CONTENTS

1.	Configuring the module over USB	1
2.	Accessing the module	2
2.1.	Through TELNET	3
2.2.	Through web interface	5
2.2.1	Relay Status and Control	6
2.2.2	GPIO Status and Control	7
2.2.2	.1. Digital Input (I/P)	7
2.2.2	2. Digital Output (O/P)	8
2.2.2	3. Analog Input	8
2.3.	Device Settings	9
2.4.	Through HTTP	10

This document describes how to access the following Numato Lab Ethernet and Power Over Ethernet Modules.

GPIO	Relay
NL-ETHG-A-016	NL-ETHR-A-008
NL-ETHG-A-032	NL-ETHR-A-016
NL-ETHG-F-016	NL-ETHR-A-032
NL-ETHG-F-032	NL-ETHR-F-008
	NL-ETHR-F-016
	NL-ETHR-F-032

The modules can be configured by the customer. By default, the module is configured with factory settings. To login to USB configuration settings users need to send a reboot command from telnet or do a factory reset. Refer *"User Manual"* of the module to know more.

1. Configuring the module over USB

- If the device is in configuration mode (LED D2/LED RJ3(depends on modules) is on), connect the module using a USB B cable to the PC.
- Open PuTTY, click on serial, input the COM Port number of the module, and click OK.

🕵 PuTTY Configuration		? ×
PuTTY Configuration Category: - Session - Logging - Terminal - Keyboard - Bell - Peatures - Window - Appearance - Behaviour - Translation B - Selection - Colours - Connection - Data - Proxy - SSH - Serial - Teinet - Rlogin - SUPDUP	Basic options for your PuTTY Specify the destination you want to com Serial line COM38 Connection type: O SSH Serial O Other: Tel Load, save or delete a stored session Saved Sessions Default Settings	? × session nect to Speed 9600 net V Load Save Delete
About Help	Always Never Only on	clean exit Cancel

• You will be prompted to enter the username and password (default is admin).



• Once logged-in successfully, configure the module by sending configuration commands described in user manual.



- Reboot the module using 'reboot' command.
- You will be able to see the IP address of the module and your module is ready to work with.

2. Accessing the module

The module can be accessed and controlled using the following options.

- 1. Through serial terminal software supports TELNET
- 2. Through web interface
- 3. Through HTTP link

2.1. Through TELNET

The simple set of ASCII based human-readable command set supported by this module makes controlling relays//GPIOs via TELNET protocol very easy.

The following sections give examples of how to configure and use the module with PuTTY.

To use this module with PuTTY, please follow the steps below.

• Connect the module to the PC or LAN. Refer *"User Manual"* to know more.

B COM38 - PuTTY		_	×
Numat	o Lab 8 Channel Ethernet Relay Configurat	ion	^
Enter your user name and User Name : Password :	l password to login		
Logged in successfully!			
>reboot			
******* Numato Lab 8 Cha MAC: 80 1F 12 64 76	nnel Ethernet Relay Module ****** 5 B6		

Telnet Port	: 23		
DHCP	: Disabled		
Access IP	: Disabled		
Access MAC	: Disabled		
IP Address of the module	: 192.168.10.153		
			\sim

• Open PuTTY, click on other and select TELNET from drop down menu and enter the IP address corresponding to the module, leave the port number as 23.

🕵 PuTTY Configuration		?	×							
Category:										
Session	Basic options for your PuTTY session									
En Terminal	Specify the destination you want to connect to	0								
Keyboard	Host Name (or IP address)	Port	_							
- Bell Features	192.168.10.153									
Window Appearance	Connection type: OSSH OSerial Other: Telne	et :	\sim							
Translation Selection Colours Connection	Load, save or delete a stored session Saved Sessions]								
Data Proxy ⊞- SSH	Default Settings	Load Save								
Senal Telnet Rlogin SUPDUP		Delete								
	Close window on exit Always Never Only on cl	ean exit								
About Help	Open	Cancel								

• Click Open.

• You will be prompted to enter the username and password of the module (default is admin)



• Once logged-in successfully, the module is ready to work with.



• Control or monitor the device using the command set described in user manual



2.2. Through web interface

The easiest method for controlling the module is through a web page served from the device.

• To open the administration web page, type in the IP address into the address bar of any web browser and press enter.

3 192.168.	10.153	× +		\sim	-	×
$\leftarrow \rightarrow c$	0 192.16	58.10.153	Ê	☆	*	:
	Sign in http://192.168 Your connectio Username Password	1.10.153 on to this site is	s not private	Cano	cel	

• You will be prompted to enter the username and password. The default username and password are '**admin**'. You may change the username and password once logged in.

192.168.10	0.153	×	+		\sim	-	×
← → C	① 192.7	168.10.153		Ê	☆	*	:
	Sign in http://192.10 Your connec	58.10.153 tion to this sit	te is not pr	ivate			
	Username	admin					
	Password						
			Sign in	n	Cano	el	

- Enter the default username and password then click Sign in.
- You will be presented with the device home page that shows the status of Relays and GPIOs according to the module.

🕻 Numato Lab

→ C A Not secure 192	2.168.10.153/index.htm		QB		*	
thernet Relay Module Administration pa	ge					
Numato Lab		8 Char	nel Ethernel	t Rel	ay I	Modu
OME RELAY GPIO/ADC					DEVIC	CE SETTIN
evice Status Summar	у					
Relay Status			GPIO Status			
Relay 0	Off	GPIO 0	Digital	I/P - Lo	W	
Relay 1	Off	GPIO 1	Digital	I/P - Lo	W	
Relay 2	Off	GPIO 2	Digital	I/P - Lo	W	
Relay 3	Off	GPIO 3	Digital	I/P - Lo	w	
Relay 4	Off	GPIO 4	Digital	I/P - Lo	w	
Relay 5	Off	GPIO 5	Digital	I/P - Lo	w	
Relay 6	Off	GPIO 6	Digital	I/P - Lo	W	
Relay 7	Off	GPIO 7	Digital	I/P - Lo	w	
		GPIO 8	Digital	I/P - Lo	w	
		GPIO 9	Digital	I/P - Lo	w	

2.2.1. Relay Status and Control

This page will be available only for the Numato Lab Ethernet/PoE Relay modules. Click on '**Relay**' menu to monitor and control the relays. Relays can be turned ON/OFF with just a click on 'Toggle Relay' button for corresponding relays. Relay status is real time and is visible correspondingly.

Numato Lab 8 Channel Ethernet	× +					×		1422	ш: 	×
- → C ▲ Not secure	192.168.10.153/relay.htm			Q	ß	\$	*			
Ethernet R <mark>e</mark> lay Module Admin <mark>i</mark> str	ration page									
Numato La	lb"		8 Channel	Ethe	rnet	t Re	elay	Mo	odu	e
HOME RELAY GPIO/ADC							DE	/ICE S	ETTIN	GS
Relay Status and C	Control			-						
	and an ender	Relay Status								
	Relay Index	Off	loggle Relay							
	Relay 1	Off	↑↓							
	Relay 2	Off	¢↓							
	Relay 3	off	↑↓							
	Relay 4	Off	¢↓							
	Relay S	Off	↑↓							
		Off	¢↓							
	Relay 6									

2.2.2. GPIO Status and Control

This page will be available only for the Numato Lab Ethernet/PoE modules which has onboard GPIOs.

Click on '**GPIO/AD**C' menu to monitor and control the GPIOs. GPIOs can be set/clear with just a click on 'Toggle GPIO' button for corresponding GPIOs. GPIO status is real time and is visible correspondingly.

C 🔺 Not si	ecure 192.168.1	0.153/gpio.htm			Q	B	☆	*		-	
Ethernet Relay Module Admir	nistration page										
Numato	ab			8 C	hannel Et	herr	net F	Relay	уM	odu	le
HOME RELAY GPIO/A	DC							D	EVICE	SETTI	NG
GPIO Status and	Control										
		6	PIO Stat	us .							
	GPIO Index	Current Config	Status	Toggle GPIO	Change Config						
	GPIO 0	Digital I/P	Low	↑↓	Ø						
	GPIO 1	Digital I/P	Low	¢↓	ø						
	GPIO 2	Digital I/P	Low	¢↓	ø						
	GPIO 3	Digital I/P	Low	¢↓	Ø						
	GPIO 4	Digital I/P	Low	¢↓	ø						
	GPIO 5	Digital 1/P	Low	¢↓	¢						
	GPIO 6	Digital I/P	Low	↑↓	ø						
	GPIO 7	Digital I/P	Low	↑↓	ø						
	GPIO 8	Digital I/P	Low	¢↓	ø						
	GPIO 9	Digitai I/P	Low	¢↓	ø						

Individual GPIO can be configured in three modes in all Ethernet modules.

- 1. Digital Input (I/P)
- 2. Digital Output (O/P)
- 3. Analog Input

2.2.2.1. Digital Input (I/P)

To configure a GPIO as Digital Input, click on corresponding GPIO's '**Change Config**' button. Select "Digital I/P" radio and click the "Submit" button.

- → C ▲ Not	secure 192.	168.10.153/gpioconfig.htm?io=0&x=26&y=19	Q	ß		*		-	
Ethernet Relay Module Ad	ministration page	2							
Numato	Lab	8 Channe	el Eti	hern	et F	Relay	уM	odu	le
HOME RELAY GPIC	ADC					D	EVICE	SETTIN	iG.S
GPIO Configura	ation								
		CPTO Configuration							
	GPIO	Settings							
	GPIO 0	Ø Digital I/P ○ Digital O/P ○ Analog I/I	P						
		Potent							

2.2.2.2.Digital Output (O/P)

To configure a GPIO as Digital Output, click on corresponding GPIO's '**Change Config**' button. Select "Digital O/P" radio and click the "Submit" button.

	namer cuternes A	T							
· > C A	Not secure 192	.168.10.153/gpioconfig.htm?io=080x=2680y=19	Q	ß	☆	*		-	
thernet Relay Modu	ule Administration pag	e							
Numa	ito Lab'	8 Cha	nnel Et	hern	et F	Relay	/ M	odu	le
IOME RELAY	GPIO/ADC					DI	INCE	SETTIN	NGS
GPIO Config	guration								
		GPLO Configuration							
	GPIO	Settings							
	GPIO 0	O Digital I/P 🔹 Digital O/P 🛛 Ana	log I/P						
		Submit							
					_				_

2.2.2.3. Analog Input

To configure a GPIO as Analog Input, click on corresponding GPIO's '**Change Config**' button. Select "Analog I/P" radio and click the "Submit" button.



2.2.3. Device Settings

This page displays the current firmware version, device ID, account settings and basic network settings. Click on '**Device Settings**' menu to access this page. A logged-in user can change and save device ID, username, password, and network settings. After saving changes in network settings, the board will reboot with the new network settings.

	secure 152.100.10.155/	settings.ntm	4				
Ethernet Relay Module Adm	inistration page						
Numato	Lab°	8	Channel Et	hernet	Relay	Modu	IL
HOME RELAY GPIO//	ADC				DEV	VICE SETTI	N
Device Settings							
		Device Info					
	Device ID	0000000					
	FW version	00000006					
		Account Settings					
	User Name	admin		ΠEŊ			
	Password	admin					
		Basic Network Settings					
	MAC Address	80:1F:12:64:76:B6					
	Host Name	ETH_RELAY8		P			
	Enable DHCP			_			
	ID Addross	192 168 10 153					

2.3. Through HTTP

Another easiest method for controlling the module is through pre-defined HTTP links provided for the device. Just copy and paste the text with your module's IP address on the address bar of any of the browser will do the corresponding action to the module.

For example, if the link is dedicated to read the relay 0 or the GPIO 0, once the customer clicked on it, it opens a web page with the clicked link as address and do the read action and print it on the webpage.



Refer "HTTP Command Set" documentation to know more

Note: Features depends on each module. Refer User Manual of the module to know more.