

Prüfbericht-Nr.: Test report no.:	CN24XZM2 002	Auftrags-Nr.: Order no.:	170384220	Seite 1 von 18 Page 1 of 18
Kunden-Referenz-Nr.: Client reference no.:	N/A	Auftragsdatum: Order date:	2024-07-26	
Auftraggeber: Client:	Shanghai Gotion New Energy Co., Ltd. Building 26, No.1387 Zhangdong Rd., Shanghai, P.R. China			
Prüfgegenstand: Test item:	Portable Power Station Go 300			
Bezeichnung / Typ-Nr.: Identification / Type no.:	Go 300			
Auftrags-Inhalt: Order content:	Test Report			
Prüfgrundlage: Test specification:	CFR47 FCC Part 1.1310 CFR47 FCC Part 2.1091 KDB 680106 D01 RF Exposure Wireless Charging			
Wareneingangsdatum: Date of sample receipt:	2024-07-26	Please refer to Photo Document		
Prüfmuster-Nr.: Test sample no.:	170384220-001			
Prüfzeitraum: Testing period:	2023-05-18 - 2023-05-31			
Ort der Prüfung: Place of testing:	Refer to section 2.1			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Guangdong) Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von: tested by:	genehmigt von: authorized by:			
Datum: Date:	2024-11-07		Ausstellungsdatum: Issue date:	
2024-11-07		2024-11-07		
Stellung / Position:	Sachverständige(r)/Expert		Stellung / Position: Sachverständige(r)/Expert	
Sonstiges / Other:	FCC ID: 2A9IU-GO300			
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. 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.				

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Anmerkungen
Remarks

1	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. <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>
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3	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. <i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i> <i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i>
4	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. <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>

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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

KSIGN(Guangdong) Testing Co., Ltd

No.362, Huanguan Middle Road, Songyuansha Community, Guanhu Subdistrict, Longhua District, Shenzhen 518110, Guangdong, China

FCC Accreditation Designation No.: CN1328

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

EMF				
Equipment	Manufacturer	Model	Serial No.	Cal. until
Electric and Magnetic Field Analyzer	Narda	ELT-400	Q-0731/M-2177	2025-01-28

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

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

Table 2: Measurement Uncertainty

Parameter	Uncertainty
Magnetic field measurements(3kHz~500kHz)	$\pm 0.6\text{dB}$
Electric field measurements(3kHz~500kHz)	$\pm 0.6\text{dB}$
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.	

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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 (Guangdong) Co., Ltd. file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

KSIGN(Guangdong) Testing Co., Ltd. Test facility located at No.362, Huanguan Middle Road, Songyuansha Community, Guanhu Subdistrict, Longhua District, Shenzhen 518110, 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 Product is Portable Power Station for Class B MME products and with Wi-Fi, Bluetooth and wireless charging function.

According to above information, the EMF test was performed on model **Go 300**.

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:	Portable Power Station Go 300	
Type Designation:	Go 300	
FCC ID:	2A9IU-GO300	
Power Supply:	Solar Input	DC 10-30V, 10 A, 200W Max
	USB-C Input/output Port	DC 5V/3A, DC 9V/3A, DC 12V/3A, DC 15V/3A, DC 20V/5A, DC 28V/5A, (140W Max)
	USB-C output Port	DC 5V/3A, DC 9V/3A, DC 12V/3A, DC 15V/3A, DC 20V/5A, DC 28V/5A, (140W Max)
	USB-A Port	DC 5V/3A, DC 9V/2A, DC 12V/1.5A,
	AC Outlet	AC 120V, 60Hz (300W Max)
	DC Port	DC 12-16V, 10A (160W Max)
	Wireless charge Output	5W, 7.5W, 10W, 15W
Battery:	Battery type: Lithium Iron Phosphate Rated capacity: 288Wh (19.2V 15Ah)	
Operating Temperature Range:	-10℃ ~ +45 ℃	
Technical Specification of WPT		
Frequency Range:	140KHz	
Type of Modulation:	PWM/ASK	
Antenna Type:	Inductance coil	

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Wireless output(15W) Max
- B. On, Stand by

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- ID Label and Location Info

3.6 Test Setup Diagram

Diagram of Measurement Configuration (10cm distance):

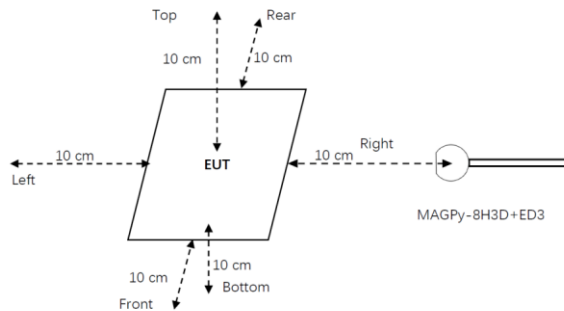
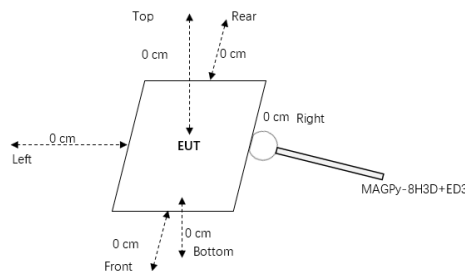


Diagram of Measurement Configuration (0cm distance):



Note: For H-Field measurement, tips mode of the test probe is used. For E-Field measurement the center mode of the probe is used, and curve-fitting method refer to ISED Notice 2024-DRS0004.

3.7 Test Procedures

- The RF exposure test was performed in anechoic chamber.
- E and H-field measurements performed under the § 2.1093-Portable conditions, as a conservative evaluation. (This WPT will be fixed installed on the vehicle)
- The highest emission level was recorded and compared with limit.
- The EUT was measured according to the dictates of KDB 680106 D01 Wireless Power Transfer v04.

3.8 Special Accessories and Auxiliary Equipment

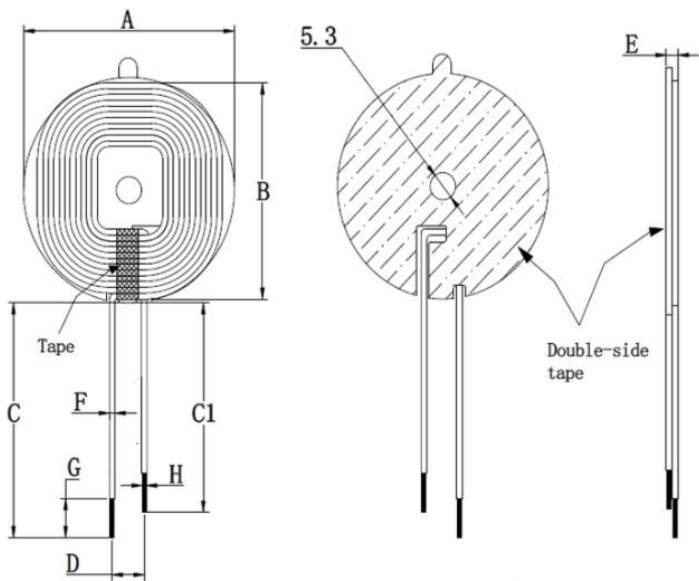
Name	Model No.	Manufacturer	Remark
Wireless charging tester fixture	SiLiYuan	SK-99899	5W, 7.5W, 10W, 15W

3.9 Coil Description

1	Antenna number:	Primary coil*1
2	Input inductance:	10uH±10%
3	Direct current resistance:	60mΩ
4	Coil diameter:	See below

Coli to the outer surface of the enclosure(s)

DIMENSION(mm):



A	B	C	C1	D	E	F	G	H
50.0±1.0	48.0±1.0	15.0±2.0	12.0±2.0	8.5±2.0	4.1-4.7	1.2Ref	3.0±1.0	2.0Max

4 RF exposure information

4.1 Test procedures according to the technical standards

§1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of FCC part 2.1093 of this chapter.

Table 1 to §1.1310(e)(1) - Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(i) 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
300-1500			f/300	<6
1500-100000			5	<6
(ii) 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
300-1500			f/1500	<30
1500-100000			1.0	<30

f = frequency in MHz

* = Plane-wave equivalent power density

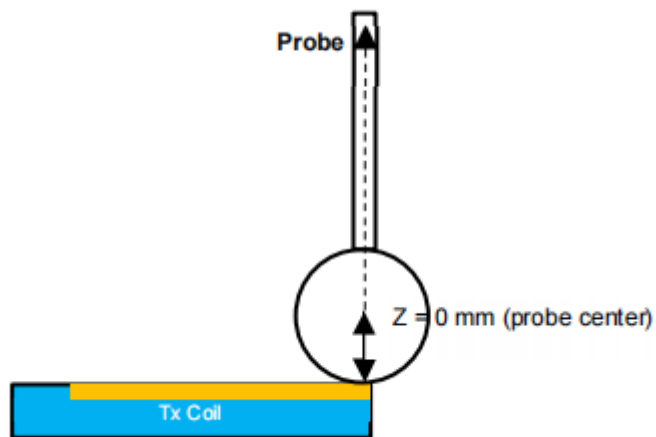
Note 1: Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

Note 2: General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

4.2 Test result

Operating mode with client device (0mm)

Notes: A grid of 10mm by 10mm as shown in Figure 3 was selected in this example.
A probe is used to measure the E- and H- fields stemming from the EUT.
These initial measurements are made at $Z = 60$ mm from the surface of the XY plane.
All modes are tested, the result only shown the worst test mode.



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RF Exposure

Maximum Permissible Exposure					
Charging	Separation	Probe from EUT Side	Result (uT)	H-field (A/m)	E-field (V/m)
< 1% Battery	60mm	Top	0.26	0.21	4.84
< 1% Battery	65mm	Top	0.24	0.19	4.67
< 1% Battery	70mm	Top	0.21	0.17	4.38
< 1% Battery	75mm	Top	0.20	0.16	4.15
< 1% Battery	80mm	Top	0.18	0.14	3.98
< 1% Battery	85mm	Top	0.15	0.12	3.75
< 1% Battery	90mm	Top	0.14	0.11	3.64
< 1% Battery	95mm	Top	0.11	0.09	3.45
< 1% Battery	100mm	Top	0.11	0.09	3.26
< 1% Battery	105mm	Top	0.10	0.08	3.19
< 1% Battery	110mm	Top	0.10	0.08	3.17
Limit				1.63	614

Maximum Permissible Exposure					
Charging	Separation	Probe from EUT Side	Result (uT)	H-field (A/m)	E-field (V/m)
50% Battery	60mm	Top	0.29	0.23	4.97
50% Battery	65mm	Top	0.26	0.21	4.78
50% Battery	70mm	Top	0.24	0.19	4.60
50% Battery	75mm	Top	0.21	0.17	4.42
50% Battery	80mm	Top	0.19	0.15	3.98
50% Battery	85mm	Top	0.15	0.12	3.76
50% Battery	90mm	Top	0.15	0.12	3.56
50% Battery	95mm	Top	0.10	0.08	3.36
50% Battery	100mm	Top	0.10	0.08	3.33
50% Battery	105mm	Top	0.10	0.08	3.20
50% Battery	110mm	Top	0.10	0.08	3.18
Limit				1.63	614

Maximum Permissible Exposure					
Charging	Separation	Probe from EUT Side	Result (uT)	H-field (A/m)	E-field (V/m)
>99% Battery	60mm	Top	0.33	0.26	4.98
>99% Battery	65mm	Top	0.30	0.24	4.77
>99% Battery	70mm	Top	0.24	0.19	4.63
>99% Battery	75mm	Top	0.21	0.17	4.47
>99% Battery	80mm	Top	0.20	0.16	3.95
>99% Battery	85mm	Top	0.16	0.13	3.83
>99% Battery	90mm	Top	0.14	0.11	3.56
>99% Battery	95mm	Top	0.11	0.09	3.52
>99% Battery	100mm	Top	0.10	0.08	3.47
>99% Battery	105mm	Top	0.10	0.08	3.21
>99% Battery	110mm	Top	0.10	0.08	3.20
Limit				1.63	614

Performing Curve-fitting

The data only reflects the worst mode (battery status: 50%)

3 regression techniques were used to validate their model errors.

Model 1: Quadratic Regression

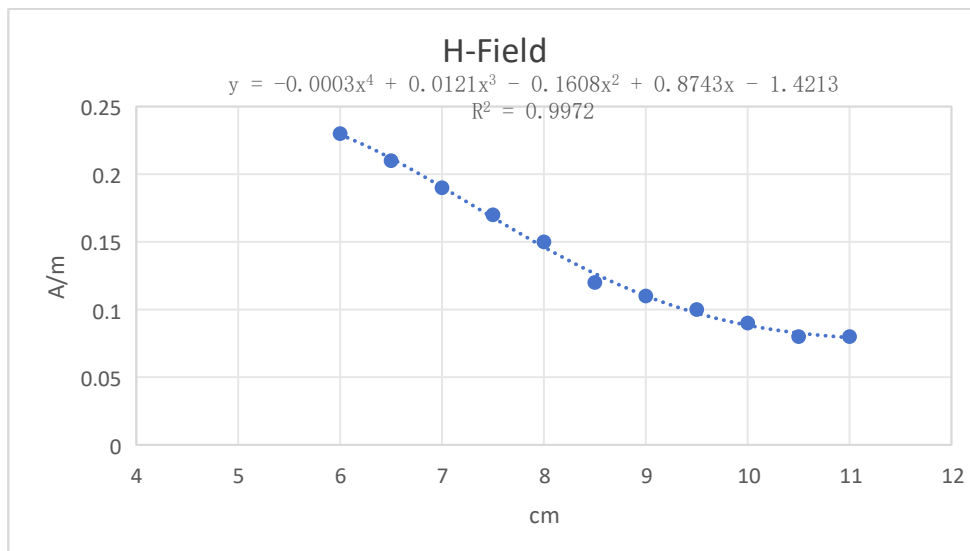
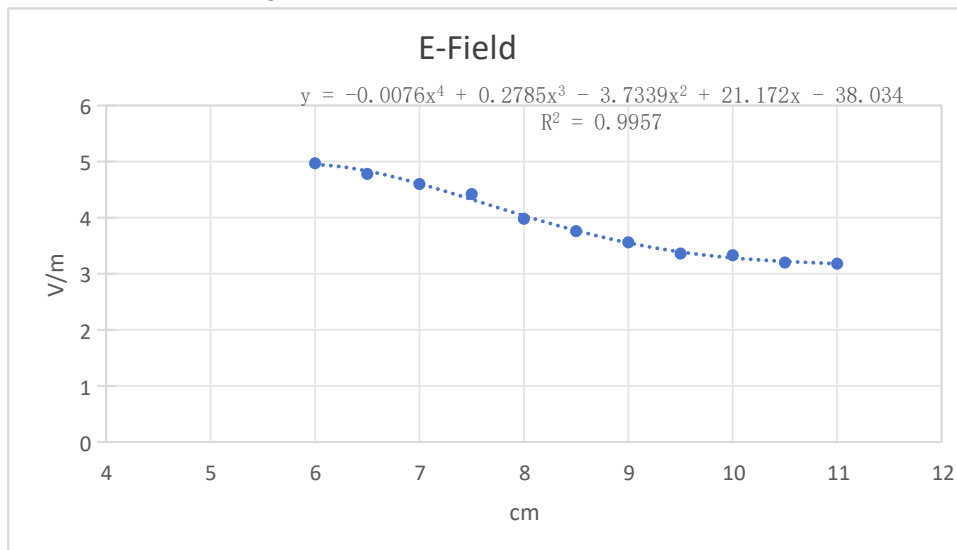
Model 2: Cubic Regression

Model 3: Quartic Regression

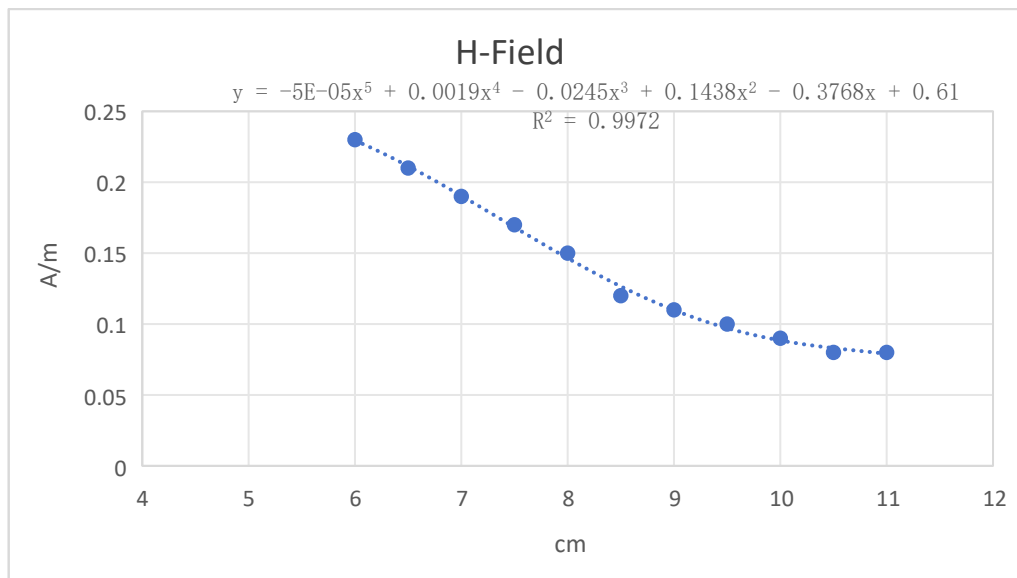
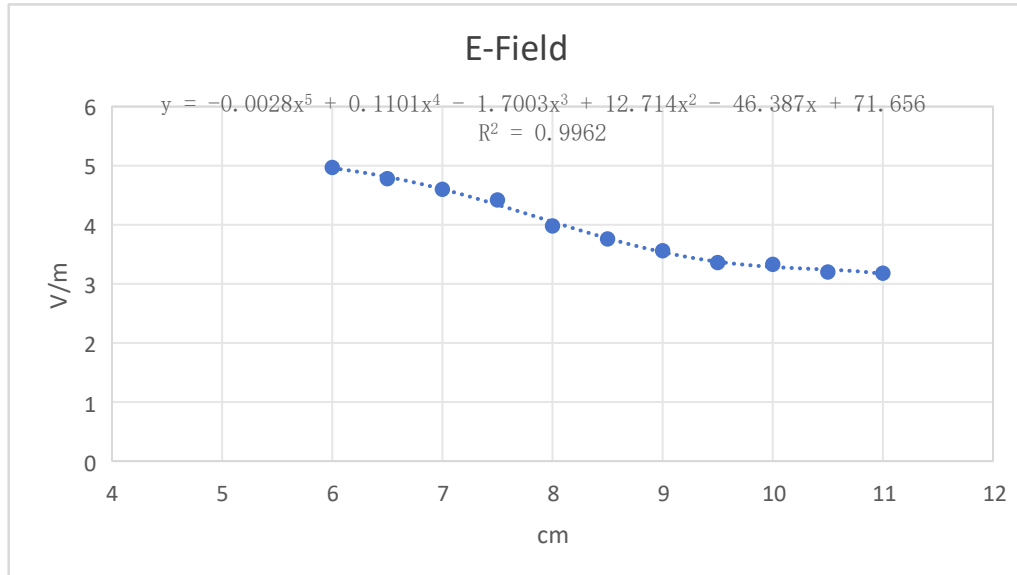
Each regression model will use the 11 data points in this example, the Data Analysis package included in MS Excel was used to perform the regression analyses.

(Battery Status:50%):

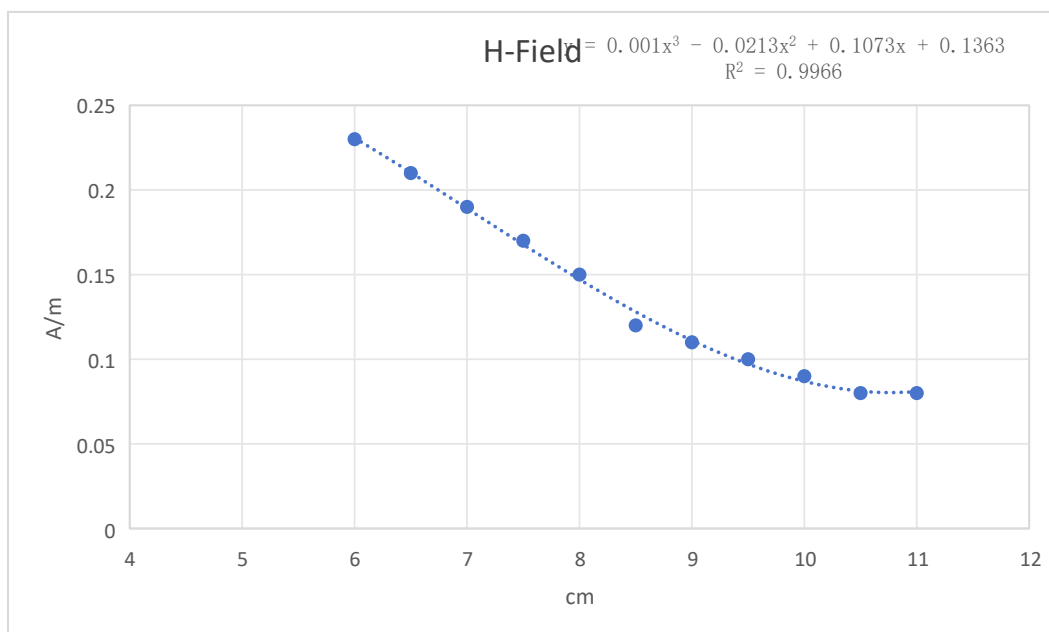
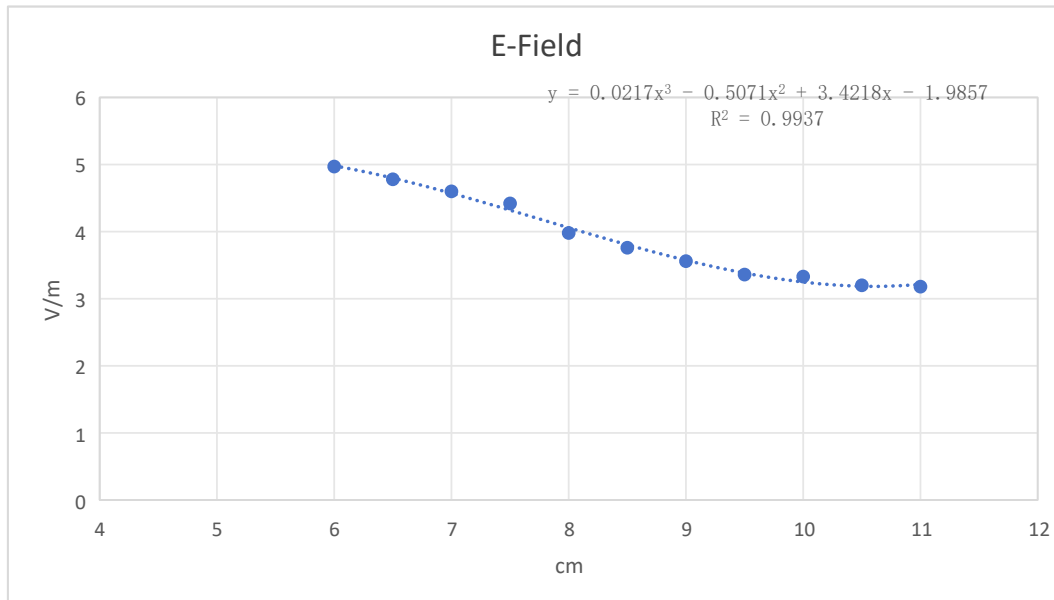
Model 1: 4th Order Regression



Model 2: 5th Order Regression



Model 3: Cubic Regression



Analyzing Results

Parameter	Linear Regression Model	Quadratic Regression Model	Cubic Regression Model
Multiple R	0.998	0.998	0.997
R ²	0.996	0.996	0.994
Adjusted R ²	0.993	0.992	0.991
Standard Error (S)*	0.056	0.058	0.063
Number of data points used	11	11	11
Estimated magnetic field strength at touch position (V/m)	-38.034	71.656	-1.986

Parameter	4th Order Regression	5th Order Regression	Cubic Regression
Multiple R	0.999	0.999	0.998
R ²	0.997	0.997	0.997
Adjusted R ²	0.995	0.994	0.995
Standard Error (S)*	0.004	0.004	0.004
Number of data points used	11	11	11
Estimated magnetic field strength at touch position (A/m)	-1.421	0.61	0.136

As shown in table above, it is below the minimum standard error threshold of 15% that ISED prescribes. Hence the EUT complies with FCC radiation exposure limits according to FCC KDB Publication 680106 D01 RF Exposure Wireless Charging.

	H-field (A/m)	E-field (V/m)
Analyzing Results	0.61	71.656
Limit	1.63	614

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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