

FCC Test Report

Report No.: AGC03397240508FE01

FCC ID NMC-WT600

APPLICATION PURPOSE : Original Equipment

PRODUCT DESIGNATION: Two-Way Radio

BRAND NAME : UCLEAR DIGITAL

MODEL NAME: RUNE WT600, T-800D

APPLICANT: BITWAVE PTE LTD

DATE OF ISSUE : Jun. 11, 2024

STANDARD(S) : FCC Part 15 Subpart B

REPORT VERSION: V1.0

Attestation of Global Conce (Shenzhen) Co., Ltd



Page 2 of 26

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes	
V1.0	/	Jun. 11, 2024	Valid	Initial Release	

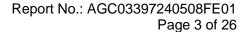




Table of Contents

1. General Information	4
2. Product Information	5
2.1 Product Technical Description	5
2.2 Auxiliary Surrounding Description	5
2.2 Test Methodology	6
2.3 Description of Test Modes	6
3. Test Environment	7
3.1 Address of The Test Laboratory	7
3.2 Test Facility	7
3.3 Environmental Conditions	8
3.4 Measurement Uncertainty	8
3.5 List of Equipment Used	9
4. Summary of Test Results	10
5. Radiated Emission Measurements	
5.1 Provisions Applicable	11
5.2 Measurement Setup	11
5.3 Measurement Procedure	12
5.4 Measurement Resul	13
6. Conducted Emission Measurements	17
6.1 Provisions Applicable	17
6.2 Measurement Setup	17
6.3 Measurement Procedure	18
6.4 Measurement Result	19
7. Antenna Conducted Power for Receivers	21
7.1 Provisions Applicable	21
7.2 Measurement Setup	21
7.3 Measurement Procedure	21
7.4 Measurement Result	22
8. Scanning Receivers and Frequency Converters Used with Scanning Receivers	24
8.1 Provisions Applicable	24
8.2 Measurement Setup	24
8.3 Measurement Procedure	24
8.4 Measurement Result	25
Appendix I: Photographs of Test Setup	26
Appendix II: Photographs of Test EUT	26



Report No.: AGC03397240508FE01 Page 4 of 26



1. General Information

BITWAVE PTE LTD
Ascendas Building 53 Serangoon North Ave 4, #05-06 Singapore, 555852 Singapore
BITWAVE PTE LTD
Ascendas Building 53 Serangoon North Ave 4, #05-06 Singapore, 555852 Singapore
BITWAVE PTE LTD
Ascendas Building 53 Serangoon North Ave 4, #05-06 Singapore, 555852 Singapore
Two-Way Radio
UCLEAR DIGITAL
RUNE WT600
T-800D
Only the model name and shell line design are different
May 16, 2024
May 16, 2024~Jun. 11, 2024
No any deviation from the test method
Normal
Pass
AGCTR-ER-FCC-CSR-V1.0

Note: The test results of this report relate only to the tested sample identified in this report.

Reviewed By

Calvin Liu
(Reviewer)

Approved By

Max Zhang
(Authorized Officer)

Jun. 11, 2024

Jun. 11, 2024



Page 5 of 26

2. Product Information

2.1 Product Technical Description

Housing Type	Plastic and metal
Receive Frequency Range	400-480MHz (Scanning Receiver)
Highest Operating Frequency	2480MHz (The maximum BT receiving frequency should be considered)
Equipment Type	Table-Top
Hardware Version	V1.0
Software Version	V1.0
Power Supply	DC 7.4V 2000mAh by battery

I/O Port Information (⊠Applicable □Not Applicable)

I/O Port of EUT					
I/O Port Type Q'TY Cable Tested with					
Antenna Port	1	N/A	1		
Earphone Port	1	1.2m unshielded	1		

2.2 Auxiliary Surrounding Description

The Following Peripheral Devices and Interface Cables Were Connected During the Measurement:

☐ Test Accessories Come from The Laboratory

☐ Test Accessories Come from The Manufacturer

No.	Equipment	Model No.	Manufacturer	Specification Information	Cable
1	Adapter	DLD-12005-M	Xiamen Delida Elactric Power Technology Co., Ltd. Input: AC 100-240V 50/60H Output: DC 12V 0.5A		1.0m unshielded
2	Charger	CH-32	N/A	Input: DC 12V 0.5A Output: DC 8.4V 300mA	N/A
3	Battery	TB-3820L	BITWAVE PTE LTD	DC 7.4V 2000mAh	N/A
4	Back Clip	N/A	N/A	N/A	N/A



Page 6 of 26

2.2 Test Methodology

The tests were performed according to following standards:

No.	Identity	Document Title
1	FCC 47 CFR Part 15	Radio Frequency Devices
2	ANSI C63.4-2014	American National Standard for Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

2.3 Description of Test Modes

No.	Test Mode	Remark
1	Scanning mode	Worst
2	Scanning stopped/Receiving at low channel of 400 MHz to 480 MHz	
3	Scanning stopped/Receiving at middle channel of 400 MHz to 480 MHz	
4	Scanning stopped/Receiving at high channel of 400 MHz to 480 MHz	

Note:

- 1. Only the result of the worst case was recorded in the report.
- The device is scanning and receiving. Bluetooth is in idle receiving state. It has been considered synchron ously



Page 7 of 26

3. Test Environment

3.1 Address of The Test Laboratory

Laboratory: Attestation of Global Compliance (Shenzhen) Co., Ltd.

Address: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

3.2 Test Facility

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

CNAS-Lab Code: L5488

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No.: 5054.02

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 975832

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files with Registration 975832.

IC-Registration No.: 24842 (CAB identifier: CN0063)

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the Certification and Engineering Bureau of Industry Canada. The acceptance letter from the IC is maintained in our files with Registration 24842.



Page 8 of 26

3.3 Environmental Conditions

	Normal Conditions
Temperature range (℃)	15 - 35
Relative humidity range	20 % - 75 %
Pressure range (kPa)	86 - 106

3.4 Measurement Uncertainty

The reported uncertainty of measurement y ±U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Item	Measurement Uncertainty		
Uncertainty of Conducted Emission	$U_c = \pm 2.9 \text{ dB}$		
Uncertainty of Radiated Emission below 1GHz	$U_c = \pm 3.9 \text{ dB}$		
Uncertainty of Radiated Emission above 1GHz	$U_c = \pm 4.9 \text{ dB}$		



Page 9 of 26

3.5 List of Equipment Used

•	Radiated Emission							
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)	
	AGC-EM-E046	EMI Test Receiver	R&S	ESCI	10096	2024-02-01	2025-01-31	
\boxtimes	AGC-EM-E116	EMI Test Receiver	R&S	ESCI	100034	2023-06-03	2024-06-02	
\boxtimes	AGC-EM-E116	EMI Test Receiver	R&S	ESCI	100034	2024-05-24	2025-05-23	
\boxtimes	AGC-EM-E061	Spectrum Analyzer	Agilent	N9010A	MY53470504	2023-06-01	2024-05-31	
\boxtimes	AGC-EM-E061	Spectrum Analyzer	Agilent	N9010A	MY53470504	2024-05-28	2025-05-27	
	AGC-EM-E001	Wideband Antenna	SCHWARZBECK	VULB9168	D69250	2023-05-11	2025-05-10	
\boxtimes	AGC-EM-E005	Wideband Antenna	SCHWARZBECK	VULB9168	VULB9168-494	2023-01-05	2025-01-04	
\boxtimes	AGC-EM-E029	Broadband Ridged Horn Antenna	ETS	3117	00034609	2023-03-23	2025-03-22	
\boxtimes	AGC-EM-E146	Pre-amplifier	ETS	3117-PA	00246148	2022-08-04	2024-08-03	

•	AC Power Line Conducted Emission							
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)	
\boxtimes	AGC-EM-E045	EMI Test Receiver	R&S	ESPI	101206	2023-06-03	2024-06-02	
\boxtimes	AGC-EM-E045	EMI Test Receiver	R&S	ESPI	101206	2024-05-28	2025-05-27	
	AGC-EM-A130	6dB Attenuator	Eeatsheep	LM-XX-6-5W	DC-6GZ	2023-06-09	2025-06-08	
\boxtimes	AGC-EM-E023	AMN	R&S	100086	ESH2-Z5	2023-06-03	2024-06-02	
\boxtimes	AGC-EM-E023	AMN	R&S	100086	ESH2-Z5	2024-05-28	2025-05-27	

• Tes	Test Software								
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Version Information				
	AGC-EM-S004	RE Test System	Tonscend	TS ⁺ Ver2.1(JS32-RE)	4.0.0.0				
	AGC-EM-S003	RE Test System	FARA	EZ-EMC	V.RA-03A				
\boxtimes	AGC-EM-S001	CE Test System	R&S	ES-K1	V1.71				



Page 10 of 26

4. Summary of Test Results

Item	FCC Rules	Description Of Test	Class/Severity	Result
1	Section 15.107	Radiated Emission	Class B	Pass
2	Section 15.109	Conducted Emission	Class B	Pass
3	§15.111	Antenna Conducted Power for Receivers	/	Pass
4	§15.121(b)	Scanning receivers and frequency converters used with scanning receivers	/	Pass



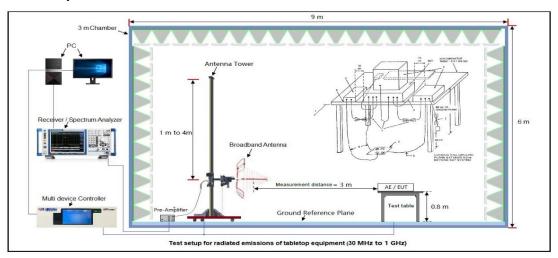
5. Radiated Emission Measurements

5.1 Provisions Applicable

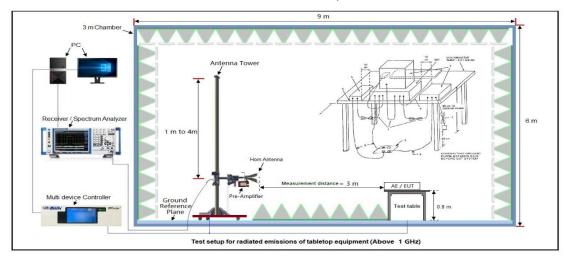
FCC CFR Title 47 Part 15 Subpart B Section 15.109:

Frequency Range	Class B Limit (dBuV/m @3m)	Class A Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	50.00	Quasi-peak
88MHz-216MHz	43.50	53.50	Quasi-peak
216MHz-960MHz	46.00	56.00	Quasi-peak
960MHz-1GHz	54.00	64.00	Quasi-peak
Above 1GHz	54.00	60.00	Average
ADOVE IGHZ	74.00	80.00	Peak

5.2 Measurement Setup



Radiated Emission Measurements Test Setup for 30MHz to 1GHz



Radiated Emission Measurements Test Setup for above 1GHz



Page 12 of 26

5.3 Measurement Procedure

- 1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2. Support equipment, if needed, was placed as per ANSI C63.4.
- 3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- 4. The EUT received power by AC 120V/60Hz.
- 5. The antenna was placed at 3 meter away from the EUT as stated in FCC Part 15. The antenna connected to the Analyzer via a cable and at times a pre-amplifier would be used.
- 6. The Analyzer / Receiver quickly scanned from 30MHz to 1000MHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- 7. The test mode(s) were scanned during the test:
- 8. Recorded at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and Q.P./Peak reading is presented. For emissions below 1GHz, use 120KHz RBW and VBW>=3RBW for QP reading.
- 9. For emissions above 1GHz, use 1MHz RBW and 3MHz VBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
- 10. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
- 11. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the guasi-peak method for below 1GHz.
- 12. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- 13. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High Low scan is not required in this case.
- 14. The test data of the worst case condition (mode 1) was reported on the following Data page.

EMI Test Receiver Setup:

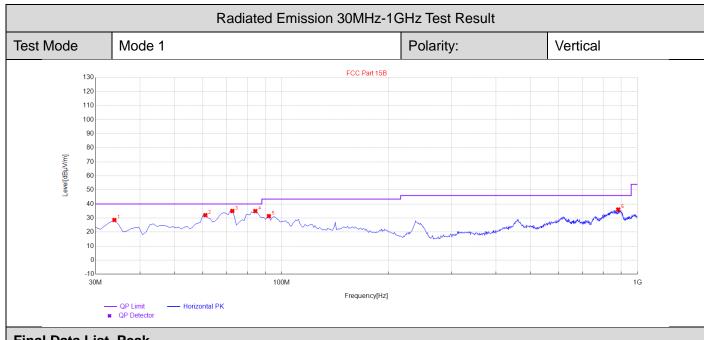
During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
Abovo 1 CHz	1MHz	3 MHz	/	PK
Above 1 GHz	1MHz	10 Hz	/	Ave.



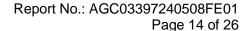
Page 13 of 26

5.4 Measurement Resul

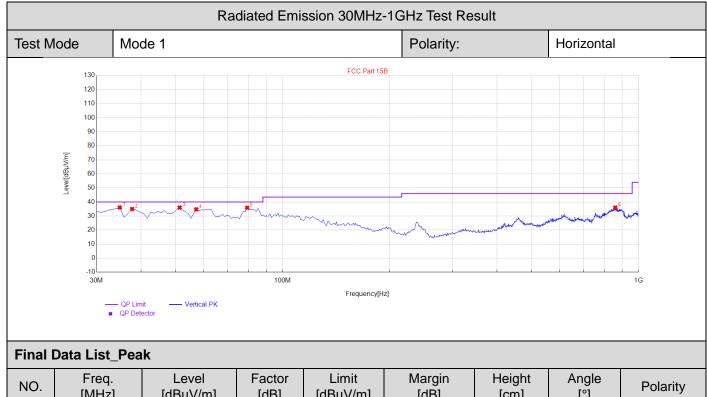


Final Data List_Peak Limit Freq. Level Factor Margin Height Angle NO. Polarity [MHz] [dBµV/m] [dB] [dBµV/m] [dB] [cm] [°] 1 33.88 28.58 12.12 40.00 11.42 100 350 Vertical 2 61.04 32.04 17.54 7.96 100 Vertical 40.00 359 3 72.68 35.01 13.92 40.00 4.99 100 357 Vertical 4 84.32 34.93 12.84 40.00 5.07 100 163 Vertical 92.08 31.34 14.68 43.50 12.16 0 5 100 Vertical 6 882.63 36.05 29.46 46.00 9.95 100 300 Vertical

RESULT: PASS







[MHz] [dBµV/m] [dB] [dBµV/m] [dB] [cm] [°] 40.00 Horizontal 34.85 36.07 11.82 3.93 100 359 1 2 37.76 35.00 10.93 40.00 5.00 100 218 Horizontal 3 51.34 36.04 15.58 40.00 3.96 100 231 Horizontal 57.16 34.76 17.12 40.00 5.24 100 251 4 Horizontal 5 79.47 35.89 12.06 40.00 4.11 100 178 Horizontal 30.00

46.00

9.97

100

336

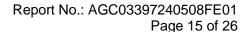
Horizontal

RESULT: PASS

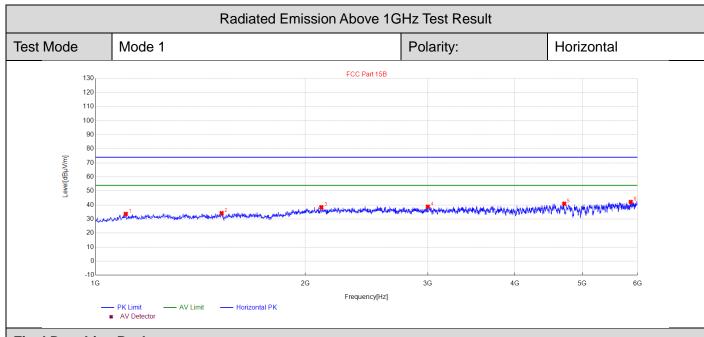
860.32

36.03

6

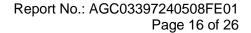




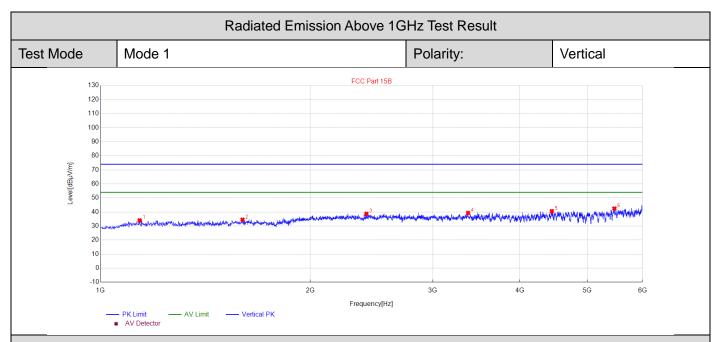


Final Data List_Peak Freq. Level Factor Limit Margin Height Angle NO. Polarity [MHz] [dBµV/m] [dB] [dBµV/m] [dB] [cm] [°] 1 1105.021 33.62 -18.17 74.00 40.38 100 250 Horizontal 2 1517.1034 34.19 -17.40 74.00 39.81 100 360 Horizontal 3 2109.2218 38.36 -13.15 74.00 35.64 100 160 Horizontal 4 2999.3999 38.73 -11.97 74.00 35.27 100 300 Horizontal 40.90 5 4708.7417 -7.83 74.00 33.10 100 150 Horizontal 6 5867.9736 42.16 -5.79 74.00 31.84 100 50 Horizontal

RESULT: PASS







Final Data List_Peak

NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1138.0276	33.99	-18.12	74.00	40.01	100	10	Vertical
2	1599.1198	34.51	-16.72	74.00	39.49	100	40	Vertical
3	2408.2817	38.70	-12.42	74.00	35.30	100	290	Vertical
4	3370.4741	39.28	-10.98	74.00	34.72	100	340	Vertical
5	4445.6891	40.58	-8.11	74.00	33.42	100	160	Vertical
6	5466.8934	42.44	-6.94	74.00	31.56	100	310	Vertical

RESULT: PASS

Note:

- 1. Factor=Antenna Factor + Cable loss Amplifier gain, Margin= Limit-Measurement.
- 2. The "Factor" value can be calculated automatically by software of measurement system.



Page 17 of 26

6. Conducted Emission Measurements

6.1 Provisions Applicable

FCC CFR Title 47 Part 15 Subpart B Section 15.107:

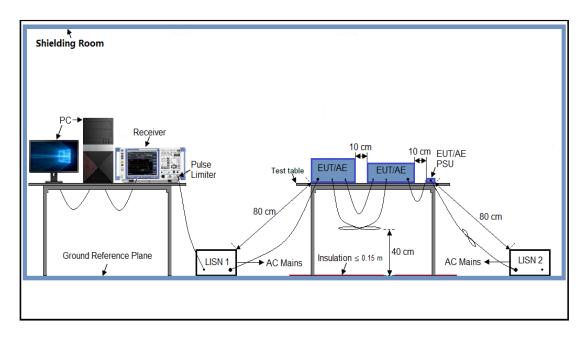
For Class B Limits:

Fraguency	Maximum RF Line Voltage			
Frequency	Q.P. (dBµV)	Average (dBµV)		
150kHz~500kHz	66-56	56-46		
500kHz~5MHz	56	46		
5MHz~30MHz	60	50		

For Class A Limits:

Fraguency	Maximum RF Line Voltage				
Frequency	Q.P. (dBµV)	Average (dBµV)			
150kHz~500kHz	79	66			
500kHz~30MHz	73	60			

6.2 Measurement Setup





Report No.: AGC03397240508FE01 Page 18 of 26

6.3 Measurement Procedure

- 1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2. Support equipment, if needed, was placed as per ANSI C63.4.
- 3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- 4. The EUT received AC 120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5. All support equipment received AC power from a second LISN, if any.
- 6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
- 8. During the above scans, the emissions were maximized by cable manipulation.
- 9. The test data of the worst case condition (Mode 1) was reported on the following Data page.



6.4 Measurement Result

			er Line Cond				
Test Mode	Mode 1			LIS	SN Line	Neu	tral Side
Le	evel [dBµV]						
80	r						
70	 			-			
60					· <u>i</u>	 	+
50	 				· 	1 1 1 1	+
40			- -	-		 	
30	Jan Jan	" with the state of the state o		Andrews and the			
20			- the same and the same and				
10							
-10						1 1 1	
-10	150k 300k	400k 600k 800k		2M 3M uency [Hz]	4M 5M 6M	8M 10M	20M 30M
x x 3	MES agc_fin						
1/	EXCUDENCE	NT RESULT	: "agc	fin"			
20		11:28					
20	Frequenc	cy Level	Transd		Margin	Detector	Line
20		cy Level	Transd dB	Limit dBµV	Margin dB	Detector	Line
20	Frequenc MF	cy Level Hz dBµV	dB	dΒμV	dB		
20	Frequence MF 0.33800	Ey Level Hz dBµV	dB 6.1	dBµV 59	dB 28.6	Detector QP QP	Line L1 L1
20	Frequenc MF	Ey Level dBµV 00 30.70 21.30	dB	dΒμV	dB	QP	L1
20	0.33800 0.65400 1.11400	Ey Level dBμV 00 30.70 00 21.30 00 22.20 00 22.80	dB 6.1 6.2 6.2 6.2	dΒμV 59 56	dB 28.6 34.7	QP QP	L1 L1
20	0.33800 0.65400 1.11400 1.37400	Ey Level dBμV 00 30.70 00 21.30 00 22.20 00 22.80 00 22.60	dB 6.1 6.2 6.2 6.2 6.2	dBμV 59 56 56 56 56	28.6 34.7 33.8 33.2 33.4	QP QP QP QP QP	L1 L1 L1 L1 L1
20	0.33800 0.65400 1.11400	Ey Level dBμV 00 30.70 00 21.30 00 22.20 00 22.80 00 22.60	dB 6.1 6.2 6.2 6.2	dBμV 59 56 56 56	28.6 34.7 33.8 33.2	QP QP QP QP	L1 L1 L1 L1
	0.33800 0.65400 1.11400 1.37400 1.42200	Ey Level dBμV 00 30.70 00 21.30 00 22.20 00 22.80 00 22.60	6.1 6.2 6.2 6.2 6.2 6.2	dBμV 59 56 56 56 56 56	28.6 34.7 33.8 33.2 33.4	QP QP QP QP QP	L1 L1 L1 L1 L1
М	Frequence MH 0.33800 0.65400 1.11400 1.37400 1.42200 1.49800	Ey Level dBµV 00 30.70 00 21.30 00 22.20 00 22.80 00 22.60 00 22.60	6.1 6.2 6.2 6.2 6.2 6.2 6.2	dBμV 59 56 56 56 56 56	28.6 34.7 33.8 33.2 33.4 33.4	QP QP QP QP QP	L1 L1 L1 L1 L1 L1
М	Frequence MH 0.33800 0.65400 1.11400 1.37400 1.42200 1.49800 EASUREME 024/6/7 1 Frequence	Ey Level dB \(\pu \) 00 30.70 00 21.30 00 22.20 00 22.80 00 22.60 00 22.60 ENT RESULT 11:28 Ey Level	dB 6.1 6.2 6.2 6.2 6.2 6.2 6.2 6.2	dBμV 59 56 56 56 56 56 56	28.6 34.7 33.8 33.2 33.4 33.4	QP QP QP QP QP	L1 L1 L1 L1 L1 L1
М	Frequence MH 0.33800 0.65400 1.11400 1.37400 1.42200 1.49800 EASUREME 024/6/7 1 Frequence	Ey Level dBµV 00 30.70 00 21.30 00 22.20 00 22.80 00 22.60 00 22.60	6.1 6.2 6.2 6.2 6.2 6.2 6.2	dBμV 59 56 56 56 56 56	dB 28.6 34.7 33.8 33.2 33.4 33.4	QP QP QP QP QP	L1 L1 L1 L1 L1 L1
М	Frequence MH 0.33800 0.65400 1.11400 1.37400 1.42200 1.49800 EASUREME 024/6/7 1 Frequence	Level dBμV 30.70 30.70 21.30 22.20 22.80 22.60	dB 6.1 6.2 6.2 6.2 6.2 6.2 : "agc_ Transd dB	dBμV 59 56 56 56 56 56 56	dB 28.6 34.7 33.8 33.2 33.4 33.4	QP QP QP QP QP QP	L1 L1 L1 L1 L1 L1
М	Frequence 0.33800 0.65400 1.11400 1.37400 1.42200 1.49800 EASUREME 024/6/7 1 Frequence MF	Ey Level dB \(\pu \) 00 30.70 00 21.30 00 22.20 00 22.80 00 22.60 00 22.60 00 22.60 00 21.30 00 22.80 00 22.80 00 23.50	dB 6.1 6.2 6.2 6.2 6.2 6.2 : "agc_ Transd dB 6.1	dBµV 59 56 56 56 56 56 49	dB 28.6 34.7 33.8 33.2 33.4 33.4	QP QP QP QP QP QP	L1 L1 L1 L1 L1 L1
М	Frequence 0.33800 0.65400 1.11400 1.37400 1.42200 1.49800 EASUREME 024/6/7 1 Frequence MF 0.33800 0.77800 1.01800	CV Level dBμV 00 30.70 00 21.30 00 22.20 00 22.80 00 22.60 00 22.60 CNT RESULT 11:28 CY Level dBμV 00 23.50 00 18.80 00 17.00	dB 6.1 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.2	dBμV 59 56 56 56 56 56 56 56 49 49 46 46	dB 28.6 34.7 33.8 33.2 33.4 33.4 33.4 Margin dB 25.8 27.2 29.0	QP QP QP QP QP QP AV AV	L1
М	Frequence 0.33800 0.65400 1.11400 1.37400 1.42200 1.49800 EASUREME 024/6/7 Frequence MH 0.33800 0.77800 1.01800 2.52200	Ey Level dB \(\pi \) 00 30.70 00 21.30 00 22.20 00 22.80 00 22.60 00 22.60 ENT RESULT 11:28 Ey Level dB \(\pi \) 00 23.50 00 18.80 00 17.00 00 10.60	dB 6.1 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.3	dBμV 59 56 56 56 56 56 49 46 46 46	dB 28.6 34.7 33.8 33.2 33.4 33.4 33.4 Margin dB 25.8 27.2 29.0 35.4	QP QP QP QP QP QP AV AV AV	L1
М	Frequence 0.33800 0.65400 1.11400 1.37400 1.42200 1.49800 EASUREME 024/6/7 1 Frequence MF 0.33800 0.77800 1.01800	Ey Level dB \(\pi \) 00 30.70 00 21.30 00 22.20 00 22.80 00 22.60 00 22.60 00 22.60 00 23.50 18.80 00 17.00 00 10.60 00 14.30	dB 6.1 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.3 6.8	dBμV 59 56 56 56 56 56 56 56 49 49 46 46	dB 28.6 34.7 33.8 33.2 33.4 33.4 33.4 Margin dB 25.8 27.2 29.0 35.4 35.7	QP QP QP QP QP QP AV AV AV AV	L1

RESULT: PASS

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ME	Frequency MHz 0.338000 0.434000 0.794000 1.170000 1.342000 1.498000	Level dBµV 29.80 21.60 28.80 22.50 22.60 22.10	dB 6.1 6.2 6.2 6.2	Limit dBµV 59 57 56 56 56	dB 29.5 35.6 27.2 33.5 33.4	QP QP QP QP QP	N N N N
ME	Frequency MHz 0.338000 0.434000 0.794000 1.170000 1.342000 1.498000 ASUREMENT	Level dBµV 29.80 21.60 28.80 22.50 22.60 22.10	dB 6.1 6.2 6.2 6.2 6.2	Limit dBµV 59 57 56 56 56	dB 29.5 35.6 27.2 33.5 33.4 33.9	QP QP QP QP QP	N N N N N
ME	Frequency MHz 0.338000 0.434000 0.794000 1.170000 1.342000 1.498000 ASUREMENT 24/6/7 11:2 Frequency	Level dBµV 29.80 21.60 28.80 22.50 22.60 22.10	dB 6.1 6.2 6.2 6.2 6.2	Limit dBµV 59 57 56 56 56 56	dB 29.5 35.6 27.2 33.5 33.4 33.9	QP QP QP QP QP	N N N N N
ME	Frequency MHz 0.338000 0.434000 0.794000 1.170000 1.342000 1.498000 ASUREMENT	Level dBµV 29.80 21.60 28.80 22.50 22.60 22.10	dB 6.1 6.2 6.2 6.2 6.2	Limit dBµV 59 57 56 56 56	dB 29.5 35.6 27.2 33.5 33.4 33.9	QP QP QP QP QP	N N N N N
ME	Frequency MHz 0.338000 0.434000 0.794000 1.170000 1.342000 1.498000 ASUREMENT 24/6/7 11:2 Frequency	Level dBµV 29.80 21.60 28.80 22.50 22.60 22.10	dB 6.1 6.2 6.2 6.2 6.2	Limit dBµV 59 57 56 56 56 56	dB 29.5 35.6 27.2 33.5 33.4 33.9	QP QP QP QP QP QP	N N N N N
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ME	### Trequency MHz 0.338000 0.434000 0.794000 1.170000 1.342000 1.498000 #################################	Level dBµV 29.80 21.60 28.80 22.50 22.60 22.10 4 Level dBµV 23.30 20.60 16.70	dB 6.1 6.2 6.2 6.2 6.2 6.2 6.2	Limit dBµV 59 57 56 56 56 56 56	dB 29.5 35.6 27.2 33.5 33.4 33.9 Margin dB 26.0	QP QP QP QP QP QP	N N N N N
ME :	### Trequency MHz 0.338000 0.434000 0.794000 1.170000 1.342000 1.498000 #### ASUREMENT 24/6/7 11:2 #### Frequency MHz 0.338000 0.782000 1.022000 3.798000	Level dBµV 29.80 21.60 28.80 22.50 22.60 22.10 24 Level dBµV 23.30 20.60 16.70 12.30	dB 6.1 6.2 6.2 6.2 6.2 6.2 6.2 6.1 6.2 6.2 6.3	Limit dBµV 59 57 56 56 56 56 56 46 46 46 46	dB 29.5 35.6 27.2 33.5 33.4 33.9 Margin dB 26.0 25.4 29.3 33.7	QP QP QP QP QP QP AV AV AV	N N N N N N
ME :	### Trequency MHz 0.338000 0.434000 0.794000 1.170000 1.342000 1.498000 #### ASUREMENT 24/6/7 11:2 Frequency MHz 0.338000 0.782000 1.022000	Level dBµV 29.80 21.60 28.80 22.50 22.60 22.10 24 Level dBµV 23.30 20.60 16.70 12.30	dB 6.1 6.2 6.2 6.2 6.2 6.2 6.2 6.1 6.2 6.2 6.3	Limit dBµV 59 57 56 56 56 56 56 49 49 46 46	dB 29.5 35.6 27.2 33.5 33.4 33.9 Margin dB 26.0 25.4 29.3	QP QP QP QP QP QP AV AV AV AV	N N N N N N N

RESULT: PASS

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Page 21 of 26

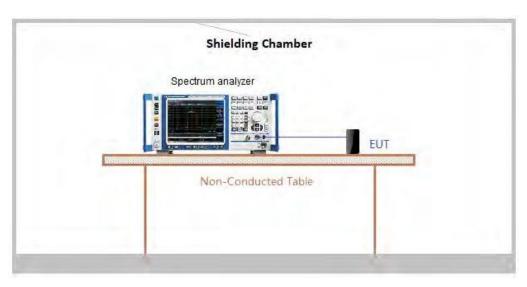
7. Antenna Conducted Power for Receivers

7.1 Provisions Applicable

The antenna conducted power of the receiver as defined in §15.111 shall not exceed the values given in the following tables

Frequency Range	9 KHz to 2GHz
Limit	2.0 nW (-57 dBm)

7.2 Measurement Setup



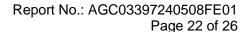
7.3 Measurement Procedure

1. The receiver antenna terminal connected to a spectrum analyzer.

2. Receiver set as follow:

Frequency range	RBW (kHz)	VBW (kHz)
9 kHz ~ 150 kHz	1	3
150 kHz ~ 30 MHz	10	30
30 MHz ~ 1000 MHz	100	300
1000 MHz ~ 3000 MHz	1000	3000

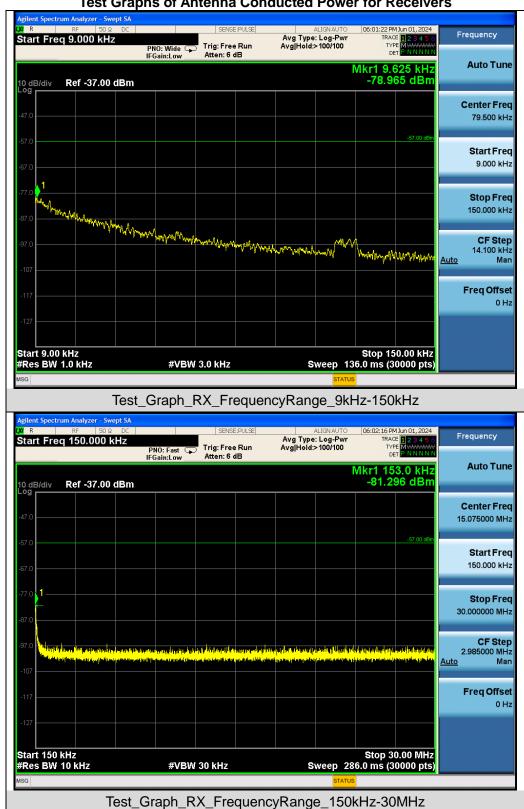
3. The test data of the worst case condition (mode 1) was reported on the following Data page.



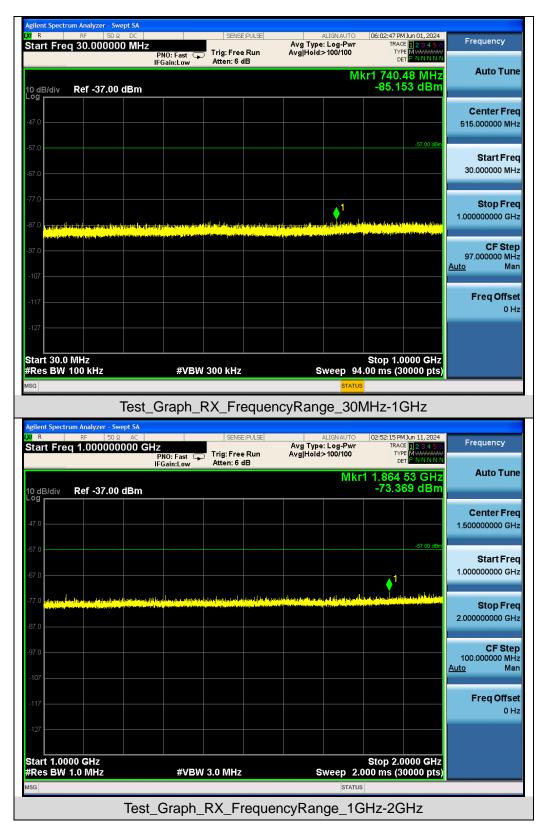


7.4 Measurement Result

Test Graphs of Antenna Conducted Power for Receivers







RESULT: PASS

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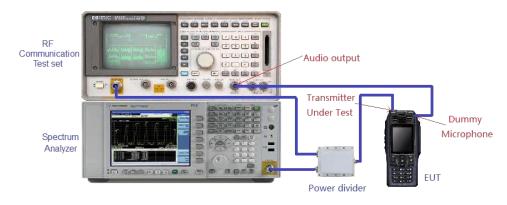
Page 24 of 26

8. Scanning Receivers and Frequency Converters Used with Scanning Receivers

8.1 Provisions Applicable

Except as provided in paragraph (c) of this section, scanning receivers shall reject any signals from the Cellular Radiotelephone Service frequency bands that are 38 dB or lower based upon a 12 dB SINAD measurement, which is considered the threshold where a signal can be clearly discerned from any interference that may be present.

8.2 Measurement Setup



8.3 Measurement Procedure

- 1) Connected the EUT as shown in the above block diagram.
- Apply a RF signal to the receiver input port at lowest, middle and highest channel frequencies of receiver operation band.
- 3) Adjust the audio output level of the receiver to it's rated value with the distortion less than 10%.
- 4) Adjust the RF Signal Generator Output Power to produce 12 dB SINAD without the audio output power dropping by more than 3 dB. This output level of the RF SG at each channel frequency is the sensitivity of the receiver.
- 5) Select the lowest or worse-case sensitivity level for all of the bands as the reference sensitivity.
- 6) Adjust the RF Signal Generator output to a level of +60 dB above the reference sensitivity obtained in step 5) and its frequency to the frequency points in the cellular band.
- 7) Set the Receiver squelch to threshold, the signal required to open the squelch must be lower than the reference sensitivity level.
- 8) Set the receiver in a scanning mode and allow it to scan through it's complete receiving range.
- 9) If the receiver unsquelched or stopped on any frequency, receiving at this frequency, then adjust the signal generator output level until 12 dB SINAD is produced, this level is the spurious value and the difference between the reference sensitivity and the spurious value is the rejection ratio and must be at least 38dB.
- 10) Repeat above procedure at the frequencies 824.5, 836.0, and 848.5 MHz for the mobile band, and 869.1, 881.5, and 893.5MHz for the cellular base band.



Page 25 of 26

8.4 Measurement Result

Scanning Frequency Band (MHz)	Test Frequency of Cellular Band (MHz)	Spurious Value of Cellular Frequency (dBm)	Reference Sensitivity (dBm)	Measurement Result (dB)	Limit (dB)
400-480	824.5/836.0/848.5	>-44	-107	<-63	<-38
400-480	869.1/881.5/893.5	>-44	-107	<-63	<-38

Note:

- 1. Measurement Result = Rejection Ratio
- 2. Reference Sensitivity is the recorded value when the signal-to-noise ratio is 12dB.
- 3. Measurement Result = Reference Sensitivity- Spurious Value.



Page 26 of 26

Appendix I: Photographs of Test Setup

Refer to the Report No.: AGC03397240508AP03

Appendix II: Photographs of Test EUT

Refer to the Report No.: AGC03397240508AP02

----End of Report----



Conditions of Issuance of Test Reports

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- 3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
- 4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
- 5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
- 6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
- 7.Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
- 8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
- 9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.