

# TEST REPORT

**Product Name** : WIRE TRACKER  
**Model Number** : UT683 ( UT683T TRANSMITTER, UT683R RECEIVER)

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**Report Number** : EDG2208310218E00101R  
**Date(s) of Tests** : August 31, 2022 to September 22, 2022  
**Date of issue** : September 23, 2022



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## TEST REPORT DESCRIPTION

Applicant : UNI-TREND TECHNOLOGY (CHINA) CO.,LTD.  
Manufacturer : UNI-TREND TECHNOLOGY (CHINA) CO.,LTD.  
Factory : UNI-TREND TECHNOLOGY (CHINA) CO.,LTD.  
Brand Name : UNI-T  
EUT : WIRE TRACKER  
Model Number : UT683 ( UT683T TRANSMITTER, UT683R RECEIVER)  
Rating : DC 5V from USB port

## Measurement Procedure Used:


EN IEC 61326-1: 2021  
EN IEC 61326-2-2: 2021  
EN IEC 61000-3-2: 2019+A1:2021  
EN 61000-3-3:2013+A2:2021  
(IEC 61000-4-2: 2008, IEC61000-4-3: 2020, IEC 61000-4-4: 2012,  
IEC 61000-4-5: 2014+AMD1: 2017, IEC 61000-4-6:2013/COR1:2015, IEC 61000-4-11: 2020)


The device described above is tested by EMTEK (DONGGUAN) CO. and EMTEK (SHENZHEN) CO., LTD. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and EMTEK (DONGGUAN) CO., LTD. is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the EN IEC 61326-1, EN IEC 61326-2-2, EN IEC 61000-3-2 and EN 61000-3-3 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of EMTEK (DONGGUAN) CO., LTD.

Date of Test : August 31, 2022 to September 22, 2022

Prepared by :   
Galen Xiao /Editor

Reviewer :   
Tim Dong /Supervisor

Approved & Authorized Signer :   
Sam Iv /Manager

## Modified Information

Version	Report No.	Revision Date	Summary
	ED200508040E	May 15, 2020	Original Report
M1	EDG2208310218E00101R	September 23, 2022	IC MCU model number changed from MM32F031K8T6 to APM32F030C8T6



## 1. DESCRIPTION OF STANDARDS AND RESULTS (EUT)

EMISSION				
Description of Test Item		Standard	Limits	Results
Conducted Emissions -	a.c. mains power port	EN IEC 61326-1	Class B	Pass
Conducted Emissions -	d.c. power port		Class B	N/A
Radiated emissions at frequencies up to 1 GHz			Class B	Pass
Harmonic Current Emissions		EN IEC 61000-3-2	Class A	N/A
Voltage Fluctuation and Flicker		EN 61000-3-3	Section 5	Pass
IMMUNITY				
Description of Test Item		Basic Standard	Performance Criteria	Results
Electrostatic Discharge	Enclosure ports	IEC 61000-4-2:2008	B	Pass
Electromagnetic field	Enclosure ports	IEC 61000-4-3:2020	A	Pass
Burst	AC power ports	IEC 61000-4-4:2012	B	Pass
	I/O Signal/control ports		B	Pass
	DC power ports		N/A	N/A
Surge	AC power ports	IEC 61000-4-5: 2014+AMD1: 2017	B	Pass
	I/O Signal/control ports		B	Pass
	DC power ports		N/A	N/A
Conducted RF	AC power ports	IEC 61000-4-6:2013/COR 1:2015	A	Pass
	I/O Signal/control ports		A	Pass
	DC power ports		N/A	N/A
Power frequency magnetic field	Enclosure ports	IEC 61000-4-8:2009	A	N/A
Voltage dips and Short interruptions	AC mains power ports	IEC 61000-4-11:2020	B,C	Pass
Note: N/A is an abbreviation for Not Applicable.				

## 2. GENERAL INFORMATION

### 2.1. Description of Device (EUT)

EUT : WIRE TRACKER

Model Number : UT683 ( UT683T TRANSMITTER, UT683R RECEIVER)

Input Voltage : DC 5V from USB port , DC 3.7 from battery

Date of Received : August 31, 2022

Date of Test : August 31, 2022 to September 22, 2022

### 2.2. Independent Operation Modes

- A. Charging
- B. Tracking

### 2.3. Test Manner

Test Items	Test Voltage	Operation Modes	Worst case
Conducted Emissions - a.c. mains power port	DC 5V from USB port	Mode A	/
Radiated emissions at frequencies up to 1 GHz	DC 5V from USB port DC 3.7 from battery	Mode A&B	B
Harmonic Current Emissions	N/A	N/A	/
Voltage Fluctuation and Flicker	DC 5V from USB port	Mode A	/
Electrostatic Discharge	DC 5V from USB port DC 3.7 from battery	Mode A&B	/
Electromagnetic field	DC 5V from USB port DC 3.7 from battery	Mode A&B	/
Burst	DC 5V from USB port DC 3.7 from battery	Mode A&B	/
Surge	DC 5V from USB port DC 3.7 from battery	Mode A&B	/
Conducted RF	DC 5V from USB port DC 3.7 from battery	Mode A&B	/
Power frequency magnetic field	N/A	N/A	/
Voltage dips and Short interruptions	DC 5V from USB port	Mode A	/

### 2.4. Description of Support Device

Adapter : Model : YSV6-0501000

Input: AC 100-240V, 50/60Hz

Output: DC 5V, 1000mA

## 2.5. Description of Test Facility

Site Description	
EMC Lab.	: Accredited by CNAS, 2020.08.27 The certificate is valid until 2024.07.05 The Laboratory has been assessed and proved to be in compliance with CNAS/CL01:2018 The Certificate Registration Number is L3150
Name of Firm	: EMTEK(DONGGUAN) CO., LTD.
Site Location	: -1&2/F., Building 2, Zone A, Zhongda Marine Biotechnology Reserch and Development Base, No.9, Xincheng Avenue, Songshanhu High-technology Industrial Development Zone, Dongguan, Guangdong, China.

## 2.6. Measurement Uncertainty

Test Item	Uncertainty
Conducted Emission Uncertainty	: 2.08dB(9K-150KHz) 2.42dB(150K-30MHz)
Radiated Emission Uncertainty (3m Chamber)	: 3.32dB (30M~1GHz Polarize: H) 3.24dB (30M~1GHz Polarize: V) 4.46dB (1~6GHz) 4.96dB (6~18GHz)
Uncertainty for Flicker test	: 0.07%
Uncertainty for Harmonic test	: 1.8%
Uncertainty for C/S Test	: 1.45(Using CDN Test)
Uncertainty for R/S Test	: 2.10dB(80MHz-200MHz) 1.76dB(200MHz-1000MHz)
Uncertainty for test site temperature and humidity	: 0.6℃ 4%



### 3. MEASURING DEVICE AND TEST EQUIPMENT

#### 3.1. For Conducted Emissions At the AC Mains Power Ports

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde&Schwarz	ESCI	100137	2022/5/19	1Year
2.	L.I.S.N.	Rohde&Schwarz	ENV216	101209	2022/5/19	1Year
3.	RF Switching Unit	CDS	RSU-M2	38401	2022/5/19	1Year

#### 3.2. For Radiated Emission Measurement (3m)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	Rohde & Schwarz	ESCI	101415	2022/5/19	1Year
2.	Bilog Antenna	Schwarzbeck	VULB9163	141	2022/5/22	1Year
3.	Power Amplifier	HP	8447F	OPH64	2022/5/19	1Year
4.	Cable	N/A	CIL02	A0783566	2022/5/19	1Year
5.	Cable	N/A	RG 223/U	525178	2022/5/19	1Year
6.	Cable	N/A	RG 223/U	525179	2022/5/19	1Year

#### 3.3. For Harmonic Current / Flicker Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	AC Frequency Conversion Power	Teseq	100-CTS-230-TESQ	1804A03259	2022/5/19	1Year
2.	Power Frequency Test System	Teseq	5001IX-CTS-400-SCH	1805A03008	2022/5/19	1Year

#### 3.4. For Electrostatic Discharge Immunity

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	ESD Tester	TESEQ	NSG 437	409	2022/5/22	1Year

#### 3.5. For Continuous RF Electromagnetic Field Disturbances Immunity

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Power Amplifier	MILMEGA	AS0102-55	1018770	2022/5/14	1 Year
2.	50ohm Diode Power Sensor	BOONTON	51011EMC	34236	2022/5/16	1 Year
3.	RF Power Meter. Dual Channel	BOONTON	4232A	10539	2022/5/14	1 Year
4.	Log.-Per. Antenna	SCHWARZBECK	VULP 9118E	811	N/A	N/A
5.	Signal Generator	Agilent	N5181A	MY50145187	2022/5/14	1 Year
6.	50ohm Diode Power Sensor	BOONTON	51011EMC	36164	2022/5/14	1 Year
7.	Broad-Band Horn Antenna	SCHWARZBECK	STLP 9149	9149-227	N/A	N/A
8.	Field Strength Meter	DARE	RSS1006A	10I00037SNO22	2022/5/15	1 Year

9.	Multi-function interface system	DARE	CTR1009B	12I00250SNO72	N/A	N/A
10.	Automatic switch group	DARE	RSW1004A	N/A	N/A	N/A
11.	Power Amplifier	MILMEGA	AS1860-50	1059346	2022/5/14	1 Year
12.	Power Amplifier	MILMEGA	80RF1000-175	1059345	2022/5/14	1 Year
13.	Directional Coupler	MILMEGA	DC6180AM1	0340463	2022/5/14	1 Year
14.	Audio Analyzer	R&S	UPV	101473	2022/5/14	1 Year
15.	Audio Test System	AUDIO PRECISION	ATS-1	41100	2022/5/14	1 Year

### 3.6. For Burst Immunity

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Three-in-one tester	HTEC	HCOMPACT7	190305	2022/5/19	1Year

### 3.7. For Surges Immunity

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Three-in-one tester	HTEC	HCOMPACT7	190305	2021/5/20	1 Year

### 3.8. For Continuous Induced RF Disturbances Immunity

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	signal source	Rohde& Schwarz	SMB100A	103042	2022/5/19	1Year
2.	Single channel power meter	Rohde& Schwarz	NRVS	101761	2022/5/19	1Year
3.	Attenuator	AR-WORLDWIDE	6dB/50FH-006-100	324011	2022/5/19	1Year
4.	CDN	SKET	CDN M2+M3	204303	2022/5/19	1Year
5.	Power amplifier	Rohde& Schwarz	BSA 1515-25	097483	2022/5/19	1Year

### 3.9. For Power Frequency Magnetic Field Immunity

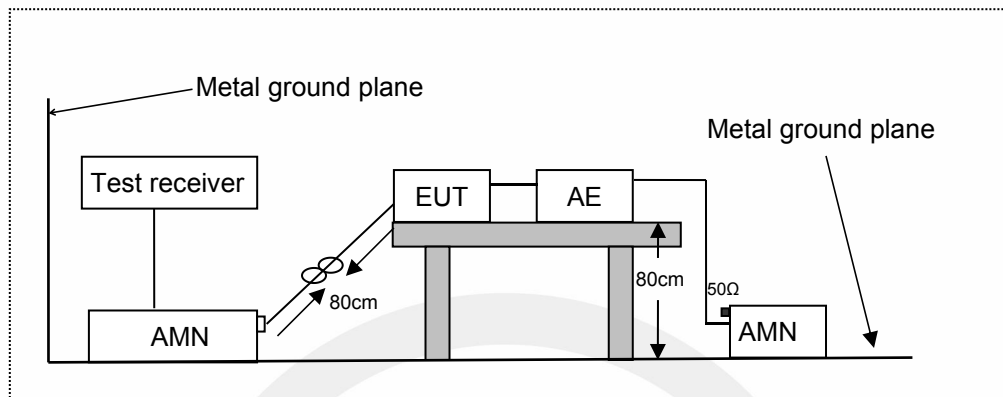
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Magnetic Field Tester	HAEFELY	MAG100	250040.1	2022/5/14	1 Year

### 3.10. For Voltage dips and Short interruptions Immunity

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Three-in-one tester	HTEC	HCOMPACT7	190305	2022/5/19	1Year
2.	Dips module	HTEC	HV1P16T	190302	2022/5/19	1Year

## 4. CONDUCTED EMISSIONS - A.C. MAINS POWER PORT

### 4.1. Block Diagram of Test Setup



AMN: Artificial Mains Network  
AE: Associated equipment  
EUT: Equipment under test

### 4.2. Limits

EN IEC 61326-1:2021

Frequency range MHz	Coupling device	Detector type / bandwidth	Class B limits dB(μV)
0.15 to 0.5	AMN	Quasi Peak / 9 kHz	66 to 56
0.5 to 5			56
5 to 30			60
0.15 to 0.5	AMN	Average / 9 kHz	56 to 46
0.5 to 5			46
5 to 30			50

### 4.3. Test Procedure

The EUT was placed on a desk 0.8 m height from the metal ground plane and 0.4 m from the conducting wall of the shielding room and it was kept at least 0.8 m from any other grounded conducting surface. The size of the table will nominally be 1.5 m x1.0 m.

The rear of the arrangement shall be flush with the back of the supporting tabletop unless that would not be possible or typical of normal use.

All units of equipment forming the system under test (includes the EUT as well as connected peripherals and associated equipment or devices) shall be arranged such that a nominal 0.1 m separation is achieved between the neighboring units.

Connect EUT to the power mains through a artificial mains network (AMN). Where the mains cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the centre into a bundle

no longer than 0.4 m, so that its length is shortened to 1 m.

All the support units are connecting to the other AMN.

The AMN provides 50 ohm coupling impedance for the measuring instrument.

The CISPR states that the AMN with 50 ohm and 50 microhenry should be used.

Both sides of AC line were checked for maximum conducted interference.

The frequency range from 150 kHz to 30 MHz was sweep.

Set the test-receiver system to quasi peak detect function and average detect function, and to measure the conducted emissions values.

Test results were obtained from the following equation:

Emission Level (dBμV) = AMN Factor (dB) + Cable Loss (dB) + Reading (dBμV)

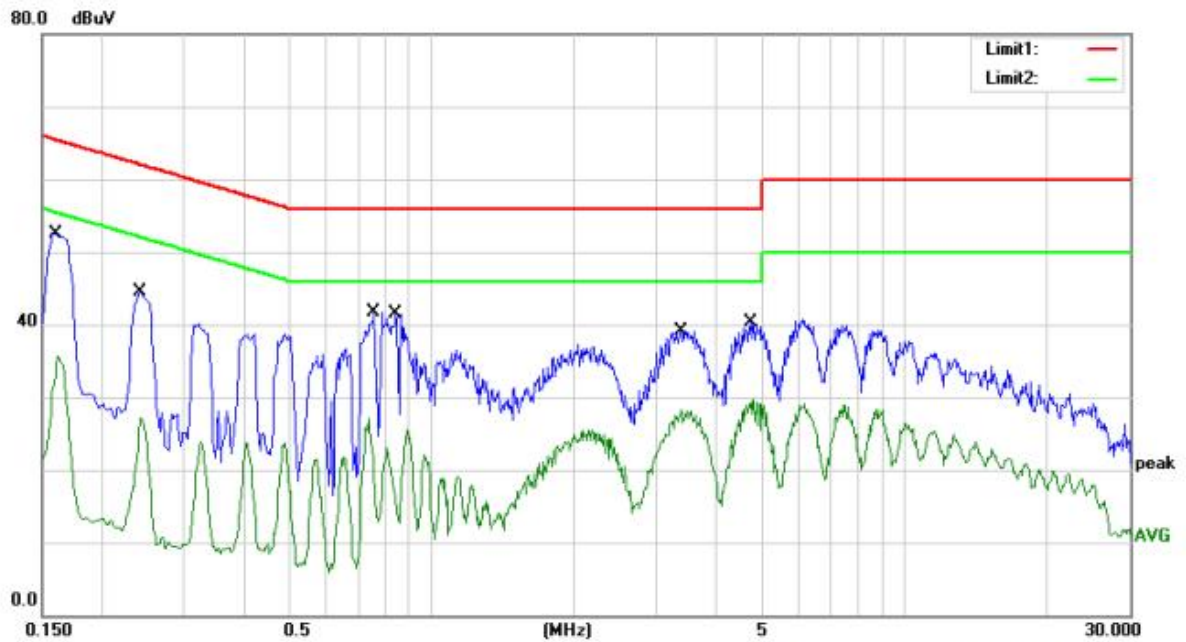
Margin (dB) = Emission Level (dBμV) - Limit (dBμV)

#### 4.4. Measuring Results

**PASS.**

All the modes were tested and the worst data are attached the following pages.

UT683T TRANSMITTER

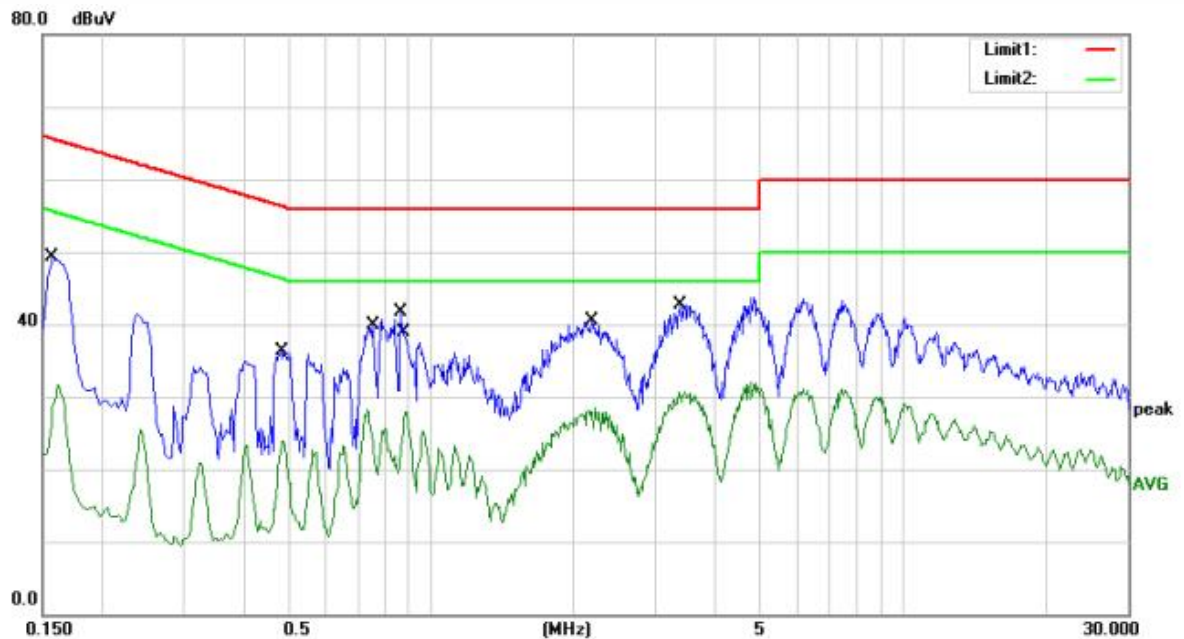


Site site #1 Phase: **L1** Temperature: 25  
Limit: EN IEC 61326-1\_QP (CE) Power: DC 5V from USB port Humidity: 55 %  
Mode: Charging  
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1620	42.37	10.02	52.39	65.36	-12.97	QP	
2		0.1620	25.71	10.02	35.73	55.36	-19.63	AVG	
3		0.2420	34.39	10.05	44.44	62.03	-17.59	QP	
4		0.2420	17.10	10.05	27.15	52.03	-24.88	AVG	
5		0.7580	31.59	10.18	41.77	56.00	-14.23	QP	
6		0.7580	16.97	10.18	27.15	46.00	-18.85	AVG	
7		0.8420	31.39	10.18	41.57	56.00	-14.43	QP	
8		0.8420	15.41	10.18	25.59	46.00	-20.41	AVG	
9		3.3780	28.95	10.18	39.13	56.00	-16.87	QP	
10		3.3780	18.03	10.18	28.21	46.00	-17.79	AVG	
11		4.7220	30.18	10.18	40.36	56.00	-15.64	QP	
12		4.7220	19.55	10.18	29.73	46.00	-16.27	AVG	

\*:Maximum data x:Over limit l:over margin Comment: Factor build in receiver. Operator: Jason





Site site #1

Phase: **N**

Temperature: 25

Limit: EN IEC 61326-1\_QP (CE)

Power: DC 5V from USB port

Humidity: 55 %

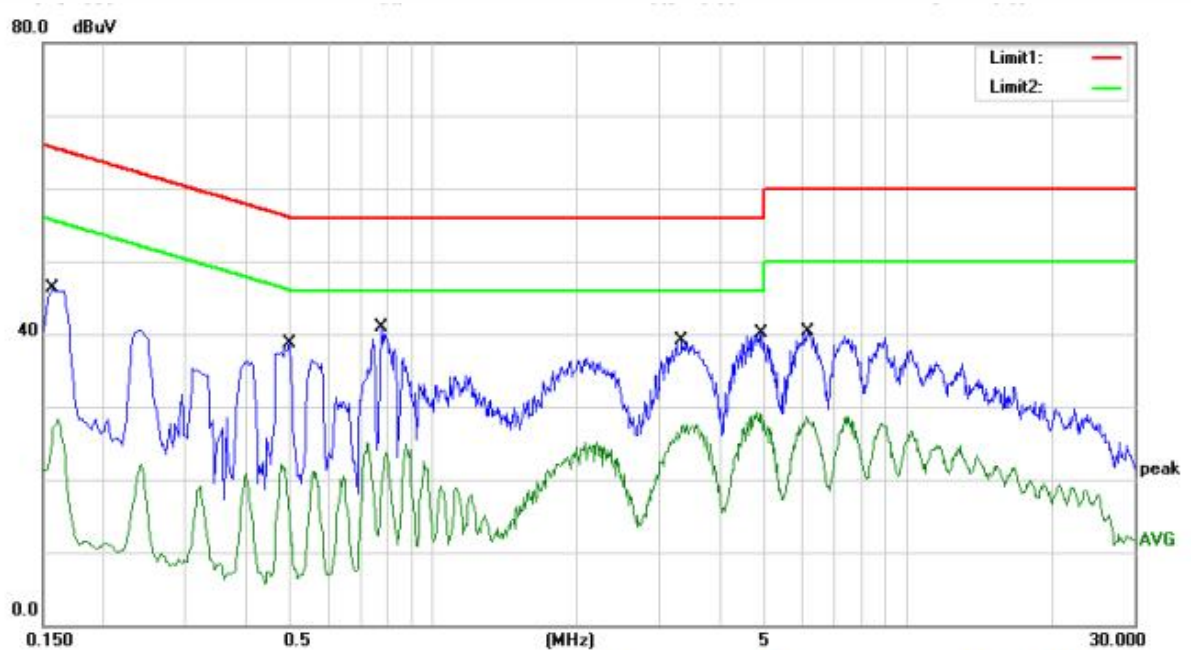
Mode: Charging

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1580	39.31	10.01	49.32	65.57	-16.25	QP	
2		0.1580	21.74	10.01	31.75	55.57	-23.82	AVG	
3		0.4820	26.04	10.17	36.21	56.30	-20.09	QP	
4		0.4820	13.78	10.17	23.95	46.30	-22.35	AVG	
5		0.7460	29.33	10.18	39.51	56.00	-16.49	QP	
6		0.7460	18.11	10.18	28.29	46.00	-17.71	AVG	
7		0.8660	31.44	10.18	41.62	56.00	-14.38	QP	
8		0.8860	17.75	10.18	27.93	46.00	-18.07	AVG	
9		2.1940	30.35	10.18	40.53	56.00	-15.47	QP	
10		2.1940	18.36	10.18	28.54	46.00	-17.46	AVG	
11	*	3.3700	32.52	10.18	42.70	56.00	-13.30	QP	
12		3.3700	20.50	10.18	30.68	46.00	-15.32	AVG	

\*:Maximum data    x:Over limit    !:over margin    Comment: Factor build in receiver.    Operator: Jason

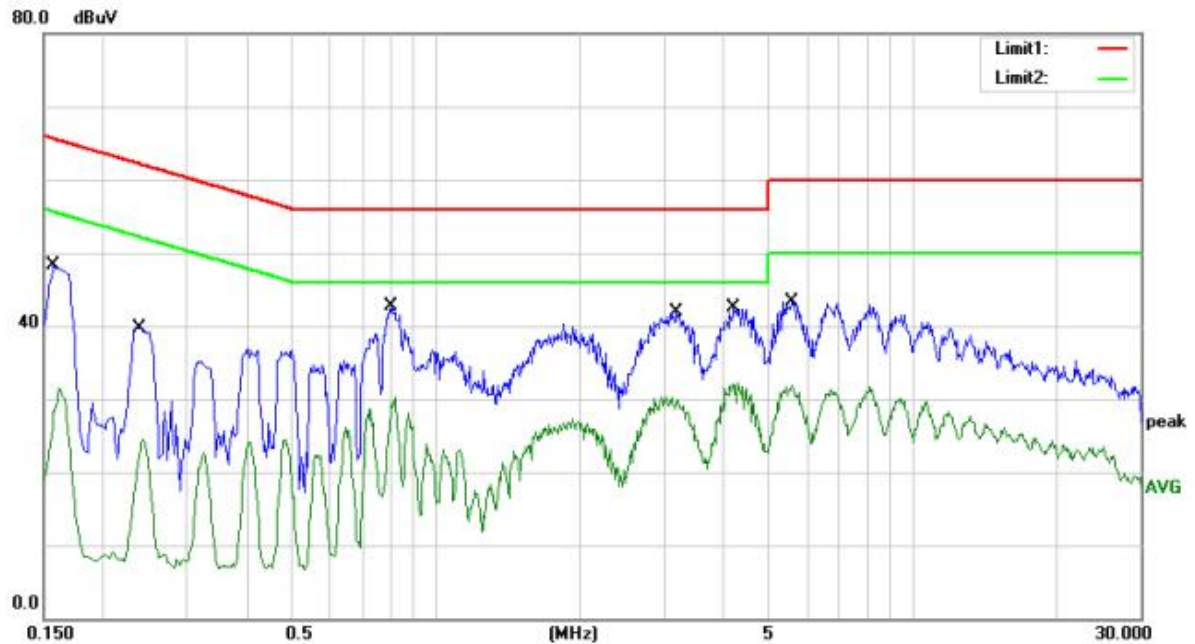
UT683R RECEIVER



Site site #1 Phase: **L1** Temperature: 25  
Limit: EN IEC 61326-1\_QP (CE) Power: DC 5V from USB port Humidity: 55 %  
Mode: Charging  
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1580	36.26	10.01	46.27	65.57	-19.30	QP	
2		0.1580	18.26	10.01	28.27	55.57	-27.30	AVG	
3		0.4980	28.42	10.18	38.60	56.03	-17.43	QP	
4		0.4980	11.88	10.18	22.06	46.03	-23.97	AVG	
5	*	0.7780	30.65	10.18	40.83	56.00	-15.17	QP	
6		0.7780	14.93	10.18	25.11	46.00	-20.89	AVG	
7		3.3340	28.96	10.18	39.14	56.00	-16.86	QP	
8		3.3340	17.39	10.18	27.57	46.00	-18.43	AVG	
9		4.9020	29.98	10.18	40.16	56.00	-15.84	QP	
10		4.9020	19.09	10.18	29.27	46.00	-16.73	AVG	
11		6.1700	30.14	10.19	40.33	60.00	-19.67	QP	
12		6.1700	18.46	10.19	28.65	50.00	-21.35	AVG	

\*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: Jason



Site site #1 Phase: **N** Temperature: 25  
Limit: EN IEC 61326-1\_QP (CE) Power: DC 5V from USB port Humidity: 55 %  
Mode: Charging  
Note:

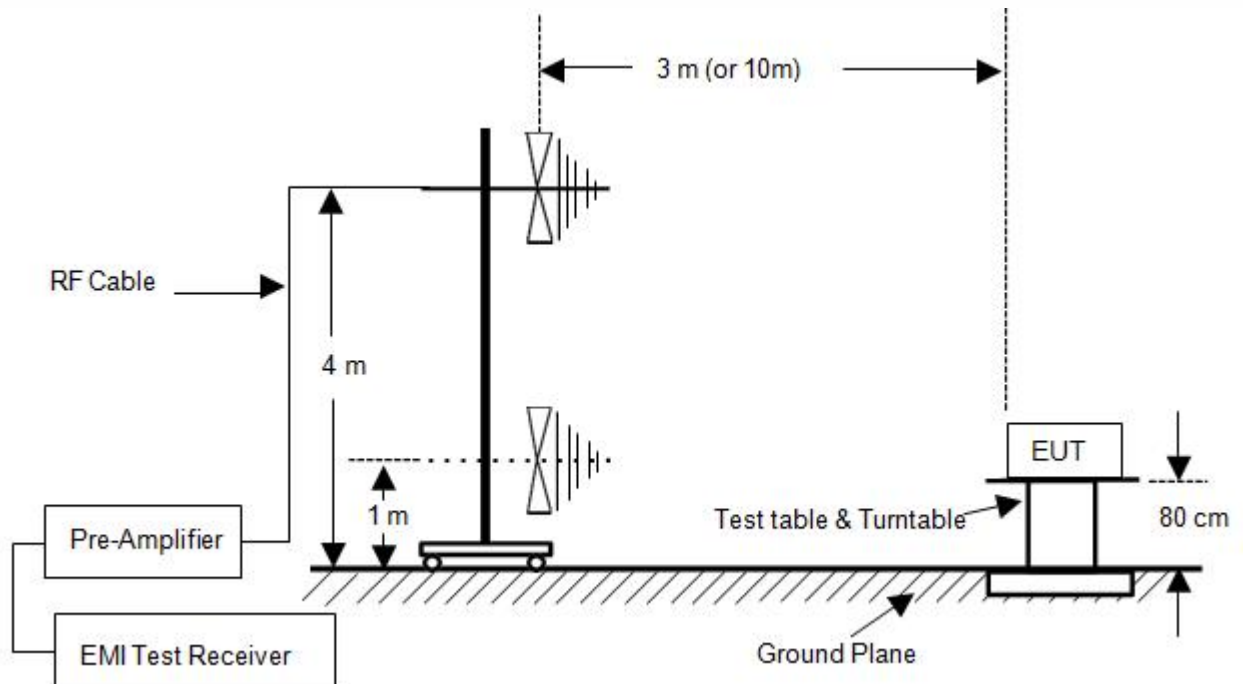
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1590	38.07	10.01	48.08	65.52	-17.44	QP	
2		0.1590	21.41	10.01	31.42	55.52	-24.10	AVG	
3		0.2380	29.72	10.05	39.77	62.17	-22.40	QP	
4		0.2380	14.44	10.05	24.49	52.17	-27.68	AVG	
5	*	0.8020	32.61	10.18	42.79	56.00	-13.21	QP	
6		0.8020	20.13	10.18	30.31	46.00	-15.69	AVG	
7		3.1980	31.75	10.18	41.93	56.00	-14.07	QP	
8		3.1980	19.66	10.18	29.84	46.00	-16.16	AVG	
9		4.2020	32.31	10.18	42.49	56.00	-13.51	QP	
10		4.2020	21.96	10.18	32.14	46.00	-13.86	AVG	
11		5.5820	33.19	10.18	43.37	60.00	-16.63	QP	
12		5.5820	21.73	10.18	31.91	50.00	-18.09	AVG	

\*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: Jason



## 5. RADIATED EMISSION MEASUREMENT (UP TO 1GHz)

### 5.1. Block Diagram of Test Setup



### 5.2. Radiated Limit

EN IEC 61326-1:2021

Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance (m)	Detector type / bandwidth	
30 to 230	OATS/SAC	10	Quasi Peak / 120 kHz	30
230 to 1 000				37
30 to 230	OATS/SAC	3		40
230 to 1 000				47

### 5.3. Test Procedure

The EUT was placed on a non-conductive table whose total height equaled 80cm. All units of equipment forming the system under test (includes the EUT as well as connected peripherals and associated equipment or devices) shall be arranged such that a nominal 0.1 m separation is achieved between the neighboring units. Where the mains cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the centre into a bundle no longer than 0.4 m, so that its length is shortened to 1 m.

The EUT was set 3 meters (or 10 meters) away from the receiving antenna that was mounted on a non-conductive mast. The antenna can move up and down between 1 to 4 meters to find out the

maximum emission level.

The turntable can rotate 360 degree to determine the position of the maximum emission level.

The initial testing identified the frequency that has the highest disturbance relative to the limit while operating the EUT in typical modes of operation and cable positions in a test setup representative of typical system configuration.

The identification of the frequency of highest emission with respect to the limit was found by investigating emissions at a number of significant frequencies. The probable frequency of maximum emission had been found and that the associated cable and EUT configuration and mode of operation had been identified.

The bandwidth of the Receiver is set at 120 kHz.

Test results were obtained from the following equation:

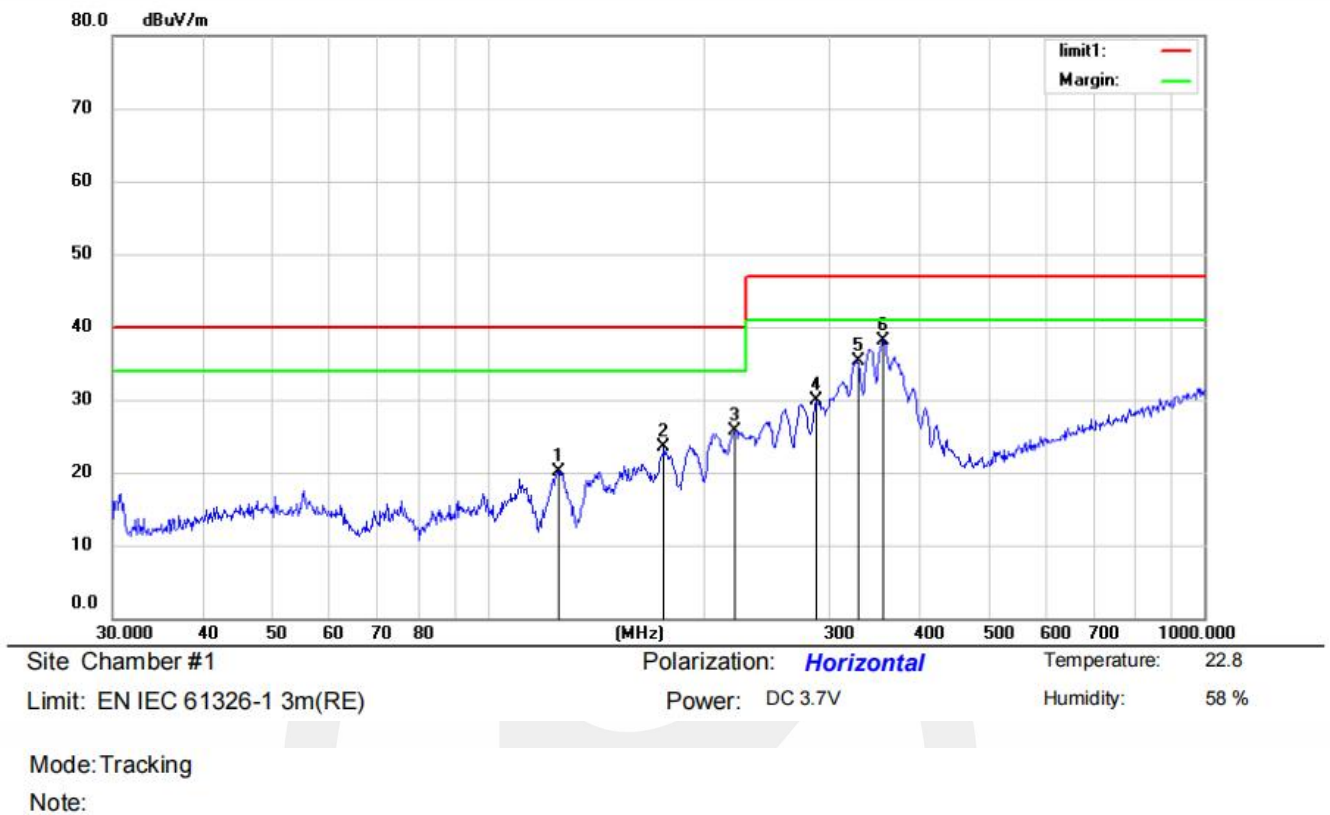
Emission level (dB $\mu$ V/m) = Antenna Factor - Amp Factor + Cable Loss + Reading

Margin (dB) = Emission Level (dB $\mu$ V/m) - Limit (dB $\mu$ V/m)

## 5.4. Measuring Results

**PASS.**

The data are attached the following pages.



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		125.4457	39.81	-19.63	20.18	40.00	-19.82	QP		
2		176.2686	41.69	-18.10	23.59	40.00	-16.41	QP		
3		221.3921	40.63	-14.87	25.76	40.00	-14.24	QP		
4		286.9823	42.90	-12.97	29.93	47.00	-17.07	QP		
5		327.8873	47.39	-12.05	35.34	47.00	-11.66	QP		
6	*	356.6758	49.52	-11.38	38.14	47.00	-8.86	QP		

\*:Maximum data x:Over limit !:over margin

Operator: Ccyf



Site Chamber #1 Polarization: **Vertical** Temperature: 22.8  
Limit: EN IEC 61326-1 3m(RE) Power: DC 3.7V Humidity: 58 %

Mode: Tracking  
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		44.2752	32.18	-15.66	16.52	40.00	-23.48	QP		
2		57.3923	33.59	-16.34	17.25	40.00	-22.75	QP		
3		223.7334	33.20	-14.79	18.41	40.00	-21.59	QP		
4		340.7817	37.52	-11.76	25.76	47.00	-21.24	QP		
5		369.4047	35.16	-11.01	24.15	47.00	-22.85	QP		
6	*	860.0352	32.83	-2.56	30.27	47.00	-16.73	QP		

\*:Maximum data x:Over limit !:over margin

Operator: Ccyf



Site Chamber #1

Limit: EN IEC 61326-1 3m(RE)

Polarization: **Horizontal**

Power: DC 3.7V

Temperature: 22.8

Humidity: 58 %

Mode: Charging

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1		42.0066	33.47	-16.07	17.40	40.00	-22.60	QP		
2		55.0274	32.08	-15.79	16.29	40.00	-23.71	QP		
3		121.1231	37.35	-19.10	18.25	40.00	-21.75	QP		
4	*	183.2005	43.07	-17.51	25.56	40.00	-14.44	QP		
5		233.3487	39.59	-14.44	25.15	47.00	-21.85	QP		
6		903.3094	32.69	-1.66	31.03	47.00	-15.97	QP		

\*:Maximum data x:Over limit !:over margin

Operator: Ccyf





Site Chamber #1

Polarization: **Vertical**

Temperature: 22.8

Limit: EN IEC 61326-1 3m(RE)

Power: DC 3.7V

Humidity: 58 %

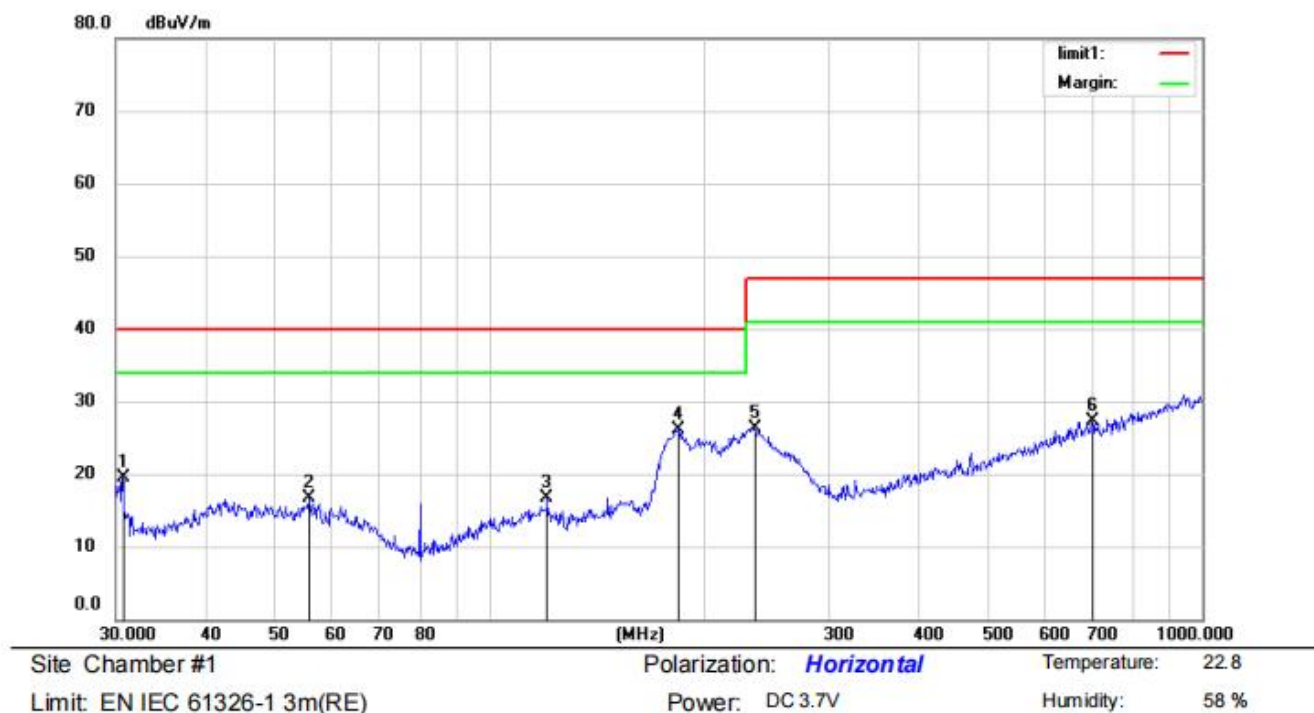
Mode: Charging

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		35.2512	40.93	-17.77	23.16	40.00	-16.84	QP		
2		42.0066	39.76	-16.07	23.69	40.00	-16.31	QP		
3		63.0916	37.33	-17.75	19.58	40.00	-20.42	QP		
4	*	181.2834	41.61	-17.78	23.83	40.00	-16.17	QP		
5		261.9753	36.96	-13.55	23.41	47.00	-23.59	QP		
6		790.6188	32.74	-3.84	28.90	47.00	-18.10	QP		

\*:Maximum data x:Over limit !:over margin

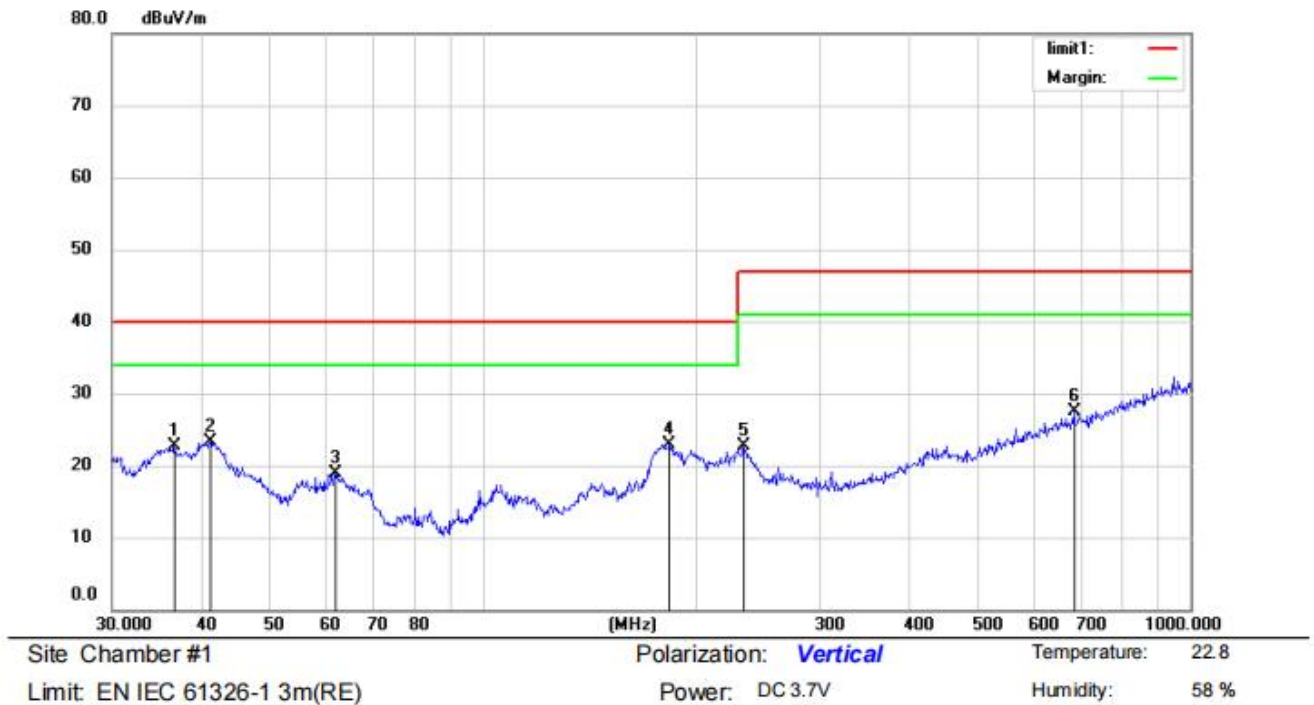
Operator: Ccyf



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	dBuV	Factor	ment			Height	Degree	
				dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		30.6380	37.72	-18.12	19.60	40.00	-20.40	QP		
2		56.0007	32.65	-16.02	16.63	40.00	-23.37	QP		
3		120.6991	35.77	-19.05	16.72	40.00	-23.28	QP		
4	*	184.4898	43.46	-17.32	26.14	40.00	-13.86	QP		
5		234.9910	40.63	-14.37	26.26	47.00	-20.74	QP		
6		699.3046	31.10	-3.81	27.29	47.00	-19.71	QP		

\*:Maximum data x:Over limit l:over margin

Operator: Ccyf



Mode: Charging

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		36.6375	39.99	-17.38	22.61	40.00	-17.39	QP		
2	*	41.2765	39.60	-16.20	23.40	40.00	-16.60	QP		
3		61.7781	36.39	-17.42	18.97	40.00	-21.03	QP		
4		183.8440	40.25	-17.41	22.84	40.00	-17.16	QP		
5		233.3487	37.11	-14.44	22.67	47.00	-24.33	QP		
6		684.7454	31.59	-4.14	27.45	47.00	-19.55	QP		

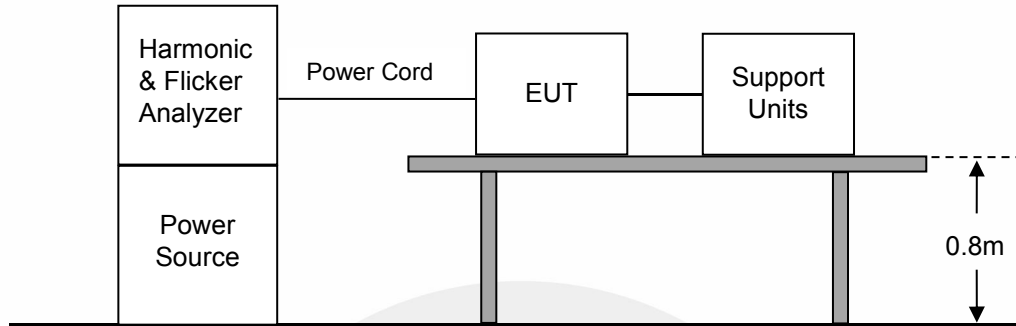
\*:Maximum data x:Over limit !:over margin

Operator: Ccyf



## 6. HARMONIC CURRENT EMISSION MEASUREMENT

### 6.1. Block Diagram of Test Setup



### 6.2. Standard Limits

EN 61000-3-2, CLASS A

Harmonic current emissions evaluate the potential for the EUT to cause distortion on the AC power lines. It is applicable to electrical and electronic equipment having an input current  $\leq 16$  A per phase, and intended to be connected to public low-voltage distribution systems

Table 1 - Limits for Class A equipment

Harmonic order n	Maximum permissible harmonic current (A)
Odd harmonics	
3	2.30
5	1.14
7	0.77
9	0.40
11	0.33
13	0.21
$15 \leq n \leq 39$	$0.15 \frac{0.15}{n}$
Even harmonics	
2	1.08
4	0.43
6	0.30
$8 \leq n \leq 40$	$0.23 \frac{8}{n}$

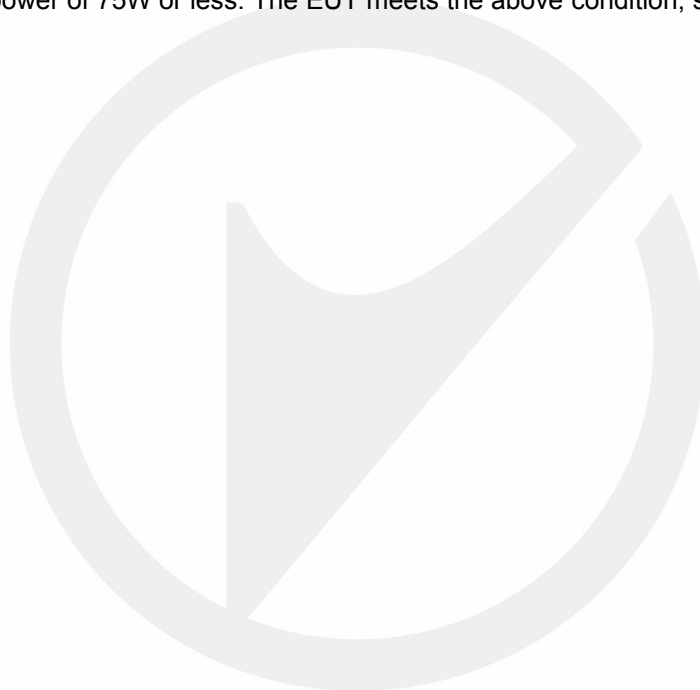
### 6.3. Test Procedure

The measurement of harmonic currents shall be performed as follows: i. For each harmonic order, measure the 1.5 s smoothed r.m.s. harmonic current in each DFT time window as defined in EN / IEC 61000-4-7:2009. ii. Calculate the arithmetic average of the measured values from the DFT time windows, over the entire observation period Short cyclic (T cycle $\leq$ 2.5 min). Because of synchronisation to meet the requirements for repeatability in 5%.

### 6.4. Test Results

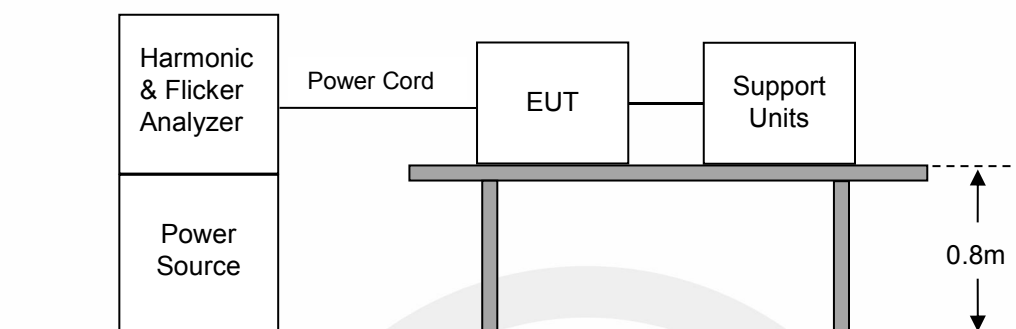
**N/A**

As specified on section 7 and above figure of EN 61000-3-2, the limits are not specified for equipment with a rated power of 75W or less. The EUT meets the above condition, so it conforms to EN 61000-3-2.



## 7. VOLTAGE FLUCTUATION AND FLICKER MEASUREMENT

### 7.1. Block Diagram of Test Setup



### 7.2. Standard Limits

#### EN 61000-3-3 Limits

The objective of voltage changes, voltage fluctuations and flicker in public low voltage supply systems during equipment with rated current  $\leq 16$  A per phase, ensures that home appliances and certain other electrical equipment do not adversely affect lighting equipment when connected to the same power system.

#### Voltage Fluctuation and Flicker Limits:

- the value of  $P_{st}$  shall not be greater than 1.0;
- the value of  $P_{lt}$  shall not be greater than 0.65;
- the value of  $d(t)$  during a voltage change shall not exceed 3.3 % for more than 500 ms;
- the relative steady-state voltage change,  $d_c$ , shall not exceed 3.3 %;
- the maximum relative voltage change,  $d_{max}$ , shall not exceed 4.0 %;

### 7.3. Test Procedure

The total impedance of the test circuit, excluding the appliance under test, but including the internal impedance of the supply source, shall be equal to the reference impedance. The stability and tolerance of the reference impedance shall be adequate to ensure that the overall accuracy of 8% is achieved during the whole assessment procedure.

### 7.4. Test Results

**PASS.**

Please see the attached page.

#### Flicker Test Summary per EN/IEC61000-3-3 Ed. 3.0 (Run time)

**EUT: UT683T TRANSMITTER**

**Test category: All parameters (European limits)**

**Test date: 2022-9-22**

**Start time: 10:15:35**

**Tested by: XIAO**

**Test Margin: 100**

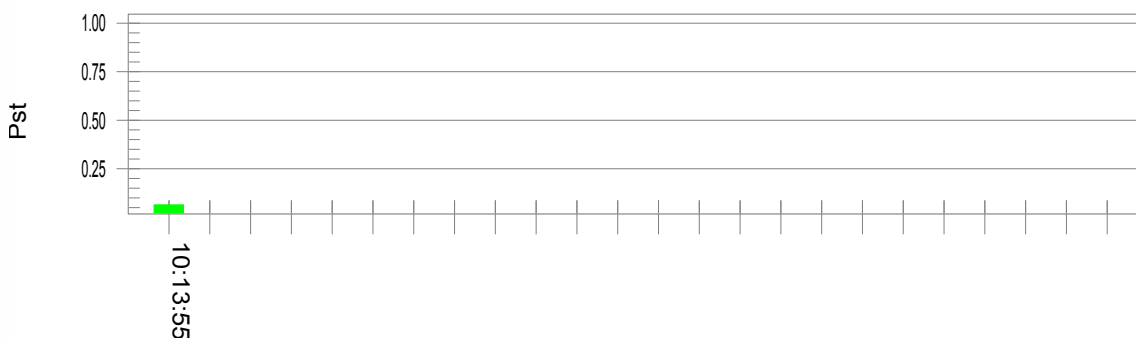
**End time: 10:26:02**

Test duration (min): 10      Data file name: F-000208.cts\_data  
 Comment: Charging  
 Customer: Customer information

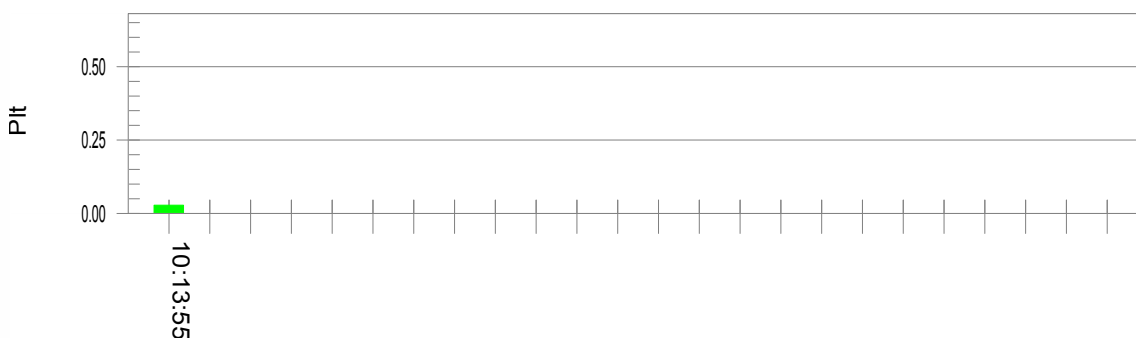
Test Result: Pass      Status: Test Completed

## Pst and limit line

## European Limits



## Plt and limit line



### Parameter values recorded during the test:

Vrms at the end of test (Volt):	228.41		
T-max (mS):	0	Test limit (mS):	500.0
Highest dc (%):	0.00	Test limit (%):	3.30
Highest dmax (%):	0.00	Test limit (%):	4.00
Highest Pst (10 min. period):	0.064	Test limit:	1.000
			Pass
			Pass
			Pass
			Pass

## Flicker Test Summary per EN/IEC61000-3-3 Ed. 3.0 (Run time)

EUT: UT683R RECEIVER  
Test category: All parameters (European limits)  
Test date: 2022-9-22  
Test duration (min): 10  
Comment: Charging  
Customer: Customer information

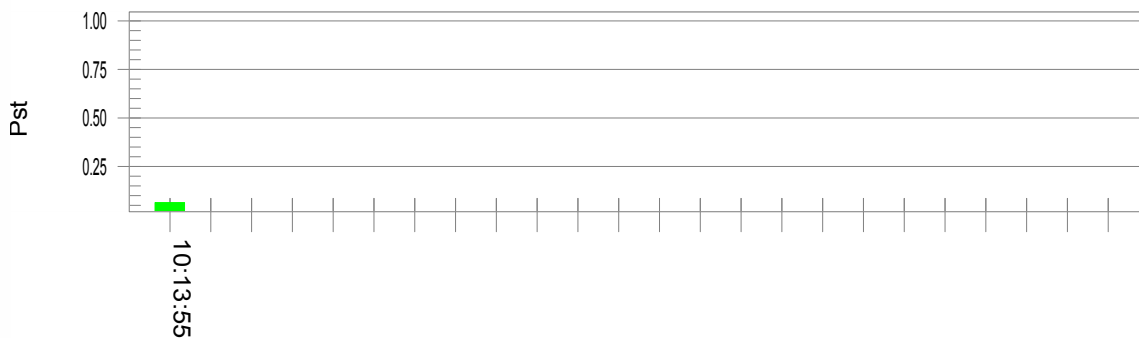
Tested by: XIAO  
Test Margin: 100  
Start time: 10:03:35  
End time: 10:14:02  
Data file name: F-000208.cts\_data

Test Result: Pass

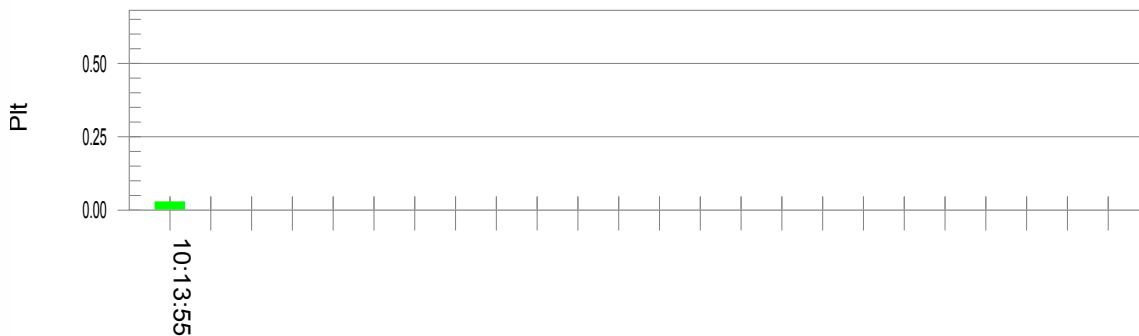
Status: Test Completed

### Pst and limit line

### European Limits



### Plt and limit line



### Parameter values recorded during the test:

Vrms at the end of test (Volt):	228.41		
T-max (mS):	0	Test limit (mS):	500.0
Highest dc (%):	0.00	Test limit (%):	3.30
Highest dmax (%):	0.00	Test limit (%):	4.00
Highest Pst (10 min. period):	0.064	Test limit:	1.000

Pass  
Pass  
Pass  
Pass

## 8. IMMUNITY GENERAL PERFORMANCE CRITERIA DESCRIPTION

General performance criteria are defined in EN IEC 61326-1 clause 4. These criteria shall be used during the testing of primary functions where no relevant annex is applicable.

When assessing the impact of a disturbance on a function, the assessment should take into consideration the function's performance prior to the application of the disturbance and only identify as failures those changes in performance that are a result of the disturbance.

EN IEC 61326-1:

Performance criterion A: The EUT shall continue to operate as intended during and after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the EUT is used as intended. If the performance level is not specified by the manufacturer, this may be derived from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.

Performance criterion B: The EUT shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the EUT is used as intended. The performance level may be replaced by a permissible loss of performance. However, during the test ENIEC 61000-6-2:2019 degradation of performance is allowed but no change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, either of these may be derived from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.

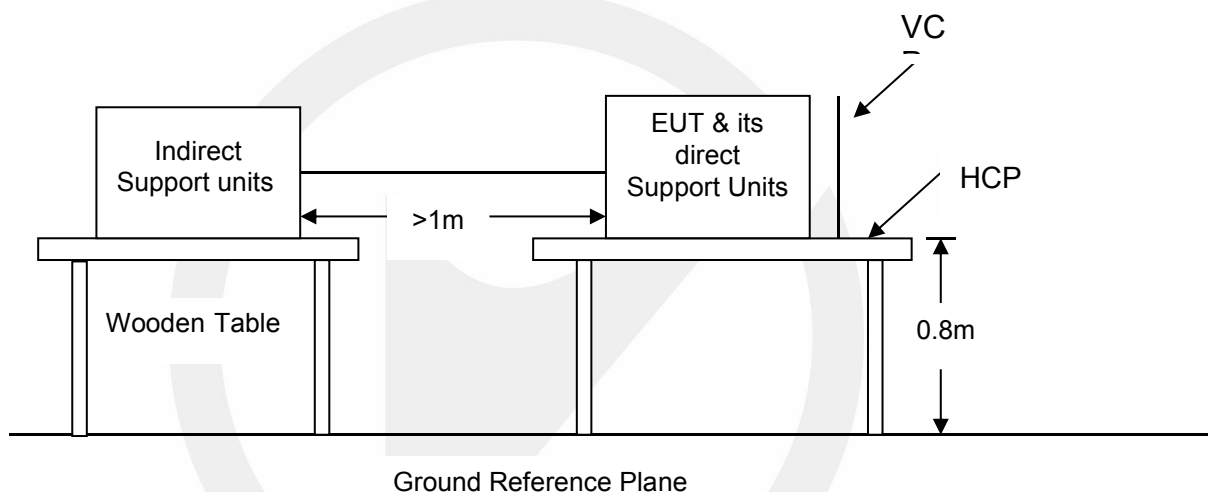
Performance criterion C: Temporary loss of function is allowed during the test, provided the function is self-recoverable or can be restored by the operation of the controls. If, as a result of the application of the tests defined in this standard, the EUT becomes dangerous or unsafe, it shall be deemed to have failed the test.

## 9. ELECTROSTATIC DISCHARGE

### 9.1. Test Specification

Test standard	: EN IEC 61326-1
Basic standard	: IEC 61000-4-2
Performance criterion	: B
Test level	: $\pm 8.0\text{kV}$ (Air discharge)
	: $\pm 4.0\text{kV}$ (Contact discharge)

### 9.2. Block Diagram of Test Setup



### 9.3. Test Procedure

- In the case of air discharge testing, the climatic conditions shall be within the following ranges:
  - ambient temperature:  $15^{\circ}\text{C}$  to  $35^{\circ}\text{C}$ ;
  - relative humidity : 30% to 60%;
  - atmospheric pressure : 86 kPa (860 mbar) to 106 kPa (1060 mbar)
- Test programs and software shall be chosen so as to exercise all normal modes of operation of the EUT. The use of special exercising software is encouraged, but permitted only where it can be shown that the EUT is being comprehensively exercised.
- In the case of contact discharges, the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.
- In the case of painted surface covering a conducting substrate, the following procedure shall be adopted :
  - If the coating is not declared to be an insulating coating by the equipment manufacturer, then the pointed tip of the generator shall penetrate the coating so as to make contact with the conducting substrate.
  - Coating declared as insulating by the manufacturer shall only be submitted to the air discharge.
  - The contact discharge test shall not be applied to such surfaces.
- In the case of air discharges, the round discharge tip of the discharge electrode shall be approached as fast as possible (without causing mechanical damage) to touch the EUT. After each discharge, the ESD generator (discharge electrode) shall be removed from the EUT. The generator is then retriggered for a new single discharge. This procedure shall be repeated until the discharges are completed. In the case of an air discharge test, the discharge switch, which is used for contact discharge, shall be closed.

- f. The test voltage shall be increased from the minimum to the selected test severity level, in order to determine any threshold of failure. The final test level should not exceed the product specification value in order to avoid damage to the equipment.
- g. The test shall be performed with both air discharge and contact discharge. The test shall be performed with single discharges. On each pre-selected point at least 10 single discharges (in the most sensitive polarity) shall be applied. For the time interval between successive single discharges an initial value of 1 s is recommended. Longer intervals may be necessary to determine whether a system failure has occurred.
- h. Ensure that the applied charge on the EUT has been dis-charged before next ESD pulse.

## 9.4. Test Results

### PASS

Temperature : 23.5 °C  
Humidity : 56.3%  
Atmospheric Pressure : 101kpa  
Test Engineer : Ccyf  
Test Date : 2022-09-15

#### Air Discharge:

Test Voltage	Location	Actual criterion	Required performance criterion	Result (Pass/Fail)
±2; 4; 8 kV	Gap	A	B	Pass
±2; 4; 8 kV	Screen	A	B	Pass
±2; 4; 8 kV	Switch	A	B	Pass

#### Contact Discharge

Test Voltage	Location	Actual criterion	Required performance criterion	Result (Pass/Fail)
±2; 4kV	Metal enclosure	A	B	Pass
±2; 4kV	Ports	A	B	Pass
±2; 4kV	Screw	A	B	Pass

#### Indirect Discharge

Test Voltage	Location	Actual criterion	Required performance criterion	Result (Pass/Fail)
±2; 4 kV	HCP	A	B	Pass
±2; 4kV	VCP	A	B	Pass

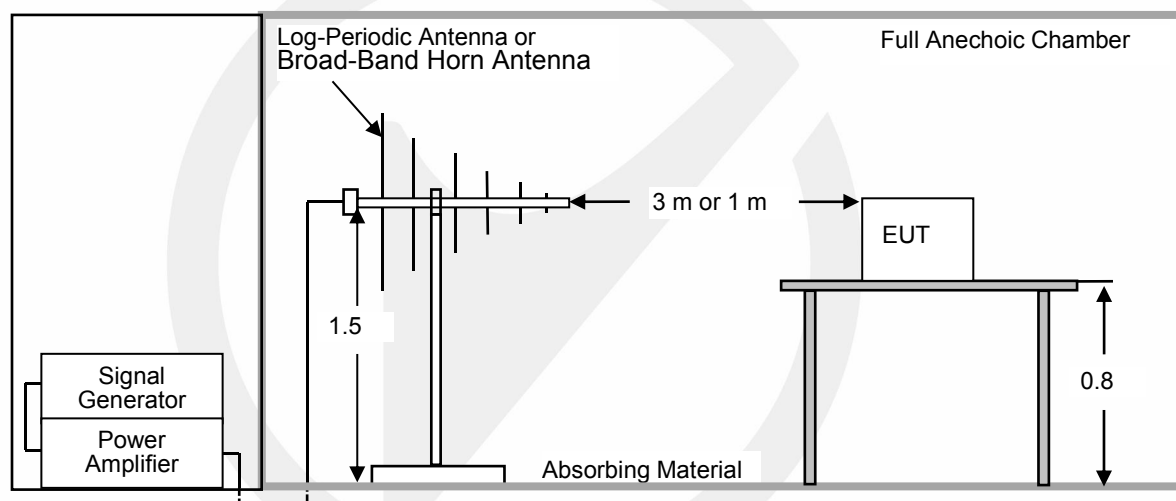


## 10. ELECTROMAGNETIC FIELD

### 10.1. Test Specification

Test standard	: EN IEC 61326-1	
Basic standard	: IEC 61000-4-3	
Performance criterion	: A	
Frequency range &	: <input checked="" type="checkbox"/> 80MHz-1000MHz	3V/m
Test level	: <input checked="" type="checkbox"/> 1400MHz-6000MHz	3V/m
Modulation	: AM, 80%, 1kHz sine-wave	

### 10.2. Block Diagram of Test Setup



### 10.3. Test procedure

The procedure defined in this part requires the generation of electromagnetic fields within which the test sample is placed and its operation observed. To generate fields that are useful for simulation of actual (field) conditions may require significant antenna drive power and the resultant high field strength levels. To comply with local regulations and to prevent biological hazards to the testing personnel, it is recommended that these tests be carried out in a shielded enclosure or semi-anechoic chamber.

- The antenna which is enabling the complete frequency range of 80-1000 MHz is placed 3m (or 1m) away from the equipment. The required field strength is determined by placing the field strength meter(s) on top of or directly alongside the equipment under test and monitoring the field strength meter via a remote field strength indicator outside the enclosure while adjusting the continuous-wave to the antenna.
- The test is performed with the antenna facing the front and back sides of the EUT with. Both vertical and horizontal polarizations from antenna are tested.

#### 10.4. Test results

This test result outsourced to EMTEK(SHENZHEN) CO., LTD.

**PASS**

Temperature : 23.4 °C  
Humidity : 56%  
Atmospheric Pressure : 101kpa  
Test Engineer : Ccyf  
Test Date : 2022-09-15

☒ 80MHz-1000MHz:

Freq. Range (MHz)	Field	Modulation	Polarity	Position (°)	Actual criterion	Required performance criterion	Result
80-1000	3V/m	AM, 80%	H / V	0, 90, 180, 270	A	A	Pass

☒ 1400MHz-6000MHz:

Freq (MHz)	Field	Modulation	Polarity	Position (°)	Actual criterion	Required performance criterion	Result
1400-6000	3V/m	AM, 80%	H / V	0, 90, 180, 270	A	A	Pass

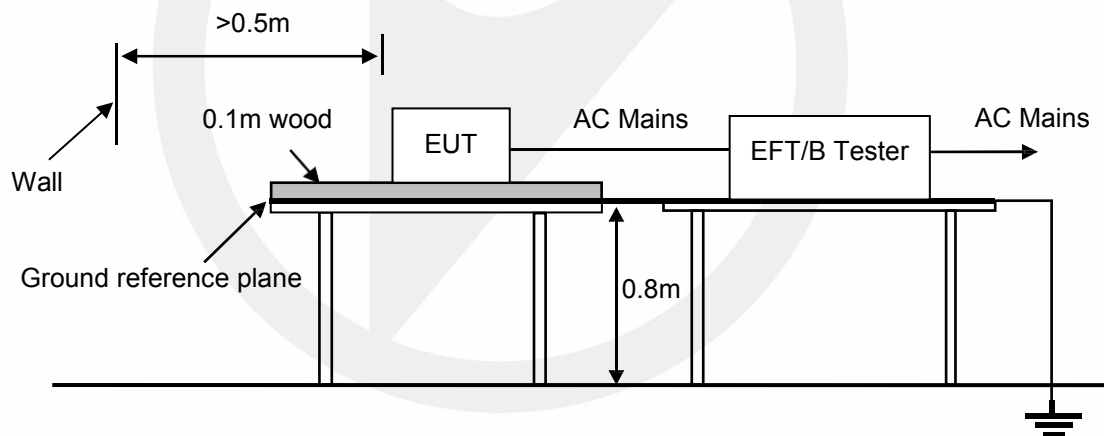
## 11. BURST

### 11.1. Test Specification

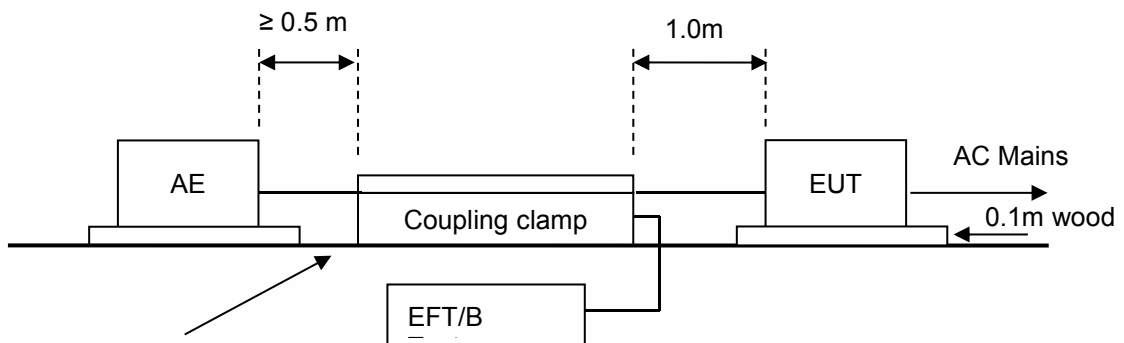
Test standard	: EN IEC 61326-1
Basic standard	: IEC 61000-4-4
Performance criterion	: B
Test level	: <input checked="" type="checkbox"/> 1.0kV, AC mains power ports <input type="checkbox"/> 0.5kV, DC power ports <input checked="" type="checkbox"/> 0.5kV, I/O Signal/control ports
Repetition frequency	: <input checked="" type="checkbox"/> 5kHz, <input type="checkbox"/> 100kHz(Only xDSL ports)
Tr/Th:	: 5/50ns
Burst period	: 300ms
Test time	: 120s

### 11.2. Block Diagram of Test Setup

AC Lines:



Signal lines:



### 11.3.Test Procedure

The EUT is put on the table that is 0.8 meter high above the ground. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

### 11.4.Test Results

#### PASS

Temperature : 25.1° C  
Humidity : 57.2%  
Atmospheric Pressure : 101kpa  
Test Engineer : Ccyf  
Test Date : 2022-09-15

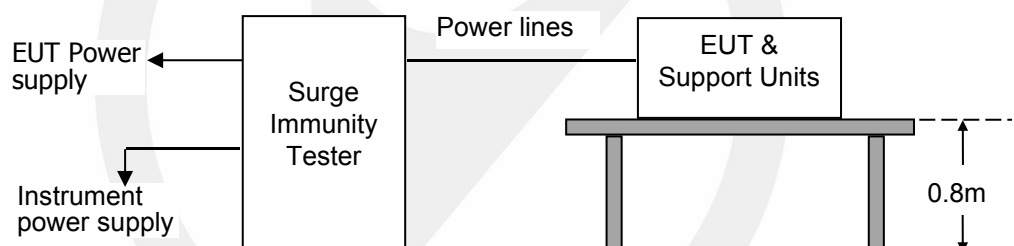
Injection Line	Voltage (kV)	Injected Method	Actual criterion	Required performance criterion	Result (Pass/Fail)
<input checked="" type="checkbox"/> AC mains power ports	± 1.0	<input checked="" type="checkbox"/> CDN <input type="checkbox"/> Direct injection <input type="checkbox"/> Capacitive coupling clamp	A	B	Pass
<input type="checkbox"/> DC power ports	± 0.5	<input type="checkbox"/> CDN <input type="checkbox"/> Direct injection <input checked="" type="checkbox"/> Capacitive coupling clamp	N/A	N/A	N/A
<input checked="" type="checkbox"/> I/O Signal/control ports	± 0.5	<input type="checkbox"/> CDN <input type="checkbox"/> Direct injection <input checked="" type="checkbox"/> Capacitive coupling clamp	A	B	Pass

## 12. SURGES

### 12.1. Test Specification

Test standard	: EN IEC 61326-1
Basic standard	: IEC 61000-4-5
Test level	: <input checked="" type="checkbox"/> 0.5kV, Line to Line, AC mains power ports, Criterion B <input type="checkbox"/> 1.0kV, Line to Earth, AC mains power ports, Criterion B <input type="checkbox"/> 0.5kV, Line to line, DC power ports, Criterion B <input type="checkbox"/> 1.0kV, Line to earth, DC power ports, Criterion B <input checked="" type="checkbox"/> 1.0kV, Line to earth, I/O Signal/control ports, Criterion B
Number of surges	: 5 (for each combination of parameters)
Repetition rate	: 1 minute / time
Polarity:	: Positive / Negative
Phase angle:	: 90°, 270° (Only AC mains power ports)

### 12.2. Block Diagram of Test Setup



### 12.3. Test Procedure

This test simulates a lightning event by inducing transients onto the AC/DC power supply lines in common mode (Line to Ground) and differential mode (Line to Line). Each device was tested in a total of two surge configurations: Line to Ground (L-G): Combination Wave, Line to Protective Earth with 9uF and 10Ohm and Neutral to Protective Earth with 9uF and 10Ohm, common mode, generator earthed.

Line to Line (L-L): Combination Wave,

Line to Neutral with 18uF, differential mode, generator floated.

2 ohm : the source impedance of the low-voltage power supply network.

12 ohm : the source impedance of the low-voltage power supply network and ground.

- If not otherwise specified the surges have to be applied synchronized to the voltage phase at the zero-crossing and the peak value of the a.c. voltage wave (positive and negative).
- The surges have to be applied line to line and line to earth. When testing line to earth, the test voltage has to be applied successively between each of the lines and earth, if there is no other specification.
- The test procedure shall also consider the non-linear current-voltage characteristics of the equipment under test. Therefore the test voltage has to be increased by steps up to the test level specified in the product standard or test plan. All lower levels including the selected test level shall be satisfied.
- For testing the secondary protection, the output voltage of the generator shall be increased up to the worst-case voltage breakdown level (let-through level) of the primary protection.
- Testing shall be performed according to a Test Plan, which shall be included in the test report.

f. To find all critical points of the duty cycle of the equipment, a sufficient number of positive and negative test pulses shall be applied.

## 12.4. Test results

### PASS

Temperature : 25.1 °C  
Humidity : 57.2%  
Atmospheric Pressure : 101kpa  
Test Engineer : Ccyf  
Test Date : 2022-09-15

☒ AC mains power ports:

Coupling Line	Voltage (kV)	Waveform (μs)	Polarity	Actual criterion	Required performance criterion	Result (Pass/Fail)
<input checked="" type="checkbox"/> Line to line	0.5	1.2/50 (8/20)	Pos./ Neg.	A	B	Pass
<input type="checkbox"/> Line to earth	1.0	1.2/50 (8/20)	Pos./ Neg.	N/A	B	N/A

☐ DC power ports:

Coupling Line	Voltage (kV)	Waveform (μs)	Polarity	Actual criterion	Required performance criterion	Result (Pass/Fail)
<input type="checkbox"/> Line to line	0.5	1.2/50 (8/20)	Pos./ Neg.	N/A	B	N/A
<input type="checkbox"/> Line to earth	1.0	1.2/50 (8/20)	Pos./ Neg.	N/A	B	N/A

☒ I/O Signal/control ports:

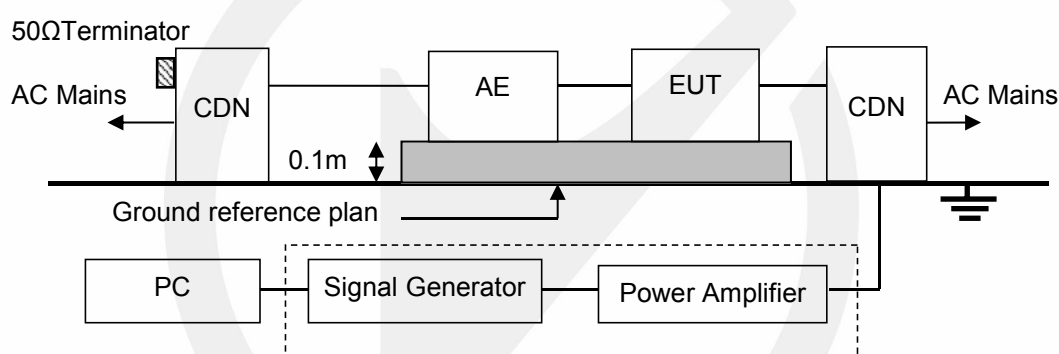
Coupling Line	Voltage (kV)	Waveform (μs)	Polarity	Actual criterion	Required performance criterion	Result (Pass/Fail)
<input checked="" type="checkbox"/> Line to earth	1.0	1.2/50 (8/20)	Pos./ Neg.	A	B	Pass

## 13. CONDUCTED RF

### 13.1. Test Specification

Test standard	: EN IEC 61326-1
Basic standard	: IEC 61000-4-6
Performance criterion	: A
Frequency range & Test level	: 0.15M to 80MHz, 3V at AC power ports 0.15M to 80MHz, 3V at DC power ports 0.15M to 80MHz, 3V at I/O Signal/control ports
Modulation	: AM 80%, 1kHz sine-wave
Frequency Step	: 1% of fundamental

### 13.2. Block Diagram of Test Setup



### 13.3. Test Procedure

- The EUT shall be operated within its intended climatic conditions. The temperature and relative humidity should be recorded.
- The EUT is placed on a 0.1m high test table, and a well grounded cable is connected to metallic plane above the test table.
- All cables/wires must be laid out on test plate (3cm in thickness), and the EUT is set up on test plate (10 cm in thickness) as shown in test setup photo, and the cables/wires must not be in mid-air, they should be touching the surface of test plate. Ensure that the EUT is properly connected to the accessory equipment.
- The test shall be performed with the test generator connected to each of the coupling and decoupling devices in turn while the other non-excited RF-input ports of the coupling devices are terminated by a 50 ohm load resistor.
- The frequency range is swept from 150 kHz to 80 MHz, using the signal levels established during the setting process, and with the disturbance signal 80% amplitude modulated with a 1 kHz sine wave, pausing to adjust the RF-signal level or to switch coupling devices as necessary. The rate of sweep shall no exceed  $1.5 \times 10^{-3}$  decades/s. Where the frequency is swept incrementally, the step size shall no exceed 1% of the start and thereafter 1% of the preceding frequency value.
- The dwell time at each frequency shall not be less than the time necessary for the EUT to be exercised, and able to respond. Sensitive frequencies e.g. clock frequency (ies) and harmonics or frequencies of dominant interest shall be analyzed separately.
- Attempts should be made to fully exercise the EUT during testing, and to fully interrogate all exercise

modes selected for susceptibility

h. Testing shall be performed according to a Test Plan, which shall be included in the test report.

## 13.4. Test results

### PASS

Temperature : 25.1 °C  
Humidity : 57.2%  
Atmospheric Pressure : 101kpa  
Test Engineer : Ccyf  
Test Date : 2022-09-15

Range (MHz)	Level (V)	Injection port	Coupling type	Actual criterion	Required performance criterion	Result (Pass/Fail)
0.15-80	3	<input checked="" type="checkbox"/> AC mains power ports	<input checked="" type="checkbox"/> CDN <input type="checkbox"/> EM Clamp <input type="checkbox"/> Current Clamp <input type="checkbox"/> Direct injection	A	A	Pass
0.15-80	3	<input type="checkbox"/> DC power ports	<input type="checkbox"/> CDN <input checked="" type="checkbox"/> EM Clamp <input type="checkbox"/> Current Clamp <input type="checkbox"/> Direct injection	N/A	N/A	N/A
0.15--80	3	<input checked="" type="checkbox"/> I/O Signal/control ports	<input type="checkbox"/> CDN <input checked="" type="checkbox"/> EM Clamp <input type="checkbox"/> Current Clamp <input type="checkbox"/> Direct injection	A	A	Pass

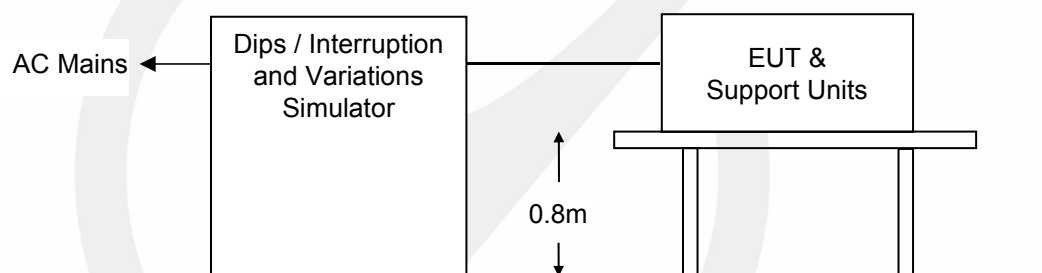


## 14. VOLTAGE DIPS AND SHORT INTERRUPTIONS

### 14.1. Test Specification

Test standard	: EN IEC 61326-1
Basic standard	: IEC 61000-4-11
Test level	: 0%, 0.5 period, Criterion B
	: 0%, 1 period, Criterion B
	<input checked="" type="checkbox"/> 70%, 25 periods for 50Hz, Criterion C
	<input checked="" type="checkbox"/> 70%, 30 periods for 60Hz, Criterion C
	<input checked="" type="checkbox"/> 0%, 250 periods for 50Hz, Criterion C
	<input checked="" type="checkbox"/> 0%, 300 periods for 60Hz, Criterion C

### 14.2. Block Diagram of Test Setup



### 14.3. Test Procedure

- a. Where the equipment has a rated voltage the following shall apply - If the voltage range does not exceed 20% of the lower voltage specified for the rated voltage range, a single voltage within that range may be specified as a basis for test level specification.
  - In all other cases, the test procedure shall be applied for both the lowest and highest voltages declared in the voltage range.
- b. Test Conditions
  - Select operated voltage and frequency of EUT - Test of interval : 10 sec.
  - Level and duration : Sequence of 3 dips/interrupts.
  - Voltage rise (and fall) time : 1.5  $\mu$ s.

#### 14.4. Test results

##### PASS

Temperature : 25.1 °C  
Humidity : 57.2%  
Atmospheric Pressure : 101kpa  
Test Engineer : Ccyf  
Test Date : 2022-09-15

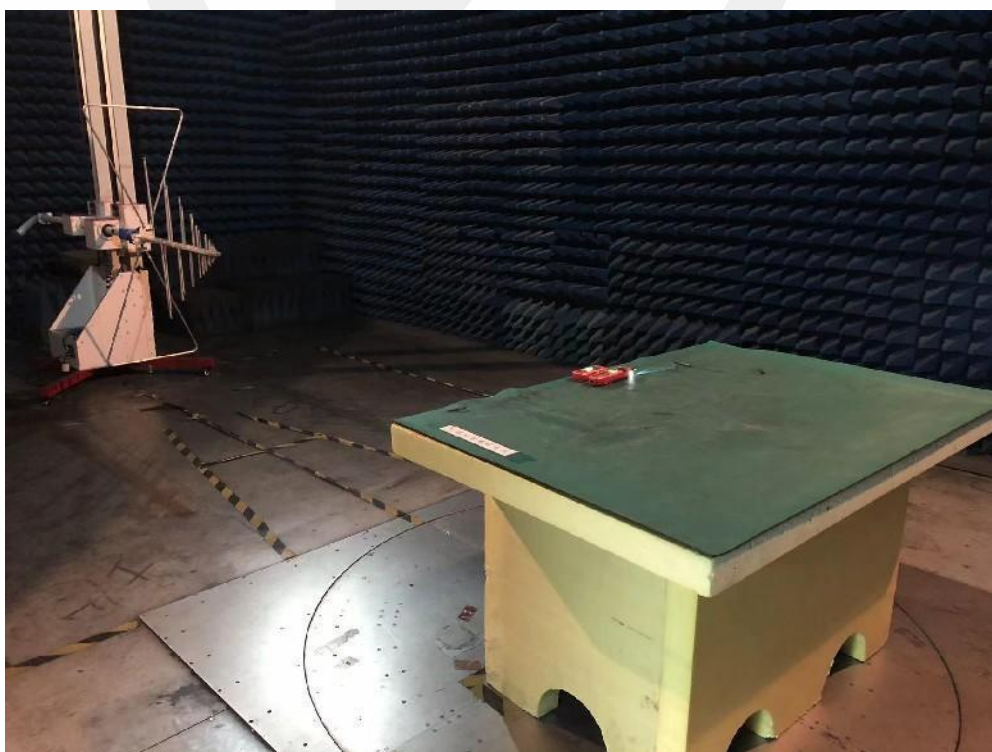
	Test Level (% UT)	Phase angle (°)	Input Voltage (V)	Freq (Hz)	Duration (periods)	Actual criterion	Required performance criterion	Result (Pass /Fail)
<input type="checkbox"/> Voltage dips	0%	0°, 180°	AC 100V	60	0.5	N/A	N/A	N/A
<input checked="" type="checkbox"/> Voltage dips	0%	0°, 180°	AC 240V	50	0.5	A	B	Pass
<input type="checkbox"/> Voltage dips	0%	0°, 180°	AC 100V	60	1	N/A	N/A	N/A
<input checked="" type="checkbox"/> Voltage dips	0%	0°, 180°	AC 240V	50	1	A	B	Pass
<input type="checkbox"/> Voltage dips	70%	0°, 180°	AC 100V	60	25	N/A	N/A	N/A
<input checked="" type="checkbox"/> Voltage dips	70%	0°, 180°	AC 240V	50	25	A	C	Pass
<input type="checkbox"/> Voltage dips	70%	0°, 180°	AC 100V	60	30	N/A	N/A	N/A
<input checked="" type="checkbox"/> Voltage dips	70%	0°, 180°	AC 240V	50	30	A	C	Pass
<input type="checkbox"/> Voltage interruptions	0%	0°, 180°	AC 100V	60	250	N/A	N/A	N/A
<input checked="" type="checkbox"/> Voltage interruptions	0%	0°, 180°	AC 240V	50	250	B	C	Pass
<input type="checkbox"/> Voltage interruptions	0%	0°, 180°	AC 100V	60	300	N/A	N/A	N/A
<input checked="" type="checkbox"/> Voltage interruptions	0%	0°, 180°	AC 240V	50	300	B	C	Pass

## 15. PHOTOGRAPHS

### 15.1.Photos of Conducted Emissions



### 15.2.Photos of Radiation Emission Measurement



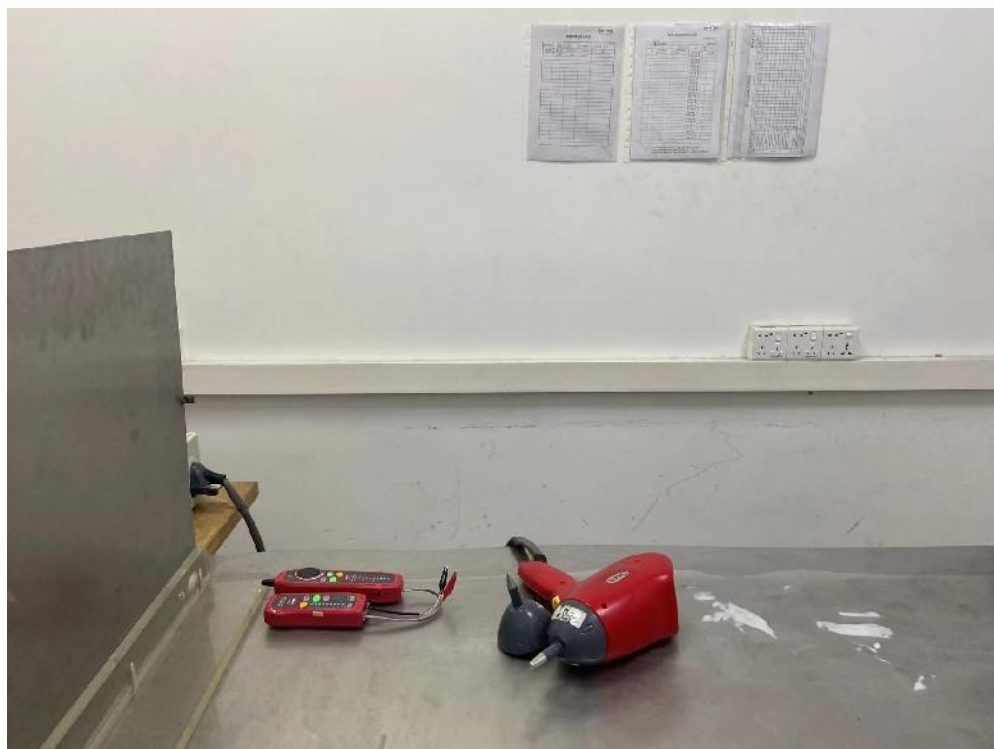


15.3.Photo of Harmonic / Flicker Measurement





#### 15.4.Photo Of Electrostatic Discharges



#### 15.5.Photo Of Electromagnetic field





## 15.6.Photos Of Burst



### 15.7.Photo of Voltage Dips and Interruption Immunity Test



### 15.8.Photos Of Surges





## 15.9.Photos Of Conducted RF





## APPENDIX (PHOTOS OF EUT)





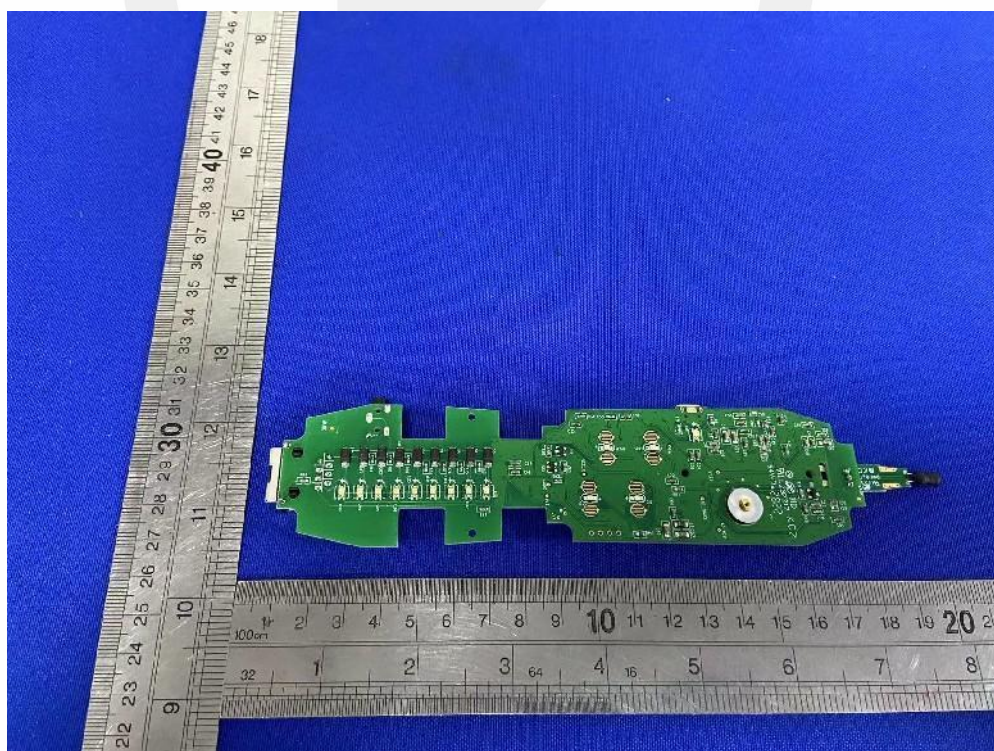
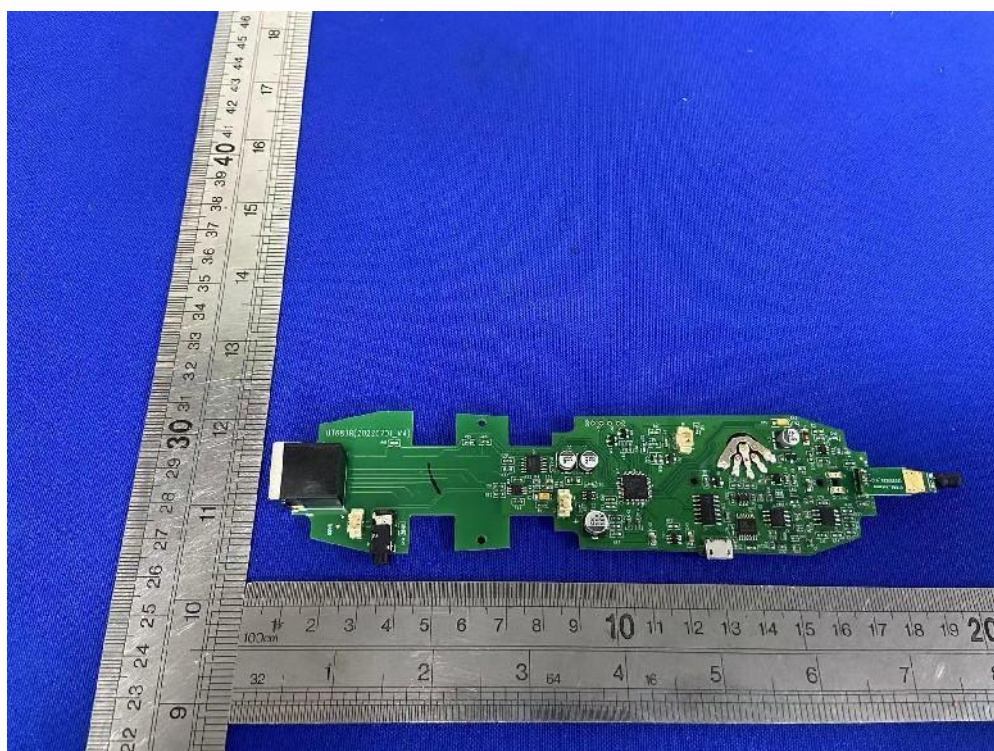














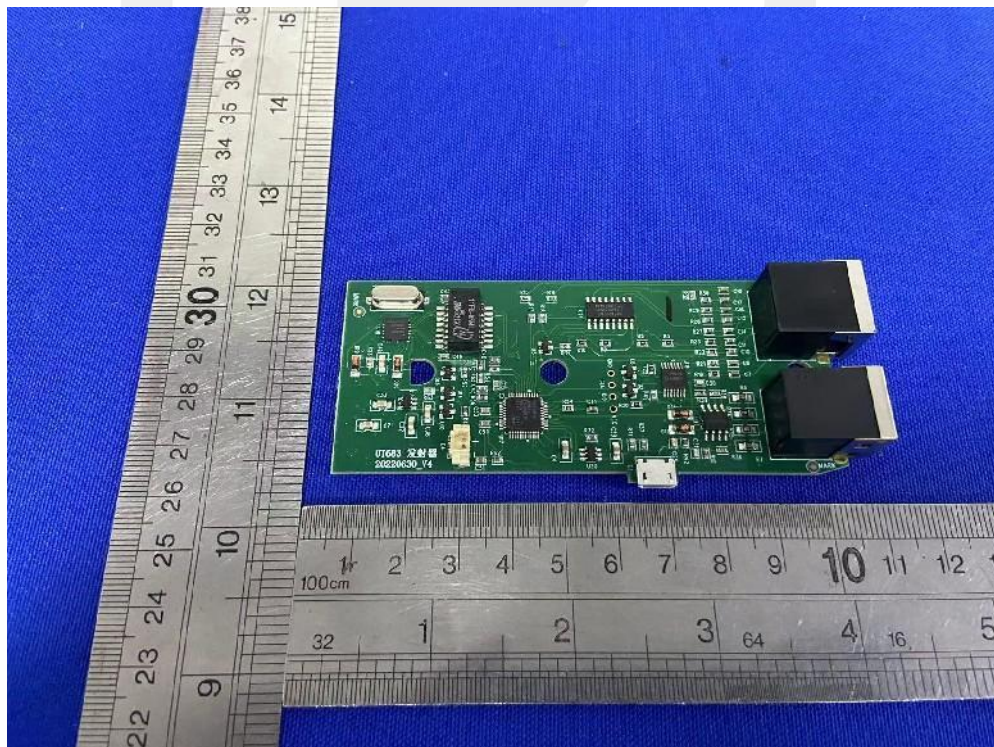


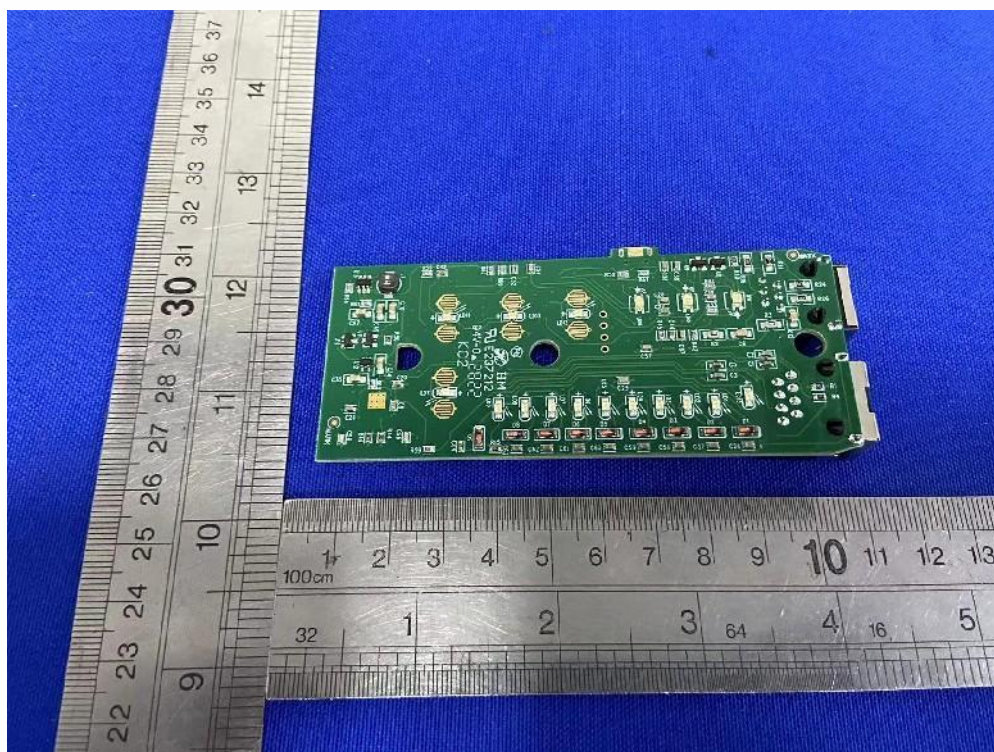












---The end---



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