

RADIO TEST REPORT

Report No: STS1609122F01

S T S

A

Issued for

Santok Limited

Santok House, Unit L, Braintree Industrial Estate, Braintree Road, South Ruislip, Middlesex, United Kingdom

Product Name:	Smart Phone
Brand Name:	stk
Model Name:	Storm 2e X
Series Model:	N/A
FCC ID:	2AE7RSTKSTORM2EX
Test Standard:	FCC Part 22H and 24E

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Report No.: STS1609122F01

TEST RESULT CERTIFICATION

Applicant's name:	Santok Limited
Address:	Santok House, Unit L, Braintree Industrial Estate, Braintree Road, South Ruislip, Middlesex, United Kingdom
Manufacture's Name:	Santok Limited
Address	Santok House, Unit L, Braintree Industrial Estate, Braintree Road, South Ruislip, Middlesex, United Kingdom
Product name:	Smart Phone
Brand name:	stk
Model and/or type reference:	Storm 2e X
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.

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Date of Test

Date of performance of tests 18 Sep. 2016~28 Sep. 2016

Date of Issue 29 Sep. 2016

Test Result..... Pass

Testing Engineer :	Junter
Technical Manager :	(Tony Liu)
Authorized Signatory :	(Vita Li)
	(Bovey Yang)
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Shenzhen STS Tes



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Revision History

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	29 Sep. 2016	STS1609122F01	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 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%



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2 PRODUCT INFORMATION

Product Designation:	Smart Phone		
Hardware version number:	Z157_E1_BOM_V1.0		
Software version number:	Storm_2e+_DS_921_V0.0.1_20160830		
FCC ID:	2AE7RSTKSTORM2EX		
	GSM/GPRS/EDGE:		
	850: 824.2 MHz ~ 848.8 MHz		
	1900: 1850.2 MHz ~ 1909.8MHz		
Tx Frequency:	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		
By Fraguanay	1900: 1930.2 MHz ~ 1989.8 MHz		
Rx Frequency:	WCDMA:		
	Band V: 871.4 MHz ~ 891.6 MHz		
	Band II: 1932.4 MHz ~ 1987.6 MHz		
Max RF Output Power:	GSM850:31.55dBm,PCS1900:28.40dBm GPRS850:31.54dBm,GPRS1900:28.37dBm EDGE850:31.41dBm,EDGE1900:28.41dBm WCDMABand V:22.25dBm,WCDMA Band II:21.25dBm		
Type of Emission:	GSM(850): 318KGXW; GSM(1900): 320KGXW GPRS(850): 315KGXW; GPRS(1900): 321KGXW EDGE(850): 322KG7W; EDGE(1900): 316KG7W WCDMA850: 4M69F9W WCDMA1900: 4M69F9W		
SIM Card:	SIM 1 and SIM 2 is a chipset unit and tested as single chip- set,SIM 1 is used to tested		
Antenna:	PIFA Antenna		
Antonno goini	GSM 850: -3.1dBi ,PCS 1900: -1.2dBi		
Antenna gain:	WCDMA 850: -2.7dBi, WCDMA1900: -1.6dBi		
Power Supply:	DC 3.7V by battery		
Battery parameter:	Capacity: 1300mAh, Rated Voltage: 3.7V		
GPRS/EDGE Class:	Multi-Class12		
Extreme Vol. Limits:	DC3.4 V to 4.2 V (Nominal DC3.7V)		
Extreme Temp. Tolerance:	-20℃ to +45℃		
· · ·	.2 V and Low Voltage 3.4 V was declared by manufacturer, The mally 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 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	



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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

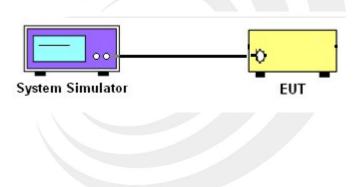
Test overview

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

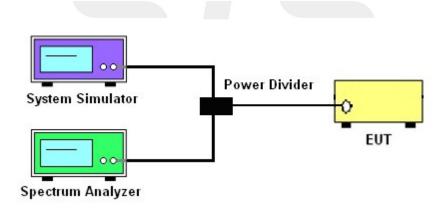
TEST OVERVIEW

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



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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/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.

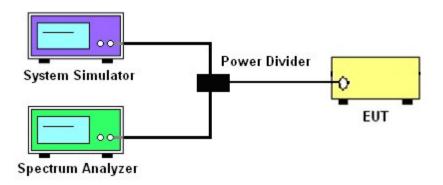
All modes of operation were investigated and the worst case configuration results are reported in this section.

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:

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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 $\pm 0.00025\%$ (± 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

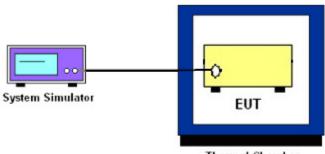
1. The testing follows FCC KDB 971168 D01 Section 9.0.

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.

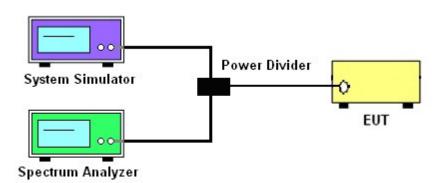
7. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

= 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.

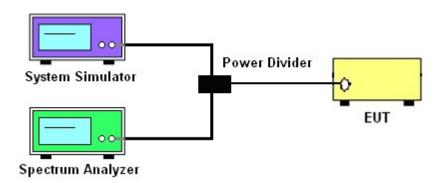
6.The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

= 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.

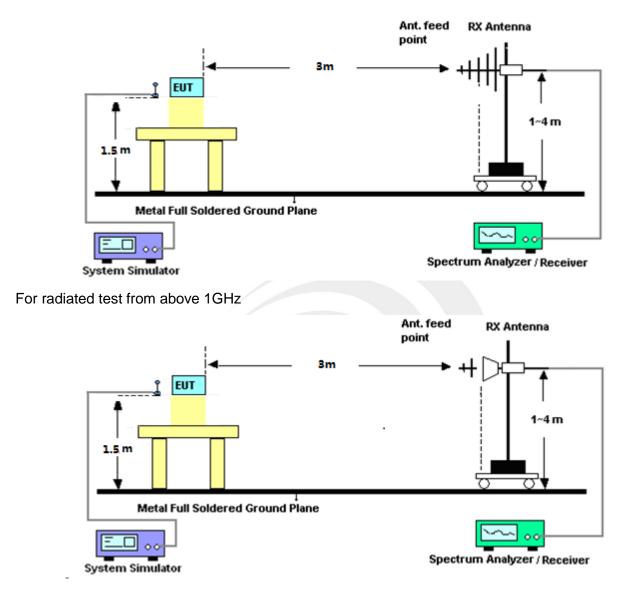
Test procedure

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



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APPENDIX ATESTRESULT A1CONDUCTED OUTPUT POWER

GSM 850:

Mode	Frequency (MHz)	AVG Power
GSM850	824.2	31.55
	836.6	31.44
	848.8	31.31
GPRS850	824.2	31.54
	836.6	31.43
	848.8	31.30
EDGE850 (1 Slot)	824.2	31.32
	836.6	31.41
	848.8	31.34

PCS 1900:

Mode	Frequency (MHz)	AVG Power
/	1850.2	28.40
GSM1900	1880	28.32
	1909.8	28.29
	1850.2	28.37
GPRS1900	1880	28.30
	1909.8	28.28
EDGE1900 (1 Slot)	1850.2	28.12
	1880	28.28
	1909.8	28.41

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UMTS BAND V

Mode	Frequency(MHz)	AVG Power
	826.4	22.25
WCDMA 850 RMC	836.6	21.61
RMC	846.6	22.18
	826.4	20.33
HSDPA Subtest 1	836.6	20.10
Sublesi	846.6	20.22
	826.4	19.86
HSDPA	836.6	19.67
Subtest 2	846.6	19.74
	826.4	19.45
HSDPA Subtest 3	836.6	19.25
Sublest 3	846.6	19.40
	826.4	19.07
HSDPA Subtest 4	836.6	18.79
Sublest 4	846.6	19.08
	826.4	20.28
HSUPA Subtest 1	836.6	20.07
Sublest	846.6	19.79
	826.4	19.32
HSUPA Subtest 2	836.6	19.15
Sublest 2	846.6	18.82
	826.4	19.28
HSUPA	836.6	18.66
Subtest 3	846.6	18.46
	826.4	18.81
HSUPA	836.6	18.17
Subtest 4	846.6	18.02
	826.4	17.36
HSUPA	836.6	16.75
Subtest 5	846.6	16.61

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UMTS BAND II

Mode	Frequency(MHz)	AVG Power
	1852.4	21.16
WCDMA 1900 RMC	1880	21.13
RINC	1907.6	21.25
	1852.4	21.08
HSDPA Subtest 1	1880	20.97
Sublesi	1907.6	21.10
	1852.4	20.58
HSDPA Subtest 2	1880	20.53
Sublest 2	1907.6	20.70
	1852.4	20.11
HSDPA	1880	20.05
Subtest 3	1907.6	20.40
	1852.4	19.74
HSDPA Subtest 4	1880	19.59
Sublest 4	1907.6	20.02
	1852.4	21.01
HSUPA Subtest 1	1880	20.93
Sublesi	1907.6	20.67
	1852.4	20.17
HSUPA Subtest 2	1880	19.94
Sublest 2	1907.6	19.71
	1852.4	20.10
HSUPA Subtest 3	1880	19.46
Sublest 3	1907.6	19.23
	1852.4	19.68
HSUPA	1880	19.00
Subtest 4	1907.6	18.78
	1852.4	18.27
HSUPA	1880	17.52
Subtest 5	1907.6	17.31

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A2 PEAK-TO-AVERAGE RADIO

PCS 1900:

Mode	Frequency (MHz)	PEAK Power	AVG Power	PAR
	1850.2	29.04	28.40	0.64
PCS1900	1880	29.01	28.32	0.69
	1909.8	28.92	28.29	0.63
GPRS1900	1850.2	28.99	28.37	0.62
	1880	28.83	28.30	0.53
	1909.8	28.93	28.28	0.65
EDGE1900	1850.2	28.80	28.12	0.68
	1880	28.89	28.28	0.61
(1 Slot)	1909.8	29.10	28.41	0.69

UMTS BAND II:

Mode	Frequency (MHz)	PEAK Power	AVG Power	PAR
	1852.4	21.78	21.16	0.62
WCDMA 1900 RMC	1880	21.77	21.13	0.64
	1907.6	21.94	21.25	0.69
	1852.4	21.71	21.08	0.63
HSDPA 1900	1880	21.52	20.97	0.55
	1907.6	21.70	21.10	0.60
HSUPA 1900	1852.4	21.63	21.01	0.62
	1880	21.50	20.93	0.57
	1907.6	21.36	20.67	0.69

Shenzhen STS Test Services Co., Ltd.



Report No.: STS1609122F01

A3 TRANSMITTER RADIATED POWER (EIRP/ERP)

	Radiated Power (ERP) for GSM 850 MHZ							
			Result					
Mode	Frequency	S G.Level (dBm)	Cable loss	Gain (dBi)	PMeas E.R.P(dBm)	Polarization Of Max. ERP	Conclusion	
	824.2	23.39	0.44	6.5	29.45	Horizontal	Pass	
	824.2	25.38	0.44	6.5	31.44	Vertical	Pass	
0014050	836.6	23.49	0.45	6.5	29.54	Horizontal	Pass	
GSM850	836.6	25.11	0.45	6.5	31.16	Vertical	Pass	
	848.8	23.26	0.46	6.5	29.30	Horizontal	Pass	
	848.8	24.98	0.46	6.5	31.02	Vertical	Pass	
	824.2	23.43	0.44	6.5	29.49	Horizontal	Pass	
	824.2	25.00	0.44	6.5	31.06	Vertical	Pass	
	836.6	23.26	0.45	6.5	29.31	Horizontal	Pass	
GPRS850	836.6	25.09	0.45	6.5	31.14	Vertical	Pass	
	848.8	23.24	0.46	6.5	29.28	Horizontal	Pass	
	848.8	25.02	0.46	6.5	31.06	Vertical	Pass	
	824.2	23.48	0.44	6.5	29.54	Horizontal	Pass	
	824.2	25.02	0.44	6.5	31.08	Vertical	Pass	
EDGE850	836.6	23.34	0.45	6.5	29.39	Horizontal	Pass	
EDGE000	836.6	25.15	0.45	6.5	31.20	Vertical	Pass	
	848.8	23.12	0.46	6.5	29.16	Horizontal	Pass	
	848.8	24.93	0.46	6.5	30.97	Vertical	Pass	



Report No.: STS1609122F01

	Radiated Power (EIRP) for PCS 1900 MHZ						
Mode	Frequency	S G.Level	Cable	Gain	PMeas	Polarization	Conclusion
		(dBm)	loss	(dBi)	E.I.R.P.(dBm)	Of Max.EIRP.	
	1850.2	18.14	2.41	10.06	25.79	Horizontal	Pass
	1850.2	20.14	2.41	10.06	27.79	Vertical	Pass
PCS1900	1880.0	18.24	2.42	10.06	25.88	Horizontal	Pass
PC51900	1880.0	19.92	2.42	10.06	27.56	Vertical	Pass
	1909.8	18.16	2.43	10.06	25.79	Horizontal	Pass
	1909.8	20.03	2.43	10.06	27.66	Vertical	Pass
	1850.2	18.06	2.41	10.06	25.71	Horizontal	Pass
	1850.2	20.02	2.41	10.06	27.67	Vertical	Pass
GPRS1900	1880.0	18.22	2.42	10.06	25.86	Horizontal	Pass
GPR51900	1880.0	19.78	2.42	10.06	27.42	Vertical	Pass
	1909.8	18.14	2.43	10.06	25.77	Horizontal	Pass
	1909.8	19.86	2.43	10.06	27.49	Vertical	Pass
	1850.2	18.25	2.41	10.06	25.90	Horizontal	Pass
	1850.2	20.06	2.41	10.06	27.71	Vertical	Pass
	1880.0	18.18	2.42	10.06	25.82	Horizontal	Pass
EDGE1900	1880.0	19.84	2.42	10.06	27.48	Vertical	Pass
	1909.8	18.06	2.43	10.06	25.69	Horizontal	Pass
	1909.8	19.88	2.43	10.06	27.51	Vertical	Pass

Shenzhen STS Test Services Co., Ltd.

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Report No.: STS1609122F01

Radiated Power (ERP) for WCDMA Band V							
				Re	esult		
Mode	Frequency	S G.Level	Cable	Gain	PMeas E.R.P	Polarization	Conclusion
		(dBm)	loss (dBi)	(dBm)	Of Max.ERP		
	826.4	13.51	0.44	6.5	19.57	Horizontal	Pass
	826.4	15.42	0.44	6.5	21.48	Vertical	Pass
Band V	836.6	13.06	0.45	6.5	19.11	Horizontal	Pass
Danu V	836.6	15.01	0.45	6.5	21.06	Vertical	Pass
	846.6	13.63	0.46	6.5	19.67	Horizontal	Pass
	846.6	15.45	0.46	6.5	21.49	Vertical	Pass

Radiated Power (EIRP) for WCDMA Band II									
			Result						
Mode	Frequency	S G.Level	Cable	Gain	PMeas	Polarization	Conclusion		
		(dBm)	(dBm) loss	(dBi)	E.I.R.P.(dBm)	Of Max.EIRP			
	1852.4	10.83	2.41	10.06	18.48	Horizontal	Pass		
	1852.4	12.84	2.41	10.06	20.49	Vertical	Pass		
Band II	1880.0	10.75	2.42	10.06	18.39	Horizontal	Pass		
Danu II	1880.0	12.78	2.42	10.06	20.42	Vertical	Pass		
	1907.6	10.86	2.43	10.06	18.49	Horizontal	Pass		
	1907.6	12.90	2.43	10.06	20.53	Vertical	Pass		

Shenzhen STS Test Services Co., Ltd.

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Report No.: STS1609122F01

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

Occupied Bandwidth for GSM 850 band					
Mode		Occupied Bandwidth	Emission Bandwidth		
Mode	Frequency(MHz)	(99%)(kHz)	(-26dBc)(kHz)		
Low Channel	824.2	245.97	313.8		
Middle Channel	836.6	247.20	318.2		
High Channel	848.8	244.67	312.8		
	Occupied Band	width for GPRS 850 band			
Mode	Frequency(MHz)	Occupied Bandwidth	Emission Bandwidth		
Widde		(99%)(kHz)	(-26dBc)(kHz)		
Low Channel	824.2	245.01	311.9		
Middle Channel	836.6	244.05	306.8		
High Channel	848.8	243.41	315.2		
	Occupied Bandv	vidth for EGPRS 850 band			
Mada		Occupied Bandwidth	Emission Bandwidth		
Mode	Frequency(MHz)	(99%)(kHz)	(-26dBc)(kHz)		
Low Channel	824.2	249.28	321.7		
Middle Channel	836.6	243.24	313.6		
High Channel	848.8	244.71	317.3		

Shenzhen STS Test Services Co., Ltd.



Report No.: STS1609122F01

Occupied Bandwidth for GSM1900 band					
Mode		Occupied Bandwidth	Emission Bandwidth		
wode	Frequency(MHz)	(99%)(kHz)	(-26dBc)(kHz)		
Low Channel	1850.2	243.09	320.0		
Middle Channel	1880.0	244.54	316.4		
High Channel	1909.8	244.50	316.3		
	Occupied Bandy	width for GPRS 1900 band			
Mode	Frequency(MHz)	Occupied Bandwidth	Emission Bandwidth		
wode		(99%)(kHz)	(-26dBc)(kHz)		
Low Channel	1850.2	243.83	318.0		
Middle Channel	1880.0	246.08	320.7		
High Channel	1909.8	242.37	314.7		
	Occupied Bandw	width for EDGE 1900 band			
Mode		Occupied Bandwidth	Emission Bandwidth		
wode	Frequency(MHz)	(99%)(kHz)	(-26dBc)(kHz)		
Low Channel	1850.2	245.38	315.7		
Middle Channel	1880.0	243.37	316.0		
High Channel	1909.8	244.32	311.8		

Occupied Bandwidth for UMTS band V						
Mada		Occupied Bandwidth	Emission Bandwidth			
Mode	Frequency(MHz)	(99%)(MHz)	(-26dBc)(MHz)			
Low Channel	826.4	4.1605	4.685			
Middle Channel	836.6	4.1376	4.680			
High Channel	846.6	4.1570	4.690			

Occupied Bandwidth for UMTS band II						
Mode	Fraguaney (MHz)	Occupied Bandwidth	Emission Bandwidth			
	Frequency(MHz)	(99%)(MHz)	(-26dBc)(MHz)			
Low Channel	1852.4	4.1481	4.661			
Middle Channel	1880	4.1556	4.687			
High Channel	1907.6	4.1546	4.669			

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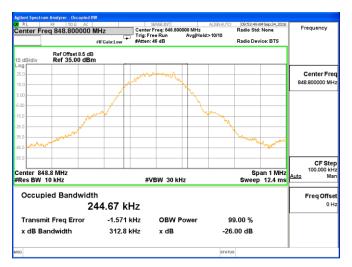
Report No.: STS1609122F01

GSM 850 CH 128



GSM 850 CH 190





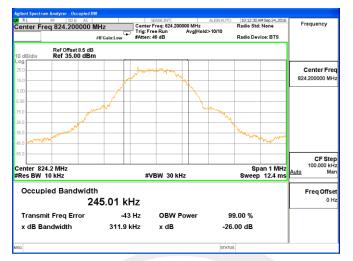
GSM 850 CH 251

Shenzhen STS Test Services Co., Ltd.



Report No.: STS1609122F01

GPRS 850 CH 128



GPRS 850 CH 190





GPRS 850 CH 251

Shenzhen STS Test Services Co., Ltd.

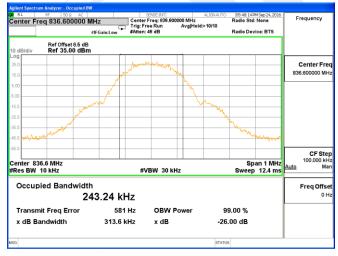


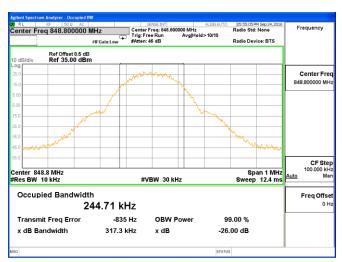
Report No.: STS1609122F01

EDGE 850 CH 128



EDGE 850 CH 190





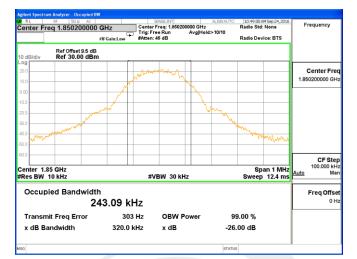
EDGE 850 CH 251

Shenzhen STS Test Services Co., Ltd.

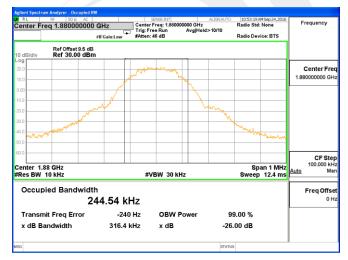


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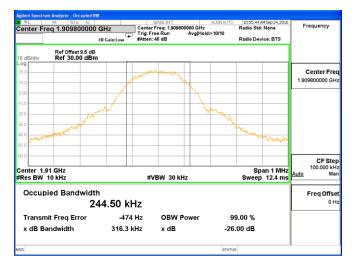
PCS 1900 CH 512



PCS 1900 CH 661



PCS 1900 CH 810

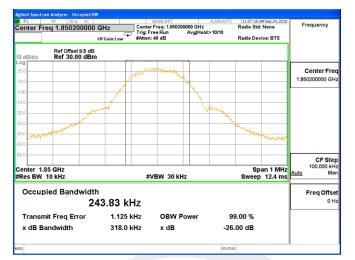


Shenzhen STS Test Services Co., Ltd.

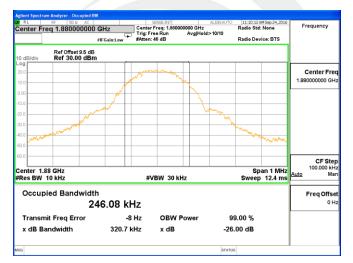


Report No.: STS1609122F01

GPRS 1900 CH 512



GPRS 1900 CH 661





GPRS 1900 CH 810

Shenzhen STS Test Services Co., Ltd.



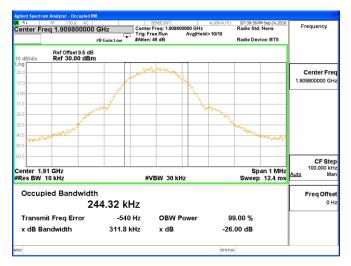
EDGE 1900 CH 512



EDGE 1900 CH 661

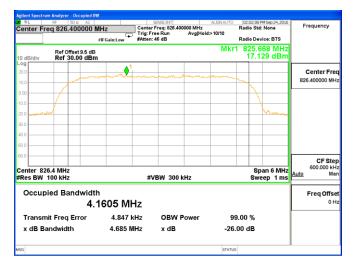


EDGE 1900 CH 810





UMTS BAND V CH 4132



UMTS BAND V CH 4183

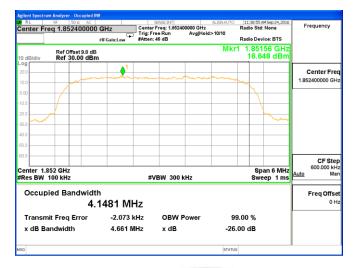
enter Fr	RF 50 Ω AC 7eq 836.600000	MHz #IFGain:Low	Center Fr	ISE:INT eq: 836.600000 MHz Run Avg Ho dB	ALIGNAUTO	Radio St	PM Sep 24, 2016 f: None vice: BTS	Frequency
0 dB/div	Ref Offset 9.5 di Ref 30.00 dB				Mkr		236 MHz 155 dBm	
.og 20.0				umur lumu				Center Fre 836.600000 MH
1.00								
0.0	~						Viennen	
0.0								
0.0								CF Ste
enter 83 Res BW			#VB	W 300 kHz		S Sw	oan 6 MHz eep 1 ms	600.000 kł Auto Ma
Occup	bied Bandwid 4	th .1376 M	Hz					Freq Offs 0 H
	nit Freq Error	-12.245		OBW Power	-	9.00 %		
x dB B	andwidth	4.680	MHz	x dB	-26.	00 dB		

UMTS BAND V CH 4233

	RF 50 Ω AC	MHz Cer Trig	SENSE:INT Iter Freq: 846.600000 P I: Free Run Av		02:06:16 PM Sep 24, 2016 adio Std: None	Frequency
			en:46 dB	R	adio Device: BTS	
0 dB/div	Ref Offset 9.5 dB Ref 30.00 dBn			Mkr1	847.212 MHz 17.560 dBm	
.og			↓ ¹			Center Fre
0.0		mountheres	mmm	monny		846.600000 Mi
					N	
00	1					
1.0						
1.0					~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
1.0						
1.0						
1.0						
1.0						CF St
enter 846.	6 MH7				Span 6 MHz	600 000 k
Res BW 100 kHz #VBW 300 kHz Sweep 1 ms						
Occupie	ed Bandwidt	h				Freq Offs
occupit		 1570 MHz				0
Transmit	Freq Error	723 Hz	OBW Pow	er 99.0	0 %	
x dB Bar	ndwidth	4.690 MHz	x dB	-26.00	dB	

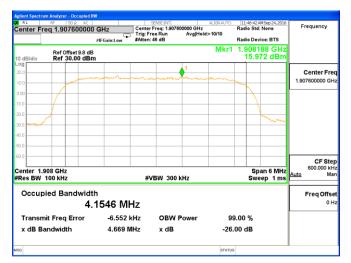


UMTS BAND II CH 9262



UMTS BAND II CH 9400

LXI RL	m Analyzer - Occupied E RF 50 Ω AC 9q 1.880000000) GHz Cente	SENSE:INT r Freq: 1.880000000 GHz ree Run Avg Hol :: 46 dB	d>10/10	11:44:334 Radio Std: Radio Dev		Frequency
10 dB/div	Ref Offset 9.8 dE Ref 30.00 dBr			Mkr		06 GHz 00 dBm	
20.0 10.0	Jum						Center Fred 1.88000000 GH:
-10.0							
-20.0 -30.0					-	1 more	
-40.0					-		
Center 1.8		#	VBW 300 kHz		Sp	an 6 MHz ep 1 ms	CF Step 600.000 kHz Auto Mar
Occupi	ied Bandwidt 4.	^h 1556 MHz					Freq Offset 0 Hz
	it Freq Error Indwidth	-2.088 kHz 4.687 MHz	OBW Power x dB	99. -26.0	00 % 0 dB		
MSG				STATUS			



UMTS BAND II CH 9538

Shenzhen STS Test Services Co., Ltd.



Report No.: STS1609122F01

A5 FREQUENCY STABILITY

Normal Voltage = 3.7V. ; Battery End Point (BEP) = 3.4 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	Normal Voltage	17.87	0.214	2.5ppm	PASS			
40		22.92	0.274					
30		17.19	0.205					
20		22.48	0.269					
10		27.00	0.323					
0		13.02	0.156					
-10		14.12	0.169					
-20		24.82	0.297	-				
-30	/	18.41	0.220					
25	Maximum Voltage	14.91	0.178					
25	BEP	21.74	0.260					

GPRS 850 Middle Channel/836.6MHz								
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result			
50		35.36	0.423					
40		22.88	0.273					
30		35.89	0.429					
20		22.37	0.267					
10	Normal Voltage	14.58	0.174					
0		34.93	0.418	2.5ppm	PASS			
-10		26.04	0.311					
-20		20.98	0.251					
-30		32.13	0.384					
25	Maximum Voltage	23.69	0.024					
25	BEP	30.24	0.014					



Report No.: STS1609122F01

	EDGE	850 Middle Cha	nnel/836.6MHz		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		32.44	0.388		
40		26.42	0.316		
30		27.10	0.324		
20		20.62	0.246		
10	Normal Voltage	23.09	0.276		
0		14.82	0.177	2.5ppm	PASS
-10		15.56	0.186		
-20		24.76	0.296		
-30		16.57	0.198		
25	Maximum Voltage	22.73	0.024		
25	BEP	29.43	0.014		



Shenzhen STS Test Services Co., Ltd.



Report No.: STS1609122F01

	GSM [·]	1900 Middle Cha	nnel/1880MHz		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		12.09	0.006		
40		28.66	0.015		
30		32.52	0.017		
20		26.52	0.014		
10	Normal Voltage	22.45	0.012	Within Au-	
0		36.08	0.019	thorized	PASS
-10		11.93	0.006	Band	
-20		15.02	0.008		
-30		21.61	0.011		
25	Maximum Voltage	24.81	0.013		
25	BEP	13.32	0.007		

	GPRS	1900 Middle Cha	annel/1880MHz		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		24.90	0.013		
40		28.40	0.015		
30		12.71	0.007		
20		25.08	0.013		
10	Normal Voltage	35.82	0.019	Within Au-	
0		28.95	0.015	thorized	PASS
-10		21.75	0.012	Band	
-20		32.27	0.017		
-30		13.10	0.007		
25	Maximum Voltage	12.18	0.006		
25	BEP	24.36	0.013		

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Report No.: STS1609122F01

	EDGE	1900 Middle Cha	annel/1880MHz		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		24.06	0.013		
40		24.47	0.013		
30		31.03	0.017		
20		29.42	0.016		
10	Normal Voltage	22.14	0.012	Within Au-	
0		35.50	0.019	thorized	PASS
-10		13.63	0.007	Band	
-20		27.39	0.015		
-30		26.87	0.014		
25	Maximum Voltage	35.91	0.019		
25	BEP	26.98	0.014		



Shenzhen STS Test Services Co., Ltd.



Report No.: STS1609122F01

	WCDN	IA V Middle Cha	nnel/836.6MHz		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		11.92	0.142		
40		20.09	0.240		
30		15.24	0.182		
20		13.96	0.167		
10	Normal Voltage	15.23	0.182		
0		31.20	0.373	2.5ppm	PASS
-10		26.97	0.322		
-20		20.87	0.249		
-30		32.05	0.383		
25	Maximum Voltage	20.44	0.244		
25	BEP	15.84	0.189		

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

	WCDN	IA II Middle Cha	nnel/1880MHz		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		29.78	0.016		
40		23.92	0.013		
30		31.82	0.017		
20		14.05	0.007		
10	Normal Voltage	27.26	0.015	Within Au-	
0		21.79	0.012	thorized	PASS
-10		16.88	0.009	Band	
-20		19.98	0.011		
-30		30.78	0.016		
25	Maximum Voltage	25.67	0.014		
25	BEP	32.12	0.017		

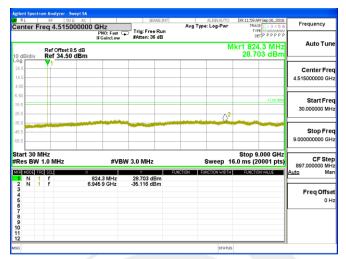
1. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.



A6 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

GSM 850 BAND

Lowest Channel



Middle Channel

Contor	RF	50 Ω AC		SENSE:		ALIGNAUTO		Sep 26, 2016	Frequency
-eillei	r Freq ₄	1.515000000	PN0: Fast C	Trig: Free Ru	Avg Ty n	e: Log-Pwr	TVDE	123456 MWWWWWW	Frequency
			IFGain:Low	#Atten: 36 dB			DET	PPPPP	
10 dB/di		Offset 8.5 dB 34.50 dBm				N	1kr1 836 28.54	9 MHz 9 dBm	Auto Tun
24.5	V 1								0
14.5									Center Fr 4.515000000 G
4.50									4.515000000 G
5.60									
15.5								-13.00 dBm	Start Fr
25.5					_				30.000000 N
					() ²				
35.5	-								Stop Fi
45.5									9.000000000
55.5						-			9.00000000 GH
start 3	0 MHz						Stop 9.	000 GHz	
	10 MHz 3W 1.0 M	ИНz	#VB	W 3.0 MHz		Sweep 1			
Res E		×		Y	EUNCTION 1	Sweep 1	6.0 ms (20	001 pts)	897.000000 N
Rese Rese	SW 1.0 P	×	836.9 MHz	28,549 dBm	FUNCTION		6.0 ms (20	001 pts)	897.000000 N
Rese 1 N 2 N 3	SW 1.0 P	×		Y	FUNCTION		6.0 ms (20	001 pts)	897.000000 M Auto
Rese 1 N 2 N 3 4	SW 1.0 P	×	836.9 MHz	28,549 dBm	FUNCTION		6.0 ms (20	001 pts)	897.000000 M <u>Auto</u> Freq Off
Rese 1 N 2 N 3 4	SW 1.0 P	×	836.9 MHz	28,549 dBm	FUNCTION		6.0 ms (20	001 pts)	897.000000 N <u>Auto</u> N Freq Off
ARes E 1 N 2 N 3 4 5 6 7	SW 1.0 P	×	836.9 MHz	28,549 dBm	FUNCTION 4		6.0 ms (20	001 pts)	897.000000 N <u>Auto</u> N Freq Off
Res E 1 N 2 N 3 4 5 6 7 8 9	SW 1.0 P	×	836.9 MHz	28,549 dBm	FUNCTION		6.0 ms (20	001 pts)	897.000000 N <u>Auto</u> N Freq Off
ARes E 1 N 2 N 3 4 5 6 7	SW 1.0 P	×	836.9 MHz	28,549 dBm	FUNCTION		6.0 ms (20	001 pts)	CF St 897.00000 N <u>Auto</u> N Freq Off 0

Highest Channel

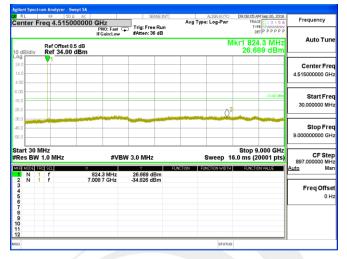
enter Freq 4.5	50 Ω AC 15000000 GHz PN0: Fast 0 IFGain:Low	Trig: Free Run #Atten: 36 dB	Avg Type: Log-Pwr	09:12:54 AM Sep 26, 2016 TRACE 1 2 3 4 5 6 TYPE MMMMMMM DET P P P P P P	Frequency Auto Tune
OdB/div Ref 34	set 8.5 dB J.50 dBm		M	lkr1 849.0 MHz 28.333 dBm	
•g 1 14.5 1.50					Center Fr 4.51500000 Gi
5.5 5.5 5.5				-13.00 dBn	Start Fr 30.000000 M
5.5					Stop Fr 9.000000000 G
tart 30 MHz Res BW 1.0 MH:	z #VB	W 3.0 MHz	Sweep 1	Stop 9.000 GHz 6.0 ms (20001 pts)	CF St 897.000000 M
KR MODE TRC SCL 1 N 1 f 2 N 1 f	× 849.0 MHz 7.932.6 GHz	28.333 dBm -34.898 dBm	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> M
3 4 5 6 7 8 9	1392 0 612	54,000 UBII			Freq Offs 0
0					

Shenzhen STS Test Services Co., Ltd.



GPRS 850 BAND

Lowest Channel



Middle Channel

RL	RF 50	Ω AC	SENSE:INT	ALIGNAUTO	09:09:25 AM Sep 26, 2016	F
enter	Freq 4.5150	000000 GHz PN0: Fast C	Trig: Free Run	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE MWWWWW	Frequency
		IFGain:Low	#Atten: 36 dB		DETPPPPP	Auto Tu
0 dB/div	Ref Offset 8 Ref 34.50	8.5 dB dBm		N	1kr1 836.9 MHz 26.527 dBm	Autoru
4.6	V 1					Center Fr
4.6						4.515000000
50						
50					-13.00 dBn	Start F
i.5						30.000000 M
i.5 —					\Diamond^2	
1.5			and the second division of the second divisio			
1.5						Stop F 9.000000000
						3.000000000
art 30					Stop 9.000 GHz	CFS
	V 1.0 MHz		W 3.0 MHz		6.0 ms (20001 pts)	897.000000
N	TRC SCL	836.9 MHz	26.527 dBm	UNCTION FUNCTION WIDTH	FUNCTION VALUE	Auto
2 N 3	11	7.457 2 GHz	-33.299 dBm			
4						Freq Off
5						
7 B						
8 9 0						
1						
2				STATU		

Highest Channel

RL RF 50.9	AC	SENSE: INT	ALIGNAUTO	09:10:26 AM Sep 26, 2016	
enter Freq 4.5150			Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE DET P P P P P P	Frequency
Ref Offset 8. dB/div Ref 34.50			M	kr1 849.0 MHz 26.284 dBm	Auto Tur
15 1					Center Fre 4.515000000 GH
50					4.515000000 G
50				-13.00 dBn	Start Fre
.5			Q ²		30.000000 M
5					Stop Fre
.5					9.00000000 G
art 30 MHz tes BW 1.0 MHz	#VB	W 3.0 MHz		Stop 9.000 GHz 5.0 ms (20001 pts)	CF Ste 897.000000 Mi
R MODE TRO SCL N 1 f N 1 f	849.0 MHz 6.461 5 GHz	26.284 dBm -33.930 dBm	UNCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> M
	0.4010 012				Freq Offs 0
7 3 9 1					

Shenzhen STS Test Services Co., Ltd.



EDGE 850 BAND

Lowest Channel

Agilent Spectrum Analyzer - Swep	of SA				
RL RF 50 Ω Center Freq 4.515000	AC DOOD GHz	SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr	08:25:07 PM Sep 28, 2016 TRACE 1 2 3 4 5 6	Frequency
Ref Offset 8.5 10 dB/div Ref 34.50 dl	PNO: Fast G IFGain:Low dB	Trig: Free Run #Atten: 36 dB	N	Ikr1 824.3 MHz 24.364 dBm	Auto Tun
24.6 14.5 4.50					Center Fre 4.515000000 GH
-5.5			0 ²	-13.00 dBn	Start Fre 30.000000 MH
45.5 56.5					Stop Fre 9.000000000 GH
Start 30 MHz #Res BW 1.0 MHz #Res IX002 1750 500	#VBV	V 3.0 MHz 24.364 dBm	Sweep 1	Stop 9.000 GHz 6.0 ms (20001 pts) EUNCHIDIN VAUUE	CF Ste 897.000000 MH <u>Auto</u> Ma
2 N 1 f 3 4 5 6 7 8 9 9	6.004 0 GHz	-35.356 dBm			Freq Offs 0 ⊦
8 9 10 11 12					
ISG			STATU	5	

Middle Channel

							m Analyzer -		
Frequency	M Sep 28, 2016	TRAC	ALIGNAUTO I: Log-Pwr	Avg Ty	SENSE: JNT	Ω AC D00000 GHz			Cen
Auto Tun	.9 MHz 18 dBm	kr1 836	M		#Atten: 36 dB		Ref Offset Ref 34.5	//div	10 dE
Center Free 4.515000000 GH							↓1		24.5 14.5 4.50
Start Free 30.000000 MH	-13.00 dBn	²							-5.50 -15.5 -25.5
Stop Fre 9.000000000 GH									-35.5 -45.5 -55.5
CF Stej 897.000000 MH <u>Auto</u> Ma		Stop 9 6.0 ms (2	Sweep 1	INCTION	W 3.0 MHz	#VB	1.0 MHz	30 M BW 1 009 160	#Res
Freq Offse 0 H					-33.562 dBm	7.502 0 GHz	ł	N 1	23456789
			STATUS						10 11 12 MSG

Highest Channel

	4 Sep 28, 2016		ALIGNAUTO		INSE: INT	SE		50 Ω AC	RF 5	RL
6 Frequency	E 1 2 3 4 5 6	TRAC	Log-Pwr	Avg Typ				5000000	req 4.515	nter F
P	TPPPPPP	DE				Trig: Free #Atten: 3	PNO: Fast G			
	0.0 MHz 94 dBm		М						Ref Offset Ref 34.5	dB/div
Center Fr									1	.6
4.515000000 G										.6
	-13.00 dBm									5
30.000000 N			1	²						5
Stop Fr										5
9.000000000 G										5
	.000 GHz 0001 pts)		weep 16		:	/ 3.0 MHz	#VBV		/Hz 1.0 MHz	art 30 es BW
Auto N	IN VALUE	FUNCTIO	CTION WIDTH	ICTION FL	Bm	24.094 d -34.468 d	349.0 MHz 341 2 GHz		RC SCL	N N N
Freq Offe					ы	-34.408 G	941 2 GHZ	5.9	T	N

Shenzhen STS Test Services Co., Ltd.

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 E-mail: sts@stsapp.com



GSM1900 BAND(30M-20G)

Lowest Channel

Center Freq 10.015000000 CHz Production Trig: Free Run Adden: 36 dB Avg Type: Log-Pwr Cell P P P P P 25.726 dBm Trig: Pre- Cell P P P P 25.726 dBm Prequency Cell P P P P P 25.726 dBm 10 dBidiv 26 db Ref Offset 9.5 dB 25.726 dBm Mkr1 1.850 1 GHz 25.726 dBm Auto T 26 db 1		rum Analyz	er - Swept SA								
Ref Offset 9.5 dB Mkr1 1.850 1 GHz Cerl P P P P P Auto T 10 dB/div Ref 3.5.0 dB 25.726 dBm Center 1 10.01500000 50 1 1 10.00000 10.00000 Start 1 40 1 1 10.00000 10.00000 Start 1 0.00000 50 1 1 10.00000 10.00000 Start 1 0.00000 Start 1 0.00000 Start 1 30.0000 Start 1 30.0000 Start 1 30.0000 Start 1 St		req 10	50 Ω AC				Avg		TRA		Frequency
Zit Center I 155	0 dB/div			PNO: Fast C IFGain:Low	#Atten: 36	dB		М	kr1 1.85	0 1 GHz	Auto Tur
4.5	15.6	1									Center Fr 10.015000000 G
Stop F Stop F 200000000 art 30 MHz Stop 20.000 GHz 200000000 art 30 MHz Stop 20.000 GHz Stop 51.3 ms (35001 pts) Res BW 1.0 MHz #VBW 3.0 MHz Sweep 51.3 ms (35001 pts) 197000000 N 1 f 1.850 1 GHz 25.726 dBm Auto 197000000 N 1 f 1.850 1 GHz 25.726 dBm FUNETON BUSICENER RUMETON WORTH RUMETON WORTH Auto N 1 f 1.6465 3 GHz -28.123 dBm Freq OI	1.5						2		3	-13.00 dBm	Start Fi 30.000000 N
Kes BW 1.0 MHz #VBW 3.0 MHz Sweep 51.3 ms (35001 pts) CF 5 1.99700000 RE000 FESSION N f 1.850 1 GHz 25.726 dBm Auto Au	1.5										Stop F 20.000000000 0
N 1 f 1.860 1 GHz 26.726 dBm 26.726 dBm 26.726 dBm 27.926 dBm 27.92	Res BW	1.0 MH		#VB					51.3 ms (35001 pts)	CF St 1.997000000 C Auto M
2	1 N 1 2 N 1 3 N 1 4 5 6 7 8 9 9 0	f f	1	792 3 GHz	25.726 dE -33.196 dE	3m Im	4011014				Freq Off

Middle Channel

							m Analyzer - Swep		
Frequency	M Sep 26, 2016 E 1 2 3 4 5 6	TRAC	ALIGNAUTO : Log-Pwr	Avg T	SENSE:INT	0000 GHz	RF 50 Ω 9q 10.01500		Cer
Auto Tune	0 4 GHz	r1 1.880	Mk		Trig: Free Run #Atten: 36 dB		Ref Offset 9.5 c	B/div	10 d
Center Free 10.015000000 GH									25.6 15.5 5.50
Start Free 30.000000 MH	-13.00 dBm	³			2				-4.50 -14.5 -24.5
Stop Fre 20.000000000 GH									-34.5 -44.5 -54.5
CF Step 1.997000000 GH <u>Auto</u> Ma	.000 GHz 5001 pts)	1.3 ms (3	Sweep 5 менонулоги	UNCTION	V 3.0 MHz	#VB	.0 MHz	MODE TR	#Re
Freq Offse 0 H					-33.174 dBm -28.879 dBm	7.518 8 GHz 17.024 5 GHz	ŕ	N 1	2 3 4 5 6 7 8 9 10 11 12
			STATUS						MSG

Highest Channel

RF	50 Ω AC		SENS	E:INT		ALIGNAUTO		4 Sep 26, 2016	-
er Freq 10.	015000000		Trig: Free F	Run	Avg Type	: Log-Pwr	TVS	E 1 2 3 4 5 6	Frequency
		PNO: Fast C IFGain:Low	#Atten: 36 d	1B			DE	PPPPPP	
	et 9.5 dB .50 dBm					Mk) 0 GHz 33 dBm	Auto Tur
(1									Center Fre
									10.015000000 Gi
								-13.00 dBm	Start Fr
			2				3	a second as	30.000000 M
-	and the second	-	(have been here here here here here here here h						
									Stop Fr 20.000000000 G
									20.000000000
30 MHz BW 1.0 MHz	:	#VB	W 3.0 MHz			Sweep 5	Stop 20 1.3 ms (3	.000 GHz 5001 pts)	CF St
DDE TRC SCL	×		Y	FUNC	TION FU	NCTION WIDTH	FUNCTIO	N VALUE	Auto N
	7.63	10 0 GHz 38 6 GHz	25.533 dBr -30.782 dBr	m					
N 1 f	16.48	85 3 GHz	-28.010 dBr	n					Freq Offs
									0

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 Http://www.stsapp.com
 E-mail: sts@stsapp.com



GPRS1900 BAND(30M-20G)

Lowest Channel

								- Swept SA	n Analyze	ectrun		
Frequency	M Sep 26, 2016 E 1 2 3 4 5 6	TRAC	ALIGNAUTO : Log-Pwr	Avg Typ	INSE: INT			50 R AC	RF 9q 10.0	Fre		a R Cer
Auto Tu	D 1 GHz B1 dBm	r1 1.850	Mk		6 dB	#Atten: 3	PNO: Fast C IFGain:Low	t 9.5 dB 00 dBm	Ref Offs Ref 34		Bidi	10 d
Center Fr 10.015000000 G									1			24.0 14.0
Start Fr 30.000000 M	-13.00 dBm	3				2	C					8.00 16.0 26.0
Stop Fr 20.000000000 G												6.0 6.0 6.0
CF St 1.997000000 G Auto M	.000 GHz 5001 pts)	1.3 ms (3	Sweep 5			V 3.0 MHz	#VB	×	.0 MHz	0 Mi W 1	s B	Re
Auto M Freq Offs 0		PORCH	a low wid in		lBm Bm	23.681 d -33.729 d -28.065 d	850 1 GHz 18 8 GHz 605 3 GHz	1.8 7.5	f f f	1 1	N N N	123456789012
1			STATUS						-	-		9

Middle Channel

		lyzer - Swept SJ								
Center	Freq 1	50 Ω AC	000 GHz		SE:INT	Avg Type	ALIGNAUTO E: Log-Pwr	TRAC	M Sep 26, 2016	Frequency
10 dB/di		Offset 9.5 dB 35.50 dBm	PNO: Fast IFGain:Low	#Atten: 36	dB		Mk	r1 1.88	0 4 GHz	Auto Tune
25.5		33.30 dBi								Center Fred 10.015000000 GH:
-4.50					C	2			-13.00 dBm	Start Free 30.000000 MH
-34.5										Stop Fre 20.000000000 GH
Start 30 #Res B	₩ 1.0 N		#VE	3W 3.0 MHz 23.709 de			Sweep 5	1.3 ms (3	.000 GHz 5001 pts)	CF Stej 1.997000000 GH Auto Ma
2 N 3 N 4 5 6 7	1 f 1 f		1380 4 GHz 11.752 4 GHz 18.003 0 GHz	-33.685 dE -31.037 dE	m					Freq Offse 0 H
8 9 10 11 12 MSG							STATUS			

Highest Channel

	ctrun		lyzer - Swej										
Center	Fre	RF	50 R		SH7		ENSE:INT	Avg		ALIGNAUTO	09:41:28 A TRA	M Sep 26, 2016	Frequency
center		9	0.0150	P	NO: Fast (Gain:Low	Trig: Fre					TYI		
		_			Gain:Low	Provent S				Mk	r1 1 91	0 0 GHz	Auto Tune
10 dB/div			Offset 9.5 35.50 d									74 dBm	
25.5		1											
15.5		ľ											Center Freq 10.015000000 GHz
5.50													10.01500000 GH2
-4.50		+						_					
-14.5						_		_				-13.00 dBm	Start Freq
-24.5		+						A2			3		30.000000 MHz
-34.5			and the second	-	-	-	-	4.00	-	the state of the s			
-44.5		+		-									Stop Freq
-54.5		+				-							20.00000000 GHz
Start 30	M	łz									Stop 20	.000 GHz	
#Res B	W 1	.0 N	1Hz		#VB	W 3.0 MH	!		5	Sweep 5		5001 pts)	CF Step 1.997000000 GHz
MKR MODE	TRC	SCL		×		Y		FUNCTION	FU	ICTION WIDTH	FUNCTI	ON VALUE	<u>Auto</u> Man
1 N 2 N 3 N	1	f		11.912		23.474 0	IBm						
3 N	1	f		16.485	3 GHz	-28.255 c	IBm						Freq Offset
5													0 Hz
4 5 6 7 8 9													
9													
11													
12													
MSG										STATU	5		

Shenzhen STS Test Services Co., Ltd.

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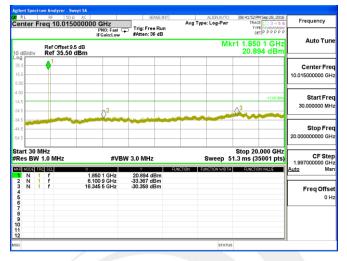
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Report No.: STS1609122F01

EDGE 1900 BAND(30M-20G)

Lowest Channel



Middle Channel

	Ω AC	SENSE:INT	ALIGNAUTO	08:40:05 PM Sep 28, 2016	Frequency
enter Freq 10.015	5000000 GHz PNO: Fast C IEGain:Low	Trig: Free Run #Atten: 36 dB	Avg Type: Log-Pwr	TYPE DET P P P P P	Frequency
Ref Offset 9 0 dB/div Ref 34.00			Mk	r1 1.880 4 GHz 21.080 dBm	Auto Tu
•g 1 44.0 44.0					Center Fr 10.015000000 G
6.0	2 ²			-13.00 dbm	Start Fi 30.000000 N
6.0 6.0					Stop Fi 20.000000000 0
tart 30 MHz Res BW 1.0 MHz		W 3.0 MHz		Stop 20.000 GHz 1.3 ms (35001 pts)	CF St 1.997000000 0
XE MODE TRO SCL 1 N 1 f 2 N 1 f 3 N 1 f 4	1.880 4 GHz 6.021 0 GHz 16.485 3 GHz	21.080 dBm -33.842 dBm -27.997 dBm	FUNCTION WIDTH	FUNCTION VALUE	Auto Freq Off
4 5 6 7 8 9 0 1					0

Highest Channel

RL	RF 50	Ω AC		SEN	SE:INT		ALIGNAUTO	08:40:587	M Sep 28, 2016	-
enter Fr	eq 10.015	F	GHZ NO: Fast G Gain:Low	Trig: Free #Atten: 36		Avg Typ	e: Log-Pwr	TRA		Frequency
dB/div	Ref Offset 9 Ref 35.50						Mk		0 0 GHz 79 dBm	Auto Tun
5.5										Center Fre
5.6										10.015000000 GH
.50										
4.5	-							.3	-13.00 dBn	Start Fre 30.000000 MH
4.5						ϕ^2		()	-	
4.5										Stop Fre
4.5	_					-				20.00000000 GH
tart 30 M Res BW 1			#VB\	V 3.0 MHz			Sweep 5	Stop 20 1.3 ms (3).000 GHz 35001 pts)	CF Ste
(re mode trad	f		0 GHz	21.079 dB	m	NCTION FI	INCTION WIDTH	FUNCT	ON VALUE	Auto Ma
2 N 1 3 N 1	f		0 GHz 4 GHz	-33.029 dB -28.965 dB	m					Freq Offs
4 5										01
6 7 8										
8 9 0										
1										

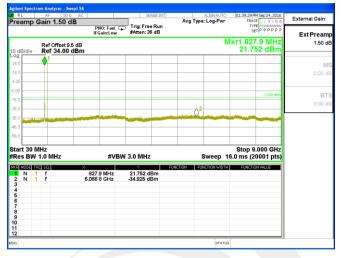
Shenzhen STS Test Services Co., Ltd.



Report No.: STS1609122F01

WCDMA Band V (RMC 12.2Kbps)

Lowest Channel



Middle Channel

	wept SA Ω AC	SENSE:INT	ALIGNAUTO	01:19:50 PM Sep 24, 2016	
enter Freq 4.5150			Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE MUNICIPAL P P P P P	Frequency
Ref Offset 9 0 dB/div Ref 35.50	9.5 dB	Pricent of dis	N	lkr1 835.5 MHz 22.756 dBm	Auto Tu
•g 15.5 15.5					Center Fi 4.515000000 G
50 4.5					Start F 30.000000 M
4.5					Stop F 9.000000000
tart 30 MHz Res BW 1.0 MHz	#VB	W 3.0 MHz	Sweep 1	Stop 9.000 GHz 6.0 ms (20001 pts)	CF Si 897.000000 M Auto
1 N 1 f 2 N 1 f 3 4 5 5 6 6 7 7 8 9 9 0 11	835.5 MHz 7.089 4 GHz	22.756 dBm -32.689 dBm			Freq Off C

Highest Channel

RL RF 50 G	2 AC	SENSE:INT	ALIGNAUTO	01:15:17 PM Sep 24, 2016	
nter Freq 4.5150			Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE DET P P P P P P	Frequency
Ref Offset 9. dB/div Ref 35.50			М	kr1 845.8 MHz 22.938 dBm	Auto Tur
g1					Center Fre
.6					4.515000000 G
0				-13.00 dBm	Start Fr
5			A2		30.000000 M
5					Oton En
5					Stop Fr 9.000000000 G
art 30 MHz tes BW 1.0 MHz	#VBI	W 3.0 MHz	Sweep 16	Stop 9.000 GHz 5.0 ms (20001 pts)	CF Ste 897.000000 M
MODE TRE SOU N 1 f N 1 f	845.8 MHz 6.963 8 GHz	22.938 dBm -34.111 dBm	INCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> M
	6.963 8 GHZ	-34.111 dBm			Freq Offs 01

Shenzhen STS Test Services Co., Ltd.



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

Lowest Channel

RL	RF	50 Ω AC		SENSE: INT		ALIGNAUTO	02:06:37 Pf	M Sep 24, 2016	-
enter	Freq '	10.01500000	PNO: Fast C IFGain:Low	Trig: Free Run #Atten: 36 dB	Avg T	ype: Log-Pwr	TRAC	E 1 2 3 4 5 6	Frequency
0 dB/di		Offset 9.8 dB 34.30 dBm				Mk	r1 1.853 20.91	35 GHz 18 dBm	Auto Tu
og 24.3									Center Fr
4.3									10.015000000 G
.30									
5.7			_		_		∧3	-13.00 dBm	Start Fr 30.000000 N
5.7				2			X.	-	
5.7									Stop Fr
5.7									20.00000000 0
	0 MHz W 1.0 M	ИНz	#VB	W 3.0 MHz		Sweep 5		.000 GHz 5001 pts)	CF St
I MODE	e tric scl		853 5 GHz	20.918 dBm	FUNCTION	FUNCTION WIDTH	FUNCTIO	IN VALUE	<u>Auto</u> M
2 N 3 N	i f i f	7.3	339 0 GHz 605 1 GHz	-36.972 dBm -27.632 dBm					Freq Off
5 6 7									0
/ 8 9									
0									
2									

Middle Channel

enter F		50 R AC 15000000 GHz	SENSEJINT	Avg Typ	ALIGNAUTO e: Log-Pwr	TRAC	M Sep 24, 2016	Frequency
0 dB/div	Ref Offse Ref 34.	PNO: Fast (IFGain:Low et 9.8 dB 30 dBm	Trig: Free Run #Atten: 36 dB		Mk	r1 1.881	5 GHz 9 dBm	Auto Tur
.og 24.3 14.3 4.30	↓ ¹							Center Fr 10.015000000 G
5.7 5.7 5.7				²		3	-13.00 dBm	Start Fr 30.000000 M
6.7 6.7 6.7								Stop Fr 20.000000000 G
tart 30 M Res BW	1.0 MHz	#VB	W 3.0 MHz 20.949 dBm		Sweep 5	1.3 ms (3		CF St 1.997000000 G <u>Auto</u> N
2 N 1 3 N 1 4 5 6 7	f f	11.872 2 GHz 16.185 7 GHz	-34.464 dBm -31.718 dBm					Freq Offs 0
8 9 0								

Highest Channel

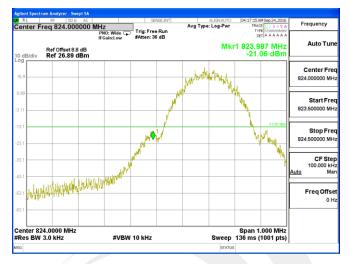
	RF 5	i0 Ω AC		SENS	SE:INT		ALIGNAUTO	02:09:23	M Sep 24, 2016	
enter F	req 10.01	15000000	GHz PNO: Fast C IFGain:Low	Trig: Free I #Atten: 36	Run dB	Avg T	/pe: Log-Pwr	TRA		Frequency
dB/div	Ref Offset Ref 34.3						MI		6 6 GHz 42 dBm	Auto Tur
4.3	• ¹									Center Fre
4.3										10.015000000 G
70									-13.00 dBm	Start Fr
5.7				A2				3		30.000000 M
5.7				Q-		-		~~~		
5.7										Stop Fre 20.000000000 G
art 30 I Res BW	MHz 1.0 MHz		#VB	W 3.0 MHz			Sweep 5).000 GHz 35001 pts)	CF Sto 1.997000000 G
R MODE 1	ric scl 1 f		06 6 GHz	Y 20.742 dB	m	ICTION	FUNCTION WIDTH	FUNCT	ON VALUE	Auto M
2 N 3 N 4 5	1 f		78 1 GHz 35 4 GHz	-34.452 dB -29.580 dB						Freq Offs 0
7 B Đ										
0										

Shenzhen STS Test Services Co., Ltd.



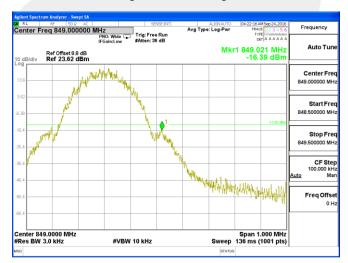
GSM 850

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.

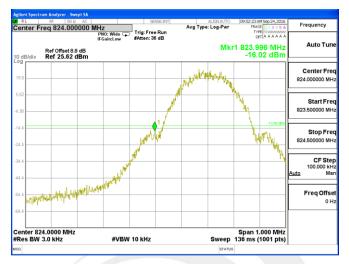
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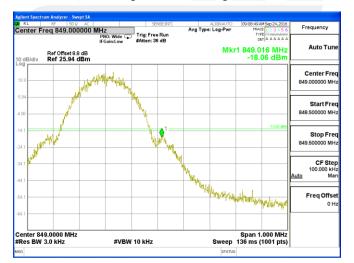
GPRS 850

Lowest Band Edge



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

Highest Band Edge



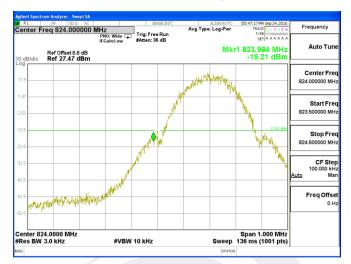
Note:Offset=Cable loss(8.5)+10log(3.2/3)=8.5+0.3=8.8 dB

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



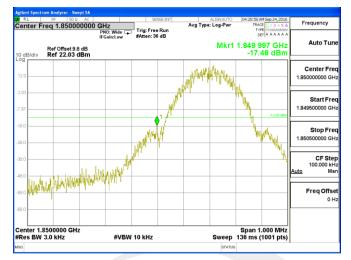
Note:Offset=Cable loss(8.5)+10log(3.2/3)=8.5+0.3=8.8 dB

Shenzhen STS Test Services Co., Ltd.



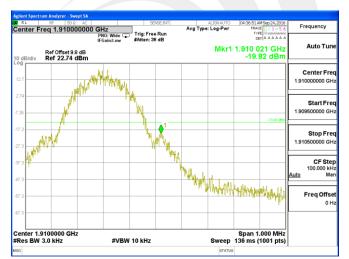
GSM 1900

Lowest Band Edge



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

Highest Band Edge



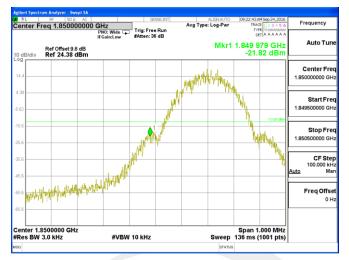
Note:Offset=Cable loss(9.5)+10log(3.2/3)=9.5+0.3=9.8 dB

Shenzhen STS Test Services Co., Ltd.



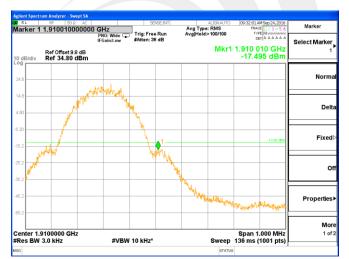
GPRS 1900

Lowest Band Edge



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

Highest Band Edge



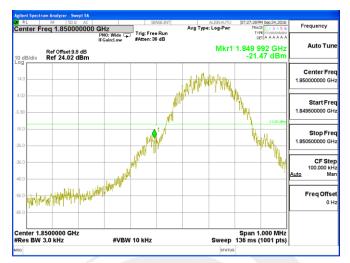
Note:Offset=Cable loss(9.5)+10log(3.2/3)=9.5+0.3=9.8 dB

Shenzhen STS Test Services Co., Ltd.



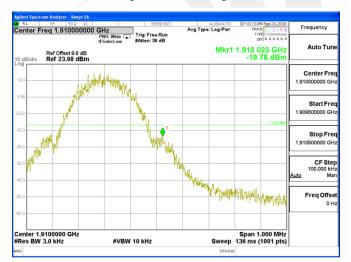
EDGE 1900

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(9.405)+10log(51/41)=9.405+0.095=9.5 dB



Highest Band Edge

Note:Offset=Cable loss(9.405)+10log(51/41)=9.405+0.095=9.5 dB

Shenzhen STS Test Services Co., Ltd.



WCDMA Band IIRMC 12.2Kbps

Lowest Band Edge



Note:Offset=Cable loss(9.705)+10log(51/41)=9.705+0.095=9.8 dB



Note:Offset=Cable loss(9.705)+10log(51/41)=9.705+0.095=9.8 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 W	orst Test R	esults Ch	annel 128/	824.2 MHz					
	S G.Lev			PMea	Limit	Margin	Deleritu			
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dBm)	Polarity			
1648.40	-41.18	9.40	4.75	-36.53	-13.00	-23.53	Н			
2472.36	-40.03	10.60	8.39	-37.82	-13.00	-24.82	Н			
3296.57	-31.30	12.00	11.79	-31.09	-13.00	-18.09	Н			
1648.17	-43.94	9.40	4.75	-39.29	-13.00	-26.29	V			
2472.28	-44.43	10.60	8.39	-42.22	-13.00	-29.22	V			
3296.60	-42.65	12.00	11.79	-42.44	-13.00	-29.44	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)	Ащаві		(dBm)	(dBm)	(dBm)	Polarity			
1672.79	-40.98	9.50	4.76	-36.24	-13.00	-23.24	Н			
2509.46	-39.64	10.70	8.40	-37.34	-13.00	-24.34	Н			
3346.34	-32.20	12.20	11.80	-31.80	-13.00	-18.80	Н			
1672.80	-44.23	9.40	4.75	-39.58	-13.00	-26.58	V			
2509.67	-44.68	10.60	8.39	-42.47	-13.00	-29.47	V			
3346.19	-42.99	12.20	11.82	-42.61	-13.00	-29.61	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			
Frequency(MHZ)	(dBm)	Ani(ubi)	L055	(dBm)	(dBm)	(dBm)	Polarity			
1697.39	-41.20	9.60	4.77	-36.37	-13.00	-23.37	Н			
2546.34	-39.65	10.80	8.50	-37.35	-13.00	-24.35	Н			
3395.04	-31.73	12.50	11.90	-31.13	-13.00	-18.13	Н			
1697.54	-43.38	9.60	4.77	-38.55	-13.00	-25.55	V			
2546.18	-43.99	10.80	8.50	-41.69	-13.00	-28.69	V			
3395.30	-42.52	12.50	11.90	-41.92	-13.00	-28.92	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.





GPRS 850: (30-9000)MHz

GPRS 850: (30-9000)MHz										
The Worst Test Results Channel 128/824.2 MHz										
	S G.Lev	A pt(dDi)		PMea	Limit	Margin	Delority			
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dBm)	Polarity			
1648.38	-41.61	9.40	4.75	-36.96	-13.00	-23.96	Н			
2472.56	-40.34	10.60	8.39	-38.13	-13.00	-25.13	Н			
3296.50	-31.79	12.00	11.79	-31.58	-13.00	-18.58	Н			
1648.50	-44.15	9.40	4.75	-39.50	-13.00	-26.50	V			
2472.41	-45.17	10.60	8.39	-42.96	-13.00	-29.96	V			
3296.68	-43.17	12.00	11.79	-42.96	-13.00	-29.96	V			
The Worst Test Results Channel 190/836.6 MHz										
Frequency(MHz)	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity			
Trequency(imrz)	(dBm)	/ in(abi)		(dBm)	(dBm)	(dBm)	Folanty			
1673.18	-41.11	9.50	4.76	-36.37	-13.00	-23.37	Н			
2509.61	-40.42	10.70	8.40	-38.12	-13.00	-25.12	Н			
3346.14	-31.45	12.20	11.80	-31.05	-13.00	-18.05	Н			
1673.09	-44.15	9.40	4.75	-39.50	-13.00	-26.50	V			
2509.91	-45.02	10.60	8.39	-42.81	-13.00	-29.81	V			
3346.34	-42.63	12.20	11.82	-42.25	-13.00	-29.25	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			
r requency(imitz)	(dBm)	Ani(ubi)	L055	(dBm)	(dBm)	(dBm)	Folanty			
1697.19	-41.48	9.60	4.77	-36.65	-13.00	-23.65	Н			
2546.18	-39.17	10.80	8.50	-36.87	-13.00	-23.87	Н			
3395.03	-31.60	12.50	11.90	-31.00	-13.00	-18.00	Н			
1697.49	-43.45	9.60	4.77	-38.62	-13.00	-25.62	V			
2546.34	-44.07	10.80	8.50	-41.77	-13.00	-28.77	V			
3395.06	-43.54	12.50	11.90	-42.94	-13.00	-29.94	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 has.



Report No.: STS1609122F01

EDGE 850: (30-9000)MHz

EGPRS 850: (30-9000)MHz										
	The W	orst Test R	esults Ch	annel 128/	824.2 MHz					
Frequency(MHz)	S G.Lev	Ant(dDi)		PMea	Limit	Margin	Delority			
Frequency(MHZ)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dBm)	Polarity			
1648.47	-40.35	9.40	4.75	-35.70	-13.00	-22.70	Н			
2472.71	-40.37	10.60	8.39	-38.16	-13.00	-25.16	Н			
3296.89	-31.05	12.00	11.79	-30.84	-13.00	-17.84	Н			
1648.31	-44.61	9.40	4.75	-39.96	-13.00	-26.96	V			
2472.69	-45.26	10.60	8.39	-43.05	-13.00	-30.05	V			
3296.87	-43.24	12.00	11.79	-43.03	-13.00	-30.03	V			
The Worst Test Results Channel 190/836.6 MHz										
	S G.Lev			PMea	Limit	Margin	Delerity			
Frequency(MHz)	(dBm)	Ant(dBi)	nt(dBi) Loss -	(dBm)	(dBm)	(dBm)	Polarity			
1673.26	-40.69	9.50	4.76	-35.95	-13.00	-22.95	Н			
2509.80	-39.97	10.70	8.40	-37.67	-13.00	-24.67	Н			
3346.43	-31.78	12.20	11.80	-31.38	-13.00	-18.38	Н			
1672.93	-43.87	9.40	4.75	-39.22	-13.00	-26.22	V			
2509.52	-45.36	10.60	8.39	-43.15	-13.00	-30.15	V			
3346.14	-43.42	12.20	11.82	-43.04	-13.00	-30.04	V			
	The W	orst Test R	esults Ch	annel 251/	848.8 MHz					
	S G.Lev	Ant(dBi)	1 000	PMea	Limit	Margin	Delority			
Frequency(MHz)	(dBm)	Апцаві)	Loss	(dBm)	(dBm)	(dBm)	Polarity			
1697.62	-41.37	9.60	4.77	-36.54	-13.00	-23.54	Н			
2546.35	-39.75	10.80	8.50	-37.45	-13.00	-24.45	Н			
3395.03	-32.00	12.50	11.90	-31.40	-13.00	-18.40	Н			
1697.38	-43.88	9.60	4.77	-39.05	-13.00	-26.05	V			
2546.55	-44.56	10.80	8.50	-42.26	-13.00	-29.26	V			
3395.27	-43.46	12.50	11.90	-42.86	-13.00	-29.86	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.: STS1609122F01

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				
3700.24	-34.33	12.60	12.93	-34.66	-13.00	-21.66	Н				
5550.57	-34.25	13.10	17.11	-38.26	-13.00	-25.26	Н				
7400.57	-33.13	11.50	22.20	-43.83	-13.00	-30.83	Н				
3700.51	-35.08	12.60	12.93	-35.41	-13.00	-22.41	V				
5550.69	-35.13	13.10	17.11	-39.14	-13.00	-26.14	V				
7400.51	-33.02	11.50	22.20	-43.72	-13.00	-30.72	V				
The Worst Test Results for Channel 661/1880.0MHz											
Frequency(MHz)	S G.Lev	Ant(dBi)	dBi) Loss -	PMea	Limit	Margin	Polority				
	(dBm)			(dBm)	(dBm)	(dBm)	Polarity				
3760.12	-34.03	12.60	12.93	-34.36	-13.00	-21.36	Н				
5639.82	-34.14	13.10	17.11	-38.15	-13.00	-25.15	Н				
7520.09	-32.64	11.50	22.20	-43.34	-13.00	-30.34	Н				
3760.09	-35.22	12.60	12.93	-35.55	-13.00	-22.55	V				
5639.96	-34.81	13.10	17.11	-38.82	-13.00	-25.82	V				
7520.15	-31.72	11.50	22.20	-42.42	-13.00	-29.42	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				
3819.66	-33.72	12.60	12.93	-34.05	-13.00	-21.05	Н				
5729.11	-34.70	13.10	17.11	-38.71	-13.00	-25.71	Н				
7639.02	-32.91	11.50	22.20	-43.61	-13.00	-30.61	Н				
3819.53	-35.22	12.60	12.93	-35.55	-13.00	-22.55	V				
5729.10	-33.95	13.10	17.11	-37.96	-13.00	-24.96	V				
7639.09	-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.: STS1609122F01

GPRS 1900: (30-20000)MHz

GPRS1900: (30-20000)MHz										
	The Wor	st Test Res	sults for C	hannel 512	2/1850.2MH	Z				
	S G.Lev	Ant(dBi)		PMea	Limit	Margin	Delerity			
Frequency(MHz)	(dBm)	Апциы)	Loss	(dBm)	(dBm)	(dBm)	Polarity			
3700.49	-34.61	12.60	12.93	-34.94	-13.00	-21.94	Н			
5550.53	-34.47	13.10	17.11	-38.48	-13.00	-25.48	Н			
7400.67	-33.18	11.50	22.20	-43.88	-13.00	-30.88	Н			
3700.51	-35.76	12.60	12.93	-36.09	-13.00	-23.09	V			
5550.25	-34.30	13.10	17.11	-38.31	-13.00	-25.31	V			
7400.81	-32.65	11.50	22.20	-43.35	-13.00	-30.35	V			
The Worst Test Results for Channel 661/1880.0MHz										
Frequency(MHz)	S G.Lev			PMea	Limit	Margin	Delerity			
	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dBm)	Polarity			
3759.89	-33.80	12.60	12.93	-34.13	-13.00	-21.13	Н			
5640.04	-34.86	13.10	17.11	-38.87	-13.00	-25.87	Н			
7519.95	-32.49	11.50	22.20	-43.19	-13.00	-30.19	Н			
3759.93	-35.29	12.60	12.93	-35.62	-13.00	-22.62	V			
5640.00	-34.62	13.10	17.11	-38.63	-13.00	-25.63	V			
7520.17	-33.07	11.50	22.20	-43.77	-13.00	-30.77	V			
	The Wor	st Test Res	sults for C	hannel 810)/1909.8MH	z				
	S G.Lev	Ant(dBi)		PMea	Limit	Margin	Delority			
Frequency(MHz)	(dBm)	Апциы)	Loss	(dBm)	(dBm)	(dBm)	Polarity			
3819.66	-34.72	12.60	12.93	-35.05	-13.00	-22.05	Н			
5729.47	-35.20	13.10	17.11	-39.21	-13.00	-26.21	Н			
7639.06	-32.53	11.50	22.20	-43.23	-13.00	-30.23	Н			
3819.74	-35.58	12.60	12.93	-35.91	-13.00	-22.91	V			
5729.07	-34.32	13.10	17.11	-38.33	-13.00	-25.33	V			
7638.92	-31.86	11.50	22.20	-42.56	-13.00	-29.56	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.: STS1609122F01

EDGE 1900: (30-20000)MHz

	EGPRS 1900: (30-20000)MHz										
	The Wor	st Test Res	sults for C	hannel 512	2/1850.2MH	Z					
	S G.Lev	Ant(dDi)		PMea	Limit	Margin	Delerity				
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dBm)	Polarity				
3700.42	-33.83	12.60	12.93	-34.16	-13.00	-21.16	Н				
5550.34	-34.35	13.10	17.11	-38.36	-13.00	-25.36	Н				
7400.92	-32.20	11.50	22.20	-42.90	-13.00	-29.90	Н				
3700.51	-34.89	12.60	12.93	-35.22	-13.00	-22.22	V				
5550.45	-34.20	13.10	17.11	-38.21	-13.00	-25.21	V				
7400.89	-32.08	11.50	22.20	-42.78	-13.00	-29.78	V				
The Worst Test Results for Channel 661/1880.0MHz											
Frequency(MHz)	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Delerity				
	(dBm)		L033	(dBm)	(dBm)	(dBm)	Polarity				
3759.92	-33.82	12.60	12.93	-34.15	-13.00	-21.15	Н				
5640.05	-34.37	13.10	17.11	-38.38	-13.00	-25.38	Н				
7519.81	-32.82	11.50	22.20	-43.52	-13.00	-30.52	Н				
3760.01	-35.01	12.60	12.93	-35.34	-13.00	-22.34	V				
5640.32	-33.78	13.10	17.11	-37.79	-13.00	-24.79	V				
7519.86	-31.83	11.50	22.20	-42.53	-13.00	-29.53	V				
	The Wor	st Test Res	sults for C	hannel 810)/1909.8MH	z					
Frequency(MHz)	S G.Lev	A pt(dDi)		PMea	Limit	Margin	Delority				
Frequency(MHZ)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dBm)	Polarity				
3819.31	-33.91	12.60	12.93	-34.24	-13.00	-21.24	Н				
5729.45	-34.31	13.10	17.11	-38.32	-13.00	-25.32	Н				
7639.00	-33.45	11.50	22.20	-44.15	-13.00	-31.15	Н				
3819.67	-35.40	12.60	12.93	-35.73	-13.00	-22.73	V				
5729.41	-35.05	13.10	17.11	-39.06	-13.00	-26.06	V				
7639.18	-33.05	11.50	22.20	-43.75	-13.00	-30.75	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.: STS1609122F01

UMTS band V(30-9000)MHz

	WCDMA Band V: (30-9000)MHz										
	The v	vost testre	sults chan	nel 4132/8	26.4MHz						
	S G.Lev	Apt(dDi)		PMea	Limit	Margin	Delarity				
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dBm)	Polarity				
1652.44	-41.51	9.40	4.75	-36.86	-13.00	-23.86	Н				
2479.33	-40.60	10.60	8.39	-38.39	-13.00	-25.39	Н				
3305.49	-32.13	12.00	11.79	-31.92	-13.00	-18.92	Н				
1652.12	-44.45	9.40	4.75	-39.80	-13.00	-26.80	V				
2479.30	-44.18	10.60	8.39	-41.97	-13.00	-28.97	V				
3305.52	-42.81	12.00	11.79	-42.60	-13.00	-29.60	V				
The Worst Test Results Channel 4183/836.6MHz											
Frequency(MHz)	S G.Lev	Ant(dDi)		PMea	Limit	Margin	Delerity				
	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dBm)	Polarity				
1672.93	-40.85	9.50	4.76	-36.11	-13.00	-23.11	Н				
2509.70	-40.37	10.70	8.40	-38.07	-13.00	-25.07	Н				
3346.38	-31.66	12.20	11.80	-31.26	-13.00	-18.26	Н				
1673.19	-43.67	9.40	4.75	-39.02	-13.00	-26.02	V				
2509.60	-44.36	10.60	8.39	-42.15	-13.00	-29.15	V				
3345.96	-43.36	12.20	11.82	-42.98	-13.00	-29.98	V				
	The Wo	orst Test R	esults Cha	annel 4233	/846.6MHz						
	S G.Lev	Apt(dDi)		PMea	Limit	Margin	Delarity				
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dBm)	Polarity				
1693.34	-41.25	9.60	4.77	-36.42	-13.00	-23.42	Н				
2539.07	-39.68	10.80	8.50	-37.38	-13.00	-24.38	Н				
3385.99	-31.15	12.50	11.90	-30.55	-13.00	-17.55	Н				
1693.66	-43.74	9.60	4.77	-38.91	-13.00	-25.91	V				
2539.31	-44.93	10.80	8.50	-42.63	-13.00	-29.63	V				
3386.28	-43.72	12.50	11.90	-43.12	-13.00	-30.12	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.



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UMTS band II(30-20000)MHz

HSDPA Band II: (30-20000)MHz										
	The Wors	st Test Res	ults for Cł	nannel 926	2/1852.4MH	łz				
	S G.Lev			PMea	Limit	Margin	Deleritu			
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	(dBm)	(dBm)	(dBm)	Polarity			
3704.36	-34.47	12.60	12.93	-34.80	-13.00	-21.80	Н			
5557.66	-34.48	13.10	17.11	-38.49	-13.00	-25.49	Н			
7409.71	-33.50	11.50	22.20	-44.20	-13.00	-31.20	Н			
3704.47	-34.54	12.60	12.93	-34.87	-13.00	-21.87	V			
5557.24	-34.27	13.10	17.11	-38.28	-13.00	-25.28	V			
7409.59	-32.02	11.50	22.20	-42.72	-13.00	-29.72	V			
The Worst Test Results for Channel 9400/1880MHz										
Frequency(MHz)	S G.Lev	Apt(dDi)	dBi) Loss -	PMea	Limit	Margin	Delority			
	(dBm)	Ant(dBi)		(dBm)	(dBm)	(dBm)	Polarity			
3760.09	-33.46	12.60	12.93	-33.79	-13.00	-20.79	Н			
5640.22	-35.40	13.10	17.11	-39.41	-13.00	-26.41	н			
7520.06	-32.66	11.50	22.20	-43.36	-13.00	-30.36	Н			
3760.05	-34.86	12.60	12.93	-35.19	-13.00	-22.19	V			
5639.89	-33.99	13.10	17.11	-38.00	-13.00	-25.00	V			
7520.15	-32.38	11.50	22.20	-43.08	-13.00	-30.08	V			
	The Wors	st Test Res	ults for Ch	nannel 953	8/1907.6MH	lz				
Frequency(MHz)	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity			
Frequency(MHZ)	(dBm)	Ani(ubi)	L055	(dBm)	(dBm)	(dBm)	Folanty			
3815.40	-33.92	12.60	12.93	-34.25	-13.00	-21.25	Н			
5722.06	-34.85	13.10	17.11	-38.86	-13.00	-25.86	Н			
7630.10	-33.07	11.50	22.20	-43.77	-13.00	-30.77	Н			
3815.45	-35.48	12.60	12.93	-35.81	-13.00	-22.81	V			
5722.39	-33.86	13.10	17.11	-37.87	-13.00	-24.87	V			
7630.27	-32.17	11.50	22.20	-42.87	-13.00	-29.87	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



