

4G Camera Solution

4G WiFi M2M Router
NTC-140W
Security Camera
Mobotix

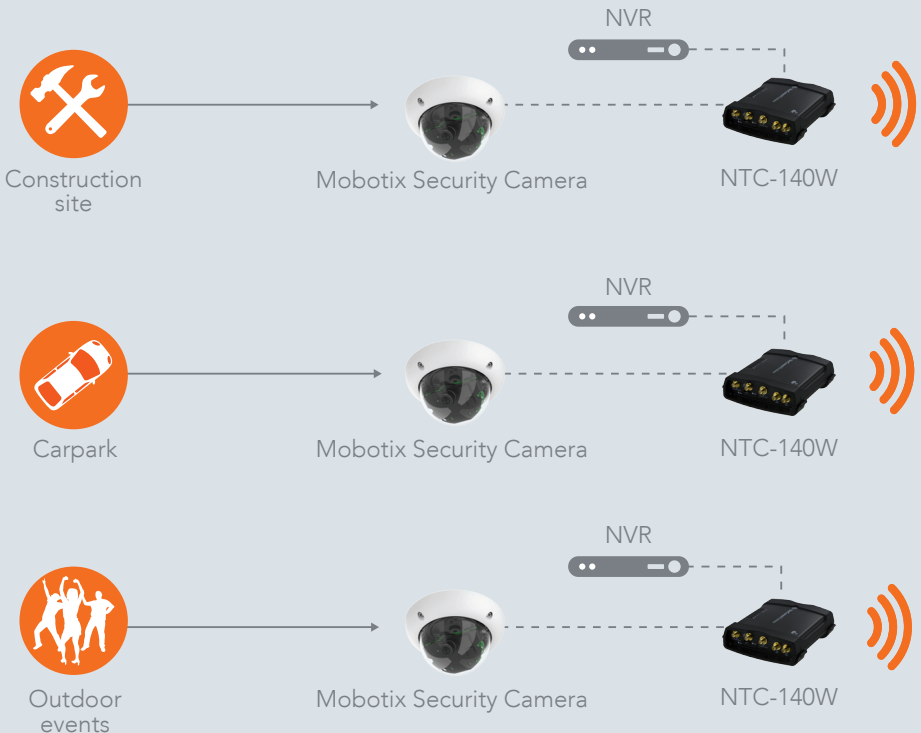


Introduction

The NetComm Wireless **4G Camera Solution** has been developed to improve productivity and increase profitability of system integrators.

The demand for wireless camera solutions is growing constantly. Applications include construction companies who want to visually track the progress of a project and share it with investors, retailers of all sizes who want a camera in their store to improve security, local governments who want to install cameras in remote locations to monitor traffic or improve on street security, etc.

Designed to serve as either a standalone solution or a starter kit to a more complex solution, the NetComm Wireless **4G Camera Solution** will guide you through the setup



NTC-140W - 4G WiFi M2M Router Mobotix - Security Camera

and configuration of a design which includes an industrial grade NetComm Wireless 4G WiFi M2M Router, a Mobotix IP Security Camera, an optional High Performance Panorama Low Profile 5-in-1 (LTE, WiFi and GPS) Antenna and all other accessories to make the solution work – first time.

Although this document guides you through an example setup, we at NetComm Wireless hope to leave you with a great impression of how easy it is to work with our robust and powerful M2M equipment and that you may gain the skills and experience to consider far more complex solutions using similar equipment.

This bundle is useful in many applications including remotely monitoring a construction site, a car park or an outdoor event.



Package contents

The 4G Camera Solution includes:



NetComm Wireless NTC-140W
4G WiFi M2M Router



Mobotix IP
Security Camera



Power over Ethernet (PoE)
Injector (PSU-0015)






NTC-140W Power supply
unit (PSU-0039)



High performance low
profile 5-in-1 (LTE, WiFi and
GPS) Antenna (ANT-0025)
(Optional)

Pre-requisites

-  If you wish to access the camera or its video stream remotely (from a machine not connected to the local area network), the router must use a SIM card with a publically routable IP address.
-  An additional Ethernet cable for configuration from a laptop.
-  Depending on your chosen location for the router and the distance to the nearest power source, you may require an additional Ethernet cable to cover this distance.

Router configuration

For installation instructions, please refer to the Quick Start Guide included in the 4G M2M WiFi Router package. When you have installed the router as described in the Quick Start Guide, continue to the next section of this guide to configure the router and camera for use together.

Configuring the NetComm Wireless router for use with the camera

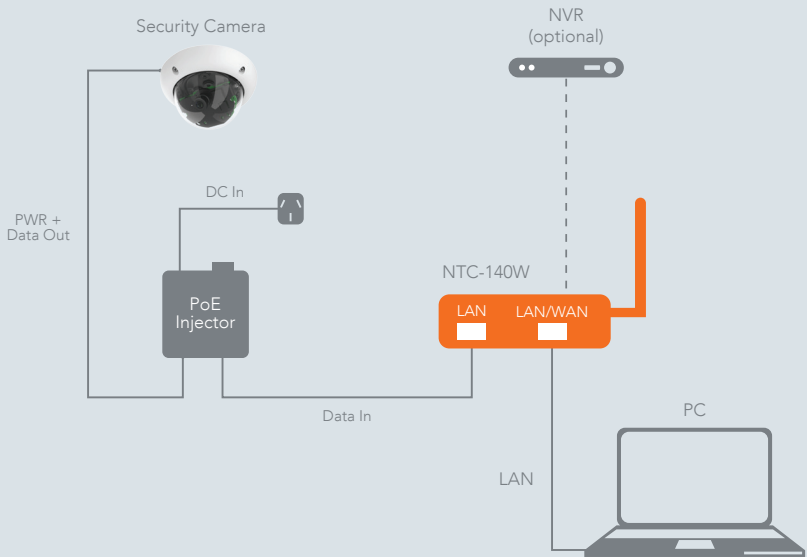
Configuring the router for use with the camera involves the following steps:

1. Determining the camera's DHCP IP address
2. Configuring the camera with a static IP address
3. Forwarding the required ports to the camera (and NVR, if required)
4. Configuring the Dynamic DNS (required for remote access if mobile broadband account does not have a static IP address)

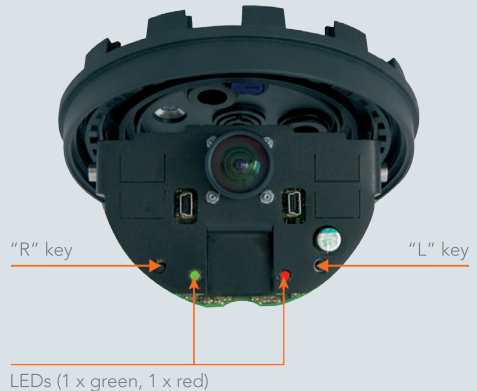
1. Determining the camera's DHCP IP address

When the camera boots up, it is assigned an address dynamically by the router. In order to connect to the camera for the initial setup, you need to find out its address.

a) Connect the IP security camera to the router as pictured below.



b) If the camera is already powered on, remove the Ethernet cable from the camera then connect it again. Observe the two LEDs on the mainboard of the camera. When they both light up, press the “R” key on the camera within 4 seconds. This will force the camera to boot as a DHCP client. Refer to the Mobotix camera’s user manual for further details.



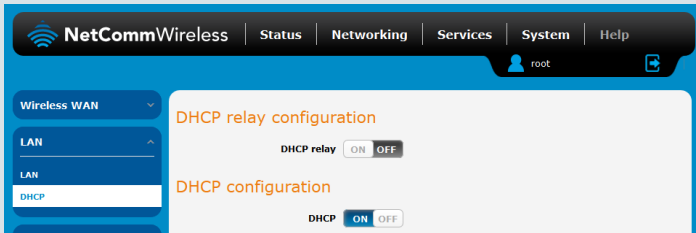
c) Using a web browser, navigate to **http://192.168.1.1**. Log in to the 4G WiFi M2M Router with the following credentials:

Username: **root**

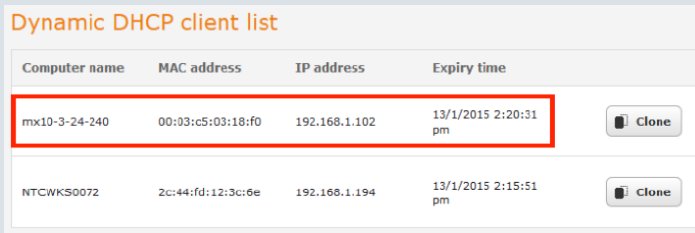
Password: **admin**

Further instructions on logging in to the router are described in the 4G WiFi M2M Router Quick Start Guide.

d) Select the **Networking** menu item, then the **LAN** menu on the left and finally select the DHCP item.



e) Scroll to the bottom of the page to the Dynamic DHCP client list.

The screenshot shows the 'Dynamic DHCP client list' table. The table has four columns: 'Computer name', 'MAC address', 'IP address', and 'Expiry time'. There are two entries. The first entry, 'mx10-3-24-240', is highlighted with a red box. The second entry is 'NTCWKS0072'. Each entry has a 'Clone' button to its right.

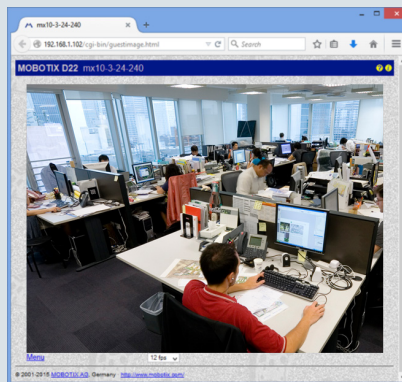
Computer name	MAC address	IP address	Expiry time	
mx10-3-24-240	00:03:c5:03:18:f0	192.168.1.102	13/1/2015 2:20:31 pm	Clone
NTCWKS0072	2c:44:fd:12:3c:6e	192.168.1.194	13/1/2015 2:15:51 pm	Clone

The camera and your connected computer appear in the DHCP client list. To identify the camera's IP address, use a process of elimination. By first identifying your computer in the list (usually via the hostname), you can determine which entry is the camera's. When you have done so, take note of the camera's IP address. In this example, it is 192.168.1.102.

2. Configuring the camera with a static IP address

So that you can access the camera with the same address in future, it is important to assign the camera with an IP address that doesn't change.

- a) Open a new tab in your browser and navigate to the camera's dynamically assigned IP address. The screenshot below shows a browser accessing a Mobotix camera via its dynamically assigned address of 192.168.1.102:



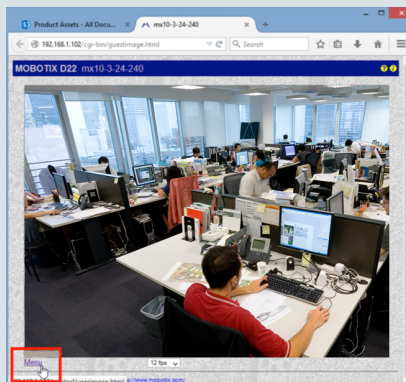
- b) Log in to the router using the following credentials:

Account: **admin**

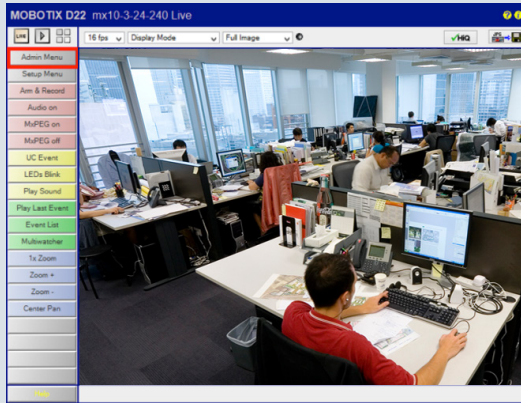
Password: **meinsm**

Click the **Login** button.

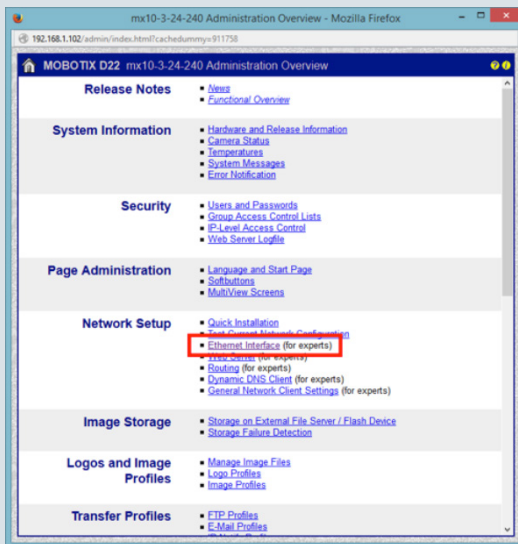
- c) Click on the **Menu** button at the bottom left of the video.



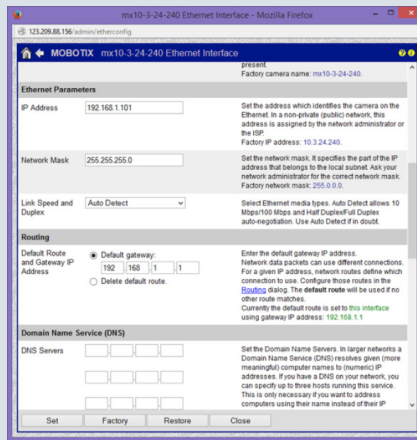
d) Click on the **Admin Menu** button on the left.



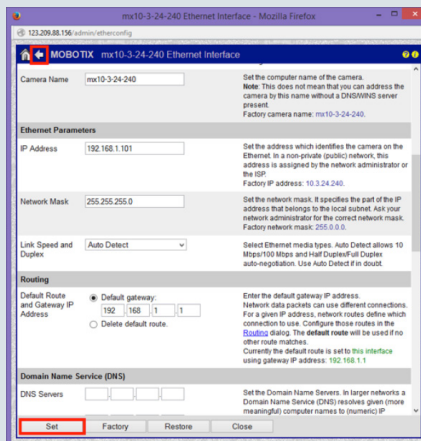
e) Click on the **Ethernet Interface (for experts)** link.



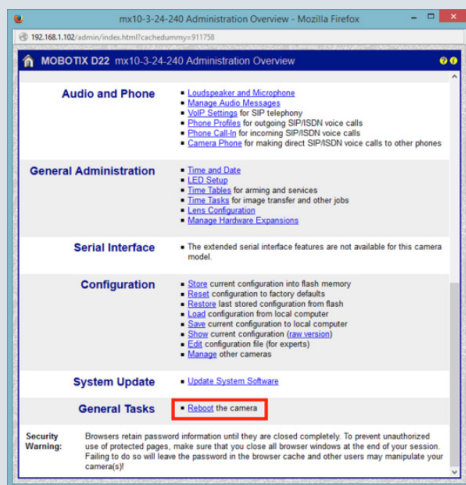
- f) In the **IP Address** field, enter a static IP address for the camera within the router's IP address range. Since the NetComm Wireless router uses the DHCP range of 192.168.1.X, configure the camera's address to something in this range that is not in use, for example 192.168.1.101. Set the **Default Route and Gateway IP address** to 192.168.1.1. An example screenshot is shown below.



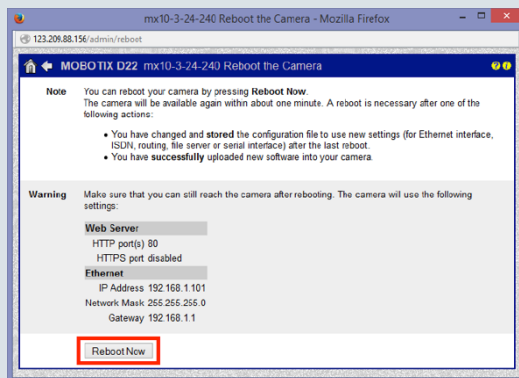
- g) Click on the **Set** button. The camera informs you that you have to store and reboot the camera for the settings to take effect. Click on the Back arrow at the top left of the screen.



h) Scroll to the bottom of the Administration Overview window and click the **Reboot** link.



i) Click the **Reboot Now** button.

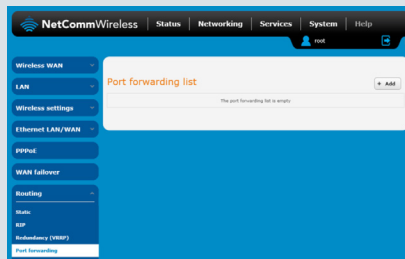


The camera reboots and automatically redirects you to the new address.

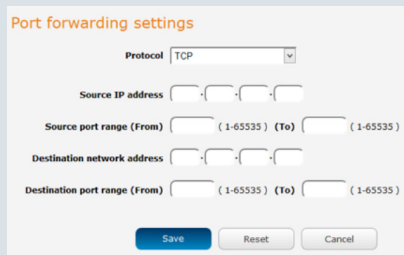
3. Forwarding the required ports to the camera (and NVR, if required)

The Mobotix IP camera uses port 80 to send and receive data. Due to the nature of connecting through a router with network address translation, it is necessary to inform the router of the camera's ports so that all features work.

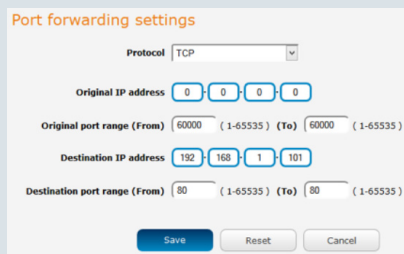
- a) Log in to the NTC-140W router again using the same credentials as before.
- b) Select **Networking -> Routing -> Port forwarding**



- c) Select the **+Add** button. The Port forwarding settings page is displayed.



- d) The Mobotix camera requires port 80 be forwarded to it. To forward port 80 to the camera with a static IP address of 192.168.1.101, enter the details as follows:



The **Original IP address** setting of 0.0.0.0 means that the router forwards traffic from any source address. You can add a range of ports by entering the first port in the range in the **(From)** fields and the last port in the **(To)** fields. If you are installing multiple cameras, you should select a range of ports that are not reserved or in use elsewhere on the network. In this example, we have selected the first camera to use incoming port 60000. If you had a second camera with the IP address 192.168.1.102, you could configure a port forwarding rule like this:

Port forwarding settings

Protocol: TCP

Original IP address: 0.0.0.0

Original port range (From): 60001 (1-65535) (To): 60001 (1-65535)

Destination IP address: 192.168.1.102

Destination port range (From): 80 (1-65535) (To): 80 (1-65535)

Buttons: Save, Reset, Cancel

When you have finished adding port forwarding rules, they appear in the port forwarding list:

Port forwarding list

Protocol	Original IP address	Original port range	Destination IP address	Destination port range	
TCP	0.0.0.0	60000 - 60000	192.168.1.101	80 - 80	
TCP	0.0.0.0	60001 - 60001	192.168.1.102	80 - 80	

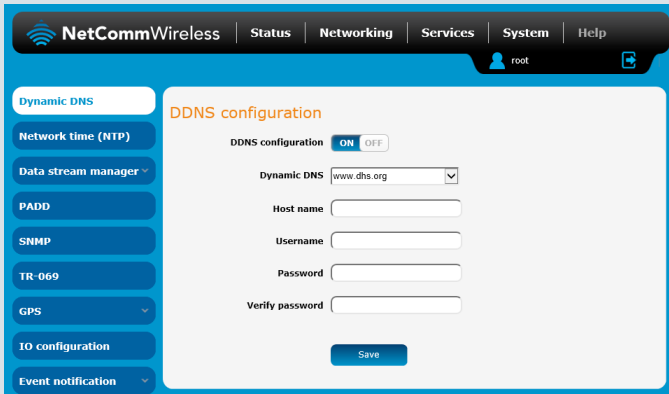
+ Add

- e) If you have an NVR that you would like to access remotely, add another port forward rule to allow traffic to pass through the router. Refer to the NVR's documentation for the required ports. Click the **Save** button when you have entered the required details.

4. Configuring Dynamic DNS (required for remote access if mobile broadband account does not have a static IP address)

Most mobile broadband providers assign WAN IP addresses dynamically. If your carrier assigns IP addresses dynamically and you want to access the camera remotely, it is best to use a Dynamic DNS service so that you can use a single hostname to access the camera even when the IP address changes.

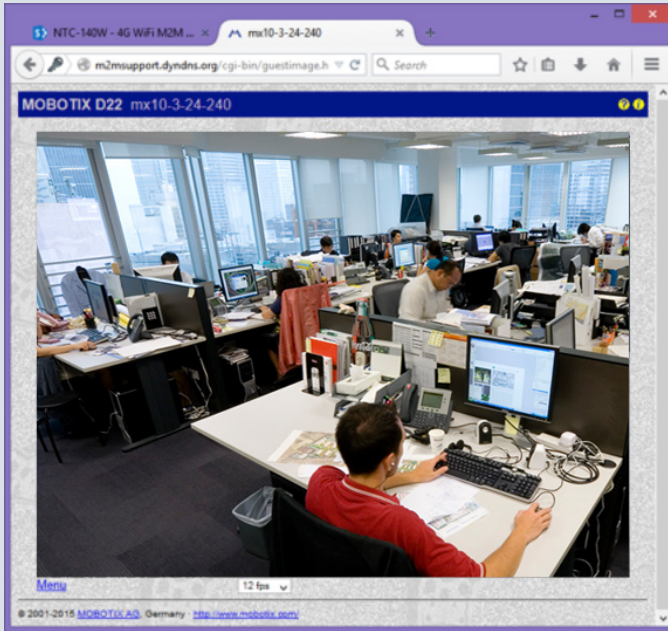
- a) Select **Services** then click the **DDNS configuration** toggle key to enable Dynamic DNS.
- b) Use the **Dynamic DNS** dropdown list to select your Dynamic DNS provider.
- c) Enter your **Host name**, **Username** and **Password** then click the **Save** button.



The screenshot shows the NetCommWireless web interface. The top navigation bar includes 'Status', 'Networking', 'Services', 'System', and 'Help'. The 'Services' menu is active, and the 'Dynamic DNS' option is selected in the left sidebar. The main content area is titled 'DDNS configuration' and features a toggle switch for 'DDNS configuration' set to 'ON'. Below this, there is a dropdown menu for 'Dynamic DNS' with 'www.dhs.org' selected. There are four input fields: 'Host name', 'Username', 'Password', and 'Verify password'. A 'Save' button is located at the bottom of the configuration area.

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The setup is complete. You can access the camera remotely using the Dynamic DNS host name. After logging in to the camera, a live view of the camera's vision is displayed.



Using SMS to retrieve the router's IP address

If you do not have a Dynamic DNS service, you can still access the camera remotely. This is achieved by retrieving the router's IP address via SMS. Refer to the NTC-140W User Guide for more information.

Product Warranty

For product warranty terms and conditions please refer to the individual guides for your devices.

Safety and product care

Please refer to the user guide for safety and product care information.



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