

# **RF TEST REPORT**

Product Name: 4G GPS TRACKER

Model Name: C02G

FCC ID: 2AQSK-C02G

Issued For : HuiZhou BoShiJie Technology CO.,Ltd

No. 1, Huifeng West three road, Zhongkai Hi-tech Zone

Issued By : Shenzhen LGT Test Service Co., Ltd.

Room 205, Building 13, Zone B, Zhenxiong Industrial Park, No.177, Renmin West Road, Jinsha, Kengzi Street, Pingshan District, Shenzhen, Guangdong, China

Report Number:	LGT25B064RF01
Sample Received Date:	Feb. 19, 2025
Date of Test:	Feb. 19, 2025 ~ Mar. 08, 2025
Date of Issue:	Mar. 18, 2025

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# **TEST REPORT CERTIFICATION**

Applicant:	HuiZhou BoShiJie Technology CO.,Ltd
Address:	No. 1,Huifeng West three road, Zhongkai Hi-tech Zone
Manufacturer:	HuiZhou BoShiJie Technology CO.,Ltd
Address:	No. 1,Huifeng West three road, Zhongkai Hi-tech Zone
Product Name:	4G GPS TRACKER
Trademark:	N/A
Model Name:	C02G
Sample Status:	Normal

APPLICABLE STANDARDS			
STANDARD TEST RESULTS			
FCC Part 22H and 24E	PASS		
KDB 971168 D01 v03r01, ANSI C63.26( 2015)	1,400		

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Zane Shan

Zane Shan Engineer

ESTSE Approved by: rtali ( 5 Vita Li 领 冠 检 **Technical Director** 

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# **Revision History**

Rev.	Issue Date	Contents
00	Mar. 18, 2025	Initial Issue

# **1 SUMMARY OF TEST RESULTS**

Test procedures according to the technical standards:

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

FCC Rules	Test Description	Test Limit	Test Result	Reference
2.1046	Conducted Output Power	Reporting Only	PASS	
22.913d 24.232d	Peak-to-Average Ratio	< 13 dB	PASS	
2.1046	Effective Radiated Power/Equivalent	< 7 Watts max. ERP(Part 22)		
22.913	Isotropic	< 2 Watts max. EIRP(Part 24)	PASS	
24.232	Radiated Power	<1 Watts max. EIRP(Part 27)		
2.1049				
22.917	Occupied Bandwidth	Reporting Only	PASS	
24.238				
2.1055 22.355 24.235	Frequency Stability	< 2.5 ppm (Part 22) Emission must remain in band (Part 24) Emission must remain in band (Part 27)	PASS	
2.1051 22.917 24.238	Spurious Emission at Antenna Terminals	< 43+10log10(P[Watts])	PASS	
2.1053				
22.917	Field Strength of Spurious Radiation	< 43+10log10(P[Watts])	PASS	
24.238				
2.1051				
22.917	Band Edge	< 43+10log10(P[Watts])	PASS	
24.238				

# 2 INTRODUCTION

# 2.1 TEST FACTORY

Company Name:	Shenzhen LGT Test Service Co., Ltd.	
Address:	Room 205, Building 13, Zone B, Zhenxiong Industrial Park, No.177, Renmin West Road, Jinsha, Kengzi Street, Pingshan District, Shenzher Guangdong, China	
	A2LA Certificate No.: 6727.01	
Accreditation Certificate:	FCC Registration No.: 746540	
	CAB ID: CN0136	

## 2.2 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.26. 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.

No.	Item	Uncertainty
1	RF output power, conducted	±0.68dB
2	Unwanted Emissions, conducted	±2.988dB
3	All emissions, radiated 9K-30MHz	±2.84dB
4	All emissions, radiated 30M-1GHz	±4.39dB
5	All emissions, radiated 1G-6GHz	±5.10dB
6	All emissions, radiated>6G	±5.48dB
7	Conducted Emission (9KHz-150KHz)	±2.79dB
8	Conducted Emission (150KHz-30MHz)	±2.80dB

Note: The measurement uncertainty is not included in the test result.

# **3. PRODUCT INFORMATION**

Product Name:	4G GPS TRACKER
Trademark:	N/A
Model Name:	C02G
Series Model:	N/A
Model Difference:	N/A
Tx Frequency:	GPRS: 850: 824 MHz ~ 849MHz 1900: 1850 MHz ~ 1910MHz
Rx Frequency:	GPRS: 850: 869 MHz ~ 894 MHz 1900: 1930 MHz ~ 1990MHz
Modulation Characteristics:	GMSK for GPRS
SIM Card:	Only one SIM card is supported.
Antenna type:	FPC Antenna
Antenna gain:	GSM 850: -1.55dBi GSM 1900: 1.98dBi
Rating:	Input: DC 12V
Battery:	Capacity: 180mAh Rated Voltage: 3.7V
GPRS Class:	Multi-Class12
Extreme Vol. Limits:	3.3V to 4.2V (Nominal 3.7V)
Extreme Temp. Tolerance:	0°℃ to +40°℃
Hardware version:	2305005-V1.2
Software version:	#Software Version#

\*\* Note: The High Voltage 4.2V and Low Voltage 3.3V was declared by manufacturer, The EUT couldn't be operate normally with higher or lower voltage, the antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report.

#### 4 TEST CONFIGURATION OF EQUIPMENT UNDER TEST

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

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

Radiated emissions were investigated as following frequency range:

1. 30 MHz to 10th harmonic for GSM850.

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

# **5 MEASUREMENT INSTRUMENTS**

Radiated Test equipment					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
EMI Test Receiver	R&S	ESU8	100372	2024.03.09	2025.03.08
Active loop Antenna	ETS	6502	00049544	2023.10.13	2025.10.12
Spectrum Analyzer	Keysight	N9010B	MY60242508	2024.08.05	2025.08.04
Bilog Antenna(30M-1G)	SCHWARZBECK	VULB 9168	2705	2022.12.12	2025.12.11
Horn Antenna(1-18G)	SCHWARZBECK	3115	10SL0060	2022.06.02	2025.06.01
Horn Antenna(18-40G)	A-INFO	LB-180400-KF	J211060273	2022.06.08	2025.06.07
Pre-amplifier(30M-1G)	EMtrace	RP01A	02019	2024.03.09	2025.03.08
Pre-amplifier(1-26.5G)	Agilent	8449B	3008A4722	2024.03.09	2025.03.08
Pre-amplifier(18-40G)	com-mw	LNPA_18-40-01	18050003	2024.03.09	2025.03.08
Wireless Communications Test Set	R&S	CMW 500	137737	2024.03.09	2025.03.08
Temperature & Humidity	JINGCHUANG	BT-3	N.A	2024.03.11	2025.03.10
Testing Software	EMC-I_V1.4.0.3_SKET				

<b>RF</b> Conducted Test equipmen	t				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
Signal Analyzer	Keysight	N9010B	MY60242508	2024.08.05	2025.08.04
Signal Analyzer	Keysight	N9020A	MY50530994	2024.03.09	2025.03.08
RF Automatic Test system	MW	MW100-RFCB	MW220322LG- 033	2024.03.09	2025.03.08
MXG Vector Signal Generator	Keysight	N5182B	MY59100717	2024.03.09	2025.03.08
Temperature& Humidity test chamber	AISRY	LX-1000L	171200018	2024.03.09	2025.03.08
Attenuator	eastsheep	90db	N.A	2024.03.09	2025.03.08
Antenna Tower	SAEMC	BK-4AT-BS-D	SK2021093008	N.A	N.A
Temperature & Humidity	JINGCHUANG	BT-3	N.A	2024.03.11	2025.03.10
Digital multimeter	MASTECH	MS8261	MBGBC83053	2024.03.09	2025.03.08
Testing Software		MTS831	10_V2.0.0.0_MW		

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

# 6 TEST ITEMS 6.1 CONDUCTED OUTPUT POWER

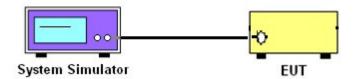
# TEST OVERVIEW

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



#### TEST RESULT

# 6.2 PEAK TO AVERAGE RATIO

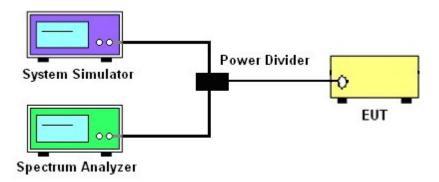
#### TEST OVERVIEW

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 FCC KDB 971168 v03r01 section.
- 2. The eut was connected to the peak and av system simulator& spectrum analyzer.
- 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



#### TEST RESULT

# 6.3 TRANSMITTER RADIATED POWER (EIRP/ERP)

## TEST OVERVIEW

Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI C63.26 2015 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically polarized broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

# frequencies.

#### TEST PROCEDURE

1. The testing follows FCC KDB 971168 Section 5.8 and ANSI C63.26-2015 Section 5.2.

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

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

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

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

6. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to ANSI C63.26-2015. The EUT was replaced by the substitution antenna at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna.

EIRP=S.G Level+ Gain-Cable loss; ERP=S.G Level+ Gain-Cable loss-2.15.

#### TEST RESULT

#### 6.4 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.

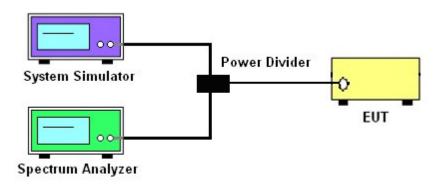
All modes of operation were investigated and the worst-case configuration results are reported in this section.

#### 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



#### TEST RESULT

# 6.5 FREQUENCY STABILITY TEST OVERVIEW

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

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

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

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

# TEST PROCEDURE

Temperature Variation

1. The testing follows FCC KDB 971168 D01 section 9.0

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

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.
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

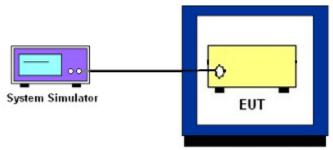
1. The testing follows FCC KDB 971168 D01 Section 9.0.

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

TEST RESULT Note: Test data See APPENDIX I.

### 6.6 SPURIOUS EMISSIONS AT ANTENNA TERMINALS TEST OVERVIEW

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

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

# TEST PROCEDURE

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

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.

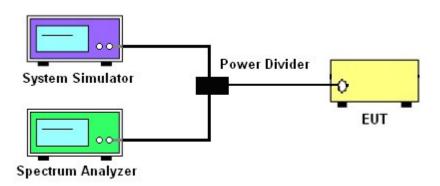
7. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

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

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

= -13dBm.

# TEST SETUP



# TEST RESULT

# 6.7 BAND EDGE

#### TEST OVERVIEW

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

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

#### TEST PROCEDURE

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

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

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

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

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

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

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

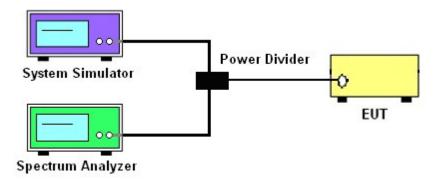
7.The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

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

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

= -13dBm.

TEST SETUP



#### TEST RESULT

# 6.8 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT TEST OVERVIEW

Radiated spurious emissions measurements are performed using the substitution method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements on signalsoperating below 1GHz are performed using horizontally and vertically polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarizedhorn antennas. All measurements are performed as peak measurements while the EUT isoperating at maximum power and at the appropriate frequencies.

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

# TEST PROCEDURE

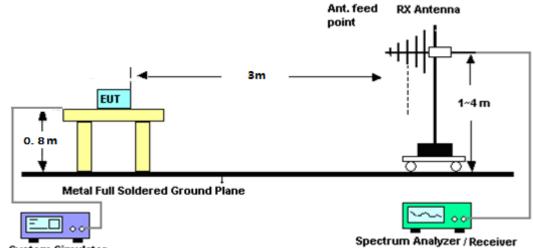
- 1. The testing FCC KDB 971168 D01 Section 5.8 and ANSI C63.26-2015-Section 5.5.
- 2. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
- 3. VBW ≥ 3 x RBW
- 4. Span = 1.5 times the OBW
- 5.No. of sweep points > 2 x span/RBW
- 6. Detector = Peak
- 7. Trace mode = max hold
- 8. The 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.

PMea=S.G Level+ Ant-Cable loss; Margin=PMea-Limit.

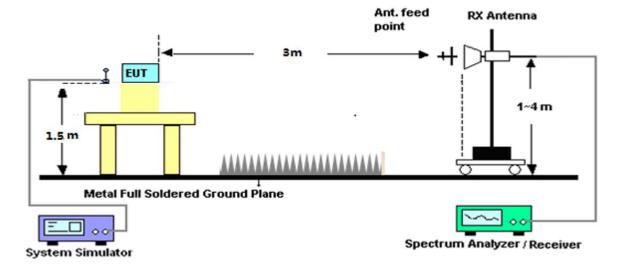
# TEST SETUP

For radiated test from 30MHz to 1GHz



System Simulator

For radiated test from above 1GHz



# TEST RESULT

# APPENDIX I. TESTRESULT

#### 2G

# Conducted output power

Band	Channel	Frequency (MHz)	Power (dBm)	Gain (dB)	ERP (dBm)	ERP Limit (dBm)	Verdict
GPRS850 1 Slot	128	824.2	33.21	-1.55	29.51	38.45	PASS
GPRS850 1 Slot	190	836.6	33.28	-1.55	29.58	38.45	PASS
GPRS850 1 Slot	251	848.8	33.53	-1.55	29.83	38.45	PASS
GPRS850 2 Slot	128	824.2	30.89	-1.55	27.19	38.45	PASS
GPRS850 2 Slot	190	836.6	30.72	-1.55	27.02	38.45	PASS
GPRS850 2 Slot	251	848.8	31.09	-1.55	27.39	38.45	PASS
GPRS850 3 Slot	128	824.2	28.81	-1.55	25.11	38.45	PASS
GPRS850 3 Slot	190	836.6	28.67	-1.55	24.97	38.45	PASS
GPRS850 3 Slot	251	848.8	29.02	-1.55	25.32	38.45	PASS
GPRS850 4 Slot	128	824.2	26.63	-1.55	22.93	38.45	PASS
GPRS850 4 Slot	190	836.6	26.45	-1.55	22.75	38.45	PASS
GPRS850 4 Slot	251	848.8	26.75	-1.55	23.05	38.45	PASS

Band	Channel	Frequency (MHz)	Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP Limit (dBm)	Verdict
GPRS1900 1 Slot	512	1850.2	30.39	1.98	32.37	33.01	PASS
GPRS1900 1 Slot	661	1880	30.48	1.98	32.46	33.01	PASS
GPRS1900 1 Slot	810	1909.8	29.91	1.98	31.89	33.01	PASS
GPRS1900 2 Slot	512	1850.2	29.15	1.98	31.13	33.01	PASS
GPRS1900 2 Slot	661	1880	28.27	1.98	30.25	33.01	PASS
GPRS1900 2 Slot	810	1909.8	27.09	1.98	29.07	33.01	PASS
GPRS1900 3 Slot	512	1850.2	26.82	1.98	28.80	33.01	PASS
GPRS1900 3 Slot	661	1880	26.16	1.98	28.14	33.01	PASS
GPRS1900 3 Slot	810	1909.8	25.18	1.98	27.16	33.01	PASS
GPRS1900 4 Slot	512	1850.2	24.91	1.98	26.89	33.01	PASS
GPRS1900 4 Slot	661	1880	24.12	1.98	26.10	33.01	PASS
GPRS1900 4 Slot	810	1909.8	23.12	1.98	25.10	33.01	PASS

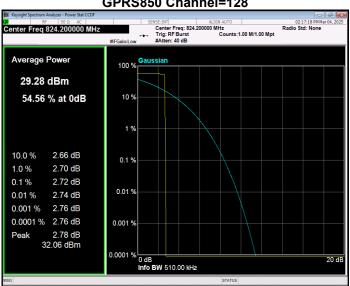
# Frequency stability

		GPRS 850 /8	36.6MHz			
Temperature	Voltage	Freq. Dev.	Freq. Dev.	Limit	Result	
(°C)	(Volt)	(Hz)	(ppm)	LIIIII	Result	
50		0.40	0.000			
40		0.44	0.001			
30		0.73	0.001		PASS	
20	Normal	-0.52	-0.001			
10		-0.59	-0.001			
0	Voltage	0.70	0.001	2 5000		
-10		0.47	0.001	- 2.5ppm		
-20		-0.50	-0.001			
-30		-0.40	0.000			
20	Maximum Voltage	-0.77	-0.001			
20	BEP	0.60	0.001			

		GPRS 1900 /	1880MHz		
Temperature	Voltage	Freq. Dev.	Freq. Dev.	Limit	Result
(°C)	(Volt)	(Hz)	(ppm)	LIIIII	Result
50		4.27	0.002		
40		4.02	0.002		
30		3.90	0.002		PASS
20	Normal	-9.62	-0.005		
10		-3.96	-0.002	Within	
0	Voltage	3.69	0.002	Authorized	
-10		-4.13	-0.002	Band	FA33
-20		4.14	0.002	Dallu	
-30		4.06	0.002		
20	Maximum Voltage	-4.00	-0.002		
20	BEP	-3.92	-0.002		

# Peak-to-Average Ratio

Band	Channel	Frequency (MHz)	Result (dB)	high Limit (dB)	Verdict
GPRS850	128	824.2	2.72	13	PASS
GPRS850	190	836.6	2.76	13	PASS
GPRS850	251	848.8	2.72	13	PASS
GPRS1900	512	1850.2	2.70	13	PASS
GPRS1900	661	1880	2.71	13	PASS
GPRS1900	810	1909.8	2.72	13	PASS



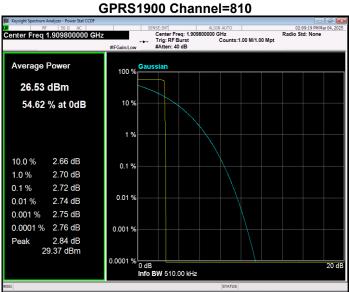
#### GPRS850 Channel=128

GPRS850 Channel=251



#### GPRS850 Channel=190





#### GPRS1900 Channel=661

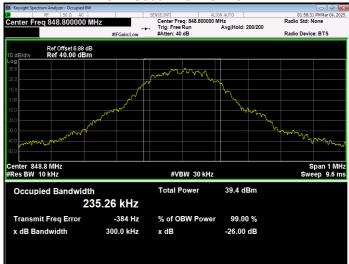


#### GPRS1900 Channel=512



# Occupied bandwidth

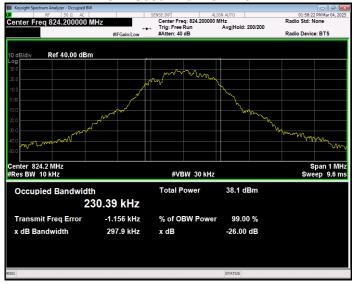
Band	Channel	Frequency (MHz)	99% OBW (kHz)	-26dB EBW (kHz)	Verdict
GPRS850	128	824.2	230.388	297.884	PASS
GPRS850	190	836.6	234.625	306.546	PASS
GPRS850	251	848.8	235.260	299.965	PASS
GPRS1900	512	1850.2	231.359	305.339	PASS
GPRS1900	661	1880	234.601	303.976	PASS
GPRS1900	810	1909.8	240.889	316.657	PASS

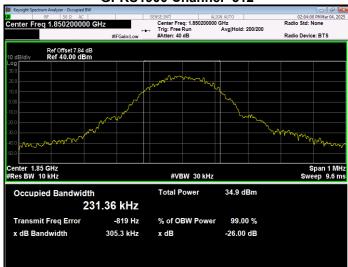


#### GPRS850 Channel=251

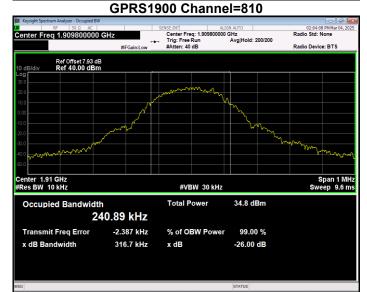
#### GPRS850 Channel=190 01:58:26 PM Mar 04, 202 Radio Std: None Center Freq 836.600000 MHz #IFGain:Low Radio Device: BTS Ref Offset 6.86 dB Ref 40.00 dBm Span 1 MHz Sweep 9.6 ms Center 836.6 MHz Res BW 10 kHz #VBW 30 kHz Total Power 38.1 dBm Occupied Bandwidth 234.62 kHz Transmit Freq Error 659 Hz % of OBW Power 99.00 % 306.5 kHz x dB Bandwidth -26.00 dB x dB

#### GPRS850 Channel=128

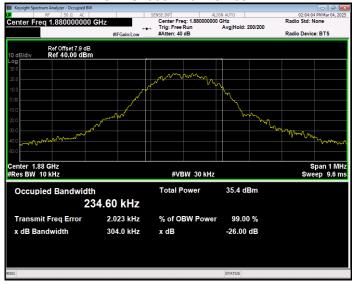




#### GPRS1900 Channel=512



#### GPRS1900 Channel=661



Band edge

Band	Channel	Frequency (MHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Verdict
GPRS850	128	824.2	823.98	-33.11	-13	PASS
GPRS850	251	848.8	849.01	-35.25	-13	PASS
GPRS1900	512	1850.2	1850.00	-34.85	-13	PASS
GPRS1900	810	1909.8	1910.01	-37.26	-13	PASS



#### GPRS850 Channel=251

GPRS850 Channel=128



#### GPRS1900 Channel=810





#### GPRS1900 Channel=512

#### Out-of-band emissions

Band	Channel	Frequency (MHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Verdict
GPRS850	128	824.2	5598.99	-29.64	-13	PASS
GPRS850	190	836.6	3157.09	-29.59	-13	PASS
GPRS850	251	848.8	5613.95	-29.97	-13	PASS
GPRS1900	512	1850.2	18706.44	-22.95	-13	PASS
GPRS1900	661	1880	19977.03	-21.99	-13	PASS
GPRS1900	810	1909.8	19098.35	-23.50	-13	PASS

l Keysight Spe	ctrum A	Analyzer - Swept SA 50 Ω AC			SENSE:INT		ALIGN AUTO		02-01-1	- @
enter Fr		5.01500000	00 GHz	NO: Fast +++ Gain:Low			Avg Type Avg Hold:	Log-Pwr 100/100	TI	TYPE DET P P P
0 dB/div		Offset 6.88 dE f 30.00 dBm							Mkr1 84 33.	9.28 M 433 dE
20.0										
0.0										
0.0										-13.00
0.0						<u> </u>	<sub>2</sub>			-15.00
0.0		a a							all the same of the	Jahosh adams
0.0				State of Sta	and the second s	-	in a contra la fina de la contra			
50.0										
tart 0.03 Res BW				#VB	W 3.0 MHz			Sweep	Stop ' 18.67 ms	10.000 G (40001 p
IKR MODE TR			× 849.28 MHz	Y 33.433		CTION	FUNCTION WIDTH	FI	UNCTION VALUE	
	f		5.613 95 GHz	-29.975						
4										
6										
8										
10										
sa							STATUS			

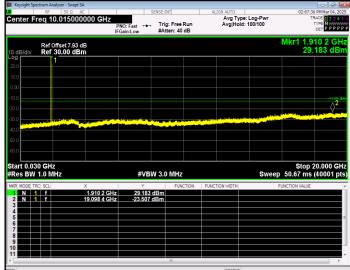
#### GPRS850 Channel=251

GPRS850 Channel=190

	req 5.0150			ig: Free Run	Avg Type Avg Hold:		TRACE 1 2 TYPE MW
		I	FGain:Low #A	tten: 40 dB			0.1
	Ref Offset 6						Mkr1 837.32
dB/div	Ref 30.00	dBm					31.851 c
⊫							
			^ <b>2</b>				
0		a loss of the second second second		the state of the second	alimber of the other states in	and the state of	المرجود والمتحر والمتحر والمتحر والمتحر
o <mark>dinan</mark>		States of the Owner, States of		Statement of the local division of the local	فاستعبر والألينا أأتداناه		Statistics of the second
o —							
o							
	30 GHz					_	Stop 10.000
	V 1.0 MHz		#VBW 3.0	0 MHz		Sweep	18.67 ms (40001
es BW			Y	FUNCTION	FUNCTION WIDTH	F	UNCTION VALUE
		х					
R MODE 1	TRC SCL 1 f 1 f	× 837.32 MHz 3.157 09 GHz	31.851 dBm				
MODE 1	1 f	837.32 MHz	31.851 dBm				
MODE 1	1 f	837.32 MHz	31.851 dBm				
N N	1 f	837.32 MHz	31.851 dBm				
MODE 1	1 f	837.32 MHz	31.851 dBm				
N N	1 f	837.32 MHz	31.851 dBm				

# GPRS850 Channel=128

		halyzer - Swept SA 50 Ω A									6 PM Mar 04, 2
nter F	<sub>R</sub> , req 5	50 Ω A0 .0150000	00 GHz	PNO: Fast IFGain:Low		: Free Run ten: 40 dB		Avg Type: Avg Hold:	Log-Pwr 100/100	TE	5 PM Mar 04, 2 RACE 1 2 3 4 TYPE M
dB/div		Offset 6.84 d 30.00 dBr								Mkr1 82 31.	4.86 MI 862 dB
9 10 10	1										
10											
.0							<mark>∕2</mark>				-13.00
0					الم حليها				<b>t</b> erit en la constant		
.0											
art 0.03	30 CH	7								Ston	10.000 G
les BW				#	VBW 3.0	MHz			Sweep	18.67 ms	
R MODE T	RC SCL		× 824.86 MHz	z 31.	r 862 dBm	FUNCTIO	N FUNC	TION WIDTH	F	UNCTION VALUE	
			5 598 99 GHz	296	646 dBm						
Ň	ŕ		5.598 99 GHz	z -29.6	646 dBm						
Ň			5.598 99 GHz	z -29.6	646 dBm						
			5.598 99 GHz	z -29.6	646 dBm						
			5.598 99 GHz	z -29.6	646 dBm	Ш					,



#### GPRS1900 Channel=810

#### GPRS1900 Channel=661

	RF		AC		SENSE:1	NI	ALIGN AUT		Log-Pwr	02:0	17:09 PM Mar 04, TRACE
nter F	req 1	0.01500	0000 GHz	PNO: Fast IFGain:Low		g: Free Run tten: 40 dB	Avg	Hold: 1	00/100		TYPE M
dB/div		Offset 7.9 c 30.00 dE									.880 2 G 9.106 d
		1									
0 <b></b>											
										and the second second	a substantia da substantia
			a second and the second second			(A standard					
											- 00 000
art 0.03				#	VBW 3.0	) MHz			Sweep		
art 0.03 es BW	RC SCL		x		Y	0 MHz	FUNCTION WID	TH			p 20.000 ( ns (40001
art 0.03 es BW	1.0 N		X 1.880 2 GH 19.977 0 GH	z 29.			FUNCTION WID	TH		50.67 n	ns (40001
art 0.03 es BW	RC SCL		1.880 2 GH	z 29.	Y 106 dBm		FUNCTION WID	TH		50.67 n	ns (40001
art 0.03 es BW	RC SCL		1.880 2 GH	z 29.	Y 106 dBm		, FUNCTION WE	TH		50.67 n	ns (40001
art 0.03 es BW	RC SCL		1.880 2 GH	z 29.	Y 106 dBm		FUNCTION WID	TH		50.67 n	ns (40001
art 0.03 es BW	RC SCL		1.880 2 GH	z 29.	Y 106 dBm		FUNCTION WID	TH		50.67 n	ns (40001

# GPRS1900 Channel=512

	RF 50Ω eq 10.0150 Ref Offset 7.8 Ref 30.00 0	IFG		rig: Free Run Atten: 40 dB	ALIGN AUTO Avg Typ Avg Hold	e: Log-Pwr i: 100/100	TR	PM Mar 04, 2 4CE 1 2 3 YPE M
dB/div g		4 dB						
- 1							Mkr1 1.85 28.8	50 8 G 306 dE
	1							
0.0								
00								
								02
			and the second second			and the second second		
.0		Lo and the local division of the		And address of the local division of the loc				
.0								
art 0.030 tes BW 1			#VBW 3	.0 MHz		Sweep	Stop 2 50.67 ms (	
R MODE TRC		х	Y	FUNCTION	FUNCTION WIDTH	F	UNCTION VALUE	
N 1	f	1.850 8 GHz 18.706 4 GHz	28.806 dBn -22.952 dBn					
			1					

### RADIATED SPURIOUS EMISSION

**Note:** (1) Spurious emissions which are attenuated by more than 20dB below the permissible value for frequeny below 1000MHz.

(2) Test is divided into three directions, X/Y/Z. X pattern for the worst.

		GPRS	<b>850: (30-9</b>	000)MHz			
	The V	Vorst Test F	Results Cha	annel 128/8	24.2 MHz		
	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Data di
Frequency(MHz)	(dBm)			(dBm)	(dBm)	(dBm)	Polarity
1648.41	-36.14	7.40	4.75	-33.49	-13.00	-20.49	Н
2472.30	-33.02	8.20	8.39	-33.21	-13.00	-20.21	Н
3296.55	-24.60	7.20	11.79	-29.19	-13.00	-16.19	Н
1648.45	-28.44	7.40	4.75	-25.79	-13.00	-12.79	V
2472.41	-30.02	8.20	8.39	-30.21	-13.00	-17.21	V
3296.90	-25.09	7.20	11.79	-29.68	-13.00	-16.68	V
	The V	Vorst Test F	Results Cha	annel 190/8	36.6 MHz		
	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Deleviter
Frequency(MHz)				(dBm)	(dBm)	(dBm)	Polarity
1672.97	-32.53	7.40	4.76	-29.89	-13.00	-16.89	Н
2509.66	-33.60	8.20	8.40	-33.80	-13.00	-20.80	Н
3346.21	-24.44	7.20	11.80	-29.04	-13.00	-16.04	Н
1673.05	-31.11	7.40	4.75	-28.46	-13.00	-15.46	V
2509.70	-30.25	8.20	8.39	-30.44	-13.00	-17.44	V
3346.34	-21.34	7.20	11.82	-25.96	-13.00	-12.96	V
	The V	Vorst Test F	Results Cha	annel 251/8	48.8 MHz		
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Deleviter
				(dBm)	(dBm)	(dBm)	Polarity
1697.21	-32.53	7.40	4.77	-29.90	-13.00	-16.90	Н
2546.09	-31.16	8.20	8.50	-31.46	-13.00	-18.46	Н
3395.03	-27.72	7.20	11.90	-32.42	-13.00	-19.42	Н
1697.49	-26.81	7.40	4.77	-24.18	-13.00	-11.18	V
2546.36	-29.93	8.20	8.50	-30.23	-13.00	-17.23	V
3395.24	-21.89	7.20	11.90	-26.59	-13.00	-13.59	V

		GPRS <sup>2</sup>	1900: (30-2	0000)MHz			
	The Wo	orst Test Re	sults for C	hannel 512/	1850.2MHz		
	S G.Lev	Ant(dBi)	Loss	PMea	Limit	Margin	Datasit
Frequency(MHz)	(dBm)			(dBm)	(dBm)	(dBm)	Polarity
3700.35	-24.75	7.00	12.93	-30.68	-13.00	-17.68	Н
5550.35	-24.92	8.40	17.11	-33.63	-13.00	-20.63	Н
7400.81	-27.39	8.30	22.20	-41.29	-13.00	-28.29	Н
3700.06	-24.71	7.00	12.93	-30.64	-13.00	-17.64	V
5550.59	-24.62	8.40	17.11	-33.33	-13.00	-20.33	V
7400.78	-19.74	8.30	22.20	-33.64	-13.00	-20.64	V
	The Wo	orst Test Re	sults for C	hannel 661/	1880.0MHz		
	S G.Lev		Loss	PMea	Limit	Margin	Delerity
Frequency(MHz)	(dBm)	Ant(dBi)		(dBm)	(dBm)	(dBm)	Polarity
3759.94	-26.70	7.00	12.93	-32.63	-13.00	-19.63	Н
5639.92	-24.64	8.40	17.11	-33.35	-13.00	-20.35	Н
7519.86	-27.15	8.30	22.20	-41.05	-13.00	-28.05	Н
3760.19	-24.71	7.00	12.93	-30.64	-13.00	-17.64	V
5639.99	-25.91	8.40	17.11	-34.62	-13.00	-21.62	V
7519.97	-23.59	8.30	22.20	-37.49	-13.00	-24.49	V
	The Wo	orst Test Re	sults for C	hannel 810/	1909.8MHz		
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Delerity
				(dBm)	(dBm)	(dBm)	Polarity
3819.23	-28.59	7.00	12.93	-34.52	-13.00	-21.52	Н
5729.25	-26.63	8.40	17.11	-35.34	-13.00	-22.34	Н
7639.13	-26.90	8.30	22.20	-40.80	-13.00	-27.80	Н
3819.48	-25.08	7.00	12.93	-31.01	-13.00	-18.01	V
5729.12	-21.80	8.40	17.11	-30.51	-13.00	-17.51	V
7639.19	-23.56	8.30	22.20	-37.46	-13.00	-24.46	V

# APPENDIX II- PHOTOS OF TEST SETUP Note: Please see the attached RF\_Test Setup photos for FCC ID.

APPENDIX III - PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS Note: Please see LGT25B064EM01\_APPENDIX II.