

## **BGR Software** Seismic Acquisition Software

🚽 BGR 1.27			12	- 12	5.e																								E	\$		6	- )(	•		×
File View	Start			Help																																
Record Plot	Config	juratio	n																																	
Chan 1 2	345	56	78	9 1 (	D	12	1	4	16	1	8	20	D	22		24	2	6	28		30	3	2	34		36	3	8	40	1	42	4	4	46		48
0 11	T	1	IT	11	1	T	11		1	1	1	1	1	T	T	T	T		T	T	T			1	1	T	1		1	1	T	T			1	T
0.05	11	-		$\{$	-†	+	$\left\{ \right\}$		+	1	1		-	-	1	1	t	-	-+	+	t	f			1	+	$\left\{ \right\}$		+	+	t	t			1	ł
0.1	$\left\{ \right\}$		$\left  \right $	$\left\{ \right\}$	+	+			+	+	}			+	+	+	+			+	+		-	$\left  \right $	1	+			+	+	1	+		+	1	+
0.15	11		+		1	+			+	1	{			-	1	1	t		-	+	t	-	-		1	1		-	1	+	1	1			+	-
0.2	11		1	11	1	1		-	1	1	1			1	1	1	1			+	1	1		1	1	1			1	1	1	1		1	1	1
0.25	11			+	+	Ŧ	$\left\{ \right\}$		+	+	1		-	+	1	+	1		-	+	t	-	-		+	+		-	-	+	t	ł			+	ł
0.3	11		11	1	1	ł			1	1	}			1	1	1	ł		$\left  \right $	+	ł	ł			1	1			1	1	1	ł		1	1	1
0.35	11		H	11	-	t	[]		1	1	-			-	1	1	t	-		ł	1	ł	-		1	1		-	1	1	1	1	{		1	ţ
0.4			t		1	+			1	1	ł			ł	1	ł	t			+	t				1	t			1	+	t	ł			1	ł
Pi#18	ft:				1	t	ţ		1	t	t			1	1	t	t		H	+	ţ	f			1	ţ	ţ		1	1	1	f			1	f
sec { { { }	111	1			1		11	-	1	1		1.1	1	1	1		1			1	1				1	1	11			9	1	1	101	1	3	•
2056																2	057	2																		
Online																	Inlin																			
Recording																	Reco SPS		_																	
GPS Valid ∢																	175	Va	IQ.																	)
Vissed: 0			5	Save	d: 1	8					I	Disk	c 7	9.95	59 N	/B/	s			Т	ota	1: 0.	19	5 M	B/s	5										

# **User's Manual**



#### DAQLink 4 System User's Manual

Printed in U.S.A.

©2016 Seismic Source Co. • All rights reserved. This document may not be reproduced in any form without prior express written consent from Seismic Source Co.

Seismic Source reserves the right to make changes and improvements to its products without providing notice.

**Trademarks** DAQLink 4 and VScope are trademarks of **Seismic Source Co**.

#### **Seismic Source Company**

2391 East Coleman Rd. Ponca City, OK 74604 USA Telephone: (580) 762-8233 Fax: (580) 762-1785 Email: mail@seismicsource.com

www.seismicsource.com



# **Table of Contents**

1 INTRODUCTION	4
1.1 System Description	4
1.2 Ethernet Setup	4
1.3 BGR Installation	5
2 BGR OPERATION	6
2.1 Setting up BGR	6
2.1.1 Configure BGR software	6
2.1.2 Plot Settings	8
2.2 Recording Data	9
3.1 COMPUTER NETWORK SETUP	11
3.1.1 INTRODUCTION	11
3.1.1.1 Pre-Requisite Software	11
3.1.1.2 Ethernet Setup	11
3.1.1.3 Notes	11
3.1.2 WINDOWS 10 ETHERNET SETUP	12
3.1.2.1 Changing the Computer's IP Address	12
3.1.2.2 Changing the Computer's Firewall Setting	16
3.1.2.3 Changing Window Defender's Setting	21
3.1.2.4 Changing Network Adaptor Power Managment	26
3.1.3 WINDOWS 8 ETHERNET SETUP	
3.1.3.1 Changing the Computer's IP Address	
3.1.3.2 Modifying the Computer Firewall Options	35
3.1.4 WINDOWS 7 ETHERNET SETUP	37
3.1.4.1 Changing the Computer's IP Address	
3.1.4.2 Disabling the Computer Firewall	
3.1.5 VISTA, XP, AND 2000 SUPPORT	40
3.1.6 TCP/IP VERIFICATION	41
4 SCHEMATICS	42
4.1 DAQLink 4 Connector wiring	42
9.1.1 Ten pin Ethernet Connector	42
4.1.2 2-pin Power Connector	42
4.1.3 3-pin Trigger Connector	42
4.1.4 6-pin GPS Connector	43
4.1.6 19-pin USB Connector	43



4.1.6 14-pin Misc. Connector	43
4.1.7 55-pin Analog Data Connector	44
4.1.8 Cable connectors Part Numbers	44
4.2 DAQLink 4 Schematics	45
4.2.1 Ethernet Wiring	45
4.2.1.1 Ethernet Cable	46
4.2.1.2 Ethernet Cable with POE for WiFi	47
4.2.2 Trigger Wiring	48
4.2.3 GPS Wiring	49
4.2.4 USB Wiring	50
4.2.5 Misc Connector Wiring	51
4.2.5.1 Aux Trigger Cable	52
4.2.6 Trigger Input Circuit	53
4.3 Distributed DAQLink4	54
4.3.1 Distributed DAQLink Wiring	55
4.4 DAQlink 4 – 48 channel system	
4.4.1 55 pin to 61 pin Cable adapter	58

## **1** Introduction

## **1.1 System Description**

BGR software can be used with any of the following seismographs:

- DAQLink 4
- DAQLink 3
- Sigma 3
- Sigma 4
- MetricPro

The BGR software provides a high-speed recording system for recording and saving large amounts of data quickly. The BGR has minimal features to provide a very fast interface to acquire and save data quickly on a Windows PC computer. Vscope or SrcSig software should be used when more recording features and options are required.

## **1.2 Ethernet Setup**

This network must be setup on the computer before using the BGR software.

Please refer to Ethernet setup section of this manual for detailed instructions on setting up the Ethernet settings on your computer.



## **1.3 BGR Installation**

WinPCap Ethernet driver must be installed on your computer to speed up the reception of the data packets on the wired Ethernet port. After installing WinPCap, the BGR program can be run.

Copy the BGR.exe program to your computer. No other installation is needed. Just start the BGR.exe program



**2 BGR operation** 

## 2.1 Setting up BGR

#### 2.1.1 Configure BGR software

Go to the Configuration Tab

BGR 1.27           File         View         Start         Stor           Record Plot         Configuration           Units         (2)           ✓         2055         (10.0.20.56)           ✓         2057         (10.0.20.57)		Channels [24] Chan 1 Chan 2 Chan 3 Chan 3 Chan 4 Chan 5 Chan 6 III	Chan 7 Chan 8 Chan 8 Chan 9 Chan 10 Chan 11 Chan 12 ►
Detect DAQs     Select       Record Length     0.5       Sample Interval     1/4       Gain     1       Pre Trigger     0       Low Cut Filter     0.015	sec Trigger Time Break ▼ msec Edge Negative ▼ Level 3.0 V sec Channel 1		
2056 Online Stopped GPS Valid		2057 Online Stopped GPS Valid	
lissed: 0	Saved: 507 Disk:	75.248 MB/s T	Fotal: 0.206 MB/s

Press the Detect DAQ button – Recorders that are connected to the BGR program should appear in the list. You can change the order of the DAQlink units by first highlighting the DAQlink unit in the list and then pressing the UP or Dn (Down) buttons.

An ASI file can also be used to define the order and number of units to be in each record.



Setup the Required recording parameters

- Record Length
- Sample Interval
- Gain
- PreTrigger Time
- Low Cut Filter

Setup the Trigger Type

- Time Break uses external trigger closure or voltage level to start each record
- Auto The system will AutoStart. This is very useful in testing the connection of the system
- Channel System can be started when one of the seismic channels exceeds a predetermined voltage level
- GPS time This mode can be used to setup continuous recording based on GPS time

Setup File storage – every time a record occurs the data will be saved

- File Type either SEG-Y or SEG-2
- Data Format IEEE Floating Point or Fixed Point
- Path on the computer where the data will be saved

Continuous Mode – This feature enables the DAQlink to automatically start a new record once the first record is completed. Enable this feature for High speed recording of multiple triggers

Combines Records from all units – Select this feature to combine the data from multiple DAQlinks into one record

Disable Plot – Disable the plots when there is too much data for the computer to plot. This allows the computer to save the data to file without plotting any data.



## 2.1.2 Plot Settings

a B					
File	View	Start	Stop		
Gair	n Up		F3		
Gair	Gain Down				
Full	View				
Plot	Setting	s			

### Enter the desired settings

Settings	1			×				
Cha	nnels	Time, s	sec	Fill Half Waves				
From	1	Min	0.00	No Fill				
То	48	Мах	0.50	🔘 Fill Positive				
All Channels Auto			Scale	Fill Negative				
Orient	ation		Colors					
O Horiz	ontal		Background					
🤨 Vertic	al		Line					
<b>▼</b> Grid	V Clip	Traces	Fill					
		ок		Cancel				



## 2.2 Recording Data

Press the Start button to start the recording Start. Also pressing ALT+S on the keyboard will start the recording

Press the Stop button to stop recording  $\frac{\text{Stop}}{\text{Stop}}$ . Also pressing ALT + T on the keyboard will stop the recording

🚭 BGR 1.27			IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
File View Start Stop	) Help		
Record Plot Configuration			
Chan 1 2 3 4 5 6 7	8 9 10 12 14 16 18	20 22 24	26 28 30 32 34 36 38 40 42 44 46 48
0 IIIIII	TITITI	mm	
0.05			
0.1			<u>╞╶┨╴</u> ╪╺ <u>╞╶╞╴╞╴╞╴╞╴╞╴╞╶╞╶╞╶╞╶╞╶╞╶╞╶╞</u> ╶╞╴
0.15	╅╡╅╡╅┽┥┽		<u>╞╶┨╴┫╴┫╶┫╶┨╶┨╶┨╶┨╶┨╶┨╶┨╶</u> ┨
0.2	****	*****	
0.25			
0.3	╁╁╁┼┼┼┼┼┼	******	
0.35	+++++++++++++++++++++++++++++++++++++++		
0.4	*****		
Prime sec			
2056		205	157
Online			nline
Waiting GPS Valid			/aiting PS Valid
		ur	PS Valid
Missed: 0	Saved: 6	Disk: 67.128 MB/s	s Total: 0.178 MB/s

F3 button will increase the Gain on the plot

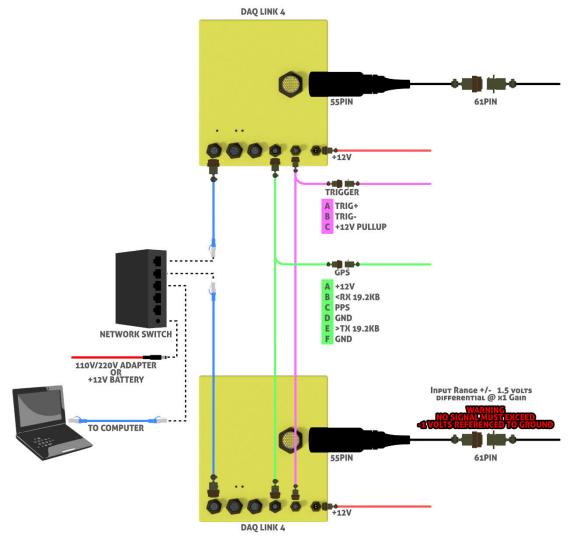
F4 button will decrease the Gain on the plot



#### 2.3 DAQlink 4 – 48 channel system

Two DAQlinks can be used to record 48 channels.

- Cable adapter is available for connecting 55 pin to 61 pin cable
- Single GPS unit can be wired to both units for precise timing and positioning
- Trigger cable can also be wired to both units for triggering.
  - For TTL triggering only pins A and B need to be connected
  - For Switch Closure applications Pins C must be wired to pin A





## **3.1 Computer Network Setup**

## **3.1.1 Introduction**

Normally, it is necessary to set up a fixed TCP/IP address for the computer to communicate with the DAQLink 4 unit.

#### IP Address SET to FIXED IP ADDRESS – 10.0.0.101

#### **All Firewalls Disabled**

## **3.1.1.1 Pre-Requisite Software**

• Run full installer to get all pre-requisites installed. Latest full install of SSC/iSeis applications is located at http://files.seismicsource.com/Software/SSC\_setup.exe

## **3.1.1.2 Ethernet Setup**

- For DAQ4 and Sigma use 10.X.X.X with 255.0.0.0 subnet static IP
- For DAQ3-24 use 192.168.0.X with 255.255.255.0 subnet static IP
- For HyMesh contact SSC/iSeis

## 3.1.1.3 Notes

Before communicating with most Seismic Source and iSeis equipment, a FIXED IP ADDRESS must be set in the computer, and the WinPcap Ethernet driver must be loaded. To set up a fixed TCP/IP address for your computer perform the following:

- IP Address SET to FIXED IP ADDRESS: 10.0.0.101
- Subnet MASK: 255.0.0.0
- It is also recommended to disable all other Network connections.
- All Firewalls Disabled
- Computer Control of Network Card Power Disabled

It is sometimes necessary to reboot the computer to have the new address take effect.



## **3.1.2 Windows 10 Ethernet Setup**

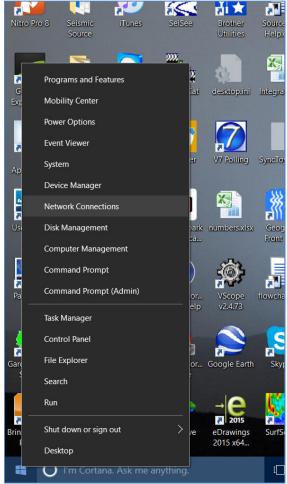
Windows 10 is the newest of the Microsoft operating systems, and many of the menus have changed. And several of the screens may be different depending on the updates applied to the computer.

Make sure the Computer IP address is on 10.x.x.x network (e.g. 10.0.0.101) with all firewalls and power management disabled.

If computer has not been setup for this IP address:

## 3.1.2.1 Changing the Computer's IP Address

For Windows 10, right-click on the Microsoft Window's logo in the bottom left corner of the screen. Then select the "Network Connections" option.

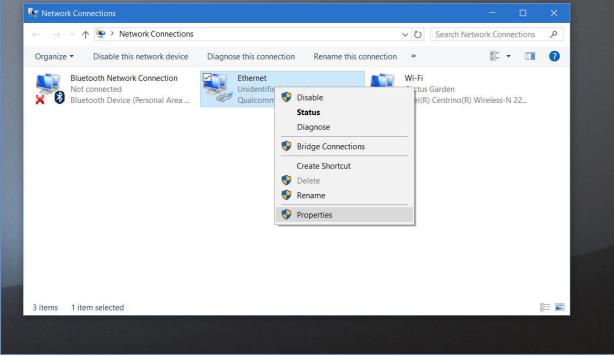


Right-Click Menu showing Command Options

These options can also be found in the Windows 10 "Control Panel".



The "Network Connections" window will display all the available network options on the computer. Next, right-click on the Ethernet adapter for the cabled connection, and then on the "Properties" option for the adapter.



Pop-Up Menu showing available Network Adapters

It is also recommended to disable other network connections that might conflict with the communication process. Highlight the other connections (like Wireless) and select **Disable**.



In the Properties menu for that adapter, select "Internet Protocol Version 4 (IPv4)", and then click on the "Properties" button.

Image: Second
(Personal Area       Unidentifie Qualcomm         Unidentifie Qualcomm       Qualcomm         Qualcomm       Qualcomm         Atheros AR8171/8175 PCI-E Gigabit Ethernet (         Configure         This connection uses the following items:         Image: Client for Microsoft Networks         Image: Qualcomm         Image:
(Personal Area Qualcomm Qualcomm Qualcomm Qualcomm Qualcomm Qualcomm Configure This connection uses the following items: Configure The following ite
This connection uses the following items:
Microsoft LLDP Protocol Driver

Control Panel showing Network and Sharing Center

Also, consider disabling (by un-checking the selection box) the "Internet Protocol Version 6 (IPv6)" option.



	> Network Connections		Ethernet	Properti	es			
Disab	ole this network device	Diagnose this connection	Networking	Sharing				
lot conne luetooth	Internet Protocol Version	4 (TCP/IPv4) Properties		×	eros AR8171/8175 PCI-E Gigabit Eth			
luctooul	General				0-0-			
		signed automatically if your			Config the following items:			
	this capability. Otherwise for the appropriate IP set	, you need to ask your netw tings.	ork administrat	or	Scheduler			
					ocol Version 4 (TCP/IPv4)			
	Obtain an IP addres	. mm			twork Adapter Multiplexor Protocol opology Discovery Mapper I/O Driver			
	Use the following IP		-		DP Protocol Driver			
	IP address:	10.0.	1.00		ocol Version 6 (TCP/IPv6) opology Discovery Responder			
	Subnet mask:	255 . 0 .	0.0		opology Discovery Responder			
	Default gateway:				Uninstall Proper			
	Obtain DNS server a	ddress automatically			Uninaton Tropo			
	Use the following DN	Use the following DNS server addresses:						
	Preferred DNS server:	540 G	×		protocol that provides communication rconnected networks.			
item sel	Alternate DNS server:							
	Validate settings up	on exit	Advanced		ОК			

Updating the "IP address" and "Subnet mask"

Use following address and mask:

- IP address ...... 10.0.0.101

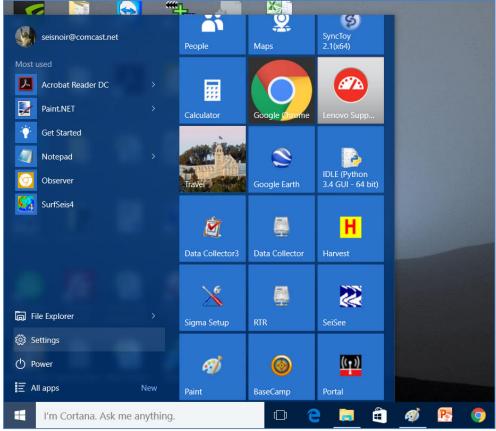
Press OK to accept entries.

It is sometimes necessary to reboot the computer to have the new address take effect.



## **3.1.2.2** Changing the Computer's Firewall Setting

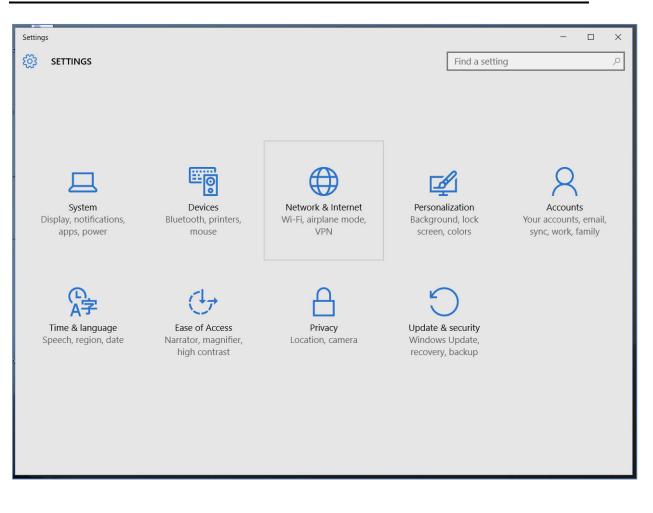
For Windows 10, right-click on the Microsoft Window's logo in the bottom left corner of the screen. Then select the "Network Connections" option.



Right-Click Menu showing Command Options

These options can also be found in the Windows 10 "Control Panel".





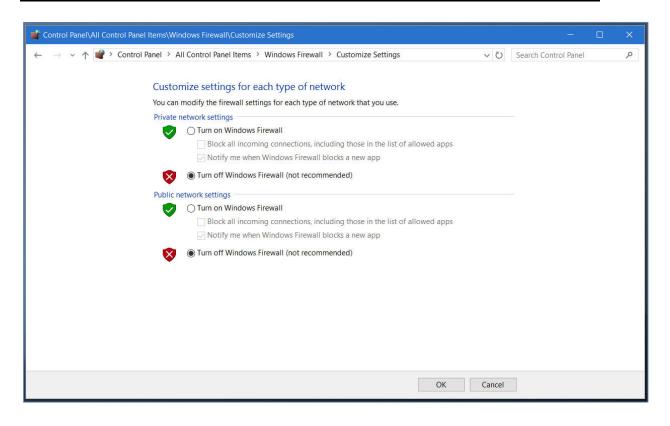


← Settings			- 0	×			
K NETWORK & INTERNET		Find a setting		9			
Wi-Fi	Wi-Fi						
Airplane mode	On On						
Data usage	Cactus Garden						
VPN	Cactus Garden Connected, secured						
Dial-up	Big Mac1_RE Secured						
: Ethernet	Mordor Secured						
Proxy	Advanced options						
	Manage Wi-Fi settings						
	Related settings						
	Change adapter options						
	Change advanced sharing options						
	Network and Sharing Center						
	HomeGroup						
	Windows Firewall						



💣 Control Panel\All Control Panel It	ems\Windows Firewall										
← 💛 🧹 🛧 📽 > Control Pa	nel > All Control Panel Items > Windows Firewall	~ Ŭ	Search Control Panel		ρ						
Control Panel Home											
Allow an app or feature through Windows Firewall	Windows Firewall can help prevent hackers or ma Internet or a network.	licious software from gaining access to your PC throu	gh the								
Change notification settings	Private networks	Not connected	d 🕑								
Turn Windows Firewall on or off	Guest or public networks	Connecter	d 🔿								
<ul> <li>Restore defaults</li> <li>Advanced settings</li> </ul>											
Troubleshoot my network	Windows Firewall state:	On									
	Incoming connections:	Block all connections to apps that are not on the of allowed apps	e list								
	Active public networks:	actus Garden									
		Hunidentified network									
	Notification state:	Notify me when Windows Firewall blocks a new	арр								
	1										
See also											
Security and Maintenance											
Network and Sharing Center											
L											

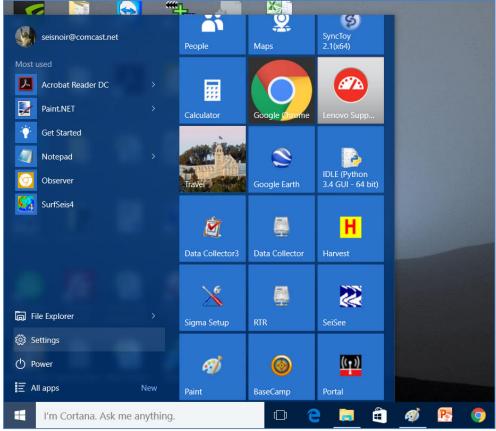






## **3.1.2.3 Changing Window Defender's Setting**

For Windows 10, right-click on the Microsoft Window's logo in the bottom left corner of the screen. Then select the "Network Connections" option.



Right-Click Menu showing Command Options

These options can also be found in the Windows 10 "Control Panel".



Settings				- 🗆 ×
🔅 SETTINGS			Find a setting	ر g
_			0	$\bigcirc$
		$\bigoplus$		X
System	Devices	Network & Internet	Personalization	Accounts
Display, notifications, apps, power	Bluetooth, printers, mouse	Wi-Fi, airplane mode, VPN	Background, lock screen, colors	Your accounts, email, sync, work, family
apps, power	mouse	VEIN	screen, colors	Sync, work, failing
	$(\downarrow_{})$	Д		
AJ				
Time & language Speech, region, date	Ease of Access Narrator, magnifier,	Privacy Location, camera	Update & security Windows Update,	
	high contrast	, , , , , , , , , , , , , , , , , , ,	recovery, backup	



← Settings			-	×
OPDATE & SECURITY		Find a setting		 Q
Windows Update	Real-time protection			^
Windows Defender	This helps find and stop malware from installing or run			
Backup	your PC. You can turn this off temporarily, but if it's off we'll turn it back on automatically.	for a while		
Recovery	On On			
Activation	Cloud-based Protection			
Find My Device	Get better, faster protection by sending Microsoft info potential security problems Windows Defender finds.	about		
For developers	Off Off			
	Privacy Statement			1
	Automatic sample submission			
	Help us make Windows Defender better by sending Mi samples so we can improve our anti-virus and malware Turn this off to be prompted before sending samples to	e measures.		
	Off	inclosoft.		
	Privacy Statement			
	Exclusions			~



← Settings			Find a setting	_	× ם م
Windows Update	Privacy Statement				,
Windows Defender	Exclusions				
Backup	Windows Defender won't sca vulnerable to malware.	n excluded files, making y	our PC more		
Recovery	Add an exclusion				
Activation	Version info				
Find My Device	Antimalware client version:	4.9.10586.0			
For developers	Engine version:	1.1.12300.0			
	Antivirus definition:	1.211.2339.0			
	Antispyware definition: Network inspection system engine version:	1.211.2339.0 2.1.11804.0			
	Network inspection system definition version:	115.28.0.0			
	Open Windows Defender				

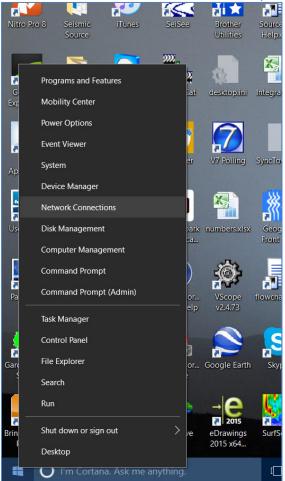


Windows Defender	3. <del></del> 8		
PC status: Protected			
Home Update History	💭 Settings	😯 Help 🛨	
Your PC is being monitored and protected.         Real-time protection:       On         Virus and spyware definitions:       Up to date	Scan options:		
Scan details Last scan: 12/9/2015 at 18:15 (Quick scan)			



## **3.1.2.4 Changing Network Adaptor Power Managment**

For Windows 10, right-click on the Microsoft Window's logo in the bottom left corner of the screen. Then select the "Network Connections" option.

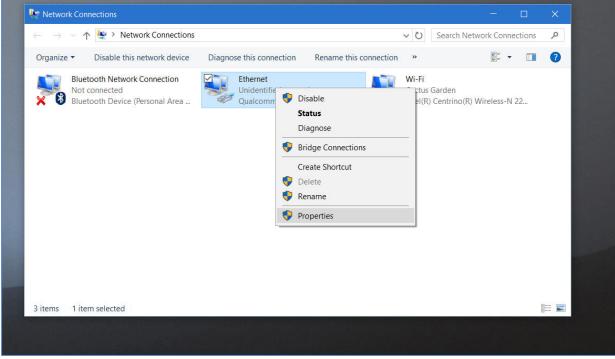


Right-Click Menu showing Command Options

These options can also be found in the Windows 10 "Control Panel".



The "Network Connections" window will display all the available network options on the computer. Next, right-click on the Ethernet adapter for the cabled connection, and then on the "Properties" option for the adapter.

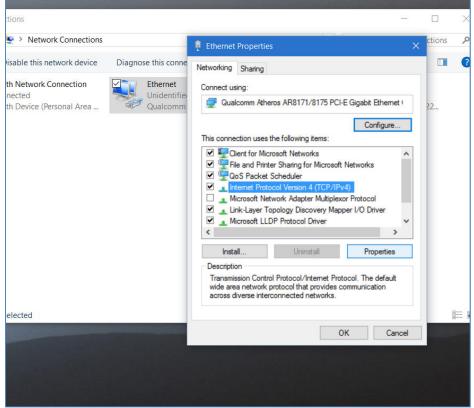


Pop-Up Menu showing available Network Adapters

It is also recommended to disable other network connections that might conflict with the communication process. Highlight the other connections (like Wireless) and select **Disable**.



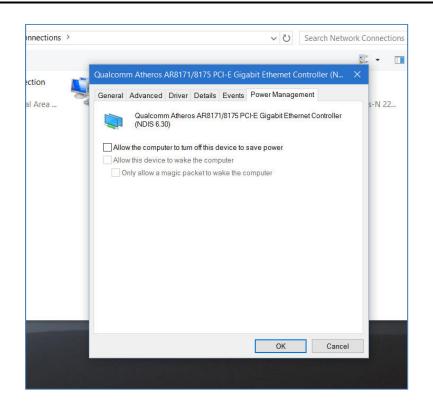
In the Properties menu for that adapter, select "Internet Protocol Version 4 (IPv4)", and then click on the "Properties" button.



Control Panel showing Network and Sharing Center

Also, consider disabling (by un-checking the selection box) the "Internet Protocol Version 6 (IPv6)" option.







## **3.1.3 Windows 8 Ethernet Setup**

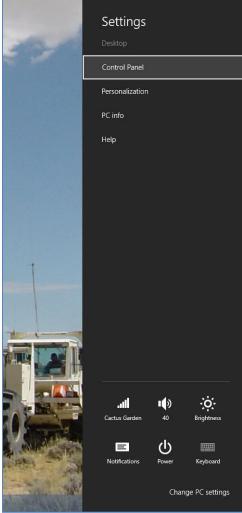
Windows 8 is the most flexible of the Microsoft operating systems, so the screens may be different depending on the updates applied to the computer.

Make sure the Computer IP address is on 10.x.x.x network (eg.10.0.0.99 or 10.0.0.101) with all firewalls and power management disabled.

If computer has not been setup for this IP address:

## 3.1.3.1 Changing the Computer's IP Address

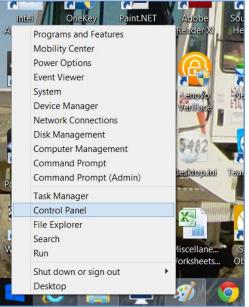
For Windows 8: Use a right-handed sweeping motion from the right side of the screen towards the left with a single finger, and select "Control Panel".



Charm Bar showing Control Panel Option

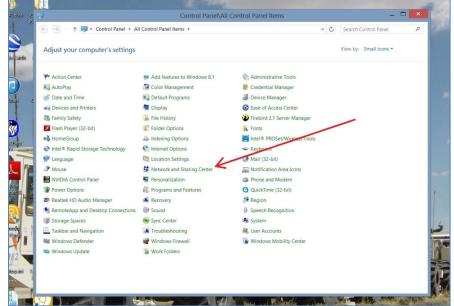


Also for Windows 8.1: Or right-click on the semi-Windows logo in the bottom left corner. From the pop-up menu select "Control Panel".



Pop-Up menu showing Control Panel Option

From the Control Panel, select "Network and Sharing Center".

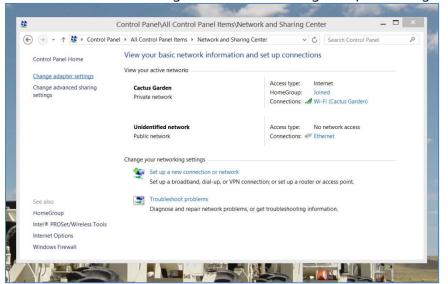


Control Panel showing Network and Sharing Center

It is also recommended to disable all other Network Connections. Highlight the other Network Connections (like Wireless) select **Disable**.



From the Network and Sharing Center select "Change adapter settings".



Network and Sharing Center showing installed Networks

From the Network Connections select network connected the Sigma Device. This is quite possibly the network labeled as "Unidentified network".

View your basic Cont	ems I Network and Sharing Center network information and se rol Pane(Network and Inter ork and Internet I Network Connec Ethernet Unidentified <u>network</u> Qualcomm A Qualcomm 6.30)	et up connections rnet\Network Connections	Search Network C		_
Cont	rol Panel/Network and Inter ork and Internet > Network Connec Ethernet Unidentified <u>network</u> Qualcomm A Qualcomm	rnet'Network Connections	Search Network C	Connection	_
h Network Connection	Ethernet Unidentified network Qualcomm A Qualcomm	Wi-Fi Cactus G	Sarden		s P
1	Unidentified network Qualcomm A Qualcomm	Cactus G		er (NDIS	0
1	Unidentified network Qualcomm A Qualcomm	Cactus G		er (NDIS	

Selecting the "Wired" Network



Set the Properties for the "Unidentified network".

Click on Properties

It is also recommended to disable all other Network Connections. Highlight the other Network Connections (like Wi-Fi) and select **Disable**.

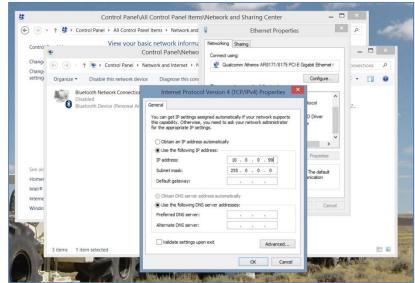
Set the Properties for the "Internet Protocol Version 4 (TCP/IPv4)".

$\odot$	🕆 👌 🕨 Control Panel 🕨 All Control Panel Item	s 🕨 Network and 🔋	Ethernet Properties	× ,	<u>a</u> –	
Contro' Changi	View vour basic ne Source (e) (∋) ← (e) + Control Panel → Network	l Panel\Netwo	tworking Sharing ionnect using: Qualcomm Atheros AR8171/8175 PCI-E Gigabit Ethemet (	onn	ections	×
Chang- setting See als Homet Intel Ø	Organize •     Disable this network device     I       Bluetooth Network Connection Disabled Bluetooth Device (Personal Area     I	Ethernet Unidentifi Qualcom	Configure  It is connection uses the following items:  Configure  Confi	2_	,	0
Interne Windo	3 items 1 item selected		OK Cance			8= 1

Set the TCP/IPv4 addresses



Set the IP address and the Subnet mask.



Use following IP -> IP address: 10.0.0.99, Subnet Mask: 255.0.0.0

It is sometimes necessary to reboot the computer to have the new address take effect.



## **3.1.3.2 Modifying the Computer Firewall Options**

To communicate with a Sigma Unit, either disable the firewall for that network or else set the permission for the Sigma Software.

From the Control Panel, select the "Window Firewall" option.

-) 🎯 - ↑ 赙 + Control Panel + Al	I Control Panel Item	s >		~ C	Search Control Panel	م	
Adjust your computer's settings					View by: Small icons *		
Y Action Center	🗭 Add features t	o Windows 8.1	👫 Adr	ninistrative Tools			
AutoPlay	🗿 Color Manage	ment	Cre	dential Manager			
📸 Date and Time	Bofault Progra	ims	🚚 Dev	rice Manager			
Devices and Printers	🔙 Display		🕑 Eas	e of Access Cente	r		
🍓 Family Safety	Kile History		<li>Fire</li>	bird 2.1 Server M	anager		
🗲 Flash Player (32-bit)	Folder Option	5	🙀 Fon	ts			
NomeGroup	A Indexing Optio	ons	Thtel  PROSet/Wireless Tools				
Intel <sup>®</sup> Rapid Storage Technology	1 Internet Option	ns	🗢 Key	board			
🚰 Language	Location Settin	ngs	Mai	l (32-bit)			
J Mouse	Stewark and S	iharing Center	Not	ification Area Ico	ins		
NVIDIA Control Panel	Sersonalizatio	n	🚙 Pho	ne and Modem			
Power Options	R Programs and	Features	Q Qui	ckTime (32-bit)			
📑 Realtek HD Audio Manager	🛋 Recovery		🔊 Reg	ion			
s RemoteApp and Desktop Connections	Sound		0 Spe	ech Recognition			
Storage Spaces	Sync Center		🖓 Syst	tem			
Taskbar and Navigation	Troubleshootin	ng	😹 Use	r Accounts			
Windows Defender	Windows Firev	vall	🐌 Wir	dows Mobility Ce	enter		
Windows Update	Work Folders	Windows Firewall Set firewall security protect your comp and malicious soft	uter from hack				

Selecting the "Windows Firewall" option

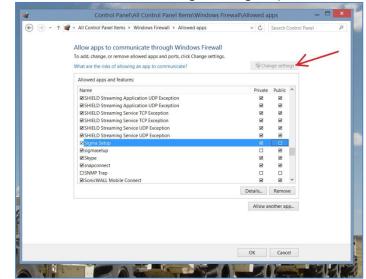
In the "Window Firewall" menu, select the "Allow an app or feature through Windows Firewall" option.

🔄 🕘 🔹 🕆 📽 🕨 Control Par	el + All Control Panel Items + Windows Firewall	✓ C Search Control Panel
Control Panel Home	Help protect your PC with Windows I	Firewall
Allow an app or feature. through Windows Firewall	Windows Firewall can help prevent hackers or maintennet or a network.	alicious software from gaining access to your PC through the
Change notification settings	Private networks	Connected 🕥
Turn Windows Firewall on or off	Networks at home or work where you know and	I trust the people and devices on the network
Restore defaults	Windows Firewall state:	On
Advanced settings Troubleshoot my network	Incoming connections:	Block all connections to apps that are not on the list of allowed apps
	Active private networks:	🝧 Cactus Garden
	Notification state:	Notify me when Windows Firewall blocks a new app
	Guest or public networks	Connected 🕥
	Networks in public places such as airports or co	ffee shops
	Windows Firewall state:	On
	Incoming connections:	Block all connections to apps that are not on the list of allowed apps
	Active public networks:	Muldentified network
	Notification state:	Notify me when Windows Firewall blocks a new app
See also		
Action Center		

Selecting the Windows Firewall pass-through menu



Once in the menu, click on the "Change settings" option.



Selecting the "Change settings" option

Also, the settings for an individual program can be adjusted.

€ ⊕ • ↑	📽 « All Control Panel Items	Windows Firewall      Allowed apps	~ C	Search	Control Pan	el	۶
		nunicate through Windows Firewall e allowed apps and ports, click Change settings.					
	What are the risks of allow	ving an app to communicate?	😽 Cha	ange setti	ngs		
	Allowed apps and featu	ires:					
	Name		Private	Public	^		
	SHIELD Streaming A	pplication UDP Exception	Ø	Ð			
	SHIELD Streaming Application UDP Exception						
	SHIELD Streaming Application UDP Exception						
	SHIELD Streaming Se	ervice TCP Exception	2	Ð			
	SHIELD Streaming Se	ervice UDP Exception					
	INSTITUCE Streaming Service UDP Exception         IN           INSTITUCE Streaming Service UDP Exception         IN           INSTITUCE Streaming Service UDP Exception         IN						
	⊠sigmasetup		Ð				
	☑ Skype	Edit an app	×	R			
	☑ snapconnect						
	SNMP Trap	You can allow communication with this app from any computer, including those on the Internet or just from computers on your me					
	SonicWALL Mobile	including those on the internet or just from computers on your n	ECWORK.	R	~		
		Name: 🔀 Sigma Setup		Remov	re		
		Path: C:\jSeis\Utilities\SigmaSetup\SigmaSetup.exe	-				
			<b> </b>	nother ap	p_		
		What are the risks of unblocking an app?					
		You can choose which network types to add this app to.					
		Network types OK Ca	ncel				
		OK C					
			OK	Canc	el		

Inspecting options for a program or app

It is sometimes necessary to reboot the computer to have the new address take effect.

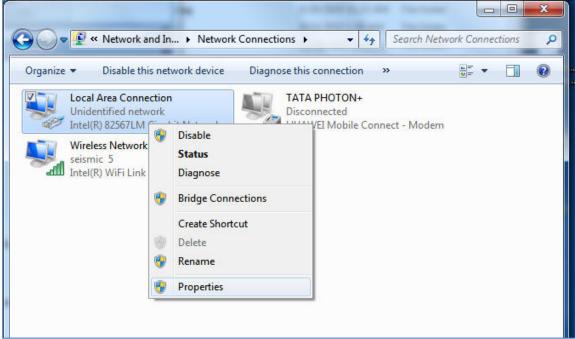


# **3.1.4 Windows 7 Ethernet Setup**

Make sure the Computer IP address is on 10.x.x.x network (eg.10.0.0.99 or 10.0.0.101) with all firewalls and power management disabled. If computer has not been setup for this IP address:

3.1.4.1 Changing the Computer's IP Address

For Windows 7: Go to Start->Control Panel->Network and Internet->View Network Status and tasks->Change adapter settings->Local Area Network



Right click and select Properties

It is also recommended to disable all other Network Connections. Highlight the other Network Connections (like Wireless) select **Disable**.



Intel(R) 82567LM Gigabit Networ	rk Co Configure
is connection uses the following item	IS:
Sient for Microsoft Networks     Section: Client for Microsoft Networks     Get and Printer Sharing for Mic     Get QoS Packet Scheduler     Tornet Protocol (TCP/IP)	crosoft Networks
Install Uninstall	Properties
Description	
Transmission Control Protocol/Intern wide area network protocol that prov across diverse interconnected netwo	vides communication
Show icon in notification area when	connected
eneri leen minealen area mien	

Select Internet Protocol Version 4 -> Properties and set

cally					
10 .	0	2	0		99
255 .	0	3	0	4	0
	_			•	
Itomatically					
addresses: –					
		S.		×	
				2	
			-		
				4	Advanced
	to ask your r cally 10 . 255 .	to ask your netw cally 10 . 0 255 . 0	to ask your network cally 10 . 0 . 255 . 0 .	to ask your network ac cally 10 . 0 . 0 255 . 0 . 0  tomatically addresses:	10 . 0 . 0 . 255 . 0 . 0 .  tomatically addresses:

Use following IP -> IP address: 10.0.0.99, Subnet Mask: 255.0.0.0



## **3.1.4.2 Disabling the Computer Firewall**

To program the TDMA, all firewalls needs to be turned off.

Start->Control Panel-> System and Security->Windows Firewall and turn it off. This is very important as the firewall will block the communication.

It is sometimes necessary to reboot the computer to have the new address take effect.

If the UE2 unit was previously communicating with a computer with a different address, then the UE2 unit must be reset (power off then on) for the unit to communicate to the new address.



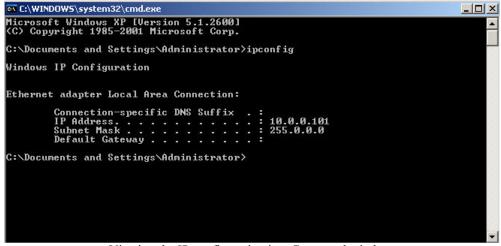
# 3.1.5 Vista, XP, and 2000 Support

If circumstances require use of one of these older and discontinued operating systems, please contact us as we will always help.



# **3.1.6 TCP/IP Verification**

To verify that the IP address is correct, select "Start", then "Run", then type in "CMD". This starts the command prompt in Windows (This is similar to the old DOS command prompt). Type the command "ipconfig". The current IP address 10.0.0.101 should be shown.



Viewing the IP configuration in a Command window

Viewing the Network Tab at the bottom of the Vscope program can also check the IP address. The Network Tab shows the current IP address detected by the Vscope program.

Comment Rec	ord Info 🗍 Plot I	n fo   Status   Ei	rrors   Communica	ation Network
Adapter Desc: In IP Address: 10.0 IP Mask: 255.0. DHCP Enabled: ***	). O. 101 0. 0	Gigabit Networ	k Connection - Pa	cket Scheduler Miniport

Viewing IP address in Vscope



# **4** Schematics

### 4.1 DAQLink 4 Connector wiring

#### 9.1.1 Ten pin Ethernet Connector

H..... TD+ A..... TD-B.....RD+ F.....RD-J..... +12 volts K....Ground

#### 4.1.2 2-pin Power Connector

A.....Positive Battery B.....Negative Battery

There are two internal fuses on the board to prevent damage to the unit. However, SSC recommends using external 2 amp fast blow fuses to protect the DAQLink 4. The unit can be powered from any DC source supplying a minimum of 11 to a maximum of 18 VDC.

#### 4.1.3 3-pin Trigger Connector

A.....TB active B.....TB return (ground) C.....+12 volt through 5 kOhms resistor

When DAQLink 4 trigger option is set to trigger on Time Break, then this input is used to trigger the box. This input drives an op-amp input and the trigger level is set by software. Normal trigger level is 2 volts minimum to trigger. Positive Voltage should be applied to pin A, and negative voltage to pin B. Maximum voltage should be less than 60 volts.

When using standard "Hammer Switch", connect Pin A to Pin C and to the High voltage side of the ST-01 switch. Connect pin B to the Low voltage side of the ST-01 switch.



#### 4.1.4 6-pin GPS Connector

A.....Battery +12 volts (supplies power to GPS receiver)

B.....GPS RX (receives GPS data from GPS receiver)

C.....GPS PPS

D.....Ground

E.....GPS TX

 $F.\ldots..Ground$ 

An external GPS receiver can be connected to the 19 pin GPS connector using a PT06A-14-19P. The GPS receiver must be setup for RS232 voltage levels

- 19200 baud
- \$GPGGA and \$GPRMC messages only

#### 4.1.6 19-pin USB Connector

C......+5 volts E.....USB\_DM F.....USB\_DP H.....Ground

#### 4.1.6 14-pin Misc. Connector

A......SPKR+
B.....SPKR C.....MIC A
D.....RADIO RTN
E.....PTT A
F.....Geophone + - AUX Trigger input +
G.....
H....Geophone - - AUX Trigger Input J.....+3 volts
K....external LED GREEN - Battery
L....external LED GREEN Status
P.....external LED RED Status
R....external LED Network LINK

S .....external LED Network ACTIVE



#### 4.1.7 55-pin Analog Data Connector

Pin	Signal	Pin	Signal
A	Ch 1 pos	b	Ch 13 pos
B	Ch 1 neg	c	Ch 13 neg
С	Ch 2 pos	d	Ch 14 pos
D	Ch 2 neg	e	Ch 14 neg
Е	Ch 3 pos	f	Ch 15 pos
F	Ch 3 neg	g	Ch 15 neg
G	Ch 4 pos	h	Ch 16 pos
Н			Ch 16 neg
J			Ch 17 pos
Κ		k	Ch 17 neg
L			Ch 18 pos
M			Ch 18 neg
N			Ch 19 pos
Р			Ch 19 neg
R			Ch 20 pos
S			Ch 20 neg
Τ			Ch 21 pos
U			Ch 21 neg
	Ch 10 pos		Ch 22 pos
	Ch 10 neg		Ch 22 neg
	Ch 11 pos		Ch 23 pos
	Ch 11 neg		Ch 23 neg
	Ch 12 pos		Ch 24 pos
a	Ch 12 neg	AA	Ch 24 neg

#### 4.1.8 Cable connectors Part Numbers

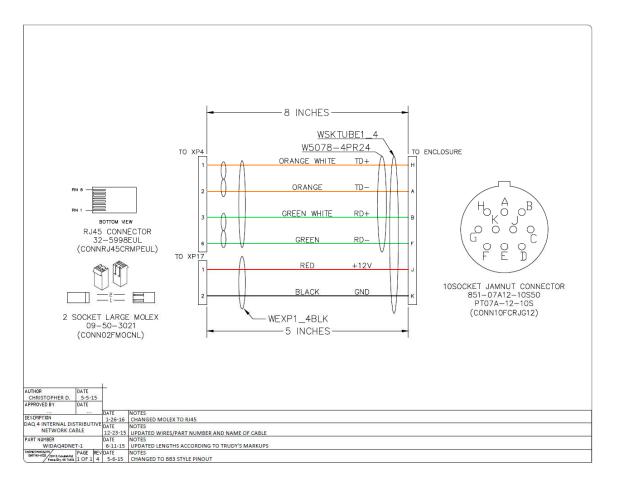
The following part numbers can be used to purchase cable connectors for the DAQLink4 unit:

Ethernet Plug	851-06AC12-10P50	PT06-12-10P
USB Plug	851-06AC14-19P50	PT06-14-19P
MISC/Aux trigger	851-06AC12-14P50	PT06-12-14P
Analog Channel Plug	851-06A22-55S50	PT06-22-55S
GPS Plug	851-06AC10-6P50	PT06-10-6P
Power Plug	851-06AC8-2S50	PT06-8-2S
Trigger Plug	851-06AC8-3P50	PT06-8-3P



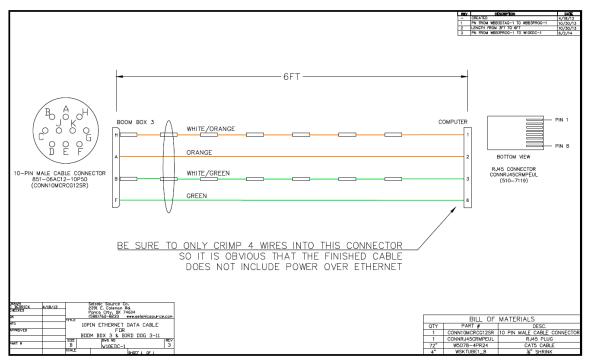
## **4.2 DAQLink 4 Schematics**

#### 4.2.1 Ethernet Wiring





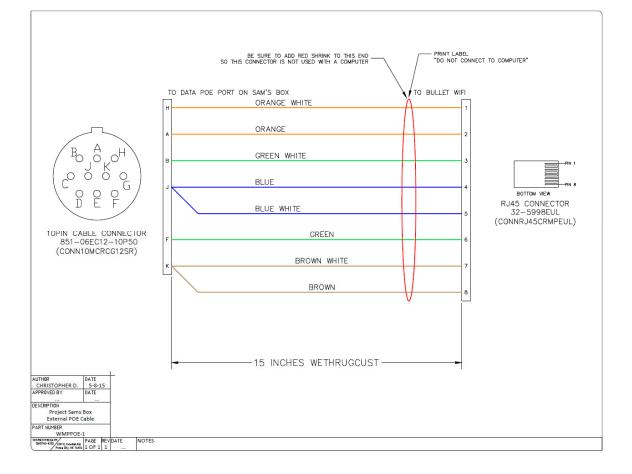
#### 4.2.1.1 Ethernet Cable





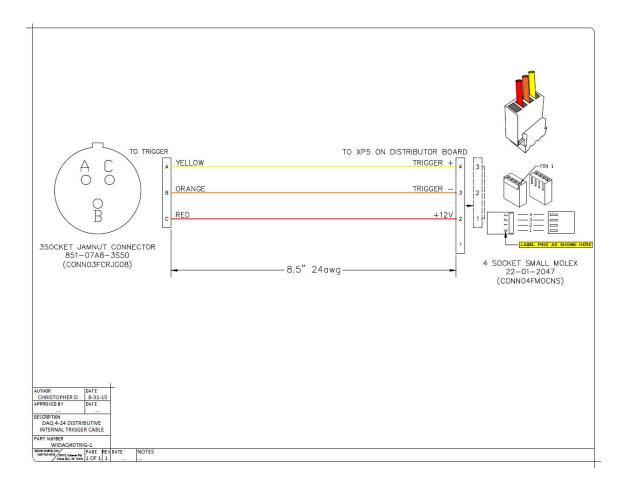
#### 4.2.1.2 Ethernet Cable with POE for WiFi

# WIFI ONLY -DO NOT USE WITH COMPUTER



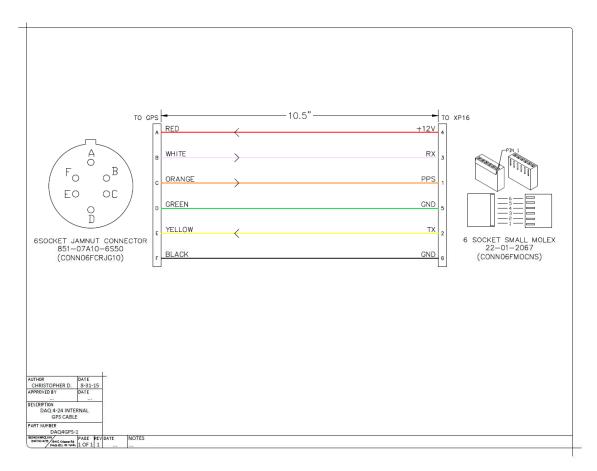


### 4.2.2 Trigger Wiring



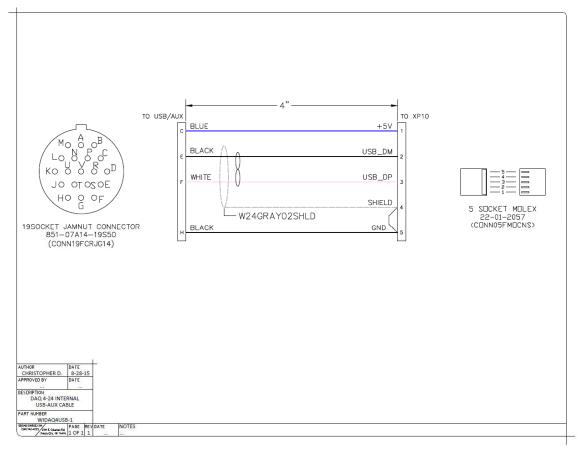


### 4.2.3 GPS Wiring



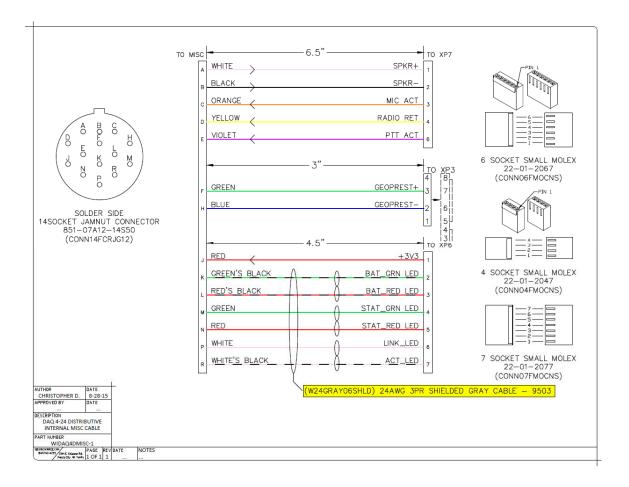


### 4.2.4 USB Wiring



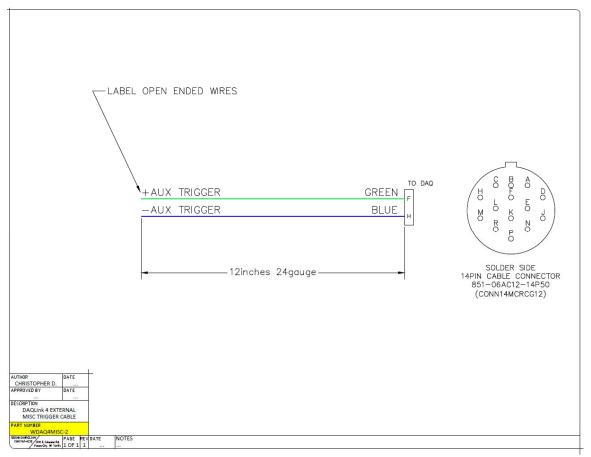


### 4.2.5 Misc Connector Wiring



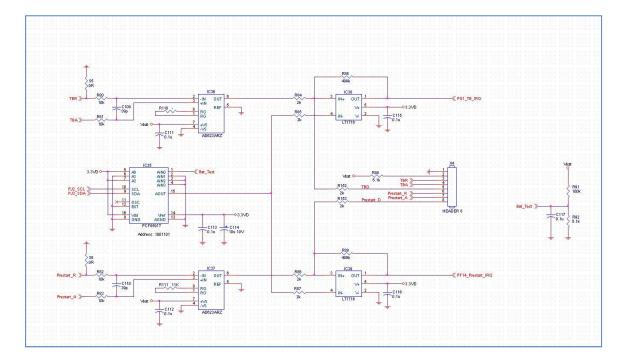


### 4.2.5.1 Aux Trigger Cable



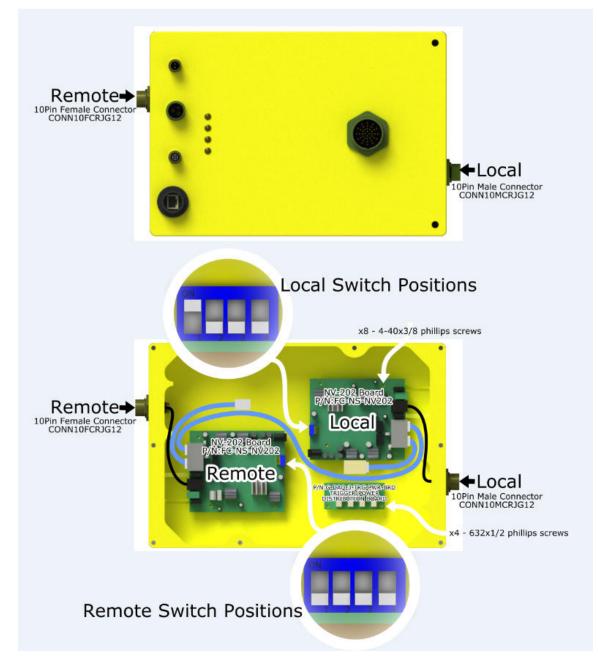






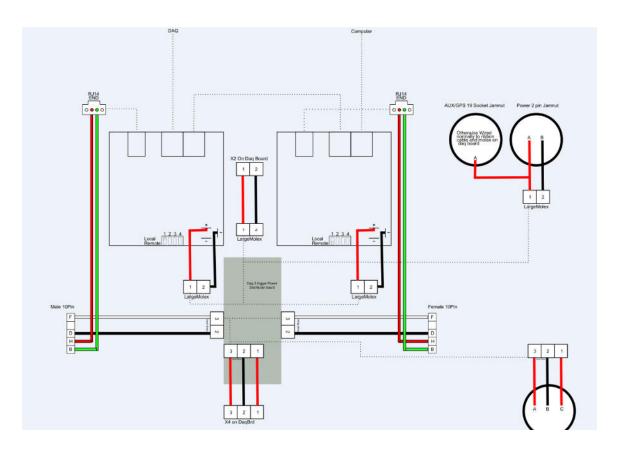


## 4.3 Distributed DAQLink4





## 4.3.1 Distributed DAQLink Wiring





wall de outstable de	and the second		and the second secon
	AN1 LAN		• PWR
spetsys	mana anno	LAN1	• co
NV-202	5.0	LAN2	 • CPE

#### Figure 3.1 Front Panel

#### Tip:

At a quick glance of the front panel, it is easy to determine if it has Ethernet signal from its RJ-45 port and if there is vdsI line signal on RJ-11 port.

And the table shows the description. (Table 3-1)

Table 3-1	Description	of the	bridge	front	connectors

Connectors	Туре	Description
LAN1 / LAN2	RJ-45	For connecting to an Ethernet equipped device.
Line	RJ-11/Terminal Block	For connecting to VDSL2 bridge. (Do not use RJ11 and Terminal Block at the same time.)

🙀 Nerve - Nevativ (1991) - x / 😅 NV-200 Jeans Manual da 🗴	-		Contraction (1)	And in the local distance of the second seco	5 <b>- 3 - 4</b>
← → C   E www.netsys.com.tw/support/manual/NV-202%20users%.					0 E
📅 Appe 🌞 NWS rader i mage Ic 🔓 Coogle 🌻 Ketradianti The Mod . 🕤 Secreograp	h lowp 🔏 Kosen AV/1	WO Hand.			💾 Other book made
	<b>ELSYS</b> 3.2 Front Indicate The bridge has E			<u>MV-202 VDSL2 Bridge with DIP Switch USER'S MANUAL Ver. A4</u> ang Table shows the description. (Table 3-2) dicators Description.	
	LED	Color	Status	Descriptions	
	WR		On(Steady)	Lights to indicate that the VDSL2 bridge had power	
	Power LED)	Green	or	The device is not ready or has malfunctioned.	
-			On(Steady)	The device has a good Ethemet connection.	
	AN 1-2 Ethernet LED)	Green	Blinking	The device is sending or receiving data.	
	Emerner (LED)		Off	The LAN is not connected.	
	CO (Local Side) CO LED)	Green	On(Steady)	Indicate the VDSL2 bridge is running at CO(Master) mode.	
	CPE (Remote Side) CPE LED)	Green	On(Steady)	Indicate the VDSL2 bridge is running at CPE(Slave) mode.	
			On(Steady)	The Internet or network connection is up.	
	LINE	Green	Blinking slowly	The CO device is auto-detecting CPE device.	
	VDSL LINK LED)	GIEBT	Blinking fastly	<ol> <li>The CO device has detected a CPE device and ready to connect.</li> <li>The device is sending or receiving data.</li> </ol>	
			Off	The Internet or network connection is down or has maifunctioned.	
euto				ee up to 3 minutes, flue to NV-402 to establish a link mochastion in E both PBO and PSD level, noise levels and other arguments for getting a	
	Rear Panel The following figu	ure shows t	he rear panel. (Figu	NV-202 VDSL2 Bridge with DIP Switch USER'S MANUAL Ver. A4	
🐔 🖉 👔 tatangan 🦷 tapatan 👔 Tatangar 🔊	0	-		ROWER	2007 Mar. 😿 Larder 🕫 🔺 🕼 🖬 🛓 🖬 🖉 100 Mar.



### 4.4 DAQlink 4 – 48 channel system

Two DAQlinks can be used to record 48 channels.

- Cable adapter is available for connecting 55 pin to 61 pin cable
- Single GPS unit can be wired to both units for precise timing and positioning
- Trigger cable can also be wired to both units for triggering.
  - For TTL triggering only pins A and B need to be connected
  - For Switch Closure applications Pins C must be wired to pin A

