

RADIO TEST REPORT

Report No: STS1606043F01

Issued for

COMMERCIAL LINK INTERNATIONAL S.A.S

AV.suba No. 115-58 Centro Ilarco torre A oficina 703 BOGOTA Colombia

Product Name:	Smart phone
Brand Name:	MULTITECH, GLOBE
Model Name:	MT-SMP454G
Series Model:	MT-MOB454G,GB-SP454G,K43FM
FCC ID:	2AGT8-MT454G
Test Standard:	FCC Part 22H and 24E



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TEST RESULT CERTIFICATION

Applicant's name:	COMMERCIAL LINK INTERNATIONAL S.A.S
Address:	AV.suba No. 115-58 Centro llarco torre A oficina 703 BOGOTA Colombia
Manufacture's Name	Shenzhen Vastking Electronic Co.,Ltd
Address:	2/F,Building 6,Zhengzhong Industrial Park,Qiaotou community, Fuyong,Baoan,Shenzhen,China
Product name:	Smart phone
Brand name:	MULTITECH,GLOBE
Model and/or type reference:	MT-SMP454G
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 07 June. 2016~14 June. 2016

Date of Issue 15 June. 2016

Test Result..... Pass

Testing Engineer :	Burning
	(Jin Ming)
Technical Manager :	APPROVAL S
	(Vita Li)
Authorized Signatory :	Boney Yoney
	(Povov Vong)

(Bovey Yang)

Shenzhen STS Test Services Co., Ltd.

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Revision History

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	15 June. 2016	STS1606043F01	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. \circ

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:	V01
Software version:	K43FM_V1.0
FCC ID:	2AGT8-MT454G
	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
Rx Frequency	1900: 1930.2 MHz ~ 1989.8 MHz
TXTTEQUEICy	WCDMA:
	Band V: 871.4 MHz ~ 891.6 MHz
	Band II: 1932.4 MHz ~ 1987.6 MHz
Max RF Output Power:	GSM850:32.68dBm,PCS1900:28.58dBm GPRS850:32.57dBm,GPRS1900:28.44dBm EDGE850:32.41dBm,EDGE1900:28.31dBm WCDMABand V:20.64dBm,WCDMA Band II:20.33dBm
Type of Emission:	GSM(850):326KGXW: GSM(1900):320KGXW GPRS(850):320KGXW: GPRS(1900):321KGXW EDGE(850):322KG7W; EDGE(1900):319KG7W WCDMA850:4M86F9W WCDMA1900:4M88F9W
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
Astronomic	GSM 850:0.39dBi ,PCS 1900:1.48dBi
Antenna gain:	WCDMA 850:0.39dBi, WCDMA1900:1.51dBi
Power Supply:	DC 3.8V by battery
Battery parameter:	Capacitance: 1800mAh, Rated Voltage: 3.8V
GPRS/EDGE Class	Multi-Class12
Extreme Vol. Limits:	DC3.5 V to 4.35 V (Nominal DC3.8V)
Extreme Temp. Tolerance	-20℃ to +45℃
	4.35V and Low Voltage 3.5V was declared by manufacturer, The prmally 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 8 LINK	GSM LINK GPRS/EDGE CLASS 8 LINK	
GSM 1900	GSM LINK GPRS/EDGE CLASS 8 LINK	GSM LINK GPRS/EDGE CLASS 8 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
Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-1343	2016.03.06	2017.03.05
Horn Antenna	Schwarzbeck	BBHA 9170	9170-0741	2016.03.06	2017.03.05
MXA SIGNAL Analyzer	Agilent	N9020A	MY49100060	2015.10.25	2016.10.24
Bilog Antenna	Sunol Sciences	JB3	A110714	2015.09.03	2016.09.02
Horn-Antenna	Schwarzbeck	BBHA9120D	9120D-1266	2016.03.06	2017.03.05
Horn Antenna	Schwarzbeck	BBHA 9170	9170-0741	2016.03.06	2017.03.05
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

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

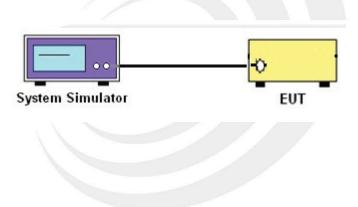
Test overview

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.

<u>Test setup</u>





5.2 PEAK TO AVERAGE RATIO

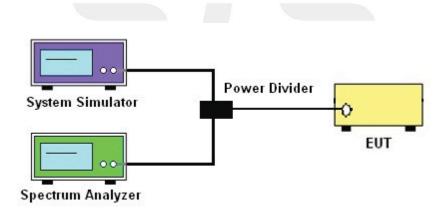
TEST OVERVIEW

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





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.

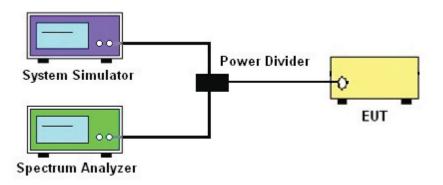
All modes of operation were investigated and the worst case configuration results are reported in this section.

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

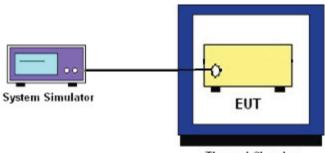
1. The testing follows FCC KDB 971168 D01 Section 9.0.

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.

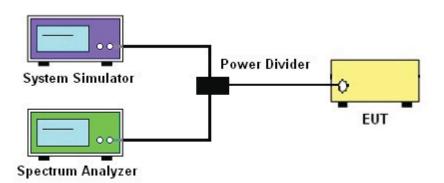
7. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

= 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.

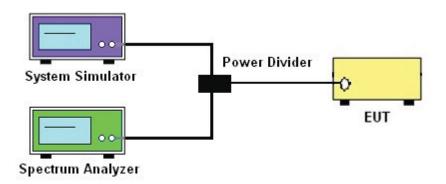
6.The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

= 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

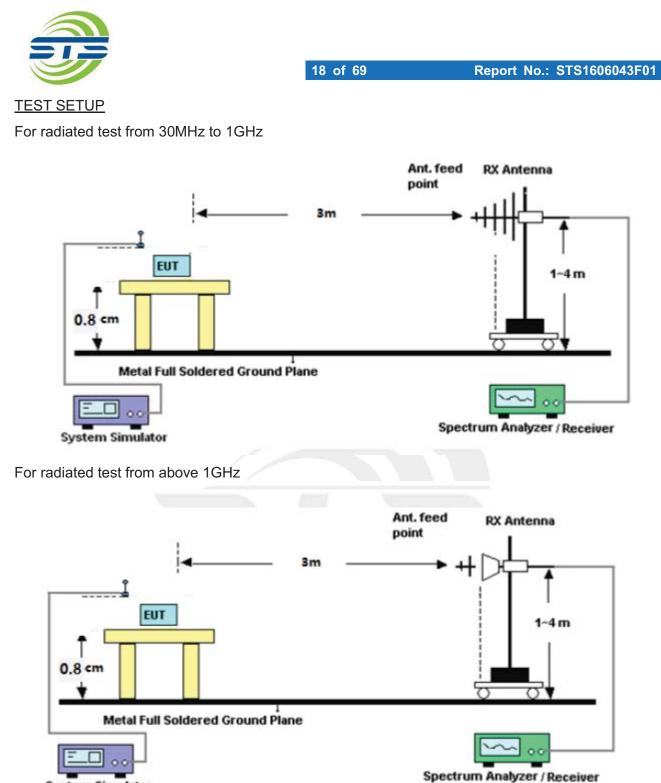
Radiated spurious emissions measurements are performed using the substitution method described inANSI/TIA-603-D-2010 with the EUT transmitting into an integral antenna. Measurements on signalsoperating below 1GHz are performed using horizontally and vertically polarized tuned dipole antennas. Measurements 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



System Simulator



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APPENDIX ATESTRESULT A1CONDUCTED OUTPUT POWER

GSM 850:

Mode	Frequency (MHz)	AVG Power
GSM850	824.2	32.68
	836.6	32.61
	848.8	32.56
GPRS850	824.2	32.57
	836.6	32.50
	848.8	32.45
EDGE850 (1 Slot)	824.2	32.41
	836.6	32.36
	848.8	32.32

PCS 1900:

Mode	Frequency (MHz)	AVG Power
	1850.2	28.39
GSM1900	1880	28.39
	1909.8	28.58
	1850.2	28.30
GPRS1900	1880	28.28
	1909.8	28.44
	1850.2	28.20
EDGE1900 (1 Slot)	1880	28.18
	1909.8	28.31

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UMTS BAND V

Mode	Frequency(MHz)	AVG Power
	826.4	20.32
WCDMA 850 RMC	836.6	20.64
TANG	846.6	20.19
	826.4	19.35
HSDPA Subtest 1	836.6	19.67
Oublest 1	846.6	19.22
	826.4	18.44
HSDPA Subtest 2	836.6	18.74
Sublest 2	846.6	18.36
	826.4	17.94
HSDPA Subtest 3	836.6	18.32
Sublest 5	846.6	17.88
10000	826.4	17.33
HSDPA Subtest 4	836.6	17.65
Sublest 4	846.6	17.26
	826.4	18.86
HSUPA Subtest 1	836.6	19.26
Sublest	846.6	18.81
	826.4	17.99
HSUPA Subtest 2	836.6	18.33
Sublest 2	846.6	18.01
	826.4	17.52
HSUPA Subtest 3	836.6	17.87
Sublest 3	846.6	17.58
	826.4	16.97
HSUPA Subtest 4	836.6	17.35
Sublest 4	846.6	16.98
	826.4	16.31
HSUPA	836.6	16.72
Subtest 5	846.6	16.31

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UMTS BAND II

Mode	Frequency(MHz)	AVG Power
	1852.4	20.23
WCDMA 1900 RMC	1880	20.33
RIVIC	1907.6	20.26
	1852.4	19.28
HSDPA Subtest 1	1880	19.39
Sublest	1907.6	19.27
	1852.4	18.45
HSDPA Subtest 2	1880	18.47
Sublest 2	1907.6	18.45
	1852.4	17.97
HSDPA Subtest 3	1880	17.99
Sublest 5	1907.6	17.95
	1852.4	17.36
HSDPA Subtoct 4	1880	17.47
Subtest 4	1907.6	17.31
	1852.4	18.84
HSUPA Subtest 1	1880	18.97
Sublest	1907.6	18.80
	1852.4	17.89
HSUPA Subtest 2	1880	18.16
Oublest 2	1907.6	17.94
	1852.4	17.41
HSUPA Subtest 3	1880	17.73
	1907.6	17.45
	1852.4	16.83
HSUPA Subtest 4	1880	17.15
	1907.6	16.81
	1852.4	16.16
HSUPA Subtest 5	1880	16.64
Sublest J	1907.6	16.26

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A2 PEAK-TO-AVERAGE RADIO

PCS 1900:

Mode	Frequency (MHz)	PEAK Power	AVG Power	PAR
	1850.2	29.55	28.39	0.90
PCS1900	1880	29.47	28.39	0.89
	1909.8	29.57	28.58	0.85
	1850.2	29.40	28.30	0.91
GPRS1900	1880	29.44	28.28	0.95
	1909.8	29.57	28.44	0.92
	1850.2	29.21	28.20	0.91
EDGE1900 (1 Slot)	1880	29.21	28.18	0.99
(1 300)	1909.8	29.35	28.31	0.95

UMTS BAND II:

Mode	Frequency (MHz)	PEAK Power	AVG Power	PAR
	1852.4	23.79	20.23	3.56
WCDMA 1900 RMC	1880	23.63	20.33	3.30
	1907.6	23.73	20.26	3.47
HSDPA 1900	1852.4	22.45	19.28	3.17
	1880	22.40	19.39	3.01
	1907.6	22.32	19.27	3.05
HSUPA 1900	1852.4	22.02	18.84	3.26
	1880	21.96	18.97	2.99
	1907.6	21.85	18.80	3.05



Report No.: STS1606043F01

A3 TRANSMITTER RADIATED POWER (EIRP/ERP)

Radiated Power (ERP) for GSM 850 MHZ							
Mode	Frequency	S G.Level	Cable loss	Gain	PMeas	Polarization	Conclusion
		(dBm)		(dBd)	E.R.P(dBm)	Of Max. ERP	
	824.2	28.54	0.44	0	30.25	Horizontal	Pass
	824.2	30.97	0.44	0	32.68	Vertical	Pass
0014050	836.6	28.57	0.45	0	30.27	Horizontal	Pass
GSM850	836.6	30.91	0.45	0	32.61	Vertical	Pass
	848.8	28.63	0.46	0	30.32	Horizontal	Pass
	848.8	30.87	0.46	0	32.56	Vertical	Pass
	824.2	28.57	0.44	0	30.28	Horizontal	Pass
	824.2	30.86	0.44	0	32.57	Vertical	Pass
GPRS850	836.6	28.48	0.45	0	30.18	Horizontal	Pass
GFK3000	836.6	30.8	0.45	0	32.50	Vertical	Pass
	848.8	28.53	0.46	0	30.22	Horizontal	Pass
	848.8	30.76	0.46	0	32.45	Vertical	Pass
	824.2	28.57	0.44	0	30.28	Horizontal	Pass
	824.2	30.7	0.44	0	32.41	Vertical	Pass
	836.6	28.74	0.45	0	30.44	Horizontal	Pass
EDGE850	836.6	30.66	0.45	0	32.36	Vertical	Pass
	848.8	28.69	0.46	0	30.38	Horizontal	Pass
	848.8	30.63	0.46	0	32.32	Vertical	Pass
(1)PIFA Ant	enna Gain:0d	Bd=2.15dBi,(2) EUT A	ntenna C	Gain 0.39dBi		



Report No.: STS1606043F01

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	18.98	2.41	10.06	26.63	Horizontal	Pass
	1850.2	20.74	2.41	10.06	28.39	Vertical	Pass
DCC1000	1880.0	18.91	2.42	10.06	26.55	Horizontal	Pass
PCS1900	1880.0	20.75	2.42	10.06	28.39	Vertical	Pass
	1909.8	18.57	2.43	10.06	26.20	Horizontal	Pass
	1909.8	20.95	2.43	10.06	28.58	Vertical	Pass
	1850.2	18.59	2.41	10.06	26.24	Horizontal	Pass
	1850.2	20.65	2.41	10.06	28.30	Vertical	Pass
GPRS1900	1880.0	18.61	2.42	10.06	26.25	Horizontal	Pass
GPR3 1900	1880.0	20.64	2.42	10.06	28.28	Vertical	Pass
	1909.8	18.68	2.43	10.06	26.31	Horizontal	Pass
	1909.8	20.81	2.43	10.06	28.44	Vertical	Pass
	1850.2	18.56	2.41	10.06	26.21	Horizontal	Pass
	1850.2	20.55	2.41	10.06	28.20	Vertical	Pass
EDGE1900	1880.0	18.44	2.42	10.06	26.08	Horizontal	Pass
EDGE 1900	1880.0	20.54	2.42	10.06	28.18	Vertical	Pass
	1909.8	18.82	2.43	10.06	26.45	Horizontal	Pass
	1909.8	20.68	2.43	10.06	28.31	Vertical	Pass
(1)EUT Ante	nna Gain 1.48	dBi					

Shenzhen STS Test Services Co., Ltd.

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Report No.: STS1606043F01

Radiated Power (ERP) for WCDMA Band V							
			Result				
Mode	Frequency	S G.Level	Cable	Gain	PMeas E.R.P	Polarization	Conclusion
		(dBm)	loss	(dBd)	(dBm)	Of Max.ERP	
	826.4	16.31	0.44	0	18.02	Horizontal	Pass
	826.4	18.61	0.44	0	20.32	Vertical	Pass
Band V	836.6	16.54	0.45	0	18.24	Horizontal	Pass
Danu V	836.6	18.94	0.45	0	20.64	Vertical	Pass
	846.6	16.74	0.46	0	18.43	Horizontal	Pass
	846.6	18.50	0.46	0	20.19	Vertical	Pass
(1)Dipole	Antenna Gain:0)dBd=2.15dB	i,(2) EUT	Antenna	Gain 0.39dBi	·	

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Radiated Power (EIRP) for WCDMA Band II							
Mode	Frequency	S G.Level	Cable	able Gain	PMeas	Polarization	Conclusion
		(dBm)	loss	(dBi)	E.I.R.P.(dBm)	Of Max.EIRP	
	1852.4	10.98	2.41	10.06	18.63	Horizontal	Pass
	1852.4	12.58	2.41	10.06	20.23	Vertical	Pass
Dand II	1880.0	10.88	2.42	10.06	18.52	Horizontal	Pass
Band II	1880.0	12.69	2.42	10.06	20.33	Vertical	Pass
	1907.6	11.20	2.43	10.06	18.83	Horizontal	Pass
	1907.6	12.63	2.43	10.06	20.26	Vertical	Pass
(1)EUT Ar	ntenna Gain 1	.51dBi					

F



Report No.: STS1606043F01

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	246.50	326.4					
Middle Channel	836.6	245.86	317.2					
High Channel	848.8	246.04	312.2					
	Occupied Bandwidth for GPRS 850 band							
Mode	Frequency(MHz)	Occupied Bandwidth	Emission Bandwidth					
wode		(99%)(kHz)	(-26dBc)(kHz)					
Low Channel	824.2	241.43	317.2					
Middle Channel	836.6	245.78	315.4					
High Channel	848.8	245.44	320.3					
	Occupied Bandw	vidth for EGPRS 850 band						
Mada		Occupied Bandwidth	Emission Bandwidth					
Mode	Frequency(MHz)	(99%)(kHz)	(-26dBc)(kHz)					
Low Channel	824.2	243.74	317.9					
Middle Channel	836.6	244.62	321.5					
High Channel	848.8	243.63	318.4					



Report No.: STS1606043F01

Occupied Bandwidth for GSM1900 band								
Mode		Occupied Bandwidth	Emission Bandwidth					
wode	Frequency(MHz)	(99%)(kHz)	(-26dBc)(kHz)					
Low Channel	1850.2	242.40	311.5					
Middle Channel	1880.0	245.65	319.7					
High Channel	1909.8	246.70	317.4					
	Occupied Bandwidth for GPRS 1900 band							
Maria	Frequency(MHz)	Occupied Bandwidth	Emission Bandwidth					
Mode		(99%)(kHz)	(-26dBc)(kHz)					
Low Channel	1850.2	246.10	316.5					
Middle Channel	1880.0	248.44	321.1					
High Channel	1909.8	246.34	320.0					
	Occupied Bandw	vidth for EDGE 1900 band						
Mode		Occupied Bandwidth	Emission Bandwidth					
Iviode	Frequency(MHz)	(99%)(kHz)	(-26dBc)(kHz)					
Low Channel	1850.2	245.72	318.5					
Middle Channel	1880.0	246.53	311.0					
High Channel	1909.8	246.03	314.7					

Occupied Bandwidth for UMTS band V						
Mode	Fraguanay (MHz)	Occupied Bandwidth	Emission Bandwidth			
Mode	Frequency(MHz)	(99%)(MHz)	(-26dBc)(MHz)			
Low Channel	826.4	4.194	4.851			
Middle Channel	836.6	4.194	4.847			
High Channel	846.6	4.197	4.858			

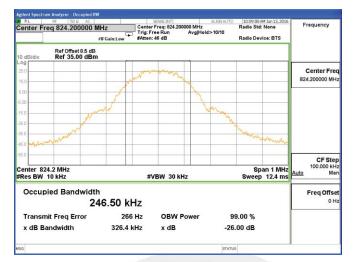
Occupied Bandwidth for UMTS band II							
Mode		Occupied Bandwidth	Emission Bandwidth				
Mode	Frequency(MHz)	(99%)(MHz)	(-26dBc)(MHz)				
Low Channel	1852.4	4.207	4.868				
Middle Channel	1880	4.208	4.863				
High Channel	1907.6	4.203	4.880				

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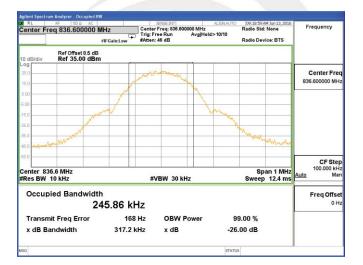


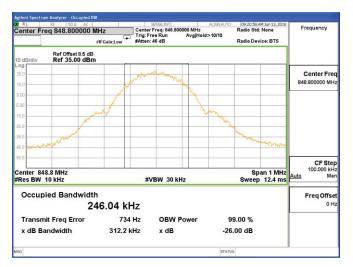
Report No.: STS1606043F01

GSM 850 CH 128



GSM 850 CH 190



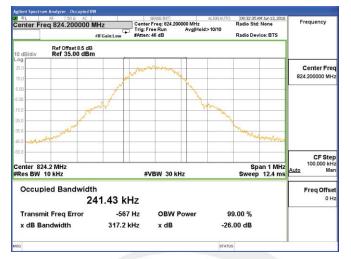


GSM 850 CH 251



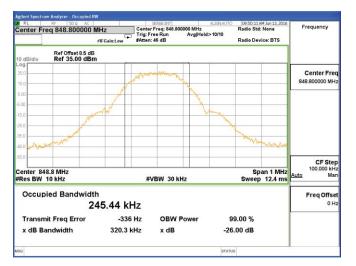
Report No.: STS1606043F01

GPRS 850 CH 128



GPRS 850 CH 190





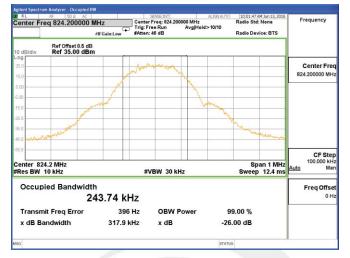
GPRS 850 CH 251

Shenzhen STS Test Services Co., Ltd.

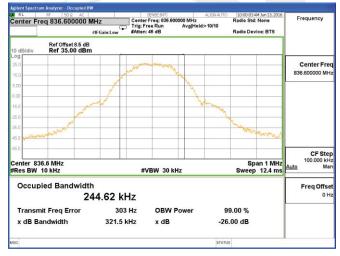


Report No.: STS1606043F01

EDGE 850 CH 128



EDGE 850 CH 190



ctrum Analyzer - Occupied BW
 M
 RL
 RF
 50 Q
 AC
 SEISE:INIT
 ALIGNAU

 Center Freq 848.80000 MHz
 Center Freq 848.80000 MHz
 Center Freq 848.80000 MHz
 Trig: Free Run
 Avg|Hold>10/10

 #IFGaint.ow
 #Atten: 46 dB
 #Atten: 46 dB
 B
 09:57:04 AM Jun 13, 2 Radio Std: None Frequency Radio Device: BTS Ref Offset 8.5 dB Ref 35.00 dBn Center Freq 848.800000 Mi CF Step 100.000 kHz Span 1 MHz Sweep 12.4 ms Center 848.8 MHz #Res BW 10 kHz Auto #VBW 30 kHz Occupied Bandwidth Freq Offse 0 H 243.63 kHz Transmit Freq Error 501 Hz OBW Power 99.00 % x dB Bandwidth 318.4 kHz x dB -26.00 dB STATUS

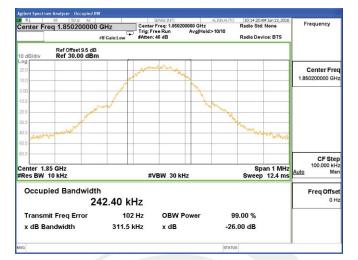
EDGE 850 CH 251

Shenzhen STS Test Services Co., Ltd.



Report No.: STS1606043F01

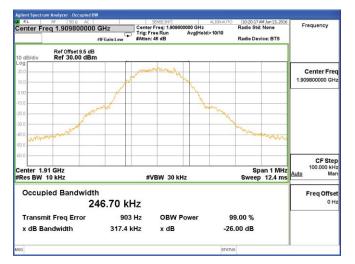
PCS 1900 CH 512



PCS 1900 CH 661



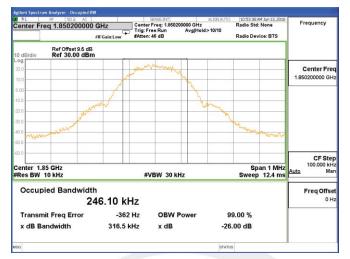
PCS 1900 CH 810



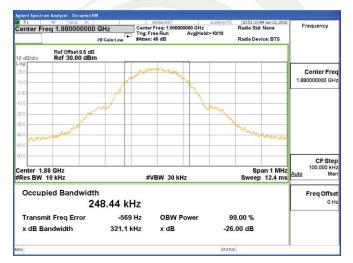


Report No.: STS1606043F01

GPRS 1900 CH 512



GPRS 1900 CH 661





GPRS 1900 CH 810

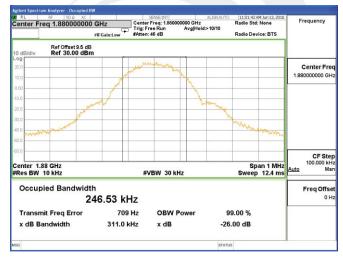
Shenzhen STS Test Services Co., Ltd.



EDGE 1900 CH 512



EDGE 1900 CH 661

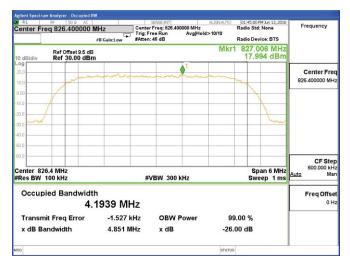


EDGE 1900 CH 810





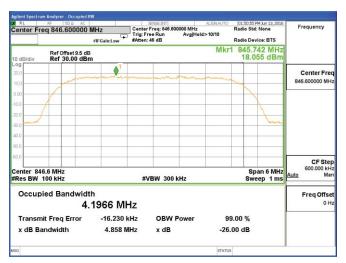
UMTS BAND V CH 4132



UMTS BAND V CH 4183

Center Fre	RF 50 Ω AC eq 836.600000 M	Trig:	SENSE:INT ALIGNAUTO Center Freq: 836.600000 MHz Trig: Free Run Avg Hold>10/10 #Atten: 46 dB		01:48:50 PM Jun 13, 2016 Radio Std: None Radio Device: BTS	Frequency
0 dB/div	Ref Offset 9.5 dB Ref 30.00 dBm			Mki	1 835.43 MHz 17.244 dBm	
20.0 10.0			- construct Harris		~	Center Fre 836.600000 MH
1.00						
10.0 mm					Low	
0.0						
enter 836.6 MHz Span 6 MHz Res BW 100 KHz \$VBW 300 kHz Sweep 1 ms						
Occupi	ied Bandwidt 4.	n 1940 MHz				Freq Offs 0 H
	it Freq Error	-6.367 kHz	OBW Power		.00 %	
x dB Ba	ndwidth	4.847 MHz	x dB	-26.	00 dB	

UMTS BAND V CH 4233



Shenzhen STS Test Services Co., Ltd.

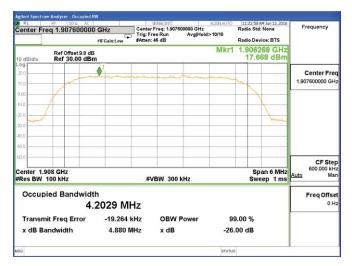


UMTS BAND II CH 9262



UMTS BAND II CH 9400

RL RF 50 Ω AC enter Freq 1.880000000 GHz #IFGain:Low		SENSE:INT ALIGNAUTO Center Freq: 1.88000000 GHz Trig: Freq: National Avg Hold>10/10 #Atten: 46 dB Avg Hold>10/10		Radio Std: None Radio Device: BTS		Frequency		
	Ref 0ffset 9.8 dB Mkr1 1.87913 GHz Ref 30.00 dBm 18.005 dBm							
20.0		- l'	mone		server -	w		Center Free 1.880000000 GH
0.00						7	X	
20.0							L	
40.0								
60.0								
Center 1.88 GH #Res BW 100 k							an 6 MHz eep 1 ms	CF Step 600.000 kH: Auto Mar
Occupied		^ь 2079 МН	z					Freq Offset 0 Hz
	Transmit Freq Error -9.825 k dB Bandwidth 4.863 M					99.00 % -26.00 dB		
sa		and sensitive the specific			STATU	6		



UMTS BAND II CH 9538



Report No.: STS1606043F01

A5 FREQUENCY STABILITY

Normal Voltage = 3.8V. ; Battery End Point (BEP) = 3.5 V.; Maximum Voltage = 4.35 V

GSM 850Middle Channel						
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result	
50	_	13.532	0.016	2.5ppm	PASS	
40		26.458	0.032			
30		23.645	0.028			
20		27.936	0.033			
10	Normal Voltage	18.230	0.022			
0		13.479	0.016			
-10		17.345	0.021			
-20		15.896	0.019			
-30		16.236	0.019			
25	Maximum Voltage	19.918	0.024			
25	BEP	11.599	0.014			

GPRS 850Middle Channel						
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result	
50		13.509	0.016			
40		26.474	0.032			
30		23.643	0.028			
20		27.913	0.033			
10	Normal Voltage	18.273	0.022			
0		13.565	0.016	2.5ppm	PASS	
-10		17.351	0.021			
-20		15.894	0.019			
-30		16.241	0.019			
25	Maximum Voltage	19.904	0.024			
25	BEP	11.636	0.014			

Shenzhen STS Test Services Co., Ltd.



Report No.: STS1606043F01

	E	EDGE 850Middle	Channel		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		13.549	0.016		
40		26.504	0.032		
30		23.676	0.028		
20		27.889	0.033		
10	Normal Voltage	18.245	0.022		
0		13.505	0.016	2.5ppm	PASS
-10		17.371	0.021		
-20		15.940	0.019		
-30		16.255	0.019		
25	Maximum Voltage	19.897	0.024		
25	BEP	11.586	0.014		



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Report No.: STS1606043F01

	(GSM 1900Middle	Channel		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		19.109	0.010		
40		11.193	0.006		
30		10.308	0.005		
20		22.210	0.012		
10	Normal Voltage	14.085	0.007	Within Au-	
0		9.984	0.005	thorized	- PASS
-10		15.433	0.008	Band	
-20		20.689	0.011		
-30		24.137	0.013		
25	Maximum Voltage	12.530	0.007		
25	BEP	12.436	0.007]	

	G	PRS 1900Middle	e Channel		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		19.032	0.010		
40		11.132	0.006		
30		10.266	0.005		
20		22.252	0.012		
10	Normal Voltage	14.068	0.007	Within Au-	
0		10.002	0.005	thorized	PASS
-10		15.408	0.008	Band	
-20		20.692	0.011		
-30		24.177	0.013		
25	Maximum Voltage	12.500	0.007		
25	BEP	12.496	0.007		

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Report No.: STS1606043F01

	E	DGE 1900Middle	e Channel		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		19.110	0.010	_	
40		11.214	0.006	_	
30		10.306	0.005		
20		22.228	0.012		
10	Normal Voltage	14.128	0.008	Within Au-	
0		10.015	0.005	thorized	
-10		15.481	0.008	Band	
-20		20.656	0.011		
-30		24.128	0.013		
25	Maximum Voltage	12.452	0.007		
25	BEP	12.475	0.007		



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Report No.: STS1606043F01

	V	VCDMA VMiddle	Channel		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		23.947	0.029		
40		12.744	0.015		
30		16.933	0.020		
20		16.714	0.020		
10	Normal Voltage	19.887	0.024		DASS
0		18.972	0.023	2.5ppm	PASS
-10		17.262	0.021		
-20		11.003	0.013		
-30		25.344	0.030		
25	Maximum Voltage	23.536	0.028		
25	BEP	15.612	0.019		

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

	V	VCDMA IIMiddle	Channel		
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result
50		14.146	0.008		
40		17.900	0.010		
30		23.633	0.013		
20		21.122	0.011		
10	Normal Voltage	10.534	0.006	Within Au-	- PASS
0		18.577	0.010	thorized	
-10		16.266	0.009	Band	
-20		16.927	0.009		
-30		16.500	0.009		
25	Maximum Voltage	11.786	0.006		
25	BEP	13.262	0.007		

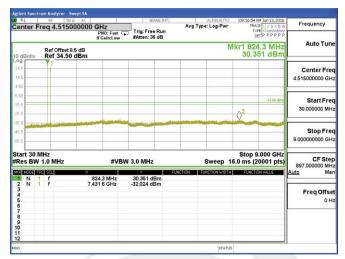
1. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.



A6 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

GSM 850 BAND

Lowest Channel



Middle Channel

ontor Fre			SENSE: INT	ALIGNAUT		
enter Fre	q 4.5150	00000 GHz PNO: Fast	Trig: Free Run	Avg Type: Log-Pw	TYPE MALARAMARA	Frequency
		IFGain:Low	#Atten: 36 dB		DET P P P P P P	Auto Tun
	Ref Offset 8. Ref 34.50				Mkr1 836.9 MHz 30.361 dBm	Auto Tun
24.5	1					Center Fre
4.5						4.515000000 GH
4.50						
.50					-13.00 dEm	Start Fre
15.5		3		²		30.000000 MH
85						
5.5						Stop Fre
55.5	_					9.00000000 GH
tart 30 MH Res BW 1		#VE	SW 3.0 MHz	Sweep	Stop 9.000 GHz 16.0 ms (20001 pts)	CF Ste 897.000000 MH
KR MODE THO	sci. f	× 836.9 MHz	30.361 dBm	UNCTION FUNCTION WID	TH FUNCTION VALUE	<u>Auto</u> Ma
2 N 1 3 4 5 6 7	1	5.825 1 GHz	-31.406 dBm			Freq Offset 0 Ha
7 8 9 10 11						

Highest Channel

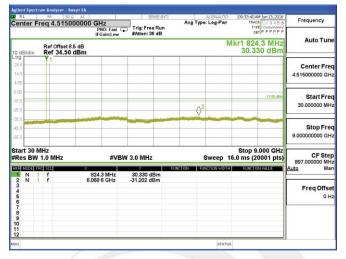
RL	RF 50	R AC	SENSE: IN	T .	ALIGNAUTO	09:22:01 AM Jun 13, 2016	
Center Fi	req 4.5150	DOOOOO GHz PNO: Fast C IFGain:Low	Trig: Free Run #Atten: 36 dB	Avg T	/pe: Log-Pwr	TYPE Monotonio DET P P P P P	Frequency
10 dB/div	Ref Offset 8 Ref 34.50				N	1kr1 849.0 MHz 30.234 dBm	Auto Tun
24.5 14.5	1						Center Fre 4.515000000 GH
5.50 -15.5 -25.5				0	2	-13.00 dēm	Start Fre 30.000000 MH
36.5 45.5 55.5			Winese Hartstein				Stop Fre 9.00000000 GH
Start 30 N #Res BW		#VB	W 3.0 MHz		Sweep 1	Stop 9.000 GHz 6.0 ms (20001 pts)	
1 N 1 2 N 1	e sou	849.0 MHz 5.993.3 GHz	30.234 dBm -31.328 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	Auto Ma
2 N 1 3 4 5 6 7 8 9 9 10 11 12		0.893 3 GH2					Freq Offse 0 H

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GPRS 850 BAND

Lowest Channel



Middle Channel

RL RF 50 S enter Freq 4.5150	2 AC	SENSE: INT	ALIGNAUTO Avg Type: Log-Pwr	09:49:14 AM Jun 13, 2016 TRACE 1 2 3 4 5 6	Frequency
	PNO: Fast C IFGain:Low	Trig: Free Run #Atten: 36 dB		DET P P P P P	
Ref Offset 8. 0 dB/div Ref 34.50			N	kr1 836.9 MHz 30.267 dBm	Auto Tun
24.5					Center Fre 4.515000000 GH
4.50					4.01000000 01
5.5				-13.00 dBm	Start Fre 30.000000 MH
85 855		-	and the second second second second		
6.5 56.5					Stop Fre 9.000000000 Gi
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 Ste 897.000000 M
N 1 1	× 836.9 MHz	30.267 dBm	UNCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> M
2 N 1 f 3 4 5 6 7	8.094 9 GHz	-31.806 dBm			Freq Offs 01
7 8 9					
1					

Highest Channel

RL RF !	50 Q AC	SENSE:INT	ALIGNAUTO	09:51:09 AM Jun 13, 2016	
enter Freq 4.51			Avg Type: Log-Pwr	TYPE Monotonic	Frequency
Ref Offse 0 dB/div Ref 34.5			M	kr1 849.0 MHz 30.165 dBm	Auto Tun
09 11 24.5 14.5 4.50					Center Free 4.515000000 GH
5.50 15.5 15.5				-13.00 dBm	Start Free 30.000000 MH
65 55 65					Stop Fre 9.000000000 GH
tart 30 MHz Res BW 1.0 MHz	#VB\	V 3.0 MHz	Sweep 10	Stop 9.000 GHz 5.0 ms (20001 pts)	CF Ste 897.000000 MH Auto Ma
1 N 1 f 2 N 1 f 3 4 5 6 6 7 7 8 9 9 0 0 1 1 2	849.0 MHz 7.561 2 GHz	30.165 dBm -31.421 dBm			Freq Offse

Shenzhen STS Test Services Co., Ltd.



EDGE 850 BAND

Lowest Channel

6 Frequenc	10:02:37 AM Jun 13, 2016 TRACE 1 2 3 4 5 6	ALIGNAUTO Type: Log-Pwr	E:JNT		GHz	50 9 AC	RF		R
P	DET P P P P P P		lB	Trig: Free F #Atten: 36 o	PNO: Fast 😱 IFGain:Low				
Z	kr1 824.3 MHz 30.311 dBm	M				fset 8.5 dB 4.50 dBm		3/div	0 dl
Center 4.51500000							×1		24.5 14.5 4.50
Start 30.000000	-13.00 dBm								5.50 5.5
Stop 9.00000000									55 5.5 5.5
IZ S) CF 897,00000	Stop 9.000 GHz 5.0 ms (20001 pts)	Sweep 16		3.0 MHz	#VBW	z	1Hz 1.0 M	t 30 N 5 BW	
Auto	FUNCTION VALUE	FUNCTION WIDTH		30.311 dBr -31.431 dBr	324.3 MHz 95 5 GHz		ic sci	N 1	1
FreqO				-01.401 UDI		0.			234567890
									8 9 0 1 2
-		STATUS							a

Middle Channel

Frequency	M Jun 13, 2016		ALIGNAUTO		SENSE: IN		AC		RF		L
Frequency	E 1 2 3 4 5 6	TY	e: Log-Pwr	P	Trig: Free Run	Hz PNO: Fast G	0000 G	51500	eq4	Fre	ter
	PPPPP	D			#Atten: 36 dB	Gain:Low	IF.				
Auto Tu	6.9 MHz 20 dBm		M					ffset 8.5 34.50 c			B/div
Center Fr				_		_			1		
4.515000000 G				_		-					
									+		⊢
Start Fre	-13.00 dBm		-	-		-			+	-	
30.000000 M			0			1					F
		Q ²				d a delar					
Stop Fre					No. of Concession, Name	and a state of the			and and it	di-hoy	-
9.000000000 G											
	.000 GHz 0001 pts)		Sweep 1		3.0 MHz	#VB		Hz	HZ .0 M	W 1	
Auto M	IN VALUE	FUNCT	INCTION WIDTH	FUNCTIO	Y		×		SCL	TRC	
					30.320 dBm -32.014 dBm	5.9 MHz 2 1 GHz			f	1	NN
Freq Offs 01											
			STATUS								

Highest Channel

	M Jun 13, 2016	09:57:53A	ALIGNAUTO	INT	SEP		AC	50 9	RF		L
Frequency	E 1 2 3 4 5 6	TVE	Type: Log-Pwr	an	Trig: Free	IZ NO: Fast 😱	0000 GH	1500	eq 4.	Fre	nter
Auto Tu	TPPPPP			3	#Atten: 36	Gain:Low	- IFO				
Auto Tu	9.0 MHz 91 dBm		M				B/div Ref 34.50 dB				
Center Fr								_	1		F
4.515000000 G											
Start Fr	-13.00 dBm		<u> </u>					_			
30.000000 M	10.00 000	2							T		E
		V.	and a strength of the	-			-	-			
Stop Fr 9.000000000 G											
5.000000000									_		L
CF Ste 897.000000 M	.000 GHz 0001 pts)		Sweep 16		3.0 MHz	#VBW		z	HZ	0 MI	
<u>Auto</u> M	IN VALUE	FUNCTIO	FUNCTION WIDTH	FUNC	30.191 dE	0 MHz	× 849.		SCL	E TRC	
Freq Offs					-31.817 dE	2 GHz	7.518		f	1	NN
01											
											_
			STATUS								

Shenzhen STS Test Services Co., Ltd.



GSM1900 BAND(30M-12G)

Lowest Channel

RL RF 50 Ω AC		SENSE: INT	ALIGNAUTO	10:15:13 AM Jun 13, 2016	Frequency
enter Freq 6.015000000	GHz PNO: Fast IFGain:Low	Trig: Free Run #Atten: 36 dB	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE MUMMUMUM DET P P P P P P	
Ref Offset 9.5 dB dB/div Ref 35.50 dBm			Mk	r1 1.850 4 GHz 27.472 dBm	Auto Tu
9 1 5.5 5.5 50					Center Fr 6.015000000 G
0 5 5				-13.00 dBm	Start Fr 30.000000 N
5					Stop Fi 12.000000000 0
art 30 MHz es BW 1.0 MHz	#VBW	3.0 MHz		Stop 12.000 GHz 0.0 ms (25001 pts)	1.197000000 0
	850 4 GHz 869 3 GHz	27.472 dBm -31.007 dBm	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	Auto M Freq Off

Middle Channel

Frequency	39 AM Jun 13, 2016		ALIGNAUTO		INSE: INT	SE		AC		RF		L
Frequency	TYPE MWWWWWWWW	1	: Log-Pwr	Avg T	e Run	Tria: Fre	Hz NO:Fast C	0000 G	01500	eq 6.	Fre	ter
	DETPPPPP					#Atten: 3	Gain:Low	IF				
Auto Tu	880 1 GHz .528 dBm		Mk	Ref Offset 9.5 dB 3/div Ref 35,50 dBm							B/di	
0									1			
Center Fr 6.015000000 G												
8.01500000 G			2									
Start Fr	-13.00 dBm					-						
30.000000 M	2		6 2									
	And and a second second	Concernance of		-	-			and the second				
Stop Fr							of the second second			C. C	10.00	-
12.00000000 G							1					
				_								
CF St 1.197000000 G	12.000 GHz (25001 pts)	0.0 ms	Sweep 2			W 3.0 MHz	#VB		Ηz	.0 M	W 1	
Auto M	ICTION VALUE	FUN	NCTION WIDTH	NCTION		Y		×		SCL	TRC	
						27.528 d -30.090 d	1 GHz 6 GHz	1.880		f	1	NN
Freq Offs												
0												
		-	STATUS	_							-	_

Highest Channel

RL	RF 50 Q A0		SENSE:INT	ALIGNAUTO	10:21:24 AM Jun 13, 2016	
enter Fre	q 6.0150000	PNO: Fast Ca	Trig: Free Run #Atten: 36 dB	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE MYMMMMM DET P P P P P	Frequency
F	Ref Offset 9.5 dB	IFGain:Low	#Atten: 36 dB	Mk	r1 1.909 8 GHz	Auto Tune
dB/div	Ref 35.50 dBn	n			27.280 dBm	
5.6	- Y					Center Fre
5.6						6.015000000 GH
50		-			-13.00 dBm	Start Fre
4.5					ß	30.000000 MH
5		a designed in the second second	Station of the second second			
4.5						Stop Fre 12.00000000 GF
art 30 MH Res BW 1.		#VBW	/ 3.0 MHz	Sweep 2	Stop 12.000 GHz 0.0 ms (25001 pts)	CF Ste
R MODE TRO	scu	× 1.909 8 GHz	27.280 dBm	UNCTION FUNCTION WIDTH	FUNCTION VALUE	Auto Ma
	f	11.767 3 GHz	-30.422 dBm			
5						Freq Offs 0 H
2 N 1 3 4 5 6 7 8 9						
0						
1						
				STATUS		1

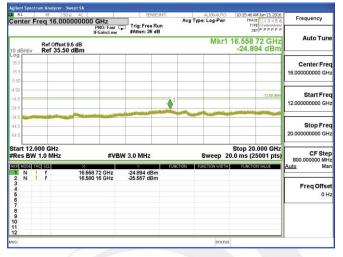
Shenzhen STS Test Services Co., Ltd.



Report No.: STS1606043F01

GSM1900 BAND(12G-20G)

Lowest Channel



Middle Channel

	50 Q AC	SENSE: INT	ALIGNAUTO	10:19:12 AM Jun 13, 2016	-
Center Freq 16.0	00000000 GHz PNO: Fast C	Trig: Free Run #Atten: 36 dB	Avg Type: Log-Pwr	TYPE NUMBER P P P P P	Frequency
Ref Offse 0 dB/div Ref 35.			Mkr1	16.499 20 GHz -24.546 dBm	Auto Tune
09 25.5 15.5 5.50					Center Fre 16.000000000 GH
4.50				-13.00 dBm	Start Free 12.000000000 GH
34.5 					Stop Fre 20.000000000 GH
start 12.000 GHz Res BW 1.0 MHz	#VB	W 3.0 MHz	Sweep 2	Stop 20.000 GHz 0.0 ms (25001 pts)	CF Ste 800.000000 MH
MODE THE SCL 1 N 1 f 2 N 1 f	× 16.499 20 GHz 16.332 16 GHz	-24.546 dBm -25.555 dBm	INCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Ma
3 4	ICOUL IC CITE	-20.000 0.2111			Freq Offse 0 H
5 6 7 8 9					

Highest Channel

RL RF 50.0 AC	SENSE: INT	ALIGNAUTO	10:21:56 AM Jun 13, 2016	- 0.000 A 0.000 A
enter Freq 16.000000000 GHz PNO: Fast IFGain:Low	Trig: Free Run #Atten: 36 dB	Avg Type: Log-Pwr	TRACE 2 3 4 5 6 TYPE Minimutoto DET P P P P P P	Frequency
Ref Offset 9.5 dB dB/div Ref 35.50 dBm		Mkr1	16.560 64 GHz -24.699 dBm	Auto Tune
D9 5.5 5.6				Center Free 16.000000000 GH
4.5	1		-13.00 dBm	Start Fre 12.000000000 GH
45				Stop Fre 20.000000000 GH
tart 12.000 GHz Res BW 1.0 MHz #VBW	3.0 MHz	Sweep 2	Stop 20.000 GHz 0.0 ms (25001 pts)	CF Step 800.000000 MH
E MODE TEE SCI. X 1 N 1 f 16.550 64 GHz 2 N 1 f 16.560 64 GHz	-24.699 dBm -24.699 dBm	CTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Mai
3 10000 0 012 4 5 5 6 7 7 8	-24.055 UBII			Freq Offse 0 H
9 0 1 2				

Shenzhen STS Test Services Co., Ltd.



GPRS1900 BAND(30M-12G)

Lowest Channel

Frequency	10:54:44 AM Jun 13, 2016	ALIGNAUTO		SENSE: INT		50 Q AC			RL
	TYPE MYMMMMM DET P P P P P	Type: Log-Pwr	Av	Trig: Free Run #Atten: 36 dB	PNO: Fast	15000000	req 6.01	ter F	nt
Auto Tu	1 1.850 4 GHz 27.528 dBm	Mki				et 9.5 dB .50 dBm	Ref Offs Ref 35.	3/div	
Center F 6.015000000 0						1			g 5.6 5.6 50
Start Fr 30.000000 N	-13.00 dBm		_						50
Stop Fr 12.00000000 0		~~~~	-					فيحاجله	15
CF St 1.197000000 (Stop 12.000 GHz 0.0 ms (25001 pts)	Sweep 20		3.0 MHz	#VBW		/Hz 1.0 MHz	1 30 N 8 BW	
Auto M	FUNCTION VALUE	FUNCTION WIDTH	FUNCTION	27.528 dBm -30.510 dBm	350 4 GHz 736 7 GHz		f f	N 1	
Freq Off C									3
									4 5 7 8 9 0
		STATUS							

Middle Channel

RL	RF	50 Q			SEN	SE:INT		ALIGNAUTO		M Jun 13, 2016	Frequency
enter F	req 6.0	15000	0000 GH	Z 0: Fast C	Trig: Free		Avg Type	a: Log-Pwr	TY		
			IFG	ain:Low	#Atten: 36	dB				A statistical setup as they	Auto Tun
dB/div		set 9.5 5.50 dl						Mk		01 GHz 82 dBm	Auto Tuli
5.6		V 1									Center Fre
5.6											6.015000000 GH
50	_										
50	-			-						-13.00 dBm	StartFre
1.5											30.000000 MH
4.5								\Diamond			
1.5	and the second second										Stop Fre
4.5					1						12.000000000 GH
art 30 M Res BW		7		#VB	W 3.0 MHz			Sweep 20		.000 GHz	CF Ste
iri model te			×		T DIO IMIL	l a		Neitonwioitti		IN VALUE	1.197000000 GH Auto Ma
1 N 1	f		1.880 1	GHz	27.582 dE	m					ind ind
3	T		9.437 8	GHZ	-30.073 dB	m					Freq Offse
4 5											0 H
5 6 7											
B 9											
D 1											
2											

Highest Channel

- 1. Co. Co. Co. Co. Co. Co. Co. Co. Co. Co	AM Jun 13, 2016		ALIGNAUTO		NSE:INT	SEP		AC	50 Ω	RF		L
Frequency	CE 23456 PE MUMMMMM ET P P P P P P	TVE	: Log-Pwr	Avg T	Run	Trig: Free	NO: Fast	0000 GI	01500	eq 6.	Fre	nter
Auto Tu					6 dB	#Atten: 36	Gain:Low	IF				_
	9 8 GHz 35 dBm		MK						fset 9.5 5.50 d			B/di
Center Fr				_			-		Q 1	-		
6.015000000 G			a	-			-		-			\vdash
Start Fr	-13.00 dBm			_						_		
30.000000 M				\Diamond^2						-		
Stop Fr				-		A state of the		an a state of the second	-	-	No.	-
12.00000000 G										_		F
CF Ste	2.000 GHz 25001 pts)		Sweep 20			3.0 MHz	#VBW		łz	Hz .0 Mi	0 MH W 1	
Auto M	ON VALUE	FUNCTIO	NCTION WIDTH	INCTION		27.335 dE	8 GHz	×		SCL	TRC	
					Bm	-30.661 dE	8 GHz	7.397		f	1	NN
Freq Offs 0												
			STATUS							_	-	_

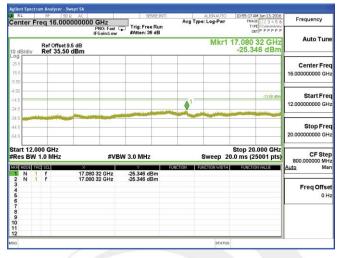
Shenzhen STS Test Services Co., Ltd.



Report No.: STS1606043F01

GPRS1900 BAND(12G-20G)

Lowest Channel



Middle Channel

	un 13, 2016
Type International Type Internat	PPPPP
dB Mkr1 16.601 60 Bm -25.144	
	Center Fre 16.00000000 GH
	-13.00 dBm Start Fre 12.000000000 GH
	Stop Fre 20.00000000 GH
Stop 20.00 #VBW 3.0 MHz Sweep 20.0 ms (250	01 pts) CF Ste 800.000000 M
X Y EUNITION EUNITION WOTH EUNITION WOTH 16.601 60 GHz -25.144 dBm 16.601 60 GHz -25.144 dBm	Auto Ma
	Freq Offs 0 H

Highest Channel

RL RF 50 Ω AC	SENSE:INT	ALIGNAUTO	10:49:09 AM Jun 13, 2016	2 0 00 M 000 M
enter Freq 16.000000000 GHz PNO: Fast IFGain:Low	Trig: Free Run #Atten: 36 dB	Avg Type: Log-Pwr	TYPE MUMMMMMM DET P P P P P P	Frequency
Ref Offset 9.5 dB dB/div Ref 35.50 dBm		Mkr1	16.546 88 GHz -25.259 dBm	Auto Tune
5.5 5.0 5.0				Center Free 16.000000000 GH
4.5	1		-13.00 dBm	Start Fre 12.000000000 GH
45 45 45 45 45 45 45 45 45 45 45 45 45 4				Stop Fre 20.000000000 GH
tart 12.000 GHz Res BW 1.0 MHz #VBW	3.0 MHz	Sweep 2	Stop 20.000 GHz 0.0 ms (25001 pts)	CF Ste 800.000000 MH
E MODE TRE SCL X N 1 f 16.546 88 GHz 2 N 1 f 16.546 88 GHz	-25.259 dBm -25.259 dBm	TION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Ma
4 5 6 7 8	20205 0.5/1			Freq Offse 0 H
9 0 1 2				

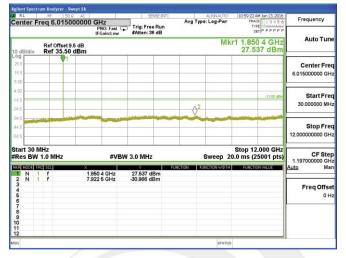
Shenzhen STS Test Services Co., Ltd.



Report No.: STS1606043F01

EDGE 1900 BAND(30M-12G)

Lowest Channel



Middle Channel

RL RF 50.Ω AC		SENSE: INT	ALIGNAUTO	11:02:32 AM Jun 13, 2016	Freedom
enter Freq 6.01500000	0 GHz PNO: Fast C	Trig: Free Run #Atten: 36 dB	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE MWWWWWWW DET P P P P P P	Frequency
Ref Offset 9.5 dB 0 dB/div Ref 35.50 dBm	FGain:Low	Price in our and	Mk	r1 1.880 1 GHz 27.600 dBm	Auto Tun
og 01 25.5 15.5 5.50					Center Fre 6.015000000 GH
1.50 14.5 14.5		O ²		-13.00 dBm	Start Fre 30.000000 Mi
14 5					Stop Fr 12.00000000 Gi
tart 30 MHz Res BW 1.0 MHz	#VBW	3.0 MHz	Sweep 2	Stop 12.000 GHz 0.0 ms (25001 pts)	CF Ste 1.197000000 G
ACE MODE THE SOL X	1.880 1 GHz	27.600 dBm -31.044 dBm	JNCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> M
2 N 1 1 4 5 6 7 8 9	5.516 3 GHz	51,044 dBm			Freq Offs 01
9					

Highest Channel

RL RF 50 Ω AC		SENSE:INT	ALIGNAUTO	11:05:29 AM Jun 13, 2016	-
Center Freq 6.01500000	PNO: Fast Ca	Trig: Free Run	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE Minimum DET P P P P P P	Frequency
	IFGain:Low	#Atten: 36 dB		the second se	Auto Tune
Ref Offset 9.5 dB 0 dB/div Ref 35.50 dBm			Mk	r1 1.910 2 GHz 27.355 dBm	Auto Tune
-og					
					Center Free
15.5					6.015000000 GH
5.50					
4.50				-13.00 dBm	Start Fre
14.5					30.000000 MH
24.5		\$ ²			00.000000 1111
34.5	and a local de la constante	and the second design of the	Martin Martin Martin	and the state of the	
44.5					Stop Free
54.5					12.00000000 GH
Start 30 MHz			-	Stop 12.000 GHz	CF Ster
Res BW 1.0 MHz	#VBW	3.0 MHz	Sweep 20	0.0 ms (25001 pts)	1.197000000 GH
KE MODE THE SEL			UNCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Mai
2 N 1 f	1.910 2 GHz 5.008 8 GHz	27.355 dBm -30.490 dBm			
3 4					Freq Offse
5					. он
5 6 7					
8					
8					
8					

Shenzhen STS Test Services Co., Ltd.



Report No.: STS1606043F01

EDGE 1900 BAND(12G-20G)

Lowest Channel

RL RF 50 Ω AC enter Freg 16.00000000	0.042	SENSE: INT	ALIGNAUTO Avg Type: Log-Pwr	10:59:55 AM Jun 13, 2016 TRACE 1 2 3 4 5 6	Frequency
Siller Freq 10.00000000	PNO: Fast C	Trig: Free Run #Atten: 36 dB		DET P P P P P P	
Ref Offset 9.5 dB dB/div Ref 35.50 dBm			Mkr1	16.508 16 GHz -25.590 dBm	Auto Tun
555 5.5 50					Center Fre 16.00000000 GF
50		•		-13.00 dBn	Start Fre 12.000000000 GF
45					Stop Fre 20.000000000 GH
tart 12.000 GHz Res BW 1.0 MHz	#VBW	3.0 MHz	Sweep 2	Stop 20.000 GHz 0.0 ms (25001 pts)	CF Ste 800.000000 M
		-25.590 dBm -25.590 dBm	INCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> M
3	JO 10 GHZ	-20.090 dBin			Freq Offs 0 F
4 5 6 7 8 9 9 0 11 2					
11 12 sq			STATU		

Middle Channel

RL	RF	50 Q AC		SENSE	INT		ALIGNAUTO		AM Jun 13, 2016	Frequency
enter	Freq 16	.0000000	PNO: Fast C	Trig: Free Ru	In	Avg Type	: Log-Pwr	TY	CE 1 2 3 4 5 6 PE MWMMMM	riequency
			IFGain:Low	#Atten: 36 dE	1			C	ETPPPPPP	
) dB/div		fset 9.5 dB 5.50 dBm	C.				Mkr1		12 GHz 00 dBm	Auto Tur
5.5										Center Fre
5.6										16.00000000 GH
50										
.50									-13.00 dBm	Start Fre
4.5	-	-			A1-	-	6			12.00000000 GH
4.5				-	No.	and in case of	-	and the second second	discontinuo dis	
4.5	A CONTRACTOR OF CONTRACTOR									Stop Fre
4.5										20.00000000 G
	.000 GH: V 1.0 MH		#VB	W 3.0 MHz			Sweep 2		0.000 GHz 25001 pts)	CF Ste 800.000000 MH
KR MODE	TRC SCL	10	.501 12 GHz	-25.600 dBm	FUN	CTION FU	NCTION WIDTH	FUNCT	ON VALUE	<u>Auto</u> Ma
1 N 2 N	f	16	.501 12 GHz	-25.600 dBm						
3 4										Freq Offs
5 6 7										01
7										
8 9 0										
1										
2						_	STATU			

Highest Channel

RL RF 50.0 AC	SENSE: INT	ALIGNAUTO	11:06:01 AM Jun 13, 2016	-
enter Freq 16.000000000 GHz PNO: Fast IFGain:Low	Trig: Free Run #Atten: 36 dB	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE MWWWWWWWWW DET P P P P P P	Frequency
Ref Offset 9.5 dB	WALLEN, 30 GD	Mkr1	16.461 44 GHz -25.245 dBm	Auto Tun
og 555 50				Center Fre 16.000000000 GH
50 4.5 4.5	•1		-13.00 dBn	Start Fre 12.00000000 GF
4.5 4.5				Stop Fre 20.000000000 GF
tart 12.000 GHz Res BW 1.0 MHz #V	BW 3.0 MHz	Sweep 2	Stop 20.000 GHz 0.0 ms (25001 pts)	CF Ste 800.000000 Mi
XE MODE TEO SCL X 1 N 1 f 16.461 44 GHz 2 N 1 f 16.461 44 GHz	-25.245 dBm -25.245 dBm	CTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Mi
2 N 1 f 16.461 44 GHz 3 4 5 6 7	-20.240 dBm			Freq Offs 0 I
7 8 9 0 1				

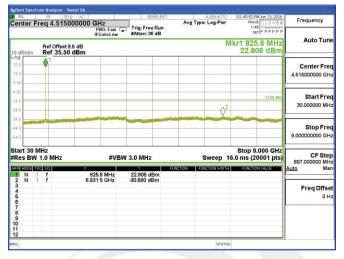
Shenzhen STS Test Services Co., Ltd.



Report No.: STS1606043F01

WCDMA Band V (RMC 12.2Kbps)

Lowest Channel



Middle Channel

RL	RF SI	DΩ AC	SENSE: INT		ALIGNAUTO	01:49:44 PM Jun 13, 201			
Center I	Freq 4.515	000000 GHz PN0: Fast (Trig: Free Run	Avg Type	: Log-Pwr	TRACE	ũ		
		IFGain:Low	#Atten: 36 dB			DET PPPP	Auto Tun		
0 dB/div	Ref Offset Ref 35.5				Mkr1 836.0 MHz 23.115 dBm				
25.5							Center Fre		
15.5		-					4.515000000 GH		
5.50					-				
4.50						-13.00 dBr	Start Fre		
24.5				\wedge^2			30.000000 MH		
34.5				V	and the second				
44.5	Parties and the subscription						Stop Fre		
54.5							9.00000000 GH		
Start 30						Stop 9.000 GHz			
Res BV	/ 1.0 MHz	#VB	W 3.0 MHz		Sweep 1	5.0 ms (20001 pts	CF Step 897.000000 MH		
1 N	THE SCL	× 836.0 MHz	23.115 dBm	UNCTION	NCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Ma		
2 N 3	i i	5.821 5 GHz	-30.771 dBm						
4							Freq Offse		
5 6 7									
8 9									
10									
11 12									
sq					STATUS		ei		

Highest Channel

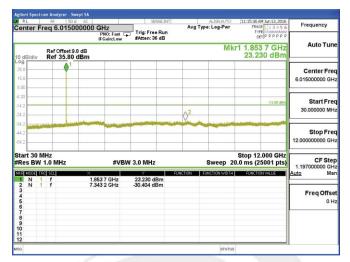
	01:51:57 PM Jun 13, 2016	ALIGNALITO		SENSE: INT			AC AC	RF.			RI
Frequency	TYPE MUMMUMUM DET P P P P P P	: Log-Pwr	Avg Ty	Free Run n: 36 dB	, TI #/	iHz PNO: Fast 😱 FGain:Low	000000 G	4.51	Fre	ter	en
Auto Tur	kr1 845.8 MHz 22.768 dBm	М					Ref Offset 9.5 dB dB/div Ref 35.50 dBm				
Center Fre 4.515000000 GH								1			5.5 5.5
Start Fre 30.000000 MH	-13.00 dBin										4.5
Stop Fre 9.000000000 GH					-		in the second		nda an		4.5
CF Ste 897.000000 MH	Stop 9.000 GHz 5.0 ms (20001 pts)				/ 3.0	#VBW		MHz		s Bl	Re
Auto Ma Freq Offs 0 H	FUNCTION VALUE	NCTION WIDTH	NCTION	8 dBm 6 dBm	22 -30	5.8 MHz 2 5 GHz		f	1	NN	123456789
											8 9 0 1 2

Shenzhen STS Test Services Co., Ltd.



WCDMA Band II (RMC 12.2Kbps)(30M-12G)

Lowest Channel



Middle Channel

RL	RF	50 Q		SENSE:INT	Aug T	ALIGNAUTO	11:21:33 AM)	an 13, 2016	Frequency
enter	Freq b	.01500	PNO: Fast (IEGain:Low	Trig: Free Run #Atten: 36 dB	Avg	ype: Log-Pwr	TYPEN	PPPPP	
		Offset 9.8	dB	section . So db		Mk	r1 1.879 1 23.733		Auto Tun
0 dB/div	Ref	35.80 d	Bm			_	20.700	ubiii	
25.8		-							Center Fre
15,8	-		-						6.015000000 GH
5,80						-			
4.20								-13.00 (50)	Start Fre
14.2					. 2	-		13100 0211	30.000000 Mi
24:2			a						
34.2	Supply Street, or other	State of Lot of	Non-second second s	Alter Photo Contract of the galling	and the second designed	Station of the second	a qualitative providents	and in case of	
44.2						-			Stop Fr 12.00000000 G
54.2	-					-			12.00000000 G
Start 30	MHz N 1.0 M	Hz	#VB	W 3.0 MHz		Sweep 2	Stop 12.00 0.0 ms (250		CF Ste 1.197000000 G
KR MODE	TRC SCL		×	Y	FUNCTION	FUNCTION WIDTH	FUNCTION V	ALUE	<u>Auto</u> M
1 N 2 N	1 7		1.879 1 GHz 7.474 9 GHz	23.733 dBm -30.134 dBm					
3 4									Freq Offs
5									0
5 6 7									
8 9 10									
11 12									
sa						STATUS			

Highest Channel

RL	RF	50 Q AC		SENSE: IN		ALIGNAUTO	11:27:50 AM Jun 13, 2016	-
enter	Freq 6.0	15000000	PNO: Fast G	Trig: Free Run #Atten: 36 dB	Avg	Type: Log-Pwr	TYPE Myddyndydy DET P P P P P	
10 dB/di		set 9.8 dB 5.80 dBm				Mk	r1 1.906 4 GHz 23.431 dBm	Auto Tune
og 25.8 15.8 5.80		¢1						Center Free 6.015000000 GH
4.20							-13.00 dBn	Start Free 30.000000 MH
34.2 44.2 54.2				مرزواه ^{ال} ادواه المعردينيونيي				Stop Fre 12.000000000 GH
start 30 Res B	OMHZ W 1.0 MH	z	#VB	N 3.0 MHz		Sweep 2	Stop 12.000 GHz 0.0 ms (25001 pts)	
1 N	TRE SOL		906 4 GHz 908 1 GHz	23.431 dBm -29.537 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	Auto Ma
2 N 3 4 5 6 7 8 9		11.	908 T GHZ	-29.537 dBm				Freq Offse 0 H

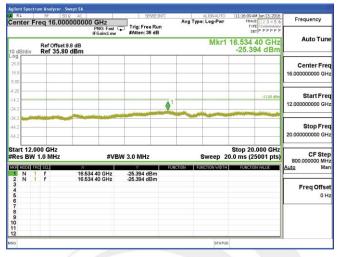
Shenzhen STS Test Services Co., Ltd.



Report No.: STS1606043F01

WCDMA Band II (RMC 12.2Kbps)(12G-20G)

Lowest Channel



Middle Channel

- 0.00 A 0.00 A	2:06 AM Jun 13, 2016		ALIGNAUTO		ISE: INT	SEP		50 Q AC	RF		RL
Frequency	TYPE Monitoria	3	ype: Log-Pwr	Av		Trig: Free #Atten: 36	PNO: Fast	0000000	eq 16.0	er Fre	Cent
Auto Tur	75 52 GHz 1.829 dBm		Mkr1					t 9.8 dB 80 dBm			0 dE
Center Fre 16.00000000 GH											.0g 25.8 15.8 5.80
Start Fre 12.00000000 GF	-13.00 dBm										4.20 14.2 24.2
Stop Fre 20.00000000 GH											34.2 44.2 54.2
CF Ste 800.000000 MH	o 20.000 GHz s (25001 pts)		Sweep 2			3.0 MHz	#VBW		0 GHz .0 MHz		
<u>Auto</u> Ma	INCTION VALUE	FUN	FUNCTION WIDTH	NCTION	Bm	-24.829 dE	75 52 GHz 96 64 GHz		f	N 1	1
Freq Offs 0 ⊦					200	-20.010 00	50 04 GHZ	10.45		• •	34567
											8 9 10

Highest Channel

RL RF 50 Q AC	SENSE: INT	ALIGNAUTO	11:28:22 AM Jun 13, 2016	- 0.000 A 000 A 00
enter Freq 16.00000000 GHz PNO: Fast IFGain:Low	Trig: Free Run #Atten: 36 dB	Avg Type: Log-Pwr	TYPE DET P P P P P P	Frequency
Ref Offset 9.8 dB dB/div Ref 35.80 dBm		Mkr1	16.494 72 GHz -25.521 dBm	Auto Tuni
5.8				Center Free 16.000000000 GH
42	1		-13.00 dBm	Start Fre 12.000000000 GH
4.2				Stop Fre 20.000000000 GH
tart 12.000 GHz Res BW 1.0 MHz #VBV	/ 3.0 MHz	Sweep 2	Stop 20.000 GHz 0.0 ms (25001 pts)	CF Ste 800.000000 MH
I N 1 f 16.494 72 GHz 2 N 1 f 16.494 72 GHz	-25.521 dBm -25.521 dBm	FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Ma
3 4 5 6 7 8	200210211			Freq Offse 0 H
9 0 1 2				

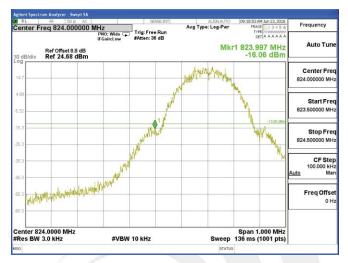
Shenzhen STS Test Services Co., Ltd.



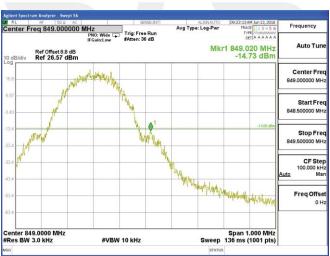
A7 BAND EDGE

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



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 Birningstein nrF 50 Q AC RL nF 50 Q AC Center Freq 849.000000 MHz IFGsint.ew #Atten: 36 dB Aug Type: Log-Pwr Frequency DET A A A A Auto Tu Mkr1 849.007 MHz -17.43 dBm Ref Offset 8.8 dB Ref 26.48 dBm 10 dB/div Center Fre 849.000000 MH Start Fre Stop Fre 849.500000 MH CF Ste 100.000 kH Freq Offs 0 H Center 849.0000 MHz #Res BW 3.0 kHz Span 1.000 MHz Sweep 136 ms (1001 pts) #VBW 10 kHz

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



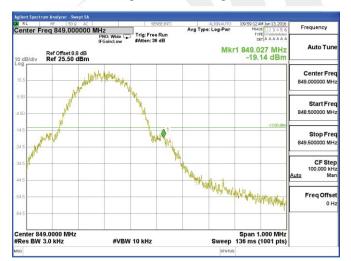
EDGE 850

Lowest Band Edge



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

Highest Band Edge



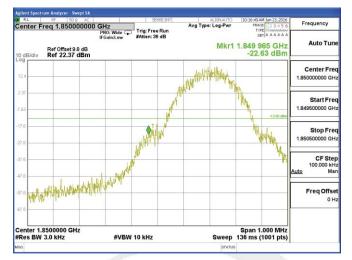
Note:Offset=Cable loss(8.5)+10log(3.2/3)=8.5+0.3=8.8 dB

Shenzhen STS Test Services Co., Ltd.



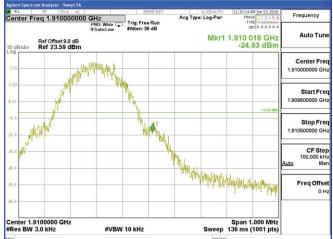
GSM 1900

Lowest Band Edge



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

Highest Band Edge



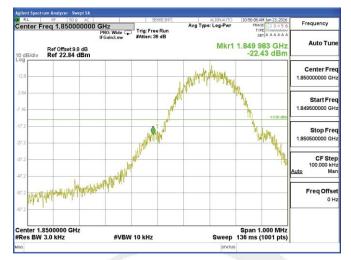
Note:Offset=Cable loss(9.5)+10log(3.2/3)=9.5+0.3=9.8 dB

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 India by State of the state of Frequency Aug Type: Log-Pwr TYPE MWWWW DET A A A A Auto Tur Mkr1 1.910 008 GHz -24.04 dBm Ref Offset 9.8 dB Ref 22.33 dBm 10 d Center Fred 1.91000000 GHz Start Fred Stop Fre 0500000 GH CF Ste 100.000 kH 17 Martin Martin Freq Offs *** 0 H Center 1.9100000 GHz #Res BW 3.0 kHz Span 1.000 MHz Sweep 136 ms (1001 pts) #VBW 10 kHz

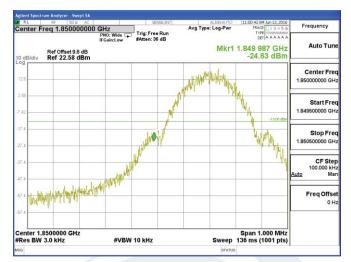
Note:Offset=Cable loss(9.5)+10log(3.2/3)=9.5+0.3=9.8 dB

Shenzhen STS Test Services Co., Ltd.



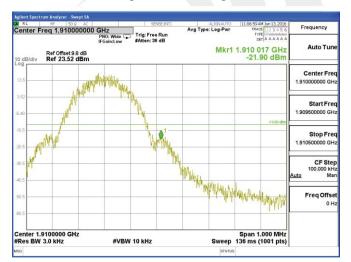
EDGE 1900

Lowest Band Edge



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

Highest Band Edge



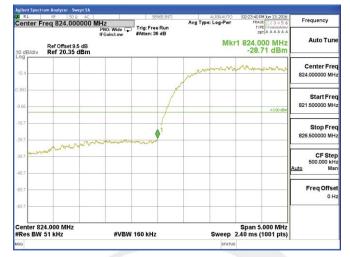
Note:Offset=Cable loss(9.5)+10log(3.2/3)=9.5+0.3=9.8 dB

Shenzhen STS Test Services Co., Ltd.



WCDMA Band VRMC 12.2Kbps





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



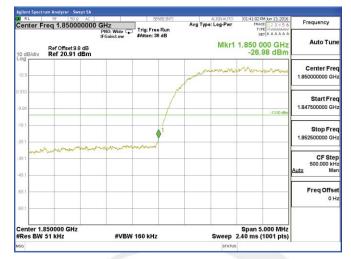
Highest Band Edge

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



WCDMA Band IIRMC 12.2Kbps





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



Highest Band Edge

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



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

	The	e Worst Test R	esults Channe	el 128/824.2 MHz		
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity
1648.499	-35.45	-4.65	-40.1	-13	-27.1	Horizontal
2472.782	-36.99	-2.21	-39.2	-13	-26.2	Horizontal
3296.916	-31.08	0.21	-30.87	-13	-17.87	Horizontal
1648.512	-38.53	-4.65	-43.18	-13	-30.18	Vertical
2472.862	-41.77	-2.21	-43.98	-13	-30.98	Vertical
3296.95	-42.77	0.21	-42.56	-13	-29.56	Vertical
	The	e Worst Test R	esults Channe	1 190/836.6 MHz		
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity
1673.296	-36.49	-4.65	-41.14	-13	-28.14	Horizontal
2509.938	-42.98	-2.21	-45.19	-13	-32.19	Horizontal
3346.517	-38.09	0.21	-37.88	-13	-24.88	Horizontal
1673.317	-37.48	-4.65	-42.13	-13	-29.13	Vertical
2510.014	-31.77	-2.21	-33.98	-13	-20.98	Vertical
3346.558	-36.7	0.21	-36.49	-13	-23.49	Vertical
	The	e Worst Test R	esults Channe	1 251/848.8 MHz		
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity
1697.705	-35.5	-4.65	-40.15	-13	-27.15	Horizontal
2546.522	-43.99	-2.21	-46.2	-13	-33.2	Horizontal
3395.32	-42.15	0.21	-41.94	-13	-28.94	Horizontal
1697.72	-35.52	-4.65	-40.17	-13	-27.17	Vertical
2546.619	-41.73	-2.21	-43.94	-13	-30.94	Vertical
3395.391	-37.74	0.21	-37.53	-13	-24.53	Vertical

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.: STS1606043F01

GPRS 850: (30-9000)MHz

	The	e Worst Test F	Results Channe	el 128/824.2 MHz		
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity
1648.505	-37.41	-4.65	-42.06	-13	-29.06	Horizontal
2472.763	-38.01	-2.21	-40.22	-13	-27.22	Horizontal
3296.9	-32.15	0.21	-31.94	-13	-18.94	Horizontal
1648.523	-39.45	-4.65	-44.1	-13	-31.1	Vertical
2472.82	-42.8	-2.21	-45.01	-13	-32.01	Vertical
3296.99	-43.72	0.21	-43.51	-13	-30.51	Vertical
	The	e Worst Test F	Results Channe	el 190/836.6 MHz		
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity
1673.334	-37.5	-4.65	-42.15	-13	-29.15	Horizontal
2509.892	-45.03	-2.21	-47.24	-13	-34.24	Horizontal
3346.474	-40.1	0.21	-39.89	-13	-26.89	Horizontal
1673.338	-39.44	-4.65	-44.09	-13	-31.09	Vertical
2509.99	-32.78	-2.21	-34.99	-13	-21.99	Vertical
3346.551	-38.67	0.21	-38.46	-13	-25.46	Vertical
	The	e Worst Test F	Results Channe	el 251/848.8 MHz		
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity
1697.68	-37.47	-4.65	-42.12	-13	-29.12	Horizontal
2546.482	-44.97	-2.21	-47.18	-13	-34.18	Horizontal
3395.309	-43.14	0.21	-42.93	-13	-29.93	Horizontal
1697.696	-36.47	-4.65	-41.12	-13	-28.12	Vertical
2546.484	-42.82	-2.21	-45.03	-13	-32.03	Vertical
3395.381	-38.69	0.21	-38.48	-13	-25.48	Vertical

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.: STS1606043F01

EDGE 850: (30-9000)MHz

	The	e Worst Test F	Results Channe	I 128/824.2 MHz		
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity
1648.532	-38.49	-4.65	-43.14	-13	-30.14	Horizontal
2472.755	-38.96	-2.21	-41.17	-13	-28.17	Horizontal
3296.903	-33.06	0.21	-32.85	-13	-19.85	Horizontal
1648.616	-40.48	-4.65	-45.13	-13	-32.13	Vertical
2472.813	-44.81	-2.21	-47.02	-13	-34.02	Vertical
3296.912	-45.76	0.21	-45.55	-13	-32.55	Vertical
	The	e Worst Test F	Results Channe	I 190/836.6 MHz	-	
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity
1673.316	-38.5	-4.65	-43.15	-13	-30.15	Horizontal
2509.932	-44.96	-2.21	-47.17	-13	-34.17	Horizontal
3346.453	-42.07	0.21	-41.86	-13	-28.86	Horizontal
1673.348	-41.44	-4.65	-46.09	-13	-33.09	Vertical
2509.966	-34.83	-2.21	-37.04	-13	-24.04	Vertical
3346.479	-40.75	0.21	-40.54	-13	-27.54	Vertical
	The	e Worst Test F	Results Channe	I 251/848.8 MHz		
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity
1697.677	-39.46	-4.65	-44.11	-13	-31.11	Horizontal
2546.505	-47.02	-2.21	-49.23	-13	-36.23	Horizontal
3395.34	-45.1	0.21	-44.89	-13	-31.89	Horizontal
1697.749	-38.51	-4.65	-43.16	-13	-30.16	Vertical
2546.589	-44.82	-2.21	-47.03	-13	-34.03	Vertical
3395.434	40.79	0.21	41	-13	54	Vertical

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.



PCS 1900: (30-20000)MHz

	The	Worst Test Res	ults for Chann	el 512/1850.2MH	lz	
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity
3700.508	-33.44	0.33	-33.11	-13	-20.11	Horizontal
5550.699	-35.99	4.01	-31.98	-13	-18.98	Horizontal
7400.957	-42.11	10.7	-31.41	-13	-18.41	Horizontal
3700.557	-34.44	0.33	-34.11	-13	-21.11	Vertical
5550.768	-35.79	4.01	-31.78	-13	-18.78	Vertical
7401.047	-41.68	10.7	-30.98	-13	-17.98	Vertical
	The	Worst Test Res	ults for Chann	el 661/1880.0MH	lz	
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity
3760.177	-36.45	0.33	-36.12	-13	-23.12	Horizontal
5640.267	-36.97	4.01	-32.96	-13	-19.96	Horizontal
7520.259	-32.11	10.7	-21.41	-13	-8.41	Horizontal
3760.219	-38.49	0.33	-38.16	-13	-25.16	Vertical
5640.317	-41.74	4.01	-37.73	-13	-24.73	Vertical
7520.332	-42.71	10.7	-32.01	-13	-19.01	Vertical
	The	Worst Test Res	sults for Chann	el 810/1909.8MH	lz	
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity
3819.674	-36.45	0.33	-36.12	-13	-23.12	Horizontal
5729.503	-36.99	4.01	-32.98	-13	-19.98	Horizontal
7639.306	-32.11	10.7	-21.41	-13	-8.41	Horizontal
3819.739	-38.45	0.33	-38.12	-13	-25.12	Vertical
5729.521	-41.8	4.01	-37.79	-13	-24.79	Vertical
7639.403	-42.7	10.7	-32	-13	-19	Vertical

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.: STS1606043F01

GPRS 1900: (30-20000)MHz

	The	Worst Test Re	sults for Chann	el 512/1850.2MF	lz	
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity
3700.522	-35.46	0.33	-35.13	-13	-22.13	Horizontal
5550.741	-37.97	4.01	-33.96	-13	-20.96	Horizontal
7400.933	-44.15	10.7	-33.45	-13	-20.45	Horizontal
3700.544	-36.46	0.33	-36.13	-13	-23.13	Vertical
5550.835	-37.82	4.01	-33.81	-13	-20.81	Vertical
7400.934	-42.66	10.7	-31.96	-13	-18.96	Vertical
	The	Worst Test Re	sults for Chann	el 661/1880.0MF	lz	
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity
3760.237	-37.45	0.33	-37.12	-13	-24.12	Horizontal
5640.308	-37.97	4.01	-33.96	-13	-20.96	Horizontal
7520.31	-33.12	10.7	-22.42	-13	-9.42	Horizontal
3760.28	-39.5	0.33	-39.17	-13	-26.17	Vertical
5640.401	-42.78	4.01	-38.77	-13	-25.77	Vertical
7520.344	-43.74	10.7	-33.04	-13	-20.04	Vertical
	The	Worst Test Re	sults for Chann	el 810/1909.8MF	lz	
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity
3819.634	-37.51	0.33	-37.18	-13	-24.18	Horizontal
5729.504	-37.98	4.01	-33.97	-13	-20.97	Horizontal
7639.339	-33.16	10.7	-22.46	-13	-9.46	Horizontal
3819.732	-39.47	0.33	-39.14	-13	-26.14	Vertical
5729.566	-42.74	4.01	-38.73	-13	-25.73	Vertical
7639.435	-43.72	10.7	-33.02	-13	-20.02	Vertical

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.: STS1606043F01

EDGE 1900: (30-20000)MHz

	The	Norst Test Re	sults for Chann	el 512/1850.2MH	łz	
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity
3700.435	-37.46	0.33	-37.13	-13	-24.13	Horizontal
5550.762	-38.96	4.01	-34.95	-13	-21.95	Horizontal
7400.907	-46.11	10.7	-35.41	-13	-22.41	Horizontal
3700.456	-38.45	0.33	-38.12	-13	-25.12	Vertical
5550.826	-39.81	4.01	-35.8	-13	-22.8	Vertical
7400.947	-44.7	10.7	-34	-13	-21	Vertical
	The	Norst Test Re	sults for Chann	el 661/1880.0MH	łz	
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity
3760.251	-39.52	0.33	-39.19	-13	-26.19	Horizontal
5640.258	-38.96	4.01	-34.95	-13	-21.95	Horizontal
7520.229	-35.1	10.7	-24.4	-13	-11.4	Horizontal
3760.339	-41.46	0.33	-41.13	-13	-28.13	Vertical
5640.275	-44.72	4.01	-40.71	-13	-27.71	Vertical
7520.258	-45.72	10.7	-35.02	-13	-22.02	Vertical
	The	Norst Test Re	sults for Chann	el 810/1909.8MH	lz	
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity
3819.656	-39.47	0.33	-39.14	-13	-26.14	Horizontal
5729.524	-39.01	4.01	-35	-13	-22	Horizontal
7639.321	-35.19	10.7	-24.49	-13	-11.49	Horizontal
3819.673	-41.47	0.33	-41.14	-13	-28.14	Vertical
5729.608	-44.71	4.01	-40.7	-13	-27.7	Vertical
7639.347	-45.71	10.7	-35.01	-13	-22.01	Vertical

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

Channel 4132/826.4MHz								
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity		
1652.857	-34.54	-4.65	-39.19	-13	-26.19	Horizontal		
2479.268	-35.66	-2.21	-37.87	-13	-24.87	Horizontal		
1652.87	-32.74	-4.65	-37.39	-13	-24.39	Vertical		
2479.323	-31.5	-2.21	-33.71	-13	-20.71	Vertical		
	Channel 4183/836.6MHz							
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity		
1673.142	-31.57	-4.65	-36.22	-13	-23.22	Horizontal		
2509.773	-36.63	-2.21	-38.84	-13	-25.84	Horizontal		
1673.183	-28.7	0.21	-28.49	-13	-15.49	Vertical		
2509.787	-34.43	-4.65	-39.08	-13	-26.08	Vertical		
		Chan	nel 4233/846.6N	1Hz				
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity		
1693.843	-36.5	-4.65	-41.15	-13	-28.15	Horizontal		
2539.814	-38.66	-2.21	-40.87	-13	-27.87	Horizontal		
1693.924	-26.7	-4.65	-31.35	-13	-18.35	Vertical		
2539.906	-35.4	-2.21	-37.61	-13	-24.61	Vertical		

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.



UMTS band II(30-20000)MHz

Channel 9262/1852.4MHz									
Frequency(MHz)	Power(dBm)	ARpl	Р _{меа} (dBm)	Limit (dBm)	Margin(dBm)	Polarity			
3704.767	-34.53	0.33	-34.2	-13	-21.2	Horizontal			
5557.217	-35.63	4.01	-31.62	-13	-18.62	Horizontal			
3704.862	-34.74	0.33	-34.41	-13	-21.41	Vertical			
5557.316	-31.44	4.01	-27.43	-13	-14.43	Vertical			
	Channel 9400/1880.0MHz								
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity			
3760.115	-31.48	0.33	-31.15	-13	-18.15	Horizontal			
5640.216	-35.43	4.01	-31.42	-13	-18.42	Horizontal			
3760.15	-27.65	0.33	-27.32	-13	-14.32	Vertical			
5640.27	-35.41	4.01	-31.4	-13	-18.4	Vertical			
		Cha	nnel 9538/1907	.6MHz					
Frequency(MHz)	Power(dBm)	ARpl	P _{Mea} (dBm)	Limit (dBm)	Margin(dBm)	Polarity			
3815.268	-36.54	0.33	-36.21	-13	-23.21	Horizontal			
5722.847	-38.62	4.01	-34.61	-13	-21.61	Horizontal			
3815.3	-28.75	0.33	-28.42	-13	-15.42	Vertical			
5722.852	-35.49	4.01	-31.48	-13	-18.48	Vertical			

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

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



APPENDIX BPHOTOS OF TEST SETUP

RADIATED SPURIOUS EMISSION





Shenzhen STS Test Services Co., Ltd.