



CMAPSi

Getting Started

Issue No. 2.1
February 2006

CMAPSi

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Revision History

Issue	Date	Notes
1.0	Sep 2002	Initial Issue
2.0	Sep 2002	Amendments and enhancements
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Preface

This document describes the pre-installation requirements for the Element Management System (EMS) software, the installation of required system software and the installation and configuration of EMS software.

The version of EMS supplied on this release may also require certain elements of the system firmware to be updated for compatibility. Details of the firmware are given in the release notes and information on updating the firmware is included in this installation guide.

Intended Audience

This manual is intended for installation and site engineers. It is assumed that the users of this document are familiar with general Microsoft Windows and PC operations and terminology.

Associated Documents

ATC Technical Description

Element Management System (EMS) User Manual

Maintenance Manual

Operator Manual

Conventions Used in this Manual

A text box as shown below indicates important points that should be noted:

NOTE:

Warnings are highlighted in a text box as shown below:



Important





1 Introduction

1.1 What is this document for?

This document provides an introduction to the Configuration and Master Assignment Programming System (CMAPSi). It contains a tutorial that will enable you to:

- Create or open a Map
- Name Ports
- Assign these ports as either Panels or Audio Ports
- Select a Panel for key assignment
- Make the necessary key assignments
- Change keys from 'Talk' to 'Listen'
- Change keys from 'Non-latched' to 'Latched'.

Please Note!

This tutorial does not replace the Help information. If in doubt, refer to CMAPSi Help, using the F1 key when in CMAPSi.

1.2 Who should use it?

Anyone who has to operate a Drake Intercom System equipped with CMAPSi. CMAPSi works with Drake 3000, 4000 Series 1 and 4000 Series 2 systems.

1.3 What does it contain?

The document contains the following sections:

- Introduction
- Software menu structure
- Elements of a Map
- Managing Maps
- Reference material

1.4 What does it assume you know?

You should have a working knowledge of the Windows Operating System and Intercom Systems.

1.5 Terminology

Many of the terms used in connection with CMAPSi are explained in the Standard Glossary on the Integra CDROM (part no. STA0389) and the CMAPSi CDROM (part no. STA0533).

1.6 Drake Proprietary Software

The CMAPSi package contains two elements - CMAPS and ADM (Assignments, Diagnostics and Monitoring).

- CMAPS is an *offline* package. It can be used on a standalone PC.
- ADM is an *online* package. The PC on which it is used must be connected to a matrix.

This document only looks at the CMAPS part of CMAPSi.

1.7 What is a map?

Each port on a Drake matrix can provide audio in, audio out, data in and data out. This document describes configuring the matrix prior to use. There are several elements of system configuration that must be set up before the system can be used. This initial set up forms a 'baseline' for the system state and is called a 'map'. You configure the system (by setting up a 'map') using the Drake configuration software, CMAPS, running under Microsoft Windows. You can set up the map off-line, ie, you do not need to be connected to the matrix. Once the map is configured, the PC can be plugged into the matrix and the map downloaded (this connection can either be via serial link or Ethernet connection).

1.8 Brief description of CMAPSi

The CMAPSi software is used to configure the Drake Intercom System. A map is required for each system and allows the following to be implemented:

- Assignment of names and mnemonics to ports, groups, IFBs and conferences
- Setting of the initial or permanent status of each, non-normally open (default) crosspoint within a matrix
- Assignment of functions and assignment of operation modes to individual keys on control panels
- Assignment of function limits and default settings to control panels
- Configuration of external control (General Purpose Interface) input and output actions to either panel keys or Matrix crosspoints
- Production and storage of maps. Each map is stored in its own directory on disk or on a floppy disk (one map per disk)
- Provide audio trunk line assignments for networked systems.
- Set up VeNiX ISDN/X.21 operations
- Set up FreeSpeak® wireless intercom operations.
- Set up Hi-Que digital trunk lines.
- Print panel labels and print the contents of the map.

This document will only deal with the introductory items named in section 1.1.

1.9 System Requirements

This document refers to operations in CMAPSi version 6.0 and 7.0. Apart from the PassCode information (for 4000 series II matrices) this information is also valid for CMAPSi version 5.0.

CMAPSi will run on Windows 95, 98, Me, NT4, 2000 and XP. Windows NT4, 2000 and XP require the CMAPSi-NT activation code for additional download support.

1.10 Other reference documentation

Please refer to the following for guidance:

- *CMAPSi Help*. This is an On-line guide, but a printable PDF version is available.
- *CMAPSi Installation guide*
- *PiCo Product Guide*
- *4000 Series I and II User Guides*.

1.11 Installation or update of system PassCodes

Once you have installed CMAPSi (as detailed in the *CMAPSi Installation Guide*, found on the CMAPSi CDROM) you will need to enter the PassCodes, supplied with the system, to enable you to use the system to its fullest extent. The PassCodes will have been supplied either on the inside of the front door of the system or else in the system documentation.

To enter or update the PassCodes, proceed as follows:

- Launch CMAPSi
- Enter the default password, `user`, on the opening 'Enter Password' screen.
- Select **Map > Show Current PassCodes**.
- The 'System Pass Codes' screen is displayed:

System	Passcode 1	Passcode 2	Passcode 3	Passcode 4	Action
System1	0000	-- 0000	-- 0000	-- 0000	Clear
System2	0000	-- 0000	-- 0000	-- 0000	Clear
System3	0000	-- 0000	-- 0000	-- 0000	Clear
System4	0000	-- 0000	-- 0000	-- 0000	Clear
System5	0000	-- 0000	-- 0000	-- 0000	Clear
System6	0000	-- 0000	-- 0000	-- 0000	Clear
System7	0000	-- 0000	-- 0000	-- 0000	Clear
System8	0000	-- 0000	-- 0000	-- 0000	Clear

System Range
☒ Systems 1-8 ☐ Systems 9-15

Figure 1-1 System Pass Codes

- Enter the PassCodes you were given for each system.

1.11.1 PiCo PassCode

The PiCo PassCode, which will be found in the System Documentation, must be entered into the PiCo to enable the PiCo to function. It must also be entered into CMAPSi to enable the PiCo matrix to have maps downloaded to it.



Enter the PassCode into the PiCo in accordance with the instructions given in the PiCo User Guide and then enter the PassCode into CMAPSi in accordance with Section 1.11.1.

2 Software menu structure

This section gives a brief introduction to the software menu structure. Full details are given in the *CMAPSi User Guide* (part no. STA0538), to which reference should be made. For Help, press key F1 at any time.

2.1 Top-level menus

The following screen shows the top-level menus.



Figure 2-1 CMAPSi Menu Bar

The entries on the Menu Bar are described in the following sections.

2.1.1 Map

The **Map** menu allows you to set up and use Maps that define a system's configuration.

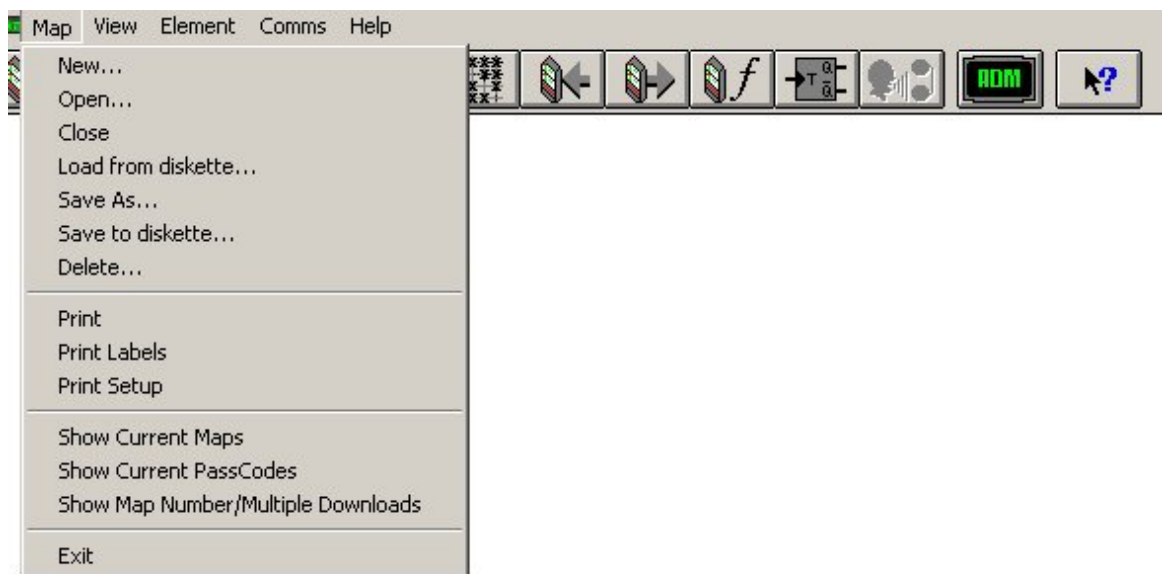


Figure 2-2 Map Menu

2.1.2 View

The **View** menu allows you to show or hide the Toolbar, the Status bar and switch between ADM and CMAPSi.



Figure 2-3 View menu

2.1.3 Element

The **Element** menu allows you to set up and program the elements of an intercom system.

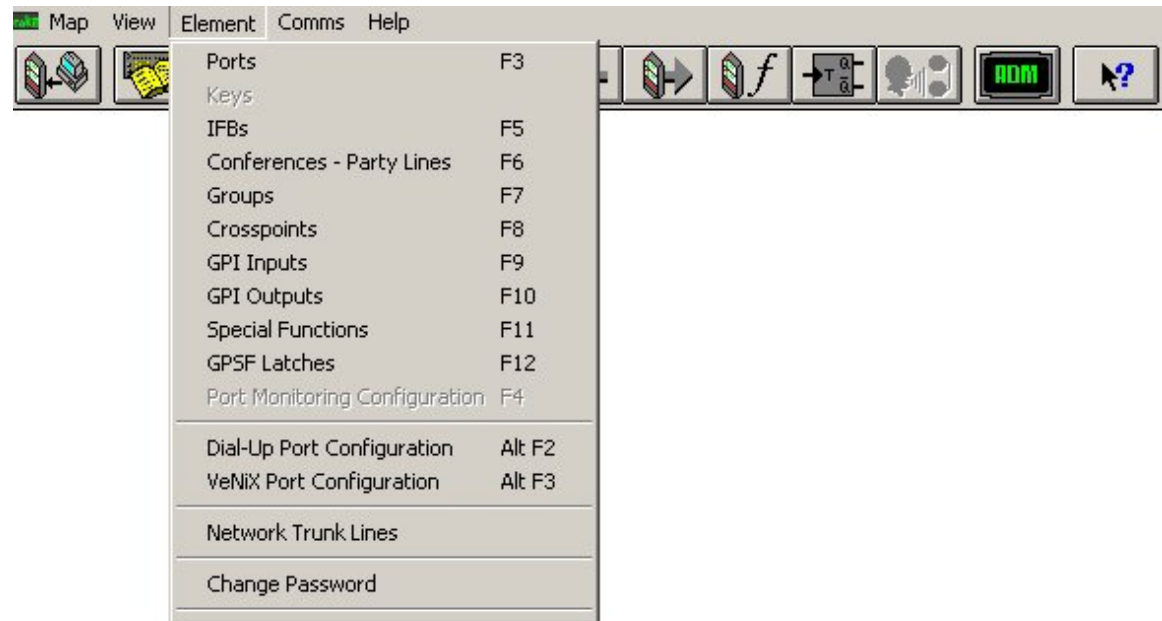


Figure 2-4 Element Menu

2.1.4 Comms

The **Comms** menu enables Map and Firmware downloads, together with various communications protocols and facilities.

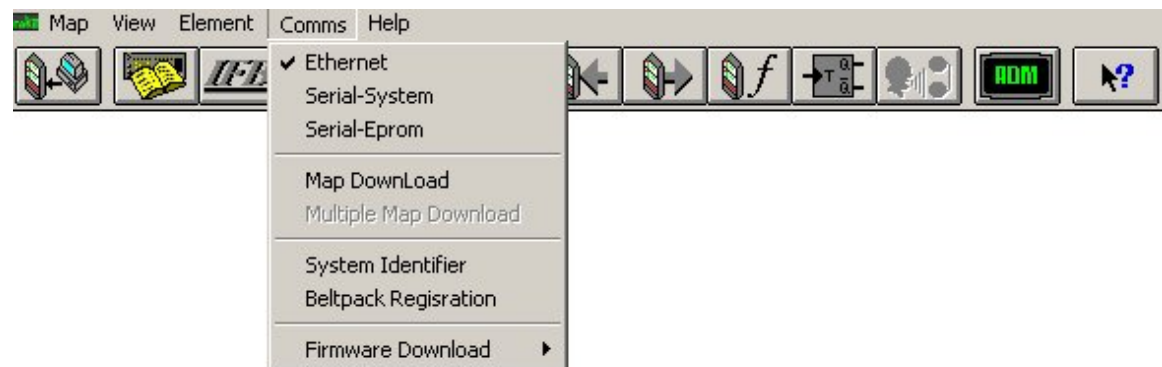


Figure 2-5 Comms Menu

2.2 Main groups of buttons

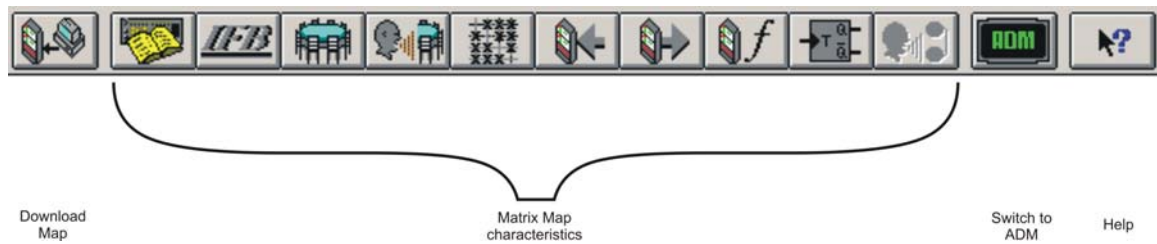


Figure 2-6 Main Buttons

2.2.1 Download map to matrix

Click this button to download a completed Map to the matrix.

2.2.2 Matrix map characteristics

Use these buttons to access the different configuration areas for the map.

2.2.3 Switch to ADM

Use this button to switch between CMAPSi and ADM.

2.2.4 Help

Use this button to access the CMAPSi help information.



3 Elements of a Map

3.1 Physical port set-up

Each (physical) port needs to know the type of equipment that will be plugged into it. This could be one of the many different kinds of Drake control panel, a pure audio connection or one of the several different types of remote interfacing equipment supported by the Drake matrix. In addition you can name each port – this name is then used to identify the port on panels and other connected equipment.

3.2 Panel key assignments

A control panel is basically like a telephone – it has a microphone for the user to talk into, a speaker so that the user can hear incoming audio and a series of keys letting the user control who they are talking / listening to. These keys can be considered like the ‘speed dial’ keys on a conventional telephone. You can set up each key so that when it is pressed it causes an audio route to be made. For example, you can assign a key on the panel attached to port 600 to talk to port 602. In this way, when the key on the panel is pressed, the crosspoint from port 600 to 602 is made. When the key is released again, the crosspoint is unmade.

3.3 Groups

A group is a gathering of physical ports that is then assigned its own number. Groups are set up off line.

3.4 Conferences

A conference is an entity that physical ports can join and leave in real time – rather like a telephone conference. All that needs to be specified off line is the number of conferences in existence.

3.5 Default crosspoint states

You can specify the baseline (default) state of individual crosspoints using CMAPS.

3.6 What are ‘actions’ ?

You must set up a system ‘baseline’ configuration before starting to use the system properly. It is important to understand how changes to the system, made as the system is in use, affect this ‘baseline’.

In a conventional representation of a matrix, horizontal lines represent inputs (from the left) and vertical lines represent outputs (downwards). An intersection between an input and an output is called a crosspoint (sometimes abbreviated to XPT).

Probably the easiest way to consider this problem is to examine a single crosspoint. Let's consider the crosspoint from port 600 to port 602. If there are two control panels connected to the matrix – one to port 600 and 602, each with separate keys to talk and listen to the other, then either panel can affect the crosspoint.

This key is configured to talk to port 601.
When it is pressed, it will affect crosspoint 600
-> 601.

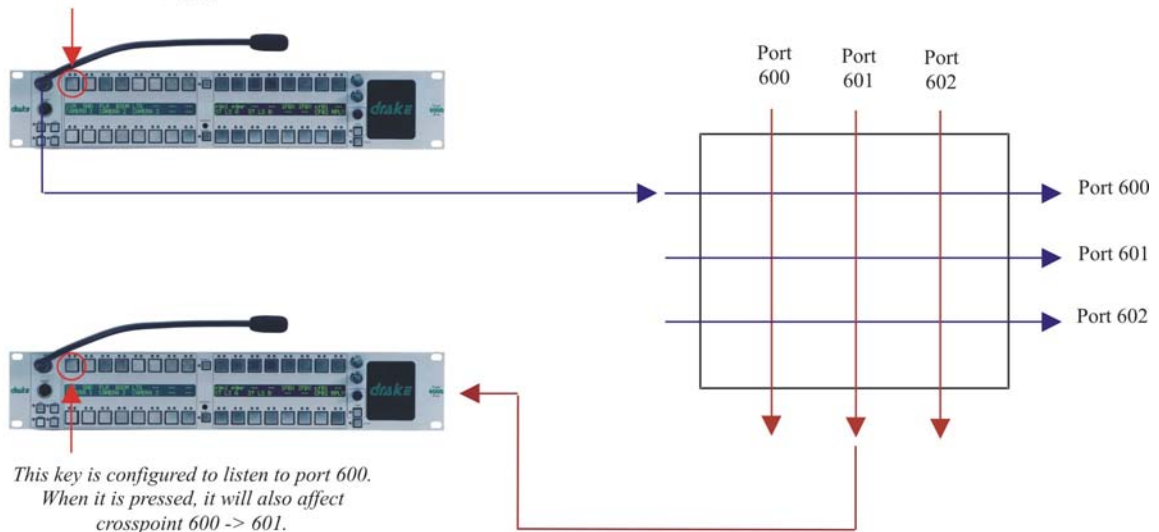


Figure 3-1 System Action

When key 1 on panel 600 (the panel connected to port 600) is pressed, crosspoint 600 → 601 should be made and then unmade when the key is released.

So, why not use the baseline configuration as a starting point and then modify it as needed to represent the current state of the system (as keys on panels are pressed, etc.).

Consider the following sequence of events based on the above diagram (only the crosspoint grid is shown in each case below).

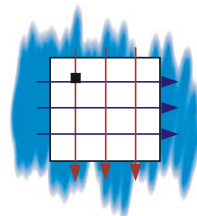


Figure 3-2 Crosspoints 1

1.) Key 1 on port 600 is pressed (talk to 601).

In this example, the crosspoint would be made.

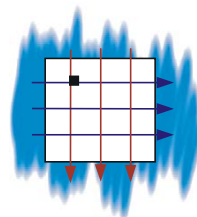


Figure 3-3 Crosspoints 2

2.) Key 1 on port 601 is pressed (listen to 600).

In this example, the crosspoint would be made again, although as it was already made this would have no effect.

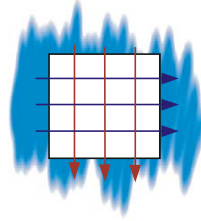


Figure 3-4 Crosspoints 3

3.) Key 1 on port 600 is released. In this example, the crosspoint would now be removed. We now have a problem, as panel 601 still has its 'listen to port 600' key pressed.

Modifying the baseline in this way is liable to cause problems. In fact, the baseline (map) is stored in the state in which it was downloaded. Each time an event occurs which requires something in the system to change, the change requested by the event is stored. The change requests are known as 'actions' (they are asking the matrix to perform an action). Actions are said to be 'stacking' – **there can be several actions in existence at once**, all relating to a single system element (for instance, a crosspoint). **The actual effect on the system is the net result of all actions relating to that system element.**

In summary, then, an 'action' is a request to the matrix to change the state of something (commonly, although not exclusively, a crosspoint). When we talk about the 'stacking nature of actions', we mean the fact that each action exists and is considered in its own right. The net effect on a given element of the matrix is the sum of all actions operating on that element at any given time.



4 Managing Maps

4.1 Creating or opening a Map

Having logged on to the system and entered the various PassCodes, you will need either to create a new map or open an existing one.

If you are looking at a greyed-out screen (with greyed-out buttons and no map name in the title bar) you need to create a new map (using **Map > New**) or load the initial map that was supplied on disk with the system (**Map > Load from diskette**). When the map is loaded, the screen turns white and the buttons are enabled. PiCo standard maps can be found on the Integra CD ROM.

If you are looking at a white screen, with enabled menu buttons, a map has been loaded. The name of the map is given in the title bar at the top of the screen.

This tutorial assumes that the map has to be configured, so that it can be downloaded into a system.

4.2 Naming and assigning panels to ports

This part of the tutorial will show you how to name operator control panels and assign these panels to communications ports in the system matrix.

4.2.1 The Panel Ports table



Access the 'Panel Ports' table by selecting **Element > Ports** or clicking the 'Yellow Pages' button on the button bar.

The example shown below shows a typical starting position:

Panel Ports

Port No.	Dial Up	Type	H/W ID	Alpha	Description	Sys ID	Input Level (dB)	Output Level (dB)	VOX Level (dB)
600	4224	600	DIR	DIRECTOR		0	0		
601	4215	601	PA	STUDIO PA		0	0		
602	4224	602	SND	SOUND		0	0		
603	4215	603	VIS	VISION		0	0		
604	4215	604	LTG	LIGHTING		0	0		
605	4215	605	GRPH	GRAPHIX		0	0		
606	4215	606	MCR	MCR		0	0		
607	4215	607	TECH	TECHNICIAN		0	0		
608	4224	608	608	608		0	0		
609	4224	609	609	609		0	0		
610	4224	610	610	610		0	0		
611	4224	611	611	611		0	0		
612	4224	612	612	612		0	0		
613	4224	613	613	613		0	0		
614	4224	614	614	614		0	0		
615	4224	615	615	615		0	0		

No Panel Selected

Load Template

Save Template

Delete Entry

Exit

Cancel

Sort by

None

Port No.

H/W ID

Alpha

Type

Sys ID

Show Key Labels

External Level Set

Note: any changes to Input or Output levels for a particular port will result in the corresponding ADM level settings for that port being overwritten upon the next Map download

Figure 4-1 Panel Ports Table

The 'Panel Ports' table lists all the real and virtual ports in the system. The table is sent out to all the panels on the system as well as across the network if it exists. The real panel ports start at 600. This is to save space for all the virtual ports you might use for Conferences, Groups of ports and IFBs, (see later).

The table is set out like a spreadsheet with ports down and names and attributes across. The convention is that fields having a green background can be edited, but those having a white background cannot.

4.2.2 Naming the ports

The first task is to give each panel and audio port a meaningful name. Double-click the entry in the Alpha column for any port number and change it to any alphanumeric 4-character code. For example, for Studio 1 Director you could use DIR1. For Camera 1, CAM1; for Camera 10, CAMX and so on. This 4-character code is sent to the display keys on other panels that have a key to talk to this port. The 15-character description is used in two ways; to help you describe the port in more detail and for the displays on the LCD Key panels (like the 4222, which can display up to 10 characters). Double clicking the Description field will allow you to change the description.

Panel Ports

Port No.	Dial Up	Type	H/W ID	Alpha	Description	Sys ID	Input Level (dB)	Output Level (dB)	VOX Level (dB)
100		GRP		CAMS	CAMS				
101		GRP		MTNC	MAINTANCE				
102		GRP		REM	REMOTES				
400		IFB		IFB1	IFB 1				
401		IFB		IFB2	IFB 2				
402		IFB		IFB3	IFB 3				
501		CONF		PTB	PTB				
600		4224	600	DIR	DIRECTOR		0	0	
601		4215	601	PA	STUDIO PA		0	0	
602		4224	602	SND	SOUND		0	0	
603		4215	603	VIS	VISION		0	0	
604		4215	604	LTG	LIGHTING		0	0	
605		4215	605	GRPH	GRAPHIX		0	0	
606		4215	606	MCR	MCR		0	0	
607		4215	607	TECH	TECHNICIAN		0	0	
608		4224	608	608	608		0	0	
609		4224	609	609	609		0	0	
610		4224	610	610	610		0	0	
611		4224	611	611	611		0	0	
612		4224	612	612	612		0	0	
613		4224	613	613	613		0	0	
614		4224	614	614	614		0	0	
615		4224	615	615	615		0	0	

No Panel Selected

Load Template

Save Template

Delete Entry

Exit

Cancel

Sort by

☒ None
 ☐ Port No.
 ☐ H/W ID
 ☐ Alpha
 ☐ Type
 ☐ Sys ID

Show Key Labels

External Level Set

Note: any changes to Input or Output levels for a particular port will result in the corresponding ADM level settings for that port being overwritten upon the next Map download

Figure 4-2 Naming Ports

Some panels have paper key labels using the Drake QuickFix™ ident strips. Two rows of eight characters can be typed for each port. This can be automatically printed out through CMAPSi. Edit the two cells available when you click 'Show Key Labels'.

4.2.3 Assigning panels to ports

If you double-click the entry under the Type column, you can select from a list of available Panels and Audio options. In this case, Port 600 has been named as a 4224 32-key intelligent panel. If you then click the 'Attributes' button, you can set specific attributes (properties) for the panel.

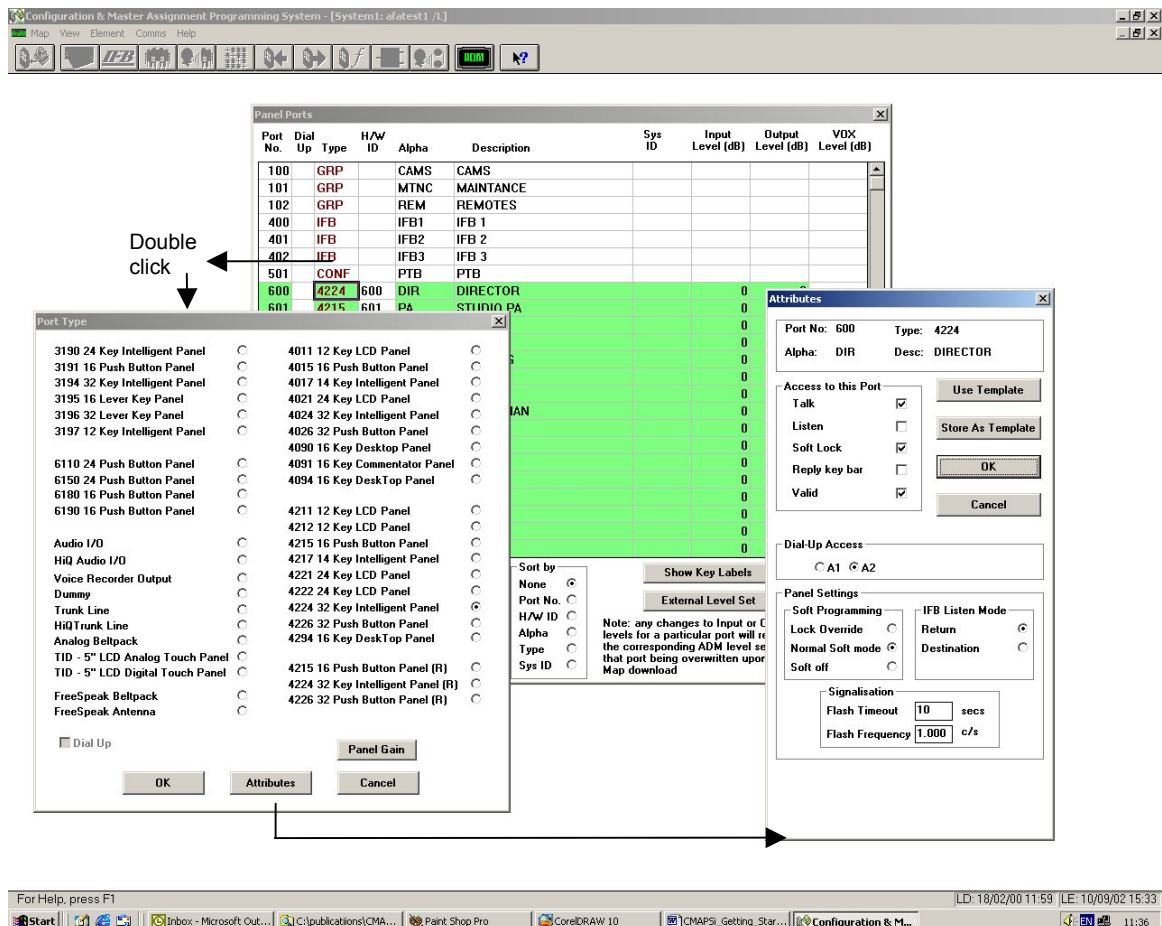


Figure 4-3 Assigning Panels to Ports

Selecting the correct panel type will firstly show you the correct layout of keys for that panel when configuring keys and secondly give you the correct set of attributes to change, for features such as soft operation, Mic gains, etc.

Ports can be selected from various types, which include:

- Panel type eg, 4224, 6190, 3194
- A I/O Audio Input and Output
- Trunk A 4-wire audio line used to connect to other matrices
- Dummy Can be used for:
 - a) a control label for a key which has a GPI under it (such as RED for red light on) or
 - b) specific macro function like Call Reject, CUT or DIAL.

Click 'OK' in the Port Type window to return to the Panel Ports window. It is possible to click the Attributes button to set attributes (properties) for the port but setting of attributes is not covered in this introductory document.

4.2.4 Panel Gains

This facility in CMAPSi replaces the manually operated pots on earlier panels.

Use the "View or Edit Port Data" button on the CMAPSi toolbar (or press F3) to open the Panel Ports dialog and double click on the required row in the Port Type column to open the Port Type dialog as shown below:

Port Type

3190 24 Key Intelligent Panel

3191 16 Push Button Panel

3194 32 Key Intelligent Panel

3195 16 Lever Key Panel

3196 32 Lever Key Panel

3197 12 Key Intelligent Panel

6110 24 Push Button Panel

6150 24 Push Button Panel

6180 16 Push Button Panel

6190 16 Push Button Panel

Audio I/O

Voice Recorder Output

Dummy

Trunk Line

TID - 5" LCD Analog Touch Panel

TID - 5" LCD Digital Touch Panel

☐ Dial Up

4011 12 Key LCD Panel

4015 16 Push Button Panel

4017 14 Key Intelligent Panel

4021 24 Key LCD Panel

4024 32 Key Intelligent Panel

4026 32 Push Button Panel

4090 16 Key Desktop Panel

4091 16 Key Commentator Panel

4094 16 Key DeskTop Panel

4211 12 Key LCD Panel

4212 12 Key LCD Panel

4215 16 Push Button Panel

4217 14 Key Intelligent Panel

4221 24 Key LCD Panel

4222 24 Key LCD Panel

4224 32 Key Intelligent Panel

4226 32 Push Button Panel

4294 16 Key DeskTop Panel

Panel Gain

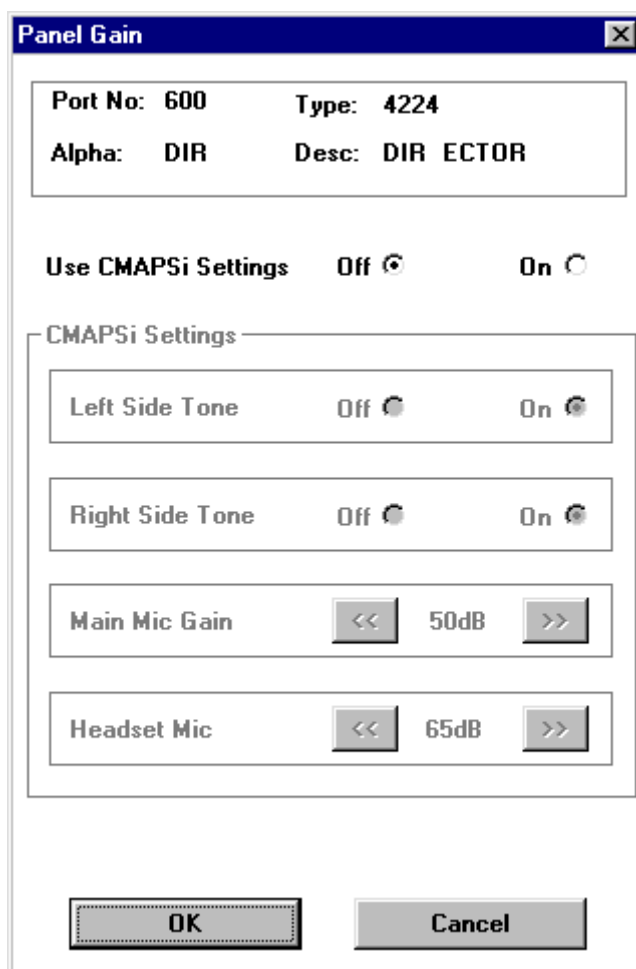
OK

Attributes

Cancel

Figure 4-4 Port Type

In this dialog, click Panel Gains to open the Panel Gain dialog as shown below:



The dialog box is titled "Panel Gain". It contains the following fields and controls:

- Port No:** 600
- Type:** 4224
- Alpha:** DIR
- Desc:** DIR ECTOR
- Use CMAPSi Settings:** Off ☒ On ☐
- CMAPSi Settings:**
 - Left Side Tone:** Off ☐ On ☒
 - Right Side Tone:** Off ☐ On ☒
 - Main Mic Gain:** << 50dB >>
 - Headset Mic:** << 65dB >>
- Buttons:** OK, Cancel

Figure 4-5 Panel Gain Setup

To enable the options in the CMAPSi settings group, click the On radio button against Use CMAPSi Settings. Then select whether to have Left and Right Side Tone On or Off.

The Main Mic Gain can be set in the range 40dB to 80dB with 50dB as the default.

The Headset Mic Gain can be set in the range 40dB to 80dB with 65dB as the default.

If you click OK with Use CMAPSi Settings set to On, the system enables and remembers the settings. If you click OK with Use CMAPSi Settings set to Off, both gain values are reset to the defaults. It is when you press OK that the settings are saved.

Default Side Tone is On.

NOTE: It should be remembered that, for LCD Panels only, these gain settings can be set locally.

4.3 Making key assignments

4.3.1 The Keys dialog

When you left-click the mouse on any panel type row, the button below will say 'Assign Keys for Panel xxx'. Click this button to access the following screen:

Panel Ports

Port No.	Dial Up	Type	H/W ID	Alpha	Description	Sys ID	Input Level (dB)	Output Level (dB)	VOX Level (dB)
100		GRP		CAMS	CAMS				
101		GRP		MTNC	MAINTANCE				
102		GRP		REM	REMOTES				
400		IFB		IFB1	IFB 1				
401		IFB		IFB2	IFB 2				
402		IFB		IFB3	IFB 3				
501		CONF		PTB	PTB				
600	4224	600	DIR	DIRECTOR					
601	4215	601	PA	STUDIO P					
602	4224	602	SND	SOUND					
603	4215	603	VIS	VISION					
604	4215	604	LTG	LIGHTING					
605	4215	605	GRPH	GRAPHIX					
606	4215	606	MCR	MCR					
607	4215	607	TECH	TECHNICAL					
608	4224	608	608	608					
609	4224	609	609	609					
610	4224	610	610	610					
611	4224	611	611	611					
612	4224	612	612	612					
613	4224	613	613	613					
614	4224	614	614	614					
615	4224	615	615	615					

Keys

No.	Route Mode	Route Alpha	Control Mode	Control Alpha	Key Action	Soft O/W
1	T	PTB	E	PTB	L	
2	T	SND			LNL	
3	T	VIS			LNL	
4	T	LTG			LNL	
5	T	GRPH			LNL	
6	T	MCR			LNL	
7	T	TECH			LNL	
8					LNL	
9	L	cams			LNL	
10	L	rem1			LNL	
11	L	rem2			LNL	
12	L	rem3			LNL	
13	L	ext1			LNL	
14	L	ext2			LNL	
15	L	ext3			LNL	
16					LNL	
17	T	PTC	E	PTC	L	
18					LNL	
19					LNL	
20					LNL	
21					LNL	
22					LNL	
23					LNL	
24					LNL	

Panel

Panel Port: 600
Alpha: DIR
Type: 4224

Main: ☒
Shift Page: ☐
Extension Panel 1: ☐
Control Inputs: ☐

Buttons: Unassign Key, Unassign GPI, Initialise Key Actions, Load Template, Save Template, OK, Cancel

Figure 4-6 Keys Dialogue

This screen is for the panel type 4024 or 4224.

The green table shows you the assignments and parameters for the keys listed under 'Port No.' on the 'Panel Ports' screen. The number of rows in the green table will be correct for the type of panel selected. Remember that the last key is always used as the REPLY key. It should not be re-programmed.

The table rows are split into two sections, Route and Control. The Route is the audio destination or source port crosspoint that the key enables. The Control is a key-based GPI that is also activated if required.

4.3.2 8 Character Keys

Use of "8-character keys" is a means of utilising the 4-character displays of two adjacent keys on a non-LCD keypad to provide an 8-character readout. It uses two adjacent keys, the left (which must be odd-numbered) and the key immediately to its right.

The even-numbered key whose display is "borrowed" must be one where a display is not essential such as a CUT key or Listen key. The "borrowed" key is still fully programmable.

To set this up in CMAPSi:

1. Call up Panel Ports
2. Move the highlight on to the required panel

- Press the "Assign Keys for Panel nnnn" key and this calls up the Panel Keys dialog as shown below

Keys

No.	Route Mode	Alpha	Control Mode	Alpha	Key Action	Soft O/W
1	T	DIR ECT			LNL	
2	T	CUT			LNL	
3	T	SND			LNL	
4	T	VIS			LNL	
5	T	EDIT			LNL	
6	T	SUPV			LNL	
7					LNL	
8					LNL	
9	TL	CAM1			LNL	
10	TL	CAM2			LNL	
11	TL	EXT1			LNL	
12	TL	EXT2			LNL	
13	TL	FLR			LNL	
14	TL	CAMS			LNL	
15	TL	CNF1			LNL	
16	TL	IFB1			LNL	
17					LNL	
18					LNL	
19					LNL	
20					LNL	
21					LNL	
22					LNL	
23					LNL	
24					LNL	
25	TL	TEL1			LNL	

Panel Configuration:

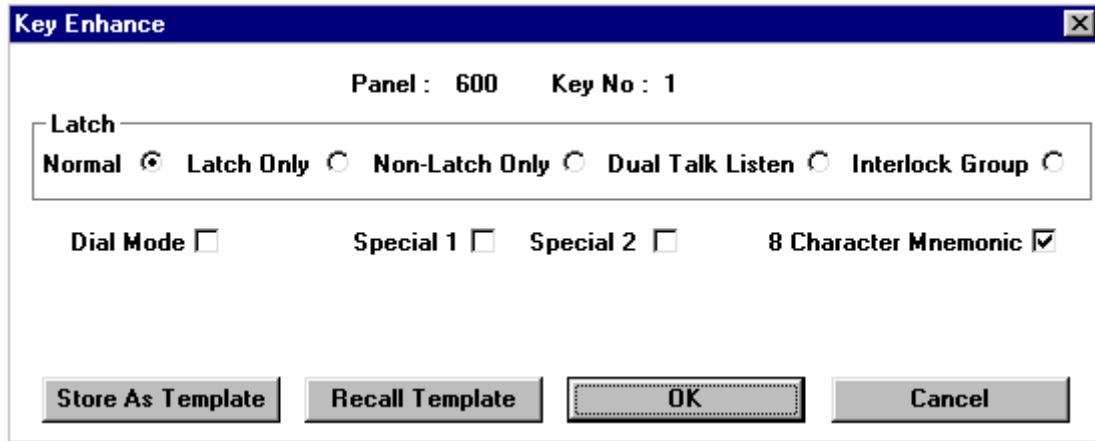
Panel Port: 600
Alpha: DIR
Type: 4224

Main: ☒
Shift Page: ☐
Extension Panel 1: ☐
Control Inputs: ☐

Buttons: Unassign Key, Unassign GPI, Initialise Key Actions, Load Template, Save Template, OK, Cancel

Figure 4-7 8 Character Keys Dialogue

- On this dialog, double click in the Key Action column on the key number (which must be an odd number) for which 8-character display is required. This calls up one version of the Key Enhance dialog (the other refers to interlock groups) and is shown below:



The image shows a 'Key Enhance' dialog box with a title bar containing a close button. Inside the dialog, it displays 'Panel : 600' and 'Key No : 1'. Below this is a 'Latch' section with five radio button options: 'Normal' (selected), 'Latch Only', 'Non-Latch Only', 'Dual Talk Listen', and 'Interlock Group'. Underneath the radio buttons are four checkboxes: 'Dial Mode', 'Special 1', 'Special 2', and '8 Character Mnemonic' (which is checked). At the bottom of the dialog are four buttons: 'Store As Template', 'Recall Template', 'OK' (highlighted with a dashed border), and 'Cancel'.

Figure 4-8 8 Character Mnemonic Setup

5. Check the 8 Character Mnemonic box and then OK. The 4-character displays for the chosen key and the next key above will now display the first eight characters that are typed into the Alpha column on the Keys dialog.

4.3.3 Dual Talk/Listen (Lever Key Mimic)

Dual Talk/Listen is one of the standard set of five audio actions - also known as DAK Attributes (Talk, Listen, Talk/Listen, Dual Talk/Listen and Talk/Forced Listen) which can be made available on a DAK. It utilises both the latched and non-latching action of a DAK but is available only for panels and 4-wire destinations.

When a DAK has been set up (in CMAPSi) as a DTL, a momentary press of less than 0.5 second will latch the key to listen. This condition indicates as a steady green LED. Pressing and holding for more than 0.5 second will enable the momentary talk function. The term "Dual" indicates that the same key is used for both talk and listen functions.

To set this up in CMAPSi, call up Panel Ports and move the highlight on to the required panel. Press the Assign Keys for Panel nnnn key and this calls up the Panel Keys dialog as shown below:

DIR

ECT

SND

VIS

EDIT

SUPV

CAM1

CAM2

EXT1

EXT2

FLR

CAMS

CNF1

IFB1

TEL1

ISM1

DIAL

No.	Route Mode	Alpha	Control Mode	Alpha	Key Action	Soft O/W
1	T	DIR ECT			LNL	
2	T	CUT			LNL	
3	T	SND			LNL	
4	T	VIS			LNL	
5	T	EDIT			LNL	
6	T	SUPV			LNL	
7					LNL	
8					LNL	
9	TL	CAM1			LNL	
10	TL	CAM2			LNL	
11	TL	EXT1			LNL	
12	TL	EXT2			LNL	
13	TL	FLR			LNL	
14	TL	CAMS			LNL	
15	TL	CNF1			LNL	
16	TL	IFB1			LNL	
17					LNL	
18					LNL	
19					LNL	
20					LNL	
21					LNL	
22					LNL	
23					LNL	
24					LNL	
25	TL	TEL1			LNL	

Panel

Port 600

Alpha DIR

Type 4224

Main

☒

Shift Page

☐

Extension Panel 1

☐

Control Inputs

☐

Unassign Key

Unassign GPI

Initialise Key Actions

Load Template

Save Template

OK

Cancel

Figure 4-9 Talk/Listen Dialogue

Double click on the appropriate row in the Route - Alpha column. This opens the Port Select dialog as shown below:

No.	Alpha	Port Description
600	DIR	DIR ECTOR
601	PA	PA
602	SND	SOUND
603	VIS	VIS ION
604	EDIT	EDIT
605	SUPV	SUPV
606	PT7	Port 7
607	PT8	Port 8
608	PT9	Port 9
609	PT10	Port 10
610	PT11	Port 11
611	PT12	Port 12
612	PT13	Port 13
613	PT14	Port 14
614	PT15	Port 15
615	PT16	Port 16
616	CAM1	CAM1
617	CAM2	CAM2
618	EXT1	EXT1
619	EXT2	EXT2
620	FLR	FLR MAN
621	PRES	PRES

Exit System1

Mode Port Type

Talk ☐ Ports ☒

Talk + Listen ☒ Groups ☐

Listen ☐ Conf/Party Lines ☐

Talk + F/Listen ☐ IFBs ☐

Figure 4-10 Port Select

At this point, both the Keys and Port Select dialogs are open. Ensure that neither is maximised because the (green) Key Assignment table in Key and the Port Select dialog must be visible at the same time.

What is required now is a three-click sequence:

1. In Port Select, click on the required port
2. In the Mode group of Port Select, click Talk + Listen
3. In the (green) Key Assignment table on the Keys dialog, click on the row for the key which is to be made DTL.

Exit from Port Select.

On the Key Assignment table, double click on the appropriate row in the Key Action column and this opens the Enhance Keys dialog as shown:

Key Enhance

Panel : 600 Key No : 1

Latch

Normal ☐ Latch Only ☐ Non-Latch Only ☐ Dual Talk Listen ☐ **Interlock Group ☒**

Dial Mode ☐ Special 1 ☐ Special 2 ☐ 8 Character Mnemonic ☒

Interlock Group

A ☒ B ☐ C ☐ D ☐ E ☐ F ☐ G ☐ H ☐ Make before Break ☐ Deactivating ☐

Store As Template Recall Template OK Cancel

Figure 4-11 Key Setup

Select the Dual Talk Listen radio button and then click OK.

4.3.4 Route assignment

To select the port on the matrix to which a key (key 8 on the illustration) will connect, double-click that row in either the Mode or Alpha columns under the heading 'Route'. This calls up the 'Port Select' dialog, as shown below.

Panel Ports

Port No.	Dial Up	Type	H/W ID	Alpha	Description	Sys ID	Input Level (dB)	Output Level (dB)	Vox Level (dB)
100		GRP		CAMS	CAMS				
101		GRP		MTNC	MAINTANCE				
102		GRP		REM	REMOTES				
400		IFB		IFB1	IFB 1				
401		IFB		IFB2	IFB 2				
402		IFB		IFB3	IFB 3				
501		CONF		PTB	PTB				
600	4224	600	DIR	DIRECTOR			0	0	
601	4215	601	PA	STUDIO PA					
602	4224	602	SND	SOUND					
603	4215	603	VIS	VISION					
604	4215	604	LTG	LIGHTING					
605	4215	605	GRPH	GRAPHIX					
606	4215	606	MCR	MCR					
607	4215	607	TECH	TECHNICIAN					
608	4224	608							
609	4224	609							
610	4224	610							
611	4224	611							
612	4224	612							
613	4224	613							
614	4224	614							
615	4224	615							

Port Select

No.	Alpha	Port Description
600	DIR	DIRECTOR
601	PA	STUDIO PA
602	SND	SOUND
603	VIS	VISION
604	LTG	LIGHTING
605	GRPH	GRAPHIX
606	MCR	MCR
607	TECH	TECHNICIAN
608	608	608
609	609	609
610	610	610
611	611	611
612	612	612
613	613	613
614	614	614
615	615	615
616	EXT1	EXTERNAL 1
617	EXT2	EXTERNAL 1
618	EXT3	EXTERNAL 2
619	REM1	REM1
620	REM2	REM2

Route Assignment

No.	Route	Control	Key	Soft	Panel
	Mode	Alpha	Mode	Alpha	Port
1	T	PTB	E	PTB	L
2	T	SND			LNL
3	T	VIS			LNL
4	T	LTG			LNL
5	T	GRPH			LNL
6	T	MCR			LNL
7	T	TECH			LNL
8					LNL
9	L	cams			LNL
10	L	rem1			LNL
11	L	rem2			LNL
12	L	rem3			LNL
13	L	ext1			LNL
14	L	ext2			LNL
15	L	ext3			LNL
16					LNL
17	T	PTC	E	PTC	L
18					LNL
19					LNL
20					LNL
21					LNL
22					LNL
23					LNL
24					LNL

Assign Keys For Pa Load Template Delete Entry Exit

Port Type: ☒ Ports ☐ Groups ☐ Conf/Party Lines ☐ IFBs

Mode: ☒ Talk ☐ Talk + Listen ☐ Listen ☐ Talk + F/Listen

Initial Exit System1

Load Template Save Template OK Cancel

Figure 4-12 Route Assignment

See the
Reference
section

Scroll down the 'Port Select' table until you find the Destination port (for talk) or Source port (if it is to be a listen key). Click once and then move to the correct field on the 'Keys' table and click once again to assign the port on the key. The key has now been assigned.

4.3.5 Control Assignment

You can also enter General Purpose Interface (GPI) and Special Functions (GPSF) in the Mode and Alpha columns under the heading 'Control'. See the information given in the Reference section.

4.3.6 Changing key assignments

What do you do if you have a talk to a destination and want a listen to its source? In the 'Port Select' table, on the right in the previous screen, you will see at the bottom a small Mode box with Talk, Listen, Talk and Listen and Talk with Forced Listen radio button choices. This time select Listen, click once on the port and then move to the 'Keys' table and click once again to drop the port on the key.

What do you do if you want the key to Latch when you press it, rather than having a momentary action? Double-click the key column field called Key Action to display the following pop up box.

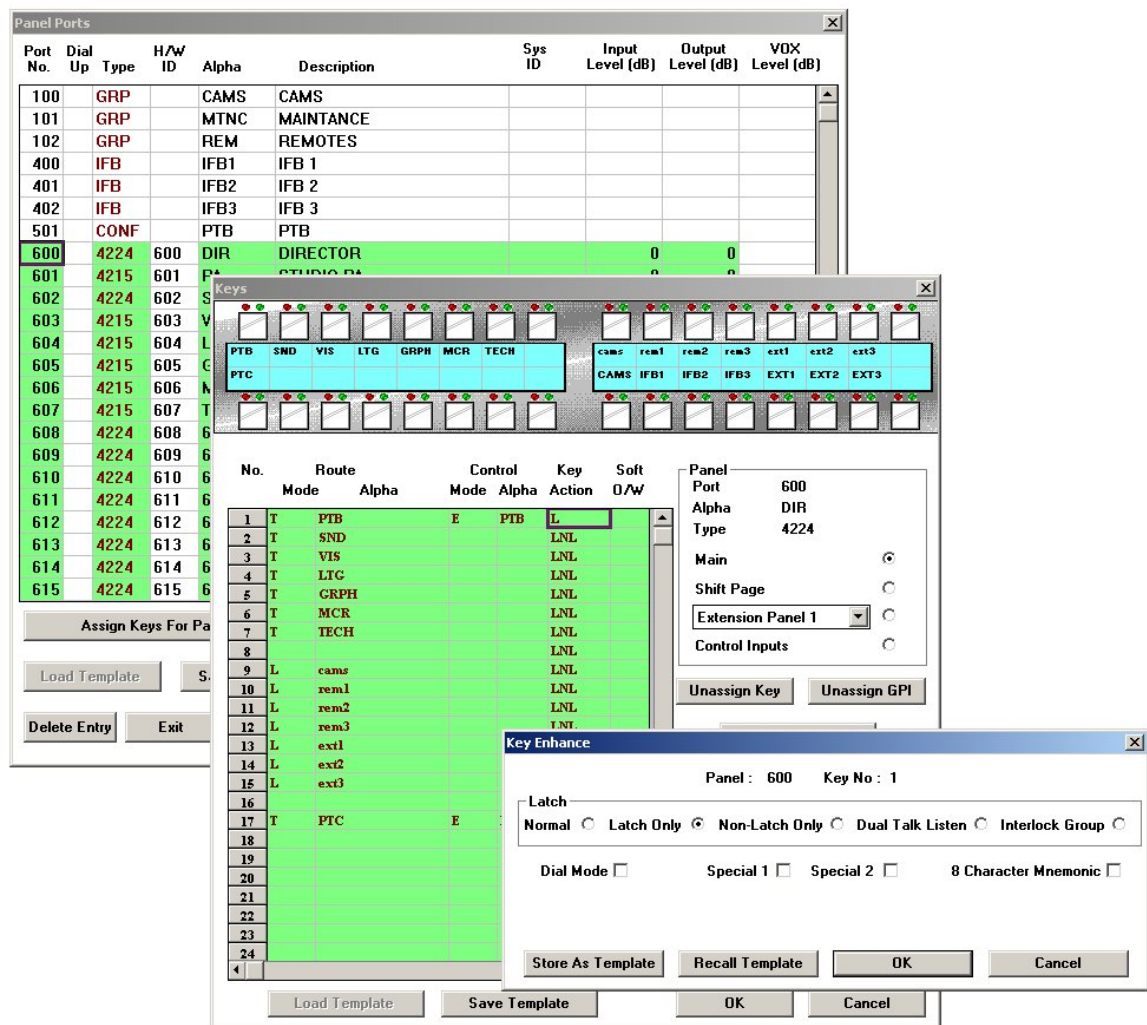


Figure 4-13 Changing Key Assignments

The 4000 Series Panels have Direct Access Key (DAK) pushbuttons. These DAKs are used to make Listen and/or Talk routes to and from the Control Panel or other audio connections. The DAK can also be assigned to trigger a control event from either the Control Panel or the matrix.

The pushbutton operation is selectable from a range of options and set via the Configuration and Master Assignment Programming System (CMAPSi) workstation software. The pushbutton actions include:

Latch	When a DAK is pressed and released, it latches in the engaged position. Pressing the DAK again disengages it.
Non-Latch	When a DAK is pressed and held depressed, it automatically disengages when released.
Latch/Non-Latch	A combination of the two above such that a quick press will latch the button and a slow press will be the non-latch action.
Dual Talk/Listen	When a DAK is momentary pressed, it makes a latched Listen Route. The DAK can then be pressed and held to make a Talk Route at the same time, and released to unmake the Talk Route. A second momentary press disengages the DAK and the latched Listen Route.
Interlock Group	A DAK can be assigned to any one of eight interlock groups A-H. Within an interlock group only one DAK may be active at any one time. If a DAK in a given group is pressed whilst another DAK in the same group is already active the currently active key is deactivated and the key pressed becomes active.

The Direct Access Keys can be programmed with a range of attributes as set in the Configuration and Master Assignment Programming System (CMAPSi) workstation software. The pushbutton attributes are:

Talk Only	A single DAK press causes an audio route to be made from the source panel to the desired destinations. Normally used for communication from one panel to another.
Listen Only	A single DAK press causes an audio route to be made from the destination. Used when listening to an external audio signal (not originating from a Control Panel) is required.
Talk and Listen	A single DAK press causes a bi-directional audio route to be made between the source panel and the destinations. Used between panels and also with certain external audio signals.
Talk & Forced Listen	This is similar to Talk and Listen except that the Listen route is permanently made. The operator need only press the DAK to talk.

NOTE: For the above functions, the destination can be a single or group of panels, or a single or group of external sources.

4.4 Interlocking Group Panel Keys

Interlocking keys are used to provide a means where the operator can select only one key at a time.

No more than one key of an interlocking group can be latched at the same time. When a key is part of an interlocking group, pressing it unlatches any other key which is already latched in that group. CMAPSi permits up to eight groups (A-H) to be set up for each panel.

Interlock groups operate on a "per panel" basis; it is not possible to interlock across different panels.

To set this up in CMAPSi, call up Panel Ports and move the highlight on to the required panel. Press the Assign Keys for Panel nnnn key and this calls up the Panel Keys dialog as shown below:

Keys

No.	Route	Alpha	Control	Key	Soft
	Mode		Mode	Action	O/W
1	T	DIR ECT		LNL	
2	T	CUT		LNL	
3	T	SND		LNL	
4	T	VIS		LNL	
5	T	EDIT		LNL	
6	T	SUPV		LNL	
7				LNL	
8				LNL	
9	TL	CAM1		LNL	
10	TL	CAM2		LNL	
11	TL	EXT1		LNL	
12	TL	EXT2		LNL	
13	TL	FLR		LNL	
14	TL	CAMS		LNL	
15	TL	CNF1		LNL	
16	TL	IFB1		LNL	
17				LNL	
18				LNL	
19				LNL	
20				LNL	
21				LNL	
22				LNL	
23				LNL	
24				LNL	
25	TL	TEL1		LNL	

Panel Port: 600
Alpha: DIR
Type: 4224

Main: ☒
Shift Page: ☐
Extension Panel 1: ☐
Control Inputs: ☐

Unassign Key Unassign GPI

Initialise Key Actions

Load Template Save Template OK Cancel

Figure 4-14 Panel Key Setup

On this dialog, double click in the Key Action column on the key number which is to be included in an interlocking group. This calls up the Key Enhance dialog which is shown below:

Figure 4-15 Key Enhance Setup

Click the Interlock Group radio button to display the additional material in the dialog. In the Interlock Group area of the dialog, select which group (A - H) of which this key is to be made a member. (No key can be a member of more than one group at the same time; making a key a member of a new group removes any existing group membership.) Optionally check Make before Break.

When an interlock group exists, one member of the group must always be latched; the only way to cancel one button is to latch another. On this dialog you can check Deactivate to unlatch all members of the interlock group so that no button is latched.

4.5 System Feedback Signalisation

All the feedbacks are basically the same. In Drake terms, a feedback is control LED signalisation.

Most of the setups for feedback are factory set and cannot be edited in CMAPSi. The feedbacks described in this section are VOX feedback, conference feedback and IFB feedback.

4.5.1 VOX Feedback

VOX Feedback is the signal which illuminates a green LED on a panel key to indicate that a signal greater than the VOX threshold is present on a specified 4-wire circuit.

VOX feedback defines a range of 4-wire circuits and specified keys on a set of panels. Operationally, the effect is that any key on any panel that has a key programmed to one of the 4-wires will illuminate the green LED if the VOX threshold is triggered on that particular 4-wire. If a key which has been configured in this way is subsequently moved, the VOX feedback facility moves with it automatically. This facility is factory set and cannot be edited in CMAPSi.

With VOX Feedback, the signalisation will appear immediately the threshold is crossed and remains for a period after the signal has dropped below the threshold. This facility prevents the signalisation from dropping during pauses or quiet passages of speech. This parameter (known as the VOX_Delay) can be set in CMAPSi. Go into Panel Ports and select any spare dummy port on which the VOX Feedback Delay is to be set. Then type the following code into the Description field for that port:

VOX_DELAY_x□□□□

Figure 4-16 VOX Delay Command

where x is a digit in the range 1-9.

Note that four spaces must follow the digit. The relationship between the value of the digit and the delay in seconds is as follows:

Setting	0	1	2	3	4	5	6	7	8	9
Delay	0.025	0.5	1	1.5	2	2.5	3	3.5	4	4.5

This sets the VOX delay for all ports.

4.5.2 Conference Feedback

In a conference, if someone talks, the system will automatically illuminate the green LED of your conference key to indicate that someone is talking. The signalisation disappears immediately that talking ceases in the conference.

This facility is factory set and cannot be edited in CMAPSi.

4.5.3 IFB Feedback

IFB Feedback (Feedback from Interruptible Foldback) is a control which is used when there is more than one interrupting-source. If any interrupting-source in the group interrupts the foldback, signalisation appears on the IFB keys of all the other interrupting-source panels. IFB Feedback is an indication that someone has activated the IFB.

This facility is factory set and cannot be edited in CMAPSi.

4.6 Configuring Groups



A group is a collection of physical ports that is then assigned a single port number. In this way, a single assignment can be made (for instance, to a panel key) in order to make routes to several targets.

A group cannot exist if it has no members (unlike a conference). To create a group (or to modify an existing group) click the 'Groups' button on the CMAPS tool bar or select **Element > Groups** (key F7). This opens the group assignment window, listing all currently available groups.



Figure 4-17 Configuring Groups

The left hand side of the window shows the currently configured groups. The middle of the window shows the ports that are available for addition to a group (all physical ports). The right hand side of the window shows the ports that are members of the currently selected group.

To select an existing group, click the desired group in the list on the left hand side. To create a new group, click the next free line in the list and enter the new group number. As with any port, the group can be named by double-clicking its 'Alpha' or 'Description' fields.

To add member ports to a group, double-click the desired port in the central list and it will be added to the member list on the right hand side. To remove a member from a group, double-click the port in the member list on the right hand side. You will then be prompted as to whether you are certain you wish to remove the port. Upon selecting 'OK' the selected port will be removed from the group.

4.7 Configuring Conferences



Conferences are simpler to configure than groups. A conference can exist with no members. In fact, it can only have members added to it when the system is operating. Thus, all you can do in the map is specify how many conferences exist and what their names are.

To create or modify a conference, click the 'Conferences' button on the CMAPS tool bar or select **Element > Conferences - Party Lines** (key F6). This opens the conference list window. This window shows a list of available conferences. In order to modify an existing conference, double-click either the 'Alpha' or 'Description' fields to edit them.

To create a new conference, enter the desired conference number on the next available line.

Conferences can be deleted entirely using the 'Remove xxx' button (this will prompt you as to whether you are sure you wish to delete the conference).

4.8 Interruptible Foldbacks



The Interruptible Foldback (IFB) page enables an IFB destination to listen to a programme cue feed, the IFB source input, until an interrupting panel asserts itself over the matrix (by pressing the talk key) in order to talk to the IFB destination. When this happens, the IFB source is either cut or the audio diminished until the interrupting panel releases the talk key. Panels can have priority, 1-5, over other panels to the IFB destination. Panels with priority 0 cannot talk to the IFB destination.

IFB set-ups can be altered in ADM. You will see a warning about this when you next do a map download if the ADM set-up is different from the current IFB set-up.

IFB LIST

Port No	Alpha	Description	Interrupt Level	Source	Dest.	Return
400	IFB1	IFB 1	-12dB	REM1	REM1	
401	IFB2	IFB 2	-12dB	REM2	REM2	
402	IFB3	IFB 3	-12dB	REM3	REM3	

Assign IFB 400

Delete IFB 400

Exit

Cancel

Figure 4-19 Create Interruptible Foldbacks

4.9 Setting Default Crosspoint States

The 'lowest level' at which to consider the operation of the matrix is as a crosspoint grid. The operation of entities such as groups, conferences and IFBs can always be represented on a crosspoint grid, as the grid represents the ultimate capability of the system (to make routes from any input to any output).

You can set up the default state of individual crosspoints using CMAPS. For instance, if you wanted port 604 to always talk to port 600, regardless of the states of panel keys, etc., you could define the crosspoint 600→604 as being 'permanently closed'.

To open the crosspoint viewer window, click the 'Crosspoints' button on the CMAPS toolbar or select **Elements > Crosspoints** (key F8).

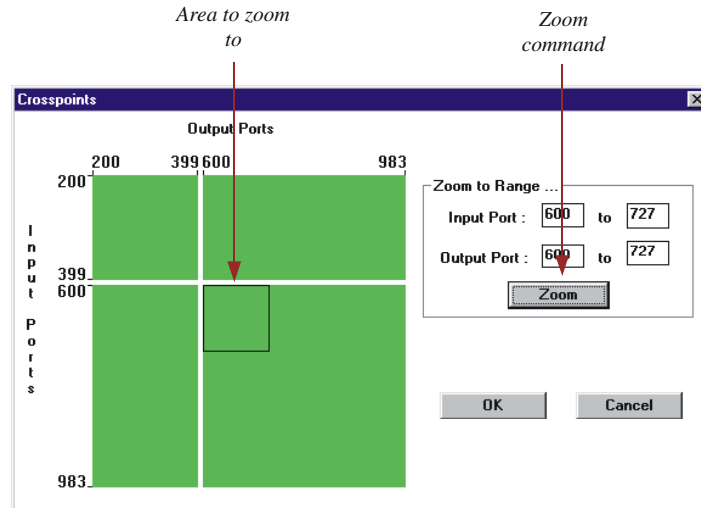


Figure 4-20 Set Crosspoint State

This displays a crosspoint grid (shown in green). Click on this grid to re-position the area you wish to modify (shown as a black square). The 'Zoom to Range' will change accordingly as you move the square around. When you have positioned the square over the area you want to modify, click the 'Zoom' button to open a window showing a more detailed image of the area of the crosspoint grid specified.

You can now select the exact crosspoint that interests you (using the two selection lists on the left hand side).

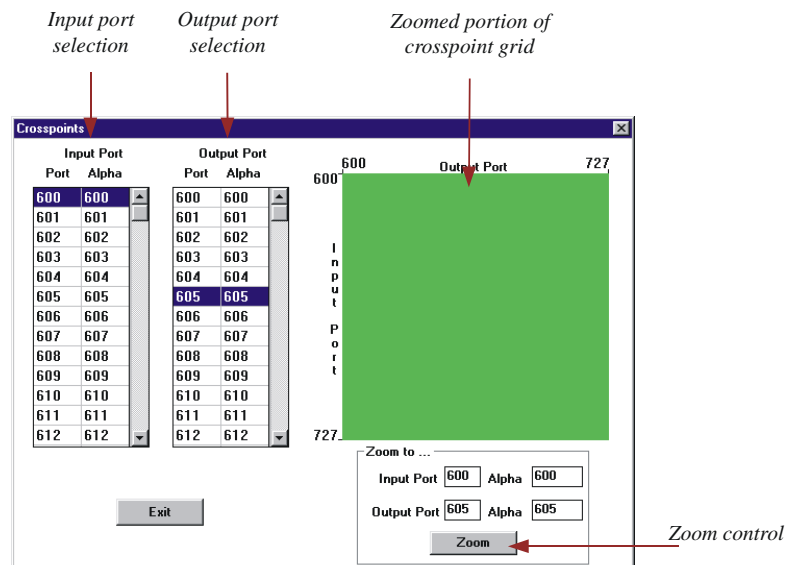


Figure 4-21 Crosspoint Display

Click the 'Zoom' button again to see a third view, where you can deal with each crosspoint individually. The crosspoint selected in the last window forms the top left crosspoint in this new 'ultra-zoomed' view.

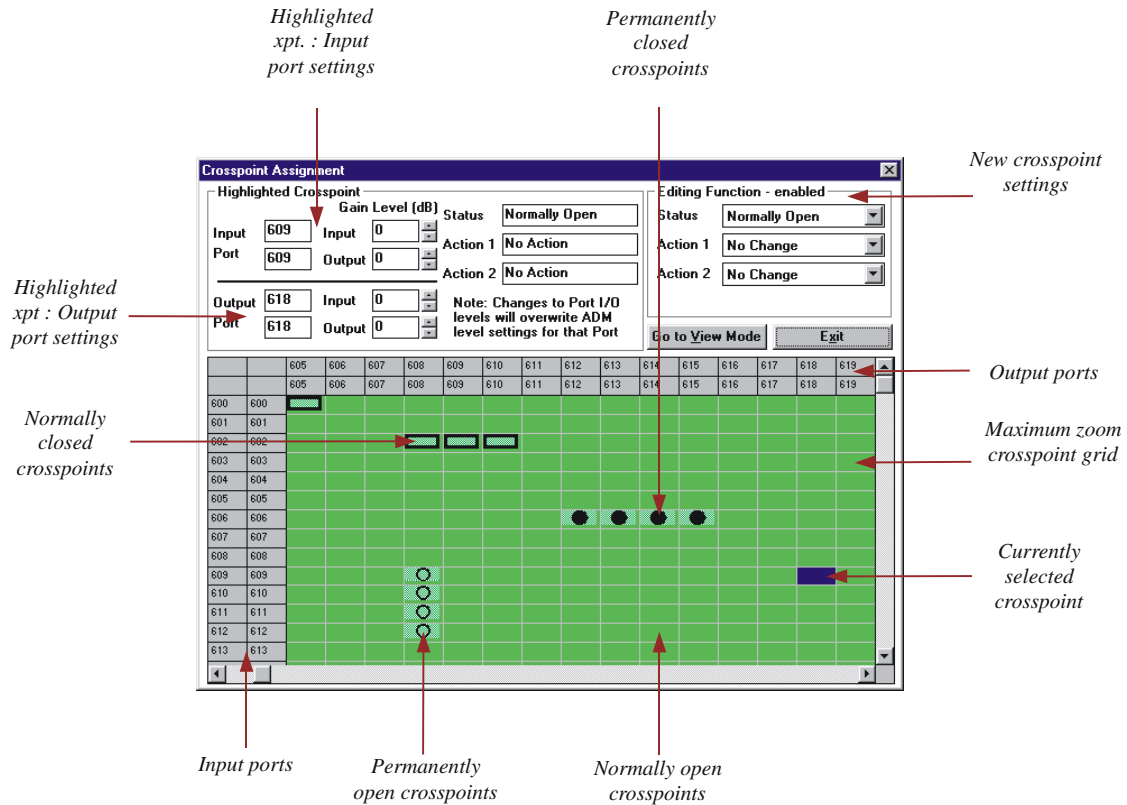


Figure 4-22 Crosspoint Details

In order to edit a specific crosspoint, you must first switch to 'edit mode', by clicking the 'Go to Edit Mode' button (which will then read 'Go to View Mode'). Select a new 'Status' value in the new crosspoint settings section of the screen (top right) and then click a specific crosspoint. The crosspoint takes the new value.

The four available values are:

Normally open

In a new map, all crosspoints default to 'normally open'. A 'normally open' crosspoint stays open (ie, doesn't let audio pass) until an action, for example from a panel key, requests it to close.

Normally closed

A normally closed crosspoint is slightly unusual – it starts off closed (lets audio pass) but can be opened by an inhibit action. A normally closed crosspoint is like a back to front 'normal' crosspoint.

Permanently open

A permanently open crosspoint cannot be closed by anything while that map remains in the matrix. Panel keys, etc., which are set up to close that crosspoint will have no effect.

Permanently closed

A permanently closed crosspoint will always pass audio. A permanently closed crosspoint cannot be opened while that map remains in the matrix.

Once complete, click 'Exit' to accept the changes.

4.10 Local/Remote Matrices

This facility defines a matrix formally as being local or remote. The formal, definitive distinction between whether a matrix is local or remote is whether it is networked by Ethernet or some other form of connection as follows:

- Local Matrix - network by Ethernet
- Remote Matrix - any form of networking other than by Ethernet (for example, ISDN or X.21 leased line using VeNiX®)

The following dialog is one of two different dialogs which both carry "Current Maps" in the header line. (The other one is described under "Multiple Downloads".)

Use Map > Show Current maps and the Current Maps dialog opens as shown:

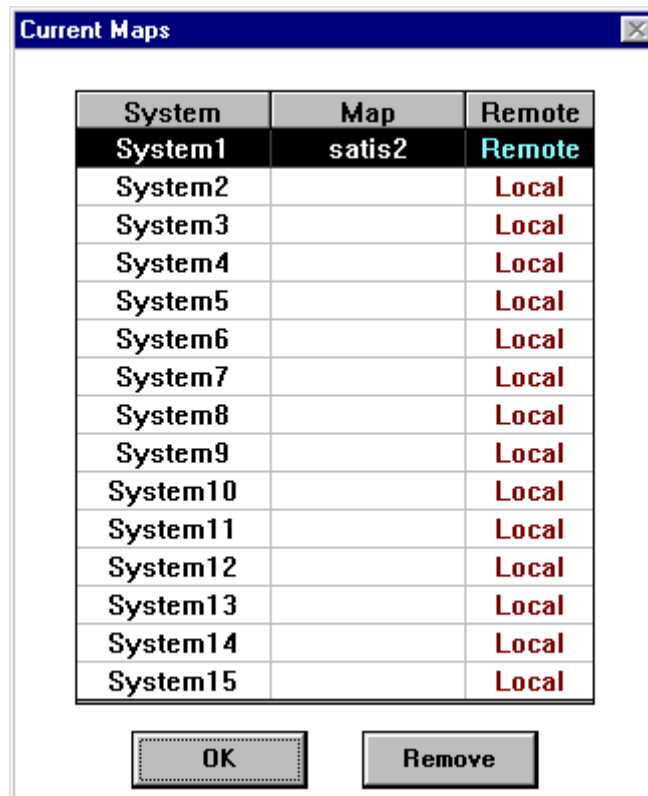


Figure 4-23 Current Maps

In the illustration, System 1 is networked remotely (via ISDN or X.21) to System 2.

Double click on the entry in the third column to toggle between Local and Remote.

4.11 Trunk Forwarding

Trunk Forwarding is a networking design development which enables audio to be routed between several matrices without the need to provide an audio connection between every matrix and every other matrix on the network. The technique uses branch or ring topology. Several points are important:

- The facility is always active and so does not require any user intervention.
- It is available only between matrices which are connected on the same Ethernet.
- There is a maximum limit of four "hops".

- If a ring is used, the network will automatically re-route the audio if the loop is broken.

4.12 Downloading Maps



Once you have set up your map, you will need to transmit the new baseline to the target matrix. Do this by connecting the PC to the matrix, either via a serial link or via an Ethernet connection, and then click the 'Download map' button on the CMAPS tool bar or Select **Comms > Map Download** to display the following screen:

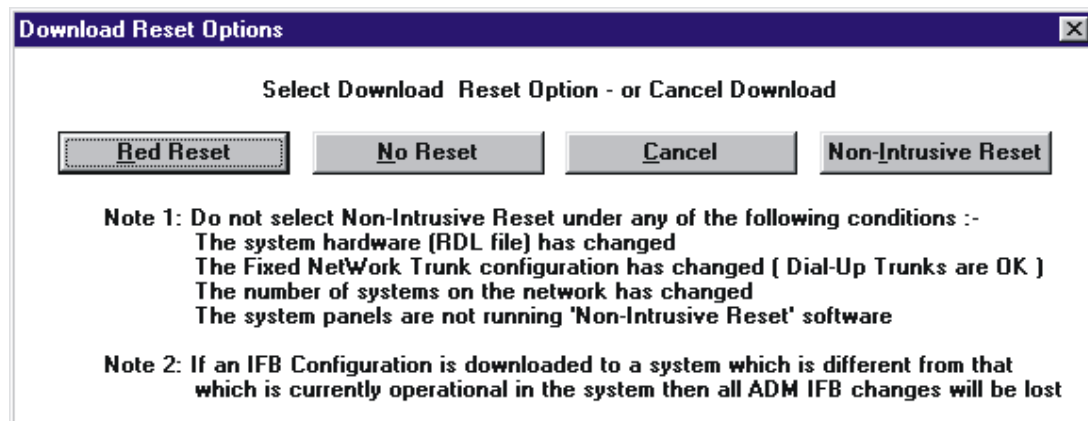


Figure 4-24 Map Downloads

Red Reset

This is the 'safest' way to perform a download – all changes will take effect as the processor card is reset following reception of the map. The disadvantage is that the system is taken 'offline' for a number of seconds while the reset takes place.

No Reset

In this case, the map is stored by the processor card but does not become active until the processor card is manually reset.

Cancel

Selecting cancel closes the 'Download Reset Options' window and abandons the download attempt.

Non-Intrusive Reset

The 'Non-Intrusive Reset' (or NID) provides a mechanism so that a new map can be entered into the system without causing the downtime associated with a red reset. However, there are restrictions on when a non-intrusive download can be performed (for instance, a NID will not suffice if hardware settings are being changed or if all panels connected to the system are not running appropriate firmware).

A progress indicator is displayed during the download (the progress indicator for an Ethernet download looks significantly different from that for a serial download). A pop-up box shows the result (success or failure) of the download.

NOTE: The download will be reported as having been successful but will not be accepted by the matrix if the correct PassCode is not in place.

4.12.1 Multiple Map Downloads

This facility enables multiple maps to be downloaded to the matrix as a batch instead of one-by-one.

NOTE: There are two different dialogs which both carry the title "Current Maps" in the header line. The other is a list of systems where each one has a Local/Remote switch and this is described under Local/Remote Matrices.

Go to Map menu > Show Map Number/Multiple Downloads. This calls up the "Current Map Number" dialog as follows:

Map Name	Number	Auto
000127a1	1	
010427aa	1	
1-990312	1	
1-991101	1	
240899c	1	
3135_ea	1	
3135_ea2	1	
cnn_1a	1	
cruisert	2	
demo	1	
demo164	1	

Sort By :-
☒ Map Name
☐ Map Number
☐ Auto Download

Save & Exit
Cancel

Current Map Settings
Current Map Number :- **5** Saved Map Number :- 5

Please Note : If the Map number is changed from the currently saved number, then the whole map must be saved for this to take effect in a Mutiple Map Download

Figure 4-25 Download Multiple Maps

This lists the maps that have been saved in the appropriate folder below the CMAPIMAP folder on the local machine.

The term "Map Number" is not an identifier of a particular map; it refers to the memory slot in the processor card in which that map is to be held when downloaded to the matrix. The processor card in the 4000 Series II 9RU and 4RU matrices holds up to two maps; the processor card in PiCo holds up to 6.

The two maps in the 9RU and 4RU matrices are called the Working map (numbered as map 1) and the Reserve map (numbered as map 2). The working map may also be called the Current or Standard map.

When you open CMAPSi, the map which is loaded is the one held in the folder called Current.

4.12.2 How to download multiple maps to 4000 matrices (including PiCo)

Edit C:\WINDOWS\DCSI.ini with the following:

4.12.2.1 For PiCo:

```
[Multiple Maps]
Max Map Number=6
Map Download Delay=10
MultiMap Download=1
```

4.12.2.2 For 9RU and 4RU matrices

```
[Multiple Maps]
Max Map Number=2
Map Download Delay=10
MultiMap Download=1
```

4.12.3 IN CMAPSi:

1. Use COMMS Menu > Multiple Map Download to open the Current Map Number dialog.
2. Select the required Working map in the Map Name column.
3. Determine which location is to hold the selected map in matrix (1 or 2 for 4RU or 9RU or 1-6 for PiCo).
4. Double Mouse click on the Current Map Number field and the number cycles round a range determined by the Max Map Number parameter in DCSI.INI. This number is reflected in real time in the list.
5. Repeat the above three steps for all required maps.
6. Click the Auto column, to display the word YES in that column for every selected row which is to be downloaded as part of the batch.
7. Optionally click a radio button in the Sort By: group. If you sort by Auto Download, the list displays all the rows displaying YES at the top of the list.
8. Click Save & Exit.
9. Ensure the PC is connected to the matrix and download maps in the normal way. A report monitor shows the map download progress and a timer shows the delays between downloads as set in the DCSI.INI file.

4.13 Naming Systems

CMAPSi permits a system (matrix) on the network to be given a name which is more meaningful than merely calling it System1, System 2 etc. The restrictions on the name are that it must have no more than eight characters with no punctuation or spaces. The matrix "name" is downloaded to the matrix as part of any map that is downloaded to that matrix. The name will be used in any diagnostic reporting in ADM.

Editing a system name involves editing two configuration files. One is the CSUINFO.CFG file which can be found in the CMAPSi folder; the other is the HOSTS (no filename extension) file which will either be in Windows or in or below the WinNT folder. Both are plain ASCII files and can be edited using a text editor such as Notepad.

NOTE: It is important that the name must be entered exactly the same (including case) in the two locations.

4.13.1 Example of a default CSUINFO.CFG file:

```
[001]
Name=System1
[002]
Name=System2
[003]
Name=System3
```

4.13.2 Example of a default HOSTS file:

```
# Drake ADM
129.67.61.36 System1
129.67.61.37 System2
129.67.61.38 System3
```

NOTE: There must be at least one space between the number and the system name.

As instructed in the CMAPSi Installation Guide, the file as shipped from Drake is always called HOSTS.ADM. For a new installation only, obtain the HOSTS file by renaming this file to delete the filename extension. It is supplied in this way to avoid over-writing an existing HOSTS file which may contain local data.

5 CMAPSi PiCo Options

5.1.1 4000 Series II PiCo Supplementary Information - Options Overview

This information supplements the 4000 Series II PiCo Product Manual STA0348 Issue 2.1.

5.1.1.1 The Options

Four options are available to extend the PiCo functionality in various ways. All the options can be ordered with the equipment or retro fitted. The sales order codes and brief descriptions are:

4120-4W

Expands the matrix from 32x32 to 36x36 by providing four additional 4-wire circuits which can be accessed only using **PiCo software RA412G or later**. The highest port number has been increased from 631 to 635. Requires fitment of PDE4656 daughter board which provides an additional D connector on the rear panel. Can be fitted in addition to 4120-ISO and/or 4120-ETH but not in addition to the 4120-BP.

4120-BP

Expands the matrix from 32x32 to 36x36 by providing four channels on which beltpacks can be "daisy-chained". The highest port number has been increased from 631 to 635 and these can be accessed only using **CMAPSi version 6.0n or later** and **PiCo software RA412G or later**. Requires fitment of PDE4655 daughter board which provides an additional D connector on the rear panel. Can be fitted in addition to 4120-ISO and/or 4120-ETH but not in addition to the 4120-4W.

4120-ISO

Provides for the use of Unscreened Twisted Pair (UTP) cable for all system cabling instead of the usual Screened Twisted Pair. Requires fitment of 32 replacement ICs on the main board. Uses the same CAT5 connector that was used for Screened Twisted Pair. There are no software implications of implementing the 4120-ISO Option.

4120-ETH

Provides an ethernet interface to third party computer equipment running Drake CMAPSi or HCI software. No hardware change is required; the standard PiCo unit is supplied with an RJ45 Ethernet socket on the rear panel and its use is enabled through the use of a passcode.

Of the four PiCo options available, only two involve the use of software, either PiCo software RA412G or later and/or CMAPSi (version 6.0n or later). The PiCo Options for which software support is required are:

- PiCo 4120-4W option. This option provides four additional 4-wire ports (port numbers 632-635 inclusive) which are configured in the same way as any other 4-wire ports in CMAPSi.
- PiCo 4120-BP Option.

5.2 PiCo 4120-BP Beltpack Option

The Belt Pack Setting group in the CMAPSi Attributes dialog enables you to specify the make of beltpacks on the channel (different makes of beltpack cannot be mixed on the same channel) and to specify whether the matrix is to provide the only termination which must be present on the channel.

Double click on the Type column in the CMAPSi Panel Ports dialog to call up the Port Type dialog.

Select the Beltpack radio button and click the Attributes button to call up the Attributes dialog which includes the Belt Pack Settings groups as shown below.

Belt Pack Settings

UAI Type

DRAKE

UAI Termination

☒ Off
☐ On

Select the make of beltpack for this port from the drop down list.

There must be one, and only one, termination on each channel. If a termination is provided on one of the beltacks on the channel, select the Universal Audio Interface (UAI) Termination to Off. This disables the termination which the matrix could provide if required. If none of the beltacks provide a termination, select On.

5.3 PiCo 4120-4W Option Card

5.3.1 Installation

To install the card, follow the [procedure](#).

The additional 4-wire circuits should be wired to the additional 26 pin D (fixed, male) connector on the rear panel which the option card provides. The pin numbers for each circuit are as follows:

	IN+	IN-	OUT+	OUT-
Circuit 1	1	10	5	14
Circuit 2	2	11	6	15
Circuit 3	3	12	7	16
Circuit 4	4	13	8	17

Pins 19-26 are connected to earth. Pins 9 and 18 are not used.

5.3.2 Software

The only software impact of this option requires the use of CMAPSi version 6.0n or later.

6 Reference Material

6.1 Changes to .ini files for download options

The following information will help you to download more than one MAP from CMAPSi to the 4000 series II matrices, for the 'Standard' and 'Reserve' MAP positions and to PiCo for the 6 MAPs.

First, you must edit the .ini file, **DCSI.ini**.

If your operating system is Windows 95/98/Me, open `C:\WINDOWS\DCSI.ini`.

If your operating system is Windows NT4, 2000 or XP, open `C:\WINNT\DCSI.ini`.

- For PiCo, edit the [Multiple Maps] section of the file as follows:

```
[Multiple Maps]
Max Map Number=6
Map Download Delay=10
MultiMap Download=1
```

- For 44264 and 492xx, edit the [Multiple Maps] section of the file as follows:

```
[Multiple Maps]
Max Map Number=2
Map Download Delay=10
MultiMap Download=1
```

Save the changes and then Exit

6.2 Downloading many maps at once

To download a number of Maps simultaneously, proceed as follows:

1. Ensure that CMAPSi is running.
2. Select **Comms > Multiple Map Download**
3. Select your Master or first MAP.
4. Double-click the Map Number box next to the Map name until the correct MAP number is selected (= 1 for Master or first PiCo MAP).
5. Select your Reserve or second MAP.
6. Double-click the Map Number box next to the Map name until the correct MAP number is selected (= 2 for Reserve or second PiCo MAP).

Either Save and Exit or

7. Select your third MAP (PiCo only)
8. Double-click the Map Number box next to the Map name until the correct MAP number is selected (= 3 for third MAP).
9. Save and exit or select MAPs 4-5 (6 is the test MAP and it is better not to overwrite it)

Then

10. Sort by Map number
11. Double-click the AUTO box until it says YES next to each map to be downloaded
12. Ensure the PC is connected to the matrix and then click Download Maps.

A report monitor shows the map download progress and a timer shows the delays between downloads as set in the **DCSI.ini** file above

6.3 Notes on other sections within CMAPSi

Sections 3 and 4 gave you enough basic information to make port assignments to panel keys. The following sub-sections give information that will help you to start exploring other facilities within the CMAPSi program.

6.3.1 Matrix Crosspoint Types

Where fixed state crosspoints are needed in the matrix, for example between the Studio Floor Manager beltpack and the producer panel, the following types are available:

- Active crosspoints:

NORMALLY OPEN	(the default crosspoint state)
NORMALLY CLOSED	(required in the example above)
- Permanent crosspoints:

PERMANENTLY OPEN	(no connection allowed)
PERMANENTLY CLOSED	(always connected)

The difference between 'Normally' and 'Permanently' is that a Panel Key or incoming GPI can change the state of the 'normal' types but not the permanent types. A closed crosspoint, like relay contacts, means that the connection from source to destination is made.

6.3.2 Conference or party Line operation

The conference, or party line, allows many users to talk and listen to each other using one or two panel keys. Panels do not hear themselves over the conference or party line.

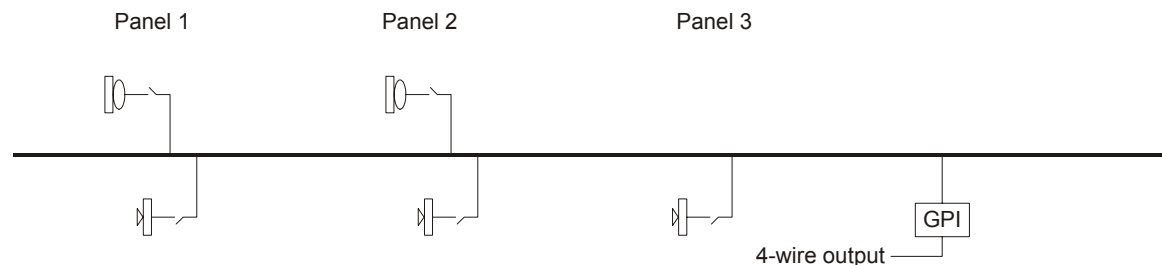


Figure 6-1 Conference Operation

Note that Panels 1 to 3 do not hear themselves on this conference. Panels 1 and 2 are both talker and listeners to this conference but panel 3 is only a listener. The 4-wire output is also a listener only and attached to the conference through the GPI Special function feature.

Conferences start at port 501 and there are 64 available. Once declared, they can be placed on a panel key in the same way as a panel key assignment.

6.3.3 Groups

Groups can be used to:

- make a one-to-many initial port
- give an existing port another name.

To enter ports into a group, click the 'Group' button or select **Element > Groups**. Enter a new port group number (these start from 100). Double-click the centre column of ports to add members.

To rename existing ports, make a group with the one member and give the group the new name. This is useful if you want to have a panel with 'Talk to Studio LS' but a key to listen to 'Programme Sound'. Both of these can be different halves of the same port. Use Group to make 'Talk to Studio LS' use the same port. CMAPSi will then use the group port for the IFB destination.

6.3.4 General Purpose Interface and Special Functions

General Purpose Interface (GPI) inputs and outputs are available to and from the matrix rear connections on the 3619 or 4619 RCU. Internal logic is referred to as General Purpose Special Functions (GPSF).

Each Drake matrix has available 32 GPI 'cards' and each 'GPI Card' has 32 inputs and outputs, referred to as 'pins'.

GPIs are used to send controls from the Drake system as outputs (GPOs); accept controls from other systems as inputs (GPIs); and for automatic signalling and audio control within the matrix GPSF or GPIs from Voice operated Crosspoints, (VOXs).

GPIs, both GPO and GPSF, can be put under panel keys, under crosspoints or under IFBs.

NOTE: The expression 'to put a function *under* a key' means to assign a control function to the key as well as a route function. This corresponds to the columns headed Route and Control on the Keys dialog (section 4.3).

The GPI cards are either real, existing as firmware, or phantom (existing in software only as GPSFs). The table below states which and what they are reserved for:

GPI Card No.	Type	Use
1	Real GPI/O card option 4619	CPU fail alarm, Relay 1
2	Real GPI/O card option 4619	GPIs 33-64
3	Real GPI/O card option 4619	GPIs 65 -96
4	Not available	
5	Firmware on 3609 / 4609	Telephone Channels 1,9
6	Firmware on 3609 / 4609	Telephone Channels 2,10
7	Firmware on 3609 / 4609	Telephone Channels 3, 11
8	Firmware on 3609 / 4609	Telephone Channels 4, 12
9	Firmware on 3609 / 4609	Telephone Channels 5, 13
10	Firmware on 3609 / 4609	Telephone Channels 6, 14
11	Firmware on 3609 / 4609	Telephone Channels 7, 15
12	Firmware on 3609 / 4609	Telephone Channels 8, 16
13	Firmware on 3621 / 4621	VOX inputs 0 - 31
14	Firmware on 3621 / 4621	VOX inputs 32-63
15	Firmware on 3621 / 4621	VOX inputs 64 - 95
16	Firmware on 3621 / 4621	VOX inputs 96 - 127

17- 32	Phantom	Used for GP Special functions
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6.3.4.1 GPI Input example

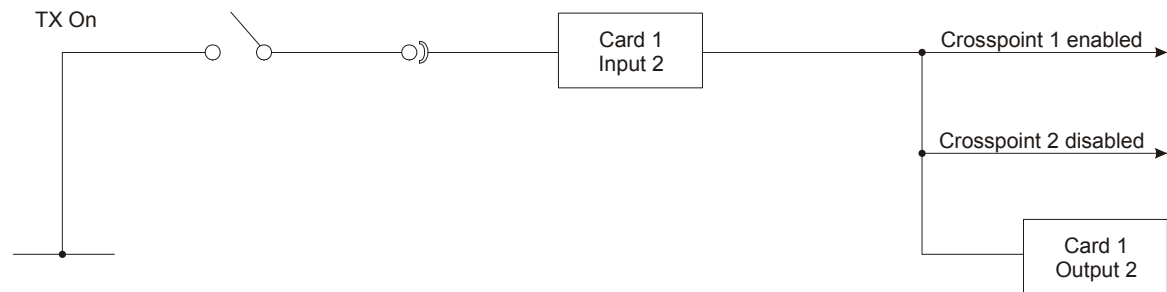


Figure 6-2 GPI Input

6.3.4.2 GPI Output example

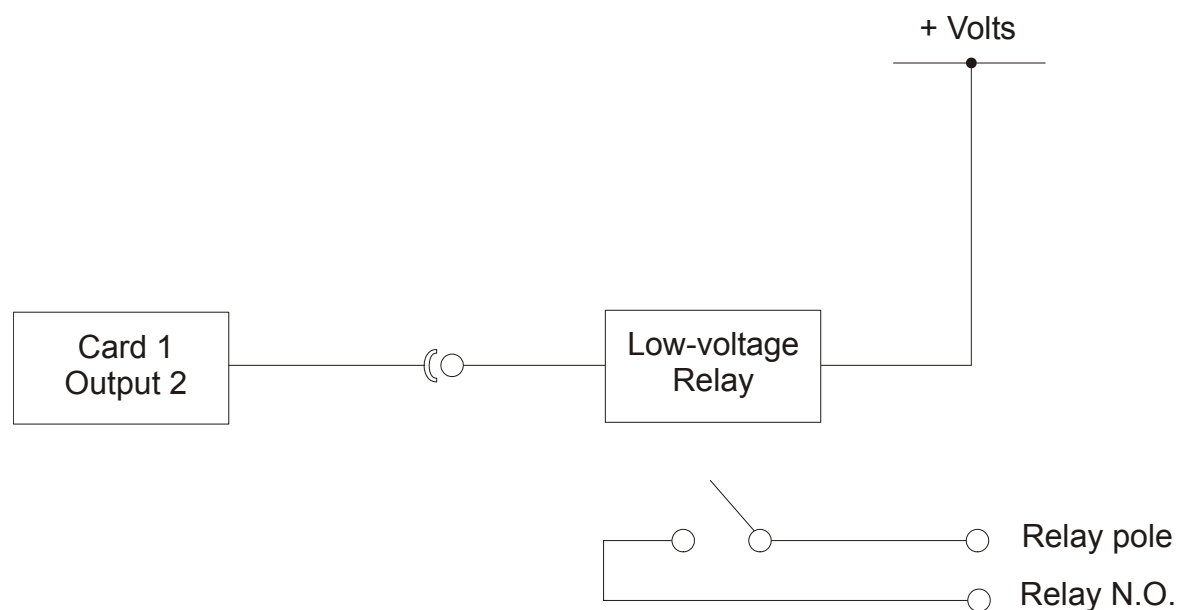


Figure 6-3 GPI Output

6.3.4.3 GPI Special Functions (GPSF)

These are available in all matrices from GPI card 17 input 1 to GPI card 32 input 32.

These are the general rules:

1. All A, B, and C, logic bits must be made before a GPI Special Function, GPSF, or GPO will be activated.
2. Control GPSFs under panel switches always activate all 3 logic bits together.

The use of these rules to combine GPSFs to provide AND and OR logic gates is best shown in the examples below:

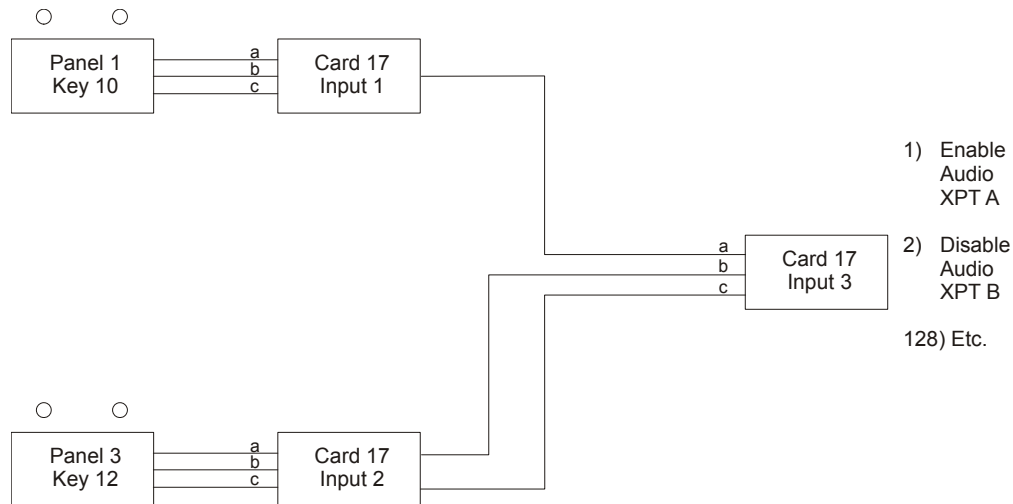


Figure 6-4 GPI Special Functions

Only when both keys are pressed do the crosspoints A and B change state.

If both GPSFs 17/1 and 17/2 provided all three logic bits a, b and c to 17/3, then this would be a 'OR' gate.

The GPSF Latches can be used in addition to the above to provide initial switch-on conditions and supply panel keys with toggle latch action to switch initial conditions between single and multiple states. Latches allow switches to be interlocked between panels.

In the example above multiple panel keys can be programmed to toggle the state of the crosspoints A and B as a group. One other use is to provide a universal GPI switch to toggle the RED TX light on and off from any panel.