

Features at a Glance

WIDE RANGE OF INTERFACES

Integrated Cortex M4F Microcontroller exposes SPI, USART, I2C, GPIO, and JTAG.

LTE-M / NB-IOT / BLUETOOTH 5 - ALL WITH CO-LOCATED RADIO CERTIFICATION

Simplified certification process with reduced costs - multi-wireless integration at its very best for your risk reduction

DEPLOY WITH CONFIDENCE

Wireless security, smart power management, and popular cloud service integration helps your device continue gathering data autonomously.

ZEPHYR RTOS/Free RTOS

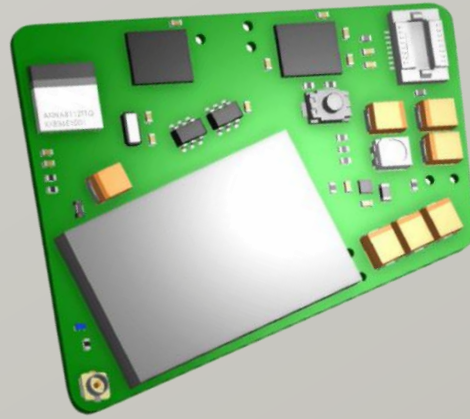
The Zephyr / Free RTOS tools suite simplifies complicated configurations, and our DVK environmental sensor and sample test apps get you up and running quickly.

CERTIFIED FOR DEPLOYMENT AROUND THE USA

Regulatory approvals for FCC (USA), AT&T

PERSONAL SUPPORT FOR YOUR IMPLEMENTATION

Free antenna scans, design reviews, on-site EMC support and a global team of FAEs and Tier 2 support help accelerate your product to market.



SD100 Smart Modem

LTE-M & NB-IoT Modem with integrated Bluetooth v5 Cellular End Device certified

- Integrated antenna for BLE and external antenna for LTE-M & NB-IoT Modem
- Hostless operation and Hosted operation both supported with Full flexibility
- Low power operation – eDRX and PSM
- Powerful MCU on board with integrated Bluetooth v5 including LE long range and mesh
- Complete radio and cellular certifications
- Free-RTOS and of Zephyr RTOS supported MCU

The SD100 modem seamlessly incorporates a powerful Cortex M4F controller, full Bluetooth v5 and LTE-M/NB-IoT capabilities – all with full regulatory certifications and LTE carrier approvals.

Develop your application directly on the M4F controller using Zephyr RTOS/Free RTOS or bare metal programming to cut BOM costs and power consumption. Take advantage of code (cellular, Bluetooth) and hardware interfaces, OR use our hosted mode AT commands set.

This innovative modem family also offers complete antenna flexibility – on-device, off-board, as well as external antennas – to give you design flexibility, reduce complexity, and simplify your overall product solution.

Extremely power conscious, the SD 100 is ideal for battery-powered devices operating at the edge of your IoT networks, seamlessly bridging the cellular WAN to the Bluetooth PAN. It's never been easier to bridge wireless Bluetooth 5 sensor data to cloud services like AWS IoT over a low-power LTE connection.

- **LTE-M / NB-IoT radio via SaraR500S**
 - (Sara R5) – LTE bands 1, 2, 3, 4, 5, 8, 12, 13, 20, 28
 - Nordic nRF52832 – Bluetooth v5, Coded PHY (long range), 2MPHY
- **Onboard Cortex-M4F Microcontroller** – 32-bit @ 64 MHz, 256 KB of RAM, 512KB internal flash, 8MB SPI Flash
- **Industrial Temp Range** – Operating range -40° to +85° C
- **Globally & Carrier Certified** – FCC, PTCRB, GCF End Device certified – AT&T
- **Flexible Programming** – Design your way: Hostless mode via Zephyr RTOS or Hosted mode AT Command Set
- **Secure Firmware Upgrade** – Comes pre-programmed With our OTA app
- **Antenna Options** – Unique integrated antenna variant plus external variant with U.FL connectors



Security and Building Automation



Wireless Sensor Connectivity



Internet of Things Connectivity



Connected Home

Electronics Specification Overview



Electronic Precepts
Design • Development • Manufacturing

CATEGORY	FEATURE	SPECIFICATION
Chipsets	LTE-M / NB-IoT	Sara R500S
	Bluetooth 5 / MCU	Nordic Semiconductor nRF52832 (Cortex-M4F, 32 bit @ 64 MHz)
Microcontroller	Memory	256 KB RAM 512 KB internal flash
	Interfaces	UART
	Additional Features	SPI, I2C, GPIO, timers
Cellular	Debugging	JTAG, UART
	LTE Category	LTE-M / NB-IoT, Release 13 GPP
	Typical transmit power	Up to 23 dBm
	Typical receive sensitivity (LTE-M)	TBC
	Typical receive sensitivity (NB-IoT)	TBC
Bluetooth	Frequency Bands	1, 2, 3, 4, 5, 8, 12, 13, 20, 28
	Standards	Bluetooth v5
	Additional Features	Coded PHY (Long Range), 2MPHY, Bluetooth LE mesh
SIM	Class	Class 1 up to +6 dBm max
	Type	4FF Nano SIM card slot Integrated ESIM (future capability)
FW Upgrade	Interface	UART/JTAG
Power Consumption	OTA	Bluetooth and cellular
	Power Save Mode (PSM)	5mA
	BLE – TX	10 mA
Form Factor	System Deep Sleep	70uA
	M2 Connector	Double-sided board with M2 style connector interface
	Operating Voltage	3.3V
	Dimensions	External antenna module: 30.5 x 32 x 4.6 mm Integrated antenna module: 49.2 x 49 x 12.9 mm
Electrical	Operating Temperature	-40° to +85° C
	Storage Temperature	-40° to +125° C
Physical	Hostless	Zephyr RTOS/Free RTOS
	Hosted	AT Command Set
Software	Regulatory	FCC, PTCRB / GCF AT&T
	Carrier	
Approvals	Environmental	REACH and RoHS compliant

Ordering Information

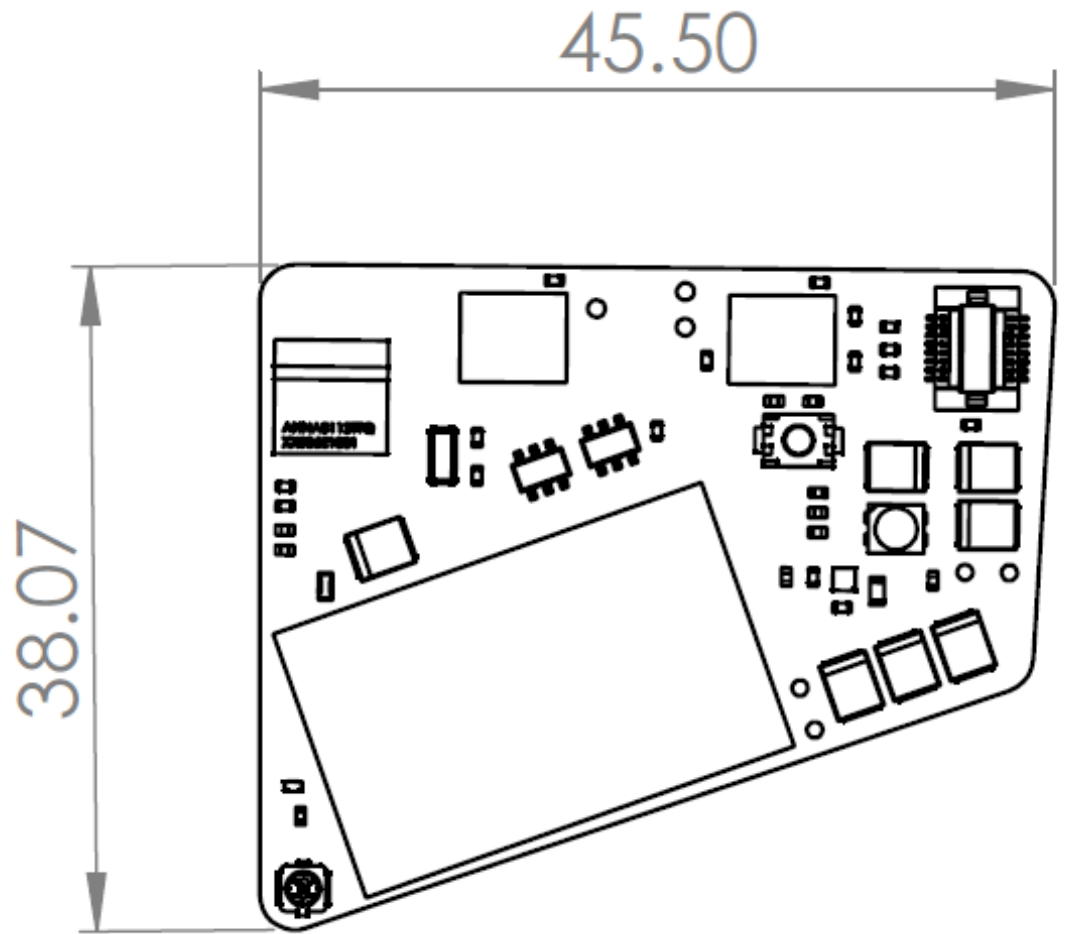
PART	DESCRIPTION
SD100-A	Hosted module with AT commands with Uconnect for BLE and AT commands with Sara R500S modem
SD100-B	Host less module
SD100-C	Hosted module with simplified AT command interface to send data to your cloud in 3 commands.
SD100-D	Hosted module with thing stream connectivity solution via at commands

Certified Antennas

PART NUMBER	TYPE	FREQUENCY	CONNECTOR
TBD	TBD	TBD	TBD



Length & Width



Length & Height

