



TEST REPORT

Applicant Name: Shenzhen Youmi Intelligent Technology Co., Ltd.

Address: 406-407 Jinqi Zhigu Building, 4/F, 1 Tangling Road, Nanshan

District, Shenzhen City, China

Report Number: SZ1240129-06571E-RF-00D

FCC ID: 2ATZ4-G75G

Test Standard (s)

FCC PART 27

Sample Description

Product Type: Smart phone Model No.: PG3NBG7YB

Multiple Model(s) No.: N/A

Trade Mark: UMIDIGI
Date Received: 2024/01/22
Issue Date: 2024/04/01

Test Result: Pass▲

▲ In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By: Approved By:

Andy to Nany Wang

Andy Yu Nancy Wang
RF Engineer RF Supervisor

Note: The information marked *is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.

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Bay Area Compliance Laboratories Corp. (Shenzhen)

5F(B-West) , 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	SZ1240129-06571E-RF-00D	Original Report	2024/04/01

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Product Description for Equipment under Test (EUT)

Product	Smart phone				
Tested Model	PG3NBG7YB				
Multiple Model(s)	N/A				
Frequency Range	5G NR Band 4	1: 2496-269	0MHz(TX/RX)		
EN-DC possible combinations	DC_2A_n41A				
Carrier aggregation	None Carrier a	ggregation			
Modulation Technique			, QPSK, 16QAM, M, 64QAM, 256Q	, 64QAM, 256QAM AM	
	Antenna	Opera	ntion Bands	Antenna Gain (G _T) (dBi)	Lc (dB)
	ANT0		n41	-1.49	0.8
Antenna Specification#	Note: Lc= Signal Attenuation in the connecting cable between antenna, in dB.			ing cable between the t	ransmitter and
	NSA ANT Loc	ation:			
	NSA mo	ode:	LTE	N	IR.
	DC_2A_1	141A	ANT 1	AN	NT 0
Voltage Range	DC 3.87V from battery or DC 5V from adapter				
Sample serial number	2H9S-2 for Radiated Emissions Test 2H9S-1 for RF Conducted Test (Assigned by BACL, Shenzhen)				
Sample/EUT Status	Good condition				
Normal/Extreme Condition [#]	L.V.: Low Voltage 3.45V _{DC} N.V.: Normal Voltage 3.87V _{DC} H.V.: High Voltage 4.45V _{DC}				
Adapter Information	Model:HJ-0502000W2-US Input: AC 100-240V~50/60Hz 0.3A Output: DC 5V, 2A				

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Objective

This test report is in accordance with Part 27of the Federal Communication Commission's rules of the Innovation, science and Economic Development Canada.

The objective is to determine the compliance of the EUT with FCC rules for output power, modulation characteristic, occupied bandwidth, and spurious emission at antenna terminal, spurious radiated emission, frequency stability and band edge.

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Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2-Subpart J as well as the following parts:

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Part 27 - Miscellaneous Wireless Communications Services

ANSI C63.26-2015: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occu	pied Channel Bandwidth	±5%
	RF Frequency	213.55Hz(k=2, 95% level of confidence)
RF o	output power, conducted	0.72 dB(k=2, 95% level of confidence)
Unwa	nted Emission, conducted	1.75 dB(k=2, 95% level of confidence)
	30MHz~200MHz (Horizontal)	4.48dB(k=2, 95% level of confidence)
	30MHz~200MHz (Vertical)	4.55dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Horizontal)	4.85dB(k=2, 95% level of confidence)
Emissions, Radiated	200MHz~1000MHz (Vertical)	5.05dB(k=2, 95% level of confidence)
	1GHz - 6GHz	5.35dB(k=2, 95% level of confidence)
	6GHz - 18GHz	5.44dB(k=2, 95% level of confidence)
	18GHz - 40GHz	5.16dB(k=2, 95% level of confidence)
Temperature		±1°C
Humidity		±1%
	Supply voltages	±0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West), 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 715558, the FCC Designation No.: CN5045.

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SYSTEM TEST CONFIGURATION

Description of Test Configuration

The final qualification test was performed with the EUT operating at normal mode.

The test items were performed with the EUT operating at testing mode. Test was performed with channels as below table:

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Bands	Frequency Range	Bandwidth	Test Frequency (MHz)		
Banus	(MHz)	(MHz)	Low Channel	Middle Channel	High Channel
		10	2501	2593	2685
		15	2503.5	2593	2682.5
	N41 2496-2690	20	2506	2593	2680
		30	2511	2593	2675
NI41		40	2516	2593	2670
N41		50	2521	2593	2665
		60	2526	2593	2660
		80	2536	2593	2650
		90	2541	2593	2645
		100	2546	2593	2640

Note:

For modulation of CP-OFDM and DFT-s-OFDM, the maximum power of CP-OFDM is lower than DFT-s-OFDM modulation, therefore, we chose higher power (DFT-s-OFDM modulation) to perform all tests and show in the report

Equipment Modifications

No modification was made to the EUT.

Support Equipment List and Details

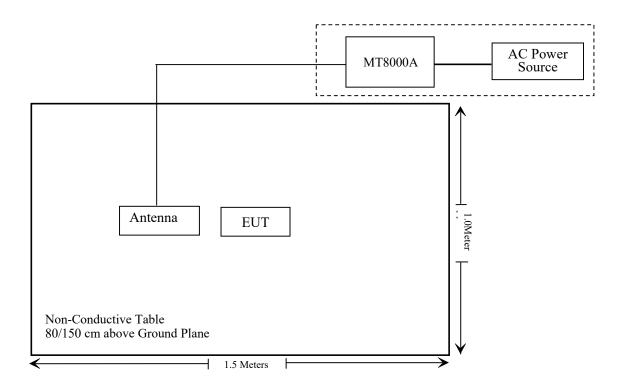
Manufacturer	Description	Model	Serial Number
Anritsu	Radio Communication Test Station	MT8000A	6262309799

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Support Cable Description

Cable Description	Length (m)	From / Port	То
Un-shielded Un-detachable AC cable	1.2	AC Power	MT8000A

Block Diagram of Test Setup



FCC Rules	Description of Test	Result
§1.1307 ,§2.1093	RF Exposure (SAR)	Compliant
§2.1046;§27.50(h)	RF Output Power	Compliant
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049;§27.53	Occupied Bandwidth	Compliant
§ 2.1051;§27.53	Spurious Emissions at Antenna Terminal	Compliant
§ 2.1053;§27.53	Field Strength of Spurious Radiation	Compliant
§27.53(m)	Band Edge	Compliant
§ 2.1055;§27.54;	Frequency stability	Compliant

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Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
]	Radiated Emissi	on Test		
R&S	EMI Test Receiver	ESR3	102455	2024/01/16	2025/01/15
Sonoma instrument	Pre-amplifier	310 N	186238	2023/06/08	2024/06/07
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2024/07/19
Unknown	Cable	Chamber Cable 1	F-03-EM236	2023/08/03	2024/08/02
Unknown	Cable	Chamber Cable 4	EC-007	2023/08/03	2024/08/02
COM-POWER	Dipole Antenna	AD-100	721027	NCR	NCR
Rohde & Schwarz	Spectrum Analyzer	FSV40	101605	2023/04/18	2024/04/17
COM-POWER	Pre-amplifier	PA-122	181919	2023/06/29	2024/06/28
Schwarzbeck	Horn Antenna	BBHA9120D(1201)	1143	2023/07/26	2024/07/25
A.H.System	Horn Antenna	SAS-200/571	135	2021/07/14	2024/07/13
Unknown	RF Cable	KMSE	0735	2023/10/08	2024/10/07
Unknown	RF Cable	UFA147	219661	2023/10/08	2024/10/07
Unknown	RF Cable	XH750A-N	J-10M	2023/10/08	2024/10/07
Anritsu	Radio Communication Analyzer	MT8821C	6262287697	2023/12/18	2024/12/17
Anritsu	Radio Communication Test Station	MT8000A	6262309799	2023/12/18	2024/12/17
JD	Filter Switch Unit	DT7210FSU	DQ77930	NCR	NCR
JD	Multiplex Switch Test Control Set	DT7210SCU	DQ77929	NCR	NCR
A.H.System	Pre-amplifier	PAM-1840VH	190	2023/08/03	2024/08/02
Electro-Mechanics Co	Horn Antenna	3116	9510-2270	2023/09/18	2026/09/17
Electro-Mechanics Co	Horn Antenna	3116	2026	2023/09/18	2026/09/17
UTIFLEX	RF Cable	NO. 13	232308-001	2023/08/03	2024/08/02

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Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date	
	RF Conducted Test					
BACL	Temperature & Humidity Chamber	BTH-150-40	30145	2024/01/16	2025/01/15	
Rohde & Schwarz	Signal and Spectrum Analyzer	FSV40	101473	2024/01/16	2025/01/15	
instek	DC Power Supply	GPS-3030DD	EM832096	NCR	NCR	
Fluke	Digital Multimeter	287	19000011	2023/06/08	2024/06/07	
Anritsu	Radio Communication Analyzer	MT8821C	6262287697	2023/12/18	2024/12/17	
Anritsu	Radio Communication Test Station	MT8000A	6262309799	2023/12/18	2024/12/17	
JD	Filter Switch Unit	DT7210FSU	DQ77930	NCR	NCR	
JD	Multiplex Switch Test Control Set	DT7210SCU	DQ77929	NCR	NCR	
MARCONI	10dB Attenuator	6534/3	2942	2023/07/04	2024/07/03	
WEINSCHEL	3dB Attenuator	Unknown	F-03-EM220	2023/07/04	2024/07/03	
WEINSCHEL	Power Splitter	1515	RH386	2023/07/04	2024/07/03	
Unknown	RF Cable	65475	01670515	2023/07/04	2024/07/03	

^{*} Statement of Traceability: Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §1.1307(b) & §2.1093- RF EXPOSURE INFORMATION

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Applicable Standard

FCC§1.1307 and §2.1093.

Test Result

Compliant, please refer to the SAR report: SZ1240129-06571E-20A.

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FCC § 2.1046, §27.50 (h) - RF OUTPUT POWER

Applicable Standard

According to FCC §2.1046 and §27.50 (h) The following power limits shall apply in the BRS and EBS:

(2)Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB.

Test Procedure

Conducted method: ANSI C63.26-2015 Section 5.2

The RF output of the transmitter was connected to the MT8000A through sufficient attenuation.



Test Data

Environmental Conditions

Temperature:	23~25°C
Relative Humidity:	54~56 %
ATM Pressure:	101 kPa

The testing was performed by Jim Cheng from 2024-03-02 to 2024-03-14.

EUT operation mode: Transmitting (Worst case record in the reports)

Please refer to the Appendix D1~D2 for Conducted Power

Please refer to the Appendix E1 for Peak-to-average ratio (PAR)

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FCC §2.1049, §27.53- OCCUPIED BANDWIDTH

Applicable Standard

FCC 47 §2.1049, §27.53

The occupied bandwidth or the "99% emission bandwidth" is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

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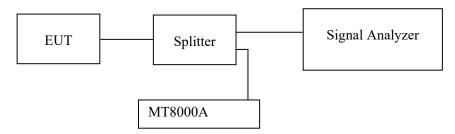
In some cases, the "26 dB bandwidth" is required, which is defined as the frequency range between two points, one at the lowest frequency below and one at the highest frequency above the carrier frequency, at which the maximum power level of the transmitted emission is attenuated 26 dB below the maximum inband power level of the modulated signal, where the two points are on the outskirts of the in-band emission.

Test Procedure

ANSI C63.26-2015 Section 5.4.4

The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.

The resolution bandwidth of the spectrum analyzer was set at 1% to 5% of the anticipated emission bandwidth and the 26 dB & 99% bandwidth was recorded.



Test Data

Environmental Conditions

Temperature:	23~25°C
Relative Humidity:	54~56 %
ATM Pressure:	101 kPa

The testing was performed by Jim Cheng on 2024-03-13.

EUT operation mode: Transmitting (Worst case record in the reports)

Test Result: Pass

Please refer to the Appendix F1 for occupied bandwidth

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FCC §2.1051, §27.53- SPURIOUS EMISSIONS AT ANTENNA TERMINALS

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Applicable Standard

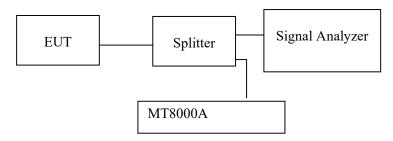
FCC §2.1051, §27.53

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in § 2.1051.

Test Procedure

ANSI C63.26-2015 Section 5.7

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.



Note: the worst case path loss (cable loss and splitter inset loss) among the test frequency range has included in plots.

Test Data

Environmental Conditions

Temperature:	23~25°C
Relative Humidity:	54~56 %
ATM Pressure:	101 kPa

The testing was performed by Jim Cheng on 2024-03-02.

EUT operation mode: Transmitting (Worst case record in the reports)

Test result: Pass

Please refer to the Appendix G1 for spurious emissions at antenna terminals.

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FCC § 2.1053, 27.53- SPURIOUS RADIATED EMISSIONS

Applicable Standard

FCC § 2.1053, § 27.53

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in § 2.1051.

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Test Procedure

ANSI/TIA-603-E-2016 Section 2.2.12 KDB 671168 D01 v03r01 Section 6.2

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

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the receiving 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.

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

Test Data

Environmental Conditions

Temperature:	23~25.3 °C
Relative Humidity:	50~51 %
ATM Pressure:	101 kPa

The testing was performed by Warren Huang on 2024-03-17 and Tyler Wu on 2024-03-13.

EUT operation mode: Transmitting (Scan with X-axis, Y-axis, Z-axis, the worst case Y-axis was recorded)

The worst case is as below:

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8055.00

8055.00

49.17

48.56

Η

V

2.00

2.00

-46.5

-47.4

11.40

11.40

-37.10

-38.00

-25

-25

12.10

13.00

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50.31

32.15

32.82

51.36

51.13

48.29

47.82

Frequency

(MHz)

958.3

958.3

5002.00

5002.00

7503.00

7503.00

952.2

952.2

5186.00

5186.00

7779.00

7779.00

957.8

957.8

5370.00

5370.00

8055.00

8055.00

0.0

0.0

10.50

10.50

11.40

11.40

-65.76

-62.56

-42.60

-42.80

-38.00

-38.70

-25

-25

-25

-25

-25

-25

40.76

37.56

17.60

17.80

13.00

13.70

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Note:

Absolute Level = Reading Level + Substituted Factor Substituted Factor contains: Substituted Level - Cable loss+ Antenna Gain Margin = Limit-Absolute Level

Η

V

Η

V

Η

V

-64.4

-61.2

-51.4

-51.6

-47.4

-48.1

1.36

1.36

1.70

1.70

2.00

2.00

FCC§27.53 (m) - BAND EDGES

Applicable Standard

According to FCC §27.53 (m), 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 that $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5MHz.

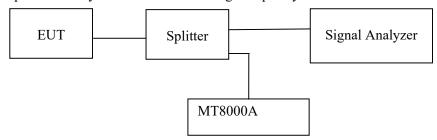
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Test Procedure

ANSI C63.26-2015 Section 5.7

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

The center of the spectrum analyzer was set to block edge frequency



Test Data

Environmental Conditions

Temperature:	23~25°C
Relative Humidity:	54~56 %
ATM Pressure:	101 kPa

The testing was performed by Jim Cheng from 2024-03-02 to 2024-03-03.

EUT operation mode: Transmitting (Worst case record in the reports)

Test Result: Pass

Please refer to the Appendix H1 for band edges.

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FCC § 2.1055; §27.54 - FREQUENCY STABILITY

Applicable Standard

FCC § 2.1055,§27.54

According to FCC §2.1055, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

According to §§27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

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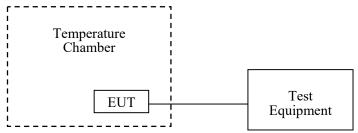
Test Procedure

ANSI C63.26-2015 Section 5.6

Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to communication test set via feed-through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable exited the chamber through an opening made for the purpose.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the communication test set.

Frequency Stability vs. Voltage: For hand carried, battery powered equipment; reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer.



Test Data

Environmental Conditions

Temperature:	23~25°C
Relative Humidity:	54~56 %
ATM Pressure:	101 kPa

The testing was performed by Jim Cheng from 2024-03-02 to 2024-03-14.

EUT operation mode: Transmitting (Worst case record in the reports)

Test Result: Pass

Please refer to the Appendix I1 for frequency stability.

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	1.1. 1.071240120 077717 777
Please refer to the attachment SZ1240129-06571E-RF Exterphoto.	ernal photo and SZ1240129-06571E-RF Interna
photo.	

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