

APPLICATION NOTE:

Establishing I/O communication between AnyBus-S EtherNet/IP and EIPScan Test Tool



HMS Industrial Networks

Revision Notes

Date:	Revision:	Notes:	Responsible
2003-04-18	0.10	Document created	Joakim Wiberg
2003-07-30	0.20	Updated layout	Joakim Wiberg
2007-07-25	2.0	Revision	Thorbjörn Palm

Abbreviations

ESTT	EIPScan Test Tool

1. System configuration overview

This is an example on how to configure the Anybus-S Slave module to connect with EtherNet/IP Scan Test Tool from Pyramid Solutions. It is possible to use this document as a guide on how to set up any "generic" EtherNet/IP module from HMS under EtherNet/IP Scan Test Tool, ESTT.

This application note assumes that ESTT are installed and working correct.

The ESTT is set up to read and write 32 bytes of I/O data from and to the Anybus-S Slave module.

2. Configure the ESTT

Add the Anybus-S Slave module to the configuration in the ESTT. Start by right click in the "network" area, and select "Add Device".



Now a dialogue window will appear. In this dialogue window the IP address of the Anybus-S Slave module shall be entered, here 10.10.14.225 is used.

Add New Dev	vice	×
IP Address	10.10.14.225	ОК
		Cancel

The Anybus-S Slave module will now occur in the "network" area.

📮 EIPScan Test Tool - Untitled		
<u>File View N</u> etwork <u>R</u> equest <u>I</u> /O <u>H</u> elp		
Request (all fields, but IP addresses are in hex) Send Request to: Service (hex) Class (hex) Instance (hex) Attribute (hex) Member (hex) Symbol Tag Request Data. Each byte is a 2 char hex value, separated by a space (i.e. Da 26 f9).	EIPScan Test Tool Host: 10.10.14.22 Ethernet HMS AnyBus Board 10.10.14.225	
Response Response Size (decimal)		<u> </u>
Timestamp Message 16:00:34:360 Ethernet/IP Scanner Library is online	ne	
		F
Ready		NUM //

EIPScan Test Tool - Untitled	
<u>File View Network Request I/O Help</u>	
EIPScan Test Tool Send Request to: Service (hex) Class (hex) Instance (hex) Attribute (hex) Member (hex) Symbol Tag Request Data. Each byte is a 2 char hex value, separated by a space (i.e. 0a 26 fg).	
Response Size (decimal)	
Timestamp Message	
16:00:34:360 Ethernet/IP Scanner Library is online	
	Þ
Ready	

Right click on the Anybus-S Slave module and select "Add Connection".

A new dialogue window will now occur; it contains six property pages used to set up the connection. In the first page it's possible to select connection and transport type. To reduce the network load the setting for "Target -> Originator" have been changed from "Multicast" to "Point To Point", the rest are left unchanged.

Add Connection		×
Type Data Size Rate	Trigger Destination Priority	
Connection Type Class 1 Class 3	Transport Type Originator -> Target Target -> Originator	Point To Point
	Οκ	Cancel Applie

The second tile contains the data sizes; here we use 32 bytes in each direction since this is how the module was initiated.

Add Connection		×
Type Data Size Rate Trig	gger Destination Priority	
Originator->Target	Bun/Idle Header	
Target->Originator		
Data Size 32	Run/Idle Header	
	OK Cancel	Apply

The "Rate" tile holds the RPI (requested packet interval), this is how often data will be produced and consumed (in ms).

Add Connection	×
Type Data Size Rate Trigger Destination Priority	
Packet Rate in milliseconds Originator -> Target	
Target -> Originator	
OK Cancel Apply	

In the "Trigger" tile the transport trigger and the timeout multiplier are selected. The Anybus-S Slave module only supports "Cyclic" triggers. The timeout are set to the default value of 16.

Add Connection		х
Type Data Size Rate	Trigger Destination Priority	
Transport Trigger		
Timeout Multiplier	16 💌	
	OK Cancel Apply	

The "Destination" tile is used to set up the connection points in the Anybus-S Slave module. The ESTT is to by default display the correct connection points, make sure that the connection points are

configured as below. Adjust the connection points if they do not match what is stated in the manual for the product.

Add Connection	×
Type Data Size Rate Trigger Des	tination Priority
Configuration Connection Instance	E
Originator->Target Connection Point	150
Target->Originator Connection Point	100
Connection Tag	
[OK Cancel Apply

In the "Priority" tile it is possible to set the priority of the connection, for the moment the ABS only supports "Scheduled". Now press "OK" and the connection will be opened.

Add Connection		×
Type Data Size Rate	Trigger Destination Priority	
Originator -> Target	Scheduled	
Target -> Originator	Scheduled	
	,	
	OK Cancel	Apply

EIPScan Test Tool - Untitled		
Request (all fields, but IP addresses are in hex) Send Request to: Service (hex) Class (hex) Instance (hex) Attribute (hex) Member (hex) Symbol Tag Request Data. Each byte is a 2 char hex value, separated by a space (i.e. 0a 26 f9).	EIPScan Test Tool Host: 10.10.14.22 Ethernet HMS AnyBus Board	
Response	1 2h	2h 2h 2h 2h
Response Size (decimal)	2b 2	
×	00 00 00 00 00 00 00 00 00 00 00 00 00	00 00 00 00
Timestamp Message		
16:00:34:360 Ethernet/IP Scanner Library is on 16:07:39:480 New connection opened with Inst	ne ance 1	
		<u>></u>
Ready		NUM //

This is how the screen on the ESTT looks if the connection has been opened.

3. Links to information about networks and products

- The latest for the ABS module can be found on the HMS homepage http://www.anybus.com.
- The Open DeviceNet Vendor Organization has a homepage, <u>http://www.odva.org/</u>, with more information about EtherNet/IP.
- To learn more about the EIPScan Test Tool refer to the Pyramid Solutions homepage <u>http://www.pyramid-</u> solutions.com/Expertise_DataCom_Products_EtherNetIP_Scanner_Simulator.htm.

4. Support

HMS Sweden	HMS America		HMS Japan		HMS Germany	
Email: support@hms-networks.com Phone: +46 (0)35-17 29 22 Fax: +46 (0)35-17 29 09 Online: www.hms-networks.com	Email: networks.com	us-support@hms-	Email: networks.com	jp-support@hms-	Email: networks.com	ge-support@hms-
	Phone: +1.773.404.2271		Phone: +81 45 478 5340		Phone: +49 721 964 72157	
	Fax: +1.773.404.1797		Fax: +81 45 476 0315		Fax: +49 721 964 7210	
	Online: www.hms-networks.com		Online: www.hms-networks.com		Online: www.hms-networks.com	