



FCC TEST REPORT

FCC ID: SY4-A02021

On Behalf of

Shanghai Huace Navigation Technology LTD.
Mobile Mapping System
Model No.: AlphaUni 900

Prepared for : Shanghai Huace Navigation Technology LTD.
Address : 599 Gaojing Road, Building D, Shanghai 201702, China

Prepared By : Shenzhen Alpha Product Testing Co., Ltd.
Address : Building i, No.2, Lixin Road, Fuyong Street, Bao'an District,
518103, Shenzhen, Guangdong, China

Report Number : A2012086-C01-R05
Date of Receipt : January 12, 2021
Date of Test : January 12, 2021- March 19, 2021
Date of Report : March 19, 2021
Version Number : V0

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TEST REPORT DECLARATION

Applicant : Shanghai Huace Navigation Technology LTD.
Address : 599 Gaojing Road, Building D, Shanghai 201702, China
Manufacturer : Shanghai Huace Navigation Technology LTD.
Address : 599 Gaojing Road, Building D, Shanghai 201702, China
EUT Description : Mobile Mapping System

(A) Model No. : AlphaUni 900

(B) Trademark : 

Measurement Standard Used:

FCC CFR Title 47 Part 90, FCC CFR Title 47 Part 2

ANSI C63.26: 2015

The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 2, Part 90 limits both conducted and radiated emissions. 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.

After the test, our opinion is that EUT compliance with the requirement of the above standards.

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.

Tested by (name + signature).....:

Lucas Pang
Project Engineer



Approved by (name + signature).....:

Simple Guan
Project Manager



Date of issue.....:

March 19, 2021

Revision History

Revision	Issue Date	Revisions	Revised By
V0	March 19, 2021	Initial released Issue	Lucas Pang

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

Test Item	Test Requirement	Standards Paragraph	Result
Transmitter Power(Conducted)	FCC PART 90	§ 90.205	P
Occupied Bandwidth & Emission Mask	FCC PART 90	§ 90.209, § 90.210	P
Spurious Emissions(conducted)	FCC PART 90	§ 90.210	P
Spurious Emissions(Radiated)	FCC PART 90	§ 90.210	P
Transient Frequency Behavior	FCC PART 90	§ 90.213	P
Frequency Stability	FCC PART 90	§ 90.214	P
Modulation Characteristics - Audio Frequency Response	FCC PART 2 FCC PART 90	§ 2.1047(a); § 90.207	N/A
Modulation Characteristics - Modulation Limiting	FCC PART 2 FCC PART 90	§ 2.1047(b); § 90.207	N/A
<p>Note:</p> <ol style="list-style-type: none"> 1. P is an abbreviation for Pass. 2. F is an abbreviation for Fail. 3. N/A is an abbreviation for Not Applicable. 			

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Description : Mobile Mapping System

Trademark : The logo consists of the word "CHCNAV" in a bold, sans-serif font. The letters "C", "H", "C", "N", and "A" are in a dark grey color, while "V" is in orange. A small orange icon resembling a map or a location pin is positioned to the right of the "V".

Model Number : AlphaUni 900

DIFF. : /

Test Voltage : DC 24V

UHF

Operation frequency : 433.00MHz

Conducted Power : 26.34dBm

Bandwidth : 12.5KHz, 25KHz

Modulation type : GMSK

Antenna Type : Rod Antenna, Maximum Gain is 6dBi.

Stated power : 1W

Software version : V1.0

Hardware version : V1.0

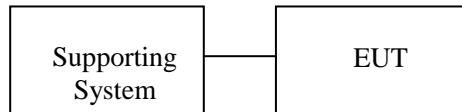
2.2. Accessories of Device (EUT)

Accessories1 : /
 Manufacturer : /
 Model : /
 Ratings : /

2.3. Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number	Certification or SDOC
1.	ADAPTER	MW	GSM120A24	N/A	N/A

2.4. Block Diagram of connection between EUT and simulators



The sample was placed 0.8m & 1.5m for the measurement below & above 1GHz above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

2.5. Test Mode

All modes and data rates and positions were investigated.

Test modes are chosen to be reported as the worst case configuration below:

Test Mode		
Item	Description of operation mode	Note
1	GMSK+BW12.5KHz+TX	at maximum rated power for transmitter
2	GMSK+BW25KHz+TX	at maximum rated power for transmitter

Note: The worst case modes for all test are the item 1 and item 2.

Description Operation Frequency

QMSK		
Test Channel	BW(MHz)	Frequency(MHz)
1	12.5	433.00
	25	433.00

2.6. Test Conditions

Items	Required	Actual
Temperature range:	15-35°C	24°C
Humidity range:	25-75%	56%
Pressure range:	86-106kPa	980kPa

2.7. Test Facility

Shenzhen Alpha Product Testing Co., Ltd
 Building i, No.2, Lixin Road, Fuyong Street, Bao'an District,
 518103, Shenzhen, Guangdong, China

June 21, 2018 File on Federal Communication Commission
 Registration Number: 293631

July 15, 2019 Certificated by IC
 Registration Number: CN0085

2.8. Measurement Uncertainty

(95% confidence levels, k=2)

Item	Uncertainty
Uncertainty for Power point Conducted Emissions Test	2.74dB
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	2.13 dB(Polarize: V)
	2.57dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.77dB(Polarize: V)
	3.80dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	4.16dB(Polarize: H)
	4.13dB(Polarize: V)
Uncertainty for radio frequency	5.4×10^{-8}
Uncertainty for conducted RF Power	0.37dB
Uncertainty for temperature	0.2°C
Uncertainty for humidity	1%
Uncertainty for DC and low frequency voltages	0.06%

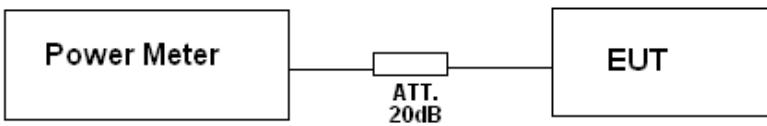
2.9. Test Equipment List

Equipment	Manufacture	Model No.	Serial No.	Last cal.	Cal Interval
9*6*6 anechoic chamber	CHENYU	9*6*6	N/A	2019.09.06	3 Year
Spectrum analyzer	ROHDE&SCHW ARZ	FSV40-N	102137	2020.09.02	1 Year
Spectrum analyzer	Agilent	N9020A	MY499100060	2020.09.02	1 Year
Receiver	ROHDE&SCHW ARZ	ESR	1316.3003K03-10208 2-Wa	2020.09.02	1 Year
Receiver	R&S	ESCI	101165	2020.09.02	1 Year
Bilog Antenna	Schwarzbeck	VULB 9168	VULB9168-438	2020.04.12	2 Year
Horn Antenna	SCHWARZBEC K	BBHA 9120 D	BBHA 9120 D(1201)	2020.04.12	2 Year
Active Loop Antenna	SCHWARZBEC K	FMZB 1519B	00059	2019.09.07	2 Year
Cable	Resenberger	N/A	No.1	2020.09.02	1 Year
Cable	Resenberger	N/A	No.2	2020.09.02	1 Year
Cable	Resenberger	N/A	No.3	2020.09.02	1 Year
Pre-amplifier	HP	HP8347A	2834A00455	2020.09.02	1 Year
Pre-amplifier	Agilent	8449B	3008A02664	2020.09.02	1 Year
L.I.S.N.#1	Schwarzbeck	NSLK8126	8126466	2020.09.02	1 Year
L.I.S.N.#2	ROHDE&SCHW ARZ	ENV216	101043	2020.09.02	1 Year
20db Attenuator	ICPROBING	IATS1	82347	2020.09.02	1 Year
Horn Antenna	SCHWARZBEC K	BBHA9170	00946	2019.09.07	2 Year
Preamplifier	SKET	LNPA_1840-50	SK2018101801	2020.09.02	1 Year
Power Meter	Agilent	E9300A	MY41496625	2020.09.02	1 Year
Temp. &Humid. Chamber	Weihuang	WHTH-1000-40-8 80	100631	2020.09.02	1 Year
Switching Mode Power Supply	JUNKE	JK12010S	20140927-6	2020.09.02	1 Year

3. Test Results and Measurement Data

3.1. Transmitter Power (Conducted)

3.1.1. Test Specification

Test Requirement:	Part 90.205:	
Test Method:	FCC part 2.1046	
Limits:	Part 90.205 (s) stipulates that the output power shall not exceed 20% of the power declared by the manufacturer.	
Test Setup:		
Test Procedure:	a) Connect the equipment as illustrated. b) Turn on the power meter c) Record value	
Test Result:	PASS	

3.1.2. Test Results

GMSK mode (1W): 12.5KHz						
Frequency (MHz)	Maximum Conducted Output Power(Peak) (dBm)	Maximum ERP (dBm)	Stated ERP Power (dBm)	Tolerance (%)	Limit (%)	Result
433.00	26.34	30.19	30	0.63	20	PASS

GMSK mode (1W): 25KHz						
Frequency (MHz)	Maximum Conducted Output Power(Peak) (dBm)	Maximum ERP (dBm)	Stated ERP Power (dBm)	Tolerance (%)	Limit (%)	Result
433.00	26.28	30.13	30	0.43	20	PASS

Note: 1. ERP= Maximum Conducted Output Power(Peak) + Antenna Gain – 2.15dB

3.2. Occupied Bandwidth and Emission Mask

3.2.1. Test Specification

3.2.2. Test data

Occupied Bandwidth:

GMSK 12.5KHz Channel Spacing:					
Channel	Frequency (MHz)	20dB Occupied Bandwidth (KHz)	99% Occupied Bandwidth (KHz)	Limit (99% KHz)	Result
Low	433.00	11.84	10.115	11.25	PASS

GMSK 25KHz Channel Spacing:					
Channel	Frequency (MHz)	20dB Occupied Bandwidth (KHz)	99% Occupied Bandwidth (KHz)	Limit (99% KHz)	Result
Low	433.00	20.65	19.107	20	PASS

Emission Mask:

GMSK 12.5KHz Channel Spacing:				
Channel	Frequency (MHz)	Applicable Mask	RBW	Result
Low	433.00	D	300	PASS

GMSK 25KHz Channel Spacing:				
Channel	Frequency (MHz)	Applicable Mask	RBW	Result
Low	433.00	C	300	PASS

Test plots as follows:

GMSK 12.5KHz Channel Spacing: Occupied Bandwidth

433.00MHz



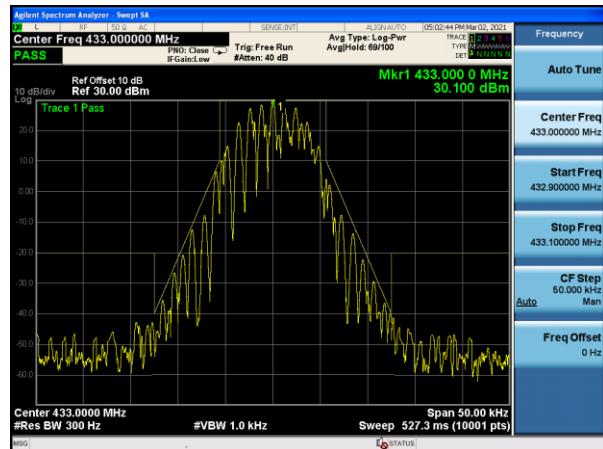
GMSK 25KHz Channel Spacing: Occupied Bandwidth

433.00MHz

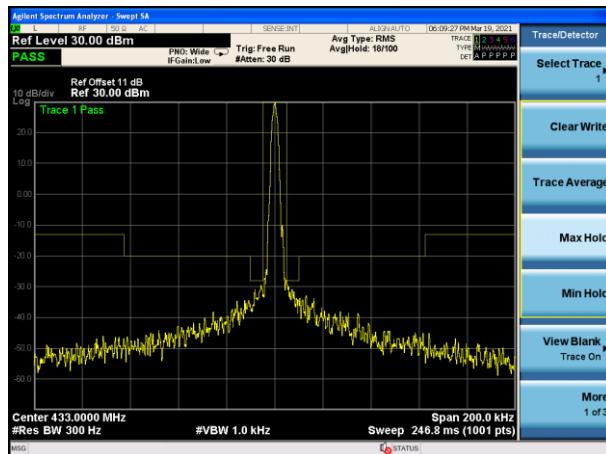


GMSK 12.5KHz Channel Spacing: Emission Mask

433.00MHz

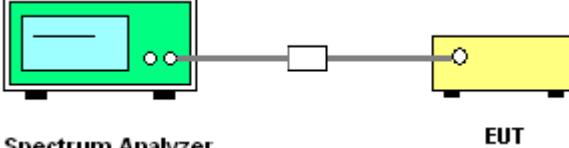


GMSK 25KHz Channel Spacing: Emission Mask



3.3. Spurious Emissions(conducted)

3.3.1. Test Specification

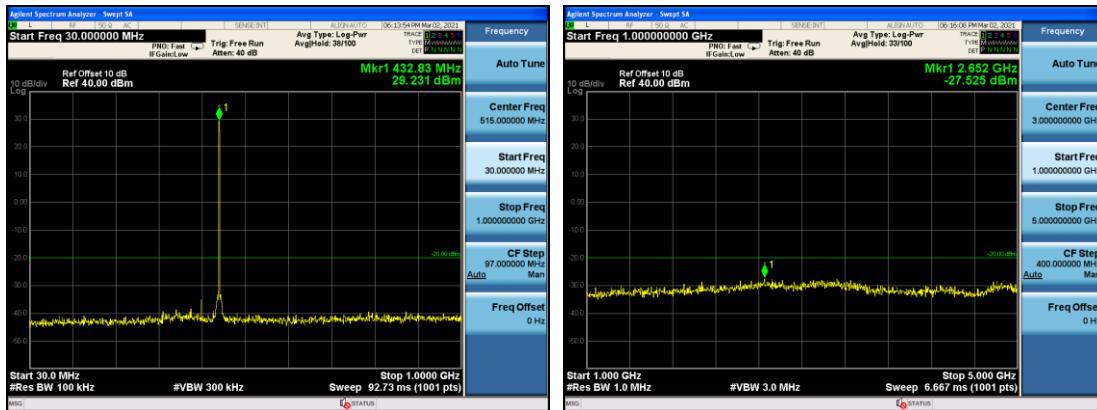
Test Requirement:	FCC Part 90.210
Test Setup:	
Test Limit:	<p>Modulation Type: GMSK</p> <p>FCC Part 22.359, 74.462, 80.211 and 90.210 and RSS Gen, RSS 119 Issue 12:</p> <p>For 12.5 bandwidth:</p> <p>On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 12.5 kHz at least:</p> <p>High: $50 + 10 \log (P_{\text{watts}}) = 50 + 10 \log (3.0) = 54.77 \text{ dB}$</p> <p>Low: $50 + 10 \log (P_{\text{watts}}) = 50 + 10 \log (1.0) = 50.00 \text{ dB}$</p> <p>Note: In general, the worst case attenuation requirement shown above was applied.</p> <p>Calculation: Limit (dBm) = $EL - 50 - 10 \log 10 (TP)$</p> <p>Notes: EL is the emission level of the Output Power expressed in dBm, In this application, the EL is 34.77 dBm for High rated power and 30.00 for lower rated power.</p> <p>High: Limit (dBm) = $34.77 - 50 - 10 \log (3.0) = -20 \text{ dBm}$</p> <p>Low: Limit (dBm) = $30.00 - 50 - 10 \log (1.0) = -20 \text{ dBm}$</p> <p>For 25 kHz bandwidth:</p> <p>On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 62.5 kHz at least:</p> <p>High: $43 + 10 \log (P_{\text{watts}}) = 43 + 10 \log (3.0) = 47.77 \text{ dB}$</p> <p>Low: $43 + 10 \log (P_{\text{watts}}) = 43 + 10 \log (1.0) = 43.00 \text{ dB}$</p> <p>Note: In general, the worst case attenuation requirement shown above was applied.</p> <p>Calculation: Limit (dBm) = $EL - 43 - 10 \log 10 (TP)$</p> <p>In this application, the EL is 34.77 dBm for High rated power and 30.00 for lower rated power.</p> <p>High: Limit (dBm) = $34.77 - 43 - 10 \log (3.0) = -13 \text{ dBm}$</p> <p>Low: Limit (dBm) = $30.00 - 43 - 10 \log (1.0) = -13 \text{ dBm}$</p> <p>Note: 1. In general, the worst case attenuation requirement shown above was applied.</p> <p>2. The measurement frequency range from 9 KHz to 5 GHz.</p> <p>3. *** means that the emission level is too low to be measured or at least 20 dB down than the limit.</p> <p>4. ERP for below 1GHz and EIRP above 1GHz.</p>
Test Result:	PASS

3.3.2. Test data

Test plots as follows:

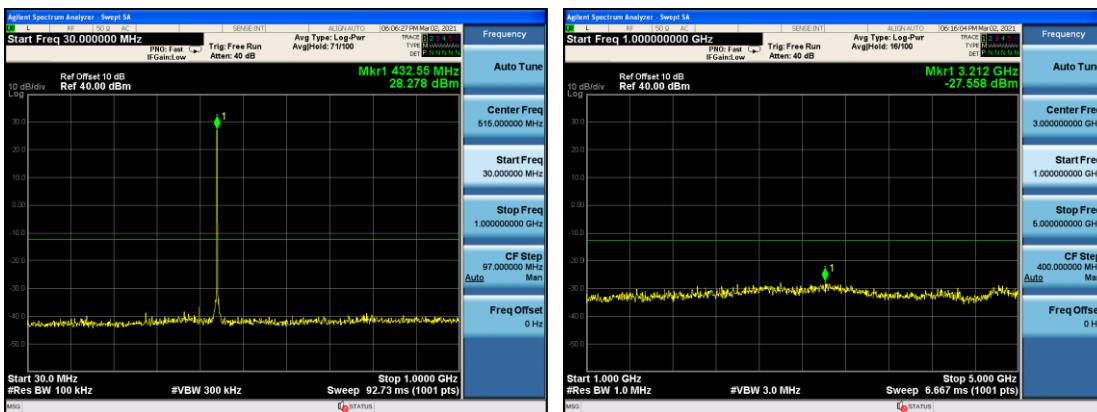
GMSK 12.5KHz Channel Spacing:

433.00MHz



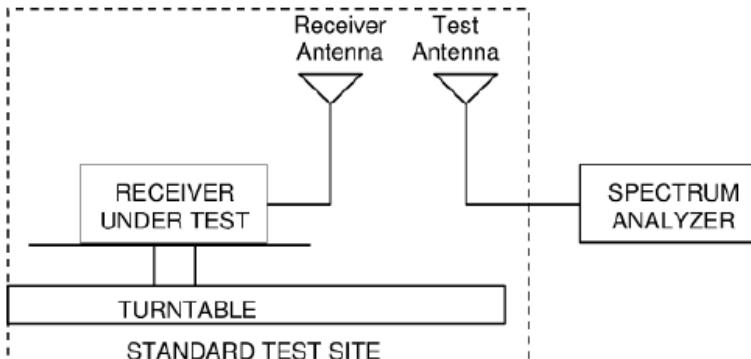
GMSK 25KHz Channel Spacing:

433.00MHz



3.4. Radiated Spurious Emission

3.4.1. Test Specification

Test Requirement:	FCC Part 90.210															
Test Method:	ANSI C63.26															
Measurement Distance:	3 m															
Antenna Polarization:	Horizontal & Vertical															
Operation mode:	Refer to item 4.1															
Receiver Setup:	<table border="1"> <tr> <th>Frequency</th> <th>RBW</th> <th>VBW</th> </tr> <tr> <td>9kHz- 150kHz</td> <td>200Hz</td> <td>1kHz</td> </tr> <tr> <td>150kHz- 30MHz</td> <td>9kHz</td> <td>30kHz</td> </tr> <tr> <td>30MHz-1GHz</td> <td>100KHz</td> <td>300KHz</td> </tr> <tr> <td>Above 1GHz</td> <td>1MHz</td> <td>3MHz</td> </tr> </table>	Frequency	RBW	VBW	9kHz- 150kHz	200Hz	1kHz	150kHz- 30MHz	9kHz	30kHz	30MHz-1GHz	100KHz	300KHz	Above 1GHz	1MHz	3MHz
Frequency	RBW	VBW														
9kHz- 150kHz	200Hz	1kHz														
150kHz- 30MHz	9kHz	30kHz														
30MHz-1GHz	100KHz	300KHz														
Above 1GHz	1MHz	3MHz														
Limit:	<p>For equipment using 25 kHz channel spacing, on any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth: At least $43 + 10\log(P)$ dB.</p> <p>For equipment using 12.5 kHz channel spacing, on any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 12.5 kHz: At least $50 + 10 \log(P)$ dB or 70 dB, whichever is the lesser attenuation.</p>															
Test setup:																
Test Procedure:	<p>The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load, which was also placed on the turntable. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.</p> <p>The frequency range up to teeth harmonic of the fundamental frequency was investigated.</p> <p>Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by</p>															

	<p>the substitution. Spurious emissions in dB =10, 1g (TXpwr in Watts/0.001)-the absolute level Spurious attenuation limit in dB =50+10 Log₁₀ (power out in Watts) for EUT with a 12.5 kHz and 25KHz channel bandwidth.</p>
Test results:	PASS

3.4.2. Test Data

Test Mode: 433.00MHz, Channel Spacing 12.5KHz

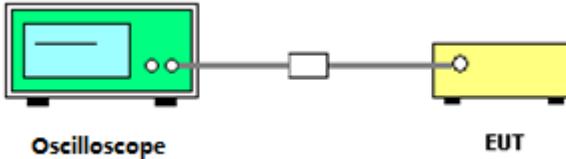
Frequency (MHz)	Reading level (dBm)	Antenna Polarization	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
152.648	-92.96	V	0.24	31.35	-61.85	-20	-41.85
360.904	-94.20	V	0.26	31.34	-63.12	-20	-43.12
673.313	-96.75	V	0.42	31.24	-65.93	-20	-45.93
863.444	-96.39	V	0.58	30.71	-66.26	-20	-46.26
1263.509	-85.44	V	1.23	26.38	-60.29	-20	-40.29
3864.166	-80.71	V	1.68	25.47	-56.92	-20	-36.92
285.253	-96.53	H	0.43	31.24	-65.72	-20	-45.72
399.050	-94.35	H	0.45	30.68	-64.12	-20	-44.12
479.190	-96.89	H	0.64	30.85	-66.68	-20	-46.68
675.773	-98.28	H	0.79	31.12	-67.95	-20	-47.95
1368.694	-85.36	H	1.29	26.12	-60.53	-20	-40.53
3258.712	-81.76	H	1.62	25.41	-57.97	-20	-37.97

Test Mode: 433.00MHz, Channel Spacing 25KHz

Frequency (MHz)	Reading level (dBm)	Antenna Polarization	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
149.365	-93.61	V	0.24	31.35	-62.50	-20	-42.50
360.122	-93.53	V	0.26	31.34	-62.45	-20	-42.45
672.254	-97.22	V	0.42	31.24	-66.40	-20	-46.40
867.320	-96.24	V	0.58	30.71	-66.11	-20	-46.11
1259.385	-85.31	V	1.23	26.38	-60.16	-20	-40.16
3856.570	-80.76	V	1.68	25.47	-56.97	-20	-36.97
287.978	-96.73	H	0.43	31.24	-65.92	-20	-45.92
402.660	-94.18	H	0.45	30.68	-63.95	-20	-43.95
475.190	-96.37	H	0.64	30.85	-66.16	-20	-46.16
678.902	-97.96	H	0.79	31.12	-67.63	-20	-47.63
1370.493	-85.13	H	1.29	26.12	-60.30	-20	-40.30
3258.430	-81.48	H	1.62	25.41	-57.69	-20	-37.69

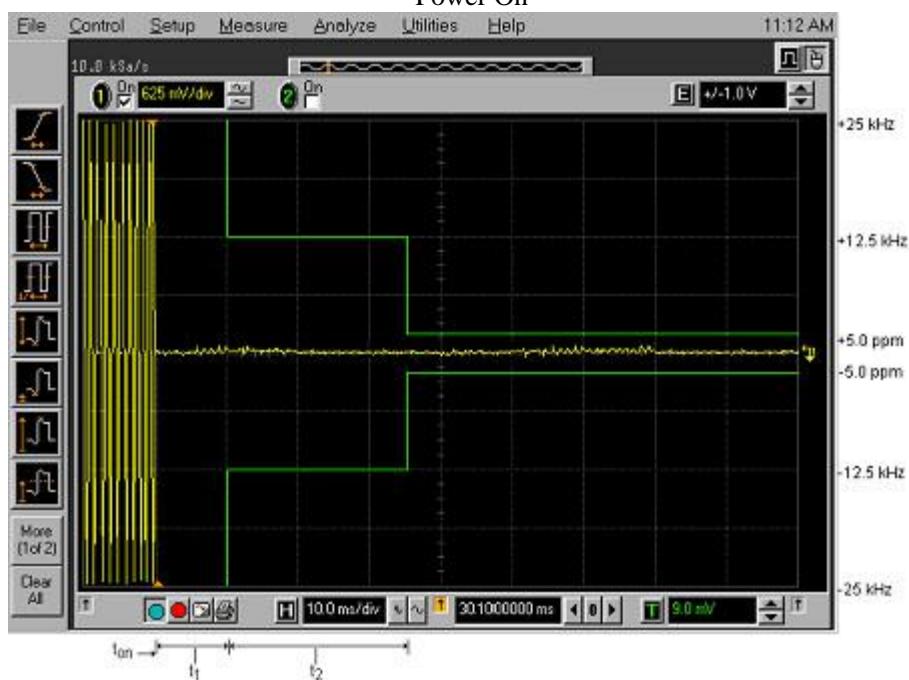
3.5. Transient Frequency Behavior

3.5.1. Test Specification

Test Requirement:	FCC Part 90.214																																						
Test Setup:	 <p style="text-align: center;">Oscilloscope EUT</p>																																						
Test Limit	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Frequency Range</th> <th rowspan="2">Channel Bandwidth</th> <th colspan="3">Frequency Tolerance (ppm)</th> </tr> <tr> <th>Fixed and Base Station</th> <th colspan="2">Mobile Stations</th> </tr> </thead> <tbody> <tr> <td rowspan="3">150-174MHz</td> <td>6.25</td> <td>1.0</td> <td>> 2W</td> <td>2.0</td> </tr> <tr> <td>12.5</td> <td>2.5</td> <td></td> <td>5.0</td> </tr> <tr> <td>25</td> <td>5.0</td> <td></td> <td>50.0*</td> </tr> <tr> <td rowspan="3">421-512MHz</td> <td>6.25</td> <td>0.5</td> <td>> 2W</td> <td>1.0</td> </tr> <tr> <td>12.5</td> <td>1.5</td> <td></td> <td>2.5</td> </tr> <tr> <td>25</td> <td>2.5</td> <td></td> <td>5.0</td> </tr> </tbody> </table> <p style="text-align: center;">* Stations operating in the 154.45 MHz or the 173.2 to 173.4 MHz bands must have a frequency stability of 5 ppm. * Paging transmitters operating on paging-only frequencies must operate with frequency stability of 5 ppm in the 150-174 MHz band and 2.5 ppm in the 421-512 MHz band.]</p>					Frequency Range	Channel Bandwidth	Frequency Tolerance (ppm)			Fixed and Base Station	Mobile Stations		150-174MHz	6.25	1.0	> 2W	2.0	12.5	2.5		5.0	25	5.0		50.0*	421-512MHz	6.25	0.5	> 2W	1.0	12.5	1.5		2.5	25	2.5		5.0
Frequency Range	Channel Bandwidth	Frequency Tolerance (ppm)																																					
		Fixed and Base Station	Mobile Stations																																				
150-174MHz	6.25	1.0	> 2W	2.0																																			
	12.5	2.5		5.0																																			
	25	5.0		50.0*																																			
421-512MHz	6.25	0.5	> 2W	1.0																																			
	12.5	1.5		2.5																																			
	25	2.5		5.0																																			
Test Procedure:	<p>The EUT was set in the climate chamber and connected to an external DC power supply and AC power supply. The RF output was directly connected to Oscilloscope. The coupling loss of the additional cables was recorded and taken in account for all the measurements. After temperature stabilization (approx. 20 min for each stage), the frequency for the lower, the middle and the highest frequency range was recorded. For Frequency stability Vs. Voltage the EUT was connected to a DC power supply or AC power supply and the voltage was adjusted in the required ranges. The result was recorded.</p>																																						
Test Result:	PASS																																						

3.5.2. Test data

Test Plots for channel spacing 25KHz, EUT power setting: Maximum.
Power On

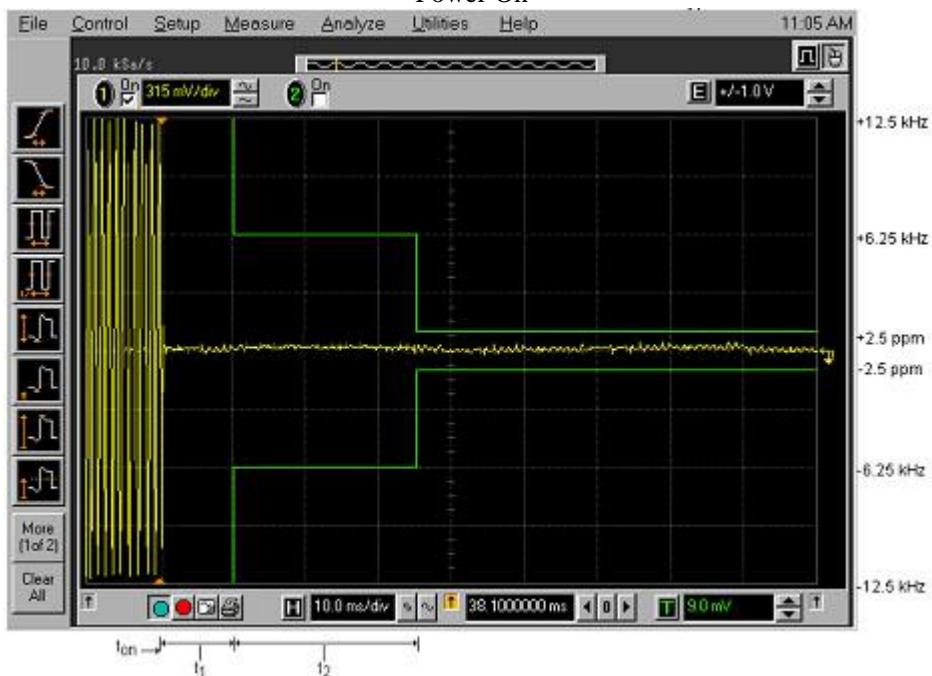


Power On

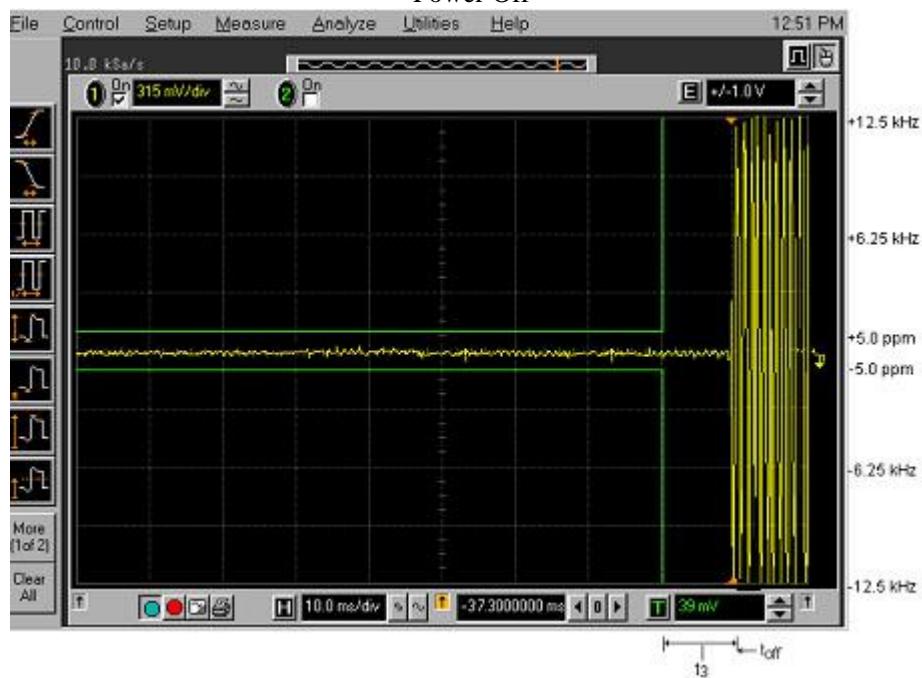


$t_4 - t_{off}$

Test Plots for channel spacing 12.5KHz. EUT power setting: Maximum Power On

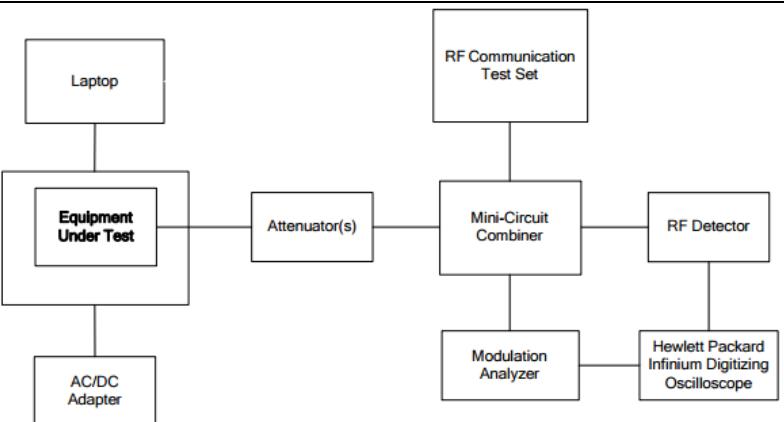


Power Off



3.6. Behavior Frequency Stability

3.6.1. Test Specification

Test Requirement:	FCC Part 90.213
Test Method:	ANSI C63.26
Test Setup:	 <pre> graph TD Laptop[Laptop] --- EUT[Equipment Under Test] EUT --- ACDC[AC/DC Adapter] EUT --- Attenuators[Attenuator(s)] Attenuators --- MiniCircuit[Mini-Circuit Combiner] MiniCircuit --- RFDetector[RF Detector] RFDetector --- ModulationAnalyzer[Modulation Analyzer] ModulationAnalyzer --- Oscilloscope[Hewlett Packard Infinium Digitizing Oscilloscope] </pre>
Test Procedure:	<p>Method of Measurement (using a Modulation Domain Analyzer). The output of the EUT was connected to a power meter in order to get a reference power measurement. And the reference level is -20dBm. Once the reference power measurement was determined, an external signal source was connected to the Modulation Domain Analyzer in order to set the trigger level.</p> <p>The EUT was connected to the Modulation Domain Analyzer. In order to capture a single-shot turn-on of the transmitter signal, the modulation domain analyzer was set to trigger on the rising edge of the waveform. Plots were taken.</p> <p>The modulation domain analyzer was then adjusted to trigger on the falling edge of the transmitter waveform in order to capture a single-shot turn-off transient of the transmitter signal. Plots were taken.</p>
Test Result:	PASS

3.6.2. Test data

Conclusion: PASS			
Mode	Voltage (Vdc)	Frequency error (Hz)	frequency error (ppm)
12.5KHz Channel Spacing	24	-34	-0.0027
	22	-28	-0.0331
	20	-54	-0.0640
	18	-29	-0.0350
Limit		2.5ppm	
25KHz Channel Spacing	24	-46	-0.0546
	22	-29	-0.0346
	20	-21	-0.0256
	18	-31	-0.0373
Limit		5ppm	

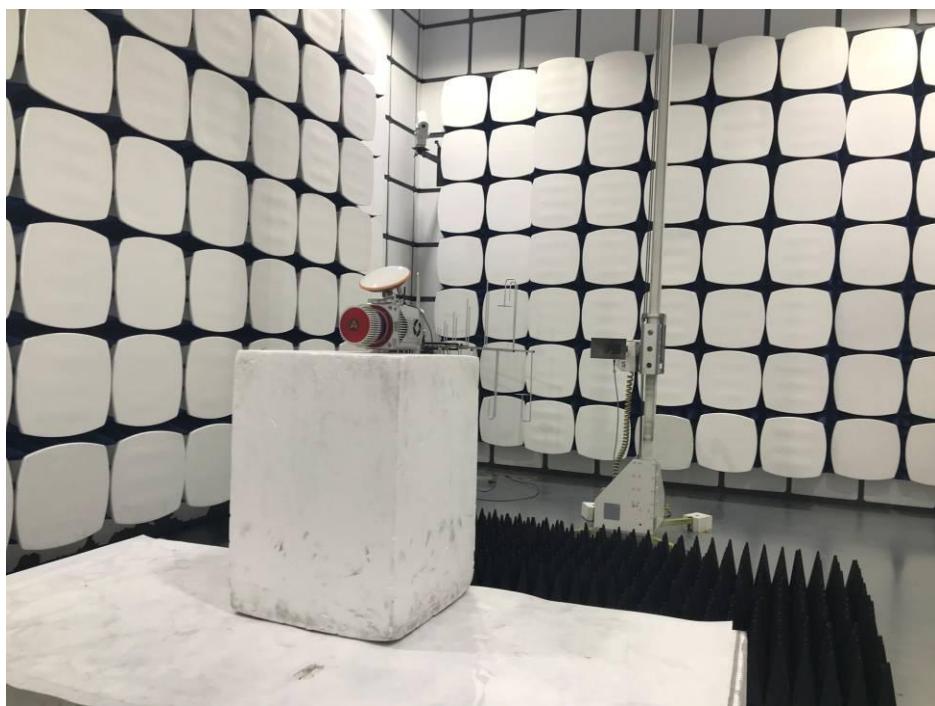
Mode	Temperature (°C)	Frequency error (Hz)	frequency error (ppm)
12.5KHz Channel Spacing	-20	-36	-0.0028
	-10	-25	-0.0020
	0	-52	-0.0042
	10	-29	-0.0023
	20	-31	-0.0025
	30	-46	-0.0037
	40	-27	-0.0022
	50	-17	-0.0013
Limit		2.5ppm	
25KHz Channel Spacing	-20	-30	-0.0012
	-10	-40	-0.0016
	0	-30	-0.0012
	10	-31	-0.0012
	20	-31	-0.0013
	30	-31	-0.0012
	40	-24	-0.0010
	50	-23	-0.0009
Limit		5ppm	

3.7. Modulation Characteristic

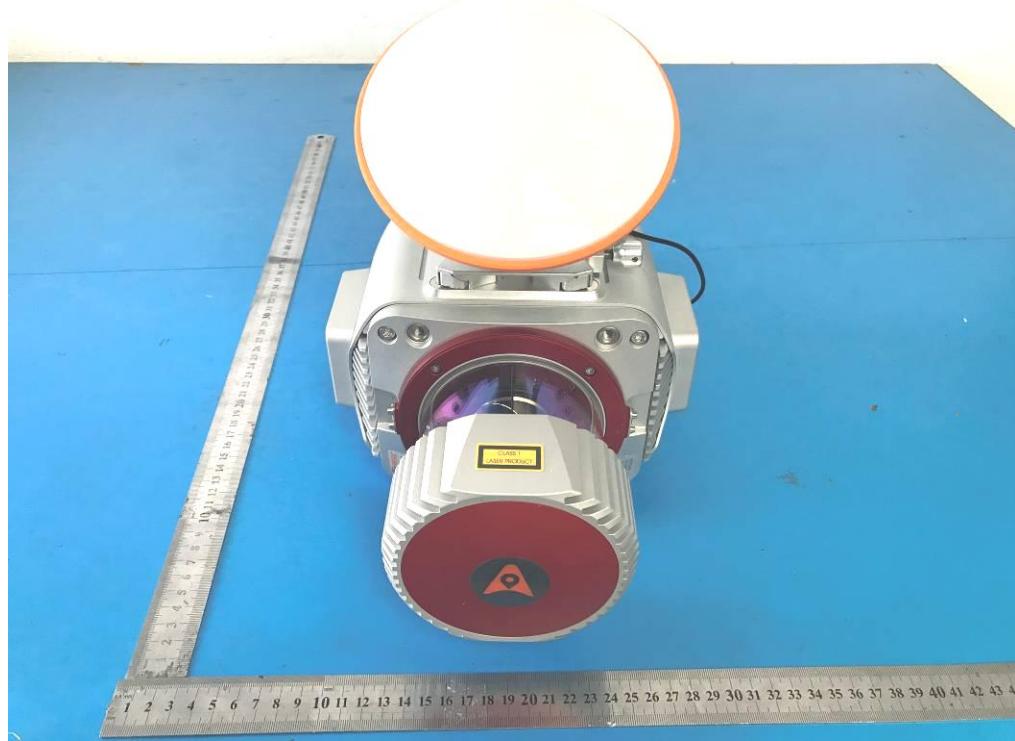
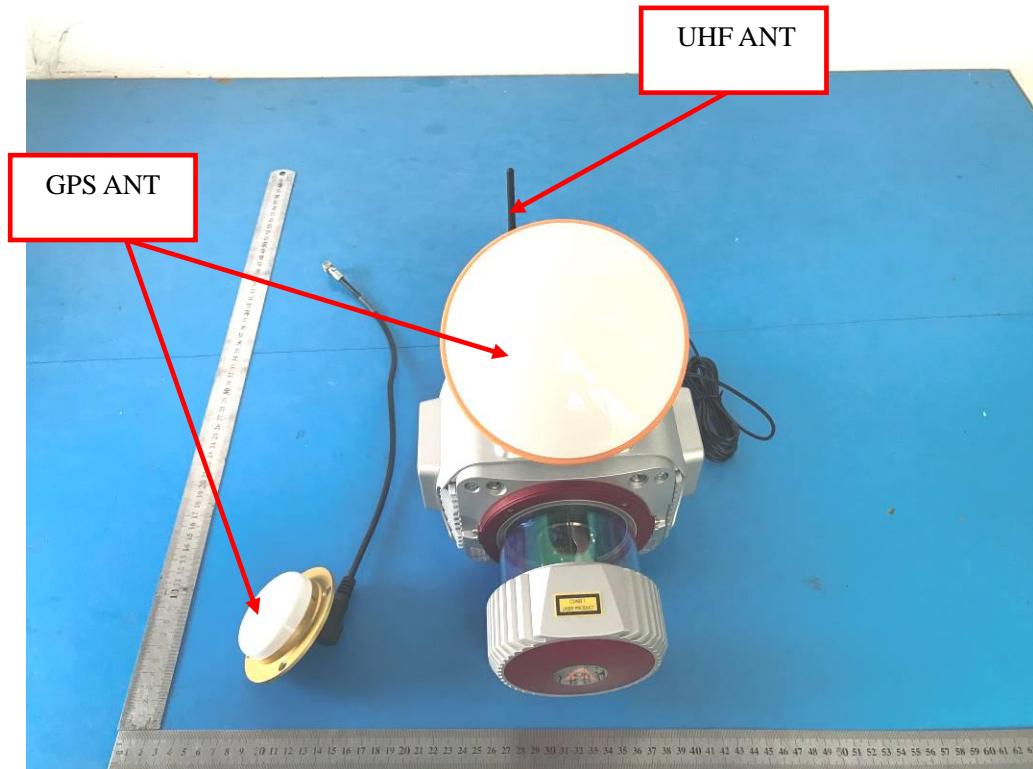
Test Requirement:	FCC Part 90.207
Test Result:	According to FCC § 2.1047(d), Part 22, 74, 90 there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

4. TEST SETUP PHOTO

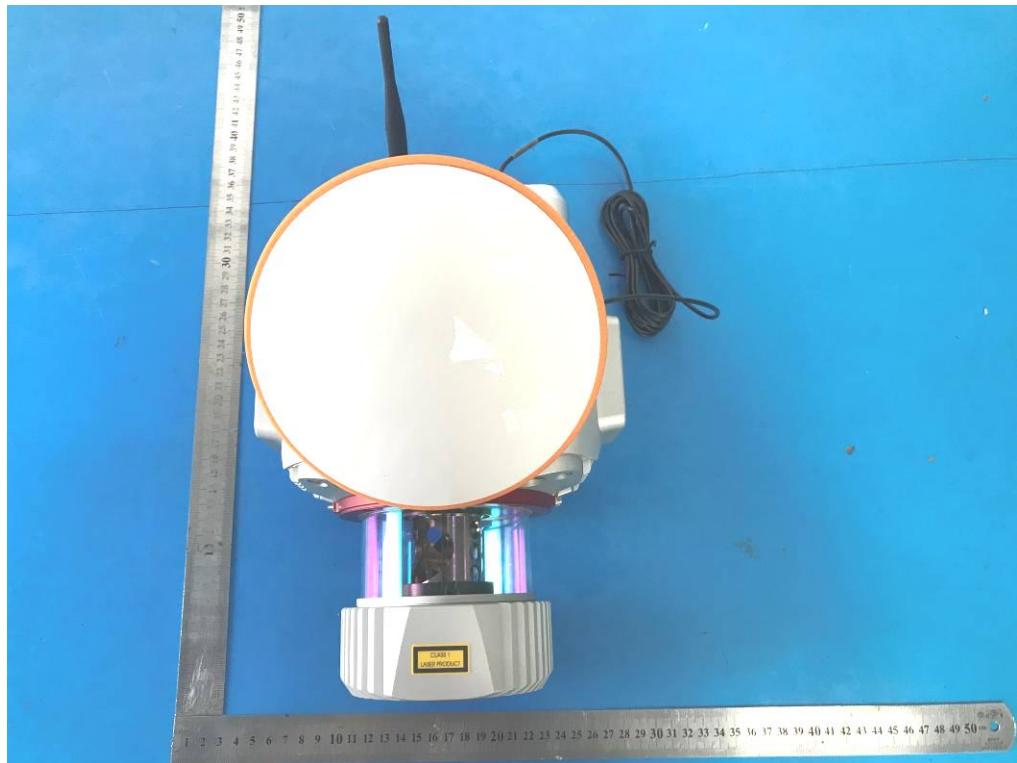
4.1. Photos of Radiated emission



5. TEST SETUP PHOTO

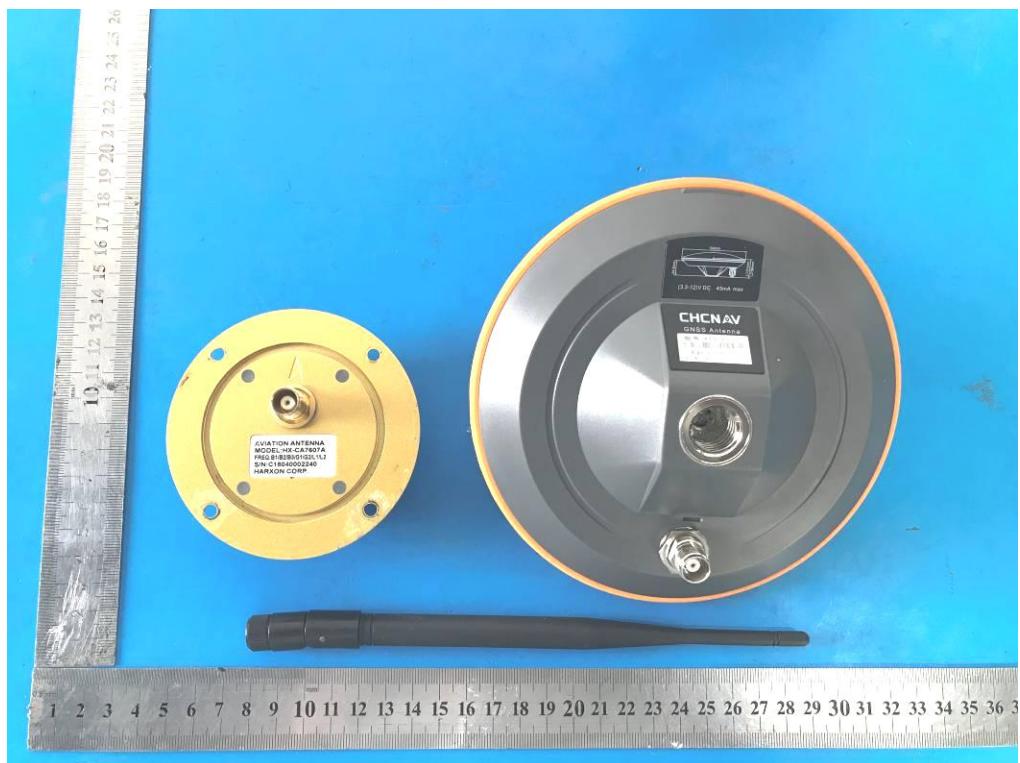


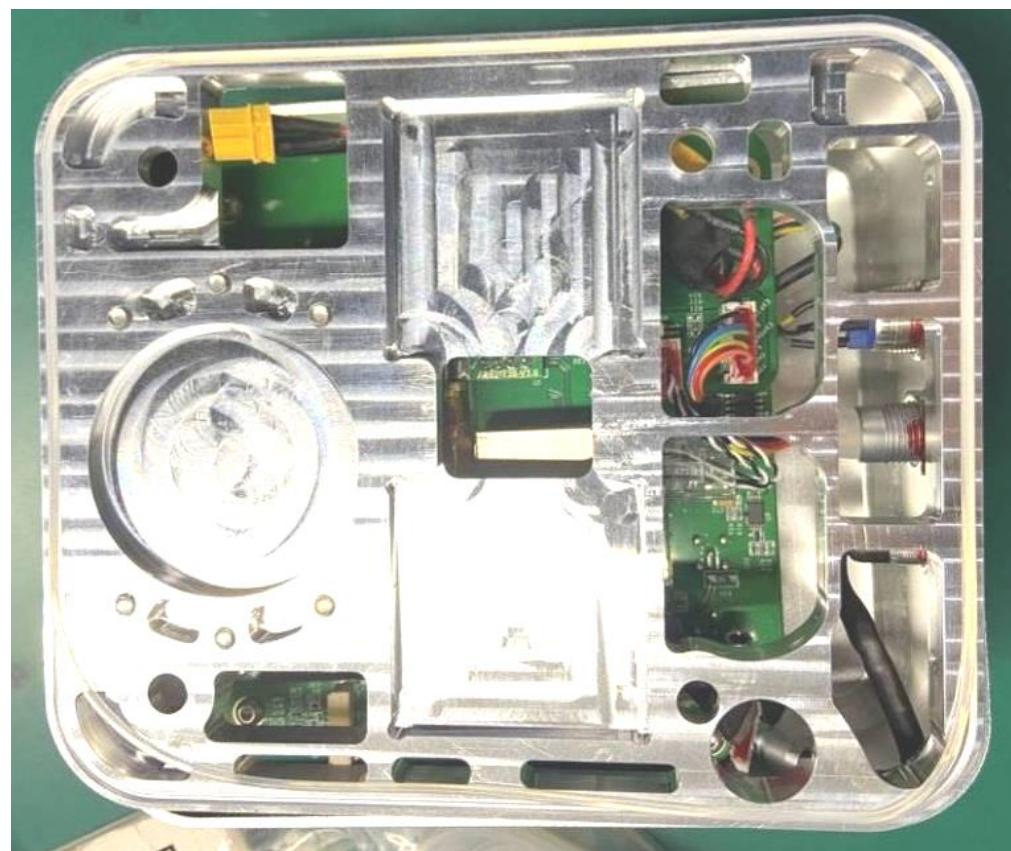
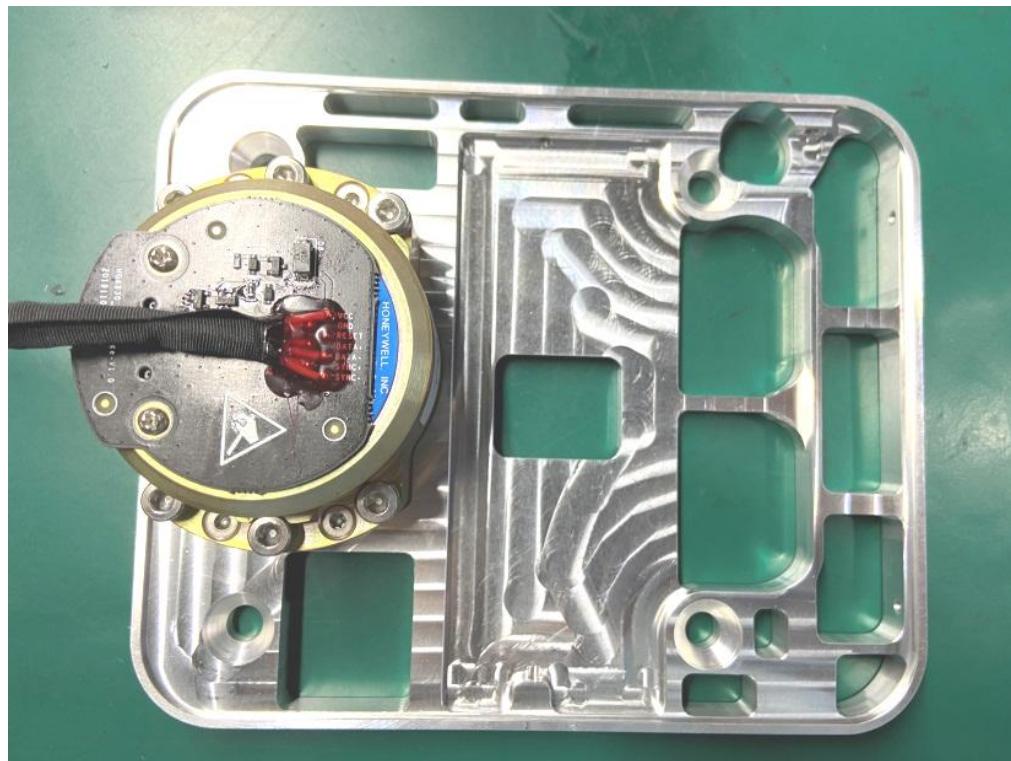


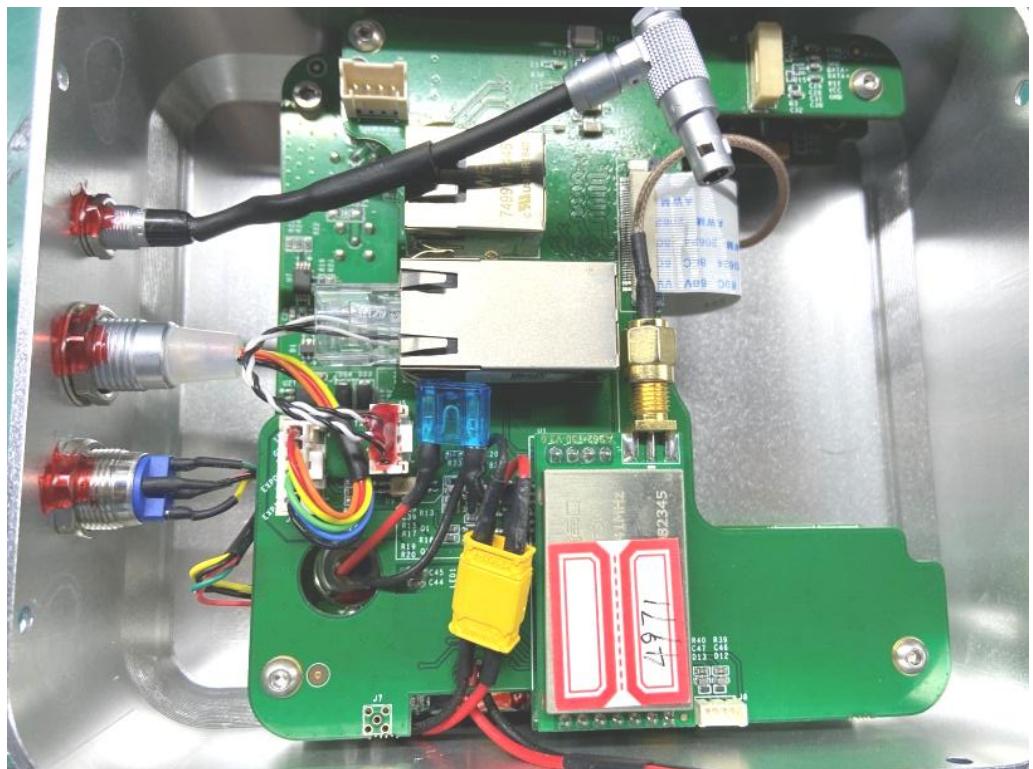
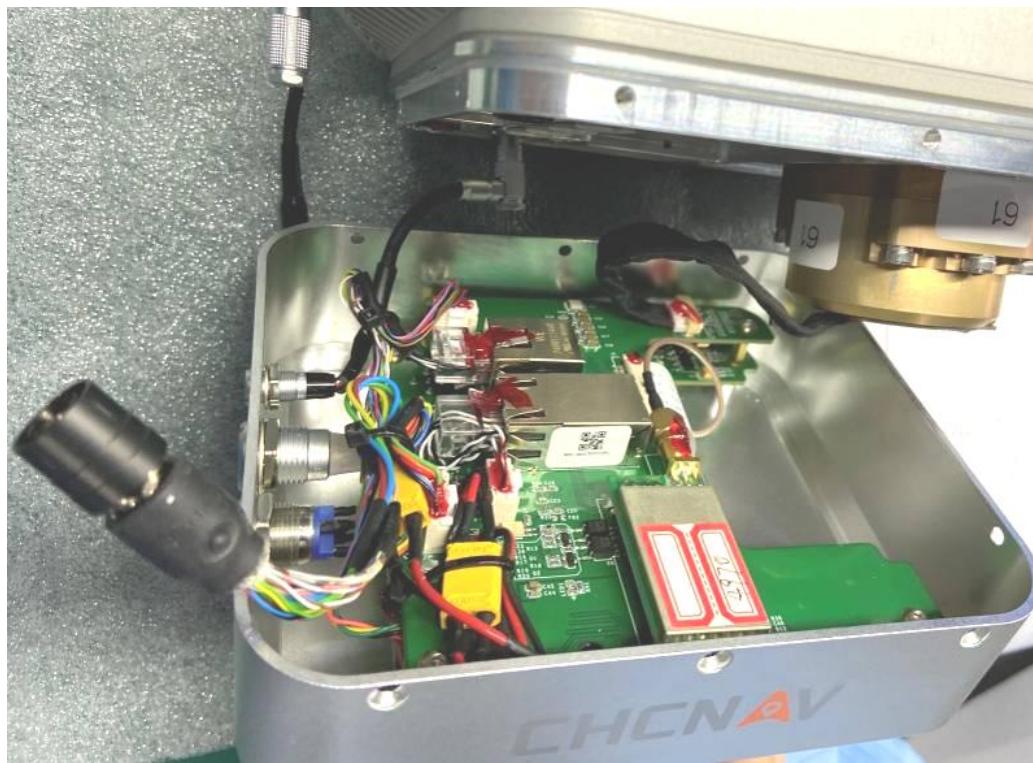


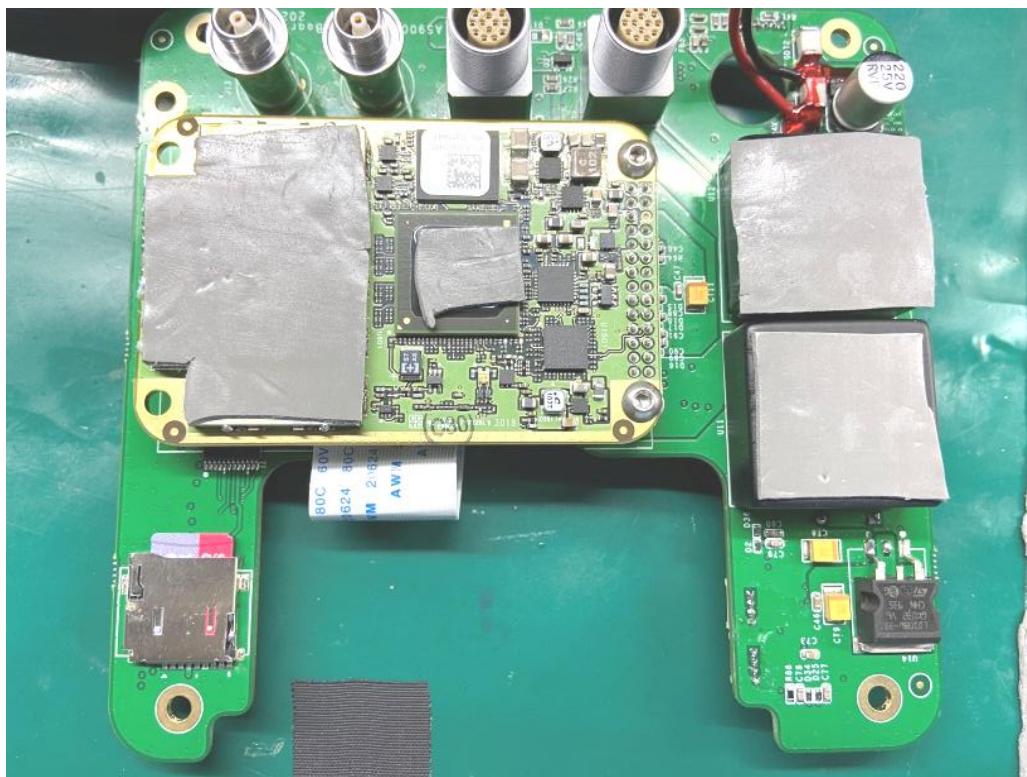


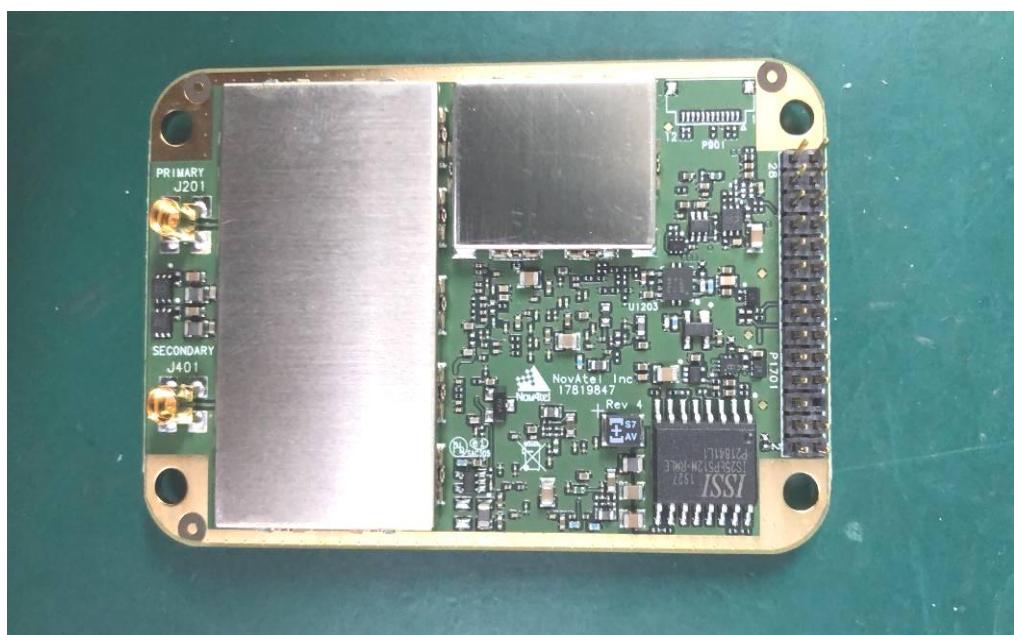


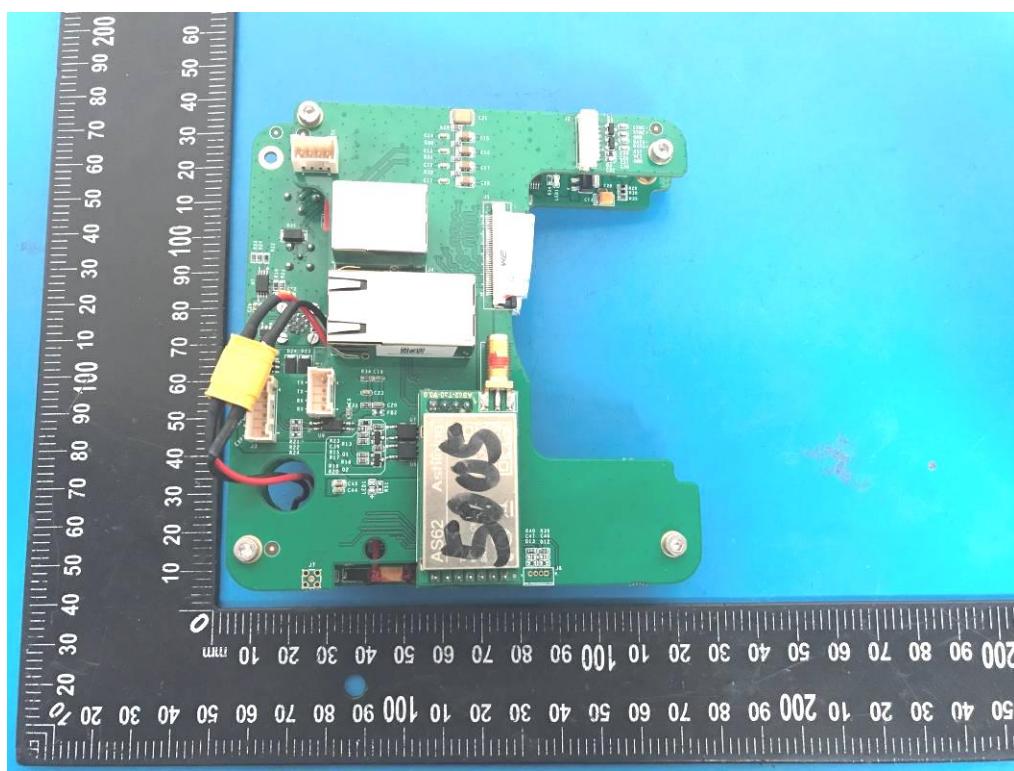
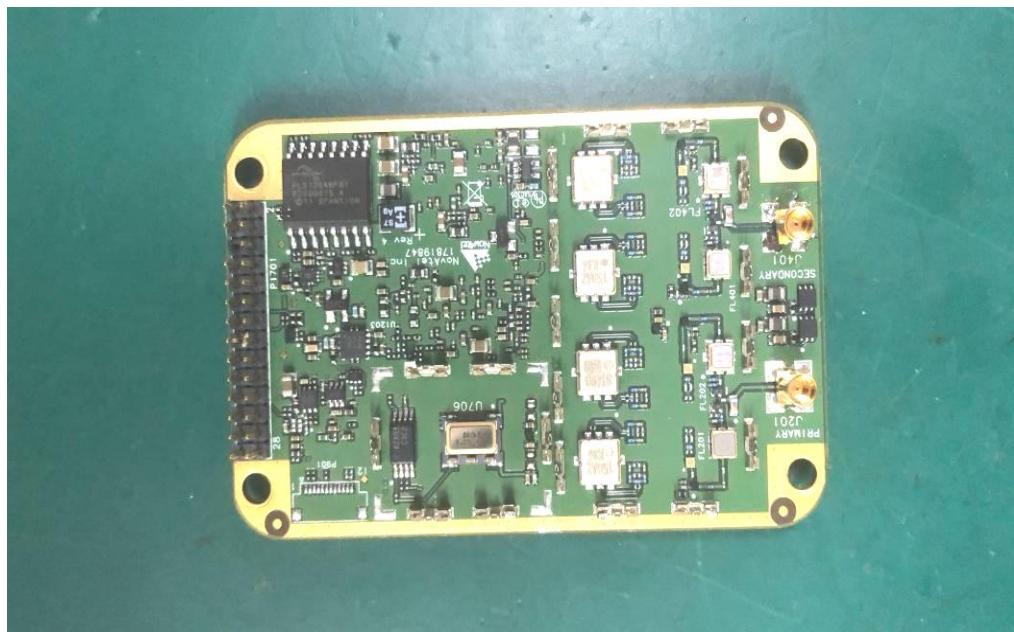


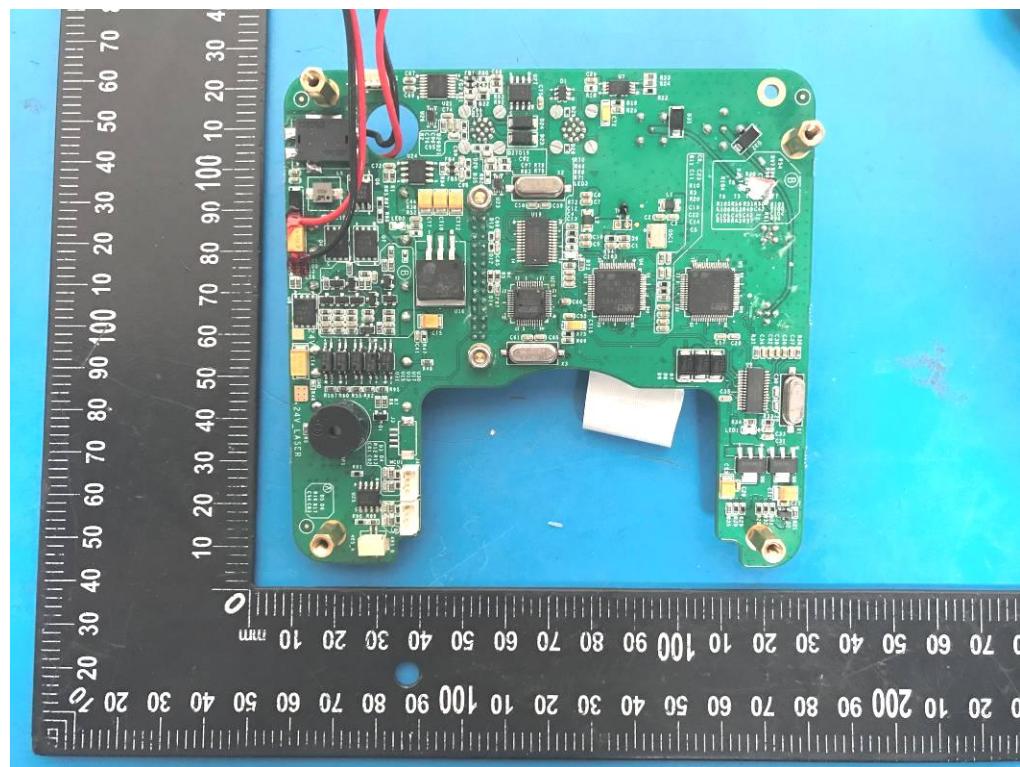
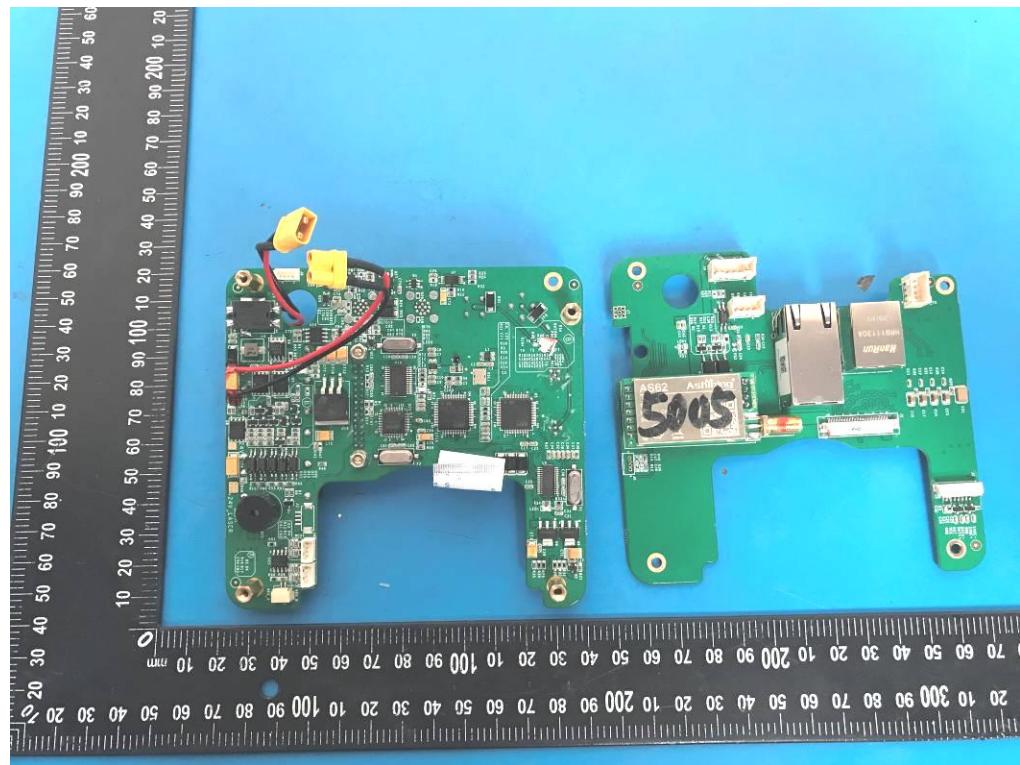


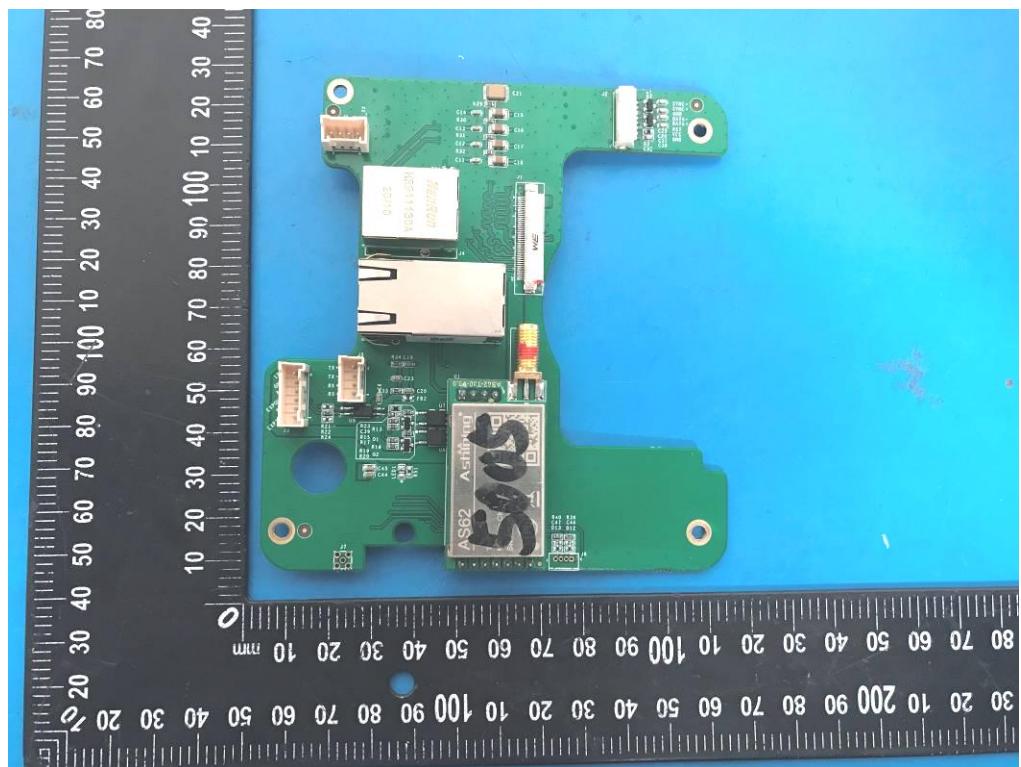
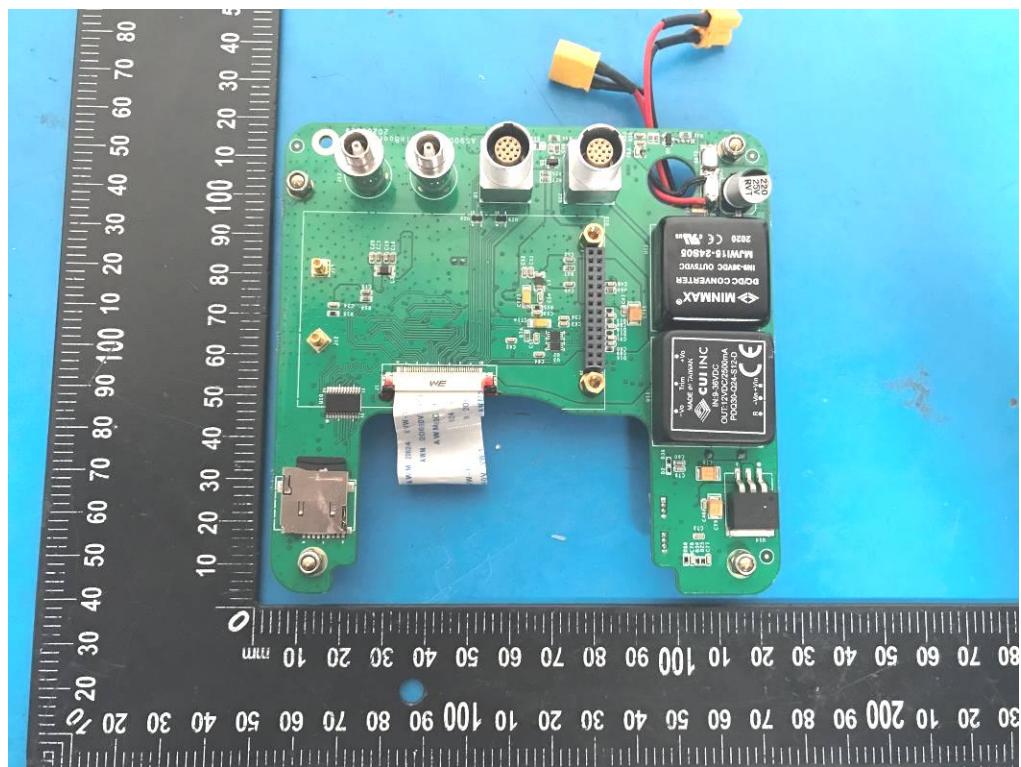


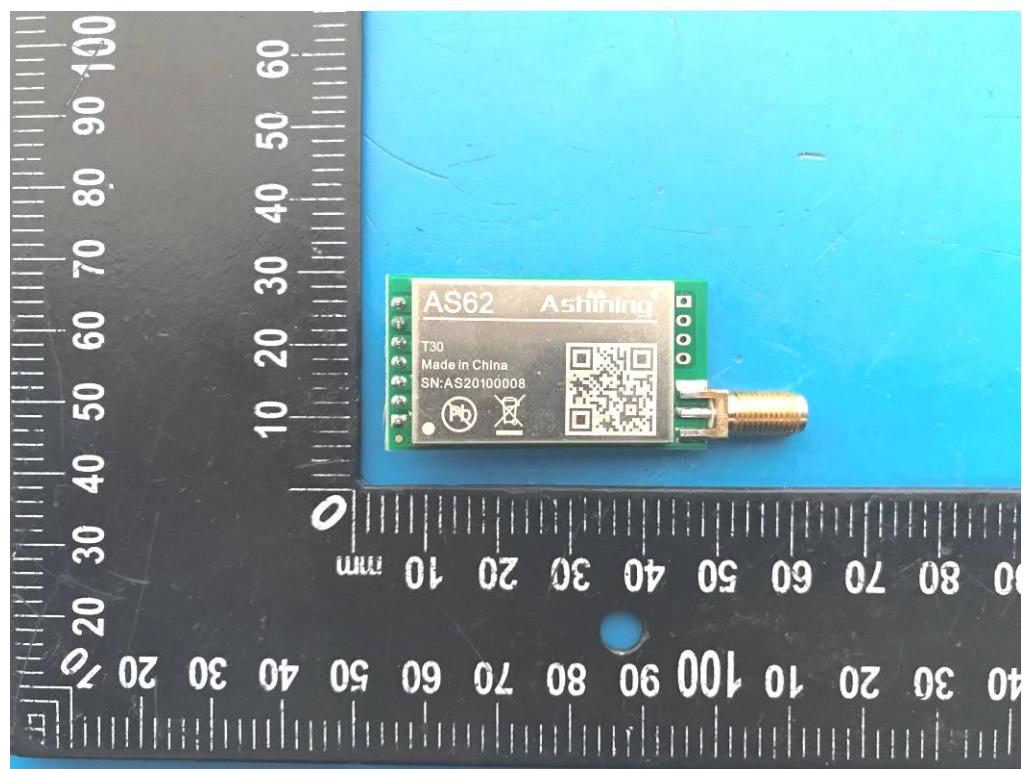
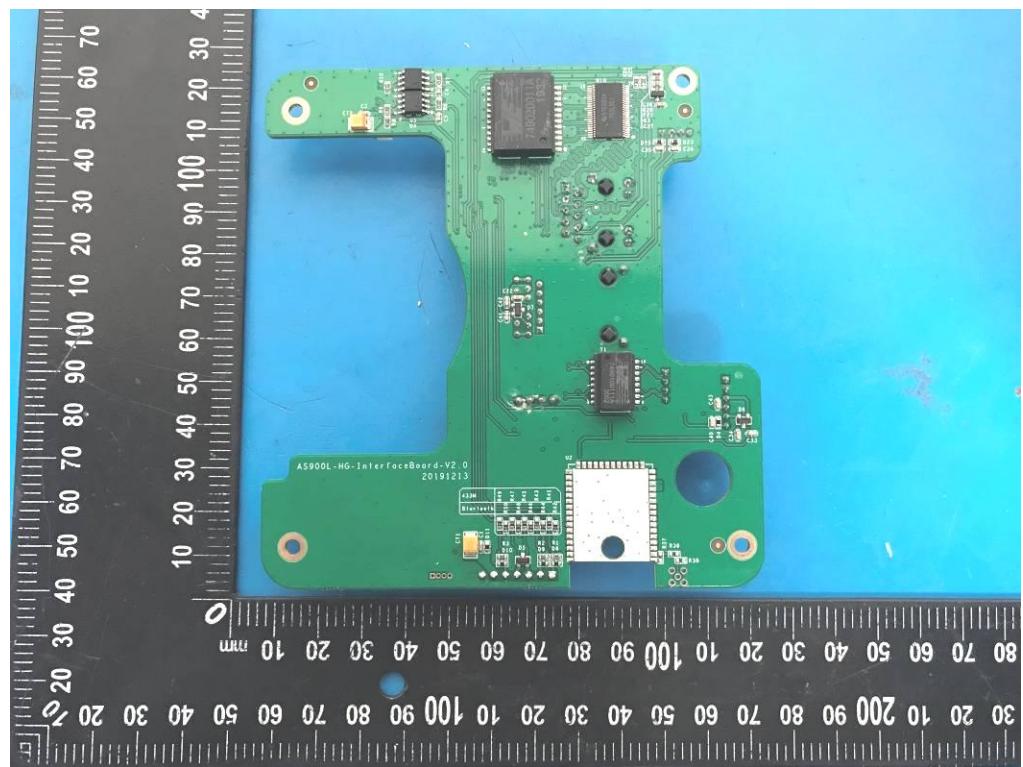


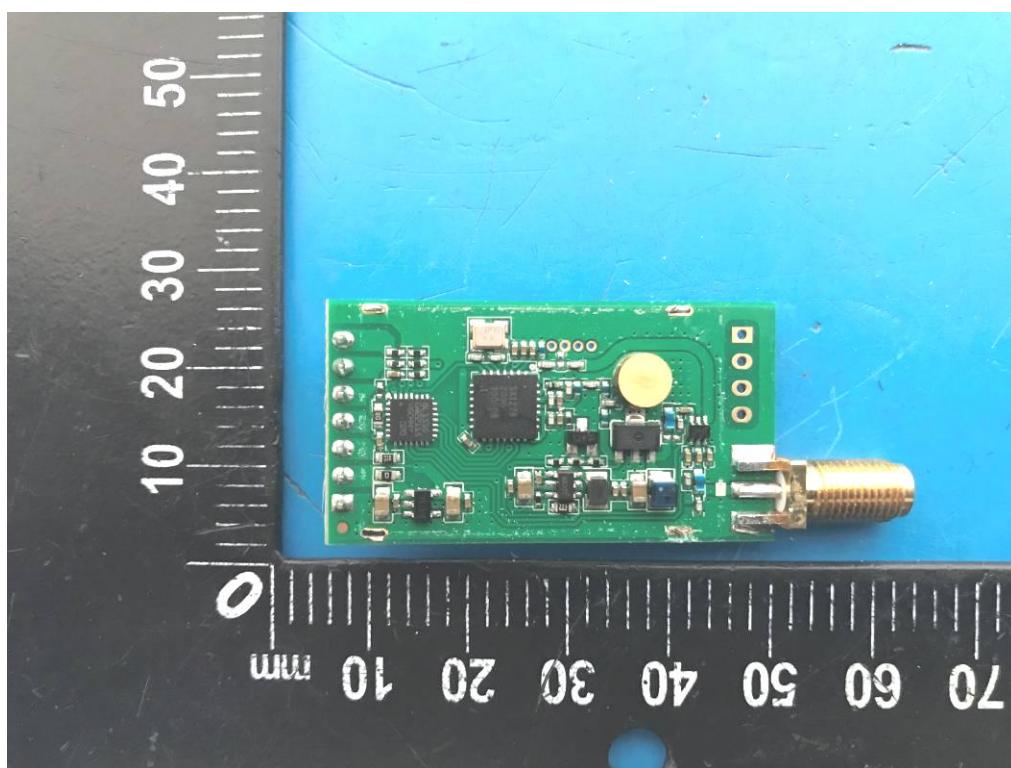
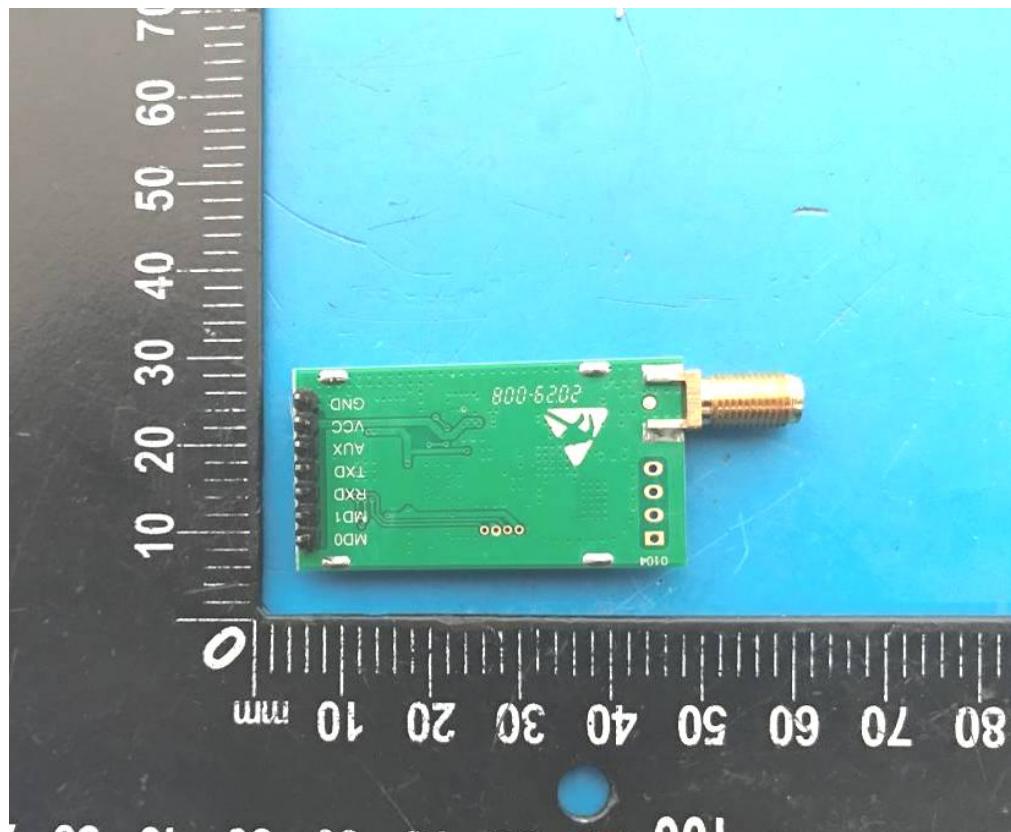












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