

## 1 | Technical data of the individual components of the evomove®



Control Unit	
Classification	internal power supply
Operating modes	off, stimulation with gait phase detection (1 - 2 channels)
Battery type	Lithium-Polymer 3,7 VDC
Controls	Medical App, tap function
Notification	3-color LED, Medical App
Transportation options	Original packaging
Measurements	85x35x25 mm
Weight	~ 65 g
Protection class	IP22
Operating temperature	0°C bis +55°C
Storage temperature	0°C bis +55°C
Humidity	0% bis 90%
Air pressure	700 to 1060 hPa
Impulse Parameters	
Impulse	biphasic
Waveform	Square pulse
Intensity	0; 4 to 80 mA; 1 mA steps
Maximum tension	120V
Modulation types	symmetrical, asymmetrical
Maximum load	5 kOhm (40 mA)
Pulse repetition rate	25 to 60 Hz, 5 Hz steps
Symmetrical	
Positive pulse	100 150 200 250 300 350 400 450
Negative pulse	100 150 200 250 300 350 400 450
Asymmetrical	
Positive pulse	100 150 200 250 300 350 400 450
Negative pulse	300 450 600 750 900 900 900 900
Gait Parameters	
Start phase	0 to 100%
Stop phase	0 to 100%
Cuff	
Material surface	Softshell
Suitable for leg circumference	Individual production
Measurements	~ 160 x 350 mm
Weight	~ 70 g
Material electrodes	Silicon graphite
Power Adapter	
Manufacturer	HN Electronic Components GmbH & Co.KG
Model	HNP11-USBV2
Input	
Tension	100 to 240 VAC
Frequency	50/60 Hz

The table continues on the next page →

EvoMotion

Output	
Power	10,5 W
Tension	5V
Amperage	2,1 mA
General data	
Dimensions (LxWxH)	71,6 x 37 x 20,7 mm
Weight	37 g
Operating temperatur	-10°C to +40°C
Storage temperature	-20°C to +65°C
Humidity	35 to 85% RH
EMV	EN55022:2010+AC:2011; EN55024:2010
ErP / RoHS	EN50563:2011 EN50581:2012

**IMPORTANT NOTE:**

The evomove® cannot be used while it is charging.

**WARNING:**

Only use the charger that is included with the evomove®.

**evomove®**

### Technical Data of the Wireless Connection

Description	Industry standard Bluetooth Low Energy (BLE) 4.2 communication protocol
Frequency band	2,405 to 2,408 GHz
Modulation type	FSK
Modulation signal	Binary data message
Data rate (frequency of the modulation signal)	250 kbit/s
Effective radiation power	<10 dBm
Bandwidth of the recipient	812 kHz around a selected frequency
EMV	IEC 60601-1-2 IEC 60601-2-10

The evomove® was designed and tested so that it is not disturbed by other RF devices (e.g. other evomove® products, WLAN networks, microwaves, Bluetooth devices, ...). Other devices that emit electromagnetic radiation, e.g. Metal detectors, devices for electronic article surveillance or radio identification do not interfere with the function of the evomove®. Despite the careful check, it cannot be ruled out that the wireless connection of the evomove® will be disturbed in special situations.

**WARNING:**

If there are interference from other devices (e.g. connection problems), please interrupt the use and reconnect to the evomove® at a greater distance from possible sources of interference.

## 2 | EMI Tables (Radiated Interference)

### Guidelines and Manufacturer's Declaration - Electromagnetic Emission

Der evomove® ist für den Betrieb in der unten angegebenen elektromagnetischen Umgebung bestimmt. Anwender\*innen des evomove® sollten sicherstellen, dass es in einer solchen Umgebung benutzt wird.

Emission Measurements	Accordance	Electromagnetic Environment - Guidelines
HF emissions according to CISPR 11	Group 1	The evomove® uses HF energy exclusively for its internal function. Therefore, its HF emissions are very low and it is unlikely that nearby electronic devices will be disturbed.
HF emissions according to CISPR 11	Class B	The evomove® is intended for use in all facilities including living areas and those that are directly connected to a public supply network that also supplies buildings that are used for residential purposes.

### Guidelines and Manufacturer's Declaration - Electromagnetic Immunity | Table 1


The evomove® is intended for operation in the electromagnetic environment specified below. Users of the evomove® should ensure that it is used in such an environment.

Immunity Exams	IEC 60601- Test Level	Consistency Level	Electromagnetic Environment - Guidelines
Electrostatic discharge (ESD) according to IEC 61000-4-2	± 8 kV Contact discharge  ± 15 kV Air discharge	± 8 kV Contact discharge  ± 15 kV Air discharge	Floors should be made of wood, concrete, or ceramic tiles. If the floor is covered with synthetic material, the relative humidity must be at least 30%.
Magnetic field at the supply frequency (50/60 Hz) according to IEC 61000-4-8	30 A/m	30 A/m	Mains frequency magnetic fields must correspond to those of a typical commercial or medical environment.

NOTE:  $U_T$  is the ac mains voltage prior to application of the test level.

### Guidelines and Manufacturer's Declaration - Electromagnetic Immunity | Table 2

The evomove® is intended for operation in the electromagnetic environment specified below. Users of the evomove® should ensure that it is used in such an environment.

Immunity Exams	IEC 60601- Test Level	Consistency Level	Electromagnetic Environment - Guidelines
Conducted HF interference according to IEC 61000-4-6	3 V <sub>Rms value</sub> 150 kHz to 80 MHz  6 V <sub>Rms value</sub> 150 kHz to 80 MHz ISM and amateur radio bands	3 V <sub>Rms value</sub>  6 V/m	Portable and mobile radio devices are not used any closer to the evomove® including cables than the recommended safety distance, which is calculated using the equation suitable for the transmission frequency.
Radiated HF interference according to IEC 61000-4-3	10 V/m 80 MHz to 2,7 GHz 80% AM at 1kHz	10 V/m 26 MHz to 2.7 GHz 80% AM at 1kHz	

Guidelines and Manufacturer's Declaration - Electromagnetic Immunity | Table 3

Test Frequency (MHz)	Band a) (MHz)	Service a)	Modulation b)	Maximum Performance (W)	Distance (m)	Immunity Test Level
385	380 - 390	TETRA 400	Pulse Modulation b) 18Hz	1,8	0,3	27
7450	430 - 470	GMRS 460, FRS 460	FM c) ± 5 kHz deviation 1 kHz sine	2	0,3	28
710 745 780	704 - 787	LTE Band 13, 17	Pulse modulation b) 217Hz	0,2	0,3	9
810 870 930	800 - 960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation b) 18Hz	2	0,3	28
1720 1845 1970	1700 - 1990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS	Pulse modulation b) 217Hz	2	0,3	28
2450	2400 - 2570	Bluetooth, WIFI, 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation b) 217Hz	2	0,3	28
5240 5500 5785	5100 - 5800	WIFI 802.11 a/n	Pulse modulation b) 217Hz	0,2	0,3	9

NOTE: In order to comply with the IMMUNITY TEST LEVEL, the distance between the transmitting antenna and the ME DEVICE or ME SYSTEM can be reduced to 1 m, if necessary. The distance of 1m is permitted by IEC 61000-4-3.

a) For some services only the uplink frequencies are included.

b) The carrier frequency should be modulated with a square wave signal with a 50% duty cycle.

c) As an alternative to FM, a pulse modulation with 50% duty cycle at 18 Hz can be used, because even if it does not reflect the type of modulation, it corresponds to the worst case.

This warning is intended to make the patient and user aware of the minimum distance between PORTABLE RF communication devices and ME DEVICES and ME SYSTEMS in order to avoid loss of performance or risks to BASIC SAFETY or ESSENTIAL PERFORMANCE FEATURES.