



New Arrow ARIS-EDGE-S3 kit simplifies development of battery-powered applications with compact TFT display

Arrow Electronics has extended its convenient and flexible ARIS (Arrow Renesas IoT Synergy) platform for developing Internet of Things (IoT) devices by introducing the ARIS-EDGE-S3, which packs extra compute performance and the opportunity to add a compact user interface for richer interactions.

Teaming the latest Arm® Cortex®-M4-based 48MHz Renesas Synergy™ S3A3 Group of microcontrollers with rich context sensing and the multi-protocol wireless subsystem proven in other ARIS-EDGE boards, the new ARIS-EDGE-S3 lets developers add extra sophistication to connected objects. They can also connect a small-form-factor TFT-display, and take advantage of tools and software to create a graphical user interface for an extra level of user interactivity.

The on-board sensors include the Bosch Sensortec BNO055 9-degrees-of-freedom (9-DOF) application specific sensor node (ASSN) absolute orientation sensor, which contains a MEMS accelerometer and gyroscope, a geo-magnetic sensor, and a 32-bit microcontroller running Bosch Sensortec BSX3.0 FusionLib software. This sensor is widely used in robotics, augmented and virtual reality, drones, gaming, and other industrial applications. Also on-board, the BME280 environmental sensor from Bosch Sensortec combines temperature, humidity and pressure sensing., while Aa separate MEMS microphone and an ambient light sensor further extend contextual awareness.

The radio module comes with built-in Bluetooth Low Energy (BLE 4.1/4.2), Thread, and ZigBee stacks, giving easy access to the most popular connectivity standards for use cases such as home automation, smart meters, smart lighting, wearable electronics, medical monitors, industrial sensing, and others.

Arrow's ARIS-EDGE concept, updated and upgraded with this latest and most powerful of the Edge boards, connects developers with the Renesas Synergy platform giving access to an optimized operating system, qualified stacks, consistent software libraries, and APIs that streamline IoT-device development and lower total cost of ownership.

Arrow works with Reloc (www.reloc.it) to design the ARIS board family. The Italy-based Renesas design house has comprehensive expertise in designing and



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integrating consumer IoT and industrial machine-to-machine applications, specifically in distributed sensing, location solutions and radio identification. Customers can also contract Reloc to get their products designed quickly and first-time-right.

Arrow Electronics, Renesas Electronics and Shiratech add NarrowBand-IoT functionality to ARIS-EDGE

New ARIS-EDGE-NB-IoT shield enhances the Renesas Synergy-based line-up of kits to enable cellular connection to the cloud

Arrow Electronics has extended its powerful and flexible ARIS (Arrow Renesas IoT Synergy) platform for developing Internet of Things (IoT) devices by introducing the ARIS-EDGE-NB-IoT shield. The shield, made by Shiratech, features a Quectel BG96 module and plugs onto the ARIS-EDGE-S3 board, which is based on the low-power Renesas Synergy™ S3A3 microcontroller. The combination of these two boards enables users to evaluate streaming of sensor data to Microsoft's Azure™ cloud via a cellular connection (2G/3G, NB-IoT or CAT-M1 depending on network availability), easily and fast.

The new shield has an Arduino form factor and features the popular, low-power Quectel BG96 LTE CAT-M1 & NB-IoT modem and built-in GPS plus an antenna. Download speed up to 300kbit/s and upload up to 375kbit/s are supported. The ARIS-EDGE-S3 board features a radio module with Bluetooth Low Energy (BLE 4.1/4.2), Thread, and ZigBee stacks. The new combo kit is well suited for use cases such as home automation, smart meters, smart lighting, wearable electronics, medical monitors and industrial sensing. Arrow plans to add a LoRa shield as well.

The ARIS-EDGE-S3 features a Bosch Sensortec BNO055 9-degrees-of-freedom (9-DOF) application specific sensor node (ASSN). This sensor is widely used in robotics, augmented and virtual reality, drones, gaming, and other industrial applications. Also on-board are the BME280 environmental sensor from Bosch Sensortec, which combines temperature, humidity and pressure sensing; a separate MEMS microphone; and an ambient light sensor to further extend contextual awareness.



Arrow's ARIS-EDGE concept, updated and upgraded with this latest and most powerful of the EDGE boards, connects developers with the Renesas Synergy platform giving access to an optimized operating system, qualified stacks, consistent software libraries, and APIs that streamline IoT-device development and lower total cost of ownership.

David Spragg, vice president engineering of Arrow's components business in EMEA commented: "With the addition of this new shield, our expanding ARIS family has become a great option for effectively deploying devices and IoT nodes with cellular connectivity. This capability is underlined further by the complementary software included with the ARIS platform."