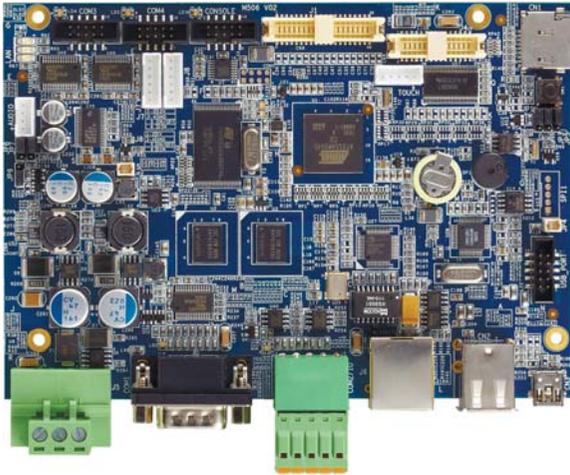


M-506 Industrial ARM9 Linux-based Single Board Computer



- ▶ Low power consumption of 200mA
- ▶ GNU C/C++ tool chain includes GTK, X11 and Qt library

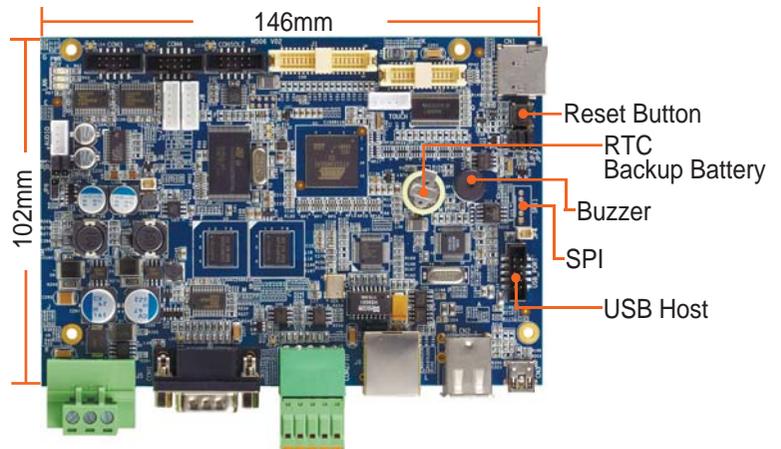
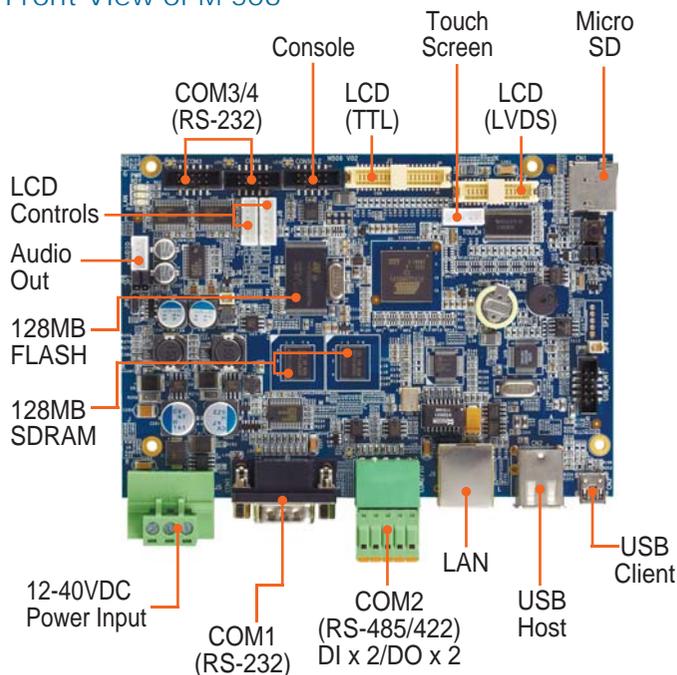
- ▶ ATMEL 400MHz AT91SAM9G45 CPU w/ MMU
- ▶ Linux kernel 2.6.38 with file system
- ▶ 128MB SDRAM/128MB NAND Flash
- ▶ 2MB DataFlash for system recovery
- ▶ On-board real-time clock w/ backup battery
- ▶ Supports up to 1280 x 860 LCD and touch screen
- ▶ Supports LVDS
- ▶ 1 x 10/100Mbps Ethernet
- ▶ 3 x RS-232 ports, 1 x RS-422/485 port
- ▶ 4 x USB Hosts supporting high speed of 480Mbps
- ▶ 1 x micro SD socket
- ▶ 4 x GPIOs
- ▶ Standard 3.5" form factor (LxW): 146 x 102mm



Overview

M-506 is a standard 3.5" form factor ARM9 Linux-based Single Board Computer. M-506 is powered by 400MHz AT91SAM9G45 ARM9 Processor with memory management unit, and equipped with 128MB SDRAM, 128MB NAND Flash, and 2MB DATAFlash. M-506 supports up to 1280 x 860 LCD interface, and LVDS, which makes M-506 an ideal choice for mission-critical industrial applications where HMI (Human Machine Interface) is necessary. M-506 is also pre-installed with Linux 2.6.38 OS, busybox utility collection, lighttpd Web server, and various hardware device drivers. M-506 comes with one 10/100Mbps Ethernet, four USB 2.0 hosts, four serial ports, and 4 GPIOs. M-506 is a reliable single board computer to be used in various embedded systems. It is ideal for all kinds of industrial applications, including intelligent transportation system (ITS), building automation, energy-saving system, and scenario control systems.

Front View of M-506



Hardware Specifications

CPU/Memory

CPU: ATMEL 400MHz AT91SAM9G45 w/MMU
SDRAM: 128MB
NAND Flash: 128MB
DataFlash®: 2MB, for system backup

Network Interface

Type: 10/100Mbps Ethernet, RJ-45 connector
Protection: 1.5KV magnetic isolation

TTY(Serial) Ports

3 x RS-232 (Port 1, 3, 4)
1 x RS-422/485 (Port 2)
Connector: One DB9 and two 10 pins header (male) for RS-232
Terminal Block for RS-422/485

TTY(Serial) Port Parameters

Baud Rate: up to 921.6Kbps
Parity: None, Even, Odd, Mark, Space
Data Bits: 5, 6, 7, 8
Stop Bit: 1, 1.5, 2
Flow Control: RTS/CTS, XON/XOFF, None
RS-485 Direction Control: auto, by hardware

USB Ports

Hosts: Four, USB 2.0 compliant
Speed: low speed (1.5Mbps), full speed (12Mbps) and high speed (480Mbps)
Client Port: One USB 2.0
Speed: high speed (480Mbps)

Display Interface

LCD Resolution: Up to 1280x860 TFT
Interface Signal: 24-bit TTL/CMOS and LVDS
Touch Screen: 4-wire touch screen

General-Purpose IOs (GPIO)

No. of Pins: 4
Signal Level: CMOS/TTL compatible
Each pin can be programmed as input or output

General

Watch Dog Timer: Yes
Real Time Clock: Yes, with backup battery
Buzzer: Yes
Power Input: 12-40VDC
Power Consumption: 200mA@12VDC
Dimensions: 146 x 102mm
Operating Temperature: 0 to 70°C (32 to 158°F)

Software 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, gtk+, x11, gpe, alsa, madplayer, psplash, sysvinit, wget, ipkg, procps (for webmin), psmics, lighttpd, vsftpd, iptable, ppp, openssh, wireless_tools, util-linux-mount/umount, usbutils, phyton, jamvm, php, qt4-embedded, mysql, perl, sqlite3, snmp, Artila utility and more

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.

Tool Chain for Linux

GCC: C/C++ PC cross compiler
GLIBC: POSIX Library
GUI: GTK+, X window (X11), GPE and QT4-Embedded

USB Host Drivers

Generic Flash drive
RS-232 adaptors (for Prolific PL-2303 compatibles)
WiFi dongles (rt2500/rtl8187/rt73/zd1211 chips)

Ordering Information

M-506

Industrial Linux-based ARM9 Single Board Computer

Pin Assignments

DB9 Male RS-232

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

