority		
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dB)	Polarity		
1672.86	-41.29	9.50	4.76	-36.55	-13.00	-23.55	Н		
2509.91	-39.44	10.70	8.40	-37.14	-13.00	-24.14	Н		
3346.32	-31.55	12.20	11.80	<mark>-31.15</mark>	-13.00	-18.15	Н		
1673.16	-43.92	9.40	4.75	-39.27	-13.00	-26.27	V		
2509.71	-44.34	10.60	8.39	-42.13	-13.00	-29.13	V		
3345.95	-43.67	12.20	11.82	-43.29	-13.00	-30.29	V		
	The W	orst Test R	esults Ch	annel 251/8	848.8 MHz				
	S G.Lev	Apt(dDi)		PMea	Limit	Margin	Delority		
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dB)	Polarity		
1697.36	-40.63	9.60	4.77	-35.80	-13.00	-22.80	Н		
2546.16	-40.52	10.80	8.50	-38.22	-13.00	-25.22	Н		
3394.87	-31.32	12.50	11.90	<mark>-30.72</mark>	-13.00	-17.72	Н		
1697.38	-43.45	9.60	4.77	-38.62	-13.00	-25.62	V		
2546.34	-45.10	10.80	8.50	-42.80	-13.00	-29.80	V		
3395.05	-42.74	12.50	11.90	-42.14	-13.00	-29.14	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



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## PCS 1900: (30-20000)MHz

		DCS 19	900: (30-2	0000)MHz				
	The Wors	t Test Res	ults for C	hannel 51	2/1850.2MH	łz		
	S G.Lev			PMea	Limit	Margin	Delevity	
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dB)	Polarity	
3700.43	-34.23	12.60	12.93	<mark>-34.56</mark>	-13.00	-21.56	Н	
5550.32	-34.01	13.10	17.11	-38.02	-13.00	-25.02	Н	
7400.95	-32.44	11.50	22.20	-43.14	-13.00	-30.14	Н	
3700.51	-35.18	12.60	12.93	-35.51	-13.00	-22.51	V	
5550.30	-34.52	13.10	17.11	-38.53	-13.00	-25.53	V	
7400.96	-33.08	11.50	22.20	-43.78	-13.00	-30.78	V	
The Worst Test Results for Channel 661/1880.0MHz								
	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity	
Frequency(MHz)	(dBm)	Апциы)	LUSS	(dBm)	(dBm)	(dB)	Polanty	
3760.17	-34.03	12.60	12.93	<mark>-34.36</mark>	-13.00	-21.36	Н	
5640.24	-34.15	13.10	17.11	-38.16	-13.00	-25.16	Н	
7520.28	-33.17	11.50	22.20	-43.87	-13.00	-30.87	Н	
3760.26	-34.90	12.60	12.93	-35.23	-13.00	-22.23	V	
5640.09	-33.96	13.10	17.11	-37.97	-13.00	-24.97	V	
7519.92	-31.91	11.50	22.20	-42.61	-13.00	-29.61	V	
	The Wors	t Test Res	ults for C	hannel 81	0/1909.8MH	łz		
Frequency(MHz)	S G.Lev	Apt(dBi)	Loss	PMea	Limit	Margin	Polarity	
Frequency(MHZ)	(dBm)	Ant(dBi)	LUSS	(dBm)	(dBm)	(dB)	Polanty	
3819.44	-34.89	12.60	12.93	<mark>-35.22</mark>	-13.00	-22.22	Н	
5729.37	-34.14	13.10	17.11	-38.15	-13.00	-25.15	Н	
7638.84	-32.39	11.50	22.20	-43.09	-13.00	-30.09	Н	
3819.32	-35.27	12.60	12.93	-35.60	-13.00	-22.60	V	
5729.43	-34.93	13.10	17.11	-38.94	-13.00	-25.94	V	
7639.23	-31.81	11.50	22.20	-42.51	-13.00	-29.51	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



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Report No.: STS1812037W01

## GPRS 1900: (30-20000)MHz

GPRS1900: (30-20000)MHz								
The Worst Test Results for Channel 512/1850.2MHz								
Frequency(MHz)	S G.Lev		Loss	PMea	Limit	Margin	Polarity	
	(dBm)	Ant(dBi)		(dBm)	(dBm)	(dB)		
3700.08	-34.74	12.60	12.93	<mark>-35.07</mark>	-13.00	-22.07	Н	
5550.32	-34.27	13.10	17.11	-38.28	-13.00	-25.28	Н	
7400.76	-33.29	11.50	22.20	-43.99	-13.00	-30.99	Н	
3700.51	-35.27	12.60	12.93	-35.60	-13.00	-22.60	V	
5550.69	-34.67	13.10	17.11	-38.68	-13.00	-25.68	V	
7400.67	-32.14	11.50	22.20	-42.84	-13.00	-29.84	V	
	The Worst Test Results for Channel 661/1880.0MHz							
	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity	
Frequency(MHz)	(dBm)			(dBm)	(dBm)	(dB)		
3759.79	-34.52	12.60	12.93	<mark>-34.85</mark>	-13.00	-21.85	Н	
5640.29	-34.07	13.10	17.11	-38.08	-13.00	-25.08	Н	
7519.85	-33.05	11.50	22.20	-43.75	-13.00	-30.75	Н	
3760.17	-35.60	12.60	12.93	-35.93	-13.00	-22.93	V	
5640.21	-34.91	13.10	17.11	-38.92	-13.00	-25.92	V	
7519.91	-33.11	11.50	22.20	-43.81	-13.00	-30.81	V	
The Worst Test Results for Channel 810/1909.8MHz								
	S G.Lev			PMea	Limit	Margin	Polarity	
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dB)	Folanty	
3819.67	-33.73	12.60	12.93	<mark>-34.06</mark>	-13.00	-21.06	Н	
5729.43	-35.10	13.10	17.11	-39.11	-13.00	-26.11	Н	
7639.05	-32.19	11.50	22.20	-42.89	-13.00	-29.89	Н	
3819.55	-35.07	12.60	12.93	-35.40	-13.00	-22.40	V	
5729.17	-33.93	13.10	17.11	-37.94	-13.00	-24.94	V	
7639.34	-32.24	11.50	22.20	-42.94	-13.00	-29.94	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



## EDGE 1900: (30-20000)MHz

EGPRS 1900: (30-20000)MHz							
The Worst Test Results for Channel 512/1850.2MHz							
Frequency(MHz)	S G.Lev	A set(dDi)	Loss	PMea	Limit	Margin	Polarity
	(dBm)	Ant(dBi)		(dBm)	(dBm)	(dB)	
3700.01	-34.27	12.60	12.93	<mark>-34.60</mark>	-13.00	-21.60	Н
5550.40	-35.41	13.10	17.11	-39.42	-13.00	-26.42	Н
7400.71	-32.78	11.50	22.20	-43.48	-13.00	-30.48	Н
3700.51	-35.53	12.60	12.93	-35.86	-13.00	-22.86	V
5550.32	-34.91	13.10	17.11	-38.92	-13.00	-25.92	V
7400.87	-32.08	11.50	22.20	-42.78	-13.00	-29.78	V
The Worst Test Results for Channel 661/1880.0MHz							
	S G.Lev	A pt/dDi)		PMea	Limit	Margin	Polarity
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dB)	
3760.08	-34.30	12.60	12.93	<mark>-34.63</mark>	-13.00	-21.63	Н
5640.06	-34.83	13.10	17.11	-38.84	-13.00	-25.84	Н
7520.11	-32.26	11.50	22.20	-42.96	-13.00	-29.96	Н
3760.31	-35.82	12.60	12.93	-36.15	-13.00	-23.15	V
5640.17	-34.22	13.10	17.11	-38.23	-13.00	-25.23	V
7520.03	-32.97	11.50	22.20	-43.67	-13.00	-30.67	V
	The Wors	t Test Res	ults for C	hannel 81	0/1909.8MH	łz	
Frequency(MHz)	S G.Lev		Loss	PMea	Limit	Margin	Delerity
Frequency(MHZ)	(dBm)	Ant(dBi)	LUSS	(dBm)	(dBm)	(dB)	Polarity
3819.66	-34.79	12.60	12.93	<mark>-35.12</mark>	-13.00	-22.12	Н
5729.28	-34.30	13.10	17.11	-38.31	-13.00	-25.31	Н
7639.26	-33.55	11.50	22.20	-44.25	-13.00	-31.25	Н
3819.60	-35.00	12.60	12.93	-35.33	-13.00	-22.33	V
5729.49	-34.79	13.10	17.11	-38.80	-13.00	-25.80	V
7639.23	-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 8GHz amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has.



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## UMTS band V(30-9000)MHz

WCDMA Band V: (30-9000)MHz							
The wost testresults channel 4132/826.4MHz							
Frequency(MHz)	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
	(dBm)			(dBm)	(dBm)	(dB)	
1652.02	-41.08	9.40	4.75	-36.43	-13.00	-23.43	Н
2479.25	-40.17	10.60	8.39	-37.96	-13.00	-24.96	Н
3305.60	-30.97	12.00	11.79	<mark>-30.76</mark>	-13.00	-17.76	Н
1652.07	-44.61	9.40	4.75	-39.96	-13.00	-26.96	V
2479.66	-44.80	10.60	8.39	-42.59	-13.00	-29.59	V
3305.89	-42.55	12.00	11.79	-42.34	-13.00	-29.34	V
The Worst Test Results Channel 4183/836.6MHz							
	S G.Lev	Apt(dDi)	Loss	PMea	Limit	Margin	Polarity
Frequency(MHz)	(dBm)	Ant(dBi)		(dBm)	(dBm)	(dB)	
1672.88	-40.22	9.50	4.76	-35.48	-13.00	-22.48	Н
2509.87	-40.38	10.70	8.40	-38.08	-13.00	-25.08	Н
3346.16	-31.75	12.20	11.80	<mark>-31.35</mark>	-13.00	-18.35	Н
1672.86	-43.50	9.40	4.75	-38.85	-13.00	-25.85	V
2509.63	-44.18	10.60	8.39	-41.97	-13.00	-28.97	V
3346.44	-42.79	12.20	11.82	-42.41	-13.00	-29.41	V
	The Wo	rst Test Re	esults Cha	annel 4233	3/846.6MHz		
	S G.Lev	Apt(dBi)		PMea	Limit	Margin	Deleviter
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dB)	Polarity
1693.23	-41.42	9.60	4.77	-36.59	-13.00	-23.59	Н
2539.36	-39.49	10.80	8.50	-37.19	-13.00	-24.19	Н
3386.08	-31.40	12.50	11.90	<mark>-30.80</mark>	-13.00	-17.80	Н
1693.24	-44.53	9.60	4.77	-39.70	-13.00	-26.70	V
2539.19	-44.95	10.80	8.50	-42.65	-13.00	-29.65	V
3386.18	-43.20	12.50	11.90	-42.60	-13.00	-29.60	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



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## UMTS band II(30-20000)MHz

WCDMA Band II: (30-20000)MHz							
The Worst Test Results for Channel 9262/1852.4MHz							
Frequency(MHz)	S G.Lev		Loss	PMea	Limit	Margin	Polarity
	(dBm)	Ant(dBi)		(dBm)	(dBm)	(dB)	
3704.19	-34.63	12.60	12.93	-34.96	-13.00	-21.96	Н
5557.49	-35.05	13.10	17.11	-39.06	-13.00	-26.06	Н
7409.68	-33.01	11.50	22.20	-43.71	-13.00	-30.71	Н
3704.29	-34.61	12.60	12.93	<mark>-34.94</mark>	-13.00	-21.94	V
5557.50	-33.84	13.10	17.11	-37.85	-13.00	-24.85	V
7409.92	-33.16	11.50	22.20	-43.86	-13.00	-30.86	V
The Worst Test Results for Channel 9400/1880MHz							
Frequency(MHz)	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
Fiequency(IVIHZ)	(dBm)	Anii(ubi)	LUSS	(dBm)	(dBm)	(dB)	
3759.95	-33.55	12.60	12.93	<mark>-33.88</mark>	-13.00	-20.88	Н
5640.18	-35.39	13.10	17.11	-39.40	-13.00	-26.40	Н
7519.98	-32.73	11.50	22.20	-43.43	-13.00	-30.43	Н
3759.91	-35.90	12.60	12.93	-36.23	-13.00	-23.23	V
5640.01	-34.75	13.10	17.11	-38.76	-13.00	-25.76	V
7519.85	-32.96	11.50	22.20	-43.66	-13.00	-30.66	V
-	The Worst	: Test Resi	ults for Ch	nannel 953	88/1907.6M	Hz	
Frequency(MHz)	S G.Lev	Ant(dBi)		PMea	Limit	Margin	Polarity
Fiequency(IVIHZ)	(dBm)	Anii(ubi)	Loss	(dBm)	(dBm)	(dB)	Folanty
3815.67	-34.90	12.60	12.93	-35.23	-13.00	-22.23	Н
5722.45	-34.15	13.10	17.11	-38.16	-13.00	-25.16	Н
7630.27	-33.09	11.50	22.20	-43.79	-13.00	-30.79	Н
3815.64	-34.55	12.60	12.93	<mark>-34.88</mark>	-13.00	-21.88	V
5722.27	-34.89	13.10	17.11	-38.90	-13.00	-25.90	V
7630.29	-32.91	11.50	22.20	-43.61	-13.00	-30.61	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



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APPENDIX BPHOTOS OF TEST SETUP

Note: See test photos in setup photo document for the actual connections between Product and support equipment.

\* \* \* \* \* END OF THE REPORT \* \* \* \*



Shenzhen STS Test Services Co., Ltd.