

# INSTALLATION AND USER GUIDE

## NMC Gateway



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## 1 DOCUMENT SUMMARY

This document describes the Netafim Gateway box, its place in the context of the NMC Air communication scheme, and its installation procedure.

## 2 GATEWAY OVERVIEW

The Netafim Gateway is part of the connection between the realm of controllers and Internet communication.

Netafim controllers can be connected in a network of devices; this network works on propriety Netafim protocols. Netafim developed the Gateway device to function as part of the bridge between the controller network and the higher end systems. Requests for information or actions are sent to the gateway in an XML format (for requests' syntax specifications, see separate documentation). This request is relayed by the Gateway to the specific controllers in the NMC Air network in an appropriate form.

### COMPONENTS

- Netafim Gateway
- Optional: Communication device
- Server
- Netafim Controllers

## 3 NETWORKING DIAGRAM

The Gateway is connected to the Netafim controller network with a 485 cable and via an RJ-45 cable to an internet enabled network.

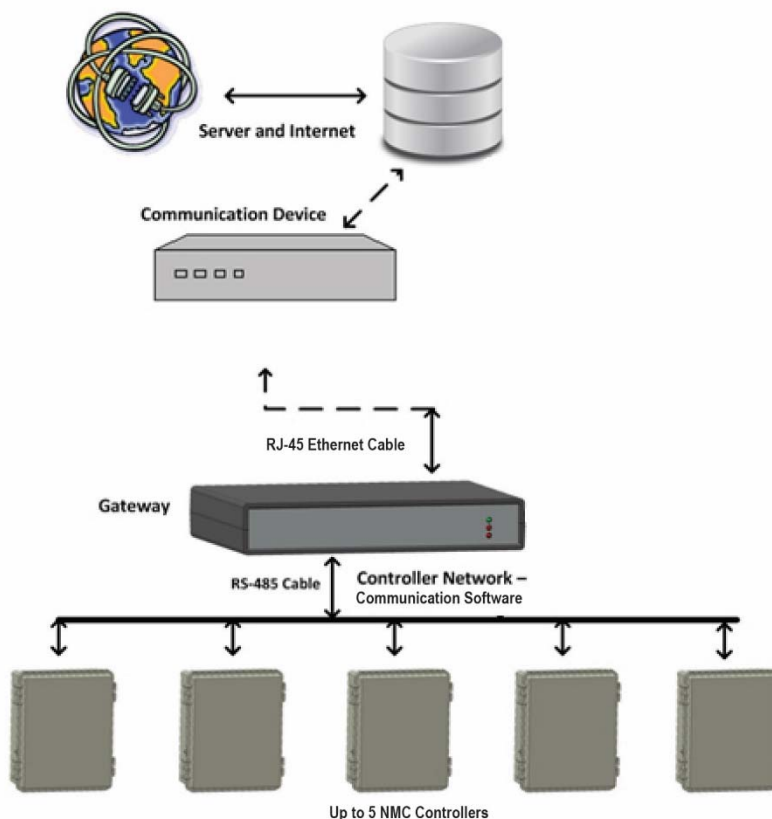


Figure 1

# INSTALLING THE GATEWAY

## 4 INSTALLING THE GATEWAY

- Unit Installation
- Controller Network Wiring

### 4.1 Unit Installation

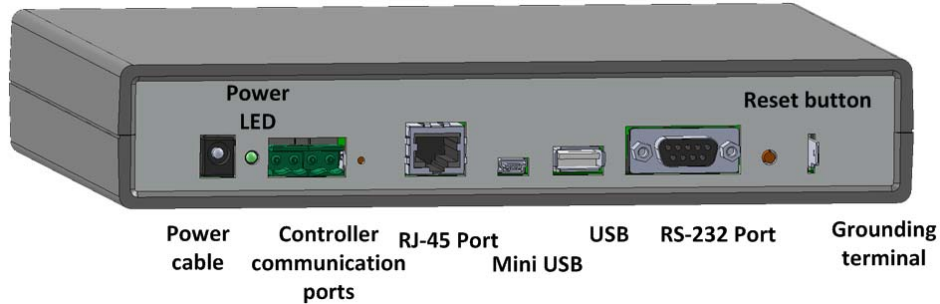


Figure 2

#### To install the unit:

1. Connect a grounding cable to the grounding terminal.

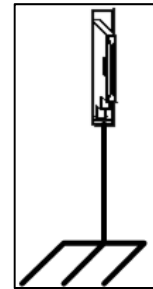



Figure 3

2. Apply AC power to the Gateway. The rear panel Power LED lights up.
3. Connect the Gateway to the internet using the RJ-45 ethernet cable. The Gateway uses DHCP by default.
4. Wire the controller communication ports as shown in Figure 4.

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 The USB ports are for Netafim's use only.

### 4.2 Controller Network Wiring

Refer to Figure 4:

- install a 120 ohm terminator at the network edge (the last controller)

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 The Gateway comes with a 120 ohm terminator installed. Do not install a terminator on that side of the network.

- in the daisy chain, the Gateway must be at the beginning of the chain

# INSTALLING THE GATEWAY

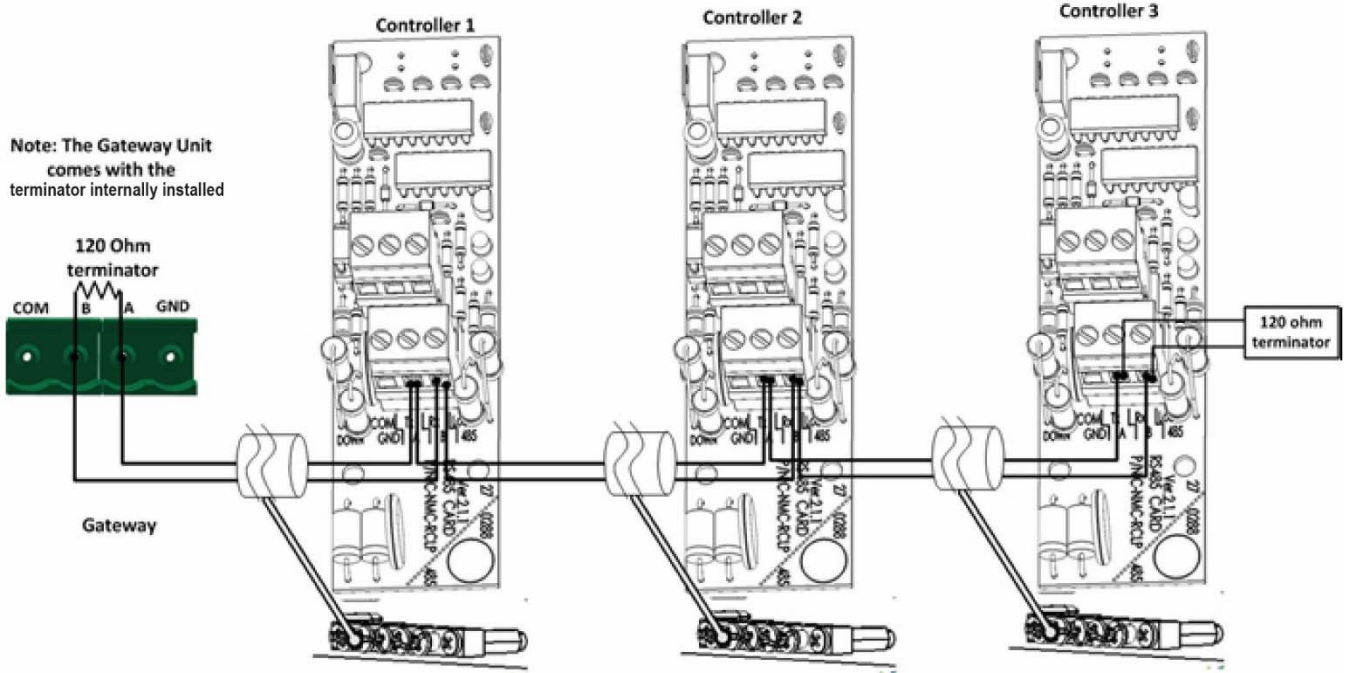


Figure 4

△ The **non-isolated** RS-485 cable must be grounded using the shield cable! Connect the shield cable to one safety ground only! Do not connect the COM ports.

△ Refer to the controllers' installation manual for wiring details.

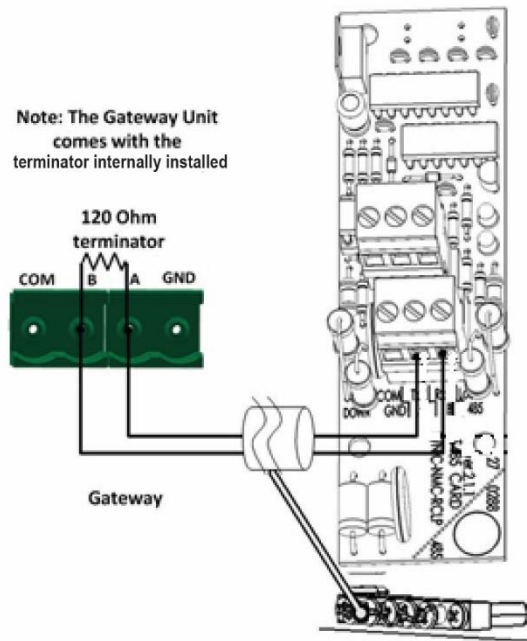


Figure 5

## 5 FRONT PANEL LED INDICATORS

Name	Color	Indicates	After applying power
Power	Red	System viability	System is active.
Internet	Red	Gateway is connected to server	LED stays on
Controller	Red	Transmission to/from controllers	Gateway is checking the controllers' activities. LEDs flash for 1.5 seconds.
Rear panel LED	Red	Power	AC power is applied



### If the controller does not seem to communicate:

1. Check if the communication light is pulsing on the controller communication card. If not, check the network cables.
2. Check controller network setup in menu 6.2:
  - ♦ Controller number.
  - ♦ Lower port protocol; should be NMC RCC.
  - ♦ Check controller baud rate; must be identical to gateway and all controllers on the network should be identical.
  - ♦ Recommended value NMC Pro / DC 38400 (cable length permitting)
  - ♦ Recommended value for NMC Junior Pro 19200 (cable length permitting)

## 6 WEB APPLICATION

You can configure your Gateway via the web. The following section details the steps.

- Click a tab to go to the screen.
- The active screen's tab has red text.


 To reset the Gateway to its factory settings, press the Reset button (Figure 2).

### 6.1 Configuration

1. Go to <http://gateway-ws/> If your router does not support NetBIOS name resolution, search your router's DHCP lease table for the IP address assigned to 'gateway-ws'.
2. Configure the following screens:

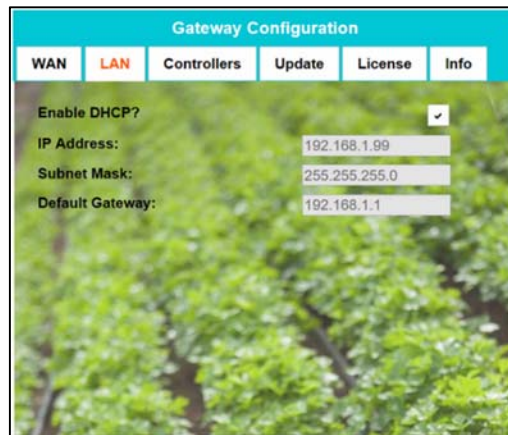


3. Select the WAN connection technology from the drop down list.
  - TCP/IP:
    - Server IP: Default is 52.19.78.41
    - Server TCP Port: 23020

 Consult with your IT administrator regarding these fields. Entries to your outbound firewall may need to be added.

- Unit number: Every new unit comes with a factory serial number.

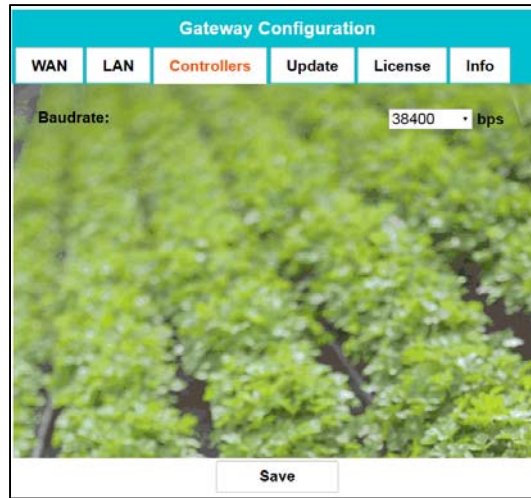
4. Click **Save**.
5. On the LAN tab, specify DHCP addressing or assign a static IP address.





△ Consult with your IT administrator regarding the above fields.

6. Click **Save**.

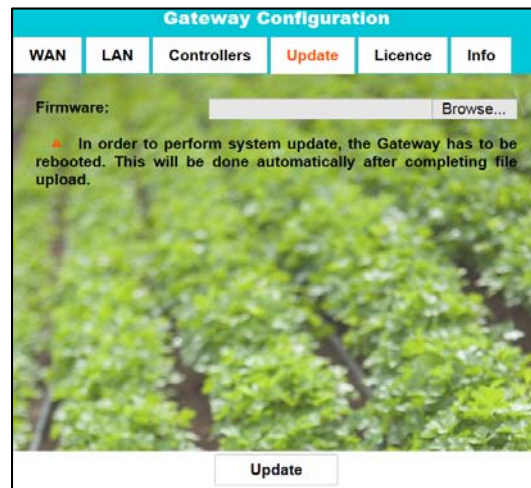


The screenshot shows the 'Gateway Configuration' web application interface. At the top, there are tabs for 'WAN', 'LAN', 'Controllers', 'Update', 'License', and 'Info'. The 'Controllers' tab is selected. Below the tabs, there is a 'Baudrate:' label followed by a dropdown menu showing '38400' and 'bps'. The background of the page is a green, leafy tree. At the bottom center, there is a 'Save' button.

7. On the Controllers tab, from the drop down list, specify the appropriate baud rate (38400 for NMC Pro/DC or 19200 for NMC Junior Pro). The baud rate on the Gateway must match the lower port baud rate on the NMC Controller(s).

8. Click **Save**.

## 6.2 Updating Firmware



The screenshot shows the 'Gateway Configuration' web application interface with the 'Update' tab selected. There is a 'Firmware:' label followed by a text input field and a 'Browse...' button. Below this, a red warning icon is followed by the text: 'In order to perform system update, the Gateway has to be rebooted. This will be done automatically after completing file upload.' The background is a green, leafy tree. At the bottom center, there is an 'Update' button.

1. If required, browse to the appropriate Gateway firmware file.
2. Click **Update**.
3. Reboot Gateway.

△ Only update the firmware if advised by a Netafim technician.

## 6.3 Licensing

Every Gateway unit (Version 1.9.2 and higher) comes supplied with a license key. This key defines certain Gateway functionality (single or multiple controllers). In this situation, **there is no need** for the user to change any fields on this screen.

Perform the following procedure if:

- The Gateway arrives without a license key
- You wish to change the product's functionality

1. Send the MAC address that appears on the info tab to your Netafim support person.



Gateway Configuration					
WAN	LAN	Controllers	Update	Licence	Info
Metadata Version:	3.05.25.00				
OSVersion:	1.02_Or_1.03->1.04				
Gateway Version:	1.9.1.0				
MacAddress:	F8DC7A0124B6				
License Details:	Network				

2. You will receive a license key. Copy this key, click the **Licence** tab, and paste the number in the text box.



Gateway Configuration					
WAN	LAN	Controllers	Update	Licence	Info
Enter Your Licence Key: 7e75fdf2bf43d52ae034f7f046bf69f7a3045000628cae0b8f19c0f20b97269d					
<input type="button" value="Save"/>					

3. Click **Save**.

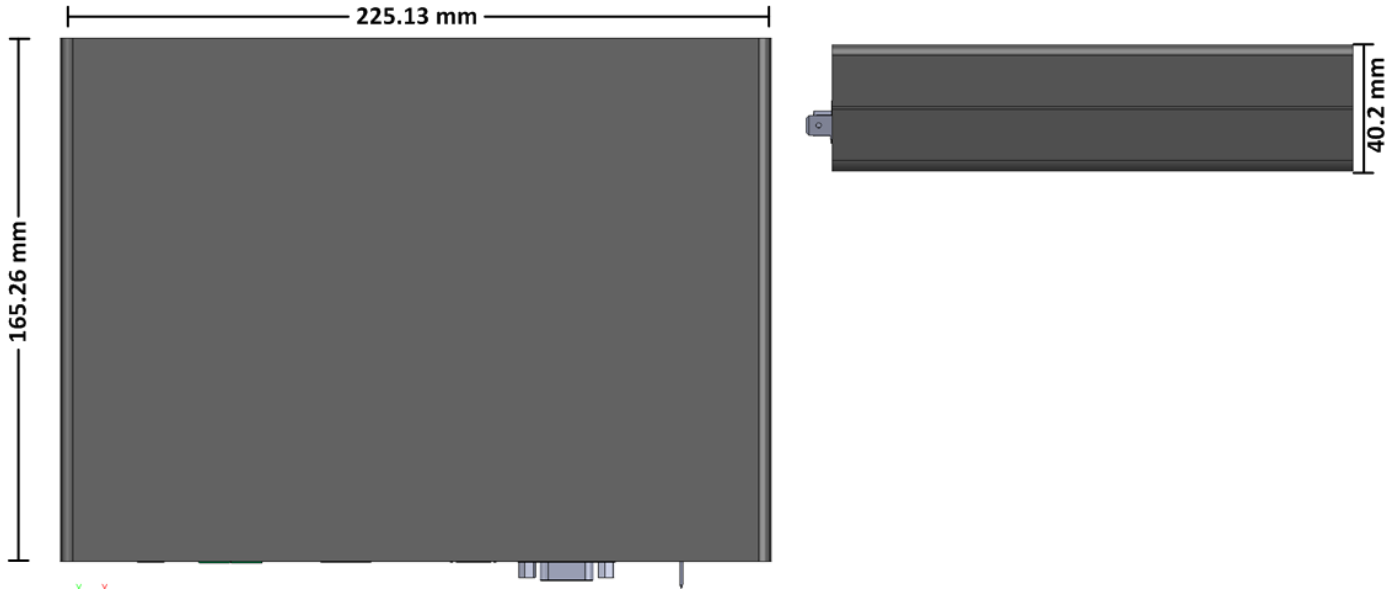
4. Reboot the Gateway.

5. Click the **Info** tab.

- ♦ Under License Details, *Network* or *Single Unit* should appear.
- ♦ If *Not Activated* appears, the license key was not saved. Repeat the process and be sure to click **Save**.

## 7 SPECIFICATIONS

- Power supply: 5VDC +0.1V / 700mA
- RS485 line communication baud rate: 38400 bps max.
- Ethernet TCP/IP 10/100Mbps
- COM1 (RS232, DB-9) baud rate: 115200 bps max
- USB2 Host Controller
- Operating temperature: -10° to +50° C



## 8 TROUBLESHOOTING

### Rear panel Power LED remains off

- Verify that the AC/DC power supply works.

### Gateway Controllers LED light does not blink after sending a request

1. Check the wiring on the AB cable in the back of the Gateway box:
  - Gateway cable wiring scheme must be 

A	B
---	---
  - The cable's other side is normally 

Ground	A	B
--------	---	---
2. In the Controller's setup menu in the "System Setup" table. Verify that:
  - the Communication→Lower port protocol is set to NMC RCC
  - the Communication→Controller ID has a unique ID number in the controller network.
3. Verify that the Controller communication card is a 485 card.
4. Restart Gateway box and retry after waiting for the Controller LED to start blinking.

### The Gateway can not be found in NMC Air

1. Ping your Gateway's IP address from a PC on your local network.
2. Verify that you are using a valid Default Gateway on your Gateway's LAN page.
3. Verify that your Gateway can communicate with the Internet.
  - Verify that appropriate firewall rules are added as needed (allow outbound connections to IP 52.19.78.41 on TCP port 23020).