

MARK ROBERTS MOTION CONTROL

FOCUS ASSIST MODULE



QUICK START GUIDE

QSG Product code: MRMC-2168-00 Product Covered: MRMC-2087-00

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Chapter 1 Quick Start

Overview

Thank you for using the Focus Assist Module from Mark Roberts Motion Control (MRMC). The Focus Assist Module is designed for reliable day-in, day out use in professional studio environments. Focus Assist Module camera to measure target distances in real time and accordingly instruct the program to adjust the Focus axis. This is used along with any MRMC rig, camera and Flair 7 software application.

Safety

- Do not use around flammable gas. All electrical equipment can generate sparks that can ignite flammable gas.
- Keep Away From Pets and Children. The track and camera heads have powerful motors that can pinch, so take care not to get your hands trapped in the gears or cabling.
- Keep the equipment dry. The system has **not** been made weatherproof. Do not use with wet hands.
- Keep cables tidy. Use cable ties to keep them out of harm's way.

Hardware Requirements

- Focus assist camera and box
- Ulti box
- Flair 7 PC, camera installed on MRMC rig and focus motor

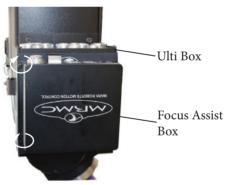


Mounting the Focus Assist Camera and Box

1. Unscrew 4 x screws on the Ulti box housing mounted on the arm of the rig.



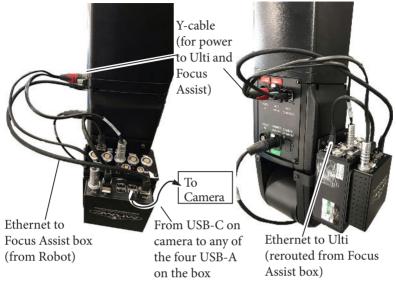
2. Replacing the 4 x screws with longer ones, mount the Focus assist box by attaching it to the Ulti box.



3. On the robot arm, mount the Camera Platform and the camera if not already mounted.



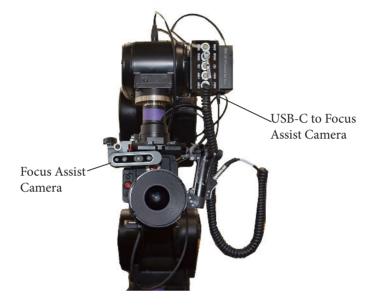
4. Connect the cables as shown:



5. Mount the Focus Assist camera on the matte bar on the camera platform and connect it with the USB-C port on the Focus Assist camera using the USB-C to USB-A cable.

The position of the focus assist camera relative to the actual camera sensor is important to get the right target distance. The measure of offsets in the lens setups may need to be adjusted depending on where the focus assist camera is mounted. Note that for critical applications that require high degree of precision, it might be beneficial to use a tape measure to accurately measure target distances. Therefore, preferably mount focus assist camera in the same location as your usual measure point/hook with the correct





offsets so you can easily switch between the focus assist camera and the manual tape measure whenever needed.

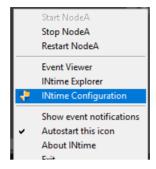
Note: The Focus Assist IP address is set to default 192.168.1.201. This doesn't need to be changed.

Creating a Virtual Network Interface in INTime

- 1. Close Flair 7, if open.
- 2. Create a Virtual interface within INtime NodeA:



2.1 Ensure that INtime is running. From the System Tray, right click the INtime icon and select **INtime Configuration**.



2.2 Double-click Node Management.

😵 INtime Configuration Panel	×
Select the INtime component that you want to configure	
Node Miscellaneous License Manager INtime Device Management	
Export Settings Import Settings	
Exit Help	



2.3 The Intime Node Management window appears with one item in the NIC list. Click the ellipses.

INtime Nodes Local: DESKTOP-IN2VMIT	System Kernel Network Auto Load Ad	vanced
NodeA	Configuration	
NODEA	Start automatically	Yes
	Hostname	DESKTOP-IN2VMIT-NodeA
	Domain	
	Network memory in MB	0
	DNS	
	Server1	
	Server2	
	Server3	
	NIC configuration	
	NIC list	ie1g0
	Routing	
	Routes IPv4	
	Default route IPv4	
	Routes IPv6	
	Default route IPv6	
	NIC list A list of Network Interface Cards (NICs), sepa	rated by semicolons. To edit, click the button in the
New Node Rename Remove	ight hand.	Help

2.4 The NIC Properties dialog box appears.

NIC Properties				×
Туре		~	Instance: 0	
Alternate interface name				
Enable DHCP				
• Use interrupt				
O Poll the NIC every 1 🔹 Iow	/ level tick(s)			
IPv4 Address Net Mask	Add	IPV6 Address	Prefix Length	Add
	Edit			Edit
	Up			Up
	Down			Down
	Delete			Delete
	1	L		1
ОК	Cance	el	Help	



2.5 Select the NIC Type as **Virtual Ethernet (ven)**. Then, click **Add** to add an IPv4 Address.

NIC Properties				×
Type Broadcom, Gigabit, PCI Ethernet (bge 1 Intel PRO 100, PCI Ethernet (e100m) Alte Intel Gigabit, PCI/PCIe Ethernet (e1g) RDC 10/100 PCI Ethernet (rd100m) RealTek, Gigabit, PCI Ethernet (rd10) RealTek, Legacy Gigabit, PCI Ethernet Virtual Ethernet (ven) XCNT Connector Driver (xont) O Poll the NIC every 1 ÷ low	-	~	Instance: 0	
IPv4 Address Net Mask	Add Edit Up Down Delete	IPV6 Address	Prefix Length	Add Edit Up Down Delete
ОК	Cano	el	Help	

2.6 In the appearing window, specify the IPv4 address as **192.168.1.199** and subnet mask as **255.255.255.0**. Click **OK**.

IPv4 address							×
IPv4 Address:	٥	. 0		ο.	0]	
						-	
Net Mask	255	. 0		0.	0		
_							
	OK		Car	ncel		Help	



2.7 The IP address should now appear in the list of IPv4 address. Click OK.

NIC Properties - ven0	×
Type Virtual Ethernet (ven) V Instance: 0 🔹	
Alternate interface name	
Enable DHCP	
Use interrupt	
○ Poll the NIC every 1 🖕 low level tick(s)	
IPv4 Address Net Mask I92.168.1.199 255.255.255.0 Edit Up Down C	Add Edit Up Down Delete
OK Cancel Help	

2.8 The NIC card is now added. Click OK in the NIC Management dialog box.

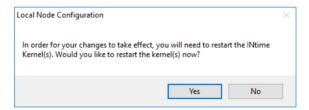
NIC Manag	gement				×
				7	
	Interface	Driver	Instance		
	ie 1g0	Intel Gigabit, PCI/PCIe Ethernet	0	Add	
	ven0	Virtual Ethernet	0	Edit	
				Move Up	
				Move Down	
				Delete	
		ОК	Cancel	Help	



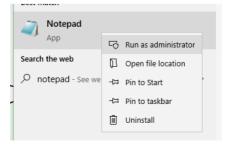
2.9 The virtual network interface in now created. Click Save and Close.

INtime Node Management	System Kernel Network Auto Load Adv	Anced
NodeA	Configuration	
NODEA	Start automatically	Yes
	Hostname	DESKTOP-IN2VMIT-NodeA
	Domain	
	Network memory in MB	0
	E DNS	
	Server1	
	Server2	
	Server3	
	NIC list	ie1g0;ven0
	Routing	
	Routes IPv4	
	Default route IPv4	
	Routes IPv6	
	Default route IPv6	
New Node Rename Remove	NIC list A list of Network Interface Cards (NICs), separa right hand.	ted by semicolons. To edit, click the button in the
Close	Save	Help

2.10 A message box appears for permission to restart INtime. Click Yes.



2.11 Open Notepad as an administrator.



9

2.12 Open the netuser.cfg file shown below. You will need to change the filter to see all files.

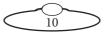
				- 🛄 (
Name	Date modified	Туре	Size	
≶ dhclient.cfg	07/01/2020 07:55	CFG File	1 KB	
ethers	07/01/2020 07:55	File	1 KB	
📄 eui64	07/01/2020 07:55	File	1 KB	
📄 hosts	07/01/2020 07:55	File	2 KB	
📁 ip6actl.cfg	07/01/2020 07:55	CFG File	1 KB	
≤ ipfw.cfg	07/01/2020 07:55	CFG File	1 KB	
롣 ipsec.cfg	07/01/2020 07:55	CFG File	10 KB	
📁 loader.cfg	09/12/2020 14:46	CFG File	4 KB	
≶ netload.cfg	09/12/2020 14:46	CFG File	1 KB	
📁 netuser.cfg	22/09/2020 13:45	CFG File	2 KB	
📁 netuser0.cfg	07/01/2020 07:55	CFG File	1 KB	
networks	07/01/2020 07:55	File	1 KB	
≤ nsswitch.cfg	07/01/2020 07:55	CFG File	1 KB	
protocols	07/01/2020 07:55	File	6 KB	
≤ resolv.cfg	07/01/2020 07:55	CFG File	1 KB	
:			✓ All Files (*.*)	

C:\ProgramData\TenAsys\INtime\NodeA\etc\netuser.cfg

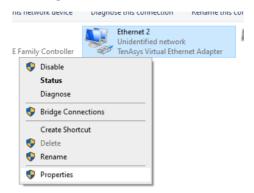
2.13 Add the following lines to this file. Replace rtl1g0 with the name of the interface you noted earlier.

```
ifconfig.rta -q bridge create
ifconfig.rta bridge0 addm ven0 addm rtl1g0 up
ifconfig.rta ven0 up
```

2.14 Save and Exit.



2.15 Open the Windows Network Connections window. You will see TenAsys Virtual Ethernet Adapter listed. Right-click and open the Properties window.



2.16 Locate the Internet Protocol Version 4 (TCP/IPv4) item and click **Properties**.

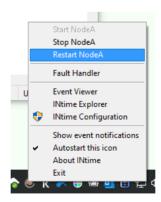
Ethernet 2 Properties	×
Networking Sharing	
Connect using:	
🚽 TenAsys Virtual Ethernet Adapter	
<u>C</u> onfigure	
This connection uses the following items:	
Client for Microsoft Networks File and Printer Sharing for Microsoft Networks Npcap Packet Driver (NPCAP) Internet Protocol Version 4 (TCP/IPv4) Microsoft Network Adapter Multiplexor Protocol Microsoft LLDP Protocol Driver Internet Protocol Version 6 (TCP/IPv6) <	
Install Uninstall Properties	
Description Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.	
OK Cancel	

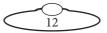


2.17 Check **Use the following IP address** and enter the IP address **192.168.1.200**.

Internet Protocol Version 4 (TCP/IPv4)	Internet Protocol Version 4 (TCP/IPv4) Properties				
General		_			
You can get IP settings assigned auton this capability. Otherwise, you need to for the appropriate IP settings.					
O Obtain an IP address automatical	ly				
OUse the following IP address:		11			
IP address:	192 . 168 . 1 . 200				
Subnet mask:	255.255.255.0				
Default gateway:					
Obtain DNS server address autom	natically				
• Us <u>e</u> the following DNS server add	resses:	1			
Preferred DNS server:					
<u>A</u> lternate DNS server:					
Validate settings upon exit Advanced					
	OK Cance	I			

- 2.18 Click **OK** and close.
- 2.19 Restart the INtime Node A.





Setup in Flair

- 1. Launch Flair 7.
- In Flair, select System > Configuration to open the System Configuration window. ensure the IP address is 192.168.1.201. Check the Enable box and click Save. The icon next to the Enable checkbox should turn green.

Configuration				0	×
		Import	Export	Save	
System 🔻					
Network Direct 🔻					
RIC 🔻					
Robot 🔻					
Јор 🔺					
Focus Assist 🔺	Enable 🕑 🎯 IP Address 192.168.1.201 Port 8888				

Note

The X offset of the Focus Assist camera to the nodal point of the main film camera follows the same direction as the lens setup, so forward of the film camera is the X positive direction. The Y and Z offsets can be ignored as the Focus Assist camera will (or should) always be mounted in the same direction as the film camera

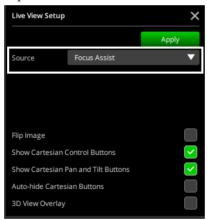
3. **Save** and close the dialog box. The Status Icon MUST go green to indicate that the Focus assist bridge communication is successful.





4. In the LiveView, open the setup popup.

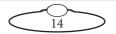
5. In the LiveView Setup dialog box, select **Focus Assist** from the Source drop-down list.

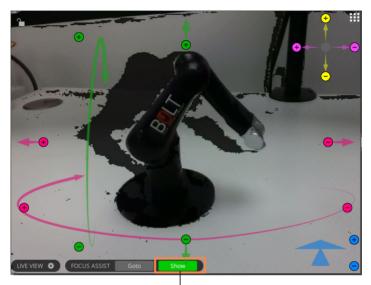


The video from the Focus Assist will now appear in the LiveView area.

Displaying the Heat Map

When Focus Assist is installed and configured and LiveView is set to display the video from a source (that is you have selected a source other than Focus Assist in the Live View Setup dialog box), you can toggle the LiveView to show the video from the source and that from the Focus Assist camera by clicking the **Show** button.



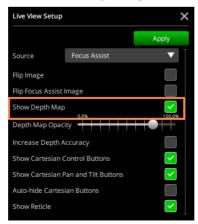


Use to toggle video from main camera and focus assist camera

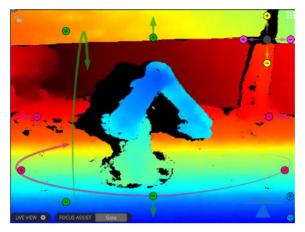
However, if you open two LiveView windows, one for the main camera video and another for the focus assist camera, the Show button will not available.

Displaying the Depth Map

A depth map of the video can be displaying by enabling the **Show Depth Map** option in the Live View Setup dialog box.







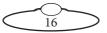
A depth image is an image channel in which the RGB colours on the image represent the distance between the image plane and the corresponding object.

Using Focus Assist

Once the heat map from the Focus Assist camera is displayed in LiveView, the Goto button in LiveView can be used to toggle between the following two functions:

- 1. :When the Goto button is grey, clicking at a target in the LiveView will display the target distance (focus position) in the Waypoint view allowing you to store the focus value in the key frames
- 2. When the Goto button is green, clicking in the LiveView will pull the focus axis to focus on that target.

If you hover the mouse pointer in the LiveView area, it should have changed to '+' rather than a pointer in the Target mode. Point at a target and double-click. The lens motor will move to bring the target in focus. The lens must be calibrated for Focus Assist to measure target distances accurately.



Modifying the IP address of the Focus Assist box

1. Open a web browser on the Flair PC and visit http:// 192.168.1.201:10000.

😃 Login to Webmin	× +				
← → C ▲ Not secure	192.168.1.201 :10000	¢	Θ	Incognito	
	Compared and a series of the s				

2. Log on with username "focusassist" and password "focusassist".

🐵 Login to Webmin		-		×
\leftrightarrow \Rightarrow \mathbf{C} \blacksquare Not secure	192.168.1.201.10000	\$ a In	cognite	:
	Counterference			

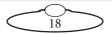


3. On the left, select Tools -> Custom Commands.



4. Enter the new IP address in the input field.



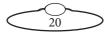


5. Click 'Set IP Address'.

- 6. Click **Save**. The browser will lose connectivity because the IP address will have changed. Log on with the updated IP address to verify.
- 7. In Flair, in the **System > Configuration** window, change the Focus Assist IP address to match with the changed IP address. The port should remain the same.

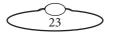
uration				0
		Import	Export	Save
Robot 🔻				
Job 🔻				
Focus Assist 🔺	Enable 🔽 📀			
	IP Address 192.168.1.			
	Port 8888			
	Flip Image			
	X Offset 0.120 n			
Flair API 🔻				
Advanced 🔻				













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