




TEST REPORT

For RFID

Report No. : **CHTEW22040022** **Report Verification:** 

Project No. : **SHT2201062324EW**

FCC ID : **2A6TQDNBSEQ-T7RS**

Applicant's name : **Wuhan MGI Tech Co., Ltd.**

Address : Building 24, Stage 3.1, BioLake Accelerator, No.388 2nd Gaoxin Road, East Lake High-Tech Development Zone, 430075 Wuhan, P.R.China

Test item description : **Genetic Sequencer**

Trade Mark : -

Model/Type reference : **DNBSEQ-T7RS**

Listed Model(s) : -

Standard : **FCC CFR Title 47 Part 15 Subpart C Section 15.247**

Date of receipt of test sample : Mar.04, 2022

Date of testing : Mar.04, 2022-Apr.01, 2022

Date of issue : Apr.02, 2022

Result : **PASS**

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Testing Laboratory Name : **Shenzhen Huatongwei International Inspection Co., Ltd.**

Address : 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China

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The test report merely correspond to the test sample.

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1. TEST STANDARDS AND REPORT VERSION

1.1. 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 C63.10:2013](#): American National Standard for Testing Unlicensed Wireless Devices
- [KDB 558074 D01 15.247 Meas Guidance v05r02](#): Guidance for Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating under Section 15.247 of The FCC Rules

1.2. Report version

Revision No.	Date of issue	Description
N/A	2022-04-02	Original

2. TEST DESCRIPTION

Report clause	Test Items	Standard Requirement	Result	Test Engineer
-	Antenna Requirement	15.203/15.247 (c)	PASS* ²	-
5.1	AC Conducted Emission	15.207	PASS	xiepan
5.2	Peak Output Power	15.247 (b)(1)	PASS	xiepan
-	20 dB Bandwidth	15.247 (a)(1)	PASS* ²	-
-	99% Occupied Bandwidth	-	PASS* ²	-
-	Carrier Frequency Separation	15.247 (a)(1)	PASS* ²	-
-	Hopping Channel Number	15.247 (a)(1)	PASS* ²	-
-	Dwell Time	15.247 (a)(1)	PASS* ²	-
-	Pseudorandom Frequency Hopping Sequence	15.247(b)(4)	PASS* ²	-
-	Conducted Band Edge and Spurious Emission	15.247(d)/15.205	PASS* ²	-
5.3	Radiated Band Edge Emission	15.205/15.209	PASS	xiepan
5.4	Radiated Spurious Emission	15.247(d)/15.205/15.209	PASS	xiepan

Note:

- The measurement uncertainty is not included in the test result.
- *2: reference to module report , which FCC ID is PJMMRU102A

3. SUMMARY

3.1. Client Information

Applicant:	Wuhan MGI Tech Co., Ltd.
Address:	Building 24, Stage 3.1, BioLake Accelerator, No.388 2nd Gaoxin Road, East Lake High-Tech Development Zone, 430075 Wuhan, P.R.China
Manufacturer:	Wuhan MGI Tech Co., Ltd.
Address:	Building 24, Stage 3.1, BioLake Accelerator, No.388 2nd Gaoxin Road, East Lake High-Tech Development Zone, 430075 Wuhan, P.R.China

3.2. Product Description

Main unit information:	
Name of EUT:	Genetic Sequencer
Trade Mark:	-
Model No.:	DNBSEQ-T7RS
Listed Model(s):	-
Power supply:	AC 120V
Hardware version:	V2.1
Software version:	V3.04

3.3. Radio Specification Description

Support function ^{*2} :	RFID
Modulation:	DSB—ASK,SSB—ASK,PR—ASK
Operation frequency:	902MHz~928MHz
Channel number:	50
Channel separation:	500KHz
Antenna type:	UHF near field antenna
Antenna gain ^{*1} :	Ant1(EC-UHF-ANT-NF0001): 1dBi Ant2(EC-UHF-ANT-NF0001): 2.5dBi

Note:

*1: Dual antennas do not support MIMO, and can only be transmitted in a single mode at a time.

*2: only show the RF function associated with this report.

3.4. Testing Laboratory Information

Laboratory Name	Shenzhen Huatongwei International Inspection Co., Ltd.	
Laboratory Location	1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China	
Connect information:	Tel: 86-755-26715499 E-mail: cs@szhtw.com.cn http://www.szhtw.com.cn	
Qualifications	Type	Accreditation Number
	FCC	762235

4. TEST CONFIGURATION

4.1. Test frequency list

According to section 15.31(m), regards to the operating frequency range over 10 MHz, must select three channels which were tested. The Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, please see the below blue front.

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

4.2. Descriptions of Test mode

For RF test items
The engineering test program was provided and enabled to make EUT continuous transmit (duty cycle>98%).
For AC power line conducted emissions:
control RFID transmitting.
For Radiated spurious emissions test item:
The engineering test program was provided and enabled to make EUT continuous transmit (duty cycle>98%). The EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data Recorded in the report.

4.3. Test sample information

Test item	HTW sample no.
RF Conducted test items	YPHT22010623013
RF Radiated test items	YPHT22010623013
EMI test items	YPHT22010623013

Note:

RF Conducted test items: Peak Output Power

RF Radiated test items: Radiated Band Edge Emission, Radiated Spurious Emission

EMI test items: AC Conducted Emission

4.4. Support unit used in test configuration and system

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

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

Whether support unit is used?					
✓ No					
Item	Equipment	Trade Name	Model No.	FCC ID	Power cord
1	-	-	-	-	-
2	-	-	-	-	-

4.5. Testing environmental condition

Type	Requirement	Actual
Temperature:	15~35°C	25°C
Relative Humidity:	25~75%	50%
Air Pressure:	860~1060mbar	1000mbar

4.6. Measurement uncertainty

Test Item	Measurement Uncertainty
AC Conducted Emission (150kHz~30MHz)	3.00 dB
Radiated Emission (30MHz~1000MHz)	4.36 dB
Radiated Emissions (1GHz~25GHz)	5.10 dB
Peak Output Power	0.77dB
Power Spectral Density	0.77dB
Conducted Spurious Emission	0.77dB
6dB Bandwidth	70Hz for <1GHz 130Hz for >1GHz

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

4.7. Equipment Used during the Test

● Conducted Emission

Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Shielded Room	Albatross projects	HTWE0114	N/A	N/A	2021/09/13	2022/09/12
●	EMI Test Receiver	R&S	HTWE0111	ESCI	101247	2021/09/13	2022/09/12
●	Artificial Mains	SCHWARZBECK	HTWE0113	NNLK 8121	573	2021/09/13	2022/09/12
●	Pulse Limiter	R&S	HTWE0033	ESH3-Z2	100499	2021/09/13	2022/09/12
●	RF Connection Cable	HUBER+SUHNER	HTWE0113-02	ENVIROFLEX_142	EF-NM-BNCM-2M	N/A	N/A
●	Test Software	R&S	N/A	ES-K1	N/A	2021/09/13	2022/09/12

● Radiated emission-6th test site

Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Semi-Anechoic Chamber	Albatross projects	HTWE0127	SAC-3m-02	C11121	2018/09/30	2022/09/29
●	EMI Test Receiver	R&S	HTWE0099	ESCI	100900	2021/9/14	2022/9/13
●	Loop Antenna	R&S	HTWE0170	HFH2-Z2	100020	2021/04/06	2024/04/05
●	Ultra-Broadband Antenna	SCHWARZBECK	HTWE0123	VULB9163	538	2021/04/06	2024/04/05
●	Pre-Amplifier	SCHWARZBECK	HTWE0295	BBV 9742	N/A	2021/11/5	2022/11/4
●	RF Connection Cable	HUBER+SUHNER	HTWE0062-01	N/A	N/A	2022/02/25	2023/02/24
●	RF Connection Cable	HUBER+SUHNER	HTWE0062-02	SUCOFLEX104	501184/4	2022/02/25	2023/02/24
●	Test Software	R&S	N/A	ES-K1	N/A	N/A	N/A

● Radiated emission-7th test site

Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Semi-Anechoic Chamber	Albatross projects	HTWE0122	SAC-3m-01	N/A	2018/09/27	2022/09/26
●	Spectrum Analyzer	R&S	HTWE0098	FSP40	100597	2021/9/13	2022/9/12
●	Horn Antenna	SCHWARZBECK	HTWE0126	9120D	1011	2020/04/01	2023/03/31
●	Broadband Horn Antenna	SCHWARZBECK	HTWE0103	BBHA9170	BBHA9170472	2020/4/27	2023/4/27
●	Pre-amplifier	CD	HTWE0071	PAP-0102	12004	2021/11/5	2022/11/4
●	Broadband Pre-amplifier	SCHWARZBECK	HTWE0201	BBV 9718	9718-248	2022/02/28	2023/02/27
●	RF Connection Cable	HUBER+SUHNER	HTWE0120-01	6m 18GHz S Serisa	N/A	2022/02/25	2023/02/24
●	RF Connection Cable	HUBER+SUHNER	HTWE0120-02	6m 3GHz RG Serisa	N/A	2022/02/25	2023/02/24
●	RF Connection Cable	HUBER+SUHNER	HTWE0120-03	6m 3GHz RG Serisa	N/A	2022/02/25	2023/02/24
●	RF Connection Cable	HUBER+SUHNER	HTWE0120-04	6m 3GHz RG Serisa	N/A	2022/02/25	2023/02/24
●	RF Connection Cable	HUBER+SUHNER	HTWE0121-01	6m 18GHz S Serisa	N/A	N/A	N/A
●	Test Software	Audix	N/A	E3	N/A	2022/02/28	2023/02/27

5. TEST CONDITIONS AND RESULTS

5.1. AC Conducted Emission

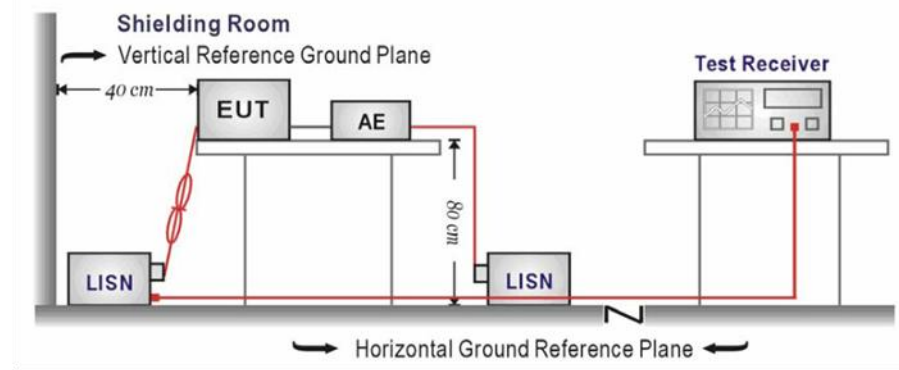
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.207

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 CONFIGURATION



TEST PROCEDURE

1. The EUT was setup according to ANSI C63.10 requirements.
2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
3. The EUT and simulators are connected to the main power through a line impedances stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment.
4. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
5. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
6. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
7. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
8. During the above scans, the emissions were maximized by cable manipulation.

TEST MODE:

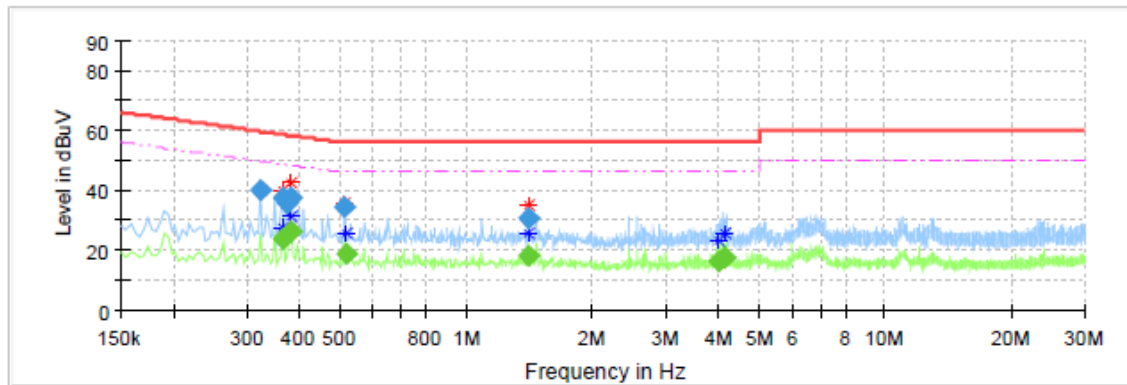
Please refer to the clause 4.2

TEST RESULT

☒ Passed ☐ Not Applicable

Test Line:

L

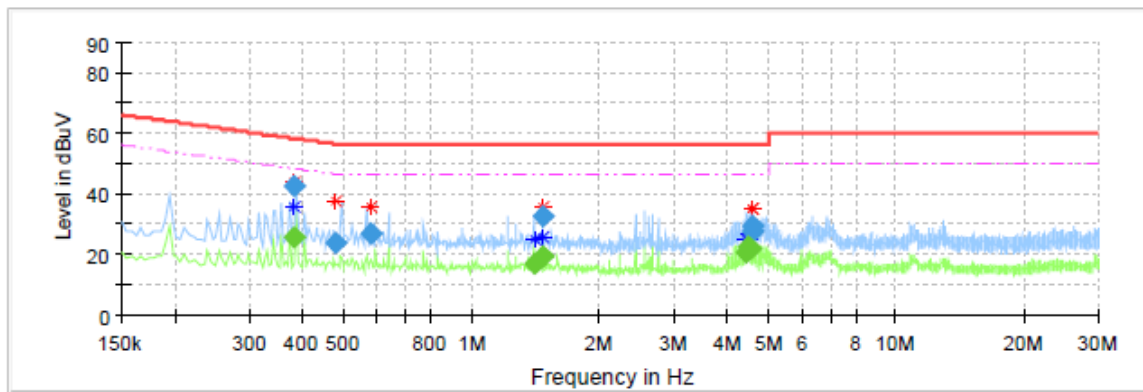


Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
0.323500	40.21	---	59.62	19.41	L1	20.1
0.363500	---	23.51	48.65	25.14	L1	20.1
0.363500	37.67	---	58.65	20.98	L1	20.1
0.372500	35.91	---	58.45	22.53	L1	20.1
0.379500	37.71	---	58.29	20.58	L1	20.1
0.383500	---	26.35	48.20	21.85	L1	20.1
0.511500	34.11	---	56.00	21.89	L1	20.1
0.515500	---	18.45	46.00	27.55	L1	20.1
1.403500	---	18.38	46.00	27.62	L1	20.1
1.403500	30.58	---	56.00	25.42	L1	20.1
4.024500	---	16.29	46.00	29.71	L1	20.3
4.123500	---	17.57	46.00	28.43	L1	20.3

Test Line:

N



Final Result

Frequency (MHz)	QuasiPeak (dBuV)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
0.383500	---	25.73	48.20	22.47	N	20.1
0.383500	42.57	---	58.20	15.63	N	20.1
0.475500	24.03	---	56.42	32.39	N	20.1
0.579500	26.95	---	56.00	29.05	N	20.1
1.411500	---	16.75	46.00	29.25	N	20.1
1.471500	32.30	---	56.00	23.70	N	20.1
1.471500	---	19.62	46.00	26.38	N	20.1
4.423500	---	20.86	46.00	25.14	N	20.3
4.475500	---	22.21	46.00	23.79	N	20.3
4.543500	---	21.67	46.00	24.33	N	20.3
4.559500	29.12	---	56.00	26.88	N	20.3
4.571500	27.61	---	56.00	28.39	N	20.3

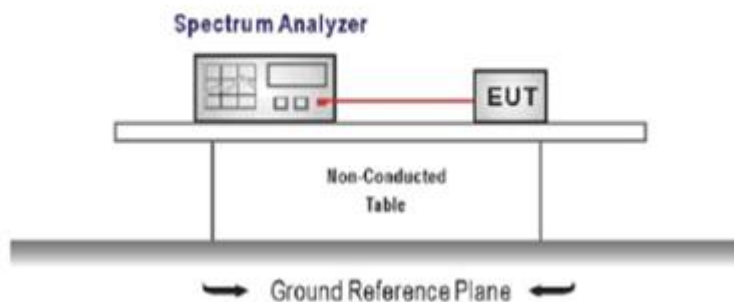
5.2. Peak Output Power

LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (b)(1):

For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

TEST CONFIGURATION



TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer through an attenuator, the pathloss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously
3. Use the following spectrum analyzer settings:
Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel
RBW \geq the 20 dB bandwidth of the emission being measured, VBW \geq RBW
Sweep = auto, Detector function = peak, Trace = max hold
4. Measure and record the results in the test report.

TEST MODE:

Please refer to the clause 4.2

TEST RESULT

☒ Passed ☐ Not Applicable

TEST DATA

Channel	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
CH-L	20.54	20.50	≤ 30.00	Pass
CH-M	20.06	19.98		
CH-H	20.07	20.01		

Note:

This power value is tested according to the power setting value of the product declared by the customer, not according to the power setting value of the module

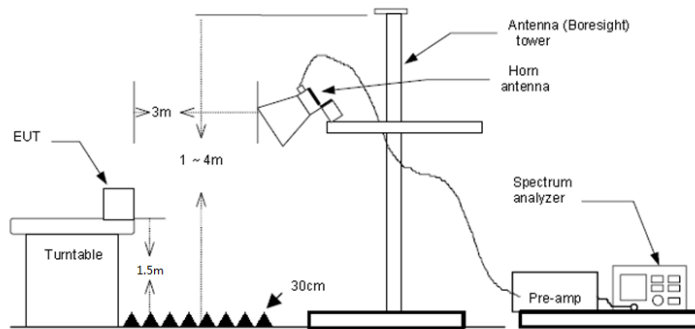
5.3. Radiated Band edge Emission

LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d):

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._

TEST CONFIGURATION



TEST PROCEDURE

1. The EUT was setup and tested according to ANSI C63.10 .
2. The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10 on radiated measurement.
5. Use the following spectrum analyzer settings:
 - a) Span shall wide enough to fully capture the emission being measured
 - b) Set RBW=100kHz for <1GHz, VBW=3*RBW, Sweep time=auto, Detector=peak, Trace=max hold
 - c) Set RBW=1MHz, VBW=3MHz for >1GHz, Sweep time=auto, Detector=peak, Trace=max hold for Peak measurement

For average measurement: use duty cycle correction factor method (DCCF)

Averager level = Peak level + DCCF

TEST MODE:

Please refer to the clause 4.2

TEST RESULT

☒ **Passed** ☐ **Not Applicable**

Note:

- 1) Level= Reading + Factor; Factor =Antenna Factor+ Cable Loss- Preamp Factor
- 2) Over Limit = Level- Limit

Test channel:	CH _L			Polarity			Horizontal		

Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	902.00	11.98	22.90	10.87	0.00	45.75	76.71	-30.96	Peak
2	902.74	62.93	22.91	10.87	0.00	96.71	76.71	20.00	Peak

Test channel:	CH _L			Polarity			Vertical		

Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	902.00	11.35	22.90	10.87	0.00	45.12	75.80	-30.68	Peak
2	902.74	62.02	22.91	10.87	0.00	95.80	75.80	20.00	Peak

Test channel:	CH _H			Polarity			Horizontal		

Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	927.26	62.64	22.95	10.94	0.00	96.53	76.53	20.00	Peak
2	928.00	10.89	22.96	10.94	0.00	44.79	76.53	-31.74	Peak
Test channel:	CH _H			Polarity			Vertical		

Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	927.26	61.78	22.95	10.94	0.00	95.67	75.67	20.00	Peak
2	928.00	12.00	22.96	10.94	0.00	45.90	75.67	-29.77	Peak

Test channel:	CH _H			Polarity			Horizontal		

Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	927.26	62.64	22.95	10.94	0.00	96.53	76.53	20.00	Peak
2	928.00	10.89	22.96	10.94	0.00	44.79	76.53	-31.74	Peak
Test channel:	CH _H			Polarity			Vertical		

Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	927.26	61.78	22.95	10.94	0.00	95.67	75.67	20.00	Peak
2	928.00	12.00	22.96	10.94	0.00	45.90	75.67	-29.77	Peak

Test channel:	CH _H		Polarity				Vertical		

Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	927.26	61.78	22.95	10.94	0.00	95.67	75.67	20.00	Peak
2	928.00	12.00	22.96	10.94	0.00	45.90	75.67	-29.77	Peak

NOTE: The limit is calculated by 20dB down from fundamental peak

5.4. Radiated Spurious Emission

LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.209

Frequency	Limit (dBuV/m)	Value
0.009 MHz ~0.49 MHz	2400/F(kHz) @300m	Quasi-peak
0.49 MHz ~ 1.705 MHz	24000/F(kHz) @30m	Quasi-peak
1.705 MHz ~30 MHz	30 @30m	Quasi-peak

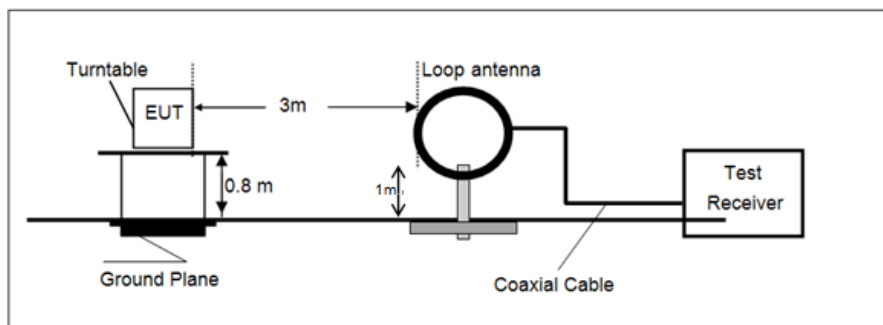
Note: Limit dBuV/m @3m = Limit dBuV/m @300m + 40*log(300/3)= Limit dBuV/m @300m +80,

Limit dBuV/m @3m = Limit dBuV/m @30m +40*log(30/3)= Limit dBuV/m @30m + 40.

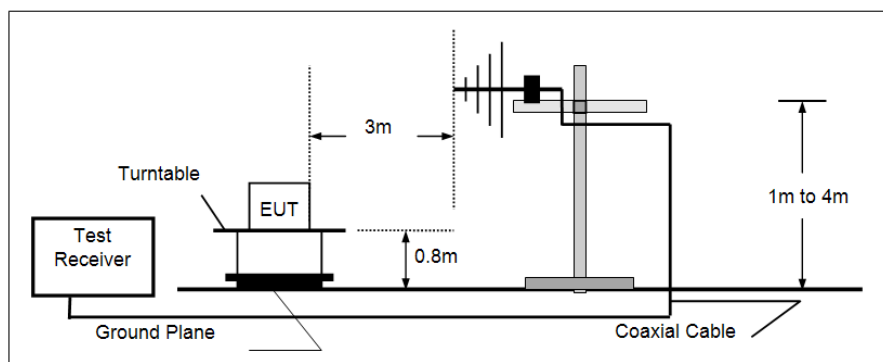
Frequency	Limit (dBuV/m @3m)	Value
30MHz~88MHz	40.00	Quasi-peak
88MHz~216MHz	43.50	Quasi-peak
216MHz~960MHz	46.00	Quasi-peak
960MHz~1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

TEST CONFIGURATION

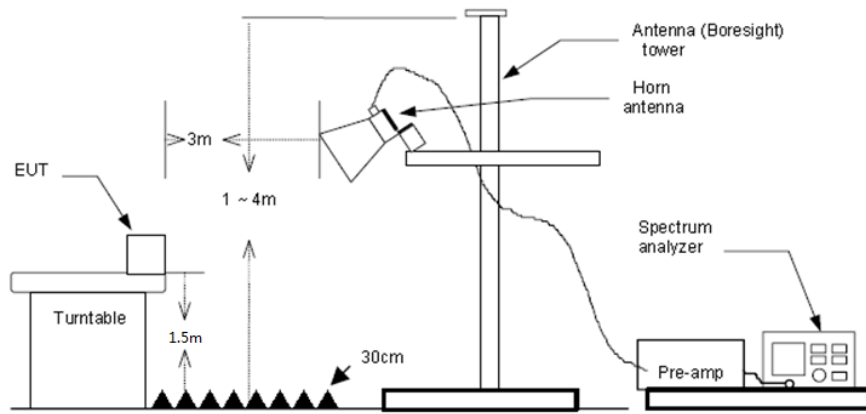
- 9 kHz ~ 30 MHz



- 30 MHz ~ 1 GHz



- Above 1 GHz



TEST PROCEDURE

1. The EUT was setup and tested according to ANSI C63.10 .
2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
5. Set to the maximum power setting and enable the EUT transmit continuously.
6. Use the following spectrum analyzer settings
 - a) Span shall wide enough to fully capture the emission being measured;
 - b) Below 1 GHz:

RBW=120 kHz, VBW=300 kHz, Sweep=auto, Detector function=peak, Trace=max hold;

If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
 - c) Set RBW=1MHz, VBW=3MHz for >1GHz, Sweep time=auto, Detector=peak, Trace=max hold for Peak measurement

For average measurement: use duty cycle correction factor method (DCCF)

Averager level = Peak level + DCCF

TEST MODE:

Please refer to the clause 4.2

TEST RESULT

☒ **Passed** ☐ **Not Applicable**

Note:

- 1) Level= Reading + Factor/Transd; Factor/Transd =Antenna Factor+ Cable Loss- Preamp Factor
- 2) Over Limit = Level- Limit
- 3) Average measurement was not performed if peak level is lower than average limit(54 dBuV/m) for above 1GHz.

TEST DATA FOR 9 kHz ~ 30 MHz

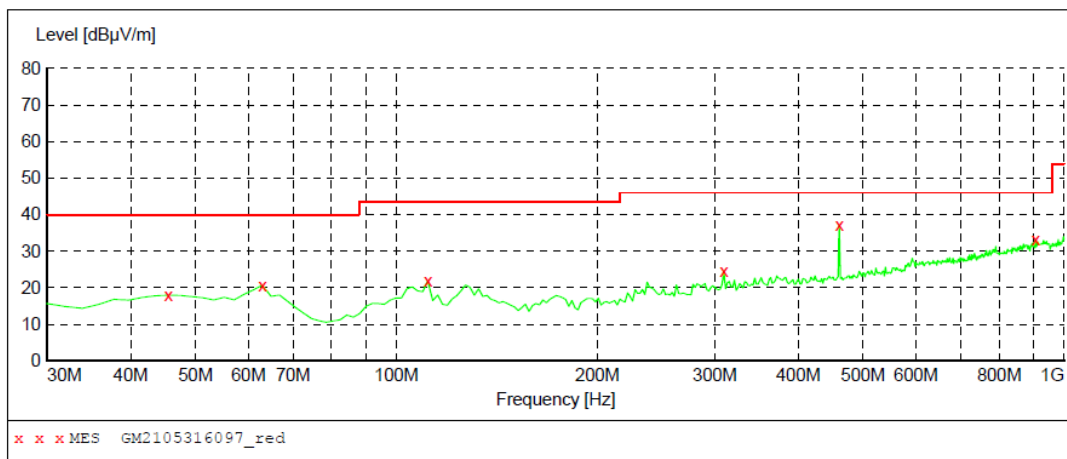
The EUT was pre-scanned this frequency band, found the radiated level 20dB lower than the limit, so don't show data on this report.

TEST DATA FOR 30 MHz ~ 1000 MHz

Have pre-scan all test channel, found CH-L which it was worst case, so only show the worst case's data on this report.

Polarization:

Horizontal

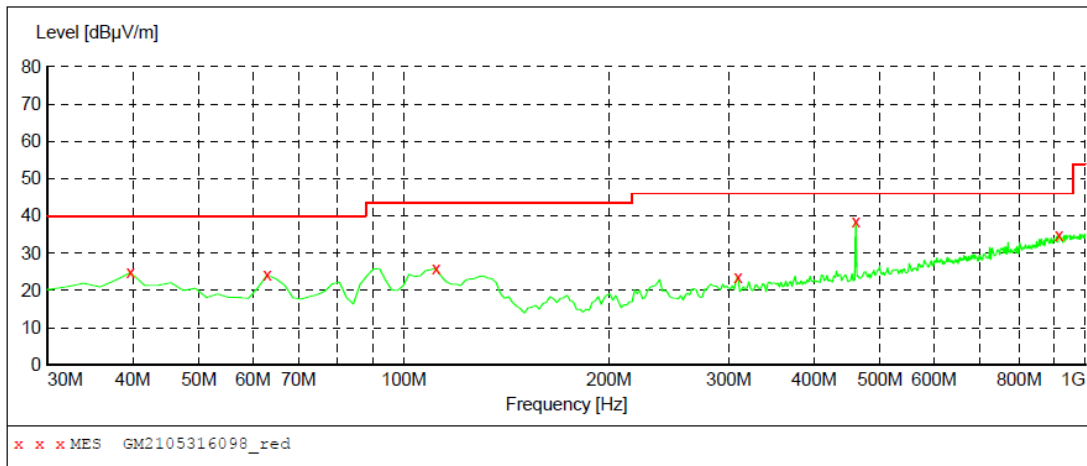
**MEASUREMENT RESULT: "GM2105316097_red"**

5/31/2021 9:30PM

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
45.520000	18.00	-8.9	40.0	22.0	QP	300.0	63.00	HORIZONTAL
62.980000	20.70	-10.8	40.0	19.3	QP	300.0	154.00	HORIZONTAL
111.480000	21.80	-11.1	43.5	21.7	QP	300.0	193.00	HORIZONTAL
309.360000	24.70	-7.0	46.0	21.3	QP	100.0	154.00	HORIZONTAL
460.680000	37.10	-2.9	46.0	8.9	QP	100.0	351.00	HORIZONTAL
906.880000	33.10	7.2	46.0	12.9	QP	100.0	0.00	HORIZONTAL

Polarization:

Vertical

**MEASUREMENT RESULT: "GM2105316098_red"**

5/31/2021 9:33PM

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
39.700000	24.80	-10.0	40.0	15.2	QP	100.0	82.00	VERTICAL
62.980000	24.10	-10.8	40.0	15.9	QP	100.0	323.00	VERTICAL
111.480000	26.00	-11.1	43.5	17.5	QP	100.0	211.00	VERTICAL
309.360000	23.70	-7.0	46.0	22.3	QP	100.0	55.00	VERTICAL
460.680000	38.40	-2.9	46.0	7.6	QP	100.0	94.00	VERTICAL
914.640000	34.90	7.5	46.0	11.1	QP	100.0	188.00	VERTICAL

TEST DATA FOR 1 GHz ~ 10 GHz

Test channel		CH-L			Polarity			Horizontal	
Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1805.01	52.46	25.42	4.76	37.08	45.56	74.00	-28.44	Peak
2	2124.37	46.51	27.39	5.19	37.30	41.79	74.00	-32.21	Peak
3	2987.92	43.83	28.70	6.19	37.47	41.25	74.00	-32.75	Peak
4	5762.24	35.87	31.92	9.57	34.86	42.50	74.00	-31.50	Peak

Test channel		CH-L			Polarity			Vertical	
Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1597.40	52.23	25.41	4.47	37.12	44.99	74.00	-29.01	Peak
2	1805.01	51.37	25.42	4.76	37.08	44.47	74.00	-29.53	Peak
3	2987.92	49.75	28.70	6.19	37.47	47.17	74.00	-26.83	Peak
4	3993.90	43.61	29.90	7.38	36.37	44.52	74.00	-29.48	Peak

Test channel		CH-M			Polarity			Horizontal	
Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1329.89	47.84	26.18	4.07	36.37	41.72	74.00	-32.28	Peak
2	1828.13	49.36	25.51	4.79	37.07	42.59	74.00	-31.41	Peak
3	2664.54	44.89	27.79	5.87	37.02	41.53	74.00	-32.47	Peak
4	5762.24	35.71	31.92	9.57	34.86	42.34	74.00	-31.66	Peak

Test channel		CH-M			Polarity			Vertical	
Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1663.80	50.95	25.10	4.56	37.19	43.42	74.00	-30.58	Peak
2	1828.13	51.19	25.51	4.79	37.07	44.42	74.00	-29.58	Peak
3	2987.92	48.97	28.70	6.19	37.47	46.39	74.00	-27.61	Peak
4	8125.22	35.00	37.10	11.28	33.36	50.02	74.00	-23.98	Peak

Test channel		CH-H			Polarity			Horizontal	
Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1851.54	48.95	25.61	4.83	37.00	42.39	74.00	-31.61	Peak
2	2129.79	47.50	27.46	5.20	37.32	42.84	74.00	-31.16	Peak
3	2987.92	43.89	28.70	6.19	37.47	41.31	74.00	-32.69	Peak
4	5230.96	36.61	31.51	9.11	35.34	41.89	74.00	-32.11	Peak

Test channel		CH-H			Polarity			Vertical	
Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1851.54	51.48	25.61	4.83	37.00	44.92	74.00	-29.08	Peak
2	2129.79	48.44	27.46	5.20	37.32	43.78	74.00	-30.22	Peak
3	2995.54	48.00	28.70	6.20	37.47	45.43	74.00	-28.57	Peak
4	4996.69	42.52	31.87	8.81	35.24	47.96	74.00	-26.04	Peak

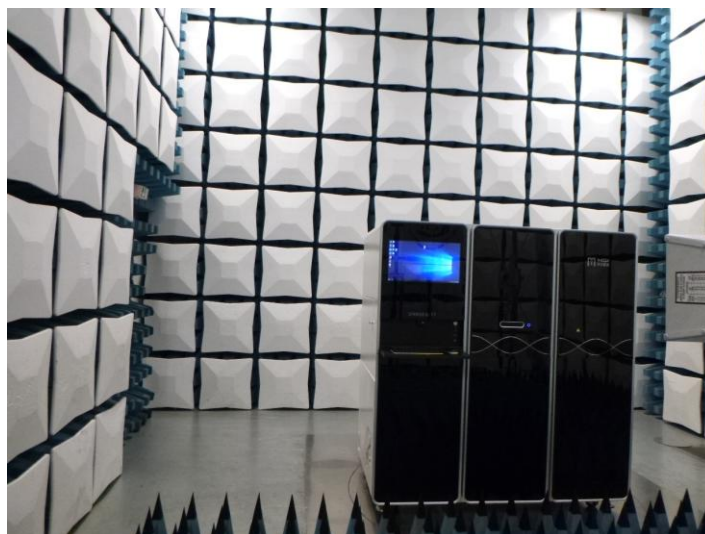
Note: Both ant1 and ant2 have been tested, and only reflect the data of the worst antenna(ant2)

6. TEST SETUP PHOTOS

AC Conducted Emission



Radiated Emission



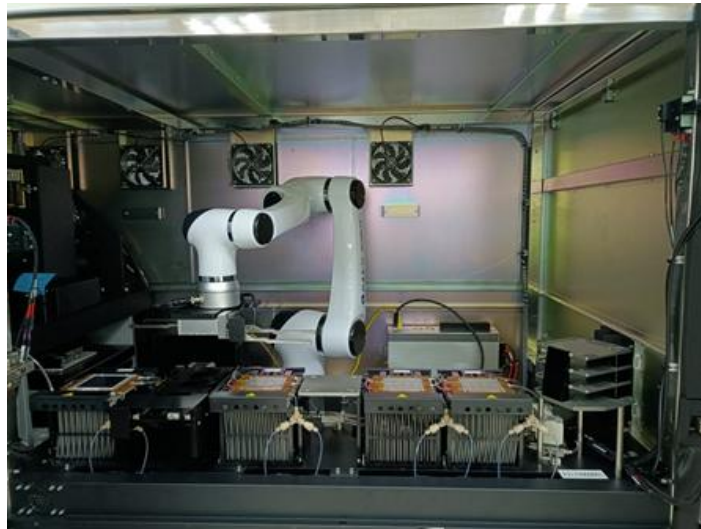
7. EXTERNAL AND INTERNAL PHOTOS

External Photos

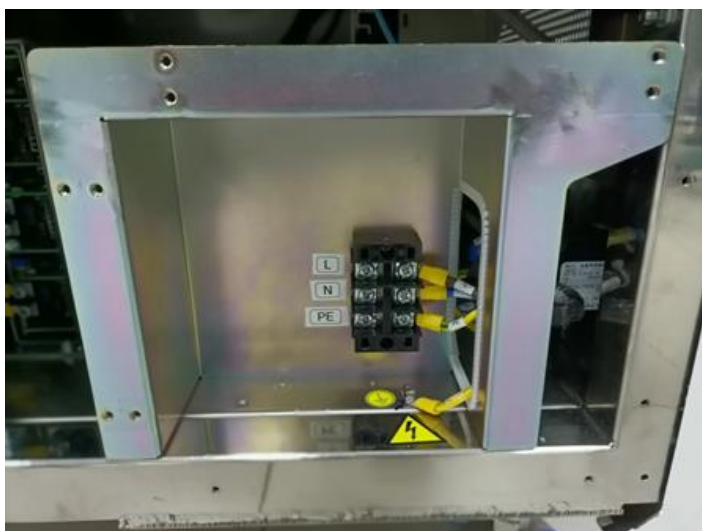


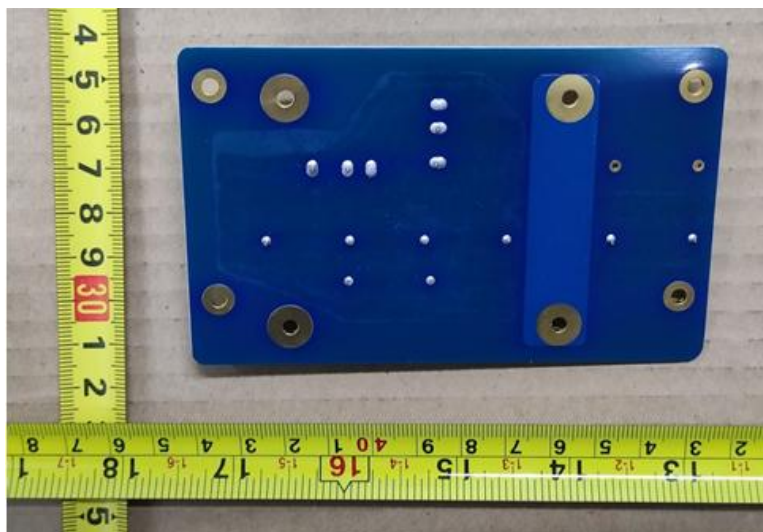


Internal Photos

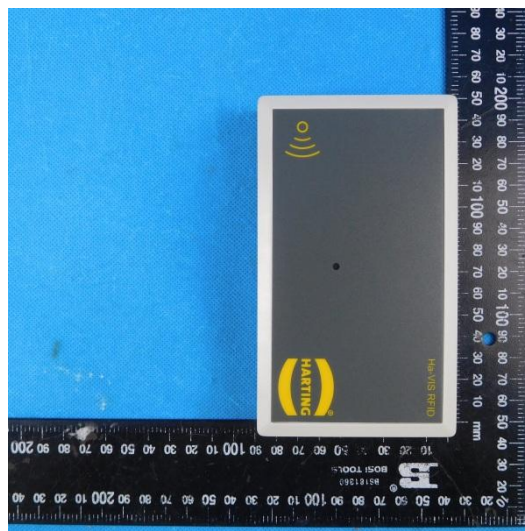
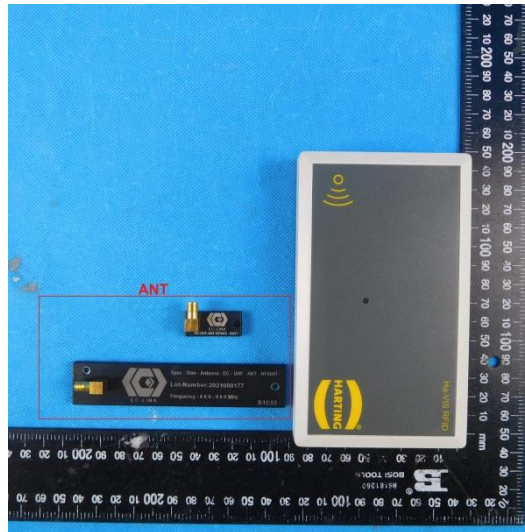


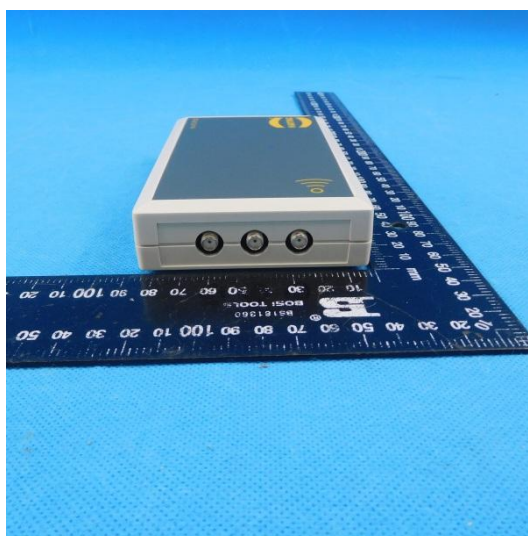
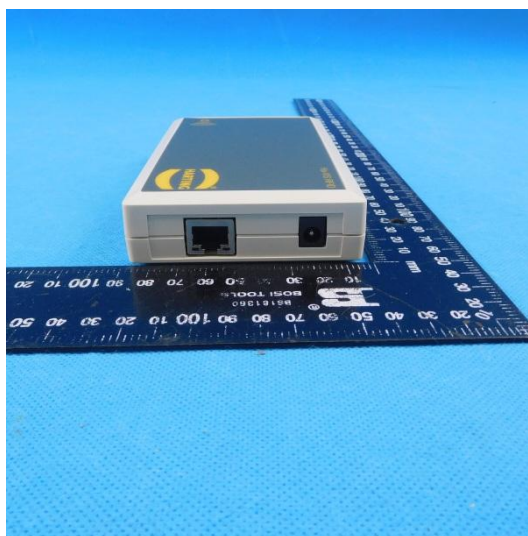
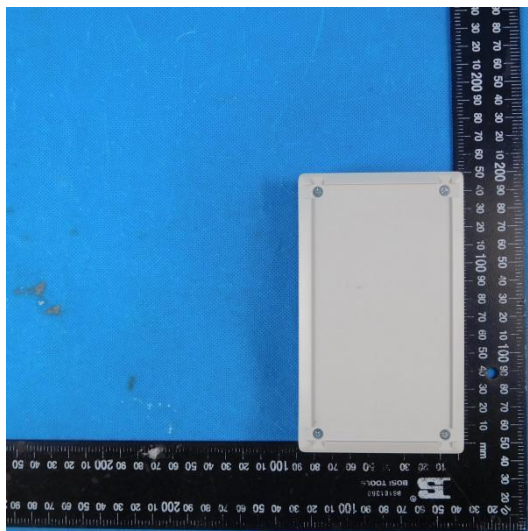


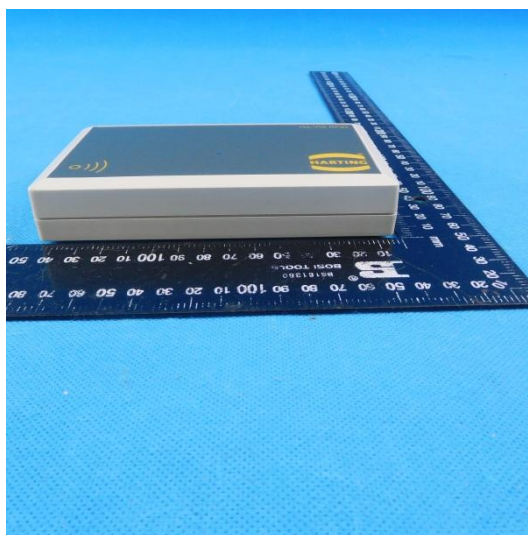
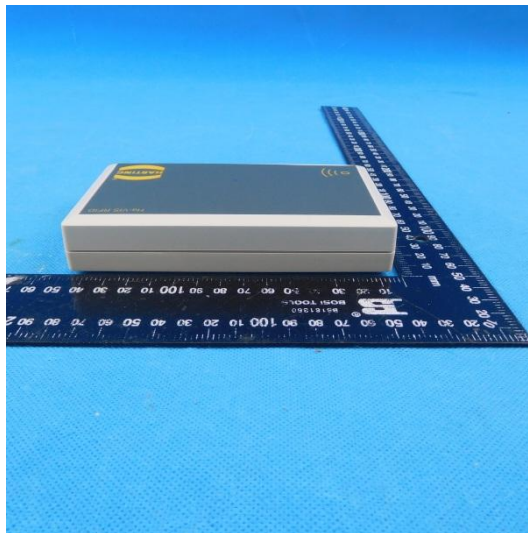




External Photos module







Internal Photos
module

