C2 Smart Watch — Precision Health Monitoring, Reinvented

The C2 Smart Band is a lightweight (9.4 g) and highly durable wearable designed for seamless health tracking and intelligent integration. With IP68 water resistance and a compact frame (40 × 20 × 13 mm), it's built to deliver precision and reliability—24/7.

C2 Precision Health & Fitness Smart Watch with BLE Integration

Core Health-Monitoring Features

- 24/7 Continuous Heart Rate — Precision, ultra-low-power monitoring with automatically calibrated data transmission.
- Blood Oxygen (SpO$_2$) — Optical PPG-based measurement using red and infrared LEDs.
- Body Temperature — High-conductivity module measuring surface skin temperature with accuracy within ±0.2 °C.
- Blood Pressure — Supported with caution (accuracy may vary with movement/environment).
- Heart Rate Variability (HRV / R-R Interval) — Supports emotional and physiological wellbeing analysis; accessible via SDK or broadcast protocol.
- Respiratory Rate — Measures breathing rate in real-time.
- Activity & Sleep — Stores 7 days of detailed activity and sleep data.

Connectivity & Interactive Features

- Bluetooth 5.2 — Ensures fast, stable pairing and data exchange.
- SOS Button — Long-press (5s) triggers emergency alerts when enabled in firmware.
- NFC (13.56 MHz M1) — Supports contactless applications.
- Broadcast Capabilities — Sends data via Bluetooth beacon every 300 ms. Perfect for bulk device deployment and infrastructure-supported messaging (e.g., student/employee ID, class name, announcements)
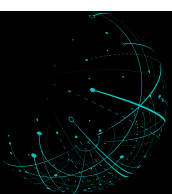
Technical Specifications

- Chipset: Nordic nRF52840
- Display: 0.96" IPS TFT (160 × 80 px), single-touch
- Battery: 80 mAh polymer Li-battery; charges via magnetic dock
- Battery Life: Up to 12.5 days (Bluetooth, steps, temp active); over 1 week with continuous heart rate monitoring
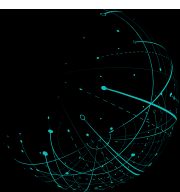- Waterproofing: IP68 rated

Physical Design & Packaging

- Weight: 9.4 g (watch body only); 12.2 g with strap
- Strap: Black silicone (custom colors available, MOQ 1000 units)
- Packaging: Retail box 98 × 98 × 40 mm; 92 g. Packed 100 units per carton (carton: 510 × 420 × 230 mm, 10.2 kg).
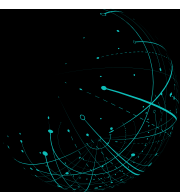
FEATURE	HIGHLIGHT
Health Sensors	Heart Rate, SpO_2, Body Temp, HRV, Respiration
Communication	Bluetooth 5.2, NFC, SOS alert, Beacon broadcast
Battery & Power	80 mAh battery; up to 12.5 days uptime
Rugged Build	Lightweight, IP68-rated, 0.96" touch display
Data Capability	7-day activity/sleep storage, raw data export

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1	Key features (some support work with Bluetooth gateway)	Blood oxygen	PPG Reflective Blood Oxygen Monitoring (Red Light + Infrared Light)
		Body temperature	High-precision Temperature Measurement Module with a temperature measurement accuracy of ±0.2 degrees.
		High-Precision Ultra-Low Power Consumption Heart Rate Monitoring	Heart rate continuous monitoring for 24/7 support (detailed power consumption analysis in the technical guide). Continuous broadcasting.
		Blood pressure	Support(not high acucuracy, not recommend to use)
		HRV(RRI)	Used for applications such as emotion and psychology (broadcast protocol extraction or customized SDK extraction)
		Breathing rate	support time/second
		Sports & sleep	Supports storage of 7 days' worth of data for both physical activity and sleep tracking (24/7)
		Automatic time calibration for bulk adjustment on the smart bracelet	Supports automatic time calibration on the smart bracelet without the need for manual adjustment through the app. The bracelet automatically synchronizes time from Bluetooth base stations (optional software)
		Sensor data	Supports broadcasting XYZ three-axis data to the base station or app for algorithm analysis (e.g., fall detection algorithm). This feature is optional and may require additional software.)
		SOS	Long press of touch key for 5 seconds to broadcast SOS = 1 and, which will be transmited to the cloud baesd platform through Bluetooth gateway(Optional)
		NFC	13.56MHZ/M1 Supports access control and campus one-card
		Bluetooth BEACON Broadcast	300MS
		Support with Bluetooth Gateway(Optional)	1. Time calibration through Bluetooth gateway 2. Student or employee's ID displayed on the bracelet page 3. Messages pushed from Bluetooth gateway 4. Max. of five messages storage

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2	Basic Parameter	Device size（mm）without strap	40*20*13mm
		Weight Device without strap	9.4g
		Weight strap	12.2g
		Body temperature function description	High-precision wrist surface temperature (36–40 °C, ±0.2 °C) and heart rate monitoring with continuous broadcast; shows "LO" below 36 °C, "HI" above 40 °C.
3	Hardware parameter	Chipset Supplier	NORDIC NRF52840
		APP	IXFIT
		App System reqirement	Android5.0 or Above、IOS9.0 or Above
		FLASH memory	512K
		Display type	TFT IPS
		screen size	0.96inch
		Resolution	160*80
		touch Type	single touch
4	Connection parameter	Bluetooth	BLE 5.2
5	Sensor	(G-Sensor)	High-precision sensor with power consumption as low as 100 microamps
		PPG(Heart Rate)	High accruracy heart rate module

6	Battery	Battery Type	Polymer lithium battery
		Capacity	80mah
		Charging Method	Magnetic charging
7	Other Partmeter	Waterproof Level	IP68
		Charging time	2hours
		Working time	1. Operating time (Bluetooth on + step counting + body temperature, heart rate off/screen off/vibration off): 12.5 days. 2. With continuous heart rate monitoring on the basis of 1: Over 1 week. 3. The above values are theoretical calculations and do not include the power consumption of screen illumination and vibration. Actual testing will provide accurate results.
		Strap color	black TPU strap can be customize for other color (MOQ 1000PCS)
		Appearance material	Case: plastic, Strap: silicone
8	Package Size	Packing box size（L*W*H）MM	98*98*40mm
		Package weight（g）	92g(Including device+ strap + charging accessories)
		Carton box size（L*W*H）CM	510*420*230mm
		Carton weight(KG)	10.2
		Packing quantity（pcs）	100pcs

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