

∎µSD

4G Camera Solution

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

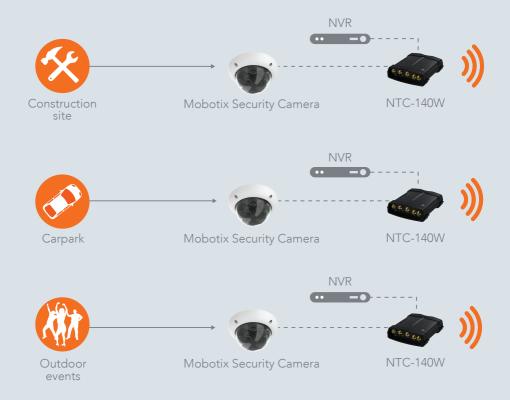


Introduction

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



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.



Internet



Remote monitoring



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 peformance 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:

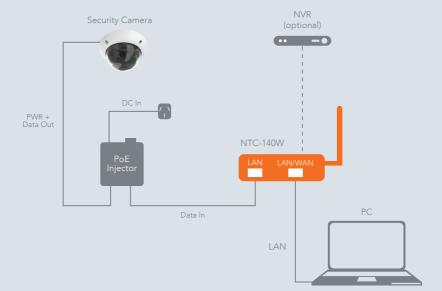
- 1. Determining the camera's DHCP IP address
- 2. Configuring the camera with a static IP address
- 3. Forwarding the required ports to the camera (and NVR, if required)
- 4. Configuring the Dynamic DNS (required for remote access if mobile broadband account does no have a static IP address)



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.

🚖 NetComm	Vireless Status Networking Services System Help		
Wireless WAN ~	DHCP relay configuration		
LAN			
DHCP	DHCP ON OFF		

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

Dynamic DHCP client list				
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
NTCWK50072	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.

A		
🎧 🔶 МОВО	TIX mx10-3-24-240 Ethernet In	terface C
		Factory camera name: mx10-3-24-240.
Ethernet Parame	eters	
IP Address	192.168.1.101	Set the address which identifies the camera on the Ethemet. In a non-private (public) network, this address is assigned by the network administrator or the ISP. Factory IP address: 10.3.24.240.
Network Mask	255 255 255 0	Set the network mask. It specifies the part of the IP address that belongs to the local subnet. Ask your network administrator for the correct network mask. Factory network mask: 255.0.0.0.
Link Speed and Duplex	Auto Detect 🗸	Select Ethernet media types. Auto Detect allows 10 Mbps/100 Mbps and Half Duplex/Full Duplex auto-negotiation. Use Auto Detect if in doubt.
Routing		
Default Route and Gateway IP Address	Default gateway: 192 168 1 Delete default route.	Enter the default gateway i/P address. Network data gatestec can use different connections. For a given IP address, network routes define which connection to use. Configure those routes in the <u>Bouting</u> dialog. The default route will be used if no other route matches. Currently the default route is set to this interface using gateway IP address. Toto 21:68.1.1
Domain Name S	ervice (DNS)	
DNS Servers		Set the Domain Name Servers, In larger networks a Domain Name Servers (DNS) resolves given (more maaningul) computer names to furume(c) (P addresses. If you have a DNS on your network, you can speed up to three hosts unning this service. This is only necessary if you want to address computers using their name instead of their (P
Set	Factory Restore	Close

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.

	mx10-3-24-240 Etherne	t Interface - Mozilla Firefox 🛛 🗕 🗖 🎫
3 123.209.88.156/a	dmin/etherconfig	
🏫 🔶 мово	TIX mx10-3-24-240 Ethernet In	terface 🛛 🥹 G
Camera Name	mx10-3-24-240	Set the computer name of the camera. Note: This does not mean that you can address the camera by this name without a DNS/WINS server present Fadory camera name: mt10-3-24-240.
Ethernet Parame	eters	
IP Address	192.168.1.101	Set the address which identifies the camera on the Ethernet in a non-private (public) network, this address is assigned by the network administrator or the ISP. Factory IP address: 10.3.24.240.
Network Mask	255 255 255 0	Set the network mask. It specifies the part of the IP address that belongs to the local subnet. Ask your network administrator for the correct network mask. Factory network mask: 255.0.0.0.
Link Speed and Duplex	Auto Detect v	Select Ethernet media types. Auto Detect allows 10 Mbps/100 Mbps and Haif Duplex/Full Duplex auto-negotiation. Use Auto Detect if in doubt.
Routing		
Default Route and Gateway IP Address	Default gateway: 192 [168]1] Delete default route.	Enter the default galaxies, pedderso, Network vice data packets can use different connections. For a galaxie TB address, network rootes define which connection to use. Condigues those rootes in the <u>Bouting</u> datag. The default roote will be used if no other roote matches. Currently the default roote is set to this interface using galaxies y? address. 20: 2108.1.1
Domain Name S	ervice (DNS)	
DNS Servers		Set the Domain Name Servers. In larger networks a Domain Name Service (DNS) resolves given (more meaningful) computer names to (numeric) IP
Set	Factory Restore	Close

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



i) Click the Reboot Now button.

Þ	mx10-3-24-240 Reboot the Camera - Mozilla Firefox – 🗖 💌
@ 123.209.88	.156/admin/reboet
REPAIRS NO.	
🏠 🌩 M	OBOTIX D22 mx10-3-24-240 Reboot the Camera 20
Note	You can reboot your camera by pressing Reboot Now. The camera will be available again within about one minute. A reboot is necessary after one of the following actions: • You have changed and stored the configuration file to use new settings (for Ethernet interface,
	ISDN, routing, file server or serial interface) after the last reboot. • You have successfully uploaded new software into your camera.
Warning	Make sure that you can still reach the camera after rebooting. The camera wil use the following settings:
	Web Server
	HTTP port(s) 80
	HTTPS port disabled
	Ethernet
	IP Address 192.168.1.101
	Network Mask 255.255.255.0
	Gateway 192.168.1.1
	Reboot New

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

🚖 NetComm	Wireless Status Networking Services System 2 rot	Help
Wireless WAN *		
LAN ~	Port forwarding list	+ Add
Wireless settings	The port forwarding list is empty	
Ethemet LAN/WAN 👻		_
PPPoE		
WAN failover		
Routing ~		
Static		
RIP Redundancy (VREP)		
Redundancy (VIRP) Port forwarding		

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

Port forwarding setti	ings
Protocol	ТСР
Source IP address	
Source port range (From)	(1-65535) (To) (1-65535)
Destination network address	
Destination port range (From)	(1-65535) (To) (1-65535)
	Save Reset Cancel

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:

Port forwarding settings
Protocol TCP v
Original IP address 0 0 0 0
Original port range (From) 60000 (1-65535) (To) 60000 (1-65535)
Destination IP address 192 · 168 · 1 · 101
Destination port range (From) 80 (1-65535) (To) 80 (1-65535)
Save Reset Cancel

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)
Save Reset Cancel

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

ort fo	rwarding	g list			+ Add
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	×
CP	0.0.0.0	60001 - 60001	192.168.1.102	80 - 80	×

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.

🚖 NetCommV	ireless Status Networking Services System Help
	💄 root 💽
Dynamic DNS	DDNS configuration
Network time (NTP)	DDNS configuration OFF
Data stream manager •	Dynamic DNS www.dhs.org
PADD	Host name
SNMP	Username
TR-069	Password
GPS 👻	Verify password
10 configuration	Save
Event notification 🛛 👻	

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.





NETCOMM WIRELESS LIMITED ABN 85 002 490 486

Head Office, 18-20 Orion Road Lane Cove, Sydney, NSW 2066, Australia

p: +61 2 8205 3888 **f:** +61

f: +61 2 9424 2010

e: m2msales@netcommwireless.com

www.netcommwireless.com