Integration Note

Manufacturer:	Global Cache
Model Number(s):	**iTach, iTach Flex (see details below)**
Core Module Version:	6.4.200
Comment:	iTach Flex FW: 710-3000-07, iTach Flex Wi-Fi FW: 710-2000-07 iTACHIP2CC FW: 710-1008-05, iTachIP2IR FW: 710-1005-05, iTachWF2IR FW: 710-1001-05, iTachWF2SL FW: 710-1007-05, iTachIP2SL FW: 710-1009-05, iTachWF2CC FW: 710-1010-05
Document Revision Date:	8/5/2013

OVERVIEW AND SUPPORTED FEATURES

The Global Cache iTach series offers models that support wired or Wi-Fi variants that support one of the following options:

- IR Network Adapter that converts hex signals sent over IP to IR codes that can be configured for output from 3.5mm jacks using either IR flashers or direct cabling (see note below).
- IP-to-Serial device that supports RS-232 serial ports for control of serial devices.
- IP controlled relays.
- iTach Flex allows a single wired or Wi-Fi model to be used for 1-3 IR Output or Serial control by simply switching the configuration and iTach Flex cable.

The iTach and iTach Flex series are small devices that allow easy interaction with remote subsystems and communicate with the g! system using Ethernet for reliable control and feedback.

THE ITACH SERIES SUPPORTS THE FOLLOWING FEATURES:

RS-232 Ports: The IP2SL/-P, and WF2SL models or iTach Flex with Serial Flex Link cable each include one RS-232 port. These provide a convenient means to connect to compatible rs-232 sub-systems close to the iTach.

IMPORTANT: The Global Cache serial ports are not compatible with all serial devices. Test all serial devices using these ports for proper operation prior to installation.

IR Output: The iTach can send IR signals to IR flashers compatible with ELAN, Xantech, Speakercraft and Niles (etc.) in the frequency range of 20KHz – 250KHz. The IP2IR/-P and WF2IR models, and iTach Flex with IR TriPort includes three connections (either as 2 emitters, 1 blaster or 3 emitters), whereas the iTach Flex can be configured with a single IR blaster/emitter for IR output.

Important: IR Outputs on Global Cache can normally be set as Sense Inputs, however the iTach IP2IR/-P and WF2IR were not functional in testing for this purpose.

The iTach Flex does not support Sense Inputs.

Relay Outputs: The IP2CC/-P and WF2IR models include three normally open relays rated at 24V (DC or AC) and 500mA.

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tech support: 800.622.3526 • main: 760.710.0990 • sales: 877.289.3526 • email: elan@elanhomesystems.com

THE ITACH DOES NOT SUPPORT THE FOLLOWING FEATURES:

IR output direct to an IR input port on a device: The iTach uses a non standard voltage for their IR outputs. This works fine with IR flashers but does NOT typically work for direct input to a device or receiver port on a connecting block. Global Cache makes an adapter cable, GC-CGX, that will convert the voltage and allow connection to some devices directly. Refer to Global Cache documentation and the **Alternative Connections** diagram below for details.

IR Input: Global Cache ports cannot be used for IR Input, and optional parts (IRL or IRE) are required for this function. See the appropriate Integration Notes for more detail. The IR Receiver window on the iTach Flex is not supported.

Standalone Operation: The Global Cache is an IR Network Adapter. It will not route/store IR independently of an external control system.

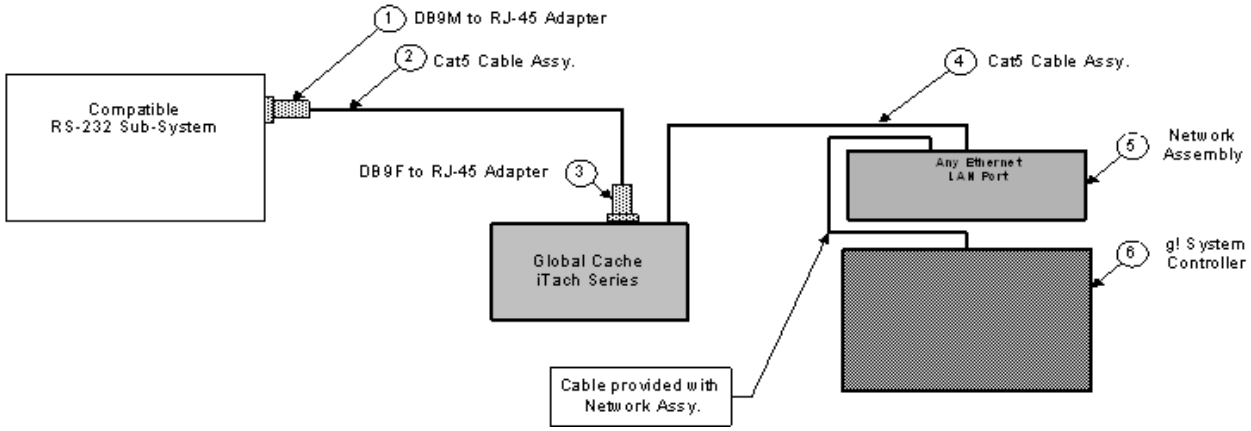
Sense Input: Sense Input on the iTach/iTach Flex units is not available at this time.

Any feature not specifically noted as supported should be assumed to be unsupported.

INSTALLATION OVERVIEW

1. During the rough-in phase, pull Cat5 from the iTach location back to the System Enclosure.
2. If using RS-232 from the iTach, and the iTach is a distance from the equipment, then pull Cat5 from the equipment to the location of the iTach.
3. If using RS-232 from the iTach, install and connect the RS-232 equipment to the iTach.
4. If using IR from the iTach, install the equipment that will be controlled by the iTach, and run IR flashers back from each piece of equipment to the iTach.
5. Configure the iTach using its built-in web server with the assistance of the Global Cache iHelp utility. See **Configuring the iTach** below.
6. Connect the iTach to the **g!** system electrically.
7. Configure the **g!** system for the iTach. Refer to **Using the iTach with g!** and **g! System Configuration Details** below.

CONNECTION DIAGRAM: RS-232 CONNECTIONS

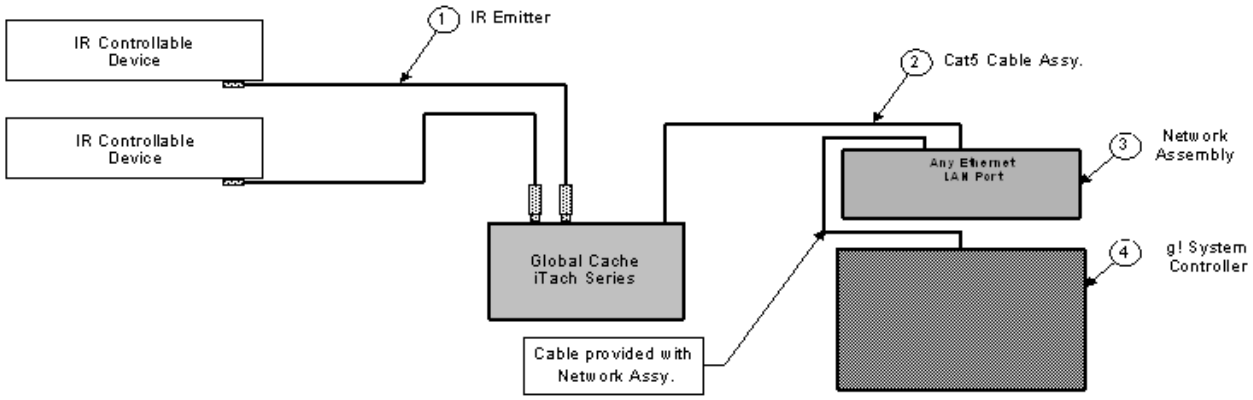


BILL OF MATERIALS FOR RS-232 CONNECTIONS

#	Device	Manufacturer	Part Number	Protocol	Connector Type	Notes
1	DB9M to RJ45 Adapter	ELAN	HA-CB-307	RS-232	DB-9 Male X RJ-45 Female	Included with HW-USB-100
2	Cat5 Cable Assy.	Installer	N/A	RS-232	RJ-45 Male X RJ-45 Male	Must terminate all 8 conductors
3	DB9F to RJ45 Adapter	ELAN	HA-CB-308	RS-232	DB-9 Female X RJ-45 Female	Included with HW-USB-100
4	Cat5 Cable Assy.	Installer	N/A	IP	RJ-45 Male X RJ-45 Male	
5	Network Assembly	ELAN	NWA18	IP	RJ-45 Female X RJ-45 Female	Use any available LAN port
6	g! System Controller	ELAN	Various (e.g. HC-12)	IP	RJ-45 Female	

CONNECTION DIAGRAM: IR CONTROL FROM g!

In this configuration IR commands can be sent from the **g!** system through the iTach to each IR controlled device individually. An IR command sent to one device will not be sent to any other IR device unless it is specifically configured to do so.

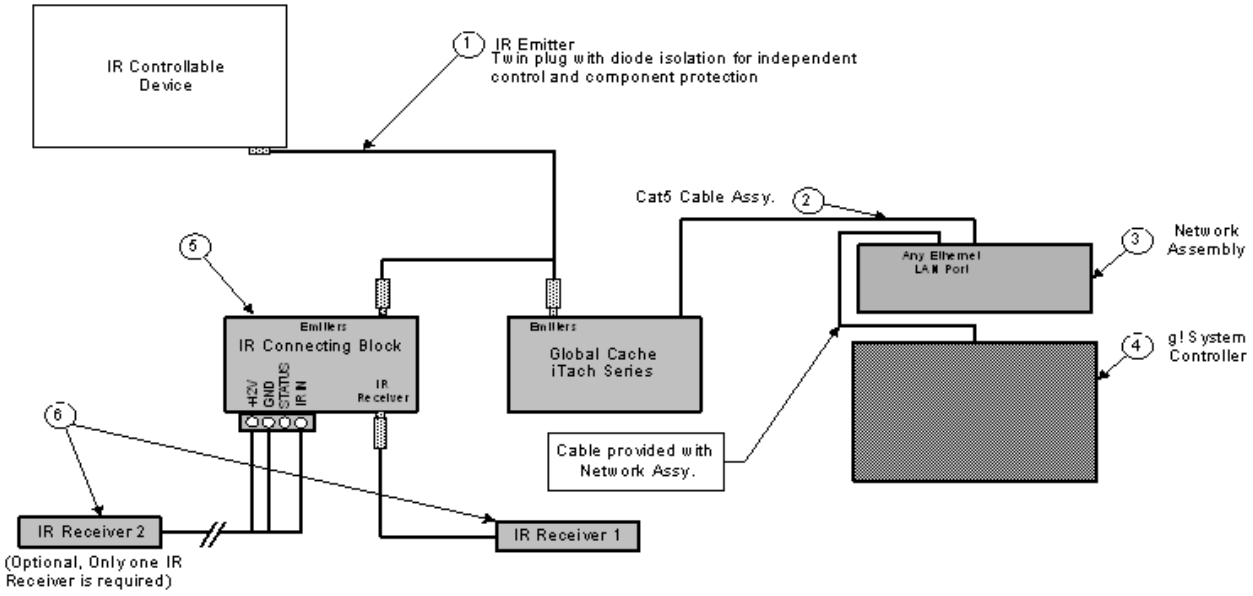


BILL OF MATERIALS FOR IR CONNECTIONS

#	Device	Manufacturer	Part Number	Protocol	Connector Type	Notes
1	IR Emitter	Various	N/A	IR	3.5mm Male	Compatible with Xantech, Speakercraft, Niles, Russound
2	Cat5 Cable Assy.	Installer	N/A	IP	RJ-45 Male X RJ-45 Male	
3	Network Assembly	ELAN	NWA18	IP	RJ-45 Female X RJ-45 Female	Use any available LAN port
4	g! System Controller	ELAN	Various (e.g. HC-12)	IP	RJ-45 Female	

CONNECTION DIAGRAM: IR CONTROL FROM IR REMOTES AND g!

In this configuration, IR commands can be sent from the **g!** system through the iTach to each IR controlled device individually. IR commands can also be received from an IR remote control through an IR receiver connected to the IR connecting block. The connecting block will then repeat those IR commands out of its emitter ports to any IR devices connected to the block.



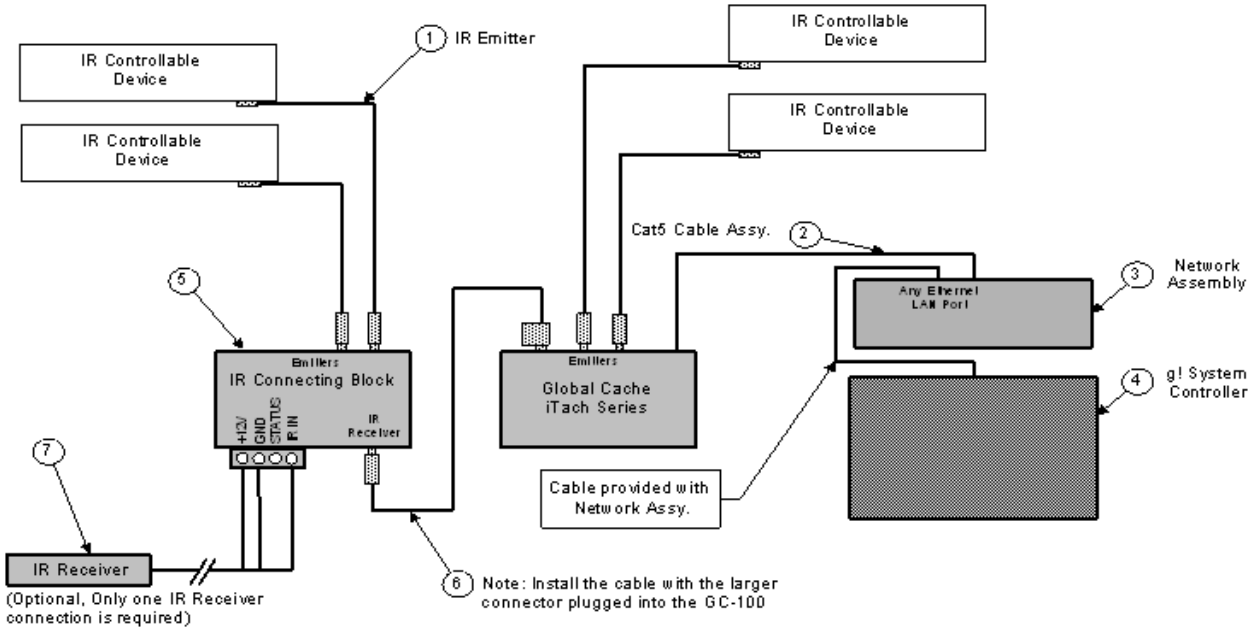
BILL OF MATERIALS FOR IR CONNECTIONS

#	Device	Manufacturer	Part Number	Protocol	Connector Type	Notes
1	IR Emitter	Xantech, or equivalent	283TP or equivalent	IR	3.5mm Male	Twin plug blink mouse emitter with diode isolation
2	Cat5 Cable Assy.	Installer	N/A	IP	RJ-45 Male X RJ-45 Male	
3	Network Assembly	ELAN	NWA18	IP	RJ-45 Female X RJ-45 Female	Use any available LAN port
4	g! System Controller	ELAN	Various (e.g. HC-12)	IP	RJ-45 Female	
5	IR Connecting Block	Xantech, or equivalent	789-44 or equivalent	IR	3.5mm Female & Screw terminal	
6	IR Receiver	Xantech, or equivalent	490-00 or equivalent	IR	3.5mm Male or wire pigtail	

CONNECTION DIAGRAM: IR CONTROL FROM IR REMOTES AND g! (ALTERNATIVE CONNECTIONS)

In this configuration, IR commands can be sent from the **g!** system through the iTach to IR controlled devices, individually when connected directly to the iTach, or to a group of IR devices when connected through the IR connecting block.

Note: Any IR commands received by the IR receiver will be repeated to any devices connected to the IR block but NOT to any devices connected directly to the iTach.



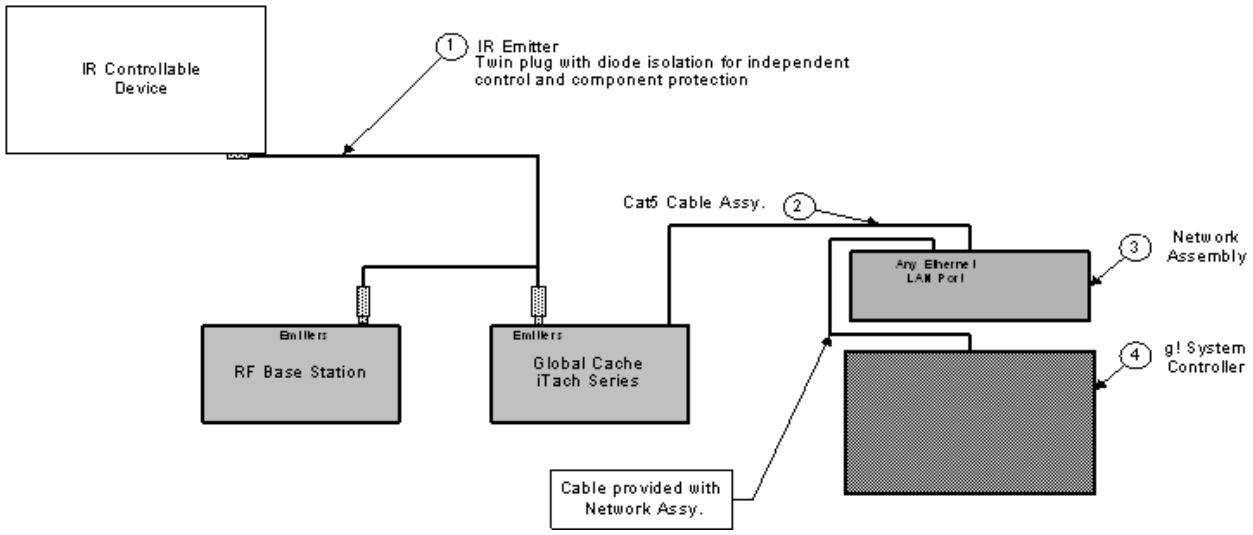
BILL OF MATERIALS FOR IR CONNECTIONS

#	Device	Manufacturer	Part Number	Protocol	Connector Type	Notes
1	IR Emitter	Xantech, or equivalent	283TP or equivalent	IR	3.5mm Male	Twin plug blink mouse emitter with diode isolation
2	Cat5 Cable Assy.	Installer	N/A	IP	RJ-45 Male X RJ-45 Male	
3	Network Assembly	ELAN	NWA18	IP	RJ-45 Female X RJ-45 Female	Use any available LAN port
4	g! System Controller	ELAN	Various (e.g. HC-12)	IP	RJ-45 Female	
5	IR Connecting Block	Xantech, or equivalent	789-44 or equivalent	IR	3.5mm Female & Screw terminal	
6	IR Cable, GC-100 to IR Block	Global Cache	GC-CGX	IR	3.5mm Male	Install with larger connector in the GC-100
7	IR Receiver	Xantech, or equivalent	490-00 or equivalent	IR	3.5mm Male or wire pigtail	

CONNECTION DIAGRAM: IR CONTROL FROM RF REMOTES AND G!

In this configuration IR commands can be sent from the **g!** system through the iTach to each IR controlled device individually. IR commands can also be received from an RF remote control through an RF base station.

Note: Any IR commands received from the RF remote will be sent to all devices connected to the RF base station.



BILL OF MATERIALS FOR IR CONNECTIONS

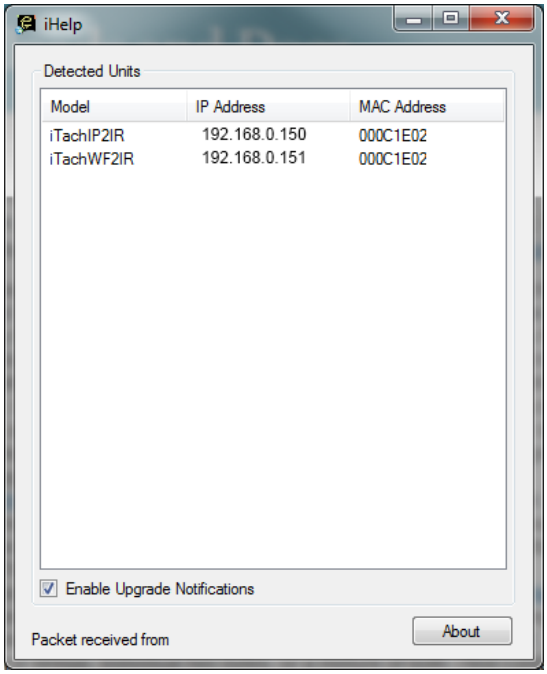
#	Device	Manufacturer	Part Number	Protocol	Connector Type	Notes
1	IR Emitter	Various	N/A	IR	3.5mm Male	Compatible with Xantech, Speakercraft, Niles, Russound
2	Cat5 Cable Assy.	Installer	N/A	IP	RJ-45 Male X RJ-45 Male	
3	Network Assembly	ELAN	NWA18	IP	RJ-45 Female X RJ-45 Female	Use any available LAN port
4	g! System Controller	ELAN	Various (e.g. HC-12)	IP	RJ-45 Female	

CONFIGURING THE ITACH

The Global Cache units come out of the box with a network configuration that needs to be changed to properly function on the **g!** system default network. If you have multiple Global Caches in an installation, power them up one at a time and change the IP address as follows. Each Global Cache must be on a different IP.

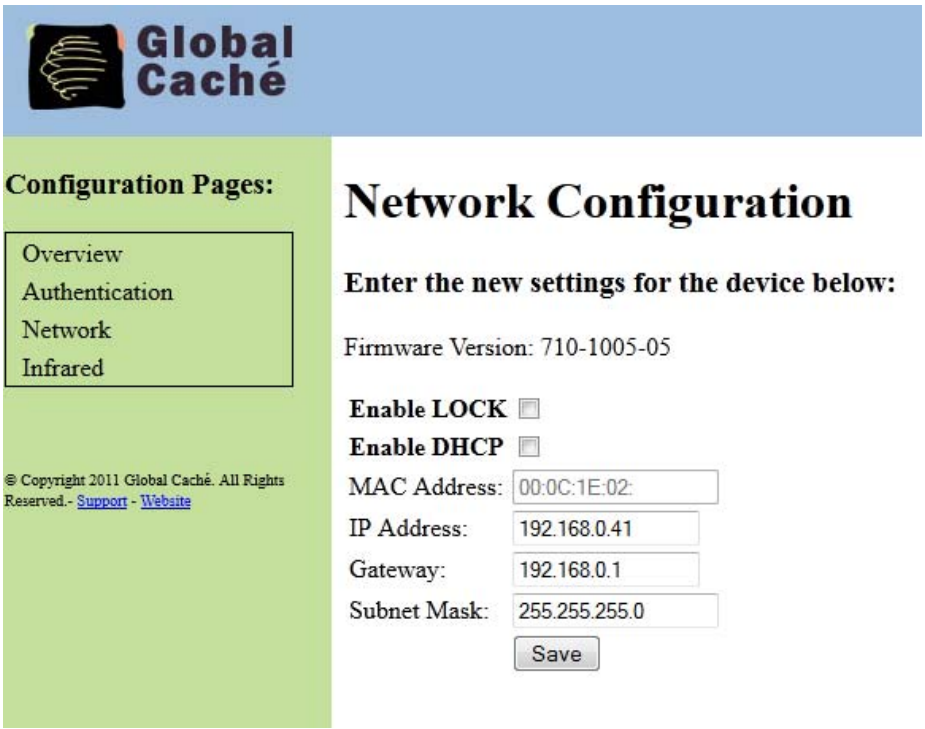
Note: specific screenshots of the iTach Flex are not provided below. The webpage layout is somewhat different but contains all the same options—in some locations note there is a "+" to expand instead of a check box.

WIRED ITACH



1. Download the **iHelp** application from the Global Cache website: http://www.globalcache.com/downloads/
2. Run the iHelp application, and wait a few moments for it to locate all Global Cache units on your network.
3. Right click on the desired unit in the model list, and choose **Configure**. A webpage to the device IP opens.
4. Enter the **Network** settings page.
5. In the Network Settings area change the following: Uncheck DHCP (to allow Static address); IP Address to 192.168.0.41; Gateway to 192.168.0.1 (to match router), and subnet mask (typically 255.255.255.0). If you are configuring more than one Global Cache then set the second unit to 192.168.0.42, the third to 192.168.0.43, and so on.

   Note: modify IP settings to match your subnet settings by inserting your network info for 192.168.0 as needed)



6. Finally, **Save** settings and refresh iHelp to confirm the new IP settings took effect after device reboot.

WI-FI ITACH

The Wi-Fi iTach units come out of the box as an unsecured ad-hoc device that requires a device with Wi-Fi to configure.

1. Power up the GC iTach Wi-Fi unit to be configured. If you have multiple units, power them up one at a time for ease of configuration.
2. On your laptop or other Wi-Fi enabled device, look for a new wireless network that says "iTachMACID" (where MACID equals the device MAC address). Connect to this AP.
3. Once connected, open a browser and type in http://169.251.1.70 to access the iTach webGUI.
4. Click the Network page and edit the settings as follows: In the Network Settings area change the following: Uncheck DHCP (to allow Static address); IP Address to 192.168.0.41; Gateway to 192.168.0.1 (to match router), and subnet mask (typically 255.255.255.0), Network Type: Infrastructure, SSID (to match installed Wi-Fi SSID), Security Type (to match installed Wi-Fi Security), Pass Phrase (to match installed Wi-Fi). If you are configuring more than one Global Cache then set the second unit to 192.168.0.42, the third to 192.168.0.43, and so on.

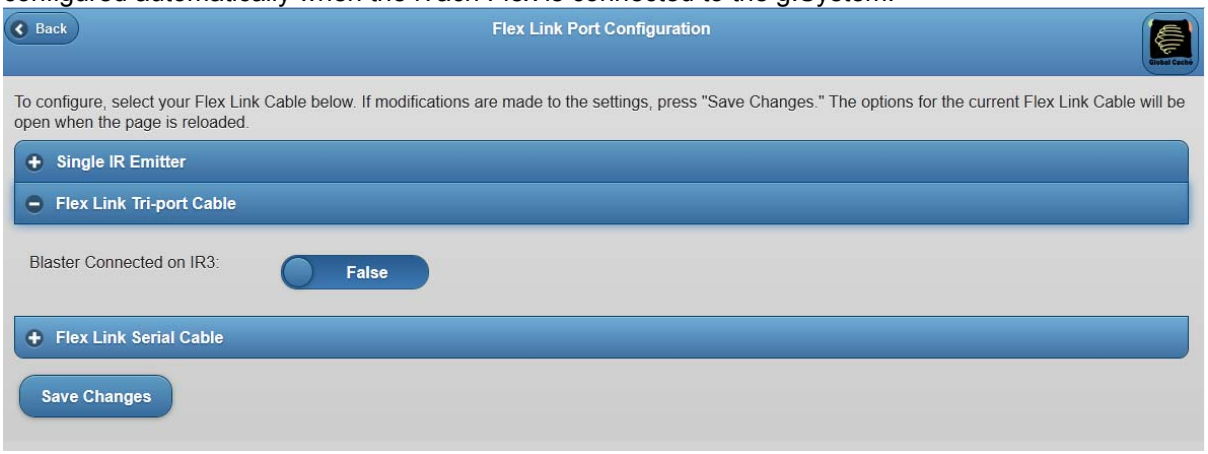
   Note: modify IP settings to match your subnet settings by inserting your network info for 192.168.0 as needed)

5. Finally, **Save** settings and connect back to the installed Wi-Fi on your laptop. Refresh iHelp to confirm the new IP settings took effect after device reboot.

iTach Flex Link Cable Configuration

iTach Flex must have the correct FlexLink cable attached and configured in the iTach Flex web page prior to adding the iTach Flex to the g!system.

1. Open the webpage to configure the iTach by right-clicking the **Configure** button in iHelp as detailed above.
2. Click the **Flex Link Port Configuration** option.
3. Expand the appropriate "+" sign for your configuration and ensure to set if a blaster is used for IR options. It is not important to configure specific serial settings such as baud rate, as these will be configured automatically when the iTach Flex is connected to the g!System.



This image depicts an iTach Flex used with the Triport adapter for 3 IR emitters (no blaster).

4. **Save Changes** before continuing.

Using the iTach with g!

g! will automatically populate the proper number of IR senders and the relay outputs if applicable when it is initially configured. See below for details pertaining to the functionality of the iTach.

Serial Ports

Note: The Global Cache should be configured and discovered on the input/output tab prior to setting up control of a device through its serial com ports. If this is not done, you may add the unit manually with User Defined settings.

The serial ports on the GC only need to be added in the configurator as a Communication Device on the tab of the subsystem that they are going to be used for. For instance if a GC com port is used to control a lighting system, the GC com device is **only** configured on the lighting tab of the configurator. The proper selection for a com device using a Global Cache com port is **(IP to Serial) Global Cache**. This will open up a selection box to choose iTach com port. Finally add the device to be connected following its Integration Note.

IR

The IR senders are automatically populated once the unit is discovered in the configurator. These are then linked to IR Devices to allow proper routing of IR to the GC IR ports. For more Information, refer to the IR lessons of the ***g!** Training Guide*. The training guide can be found in the Dealer area of the ELAN website (http://www.elanhomesystems.com).

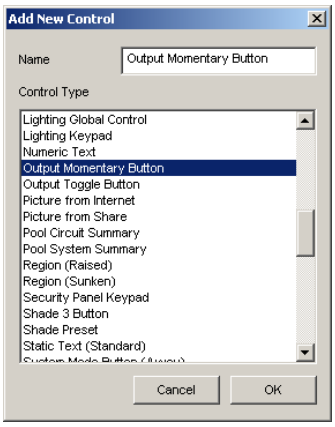
RELAYS

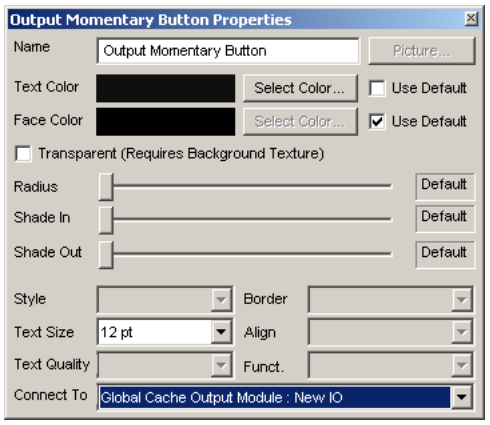
The relays on the iTach are “Normally Open” contacts rated for 500mA at 24V (DC or AC). These relays are automatically populated during the “Discover Devices” process and can be actuated directly using a Button Press or by using the Event Mapper. The two possible ways of implementing this are outlined below:

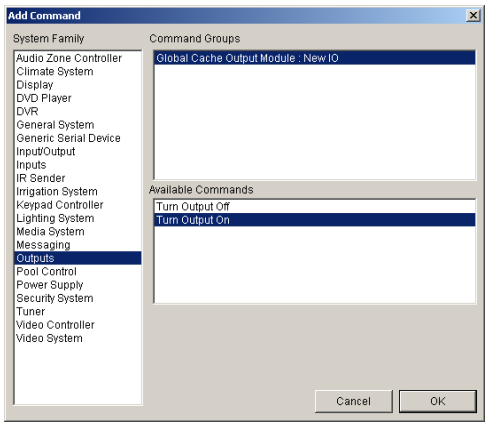
Button Press:

Add a new control to a custom tab or Home Page. Select either “Output Momentary” or “Output Toggle” as the control type:

“Output Momentary” will trigger the relay only while the button is being held. “Output Toggle” will turn the relay on the first time the button is pressed, off the second time. After the button has been added, select it. The “Output Momentary Button Properties” dialogue box will be displayed. Click the arrow in the “Connect To” dropdown, and select the output relay to control.







Event Mapper:

On the “Event Mapper” tab. Right click “Event Maps” and select “Add New Event Map”. Under “Events” on the right, select the event that will trigger the relay, such as a faulted zone in the security system. Then under “Commands”, select “Outputs”, the appropriate iTach Output Module, and select “Turn On” or Turn Off” from available events.

g! CONFIGURATION DETAILS

The following sections provide details on configuring the iTach. There are two separate situations covered in the tables below:

1. Configuring the RS-232 ports on the iTach
2. Configuring IR outputs on the iTach
3. Configuring the relay outputs on the iTach—See above.

In the tables, the following items appear:

- o "<Select>" Select the desired item from the list (or drop-down) in Configurator.
- o "<User Defined>", etc. Type in the desired name for the item.

CONFIGURING IR OUTPUTS

This table provides settings used in the Configurator to setup the IR outputs on the iTach. Configure the IR outputs on the Input/Output tab in Configurator.

Devices	Variable Name	Setting	Comments
Communication Devices	**Name**	<User Defined> (Default: **Global Cache GC-100/iTach**)	Rename to **Global Cache IR** to avoid confusion with the serial ports
	Type	**Ethernet**	
	Communication Type	**Global Cache GC-100 / iTach**	
	Location	<User Defined> (Not Required)	
	IP Address	<User Defined> (Default: **192.168.0.41**) (See Note 1)	
	Port	**4998**	All IR commands are sent to port 4998
IR Senders <See Note 2>	**Name**	<User Defined>	For eg: **Comcast (IR2)**
	Device Type	**Global Cache**	
	Location	<User Defined> (Not Required)	
	COM Device	<Select> (Default: **Global Cache GC-100**)	
	Module	<Auto-discovered>	
	Device	<Auto-discovered>	

Notes:

1. By default, set the GC to 192.168.0.41. If you have more than one GC, set the second to 192.168.0.42 and so on.

CONFIGURING RS-232 PORTS

This table provides settings used in Configurator to setup the serial port(s) on the iTach. Configure the serial ports on the tab of the system that the serial port will connect to.

Devices	Variable Name	Setting	Comments
Communication Devices	**Name**	<User Defined> (Default: **Global Cache GC-100**)	Rename to **Global Cache(COM#)** to avoid confusion with the IR output
	Type	**(IP to Serial) Global Cache**	
	Global Cache Port	**<Select>**	Select the COM port that will be used
	Communication Type	**<Select>**	Select the appropriate Communication Type for the particular sub-system
	Location	<User Defined> (Not Required)	
	IP Address	<User Defined> (Default: **192.168.0.41**) (See Note 1)	
	Port	<User Defined> (Default: **4999**)	Serial port 1 is port 4999

Note: By default, set the GC to 192.168.0.41. If you have more than one GC set the second to 192.168.0.42 and so on.

CONFIGURING RELAYS AND INPUTS

Refer to the **Using the iTach with g!** section above for details.

COMMON MISTAKES

1. Incorrect Communication Device for initial iTach configuration. The proper Communication Device to configure the iTach on the Input/Output tab is:

   Type: Ethernet

   Communication Type: Global Cache.

   Refer to **Configuring IR Outputs** above.

2. Not checking the RS-232 port for compatibility with the sub-system. The iTach has some limitations that prevent it from working properly with all RS-232 devices. This includes a limit on baud and parity settings, among others. You should test your equipment with the iTach prior to installation to ensure communications are reliable.
3. Not configuring and discovering the Global Cache before trying to configure a device with the Global Cache serial ports. The Global Cache should be configured on the Input/Output tab before trying to configure a device to communicate using one of the iTach serial ports.
4. Not configuring the Global Cache iTach Flex for the appropriate Flex Link cable prior to integrating with g!. The iTach Flex must be correctly configured for g! to discover the correct outputs.