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Driver Manual
(Supplement to the FieldServer Instruction Manual)

FS-8705-41

Hunter Industries ACC2 Irrigation Controller
Ethernet Driver

APPLICABILITY & EFFECTIVITY

Effective for all systems manufactured after Sep 20, 2010

TABLE OF CONTENTS

1.   Hunter Industries ACC2 Driver Description

The Hunter ACC2 protocol can be used to connect to suitably enabled Hunter Industries controllers such as the ACC2 Irrigation Controller. The Driver can read and write data, change settings and issue commands to the irrigation system. A single gateway can connect to multiple controller's using this driver.

The Gateway will be an active client in communications with the Hunter controller. This means that the gateway will issue messages to read/write data. The Hunter Controller ACC2D will be a passive server, waiting silently for messages from the gateway to which it will respond. The data read will be cached for serving via a 2nd protocol such as DNP3 to Cimplicity or Modbus / BACnet for a building management system. Any of the over 140 protocols in the gateway library may be connected to the Hunter Driver.

The gateway requires minimal configuration and can be considered a plug and play component of a system, in that it is ready to operate out of the box with the default configuration.

Max Nodes Supported

FieldServer Mode	Nodes	Comments
Client	Many	One Gateway can connect to many irrigation controlers provided each has a unique IP.
Server	0	This driver cannot be used to simulate a Hunter ACC Controller.

2.   Driver Scope of Supply

2.1.   Supplied by FieldServer Technologies for this driver

FieldServer Technologies PART #	Description
-	No specific cables are shipped with this driver. A generic RJ45 Ethernet cable must be shipped with this driver.
-	A generic male and Female connector kit must be shipped with this driver.
FS-8705-41	Driver Manual.

2.2.   Provided by the Supplier of 3rd Party Equipment

2.2.1.   Required 3rd Party Hardware

Part #	Description

2.2.2.   Required 3rd Party Software
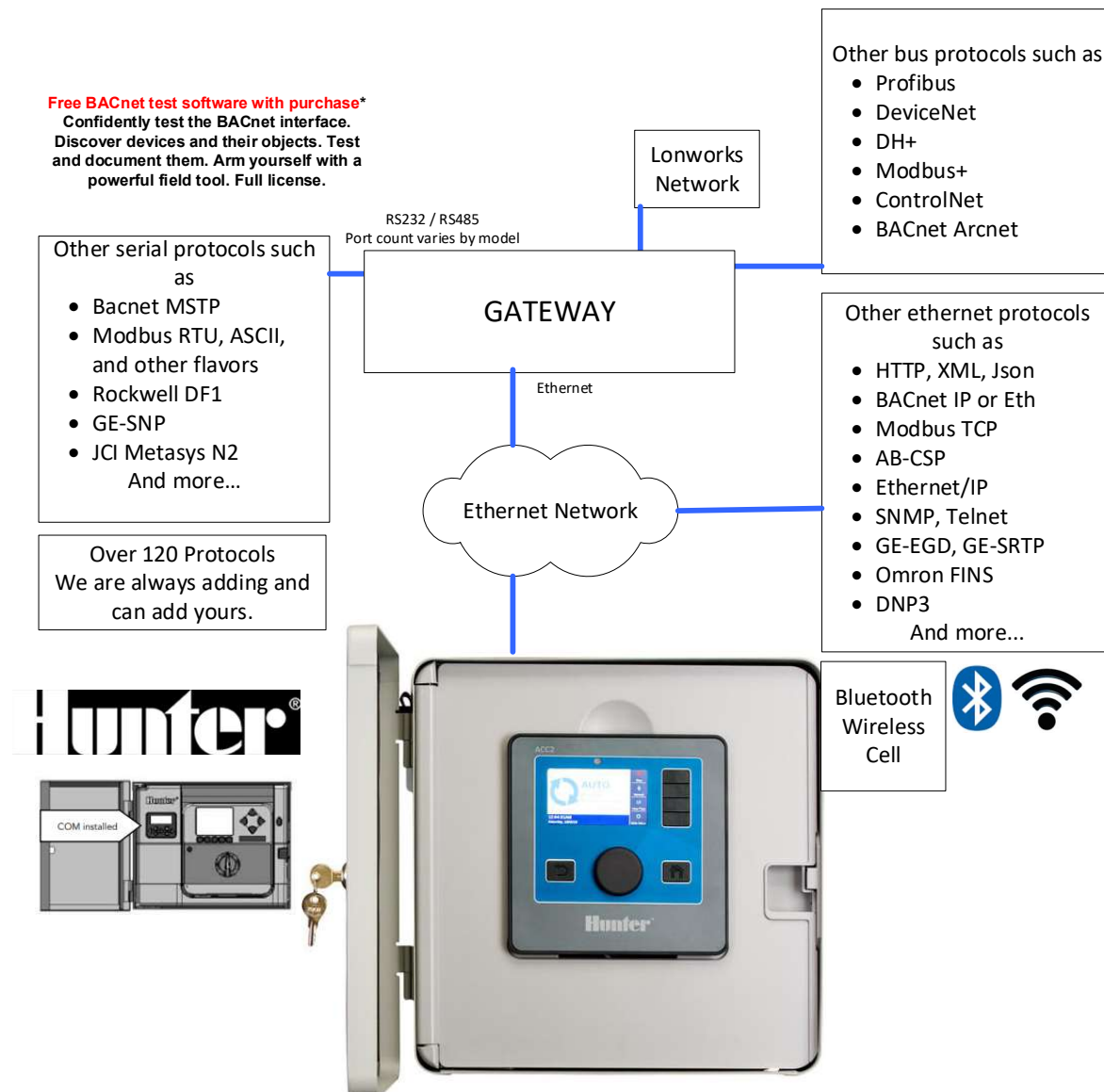
2.2.3.   Required 3rd Party Configuration

None Known.

3. Hardware Connections
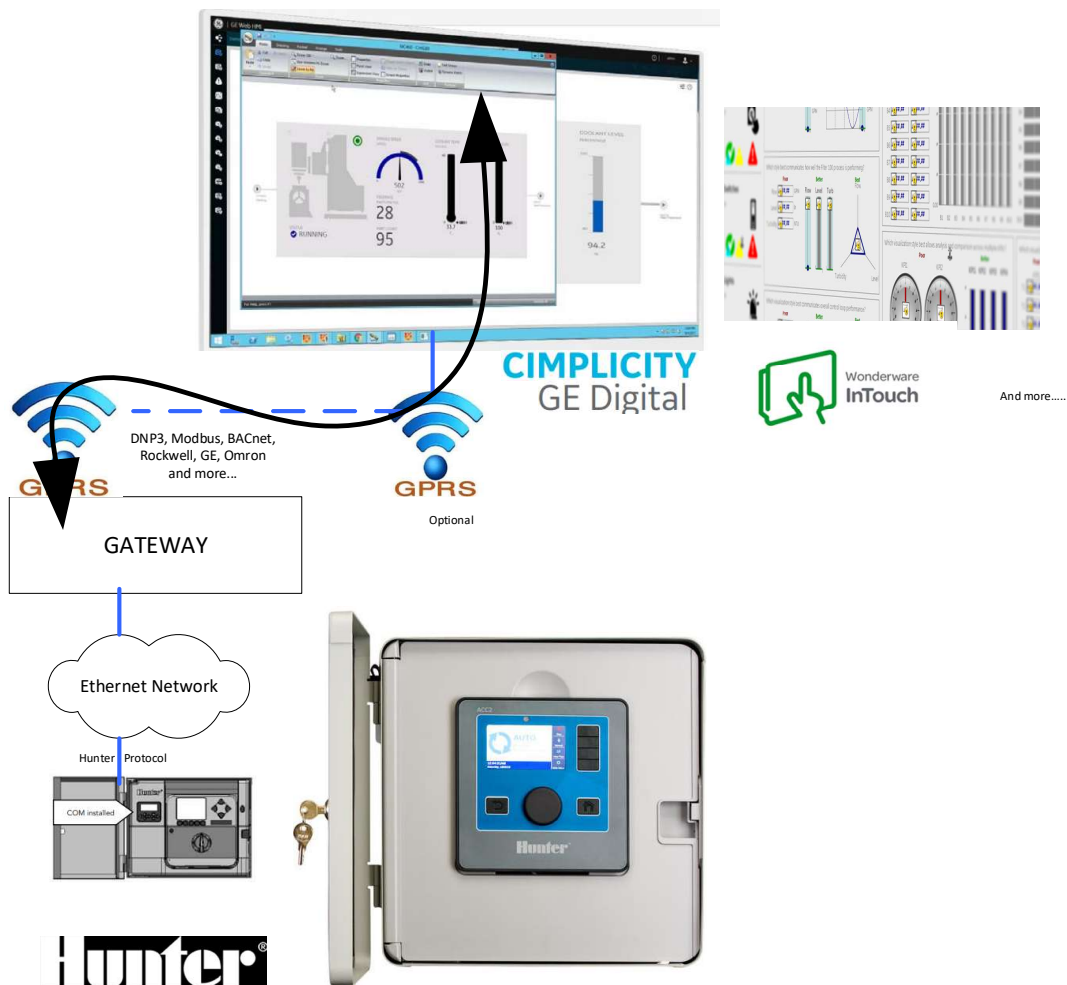
3.1. Typical Block Diagram

Multiple upstream protocols and connection supported. See list of FieldServer Drivers.

Free BACnet test software with purchase*
**Confidently test the BACnet interface.
Discover devices and their objects. Test
and document them. Arm yourself with a
powerful field tool. Full license.**

Other bus protocols such as
- Profibus
- DeviceNet
- DH+
- Modbus+
- ControlNet
- BACnet Arcnet

Lonworks Network

RS232 / RS485
Port count varies by model

Other serial protocols such as
- Bacnet MSTP
- Modbus RTU, ASCII, and other flavors
- Rockwell DF1
- GE-SNP
- JCI Metasys N2
  And more…

GATEWAY

Ethernet

Other ethernet protocols such as
- HTTP, XML, Json
- BACnet IP or Eth
- Modbus TCP
- AB-CSP
- Ethernet/IP
- SNMP, Telnet
- GE-EGD, GE-SRTP
- Omron FINS
- DNP3
  And more…

Over 120 Protocols
We are always adding and can add yours.

Ethernet Network

Bluetooth Wireless Cell

3.1.   HMI Typical Block Diagram

Driver can be linked with any of the 140+ other protocols that the gateway supports. Thus, support for all HMI's is enabled.
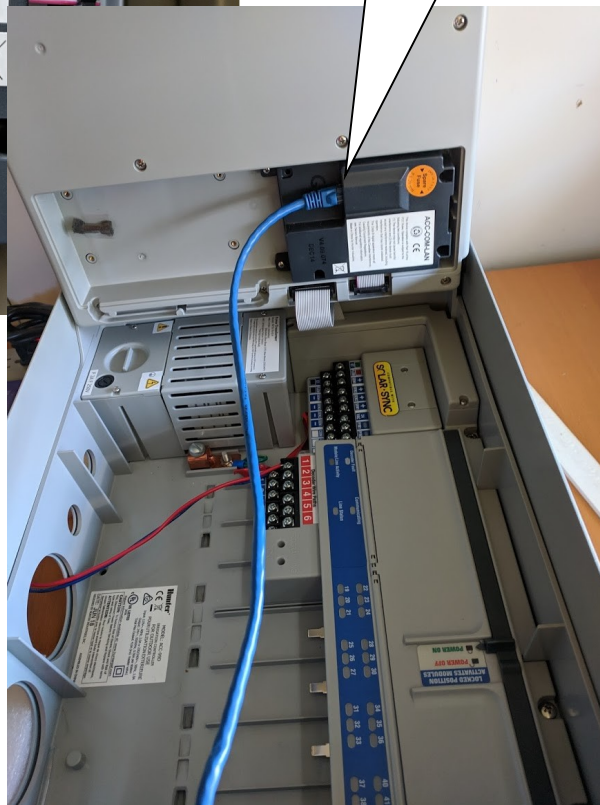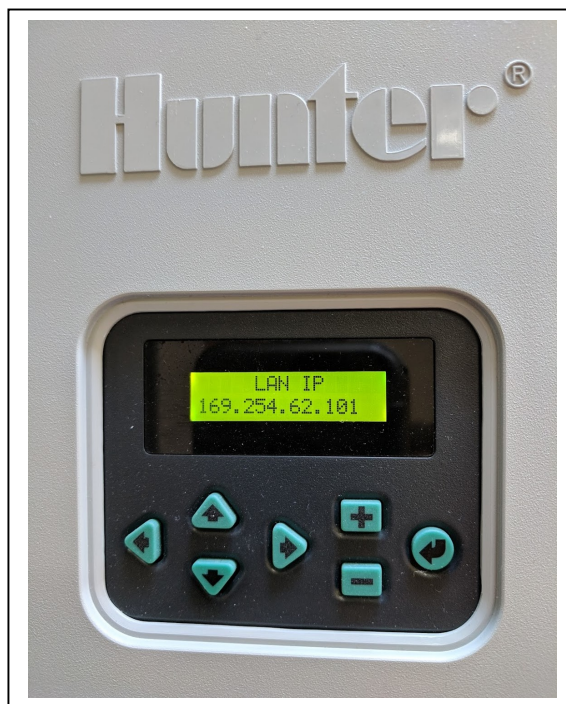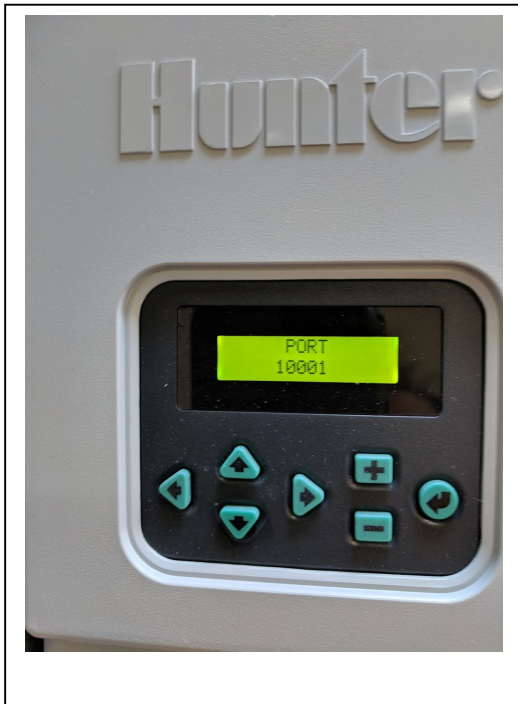
3.2.   Hardware Connection Tips / Hints

The Hunter manual "LIT-568_OM_ACC-COM-LANSoftware_web.pdf" provides instructions on installing and configuring the Hunter Lan Module.

Connect ACC-COM-LAN module to Ethernet network using standard networking equipment – patch cables, switches etc.

Refer to the Hunter manual on how to change these settings.

Note these settings – you will need them in the configuration.

4.   Configuring the FieldServer as a Hunter ACC2 Client

For a detailed discussion on FieldServer configuration, please refer to the FieldServer Configuration Manual. The information that follows describes how to expand upon the factory defaults provided in the configuration files included with the FieldServer (See ".csv" sample files provided with the FS).

This section documents and describes the parameters necessary for configuring the FieldServer to communicate with a Comput25 controller.

4.1.   Data Arrays/Descriptors

The configuration file tells the FieldServer about its interfaces, and the routing of data required. In order to enable the gateway for Hunter ACC Driver communications, the driver independent FieldServer buffers need to be declared in the "Data Arrays" section, the destination device addresses need to be declared in the "Client Side Nodes" section, and the data required from the servers needs to be mapped in the "Client Side Map Descriptors" section. Details on how to do this can be found below.

Note that in the tables, * indicates an optional parameter, with the bold legal value being the default.

Section Title	
Data_Arrays	

Column Title	Function	Legal Values
Data_Array_Name	Provide name for Data Array	Up to 15 alphanumeric characters
Data_Array_Format	Provide data format. Each Data Array can only take on one format.	Float, Bit, UInt16, Uint32, SInt16, Packed_Bit, Byte, Packed_Byte, Swapped_Byte
Data_Array_Length	Number of Data Objects. Must be larger than the data storage area required by the Map Descriptors for the data being placed in this array.	1-10,000

Example

```
//   Data Arrays
Data_Arrays
Data_Array_Name,              Data_Format,              Data_Array_Length,


DA_ACC2_Stats,               UNT16,                    200
```

4.2.   Client Side Connection Descriptions

Create one adapter for each Ethernet port. Each connection can only be used to connect to a single PRO2000 interface/port.

Section Title		
Adapters		

Column Title	Function	Legal Values
Adapter	Specify which network port the device is connected to the gateway	N1.N1
Protocol	Specify protocol used	ACC2
Acc2_LanPort	This is the TCP/IP Socket Port. Setting in config must match setting on Lan module.	Default is 10001. Whole Numbers
Acc2_FCB	This setting controls an aspect of the protocol. Always use the value specified unless directed by tech Support.	169
Acc2_SystemID	This setting controls an aspect of the protocol. Always use the value specified unless directed by tech Support.	130

Example

```
//      Client Side Connections



Adapter

Adapter,        Acc2_SystemID,      Acc2_FCB,                   Protocol,

N1,             2400,               None,                       ACC2,
```

4.3.   Client Side Node Descriptors

Create one Node per Hunter ACC2 Controller.

Section Title		
Nodes		

Column Title	Function	Legal Values
Node_Name	Provide name for node	Up to 32 alphanumeric characters
Node_ID	Station address of physical server node	Whole Numbers 0,1,2,…
Acc2_SideID		Whole Numbers 0,1,2,…
Protocol	Specify protocol used	ACC2
Adapter	Specify which network port the device is connected to the gateway	N1.N1

Example:

Nodes

Node_name , Node_ID, Acc2_SiteID, Protocol   , Adapter

ACC2-01   , 3   , 0   , ACC2 , N1

4.4.   Client Side Map Descriptors

4.4.1.   FieldServer Related Map Descriptor Parameters

Column Title	Function	Legal Values
Map_Descriptor_Name	Name of this Map Descriptor	Up to 32 alphanumeric characters
Data_Array_Name	Name of Data Array where data is to be stored in the FieldServer The temperature is stored here.	One of the Data Array names from "Data Array" section above We recommend that you use a 'FLOAT' Data Array since the temperatures are reported as floating point numbers.
Data_Array_Offset	Starting location in Data Array	0 to maximum specified in "Data Array" section above
Function	Function of Client Map Descriptor..	RDBC, ARB, WRBX, WRBC

4.4.2. Driver Related Map Descriptor Parameters

Column Title	Function	Legal Values
Node_Name	Name of Node to fetch data from	One of the node names specified in "Client Node Descriptor" above
Data_Type	This commonly used parameter is not used by this driver.	
Length	Length of Map Descriptor Reserves space in the Data Array. Set to 1.	1
Address	This commonly used FieldServer parameter is not used by this protocol.	
Acc2_CMD	The Hunter Command / Services to be executed. For a complete list see *4.4.5 Hunter Command / Services Payloads* *4.4.1 Hunter Services and Commands Supported*	0xnn where nn is a 2 digit hex number. Eg,. "0x72" , "0x9A"
Acc2_Option1	Use and meaning is dependent on the Acc2_CMD. This parameter	0,1,2… Whole Numbers

	specifies a command option. Many commands do not require these options – setting these to zero if fin. See the map Descriptor examples	
Acc2_Option2	See Above.	0,1,2… Whole Numbers

4.4.3.   Timing Parameters

Column Title	Function	Legal Values
Scan_Interval	Rate at which data is polled	≥0.001s

4.4.1.   Hunter Services and Commands Supported

Strikethrough = Not Supported

If the services is not in this list then it is not supported

Services supported for ACC2 firmware as shipped by Hunter in Jan2020

Services to support older ACC2 firmware - May be available on Request

Hunter_CMD / Services Supported
0x01 – SET FIELD CONTROLLER SYSTEM GLOBALS
0x02 – REPORT FIELD CONTROLLER GLOBALS
0x03 – SET STACKING MODE AND LIMITS
0x04 – REPORT STACKING MODE AND LIMITS
0x06 – Mute
0x07 - Reset Mute
0x0A – REPORT VERSIONS
0x0C – SET FLOW OPERATION PARAMETERS
0x0D – REPORT FLOW OPERATION PARAMETERS
0x0E – REPORT ITEM INFORMATION
0x10 – SET DECODER MODULE STATION ASSIGNMENTS (v2.00.016 and later)
0x12 – SET ITEM NAMES (v2.00.016 and later)
0x13 – SET STATION PARAMETERS
0x15 – REPORT DECODER MODULE STATION ASSIGNMENTS (v2.00.016 and later)
0x16 - Set Pump / Master Valve Param
0x17 – SET MAINSAFE PARAMETERS
0x18 – REPORT MAINSAFE PARAMETERS
0x19 – SET FLOW ZONE PARAMETERS
0x1A – REPORT FLOW ZONE PARAMETERS
0x1B – SET FLO+A694W SENSOR PARAMETERS (v2.00.033 and later)
0x1c– SET CLICK SENSOR PARAMS
0x1D – SET PROGRAM SENSOR ACTION
0x1E – SET FIELD CONTROLLER PROGRAM HEADER DATA (v2.13.000 and Later)

0x1F – SET FIELD CONTROLLER PROGRAM EVENT RUN TIME DATA
0x20 – SET RAIN DELAY VALUES
0x21 – GET RAIN DELAY VALUES
0x23 – SET SEASONAL ADJUST VALUES
0x24 – STOP STATIONS
0x25 – REPORT SEASONAL ADJUST VALUES
0x26 – STOP A PROGRAM
0x27 – DECODER INVENTORY
0x28 – PURGE LOG RECORDS
0x2B – REPORT FLOW ZONE MONITORING DATA
0x2C – REPORT FLOW ZONE DIAGNOSTIC DATA
0x2D – REPORT MAINSAFE MONITORING DATA
0x2E – REPORT FLOW MANAGEMENT FLOW DATA
0x2F – REPORT FLOW MANAGEMENT ACTIVE STATION DATA
0x30 – REPORT CONTROLLER CURRENT DRAWS (v2.00.016 and later)
0x32 – REPORT ITEM NAMES (v.2.00.016 and later)
0x33 – REPORT STATION PARAMETERS (v.2.00.016 and later)
0x34 – Report Block Parameters
0x35 – Stop Blocks
0x36 – REPORT PUMP/MASTER VALVE PARAMETERS (v2.11.007 and later)
0x37 – Reserved for Future
0x38 – SET LEARN FLOW START/STOP TIME
0x39 – GET LEARN FLOW STATUS INFO
0x3A – Get Learn Flow Report Info
0x3B – REPORT FLOW SENSOR PARAMETERS (v2.00.033 and Later)
0x3C – REPORT CLICK SENSOR PARAMETERS
0x3D – REPORT PROGRAM SENSOR ACTION
0x3E – REPORT FIELD CONTROLLER PROGRAM HEADER DATA (v2.13.000 and Later)
~~0x3F – Report Field Controller Program Event Run Time Data~~
~~0x40 - Set User Management Information~~
~~0x41 - Report User Management Information~~
0x42 – Set Calendar Days Off
0x43 – Get Calendar Days Off
0x4f - Report Item CRCs
0x51 – Stop Irrigation

0x51 – Stop Irrigation
0x52 – Programmable Off
0x53 – Suspend Irrigation
0x54 – Cancel Programmable Off
0x55 – Cancel Suspend
0x56 – Start Manual All Station Program
0x57 – Set System Event Mode
0x58 – Set FCP Mode
0x59 – Clear Field Controller Display Messages
0x5A – Set Pause Mode
0x5B – Cancel Pause Mode
0x5C – Start Single Manual Event
0x5D – Start Multiple Manual Events
0x5e - 0x71
0x72 – REPORT ACTIVE OUTPUTS (v2.00.025)
0x73 – REPORT ALARMS/INFORMATION
0x74 – REPORT LOG
0x75 – REPORT CURRENT FLOW DATA
0x76 – REPORT CLIK SENSOR INFORMATION
0x77 – REPORT DECODER MODULE INFORMATION (v2.00.024 and later)
0x7A – REPORT FLOW TOTALS
0x7B – REPORT FLOW DETAIL DATA
0x7C - Clear Flow Alarms
0x9A – GET CONTROLLER VERSION TYPE (v2.11.006 and later)
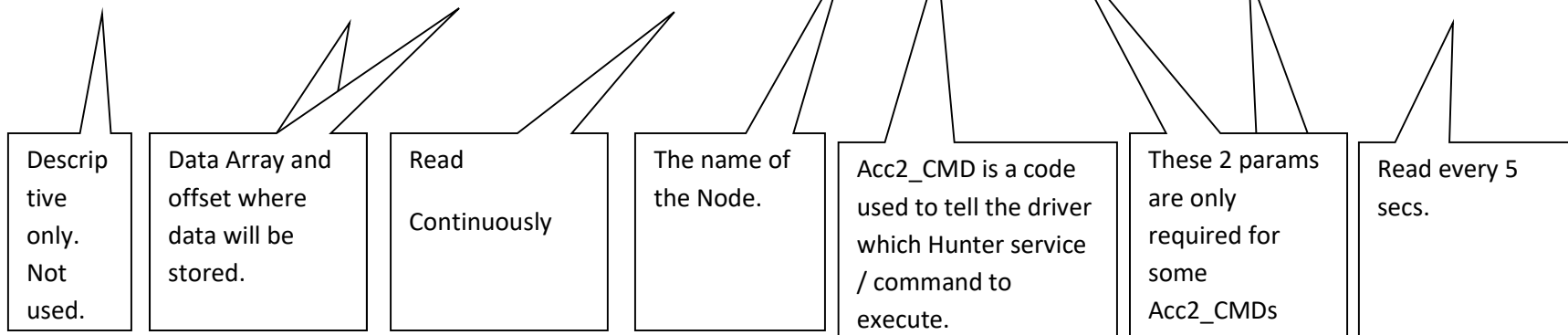
4.4.2.   Map Descriptor Example 1 – Read Global Data

In this example the driver reads the Controller's GLOBAL DATA. This task is executed at best every 5 seconds. The data read by the command is stored in the data array named "DA_Global_Data" starting at offset zero in the array. Exactly what data is stored is dependent on the Acc2_CMD. For command and services that write data, the Data Array/Offset as well the the 2x Acc2_options define the data that will be sent to the controller.

```
Map_Descriptors

Map_Descriptor_Name ,Data_Array_Name ,Data_Array_Offset ,Function ,Node_Name ,Acc2_CMD, Acc2_Option1, Acc2_option2, Scan_Interval

Read Globals        ,DA_Global_Data  ,0                 ,RDBC     ,ACC2-01  ,0x02        ,0             ,0             ,5.000s
```

Descriptive only. Not used.	Data Array and offset where data will be stored.	Read Continuously	The name of the Node.	Acc2_CMD is a code used to tell the driver which Hunter service / command to execute.	These 2 params are only required for some Acc2_CMDs	Read every 5 secs.
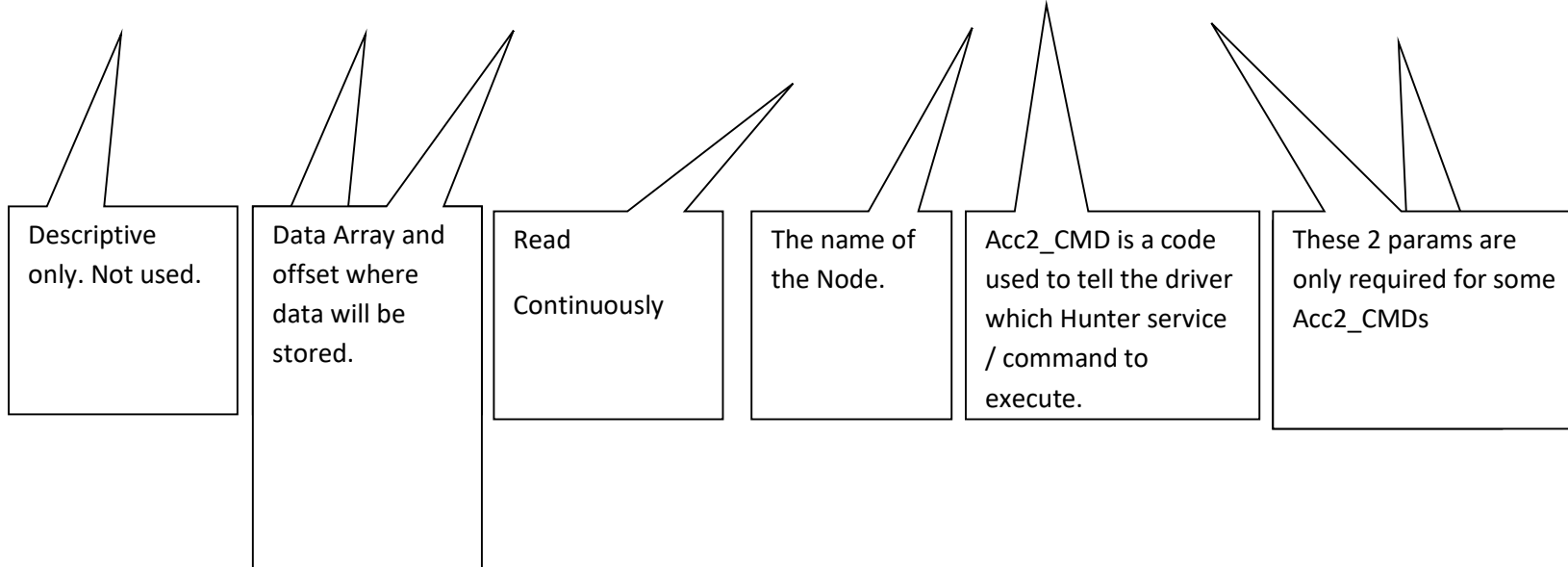
4.4.3.   Map Descriptor Example 2 – Read Alarm Log

In this example the driver reads, every 5 seconds, the controller alarm log. The data is stored in the Data Array named "DA_ALARM_Log" starting at offset 0. Exactly what data is stored and how the data is arranged is described elsewhere. In this example on the Acc2_Option1 parameter is set to 3 (selecting the Alarm Log).

```
Map_Descriptors

Map_Descriptor_Name ,Data_Array_Name ,Data_Array_Offset ,Function ,Node_Name ,Acc2_CMD ,Acc2_Option1 ,Acc2_option2 ,Scan_Interval

Read Alm Log        ,DA_Alarm_Log    ,0                 ,RDBC     ,ACC2-01   ,0x74     ,3            ,0            ,5.000s
```

Descriptive only. Not used.	Data Array and offset where data will be stored.	Read Continuously	The name of the Node.	Acc2_CMD is a code used to tell the driver which Hunter service / command to execute.	These 2 params are only required for some Acc2_CMDs
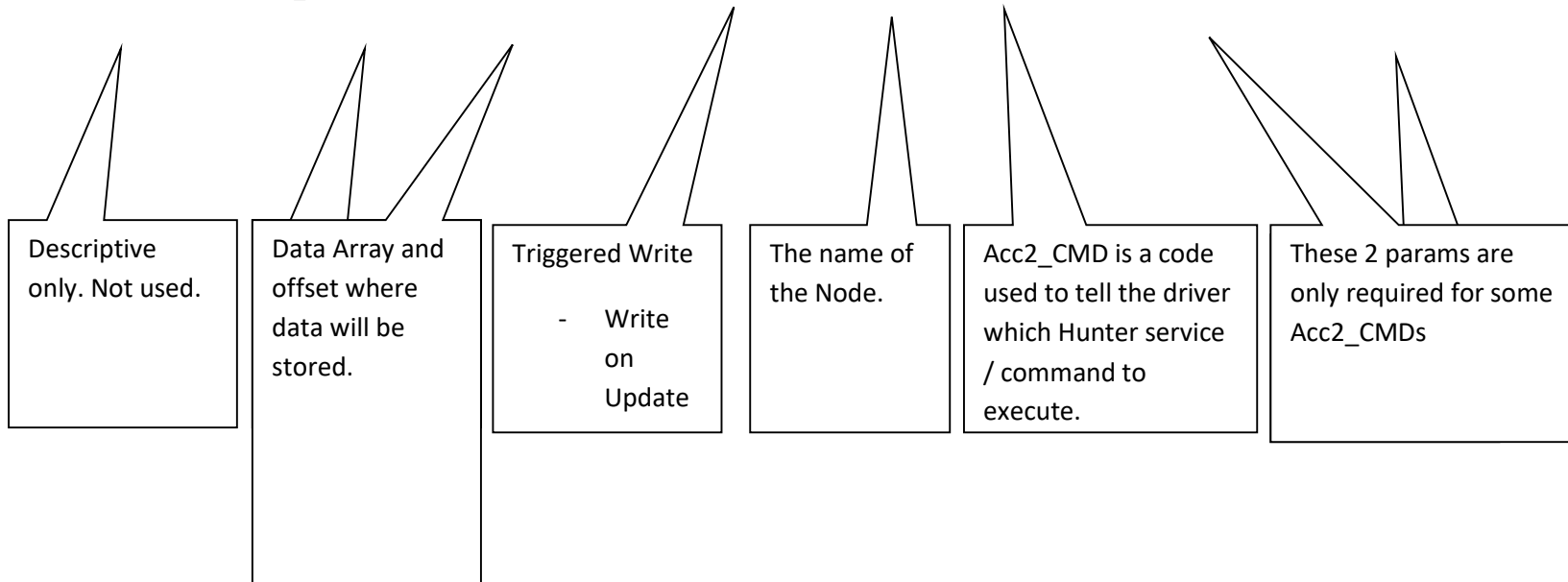
4.4.4.   Map Descriptor Example 3 – Stop Irrigation Command

The function=wrbx means this is a triggered task. It is triggered by an update to the Data Array/Offset's data. When the data in the Data Array named "DA_commands" at offset=0 is updated then the command is triggered. An update simply means the data is updated – it does not have to change. In some services, data is extracted from the Data Array specified to make the payload of parameters the services require. Details for each command / service are provided elsewhere.

```
Map_Descriptors

Map_Descriptor_Name ,Data_Array_Name ,Data_Array_Offset ,Function ,Node_Name ,Acc2_CMD ,Acc2_Option1 ,Acc2_option2 ,

Stop Irrigation     ,DA_Commands     ,0                 ,wrbx     ,ACC2-01   ,0x51      ,0             ,0              ,
```

| Descriptive only. Not used. | Data Array and offset where data will be stored. | Triggered Write

- Write on Update | The name of the Node. | Acc2_CMD is a code used to tell the driver which Hunter service / command to execute. | These 2 params are only required for some Acc2_CMDs |

4.4.5. Hunter Command / Services Payloads

In this section we provide details of how data is stored in the gateway when a 'Read' command is completed as well as information on the how data is extracted from the Data Arrays to form a command or send settings to the Irrigation Controller.

To Form A Command / Set Payload – 2 data sources

1. Configuration file via the parameters Acc2_option1, Huner_option2. Not used with most commands.

2. Data Array. In forming the message the driver extracts data from consecutive offsets in the Data Array specified.

Legend

| Command / Set |
| Report / Read |

This list is provided for reference.

Do not USE.

It is updated from time to time. Google "FS-8705-41 Hunter Industries ACC2 Irrigation Controller.xlsx" with the quotation marks to find the latest version.

0x01 – SET FIELD CONTROLLER SYSTEM GLOBALS

Transmits to field controller(s), system global information from a Central to all Field Controllers for system event operation. The Time-of-Day and Midnight components will be expressed in 24-hour format. The new values become effective immediately. This command would normally use the global field controller address of 1940H. Addr ... ernate method

Want to know the meaning of each data variable / parameter ? There is not enough space in this manual.

Google "FS-8705-41 Hunter Industries ACC2 Irrigation Controller.xlsx" with the quotation marks.

The payload of data is extracted from the Data Ar ... ent to the Controller

Offset	item	Variable/ Data		Data Type
		Payload		

3	1	Hours	Byte
4	2	Minutes	Byte
5	3	Seconds	Byte
6	4	Month	Byte
7	5	Day	Byte
8	6	Year	Uint16
9	7	SysDChour	Byte
10	8	FcpDChour	Byte
11	9	options	Byte
12	10	curEtap	Byte
13	11	maxEtap	Byte
14	12	Response	Byte
15	13	ResponseInterval	Byte
16	14	OptStatus	Byte
17	15	OffStatus	Byte
18	16	GlblSeasAdj	Uint16
19	17	StackMode	Byte
20	18	SsPrgThold	Byte

21	19	SsgSsPrgThold	Byte

0x02 – REPORT FIELD CONTROLLER GLOBALS

5.   Configuring the FieldServer as a Hunter Irrigation Controller Server

This driver cannot be used to emulate a Hunter ACC2 device. In other words, you can use this driver to make some other irrigation system function as if it were a Hunter System.

6.   Startup – Testing - Demo

6.1.   Setup Devices IP Address

6.1.1.   Method 1 – Adjust reality to match the config

1. Set ACC to 192.168.1.18 Node=3 Port 10001
2. Set Laptop to 192.168.1.201 (See notes labelled "Windows 10 - Change IP Address for demo" at the end of this doc.)
3. Connect gateway, ACC and laptop to router
4. Browse to gateway by typing IP address into chrome address bar : 192.168.1.168
5. View, connection overview, we expect stats for msgs Rx and Tx on the Hunter connection. If these do not count up call for help (See step 5 of method 2)
6. Browse to demo by typing IP address into chrome address bar : 192.168.1.168/hunter.html

6.1.2.   Method 2 – Adjust the config to match reality

1. Note the following from the 2 line display on the Hunter ACC Controller

   ACC-Com-LAN Address : Example – 3

   Lan IP : Example 192.168.1.168

   Lan Port : Example 1001

   If you wish to change these follow the procedures provided by Hunter Industries.

2. Upload the configuration from the Gateway

   Procedure provided in 'Simplified Support for Gateways - Chipkin 2019 October.pdf"

3. Edit the configuration. It is better to use notepad than Excel.

```
Connections

Adapter , protocol  , Hunter_SystemID , Hunter_FCB , Poll_Delay , Timeout ,Hunter_LanPort

N1     , HunterACC , 130         , 169      , 0.05s     , 2.2s  ,10001




Nodes

Node_Name , IP_Address   , Node_ID , Hunter_SiteId , Protocol  , Adapter ,Recovery_Interval , Retry_Interval
```

4. Download the edited configuration file to the gateway, restart the gateway to give effect to the changes.

    Procedure provided in 'Simplified Support for Gateways - Chipkin 2019 October.pdf"

5. Browse to the Gateway
    View the connections – You should see messages counting up on the Hunter connection.

6.2. Points List

"FS-8705-41 Hunter Industries ACC2 Irrigation Controller.xlsx"

Google it to find the best version.

6.3. Testing Using WEB demo

Browse to the page hunter.html on the gateway. If you get a 404 error then email support@chipkin.com . They will provide you with the Hunter Web Demo files

6.4. Testing Using BACnet

Download CAS BACnet Explorer from this page: https://store.chipkin.com/products/tools/cas-bacnet-explorer

Activate – Insert the Green key in your laptop (there is another better way to install permanently on your laptop)

CHANGE SETTINGS – select your network card, turn on BACnet IP
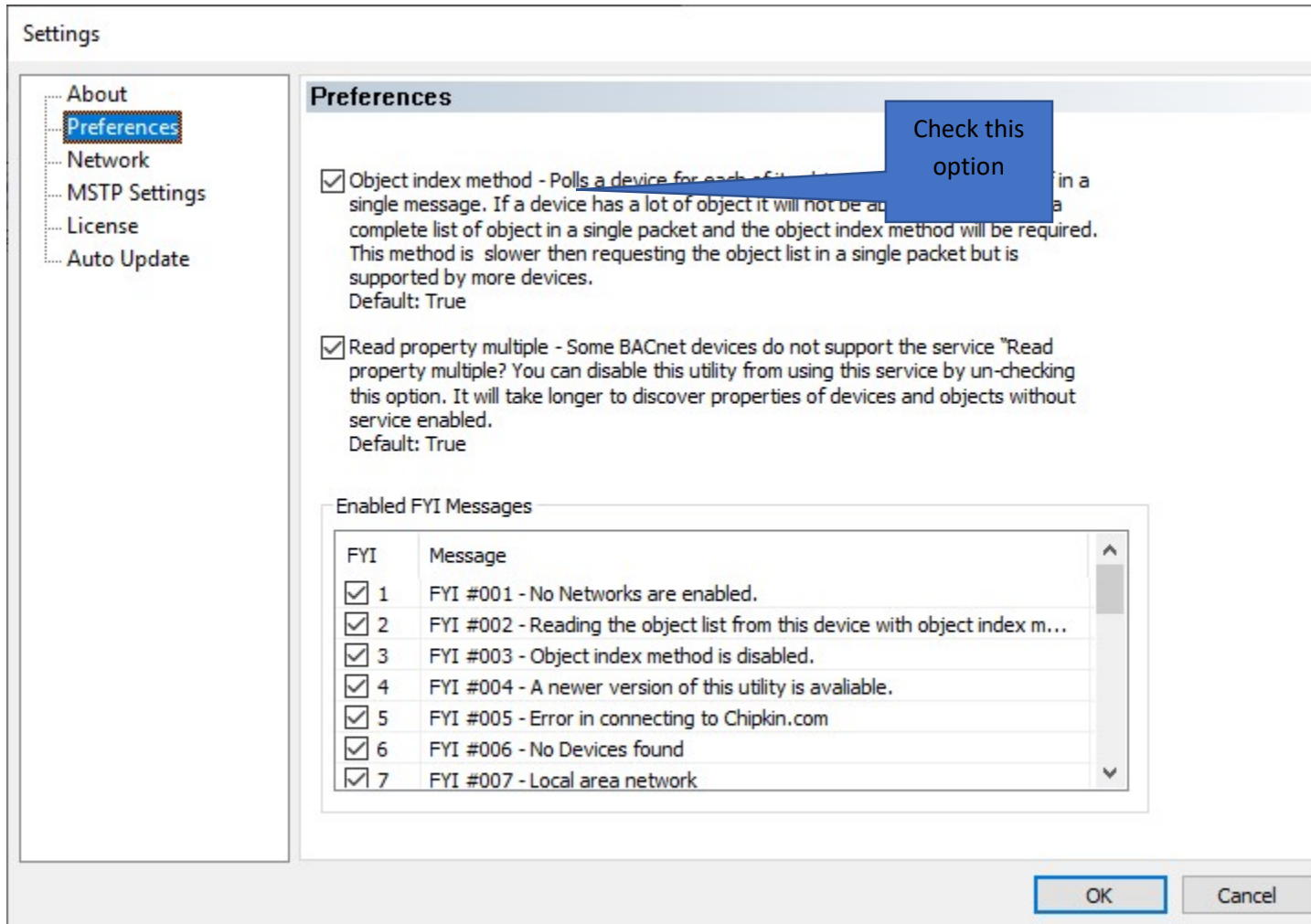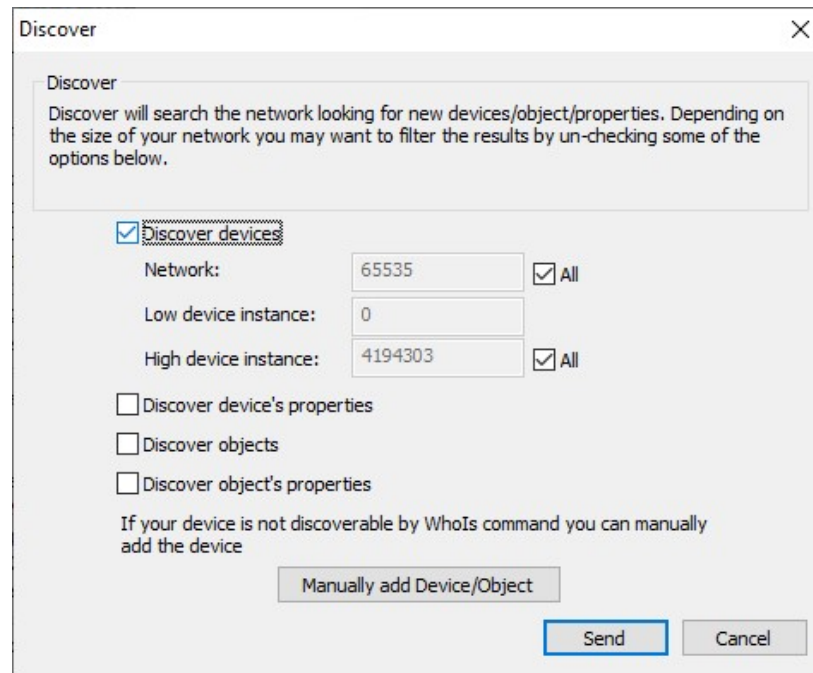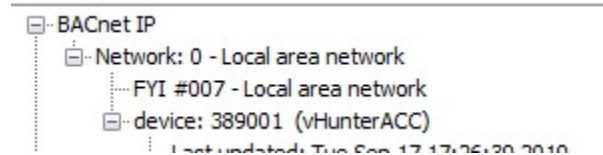
CHANGE SETTING – The object list index is too big to fit in one packet
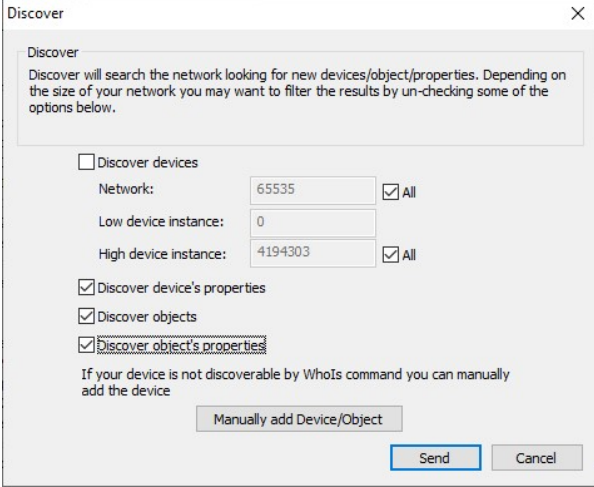
Do discovery – check devices box

You should get this.

Once the device has been discovered, select it by clicking on the device 389001 , and right click to select DISCOVER again. This time check all the boxes to discover objects on the device.

Wait wait wait … takes a FEW MINUTES

You get the tree shown on the next page. Explore the tree or print a report.

CAS BACnet Explorer

File   Advanced   Diagnostics   Help

Chipkin
Automation Systems

Discover Cancel Refresh Report Monitor About Settings Exit

- BACnet IP
  - Network: 0 - Local area network
    - FYI #007 - Local area network
    - device: 389001 (vHunterACC)
      - Last updated: Tue Sep 17 17:26:39 2019
      - IP Address: 192.168.1.170:47808
      - MAC (hex): 00-50-4E-12-47-84
      - object_identifier: device (389001)
      - object_type: device (0x8)
      - vendor_identifier: Sierra Monitor Corp. (0x25)
      - FYI #011 - Read object properties from profile.
      - apdu_timeout: 10000
      - application_software_version: V6.49c (A)
      - firmware_revision: V2.09i
      - max_apdu_length_accepted: 1458
      - model_name: FS-QS-1220
      - number_of_apdu_retries: 3
      - object_name: vHunterACC
      - protocol_services_supported: acknowledgeAlarm (0), confirmedCOVNotification (0), confirmedEventNotification (0), getAlarmSummary (0), getEnrollmentSummary (0), subscribeCOV (1), at
      - protocol_version: 1
      - segmentation_supported: no_segmentation (0x3)
      - system_status: non_operational (0x4)
      - vendor_name: Sierra Monitor Corporation
      - protocol_revision: 16
      - database_revision: 34
      - FYI #002 - Reading the object list from this device with object index method.
      - binary_output: 0 (SetGlbl-Trigger Write)
      - analog_output: 0 (SetGlbl-Hours)
      - analog_output: 1 (SetGlbl-Minutes)
      - analog_output: 2 (SetGlbl-Seconds)
      - analog_output: 3 (SetGlbl-Month)
      - analog_output: 4 (SetGlbl-Day)
      - analog_output: 5 (SetGlbl-Year)
      - analog_output: 6 (SetGlbl-SysDChour)
      - analog_output: 7 (SetGlbl-FcpDChour)
      - analog_output: 8 (SetGlbl-options)
      - analog_output: 9 (SetGlbl-curEtap)
      - analog_output: 10 (SetGlbl-maxEtap)
      - analog_output: 11 (SetGlbl-Response)
      - analog_output: 12 (SetGlbl-ResponseInterval)
      - analog_output: 13 (SetGlbl-GlblSeasAdj)
      - analog_output: 14 (SetGlbl-StackMode)
      - analog_output: 15 (SetGlbl-SsPrgThold)
      - analog_output: 16 (SetGlbl-SsgSsPrgThold)
      - analog_input: 0 (ReportFldCtrlGlbls-Fwvers)
      - binary_output: 24 (Mute-Trigger Command)
      - binary_output: 25 (ResetMute-Trigger Command)
      - binary_output: 26 (Report versions-Trigger Command)
      - binary_output: 2 (SetStationParams-Trigger Cmd)
      - analog_output: 65 (SetStationParams-StationID)
      - analog_output: 66 (SetStationParams-StationName)
      - analog_output: 78 (SetStationParams-PumpUsage)
      - analog_output: 79 (SetStationParams-CycleTime)

Ready...

6.5.   Testing Using Modbus

Download MODBUS SCANNER test tool from this page:
https://store.chipkin.com/products/tools/modbus-scanner-app

Add a task to scan the IP Address

The NODE_ID = 1

Read Holding Registers 1-100

View the data
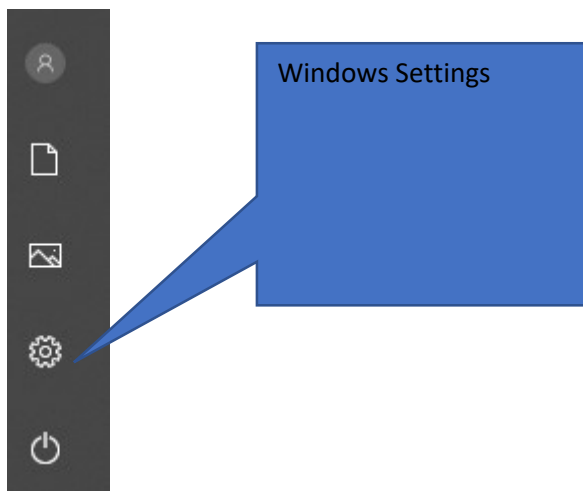
Use the XLSX points list to see which Modbus Address contains what data

Sample screen from the Modbus Scanner. Here it is reading 30001…. These correspond to Analog Inputs. To know the meaning of 30001,2,3…. You need to revert to the XLSX file. Modbus is dumb and 'meaning' cannot be found without a manual.

6.6.   Windows 10 - Change IP Address for demo

Windows 10 - Change IP Address of laptop

Windows Settings

System
Display, sound, notifications, power

Devices
Bluetooth, printers, mouse

Phone
Link your Android

Apps
Uninstall, defaults, optional features

Accounts
Your accounts, email, sync, work, family

Time & Langu
Speech, region, d
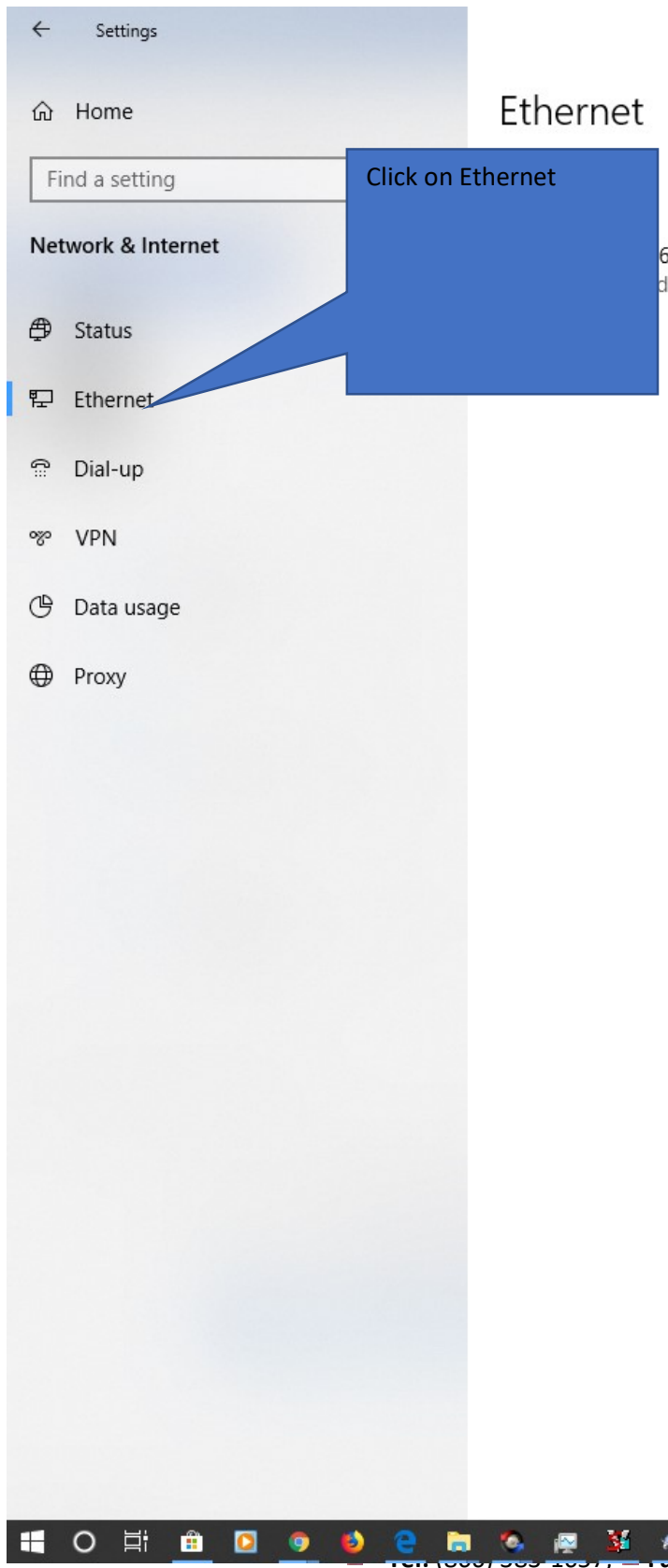
Cortana
Cortana language, permissions, notifications
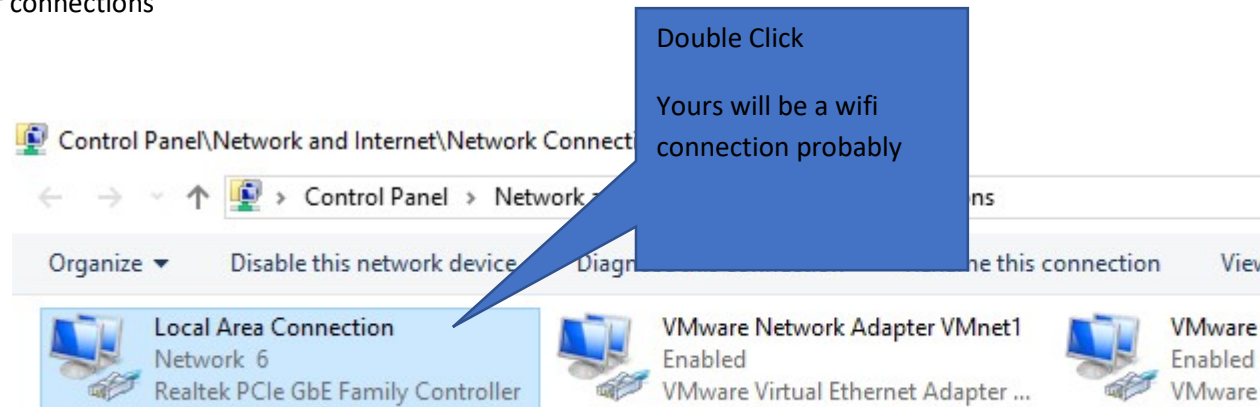
Privacy
Location, camera

Update & Sec
Windows Update
backup

← Settings

⌂ Home

Find a setting

Network & Internet

⊕ Status

🖳 Ethernet

📞 Dial-up

⚇ VPN

⊕ Data usage

⊕ Proxy

Ethernet

Click on Ethernet
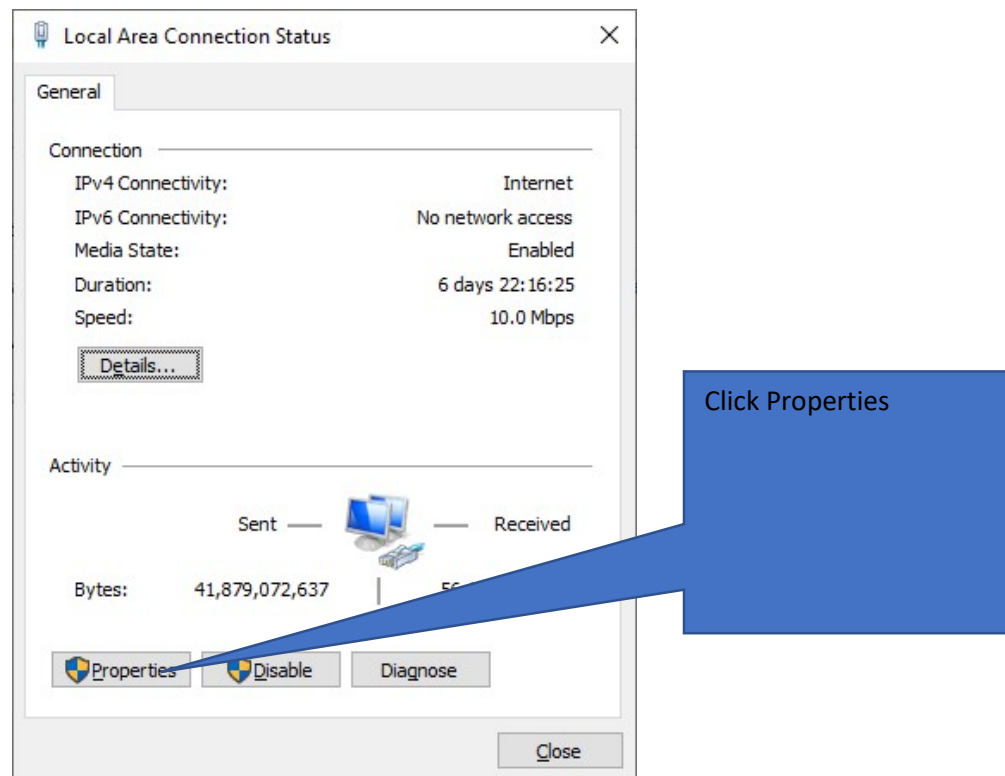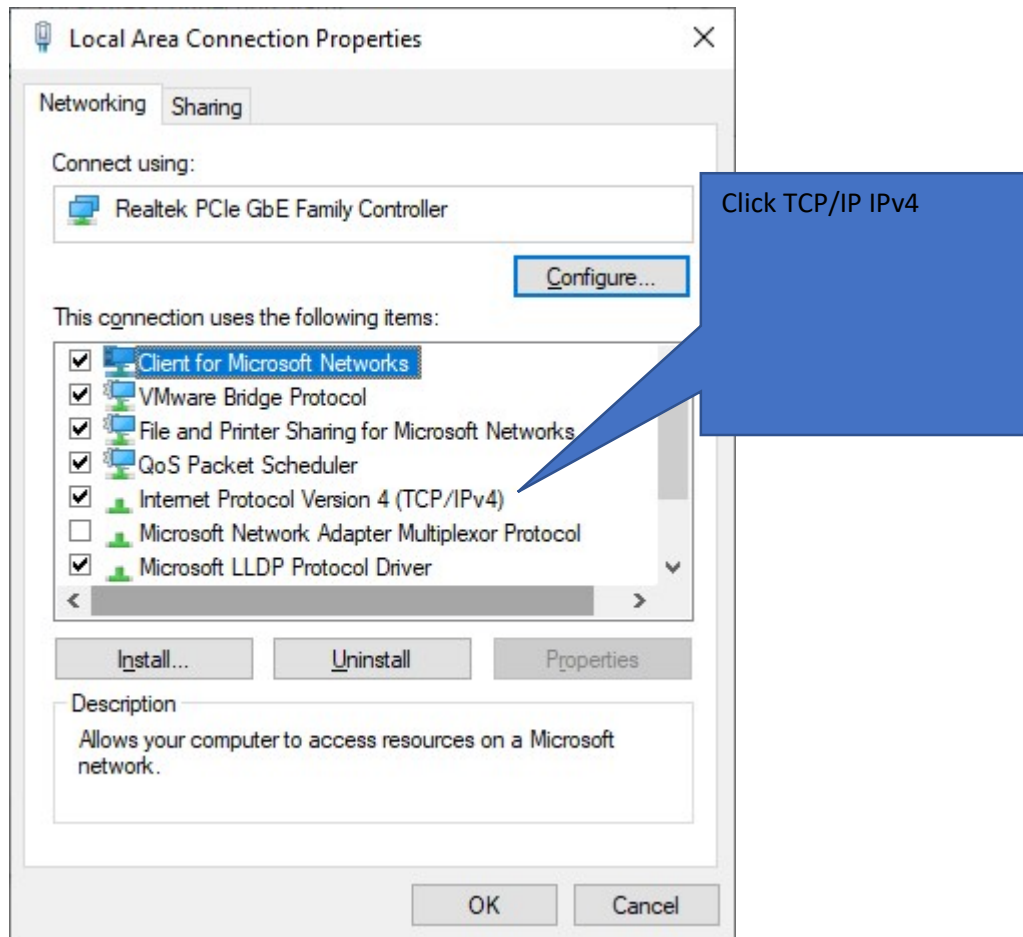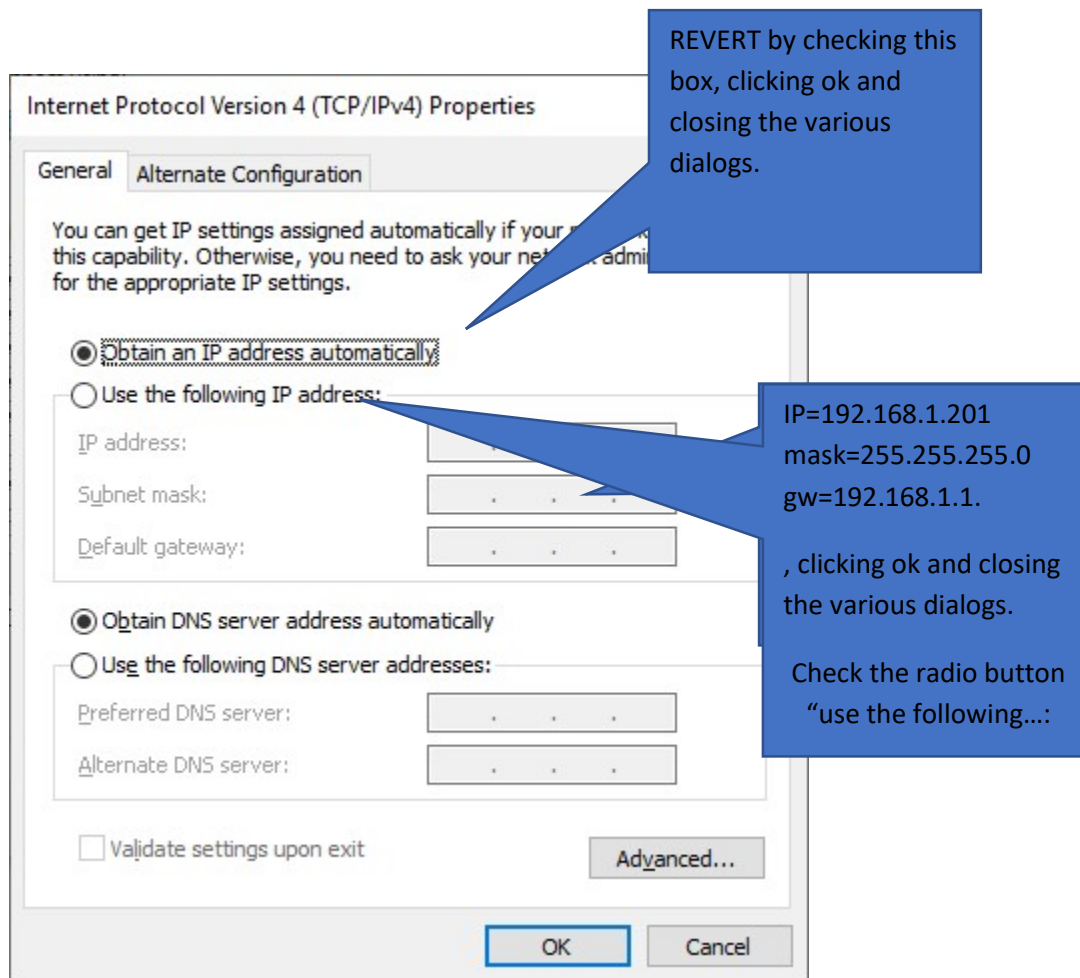
You get a list of connections

Double Click

Yours will be a wifi connection probably

You get a dialog

Click Properties

Local Area Connection Properties

Networking   Sharing

Connect using:

Realtek PCIe GbE Family Controller

Configure...

This connection uses the following items:

☑ Client for Microsoft Networks
☑ VMware Bridge Protocol
☑ File and Printer Sharing for Microsoft Networks
☑ QoS Packet Scheduler
☑ Internet Protocol Version 4 (TCP/IPv4)
☐ Microsoft Network Adapter Multiplexor Protocol
☑ Microsoft LLDP Protocol Driver

Install...   Uninstall   Properties

Description

Allows your computer to access resources on a Microsoft network.

OK   Cancel

Click TCP/IP IPv4

REVERT by checking this box, clicking ok and closing the various dialogs.

Internet Protocol Version 4 (TCP/IPv4) Properties

General Alternate Configuration

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

◉ Obtain an IP address automatically
○ Use the following IP address:

IP address:

Subnet mask:

Default gateway:

IP=192.168.1.201
mask=255.255.255.0
gw=192.168.1.1.

, clicking ok and closing the various dialogs.

Check the radio button "use the following…:

◉ Obtain DNS server address automatically
○ Use the following DNS server addresses:

Preferred DNS server:

Alternate DNS server:

☐ Validate settings upon exit   Advanced...

OK   Cancel

6.6.1.   Installing the demo

The purpose of this demo is to show how the Hunter Data can be exposed for use in a remote system.
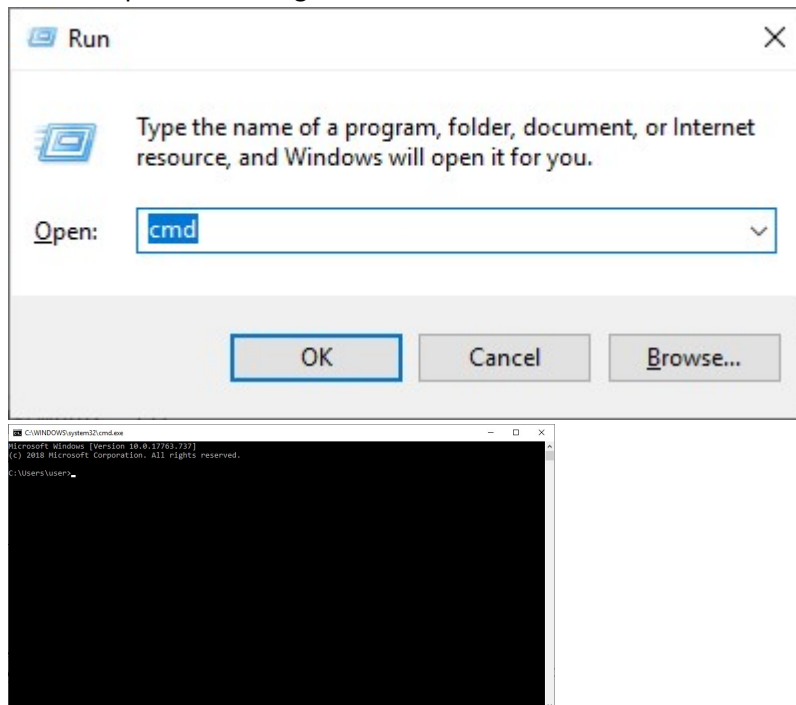
These pages can be used to view and change controller, program and other settings.

They are simple. In a real project with a real SCADA or GUI this same data can be used to animate graphics etc.

Each data element shown here is available in any other protocol we support. Like BACnet, Modbus, GE, Rockwell etc.

Install the demo
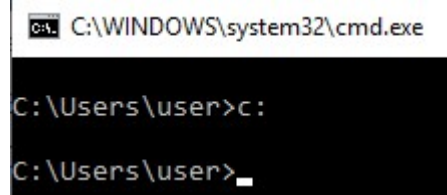
1. Create a folder on your c: drive called: acc2demo
2. Unzip this demo into that folder. (c:\acc2demo)
3. Start a Dos Window. Hold the windows key down and push the 'R' key. You get a dialog. Type CMD and push Ok. You get a blue or black window that looks like this.

4. Change folder to 'c:\acc2demo':   At the prompt in the window type:
    C:
    Push the Enter Key.
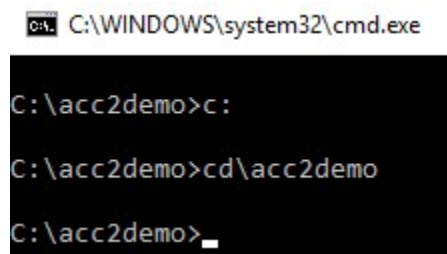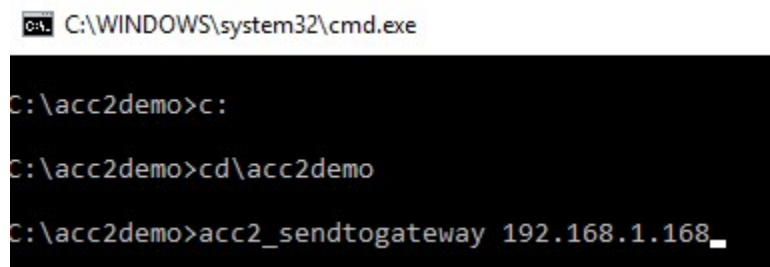
    Type:
    Cd \acc2demo
    Push the Enter Key.
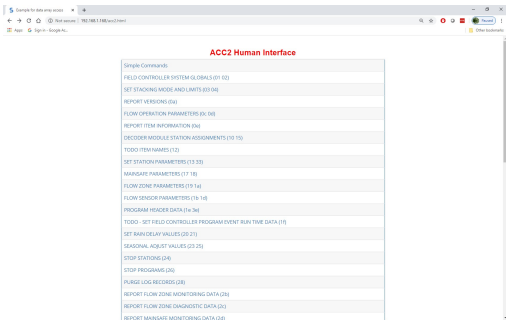
5. Note the IP Address of the gateway - example 192.168.1.168
6. Run the download . Type

7. Push Enter. Wait to completion.
8. Browse to the demo: In your Browser address bar type: 192.168.1.168/acc2.html
9. You see the screen below

Appendix 1. Advanced Topics

Appendix 1.1.   Driver Error Messages

Error Message	Explanation and corrective action
We have shown place holders for the parts of the message which change. %s is a place holder for a text string. %d is a place holder for a number %c is a place holder for an alpha character.	*FYI messages are informational and do not require a corrective action. Simply use them to confirm configuration / behaviors are what you expect.*
ACC2#01 Err. hunter_master Driver parameter error	A Map Descriptor does not have a length defined or the length has been set to zero. Correct the configuration.
ACC2#02 Err. Slave toolkit driver parameter error	A Map Descriptor does not have a length defined or the length has been set to zero. Correct the configuration.
ACC2:#03 Err. Cant find Acc2_Interface	The driver expects to find a Data Array called "DA_Acc2_Debug" in the configuration file. This error may be ignored. Until it is resolved you will be unable to enable some debugging.

	Correct the configuration. Create the Data Array of type UINT16 and length of 100.
ACC2:#04 Err. send ERROR rc==%d	AN attempt was made to send a message to the Hunter controller. It failed. If this error occurs frequently then report it to tech support. You cannot resolve this error yourself.
ACC2#05a FYI Connect:NON DEFAULT PORT=%d ACC2#05b FYI Connect:Default Port=%d"	These messages inform you of what socket port is being used. The port must correspond to the port allocated on the Hunter Controller. Most commonly use port = 10001.
ACC2#06 FYI. Connection Attempt (RC=%d)	No corrective action required. Reports the success of the socket attempt to connect to the ACC2 controller.
ACC2#07 FYI. Connected!! Going to poll for data	No corrective action required
ACC2#08 Err. 2.2 Connect Error Timer	Failed to connect to the ACC2 controller within the allocated timeout. This is a networking problem. Check IP, Port, cables, router, Node_ID. All of those are factors which can cause this error. Sometimes this problem is resolved by restarting the ACC2 Controller.

ACC#09 Err. 2.4 Socket Error	No corrective action possible. If this occurs then reboot the gateway. If it occurs often then call tech support.
ACC2#10 FYI 3.1 Rcvd cmdID=0x%02x	
ACC2#11 Err. Response parser not coded !!!!!!!!!	A response from the Hunter Contoller contained a function code which we did not expect. If this occurs more than once contact tech support. They will ask you for a wireshark log.
ACC2#12 ERR. CMD=0x%02x Failed Md=%s Rcvd CMD=0x%02x ErrNum=%d ErrSeq=%d	This error occurs because the data sent to the ACC2 Controller was rejected. This error occurs most frequently when data points being sent to the controller are out-of-range. Sometimes it will occur because of the current condition. You cannot stop a station that isn't running for example. The ErrSeq simply increments each error report. Th ErrNum is useful. 1 – An out-of-range value was detected in a data element. 2 – No more 'User Field Controller Programs' are available (not used) 3 – The specified 'User Field Controller Program' could be found (not used).

	4 – System Event Buffer (SAE or SME) is full
	5 – The supplied FC program id was zero (not used).
	6 – No more stations can be run.
	7 – Station Size is zero (not used).
	8 – Comm. test failed.
	9 – Invalid ASCII character (only used by the Com Module)
	10 – Sequential packet is out of the sequence
	11 – Operation Command cannot be executed.
	12 – Trying to manually run an SSG while the controller is not in the SSG/SmartStack Mode.
	253 – Command Incomplete – 2 or more bytes missing
	254 – CRC Bad – Either incorrect or last CRC byte is missing
	255 – Command unknown
ACC2:#13 Err. Response too short	No corrective action possible. If this occurs repeatedly, take a wireshark log and contact Tech Support.
ACC2#14 Err. Timeout-Ignore unless this happens often.	If this occurs occasionally then ignore. If this happens often increase the timeout in the configuration. A value greater than 2.2

	seems optimal. Update the config.
ACC2#15 Err. ST_ERROR	Confirms that a timeout or other eror occurred. If this occurs occasionally then ignore.
ACC2#16 Err. Timeout. Ignore unless this happens often.	If this occurs occasionally then ignore. If this happens often increase the timeout in the configuration. A value greater than 2.2 seems optimal.
ACC2#17 Err. Header not found iptr=%d md=%s (%02x=%ld)	A response from the controller didn't meet the expected format. If this occurs often you will need to contact tech support. They will ask you for a wireshark log.
ACC2:#18a/b Cant find DA= DA_Acc2_Debug	The driver expects to find a Data Array called "DA_Acc2_Debug" in the configuration file. This error may be ignored. Until it is resolved you wil be unable to enable some debugging. Correct the configuration. Create the Data Array of type UINT16 and length of 100.

Appendix 1.2.   Driver Debug Mode

The driver has a number of diagnostic and debug messages. Normally these are suppressed. Turn them on if directed by tech support. To turn then on, defne the Hunter Interface Array and populate it with some non-zero data to turn on the diagnostic function

Data_Arrtys

Data_Array_Name , Data_Array_Format , Length

DA_ACC2_Debug , UINT16   , 1000

Offset	
1	Display Send Buffer
2	Display Rcv Buffer
3	Display Unpack
4	Display Response Payload
5	Display Poll Payload
6	Display the Recv() function in state2

Revision History

Date	Resp	Driver Ver.	Doc. Rev.	Comment
2020Jan	PMC	1.00	1.00	Released