IoT Octopus™
An Industry 4.0 8-Channels ADC, IoT Node

Equipped with Dual-core ARM® Cortex A9 and 110K LE FPGA, the IoT Octopus™ processing power can do complex computing and data analysis in real time.

The IoT Octopus™ serves as a high-end industrial IoT node capable of high accuracy and a high sampling rate of electro-mechanical equipment. With its simultaneous 8-channels, 24-bit, 30 KHz sample rate the IoT Octopus™ can provide connectivity from the electrical grid to the drilling pump and from the hydro-electro turbine to the industrial air conditioner. The IoT Octopus™ converts analog signals to digital data, rearranges data, analyzes data, stores data and can transmit data to gateways/local servers/cloud servers.

FEATURES
• Simultaneous 8-Channels 24-bit 30Khz sampling ADC
• 1PPS GPS source for multi-nodes sampling synchronization
• One 1G/100/10 Ethernet PHY connected to HPS (Hard Processor System, dual core Cortex A-9)
• Two 1G/100/10 Ethernet PHYs connected to FPGA
• Up to two RF interfaces, 802.11, ZigBee, 802.15.4, 900Mhz-Long Range, Mesh Network
• RTC (Real Time Clock) with battery backup
• Embedded Security
• 30 HPS signals that can be configured as: HPS GPIO, FPGA I/O signals, CAN BUS x2, Additional UART, SPI
• 30 FPGA signals that can be configured as: FPGA I/O signals, HPS signals, One global clock input

EMBEDDED SECURITY
IoT Octopus™ uses Infineon’s Optiga™Trusted P (SLJ 52ACA150A1) to achieve the following system security features:
• Protected storage of credentials and device configuration information
• Secure boot of the system
• Device authentication to the network
• Secure update of the device firmware and configuration
• Secure communication channel for data exchange of over the network

PRE-PRODUCTION READY
The IoT Octopus™ can be taken into production once these steps are completed:
• Customize Linux to your needs
• Customize an enclosure for the solution
• Pass regulatory requirements
NovTech provides services that assist in achieving these tasks.

Order Information
Arrow Part Number: NOVPEK_IOTOK at $799.00
For pre-production orders please contact NovTech at sales@novtech.com

Edward Payne
Principal Engineer, Gilbarco

Applications
• Smart Grid
• Smart City
• Motor Monitor/Control
• Engine Monitor/Control
• Pump Monitor/Control
• Turbine, Elevator, A/C, Power Generator, Industrial Battery Charging and other electro-mechanical equipment

Kit Includes:
• NOVSOM® CV
• IoT Octopus™ base board
• SD card with Linux image and example code
• UART TTL to USB cable
• USB drive with manuals, documentation, quick start guide and Virtual Machine
• Power supply
• Operational mode usage of crypto function for running the secure application

SUPPORT
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“NovTech came highly recommended to us by Arrow Electronics for i.MX6-based solution. NovTech took our unique I/O interface requirements for a retail fuel dispenser, coupled this with their i.MX6 expertise, and in mere months we had a fully functional solution in hand. The boards arrived, 24VDC was applied, and we were up and running. Internally, a project of this size would have required at least a year for just a first prototype. NovTech did the equivalent effort delivering a production grade solution in less than five months.”

Edward Payne
Principal Engineer, Gilbarco

Target markets for IoT Octopus™ include:
• Industrial & Manufacturing
• Aerospace & Defense
• Agriculture
• Automotive
• Energy
• Transportation
• Utilities
• Mining

Applications
• Smart Grid
• Smart City
• Motor Monitor/Control
• Engine Monitor/Control
• Pump Monitor/Control
• Turbine, Elevator, A/C, Power Generator, Industrial Battery Charging and other electro-mechanical equipment