Order No: 4790516492

Report No: 4790516492-FE1V1

Issue Date: Nov. 03, 2023

Date of Test: Nov. 19, 2022 to Mar. 09, 2023

Model No: MPT-E14D-UNA02

Variant model: -

FCC ID: 2A9GVMPT-E14D-UNA02

FCC 47 CFR PART 15 SUBPART B

Test Report

For

Ambulatory ECG Monitor

HUINNO Co., Ltd.
3F, 4F, 5F, 19, Apgujeong-ro 79-gil, Gangnam-gu, Seoul, 06011, Republic of Korea

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Summary of test results:

FCC Part 15 Subpart B ANSI C63.4-2014	Title	Applied	Test Result
FCC Part 15 B 15.107	Conducted emission limits	☒	☒ MET ☐ NOT MET
FCC Part 15B 15.109	Radiated emission limits	☒	☒ MET ☐ NOT MET

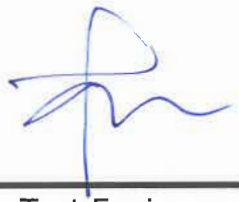
Decision rule

Decision rule for statement(s) of conformity is based on accuracy method specified in procedure 2, Clause 4.4.3 in IEC 115:2021

Conclusion:

The tests listed in the Summary of Testing section of this report have been performed by UL Korea Ltd. in accordance with the procedures stated in each test requirement and specification. The test list was determined by the Applicant as being applicable to the Equipment under Test. As a result, the subject product has been verified to comply or not comply as noted in the Summary of Testing with each test specification. The test results relate only to the items tested.

Tested by



Byoungjin Lim, Test Engineer
UL Korea Ltd.
Nov. 03, 2023

Reviewed by

Jinha Ko, Manager
UL Korea Ltd.
Nov. 03, 2023

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HISTORY of REPORT REVISION

REVISION	DATE	COMMENTS
-	Nov. 03, 2023	1st issued

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1.0 Applicant and manufacturer description

- **Applicant**

  Name : HUINNO Co., Ltd.

  Address : 3F, 4F, 5F, 19, Apgujeong-ro 79-gil, Gangnam-gu, Seoul, 06011, Republic of Korea

- **Manufacturer**

  Name : HUINNO Co., Ltd.

  Address : 3F, 4F, 5F, 19, Apgujeong-ro 79-gil, Gangnam-gu, Seoul, 06011, Republic of Korea

2.0 Test facility description

- **Test site**

  Name : UL Korea, Ltd. Uiwang Laboratory

  Address : 42, Obongsandan 1-ro, Uiwang-si, Gyeonggi-do, 16079 Republic of Korea

  FCC site designation No.: KR0161

Radiated emissions measurements are performed in the 10 m semi-anechoic chamber, which conforms to volumetric normalized site attenuation (VNSA) for 3 and 10 m measurements. The chamber also conforms to the SVSWR compliance requirements for 1-18 GHz measurements. The VNAS and SVSWR meet the technical requirements, as set, in CISPR 16 and ANSI C63.4 regulations. Facility test areas for conducted emissions and immunity testing also meet the construction and characteristics, as required by CISPR 16 and ANSI C63.4 regulations.

UL Korea Ltd. Uiwang Laboratory is accredited by IAS, Laboratory Code TL-1087. The full scope of accreditation can be viewed at https://www.iasonline.org/wp-content/uploads/2022/05/TL-1087-Cert-New.pdf

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3.0 Description of EUT

3.1 Specification

Performance Characteristics

ECG Channels	1 channel
Memory capacity	14 days
Recording Format	HUINNO's internally defined format. (Encrypted by AES128 algorithm)
Service Life	Up to 14 days
Shelf Life	2 years
Out-of-Pouch Shelf life	Use upon opening

Electrical Characteristics

Protection Against Electrical Shock	Type BF Applied Part (Electrode)
	Internally powered ME equipment
ECG Frequency Band	0.5Hz to 125Hz
ECG Input Impedance	≥10 MΩ
ECG Differential Range	±6.3 mV
ECG A/D Sampling Rate	250 Hz
ECG Resolution	12bit
Bandwidth width of the receiving section	1M
Each transmission frequency or frequency band.	2.4 GHz ISM Band (2.402-2.480GHz)
Modulation Type and Frequency Characteristics	GFSK (Gaussian Frequency Shift Keying) modulation & 1Mbps
Effective Radiated Power (ERP)	2.5mW (4dB) or less.

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Power Characteristics

Patch Battery Type	CR2430, 300mAh
Battery Life	14 days

Physical Characteristics

Patch Dimensions	142mm(W) X 48mm(D) X 12.8mm(H)
Patch Weight	35g (with battery)
Data transferred cradle Dimensions	54mm(W) x 54mm(D) x 18mm(H)
Data transferred cradle Weight	22g

Environmental Characteristics

Operational Temperature	10℃ - 45℃
Operational Altitude	0 to 9,882 ft
Operational & Storage Humidity	10% to 95% (non-condensing)
Operational Atmospheric Pressure	700hPa – 1060hPa
Transport or Storage Pressure	700hPa – 1060hPa
Shipping (Short-term Storage) Temperature	-40℃ - 70℃
Storage Altitude	0 to 9,882 ft
Patch IP Classification	IP24
IP24) Protected from water spray from any direction.	

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3.2 General description of EUT

ITEM	DETAILS	
Product	Ambulatory ECG Monitor	
Model	MPT-E14D-UNA02	
Variant Model/Type No.	-	
Difference	-	
Classification	☒ Class B ☐ Class A	
Internal clock frequency	☐ Below 1 GHz ☒ Above 1 GHz (2.4 GHz ISM Band)	
Tested form	☒ Table-top ☐ Floor-standing	
	☐ Combination of two	
Electrical ratings	Input:	1) 3 VDC (CR2430) 2) ECG Data Transferred Cradle:5 VDC
	Output:	-
Test voltage	120 V/60 Hz, Battery	
Note	-	

3.3 Variant model differences

None.

3.4 Device Modifications

None.

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3.5 EUT Configuration(s)

The following peripheral devices and/or interface cables were connected during the measurement:

☒ Peripheral Devices

[Configuration 1: Data transmitting]

Device	Model No.	Serial No.	Manufacturer	Remark
Ambulatory ECG Monitor	MPT-E14D-UNA02	-	HUINNO Co., Ltd.	EUT
ECG Data Transferred Cradle	ACC-C01P-02	-	HUINNO Co., Ltd.	
Laptop computer	HP ProBook 450 GB	-	HP Inc.	-
AC/DC Adapter	TPN-AA06	-	ACBEL ELECTRONICS CO., LTD.	-

[Configuration 2: ECG measuring]

Device	Model No.	Serial No.	Manufacturer	Remark
Ambulatory ECG Monitor	MPT-E14D-UNA02	-	HUINNO Co., Ltd.	EUT
Cell phone	iPhone 2	-	Apple Inc.	-

☒ Input/Output Ports

[Configuration 1: Data transmitting]

Port #	I/O Port		Type*	Cable Max. ≥ 3 m	Cable Shielded	Comments
1	ECG data upload pogo pin	Ambulatory ECG Monitor	I/O	Direct	-	Connected to ECG Data Transferred Cradle
2	Micro 5pin cable port	ECG Data Transferred Cradle	I/O	0.5	Shielded	Connected to laptop computer
*** Note**: * AC= AC Power Port, DC = DC Power Port, N/E = Non-Electrical, I/O = Signal Input or Output Port (Not Involved in Process Control), TP = Telecommunication Ports						

☐ Integrated parts

Device	Model No.	Serial No.	Manufacturer

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3.6 Description and method of exercising the EUT (modes)

Equipment under test was operated during the measurement under the following conditions:

Mode	Description	Test voltage
#1 Data transmitting	The EUT put on a data transferred cradle and then the stored data in the EUT was transmitted to a laptop PC through an USB port.	120 V/60 Hz
#2 ECG measuring (Bluetooth communication)	ECG data was transmitted from the EUT to cell phone in real-time through bluetooth wireless communication.	Battery (3 VDC)

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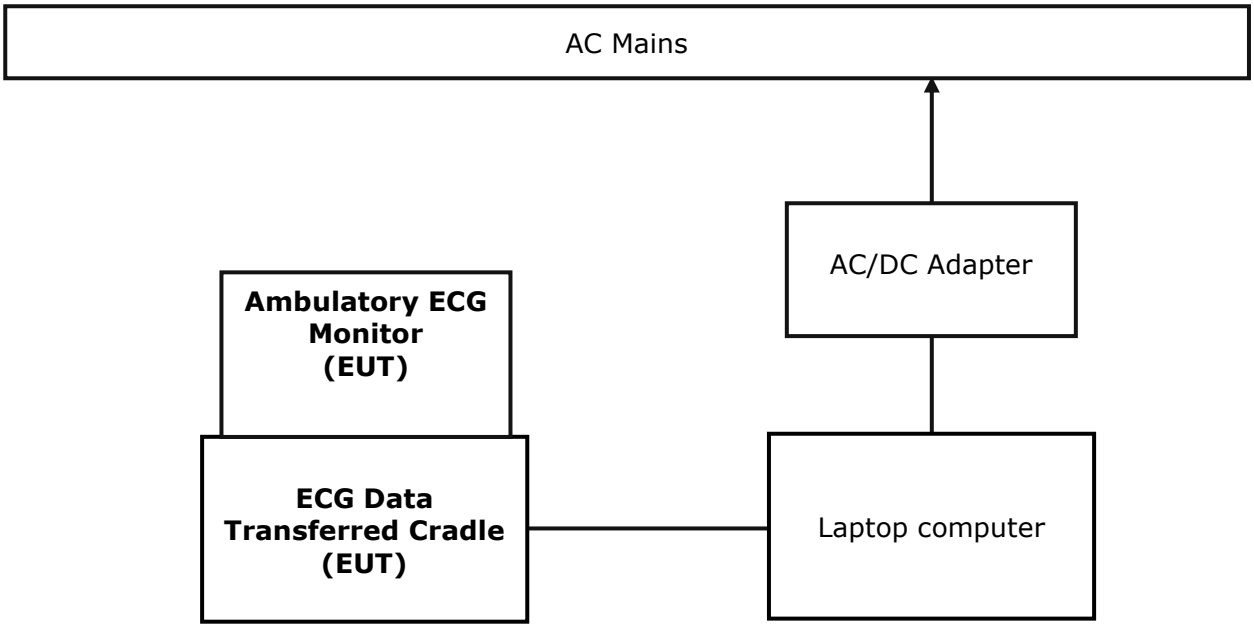
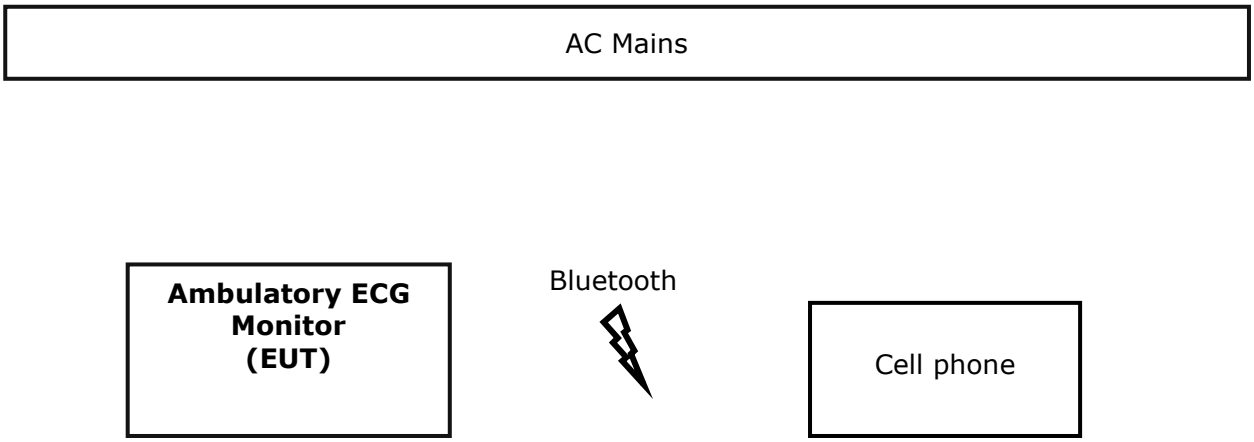
3.7 Configuration of system under test

● Configuration 1: Data transmitting



● Configuration 2: ECG measuring (Bluetooth communication)



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4.0 Uncertainty and calibration for measurement

4.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:
This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2

Measurement Type	Frequency Range	Expanded Uncertainty	
Conducted Emission	150 kHz to 30 MHz	ENV216	1.96 dB
		ENV4200	2.04 dB
		ISN	2.48 dB
Radiated Emission	30 MHz to 1000 MHz	4.74 dB	
	1 GHz to 6 GHz	5.06 dB	
T	6 GHz to 18 GHz	5.38 dB	

T

These listed uncertainties are the worst case uncertainty for the entire range of measurement. Please note that the uncertainty values are provided for informational purposes only and not used in determining the Pass/Fail results.

4.2 Sample calculation

Where relevant, the following sample calculation is provided;

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

ex. Receiver reading is 36.5 dBμV, Ant. Fator 18.7 dB, Cable loss 0.6 dB, Preamp gain 26.9 dB, The result is;

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

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5.0 Applicable limits and test results

5.1 Conducted Emissions

5.1.1 Test procedure

The measurements were performed in a shielded room. The EUT was placed 0.4 m from vertical metal reference of plane, was kept at least 0.8 m from any other metal surface. In case of floor-standing equipment, place on a non-metallic table 0.1 m above horizontal metal reference plane.
EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 Ohm/50 μH of coupling impedance for the measuring instrument.

5.1.2 Limit

(a) Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges

Frequency of emission [MHz]	Conducted limit [dBμV]	
	Quasi-peak	Average
0.15-50	66 to 55	56 to 46
0.5-5	56	46
5-30	60	50

(b) For a Class A digital device that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms LISN. Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of emission [MHz]	Conducted limit [dBμV]	
	Quasi-peak	Average
0.15-50	79	66
0.5-30	73	60

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5.1.3 Test parameter

Test date : Feb. 13, 2023

Test location : Shielded room

Environmental condition : Temp.: 20.4 °C, Humid.: 31.0 %R.H.

Test voltage : 120 V/60 Hz

Test frequency range : 150 kHz to 30 MHz

6 dB bandwidth : 9 kHz

Test equipment :

Instrument	Model No.	Manufacturer	Serial No.	Due Date	Applied
EMI Test Receiver	ESR7	Rohde & Schwarz	102328	Feb. 14, 2023	☒
2 Line LISN	ENV216	Rohde & Schwarz	102638	Feb. 16, 2023	☒
4 Line LISN	ENV4200	Rohde & Schwarz	100519	Feb. 16, 2023	☐

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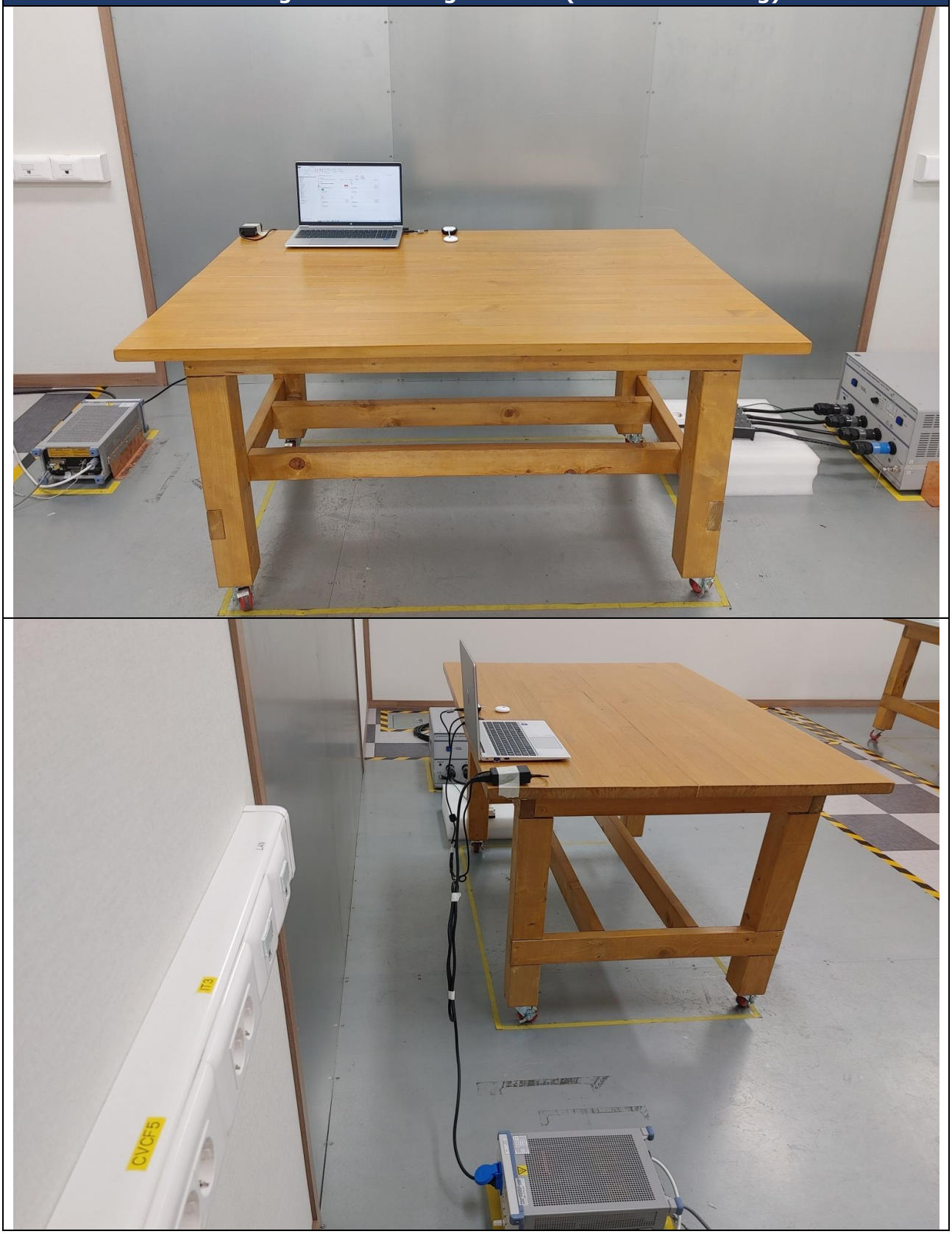
Photo of test set up for conducted voltage emissions
Test configuration: Configuration 1 (Data transmitting)



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5.1.4 Test results

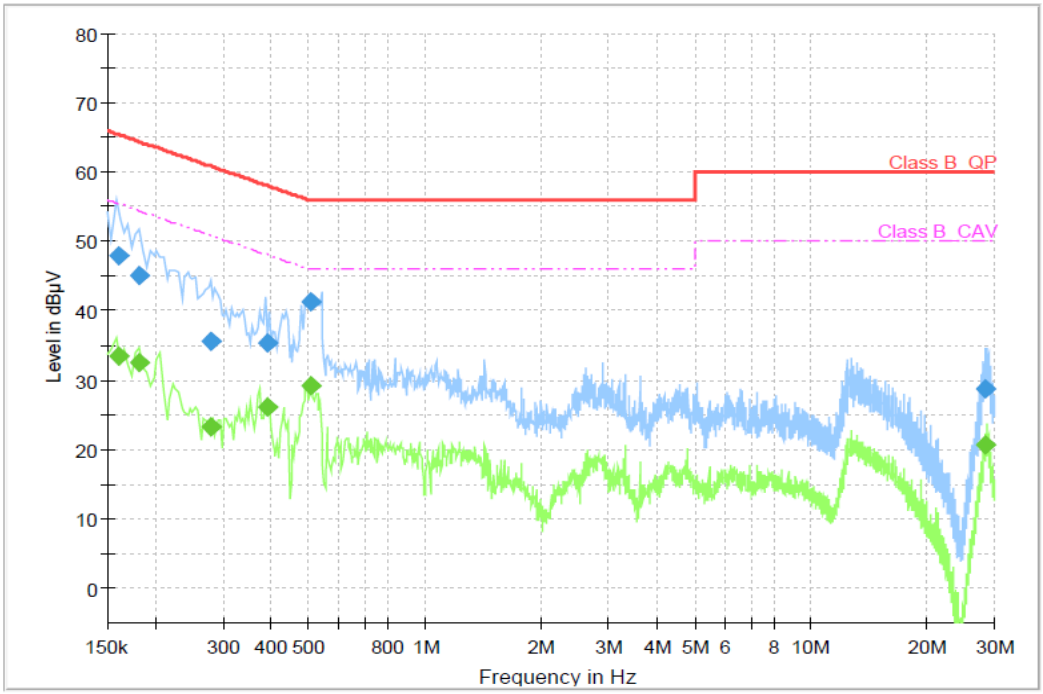
Graphical representation for conducted voltage emissions of mains

Line: L1

Operating mode/Voltage: Configuration 1 (Data transmitting), 120 V/60 Hz

Common Information

Project No:	4790516492
Test Description:	Shielded Room#1, Conducted Emission
Test Standard:	FCC Part 15 Subpart B Class B
Model Name:	MPT-E14D-UNA02
Test Voltage:	120 V~, 60 Hz
Test Mode:	Data transmitting
Opeartor	Byoungjin, Lim
Line	LINE
Remark:	



Tabulated results for conducted voltage emission of mains

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.161080	---	33.54	55.41	21.86	9.000	L1	ON	9.9
0.161080	48.00	---	65.41	17.41	9.000	L1	ON	9.9
0.181040	---	32.54	54.44	21.90	9.000	L1	ON	9.9
0.181040	45.00	---	64.44	19.44	9.000	L1	ON	9.9
0.278370	---	23.18	50.86	27.68	9.000	L1	ON	9.7
0.278370	35.72	---	60.86	25.15	9.000	L1	ON	9.7
0.388860	---	26.07	48.09	22.02	9.000	L1	ON	9.9
0.388860	35.43	---	58.09	22.66	9.000	L1	ON	9.9
0.503530	---	29.31	46.00	16.69	9.000	L1	ON	9.9
0.503530	41.19	---	56.00	14.81	9.000	L1	ON	9.9
28.514250	---	20.65	50.00	29.35	9.000	L1	ON	10.1
28.514250	28.74	---	60.00	31.26	9.000	L1	ON	10.1

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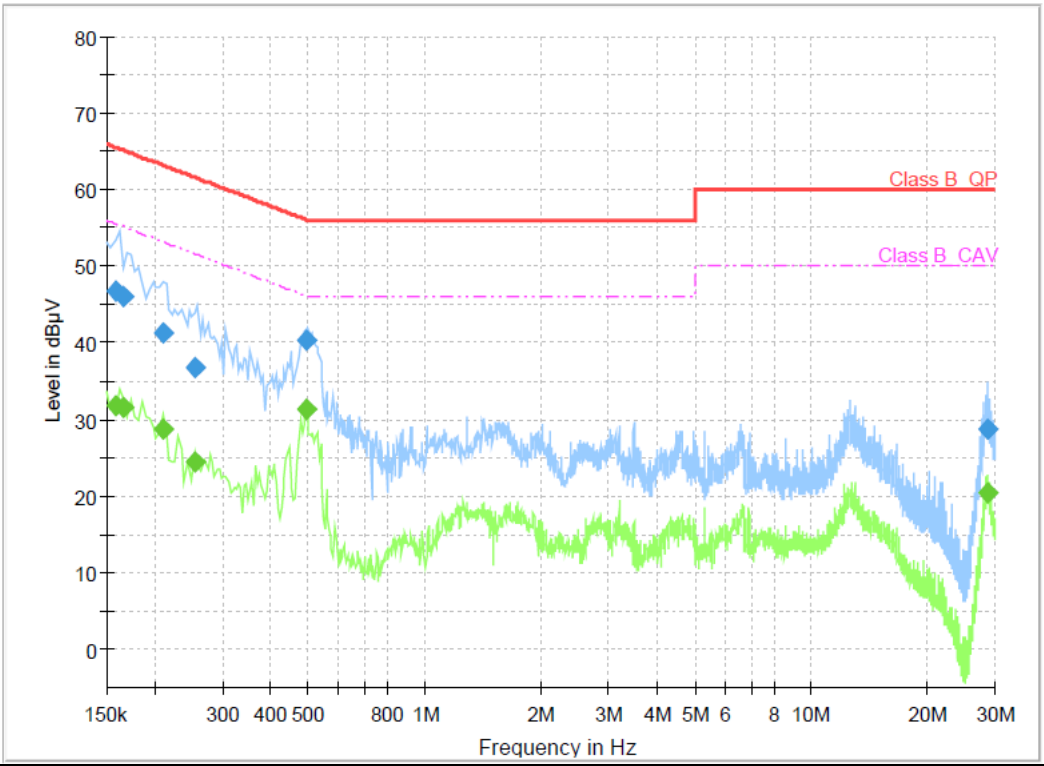
Graphical representation for conducted voltage emissions of mains

Line: Neutral

Operating mode/Voltage: Configuration 1 (Data transmitting), 120 V/60 Hz

Common Information

Project No:	4790516492
Test Description:	Shielded Room#1, Conducted Emission
Test Standard:	FCC Part 15 Subpart B Class B
Model Name:	MPT-E14D-UNA02
Test Voltage:	120 V~, 60 Hz
Test Mode:	Data transmitting
Opeartor	Byoungjin, Lim
Line	NEUTRAL
Remark:	



Tabulated results for conducted voltage emission of mains

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.158690	---	31.74	55.53	23.79	9.000	N	ON	9.8
0.158690	46.65	---	65.53	18.88	9.000	N	ON	9.8
0.166720	---	31.45	55.12	23.68	9.000	N	ON	9.9
0.166720	46.01	---	65.12	19.11	9.000	N	ON	9.9
0.209400	---	28.66	53.23	24.57	9.000	N	ON	9.8
0.209400	41.30	---	63.23	21.93	9.000	N	ON	9.8
0.254050	---	24.38	51.62	27.25	9.000	N	ON	9.6
0.254050	36.79	---	61.62	24.84	9.000	N	ON	9.6
0.494570	---	31.37	46.09	14.72	9.000	N	ON	9.9
0.494570	40.42	---	56.09	15.67	9.000	N	ON	9.9
28.551010	---	20.52	50.00	29.48	9.000	N	ON	10.2
28.551010	28.75	---	60.00	31.25	9.000	N	ON	10.2

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5.2 Radiated emissions (Below 1 GHz)

5.2.1 Test procedure

The EUT was placed on the top of a rotating table 0.8 m above the ground at a 10 m semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 10 m away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna mast.
The height of antenna is varied from (1-4) m above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from (1-4) m and the rotatable table was turned from 0-360 degrees to find the maximum quasi-peak reading.

5.2.2 Limit

(a) Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of emission [MHz]	Field strength [μV/m]	Field strength [dBμV/m]
30-88	100	40.0
88-216	150	43.5
216-960	200	46.0
Above 960	500	54.0

(b) The field strength of radiated emissions from a Class A digital device, as determined at a distance of 10 meters, shall not exceed the following:

Frequency of emission [MHz]	Field strength [μV/m]	Field strength [dBμV/m]
30-88	90	39.1
88-216	150	43.5
216-960	210	46.4
Above 960	300	49.5

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5.2.3 Test parameter

Test date : Dec. 06, 2022/ Mar. 02, 2023

Test location : 10 m semi-anechoic chamber

Test distance : ☒ 3 m, ☐ 10 m

Environmental condition : Temp.: 18.3 °C, Humid.: 31.2 %R.H.
Temp.: 21.1 °C, Humid.: 32.1 %R.H.

Test frequency range : 30 MHz-1000 MHz

6 dB bandwidth : 120 kHz

Test equipment :

Instrument	Model No.	Manufacturer	Serial No.	Due Date	Applied
EMI Test Receiver	ESW44	Rohde & Schwarz	101972	Feb. 14, 2023	☒
Broadband Test Antenna	VULB9163	Schwarzbeck	1317	Apr. 27, 2023	☒
Low Noise Amplifier	BTL-0340A	Broad-tek International	2121001	Aug. 08, 2023	☒
Antenna Mast	MA4000-EP	Innco Systems GmbH	-	-	☒
Turn Table	DT3000-3t	Innco Systems GmbH	-	-	☒
Controller	CO3000	Innco Systems GmbH	CO3000/1279 /49380520/P	-	☒

Instrument	Model No.	Manufacturer	Serial No.	Due Date	Applied
EMI Test Receiver	ESW44	Rohde & Schwarz	101972	Feb. 14, 2024	☒
Broadband Test Antenna	VULB9163	Schwarzbeck	1317	Apr. 27, 2023	☒
Low Noise Amplifier	BTL-0340A	Broad-tek International	2121001	Aug. 08, 2023	☒
Antenna Mast	MA4000-EP	Innco Systems GmbH	-	-	☒
Turn Table	DT3000-3t	Innco Systems GmbH	-	-	☒
Controller	CO3000	Innco Systems GmbH	CO3000/1279 /49380520/P	-	☒

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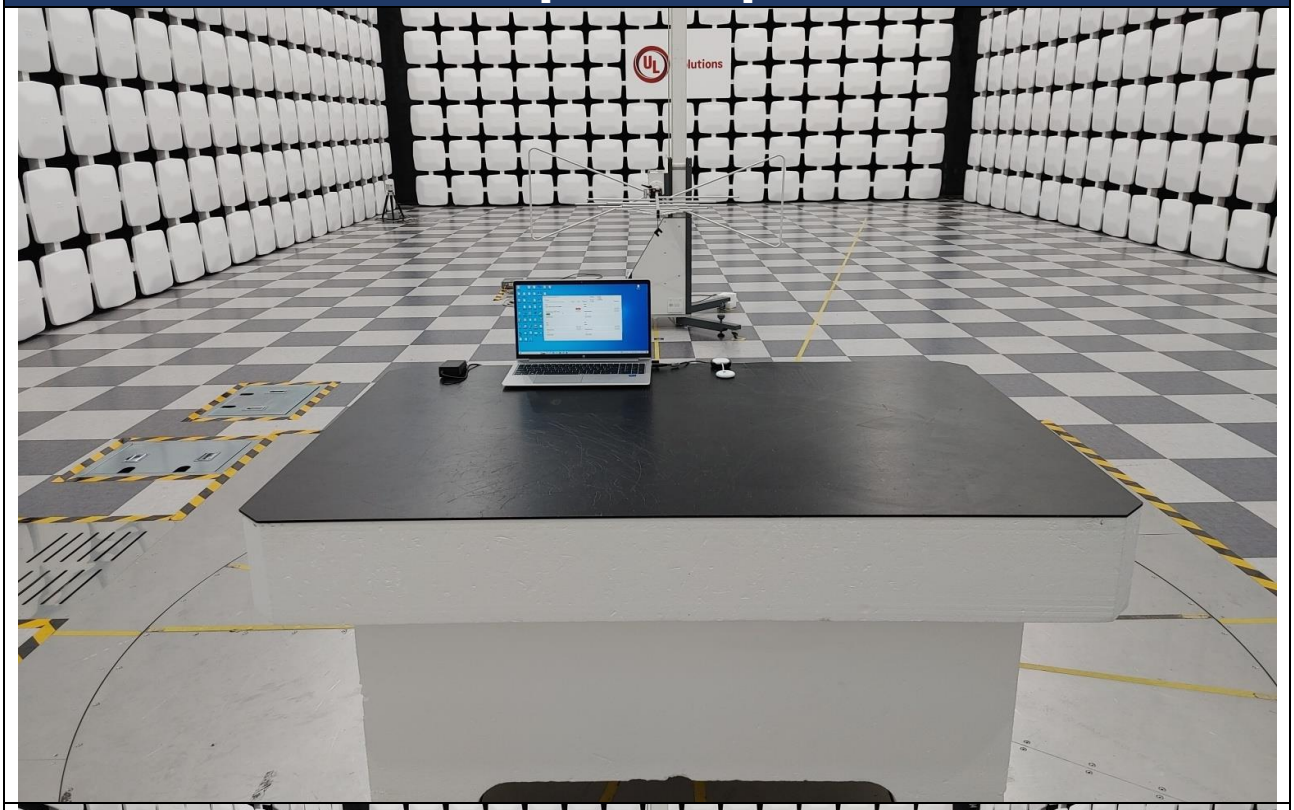
Photo of test set up for radiated emissions

Test configuration: Configuration 1 (Data transmitting)

[Below 1 GHz]



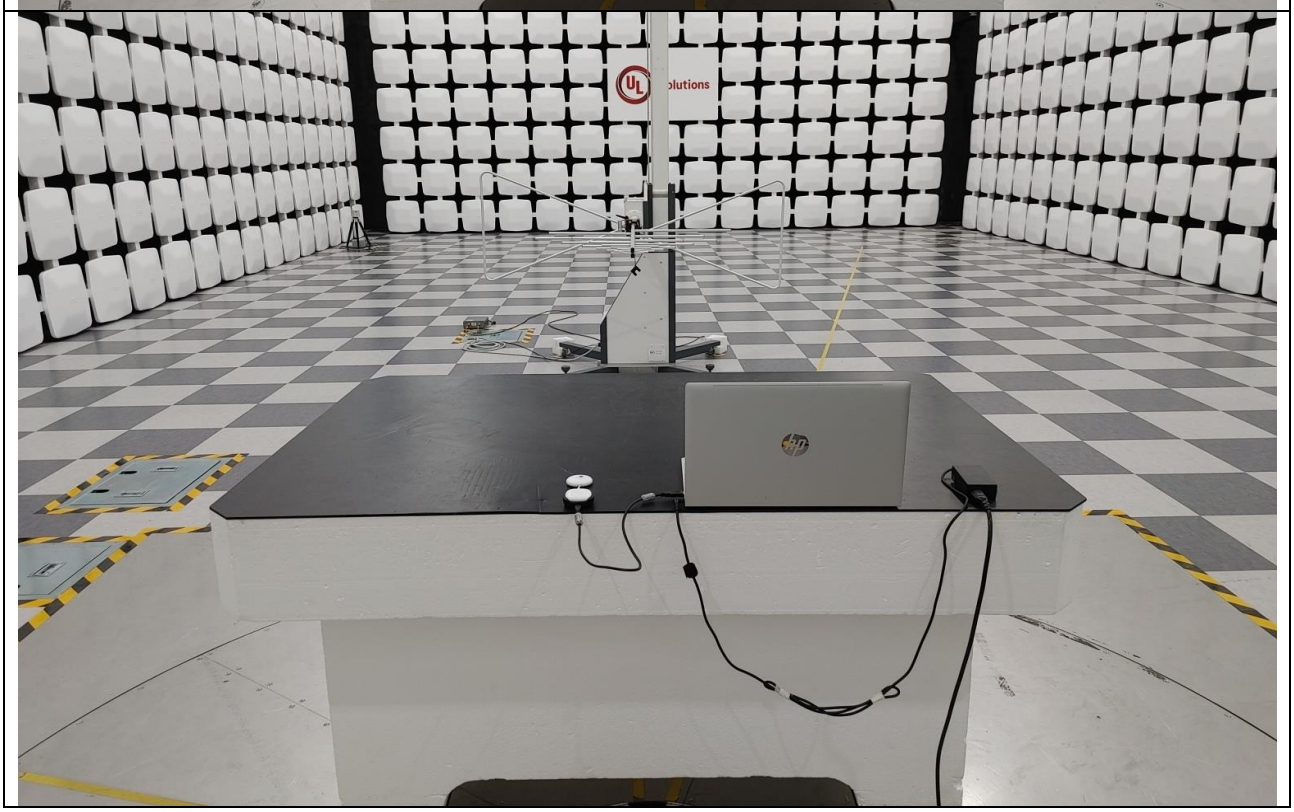


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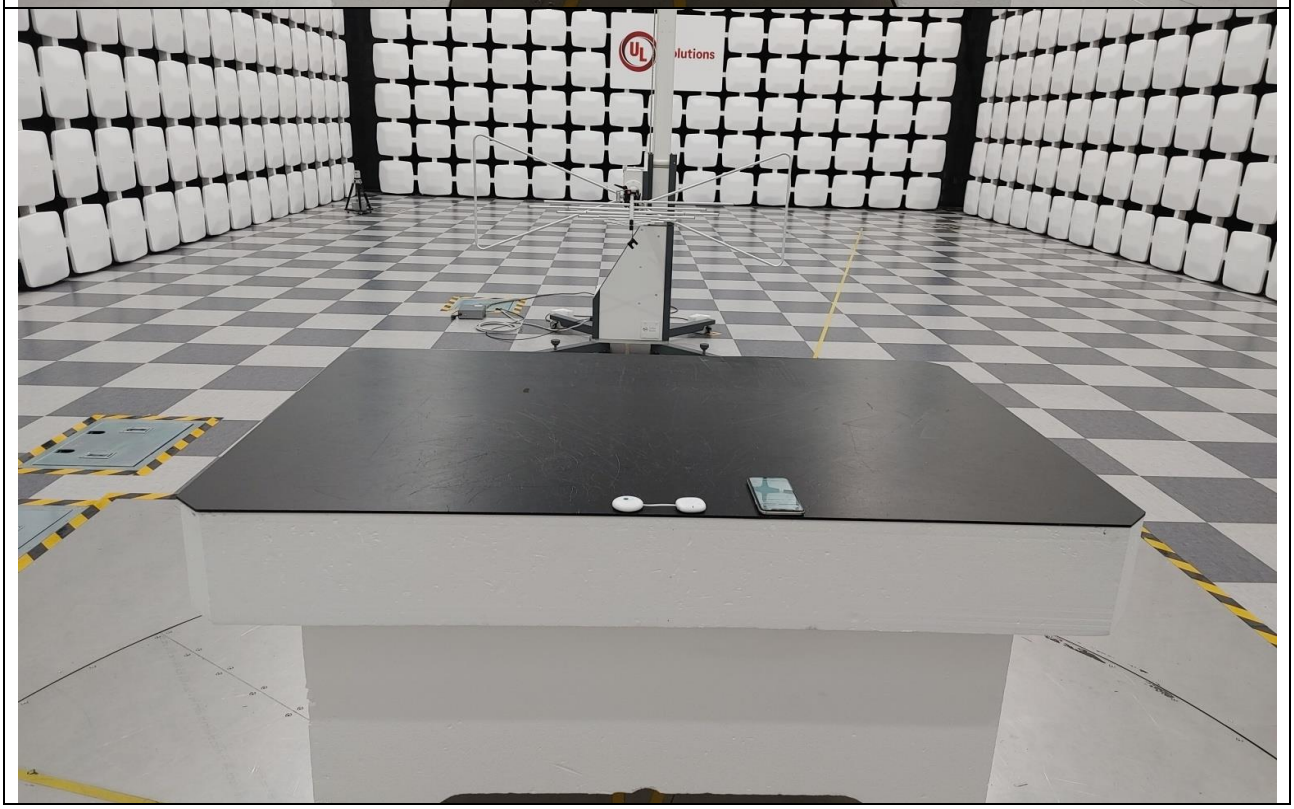
Photo of test set up for radiated emissions
Test configuration: Configuration 2 (ECG measuring)
[Below 1 GHz]



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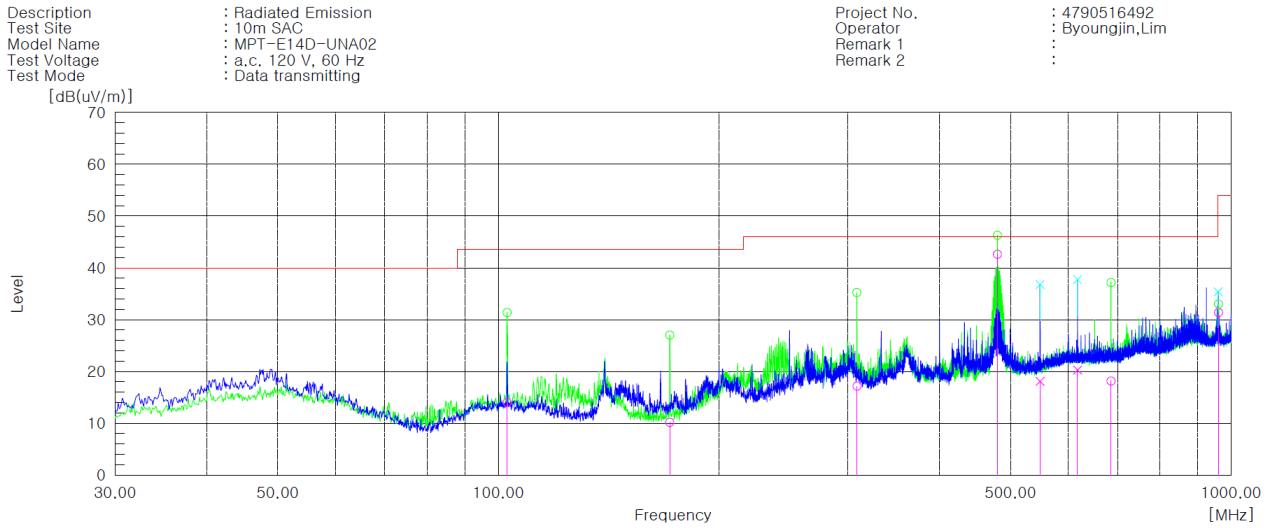
5.2.4 Test results

Graphical representation of radiated emissions [Below 1 GHz]

Operating mode/Voltage: Configuration 1 (Data transmitting), 120 V/60 Hz



Tabulated results of radiated emission [Below 1 GHz]

--- Horizontal Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(uV)]	c.f [dB(1/m)]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1	102.849	35.6	-21.5	14.1	43.5	29.4	197.3	344.2
2	171.388	33.7	-23.5	10.2	43.5	33.3	155.1	202.3
3	308.602	34.9	-17.7	17.2	46.0	28.8	101.7	269.1
4	480.003	56.2	-13.6	42.6	46.0	3.4	200.1	148.8
5	685.729	27.9	-9.7	18.2	46.0	27.8	178.8	102.4
6	961.491	37.1	-5.7	31.4	54.0	22.6	100.0	114.2

--- Vertical Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(uV)]	c.f [dB(1/m)]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1	548.670	30.2	-12.1	18.1	46.0	27.9	113.8	335.8
2	617.171	30.3	-10.0	20.3	46.0	25.7	175.4	168.9

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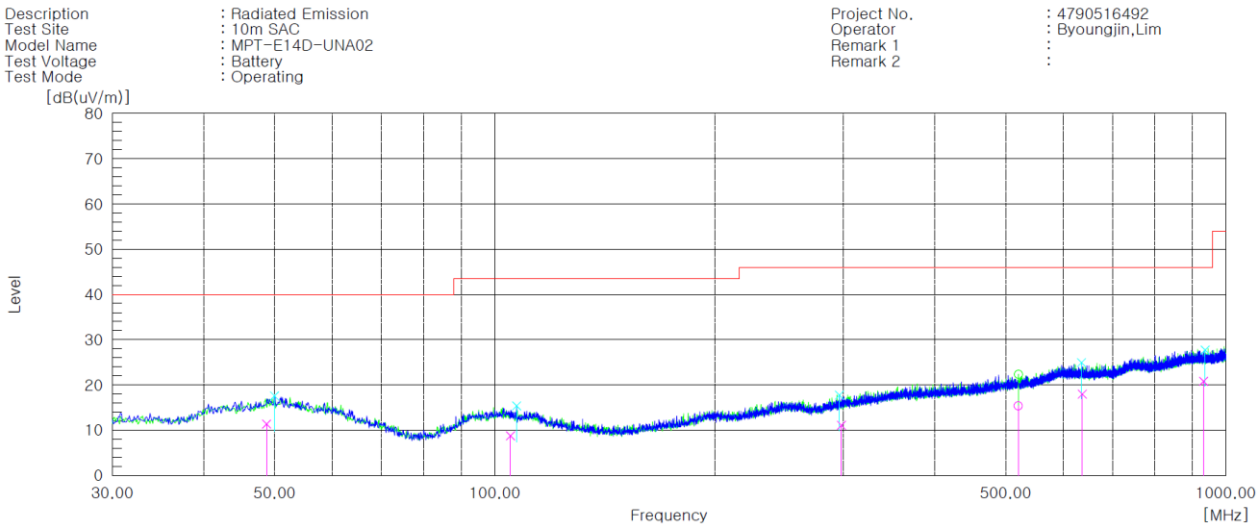
Graphical representation of radiated emissions [Below 1 GHz]

Operating mode/Voltage: Configuration 2 (ECG measuring), Battery (3 VDC)



Tabulated results of radiated emission [Below 1 GHz]

--- Horizontal Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(uV)]	c.f [dB(1/m)]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1	520.106	28.1	-12.7	15.4	46.0	30.6	133.6	237.6

--- Vertical Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(uV)]	c.f [dB(1/m)]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1	48.723	31.1	-19.7	11.4	40.0	28.6	102.4	92.8
2	105.109	30.4	-21.6	8.8	43.5	34.7	253.7	263.6
3	298.058	29.1	-18.0	11.1	46.0	34.9	255.6	160.0
4	636.347	28.0	-10.0	18.0	46.0	28.0	347.5	341.9
5	931.950	26.7	-5.9	20.8	46.0	25.2	326.6	111.6

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5.3 Radiated emissions (Above 1 GHz)

5.3.1 Test procedure

The EUT was placed on the top of a rotating table 0.8 m above the ground at a 10 m semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 3 m away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna mast.
The height of antenna is varied from 1-4 m, the height of adjustment depends on the EUT height and the antenna 3 dB beamwidth both, to detect the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights and the rotatable table was turned from 0-360 degrees to find the maximum reading.

5.3.2 Test parameter

Test date : Nov. 19, 2022/ Mar. 09, 2023

Test location : 10 m semi-anechoic chamber

Test distance : 3 m

Environmental condition : Temp.: 19.3 °C, Humid.: 37.0 %R.H.
Temp.: 21.9 °C, Humid.: 33.2 %R.H.

Test frequency range : 1 GHz-13 GHz

6 dB bandwidth : 1 MHz

Test equipment :

Instrument	Model No.	Manufacturer	Serial No.	Due Date	Applied
EMI Test Receiver	ESW44	Rohde & Schwarz	101972	Feb. 14, 2023	☒
Horn Antenna	HF907	Rohde & Schwarz	102928	Feb. 23, 2023	☒
Signal Conditioning Unit	SCU18F	Rohde & Schwarz	100798	Feb. 15, 2023	☒
Horn Antenna	3160-9	ETS-LINDGREN	LM11495	Feb. 23, 2023	☐
Signal Conditioning Unit	SCU26F	Rohde & Schwarz	100726	Feb. 16, 2023	☐
Antenna Mast	MA4640/ 0800-EP-ET	Innco Systems GmbH	-	-	☒
Turn Table	DT3000-3t	Innco Systems GmbH	-	-	☒
Controller	CO3000	Innco Systems GmbH	CO3000/1279 /49380520/P	-	☒

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Instrument	Model No.	Manufacturer	Serial No.	Due Date	Applied
EMI Test Receiver	ESW44	Rohde & Schwarz	101972	Feb. 14, 2024	☒
Horn Antenna	HF907	Rohde & Schwarz	102928	Feb. 21, 2024	☒
Signal Conditioning Unit	SCU18F	Rohde & Schwarz	100798	Feb. 13, 2024	☒
Horn Antenna	3160-9	ETS-LINDGREN	LM11495	Feb. 16, 2024	☐
Signal Conditioning Unit	SCU26F	Rohde & Schwarz	100726	Feb. 15, 2024	☐
Horn Antenna	3160-10	ETS-LINDGREN	514028	Feb. 16, 2024	☐
Signal Conditioning Unit	SCU40	Rohde & Schwarz	100370	Feb. 15, 2024	☐
Antenna Mast	MA4640/ 0800-EP-ET	Innco Systems GmbH	-	-	☒
Turn Table	DT3000-3t	Innco Systems GmbH	-	-	☒
Controller	CO3000	Innco Systems GmbH	CO3000/1279 /49380520/P	-	☒

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Photo of test set up for radiated emissions

Test configuration: Configuration 1 (Data transmitting)

[Above 1 GHz]

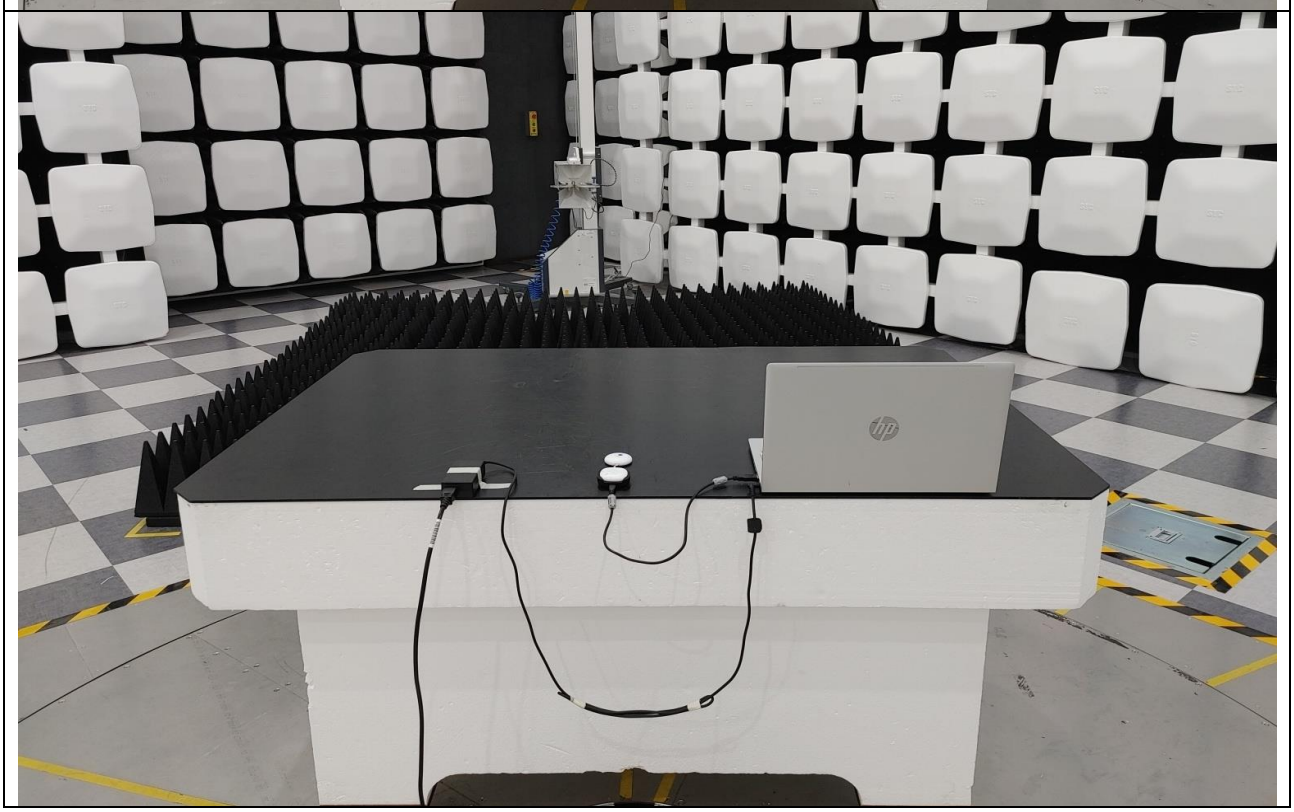

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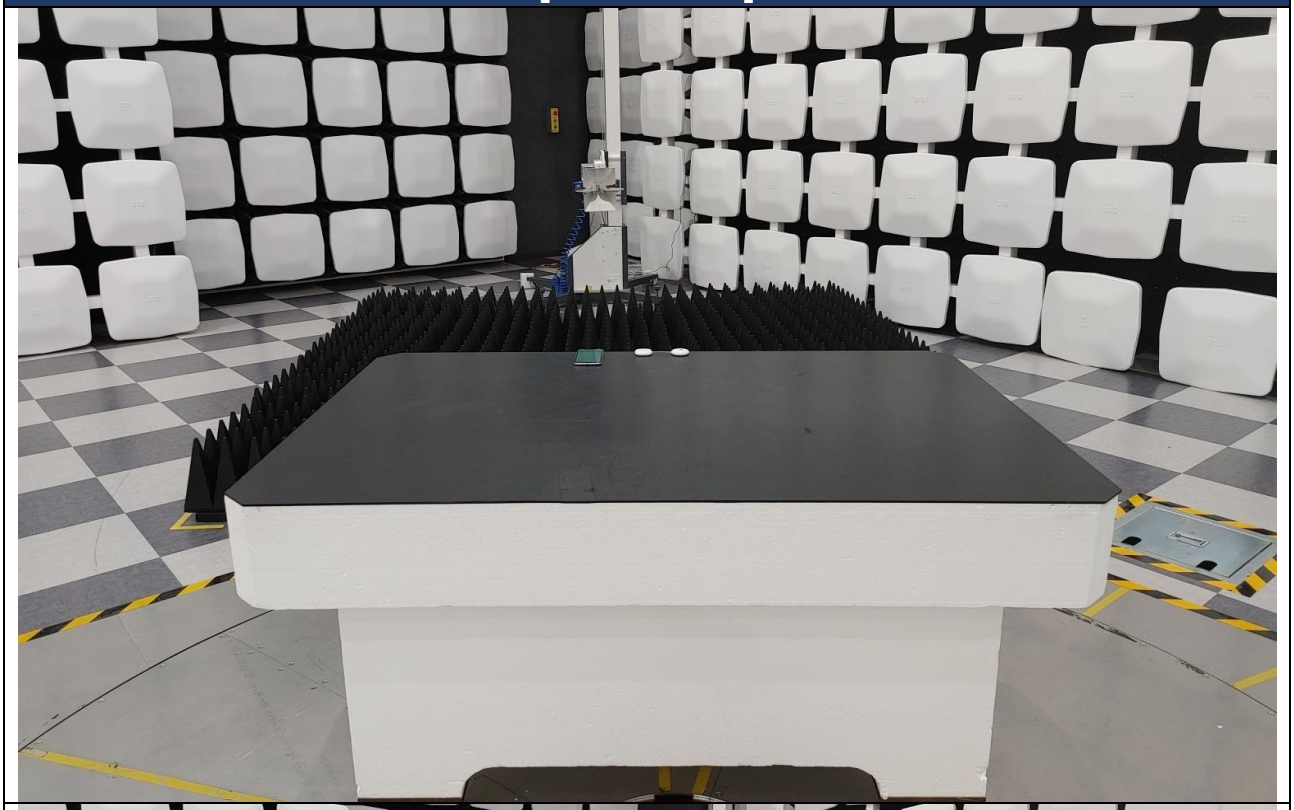
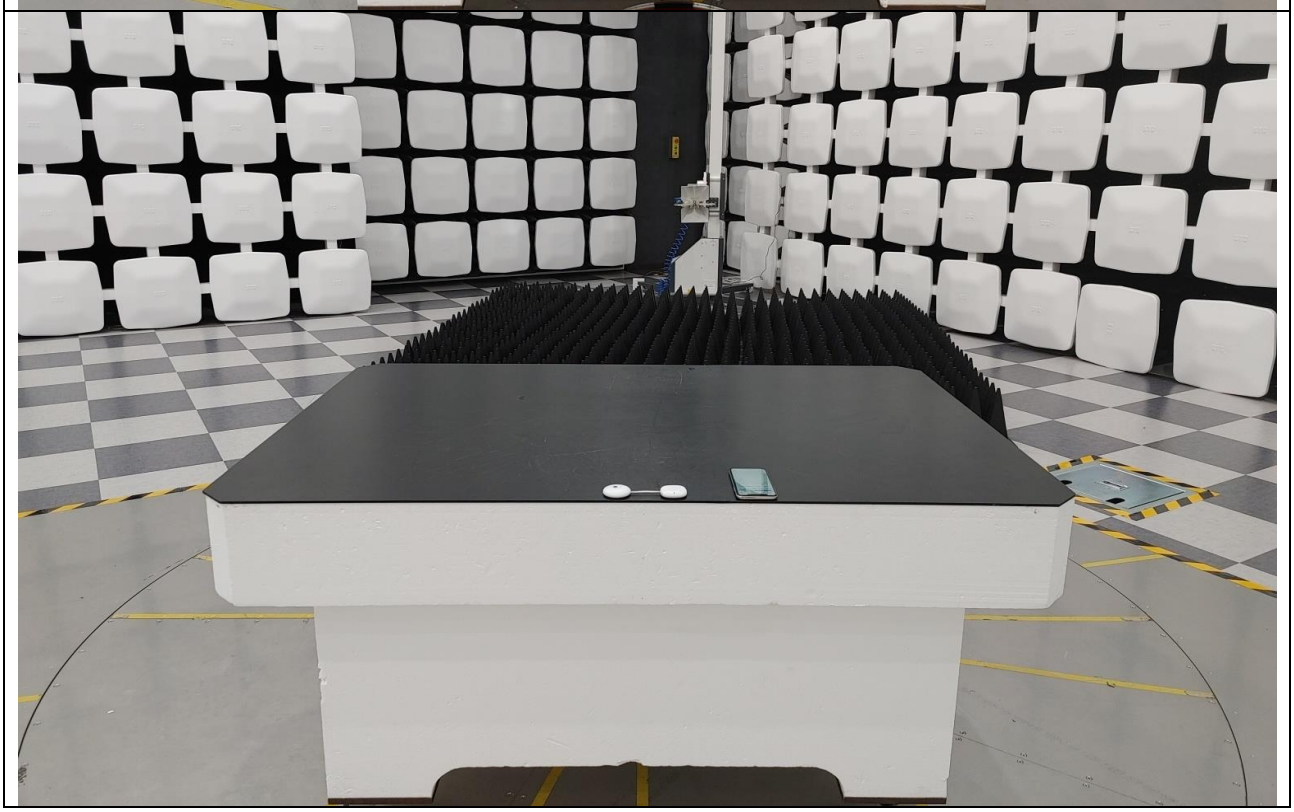
Photo of test set up for radiated emissions
Test configuration: Configuration 2 (ECG measuring)
[Above 1 GHz]





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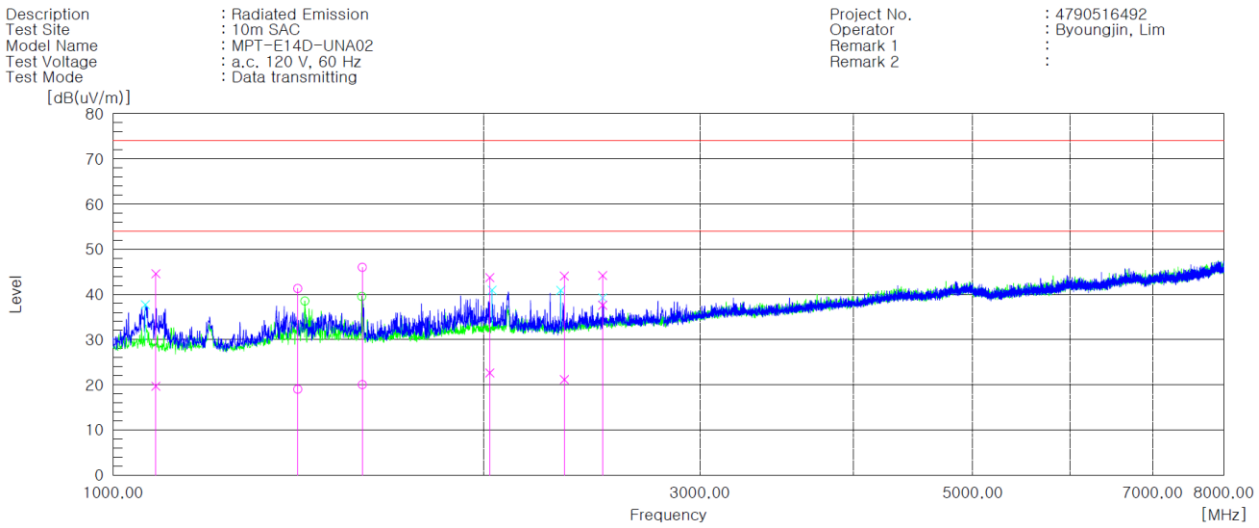
5.3.3 Test results

Graphical representation of radiated emissions [1 GHz – 8 GHz]

Operating mode/Voltage: Configuration 1 (Data transmitting), 120 V/60 Hz



Tabulated results of radiated emission [1 GHz – 8 GHz]

--- Horizontal Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(uV)]	c.f [dB(1/m)]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1	1413.135	51.4	-10.1	41.3	74.0	32.7	245.9	358.3
2	1594.258	55.2	-9.2	46.0	74.0	28.0	327.5	48.0

--- Horizontal Polarization (CAV)---

No.	Frequency [MHz]	Reading [dB(uV)]	c.f [dB(1/m)]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1	1413.135	29.1	-10.1	19.0	54.0	35.0	245.9	358.3
2	1594.258	29.2	-9.2	20.0	54.0	34.0	327.5	48.0

--- Vertical Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(uV)]	c.f [dB(1/m)]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1	1083.228	57.6	-13.0	44.6	74.0	29.4	388.9	102.6
2	2023.590	50.1	-6.4	43.7	74.0	30.3	291.2	135.9
3	2327.521	49.7	-5.6	44.1	74.0	29.9	284.2	97.3
4	2500.086	48.6	-4.4	44.2	74.0	29.8	399.9	120.5

--- Vertical Polarization (CAV)---

No.	Frequency [MHz]	Reading [dB(uV)]	c.f [dB(1/m)]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1	1083.228	32.7	-13.0	19.7	54.0	34.3	388.9	102.6
2	2023.590	29.0	-6.4	22.6	54.0	31.4	291.2	135.9
3	2327.521	26.8	-5.6	21.2	54.0	32.8	284.2	97.3
4	2500.086	42.0	-4.4	37.6	54.0	16.4	399.9	120.5

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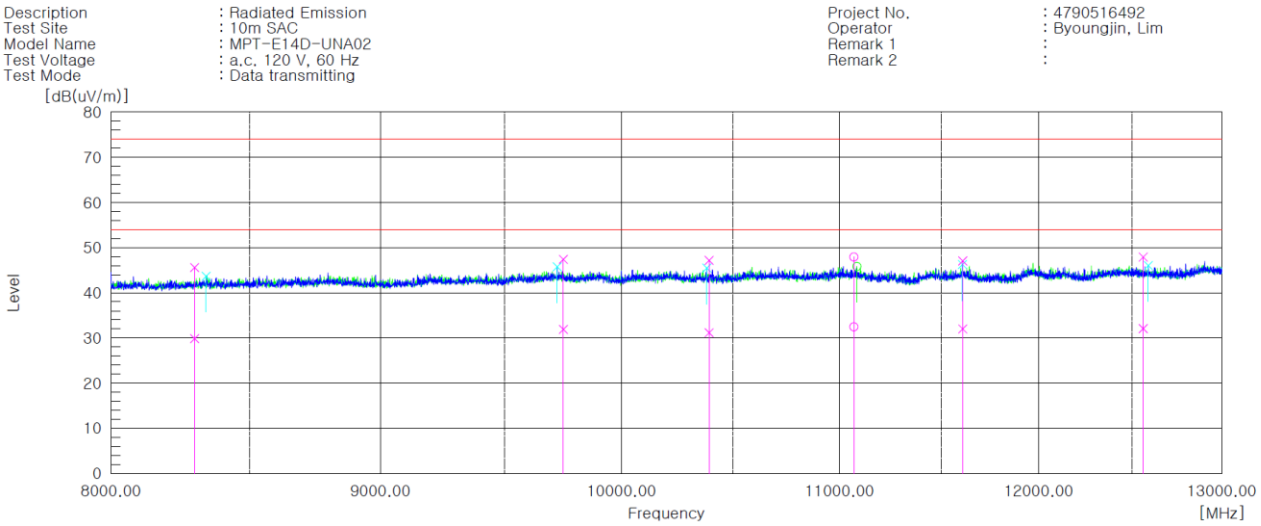
Graphical representation of radiated emissions [8 GHz – 13 GHz]

Operating mode/Voltage: Configuration 1 (Data transmitting), 120 V/60 Hz



Tabulated results of radiated emission [8 GHz – 13 GHz]

--- Horizontal Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(uV)]	c.f [dB(1/m)]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1	11069.120	32.7	15.2	47.9	74.0	26.1	330.1	289.1

--- Horizontal Polarization (CAV)---

No.	Frequency [MHz]	Reading [dB(uV)]	c.f [dB(1/m)]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1	11069.120	17.3	15.2	32.5	54.0	21.5	330.1	289.1

--- Vertical Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(uV)]	c.f [dB(1/m)]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1	8297.344	34.3	11.3	45.6	74.0	28.4	354.4	168.9
2	9748.517	33.2	14.2	47.4	74.0	26.6	242.4	170.2
3	10390.100	32.7	14.5	47.2	74.0	26.8	309.2	197.4
4	11607.160	31.1	16.0	47.1	74.0	26.9	108.7	130.4
5	12560.780	30.2	17.7	47.9	74.0	26.1	193.8	163.9

--- Vertical Polarization (CAV)---

No.	Frequency [MHz]	Reading [dB(uV)]	c.f [dB(1/m)]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1	8297.344	18.6	11.3	29.9	54.0	24.1	354.4	168.9
2	9748.517	17.7	14.2	31.9	54.0	22.1	242.4	170.2
3	10390.100	16.7	14.5	31.2	54.0	22.8	309.2	197.4
4	11607.160	16.0	16.0	32.0	54.0	22.0	108.7	130.4
5	12560.780	14.4	17.7	32.1	54.0	21.9	193.8	163.9

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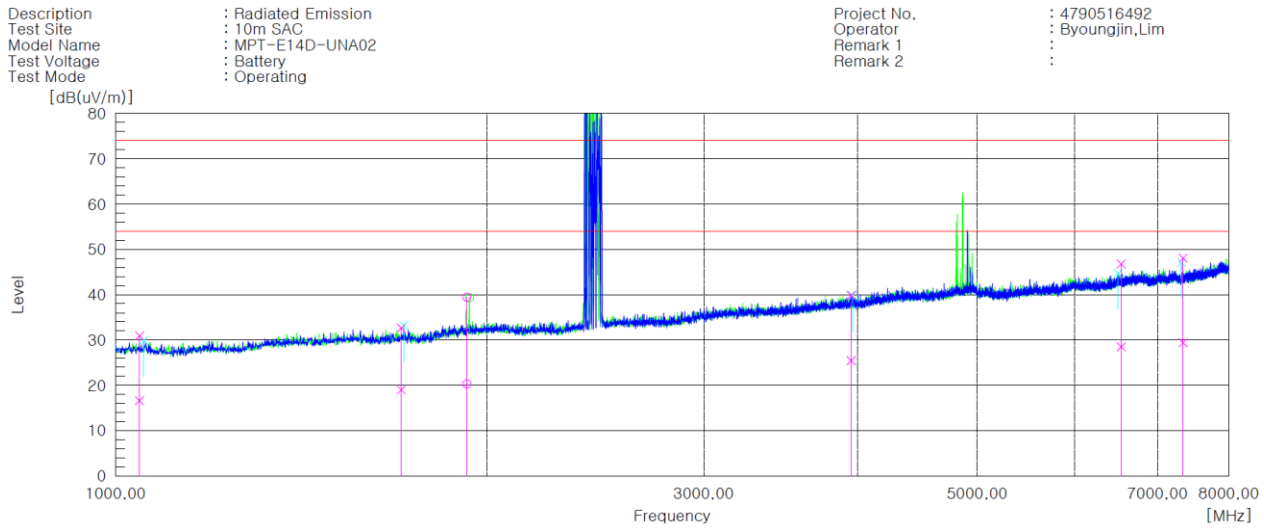
Graphical representation of radiated emissions [1 GHz – 8 GHz]

Operating mode/Voltage: Configuration 2 (ECG measuring), Battery (3 VDC)



Tabulated results of radiated emission [1 GHz – 8 GHz]

--- Horizontal Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(uV)]	c.f [dB(1/m)]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1	1927.606	46.3	-6.9	39.4	74.0	34.6	125.2	143.8

--- Horizontal Polarization (CAV)---

No.	Frequency [MHz]	Reading [dB(uV)]	c.f [dB(1/m)]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1	1927.606	27.2	-6.9	20.3	54.0	33.7	125.2	143.8

--- Vertical Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(uV)]	c.f [dB(1/m)]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1	1045.557	44.0	-13.0	31.0	74.0	43.0	290.7	243.2
2	1704.649	41.5	-8.9	32.6	74.0	41.4	242.4	55.5
3	3950.466	37.9	2.0	39.9	74.0	34.1	169.3	234.4
4	6540.182	38.6	8.2	46.8	74.0	27.2	295.9	278.0
5	7343.664	38.9	9.2	48.1	74.0	25.9	273.4	164.9

--- Vertical Polarization (CAV)---

No.	Frequency [MHz]	Reading [dB(uV)]	c.f [dB(1/m)]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1	1045.557	29.6	-13.0	16.6	54.0	37.4	290.7	243.2
2	1704.649	27.9	-8.9	19.0	54.0	35.0	242.4	55.5
3	3950.466	23.5	2.0	25.5	54.0	28.5	169.3	234.4
4	6540.182	20.3	8.2	28.5	54.0	25.5	295.9	278.0
5	7343.664	20.2	9.2	29.4	54.0	24.6	273.4	164.9

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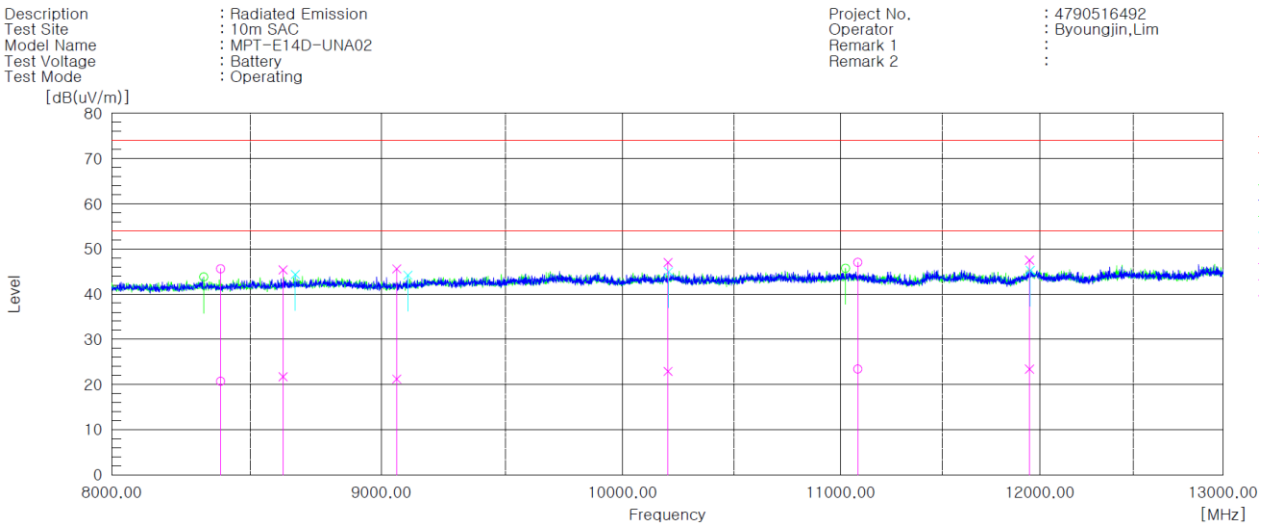
Graphical representation of radiated emissions [8 GHz – 13 GHz]

Operating mode/Voltage: Configuration 2 (ECG measuring), Battery (3 VDC)



Tabulated results of radiated emission [8 GHz – 13 GHz]

--- Horizontal Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(uV)]	c.f [dB(1/m)]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1	8389.115	34.2	11.4	45.6	74.0	28.4	353.4	106.1
2	11081.880	31.8	15.2	47.0	74.0	27.0	106.5	161.1

--- Horizontal Polarization (CAV)---

No.	Frequency [MHz]	Reading [dB(uV)]	c.f [dB(1/m)]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1	8389.115	9.3	11.4	20.7	54.0	33.3	353.4	106.1
2	11081.880	8.2	15.2	23.4	54.0	30.6	106.5	161.1

--- Vertical Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(uV)]	c.f [dB(1/m)]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1	8621.275	33.4	12.0	45.4	74.0	28.6	201.4	10.8
2	9060.565	33.1	12.5	45.6	74.0	28.4	255.5	337.6
3	10200.450	32.2	14.8	47.0	74.0	27.0	233.2	26.3
4	11944.850	30.9	16.6	47.5	74.0	26.5	101.0	3.6

--- Vertical Polarization (CAV)---

No.	Frequency [MHz]	Reading [dB(uV)]	c.f [dB(1/m)]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	Height [cm]	Angle [deg]
1	8621.275	9.7	12.0	21.7	54.0	32.3	201.4	10.8
2	9060.565	8.7	12.5	21.2	54.0	32.8	255.5	337.6
3	10200.450	8.1	14.8	22.9	54.0	31.1	233.2	26.3
4	11944.850	6.8	16.6	23.4	54.0	30.6	101.0	3.6

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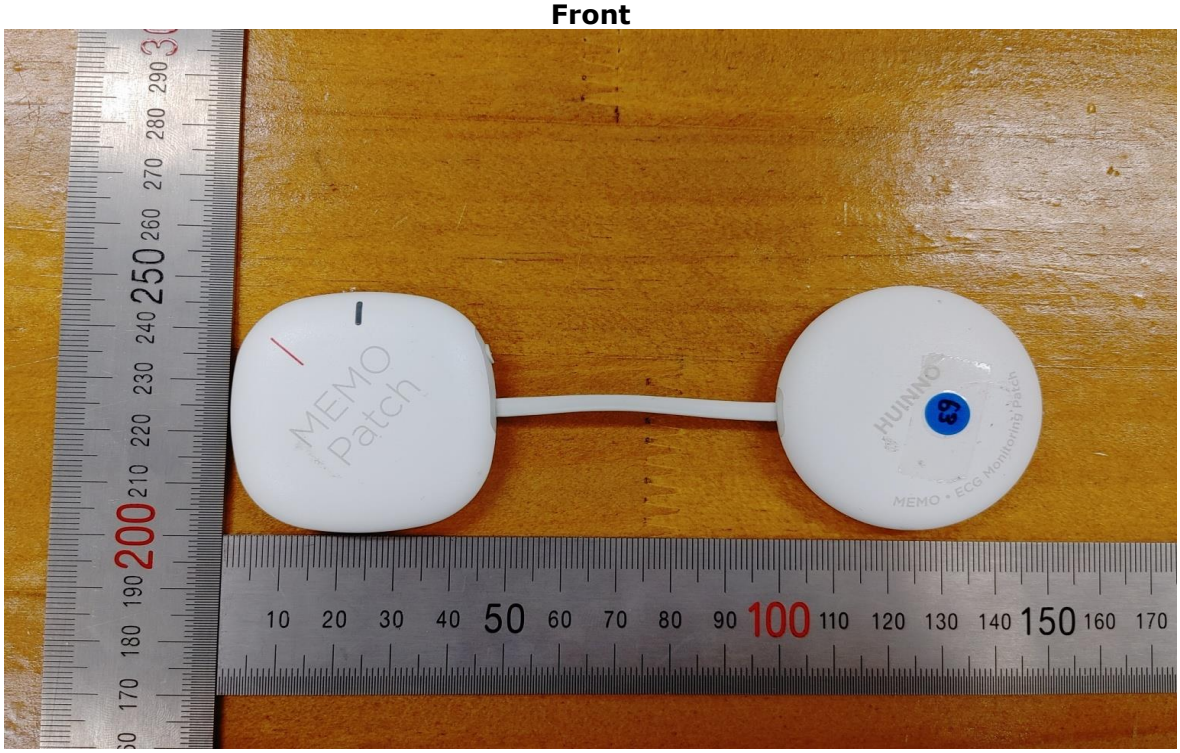
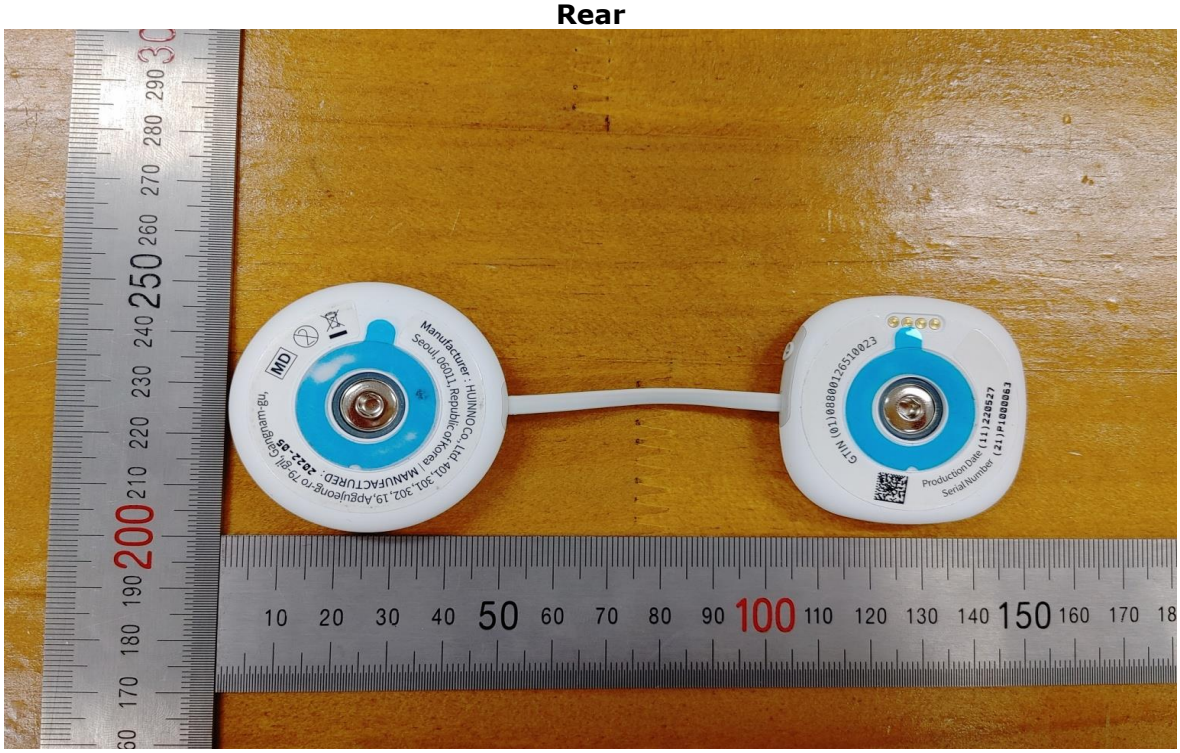
6.0 EUT Photographs

EUT External Photographs

Front



Rear



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● Data Transferred Cradle

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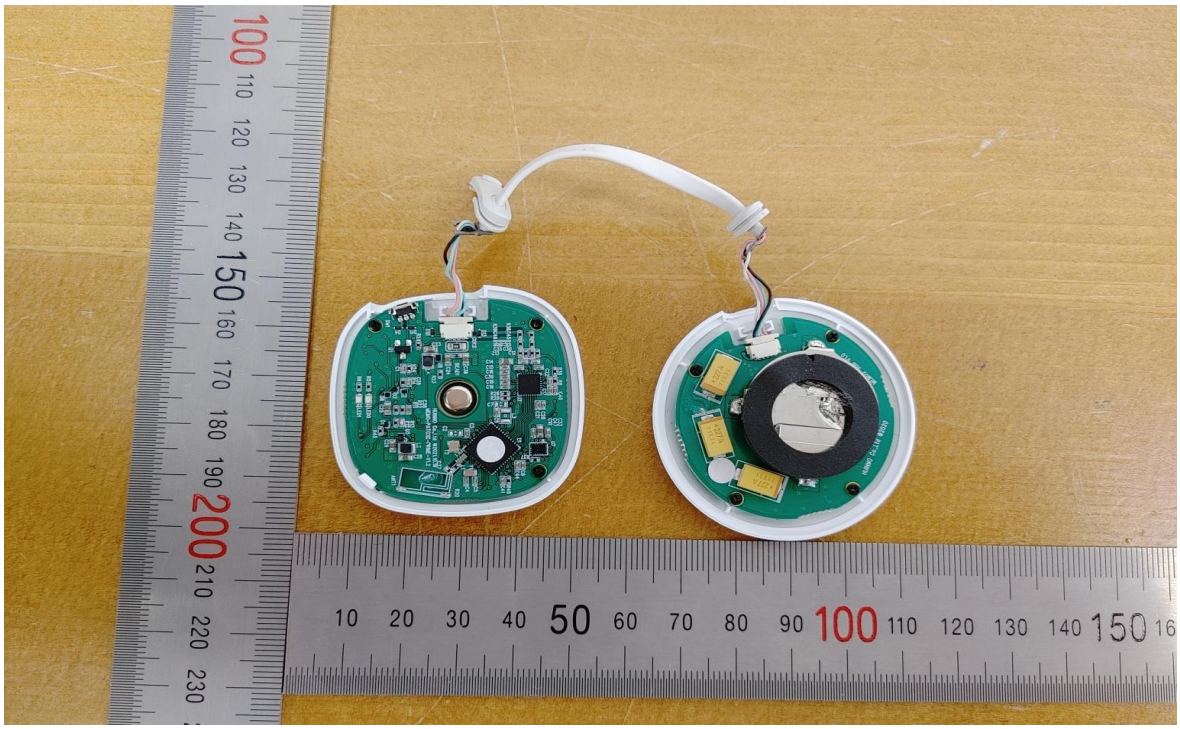
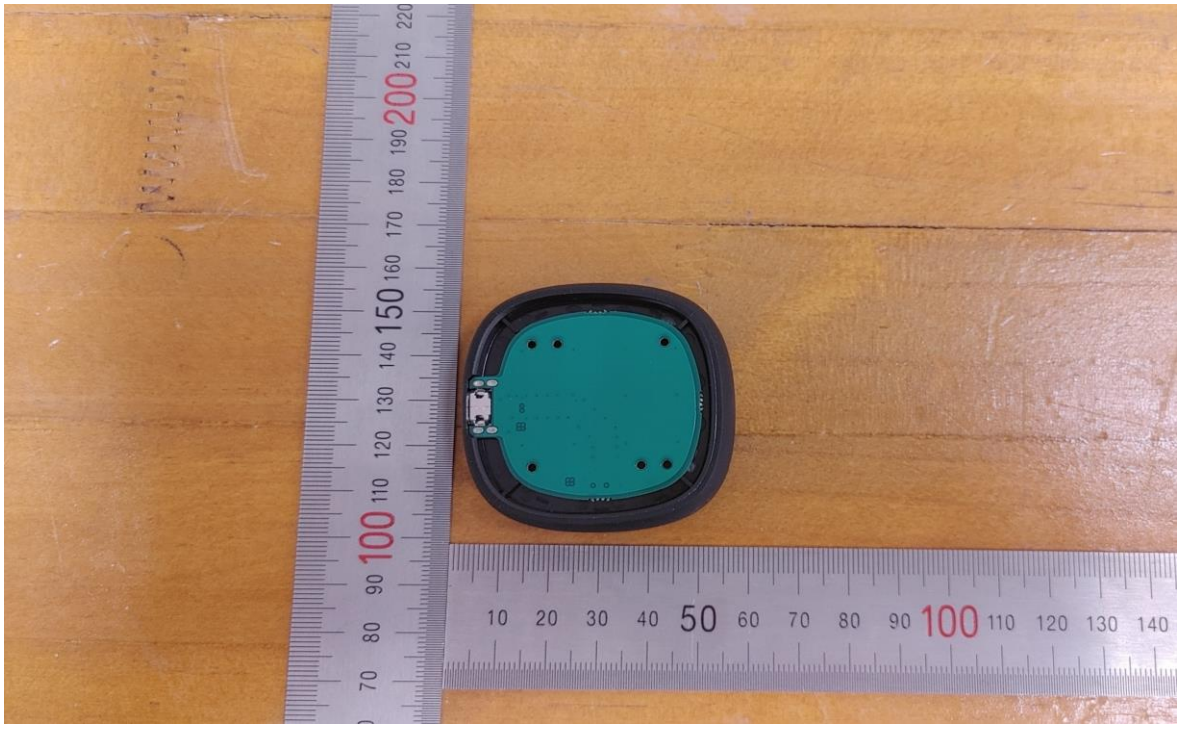
EUT Internal Photographs



● Data Transferred Cradle



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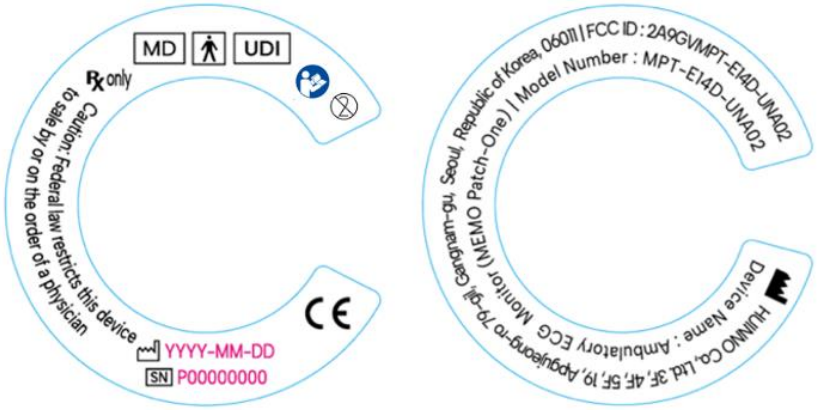
Label

● Device Label



● Data Transferred Cradle Label

End of test report

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