

# NetLeap™

An Industry 4.0 Multi-Protocol Ethernet Ports Aggregator Platform



*"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 NetLeap™ include:

- Industrial & Manufacturing
- Aerospace & Defense
- Agriculture
- Automotive
- Energy
- Transportation
- Utilities

## Applications

- Industrial Ethernet Protocol Switch
- Industrial Ethernet Router
- Industrial Ethernet Protocol Bridge

## Kit Includes:

- NOV SOM® CVL
- NetLeap™ 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

## Order Information

Arrow Part Number: **NOVPEK\_NLEAK at \$439.00**

For pre-production orders please contact NovTech at [sales@novtech.com](mailto:sales@novtech.com)

## SUPPORT

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The platform is based on the NOV SOM® CVL, a Cyclone V SoC based SoM. The kit is delivered with the largest FPGA in this family, the 110K LE.

NovTech's NetLeap™, an Industry 4.0 Multi-Protocol Ethernet Ports Aggregator Platform, allows the development and integration of many Ethernet protocols including PROFINET®, EtherCAT®, EtherNet/IP, Ethernet Powerlink, Modbus TCP, SERCOS III and more. Six 1G/100/10 Ethernet ports are present. Two are connected to the HPS (The ARM® Cortex-A9 core of the Cyclone V SoC) and four are connected to the FPGA fabric. With its six ports, the NetLeap™ allows different protocols to reside on the same platform and can be a protocol bridge, a switch, or a router. The kit comes with a templated project example that allows the board to boot to Linux and demonstrate Ethernet connectivity. This solution is pre-production ready.

## FEATURES

- NOV SOM® CVL, a cyclone V SoC with 110K LE
- Six 1G/100/10 Ethernet ports (can be configured to any protocol)
- MAC address for each port
- UART port (for OS monitor)
- I2C port
- Temperature sensor
- RTC (Real Time Clock) with battery backup
- Embedded Security
- 15 HPS signals that can be configured as: HPS GPIO, FPGA I/O signals, CAN BUS, Additional I2C port, Additional UART, SPI
- Four FPGA signals that can be configured as: FPGA I/O signals, HPS signals, One global clock input

## EMBEDDED SECURITY

NetLeap™ uses Infineon's OPTIGA™ Trust P (SLJ 52ACA150A1) to achieve the following 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

The NetLeap™ 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