FCC TEST REPORT

for

UP Squared 6000; UP Squared 6000 Edge; AI Core X module

MODEL: xUPNxEHLx; xUPNxEDGExEHLx; xPERxTAIXx (x - Where x may be any combination of alphanumeric characters or "-"or blank.)

Issued to:

AAEON Technology Inc.

**5F, No.135, Lane 235, Pao Chiao Rd, Hsin-Tien Dist.,
New Taipei City, Taiwan, R.O.C.**

Issued by:

Compliance Certification Services Inc.

Xindian Lab.

**No.163-1, Jhongsheng Rd., Xindian Dist.,
New Taipei City, Taiwan.**

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Issued Date: January 25, 2022

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Report No.: TMXD2112001941DE

Revision History

Rev.		Issue Date		Revisions	Effect Page	Revised By
00		January 25, 2022		Initial Issue	ALL	Linda Wu

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Report No.: TMXD2112001941DE

1 TEST RESULT CERTIFICATION

Product:	UP Squared 6000; UP Squared 6000 Edge; AI Core X module
Model:	xUPNxEHLx; xUPNxEDGExEHLx; xPERxTAIXx (x - Where x may be any combination of alphanumeric characters or "-"or blank.)
Brand:	AAEON
Applicant:	**AAEON Technology Inc.** 5F, No.135, Lane 235, Pao Chiao Rd, Hsin-Tien Dist., New Taipei City, Taiwan, R.O.C.
Manufacturer:	**AAEON Technology Inc.** 5F, No.135, Lane 235, Pao Chiao Rd, Hsin-Tien Dist., New Taipei City, Taiwan, R.O.C.
Tested:	December 25, 2021

EMISSION			
Standard	**Item**	**Result**	**Remarks**
FCC 47 CFR Part 15 Subpart B, ICES-003 Issue 7-2020 ANSI C63.4-2014	Conducted (Power Port)	PASS	Meet Class A limit
	Radiated	PASS	Meet Class A limit

Statements of Conformity
Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

The above equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Approved by:

Jason Lee
Section Manager

Reviewed by:

Eva Fan
Supervisor of report document dept.

2 EUT DESCRIPTION

Product	UP Squared 6000; UP Squared 6000 Edge; AI Core X module
Brand Name	AAEON
Model	xUPNxEHLx; xUPNxEDGExEHLx; xPERxTAIXx (x - Where x may be any combination of alphanumeric characters or “-”or blank.)
Applicant	AAEON Technology Inc.
Housing material	Metal case
Identify Number	TMXD2112001941DE
Received Date	December 17, 2021
EUT Power Rating	12VDC from Adaptor
AC Power During Test	120VAC / 60Hz & 230VAC / 60Hz to Adaptor
AC Adaptor Manufacturer	EDAC
AC Adaptor Model Number	EA10681U-120
AC Adaptor Power Rating	I/P: 100-240VAC, 2.0A, 50-60Hz O/P: 12.0VDC, 6.0A 72.0W
DC Power Cable Type	Unshielded, 1.2m (Non-detachable, with a core)

Model Differences

Model	Difference	Tested (Checked)
UPN-EHL01	Devices difference	☒
UPN-EDGE-EHL01		☒
PER-TAIX2-A20-2280	AI Core X module	☒
xUPNxEHLx; xUPNxEDGExEHLx; xPERxTAIXx	1. x - Where x may be any combination of alphanumeric characters or “-”or blank. 2. For marketing purpose only	☐

I/O PORT

Model: UPN-EHL01

I/O PORT TYPES	Q'TY	TESTED WITH
1. COM Port	1	1
2. HDMI Port	1	1
3. Display Port	1	1
4. Earphone Port	1	1
5. Microphone Port	1	1
6. USB 3.0 Port	2	2
7. USB Type-C Port	1	1
8. LAN Port	2	2

Model: UPN-EDGE-EHL01

I/O PORT TYPES	Q'TY	TESTED WITH
1. COM Port	2	2
2. HDMI Port	1	1
3. Display Port	1	1
4. Earphone Port	1	1
5. Microphone Port	1	1
6. USB 3.0 Port	2	2
7. USB Type-C Port	1	1
8. Micro USB Port	1	1
9. LAN Port	4	4
10. Antenna Port	2	2

Note: None.

3 TEST METHODOLOGY

3.1. DECISION OF FINAL TEST MODE

The EUT was tested together with the below additional components, and a configuration, which produced the worst emission levels, was selected and recorded in this report.

The test configuration/ modes are as the following:

Conduction Modes:

No.	Model	Operate State	
1	UPN-EDGE-EHL01; PER-TAIX2-A20-2280	HDMI+DP 3840*2160, 30Hz	120VAC, 60Hz
2			230VAC, 60Hz
3	UPN-EHL01	HDMI+DP 3840*2160, 30Hz	120VAC, 60Hz

Radiation Modes:

No.	Model	Operate State	
1	UPN-EDGE-EHL01; PER-TAIX2-A20-2280	HDMI+DP 3840*2160, 30Hz	120VAC, 60Hz
		HDMI+DP 3840*2160, 30Hz / 1-15GHz	
2		HDMI+DP 3840*2160, 30Hz	230VAC, 60Hz
3	UPN-EHL01	HDMI+DP 3840*2160, 30Hz	120VAC, 60Hz

Worst:

Conduction: Mode 1

Radiation: Mode 1

3.2. EUT SYSTEM OPERATION

1. Windows 10 boots system.
2. Run MyHWin.exe to activate all peripherals and display “H” pattern on monitor screen.
3. Run Winemc.exe and choose media player to play music.
4. Run Winemc.exe and choose “F:/” to test EUT.
5. Run Lantest20.exe to ping 192.168.1.1 –t (EUT), ping 192.168.1.2 –t (EUT), ping 192.168.1.3 –t (EUT), ping 192.168.1.4 –t (EUT), ping 192.168.1.10 –t (Server PC).

   Note: Test program is self-repeating throughout the test.

4 SETUP OF EQUIPMENT UNDER TEST

4.1. DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

EUT Devices:

Model: UPN-EHL01

No.	Equipment	Model No.	Brand Name
1	CPU (3.0GHz)	Atom X6425E Processor	Intel
2	Memory (SDRAM.LPDDR4.32GB)	MT53E2G32D4DT-046	Micron
3	Storage (eMMC 64GB)	SDINBDA4-64G-V	Sandisk
4	Power Adapter	EA10681U-120	EDAC

Model: UPN-EDGE-EHL01

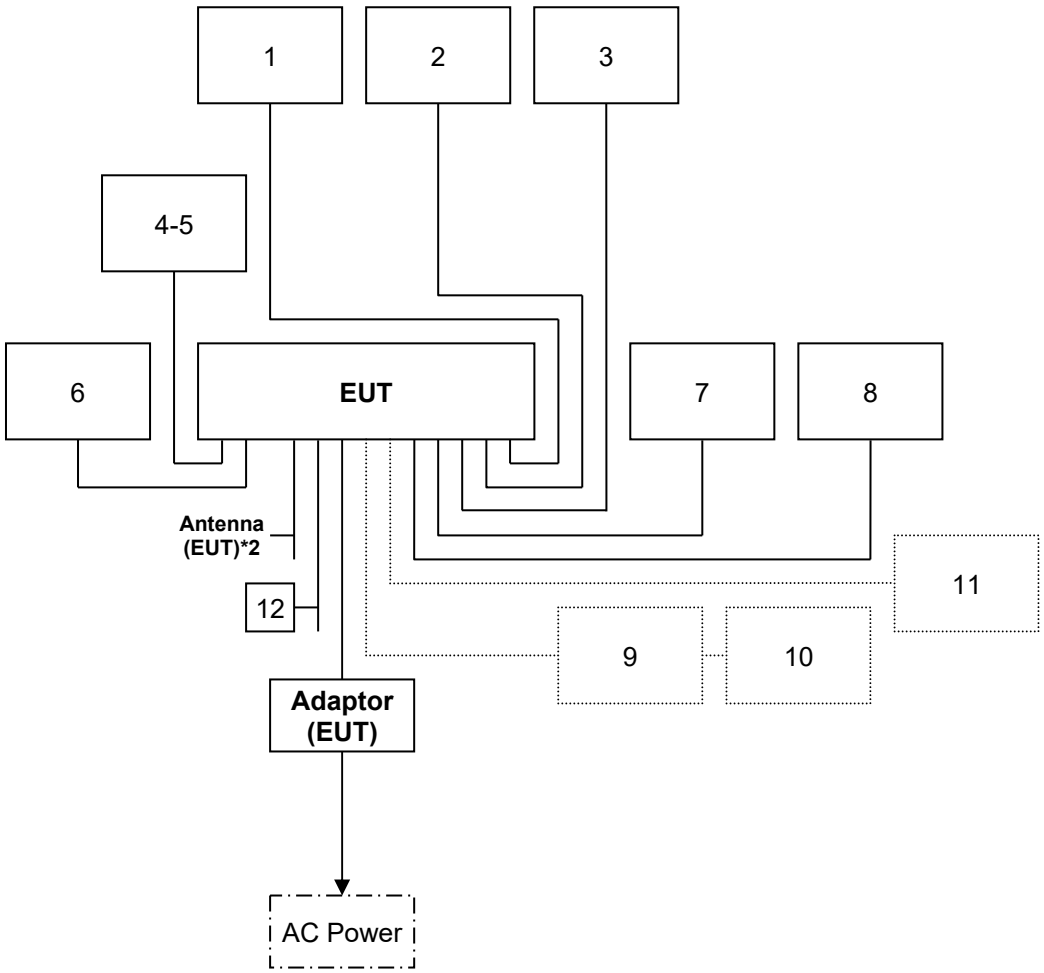
No.	Equipment	Model No.	Brand Name
1	CPU (3.0GHz)	Atom X6425E Processor	Intel
2	Memory (SDRAM.LPDDR4.32GB)	MT53E2G32D4DT-046	Micron
3	Storage (eMMC 64GB)	SDINBDA4-64G-V	Sandisk
4	Power Adapter	EA10681U-120	EDAC
5	RF Module	INTEL 9260 802.11ac	Intel

Peripherals Devices:

No.	Equipment	Model No.	Serial No.	FCC ID / BSMI ID	Brand Name	Data Cable	Power Cord
1	Earphone & Microphone	X710	N/A	N/A	HAWK	Unshielded, 1.8m	N/A
2	USB Mouse	M-U0026	N/A	BSMI: T41126	LOGITECT	Shielded, 1.8m	N/A
3	USB Keyboard	Y-U0011	1804SY04FP48	BSMI: D51160	LOGITECH	Shielded, 1.8m	N/A
4-5	Modem	AL-56ERM	0MERM04A0212	N/A	GALILEO	Shielded, 1.5m	Unshielded, 1.8m with a core
6	Monitor	VP28U	KCLMTF168414	BSMI: R31018	ASUS	Shielded, 1.8m	Unshielded, 1.8m
7	USB HDD	TS1TSJ25MC	E57223-0003	BSMI: D33193	Transcend	Shielded, 0.5m	N/A
8	Monitor	U2718Qb	CN-0M5R5F-QDC00-9CL-0CVL-A10	BSMI: R43002	DELL	Shielded, 1.8m	Unshielded, 1.8m
9	Hub	GS-108B v3	S184305016657	BSMI: D41163	ZYXEL	Unshielded, 20m*3	Unshielded, 1.8m
10	Server PC	T5810	2H6YZG2	BSMI: R33002	DELL	Unshielded, 3.0m	Unshielded, 1.8m
11	Server PC	T5810	2H720H2	BSMI: R33002	DELL	Unshielded, 20m	Unshielded, 1.8m
12	Micro USB Cable	N/A	N/A	N/A	N/A	Shielded, 1.8m	N/A

Note:
1) All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2) Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.2. CONFIGURATION OF SYSTEM UNDER TEST



5 FACILITIES AND ACCREDITATIONS

5.1. FACILITIES

All measurement facilities used to collect the measurement data are located at CCSrf Taiwan Xindian Lab. at No.163-1, Jhongsheng Rd., Xindian Dist., New Taipei City, Taiwan.

The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. All receiving equipment conforms to CISPR 16-1-1, CISPR 16-1-2, CISPR 16-1-3, CISPR 16-1-4 and CISPR 16-1-5.

5.2. ACCREDITATIONS

Our laboratories are accredited and approved by the following accreditation body according to ISO/IEC 17025.

Taiwan	TAF

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada	Industry Canada
Japan	VCCI
Taiwan	BSMI
USA	FCC

Copies of granted accreditation certificates are available for downloading from our web site, http://www.ccsrf.com

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Uncertainty
Conducted emissions	0.15MHz ~ 30MHz	± 2.8
Radiated emissions	30MHz ~ 1000MHz	± 5.2
	1000MHz ~ 18000MHz	± 4.6
	18000MHz ~ 40000MHz	± 3.8

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

Consistent with industry standard (e.g. CISPR 22: 2005, clause 11, Measurement Uncertainty) determining compliance with the limits shall be base on the results of the compliance measurement. Consequently the measure emissions being less than the maximum allowed emission result in this be a compliant test or passing test.

The acceptable measurement uncertainty value without requiring revision of the compliance statement is base on conducted and radiated emissions being less than U_{CISPR} which is 3.8dB(AMN); 5.2dB(OATS) and 5.5dB(1-18GHz) respectively. CCS values (called U_{Lab} in CISPR 16-4-2) is less than U_{CISPR} as shown in the table above. Therefore, MU need not be considered for compliance.

6 CONDUCTED EMISSION MEASUREMENT

6.1. LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

NOTE:
(1) The lower limit shall apply at the transition frequencies.
(2) The limit decreases in line with the logarithm of the frequency in the range 0.15 to 0.50 MHz.
(3) All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

6.2. TEST INSTRUMENTS

Conducted Emission room # B				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Attenuator	MCL	HAT-10	SD-C012	03/23/2022
BNC Cable	EMCI	CFD300-NL	BNC#B5	01/04/2022
EMI Test Receiver	R&S	ESR3	102166	04/12/2022
LISN	Schwarzbeck	NSLK 8127	8127382	04/13/2022
LISN(EUT)	Schwarzbeck	NSLK 8127	8127526	04/13/2022
Thermo-Hygro Meter	Wisewind	N/A	SD-S017	09/01/2022
Test S/W	EZ-EMC			

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. N.C.R = No Calibration Request.

6.3. TEST PROCEDURES

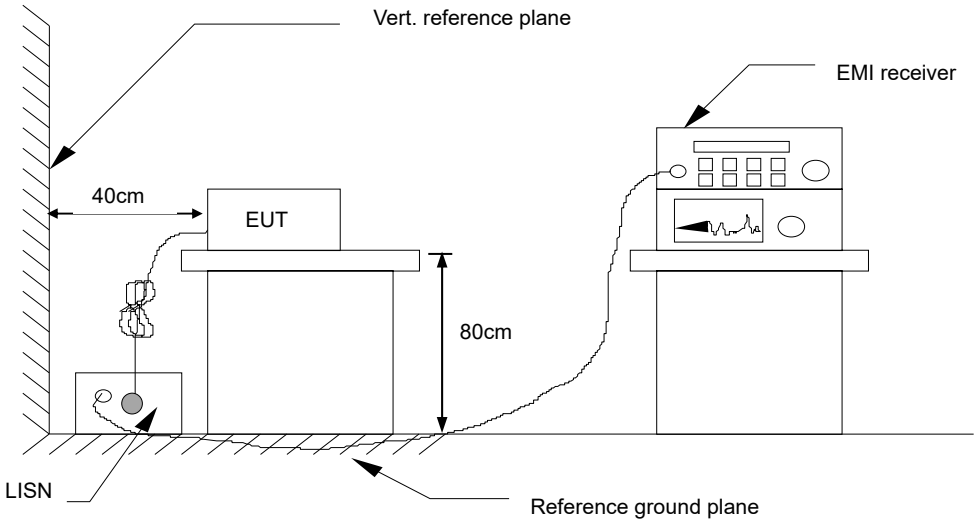
Procedure of Preliminary Test

- The EUT and support equipment, if needed, were set up as per the test configuration to simulate typical usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor standing equipment, it is placed on the ground plane, which has a 12 mm non-conductive covering to insulate the EUT from the ground plane.
- All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- The test equipment EUT installed by AC main power, through a Line Impedance Stabilization Network (LISN), which was supplied power source and was grounded to the ground plane.
- All support equipment power by from a second LISN.
- The test program of the EUT was started. Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.
- The Receiver scanned from 150kHz to 30MHz for emissions in each of the test modes.
- During the above scans, the emissions were maximized by cable manipulation.
- The test mode(s) described in Item 3.1 were scanned during the preliminary test.
- After the preliminary scan, we found the test mode described in Item 3.1 producing the highest emission level.
- The worst configuration of EUT and cable of the above highest emission level were recorded for reference of the final test.

Procedure of Final Test

- EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.
- A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.
- The test data of the worst-case condition(s) was recorded.

6.4. TEST SETUP



- For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

6.5. DATA SAMPLE

Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)
x.xx	42.95	0.55	43.50	73	-29.50	Q	L1

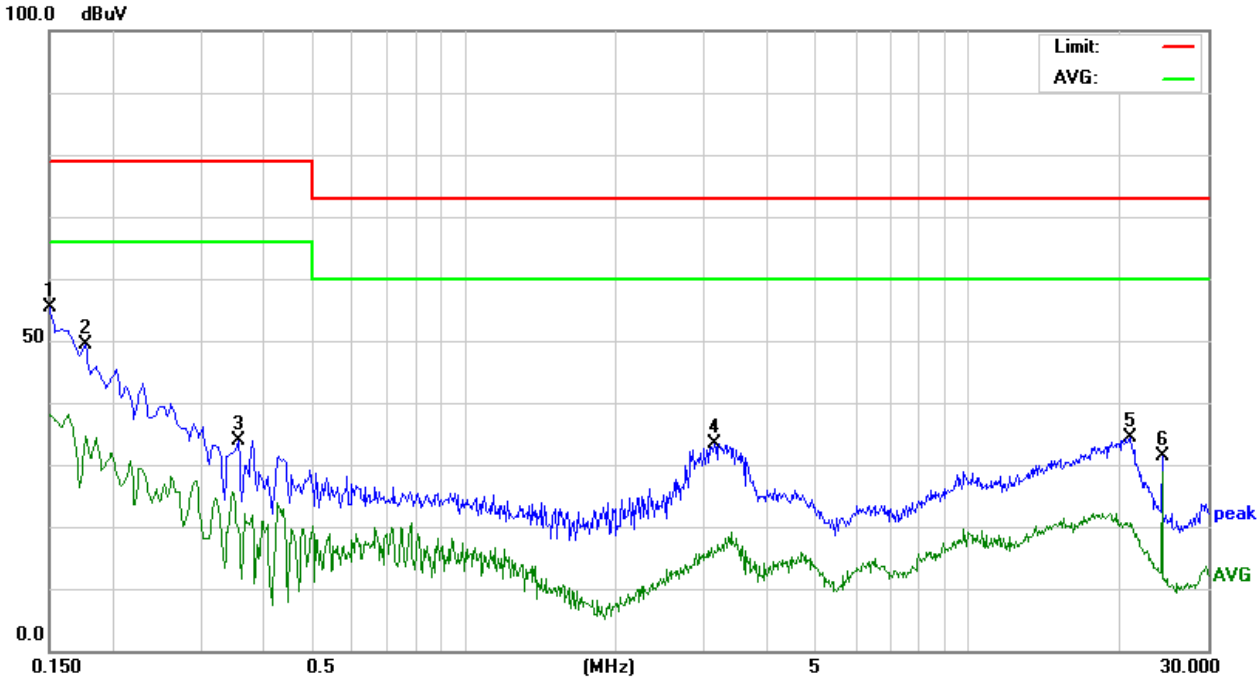
Freq. = Emission frequency in MHz
Reading = Uncorrected Analyzer/Receiver reading
Factor = Insertion loss of LISN + Cable Loss + Pulse Limit
Result = Reading + Factor
Limit = Limit stated in standard
Margin = Reading in reference to limit
P = Peak Reading
Q = Quasi-peak Reading
A = Average Reading
L1 = Hot side
L2 = Neutral side

Calculation Formula

Margin (dB) = Result (dBuV) – Limit (dBuV)

6.6. TEST RESULTS

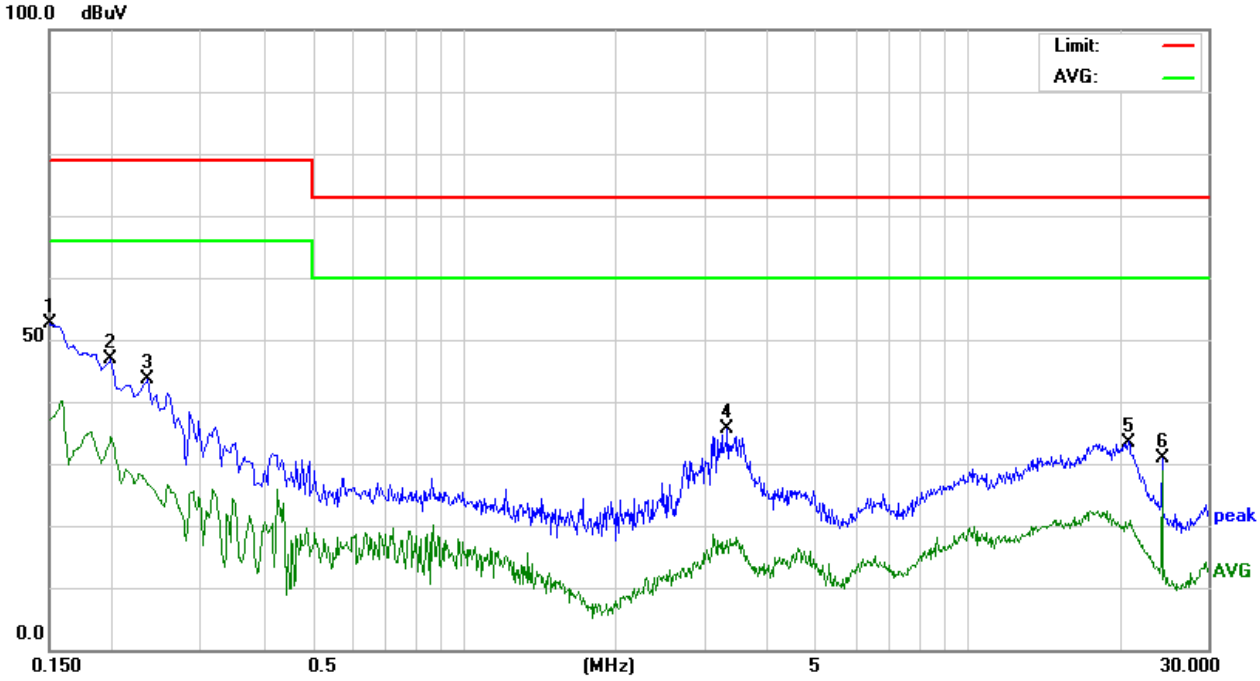
Model No.	UPN-EDGE-EHL01	6dB Bandwidth	9 kHz
Environmental Conditions	23.9°C, 59% RH	Test Mode	Mode 1
Tested by	David Cheng	Phase	L1
Standard	FCC CLASS A / ICES-003 CLASS A		



Conducted Emission Readings							
Frequency Range Investigated				150 kHz to 30 MHz			
Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)
0.1500	45.23	10.08	55.31	79.00	-23.69	P	L1
0.1770	39.24	10.09	49.33	79.00	-29.67	P	L1
0.3570	23.85	10.08	33.93	79.00	-45.07	P	L1
3.1425	22.92	10.39	33.31	73.00	-39.69	P	L1
20.9580	23.34	10.93	34.27	73.00	-38.73	P	L1
24.3060	20.35	10.95	31.30	73.00	-41.70	P	L1

Note: 1. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).

Model No.	UPN-EDGE-EHL01	**6dB Bandwidth**	9 kHz
Environmental Conditions	23.9°C, 59% RH	**Test Mode**	Mode 1
Tested by	David Cheng	**Phase**	L2
Standard	FCC CLASS A / ICES-003 CLASS A		



Conducted Emission Readings							
Frequency Range Investigated				**150 kHz to 30 MHz**			
Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)
0.1500	**42.44**	**10.09**	**52.53**	**79.00**	**-26.47**	**P**	**L2**
0.1995	**36.71**	**10.10**	**46.81**	**79.00**	**-32.19**	**P**	**L2**
0.2355	**33.49**	**10.09**	**43.58**	**79.00**	**-35.42**	**P**	**L2**
3.3315	**25.36**	**10.35**	**35.71**	**73.00**	**-37.29**	**P**	**L2**
20.8770	**22.64**	**10.86**	**33.50**	**73.00**	**-39.50**	**P**	**L2**
24.3060	**20.09**	**10.88**	**30.97**	**73.00**	**-42.03**	**P**	**L2**

Note: 1. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).

7 RADIATED EMISSION MEASUREMENT

7.1. LIMITS OF RADIATED EMISSION MEASUREMENT

FCC 47 CFR Part 15 Subpart B

Below 1GHz (for digital device)

FREQUENCY (MHz)	dBuV/m (At 10m)	
	Class A	Class B
30 ~ 230	40	30
230 ~ 1000	47	37

Limit tables for non-digital device:

Class A Radiated Emission limit at 10m (for others)

Frequency (MHZ)	Field Strength Limit (uV/m)Q.P.	Field Strength Limit (dBuV/m)Q.P.
30 - 88	90	39
88 - 216	150	43.5
216 – 960	210	46.4
Above 960	300	49.5

Class B Radiated Emission limit at 3m (for others)

Frequency (MHZ)	Field Strength Limit (uV/m)Q.P.	Field Strength Limit (dBuV/m)Q.P.
30 - 88	100	40
88 - 216	150	43.5
216 – 960	200	46
Above 960	500	54

Above 1GHz(for all device)

Frequency (MHZ)	Class A (dBuV/m) (At 10m)		Class B (dBuV/m) (At 3m)	
	Average	Peak	Average	Peak
Above 1000	49.5	69.5	54	74

NOTE: (1) The lower limit shall apply at the transition frequencies.
(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).
(3) The measurement above 1GHz is at close-in distances 3m,and determine the limit **L_2** corresponding to the close-in distance **d_2** by applying the following relation: **$L_2 = L_1 (d_1/d_2)$**, where **L_1** is the specified limit in microvolts per metre (**uV/m**) at the distance **d_1** (**10m**), **L_2** is the new limit for distance **d_2** (**3m**).
So the new Class A limit above 1GHz at 3m is as following table:

Frequency (MHZ)	Class A (dBuV/m) (At 3m)	
	Average	Peak
Above 1000	60	80

According to FCC Part 15.33 (b), for an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705-108	1000
108-500	2000
500-1000	5000
Above 1000	5th harmonic of the highest frequency or 40GHz, whichever is lower

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Below 1GHz

Class A Radiated Emission limit

Frequency (MHZ)	(dBuV/m)Q.P. Distances (3m)	(dBuV/m)Q.P. Distances (10m)
30 - 88	50	40
88 - 216	54	43.5
216 - 230	56.9	46.4
230 – 960	57	47
960 - 1000	60	49.5

Class B Radiated Emission limit

Frequency (MHZ)	(dBuV/m)Q.P. Distances (3m)	(dBuV/m)Q.P. Distances (10m)
30 - 88	40	30
88 - 216	43.5	33.1
216 - 230	46	35.6
230 – 960	47	37
960 - 1000	54	43.5

Above 1GHz

Frequency (MHZ)	Class A (dBuV/m) (At 3m)		Class B (dBuV/m) (At 3m)	
	Average	Peak	Average	Peak
Above 1000	60	80	54	74

Required highest measurement frequency for radiated emissions

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Fx-108	1000
108-500	2000
500-1000	5000
Above 1000	5 x FX up to a maximum of 40 GHz

Note: Fx is the highest fundamental frequency generated and/or used in the ITE or digital apparatus under test.

7.2. TEST INSTRUMENTS

Open Area Test Site # H				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Bilog Antenna	Teseq	CBL 6112D	40529	09/22/2022
Cable	EMEC	CFD400E-LW	SD-R074	08/11/2022
EMI Test Receiver	R&S	ESCI	101340	02/25/2022
Pre-Amplifier	HP	8447D	1937A01554	09/23/2022
Thermo-Hygro Meter	Wisewind	201A	No. 03	05/19/2022
Test S/W	EZ-EMC			
Chamber # E (Above 1GHz Used)				
Horn Antenna	ETS	3117	00139062	07/13/2022
Microflex Cable x 7m	EMCI	EMC107-NM-NM-7000	SD-R072	07/27/2022
K-Type Cable x 1m	EMCI	EMC101G-KM-KM-1000	200702	07/04/2022
Pre-Amplifier	Com-Power	PAM-118A	551041	07/06/2022
Signal Analyzer	R&S	FSV40	101269	07/05/2022
Thermo-Hygro Meter	Wisewind	201A	SD-R046	08/09/2022
Test S/W	EZ-EMC			

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. N.C.R = No Calibration Request.

7.3. TEST PROCEDURES

Procedure of Preliminary Test

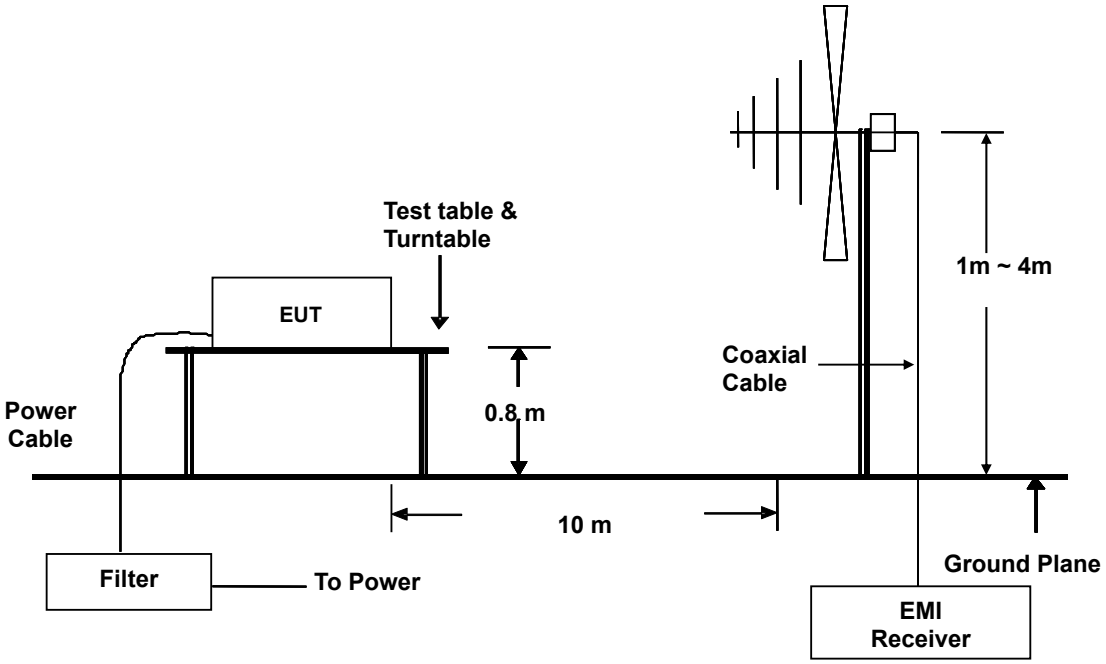
- The equipment was set up as per the test configuration to simulate typical usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane. When the EUT is a floor standing equipment, it is placed on the ground plane which has a 12 mm non-conductive covering to insulate the EUT from the ground plane.
- Support equipment, if needed, was placed as per ANSI C63.4.
- All I/O cables were positioned to simulate typical usage as per ANSI C63.4.
- The EUT received AC power source from the outlet socket under the turntable. All support equipment power received from another socket under the turntable.
- The antenna was placed at 3 or 10 meter away from the EUT as stated in ANSI C63.4. The antenna connected to the Spectrum Analyzer via a cable and at times a pre-amplifier would be used.
- The Analyzer / Receiver quickly scanned from 30MHz to 40GHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- The test mode(s) described in Item 3.1 were scanned during the preliminary test:
- After the preliminary scan, we found the test mode described in Item 3.1 producing the highest emission level.
- The worst configuration of EUT and cable of the above highest emission level were recorded for reference of the final test.

Procedure of Final Test

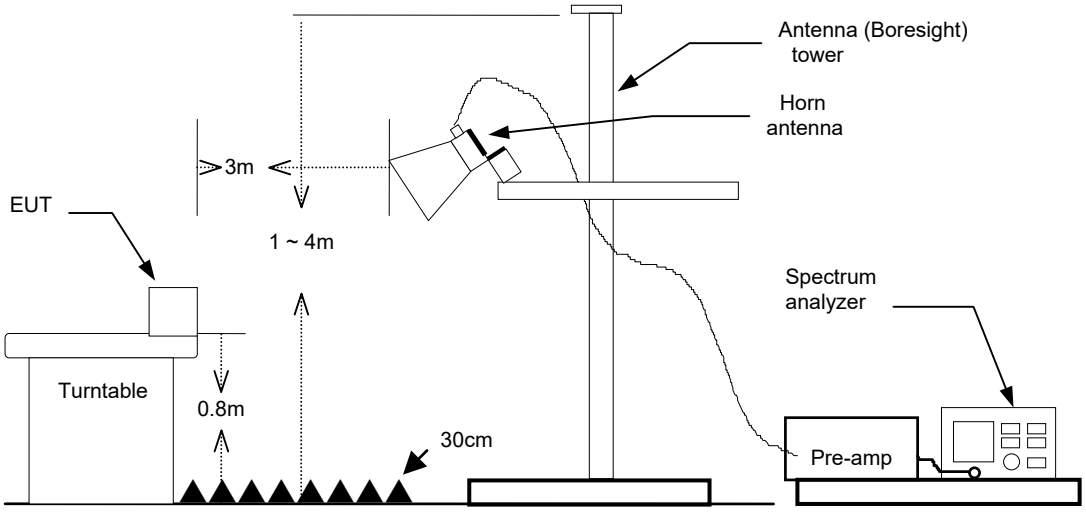
- EUT and support equipment were set up on the turntable as per the configuration with highest emission level in the preliminary test.
- The Analyzer / Receiver scanned from 30MHz to 40GHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying cable placement and positioning the antenna 1 or 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- Recording at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. Below 1GHz the Q.P. reading and above 1GHz the Peak and Average reading are presented.
- The test data of the worst-case condition(s) was recorded.

7.4. TEST SETUP

Below 1GHz



Above 1GHz



- For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

7.5. DATA SAMPLE

Below 1GHz

Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/Q)	Pol. (H/V)
x.xx	14.0	12.2	26.2	40	-13.8	Q	H

Above 1GHz

Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)
x.xx	42.95	0.55	43.50	60	-16.50	A	H

Freq. = Emission frequency in MHz
Reading = Uncorrected Analyzer/Receiver reading
Factor = Antenna Factor + Cable Loss - Amplifier Gain
Result = Reading + Factor
Limit = Limit stated in standard
Margin = Reading in reference to limit
P = Peak Reading
Q = Quasi-peak Reading
A = Average Reading
H = Antenna Polarization: Horizontal
V = Antenna Polarization: Vertical

Calculation Formula

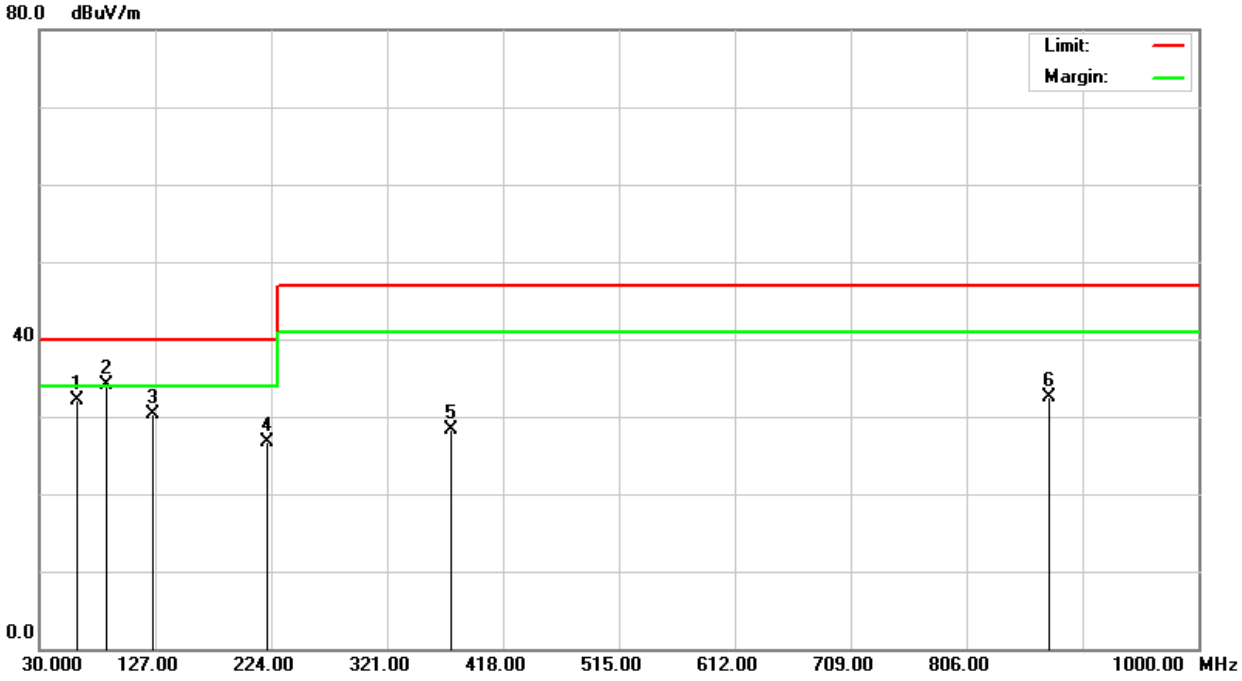
Margin (dB) = Result (dBuV/m) – Limit (dBuV/m)

7.6. TEST RESULTS

FCC 47 CFR Part 15 Subpart B

Below 1GHz

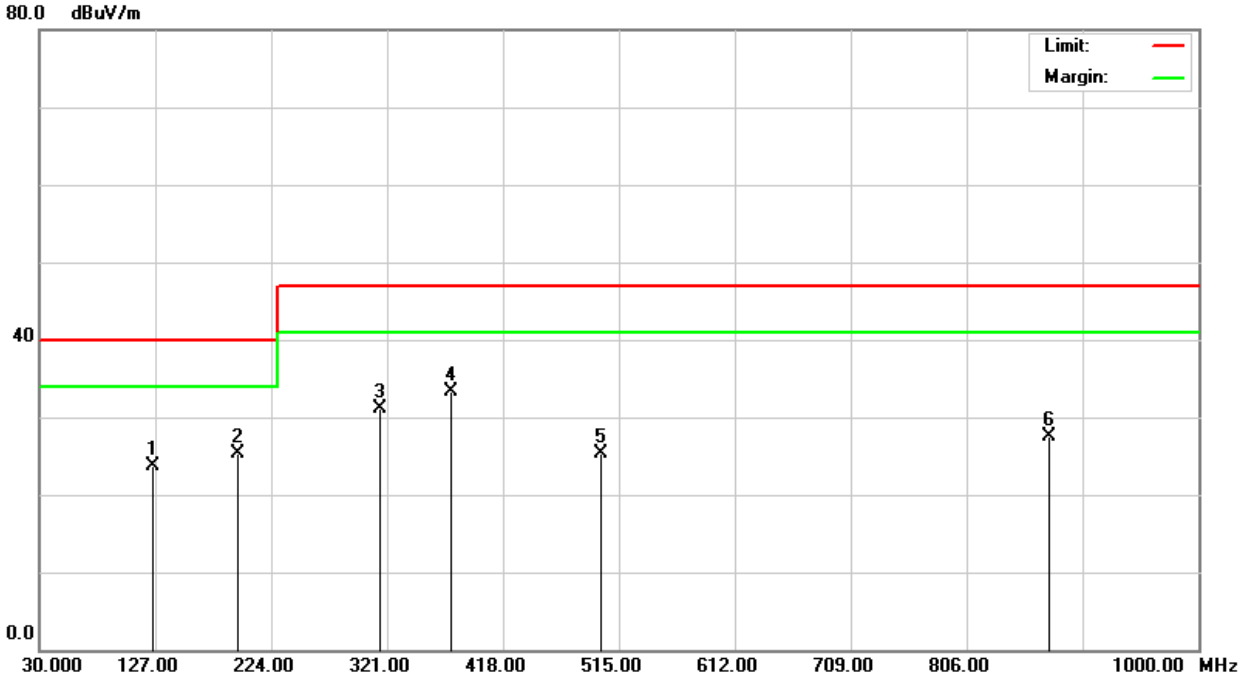
Model No.	UPN-EDGE-EHL01	Test Mode	Mode 1
Environmental Conditions	20.3°C, 81% RH	6dB Bandwidth	120 kHz
Antenna Pole	Vertical	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	David Cheng
Standard	FCC CLASS A W/ CISPR 22 CLASS A LIMIT		



Radiated Emission Readings									
Frequency Range Investigated				30 MHz to 1000 MHz at 10m					
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
62.1200	46.90	-14.78	32.12	40.00	-7.88	100	198	Q	V
86.1300	46.30	-12.25	34.05	40.00	-5.95	100	91	Q	V
125.0200	38.60	-8.34	30.26	40.00	-9.74	100	329	Q	V
221.0400	37.20	-10.44	26.76	40.00	-13.24	100	54	Q	V
375.0200	32.30	-3.99	28.31	47.00	-18.69	100	112	Q	V
875.0100	28.60	3.90	32.50	47.00	-14.50	400	223	Q	V

Note: 1. 30MHz to 1000MHz test is Applicable CISPR 22 standard.
2. P= Peak Reading; Q= Quasi-peak Reading.

Model No.	UPN-EDGE-EHL01	Test Mode	Mode 1
Environmental Conditions	20.3°C, 81% RH	6dB Bandwidth	120 kHz
Antenna Pole	Horizontal	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	David Cheng
Standard	FCC CLASS A W/ CISPR 22 CLASS A LIMIT		



Radiated Emission Readings									
Frequency Range Investigated				30 MHz to 1000 MHz at 10m					
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
125.0300	32.10	-8.34	23.76	40.00	-16.24	400	177	Q	H
196.3300	36.00	-10.71	25.29	40.00	-14.71	400	325	Q	H
315.2600	36.60	-5.56	31.04	47.00	-15.96	400	78	Q	H
375.0100	37.30	-3.99	33.31	47.00	-13.69	400	112	Q	H
500.0200	26.50	-1.13	25.37	47.00	-21.63	100	236	Q	H
875.0100	23.60	3.90	27.50	47.00	-19.50	100	261	Q	H

Note: 1. 30MHz to 1000MHz test is Applicable CISPR 22 standard.
2. P= Peak Reading; Q= Quasi-peak Reading.

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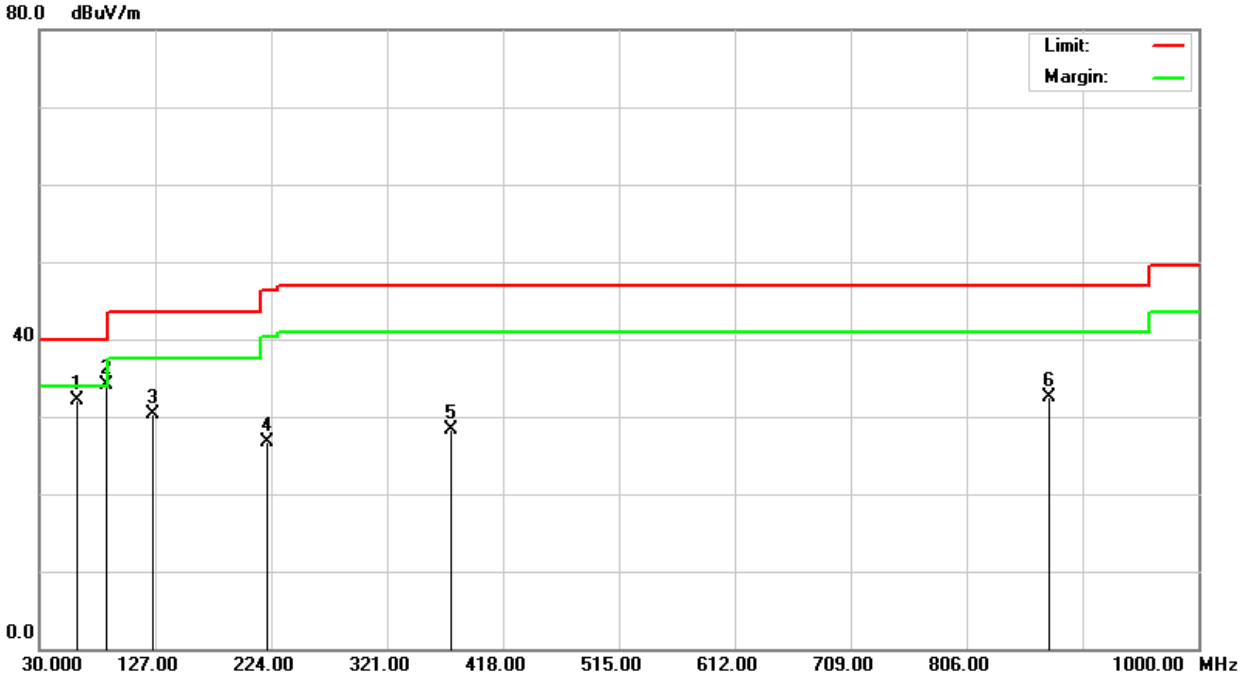
Below 1GHz

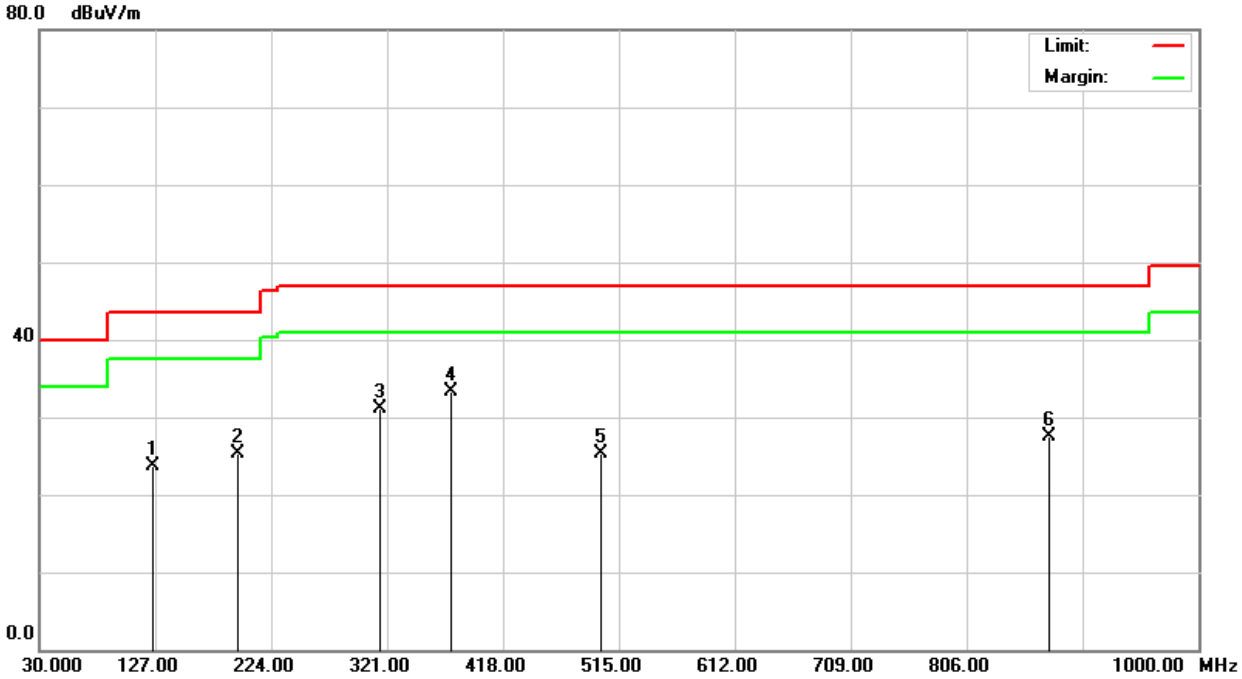
Model No.	UPN-EDGE-EHL01	Test Mode	Mode 1
Environmental Conditions	20.3°C, 81% RH	6dB Bandwidth	120 kHz
Antenna Pole	Vertical	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	David Cheng
Standard	ICES-003 CLASS A		



Radiated Emission Readings									
Frequency Range Investigated				30 MHz to 1000 MHz at 10m					
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
62.1200	46.90	-14.78	32.12	40.00	-7.88	100	198	Q	V
86.1300	46.30	-12.25	34.05	40.00	-5.95	100	91	Q	V
125.0200	38.60	-8.34	30.26	43.50	-13.24	100	329	Q	V
221.0400	37.20	-10.44	26.76	46.40	-19.64	100	54	Q	V
375.0200	32.30	-3.99	28.31	47.00	-18.69	100	112	Q	V
875.0100	28.60	3.90	32.50	47.00	-14.50	400	223	Q	V

Note: 1. P= Peak Reading; Q= Quasi-peak Reading.

Model No.	UPN-EDGE-EHL01	Test Mode	Mode 1
Environmental Conditions	20.3°C, 81% RH	6dB Bandwidth	120 kHz
Antenna Pole	Horizontal	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	David Cheng
Standard	ICES-003 CLASS A		



Radiated Emission Readings									
Frequency Range Investigated				30 MHz to 1000 MHz at 10m					
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
125.0300	32.10	-8.34	23.76	43.50	-19.74	400	177	Q	H
196.3300	36.00	-10.71	25.29	43.50	-18.21	400	325	Q	H
315.2600	36.60	-5.56	31.04	47.00	-15.96	400	78	Q	H
375.0100	37.30	-3.99	33.31	47.00	-13.69	400	112	Q	H
500.0200	26.50	-1.13	25.37	47.00	-21.63	100	236	Q	H
875.0100	23.60	3.90	27.50	47.00	-19.50	100	261	Q	H

Note: 1. P= Peak Reading; Q= Quasi-peak Reading.

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Above 1GHz

Model No.	UPN-EDGE-EHL01	**Test Mode**	Mode 1
Environmental Conditions	23.9°C, 61% RH	**6dB Bandwidth**	1 MHz
Antenna Pole	Vertical / Horizontal	**Antenna Distance**	3m
Highest frequency generated or used	3000MHz	**Upper frequency**	15000MHz
Detector Function	Peak and average.	**Tested by**	David Cheng
Standard	FCC CLASS A / ICES-003 CLASS A		

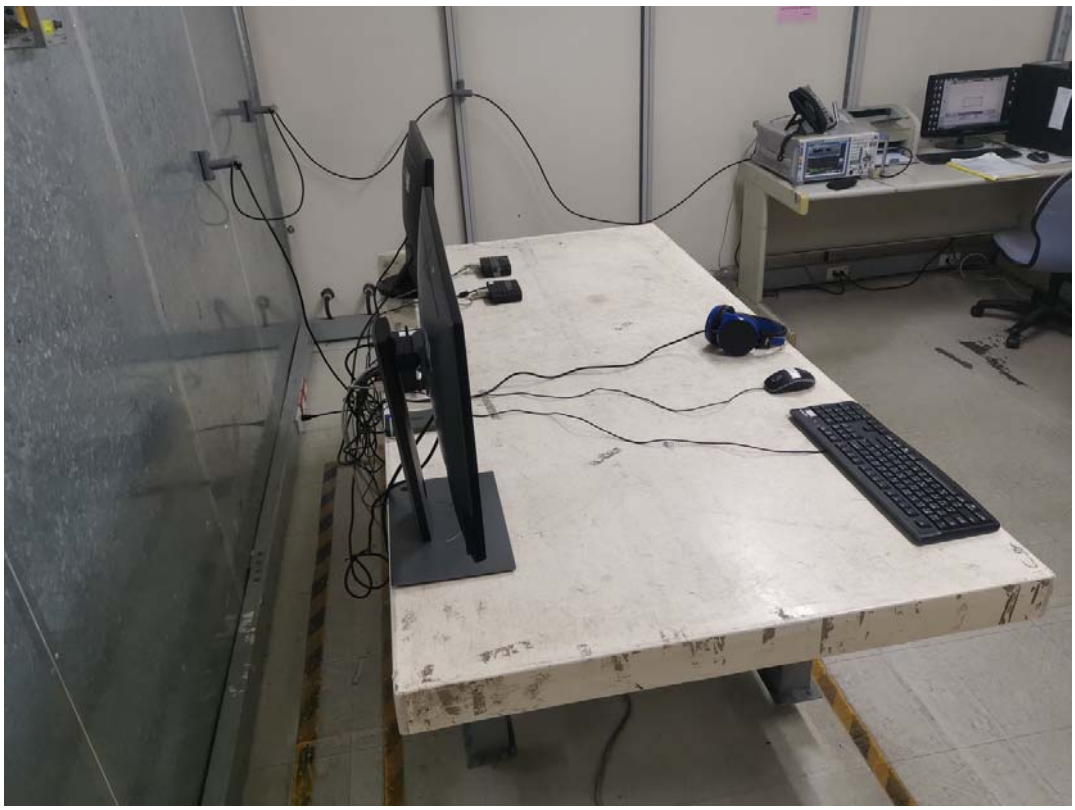
Radiated Emission Readings							
Frequency Range Investigated				**Above 1GHz at 3m**			
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)
1935.000	**51.63**	**-5.84**	**45.79**	**80.00**	**-34.21**	**P**	**V**
2938.000	**53.50**	**-4.45**	**49.05**	**80.00**	**-30.95**	**P**	**V**
4995.000	**53.35**	**-2.51**	**50.84**	**80.00**	**-29.16**	**P**	**V**
5896.000	**52.03**	**-0.87**	**51.16**	**80.00**	**-28.84**	**P**	**V**
9993.000	**50.19**	**1.69**	**51.88**	**80.00**	**-28.12**	**P**	**V**
16827.000	**48.58**	**7.38**	**55.96**	**80.00**	**-24.04**	**P**	**V**

Radiated Emission Readings							
Frequency Range Investigated				**Above 1GHz at 3m**			
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)
1969.000	**55.54**	**-5.67**	**49.87**	**80.00**	**-30.13**	**P**	**H**
2938.000	**54.35**	**-4.45**	**49.90**	**80.00**	**-30.10**	**P**	**H**
4995.000	**53.14**	**-2.51**	**50.63**	**80.00**	**-29.37**	**P**	**H**
5879.000	**50.05**	**-0.88**	**49.17**	**80.00**	**-30.83**	**P**	**H**
9976.000	**50.15**	**1.65**	**51.80**	**80.00**	**-28.20**	**P**	**H**
16708.000	**48.57**	**7.14**	**55.71**	**80.00**	**-24.29**	**P**	**H**

Note: 1. P= Peak Reading; A= Average Reading.

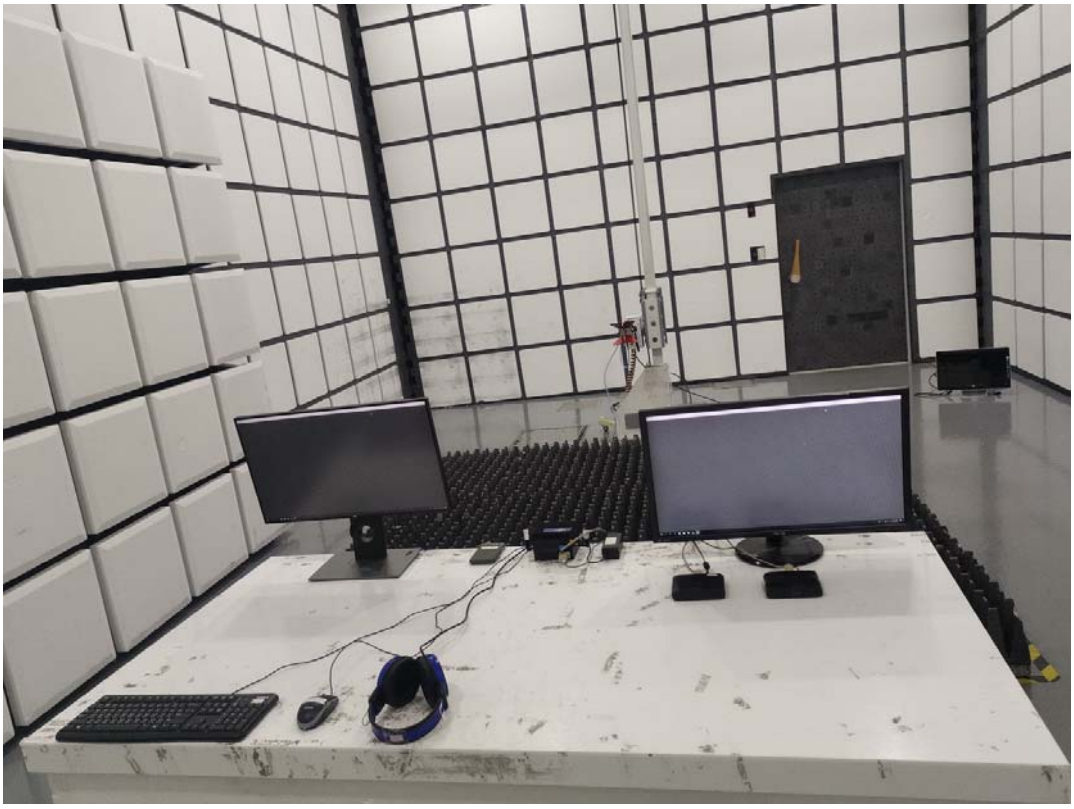
8 PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST



RADIATED EMISSION TEST (Below 1GHz)

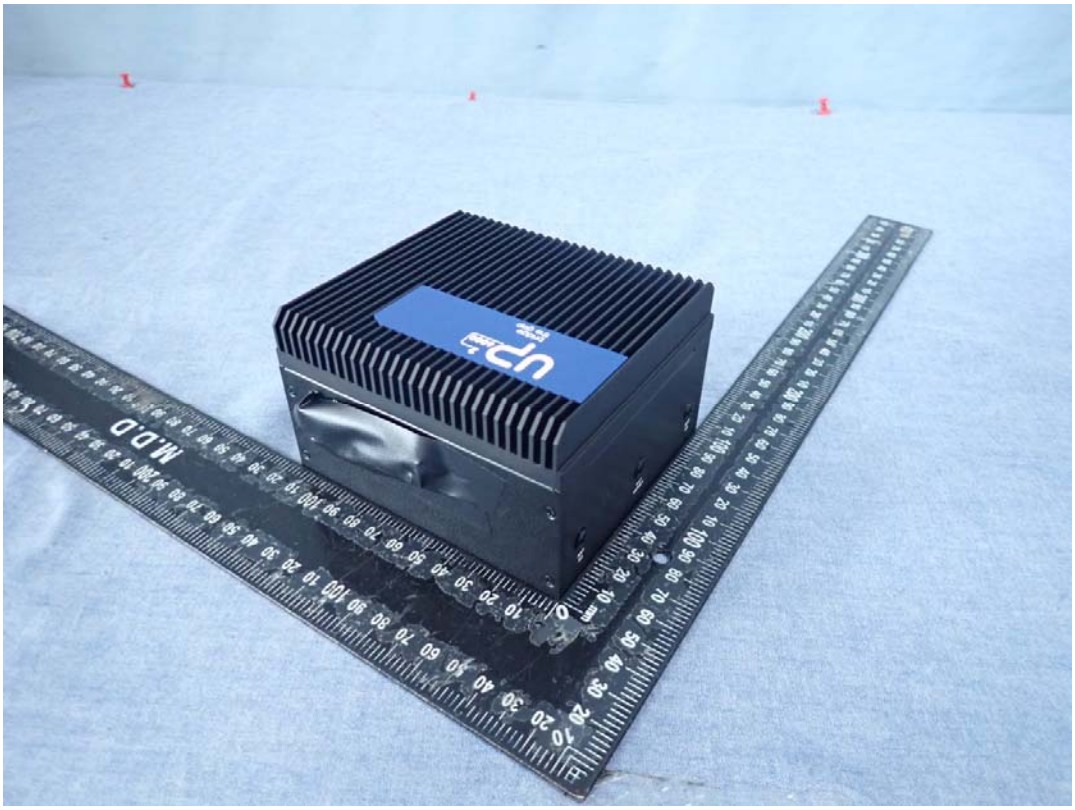
RADIATED EMISSION TEST (Above 1GHz)

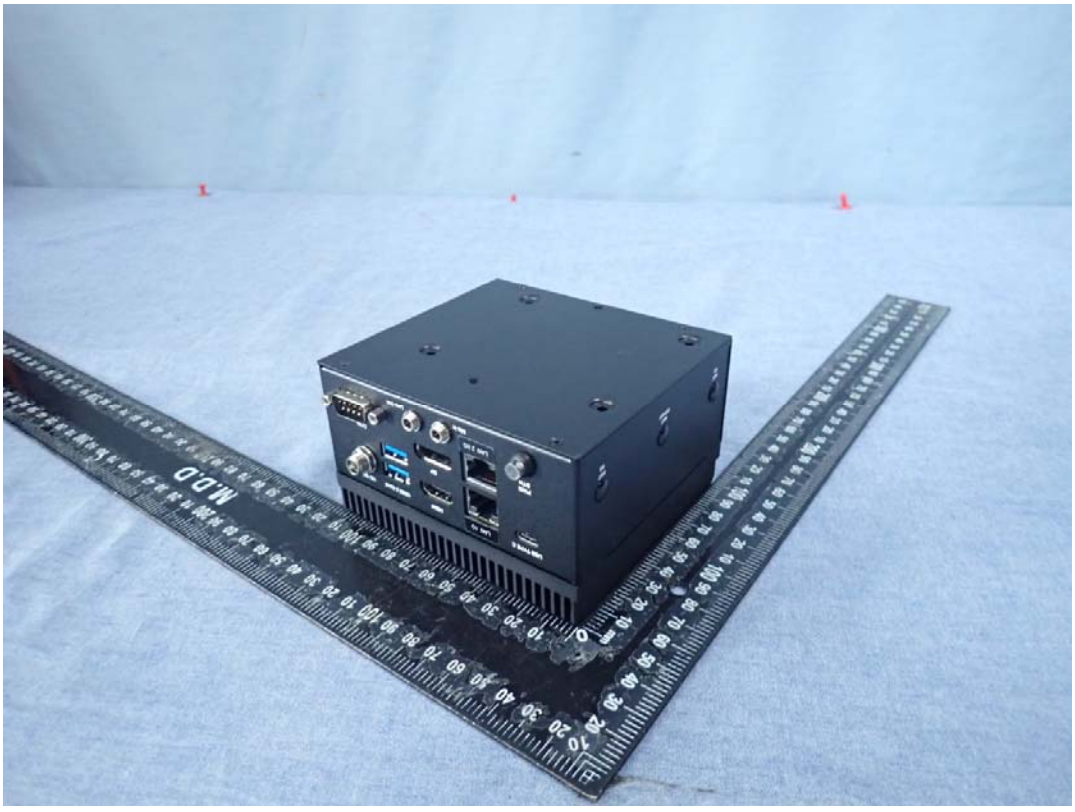


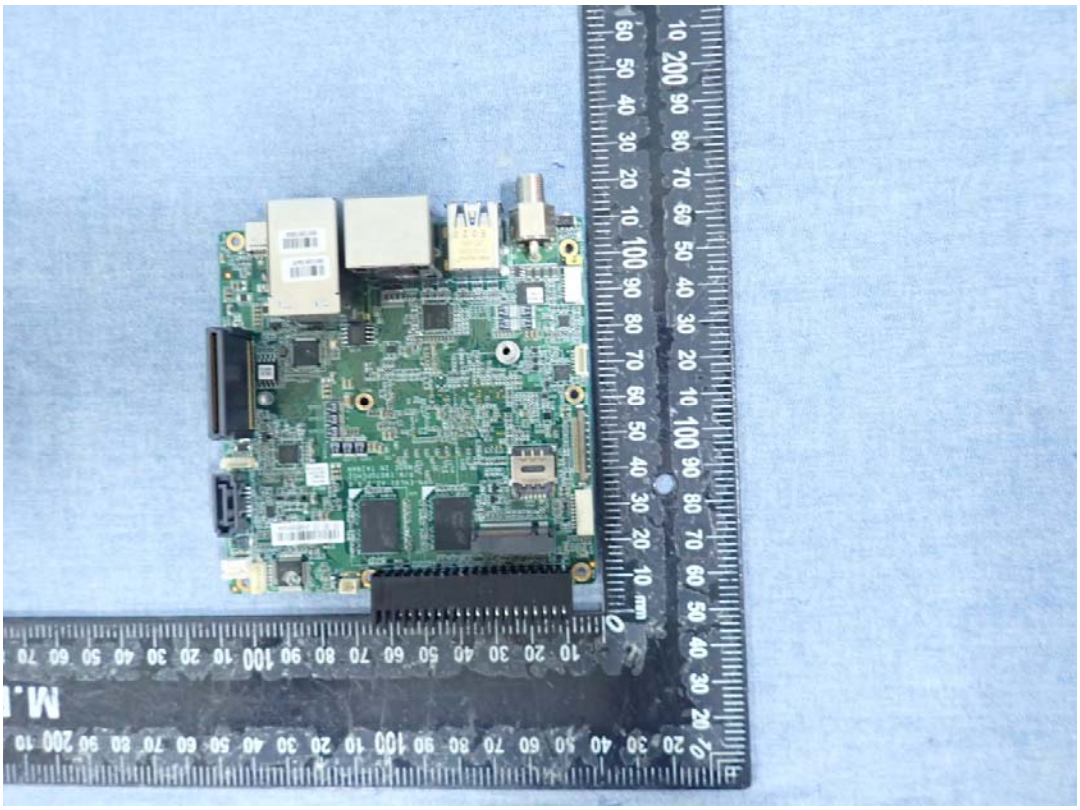
Report No.: TMXD2112001941DE

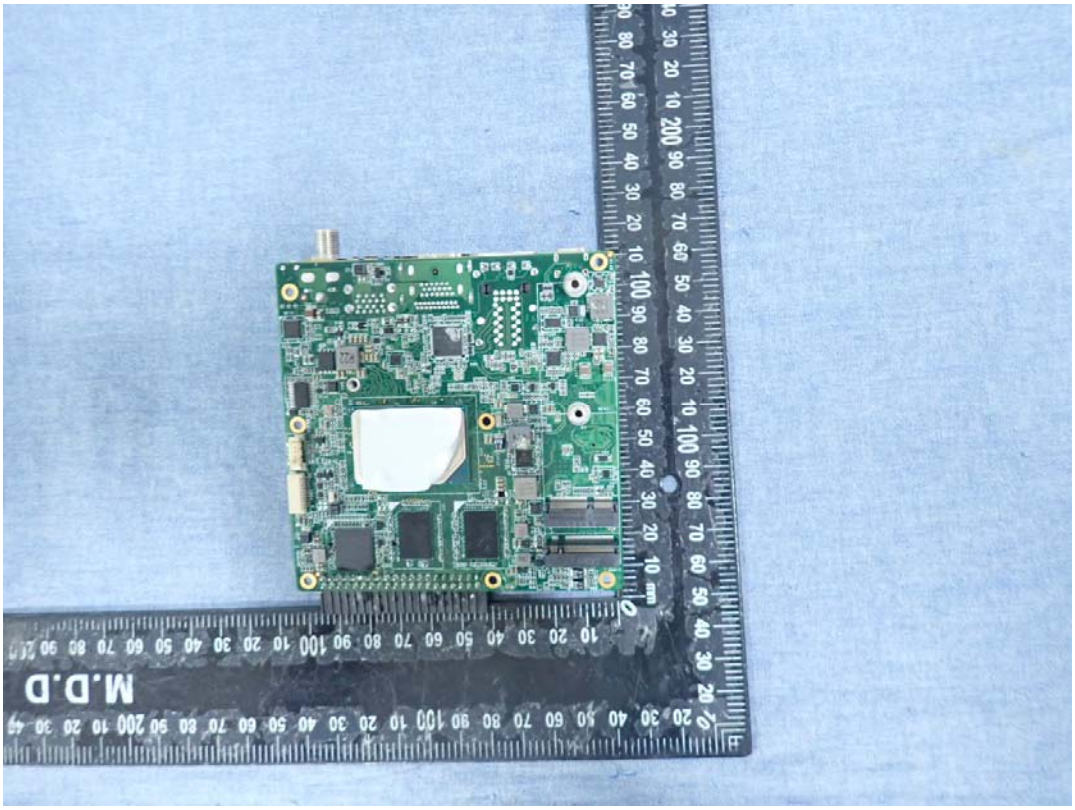
APPENDIX 1 - PHOTOGRAPHS OF EUT

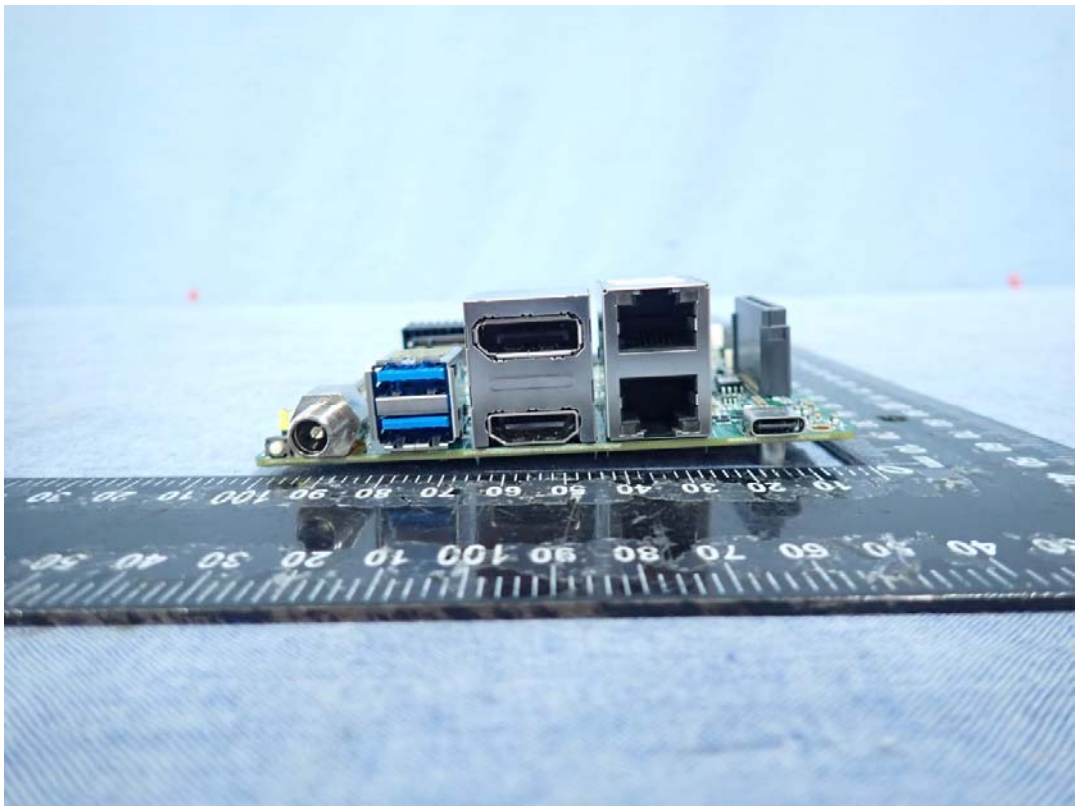
Model: UPN-EHL01

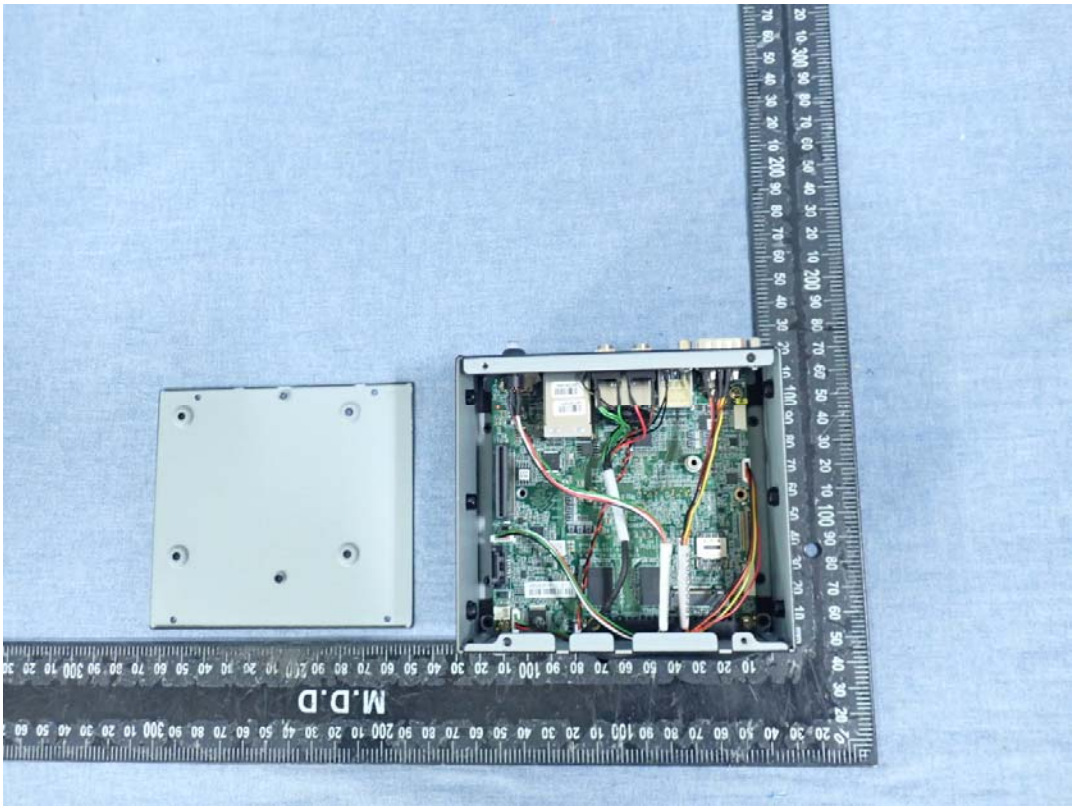




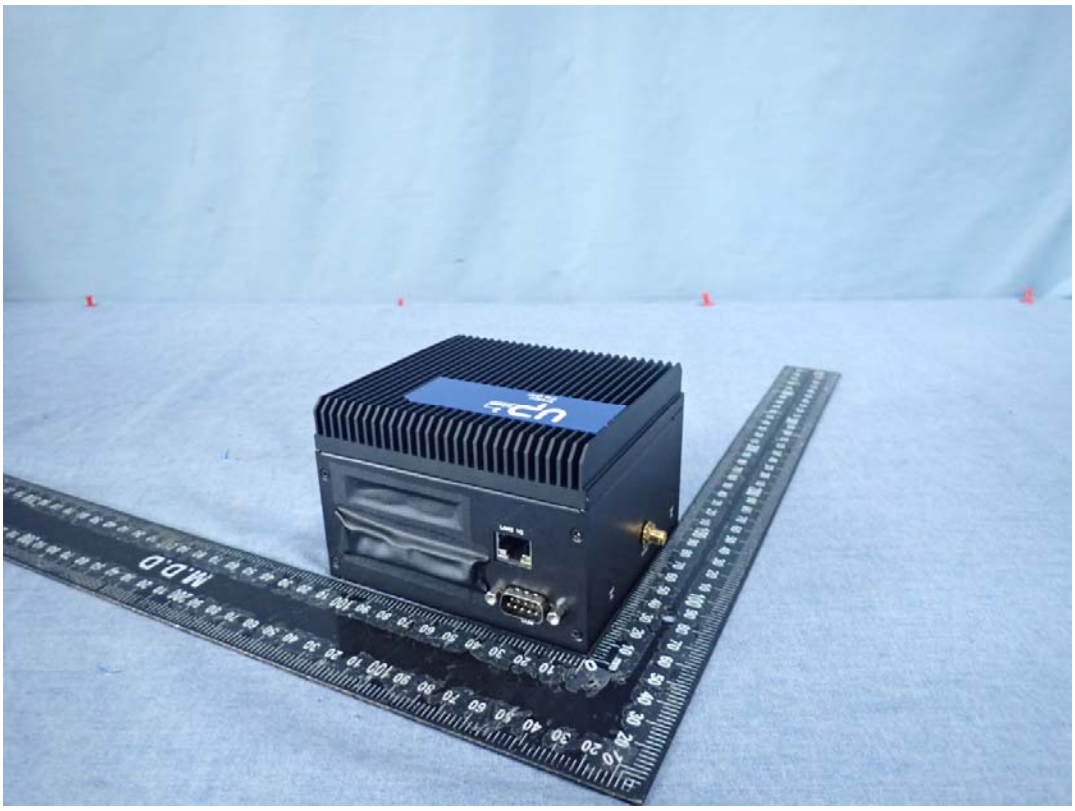


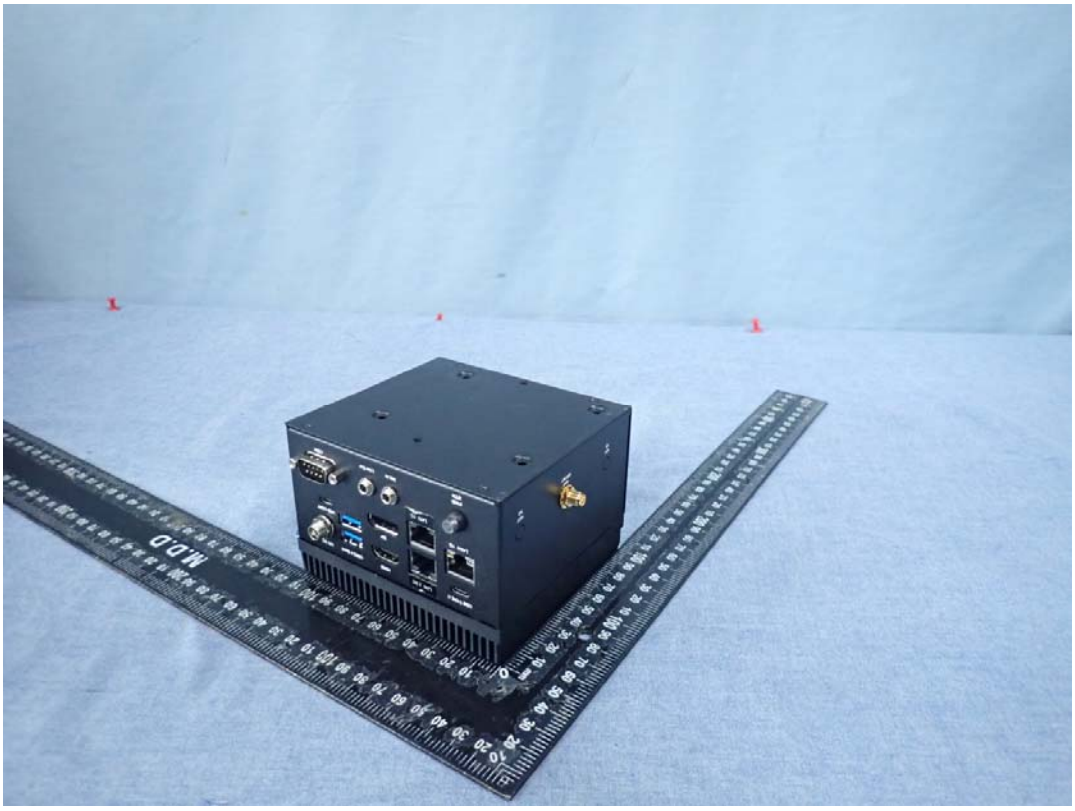


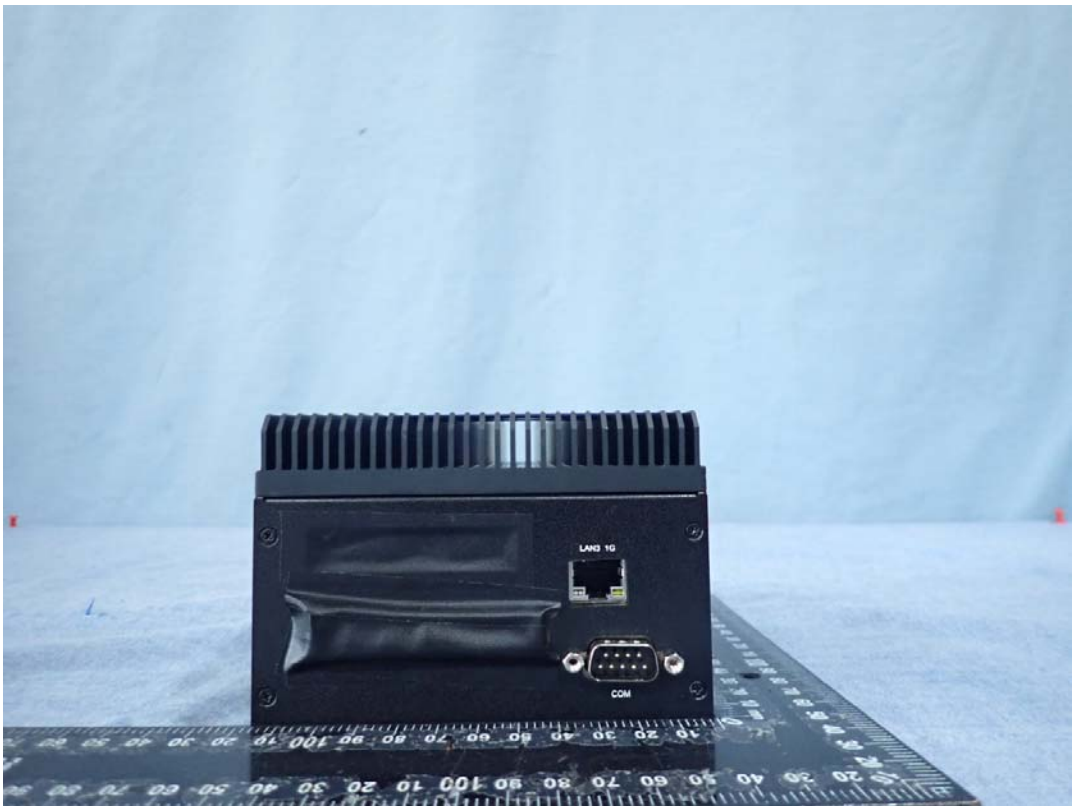


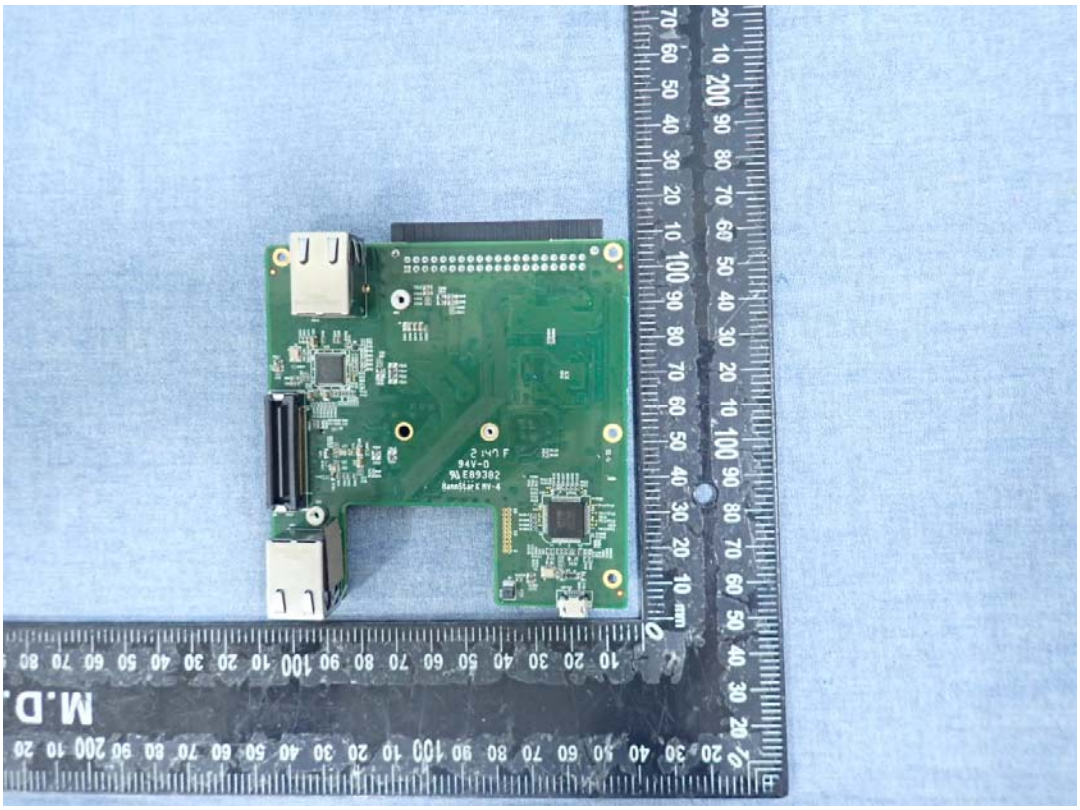


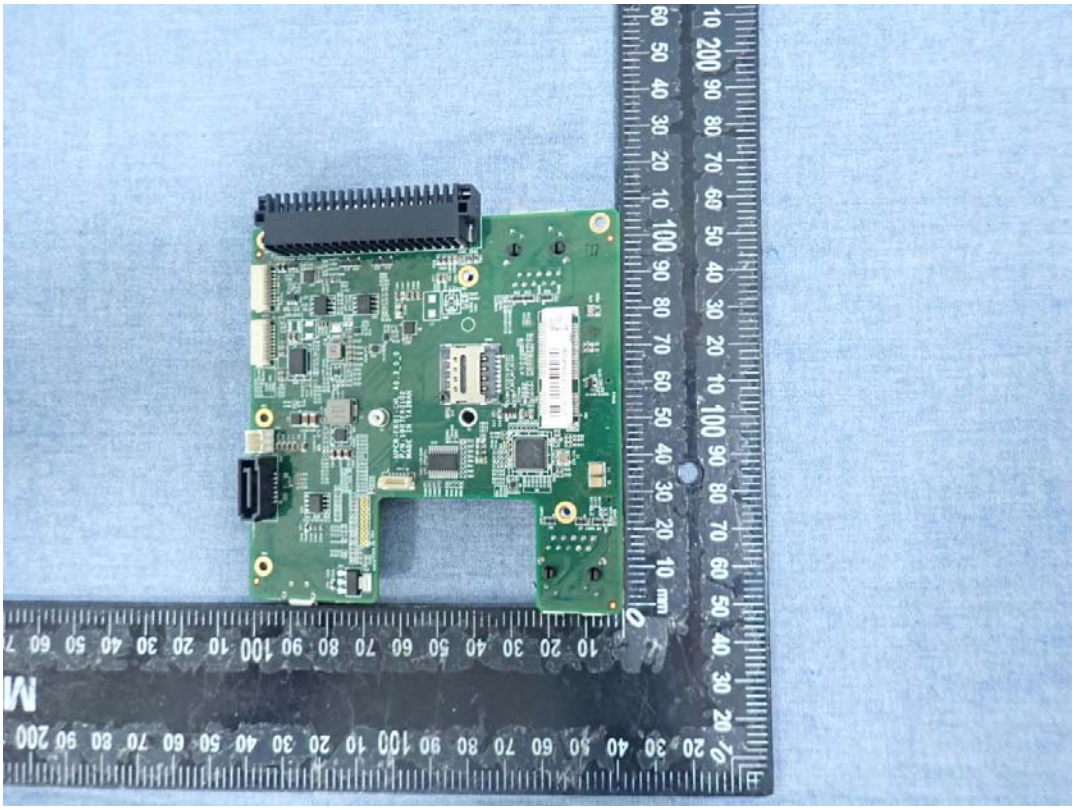
Model: UPN-EDGE-EHL01

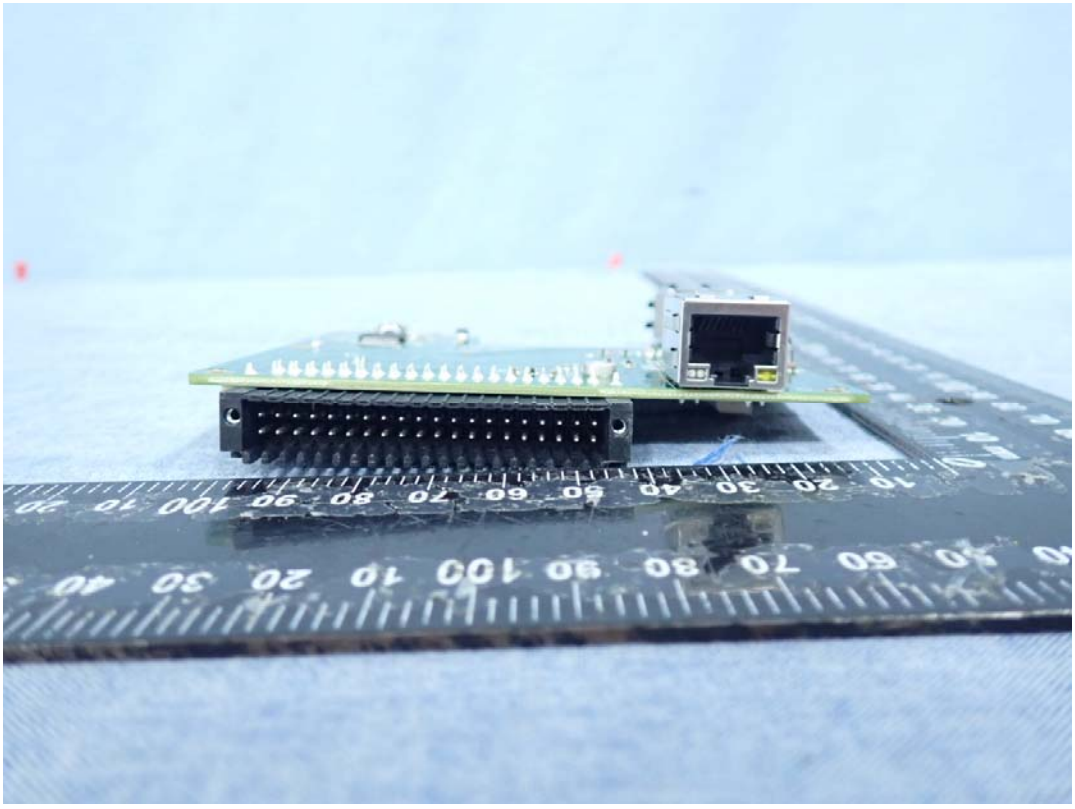


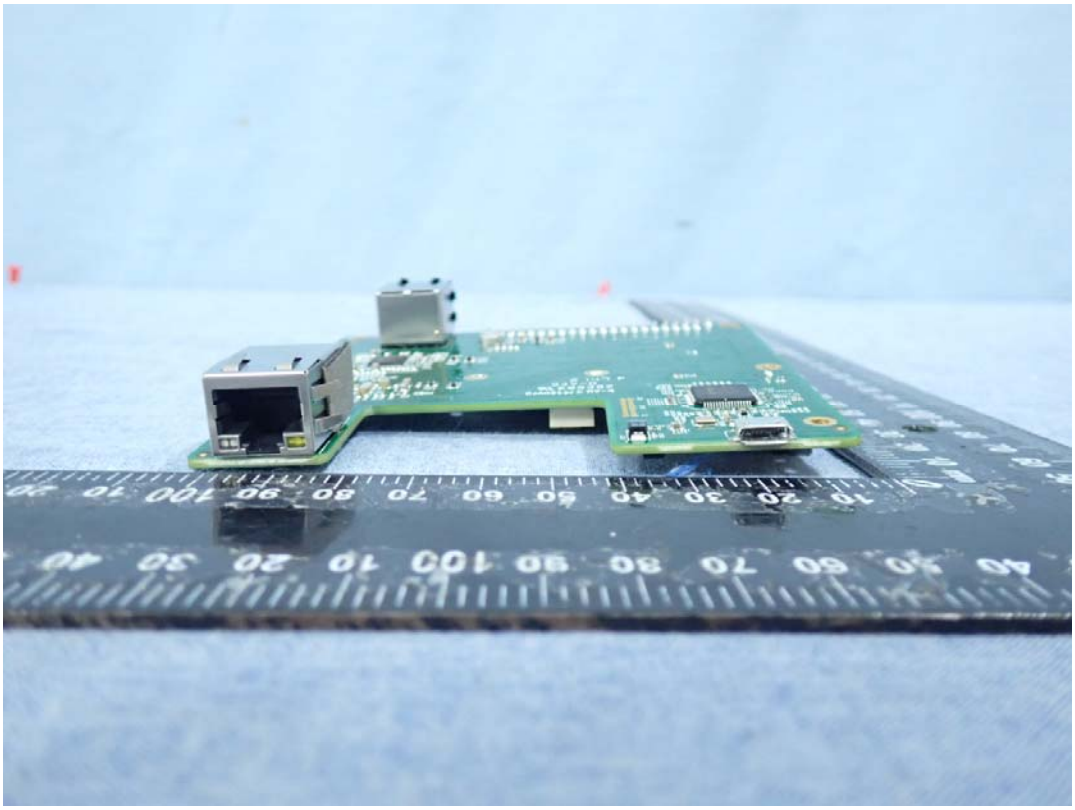


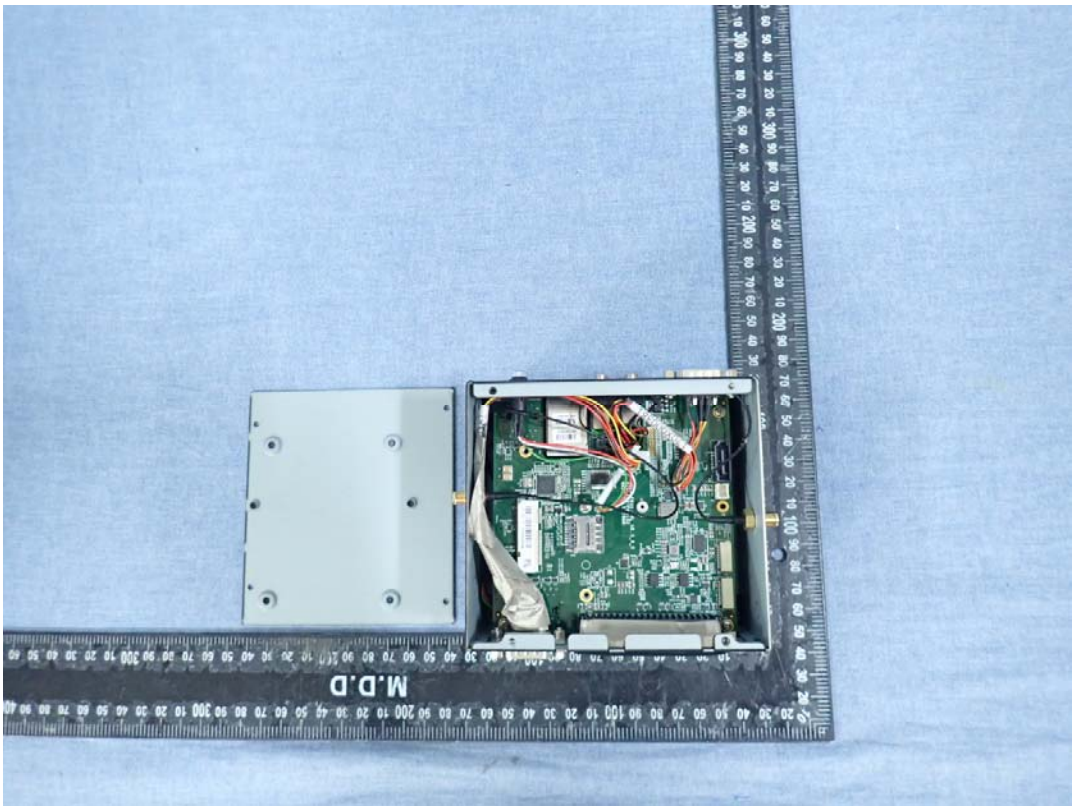


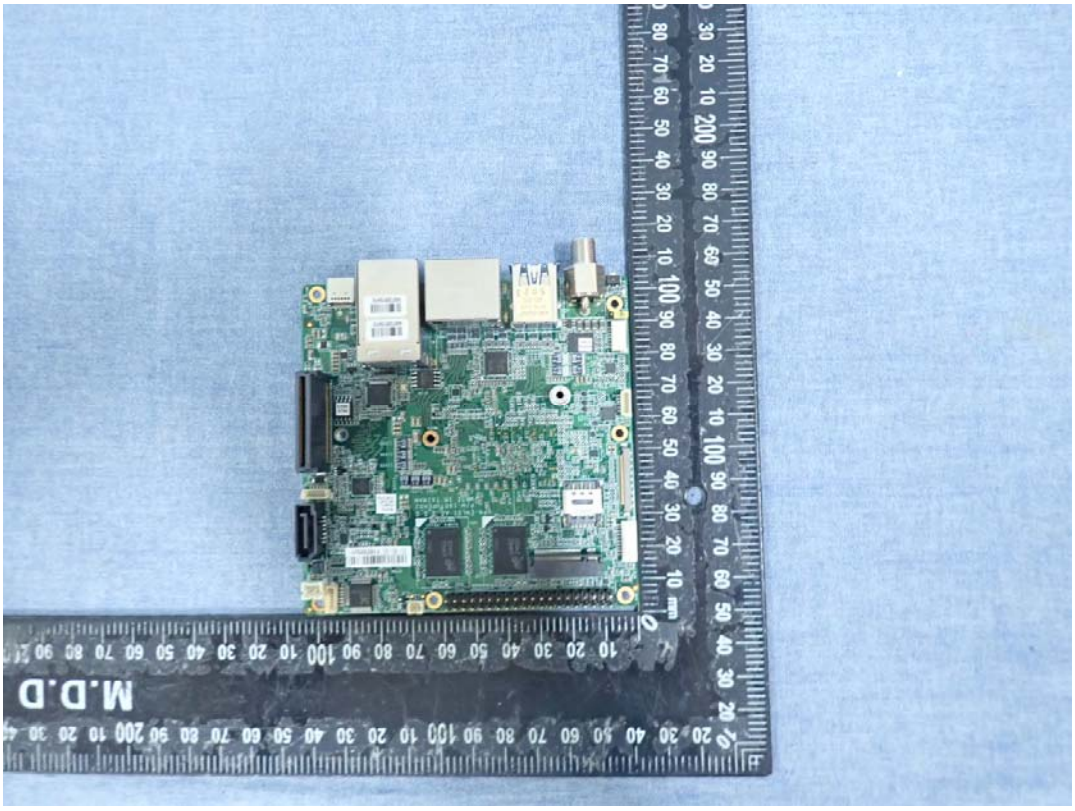


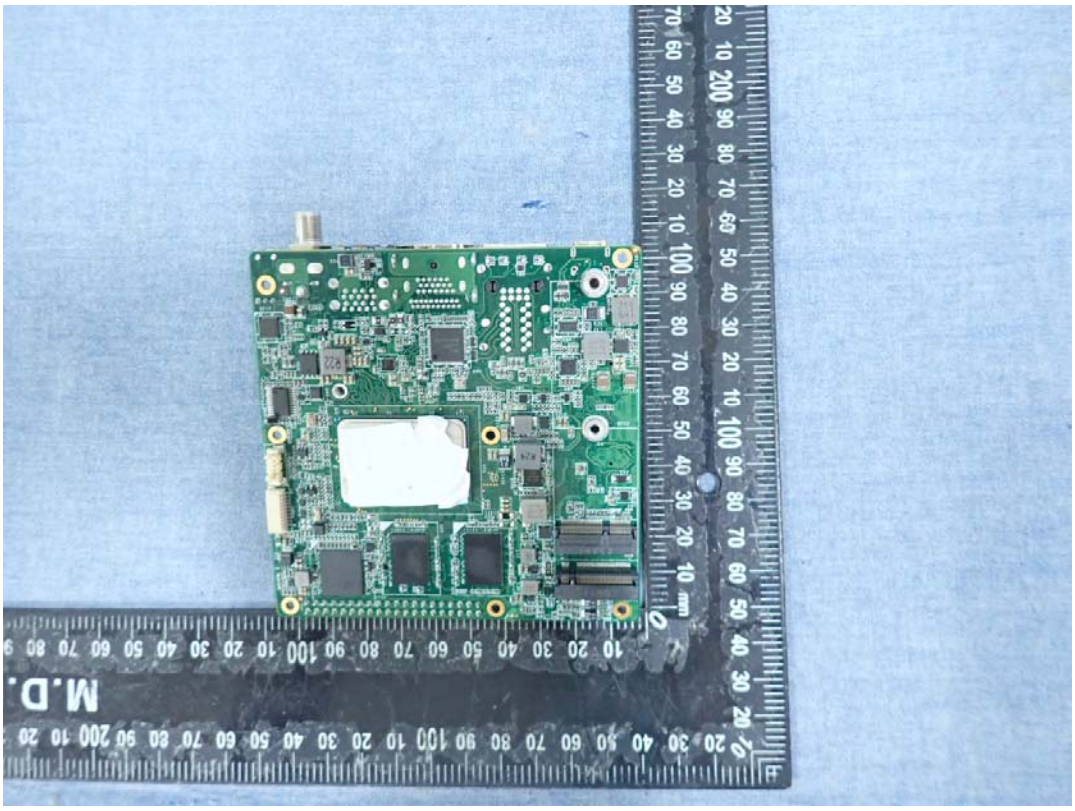


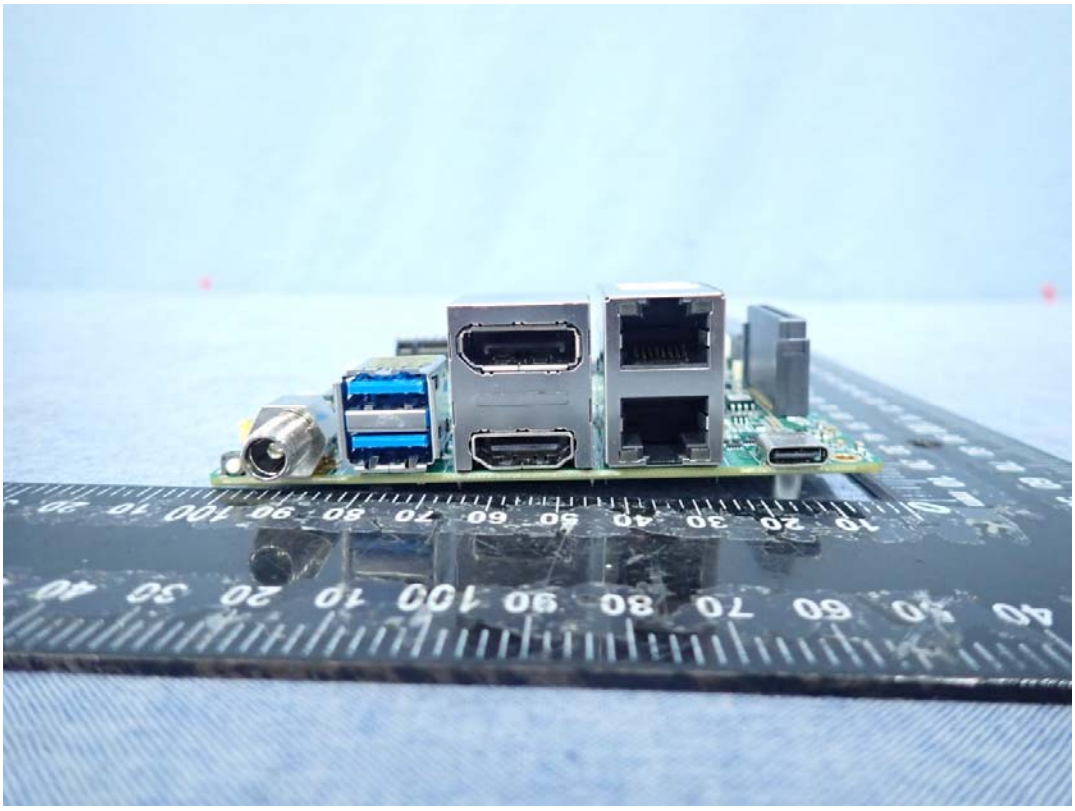






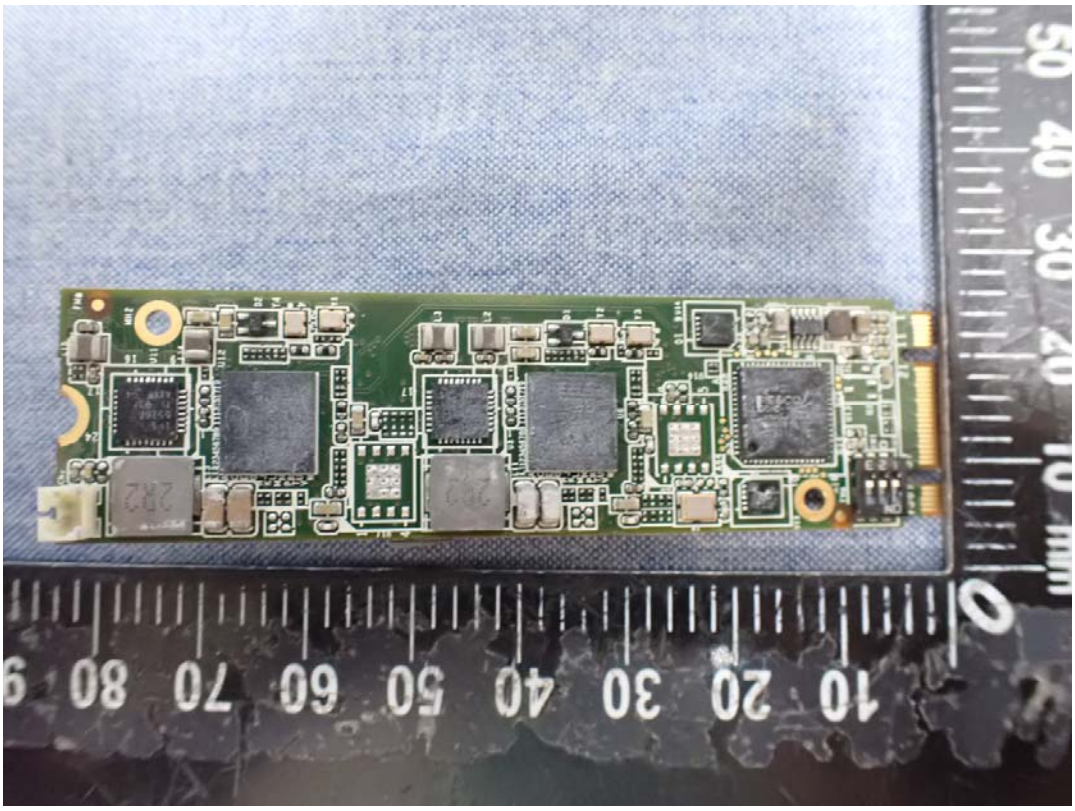


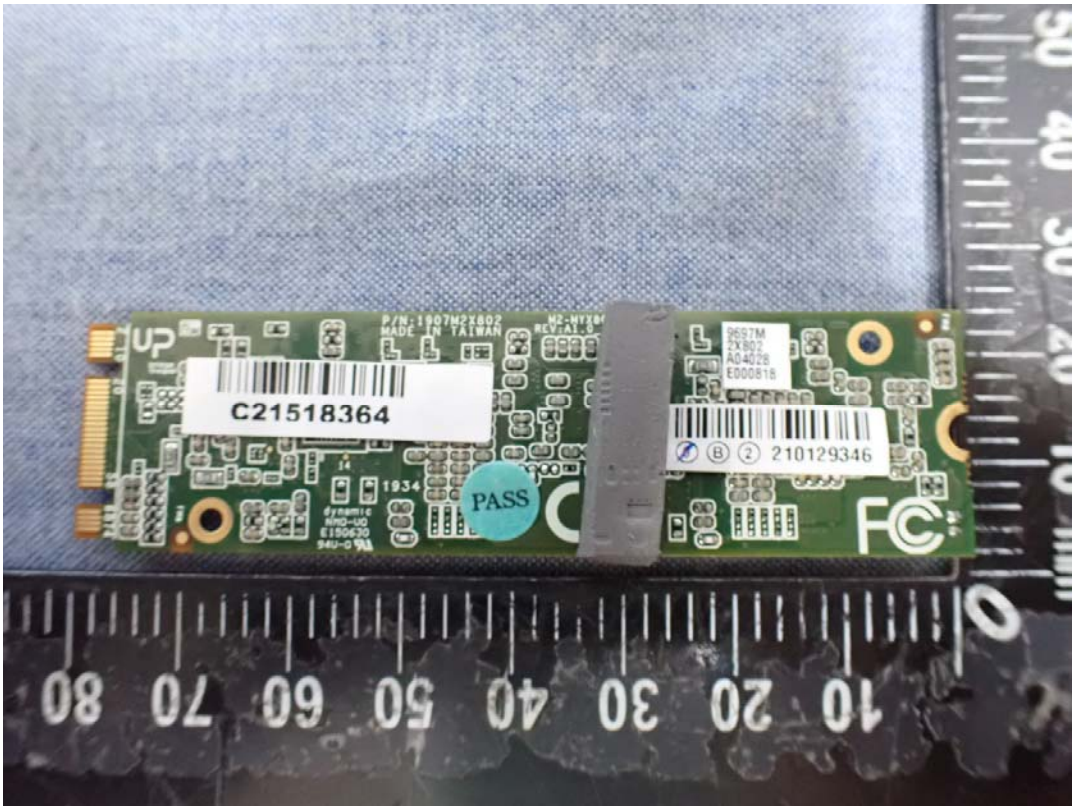


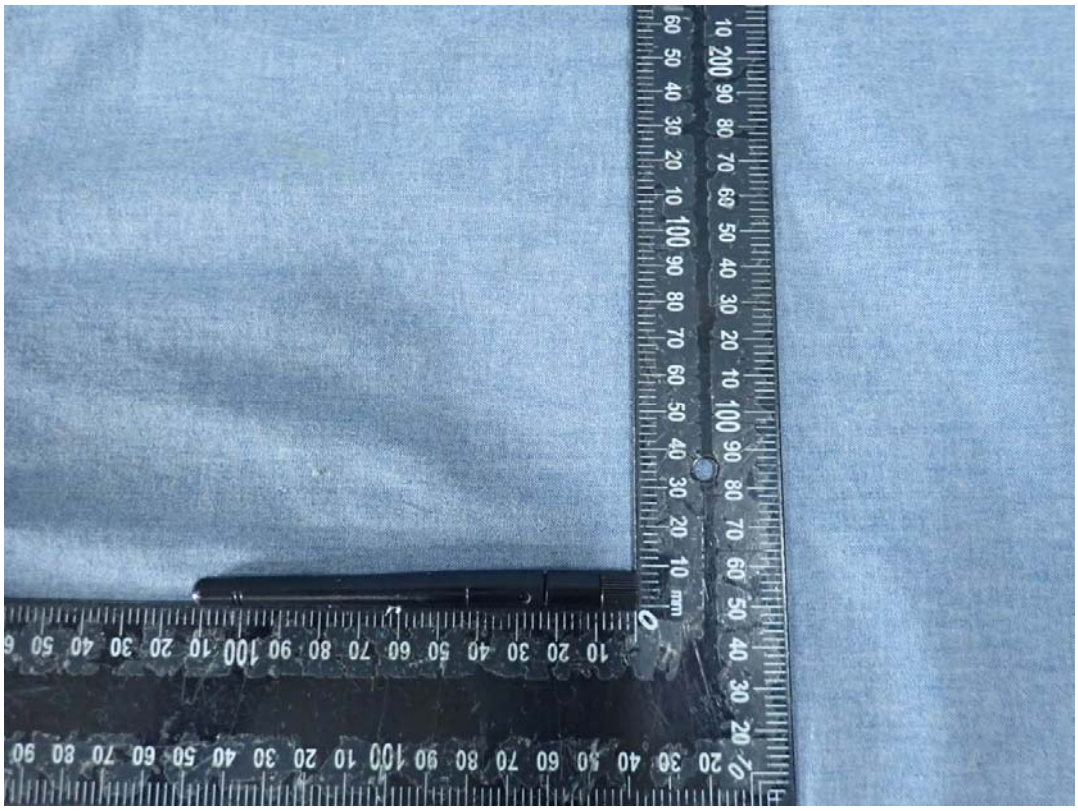


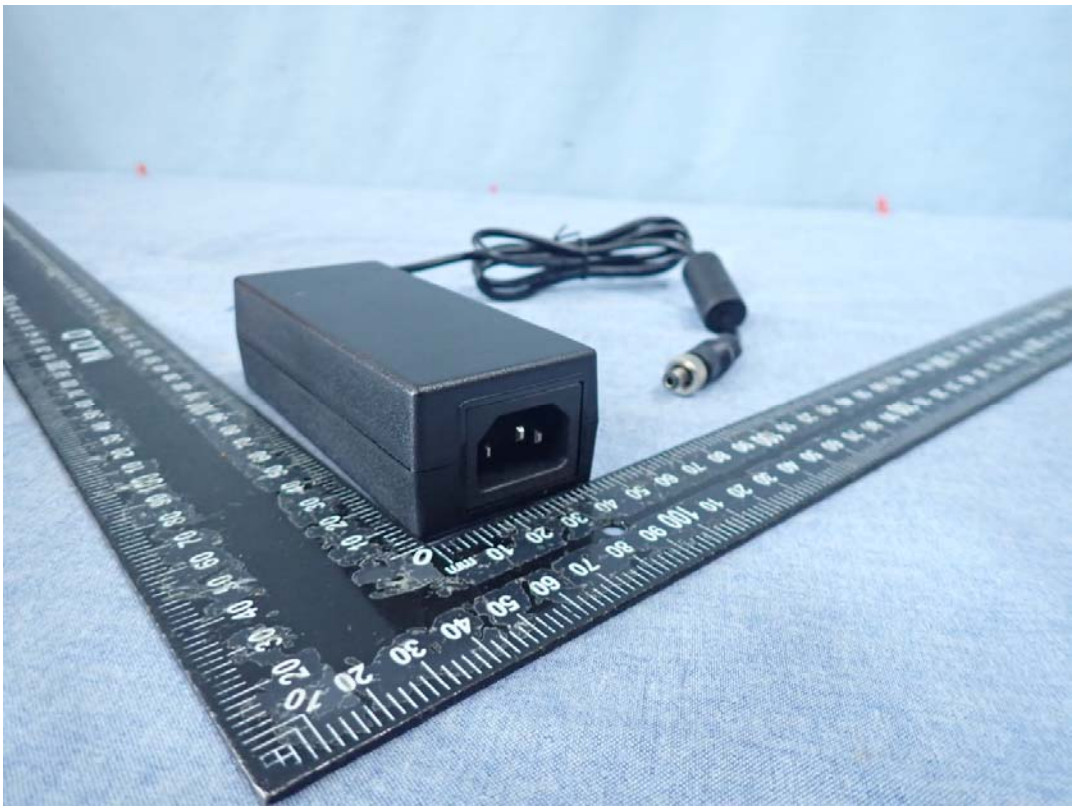
Report No.: TMXD2112001941DE

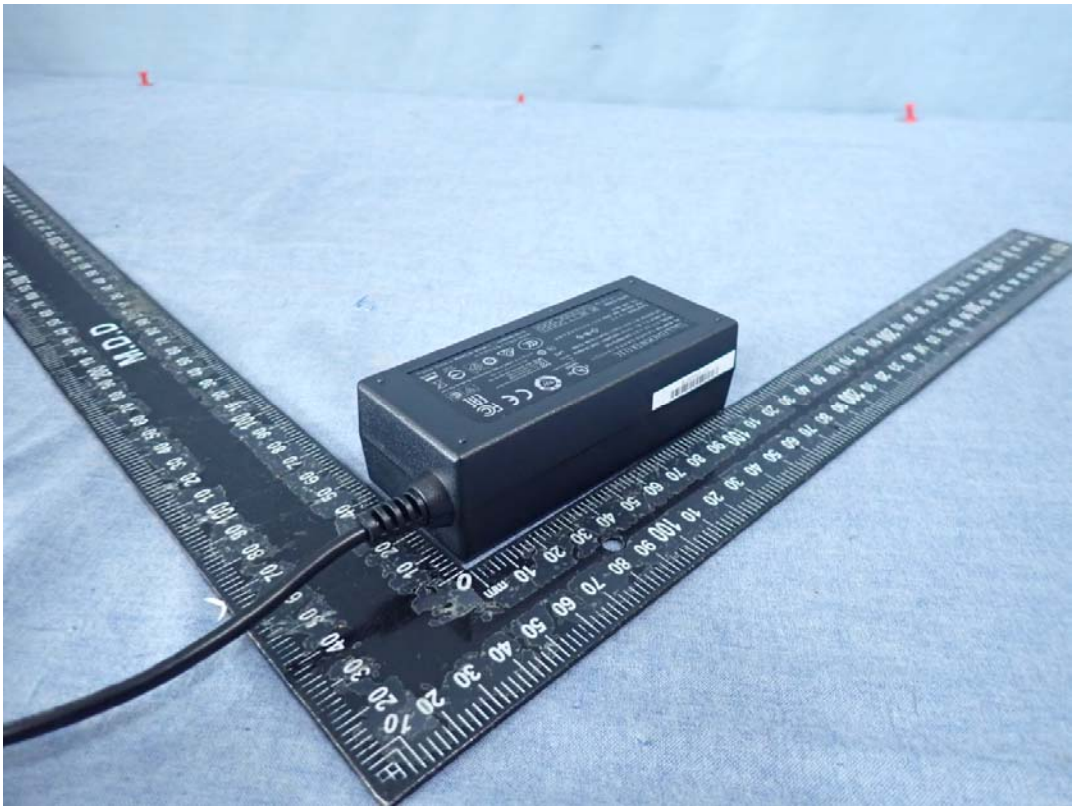
Model: PER-TAIX2-A20-2280











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