

Prüfbericht-Nr.: Test report no.:	CN245SJJ 002	Auftrags-Nr.: Order no.:	168511326	Seite 1 von 11 Page 1 of 11			
Kunden-Referenz-Nr.: Client reference no.:	N/A	Auftragsdatum: Order date:	2024-11-01				
Auftraggeber: Client:	CE LINK LIMITED 22 Dongkang Road, Dalingshan Town, Dongguan City, Guangdong Province, China						
Prüfgegenstand: Test item:	QI2 Wireless Charger						
Bezeichnung / Typ-Nr.: Identification / Type no.:	MPP23-1TCNC-J, 39-3971, AL31WCPA-WH (Trademark: CE-LINK, )						
Auftrags-Inhalt: Order content:	Test Report						
Prüfgrundlage: Test specification:	CFR47 FCC Part 2.1091						
Wareneingangsdatum: Date of sample receipt:	2024-10-29	Please refer to Photo Document					
Prüfmuster-Nr.: Test sample no.:	EST-241029019-001						
Prüfzeitraum: Testing period:	2024-11-20						
Ort der Prüfung: Place of testing:	EST Technology Co., Ltd.						
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.						
Prüfergebnis*: Test result*:	Pass						
geprüft von: tested by:	X 		genehmigt von: authorized by:	X 			
Datum: Date:	2025-01-02	Signed by: Breeze Jiang		Ausstellungsdatum: Issue date:	2025-01-02	Signed by: Jonathan Li	
Stellung / Position:	Sachverständige(r)/Expert		Stellung / Position:	Sachverständige(r)/Expert			
Sonstiges / Other:	FCC ID: A4X-MPP23-1TCNC-J						
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:	Prüfmuster vollständig und unbeschädigt Test item complete and undamaged						
* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet			
* Legend:	P(ass) = passed a.m. test specification(s)	F(ail) = failed a.m. test specification(s)	N/A = not applicable	N/T = not tested			
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>							

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Test report no.:

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Anmerkungen Remarks

- | | |
|---|--|
| 1 | <p>Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben.
Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.</p> <p><i>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</i></p> |
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| 3 | <p>Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben.
Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.</p> <p><i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.
Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i></p> |
| 4 | <p>Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019.</p> <p><i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i></p> |

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Photographs of the Test Set-up

2 Test Sites

2.1 Test Facilities

EST Technology Co., Ltd.

Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China

A2LA Registration No.: 4366.01

FCC Accreditation Designation No.: CN1215

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

For Exposure test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Electric and Magnetic Field Probe-Analyzer	Narda S.T.S./PMM	EHP-200A	EST-E106	June 11,24	1 Year
Test Software	Narda	EHP200-TS	Rel 1.92	N/A	N/A

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Table 2: Measurement Uncertainty

Parameter	Uncertainty
Uncertainty for EMF	5.03 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The EST Technology Co., Ltd. Test facility located at Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a Qi2 Wireless Charger, which supports wireless charging (WPT) function.

The models have the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction, except the different model number.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 3: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment:	Qi2 Wireless Charger
Type Designation:	MPP23-1TCNC-J, 39-3971, AL31WCPA-WH
Trademark:	CE-LINK, 
FCC ID:	A4X-MPP23-1TCNC-J
Operating Voltage:	Input: Type-C DC12V 3A
Test Voltage:	AC 120V, 60Hz (DC 12V By USB Host Unit)
Operating Temperature Range:	0 °C ~ +35 °C
Technical Specification of WPT	
Frequency Range:	110.5 kHz to 205 kHz & 0.1485 to 5 MHz
Operating Frequency:	110.5 kHz to 205 kHz (Output 1: 5W, 7.5W; Output 2: 5W), 326.5 kHz (Output 3: 3W), 360 kHz (Output 1: 15W), 1.778 MHz (Output 3: 3W)
Type of Modulation:	FSK
Antenna Type:	Inductive Loop Coil Antenna
Antenna Gain:	0 dBi (Provided by the Client)
Wireless output power:	Output 1: 15W (Qi2 module CE-222J), Output 2: 5W (AirPods), Output 3: 3W (Apple Watch)

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Wireless Charging
- B. On, Standby

3.4 Noise Generating and Noise Suppressing Parts

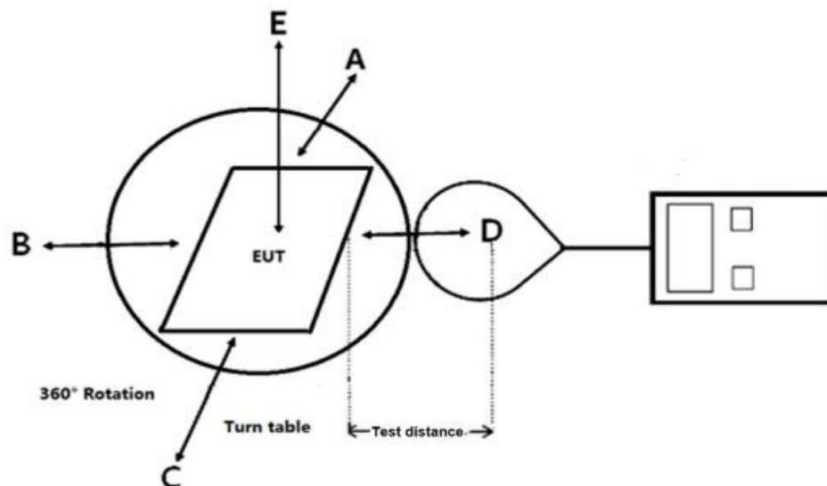
Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- | | |
|-------------------------|------------------------------|
| - Application Form | - User Manual |
| - Operation Description | - ID Label and Location Info |
| - Block Diagram | - PCB Layout |

3.6 Test Setup Diagram

Diagram of Measurement Configuration



4 Safety Human Exposure

4.1 Radio Frequency Exposure Compliance

4.1.1 Test Procedures According to the Technical Standards

Standards	Test Item	Judgment	Remark
FCC CFR 47 part1, 1.1310 680106 D01 Wireless Power Transfer v04	Electric Field Strength (E) (V/m)	PASS	-
	Magnetic Field Strength (H) (A/m)	PASS	-

4.1.2 Limit of Maximum Permissible Exposure

Limit of Maximum Permissible Exposure

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

Note 1: f = frequency in MHz ; *Plane-wave equivalent power density.

Note 2: For the applicable limit, see FCC 1.1310, 680106 D01 Wireless Power Transfer v04.

Note 3: Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

Note 4: Test distance is 20cm.

H-field strength									
Frequency range (kHz)	110.5~205kHz & 326.5kHz & 360kHz & 1.778MHz								
Test Mode	0W	5W Earphone	5W Phone	7.5W Phone	15W Phone	3W Watch	5W Phone +5W Earphone +3W Watch	7.5W Phone +5W Earphone +3W Watch	15W Phone +5W Earphone +3W Watch
Position A(A/m)	0.043	0.039	0.056	0.051	0.098	0.048	0.050	0.098	0.112
Position B(A/m)	0.045	0.044	0.065	0.049	0.078	0.046	0.053	0.102	0.132
Position C(A/m)	0.043	0.043	0.067	0.048	0.065	0.043	0.049	0.112	0.098
Position D(A/m)	0.036	0.046	0.059	0.052	0.079	0.039	0.054	0.101	0.109
Position E(A/m)	0.038	0.047	0.058	0.056	0.095	0.037	0.075	0.098	0.104
Limits (A/m)	1.630								
50% Limits (A/m)	0.815								

5 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix A.

6 List of Tables

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