Linux-ready Cortex-A5 Industrial IoT Gateway

Matrix-713

Features

- Rugged Design, Wide-range Temperature operating
- ATMEL ATSAMA5D35 536MHz Cortex-A5 CPU
- Linux kernel 5.4.x with file system
- Support Node-Red , the browser-based flow editor
- 512MB LPDDR2 SDRAM
- 16GB eMMC Flash and 8MB DataFlash for system backup
- Toolchain: gcc 9.3.0 + glibc 2.31
- 2 x USB, 1 x Micro-SD socket, 1 x Line-out
- 1 x Gigabit Ethernet and 1 x 10/100Mbps Ethernet
- Rich I/Os: 4xisolated RS-485, 2xCAN, 2xUSB,2xDI, 2xDO
- 2xminiPCIe slot & 2xmicro-SIM card socket reserved

H/W Specifications

CPU / Memory

- CPU: ATMEL ATSAMA5D35 536MHz w/MMU
- SDRAM: 512MB, LPDDR2
- Flash: 16GB, eMMC
- DataFlash: 8MB, for system backup

Network Interface

- Type: 1 x Gigabit and 1 x 10/100Mbps Ethernet
- Protection: 1.5KV magnetic isolation
- Connector Type: RJ45

TTY (Serial) Ports

- 4 x Isolated RS-485 (1500Vrms isolation)
- Port 4 support RS422 / RS-485 (selectable)
- Direction Control: Auto, by hardware
- Connector: Terminal block
- RS485 Signal: Data+, Data-

CAN Bus Ports

- 2 x CAN bus 2.0 A/B compliant ports
- Speed: Up to 1Mbps

Console / Debug Ports

- 1 x microUSB console port
- Serial console port (inside the box)

USB 2.0 Host Interface

- 2 x USB Host Port

Audio Out

- 1 x Line-out R/L port, optional Earphone R/L
- Connector: Earphone-Jack
- Support MP3 and WAV format

Digital Input

- 2 x Digital Input channels
- Isolation Protection: 2500Vrms (Photo-Coupler)
- Logical High: 5~24VDC
- Logical Low: 0~1.5VDC

Relay Output

- 2 x Digital Output Channels (Solid state Relay)
- Solid State Relay, Normal Open (NO) Type
- Contact Rating: 80VDC@1.5A

SD Slot

- 1 x Micro-SD socket
- SD 2.0 compliant, supports SDHC

Expansion

- 2 x miniPCIe Full-size socket
- 2 x micro-SIM card socket , USB interface reserved
- 4 x SMA-type Antenna hole reserved

General

- Watchdog: Yes
- Real-Time Clock (RTC): Yes, backup by super capacitor
- Buzzer: Yes
- Power Input: +9~+60VDC (terminal block)
- Typical Consumption: 12VDC@600mA
- Indicator: PWR, READY, LAN, UART, CAN, Status(user define)
- Dimensions (W x L x H): 160 x 118 x 35mm (6.3 x 4.64 x 1.37in)
- Operating Temperature: 0~70°C (32~158°F)
- Regulation: CE Class A, FCC Class A
- Installation: Wall mounting, DIN-rail mounting (with optional kit)

S/W Specifications

Operation System

- Linux kernel 5.4.x
- Supports bootup from eMMC or SD card
- Supports backup from SD card or USB device
- Boot Loader : Barebox
- File System : EXT4/ETX3/ETX2, VFAT/FAT, NFS

Software Development

- Toolchain: gcc 9.3.x+ glibc 2.31
- Supports in-place C/C++ code compilation

Ordering Information

Matrix-713

- Linux-ready Cortex-A5 536MHz Industrial IoT Gateway with 512MB SDRAM, 16GB eMMC Flash, with LAN/USB/DI/DO/CAN/Audio out/GPIO/mPCIe slot
- Optional 4G/LTE miniPCIe Module with antenna:
  Matrix-713-C (for China) / Matrix-713-EA (for Europe, ASIA, LATAM)
  Matrix-713-NA (for North America)

DK-35A (36-DK35A-000)

- DIN RAIL Mounting Kit

PWR-12V-1A (31-62100-000)

- 12VDC@1A power adapter with 110 ~ 240VAC power-in