M KEYBOARD

Change History

REVISION	CHANGE	REASON
1.00		Initial Release

1.01	F24 changed to default to INT_RELAY 1 instead of external RELAY 2. Further details on RELAY and INT_RELAY keys.	Already have external RELAY 1 (F12 key).

Set up

The M keyboard is a new product based upon the 9760 keyboard.

Switches

Switch 1 ON puts the keyboard in diagnostic mode.
Switch 2 ON puts the keyboard in setup mode.

Start Up

The "6800" Keyboard comes up with "Keyboard Offline". When plugged into an M protocol bus, the screen will then read "KEYBOARD 950". This transition occurs when the Bus Master turns the keyboard "on line". The user must then enter a monitor number and press the monitor key.

(CONFIDENTIAL)
An M_REQ_RESOURCE_DATA_CMD is then issued from the keyboard to the system controller to get information about the monitor. The response to the command includes a logical camera number. Once this response is received, an M_REQ_RESOURCE_CNTRL_CMD is sent to see if we can control this camera. The response, to this command, returns a four byte physical address for the camera that may then be used to directly control the camera. However, in project 68, the system controller is responsible for interpreting these commands and routing them to the camera. A resource control request is also sent for the monitor. Monitor control is required to perform camera switches on the monitor.

Camera Forward, Camera Backward (CONFIDENTIAL)

The camera forward and camera backward keys are implemented by first sending an M_REQ_NEXT_LOG_RESOURCE_NUM_CMD or M_REQ_PREV_LOG_RESOURCE_NUM_CMD which returns a logical camera number. When the response to this command is received an M_REQ_RESOURCE_CNTRL_CMD is sent.

Monitor Forward, Monitor Backward (CONFIDENTIAL)

The monitor forward and monitor backward keys are implemented by first sending an M_REQ_NEXT_LOG_RESOURCE_NUM_CMD or M_REQ_PREV_LOG_RESOURCE_NUM_CMD which returns a logical monitor number. When the response to this command is received an M_REQ_RESOURCE_DATA_CMD is sent to get information about the monitor. This will in turn send an M_REQ_RESOURCE_CNTRL_CMD to get control of the camera on the monitor.

See the M Commands documentation for information about monitor data.

Over Ride (CONFIDENTIAL)

When control is requested of a device that is currently being used, an M_DEVICE_BUSY error is returned to the requesting device. When this happens a message appears "Device In Use". If the user is in the menu associated with the device (in camera menu when requesting another camera) then an icon will display the control status of the device. If the icon is inverse (darkened) the user has control. In the camera menu, this icon is the CAMERA icon (4^{th} button from the left).

PTZ Commands (CONFIDENTIAL)

PTZ commands are sent using M_COMBINED_CMDS format as a P data packet. The four bytes of P data are combined into one message rather than send several M protocol commands. The exception to this is for preset labels. Preset labels in P protocol are inefficient: one character is sent for every message, meaning 20 messages for one preset label. For preset labels, an M_PRESET_SET_LBL_CMD is sent.

Auxiliaries (CONFIDENTIAL)

Auxiliaries will continue to be grouped into GPI addresses. Each GPI contains 8 auxes. From the keyboard, communication with auxes is by All Call addressing. The keyboard does not know at what physical address an auxiliary resides. An All Call message is sent with the GPI number or the logical aux number, depending upon the command. Receiving devices will parse this message and carry out the command.

Alarms

When an alarm has been triggered in the system, a flashing alarm symbol appears on the screen along with the alarm siren. The alarm menu allows the user to mute the alarm buzzer, reset the current alarm or reset the current alarm on all monitors. The up and down symbols allow a user to move through the steps of an alarm. A text string besides the flashing alarm symbol indicates the type of the alarm (Internal, External or Video Loss).

(CONFIDENTIAL)
Alarm messages are handled differently for Project 68 than in a standard M system. The keyboard in project 68 will ignore all alarm commands. This is done so that System 6800 may tell the keyboard which alarms it wants the keyboard to see, which is necessary since alarms are managed by the System Master in Project 68. The System Master may update the keyboard display by sending a SEND_RESOURCE_DATA command for the monitor the keyboard is controlling. This command includes the alarm on the monitor and the type of the alarm.

Resource Types (CONFIDENTIAL)

In order to control a resource, permission to control the resource must be granted from the system master. If the system master grants permission to control the resource, the response to the message will be in the form of an ACK which will contain addressing information to control the device directly. If the system master does not exist or fails, it is possible to send all call messages in some cases to control devices for which the address in unknown. Permission is considered unnecessary if no system master exists, but finding an address for a device becomes a problem.

Menus

The menus have changed as described below. In the following tables, each column represents an icon. Images of the icons used are not available.

TOP MENU 1

MONITOR	CAMERA	MUX	ALARM	GPI	PRST	MORE	LOG OFF

- MONITOR brings up the monitor menu. If a number is entered before selecting this icon, then the monitor number is changed to the entered number.
- CAMERA brings up the camera menu. If a number is entered before selecting this icon, then the camera number is changed to the entered number and a camera switch takes place on the current monitor without going into the camera menu.
- MUX brings up the MUX menu. A number may be entered before selecting this icon.
- ALARM brings up the ALARM menu when there is a triggered alarm in the system, otherwise an error beep is heard. Entering a number before selecting this icon has no effect, as the current alarm shown on the user monitor is the alarm that will appear when the ALARM menu is selected.

- GPI brings up the GPI menu. Entering a GPI number before selecting this icon will request control and data for the selected GPI.
- PRST brings up the PRESET menu. Entering a number before selecting this icon will call the indicated preset without bringing up the preset menu.
- MORE brings up TOP MENU 2.
- LOG OFF will prompt the user to enter YES or NO for logging off the system.

TOP MENU 2

MACRO	SEQUENCE	DEF					EXIT

- MACRO brings up the MACRO menu. Entering a macro number before selecting this icon will request control and data for the selected macro.
- SEQ brings up the SEQUENCE menu. Entering a sequence number before selecting this icon will request control and data for the selected sequence.
- DEF prompts for a PIN number is the PIN has not already been entered. It then brings up the DEFINE menu.
- EXIT returns to TOP MENU 1.

MONITOR MENU

DOWN	UP	MONITOR	PAUSE				EXIT

- DOWN requests the previous logical monitor number in the system and grants control of the monitor if it is available.
- UP requests the next logical monitor number in the system and grants control of the monitor if it is available.
- MONITOR indicates whether or not the user has control of the selected monitor. If the MONITOR icon is inverted then the user has control. Selecting this icon will request or release control of the selected monitor. If a number is input before selecting this icon, the keyboard will request control of the monitor number input.
- PAUSE prevents other processes from interfering with the monitor. For example, an alarm will no longer be able to switch cameras on the monitor that is paused.
- EXIT returns to TOP MENU 1.

CAMERA MENU 1

DOWN	UP	PATTERN	CAMERA	1	2	MORE	EXIT

- DOWN requests the previous logical camera number in the system and grants control of the camera if it is available.
- UP requests the next logical camera number in the system and grants control of the camera if it is available.
- PATTERN runs a selected pattern.
- CAMERA indicates whether or not the user has control of the selected camera. If the CAMERA icon is inverted then the user has control. Selecting this icon will request or release control of the selected camera. If a number is input before selecting this icon, the keyboard will request control of the camera number input.
- 1 will send an AUX 1 set command to the selected camera when pressed down and a clear command when the key is released.
- 2 is the same as 1 but send AUX 2 commands.
- MORE brings up CAMERA MENU 2.
- EXIT returns to TOP MENU 1.

CAMERA MENU 2

3	4	5	6	7	8	MORE	EXIT

- 3-8 send AUX commands as in CAMERA MENU 1.
- MORE and EXIT bring up CAMERA MENU 1.

*Note with VCR menu: the PLAY, STOP, REWIND and FAST FORWARD commands will cause a switch command to be sent to switch the currently selected VCR to the selected MONITOR. A RECORD command will cause a switch command to be sent to switch the currently selected CAMERA to the selected VCR. When recording a VCR is an output device like a MONITOR.

MUX MENU 1

DOWN	UP	MUX	TAPE	LIVE	ZOOM	MORE	EXIT

- DOWN requests the previous logical MUX number in the system and grants control of the MUX if it is available.
- UP requests the next logical MUX number in the system and grants control of the MUX if it is available.
- MUX indicates whether or not the user has control of the selected MUX. If the MUX icon is inverted then the user has control. Selecting this icon will request or release control of the selected MUX. If a number is input before selecting this icon, the keyboard will request control of the MUX number input.
- TAPE sends a MUX TAPE command to the selected MUX.
- LIVE sends a MUX LIVE command to the selected MUX.
- ZOOM sends a MUX ZOOM command to the selected MUX. If a number is entered before selecting this icon, then the command sent to the MUX becomes a MUX SWITCH CHANNEL command to the specified channel.
- MORE brings up MUX MENU 2.
- EXIT brings up TOP MENU 1.

MUX MENU 2

PIP	QUAD	NANO	HEX			MORE	EXIT

- PIP sends a MUX PIP command to the selected MUX.
- QUAD sends a MUX QUAD command to the selected MUX.
- HEX sends a MUX HEX command to the selected MUX.
- MORE brings up MUX MENU 1.
- EXIT brings up TOP MENU 1.

ALARM MENU

DOWN	UP	MUTE	RESET	RESET ALL			EXIT

- DOWN requests the previous triggered logical alarm number in the system. This command is interpreted by the P68 matrix as a Previous Alarm Step.
- UP requests the next triggered logical alarm number in the system. This command is interpreted by the P68 matrix as a Next Alarm Step.
- MUTE turns off the alarm siren of the keyboard.
- RESET sends an ALARM RESET command for the currently displayed alarm.
- RESET ALL sends an ALARM RESET ALL command. This is interpreted by the P68 matrix as a reset current alarm on all monitors.
- EXIT brings up TOP MENU 1.

PRESET MENU

PRST	PATTERN	ZONE					EXIT

- PRST sends a PRESET CALL command to the current camera.
- PATTERN sends a PATTERN START command to the current camera. Entering a number before pressing PATTERN will specify that pattern.
- ZONE sends a ZONE SCAN ON command to the current camera and displays the text Zone On. If the ZONE icon is pressed while this text appears, a ZONE SCAN OFF command will be sent to the camera and the text Zone Off will appear. It should be noted that if the menu is exited, the keyboard retains memory of the ZONE key press and will send ZONE S
- EXIT brings up TOP MENU 1.

MACRO MENU

DOWN	UP	MACRO	PLAY BWD	PLAY FWD	STOP	PAUSE	EXIT

- DOWN requests the previous logical MACRO number in the system and grants control of the MACRO if it is available.
- UP requests the next logical MACRO number in the system and grants control of the MACRO if it is available.
- MACRO indicates whether or not the user has control of the selected MACRO. If the MACRO icon is inverted then the user has control. Selecting this icon will request or release control of the selected MACRO. If a number is input before selecting this icon, the keyboard will request control of the MACRO number input.
- PLAY BWD sends a MACRO PLAY BWD command to the selected MACRO.
- PLAY FWD sends a MACRO PLAY FWD command to the selected MACRO.
- STOP sends a MACRO STOP command to the selected MACRO.
- PAUSE sends a MACRO PAUSE command to the selected MACRO.
- EXIT brings up TOP MENU 1.

SEQUENCE MENU

DOWN	UP	MACRO	PLAY BWD	PLAY FWD	STOP	PAUSE	EXIT

- DOWN requests the previous logical SEQUENCE number in the system and grants control of the SEQUENCE if it is available.
- UP requests the next logical SEQUENCE number in the system and grants control of the SEQUENCE if it is available.
- SEQ indicates whether or not the user has control of the selected SEQUENCE. If the SEQ icon is inverted then the user has control. Selecting this icon will request or release control of the selected SEQUENCE. If a number is input before selecting this icon, the keyboard will request control of the SEQUENCE number input.
- PLAY BWD sends a SEQ PLAY BWD command to the selected sequence.
- PLAY FWD sends a SEQ PLAY FWD command to the selected sequence.
- STOP sends a SEQ STOP command to the selected sequence.
- PAUSE sends a SEQ PAUSE command to the selected sequence.
- EXIT brings up TOP MENU 1.

GPI MENU 1

GPI	MTRY	1	2	3	4	MORE	EXIT

- GPI sets the current GPI to the input value. GPI also request control of the selected GPI and sends a message to gather information about the status of the auxes within the GPI. GPI also indicates whether or not the user has control of the selected GPI. If the GPI icon is inverted then the user has control.

- MTRY is the control method used on the auxes. If MTRY is inverted, then the control method is momentary, otherwise it is latching. In momentary mode, the button press sends an AUX ON command and the button release sends an AUX OFF command. The latching mode simply disables the AUX OFF command from being sent when the button is released. When in latching mode, the user can specify a number up to 255 then press the aux number to set the aux and have it unlatch at the specified time (1 –255 in seconds). If no number is entered the aux latches until an AUX OFF command is sent. This can be done by placing the keyboard in MTRY (momentary) mode again and pressing the button (when the button is released an AUX OFF is sent and the AUX ON on pressing the button is ignored).
- 1 – 4 will send set auxiliary commands for the aux within the selected GPI. Pressing the button sends an AUX ON, releasing the button sends an AUX OFF in momentary mode.
- MORE will bring up GPI MENU 2.
- EXIT brings up TOP MENU 1.

GPI MENU 2

5	6	7	8			MORE	EXIT

- 5 – 8 will send set auxiliary commands for the aux within the selected GPI. Pressing the button sends an AUX ON, releasing the button sends an AUX OFF in momentary mode.
- MORE will bring up GPI MENU 1.
- EXIT brings up TOP MENU 1.

DEFINE MENU

PRST	ZONE	LCD	PATTERN	MENU	DOWNLOAD		EXIT

- PRST enters the DEFINE PRESET MENU.
- ZONE enters the DEFINE ZONE MENU.
- LCD enters the SETUP LCD MENU.
- PATTERN sends a start pattern programming command to the current camera. An icon will appear of an inverted pattern symbol to the right of the MENU icon. Pressing PATTERN again will send a stop pattern programming command to the current camera and cause the pattern symbol to become normal.
- MENU brings up the PROGRAMMING MENU.
- DOWNLOAD brings up the DATABASE MENU.
- EXIT brings up TOP MENU 1.

DEFINE PRESET MENU

PRST	DEL						EXIT

- PRST sends a set preset command to the current camera. A preset number is required prior to pressing this icon key. A preset label is sent as well.
- DEL will send a delete preset command to the current camera. A preset number is required prior to pressing this icon key.
- EXIT brings up the DEFINE MENU.

DEFINE ZONE MENU

ZONE							EXIT

- ZONE sends a set zone command to the current camera. A zone number is required prior to pressing this icon key. A zone label is sent as well.
- EXIT brings up the DEFINE MENU.

SETUP LCD MENU

DOWN	UP	SAVE					EXIT

- DOWN lowers the LCD brightness.
- UP intensifies the LCD brightness.
- SAVE saves the setting.
- EXIT brings up the DEFINE MENU.

PROGRAMMING MENU

DOWN	UP	LEFT	RIGHT	PLUS	MINUS	PGM	EXIT

- DOWN sends a MENU ITEM DOWN command to the system master.
- UP sends a MENU ITEM UP command to the system master.
- LEFT sends a MENU ITEM LEFT command to the system master.
- RIGHT sends a MENU ITEM RIGHT command to the system master.
- PLUS increments the current item.
- MINUS decrements the current item.
- EXIT brings up the DEFINE MENU.

DATABASE MENU

SEND	RECEIVE						EXIT

- SEND will send the keyboard's key configuration to another keyboard. The local device address of the keyboard to send to must be entered before the key is pressed. This will only send to a device on the same bus as the keyboard.
- RECEIVE will ask another keyboard for it's key configuration database. The local device address of the keyboard to send to must be entered before the key is pressed. This will only send to a device on the same bus as the keyboard.
- EXIT brings up the DEFINE MENU.

Setup Menus

The setup menus have changed to be the following. The setup menu is reached by setting dip switch 2 ON. The keyboard will then require the user to enter a setup PIN.

SETUP MODE MENU

KEY DEFINE	JOYSTICK	LCD	ADV				EXIT

- KEY DEFINE will enter the KEY DEFINE MENU.
- JOYSTICK will enter the JOYSTICK SETUP MENU.
- LCD will enter the LCD BRIGHTNESS SETUP MENU.
- ADV will enter the ADVANCE SETUP MENU.
- EXIT will prompt the user to set dip switch 2 OFF and press EXIT again or simply exit if dip switch 2 is already OFF.

KEY DEFINE MENU

UP	DOWN	SELECT			DEF NUM	SAVE	EXIT

- UP traverses a list of possible key definitions.
- DOWN traverses a list of possible key definitions.

- Once a user selects a key to define, SELECT will choose the key definitions selected by the ">" from the list of possible key definitions.
- DEF NUM is used to define the number associated with the key being defined. For example, if a key is defined as NUMX, and the number associated with NUMX is 3, then the number 3 is the definition of the key.
- SAVE should be pressed any time a key is changed and the user wishes to save changes.
- EXIT will return to the SETUP MODE MENU.

JOYSTICK SETUP MENU

This menu has not changed from the current manual (C540M-A).

LCD BRIGHTNESS SETUP MENU

This menu has not changed from the current manual (C540M-A).

ADVANCE SETUP MENU

The ADVANCE SETUP MENU contains 2 pages. Each page has the different ICONS on the screen with a difference list of parameters on the left to configure.

ADVANCE SETUP PAGE 1

This page is for configuring com port parameters.

UP	DOWN	LEFT	RIGHT	PARITY	HOST PORT	SAVE	EXIT

- UP traverses the list of parameters on the left to configure. Going up past the current page will wrap to the next page up.
- DOWN traverses the list of parameters on the left to configure. Going up past the current page will wrap to the next page down.
- LEFT will adjust the baud rate by cycling through the list of possible baud rates for the port selected by the ">". If on Local Address, it will subtract 1 from the Local Address (1 – 253).
- RIGHT will adjust the baud rate by cycling through the list of possible baud rates for the port selected by the ">". If on Local Address, it will add 1 from the Local Address (1 – 253).
- PARITY will cycle through the list of possible parity selection for the port selected by the ">".
- HOST PORT will select the port selected by ">" as the current Host port. This is the port through which the keyboard will communicate to the Host device (CM6800).
- SAVE will save any changes made on the current page.
- EXIT will return to the SETUP MODE MENU.

ADVANCE SETUP PAGE 2

This menu is used to define the setup PIN. This is done in the same fashion as the current manual (C540M-A).

Diagnostic Menus

The diagnostic menus remain unchanged from the current manual (C540M-A) section 3.3.

Notes (CONFIDENTIAL)

The keyboard is intended to be general purpose. A menu option provides a device address for the keyboard. The upper three bytes of addressing are provided by the bus master when the keyboard is brought on line. The bus master also provides a System Master address if one exists as well as the Alarm Master address.

When a user selects a camera, the keyboard needs the camera address to control it. The keyboard then queries the system controller for the physical address of the logical camera number it needs to address.

Normally, this would be a network address that the keyboard would send commands to directly. However, in project 68, all communication to cameras is indirect (we do not yet have any PT that speak M protocol). For this reason, when a keyboard sends a request to control a camera, the system controller should respond with its own physical address as the camera address. The system controller will also have to remember which camera a particular keyboard is controlling in order to route the message to the camera.

Commands Sent from Keyboard (CONFIDENTIAL)

Universal Commands [00]
- Database up/down load [C2]
  - Get Record [01]
  - Get Record Range[04]

Alarms [05]
- Clear Alarm [08]
- Request GPI Status [02] (this is a command with an implied response, not immediate)

Auxiliary Outputs [06]
- Set Aux [00]
- Clear Aux [01]

Recording Equipment [08]
- Play [00]
- Stop [01]
- Rewind [02]
- Fast Forward [03]
- Pause [04]
- Record [05]
- Eject [06]

Multiplexers [09]
- Mux Tape [00]
- Mux Live [01]
- Mux Zoom [02]
- Mux PIP [03]
- Mux 2X2 [04]
- Mux 3X3 [05]
- Mux 4X4 [06]
- Mux Switch Channel [07]

Monitors [0A]
- Toggle Pause Monitor Activity [00]

System Management [0E]
- Release Resource Control [01]
- Set Date and Time [10]
- Start Macro [11]
- Stop Macro [12]
- Pause Macro [13]

Combination Commands [0F]
- P Data Cmd [00]

User Interfaces [10]
- Menu Program Mode On [00]

Menu Program Mode Off [01]
Menu Select Item [04]
Menu Item Up [05]
Menu Item Down [06]
Menu Item Left [07]
Menu Item Right [08]
Menu Decrement Value [09]
Menu Increment Value [0A]
Menu Set Value [0B]
Menu Set String [0C]

Requests sent from Keyboard (immediate response requested): (CONFIDENTIAL)

Alarms [05]
Get Next Triggered Alarm [0B]
Get Previous Triggered Alarm [0C]

System Management [0E]
Request Resource Control [00]
Request Next Logical Resource Number [03]
Request Previous Logical Resource Number [04]
Request Resource Data Command [05]
Request Switch Command [07]

Commands not listed above that are received by Keyboard (CONFIDENTIAL)

Universal Commands [00]
Acknowledge (ACK) [00]
Negative Acknowledge (NAK) [01]
Get Device Info [02]
Get Version/Revision [03]
Turn Device On [10]
Set "Listen Only" Mode [11]
Turn Device Off [12]
Set Address [13]
Set System Master Address [14]
Set Alarm Master Address [15]
Database up/down load [C2]
Set Record [00]
*does not accept Set Record Range [03]

System Management [0E]
Resource Control Lost [02]
Update Resource Data Command [06]

Key Database (CONFIDENTIAL)

The Key Database within the keyboard contains 64 entries. Each entry has the following fields:

NAME	SIZE	MEANING
KeyDef	Byte	This is the function of the key.

KeyNum	Word	Number associated with the function of the key. For example, if the function were RELAY and the associated number was 1, then the result would be RELAY 1.
KeyFlags	Byte	Bit flags for each key: Bit 0 1 = Key Enabled, 0 = Key Disabled Bit 1 1 = LED always ON, 0 = LED always OFF Bit 2 1 = LED lit/unlit when key pressed Bit 3 1 = BEEP when key pressed Bit 4 1 = Suppress release, 0 = Act on release of key Bit 5 1 = Suppress press, 0 = Act on press of key

One of these constants is assigned to each key. When a key is pressed, the physical position of the key is used to index into an array called KeyMap which contains a field called KeyDef. The KeyDef is used to call the appropriate function.

CONSTANT	NAME	Description
0 (0x00)	NOTDEF	Key is not defined
1 (0x01)	NUMX	Numerical value X
2 (0x02)	ESC	Escape – acts like exit key
3 (0x03)	BS	Backspace on number being input, if any.
4 (0x04)	ENTER	Enter – has various functionality depending upon menu
5 (0x05)	DEFINE	Goes to define menu (may need to enter PIN first)
6 (0x06)	CLEAR	Resets alarm in alarm menu, clears number input elsewhere
7 (0x07)	ICON	Defines a key as one of the icon keys, uses numbers 1 – 8
8 (0x08)	MENUFWD	Next device of menu type.
9 (0x09)	MENUBWD	Previous device of menu type.
10 (0x0A)	MON	Goes to monitor menu, may input monitor number
11 (0x0B)	MONX	Select Monitor X
12 (0x0C)	CAM	Go to camera menu, may input camera number
13 (0x0D)	CAMX	Go to camera menu, select CAM X
14 (0x0E)	VCR	Go to VCR menu, may input VCR number
15 (0x0F)	VCRX	Go to VCR menu, select VCR X
16 (0x10)	MUX	Go to MUX menu, may input MUX number
17 (0x11)	MUXX	Go to MUX menu, select MUX X
18 (0x12)	ALM	Go to alarm menu
19 (0x13)	ALMX	Go to alarm menu
20 (0x14)	PRST	Go to Preset menu or call input preset number
21 (0x15)	PRSTX	Call preset X
22 (0x16)	MAC	Go to MAC menu, may input MAC number
23 (0x17)	MACX	Go to macro menu, select macro X
24 (0x18)	SEQ	Go to SEQ menu, may input sequence number
25 (0x19)	SEQX	Go to sequence menu, select sequence X
26 (0x1A)	GPI	Go to GPI menu, may input GPI number
27 (0x1B)	GPIX	Go to GPI menu, select GPI X
28 (0x1C)	PAUSE	Pause key – pauses sequence, alarm, on a monitor or macro. Function depends upon menu, default is monitor pause.
29 (0x1D)	CAMFWD	Switches next camera to current monitor
30 (0x1E)	CAMBWD	Switches previous camera to current monitor
31 (0x1F)	ALT	Currently does nothing
32 (0x20)	RECALL	Recall last selected camera on monitor

33 (0x21)	CAMPATTERN	Call a pattern
34 (0x22)	CAMPATTERNX	Call pattern number X.
35 (0x23)	CAMAUX	Send a camera aux
36 (0x24)	TURBO	Turbo pan speed when pressed
37 (0x25)	ZOOM_IN	Zoom current camera lens in.
38 (0x26)	ZOOM_OUT	Zoom current camera lens out.
39 (0x27)	FOCUS_NEAR	Focus current camera lens near.
40 (0x28)	FOCUS_FAR	Focus current camera lens far.
41 (0x29)	IRIS_OPEN	Open current camera iris.
42 (0x30)	IRIS_CLOSE	Close current camera iris.
43 (0x31)	RELAY	Sends external relay X on/off to system master Also allows user to enter a number in place of X (this is keyed or momentary only – to get latching user must enter the GPI menu)
44 (0x32)	INT_RELAY	Turn internal (to keyboard) relay X on/off (latching only)
45 (0x33)	RSTALLALM	Send Reset all alarms
46 (0x34)	RSTALM	Resets current alarm
47 (0x35)	ARM_DISARM	Arm or disarm an alarm

Physical Position	Key Label	Default KeyDef	Default KeyNum	Def. Flags	Has LED	Configurable Blank = YES
0		NOTDEF				
1		NOTDEF				
2		NOTDEF				
3	ICON3	ICON	3			NO
4	F1	CAMAUX	1		YES	
5	F7	CAMAUX	7		YES	
6	F13	MUX			YES	
7	F19	MENUFWD			YES	
8	Esc	ESC				NO
9	ICON1	ICON	1			NO
10	ICON2	ICON	2			NO
11	ICON4	ICON	4			NO
12	F2	CAMAUX	2		YES	
13	F8	CAMAUX	8		YES	
14	F14	ALM			YES	
15	F20	MENUBWD			YES	
16	ICON5	ICON	5			NO
17	ICON7	ICON	7			NO
18	1	NUMX	1			NO
19	7	NUMX	7			NO
20	F3	CAMAUX	3		YES	
21	F9	CAMPATTERNX	0		YES	
22	F15	MAC			YES	
23	F21	BS	1		YES	
24	ICON6	ICON	6			NO
25	ICON8	ICON	8			NO
26	4	NUMX	4			NO
27	CAM	CAM	0			NO
28	F4	CAMAUX	4		YES	
29	F10	CAMPATTERNX	1		YES	

30	F16	SEQ			YES	
31	F22	ENTER			YES	
32	2	NUMX	2			NO
33	5	NUMX	5			NO
34	8	NUMX	8			NO
35	0	NUMX	0			NO
36	F5	CAMAUX	5		YES	
37	F11	CAMPATTERNX	2		YES	
38	F17	GPI			YES	
39	F23	CLEAR			YES	
40	3	NUMX	3			NO
41	6	NUMX	6			NO
42	9	NUMX	9			NO
43	MON	MON				NO
44	F6	CAMAUX	6		YES	
45	F12	RELAY	1		YES	
46	F18	DEFINE			YES	
47	F24	INT_RELAY	1		YES	
48	Fwd	CAMFWD				
49	Run	PAUSE				
50	Rcl	RECALL				
51	Prst	PRESET				NO
52	T	TURBO				
53	In	ZOOM_IN				
54	Near	FOCUS_NEAR				
55	Open	IRIS_OPEN				
56	Bwd	CAMBWD				
57	Mac	MAC				NO
58	Alt	ALT				
59	Lock	PAUSE				NO
60		NOTDEF				
61	Out	ZOOM_OUT				
62	Far	FOCUS_FAR				
63	Close	IRIS_CLOSE				