

# EMC TEST REPORT

## For Electromagnetic Interference of

Report Reference No. .... : E01A22120037E00101

Prepared by (name + signature) ..... : Luke Li *Luke Li*

Reviewed by (name + signature) ..... : Duke Liu *Duke Liu*

Approved by (name + signature) ..... : Tiger Xu *Tiger Xu*

Date of Receipt of EUT ..... : December 5, 2022

Date of Test ..... : December 6, 2022 to December 9, 2022

Date of Issue ..... : December 20, 2022

Testing Laboratory..... : Dongguan Anci Electronic Technology Co., Ltd.

Address ..... : 1-2 Floor, Building A, No.11, Headquarters 2 Road, Songshan Lake  
Hi-tech Industrial Development Zone, Dongguan City, Guangdong,  
China

Laboratory location..... : EMC Laboratory

Applicant's name..... : Power Communication Tech. Co., LTD

Address ..... : 9F-3, NO.716, Chung Cheng Rd, Zhonghe District, New Taipei  
City, 23552 Taiwan

Manufacturer's name ..... : Dongguan Mingtong Computer Technology Co., LTD

Address ..... : 5F, Building B, No.19, Hexing Road, Shatou Southern District,  
Chang'an Town, Dongguan, Guangdong, China

Factory's name ..... : Dongguan Mingtong Computer Technology Co., LTD

Address..... : 5F, Building B, No.19, Hexing Road, Shatou Southern District,  
Chang'an Town, Dongguan, Guangdong, China



## Test specification:

EUT description.....: Connector  
Trade Mark.....: N/A  
Model/Type reference .....: UH14-850P  
Test Sample.....: UH14-850P  
Rating.....: Input: 5.1V, MAX 4.2A, 12MHz  
Output: 5.1V, MAX 4.2A  
  
Standards .....: EN 55032: 2015+A11:2020  
EN 55035: 2017+A11:2020

The device described above was tested by Dong Guan Anci Electronic Technology Co., Ltd. to determine the maximum emission levels emanated from the device and severity levels of the device endure and its performance criterion. The measurement results are contained in this test report and Dong Guan Anci Electronic Technology Co., Ltd. assumes full responsibility for the accuracy and completeness of these measurements. This report shows the EUT is technically compliance with the above official standards.

This report applies to the above sample only and shall not be reproduced in part without written approval of Dong Guan Anci Electronic Technology Co., Ltd.

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## **1. GENERAL INFORMATION**

### **1.1 PRODUCT INFORMATION**

The product is Connector for use with audio/video, information technology equipment.

The model tested in the report is UH14-850P.

The EUT passed the test.

## 1.2 Modified Information

Version	Summary	Revision Date	Report No.
Ver.1.0	Original Report	/	E01A22120037E00101

## 1.3 Details about the Test Laboratory

**Test Location: 1**

Company name: Dongguan Anci Electronic Technology Co., Ltd.

Address: 1-2 Floor, Building A, No.11, Headquarters 2 Road, Songshan Lake  
Hi-tech Industrial Development Zone, Dongguan City,  
Guangdong Pr., China.

**Test Location: 2**

Company name: Guangdong Global Testing Technology Co., Ltd.

Address: Room 101,203, Building 1, No.2, Keji 8 Road, Songshan  
Lake Park, Dongguan city, Guangdong Pr., China.

Subcontractor: The wide-field electromagnetic laboratory is not within the CNAS.

Standard	Test Item	Test Site
EN 55032: 2015+A11:2020	Conducted Emission	N/A
	Radiated Emission Below 1 GHz	1
	Radiated Emission Above 1 GHz	1
EN IEC 61000-3-2:2019+A1:2021	Harmonic Current Emission	N/A
EN 61000-3-3:2013+A2:2021	Voltage Fluctuations & Flicker	N/A
EN 61000-4-2:2009	Electrostatic Discharge	2
EN 61000-4-3:2006 +A1:2008+A2: 2010	RF electromagnetic field	2
EN 61000-4-4:2012	Fast transients	N/A
EN 61000-4-5:2014	Surges	N/A
EN 61000-4-6:2014	Injected Current	N/A
EN 61000-4-8:2010	Power Frequency Magnetic Field	N/A
EN 61000-4-11:2004	Volt. Interruptions Volt. Dips	N/A

## 2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

Emission				
Standard	Test Item	Limit	Judgment	Remark
EN 55032: 2015+A11:2020	Conducted Emission	Class B	N/A	
	Radiated Emission Below 1 GHz	Class B	PASS	
	Radiated Emission Above 1 GHz	Class B	PASS	
EN IEC 61000-3-2:2019+A1:2021	Harmonic Current Emission	Class A	N/A	
EN 61000-3-3:2013+A2:2021	Voltage Fluctuations & Flicker	Clause 5	N/A	
Immunity (EN 55035: 2017+A11:2020)				
Section	Test Item	Performance Criteria	Judgment	Remark
EN 61000-4-2:2009	Electrostatic Discharge	B	PASS	
EN 61000-4-3:2006 +A1:2008+A2: 2010	RF electromagnetic field	A	PASS	
EN 61000-4-4:2012	Fast transients	B	N/A	
EN 61000-4-5:2014	Surges	B	N/A	
EN 61000-4-6:2014	Injected Current	A	N/A	
EN 61000-4-8:2010	Power Frequency Magnetic Field	A	N/A	
EN 61000-4-11:2004	Volt. Interruptions Volt. Dips	B / C / C <b>NOTE (3)</b>	N/A	

### NOTE:

- (1) "N/A" denotes test is not applicable in this Test Report
- (2) The power consumption of EUT is less than 75W and no Limits apply.
- (3) Voltage dip: >95% reduction – Performance Criteria **B**  
 Voltage dip: 30% reduction – Performance Criteria **C**  
 Voltage Interruption: >95% reduction – Performance Criteria **C**



- (4) If the highest frequency of the internal sources of the EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz. If the highest frequency of the internal sources of the EUT is between 108 MHz and 500 MHz, the measurement shall only be made up to 2GHz. If the highest frequency of the internal sources of the EUT is between 500 MHz and 1GHz, measurement shall only be made up to 5 GHz. If the highest frequency of the internal sources of the EUT is above 1 GHz, the measurement shall be made up to 5 times the highest frequency or 40 GHz, whichever is less.

## 2.1 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately **95 %**.

### A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U (dB)	NOTE
843	ANSI	150 KHz ~ 30MHz	2.74	

### B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U(dB)	NOTE
S02	ANSI	30MHz ~ 1000MHz	V	3.52	
S02	ANSI	30MHz ~ 1000MHz	H	3.52	

## 2.2 DESCRIPTION OF TEST MODES

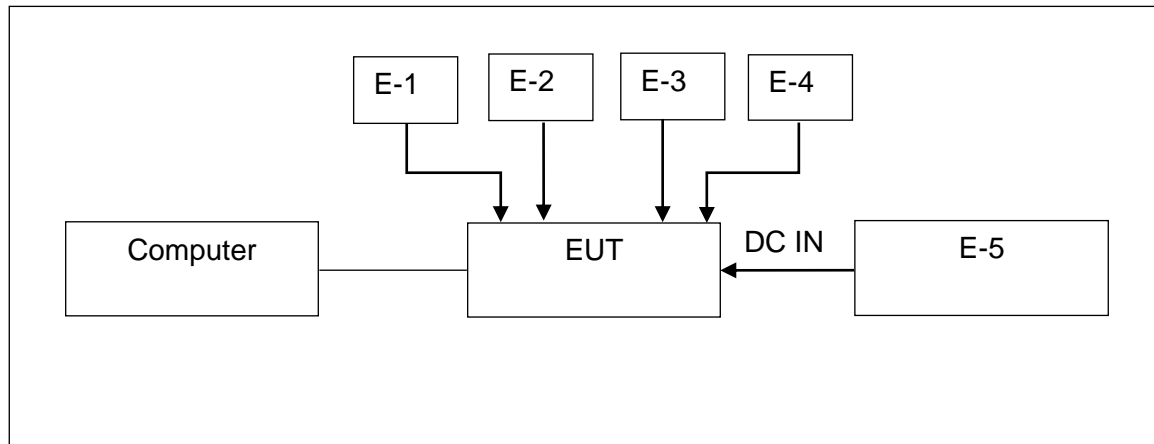
To investigate the maximum EMI characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

### Modes of Operation

For Emission Test	
Test Mode	Description
Mode 1	Normal operation

For Immunity Test	
Test Mode	Description
Mode 1	Normal operation

### 2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



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.

Item	Equipment
E-1	U disk
E-2	U disk
E-3	U disk
E-4	U disk
E-5	Adapter

### 3. EMISSION TEST

#### 3.1 CONDUCTED EMISSION MEASUREMENT

##### 3.1.1 LIMITS OF CONDUCTED EMISSION(MAINS PORT) (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	<input type="checkbox"/> Class A (dBuV)		<input checked="" type="checkbox"/> Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

Note

:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.
- (3) The test result calculated as following:

Measurement Value = Reading Level + Correct Factor

Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor (if use)

Margin Level = Measurement Value - Limit Value

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

**3.1.2 MEASUREMENT INSTRUMENTS LIST**

Item	Instr.Code	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	AN-E024	EMI Test Receiver	ROHDE&SCHWARZ	ESPI	101144	2023-10-07
2	AN-E025	LISN	ROHDE&SCHWARZ	ENV216	101413	2023-10-07
3	AN-E029	RF Cable	N/A	ZT06S-NJ-NJ-2.5M	19044022	2023-05-12
4	AN-E044	2# Shielded Room	chengyu	8m*4m*3m	N/A	2024-11-11
5	AN-E046	Test Software	Farad	EZ-EMC (Ver.ANCI-3A1)	N/A	N/A

Remark: " N/A" denotes No Model No. , Serial No. or No Calibration specified.

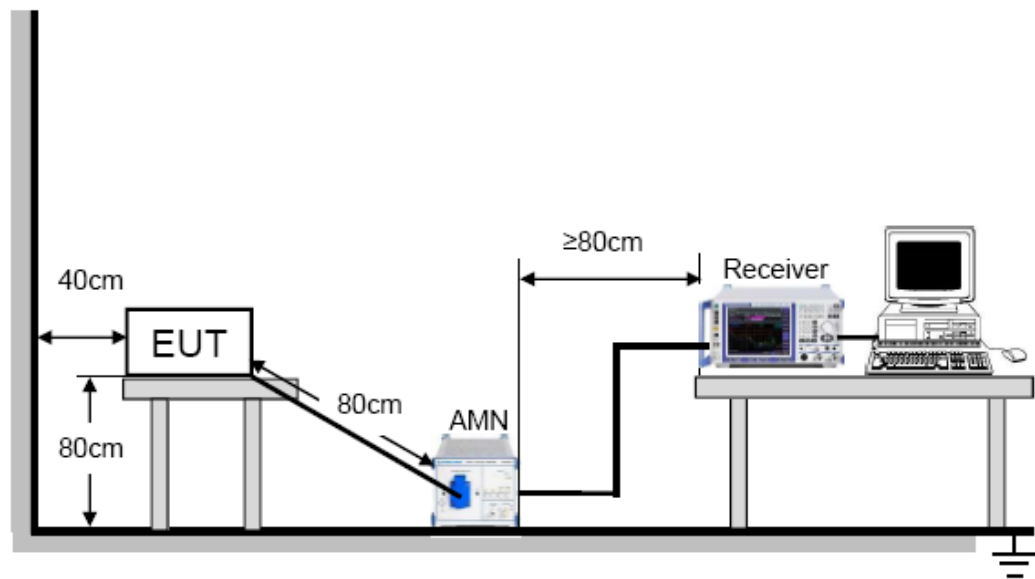
**3.1.3 TEST PROCEDURE**

- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

**3.1.4 DEVIATION FROM TEST STANDARD**

No deviation

### 3.1.5 TEST SETUP



### 3.1.6 EUT OPERATING CONDITIONS

The EUT exercise program used during radiated and/or conducted emission measurement was designed to exercise the various system components in a manner similar to a typical use.

### 3.1.7 TEST RESULTS

Not applicable in this test report.

### 3.2 RADIATED EMISSION MEASUREMENT

#### 3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT (Below 1000MHz)

FREQUENCY (MHz)	<input type="checkbox"/> Class A (at 3m)	<input checked="" type="checkbox"/> Class B (at 3m)
	dBuV/m	dBuV/m
30 – 230	50	40
230 – 1000	57	47

#### LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (GHz)	<input type="checkbox"/> Class A (dBuV/m) (at 3m)		<input checked="" type="checkbox"/> Class B (dBuV/m) (at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
1 ~ 3	76	56	70	50
3 ~ 6	80	60	74	54

#### FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

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

#### NOTE:

- (1) The limit for radiated test was performed according to EN 55032/CISPR 32.
- (2) The tighter limit applies at the band edges;
- (3) Emission level (dBuV/m) = 20log Emission level (uV/m),  
3m Emission level = 10m Emission level + 20log(10m/3m);
- (4) The bandwidth of the Receiver is set at 120 kHz.
- (5) The test result calculated as following:  
Measurement Value = Reading Level + Correct Factor,  
Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use),  
Margin Level = Measurement Value - Limit Value.



**3.2.2 MEASUREMENT INSTRUMENTS LIST****3m Radiated Emission Measurement 30MHz-1GHz**

Item	Instr.Code	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	AN-E060	EMI Test Receiver	Rohde & Schwarz	ESCI	100302	2023-05-12
2	AN-E061	Pre-Amplifier	Anritsu	MH648A	M57886	2023-05-12
3	AN-E076	Bilog Antenna	Schwarzbeck	VULB9163	VULB9163-1290	2023-10-07
4	AN-E063	RF Cable	N/A	ZT06S-NJ-NJ-11M	19060398	2023-05-12
5	AN-E064	RF Cable	N/A	ZT06S-NJ-NJ-0.5M	19060400	2023-05-12
6	AN-E065	RF Cable	N/A	ZT06S-NJ-NJ-2.5M	19060404	2023-05-12
7	AN-E056	3m Semi-anechoic Chamber	chengyu	9m*6m*6m	N/A	2024-11-11
8	AN-E069	Test Software	Farad	EZ-EMC (Ver.FA-03A2 RE)	N/A	N/A

Remark: " N/A" denotes No Model No. / Serial No. and No Calibration specified.

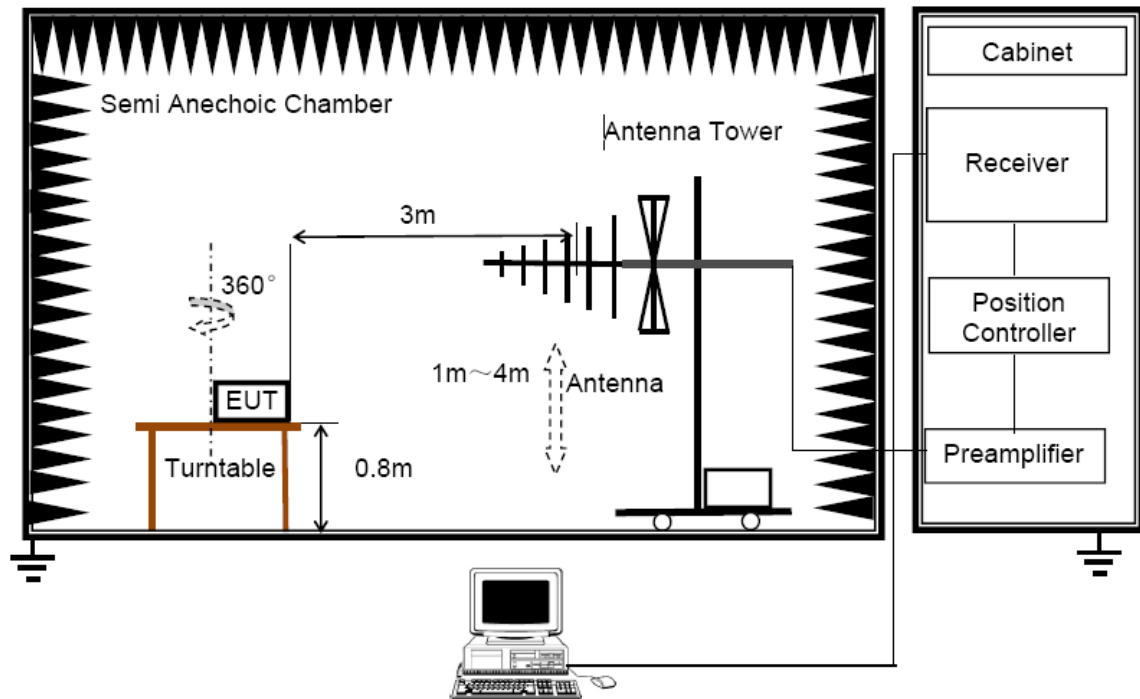
### 3.2.3 TEST PROCEDURE

- a. The measuring distance of at 3m or 10 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m or 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

### 3.2.4 DEVIATION FROM TEST STANDARD

No deviation

### 3.2.5 TEST SETUP



### 3.2.6 EUT OPERATING CONDITIONS

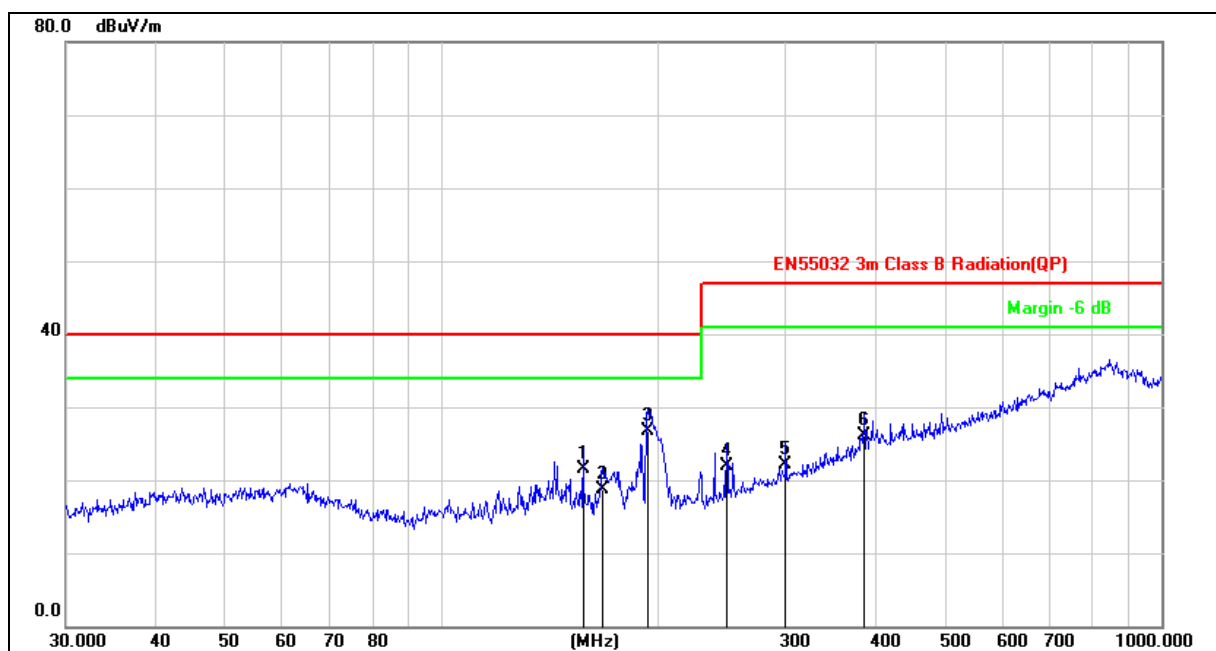
The EUT tested system was configured as the statements of 3.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

**3.2.7 TEST RESULTS**

<b>EUT:</b>	Connector	<b>Model No. :</b>	UH14-850P
<b>Temperature:</b>	24.5℃	<b>Relative Humidity:</b>	53.2 %
<b>Pressure:</b>	1008 hPa	<b>Test Power :</b>	DC 5V
<b>Test Mode :</b>	Normal operation		

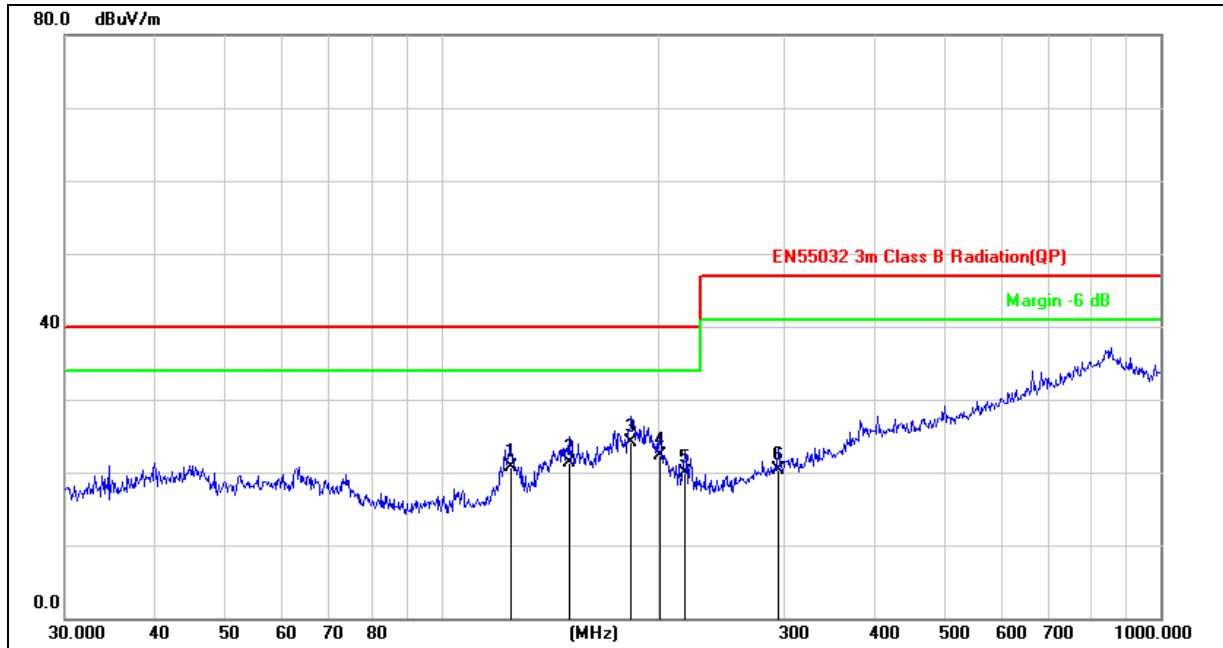
**Remark:**

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Detector or Peak Detector.
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (3) Measuring frequency range from 30MHz to 1000MHz.
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table.
- (5) This test was carried out in 3m an echoic chamber.



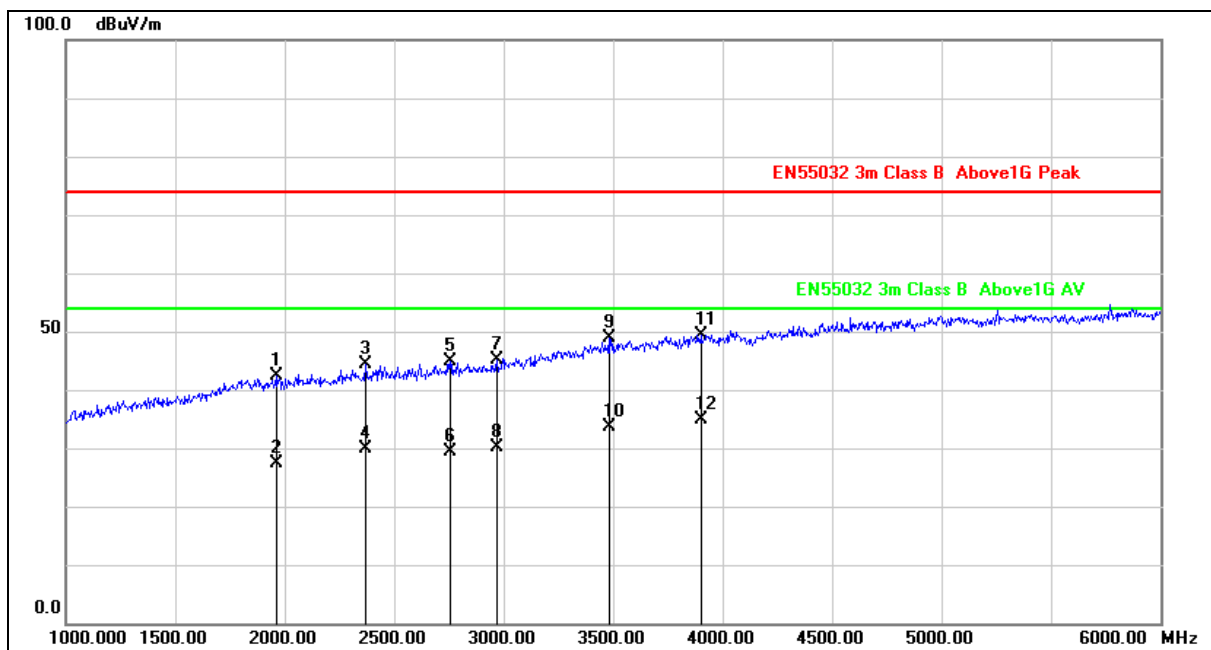
**Site:** LAB      **Antenna:** Vertical      **Temperature(C):**24.5(C)  
**Limit:** EN55032 3m Class B Radiation(QP)      **Humidity(%):**53.2%  
**EUT:** Connector      **Test Time:** 2022-12-06  
**M/N.:** UH14-850P      **Power Rating:** DC 5V  
**Mode:** Normal operation      **Test Engineer:** Luke  
**Note:**

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	157.0073	32.94	-11.43	21.51	40.00	-18.49	QP
2	167.2366	30.28	-11.57	18.71	40.00	-21.29	QP
3 *	193.0945	38.05	-11.32	26.73	40.00	-13.27	QP
4	248.5518	31.21	-9.39	21.82	47.00	-25.18	QP
5	300.3672	28.94	-6.79	22.15	47.00	-24.85	QP
6	386.6338	29.77	-3.63	26.14	47.00	-20.86	QP



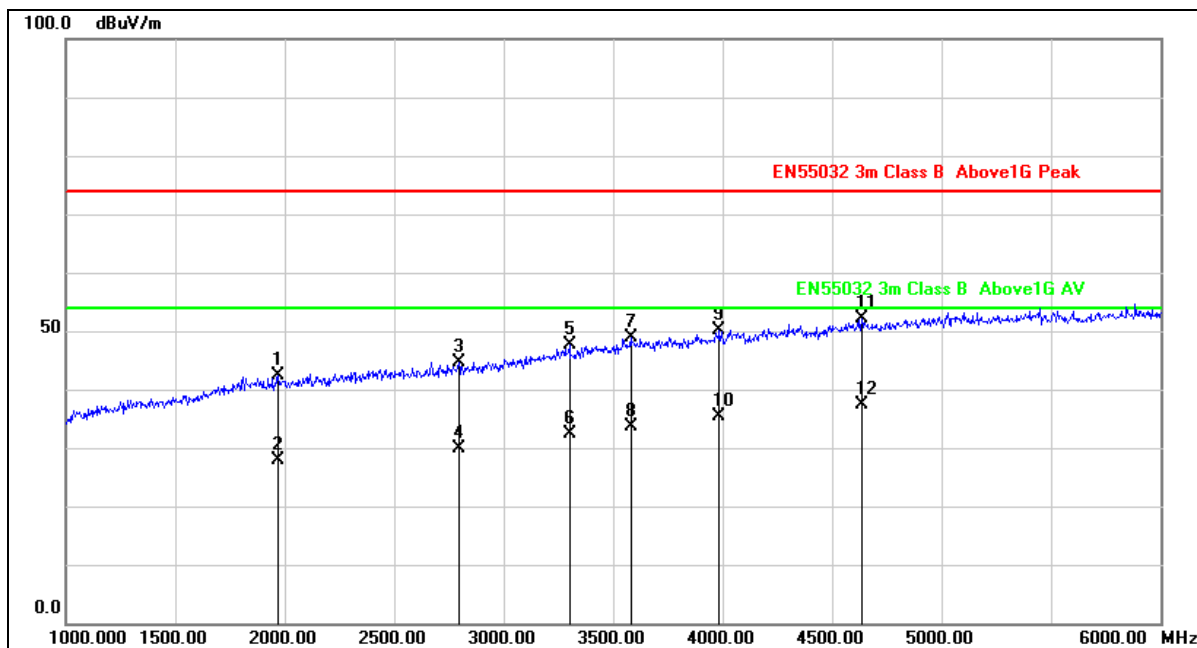
Site: LAB Antenna: Horizontal Temperature(C):24.5(C)  
 Limit: EN55032 3m Class B Radiation(QP) Humidity(%):53.2%  
 EUT: Connector Test Time: 2022-12-06  
 M/N.: UH14-850P Power Rating: DC 5V  
 Mode: Normal operation Test Engineer: Luke  
 Note:

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	125.0066	32.34	-11.73	20.61	40.00	-19.39	QP
2	150.5378	32.82	-11.42	21.40	40.00	-18.60	QP
3 *	183.8439	35.23	-11.10	24.13	40.00	-15.87	QP
4	201.3930	33.71	-11.31	22.40	40.00	-17.60	QP
5	218.3085	30.77	-10.92	19.85	40.00	-20.15	QP
6	294.1136	27.68	-7.38	20.30	47.00	-26.70	QP



<b>Site:</b> LAB	<b>Antenna::</b> Vertical	<b>Temperature(C):</b> 24.5(C)
<b>Limit:</b> EN55032 3m Class B Above1G Peak		<b>Humidity(%):</b> 53.2%
<b>EUT:</b> Connector	<b>Test Time:</b>	<b>2022-12-06</b>
<b>M/N.:</b> UH14-850P	<b>Power Rating:</b>	<b>DC 5V</b>
<b>Mode:</b> Normal operation	<b>Test Engineer:</b>	<b>Luke</b>
<b>Note:</b>		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Remark
1	1960.000	49.03	-6.72	42.31	74.00	-31.69	peak	
2	1960.000	34.13	-6.72	27.41	54.00	-26.59	AVG	
3	2370.000	49.00	-4.60	44.40	74.00	-29.60	peak	
4	2370.000	34.45	-4.60	29.85	54.00	-24.15	AVG	
5	2755.000	47.81	-2.89	44.92	74.00	-29.08	peak	
6	2755.000	32.32	-2.89	29.43	54.00	-24.57	AVG	
7	2970.000	47.09	-1.85	45.24	74.00	-28.76	peak	
8	2970.000	32.01	-1.85	30.16	54.00	-23.84	AVG	
9	3480.000	47.52	1.25	48.77	74.00	-25.23	peak	
10	3480.000	32.29	1.25	33.54	54.00	-20.46	AVG	
11	3900.000	47.24	2.23	49.47	74.00	-24.53	peak	
12 *	3900.000	32.53	2.23	34.76	54.00	-19.24	AVG	



<b>Site:</b> LAB	<b>Antenna::</b> Horizontal	<b>Temperature(C):</b> 24.3(C)
<b>Limit:</b> EN55032 3m Class B Above1G Peak		<b>Humidity(%):</b> 53.2%
<b>EUT:</b> Connector	<b>Test Time:</b>	<b>2022-12-06</b>
<b>M/N.:</b> UH14-850P	<b>Power Rating:</b>	<b>DC 5V</b>
<b>Mode:</b> Normal operation	<b>Test Engineer:</b>	<b>Luke</b>
<b>Note:</b>		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Remark
1	1970.000	49.01	-6.72	42.29	74.00	-31.71	peak	
2	1970.000	34.56	-6.72	27.84	54.00	-26.16	AVG	
3	2795.000	47.26	-2.70	44.56	74.00	-29.44	peak	
4	2795.000	32.56	-2.70	29.86	54.00	-24.14	AVG	
5	3300.000	47.44	0.14	47.58	74.00	-26.42	peak	
6	3300.000	32.29	0.14	32.43	54.00	-21.57	AVG	
7	3580.000	47.45	1.54	48.99	74.00	-25.01	peak	
8	3580.000	31.97	1.54	33.51	54.00	-20.49	AVG	
9	3985.000	47.67	2.40	50.07	74.00	-23.93	peak	
10	3985.000	33.09	2.40	35.49	54.00	-18.51	AVG	
11	4635.000	47.72	4.38	52.10	74.00	-21.90	peak	
12 *	4635.000	33.07	4.38	37.45	54.00	-16.55	AVG	



**4. IMMUNITY TEST****4.1 STANDARD COMPLIANCE/SERVIRITY LEVEL/CRITERIA**

Tests Standard No.	Test Specification	Test Mode Test Ports	Perform. Criteria	Remark
1. ESD IEC/EN 61000-4-2	8KV air discharge 4KV contact discharge	Direct Mode	B	PASS
	4KV HCP discharge 4KV VCP discharge	Indirect Mode	B	PASS
2. RS IEC/EN 61000-4-3	80 MHz to 1000 MHz, 1800, 2600, 3500, 5000 MHz 3V/m(rms), 1 KHz, 80%, AM modulated	Enclosure	A	PASS
3. EFT/Burst IEC/EN 61000-4-4	1.0KV(peak) 5/50ns Tr/Th 5KHz Repetition Freq.	AC Power Port	B	N/A
	0.5 KV(peak) 5/50ns Tr/Th 5KHz Repetition Freq.	CTL/Signal Data Line Port	B	N/A
4. Surges IEC/EN 61000-4-5	1 KV(5P/5N) 1.2/50(8/20) Tr/Th us	L-N	B	N/A
	2 KV(5P/5N) 1.2/50(8/20) Tr/Th us	L-PE N-PE	B	N/A
5 Injected Current IEC/EN 61000-4-6	0.15 MHz to 10 MHz 3V (rms), 10 MHz to 30 MHz 3V ~1V (rms), 30 MHz to 80 MHz 1V(rms), 1KHz 80%, AM Modulated 150Ω source impedance	CTL/Signal Port	A	N/A
		AC Power Port	A	N/A
		DC Power Port	A	N/A
6. Power Frequency Magnetic Field IEC/EN 61000-4-8	50Hz or 60Hz, 1A/m	Enclosure	A	N/A
7. Volt. Interruptions Volt. Dips IEC/EN 61000-4-11	Voltage dip >95% / 30% Interruption >95%	AC Power Port	B / C C See Remark(2)	N/A

\* Remark:

- (1) "N/A": denotes test is not applicable in this Test Report.  
 (2) Voltage dip: >95% reduction – Performance Criteria **B**  
 Voltage dip: 30% reduction – Performance Criteria **C**  
 Voltage Interruption: >95% reduction – Performance Criteria **C**  
 (3) Test Location: This test was carried out in EMS Test Location.

## 4.2 GENERAL PERFORMANCE CRITERIA

According to **EN 55035:2017+A11:2020** standard, the general performance criteria as following:

<b>Criterion A</b>	The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.
<b>Criterion B</b>	After the test, the equipment shall continue to operate as intended without operator Intervention. No degradation of performance or loss of function is allowed, after the application of the phenomenon below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is allowed. However, no change of operating state if stored data allowed to persist after the test. If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.
<b>Criterion C</b>	Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

## 4.3 GENERAL PERFORMANCE CRITERIA TEST SETUP

The EUT tested system was configured as the statements of **3.1.6** Unless otherwise a special operating condition is specified in the follows during the testing.

#### 4.4 ESD TESTING

##### 4.4.1 TEST SPECIFICATION

<b>Basic Standard:</b>	IEC/EN 61000-4-2
<b>Discharge Impedance:</b>	330 ohm / 150 pF
<b>Required Performance</b>	B
<b>Discharge Voltage:</b>	Air Discharge: 2kV/4kV/8kV (Direct) Contact Discharge: 2kV/4kV (Direct/Indirect)
<b>Polarity:</b>	Positive & Negative
<b>Number of Discharge:</b>	Air Discharge: min. 20 times at each test point Contact Discharge: min. 200 times in total
<b>Discharge Mode:</b>	Contact and Air
<b>Discharge Period:</b>	1 second minimum

##### 4.4.2 MEASUREMENT INSTRUMENTS

Item	Instr.Code	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	04-E-EMS-N SG437	ESD Simulator	TESEQ	NSG437	336	2023-10-28

Remark: " N/A" denotes No Model No. / Serial No. and No Calibration specified.

##### 4.4.3 TEST PROCEDURE

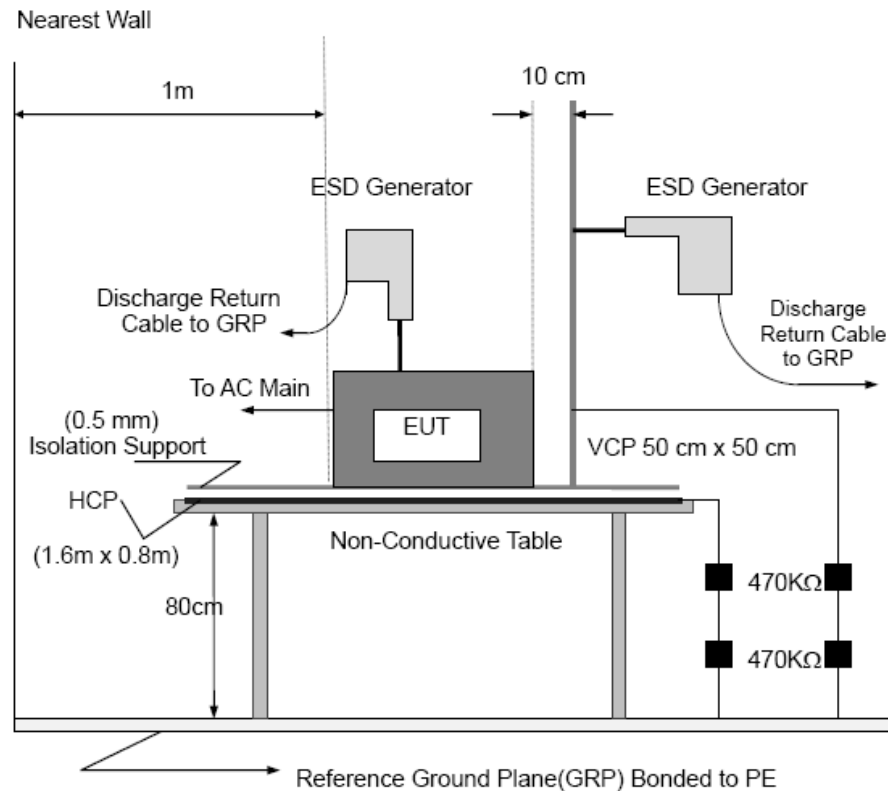
The test generator necessary to perform direct and indirect application of discharges to the EUT in the following manner:

- a. Contact discharge was applied to conductive surfaces and coupling planes of the EUT.  
During the test, it was performed with single discharges. For the single discharge time between successive single discharges was at least 1 second. The EUT shall be exposed to at least 200 discharges, 100 each at negative and positive polarity, at a minimum of four test points. One of the test points shall be subjected to at least 50 indirect discharges to the center of the front edge of the horizontal coupling plane. The remaining three test points shall each receive at least 50 direct contact discharges.  
If no direct contact test points are available, then at least 200 indirect discharges shall be applied in the indirect mode. Test shall be performed at a maximum repetition rate of one discharge per second.  
Vertical Coupling Plane (VCP):  
The coupling plane, of dimensions 0.5m x 0.5m, is placed parallel to, and positioned at a distance 0.1m from, the EUT, with the Discharge Electrode touching the coupling plane.  
The four faces of the EUT will be performed with electrostatic discharge.  
Horizontal Coupling Plane (HCP):  
The coupling plane is placed under to the EUT. The generator shall be positioned vertically at a distance of 0.1m from the EUT, with the Discharge Electrode touching the coupling plane.  
The four faces of the EUT will be performed with electrostatic discharge.
- b. Air discharges at insulation surfaces of the EUT.  
It was at least ten single discharges with positive and negative at the same selected point.
- c. For the actual test configuration, please refer to the related Item –EUT Test Photos.

#### 4.4.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.4.5 TEST SETUP



Note:

##### TABLE-TOP EQUIPMENT

The configuration consisted of a wooden table 0.8 meters high standing on the Ground Reference Plane. The GRP consisted of a sheet of aluminum at least 0.25mm thick, and 2.5 meters square connected to the protective grounding system. A Horizontal Coupling Plane (1.6m x 0.8m) was placed on the table and attached to the GRP by means of a cable with 940k total impedance. The equipment under test, was installed in a representative system as described in section 7 of IEC /EN 61000-4-2, and its cables were placed on the HCP and isolated by an insulating support of 0.5mm thickness. A distance of 1-meter minimum was provided between the EUT and the walls of the laboratory and any other metallic structure.

##### FLOOR-STANDING EQUIPMENT

The equipment under test was installed in a representative system as described in section 7 of IEC/EN 61000-4-2, and its cables were isolated from the Ground Reference Plane by an insulating support of 0.1-meter thickness. The GRP consisted of a sheet of aluminum that is at least 0.25mm thick, and 2.5meters square connected to the protective grounding system and extended at least 0.5 meters from the EUT on all sides.

## 4.4.6 TEST RESULTS

<b>EUT:</b>	Connector	<b>Model No. :</b>	UH14-850P
<b>Temperature:</b>	23.4℃	<b>Relative Humidity:</b>	55.1 %
<b>Pressure:</b>	1009 hPa	<b>Test Power :</b>	DC 5V
<b>Test Engineer:</b>	Luke	<b>Test Date:</b>	2022-12-09
<b>Test Mode:</b>	Normal operation		

Mode	Air Discharge								Contact Discharge							
	2KV		4KV		8KV		12KV		2KV		4KV		6KV		8KV	
Location	P	N	P	N	P	N	P	N	P	N	P	N	P	N	P	N
1	--	--	A	A	A	A	--	--					--	--	--	--
2									A	A	A	A				
3	-	--					--	--					--	--	--	--
Criteria	B								B							
Result	A								A							
Judgment	PASS								PASS							

Mode	HCP Discharge								VCP Discharge							
	2KV		4KV		6KV		8KV		2KV		4KV		6KV		8KV	
Location	P	N	P	N	P	N	P	N	P	N	P	N	P	N	P	N
Front sides	-	--	A	A	--	--	--	--	-	--	A	A	--	--	--	--
Rear sides	--	--	A	A	--	--	--	--	--	--	A	A	--	--	--	--
Left sides	--	--	A	A	-	--	--	--	--	--	A	A	-	--	--	--
Right sides	-	--	A	A	--	--	--	--	-	--	A	A	--	--	--	--
Criteria	B								B							
Result	A								A							
Judgment	PASS								PASS							

Note:

- 1) P/N denotes the Positive/Negative polarity of the output voltage.
- 2) Test condition:  
Direct discharges: Minimum 50 times (Positive/Negative) at each point.  
Air discharges / Indirect (HCP/VCP): Minimum 20 times (Positive/Negative) at each point.
- 3) Test location(s) in which discharge (Air and contact discharge) to be described as following
- 4) The Indirect (HCP/VCP) discharges description of test point as following:  
1.left side 2.right side 3.front side 4.rear side
- 5) N/A - denotes test is not applicable in this test report
- 7) Criteria B: The EUT function loss during the test, but self-recoverable after the test.

Test location description:

No	Description	No	Description
1	EUT Gaps	4	
2	Input port	5	
3		6	

## 4.5 RS TESTING

### 4.5.1 TEST SPECIFICATION

<b>Basic Standard:</b>	IEC/EN 61000-4-3
<b>Required Performance</b>	A
<b>Frequency Range:</b>	80 MHz - 1000 MHz, 1800, 2600, 3500, 5000 MHz
<b>Field Strength:</b>	3 V/m
<b>Modulation:</b>	1kHz Sine Wave, 80%, AM Modulation
<b>Frequency Step:</b>	1 % of fundamental
<b>Polarity of Antenna:</b>	Horizontal and Vertical
<b>Test Distance:</b>	3 m
<b>Antenna Height:</b>	1.5 m
<b>Dwell Time:</b>	at least 3 seconds

### 4.5.2 MEASUREMENT INSTRUMENTS

Instr.Code	Equipment Type	Manufacturer	Model No.	Serial Number	Calibrated until
04-E-RS-STLP 9129	Stacked Log.-Per.-Broadband Antenna	Schwarzbeck	STLP 9129	170	2023-12-7
04-E-RS-MPA-80-1000-500	Power amplifier	MiCOTOP	MPA-80-1000-500	MPA2209336	2023-10-8
04-E-RS-1000-6000-100	Power amplifier	MiCOTOP	MPA-1000-6000-100	MPA2209337	2023-10-8
04-E-RS-N1914A	EPM Series Power Meter	Keysight	N1914A	MY53240003	2023-10-8
04-E-RS-E9304A1	Average Power Sensor	Keysight	E9304A	MY41498925	2023-10-8
04-E-RS-E9304A2	Average Power Sensor	Keysight	E9304A	MY41497454	2023-10-8
04-E-RS-N5171B	EXG Analog Signal Generator	Keysight	N5171B	MY61252624	2023-10-8
04-E-RS-EP 601	Field Probe	Narda	EP 601	811ZX11137	2023-10-29
04-E-RS-HSW06	RF Switch Unit	HZEMC	HSW06	HSW2218C04	N/A
04-E-RE2-Chamber	Chamber 2	ETS	9*6*6	Q2149	2025-8-30

Remark: " N/A" denotes No Model No. / Serial No. and No Calibration specified.

#### 4.5.3 TEST PROCEDURE

The EUT and support equipment, which are placed on a table that is 0.8 meter above ground and the testing was performed in a fully-anechoic chamber.

The testing distance from antenna to the EUT was 3 meters.

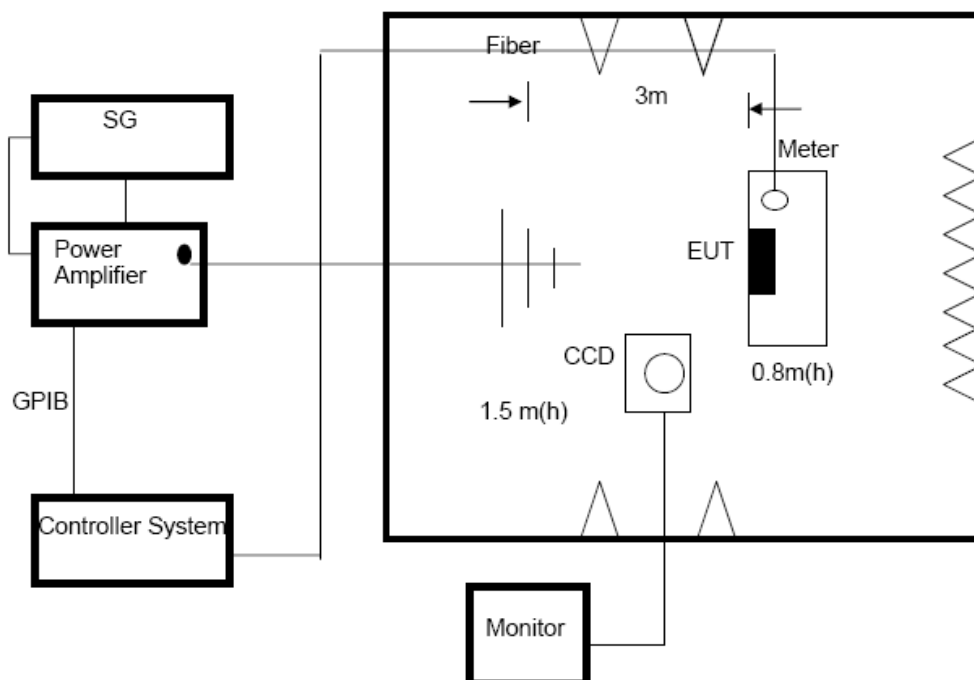
The other condition as following manner:

- a. The field strength level was 3V/m.
- b. The frequency range is swept from 80 MHz to 1000 MHz, 1800 MHz, 2600 MHz, 3500 MHz, 5000 MHz with the signal 80%amplitude modulated with a 1kHz sine wave. The rate of sweep did not exceed  $1.5 \times 10^{-3}$  decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.
- c. The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.
- d. The test was performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

#### 4.5.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.5.5 TEST SETUP



Note:

##### TABLE-TOP EQUIPMENT

The EUT installed in a representative system as described in section 7 of IEC/EN 61000-4-3 was placed on a non-conductive table 0.8 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.

##### FLOOR-STANDING EQUIPMENT

The EUT installed in a representative system as described in section 7 of IEC/EN 61000-4-3 was placed on a non-conductive wood support 0.1 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.



**4.5.6 TEST RESULTS**

<b>EUT:</b>	Connector	<b>Model No. :</b>	UH14-850P
<b>Temperature:</b>	22.6℃	<b>Relative Humidity:</b>	54.8 %
<b>Pressure:</b>	1009 hPa	<b>Test Power :</b>	DC 5V
<b>Test Engineer:</b>	Luke	<b>Test Date:</b>	2022-12-09
<b>Test Mode:</b>	Normal operation		

Frequency Range (MHz)	Polarity of Antenna	R.F. Field Strength	Azimuth	Perform. Criteria	Results	Judgment
80MHz - 1000MHz	H / V	3 V/m (rms) AM Modulated 1000Hz, 80%	Front	A	A	PASS
			Rear			
			Left			
			Right			

Frequency Range (MHz)	Polarity of Antenna	R.F. Field Strength	Azimuth	Perform. Criteria	Results	Judgment
1800, 2600, 3500, 5000 MHz	H / V	3 V/m (rms) AM Modulated 1000Hz, 80%	Front	A	A	PASS
			Rear			
			Left			
			Right			

Note:

- 1) H/V denotes the Horizontal/Vertical polarity of Antenna.
- 2) N/A - denotes test is not applicable in this test report.
- 3) Criteria A: There was no change operated with initial operating during the test.
- 4) Criteria B: The EUT function loss during the test, but self-recoverable after the test.
- 5) Criteria C: The system shut down during the test.

## 5. ATTACHMENT

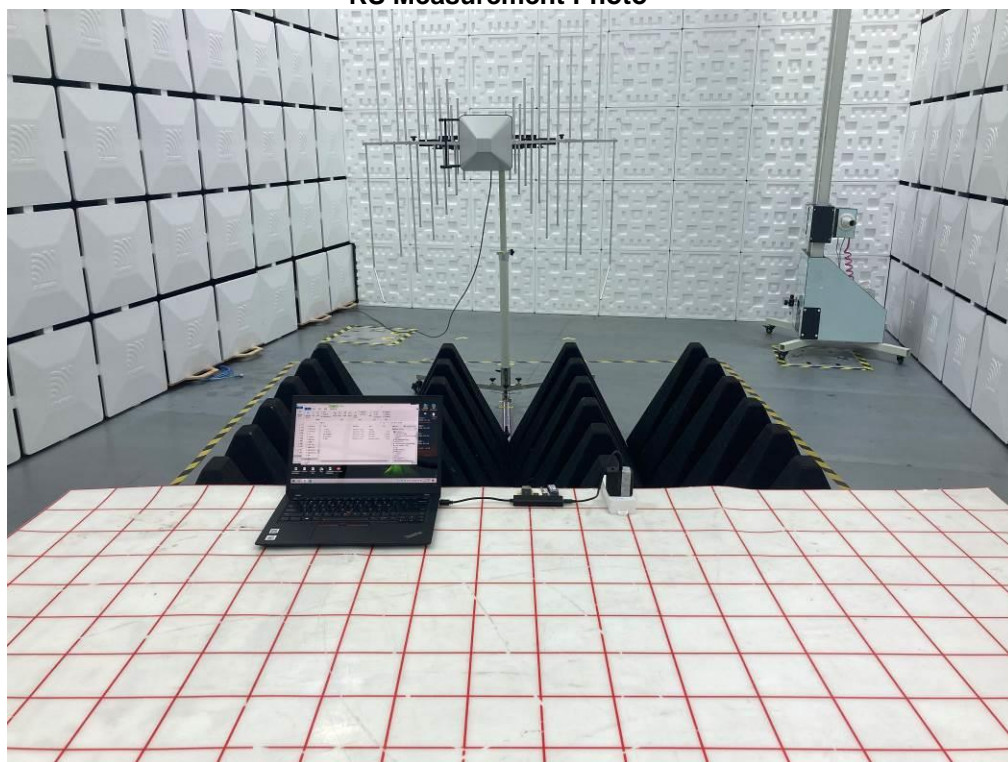
### 5.1 EUT TEST PHOTO

**Radiated Measurement Photo**



**Radiated Measurement Photo (Above 1000MHz)**



**ESD Measurement Photo****RS Measurement Photo**



## 5.2 EUT PHOTO

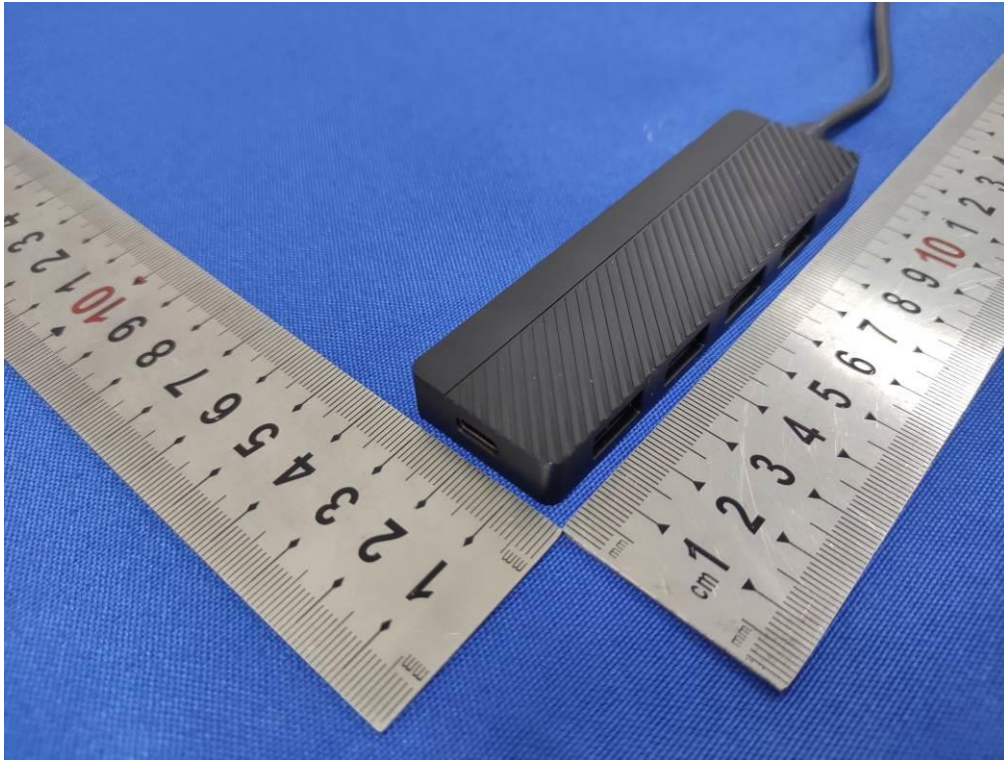


Figure 1. Overall view of unit

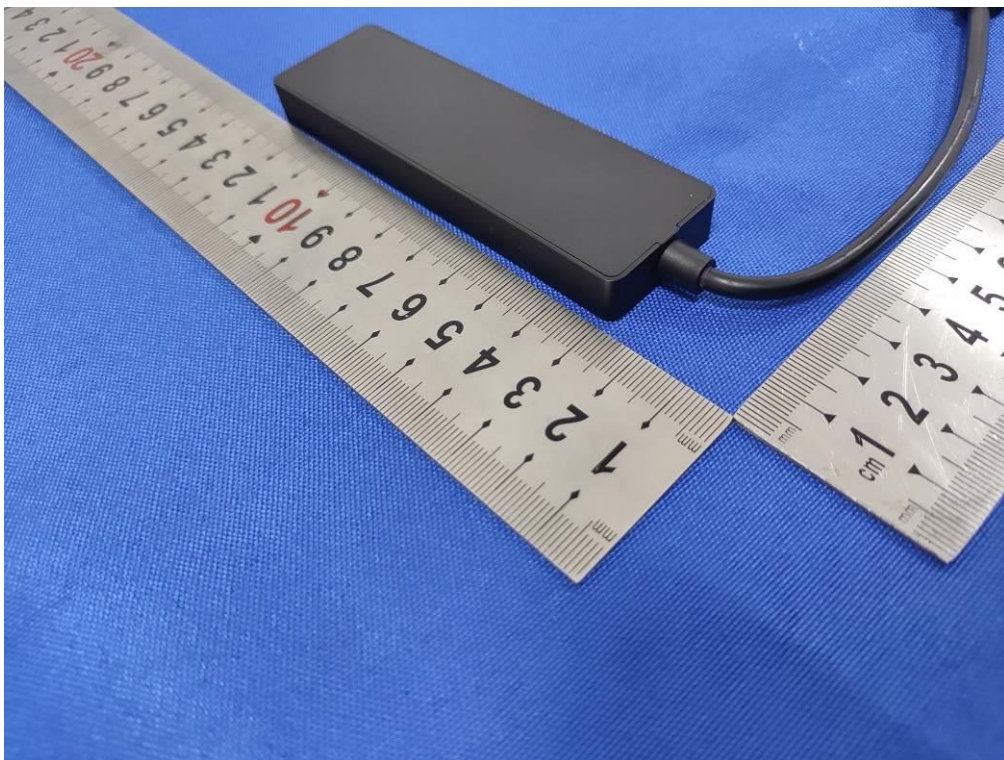


Figure 2. Overall view of unit



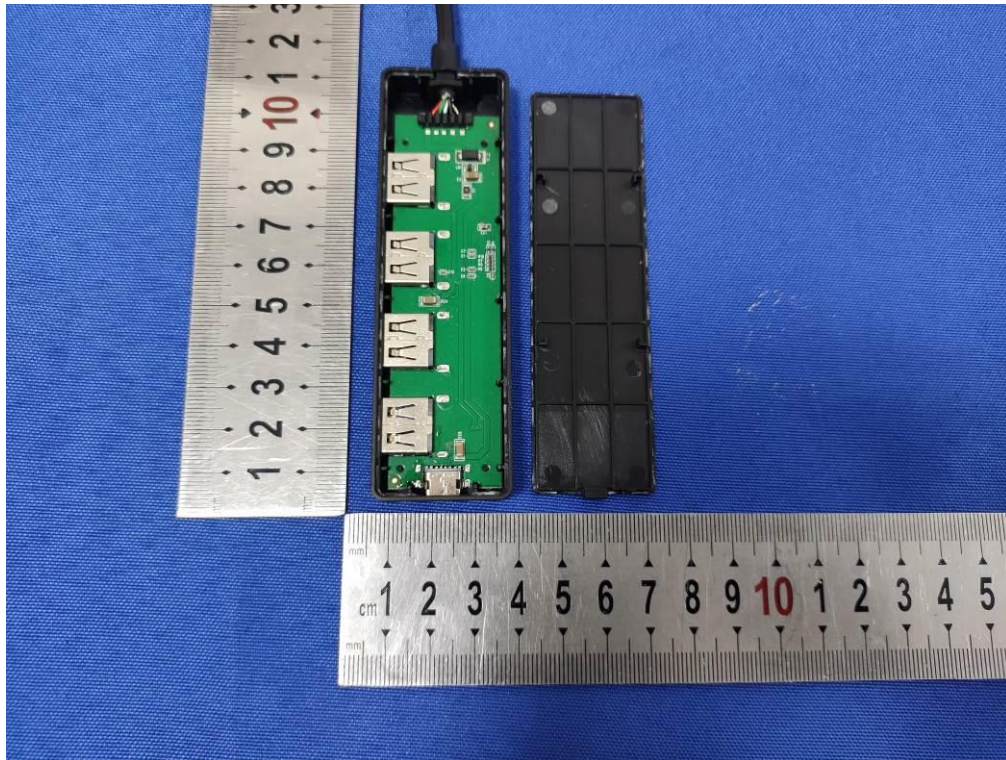


Figure 3. Internal view of unit

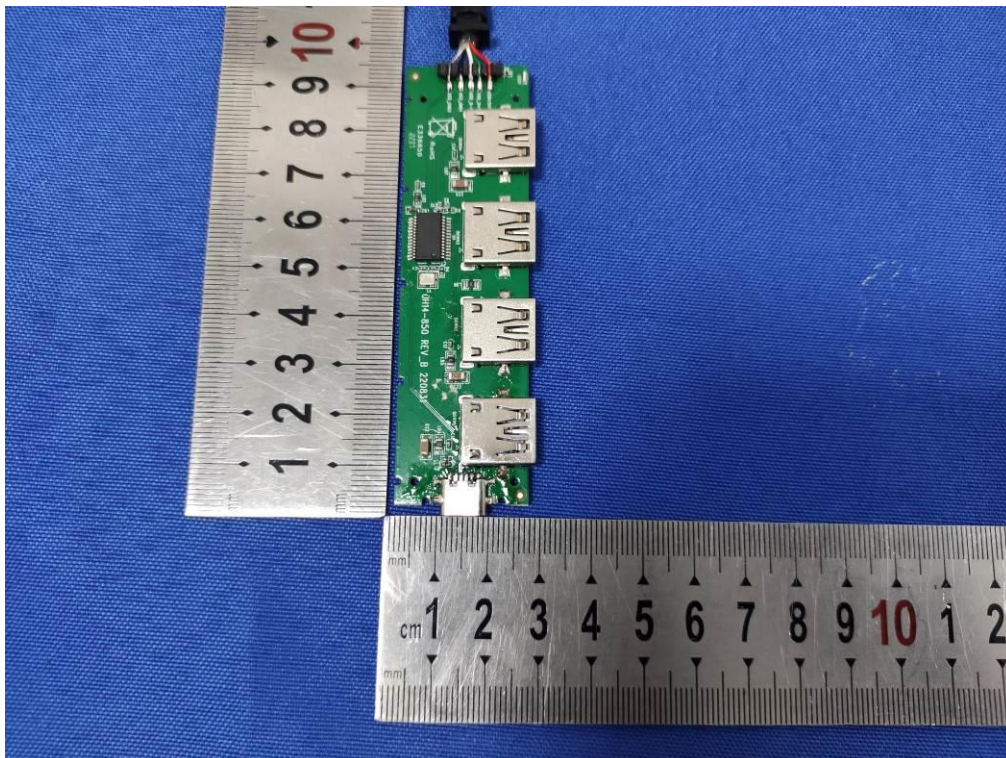


Figure 4. PCB view of unit

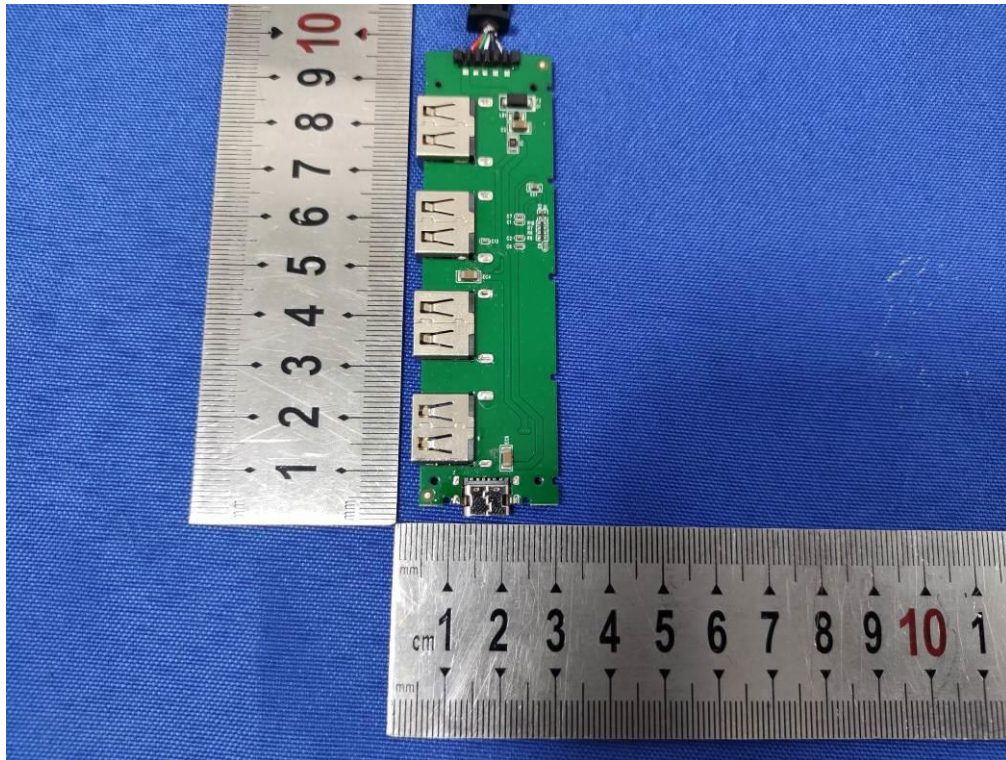


Figure 5. PCB view of unit

--- End of Report---