

# Matrix-505

## Linux-ready ARM9 Industrial Box Computer



### H/W Specifications

#### CPU / Memory

- CPU: ATMEL 400MHz AT91SAM9G45 (ARM9, w/ MMU)
- Memory: 128MB DDR2 SDRAM, 256MB NAND Flash
- DataFlash@: 2MB, for system backup

#### Network Interface

- No. of Ports: 2, independent
- Type: 10/100BaseT, RJ45 connector
- Protection: 1.5KV magnetic isolation

#### TTY (Serial) Ports

- Port 1: Can be set as RS-232 / 422 / 485
- Port 2, 3, 4: Can be set as RS-232 / 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 high-speed (480Mbps) mode

#### General

- Watchdog Timer: Yes, for kernel use
- Real Time Clock: Yes
- Buzzer: Yes
- microSD Socket: Inside the box, up to 32GB
- Power Input: 9~48VDC
- Power Consumption: 200mA@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	---	---



### Features

- Linux 2.6.38 compatible computing platform
- 128MB DDR2 SDRAM and 256MB NAND Flash
- System backup Data Flash: 2MB
- 2 x 10/100Mbps Ethernet ports
- 1 x RS-232 / 422 / 485, 3 x RS-232 / 485 TTY ports
- 2 x USB 2.0 host ports, up to 480Mbps
- 1 x microSD socket inside
- Extremely compact design, 78 x 108 x 24mm
- Ultra-low power consumption, less than 3 Watts

### S/W Specifications

#### General

- OS: Linux, kernel 2.6.38
- 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, lighttpd, vsftpd, iptables, ppp, ssh, wireless\_tools, util-linux-mount / umount, usbutils, Artila 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 (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

#### USB Host Drivers

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

### Ordering Information

- **Matrix-505**  
Linux-ready ARM9 Industrial Box Computer with 256MB on-board Flash
- **CB-RJ45F9-150 (91-R45F9-150)**  
Serial Cable (RJ45 to DB9 Female, 150cm)
- **CB-PHDF9-050 (91-PHDF9-050)**  
Console Cable (Wafer Box to DB9 Female, 50cm)
- **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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