

SIMRAD

FLIR® Camera Integration Guide



FLIR® Camera Integration

FLIR® is a camera manufacturer specializing in Marine/Military grade night vision and thermal video cameras.

Navico is introducing control integration of a certain range of FLIR® Pan Tilt Zoom cameras with certain Navico multifunction displays. This manual details how to setup the camera in order to receive control commands from a Simrad multifunction displays

Compatibility

. At the time this document was written the following models of FLIR® cameras can be used:

Updated compatible camera list as of September 2018

FLIR Camera	Series Model	Video Output	Notes
M132/M232	M132	IP Video	IP to analog video decoder is required to view the video feed. Joystick Control Unit is required for control. (see "IP Camera integration" on page 7)
	M232	IP Video	
Next-Generation M-Series	M324S	Analog Video	On-screen controls for pan, tilt, and zoom. Camera options menu for changing source on dual payload cameras (Infrared or Daylight), color scheme polarity, and home position.
	M324CS	Analog Video	
	M617CS	Analog Video	
	M625S	Analog Video	
	M625CS	Analog Video	
Legacy M-Series	M324L	Analog Video	On-screen controls for pan, tilt, and zoom. Camera options menu for changing source on dual payload cameras (Infrared or Daylight), color scheme polarity, and home position.
	M324XP	Analog Video	
	M612L	Analog Video	
	M618CS	Analog Video	
	M625L	Analog Video	
	M625XP	Analog Video	
Legacy MD-Series	MD-324	Analog Video	MD-Series has a fixed-mount and does not move. MFD identifies the camera as an M-Series and gives you options for pan, tilt, zoom, home position, etc.
	MD-625	Analog Video	

*** Video over IP is not supported at present. A FLIR IP Video to Analog Converter is required**

Pre requisites

FLIR Software Version

Flir Camera Systems that shipped prior to Aug 2013 will require a M-Series software update to Nexus 2.5.9.17 or later. The update procedure for an M-Series is not automated and requires a manual upload using a PC. Please contact FLIR directly if a software update is required at 1-888-747-3547"

MFD compatibility

The cameras can integrate to following Simrad Navigation systems with compatible software.

NSO evo3

NSS evo3

NSO-evo2 with RTM 1 software or above

NSS evo 2 with RTM 1 software or above

NSE with RTM 4.0 software or above

NSS with RTM 3.0 software or above

With a WIFI-1 module	Without a WIFI-1 module
WIFI-1 acts as a DHCP server and assigns an IP address to the camera	No DHCP server on the network. The MFDs won't be able to control the camera
No additional setup required	Set Static Address in the camera

Tools Required

PC with Windows 7 or later.

Ethernet patch cable (not crossover)

Microsoft Internet explorer web browser

Systems without a WIFI-1 module (no DHCP)

If a FLIR® Camera is installed into a system without a WIFI-1 module, it will not be automatically be recognized by the Multifunction Displays (MFDs) as the FLIR® camera expects to get an IP address assigned from a DHCP server and the MFDs will not be able to control the camera.

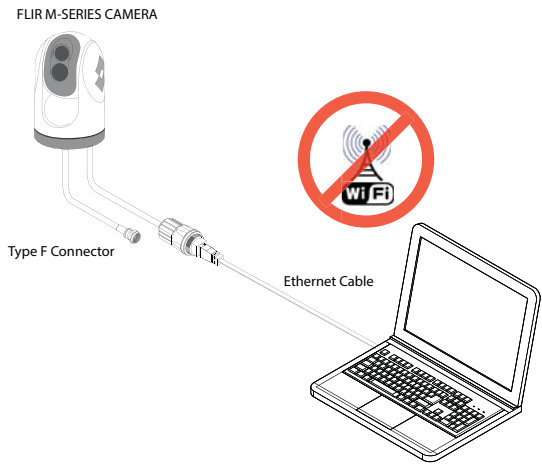
In order for the MDFs to be able to control the pan tilt zoom of the FLIR® camera, the camera will need to be configured with a static IP address in the ZeroConfig subnet. The Flir camera must have a software version greater than "Nexus 2.5.9.17" Please contact FLIR® for further information 1-888-747-3547 and upgrade information.

Give the camera a Static IP address

To browse to the FLIR® web interface, you will first need to discover FLIR®'s current IP address.

Determine the IP address of the camera

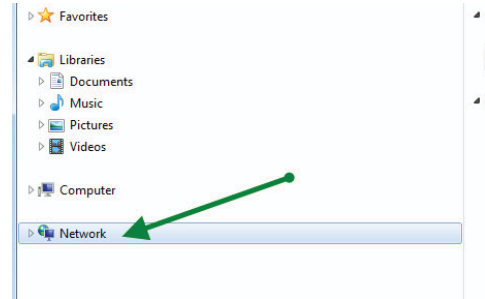
- 1 Connect the FLIR® Camera directly to the computer via Ethernet. Disable the computer's Wi-fi adapter so the camera and the computer are the only devices on the network



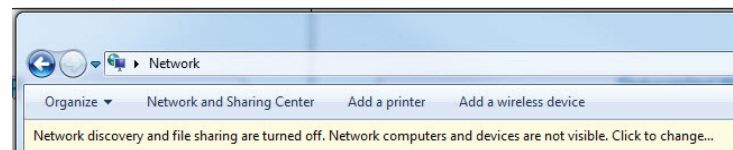
- 2 Apply power to the camera and wait for the camera to initialize itself

3 Open Windows Explorer.

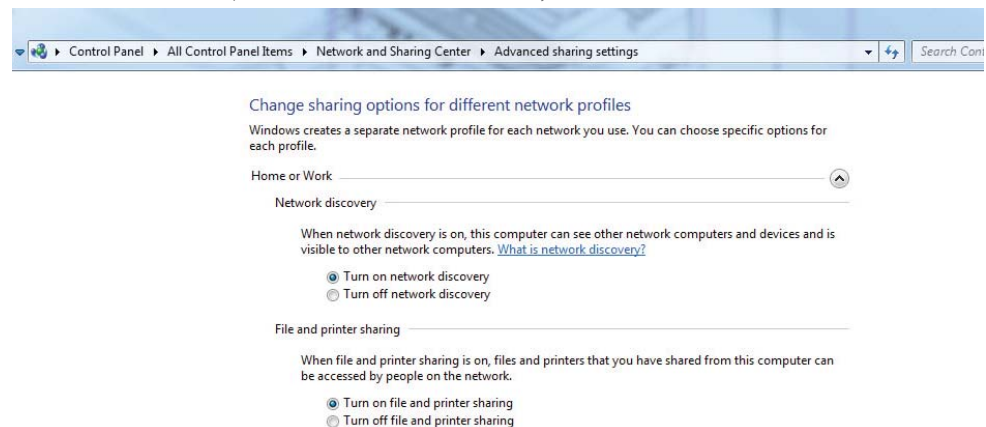
4 Click on Network



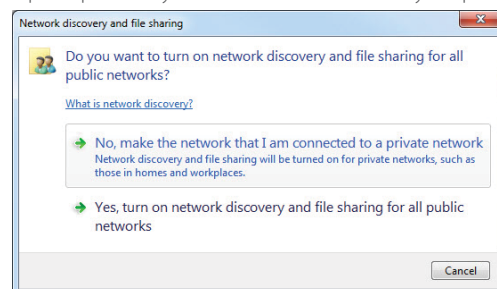
1 If necessary enable network discovery. A message will appear prompting you



2 In the "Home or Work" profile turn on network discovery.



3 If prompted only enable network discovery on private networks



4 The camera should now appear under other devices



5 Double click on the device. This will open the camera's built in web page in your default web browser.

➔ **Note:** If your default web browser is not Microsoft Explorer the web interface may not work correctly. Copy the url and paste into Microsoft Explorer

Microsoft Internet supported Web browsers include Microsoft Internet Explorer version 7 or 8 on PC platforms running Microsoft Windows. Internet Explorer 8 may have to be configured

to run in compatibility mode.

Set the Static IP address

- 1 Click on Network Setup.



Web Camera Control

Pan & Tilt

Home

Stop

Joystick Control

Left

Right

Twist -

Twist +

Down

Up

Menu Options

Display Minimal Icons

Display All Icons

Hide All Icons

Disable High Power

Disable High Torque

Set Stow Position

Switch IR/VIS

Set Default Color

Switch Video Polarity

Start Surveillance Scan

Switch Rearview Mode

Camera Controls

Active

Standby

Speed: 60 ▾

Product Information

Network Setup

Menu

User

Scene

Color

Freeze

Zoom +

Zoom -

FLIR
1-877-773-3547
www.flir.com



Camera Name:

M-618CS CG1001

Command String:

TX

RX



Network Settings

IP:

169.254.88.88

?

Mask:

255.255.0.0

?

Gateway:

?

☐ Dynamic ☒ Static

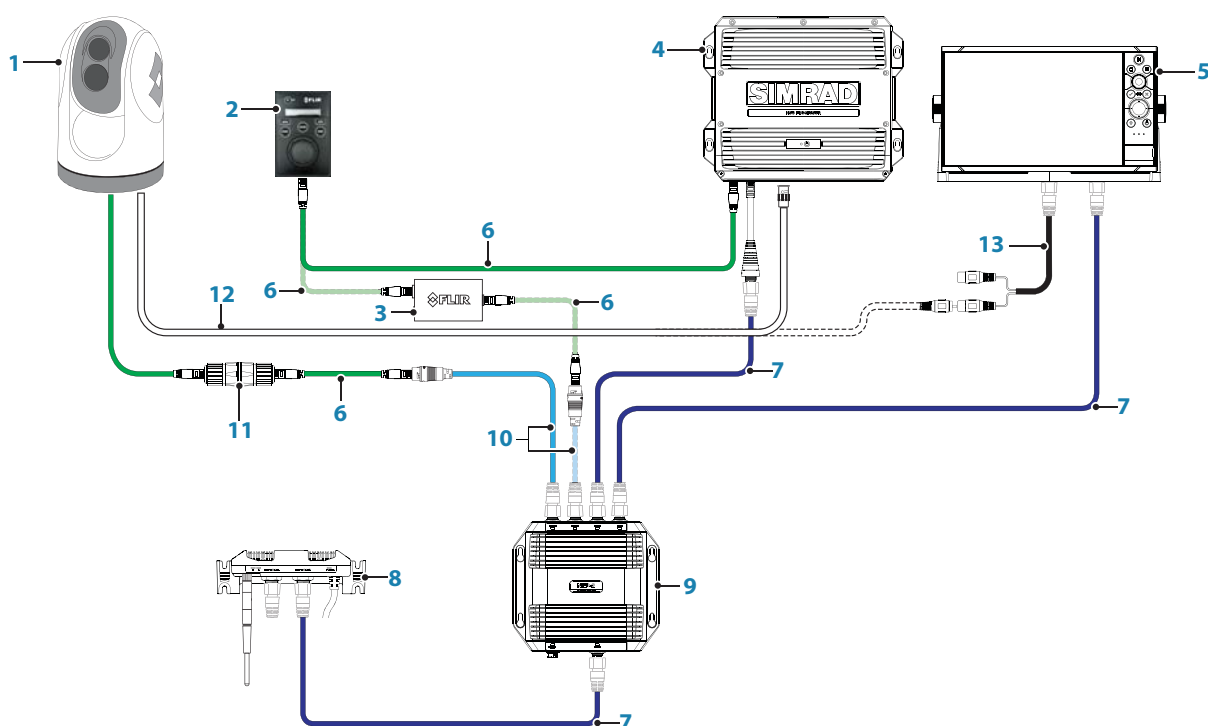
Save

Factory IP Defaults

- 2 Select the Static radio button
- 3 Set the IP Address to 169.254.xxx.xxx (xxx= number between 1 and 254) e.g 169.254.88.88
- 4 Set sub mask to 255.255.0.0
- 5 Click on the save button
- 6 Disconnect the laptop
- 7 Reconnect the camera to Simrad Ethernet network
- 8 Power on the system and check operation.

Analog Video Camera with Control over Ethernet

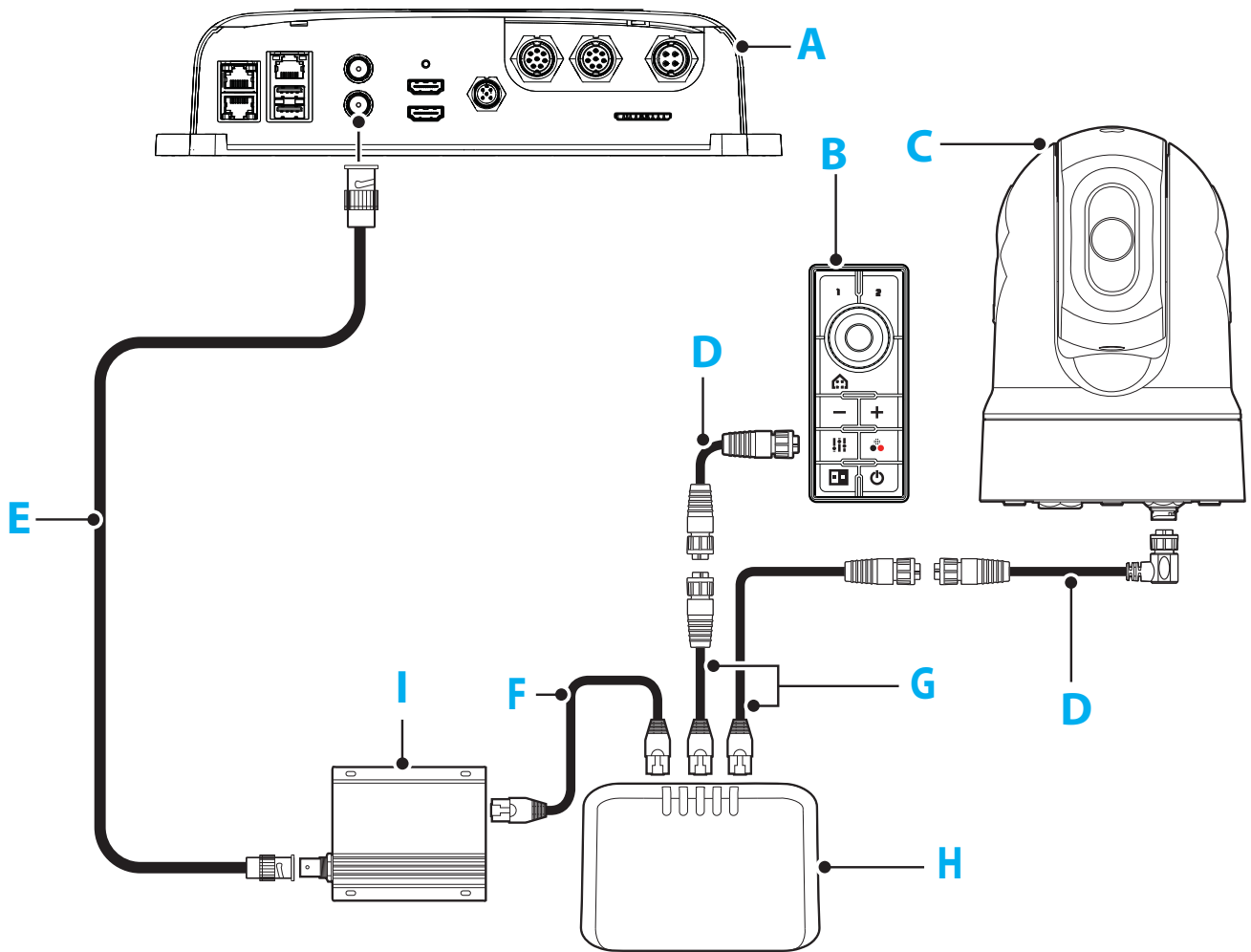
System with a WIFI-1 module should not require an additional setup



1	FLIR® M Series (analog video) Camera
2	FLIR® Joystick Control Unit (JCU) (Requires Power over Ethernet from PoE injector (PN 4113746)
3	FLIR® Power over Ethernet Power (PoE) Power supply PN 4113746. See Flir manual for more information on power
4	NSO evo2 Processor
5	SimRad MFD running compatible Software NSO evo3, NSS evo3, : NSS evo2, NSE>v4.0, NSS >v3.0
6	3rd party network cable for PoE devices (ieee802.3Af) 8 conductor T568B, Ethernet, double shielded FLIR® PN 308-0163-25 or equivalent. Note: to maintain IEC 60945 EMI compliance, use of a double shielded cable is required.
7	Navico Ethernet cable 5 Pin Yellow. Choice of 000-0127-51: 1.8m (6ft) , 000-0127-29: 4.5m (15ft) , 000-0127-30: 7.5m (25ft) 000-0127-37: 15.15m (50ft)
8	WIFI-1 Module. Acts as DHCP server and simplifies software integration to the FLIR® Camera (recommended)
9	Optional Ethernet switch. NEP-2, StructureScan, SonarHub
10	000-14552-001/ Ethernet adapter 1.5 m (4.9 ft) OR 000-0127-56/ Ethernet adapter 2.0 m (6ft)
11	FLIR® RJ45 IPX6 Cable Joiner
12	Composite video cable BNC
13	Composite video cable to other MFDs. (RCA) NSS series require additional video data cable (000-00129-001)

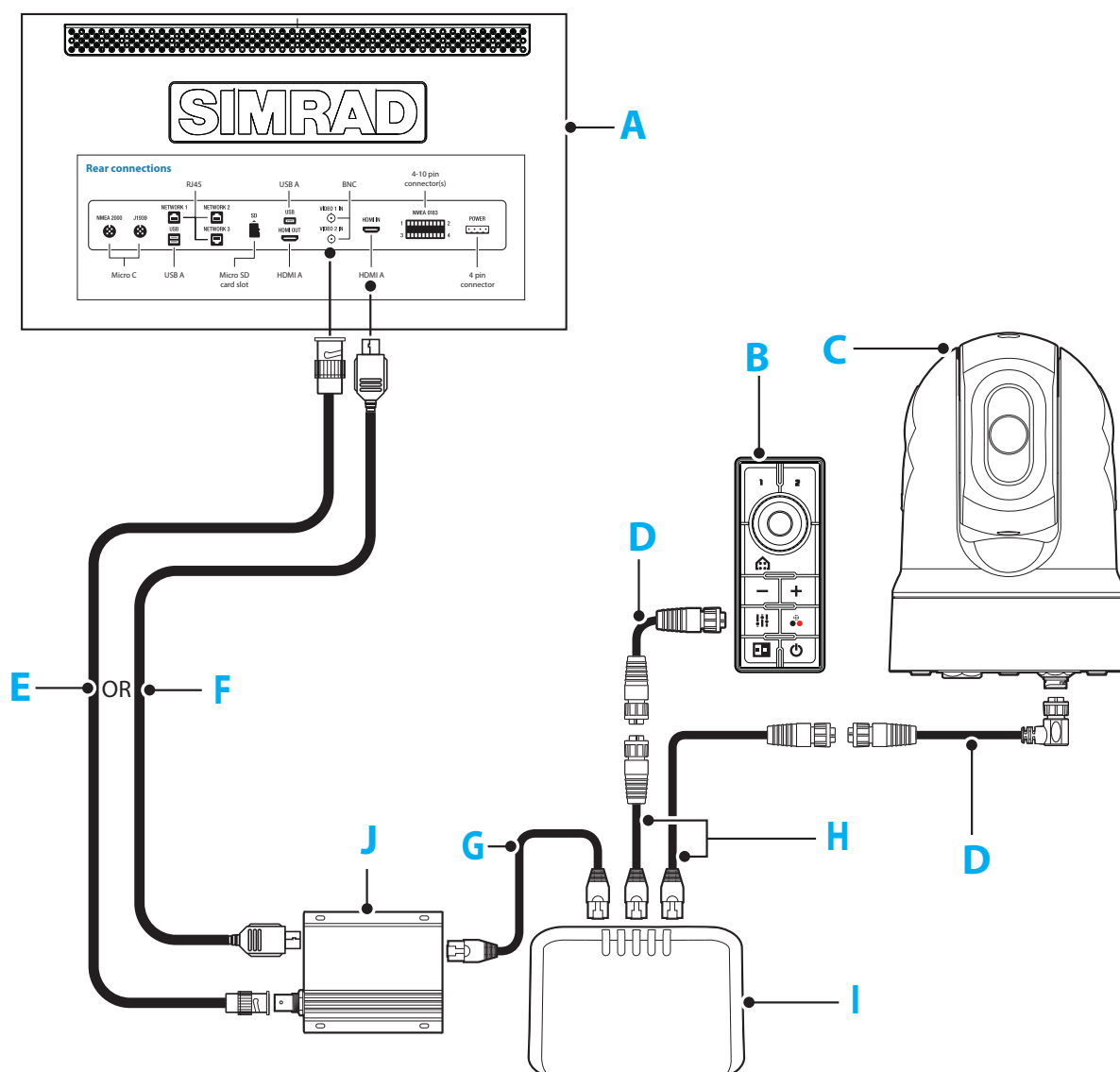
IP Camera integration

NSO evo2



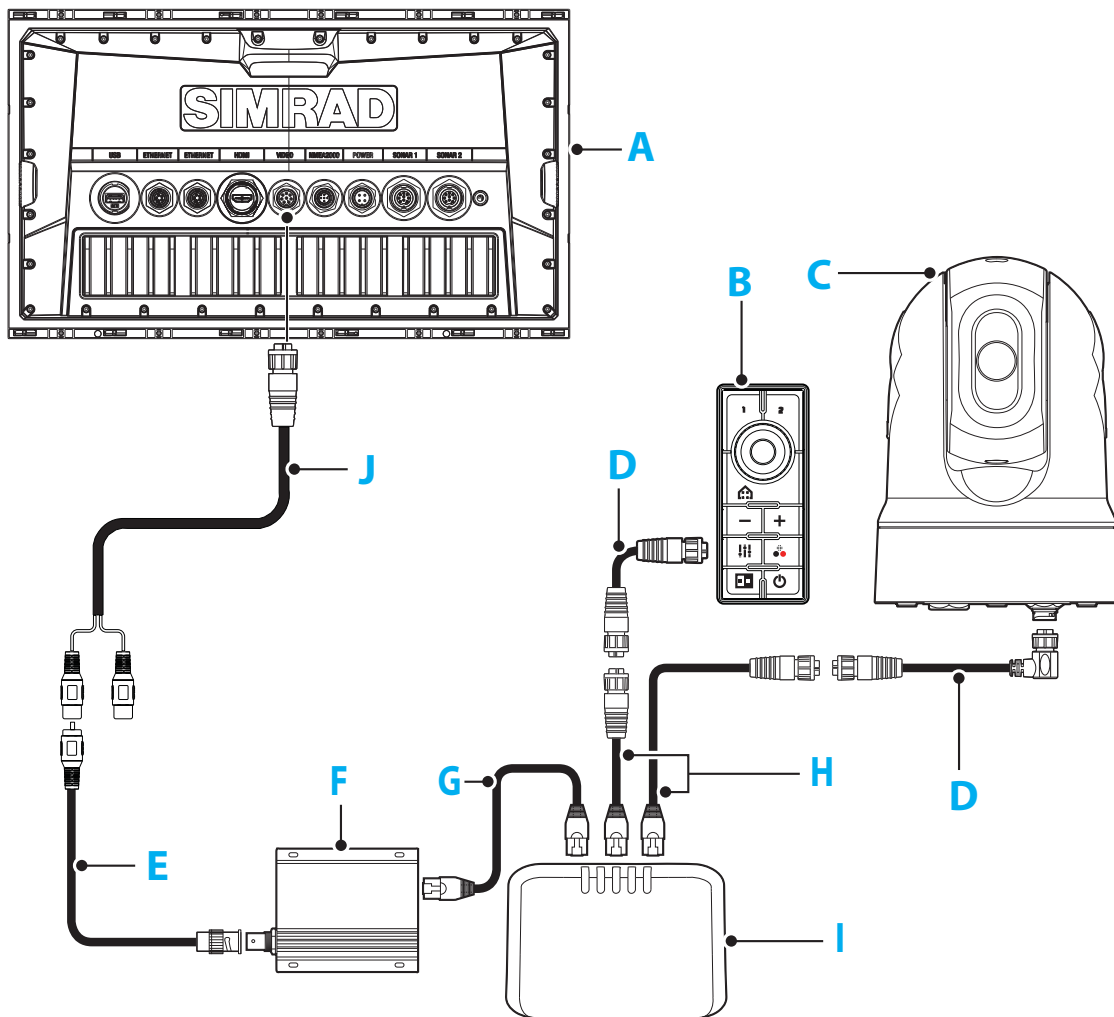
A	Simrad NSO evo 3
B	Joystick control unit (JCU-3) A80510
C	--M132 Thermal tilt-only, night-vision IP video camera --M232 Thermal pan-and-tilt, night-vision IP video camera
D	RayNet to RayNet cable. --Right angle Qnt. 1 included with the camera 10 m (33 ft) --Qnt. 1 included with JCU-3, 2 m (6.6 ft)
E	BNC to BNC Analog video cable (third party) OR "F" below
F	RJ45-RJ45 cable 7.5 m (25 ft) FLIR part (308-0163-25)
G	RayNet to RJ45 Adapter cable --Qnt. 1 supplied with the camera 100 mm (4") --Qnt. 1 supplied with JCU-3 100 mm (4")
H	FLIR PoE switch. Available in 5, 8 and 16 port or refer to the FLIR installation manual regarding powering the camera system
I	IP video decoder (A80508)

NSS evo3



A	Simrad NSO evo 3
B	Joystick control unit (JCU-3) A80510
C	--M132 Thermal tilt-only, night-vision IP video camera --M232 Thermal pan-and-tilt, night-vision IP video camera
D	RayNet to RayNet cable. --Right angle Qnt. 1 included with the camera 10 m (33 ft) --Qnt. 1 included with JCU-3, 2 m (6.6 ft)
E	BNC to BNC Analog video cable (third party) OR "F" below
F	HDMI Cable OR "E" above
G	RJ45-RJ45 cable 7.5 m (25 ft) FLIR part (308-0163-25)
H	RayNet to RJ45 Adapter cable --Qnt. 1 supplied with the camera 100 mm (4") --Qnt. 1 supplied with JCU-3 100 mm (4")
I	FLIR PoE switch. Available in 5, 8 and 16 port or refer to the FLIR installation manual regarding powering the camera system
J	IP video decoder (A80508)

NSS evo 3/2



A	Simrad NSS evo 2 / NSS evo 3
B	Joystick control unit (JCU-3) A80510
C	-M132 Thermal tilt-only, night-vision IP video camera -M232 Thermal pan-and-tilt, night-vision IP video camera
D	RayNet to RayNet cable. -Right angle Qnt. 1 included with the camera 10 m (33 ft) -Qnt. 1 included with JCU-3, 2 m (6.6 ft)
E	RCA to BNC Analog video cable (third party)
F	IP video decoder (A80508)
G	RJ45-RJ45 cable 7.5 m (25 ft) FLIR part (308-0163-25)
H	RayNet to RJ45 Adapter cable --Qnt. 1 supplied with the camera 100 mm (4") --Qnt. 1 supplied with JCU-3 100 mm (4")
I	FLIR PoE switch. Available in 5, 8 and 16 port or refer to the FLIR installation manual regarding powering the camera system

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