

DVR Keyboard Controller

Installation and Operation Manual

MODEL PTZ790



Controls DVRs and PTZs

Version 1.0

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1. Summary

The PTZ790 is a DVR keyboard controller that can control both the Alien and DVR9K range of DVRs and the excelPTZ range of intelligent Speed Domes and other standard PTZ domes. The DVR controller completely replaces the functions available on the front panel of the Alien and DVR9K DVRs and can control a maximum of 31 x DVRs or 128 x PTZ domes with a maximum communication distance of up to 1.2 km. The PTZ790 is very easy to operate and control the Speed Dome Camera including functions to control pan, tilt, lens etc.

Control

- ◆ Completely replaces all the functions of the DVR front panel.
- ◆ All operations are displayed in the LCD display.
- ◆ One PTZ790 can manage a total of 31 x DVRs maximum.
- ◆ One PTZ790 can control up to 255 x PTZs.
- ◆ The address range for PTZ domes is 0 ~ 254.
- ◆ Up to 15 x auxiliary keyboards can be connected in range 0 ~ 15.
- ◆ Up to 9 different protocols and different baud rates can be selected as configuration is set by the LCD display.

2. Keyboard Overview

The PTZ790 controls up to 31 DVRs and 255 PTZ cameras. Each DVR has to be given a unique ID between 01 and 31. Generally Alien DVRs are given a default ID of 255, so to access it, this has to be changed. Instructions for changing the ID are detailed in the relevant DVR instruction manual. By pressing the **Shift** button you switch control between PTZ control or DVR control. The LCD display will show the commands or options selected.

When you have set the DVR ID number/s you can connect the DVR/s to the PTZ790 controller. You can use a pair of CAT5 twisted cable for connecting the controller to the DVR. Check the rear of the PTZ790 and you will see a diagram of the connections. The right hand connections are for the DVR/s and the left hand connections for the PTZ/s. Refer to the diagram which shows two PTZ790s connected to two DVRs. You will see the main or Host PTZ790 connected from the transmit connections Ta+ and Tb- to the DVR input connections D+ and D-. The second PTZ790 (the auxiliary) connects from the Ta+ and Tb- to the Host PTZ790 Ra+ and Rb- connections. The PTZ cameras can connect either to the DVR or to the back of the PTZ790. It is recommended that you connect to the PTZ790 as more functionality and control is available. The PTZs are connected to the PTZ connections on the left side of the controller, to the transmit connections Ta+ and Tb-. If you are using two PTZ790s then connect the second or auxiliary unit to the Host controller's Ra+ and Rb- connections. You can use the star method of connectivity if you prefer.

The next step is to set all the PTZ cameras with unique IDs as set in each PTZ and Protocol and baud rate. Please follow the instructions in section 6 to setup the PTZ cameras. This operation is passworded and it will be necessary to hold down the **Setup** button to enter the Setup menus. To access the PTZ if connected to the controller, select the camera ID by pressing the **Addr** button, entering the ID number and then pressing the **Enter** button. As a general guide the DVR commands are mainly accessed using the left block of buttons on the PTZ790, the PTZ using the far right block of buttons with the centre numeric/alpha keys used for either.

3. The PTZ790 Keyboard

Description of Buttons (Figure 1)

The keyboard has a speed joystick, press buttons and an illuminated display on the front panel. The display is used to show the active functions in use at that time. The joystick controls the upward, downward, and sideways movement of the speed dome. The description of buttons is as follows:



1. **ESC** Return to Main Menu
2. **Setup** Hold for 3 seconds to enter keyboard configuration. Default Password = **8888**
3. **Search** Hold for 1 second to check keyboard configuration: PTZ Control
4. **Shift** Switch the control mode from DVR to PTZ or vice versa.
5. **Display** Display LCD screen.
6. **Joystick Controls** Up, Down, Left, Right, Wide, Tele.

- A **DVR Operation**
B **Numeric Keys**
C **PTZ Operation**

A. DVR Operation



- MENU** Show main menu
- PREV** Switch preview displays 1, 4, 9, 12 or 16
- F1** Quick setup speed dome – refer LCD display
- F2** Quick setup speed dome – refer LCD display
- REC** Enter DVR Menu
- MON** Control 4 x Auxiliary display output ports
- EDIT** Enter DVR edit mode
- F3** Set presets in a tour number
- PLAY** DVR Playback menu
- MAIN/AUX** Switch between Min/Aux (hold 2 secs)
- A** Switch input ways
- F4** Quick setup speed dome – refer LCD display
- PTZ** Select PTZ options in DVR
- AUX** In DVR mode this button is reserved
- SHUTDOWN** Powers down DVR
- ADDR** Changes PTZ camera number in PTZ mode
Or DVR number in DVR mode. Note that this is either the PTZ ID number or the DVR ID number.

B. Numeric Keys







- NUMERIC KEYPAD** Enter alpha or numeric characters
- CLEAR** Clear current input
- ENTER** Enter current input

C. PTZ Operation

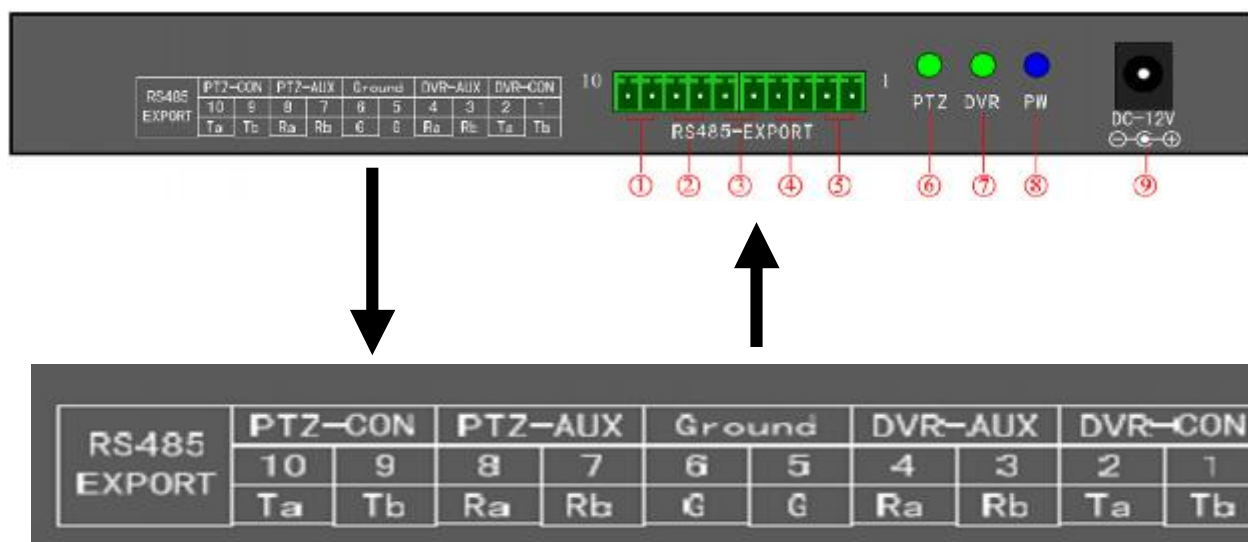


PRESET	Set preset position
FOCUS+	Set Lens focus near
FOCUS-	Set Lens focus far
DEL	Delete preset position
ZOOM+	Zoom in
ZOOM-	Zoom out
SHOT	Call preset position
IRIS+	Open Lens Iris
IRIS-	Close Lens Iris
AUTO	Set dome to rotate – depends on PTZ
WIPER	Switch wiper on/off –depends on PTZ
LIGHT	Switch light on/off – depends on PTZ

Joystick Controls

fig	operation	function introduction
	up	In PTZ control mode: control the movement of pan/tilt
		In DVR control mode: play record file fast
	down	In PTZ control mode: control the pan/tilt to move upon
		In DVR control mode: play record file slowly
	left	In PTZ control mode: control pan/tilt to move left
		In DVR control mode: control record file backward
	right	In PTZ control mode: control pan/tilt to move right
		In DVR control mode: control record file forward

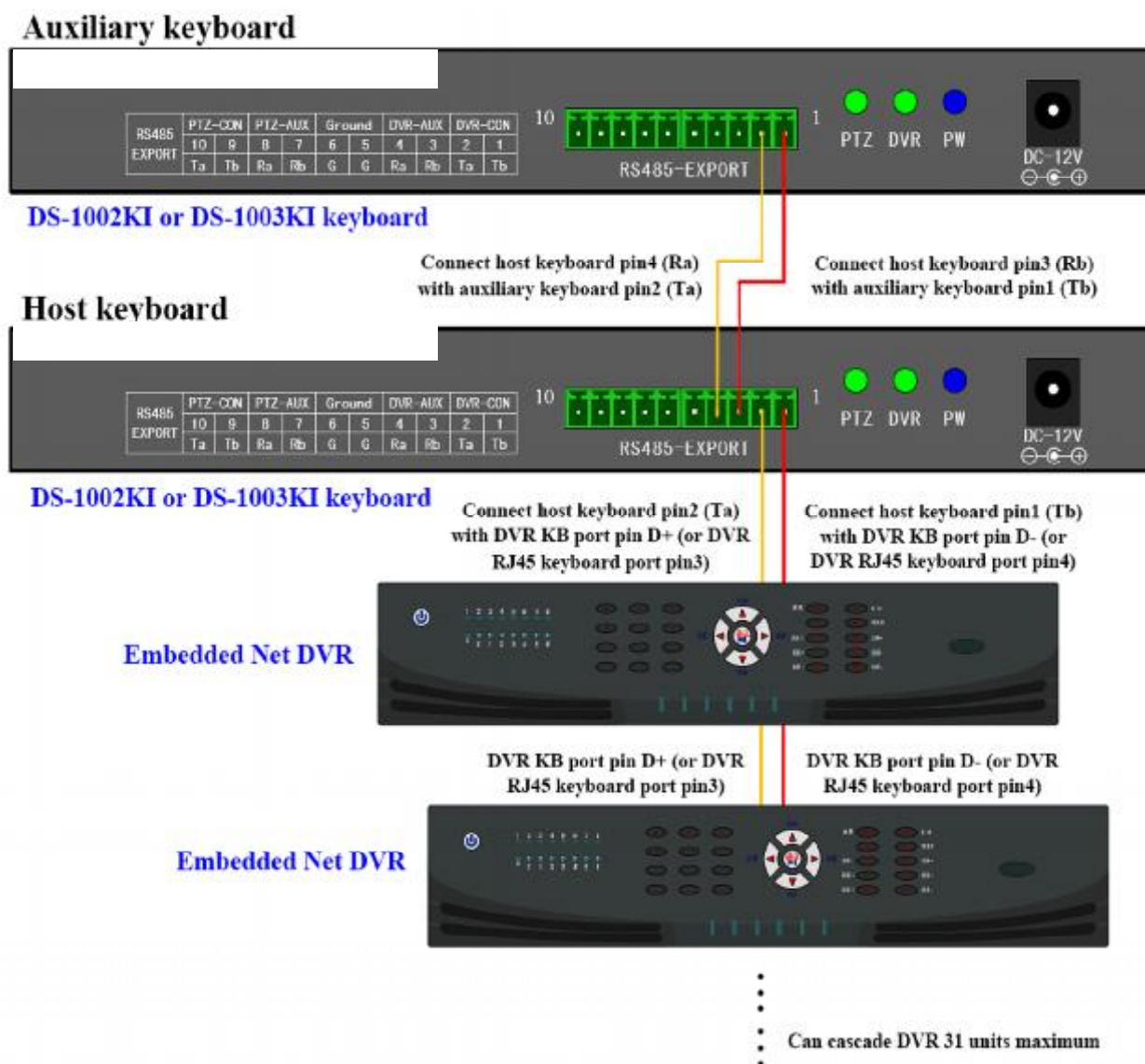
4. Rear Panel Interface



No	Physical interface	Connect introduction
1	Output of control PTZ PTZ-CON	Host keyboard connects PTZ RS485 port. Ta is for RS485+, and Tb is for RS485-
2	Input of auxiliary keyboard for PTZ control PTZ-AUX	Host keyboard connects auxiliary keyboard for PTZ control. Host keyboard pin8 (Ra) connects auxiliary keyboard pin10 (Ta), and host keyboard pin7 (Rb) connects auxiliary keyboard pin9 (Tb). Then auxiliary keyboard can control PTZ.
3	Ground	Ground control signal line terminal
4	Input of auxiliary control keyboard for DVR control DVR-AUX	Host keyboard connects auxiliary keyboard for DVR control. Host keyboard pin4 (Ra) connects auxiliary keyboard pin2 (Ta), and host keyboard pin3 (Rb) connects auxiliary keyboard pin1 (Tb). Then auxiliary keyboard can control DVR.
5	Output of control DVR DVR-CON	connect host keyboard pin2 (Ta) with DVR KB port D+ , and connect host keyboard pin1 (Tb) with DVR KB port D-
6	PTZ control indicator light	In PTZ control mode, the led is green lighted and twinkling.
7	DVR control indicator light	In DVR control mode, it is green and twinkling.
8	Power light PW	The lamp of keyboard is constantly red lighted on the working state
9	Power input DC-12V	DC 12V power input

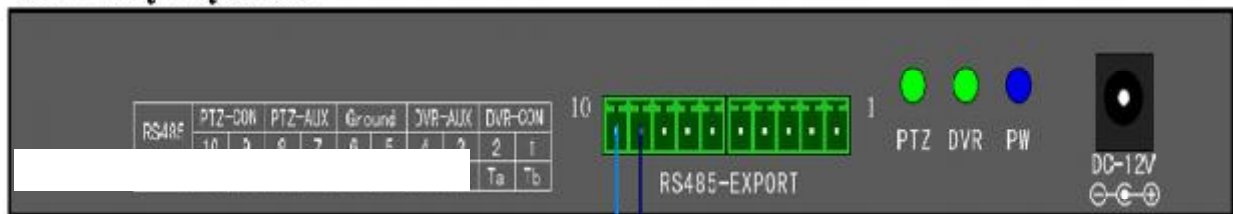
5. Rear Panel Connections to DVR and PTZ

Connecting two PTZ790 to two DVRs



Connecting two PTZ790 to four PTZs

Auxiliary keyboard



DS-1002KI or DS-1003KI keyboard

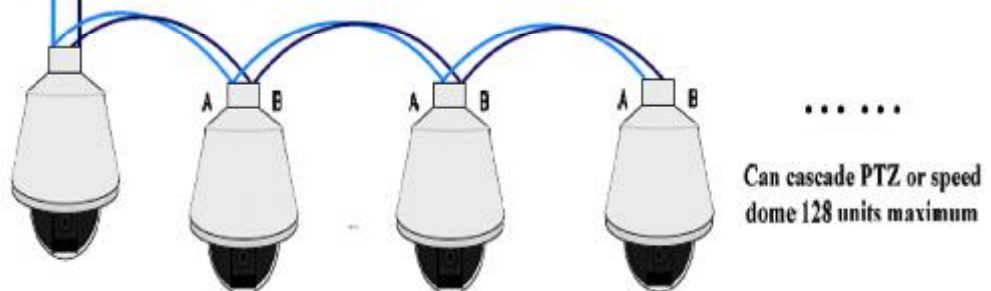
Host keyboard



DS-1002KI or DS-1003KI keyboard

Connect host keyboard pin10 (Ta) with PTZ RS485+

Connect host keyboard pin9 (Tb) with PTZ RS485-



6. PTZ Operation

PTZ SETUP

In order to control the PTZ dome you will need to uniquely address it. The dome will usually have dip switches to set the address. When the address is set you will need to use this address to access the specific dome. Press the Shift button to access PTZ operation rather than DVR control. Now press the Setup button holding it down until the **ENTER PW:** message is displayed. Enter the password **8888** and press **Enter**. Now select **PTZ SETUP** and press **Enter**.

The following is displayed

<p style="text-align: center;">PTZ SETUP</p> <p>CAM : 001</p> <p>PROTOCOL :</p> <p>BAUD RATE :</p>
--

Using the joystick move it to the right to select the required PTZ number (001 ~ 254). Now press **Enter**.

The protocol and baud rate can now be set for this camera number. This means you can select different protocols and baud rates for every PTZ camera connected. Press **Enter** to save.

Protocols provided: Pelco-D, HIK, SAMSUN, RULE, ALEC, YAAN, B01, NCS850, CS850, Pelco-P.

Baud Rates provided: 1200, 2400, 4800, 9600, 19200.

Note that the screen display cancels after 30 seconds.

SELECTING A CAMERA

To select a camera move the joystick to the right. If display shows DVR controller press the **Shift** key.

Now press **Addr** (Address) nn = camera number e.g **02** and press **Enter**.

INTRODUCTION TO PTZ CAMERA FUNCTIONALITY

The dome stores preset positions, preset tours and other functionality associated with the dome equipment. The keypad merely instructs the dome to carry out those functions. Think of the keypad as a switch that activates a particular function in the dome that you require. Not all domes have the same functionality so if your dome does not have presets built into it you obviously cannot use presets, regardless of the keypad you use. The PTZ790 controller can be operated in two modes. Speed Dome or DVR. The Shift function button switches between these modes. The LCD screen will provide guidance on the mode you are in.

PRESETS AND OTHER FUNCTIONS

What is a preset? A preset is a particular area or object that the dome camera was looking at and has been stored into its memory so when the preset is “called-up” from the keypad, the dome will select the area again without the operator using the joystick to do this. Even the zoom at the time can be stored with the preset. This means that you could for example store a PRESET of a car-park entrance. When the operator calls up this preset from the keypad, the camera automatically zooms in on this area. This keypad can select up to 140 different presets. Of course this is dependent on the total number that can be programmed into the dome. Once programmed they will stay in the dome’s non-volatile memory so they will be retained even after a power cut. By storing more than one preset you can add even more functionality to the dome. By having two locations set, you can then get the dome to “SCAN” between the two locations. You can even vary the speed of this scan. Having 3 or more presets you can get the dome to go on a TOUR (PATROL) of the presets. When you run the patrol, the dome goes to one preset, then waits a short period then on to the next preset and so on. The dome continues to cycle around this patrol until you cancel it.

Please note that the ability to use presets, auto scans, tours, record patterns, the length of time the camera stays at one location and the speed of travel between each preset, are dependent on the functionality available in the dome. Always refer to the relevant dome instruction manual.

PRESETS –HOW TO SETUP A PRESET

To select a camera move the joystick to the right. If display shows DVR controller press the **Shift** key.

Now press **Addr** (Address) nn = camera number e.g **02** and press **Enter**.

Aim the dome where you want it to look, zoom in or out to get the correct scene and let the camera auto focus. Now press the following keys on the keypad : **PRESET + xx +Enter** (where **xx** is the preset number you wish to store). For example **PRESET + 01 + Enter** would set preset 1 and the camera would always go to this location when preset 01 is “CALLED”.

To test if the preset is stored correctly in the dome, use the joystick to move the camera to point in a new location. Now press **SHOT + xx + Enter** (where **xx** is the preset you wish the camera to go to). In this example if you press **CALL + 01 + Enter** the dome should go straight to the PRESET 01 location.

TIP -You may wish to write down a list of presets that you have stored next to the keypad for the operator.

CALLING A PRESET

This may be as follows;

PRESET 01 = MAIN GATE (a long zoom shot)

PRESET 02 = ENTRANCE DOOR

PRESET 03 = FIRE ESCAPE

PRESET 04 = EMERGENCY EXIT

PRESET 05 = CAR PARK (zoomed-out wide angle)

PRESET 06 = CAR PARK (zoomed-in narrow angle)

When the operator wishes to quickly zoom in on the MAIN GATE all he has to do is press **SHOT + 01 + Enter**.

To go to the EMERGENCY EXIT he would press **SHOT + 04 + Enter** and so on.

To call up any previously stored preset camera location, simply press **SHOT + xx + Enter**, where **xx** is the preset number.

DELETING A PRESET

You may wish to delete a preset.

To do this press **DEL + xx + Enter** (xx = preset number).

For example to delete preset 1, press **DEL + 01 + Enter**. Obviously if you wish to overwrite a preset with a new location, simply aim the camera at the new location and store the same preset again.

PATROLS (TOURS) – HOW TO SET THEM UP AND USE THEM

A patrol (tour) is simply a collection of at least three preset camera locations that are run in sequence with the dome stopping at each location for a brief period of time and then moving on to the next preset.

For example, you could use a patrol so that an outside dome camera points at a gate, then at a side doorway, then zooms out to get an overall shot of a car park and finally zooming in on a delivery bay, before repeating the whole cycle again. Patrols can be useful for both outside and internal PTZ's. For a shop they could be used to cover key areas like clothes rails, tills and changing rooms in a sequence.

To set up a patrol you need to set up the individual stop points where the camera will pause. These are called *presets*.

AN EXAMPLE 4 PRESET MINI TOUR

SETTING THE PRESETS USING THE CONTROLLER

STEP 1- Using the keypad joystick, move to the first position and then press **PRESET + 01 + Enter**

STEP 2- Now move to the next location and press **PRESET + 02 + Enter**

STEP 3- Now move to the third location and press **PRESET + 03 + Enter**

STEP 4- Finally move to where you wish to end the tour and press **PRESET + 04 + Enter**

SETTING UP A TOUR/PATROL/TRACK

Refer to your instructions on the dome. This will detail how the tour/patrol/track (all synonymous) is set up and initiated via the dome menu. In order to access the dome menu press **SHOT + 95 + Enter** for the high speed dome. You can select items in the menu by using the joystick up and down movements to select menu and the joystick right movement to enter it. Use the **IRIS-** button to exit. The standard speed dome has no PTZ menu.

RUNNING A TOUR/PATROL/TRACK

Refer to your dome instructions. This will detail how to initiate the Tour/Patrol/Track via the dome menu. In order to access the dome menu in a high speed dome press **SHOT + 95 + Enter**. Select the **RUN PATROL** option by moving the joystick down to select the option and move joystick to right to start tour.

Alternatively you may be able to start the Tour/Patrol/Track directly from the controller by pressing the **SHOT** button followed by **91** and then press the **Enter** button for the high speed dome.

If you are using the standard speed PTZ dome you may be able to initiate the tour by pressing **PRESET 51 Enter** or **PRESET 64 Enter**.

STOP A TOUR/PATROL/TRACK

A Tour/Patrol/Track may be stopped by pressing **CLEAR** then **Enter** or by moving joystick.

CLEAR A TOUR/PATROL/TRACK

A Tour/Patrol/Track can only be cleared by entering a new tour.

SETTING UP AN AUTO PAN/SCAN ON HIGH SPEED DOME

Refer to your instructions on the dome. This will detail how the Auto Pan/Scan is set up and initiated via the dome menu. This is providing you have a PTZ menu to access. In order to access the dome menu press **SHOT + 95 + Enter**. You can select items in the menu by using the joystick up and down movement and then entering the menu using the joystick right movement. You will need to move the camera to the starting position and by pressing the **IRIS-** key this will save the start position and return to the menu. Now move the camera using the joystick to the end position and select the option to set this and press the **IRIS-** key again to save this position. To run press **SHOT + 97 + Enter**.

SETTING UP AN AUTO PAN/SCAN ON STANDARD SPEED DOME

Move the PTZ to the start point of the Autoscan and press **PRESET 52 Enter**. Now move PTZ to end point and press **PRESET 53 Enter**.

RUNNING AN AUTO PAN/SCAN

Refer to your dome instructions. This will detail how to initiate the Auto Pan/Scan via the dome menu. In order to access the dome menu press **SHOT + 95 + Enter**. You can select **RUN AUTOSCAN** in the menu by using the joystick up and down movement and then entering the menu using the joystick right movement. If you are using a standard speed dome then try **SHOT 51 Enter** (slow speed), **SHOT 52 Enter** (middle speed) or **SHOT 53 Enter** (high speed).

NOTE: When initiating an Auto Pan/Scan the PTZ dome will normally take the shortest route. If this is not the required route then set a tour with at least four presets setting the last preset near the first preset position. On some PTZs it may be possible to set a route less than 180 or greater than 180 degrees via the dome menu.

SETTING UP A RECORD PATTERN (only certain High Speed domes)

Refer to your instructions on the dome. This will detail how the Record Pattern is set up and initiated via the dome menu. In order to access the dome menu press **SHOT + 95 + Enter**. You can select items in the menu by using the joystick up and down movement and then entering the menu using the joystick right movement. Move to **RECORD PATTERN** and press joystick right movement. Now using the joystick move to start recording. When complete press the **IRIS-** button.

RUNNING A RECORDED PATTERN (only certain High Speed domes)

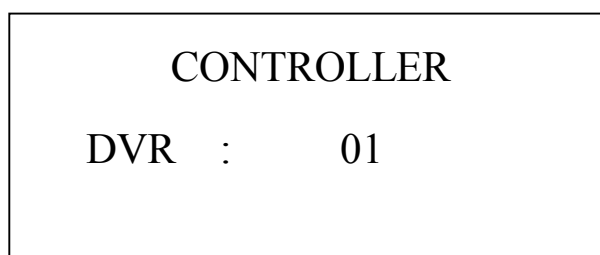
Refer to your dome instructions. This will detail how to initiate the Record Pattern via the dome menu. In order to access the dome menu press **SHOT + 95 + Enter**. You can select items in the menu by using the joystick up and down movement and then entering the menu using the joystick right movement. Now using the joystick move to **RUN PATTERN**. The pattern will run until the joystick is moved.

7. DVR Operation

DVR SETUP

In order to control a DVR you will need to uniquely address it. The PTZ790 can address up to 31 DVRs and the ID in the DVR must be set to a number within this range. Check the ID in the Alien DVR menu and ensure it is set to a number between 01 ~ 31. As the PTZ790 defaults to DVR 01, it may be easier to use 01. Remember that if more than one DVR is being controlled by the PTZ790, then it must have a unique ID setting. As the ID is also used by the remote controller, check that the new ID is working by aiming the remote at the DVR within 1 metre distance and press the DEV button on the remote followed by the new ID number followed by the Enter button. The remote should now operate the DVR and this will confirm that the new ID has been setup correctly.

If you do not want to use DVR 01 then you will need to change the PTZ790 Host Controller ID. First move the joystick to display



Now hold down the **Setup** button until the **ENTER PW :** _ _ _ _ is displayed. Enter **8888** followed by **Enter**.

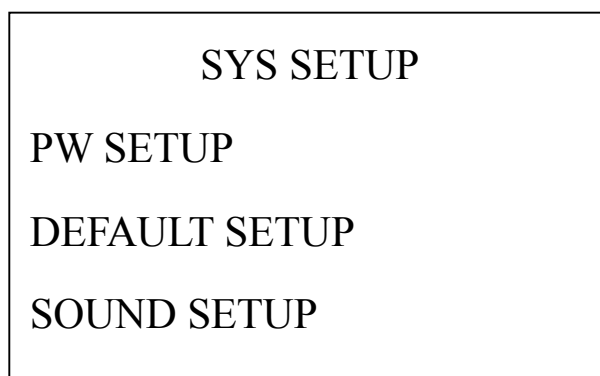
Now select **PTZ SETUP** and press **Enter**.

The following is displayed



Move the joystick down to **SYS SETUP** and press the **Enter** button.

This will display the following:



Use the joystick and move down. You will see that SYS SETUP moves to a second page and displays HOST ID SETUP



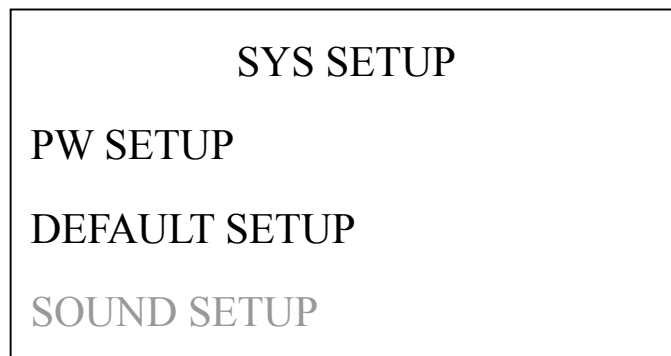
Press **Enter**



Enter new DVR ID number 01 ~ 31 as set in Alien DVR to be accessed by PTZ790 controller.

DVR SWITCHING OFF BLEEPER

Follow the instructions above to access the SYS SETUP :



Select **SOUND SETUP** by moving joystick down and then press the **Enter** button.

SOUND ON will then be displayed. Move the joystick to the right to switch **SOUND OFF**. Now press **Enter** button.

DEFAULTING PTZ790

Selecting **DEFAULT SETUP** and pressing **Enter** will default the PTZ790 system settings.

DVR CONTROL

MODELS: ALIEN HYBRID ALIEN PROLITE

The following DVR buttons can be used to control the DVR. First ensure that you select the correct DVR ID held in the DVR menu. The default is 01. If it is 02 ~ 31 then press **Addr** and change to the correct DVR ID number. Press **Enter** to save. Use the **Esc** to escape a routine and start again. When accessing the DVR you may need specific functionality and by pressing for example the **PTZ** button will allow further control options to be accessed. Always check the LCD display screen to ensure that the required function has been selected, particularly following the **Esc** button that clears the last function.

MENU OF DVR

Press the MENU button to display the DVR menu. Move the joystick to the selected menu and press **Enter**. Use the joystick up and down movements to position on entry to change. Press **Enter** then use joystick up or down to change value. Press **Enter** to save.

EDITING A FIELD

After selecting menu move to field for editing. Press **EDIT** button and the text will be displayed in a different colour. Now press the **A** button. At the bottom of the screen it will tell you the mode you are in. Select from **NUMBER, UPPERCASE, LOWERCASE and SYMBOL**. If you want a space select **SYMBOL** and 1.

Note that when in alpha you will need to press the number keypad the relevant number of times to select the correct alpha character similar to a mobile phone text message.

PREV

Press this button to automatically switch screen modes from 1, 4, 9, 12 and 16 screen modes. Note that these modes apply according to the available streams on the DVR accessed.

REC

This automatically brings up the Manual Record menu. Use the joystick to select the channel and press Enter to switch record on or off. Press **ESC** to exit.

MON

This is a control for switching to up to 4 auxiliary display ports. If you press this with only one monitor connected you will not be able to access monitor unless pressed again to select correct monitor port.

EDIT & A

After selecting menu move to field for editing. Press **EDIT** button and the text will be displayed in a different colour. Now press the **A** button. At the bottom of the screen it will tell you the mode you are in. Select from **NUMBER, UPPERCASE, LOWERCASE and SYMBOL**. If you want a space select **SYMBOL** and 1.

Note that when in alpha you will need to press the number keypad the relevant number of times to select the correct alpha character.

PLAY ALIEN PRO

This automatically enters the Playback menu of the Alien PRO DVR. Move joystick to option required and press the **Enter** button. Move joystick downwards and box will change colour selecting different options. Press **Enter** to select required change. The Playback will open with the cursor on the search box. Just press **Enter** to display recorded files today or edit as necessary. Move joystick to selected file and press **Enter** to play.

PLAY ALIEN PROLITE

This automatically enters the Playback menu of the Alien ProLite DVR and begins to automatically start the playback of channel 1 for the current day. If this is not required then select **MENU** and move to the Video Search menu using joystick right movement. Then click **Enter**. Using the joystick right movement move to the channel number required and then press **Enter**. This then ticks the channel required. Use the joystick to move to the Video Type and or File Type and select if required by pressing **Enter**. Move to the option required using the joystick and press **Enter**. For editing a field, for example the date, press the **Enter** button to select the numeric field, move the joystick to position directly right of the digit to be changed, then press **Edit** button twice for first digit to be edited and this will be removed. Press the required digit and move to right of next digit using the joystick left or right movement. Now press **Edit** button once to delete next digit and enter the required digit. Finally press **Edit** to save the amended date and move to next position by using the joystick.

If you need to edit uppercase, lowercase or special characters then press the **Edit** button followed by the **A** button. This changes between numerics, alpha uppercase, alpha lowercase and special characters. A small red icon shows the character type selected. See **EDIT & A** above.

PTZ

The PTZ button is used when the PTZ camera is connected to the DVR rather than the PTZ790.

Use the joystick to move left, right, up or down. Twist joystick in clockwise direction to zoom in and anti-clockwise to zoom out. Alternatively use the **ZOOM+** button to zoom in or the **ZOOM-** button to zoom out. The **FOCUS+** and **FOCUS-** can be used to adjust focus and the **IRIS+** and **IRIS-** to open or close the camera iris. You can only set presets if the PTZ is connected directly to the DVR unless you enter the PTZ menu using a **SHOT 95 Enter**. However you can call presets directly using the **SHOT xx Enter** (xx = preset number) command. You can set presets using the mouse connected to the DVR or you can enter the PTZ menu using a **SHOT 95 Enter** on the high speed dome and follow the earlier instructions on PTZ using the menus. Using **SHOT 91 Enter** will start a tour on the high speed dome. To provide more extensive control of PTZ cameras it is recommended to connect them to the rear of the PTZ790 rather than through a DVR.

SHUTDOWN

You can shutdown a DVR by using the **SHUTDOWN** button. Different display screens according to the DVR model will be displayed. Use the joystick to select command and press **Enter**.

SPECIAL NOTE: Functionality depends on how the PTZ790 is connected to DVRs and PTZ cameras and also the types of DVR and PTZ cameras used. Check that the functions are available on the equipment connected.

8. Technical Specifications

Keyboard Model	PTZ790
Total DVRs Supported	31
Total PTZs Supported	255
Control Mode	RS485 half duplex mode Baud Rate: 1200 ~ 19200bps
Communications Interface	RS485 port
LCD Screen	128mm X 64mm
Joystick	3D
Maximum cable length	1200 metres
Power Supply	12vDC 2Amp PSU
Working Temperature	-10°C ~ +55°C
Working Humidity	10% ~ 90%
Size	360mm x 200mm x 108mm
Weight	3.3Kg

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