

## Linux-ready Arm9 Industrial IoT Gateway

# Matrix-516



### Features

- ATMEL AT91SAM9G20 400MHz CPU
- Linux kernel 2.6.29 with file system
- 64MB SDRAM and 256MB NAND Flash
- 1 x microSD socket inside
- 2 x 10/100Mbps Ethernet ports
- 8 x isolated RS-485 serial ports
- 2 x USB hosts, 21 x GPIOs
- Ultra-low power consumption, less than 3 Watts

### ■ H/W Specifications

#### **CPU / Memory**

- CPU: ATMEL AT91SAM9G20 400MHz w/ MMU
- Memory: 64MB SDRAM, 256MB NAND Flash
- DataFlash@: 2MB, for system backup

#### **Network Interface**

- Type: 2 x 10/100BaseT, RJ45 connector
- Protection: 1.5KV magnetic isolation

#### **TTY (Serial) Ports**

- 8 x Isolated RS-485 (1500Vrms isolation)
- Direction Control: Auto, by hardware
- Connector: Terminal block
- Baud Rate: Up to 921.6Kbps
- Parity: None, Even, Odd, Mark, Space
- Data Bits: 5, 6, 7, 8
- Stop Bits: 1, 1.5, 2

#### **USB Ports**

- Host Ports: 2
- Client Port: 1, reserved
- Speed: USB 2.0 compliant, supports low-speed (1.5Mbps) and full-speed (12Mbps) data rate

#### **SD Socket (Secure Digital Card)**

- Type: microSD
- No. of Sockets: 1
- Storage Capacity: Up to 32GB
- Compatibility: SD memory specification 1.0

#### **Digital I/Os (GPIO)**

- No. of Pins: 21
- Signal Level: CMOS / TTL compatible
- Each pin can be programmed as input or output

#### **General**

- Watchdog Timer: Yes
- Real-Time Clock (RTC): Yes
- Buzzer: Yes
- Power Input: +9V~+60VDC
- Power Consumption: 12VDC@190mA
- Dimensions (W x H x D): 160 x 104 x 32mm (6.3 x 4.0 x 1.26in)
- Operating Temperature: 0~70°C (32~158°F)
- Regulation: CE Class A, FCC Class A

### ■ S/W Specifications

#### **General**

- OS: Linux, kernel 2.6.29
- Boot Loader: U-Boot
- File Systems: UBI, JFFS2, ETX2 / ETX3, VFAT / FAT, NFS

#### **Pre-installed Utilities**

- bash, busybox, sysvinit, wget, ipkg, procps (for webmin), psmsics, lighttpd, vsftpd, iptables, ppp, ssh, wireless\_tools, util-linux-mount / umount, usbtutils, Artila utility, and more

#### **Daemons Started by Default**

- ssh (secured shell) with sftp
- syslog / klogd (system and kernel log)
- telnet server (disable root permission in /etc/security)
- ftp server (vsftp)
- web server (lighttpd)
- amgrd (Artila broadcast search daemon)

#### **Package Management & System Administration**

- Supports ipkg to manage the package installation, upgrade and removal
- Supports webmin (use 'ipkg install webmin' to install) for web-based system administration

#### **Toolchain for Linux**

- GCC: C / C++ PC cross compiler
- GLIBC: POSIX Library

### ■ Ordering Information

#### **Matrix-516B**

- Linux-ready Arm9 Industrial IoT Gateway

#### **CBL-F10M9-20 (91-0P9M9-001)**

- Console Cable (10Pin Header to DB9 Male, 20cm)

#### **DK-35A (36-DK35A-000)**

- DIN RAIL Mounting Kit