



IoT Octopus®

An Industry 4.0 8-Channels ADC, IoT Node

“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 with their i.MX6 expertise, and in mere months we had a fully functional solution in hand. The boards arrived, 24V DC was applied, and we were up and running. Internally, a project of this size would have required at least a year for just a 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®

- Industrial & Manufacturing
- Aerospace & Defence
- 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

Kit Contents

- NOV SOM@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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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.

Electro-mechanical systems such as drilling pumps, hydro-electric turbines, and electric grids form the basis of many industrial applications. Smooth and reliable functioning of these systems is critical to ensuring cost effective production and sometimes even environmental and human safety. The IoT Octopus® is purpose built for such applications where accurate data interpretation of electro-mechanical devices is paramount. With its simultaneous 8-channel, 24-bit Sigma-Delta, 32 KHz sample rate ADC and an on-board Cyclone® V SoC, a Dual Core Arm® Cortex® A9 and 110K LE fabric, the IoT Octopus® converts analog signals to digital data, rearranges, analyzes, stores and transmits data to gateways/local servers/cloud servers in real time. GPS-based synchronization ensures a fool-proof mechanism for multi-channel alignment. With a dedicated security chip, the IoT Octopus® provides several layers of security including authentication, protected storage, secure updates, secure boot, memory integrity, and protection against tampering and physical attacks.

Features

- Simultaneous 8-Channels 24-bit 30 KHz sampling ADC
- 1PPS GPS source for multi-nodes sampling synchronization
- One 1G/100/10 Ethernet PHY connected to HPS (Hard processor System, Dual Core Arm® Cortex® A9)
- Two 1G/100/10 Ethernet PHY connected to FPGA
- Up to two RF interfaces, 802.11, ZigBee, 802.15.4, 900 MHz-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™ Trust 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 over the network

Pre-Production Ready

IoT Octopus® can be taken into production once these steps are completed:

- Customize Linux to your application needs
- Customize an enclosure for the solution
- Pass regulatory requirements

NovTech provides services that assist in achieving these tasks.

Ordering Information

IoT Octopus® can be ordered from Arrow with P/N: **NOVPEK_IOTOK** at \$799.00

For pre-production orders please contact NovTech at sales@novtech.com