Solutions for Field Connectivity with
SCADA / Enterprise Systems

ICx-RTU / FRTU

The ***RBH*** ICx-RTU based on ADVATECH Hardware Platform and ICx Gateway Platform. RTU features the power of Data acquisition, power of a PLC and communication capabilities of a Gateway / Data Concentrator device. With combined benefits of the advanced Intel / ARM / GEODE processors and ICx Interface software technologies with the proven reliability of ADVANTECH Products the RTU solution performs in the most demanding and complex monitoring / control applications.

The RBH ICx-RTU Base Models:

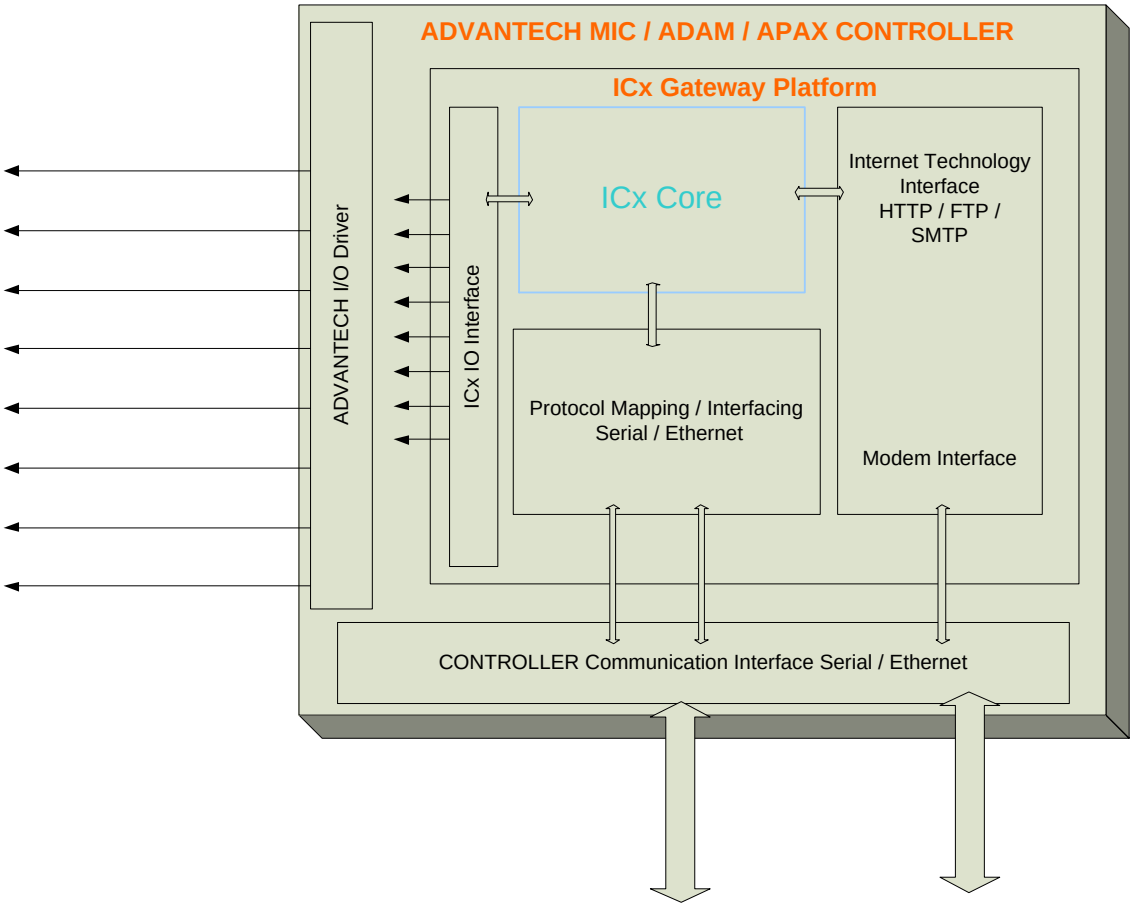
⇒ **MIC-1911**
- Based On Advantech MIC-1911 Compact Hardware Platform
- Ideally designed for Feeder Automation, Remote Site Installation and Building Management System
- 4 Serial Ports + 2 LAN Ports + 32 DI + 32 DO + 8 AI

⇒ **ADAM 5560**
- Based On Advantech ADAM 5560 Modular Hardware Platform
- Ideally designed for Substation Automation, Process Automation with integrated PLC Functions
- 4 Serial Ports + 2 LAN Ports + 7 Slots for I/O Cards

⇒ **APAX Series**
- Based On Advantech APX Programmable Automation Controller (PAC) Hardware Platform
- Ideally designed for Large Substation Automation with Multiple I/O requirements and distributed I/O Deployment
- Redundant CPU, Redundant Power Supply, Redundant Communication allows APAX well suited for critical installation.

ADVATECH CONTROLLER – ICx Platform Architecture

RBH ICx-RTU

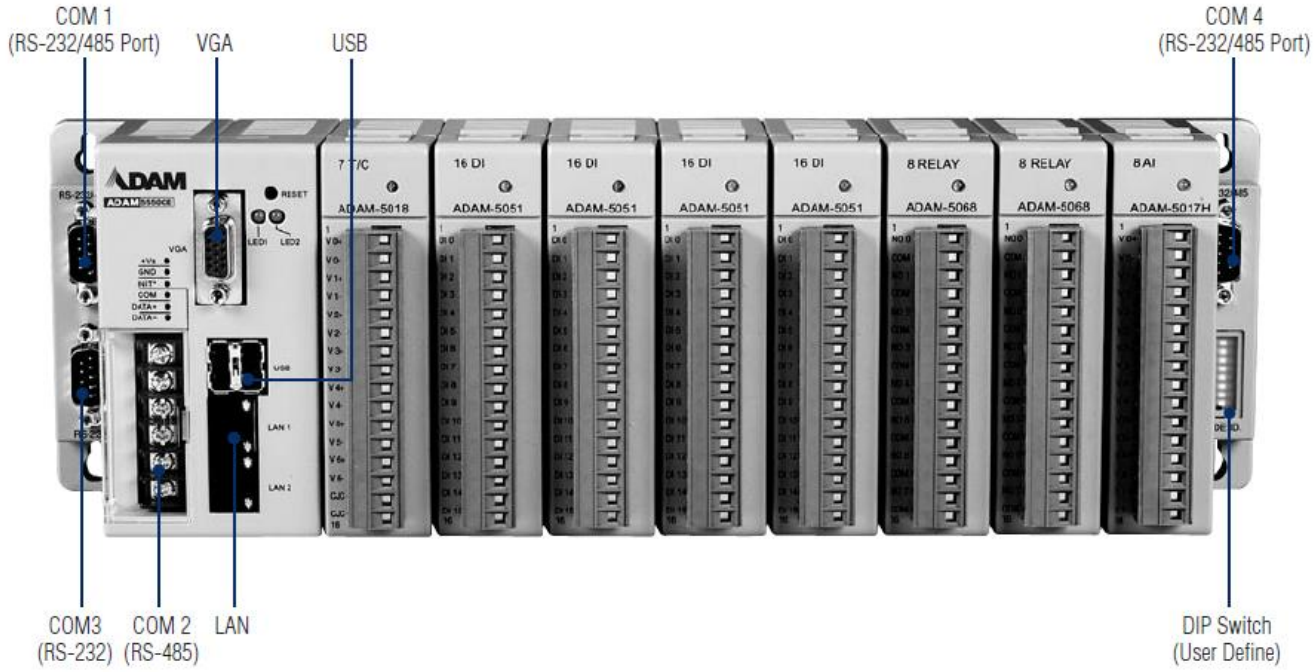


Communication Interface: Ideal for any application

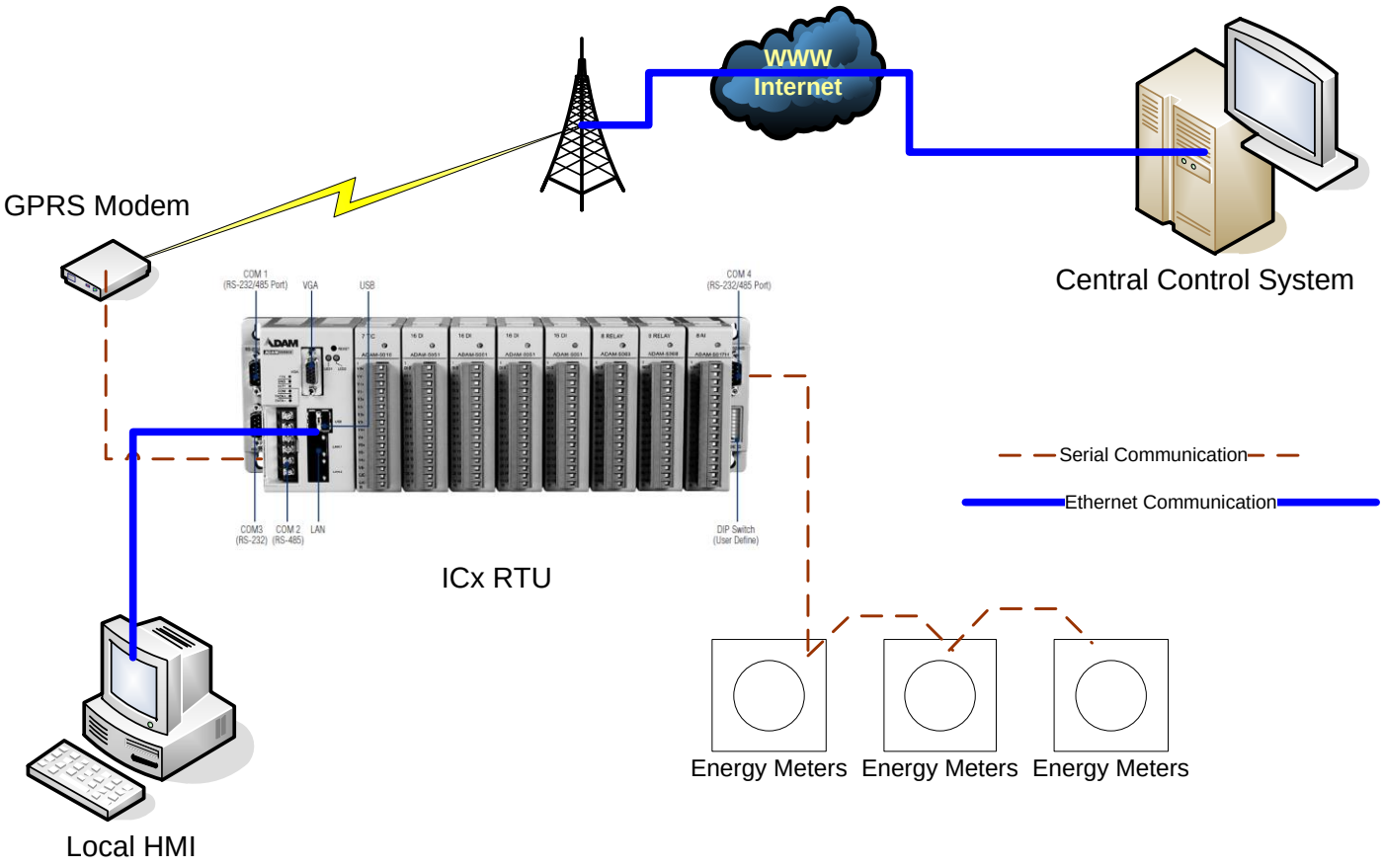
The RBH ICx-RTU supports the following Protocols:

- ⇒ IEC Suite (101 / 104/ 103 / 61850)
- ⇒ ICCP
- ⇒ DNP3 Serial / Network
- ⇒ MODBUS Serial / TCP
- ⇒ Ethernet I/P
- ⇒ Profibus DP Master/Slave
- ⇒ OPC DA Client / Server
- ⇒ Internet (HTTP / VPN / FTP / SMTP)
- ⇒ *Custom Protocol Support:* ICx Platform presents the opportunity for open development of required custom Protocol Interface.

ADAM Series: Ideal for Substation and PLC Requirements



ADAM Series: Sample Implementation APDRP



ADAM Series: Sample Configuration

Serial Communication Ports

- ⇒ 1 RS 232
- ⇒ 1 RS 485
- ⇒ 2 RS 232/485
- ⇒ Protocols
  - Both Master / Slave Implementation Supported
  - MODBUS RTU
  - IEC 60870-5-101/ 103
  - DLMS

Ethernet Communication

- ⇒ 2 RJ45 Ports
- ⇒ Protocols
  - Both Master / Slave Implementation Supported
  - MODBUS TCP
  - IEC 60870-5-104

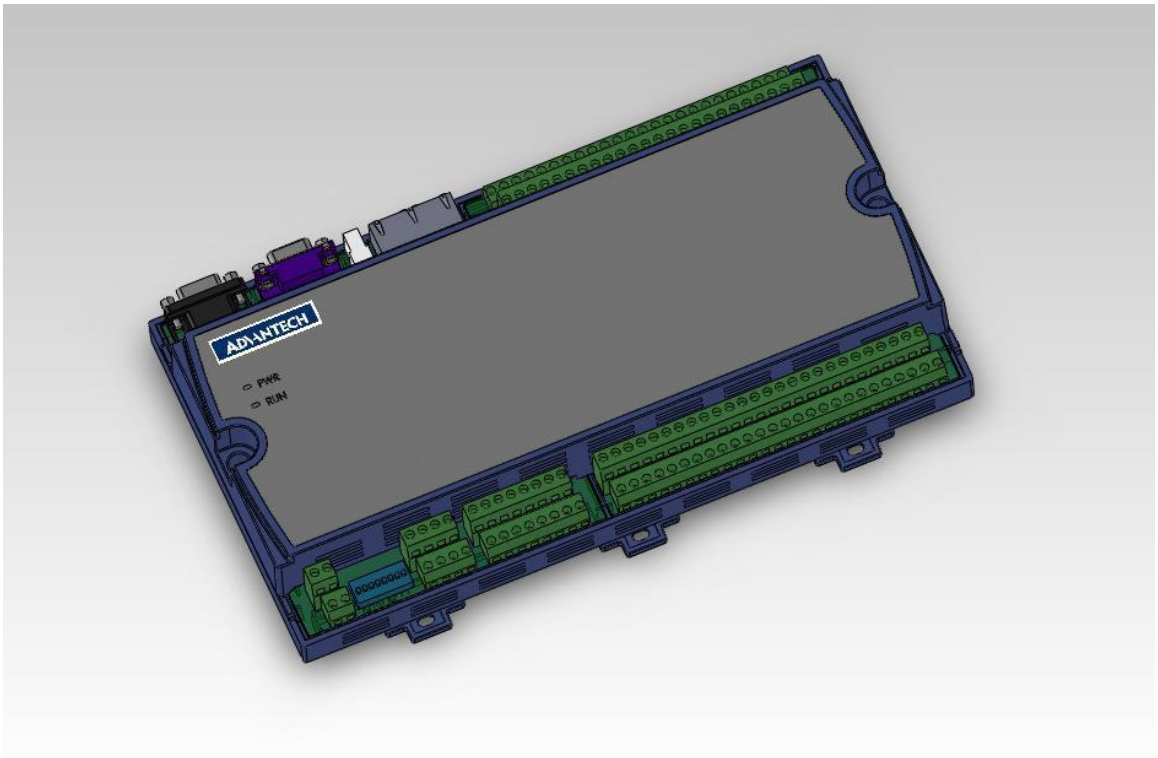
Typical I/O Deployment: Modular Card Based

- ⇒ 4 32 DI Cards
- ⇒ 1 32 DO Cards
- ⇒ 2 8 Chanel Universal AI Cards

Modem Communication

- ⇒ Any modem supporting Windows DIALUP Connection
- ⇒ Facilities supported over GPRS Modem (any Internet connectivity)
  - FTP (Client / Server)
  - SMTP Email
  - Web Server (Web Interface) provision for remote Diagnostics & Control

MIC Series: Ideal for Feeder RTU / Remote Deployments

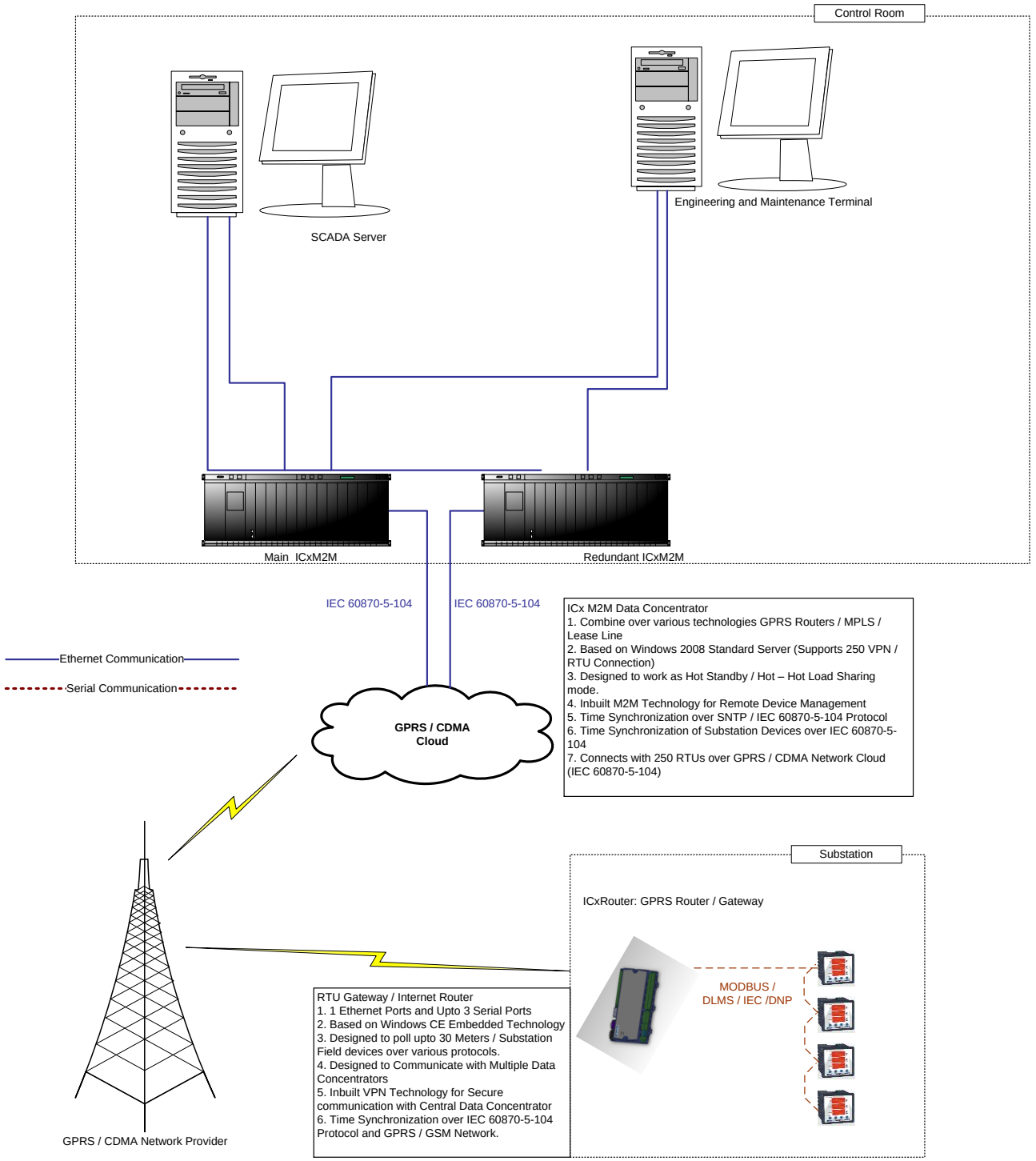


Features

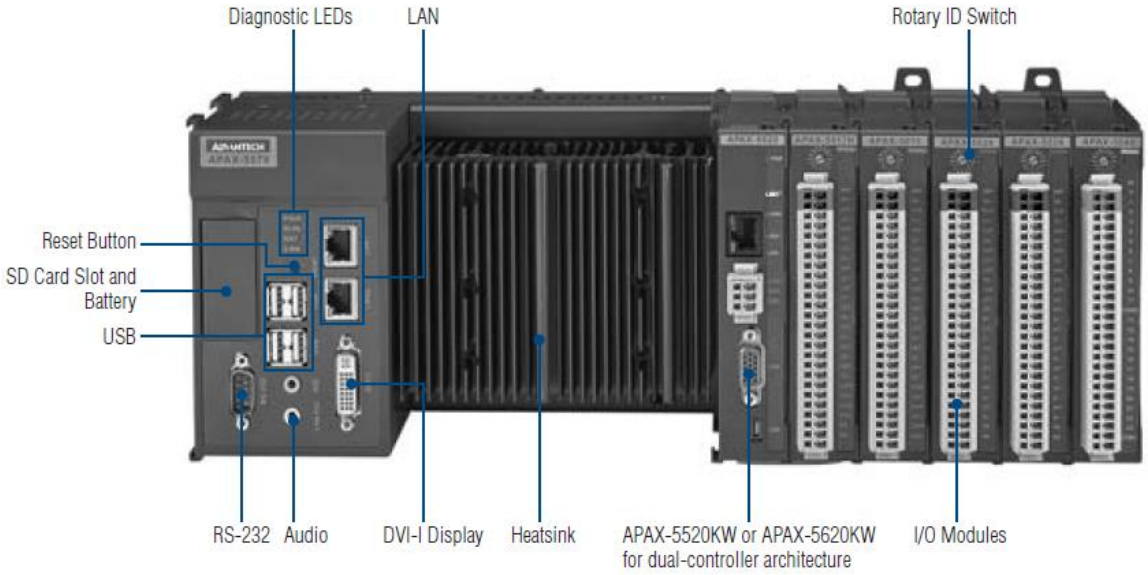
MIC-1911

- ⇒ Onboard Xscale @ PXA-270 520MHz CPU
- ⇒ 1 x RS-232 port,
- ⇒ 3 xRS-485 isolation ports
- ⇒ 2 x 10/100Base-T RJ-45 ports
- ⇒ 8-ch 16-bit differential Analog Input
- ⇒ 32-ch Isolation DI
- ⇒ 32-ch Isolation DO
- ⇒ Built-in Window CE

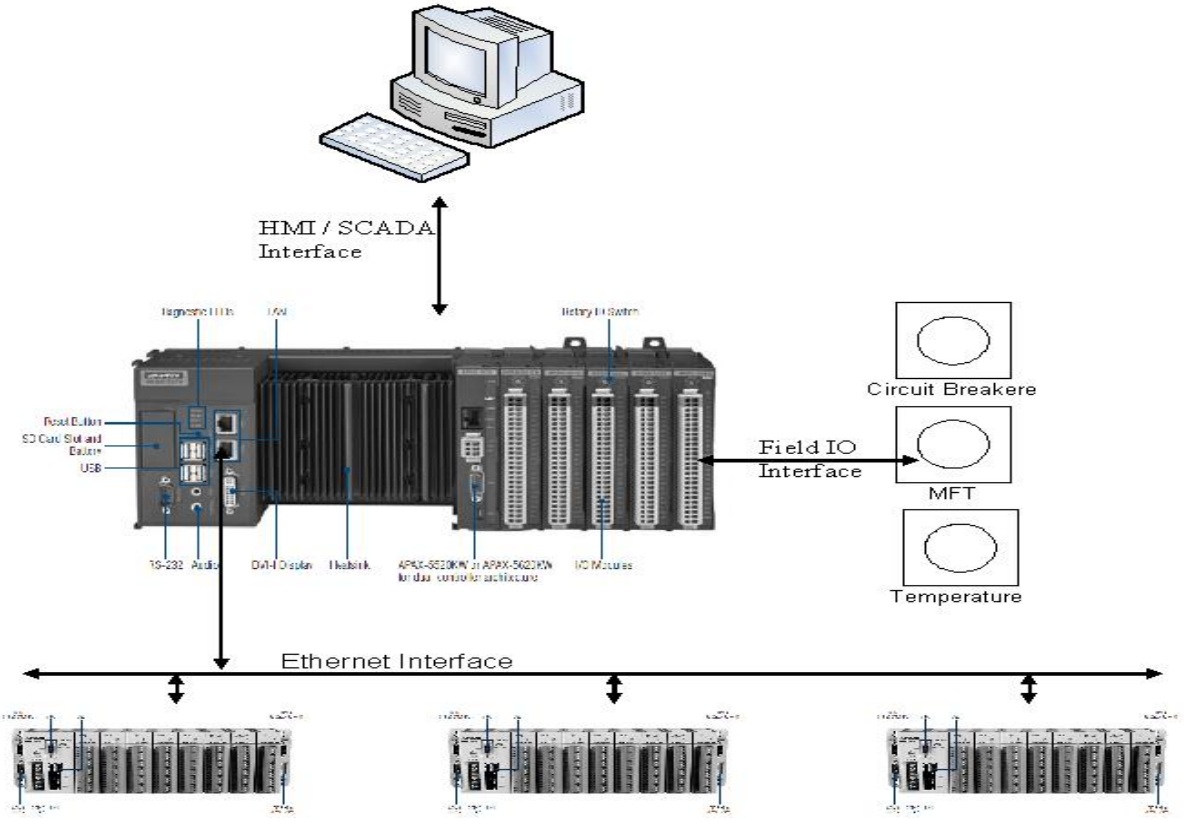
MIC Series: Sample Implementation APDRP



APAX Series: Ideal for High End RTU (Distributed Architecture)

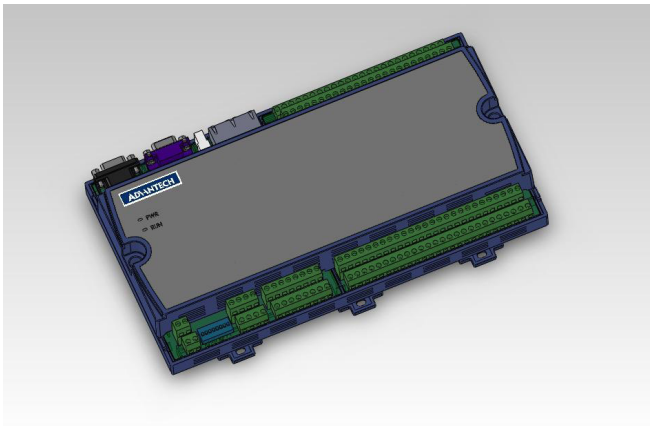


APAX Series: Sample Implementation APDRP



MIC-1911

Xscale @ PXA-270 520MHz RTU with 8-ch 16-bit AI,32-ch DI,32-ch DO



Features

- Onboard Xscale @ PXA-270 520MHz CPU
- 1 x RS-232 port,
- 3 xRS-485 isolation ports
- 2 x 10/100Base-T RJ-45 ports
- 8-ch 16-bit differential Analog Input
- 32-ch Isolation DI
- 32-ch Isolation DO
- Built-in Window CE 5.0

Introduction

MIC-1911 is focus on RTU monitor application. MIC-1911 is also a standalone RTU that provides a 16-bit 8-ch A/D converter, 32-ch Relay and 32-ch Digital input . This controller also supports 4 serial communication ports and 2 networking interfaces. You can seamlessly integrate your applications into MIC-1911 and speed up your system development with this application ready RTU.

Specifications

General

- **Power Consumption** <10 W (Typical)
- **Power Requirements** 10 ~ 30 V_{DC}
- **OS Support** Windows CE 5.0

System Hardware

- **CPU** Xscale @ PXA-270 20MHz
- **Memory** Onboard 64 MB SDRAM/32 MB Flash
- **Storage** 1 x type I/II Compact Flash slot

Digital Input

- **Channels** 32
- **I/O Type** Sink
- **Wet Contact** Logic 0 : 0~10V
Logic 1: 19~30V
- **Isolation** 3000V_{DC}
- **Connector** Terminal Block.(#14~22AWG)

Digital Output

- **Channels** 32
- **I/O Type** Power Relay Form A
- **Contact Rating** AC: 5A @ 250V;DC: 30V@5A (Resistive Load)
- **Isolation** 500V_{DC}
- **Connector** Terminal Block.(#14~22AWG)

Analog Input

- **Channels** 8 differential
- **Resolution** 16 bits
- **Sampling rate** 10Hz /sec. (total)
- **Input Impedance** Voltage: 20 MΩ
Current: 120 Ω (Build-in120 Ω. for Current)
- **Input Range** 0 ~ 150 mV, 0 ~ 500 mV, 0 ~ 1 V, 0 ~ 5 V, 0 ~ 10V, 0 ~ 15 V, ±150 mV, ±500mV, ±1 V, ±5 V, ±10 V, ±15 V, ±20 mA, 4 ~ 20 mA

Environment

- **Humidity** 5~95% @ 40°C (non-condensing)
- **Operating Temperature** -10 ~ 60°C (14 ~140°F)
- **Storage Temperature** -20 ~ 80°C (-4 ~176°F)

I/O Interface

- **Serial Ports** 1 x RS-232 with DB9(RTS,CTS,TX,RX),
3 xRS-485 with Terminal Block connector,
Automatic RS-485 data flow
- **LAN** 2 x 10/100Base-T RJ-45 ports
- **USB Port** 1 x USB, OpenHCI, Rev. 1.1 compliant

Ordering Information

- **MIC-1911-AE** Xscale @PXA-270 520MHz RTU with 8-ch 16-bit AI,32-ch DI,32-ch DO