

TECHNOLOGY PRINCIPLES

SIGNAL ALGORITHM

1. Noise Reduction
2. Frequency Filtering
3. Waveform Analysis

Calculates key parameters such as Heart Rate (HR), Respiratory Rate (RR), and Stroke Volume (SV) in real time.

SENSOR

A compact MEMS accelerometer detects subtle body vibrations transmitted through structures such as beds or chairs. By separating frequency components associated with respiration and cardiac activity from the vibration signals, physiological signals are extracted.






REAL-TIME

Measured data is transmitted to the server and mobile application via Wi-Fi. Healthcare professionals can immediately monitor the data through the monitoring dashboard. General users can check their real-time physiological information through the mobile application.



AI ANALYSIS

Beyond simply presenting numerical values, the system provides advanced indicators such as HRV analysis and autonomic nervous system balance assessment.

Measurement Parameters

	Heart Rate	Real-time measurement of basic heart rate
	Heart Rate Variability	Analysis of autonomic nervous system balance and stress levels
	Respiratory Rate	Monitoring of respiratory patterns during rest and sleep
	Stroke Volume	Assessment of blood circulation and cardiac function indicators
	Sleep Quality	Evaluation of sleep quality during sleep (applicable for extended analysis)

Data Utilization

	Hospitals and Medical Institutions	Real-time monitoring and trend analysis of patients' physiological data
	Individual Users	Provision of customized healthcare solutions for the elderly and patients with chronic diseases

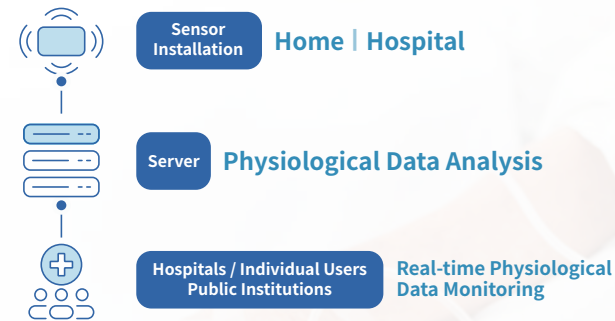
PRODUCT OVERVIEW

A high-sensitivity MEMS accelerometer detects subtle cardiac vibrations (BCG)



★ BCG (Ballistocardiogram): Software technology that calculates four physiological parameters by analyzing subtle mechanical vibrations generated during the contraction and relaxation of the heart.

데이터 흐름도



• Fully Contactless Method

No electrodes or patches need to be attached to the skin, eliminating skin irritation, discomfort, and foreign body sensation.

• Optimized for Long-term Continuous Monitoring

Unconstrained monitoring is possible even while the patient is sleeping, resulting in higher adherence compared to conventional wearable devices.

• Advantages of Fixed Installation

Applicable in both medical environments (hospital beds) and daily living environments (care chairs, smart furniture)

• Clinically Reliable

A high correlation with electrocardiography (ECG) has been demonstrated ($r = 0.985$), indicating suitability for use in real clinical settings.

• AI-Integrated Architecture

Beyond simple data measurement, it can be expanded to early prediction and personalized healthcare management.



Software Convergence Institute Co., Ltd.

EDLDN01

Ballistocardiography medical device

Non-contact, unobtrusive, real-time vital sign monitoring



Company Name

Software Convergence Institute Co., Ltd. (SCI)

E-mail

pck3867@scikorea.co.kr

Main Phone

+82-1600-0415

Website

www.scikorea.co.kr

Head Office

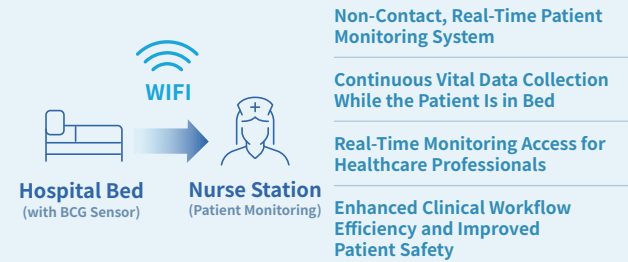
205-2, Business Building 2, 333 Cheomdangwagi-ro, Buk-gu, Gwangju 61008, Republic of Korea

Branch Office

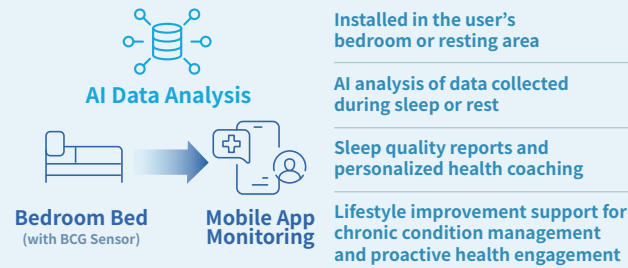
#404, 193-12 Geumnam-ro, Dong-gu, Gwangju 61472, Republic of Korea

APPLICATION AREAS

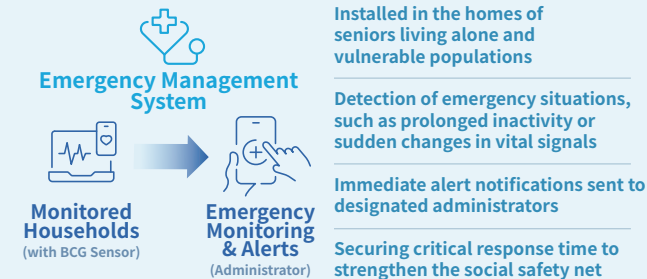
B2B | Hospital Patient Monitoring Service



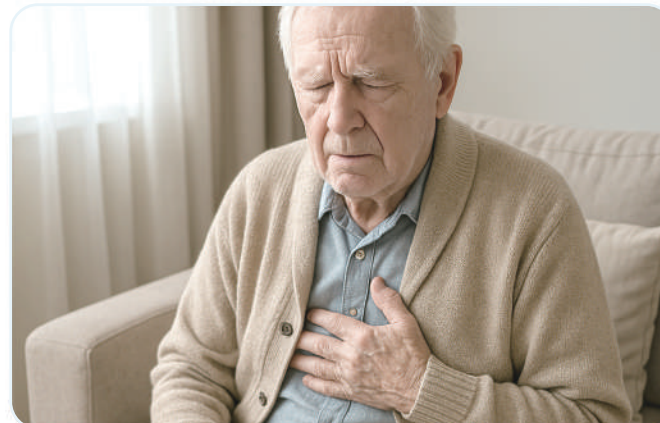
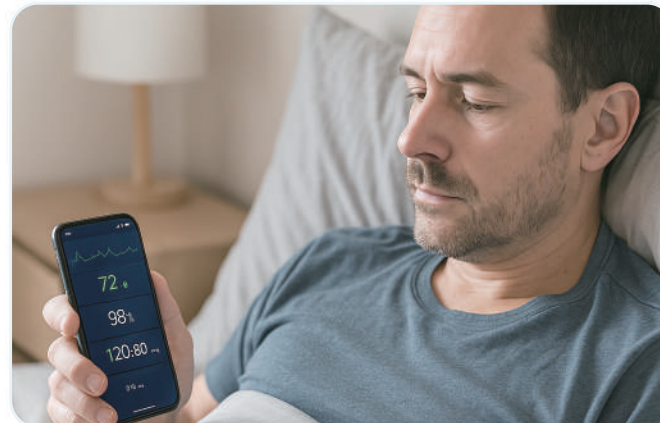
B2C | Home-Based Health Monitoring Service



B2G | Community-Based Senior Emergency Monitoring Service



APPLICATION EXAMPLES



PRODUCT SPECS

EDLDN01

EVERYDAY DIAGNOSIS LONGEVITY

Product Name	Ballistocardiography
Dimensions	83.7 × 40.7 × 17.6 mm
Weight	Lightweight (Compact Sensor Type)
Power Supply	DC Power
Communication	Wi-Fi Based (TCP/IP Protocol)
Operating Environment	Hospital beds, care chairs, smart furniture, etc.



HOW TO USE & INSTALLATION GUIDE

Installation Location For optimal signal acquisition, attach the device to the bed frame at a position closest to the heart.

User Guide Individual Users – Mobile App
Once connected, the sensor syncs with the system, enabling real-time monitoring on your smartphone.

Hospitals & Medical Institutions – PC/Web-Based System
The hospital/institutional monitoring dashboard enables multi-patient monitoring and data management.

- Step-by-Step Instructions**
- 01 Remove the magnet and connect the power supply.
 - 02 Attach the magnet and configure the sensor's Wi-Fi settings.
 - 03 Set up sensor communication and confirm data reception.
 - 04 Monitor data in real time via the mobile app or PC.



CERTIFICATE

Medical Device Classification A26070.01 Class II Medical Device	Radio Equipment Compliance Korea Radio Equipment Conformity Registration Mark R-R-2C1-EDLDN101
Quality Certifications GMP Certified ISO 13485 Certified	Medical Device Approval Approval No. 24-883 Ballistocardiograph (BCG)



Medical Device GMP Certificate of Conformity



Certificate of ISO13485



Manufacturing License for Ballistocardiograph Medical Device (Class II)

PARTNER

KHIDI 한국보건산업진흥원

진남대학교병원
CHONNAM NATIONAL UNIVERSITY HOSPITAL

infobank

INNOPOLIS
KOREA INNOVATION FOUNDATION

NISSHA

KMEDIHUB
Korea Medical Device Hub

KOSME 중소벤처기업진흥공단
Korea SMEs and Startups Agency

HEM Pharma
Human Effective Microbes Pharma Inc.

ZetaPlan
INVESTMENT

RSS
TECHWIN

