

MD-N32

Serial to Ethernet Gateway Installation and Operating Guide



ROSSLARE
SECURITY PRODUCTS

Copyright © 2014 by Rosslare. All rights reserved.

This manual and the information contained herein are proprietary to ROSSLARE ENTERPRISES LIMITED and/or its related companies and/or subsidiaries' (hereafter: "ROSSLARE"). Only ROSSLARE and its customers have the right to use the information.

No part of this manual may be re-produced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the express written permission of ROSSLARE.

ROSSLARE owns patents and patent applications, trademarks, copyrights, or other intellectual property rights covering the subject matter in this manual.

TEXTS, IMAGES, AND ILLUSTRATIONS INCLUDING THEIR ARRANGEMENT IN THIS DOCUMENT ARE SUBJECT TO THE PROTECTION OF COPYRIGHT LAWS AND OTHER LEGAL RIGHTS WORLDWIDE. THEIR USE, REPRODUCTION, AND TRANSMITTAL TO THIRD PARTIES WITHOUT EXPRESS WRITTEN PERMISSION MAY RESULT IN LEGAL PROCEEDINGS.

The furnishing of this manual to any party does not give that party or any third party any license to these patents, trademarks, copyrights or other intellectual property rights, except as expressly provided in any written agreement of ROSSLARE.

ROSSLARE reserves the right to revise and change this document at any time, without being obliged to announce such revisions or changes beforehand or after the fact.

Table of Contents

1. Introduction	7
2. Specifications	8
3. Connection and Configuration	9
3.1 Hardware Requirements	9
3.2 Software Requirements	9
3.3 Connecting the MD-N32	9
3.3.1 Network Connection	10
3.3.2 Serial Connection	10
3.3.3 Power Connection	11
3.3.4 Network Connection Diagram	11
3.4 Configuring the AS-IP01	11
3.4.1 MAC Address Table	12
3.4.2 Buttons	13
3.4.3 Network Section	13
3.4.4 Device Type	14
3.4.5 Serial Speed	14
3.4.6 Options Section	14
3.4.7 Status	15
3.5 Configuring the MD-N32.....	15
A. Limited Warranty	18

List of Figures

Figure 1: Front View of the MD-N32	10
Figure 2: Rear View of the MD-N32.....	10
Figure 3: TCP/IP Network Connection.....	11
Figure 4: AS-IP01 Configuration Utility GUI	12
Figure 5: AS-IP01 Configuration Utility – Search Button Results.....	16

List of Tables

Table 1: AS-IP01 Configuration Utility Buttons	13
Table 2: Network Section Fields	13

Notice and Disclaimer

This manual's sole purpose is to assist installers and/or users in the safe and efficient installation and usage of the system and/or product, and/or software described herein.

BEFORE ATTEMPTING TO INSTALL AND/OR USE THE SYSTEM, THE INSTALLER AND THE USER MUST READ THIS MANUAL AND BECOME FAMILIAR WITH ALL SAFETY REQUIREMENTS AND OPERATING PROCEDURES.

- The system must not be used for purposes other than those for which it was designed.
- The use of the software associated with the system and/or product, if applicable, is subject to the terms of the license provided as part of the purchase documents.
- ROSSLARE exclusive warranty and liability is limited to the warranty and liability statement provided in an appendix at the end of this document.
- This manual describes the maximum configuration of the system with the maximum number of functions, including future options. Therefore, not all functions described in this manual may be available in the specific system and/or product configuration you purchased.
- Incorrect operation or installation, or failure of the user to effectively maintain the system, relieves the manufacturer (and seller) from all or any responsibility for consequent noncompliance, damage, or injury.
- The text, images and graphics contained in the manual are for the purpose of illustration and reference only.
- All data contained herein subject to change without prior notice.
- In no event shall manufacturer be liable for any special, direct, indirect, incidental, consequential, exemplary or punitive damages (including, without limitation, any and all damages from business interruption, loss of profits or revenue, cost of capital or loss of use of any property or capital or injury).
- All graphics in this manual are for reference only, some deviation between the image(s) and the actual product may occur.
- All wiring diagrams are intended for reference only, the photograph or graphic of the PCB(s) are intended for clearer illustration and understanding of the product and may differ from the actual PCB(s).

1. Introduction

The MD-N32 is a Serial to Ethernet Gateway. One MD-N32 unit is required (unless it is connected to a Rosslare software product that supports direct TCP/IP operation, in which case the PC's internal LAN card may be used).

A Serial to Ethernet Gateway allows connectivity for systems with Legacy serial interface communication, such as RS-232 or RS-485, with local networks and Internet.

The concept is to send and receive information between varied PC-managed products (access control systems, guard control, security systems, and so on) via a local network or Internet, thereby saving on serial cabling installation, and enabling connections to remote sites (most modern offices are already networked).

As a compact plug-in module, the MD-N32 can easily connect to most products without modification. The module receives serial communication, converts it to TCP/IP format, and sends it over the LAN or Internet to the PC. From the other end, the module converts communications sent from the PC over the network back to serial format into the device.

All the setting and configuration is done using the AS-IP01 Configuration Utility PC software or by other Rosslare software that supports a direct connection to hardware through TCP/IP (refer to the software manuals of the specific products.) Once the module is configured, the information is saved in a non-volatile memory within the module.

The MD-N32 has two indication LEDs – the green LED indicates LAN connectivity (Link) and the red LED indicates power supply operation (Power).

2. Specifications

Electrical Characteristics

Input Power	10 to 16 VDC
Power Consumption	Typical: 75 mA Maximum: 115 mA

Transmission and Connectivity Characteristics

Hardware Protocols	TCP, UDP, IP, ARP, ICMP, Ethernet MAC
Network Interface	10/100 Base-T Ethernet (Auto Detection) RJ-45 jack for LAN connection
Serial Port	D9 Male Connector RS-232
Data	1, 4, 6, 7, 8, 9 – N.C. 2 – Rx 3 – Tx 5 – GND Signal
MCU	32 bit micro-controller
Serial Line Format	8-N-1, 8-O-1, 8-E-1, 7-O-1, 7-E-1
Serial Flow Control	None, XON/XOFF
Transmission Speed	1200 bps to ~115 Kbps

Environmental Characteristics

Operating Temp. Range	0°C to 70°C (32°F to 158°F)
Operating Humidity Range	10 to 90% (non-condensing)

Dimensions

Height x Width x Depth	110 x 63 x 39 mm (4.33 x 2.48 x 1.54 in.)
Weight	92 g (3.25 oz)

3. Connection and Configuration

3.1 Hardware Requirements

The following are the hardware units required to connect the MD-N32 to the remote unit.

- Standard LAN cables – RJ-45 plugs on both sides
- 12 VDC (400 mA) power adaptor, connected to the unit's DC jack
- MD-14 RS-485 to RS-232 Converter (for RS-485 units or RS-232 cable)

3.2 Software Requirements

The following are the requirements for the software installation of the AS-IP01 Configuration Utility PC software.

Your PC configuration must be able to support one of the following operating systems:

- Windows[®] 98/ME
- Windows[®] NT/2000/XP

One of the above operating systems must be installed on your computer.

The PC must have a LAN network connection to configure the MD-N32. Both the PC and external unit must be connected to the same LAN through a hub. It is also possible to use the MD-N32 over a WAN, but this requires network router settings. (It is recommended that system administrators be responsible for setting network routers.)

3.3 Connecting the MD-N32

Before setting, ask your network administrator for an IP address, ports, and subnet masks for each MD-N32.

3.3.1 Network Connection

Connect each MD-N32 to the LAN using the LAN cables through the RJ-45 connector on each unit of the MD-N32 (Figure 1).

Figure 1: Front View of the MD-N32



Make sure that the units are connected to the same LAN through a hub.

3.3.2 Serial Connection

3.3.2.1 Unit Side

Connect the unit to the MD-N32 D9 jack using an RS-232 cable (Figure 2), or use Rosslare's MD-14 when necessary (RS-485 to RS-232 Converter).

Figure 2: Rear View of the MD-N32



3.3.2.2 PC Side

If the MD-N32 is connected to the PC's serial port, connect the MD-N32's D9 jack to the PC using a cross-linked RS-232 cable.

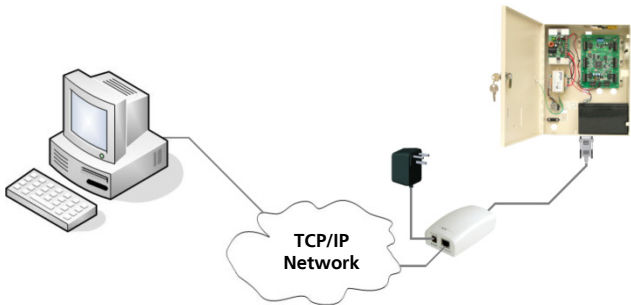
3.3.3 Power Connection

Connect a 12 VDC (200 mA) power adaptor to each MD-N32 unit. Ensure that the MD-N32 Power LED is on.

3.3.4 Network Connection Diagram

Figure 3 shows the network connection using an MD-N32 and PC network card.

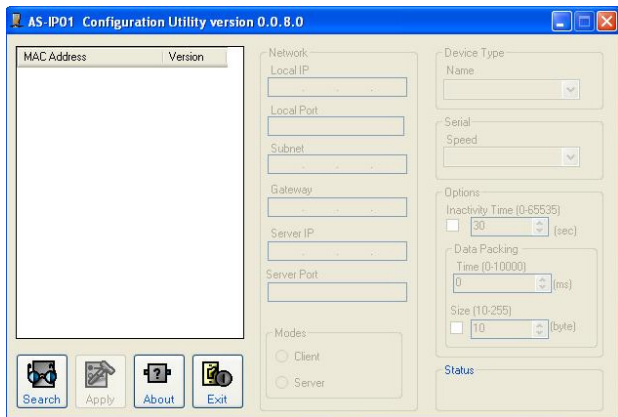
Figure 3: TCP/IP Network Connection



3.4 Configuring the AS-IP01

Once you have installed the AS-IP01 Configuration Utility according to the installation's automated steps, the GUI appears as shown in Figure 4.

Figure 4: AS-IP01 Configuration Utility GUI



The AS-IP01 Configuration Utility includes the following features:

- A MAC address table in the left pane
- Network, Modes, Device Type, Serial, and Options sections in the right pane
- Search, Apply, About, and Exit buttons in the bottom left pane

Each section of the AS-IP01 Configuration Utility and its parameters are labeled in Figure 4. An explanation of each section and parameter is provided in the following subsections.

3.4.1 MAC Address Table

3.4.1.1 MAC Address

When the MD-N32 units connected to the network are found, the units are displayed as MAC addresses in the table.



The MAC number is a long 12-digit number that can be found on a sticker located on the bottom side of the MD-N32 unit.

3.4.1.2 Version

The MD-N32 firmware version is displayed.

3.4.2 **Buttons**

Table 1 presents the buttons that appear in the AS-IP01 Configuration Utility.

Table 1: AS-IP01 Configuration Utility Buttons

Field	Description
Search	Clicking Search retrieves all operating MD-N32 units connected to the network. The results are displayed as MAC addresses in the table.
Apply	Clicking Apply changes the configuration of the selected MD-N32 unit; the selected unit is initialized with the newly entered values.
About	Clicking About displays the details of the AS-IP01 Configuration Utility.
Exit	Clicking Exit exits the software

3.4.3 **Network Section**

Once a unit is selected in the MAC Address table, the network information of the selected unit is displayed in this section.

You can change the network configuration of the unit by inserting and/or revising the information in the following parameters of the Network section.

Table 2 presents the fields in the Network section.

Table 2: Network Section Fields

Field	Description
Local IP and Local Port	The IP address of the unit
Subnet	The subnet address of the unit
Gateway	The gateway address
Server IP and Server Port	Defines the server's IP and port when the unit is set to operate in Client mode

Connection and Configuration

Field	Description
Modes	<p>The network mode of operation:</p> <ul style="list-style-type: none">• Client mode – Unit operates in Client mode and attempts to connect to the specified server's IP address and port• Server mode – Unit operates in Server mode and listens in on the specified Listen port and awaits client connection



In Client mode, the inactivity time should be set above 30 seconds (the default is 45 seconds). In Server mode, the inactivity timer of the server is set to 0 by default. The client closes and restarts the socket every 45 seconds. When the server is reset, the link between the client and the server is resumed after 45 seconds. While data transfer may fail when the socket is restarted, the transfer should be successful the next time the socket is restarted.



Data transfer does not fail as long as “keep alive” data is maintained in the TCP socket.



A socket connection should be in place when the data is sent from a serial device. If not, a connection may be initiated to the server IP and port, and the data may then be resent.

3.4.4 Device Type

This section contains the name of the product (MD-N32).

3.4.5 Serial Speed

This section lists the product's speed, which can be configured as desired.

Click **Apply** for any changes in the device type or serial speed to take effect.

3.4.6 Options Section

The Options section includes the following parameters:

3.4.6.1 Inactivity Time

The inactivity time is intended for use with the TCP channel when a link is established. If the inactivity timer has expired, the channel is closed to data transfer. Data transfer resumes once the MD-N32 has been set to the client. The inactivity timer range may be 0 (the default, TCP channel is always ON) or from 30 to 65,535 seconds.

3.4.6.2 Data Packing

This options allows you to designate conditions for Serial to Ethernet data transmission. The two conditions are Time and Size, with Time packing as the default.

- Time – Designates a time frame for periodic transmission, between 0 and 10,000 milliseconds.
- Size – Select the checkbox to enable the size packing feature, and then designate the data size for transmission based on data packet size, between 10 and 255 bytes.

After changes are made, click **Apply** for the changes to take effect.

3.4.7 Status

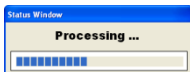
The Status describes the status of the selected MAC (for example, Configured).

3.5 Configuring the MD-N32

To configure the MD-N32:

1. Run the AS-IP01 Configuration Utility PC software.
2. Click **Search**.

The *Processing* window appears.



3. When the search is complete, ensure that the correct MD-N32 MAC addresses appear in the MAC Address table (Figure 5).

Figure 5: AS-IP01 Configuration Utility – Search Button Results

AS-IP01 Configuration Utility version 0.0.8.0

MAC Address	Version
00:50:C2:78:9C:09	5.1
00:50:C2:78:9C:19	5.1

Network

Local IP: 192 . 168 . 20 . 68

Local Port: 1000

Subnet: 255 . 255 . 255 . 0

Gateway: 192 . 168 . 20 . 250

Server IP: 192 . 168 . 20 . 69

Server Port: 2000

Device Type

Name: MD-N32

Serial

Speed: 9600

Options

Inactivity Time (0-65535): 30 (sec)

Data Packing

Time (0-10000): 1 (ms)

Size (10-255): 10 (byte)

Modes

Client

Server

Status

Not configured

Buttons: Search, Apply, About, Exit



It is not possible to run two sets of AS-IP01 simultaneously on the same PC or on the same network. It is also not recommended that AS-IP01 be run simultaneously with some software applications either based on Microsoft® Visual Basic 6 or featuring TCP/IP support, since the AS-IP01 may malfunction. For example, it is not recommended to run AS-IP01 on the same PC and at the same time as Rosslare's AxTraxNG™ software.

4. Select the MAC Address of the MD-N32 unit that is connected to the applicable networked unit.
5. In the Network section, in the **Local IP** and **Local Port** text boxes, enter the first IP Address and port number (1000 recommended) supplied by your network administrator.
6. In the **Subnet** text box, enter the supplied subnet.
7. In the **Server IP** text box, enter the second IP address and port number (1000 recommended).
8. In Modes, select either **Client** or **Server**, as required.

9. Click **Apply** to send the configuration to the unit.
10. Run the applicable application software for the networked unit.

A. Limited Warranty

The full ROSSLARE Limited Warranty Statement is available in the Quick Links section on the ROSSLARE website at www.rosslaresecurity.com.

Rosslare considers any use of this product as agreement to the Warranty Terms even if you do not review them.



MD-N32

Asia Pacific, Middle East, Africa

Rosslare Enterprises Ltd.

Kowloon Bay, Hong Kong

Tel: +852 2795-5630

Fax: +852 2795-1508

support.apac@rosslaresecurity.com

United States and Canada

Rosslare Security Products, Inc.

Southlake, TX, USA

Toll Free: +1-866-632-1101

Local: +1-817-305-0006

Fax: +1-817-305-0069

support.na@rosslaresecurity.com

Europe

Rosslare Israel Ltd.

Rosh HaAyin, Israel

Tel: +972 3 938-6838

Fax: +972 3 938-6830

support.eu@rosslaresecurity.com

Latin America

Rosslare Latin America

Buenos Aires, Argentina

Tel: +54-11-4001-3104

support.la@rosslaresecurity.com

China

Rosslare Electronics (Shenzhen) Ltd.

Shenzhen, China

Tel: +86 755 8610 6842

Fax: +86 755 8610 6101

support.cn@rosslaresecurity.com

India

Rosslare Electronics India Pvt Ltd.

Tel/Fax: +91 20 40147830

Mobile: +91 9975768824

sales.in@rosslaresecurity.com

ROSSLARE
SECURITY PRODUCTS
www.rosslaresecurity.com



0706-0960055+02