

SCS Wearable

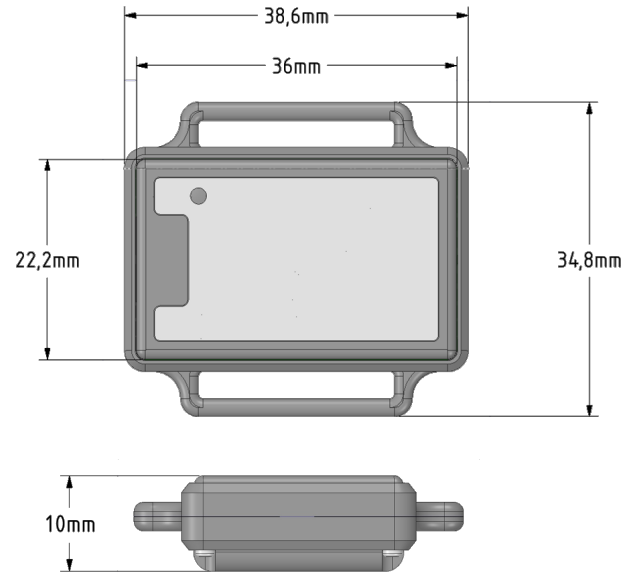
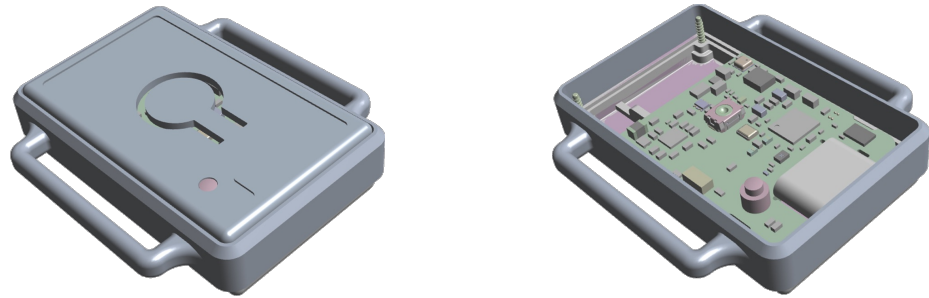
User Guide



SCS Wearable

Product Data

- Model: SCS Wearable Design
- Net weight: 8 g
- Input voltage: 4.75-5.4 V
- Input current limitation: 1.7 A
- Battery capacity: 110 mAh
- Battery: DTP401230
- Bluetooth version: BLE 5.3 (no specific features)
- Bluetooth protocol: Nordic UART Service (NUS)
- Temperature range (in use): 0 °C ... +40 °C
- Temperature range (storage): 0 °C ... +40 °C
- BLE SoC: NORDIC® SEMICONDUCTOR nRF5340
- Frequency Range: 2400 – 2483.5 MHz
- Modulation: GFSK
- Data Rates: 1 Mbps, 2 Mbps



SCS Wearable

Charging

- How to charge the device
 - Place device on a flat surface
 - Connect USB type-c connector of a USB Type-C cable to the port at the device
 - Connect the other end of the cable to a standard USB charger or your computer
 - Charging will start automatically
- Check Battery Level

LED Indicator	Battery Level
Yellow Blinks	Charging
Green	Fully charged

- Note
 - Always use certified USB Type-C cables
 - Keep USB port dry

SCS Wearable Modes

Index	Mode	Description	Enter Mode	LED State
1	Shutdown	The device is in off state	<p>Press the button (>3 sec.) in one of the following modes:</p> <ul style="list-style-type: none"> - BLE Advertisement (detailed in 5) - Application error state (detailed in 6 & 7) <p>The device will not shut down in the following modes:</p> <ul style="list-style-type: none"> - Charging (detailed in 8) - MCU boot (detailed in 3) 	None
2	Powering down	The devices enters the shutdown mode	See 1)	Red (blinks 3 times)
3	MCU Boot	This mode allows the user to flash firmware on the device	<p>When the device is shut down, perform a long press (>3 sec.) on the button. The LED will turn solid green and the device enters MCU boot mode.</p> <p>It is not possible to shutdown the SCS wearable device from the MCU boot mode. One has to connect the device to the PC and reset the device via the FW update script.</p> <p>After reset unplug the device from PC, then the SCS application starts executing. From then on it is possible to shutdown the device.</p>	Green (solid)

SCS Wearable Modes

Index	Mode	Description	Enter Mode	LED State
4	Firmware boot done	Newly flashed firmware is booted onto the device	<p>When the firmware that was flashed into the SCS wearable boots successfully then the SCS wearable enters this state. Then the SCS application starts executing and it indicates the following:</p> <ul style="list-style-type: none"> - SCS application starts and the SCS wearable advertises via BLE indicated using blue blinks. - If the application throws an error while BHI3 FW boot procedure / BHI3 CRT/FOC calibration then solid red LED glows. - If the application throws an error due to battery error / fault then red LED blinks. <p>To recover the SCS wearable device from application error , the user should shutdown the device and:</p> <ul style="list-style-type: none"> - Try restarting the device. - Try re-flashing the device with updated application FW and BHI3FW. - In case of battery issues , remove the casing and solder new battery. 	Green (3 fast blinks)

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Modes

Index	Mode	Description	Enter Mode	LED State
5	BLE Advertising	The SCS wearable is advertising and is ready to connect with android application / any host.	<ul style="list-style-type: none"> - The SCS wearable enters the BLE advertisement state from shutdown state when the user performs a short button press (<3 sec.). - When the device is connected to the host (Android / PC) when it gets disconnected. It starts to advertise again. - The SCS wearable also advertises while charging. 	Blue (slow blinks)
6	SCS Application failure	Immediately after updating the Firmware on the SCS wearable device, SCS application start executing. If there is a failure in the SCS application it notifies by turning the LED solid red.	<ul style="list-style-type: none"> - BHI3 FW boot procedure fails. This can happen due to timeout issue while boot procedure of BHI3. - BHI3 Calibration using CRT (Component re-trim). It is only done when the host requests for it. But if CRT fails it is indicated as SCS application failure. - BHI3 FOC (Fast offset calibration). It is only done when the host requests for it. But if FOC fails it is indicated as SCS application failure. 	Red (solid)

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Modes

Index	Mode	Description	Enter Mode	LED State
7	Battery error	The device is battery operated. The firmware detects battery faults by reading the battery status pin in the component STBC03J (Battery charger in the SCS PCB).	<ul style="list-style-type: none"> - Overcharging fault (input voltage for charging is ≥ 4.275 V) - Thermal fault (when temp is outside the range (0-45°C)) - Input voltage for charging is below 3V - Charging timeout (because battery voltage can no longer be assessed during device charging, the device will continue to charge past 30 seconds and a charge circuit timeout occurs.) 	Red (slow blinks)
8	Charging	Charging the battery for the device when it is connected to PC / charger via USB-C.	Connect the SCS Wearable device via USB-C to the PC or charger	Yellow (slow blinks)
9	Battery fully charged	The battery of the device is fully charged	Connect the device to the PC / charger via USB-C. When the device is fully charged then the solid green LED glows while it is charging. As soon as it is disconnected from the PC/charger it starts advertising or it goes to error state if there is application failure	Green (solid)
10	BLE connected to host	The device can be connected with any host device like android app, python running on PC when it is in the advertisement mode	The android app can be used to connect with the device. In the advertisement mode the device shows slow blue blinks, when the device is getting connected then there are rapid blinks of Blue LED, after it got connected the LED blinks green after small intervals.	<ul style="list-style-type: none"> - Blue (fast blinks): getting connected - Green (fast blinks): connected

SCS Wearable

Safety instructions

- If there are any signs of skin irritation at the site of skin contact, discontinue use immediately and seek medical advice
- Do not attempt to disassemble, repair or modify the product, as this may cause fire or even completely damage the product
- Do not expose the product to environments with temperatures below XXX or above XXX
- Do not clean this product with alcohol or other volatile liquids
- Avoid any contact with liquids
- Do not use the device while driving and comply with the relevant regulations in your region or country
- Do not disassemble, puncture or crush the product
- Do not expose the product to fire
- Disposal of the battery into fire or a hot oven, or mechanically crushing or cutting of a battery can result in an explosion

SCS Wearable

Safety instructions

- Leaving the product in an extremely high temperature surrounding environment can result in an explosion or the leakage of flammable liquid or gas
- The product subjected to extremely low air pressure may result in an explosion or the leakage of flammable liquid or gas
- Do not put the product in trash that is disposed of in landfills. When disposing of the battery, comply with local laws or regulations

SCS Wearable

FCC/ISED Regulatory notices

FCC ID: 2A04I-SCS1

IC: 26413-SCS1

Modification statement

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Interference statement

This device complies with Part 15 of the FCC Rules and Industry Canada license-exempt RSS standard(s).

Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage,
- (2) et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Distance of use of the device

This device complies with the ISED and FCC RF exposure limits and has been evaluated in compliance with portable exposure condition.

Cet appareil est conforme aux limites d'exposition RF par FCC et l'ISDE et a été évalué conformément aux conditions d'exposition portable.

FCC Class B digital device notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.