

Matrix-504

Linux-ready ARM9 Industrial Box Computer



Features

- Linux 2.6.29 compatible computing platform
- 64MB SDRAM and 256MB NAND Flash
- Ultra-low power consumption, less than 3 Watts
- 1 x 10/100Mbps Ethernet port
- 4 x 921.6Kbps high speed TTY (serial) ports
- 2 x USB 2.0 host ports, 12Mbps
- 1 x microSD socket inside
- GNU C / C++ toolchain for Linux / Windows environment
- Extremely compact design, 78 x 108 x 24mm

H/W Specifications

CPU / Memory

- CPU: ATMEL 400MHz AT91SAM9G20 (ARM9, w/ MMU)
- Memory: 64MB SDRAM, 256MB NAND Flash
- DataFlash@: 2MB, for system backup

Network Interface

- Type: 1 x 10/100BaseT, RJ45 connector
- Protection: 1.5KV magnetic isolation

TTY (Serial) Ports

- Port 1: Can be set as RS-232, RS-422 or RS-485
- Port 2, 3, 4: Can be set as RS-232 or RS-485
- Connector: RJ45 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
- RS-485 Direction Control: Auto, by hardware

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

General

- Watchdog Timer: Yes, for kernel use
- Real Time Clock: Yes
- Buzzer: Yes
- microSD Socket: Yes
- Power Input: 9~48VDC
- Power Consumption: 250mA@12VDC
- Dimensions (W x H x D): 78 x 108 x 24mm
- 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	DSR	---	---
2	RTS	Tx+	Data+
3	GND	GND	GND
4	Tx	Tx-	Data-
5	Rx	Rx+	---
6	DCD	Rx-	---
7	CTS	---	---
8	DTR	---	---



S/W Specifications

General

- OS: Linux, kernel 2.6.29
- Boot Loader: U-Boot 1.1.2
- File Systems: UBI, JFFS2, ETX2 / ETX3, VFAT / FAT, NFS

Pre-installed Utilities

- bash, busybox, sysvinit, wget, ipkg, procps (for webmin), psmics, apache2, vsftpd, iptables, ppp, ssh, wireless_tools, util-linux-mount / umount, usbutils, Artilla utility

Daemons Started by Default

- ssh (secured shell) with sftp
- syslog / klogd (system and kernel log)
- telnet server (disable root permission in /etc/securetty)
- ftp server (vsftp)
- web server (lighttpd)
- amgrd (Artilla 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

USB Host Drivers

- Generic Flash drive
- RS-232 adapters (for Prolific PL-2303 compatibles)
- WiFi dongles (for Ralink RT73 compatibles)

Ordering Information

- **Matrix-504**
Linux-ready ARM9 Industrial Box Computer with 256MB on-board Flash and microSD Socket Inside
- **Matrix-504T**
Wide-temperature (-20~80°C) Version of the Matrix-504
- **CB-RJ45F9-150 (91-R45F9-150)**
Serial Cable (RJ45 to DB9 Female, 150cm)
- **CB-RJ2CON-100 (91-RJCON-100)**
Console Cable (RJ45 to DB9 Female, 100cm)
- **DK-35A (36-DK35A-000)**
DIN RAIL Mounting Kit
- **PWR-12V-1A (31-62100-000)**
110~240VAC to 12VDC 1A Power Adapter

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