



FCC REPORT

Applicant	:	GPRO GLOBAL SDN. BHD.
Address of Applicant	:	29-33, JALAN HANG TUAH 4, TAMAN MUHIBBAH, 86000, KLUANG, JOHOR, MALAYSIA.
Manufacturer	:	GPRO GLOBAL SDN. BHD.
Address of Manufacturer	:	29-33, JALAN HANG TUAH 4, TAMAN MUHIBBAH, 86000, KLUANG, JOHOR, MALAYSIA.
Equipment under Test	:	Smart Reader
Model No.	:	Gmini-UHF
FCC ID	:	2BREF-GMINI-UHF
Test Standard(s)	:	FCC Rules and Regulations Part 15 Subpart C Section 15.247, ANSI C63.10:2013
Report No.	:	A2504315-C02-R01
Issue Date	:	2025/09/15
Issued By	:	Shenzhen Alpha Product Testing Co., Ltd. Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen City, Guangdong Province, P.R. China.

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Test Report Declare

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Manufacturer	:	GPRO GLOBAL SDN. BHD.
Address of Manufacturer	:	29-33, JALAN HANG TUAH 4, TAMAN MUHIBBAH, 86000, KLUANG, JOHOR, MALAYSIA.
Equipment under Test	:	Smart Reader
Model No.	:	Gmini-UHF
Trademark	:	/

Test Standard Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.247, ANSI C63.10:2013

We Declare:

The equipment described above is tested by Shenzhen Alpha Product Testing Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

Report No.:	A2504315-C02-R01		
Date of Receipt:	2025/08/26	Date of Test:	2025/08/26 - 2025/09/15

Prepared By:

Yannis Wen/Engineer**Approved By:**

Jack Xu/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Alpha Product Testing Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
V0	Initial issue	2025/09/15	Yannis Wen

1. Summary of Test Results

No.	Test Parameter	Clause No.	Result
1	Antenna Requirement	FCC Part 15: 15.203	Pass
2	Number of Hopping Channel	FCC Part 15: 15.247(a)(1), ANSI C63.10 :2013	Pass
3	Duty Cycle	ANSI C63.10 :2013	Pass
4	Maximum Peak Output Power	FCC Part 15: 15.247(b)(2), ANSI C63.10 :2013	Pass
5	99% Bandwidth&20 dB Bandwidth	FCC Part 15: 15.247(a)(1), ANSI C63.10 :2013	Pass
6	Carrier Frequency Separation	FCC Part 15: 15.247(a)(1), ANSI C63.10 :2013	Pass
7	Dwell Time	FCC Part 15: 15.247(a)(1), ANSI C63.10 :2013	Pass
8	RF Conducted Spurious Emissions	FCC Part 15: 15.247(d), ANSI C63.10 :2013	Pass
9	Band Edge(Conducted)	FCC Part 15: 15.247(d), ANSI C63.10 :2013	Pass
10	Power Line Conducted Emissions	FCC Part 15: 15.207, ANSI C63.10 :2013	Pass
11	Radiated Emission	FCC Part 15: 15.209, FCC Part 15: 15.247(d), ANSI C63.10 :2013	Pass
12	Band Edge(Radiated)	FCC Part 15: 15.247(d), ANSI C63.10 :2013	Pass
Note: 1.N/A is an abbreviation for Not Applicable, and means this item is not applicable for this device or no need to test according to standard. 2. Decision rules for the conclusion of this test report: decision by actual test data without considering measurement uncertainty.			

Software Information			
Test Item	Software Name	Manufacturer	Version
RE	EZ-EMC	Farad	Alpha-3A1
RF-CE	MTS 8310	MWRFTest	V2.0.0.0

2. General Test Information

2.1. Description of EUT

EUT Name	: Smart Reader
Model Number	: Gmini-UHF
Difference of model number	: /
Power Supply	: DC 5V from Type-C
Hardware Version	: /
Software Version	: /

Radio Specification	: RFID
Operation Frequency	: 902.75 MHz to 927.25 MHz
Modulation	: GFSK
Antenna Type	: Internal Antenna
Max Antenna Gain(dBi)	: -1.78dBi(Antenna information is provided by applicant.)

Channel information					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	902.75	17	911.25	34	919.75
1	903.25	18	911.75	35	920.25
2	903.75	19	912.25	36	920.75
3	904.25	20	912.75	37	921.25
4	904.75	21	913.25	38	921.75
5	905.25	22	913.75	39	922.25
6	905.75	23	914.25	40	922.75
7	906.25	24	914.75	41	923.25
8	906.75	25	915.25	42	923.75
9	907.25	26	915.75	43	924.25
10	907.75	27	916.25	44	924.75
11	908.25	28	916.75	45	925.25
12	908.75	29	917.25	46	925.75
13	909.25	30	917.75	47	926.25
14	909.75	31	918.25	48	926.75
15	910.25	32	918.75	49	927.25
16	910.75	33	919.25		

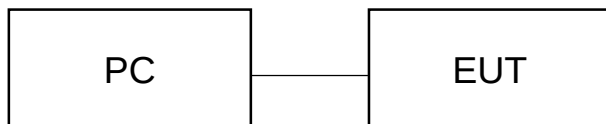
Note: The above EUT information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications or User's Manual. The above Antenna information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

“☑” means to be chosen or applicable; “☐” means don't to be chosen or not applicable; This note applies to entire report.

2.2. Accessories of EUT

Accessories	Manufacturer	Model number	Description
/	/	/	/

2.3. Block diagram of EUT configuration for test



2.4. Test mode description

The test software “reader_win64.exe” was used to control EUT work in Continuous TX mode, and select test channel, default power level, wireless mode:

Mode	Channel	Frequency (MHz)
GFSK Mode	Low : CH0	902.75
	Middle: CH25	915.25
	High: CH49	927.25
GFSK hopping Mode	/	902.75-927.25

2.5. Deviations of test standard

No deviation.

2.6. Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

Items	Required
Temperature range:	15-35°C
Humidity range:	25-75%
Pressure range:	86-106kPa

Note: The specific temperature and humidity information of each test item refers to the temperature and humidity record in the corresponding test data.

2.7. Test laboratory

Shenzhen Alpha Product Testing Co., Ltd.

Add.: Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen City, Guangdong Province, P.R. China.

Tel.: 4008-3008-95, Website: <http://www.a-lab.cn>, Email: service@a-lab.cn

CNAS Accreditation No. L7472; A2LA Accreditation Number: 4762.01

FCC Designation Number: CN1182, Test Firm Registration Number: 203110

Innovation, Science and Economic Development Canada Site Registration Number: 12135A

CAB identifier: CN0085

2.8. Measurement uncertainty

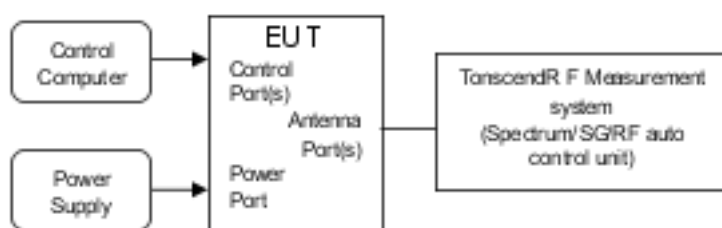
Item	Uncertainty
Uncertainty for Power point Conducted Emissions Test	1.63dB
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	3.5dB
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.74dB(Polarize: V)
	3.76dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	3.77dB(Polarize: V)
	3.80dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (18GHz to 40GHz)	4.31 dB(Polarize: V)
	4.30 dB(Polarize: H)
Uncertainty for radio frequency	5.06×10^{-8} GHz
Uncertainty for conducted RF Power	0.40dB
Uncertainty for temperature	0.2°C
Uncertainty for humidity	1%
Uncertainty for DC and low frequency voltages	0.06%

3. Antenna Requirement

3.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
CMW500	ROHDE&SCH WARZ	CMW500	Aa-EE073	2025/08/04	2026/08/03
Spectrum analyzer	ROHDE&SCH WARZ	FSV40-N	Aa-EE081	2025/08/04	2026/08/03
Signal Analyzer	Agilent	N9020A	Aa-EE039	2025/08/04	2026/08/03
Power Sensor	Agilent	E9300A	Aa-EE046	2025/08/04	2026/08/03
Vector Signal Generator	Agilent	N5182A	Aa-EE040	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE071	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE070	2025/08/04	2026/08/03
Power meter	Agilent	E4419B	Aa-EE045	2025/08/04	2026/08/03

3.2. Block diagram of test setup



3.3. Limits

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 shall be considered sufficient to comply with the provisions of this Section. 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.

For intentional device, according to FCC 47 CFR Section 15.203, 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. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
---------------------	--------------	--------------	-------------	-------

/	/	/	/	/
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3.5. Test procedure

The antenna is internal antenna and no consideration of replacement. Please see EUT photo for details.

3.6. Test result

Test Site: RF Laboratory	Test Date: 2025/09/01--2025/09/01
Condition: 24°C,56%RH,101kPa	Test Engineer: Yannis Wen
Memo: /	

EUT Name: Smart Reader	EUT Model: Gmini-UHF
Sample No.: A2504315-S0001	Test Mode: /
Power supply: DC 5V from Type-C	Memo: The EUT antenna is Internal Antenna. It complies with the standard requirement.

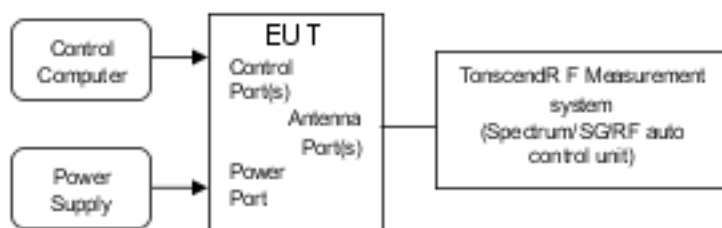
/

4. Number of Hopping Channel

4.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
CMW500	ROHDE&SCH WARZ	CMW500	Aa-EE073	2025/08/04	2026/08/03
Spectrum analyzer	ROHDE&SCH WARZ	FSV40-N	Aa-EE081	2025/08/04	2026/08/03
Signal Analyzer	Agilent	N9020A	Aa-EE039	2025/08/04	2026/08/03
Power Sensor	Agilent	E9300A	Aa-EE046	2025/08/04	2026/08/03
Vector Signal Generator	Agilent	N5182A	Aa-EE040	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE071	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE070	2025/08/04	2026/08/03
Power meter	Agilent	E4419B	Aa-EE045	2025/08/04	2026/08/03

4.2. Block diagram of test setup



4.3. Limits

According to FCC section 15.247(a)(1)(i), frequency hopping systems operating in the 902MHz to 928MHz bands shall use at least 50 hopping frequencies if the 20dB bandwidth of the hopping channel is less than 250KHz; or at least 25 hopping frequencies if the 20dB bandwidth of the hopping channel is 250KHz or greater.

4.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
Portable laptop	Lenovo	ThinkPad E14	/	/

4.5. Test procedure

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

Span = the frequency band of operation

RBW $\geq$ 1% of the span

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

Allow the trace to stabilize

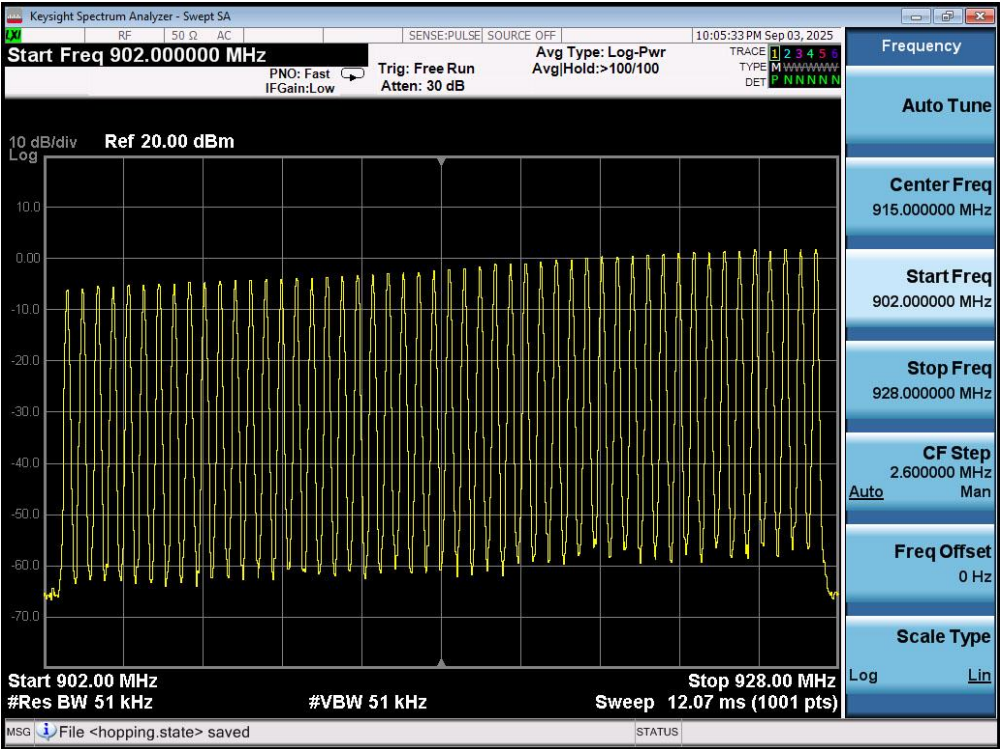
4.6. Test result

Test Site: RF Laboratory	Test Date: 2025/09/03--2025/09/03
Condition: 24.2°C,56%RH,101kPa	Test Engineer: Yannis Wen
Memo: /	

EUT Name: Smart Reader	EUT Model: Gmini-UHF
Sample No.: A2504315-S0001	Test Mode: GFSK hopping Mode
Power supply: DC 5V from Type-C	Memo: /

4.7. Test data

Frequency Band (MHz)	Antenna	Hopping Number	Limit	Verdict
902-928	ANT1	50	50	Pass

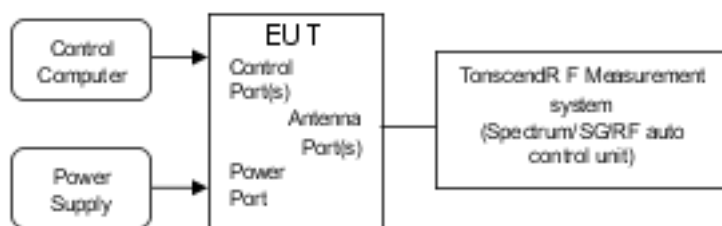


5. Duty Cycle

5.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
CMW500	ROHDE&SCH WARZ	CMW500	Aa-EE073	2025/08/04	2026/08/03
Spectrum analyzer	ROHDE&SCH WARZ	FSV40-N	Aa-EE081	2025/08/04	2026/08/03
Signal Analyzer	Agilent	N9020A	Aa-EE039	2025/08/04	2026/08/03
Power Sensor	Agilent	E9300A	Aa-EE046	2025/08/04	2026/08/03
Vector Signal Generator	Agilent	N5182A	Aa-EE040	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE071	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE070	2025/08/04	2026/08/03
Power meter	Agilent	E4419B	Aa-EE045	2025/08/04	2026/08/03

5.2. Block diagram of test setup



5.3. Limits

Please refer KDB 558074 D01 Meas Guidance v05r02.

The duty cycle refers to the fraction of time over which the transmitter is ON and is transmitting at its maximum power control level. The duty cycle is considered to be constant if variations are less than $\pm 2\%$; otherwise, the duty cycle is considered to be nonconstant.

5.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
Portable laptop	Lenovo	ThinkPad E14	/	/

5.5. Test procedure

- a) A diode detector and an oscilloscope that together have sufficiently short response time to permit accurate measurements of the on- and off-times of the transmitted signal.
 - b) The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on- and off-times of the transmitted signal.
- 1) Set the center frequency of the instrument to the center frequency of the transmission.

- 2) Set RBW $\geq$ OBW if possible; otherwise, set RBW to the largest available value.
- 3) Set detector = average.
- 4) The zero-span measurement method shall not be used unless both RBW and VBW are $> 50/T$ and the number of sweep points across duration T exceeds 100.

5.6. Test result

Test Site: RF Laboratory	Test Date: 2025/09/03--2025/09/03
Condition: 24.2°C,56%RH,101kPa	Test Engineer: Yannis Wen
Memo: /	

EUT Name: Smart Reader	EUT Model: Gmini-UHF
Sample No.: A2504315-S0001	Test Mode: GFSK Mode
Power supply: DC 5V from Type-C	Memo: /

/

5.7. Test data

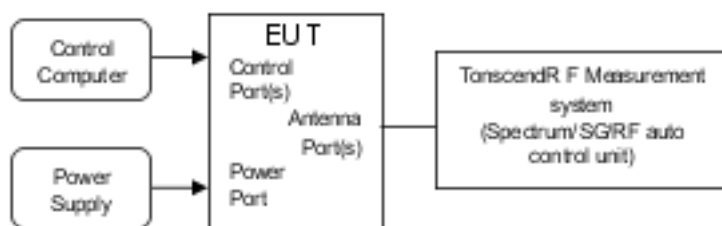
Antenna	Duty Cycle (%) (D)	Duty Factor ($10 \cdot \lg[1/D]$)
ANT1	43.33%	3.63

6. Maximum Peak Output Power

6.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
CMW500	ROHDE&SCH WARZ	CMW500	Aa-EE073	2025/08/04	2026/08/03
Spectrum analyzer	ROHDE&SCH WARZ	FSV40-N	Aa-EE081	2025/08/04	2026/08/03
Signal Analyzer	Agilent	N9020A	Aa-EE039	2025/08/04	2026/08/03
Power Sensor	Agilent	E9300A	Aa-EE046	2025/08/04	2026/08/03
Vector Signal Generator	Agilent	N5182A	Aa-EE040	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE071	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE070	2025/08/04	2026/08/03
Power meter	Agilent	E4419B	Aa-EE045	2025/08/04	2026/08/03

6.2. Block diagram of test setup



6.3. Limits

Please refer section 15.247

According to FCC section 15.247(b)(2), for frequency hopping systems that operates in the 902MHz to 928MHz band employing at least 50 hopping channels, the maximum peak output power of the intentional radiator shall not exceed 1Watt, and 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels.

6.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
Portable laptop	Lenovo	ThinkPad E14	/	/

6.5. Test procedure

The transmitter output is connected to the Spectrum Analyzer. The Spectrum Analyzer is set to the peak power detection.

6.6. Test result

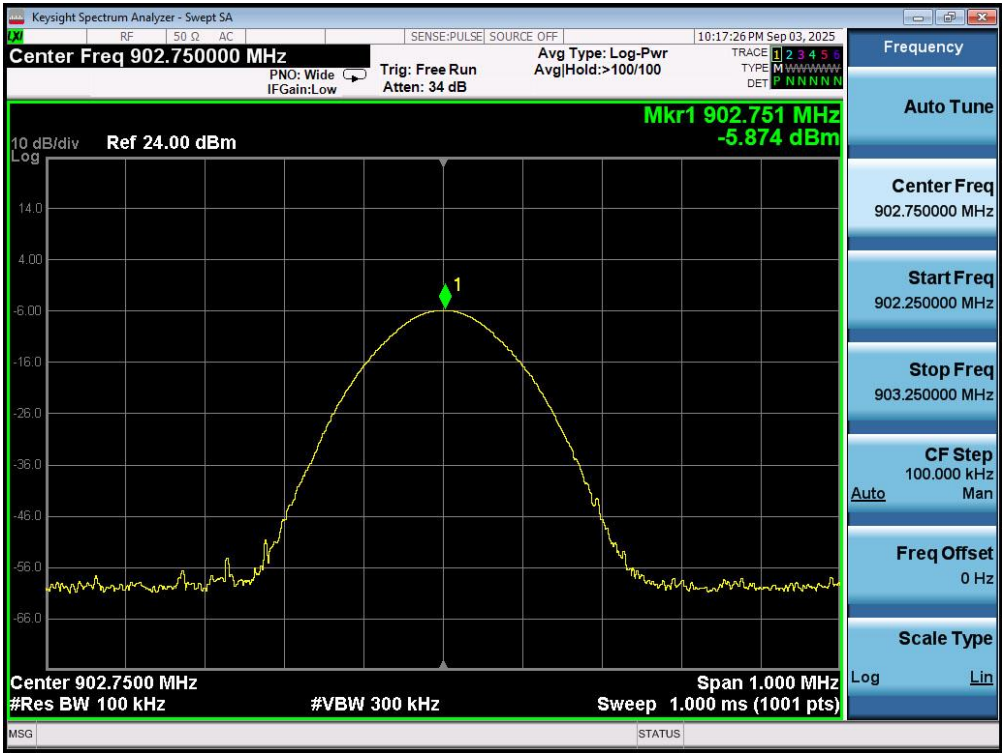
Test Site: RF Laboratory	Test Date: 2025/09/03--2025/09/03
Condition: 24.2°C,56%RH,101kPa	Test Engineer: Yannis Wen
Memo: Only show the test data of the worst case.	

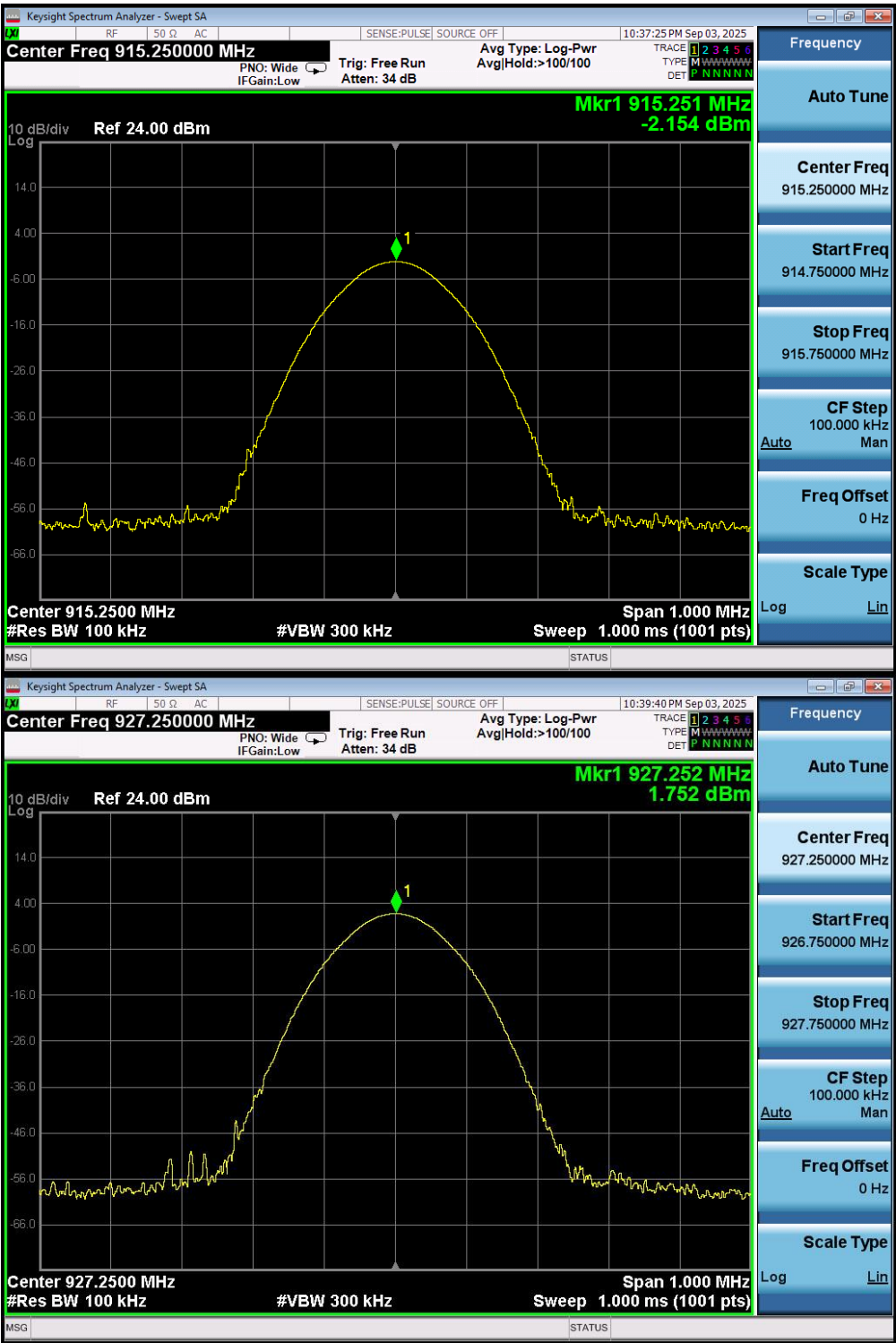
EUT Name: Smart Reader	EUT Model: Gmini-UHF
Sample No.: A2504315-S0001	Test Mode: GFSK Mode
Power supply: DC 5V from Type-C	Memo: /

/

6.7. Test data

Channel	Antenna	Frequency (MHz)	Measured Output Peak Power		Limit		Verdict
			dBm	W	dBm	W	
0	ANT1	902.75	-5.874	0.00026	30	1	Pass
25	ANT1	915.25	-2.154	0.00061	30	1	Pass
49	ANT1	927.25	1.752	0.00150	30	1	Pass



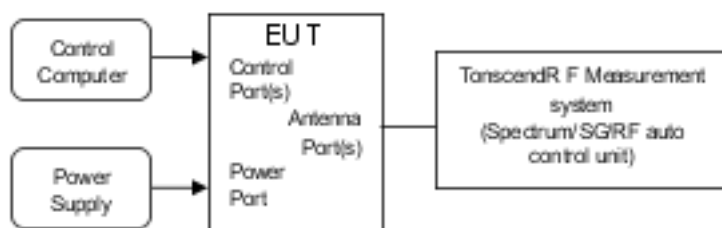


7. 99% Bandwidth&20 dB Bandwidth

7.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
CMW500	ROHDE&SCHWARZ	CMW500	Aa-EE073	2025/08/04	2026/08/03
Spectrum analyzer	ROHDE&SCHWARZ	FSV40-N	Aa-EE081	2025/08/04	2026/08/03
Signal Analyzer	Agilent	N9020A	Aa-EE039	2025/08/04	2026/08/03
Power Sensor	Agilent	E9300A	Aa-EE046	2025/08/04	2026/08/03
Vector Signal Generator	Agilent	N5182A	Aa-EE040	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE071	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE070	2025/08/04	2026/08/03
Power meter	Agilent	E4419B	Aa-EE045	2025/08/04	2026/08/03

7.2. Block diagram of test setup



7.3. Limits

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in FCC Section 15.247(a)(1), must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

7.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
Portable laptop	Lenovo	ThinkPad E14	/	/

7.5. Test procedure

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30kHz RBW and 100kHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

7.6. Test result

Test Site: RF Laboratory	Test Date: 2025/09/03--2025/09/03
--------------------------	-----------------------------------

Condition: 24.2°C,56%RH,101kPa	Test Engineer: Yannis Wen
Memo: Only show the test data of the worst case.	

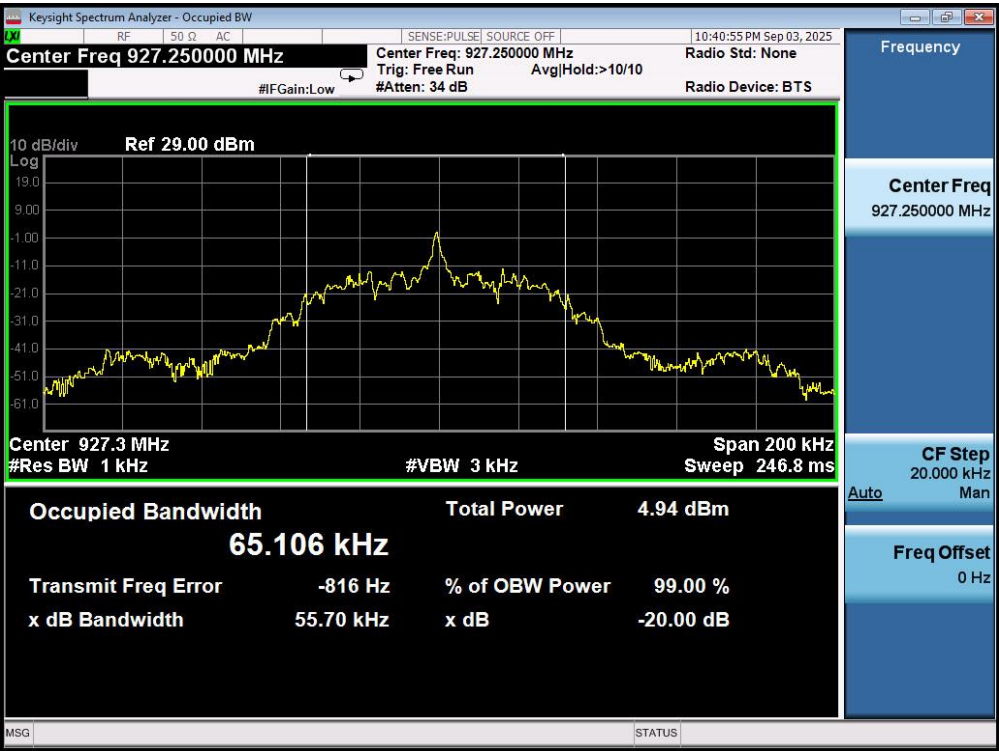
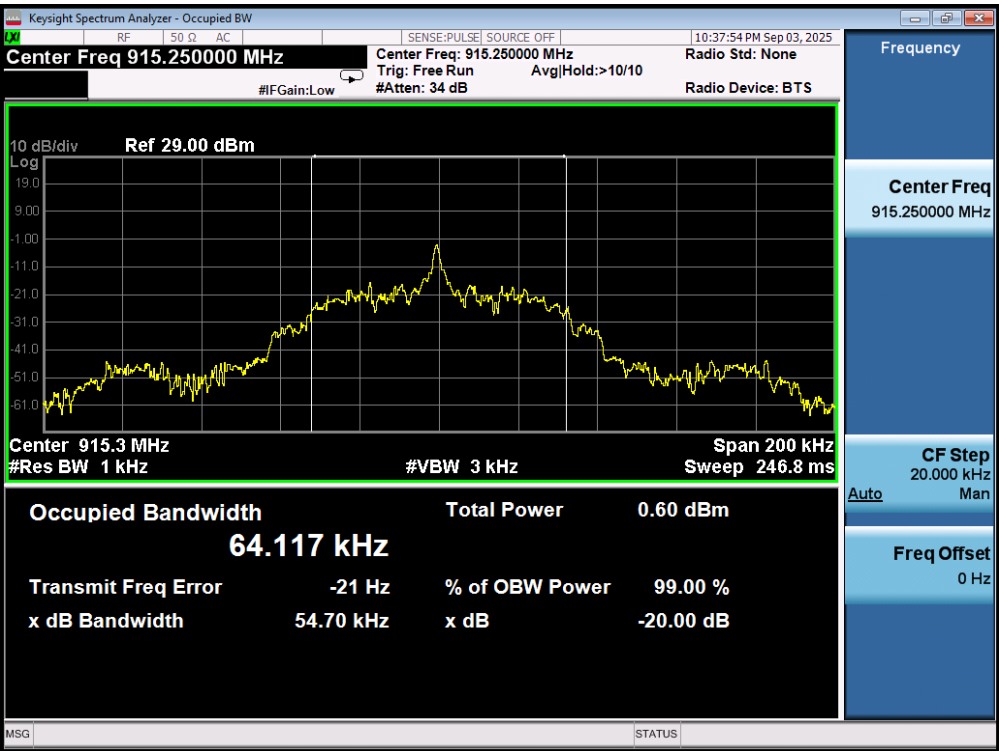
EUT Name: Smart Reader	EUT Model: Gmini-UHF
Sample No.: A2504315-S0001	Test Mode: GFSK Mode
Power supply: DC 5V from Type-C	Memo: /

/

7.7. Test data

Channel	Antenna	Frequency (MHz)	99% Bandwidth (kHz)	20 dB Bandwidth (kHz)	Verdict
0	ANT1	902.75	65.795	55.74	Pass
25	ANT1	915.25	64.117	54.70	Pass
49	ANT1	927.25	65.106	55.70	Pass



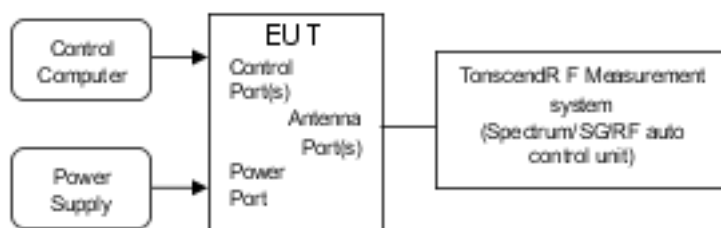


8. Carrier Frequency Separation

8.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
CMW500	ROHDE&SCH WARZ	CMW500	Aa-EE073	2025/08/04	2026/08/03
Spectrum analyzer	ROHDE&SCH WARZ	FSV40-N	Aa-EE081	2025/08/04	2026/08/03
Signal Analyzer	Agilent	N9020A	Aa-EE039	2025/08/04	2026/08/03
Power Sensor	Agilent	E9300A	Aa-EE046	2025/08/04	2026/08/03
Vector Signal Generator	Agilent	N5182A	Aa-EE040	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE071	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE070	2025/08/04	2026/08/03
Power meter	Agilent	E4419B	Aa-EE045	2025/08/04	2026/08/03

8.2. Block diagram of test setup



8.3. Limits

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

8.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
Portable laptop	Lenovo	ThinkPad E14	/	/

8.5. Test procedure

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

Span = wide enough to capture the peaks of two adjacent channels

Resolution (or IF) Bandwidth (RBW) $\geq$ 1% of the span

Video (or Average) Bandwidth (VBW) ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels.

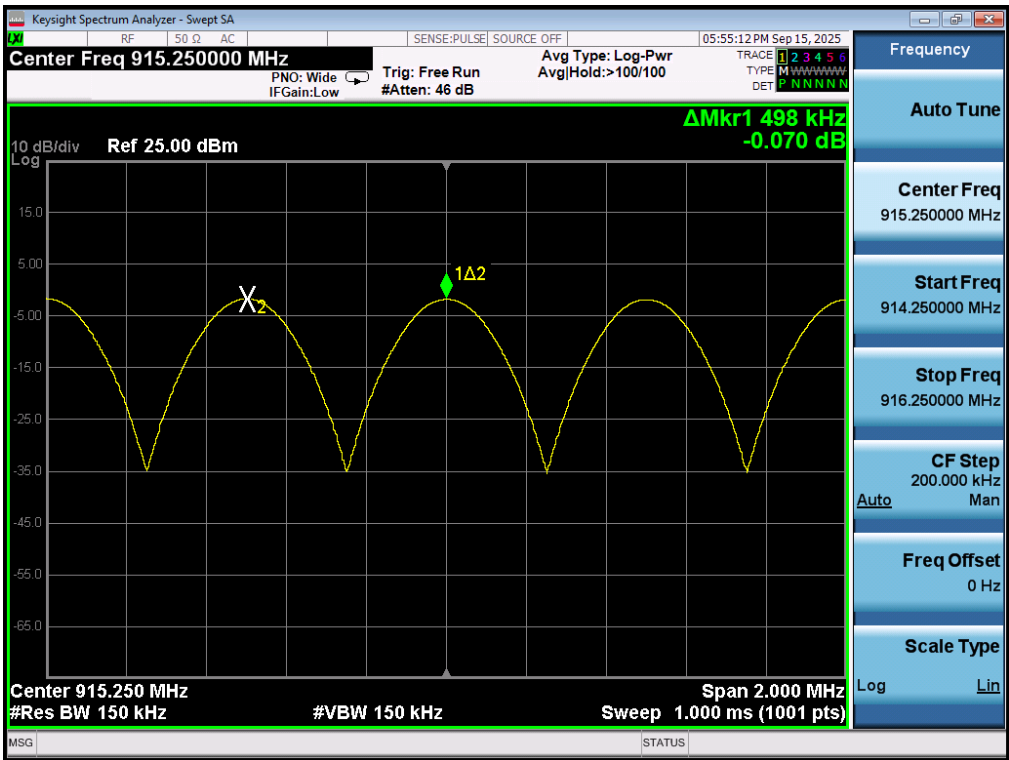
8.6. Test result

Test Site: RF Laboratory	Test Date: 2025/09/15--2025/09/15
Condition: 24.1°C,56%RH,101kPa	Test Engineer: Yannis Wen
Memo: Only show the test data of the worst case.	
EUT Name: Smart Reader	EUT Model: Gmini-UHF
Sample No.: A2504315-S0001	Test Mode: GFSK hopping Mode
Power supply: DC 5V from Type-C	Memo: /

/

8.7. Test data

Test Mode	Antenna	Measured Channel Numbers	Carried Frequency Separation (kHz)	20dB bandwidth (kHz)	Min. Limit	Verdict
RFID	ANT1	24 and 25	498	55.74	20dB bandwidth	Pass

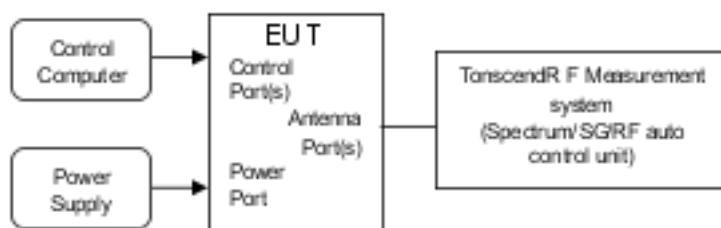


9. Dwell Time

9.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
CMW500	ROHDE&SCH WARZ	CMW500	Aa-EE073	2025/08/04	2026/08/03
Spectrum analyzer	ROHDE&SCH WARZ	FSV40-N	Aa-EE081	2025/08/04	2026/08/03
Signal Analyzer	Agilent	N9020A	Aa-EE039	2025/08/04	2026/08/03
Power Sensor	Agilent	E9300A	Aa-EE046	2025/08/04	2026/08/03
Vector Signal Generator	Agilent	N5182A	Aa-EE040	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE071	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE070	2025/08/04	2026/08/03
Power meter	Agilent	E4419B	Aa-EE045	2025/08/04	2026/08/03

9.2. Block diagram of test setup



9.3. Limits

Please refer section 15.247

According to §15.247(a)(1)(i), For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

9.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
Portable laptop	Lenovo	ThinkPad E14	/	/

9.5. Test procedure

The transmitter output is connected to a spectrum analyzer. The span is set to 0 Hz, centered on a single, selected hopping channel. The width of a single pulse is measured in a fast scan. The number of pulses is measured in 10 second scan, to enable resolution of each occurrence.

The average time of occupancy in the specified 20 second period is equal to (# of pulses in 20s) * pulse width.

9.6. Test result

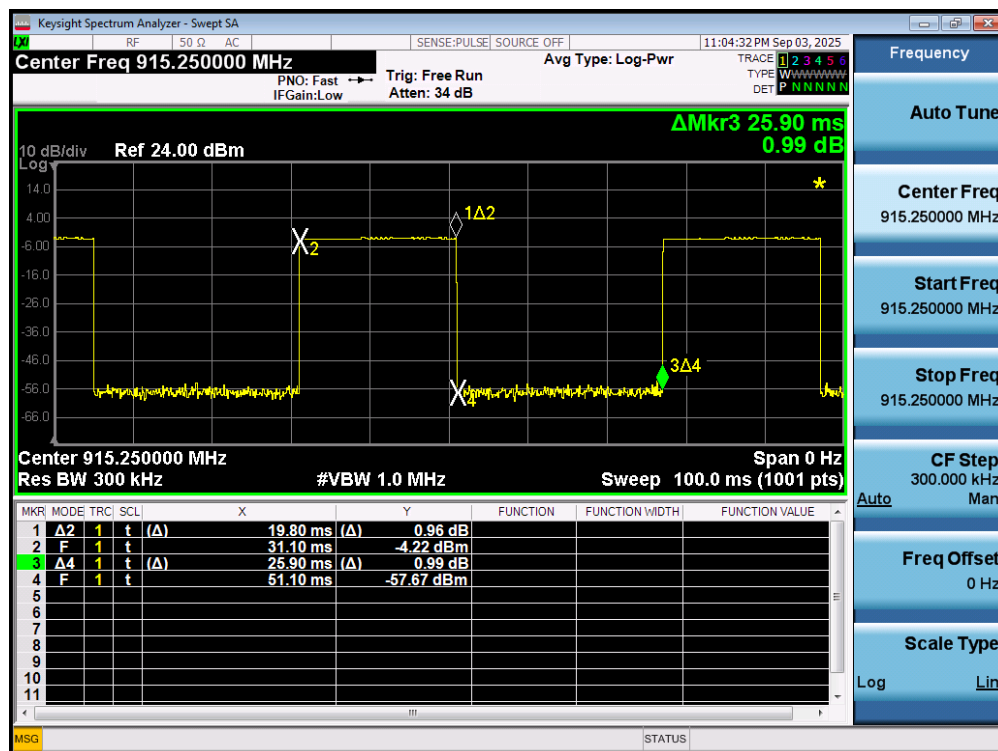
Test Site: RF Laboratory	Test Date: 2025/09/03--2025/09/03
Condition: 24.3°C,56%RH,101kPa	Test Engineer: Yannis Wen
Memo: /	

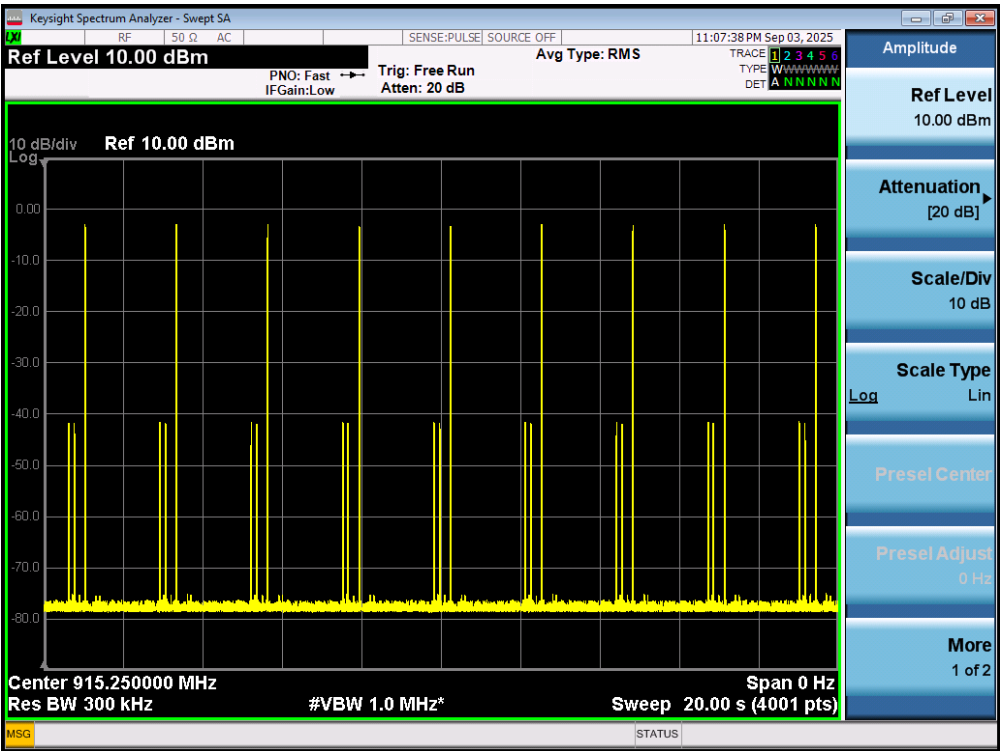
EUT Name: Smart Reader	EUT Model: Gmini-UHF
Sample No.: A2504315-S0001	Test Mode: GFSK hopping Mode
Power supply: DC 5V from Type-C	Memo: /

/

9.7. Test data

Frequency (MHz)	Antenna	Pulse Width(s)	Number of pulse in 20 seconds	Average Time of Occupancy (s)	Limit (s)	Verdict
915.25	ANT1	0.0198	9	0.1782	0.4	Pass



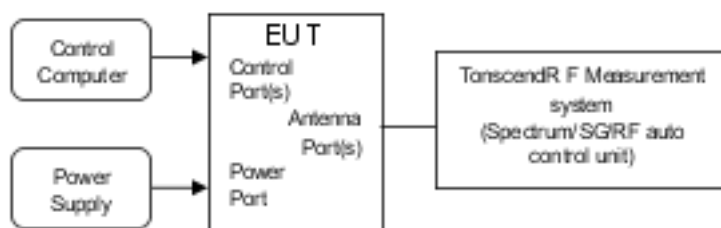


10.RF Conducted Spurious Emissions

10.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
CMW500	ROHDE&SCH WARZ	CMW500	Aa-EE073	2025/08/04	2026/08/03
Spectrum analyzer	ROHDE&SCH WARZ	FSV40-N	Aa-EE081	2025/08/04	2026/08/03
Signal Analyzer	Agilent	N9020A	Aa-EE039	2025/08/04	2026/08/03
Power Sensor	Agilent	E9300A	Aa-EE046	2025/08/04	2026/08/03
Vector Signal Generator	Agilent	N5182A	Aa-EE040	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE071	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE070	2025/08/04	2026/08/03
Power meter	Agilent	E4419B	Aa-EE045	2025/08/04	2026/08/03

10.2. Block diagram of test setup



10.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20dB.

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

10.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
Portable laptop	Lenovo	ThinkPad E14	/	/

10.5. Test procedure

Place the EUT on the table and set it in transmitting mode.

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

Set frequency of spectrum analyzer = 30MHz-10GHz.

Set the spectrum analyzer as RBW=100kHz, VBW $\geq$ 3*RBW =300kHz, Sweep = auto.

The spectrum analyzer is set to the peak detection

10.6. Test result

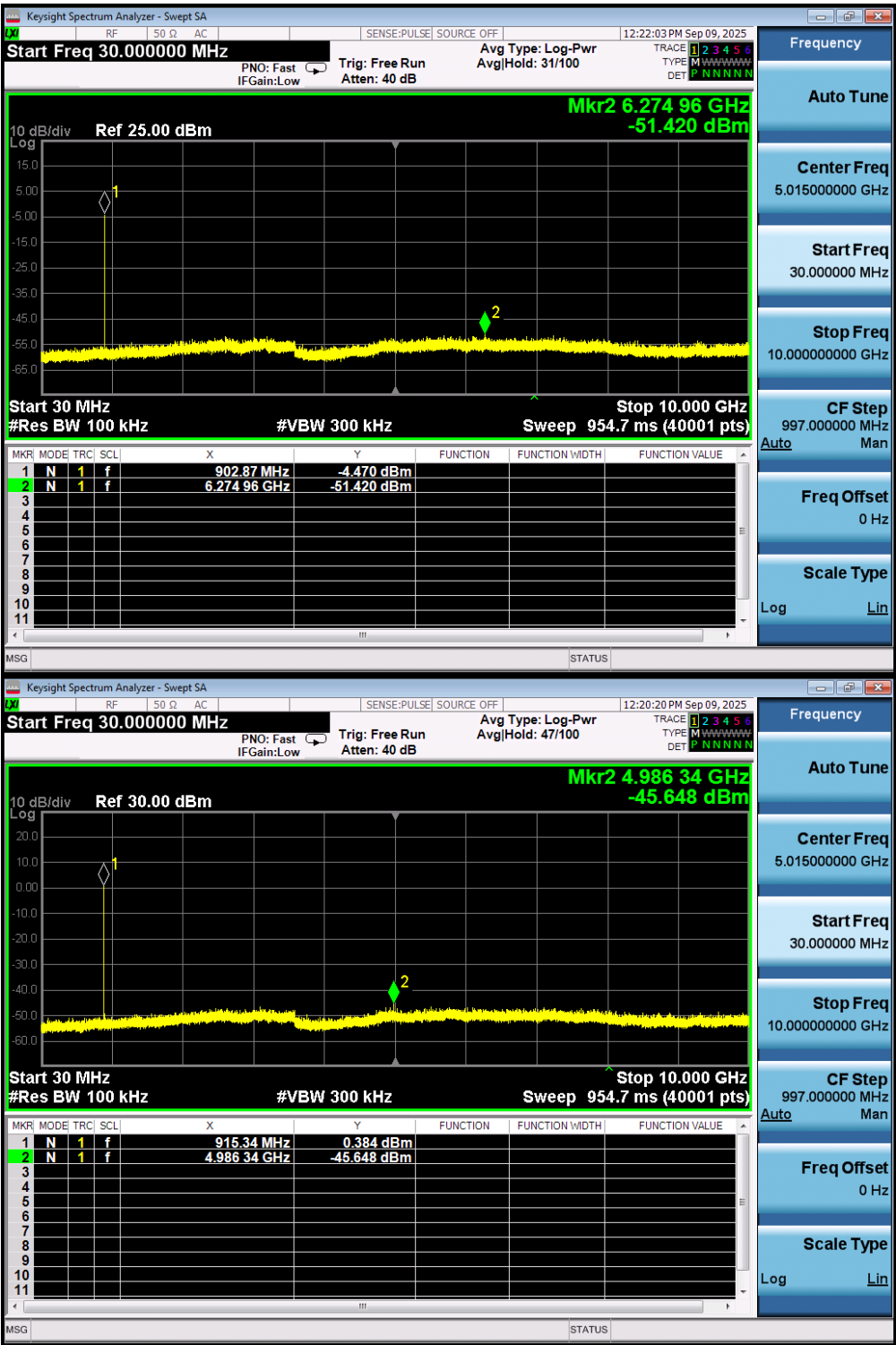
Test Site: RF Laboratory	Test Date: 2025/09/09--2025/09/09
Condition: 24.3°C,56%RH,101kPa	Test Engineer: Yannis Wen
Memo: Only show the test data of the worst case.	

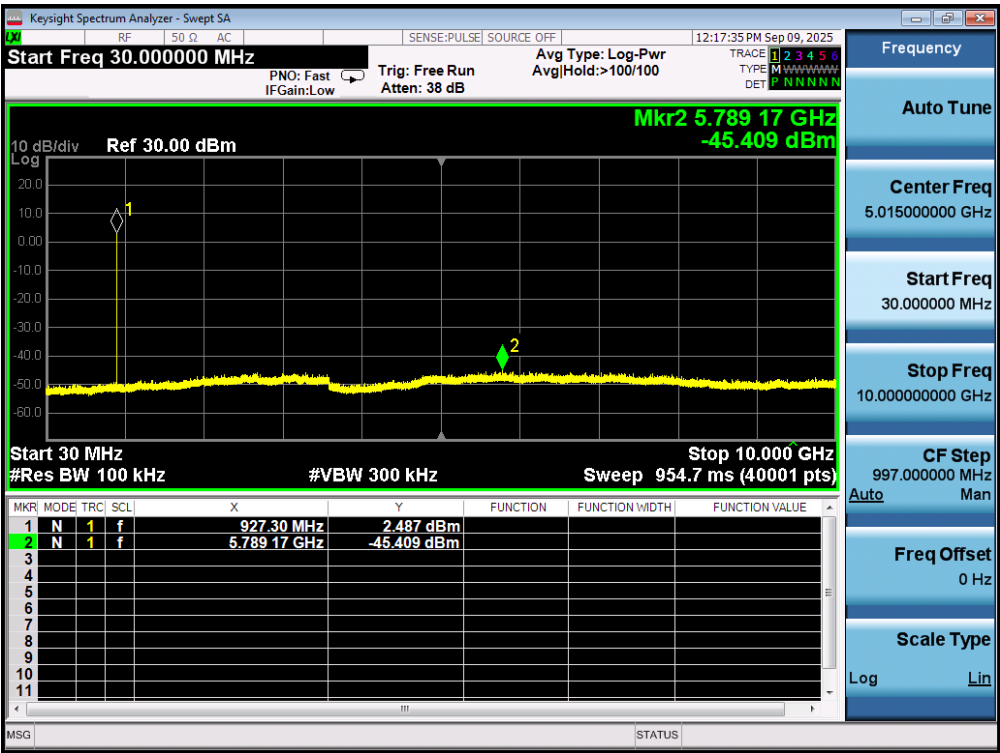
EUT Name: Smart Reader	EUT Model: Gmini-UHF
Sample No.: A2504315-S0001	Test Mode: GFSK Mode
Power supply: DC 5V from Type-C	Memo: /

/

10.7. Test data

Frequency (MHz)	Antenna	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
			Carrier Level	Calculated 20dBc Limit	
902.75	ANT1	-51.420	-4.470	-24.470	Pass
915.25	ANT1	-45.648	0.384	-19.616	Pass
927.25	ANT1	-45.409	2.487	-17.513	Pass



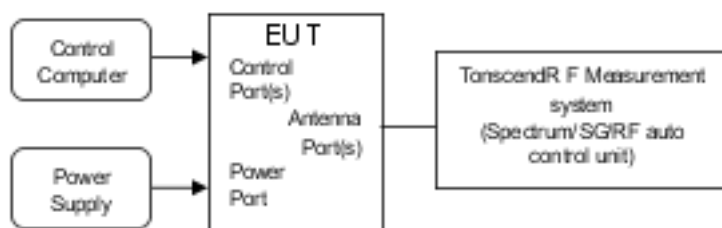


11.Band Edge(Conducted)

11.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
CMW500	ROHDE&SCH WARZ	CMW500	Aa-EE073	2025/08/04	2026/08/03
Spectrum analyzer	ROHDE&SCH WARZ	FSV40-N	Aa-EE081	2025/08/04	2026/08/03
Signal Analyzer	Agilent	N9020A	Aa-EE039	2025/08/04	2026/08/03
Power Sensor	Agilent	E9300A	Aa-EE046	2025/08/04	2026/08/03
Vector Signal Generator	Agilent	N5182A	Aa-EE040	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE071	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE070	2025/08/04	2026/08/03
Power meter	Agilent	E4419B	Aa-EE045	2025/08/04	2026/08/03

11.2. Block diagram of test setup



11.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under [paragraph \(b\)\(3\)](#) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in [§ 15.209\(a\)](#) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in [§ 15.205\(a\)](#), must also comply with the radiated emission limits specified in [§ 15.209\(a\)](#) (see [§ 15.205\(c\)](#)).

11.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
Portable laptop	Lenovo	ThinkPad E14	/	/

11.5. Test procedure

- 1) Span: Wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products that fall outside of the authorized band of operation.
 - 2) Reference level: As required to keep the signal from exceeding the maximum instrument input mixer level for linear operation.
 - 3) Attenuation: Auto (at least 10 dB preferred).
 - 4) Sweep time: Coupled.
 - 5) Resolution bandwidth: 100 kHz.
 - 6) Video bandwidth: 300 kHz.
 - 7) Detector: Peak.
 - 8) Trace: Max hold.
- All restriction band and non- restriction band have been tested, only worse case is reported.

11.6. Test result

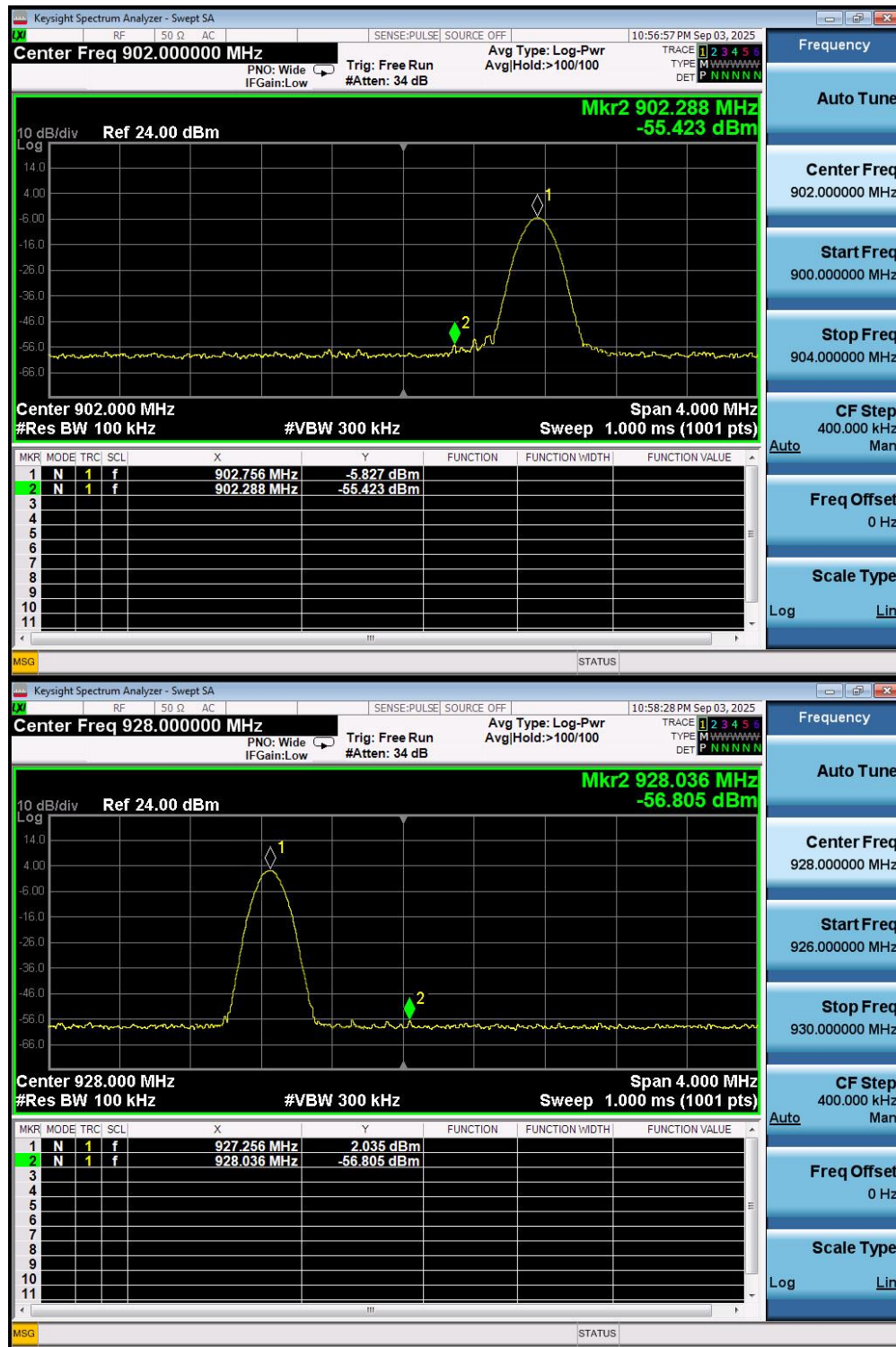
Test Site: RF Laboratory	Test Date: 2025/09/03--2025/09/03
Condition: 24.2°C,56%RH,101kPa	Test Engineer: Yannis Wen
Memo: Only show the test data of the worst case.	

EUT Name: Smart Reader	EUT Model: Gmini-UHF
Sample No.: A2504315-S0001	Test Mode: GFSK Mode-L/H & GFSK hopping Mode
Power supply: DC 5V from adapter	Memo: /

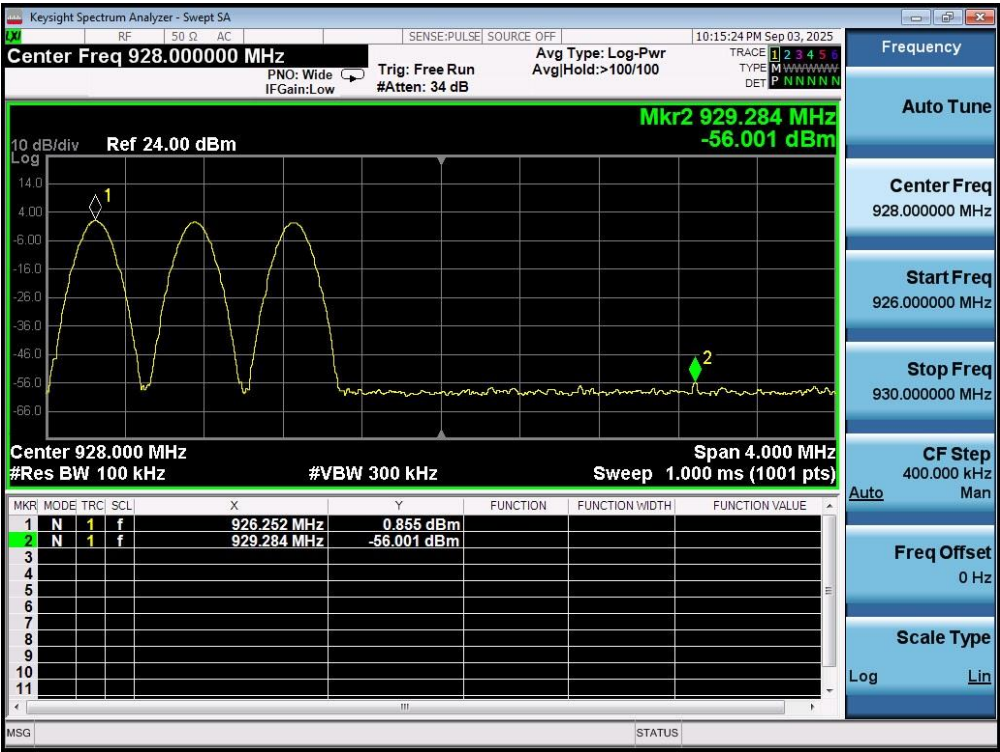
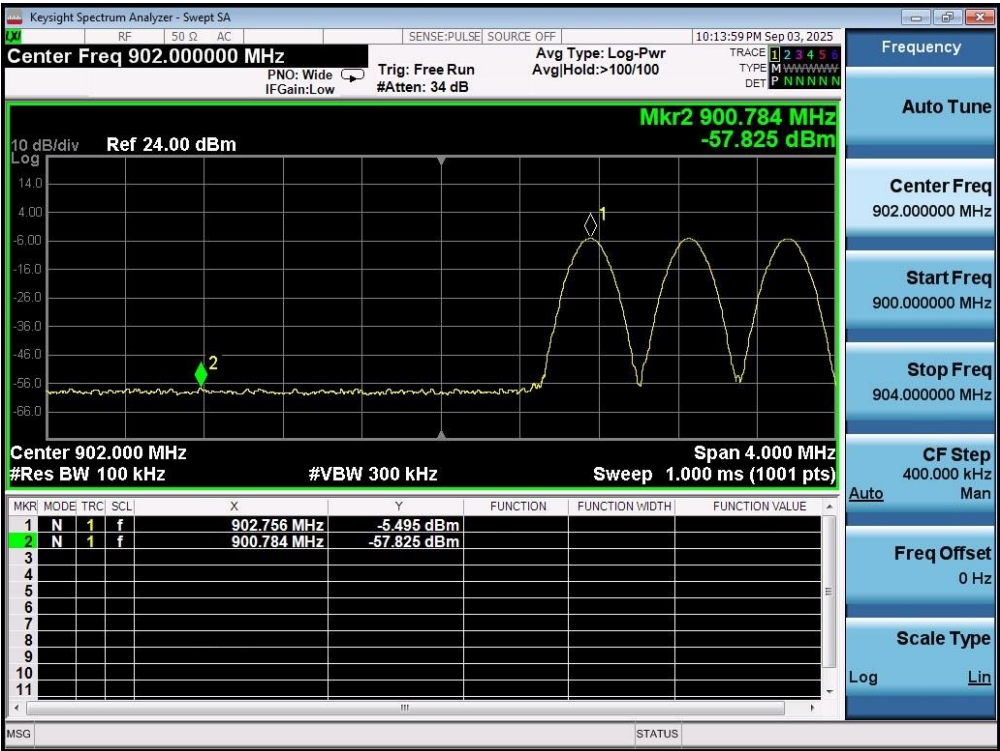
/

11.7. Test data

Frequency (MHz)	Antenna	Hopping Mode	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
				Carrier Level	Calculated 20dBc Limit	
902.75	ANT1	No-Hopping	-55.423	-5.827	-25.827	Pass
915.25	ANT1	No-Hopping	-56.805	2.035	-17.965	Pass



Frequency (MHz)	Antenna	Hopping Mode	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
				Carrier Level	Calculated 20dBc Limit	
902.75	ANT1	Hopping	-57.825	-5.495	-25.495	Pass
915.25	ANT1	Hopping	-56.001	0.855	-19.145	Pass

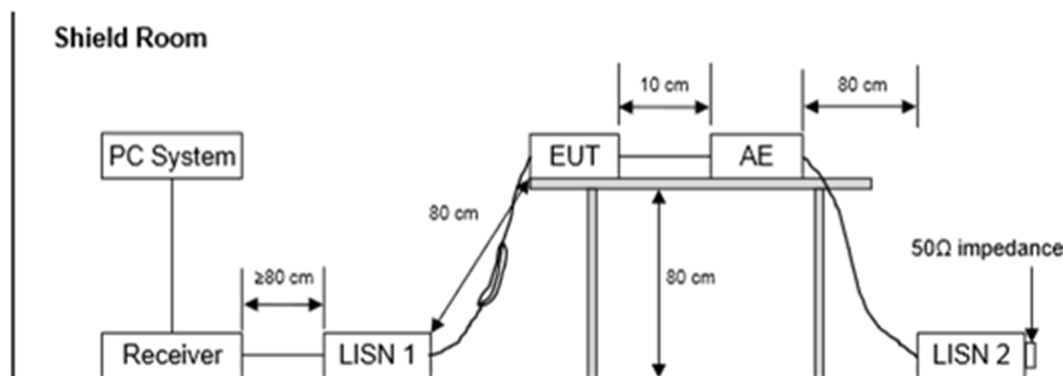


12.Power Line Conducted Emissions

12.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
Test Receiver	ROHDE&SCHWARZ	ESCI	Aa-EE005	2025/08/04	2026/08/03
Pulse Limiter	SCHWARZBECK	9516F	Aa-EE004	2025/08/04	2026/08/03
L.I.S.N.	SCHWARZBECK	NSLK8126	Aa-EE003	2025/08/04	2026/08/03

12.2. Block diagram of test setup



12.3. Limits

Frequency	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150 kHz~500 kHz	66 ~ 56*	56 ~ 46*
500 kHz~5 MHz	56	46
5 MHz~30 MHz	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

3. The limit decreases in line with the logarithm of the frequency in rang of 0.15 to 0.50 MH

12.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
AC Adapter	DEE VAN ENTERPRISE CO., LTD.	D5A-45PDA FCH	/	/

12.5. Test procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In

order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10:2013 on Conducted Emission Measurement. The bandwidth of test receiver is set at 9 kHz.

12.6. Test result

Test Site: Shield Room CE 1#	Test Date: 2025/08/29--2025/08/29
Condition: 23.6°C,56%RH,101kPa	Test Engineer: Yannis Wen
Memo: /	

EUT Name: Smart Reader	EUT Model: Gmini-UHF
Sample No.: A2504315-S0001	Test Mode: All modes
Power supply: DC 5V from Type-C	Memo: /

PASS. (See below detailed test result)

Note1: All emissions not reported below are too low against the prescribed limits.

Note2: “----” means Peak detection; “-----” means Average detection.

Note3: Pre-test AC conducted emission at both voltage AC 120V/60Hz and AC 240V/50Hz, recorded the worst case.

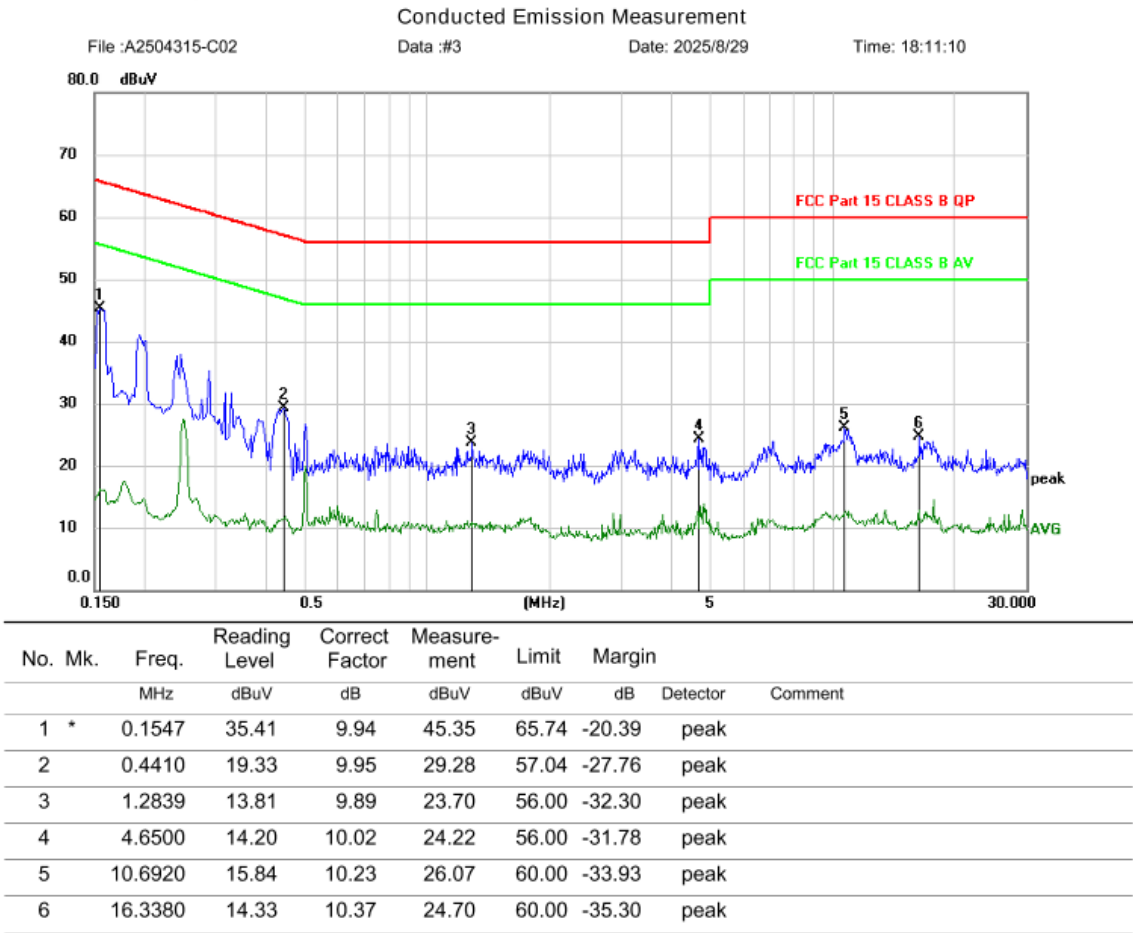
12.7. Test data



深圳阿尔法商品检验有限公司
SHENZHEN ALPHA PRODUCT TESTING CO.,LTD.

深圳阿尔法商品检验有限公司
Shenzhen Alpha Product Testing Co.,Ltd.
地址: ALPHA 广东省深圳市宝安区福永街道立新路 2 号 i 栋
TEL: 4008-3008-95

Site LAB	Phase: L1	Temperature: 23.6
Limit: FCC Part 15 CLASS B QP	Power: DC 5V from Type-C	Humidity: 56 %
EUT/Task No : A2504315-C02		
M/N/Sample No: A2504315-S0001		
Mode : GFSK 915.25MHz		
Note:		
Engineer Signature: <i>Yanni's wen</i>		



*:Maximum data x:Over limit !:over margin <Reference Only
Note: Measurement=Reading Level+Correc Factor. Factor=(LISN or ISN or PLC or Current Probe)Factor+Cable



深圳阿尔法商品检验有限公司
SHENZHEN ALPHA PRODUCT TESTING CO.,LTD.

深圳阿尔法商品检验有限公司
Shenzhen Alpha Product Testing Co.,Ltd.

地址: ALPHA 广东省深圳市宝安区福永街道立新路 2 号 i 栋
TEL: 4008-3008-95

Site LAB

Phase: N

Temperature: 23.6

Limit: FCC Part 15 CLASS B QP

Power: DC 5V from Type-C

Humidity: 56 %

EUT/Task No : A2504315-C02

M/N/Sample No: A2504315-S0001

Mode : GFSK 915.25MHz

Note:

Engineer Signature: Yanni3 Wen

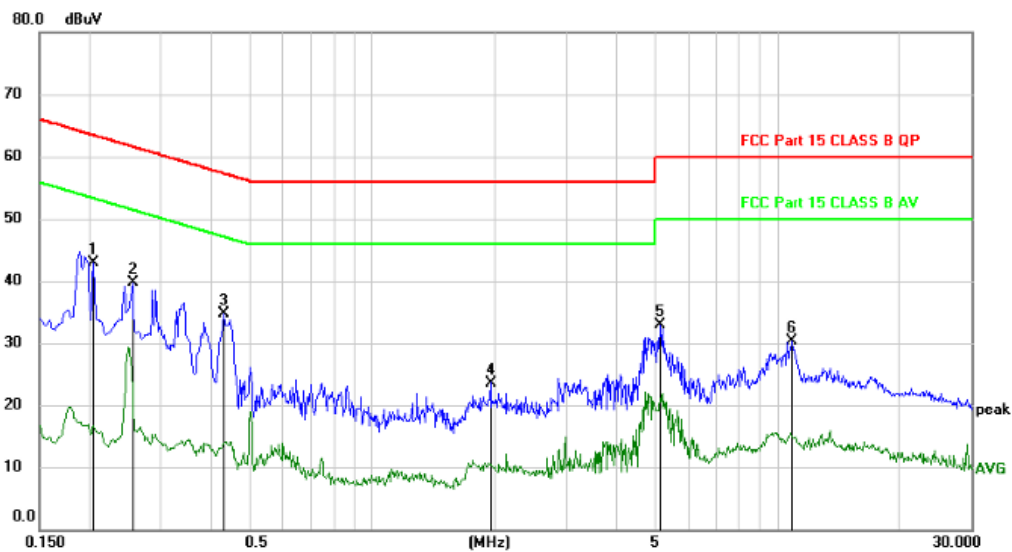
Conducted Emission Measurement

File :A2504315-C02

Data :#4

Date: 2025/8/29

Time: 18:14:41



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector Comment
1	*	0.2038	32.96	9.92	42.88	63.45	-20.57	peak
2		0.2550	29.70	9.96	39.66	61.59	-21.93	peak
3		0.4289	24.71	9.95	34.66	57.27	-22.61	peak
4		1.9556	13.72	9.88	23.60	56.00	-32.40	peak
5		5.1180	22.78	10.04	32.82	60.00	-27.18	peak
6		10.7970	20.03	10.23	30.26	60.00	-29.74	peak

*:Maximum data x:Over limit !:over margin

<Reference Only

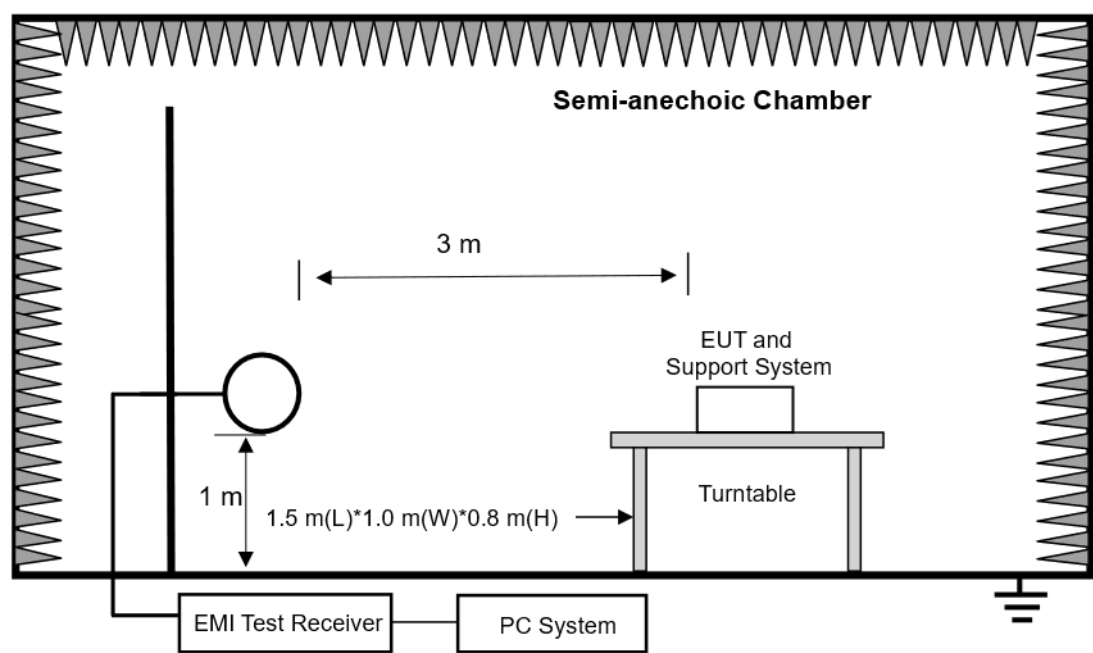
Note: Measurement=Reading Level+Correc Factor. Factor=(LISN or ISN or PLC or Current Probe)Factor+Cable

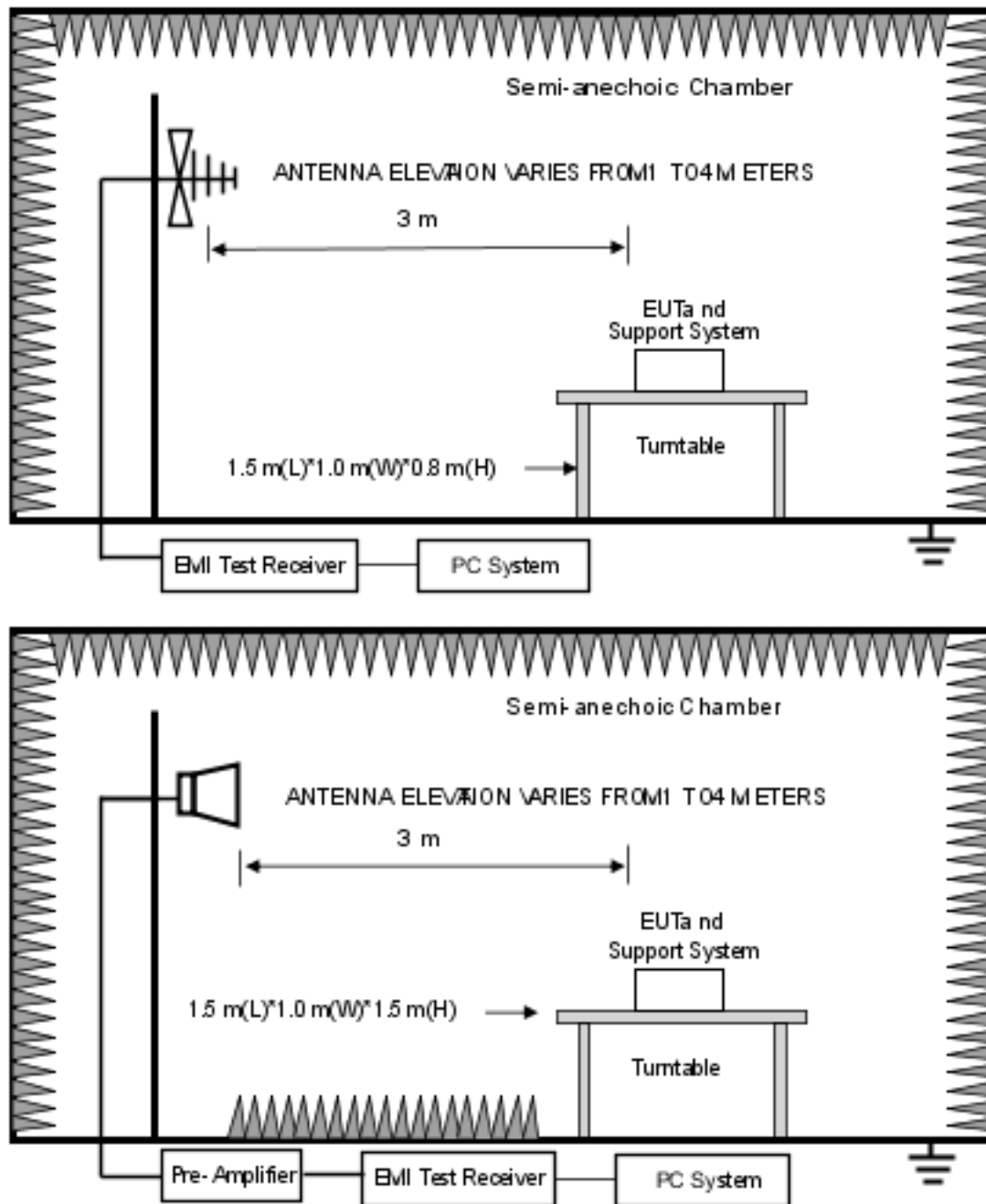
13.Radiated Emission

13.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
Spectrum analyzer	ROHDE&SCHWARZ	FSU	Aa-EE075	2025/08/04	2026/08/03
Horn Antenna	SCHWARZBECK	BBHA 9120 D	Aa-EE076	2025/08/11	2027/08/10
Test Receiver	ROHDE&SCHWARZ	ESR	Aa-EE048	2025/08/04	2026/08/03
Bilog Antenna	SCHWARZBECK	VULB 9168	Aa-EE001	2025/08/11	2027/08/10
Amplifier	SKET	LNPA_0118G-45	Aa-EE087	2025/08/04	2026/08/03
Horn Antenna	SCHWARZBECK	BBHA 9170	Aa-EE077	2025/08/11	2027/08/10
Loop Antenna	SCHWARZBECK	FMZB 1519B	Aa-EE074	2025/08/11	2027/08/10

13.2. Block diagram of test setup





13.3. Limits

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.1772&4.17775	37.5-38.25	1435-1626.5	9.0-9.2

4.2072&4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(²)
13.36-13.41			

1Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

2Above 38.6

15.209 Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		uV/m	dBuV/m
0.009 ~ 0.490	300	2400/F(kHz)	67.6-20log(F)
0.490 ~ 1.705	30	24000/F(kHz)	87.6-20log(F)
1.705 ~ 30.0	30	30	29.54
30~88	3	100	40.0
88~216	3	150	43.5
216~960	3	200	46.0
960~1000	3	500	54.0
Above 1000	3	74.0 dBuV/m (Peak) 54.0 dBuV/m (Average)	

Note: Harmonic emissions limits comply with below 54 dBuV/m at 3m. Other emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or comply with the radiated emissions limits specified in section15.209(a) limit in the table below has to be followed.

13.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
Portable laptop	Lenovo	ThinkPad E14	/	/

13.5. Test procedure

The measuring distance of 3m shall be used for measurements at frequency up to 1GH and above 1GHz, The EUT was placed on a rotating 0.8 m high above ground for below 1GHz and 1.5m high

for above1GHz testing, The table was rotated 360 degrees to determine the position of the highest radiation.

The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set of make measurement.

The initial step in collecting conducted emission data is a spectrum analyzer Peak detector mode pre-scanning the measurement frequency range. Significant Peaks are then marked. and then Qusia Peak Detector mode premeasured.

If Peak value comply with QP limit Below 1GHz.The EUT deemed to comply with QP limit. But the Peak value and average value both need to comply with applicable limit above 1GHz.

For the actual test configuration, please see the test setup photo.

13.6. Test result

Test Site: Chamber 1#(RSE)	Test Date: 2025/08/29--2025/08/29
Condition: 22.4°C,55%RH,101kPa	Test Engineer: Yannis Wen
Memo: /	

EUT Name: Smart Reader	EUT Model: Gmini-UHF
Sample No.: A2504315-S0001	Test Mode: All modes
Power supply: DC 5V from Type-C	Memo: /

Test Condition

Continual Transmitting in maximum power.

9KHz~150KHz	RBW200Hz	VBW1KHz
150KHz~30MHz	RBW9KHz	VBW 30KHz
30MHz~1GHz	RBW120KHz	VBW 300KHz
Above1GHz	RBW1MHz	VBW 3MHz

We have scanned the 10th harmonic from 9 kHz to the EUT.

Detailed information please see the following page.

From 9KHz to 30MHz: Conclusion: PASS

Note: 1.The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

2. Only show the test data of the worst Channel in this report.

3. From 30MHz-1000MHz: Mark 6 is the main frequency transmission.

13.7. Test data

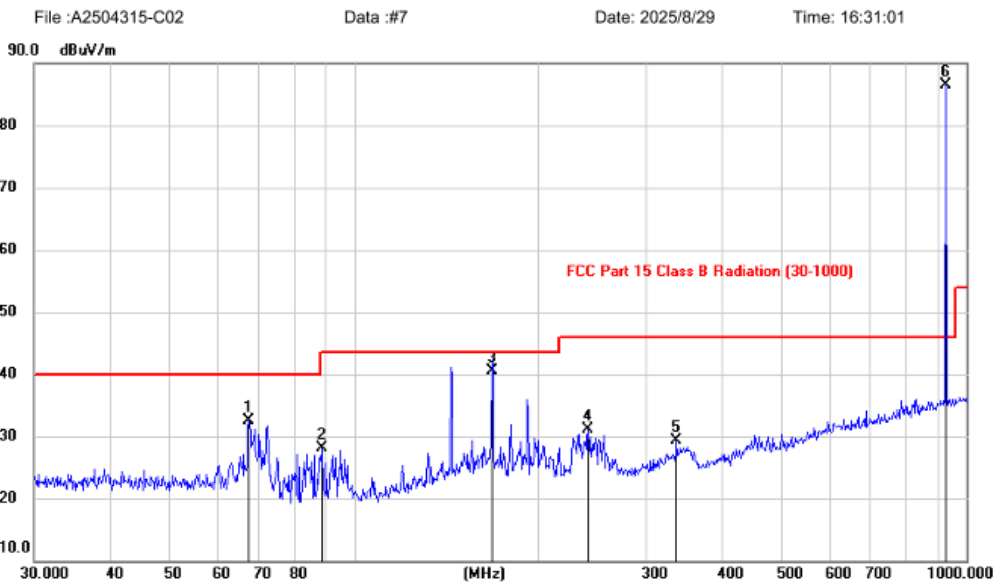


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地址: ALPHA 广东省深圳市宝安区福永街道立新路 2 号 i 栋
TEL: 4008-3008-95

Site	LAB 966 Chamber 1	Polarization:	Horizontal	Temperature:	22.4
Limit:	FCC Part 15 Class B Radiation (30-1000)	Power:	DC 5V from Type-C	Humidity:	55 %
EUT/Task No	: A2504315-C02	Distance:	3m		
M/N/Sample No:	A2504315-S0001				
Mode	: GFSK 927.25MHz				
Note:					
Engineer Signature:	Yanni3 wen				

Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		67.3122	20.76	11.78	32.54	40.00	-7.46	peak		
2		88.7147	18.00	10.03	28.03	43.50	-15.47	peak		
3		168.1974	26.21	14.25	40.46	43.50	-3.04	QP		
4		240.9430	18.58	12.57	31.15	46.00	-14.85	peak		
5		336.4675	14.30	14.98	29.28	46.00	-16.72	peak		
6	*	927.2724	62.15	24.39	86.54	46.00	40.54	peak		

Note: 1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

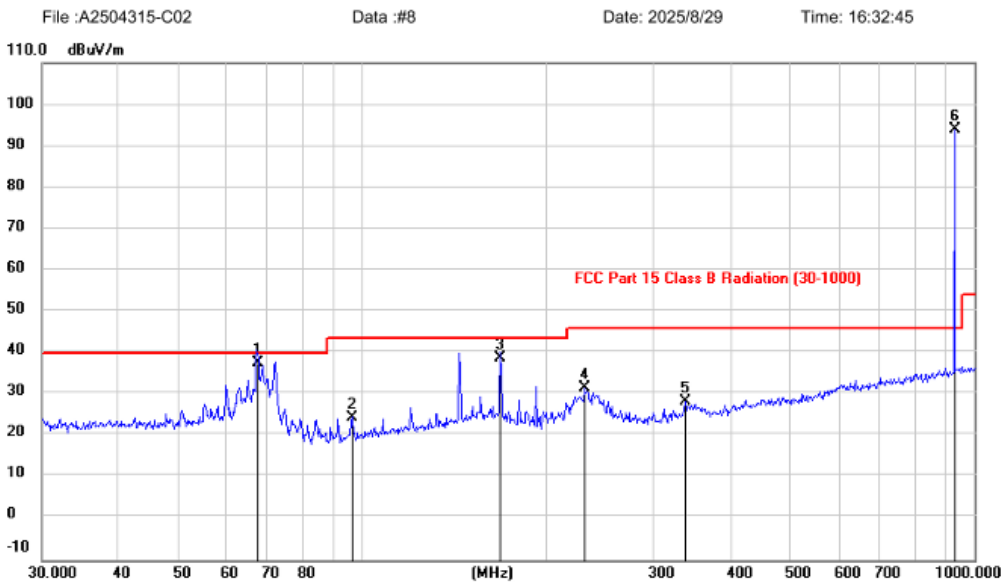


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TEL: 4008-3008-95

Site LAB 966 Chamber 1	Polarization: Vertical	Temperature: 22.4
Limit: FCC Part 15 Class B Radiation (30-1000)	Power: DC 5V from Type-C	Humidity: 55 %
EUT/Task No : A2504315-C02	Distance: 3m	
M/N/Sample No: A2504315-S0001		
Mode : GFSK 927.25MHz		
Note:		
Engineer Signature: <i>Yannu3 wen</i>		

Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		67.5026	25.69	11.78	37.47	40.00	-2.53	QP		
2		96.1323	13.94	10.55	24.49	43.50	-19.01	peak		
3		168.2564	24.54	14.25	38.79	43.50	-4.71	QP		
4		230.3945	19.13	12.32	31.45	46.00	-14.55	peak		
5		336.5855	13.17	15.00	28.17	46.00	-17.83	peak		
6	*	927.2724	69.43	24.39	93.82	46.00	47.82	peak		

Note:1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

Frequency range: 1GHz~25GHz

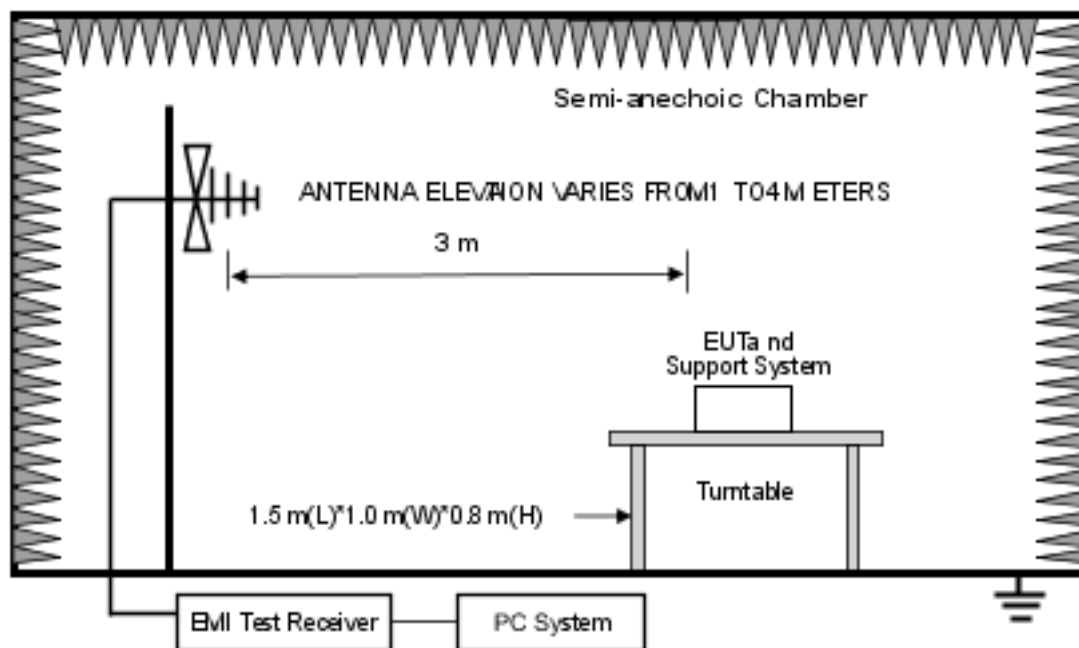
Test Mode : GFSK TX 902.75MHz								
No.	Freq MHz	Polarity	Reading (dBuV/m)	Correct Factor	Result (dBuV/m)	Limit (dBuV/m)	Margin	Remark
1	1805.5	H	52.48	-19.9	32.58	74	-41.42	Peak
2	1805.5	H	--	-19.9	--	54	--	AVG
3	2708.25	H	56.24	-13.88	42.36	74	-31.64	Peak
4	2708.25	H	--	-13.88	--	54	--	AVG
5	1805.5	V	55.50	-19.9	35.60	74	-38.40	Peak
6	1805.5	V	--	-19.9	--	54	--	AVG
7	2708.25	V	55.13	-13.88	41.25	74	-32.75	Peak
8	2708.25	V	--	-13.88	--	54	--	AVG
Test Mode : GFSK TX 915.25MHz								
1	1830.5	H	52.5	-19.9	32.60	74	-41.40	Peak
2	1830.5	H	--	-19.9	--	54	--	AVG
3	2745.75	H	54.46	-13.88	40.58	74	-33.42	Peak
4	2745.75	H	--	-13.88	--	54	--	AVG
5	1830.5	V	60.89	-19.9	40.99	74	-33.01	Peak
6	1830.5	V	--	-19.9	--	54	--	AVG
7	2745.75	V	53.51	-13.88	39.63	74	-34.37	Peak
8	2745.75	V	--	-13.88	--	54	--	AVG
Test Mode : GFSK TX 927.25MHz								
1	1854.5	H	71.56	-19.9	51.66	74	-22.34	Peak
2	1854.5	H	--	-19.9	--	54	--	AVG
3	2781.75	H	55.46	-13.88	41.58	74	-32.42	Peak
4	2781.75	H	--	-13.88	--	54	--	AVG
5	1854.5	V	72.15	-19.9	52.25	74	-21.75	Peak
6	1854.5	V	--	-19.9	--	54	--	AVG
7	2781.75	V	55.73	-13.88	41.85	74	-32.15	Peak
8	2781.75	V	--	-13.88	--	54	--	AVG
Note: 1. Means other frequency and mode comply with standard requirements and at least have 20dB margin. 2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain. Result=Reading + Correct Factor. Margin= Result-Limit. 3. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.								

14. Band Edge (Radiated)

14.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
Spectrum analyzer	ROHDE&SCHWARZ	FSU	Aa-EE075	2025/08/04	2026/08/03
Horn Antenna	SCHWARZBECK	BBHA 9120 D	Aa-EE076	2025/08/11	2027/08/10
Test Receiver	ROHDE&SCHWARZ	ESR	Aa-EE048	2025/08/04	2026/08/03
Bilog Antenna	SCHWARZBECK	VULB 9168	Aa-EE001	2025/08/11	2027/08/10
Amplifier	SKET	LNPA_0118G-45	Aa-EE087	2025/08/04	2026/08/03
Horn Antenna	SCHWARZBECK	BBHA 9170	Aa-EE077	2025/08/11	2027/08/10
Loop Antenna	SCHWARZBECK	FMZB 1519B	Aa-EE074	2025/08/11	2027/08/10

14.2. Block diagram of test setup



14.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under [paragraph \(b\)\(3\)](#) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in [§ 15.209\(a\)](#) is not required. In addition, radiated emissions which fall in the restricted

bands, as defined in [§ 15.205\(a\)](#), must also comply with the radiated emission limits specified in [§ 15.209\(a\)](#) (see [§ 15.205\(c\)](#)).

14.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
Portable laptop	Lenovo	ThinkPad E14	/	/

14.5. Test procedure

Details see the KDB 558074 D01 15.247 Meas Guidance v05r02

- § Put the EUT on a 0.8m high table, power on the EUT. Emissions were scanned and measured rotating the EUT to 360 degrees, Find the maximum Emission
- § Check the spurious emissions out of band.
- § RBW 1MHz, VBW 3MHz, peak detector for peak value, RBW 1MHz, VBW 3MHz, RMS detector for AV value.

All restriction band and non- restriction band have been tested, only worse case is reported.

14.6. Test result

Test Site: Chamber 1#(RSE)	Test Date: 2025/08/29--2025/08/29
Condition: 22.4°C,55%RH,101kPa	Test Engineer: Yannis Wen
Memo: Only show the test data of the worst case.	

EUT Name: Smart Reader	EUT Model: Gmini-UHF
Sample No.: A2504315-S0001	Test Mode: GFSK Mode-L/H & GFSK hopping Mode
Power supply: DC 5V from Type-C	Memo: /

/

14.7. Test data

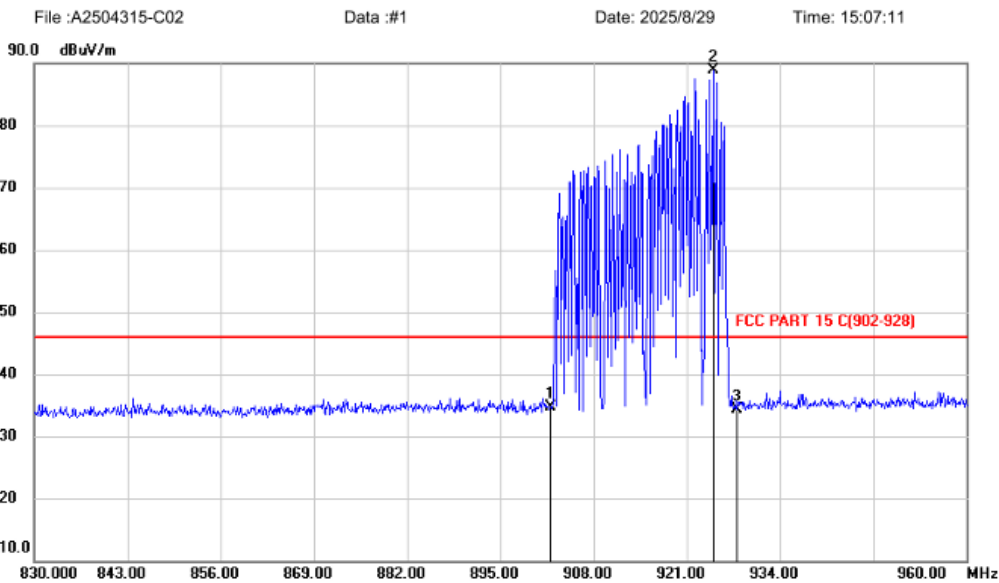


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TEL: 4008-3008-95

Site	LAB 966 Chamber 1	Polarization:	Horizontal	Temperature:	22.4
Limit:	FCC PART 15 C(902-928)	Power:	DC 5V from Type-C	Humidity:	55 %
EUT/Task No	: A2504315-C02	Distance:	3m		
M/N/Sample No:	A2504315-S0001				
Mode	: GFSK Hopping				
Note:					
Engineer Signature:	<i>Yanni3 wen</i>				

Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		902.0000	10.59	24.07	34.66	46.00	-11.34	peak		
2	*	924.7481	64.63	24.36	88.99	46.00	42.99	peak		
3		928.0000	9.83	24.39	34.22	46.00	-11.78	peak		

Note:1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

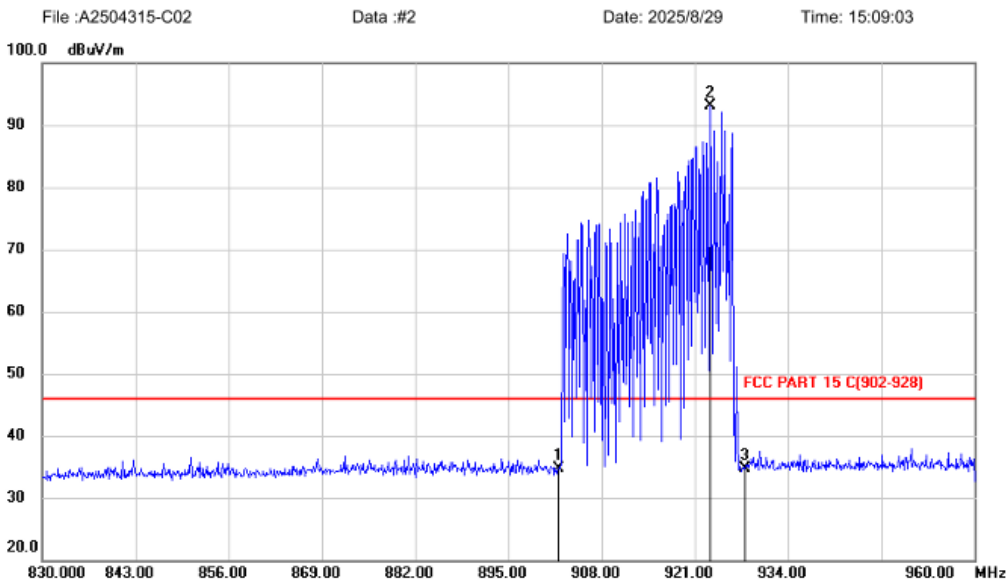


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TEL: 4008-3008-95

Site LAB 966 Chamber 1	Polarization: Vertical	Temperature: 22.4
Limit: FCC PART 15 C(902-928)	Power: DC 5V from Type-C	Humidity: 55 %
EUT/Task No : A2504315-C02	Distance: 3m	
M/N/Sample No: A2504315-S0001		
Mode : GFSK Hopping		
Note:		
Engineer Signature: <i>Yanni3 Wen</i>		

Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		902.0000	10.71	24.07	34.78	46.00	-11.22	peak		
2	*	923.2490	68.75	24.35	93.10	46.00	47.10	peak		
3		928.0000	10.39	24.39	34.78	46.00	-11.22	peak		

Note: 1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

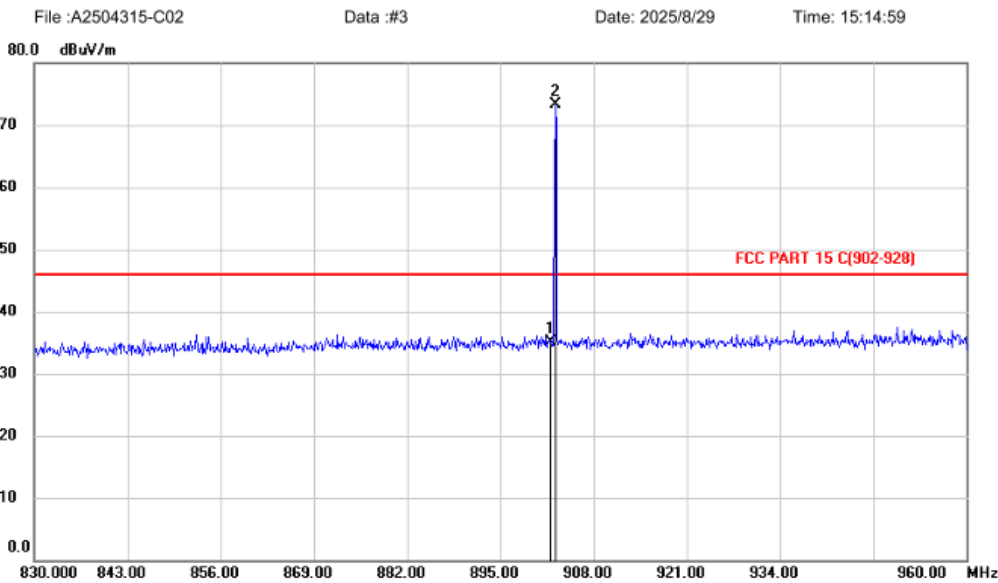


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TEL: 4008-3008-95

Site LAB 966 Chamber 1	Polarization: Vertical	Temperature: 22.4
Limit: FCC PART 15 C(902-928)	Power: DC 5V from Type-C	Humidity: 55 %
EUT/Task No : A2504315-C02	Distance: 3m	
M/N/Sample No: A2504315-S0001		
Mode : GFSK 902.75MHz		
Note:		
Engineer Signature: Yanni3 Wen		

Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		902.0000	10.98	24.07	35.05	46.00	-10.95	peak		
2	*	902.7500	49.28	24.08	73.36	46.00	27.36	peak		

Note:1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

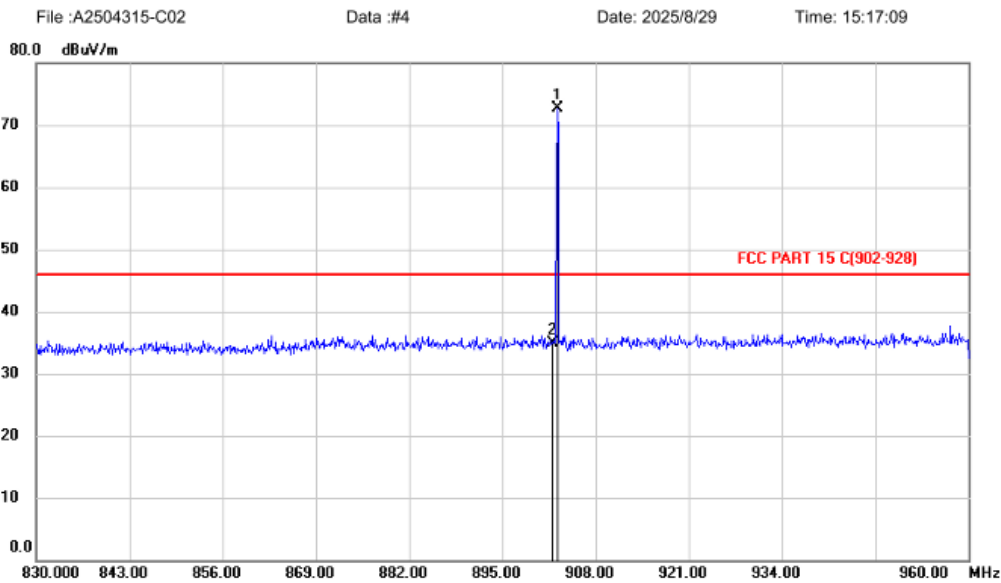


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TEL: 4008-3008-95

Site LAB 966 Chamber 1	Polarization: Horizontal	Temperature: 22.4
Limit: FCC PART 15 C(902-928)	Power: DC 5V from Type-C	Humidity: 55 %
EUT/Task No : A2504315-C02	Distance: 3m	
M/N/Sample No: A2504315-S0001		
Mode : GFSK 902.75MHz		
Note:		
Engineer Signature: <i>Yanmi3 Wen</i>		

Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree
1	*	902.7500	48.69	24.08	72.77	46.00	26.77	peak	
2		902.0000	10.86	24.07	34.93	46.00	-11.07	peak	

Note:1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

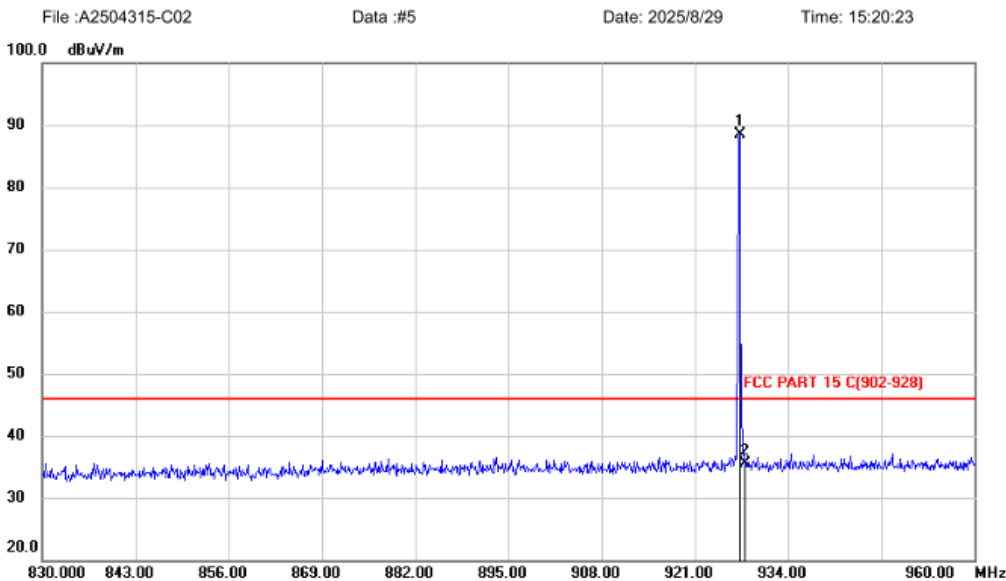


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TEL: 4008-3008-95

Site LAB 966 Chamber 1	Polarization: Horizontal	Temperature: 22.4
Limit: FCC PART 15 C(902-928)	Power: DC 5V from Type-C	Humidity: 55 %
EUT/Task No : A2504315-C02	Distance: 3m	
M/N/Sample No: A2504315-S0001		
Mode : GFSK 927.25MHz		
Note:		
Engineer Signature: <i>Yanni3 Wen</i>		

Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	927.2530	64.18	24.39	88.57	46.00	42.57	peak		
2		928.0000	11.15	24.39	35.54	46.00	-10.46	peak		

Note:1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

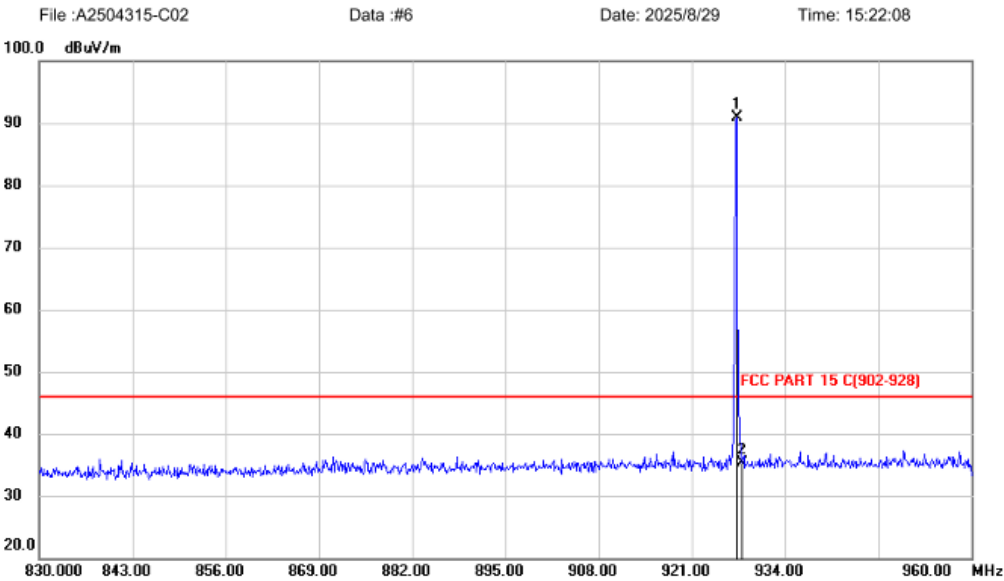


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TEL: 4008-3008-95

Site LAB 966 Chamber 1	Polarization: Vertical	Temperature: 22.4
Limit: FCC PART 15 C(902-928)	Power: DC 5V from Type-C	Humidity: 55 %
EUT/Task No : A2504315-C02	Distance: 3m	
M/N/Sample No: A2504315-S0001		
Mode : GFSK 927.25MHz		
Note:		
Engineer Signature: <i>Yanni3 wen</i>		

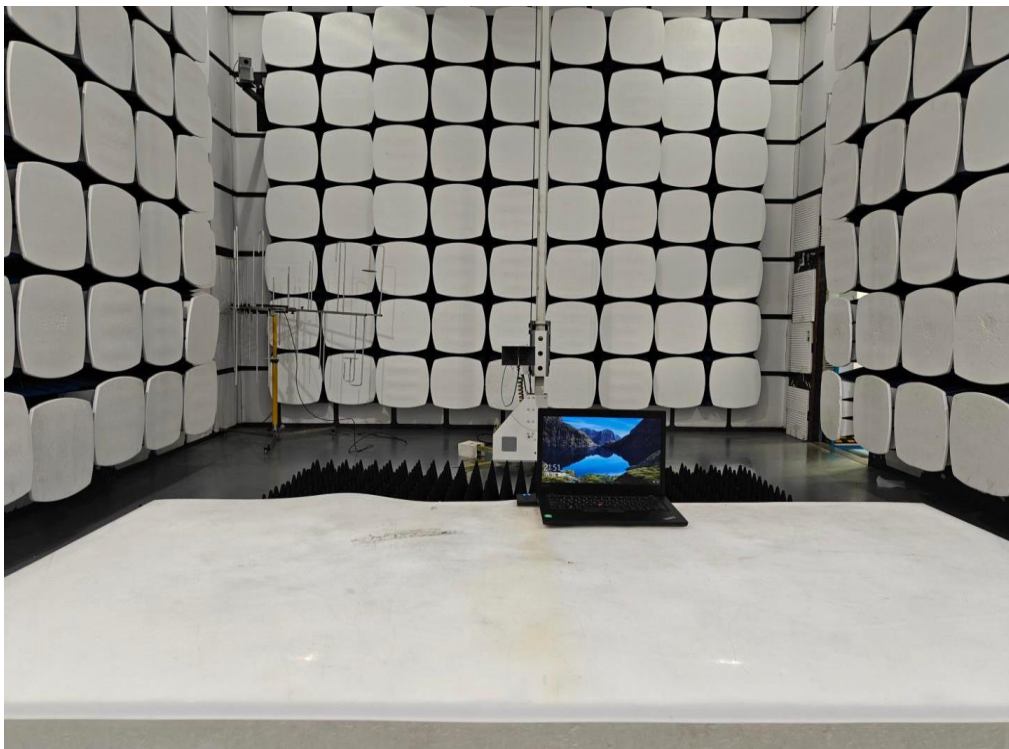
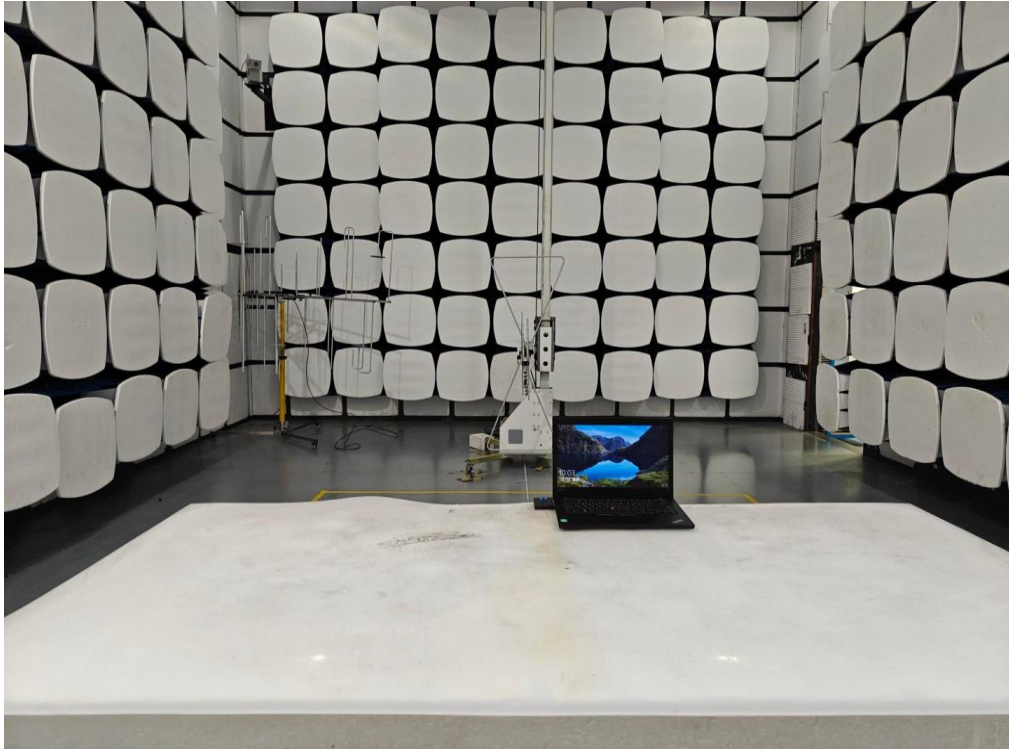
Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	927.2486	66.49	24.39	90.88	46.00	44.88	peak		
2		928.0000	10.96	24.39	35.35	46.00	-10.65	peak		

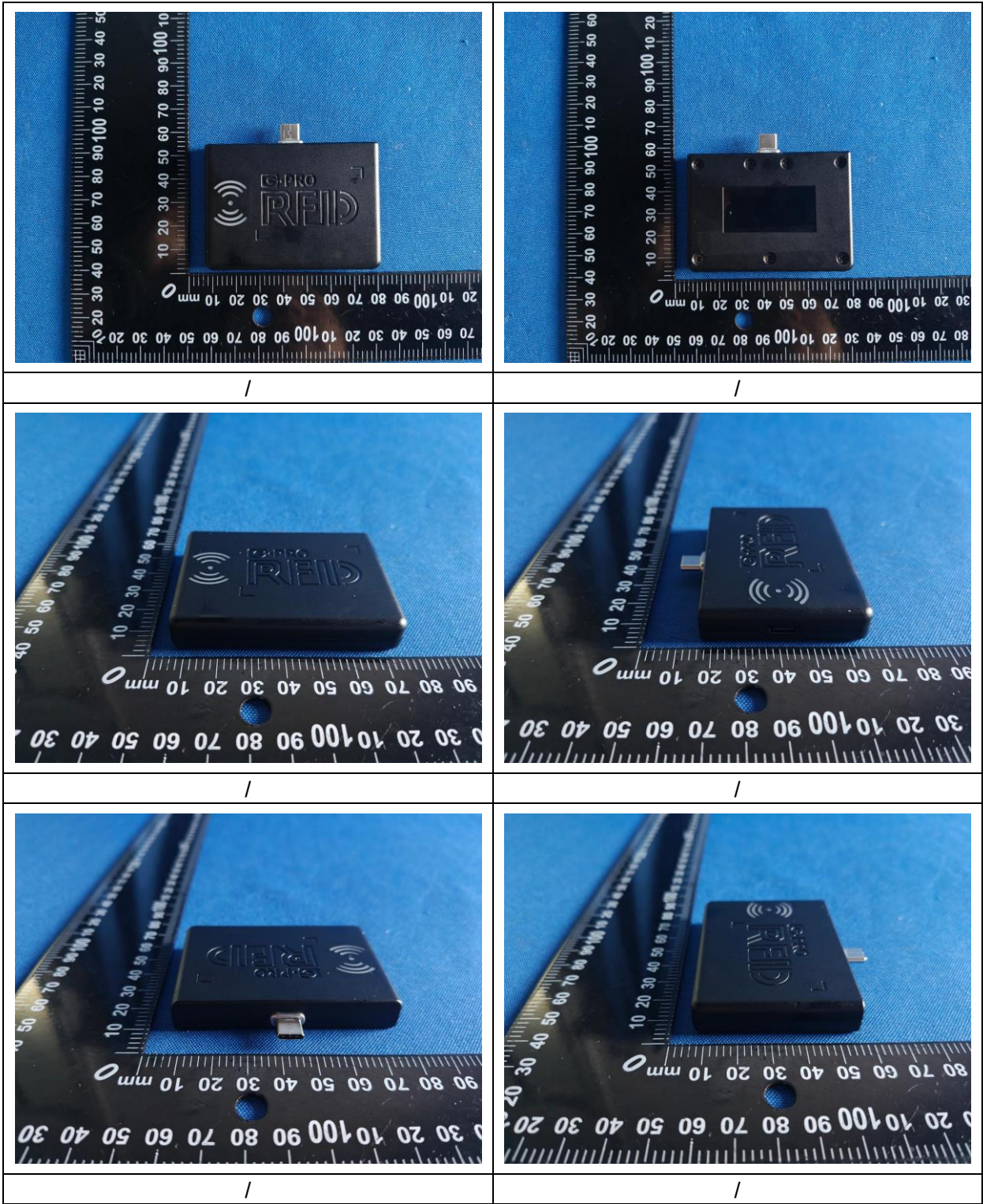
Note:1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

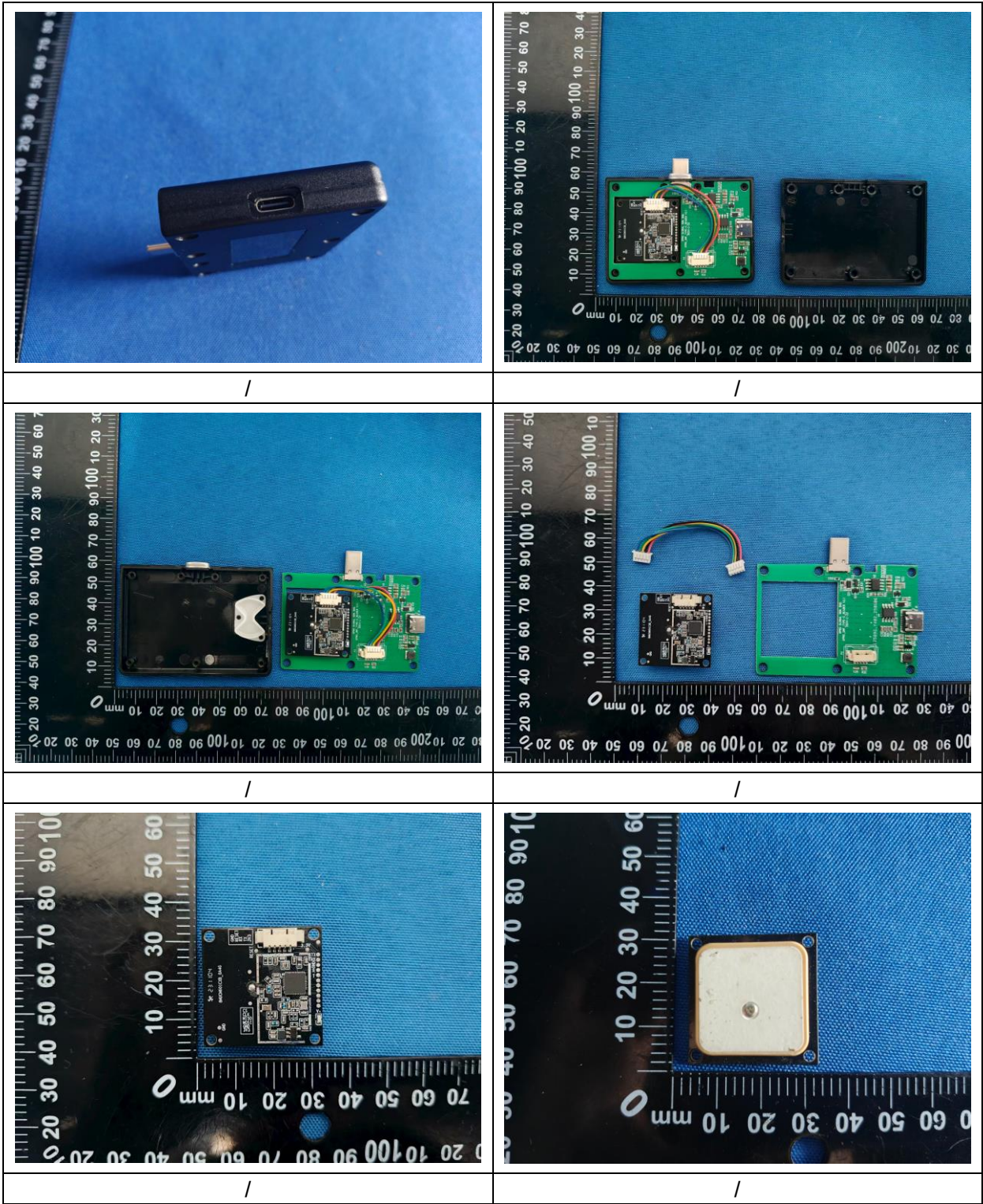
15. Test Setup Photograph

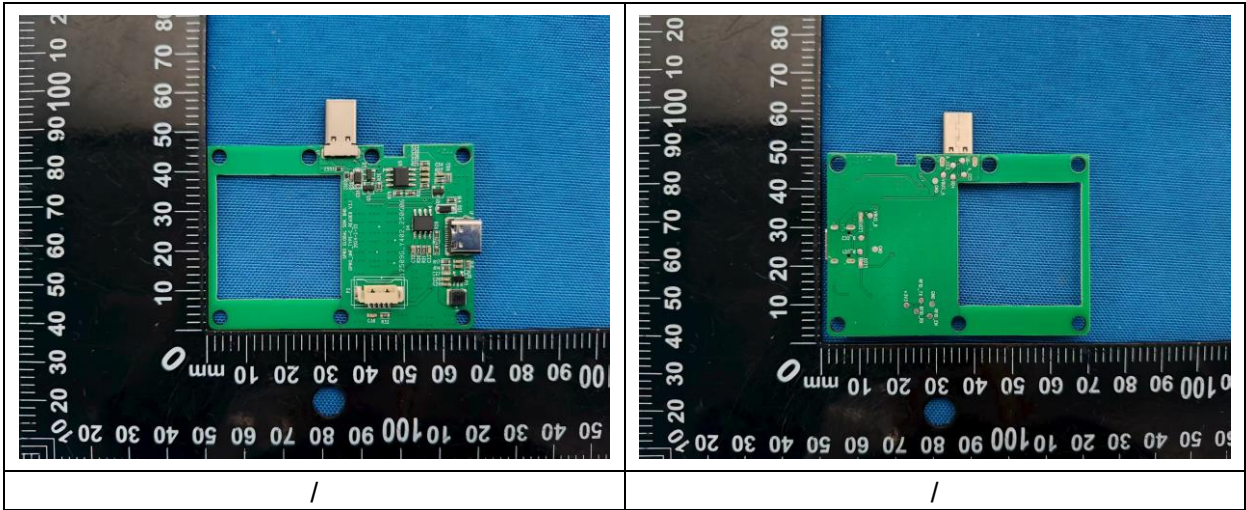




16.Photos of the EUT







-----End Report-----