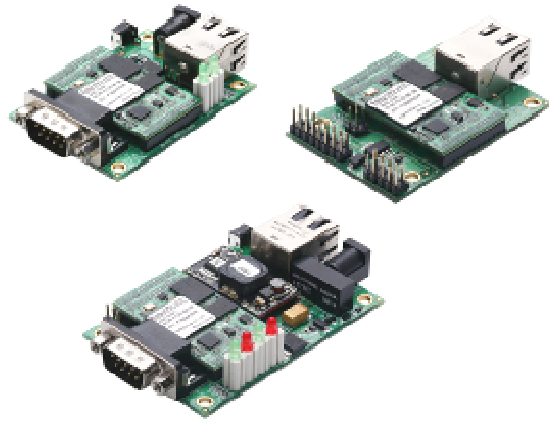


# Eddy™ Serial V2.0

## Serial to Ethernet Embedded Module

### Main Features

- 32-bit ARM9 CPU / 4MB Flash / 32MB SDRAM
- 10/100Mbps Ethernet Port
- RS232 or RS422/485 Serial Interface
- Max Serial Communication Speed : 921.6Kbps
- Pin Header / DB9 interface
- Supported by Dev Kit including SDK & API
- Operated by Real Time Linux, Lemonix™
- Supported by Eclipse based IDE, LemonIDE™
- Provides easy-to-use Windows utilities
  - COM Port Redirector, PortView™, TestView™
- Operating Temp : -40 ~ 85 °C



Eddy Serial to Ethernet modules are embedded device servers. These compact-sized modules are easily integrated on to your hardware design, supporting RS232, RS422, and RS485 serial interfaces upto 921.6Kbps. OEMs & Engineers can add network connectivity to their hardware design with these high-performance modules at a fraction of the time with least amount of efforts. LemonIDE, IDE based on Eclipse framework is also available to aid developers with an easy and simple means of programming their customized applications.



Eddy modules mounted on the Development Kit Board

### The best embedded solution for your customized application !

Eddys are distinguished with other embedded device servers in that it can upload and execute user's customized applications. With least amount of effort, developers can upload any socket / serial communication application that was designed on standard Linux environment with no or little modification.

Eddys can be deployed in various industrial fields immediately as an embedded device server without any customization using its default functionality.

Almost entire source codes for Eddy's functions are open to developers. Such openness provides users a chance to apply a wide variety of operations on Eddy, with considerably less limitations.

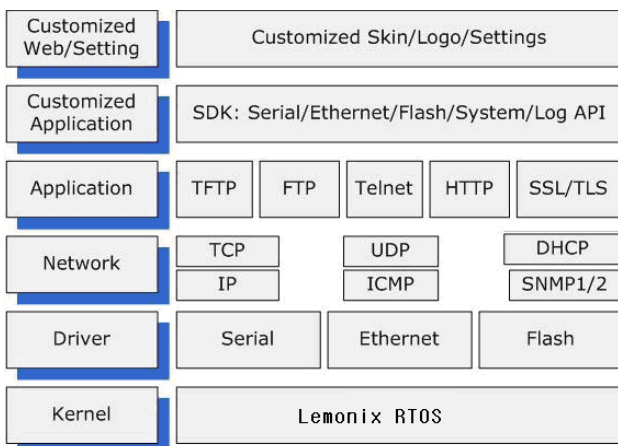
To help programmers work on their own application SDK (Software Development Kit) and LemonIDE an IDE (Integrated Development Environment) based on Eclipse is supported. With SDK, ready-to-run example codes and an easy to use LemonIDE, developers can easily build their own applications for Eddys.

## Industry's Most Powerful Specs

Tired of constraints on your embedded device server's 8-bit CPU and 256KB memory? Eddy provides a simple and complete relief to these concerns by adopting a 32-bit ARM9 CPU with 180MHz clock, 4MB Flash memory, and 32MB SDRAM. Your applications can be large in size and will run faster, in a more stable manner under the real time embedded Linux operating system, Lemonix.

## Real Time Linux - Lemonix™

Lemonix is a Real Time Linux built on Linux kernel 2.6.x. Standard Linux kernel 2.6.x has been revised to support Real Time capability while retaining the stable traits and merits of Linux kernel 2.6.x. Real time scheduler, preemptive kernel and lock-break methods have been implemented on Lemonix to guarantee a maximum response latency of under 100us enabling a stable and reliable means of real time communication.



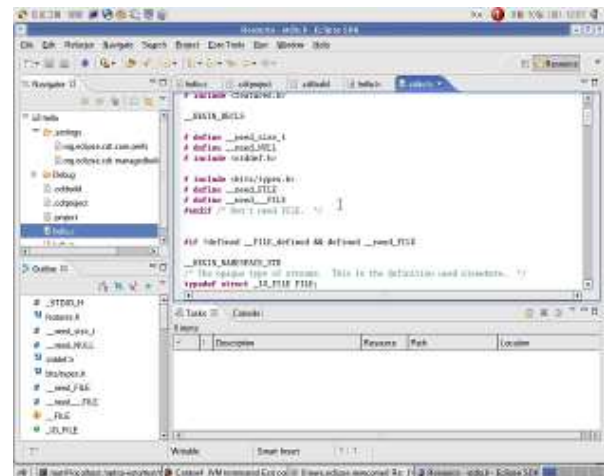
## SDK, API & Source Codes Support

Eddy is distinguished with other embedded device servers in that it can upload and execute customized user applications. To enable developers to program their own socket/serial communication applications with least amount of time and effort, SystemBase provides arrays of development support including, SDK (Software Development Kit), API (Application Programming Interface) and Source Codes to assist developments.

## Eclipse based IDE - LemonIDE™ Support

LemonIDE is an integrated development environment built on open source Eclipse framework. LemonIDE provides an easy & effective GUI (Graphical User Interface) for Application and Firmware Developments that runs on SystemBase's embedded real time Linux, Lemonix

LemonIDE encompasses GNU C/C++ Compiler, Source Code Editor and Debugger delivering a one-stop development environment solution to embedded developers with conveniences of simple mouse click execution.



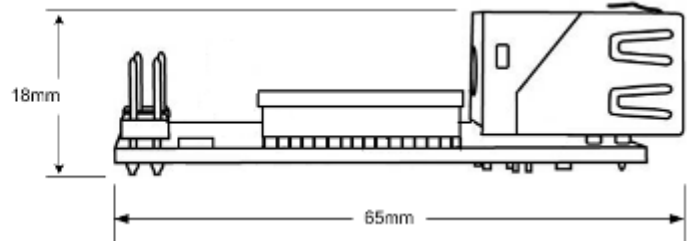
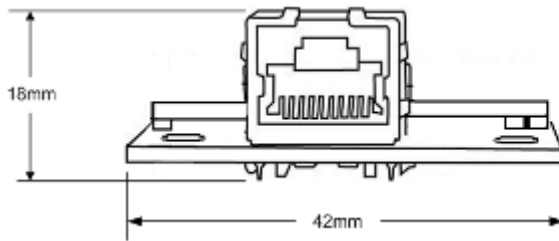
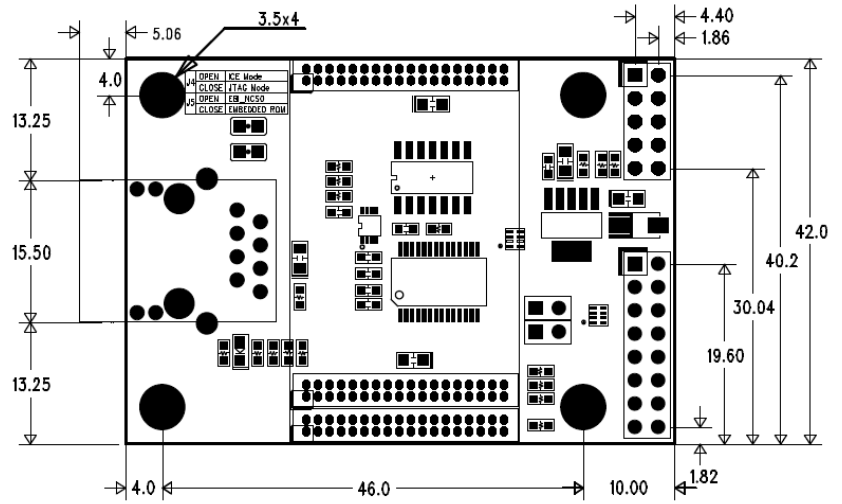
## Development Kit

Eddy Development Kit provides an easy testing and evaluation environment for Eddy applications. Before integrating Eddy to user's hardware, applications are first programmed and tested on the development board. Power, Ready, Communication Interface, and GPIO Serial Signal Status LEDs on the development board provides a visual guide in understanding Eddy's operating status.

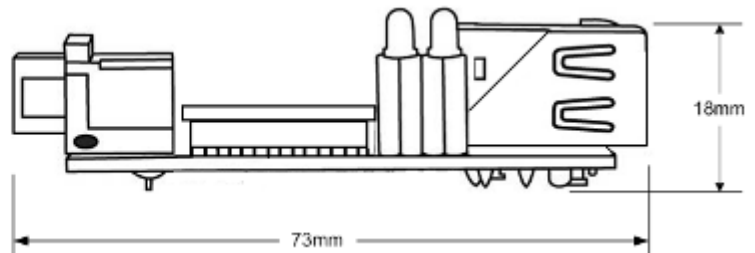
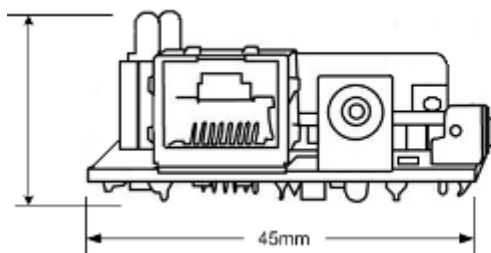
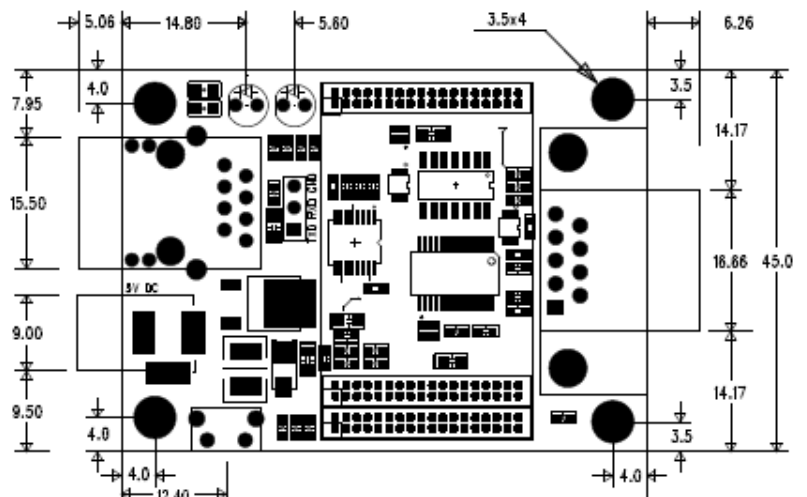
## Windows Utility Support

High featured and easy-to-use utilities to monitor and test your finalized products over network and serial interface are provided at no cost. SystemBase management utilities, COM port redirector, PortView and TestView enables an accurate monitor and full administration of your inventions.

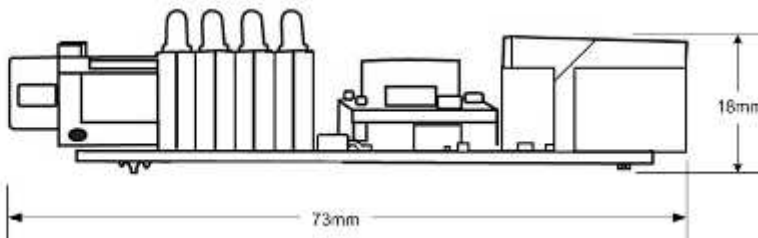
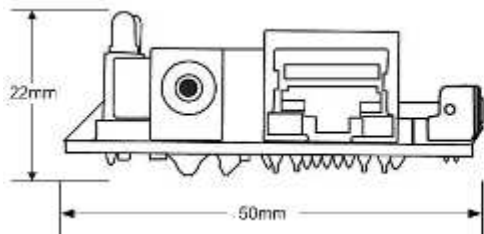
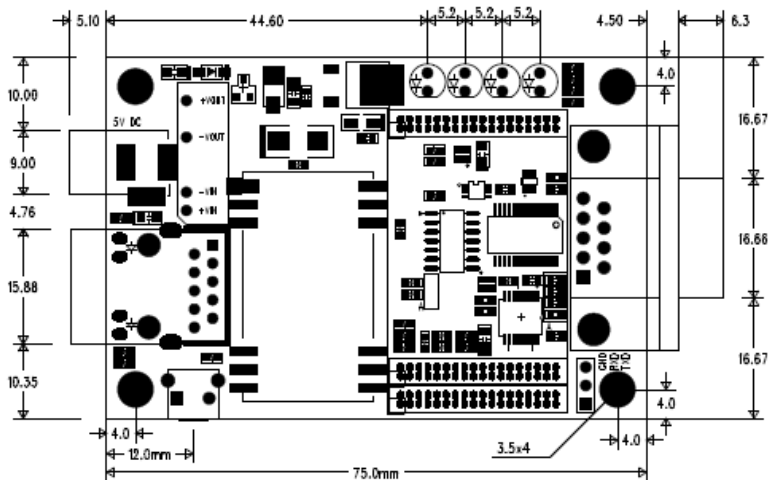
## Eddy-S1/PIN



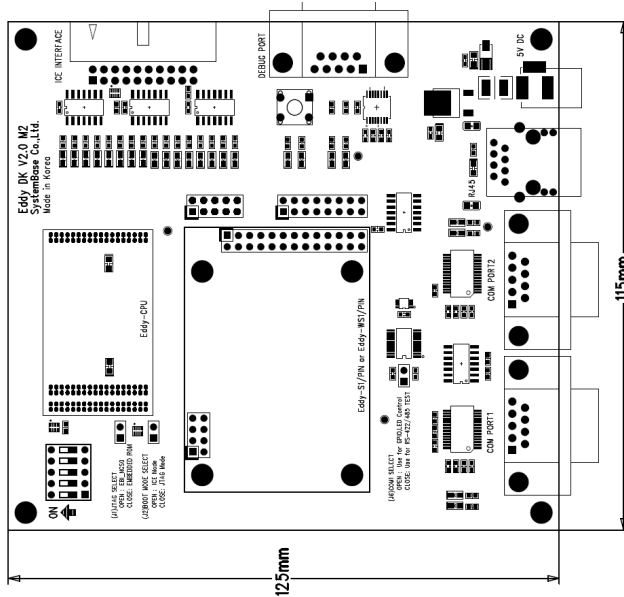
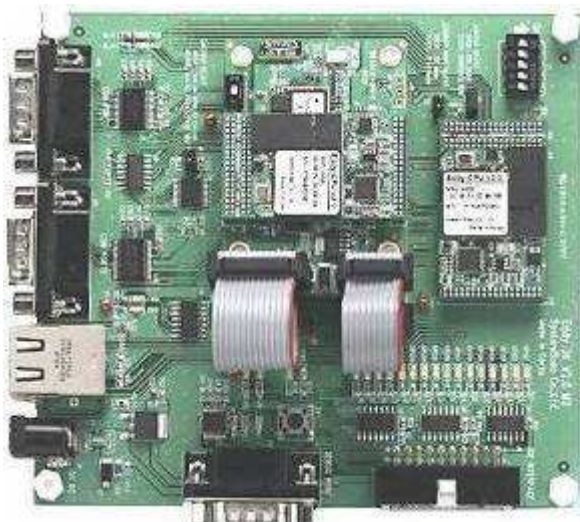
## Eddy-S1/DB9



## Eddy-S1/DB9-PoE



## Eddy™ Development Kit



## Eddy™ Serial to Ethernet Modules Specifications

|                               |                    | S1/Pin   | S1/Pin-C  | S1/DB9          | S1/DB9-C  | S1/DB9-PoE           | S1/DB9-PoE-C |
|-------------------------------|--------------------|--|-----------|-----------------|-----------|----------------------|--------------|
| <a href="#">H/W</a>           | CPU                | ARM926EJ-S (180MHz)  |           |                 |           |                      |              |
|                               | Memory             | 4MB Flash / 32 MB SDRAM  |           |                 |           |                      |              |
|                               | LED                | None   |           | Ready, DATA     |           | Tx, Rx, Ready, Power |              |
|                               | GPIO               | 4  |           | N/A             |           |                      |              |
|                               | Power Input        | 3.3V ~ 5V Pin Input  |           | 5V Power Jack   |           | 5V Power Jack or PoE |              |
|                               | Power Consumption  | 5V / 290 mA (1.5 W Max)  |           |                 |           |                      |              |
|                               | Dimensions         | 60 x 42 x 16 mm  |           | 62 x 45 x 19 mm |           | 75 x 50 x 19 mm      |              |
|                               | Weight             | 18.8 g   |           | 28.65 g         |           | 44.50 g              |              |
| <a href="#">S/W</a>           | Operating System   | Real Time Linux Lemonix (Kernel 2.6.x)                                   |           |                 |           |                      |              |
|                               | Mgmt. Tools        | SNMP, Portview, Web  |           |                 |           |                      |              |
|                               | Terminal           | Telnet, SSH  |           |                 |           |                      |              |
|                               | Application Upload | TFTP, FTP, Web   |           |                 |           |                      |              |
|                               | Web Service        | Embedded Web Server  |           |                 |           |                      |              |
| <a href="#">Serial</a>        | Serial Interface   | RS232  | RS422/485 | RS232           | RS422/485 | RS232                | RS422/485    |
|                               | Serial Port        | 1 x Pin Header   |           | 1 x DB9         |           |                      |              |
|                               | Serial Speed       | 150 ~ 921.6 Kbps   |           |                 |           |                      |              |
|                               | Signals            | TX, RX, DTR, DSR, CTS, RTS, DCD  |           |                 |           |                      |              |
|                               | Data Bits          | 5, 6, 7, 8   |           |                 |           |                      |              |
|                               | Stop Bits          | 1, 2   |           |                 |           |                      |              |
|                               | Parity             | None, Even, Odd  |           |                 |           |                      |              |
|                               | Flow Control       | RTS/CTS, Xon/Xoff  |           |                 |           |                      |              |
| <a href="#">Network</a>       | Ethernet Interface | 10/100 BASE-T (Auto MDIX)  |           |                 |           |                      |              |
|                               | Ethernet Port      | RJ45   |           |                 |           |                      |              |
|                               | Connection Type    | Static IP, DHCP  |           |                 |           |                      |              |
|                               | Protocol           | TCP, UDP, Telnet, SSH, SSL/TLS, DDNS, ICMP, DHCP, TFTP, HTTP, SNMP 1 & 2 |           |                 |           |                      |              |
| <a href="#">Environmental</a> | Operating Temp     | -40 ~ 85 °C  |           |                 |           |                      |              |
|                               | Storage Temp       | -60 ~ 150 °C   |           |                 |           |                      |              |
|                               | Humidity           | 5 ~ 95% Non-Condensing   |           |                 |           |                      |              |
| <a href="#">Programming</a>   |                    | Support  |           |                 |           |                      |              |
| <a href="#">Approvals</a>     |                    | CE Class A, FCC Class A, RoHS compliant                                  |           |                 |           |                      |              |

## Eddy™ Development Kit Specifications

|                          | <b>Eddy Development Kit</b>  |
|--------------------------|--|
| LED                      | Power, Ready, 16 Programmable IO<br>Console and Serial TxLED, RxLED  |
| Switch                   | Product Setting Switch   |
| Jumper Switch            | Boot Mode Select, JTAG Select, RS422/485 Select  |
| Serial Port              | 2 x DB9 Male, Port 1 : (RS232, RS422, RS485), Port 2 : RS232 Only  |
| Console Port             | 1 x DB9 Male (RS232)   |
| LAN Port                 | 1 x RJ45   |
| ICE Port                 | Used for Flash Image uploads   |
| Reset Button             | Factory Default & warm boot  |
| Serial Interface         | RS232, RS422/RS485 Selectable<br>(RS422 & RS485 selected by S/W)   |
| Module Connection Socket | 108 Pin header for Eddy-CPU® connections<br>26 Pin header for Eddy-S1/PIN or Eddy-WS1/PIN Connections<br>34 Pin TTL for Eddy-WS1/TTL Connections |
| Power Input              | 5V DC (400 mA)   |
| Dimensions               | 115 X 125 mm   |

### Ordering Information

|              |   |
|--------------|---|
| S1/PIN       | RS232 Pin Header Interface<br>3.3 ~ 5V Input Power            |
| S1/PIN -C    | RS422/485 Pin Header Interface<br>3.3 ~ 5V Input Power        |
| S1/DB9       | RS232 DB9 Serial Interface<br>5V Input Power                  |
| S1/DB9-C     | RS422/485 DB9 Serial Interface<br>5V Input Power              |
| S1/DB9-PoE   | RS232 DB9 Serial Interface<br>5V(power jack) or PoE( 48V)     |
| S1/DB9-PoE-C | RS422/485 DB9 Serial Interface<br>5V(power jack) or PoE( 48V) |
| Eddy DK      | Eddy Development Kit  |

### Package

|              |  |
|--------------|--|
| S1/PIN       | S1/Pin or S1/Pin-C Module,   |
| S1/Pin-C     | Manual / Utility CD  |
| S1/DB9       | S1/DB9 or S1/DB9-C Module  |
| S1/DB9-C     | Manual / Utility CD  |
| S1/DB9-PoE-S | S1/DB9-PoE or S1/DB9-PoE-C Module  |
| S1/DB9-PoE-C | Manual / Utility CD  |
| Eddy DK      | Test Board & 1 Eddy-Series Module<br>SDK/IDE/Compiler/Documents/Utility CD<br>LAN Cable, Serial Cable,<br>Pin Header Cable, Board Support,<br>Jumper, Power Adaptor, Power Cable |