

FCC CERTIFICATION TEST REPORT

FOR

Applicant	:	Infinet LLC
Address	:	69/75 Vavilova str., off. 425, 117997, Moscow, Russian Federation
Equipment under Test	:	InfiMAN Evolution
Model No.	:	E5-ST18/06000, E6-ST18/06400
Trade Mark	:	InfiMAN Evolution
FCC ID	:	2AZJ4-E5-ST
Manufacturer	:	Infinet LLC
Address	:	S.Deryabina str., 24, off. 701, 620149, Ekaterinburg, Russian Federation

Issued By: Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park,
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REPORT

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Test Report Declare

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Address	:	69/75 Vavilova str., off. 425, 117997, Moscow, Russian Federation
Equipment under Test	:	Infiman Evolution
Model No	:	E5-ST18/06000, E6-ST18/06400
Trade Mark	:	Infiman Evolution
Manufacturer	:	Infinet LLC
Address	:	S.Deryabina str., 24, off. 701, 620149, Ekaterinburg, Russian Federation

Test Standard Used: FCC Rules and Regulations Part 15 Subpart E

Test procedure used: ANSI C63.10:2013, 789033 D02 General U-NII Test Procedures New Rules v02r01, 662911 D01 Multiple Transmitter Output v02r01

We Declare:

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

After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC standards.

Report No.:	DDT-R21070824-2E09		
Date of Receipt:	Sep. 20, 2021	Date of Test:	Sep. 20, 2021 ~ Jan. 06, 2022

Prepared By:

Ben Jin

Ben Jin/Engineer

Approved By:



Damon Hu/EMC Manager

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

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Jan. 06, 2022	

1. Summary of test results

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

Description of Test Item	Standard	Verdict
6/26db Bandwidth and 99% Bandwidth	FCC 15.407 (e)	Pass Refer report DDT-R21070824-2E01.
Maximum Conducted Output Power	FCC 15.407 (a)	Pass
Power Spectral Density	FCC 15.407 (a)	Pass Refer report DDT-R21070824-2E01.
Frequency Stability Measurement	FCC 15.407 (g)	Pass Refer report DDT-R21070824-2E01.
Emissions in restricted frequency bands	FCC 15.407 (a) FCC 15.209 FCC 15.205	Pass Part result Refer report DDT-R21070824-2E01.
Power Line Conducted Emission	FCC 15.207	Pass Refer report DDT-R21070824-2E01.
Antenna requirement	FCC 15.203	Pass
Dynamic Frequency Selection	FCC 15.407 (h)	N/A

Note 1: N/A means not application

Note 2: This report added Model Number E5-ST28/06600, E6-ST28/07100, E5-ST23/05800, E5-ST25/06500 and E6-ST25/07000 base on the DDT-R21070824-2E01.

Note 3: E5-ST28/06600, E6-ST28/07100, E5-ST23/05800, E5-ST25/06500, E6-ST25/07000, E5-ST23/05900 and E6-ST25/06300 use the same PCB and wireless modules, only the antennas used are different, so Maximum Conducted Output Power and Emissions in restricted frequency bands had been retested and updated in this report.

2. General Test Information

2.1. Description of EUT

EUT* Name	: InfiMAN Evolution
Model Number	: E5-ST18/06000, E6-ST18/06400
EUT function description	: Please reference user manual of this device
Power supply	: DC 48V 0.5A from Indoor Power Supply Unit
Radio Technology	: Proprietary protocol based on IEEE 802.11ac
FCC Operation frequency	: 20 MHz: 5745MHz-5825MHz 40 MHz: 5755MHz-5795MHz 80 MHz: 5775MHz
Modulation	: BPSK, QAM
Antenna Type	: Dedicated antenna 1, maximum PK gain: 18 dBi Dedicated antenna 2, maximum PK gain: 18 dBi
Sample Type	: Series production
Serial Number	: N/A

Note 1: EUT is the ab. of equipment under test.

Note 2: EUT without DFS detection.

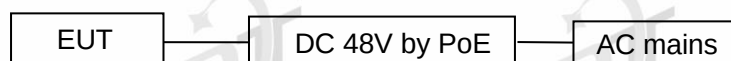
2.2. Accessories of EUT

Assistant equipment	Manufacturer	Model number	Serial No.	Other
Indoor Power Supply Unit	INFINET	IDU-CPE-G(24 W)	N/A	INPUT: 100-240V AC~ 50/60 Hz 1.5A OUTPUT: 48V 0.5A(24W)
Network cable	N/A	N/A	N/A	N/A

2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	EMC Compliance	SN
N/A	N/A	N/A	N/A	N/A

2.4. Block diagram of EUT configuration for test



Run a special test software "Putty.exe" provided by manufacturer to control EUT work in Continuous Tx mode, and select test channel, wireless mode and data rate.

Tested mode, channel, and data rate information				
Mode	Setting Tx Power		Channel	Frequency (MHz)
	Ant1	Ant2		
20 MHz	7	7	Low: CH149	5745
	7	7	Middle: CH157	5785
	7	7	High: CH165	5825
40 MHz	7	7	Middle: CH151	5755
	7	7	High: CH159	5795
80 MHz	7	7	CH155	5775

2.5. Deviations of test standard

No Deviation.

2.6. Test environment conditions

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

Temperature range:	21-25℃
Humidity range:	40-75%
Pressure range:	86-106 kPa

2.7. Test laboratory

Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808.

Tel.: +86-0769-38826678, <http://www.dgddt.com>, Email: ddt@dgddt.com.

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

VCCI facility registration number: C-20087, T-20088, R-20123, G-20118

2.8. Measurement uncertainty

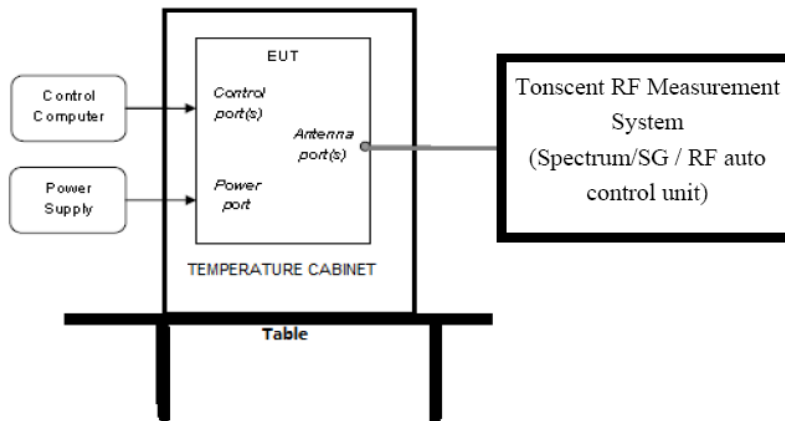
Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum analyzer)	0.86 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$); 1.38 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$); 1.38 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
Frequencies Stability	6.7×10^{-8} (Antenna couple method) 5.5×10^{-8} (Conducted method)
Conducted spurious emissions	0.86 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$); 1.40 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$) 1.66 dB ($8 \text{ GHz} \leq f < 22 \text{ GHz}$)
Uncertainty for radio frequency (RBW<20kHz)	3×10^{-8}
Temperature	0.4°C
Humidity	2%
Uncertainty for Radiation Emission test (30MHz-1GHz)	4.70 dB (Antenna Polarize: V) 4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission test (1GHz-40GHz)	4.10 dB (1-6 GHz) 4.40 dB (6 GHz-18 GHz) 3.54 dB (18 GHz-26 GHz) 4.30 dB (26 GHz-40 GHz)
Uncertainty for Power line conduction emission test	3.32 dB (150 kHz-30 MHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3. Equipment Used During Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑RF Connected Test (Tonscend RF Measurement System 2#)					
Signal analyzer	R&S	FSQ26	101272	Jun. 01, 2021	1 Year
Wideband Radio Communication tester	R&S	CMW500	117491	Jun. 01, 2021	1 Year
Vector Signal Generator	Agilent	N5182A	MY19060405	Jun. 01, 2021	1 Year
Vector Signal Generator	Agilent	N5182A	MY48180912	Jun. 01, 2021	1 Year
RF Control Unit	Tonsend	JS0806-2	DDT-ZC01449	Jun. 01, 2021	1 Year
Temp&Humi Programmable	ZHIXIANG	ZXGDJS-150 L	ZX170110-A	Jun. 01, 2021	1 Year
Test Software	JS Tonscend	JS1120-3	Ver.2.6.77.0518	N/A	N/A
☑Radiation 3#chamber					
EMI Test Receiver	R&S	ESU	100472	Jun. 01, 2021	1 Year
Spectrum analyzer	Agilent	E4447A	MY50180031	Jun. 01, 2021	1 Year
Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Sep. 19, 2021	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	01429	Aug. 07, 2021	1 Year
Double Ridged Horn Antenna	Schwarzbeck	BBHA9120	02108	Jul. 17, 2021	1 Year
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	790	May 08, 2021	1 Year
Pre-amplifier	COM-POWER	PAM-118A	18040084	Sep. 02, 2021	1 Year
Pre-amplifier	COM-POWER	PAM-840A	461369	Mar. 15, 2021	1 Year
Test software	Audix	E3	V 6.1.1.1	N/A	N/A

4. Maximum Output Power

4.1. Block diagram of test setup



4.2. Limits

FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Conducted Output Power	1 Watt (30 dBm)	5725-5850

Note: the EUT incorporates a MIMO function. The Antenna directional gain is 18 dBi.
The Output Power limit is the above limits (18-6)

4.3. Test procedure

- (1) Connect each EUT's antenna output to power meter by RF cable and attenuator, The procedure for this method refer to ANSI C63.10 clause 12.3.3.1 is as follows:
 - a) Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the following conditions are satisfied:
 - 1) The EUT is configured to transmit continuously, or to transmit with a constant duty cycle.
 - 2) At all times when the EUT is transmitting, it shall be transmitting at its maximum power control level.
 - 3) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
 - b) If the transmitter does not transmit continuously, measure the duty cycle D of the transmitter output signal as described in 12.2.
 - c) Measure the average power of the transmitter. This measurement is an average over both the ON and OFF periods of the transmitter.
 - d) Adjust the measurement in dBm by adding $[10 \log (1 / D)]$, where D is the duty cycle {e.g., $[10 \log (1 / 0.25)]$, if the duty cycle is 25%}.
- (2) Add each antenna port's results to get the total output power of EUT.

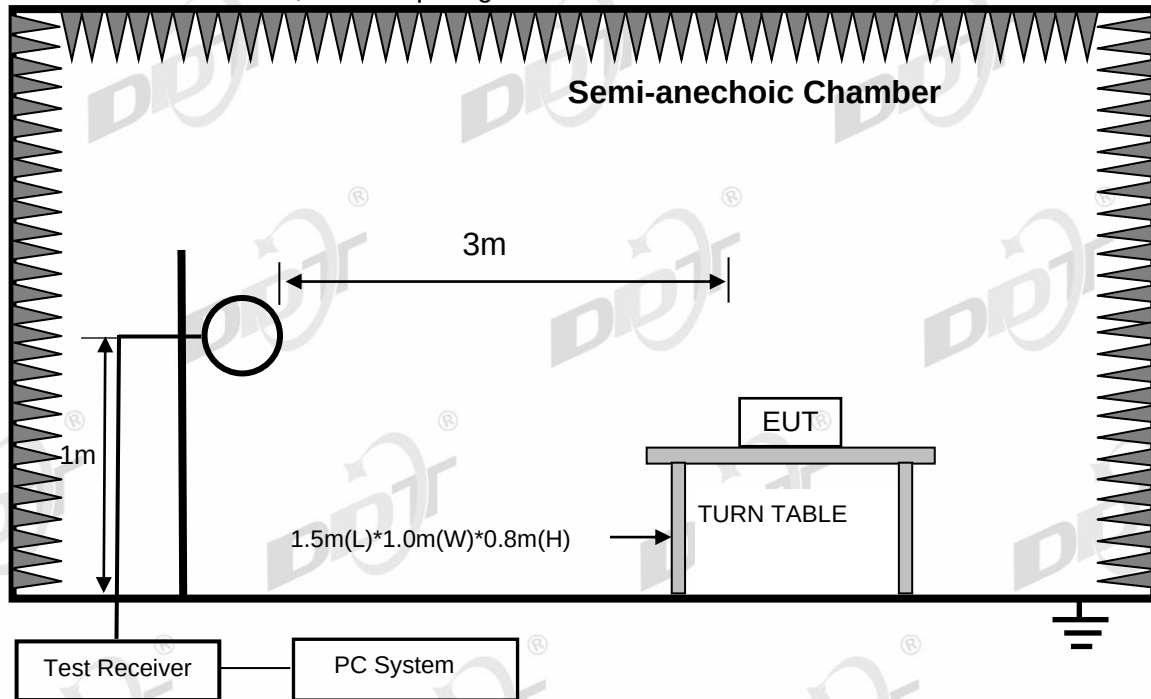
4.4. Test result

Test Mode	Antenna	Channel	Duty cycle [%]	Duty cycle Factor[dB]	Result[dBm]	Limit[dBm]	Verdict
20 MHZ	Ant1	5745	4.88	13.1	7.09	<=18	Pass
	Ant2	5745	4.88	13.1	7.61	<=18	Pass
	total	5745	/	/	10.37	<=18	Pass
	Ant1	5785	4.88	13.1	7.35	<=18	Pass
	Ant2	5785	4.88	13.1	7.69	<=18	Pass
	total	5785	/	/	10.53	<=18	Pass
	Ant1	5825	4.88	13.1	7.74	<=18	Pass
	Ant2	5825	4.88	13.1	7.13	<=18	Pass
	total	5825	/	/	10.46	<=18	Pass
40 MHZ	Ant1	5755	4.88	13.1	6.59	<=18	Pass
	Ant2	5755	4.88	13.1	7.28	<=18	Pass
	total	5755	/	/	9.96	<=18	Pass
	Ant1	5795	4.88	13.1	6.59	<=18	Pass
	Ant2	5795	4.88	13.1	7.92	<=18	Pass
	total	5795	/	/	10.32	<=18	Pass
80 MHZ	Ant1	5775	4.88	13.1	6.96	<=18	Pass
	Ant2	5775	4.88	13.1	6.85	<=18	Pass
	total	5775	/	/	9.92	<=18	Pass

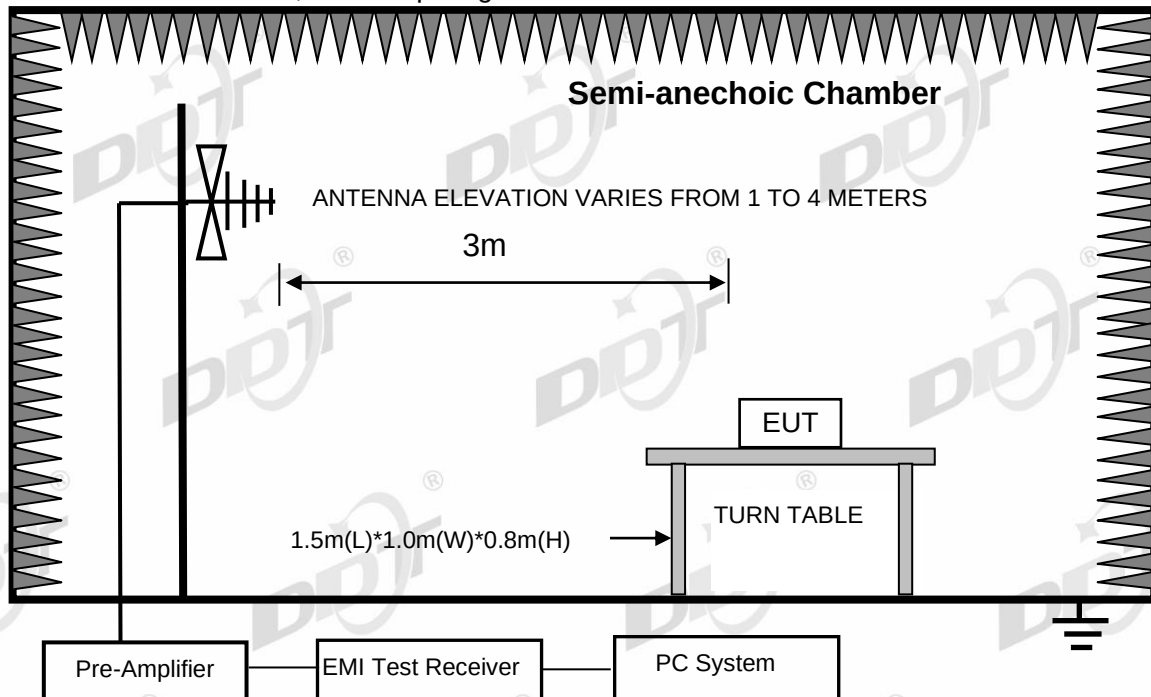
5. Emissions in restricted frequency bands

5.1. Block diagram of test setup

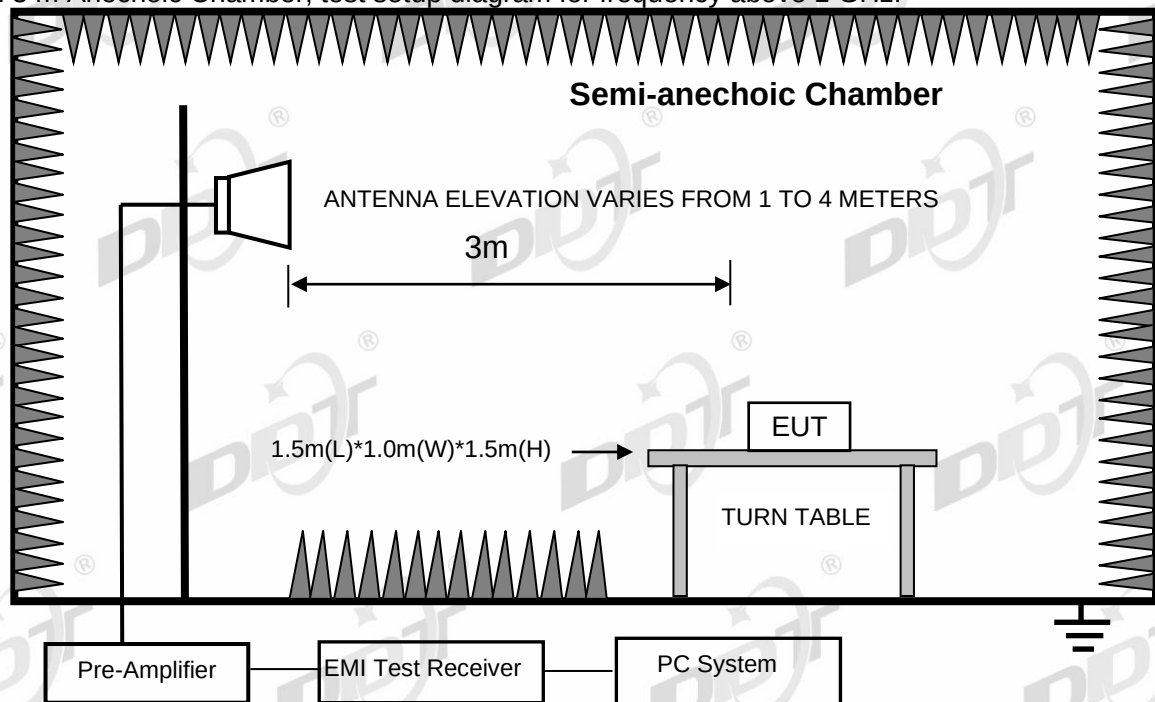
In 3 m Anechoic Chamber, test setup diagram for 9 kHz - 30 MHz:



In 3 m Anechoic Chamber, test setup diagram for 30 MHz – 1 GHz:



In 3 m Anechoic Chamber, test setup diagram for frequency above 1 GHz:



Note: For harmonic emissions test an appropriate high pass filter was inserted in the input port of AMP.

5.2. Limit

(1) FCC 15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.1772&4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.2072&4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(²)
13.36-13.41			

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

²Above 38.6

(2) FCC 15.209 Limit.

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

Note: (1) The emission limits shown in the above table are based on measurements employing a CISPR QP detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000MHz. Radiated emissions limits in these three bands are based on measurements employing an average detector.

(2) At frequencies below 30MHz, measurement may be performed at a distance closer than that specified, and the limit at closer measurement distance can be extrapolated by below formula:

$$\text{Limit}_{3\text{m}}(\text{dB}\mu\text{V}/\text{m}) = \text{Limit}_{30\text{m}}(\text{dB}\mu\text{V}/\text{m}) + 40\text{Log}(30\text{m}/3\text{m})$$

(3) Limit for this EUT

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

5.3. Test procedure

- (1) EUT height should be 0.8 m for below 1 GHz at a semi - anechoic chamber while EUT height should be 1.5 m for above 1GHz at full chamber or semi - anechoic chamber ground with absorbers
- (2) Setup EUT and assistant system according clause 2.3 and 8.2
- (3) Test antenna was located 3m from the EUT on an adjustable mast, and the antenna used as below table.

Test frequency range	Test antenna used	Test distance
9 kHz-30 MHz	Active Loop antenna	3 m
30 MHz-1 GHz	Trilog Broadband Antenna	3 m
1 GHz-18 GHz	Double Ridged Horn Antenna(1GHz-18GHz)	3 m
18 GHz-40 GHz	Horn Antenna(18GHz-40GHz)	1 m

According ANSI C63.10:2013 clause 6.4.4.2 and 6.5.3, for measurements below 30 MHz, the loop antenna was positioned with its plane vertical from the EUT and rotated about its vertical axis for maximum response at each azimuth position around the EUT. And the loop antenna also be positioned with its plane horizontal at the specified distance from the EUT. The center of the loop is 1 m above the ground. for measurement above 30 MHz, the Trilog Broadband Antenna or Horn Antenna was located 3m from EUT, Measurements were made with the antenna positioned in both the horizontal and vertical planes of Polarization, and the measurement antenna was varied from 1 m to 4 m. in height above the reference ground plane to obtain the maximum signal strength.

(4) Below pre-scan procedure was first performed in order to find prominent frequency spectrum radiated emissions from 9 kHz to 40 GHz:

(a) Scanning the peak frequency spectrum with the antenna specified in step (3), and the EUT was rotated 360 degree, the antenna height was varied from 1 m to 4 m (Except loop antenna, it's fixed 1m above ground.)

(b) Change work frequency or channel of device if practicable.

(c) Change modulation type of device if practicable.

(d) Change power supply range from 85% to 115% of the rated supply voltage

(e) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions.

Spectrum frequency from 9 kHz to 40 GHz (tenth harmonic of fundamental frequency) was investigated, and no any obvious emission were detected from 9 kHz to 30 MHz and 18 GHz to 40 GHz, so below final test was performed with frequency range from 30 MHz to 18 GHz.

(5) For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.10:2013 on Radiated Emission test.

(6) The emissions from 9 kHz to 1 GHz were measured based on CISPR QP detector except for the frequency bands 9-90 kHz, 110-490 kHz, for emissions from 9 kHz-90kHz,110kHz-490kHz and above 1GHz were measured based on average detector, for emissions above 1 GHz, peak emissions also be measured and need comply with Peak limit.

(7) The emissions from 9 kHz to 1 GHz, QP or average values were measured with EMI receiver with below RBW

Frequency band	RBW
9 kHz-150 kHz	200 Hz
150 kHz-30 MHz	9 kHz
30 MHz-1 GHz	120 kHz

(8) For emissions above 1 GHz, both Peak and Average level were measured with Spectrum

Analyzer, and the RBW is set at 1 MHz, VBW is set at 3MHz for Peak measure, the RBW is set at 1 MHz, VBW is set at 1/T for AV value.

5.4. Test result

PASS. (See below detailed test result)

All the emissions except fundamental emission from 9kHz to 40GHz were comply with 15.209 limit.

Note1: According exploratory test, the emission levels are 20 dB below the limit detected from 9 kHz to 30 MHz and 18 GHz to 40 GHz, so the final test was performed with frequency range from 30 MHz to 18 GHz and recorded in below.

Note2: For emissions below 1 GHz, according exploratory explorer test, when change Tx mode and channel, have no distinct influence on emissions level, so for emissions below 1 GHz, the final test was only performed with EUT working in 20 MHz mode.

Note3: For below test data, when the limit tabular marked “/” means this frequency point is the fundamental emission and no need comply with this limit.

Radiated Emission test (below 1GHz)

TR-4-E-009 Radiated Emission Test Result

Test Site : DDT 3m Chamber 3#

D:\2021 report data\Q21070824-2E E5\E5-ST18\FCC
BELOW 1G E5-ST18\FCC BELOW 1G_00001.EMI

Test Date : 2021-12-21

Tested By : Zora Zhang

EUT : InfiMAN Evolution

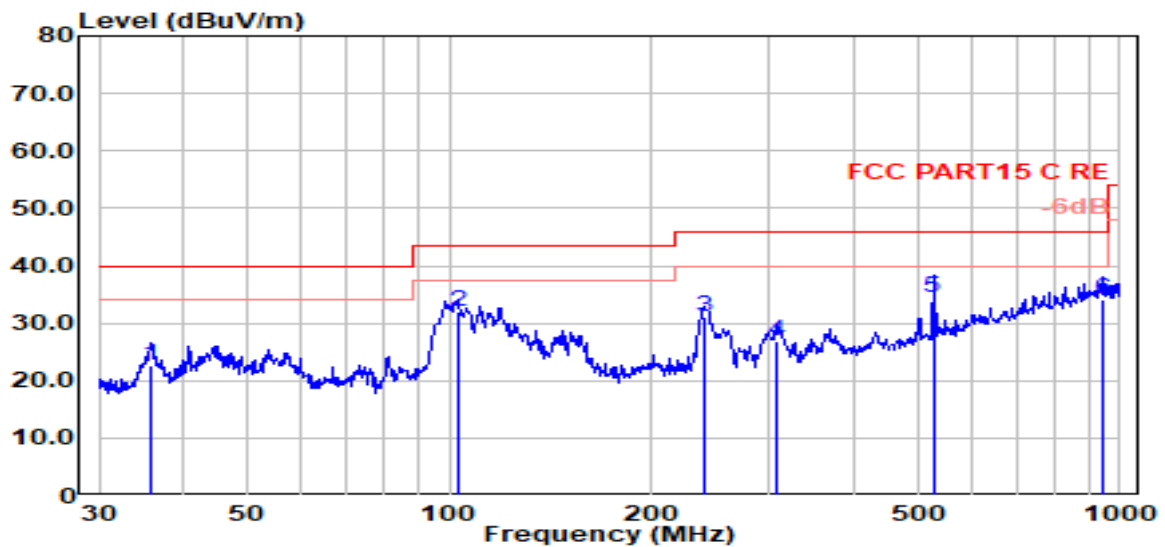
Model Number : E5-ST18/06000

Power Supply : AC 120V/60Hz

Test Mode : TX Mode

Condition : Temp:24.5°,Humi:55%,Press:100.1kPa Antenna/Distance : VLUB 9163 3#/3m/VERTICAL

Memo : 5G



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	36.00	9.63	9.60	3.47	22.71	40.00	-17.29	QP	VERTICAL
2	102.72	16.68	11.53	3.90	32.11	43.50	-11.39	QP	VERTICAL
3	239.15	14.04	12.47	4.48	30.99	46.00	-15.01	QP	VERTICAL
4	308.91	8.84	13.38	4.74	26.96	46.00	-19.04	QP	VERTICAL
5	526.40	11.71	17.30	5.42	34.43	46.00	-11.57	QP	VERTICAL
6	942.13	5.44	22.20	6.49	34.13	46.00	-11.87	QP	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto

TR-4-E-009 Radiated Emission Test Result

Test Site : DDT 3m Chamber 3#

D:\2021 report data\Q21070824-2E E5\E5-ST18\FCC
BELOW 1G E5-ST18\FCC BELOW 1G_00002.EMI

Test Date : 2021-12-21

Tested By : Zora Zhang

EUT : InfiMAN Evolution

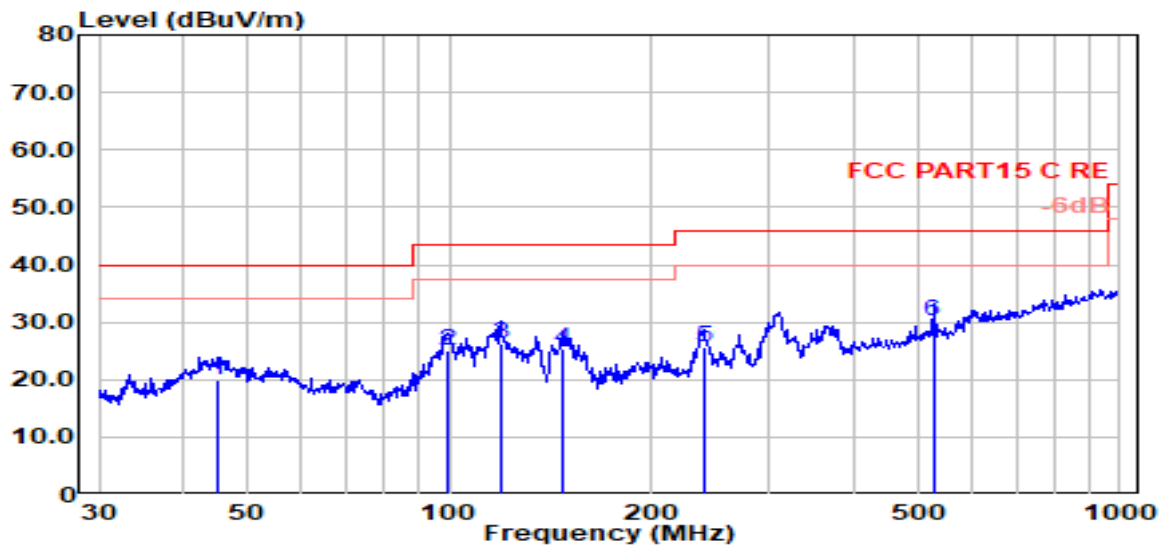
Model Number : E5-ST18/06000

Power Supply : AC 120V/60Hz

Test Mode : TX Mode

Condition : Temp:24.5°,Humi:55%,Press:100.1kPa Antenna/Distance : VLUB 9163 3#/3m/HORIZONTAL

Memo : 5G



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	45.06	1.21	15.07	3.67	19.94	40.00	-20.06	QP	HORIZONTAL
2	99.53	9.64	11.50	3.89	25.03	43.50	-18.47	QP	HORIZONTAL
3	119.02	12.97	9.20	3.95	26.12	43.50	-17.38	QP	HORIZONTAL
4	147.40	13.45	7.84	4.05	25.34	43.50	-18.16	QP	HORIZONTAL
5	239.99	8.80	12.50	4.49	25.79	46.00	-20.21	QP	HORIZONTAL
6	526.40	7.36	17.30	5.42	30.07	46.00	-15.93	QP	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto

Radiated Emission test (above 1GHz)

Freq (MHz)	Read level (dBμV)	Antenna Factor (dB/m)	PRM Factor(dB)	Cable Loss (dB)	Result Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector type	Polarization
11ac CH149									
7154.00	46.03	35.93	6.44	39.72	48.69	74.00	-25.31	Peak	HORIZONTAL
9245.00	43.98	38.24	7.28	40.07	49.43	74.00	-24.57	Peak	HORIZONTAL
11387.00	44.32	39.92	7.92	40.16	52.00	74.00	-22.00	Peak	HORIZONTAL
14498.00	42.17	41.80	9.04	39.65	53.37	74.00	-20.63	Peak	HORIZONTAL
17235.00	40.00	41.39	9.76	40.24	50.91	54.00	-3.09	Average	HORIZONTAL
17235.00	44.49	41.39	9.76	40.24	55.40	74.00	-18.60	Peak	HORIZONTAL
18000.00	31.00	49.20	10.00	40.70	49.50	54.00	-4.50	Average	HORIZONTAL
18000.00	40.97	49.20	10.00	40.70	59.47	74.00	-14.53	Peak	HORIZONTAL
7528.00	46.95	36.92	6.61	39.75	50.73	74.00	-23.27	Peak	VERTICAL
9789.00	45.00	38.76	7.43	40.45	50.74	74.00	-23.26	Peak	VERTICAL
11387.00	43.93	39.92	7.92	40.16	51.61	74.00	-22.39	Peak	VERTICAL
13835.00	42.63	40.60	8.94	39.82	52.35	74.00	-21.65	Peak	VERTICAL
14940.00	43.20	40.74	9.08	39.61	53.41	74.00	-20.59	Peak	VERTICAL
17235.00	39.72	41.39	9.76	40.24	50.63	54.00	-3.37	Average	VERTICAL
17235.00	44.97	41.39	9.76	40.24	55.88	74.00	-18.12	Peak	VERTICAL
11ac CH157									
7545.00	46.06	36.93	6.62	39.75	49.85	74.00	-24.15	Peak	HORIZONTAL
9517.00	43.78	38.70	7.35	40.26	49.57	74.00	-24.43	Peak	HORIZONTAL
11081.00	43.58	39.98	7.79	40.19	51.17	74.00	-22.83	Peak	HORIZONTAL
12815.00	43.34	38.83	8.49	40.34	50.31	74.00	-23.69	Peak	HORIZONTAL
14447.00	42.69	41.70	9.04	39.66	53.78	74.00	-20.22	Peak	HORIZONTAL
17371.00	38.97	41.91	9.81	40.32	50.36	54.00	-3.64	Average	HORIZONTAL
17371.00	48.34	41.91	9.81	40.32	59.74	74.00	-14.26	Peak	HORIZONTAL
7154.00	45.85	35.93	6.44	39.72	48.51	74.00	-25.49	Peak	VERTICAL
7749.00	45.21	37.05	6.71	39.77	49.20	74.00	-24.80	Peak	VERTICAL
10435.00	44.95	39.76	7.61	40.43	51.89	74.00	-22.11	Peak	VERTICAL
12050.00	43.51	39.24	8.19	40.12	50.82	74.00	-23.18	Peak	VERTICAL
14481.00	41.81	41.77	9.04	39.65	52.97	74.00	-21.03	Peak	VERTICAL
17354.00	37.19	41.85	9.80	40.31	48.52	54.00	-5.48	Average	VERTICAL
17354.00	49.90	41.85	9.80	40.31	61.23	74.00	-12.77	Peak	VERTICAL
11ac CH165									
7766.00	47.20	37.06	6.72	39.78	51.21	74.00	-22.79	Peak	HORIZONTAL
9789.00	43.25	38.76	7.43	40.45	48.99	74.00	-25.01	Peak	HORIZONTAL
11455.00	43.40	39.91	7.95	40.15	51.10	74.00	-22.90	Peak	HORIZONTAL
12798.00	42.99	38.82	8.48	40.34	49.95	74.00	-24.05	Peak	HORIZONTAL
14277.00	42.26	41.40	9.03	39.67	53.02	74.00	-20.98	Peak	HORIZONTAL
17473.00	39.22	42.30	9.84	40.38	50.97	54.00	-3.03	Average	HORIZONTAL
17473.00	50.59	42.30	9.84	40.38	62.34	74.00	-11.66	Peak	HORIZONTAL
7596.00	45.27	36.96	6.64	39.76	49.12	74.00	-24.88	Peak	VERTICAL
9551.00	43.55	38.71	7.36	40.29	49.34	74.00	-24.66	Peak	VERTICAL
11659.00	44.47	39.71	8.03	40.13	52.08	74.00	-21.92	Peak	VERTICAL
14209.00	42.08	41.28	9.02	39.68	52.70	74.00	-21.30	Peak	VERTICAL
16113.00	42.59	37.97	9.40	39.92	50.04	74.00	-23.96	Peak	HORIZONTAL

17490.00	40.79	42.36	9.84	40.39	52.60	54.00	-1.40	Average	VERTICAL
17490.00	59.64	42.36	9.84	40.39	71.45	74.00	-2.55	Peak	HORIZONTAL
Conclusion: Pass									

Note: 1. 30MHz~40GHz: (20 MHz, 40 MHz ,80 MHz mode all have been tested, only 20 MHz MIMO mode is the worst case and reported.)

2. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

6. Antenna Requirements

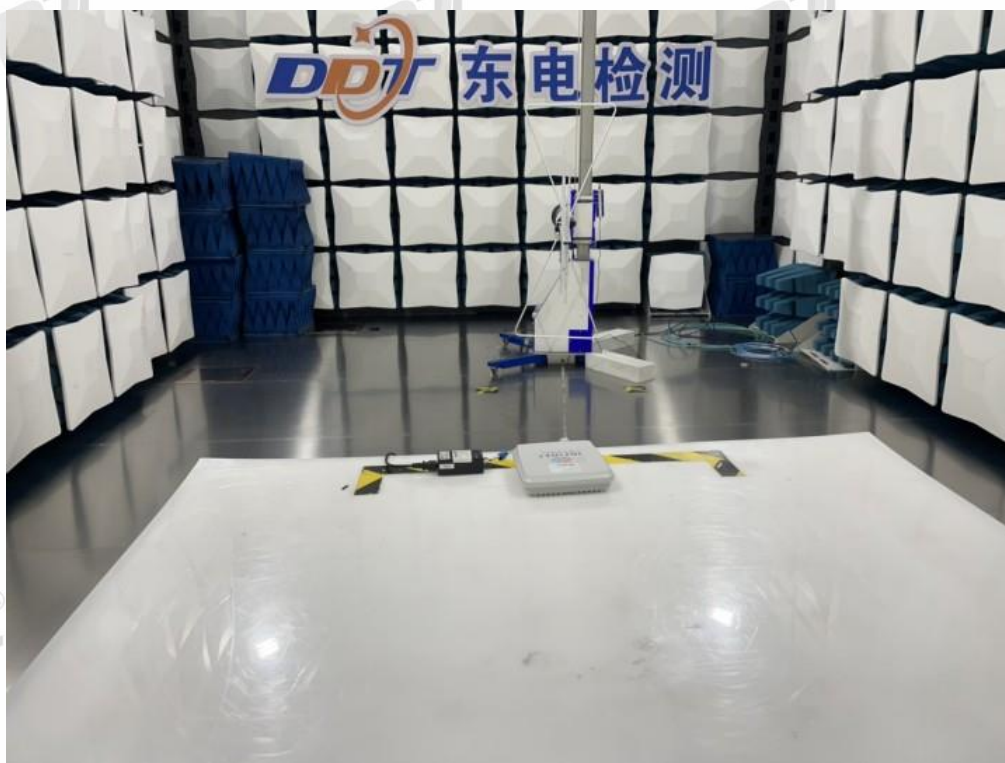
6.1. Limit

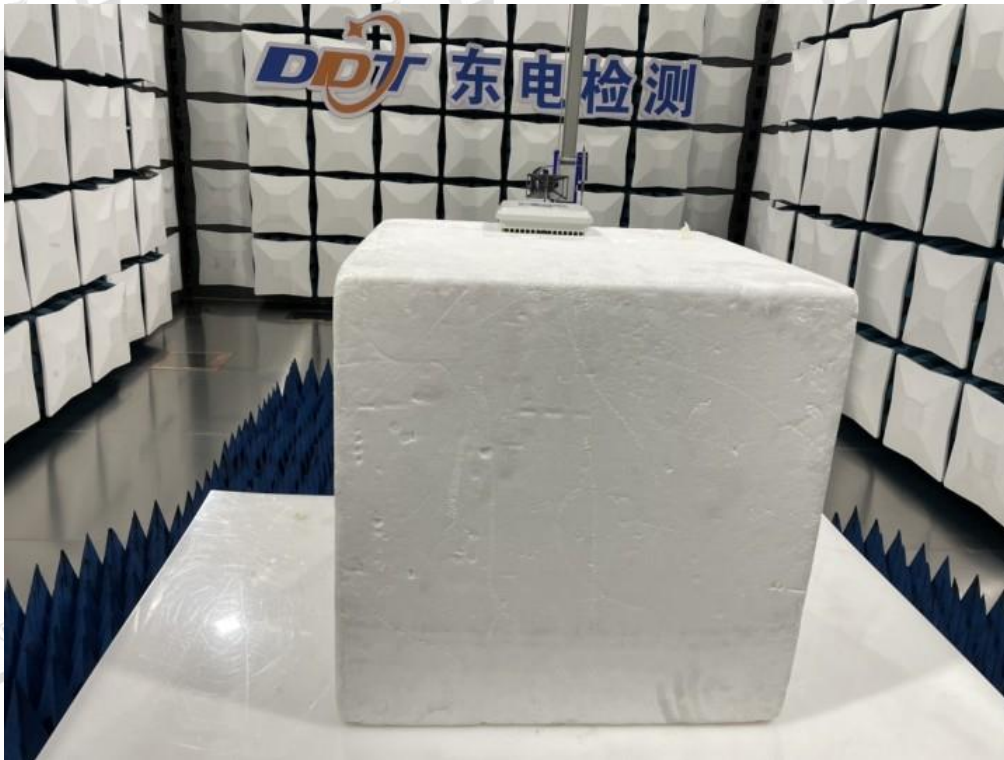
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

6.2. Result

The device support 2T2R, the antennas both used for this product are dedicated antennas and other than that furnished by the responsible party shall be used with the device, maximum antenna gain is 18 dBi for antenna 1, 18 dBi for antenna 2.

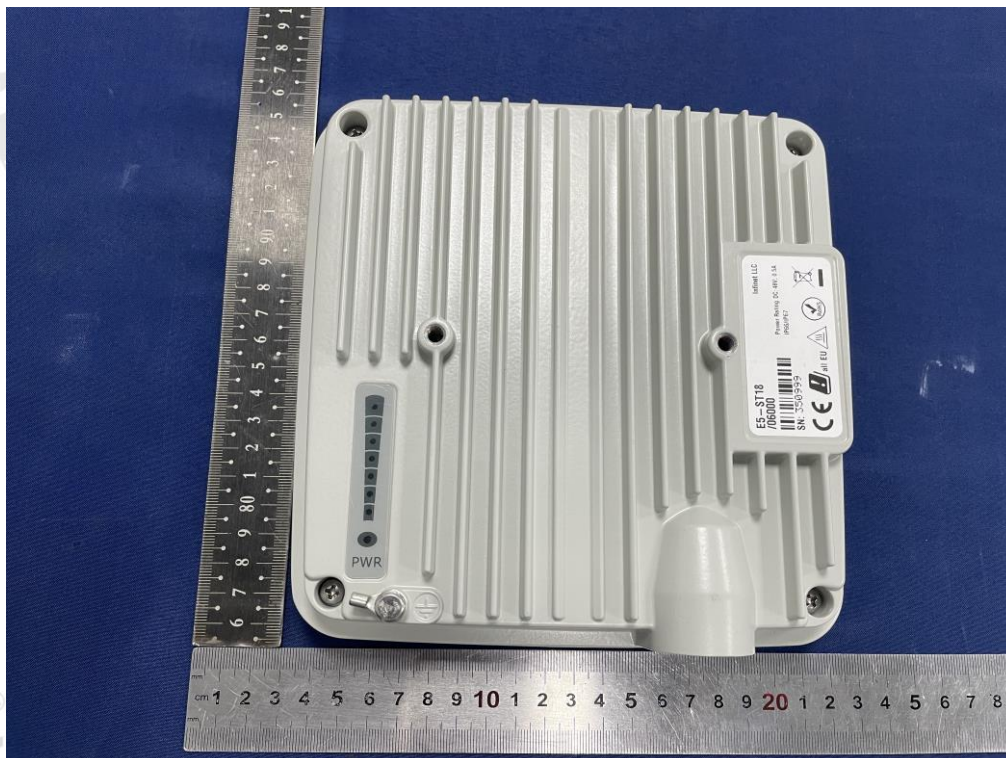
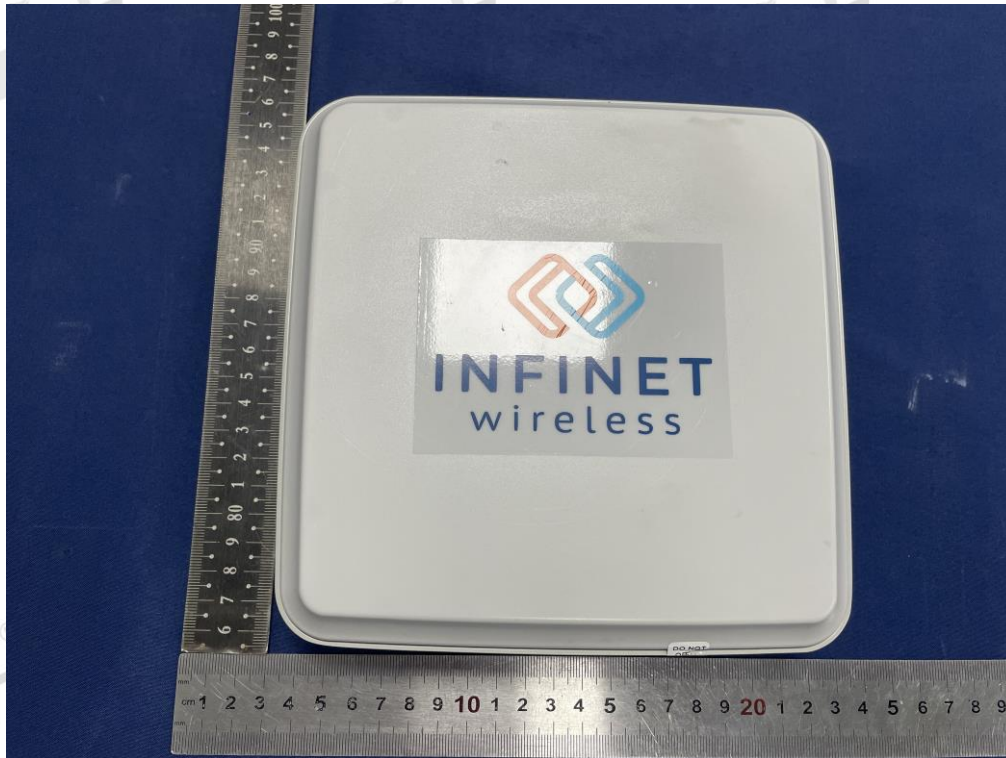
7. Test setup photograph

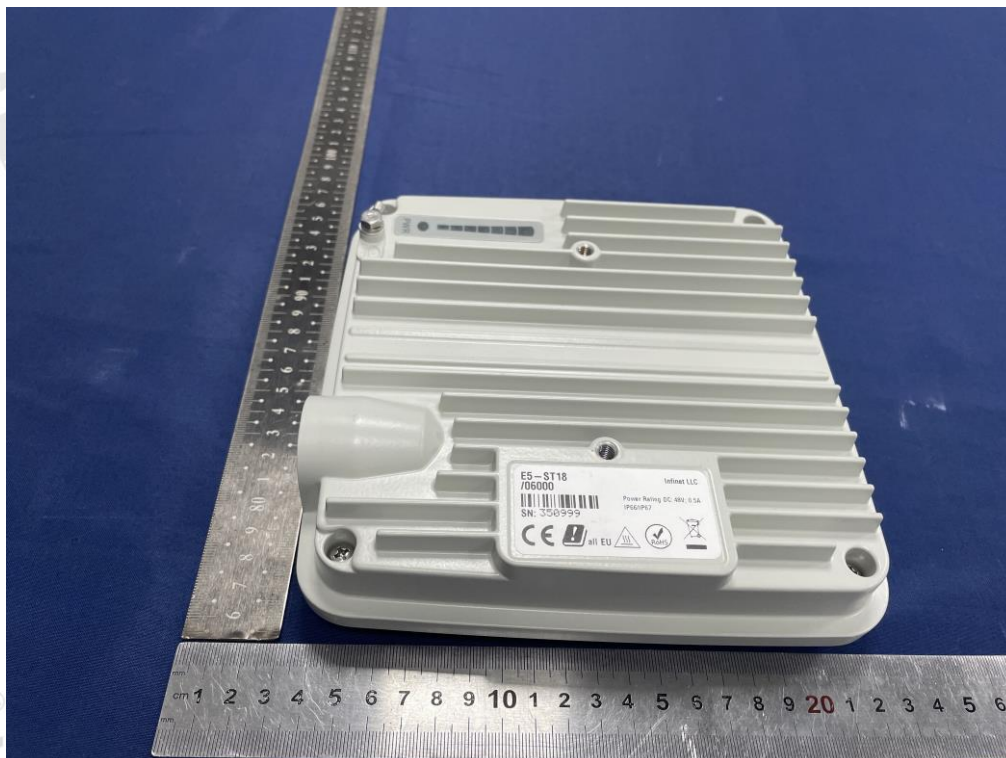


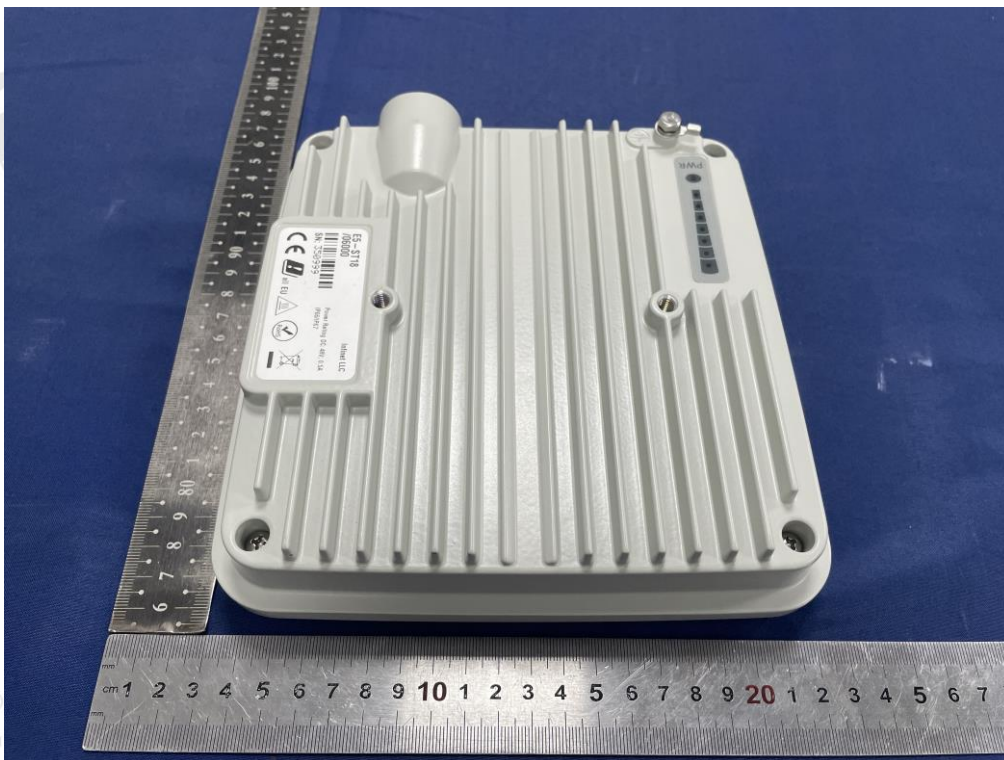
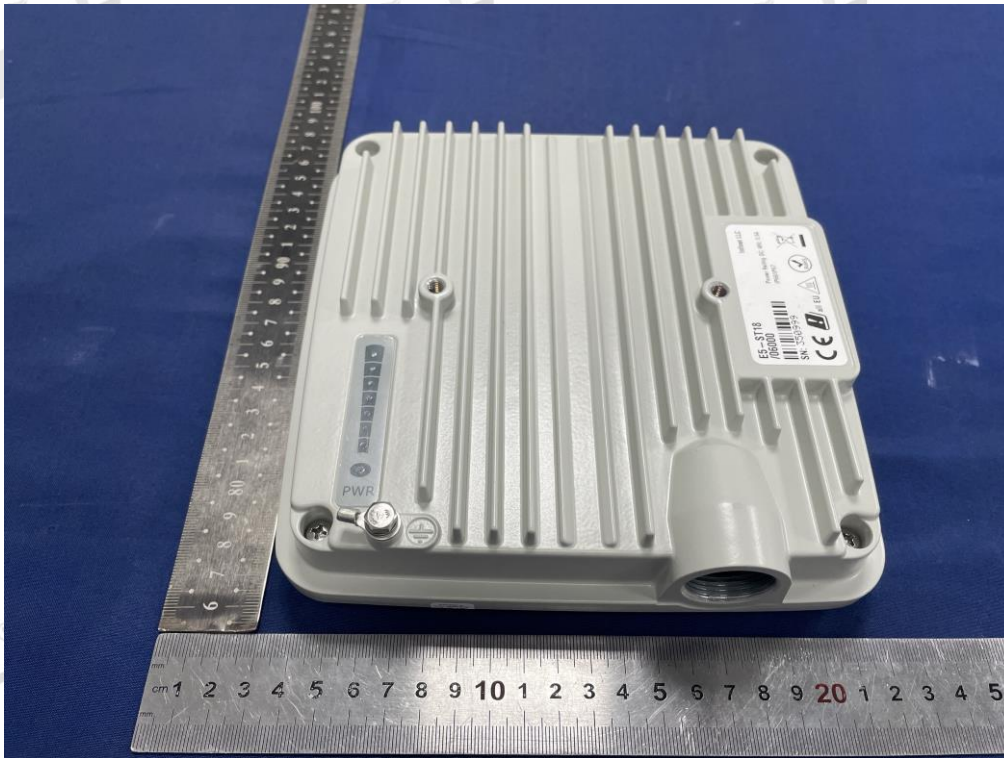


8. Photos of the EUT





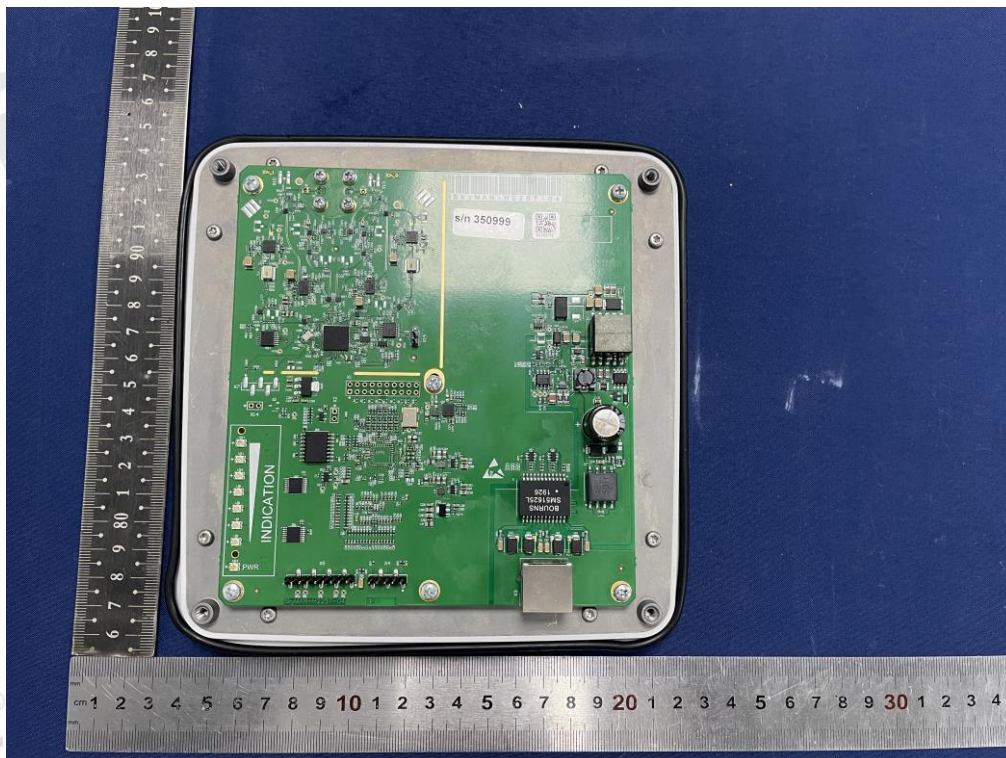
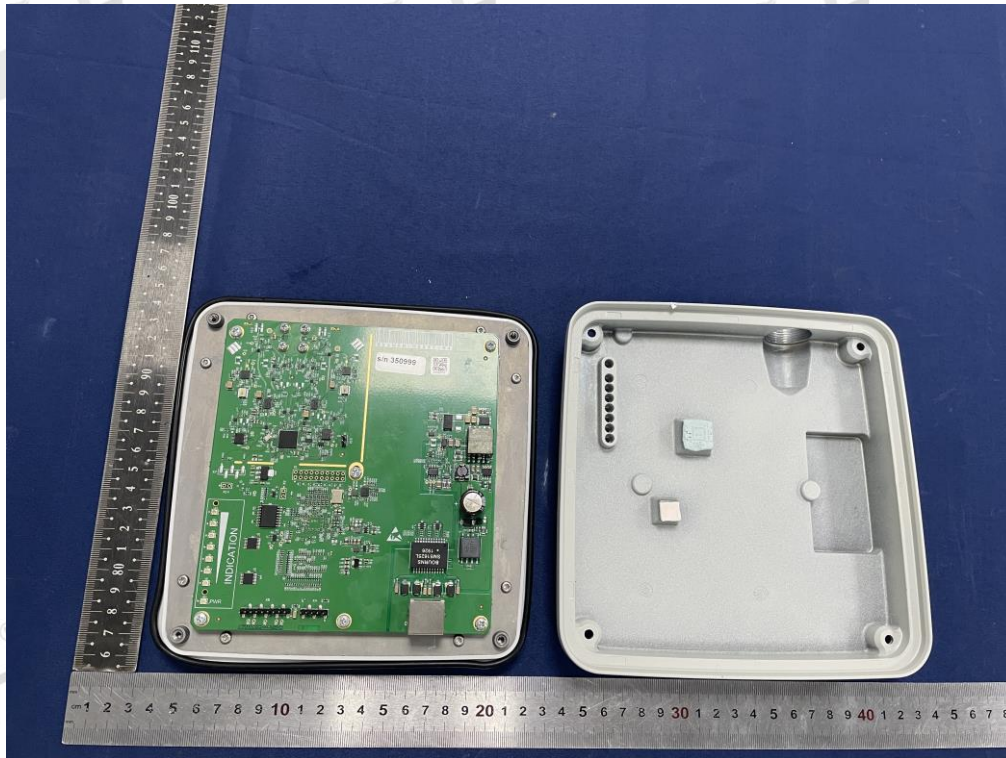


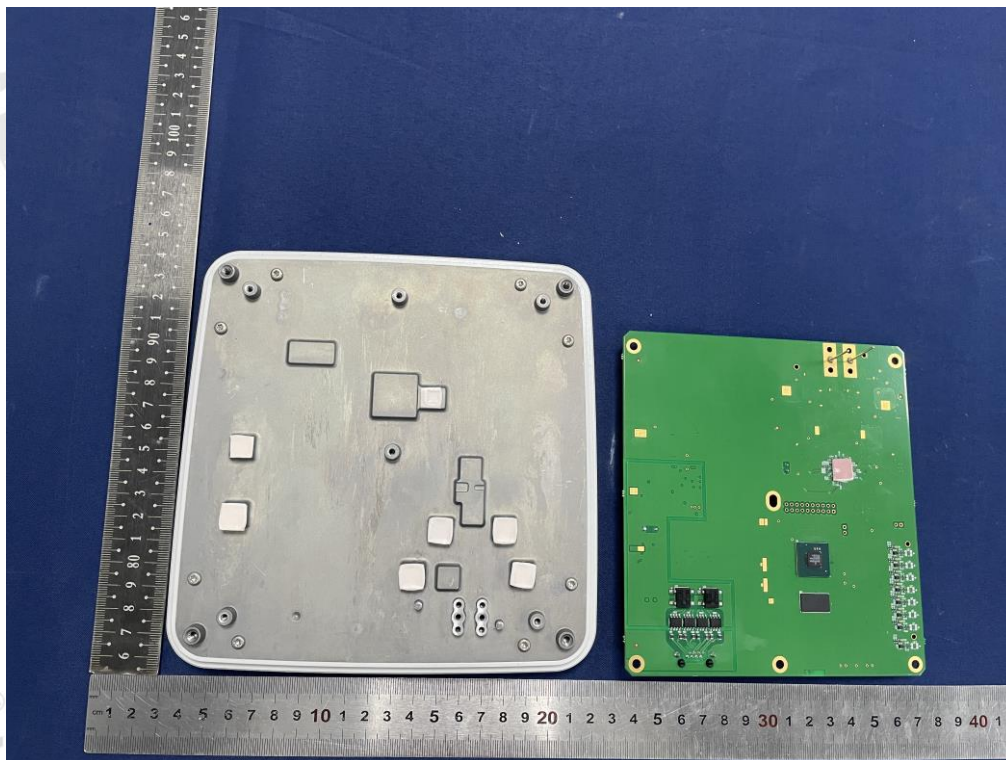
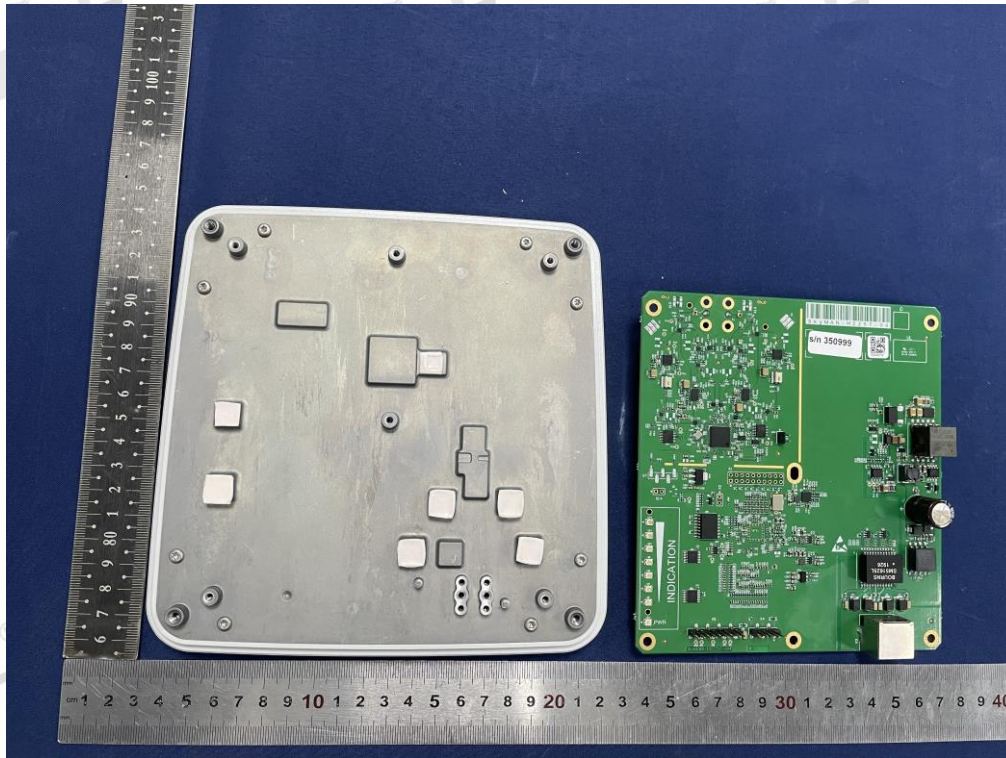


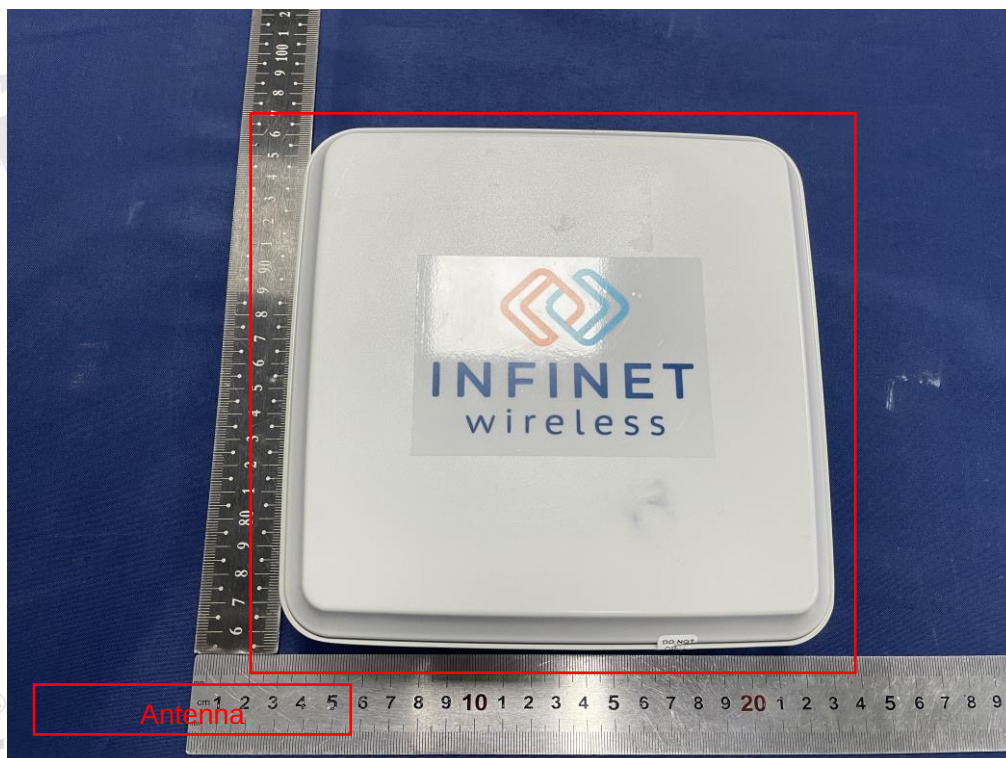
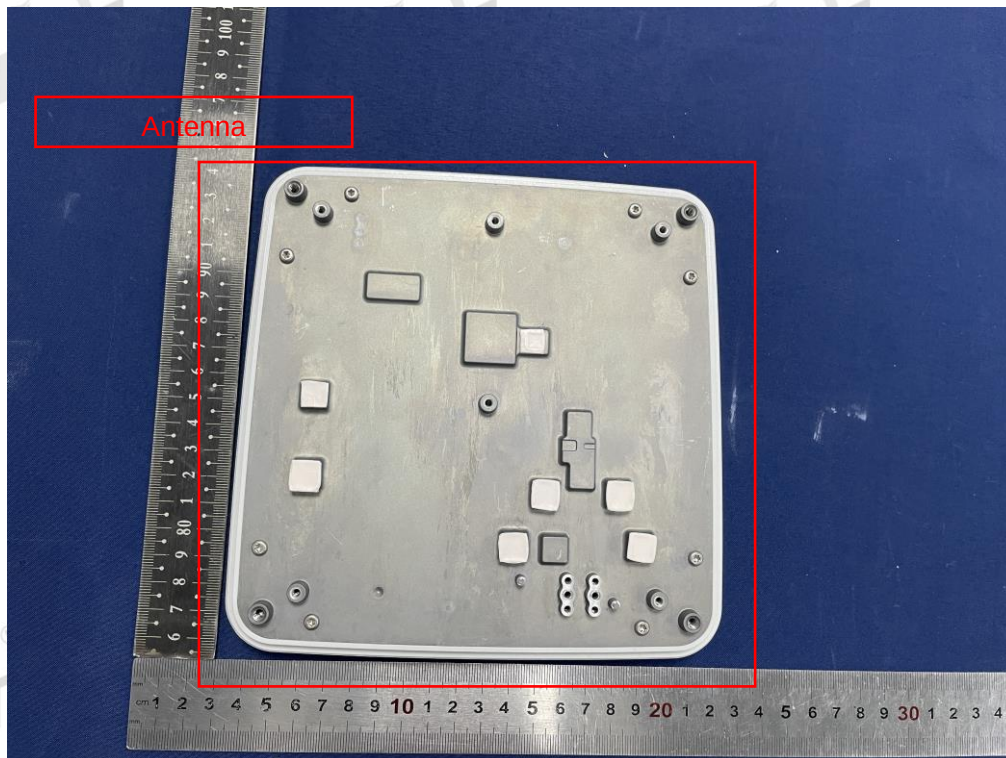


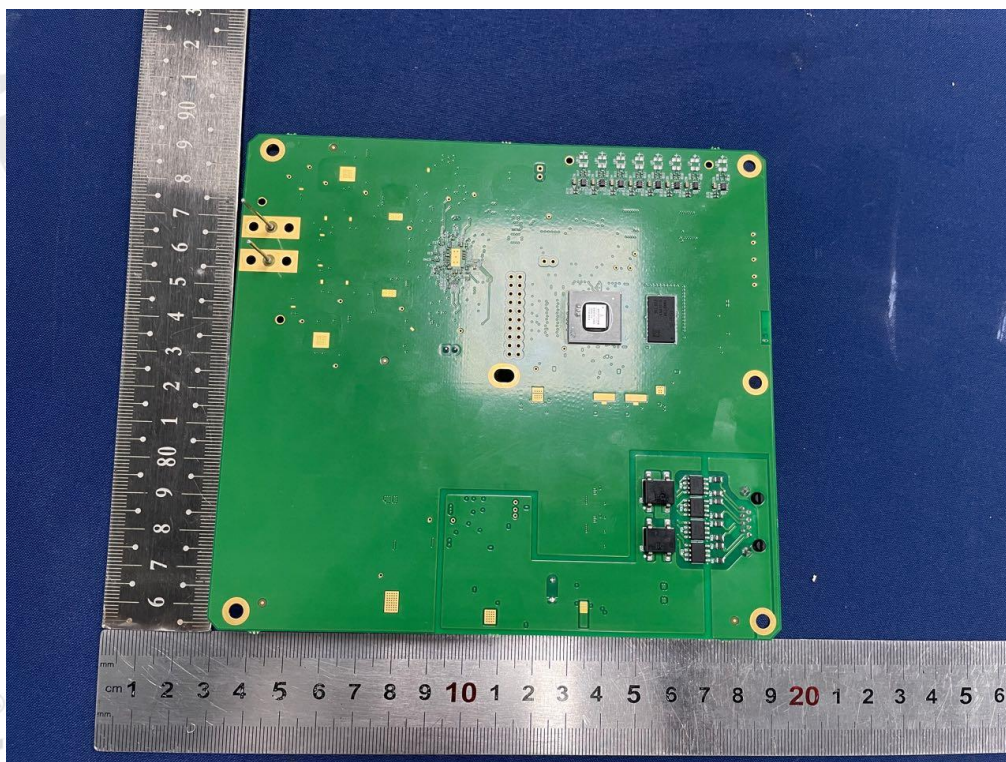
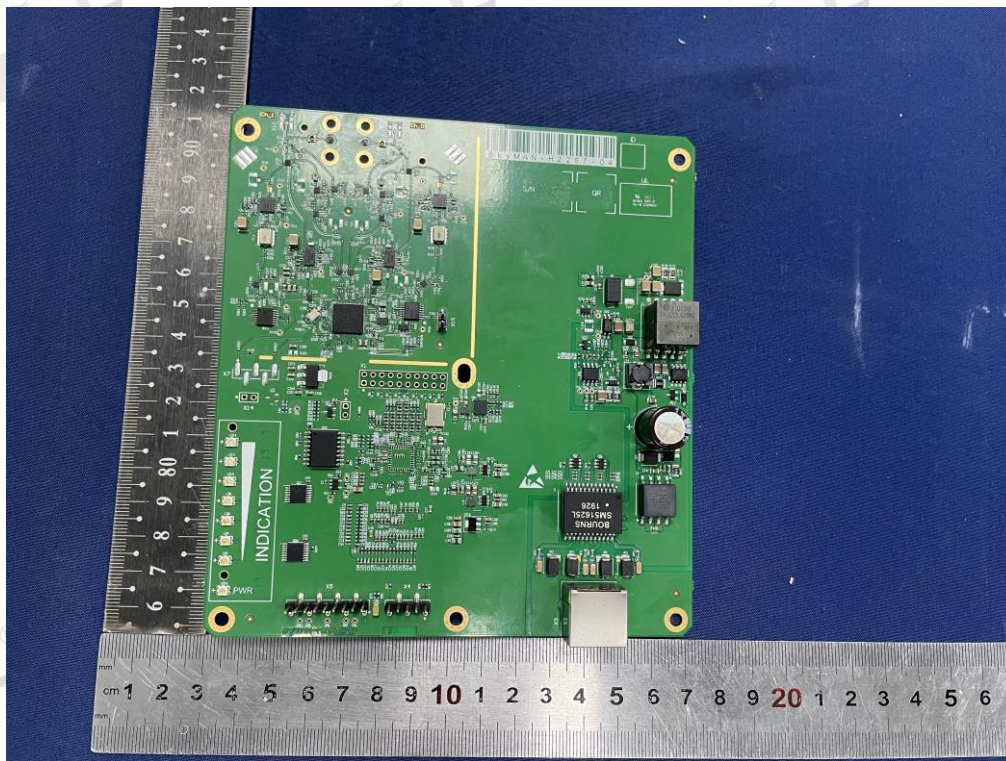


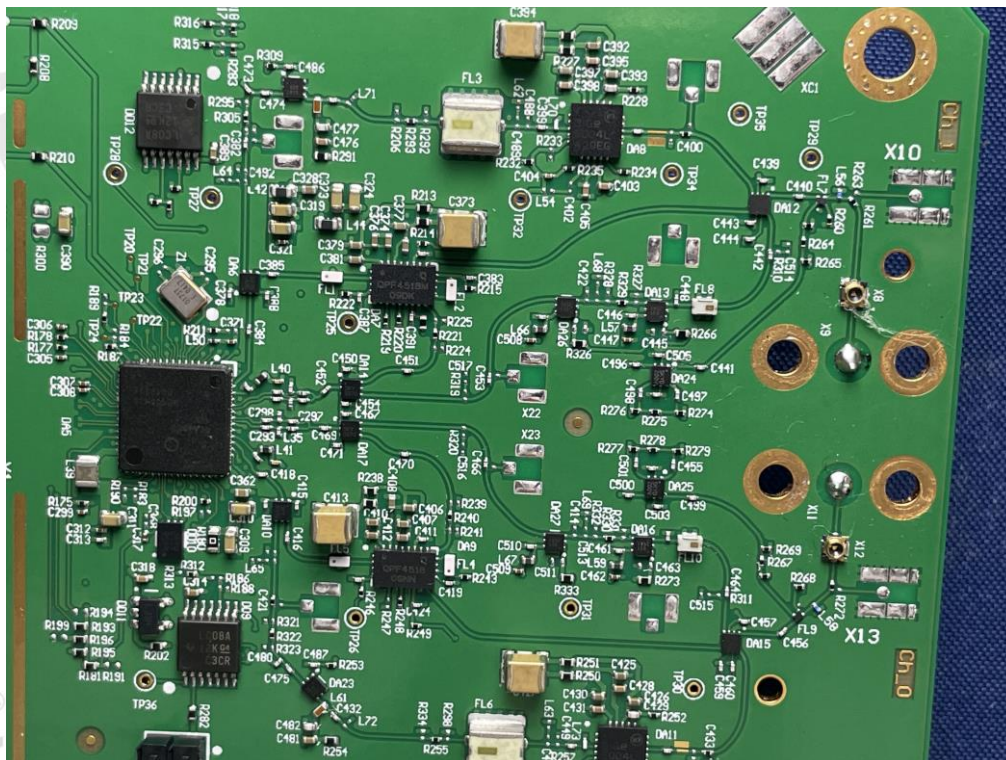
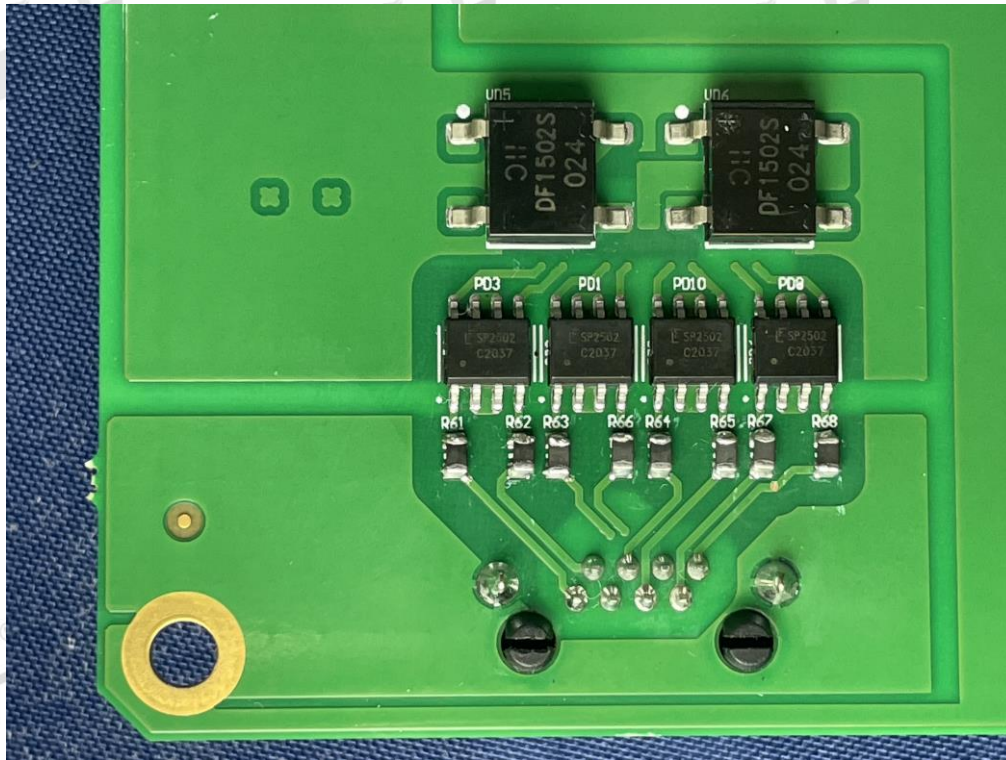


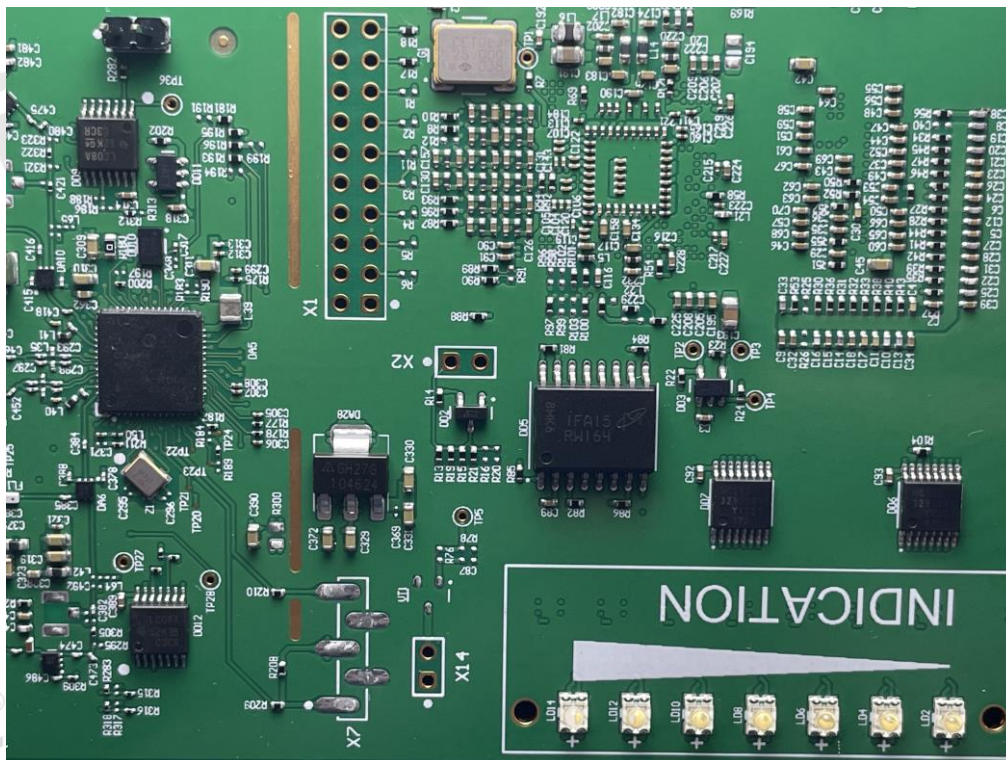
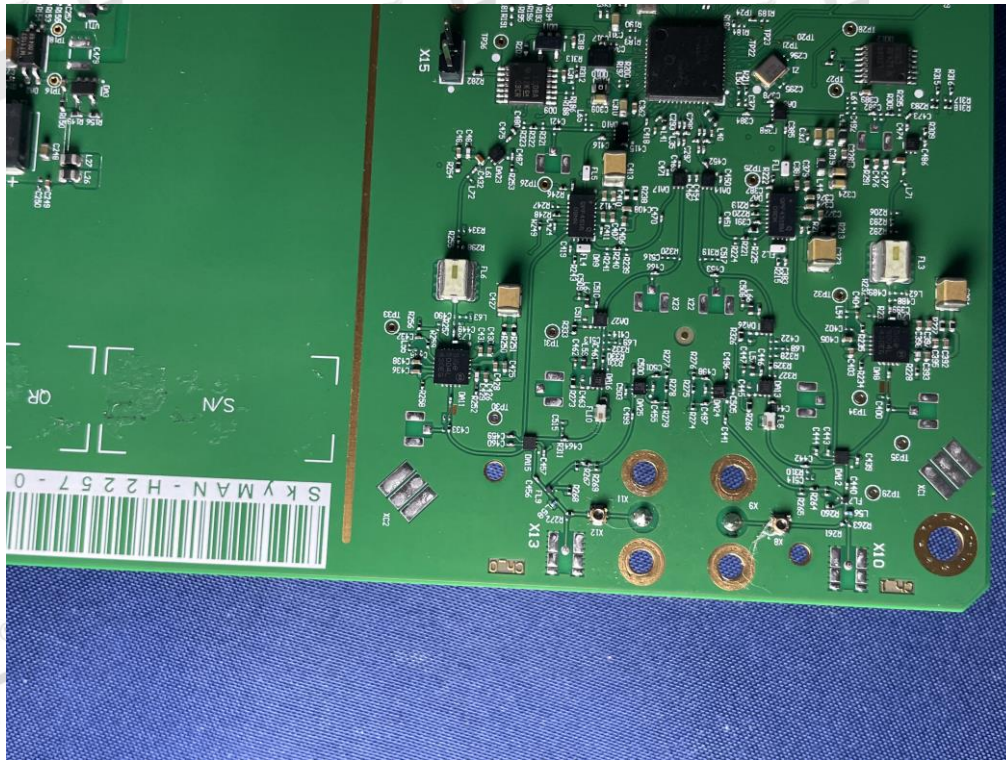


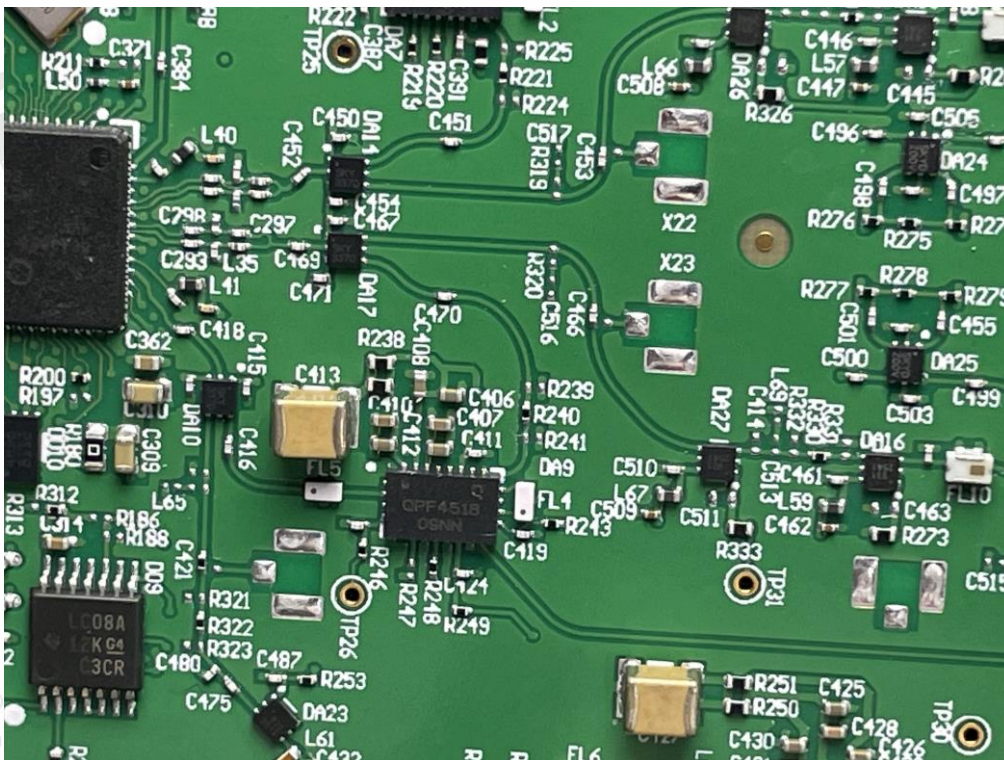
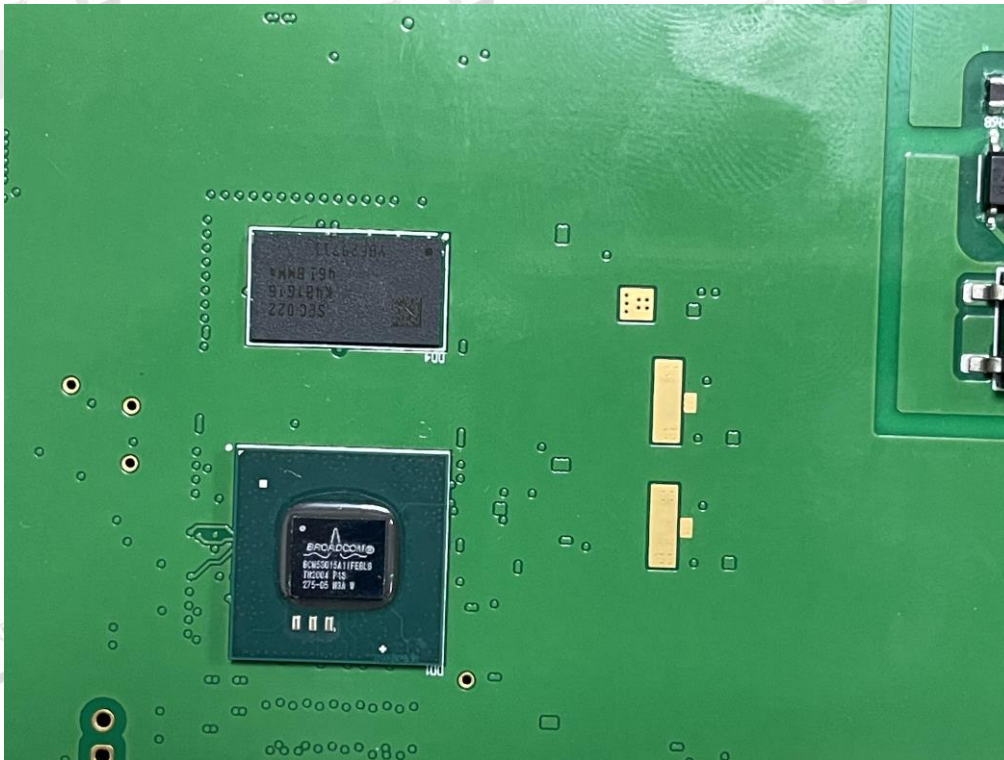












END OF REPORT