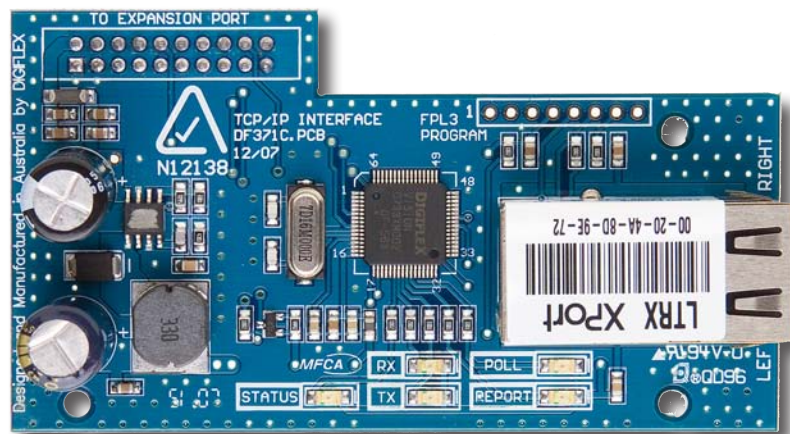


CM750B



Security Systems

EN | Quick Start Guide
IP Interface Module

BOSCH

CM750B

IP Interface Module

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Supported Panels	Solution 16i - V2.10 or higher Solution E Series
Solutionlink Version Required	V1.20 or higher

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It is important to remember that the MAC Address, IP Address, Gateway Address and port numbers etc shown in this document are examples only and they will almost certainly not be the same for your installation.

They should only be used as a guide only.

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Introduction

The CM750B module allows you to interface compatible security control panels to the building's hard wired IP connection point using a CAT 5E connection cable. Once configured and operating you will be able to report to monitoring centres that support the available IP reporting formats and to upload/download to the control panel through an internet or intranet connection.

Getting Started

There are four main steps required to configure the CM750B for reporting to the control room. The instructions assume that you are installing a new IP module and that you are using the Solutionlink RAS software.

1. Install the CM750B hardware on the control panel.
2. Configure the module's features and parameters.
3. Configure the control panel for IP reporting.
4. Configure the control panel for IP remote access.

A number of IP connection tools are included in the Solutionlink RAS software and it is recommended that you make use of these when configuring the CM750B. At this point you should connect your laptop to the same LAN that the CM750B is connected and then run Solutionlink.

If the premises has a Network Administrator you should work with them to complete the installation as a number of steps listed below can be avoided if the administrator can provide you with the required information.



Note

It is important at this point to record the MAC or physical address of the CM750B IP module for future reference. You can record this information in the "Customer Details" on page 11



Figure 1: PCB Indicator Meanings

Step 1 - Installing the IP Module

Ensure that the panel is powered off before proceeding. Plug the 3 short plastic standoffs into the module and then plug it onto the Expansion Port header pins on the panel as shown in "Figure 2: CM750B Module Installed On Solution16i" on page 4. If you are connecting the CM750B to a panel which also has a CM101B Voice Module fitted then you should use the longer standoffs from the HW750 Riser Kit.

Once installed, connect the ethernet cable to the CM750B and re power the control panel. Observe the module's green Status LED. Under normal operation the Status LED will remain on steady for approximately 3 seconds following power up while the system configures the module.

During this process if the connected internal network is DHCP enabled, the module will request an IP address from DHCP server. Once the module receives an address the Status LED will begin to flash slowly.

If the Status LED flashes fast then the module has not received an IP address or there is a IP address conflict. If this occurs check all LAN wiring to the module and or contact the network administrator for assistance.

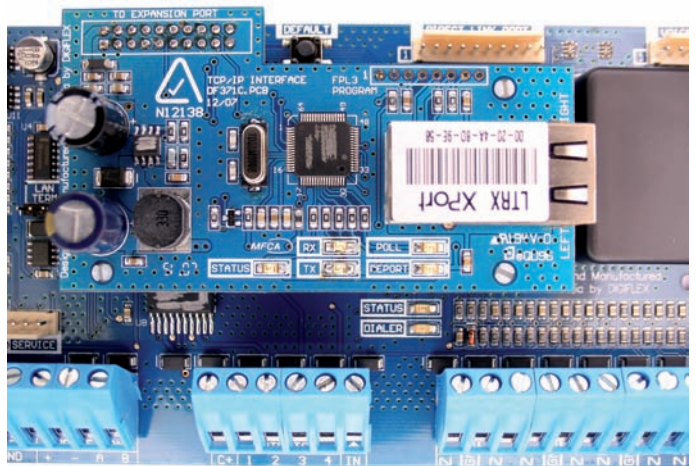


Figure 2: CM750B Module Installed On Solution16i

Step 2 - Configuring the IP Module's Network Settings

The CM750B module will need a fixed or reserved IP address on the network that it is to be connected to. If the network administrator is available then they should provide you with the Default Gateway, Subnet Mask and IP Address to be used.

If you are trying to determine this information without an administrator then you will need to obtain the Default Gateway and Subnet mask for the network. To do this run the IPCONFIG command on your laptop or another PC which is connected to the same network as the module.

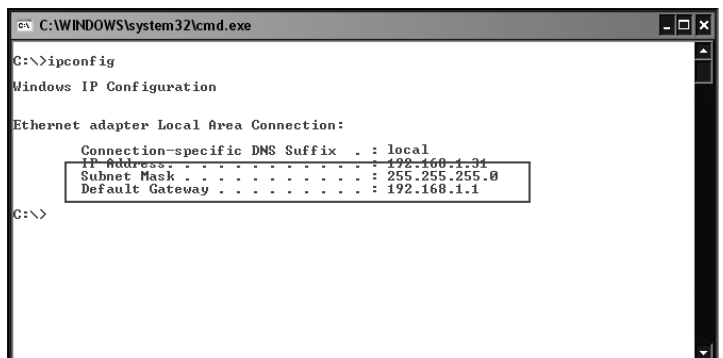


Figure 3: IP Config Showing Gateway and Subnet Mask

IPCONFIG will list the Default Gateway, Subnet Mask as

well as the IP address of the PC which executed the command. Note this is not the IP address assigned to the CM750B and is not needed to complete the installation.

You can also access this information by running Control Panel, Network Connections and then double click on Local Area Connection and select the support tab.

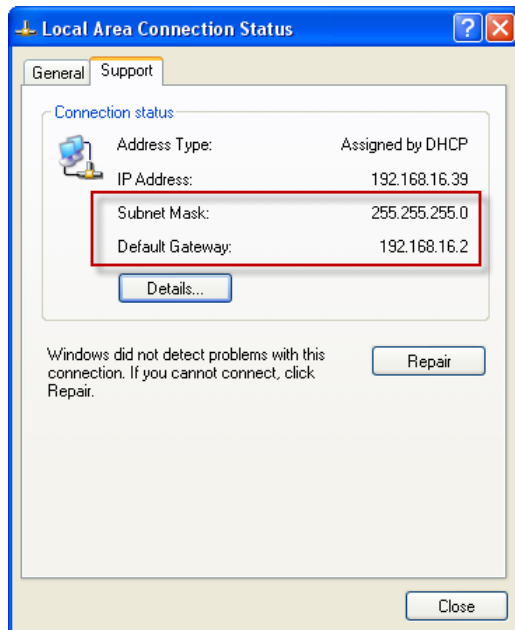


Figure 4: Local Area Connection Status

Once you have this information, create a new customer record in Solutionlink or open an existing one if you are adding the CM750B module to an existing customer. From the Customer Panel form, set the default connection method to Ethernet (TCP/IP) and then press the Auto Detect button to launch the Network Assistant.

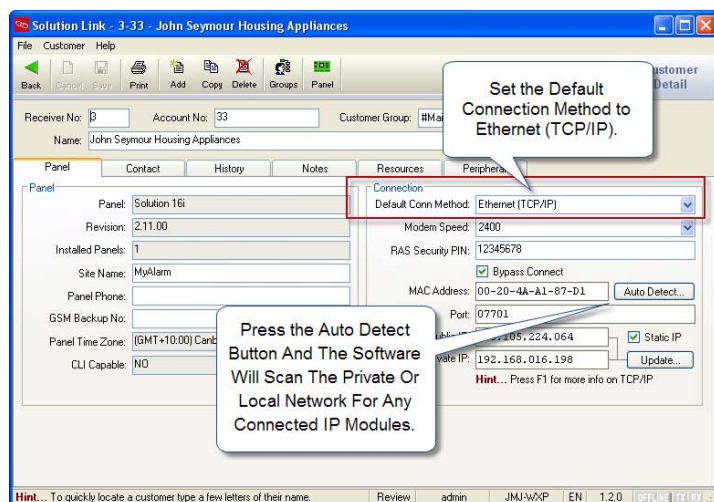


Figure 5: Customer Panel Form

Press the OK button and the assistant will begin scanning the private network LAN for the presence of CM750B modules. If more than one module is found, select the one from the list whose MAC address matches the one you are installing and press the OK button.

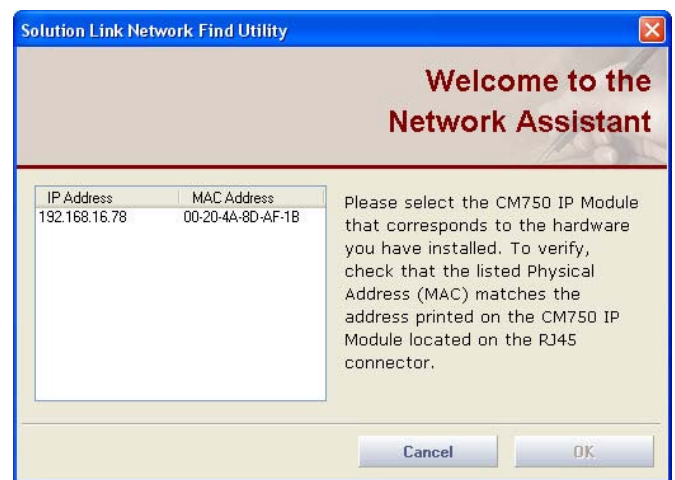


Figure 6: Solutionlink Network Assistant

You should now be able to establish a RAS session with the panel over the local or internal network connection. This will only be possible provided that the laptop or PC running Solutionlink is on the same network as the CM750B module.

Click the panel button on the tool bar followed by the connect button and then select Ethernet to start the connection.



Figure 7: Select the Ethernet Connection Method

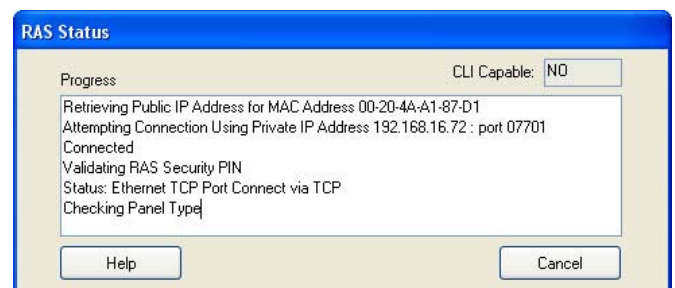


Figure 8: RAS Connection Progress Dialog

Once connected, upload the panel data. Solutionlink will compare the panel data with the data in the database and will then display a list of differences similar to those shown in "Figure 9: Uploaded Differences" on page 6.

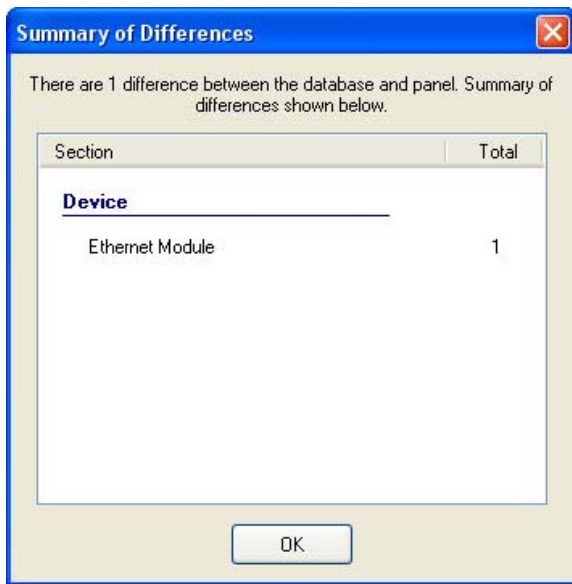


Figure 9: Uploaded Differences

Move to the Devices tab and select detail view, then scroll down or use the navigation tree to locate the Ethernet Module section. Right click on the Physical Address (MAC) field and select the MAC address which is in the database. This should match the MAC Address of the module you are installing.

Review any other highlighted differences and then save the changes to the database.

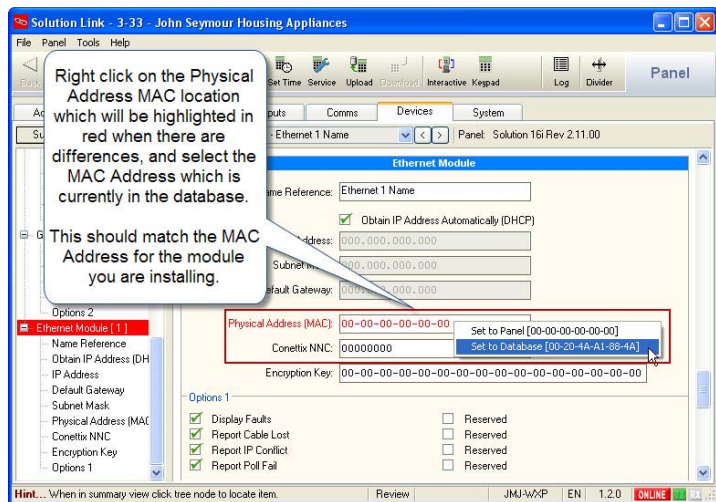


Figure 10: MAC Address Selection

Go to the Ethernet Module section in the Devices tab and uncheck the "Obtain IP Address Automatically" option then enter the IP Address of the CM750B, the Subnet Mask and the Default Gateway in the fields provided and then save the changes.

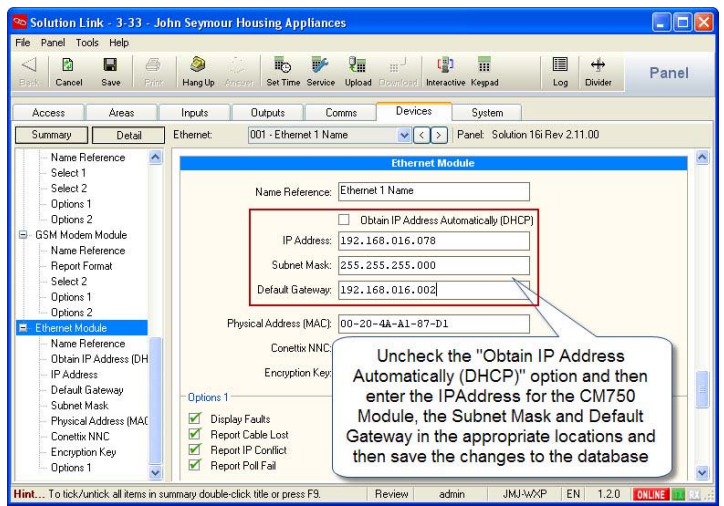


Figure 11: Subnet Mask and Default Gateway Entry

Step 3 - Configuring the Panel for IP Reporting

Before you will be able to configure the panel for IP reporting you will need to make sure you have the relevant information from the control room. The following is required,

1. IP Address for the base station's IP Receiver.
2. IP Port for the base station's IP Receiver.
3. Poll Rate.
4. Acknowledge Wait Time.
5. Reporting Format.
6. If Conettix NNC Anti Replay format is being used, you will need the base station allocated NNC Number.
7. If encryption is required you will need the base station allocated Encryption Key.

Move to the Reporting Route section on the Comms tab and set the transmission format to Ethernet format for Destination 1, 2 or both as required.

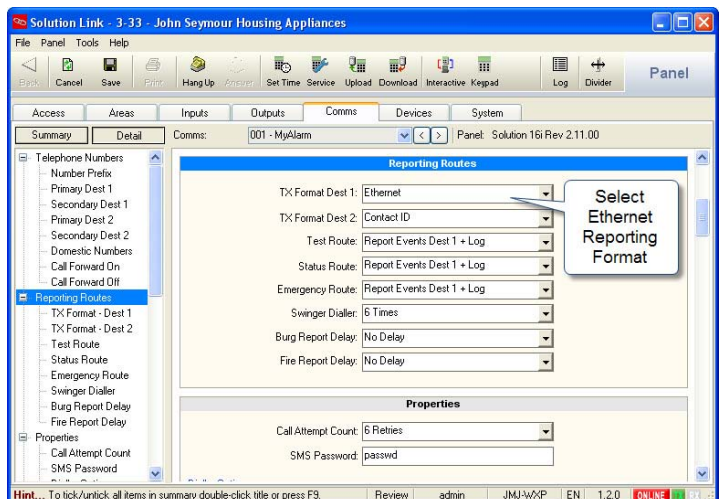


Figure 12: Configuring the Transmission Format

Move to the IP Reporting section on the Comms tab and enter the Base Station Receiver IP Address, IP Port and other parameters as supplied by the control room. Enter the details in the appropriate Destination as required.

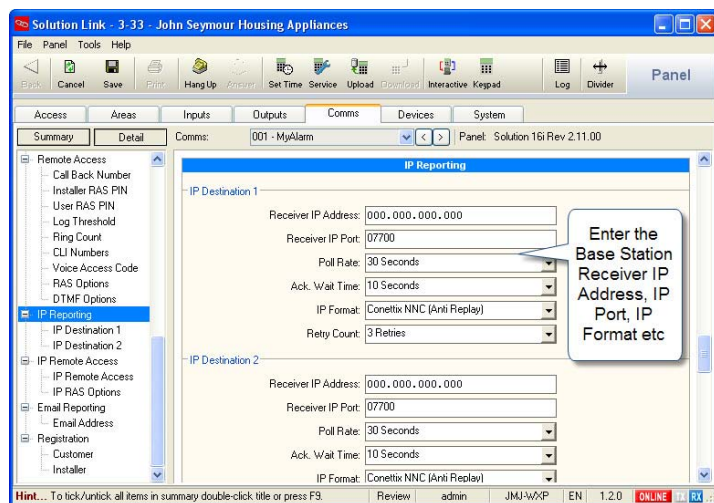


Figure 13: Configuring the Base Station's IP Settings

If you are using the Conettix NNC anti replay feature or data encryption move to the Ethernet Module section on the Devices tab and enter respective information. The values entered here must match those in the base station or communication will fail.

To remove encryption set the key back to all zeros or the factory default settings.

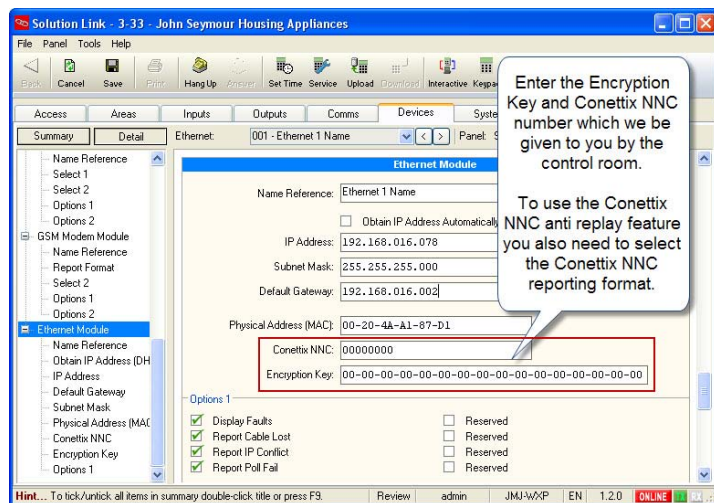


Figure 14: Configuring the Base Station's IP Settings

Step 4 - Configuring IP Remote Access

When attempting a remote connection to a site that has a CM750B module fitted the site's public IP address will be required. In many cases the site's public IP address is dynamically allocated by the ISP and therefore it can change at any time.

To cater for this situation the CM750B module will send a periodic message to a proprietary central IP Resolution Server (IPRS) which maintains a record of the site's current

public IP Address. When you attempt the remote connection using Solutionlink the software will provide you with the customers current public IP address.

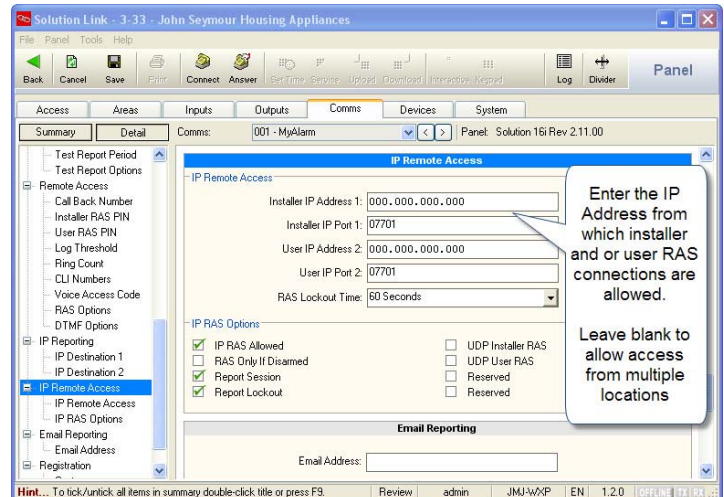


Figure 15: Configuring IP Remote Access

IP Remote Access

If required you can configure the module to only accept incoming connections from a specific IP Address. In the default state the RAS IP Address is set to 000.000.000.000 for both users and installers and this allows a connection to the panel from any IP Address. To limit access so that a RAS connection can only be established from only one IP address enter it here.

This option should be used with caution and should only be used if you have a static public IP address and you only want / need to connect to the panel from one location.

If a UDP connection is necessary for remote access then you will also need to program this option. See "UDP Protocol Options" on page 8 for more information.

The RAS IP port is defaulted to port 07701 for both users and installers. This must be programmed the same in the panel and Solutionlink RAS software.

You will need to create a port forwarding rule on the customers router to direct incoming traffic on this port to the CM750B module's private IP Address.



Note If you attempt an IP connection with an incorrect RAS security PIN then after 3 attempts to panel will lockout for the IP RAS lockout time period programmed.

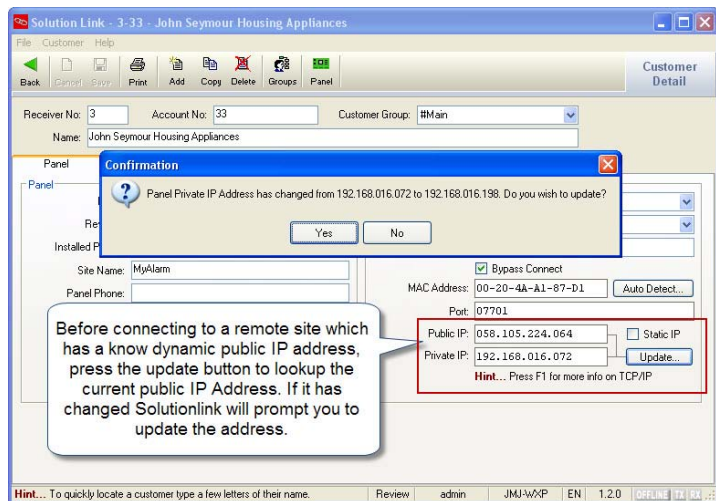


Figure 16: Using the IP Resolution Server Tool

Port Forwarding and IP Address Reservation

This is by far the most likely place where errors can be made due to the fact that there are so many different routers in the market place.

Essentially to gain access remotely to the CM750B for an upload/download session the client's router will require a rule to be created that opens and directs all IP traffic coming into the router for port 07701 (default IP RAS Port) to the internal IP address of the CM750B which is programmed in MENU 6-6-0 on the Solution 16i.

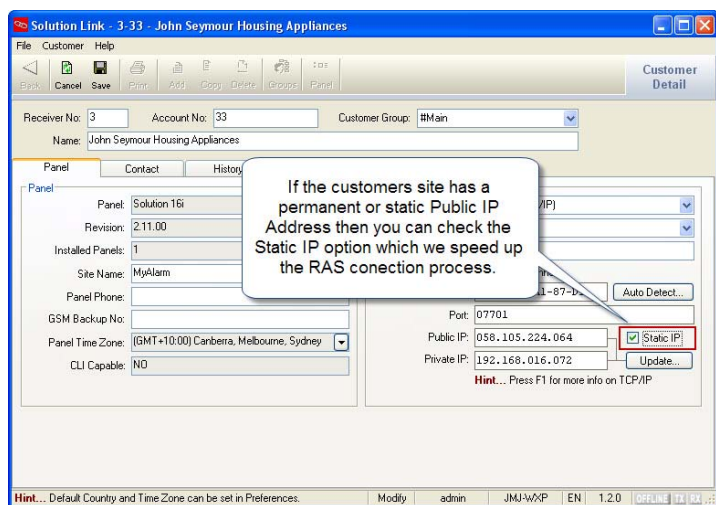


Figure 17: Static Public IP Address Option

You will also need to make sure that the DHCP server is configured to reserve or lock down the IP Address which was assigned to the CM750B module when it was first connected to the LAN. See the Module IP Address location which is MENU 6-6-0 on the Solution 16i panel.



If the port forwarding is not correctly setup then you will not be able to connect to the panel remotely via IP. Dial up RAS connections are not effected and can still be used.

UDP Protocol Options

Before connecting to a remote panel the installer needs to decide between one of two internet protocols UDP or TCP. UDP (User Datagram Protocol) is a connectionless protocol.

The packets of exchanged data are smaller and with less overhead however the IP network does not guarantee receipt. Although UDP is connectionless, the RAS software application confirms delivery of each packet so although the layer does not guarantee delivery, the application does so there should be no concerns using UDP as a transport method. TCP (Transmission Control Protocol) is one of the main protocols in IP networks. TCP establishes a full connection to exchange streams of data between two points and the network guarantees delivery.

Which protocol should you use? If you are able to allocate and open more than a single port at an installation or if you intend to remote connect to sites using multiple PCs that are part of an office network or behind a firewall then you would best be served selecting TCP as your preferred connection method. It will almost eliminate any issues you may have navigating packets between a remote site and your PC.

If however you are at a site that will only allow you to open a single port and your reporting format is TCP based like the CSV IP format, then you have no choice but to select UDP for RAS connections. UDP transactions are faster but depending on your network you may need to marshal packets (port forward) to the PC running Solutionlink RAS software. By default the CM750B is configured for Remote Access using TCP/IP protocol.

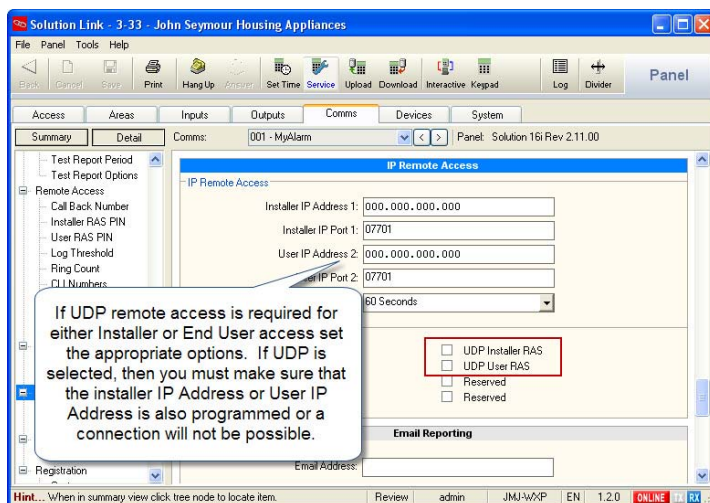


Figure 18: Configuring UDP Remote Connections

Summary of IP Program Locations for the Solution 16i Panel

Solution 16i Programming Locations		
Location	Description	Default Value
MENU 5-4-0	TX Format 1	Contact ID
MENU 5-4-1	TX Format 2	Contact ID
MENU 5-6-0	Base Station IP Address (Dest 1) Base Station IP Address (Dest 2)	000.000.000.000 000.000.000.000
MENU 5-6-1	Base Station Port Number (Dest 1) Base Station Port Number (Dest 2)	07700 07700
MENU 5-6-2	Poll Rate (Dest 1) Poll Rate (Dest 2)	0060 Seconds 0060 Seconds
MENU 5-6-3	Acknowledge Wait Time (Dest 1) Acknowledge Wait Time (Dest 2)	010 Seconds 010 Seconds
MENU 5-6-4	IP Format (Dest 1) IP Format (Dest 2)	Conettix NNC Conettix NNC
MENU 5-6-5	Retry Count (Dest 1) Retry Count (Dest 2)	03 03
MENU 5-6-6	IP RAS Address (Installer) IP RAS Address (User)	000.000.000.000 000.000.000.000
MENU 5-6-7	IP RAS Port (Installer) IP RAS Port (User)	07701 07701
MENU 5-6-8	IP RAS Options	Various
MENU 5-6-9	IP RAS Lockout Time	60 Seconds
MENU 6-6-0	Module IP Address	000.000.000.000
MENU 6-6-1	Subnet Mask	000.000.000.000
MENU 6-6-2	Default Gateway	000.000.000.000
MENU 6-6-3	Module MAC Address	00 00 00 00 00 00
MENU 6-6-4	IP Encryption Key (32 digits)	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
MENU 6-6-5	IPRS Address (Do Not Change)	202.129.083.058
MENU 6-6-6	IPRS Port (Do Not Change)	07703
MENU 6-6-7	Conettix NNC	00000000
MENU 6-6-8	Reserved	
MENU 6-6-9	Ethernet Module Options	Various

Table 1: Solution 16i Program Locations

Module Indicators and Feedback

The CM750B module includes 7 seven LED indicators which provide instant feedback during installation and commissioning of the module. Additional feedback is provided through the keypad and via the interactive option in Solution-link.

Please refer to Table 1 and Table 2 for the Indicator meanings.

LED Name	Colour	Meaning
STATUS	GREEN	ON = Trouble No Communication between Panel and Module. Slow Flash = Normal Operation Fast Flash = No IP Address or IP Address Conflict - See System Troubles
RX	GREEN	Flashes every time the IP module receives an IP packet.
TX	RED	Flashes every time the control panel sends an IP packet.
POLL	GREEN	Flashes every time the control panel sends a poll packet.
REPORT	RED	Flashes every time the control panel sends an alarm report.

Table 2: PCB Indicator Meanings

Left LED	Right LED	Meaning
OFF	OFF	No Link
OFF	Solid Amber	100BASE-T Half Duplex Link
OFF	Blinking Amber	100BASE-T Half Duplex Activity
OFF	Solid Green	100BASE-T Full Duplex Link
OFF	Blinking Green	100BASE-T Half Duplex Link
Solid Amber	OFF	10BASE-T Half Duplex Link
Blinking Amber	OFF	10BASE-T Half Duplex Activity
Solid Green	OFF	10BASE-T Full Duplex Link
Blinking Green	OFF	10BASE-T Half Duplex Link

Table 3: RJ45 Socket Indicator Meanings

Customer Details

Use this section to record the customer details for this CM750B module. This information may also be required when seeking technical support.

Customer Name:															
Module Serial No:															
MAC Address:															
IP Address Public:															
IP Address Private:															
IP RAS Port(Installer):															
	Public IP Is Static				☐	Private IP Address Fixed Or Reserved				☐	Port Fowarding Setup For IP RAS				☐
Default Gateway:															
RAS Security PIN:															
IP Poll Rate:					Seconds										
Ack Wait Time:				Seconds											
Reporting Format:	Conettix			☐	Conettix NNC			☐	IPCSV					☐	
Conettix NNC:															
Encryption Key:															

Specifications

Part Number: CM750B - IP Interface Module

Compatible With: Solution 16i and Solution E Series Panels

Network Interface: RJ45 Ethernet 10BASE-T or 100BASE-T (Auto Sensing)

Encryption: 128 bit AES

The CM750B mounts to the control panel PWA via the expansion port header and the 3 plastic standoffs provided. The HW750 Riser Kit, also included, should be used when the CM750B and CM101B Voice Module are installed on the same control panel.

Operating Environment: 0° to 55°C RH 5 to 85% at 30°C non-condensing.

Warranty: 3 years from date of manufacture (return to base)

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