2/F., Garment Centre,
576 Castle Peak Road, Kowloon,
Hong Kong SAR, China.

Telephone: (852) 2173 8888
Facsimile: (852) 2785 5487
www.intertek.com

1. GENERAL INFORMATION

1.1 CLIENT INFORMATION

Applicant:	Design Pool Ltd
FCC ID:	X3QVOY2IN101

1.2 EUT INFORMATION

Product Name:	Voyage 2-in-1 Magnetic Wireless Charger
Model No.:	VOY2IN101
Brand Name:	Native Union
DUT Stage:	*Production Unit*
Operating Frequency Range:	Smartphone Charge Pad: 127kHz to 360kHz Smartwatch Charge Pad: 326.5kHz
Antenna Type:	Coil Antenna
Power Supply	120VAC
Sample Received Date:	August 14, 2024
Sample Tested Date:	August 14, 2024 to September 02, 2024

Tested and Checked by:

Peter
Digitally signed by Peter Leung
Location: Intertek Testing Services Hong Kong Limited

Leung Chun Ning, Peter
Assistant Engineer
Date: November 28, 2024

Reviewed by:

Digitally signed by Herbert Wong
Location: Intertek Testing Services Hong Kong Limited

Wong Cheuk Ho, Herbert
Assistant Manager
Date: November 28, 2024

2/F., Garment Centre,
576 Castle Peak Road, Kowloon,
Hong Kong SAR, China.

Telephone: (852) 2173 8888
Facsimile: (852) 2785 5487
www.intertek.com

1.3 OTHER INFORMATION

Support Equipment

Description	Remark
An AC adaptor (Model: RH-PD35W; Input: 100-240VAC 50/60Hz 0.8A(MAX); Output: 5.0V 3.0A, 9.0V 3.0A, 12.0V 2.8A, 15.0V 2.33A, 20.0V 1.75A)	Provided by Applicant
1.5m USB Type-C Power Supply Cable	Provided by Applicant
iPhone	Provided by Intertek
iWatch	Provided by Intertek
15W Loading	Provided by Intertek
5W Loading	Provided by Intertek

1.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product, according to the specifications of the manufacturers. It must comply with the requirements of the following standards:

According to KDB680106 D01 RF Exposure Wireless Charging Apps v04 (October 24, 2023), the requirement of RF exposure for the Wireless Charging device shall be met.

intertek
Total Quality. Assured.

2/F., Garment Centre,
576 Castle Peak Road, Kowloon,
Hong Kong SAR, China.

Telephone: (852) 2173 8888
Facsimile: (852) 2785 5487
www.intertek.com

2. EQUIPMENT LIST

Test Equipment List						
Equipment No.	Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm dd, yyyy)	Cal. Due date (mm dd, yyyy)
EW-3412	Electric and Magnetic Field Probe - Analyzer	NARDASAFETY	EHP-200A	170WX91004	Jul 20, 2022	Oct 20, 2024

3. MPE EVALUATION

3.1 REFERENCE DOCUMENTS FOR EVALUATION

According to KDB680106 D01 RF Exposure Wireless Charging Apps v04 (October 24, 2023), the requirement of RF exposure for the Wireless Charging device shall be met.

3.2 MPE COMPLIANCE REQUIREMENT

3.2.1 Limits

3.2.1.1

According to §1.1310(e)(1), system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

Limits for Occupational / Controlled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Times $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	F/300	6
1500-100000	/	/	5	6

Limits for General Population/Uncontrolled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Times $\|E\|^2$, $\|H\|^2$ or S (minutes)
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

Note: f = frequency in MHz: * = Plane-wave equivalents power density.

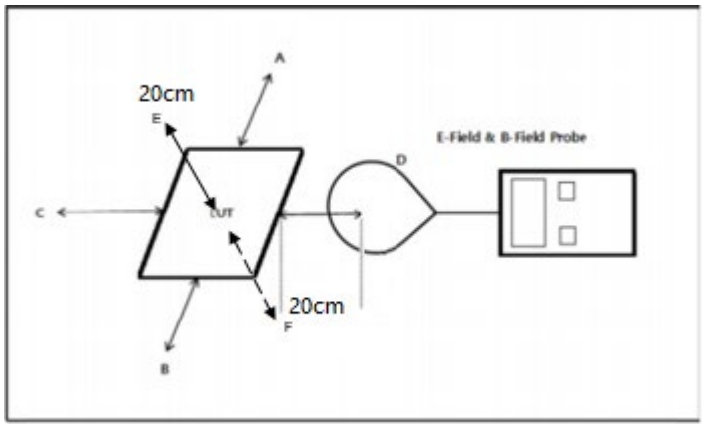
2/F., Garment Centre,
576 Castle Peak Road, Kowloon,
Hong Kong SAR, China.

Telephone: (852) 2173 8888
Facsimile: (852) 2785 5487
www.intertek.com

3.2.2 Test Procedure

Enabled the EUT to transmit and receive data continue
a. The field strength of both E-field and H-field was measured at 20 cm surrounding the device and 20 cm above the top surface using the equipment list above for determining compliance with the MPE requirements of FCC Part 1.1310.
b. For 15W wireless charging, specific loading is required for providing Max. output power for testing.
c. Maximum E-field and H-field measurements were made 20cm from each side of the EUT. Along the side of the EUT and still 20cm away from the edge of the EUT, the field probes were positioned at the location where there is maximum field strength. The maximum E-field and H-field is reported below.
d. This device uses a wireless charging circuit for power transfer operating at the frequency range of 127kHz to 360kHz for the smartphone charge pad; 326.5kHz for the smartwatch charge pad. Thus, the 300 kHz limits were used: E-field Limit = 614 (V/m); H-field limit = 1.63 (A/m).

3.2.3 Test setup



Since this application applied short-term confidentiality, thus the outlook photos of the Coil Plates are saved with filename: setup photo.pdf

Note
- The RF exposure test is performed in the shield room
- The test distance is between the edge of the charger and the geometric center of probe
- The aggregate at 20 cm surrounding the device and 20 cm above the top surface from transmitting coil is demonstrated.
- Test Position: Rear, Right, Front, Left, Top, Bottom

2/F., Garment Centre,
576 Castle Peak Road, Kowloon,
Hong Kong SAR, China.

Telephone: (852) 2173 8888
Facsimile: (852) 2785 5487
www.intertek.com

3.3 TEST DATA

Charging with Full Load – Max. output power

E-Field Strength

Test Mode	Probe Position (V/m) C-Rear	Probe Position (V/m) B-Right	Probe Position (V/m) D-Front	Probe Position (V/m) A-Left	Probe Position (V/m) E-Top	Probe Position (V/m) F-Bottom	Limits (V/m)	Result
Charging with Full Load	0.4050	0.4625	0.5069	0.2858	0.5741	0.5156	614	Complied

H-Field Strength

Test Mode	Probe Position (A/m) C-Rear	Probe Position (A/m) B-Right	Probe Position (A/m) D-Front	Probe Position (A/m) A-Left	Probe Position (A/m) E-Top	Probe Position (A/m) F-Bottom	Limits (A/m)	Result
Charging with Full Load	0.1343	0.0406	0.1170	0.0435	0.2363	0.2308	1.63	Complied

intertek
Total Quality. Assured.

2/F., Garment Centre,
576 Castle Peak Road, Kowloon,
Hong Kong SAR, China.

Telephone: (852) 2173 8888
Facsimile: (852) 2785 5487
www.intertek.com

Standby Mode

E-Field Strength

Test Mode	Probe Position (V/m) C-Rear	Probe Position (V/m) B-Right	Probe Position (V/m) D-Front	Probe Position (V/m) A-Left	Probe Position (V/m) E-Top	Probe Position (V/m) F-Bottom	Limits (V/m)	Result
Standby	0.1934	0.1950	0.2116	0.1888	0.2286	0.2258	614	Complied

H-Field Strength

Test Mode	Probe Position (A/m) C-Rear	Probe Position (A/m) B-Right	Probe Position (A/m) D-Front	Probe Position (A/m) A-Left	Probe Position (A/m) E-Top	Probe Position (A/m) F-Bottom	Limits (A/m)	Result
Standby	0.0281	0.0278	0.0281	0.0243	0.1416	0.0544	1.63	Complied

2/F., Garment Centre,
576 Castle Peak Road, Kowloon,
Hong Kong SAR, China.

Telephone: (852) 2173 8888
Facsimile: (852) 2785 5487
www.intertek.com

Test Setup Photo:

Since this application applied short-term confidentiality, thus the setup photos of RF exposure test are saved with filename: setup photo.pdf

*** End of Report ***