

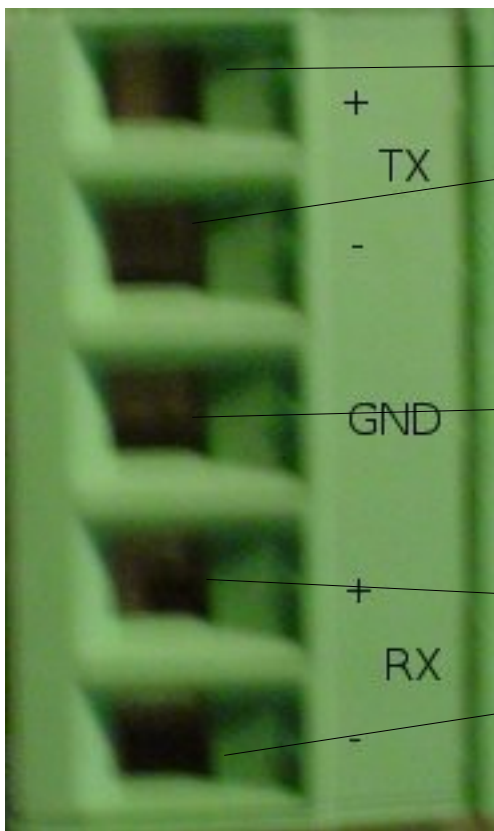


IPC-620 Serial IO Scanner Configuration

Requirements:

1. QTS IPC-620 ControlLogix backplane module and ControlLogix rack with Logix controller.
2. Associated software distributed with the QTS IPC-620 hardware, a PC computer with RSLinx and RSLogix 5000 installed.
3. At least, one rack (card file) of IPC-620 IO with a SIOM (Serial IO Module). The QTS scanner module is designed to work with 621-9940 SIOM modules and replaces the SLM 621-9939 scanner module. Older serial I/O versions are not supported (SIOM-621-9935, SLM-621-9936).
4. Network cable and termination resistors. Honeywell specifies Belden 9729 cable or equivalent, with a termination of 200 ohms at ½ watt.

Hardware configuration:



To SIOM RX pair
(+RCV / T4,-RCV / T5)

Common for both pairs (Shield)
(T3,T6)

To SIOM TX pair
(+XMIT / T7,-XMIT / T8)


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The diagram above shows how to connect the IPC-620 Scanner module to the card files (SIOM) via the two-pair Belden cable. The termination resistors are placed across the TX and RX channels, if the IPC-620 scanner module is located at the end of the serial network. Please, refer to your Honeywell documentation for further details on cable installation.

The QTS IPC-620 scanner module should be placed in the ControlLogix rack. Using RSLogix 5000 software, the communications between the Logix controller and the IPC-620 module is configured in the following way:

1. Add a new module to your I/O Configuration and choose the "1757-Module (Generic 1757 Module).
2. Fill in the 'New Module' dialog as shown in the diagram below.

New Module

Type: 1756-MODULE Generic 1756 Module
 Parent: Local

Name: QTS_IPC620_Scanner
 Description: serial i/o network scanner
 Comm Format: Data - INT - With Status
 Slot: 0

Connection Parameters

	Assembly Instance:	Size:	
Input:	1	250	(16-bit)
Output:	2	248	(16-bit)
Configuration:	4	0	(8-bit)
Status Input:	5	250	(16-bit)
Status Output:	6		

Open Module Properties

OK Cancel Help

IPC-620 Scanner Configuration:

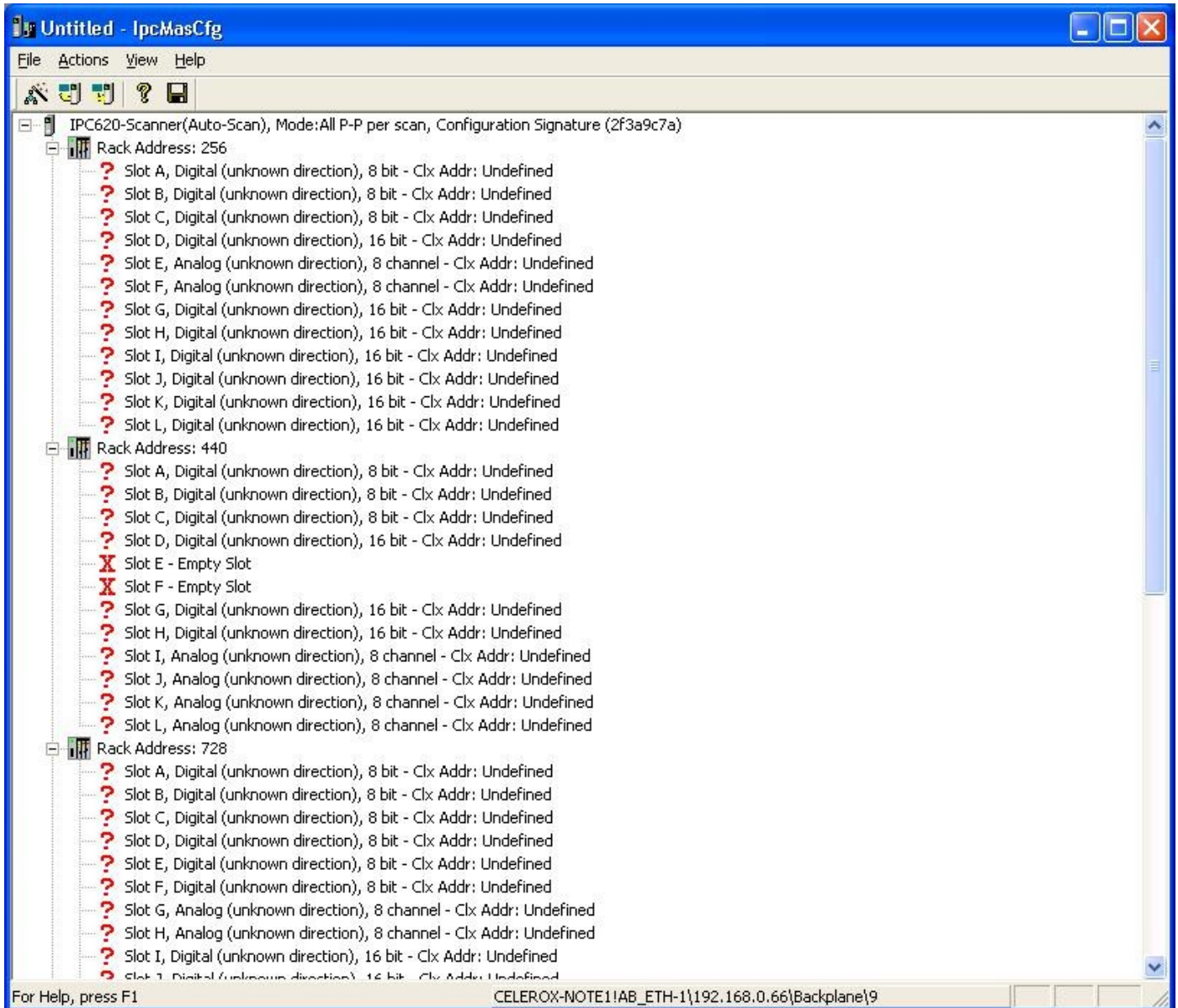
The QTS IPC-620 scanner configuration software (IpcMasCfg.exe) is shipped as a win32 application. The IpcMasCfg.exe executable can be run in-place without any installation process.

The IPC-620 scanner module's configuration consists of two parts: IPC-620 card file configuration and ControlLogix data addressing. The IpcMasCfg application is designed to do both of these operations automatically, with some user input and produce an Alias import (csv) file for the RSLogix 5000 software.



IPC-620 Card File Configuration:

1. The configuration process requires the QTS IPC Scanner module be attached to a live IPC-620 serial I/O network.
2. Start the IpcMasCfg.exe application and use the 'Actions - Start Auto Configuration' menu command.



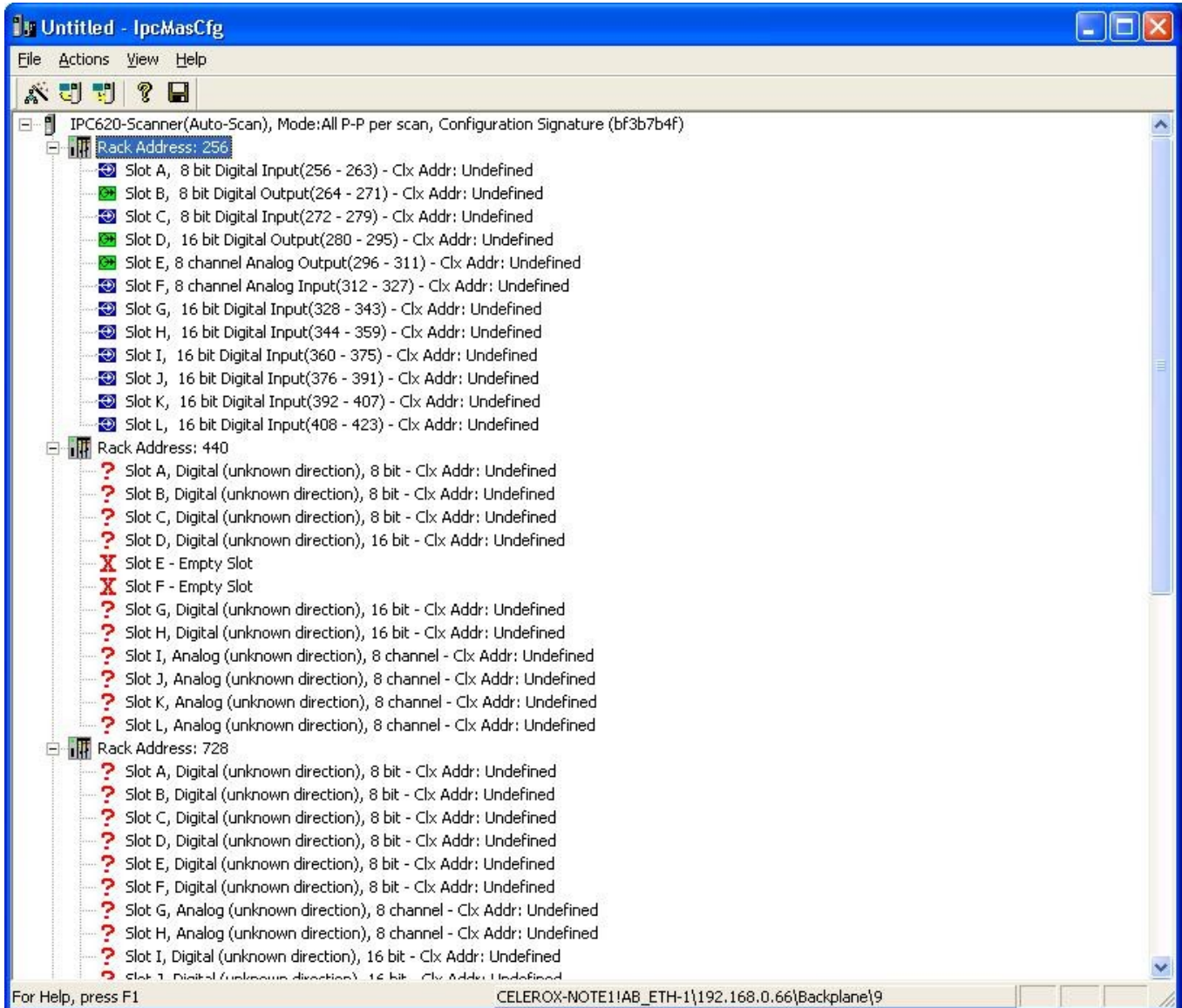
3. The IpcMasCfg tool will prompt the user for the RSLinx path to the QTS IPC-620 module and store this path for future communications with the scanner module (see status bar in diagram, above).



4. The diagram above shows the result of an 'Auto Configuration' cycle. All the card files that are attached to the serial network should appear with corresponding rack byte address. **It is important to check that all the expected card files were found before progressing further.** If any of the expected card file(s) are missing from the tree shown above, repeat the 'Auto Configure' command (step 2).
5. The network auto-scan cycle does not give any information about the direction of the I/O modules for any of the found I/O card file racks. However, the type of module (digital or analog) and size should match for each slot found in each card file rack. If any I/O slots contain a mismatch in module type (digital or analog) or module size (8-bit, 16-bit, etc.), check your card file (SIOM) configuration and repeat step 2.
6. Select the first rack icon in the configuration tree and right-click to open the rack properties menu. Select the 'edit rack properties' command and the following dialog box will open:

Slot	Direction	Module Type
Slot A	Undefined	Digital 8 bits
Slot B	Undefined	Digital 8 bits
Slot C	Undefined	Digital 8 bits
Slot D	Undefined	Digital 16 bits
Slot E	Undefined	Analog 8 channels
Slot F	Undefined	Analog 8 channels
Slot G	Undefined	Digital 16 bits
Slot H	Undefined	Digital 16 bits
Slot I	Undefined	Digital 16 bits
Slot J	Undefined	Digital 16 bits
Slot K	Undefined	Digital 16 bits
Slot L	Undefined	Digital 16 bits

7. For each slot in the 'Rack Properties' dialog, set the slot direction (input or output) to match the physical card file configuration. Click the 'OK' button when all slots have been configured.



8. The above screen capture shows the first configured rack. Repeat steps 6 and 7 for each rack.
9. Save the configuration ("File – Save") to an *.imc file.

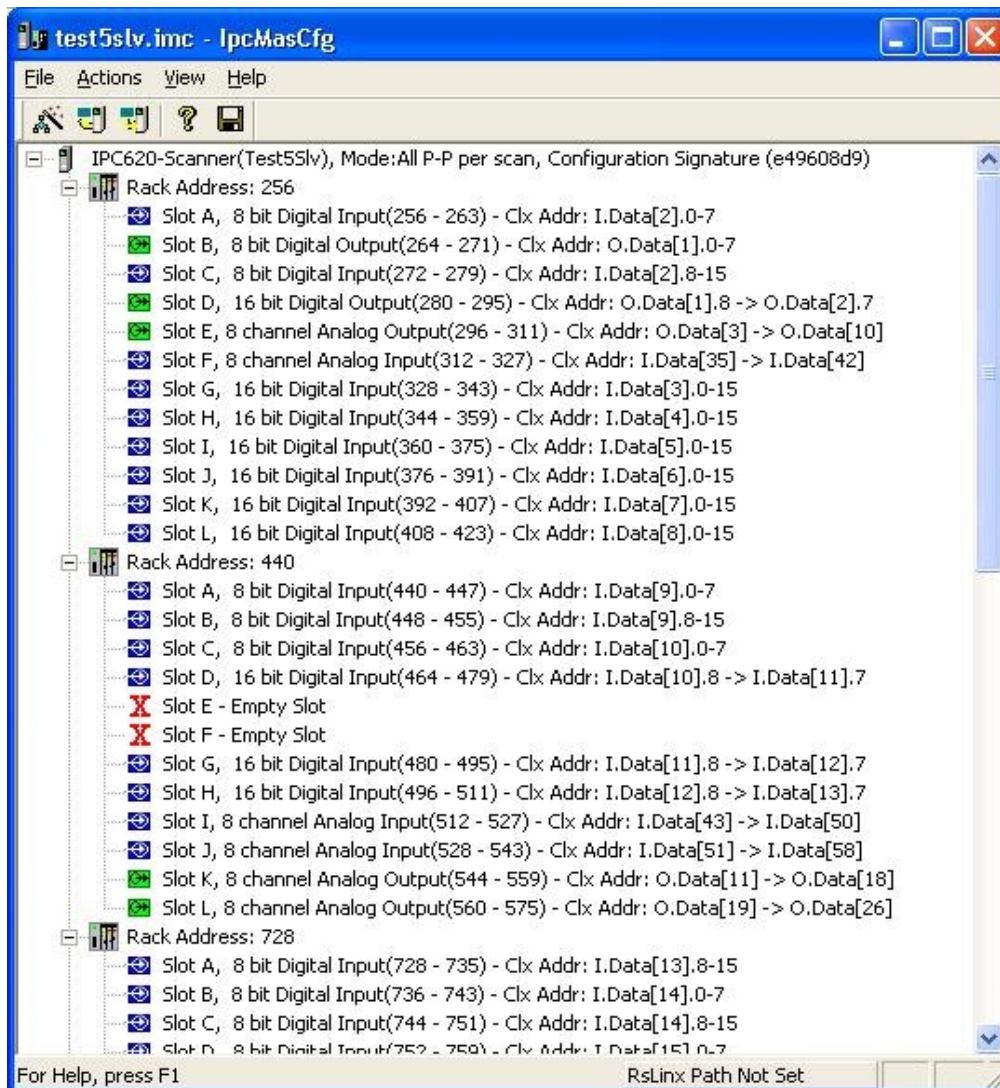
The IPC-620 I/O card file configuration portion of this process is done when all racks in the network are found, all slots in each rack have the correct direction, module type and module size.

ControlLogix Data Addressing

Now that the serial I/O network configuration has been entered into the IpcMasCfg application, it is time to map the serial network I/O data into the ControlLogix data tables.



1. Select the root of the network configuration tree (IPC-620-Scanner icon) and right-click to show the scanner properties menu. Select the 'Edit Module Properties' command to open a dialog box that allows the user to set a unique module name (default is Auto-Scan) and set the Push-Pull card (analog modules) scan setting.
2. Select and right-click the IPC-620 scanner node again. Select the 'Auto-allocate ControlLogix Addressing' command. The IpcMasCfg application will map all the IPC-620 input modules (both digital and analog) to the I.Data[] and S.Data[] arrays. The IPC-620 output modules will be mapped to the O.Data[] array. See diagram below:



3. The QTS IPC-620 configuration process is complete. Save the file.
4. Use the 'Actions – Download Cfg' main menu command or the Download toolbar icon to send this configuration to the IPC-620 Scanner module.



5. The IPC-620 module will start to scan the serial I/O network and display the configured module name. All lights on the IPC-620 scanner module should be green.

Alias Export Function:

The IpcMasCfg application has a export function ('File – Export Tags') for exporting RSLogix 5000 alias information to a csv file. The alias names are constructed as follows:

<name_of_scanner_config>_<IO-type>_Ipc<IPC-620 bit address>

For example, the configuration show above would have an alias for the IPC-620 bit address 256 as follows:

Test5Slv_DI_Ipc256

This way the new ControlLogix program can reference the IPC-620 I/O according to it's original IPC-620 PLC program address. Consult the RSLogix 5000 software help for how to import csv files.

Master Scan Control:

The original IPC620 master module (SLM) has a set of contacts on the front that allows for the reset of the card files on the network. The QTS-422-IPC module in master mode offers the same functionality by using a bit in the O.Data array and an alias is created for this bit during the export alias function. The alias is name <name_of_scanner_config>_IPCScanControl_Reset and references the address O.Data[0].0 as a BOOL. Application of a logical 1 (set) to this bit will cause a reset of the IPC620 card files.

The user can wire this bit, through program logic, to an available input card or HMI button.

Specialty I/O Module Support:

The scanner module cannot support "specialty" modules. For example, the high speed counter module and high density analog input module (32 points). If further details are required, contract QTS technical support staff.