rBOX610

Robust RISC-based DIN-rail Fanless Embedded System with iMX-287 Processor, 4 COM, 2 CAN Bus and DIO

Features

- Fanless design
- RISC-based module (iMX-287) processor
- 128MB DDR2 SDRAM onboard
- 4GB eMMC onboard
- Completed Industrial AP development software (Serial server, Modbus gateway, SNMP, Remote manager)
- 12-48 VDC wide range power input with terminal block
- Ready-to-run embedded Linux operating system
- Wide operating temperature range from -40°C to +70°C

Introduction

The rBOX610 cost-effective DIN-rail fanless embedded system utilizes the low power RISC-based module (iMX-287) processor and is designed to withstand temperatures ranging from -40°C to +70°C for use in extreme operating environments and industrial automation applications.

The rBOX610 features 4 RS-232/422/485 serial ports, dual LANs, 4 digital input channels, 4 digital output channels, 2 CAN bus and 1 eMMC onboard for storage expansion (easy to access) in a compact, IP40 protected, industrial-strength robust case. Two power paths input minimize the risk of data loss in the event of a single power failure. Its vertical DIN-rail form factor makes it easy to install the system in a small cabinet. Due to the RISC-based architecture, rBOX610 will not generate a lot of heat while being operated. The ready-to-run the rBOX610 is specially designed for remote control/monitoring management applications like unmanned control room, industrial machine, automatic parking lot, traffic cabinet and more.

Hardware Specifications

| Standard Color | Silver-Black |
| Construction | Extruded aluminum and heavy-duty steel, IP40 |
| CPU | iMX287, ARM926EJ-S™ processor, 454MHz |
| System Board | Q7M100 |
| System Memory | 1 x DDR2-667 SDRAM onboard, 128MB |
| System I/O Outlet | Serial Port: 4 x RS-232/422/485 (COM 1 ~ 4) with TX/RX/RTS/CTS signals, RS-232/422/485 interface select by software |
| | LAN: 2 x 10/100 Mbps Ethernet, Magnetic isolation protection 1.5kV |

| System I/O Outlet | USB | 1 x USB 2.0, USB power distribution control by software |
| CAN | 2 CAN 2.0 B (Phoenix connector, non-isolation) |
| | Meets ISO 11898 standard |
| | Software control termination resistor 120 ohm can high speed up to 1Mbit/s for transmit/receive |
| DIO | 1 x DIO (4-IN/4-OUT) |
| | Di: |
| | Input channels: 4, source type |
| | Input voltage: 0 to 30 VDC digital input levels for dry contacts: |
| | - Logic level 0: close to GND |
| | - Logic level 1: open |
| | Digital input levels for wet contacts: |
| | - Logic level 0: +10V to +24V (Di to COM-) |
| | - Logic level 1: +3V max. |
| | Optical isolation protection 2 kV |
| | DO: |
| | Output channels: 4, sink type |
| | Output current: 200 mA per channel |
| | On-state voltage: 24 VDC nominal, open collector to 30 V |
| Console Port | DB9 connector |
| | For user setting with debug |
| RTC | Battery onboard |
| | Provides power for the internal real time clock & calendar |
| | Ideal for vibration environment & reduces maintenance efforts |
| Alarm Contact | One relay output with current 0.5A@30 VDC |

* All specifications and photos are subject to change without notice.
Hardware Specifications

System I/O Outlet
Wireless
1 x Mini Card (supports USB interface on 3G/4G) 1 x SIM socket by outside access and is easy plug/pull

Watchdog Timer
WDT 1: one step is 1 sec, 256 levels

LEDs
System
Power, Alarm, Ready/Active, COM (TX, RX), Wireless
Alarm
DC PWR1 or PWR2 is lost

Storage
1 x eMMC 4 GB onboard (for boot disk) Supports 1 x SDHC Card (easy-to-access, for store only)

Installation
DIN-rail, wall mount

Power Supply
Power Input
2 power paths with terminal block
Power Input Range
12-48 VDC
Power Input Rating
12-48 VDC, 0.68-0.19A
Power Protection
DC Version:
- OV (Over voltage protection)
- UV (Under voltage protection)
- Reverse protection

Operating Temperature
-40°C ~ +70°C (-40°F ~ +158°F)

Humidity
5% ~ 95%

Vibration Endurance
5G @ 10-150Hz, amplitude 0.35ms

Weight (net/gross)
1.0 kg (2.2 lb)/1.50 kg (3.3 lb)

Dimensions
55 mm (2.16") (W) x 155 mm (6.10") (D) x 110 mm (4.33") (H)

OS Linux
Linux (Pre-installed)

Certificate
FCC Part 18
Heavy Industrial CE

Software Specifications

OS: Linux
Host OS/Development OS: Ubuntu 10.04 Yocto Toolchain/ Cross compiler: Freescale LTIB Kernel: 2.6.35.3 (with Freescale and Axiomtek hardware modified patch)

Support protocol types
- ICMP
- TCP/IP
- UDP/DHCP/Telnet, SNMP, HTTP, HTTPS, SSL, SMTP, ARP, NTP, DNS, PPPOE, FTP, TFTP

Support software types
- Serial Server:
  - Supports TCP Server/TCP Client/UDP/Pair/VC
  - Supports IP filter
  - Supports 32 TCP connections
  - Supports QoS
- Modbus gateway:
  - Supports Modbus TCP/Modbus RTU/Modbus ASCII
  - Supports IP filter
  - Supports 32 connections
  - Supports TCP for multiple com port
  - Supports QoS

Setting configuration
- SNMP:
  - Supports V1/V2C/V3
  - Supports SNMP Private MIB
  - Supports read/write
  - http/https:
    - Supports SSL
    - Supports Import/export
    - Supports FW update

Remote Manager
- Remote Log
- Email
- SNMP
- Supports Trap

Serial Port Redirector for
window
XP/2003 32-64/Win7 32-64/8/Vista 32-64/2008 32-64
Real com (visual com)
Centralized management
Import/Export for real com

HW’s lib
- B/DO:
  - Supports Read-DI/write DO
- CAN:
  - Supports Open/write/read/Close
- 3G:
  - Supports setting number connection
  - Supports User name/password
  - Supports detecting signal strength
- GPS:
  - Supports detecting signal strength
  - Supports satellite positioning

Watch Dog Timer:
- Supports setting enable
- Supports setting clean
- Supports setting timer

COM:
- Supports setting RS-232/422/485
- Default Reading:
  - Supports default reading for MAC, IP, Model

Ordering Information

Standard
rBOX610-FL-DC
Robust DIN-rail fanless embedded system with Q7-RISC module (iMX-287), 4 COM, 2 CAN and DIO [-40°C ~ +70°C]

Optional
- Wall mount kit
- Wireless (3G/GPS or W-Fi) module for rBOX series

Dimensions

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