TECHNICAL INFORMATION SHEET – NUMBER 208, Issue 1

TITLE: iTools EuroMBus OPC Server Startup Registry Settings

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This Technical Information Sheet (TIS) describes how to configure the iTools EuroMBus OPC Server startup file. It also describes how to start EuroMBus, auto-detect Series 2000 instruments connected to a PC and save that address space as a UIS file. You would need this capability when using an OPC client expecting a pre-configured address space for one or more instruments in EuroMBus server and you do not want to manually scan for connected instruments whenever EuroMBus is re-started.

OPC clients are typically software packages such as Wonderware's InTouch, Intellution's FIX32, Rockwell Automation's RSView 32 and many others. The OPC clients could also be the iTools Series 2000 controls running in an OPC Client container application.

Requirements: Eurotherm iTools – STANDARD or OPEN edition, Version 4 or greater.

EuroMBus is a standalone executable program fully compliant with the OPC Data Access Custom Interface Specifications 1.0 and 2.0. To start EuroMBus, go to Start/Programs/Eurotherm iTools/Advanced and select "iTools OPC Server" as shown in the picture below. EuroMBus is capable of auto-detecting any Series 2000 instrument any version with Modbus communications. By default, the parity in the instrument must be None, while the baud rate may be 4800, 9600 or 19200. The address may be anything from 1 to 255.



To auto-detect a connected instrument, from the EuroMBus menu bar, select Network/Start One Shot Scan - or press shortcut key F5. EuroMBus detects the instrument and automatically builds the address space for the recognized Series 2000 instrument as shown in the picture bottom of next page. In the example shown using COM1 of the PC, EuroMBus has detected a 2604, version 3 (V300) at address 1 (ID001).

What can be done if the instrument parity is not None? Start EuroMBus and before scanning is started, right click on the serial port icon - COM1 in this example - and click on properties. This brings up the COMx Port Properties dialog box where x is the COM port number as shown in the picture on the next page. From the Parity drop-down list box select the parity required and click on OK. Start scan.

How many instruments can be connected to EuroMBus? While there are no imposed limits there are practical limits. The amount of memory the PC has is a practical limit. Typically



Page 1 of 3



each additional device loaded into EuroMBus address space takes 1-5MB (2100 through 2500/2600/2700).

🍄 2604ec.uis - Eurol	MBus
<u>File E</u> dit <u>A</u> dd <u>N</u> etwo	ork <u>V</u> iew <u>H</u> elp
	COM1 Port Properties
	PC Port <u>N</u> ame COM1
	User Name COM1
	Protocol MODBUS
	Baud <u>R</u> ate 9600
	Parity Even
	Elow Odd
	Data Bits 8 (RTU)
	Stop Bits 1
Time Stamp 14:44:50.584 16/10/200	Min I ag Refresh 0 ms

Another limit is the amount of data that can be pushed through a serial Modbus RTU network - typically about 100 parameters per second at 9600 baud. So if there are 32 controllers, wanting to poll 20 parameters per device, the maximum refresh rate would be about 10 seconds. This assumes that nothing else is happening, such as active mirroring, writing, cloning or communications errors.

EuroMBus active mirroring mode – where EuroMBus automatically refreshes parameter values can be disabled to improve throughput. Go to Edit/Server Settings... and select the General tab. Remove the default check in both check boxes. Restart EuroMBus for the change to take effect.

🖓 Untitled - EuroMBus		· ·				_ [⊐×
<u>File E</u> dit <u>A</u> dd <u>N</u> etwork ⊻iew <u>H</u> elp							
Vee Xhe							
🕞 🦉 СОМ1	▲ Name	Description	Address	Processing	Value	High	l 🔺
	■PV	[LP1 PV] Process Variable	1		157.0009	999	
□ □··· ■ ID001-2604-V300	🔄 🗠 wSP	[Working SP] Working Setp	5		157	999	
	tSP 💶 tSP	[Target SP] Target Setpoint	2		157	0	
Main	T_0P	[Target OP] Target Output P	3		31.3997	100	
	wOP 🔍	[Working OP] Working Output	4		31.3997	100	
	M-m-A	[Loop Mode] Manual Mode	273		Auto (0)		
	💶 DisCas	[Disable CSD] Disable Casc	131		No (0)		
	🚾 🔍 O vrDis	[Disable OVR] Disable Overri	160		No (0)		
	OvrSP	[OVR Target SP] Mirror of L	831		0	1372	
	ActLP	[Active Loop] Override Activ	161		Main Lo		
	< MainOP	[Main OP] Override Main OP	164		0	100	
🕀 🧰 ALARMS	CverOP 🔄	[Override OP] Override OP	165		0	100	
AUTOTUNE	RATIO	[Enable Ratio] Ratio Enable	151		No (0)		
📔 🕀 🚞 LP1_SETUP	💶 Trim Rat	[Ratio Trim] Ratio Trim	157		0	100	
📄 💼 LP2_SETUP	💶 LeadPV	[Lead PV] Lead PV	155		0	999	-
E · · □ LP3_SETUP		IBatio SPI, Batio Setopint	156		0.01	100	ĽЧ.
							<u> </u>
Time Stamp Context Status	Command	Message					
14:28:04.456 11/10/2001 System Informati	on	iTools Open Edition					
14:28:04.456.11/10/2001 System Informati 14:28:04.456.11/10/2001 System Informati	on	Localization ID is ENU Server log file is "CATEM	IP\EuroMBi	us log"			
14:28:05.107 11/10/2001 System Informati	on	Creating New Document		us.log			
14:32:34.825 11/10/2001 Client Informati	on	Assimilating device 2604	(version V3	00) on port COI	M1 at addres	s 1 using	g IDM
							F
Idle Not Scanning		0 Clients Connected 0 OPC	Groups	Main has 0 Fo	olders and 16	Tags	



The EuroMBus address space is saved as a UIS file type – EuroMBus Server's Address Space file. From the EuroMBus menu bar select <u>File/Save</u>. Enter in the file name in the directory desired and click the <u>Save</u> button. The 'untitled – EuroMBus' message in the title bar is replaced by the name of the loaded address space file as shown in the picture below - '2604ec.uis'.

The next step is to enable EuroMBus to automatically load an address space – UIS file – whenever EuroMBus starts. From EuroMBus select <u>Edit/i</u>Tools Control Panel. Or from Start select Settings/Control Panel and double click on the iTools icon. This brings up the Registry Settings – iTools Ports Setup dialog box. Select the OPC Server Startup tab.

As shown in the picture below, check the 'iTools Server starts with Address Space File Preloaded' check box. Then click on the ellipsis button to browse to the directory where the UIS file is stored or type in the path and filename. Restart EuroMBus for these changes to take effect.

egistry Settings - I ools Ports Setup
Serial Ports TCP/IP Authorization OPC Server Startup
Default Settings
ITools OPC Server starts with Address Space File Preloaded
D:\Eurotherm\iTools\examples\2604ec.uis Edit File
Settings for Currently Logged-in User (mdemick)
Override Default Settings and start using Address Space File
Edit File
OK Cancel



Now, whenever iTools is started, it will reload the address space for the Series 2000 instrument(s) that were stored in the UIS file. Or, if EuroMBus is not running and an OPC client attempts to connect to EuroMBus, EuroMBus will automatically start and respond to address space requests. It is not necessary to have an instrument connected to EuroMBus for address space browsing by an OPC client. Instrument(s) connected are necessary however, if real-time data is needed.