

TEST REPORT

Report Number: 15532189-E2V1

Applicant : Google LLC
1600 Amphitheatre Parkway
Mountain View, CA 94043 U.S.A.

Model : GZC4K, GQ57S

FCC ID : A4RGZC4K

EUT Description : Phone

Test Standard(s) : FCC 47 CFR PART 15 SUBPART E

Date Of Issue:
2025-06-10

Prepared by:
UL VERIFICATION SERVICES INC.
47173 Benicia Street
Fremont, CA 94538 U.S.A.
TEL: (510) 319-4000
FAX: (510) 661-0888



REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2025-06-10	Initial Issue	---

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Google LLC
1600 Amphitheater pkwy
Mountain View, CA 94043 U.S.A.

EUT DESCRIPTION: Phone

MODEL: GZC4K, GQ57S

SERIAL NUMBER: 41111FDAS0001Y

SAMPLE RECEIPT DATE: 2024-10-09

DATE TESTED: 2024-10-09 TO 2025-06-03

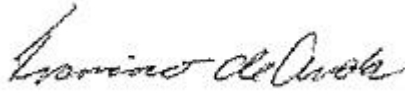
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart E (partially tested)	Complies

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document.

Approved & Released For
UL Verification Services Inc. By:



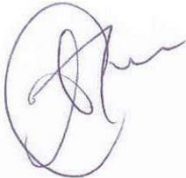
Francisco de Anda
Staff Engineer
Consumer Technology Division
UL Verification Services Inc.

Prepared By:



Gerardo Abrego
Senior Test Engineer
Consumer Technology Division
UL Verification Services Inc.

Reviewed By:



Tina Chu
Senior Project Engineer
Consumer Technology Division
UL Verification Services Inc.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with;

- FCC 47 CFR Part 2
- FCC 47 CFR Part 15 Subpart E
- FCC KDB 662911 Measurement of Transmitters with Multiple Output, MIMO
- FCC KDB 789033 D02 UNII Test Procedures New Rules
- FCC KDB 987594 D01 U-NII 6GHz General Requirements
- FCC KDB 987594 D02 U-NII 6GHz EMC Measurement
- KDB 484596 D01 Referencing Test Data
- ANSI C63.10-2013

3. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, Certificate Number 0751.05, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☒	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
☐	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
☐	Building 3: 843 Auburn Court, Fremont, CA 94538, USA			
☐	Building 4: 47658 Kato Rd, Fremont, CA 94538, USA			
☐	Building 5: 47670 Kato Rd, Fremont, CA 94538, USA			

4. DECISION RULES AND MEASUREMENT UNCERTAINTY

4.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

4.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	U _{Lab}
Radio Frequency (Spectrum Analyzer)	141.16 Hz
RF Power Measurement Using Spectrum Analyzer	0.33 dB
Power Spectral Density	2.466 dB
Time Domain Measurements	3.39%
Temperature	0.57°C
Relative Humidity	3.39%
DC Supply Voltages	0.57%

Uncertainty figures are valid to a confidence level of 95%.

4.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable} \\ &\text{Loss (dB)} - \text{Preamp Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m} \end{aligned}$$

$$\begin{aligned} \text{EIRP (dBm)} &= \text{Meter Reading (dBm)} + \text{Antenna Factor (dB/m)} + \text{Pre-Amp Gain/Cbl Loss (dB)} \\ &\quad + \text{dBm-to-dBm Unit Conversion Factor @ 3m} \\ &= -60 \text{ dBm} + 28 \text{ dB/m} + (-27) \text{ dB} + 11.8 \\ &= -47.2 \text{ dBm} \end{aligned}$$

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{Final Voltage (dBuV)} &= \text{Measured Voltage (dBuV)} + \text{Cable Loss (dB)} + \text{Limiter Factor (dB)} + \\ &\text{LISN Insertion Loss.} \\ 36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} &= 46.6 \text{ dBuV} \end{aligned}$$

5. EQUIPMENT UNDER TEST

5.1. EUT DESCRIPTION

The EUT is a phone.

5.2. MODEL DIFFERENCES

The manufacturer hereby declares the following for models GGX8B and GZC4K/ GQ57S.

GGX8B and GZC4K/CQ57S are highly similar, with the only differences being listed on the table below.

They have the same PCB layout, design, common components, antennas, antenna locations and housing cases.

Output Power and PSD spot check verification and VLP TPC test has been done on model: GZC4K. Comparison of the models, upper deviation is within 3dB range and all tests are under FCC Technical Limits.

Radiated emissions including bandedge, simultaneous, radiated spurious emissions test 9kHz to 40GHz, and power line conducted emission are covered by the original application (LP/SP) where the EUT set to transmit at the channel with highest output power as worst-case scenario to cover all LP/SP/VLP.

The results documented for model GGX8B may be applied as representative to models GZC4K/GQ57S.

Model	FCC ID	Model Changes
GGX8B	A4RGGX8B	Reference model:5G NR n79 depopulated. FR2 mmW populated.
GZC4K, GQ57S	A4RGZC4K	Variant model: Disabled LTE B29, 5G NR n29, n48, n70, n79 from the reference model via software. NR band n79 for non-US carriers, and the Reference model does not, n79 will not be part of FCC certification and therefore there will be no impact to FCC testing. FR2 mmWave depopulated. The GZC4K and GQ57S are identical in Hardware / Software to each other. The only difference lies in the model names, which serve marketing purposes. All test samples used are Model GZC4K.

5.3. INTRODUCTION OF TEST DATA REUSE

This application for certification is leveraging the data reuse procedures from KDB 484596 D01 based on reference model FCC ID: A4RGGX8B to cover variant model FCC ID: A4RGZC4K.

Based on their similarity, the following FCC equipment class reuse the reference model result and spot check on the variants.

Equipment Class	Reference FCC ID	Frequency Range (MHz)	Reference Report/ Data Referencing Section	Report Title
6VL	A4RGGX8B	5955-7095	15532189-E1/ All Sections except VLP TPC was full retested against the variant model, refer to Section 6 in this report.	FCC C2PC VLP

5.4. SPOT CHECK VERIFICATION RESULT SUMMARY

Test Item	Equipment Class	Technologies	Antenna	Mode	FCC ID: A4RGGX8B Reference	FCC ID: A4RGZC4K Variant	Delta (dB)
Total Corrected Avg EIRP Power with DCCF (dBm)	6VL	UNII Band 5	2	11be EHT20, Ch 1, 5955MHz, 242T, RU index 61	1.22	1.39	-0.17
		UNII Band 6	2	11be EHT160, Ch 111, 6505MHz, SU	11.16	11.02	0.14
		UNII Band 7	2	11be EHT40, Ch 123, 6565MHz, 484T, RU index 65	4.63	3.87	0.76
		UNII Band 8	2	11a, Ch 189, 6895MHz	1.75	1.95	-0.2
Total Corrected EIRP PSD with DCCF (dBm/1MHz)		UNII Band 5	2	11be EHT20, Ch 1, 5955MHz, 242T, RU index 61	-5.21	-6.41	1.2
		UNII Band 6	2	11be EHT160, Ch 111, 6505MHz, SU	-5.21	-6.11	0.9
		UNII Band 7	2	11be EHT40, Ch 123, 6565MHz, 484T, RU index 65	-5.24	-6.65	1.41
		UNII Band 8	2	11a, Ch 189, 6895MHz	-5.21	-5.52	0.31

The spot check plan, approved by the FCC inquiry, allows for data reuse from the reference model where the variant model data meets the limits and has not increased by more than 3dB compared to the reference model.

6. VERY LOW POWER TRANSMIT POWER CONTROL (TPC)

LIMITS

FCC §15.407 (d) (10)

(10) Very low power devices operating in the 5.925-7.125 GHz band shall employ a transmit power control (TPC) mechanism. A very low power device is required to have the capability to operate at least 6 dB below the maximum EIRP PSD value of -5 dBm/ MHz.

TEST PROCEDURE

1. Configure EUT and companion device for peer-to-peer communication (refer to block diagram)
2. Set variable attenuator to 0dB (noise free spectral environment, high RSSI simulation)
3. Establish a link and start communication between EUT and companion device
4. Capture PSD spectrum analyzer trace (2)
5. Set variable attenuator to 40dB (noisy spectral environment, low RSSI simulation)
6. Capture PSD spectrum analyzer trace (1)
7. For MIMO operations use the sum of the highest PSD from each individual antenna

SA Settings: 1MHz RBW/ 3MHz VBW

Span: 30MHz

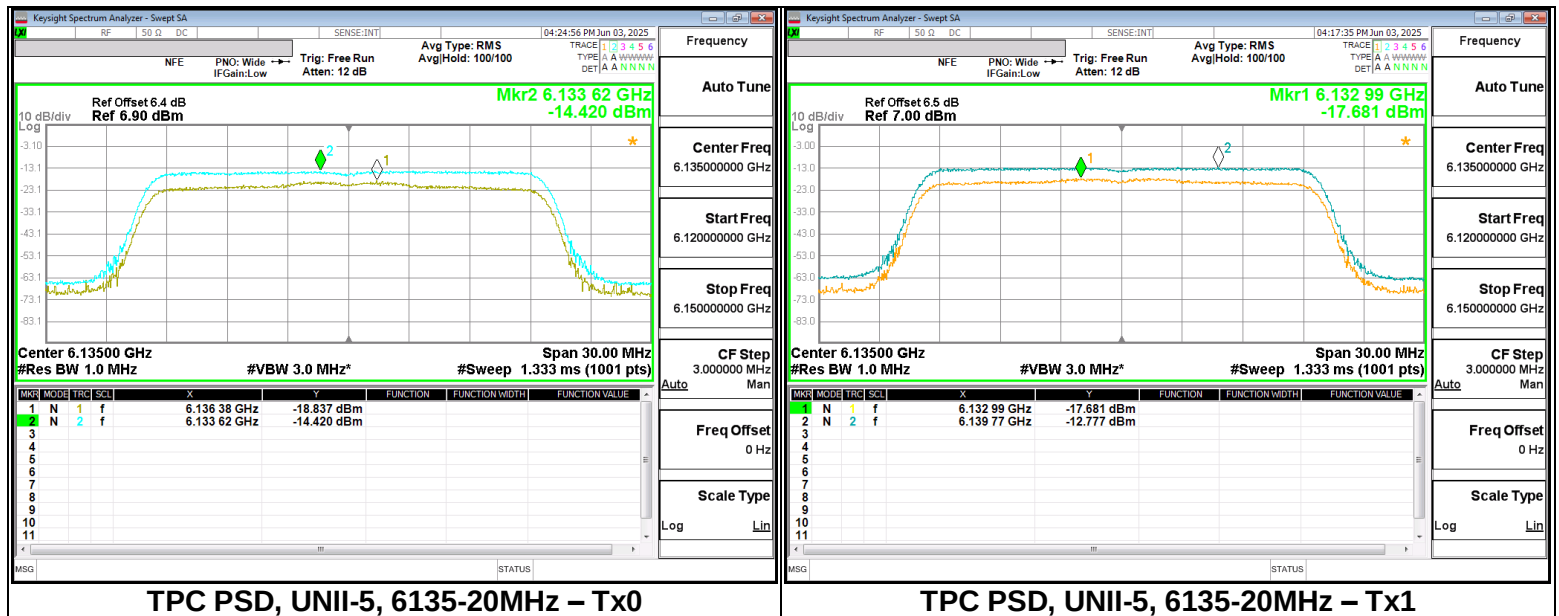
Sweep: 1.333ms, trace averaging enabled for 100 sweeps with RMS detector enabled.

RESULTS

Test Engineer:	GA 12485
Test Date:	2025-06-03

2TX	UNII-5 band						
Correlated Chains							
Directoinal Gain (dBi)	-0.58						
DCCF (dB)	0.15						
BW (MHz)	Frequency (MHz)	Tx 0		Tx 1		Tx 0 + Tx 1	
		Trace 2 High RSSI PSD (dBm/MHz)	Trace 1 Low RSSI PSD (dBm/MHz)	Trace 2 High RSSI PSD (dBm/MHz)	Trace 1 Low RSSI PSD (dBm/MHz)	2Tx High RSSI EIRP PSD (dBm/MHz)	2Tx Low RSSI EIRP PSD (dBm/MHz)
20	6135 (CH37)	-14.42	-18.837	-12.777	-17.681	-10.94	-15.64

The antenna gain is correlated gain used for the CDD MIMO mode. The device is compliant with the 2Tx Low RSSI EIRP PSD is less than -11dBm/MHz.

VLP TPC POWER LEVEL REDUCTION

7. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

CONDCUTED TEST EQUIPMENT LIST					
Description	Manufacturer	Model	ID Num	Cal Due	Last Cal
PXA Signal Analyzer	Keysight Technologies Inc	N9030B	*222073	2025-01-31	2024-01-30
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A	*85201	2025-01-31	2024-01-30
10dB Fixed Attenuator, up to 26GHz	Pasternack Enterprises	PE7087-10	236189	Verified/characterized before use	
Conducted Switch Box	UL	CSB	*245774	2025-05-31	2024-05-16
PXA Signal Analyzer	Keysight Technologies Inc	N9030B	*222074	2025-01-31	2024-01-26
TPC TEST EQUIPMENT LIST					
Description	Manufacturer	Model	ID Num	Cal Due	Last Cal
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A	80400	2026-01-31	2025-01-31
Step Attenuator 70dB	HP	8495B	2406A01354	N/A	N/A
Directional Coupler	Pasternack Enterprises	PE2204-6	246270	2026-05-31	2025-05-31
UL TEST SOFTWARE LIST					
Antenna Port Software	UL	UL RF	Ver 2022-08-16		

NOTES:

- * Testing is completed before equipment expiration date.

Appendix A - Reference Test Report

Attached is the test report number containing the reference data of the reference report as indicated on Section 5.3 of this test report.

END OF TEST REPORT