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Date: July 15, 2015

**NAVnet**  
**TZ**  
touch

Model:  
**TZT9/14/BB**

**NAVnet**  
**TZ2**  
touch

Model:  
**TZTL12F/15F**

# FLIR Camera Setup Procedures

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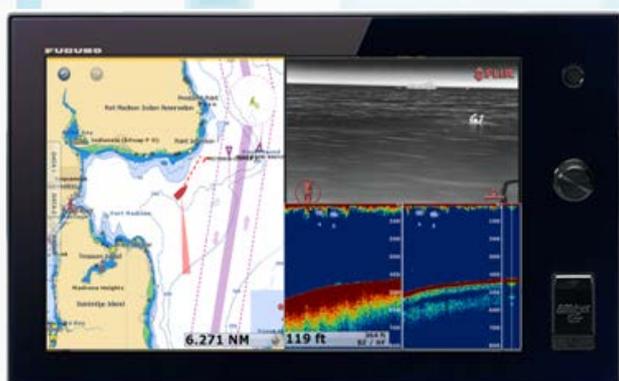
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# 1. Integration with FLIR M-Series

FLIR M-Series cameras can be integrated with **NavNet TZtouch** models **TZT9/14/BB** and **NavNet TZtouch2** models **TZTL12F/15F** to pan, tilt, zoom in/out, move, or lock a camera to a specific target. This document describes how to configure the FLIR M-Series cameras before integrating them to the NavNet TZtouch and TZtouch2 network.

## FLIR M-Series Models

For more information on the FLIR M-Series models, you can view the following FLIR website page.

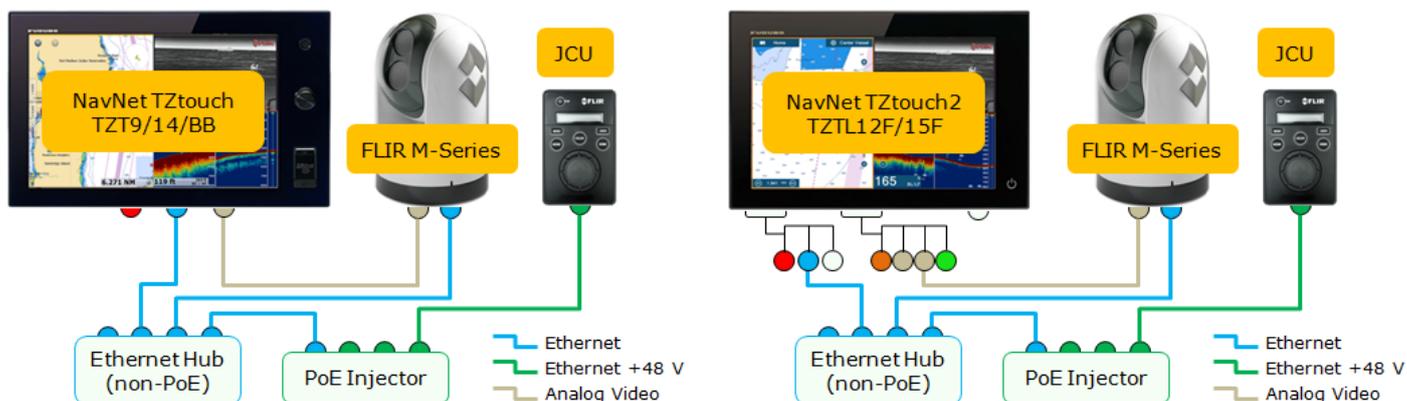
<http://www.flir.com/marine/display/?id=50777>

### Note:

Controls for the latest model **M400** are **NOT** supported by the TZT9/14/BB or TZTL12F/15F.

## 2. Network Overview

A FLIR M-Series can be networked to the TZT9/14/BB and TZTL12F/15F as shown below. While video images are provided from the camera directly to the TZT9/14/BB or TZTL12F/15F RCA video input jacks, control commands are communicated through the Ethernet network.



### Note:

A JCU (joystick control unit), included with the FLIR M-Series camera as standard, is necessary to turn on and off the camera and operate the camera for the functions not supported on the TZT9/14/BB or TZTL12F/15F.

### 3. Setting up FLIR M-Series

Static IP addresses should be assigned to the FLIR M-Series camera and JCU to match with the NavNet TZtouch and TZtouch2 network. To network with NavNet Touch2, an additional setting is required for the FLIR M-Series camera as described in **Section 3-2**.

#### 3-1 Assigning Static IP Address – For NavNet TZtouch and TZtouch2

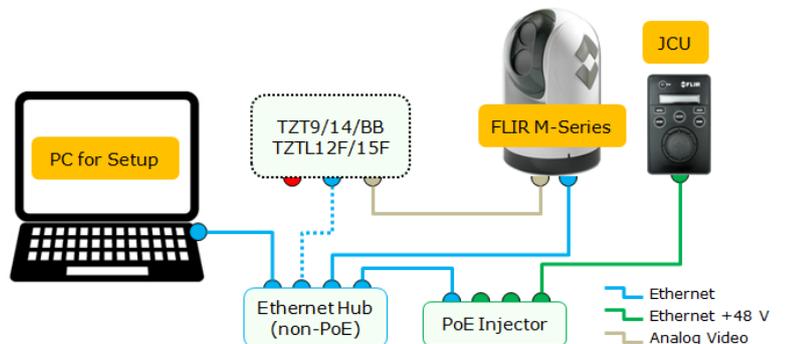
The recommended IP addresses are shown at right in order to avoid duplication with the IP addresses of Furuno Ethernet sensors. For detailed setup, follow the steps below.

M-Series	IP Address	Subnet Mask
Camera	172.31.200.9	255.255.0.0
JCU	172.31.200.10	255.255.0.0

#### Getting Started – Setting up a PC

(1) Connect a PC to the M-Series network.

(2) Set the PC to be in the same network domain as the FLIR M-Series.



#### Tips:

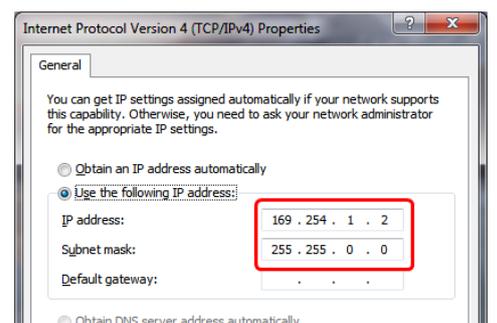
The FLIR M-Series and the JCU controller are UPnP-enabled devices. You can see the list of UPnP-enabled device on the PC by opening **[My Network Places]** (Windows® XP) or **[Network]** (Windows® 7). Note that devices such as M-Series cameras, JCUs, and AXIS converters will appear on the PC **only if they are in the same network domain**.

#### Tips:

When the PC is connected to the M-Series camera and JCU directly with Ethernet cables or via a hub (without a router or DHCP server in the network), the M-Series camera and JCU will automatically assign themselves an IP address of **169.254.xxx.xxx / 255.255.0.0**. In order to access the configuration page of the M-Series camera and JCU, **set up the IP address and subnet mask of the PC to 169.254.xxx.xxx and 255.255.0.0**.

#### Note:

If the PC is set to **[Obtain an IP address automatically]**, an IP address of 169.254.xxx.xxx will be automatically assigned in approx. two (2) minutes. However, it is sometimes easier to manually fix the IP address. In this example, the IP address is manually fixed to **169.254.1.2** and subnet mask to **255.255.0.0** as shown at right.

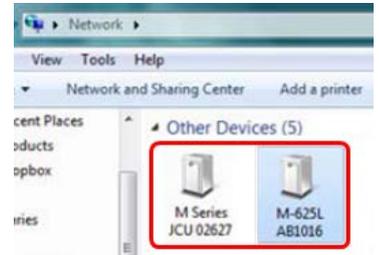


**Note:**

When networking the M-Series camera and JCU, which were previously assigned with other IP addresses, you can display the JCU IP address by pressing the COLOR button while pushing the puck. You can then assign an IP address to the PC accordingly and thus be able to access the M-Series camera and JCU configuration page.

(3) Once the PC is in the same network domain as the M-Series camera and JCU, and the UPnP is enabled, you will be able to see the M-Series camera and JCU icons under **[My Network Places]** (Windows® XP) or **[Network]** (Vista /Windows® 7).

Verify that the M-Series camera and JCU icons are available.



**Note:**

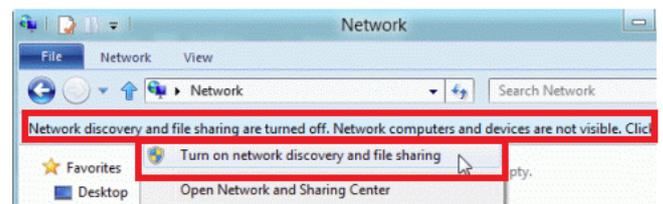
If the devices do not appear, check if the PC is set up to display UPnP notifications.

**Windows® XP**

- Open **[Control Panel]** and access **[Add/Remove Programs]**.
- On the left-hand side, select **[Add/Remove Windows® Components]**.
- From **[Windows® Component Wizard]**, scroll down to **[Networking Services]**, highlight and select the **[Details]** button
- Check the box to activate the UPnP User Interface and select **[OK]**.
- Select **[Next]** when returning to **[Windows® Component Wizard]**.
- Select **[Finish]**.

**Windows® 7**

- In the **[Network]** page, turn on **[Network Discovery]**.



**Assigning Static IP Address to M-Series Camera**

(4) Double click the M-Series camera icon to open its configuration page.



(5) In the configuration page, click **[Network Setup]** to configure a static IP address.



(6) In the [Network Settings] page, select **[Static]** (not [Dynamic]). The screen will refresh, and the [IP], [(Subnet) Mask], and [Gateway] fields will change from gray to white, enabling you to enter information.



(7) Enter a static IP address and subnet mask.

E.g. IP: **172.31.200.9** / Subnet Mask: **255.255.0.0**

(8) Click **[Save]**.

**Note:**

You will not be able to access the M-Series camera configuration page anymore after changing its IP address unless the IP address and subnet mask of the PC is changed in step (13).

**Assigning a Static IP Address to the JCU**

(9) Go back to **[My Network Places]** (Windows® XP) or **[Network]** (Windows® 7) of the PC and double click the **JCU** icon to open its configuration page.

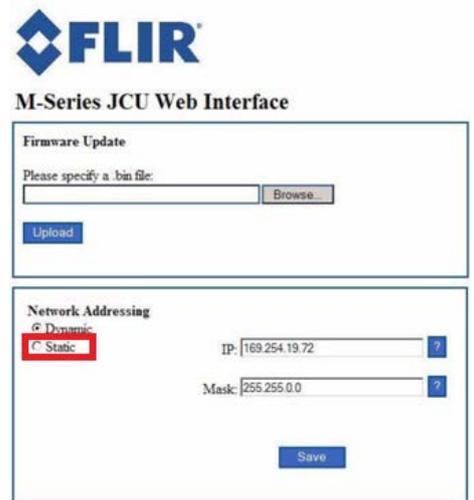


(10) In [Network Addressing], select **[Static]**.

(11) Enter a static IP address and subnet mask

E.g. IP: **172.31.200.10** / Subnet Mask: **255.255.0.0**.

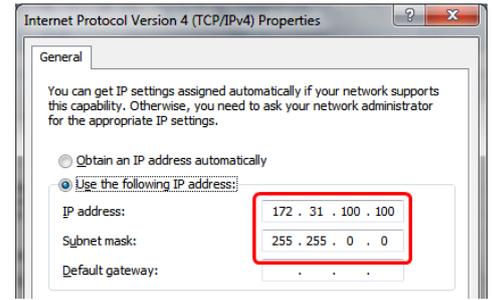
(12) Click **[Save]**.



## Adjusting the PC's IP Address to a New Domain

(13) After changing the IP address of the M-Series camera and JCU, assign the PC with an IP address of **172.31.xxx.xxx** and subnet mask of **255.255.0.0** to match with the new domain.

In this example, the IP address **172.31.100.100** and subnet mask **255.255.0.0** are assigned as shown at right.



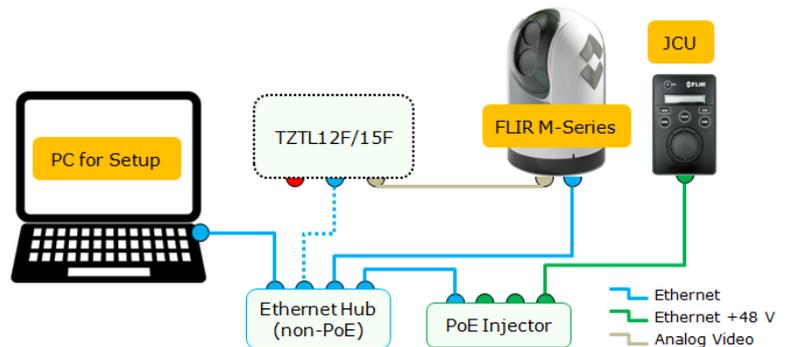
After the static IP addresses are assigned to all the devices in the same domain, you will be able to see the M-Series camera and JCU icons again in [My Network Place] (Windows® XP) or [Network] (Window 7).



## 3-2 Additional Setup – For NavNet TZtouch2 Only

FLIR M-Series cameras have a setting option called **Nexus CGI Interface**. To network a FLIR M-Series camera with the TZTL12F/15F via the Ethernet for PTZ control, etc, activate the Nexus CGI Interface as shown in the following procedures.

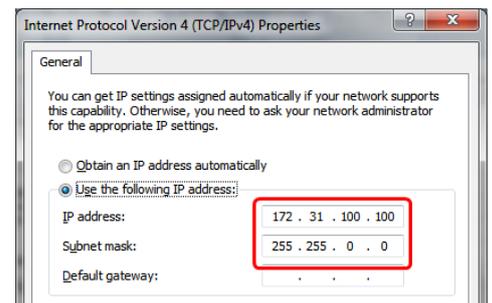
(1) Connect a PC to the M-Series network.



(2) Ensure that the IP address setting of the camera and JCU described in **Section 3-1** has finished.

(3) Set the IP address of the PC to be in the same domain as the FLIR M-Series to be configured.

In this example, the FLIR M-Series camera is assigned with an IP address of 172.31.200.9, and the PC is assigned with an IP address of **172.31.100.100** and subnet mask of **255.255.0.0** as shown at right.



(4) Open a web browser and enter the IP address assigned to the FLIR M-Series camera. In this example, 172.31.200.9 is entered.



## M-Series / T-Series

(5) After a login page appears, enter the following User ID and password.

User: "admin"

Password: "fliradmin" or "indigo" (default)

depending on unit.



User <input type="text" value="basic"/>	Default: User: "admin" Password: "fliradmin" or "indigo"
Password <input type="text"/>	
<a href="#">Login</a>	

(6) Access [Network Remote / VMS] to create Nexus CGI Interface.

### Note:

Depending on camera models, UI to access this setting page and other settings may be different. For example you may have to select [Communications] before you can access [Network Remote / VMS].



Server Running... Refresh Stop

General **Communications** Devices Modules

### TCP Transparent Mode

Enabled	no	
Terminal Type	Local Serial Port	
Serial Port	COM2	
Serial Port Settings	Speed	38400
	Data Bits	8
	Parity	None
	Stop Bits	1

(7) Select [Nexus CGI Interface], ensure Device ID is [0] and click [Add].

Server Running...

Refresh

Stop

(8) The following page will appear to create a new Nexus CGI Interface under a new Device ID (Device ID must be 1). Click [Create].

Server Running...

Refresh

Stop

(9) Nexus CGI Interface is now created under the new Device ID: **1**. Change [**Port**] (port number) to [**8090**]. (Default: 8080)

(10) Click [**Save**].

(11) To activate the changed setting, the server should be restarted as instructed in the message below. Click [**Stop**].



# Nexus Configuration

Server Running...

Refresh

Stop

You must restart the server for the changes to be effective

(11)

- Settings
- Server Status
- Network Remote / VMS
- Log File
- License
- Configuration File
- Help

## INTERFACE Configuration

Device ID: 1  Nexus CGI Interface

Device ID: 1	Driver: Nexus CGI Interface
Enabled	<input type="button" value="yes"/>
Port	8090
HTML Files Path	/usr/local/nexus/web/control/
Dictionary File	/usr/local/nexus/server/conf/dictionary:
Session Timeout	5 seconds

(9)

(9)

(10)

(12) After the message in (11) disappears, click [Start] to restart the server.



# Nexus Configuration

Server Stopped

Refresh

Start

(12)

## INTERFACE Configuration

(13) If the icon changes to [Stop], the restart process has finished. Proceed to TZTL12F/15F setting.



# Nexus Configuration

Server Running...

Refresh

Stop

(13)

## INTERFACE Configuration

(14) Recycle power to the FLIR camera.

**Note:**

The new Nexus CGI Interface created must have a device ID of 1 and no other Device ID can exist after 1. If you have other Device ID's they must be selected from the dropdown menu and then deleted.

**FLIR SYSTEMS Nexus Configuration**

Server Stopped Refresh Start

General Communications Devices Modules

**INTERFACE Configuration**

Serial Remote

Network Remote / VMS

TCP Transparent Mode 0

TCP Transparent Mode 1

Device ID: 0 Delete Pelagic JCU Add

0

1

2

Device ID: 2 Driver: Pelagic JCU

Enabled yes

# 4. Setting up NavNet TZtouch and TZtouch2

After the FLIR M-Series setup is complete, the TZT9/14/BB and TZTL12F/15F should be set to detect the camera.

## 4-1 NavNet TZtouch Models TZT9/14/BB

(1) Access [Home] – [Menu] – [Camera] – [FLIR Installation].

At this stage, the IP address of the camera is not detected yet. You will see the [✘] symbol in [FLIR IP].

(2) In [Scan IP], tap [Scan].

If the M-Series camera is properly detected, you will see the IP address of the camera with the [✔] symbol.



**Note:**  
If the IP address of the FLIR M-Series camera is not detected properly, the message of [No FLIR Detected] will appear. See Section 5-1 for troubleshooting.



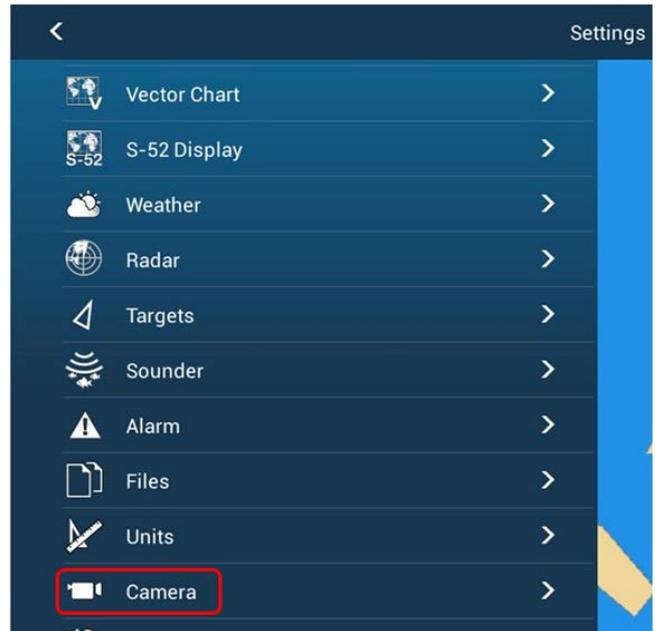
(3) Once the M-Series camera is detected, select the video input port that the analog video output from the camera is connected. In this example, [Camera 1] is selected.



After the settings (1) to (3) finishes, all the setting options related to FLIR M-Series controls will be available as shown at left.

## 4-2 NavNet TZtouch2 Models TZTL12F/15F

(1) Access [Home] – [Settings] – [Camera].



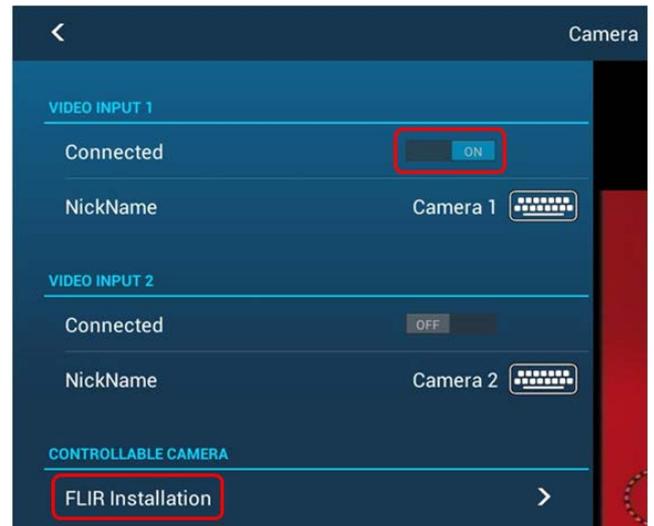
(2) Check the analog video port that the analog output from the FLIR M-Series camera is connected.

In this example, the FLIR camera is connected to the port 1.

(3) Set [VIDEO INPUT 1] – [Connected] – [ON].

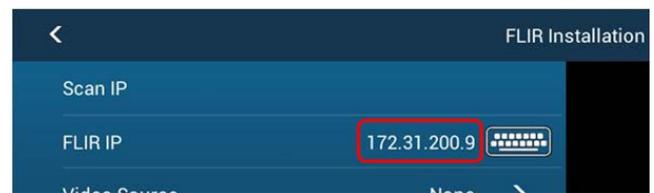
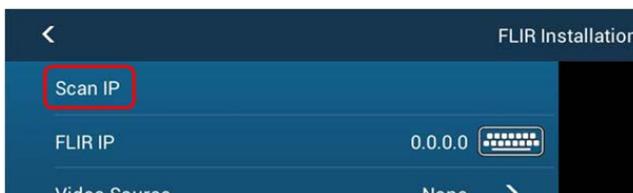
(4) Tap [FLIR Installation].

At this stage, the IP address of the camera is not detected yet. You will **not** see an IP address indication in [FLIR IP].



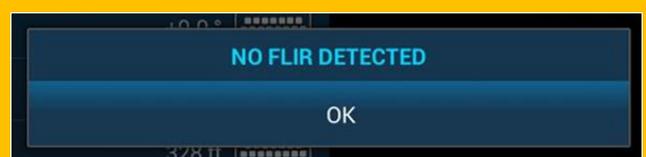
(5) Tap [Scan IP].

If the M-Series camera is properly detected, you will see the IP address of the camera.



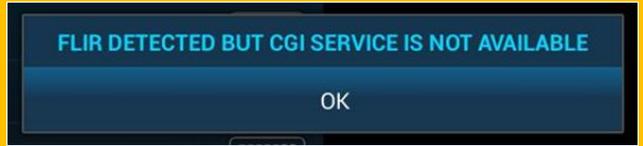
### Note:

If the IP address of the FLIR M-Series camera is not detected properly, the message of [NO FLIR DETECTED] will appear. See **Section 5-1** for troubleshooting.

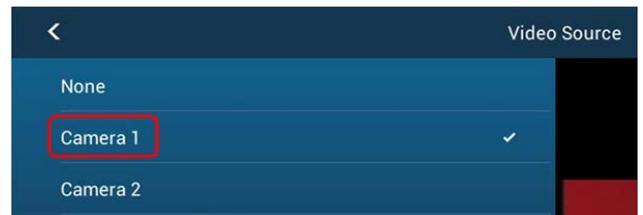
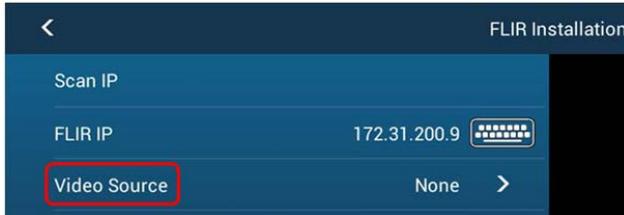


**Note:**

If the message of [FLIR DETECTED BUT CGI SERVICES IS NOT AVAILABLE] appears, see **Section 5-2** to double check the setting of Nexus CGI Interface.



(6) Once the M-Series camera is detected, select the video input port that the analog video output from the camera is connected to. In this example, [Camera 1] is selected.



All the setting options related to FLIR M-Series controls will be available as shown at right.



# 5. Troubleshooting

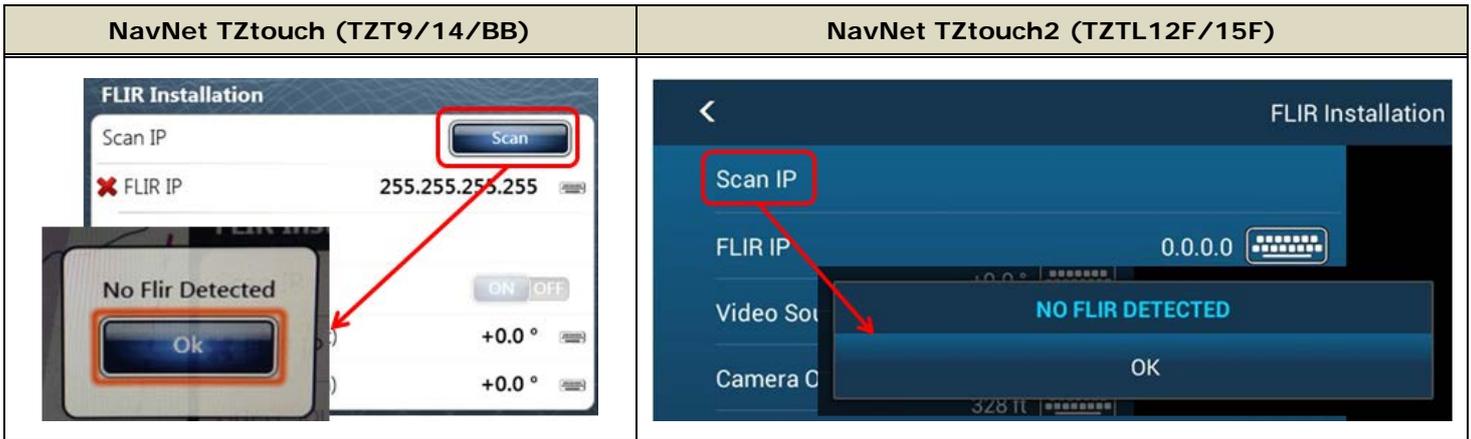
When failing to scan and detect the IP address of the connected FLIR M-Series camera, you may see the following messages. This section describes how to cope with each message.

Message	Target	See...
No FLIR Detected	NavNet TZtouch (TZT9/14/BB) NavNet TZtouch2 (TZTL12F/15F)	Section 5-1
FLIR Detected but CGI Service Is Not Available	NavNet TZtouch2 (TZTL12F/15F)	Section 5-2

## 5-1 “No FLIR Detected” – For NavNet TZtouch and TZtouch2

### Symptom

When scanning the IP address of the FLIR M-Series camera in the network, the message of [No FLIR Detected] appears. This message represents that the IP address of FLIR M-Series camera is not detected by the TZT9/14/BB or TZTL12F/15F.



### Actions

- (1) Check if appropriate static IP addresses have been assigned to the FLIR M-Series camera and JCU as described in **Section 3-1**.
- (2) Check if LAN cables for the FLIR M-Series camera and JCU are properly connected to an Ethernet hub or PoE injector without loose connections.
- (3) If the actions above do not correct the issue, review the Nexus Server setting as described below.

### How to enable the discovery and control of the M-Series from the PC

In some instance, the internal server of the FLIR M-Series, called the **Nexus Server**, is configured in a way that prevents the PC from discovering and controlling the camera. If you are unable to discover the FLIR M-Series camera

from the TZT9/14/BB or TZTL12F/15F but are able to use the Web Control of the FLIR M-Series to control it via a web browser on the PC, follow the instructions below.

**Note:**

If the Ethernet connection and IP address settings are not good, you cannot control the FLIR M-Series camera from a web browser on the PC.

(1) Open a web browser and enter the IP address assigned to the FLIR M-Series camera. In this example, 172.31.200.9 is entered.



## M-Series / T-Series

(2) After a login page appears, enter the following User ID and password.

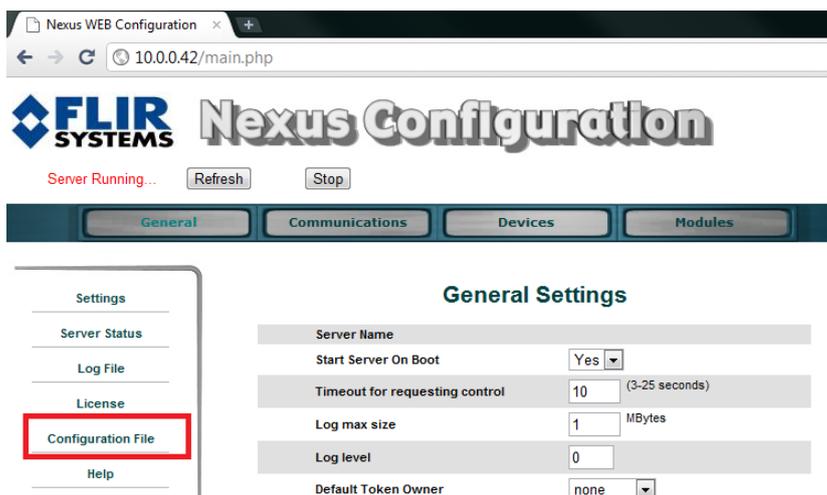
User: "admin"

Password: "fliradmin" or "indigo" (default)



User <input type="text" value="basic"/>	Default: User: "admin" Password: "fliradmin" or "indigo"
Password <input type="password"/>	
<a href="#">Login</a>	

(3) Click [Configuration File].



(4) Click [Download Configuration File] at the bottom of the page.

Backup to file

---

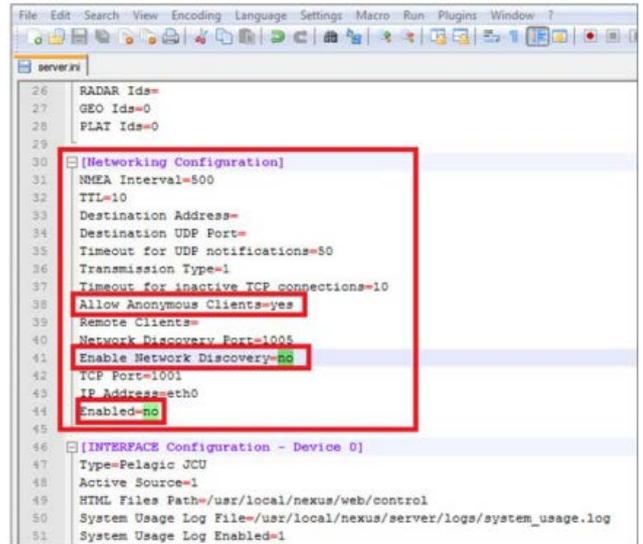
**Upload & Download**

No file chosen

[Download Configuration File](#)

(5) Save the file somewhere on the PC, such as the Desktop.

(6) Open the configuration file “**server.ini**” with a text editor, such as Notepad, and look for the section [Networking Configuration].

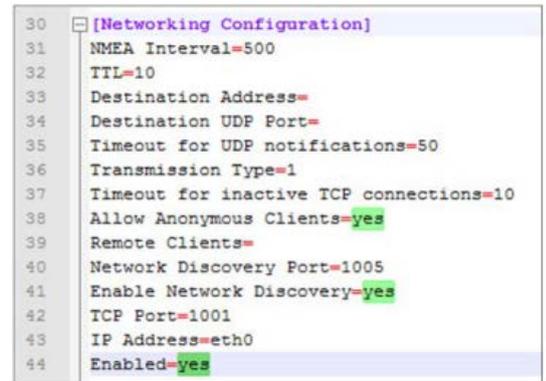


```
server.ini
26 RADAR Ids=
27 GEO Ids=0
28 FLAT Ids=0
29
30 [Networking Configuration]
31 NMEA Interval=500
32 TTL=10
33 Destination Address=
34 Destination UDP Port=
35 Timeout for UDP notifications=50
36 Transmission Type=1
37 Timeout for inactive TCP connections=10
38 Allow Anonymous Clients=yes
39 Remote Clients=
40 Network Discovery Port=1005
41 Enable Network Discovery=no
42 TCP Port=1001
43 IP Address=eth0
44 Enabled=no
45
46 [INTERFACE Configuration - Device 0]
47 Type=Pelagic JCU
48 Active Source=1
49 HTML Files Path=/usr/local/nexus/web/control
50 System Usage Log File=/usr/local/nexus/server/logs/system_usage.log
51 System Usage Log Enabled=1
```

(7) Set [Enable Network Discovery], [Enabled] and [Allow Anonymous Clients] to [yes].

**Note:**

You can search the text file for [Discovery], [Enabled], and [Anonymous] to find the line you need to check.



```
[Networking Configuration]
31 NMEA Interval=500
32 TTL=10
33 Destination Address=
34 Destination UDP Port=
35 Timeout for UDP notifications=50
36 Transmission Type=1
37 Timeout for inactive TCP connections=10
38 Allow Anonymous Clients=yes
39 Remote Clients=
40 Network Discovery Port=1005
41 Enable Network Discovery=yes
42 TCP Port=1001
43 IP Address=eth0
44 Enabled=yes
```

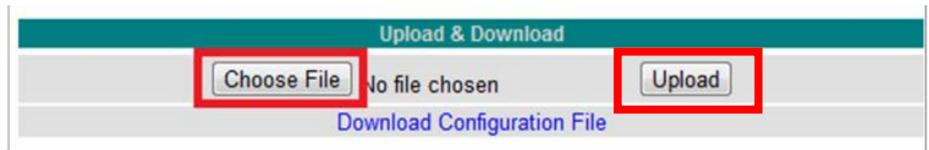
(8) Save the file.

**Note:**

Ensure that other items have not been modified.

(9) Access the Nexus Configuration page again and select [Configuration File].

(10) Click [Choose File] at the bottom of the page and select the modified file “**server.ini**”.



(11) Click [Upload].

(12) To activate the changed setting, the server should be restarted as instructed in the message below. Click [Stop].



(13) After the message in (12) disappears, click [Start] to restart the server.



# Nexus Configuration

Server Stopped

Refresh

Start



(14) If the icon changes to [Stop], the restart process has finished.



# Nexus Configuration

Server Running...

Refresh

Stop

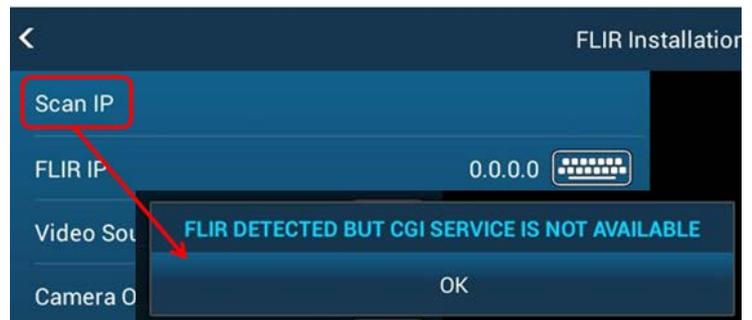


The TZT9/14/BB and TZTL12F/15F will now be able to detect and control the FLIR M-Series camera.

## 5-2 "FLIR Detected but CGI Service Is Not Available" – For NavNet TZtouch2 Only

### Symptom

When scanning the IP address of the FLIR M-Series camera in the network, the message of [FLIR DETECTED BUT CGI SERVICE IS NOT AVAILABLE] appears. This message represents that the Nexus CGI Interface is not properly set for the TZTL12F/15F network. Note that this symptom can occur on NavNet TZtouch2 only.



### Actions

Check if all the Nexus CGI Interface settings are complete as described in Section 3-2, especially Steps (12) to (13).

### Tips:

If the Nexus CGI Interface settings are finished at Step (11) without restarting the server, settings made by the previous steps have not been reflected on the FLIR M-Series camera, so that the message above will appear.



# Nexus Configuration

Server Running...

Refresh

Stop

(11)

You must restart the server for the changes to be effective

Ensure to restart the server: Click [Start] to restart the server and wait until the icon changes to [Stop].



# Nexus Configuration

Server Stopped

Refresh

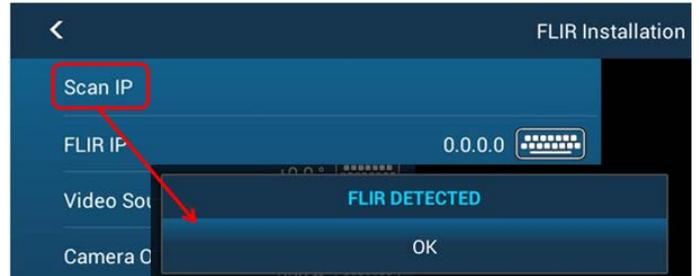
Start

(12)

After the icon changes to [Stop], all the setting procedures are complete.



The TZT9/14/BB and TZTL12F/15F will now be able to detect the FLIR M-Series camera.



--- END ---

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