

TEST REPORT

Application No.: GZCR2507001065AT
Applicant: Geosolution i Goteborg AB
Address of Applicant: Stora Avagen 21, 436 34 ASKIM, Sweden
Manufacturer: Geosolution i Goteborg AB
Address of Manufacturer: Stora Avagen 21, 436 34 ASKIM, Sweden
Factory: Geosolution i Goteborg AB
Address of Factory: Stora Avagen 21, 436 34 ASKIM, Sweden
Product Name: GNSS RTK Receiver
Model No.: SL9
Trade Mark: 
Standard(s) : 47 CFR Part 2
 47 CFR Part 27
Date of Receipt: 2025-07-15
Date of Test: 2025-07-16 to 2025-08-15
Date of Issue: 2025-09-15

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.



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Revision Record			
Version	Report No.	Date	Remark
01	GZCR250700106508	2025-09-15	Original

Authorized for issue by:			
		Key Liang	
		Key Liang/Project Engineer	
		Vico Cui	
		Vico Cui/Reviewer	



2 Test Summary

LTE Band 7

Test Item	FCC Rule No.	Requirements	Verdict
Effective (Isotropic) Radiated Power Output Data	§2.1046 §27.50(h)	EIRP≤2W	PASS
Peak-Average Ratio	§27.50(d)(5)	≤13dB	PASS
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS
Band Edge Compliance	§2.1051 §27.53(m)(4)	For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz.	PASS
Spurious emissions at antenna terminals	§2.1051 §27.53(m)(4)		PASS
Field strength of spurious radiation	§2.1051 §27.53(m)(4)		PASS
Frequency stability	§2.1055 §27.54	The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.	PASS

Note:

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.



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4 General Information

4.1 Details of E.U.T.

Power supply:	AC/DC adapter: Model: KS65A-GaN1A1-CE Input: AC 100-240V 50/60Hz 1.5A Max Output A: DC 5.0V 3.0A, DC 9.0V 2.0A, DC 12.0V 1.5A, 18.0W Output C: DC 5.0V 3.0A, DC 9.0V 3.0A, DC 12.0V 3.0A, DC 15.0V 3.0A, DC 20.0V 3.25A, 65.0W Max PPS: DC 5.0V-21.0V 3.0A Max, 63.0W Output A+C: USB-A:12.0W DC 5.0V 2.4A, Type-C: 45.0W, DC 5.0V, 3.0A, DC 9.0V 3.0A, DC 12.0V 3.0A, DC 15.0V 3.0A, DC 20.0V 2.25A Battery operation: Model: BL-5000QS(Threaded Type) Capacity: 4.9Ah(Rated)/70.56Wh Nominal Voltage:14.4V USB Port Input: 5VDC,3A, 9VDC,3A, 12VDCV,3A, 15VDC,3A, 20VDC, 2.25A Max/PD45W Built-in battery. Model: BL-5000B Capacity: 4.9Ah(Typical)/4.753Ah(Rated)/34.51Wh Max Charging Voltage:8.4V Nominal Voltage:7.26V
Test voltage:	AC 120V, 60Hz & DC 14.4V
Cable(s):	0.9m unscreened USB C to C charging cable. Type-C Port x1 for charging & data transfer. LTE Band 7
Operation Frequency:	UL: 2500-2570 MHz DL: 2620-2690 MHz
Supported Channel Bandwidth:	5 MHz, 10 MHz, 15 MHz, 20 MHz
Modulation Type:	QPSK, 16QAM
Antenna Type:	Integral Antenna
Antenna Gain:	LTE Band 7: 0.5 dBi (Declared by manufacturer)
Extreme temp. Tolerance:	-30°C to +50°C
Remark:	The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.



4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
CMW500 Test Card	/	/	/

4.3 Test Frequency

Test Band	Nominal Bandwidth (MHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
Band 7	5	2502.5	2535	2567.5
	10	2505	2535	2565
	15	2507.5	2535	2562.5
	20	2510	2535	2560

4.4 Test Environment

Environment Parameter	Selected Values During Tests	
Relative Humidity	51.5%	
Atmospheric Pressure:	1007 mbar	
Temperature:	TL	-30°C
	TN	+25°C
	TH	+50°C
Test Voltage:	VL	AC 102 V, DC 12.24V
	VN	AC 120 V, DC 14.4V
	VH	AC 138 V, DC 16.56V
NOTE: VL= Lower extreme test voltage VN= Nominal voltage VH= Upper extreme test voltage TL= Lower extreme test temperature TN= Normal temperature TH= Upper extreme test temperature		

4.5 Measurement Uncertainty

Test Item	Measurement Uncertainty
Effective (Isotropic) Radiated Power Output Data	$\pm 0.75\text{dB}$
Peak-Average Ratio	$\pm 0.75\text{dB}$
Bandwidth	$\pm 3\%$
Band Edge Compliance	$\pm 0.75\text{dB}$
Spurious emissions at antenna terminals	$\pm 0.75\text{dB}$
Field strength of spurious radiation	$\pm 5.14\text{dB}$ (below 1GHz) $\pm 5.08\text{dB}$ (above 1GHz)
Frequency stability	7.25×10^{-8}
Temperature test	1°C
Humidity test	3%
Remark: The U_{lab} (lab Uncertainty) is less than U_{ETSI} (ETSI Uncertainty), so the test results – compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit; – non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.	

4.6 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou,
Guangdong, China 510663

Tel: +86 20 82155555

No test were sub-contracted.

4.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

● ACMA

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

● SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

● FCC Recognized Accredited Test Firm(Registration No.: 486818)

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

● ISED (Registration No.: 4620B, CAB identifier: CN0052)

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

● VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)

The 10m Semi-anechoic chamber, 966 Anechoic Chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-20107 and T-11179 respectively.

● CBTL (Lab Code: TL129)

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

4.8 Deviation from Standards

None

4.9 Abnormalities from Standard Conditions

None



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5 Equipment List

Field strength of spurious radiation					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Signal Generator (9kHz-6GHz)	Rohde & Schwarz	SMB100A	EMC2093	2024-10-14	2025-10-13
1-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2024-10-14	2025-10-13
EMI Test Receiver (10Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2024-09-02	2025-09-01
Chamber cable (Above 1GHz)	Scoflex	KMKM-8.0m	EMC0545	2024-08-19	2026-08-18
Chamber Cable (Below 1GHz)	Scoflex	KMKM-8.0m	EMC0546	2024-08-19	2026-08-18
Trilog Broadband Antenna (25MHz-1GHz)	SCHWARZBECK	VULB 9160	EMC2025	2025-05-12	2027-05-11
Horn Antenna (1-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2025-05-13	2027-05-12
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2024-10-14	2025-10-13
High Pass Filter (915MHz)	FSY MICROWAVE	HM1465-9SS	EMC2079	2024-10-14	2025-10-13
Pre-Amplifier MH648A (100kHz-1.2GHz)	ANRITSU CORP	MH648A	EMC2086	2024-10-14	2025-10-13
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2023-12-20	2026-12-19
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
Wideband Radio Communication Tester (CMW500)	R&S	CMW500	EMC2215	2024-10-14	2025-10-13

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RF Conducted Test					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
MI CABLE	SGS-EMC	0.8M	EMC2137	2023-11-02	2025-11-01
MI CABLE	SGS-EMC	0.8M	EMC0543	2023-11-02	2025-11-01
EXA Signal Analyzer (10Hz-44GHz)	Keysight	N9010A	EMC2138	2024-08-23	2025-08-22
4X4 Power sensor Unit	TST	TSPS2023R	EMC2226	2024-08-23	2025-08-22
Test Software	TST	V2.0	GZE100-78	N/A	N/A
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	EMC2215	2024/11/10	2025/11/09
Temperature Chamber	GZ GongWen Co.Ltd.	GDJW-100	EMC0039	2024-06-28	2025-06-27
Splitter	Mini-Circuits	ZFSC-2-10G+	RFCONMBINE R05	2023-11-02	2025-11-01

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DMM	Fluke	73	EMC0006	2025-06-11	2026-06-10



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6 Radio Spectrum Matter Test Results

6.1 Effective (Isotropic) Radiated Power Output Data

Test Requirement	Reference test summary
Test Method:	ANSI C63.26, KDB 971168 D01 v03r01
Limit:	Reference test summary

6.1.1 E.U.T. Operation

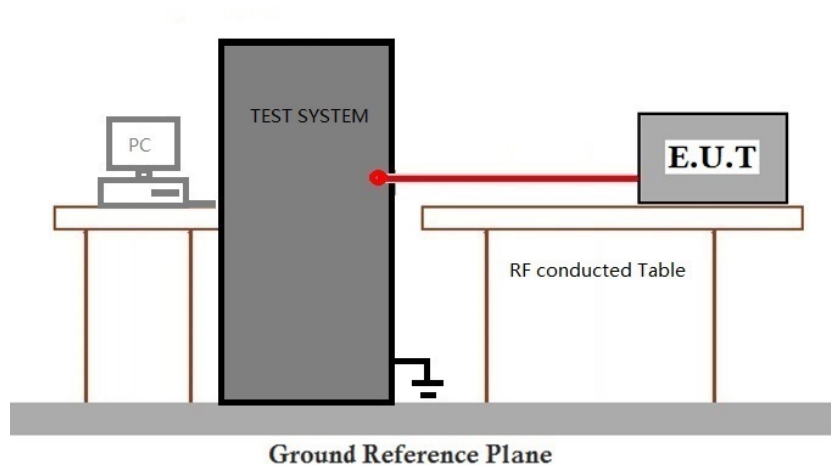
Operating Environment:

Temperature: 22.6 °C Humidity: 56.6 % RH Atmospheric Pressure: 1001 mbar

6.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Establish communication connection with auxiliary equipment CMW500 and keep the EUT in transmitting mode.

6.1.3 Test Setup Diagram



6.1.4 Measurement Procedure and Data

Please Refer to Appendix for Details

6.2 Peak-Average Ratio

Test Requirement	Reference test summary
Test Method:	ANSI C63.26, KDB 971168 D01 v03r01
Limit:	Reference test summary

6.2.1 E.U.T. Operation

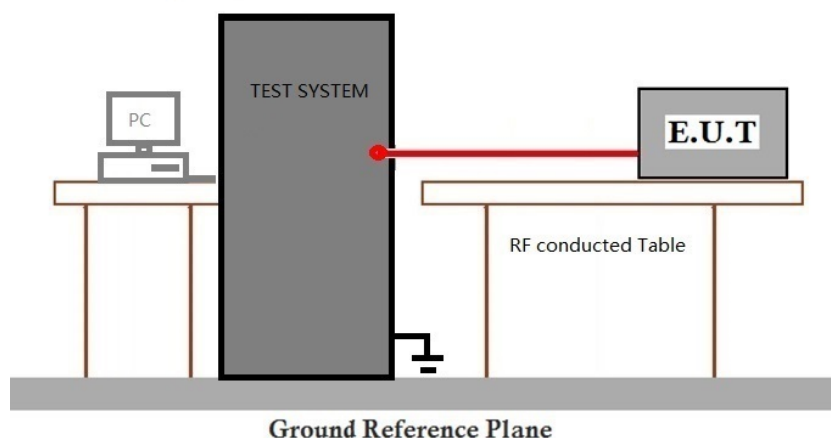
Operating Environment:

Temperature: 22.6 °C Humidity: 56.6 % RH Atmospheric Pressure: 1001 mbar

6.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Establish communication connection with auxiliary equipment CMW500 and keep the EUT in transmitting mode.

6.2.3 Test Setup Diagram



6.2.4 Measurement Procedure and Data

Please Refer to Appendix for Details

6.3 Bandwidth

Test Requirement	Reference test summary
Test Method:	ANSI C63.26, KDB 971168 D01 v03r01
Limit:	Reference test summary

6.3.1 E.U.T. Operation

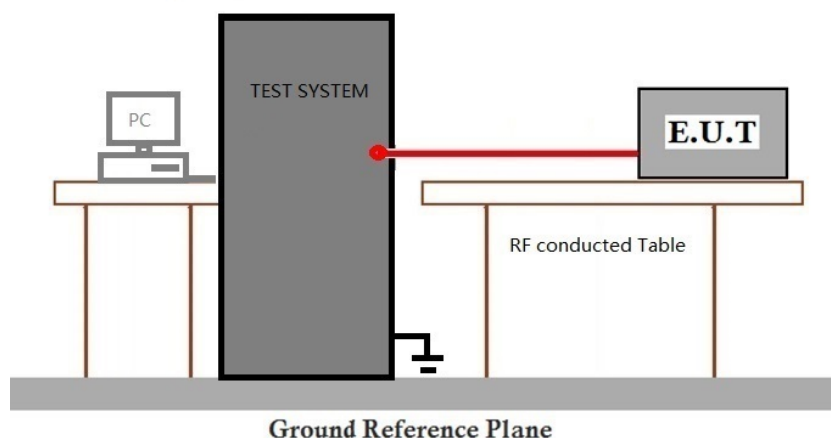
Operating Environment:

Temperature: 22.6 °C Humidity: 56.6 % RH Atmospheric Pressure: 1001 mbar

6.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Establish communication connection with auxiliary equipment CMW500 and keep the EUT in transmitting mode.

6.3.3 Test Setup Diagram



6.3.4 Measurement Procedure and Data

Please Refer to Appendix for Details

6.4 Band Edge Compliance

Test Requirement	Reference test summary
Test Method:	ANSI C63.26, KDB 971168 D01 v03r01
Limit:	Reference test summary

6.4.1 E.U.T. Operation

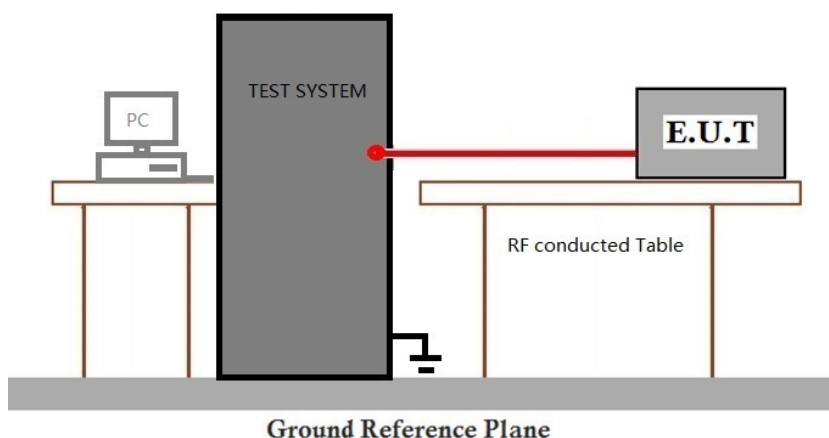
Operating Environment:

Temperature: 22.6 °C Humidity: 56.6 % RH Atmospheric Pressure: 1001 mbar

6.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Establish communication connection with auxiliary equipment CMW500 and keep the EUT in transmitting mode.

6.4.3 Test Setup Diagram



6.4.4 Measurement Procedure and Data

Please Refer to Appendix for Details

6.5 Spurious emissions at antenna terminals

Test Requirement	Reference test summary
Test Method:	ANSI C63.26, KDB 971168 D01 v03r01
Limit:	Reference test summary

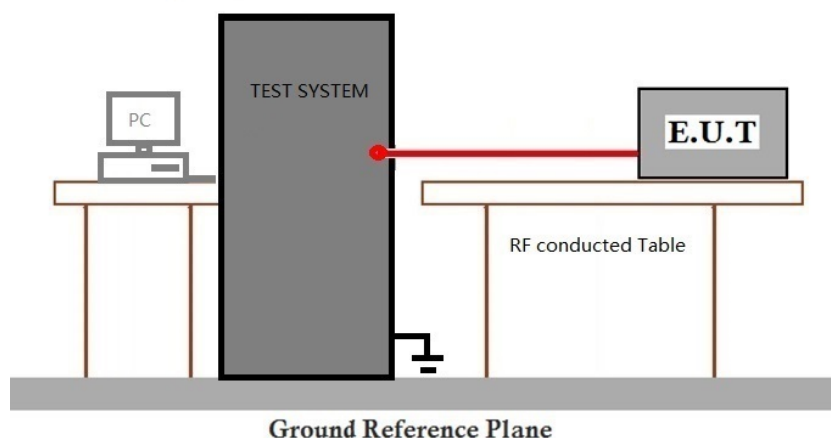
6.5.1 E.U.T. Operation

Operating Environment:			
Temperature:	22.6 °C	Humidity:	56.6 % RH
		Atmospheric Pressure:	1001 mbar

6.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Establish communication connection with auxiliary equipment CMW500 and keep the EUT in transmitting mode.

6.5.3 Test Setup Diagram



6.5.4 Measurement Procedure and Data

Please Refer to Appendix for Details

6.6 Field strength of spurious radiation

Test Requirement	Reference test summary
Test Method:	ANSI C63.26, KDB 971168 D01 v03r01
Test Distance:	3m
Limit:	Reference test summary

6.6.1 E.U.T. Operation

Operating Environment:

Temperature: 22.6 °C

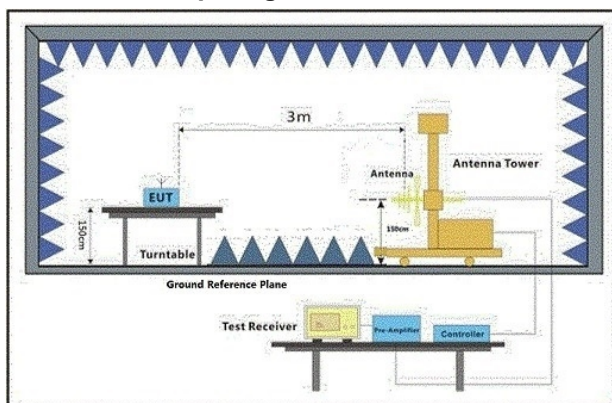
Humidity: 56.6 % RH

Atmospheric Pressure: 1001 mbar

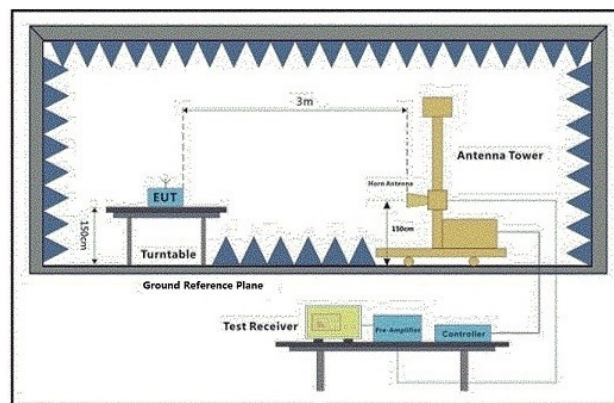
6.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	15	LTE B7 TX Mode_ Establish connection with auxiliary equipment CMW500(Only the data of worst case for QPSK@1RB is recorded in the report).

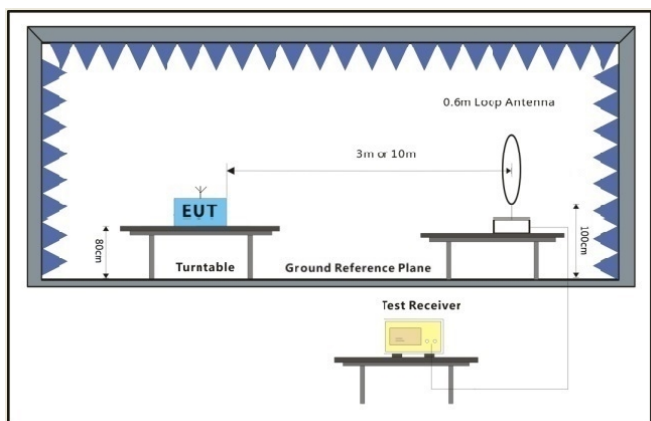
6.6.3 Test Setup Diagram



30MHz-1GHz



Above 1GHz



Below 30MHz



6.6.4 Measurement Procedure and Data

Test Procedure:

- (1) On a test site, the EUT shall be placed on a turntable and in the position closest to the normal use as declared by the user.
- (2) The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
- (3) The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
- (4) The transmitter shall be switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
- (5) The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.
- (6) The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
- (7) The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.
- (8) The maximum signal level detected by the measuring receiver shall be noted.
- (9) The measurement shall be repeated with the test antenna set to horizontal polarization.
- (10) Replace the antenna with a proper Antenna (substitution antenna).
- (11) The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
- (12) The substitution antenna shall be connected to a calibrated signal generator.
- (13) If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
- (14) The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.
- (15) The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.
- (16) The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
- (17) The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.

Remark:

The spurious emissions 9kHz to 1GHz were very low and not displayed in this report.



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Test Mode: 15

LTE Band 7-20MHz Low channel, Modulation: QPSK, 1 RB								
Frequency (MHz)	EIRP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
3702	-52.08	-25	-27.08	-54.31	6.98	9.21	Horizontal	Pass
5553	-49.27	-25	-24.27	-51.65	8.21	10.59	Horizontal	Pass
7404	-45.57	-25	-20.57	-49.56	8.27	12.26	Horizontal	Pass
3702	-49.44	-25	-24.44	-51.67	6.98	9.21	Vertical	Pass
5553	-46.18	-25	-21.18	-48.56	8.21	10.59	Vertical	Pass
7404	-43.9	-25	-18.9	-47.89	8.27	12.26	Vertical	Pass

LTE Band 7-20MHz Middle channel, Modulation: QPSK, 1 RB								
Frequency (MHz)	EIRP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
3742	-51.33	-25	-26.33	-53.56	6.98	9.21	Horizontal	Pass
5613	-47.56	-25	-22.56	-49.94	8.21	10.59	Horizontal	Pass
7484	-47.16	-25	-22.16	-50.62	8.27	11.73	Horizontal	Pass
3742	-49.42	-25	-24.42	-51.65	6.98	9.21	Vertical	Pass
5613	-47.34	-25	-22.34	-49.72	8.21	10.59	Vertical	Pass
7484	-45.18	-25	-20.18	-48.64	8.27	11.73	Vertical	Pass

LTE Band 7-20MHz High channel, Modulation: QPSK, 1 RB								
Frequency (MHz)	EIRP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
3782	-52.29	-25	-27.29	-54.52	6.98	9.21	Horizontal	Pass
5673	-49.55	-25	-24.55	-51.93	8.21	10.59	Horizontal	Pass
7564	-46.83	-25	-21.83	-50.82	8.27	12.26	Horizontal	Pass
3782	-50.22	-25	-25.22	-52.45	6.98	9.21	Vertical	Pass
5673	-46.31	-25	-21.31	-48.69	8.21	10.59	Vertical	Pass
7564	-43.86	-25	-18.86	-47.85	8.27	12.26	Vertical	Pass

Note: All modes have been tested and we found QPSK test mode has the worst test result. Only record the worst test result.

EIRP= S.G. Power- Cable loss+ Antenna Gain



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6.7 Frequency stability

Test Requirement	Reference test summary
Test Method:	ANSI C63.26, KDB 971168 D01 v03r01
Limit:	Reference test summary

6.7.1 E.U.T. Operation

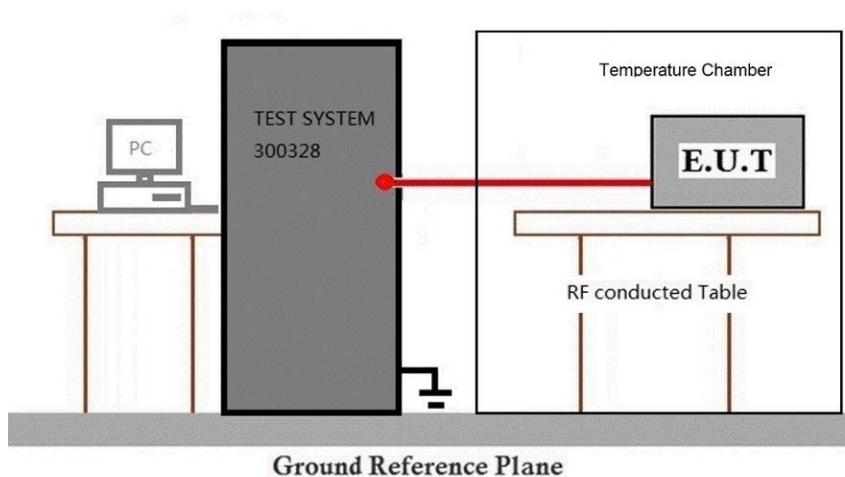
Operating Environment:

Temperature: 22.6 °C Humidity: 56.6 % RH Atmospheric Pressure: 1001 mbar

6.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Establish communication connection with auxiliary equipment CMW500 and keep the EUT in transmitting mode.

6.7.3 Test Setup Diagram



6.7.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7 Test Setup Photo

Refer to Appendix - Test Setup Photos for GZCR250700106508.

8 EUT Constructional Details (EUT Photos)

Refer to Appendix - External and Internal Photos for GZCR2507001065AT.

9 Appendix

Refer to Appendix _Test Data for report GZCR250700106508.

--End of the Report--

