

Matrix-512

Linux-ready ARM9 Industrial Box Computer



Features

- Linux 2.6.14 compatible computing platform
- 64MB SDRAM and 16MB NOR Flash
- 2 x 10/100Mbps Ethernet ports
- 4 x 921.6Kbps RS-232 / 422 / 485 TTY ports
- 2 x USB 2.0 host ports for add-on functionality expansion
- 1 x SD memory card slot inside for storage expansion
- 21 x CMOS / TTL-level digital I/Os (GPIO)
- GNU C / C++ toolchain for Linux / Windows environment
- Ultra-low power consumption, less than 3 Watts

H/W Specifications

CPU / Memory

- CPU: ATMEL 180MHz AT91RM9200 (ARM9, w/ MMU)
- Memory: 64MB SDRAM, 16MB NOR Flash

Network Interface

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

TTY (Serial) Ports

- 4 x RS-232 / 422 / 485 ports, software select
- Port 2: Supports full modem signals
- Connector: DB9 male connector

TTY (Serial) Port Parameters

- Baud Rate: Up to 921.6Kbps
- Parity: None, Even, Odd, Mark, Space
- Data Bits: 5, 6, 7, 8
- Stop Bits: 1, 1.5, 2
- Flow Control: RTS / CTS, XON / XOFF, None

USB Host Ports

- No. of Ports: 2
- Speed: USB 2.0 compliant, supports low-speed (1.5Mbps) and full-speed (12Mbps) data rate

Digital I/Os (GPIO)

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

Mass Storage

- 1 x SD 1.0 compliant socket inside

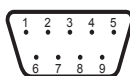
General

- Watchdog Timer: Yes, for kernel use
- Real Time Clock: Yes
- Buzzer: Yes
- Power Input: 9~40VDC
- Power Consumption: 300mA@12VDC
- Dimensions (W x H x D): 160 x 104 x 32mm
- Operating Temperature: 0~70°C (32~158°F)
- Regulation: CE Class A, FCC Class A

TTY Pin Assignment

PIN	RS-232	RS-422	RS-485
1	DCD*	Tx-	---
2	Rx	Tx+	---
3	Tx	Rx+	Data+
4	DTR*	Rx-	Data-
5	GND	GND	GND
6	DSR*	---	---
7	RTS	---	---
8	CTS	---	---
9	---	---	---

*: Port 2 only



S/W Specifications

General

- OS: Linux, kernel 2.6.14
- Boot Loader: U-Boot 1.1.2
- File Systems: JFFS2, ETX2 / ETX3, VFAT / FAT, NFS

Protocol Stacks

- IPv4, ICMP, ARP, DHCP, NTP, TCP, UDP, FTP, TELNET, HTTP, PPP, PPPoE, CHAP, PAP, SMTP, SNMP V1 / V2, SSL, SSH 1.0 / 2.0

Pre-installed Utilities

- bash: shell command
- tinylogin: login and user manager utility
- telnet: telnet client program
- busybox: Linux utility collection
- ftp: ftp client program

Daemons

- pppd: dial in / out over serial port and PPPoE
- snmpd: SNMP agent program
- telnetd: telnet server program
- inetd: TCP server program
- ftpd: ftp server program
- boa: web server program
- sshd: secured shell server
- iptables: firewall service manager
- amgrd: Artila manager daemon

Toolchain for Linux

- GCC: C / C++ PC cross compiler for Linux, Cygwin
- GLIBC: POSIX Library

Device Drivers

- SD / MMC, UART, Real Time Clock, Buzzer, Digital I/O, Ethernet, Watchdog Timer

USB Host Drivers (Could Be Customized)

- Flash disk
- WiFi (IEEE-802.11b/g)
- RS-232 adapters

Ordering Information

- **Matrix-512**
Linux-ready ARM9 Industrial Box Computer with 16MB on-board Flash
- **CB-DBCON-100 (91-DBCON-100)**
Console Cable (DB9 Female to DB9 Female, 100cm)
- **DK-35A (36-DK35A-000)**
DIN RAIL Mounting Kit

Front View



4 x TTY (Serial) Ports
support RS-232 / 422 / 485

Rear View



9~40VDC 21 x
GPIOs 2 x 2 x LANs
USB Hosts

Assured Systems

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