# **RADIO TEST REPORT**

Report No: STS1705021F01

Issued for

# UNNECTO HOLDING LIMITED

# 13/F HARBOUR, COMMERCIAL BUILDING 122-124 CON-NAUGHT ROAD CENTRAL, SHEUNG WAN HK, CHINA.

Product Name:	2G MOBILE PHONE
Brand Name:	unnecto ™
Model Name:	U152
Series Model:	N/A
FCC ID:	2ADR3U152
Test Standard:	FCC Part 22H and 24E

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## **TEST RESULT CERTIFICATION**

Applicant's name:	UNNECTO HOLDING LIMITED
Address	13/F HARBOUR COMMERCIAL,BUILDING,122-124, CONNAUGHT,ROAD CENTRAL SHEUNG WAN HK,CHINA.
Manufacture's Name	WEPLUS Communication Co.,Ltd
Address	708, Dongfang Technology Building,16,Keyuan road, S&T Park, Nanshan District, Shenzhen, PRC
Product name:	2G MOBILE PHONE
Brand name:	unnecto ™
Model and/or type reference:	U152
Standards	FCC Part 22H and 24E
Test procedure	ANSI/TIA 603-D (2010)

This device described above has been tested by BZT 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 ....... 04 May. 2017~15 May. 2017

Date of Issue ..... 17 May. 2017

Test Result..... Pass

Testing Engineer

:

eo li

(Leo li)

Technical Manager :

mm

(Tony liu)

Authorized Signatory :

(Vita Li)

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# **Revision History**

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Rev.	Issue Date	Report NO.	Effect Page	Contents
00	17 May. 2017	STS1705021F01	ALL	Initial Issue

## 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

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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 BZT Testing Technology Co., Ltd. Add. : Buliding 17, Xinghua Road Xingwei industrial Park Fuyong, Baoan District, Shenzhen, Guangdong, China FCC Registration No.: 701733

#### 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 toindicate a 95% level of confidence. The measurement data shown herein meets or exceeds the UCISPRmeasurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly tospecified 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 Designa- tion:	2G MOBILE PHONE
Hardware version:	N43V1.1
Software version:	Z1802N4300VGA V01 04-08-2017
FCC ID:	2ADR3U152
	GSM/GPRS;
Tx Frequency:	850: 824.2 MHz ~ 848.8 MHz
	1900: 1850.2 MHz ~ 1909.8MHz
	GSM/GPRS:
Rx Frequency:	850: 869.2 MHz ~ 893.8 MHz
	1900: 1930.2 MHz ~ 1989.8 MHz
Max RF Output Power:	GSM850:33.17dBm,PCS1900:30.79dBm GPRS850(GMSK,1-Slot):33.15dBm,GPRS1900(GMSK,1-Slot):30.75dBm GPRS850(GMSK,2-Slot):32.65dBm,GPRS1900(GMSK,2-Slot):30.25dBm GPRS850(GMSK,3-Slot):31.16dBm,GPRS1900(GMSK,3-Slot):28.85dBm GPRS850(GMSK,4-Slot):30.76dBm,GPRS1900(GMSK,4-Slot):28.43dBm
Type of Emission:	GSM(850):320KGXW: GSM(1900):319KGXW GPRS(850):323KGXW: GPRS(1900):318KGXW
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
Antenna gain:	GSM 850: -1.3dBi ,PCS 1900: -0.7dBi
Power Supply:	DC 3.7V by battery
Battery parameter:	Capacity: 800mAh, Rated Voltage: 3.7V
GPRS Class:	Multi-Class12
Extreme Vol. Lim- its:	DC3.2 V to 4.2 V (Nominal DC3.7V)
Extreme Temp. Tolerance:	-30℃-50℃
_	<i>Voltage 4.2 V and Low Voltage 3.2 V was declared by manufacturer, The erate normally with higher or lower voltage.</i>

#### **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 with maximum output power.

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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

2. 30 MHz to 10th harmonic for GSM1900

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 CLASS 12 LINK	GSM LINK GPRS CLASS 12 LINK		
GSM 1900	GSM LINK GPRS CLASS 12 LINK	GSM LINK GPRS CLASS 12 LINK		

# 4 MEASUREMENT INSTRUMENTS

	•				
Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibra- tion	Calibrated Un- til
Spectrum Analyzer	Agilent	E4407B	MY50140340	2016.10.23	2017.10.22
Signal Analyzer	Agilent	N9020A	MY49100060	2016.10.23	2017.10.22
Test Receiver	R&S	ESCI	101427	2016.10.23	2017.10.22
Communication Tester	Agilent	8960	MY48360751	2016.10.23	2017.10.22
Communication Tester	R&S	CMU200	112012	2016.10.23	2017.10.22
Test Receiver	R&S	ESCI	102086	2016.10.23	2017.10.22
Bilog Antenna	TESEQ	CBL6111D	34678	2014.11.24	2017.11.23
Bilog Antenna (Calibration antenna)	TESEQ	CBL6111D	34678	2014.11.24	2017.11.23
Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-1343	2015.03.05	2018.03.04
Horn Antenna (Calibration antenna)	Schwarzbeck	BBHA 9120D	9120D-1343	2015.03.05	2018.03.04
MXA SIGNAL Analyzer	Agilent	N9020A	MY49100060	2016.10.23	2017.10.22
Double Ridge Horn An- tenna	COM-POWER CORPORATION	AH-840	AHA-840	2016.10.23	2017.10.22
Low frequency cable	N/A	R01	N/A	NCR	NCR
High frequency cable	SCHWARZBECK	AK9515H	SN-96286/96287	NCR	NCR
Vector signal generator	Agilent	E8257D-521	MY45141029	2016.10.23	2017.10.22
Power amplifier	DESAY	ZHL-42W	9638	2016.10.23	2017.10.22
Band Reject fil- ter(1920-1980MHz)	COM-MW	ZBSF-1920-1980	0092	2016.10.23	2017.10.22
Band Reject fil- ter(880-915MHz)	COM-MW	ZBSF-C897.5-35	707	2016.10.23	2017.10.22
Band Reject fil- ter(1710-1785MHz)	COM-MW	ZBSF-C1747.5-75	708	2016.10.23	2017.10.22
Band Reject fil- ter(1850-1910MHz)	COM-MW	ZBSF-C1880-60	709	2016.10.23	2017.10.22
Band Reject fil- ter(2500-2570MHz)	COM-MW	ZBSF-C2535-70	710	2016.10.23	2017.10.22
Highpass Filter	WHKX7.0/18G-8SS	Wainwright	18	2016.10.23	2017.10.22
E an dia an and an difference a liter	ation data of "NICE			( I	· · · ·

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

## 5 TEST ITEMS 5.1 CONDUCTED OUTPUT POWER

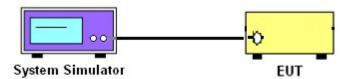
#### Test overview

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

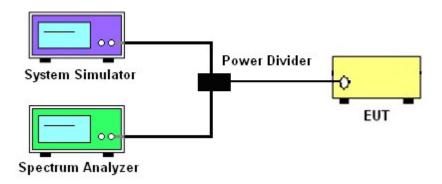
#### TEST OVERVIEW

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



#### 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.

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## TEST PROCEDURE

1. The testing follows FCC KDB 971168 D01

Section 5.2.2 (for GSM/GPRS) and ANSI / TIA-603-D-2010 Section 2.2.17.

2. The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.

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

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

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

6. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to 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.

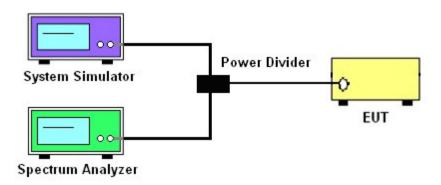
All modes of operation were investigated and the worst case configuration results are reported in this section.

#### 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:

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

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

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

#### Test Procedure

**Temperature Variation** 

1. The testing follows fcckdb 971168 D01 section 9.0

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

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

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

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

Voltage Variation

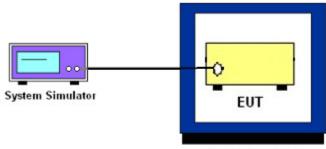
1. The testing follows FCC KDB 971168 D01 Section 9.0.

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

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

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

## TEST SETUP



Thermal Chamber

# 5.6 SPURIOUS EMISSIONS AT ANTENNA TERMINALS <u>Test Overview</u>

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

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

## Test procedure

1. The testing FCC KDB 971168 D01 v02r02 Section 6.0. and ANSI/TIA-603-D-2010-Section 2.2.13.2(d)

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.

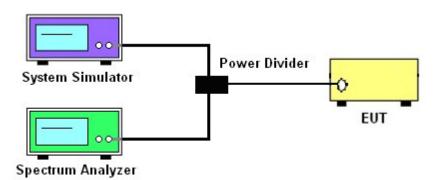
7. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

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

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

= -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. The testing FCC KDB 971168 D01 v02r02 Section 6.0. and ANSI/TIA-603-D-2010-Section 2.2.13.2(d)

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

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

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

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

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

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

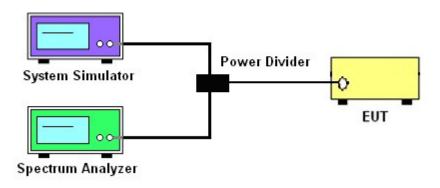
7.The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

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

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

= -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 with the EUT transmitting into an integral antenna. Measurements on signalso-perating below 1GHz are performed using horizontally and vertically polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizon-tally polarizedhorn antennas. All measurements are performed as peak measurements while the EUT isoperating at maximum power and at the appropriate frequencies.

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

# Test procedure

1. The testing FCC KDB 971168 D01 Section 5.8 and ANSI/TIA-603-D-2010-Section 2.2.12.2(b)

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

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

ERP/EIRP = P.SG + GT - LC

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

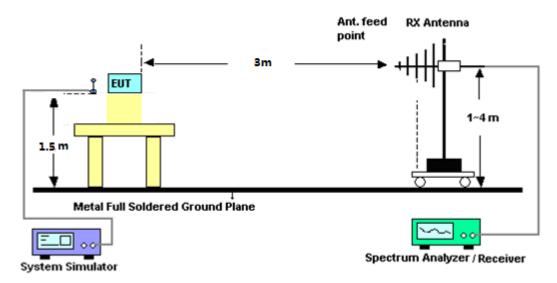
P.SG = measured transmitter output power or PSD, in dBm or dBW;

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

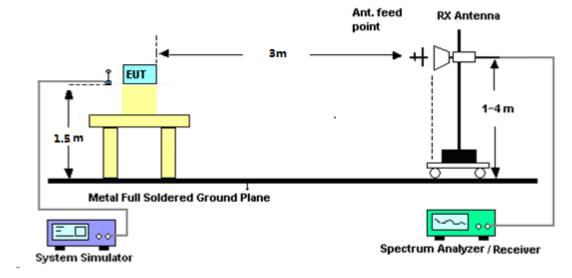
LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

#### TEST SETUP

For radiated test from 30MHz to 1GHz



For radiated test from above 1GHz



32.87

33.01

33.17

32.85

32.98

33.15

32.41 32.55

32.65

30.99

31.13

31.16

30.54

30.64

30.76

#### APPENDIX ATESTRESULT A1CONDUCTED OUTPUT POWER GSM 850:

AVG Power Mode Frequency (MHz) 824.2 GSM850 836.6 848.8 824.2 GPRS850(GMSK, 1-Slot) 836.6 848.8 824.2 GPRS850(GMSK, 2-Slot) 836.6 848.8 824.2

GPRS850(GMSK, 3-Slot)

GPRS850(GMSK, 4-Slot)

PCS 1900:

Mode	Frequency (MHz)	AVG Power
	1850.2	30.79
GSM1900	1880.0	30.31
	1909.8	29.85
	1850.2	30.75
GPRS1900(GMSK, 1-Slot)	1880.0	30.28
	1909.8	29.82
	1850.2	30.25
GPRS1900(GMSK, 2-Slot)	1880.0	29.86
	1909.8	29.38
	1850.2	28.85
GPRS1900(GMSK, 3-Slot)	1880.0	28.39
	1909.8	27.88
	1850.2	28.43
GPRS1900(GMSK, 4-Slot)	1880.0	27.99
	1909.8	27.38

836.6

848.8

824.2

836.6

848.8

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### A2 PEAK-TO-AVERAGE RADIO

PCS 1900:

Mode	Frequency (MHz)	PEAK Power	AVG Power	PAR
	1850.2	30.90	30.79	0.11
PCS1900	1880	30.42	30.31	0.11
	1909.8	29.95	29.85	0.10
GPRS1900	1850.2	30.87	30.75	0.12
	1880	30.38	30.28	0.10
	1909.8	29.94	29.82	0.12

# 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	24.43	0.44	6.5	30.49	Horizontal	Pass
	824.2	26.26	0.44	6.5	32.32	Vertical	Pass
0014050	836.6	24.54	0.45	6.5	30.59	Horizontal	Pass
GSM850	836.6	26.44	0.45	6.5	32.49	Vertical	Pass
	848.8	25.54	0.46	6.5	31.58	Horizontal	Pass
	848.8	27.54	0.46	6.5	33.58	Vertical	Pass
	824.2	24.34	0.44	6.5	30.40	Horizontal	Pass
	824.2	26.14	0.44	6.5	32.20	Vertical	Pass
	836.6	24.57	0.45	6.5	30.62	Horizontal	Pass
GPRS850	836.6	26.26	0.45	6.5	32.31	Vertical	Pass
	848.8	25.74	0.46	6.5	31.78	Horizontal	Pass
	848.8	27.33	0.46	6.5	33.37	Vertical	Pass

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		Radiated	Power (I	EIRP) fo	r PCS 1900 MH	Z	
Mode	Frequency	S G.Level	Cable	Gain	PMeas	Polarization	Conclusion
		(dBm)	loss	(dBi)	E.I.R.P.(dBm)	Of Max.EIRP.	
	1850.2	20.28	2.41	10.35	28.22	Horizontal	Pass
	1850.2	22.24	2.41	10.35	30.18	Vertical	Pass
PCS1900	1880	20.02	2.42	10.35	27.95	Horizontal	Pass
PC31900	1880	21.86	2.42	10.35	29.79	Vertical	Pass
	1909.8	19.35	2.43	10.35	27.27	Horizontal	Pass
	1909.8	21.34	2.43	10.35	29.26	Vertical	Pass
	1850.2	20.45	2.41	10.35	28.39	Horizontal	Pass
	1850.2	22.12	2.41	10.35	30.06	Vertical	Pass
GPRS1900	1880	20.02	2.42	10.35	27.95	Horizontal	Pass
GFRS1900	1880	21.67	2.42	10.35	29.6	Vertical	Pass
	1909.8	19.45	2.43	10.35	27.37	Horizontal	Pass
	1909.8	21.24	2.43	10.35	29.16	Vertical	Pass

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	Occupied Bandwidth for GSM 850 band									
Mode	Frequency(MHz)	Occupied Bandwidth	Emission Bandwidth							
Mode	Frequency(IVIEZ)	(99%)( kHz)	(-26dBc)( kHz)							
Low Channel	824.2	247.05	320.2							
Middle Channel	836.6	247.97	319.0							
High Channel	848.8	242.23	312.5							
	Occupied Band	width for GPRS 850 band								
Mode		Occupied Bandwidth	Emission Bandwidth							
Mode	Frequency(MHz)	(99%)( kHz)	(-26dBc)( kHz)							
Low Channel	824.2	243.58	309.5							
Middle Channel	836.6	243.99	317.2							
High Channel	848.8	244.42	322.8							

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

	Occupied Bandwidth for GSM1900 band									
Mode	Frequency(MHz)	Occupied Bandwidth	Emission Bandwidth							
Mode	Frequency(IVIHZ)	(99%)( kHz)	(-26dBc)( kHz)							
Low Channel	1850.2	244.53	315.6							
Middle Channel	1880.0	241.68	319.1							
High Channel	1909.8	245.06	314.0							
	Occupied Bandy	width for GPRS 1900 band								
Mode	Fraguanay (MHz)	Occupied Bandwidth	Emission Bandwidth							
Widde	Frequency(MHz)	(99%)( kHz)	(-26dBc)( kHz)							
Low Channel	1850.2	243.98	317.7							
Middle Channel	1880.0	242.45	314.4							
High Channel	1909.8	243.22	311.8							

#### GSM 850 CH 128









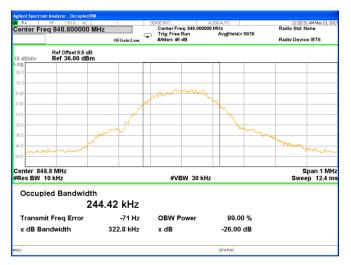
GSM 850 CH 251

#### GPRS 850 CH 128









GPRS 850 CH 251

#### PCS 1900 CH 512



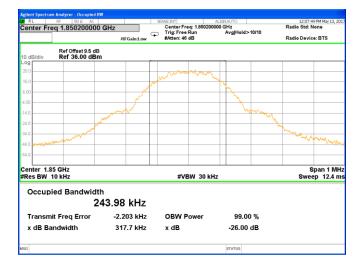
### PCS 1900 CH 661



#### PCS 1900 CH 810



#### GPRS 1900 CH 512



#### GPRS 1900 CH 661



#### GPRS 1900 CH 810



Report No.: STS1705021F01

# A5 FREQUENCY STABILITY

Normal Voltage = 3.7V. ; Battery End Point (BEP) = 3.2 V.; Maximum Voltage =4.2 V

	GSM 850 Middle Channel/836.6MHz											
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result							
50	-	23.07	0.028									
40		13.06	0.016									
30		35.51	0.042									
20		26.95	0.032									
10	Normal Voltage	25.09	0.030									
0		12.95	0.015	2.5ppm	PASS							
-10		22.81	0.027									
-20		12.30	0.015									
-30		31.57	0.038									
25	Maximum Voltage	16.03	0.019									
25	BEP	19.40	0.023									

	GPRS 850 Middle Channel/836.6MHz											
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result							
50	-	28.02	0.033	_								
40		33.63	0.040									
30		20.96	0.025									
20		14.38	0.017		PASS							
10	Normal Voltage	16.73	0.020									
0		35.04	0.042	2.5ppm								
-10		34.13	0.041									
-20		31.46	0.038									
-30		33.37	0.040									
25	Maximum Voltage	20.72	0.025									
25	BEP	12.80	0.015									

	GSM 1900 Middle Channel/1880MHz												
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result								
50		24.97	0.013										
40		12.36	0.007										
30		29.58	0.016										
20		27.08	0.014										
10	Normal Voltage	35.84	0.019	Within									
0		35.54	0.019	Authorized	PASS								
-10		31.93	0.017	Band									
-20		14.89	0.008										
-30		26.75	0.014										
25	Maximum Voltage	23.23	0.012										
25	BEP	16.92	0.009										

	GPRS 1900 Middle Channel/1880MHz											
Temperature (°C)	Voltage (Volt)	Freq. Dev. (Hz)	Freq. Dev. (ppm)	Limit	Result							
50		26.84	0.014									
40		12.56	0.007									
30		31.35	0.017									
20		23.82	0.013									
10	Normal Voltage	29.56	0.016	Within								
0		31.00	0.016	Authorized	PASS							
-10		15.80	0.008	Band								
-20		16.48	0.009									
-30		32.91	0.018									
25	Maximum Voltage	17.15	0.009									
25	BEP	30.07	0.016									

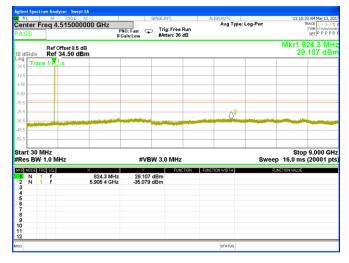
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## A6 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

GSM 850 BAND

#### Lowest Channel



# Middle Channel

			AC AC	SENSE: IF	11	ALIGNAUTO			0 AM May 13, 2
Cente PASS	r Fre	eq 4.51500	00000 GHz PN	0:Fast 😱 Tris ain:Low #Att	g: Free Run ten: 36 dB	Avg Type	: Log-Pwr	т	TYPE MWWW DET P P P P
0 dB/d	liv	Ref Offset 8. Ref 34.50							36.9 MI 244 dB
-og 24.5	race	1 F 1.s							
14.6									
4.50									
5.50		_							
15.5							_		
25.5 -		_				^2			
35.5			and the second statements	Sector Sector		Lange Landson Vi	and the second sec	and the second second	-
45.5									
55.5									
Hart 2	30 MH			#VBW 3.0	MHz		Swee	Stop p 16.0 ms	9.000 G (20001 p
	3W 1	.0 MHz							
Res E	DE TRC		× 836.9 MHz	Y	FUNCTION	FUNCTION WIDTH		UNCTION VALUE	
Res E	e tro	SCL	× 836.9 MHz 6.022 0 GHz		FUNCTION	FUNCTION WIDTH		UNCTION VALUE	
Res 1 N 2 N 3	e tro	sci. f	836.9 MHz	29.244 dBm	FUNCTION	FUNCTION WIDTH		UNCTION VALUE	
Res 1 N 2 N 3	e tro	sci. f	836.9 MHz	29.244 dBm	FUNCTION	FUNCTION WIDTH		UNCTION VALUE	
Res 1 N 2 N 3	e tro	sci. f	836.9 MHz	29.244 dBm	FUNCTION	FUNCTION WIDTH		UNCTION VALUE	
Res 1 1 N 2 N 3 4 5 6 7 8 9	e tro	sci. f	836.9 MHz	29.244 dBm	FUNCTION	FUNCTION WIDTH		UNCTION VALUE	
Res 1 N 2 N 3	e tro	sci. f	836.9 MHz	29.244 dBm	FUNCTION	FUNCTION WIDTH		UNCTION VALUE	

RL		RF	er - Swept 50 ຄ	AC		SENSE:INT		ALIG	NAUTO		11:2	0:27 AM May 13, 2
Center PASS	r Fre	q 4.5	15000		PNO: Fast 🕞 FGain:Low	Trig: Fro #Atten: 3	e Run 36 dB		Avg Type:	Log-Pwr		TRACE 1 2 3 4 TYPE MWWW DET P P P P
0 dB/di			set 8.5 d 1.50 dB									849.0 MH 9.445 dB
.og 24.5	race	1111										
4.6												
1.50							-					
.50												
5.5									~			
	- have - t			L					st aller			
5.5												
6.5		_										
tart 3 Res B			z		#VB	W 3.0 MI	łz			Swe	Ste ep 16.0 m	op 9.000 Gl 1s (20001 p
1 N 2 N	E TRC 1 1	SCL f f		× 849.0 MHz 5.860 5 GHz		dBm	UNCTION	FUNCTIO	IN WIDTH		FUNCTION VALUE	Ε
3												
4 5 6												
7												
8 9 0												
1												
a									STATUS			

# Report No.: STS1705021F01

# GPRS 850 BAND

# Lowest Channel

Agilent Spectrum								
RL	RF 50 Ω		SENSE: INT		ALIGNAUTO			01 AM May 13, 20
Center Free PASS	q 4.51500	PN	0: Fast 🖵 Trig: Fre Jin:Low #Atten: 3	Run dB	Avg Type:	Log-Pwr		TYPE MWMMM DET P P P P P
10 dB/div	Ref Offset 8.5 Ref 23.53 d							24.3 MH .526 dBi
13.6 Trace	1 v1us							
3.53 6.47								
26.5							<sup>2</sup>	
36.5				-				
i6.5 i6.6								
56.5								
itart 30 MH Res BW 1.			#VBW 3.0 MH	z		Swee	Stop p 16.0 ms	9.000 G (20001 p
KR MODE TRC	SCL	×		NCTION F	UNCTION WIDTH		FUNCTION VALUE	
1 N 1 2 N 1 3 4	f	824.3 MHz 7.502 0 GHz	13.526 dBm -31.966 dBm					
4 5 6 7 8 9								
1								
12 sq					STATUS			

#### Middle Channel

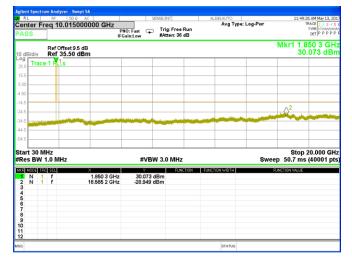
RL		RF	er - Swept S/ 50 Ω AC 150000	00 GHz	NO: Fast	ENSE:INT Trig: Fre- #Atten: 3	e Run	ALIGN AUTO Avg	Type: L	og-Pwr	11:3	1:46 AM May 13, 2 TRACE 1 2 3 4 TYPE MINNY DET P P P
0 dB/d			set 8.5 dB 3.53 dBn		sain:Low	Printern. o	o ub					836.9 M 3.527 dB
13.6 T	race	1 1 1										_
3.53 6.47												
16.5									_			
36.5		_					_				^ <del>2</del>	
6.5		a de la com	, in the second		-	ويلعمهم		and state storage be	-		1 Value	
6.5		-							-			
6.5 6.5												
tart 3 Res E		iz .0 MH:	z		#VB\	V 3.0 MH	z			Swee	Sto ep 16.0 m	op 9.000 G 1s (20001 p
1 N 2 N	E TRC	sa.		836.9 MHz 7.394 4 GHz	13.527 c -35.589 c	dBm	NCTION	FUNCTION WIDT	H.	F	UNCTION VALUE	8
3	-			7.004 4 0112	-00.003 (							
4 5 6												
7 8 9												
0												
1												
a								STAT	US			

Agilent Spectr										
Center Fi PASS		50 R AC	P	NO: Fast Gain:Low	SENSE: JNT Trig: Free #Atten: 36	Run dB	ALIGNAUTO Avg Type	: Log-Pwr	т	2 AM May 13, 201 RACE 1 2 3 4 5 TYPE MUMANAN DET P P P P P
10 dB/div		et 8.5 dB .66 dBm							Mkr1 8 13.	49.0 MH: 659 dBm
13.7	e 1 N21s									
3.66 -6.34										
-16.3							2			
-36.3				ik postal i basi d			V.	-	-	
-46.3 -56.3										
-66.3										
Start 30 N #Res BW				#VB	W 3.0 MHz	!		Swe	Stop ep 16.0 ms	9.000 GHz (20001 pts
MKE MODE TE 1 N 1 2 N 1 3 4	f f	*	849.0 MHz 5.591 4 GHz	13.659 -33.160	dBm	ICTION	FUNCTION WIDTH		FUNCTION VALUE	
4 5 6 7 8 9										
9 10 11 12										
MSG							STATUS			

# GSM1900 BAND(30M-20G)

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#### Lowest Channel



# Middle Channel

RL	RF			SENSE: IN	JT	ALIGNAUTO			06 AM May 13,
enter ASS	Freq	10.015000	PN	D: Fast 🧊 Trig iin:Low #Att	g:FreeRun ten:36 dB	Avg Type:	Log-Pwr		TYPE MWWW DET P P P F
dB/di	v Re	f Offset 9.5 dB f 35.50 dB	B m					Mkr1 1.8 30	80 2 G .249 dE
5.6 Tr	race 1 F	<u>1</u> s							
5.6									
50									
50									
4.5								.2	
4.5									
1.5		A CONTRACTOR OF THE OWNER		No. of the local diversion	and a share	and the strength of the streng			
4.6									
4.5									
	0 MHz W 1.0 I	MHz		#VBW 3.0	MHz		Swe	Stop ep 50.7 ms	20.000 G (40001 j
	e tro scl		X 1.880 2 GHz 16.485 3 GHz	30.249 dBm -27.005 dBm	FUNCTION	FUNCTION WIDTH		FUNCTION VALUE	
1 N 2 N	11		10.400 3 GHZ	E1.000 010111					
1 N 2 N 3	11		10,400 3 GHz	21,000 0.511					
1 N 2 N 3 4 5 6	11		10,400 3 6Hz	Linoo ubiii					
1 N 2 N 3 4 5 6 7	11		10.400 3 912						
1 N 2 N 3 4 5 6 7 8 9	1 f 1 f		10,400 3 912						
1 N 2 N 3 4 5 6 7 8	1 7		10,400 3 912						

RL	RF	50 Ω A		58	INSE: INT	AL	IGNAUTO		11:54	31 AM May 13, 20
enter ASS	Freq 1	0.015000		NO: Fast 🖵 Gain:Low	Trig: Free F #Atten: 36 d	lun IB	Avg Type:	Log-Pwr		TYPE MWMM DET P P P P
0 dB/div	Ref	offset 9.5 dE 35.50 dBr								910 2 GH ).154 dB
og 15.6 Tra	ice 1 F	1,								
5.6										-
.50										
4.5										
4.5									$Q^2$	
4.5		and the second se								
4.5										
tart 30 Res BV	MHz N 1.0 M	Hz		#VBV	V 3.0 MHz			Swee	Stop p 50.7 ms	20.000 GI s (40001 p
KR MODE	TRC SCL		× 1.910 2 GHz	30,154 d		FIDN FUNC	TION WIDTH	1	UNCTION VALUE	
2 N 3	1 1		16.485 3 GHz	-26.768 d	Bm					
4										
6 7										
9										
0										
2										

# Report No.: STS1705021F01

# GPRS1900 BAND(30M-20G)

# Lowest Channel

RL	n Analyzer - Swe RF 50 Ω		SENSE: IN		ALIGNAUTO		12:09	:26 PM May 13, 2
enter Fre	eq 10.0150	000000 GHz	IO: Fast Trig: ain:Low #Atte	Free Run n: 36 dB	Avg Type:	Log-Pwr		TRACE 1234 TYPE MWWWW DET P P P P
dB/div	Ref Offset 9.5 Ref 33.50 c						Mkr1 1. 28	850 3 G 3.021 dE
3.6 Trace	1 FL1s							
50								
.5	_							
.5					and the second second		$\Delta^2$	
i.5 i.5								
art 30 MH Res BW 1			#VBW 3.0	MHz		Swe	Stop ep 50.7 m	20.000 G s (40001 p
R MODE TRO N 1 2 N 1 3	f f	× 1.850 3 GHz 16.445 3 GHz	28.021 dBm -31.833 dBm	FUNCTION	FUNCTION WIDTH		FUNCTION VALUE	
i								
2								

#### Middle Channel

RL		vept 5A 2 AC 000000 GHz	SENSE:1		ALIGNAUTO Avg Type	: Log-Pwr	TI	6 PM May 13, 2 RACE 1 2 3 4
ASS		PN	10: Fast 🖵 Tris ain:Low #At	g:FreeRun ten:36 dB				DET P P P P
0 dB/div	Ref Offset 9 Ref 33.50						Mkr1 1.8 28.	80 2 GI 291 dB
og 73.5 Trac	e 1 F 1s							
3.6								
50								
50								
1.5								
5.5							$\Diamond^2$	la sililiansi
1.5	and the second second	No.	and an other designed in the local data	Land Street Street	and the second			
3.5		-						
6.5								
art 30 M Res BW	MHz 1.0 MHz		#VBW 3.0	MHz		Swee	Stop 2 p 50.7 ms	20.000 G (40001 p
GRIMODEITI	f	× 1.880 2 GHz	28.291 dBm	FUNCTION	FUNCTION WIDTH	FL	INCTION VALUE	
2 N 1	ſ	16.944 6 GHz	-30.987 dBm					
4								
5								
, B 9								
0								
1								
3					STATUS			

Agilent Spectrum Analyzer - Swept SA			
Center Freq 10.015000000 GHz	SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr	12:10:22 PM May 13, 2017 TRACE 1 2 3 4 5 6
P	NO: Fast 😱 Trig: Free Run Sain:Low #Atten: 36 dB		DET P P P P P
Ref Offset 9.5 dB 10 dB/div Ref 33.50 dBm			Mkr1 1.910 2 GHz 28.139 dBm
Log 23.5 Trace 1 P13			
13.5			
3.50			
-6.50			
-16.5			
-26.5			
36.5		and the second	and the second sec
-46.5			
-56.5			
Start 30 MHz			Stop 20.000 GHz
#Res BW 1.0 MHz	#VBW 3.0 MHz	Swe	ep 50.7 ms (40001 pts)
MKR MODE TRC SCL X		FUNCTION WIDTH	FUNCTION VALUE
1 N 1 f 1.910 2 GHz 2 N 1 f 18.821 8 GHz	28.139 dBm -27.494 dBm		
2 N 1 f 18.821 8 GHz 4 5 6 7 8 9 9 10			
5			
7			
9			
10			
12			
MSG		STATUS	

#### A7 BAND EDGE

#### GSM 850

#### Lowest Band Edge





# **GPRS 850**

#### Lowest Band Edge





#### GSM 1900

#### Lowest Band Edge





#### **GPRS 1900**

#### Lowest Band Edge





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

GSM 850: (30-9000)MHz											
	The Worst Test Results Channel 128/824.2 MHz										
	S G.Lev	A == t ( -1D i )			PMea	Limit	Margin	Delevitu			
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	ARpl	(dBm)	(dBm)	(dB)	Polarity			
1648.46	-41.01	9.40	4.75	-4.65	-36.36	-13.00	-23.36	Н			
2472.55	-39.52	10.60	8.39	-2.21	-37.31	-13.00	-24.31	Н			
3296.43	-32.23	12.00	11.79	-0.21	-32.02	-13.00	-19.02	Н			
1648.09	-44.59	9.40	4.75	-4.65	-39.94	-13.00	-26.94	V			
2472.59	-45.30	10.60	8.39	-2.21	-43.09	-13.00	-30.09	V			
3296.91	-42.55	12.00	11.79	-0.21	-42.34	-13.00	-29.34	V			
The Worst Test Results Channel 190/836.6 MHz											
Frequency(MHz)	S G.Lev	Apt(dBi)		ABol	PMea	Limit	Margin	Polarity			
Frequency(IVIHZ)	(dBm)	Ant(dBi)	Loss	ARpl	(dBm)	(dBm)	(dB)	Polarity			
1672.90	-40.80	9.50	4.76	-4.74	-36.06	-13.00	-23.06	Н			
2509.51	-39.88	10.70	8.40	-2.30	-37.58	-13.00	-24.58	Н			
3346.19	-31.12	12.20	11.80	-0.40	-30.72	-13.00	-17.72	Н			
1673.14	-43.29	9.40	4.75	-4.65	-38.64	-13.00	-25.64	V			
2509.49	-45.05	10.60	8.39	-2.21	-42.84	-13.00	-29.84	V			
3346.21	-42.81	12.20	11.82	-0.38	-42.43	-13.00	-29.43	V			
	Th	e Worst Te	est Result	s Channe	l 251/848.8	8 MHz					
	S G.Lev			ADal	PMea	Limit	Margin	Delority			
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	ARpl	(dBm)	(dBm)	(dB)	Polarity			
1697.55	-40.61	9.60	4.77	-4.83	-35.78	-13.00	-22.78	Н			
2546.45	-39.66	10.80	8.50	-2.30	-37.36	-13.00	-24.36	Н			
3395.12	-32.06	12.50	11.90	-0.60	-31.46	-13.00	-18.46	Н			
1697.55	-43.20	9.60	4.77	-4.83	-38.37	-13.00	-25.37	V			
2546.54	-44.26	10.80	8.50	-2.30	-41.96	-13.00	-28.96	V			
3395.04	-43.93	12.50	11.90	-0.60	-43.33	-13.00	-30.33	V			

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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

GFN3 650. (50-90	,	<b>^</b>	PRS 850:	(20,000)	MU-				
	Th			. ,					
		e Worst Te	est Result	s Channe					
Frequency(MHz)	S G.Lev	Ant(dBi)	Loss	ARpl	PMea	Limit	Margin	Polarity	
	(dBm)	~ /			(dBm)	(dBm)	(dB)	,	
1648.50	-40.83	9.40	4.75	-4.65	-36.18	-13.00	-23.18	Н	
2472.29	-40.53	10.60	8.39	-2.21	-38.32	-13.00	-25.32	Н	
3296.72	-32.21	12.00	11.79	-0.21	-32.00	-13.00	-19.00	Н	
1648.40	-44.38	9.40	4.75	-4.65	-39.73	-13.00	-26.73	V	
2472.54	-44.39	10.60	8.39	-2.21	-42.18	-13.00	-29.18	V	
3296.56	-43.77	12.00	11.79	-0.21	-43.56	-13.00	-30.56	V	
The Worst Test Results Channel 190/836.6 MHz									
Frequency(MHz)	S G.Lev				PMea	Limit	Margin	Polarity	
	(dBm)	Ant(dBi)	Loss	oss ARpl	(dBm)	(dBm)	(dB)		
1673.10	-40.20	9.50	4.76	-4.74	-35.46	-13.00	-22.46	Н	
2509.90	-39.39	10.70	8.40	-2.30	-37.09	-13.00	-24.09	Н	
3346.21	-32.12	12.20	11.80	-0.40	-31.72	-13.00	-18.72	Н	
1672.87	-43.24	9.40	4.75	-4.65	-38.59	-13.00	-25.59	V	
2509.84	-44.12	10.60	8.39	-2.21	-41.91	-13.00	-28.91	V	
3346.35	-42.49	12.20	11.82	-0.38	-42.11	-13.00	-29.11	V	
	Th	e Worst Te	est Result	s Channe	I 251/848.8	3 MHz			
	S G.Lev				PMea	Limit	Margin	Dubudt	
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	ARpl	(dBm)	(dBm)	(dB)	Polarity	
1697.65	-41.06	9.60	4.77	-4.83	-36.23	-13.00	-23.23	Н	
2546.41	-39.40	10.80	8.50	-2.30	-37.10	-13.00	-24.10	Н	
3395.13	-31.88	12.50	11.90	-0.60	-31.28	-13.00	-18.28	Н	
1697.24	-44.13	9.60	4.77	-4.83	-39.30	-13.00	-26.30	V	
2546.40	-44.75	10.80	8.50	-2.30	-42.45	-13.00	-29.45	V	
3395.18	-43.27	12.50	11.90	-0.60	-42.67	-13.00	-29.67	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.

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

DCS 1900: (30-20000)MHz										
	The	Worst Test	t Results	for Chann	el 512/185	0.2MHz				
	S G.Lev				PMea	Limit	Margin	Deleritur		
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	ARpl	(dBm)	(dBm)	(dB)	Polarity		
3700.33	-34.66	12.60	12.93	0.33	-34.99	-13.00	-21.99	Н		
5550.44	-35.43	13.10	17.11	4.01	-39.44	-13.00	-26.44	Н		
7400.85	-33.64	11.50	22.20	10.70	-44.34	-13.00	-31.34	Н		
3700.51	-35.77	12.60	12.93	0.33	-36.10	-13.00	-23.10	V		
5550.56	-33.86	13.10	17.11	4.01	-37.87	-13.00	-24.87	V		
7400.88	-33.06	11.50	22.20	10.70	-43.76	-13.00	-30.76	V		
The Worst Test Results for Channel 661/1880.0MHz										
Frequency(MHz)	S G.Lev	Ant(dBi)		ADal	PMea	Limit	Margin	Polarity		
	(dBm)	Апцаві)	Loss	ARpl	(dBm)	(dBm)	(dB)			
3759.87	-34.88	12.60	12.93	0.33	-35.21	-13.00	-22.21	Н		
5640.22	-34.75	13.10	17.11	4.01	-38.76	-13.00	-25.76	Н		
7520.10	-32.20	11.50	22.20	10.70	-42.90	-13.00	-29.90	Н		
3760.00	-34.84	12.60	12.93	0.33	-35.17	-13.00	-22.17	V		
5640.01	-33.82	13.10	17.11	4.01	-37.83	-13.00	-24.83	V		
7519.84	-32.97	11.50	22.20	10.70	-43.67	-13.00	-30.67	V		
	The	Worst Test	t Results	for Chann	el 810/190	9.8MHz				
	S G.Lev			ADal	PMea	Limit	Margin	Delerity		
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	ARpl	(dBm)	(dBm)	(dB)	Polarity		
3819.57	-34.67	12.60	12.93	0.33	-35.00	-13.00	-22.00	Н		
5729.50	-35.47	13.10	17.11	4.01	-39.48	-13.00	-26.48	Н		
7638.90	-32.15	11.50	22.20	10.70	-42.85	-13.00	-29.85	Н		
3819.40	-35.38	12.60	12.93	0.33	-35.71	-13.00	-22.71	V		
5729.07	-34.40	13.10	17.11	4.01	-38.41	-13.00	-25.41	V		
7639.08	-33.00	11.50	22.20	10.70	-43.70	-13.00	-30.70	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.

GPRS 1900: (30-20000)MHz

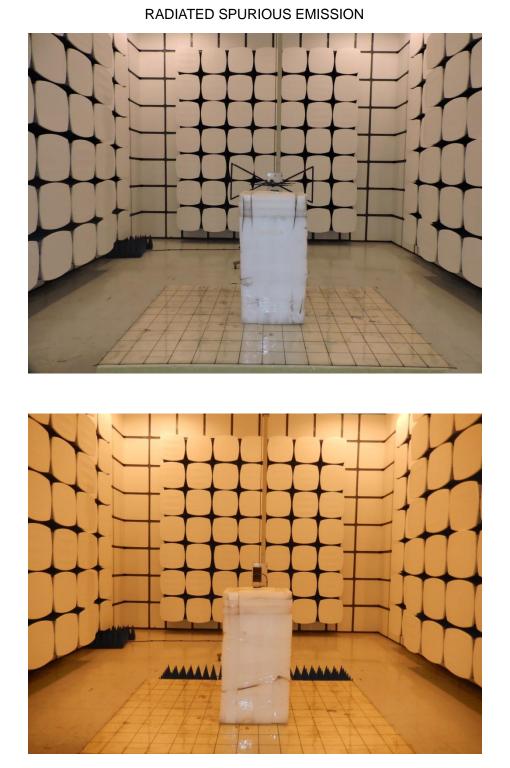
GPRS1900. (30-20000)MHz GPRS1900: (30-20000)MHz											
	The Worst Test Results for Channel 512/1850.2MHz										
	S G.Lev				PMea	Limit	Margin	<b>_</b>			
Frequency(MHz)	(dBm)	Ant(dBi)	Loss	ARpl	(dBm)	(dBm)	(dB)	Polarity			
3700.32	-34.33	12.60	12.93	0.33	-34.66	-13.00	-21.66	Н			
5550.38	-35.34	13.10	17.11	4.01	-39.35	-13.00	-26.35	Н			
7400.96	-32.30	11.50	22.20	10.70	-43.00	-13.00	-30.00	Н			
3700.51	-35.82	12.60	12.93	0.33	-36.15	-13.00	-23.15	V			
5550.44	-34.09	13.10	17.11	4.01	-38.10	-13.00	-25.10	V			
7400.96	-32.03	11.50	22.20	10.70	-42.73	-13.00	-29.73	V			
	The	Worst Test	Results for	or Channe	el 661/1880	0.0MHz					
Frequency(MHz)	S G.Lev	Ant(dBi)			PMea	Limit	Margin	Polarity			
	(dBm)	Апцаві)	Loss	ARpl	(dBm)	(dBm)	(dB)				
3759.98	-34.04	12.60	12.93	0.33	-34.37	-13.00	-21.37	Н			
5640.18	-34.04	13.10	17.11	4.01	-38.05	-13.00	-25.05	Н			
7520.23	-33.37	11.50	22.20	10.70	-44.07	-13.00	-31.07	Н			
3759.92	-34.58	12.60	12.93	0.33	-34.91	-13.00	-21.91	V			
5639.92	-34.40	13.10	17.11	4.01	-38.41	-13.00	-25.41	V			
7519.93	-32.50	11.50	22.20	10.70	-43.20	-13.00	-30.20	V			
	The	Worst Test	Results for	or Channe	el 810/1909	9.8MHz					
	S				PMea	Limit	Margin				
Frequency(MHz)	G.Level	Ant(dBi)	Loss	ARpl	(dBm)	(dBm)	(dB)	Polarity			
	(dBm)				(UDIII)		(UD)				
3819.27	-34.76	12.60	12.93	0.33	-35.09	-13.00	-22.09	Н			
5729.13	-35.36	13.10	17.11	4.01	-39.37	-13.00	-26.37	Н			
7639.02	-33.29	11.50	22.20	10.70	-43.99	-13.00	-30.99	Н			
3819.67	-34.94	12.60	12.93	0.33	-35.27	-13.00	-22.27	V			
5729.47	-34.42	13.10	17.11	4.01	-38.43	-13.00	-25.43	V			
7639.38	-31.95	11.50	22.20	10.70	-42.65	-13.00	-29.65	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.: STS1705021F01

# APPENDIX BPHOTOS OF TEST SETUP



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