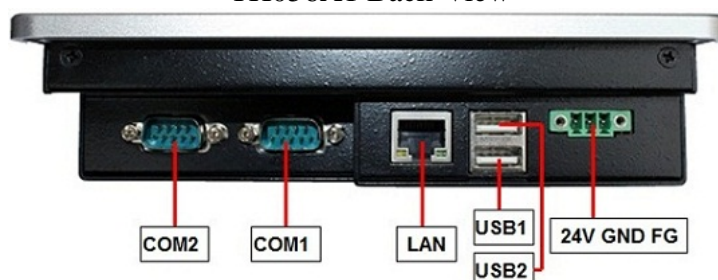# TH056A1 HMI Development Kit

- *HMI with 400MHz Atmel AT91SAM9G45 ARM926EJ-S Processor*
- *5.6 inch LCD with Touch Screen, Ethernet, Two USB and Two serial ports*
- *Ready-to-Run Linux2.6.30*

TH056A1 Top-View

TH056A1 Back-View

TH056A1 Interfaces

Overview

Embest TH056A1 HMI Development Kit is a low-cost HMI (Human Machine Interaction) solution based on Atmel AT91SAM9G45 ARM926EJ-S processor. It is controlled by an Atmel single board computer built in a reliable metal case and combined with 5.6 inch TFT LCD and touch screen. It can support memory up to 128MB high-speed DDR2 SDRAM and 256MB Nand Flash. The device has Ethernet ports, two high-speed USB Host ports and two serial ports to communicate with other external devices. It utilizes a 24V DC power supply from a phoenix connector to fit industrial automation applications.

The TH056A1 HMI Development Kit is ready to run Linux operation system. Embest has provided Linux 2.6.30 BSP and necessary documents along with the device. User can develop their own applications on this device.

The TH056A1 is also ideal for numberous HMI custom applications. Embest offers ODM and OEM service based on exsiting TH056A1 device. Whether you need to reduce, add or modify to existing hardware, Embest will help customers with expert competence and rich experience.

Hardware Features

Processor
- Atmel AT91SAM9G45 32-bit RISC CPU
- 400-MHz ARM926EJ-S Core
- 32 KBytes Data Cache, 32 KBytes Instruction Cache, MMU
- One 64-kbyte internal SRAM and One 64-kbyte internal ROM

Memory
- 128MByte DDR2 SDRAM
- 256MByte NAND Flash

Power Supply
- 24V DC In

Communication Interfaces
- Serial port:
  1 x 5 line serial port, RS232 voltage (COM1)
  1 x 3 line serial port, RS232/RS485 voltage (COM2)
- USB port:
  2 x USB2.0 Host, High-speed, 480Mbps
- Ethernet port:
  1 x 10M/100M Ethernet port (RJ45 with Led)

Video Display
- 5.6" TFT LCD (Resolution: 640x480 pixels, with touch screen)
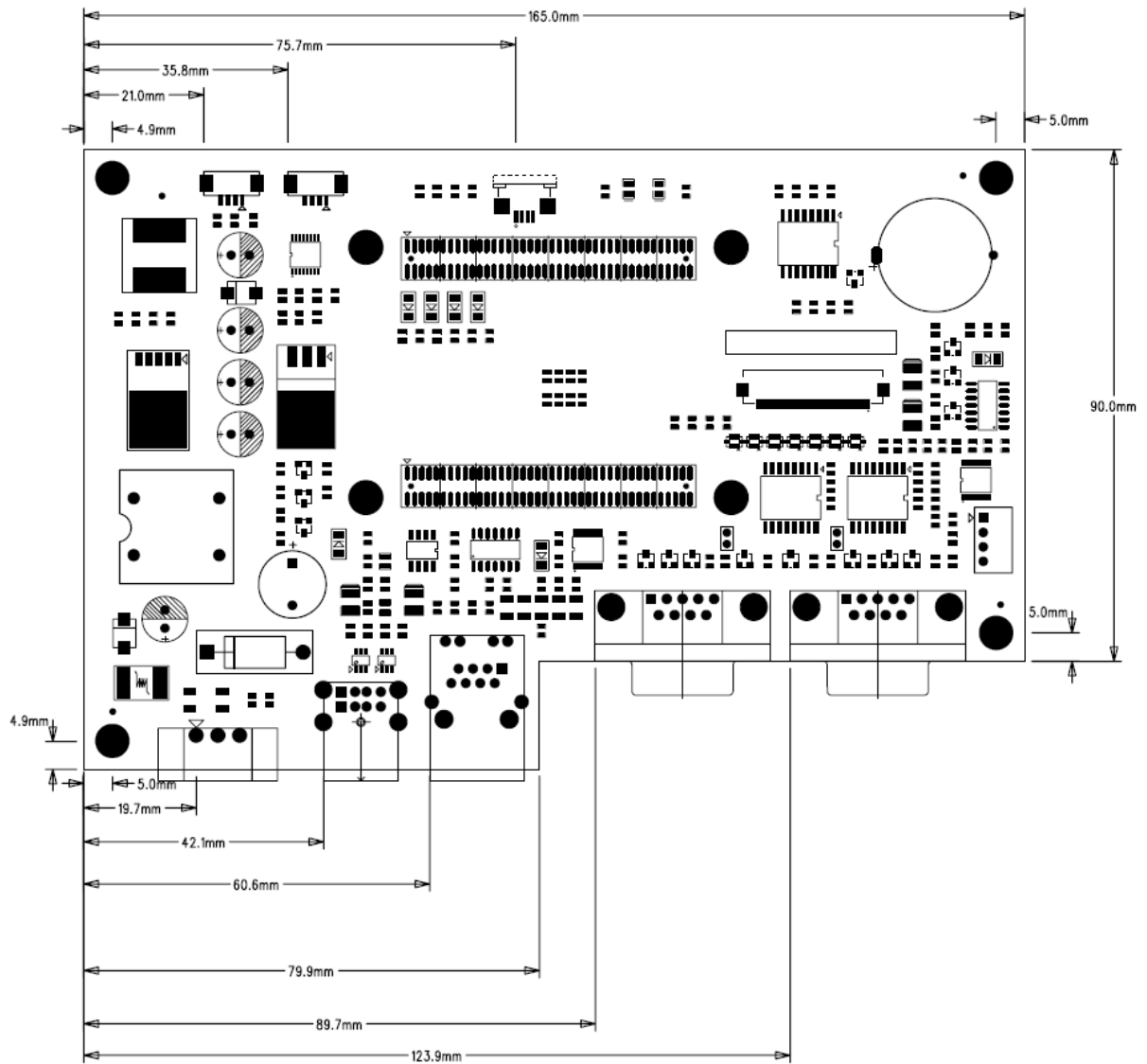
Others
- RTC (battery backed)
- 2 Status LEDs

Mechanical Parameters
- Case Dimensions: 186 mm x 147 mm x 45 mm
- Working Temperature: -10 ℃ ~ 70 ℃
- Humidity Range: 5% ~ 90%@50 ℃

Built-in Single Board Computer Dimensions

Software

The TH056A1 HMI Development Kit is provided with Linux 2.6.30 BSP, steady-going drivers, many of which are all in source code. Please refer to below table.

OS	Item	Feature	Description
LINUX	Bootloader	Version	u-boot 1.3.4
		Boot Mode	Support booting from Nandflash
		Download Mode	Support download kernel from SAM-BA or Ethernet
	Kernel	Version	Linux 2.6.30
		LED	LED driver
		Serial	Serial ports drivers
		RTC	RTC driver
		Ethernet	10/100M Ethernet driver
		RS485	RS485 driver
		Buzzer	Buzzer driver
		USB Host	USB Host driver, Hot plug-and-play
		GPIO	Provided with driver
		LCD&TSP	TFT LCD and touch screen driver
		NandFlash	Provided with driver
	File system	File system	yaffs2 file system, can be read and written
	Network protocol and applications	TCP/IP	Complete TCP/IP protocol
	System configuration and service	Network Ping	Ping command, used in checking system
	Basic command	Ifconfig, route, inetd	Used in network configuration and relative service program
		Linux command	Cat, chmod, discard, echo, flashwrite, flashfsd, free, genhtml, init, kill, loader, Ls, mkdir, mount, ps, reboot, rm, smanaged, sysconf, yes, insmod, lsmod, rmmod

Order Information

Order No.	T6010135
Item	Embest TH056A1 Development Kit
Hardware	• One TH056A1 Device
Software and Documents	• Documents • Linux 2.6.30 BSP
Price	Please contact us.

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