

ISA100 Wireless Rapid Development Kit Product Brief

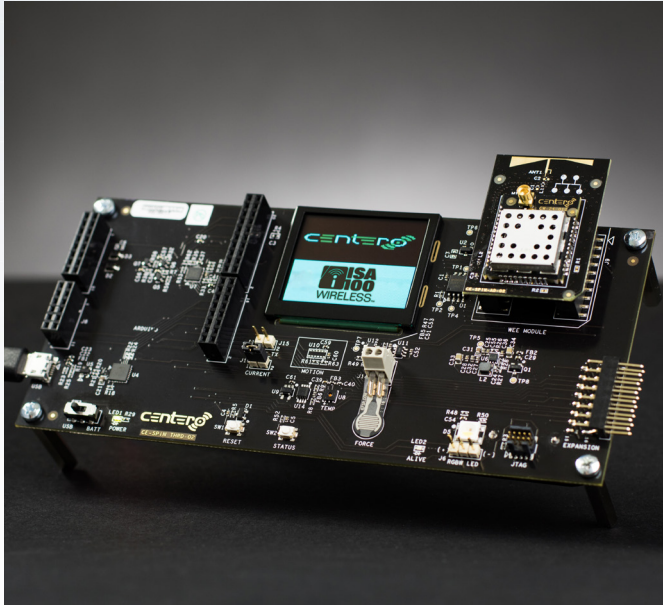
PRODUCT OVERVIEW – The Rapid Development Kit (RDK) includes everything needed to develop ISA100 Wireless certified field instruments with minimal development effort. It is a comprehensive, user friendly, end-to-end development platform that includes pre-configured and fully integrated hardware, firmware and software components. It also includes training materials and step-by-step instructions to develop an ISA100 Wireless connected field instrument. The ISA100 Wireless industrial IoT standard (ISA100.11a and IEC 62734) meets the rigorous requirements for field instruments and infrastructure devices engaged in process automation, including monitoring and control.



PRODUCT HIGHLIGHTS

- Develop ISA100 Wireless (IEC 62734) compliant and certifiable field instruments with minimal effort using application layer code provided
- Includes reference hardware design for ISA100 Wireless (IEC 62734) field instrument implementation
- WISA wireless modules included run ISA100 Wireless communication stack
- Rugged IP67 ISA100 Wireless field gateway
- User friendly SPiN development board includes OLED display and a large variety of sensors
- Connect external processors, sensors or actuators via Arduino and Freedom form factor connector
- All firmware and software components are remotely upgradeable

Development Kit Components



SPIN DEVELOPMENT BOARD

ISA100 Wireless roles: Router and/or I/O Device

Includes WISA wireless modules that run ISA100 communication stack

Hosts application processor Arduino board that runs ISA100 application layer firmware

On-board sensors: temperature, humidity, LIDAR range and motion, tactile/force and RGB LED

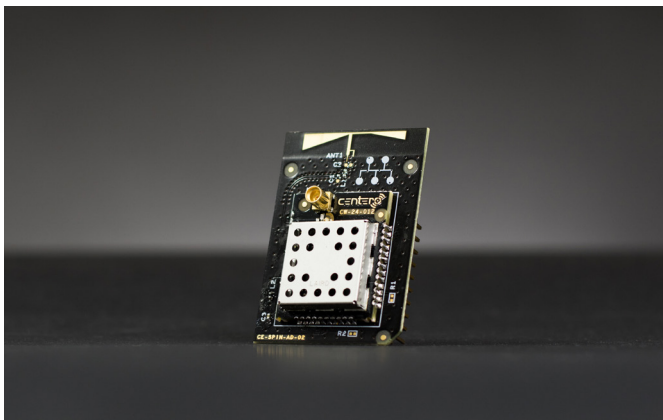
Connect other sensors, processors or actuators via Arduino or Freedom form factor connector

Graphic OLED display for local notifications

USB, DC or battery powered

Quantity included: 2

Add more SPiN development boards via expansion pack



X-MIKROBUS WISA ADAPTER

Hosts WISA surface mountable wireless module

Compliant to Mikrobus form factor

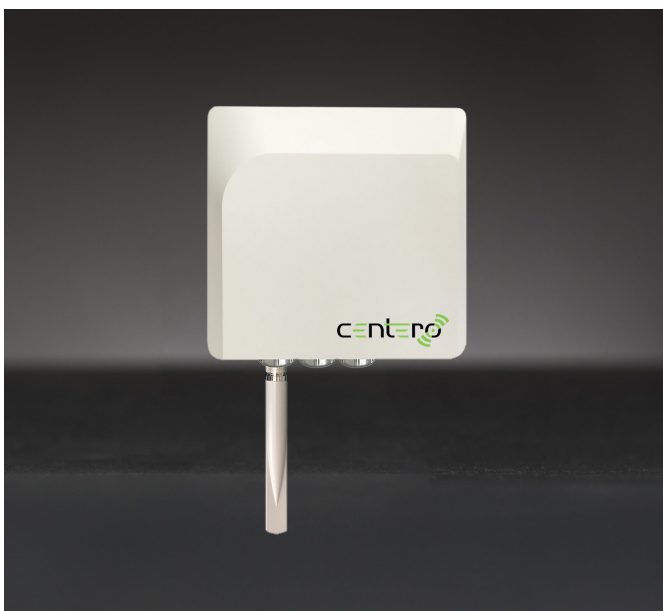
Exposes all WISA module communication ports and pins

Suitable for inclusion in designs where module needs to be easily removed or replaced

Hosts high-performance PCB Bow-tie antenna

Quantity included: 2

Add more X-Mikrobus adapters via expansion pack



NIO200IRDK GATEWAY

ISA100 Wireless compliant Network/Security Manager, Gateway and Access Point

Rugged IP67 ISA100 Wireless field gateway

Supports data traffic with strict latency requirements

Hosts intuitive web-based interface for:

- Process data monitoring/control

- Device management and configuration

- Network topology and health status

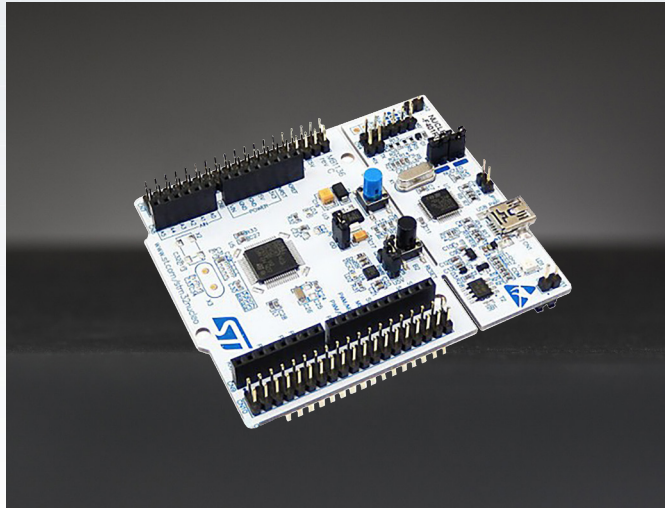
- Over-the-air upgrades of all platform components

MODBUS server and intuitive process value mapping

IPv4/IPv6 routing

- Quantity included: 1

Development Kit Components



APPLICATION PROCESSOR BOARD & SOURCE CODE

ST Micro Nucleo Arduino application processor based on ARM Cortex M0 core

Firmware source code includes full ISA100 Wireless application layer implementation

Develop your own field instrument firmware using free Eclipse IDE

Low-power application processor suitable for battery powered field instruments

Arduino form factor – add sensors or actuators

Quantity included: 2

Add more application processor boards via expansion pack



ENGINEERING UTILITY SOFTWARE

Feature rich Engineering Utility Software can be installed on any PC

Communicates with the SPiN board via USB/serial port

Allows user to provision and configure the ISA100 communication stack

Communicates with ST Micro application processor via USB/serial port

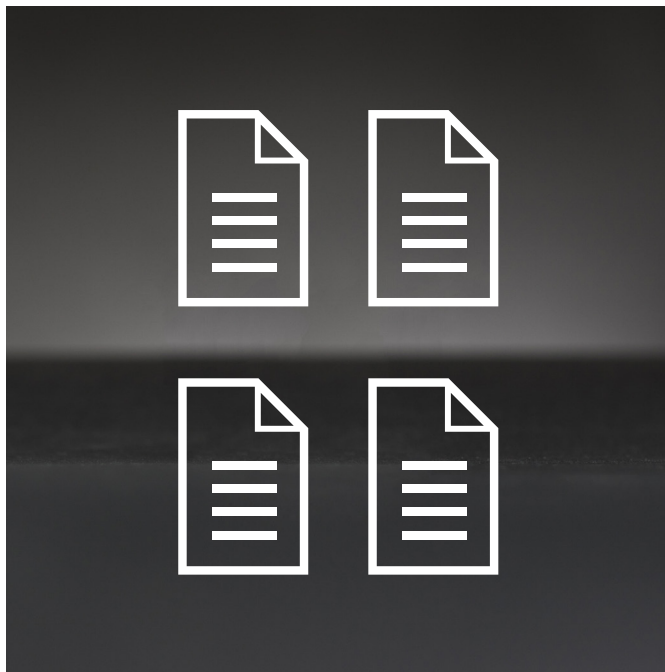
Allows user to provision and configure the application processor

Full set of ISA100 Wireless commands

Full configuration of the process values published

Serial upgrades of the communication stack

Quantity included: 1



DOCUMENTATION PACKAGE

Product Documentation

- ISA100 Wireless RDK User Guide

- UNISON Gateway User Guide

- WISA Radio Module - Hardware Integration Manual

- EASY API Manual

- Engineering Utility Software - User Guide

- ISA100 Provisioning and Firmware Upgrade Process

Training Materials

- Developing ISA100 Compliant Products - Training Course

- WCI ISA100 Wireless Nine - Part Training Course

- The Technology Behind ISA100 Wireless

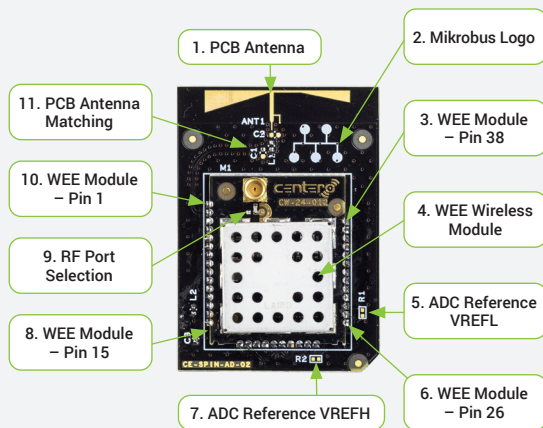
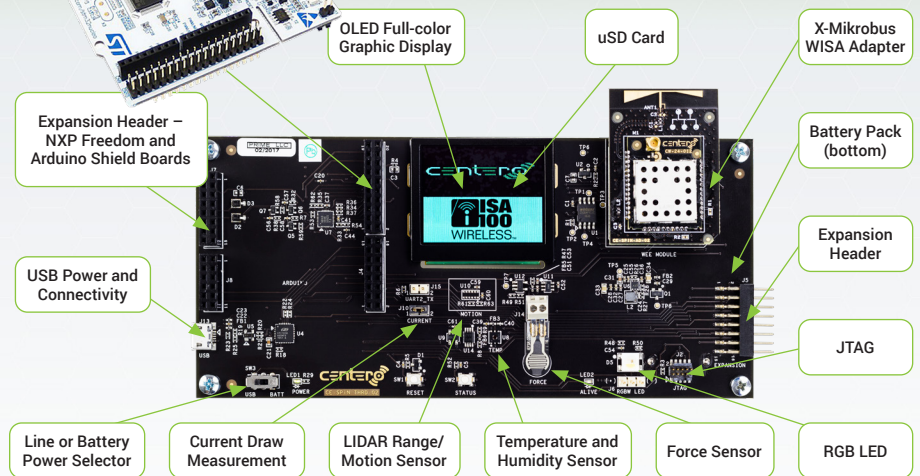
- White Paper - ISA100 Applications Technology and Systems

- ISA100 - Spectrum Management and Co-Existence

SPiN DEVELOPMENT BOARD

The SPiN development board allows users to evaluate and communicate with the WISA wireless module that runs an ISA100 Wireless compliant communication stack. It also includes a color OLED display and a wide variety of sensors that offer a unique out-of-the-box user experience. Users can easily connect and integrate external sensors via a simple, feature-rich API to swiftly develop an ISA100 Wireless compliant field instrument. The kit includes an

Arduino board that runs a full ISA100 application layer implementation. The sample application processor firmware is offered as a source code project and allows users to quickly develop their own ISA100 Wireless compliant field instrument.

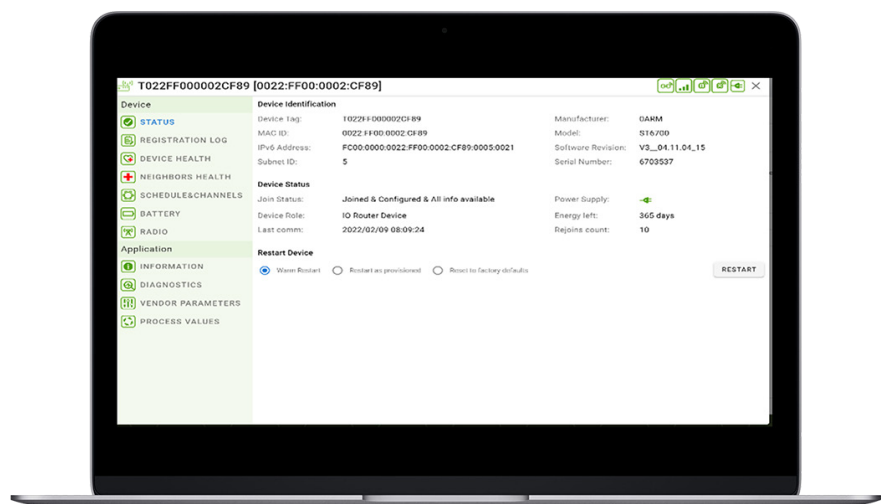


WISA X-MIKROBUS ADAPTER

The WISA X-Mikrobus board is an adapter board that allows users to incorporate the WISA wireless module in their products using headers. This is for products where users require or desire that the WISA module can be easily removed or replaced since the WISA module is a surface mount module. It hosts a high-performance PCB Bow-tie antenna. The RF port can be routed to either the PCB Bow-tie antenna or to the on-module MMCX connector (external antenna).

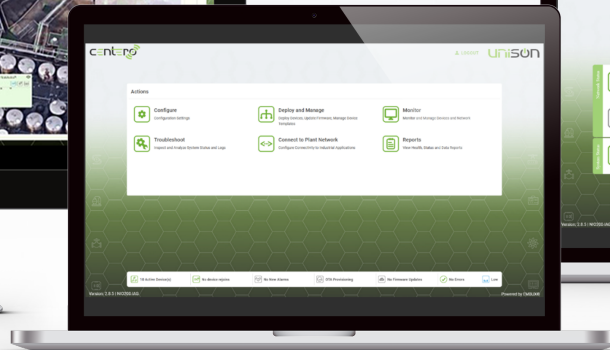
NIO200IRDK GATEWAY AND MONITORING HOST APPLICATION

The NIO200IRDK is an All-in-One ISA100 Wireless (IEC62734) compliant System and Security Manager, Gateway and Backbone Router. ISA100 compliance allows the NIO200IRDK to establish full mesh field network topologies to ensure robust and reliable communication for mission-critical industrial wireless applications. It is a perfect solution for critical as well as supervisory data monitoring and control in process automation verticals such as oil & gas. It hosts an intuitive web interface that allows end users to visualize process data, alerts and alarms as well as manage and configure ISA100 Wireless compliant field instruments.





Application specific data can be visualized in real-time as well as device health diagnostics and connectivity parameters. It includes a MODBUS server that allows for intuitive process value mapping. All software and firmware components are remotely upgradeable.



TARGET VERTICAL MARKETS AND APPLICATIONS

The WISA development platform and its components have been architected, designed, hardened and tailored to meet the requirements for a wide variety of products in several markets and verticals.

- Process Automation and Control
- Oil and Gas
- Offshore platforms and maritime applications
- Mining
- Petrochemical plants
- Paper and pulp

RELATED PRODUCTS

Product	Part Number
WISA Wireless Module	CW-24-012-ISA
UNISON ISA100 Wireless Field Gateway	NIO200IAG
UNISON ISA100 Wireless Field Access Point	NIO200IDR
WISA SPiN Board	CE-SPiN-ISA-01
X-Mikrobus WISA Adapter	CE-MKRBX-01-ISA
Centero Utility Application	CE-ENG-APP-02
WCI ISA100 Wireless STK GEN1	WCI0015
WCI ISA100 Wireless DTK GEN1	WCI0016
WCI ISA100 Wireless STK GEN2	WCI0022
WCI ISA100 Wireless DTK GEN2	WCI0022

Centero is a provider of wireless technologies, products and services for the Internet of Things.



Centero is a privately owned technology company headquartered in Atlanta, Georgia. We are the forefront of the Industrial Internet of Things revolution which is transforming a wide array of vertical markets. Centero offers end-to-end, standards-based communication platforms that are swiftly integrated into novel or existing products.



contact@centerotech.com
www.centerotech.com