



Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

FCC PART 15 SUBPART C TEST REPORT

FCC PART 15.247

Report Reference No.....: CTA26011201301

FCC ID.....: 2BU2J-ARGUS

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Date of issue.....: Apr. 07, 2026

Testing Laboratory Name: Shenzhen CTA Testing Technology Co., Ltd.

Address: Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

Applicant's name: Amazon

Address: 11501 Alterra Pkwy, Suite 200, Austin, TX 78758

Test specification

Standard: FCC Part 15.247

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Test item description: Amazon Argus

Trade Mark: N/A

Manufacturer: Amazon

Model/Type reference.....: Argus

Listed Models: N/A

Frequency.....: From 902.75MHz to 927.25MHz

Rating: Input: 12V ---4A

Result.....: PASS

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TEST REPORT

Equipment under Test : Amazon Argus

Model /Type : Argus

Listed Models : N/A

Applicant : **Amazon**

Address : 11501 Alterra Pkwy, Suite 200, Austin, TX 78758

Manufacturer : **Amazon**

Address : 11501 Alterra Pkwy, Suite 200, Austin, TX 78758

Test Result:	PASS
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The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1 TEST STANDARDS

The tests were performed according to following standards:

[FCC Rules Part 15.247](#): Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.

[ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024](#): American National Standard for Testing Unlicensed Wireless Devices

2 SUMMARY

2.1

General Remarks

Date of receipt of test sample	:	Jan. 12, 2026
Testing commenced on	:	Jan. 12, 2026
Testing concluded on	:	Apr. 07, 2026

2.2 Product Description

Product Description:	Amazon Argus
Model/Type reference:	Argus
Power supply:	Input: 12V $\overline{\text{---}}$ 4A
Adapter information:	Model: SDI50-12-U Input: AC 100-240V 50-60Hz 1.2A MAX Output: DC 12.0V 4.2A 50.4W
Hardware version:	V1.0
Software version:	V1.0
Testing sample ID:	CTA260112013-1# (Engineer sample), CTA260112013-2# (Normal sample)
RFID	
Modulation Technology:	ASK
Operation frequency:	902.75MHz-927.25MHz
Channel number:	50
Antenna type:	External antenna
Antenna gain:	3.6 dBi

2.3 Equipment Under Test

Power supply system utilised

Power supply voltage	:	☐ 230V / 50 Hz	☐ 120V / 60Hz
		☒ 12 V DC	☐ 24 V DC
		☐ Other (specified in blank below)	

2.4 Short description of the Equipment under Test (EUT)

This is an Amazon Argus.

For more details, refer to the user's manual of the EUT.

2.5 EUT configuration

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

- - supplied by the manufacturer
- - supplied by the lab

○ PC information (Auxiliary test supplied by test Lab)	Model: E470C Trade Mark: thinkpad

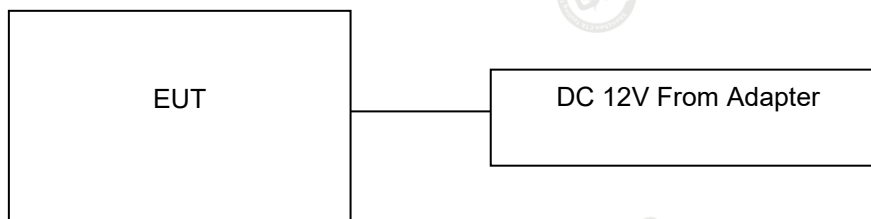
2.6 EUT operation mode

The Applicant provides communication tools software (ModuleReaderManager) to control the EUT for staying in continuous transmitting (Duty Cycle more than 98%) and receiving mode for testing. There are 50 channels provided to the EUT and Channel 01/25/50 were selected to test.

Operation Frequency:

Channel	Frequency (MHz)
01	902.75
02	903.25
⋮	⋮
24	914.25
25	914.75
26	915.25
⋮	⋮
49	926.75
50	927.25

2.7 Block Diagram of Test Setup



2.8 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for the device filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

2.9 Modifications

No modifications were implemented to meet testing criteria.

3 TEST ENVIRONMENT

3.1 Address of the test laboratory

Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

3.2 Test Facility

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

FCC-Registration No.: 517856 Designation Number: CN1318

Shenzhen CTA Testing Technology Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

A2LA-Lab Cert. No.: 6534.01

Shenzhen CTA Testing Technology Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.10 and CISPR 16-1-4:2010.

3.3 Environmental conditions

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

Radiated Emission:

Temperature:	24 ° C
Humidity:	45 %
Atmospheric pressure:	950-1050mbar

AC Power Conducted Emission:

Temperature:	25 ° C
Humidity:	46 %
Atmospheric pressure:	950-1050mbar

Conducted testing:

Temperature:	25 ° C
Humidity:	44 %
Atmospheric pressure:	950-1050mbar

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3.4 Summary of measurement results

Test Specification clause	Test case	Test Mode	Test Channel	Recorded In Report		Test result
§15.247(a)(1)	Carrier Frequency separation	ASK	☒ Lowest ☒ Middle ☒ Highest	ASK	☒ Middle	Compliant
§15.247(a)(1)	Number of Hopping channels	ASK	☒ Full	ASK	☒ Full	Compliant
§15.247(a)(1)	Time of Occupancy (dwell time)	ASK	☒ Lowest ☒ Middle ☒ Highest	ASK	☒ Middle	Compliant
§15.247(a)(1)	Spectrum bandwidth of a FHSS system 20dB bandwidth	ASK	☒ Lowest ☒ Middle ☒ Highest	ASK	☒ Lowest ☒ Middle ☒ Highest	Compliant
§15.247(b)(1)	Maximum output peak power	ASK	☒ Lowest ☒ Middle ☒ Highest	ASK	☒ Lowest ☒ Middle ☒ Highest	Compliant
§15.247(d)	Band edge compliance conducted	ASK	☒ Lowest ☒ Highest	ASK	☒ Lowest ☒ Highest	Compliant
§15.205	Band edge compliance radiated	ASK	☒ Lowest ☒ Highest	ASK	☒ Lowest ☒ Highest	Compliant
§15.247(d)	TX spurious emissions conducted	ASK	☒ Lowest ☒ Middle ☒ Highest	ASK	☒ Lowest ☒ Middle ☒ Highest	Compliant
§15.247(d)	TX spurious emissions radiated	ASK	☒ Lowest ☒ Middle ☒ Highest	ASK	☒ Lowest ☒ Middle ☒ Highest	Compliant
§15.209(a)	TX spurious Emissions radiated Below 1GHz	ASK	☒ Lowest ☒ Middle ☒ Highest	ASK	☒ Middle	Compliant
§15.107(a) §15.207	Conducted Emissions 9KHz-30 MHz	ASK	☒ Lowest ☒ Middle ☒ Highest	ASK	☒ Middle	Compliant

Remark: The measurement uncertainty is not included in the test result.

3.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2" and is documented in the Shenzhen CTA Testing Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen CTA Testing Technology Co., Ltd. :

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	9KHz~30MHz	3.02 dB	(1)
Radiated Emission	30~1000MHz	4.06 dB	(1)
Radiated Emission	1~18GHz	5.14 dB	(1)
Radiated Emission	18-40GHz	5.38 dB	(1)
Conducted Disturbance	0.15~30MHz	2.14 dB	(1)
Output Peak power	30MHz~18GHz	0.55 dB	(1)
Power spectral density	/	0.57 dB	(1)
Spectrum bandwidth	/	1.1%	(1)

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Radiated spurious emission (30MHz-1GHz)	30~1000MHz	4.10 dB	(1)
Radiated spurious emission (1GHz-18GHz)	1~18GHz	4.32 dB	(1)
Radiated spurious emission (18GHz-40GHz)	18-40GHz	5.54 dB	(1)
Time	/	± 2%	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.6 Equipments Used during the Test

Item.	Test Equipment	Manufacturer	Model No.	Equipment No.	Calibration Date	Calibration Due Date
AC Conducted Test Equipment						
☒ 1	LISN	R&S	ENV216	CTA-308	2025/08/04	2026/08/03
☒ 2	LISN	R&S	ENV216	CTA-314	2025/07/30	2026/07/29
☒ 3	EMI Test Receiver	R&S	ESPI	CTA-307	2025/07/30	2026/07/29
☒ 4	CE Cable	SKET	RF Cable (9kHz-30MHz)	CTA-367	2025/07/30	2026/07/29
☒ 5	Temperature and humidity meter	Chigo	ZG-7020	CTA-327	2025/07/31	2026/07/30
☒ 6	EMI Test Software	Tonscend	TS@JS32-CE	5.0.0.1	N/A	N/A
RF Radiation Test Equipment						
☒ 1	EMI Test Receiver	R&S	ESCI	CTA-306	2025/07/30	2026/07/29
☒ 2	Spectrum analyzer	R&S	FSV40-N	CTA-344	2025/05/17	2026/05/16
☒ 3	Ultra-Broadband Antenna	Schwarzbeck	VULB9163	CTA-310	2023/10/17	2026/10/16
☒ 4	Horn Antenna	Schwarzbeck	BBHA 9120D	CTA-309	2023/10/13	2026/10/12
☒ 5	Loop Antenna	Zhinan	ZN30900C	CTA-311	2023/10/17	2026/10/16
☒ 6	Horn Antenna	Schwarzbeck	BBHA 9170	CTA-346	2025/05/18	2028/05/17
☒ 7	Amplifier	Schwarzbeck	BBV9745	CTA-312	2025/07/30	2026/07/29
☒ 8	Amplifier	Tonscend	TAP-011840	CTA-313	2025/07/30	2026/07/29
☒ 9	Amplifier	SKET	LNPA 1840G-50	CTA-345	2025/05/17	2026/05/16
☒ 10	6dB attenuator	Shanghaihuaxiang	GZL-TS5-6-6	CTA-347	2025/05/17	2026/05/16
☒ 11	RF cable	SKET	RF Cable (9kHz-1GHz)	CTA-360	2025/09/25	2026/09/24
☒ 12	RF cable	SKET	RF Cable (1GHz-18GHz)	CTA-361	2025/09/25	2026/09/24
☒ 13	Coaxialcable (1GHz-40GHz)	SKET	RE-04-D	CTA-348	2025/05/20	2026/05/19
☒ 14	Coaxialcable (1GHz-40GHz)	SKET	RE-04-M	CTA-349	2025/05/20	2026/05/19
☒ 15	Coaxialcable (1GHz-40GHz)	SKET	RE-04-L	CTA-350	2025/05/20	2026/05/19
☒ 16	Temperature and humidity meter	Chigo	ZG-7020	CTA-328	2025/07/31	2026/07/30
☐ 17	2.4GFilter	HX Microwave	HXLBQ-DZA61	CTA-365	2025/07/31	2026/07/30
☐ 18	5GFilter	CONCEPT	CNF05150M058 50Q16A	CTA-366	2025/07/31	2026/07/30
☐ 19	High-Pass Filter	XingBo	XBLBQ-GTA18	CTA-402	2025/07/30	2026/07/29
☐ 20	High-Pass Filter	XingBo	XBLBQ-GTA27	CTA-403	2025/07/30	2026/07/29
☒ 21	High-Pass Filter	XingBo	XBLBQ-GTA10	CTA-364	2025/07/30	2026/07/29
☒ 22	EMI Test Software	Tonscend	TS@JS32-RE	5.0.0.2	N/A	N/A
RF Conducted Test Equipment						

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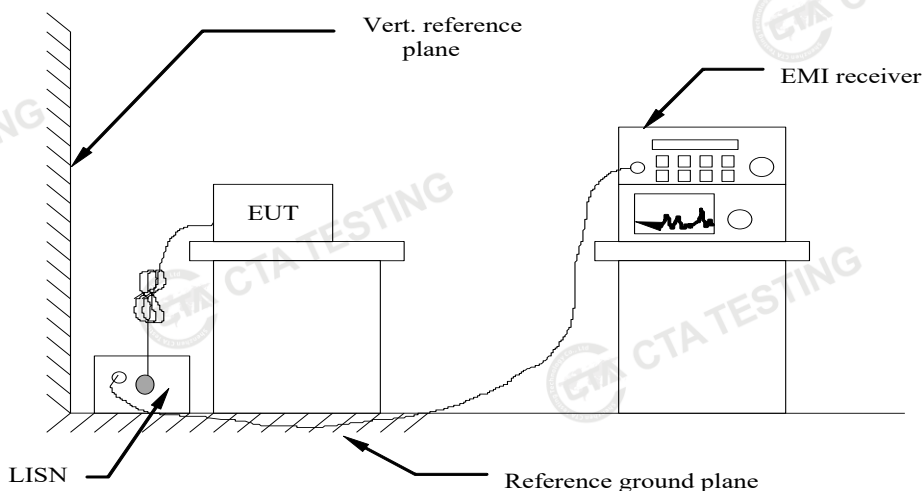
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☒ 1	Spectrum Analyzer	Agilent	N9020A	CTA-342	2025/07/30	2026/07/29
☐ 2	Spectrum analyzer	R&S	FSV40-N	CTA-344	2025/05/17	2026/05/16
☒ 3	RF Coaxial Cable	SKET	RF Cable (9kHz-40GHz)	CTA-368	2025/07/30	2026/07/29
☒ 4	Temperature and humidity meter	ZG-7020	Chigo	CTA-329	2025/07/31	2026/07/30
☐ 5	Programmable Constant Temperature And Humidity Test Chamber	DONGGUAN JINGYU	HT-H-408	CTA-053	2025/07/30	2026/07/29
☐ 6	Vector Signal generator	Agilent	N5182A	CTA-305	2025/07/30	2026/07/29
☐ 7	Analog Signal Generator	R&S	E4421B	CTA-304	2025/07/30	2026/07/29
☐ 8	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW500	CTA-302	2025/07/30	2026/07/29
☒ 9	Automatic control unit	Tonscend	JS0806-2	CTA-351	2025/07/30	2026/07/29
☒ 10	RF Test Software	Tonscend	TS@JS1120-3	3.1.65	N/A	N/A
☒ 11	RF Test Software	Tonscend	TS@JS1120	3.1.46	N/A	N/A
☒ 12	RF Connection Cable	N/A	N/A	1#	Each time	N/A

4 TEST CONDITIONS AND RESULTS

4.1 AC Power Conducted Emission

TEST CONFIGURATION



TEST PROCEDURE

- 1 The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. 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 C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024.
- 2 Support equipment, if needed, was placed as per ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024
- 3 All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024
- 4 The EUT received power from adapter, the adapter received AC120V/60Hz and AC 240V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5 All support equipments received AC power from a second LISN, if any.
- 6 The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7 Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
- 8 During the above scans, the emissions were maximized by cable manipulation.

AC Power Conducted Emission Limit

For intentional device, according to § 15.207(a) AC Power Conducted Emission Limits is as following :

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

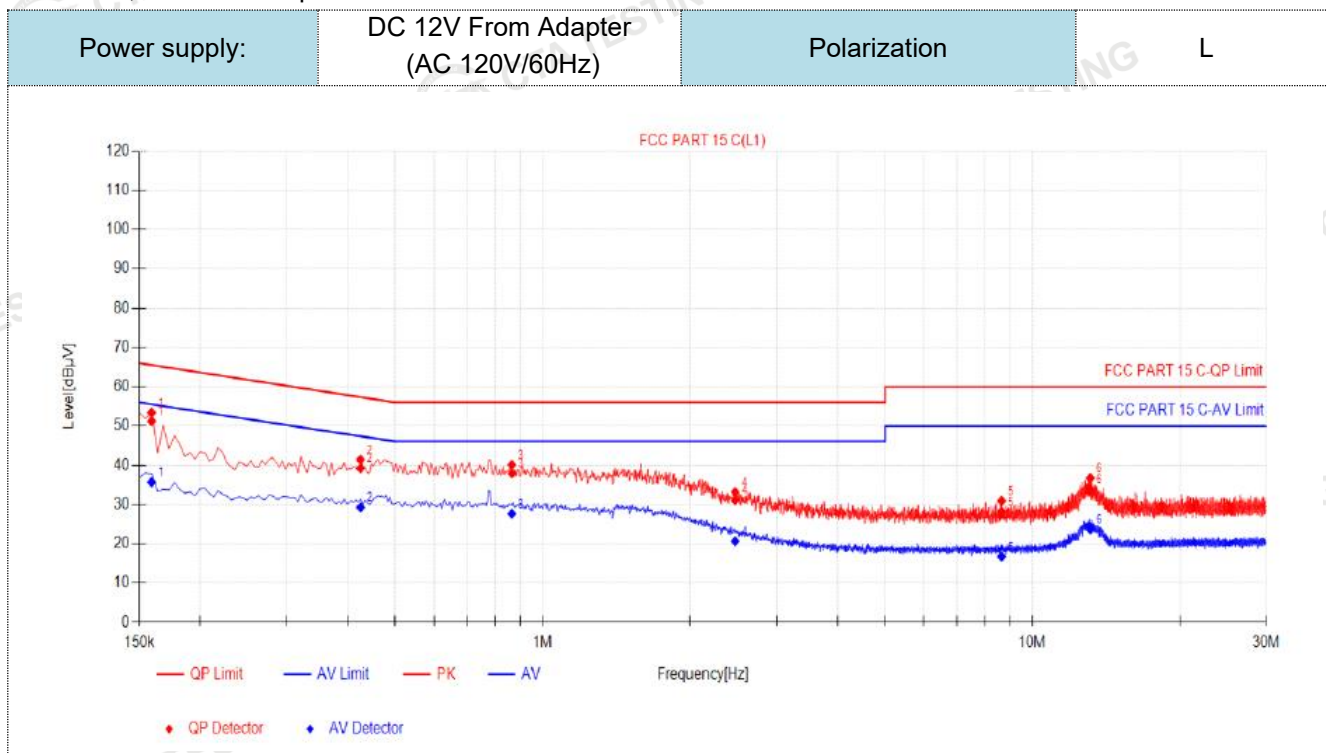
TEST RESULTS

Remark:

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1. RFID were test at Low, Middle, and High channel; only the worst result of RFID Middle Channel was reported as below:
2. Both 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz power supply have been tested, only the worst result of 120 VAC, 60 Hz was reported as below:



Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dB μV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.159	9.94	41.28	51.22	65.52	14.30	25.73	35.67	55.52	19.85	PASS
2	0.4245	10.13	29.08	39.21	57.36	18.15	19.10	29.23	47.36	18.13	PASS
3	0.8655	10.43	27.46	37.89	56.00	18.11	17.20	27.63	46.00	18.37	PASS
4	2.472	10.55	20.47	31.02	56.00	24.98	10.09	20.64	46.00	25.36	PASS
5	8.6505	11.35	16.83	28.18	60.00	31.82	5.36	16.71	50.00	33.29	PASS
6	13.1325	11.98	21.93	33.91	60.00	26.09	11.66	23.64	50.00	26.36	PASS

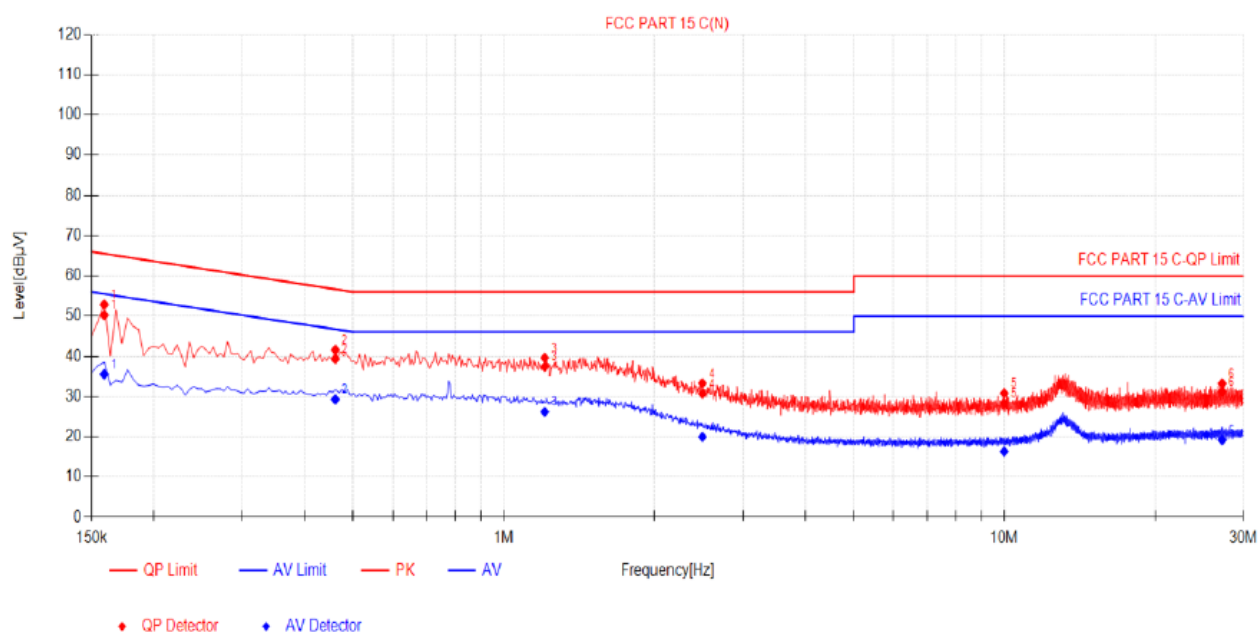
Note:1).QP Value (dBμV)= QP Reading (dBμV)+ Factor (dB)

2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)

3). QPMargin(dB) = QP Limit (dBμV) - QP Value (dBμV)

4). AVMargin(dB) = AV Limit (dBμV) - AV Value (dBμV)

Power supply:	DC 12V From Adapter (AC 120V/60Hz)	Polarization	N
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Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading [dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.159	9.88	40.37	50.25	65.52	15.27	25.63	35.51	55.52	20.01	PASS
2	0.4605	10.23	29.10	39.33	56.68	17.35	19.03	29.26	46.68	17.42	PASS
3	1.2075	10.39	26.98	37.37	56.00	18.63	15.78	26.17	46.00	19.83	PASS
4	2.4945	10.53	20.12	30.65	56.00	25.35	9.41	19.94	46.00	26.06	PASS
5	9.996	11.61	16.74	28.35	60.00	31.65	4.70	16.31	50.00	33.69	PASS
6	27.24	13.60	17.55	31.15	60.00	28.85	5.58	19.18	50.00	30.82	PASS

Note:1). QP Value (dBμV) = QP Reading (dBμV) + Factor (dB)

2). Factor (dB) = insertion loss of LISN (dB) + Cable loss (dB)

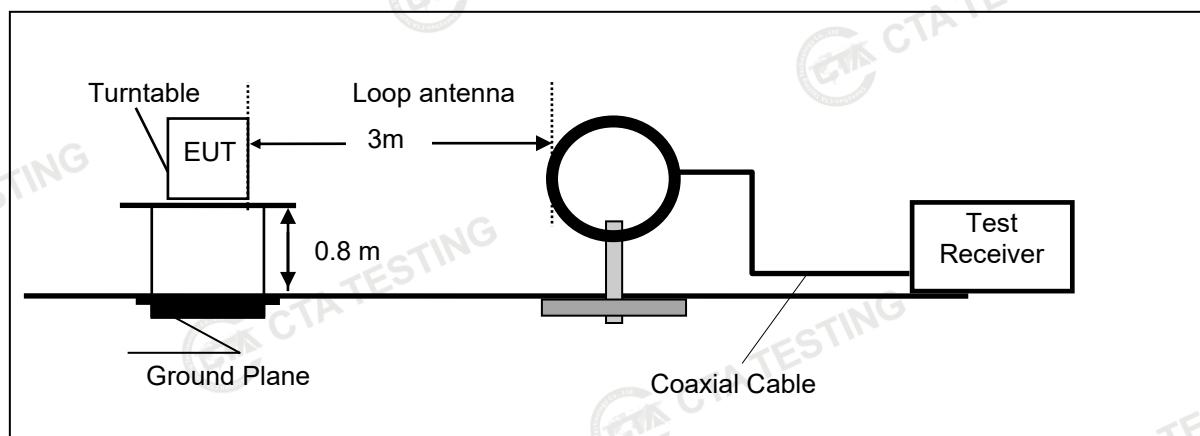
3). QPMargin (dB) = QP Limit (dBμV) - QP Value (dBμV)

4). AVMargin (dB) = AV Limit (dBμV) - AV Value (dBμV)

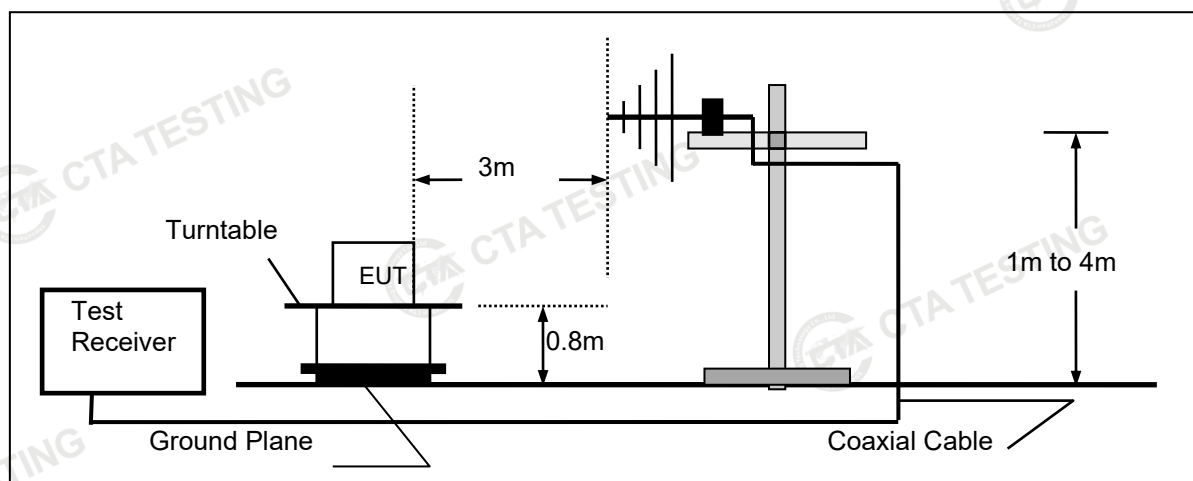
4.2 Radiated Emission

TEST CONFIGURATION

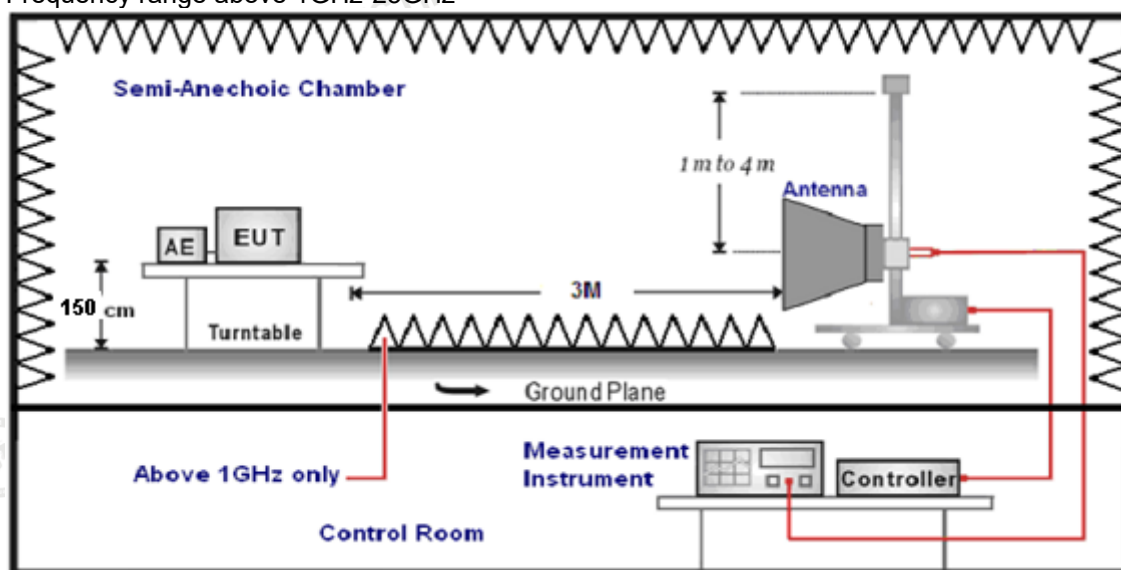
Frequency range 9 KHz – 30MHz



Frequency range 30MHz – 1000MHz



Frequency range above 1GHz-25GHz



TEST PROCEDURE

1. The EUT was placed on a turn table which is 0.8m above ground plane when testing frequency range 9 KHz –1GHz;the EUT was placed on a turn table which is 1.5m above ground plane when testing frequency range 1GHz – 25GHz.
2. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0° to 360° to acquire the highest emissions from EUT.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measurements have been completed.
5. Radiated emission test frequency band from 9KHz to 25GHz.
6. The distance between test antenna and EUT as following table states:

Test Frequency range	Test Antenna Type	Test Distance
9KHz-30MHz	Active Loop Antenna	3
30MHz-1GHz	Ultra-Broadband Antenna	3
1GHz-18GHz	Double Ridged Horn Antenna	3
18GHz-25GHz	Horn Antenna	1

7. Setting test receiver/spectrum as following table states:

Test Frequency range	Test Receiver/Spectrum Setting	Detector
9KHz-150KHz	RBW=200Hz/VBW=3KHz, Sweep time=Auto	QP
150KHz-30MHz	RBW=9KHz/VBW=100KHz, Sweep time=Auto	QP
30MHz-1GHz	RBW=120KHz/VBW=1000KHz, Sweep time=Auto	QP
1GHz-40GHz	Peak Value: RBW=1MHz/VBW=3MHz, Sweep time=Auto Average Value: RBW=1MHz/VBW=10Hz, Sweep time=Auto	Peak

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude	AG = Amplifier Gain
AF = Antenna Factor	

$$\text{Transd} = AF + CL - AG$$

RADIATION LIMIT

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emission from intentional radiators at a distance of 3 meters shall not exceed the following table. According to § 15.247(d), in any 100kHz bandwidth outside the frequency band in which the EUT is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of desired power.

The pre-test have done for the EUT in three axes and found the worst emission at position shown in test setup photos.

Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
0.009-0.49	3	$20\log(2400/F(\text{KHz})) + 40\log(300/3)$	$2400/F(\text{KHz})$
0.49-1.705	3	$20\log(24000/F(\text{KHz})) + 40\log(30/3)$	$24000/F(\text{KHz})$
1.705-30	3	$20\log(30) + 40\log(30/3)$	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

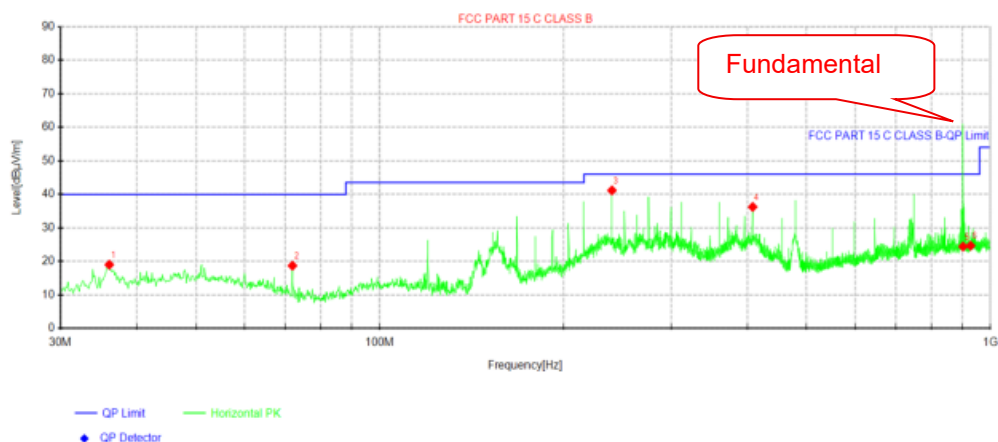
Shenzhen CTA Testing Technology Co., Ltd.

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TEST RESULTS

Remark:

1. This test was performed with EUT in X, Y, Z position and the worse case was found when EUT in X position.
2. For below 1GHz testing recorded worst at RFID Low channel.
3. Radiated emission test from 9 KHz to 10th harmonic of fundamental was verified, and no emission found except system noise floor in 9 KHz to 30MHz and not recorded in this report.

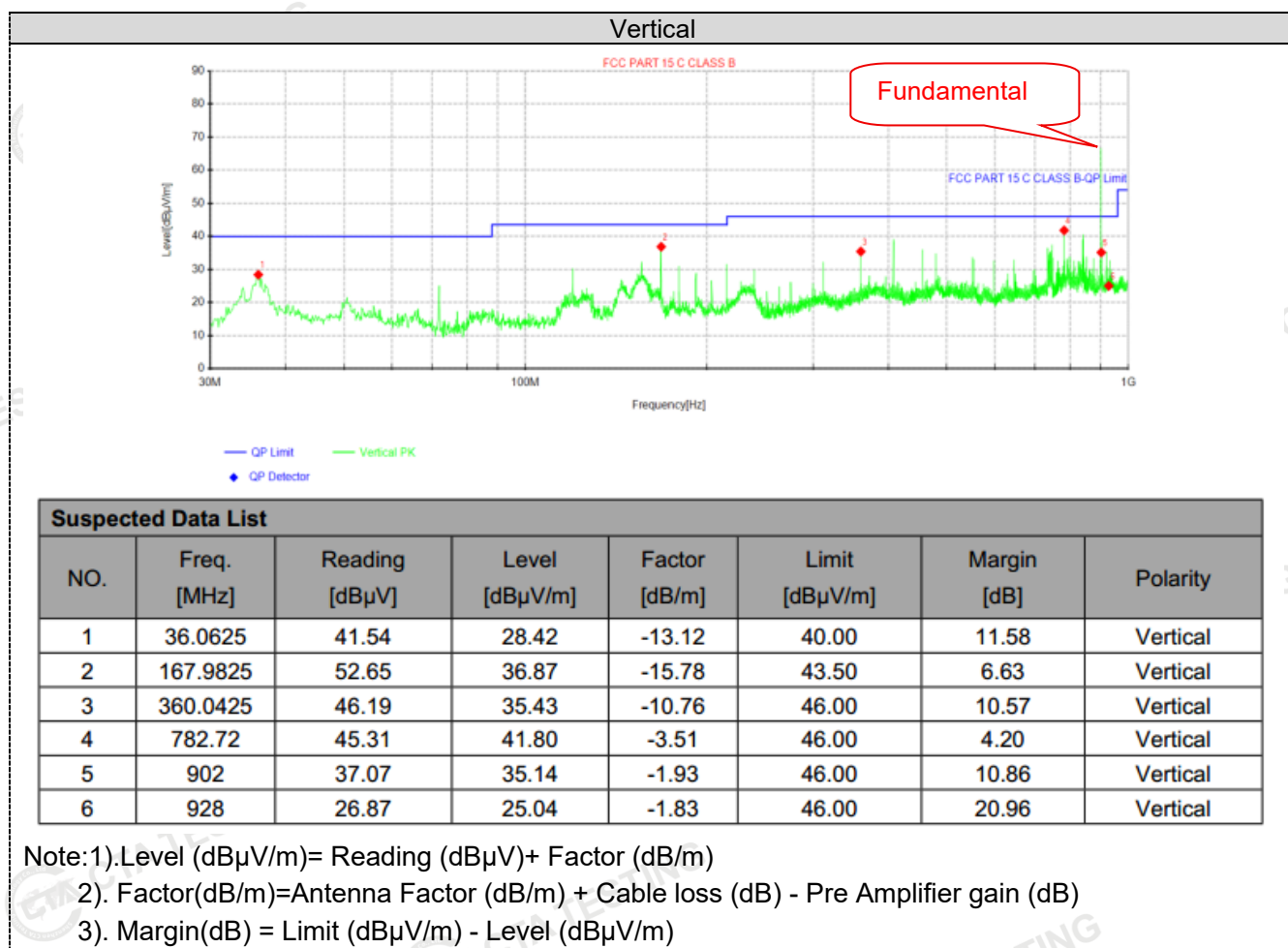
For 30MHz-1GHz**Horizontal****Suspected Data List**

NO.	Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	36.0625	32.13	19.01	-13.12	40.00	20.99	Horizontal
2	71.9525	34.52	18.72	-15.80	40.00	21.28	Horizontal
3	240.005	54.38	41.17	-13.21	46.00	4.83	Horizontal
4	408.0575	46.21	36.24	-9.97	46.00	9.76	Horizontal
5	902	26.36	24.43	-1.93	46.00	21.57	Horizontal
6	928	26.51	24.68	-1.83	46.00	21.32	Horizontal

Note:1).Level (dBμV/m)= Reading (dBμV)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBμV/m) - Level (dBμV/m)



For 1GHz to 10GHz

Frequency(MHz):			902.75		Polarity:		HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1805.5	50.22	PK	74	23.78	74.41	25.62	4.03	53.84	-24.19
1805.5	49.63	AV	54	4.37	73.82	25.62	4.03	53.84	-24.19
2708.25	50.64	PK	74	23.36	70.99	29.02	4.35	53.72	-20.35
2708.25	47.45	AV	54	6.55	67.80	29.02	4.35	53.72	-20.35

Frequency(MHz):			902.75		Polarity:		VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1805.5	48.78	PK	74	25.22	72.97	25.62	4.03	53.84	-24.19
1805.5	48.83	AV	54	5.17	73.02	25.62	4.03	53.84	-24.19
2708.25	48.69	PK	74	25.31	69.04	29.02	4.35	53.72	-20.35
2708.25	45.90	AV	54	8.10	66.25	29.02	4.35	53.72	-20.35

Frequency(MHz):			914.75		Polarity:		HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1829.5	49.87	PK	74	24.13	73.94	25.72	4.07	53.86	-24.07
1829.5	49.26	AV	54	4.74	73.33	25.72	4.07	53.86	-24.07
2744.25	50.29	PK	74	23.71	70.55	29.09	4.35	53.7	-20.26
2744.25	47.26	AV	54	6.74	67.52	29.09	4.35	53.7	-20.26

Frequency(MHz):			914.75		Polarity:		VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1829.5	48.46	PK	74	25.54	72.53	25.72	4.07	53.86	-24.07
1829.5	48.25	AV	54	5.75	72.32	25.72	4.07	53.86	-24.07
2744.25	49.40	PK	74	24.60	69.66	29.09	4.35	53.7	-20.26
2744.25	46.24	AV	54	7.76	66.50	29.09	4.35	53.7	-20.26

Frequency(MHz):			927.25		Polarity:		HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1854.5	49.55	PK	74	24.45	73.51	25.82	4.1	53.88	-23.96
1854.5	48.64	AV	54	5.36	72.60	25.82	4.1	53.88	-23.96
2781.75	49.97	PK	74	24.03	70.21	29.1	4.35	53.69	-20.24
2781.75	46.48	AV	54	7.52	66.72	29.1	4.35	53.69	-20.24

Frequency(MHz):			927.25		Polarity:		VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1854.5	48.03	PK	74	25.97	71.99	25.82	4.1	53.88	-23.96
1854.5	47.74	AV	54	6.26	71.70	25.82	4.1	53.88	-23.96
2781.75	49.20	PK	74	24.80	69.44	29.1	4.35	53.69	-20.24
2781.75	45.99	AV	54	8.01	66.23	29.1	4.35	53.69	-20.24

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REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier
3. Margin value = Limit value - Emission level.
4. -- Mean the PK detector measured value is below average limit.
5. The other emission levels were very low against the limit.

4.3 Maximum Peak Output Power

Limit

The Maximum Peak Output Power Measurement is 1W (30dBm).

Test Procedure

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

Test Configuration



Test Results

Channel	Output power (dBm)	Limit (dBm)	Result
CH01	28.516	30.0	Pass
CH25	28.488		
CH50	28.436		

Note: 1.The test results including the cable loss.

4.4 20dB Bandwidth

Limit

For frequency hopping systems operating in the 902MHz-928MHz no limit for 20dB bandwidth.

Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30 KHz RBW and 100 KHz VBW.

The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

Test Configuration



Test Results

Channel	20dB bandwidth (MHz)	Result
CH01	0.07012	Pass
CH25	0.06997	
CH50	0.07015	

Test plot as follows:

ASK



CH01



CH25



CH50

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4.5 Frequency Separation

LIMIT

According to 15.247(a)(1), frequency hopping systems shall have hopping channel carrier frequencies separated by minimum of 25KHz or the 20dB bandwidth of the hopping channel, whichever is greater.

TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30 KHz RBW and 100 KHz VBW.

TEST CONFIGURATION



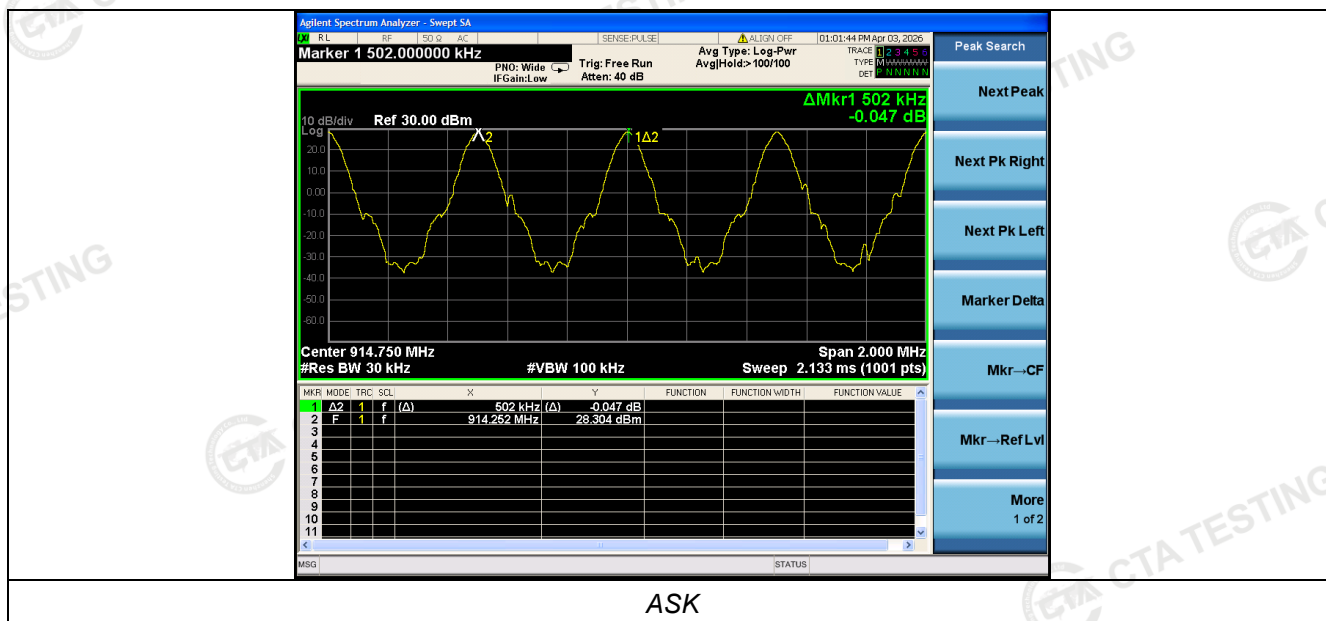
TEST RESULTS

Channel	Channel Separation (MHz)	Limit(MHz)	Result
CH24	0.502	25KHz or 20dB bandwidth	Pass
CH25			

Note:

We have tested all mode at high, middle and low channel, and recorded worst case at middle

Test plot as follows:



ASK

4.6 Number of hopping frequency

Limit

≥50 For Frequency hopping systems in the 902–928MHz band

Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. Set spectrum analyzer start 903MHz to 906MHz with 100 KHz RBW and 300 KHz VBW.

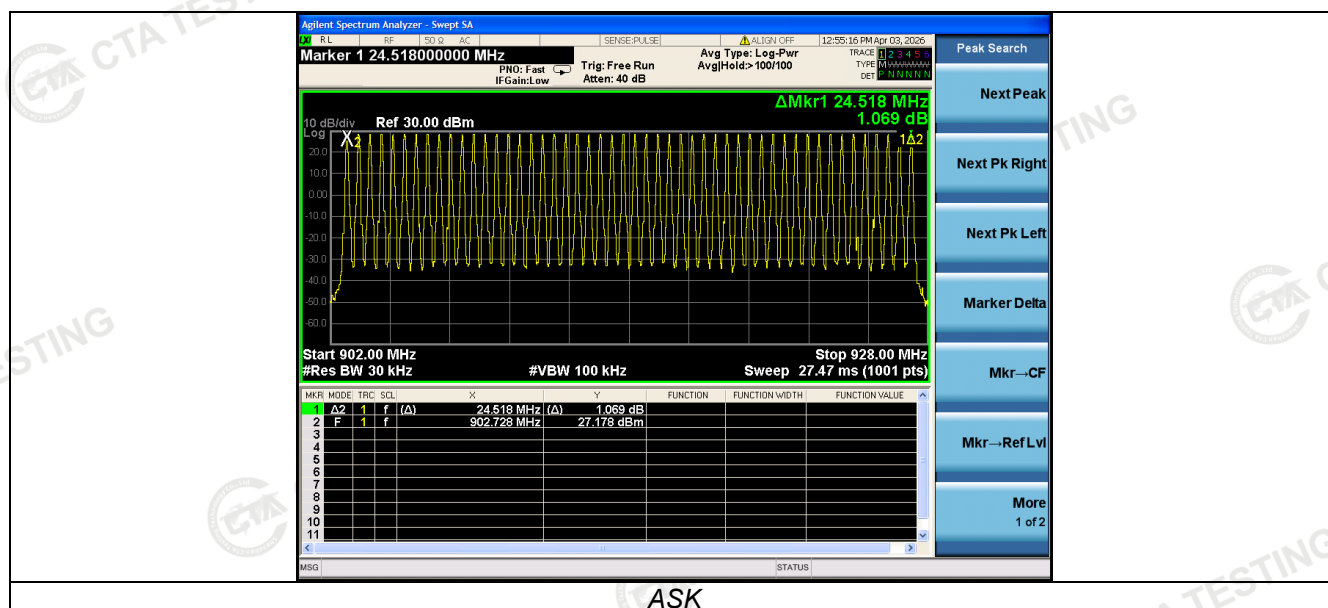
Test Configuration



Test Results

Number of Hopping Channel	Limit	Result
50	≥50	Pass

Test plot as follows:



ASK

4.7 Time of Occupancy (Dwell Time)

Limit

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. Set center frequency of spectrum analyzer=operating frequency with 1MHz RBW and 1MHz VBW, Span 0Hz.

Test Configuration



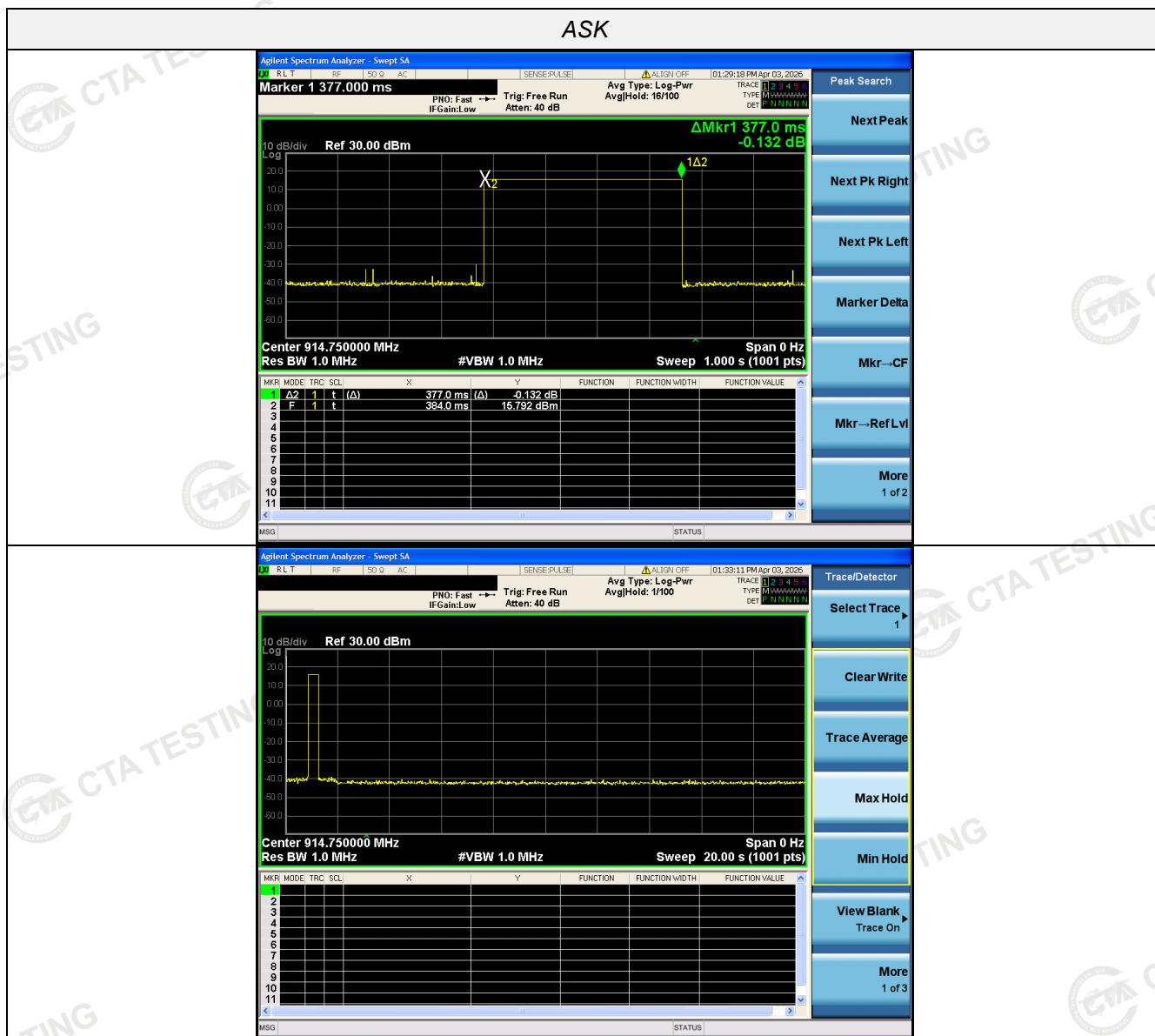
Test Results

CH	Burst time (s)	Dwell time (s)	Limit (s)	Result
25	0.377	0.377	0.40	Pass

Note: We have tested all mode at high, middle and low channel, and recorded worst case at middle channel.

Test plot as follows:

ASK



4.8 Out-of-band Emissions

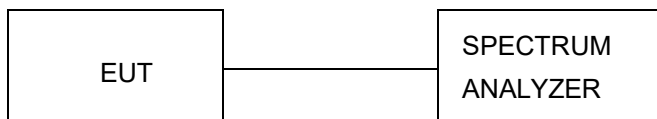
Limit

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.

Test Procedure

Connect the transmitter output to spectrum analyzer using a low loss RF cable, and set the spectrum analyzer to RBW=100 kHz, VBW= 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, band edge and out-of-band emissions.

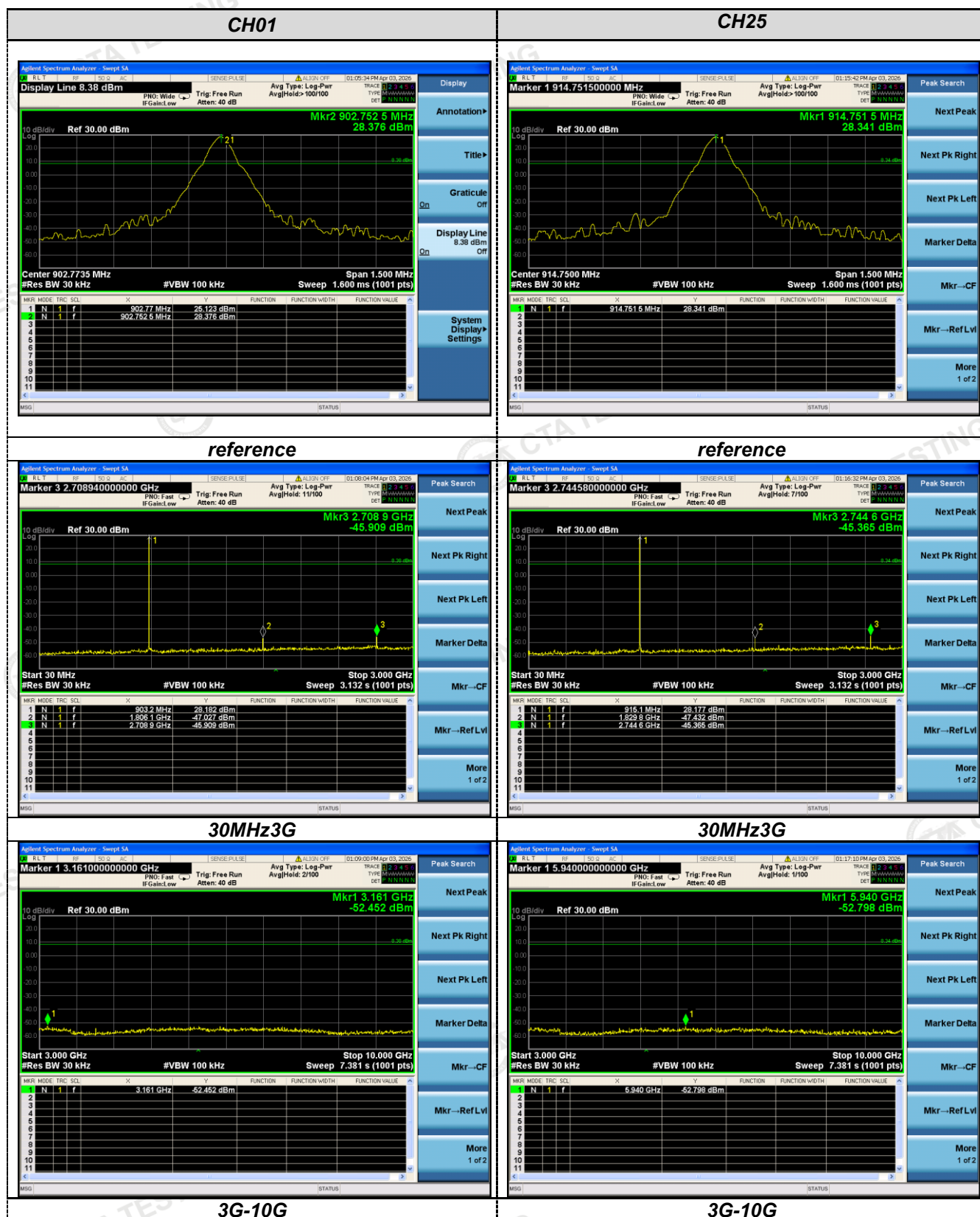
Test Configuration



Test Results

Remark: The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and band edge measurement data.

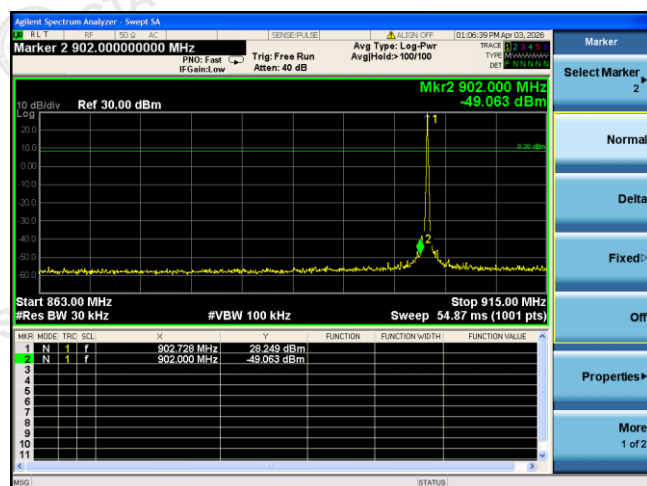
Test plot as follows:



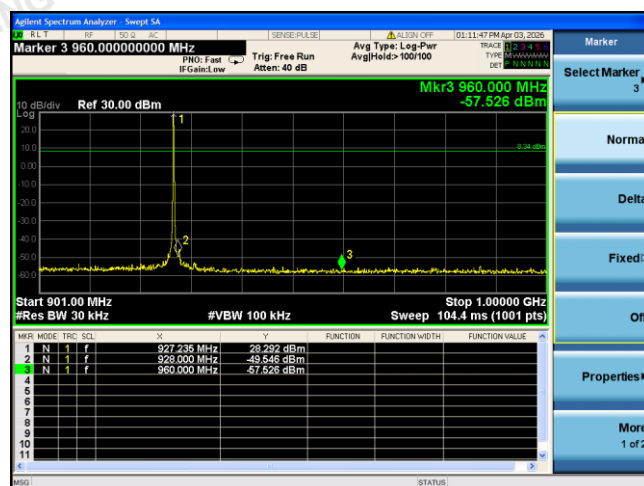


Band-edge Measurements for RF Conducted Emissions:

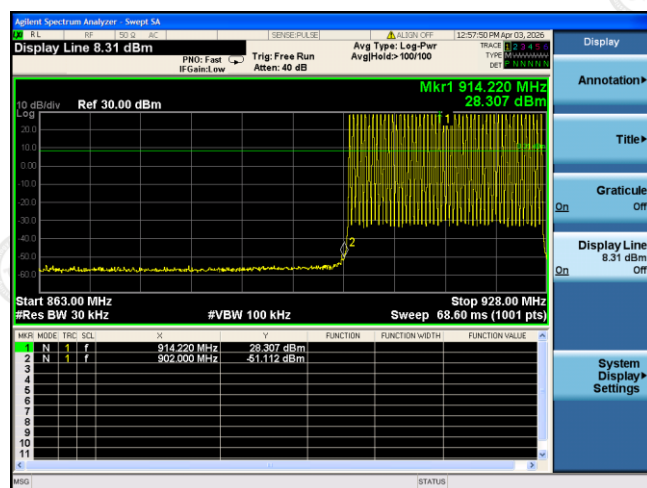
ASK



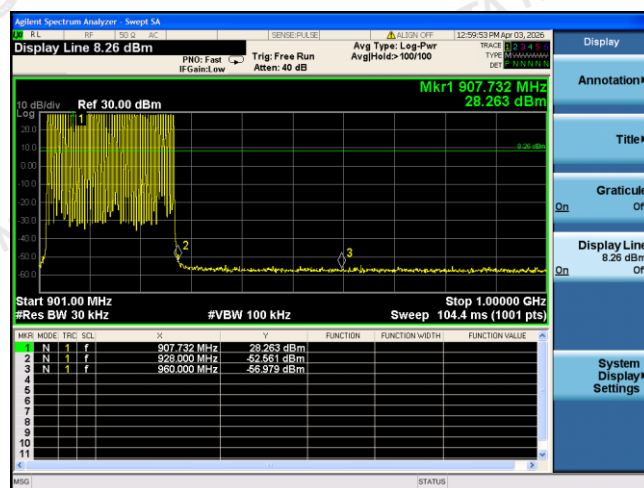
Left Band edge hopping off



Right Band edge hopping off



Left Band edge hopping on



Right Band edge hopping on

4.9 Antenna Requirement

Standard Applicable

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 (c), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

Refer to statement below for compliance

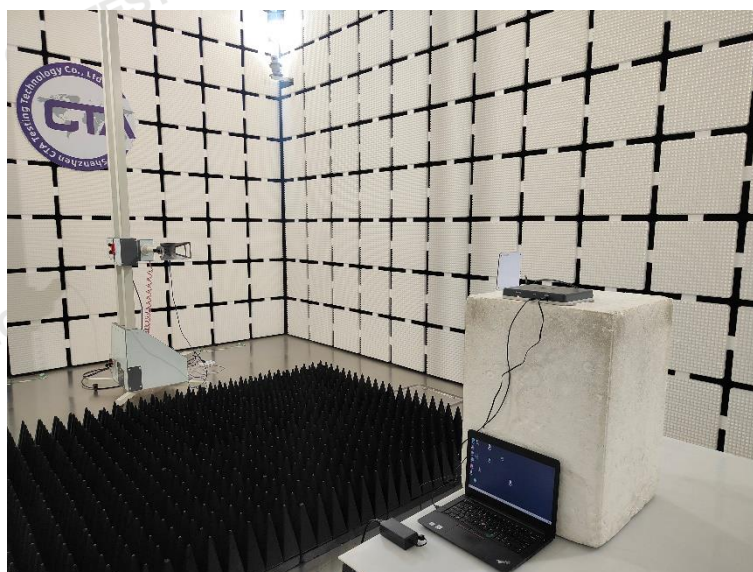
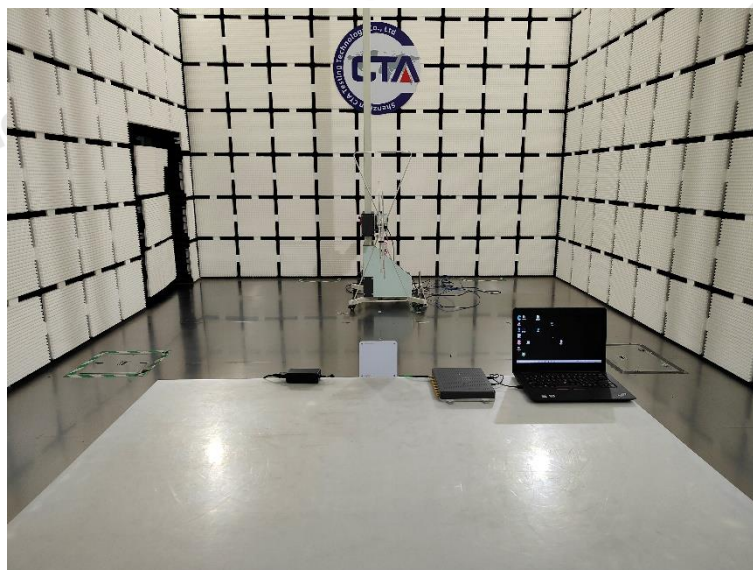
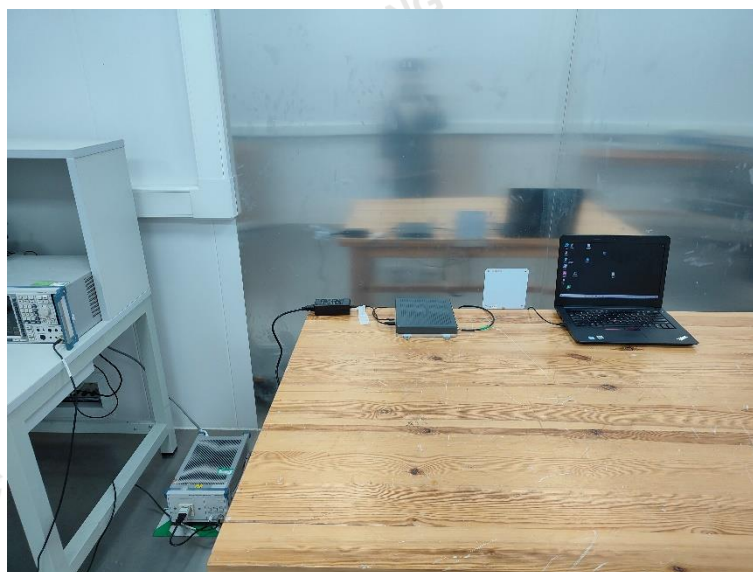
The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

Antenna Connected Construction

The maximum gain of antenna was 3.6 dBi .

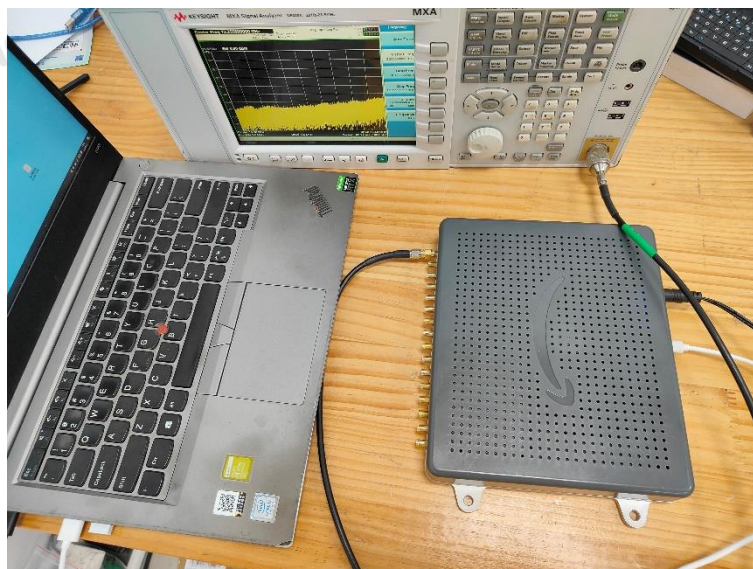
Remark: The antenna gain is provided by the customer , if the data provided by the customer is not accurate, Shenzhen CTA Testing Technology Co., Ltd. does not assume any responsibility.

5 Test Setup Photos of the EUT

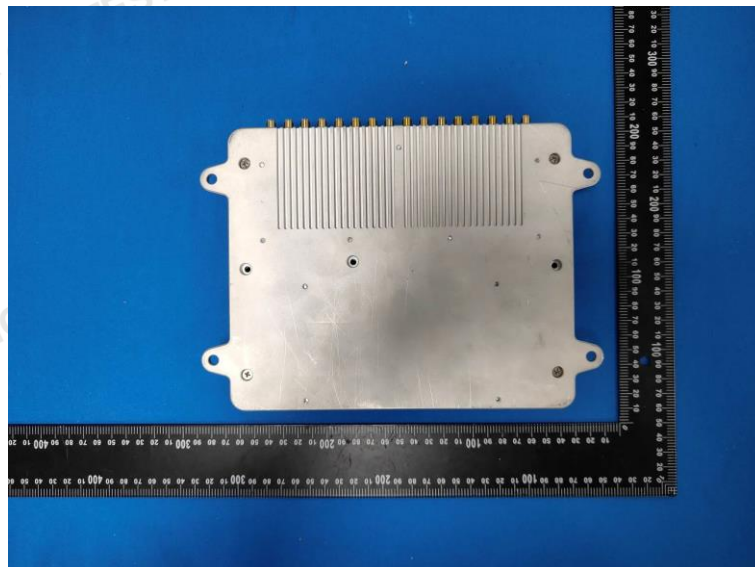
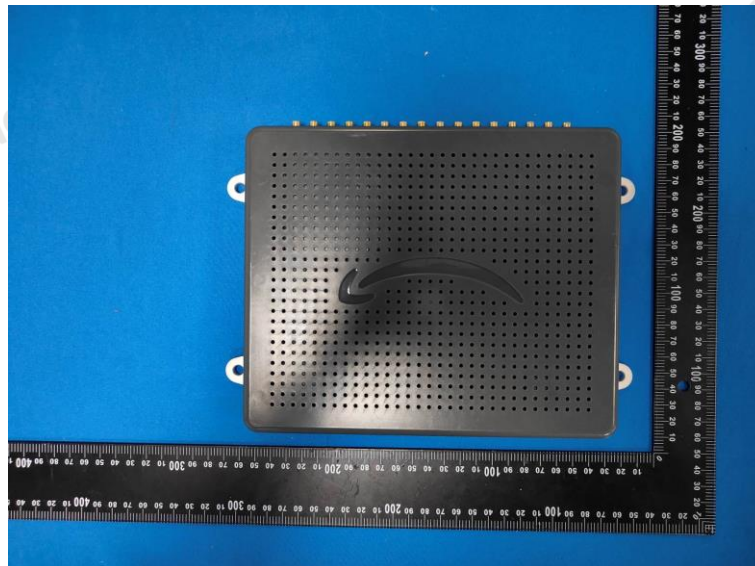
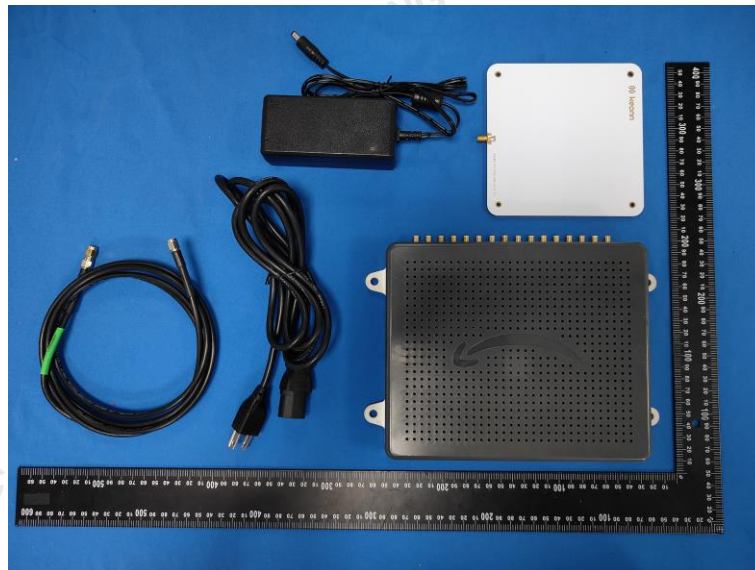


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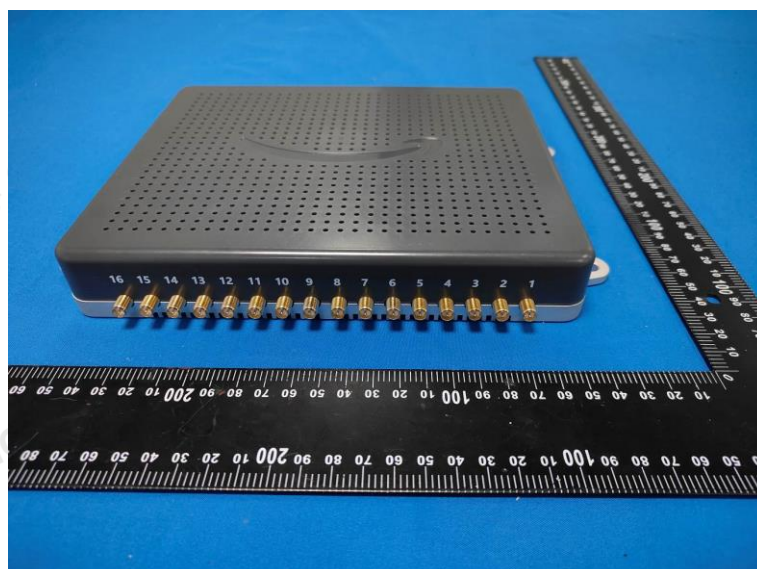
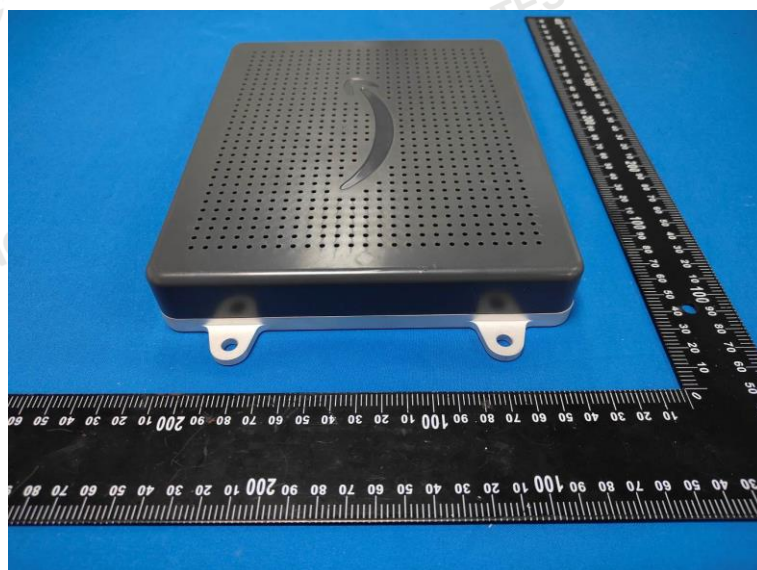
6 Photos of the EUT



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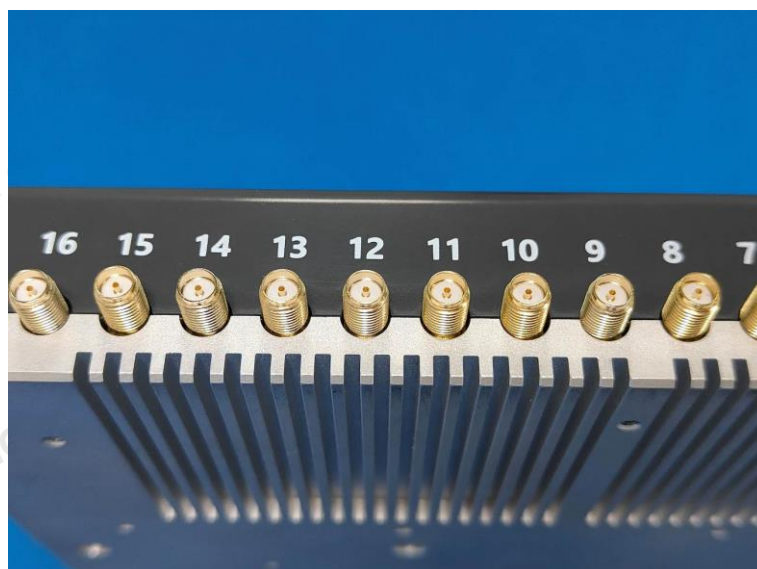
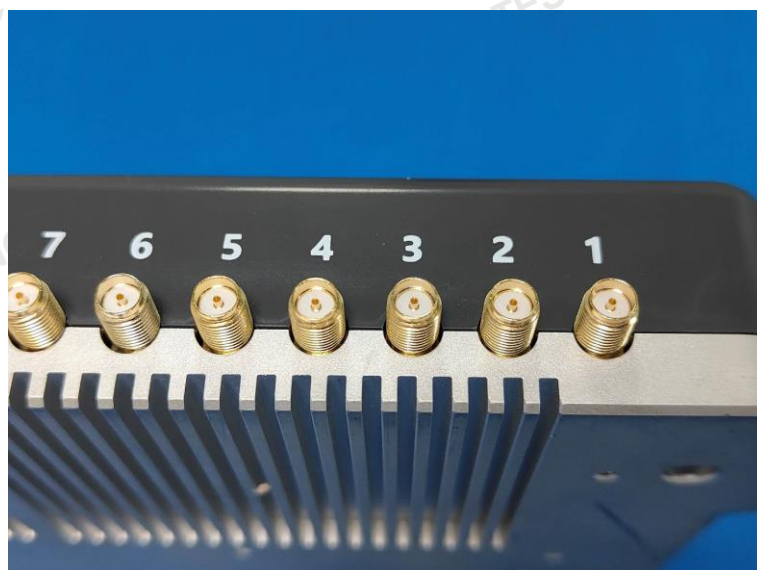
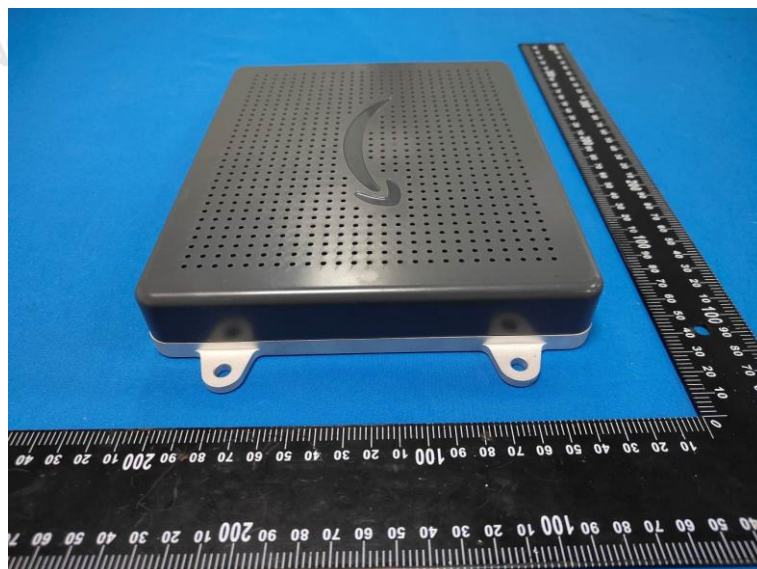
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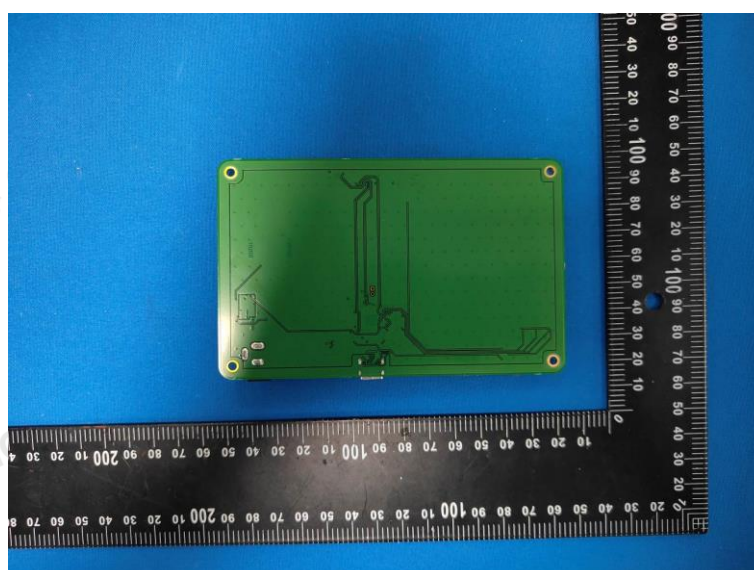
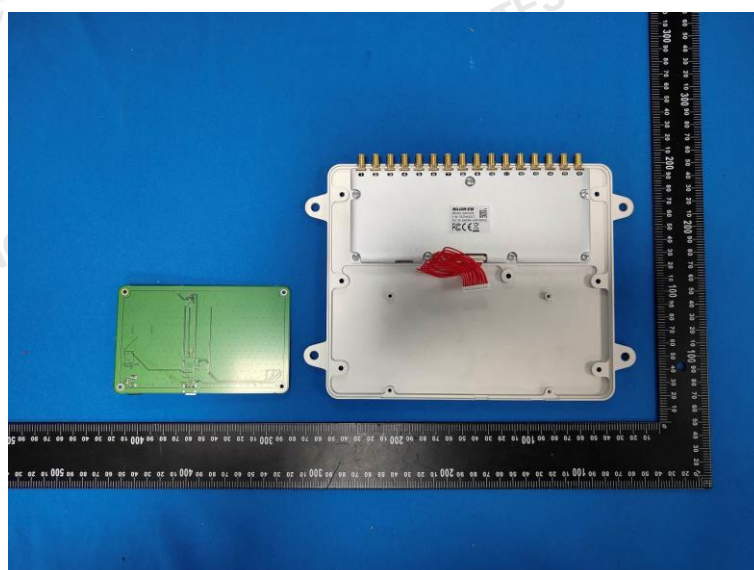
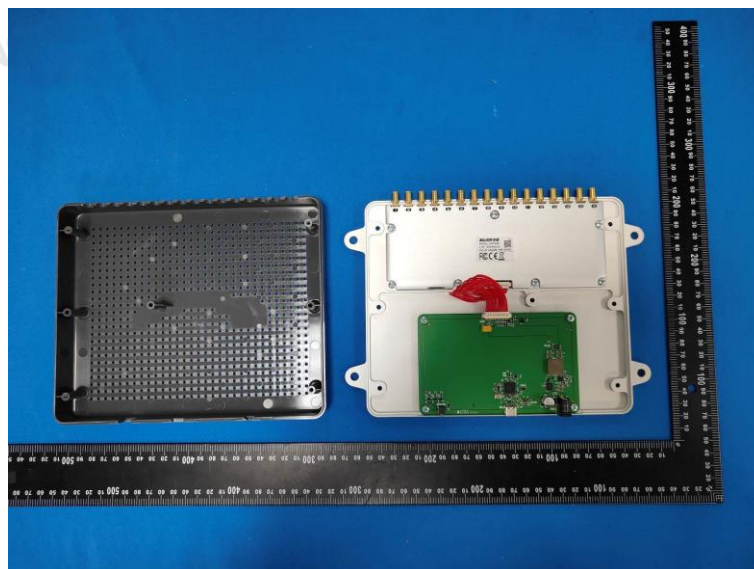
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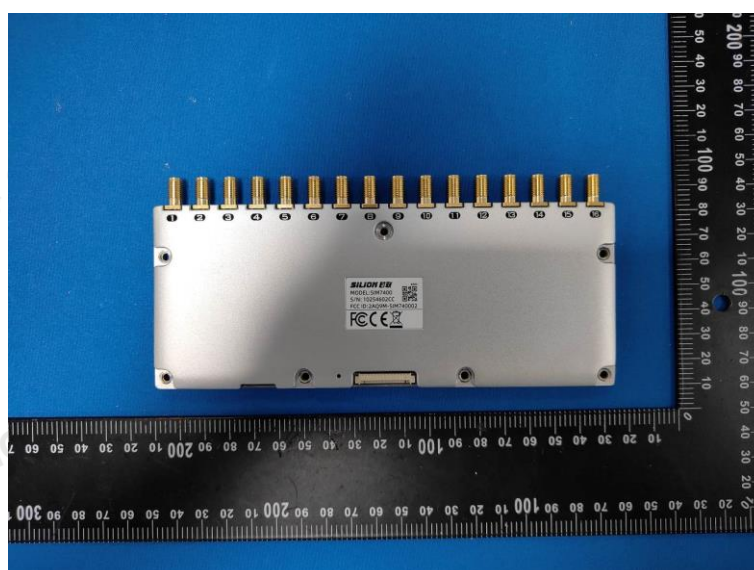
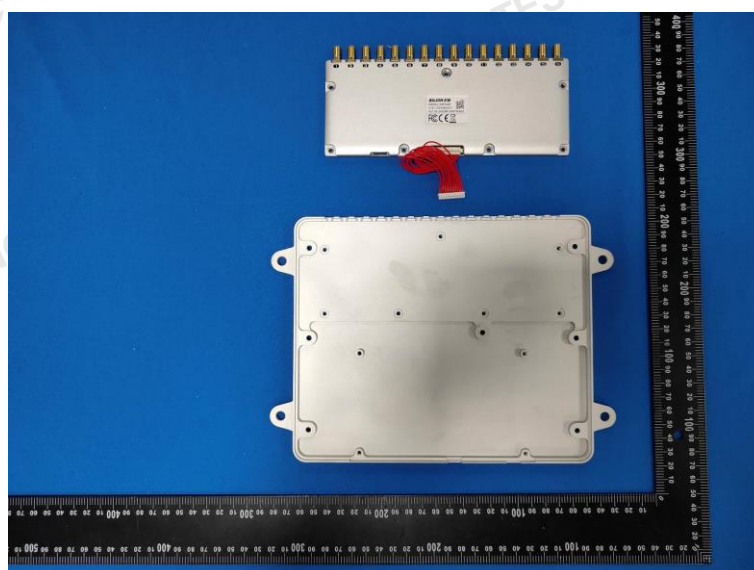
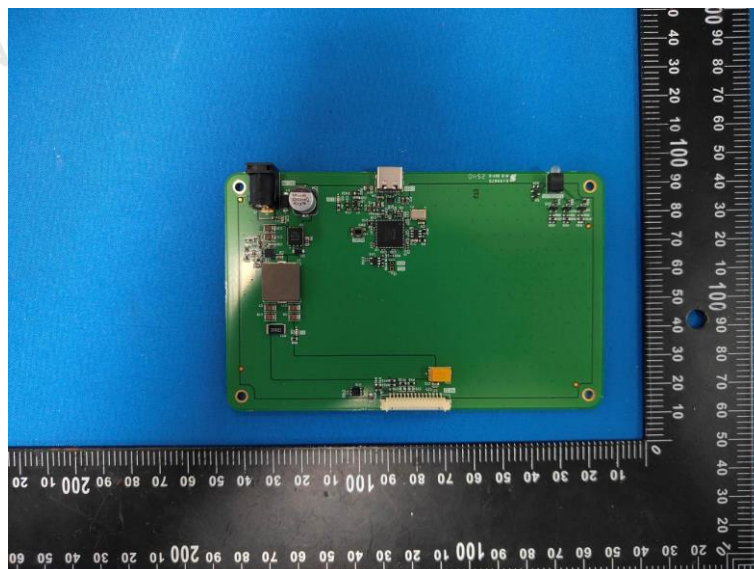


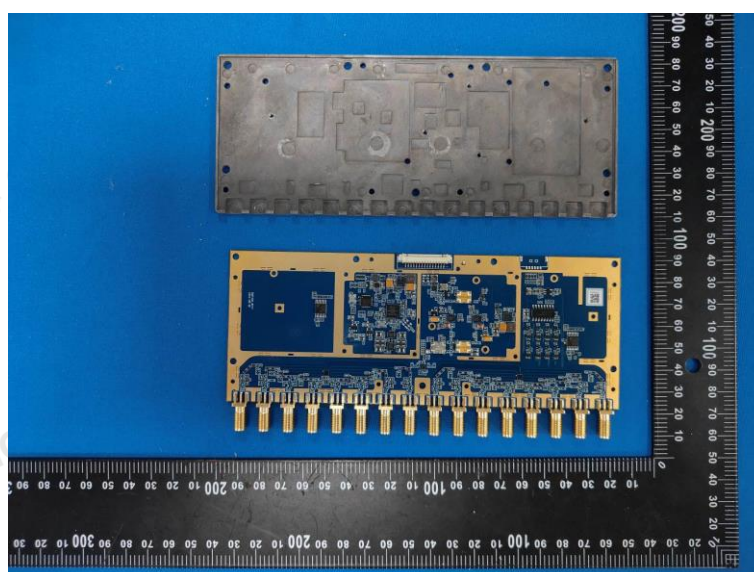
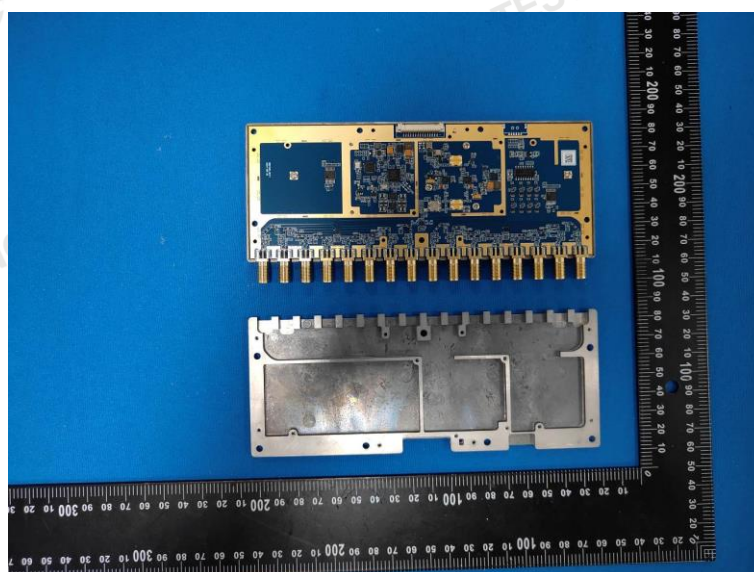
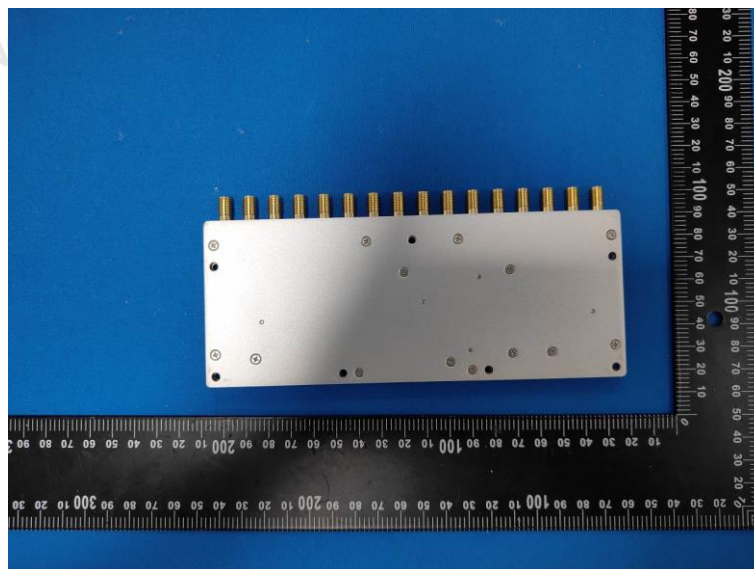
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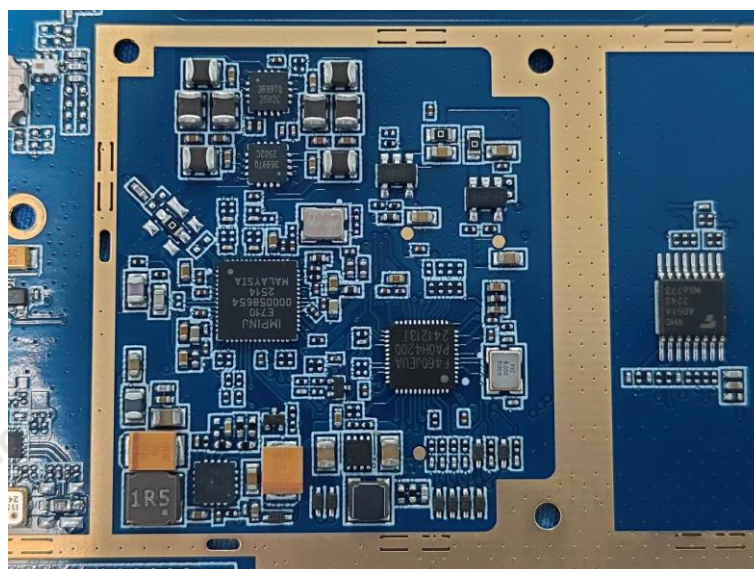
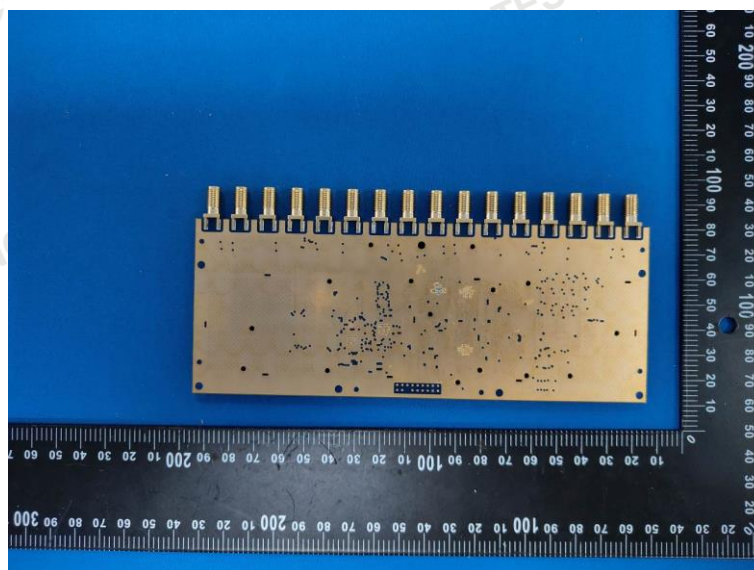
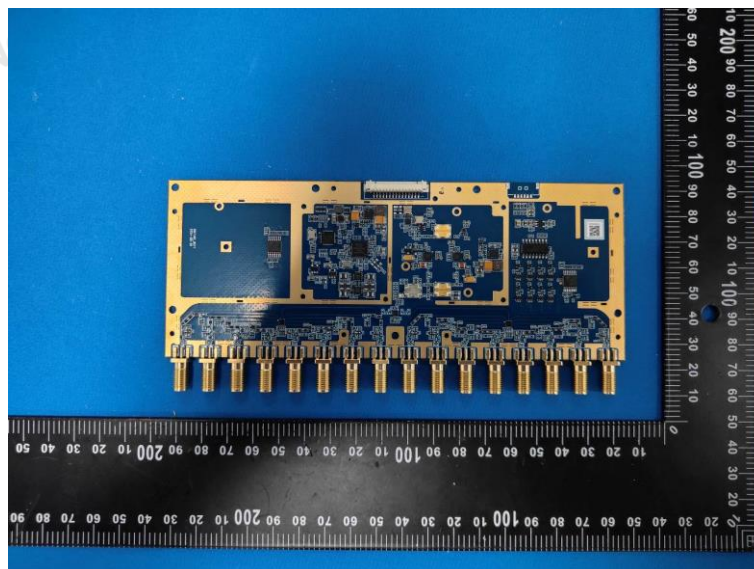
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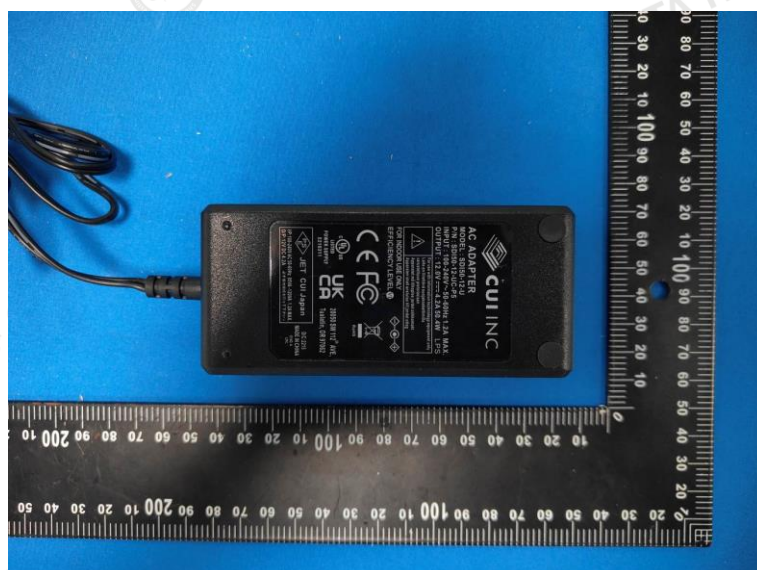
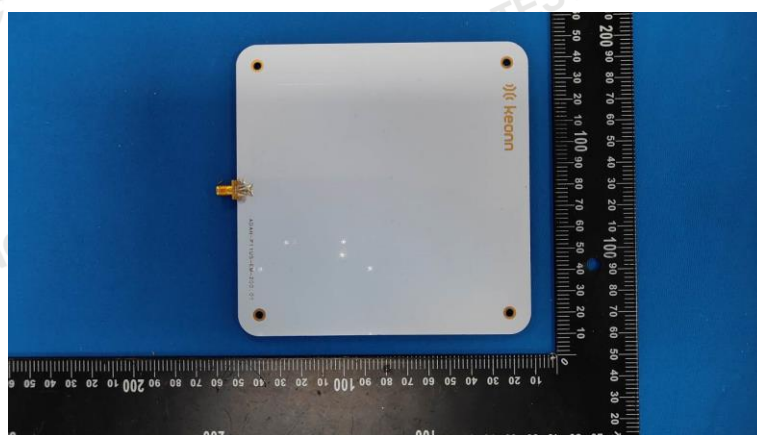
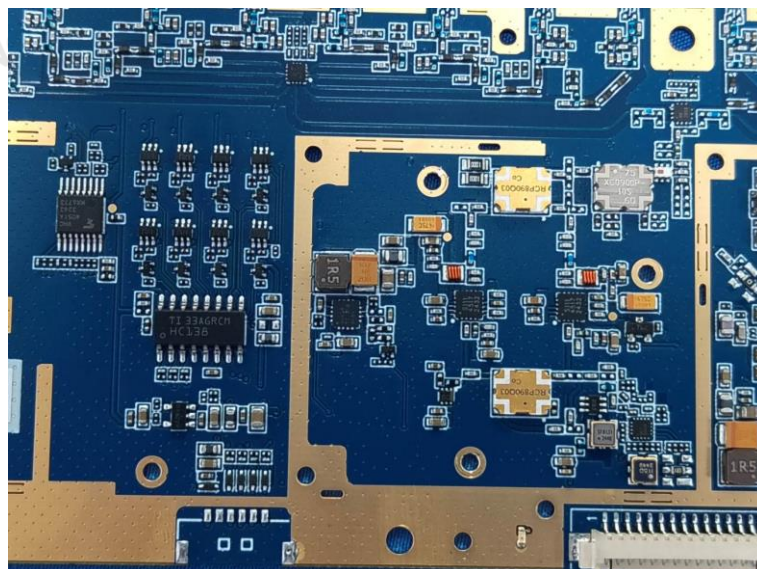
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***** End of Report *****