SMART EMBEDDED SYSTEMS

COMPLETE LINE OF KITS FOR DEVELOPMENT OF APL FIELD DEVICES

Advanced Physical layer (APL) is the new standard for field devices and these APL based devices are going to play a key role for digital transformation and connectivity to the outside world.

LIST OF BENEFITS WITH APL DEVICES

- Digital transformation of Field devices
- Connectivity from sensor to cloud
- More bandwidth
- Based on Well-established Ethernet standards
- More reliable
- Allows Convergence of IT & OT
- Top-to-bottom cybersecurity measures

Smart Embedded Systems (SES), Inc. is the first company to offer a complete set of options for APL device developments

Two evaluation Kits are available now with Hart-IP and include documentation. In addition, our APL module with a carrier board and APL switch are also available separately for purchase.
SES can do custom firmware Development with ProfiNet and EtherNet/IP™

Here are the P/Ns for ordering module + carrier board and APL switch individually:

APL Module + Carrier Board
APL Transmitter Module + Carrier Board
(P/N: SES-APL-MODC)

APL Switch
APL Switch (P/N: SES-APL-SWI)

To place and order, Please contact:
Baldev@smartembeddedsystems.com
510-304-6830

KIT #1: PCB, APL SWITCH, & HART IP PROTOCOL

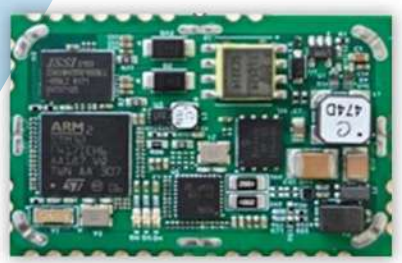
P/N: HART-APL Kit
(P/N: SES-APL-KT51)

Consists of two items:
- APL Transmitter Board (P/N: SES-APL-PCB)
- (P/N: SES-APL-SWI)

KIT #2: MODULE WITH CARRIER BOARD, APL SWITCH AND HART IP PROTOCOL

P/N: SES HART-APL Kit
(P/N: SES-APL-KT52)

Consists of two items:
- APL Transmitter Module + Carrier Board (P/N: SES-APL-MODC)
- (P/N: SES-APL-SWI)



APL TRANSMITTER PCB

FEATURES

- Loop Powered from an SPAA port (0.54W maximum)
- Low power consumption design to be suitable for with IS designs
- 4-20 ma Loop powered HART interface to connect to existing HART Transmitters in fixed current mode.
- Can easily convert existing HART Transmitters to APL.
- Can act as HART Gateway/Bridge or as a HART-IP Transmitter.
- The design is based on Texas Instruments Phy. DP83TD510E.
- Implemented with STM32F417 ARM Cortex M4 processor with 512KB Flash for program memory.
- External Analog I/O for connections to external sensors or PGA
- Serial TX/RX provided for external HART or MODBUS devices
- I2C and SPI flash are available for device logs, FDI package and other necessary data.
- Secure Intelligent Firmware update for reliable operation
- HART-IP with recommended secure Protocols supported.
- Small Form factor 2.5 inX 2.5 in (can be customized)
- Complete documentation and support

APL MODULE + CARRIER BOARD

FEATURES

- Loop Powered from an SPAA port (0.54W maximum)
- Module size 44mm x 30 mm.
- Low power consumption design to be suitable for with Intrinsic Safety designs.
- Serial Port available for HART interface to connect to existing HART Transmitters
- Can easily convert existing HART Transmitters to APL.
- Can act as HART Gateway/Bridge or as a HART-IP Transmitter or mimic the connected HART device.
- Design will use T1L Physical layer chip from Texas Instruments DP83TD510E.
- Implemented with STM32F417 ARM Cortex M4 processor with 1 MB Flash for program memory.
- External Analog I/O for connections to external sensors or PGA
- Serial TX/RX provided for external HART or MODBUS devices.
- I2C and SPI flash are available for device logs, FDI package and other necessary data.
- Secure Intelligent Firmware update for reliable operation
- HART-IP with recommended secure Protocols supported.
- SES can do custom firmware Development with ProfiNet and Ethernet IP.
- Small Form surface mountable module

APL SWITCH (3-PORT)

FEATURES

- Standardized Din Rail form factor
- Powered by 24V power from an external source through modular plugs.
- 3 – APL port with 1 Vpp signaling capabilities.
- APL devices can get their power over the data lines.
- 540 milli Watts of power available for each APL device.
- Default output voltage at 15.4V, programmable down to 9V.
- DHCP server, DHCP Client and static IP configurations possible
- Design will use T1L Phy from Texas Instruments DP83TD510E.
- Control Software Implemented with STM32F417 ARM Cortex M4 processor.
- Web UI for easy configuration.
- Per Port traffic statistics available per port.
- Link status and event logging available.
- LED indicators for link and traffic.

OEM customer can order the module without the carrier board, P/N: SES-APL-MOD

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