Securi-C™ Sensor

Our core tracking device with additional environmental sensors.

Overview

Name:	Securi-C™
Version:	1
SKU:	SC1
Serial prefix:	26
Connectivity:	cellular, bluetooth-le
Positioning:	gnss , wifi
Sensors:	accelerometer, temperature, humidity, pressure

Physical

Size

Dimensions Mm:	85 x 44 x 28.4
Weight G:	152

Certifications

0:	CE

Rating

Ik:	Shockproof
Operating Temperature C:	-20 to +60

Integrations

Cloud

Supported Platforms:	Securi-C™ Cloud Platform
Native Protocols:	UDP, TCP
Forwarding Protocols:	MQTT, HTTP(S), WebSocket

User Interface

Buttons	
Multi Purpose:	Status Check, Trigger Update, Software Reset, Hardware Reset
Leds	
Status:	Single Color LED x4, Indicates device status (battery level, charging, connected, etc.)

Connectivity

Cellular	
Technologies:	LTE CAT-M1, GPRS, EDGE
Territory:	Global
Bands:	LTE FDD: B1, B2, B3, B4, B5, B8, B12, B13, B18, B19, B20, B26, B28 LTE TDD: B39 Gsm: 850MHz, 900MHz, 1800MHz, 1900MHz

Bluetooth LE	
Technologies:	Low Power Broadcasting (iBeacon), Gateway Scanning, Child (peripheral) device
Territory:	Global
Version:	5.4

Positioning

Gnss	
Typical Accuracy Meters:	1-5
Technologies:	GPS, GLONASS, BeiDou
Constellations:	GPS: Bands: L1: 1575.42 GLONASS: Bands: L1: 1602 + n x 0.5625 (n=-7,...6) BeiDou: Bands: L1: 1575.42

Wifi	
Typical Accuracy Meters:	10-30
Technologies:	2.4Ghz Wi-Fi AP scanning

Sensors

Accelerometer	
Features:	3-axis accelerometer, Motion Detection, Orientation & Tilt detection, Shock and Vibration detection
Typical Accuracy G:	0.01
Temperature	
Features:	Temperature Sensing (high accuracy), Thermal Protection
Typical Accuracy C:	0.5
Humidity	
Typical Accuracy Pct:	3
Pressure	
Typical Accuracy Hpa:	0.002

Battery

Overall	
Capacity mAh:	6600
Pack Configuration:	1S2P

Overall

Voltage V:	3.7

Cells

Type:	18650
Spec:	Model: 18650 3300mAh Type: Li-ion Cell Nominal Voltage V: 3.7 Nominal Capacity mAh: 3300 Nominal Energy Wh: 12.21 Physical Dimensions Mm: 65.0*18.0 Appearance: Blue cylindrical battery Certifications And Tests: Standard: UN38.3 (UNITED NATIONS 'Recommendations on the TRANSPORT OF DANGEROUS GOODS' Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6, 38.3) Tests: Altitude Simulation: No leakage, no venting, no disassembly, no rupture & no fire Thermal Test: No leakage, no venting, no disassembly, no rupture & no fire Vibration: No leakage, no venting, no disassembly, no rupture & no fire Shock: Included as a test item in the UN38.3 report External Short Circuit: No disassembly, no rupture & no fire (Max external temperature: 66.4 ~ 78.8°C) Impact: No disassembly & no fire (Max external temperature: 106.9 ~ 129.2°C) Forced Discharge: No disassembly & no fire

Charging

Inputs

Voltage Range V:	5-14
Current Limit A:	0.1 to 3.25

Features

Fast Charge:	5-14V input with Fast Charge support
Configurable:	Configurable draw and charge rates

Components

Cellular

Manufacturer:	SIMCom Wireless Solutions Limited
Model:	SIM7000G
Specifications:	Supported Technologies: LTE CAT-M1, LTE NB-IoT, GPRS, EDGE Frequency Bands: Gsm: Bands: 850/900/1800/1900MHz Egsm 900mhz: Transmit Frequency Mhz: 880-915 Receive Frequency Mhz: 925-960 Dcs 1800mhz: Transmit Frequency Mhz: 1710-1785 Receive Frequency Mhz: 1805-1880 Lte Cat M1: Bands: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28/B39 Lte Nb Iot: Bands: B1/B2/B3/B5/B8/B12/B13/B17/B18/B19/B20/B26/B28 Data Transfer Rates Kbps: Cat M Dl: 300 Cat M Ul: 375 Cat Nb Dl: 34 Cat Nb Ul: 66 Egprs Dl: 85.6 Egprs Ul: 85.6 Edge Dl Ul: 236.8 Gprs Dl Ul: 85.6 Supply Voltage Range V: 3.0 ~ 4.3 Power Consumption Typical: Power Off Ua: 7 Psm Ua: 9 Sleep Ma: 1 Idle Ma: 11 Temperature Range C: -40 ~ +85 Certifications: FCC, IC, CE, 3C, GCF, RoHS, REACH, RCM, PTCRB

Bluetooth LE

Manufacturer:	STMicroelectronics
Model:	STM32WB55xx

Bluetooth LE

Specifications:	Chip Type: Multiprotocol wireless 32-bit MCU Arm®-based Cortex®-M4 with FPU Radio Features: Frequency: 2.4 GHz Bluetooth Specification: 5.4 Ieee 802 15 4 Support: Yes (supports PHY and MAC, supporting Thread 1.3 and Zigbee® 3.0) Rx Sensitivity Dbm: Bluetooth LE 1mbps: -96 Ieee 802 15 4: -100 Programmable Output Power Dbm: +6 (with 1 dB steps) Integrated Balun: Yes Data Rates Mbps: 1, 2 Dedicated Radio Cpu: Arm® 32-bit Cortex® M0+ External Pa Support: Yes Memory: Flash Memory Size: Up to 1 Mbyte Sram Size: Up to 256 Kbytes (includes 64 K SRAM1 and 64 K SRAM2 for STM32WB55Cx models) Operating Voltage V: 1.71 to 3.6 Operating Temperature C: -40 to +85 and -40 to +105 (Ambient) Power Consumption Typical Ma At 3 3v: Tx Max Output Bluetooth LE: 7.8 Tx Max Output 802 15 4: 6.5 Rx Bluetooth LE: 4.5 Rx 802 15 4: 4.5 Run Mode Flash 64mhz Typical Ma: 8.8

Gnss

Model:	SIM7000G
Specifications:	Gnss Systems: GPS, BeiDou, GLONASS Receiver Type: Channels: 16-channel Code: C/A Code Sensitivity: Tracking: GPS: -162 dBm GLONASS: -157 dBm BeiDou: unknown Cold Starts: -148 dBm Time To First Fix: Cold Starts: <35s Hot Starts: <1s Accuracy: Position: <2.5m CEP

Wifi

Manufacturer:	Espressif Systems
Model:	ESP8285
Specifications:	Soc Description: Highly integrated Wi-Fi SoC solution for IoT industry (can perform as a standalone application or as the slave to a host MCU) Recommended Upgrade: ESP8684 Wi Fi Protocols: 802.11 b/g/n (HT20) Wi Fi Frequency Range Mhz: 2400 ~ 2483.5 Tx Power Dbm: 802 11b: +19 802 11g 6mbps: +19 802 11g 54mbps: +15 802 11n Mcs0: +19 802 11n Mcs7: +14 Rx Sensitivity Dbm: 802 11b 1mbps: -97 802 11g 54mbps: -74 802 11n Mcs7: -70 Cpu: Tensilica L106 32-bit processor (up to 160 MHz) Memory: 1 MB Operating Voltage V: 2.7 ~ 3.6 Crystal Frequency Range Mhz: 24 ~ 52 Power Consumption Deep Sleep Ua: 20 Power Consumption Active Ma: Average: 80 Tx 802 11b 19dbm: 197 Rx 802 11b: 73 Modem Sleep Typical: ~15 (DTIM3, 300ms sleep/3ms wakeup) Light Sleep Typical: ~0.9 (DTIM3, 300ms sleep/3ms wakeup)

Accelerometer

Manufacturer:	STMicroelectronics
Model:	LIS3DHTR
Specifications:	Device Type: MEMS digital output motion sensor: ultra-low-power high-performance 3-axis 'nano' accelerometer Data Output: 16-bit Full Scale Range: ±2g/±4g/±8g/±16g (dynamically selectable) Supply Voltage V: 1.71 to 3.6 Operating Temperature C: -40 to +85 Power Consumption Ulp Ua: down to 2 (normal mode at 1 Hz ODR)

Charger

Charger

Manufacturer:	Texas Instruments
Model:	BQ25890H
Specifications:	Description: I2C Controlled Single Cell 5-A Fast Charger with MaxChargeTM Technology Charge Current A: 5 (Fast charge current, adjustable from 128mA to 5056mA) Charge Efficiency Percent: At 2a: 93 At 3a: 91 Usb Otg Output V: 4.5 to 5.5 (adjustable) Usb Otg Output Current A: 2.4 Boost Efficiency Percent: 93 (at 5V, 1A output) Input Voltage Range V: 3.9 to 14 Input Current Limit A: 0.1 to 3.25 (50-mA resolution, automatically set by source detection) Battery Discharge Mosfet Resistance Mohm: 11 Battery Discharge Current A: up to 9 (peak, up to 1 sec duration) Integrated Adc For Monitoring: Voltage, Temperature, Charge Current Power Path Management: Narrow VDC (NVDC), with automatic power path selection Operating Temperature C: -40 to 85

Bme280

Manufacturer:	Bosch Sensortec
Model:	BME280
Specifications:	Description: Humidity sensor measuring relative humidity, barometric pressure and ambient temperature Operation Range Temperature C: -40 to 85 Operation Range Pressure Hpa: 300 to 1100 Humidity Accuracy Pct: ±3 Pressure Accuracy Hpa: 0.002 Supply Voltage V Vddio: 1.2 to 3.6 Supply Voltage V Vdd: 1.71 to 3.6 Interface: I²C and SPI Average Current Consumption Ua 1hz H T: 1.8 Average Current Consumption Ua 1hz P T: 2.8 Average Current Consumption Ua 1hz H P T: 3.6 Average Current Consumption Sleep Mode Ua: 0.1 Response Time Humidity S: 1 Hysteresis Humidity Pct: <=2 Rms Noise Pressure Hpa: 0.002 Temperature Coefficient Offset Pressure Pak: ±1.5 Package Dimensions Mm: 2.5 x 2.5 x 0.93

Ms5637

Manufacturer:	MEAS Switzerland
Model:	MS5637-02BA03
Specifications:	Description: Ultra-compact micro altimeter for precise digital 24-bit pressure and temperature value, optimized for altimeter and barometer applications. Used for dew point calculation. Package Dimensions Mm: 3 x 3 x 0.9 Supply Voltage V: 1.5 to 3.6 Fast Conversion Speed Ms: 0.5 Low Power Ua Standby: 0.1 (at 25°C) Typical Active Current Consumption Ua: 0.6 Interface: I2C Operating Range Pressure Mbar: 300 to 1200 Operating Range Temperature C: -40 to +85 Adc Resolution: 24 bit Pressure Resolution Mbar: 0.016 (at OSR 8192) Pressure Error Band At 25c Mbar: ±2 (300 to 1200 mbar) Pressure Error Band At 20 To 85c Mbar: ±4 (300 to 1200 mbar) Long Term Stability Mbar Per Yr: ±1 Temperature Accuracy At 25c: ±1 Temperature Resolution C: <0.01 Max Soldering Temperature C: 250 (40 sec max) Esd Rating Hbm Kv: ±2