





# **FCC Test Report**

Report No.: AGC14499250706FR01

FCC ID : 2BCUQ-DT10

**APPLICATION PURPOSE**: Original Equipment

**PRODUCT DESIGNATION**: Dongle

BRAND NAME : LINXVIL

MODEL NAME : DT10

**APPLICANT**: Fanvil Link Technology Co., LTD

**DATE OF ISSUE** : Aug. 13, 2025

**STANDARD(S)** : FCC Part 15 Subpart D §15.323

**REPORT VERSION** : V1.0

Attestation of Global Chenzhen Co., Ltd



Page 2 of 66

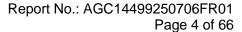
# **Report Revise Record**

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Aug. 13, 2025	Valid	Initial Release



# **Table of Contents**

1. General Information	5
2. Product Information	6
2.1 Product Technical Description	6
2.2 Test Frequency List	7
2.3 Related Submittal(S) / Grant (S)	8
2.4 Test Methodology	8
2.5 Automatic Discontinuation of Transmission	8
2.6 Digital Modulation Techniques	9
2.7 Special Accessories	9
2.8 Equipment Modifications	9
2.9 Antenna Requirement	9
3. Test Environment	10
3.1 Address of The Test Laboratory	10
3.2 Test Facility	10
3.3 Environmental Conditions	11
3.4 Measurement Uncertainty	11
3.5 List of Equipment Used	12
4.System Test Configuration	14
4.1 EUT Configuration	
4.2 EUT Exercise	
4.3 Configuration of Tested System	14
4.4 Equipment Used in Tested System	14
4.5 Summary of Test Results	
5. Description of Test Modes	16
6. 26dB Emission Bandwidth & 99% Occupied Bandwidth	17
6.1 Provisions Applicable	17
6.2 Measurement Procedure	17
6.3 Measurement Setup (Block Diagram of Configuration)	17
6.4 Measurement Result	18
7. Peak Transmit Power and Antenna Gain	20
7.1 Provisions Applicable	20
7.2 Measurement Procedure	20
7.3 Measurement Setup (Block Diagram of Configuration)	20
7.4 Measurement Result	21
8. Power Spectral Density	24
8.1 Provisions Applicable	24
8.2 Measurement Procedure	24
8.2 Measurement Setup (Block Diagram of Configuration)	24
8.3 Measurement Result	25
9. In-Band Unwanted Emissions  Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped	by the "Dedicated Testing/Inspection





9.1 Provisions Applicable	27
9.2 Measurement Procedure	27
9.3 Measurement Setup (Block Diagram of Configuration)	27
9.4 Measurement Result	28
10. Out-of-Band Unwanted Emissions	30
10.1 Provisions Applicable	30
10.2 Measurement Procedure	30
10.3 Measurement Setup (Block Diagram of Configuration)	30
10.4 Measurement Result	31
11. Radiated Emission	39
11.1 Limits of Radiated Emission Test	39
11.2 Measurement Procedure	39
11.3 Measurement Setup (Block Diagram of Configuration)	41
11.4 Measurement Result	42
12. AC Power Line Conducted Emission	47
12.1 Limits of Line Conducted Emission Test	47
12.2 Measurement Setup (Block Diagram of Configuration)	47
12.3 Preliminary Procedure of Line Conducted Emission Test	48
12.4 Final Procedure of Line Conducted Emission Test	48
12.5 Measurement Result	48
13. Carrier Frequency Stability	51
13.1 Provisions Applicable	51
13.2 Measurement Procedure	51
13.3 Measurement Setup (Block Diagram of Configuration)	51
13.4 Measurement Result	52
14. Specific Requirements for UPCS Device	54
14.1 Monitoring Time Requirements	54
14.2 Lowest Monitoring Threshold Requirements	55
14.3 Acknowledgements and Transmission Duration Requirements	56
14.4 Least Interfered Channel (LIC) Selection Requirements	57
14.5 Random Waiting Requirements	58
14.6 Monitoring Bandwidth Requirements	59
14.7 Monitoring Antenna Requirements	60
14.8 Dual Access Criteria Check Requirements	61
14.9 Alternative Monitoring Interval for Co-Located Devices Requirements	62
14.10 Frame Repetition Stability And Period And Jitter	63
Appendix I: Photographs of Test Setup	65
Appendix II: Photographs of Test EUT	65



Report No.: AGC14499250706FR01 Page 5 of 66

## 1. General Information

Applicant	Fanvil Link Technology Co., LTD
Address	13th Floor, Building 2, Runzhi R&D Center, Xin'an Street, Bao'an District, Shenzhen, Guangdong, 518000 China
Manufacturer	Fanvil Link Technology Co., LTD
Address	13th Floor, Building 2, Runzhi R&D Center, Xin'an Street, Bao'an District, Shenzhen, Guangdong, 518000 China
Product Designation	Dongle
Brand Name	LINKVIL
Test Model	DT10
Series Model	N/A
Difference Description	N/A
Date of receipt of test item	Jul. 16, 2025
Date of Test	Jul. 16, 2025~Aug. 08, 2025
Deviation from Standard	No any deviation from the test method
Condition of Test Sample	Normal
Test Result	Pass
Test Report Form No	AGCER-FCC-DECT-V1

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

Prepared By	Bibo zhang	
	Bibo Zhang (Project Engineer)	Aug. 12, 2025
Reviewed By	Jack Gai	
	Jack Gui (Reviewer)	Aug. 12, 2025
Approved By	Angole Li	
	Angela Li (Authorized Officer)	Aug. 12, 2025



Page 6 of 66

## 2. Product Information

# 2.1 Product Technical Description

Equipment Type	Fixed Part (FP)
Frequency Band	1920 MHz to 1930 MHz
Trequency Band	1920 WILL TO 1930 WILL
Operation Frequency Range	1921.536 MHz to 1928.448 MHz
Hardware Version	V1.0
Software Version	V1.0.1
Type of Modulation	Digital (Gaussian Frequency Shift Keying)
Modulation Technique	GFSK
Number of channels	5 RF Channels, 5 x 12 = 60 TDMA Duplex Channels
Channel Separation	1728 kHz
Emission Designator	F7D
Maximum Transmitter Power	17.19dBm for conducted power 17.79dBm for EIRP
Antenna Designation	FPC Antenna
Antenna Gain	0.6dBi
Power Supply	DC 5V from PC

Note: The Headset DH30 and the Dongle DT10 and the Charging Standare DB10 shipped as a set, and the set model name is DH301D.



Page 7 of 66

## 2.2 Test Frequency List

Frequency Band	Channel Number	Frequency
	0	1928.448 MHz
	1	1926.720 MHz
1920~1930MHz	2	1924.992 MHz
	3	1923.264 MHz
	4	1921.536 MHz

Note: All channels operation in the 1920-1930 MHz band, meeting the requirement of FCC 47 CFR Part 15.303



Report No.: AGC14499250706FR01 Page 8 of 66

# 2.3 Related Submittal(S) / Grant (S)

This submittal(s) (test report) is intended for FCC ID: **2BCUQ-DT10**, filing to comply with Part 2, Part 15 of the Federal Communication Commission rules.

#### 2.4 Test Methodology

The tests were performed according to following standards:

No.	Identity	Document Title
1 FCC 47 CFR Part 2 Frequency allocations and radio trea		Frequency allocations and radio treaty matters; general rules and regulations
2	FCC 47 CFR Part 15	Radio Frequency Devices
3	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
4	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices
5	ANSI C63.17-2013	American National Standard Methods of Measurement of the Electromagnetic and Operational Compatibility of Unlicensed Personal Communications Services (UPCS) Devices

#### 2.5 Automatic Discontinuation of Transmission

Does the EUT transmit Control and Signaling Information?		
⊠ Yes	□ No	
Type of EUT:		
☐ Initiating Device	□ Responding Device     □ Responding Device	
The fills is a test with the flavored and fills.		

The following tests simulate the reaction of the EUT in case of either absence of information to transmit or operational failure after a connection with the companion device is established.

No.	Test	EUT Reaction	Results
1	Power removed: EUT	A	Pass
2	Switch Off: EUT	N/A	Pass
3	Hook-On: EUT	N/A	Pass
4	Power Removed: Companion Device	В	Pass
5	Switch Off: Companion Device	В	Pass
6	Hook-On: Companion Device	В	Pass

# Note:

- A Connection breakdown, Cease of all transmissions
- B Connection breakdown, EUT transmits control and signaling information
- C Connection breakdown, Companion Device transmits control and signaling information
- N/A: Not Applicable (EUT does not have On/Off switch and cannot perform Hook-On)



Page 9 of 66

# 2.6 Digital Modulation Techniques

The test sample is an isochronous digital modulated device that operates in 1920-1930 MHz band. This device bases on DECT technology described in European Standards EN 300 175-2 and EN 300 175-3, now operating in frequency channels mentioned above.

The operating modes are MC/TDMA/TDD (Multi carrier / Time Division Multiple Access / Time Division Duplex) using Digital GFSK (Gaussian Frequency Shift Keying) modulation.

For further details see operational description provided by manufacturer.

# 2.7 Special Accessories

Not available for this EUT intended for grant.

#### 2.8 Equipment Modifications

Not available for this EUT intended for grant.

## 2.9 Antenna Requirement

#### **Standard Requirement**

#### 15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

#### **EUT Antenna:**

The non-detachable antenna inside the device cannot be replaced by the user at will. The gain of the antenna is 0.6dBi.



Page 10 of 66

#### 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 follow 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 follow 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 11 of 66

#### 3.3 Environmental Conditions

Normal Conditions	Extreme Conditions
15 - 35	-20 - 50
20 % - 75 %	20 % - 75 %
86 - 106	86 - 106
DC 5V	LV DC 4.25V/HV DC 5.75V
	15 - 35 20 % - 75 % 86 - 106

Note: The Extreme Temperature and Extreme Voltages declared by the manufacturer.

# 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%.

uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.		
Item		Measurement Uncertainty
	Uncertainty of Conducted Emission for AC Port	$U_c = \pm 2.9 \text{ dB}$
	Uncertainty of Radiated Emission below 1GHz	$U_c = \pm 3.9 \text{ dB}$
	Uncertainty of Radiated Emission above 1GHz	$U_c = \pm 4.9 \text{ dB}$
	Uncertainty of total RF power, conducted	$U_c = \pm 0.8 \text{ dB}$
	Uncertainty of RF power density, conducted	$U_c = \pm 2.6 \text{ dB}$
	Uncertainty of spurious emissions, conducted	U <sub>c</sub> = ±2 %
	Uncertainty of Occupied Channel Bandwidth	U <sub>c</sub> = ±2 %



Report No.: AGC14499250706FR01 Page 12 of 66

# 3.5 List of Equipment Used

•	RF Conducted Test System								
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)		
$\boxtimes$	AGC-ER-E087	Spectrum Analyzer	KEYSIGHT	N9020B	MY56101792	2025-05-08	2026-05-07		
$\boxtimes$	AGC-ER-E075	Small Environmental Tester	SH-242	ESPEC	93008290	2024-07-24	2026-07-23		
$\boxtimes$		Universal Switch Control Unit	Tonscend	JS	N/A	N/A	N/A		
$\boxtimes$	AGC-ER-E037	Signal Generator	Agilent	N5182A	MY50140530	2025-05-08	2026-05-07		
$\boxtimes$	AGC-ER-E040	Signal Generator	Agilent	N8257D	MY45141029	2025-07-18	2027-07-18		
$\boxtimes$	AGC-ER-E033	RF Test Plat (DECT)	RTX	RTX-2012-HS-RF	N/A	2024-07-24	2026-07-23		
$\boxtimes$		RF Connection Cable	N/A	1#	N/A	Each time	N/A		
$\boxtimes$		RF Connection Cable	N/A	2#	N/A	Each time	N/A		

• F	Radiated Spurious 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-E116	EMI Test Receiver	R&S	ESCI	100034	2025-05-08	2026-05-07	
$\boxtimes$	AGC-EM-E061	Spectrum Analyzer	Agilent	N9010A	MY53470504	2025-05-08	2026-05-07	
$\boxtimes$	AGC-EM-E086	Loop Antenna	ZHINAN	ZN30900C	18051	2024-03-05	2026-03-04	
$\boxtimes$	AGC-EM-E005	Wideband Antenna	SCHWARZBECK	VULB9168	VULB9168-494	2025-01-15	2027-01-14	
	AGC-EM-E102	Broadband Ridged Horn Antenna	ETS	3117	00154520	2025-05-18	2026-05-17	
	AGC-EM-E082	Horn Antenna	SCHWARZBECK	BBHA 9170	#768	2023-09-24	2025-09-23	
$\boxtimes$	AGC-EM-E146	Pre-amplifier	ETS	3117-PA	00246148	2024-07-24	2026-07-23	
$\boxtimes$	AGC-EM-A116	Band Stop Filter (1850-1950MHz)	MICRO-TRONICS	BRC50720	N/A	2025-05-21	2026-05-20	
$\boxtimes$	AGC-EM-A091	High Pass Filter 2 (1200-18000MHz)	N/A	N/A	N/A	2025-05-16	2026-05-15	
$\boxtimes$	AGC-EM-A138	6dB Attenuator	Eeatsheep	LM-XX-6-5W	N/A	N/A	N/A	
	AGC-EM-A139	6dB Attenuator	Eeatsheep	LM-XX-6-5W	N/A	N/A	N/A	

•	AC Power Line Conducted Emission								
Used	Equipment No. Test Equipment Manufacturer Model No. Serial No. Last Cal. Date (YY-MM-DD) (YY-MM-DD)								
	AGC-EM-A171	Attenuator	Mini-Circuits	UNAT-10A+	N/A	2024-02-01	2026-01-31		
$\boxtimes$	AGC-EM-E023	Artificial Mains Network	R&S	ESH2-Z5	100086	2025-05-08	2026-05-07		
	AGC-EM-E116	Test Receiver	R&S	ESCI	100034	2025-05-08	2026-05-07		



Page 13 of 66

• Te:	Test Software							
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Version Information			
$\boxtimes$	AGC-EM-S011	RSE Test System	Tonscend	TS <sup>+</sup> Ver2.1(JS36-RSE)	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			



Report No.: AGC14499250706FR01 Page 14 of 66

# 4. System Test Configuration

## 4.1 EUT Configuration

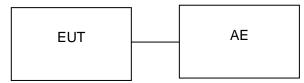
The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

#### 4.2 EUT Exercise

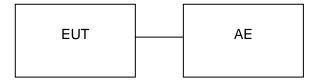
The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

# 4.3 Configuration of Tested System

Radiated Emission Configure:



#### Conducted Emission Configure:



#### 4.4 Equipment Used in Tested System

The following peripheral devices and interface cables were connected during the measurement:

☐ Test Accessories Come From The Laboratory

No.	Equipment	Manufacturer	Model No.	Specification Information	Cable
1	Notebook Adapter	Redmi	AD100G	Input:100-240V 50/60Hz 1.6A Output:5V/3A;9V/3A;11V/5A;12V/3A;15V/3A;20V/5A	1.2m, unshielded
2	Notebook PC	Redmi	XMA2002-AB	N/A	1.2m, unshielded

Test Accessories Come From The Manufacturer

No.	Equipment	Manufacturer	Model No.	Specification Information	Cable
			!		



Page 15 of 66

## 4.5 Summary of Test Results

No.	FCC Rules	Description of Test	Reference Method	Result
1	§15.203, §15.317	Antenna Equipment	Declaration & Visual inspection	Pass
2	§15.323 (c)(e)	Specific Requirements for Upcs Device	ANSI C63.17-2013 Clause 6.2, 7.3, 7.5, 8.1, 8.2, 8.3, 8.4 and Paragraph 4	Pass
3	§15.303	Channel Frequency	Declaration	Pass
4	§15.319 (b)	Digital Modulation Techniques	Declaration	Pass
5	§15.319 (f)	Automatic Discontinuation of Transmission	Manual evaluation	Pass
6	§15.319(c)(e), §15.31(e)	Peak Transmit Power and Antenna Gain	ANSI C63.17-2013 Clause 6.1.2	Pass
7	§15.323 (a)	26dB Emission Bandwidth &99%Occupied Bandwidth	ANSI C63.17-2013 Clause 6.1.3 or 7.4	Pass
8	§15.319 (d)	Power Spectral Density	ANSI C63.17-2013 Clause 6.1.5	Pass
9	§15.323 (d)	In-Band Emission	ANSI C63.17-2013 Clause 6.1.6.1	Pass
10	§15.323 (d)	Out-of-Band Emission	ANSI C63.17-2013 Clause 6.1.6.2	Pass
11	§15.323 (f)	Carrier Frequency Stability	ANSI C63.17-2013 Clause 6.2.1	Pass
12	§15.319(g), §15.323(d) §15.209(a), §15.109(a)	Radiated Emission	ANSI C63.10-2013 Clause 11.11 & Clause 11.12	Pass
13	§15.207, §15.315	AC Power Line Conducted Emission	ANSI C63.10-2013 Section 6.2	Pass

#### Note:

- 1) N/A: In this whole report not applicable.
- 2) Not required if the Conducted Out-of-Band Emissions test is passed, and assessed in the FCC 47 CFR Part 15B test report.



Page 16 of 66

# 5. Description of Test Modes

Summary table of Test Cases				
Test Item	Modulation			
rest item	DECT-Fixed Part/GFSK			
	Mode 1: UPCS TX CH00_1921.536 MHz (Powered By PC)			
Radiated Test Cases	Mode 2: UPCS TX CH02_1924.992 MHz (Powered By PC)			
	Mode 3: UPCS TX CH04_1928.448 MHz (Powered By PC)			
Conducted Test Cases	Mode 1: UPCS TX CH00_1921.536 MHz (Powered By PC) Mode 2: UPCS TX CH02_1924.992 MHz (Powered By PC) Mode 3: UPCS TX CH04_1928.448 MHz (Powered By PC)			
AC Conducted Emission	Mode 1: UPCS connects to PC to Transmit Data (Powered by PC)			

#### Note:

- 1. Only the result of the worst case was recorded in the report, if no other cases.
- 2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.
- 3. For Conducted Test method, a temporary antenna connector is provided by the manufacture.



Report No.: AGC14499250706FR01 Page 17 of 66

# 6. 26dB Emission Bandwidth & 99% Occupied Bandwidth

#### **6.1 Provisions Applicable**

Please refer to FCC 47 CFR Part 15.319(c) &15.319(e) for specification details:

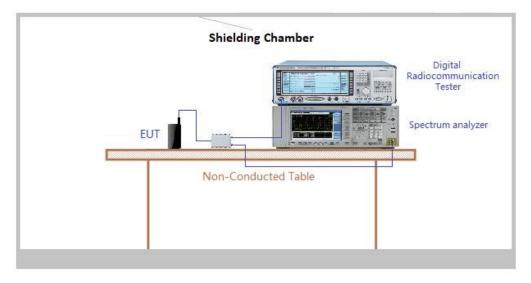
Operation shall be contained within the 1920–1930 MHz band. The emission bandwidth shall be less than 2.5 MHz. The power level shall be as specified in § 15.319(c), but in no event shall the emission bandwidth be less than 50 kHz

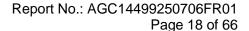
#### **6.2 Measurement Procedure**

The testing follows the ANSI C63.17-2013 Section 6.1.2

- 1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter.
- 2. The EUT shall transmit in a burst mode (shall not be configured to transmit continuously) so that transient effects associated with the burst edges are captured by the emission bandwidth measurement.
- Use the following spectrum analyzer settings:
- a) Set RBW: Approximately 1% of the emission bandwidth (a rough estimate may be obtained from peak power level measurement, or use manufacturer's declared value).
- b) Set the video bandwidth (VBW)  $\geq$  3 x RBW.
- c) Center frequency: Nominal center frequency of channel.
- d) Span:  $\geq$  2  $\times$  the expected emission bandwidth.
- e) Sweep time: Coupled to frequency span and RBW.
- f) Amplitude scale: Log.
- g) Detection: Peak detection with maximum hold enabled.
- 4. Record the maximum level of the modulated carrier. Find the two furthest frequencies above and below the frequency of the maximum level of the modulated carrier where the signal level is 26 dB below the peak level of the carrier. The difference in frequency between these two frequencies is the emission bandwidth

#### 6.3 Measurement Setup (Block Diagram of Configuration)



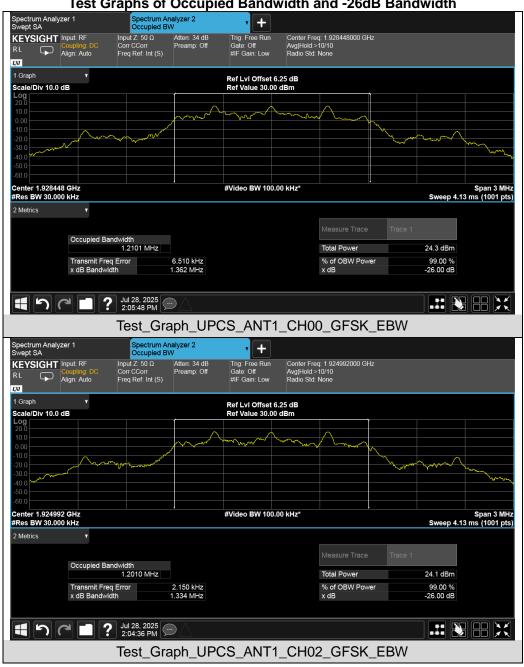


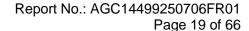


#### 6.4 Measurement Result

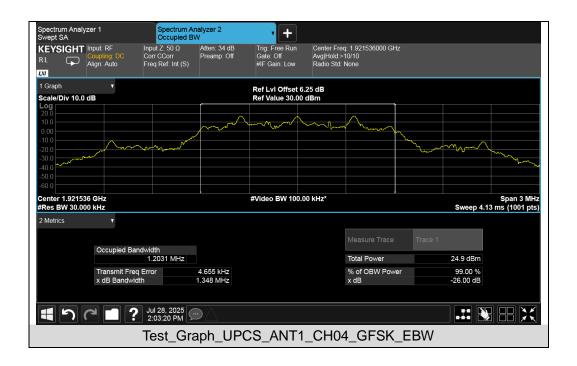
Test Channel	Test Frequency (MHz)	Occupied Bandwidth (MHz)	EBW (MHz)	EBW Limits	Pass or Fail
0	1928.448	1.2101	1.362	50 kHz <limits<2.5mhz< td=""><td>Pass</td></limits<2.5mhz<>	Pass
2	1924.992	1.2010	1.334	50 kHz <limits<2.5mhz< td=""><td>Pass</td></limits<2.5mhz<>	Pass
4	1921.536	1.2031	1.348	50 kHz <limits<2.5mhz< td=""><td>Pass</td></limits<2.5mhz<>	Pass

Test Graphs of Occupied Bandwidth and -26dB Bandwidth











Report No.: AGC14499250706FR01 Page 20 of 66

# 7. Peak Transmit Power and Antenna Gain

# 7.1 Provisions Applicable

Please refer to FCC 47 CFR Part 15.319(c) &15.319(e) for specification details:

Peak transmit power shall not exceed 100 microwatts multiplied by the square root of the emission bandwidth in hertz. Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, etc., so as to obtain a true peak measurement for the emission in question over the full bandwidth of the channel.

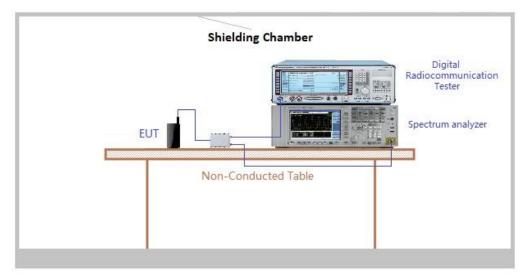
The peak transmit power shall be reduced by the amount in decibels that the maximum directional gain of the antenna exceeds 3 dBi.

#### 7.2 Measurement Procedure

The testing follows the ANSI C63.17-2013 Section 6.1.2

RBW	≥ Emission bandwidth
Video bandwidth	≥ RBW
Span	Span Zero
Center frequency	Nominal center frequency of transmit carrier
Amplitude scale	Log (linear may be used if analyzer has sufficient linear dynamic range and accuracy)
Detection	Peak detection
Trigger Video	Trigger Video
Sweep rate	Sufficiently rapid to permit the transmit pulse to be resolved accurately

# 7.3 Measurement Setup (Block Diagram of Configuration)





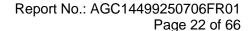
Report No.: AGC14499250706FR01 Page 21 of 66

7.4 Measurement Result

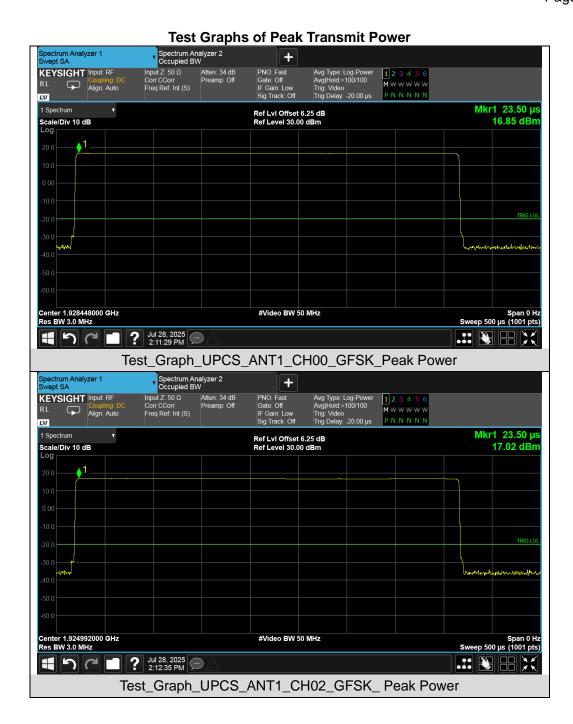
Calculation of Peak Transmit Power Limit (P <sub>max</sub> ):							
	$P_{max} = $	5*log <sub>10</sub> B-10	When G <sub>A</sub> ≤ 3dBi				
	$P_{max} = 5*log_{10} B$	-10 dBm-(G <sub>A</sub> - 3dBi)	When G <sub>A</sub> > 3dBi				
Where,	$G_A$	= EUT Gain: 2.5 dBi					
vviiere,	В	= Measured Emission Bandwidth (Hz)					
Calculation of E	EIRP Limit:						
	EIRP <sub>EUT</sub>	$\leq P_{max} + g$ , $G_A > g$ (g=3dBi)					
	EIRP <sub>EUT</sub>	$\leq P_{max} + G_A$ , $G_A \leq g$ (g=3dBi)					

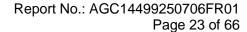
Test Channel	Test Frequency (MHz)	Maximum Antenna Gain (dBi)	EBW (MHz)	Maximum Conducted Peak Transmit Power (dBm)	Limits (dBm)	Pass / Fail
0	1928.448		1.362	16.85	≤20.67	Pass
2	1924.992	0.6	1.334	17.02	≤20.63	Pass
4	1921.536		1.348	17.19	≤20.65	Pass

Test Channel	Test Frequency (MHz)	Maximum Conducted Peak Transmit Power (dBm)	Maximum Antenna Gain (dBi)	E.I.R.P. (dBm)	Limits (dBm)	Pass / Fail
0	1928.448	16.85		17.45	≤21.27	Pass
2	1924.992	17.02	0.6	17.62	≤21.23	Pass
4	1921.536	17.19		17.79	≤21.25	Pass

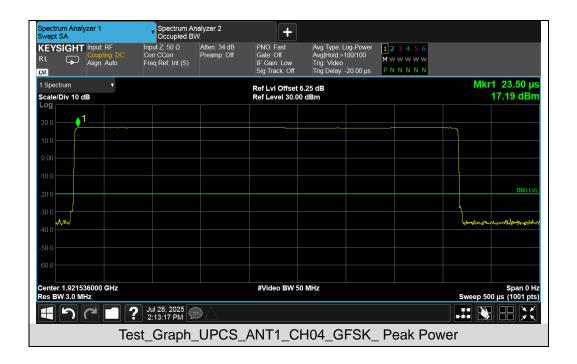














Report No.: AGC14499250706FR01 Page 24 of 66

# 8. Power Spectral Density

## 8.1 Provisions Applicable

Please refer to FCC 47 CFR Part 15.319(d) for specification details:

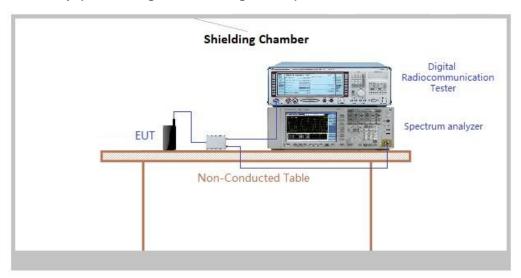
Power spectral density shall not exceed 3 milliwatts in any 3 kHz bandwidth as measured with a spectrum analyzer having a resolution bandwidth of 3 kHz.

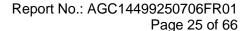
# 8.2 Measurement Procedure

The testing follows the ANSI C63.17-2013 Section 6.1.5

RBW	3 kHz
Video bandwidth	≥ 3*RBW
Span	Span Zero
Center frequency	Nominal center frequency of transmit carrier
Amplitude scale	RMS
Detection	Sample detection and averaged for a minimum of 100 sweeps
Trigger Video	External or internal
Sweep Time	For burst signals, sufficient to include essentially all of the maximum length burst at the output of a 3 kHz filter (e.g., maximum input burst duration plus 600µs). For continuous signals, 20ms.

# 8.2 Measurement Setup (Block Diagram of Configuration)



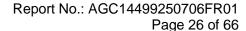




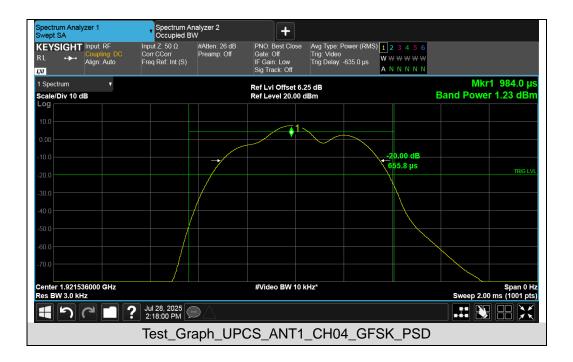
#### 8.3 Measurement Result

Test Channel	Test Frequency (MHz)	Power density (dBm/3kHz)	Power density (mW/3kHz)	Limit (mW/3kHz)	Pass or Fail
0	1928.448	1.79	1.51	€3	Pass
2	1924.992	0.84	1.21	≤3	Pass
4	1921.536	1.23	1.33	≤3	Pass

Test Graphs of Power Spectral Density ectrum Analyzer 1 ept SA + Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) PNO: Best Close Gate: Off IF Gain: Low Sig Track: Off Avg Type: Power (RMS)
Trig: Video
Trig Delay: -635.0 µs KEYSIGHT Input: RF Align: Auto **w** \*\* \*\* \*\* \*\* ANNNNN ĻXI Mkr1 970.0 µs Band Power 1.79 dBm 1 Spectrum Ref Lvi Offset 6.25 dB Ref Level 20.00 dBm Scale/Div 10 dB 648.2 μs Center 1.928448000 GHz Res BW 3.0 kHz Span 0 Hz Sweep 2.00 ms (1001 pts) #Video BW 10 kHz\* ? Jul 28, 2025 2:20:39 PM Test\_Graph\_UPCS\_ANT1\_CH00\_GFSK\_PSD pectrum Analyzer 1 vept SA Spectrum Analyzer 2 Occupied BW Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) Avg Type: Power (RMS) 1 2 3 4 5 6 Trig: Video Trig Delay: -635.0 µs PNO: Best Close Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input: RF Align: Auto ĻXI Mkr1 992.0 µs Band Power 0.84 dBm 1 Spectrum Ref LvI Offset 6.25 dB Ref Level 20.00 dBm Scale/Div 10 dB 658.1 µs Center 1.924992000 GHz Res BW 3.0 kHz #Video BW 10 kHz\* Span 0 Hz Sweep 2.00 ms (1001 pts) ? Jul 28, 2025 2:19:53 PM 5 Test\_Graph\_UPCS\_ANT1\_CH02\_GFSK\_PSD









Report No.: AGC14499250706FR01 Page 27 of 66

#### 9. In-Band Unwanted Emissions

#### 9.1 Provisions Applicable

Please refer to FCC 47 CFR Part 15.323(d) for specification details:

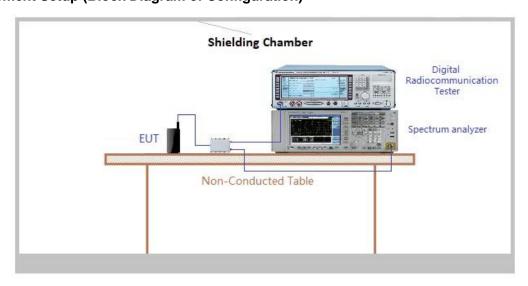
Emissions inside the band must comply with the following emission mask: In the bands between 1B and 2B measured from the center of the emission bandwidth the total power emitted by the device shall be at least 30 dB below the transmit power permitted for that device; in the bands between 2B and 3B measured from the center of the emission bandwidth the total power emitted by an intentional radiator shall be at least 50 dB below the transmit power permitted for that radiator; in the bands between 3B and the band edge the total power emitted by an intentional radiator in the measurement bandwidth shall be at least 60 dB below the transmit power permitted for that radiator. B" is defined as the emission bandwidth of the device in hertz. Compliance with the emission limits is based on the use of measurement instrumentation employing peak detector function with an instrument resolution bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

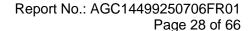
#### 9.2 Measurement Procedure

The testing follows the ANSI C63.17-2013 Section 6.1.6.1

RBW	Approximately 1% of the Emission bandwidth (B)
Video bandwidth	≥ 3*RBW
Span	Approximately equal to 3.5 B
Center frequency	Nominal center frequency of transmit carrier
Detection	Peak detection and max hold enabled
Amplitude scale	Log
Sweep Time	The sweep time shall be sufficiently slow that the swept frequency rate shall not exceed one RBW per three transmit bursts.
Number of sweeps	Sufficient to stabilize the trace

#### 9.3 Measurement Setup (Block Diagram of Configuration)

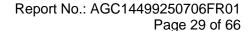






#### 9.4 Measurement Result











Report No.: AGC14499250706FR01 Page 30 of 66

## 10. Out-of-Band Unwanted Emissions

# **10.1 Provisions Applicable**

Please refer to FCC 47 CFR Part 15.323(d) for specification details:

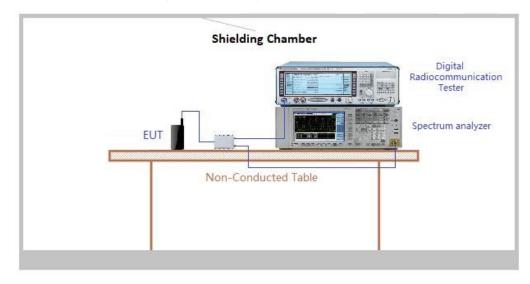
- a) In the region between the band edges and 1.25 MHz below and above the lower and the upper band edges, respectively, the measured emission level shall not exceed -9.5 dBm.
- b) In the region between 1.25 and 2.5 MHz below and above the lower and the upper band edges, respectively, the measured emission level shall not exceed -29.5 dBm.
- c) In the region at 2.5 MHz or greater below and above the lower and upper band edges, respectively, the measured emission level shall not exceed -39.5 dBm.

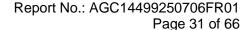
#### **10.2 Measurement Procedure**

The testing follows the ANSI C63.17-2013 Section 6.1.6.2

RBW	Approximately 1% of the Emission bandwidth (B)	
Video bandwidth	≥ 3*RBW	
Span	Approximately equal to 3.5 B	
Center frequency	Nominal center frequency of transmit carrier	
Detection	Peak detection and max hold enabled	
Amplitude scale	Log	
Sweep Time	The sweep time shall be sufficiently slow that the swept frequency rate shall not exceed one RBW per three transmit bursts.	
Number of sweeps	Sufficient to stabilize the trace	

## 10.3 Measurement Setup (Block Diagram of Configuration)

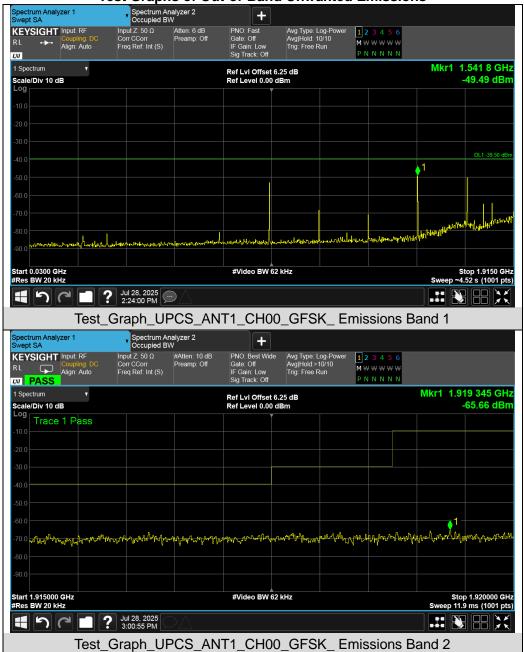


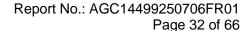




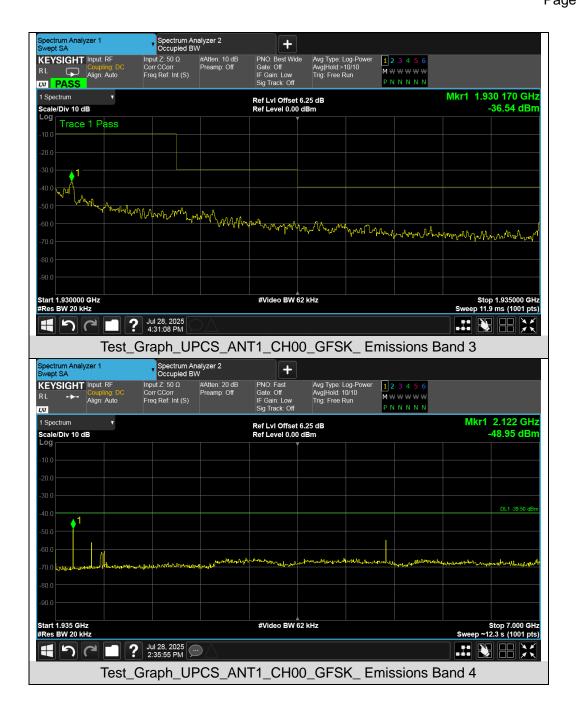
#### 10.4 Measurement Result

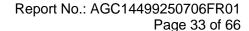




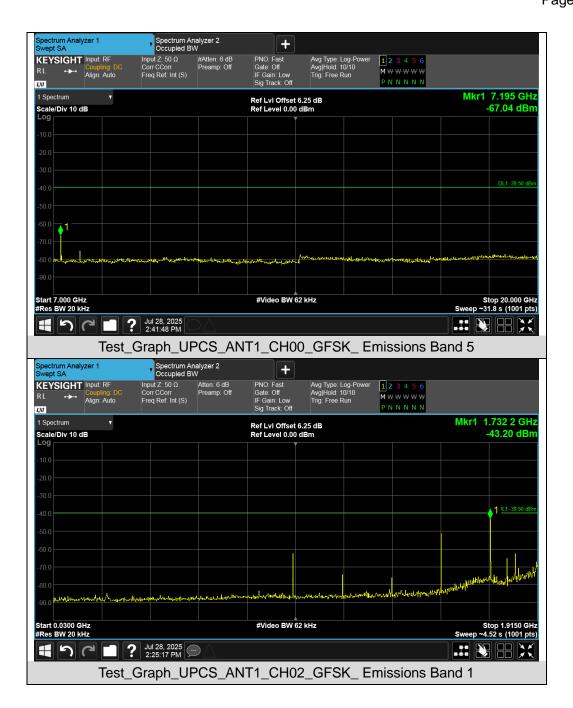


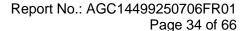




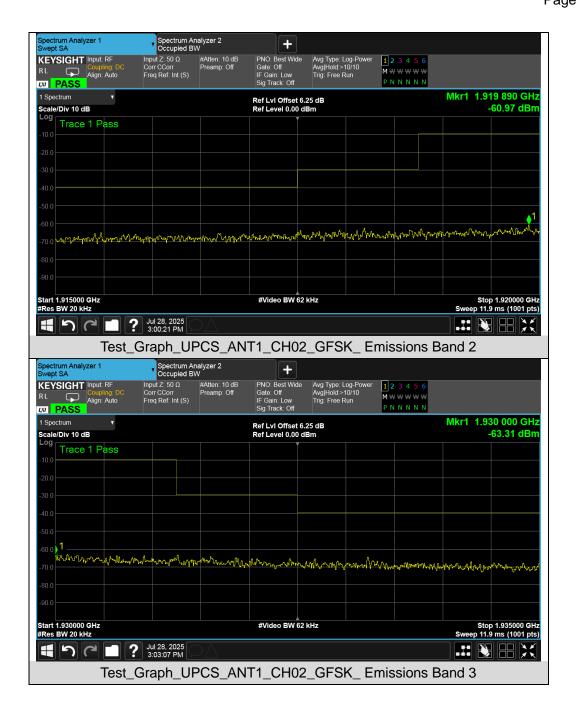


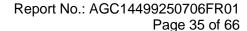




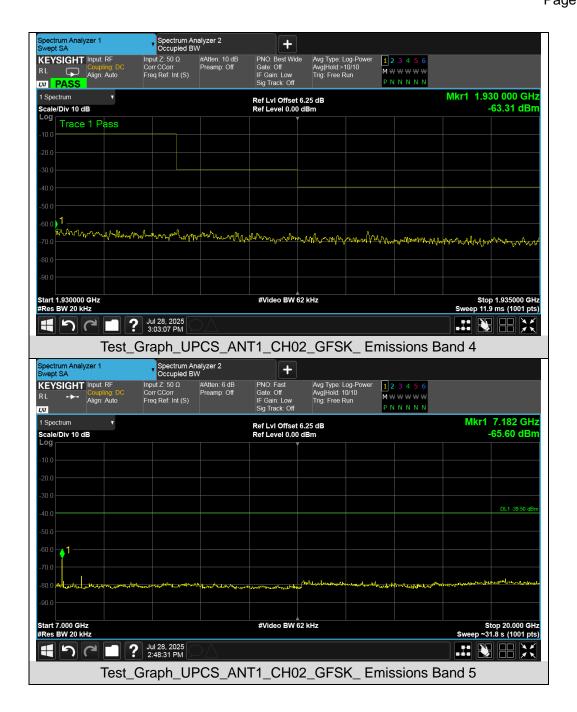


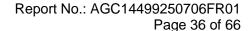




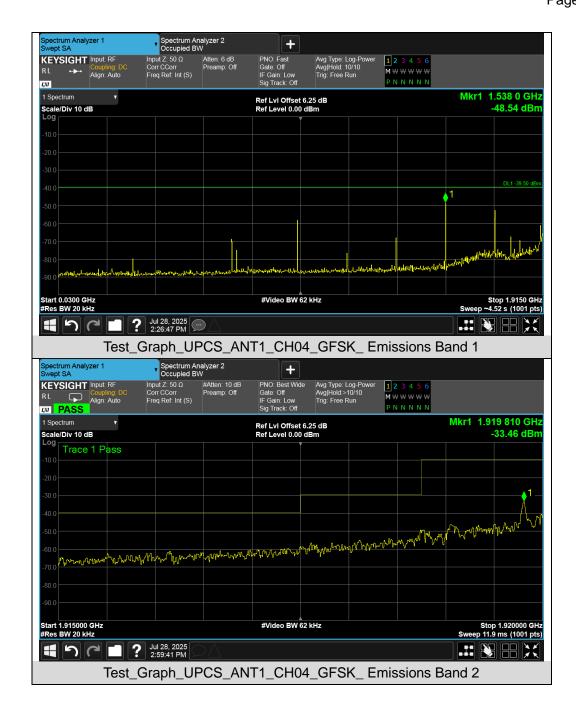


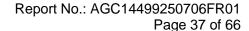




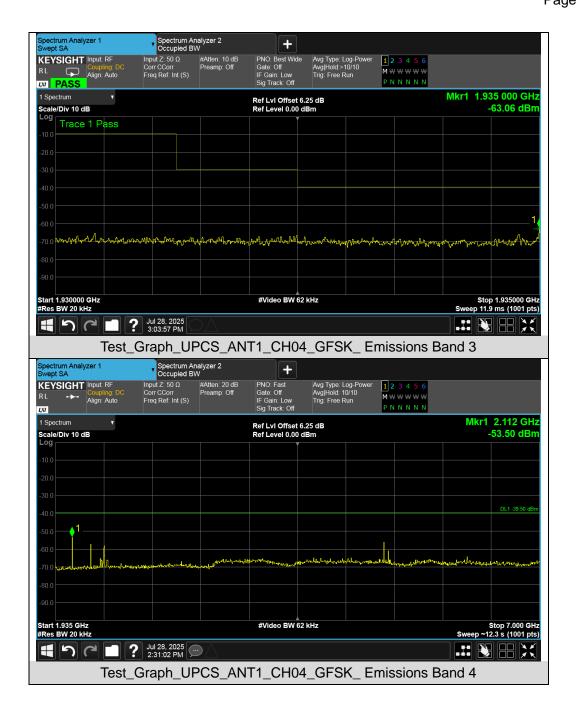


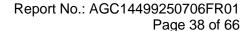




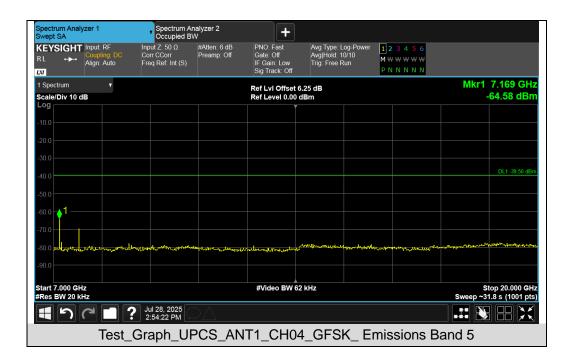














Page 39 of 66

#### 11. Radiated Emission

#### 11.1 Limits of Radiated Emission Test

15.209 Limit in the below table has to be followed

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

- 1. The lower limit shall apply at the transition frequencies.
- 2. Emission level  $(dBuV/m) = 20 \log Emission level (uV/m)$ .
- 3. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

Note: All modes were tested for restricted band radiated emission, the test records reported below are the worst result compared to other modes.

#### 11.2 Measurement Procedure

- 1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- 3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
- 4. For each suspected emission, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
- 5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
- 6. For emissions above 1GHz, use 1MHz RBW and 3MHz VBW for peak reading. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or

Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.



Report No.: AGC14499250706FR01 Page 40 of 66

reference ground plane.

- 7. 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.
- 8. 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 quasi-peak method for below 1GHz.
- 9. 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.
- 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.

The following table is the setting of spectrum analyzer and receiver.

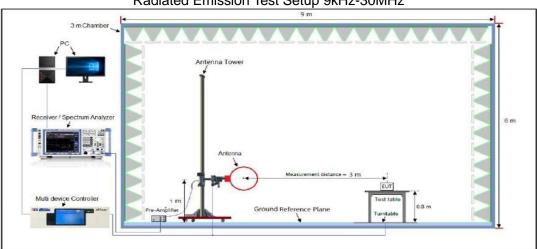
Spectrum Parameter	Setting		
Start ~Stop Frequency	9kHz~150kHz/RB 200Hz for QP		
Start ~Stop Frequency	150kHz~30MHz/RB 9kHz for QP		
Start ~Stop Frequency	30MHz~1000MHz/RB 120kHz for QP		
Start ~Stop Frequency	1GHz~26.5GHz 1MHz/3MHz for Peak, 1MHz/3MHz for Average		

Receiver Parameter	Setting
Start ~Stop Frequency	9kHz~150kHz/RB 200Hz for QP
Start ~Stop Frequency	150kHz~30MHz/RB 9kHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120kHz for QP

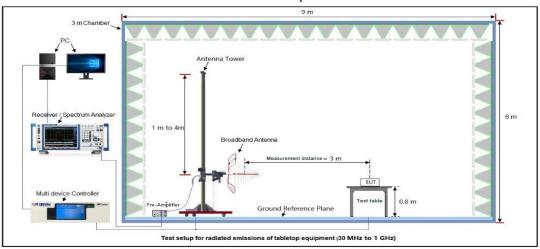


## 11.3 Measurement Setup (Block Diagram of Configuration)

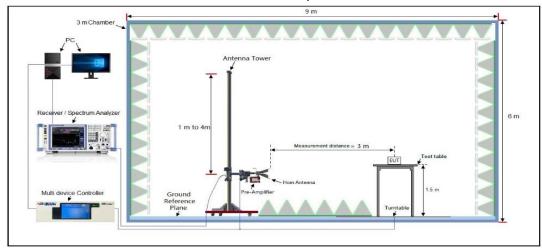
Radiated Emission Test Setup 9kHz-30MHz



## Radiated Emission Test Setup 30MHz-1000MHz



## Radiated Emission Test Setup Above 1000MHz





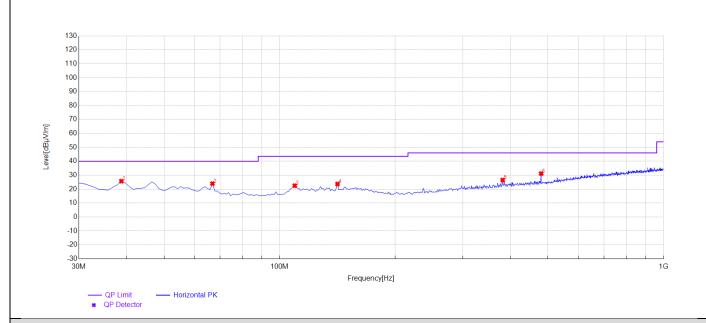
Page 42 of 66

#### 11.4 Measurement Result

## **Radiated Emission Below 30MHz**

The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.

	Radiated Emission Test Results at 30MHz-1GHz					
<b>EUT Name</b>	Dongle	Model Name	DT10			
Temperature	23.4℃	Relative Humidity	56.7%			
Pressure	960hPa	Test Voltage	DC 5V from PC			
Test Mode	Mode 3	Antenna Polarity	Horizontal			



## **Final Average Data List**

NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	38.73	25.68	14.47	40.00	14.32	100	144	Horizontal
2	66.86	23.92	12.49	40.00	16.08	100	165	Horizontal
3	109.54	22.45	12.62	43.50	21.05	100	325	Horizontal
4	141.55	23.68	15.11	43.50	19.82	100	195	Horizontal
5	381.14	26.54	18.22	46.00	19.46	100	338	Horizontal
6	480.08	31.17	20.56	46.00	14.83	100	212	Horizontal

## **RESULT: PASS**

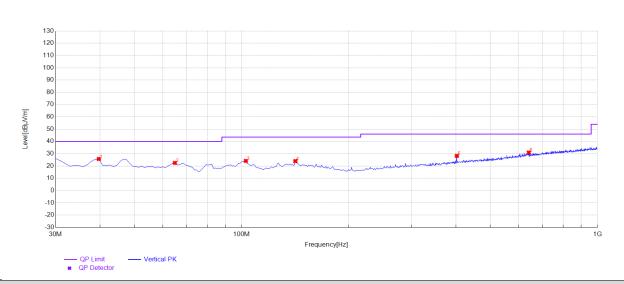
Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

Tel: +86-755 2523 4088 E-mail: agc@agccert.com Web: http://www.agccert.com/



Report No.: AGC14499250706FR01 Page 43 of 66

Radiated Emission Test Results at 30MHz-1GHz					
<b>EUT Name</b>	Dongle	Model Name	DT10		
Temperature	23.4℃	Relative Humidity	56.7%		
Pressure	960hPa	Test Voltage	DC 5V from PC		
Test Mode	Mode 3	Antenna Polarity	Vertical		



Final Average Data Lis	Final	<b>Average</b>	Data	List
------------------------	-------	----------------	------	------

NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	39.7	25.69	14.52	40.00	14.31	100	178	Vertical
2	64.92	22.50	12.84	40.00	17.50	100	78	Vertical
3	102.75	24.11	12.00	43.50	19.39	100	107	Vertical
4	141.55	23.99	15.11	43.50	19.51	100	65	Vertical
5	402.48	28.26	18.80	46.00	17.74	100	357	Vertical
6	641.1	30.91	24.48	46.00	15.09	100	237	Vertical

## **RESULT: PASS**

Note: 1. Factor=Antenna Factor + Cable loss, Margin= Limit-Measurement.

2. All test modes had been pre-tested. The mode 3 is the worst case and recorded in the report.



Page 44 of 66

## **Radiated Emission Above 1GHz**

EUT	Dongle	Model Name	DT10
Temperature	23.4℃	Relative Humidity	56.7%
Pressure	960hPa	Test Voltage	DC 5V from PC
Test Mode	Mode 1	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)		
3856.896	49.61	0.11	49.72	74.00	-24.28	Peak	
3856.896	41.66	0.11	41.77	54.00	-12.23	AVG	
5785.344	49.48	2.45	51.93	74.00	-22.07	Peak	
5785.344	40.79	2.45	43.24	54.00	-10.76	AVG	
Remark:							
Factor = Anter	na Factor + Cab	ole Loss – Pre-a	mplifier.				

EUT	Dongle	Model Name	DT10
Temperature	23.4℃	Relative Humidity	56.7%
Pressure	960hPa	Test Voltage	DC 5V from PC
Test Mode	Mode 1	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)		
3856.896	50.01	0.11	50.12	74.00	-23.88	Peak	
3856.896	40.32	0.11	40.43	54.00	-13.57	AVG	
5785.344	50.10	2.45	52.55	74.00	-21.45	Peak	
5785.344	40.04	2.45	42.49	54.00	-11.51	AVG	
Remark:							
Factor = Anten	na Factor + Cab	ole Loss – Pre-a	mplifier.			•	



Report No.: AGC14499250706FR01 Page 45 of 66

EUT	Dongle	Model Name	DT10
Temperature	23.4℃	Relative Humidity	56.7%
Pressure	960hPa	Test Voltage	DC 5V from PC
Test Mode	Mode 2	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type			
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)				
3849.984	49.78	0.12	49.90	74.00	-24.10	Peak			
3849.984	41.42	0.12	41.54	54.00	-12.46	AVG			
5774.976	49.85	2.46	52.31	74.00	-21.69	Peak			
5774.976	40.39	2.46	42.85	54.00	-11.15	AVG			
Remark:									
Factor = Antenna Factor + Cable Loss – Pre-amplifier.									

EUT	Dongle	Model Name	DT10
Temperature	23.4℃	Relative Humidity	56.7%
Pressure	960hPa	Test Voltage	DC 5V from PC
Test Mode	Mode 2	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type			
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	7.			
3849.984	49.94	0.12	50.06	74.00	-23.94	Peak			
3849.984	41.32	0.12	41.44	54.00	-12.56	AVG			
5774.976	50.39	2.46	52.85	74.00	-21.15	Peak			
5774.976	40.73	2.46	43.19	54.00	-10.81	AVG			
Remark:									
Factor = Antenna Factor + Cable Loss – Pre-amplifier.									



Page 46 of 66

EUT	Dongle	Model Name	DT10
Temperature	23.4℃	Relative Humidity	56.7%
Pressure	960hPa	Test Voltage	DC 5V from PC
Test Mode	Mode 3	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type			
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)				
3843.072	49.78	0.13	49.91	74.00	-24.09	Peak			
3843.072	41.03	0.13	41.16	54.00	-12.84	AVG			
5764.608	49.06	2.51	51.57	74.00	-22.43	Peak			
5764.608	40.98	2.51	43.49	54.00	-10.51	AVG			
Remark:									
Factor = Antenna Factor + Cable Loss – Pre-amplifier.									

EUT	Dongle	Model Name	DT10
Temperature	23.4℃	Relative Humidity	56.7%
Pressure	960hPa	Test Voltage	DC 5V from PC
Test Mode	Mode 3	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
3843.072	49.03	0.13	49.16	74.00	-24.84	Peak
3843.072	41.02	0.13	41.15	54.00	-12.85	AVG
5764.608	49.93	2.51	52.44	74.00	-21.56	Peak
5764.608	41.18	2.51	43.69	54.00	-10.31	AVG
Remark:						

Result: Pass

Factor = Antenna Factor + Cable Loss - Pre-amplifier.

Note:

The amplitude of other spurious emissions from 1G to 20 GHz which are attenuated more than 20 dB below the permissible value need not be reported.

Factor = Antenna Factor + Cable loss - Amplifier gain, Margin=Measure result-Limit.

The "Factor" value can be calculated automatically by software of measurement system.



Page 47 of 66

## 12. AC Power Line Conducted Emission

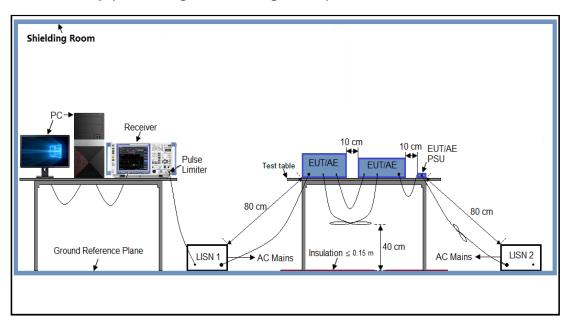
## 12.1 Limits of Line Conducted Emission Test

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

#### Note:

- 1. The lower limit shall apply at the transition frequency.
- 2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

## 12.2 Measurement Setup (Block Diagram of Configuration)





Page 48 of 66

## 12.3 Preliminary Procedure of Line Conducted Emission Test

- 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 C63.10 (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 C63.10.
- 3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4. All support equipment received AC120V/60Hz power from a LISN, if any.
- 5. The EUT received DC 5V power from adapter which received AC120V/60Hz power from a LISN.
- 6. The 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 mode(s) were scanned during the preliminary test.

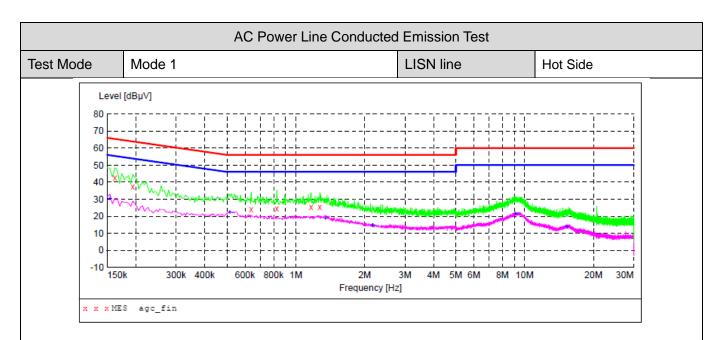
Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

#### 12.4 Final Procedure of Line Conducted Emission Test

- 1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
- 2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less 2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
- 3. A conducted emission is calculated by the following equation:
  - Measurement Level (dBμV) = Receiver reading (dBμV) + Transd (dB)
  - Transd (dB)= AMN Factor(dB)+Cable Loss(dB)+Attenuation(dB)
  - Margin= Limit-Level
- 4. The test data of the worst case condition(s) was reported on the Summary Data page.

#### 12.5 Measurement Result





# MEASUREMENT RESULT: "agc fin"

2025/7/25 15:35

4	123/1/23 13.	33					
	Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
	0.162000	42.80	9.9	65	22.6	QP	L1
	0.194000	37.50	9.9	64	26.4	QP	L1
	0.638000	24.10	9.9	56	31.9	QP	L1
	0.826000	24.70	9.9	56	31.3	QP	L1
	1.166000	25.30	9.9	56	30.7	QP	L1
	1.274000	25.40	9.9	56	30.6	QP	ь1

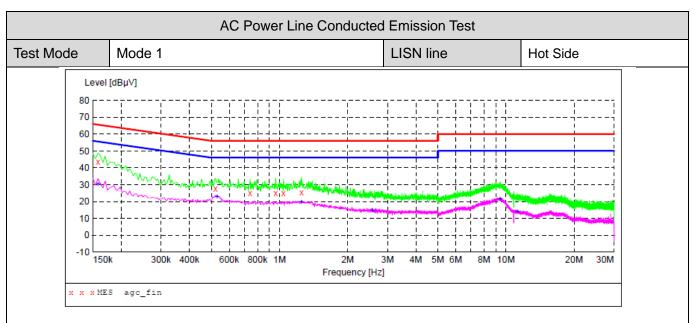
# MEASUREMENT RESULT: "agc fin2"

2025/7/25 15:35

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.154000	30.40	9.9	56	25.4	AV	L1
0.514000	22.50	9.9	46	23.5	AV	L1
1.350000	18.60	9.9	46	27.4	AV	L1
2.166000	14.60	9.9	46	31.4	AV	L1
9.142000	21.40	10.2	50	28.6	AV	L1
15.286000	13.80	10.5	50	36.2	AV	L1

# **Result: Pass**





# MEASUREMENT RESULT: "agc\_fin"

2025/7/	25 15:3	3					
Freq	uency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.1	58000	43.70	9.9	66	21.9	QP	N
0.5	22000	27.70	9.9	56	28.3	QP	N
0.7	42000	24.90	9.9	56	31.1	QP	N
0.9	62000	24.90	9.9	56	31.1	QP	N
1.0	42000	25.10	9.9	56	30.9	QP	N
1.2	50000	25.40	9.9	56	30.6	QP	N

# MEASUREMENT RESULT: "agc fin2"

2025/7/25 15:	33					
Frequency	Level	Transd	Limit	Margin	Detector	Line
MHz	dΒμV	dB	dΒμV	dB		
0.158000	30.40	9.9	56	25.2	AV	N
0.530000	22.90	9.9	46	23.1	AV	N
1.250000	19.60	9.9	46	26.4	AV	N
2.570000	14.80	9.9	46	31.2	AV	N
9.398000	21.30	10.2	50	28.7	AV	N
11.258000	13.80	10.3	50	36.2	AV	N

## **Result: Pass**

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

Tel: +86-755 2523 4088 E-mail: agc@agccert.com Web: http://www.agccert.com/



Report No.: AGC14499250706FR01 Page 51 of 66

## 13. Carrier Frequency Stability

## 13.1 Provisions Applicable

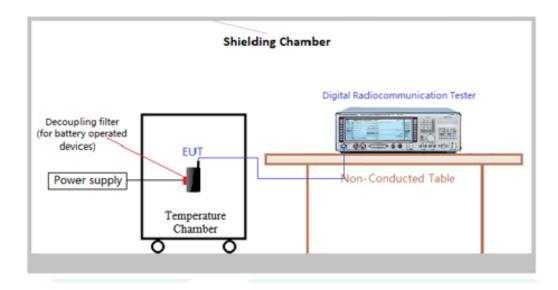
Please refer to FCC 47 CFR Part 15.319(c) &15.319(e) for specification details:

The frequency stability of the carrier frequency of the intentional radiator shall be maintained within ±10 ppm over 1 hour or the interval between channel access monitoring, whichever is shorter. The frequency stability shall be maintained over a temperature variation of -20° to + 45 °C at normal supply voltage, and over a variation in the primary supply voltage of 85 percent to 115 percent of the rated supply voltage at a temperature of 20 °C. For equipment that is capable only of operating from a battery, the frequency stability tests shall be performed using a new battery without any further requirement to vary supply voltage.

#### 13.2 Measurement Procedure

The testing follows the ANSI C63.17-2013 Section 6.2.1

## 13.3 Measurement Setup (Block Diagram of Configuration)





Report No.: AGC14499250706FR01 Page 52 of 66

## 13.4 Measurement Result

## • Carrier Frequency Stability over Time at Nominal Temperature:

Average Mean Carrier	Max. Diff.	Min. Diff.	Max Dev.	Limit
Frequency (MHz)	(kHz)	(kHz)	(ppm)	(ppm)
1924.993573	6.7	1.9	2.49	±10
1921.538456	6.5	2.0	2.34	±10
1928.449426	6.3	1.7	2.39	±10

Note 1: Max Dev. (ppm) = [(Max. Diff. - Min. Diff.) / Average Mean Carrier Freq.]\*10<sup>6</sup>

## Carrier Frequency Stability over Time at Nominal Temperature:

Voltage	Measured Carrier	Difference	Deviation	Limit
(V)	Frequency (MHz)	(kHz)	(ppm)	(ppm)
	1928.6578	-0.21	-0.11	
5.00	1924.5961	0.4	0.21	
	1921.3786	0.16	0.08	
4.25	1928.7834	-0.34	-0.18	
	1924.6112	0.38	0.20	±10
	1921.7125	-0.18	-0.09	
	1928.5114	-0.06	-0.03	
5.75	1924.6015	0.39	0.20	
	1921.3625	0.17	0.09	

Note 1: Difference (kHz) = Measured Carrier Freq. - Carrier Freq.

Note 2: Deviation (ppm) = [Difference (kHz) / Carrier Freq.] x 10<sup>6</sup>



Page 53 of 66

## Carrier Frequency Stability over Temperature:

Temperature	Measured Carrier	Difference	Deviation	Limit	
(°C)	Frequency (MHz)	(kHz)	(ppm)	(ppm)	
	1928.3724	Ref	Ref		
T = +20°C	1924.6115	Ref	Ref		
	1921.2416	Ref	Ref		
T = -20°C	1928.4351	0.01	0.01		
	1924.3628	0.63	0.33	±10	
	1921.6362	-0.1	-0.05		
	1928.2561	0.19	0.10		
T = +45°C	1924.8911	0.1	0.05		
	1921.4514	0.08	0.04		

Note 1: Set the Measured Carrier Frequency (MHz) T = +20°C as Ref Level

Note 2: Difference (kHz) = Measured Carrier Freq. T = -20°C - Measured Carrier Freq. T = +20°C or Measured Carrier Freq. T = +45°C - Measured Carrier Freq. T = +20°C

Note 3: Deviation (ppm) = [Difference (kHz) / Carrier Freq.]  $\times 10^{6}$ 



Page 54 of 66

## 14. Specific Requirements for UPCS Device

## 14.1 Monitoring Time Requirements

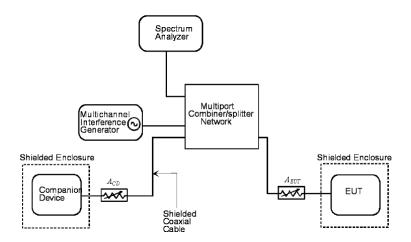
According to the requirements of FCC Part 15.323(c)(1) as follows:

Immediately prior to initiating transmission, devices must monitor the combined time and spectrum window in which they intend to transmit. For a period of at least 10 milliseconds for systems designed to use a 10 milliseconds or shorter frame period or at least 20 milliseconds for systems designed to use a 20 milliseconds frame period.

#### 14.1.1 Measurement Procedure

For detailed test methods, please refer to ANSI C63.17-2013 Clause 7.3.4, 7.5

## 14.1.2 Measurement Setup



#### 13.1.2 Measurement Result

Initial transmit channel and Interferer level	Final transmit Channel	Results
Apply the interference on f1 at level TU+UM, and no interference on f2. Initiate transmission and verify thetransmission on f2.	f2	Pass
Apply the interference on f2 at level TU+UM, at the same time, no interference on f1. After about 20ms, initiate transmission and verify the transmission on f1.	f1	Pass



Page 55 of 66

## 14.2 Lowest Monitoring Threshold Requirements

According to the requirements of FCC Part 15.323(c)(2) as follows:

The monitoring threshold must not be more than 30 dB above the thermal noise power for a bandwidth equivalent to the emission bandwidth used by the device.

## 14.2.1 Measurement Procedure

For detailed test methods, please refer to ANSI C63.17-2013 Clause 7.3.1

## 14.2.2 Measurement Result

Not Applicable



Page 56 of 66

## 14.3 Acknowledgements and Transmission Duration Requirements

According to the requirements of FCC Part 15.323(c)(3)(4) as follows:

Occupation of the same combined time and spectrum windows by a device or group of cooperating devices continuously over a period of time longer than 8 hours is not permitted without repeating the access criteria.

Once access to specific combined time and spectrum windows is obtained an acknowledgement from a system participant must be received by the initiating transmitter within one second or transmission must cease.

Periodic acknowledgements must be received at least every 30 seconds or transmission must cease. Channels used exclusively for control and signaling information may transmit continuously for 30 seconds without receiving an acknowledgement, at which time the access criteria must be repeated.

#### 14.3.1 Measurement Procedure

For detailed test methods, please refer to ANSI C63.17-2013 Clause 8.2.1& 8.2.2.

#### 14.3.2 Measurement Result

Test ref. to ANSI C63.17 clause 8.2.1	Observation	Verdict
Initial transmission without acknowledgements	Not applicable for EUT that transmits control and signaling information	N/A
Transmission time after loss of acknowledgements	10.0	Pass

Test ref. to ANSI C63.17 clause 8.2.2	Observation	Verdict
Transmission duration on same time and frequency window	Only for initiating device that controls which time slot is used	N/A



Page 57 of 66

## 14.4 Least Interfered Channel (LIC) Selection Requirements

According to the requirements of FCC Part 15.323(c)(5) as follows:

Occupation of the same combined time and spectrum windows by a device or group of cooperating devices If access to spectrum is not available as determined by the above, and a minimum of 40 duplex system access channels are defined for the system, the time and spectrum windows with the lowest power level below a monitoring threshold of 50 dB above the thermal noise power determined for the emission bandwidth may be accessed.

Calculation of monitoring threshold limits for isochroous devices:

Lowest threshold: TL = -174+10Log10B + Mu + PMAX-PEUT(dBm)

Upper threshold: TU = -174+10Log10B + Mu + PMAX-PEUT(dBm)

Where: B=Emission bandwidth (Hz)

Mu=dB the threshold may exceed thermal noise (30 for TL& 50 for TU)

PMAX=5\*Log10B-10(dBm)

PEUT=Transmitted power (dBm)

Monitor	В	Mυ	P <sub>MAX</sub>	P <sub>EUT</sub>	Threshold
Threshold	(MHz)	(dB)	(dBm)	(dBm)	(dBm)
TL	1.334	30	20.63	17.19	-79.30
TU	1.334	50	20.63	17.19	-59.30

The EUT must not transmit until the interference level is less than or equal to: Measured Threshold Level ≤TU

Where: TU=Upper threshold level

#### 14.4.1 Measurement Procedure

For detailed test methods, please refer to ANSI C63.17-2013 Clause 7.3.2& 7.3.3& 7.3.4.

## 14.4.2 Measurement Result

Monitor threshold	Measured Threshold Level	Limit (dBm)	
Lowest Threshold (dBm)	N/A	-80.26	
Upper Threshold (dBm)	N/A	-60.26	

Note: N/A Not applicable - EUT which supports at least of 40 duplex system access channels and implements Least Interfered Channel (LIC) algorithm is permitted to use an upper monitoring threshold.



Page 58 of 66

# 14.5 Random Waiting Requirements

According to the requirements of FCC Part 15.323(c)(6) as follows:

If the selected combined time and spectrum windows are unavailable, the device may either monitor and select different windows or seek to use the same window after waiting an amount of time, randomly chosen from a uniform random distribution between 10 and 150 milliseconds, commencing when the channel becomes available.

#### 14.5.1 Measurement Procedure

For detailed test methods, please refer to ANSI C63.17-2013 Clause 8.1.3.

## 14.5.2 Measurement Result

Not Applicable

Note: The manufacturer declares that this provision is not utilized by the EUT.



Page 59 of 66

## 14.6 Monitoring Bandwidth Requirements

According to the requirements of FCC Part 15.323(c)(7) as follows:

The monitoring system bandwidth must be equal to or greater than the occupied bandwidth of the intended transmission. Note: Testing of the monitoring system bandwidth is not required if the designed bandwidth from the manufacturer is available and given in the test report.

The maximum reaction time of the monitor shall be less than 50\*SQRT{1.25/EBW or OBW[MHz]} µs for signals at the applicable threshold level but shall not be required to be less than 50µs.

If a signal of 6 dB or more above the threshold level is detected, the maximum reaction time shall be 35\*SQRT{1.25/EBW or OBW[MHz]} µs but shall not be required to be less than 35µs.

#### 14.6.1 Measurement Procedure

For detailed test methods, please refer to ANSI C63.17-2013 Clause 7.5.

#### 14.6.2 Measurement Result

Test Equation (µs)	EBW (MHz)	Pulse width(µs)	Limit (us)	Result
50 (1.25/B) <sup>1/2</sup>	1.334	49.19	50	Pass
25 (1.25/B) <sup>1/2</sup>	1.334	24.60	35	Pass



Page 60 of 66

## 14.7 Monitoring Antenna Requirements

According to the requirements of FCC Part 15.323(c)(8)(9) as follows:

The monitoring system shall use the same antenna used for transmission, or an antenna that yields equivalent reception at that location.

## 14.7.1 Measurement Procedure

For detailed test methods, please refer to ANSI C63.17-2013 paragraph 4.

#### 14.7.2 Measurement Result

The antenna of the EUT used for transmission is the same interior antenna that used for monitoring.



Page 61 of 66

## 14.8 Dual Access Criteria Check Requirements

According to the requirements of FCC Part 15.323(c)(10) as follows:

A device initiating a communication (hereafter called an initiating device) may attempt to establish a duplex connection by monitoring both its intended transmit and receive time and spectrum windows.

If both the intended transmit and receive time and spectrum windows meet the access criteria, then the initiating device can initiate a transmission in the intended transmit time and spectrum window.

If the power detected by the responding device can be decoded as a duplex connection signal from the initiating device, then the responding device may immediately begin transmitting in the receive time and spectrum window monitored by the initiating device.

#### 14.8.1 Measurement Procedure

For detailed test methods, please refer to ANSI C63.17-2013 Clause 8.3.1&8.3.2.

#### 14.8.2 Measurement Result

EUT that do NOT implements the LIC procedure:

Test ref. to ANSI C63.17 clause 8.3.1	Observation	Verdict
b) EUT is restricted to a single carrier f1 for TDMA	EUT can transmit	Pass
systems. The Test is Pass if EUT can transmit	EUT Can transmit	Pa55
c) d) Interference at level TL+ UM on all timeslots except		
one receive slot where interference is at least	No connection possible	N/A
10 dB below TL		
e) f) Interference at level TL+ UM on all timeslots except		
one transmit slot where interference is at least	No connection possible	N/A
10 dB below TL		

## EUTs that implements the LIC procedure:

Test ref. to ANSI C63.17 clause 8.3.1	Observation	Verdict
b) EUT is restricted to a single carrier f1 for TDMA	EUT can transmit	Pass
systems. The Test is Pass if EUT can transmit	EOT Carritarismit	Pa55
c) d) Transmission on interference-free receive	Connected on the target Rx	Door
time/spectrum window	window and its duplex mate.	Pass
e) f) Transmission on interference-free transmit	Connected on the target Tx	Door
time/spectrum window	window and its duplex mate.	Pass



Page 62 of 66

## 14.9 Alternative Monitoring Interval for Co-Located Devices Requirements

According to the requirements of FCC Part 15.323(c)(11) as follows:

An initiating device that is prevented from monitoring during its intended transmit window due to monitoring system blocking from the transmissions of a co-located (within 1 m) transmitter of the same system, may monitor the portions of the time and spectrum window in which they are to receive over a period of at least 10 ms.

The monitored time and spectrum window must total at least 50% of the 10 ms frame interval and the monitored spectrum must be within 1.25 MHz of the centre frequency of channel(s) already occupied by that device or co-located cooperating devices.

If the access criteria are met for the intended receive time and spectrum window under the above conditions, then transmission in the intended transmit window by the initiating device may commence.

#### 14.9.1 Measurement Procedure

For detailed test methods, please refer to ANSI C63.17-2013 Clause 8.4.

#### 14.9.2 Measurement Result

Note: The manufacturer declares that this provision is not utilized by the EUT.



Report No.: AGC14499250706FR01 Page 63 of 66

## 14.10 Frame Repetition Stability And Period And Jitter

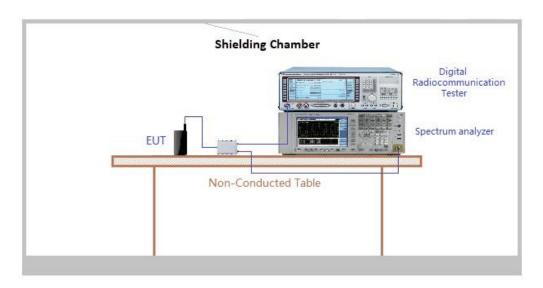
According to the requirements of FCC Part 15.323(c)(13) as follows:

The frame period (a set of consecutive time slots in which the position of each time slot can be identified by reference to a synchronizing source) of an intentional radiator operating in this band shall be 20 milliseconds or 10 milliseconds/X where X is a positive whole number. Each device that implements time division for the purposes of maintaining a duplex connection on a given frequency carrier shall maintain a frame repetition rate with a frequency stability of at least 50 parts per million (ppm). Each device which further divides access in time in order to support multiple communication links on a given frequency carrier shall maintain a frame repetition rate with a frequency stability of at least 10 ppm. The jitter (time-related, abrupt, spurious variations in the duration of the frame interval) introduced at the two ends of such a communication link shall not exceed 25 microseconds for any two consecutive transmissions. Transmissions shall be continuous in every time and spectrum window during the frame period defined for the device.

#### 14.10.1 Measurement Procedure

For detailed test methods, please refer to ANSI C63.17-2013 Clause 6.2.2&6.2.3

## 14.10.2 Measurement Setup





Page 64 of 66

## 14.10.3 Measurement Result

Carrier Frequency	Frame Jitter (us)					
(MHz)	min	mean	max	∆min	∆max	Limit of △
1928.448	-0.82	0	0.92	-0.82	0.92	±25
1924.992	-0.79	0	0.94	-0.79	0.94	±25
1921.536	-0.85	0	0.95	-0.85	0.95	±25



Page 65 of 66

**Appendix I: Photographs of Test Setup** 

Refer to the Report No.: AGC14499250706AP01

**Appendix II: Photographs of Test EUT** 

Refer to the Report No.: AGC14499250706AP02



Report No.: AGC14499250706FR01 Page 66 of 66

Conditions of Issuance of Test Reports

1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").

- 2. Any report issued by Company as a result of this application for testing services (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders. 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.

----End of Report----