

TEST REPORT

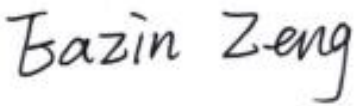
Applicant:	SHENZHEN ORICO TECHNOLOGIES CO., LTD.		
Address:	1903-1904.14A, Zhonghaixin Innovation Industrial park, no.12, Gan Lee Sixth Road, Gankeng Community, Jihua Street, Shenzhen, China		
Manufacturer:	SHENZHEN ORICO TECHNOLOGIES CO., LTD.		
Address:	1903-1904.14A, Zhonghaixin Innovation Industrial park, no.12, Gan Lee Sixth Road, Gankeng Community, Jihua Street, Shenzhen, China		
Factory:	Dongguan Xinyuan Ruichuang Electronics Technology Co., Ltd.		
Address:	Room 201, building 6, 24 Tangjiao Road, Changping Town, Dongguan City, Guangdong, China		
E.U.T.:	Power Strip with USB Charger		
Model Number:	AP3-2A2U2C-65-EU		
Trade Mark:	N/A		
Date of Receipt:	2025-04-09	Date of Test:	2025-04-09 to 2025-05-22
Test Specification:	EN 55032: 2015+A11:2020+A1:2020 EN IEC 61000-3-2:2019+A1:2021+A2:2024 EN 61000-3-3:2013+A1:2019+A2:2021 EN 55035:2017+A11:2020		
Test Result:	The equipment under test was found to be compliance with the requirements of the standards applied.		
Prepared by:	Approved & Authorized Signer:		
			
Eazin Zeng/ Engineer	Frank Shen/ Manager		
Date: 2025-05-22	Issue Date:2025-05-28		
This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Dongguan Lepont Testing Service Co.,Ltd			

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Revision History of This Test Report

Report Number	Description	Issued Date
LP25030300C01-02	Initial Issue	2025-05-28

1. GENERAL PRODUCT INFORMATION

1.1. PRODUCT FUNCTION

Refer to Technical Construction Form and User Manual.

1.2. DIFFERENCE BETWEEN MODEL NUMBERS

None.

1.3. TEST DESCRIPTION OF DEVICE (EUT)

Test Model	: AP3-2A2U2C-65-EU
Test Sample No.	: LP25030300C01-S102
RATED POWER	: 250V~, 2500W 10A MAX.
USB Input	100-250V~50/60Hz, 1.3A MAX.
USB Output	: Single-port output: USB-C1/C2:5.0V $\overline{\text{---}}$ 3.0A, 9.0V $\overline{\text{---}}$ 3.0A, 12.0V $\overline{\text{---}}$ 3.0A, 15.0V $\overline{\text{---}}$ 3.0V, 20.0V $\overline{\text{---}}$ 3.25A 65.0W MAX. USB-A1/A2:5.0V $\overline{\text{---}}$ 3.0V, 9.0V $\overline{\text{---}}$ 2.0A, 12.0V $\overline{\text{---}}$ 1.5A 18.0W MAX. Two-port output: USB-C2:45.0W+USB-C1/USB-A1/USB-A2:5.0V $\overline{\text{---}}$ 2.4A, 9.0V $\overline{\text{---}}$ 2.0A, 12.0V $\overline{\text{---}}$ 1.5A USB-C1+USB-A1/A2:5.0V $\overline{\text{---}}$ 2.4A, USB-A1+USB-A2:5.0V $\overline{\text{---}}$ 2.4A Three-port output: USB-C2:45.0W+(USB-C1+USB-A1/USB-A2):5.0V $\overline{\text{---}}$ 2.4A USB-C2:45.0W+(USB-A1+USB-A2):5.0V $\overline{\text{---}}$ 2.4A USB-C1+USB-A1+USB-A2:5.0V $\overline{\text{---}}$ 2.4A Four-port output: USB-C2:45.0W+(USB-C1+USB-A1+USB-A2):5.0V $\overline{\text{---}}$ 2.4A
DC Line	: Unshielded, Detachable, Shorter than 3m
Protection class	: Class I
Operation Frequency	: Below 108MHz (Declaration by applicant)

1.4. INDEPENDENT OPERATION MODES

Test Voltage 1:	AC 230V/50Hz
Test Voltage 2:	AC 110V/60Hz
Test Mode: A	Full Load for (USB-C1: 20V3.25A)
Test Mode: B	Full Load for (USB-C2+USB-A1: 20V2.25A+12V1.5A)
Test Mode: C	Full Load for (USB-C2+(USB-C1+USB-A1+USB-A2): 20V2.25A+(5V2.4A))
Test Mode: E	Half Load
Test Mode: F	Empty Load
Remark: The test data of the worst case condition(s) was reported on the following page.	

2. TEST STANDARDS AND SITES

2.1. DESCRIPTION OF STANDARDS AND RESULTS

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

EMISSION			
Standard	Test Type	Result	Remarks
EN 55032: 2015+A11:2020 +A1:2020	Mains Terminal Disturbance Voltage Test	PASS	Meets the requirements.
	☆Asymmetric mode conducted emissions	N/A	N/A
	Radiated Emission Test	PASS	Meets the requirements.
EN IEC 61000-3-2:2019 +A1: 2021+A2:2024	Harmonic current emission	N/A	N/A(Rated power is less than 75W)
EN 61000-3-3:2013 +A1:2019+A2:2021	Voltage fluctuations & flicker	PASS	Meets the requirements.

IMMUNITY (EN 55035:2017+A11:2020)			
Standard	Test Type	Result	Remarks
IEC 61000-4-2: 2008	Electrostatic discharge immunity test	PASS	Meets the requirements of Performance Criterion B
IEC 61000-4-3: 2006+A2: 2010	☆Radio-frequency, electromagnetic field immunity test	PASS	Meets the requirements of Performance Criterion A
IEC 61000-4-4: 2012	Electrical fast transient/ burst immunity test	PASS	Meets the requirements of Performance Criterion B
IEC 61000-4-5: 2014	Surge immunity test	PASS	Meets the requirements of Performance Criterion B
IEC 61000-4-6: 2008	Injected Currents immunity test	PASS	Meets the requirements of Performance Criterion A
IEC 61000-4-8: 2009	Power frequency magnetic field immunity test	N/A	The EUT don't containing magnetic field sensitive components.
IEC 61000-4-11: 2004	Voltage Dips and Interruptions	PASS	Meets the requirements of Performance Criterion B&C
☆: Subcontract project: Radio frequency, electromagnetic field immunity			

2.2. LIST OF TEST AND MEASUREMENT INSTRUMENTS

For conducted emission at the mains terminals test(Shielded Room 2)							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
EMI Test Receiver	Rohde & Schwarz	ESCS30	1002.4500	Dec. 23, 2024	1 Year	LEP-E004	☐
Artificial Mains Network	Rohde & Schwarz	ENV216	100873	Jan. 07, 2025	1 Year	LEP-E001	☐
Artificial Mains Network	Schwarzbeck	NSLK 8128	NSLK 8128-249	Jan. 07, 2025	1 Year	LEP-E047	☐
ISN	SCHWARZBECK	ISN-CAT6	00383	Dec. 23, 2024	1 Year	LEP-E071	☐
CVP	SCHWARZBECK	TK 9420	01272	Oct. 17, 2024	1 Year	LEP-E078	☐
current probe	SOLAR	9123 IN	223662-2A	Oct. 17, 2024	1 Year	LEP-E079	☐
RF Switching Unit	CD	RSU-M2	8830008	Dec. 23, 2024	1 Year	LEP-E045	☐
Shielded Room 2	MR	MR-L01	LEP-E050	Nov. 17, 2022	3 Year	LEP-E050	☐
Test software	EZ-EMC	Fala	EMC-CON 3A1.1+	N/A	N/A	N/A	☐
For conducted emission at the mains terminals test(Shielded Room 1)							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
EMI Test Receiver	Rohde & Schwarz	ESHS30	8290501003	Dec. 23, 2024	1 Year	LEP-E002	☒
Artificial Mains Network	Baluelec	LSN016	BL041122050121	Nov. 01, 2024	1 Year	LEP-E067	☒
Shielded Room 1	MR	MR-L05	LEP-E053	Nov. 17, 2022	3 Year	LEP-E053	☒
Test software	EZ-EMC	Fala	LEPONT-03A2	N/A	N/A	N/A	☒
For radiated(30M-1G) emission test(966 Chamber 1)							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
EMI Test Receiver	Rohde & Schwarz	ESR 3	101849	Dec. 23, 2024	1 Year	LEP-E006	☐
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	743	Nov. 20, 2022	3 Year	LEP-E005	☐
Signal Amplifier	HP	8447D	1726A01222	Jan. 07, 2025	1 Year	LEP-E007	☐
6dB Attenuator	RswTech	5W 6dB	LEP-E084	Jan. 07, 2025	1 Year	LEP-E084	☐
966 Chamber 1	MR	MR-L02	LEP-E051	Nov. 17, 2022	3 Year	LEP-E051	☐
Test software	EZ-EMC	Fala	EMEC-3A1	N/A	N/A	N/A	☐
For radiated(1-18G) emission test(966 Chamber 1)							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
Spectrum analyzer	Agilent	N9020A	MY49100060	Jan. 07, 2025	1 Year	LEP-E020	☐
Horn antenna	Schwarzbeck	BBHA 9120D	01875	Nov. 20, 2022	3 Year	LEP-E024	☐
Preamplifier	Schwarzbeck	BBN 9718B	00010	Jan. 07, 2025	1 Year	LEP-E025	☐
966 Chamber 1	MR	MR-L02	LEP-E051	Nov. 17, 2022	3 Year	LEP-E051	☐
Test software	EZ-EMC	Fala	EMEC-3A1	N/A	N/A	N/A	☐
For radiated(30M-1G) emission test(966 Chamber 2)							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
EMI Test Receiver	Rohde & Schwarz	ESPI 3	101059	Dec. 23, 2024	1 Year	LEP-E054	☒
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	1322	Nov. 20, 2022	3 Year	LEP-E049	☒
966 Chamber 2	MR	MR-L06	LEP-E052	Nov. 17, 2022	3 Year	LEP-E052	☒
Test software	EZ-EMC	Fala	EMEC-3A1	N/A	N/A	N/A	☒
For harmonic current emissions and flicker test							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
Power Analyzer	Laplace	AC2000A	311326	Dec. 23, 2024	1 Year	LEP-E011	☒
Voltage Source	APM	SP300VAAC3000 W	0114730223600001	Nov. 11, 2024	1 Year	LEP-E066	☒
Test software	HTEC	Harmonic	Ver 1.0	N/A	N/A	N/A	☒
For electrostatic discharge immunity test							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
ESD Generator	HAEFELY	ONYX16	181091	Dec. 27, 2024	1 Year	LEP-E010	☒
For electrical fast transient/burstimmunity test							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
EFT Generator	HAEFELY	ECOMPACT4	175442	Jan. 07, 2025	1 Year	LEP-E013	☒
coupling clamp	Prima	EFT-CLAMP	LEP-E018	Dec. 23, 2024	1 Year	LEP-E018	☐
Test software	HAEFELY	EMV Check 2000	V1.27b	N/A	N/A	N/A	☒
For surge immunity test							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
Surge Generator	HAEFELY	ECOMPACT4	175442	Jan. 07, 2025	1 Year	LEP-E013	☒
Test software	HAEFELY	EMV Check 2000	V1.27b	N/A	N/A	N/A	☒
For dips and short interruptions immunity test							

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
Dips Generator	HAEFELY	ECOMPACT4	175442	Jan. 07, 2025	1 Year	LEP-E013	☒
Test software	HAEFELY	EMV Check 2000	V1.27b	N/A	N/A	N/A	☒
For injected currents susceptibility immunity test							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
Signal Generator	Schloder	CDG6000-25	126A1310/2015	Dec. 23, 2024	1 Year	LEP-E014	☒
Attenuator	Schloder	CDG60100	201411010013	Jan. 07, 2025	1 Year	LEP-E040	☒
CDN	Schloder	CDN M2+M3	A2210297/2015	Dec. 23, 2024	1 Year	LEP-E015	☒
Coupling clamp	TESEQ	KEMZ 801	31338	Dec. 23, 2024	1 Year	LEP-E073	☐
CDN T400A	TESEQ	CDN T400A/RJ45	26536	Oct. 20, 2024	1 Year	LEP-E086	☐
Test software	Schloder	IEC/EN 61000-4-6	Ver 1.4.1	N/A	N/A	N/A	☒
Radio Frequency Electromagnetic Field Immunity (R/S) Test For KST							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
Signal generator	R&S	SMC100A	105651	Oct. 11, 2024	1 Year	KST-EE034	☒
Power amplifier	PRANA	MT400	1507-1746	Oct. 11, 2024	1 Year	KST-EE025	☒
Power amplifier	PRANA	SV70	1602-1820	Oct. 11, 2024	1 Year	KST-EE026	☒
Trilog-boardband antenna	Schwarzbeck	STLP 9128E	9128ES-136	Aug. 28, 2022	3 Year	KST-EE066	☒
Horn antenna	Schwarzbeck	BBHA 9120E	BBHA9120E698	Oct. 25, 2022	3 Year	KST-EE073	☒
Power meter	R&S	NRP2	105155	Oct. 11, 2024	1 Year	KST-EE024	☒

2.3. MEASUREMENT UNCERTAINTY

Parameter		UNCERTAINTY
Conducted Emission AC Mains Port	Level accuracy (150kHz to 30MHz)	± 2.54 dB
Conducted Emission Asymmetric mode	Level accuracy (150kHz to 30MHz)	± 2.72 dB
Radiated Emission	Level accuracy (30MHz to 1000MHz, V)	± 4.14 dB
	(30MHz to 1000MHz, H)	± 4.25 dB
Radiated Emission	Level accuracy (above 1000MHz, Horizontal)	± 3.92 dB
	(above 1000MHz, Vertical)	± 3.96 dB

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus.

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

As U_{lab} in all applicable tests listed above are less than U_{cisp} according to CISPR 16-4-2:2003,

- compliance is deemed to occur if no measured disturbance exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance exceeds the disturbance limit.

2.4. TEST FACILITY

- EMC Lab. : The Laboratory has been assessed and proved to be in compliance with CNAS/CL01
The Certificate Registration Number is L10100.
The Laboratory has been assessed and proved to be in compliance with A2LA
The Certificate Registration Number is 6901.01
FCC Designation No.: CN1351
Test Firm Registration No.: 397428
ISED CAB identifier: CN0151
Test Firm Registration No.: 20133
- Test Location (Others) : Dongguan Lepont Testing Service Co., Ltd.
- Address : Room 102, Building 11, No.7, Houjie Science And Technology Avenue, Houjie, Dongguan, Guangdong, China
- EMC Lab. : The Laboratory has been assessed and proved to be in compliance with CNAS/CL01
The Certificate Registration Number is L9678.
- Test Location (Only RS) : KeySense Testing & Certification International Co., Ltd.
- Address : Lab Building, No. 29 District, Zhongkai Hi-Tech Industrial Development Park, Huizhou, Guangdong, China

3. TEST SET-UP AND OPERATION MODES

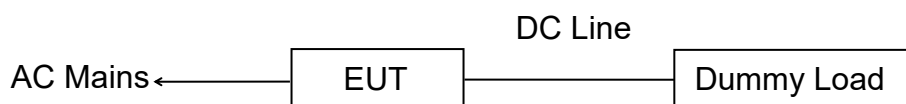
3.1. PRINCIPLE OF CONFIGURATION SELECTION

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

Immunity: The equipment under test (EUT) was configured to the representative operating mode and conditions.

3.2. BLOCK DIAGRAM OF TEST SET-UP

System Diagram of Connections Between EUT and Simulators



3.3. SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT

Description	Manufacturer	Model No.	Serial No.
/	/	/	/

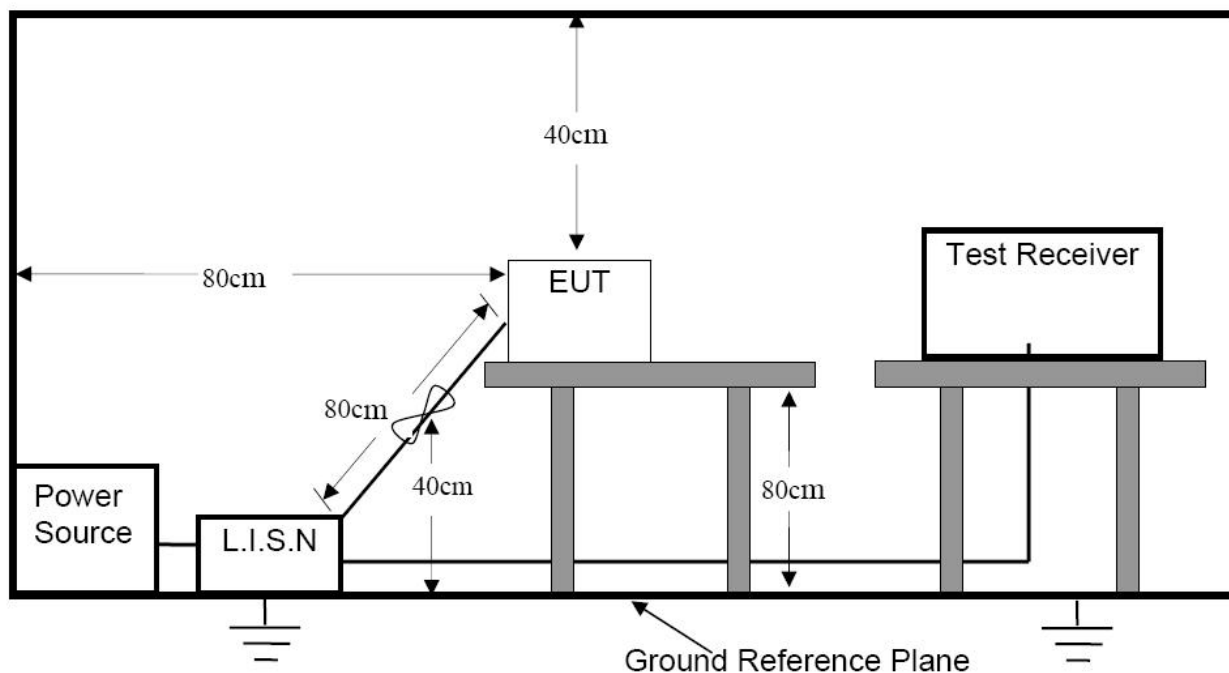
3.4. COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE

None.

4. EMISSION TEST RESULTS

4.1. CONDUCTED EMISSION AT THE MAINS TERMINALS TEST

4.1.1. Block Diagram of Test Setup



4.1.2. Limit

Limits for conducted disturbance at the mains ports of class B.

Frequency range (MHz)	Limits (dB(uV))	
	Quasi-peak	Average
0.15 to 0.5	66 to 56	56 to 46
0.5 to 5	56	46
5 to 30	60	50

- Note:
1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

4.1.3. Test Procedure

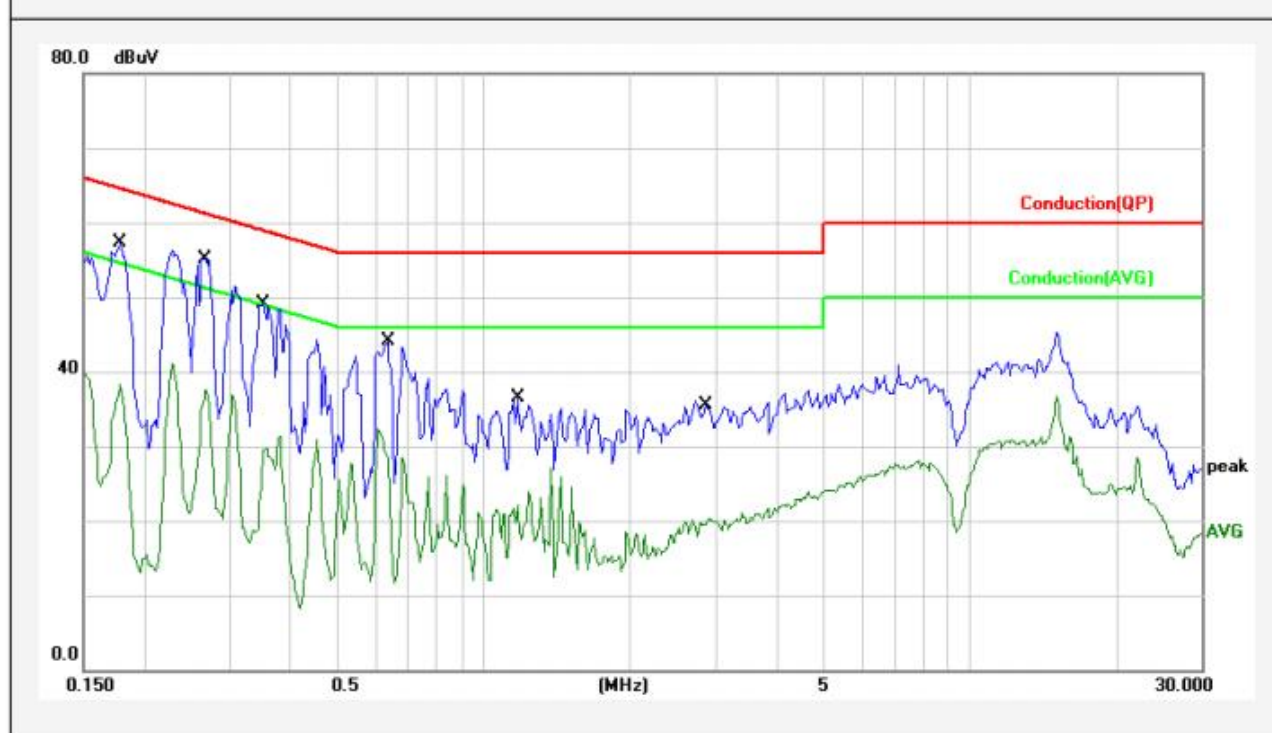
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The test results of conducted emissions at mains ports are recorded of six worst margins for quasi-peak(mandatory) [and average (if necessary)] values against the limits at frequencies of interest unless the margin is 20 dB or greater.
Note: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

4.1.4. Test Results

PASS.

Please refer to the following pages of the worst case:

M/N		:	AP3-2A2U2C-65-EU			
Test Mode		:	A			
Test Phase		:	Power Line; Live			
Test Voltage		:	1			
Temperature (°C):	23.2	Relative Humidity (%):	51	Atmospheric Pressure(kPa) :	101.5	

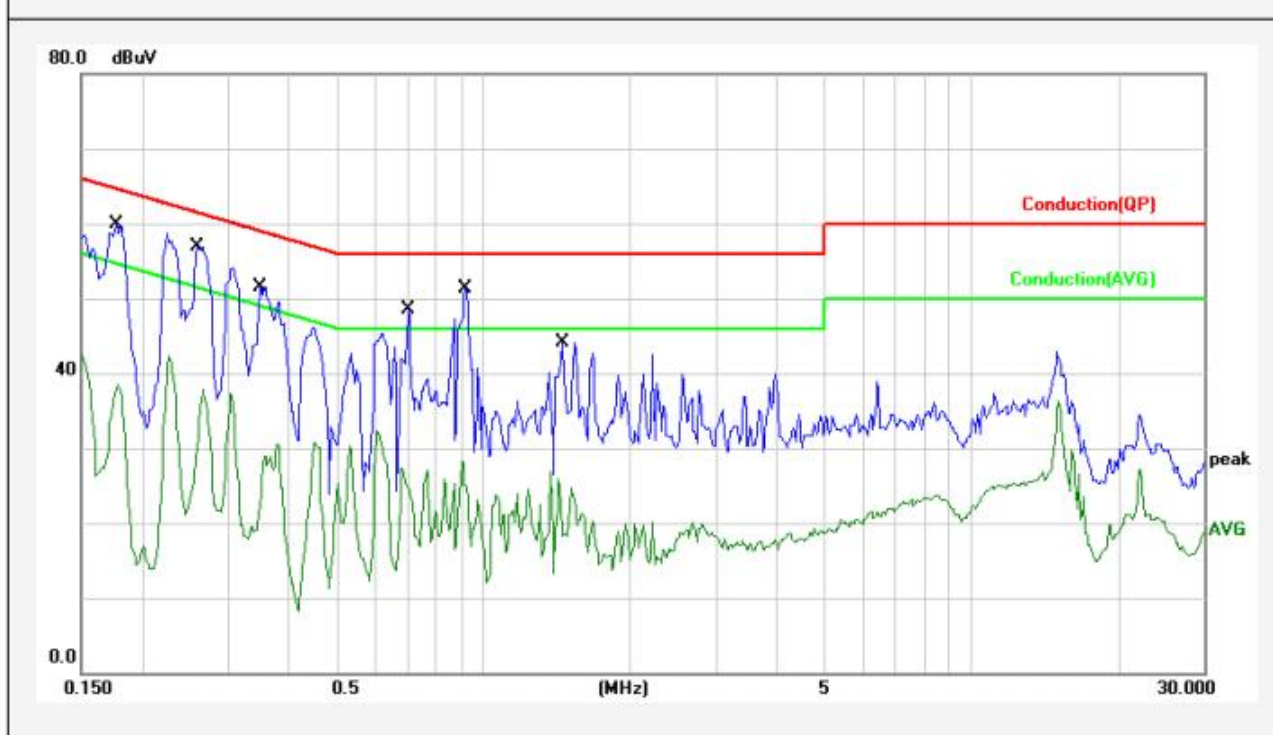


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1785	10.18	44.03	54.21	64.56	-10.35	QP	P	
2	0.1785	10.18	28.18	38.36	54.56	-16.20	AVG	P	
3	0.2682	10.21	41.99	52.20	61.17	-8.97	QP	P	
4	0.2682	10.21	27.38	37.59	51.17	-13.58	AVG	P	
5	0.3518	10.24	35.91	46.15	58.92	-12.77	QP	P	
6	0.3518	10.24	19.30	29.54	48.92	-19.38	AVG	P	
7	0.6344	10.34	30.77	41.11	56.00	-14.89	QP	P	
8	0.6344	10.34	18.64	28.98	46.00	-17.02	AVG	P	
9	1.1720	10.46	23.13	33.59	56.00	-22.41	QP	P	
10	1.1720	10.46	11.65	22.11	46.00	-23.89	AVG	P	
11	2.8607	10.54	22.03	32.57	56.00	-23.43	QP	P	
12	2.8607	10.54	9.71	20.25	46.00	-25.75	AVG	P	

Note: Level=Reading+Factor.

Margin=Level-Limit.

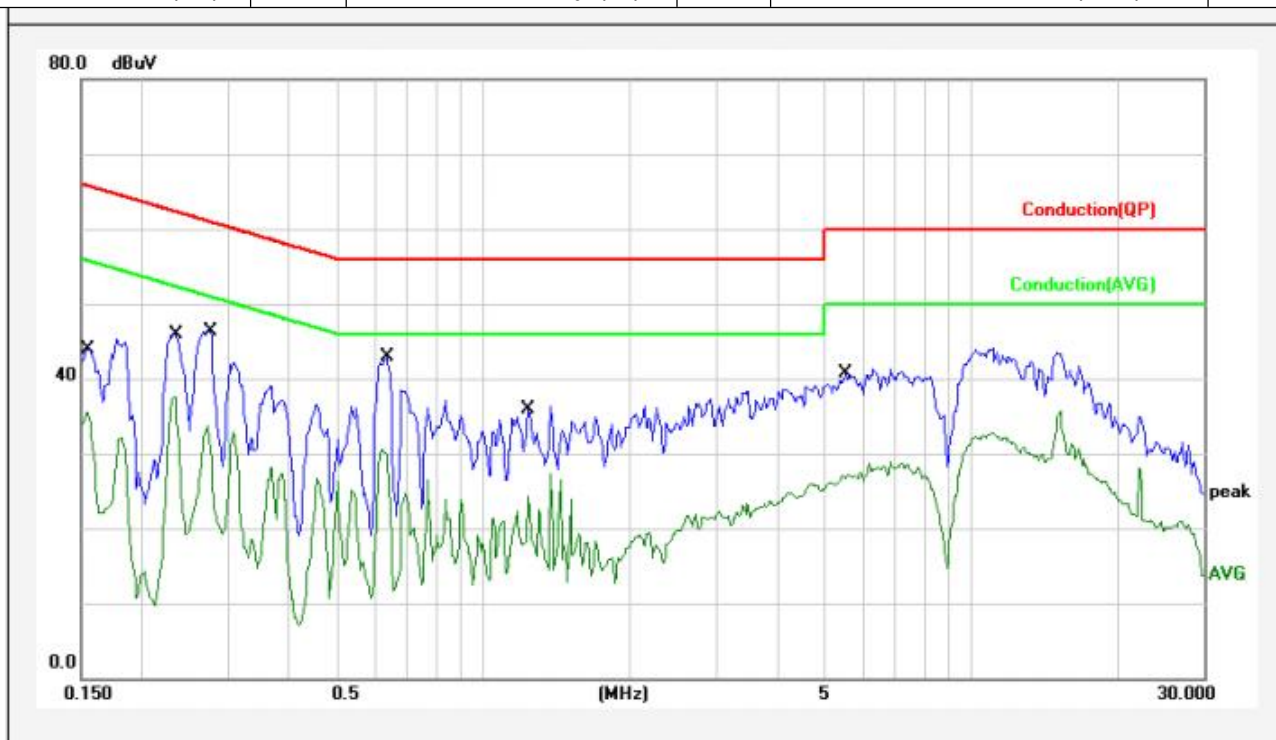
M/N	:	AP3-2A2U2C-65-EU			
Test Mode	:	A			
Test Phase	:	Power Line; Neutral			
Test Voltage	:	1			
Temperature (°C):	23.2	Relative Humidity (%):	51	Atmospheric Pressure(kPa) :	101.5



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1773	10.23	46.59	56.82	64.61	-7.79	QP	P	
2	0.1773	10.23	28.35	38.58	54.61	-16.03	AVG	P	
3	0.2600	10.25	43.74	53.99	61.43	-7.44	QP	P	
4	0.2600	10.25	27.64	37.89	51.43	-13.54	AVG	P	
5	0.3490	10.27	38.25	48.52	58.99	-10.47	QP	P	
6	0.3490	10.27	18.62	28.89	48.99	-20.10	AVG	P	
7	0.7036	10.37	35.10	45.47	56.00	-10.53	QP	P	
8	0.7036	10.37	16.86	27.23	46.00	-18.77	AVG	P	
9	0.9226	10.43	37.91	48.34	56.00	-7.66	QP	P	
10	0.9226	10.43	17.82	28.25	46.00	-17.75	AVG	P	
11	1.4532	10.47	30.69	41.16	56.00	-14.84	QP	P	
12	1.4532	10.47	15.46	25.93	46.00	-20.07	AVG	P	

Note: Level=Reading+Factor.
Margin=Level-Limit.

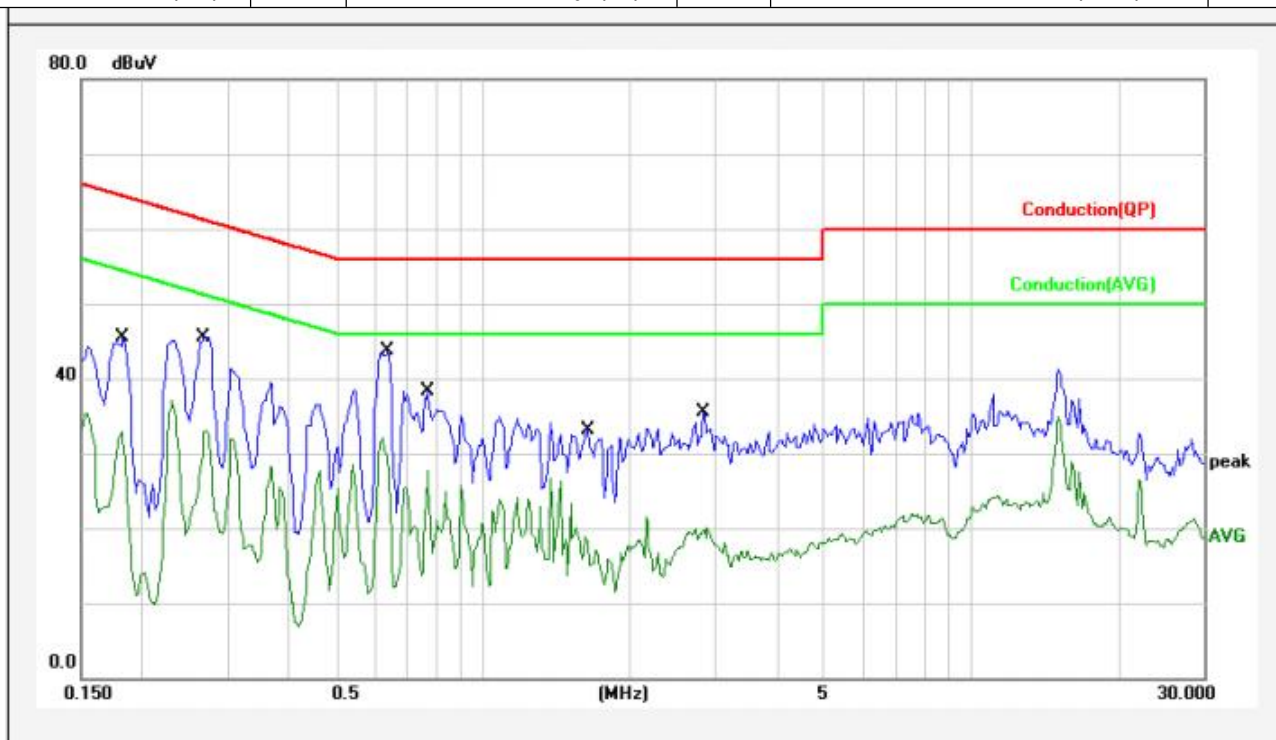
M/N		:	AP3-2A2U2C-65-EU			
Test Mode		:	B			
Test Phase		:	Power Line; Live			
Test Voltage		:	1			
Temperature (°C):	23.2	Relative Humidity (%):	51	Atmospheric Pressure(kPa) :		101.5



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1547	10.18	30.74	40.92	65.74	-24.82	QP	P	
2	0.1547	10.18	25.39	35.57	55.74	-20.17	AVG	P	
3	0.2328	10.20	32.70	42.90	62.35	-19.45	QP	P	
4	0.2328	10.20	27.37	37.57	52.35	-14.78	AVG	P	
5	0.2770	10.21	33.17	43.38	60.91	-17.53	QP	P	
6	0.2770	10.21	23.51	33.72	50.91	-17.19	AVG	P	
7	0.6344	10.34	29.55	39.89	56.00	-16.11	QP	P	
8	0.6344	10.34	20.16	30.50	46.00	-15.50	AVG	P	
9	1.2391	10.47	22.45	32.92	56.00	-23.08	QP	P	
10	1.2391	10.47	13.89	24.36	46.00	-21.64	AVG	P	
11	5.5410	10.65	27.09	37.74	60.00	-22.26	QP	P	
12	5.5410	10.65	16.44	27.09	50.00	-22.91	AVG	P	

Note: Level=Reading+Factor.
Margin=Level-Limit.

M/N		:	AP3-2A2U2C-65-EU			
Test Mode		:	B			
Test Phase		:	Power Line; Neutral			
Test Voltage		:	1			
Temperature (°C):	23.2	Relative Humidity (%):	51	Atmospheric Pressure(kPa) :		101.5

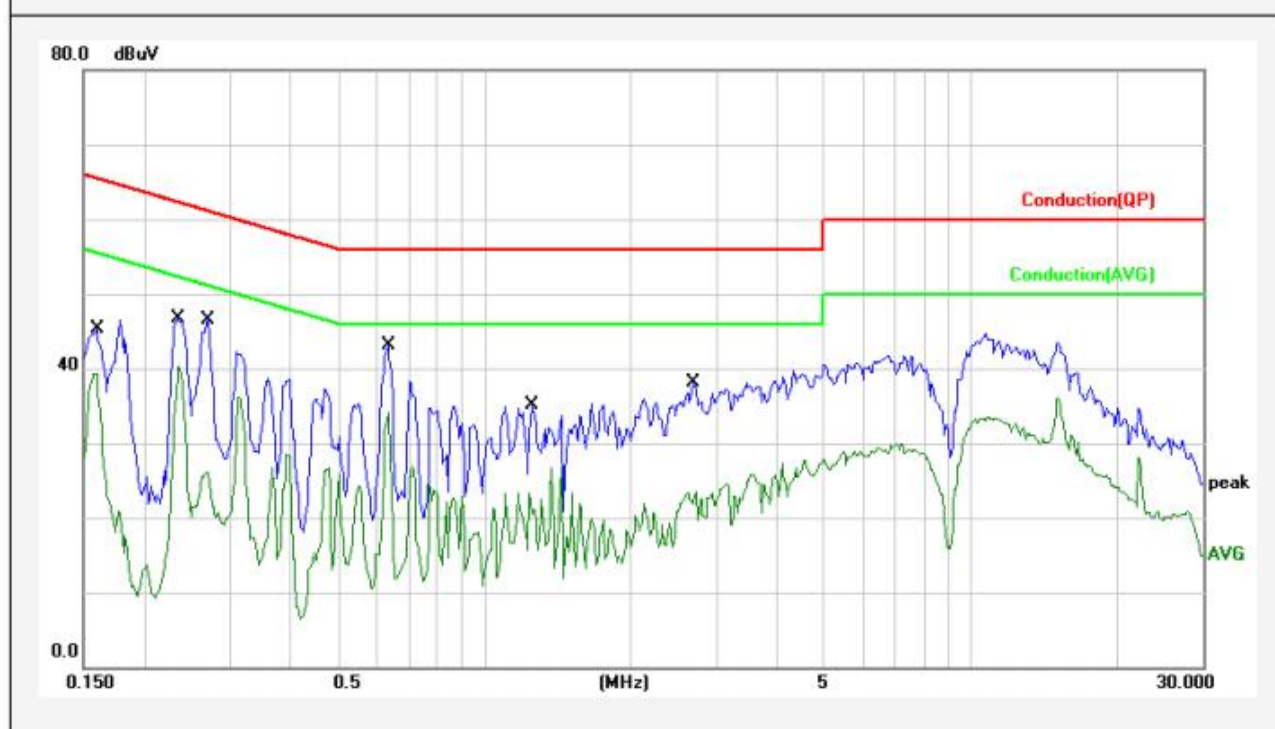


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1830	10.23	32.34	42.57	64.35	-21.78	QP	P	
2	0.1830	10.23	22.66	32.89	54.35	-21.46	AVG	P	
3	0.2682	10.25	32.35	42.60	61.17	-18.57	QP	P	
4	0.2682	10.25	22.88	33.13	51.17	-18.04	AVG	P	
5	0.6394	10.35	30.30	40.65	56.00	-15.35	QP	P	
6	0.6394	10.35	21.80	32.15	46.00	-13.85	AVG	P	
7	0.7681	10.38	24.93	35.31	56.00	-20.69	QP	P	
8	0.7681	10.38	17.28	27.66	46.00	-18.34	AVG	P	
9	1.6376	10.47	19.58	30.05	56.00	-25.95	QP	P	
10	1.6376	10.47	8.36	18.83	46.00	-27.17	AVG	P	
11	2.8380	10.52	21.99	32.51	56.00	-23.49	QP	P	
12	2.8380	10.52	9.50	20.02	46.00	-25.98	AVG	P	

Note: Level=Reading+Factor.

Margin=Level-Limit.

M/N	:	AP3-2A2U2C-65-EU				
Test Mode	:	C				
Test Phase	:	Power Line; Live				
Test Voltage	:	1				
Temperature (°C):	23.2	Relative Humidity (%):	51	Atmospheric Pressure(kPa) :	101.5	

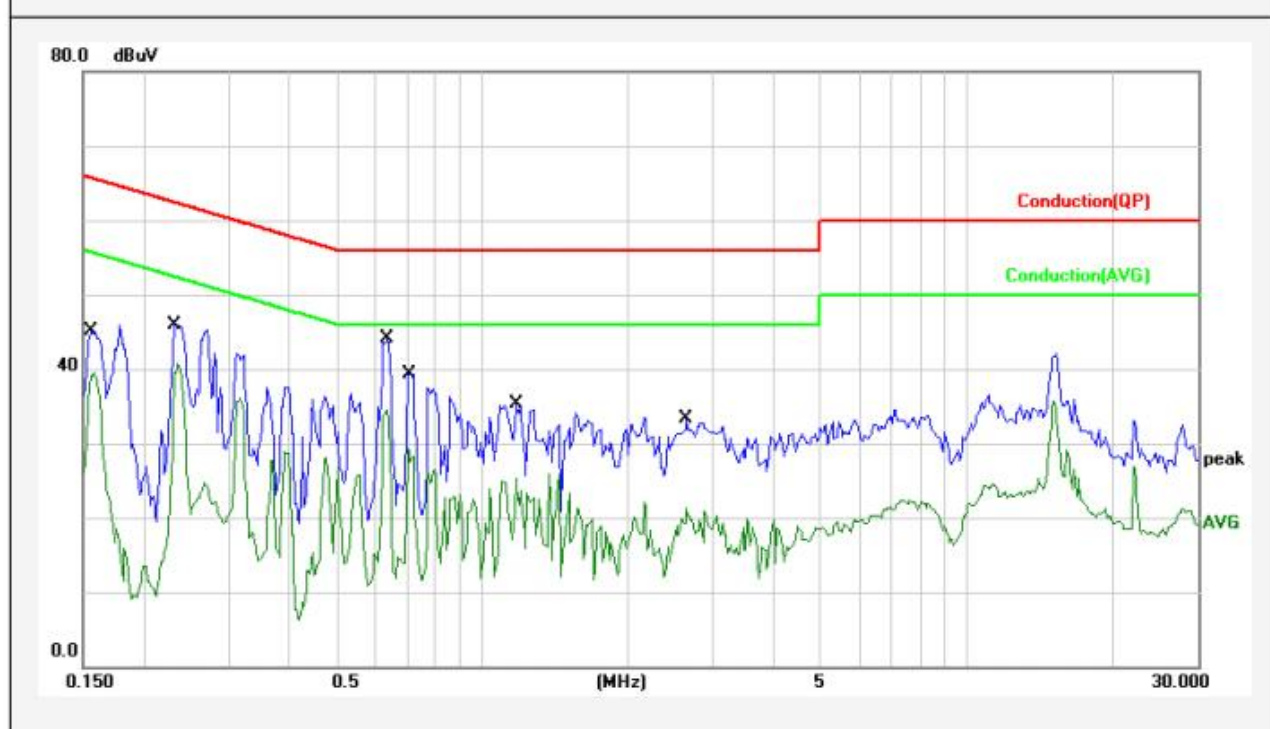


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1597	10.18	32.04	42.22	65.48	-23.26	QP	P	
2	0.1597	10.18	29.18	39.36	55.48	-16.12	AVG	P	
3	0.2343	10.20	33.60	43.80	62.30	-18.50	QP	P	
4	0.2343	10.20	30.04	40.24	52.30	-12.06	AVG	P	
5	0.2705	10.21	33.39	43.60	61.10	-17.50	QP	P	
6	0.2705	10.21	15.93	26.14	51.10	-24.96	AVG	P	
7	0.6344	10.34	29.81	40.15	56.00	-15.85	QP	P	
8	0.6344	10.34	23.82	34.16	46.00	-11.84	AVG	P	
9	1.2490	10.47	21.61	32.08	56.00	-23.92	QP	P	
10	1.2490	10.47	12.82	23.29	46.00	-22.71	AVG	P	
11	2.6840	10.54	24.62	35.16	56.00	-20.84	QP	P	
12	2.6840	10.54	12.88	23.42	46.00	-22.58	AVG	P	

Note: Level=Reading+Factor.

Margin=Level-Limit.

M/N	:	AP3-2A2U2C-65-EU			
Test Mode	:	C			
Test Phase	:	Power Line; Neutral			
Test Voltage	:	1			
Temperature (°C):	23.2	Relative Humidity (%):	51	Atmospheric Pressure(kPa) :	101.5



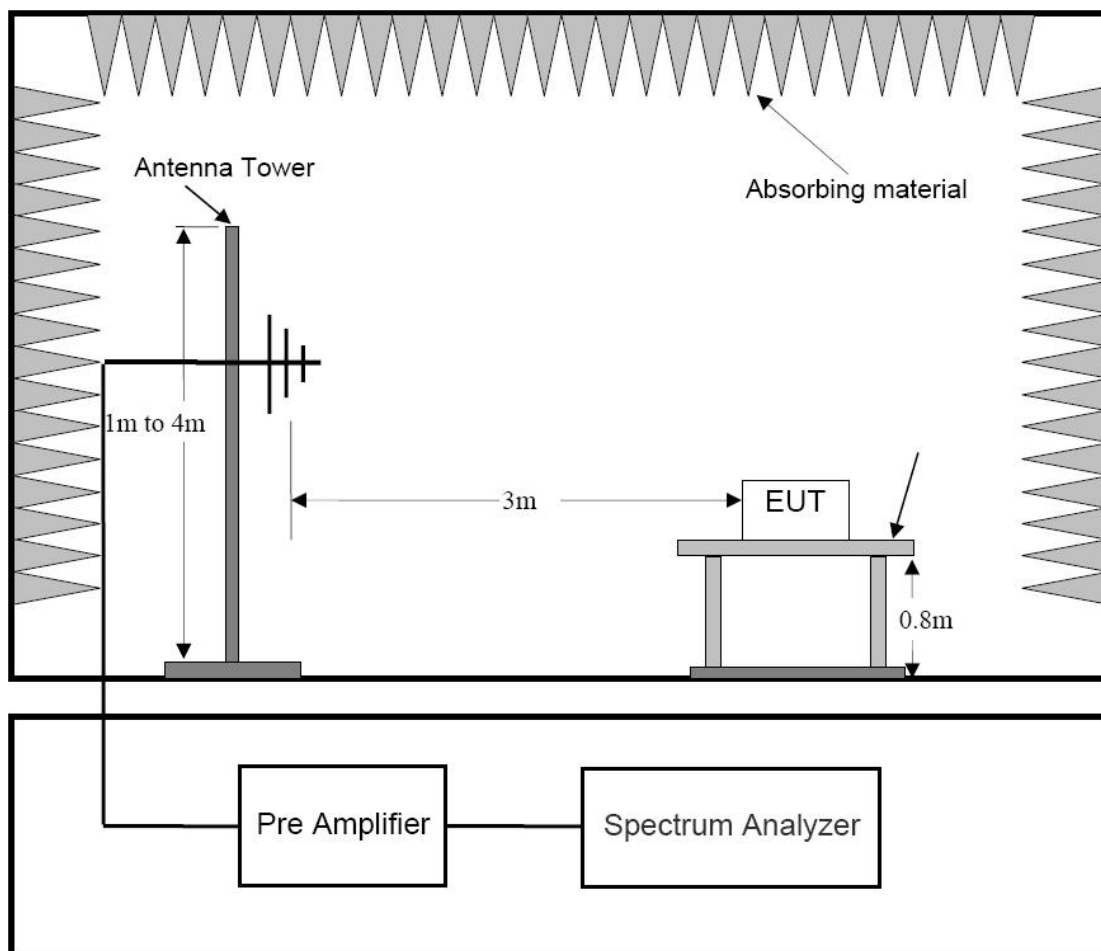
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1560	10.23	31.83	42.06	65.67	-23.61	QP	P	
2	0.1560	10.23	29.18	39.41	55.67	-16.26	AVG	P	
3	0.2323	10.24	32.70	42.94	62.37	-19.43	QP	P	
4	0.2323	10.24	30.40	40.64	52.37	-11.73	AVG	P	
5	0.6394	10.35	30.82	41.17	56.00	-14.83	QP	P	
6	0.6394	10.35	24.17	34.52	46.00	-11.48	AVG	P	
7	0.7094	10.37	26.00	36.37	56.00	-19.63	QP	P	
8	0.7094	10.37	19.03	29.40	46.00	-16.60	AVG	P	
9	1.1720	10.45	21.92	32.37	56.00	-23.63	QP	P	
10	1.1720	10.45	14.85	25.30	46.00	-20.70	AVG	P	
11	2.6414	10.50	19.84	30.34	56.00	-25.66	QP	P	
12	2.6414	10.50	10.83	21.33	46.00	-24.67	AVG	P	

Note: Level=Reading+Factor.

Margin=Level-Limit

4.2. RADIATED EMISSION TEST (BELOW 1GHZ)

4.2.1. Block Diagram of Test Setup



4.2.2. Limit

Limits for radiated disturbance of class B at a measuring distance of 3m

Frequency range MHz	Quasi-peak limits dB(uV/m)
30 to 230	40
230 to 1000	47
Note 1 The lower limit shall apply at the transition frequency. Note 2 Additional provisions may be required for cases where interference occurs.	

4.2.3. Test Procedure

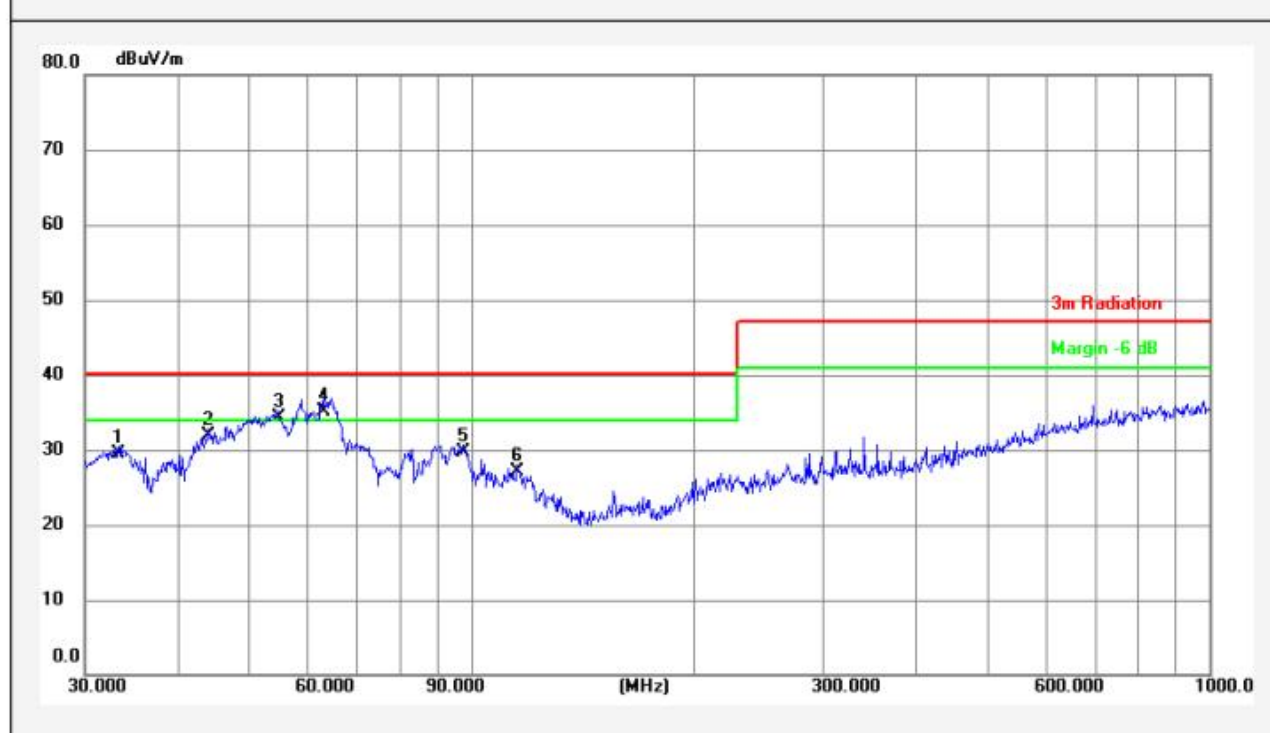
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from 1 meter to 4 meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1GHz.

4.2.4. Test Results

PASS.

Please refer to the following pages of the worst case:

M/N		:	AP3-2A2U2C-65-EU			
Test Mode		:	A			
Test Phase		:	Vertical			
Test Voltage		:	1			
Temperature (°C):	24.1	Relative Humidity (%):	54	Atmospheric Pressure(kPa) :	101.2	

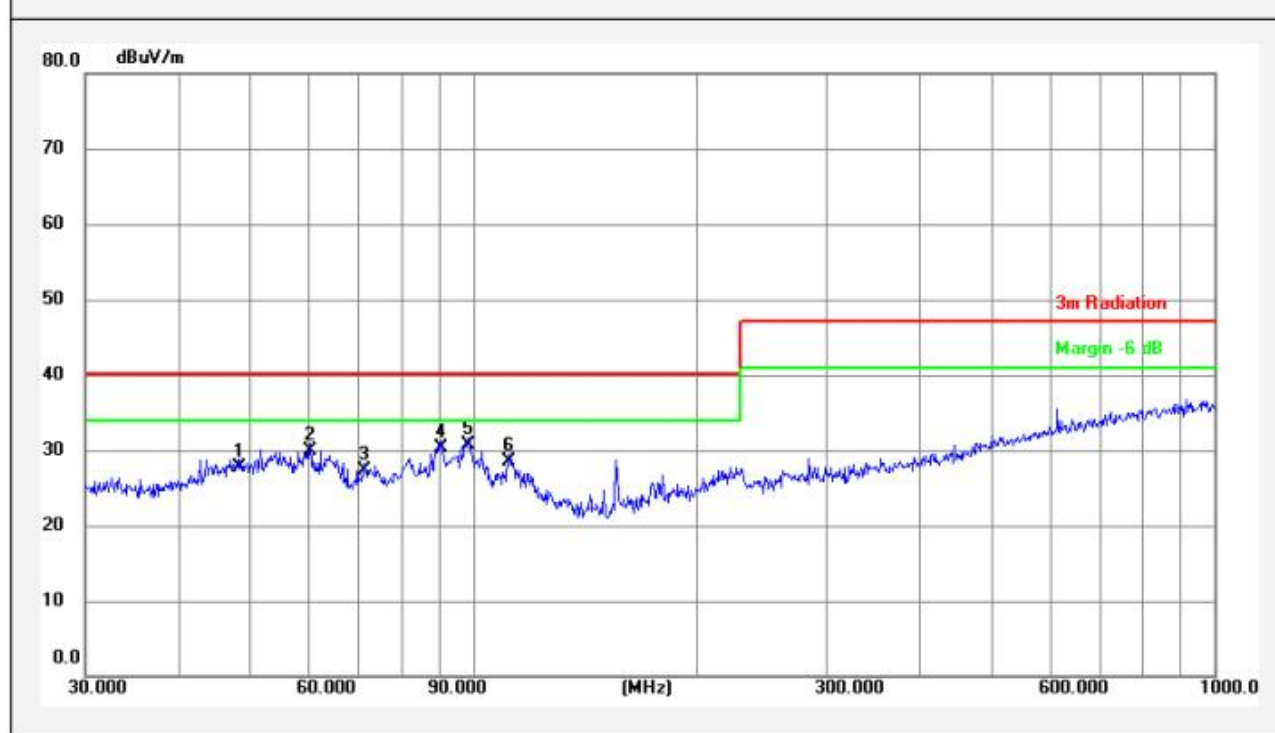


No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	MK.	Remark
1	33.3278	11.26	18.33	29.59	40.00	-10.41	QP		
2	44.1200	13.49	18.39	31.88	40.00	-8.12	QP		
3	54.6429	13.10	21.24	34.34	40.00	-5.66	QP	!	
4	63.0916	11.97	23.04	35.01	40.00	-4.99	QP	*	
5	97.7983	11.08	18.57	29.65	40.00	-10.35	QP		
6	115.3204	10.87	16.31	27.18	40.00	-12.82	QP		

Note: Level=Reading+Factor.

Margin=Level-Limit.

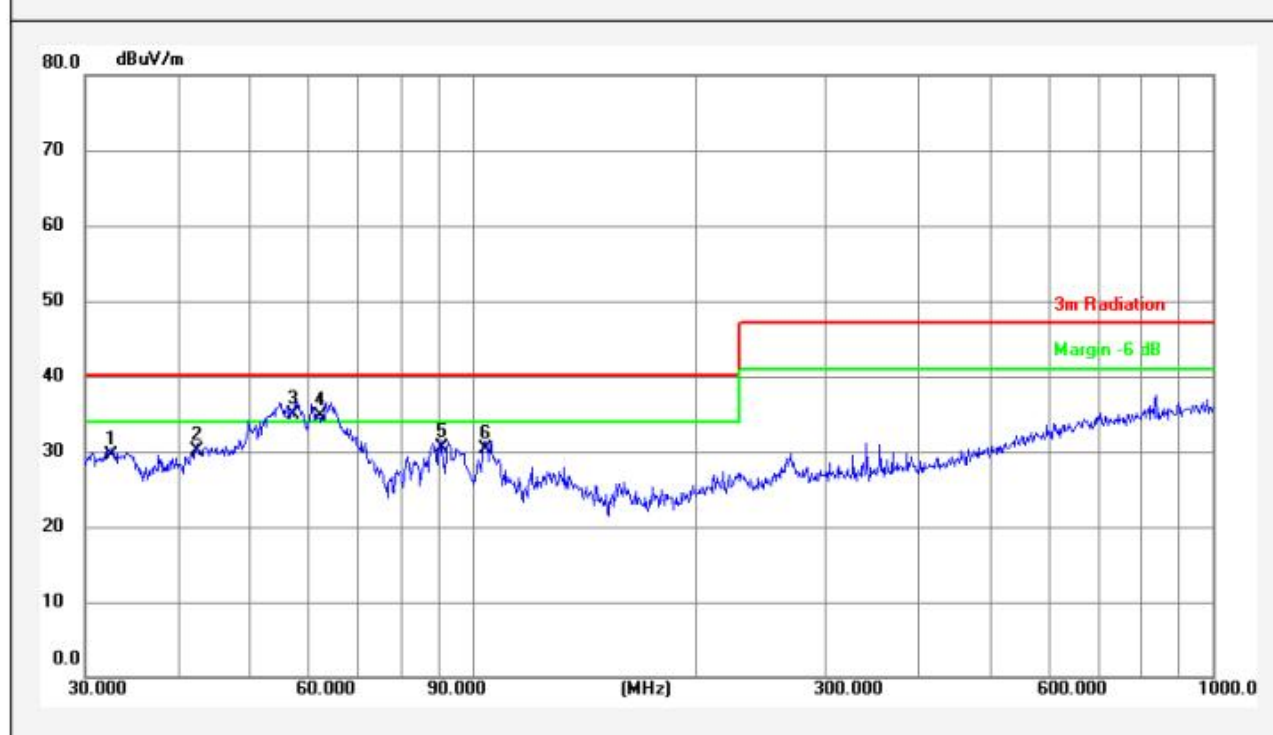
M/N	:	AP3-2A2U2C-65-EU				
Test Mode	:	A				
Test Phase	:	Horizontal				
Test Voltage	:	1				
Temperature (°C):	24.1	Relative Humidity (%):	54	Atmospheric Pressure(kPa):	101.2	



No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	MK.	Remark
1	48.5015	13.56	14.24	27.80	40.00	-12.20	QP		
2	60.2801	12.62	17.25	29.87	40.00	-10.13	QP		
3	71.3300	10.00	17.23	27.23	40.00	-12.77	QP		
4	90.5374	9.91	20.46	30.37	40.00	-9.63	QP		
5	98.4866	11.19	19.49	30.68	40.00	-9.32	QP	*	
6	111.7379	11.12	17.29	28.41	40.00	-11.59	QP		

Note: Level=Reading+Factor.
Margin=Level-Limit.

M/N	:	AP3-2A2U2C-65-EU				
Test Mode	:	B				
Test Phase	:	Vertical				
Test Voltage	:	1				
Temperature (°C):	24.1	Relative Humidity (%):	54	Atmospheric Pressure(kPa) :	101.2	

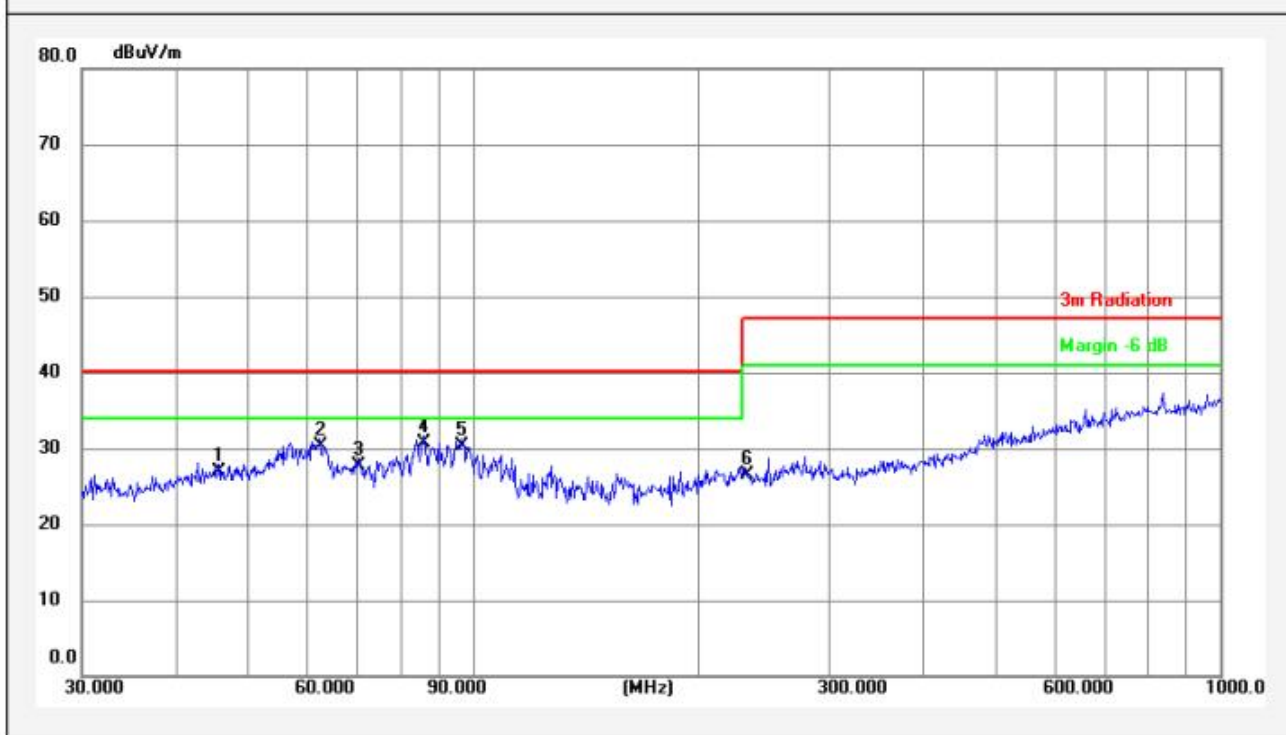


No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	MK.	Remark
1	32.5197	11.21	18.21	29.42	40.00	-10.58	QP		
2	42.4508	12.94	17.13	30.07	40.00	-9.93	QP		
3	57.1914	12.90	22.00	34.90	40.00	-5.10	QP	*	
4	62.2128	12.17	22.53	34.70	40.00	-5.30	QP	!	
5	90.8554	9.96	20.56	30.52	40.00	-9.48	QP		
6	104.1701	11.35	19.04	30.39	40.00	-9.61	QP		

Note: Level=Reading+Factor.

Margin=Level-Limit.

M/N		:	AP3-2A2U2C-65-EU				
Test Mode		:	B				
Test Phase		:	Horizontal				
Test Voltage		:	1				
Temperature (°C):	24.1	Relative Humidity (%):	54	Atmospheric Pressure(kPa) :		101.2	

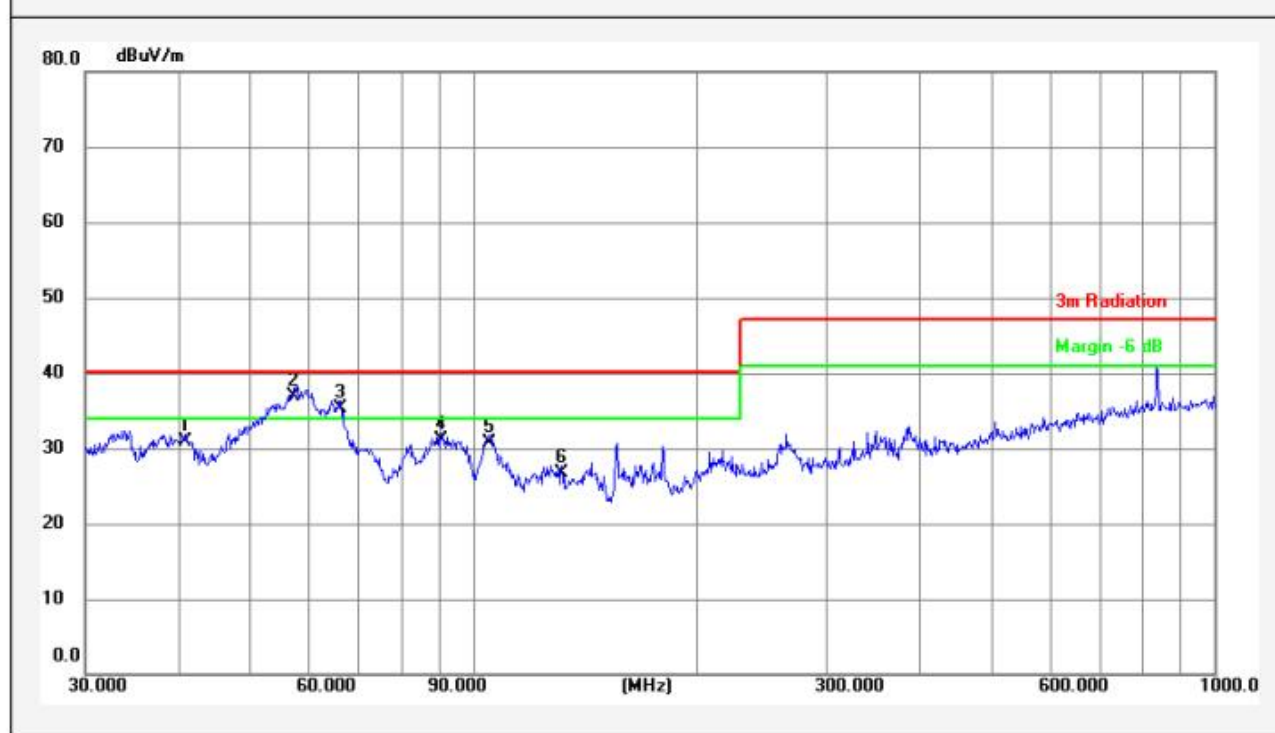


No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	MK.	Remark
1	45.8553	13.72	13.22	26.94	40.00	-13.06	QP		
2	62.4314	12.12	18.17	30.29	40.00	-9.71	QP		
3	70.3365	10.29	17.37	27.66	40.00	-12.34	QP		
4	85.8984	8.87	21.77	30.64	40.00	-9.36	QP	*	
5	96.7749	10.91	19.47	30.38	40.00	-9.62	QP		
6	231.7179	12.13	14.35	26.48	47.00	-20.52	QP		

Note: Level=Reading+Factor.

Margin=Level-Limit.

M/N	:	AP3-2A2U2C-65-EU				
Test Mode	:	C				
Test Phase	:	Vertical				
Test Voltage	:	1				
Temperature (°C):	24.1	Relative Humidity (%):	54	Atmospheric Pressure(kPa) :	101.2	

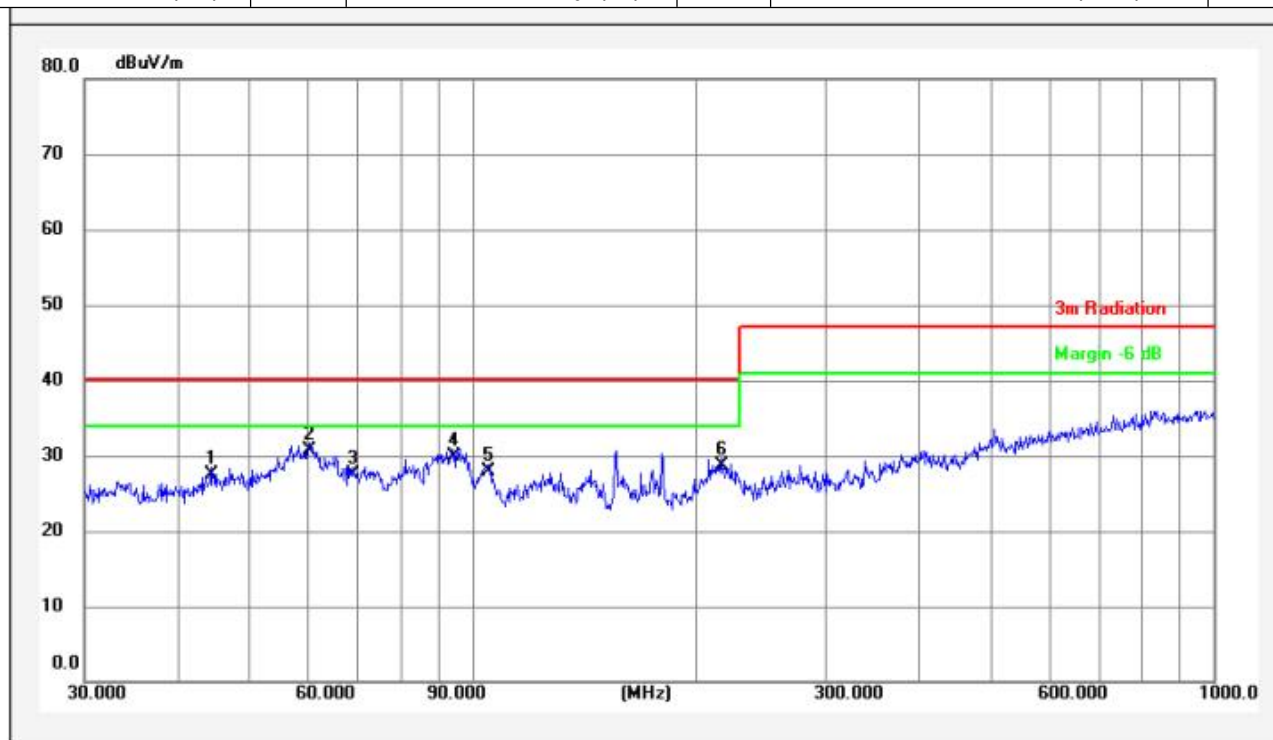


No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	MK.	Remark
1	40.8444	12.43	18.39	30.82	40.00	-9.18	QP		
2	57.3923	12.89	24.11	37.00	40.00	-3.00	QP	*	
3	66.2660	11.25	24.03	35.28	40.00	-4.72	QP	!	
4	90.5374	9.91	21.23	31.14	40.00	-8.86	QP		
5	104.9033	11.33	19.45	30.78	40.00	-9.22	QP		
6	131.7576	8.66	18.02	26.68	40.00	-13.32	QP		

Note: Level=Reading+Factor.

Margin=Level-Limit.

M/N		:	AP3-2A2U2C-65-EU				
Test Mode		:	C				
Test Phase		:	Horizontal				
Test Voltage		:	1				
Temperature (°C):	24.1	Relative Humidity (%):	54	Atmospheric Pressure(kPa) :		101.2	



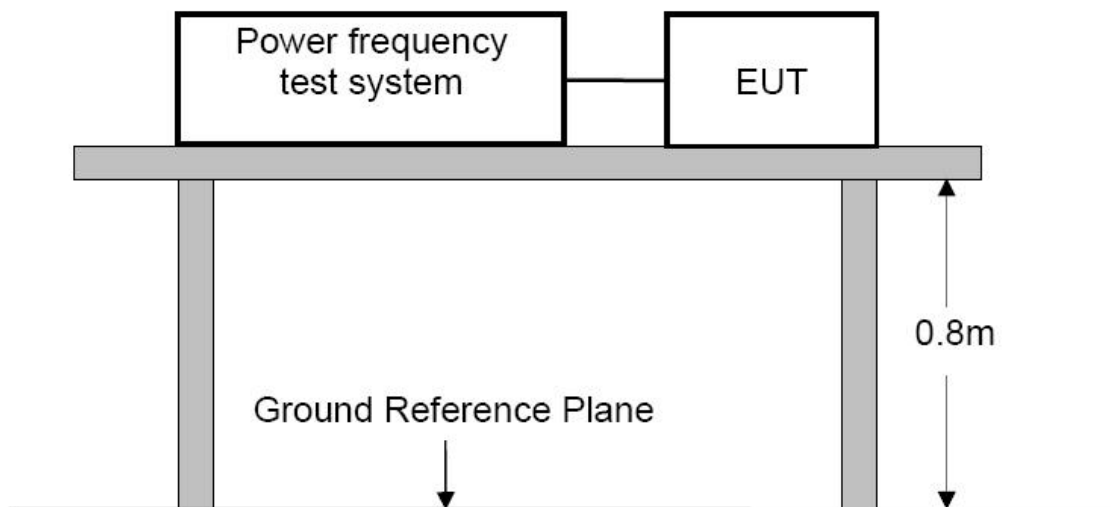
No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	MK.	Remark
1	44.4307	13.59	13.94	27.53	40.00	-12.47	QP		
2	60.2801	12.62	18.07	30.69	40.00	-9.31	QP	*	
3	69.1140	10.59	17.00	27.59	40.00	-12.41	QP		
4	94.0979	10.48	19.48	29.96	40.00	-10.04	QP		
5	105.2717	11.32	16.50	27.82	40.00	-12.18	QP		
6	216.7828	11.95	16.75	28.70	40.00	-11.30	QP		

Note: Level=Reading+Factor.

Margin=Level-Limit.

4.3. HARMONIC CURRENT EMISSIONS ON AC MAINS TEST

4.3.1. Block Diagram of Test Setup



4.3.2. Limits

Limits for Class A equipment	
Harmonics Order h	Max. permissible harmonics current A
Odd harmonics	
3	2.30
5	1.14
7	0.77
9	0.40
11	0.33
13	0.21
$15 \leq h \leq 39$	$0.15 \times 15/h$
Even harmonics	
2	1.08
4	0.43
6	0.30
$8 \leq h \leq 40$	$0.23 \times 8/h$

For the following categories of equipment limits are not specified in this edition of the standard.

Note 1: Equipment with a rated power of 75W or less, other than lighting equipment.

4.3.3. Test Procedure

The E.U.T. was put on the top of a wooden table 0.8m above the ground and operated to produce the maximum harmonic components under normal operating conditions for each successive harmonic component in turn.

The E.U.T. is classified as follows:

Class A:

Balanced three-phase equipment, Household appliances excluding equipment as Class D, Tools excluding portable tools, Dimmers for incandescent lamps, audio equipment ,equipment not specified in one of the three other classes.

Class B:

Portable tools; Arc welding equipment which is not professional equipment.

Class C:

Lighting equipment.

Class D:

Equipment having a specified power less than or equal to 600W of the following types: Personal computers and personal computer monitors and television receivers.

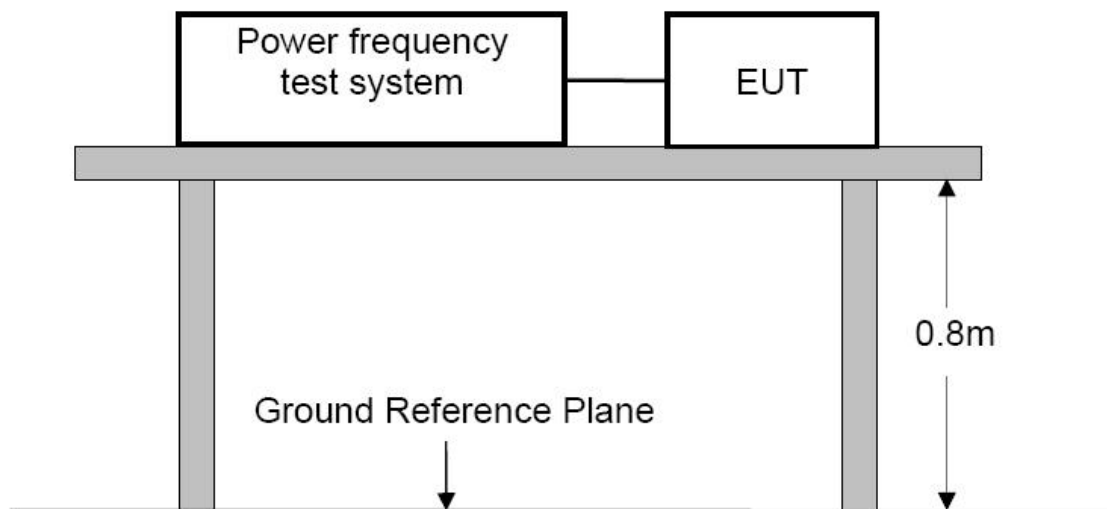
4.3.4. Test Results

N/A.

Remark:The power of the EUT is less than 75W, according to EN IEC 61000-3-2:2019+A1:2021+A2:2024 clause 7, the limit is not specified in the standard. EUT is deemed to fulfil the requirement without testing.

4.4. VOLTAGE FLUCTUATIONS AND FLICKER ON AC MAINS TEST

4.4.1. Block Diagram of Test Setup



4.4.2. Limits

Test Item	Limit
P_{st} (Short-term flicker indicator.)	1.0
P_{lt} (Long-term flicker indicator.)	0.65
$T_{d(t)}$ (ms) (Maximum time that $d(t)$ exceeds 3.3%)	500
$d_{max}(\%)$ (Maximum relative voltage change.)	4
$d_c(\%)$ (Relative steady-state voltage change)	3.3

4.4.3. Test Procedure

The E.U.T. was put on the top of a wooden table 0.8m above the ground and operated to produce the most unfavorable sequence of voltage changes under normal operating conditions.

4.4.4. Test Results

PASS.

Note:

The EUT does not contain any automatic switching component and the power consumption is low.

According to the electrical construction, the EUT does not produce inrush current, which may exceed 20A. The supply current will not fluctuate more than 1.5A either.

According to EN 61000-3-3:2013+A1:2019+A2:2021, clause 6.1*, the EUT deems to fulfil the requirement without further testing.

*) EN 61000-3-3:2013+A1:2019+A2:2021, clause 6.1:“For voltage changes caused by manual switching, equipment is deemed to comply without further testing if the maximum r.m.s. input current evaluated over each 10ms half-period between zero-crossings does not exceed 20A, and the supply current after inrush is within a variation band of 1,5A.”

5. IMMUNITY TEST RESULT

5.1. DESCRIPTION OF PERFORMANCE CRITERIA:

Performance criteria A

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 may reasonably expect from the equipment if used as intended.

Performance criteria 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 phenomena 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.

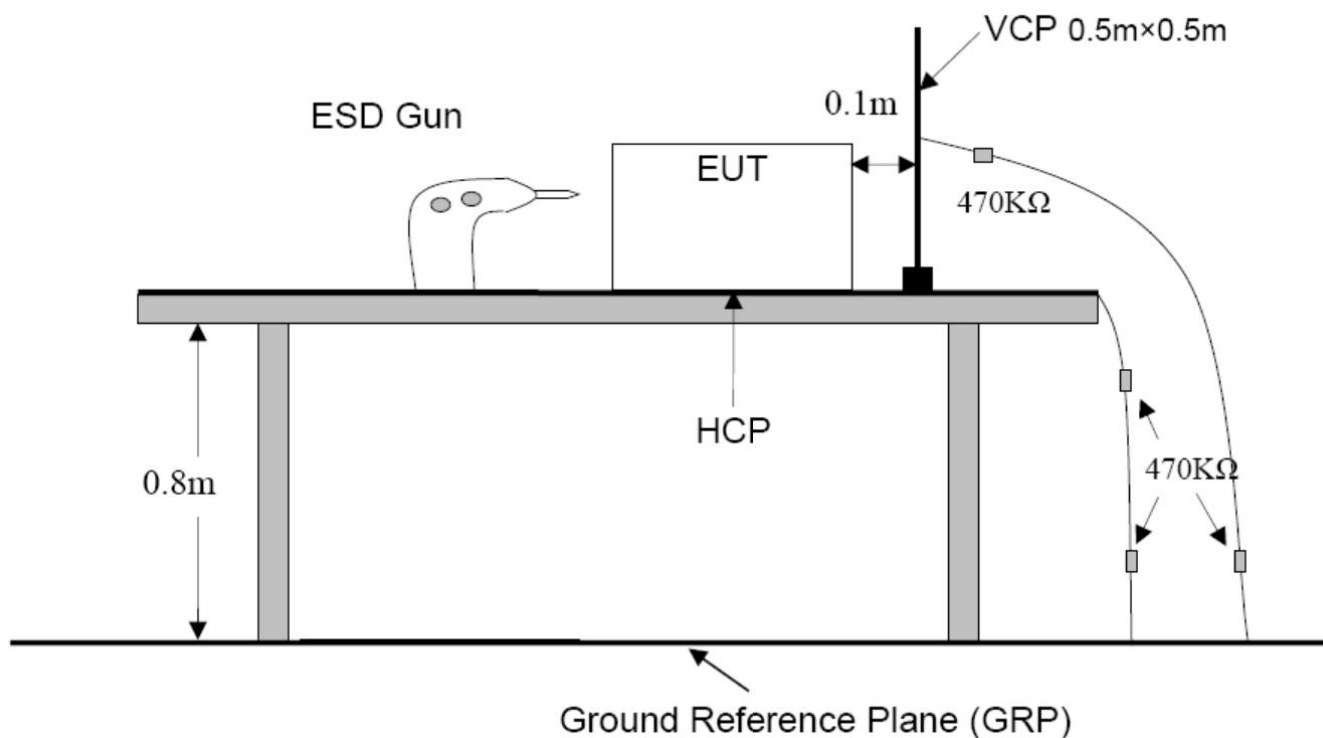
During the test, degradation of performance is allowed. However, no change of operating state or stored data is allowed to persist after the test. If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Performance criteria C

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 backup, shall not be lost.

5.2. ELECTROSTATIC DISCHARGE IMMUNITY TEST

5.2.1. Block Diagram of Test Setup



5.2.2. Test Standard and Severity Levels

Test Standard:

EN 55035:2017+A11:2020 (IEC 61000-4-2: 2008 Air Discharge:
Severity Level: 3, $\pm 8\text{KV}$; Contact Discharge: Level: 2, $\pm 4\text{KV}$)

Severity Levels:

Level	Test Voltage Contact Discharge (KV)	Test Voltage Air Discharge (KV)
1.	± 2	± 2
2.	± 4	± 4
3.	± 6	± 8
4.	± 8	± 15
X	Special	Special

5.2.3. Test Procedure

Air Discharge:

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the E.U.T.. After each discharge, the discharge electrode shall be removed from the E.U.T.. The generator is then re-triggered for a new single discharge and repeated (10 of each polarity) for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

Contact Discharge:

All the procedure shall be same as Section Air Discharge except that the tip of the discharge electrode shall touch the E.U.T..

Indirect discharge for horizontal coupling plane:

At least 10 single discharges(in the most sensitive polarity) shall be applied at the front edge of each HCP opposite the center point of each unit(if applicable) of the E.U.T. and 0.1m from the front of the E.U.T.. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge.

Indirect discharge for vertical coupling plane:

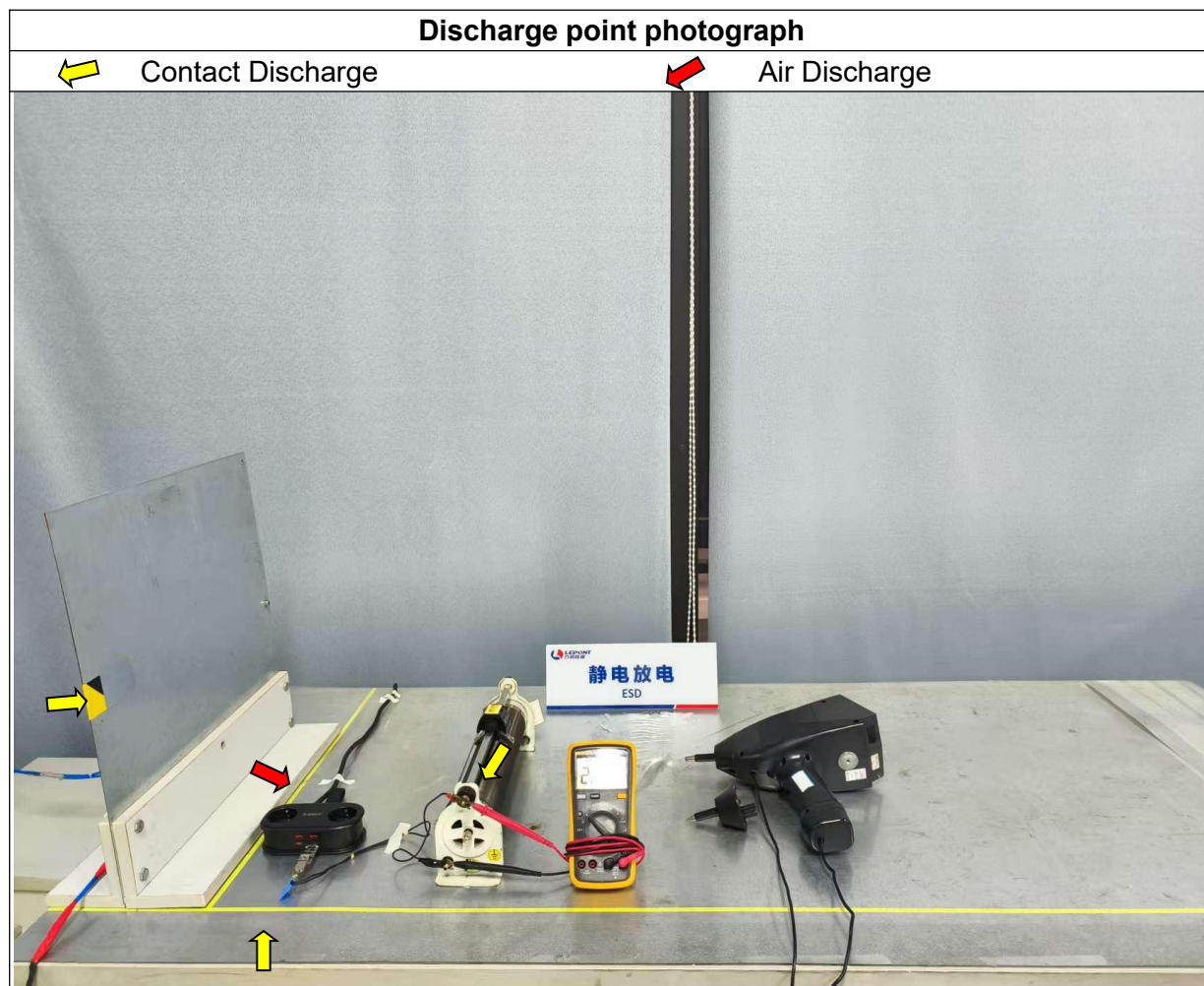
At least 10 single discharge (in the most sensitive polarity) shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the E.U.T.. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the E.U.T. are completely illuminated.

5.2.4. Test Results

PASS.

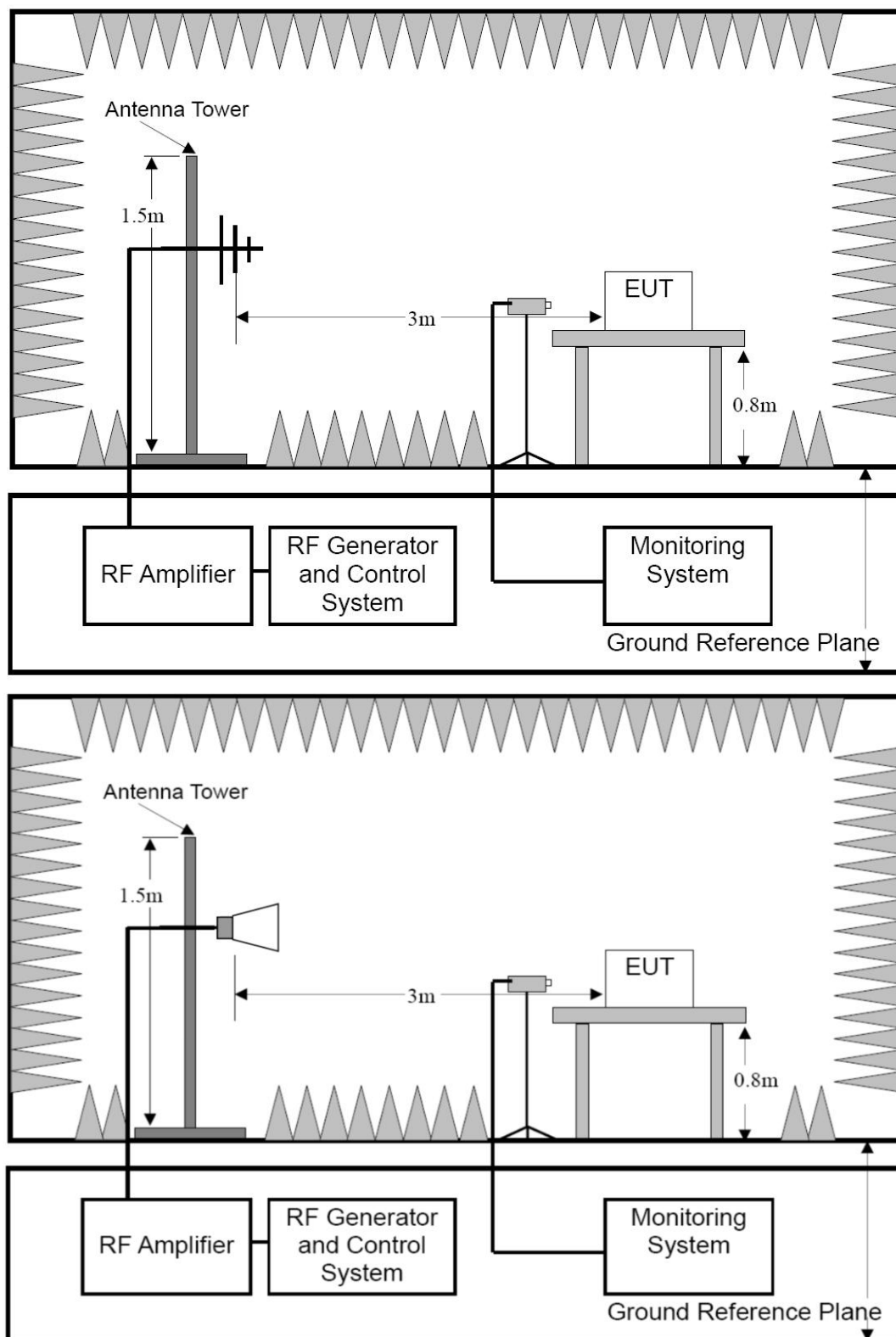
Please refer to the following page.

Electrostatic discharge immunity test				
Temperature :	22.8 °C	Relative Humidity:	53.1 % RH	
Pressure :	101.60kPa	Test Date :	2025-05-21	
Test Engineer :	Jerry Hu	Result:	Pass	
Test Model :	AP3-2A2U2C-65-EU			
Test Voltage:	1, 2	Test Mode :	A, B, C	
Test level:	±2, 4 KV Contact Discharge; For each point positive 10 times and negative 10 times ±2, 4, 8 KV Air Discharge For each point positive 10 times and negative 10 times			
Required Performance Criterion :		B		
Test Method :		☒ Test with the discharge cable ☐ Test without the discharge cable		
Type of Discharge	Applied Voltage	No. of Discharges	Test Points	Observed Criterion
Indirect Discharge (HCP)	± 4kV	10 per polarity	At the front edge of each HCP opposite the centre point of each unit of the EUT	A
Indirect Discharge (VCP)	± 4kV	10 per polarity	The centre of the vertical edge of the coupling plane	A
Direct Contact Discharge	± 4kV	10 per polarity	☒ Accessible metal parts of the EUT ☐ Conductive substrate with coating which is not declared to be insulating	A
Direct Air Discharge	± 2, ± 4, ± 8kV	10 per polarity	☐ LCD display ☐ LED Display ☐ Indicators light ☐ Keyboard ☐ Button ☐ Switch ☐ Knob ☒ Air gap ☒ Slots ☐ Hole	A
Performance Criterion: A - operate as intended during and after the test B - operate as intended after the test C - loss/error of function				
Additional Information ☒ No observable change ☐ The voltage of the EUT in the test has a fluctuation, After the test, the EUT is working properly as intended				
Remark:				



5.3. ☆ RADIO FREQUENCY ELECTROMAGNETIC FIELD IMMUNITY TEST

5.3.1. Block Diagram of Test Setup



5.3.2. Test Standard and Severity Levels

Test Standard

EN 55035:2017+A11:2020 (IEC 61000-4-3: 2006+A2:2010 Level 2: 3V/m)

Severity Levels

Level	Field Strength V/m
1	1
2	3
3	10

5.3.3. Test Procedure

The E.U.T. and its simulators are placed on a turn table which is 0.8 meter above ground. E.U.T. is set 3 meter away from the transmitting antenna which is mounted on an antenna tower. Both horizontal and vertical polarization of the antenna are set on test. Each of the four sides of E.U.T. must be faced this transmitting antenna and measured individually.

All the scanning conditions are as follows :

Condition of Test	Remarks
1. Fielded Strength	3 V/m (Severity Level 2)
2. Radiated Signal	Modulated
3. Scanning Frequency	80 - 1000 MHz, 1800MHz,2600MHz, 3500MHz,5000MHz.
4. Dwell time of radiated	0.0015 decade/s
5. Waiting Time	1 Sec.

5.3.4. Test Results

PASS.

Please refer to the following page.

☆Radio Frequency Electromagnetic Field Immunity Test				
Temperature :	21.6℃	Relative Humidity:	52.5% RH	
Pressure :	101.10kPa	Test Date :	2025-05-22	
Test Engineer :	Jerry Hu	Result:	Pass	
Test Model :	AP3-2A2U2C-65-EU			
Test Voltage:	1, 2	Test Mode :	A, B, C	
Required Performance Criterion :	A			
Field Strength:	3 V/m			
Modulation:	☐ None ☐ Pulse ☒ AM <u>80</u> % <u>1</u> KHz			
Frequency Range:	80-1000 MHz, 1800 MHz, 2600 MHz, 3500 MHz, 5000 MHz			
Frequency Range (MHz)	Exposed Side	Field Strength (V/m)	Polarization (Vertical/Horizontal)	Observed Criterion
80-1000 MHz, 1800 MHz, 2600 MHz, 3500 MHz, 5000 MHz	Front	3	V and H	A
	Left	3	V and H	A
	Rear	3	V and H	A
	Right	3	V and H	A
Performance Criterion: A - operate as intended during and after the test B - operate as intended after the test C - loss/error of function				
Additional Information ☒ No observable change ☐ The voltage of the EUT in the test has a fluctuation, After the test, the EUT is working properly as intended				
Remark: ☆This test was carry out on KeySense Testing & Certification International Co., Ltd. The tests at this testing site were conducted under the supervision of our company's engineers				

5.4.1. Block Diagram of Test Setup



5.4.2. Test Standard and Severity Levels

Test Standard

EN 55035:2017+A11:2020 (IEC 61000-4-4: 2012, Severity Level, Level 2: 1KV)

Severity level

Open circuit output test voltage and repetition rate of the impulses				
Level	On power port, PE		On I/O (Input/Output) Signal data and control ports	
	Voltage peak KV	Repetition rate KHz	Voltage peak KV	Repetition rate KHz
1.	0.5	5 or 100	0.25	5 or 100
2.	1.0	5 or 100	0.5	5 or 100
3.	2.0	5 or 100	1.0	5 or 100
4.	4.0	5 or 100	2.0	5 or 100
X	Special	Special	Special	Special
Note 1 Use of 5 KHz repetition rates is traditional; however, 100 KHz is closer to reality. Product committees should determine which frequencies are relevant for specific products or product types. Note 2 With some products, there may be no clear distinction, between power ports and I/O ports, in which case it is up to product committees to make this determination for test purposes. Note 3 "X" is an open level. The level has to be specified in the dedicated equipment specification.				

5.4.3. Test Procedure

The E.U.T. is put on the table which is 0.1 meter high above the ground. This reference ground plane shall project beyond the E.U.T. by at least 0.1m on all sides and the minimum distance between E.U.T. and all other conductive structure, except the ground plane beneath the E.U.T., shall be more than 0.5m.

For input and output AC power ports:

The E.U.T. is connected to the power mains by using a coupling device which couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 2 minutes.

For signal lines ports:

The E.U.T. is connected to the power mains by using a coupling device which couples the EFT interference signal to Signal lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 2 minutes.

For DC ports:

The E.U.T. is connected to the power mains by using a coupling device which couples the EFT interference signal to Signal lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 2 minutes.

5.4.4. Test Results

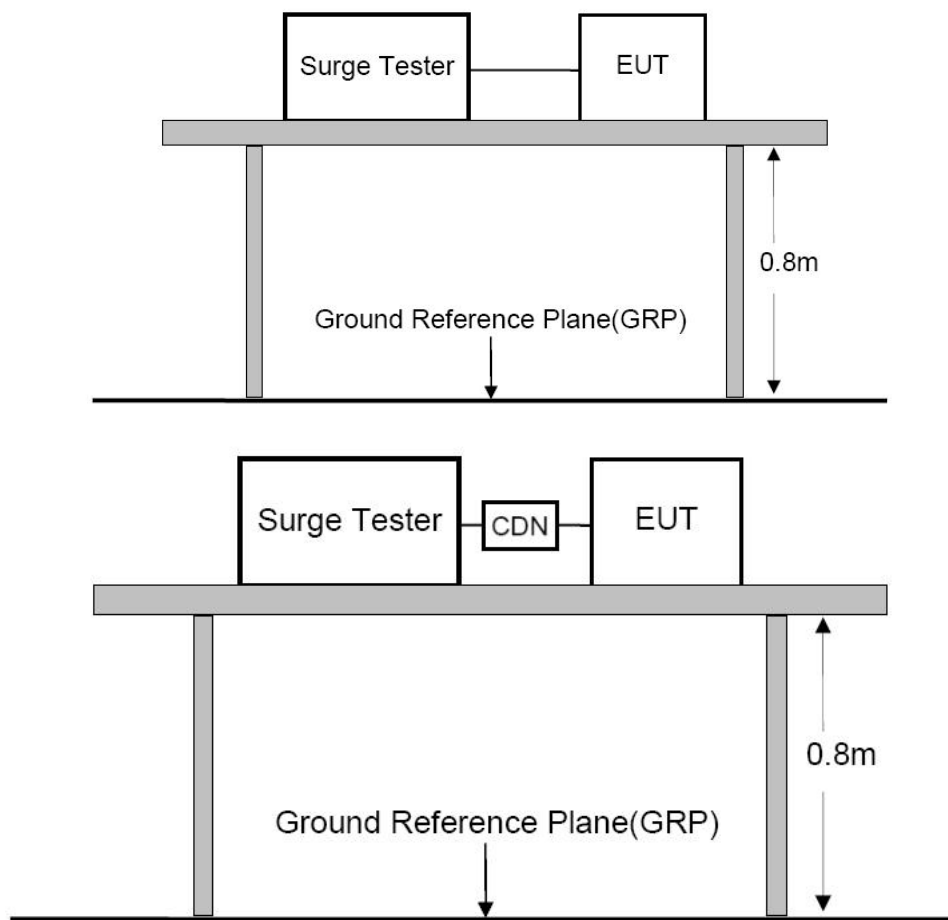
PASS.

Please refer to the following page.

Electrical Fast Transient/Burst Immunity Test			
Temperature :	22.8 °C	Relative Humidity:	53.1 % RH
Pressure :	101.60kPa	Test Date :	2025-05-21
Test Engineer :	Jerry Hu	Result:	Pass
Test Model :	AP3-2A2U2C-65-EU		
Test Voltage:	1, 2	Test Mode :	A, B, C
Required Performance Criterion :	B		
Ports/Line:	☒ AC ☐ DC ☐ Signal:		
Repetition Frequency :	☐ 100 kHz ☒ 5 kHz		
Coupling:	☒ Direct ☐ Capacitive Clamp		
Test Duration:	120 s		
Test Port	Applied Voltage (kV)	Repetition Frequency (kHz)	Observed Criterion
AC mains power line	±1kV	5	A
Analogue line:(>3m)	±0.5kV	5	/
Digital data line:(>3m)	±0.5kV	5	/
DC network power line:(>3m)	±0.5kV	5	/
CPE xDSL line	±0.5kV	100	/
EFT Burst Generator:			
1. Wave shape of the pulse: rise time 5 ns, duration 50 ns.			
2. Output type: coaxial 50Ω.			
3. Burst duration: 0.75 ms at repetition frequency 100 kHz, 15 ms at repetition frequency 5 kHz.			
4. Burst period: 300 ms.			
Performance Criterion:			
A - operate as intended during and after the test			
B - operate as intended after the test			
C - loss/error of function			
Additional Information			
☒ No observable change			
☐ The voltage of the EUT in the test has a fluctuation, After the test, the EUT is working properly as intended			
Remark:			

5.5. SURGE IMMUNITY TEST

5.5.1. Block Diagram of Test Setup



See test photos for other Block Diagram

5.5.2. Test Standard and Severity Levels

Test Standard

EN 55035:2017+A11:2020 (IEC 61000-4-5: 2014, Severity Level: Line To Line, Level 2: 1.0KV, Line To Earth, Level 3: 2.0KV)

Severity level

Severity Level	Open-Circuit Test Voltage KV
1	0.5
2	1.0
3	2.0
4	4.0
*	Special

5.5.3. Test Procedure

1. Set up the E.U.T. and test generator as shown on Section 12.1.
2. For line to line coupling mode, provide a 1.0KV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to E.U.T. selected points.
For CDN coupling mode, provide a 0.5KV 10/700 μ s voltage surge (at open-circuit condition) and 5/320 μ s current surge to E.U.T. selected points.
3. Five positive pulses Line-to-neutral at 90° phase, Five negative pulses Line-to-neutral at 270° phase. with a maximum 1/min repetition rate are conducted during test.
4. Different phase angles are done individually.
5. Record the E.U.T. operating situation during compliance test and decide the E.U.T. immunity criterion for above each test.

5.5.4. Test Results

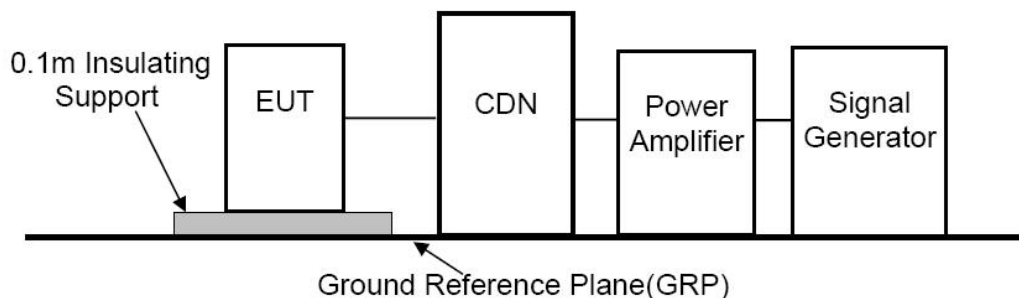
PASS.

Please refer to the following page.

Surge Immunity Test			
Temperature :	22.8 °C	Relative Humidity:	53.1 % RH
Pressure :	101.60kPa	Test Date :	2025-05-21
Test Engineer :	Jerry Hu	Result:	Pass
Test Model :	AP3-2A2U2C-65-EU		
Test Voltage:	1, 2	Test Mode :	A, B, C
Required Performance Criterion :	B		
Ports/Line:	☒ AC ☐ DC ☐ Signal:		
Repetition:	<u>5</u> times pre test		
Interval:	<u>60</u> seconds		
Coupling:	☒ Direct ☐ CDN		
Test Port	Repetition Frequency (kHz)	Observed Criterion	
AC power ^{Note 1}	Line to neutral ±0.5kV, ±1kV	A	
AC power ^{Note 2}	Line to earth ±0.5kV, ±1kV, ±2kV	A	
digital data line(>3m)	Line to ground ±0.5kV	/	
DC network power line(>3m)	Line to ground ±0.5kV	/	
Combination Wave Generator: 1; 1.2/50 us (Open-circuit voltage waveform), 8/20 us (Short-circuit current waveform) 2; 2Ω(Generator effective output impedance for line-to-line coupling), 12Ω(Generator effective output impedance for line-to-earth coupling) 3; 18 uF (Line-to-line coupling capacitors), 9 uF (Line-to-earth coupling capacitors), 1.5 mH (Decoupling inductance)			
Note 1: Five positive pulses line to neutral at 90° phase, five negative pulses line to neutral at 270° phase. Note 2: Five positive pulses line to earth at 90° phase, five negative pulses line to earth at 270° phase, five negative pulses neutral to earth at 90° phase, five positive pulses neutral to earth at 270° phase.			
Performance Criterion: A - operate as intended during and after the test B - operate as intended after the test C - loss/error of function			
Additional Information ☒ No observable change ☐ The voltage of the EUT in the test has a fluctuation, After the test, the EUT is working properly as intended			
Remark:			

5.6. INJECTED CURRENTS SUSCEPTIBILITY TEST

5.6.1. Block Diagram of Test Setup



See test photos for other Block Diagram

5.6.2. Test Standard and Severity Levels

Test Standard

EN 55035:2017+A11:2020 (IEC 61000-4-5: 2014, 0.15MHz ~ 80MHz)

Severity level

Level	Field Strength V/m
0.15-10MHz	3
10-30MHz	3 to 1 *
30-80MHz	1

Note*: Where the amplitude of a test level varies over a given frequency range, it changes linearly with respect to the logarithm of the frequency.

5.6.3. Test Procedure

1. Set up the E.U.T., CDN and test generators as shown on Section 5.6.1.
2. Let the E.U.T. work in test mode and measure it.
3. The E.U.T. are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from E.U.T.. Cables between CDN and E.U.T. are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).
4. The disturbance signal described below is injected to E.U.T. through CDN.
5. The E.U.T. operates within its operational mode(s) under intended climatic conditions after power on.
6. The frequency range is swept from 150 KHz to 10 MHz using 3V

signal level, from 10 MHz to 30 MHz using 3V to 1V changes linearly, from 30 MHz to 80 MHz using 1V signal level, and with the disturbance signal 80% amplitude modulated with a 1KHz sine wave.

7. The rate of sweep shall not exceed 1.5×10^{-3} decades/s. Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.
8. Recording the E.U.T. operating situation during compliance testing and decide the E.U.T. immunity criterion.

5.6.4. Test Results

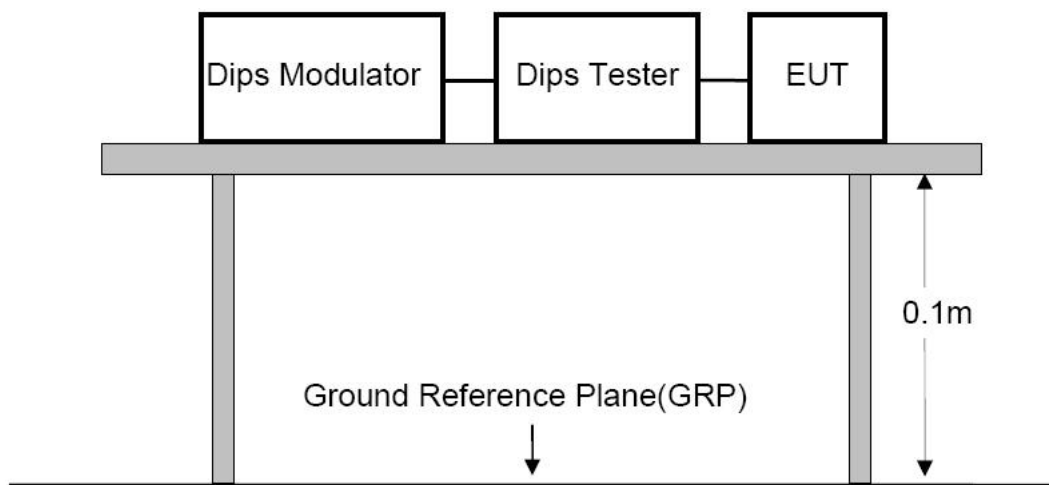
PASS.

Please refer to the following page.

Injected Currents Susceptibility Test			
Temperature :	22.8 °C	Relative Humidity:	53.1 % RH
Pressure :	101.60kPa	Test Date :	2025-05-21
Test Engineer :	Jerry Hu	Result:	Pass
Test Model :	AP3-2A2U2C-65-EU		
Test Voltage:	1, 2	Test Mode :	A, B, C
Required Performance Criterion :	A		
Modulation:	☐ None ☐ Pulse ☒ AM <u>80</u> % <u>1</u> KHz		
Coupling:	☒ CDN ☐ CDN T400A ☐ Coupling Clamp		
Field Strength:	3 V/m	3-1V/m	1 V/m
Frequency Range:	0.15 to 10MHz	10 to 30MHz	30 to 80MHz
Test Port:	Frequency (MHz)	Level	Observed Criterion
AC mains power line	0.15 to 10	3V (rms)	A
	10 to 30	3V to 1V	
	30 to 80	1V	
Analogue line:(>3m)	0.15 to 10	3V (rms)	/
	10 to 30	3V to 1V	
	30 to 80	1V	
Digital data line:(>3m)	0.15 to 10	3V (rms)	/
	10 to 30	3V to 1V	
	30 to 80	1V	
DC network power line:(>3m)	0.15 to 10	3V (rms)	/
	10 to 30	3V to 1V	
	30 to 80	1V	
CPE xDSL line	0.15 to 10	3V (rms)	/
	10 to 30	3V to 1V	
	30 to 80	1V	
Performance Criterion: A - operate as intended during and after the test B - operate as intended after the test C - loss/error of function			
Additional Information ☒ No observable change ☐ The voltage of the EUT in the test has a fluctuation, After the test, the EUT is working properly as intended			
Remark:			

5.7. VOLTAGE DIPS AND SHORT INTERRUPTIONS IMMUNITY TEST

5.7.1. Block Diagram of Test Setup



5.7.2. Test Standard and Severity Levels

Test Standard

EN 55035:2017+A11:2020 (IEC 61000-4-11: 2004)

Severity level

Test Level $\%U_T$	Voltage dip and short interruptions $\%U_T$	Duration (in period)
0	100	0.5 1
70	30	25 30
0	100	250 300 *

5.7.3. Test Procedure

1. Set up the E.U.T. and test generator as shown on Section 5.7.1.
2. The interruptions is introduced at selected phase angles with specified duration.Record any degradation of performance.

5.7.4. Test Results

PASS.

Please refer to the following page.

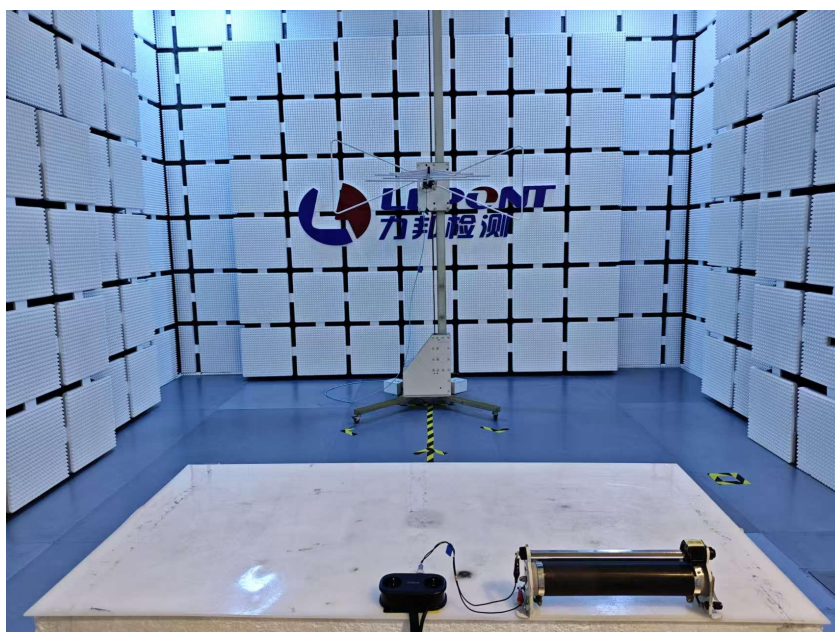
Voltage Dips and Short Interruptions Immunity Test			
Temperature :	22.8 °C	Relative Humidity:	53.1 % RH
Pressure :	101.60kPa	Test Date :	2025-05-21
Test Engineer :	Jerry Hu	Result:	Pass
Test Model :	AP3-2A2U2C-65-EU		
Test Voltage:	1, 2	Test Mode :	A, B, C
Numbers of Interruptions:	3 times		
Numbers of voltage dips:	3 times		
Interval:	> 10s		
Required Performance Criterion :	B for level of < 5%UT (0.5 Duration); C for level of 70% UT (25/30 Duration) C for level of 0% UT (250/300 Duration)		
Test Level in %UT	Duration (in periods of the rate frequency)		Observed Criterion
< 5	0.5		B
70	25 for 50Hz		B
70	30 for 60Hz		B
< 5	250 for 50Hz		B
< 5	300 for 60Hz		B
Performance Criterion: A - operate as intended during and after the test B - operate as intended after the test C - loss/error of function			
Additional Information ☐ No observable change ☒ The voltage of the EUT in the test has a fluctuation, After the test, the EUT is working properly as intended			
Remark:			

6. TEST PHOTOGRAPHS

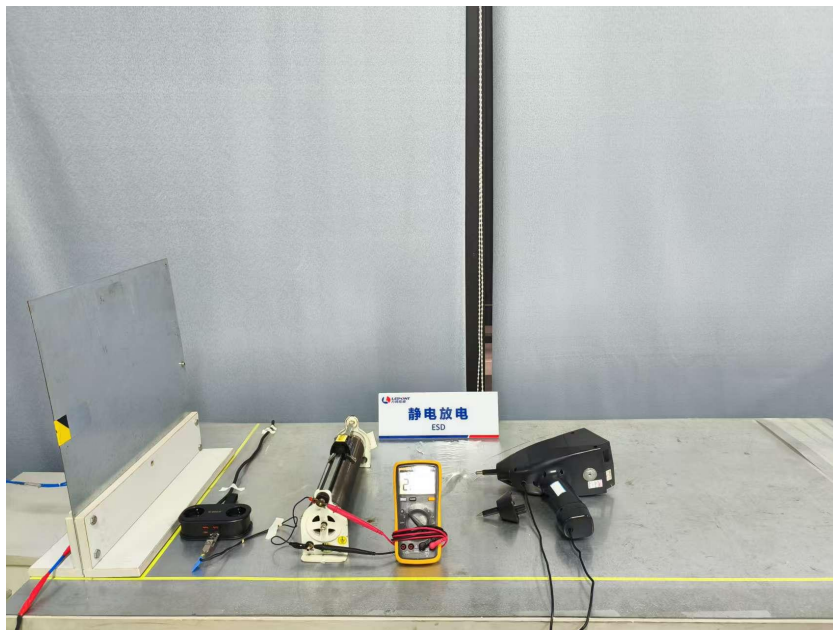
Conducted Emission at The Mains Terminals Test



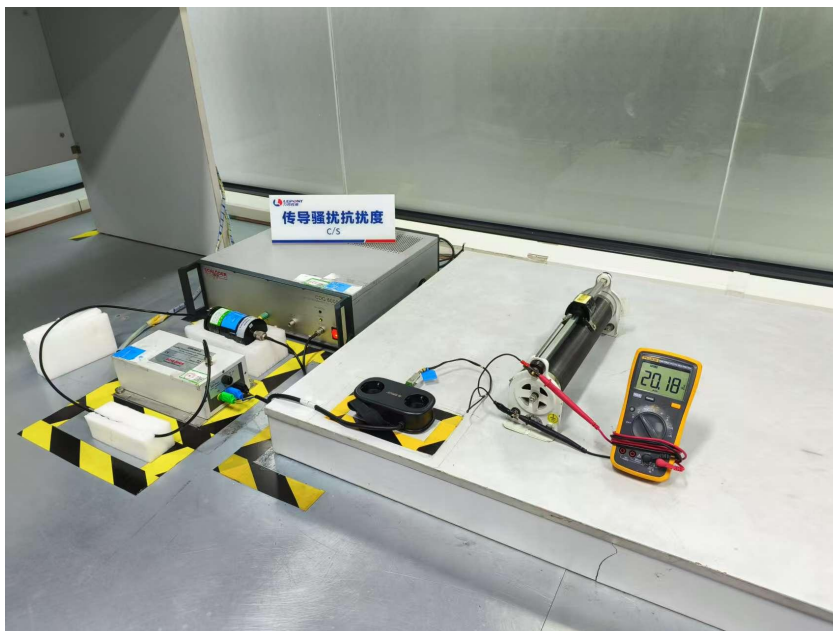
Radiated Emission Test



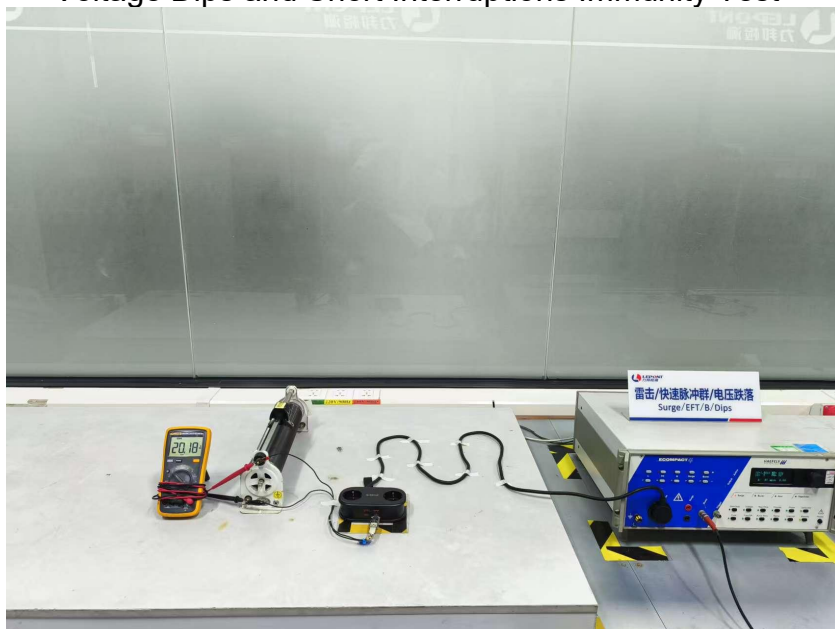
Electrostatic Discharge Immunity Test



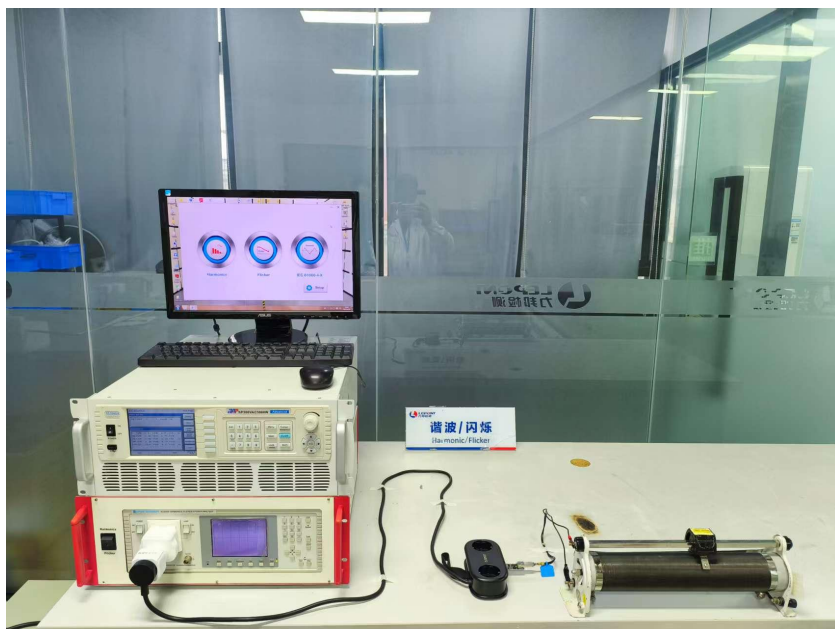
Continuous conducted disturbance on AC Mains Test



Surge Immunity Test
Electrical Fast Transient/Burst Immunity Test
Voltage Dips and Short Interruptions Immunity Test



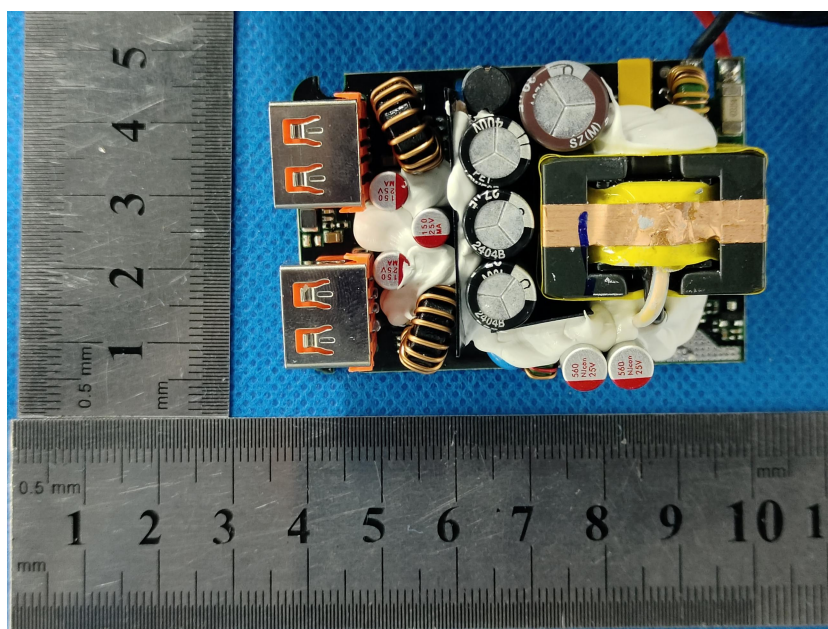
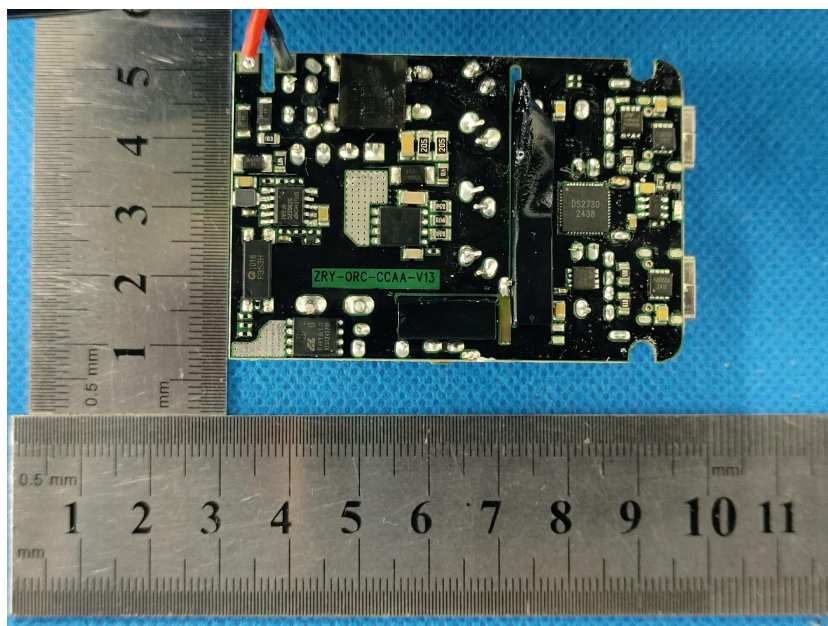
Harmonic and Flicker test



7. PHOTOGRAPHS OF THE EUT







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Statement

1. The calibration and measurement of test equipments used in our laboratory are traceable to National primary standard of measurement and BIPM.
2. The report is invalid without the special test seal of the company.
3. The test report without the signature of the project personnel and authorir issuer is invalid.
4. The report is invalid if altered and added or deleted.
5. The test results in this report only apply to the tested samples.
6. This test report shall not be reproduced except in full, without the written approval of our laboratory.
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