



CardioNS

The world's smallest clinical ECG device



- ✓ No Battery
- ✓ No Driver needed
- ✓ Zero configuration
- ✓ Zero maintenance



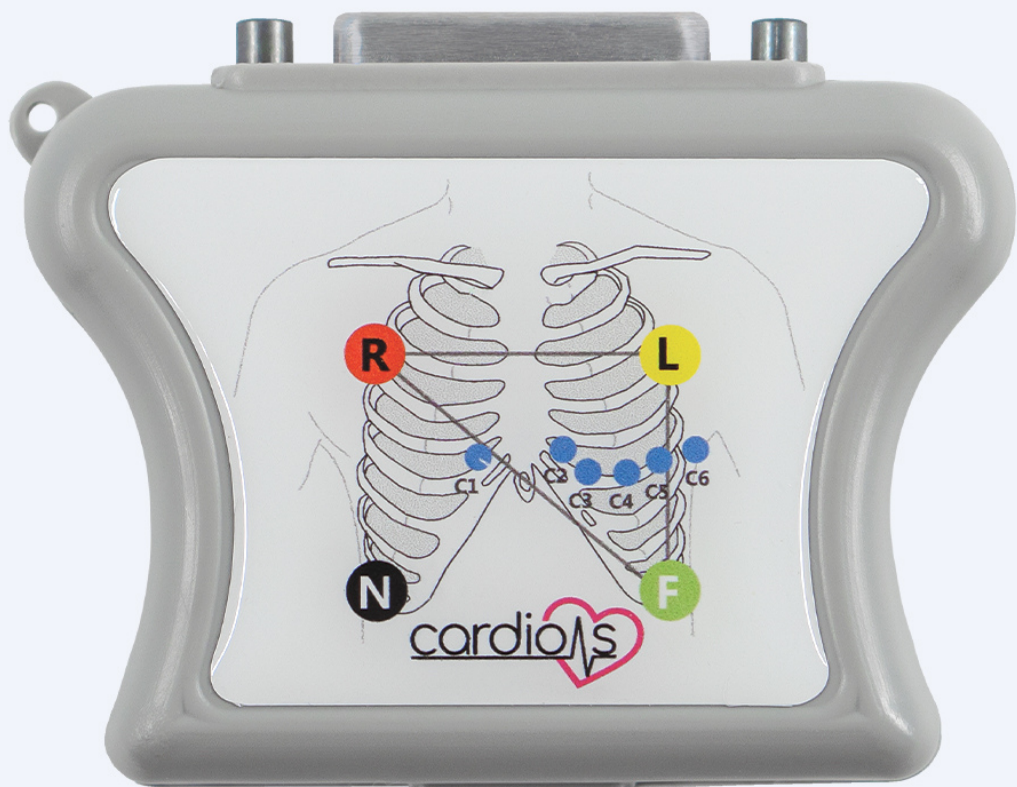
CardioNS – the world's smallest clinical ECG device

CardioNS is a compact but fully functional mobile 12-channel ECG device.

It is powered and controlled by an Android mobile phone or a tablet.

It needs NO configuration and doesn't need any maintenance.

The ECG device can be used immediately with CardioNS tablet containing a preinstalled application or after installing the free application from the Google Play Store to your Android mobile device with OTG support.



Supporting all 12 channels of data acquisition simultaneously, CardioNS presents a golden standard in cardiology.

The device has a full-speed USB connection with plug-and-play functionality, not requiring additional drivers. Contrary to a Bluetooth connection, the USB connection offers a more stable data transfer and requires no setup.

Longer recording times are enabled by the latest generation of analogue-to-digital converters. Given that they are made by the world-leading company Texas Instruments, they are known for their excellent accuracy and ultra-low power consumption.

Signal visualization

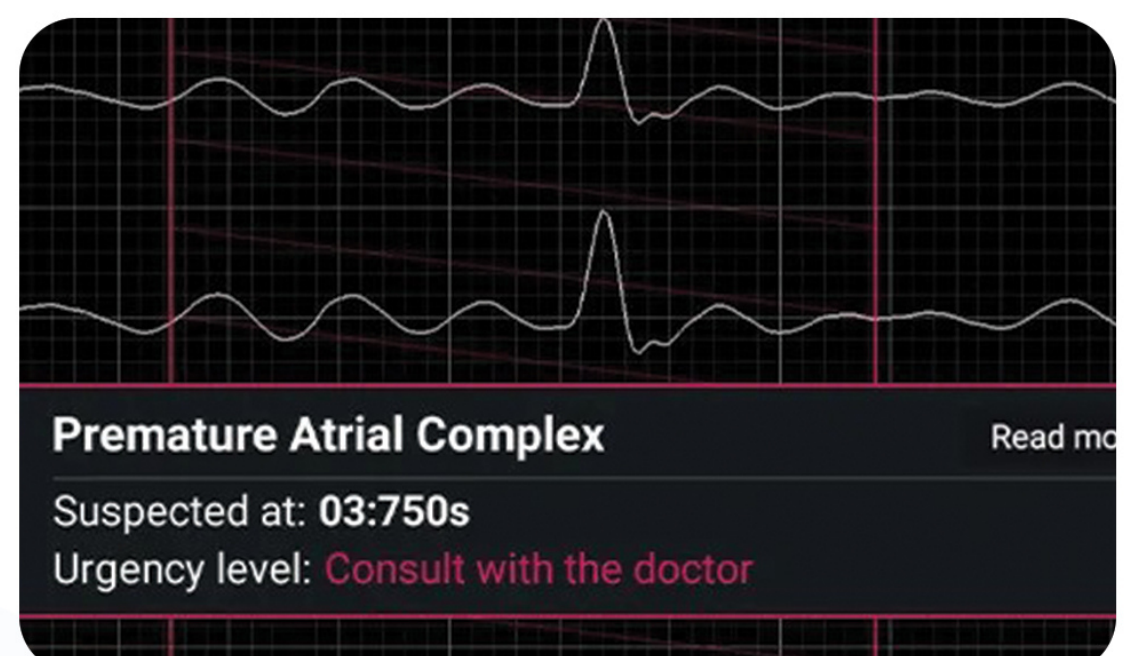
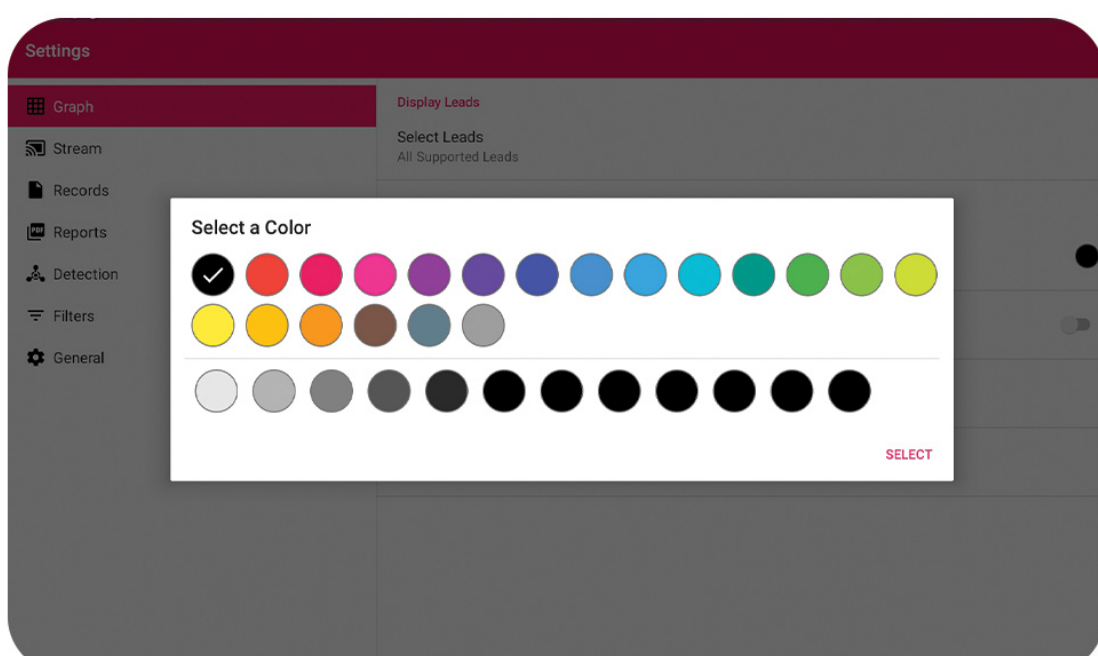
The acquired ECG signals are stored in the Android device storage and can be visualized at any time.

Users can choose desired leads to be displayed on the screen and can zoom in and out. Additionally, users can customize their lead selections and choose custom colours for each lead.

Detecting disorders

Complex mathematical algorithms analyse the acquired data and detect, identify, and mark disorders.

Alerts are sent to the user or doctor upon detection.



CardioNS Android application:

- Acquires desired number of channels (3-12),
- Stores acquired data to an internal storage or SD card
- Displays ECG signals
- Detects abnormalities
- Does real-time streaming to another device
- Sends data to another device
- Generates ECG reports
- Shares generated reports



Sending acquired data

The acquired data can be shared between devices with the CardioNS application. It is as simple as sharing an image from the photo gallery.

The generated PDF reports can be shared with any other device equipped with a PDF reader.

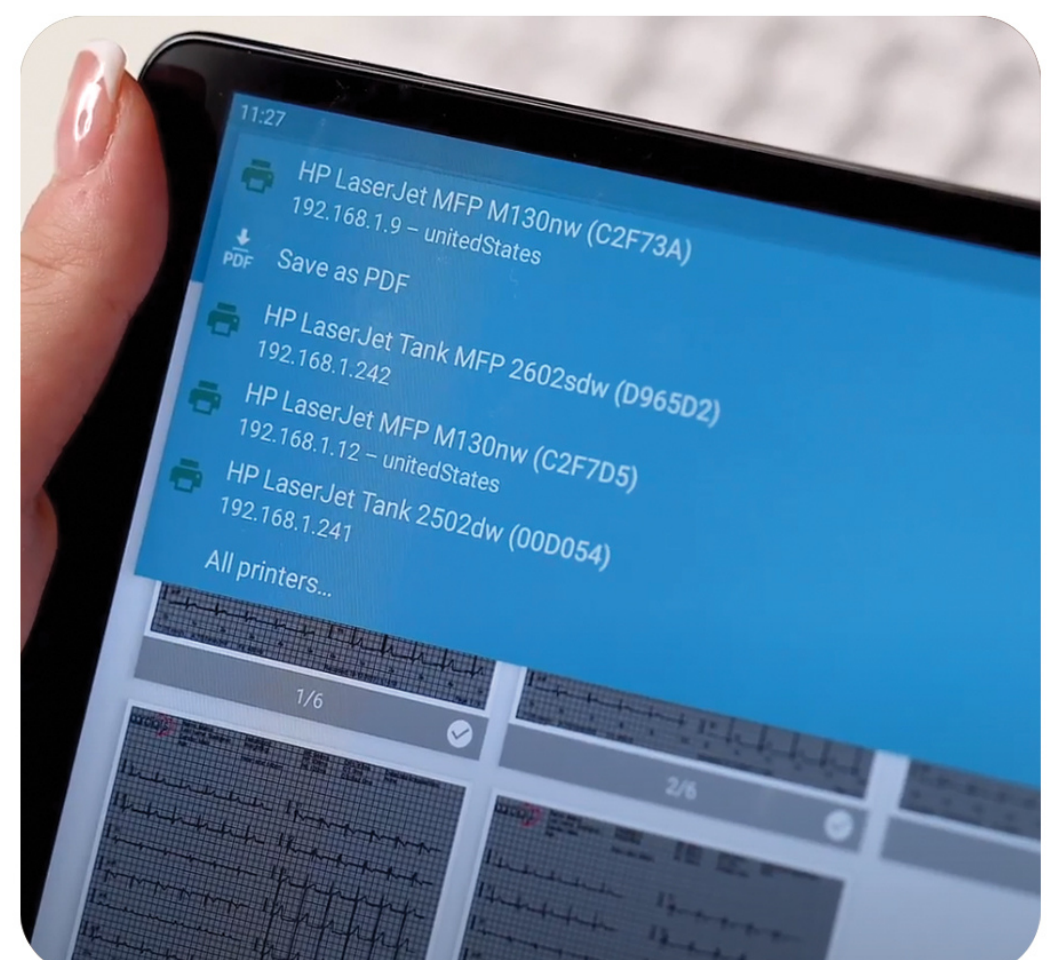
The telemetry function of the device provides signal streaming in real-time to any other Android mobile device on the same network with the CardioNS application installed.



Data printing

It is possible to print recorded signals on regular printer paper without the need for expensive thermal paper or a printer.

Different reports are available based on activated options. Results can be printed when received from another user through the data sharing option.



Technical Specifications

Dimensions

Width: 64,3 mm
Depth: 22 mm
Height: 50 mm
Weight: 50 grams

Basic information

AD convertor resolution: 24-bit
Voltage: 5V/3.3V
Power consumption: 0.5w
Number of channels: 12 (twelve)
Sampling frequency: 100 Hz – 1.066 Hz
Input signal range: ± 5 mV

Processing

Intended for: acquisition, display, interpretation, streaming, and printing ECG signals

Patient data: name, date of birth, race, blood pressure, height, weight, status (Diabetes, Smoking, Alcohol, Hyperlipidaemia, Positive Family Anamnesis, Drugs, Pacemaker), Profession, Address, Phone, Email

Recording time: from 1 s to 60 min

Low-pass filter: 25 Hz, 40 Hz, 65Hz, 80 Hz, 100Hz
High-pass filter: 0.05 Hz, 0.067 Hz, 0.4 Hz, 0.5 Hz, 0.67 Hz, 1 Hz
Notch filters: 50 or 60 Hz digital filter

Lead display: Standard (I, II, III), Unipolar (aVR, aVL, aVF), External (I, II, III, aVR, aVL, aVF), Precordial (V1), All (I, II, III, aVR, aVL, aVF, V1)+(V2+V6), Custom E2
Aplitude scale: 5mm/mV, 10mm/mV, 20mm/mV, 40mm/mV
Time scale: 25mm/s, 50mm/s, 100 mm/s

Electrode placement detection
Pacemaker detection: between 2 mV and 250 mV, durations between 0,1 – 2,0 ms

Data Management

Report access with the CardioNS application
Secure printing through the internal network, direct .pdf storage on a local device
Worklist integration for: CSV

Protection Classification

Medical device classification: Class IIa
Applied parts: CF
RF emissions (CISPR 11): Group 1, Class B
Ingress protection: IP22

Applied Standards

ISO 15223-1:2016, EN ISO 15223-1:2016, EN 1041:2008/A1:2013, EN ISO 14971:2012, IEC 62366-1:2015, IEC 62304:2006/A1:2015, ISO 11073-91064:2009, ISO 11240:2012, EN 60601-1:2006/A1:2013, EN 60601-1-2:2015, EN 60601-1-6:2010, EN 60601-1-11:2010, IEC 60601-2-25:2011, EN ISO 10993-1:2009/AC:2010.

Operating Conditions

Temperature, operating: 5° to 40°C
Relative humidity: 15 to 90% (limited condensation)
Pressure during operation: 700 to 1060 hPa

CardioNS application minimal technical requirements

Operating System: Android OS 7.0 or above
Processor: CPU Speed Octa-core from 1.95 GHz per core
Storage: Recommended free space 200 MB
RAM: 6 GB
Connectivity: Wi-Fi 802.11b/g/n

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