Eddy-Serial

Programmable Embedded Device Server

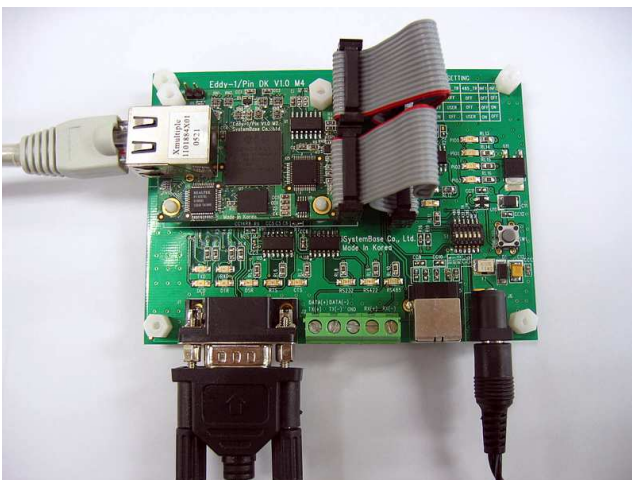
Features

- **RS232/422/485 serial interfaces**
- **Max 921.6Kbps serial speed**
- **Easy & Fast Integration**
- **Program & run your own application**
- **SDK & API in Development Kit**
- **Small size to fit in any hardware**
- **32-bit ARM9 CPU / 4MB Flash / 8MB SDRAM**
- **Pin Header / DB9 / TTL interface**
- **10/100Mbps Ethernet port**
- **COM port redirection**
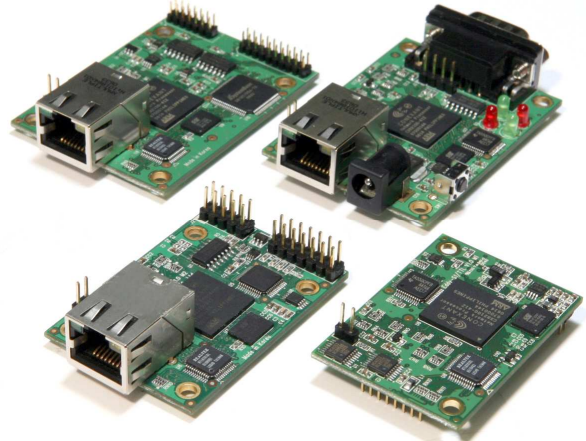
Eddy-Serial series is an embedded device server module. This small module easily integrates on to your hardware design, supporting RS232, 422, and 485 interfaces at 921.6Kbps. Engineers can now add network interface to their hardware design in an easy, reliable, and faster manner. Also, user's application can be uploaded for maximized customization. Enjoy powerful features and benefits with high performance!

Eddy-S1/Pin attached on the Development Kit Board

Program and Execute Your Own Customized Application Directly on the Module!

Eddy is distinguished with other embedded device servers in that it can upload customized user applications and execute them. With such feature, a user can upload any socket / serial communication application that can run on standard Linux environment with no or little modification. This openness gives users a chance to apply a wide variety of operations on the device server, with considerably less limitations. To help programmers work on their own application to be run on the device server, Eddy supports **SDK (Software Development Kit)** and cross-compile environment. With SDK and ready-to-run example codes, programmers can easily build up their own applications under the standard Linux environment. Cross compiler running on Linux will help the application run on Eddy with ease.

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Ever Seen a Better Hardware?

Tired of constraints on your embedded device server's 8-bit CPU and 256KB memory? Eddy completely solves this problem by adopting a 32-bit ARM9 CPU with 168MHz clock, 4MB Flash memory, and 8MB SDRAM. Your applications can be large in size and will run faster, in a more stable manner under the embedded Linux operating system. And all these high-end hardware is embedded on a half of a credit card-sized board!

Development Kit

Eddy Development Kit helps developers test and evaluate Eddy-1/Pin easily. Evaluation board itself is a guideline for integrated hardware design with Eddy module mounted. With LED displays on Power, Ready, communication interface, GPIO, and serial line status, engineers can easily recognize the operation status of the module. Compile environment including the cross-compiler, simple code, documentation, and tools are included to accelerate integration and customization process.

LED	Power, Ready, Programmable IO Interface: RS232, RS422, RS485 Serial: TxD, RxD, DCD, DTR, DSR, RTS, CTS
Serial	1 * DB9 Male (RS232) 5P Terminal Block (RS422/RS485)
USB	Only for firmware upload
Reset	Hardware Reset Button
DIP Switches	Serial Interface / Terminal Resistor
Dimensions	110 * 80 mm
Power Input	5VDC
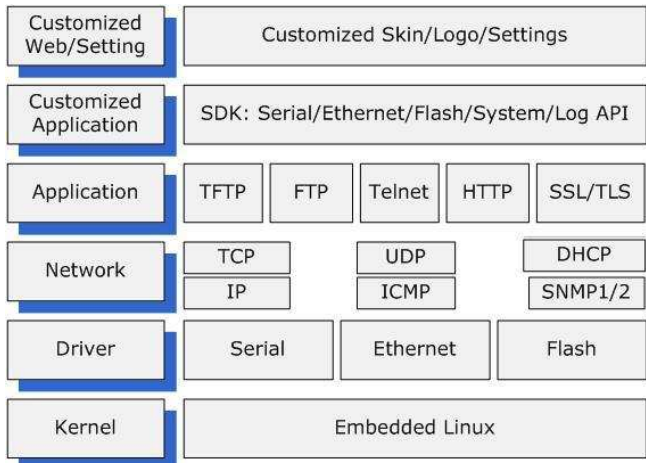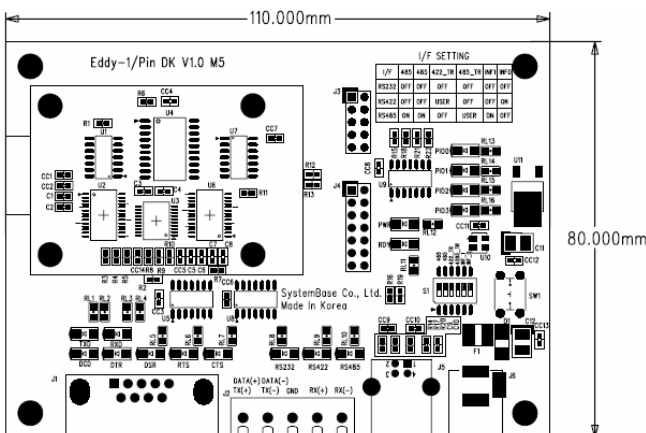
Eddy Software Architecture

Customized & Open Applications

You can add or remove applications on your Eddy module to make it serve perfectly and exclusively for your own application. Pre-compiled and optimized open source packages are provided for download. You can simply add new features to Eddy by creating your own version of firmware. Moreover, you can even design specific protocols or applications to meet the requirements of the environment that you install Eddy to. With such an open architecture, operation and performance of Eddy can be fully adjusted and controlled, and new features can be easily implemented.

Eddy DK Board

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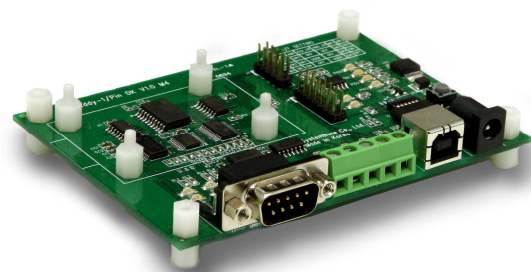
Eddy-S1/Pin

- For standard applications
- Programmable

Serial Port
　1 (Pin Header)
Serial Interface
　RS232/422/485
Ethernet Port
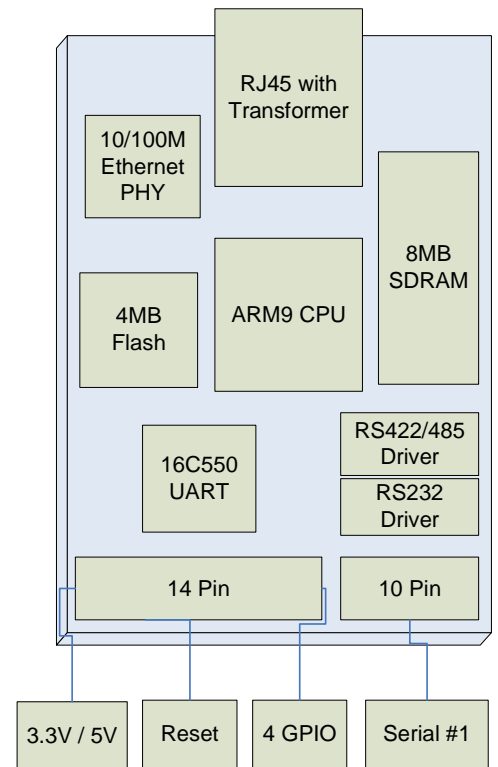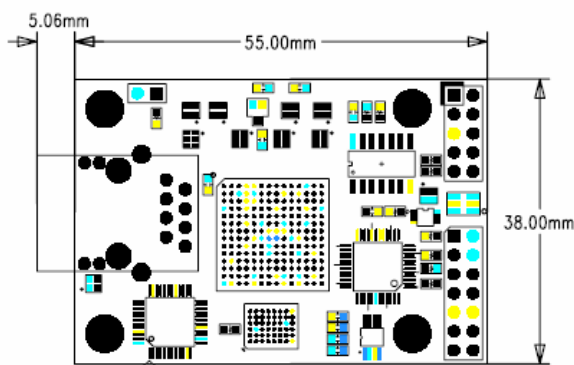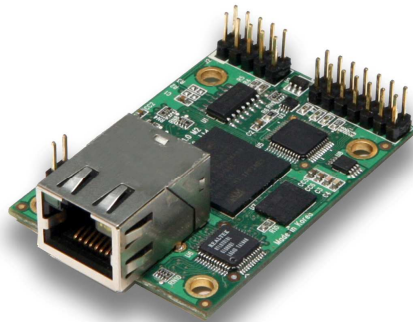　1 (RJ-45)
Ethernet Interface
　10/100Mbps
GPIO
　4
Programmable
　Yes
Power
　3.3V / 5V
Dimension
　55 * 38 mm

5.06mm　　55.00mm　　38.00mm

10/100M Ethernet PHY	RJ45 with Transformer	
4MB Flash	ARM9 CPU	8MB SDRAM
16C550 UART		RS422/485 Driver / RS232 Driver
14 Pin		10 Pin

| 3.3V / 5V | Reset | 4 GPIO | Serial #1 |

Eddy-S1/TTL

- For customized hardware
- Low cost / 9 GPIO

Serial Port
　1 (TTL)
Serial Interface
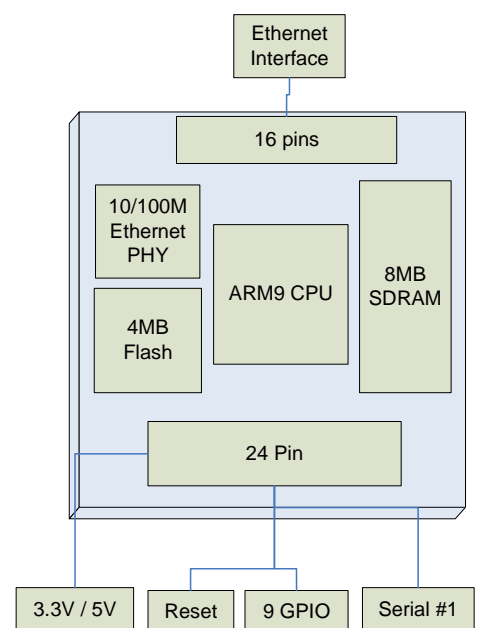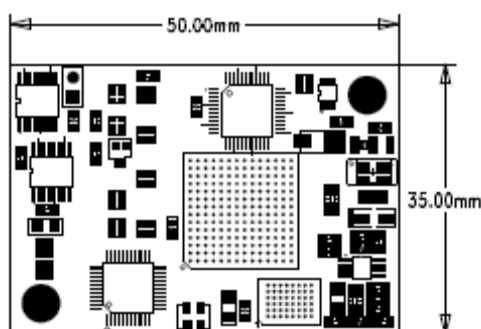　TTL
Ethernet Port
　1 (TTL)
Ethernet Interface
　10/100Mbps
GPIO
　9
Power
　3.3V / 5V
Dimension
　50 *35 mm

50.00mm　　35.00mm

	Ethernet Interface	
	16 pins	
10/100M Ethernet PHY	ARM9 CPU	8MB SDRAM
4MB Flash		
24 Pin		

| 3.3V / 5V | Reset | 9 GPIO | Serial #1 |

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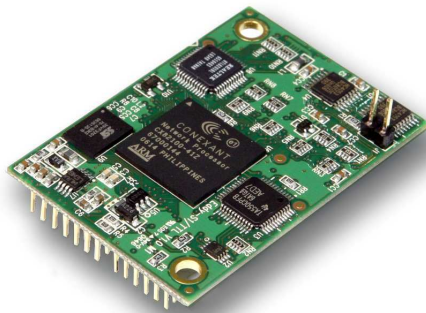
Eddy-S1/DB9

- Off-the-shelf functionality
- DB9 / Reset Switch / LED

Serial Port
  1 (DB9)
Serial Interface
  RS232/422/485
Ethernet Port
  1 (RJ-45)
Ethernet Interface
  10/100Mbps
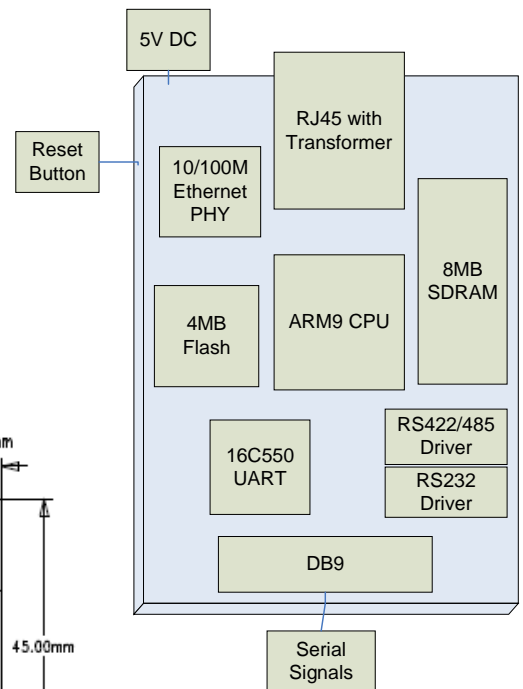**GPIO**
  0
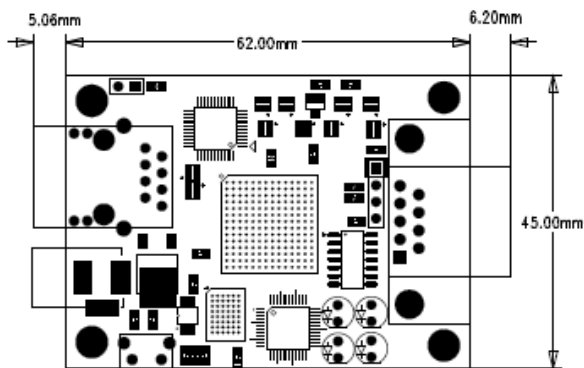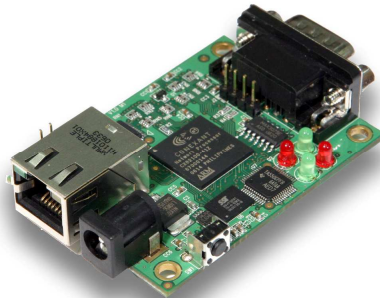**Programmable**
  No
Power
  5V DC
Dimension
  62 * 45 mm

Eddy-S2/Pin

- Powerful serial features
- 2 serial ports

Serial Port
  2 (Pin Header)
Serial Interface
  RS232/422/485
Ethernet Port
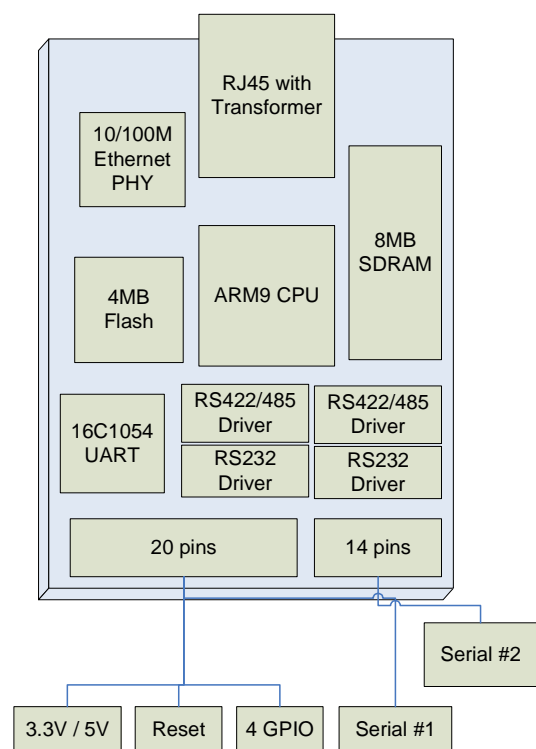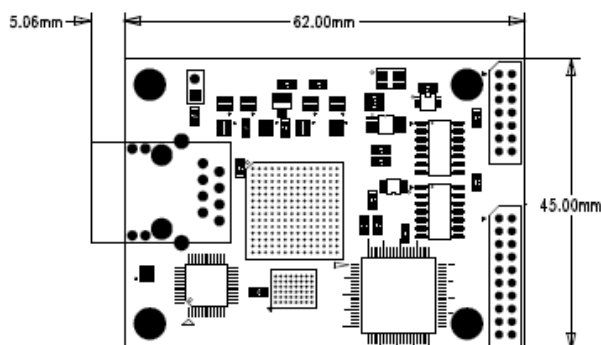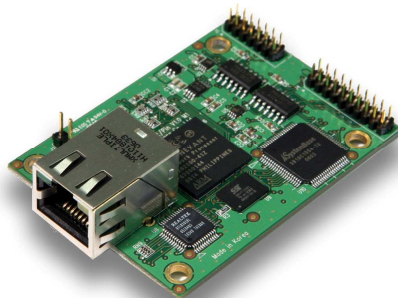 1 (RJ-45)
Ethernet Interface
  10/100Mbps
GPIO
  4
Programmable
  Yes
Power
  3.3V / 5V
Dimension
  62 * 45 mm

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Specifications

Network

Protocols	TCP, UDP, Telnet, SSH, SSL/TLS, DDNS, ICMP, DHCP, TFTP, HTTP, SNMP 1 & 2

LAN Port	10/100Mbps RJ-45 Port * 1
	  (Eddy-S1/Pin, S1/DB9, S2/Pin)
	10/100Mbps TTL * 1
	  (Eddy-S1/TTL)

Connection Type	Static IP, DHCP

Serial

Port	1 (Eddy-S1/Pin, S1/TTL, S1/DB9) 2 (Eddy-S2/Pin)
Interface	Selectable RS232/RS422/RS485
Speed	Max 921.6 Kbps
Signals	TX, RX, DTR, DSR, CTS, RTS, DCD
Protection	15KV Surge Protection for all signals

UART	16C550 with 16 byte FIFO
	  (Eddy-S1/Pin, S1/TTL, S1/DB9)
	16C1054 with 256 byte FIFO
	  (Eddy-S2/Pin only)

Data Bits	5, 6, 7, 8
Stop Bits	1, 2
Parity	None, Even, Odd
Flow Control	RTS/CTS, Xon/Xoff

Software

O/S	Embedded Linux (Kernel 2.4.x)
Mgmt. Tools	SNMP, Portview, Web
Configuration	Telnet, Web, Portview
Security	Telnet, Web ID/Password SSH, SSL/TLS
Application Upload	TFTP, FTP, Web
Web Service	Embedded Web Server
COM Port Redirection	SystemBase COM Port Redirector for Windows 98/ME/2K/XP/2003

Approvals

CE, FCC, RoHS compliant

Hardware

Processor	32-bit ARM9 Processor with 168MHz
Flash Memory	4 MB
SDRAM	8 MB
GPIO (Programmable IO)	4 (Eddy-S1/Pin, S2/Pin) 9 (Eddy-S1/TTL) 0 (Eddy-S1/DB9)

LED	100Base-Tx Link, LAN Tx
	  (Eddy-S1/Pin, S2/Pin)
	Power, Ready, Serial Tx, Rx
	  (Eddy-S1/DB9)
	None (Eddy-S1/TTL)

Power Input	Selective 3.3V / 5V (Eddy-S1/Pin, S1/TTL, S2/Pin) 5V DC only (Eddy-S1/DB9)
Power Consumption	260mA / 1.5W
Dimensions	55* 38mm (Eddy-S1/Pin) 50 * 35mm (Eddy-S1/TTL) 62 * 45mm (Eddy-S1/DB9, S2/Pin)
Weight	19g (Eddy-S1/Pin) 10g (Eddy-S1/TTL) 32.3g (Eddy-S1/DB9) 21.9g (Eddy-S2/Pin)

Environmental

Operating Temp.	0 ~ 50°C
Storage Temp.	-20 ~ 80°C
Humidity	5 ~ 95% Non-Condensing

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Selection Guide

	Eddy-S1/Pin	Eddy-S1/TTL	Eddy-S1/DB9	Eddy-S2/Pin
CPU	ARM940T(168MHz)			
Memory	4MB Flash / 8 MB SDRAM			
Serial Interface	RS232/422/485	TTL	RS232/422/485	RS232/422/485
Serial Port	1 * pin header	1 * TTL	1 * DB9	2 * pin header
Ethernet Interface	10BASE-T/100BASE-TX			
Ethernet Port	1 * RJ45	1 * TTL	1 * RJ45	1 * RJ45
GPIO	4	9	0	4
Power Input	3.3V / 5V pin input	3.3V / 5V pin input	5V power jack	3.3V / 5V pin input
Dimensions	55 * 38 mm	50 * 35 mm	62 * 45 mm	62 * 45 mm
Programmability	Yes	Yes	No	Yes

Ordering Information

Eddy-S1/Pin	1-port embedded device server module w/programmability (Pin Header serial interface)
Eddy-S1/TTL	1-port embedded device server module w/programmability (TTL serial interface)
Eddy-S1/DB9	1-port embedded device server module (DB9 serial interface)
Eddy-S2/Pin	2-port embedded device server module w/programmability (Pin Header serial interface)
Eddy-Serial DK	Development Kit for Eddy-Serial

Package Contents

Eddy-S1/Pin	Eddy-S1/Pin Module Manual / Utility CD
Eddy-S1/TTL	Eddy-S1/TTL Module Manual / Utility CD
Eddy-S1/DB9	Eddy-S1/DB9 Module Manual / Utility CD
Eddy-S2/Pin	Eddy-S2/Pin Module Manual / Utility CD
Eddy-Serial DK	Evaluation Board, Eddy Module (1EA), SDK/Compiler/Utility/Doc. CD, USB Cable for Firmware Download, LAN Cable, Serial Cable, Pin Header Cable, Board Support, Jumper, Power Adapter, Power Cable

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