

Compatible with VCCX-454 Series

Compatible with VCCX/VCCX-IP Series

CommLink 6 Technical Guide



COMMLINK 6 TECHNICAL GUIDE					
REVISION AND DATE	CHANGE				
Rev. A, August 15, 2024	Initial release				
Rev. B, August 30, 2024	Added IP configuration information, cosmetic updates				
Rev. C, October 22, 2024	Added CommLink configuration information for Windows® 10 and later				

PRODUCT NAME PARTS REFERENCE					
PART DESCRIPTION	PART NUMBER				
AAON Unit Controllers	Varies				
MiniLink PD 5	ASM01626				
E-BUS Cable Assembly E-BUS Power & Comm 1.5 ft., 3 ft., 10 ft., 25 ft., 50 ft., 75 ft., 100 ft., 150 ft., 250 ft., and 1000 Foot Spool	G029440 (1.5 ft.), G012870 (3 ft.), G029460 (10 ft.), G045270 (25 ft.), G029510 (50 ft.), G029530 (75 ft.), G029450 (100 ft.), G029470 (150 ft.), V36590 (250 Ft.), G018870 (SPOOL)				



www.aaon.com

This manual is available for download from www.aaon.com

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GENERAL INFORMATION

Overview and System Requirements

The ASM07420 CommLink 6 is used to transfer communications between controllers or local loops on your control system. It can also be used as an interface for connection of a computer to your system.

The CommLink 6 provides communication with the control system through any computer that is running Prism 2 software.

The CommLink 6 communication interface, provides TCP IP Internet and/or intranet connection for Ethernet networked computer systems, allowing them to communicate with your control system.

Using standard TCP/IP Protocol, with AAON's Prism 2 software, you are able to monitor and configure your controllers without a modem or a direct connection from a PC. Utilizing existing routers, proxies, or firewalls allows a PC running Prism 2 to connect to a controller in a remote accessible location or building. Several IP connection profiles can be created to facilitate monitoring several CommLink 6 devices.

WARNING: Verify the wiring matches the backplate description to confirm that the polarity is correct when wiring 24 VAC power to the CommLink power terminal block or serious damage to the product will result.

System Requirements

To program the CommLink 6 to work with Prism 2, you will need:

Standard Items (Required)

- CommLink 6 with USB cable and power adapter (supplied)
- A PC with an Ethernet communications port or USB port (supplied by others)
- Microsoft Windows® 10 (must be installed on the computer you are going to use)
- Prism 2 software (can be downloaded for free from www.aaon.com)

Optional Items

• MinkLink PD 5

NOTE: AAON Controls Support cannot troubleshoot internal PC and/or Windows®-based operating system problems.

INSTALLATION

Quick Start Guide

NOTE:	Prism 2, you need only perform Steps 1-3.	WARN
Step 1:	Set your CommLink's Loop switch to Multiple or Single	
	• Multiple when there is a single CommLink 6 with at least one MiniLink PD 5 installed in the system.	
	• Single when there is a single CommLink 6 with no connected MiniLink PD5 modules.	NOTE:
Step 2:	Set your CommLink's Baud rate switch to High or Low	
	• High when only using VCCX2, VCCX-IP, or VCCX-454, or GPC-XP controllers.	
	• Low when using older generation or a combination or older generation and newer controllers. Refer to the individual controllers technical guide for baud rate settings.	
Step 3:	Wire your CommLink to the appropriate controller on	

your system, and plug the CommLink into a power supply.

WARNING: Verify the wiring matches the backplate description to confirm that the polarity is correct when wiring 24 VAC power to the CommLink power terminal block or serious damage to the product will result.

Step 4: Install Prism 2 software on your computer.

WARNING: If you are replacing an earlier version of the CommLink with a CommLink 6, ensure the R(+) and T(-) terminals on the communications terminal block are wired the same as the back plate instructions. Incorrect wiring could lead to damage of the equipment.

NOTE: AAON Controls Support cannot troubleshoot internal PC and/or Windows®-based operating system problems, firewalls, routers, and/or problems on a customer's internal or external network. An IT professional may need to be consulted.

CONNECTIONS AND WIRING

Connections and Wiring



COM Port

Finding What COM Port Number the CommLink 6 is Using (Windows[®] 10)

- **Step 1:** Right-click on the Windows[®] icon, located on the bottom left or top left of the Windows Tool Bar.
- Step 2: Select < Device Manager>.
- **Step3:** Click on the plus sign next to Ports to see all of the common ports.

🗒 Device Manager	
File Action View Help	
$\leftarrow \rightarrow \blacksquare \textcircled{2} \Leftrightarrow \textcircled{2} \textcircled{3} \approx \bigotimes \bigotimes$	
E - 4 MKTG-SO-XP	^
🕀 💐 Batteries	
🕀 🧕 Computer	
🗉 🙅 Disk drives	
🖲 💆 Display adapters	
UVD/CD-ROM drives	
Eleppy disk controllers	
Hoppy disk drives	
	-
En of a DEFE 1994 But hast controllers	-
E an Keyboards	
E Mice and other pointing devices	
E Monitors	
🗄 📰 Network adapters	
🗄 \iint Ports (COM & LPT)	
- J Communications Port (COM1)	
- 📝 Communications Port (COM2)	
ECP Printer Port (LPT1)	
🍠 US8 Serial Port (COM3)	
E 💭 Processors	~

- Step 4: Locate the USB Serial Port (COM#). The COM# in parentheses is the port it is located on. Write this COM port number down. You will need to know this when setting up the Prism 2 software.
- **Step 5:** If the COM port number is 10 or greater, go to "Changing the USB COM Port Number" in the Troubleshooting section.

Changing the USB COM Port Number

When the CommLink 6 is first plugged in, it will be assigned a COM port number to be used for communicating with the Prism 2 software. If the port number is 10 or greater, it needs to be changed to a value less than 10 to be recognized by Prism 2.

Step 1:Right-click on the Windows® icon and select <Device</th>Manager> to get to the Device Manager Window.

Device Manager	
File Action View Help	
← → 📧 🗳 😫 🗶 🥿 🗶	
E 🗸 MKTG-50-XP	^
🗉 🧶 Batteries	
🕀 😼 Computer	
😟 🦇 Disk drives	
😥 🦉 Display adapters	
🕀 🥝 DVD/CD-ROM drives	
🕀 🚭 Floppy disk controllers	
🕀 🍓 Floppy disk drives	
🕀 🚰 Human Interface Devices	
E C IDE ATA/ATAPI controllers	
EEE 1394 Bus host controllers	
🗄 🧽 Keyboards	
— D Mice and other pointing devices	
🗄 😼 Monitors	
🗄 🌉 Network adapters	
E Ports (COM & LPT)	
Communications Port (COM1)	
Communications Port (COM2)	
ECP Printer Port (LPT1)	
US8 Serial Port (COM3)	
Reverse	~

Step 2: Click on the plus sign next to Ports to see all of the COM ports.

Step3: Right-click on "USB Serial Port (COM#)" and select <Properties>. In the Properties Window, select the <Port Settings> tab.

General	Port Settings	Driver Details	Resources	
		Bits per second:	9600	~
		Data bits:	8	~
		Parity:	None	~
		Stop bits:	1	~
		Flow control:	None	~
		bA	vanced	Restore Defau
			Oł	Can

Step 4: To assign a port number less than 10, click on<Advanced>. The Advanced Settings Window will appear.

OM Port Number: COM4	•		
USB Transfer Sizes			Ca
Select lower settings to correct p Select higher settings for faster p	erformance problems at erformance.	low baud rates.	De
Receive (Bytes):	4096 💌		
Transmit (Bytes):	4096 💌		
BM Uptions			
BM Uptions Select lower settings to correct re	esponse problems.		
BM Uptions Select lower settings to correct re Latency Timer (msec):	esponse problems.		
BM Uptions Select lower settings to correct re Latency Timer (msec): Miscellaneous Options	esponse problems.		
BM Uptions Select lower settings to correct re Latency Timer (msec): Miscellaneous Options Minimum Read Timeout (msec)	16 V	Setial Enumerator Setial Printer	4

- **Step 5:** In the COM Port Number drop box, select which COM port you wish to use. Make sure to select a COM port number that is not currently in use (the ports are listed in the Device Manager Window). Select a port number that is less than 10.
- **NOTE:** Windows[®] will assign a port number to every device that has ever been installed on your computer. So if there are no available ports below 10, choose a port number less than 10 for a device listed that you know you are not currently using.
- Step 6: Once you select the correct COM port number, click<OK> and close any windows opened in the process of changing the port number. Make note of this number because you will need it for your Prism 2 setup.

SETUP

Prism 2

- **Step 1:** Open your Prism 2 software.
- Step 2: Click the <Login> button and type in the Level 9 User Name and password (default is "admin, admin"). Click <Login>.



Step 3: If Prism 2 is online, click the<ON LINE> button to make it go <OFFLINE>.



Step 4: Click the <Job-Site> button to open the Job-Sites Window.



Step 5: Click on any empty location in the Job-Site Selection Window and then type in a job name in the Selected Location box and press <Enter>.

Sites Job Sites					
Exit Log Times Log Units					
Job-Site Selection		Selected Location	Jo	b-Site Lis	st #
001 - Job-Site #1	^	Job-Site #1		1	Delete Job-Site
002 - DEMONODE 003 -		Serial Port (Not Required for TCP/IP Operations)		(Not all C	omputers Allow This)
004 -		No Port Selected	~	Auto-De	tect Installed Ports
005 -		Alarm Bolling Enabled			
007 -					
- 800					
010 -					

Step 6: In the Serial Port field, click on the pull down box and select the COM Port number that the CommLink 6 is using.

Serial Port	(Not Required for TCP/IP Operations)
No Port Sele	cted
No Port Selec	cted
COM1	
COM2	
COM3	
COM4	
COM5	
COM6	

Step 7: In the Type of CommLink selection box, select the radio button next to CommLink 6.

Step 8: In the Network Configuration selection box, select the type of system configuration you are using. The only options applicable to CommLink 6 are Multiple Loop Configuration (Network) or Single Loop Configuration.

Network Configuration
 Multiple Loop Configuration
Single Loop Configuration
O Auxiliary CommLink
◯USB Link Network
◯ USB Link Stand Alone
OUSB Link Stand Alone

Step 9: Click <Exit> to close out of the Job Sites Window.

Step 10: Click the **<OFFLINE**> button to go **<ON LINE>**.



Step 11: From the <Communications> menu, select <Search for Units>.

Communications	Maintenance 9	5		
Search For Un	its			
Start AutoLog	Start AutoLog			
Setup CommLi	nk			
CommLink IP Web Settings				
Terminal Mode				
Monitor Para Blocks				
Monitor Raw Input Voltages				
Diagnostics Mode				
Monitor Controller Variables				

Step 12: The Search for Installed Units Window will pop up. Click <Start Search> located in the upper left-hand corner of the window to initiate an automatic detection of all installed controllers on your system.

😻 Search For U	👒 Search For Units						
Exit Start Search	Cancel Search						
Loop Selection Current Unit	02 Search ON	ILY the Selected Loc t Maps {CommLink y	ф 3.15}	Units Fou Total	nd on This Loop Units on System	00	
System Overview							
1-1	Ť	ĩ	Ĩ	ĩ	Ť	Ĩ	

SETUP

Prism 2

- **Step 13:** If everything is working correctly, Units Found on this Loop should increase. You will also see green boxes indicating units that have been found..
- **Step 14:** If Units Found on this Loop stays at zero, check the wiring to the CommLink 6 and the AHU/RTU Controllers and/or read through these directions again to make sure all steps were followed.
- Step 15: To stop a search, click <Cancel Search>.
- **Step 16:** Once you are done searching for units, close out of the window or click **<Exit>**.
- Step 17: A window will pop up that asks, "Do you want to save the search results?" Click <Yes> if you wish to save the results. Click <No> if not.
- Step 18: You can now access any installed unit from the Main Prism2 Screen by selecting a loop from the Loop SelectionWindow with a single-click and by selecting the unit fromthe Unit Selection Window with a double-click

Nodo Solostio	-
Node Selection	
UUT - Main Site	<u>^</u>
002 -	_
004 -	
005 -	
006 -	
007 -	
008 -	Y
Loop Selection	1
001 - MiniLink #1	~
002 -	
003 -	
004 -	
005-	
007 -	
008 -	~
Unit Selection	
001 - VCM Controller	~
002 -	
003 -	
004 -	
005 -	
008-	
008 -	
009 -	
010 -	

SETUP

CommLink Configuration

Computer IP Address Set-up for Windows® 10 and later.

In order for the CommLink to communicate properly, you must set the IP address of the CommLink and computer to be within the same net mask. The following instructions explain how to change your computer's IP address.

- **Step 1:** Right click the Windows icon or <start>; then click <Network Connections>.
- **Step 2:** Then click <Network and Sharing Center>. The Network and Sharing Center Window will appear.

NOTE: If any wireless connections are listed, disable them by right-clicking the connection and selecting <Disable>.

Step 3: In the Network and Sharing Center Window, select the Local Area Connection entry. The Local Area Connection Status Window will appear.

le Edit View Tools Help	
Change adapter settings	View your basic network information and set up connections
Change advanced sharing settings	CS-DS-W7 parkville.wattmaster.com Internet (This computer)
	View your active networks Connect or parkville.wattmaster.com Domain network Connection: Q Local Area Connection
	Change your networking settings
	Set up a new connection or network Set up a wireless, broadband, dial-up, ad hoc, or VPN connection; or set up a router or ac
	🐩 Connect to a network

Step 4: Click the <Properties> button. The Local Area Connection Properties Window will appear.

🏮 Local Area Connect	on Status	X	3
General			_
Connection			
IPv4 Connectivity:		Internet	
IPv6 Connectivity:	No Interne	t access	
Media State:		Enabled	
Duration:	(02:01:35	
Speed:	100	0.0 Mbps	
Details			
Activity			
	Sent — 💵 — F	leceived	
Bytes:	11,572,669 33,	,798,286	
Properties	Disable		
	(Close	

Step 5: In the Connection Items List Box (Figure 9), be sure the Internet Protocol Version (TCP/IPv4) is checked. Click on Internet Protocol (TCP/IP v4) to highlight it and then click <Properties>. The Internet Protocol Properties Window will appear.

🔋 Local Area	Connection Properties	X
Networking	Authentication	
Connect us	ing:	
👰 Realt	ek PCIe GBE Family Controller	
	Configure	- I
This conne	ction uses the following items:	
	IS racket someware and Printer Sharing for Microsoft Networks TC NDIS Protocol Driver C (TC P (Po.6) emet Protocol Venion 4 (TCP (Po.6) emet Protocol Venion 4 (TCP (Po.6) kit.ager Topology Discovery Responder	
Insta	II Uninstall Properties	
Descriptio Transmis wide area across di	n sion Control Protocol/Internet Protocol. The default a network protocol that provides communication verse interconnected networks.	
	OK Car	ncel

Step 6: Type in the following information:

- Make the IP address 192.168.1.5
- Make the Subnet mask 255.255.255.0
- Blank out the Default gateway setting (leave the setting blank as shown in Figure 10).
- Blank out the Preferred DNS server setting and the Alternate DNS server setting (see Figure 10).

nterr	net Protocol Version 4 (TCP/IPv4)	Properties	? X
Ger	neral		
Y: th fc	ou can get IP settings assigned auton iis capability. Otherwise, you need to or the appropriate IP settings.	natically if your network ask your network admin	supports istrator
	Obtain an IP a laress automatical	у	
Lα	Object the following IP address: —		
1	IP address:	192.168.1.5	
	Subnet mask:	255.255.255.0]]
	Default gateway:		
	Obtain DNS activer address autom	natically	
l c	Use the following DNS server add	resses:	
1	Preferred DNS server:		
	Anarpate DNS server:	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
	Validate settings upon exit	Adv	anced
		ОК	Cancel

Step 7: Select <OK> until all of the above windows are closed. You may have to reboot the computer before the new values are valid.

IP Network Configuration

Step 1: Run the Prism 2 program, open the Job Sites Window, and type the default IP address 192.168.1.25 in the Node IP Address field. See the Prism 2 Technical Guide if needed for further instructions. To access the IP Module web page, click on the <Communications> tab and then click <CommLink IP Web Settings> (see below).



- Step 2: The Sign In Window, shown below, will pop up before you can have access to the CommLink IP Module Webpage. Leave the username blank, and in the Password field, enter the password located on the bottom of the CommLink. Then click <OK>.
- **NOTE:** If there is no password label on the bottom of your CommLink, open the CommLink and look at the IP Module label for the MAC Address. The MAC address is the 12 digit dashed alphanumeric number The password is 8500 plus the MAC address with no spaces or dashes.

Username					
Password					
			Sign in	n	Cancel

Step 3: The CommLink IP Module Window, shown below, will appear if a connection is established.



Step 4: Click **<Network Configuration>** found in the menu bar on the left side of the web page.

命	
Network	Configuration
ቆ	Network Settings
Network Configuration	Network Mode: Wired Only
Configuration	IP Configuration
Change Password	 Obtain IP address automatically
	Auto Configuration Methods
Apply Settings	BOOTP: Enable Disable
	DHCP: Enable Disable
	AutoIP: Enable Disable
	DHCP Host Name:
	Use the following IP configuration:
	IP Address: 10.60.19.244
	Subnet Mask: 255.255.255.0
	Default Gateway: 0.0.0.0
	Ethernet Configuration
	 Auto Negotiate
	Speed: 10 Mbps 10 Mbps
	Duplex:
	Click OK, then click Apply Settings.
	OK

Step 5: Under IP configuration, select the radio button in front of the option **<Use the following IP configuration>** and type in the IP address, Subnet Mask, and Default Gateway as provided by the jobsite IT staff.

NOTE: Be sure all other settings are set to default.

- **Step 6:** Click **<OK>** at the bottom of the Network Settings Screen once the changes have been made.
- **Step 7:** Click **<CommLink Configuration>** found in the menu bar on the left side of the web page.



Step 8: Under Port Settings, in the Baud Rate drop down menu, select the appropriate baud rate and click OK.

Change Password	Baud Rate: CommLink 5 (115200) V	
Apply Settings	Click OK, then click Apply Settings.	ОК

IP Network Configuration

- **Step 9:** Click **<Change Password>** found in the menu bar on the left side of the web page.
- Step 10: The Change Password Window will appear. Type in a new password in both fields—the New Password field and Retype Password field and press <OK>. A message will appear if the password change is successful. Make sure to write the new password down.

CommLink Configuration	
Change Password	

NOTE: If for some reason you forget or lose the password, you can press the reset button on the back of the CommLink (located next to the DIAG button). This will reset the password to the factory-set password and will also reset ALL factory settings. As a result, all factory settings will need to be reconfigured.



Step 11: After you are done modifying all of the IP settings, click <Apply Settings> in the menu bar to the left.



- **Step 12:** To verify that the changes were successful, connect to the building's network using a standard Ethernet cable. Then make sure your PC has a connection to the Local Area Network and reopen the IP Setup Webpage by typing in the newly assigned IP Address.
- **Step 13:** Be sure to set the IP address in Prism 2 to the new IP address set up for the CommLink.

TROUBLESHOOTING

CommLink 6 LEDs

USB LEDs

- **LOOP:** Indicates communication activity on local controller network. This LED flickers when data is exchanged with the controller network.
- **USB TX:** Indicates transmitted data status of USB connection. This LED only flashes when your CommLink 6 is connected to a computer and data is sent to Prism from the CommLink 6 via USB.
- **USB RX:** Indicates received data status of USB connection. This LED only flashes when your CommLink 6 is connected to a computer and data is sent from Prism to the CommLink 6 via USB.
- **USB STAT:** Indicates connection to your computer. This LED will turn on solid once you plug the USB cable into your computer as long as the connection is not lost.

Network LEDs

- **ETH STAT:** Indicates connection to your ethernet. This LED will turn on solid once you plug the ethernet cable into the CommLink 6 and remain lit as long as the connection is not lost.
- **ETH TX:** Indicates activity on the local area network. This LED flashes on when LAN is transmitting and receiving data and is only operational with an Ethernet connection.
- **ETH RX:** Indicates local area network is connected. This LED is on when connected to LAN and is only operational with an Ethernet connection.
- **ETH LINK:** Indicates wireless connection to the local area network. This LED flashes on when LAN is transmitting and receiving data and is only operational with an Ethernet connection.



Figure 2: CommLink 6 LEDs

Connection

Proxy and Firewall Compatibility

Proxy and Firewall configurations may become necessary when the CommLink 6 is connected to a LAN/WAN that is protected by a commercially available Firewall, Proxy, or NAT enabled router. Examples of these would include Cisco, NetGear, LinkSys, or WatchGuard Technologies. Also, some ISPs provide IP Address ranges that are already fire-walled at the NOC or ISP Head-End. Make sure that your IT Department or ISP can create a mapped TCP port 39288 on your firewall/proxy to TCP port 39288 on the assigned IP Address of the CommLink 6.

Only with proper configuration of the Firewall/Proxy are connections to the CommLink 6 from outside of the local area network going to be possible. Check that the Firewall/Proxy TCP port 39288 is not set to time out or reset after a specified amount of time when there is no traffic from the remote PC.

Problems with Prism 2 Software

Verify that the correct COM port, created by the USB connection, is selected in the Job-Sites Window. Verify the COM port number by right-clicking on the Windows[®] icon, selecting **<Device Manager>**, and viewing **<Ports>**.

Verify that the radio button **<CommLink 6>** is selected for the Type of CommLink in the Job-Sites Window.

Verify that the correct CommLink mode is selected under Network Configuration in the Job-Sites Window. Select **<Multiple Loop>** or **<Single Loop>**.

Problems with USB Connection

Verify that the USB TX and USB RX are blinking when you perform a Search for Units or try to open a status screen in Prism 2.

If the USB LEDs fail to blink, disconnect and reconnect the USB connection.

Problems Viewing Multiple Controllers on a Network

Make sure that the CommLink's communication switch on the back of the CommLink is set to Multiple Loop.

In Prism 2, make sure that Multiple Loop Configuration is selected for Network Configuration in the Job-Sites Window.

Support Information

AAON Controls provides Prism 2 installation and configuration support. Call (866) 918-1100 for free, direct telephone support or (816) 505-1100 to talk to a Controls Support Representative. Support for all telephone services is available Monday through Friday, 7:00 AM to 5:00 PM central standard time.

NOTE: AAON Controls Support cannot troubleshoot internal PC and/or Windows[®]-based operating system problems.

NOTE: AAON Controls Support cannot troubleshoot firewalls, routers, and/or problems on a customer's internal or external network. An IT professional may need to be consulted.

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AAON Controls Support:

866-918-1100 Monday through Friday, 7:00 AM to 5:00 PM Central Time

Controls Support website:

www.aaon.com/aaon-controls-technical-support

AAON Factory Technical Support:

918-382-6450 | techsupport@aaon.com

NOTE: Before calling Technical Support, please have the model and serial number of the unit available.

PARTS: For replacement parts, please contact your local AAON Representative.



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