# EMC8432
# Ethernet to RS232 converter module

# User's Manual (V1.2)

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# Correction record

| Version | Record |
|---------|--------|
| 1.0 | firmware version 1.0 up |
| 1.1 | Add System Reset |
| 1.2 | 1. Modify 3.5.5 dimension |
| | 2. Add 4.2 dimension Image |

# Contents

# Notes on hardware installation

Please register as user's club member to download the
"Step_by_step_installation_of_Ethernet_module" document from http://automation.com.tw

# 1. Forward

Thank you for your selection of Ethernet to serial converter module EMC8432.

Thanks to the booming of network, Ethernet become a reliable and low cost solution for data communication. To utilize the Ethernet as data communication highway of industrial control devices is more attractive than ever. EMC8432 module is a Ethernet to serial converter and I/O control module. It is an RS232 to Ethernet device, which provide an easy to up grade your existing RS232 devices to Ethernet. The extra 8-bit programmable I/O give you compact solution when digital I/O is required.

With the module, we provide the dll's of Window's or Linux system, enabling you coding the flexible application as you need. Stable, high reliability and remote addressable module give you a new approach of application.

In the same series:
EMC8485    Ethernet to RS422/485 converter with 8-bit I/O

Any comment is welcome,
please visit our website
http://www.automation.com.tw/
http://www.automation-js.com/    for the up to date information.

# 2. Features

- Over-voltage protection on digital input

- Various IO combinations : 8 bit configurable I/O's, any bit can be input or output

- High drive capacity on digital output

- Digital I/P as counter input

- Baudrate up to 921.6K

- Wide power range

- Standalone mode：step sequence control

- IP re-assignment

- 10/100M auto detection

- Software key function

- Peer to peer response time <2ms

# 3. Specifications

3.1 RS232

3.1.1    Baud rate: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 921600

3.1.2    Data bits: 5, 6, 7, 8

3.1.3    Stop bits: 1, 1.5,

3.1.4    Parity: None, Even, Odd


3.2 Digital input

3.2.1    Input points: max 8 (Configurable)

3.2.2    Logic high level: 3.15V(min)

3.2.3    Logic low level: 1.35V(max)

3.2.4    Over-voltage protection: 60Vdc(max)

3.2.5    Over-current protection: 50mA(max)


3.3 Digital output

3.3.1    Transistor output: max 8 (Configurable)

3.3.2    Transistor capacity: 50mA, 45Vdc(max)


3.4 Ethernet

3.4.1    10/100M auto switch x 2 port

3.4.2    Peer to peer response time <2ms


3.5 General

3.5.1    Power requirement: 12Vdc ~24Vdc

3.5.2    Operation Temperature: 0 ~ +70 degree C

3.5.3    Storage Temperature: -20 ~ +80 degree C

3.5.4    Operation Humidity: 5~95% RH, non-condensing

3.5.5    Dimension: 115.4(D)*136(W)*34(H) mm
                    4.6(D)*5.4(W)*1.4(H) in

# 4. Layout and dimensions

### 4.1 EMC8432 Layout
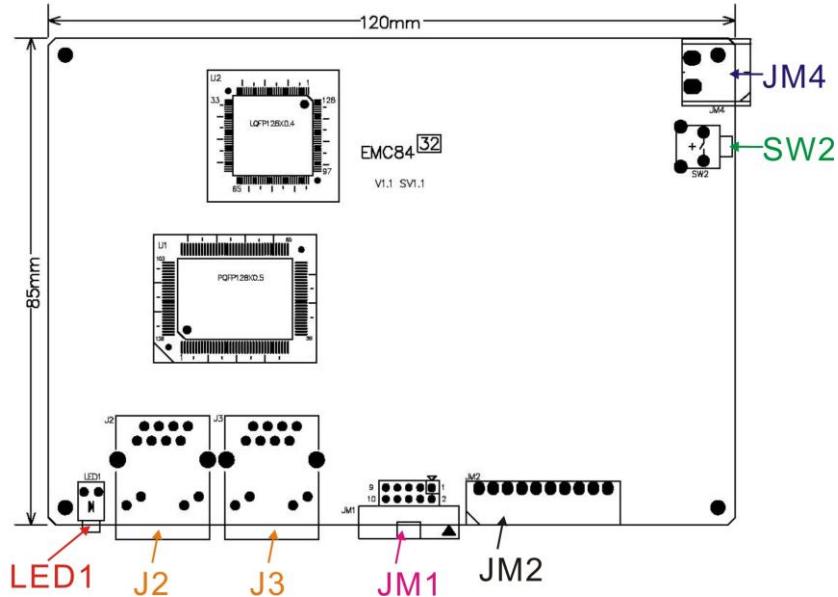


LED1: system active LED

J2,J3: Ethernet RJ45 socket

JM1: RS232 connector

JM2: I/O connector

JM4: external power 24V connector

SW2: system reset switch

### 4.2 EMC8432 Dimension
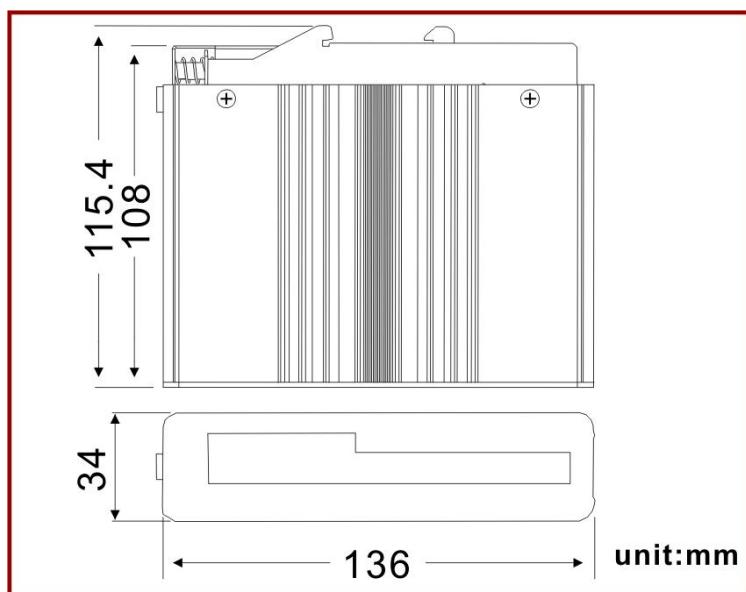
# 5. Pin definitions

## 5.1 JM1 RS232 (EMC8432)

| PIN | Descriptions | | PIN | Descriptions |
|-----|--------------|---|-----|--------------|
| 6 | DSR | | 1 | DCD |
| 7 | RTS | | 2 | RXD |
| 8 | CTS | | 3 | TXD |
| 9 | RI | | 4 | DTR |
| | | | 5 | GND |

**RS232**

DSR 6  1 DCD
RTS 7  2 RXD
    8  3 TXD
CTS 8  4 DTR
RI  9  5 GND

**DB9PM**

## 5.2 JM2 pin definitions

| +Ve* | 1 |
|------|----|
| IO_0 | 2 |
| IO_1 | 3 |
| IO_2 | 4 |
| IO_3 | 5 |
| IO_4 | 6 |
| IO_5 | 7 |
| IO_6 | 8 |
| IO_7 | 9 |
| GND | 10 |
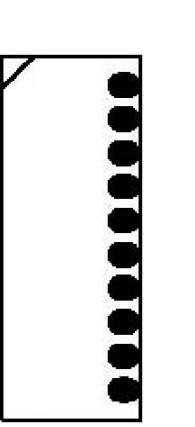
* +Ve can floating or voltage input (voltage range +3.3V ~ +24V)
* +Ve can apply different voltage as you need.

# 6. I/O Interface diagram

6.1 I/O diagram
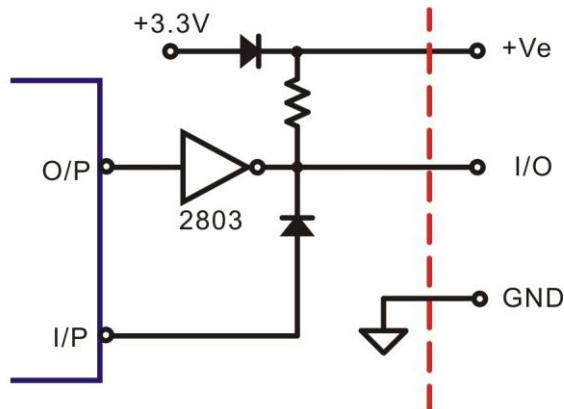


**Note:** If +Ve is externally applied +24V then the IO_0 ~ IO_7 will be also applied.

# 7.  System Reset

The system reset switch SW2 has provide normal system reset and reset to default functions.

### 7.1  Normal system reset

Push the SW2 for more than 5 seconds, the power LED will flick at 3 HZ to signal the system has already reset. Once you release the switch, the LED will return to normal flick rate.

### 7.2  Reset to default

Push the switch while power on (We suggest to push the switch first then power on and wait for 3 seconds) for 3 seconds, the LED will:

1. stop flick

2. flicking at 3 Hz--- system now setting default data

3. flicking at normal speed --- system now already reset, you can release the switch.

| item | default value |
|------|---------------|
| IP | 192.168.0.100 |
| password | 12345678 |
| socket port | 6936 |
| IO_config | ALL input (0xFF) |
| polarity | ALL inactive (0x0) |
| WDT timer | 1second(0xA) |
| WDT output state | ALL inactive (0x0) |
| Standalone function | ALL clean (0x0) |
| Power on standalone | Disable (0x0) |

# 8. Applications

- RS232 to ethernet converter
- Ethernet to RS232 converter
- Remote signal input
- Remote signal output
- Standalone step sequence controller
- Multi-channel low speed counter (100Hz)

# 9. <u>Ordering information</u>

| PRODUCT | DESCRIPTIONS |
|---------|--------------|
| EMC8432 | Ethernet module to RS232 (8 IO) Module (include M23406) |
| M23406 | 9 pin D type male cable 10cm |
| JD52000 | 110/220Vac to 24Vdc @1.5A power supply |
| JD52026 | 110/220Vac to 24Vdc @0.75A power adapter |