■**Report No.:** DDT-R20112701-1E5

■**Issued Date:** Apr. 10, 2021

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-BSE/05700
Trade Mark	:	InfiMAN Evolution
FCC ID	:	2AZJ4-E5-BS
Manufacturer	:	Infinet LLC
Address	:	24 S. Deryabinoy str., off. 701, 620149, Yekaterinburg, Russian Federation

Issued By: 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, **E-mail:** ddt@dgddt.com, http://www.dgddt.com

REPORT

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Test Report Declare

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Address	:	24 S. Deryabinoy str., off. 701, 620149, Yekaterinburg, 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-R20112701-1E5		
Date of Receipt:	Nov. 27, 2020	**Date of Test:**	Nov. 27, 2020 ~ Apr. 10, 2021

Prepared By: ***Approved By:***

Ella Gong

Ella Gong/Engineer ***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	Apr. 10, 2021	

1. Summary of test results

The EUT have been tested according to the applicable standards as referenced below.		
Description of Test Item	**Standard**	**Verdict**
Maximum Conducted Output Power	FCC 15.407 (a)	Pass
Emissions in restricted frequency bands	FCC 15.407 (a) FCC 15.209 FCC 15.205	Pass
Antenna requirement	FCC 15.203	Pass
Note 1: N/A means not application Note 2: This report added a Model Number E5-BSE/05700 base on the DDT-R20112701-1E1, E5-BSE/05700 and E5-BSI/05600 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-BSE/05700
EUT function description	:	Please reference user manual of this device
Power supply	:	DC 55V, 1.5A from PoE
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	:	Enclosure covered by a metal cover with 2 N-type connectors inserted in it
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

Description of Accessories	Manufacturer	Model number	Description	Remark
Power Over Ethernet(PoE) DC Power Injector	Microsemi corp.	PD-ACDC60G	N/A	INPUT: 100-240V AC~ 50/60 Hz 1.5A OUTPUT: 55V 1.1A

2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	EMC Compliance	SN
Notebook	Lenovo Beijing Co. Ltd.	ThinkPad	FCC/CE	TP00015A
Dedicated antenna	MTI WIRELESS EDGE LTD.	MT – 464047/SVH	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	8	8	Low: CH149	5745
	8	8	Middle: CH157	5785
	8	8	High: CH165	5825
40 MHz	8	8	Middle: CH151	5755
	8	8	High: CH159	5795
80 MHz	8	8	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 Registration No. CNAS L6451; A2LA Certificate Number: 3870.01;

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

Industry Canada Site Registration Number: 10288A

2.8. Measurement uncertainty

Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum analyzer)	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Frequencies Stability	6.7 x 10^{-8} (Antenna couple method)
	5.5 x 10^{-8} (Conducted method)
Conducted spurious emissions	0.86 dB (10 MHz ≤ f < 3.6GHz);

	1.40 dB (3.6 GHz ≤ f < 8 GHz)
	1.66 dB (8 GHz≤ f < 22 GHz)
Uncertainty for radio frequency (RBW<20kHz)	3×10^{-8}
Temperature	0.4℃
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.	

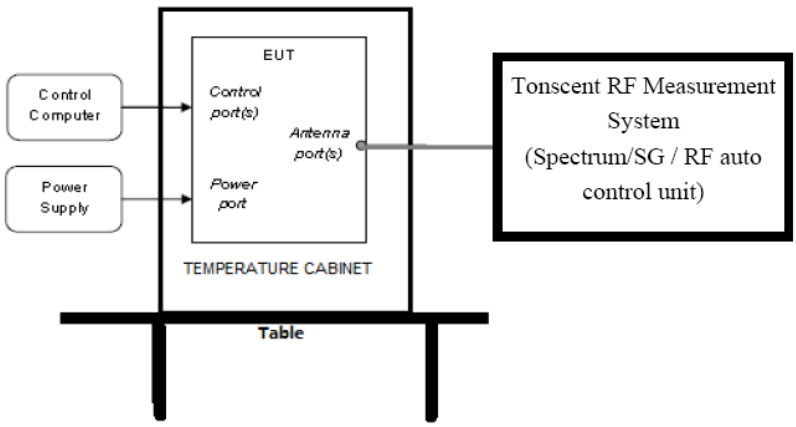
3. Equipment Used During Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☐RF Connected Test (Tonscend RF Measurement System 1#)					
Spectrum analyzer	R&S	FSU26	101272	Jul. 01, 2020	1 Year
Spectrum analyzer	Agilent	N9020D	MY49100362	Sep. 28, 2020	1 Year
Wideband Radio Communication tester	R&S	CMW500	117491	Jul. 01, 2020	1 Year
Vector Signal Generator	Agilent	E8267D	US49060192	Sep. 24, 2020	1 Year
Vector Signal Generator	Agilent	N5182A	MY48180737	Jul. 01, 2020	1 Year
Power Sensor	Agilent	U2021XA	MY55150010	Jul. 01, 2020	1 Year
Power Sensor	Agilent	U2021XA	MY55150011	Jul. 01, 2020	1 Year
DC Power Source	MATRIS	MPS-3005L-3	D813058W	Apr. 25, 2020	1 Year
RF Cable	Micable	C10-01-01-1	100309	Sep. 28, 2020	1 Year
Temp&Humi Programmable	ZHIXIANG	ZXGDJS-150L	ZX170110-A	Jul. 01, 2020	1 Year
Test Software	JS Tonscend	JS1120-3	Ver.2.7	N/A	N/A
☒RF Connected Test (Tonscend RF Measurement System 2#)					
Spectrum analyzer	R&S	FSU26	200071	Sep. 25, 2020	1 Year
Spectrum analyzer	Agilent	N9020D	MY49100362	Sep. 28, 2020	1 Year
Wideband Radio Communication tester	R&S	CMW500	117491	Jul. 01, 2020	1 Year
Vector Signal Generator	Agilent	N5182A	MY19060405	Jul. 01, 2020	1 Year
Vector Signal Generator	Agilent	N5182A	MY48180912	Jul. 01, 2020	1 Year
RF Control Unit	Tonsend	JS0806-2	DDT-ZC01449	Jul. 01, 2020	1 Year
DC Power Source	MATRIS	MPS-3005L-3	D813058W	Apr. 25, 2020	1 Year
RF Cable	Micable	C10-01-01-1	100309	Sep. 28, 2020	1 Year
Temp&Humi Programmable	ZHIXIANG	ZXGDJS-150L	ZX170110-A	Jul. 01, 2020	1 Year
Test Software	JS Tonscend	JS1120-3	Ver.2.7	N/A	N/A
☐Radiation 1#chamber					
EMI Test Receiver	R&S	ESU8	100316	Sep. 24, 2020	1 Year
Spectrum analyzer	Agilent	E4447A	MY50180031	Jul. 01, 2020	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB9163	9163-462	Nov. 13, 2020	1 Year
Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Nov. 18, 2020	1 Year
Double Ridged Horn Antenna	R&S	HF907	100276	Nov. 13, 2020	1 Year
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	790	Apr. 11, 2020	1 Year
Pre-amplifier	A.H.	PAM-0118	360	Sep. 28, 2020	1 Year

RF Cable	HUBSER	CP-X2+ CP-X1	W11.03+ W12.02	Sep. 24, 2020	1 Year
RF Cable	N/A	5m+6m+1m	06270619	Sep. 30, 2020	1 Year
MI Cable	HUBSER	C10-01-01-1 M	1091629	Sep. 30, 2020	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A
☒**Radiation 2#chamber**					
EMI Test Receiver	R&S	ESCI	101364	Sep. 28, 2020	1 Year
Spectrum analyzer	Agilent	E4447A	MY50180031	Jul. 01, 2020	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	9163-994	Nov. 13, 2020	1 Year
Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Nov. 18, 2020	1 Year
Double Ridged Horn Antenna	Schwarzbeck	BBHA9120	02108	Jul. 11, 2020	1 Year
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	790	Apr. 11, 2020	1 Year
Pre-amplifier	TERA-MW	TRLA-0040 G35	1013 03	Sep. 28, 2020	1 Year
RF Cable	N/A	14+1.5m	06270619	Sep. 28, 2020	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A
☒**Power Line Conducted Emissions Test 1#**					
EMI Test Receiver	R&S	ESU8	100316	Sep. 24, 2020	1 Year
LISN 1	R&S	ENV216	101109	Sep. 28, 2020	1 Year
LISN 2	R&S	ESH2-Z5	100309	Sep. 28, 2020	1 Year
Pulse Limiter	R&S	ESH3-Z2	101242	Sep. 24, 2020	1 Year
CE Cable 1	HUBSER	N/A	W10.01	Sep. 24, 2020	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A
☐**Power Line Conducted Emissions Test 2#**					
Test Receiver	R&S	ESPI	101761	Sep. 24, 2020	1 Year
LISN 1	R&S	ENV216	101170	Sep. 28, 2020	1 Year
LISN 2	R&S	ESH2-Z5	100309	Sep. 28, 2020	1 Year
Pulse Limiter	R&S	KH43101	43101180156 8-12#	Jul. 01, 2020	1 Year
CE Cable 2	HUBSER	N/A	W11.02	Sep. 24, 2020	1 Year
Test software	Audix	E3	V 6.11111b	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 16 dBi. The Output Power limit is the above limits-(16-6)		

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)

(3) Add each antenna port's results to get the total output power of EUT.

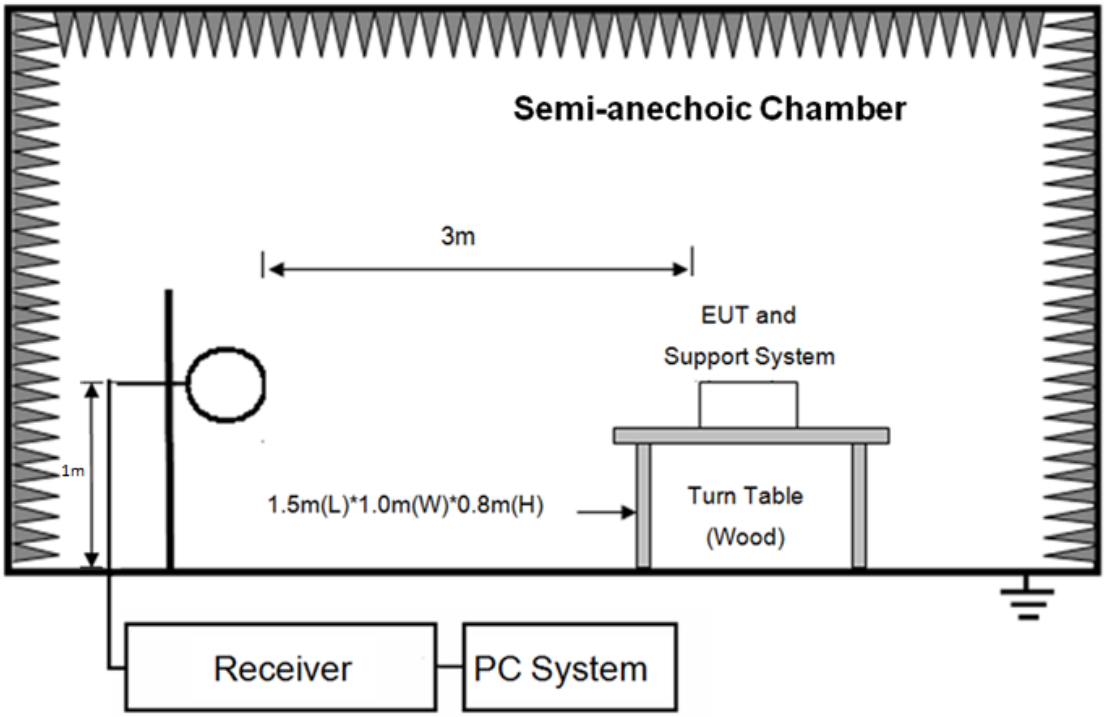
4.4. Test result

Test Mode	Antenna	Channel	Duty cycle [%]	Duty cycle Factor[dB]	Result[dBm]	Limit[dBm]	Verdict
20 MHz	Ant1	5745	56.23	2.5	9.47	<=20	PASS
	Ant2	5745	56.23	2.5	9.96	<=20	PASS
	total	5745	/	/	12.7	<=20	PASS
	Ant1	5785	56.23	2.5	10.34	<=20	PASS
	Ant2	5785	56.23	2.5	10.96	<=20	PASS
	total	5785	/	/	13.7	<=20	PASS
	Ant1	5825	47.86	3.2	11.01	<=20	PASS
	Ant2	5825	28.18	5.5	10.50	<=20	PASS
	total	5825	/	/	13.8	<=20	PASS
40 MHz	Ant1	5755	50.12	3.0	9.47	<=20	PASS
	Ant2	5755	46.77	3.3	10.27	<=20	PASS
	total	5755	/	/	12.9	<=20	PASS
	Ant1	5795	53.70	2.7	9.84	<=20	PASS
	Ant2	5795	50.12	3.0	11.24	<=20	PASS
	total	5795	/	/	13.6	<=20	PASS
80 MHz	Ant1	5775	41.69	3.8	9.20	<=20	PASS
	Ant2	5775	41.69	3.8	9.53	<=20	PASS
	total	5775	/	/	12.38	<=20	PASS

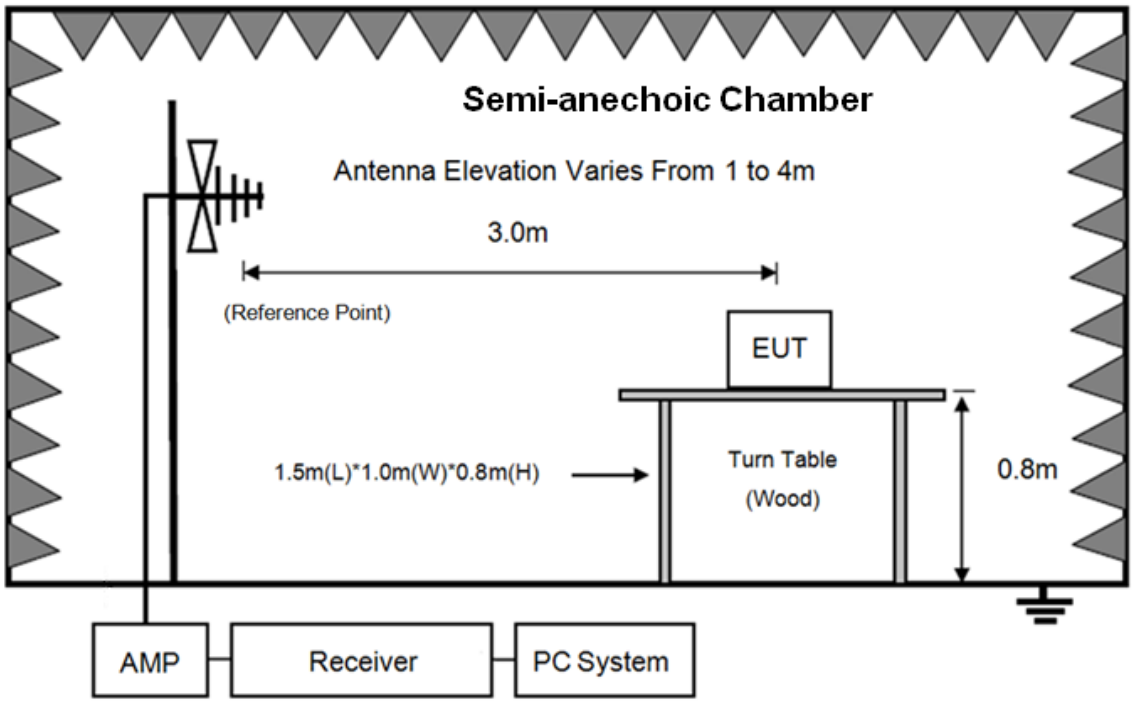
5. Emissions in restricted frequency bands

5.1. Block diagram of test setup

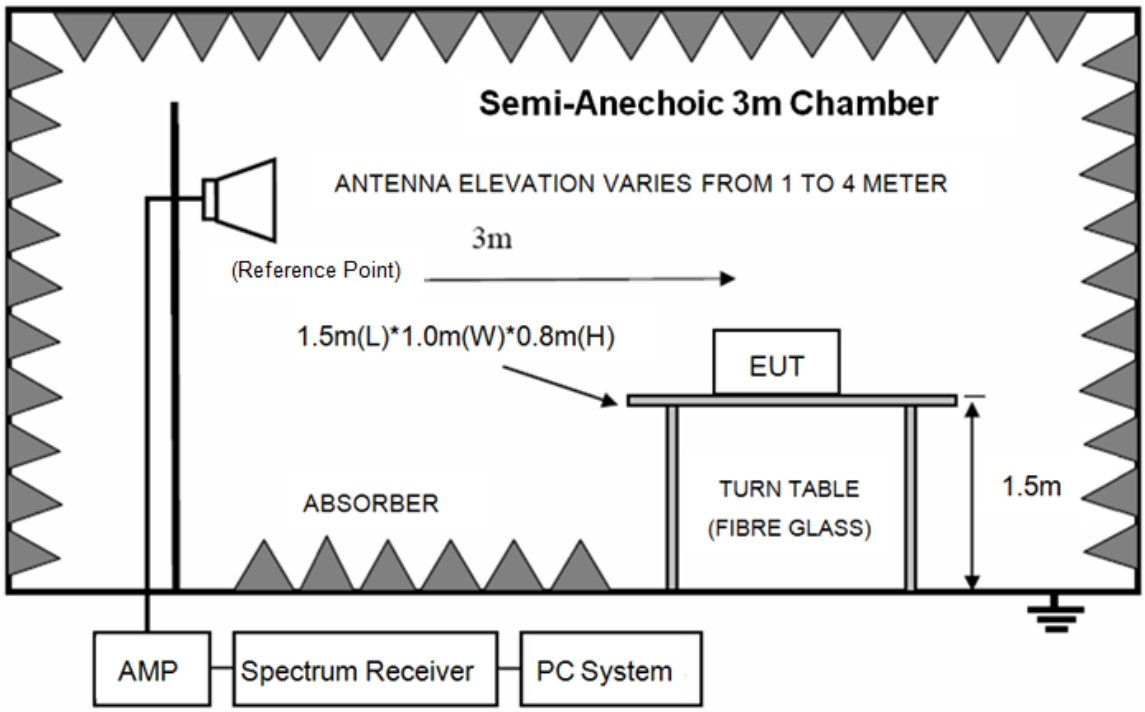
In 3 m Anechoic Chamber, test setup diagram for 9 kHz - 30 MHz:



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

8.3.1 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			

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

[2]Above 38.6

8.3.2 FCC 15.209 Limit.

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/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:

$$Limit_{3m}(dBuV/m) = Limit_{30m}(dBuV/m) + 40Log(30m/3m)$$

8.3.3 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.

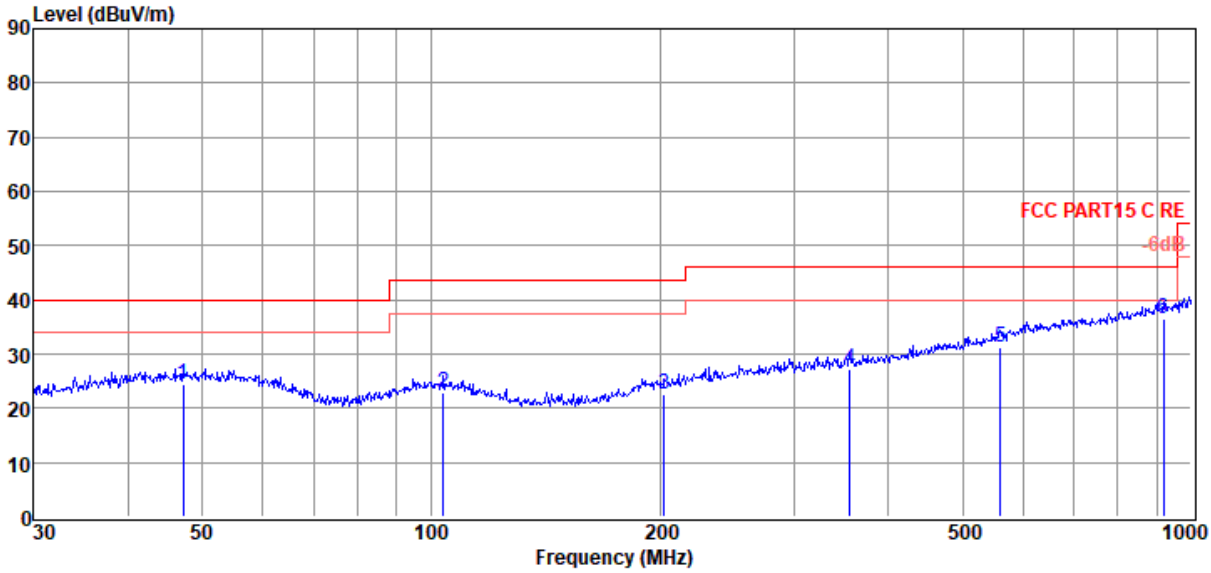
Note2: For emissions below 1 GHz, according exploratory explorer test, when change Tx mode and channel, have no distinct influence on emissions level, so for emissions below 1 GHz, the final test was only performed with EUT working in 11ac mode.

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 1#	D:\2020 RE 1# Report data\Q20112701 CETECOM\FCC BELOW1G.EM6	
Test Date	: 2021-03-02	**Tested By**	: Zora
EUT	: InfiMAN Evolution	**Model Number**	: E5-BSE/05700
Power Supply	: AC230V/50HZ	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:45%,Press:101.3kPa	**Antenna/Distance**	: 2019 VULB 9163 1#/3m/HORIZONTAL
Memo	:		

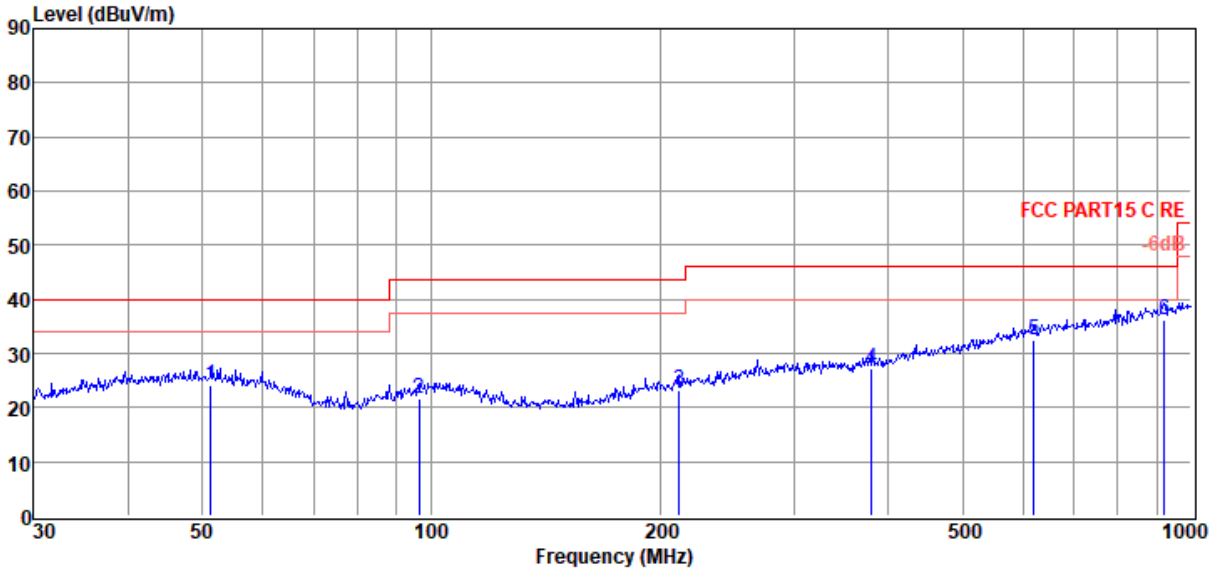


Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	47.16	6.38	14.07	3.97	24.42	40.00	-15.58	QP	HORIZONTAL
2	103.81	6.75	11.66	4.44	22.85	43.50	-20.65	QP	HORIZONTAL
3	202.81	5.95	11.49	5.05	22.49	43.50	-21.01	QP	HORIZONTAL
4	355.43	6.64	14.81	5.78	27.23	46.00	-18.77	QP	HORIZONTAL
5	560.69	6.20	18.46	6.59	31.25	46.00	-14.75	QP	HORIZONTAL
6	919.29	6.88	22.00	7.74	36.62	46.00	-9.38	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.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 1#	D:\2020 RE 1# Report data\Q20112701 CETECOM\FCC BELOW1G.EM6	
Test Date	: 2021-03-02	**Tested By**	: Zora
EUT	: InfiMAN Evolution	**Model Number**	: E5-BSE/05700
Power Supply	: AC230V/50HZ	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:45%,Press:101.3kPa	**Antenna/Distance**	: 2019 VULB 9163 1#/3m/VERTICAL
Memo	:		



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	51.30	6.15	14.03	4.00	24.18	40.00	-15.82	QP	VERTICAL
2	96.44	5.62	11.56	4.38	21.56	43.50	-21.94	QP	VERTICAL
3	212.27	6.20	11.80	5.10	23.10	43.50	-20.40	QP	VERTICAL
4	379.91	6.38	15.09	5.88	27.35	46.00	-18.65	QP	VERTICAL
5	620.71	6.21	19.35	6.81	32.37	46.00	-13.63	QP	VERTICAL
6	922.52	6.49	22.03	7.75	36.27	46.00	-9.73	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.

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									
6270.00	46.43	34.33	43.05	7.13	44.84	74.00	-29.16	Peak	HORIZONTAL
8174.00	45.15	37.90	42.76	8.67	48.96	74.00	-25.04	Peak	HORIZONTAL
10690.00	44.41	40.28	42.36	9.32	51.65	74.00	-22.35	Peak	HORIZONTAL
12645.00	45.65	38.89	41.62	10.64	53.56	74.00	-20.44	Peak	HORIZONTAL
14005.00	42.11	40.90	40.30	10.93	53.64	74.00	-20.36	Peak	HORIZONTAL
16096.00	42.71	38.82	40.09	11.62	53.06	74.00	-20.94	Peak	HORIZONTAL
5726.00	46.93	32.93	43.18	6.78	43.46	74.00	-30.54	Peak	VERTICAL
7919.00	45.30	37.89	42.81	8.60	48.98	74.00	-25.02	Peak	VERTICAL
9415.00	45.88	39.03	42.51	8.92	51.32	74.00	-22.68	Peak	VERTICAL
11761.00	45.74	39.39	42.31	10.25	53.07	74.00	-20.93	Peak	VERTICAL
13393.00	43.60	40.15	40.88	10.78	53.65	74.00	-20.35	Peak	VERTICAL
14719.00	41.13	40.45	40.22	11.45	52.81	74.00	-21.19	Peak	VERTICAL
11ac CH157									
6270.00	46.43	34.33	43.05	7.13	44.84	74.00	-29.16	Peak	HORIZONTAL
9109.00	44.33	38.79	42.57	8.69	49.24	74.00	-24.76	Peak	HORIZONTAL
11574.00	45.99	39.61	42.32	10.02	53.30	74.00	-20.70	Peak	HORIZONTAL
13189.00	43.87	39.86	41.07	10.74	53.40	74.00	-20.60	Peak	HORIZONTAL
14192.00	41.89	40.86	40.28	11.07	53.54	74.00	-20.46	Peak	HORIZONTAL
15960.00	43.09	38.45	40.10	11.53	52.97	74.00	-21.03	Peak	HORIZONTAL
5539.00	47.41	32.74	43.24	6.65	43.56	74.00	-30.44	Peak	VERTICAL
7664.00	45.84	37.53	42.84	8.31	48.84	74.00	-25.16	Peak	VERTICAL
9942.00	46.14	39.45	42.41	9.33	52.51	74.00	-21.49	Peak	VERTICAL
11370.00	46.09	39.88	42.33	9.76	53.40	74.00	-20.60	Peak	VERTICAL
13376.00	43.14	40.13	40.89	10.78	53.16	74.00	-20.84	Peak	VERTICAL
14600.00	41.37	40.64	40.24	11.36	53.13	74.00	-20.87	Peak	VERTICAL
11ac CH165									
7154.00	46.79	37.09	42.92	7.73	48.69	74.00	-25.31	Peak	HORIZONTAL
9721.00	45.34	39.28	42.45	9.16	51.33	74.00	-22.67	Peak	HORIZONTAL
11574.00	45.99	39.61	42.32	10.02	53.30	74.00	-20.70	Peak	HORIZONTAL
13189.00	43.87	39.86	41.07	10.74	53.40	74.00	-20.60	Peak	HORIZONTAL
14549.00	41.91	40.72	40.24	11.33	53.72	74.00	-20.28	Peak	HORIZONTAL
16096.00	43.41	38.82	40.09	11.62	53.76	74.00	-20.24	Peak	HORIZONTAL
5386.00	47.59	32.65	43.29	6.54	43.49	74.00	-30.51	Peak	VERTICAL
8021.00	45.06	37.99	42.80	8.69	48.94	74.00	-25.06	Peak	VERTICAL
10299.00	45.45	39.92	42.38	9.36	52.35	74.00	-21.65	Peak	VERTICAL
12611.00	44.80	38.82	41.66	10.64	52.60	74.00	-21.40	Peak	VERTICAL
14209.00	41.98	40.86	40.28	11.08	53.64	74.00	-20.36	Peak	VERTICAL
15535.00	42.71	38.96	40.14	11.58	53.11	74.00	-20.89	Peak	VERTICAL
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

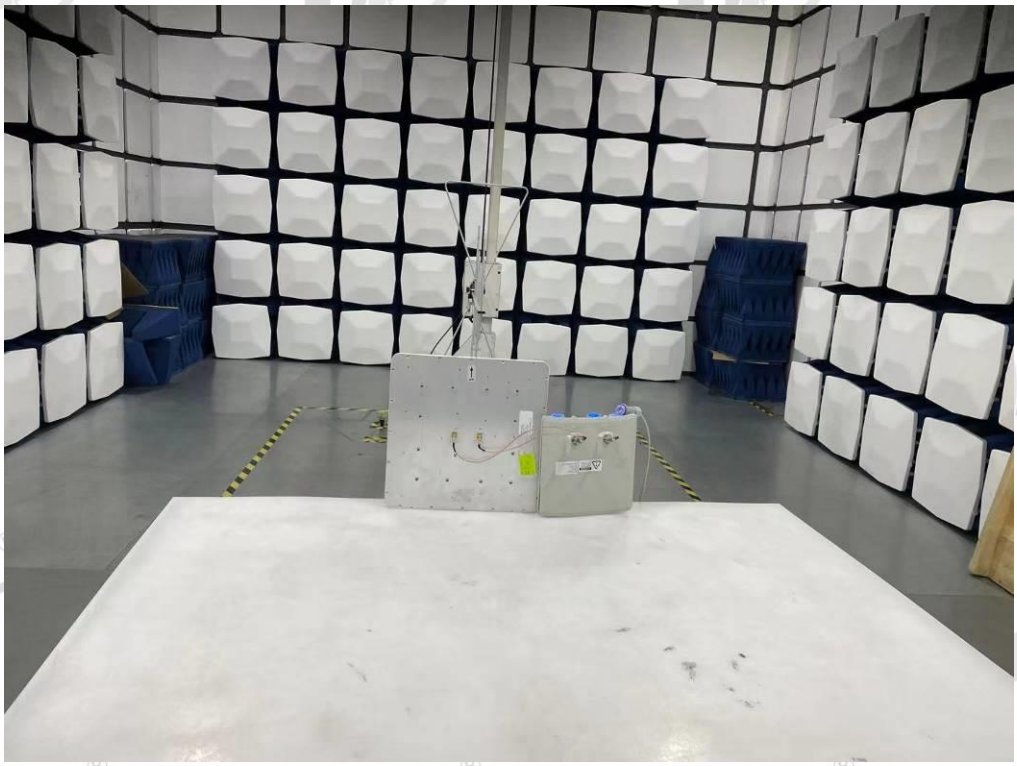
6.1. Limit

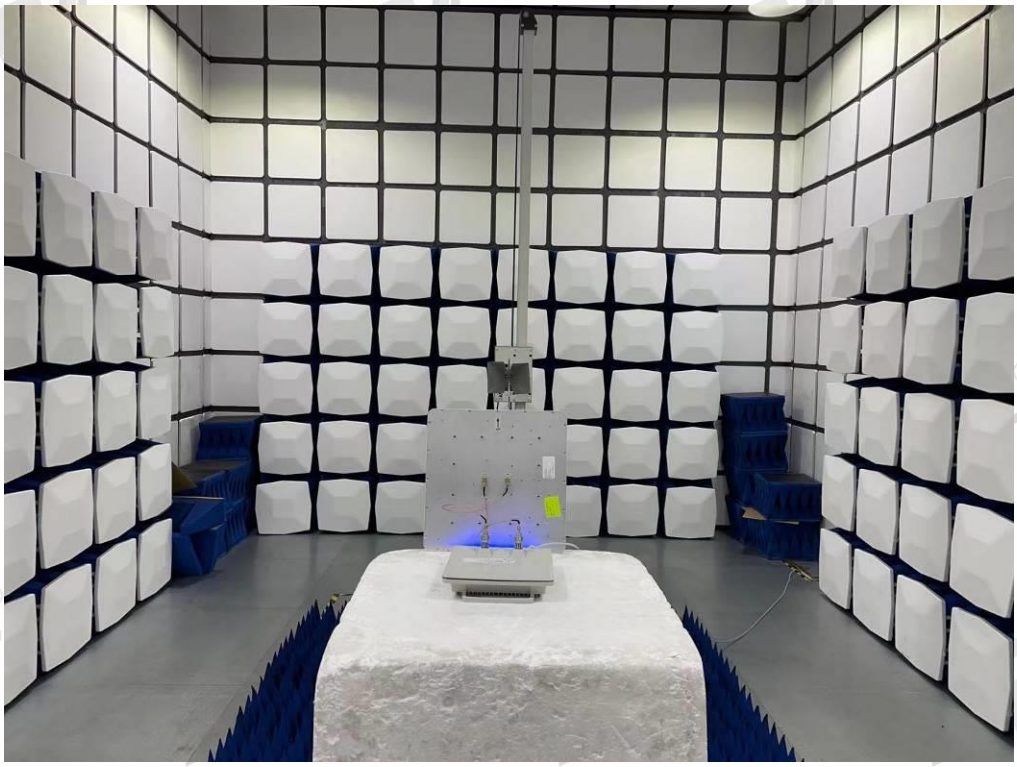
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

6.2. Result

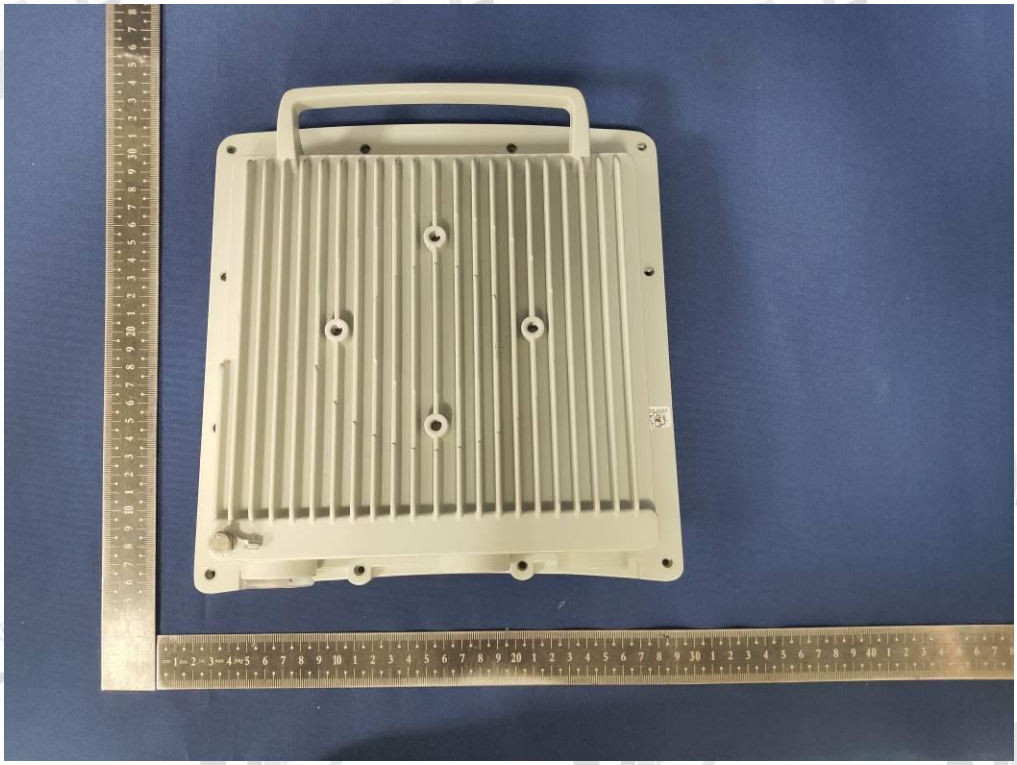
The device support 2T2R, the EUT with 2 N-type connectors used for this product and maximum antenna gain of the antennas used for testing is 16 dBi for antenna 1, 16 dBi for antenna 2.

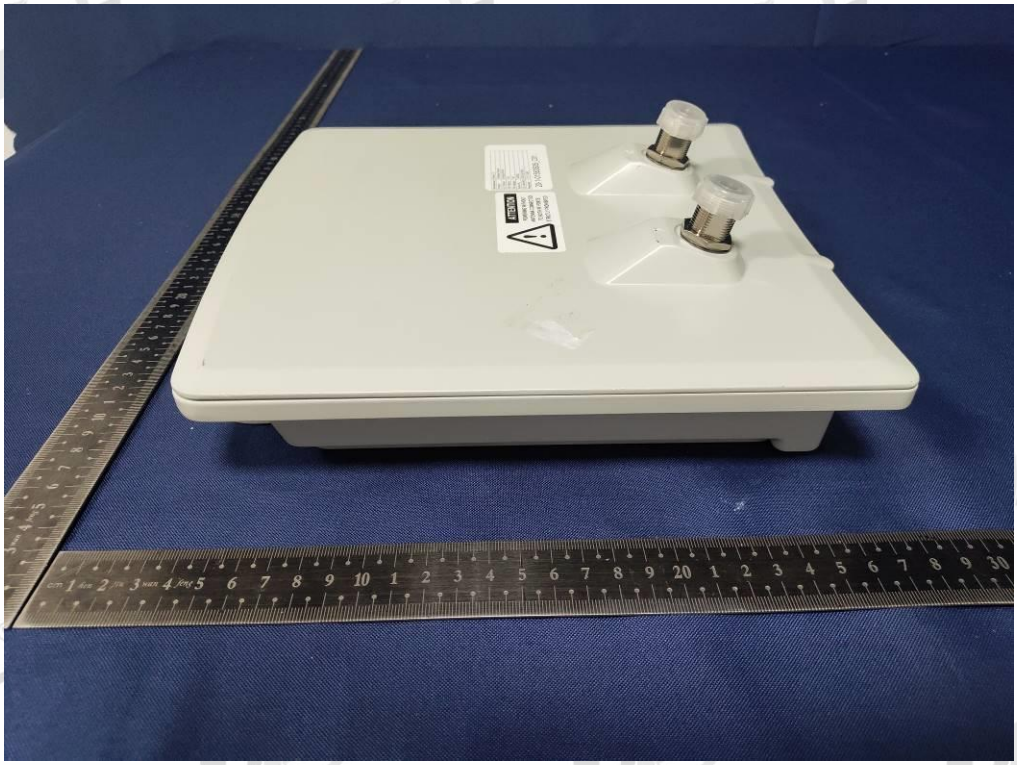
7. Test setup photograph

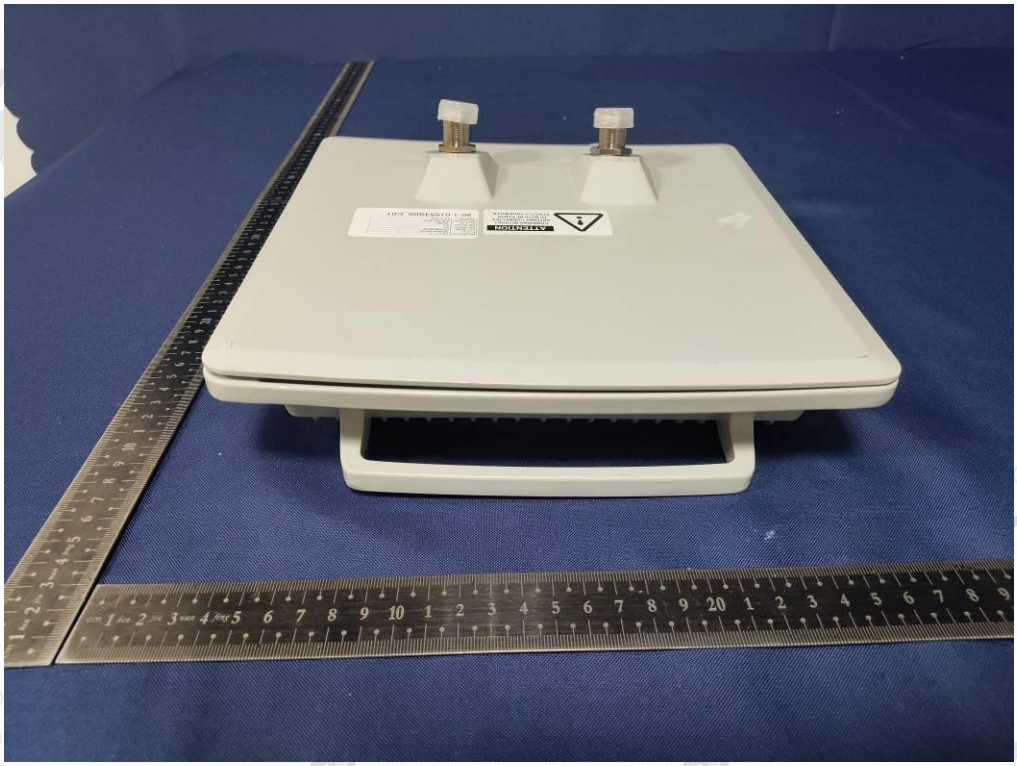




8. Photos of the EUT

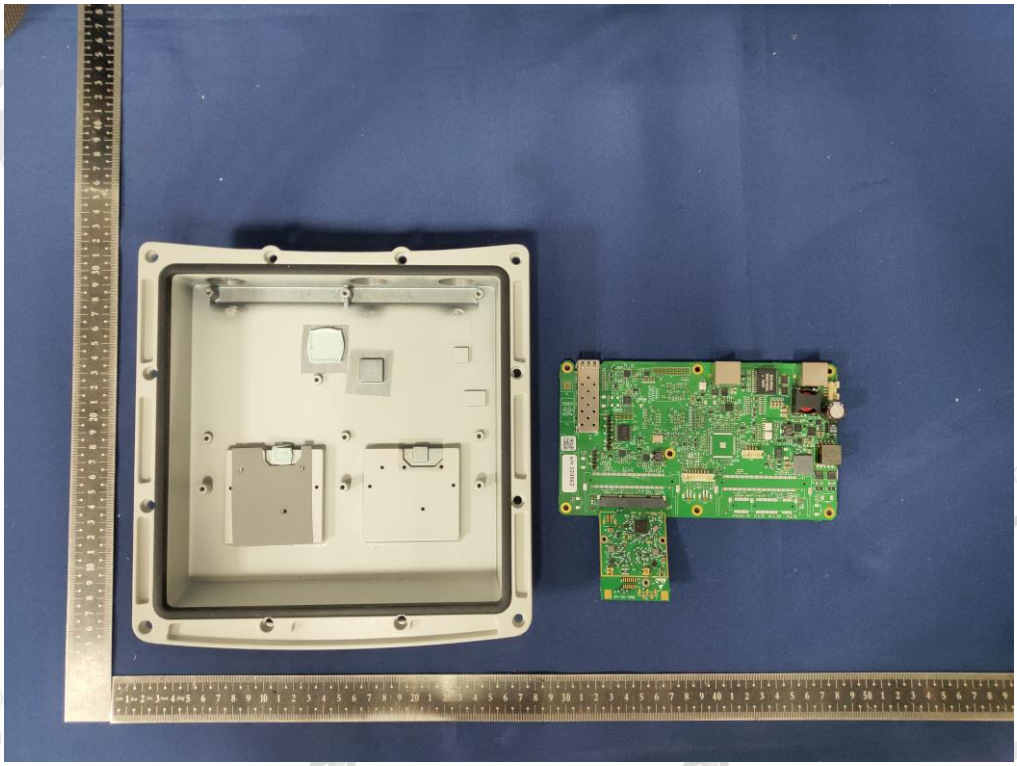


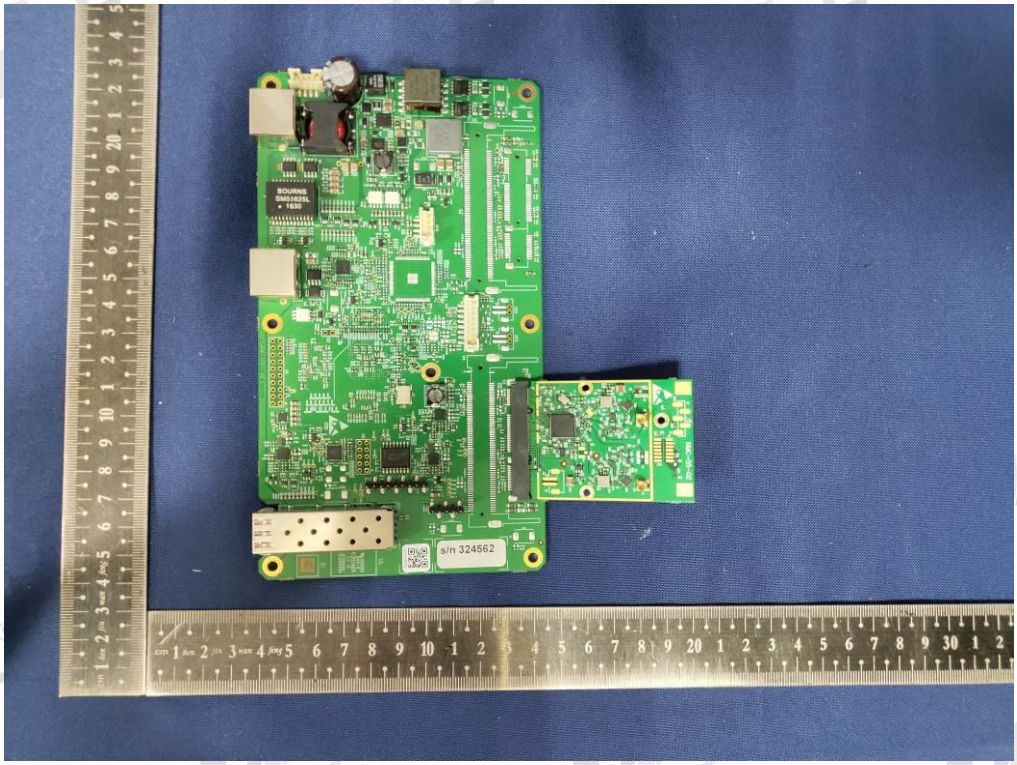




Infinet Evolution
E5 – BSE/05700
S/N: 324562
all EU

ATTENTION

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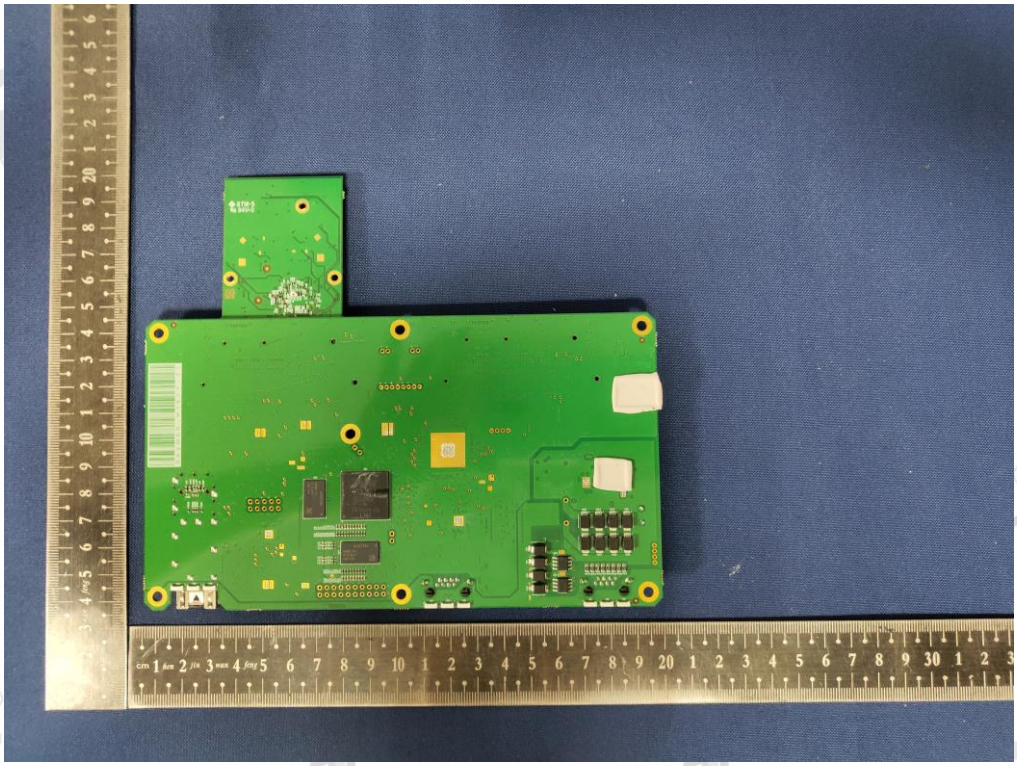

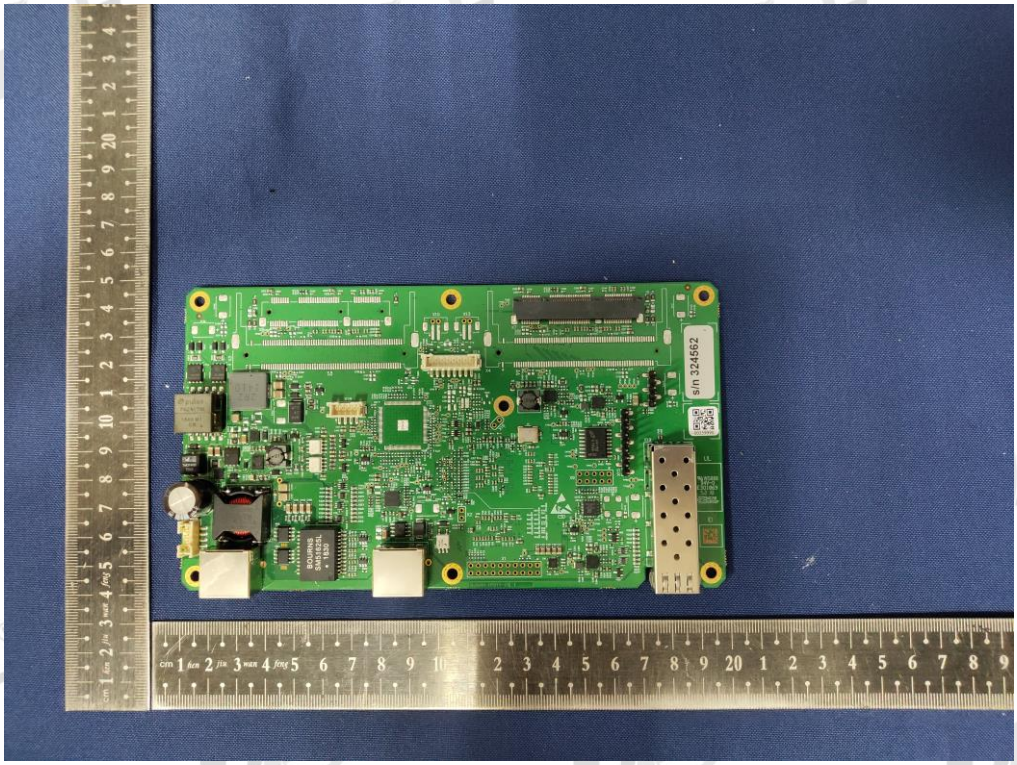
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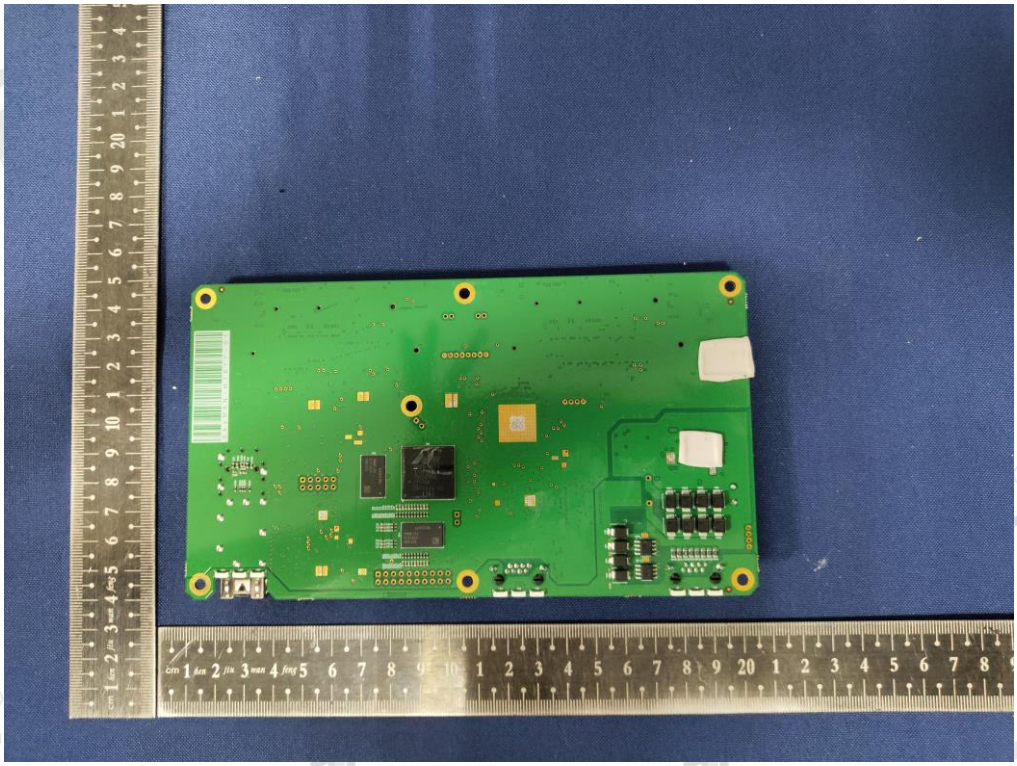

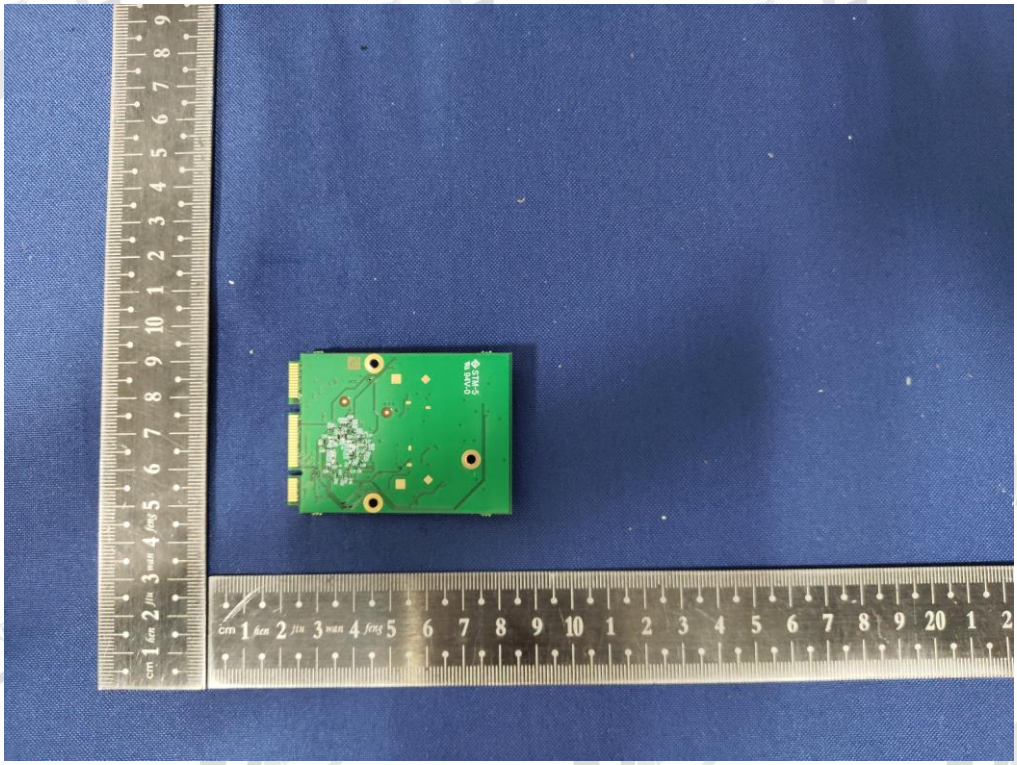

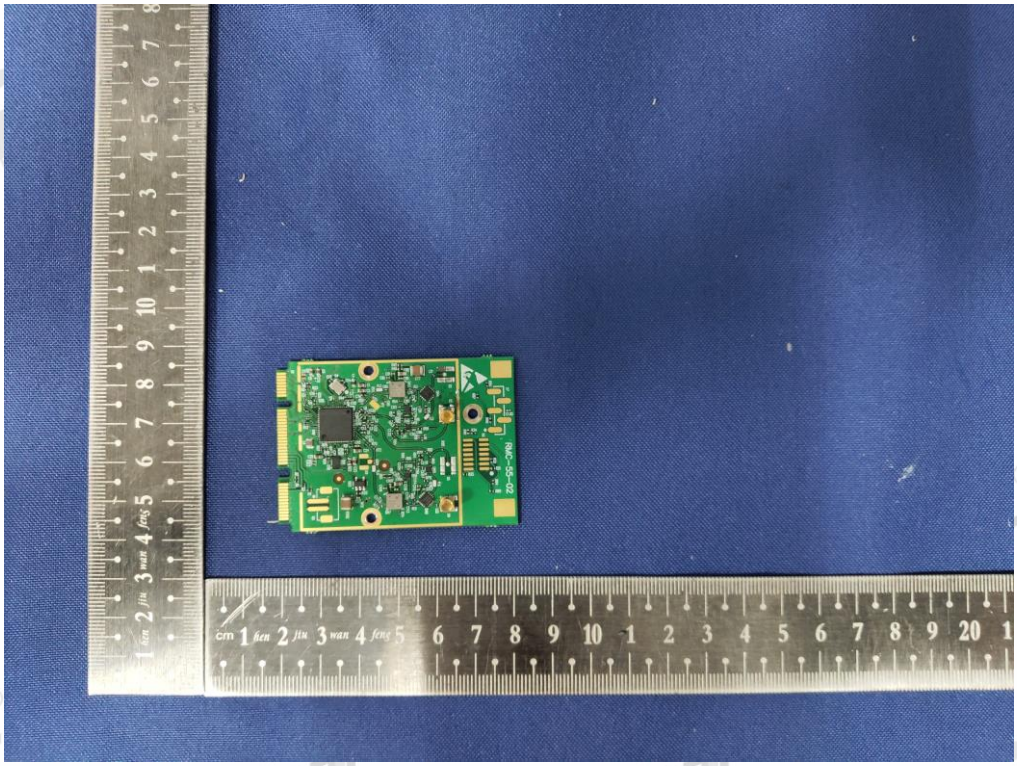

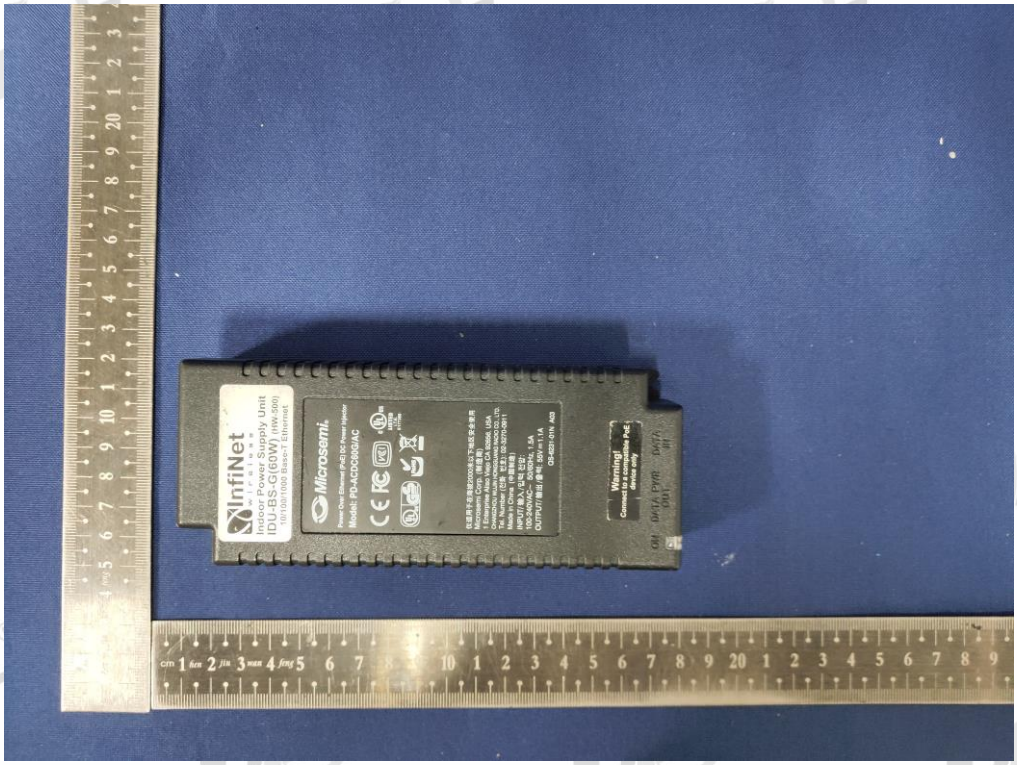

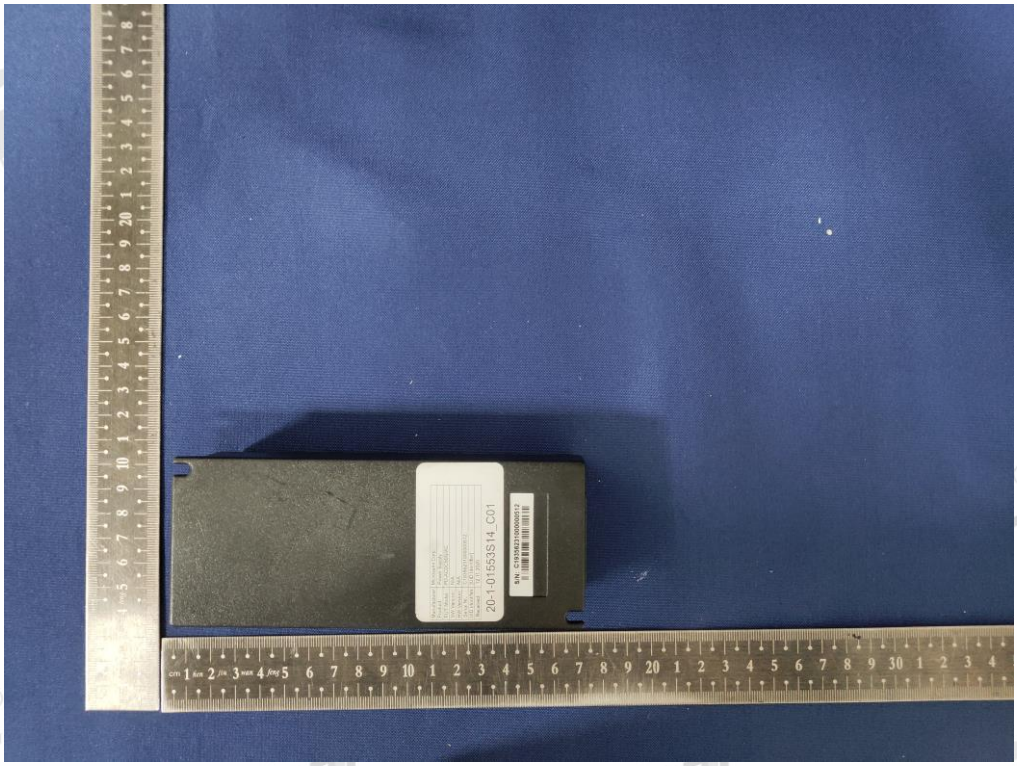

END OF REPORT