

Features

- Linux 2.6.14 compatible computing platform
- 64MB SDRAM and 32MB NOR Flash
- Ultra-low power consumption, less than 3 Watts
- 1 x 10/100Mbps Ethernet port
- 4 x 921.6Kbps RS-232 / 485 TTY ports
- 2 x USB 2.0 host ports for functionality expansion
- 1 x SD memory card slot inside for storage expansion
- 32 x CMOS-level digital I/Os (GPIO)
- Single 5V power input
- GNU C / C++ toolchain for Linux / Windows environment

H/W Specifications

CPU / Memory

- CPU: ATMEL 180MHz AT91RM9200 (ARM9, w/ MMU)
- Memory: 64MB SDRAM, 32MB NOR Flash
- SRAM: 512KB, non-volatile (M-508T only)

Network Interface

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

TTY (Serial) Ports

- 4 x RS-232 / 485 ports, software select
- Port 2: Supports full modem signals
- Port 4: Also supports RS-422 mode
- Connector: 10-pin header, male

TTY (Serial) Port Parameters

- Baud Rate: Up to 921.6 Kbps
- 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 Ports

- Host Ports: 2, USB 2.0 compliant
- Speed: Supports low-speed (1.5Mbps) and full-speed (12Mbps) data rate

CMOS-level Digital I/Os (GPIO)

- No. of Pins: 32
- Each pin can be programmed as input or output

Mass Storage

- 1 x SD 1.0 compliant socket

General

- Watchdog Timer: Yes, for kernel use
- Real Time Clock: Yes
- Buzzer: Yes
- Power Input: +5VDC, 600mA typical
- Board Dimensions (W x H): 105 x 75mm
- Operating Temperature:
 - M-508: 0~70°C (32~158°F)
 - M-508T: -20~80°C (-4~176°F)

Ordering Information

- **M-508**
Linux-ready ARM9 Single Board Computer with 32MB NOR Flash, 64MB SDRAM
- **M-508T**
Wide-temperature Linux-ready ARM9 Single Board Computer with 32MB NOR Flash, 64MB SDRAM, 512KB non-volatile SRAM

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

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

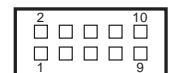
- SD / MMC, UART, Real Time Clock, Buzzer, Digital I/O, Ethernet, Watchdog Timer

USB Host Drivers (Could Be Customized)

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

TTY PIN Assignment

| PIN | RS-232 | RS-422 ** | RS-485 |
|-----|--------|-----------|--------|
| 1 | DCD* | Tx- | --- |
| 2 | DSR* | --- | --- |
| 3 | Rx | Tx+ | --- |
| 4 | RTS | --- | --- |
| 5 | Tx | Rx+ | Data+ |
| 6 | CTS | --- | --- |
| 7 | DTR* | Rx- | Data- |
| 8 | --- | --- | --- |
| 9 | GND | GND | GND |
| 10 | --- | --- | --- |



*: Port 2 only
**: Port 4 only