November 2006





# **Gbit Connectivity**



#### Hardware Connections

Connect as shown in Diagrams 1 and 2 before turning the *MEMRECAM* fx power on. For proper operation ensure that the *MEMRECAM* fx DRP is configured for Gbit connectivity (shown in the *MEMRECAM* fx DRP Gbit connectivity setup section).



Diagram 1 Direct Gbit connection to a single MEMRECAM fx DRP



Diagram 2 Gbit connection via optional 1000 Base-TX (Gbit) Hub to a single MEMRECAM fx DRP

**MEMRECAM** fx cameras that support 1000 Base-TX (Gbit) can be connected direct to a control computer or with an optional Gbit Ethernet Hub. The control computer must have Microsoft's iSCSI Initiator & fx Link software installed to operate the DRP remotely. For direct connectivity a CAT 5 crossover cable is necessary. When the optional Gbit Hub is used, straight CAT 5 cables are required. While connected to the control computer, the **MEMRECAM** fx can also be operated using the Rear Camera Control Touch Pad or the J-PAD 2 remote control (not shown).

- MEMRECAM fx DRP Gbit connectivity setup
  - Enter the TOP MENU by pressing the MENU button while in READY mode. Use the UP/DOWN keys to select the SYSTEM MENU row and press the RIGHT key.

GAIN	OdB 6dB 12dB
HITE BALANCE	AUTO 3100 5000 9000 REG
NHANCE	OFF NORMAL HIGH
AMMA	OFF LOW NORMAL
HROMA	0 50 100 150 200
NEE	OFF ON
EM SEGMENT >	
STEM MENU >	
save MENU >	

**TOP MENU** 

 In the SYSTEM MENU, use the UP/DOWN keys to select the INFORMATION row and press the RIGHT key to enter the INFORMATION sub menu.

D	000
ATE,TIME	2006 / 11 / 30 02 : 40 : 10
BOX DISPLAY	ON OFF
AFM DISPLAY	ON OFF
RAME DISPLAY	Frame Time Memory%
RAME TIME	Trigger Exposure
-VGA VIDEO	ON OFF
arning Settings	•
IOX Settings >	
RIGGER MENU	
YSTEM SETUP .	
	and the second

**SYSTEM MENU – INFORMATION** 

3) Make a note of the CID, Gbit IP address and Subnet Mask of your particular *MEMRECAM* fx DRP from the **INFORMATION** sub menu. This information is needed to set the IP address of the Control Computer. In this example the *MEMRECAM* fx DRP CID was **2092**, the Gbit IP address is **192.168.79.2** and the subnet mask is **255.255.255.0** Press the **STOP** button to return to **READY** mode.



**INFORMATION Sub Menu – CID** 

Model	MEMRECAM fx K5
Version	2.21 R6 2006/09/26 17:27:46
CID	2092
MEMORY SI	ZE 16 GB
Hardware R	evision KCP-BBB-BGF-DC0
Network	Ethernet
IP address	172.21.42.118 / 255.255.0.0
MAC addres	s 00:05:61:10:02:de
• Gbit IP add	ress 192.168.79.2 / 255.255.255.0
Gbit MAC a	ddress 00:05:61:10:02:fe

**INFORMATION Sub Menu – Gbit IP Address** 

4) Enter the TOP MENU by pressing the MENU button while in READY mode. Use the UP/DOWN keys to select the SYSTEM MENU row and press the RIGHT key. In the SYSTEM MENU, use the UP/DOWN keys to select the SYSTEM SETUP row and press the RIGHT key to enter the SYSTEM SETUP sub menu.



SYSTEM MENU – SYSTEM SETUP

5) In the SYSTEM SETUP sub menu, use the UP/DOWN keys to select the Network row and press the SET key to enable editing. Use the LEFT/RIGHT keys to select Gbit (a black box highlights the selection). Press the SET key to confirm the setting. Use the UP/DOWN keys to select the REBOOT row and press the SET key to reboot and apply changes.

SEGMENT SIZE	16GBx1 8.0GBx2 4.0GBx4 >
Network	Gbit Ethernet
Sync Setting	Remote IRIG BOX
REBOOT	

**Network Connection Sub Menu** 

## • Minimum PC Hardware requirements to operate fxLink software

PC	IBM PC compatible (DOS/V), single processor
CPU	Pentium III 750 MHz or higher (with MMX)
	(Recommended Pentium IV 2.5GHz or higher, compression and display processing
	speed depends on CPU capability)
Memory	256MB RAM or higher (recommended 512MB or higher)
Graphics	Full color, 1024×768 resolution or higher (recommended 1280×1024 or higher)
OS	Windows NT 4.0 Service Pack 5 or higher, Windows 2000 Professional,
	Windows XP Professional, Internet Explorer 5.0 Service Pack 2 or higher
Hard Disk	Minimum 42MB of disk space for program, 512MB or higher.
	Smart Capture requires an NTFS volume for data storage. Depending on the number
	of cameras, frames saved and number of projects 120GB of disk space or higher is
	recommended.
Network	Ethernet (IEEE8023u 100BASE-TX)
CD Drive	1 (for installation)

Compression and display processing speeds depend on CPU capability. There should be sufficient free disk space to store the image data. Depending on the PC configuration and hardware version, fxLink may not operate well under conditions as listed above. (Consult your retail outlet for recommended PC systems).

**Note:** Refer to the fxLink software Operation Manuals for handling and operation of the control computer.

## Network Interface Card (NIC) Setup

**NOTE:** The control computer NIC setup, Microsoft iSCSI Initiator, fxLink and device driver installation must be performed as an authorized user of the Windows "Administrators" group. Once the system has been properly configured, other user accounts will be able to operate the system.

1) If using <u>Windows XP</u> enter the **START** menu and click on **Control Panel**. Click on **Network and** Internet Connections and then **Network Connections**.

If using <u>Windows 2000 or Windows XP classic desktop</u>, right click **My Network Places** icon found on the Desktop. Click **Properties**.

2) Right click the Local Area Connection icon and click Properties.



3) In the General tab, select Internet Protocol (TCP/IP) and click the [Properties] button.

🛨 Local Area Connection Properties 🛛 🔹 🛛
General Authentication Advanced
Connect using:
Broadcom NetXtreme Gigabit Ethernet
Configure
This connection uses the following items:
Client for Microsoft Networks     Section 2 State Science of Content of
Install Uninstall Properties
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
Show icon in notification area when connected
OK Cancel

4) In the Internet Protocol (TCP/IP) Properties window click the Use the following IP address radio button. Enter an IP Address using the same Network ID and Subnet Mask as the *MEMRECAM* fx DRP. The host portion must be different than the *MEMRECAM* fx address and could be any number from 1 to 254. In this example we set the computer IP address to 192.168.79.3 (Network ID 192.168.79.0 & Host ID 0.0.0.3) and the Subnet Mask was 255.255.255.0. Click the [OK] button.

Internet Protocol (TCP/IP) Prope	rties 🤶 🔀
General	
You can get IP settings assigned autor this capability. Otherwise, you need to a the appropriate IP settings.	atically if your network supports isk your network administrator for
O Dbtain an IP address automatically	,
O Use the following IP address: —	
IP address:	192.168.79.3
S <u>u</u> bnet mask:	255 . 255 . 255 . 0
Default gateway:	· · ·
O Obtain DNS server address autom	atically
• Use the following DNS server add	resses:
Preferred DNS server:	
Alternate DNS server:	
	Ad <u>v</u> anced
	OK Cancel

5) To finish the NIC setup, click the **[Close]** button.

🕹 Local Area Connection Properties 🛛 ? 🗙
General Authentication Advanced
Connect using:
Broadcom NetXtreme Gigabit Ethernet
Configure This connection uses the following items:
<ul> <li>✓ □ Client for Microsoft Networks</li> <li>✓ □ File and Printer Sharing for Microsoft Networks</li> <li>✓ □ QoS Packet Scheduler</li> <li>✓ ☞ Internet Protocol (TCP/IP)</li> </ul>
Install Uninstall Properties
Allows your computer to access resources on a Microsoft network.
Show icon in notification area when connected
Close Cancel

## Connectivity test

 Execute the Ping command to test connectivity to the *MEMRECAM* fx. From the START menu click Run... In the Run window type cmd.



 To run the PING command type ping X.X.Y, where X.X.X. represents the Network ID and.Y the Host ID of your particular *MEMRECAM* fx DRP. In this example we entered ping 192.168.49.2 and pressed the [ENTER] key.



 The connection test has been successful when the *MEMRECAM* fx DRP sends Reply messages.



4) A failure of the test is indicated by a Hardware error. Check the Control Computer's IP address has a common Network ID with the *MEMRECAM* fx. In addition ensure that the IP addresses are NOT identical, this would create a conflict.



## Microsoft iSCSI Initiator Installation

 If the fxLink Installation CD is not available, download the Microsoft iSCSI Initiator Software Installer Version 2.02 (Initiator-2.02-QFE-bld1895-x86fre.exe) from Microsoft's web address below.

http://www.microsoft.com/downloads/results.aspx?pocId=&freetext=Microsoft%20iSCSI%20Software% 20Initiator&DisplayLang=en

 From your local hard drive run the Microsoft iSCSI Initiator Software Installer and click the [Next>] button.

Software Update Installati	ion Wizard 🛛 🔀
	Use this wizard to install the following software update: Microsoft iSCSI Initiator Before you install this update, we recommend that you: - Back up your system
	<ul> <li>Llose all open programs</li> <li>You might need to restart your computer after you complete this update. To continue, click Next.</li> </ul>
	< <u>B</u> ack Next > Cancel

3) Confirm that **Initiator Service** and **Software Initiator** are checked. Click the **[Next>]** button.

Software Update Installation Wizard	×
Microsoft iSCSI Initiator Installation	2
Microsoft iSCSI Initiator will be upgraded from 2.0x	
<ul> <li>Virtual Port Driver</li> <li>Initiator Service</li> <li>Software Initiator</li> <li>Microsoft MPIO Multipathing Support for iSCS1</li> </ul>	
< <u>Back Next&gt;</u>	Cancel

4) Read the License Agreement, select the I Agree radio button and click the [Next>] button.



5) After the software has been loaded, click the [Finish] button to complete the Microsoft iSCSI Initiator installation.

Software Update Installat	ion Wizard
Ð	Completing the Microsoft iSCSI Initiator Installation Wizard
	You have successfully completed the iscsi200 Setup Wizard.
	To close this wizard, click Finish.
	< Back Finish Cancel

## • fxLink Software Installation

# **IMPORTANT:** Before installing fxLink, turn **MEMRECAM** fx power **OFF**.

1) Insert the fxLink installation CD to run the setup utility. Click the [Next>] button.



2) Select the **Standard Installation (Recommended)** radio button and click the **[Next>]** button.

fxLink Setup			
The installation method			22
Please choose the method of installing.			
<ul> <li>Standard installation (Recommendation)</li> </ul>			
<ul> <li>Custom installation</li> </ul>			
InstallShield			
	< <u>B</u> ack	<u>N</u> ext >	Cancel

3) Click the [No] button since the connection will be made using Gbit Ethernet.



 Check the appropriate box for the NIC being used to connect to the *MEMRECAM* fx and click the [OK] button.

🖼 TCP/IP network optimization			
A TCP/IP network setting is optimized to MEMRECAI To optimize, click check box next to it. If the check box is set, A TCP/IP network setting is o You must shut down and restart your computer before	M connection. ptimized to MEMREC e the new settings will	AM connection.	OK Cancel
Name	Address	SubnetMask	Gateway
Broadcom NetXtreme Gigabit Ethernet - Pack	192.168.79.3	255.255.255.0	
1394 Net Adapter			
<			>
,			

5) Select the GUI mode desired and click the [Next>] button.



To accept the default **Destination Location** where the software will be installed click the [Next>] button.

fxLink Setup	X
Choose Destination Location Select folder where setup will install files.	X
Setup will install fxLink in the following folder.	
To install to this folder, click Next. To install to a different folder, click Bro another folder.	wse and select
C Destination Folder	
C:\Program Files\nac\MEMRECAM\	Browse
InstallShield	
< Back Next	t> Cancel

7) To accept the default **Program Folder** for the **START** menu click the **[Next>]** button.

fxLink Setup	×
Select Program Folder Please select a program folder.	
Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the existing folders list. Click Next to continue.	
<u>P</u> rogram Folder:	
MEMRECAM fxLink	
Existing Folders:	
Accessories	
Administrative Tools	
Microsoft iSCSI Initiator	
Startup	
	_
InstallShield	
< <u>B</u> ack <u>N</u> ext > Cancel	

8) After the software has been loaded, click the **[Finish]** button to reboot the PC and complete the fxLink installation.

Setup	
	Setup Complete Before you can use the program, you must restart your computer. Mes, I want to restart my computer now.           No, I will restart my computer later.           The Setup is completed after taking the CD-ROM out and clicking the Finish button.
	< Back Finish Cancel

# Microsoft iSCSI Initiator Setup

# **IMPORTANT:** Turn *MEMRECAM* fx power **ON**.

- 1) From the START menu, Programs, run Microsoft iSCSI Initiator.
- 2) In the **iSCSI Initiator Properties** window select the **Discovery** tab. Click the **[Add]** button to enter a Target Portal.

CSI Initiator Pro	perties			(
General Discovery	Targets	Persistent Targe	ets Bound Volumes/Devi	се
_ <u>Iarget</u> Portals—				7
Address	Port	Adapter	IP Addr	
Add		Pomouo	Pofreeh	
800		<u>U</u> elliove	<u>ne</u> irean	
-iSNS Servers-				
Name				
Add		Remove	Re <u>f</u> resh	
				_

3) In the **Add Target Portal** window enter the Gbit IP address of the **MEMRECAM** fx. In our example

the Gbit IP address was 192.168.79.2. Click the **[OK]** button.

Add Target Portal		
Type the IP address or DNS name a want to add. Click Advanced to sele session to the portal.	and socket number o ect specific settings	of the portal you for the discovery
IP address or DNS name:	<u>P</u> ort:	
192.168.79.2	3260	Advanced
	ОК	Cancel

**NOTE:** If the configuration is not correct the *Connection Failed* error will appear. Double-check the MEMRECAM fx IP address and the PC's IP Address and Subnet Mask. Also ensure the MEMRECAM fx power is ON.



4) Confirm that the **MEMRECAM** fx IP address is displayed in the Target Portals table.

iSCSI Initiator Pro	perties		×
General Discovery	Targets	Persistent Targets	Bound Volumes/Devices
Iarget Portals			
Address	Port	Adapter	IP Addr
192.168.79.2	3260	Default	Default
Add		<u>R</u> emove	R <u>e</u> fresh
Name			
Add		Remove	Refresh
	(	ок 🗌	Cancel Apply

5) Click the **Targets** tab. Select the *MEMRECAM* fx desired and click the **[Log On]** button. Notice that the status appears as **Inactive**.

iSCSI Initiator Properties	K
General Discovery Targets Persistent Targets Bound Volumes/Devices	1
Select a target and click Log On to access the storage devices for that target. Click details to see information about the sessions, connections and devices for that target.	
Targets:	
Name Status	1
Ign.1996-06.jp.co.camnac:MEMHELAM.tx-K5 Inactive	
Details Log On Rgfresh	

 Ensure that the Automatically restore this connection when the system boots box is checked. Click the [OK] button.

Log On to Target 🛛 🔀
Target name:
jqn.1996-06.jp.co.camnac:MEMRECAM.fx-K5.V0205.CID:2092
Automatically <u>r</u> estore this connection when the system boots
Enable multi-path
Only select this option if iSCSI multi-path software is already installed on your computer.
Advanced OK Cancel

**NOTE:** If the box were NOT checked it would prevent other users from successfully operating the system. The logon procedure can only be performed as an authorized user of the Windows "Administrators" group.

7) Confirm that the status now appears as **Connected**.

iSCSI Initiator Pro	perties			×
General Discovery	Targets	Persistent Targets	Bound Volumes/Device:	s
Select a target and target. Click details devices for that targ	click Log ( to see infor jet.	In to access the sto mation about the se	rage devices for that ssions, connections and	
<u>T</u> argets:				
Name			Status	1
ign.1996-06.jp.co.	camnac:M	EMRECAM.fx-K5	Connected	
	De	tails Log (	)n R <u>e</u> fresh	
	6			5
	L		Cancel Apply	

 If connecting to multiple *MEMRECAM* fx repeat steps 2 thru 7. To complete the Microsoft iSCSI Initiator setup click the [OK] button. 9) When connecting to the MEMRECAM fx for the first time the Found New Hardware Wizard will appear. Select the Install the software automatically (Recommended) radio button and click the [Next>] button. If asked to check with Microsoft for the latest software, select Not at this time.

Found New Hardware Wiz	ard
	Welcome to the Found New Hardware Wizard This wizard helps you install software for: nac Memrecam
	If your hardware came with an installation CD or floppy disk, insert it now.
	What do you want the wizard to do?
	< Back Next > Cancel

10) After the *MEMRECAM* fx device driver has been loaded, click the [Finish] button.

Found New Hardware Wizard		
Completing the Found New Hardware Wizard The wizard has finished installing the software for:		
< <u>Back</u> Finish Cancel		

11) Check for a **MEMRECAM** entry in **Device manager** to confirm successful installation of the **MEMRECAM** fx device driver and that the camera is connected.



# • fxLink Setup

1) Run the fxLink software by double clicking the **fxLink** icon on your computer desktop.



2) Click Settings on the top toolbar. Select Camera Connection via Gbit. Then click on Camera Registration...

File View	Settings	Help	
8. <i>V</i> = 1	Camer	a Registeration	Shift+Ctrl+R
	Camer	a Connection via TCF	P/IP
	Camer	a Connection via FC-	AL
	✓ Carner	a Connection via Gbit	t
	Option		Shift+Ctrl+C

3) Enter a Nickname and the Gbit IP address of the MEMRECAM fx. Select the appropriate Camera Type and enter the CID. Click the [Add] button and register the camera. Repeat for each MEMRECAM fx. When finished, click the [OK] button.

💀 Camera Registratio	on			
Nick Name K5	IP Address 192.168.79.2	Type K5	CID 2092	Nickname K5
				IP Address 192.168.79.2
				Camera Type
				CID 2092
				Add Delete
				Change
<				
				OK Cancel

4) Click the camera button to start the connection.

**NOTE:** Some computers may require additional entries made to the registry. If prompted, browse for and double click for the iscsi\_setup.reg file.

## C:\Program Files\nac\MEMRECAM\fxLink\iscsi\_setup.reg

Setup Error				
<u>.</u>	The setup for MEMRECAM connection is not performed. Perform "C:\Program Files\nac\MEMRECAM\fxLink\iscsi_setup.reg" as an authorized user of the Windows "Administrators" group. And restart your computer. When not performing this setup, the software cannot display a live image and cannot download the camera images.			

## Click the [Yes] button to add the information to the registry.

Registry Editor					
?	Are you sure you want to add the information in C:\Program Files\nac\MEMRECAM\fxLink\iscsi_setup.reg to the registry?				

This procedure needs to be performed only once as an authorized user of the Windows "Administrators" group

**NOTE:** If additional entries had to be made to the registry, run the TCP/IP Network Optimization utility again. The following message would appear if Optimization is required.

Setup Error				
<u>!</u>	The setup of a TCP/IP network is not optimized for MEMREAM connection. Perform "TCP/IP network optimization" as an authorized user of the Windows "Administrators" group. And restart your computer. When not performing this setup, the software cannot display a live image and cannot download the camera images.			

Browse for and double click for the NicConfig.exe file. Check the appropriate box for the NIC being used to connect to the **MEMRECAM** fx and click the **[OK]** button and Reboot the PC.

## C:\Program Files\nac\MEMRECAM\tools\NicConfig.exe

Ш¥	🗱 TCP/IP network optimization					
	A TCP/IP network setting is optimized to MEMRECAM connection. To optimize, click check box next to it. If the check box is set, A TCP/IP network setting is optimized to MEMRECAM connection. You must shut down and restart your computer before the new settings will take effect.					Cancel
	Name	Address	SubnetMask	Gateway	MTU	
	Intel(R) PRO/Wireless 3945ABG Net	192.168.1.102	255.255.255.0	192.168.1.1	default	
	🗹 Broadcom NetXtreme 57xx Gigabit	172.21.42.1	255.255.0.0		1496	
	1394 Net Adapter					

This procedure needs to be performed only once as an authorized user of the Windows "Administrators" group.