Test Report

HELEM2304000153-4

RF exposure evaluation

Equipment Under Test:	Docking Station with wireless charging
Model:	Docking Station
Customer / Manufacturer:	Planmeca Oy Asentajankatu 6 FI-00880 Helsinki Finland
FCC Rule Part:	47 CFR PART 1, Subpart I, Section 1.1310 47 CFR PART 1, Subpart I, Section 2.1091 KDB 680106 D01 Wireless Power Transfer v04

Date:	12 September 2024	Date:	12 September 2024
Issued by:	Juha Sundholm Project Manager	Checked by:	Rauno Repo Senior EMC Specialist

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GENERAL REMARKS

Disclaimer

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

RELEASE HISTORY

Version	Changes	Issued
1.0	Initial release	5 August 2024
1.1	Charge load information added to page 6.	12 September 2024

PRODUCT DESCRIPTION

Equipment Under Test

Equipment Under Test:	Docking Station
Model:	Docking Station
Type:	-
Trademark:	Planmed XFI
Serial no:	-
FCC ID:	-
IC:	-
Radio module or chip:	Renesas P9241-G

General Description

The EUT is a charging station for a remote controller.

Classification

Fixed device	☐
Mobile Device (Human body distance > 20cm)	☒
Portable Device (Human body distance < 20cm)	☐

Modifications Incorporated in the EUT

No modifications.

Ratings and declarations

Operating Frequency Range (OFR):	120 - 148 kHz
Antenna:	Integral

Power Supply

Operating voltage:	24 VDC
Maximum Current:	200 mA

Cables

Cable:	Length:	Type:
Power Supply Cable	1 m	LN

Peripherals

Peripheral	Description / Use
Remote Controller	Used to activate the charging function

SUMMARY OF TESTING

Test Specification	Description of Test	Result
47 CFR PART 1, Subpart I, Section 1.1310	Maximum Permissible Exposure	PASS

EUT Test Conditions during Testing

Configuration of the EUT was made to correspond to the actual assembling conditions as far as possible. In tests the remote controller was placed into the charging dock to activate the charging process. Charger was also tested without remote controller in the dock. EUT was charged continuously from 0% to 100% and maximum values were recorded by max hold function of the measuring sensor.

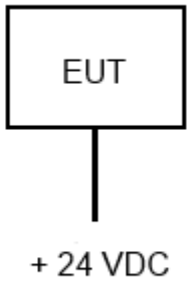

Figure 1: Test setup blocking diagram

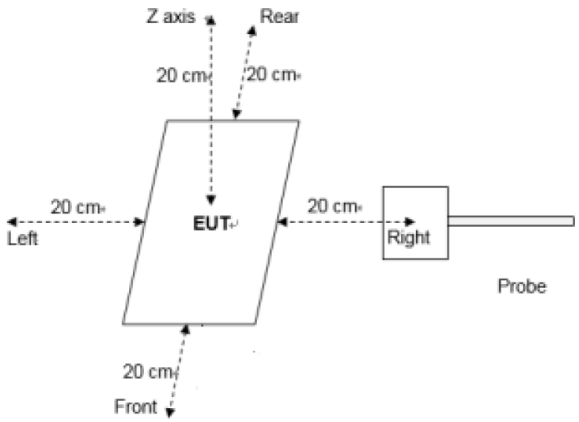

Figure 2: Measurement points

Test Facility

Testing Laboratory / address: FCC designation number: **FI0002** ISED CAB identifier: **T004**	SGS Fimko Ltd Takomotie 8 FI-00380, HELSINKI FINLAND
Test Site:	☐ K10LAB, ISED Canada registration number: **8708A-1** ☒ K5LAB, ISED Canada registration number: **8708A-2** ☐ T10LAB

LIMITS

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
300-1,500			f/300	<6
1,500-100,000			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
300-1,500			f/1500	<30
1,500-100,000			1.0	<30

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

EUT is a mobile device whereby a minimum distance of 0.2m normally can be maintained between user and the device.

TEST RESULTS

Maximum Permissible Exposure

Standard:	47 CFR PART 1, Subpart I, Section 1.1310
Tested by:	JSU
Date:	1 August 2024
Temperature:	22 °C
Humidity:	54 % RH

KDB 680106 D01 Wireless Power Transfer v04

EUT was charged continuously from 0% to 100% and maximum values were recorded by max hold function of the measuring sensor. Distance between EUT coil and the measuring sensor was 20cm. Distance was measured between the WPT coil of the EUT and the center of the measuring sensor element. Measurements were done in a shielded room.

According to KDB 680106 D01 Wireless Power Transfer v04, when clearly demonstrated, symmetry considerations may be used to reduce the amount of testing. Furthermore, for “low-frequency” loop/coil emitting structures that lead to dominant H-field near-field emissions (i.e., with E/H ratio less than 1/10 of the 377-ohm free space wave impedance, typically frequencies less than 1 MHz), only H-field measurements are sufficient for demonstrating MPE limit.

EUT has low frequency loop/coil emitting structures. E/H ratio is less than 1/10 of the 377ohm.

Measured E with the sensor HI-6105 from front position 0,71V/m and measured H was 0,4A/m. 0,71V/m/0,4A/m= 1,775ohm.

H field measurements are sufficient for demonstrating EUTs performance against limits.

Test results

Position	A/m (Charge)	A/m (no charge)	Limit 50% (A/m)	Limit (A/m)
Top	0,40	0,37	0,815	1,63
Front	0,41	0,37	0,815	1,63
Left	0,40	0,38	0,815	1,63
Right	0,43	0,37	0,815	1,63
Back	0,41	0,37	0,815	1,63

TEST EQUIPMENT

Equipment	Manufacturer	Type	Inv or serial	Prev Calib	Next Calib
Exposure level tester	NARDA	ELT-400	inv:7450	2022-09-06	2024-09-06
Field probe	ETS LINDGREN	HI-6105	inv:9759	2023-08-21	2025-08-21
Power supply	SYSTRON DONNER	KNG50-0.5	inv:3484	NCR	NCR

NCR = No calibration required

END OF REPORT