rBOX630
Robust RISC-based DIN-rail Fanless Embedded System with i.MX 6 Processor, 4 COM, 2 CAN Bus and DIO

Features
- Fanless design
- RISC-based module (i.MX 6) processor
- 1GB DDR3 SDRAM onboard
- 8GB eMMC on board
- Completed industrial AP development software
- 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 rBOX630 cost-effective DIN-rail fanless embedded system utilizes the low power RISC-based module (i.MX 6) processor and is designed to withstand temperatures ranging from -40°C to +70°C for using in harsh environment and industrial automation applications.

The rBOX630 features 4 RS-232/422/485 serial ports, dual LANs, 8 digital input channels, 8 digital output channels, 2 CAN bus and 1 eMMC onboard 8 GB & 1 x SDHC socket for storage expansion (easy to access) in a compact, IP30 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. Because of ARM’s low power consumption architecture, rBOX630 generate little heat while being operated. The ready-to-run rBOX630 is specially designed for industrial machine, automatic parking lot, traffic cabinet and more.

Hardware Specifications
<table>
<thead>
<tr>
<th>Standard Color</th>
<th>Silver/Black</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>Extruded aluminum and heavy-duty steel, IP30</td>
</tr>
<tr>
<td>CPU</td>
<td>i.MX 6, Cortex-A9 RISC CPU, 800MHz</td>
</tr>
<tr>
<td>System Board</td>
<td>Q7M120</td>
</tr>
<tr>
<td>System Memory</td>
<td>1 x DDR3-1600 onboard, 1GB</td>
</tr>
<tr>
<td>System I/O Outlet</td>
<td>4 x RS-232/422/485 (COM 1-4) COM 1-4 with TX/RX/RTS/CTS signals RS-232/422/485 interface select by software</td>
</tr>
<tr>
<td></td>
<td>1 x 10/100/1000 Mbps Ethernet 1 x 10/100 Mbps Ethernet Magnetic isolation protection 1.5 KV</td>
</tr>
<tr>
<td>USB</td>
<td>1 x USB 2.0 OTG</td>
</tr>
<tr>
<td>CAN</td>
<td>2 CAN 2.0 B (Phoenix connector, non-isolation) Meets ISO 11898 standard Software control termination resistor 120 ohm can high speed up to 115kbit/s for transmit/receive</td>
</tr>
<tr>
<td>DIO</td>
<td>1 x DIO (8-in/8-out) with isolation 2 KV Di: Wet/Dry Do: Wet Di: Input channels: 8, 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. Do: Output channels: 8, sink type Output current: Max. 200 mA per channel On-state voltage: 24 VDC nominal, open collector to 30 V Optical isolation protection 2 KV</td>
</tr>
<tr>
<td>Console Port</td>
<td>D9 connector For user setting with debug</td>
</tr>
<tr>
<td>RTC</td>
<td>Battery onboard Provides power for the internal real time clock &amp; calendar Ideal for vibration environment &amp; reduces maintenance efforts</td>
</tr>
<tr>
<td>Alarm Contact</td>
<td>One relay output with current 0.5A@ 30 VDC</td>
</tr>
</tbody>
</table>
Hardware Specifications

System I/O Outlet | Wireless | 1 x Mini card socket (supports USB interface) with 1 x SIM Socket by outside access and is easy plug/pull, 1 x Mini card socket (supports USB&POE interface) with 1 x SIM Socket by inside

Watchdog Timer | WDT 1: one step is 1 sec, 255 levels

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

Storage | 1 x eMMC 8 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, 0.74-0.23A
Power Protection DC Version: OVP (Over voltage protection), UVP (Under voltage protection), Reverse protection

Operating Temperature | -40°C to +70°C (-40°F to +158°F)
Humidity | 10% - 95%
Vibration Endurance | 5G @ 10-150Hz, amplitude 0.35ms
Weight (net/gross) | 0.9 kg (2 lb)/1.3kg (2.87 lb)
Dimensions | 55 mm (2.16") (W) x 155 mm (6.10") (D) x 110 mm (4.33") (H)

OS Linux | Linux
Host OS/ Development OS : Ubuntu 12.04 Yocto Dora LTS Toolchain/ Cross compiler : Freescale Yocto Kernel : 3.0.35 (with Freescale and Axiomtek hardware modified patch)
Certificate | FCC Part 18

Ordering Information

Standard | RBOX638-8E-FL-DC (P/N E26M630101) | Robust DIN-rail fanless embedded system with Q7-RISC module (i.MX 6), 4 COM, 2 CAN and DIO (-40°C to +70°C)

Optional | 826M1000040E | Wall mount kit
Wireless (3G/GPS or Wi-Fi) module

Packing list

1 x CD
8 x Screws
1 x Din-rail kit
1 x Console cable
1 x 8-pin terminal block for CANbus port
1 x 8-pin terminal block for power port
1 x 18-pin terminal block for DIO port

Dimensions

![Dimensions Diagram]
Mouser Electronics

Authorized Distributor

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Axiomtek:

rBOX630-FL  rBOX630-8E-FL-DC