Honeywell

HD6 Series

PTZ Camera in a Dome

User Manual

900.0679 June 2006 Rev. 1.02

ISSUE	DATE	REVISIONS
1.00	November 2005	Initial Release
1.01	December 2005	Add CE Declaration of Conformity
1.02	June 2006	Remove references to camera manufacturer; removed Manchester interface option; removed references to Burle, removed references to UltraDome; changed CAT5 to UTP

FCC COMPLIANCE STATEMENT

INFORMATION TO THE USER: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CANADIAN COMPLIANCE STATEMENT

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la Classe A est conforme à la norme NMB-003 du Canada.

USERS OF THE PRODUCT ARE RESPONSIBLE FOR CHECKING AND COMPLYING WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND STATUTES CONCERNING THE MONITORING AND RECORDING OF VIDEO AND AUDIO SIGNALS. HONEYWELL VIDEO SYSTEMS SHALL NOT BE HELD RESPONSIBLE FOR THE USE OF THIS PRODUCT IN VIOLATION OF CURRENT LAWS AND STATUTES.

Honeywell

Declaration of Conformity

ISSUED BY: Honeywell International Inc.
165 Eileen Way
P.O. Box 9035
Syosset NY 11791
United States of America

MANUFACTURER: Honeywell International Inc.

DATE OF ISSUE: December 19, 2005

TYPE OF EQUIPMENT: HD6 PTZ Ultradome System

APPROVED MODEL NUMBERS: HDT0P000, HDT0W000, HDT0D000, HDT0E000, HDT0R00F, HDT0R00H, HDT0R000, HDT0W00A, HDSA00P1 Sony 48B or 48C PAL, HDSB00P1 Sony 480B or 480C PAL, HDSC00P1 Hitachi PAL, and HDSE00P1 Chonan 25X PAL

STANDARDS TO WHICH CONFORMITY IS DECLARED:

EN 50130-4:1995 +A1:1998 +A2:2003 *Electromagnetic compatibility- alarm/security systems*

EN 55022:1994 +A1:1995 +A2:1997 Class A

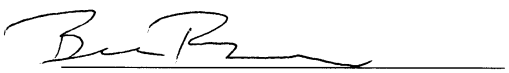
in accordance with the provisions of Council Directive(s):

89/336/EEC Electromagnetic compatibility directive

Honeywell International Inc. hereby declares that the models specified above conform to the directive and standards as specified.

Place of issue: Syosset NY, U.S.A.

by



Bruce Bauer, Director of Quality

Serial number: doc0037

IMPORTANT SAFEGUARDS

1. **READ INSTRUCTIONS –** All safety and operating instructions should be read before the unit is operated.

2. **RETAIN INSTRUCTIONS** – The safety and operating instructions should be retained for future reference.

3. **HEED WARNINGS** – All warnings on the unit and in the operating instructions should be adhered to.

4. **FOLLOW INSTRUCTIONS** – All operating and use instructions should be followed.

5. **CLEANING** – Unplug the unit from the outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

6. **ATTACHMENTS** – Do not use attachments not recommended by the product manufacturer as they may result in the risk of fire, electric shock, or injury to persons.

7. **WATER AND MOISTURE** – Do not use this unit near water or in an unprotected outdoor installation, or any area which is classified as a wet location.

8. **ACCESSORIES** - Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult and serious damage to the equipment. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer. Wall or shelf mounting should follow the manufacturer's instructions and should use a mounting kit approved by the manufacturer.

9. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

10. **VENTILATION** - Slots and openings in the cabinet and the back or bottom are provided for ventilation and to ensure reliable operation of the equipment and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. Equipment should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation, such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

11. **POWER SOURCES** – This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your product dealer or local power company. For products designed to operate from battery power or other sources, refer to the operating instructions.

12. **GROUNDING OR POLARIZATION** – The power supply supplied with this unit may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

13. **OVERLOADING** – Do not overload outlets and extension cords as this can result in a risk of fire or electric shock.

14. **POWER-CORD PROTECTION** – Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles, and the point where they exit from the monitor.

15. **OBJECT AND LIQUID ENTRY** – Never push objects of any kind into this unit through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the unit.

16. **SERVICING** – Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

17. **DAMAGE REQUIRING SERVICE** – Unplug the unit from the outlet and refer servicing to qualified service personnel under the following conditions:

    a. When the power-supply cord or plug is damaged.

    b. If liquid has been spilled, or objects have fallen into the unit.

    c. If the unit has been exposed to rain or water.

    d. If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.

    e. If the unit has been dropped or the enclosure has been damaged.

    f. When the unit exhibits a distinct change in performance - this indicates a need for service.

18. **REPLACEMENT PARTS** – When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

19. **SAFETY CHECK** – Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.

20. **LIGHTNING AND POWER LINE SURGES** – For added protection of this unit during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the unit due to lightning and power-line surges.

21. **HEAT** – The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

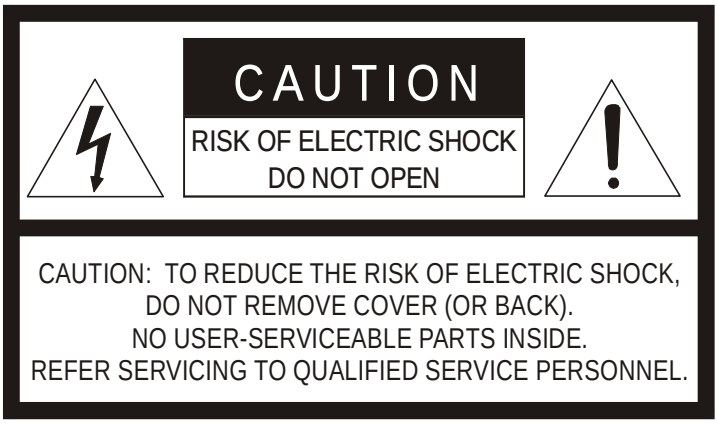
22. **INSTALLATION** – Do not install the unit in an extremely hot or humid location, or in a place subject to dust or mechanical vibration. The unit is not designed to be waterproof. Exposure to rain or water may damage the unit.

23. **WALL OR CEILING MOUNTING –** The product should be mounted to a wall or ceiling only as recommended by the manufacturer

EXPLANATION OF GRAPHICAL SYMBOLS

	The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
	The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instruction in the literature accompanying the product.

CAUTION



WARNING

	**WARNING:** TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.
	**WARNING:** DO NOT INSERT ANY METALLIC OBJECT THROUGH VENTILATION GRILLS THIS PRODUCT TO RAIN OR MOISTURE.
	**WARNING:** THIS UNIT MUST BE OPERATED WITH A PROPERLY GROUNDED 3-PIN CONNECTION. NON-OBSERVANCE OF THIS STANDARD PRACTICE MAY RESULT IN A STATIC ELECTRICITY BUILD-UP THAT MAY RESULT IN AN ELECTRIC SHOCK WHEN EXTERNAL CONNECTIONS ARE TOUCHED.

IMPORTANT NOTICE

All companies make changes and improvements in their products. Because this product can be set up to interface with equipment other than Honeywell branded products, there is a possibility that the interface protocols may have changed since this product was tested with the interfacing equipment. Therefore, this unit may not be currently compatible with equipment produced by other manufacturers. The existence of past successful installations proves our intent to provide equipment compatible with other manufacturers, but does not guarantee success.

We recommend purchasing a single unit for bench testing prior to purchasing and installing this product in quantity. Should any problems occur, we will provide technical support (at the user's expense) to analyze the interface protocols of your system. The end user must agree to provide reasonable access to the system in order to study and correct the protocol incompatibility.

In the event that we are unable to make the units work together in the system, we will accept the return of any Honeywell products associated with the installation and refund the amounts paid for these products. Because we recommend bench testing the equipment prior to installation, Honeywell Video Systems will not be liable for any installation cost, lost revenues, or other cost resulting from the incompatibility.

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INTRODUCTION

1.1 PRODUCT DESCRIPTION

An HD6 is a pan and tilt mechanism containing a camera and lens that is controlled remotely by an operator using a Honeywell series, Honeywell Maxpro mode, American Dynamics, or Pelco (P and D Code only) control system. The HD6 is enclosed in a housing. The whole assembly is often referred to as a "dome." The pan and tilt mechanism with camera and lens is often referred to as a "scan".

The indoor pendant housing can be mounted on Honeywell's indoor pendant ceiling dome mount or indoor wall dome mount. The weather dome can be mounted on Honeywell's outdoor wall mount, pendant mount, or parapet mount.

Cameras available with the HD6 are:

Part #	Description
120.0060	23x Color NTSC Camera w/3.8-87.4mm
120.0061	23x Color PAL Camera w/3.8-87.4
120.0062	25x True Day/Night NTSC Camera w/3.8-95mm
120.0063	25x True Day/Night PAL Camera w/3.8-95mm
120.0064	18x Color NTSC w/4.1-73.8mm
120.0065	18x True Day/Night NTSC w/4.1-73.8mm
120.0066	18x Color PAL w/4.1-73.8mm
120.0067	18x True Day/Night PAL w/4.1-73.8mm
843216-0984	23x Wide Dynamic Range True Day/Night NTSC Camera w/3.6-82.8mm
843216-0985	23x Wide Dynamic Range True Day/Night PAL Camera w/3.6-82.8mm

1.2 EQUIPMENT HANDLING

1.2.1 Domes

It is extremely important to treat the surface of all domes (smoked and clear) with the same care as you would a fine camera lens.

- Always handle the dome from its outside surface.
- Refer to Section 13 - Maintenance for dome cleaning procedures.
- Only use non-abrasive cleaners for acrylic plastic on the clear and smoked domes.

1.2.2 HD6 Assembly

The HD6 consists of:

1. the pan and tilt mechanism;
2. camera with zoom lens;
3. power supply board
4. digital receiver board; and
5. video board.

Do not attempt to remove the camera from the scan assembly. If a camera or lens requires service, the entire scan assembly must be sent back to the factory.

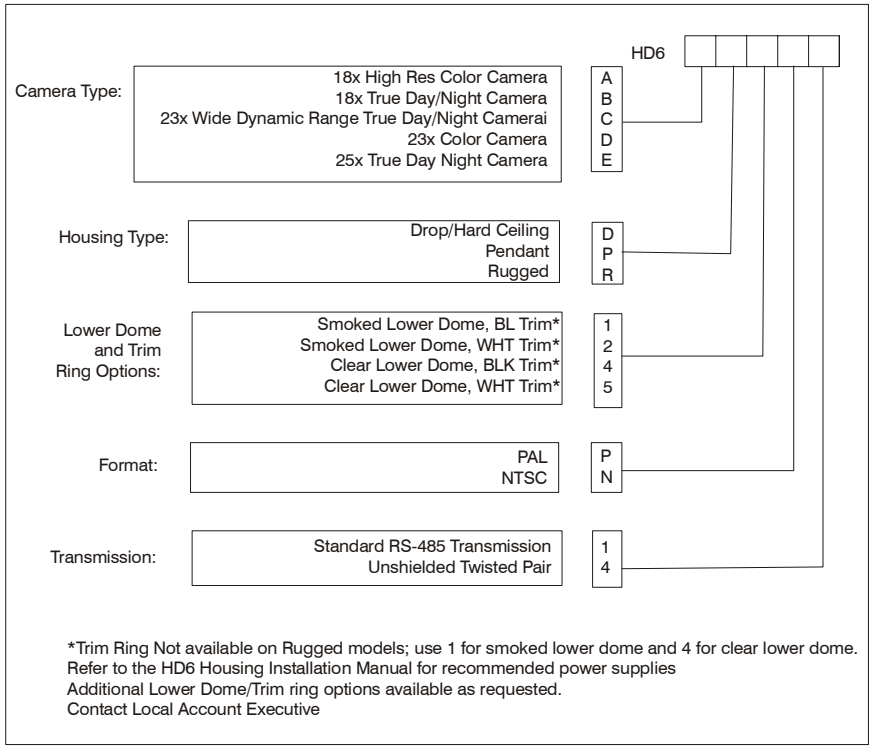
CAUTION: The receiver board and power supply board on the scan assembly have static sensitive devices. The HD6 assembly is shipped in a pink bag that is static dissipating. The unit should be handled in this bag until installed. If the unit is shipped, it must be shipped in the pink bag or an equivalent static dissipating enclosure.

1.2.3 Camera Lens

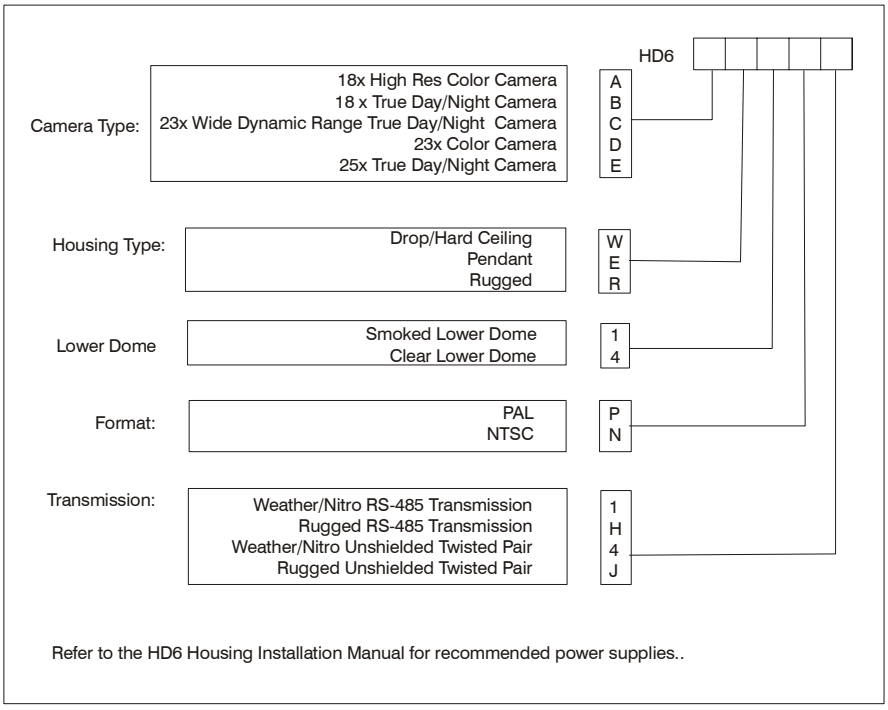
- Handle the camera lens with extreme care.
- Never touch the lens surface.
- Refer to Section 13 - Maintenance for information on cleaning the camera lens.

1.3 MODELS

Indoor



Outdoor



Notes:

SECTION 2:
HD6 SCAN INSTALLATION

2.1 OVERVIEW

The instructions and detailed information for installing and operating the HD6 are contained in several sections. Instructions in this manual assume that the housing installation is complete.

The following list is an overview of the installation steps, along with references to more specific details. Follow the detailed instructions under each section/subsection referenced.

Installation Process:

1. Set switches on the HD6 receiver board for correct protocol, baud rate, and parity. (Refer to Section 2.2.)

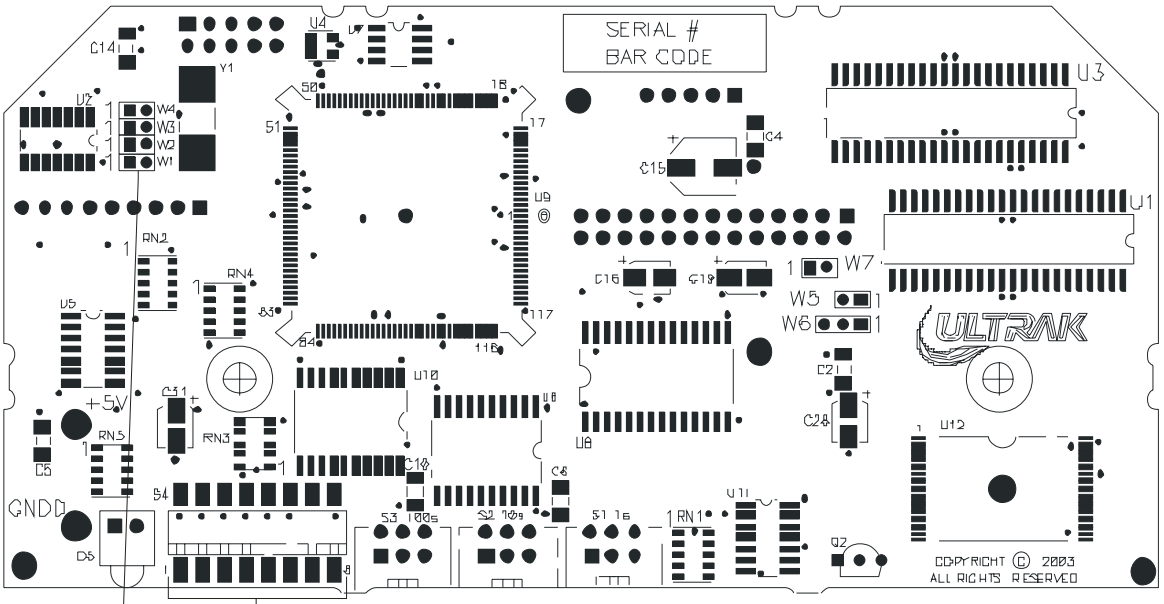
2. Set W8 jumper on the video board for standard interface board or optional UTP interface board. Jumper W8 enables or disables the 12V auxiliary power provided to the housing interface board required by the UTP option. (Refer to Section 2.3.)

3. Install scan assembly. (Refer to Section 2.4.)

4. Remove or reinstall liner, as needed. (Refer to Section 2.5.)

5. Install the lower dome. (Refer to Section 3.0.)

2.2 RECEIVER BOARD SETTINGS



Switch S4	Use
1-4	Defines protocol
5-6	Defines baud rate
7	Defines parity
8	Not used. Must be set to OFF.

Open = OFF
Closed = ON

Jumpers W1-W4	
RS485 Data Lines	
W1	In
W2	In
W3	Out
W4	Out

Note: If user is having trouble with noise, remove shunts on jumpers W1 and W2 and install shunts on jumpers W3 and W4.

1. Set the jumpers and switches as required on the HD6 receiver board.
   Refer to Section 2.2.1 and Section 2.2.2for switch settings.
   Refer to Section 2.2.3 for addressing.

Figure 1: Receiver Board, Part Number 519541-1020

2.2 RECEIVER BOARD SETTINGS, continued

2.2.1 Defining Protocol (Switches 1-4)

Protocol	1	2	3	4
Honeywell Diamond	OFF	OFF	OFF	OFF
Honeywell VCL	ON	OFF	ON	OFF
Honeywell Maxpro Mode	ON	OFF	OFF	OFF
MUX100	OFF	ON	OFF	OFF
AD	ON	ON	OFF	OFF
Pelco P	OFF	OFF	ON	OFF
Pelco D	OFF	ON	ON	OFF
Pelco P_AD	OFF	OFF	ON	ON
Pelco D_AD	OFF	ON	ON	ON

Equipment	Protocol
Javelin equipment	Set the Javelin controller for Diamond protocol and set the HD6 unit for Honeywell Maxpro Mode protocol.
HD6 with an AD1281/1 Code Distributor	Set the HD6 to American Dynamics protocol.
HD6 with a Sennetech Code Translator, Model SCT-1036	Set the HD6 to Honeywell Maxpro Mode protocol.
HD6 with the Digital Interface	Set the HD6 protocol to Honeywell VCL if using with Honeywell's DVM Digital Video Manager. Set the HD6 to standard (Honeywell Diamond) protocol when controlling the dome with a web browser.
NOTE: If the switches are set to something other than the above settings, the scan defaults to Honeywell Diamond protocol. The standard Pelco P and D selections use special PreShots numbered in the 80's and 90's. The Pelco P w/AD PreShots and the Pelco D w/AD PreShots selections set the protocol for Pelco P and Pelco D code respectively, but use special PreShot numbers less than 32 for HD6 menus and setup.	

2.2 RECEIVER BOARD SETTINGS, continued

2.2.2 Setting Baud Rate and Parity

The communications baud rate and the parity are set using DIP switch S4 positions 4, 5, 6, and 7. The control system and the scan must be set at the same baud rate and parity for proper operation. All protocols are set for 8 data bits.

DIP switch 4, position 8 must always be set to OFF.

Baud Rate	/	Parity	/	Data Bits	S4-5	S4-6	S4-7	S4-8
2400 Baud	/	No Parity	/	8 data bits	OFF	OFF	OFF	OFF
2400 Baud	/	Even Parity	/	8 data bits	OFF	OFF	ON	OFF
4800 Baud	/	No Parity	/	8 data bits	ON	OFF	OFF	OFF
4800 Baud	/	Even Parity	/	8 data bits	ON	OFF	ON	OFF
9600 Baud	/	No Parity	/	8 data bits	OFF	ON	OFF	OFF
9600 Baud	/	Even Parity	/	8 data bits	OFF	ON	ON	OFF
19.2K Baud	/	No Parity	/	8 data bits	ON	ON	OFF	OFF
19.2K Baud	/	Even Parity	/	8 data bits	ON	ON	ON	OFF

NOTE:

Settings for the protocols are as follows:

Protocol	Baud	Parity
Honeywell Diamond, Honeywell Maxpro Mode, and AD	9600 baud	Even Parity
Honeywell VCL	9600 baud	No Parity
MUX-100	19.2k baud	Even Parity
Pelco P	4800 baud	No Parity
Pelco D	2400 baud	No Parity

2.2 RECEIVER BOARD SETTINGS, continued

2.2.3 Addressing

Each HD6 must be given a unique address (camera number) set by the operator at the control system to control the scan. The address is defined using rotary switches S1, S2, and S3 on the receiver board. Addresses are set from 001 to 989. Addresses 990 to 999 are reserved for factory testing. If the switches are set to 000, the scan responds to all commands with all addresses and there is no communication error checking.

ADDRESS	
S1	Ones Digit
S2	Tens Digit
S3	Hundreds Digit

The addressing scheme is modulo 256. The scan is physically addressed 1-989, but all scans addressed above 256 must be controlled using camera numbers 1-255.

Note: If the control system is set for MUX-100 (19.2K) protocol, addresses 256, 512, and 768 cannot be used. These are unattainable values in a MUX-100 control packet.

Note: The three address switches, S1, S2, and S3, must be set to 0, 0, 0 when the HD6 is installed in a housing with the digital interface board and is installed in a network.

Note: If you are using the HD6 with control equipment other than Honeywell controllers, please consult the instruction manuals provided with your control equipment for addressing the dome. For example, if you are using a Honeywell Maxpro mode control system, the addressing scheme is 1-16. The HD6 address is determined by the switch settings and the port the HD6 is connected to on the switch.

Refer to the manuals provided with your control system for help in addressing the HD6 dome.

Refer to Table 1 to cross reference camera addresses to camera control numbers using modulo 256.

Table 1: Modulo 256 Addressing	
Camera Number Set using Switches (Video Display)	**Camera Number* for Control Purposes HEGS5000 Controller**
1-256	1-256
257 258 259 . . 510 511 512	1 2 3 . . 254 255 256
513 514 515 . . 766 767 768	1 2 3 . . 254 255 256
769 770 771 . . 987 988 989	1 2 3 . . 219 220 221
990 - 999 (reserved)	222-231

***NOTES:**

- The camera number transmitted in the protocol for control purposes must be one less than the number shown in column two above. For example, if the rotary switches are set for camera address 1 on the HD6, the command packet sent to the HD6 for control purposes must contain camera address 0 to control the HD6. If the switches are set for camera address 513, the command packet sent to the HD6 for control purposes must contain camera address 0 to control the HD6.
- The control system (protocol) used to control the HD6 is defined on DIP switch S4 on the receiver board.

2.3 VIDEO BOARD

Jumper W8 on the video board enables or disables the 12V auxiliary power provided to the Interface Board installed in the housing. 12V power is required if the Unshielded Twisted Pair (UTP) option is installed in the housing. Set jumper W8 on the video board, part number 519539-1020 (NTSC) or 519539-2020 (PAL), as shown in Figure 2.

For the **UTP option**, the housing must have the UTP interface board, part number 518753-1030.

CAUTION: The black jumper must be on pin 1 of W8 for standard interface boards or equipment damage may occur.

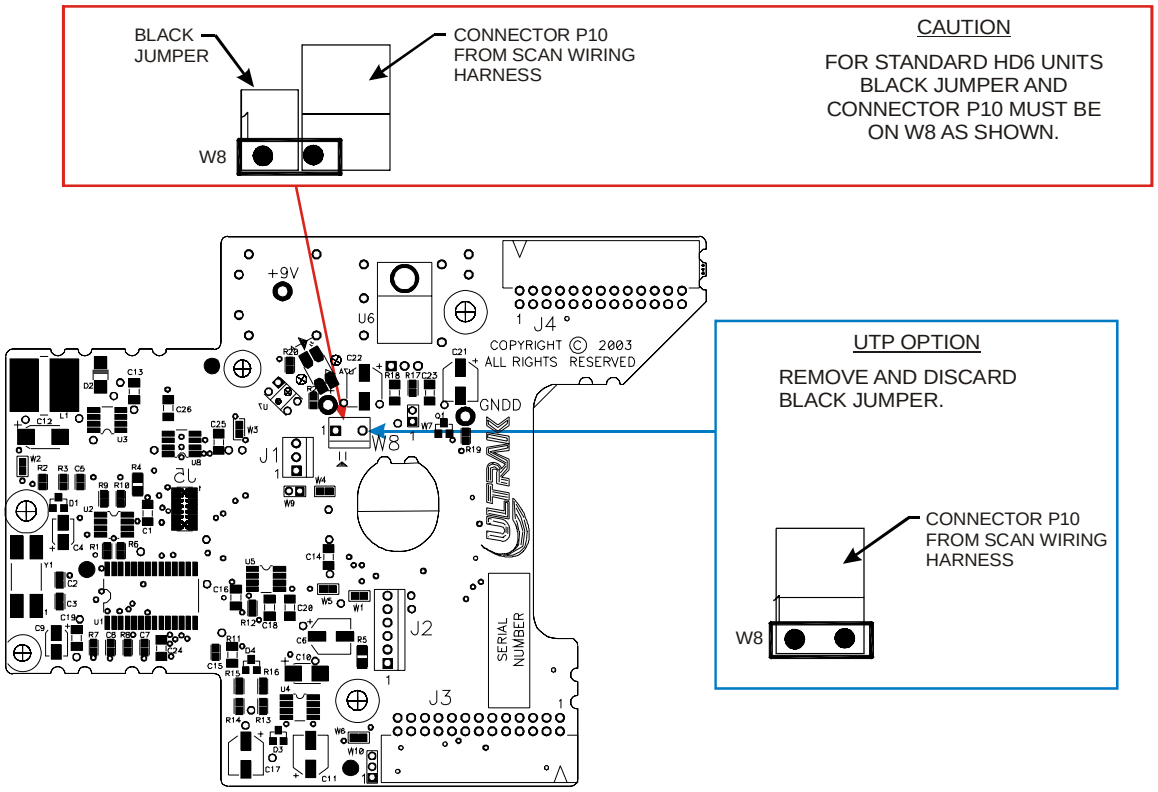


Figure 2: Video Board, Part Number 519539-1020 (NTSC)

2.4 SCAN INSTALLATION

Ensure that the latches on the HD6 are in the locked position. See Figure 3, Detail A.

Hold the HD6 scan by the liner mounting bracket, the liner itself, or the latches. **DO NOT HOLD THE HD6 SCAN BY THE CAMERA**. Locate the yellow sticker with a black dot in the center on one of the latches on the scan. Align this sticker with the same sticker in the housing. This aligns the two wide mounting slots in the scan with the two large mounting studs in the housing. The HD6 narrow mounting slot aligns with the three small scan alignment studs in the housing and the wide mounting slot aligns with the two large scan alignment studs in the housing. The connector on the top of the scan aligns with the connector in the top of the housing.

Push the HD6 scan into the housing until both latches click into the holes on the housing. You should hear two clicks. Press firmly on both latches to ensure proper installation. Gently tug on the scan to verify it is locked in position.

NOTE: The hard ceiling housing is shown. Installation of the HD6 scan in the Dropped Ceiling, Pendant, and Weather housings is the same. Installation of the lower dome depends on whether the lanyard is installed at the factory on the lower dome or on the housing (as shown below). Refer to Figure 3 or Figure 5 depending on your equipment. The lower weather dome is not shown. Refer to Figure 6 for an illustration of the lower weather dome.

2.4 SCAN INSTALLATION, CONTINUED

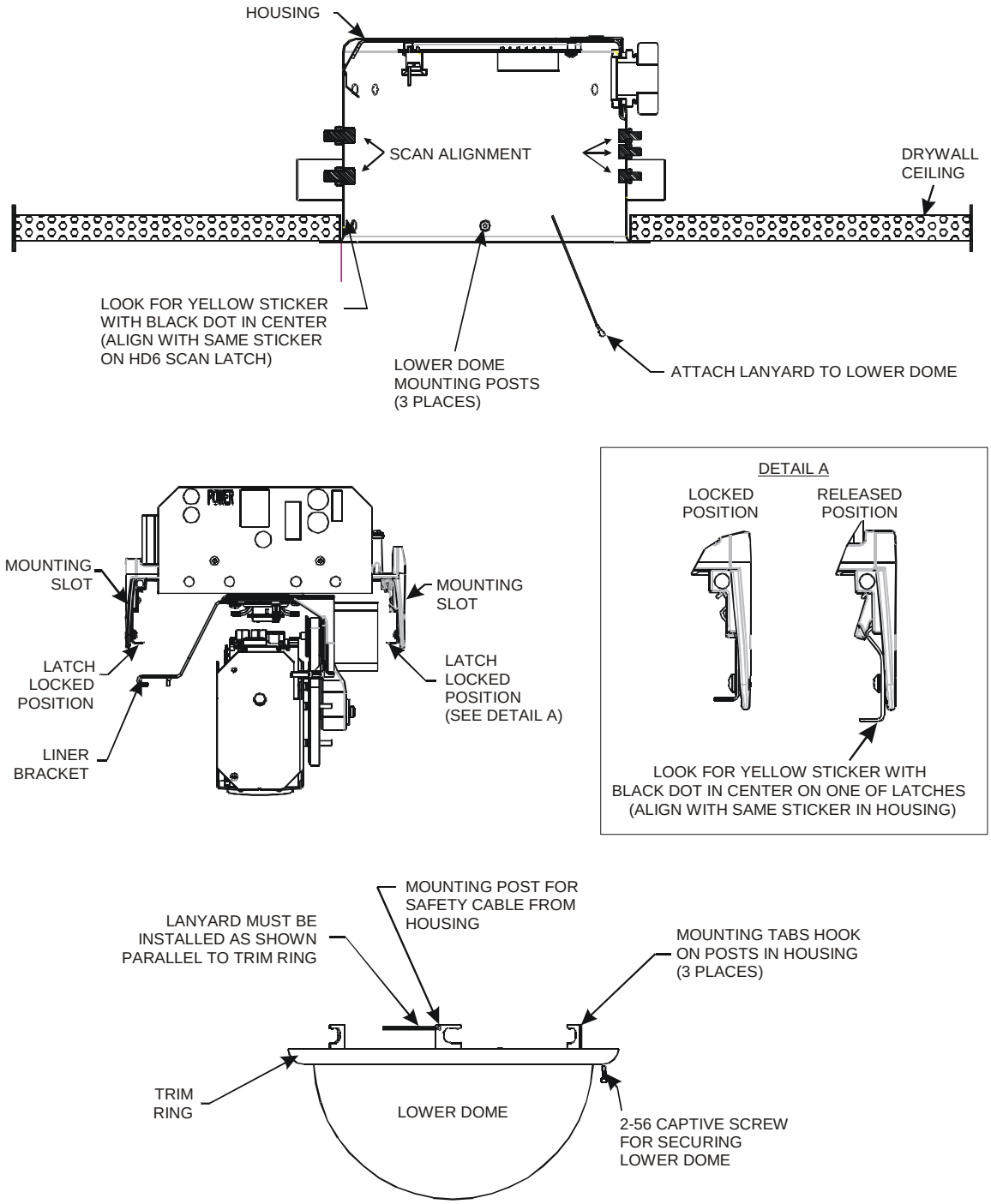


Figure 3: Installation, Lower Dome with Safety Lanyard Installed at Factory on Housing

2.5 LINER INSTALLATION

The liner installed on the HD6 scan can be removed if it is not required for your application.

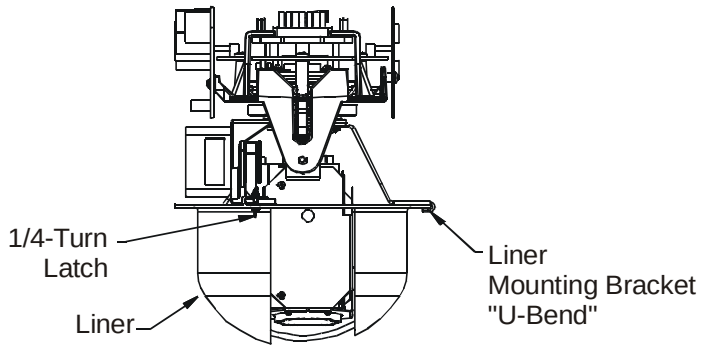


Figure 4. Liner Installation

To remove the liner:

1. Turn the ¼-turn latches counterclockwise to release the liner.
2. Slide the liner out of the “U-bend” of the liner mounting bracket.

To reinstall the liner:

1. Insert the edge of the liner into the “U-bend” of the liner mounting bracket.
2. Line up the two ¼-turn latches on the liner with the holes on the liner mounting bracket.
3. Insert the ¼-turn latches into the holes and turn clockwise to secure the liner to the mounting bracket.

SECTION 3:
HD6 LOWER DOME

3.1 LOWER DOME INSTALLATION

1. Remove the lens cap from the camera lens.

2. Install the lower dome. Follow instructions shown for the specific type of mount.

CAUTION: Always handle the lower dome by the flange around the dome. Do not touch the inside surface of the dome.

3.1.1 Indoor Dome with Safety Lanyard Installed on Housing at Factory

1. Attach the safety cable from the housing to the lower dome.

   a. Remove the acorn nut on the mounting screw on the lower dome.

   b. Hook the safety cable eyelet over the screw on the lower dome and thread the acorn nut onto the screw. Ensure safety cable is positioned as shown in drawing. Ensure cable is perpendicular to bracket and parallel to lower dome trim ring.

2. To secure the lower dome so it has to be removed with a tool, perform the following step, otherwise, go to step 3.

   a. Locate the bag containing a lock screw and 5/64” hex key (supplied with the lower dome).

   b. Insert the 2-56 lock screw through the hole in the lower dome trim ring and screw it into the lower dome inner ring.

3. Align the lower dome with the housing and twist to lock the lower dome brackets over the mounting posts. If you installed the lock screw in step 2, tighten the lock screw in the lower dome with the 5/64” hex key until it is snug. **DO NOT OVERTIGHTEN**.

Refer to Figure 3 for illustration of installation.

3.1 LOWER DOME INSTALLATION, CONTINUED

3.1.2 Indoor Dome with Safety Lanyard Installed on Lower Dome at Factory

1. Locate the safety lanyard on the lower dome.

2. Slide the ball on the lanyard into the clip on the housing as shown in the illustration.

3. To install the lower dome so it has to be removed with a tool, perform the following steps, otherwise, go to step 4.

   a. Locate the bag containing a lock screw and 5/64” hex key (supplied with the lower dome).

   b. Insert the 2-56 lock screw through the hole in the lower dome trim ring and screw it into the lower dome inner ring.

4. Align the lower dome with the top and twist to lock the lower dome brackets over the mounting posts. If you installed the lock screw in step 3, tighten the lock screw in the lower dome with the 5/64” hex key until it is snug. **DO NOT OVERTIGHTEN**.

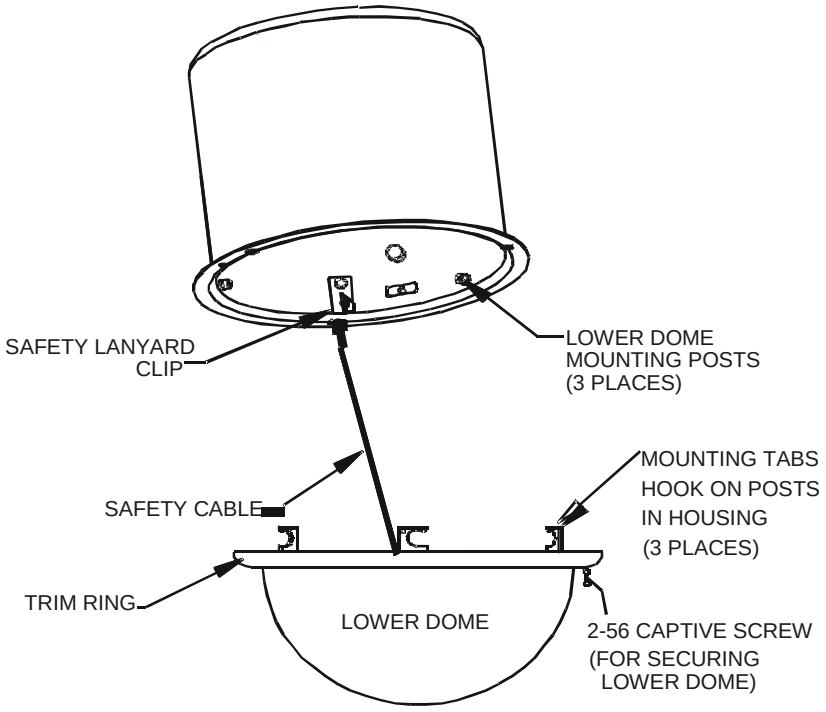


Figure 5. Installation, Lower Dome with Safety Lanyard Installed at Factory on Lower Dome

3.1 LOWER DOME INSTALLATION, CONTINUED

3.1.3 Rugged Dome

1. Insert the three posts on the lower dome in the three holes on the housing.

2. Push the lower dome up until it is snug against the housing.

3. Insert the key in the lock on the lower dome.

4. Turn the key clockwise in the lock until the latch is between the brackets in the housing.

3.1.4 Outdoor Weather Dome

1. Line up the quarter turn fasteners on the lower dome with the metal clips in the holes on the housing and align the safety cable on the housing with the mounting hole on the lower dome.

2. Using a Phillips screwdriver, push the quarter turn fasteners up through the holes in the housing and turn ¼-turn clockwise until locked.

3. Insert the screw on the safety cable into the hole on the lower dome and tighten.

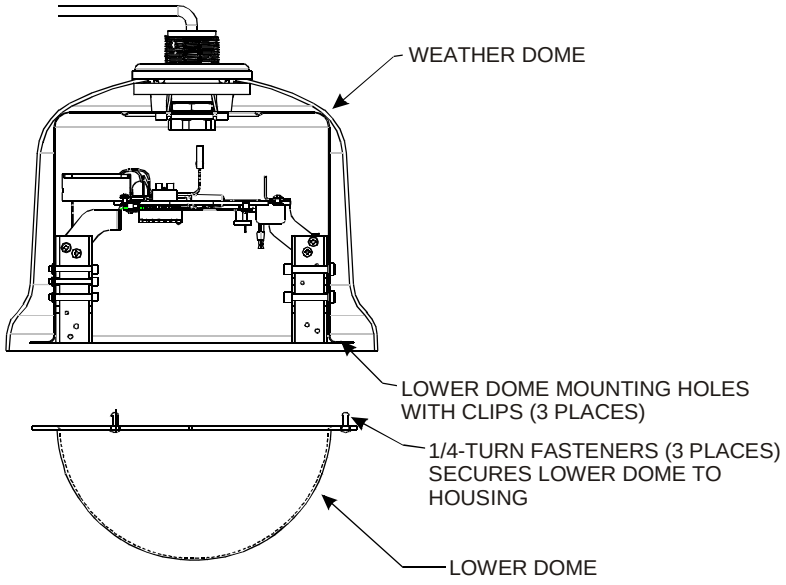


Figure 6. Installation, Lower Dome with Safety Lanyard Installed on Lower Dome

Notes:

SECTION 4:
NAVIGATING MENUS

4.1 INTRODUCTION

The HD6 features on-screen menus for simplifying set up and for enabling special features available for customer use. All units are set up at the factory; but can be easily changed in the field using the on-screen menus. Refer to your system controller user manual for the keystrokes to access the HD6 setup menu and the keystrokes to navigate through the options.

The controller must meet the following requirements:

- The HD6 being setup must be selected as the control camera on the controller where the keyboard is connected.
- The video from the scan must be displayed on the control (spot) monitor.
- The controller must have manual control of the scan.

Examples:

- When using an **HJZTP**/**HJZTPX** controller, press and hold the **Lock** key, then press **F6 (menu)** to display the HD6 menus on the controller's LCD. While **SETUP is flashing** on the LCD, press the **aux** key. The setup menus are displayed on the monitor.
- When using the **HEGS5000**/**HEGS5001** controller, press the **Dome Menu** key.
  Press +/- until Dome Setup Menu is displayed on the LCD, then press **Enter (⏎)** to access the HD6 setup menu. Use the numeric keys to access the menu options.
  Press **Clear**/**Manual (⟵)** to send an Esc command to the HD6 and exit the HD6 menu.
  Press the **Dome Menu** Key to exit the HD6 menu mode on the HEGS5000 controller.
- When using the **HSX3208 and an HEGS5002 controller**,
  press **Aux (💡),** then **PTZ Call (▭)** then **Enter (⏎)** to access the HD6 setup menu.
  Use numeric keys on the controller to access menu options.
  Press **Flashback (↻)** to send an Esc command to the HD6 and exit the HD6 menu.
  Press **Back (⟵)** to exit the menus on the HEGS5000 LCD and return to normal operation.
- When using a **Honeywell Maxpro mode, Honeywell VCL, Pelco P, or Pelco D** controller send the scan to **PreShot 90**. When using an **American Dynamics** controller, send the scan to **PreShot 61**. To select a menu option when using these controllers, use the **tilt up and down** function on the controller to move the cursor to the desired number beside the option, then press **Iris Open**. The pan left and right commands may also be used to move horizontally between fields in a table. The **Iris Close** function is used to exit (**Esc** to exit) menus.

4.1 INTRODUCTION, CONTINUED

- When using a **HEGSA002 Ultrakey** (with default menu programming):
  1. Press the **MENU** soft key (on left side of screen).
  2. Press the **Dome Setup** soft key on the screen.
  3. Press the **ENT** (hard) key.

  To access menu options, use the numeric hard or soft keys on the controller.

  The **Esc** soft key sends an ESC command and exits the HD6 menu.

  The **EXIT** soft key removes the Ultrakey from the HD6 menu mode.

- The menu options either toggle between the available choices or call up another menu.

4.2 MENU STRUCTURE

The following setup tree shows the options under each menu in the main setup menu. Use of specific menus/settings is explained in the Operation sections of the manual.

4.2 MENU STRUCTURE, CONTINUED

Table 2: HD6 SETUP TREE, 18X COLOR AND 18X TRUE DAY/NIGHT CAMERAS

Main Menu (Diamond Standard Protocol); **PreShot 61** (American Dynamica Protocol), **PreShot 90** (Pelco P, Pelco D, Maxpro, Honeywell VCL, or Burle Protocol)
Refer to your system controller manual to access HD6 setup menus.

1. Language - English - French - German - Italian - Spanish - Polish	**2. Display Options**	**3. Control Options**	**4. Diagnostic Options**	**5. Camera Options, Sony**	**6. Function Programming**
	1. Camera Options (ON/OFF)	1. PASS (ON/OFF)	1. Coordinates (ON/OFF)	1. Zoom and Focus - Max Digital Zoom (1x/2x/4x/8x) - Manual Speed (0-8)	1. PTZ Tour[1] - Run a Tour - Program a Tour - Delete a Tour
	2. Sectors (ON/OFF)	2. Auto Pivot (ON/OFF)	2. Error Table (ON/OFF)	2. Exposure Control - Exposure Level - Backlight Compensation	2. Program a VectorScan[2]
	3. PreShot Name (ON/OFF)	3. Program Alarms - PreShot/VectorScan/PTZ - Enable/Disable	3. Clear the Memory (Does not clear privacy zones)	3. NightShot Control - NightShot Mode (Auto/Man) - NightShot (ON/OFF) (Manual Mode) - Activate (2-28dB, 1/4s-1/60s)[3] - Deactivate (0-28dB, 1/8s-1/60s)[3]	
	4. Digital Zoom Msg (ON/OFF)	4. Set Pan and Tilt Options - Manual Speed (400/200/100) - Pan Reverse (ON/OFF) - Tilt Reverse (ON/OFF) - +2 Degree Tilt Limit (ON/OFF) - Find Home on Startup (ON/OFF) - Pan Offset	4. Clear the Error Table	4. White Balance - High Light WB Mode - Low Light WB Mode - High Light Level (0-28dB, 1/8s-1/60s)[3] - Low Light Level (2-28dB, 1/4s-1/60s)[3] - Manual White Balance	
	5. Start-Up Screen Msg (ON/OFF)	5. Set Default Function - PreShot/VectorScan/Tour - Delay - Enabled/Disabled	5. Display Error Table Codes	5. Still PreShot (ON/OFF) (OFF=default)	
	6. Change Camera Name Location	6. Auto Focus - Z - PTZ - OFF	6. Restore Default Settings (all menus)	6. Vertical Phase Edge - Positive - Negative - None - NA*	
	7. Change Sector Name Location	7. VectorScan Auto Focus (ON/OFF)	7. Scan & Camera Reset	7. Vertical Phase - 1-180 - NA*	
	8. Crosshairs		8. Upload New Firmware to HD6 (for future use)		

Esc to Exit

[1] Only displayed when using Standard (Diamond) protocol
[2] Only displayed when using Maxpro, VCL, Pelco P, Pelco D, American Dynamics, or Burle protocol
[3] Values shown are for cameras 120.0065 and 120.0067 only.
NA* - Not available - camera 120.0064 and 120.0066 do not support this feature.

Table 3: HD6 SETUP TREE, 23X WIDE DYNAMIC RANGE AND TRUE/DAY NIGHT CAMERA

Main Menu (Diamond Standard Protocol); **PreShot 61** (American Dynamica Protocol), **PreShot 90** (Pelco P, Pelco D, Maxpro, VCL, or Burle Protocol)
Refer to your system controller manual to access HD6 setup menus.

1. Language - English - French - German - Italian - Spanish - Polish	2. Display Options	3. Control Options	4. Diagnostic Options	5. Camera Options, Hitachi	6. Function Programming
	1. Camera Options (ON/OFF)	1. PASS (ON/OFF)	1. Coordinates (ON/OFF)	1. Max. Digital Zoom Mag (1x/2x/4x)	1. PTZ Tour[1] - Run a Tour - Program a Tour - Delete a Tour
	2. Sectors (ON/OFF)	2. Auto Pivot (ON/OFF)	2. Error Table (ON/OFF)	2. Exposure Control - Auto AE Model - Manual AE Mode	2. Program a VectorScan[2]
	3. PreShot Name (ON/OFF)	3. Program Alarms - PreShot/VectorScan/PTZ - Enable/Disable	3. Clear the Memory (Does not clear privacy zones)	3. Video Setupl - Exposure Level - Max AGC Level 0-255 - Chroma Level 0-255 - Backlight Compensation - Auto Slow Shutter Limit -Wide Dynamic Range -Privacy Zone Color	
	4. Digital Zoom Msg (ON/OFF)	4. Set Pan and Tilt Options - Manual Speed (400/200/100) - Pan Reverse (ON/OFF) - Tilt Reverse (ON/OFF) - +2 Degree Tilt Limit (ON/OFF) - Find Home on Startup (ON/OFF) - Pan Offset	4. Clear the Error Table	4. White Balance - Manual White Balance On/Off Red Gain Blue Gain	
	5. Start-Up Screen Msg (ON/OFF)	5. Set Default Function - PreShot/VectorScan/Tour - Delay - Enabled/Disabled	5. Display Error Table Codes	5. Still PreShot (ON/OFF) (OFF=default)	
	6. Change Camera Name Location	6. Auto Focus - Z - PTZ - OFF	6. Restore Default Settings (all menus)	6. Vertical Phase Edge - Positive - Negative - None	
	7. Change Sector Name Location	7. VectorScan Auto Focus (ON/OFF)	7. Scan & Camera Reset	7. Vertical Phase - 1-180	
	8. Crosshairs		8. Upload New Firmware to KD6		

Esc to Exit

[1] Only displayed when using Standard (Diamond) protocol
[2] Only displayed when using Maxpro, Honeywell VCL, Pelco P, Pelco D, American Dynamics, or Burle protocol

4.2 MENU STRUCTURE, CONTINUED

Table 4: HD6 SETUP TREE, 23X COLOR AND 25X TRUE DAY/NIGHT CAMERAS

Main Menu (HEGS5000 & Diamond Standard Protocol); **PreShot 61** (American Dynamica Protocol), **PreShot 90** (Pelco P, Pelco D, Maxpro, VCL, or Burle Protocol)
Refer to your system controller manual to access KD6i setup menus.

1. Language - English - French - German - Italian - Spanish - Polish	2. Display Options	3. Control Options	4. Diagnostic Options	5. Camera Options, GMC-655 / HZM-755	6. Function Programming
	1. Camera Options (ON/OFF)	1. PASS (ON/OFF)	1. Coordinates (ON/OFF)	1. Zoom and Focus - Max Digital Zoom(1x/2x/4x) - Manual Zoom Speed (0-10) - Auto Focus Sensitivity (High/Low)	1. PTZ Tour[1] - Run a Tour - Program a Tour - Delete a Tour
	2. Sectors (ON/OFF)	2. Auto Pivot (ON/OFF)	2. Error Table (ON/OFF)	2. Exposure Control - Backlight Mode - Backlight Compensation - Backlight Level (0-80) - Auto Exposure Level (0-99)	2. Program a VectorScan[2]
	3. PreShot Name (ON/OFF)	3. Program Alarms - PreShot/VectorScan/PTZ - Enable/Disable	3. Clear the Memory (Does not clear privacy zones)	3. Video Setup - NightShot Mode (Auto/Man)[3] - NightShot (ON/OFF) (Manual Mode)[3] - Video Sharpness (0-15) - Still PreShot[3]	
	4. Digital Zoom Msg (ON/OFF)	4. Set Pan and Tilt Options - Manual Speed (400/200/100) - Pan Reverse (ON/OFF) - Tilt Reverse (ON/OFF) - +2 Degree Tilt Limit (ON/OFF) - Find Home on Startup (ON/OFF) - Pan Offset	4. Clear the Error Table	4. White Balance - White Balance Mode (Auto/Manual) - Manual White Balance - Set Red/Blue Gain)	
	5. Start-Up Screen Msg (ON/OFF)	5. Set Default Function - PreShot/VectorScan/Tour - Delay - Enabled/Disabled	5. Display Error Table Codes	5. Auto Slow Shutter Limits (1, ½,1/4)[3]	
	6. Change Camera Name Location	6. Auto Focus - Z - PTZ - OFF	6. Restore Default Settings (all menus)	6. Vertical Phase Edge - Positive/Negative - None	
	7. Change Sector Name Location	7. VectorScan Auto Focus (ON/OFF)	7. Scan & Camera Reset	7. Vertical Phase - 1-180	
	8. Crosshairs		8. Upload New Firmware		

Esc to Exit

[1] Only displayed when using Standard (Diamond) protocol
[2] Only displayed when using Maxpro,Honeywell VCL, Pelco P, Pelco D, American Dynamics, or Burle protocol
[3] Not available - camera models GMC-655

Notes:

SECTION 5:
SETUP

5.1 MAIN MENU

NOTE:

- Refer to Section 6 (operation) and Section 7 (programming) when using Honeywell Diamond protocol.
- Refer to Section 8 (operation) and Section 9 (programming) when using Honeywell Maxpro mode, Honeywell VCL, Pelco P Code or Pelco D Code control systems.
- Refer to Section 10 (operation) and Section 11 (programming) when using an American Dynamics control system.

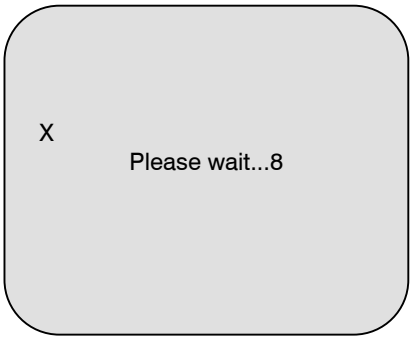
Upon power-up of an HD6, the scan displays an initialization screen and counts down from 15 to 0. The standard start-up message screen can be turned ON or OFF from the main menu.

If the start-up screen message is ON, the following screen is displayed.

Note: The protocol line displays the protocol set by DIP switch S4.

If the start-up screen message is OFF, this screen is displayed:

After the countdown, the scan accepts control commands. Refer to the controller users' manuals provided with your controller for operating procedures.



If the scan is programmed to Find Home on startup, the scan finds home after the 15-second countdown. If the scan is not programmed to Find Home on startup, the first time a scan receives control data with its address, the scan finds home then performs the command. After the scan finds home, it performs all control commands with its address immediately. Refer to Section 5.3.4, Find Home on Startup

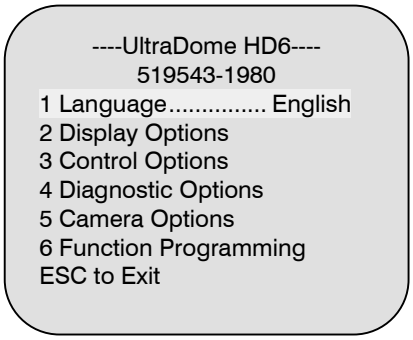
On-screen menus are used to set up the receiver board and enable special features. The MAIN MENU is used to enable and position displays as well as adjust several basic settings that allow customization of the display.

Each setting on the MAIN MENU is explained in detail in this section.

To make these settings and adjustments, access the MAIN MENU. Refer to section 4.1 for examples to accessing the MAIN MENU.

5.1.1 Language

Set Language by selecting **1** from the MAIN MENU. Continue to select 1 to toggle between language options (English, French, German, Italian, Spanish, or Polish).



5.2 DISPLAY OPTIONS

The camera message, digital zoom setting, PreShot title, and Sector ID title displays can be enabled or disabled for each unit. The position of the camera ID display and the Sector ID display is set using the Display Options menu. The current digital zoom setting is displayed on the same line as the camera ID on the right side of the monitor.

Select option **2 Display Options** from the MAIN MENU.

Several options toggle only between ON and OFF. Selecting each option toggles the value.

Refer to the controller user's manual for operation of the controller to perform these functions.

5.2.1 Camera Message

From the DISPLAY OPTIONS menu, select **1** to turn the camera ID display ON or OFF. Selecting **1** toggles the value between ON and OFF.

5.2.2 Sectors

From the DISPLAY OPTIONS menu, select **2** to turn Sector titles ON or OFF.

5.2.3 PreShot Names

From the DISPLAY OPTIONS menu, select **3** to turn PreShot titles ON or OFF.

5.2.4 Digital Zoom Message

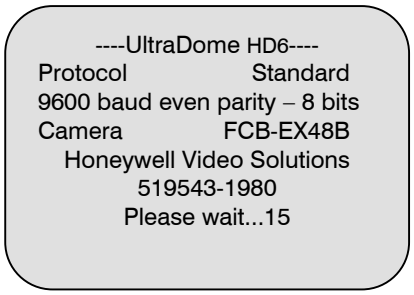
From the DISPLAY OPTIONS menu, select **4** to turn the actual digital zoom magnification display ON or OFF. The digital zoom setting is displayed on the right side of the monitor on the same line as the camera ID display. If camera name location is changed, digital zoom setting display is also changed.

5.2 DISPLAY OPTIONS, CONTINUED

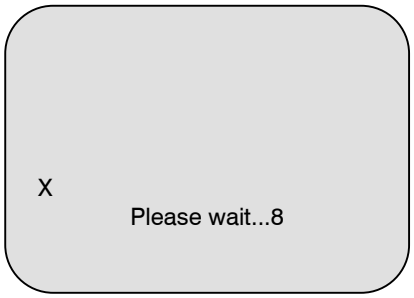
5.2.5 Startup Screen Message

From the DISPLAY OPTIONS menu, select **5** to turn the startup screen display ON or OFF.

If the startup screen display is ON, it displays the standard screen.



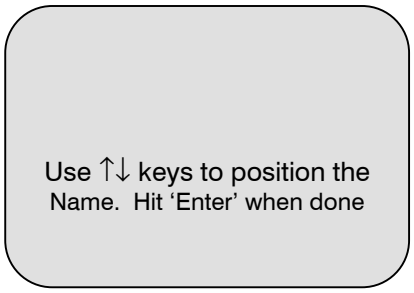
If the startup screen is OFF, an alternate screen is displayed upon power up.



5.2.6 Change Camera Name Location

From the DISPLAY OPTIONS menu, select **6** to change the position of the ID display. Use ↑ and ↓ keys to position the camera ID, then select **Enter** (F5 on HJZTP controller) when done.

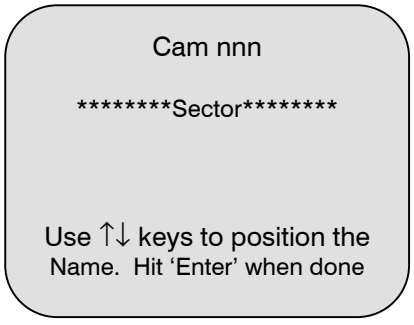
When using the HJZTP controller use F1 (▲) and F2 (▼) to position the camera ID.



5.2.7 Change Sector Name Location

From the DISPLAY OPTIONS menu, select **7** to change the position of the Sector ID title display. Use ↑ and ↓ to position the Sector ID, then select **Enter** (F5 on HJZTP controller) when done.

When using the HJZTP controller, use F1 (▲) and F2 (▼) to position the camera ID.



5.2 DISPLAY OPTIONS, CONTINUED

5.2.8 Crosshairs

From the DISPLAY OPTIONS menu, select **8** to display crosshairs on the display. This is useful when using Pan Offset.

Select **3** from the MAIN MENU to set control options. Control of a Scan assembly includes pan, tilt, zoom, focus, and iris.

Refer to the controller user's manual for operation of the controller to perform these functions.

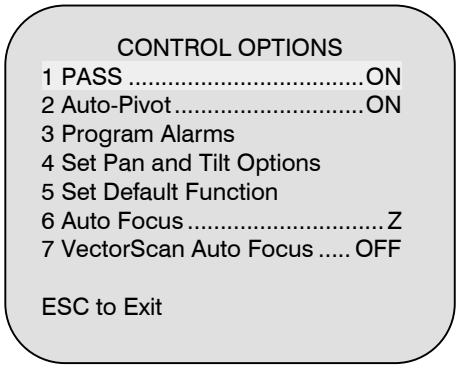
5.3 CONTROL OPTIONS

5.3.1 PASS

If the PASS function is enabled, the pan and tilt speed range is a function of the lens zoom angle. As the lens is zoomed in, the maximum pan and tilt speeds are reduced and the low speed control is expanded.

Note: At 12X zoom, the scan moves very slowly.

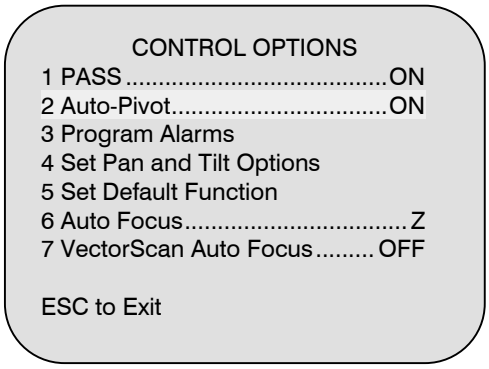
To enable/disable PASS, select 1 to toggle between ON (enable) and OFF (disable).



5.3.2 Auto-Pivot

If the Auto Pivot feature is enabled, the pan and tilt unit automatically pans the camera 180° when the camera reaches vertical. This feature is used to assist the operator in tracking an individual that passes directly under the camera.

To enable/disable **Auto-Pivot,** select **2** and toggle between **ON** (enable) and **OFF** (disable).



To perform this function:

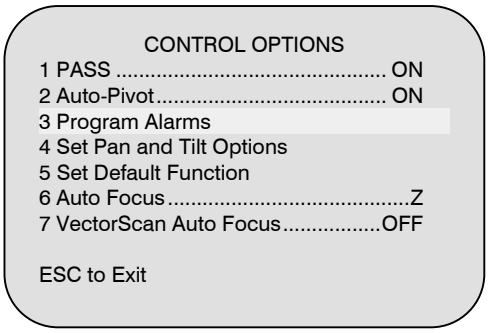
1. Position the camera lens so it is not vertical.

2. Using the controller, tilt the camera down until the camera lens is vertical (pointing at the floor) and continue tilting down with the controller.

3. The pan and tilt unit pans the camera 180° and then begins to tilt up. It continues to tilt up as long as the controller remains in the "down" position. When the Scan unit reaches its tilt up limit, the Scan returns to normal operation. If the controller is returned to its neutral position before the Scan reaches its tilt up limit, the Scan returns to normal operation.

5.3.3 Program Alarms

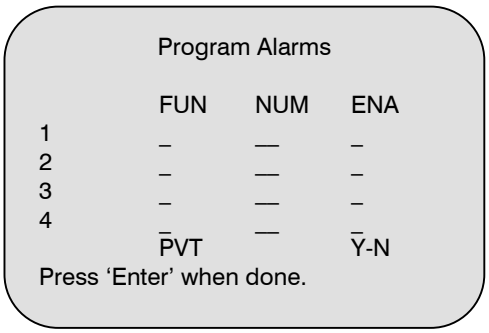
The HD6 has four alarm inputs for normally open dry contacts. When a contact closes, an alarm occurs. Alarms can be enabled or disabled and the scan can be programmed to go to a PreShot, start a VectorScan, or start a PTZ tour when an alarm occurs.



Note: If an alarm is disabled, the HD6 **does not** respond to a change of state in the alarm contact. The HD6 **does not** perform the programmed PreShot, VectorScan, or PTZ. If a PreShot, VectorScan, or PTZ Tour is not programmed for an alarm, the HD6 **does not** respond to a change of state in the contact.

To program alarms, select **3** from the Control Options Menu.

The Program Alarms screen displays.



To enter a P, V, or T in the FUN field or a Yes (Y) or No (N) in the ENA field when using an HJZTP Controller,

a. Position the cursor on the FUN or ENA field. Use the F1 (▲) F2 (▼), F3 (◀) or F4 (▶) keys to move the cursor between fields.

b. Press the **camera** and **preset** keys to scroll through the available characters on the controller's LCD. When the desired character is flashing on the LCD, press the **aux** key.

c. Enter a number in the NUM field using the numeric keypad to enter the function # (P=0-98, V= 0-9, and T=1-3).

d. Press **Enter (F5)** when finished programming alarms.

See table below for field entry.

Field	Usage
FUN (function)	Enter function to perform. (P=PreShot, V=VectorScan, T=PTZ Tour.)
NUM (number)	Enter the number of the PreShot, VectorScan, or PTZ Tour.
ENA (enable)	Enter Y to enable or N to disable the alarm.

If:	Then:
Alarm is disabled	The scan ignores a change of state in the alarm input.
Alarm is enabled and not programmed	The scan ignores a change of state in the alarm input.
Alarm is enabled and programmed	The scan performs the action programmed for the alarm input when a change of state occurs. Scan adds AL and the alarm number to the video signal. AL flashes until all alarms are acknowledged. Alarm status is displayed on-screen on the same line as the Camera ID display. Alarm number flashes until the contact returns to its normal state.

If:	Then:
More than one alarm occurs	The scan performs the action for the first alarm and adds the other alarm numbers to the video in numerical order. When the first alarm is acknowledged, the scan performs the action for the next alarm with the lowest number. For example, alarm contacts 2, 4, and 3 close in the order stated. The monitor display appears as AL-234. The scan performs the action programmed for alarm 2. The AL continues to flash until all alarms are acknowledged and then is removed from the display. The alarm numbers flash until the alarm contacts return to normal (open). When alarm 2 is acknowledged, the number 2 is removed from the alarm display and the scan performs the programmed action for alarm 3. When alarm 3 is acknowledged, the number 3 is removed from the alarm display and the scan performs the programmed action for alarm 4.

Note: An alarm can be acknowledged before the contact returns to normal; however the HD6 will not respond to the alarm again until the contact has reopened and closed again.

5.3.4 Pan and Tilt Options

Select **4** to set the pan and tilt manual control options.

```
. CONTROL OPTIONS
1 PASS ..... ON
2 Auto-Pivot ..... ON
3 Program Alarms
4 Set Pan and Tilt Options
5 Set Default Function
6 Auto Focus ..... Z
7 VectorScan Auto Focus ..... OFF

ESC to Exit
```

1. **Manual Speed deg/s** – Select **1** to change the manual pan and tilt speeds, where the maximum tilt speed is ½ of the maximum pan speed. Select **1** to toggle through options: 100°/sec, 200°/sec, 400°/sec

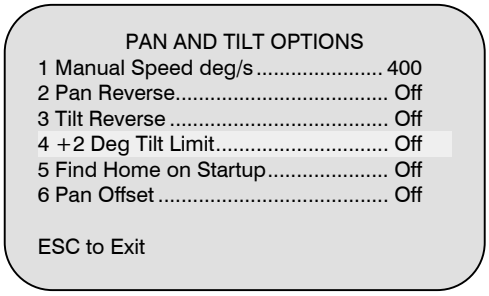
2. **Pan Reverse** – Select 2 to turn Pan Reverse ON or OFF. (See table.)

```
PAN AND TILT OPTIONS
1 Manual Speed deg/s ..... 400
2 Pan Reverse ..... Off
3 Tilt Reverse ..... Off
4 +2 Deg Tilt Limit ..... Off
5 Find Home on Startup ..... Off
6 Pan Offset ..... Off

ESC to Exit
```

3. **Tilt Reverse –** Select **3** to turn Tilt Reverse ON or OFF.

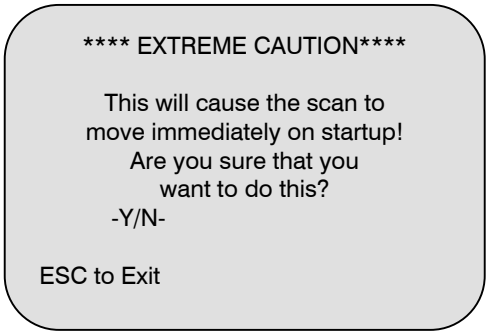
If:	Then:
Pan reverse is set to ON	A left pan command causes the scan to pan right. A right pan command causes the scan to pan left.
Tilt reverse is set to ON	A tilt up command causes the scan to tilt down. A tilt down command causes the scan to tilt up.

4. **+2 Degree Tilt Limit** –
   Select **4** to turn +2 Degree Tilt Limit ON or OFF. This allows the HD6 to tilt up 2 degrees above horizontal.



5. **Find Home on Startup** – Each unit has a factory-set mechanical "HOME" position. The receiver board uses the home position as a reference point for the pan and tilt positions.

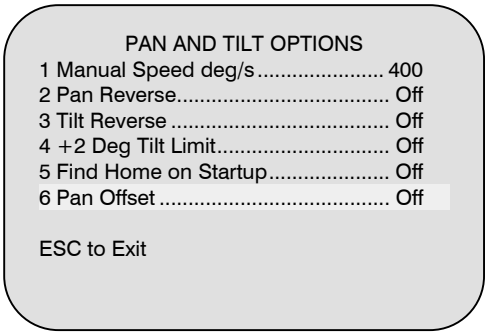
   Select **5** to turn Find Home on Startup ON or OFF. If changing from OFF (default) to ON, press **Y** when prompted. To leave Find Home on Startup OFF, press **N** when prompted.



If:	Then:
Find Home on Startup is set to OFF (default)	When a Scan unit receives control data with its address the first time after power-up, the scan finds home, and then performs the control command.
Find Home on Startup is set to ON	The scan will find home after the initial startup delay has counted down.

An operator can send a Scan to its home position at any time via the diagnostics menu. Refer to paragraph 5.4.7.

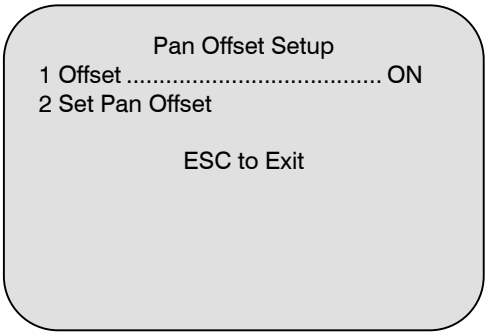
6. **Pan Offset –** Select **6** to access the Pan Offset menu.



The pan offset feature is useful when a new scan is installed in a dome and the programming from the existing scan is transferred to the new scan using the upload/download feature. The alignment of the new scan may not be exactly the same as the old scan, causing the programmed positions of the PreShots to be off. PreShot 0 is used to define the location of the pan setting.

Pan Offset Setup

1. Offset – Select **1** to toggle the offset ON or OFF. For the scan to adjust the positioning of the scan to the programmed pan offset, the offset must be set to ON.



2. Set Pan Offset – Once Offset is ON, perform the following steps to set pan offset:

*** You must know the original positioning of PreShot 0.**

1. **Esc** (**F6** on the HJZTP controller) out of the HD6 setup menus until you have manual control of the scan.

2. Send the scan to PreShot 0. If it does not go to the previously known position for PreShot 0, the offset function can be used.

3. Using the controller, position the scan for PreShot 0.

4. Access the HD6 MAIN MENU, select 3. Control Options, then select 4. Pan Options, and then select 6. Pan Offset.

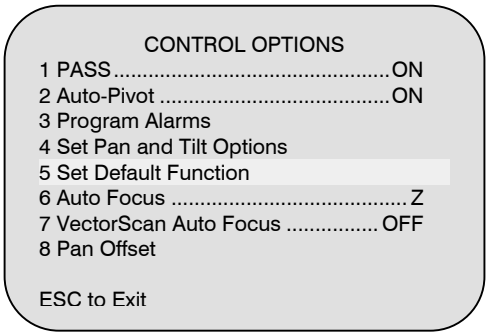
5. Select **2** to set the pan offset. To test the setting, reposition the scan, the send the scan to PreShot 0. The scan should return to the position programmed in step 3.

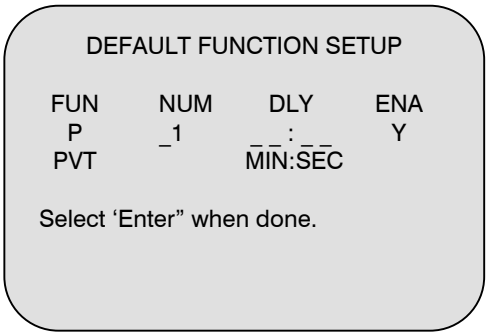
Press **Esc** (**F6** on the HJZTP controller) to exit the Pan and Tilt Options menu.

5.3.5 Default Function

Select **5** to set the default function. The Default Function can be enabled or disabled.

To set the Default Function, enter values and select **Enter** (F5 on the HJZTP controller) when done.





If:	Then:
Default Function is disabled	Scan remains at its present position until the scan receives a control command.
Default Function is enabled, and the scan is idle for the programmed Delay setting	The scan performs the function (PreShot, VectorScan, or Tour) programmed in the default function setup menu after the programmed delay with no activity.
Alarms are present and the scan reaches the delay setting	The scan automatically acknowledges the current alarm, resets its delay timer, and then processes the next alarm in numerical order. The scan processes all alarms in this manner before performing the default function.

Field	Usage
FUN (function)	Enter the function to perform after being idle for the specified delay time. P = PreShot; V = VectorScan, T = Tour. See instructions below for entering these functions in the FUN field.
NUM (number)	Enter the PreShot number (0-99), VectorScan number (0-9), or Tour number (1-3). Depending on the control system being used, specific PreShots may be used for special setup and control functions and are not available for the default function. Refer to Table 4 and Table 5 for reserved PreShot numbers.
DLY (delay	Enter the amount of time (minutes: seconds) the scan should be idle before performing the default function. Maximum delay is 99 minutes and 59 seconds.
ENA (enable)	Enter Y to enable or N to disable the default function.

To enter a P, V, or T in the FUN field or a Yes (Y) or No (N) in the ENA field when using an HJZTP Controller,

a. Position the cursor on the FUN or ENA field. Use the F1 (▲) F2 (▼), F3 (◀) or F4 (▶) keys to move the cursor between fields.

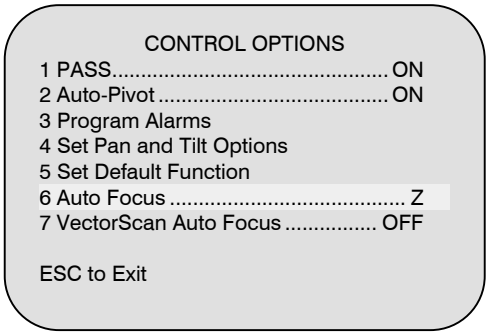
b. Press the **camera** and **preset** keys to scroll through the available characters. When the desired character is flashing on the controller LCD, press the **aux** key.

5.3.6 Auto Focus

Select **6** to setup the operation of the Lens Auto Focus. Selecting 6 toggles between the options (OFF, Z, PTZ).

The minimum focus distance is set at 1.0 meter (3.3 feet) from the camera lens in both manual and automatic focus mode.

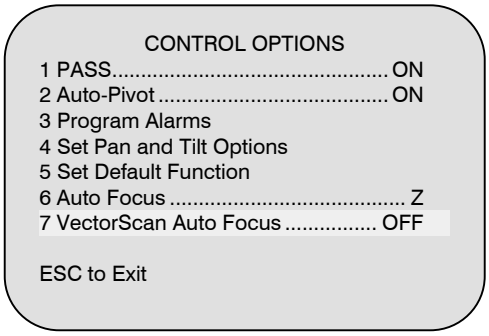
Note: If the 23x color or 25x True Day/Night camera is installed, the OFF option is disabled.



Value	Usage
OFF	Turns the Auto Focus feature OFF. The lens must be manually focused.
Z	The lens auto focuses whenever the zoom setting is changed.
PTZ	The lens auto focuses whenever the pan, tilt, or zoom positions are changed.

5.3.7 VectorScan Auto Focus

Select **7** to toggle the VectorScan Auto Focus feature ON or OFF.



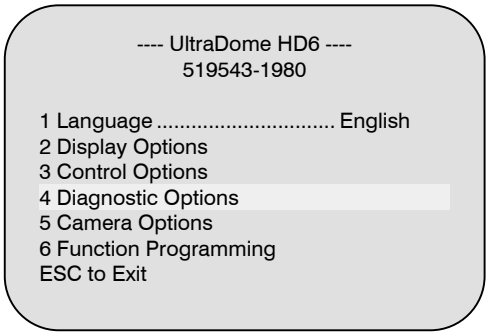
5.3 CONTROL OPTIONS, CONTINUED

If:	Then:
VectorScan auto focus is ON	The lens auto focuses when going to a PreShot while running a VectorScan.
VectorScan auto focus is OFF	The lens goes directly to the focus position stored for each PreShot while running a VectorScan. It does not autofocus.

5.4 DIAGNOSTIC OPTIONS

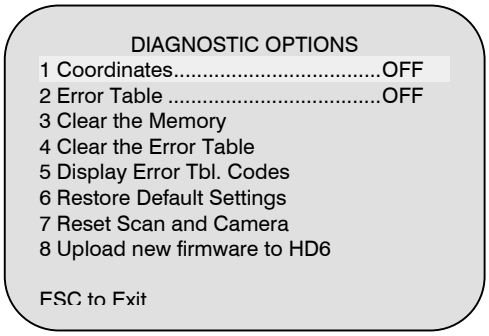
Select **4** from the MAIN MENU to access Diagnostic Options. Diagnostic menus are designed for assisting service technicians in troubleshooting.

Refer to the controller user's manual for operation of the controller to perform these functions.

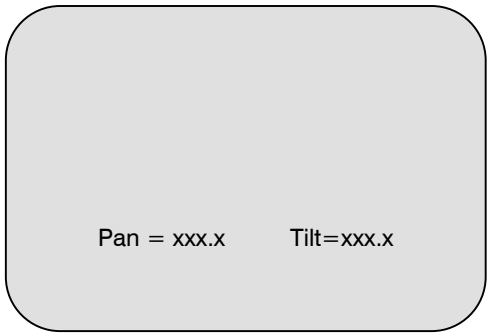


5.4.1 Coordinates

Select **1** to turn the Pan and Tilt Coordinates display ON or OFF.



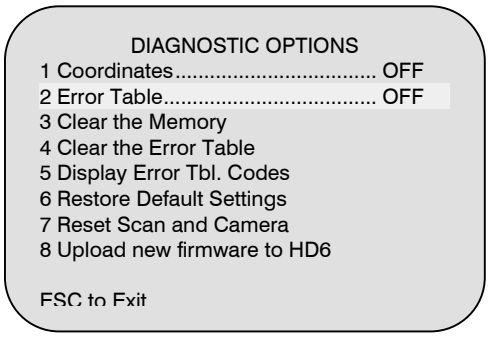
When you exit programming, the coordinates are displayed. The pan and tilt coordinates are displayed in degrees



5.4 DIAGNOSTIC OPTIONS, CONTINUED

5.4.2 Error Table

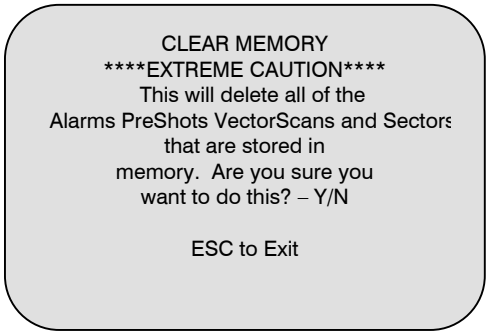
The error table lists the 64 bytes (two digit hexadecimal number) that have been entered into the error table. Some errors are represented by single bytes (2 digits) and some are represented by 2 bytes (4 digits). Not all entries are actual errors - some are indications of such things as normal power down and power up operations. (The codes used in the error table can be seen by selecting option 5 - Display Error Tbl. Codes.)



Select **2** to turn the Error Table Display ON or OFF.

5.4.3 Clear the Memory

Select **3** to clear the memory.
Select **Y** to clear the memory,
N to cancel, and **Esc (F6 on HJZTP controller)** to exit.



Clearing the memory does not clear the language selection or programmed privacy zones.

To send the Yes or No command from the HJZTP controller, press the **camera** and **preset** keys to scroll through the available characters on the LCD display. When **Y** or **N** is flashing on the controller LCD, press the **Aux** key.

5.4.4 Clear the Error Table

Select **4** to clear the error table.

The HD6 keeps track of the last 64 bytes of errors and events that occurred during operation of the unit. Selecting 4 clears the table.

5.4.5 Display Error Table Codes

Select **5** to display a list of the error and event table codes. When using the HJZTP controller, use the F1 (▲), F2 (▼), F3 (◀), and F4 (▶) keys to scroll through the list. Select **Esc (F6** on HJZTP controller**)** to exit the list.

If the scan receives a 00 corrupted memory error code, the scan automatically clears the memory and resets all default settings. All user programming (PreShots, VectorScans, Sector IDs, and Privacy Zones) is deleted.

In the Cx code the last hexadecimal digit is made up as follows:

bit#				
3	2	1	0	hexadecimal digit
0	0	0	0	0
0	0	0	1	1
0	0	1	0	2
0	0	1	1	3
0	1	0	0	4
0	1	0	1	5
0	1	1	0	6
0	1	1	1	7
1	0	0	0	8
1	0	0	1	9
1	0	1	0	A
1	0	1	1	B
1	1	0	0	C
1	1	0	1	D
1	1	1	0	E
1	1	1	1	F

Error and Event Codes:
- 00 – Corrupted memory
- 01 – Proc low voltage reset
- 02 – Proc bus error
- 03 – Proc address error
- 04 – Proc illegal instruction
- 05 – Proc zero divide
- 06 – Proc privilege violation
- 07 – Proc spurious interrupt
- 08 – Four ESC reset
- 09 – Pan motor error
- 10 – Corrupted data to camera
- 11 – Camera data queue overrun
- 21 – Command queue overrun
- 22 – Packet framing error
- C0 – Receive queue overrun
- Cx – bit0 - Byte parity error
  bit1 - Byte framing error
  bit2 - Byte noise error
  bit3 - Byte overrun error
- D0 – Byte timeout error
- D8 – Packet parity error
- EE – RESET, following byte gives type of reset:
  bit1 - System Reset
  bit2 - Loss of Clock Reset
  bit4 - Bus Fault Reset
  bit5 - Watchdog Reset
  bit6 - Power ON Reset
  bit7 - External Reset

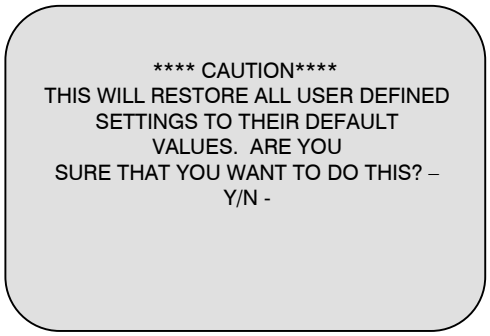
Therefore, this error code can represent multiple errors.

The EE error code includes the following byte (2 digit) hexadecimal number where the right hand digit is represented as in the above table and the left hand digit is represented as in the above table with bit 0 = bit 4, bit 1 = bit 5, bit 2 = bit 6, and bit 3 = bit 7.

5.4 DIAGNOSTIC OPTIONS, CONTINUED

5.4.6 Restore Default Settings

Select **6** to restore all default settings for displays, alarms, camera settings, and diagnostic settings to the factory default values. Select **Y** to restore all defaults or **N** to cancel and return to the Diagnostic Options menu.

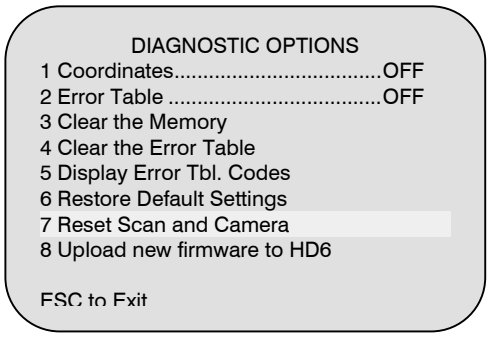


To send the Yes or No command from the HJZTP controller, press the **camera** and **preset** keys to scroll through the available characters on the LCD display. When **Y** or **N** is flashing on the controller LCD, press the **Aux** key. If **Y** is selected, confirmation of restored default settings is displayed.

5.4.7 Reset Scan and Camera

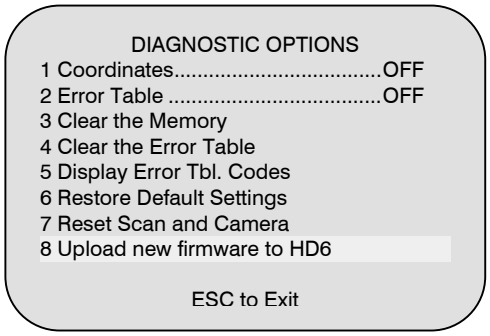
Select **7** to reset the scan and camera. This resets the unit the same as if power had been removed.

This can also be used to cause the HD6 to find home.



5.4.8 Upload New Firmware to HD6

This option is for future use.



5.5 CAMERA OPTIONS, 18X COLOR AND 18X TRUE/DAY NIGHT CAMERAS

NOTE: The following setup menu is for the 18x and 18x True/Day Night cameras. If your unit has a 23x True/Day Night Camera, 23x Color Camera, or 25x True Day/Night Camera , refer to paragraphs 5.6, 5.7, or 5.8 for camera options. The camera type is displayed on the initialization screen when the unit is powered up.

Select **5** from the MAIN MENU to access the CAMERA OPTIONS menu.

This menu is for qualified technical personnel only. Changing the camera options can make the video unusable. Restore the default settings to bring video back.

```
---- UltraDome HD6 ----
519543-1980

1 Language ..... English
2 Display Options
3 Control Options
4 Diagnostic Options
5 Camera Options
6 Function Programming
ESC to Exit
```

5.5.1 Zoom and Focus

Select **1** to set the lens zoom and focus options.

```
CAMERA OPTIONS
1 Zoom and Focus
2 Exposure Control
3 NightShot Control
4 White Balance
5 Still PreShot.....OFF
6 Vert Phase Edge ..... POS
7 Vert Phase 1-180.....180

ESC to Exit
```

1. **Max. Digital Zoom –** Select **1** to set the maximum digital zoom setting. Selecting **1** toggles through available values 1x, 2x, 4x or 12x.

2. **Manual Zoom Speed** – Select **2** to set the manual zoom speed.

```
ZOOM AND FOCUS OPTIONS

1 Max. Digital Zoom..... 1x
2 Manual Zoom Spd 0-8.....6

ESC to Exit
```

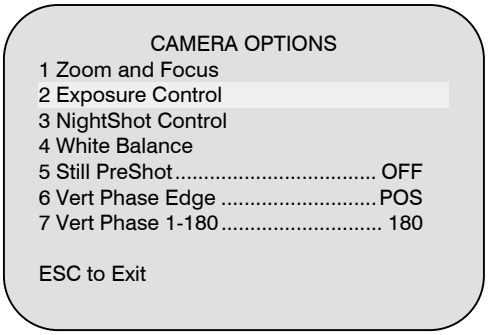
The manual zoom speed is the speed the joystick moves the zoom lens. The lens manual zoom speed ranges from 0 (slow) to 7 (fast). Selecting 8 makes the zoom speed proportional to the angular position of the joystick knob. The default is 6.

Enter a new value and select **Enter (F5** on the HJZTP controller).

5.5 CAMERA OPTIONS, 18X COLOR AND 18X TRUE/DAY NIGHT CAMERAS, CONTINUED

5.5.2 Exposure Control

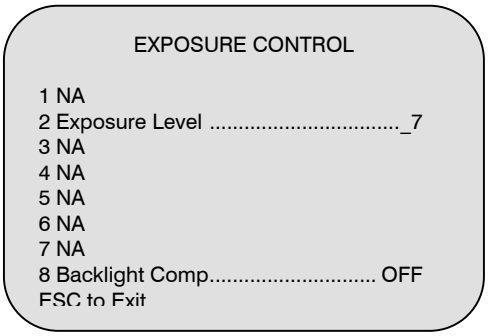
Select **2** to setup the lens exposure control options.



1. **Auto Exposure Level** –
   Select **2** to set Auto Exposure Level. Auto Exposure Level is only operational when the unit is in auto exposure mode.

   a. Enter a value from **0** (dark/ outdoor application) **to 14** (bright/indoor application.)
   (Default = 7).

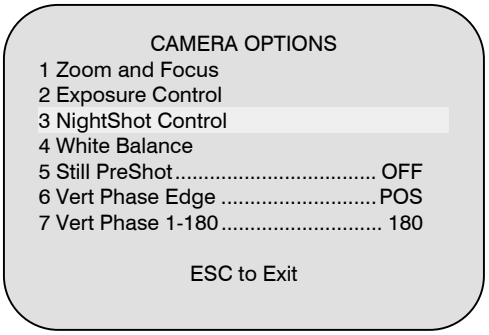
   b. Select **Enter (F5** on the HJZTP controller.



2. **Backlight Compensation –** Select **8** to turn backlight compensation ON or OFF. Backlight compensation is only operational when the unit is in auto exposure mode.

5.5.3 NightShot Control

Select **3** to setup NightShot Options.

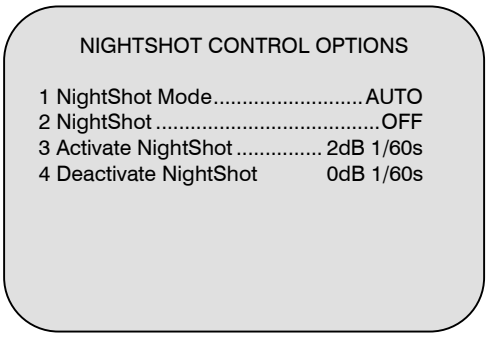


5.5 CAMERA OPTIONS, 18X COLOR AND 18X TRUE/DAY NIGHT CAMERAS, CONTINUED

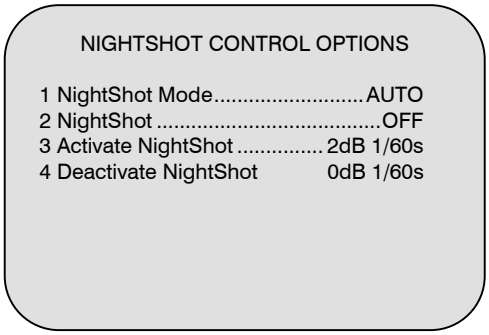
1. **NightShot Mode –** Select **1** to select between MANUAL and AUTO operation.

   NightShot is only available in the 843216-1011 or 843216-1013 camera with IR block filter.

   NightShot mode is only operational when the unit is in auto exposure mode.



2. **NightShot –** If NightShot is in manual mode, select **2** to turn the NightShot ON or OFF. Selecting 2 manually moves the IR block filter in and out.
   If NightShot is in AUTO mode, this feature is disabled.



3. **Activate NightShot** – Select **3** to set available gain and shutter speed values for activating NightShot mode. To be functional, NightShot must be in the AUTO mode. Activation setting cannot be greater than the deactivation setting. This guarantees that there will always be some deadband between the activate and deactivate levels. The amount of deadband can be adjusted to prevent the HD6 from oscillating between the NightShot activated and deactivated modes.

   Gain Settings (depending on camera):
   0dB, 2dB, 4dB, 6dB, 8dB, 10dB, 12dB, 14dB, 16dB, 18dB, 20dB, 22dB, 24dB, 26dB, 28dB.

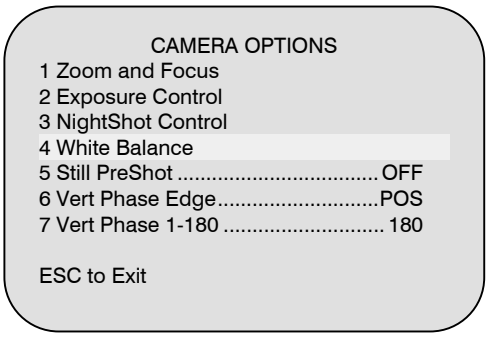
   Shutter Speed Settings:

   PAL cameras = 1/3 sec, 1/6 sec, 1/12 sec, 1/25 sec, or 1/50 sec.
   NTSC cameras = 1/4 sec, 1/8 sec, 1/15 sec, 1/30 sec, or 1/60 sec.

4. **Deactivate NightShot –** Select **4** to select available gain and shutter speed values for deactivating NightShot mode. Deactivation setting cannot be less than the activation setting.

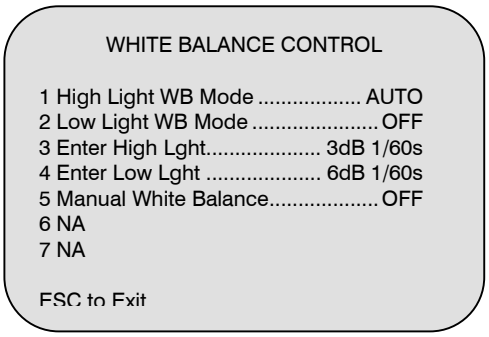
5.5.4 White Balance

Select **4** to set the white balance mode of operation.



1. **High Light WB Mode –** Select **1** to set the high light level white balance mode.

   Continue selecting **1** to select between AUTO (default), ATW, Indoor, and Outdoor values.



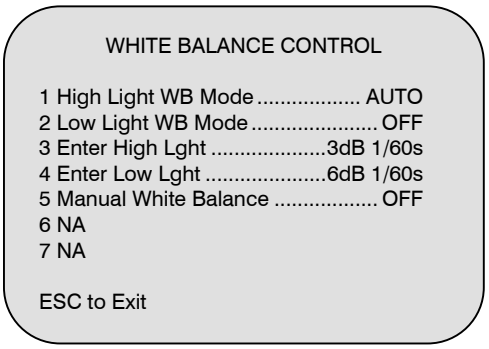
   Auto – Auto Tracing White Balance with limitations on R and B gain (3,200°K to 6,000°K). Use this setting to avoid fixing single color scenes as "white".

   ATW – Auto Tracing White Balance (2,000°K to 10,000K°). The camera tries to turn the dominant color within the temperature color range to white.

   Indoor – The indoor mode sets the white balance to 3200°K.

   Outdoor – The outdoor mode set the white balance to 5800°K.

2. **Low Light WB Mode –** Select **2** to set the low light level white balance mode. Continue selecting **2** to select between AUTO (default), ATW, Indoor, and Outdoor values. (See High Light WB Mode for explanation of values.)



3. **Enter High Light –** Select **3** to set the point at which the unit switches to high light level white balance mode. Selecting 3 toggles between available gain settings (0-28dB) and shutter speeds.

   Shutter Speed Settings:

   PAL cameras = 1/3 sec, 1/6 sec, 1/12 sec, 1/25 sec, or 1/50 sec.
   NTSC cameras = 1/4 sec, 1/8 sec, 1/15 sec, 1/30 sec, or 1/60 sec.

   The high light level mode cannot be set lower than the low light level mode.

4. **Enter Low Light –** Select **4** to set the point at which the unit switches to low light level white balance mode. Selecting **4** toggles between available gain settings (0-28dB) and shutter speeds.

   Shutter Speed Settings:

   PAL cameras = 1/3 sec, 1/6 sec, 1/12 sec, 1/25 sec, or 1/50 sec.
   NTSC cameras = 1/4 sec, 1/8 sec, 1/15 sec, 1/30 sec, or 1/60 sec.

   The low light level mode cannot be set higher than the high light level mode.

5. **Manual White Balance –** Select **5** to choose between ON and OFF for manual white balance control.

   If Manual White Balance is ON, menu options 1-4 do not apply and change to NA while menu options 6 and 7 become available.

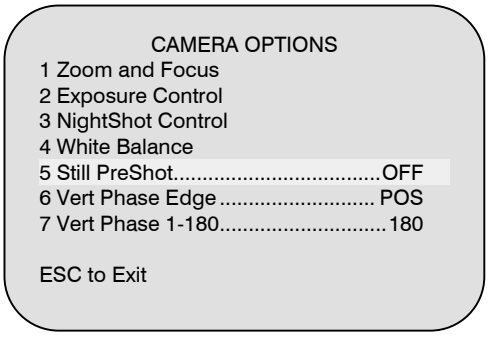
6. **Red Gain –** Select **6** to set Red Gain. Red Gain option is only available if manual white balance is ON. Enter a value between 0 (low) and 255 (high) and select **Enter (F5** on the HJZTP controller). (Default = 200)

7. **Blue Gain –** Select **7** to set Blue Gain. Blue Gain option is only available if manual white balance is ON. Enter a value between 0 (low) and 255 (high) and select **Enter (F5** on the HJZTP controller). (Default = 200)

5.5 CAMERA OPTIONS, 18X COLOR AND 18X TRUE/DAY NIGHT CAMERAS, CONTINUED

5.5.5 Still PreShot

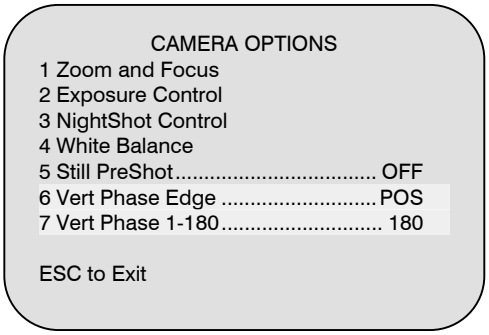
Select **5** to turn Still PreShot ON or OFF.



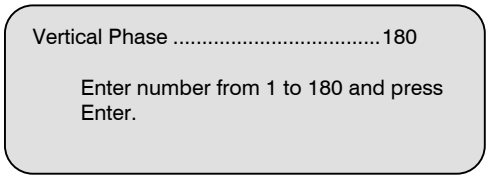
If:	Then:
Still PreShot is ON (Video is frozen)	Video is frozen between PreShots. The video remains at the current PreShot until the scan arrives at the next PreShot, and then switches the video. If an operator manually controls the scan, the still PreShot function is disabled until the scan is sent to another PreShot.
Still PreShot is OFF (Video is unfrozen)	Video returns to normal operation.

5.5.6 Vertical Phase

1. Select **6** to select the vertical phase edge for line locking the camera. Selecting 6 toggles between POS (positive), NEG (negative), or NONE. If you select POS or NEG, you can set the vertical phase from 1 to 180.
2. Select **7** to change the vertical phase.



Enter a number from **1 to 180** and press **Enter** (**F5** on HJZTP controller).

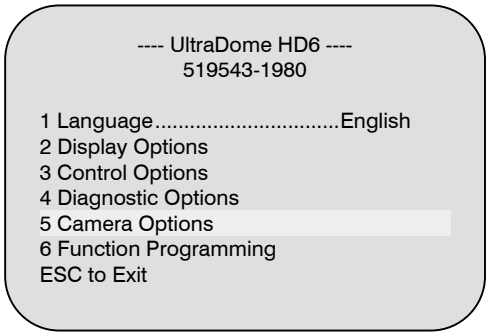


5.6 CAMERA OPTIONS, 23X WIDE DYNAMIC RANGE AND TRUE/DAY NIGHT CAMERA

NOTE: The following setup menu is for the 23x Wide Dynamic Range and True Day/Night Camera. If your unit has an 18X camera, refer to paragraph 5.5 for camera options. If your unit has a 23x color camera, refer to paragraph 5.7. If your unit has a 25x True Day/Night camera, refer to paragraph 5.8 for camera options. The camera type is displayed on the initialization screen when the unit is powered up.

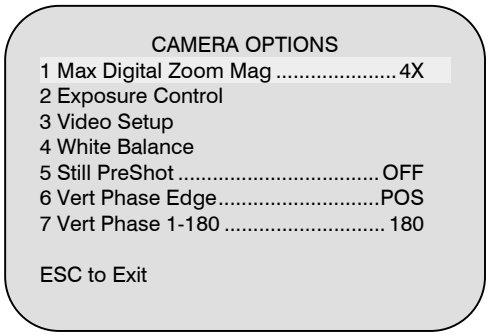
Select **5** from the MAIN MENU to access the CAMERA OPTIONS menu.

This menu is for qualified technical personnel only. Changing the camera options can make the video unusable. Restore the default settings to bring video back.



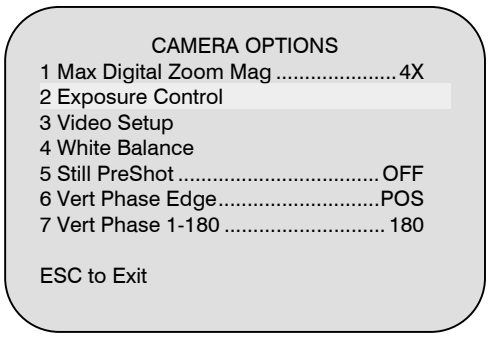
5.6.1 Maximum Digital Zoom

Select **1** to set the lens maximum digital zoom. Selecting **1** toggles through the available values (1x, 2x, and 4x)



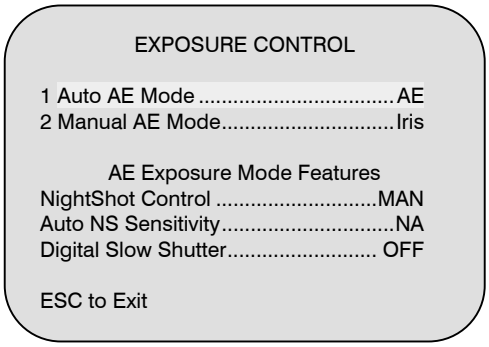
5.6.2 Exposure Control

Select **2** to setup the lens exposure control options.



5.6 CAMERA OPTIONS, 23X WIDE DYNAMIC RANGE AND TRUE/DAY NIGHT CAMERA, CONTINUED

1. **Auto Exposure Mode**
   Select **1** to change the Auto Exposure Mode. This setting applies when the controller and the camera lens are in auto iris mode. If the controller is set to manual iris, the auto iris mode is disabled, and the lens iris is in manual mode.



   Pressing 1 toggles between the available modes of operation. The settings for each mode are displayed below the menu options. The following modes and settings are available.

   a. **Auto AE Mode Settings**
      NightShot Control ..... MAN
      Auto NightShot Sensitivity .... NA
      Digital Slow Shutter..... OFF

   b. **Auto AER1 Mode Settings**
      NightShot Control AUTO
      Auto Night Sensitivity HIGH
      Digital Slow Shutter OFF

   c. **Auto AER2 Mode Settings**
      NightShot Control ..... AUTO
      Auto Night Sensitivity..... MID
      Digital Slow Shutter..... OFF

   d. **Auto AE+ Mode Settings**
      NightShot Control MAN
      Auto Night Sensitivity NA
      Digital Slow Shutter AUTO

   e. **Auto AE+1 Mode Settings**
      NightShot Control AUTO
      Auto Night Sensitivity HIGH
      Digital Slow Shutter AUTO

   f. **Auto AE+2 Mode Settings**

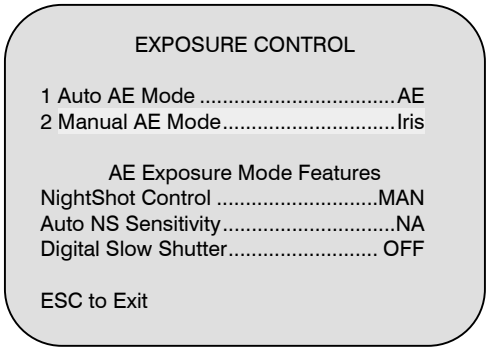
      NightShot Control ..... AUTO
      Auto Night Sensitivity..... MID
      Digital Slow Shutter..... AUTO

   g. **Auto AER+3 Mode Settings**

      NightShot Control ..... AUTO
      Auto Night Sensitivity..... LOW
      Digital Slow Shutter..... AUTO

2. Manual AE Mode

   Select **2** to change the manual AE mode. Pressing 2 toggles between the available settings: Iris, Gain, or Shutter. This setting applies when the controller is set to manual iris mode.



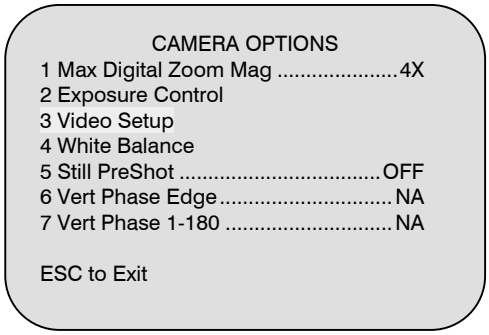
   Iris - (default setting) the iris function is controlled manually and the camera controls the gain and shutter automatically.

   Gain – the gain is manually controlled and the camera controls the iris and shutter automatically.

   Shutter – the shutter is controlled manually, and the camera controls the iris and gain automatically.

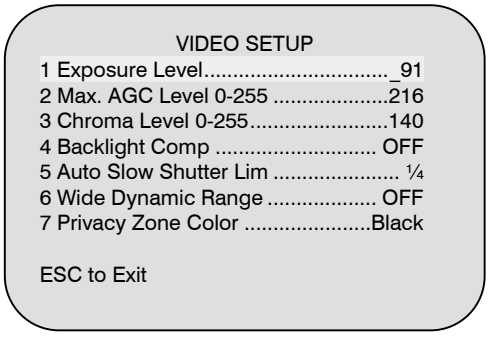
5.6.3 Video Setup

Select **3** to access the video setup menu.

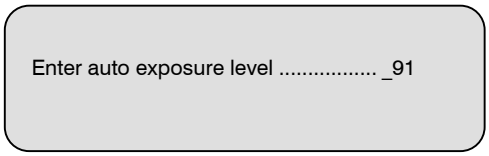


1. Select **1** to change the exposure level. The default setting is 91.

   0 = dark
   255 = bright



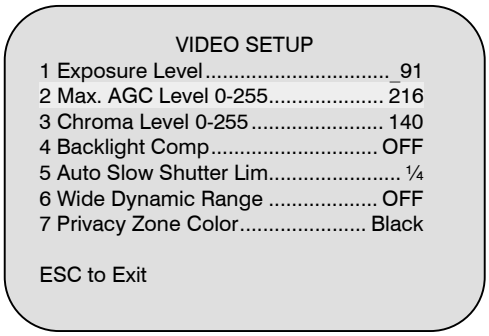
   Enter a number between 0 and 255, then press **Enter (F5** on the HJZTP controller).



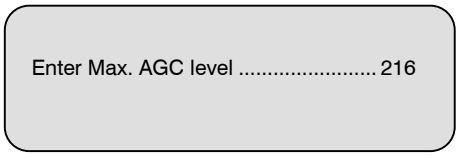
2. Select **2** to change the maximum AGC Level. The default setting is 216.

   High level (255 = bright picture, noise in picture.

   Low level (0) = dim picture, no noise.

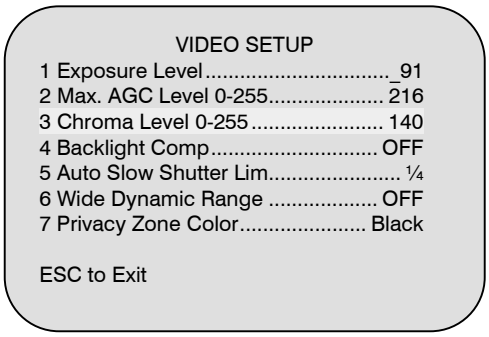


   Enter a number between 0 and 255, then press **Enter** (**F5** on HJZTP controller).

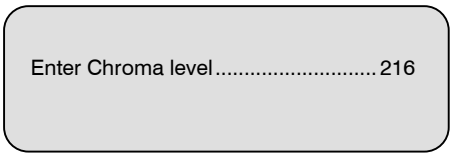


3. Select **3** to change the Chroma Level. The default setting is 140.

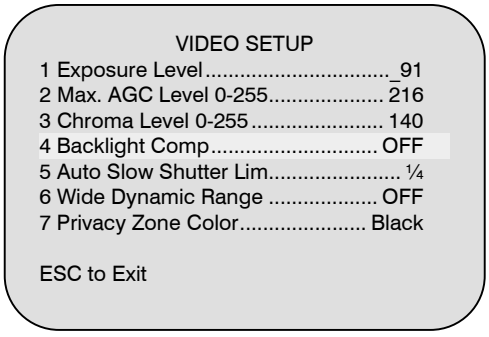
   0 = no color
   255 = color is saturated



   Enter a number between 0 and 255, then press **Enter** (**F5** on HJZTP controller).



4. Select **4** to turn the backlight compensation on or off. Selecting 4 toggles between on and off. The backlight compensation is only operational when the unit is in auto exposure mode and the wide dynamic range is off.



5.6 CAMERA OPTIONS, 23X WIDE DYNAMIC RANGE AND TRUE/DAY NIGHT CAMERA, CONTINUED

5. Select **5** to set the auto slow shutter limit. Selecting 5 toggles between the available settings.

NTSC	PAL	
1/60	1/50	
1/30	1/25	
1/15	1/12	
1/8	1/6	
¼	1/3	Default
½	2/3	

VIDEO SETUP
1 Exposure Level..... _91
2 Max. AGC Level 0-255 216
3 Chroma Level 0-255..... 140
4 Backlight Comp..... OFF
5 Auto Slow Shutter Lim ..... ¼
6 Wide Dynamic Range ..... OFF
7 Privacy Zone Color..... Black

ESC to Exit

6. Select **6** to turn the wide dynamic range on or off. The default setting is off. The wide dynamic range is only functional if the camera is in auto iris mode. The wide dynamic range scans the video and sets the exposure level so it is balanced between the bright areas and dark areas in the video.

VIDEO SETUP
1 Exposure Level..... _91
2 Max. AGC Level 0-255 216
3 Chroma Level 0-255.....140
4 Backlight Comp ..... OFF
5 Auto Slow Shutter Lim ..... ¼
6 Wide Dynamic Range ..... OFF
7 Privacy Zone Color .....Black

ESC to Exit

7. Select **7** to select the color of the privacy zone block. Pressing 7 toggles between black, grey, and white.

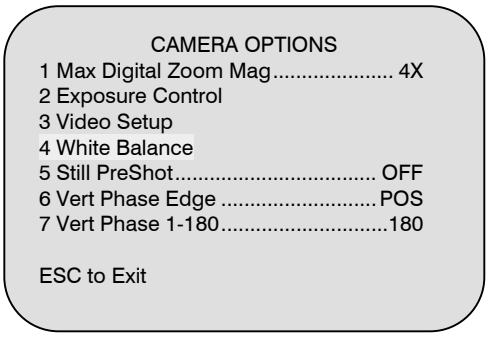
VIDEO SETUP
1 Exposure Level..... _91
2 Max. AGC Level 0-255 216
3 Chroma Level 0-255.....140
4 Backlight Comp .....OFF
5 Auto Slow Shutter Lim .....¼
6 Wide Dynamic Range .....OFF
7 Privacy Zone Color .....Black

ESC to Exit

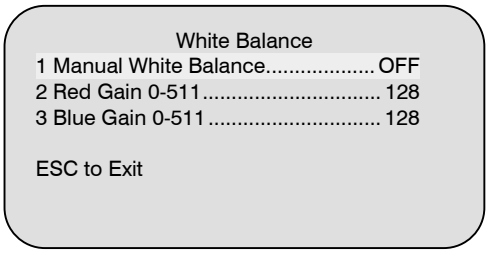
When done setting up the video, send an **Esc** (**F6** on the HJZTP Controller) command. The display returns to the Camera Options Menu.

5.6.4 White Balance

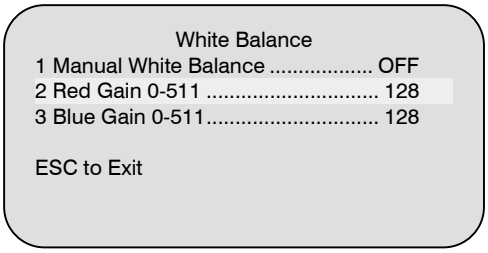
Select **4** to set the camera White Balance.



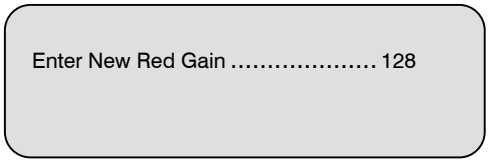
1. Select **1** to turn the white balance on or off. Pressing 1 toggles between on and off. If the manual white balance is set to on, the red gain and blue gain settings cannot be changed.



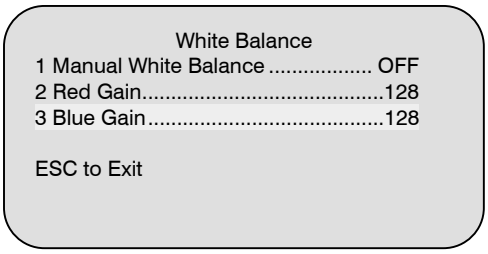
2. Select **2** to change the red gain setting. The default setting is 128.



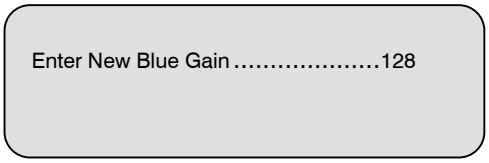
Enter a number between 0-511, then press **Enter** (**F5** on the HJZTP Controller).



3. Select **3** to change the blue gain. The default setting is 128. Enter a number between 0-511, the press **Enter** (**F5** on HJZTP controller).



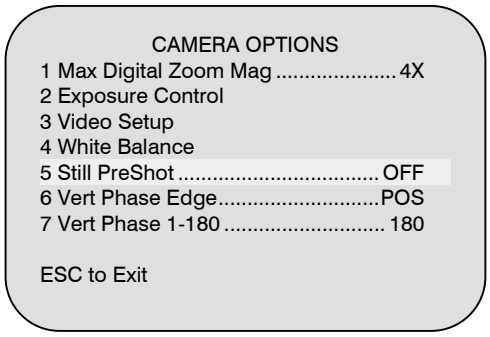
Enter a number between **0-511**, then press **Enter** (**F5** on the HJZTP controller).



When done setting up the white balance, press **Esc** (**F6** on HJZTP controller).

5.6.5 Still PreShot

Select **5** to turn Still PreShot ON or OFF.

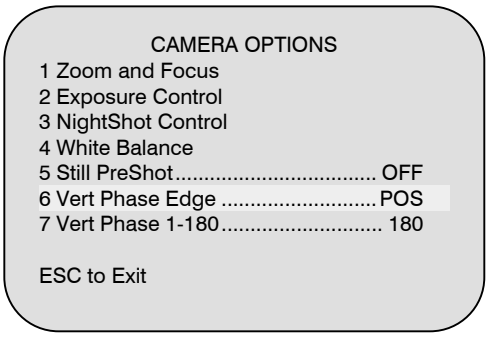


If:	Then:
Still PreShot is ON (Video is frozen)	Video is frozen between PreShots. The video remains at the current PreShot until the scan arrives at the next PreShot, and then switches the video.
Still PreShot is OFF (Video is unfrozen)	Video returns to normal operation.

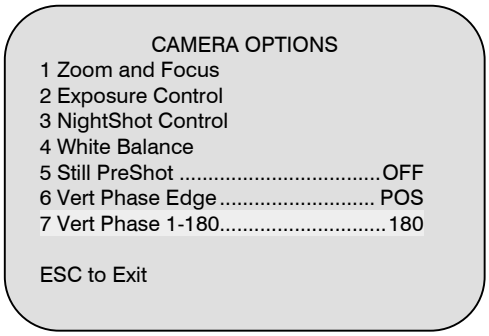
5.6 CAMERA OPTIONS, 23X WIDE DYNAMIC RANGE AND TRUE/DAY NIGHT CAMERA, CONTINUED

5.6.6 Vertical Phase

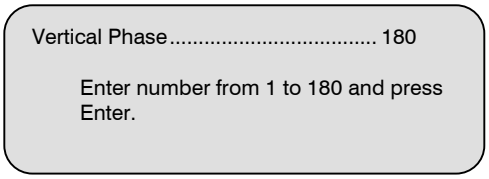
1. Select **6** to select the vertical phase edge for line locking the camera. Selecting 6 toggles between POS (positive), NEG (negative), or NONE. If you select POS or NEG, you can set the vertical phase from 1 to 180.



2. Select **7** to change the vertical phase.



Enter a number from **1 to 180** and press **Enter** (**F5** on HJZTP controller).



When done setting up the camera and lens, press **Esc** (**F6** on HJZTP controller) to exit the Camera Options Menu. The screen returns to the Main Setup Menu. Select another menu option or press Esc (F6 on HJZTP controller) to exit the setup mode.

5.7 CAMERA OPTIONS, 23X COLOR CAMERA

NOTE: The following setup menu is for the GMC-655 Camera. If your unit has an 18x or 23x True Day/Night camera, refer to paragraph 5.5 or 5.6 for camera options. If your unit has a 25x True Day/Night camera, refer to paragraph 5.8 for camera options. The camera type is displayed on the initialization screen when the unit is powered up.

Select **5** from the MAIN MENU to access the CAMERA OPTIONS menu.

This menu is for qualified technical personnel only. Changing the camera options can make the video unusable. Restore the default settings to bring video back.

```
---- UltraDome HD6 ----
519543-1980

1 Language ..... English
2 Display Options
3 Control Options
4 Diagnostic Options
5 Camera Options
6 Function Programming
ESC to Exit
```

Note: Camera Option 5 is not available (NA) for this camera model.

```
CAMERA OPTIONS
1 Zoom and Focus
2 Exposure Control
3 Video Setup
4 White Balance
5 NA
6 Vert Phase Edge      NONE
7 Vert Phase 1-180     ….180
```

5.7.1 Zoom and Focus

Select **1** to set the lens zoom and focus options.

```
ZOOM AND FOCUS OPTIONS

1 Max Digital Zoom Mag   4x
2 Manual Zoom Speed……10
3 Auto Focus Sens……..HIGH
```

1. **Max. Digital Zoom –** Select **1** to set the maximum digital zoom setting. Selecting **1** toggles through available values 1x, 2x, or 4x (default)..

2. **Manual Zoom Speed** – Select **2** to set the manual zoom speed. 10 is the default setting.

   Enter the desired speed (0-10) and press Enter.

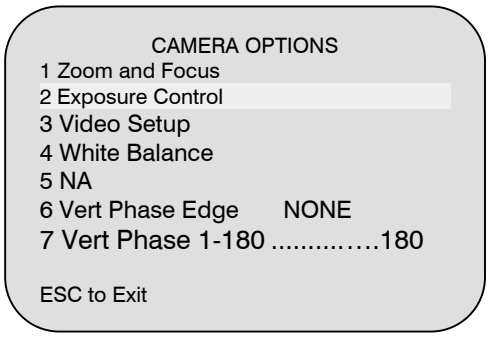
```
Manual Zoom Speed .....10

Enter number from 0 to 10 and press
Enter.
```

3. **Auto Focus Sens** - Select **3** to set the auto focus sensitivity. Selecting 3 toggles through the available options LOW or HIGH (default).

5.7 CAMERA OPTIONS, 23X COLOR CAMERA, CONTINUED

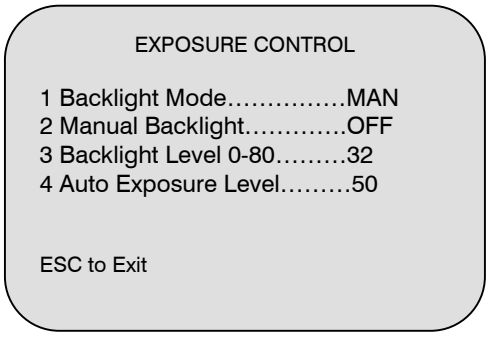
5.7.2 Exposure Control

Select **2** to setup the lens exposure control options.



1. **Backlight mode** – the backlight mode can be set to Manual (MAN) or auto (AUTO) mode. Select 1 to toggle between manual and auto mode.

   Note: If the HD6 protocol is set for Honeywell Maxpro mode and the backlight mode is set to Auto, PreShot command 93 can be used to toggle backlight on or off.



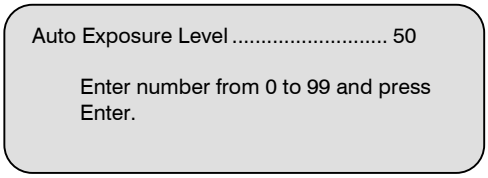
2. **Manual Backlight -** if the backlight mode is set to manual mode, the manual backlight can be set to ON or OFF. Select 2 to toggle the manual backlight on or off. If the backlight mode is set to Auto, this manual backlight does not apply (NA).

3. **Backlight Level 0-80 – This setting selects the brightness level of the Backlight feature when it is ON, either automatically or manually.** The available settings are from 0 (dark) to 80 (very bright).

   Select **3** to change the current level displayed. Enter the new backlight level and press Enter.

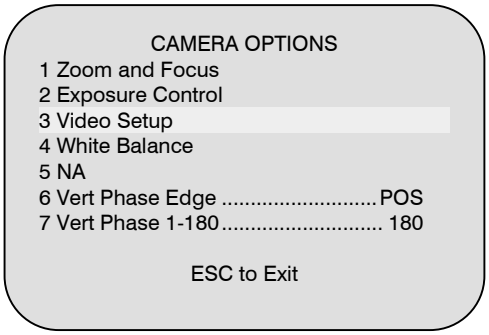
4. **Auto Exposure Level 0-99 –** the auto exposure level can be set from 00 (dark) to 99 (bright).

   Select **4** to change the current auto exposure level. Enter the **desired level** and press **Enter**.



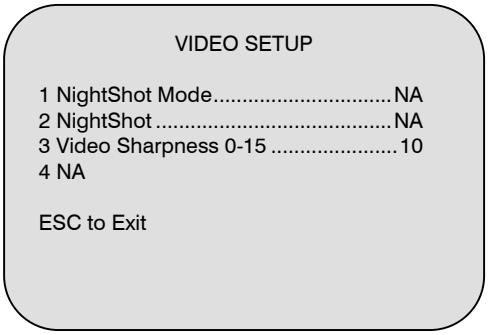
5.7.3 Video Setup

Select **3** to access the Video Setup menu.



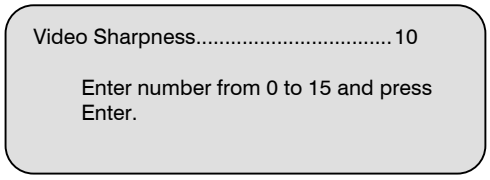
1. **NightShot Mode –** This feature is not available on the GMC-655 camera.

2. **NightShot –** This feature is not available on the GMC-655 camera.



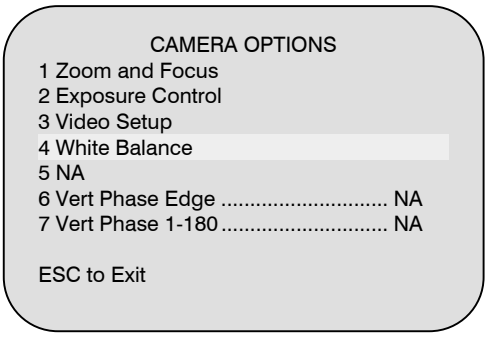
3. **Video Sharpness 0-15** – The video sharpness can be set from 00 (less sharp) to 15 (sharp).

   Select **3** to set the video sharpness. Enter the desired value and press Enter.



5.7.4 White Balance

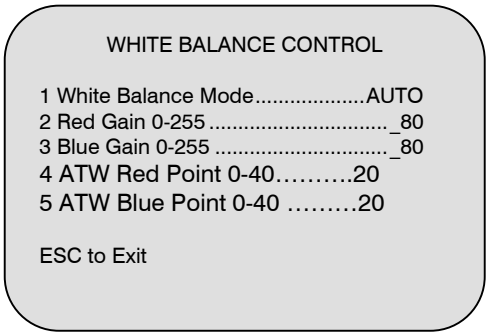
Select **4** to set the white balance mode of operation.



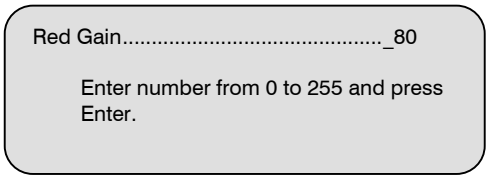
1. **White Balance Mode –** Select **1** to set the white balance mode. Selecting 1 toggles between MANUAL, AUTO (default), INDOOR, OR OUTDOOR.

Auto – White Balance mode is set to automatic control.

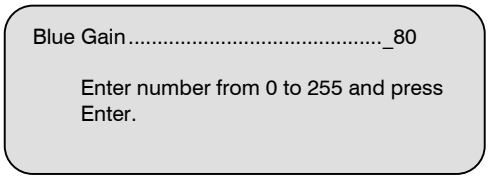
Manual – If the manual setting is selected, the red and blue gain can be set between 0-255.



Select **2** to change the Red Gain value. Enter the **desired value** and press **Enter**.



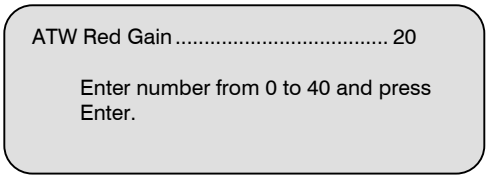
Select **3** to change the Blue Gain value. Enter the **desired value** and press **Enter.**



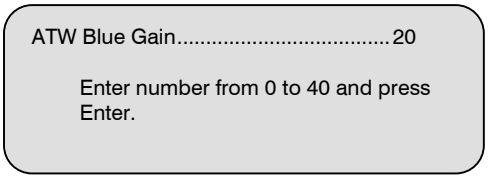
5.7.4 White Balance, Continued

ATW Red and Blue Point – The ATW Point allows the user to select a compensation value for both the red and blue gain when the white balance is set to Auto Mode. The White Balance is still automatically controlled, but the camera will drive the red and blue gain to the desired settings. If Auto is selected, the red and blue gain can be set between 0-40.

Select **4** to change the red gain value.
Enter the **desired value** and press **Enter**.



Select **5** to change the blue gain value.
Enter the **desired value** and press **Enter.**



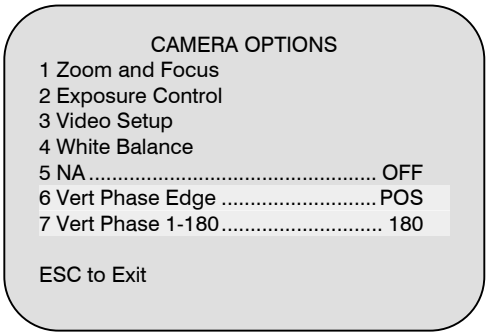
Indoor – The indoor mode sets the white balance to 3200°K.

Outdoor – The outdoor mode set the white balance to 5400°K.

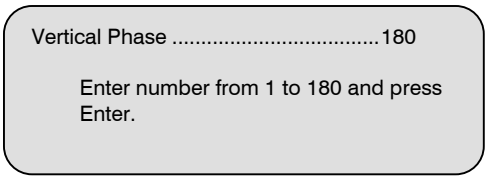
5.7.5 Vertical Phase

1. Select **6** to select the vertical phase edge for line locking the camera. Selecting 6 toggles between POS (positive), NEG (negative), or NONE. If you select POS or NEG, you can set the vertical phase from 1 to 180.

2. Select **7** to change the vertical phase.



Enter a number from 1 to 180 and press Enter.



5.8 CAMERA OPTIONS, 25X TRUE DAY/NIGHT CAMERA

NOTE: The following setup menu is for the 25 True Day/Night Camera. If your unit has an 18x or 23x Wide Dynamic Range and True Day/Night camera, refer to paragraph 5.5 or 5.6 for camera options. If your unit has a 23x color camera, refer to paragraph 5.7 for camera options. The camera type is displayed on the initialization screen when the unit is powered up.

Select **5** from the MAIN MENU to access the CAMERA OPTIONS menu.

This menu is for qualified technical personnel only. Changing the camera options can make the video unusable. Restore the default settings to bring video back.

```
---- UltraDome HD6 ----
519543-1980

1 Language ..... English
2 Display Options
3 Control Options
4 Diagnostic Options
5 Camera Options
6 Function Programming
ESC to Exit
```

5.8.1 Zoom and Focus

Select **1** to set the lens zoom and focus options.

```
CAMERA OPTIONS
1 Zoom and Focus
2 Exposure Control
3 Video Setup
4 White Balance
5 Auto SlowShutter Lim….1/4
6 Vert Phase Edge ..... NONE
7 Vert Phase 1-180.....180

ESC to Exit
```

1. **Max. Digital Zoom –** Select **1** to set the maximum digital zoom setting. Selecting **1** toggles through available values 1x, 2x, or 4x (default).

```
ZOOM AND FOCUS OPTIONS

1 Max Digital Zoom Mag   4x
2 Manual Zoom Speed……10
3 Auto Focus Sens      HIGH
```

2. **Manual Zoom Speed** – Select **2** to set the manual zoom speed. 10 is the default value.

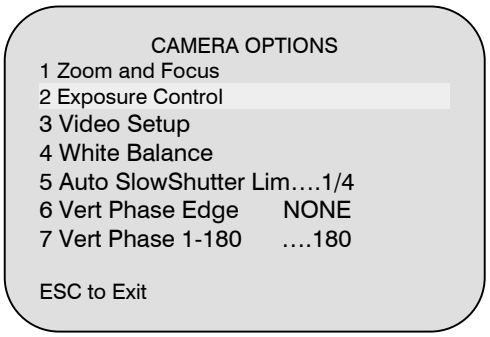
   Enter the desired speed (0-10) and press Enter.

```
Manual Zoom Speed .....10

    Enter number from 0 to 10 and press
    Enter.
```

3. **Auto Focus Sens** - Select **3** to set the auto focus sensitivity. Selecting 3 toggles through the available options LOW or HIGH.

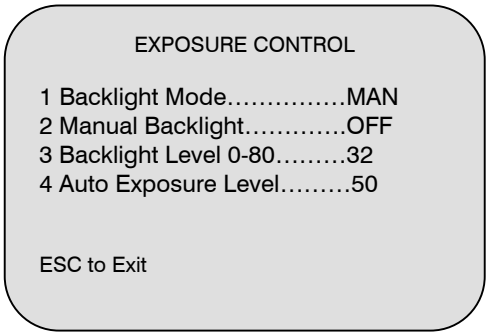
5.8.2 Exposure Control

Select **2** to setup the lens exposure control options.



1. **Backlight mode** – the backlight mode can be set to Manual (MAN) or auto (AUTO) mode. Select 1 to toggle between manual and auto mode.

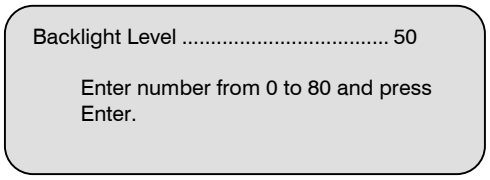
   Note: If the HD6 protocol is set for Honeywell Maxpro mode and the backlight mode is set to Auto, PreShot command 93 can be used to toggle backlight on or off.



2. **Manual Backlight -** if the backlight mode is set to manual mode, the manual backlight can be set to ON or OFF. Select 2 to toggle the manual backlight on or off. If the backlight mode is set to Auto, this manual backlight does not apply (NA).

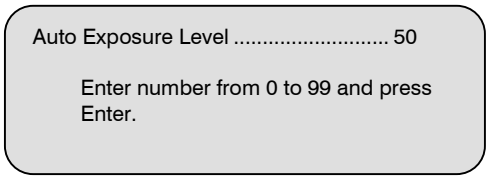
3. **Backlight Level 0-80 – This setting selects the brightness level of the Backlight feature when it is ON, either automatically or manually.** The available settings are from 0 (dark) to 80 (very bright).

   Select **3** to change the current level displayed. Enter the new backlight level and press Enter.



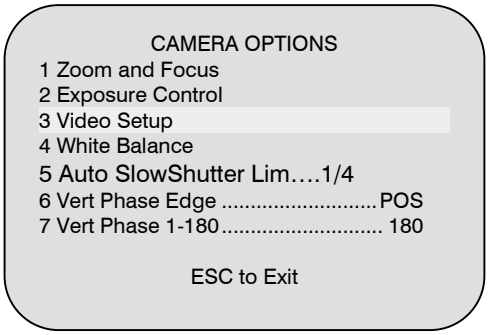
4. **Auto Exposure Level 0-99 –** the auto exposure level can be set from 00 (dark) to 99 (bright).

   Select **4** to change the current auto exposure level. Enter the **desired level** and press **Enter**.



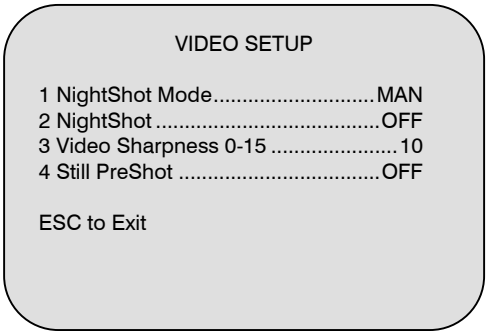
5.8.3 Video Setup

Select **3** to access the Video Setup menu.



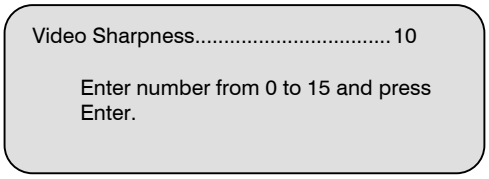
1. **NightShot Mode –** Select **1** to select between MANUAL and AUTO operation.

2. **NightShot –** If NightShot is in manual mode, select **2** to turn the NightShot ON or OFF. Selecting 2 manually moves the IR block filter in and out.
   If NightShot is in AUTO mode, this feature is disabled.



3. **Video Sharpness 0-15** – The video sharpness can be set from 00 (less sharp) to 15 (sharp).

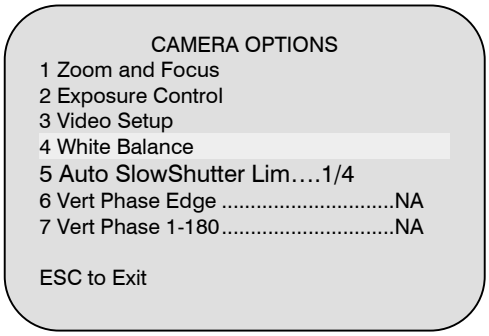
   Select **3** to set the video sharpness. Enter the desired value and press Enter.



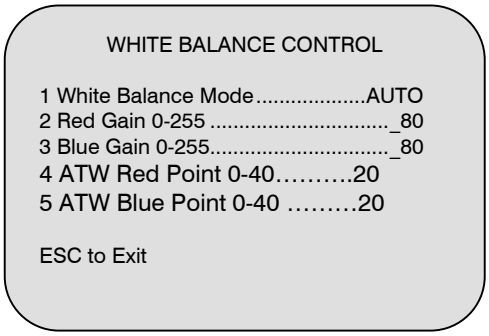
4. **Still PreShot –** Select 4 to turn the PreShot Still feature ON or OFF. If Still PreShot is ON, the video is frozen between PreShots. The video remains at the current PreShot until the scan arrives at the next PreShot, and then switches the video.

5.8.4 White Balance

Select **4** to set the white balance mode of operation.



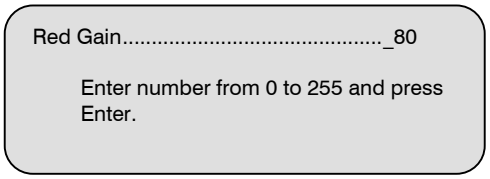
1. **White Balance Mode –** Select **1** to set the white balance mode. Selecting 1 toggles between MANUAL, AUTO (default), INDOOR, OR OUTDOOR.



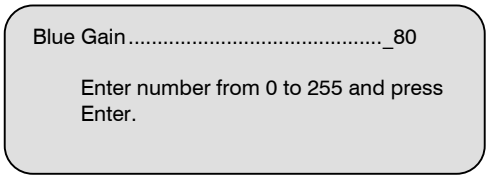
Auto – White Balance mode is set to automatic control.

Manual – If the manual setting is selected, the red and blue gain can be set between 0-255.

Select **2** to change the Red Gain value. Enter the **desired value** and press **Enter**.



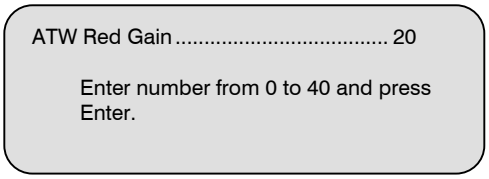
Select **3** to change the Blue Gain value. Enter the **desired value** and press **Enter.**



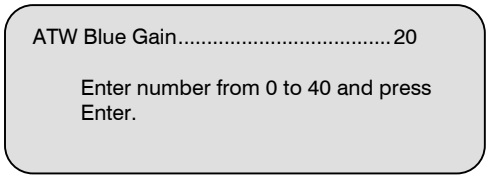
5.8.4 White Balance, Continued

ATW Red and Blue Point – The ATW Point allows the user to select a compensation value for both the red and blue gain when the white balance is set to Auto Mode. The White Balance is still automatically controlled, but the camera will drive the red and blue gain to the desired settings. If Auto is selected, the red and blue gain can be set between 0-40. The default setting is 20.

Select **4** to change the red gain value. Enter the **desired value** and press **Enter**.



Select **5** to change the blue gain value. Enter the **desired value** and press **Enter.**

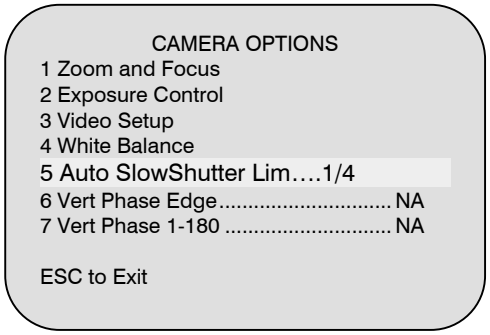


Indoor – The indoor mode sets the white balance to 3200°K.

Outdoor – The outdoor mode set the white balance to 5400°K.

5.8.5 Auto Slow Shutter

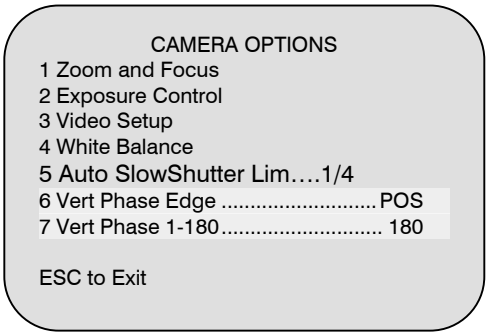
Select **5** to set the **Auto Slow Shutter Limit**. Press 5 to toggle between the available options: **1, ½, ¼.**



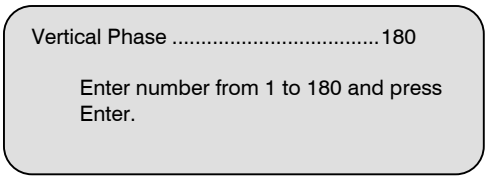
5.8.6 Vertical Phase

1. Select **6** to select the vertical phase edge for line locking the camera. Selecting 6 toggles between POS (positive), NEG (negative), or NONE. If you select POS or NEG, you can set the vertical phase from 1 to 180.

2. Select **7** to change the vertical phase.

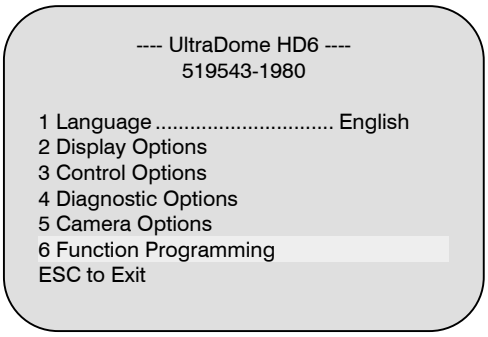


Enter a number from 1 to 180 and press Enter.



5.9 FUNCTION PROGRAMMING

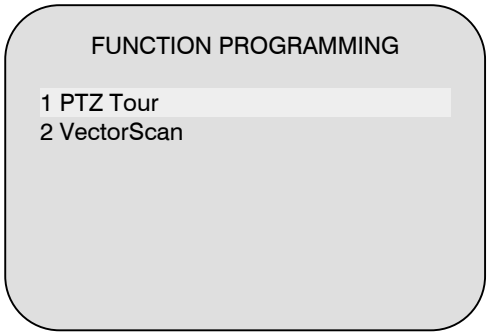
Select **6** to access programming options.



5.9.1 PTZ Tour

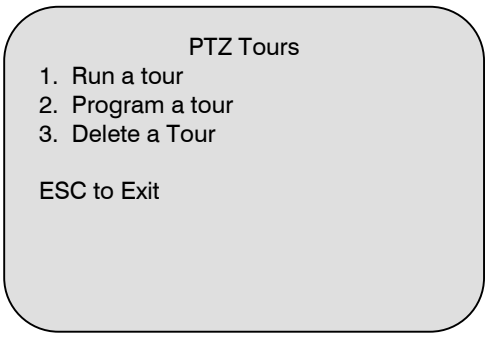
PTZ Tour – Select **1** to program, run, or delete a PTZ (pan, tilt, zoom) tour.

This menu option is a feature of the Honeywell Diamond protocol and is only displayed when standard, or MUX-100 protocol is selected on the DIP switch on the scan.



5.9 FUNCTION PROGRAMMING, CONTINUED

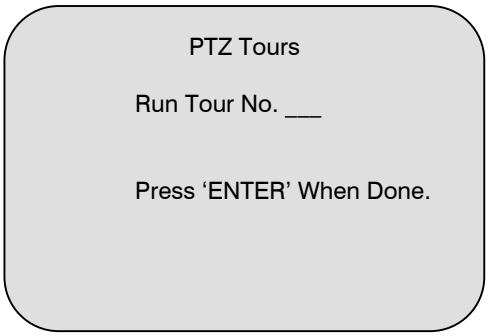
1. **Run a Tour –** Select **1** to run a tour.



Enter the tour number (**1-3**) and press **Enter (F5** on HJZTP controller).

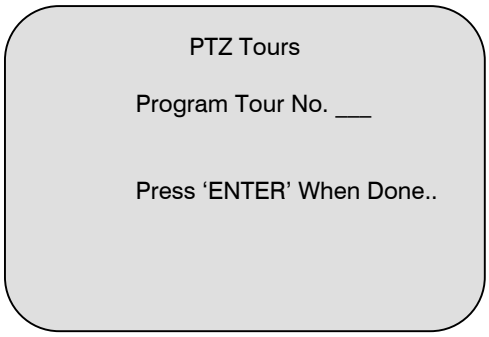
If the tour is programmed, it will run.

If the tour is not programmed, the message “Does Not Exist” appears on the top of the display.



2. **Program a Tour –** Select **2** to program a tour. Enter a tour number (1-3) and press **Enter (F5** on HJZTP controller).

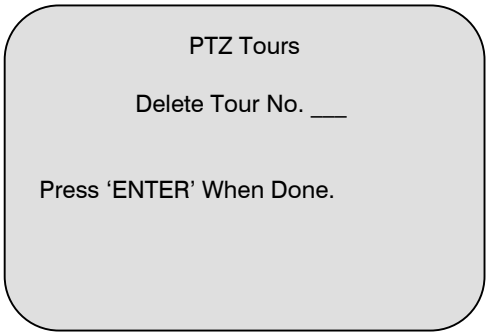
The scan counts from 120 to 0 seconds. You have 120 seconds to pan and tilt the scan and adjust the lens zoom setting. The scan saves the PTZ commands performed during the 120 seconds. When the scan reaches 0, it displays **PTZ Tour Complete**.



To program a tour less than 120 seconds, select the **Esc** key on the controller (**F6** on the HJZTP controller) when finished programming the tour. The scan saves the PTZ commands you entered between the time you started the programming mode until you selected **Esc**.

3. **Delete a Tour** – Select **3** to delete a tour. Enter the tour number (1-3) and press **Enter** (**F5** on the HJZTP controller).

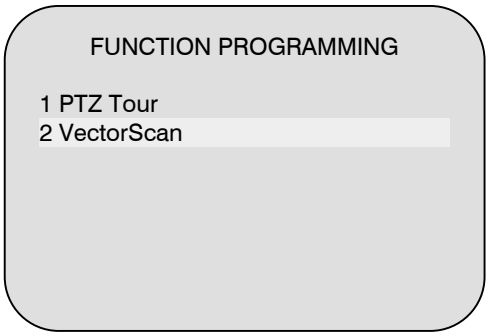
The display returns to the PTZ Tour Menu. Select another PTZ tour option or select **Esc** (**F6** on the HJZTP controller) to return to the main programming menu.



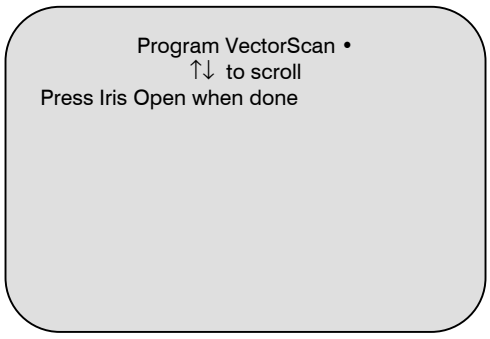
5.9.2 VectorScan

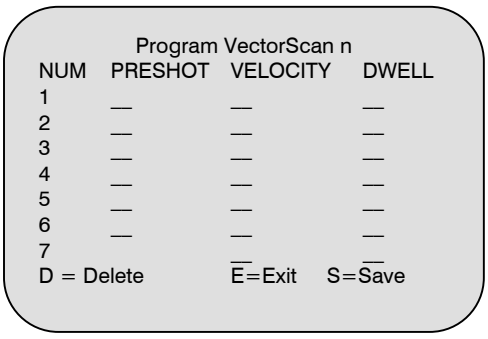
This menu option is only displayed when Honeywell Maxpro mode, Honeywell VCL, Pelco P, Pelco D, or American Dynamics protocol is selected on the DIP switch on the scan.

Position the cursor on **2** and press **Iris Open** to program a VectorScan.



VectorScans 0-9 can be programmed and assigned to alarms or the default function. VectorScans 1, 2, & 3 can be started using PreShot commands 87, 88, and 89 respectively.





1. Use the tilt up function on the joystick until the desired VectorScan number (0-9) is displayed, then press **Iris Open**.

2. Use the tilt up and down and the pan left and right functions of the controller to move between fields.

FIELD	Usage
NUM (number)	Move the cursor to the desired field and press Iris Open to activate. Use the tilt up and down functions of the controller to change the value. If the field is more than one digit, each digit can be changed individually by placing the cursor on the digit and using the tilt up or down function.
PRESHOT	Selectable from 0 to 79. PreShots 80-99 are reserved for special functions and cannot be entered in a VectorScan. When the field has the desired number, press the Iris Open to select the number. Iris Open also moves the cursor to the next field
VELOCITY	The Velocity field is the pan and tilt speed for the scan to go to the PreShot (1 to 400°/second.) The default is 400°/second.
DWELL	The dwell time is how long the scan waits before it goes to the next PreShot in the list (0 to 99 seconds.)

3. **Inserting PreShots:** To insert a PreShot between PreShots, position the cursor on the second PreShot and press **Focus Near** to insert a line.

4. **Deleting PreShots:** To delete a PreShot, place the cursor on the PreShot line and press **Focus Far**. The entire PreShot line is deleted.

5. When done entering PreShots, press **Iris Close.** The cursor moves to **S = Save.**

6. Press **Iris Open** to save the VectorScan. To exit without saving, use the **Pan Left** function to move the cursor to **E = Exit** and press **Iris Open**.

7. **To delete a VectorScan**, use the pan left function to move the cursor to **D = Delete**, then press **Iris Open**.

SECTION 6:
OPERATION USING STANDARD HONEYWELL DIAMOND PROTOCOL

6.1 INTRODUCTION

The availability of the features of the HD6 when set for standard Honeywell Diamond protocol is governed by the controller being used.

NOTE:

- Refer to Section 8 (operation) and Section 9 (programming) when using Honeywell Maxpro Mode, Honeywell VCL, Pelco P Code, or Pelco D Code control systems.
- Refer to Section 10 (operation) and Section 11 (programming) when using an American Dynamics control system.

6.2 RESET HD6

To reset an HD6 unit, access the main menu, then the diagnostics menu (option 4), and finally scan and camera reset (option 7). Refer to Section 5.4.7.

If using a HEGS5000/5001 controller, you can also press the **Clear**/**Manual** (←) key four times to reset the scan.

6.3 CONTROLLING SCAN ASSEMBLIES

The Scan assemblies are controlled manually by an operator using a compatible controller such as the HJZTP or HEGS5000. The address of the Scan assembly the operator wants to control must be selected as the control camera. When an operator performs a command, the controller sends out the control data with the control camera address.

Example: The operator has camera 2 selected as the control camera on the controller. The operator performs the tilt function on the controller. The controller sends out the tilt command and camera address 2. All the Scan assemblies receive the command, but only the Scan assembly with address 2 performs the tilt command. If the Scan is set to address 0, the scan responds to commands for all addresses.

Manual control of a Scan assembly includes pan, tilt, zoom, focus, and iris. Refer to the controller user's manual for operation of the controller to perform these functions. The maximum pan speed is selectable between 100°, 200°, or 400° per second. The selection defines the maximum speed the unit pans while under manual control. The maximum tilt speed is one-half the maximum pan speed. If the maximum pan speed is set to 200° per second, the maximum tilt speed is set to 100° per second. Refer to Section 5.3.4 for setting the manual pan speed.

The camera/lens package in the scan assembly provides automatic exposure control. The lens iris, camera video gain, and camera shutter speed adjust automatically to the brightness of the scene (unless manual exposure (iris) is selected at the controller). If the video scene is dark and auto exposure is enabled, the camera automatically goes into the slow shutter mode, which increases the light integration time and the sensitivity. If the 843216-1011, 843216-1013, 843216-0984, or 843216-0985 camera is installed and the NightShot mode is set to auto, the scan automatically pulls the IR block filter when the camera goes to the designated video gain and shutter speed. When the IR block filter is removed, the camera converts to black and white and increases the sensitivity for viewing dark scenes.

The lens auto focus feature can be set to adjust automatically when the zoom setting changes or when the pan, tilt, or zoom setting changes. The lens auto focus can also be disabled so the operator has to manually focus the lens. If the Scan is programmed for either of the two auto focus settings, the operator can also manually control the lens focus. The minimum focus distance is set at 1.0 meter (3.3 feet) from the camera lens in both manual and automatic focus mode.

Refer to the following table for controlling the camera features using the HEGS5000.

HJZTP Keys	Function
Auto	Press the auto key above the iris control keys to put the camera in auto-iris mode.
Iris +/-	Press the + (open) or – (close) keys to manually open or close the camera lens iris.

18x Color and True Day/Night Camera Features

When the scan is set to manual exposure control, iris open on the controller lightens the scene; iris close on the controller darkens the scene. With the manual exposure control, the shutter first goes from 1/10000s to 1/60s (1/50s); the iris then goes from F22 to F1.4 and the gain goes from 0dB to 28dB. Finally, the shutter goes from 1/60s (1/50s) to 1.0s. If the unit is powered down then back up, the scan comes back up in the iris mode it was in when it was powered down.

23x Wide Dynamic Range and True Day/Night Camera Features

The camera has a feature called Wide Dynamic Range that can be enabled or disabled. The wide dynamic range is only functional if the camera is in auto iris mode. When the wide dynamic range is enabled, the camera scans the scene and sets the exposure level to both the dark areas and bright areas in a scene can be viewed.

When the controller is in manual iris mode, the wide dynamic range is disabled and the auto digital shutter doesn't go below 1/60s (NTSC) or 1/50s (PAL). The exposure setting (iris, gain, or shutter) that is controlled when the camera is in manual exposure mode is selectable. If iris is selected, the gain and shutter are in auto mode. If gain is selected, the iris and shutter are in auto mode. If shutter is selected, the iris and gain are in auto mode.

6.3 CONTROLLING SCAN ASSEMBLIES, CONTINUED

The White balance can be set to manual mode. If the unit is in manual mode, the red and blue gain settings can be set between 0 (low) and 255 (high).

6.4 FREEZE AND UNFREEZE VIDEO

When the scan is set for standard Honeywell Diamond protocol, when using the HJZTP/HJZTPX controller, press and hold the Fn key, then press F2 (▼) or freeze to toggle the camera between freeze mode on and freeze mode off.

When using the scan in Honeywell Maxpro mode, Honeywell VCL, Pelco P Code, or Pelco D Code protocol, sending PreShot (View) command 95 invokes the Freeze/Unfreeze function. If the video is normal, PreShot (View) command 95 freezes the video. If the video is frozen, PreShot (View) command 95 unfreezes the video.

When the video is frozen, an asterisk displays in the bottom left corner of the display and the camera remains on the current scene until the operator unfreezes the video. An operator can manually control the camera or send the camera to a PreShot, but the video display does not change. When the video is unfrozen, the scene the camera is viewing is outputted on the video signal.

Refer to your specific controller manual for sending PreShot commands to the HD6.

6.5 FLASHBACK OPERATION

When using an HJZTP controller and scan in standard Honeywell Diamond mode, **press and hold Fn**, then **press F3 (◀) or press auto 180** to operate the flashback function.

When the HD6 is set for Honeywell Maxpro mode, Honeywell VCL, Pelco P Code, or Pelco D Code protocol, sending PreShot (View) command 96 invokes the flashback function.

The flashback function provides the user with the ability to quickly return to a scene of interest. For example, after the scan has initialized, the operator finds a scene of interest. If the operator invokes the flashback command, the scan stores the current scene (Scene A). If the operator moves on to another scene (Scene B), then invokes the flashback function, the scan returns to Scene A. While at Scene A, if the operator invokes the flashback function, the scan returns to Scene B. The toggle pattern repeats indefinitely until the operator moves the scan to a different scene (Scene C). While at scene C, the operator invokes the flashback command, the scan goes back to the last scene viewed when the flashback command was invoked. If the flashback command is invoked again, the scan returns to scene C.

6.5 FLASHBACK OPERATION, CONTINUED

The only exception is during a VectorScan operation, for example, if the Flashback function is invoked and the scan returns to scene A. After that, a VectorScan is started. During the VectorScan, the scan moves from PreShot 2 to PreShot 3. If the flashback is invoked while the scan is at PreShot 3, the VectorScan will be terminated and the scan will go back to PreShot 2. Each time flashback is invoked thereafter, the scan toggles between PreShots 2 and 3 until the scan is manually controlled. After that, the flashback feature returns to normal operation. The next time the Flashback is invoked, the current scene (Scene D) is stored and the scan returns to the last Flashback scene (in this case, Scene A) prior to the start of the VectorScan. Once at Scene A, if the flashback command is invoked, the scan goes back to Scene D.

6.6 PRESHOTS

When a scan unit receives a command to go to a PreShot, if it has not already found its home position, the unit goes to its home position first, and then performs the PreShot. The scan unit goes to the pan, tilt, zoom, and focus positions programmed in the PreShot.

While a scan unit is going to a PreShot position, the character generator adds the title of the PreShot to the video signal and adds the letter A (automatic) with the camera ID to the video signal. The PreShot title and the letter A remain on the video until the scan gets another command. When the scan is being manually controlled the letter M (manual) is added to the camera ID.

If:	Then:
PreShot title ON	PreShot title is displayed.
Camera ID title ON	Camera ID and the letter A or M are displayed.
Operator sends the scan to a PreShot that has not been programmed	The message “DOES NOT EXIST” is displayed on the video.

The HD6 has a Still PreShot feature that can be enabled or disabled.
Refer to Section 5.5.5 for enabling and disabling the Still PreShot feature.

If:	Then:
Still PreShot is ON	Video is frozen between PreShots. Video from the old position remains until the scan arrives at the new PreShot, then switches to the video from the new PreShot. While video is frozen, an asterisk (*) appears on the same line as the Camera ID.

PreShot 99 is reserved for manually controlling the NightShot mode on camera model numbers 843216-1011, 843216-1013, 843216-0984, and 843216-0985. PreShot 99 toggles between standard operation and the NightShot mode. The NightShot mode must be in the manual mode for this PreShot to function. (Refer to Section 5.5.3 to place the NightShot in manual mode.) The NightShot mode causes the camera to pull the IR block filter and automatically go to black and white to increase the sensitivity of the video.

6.6.1 List Programmed PreShots

A list of the programmed PreShots can be viewed for each scan unit. If using an HJZTP controller, perform the following procedure (for the Control Camera displayed on the programming controller). The list displays the PreShot numbers and titles.

1. Press and **hold lock**, then press **F6** (menu). The LCD displays the menu selections available. Setup will be flashing to indicate that Setup is the currently selected option.

2. Move the joystick left and right or F3 (◀) and F4 (▶) or camera (left) and preset (right) keys until **PRES** is flashing, and then press the **aux** key.

3. Move the joystick right until **List** is flashing and then press the **aux** key.

4 Press the **aux** key to scroll through the pages of the listing. An “End of Directory” message appears at the bottom of the last page.

5. Press the **lock** key when done viewing the PreShot list.

6.6.2 View/PreShot Recall

The HD6 camera you want to send to a PreShot must be selected on the controller.

When using the HJZTP controller, perform the following steps. There are two methods to recall a PreShot (view):

Note: If the 843216-1011, 843216-1013, 843216-0984, or 843216-0985 camera is installed, PreShot 99 is reserved to toggle the scan in and out of the NightShot mode. The NightShot mode must be in manual mode.

If the 843216-1010 or 843216-1012 camera is installed, PreShot 99 can be programmed as desired.

METHOD 1

1. Press the PreShot # (**1-99**)

2. Then press the **Preset** key

METHOD 2

1. Press and **hold lock**, then press **F6** (menu).

2. Move the joystick right until **PRES** is flashing on the LCD and then press the **aux** key.

3. Move the joystick until **GOTO** is flashing and then press the **aux** key.

4. Enter the PreShot # (**0-99**).

5. Press **F5** (enter) to send **Enter** to the dome.

6.6.2 View/PreShot Recall, Continued

6. Press **lock** to exit menu on LCD controller.

6.7 VECTORSCAN (VIDEO TOUR)

When a scan receives a command to run a VectorScan, it goes to the first PreShot programmed in the VectorScan at maximum velocity (400°/second) for the programmed dwell time, then goes to the next PreShot in the VectorScan at the programmed velocity for the specified dwell time, etc.

When a VectorScan is running continuously, the unit goes from the last PreShot to the first PreShot at the programmed velocity. The amount of time the scan takes to go to each PreShot depends on the programmed velocity and the distance to the next PreShot's pan and tilt coordinates. The velocity is programmable from 1° to 400° per second. The title of each PreShot, as it is viewed, is added to the video signal.

A VectorScan generally repeats continuously until an operator manually controls the scan (pan, tilt, zoom, focus, or iris) or the scan receives a PreShot, VectorScan, PTZ tour, or Find Home command. (Exception: there is a mode where the VectorScan will run just once. Automatic operation stops after the last PreShot in the VectorScan is executed.)

6.7.1 List Programmed VectorScans

A list of the programmed VectorScans can be viewed for each scan unit. The list displays the VectorScan numbers and titles. The VectorScans cannot be edited from this display.

If using an HJZTP controller, use the following steps to view the list of programmed VectorScans (for the control camera displayed on the programming controller). Refer to your controller manual for specifics when using other controllers.

1. Press and **hold lock**, then press **F6** (menu). The LCD displays the menu selections available. Setup will be flashing to indicate that Setup is the currently selected option.

2. Move the joystick left and right or F3 (◀) and F4 (▶) or camera (left) and preset (right) keys until **VECT** is flashing, and then press the **aux** key.

3. Move the joystick right until **LST** is flashing and then press the **aux** key.

4 Press the **aux** key to scroll through the pages of the listing. An "End of Directory" message appears at the bottom of the last page.

5. Press the **lock** key when done viewing the VectorScan list.

6.7.2 List Contents of a VectorScan

The contents of each VectorScan stored in the scan can be viewed. The VectorScan contents cannot be edited from this display. The list displays the PreShots with the programmed transit times and dwell times in the order they were programmed.

If using an HJZTP controller, perform the following procedure to view the contents of a VectorScan (stored in the control camera displayed on the programming controller).

1. Press and **hold lock**, then press **F6** (menu). The LCD displays the menu selections available. Setup will be flashing to indicate that Setup is the currently selected option.

2. Move the joystick left and right or F3 (◀) and F4 (▶) or camera (left) and preset (right) keys until **VECT** is flashing, and then press the **aux** key.

3. Move the joystick right until **VIEW** is flashing and then press the **aux** key.

4. Press **Enter** (**F5**) to exit the display.

5. Press the **lock** key when to exit the menu on the controller LCD.

6.7.3 Run VectorScan Once

If using an HJZTP controller, perform the following procedure.

1. Press and **hold lock**, then press **F6** (menu). The LCD displays the menu selections available. Setup will be flashing to indicate that Setup is the currently selected option.

2. Move the joystick left or right or press F3 (◀) and F4 (▶) or camera (left) and preset (right) keys until **VECT** is flashing, and then press the **aux** key.

3. Move the joystick left or right until **ONE** is flashing and press the **aux** key.

4. Enter the VectorScan# (**0-9**) and press **Enter** (**F5**). The programmed VectorScan runs through each programmed PreShot and stops.

5. Press **Lock** to exit the menus on the controller LCD.

6.7.4 Run VectorScan Continuously

"Continuously" means the scan unit runs the VectorScan from beginning to end; then repeats the list until halted by an operator.

NOTE: Continuous VectorScan operation for extended periods of time (> 8 Hours) is not recommended. Continuous operation results in increased zoom lens failure and maintenance expense.

The following is the procedure when using the HJZTP controller. Refer to your specific controller manual for procedures.

Note: The camera which you want to run the VectorScan must be selected as the control camera (CAMxxx) on the controller's LCD display and you must be able to manually control the camera.

1. Press and **hold lock**, then press **F6** (menu). The LCD displays the menu selections available. Setup will be flashing to indicate that Setup is the currently selected option.

2. Move the joystick left or right or press F3 (◀) and F4 (▶) or camera (left) and preset (right) keys until **VECT** is flashing, and then press the **aux** key.

3. Move the joystick left or right until **CON** is flashing and press the **aux** key.

4. Enter the VectorScan# (**0-9**) and press **Enter** (**F5**). The programmed VectorScan starts and continues to run until stopped by an operator or another automatic command.

5. Press **Lock** to exit the menus on the controller LCD.

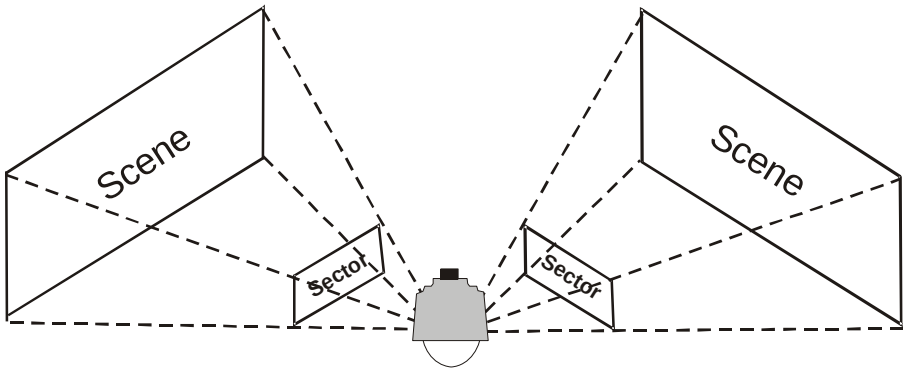
6.7.5 Stop VectorScan

To stop a VectorScan:

- Manually control the scan by moving the joystick in any direction.
- Send the scan to a PreShot.
- Start another VectorScan or PTZ tour.
- Invoke the flashback function.

6.8 SECTOR ID

Sector IDs are used to quickly identify specific areas or scenes a Scan assembly is viewing while an operator is manually controlling the Scan. Each Scan can be programmed to store up to 16 sectors. The sectors can overlap. The following diagram shows two Sector IDs:



Whenever an operator positions the Scan assembly to view an area inside Sector 1, the title (i.e., FRONT GATE) of Sector 1 is added to the video signal.

Note: The sector title display must be enabled to view Sector titles. If the operator positions the Scan where one or more programmed sectors overlap, the Scan sequences between the sector titles for 1.5 seconds per sector. The operator looking at the monitor quickly knows the location the Scan is viewing. The location of the Sector ID title is programmable.
Refer to Section 5.2.7 for positioning Sector ID titles.

6.8.1 List Programmed Sectors

A list of the programmed sectors can be viewed for each scan unit. The list displays the Sector numbers and titles.

If using an HJZTP controller, perform the following steps to view the list of programmed Sector IDs for the control camera displayed on the programming controller.

1. Press and **hold lock**, then press **F6** (menu). The LCD displays the menu selections available. Setup will be flashing to indicate that Setup is the currently selected option.

2. Move the joystick left and right or F3 (◀) and F4 (▶) or camera (left) and preset (right) keys until **SECT** is flashing, and then press the **aux** key.

3. Move the joystick right until **LST** is flashing and then press the **aux** key.

4 Press the **aux** key to scroll through the pages of the listing. An “End of Directory” message appears at the bottom of the last page.

5. Press the **lock** key when done viewing the PreShot list.

6.9 PRIVACY ZONES

Privacy zones are used so an operator cannot view the scene where the camera lens is positioned. Whenever an operator positions the camera so that any portion of a programmed privacy zone would be visible in the video, the video blanks and the title of the privacy zone is outputted on the video signal. If any portion of more than one privacy zone would be visible, the title of the lowest numbered zone is displayed. If a unit is sent to a PreShot that has been programmed so that any portion of a privacy zone would be visible, the PreShot title and the privacy zone title are displayed on the monitor and the video is blanked. If a unit is sent to a PreShot and any portion of a privacy zone would be visible while traveling to the PreShot, the video is blanked when any portion of a privacy zone would be visible.

The HD6 stores the privacy zone data in nonvolatile Flash memory, which will save the data when the HD6 is not powered. If privacy zones have been programmed and the unit loses power, the video is blanked upon power-up until the unit finds home to prevent any privacy zones being visible. Any command to move the HD6 causes the unit to find home. If any portion of a privacy zone would be visible when the unit is at its home position, the video remains blank until the operator manually moves the unit so that no portion of a privacy zone would be visible.

6.10 ALARM OPERATION

The HD6 has 4 normally open alarm contacts, which can be used to initiate a Preshot, VectorScan, or PTZ Tour. The alarms are sampled 16 times a second. After the alarm has been accepted, the HD6 will determine if a function has been programmed for that alarm, and if that alarm is enabled. If either of those conditions are not met, the alarm will be discarded. If both conditions are met, however, the alarm will be considered triggered. If no other alarm is in service, the alarm will be serviced. The function assigned to the alarm will be performed. The HD6 will stay in the state of this alarm until it is acknowledged. Any additional alarms that are triggered will not be serviced until the first alarm is acknowledged. If there is more than 1 alarm waiting to be serviced, they will be serviced in order of alarm number, starting with the lowest.

An alarm cannot be reactivated until it has been both acknowledged, and the contact reopened. After acknowledgment and the contact reopening, the cycle can begin again.

There are 3 ways to acknowledge an alarm. The first way is to press the key on the controller that represents the 'ESC' key. This will send the 'Return to Manual' command to the HD6. When the HD6 receives this command, it will acknowledge any alarm that is currently active. The second way to acknowledge an alarm is to take manual control. This will acknowledge ALL alarms that are present -- even those waiting to be serviced. The final way is to use the Default Function. The Default Function will run a Preshot, VectorScan, or PTZ Tour after a user-programmable amount of inactive time. It will also auto-acknowledge an alarm after this programmable delay. It will acknowledge each active alarm until all alarms are inactive. At that point, the Default Function will run. If any new alarms come in after this, the cycle will start again.

6.10 ALARM OPERATION, CONTINUED

The alarm status is displayed on-screen on the same text line set aside for the Camera ID number. The Camera ID does not have to be displayed in order to view the alarm status. If any alarms are active, the HD6 will display 'AL-' in blinking letters. After the blinking 'AL-', the HD6 will list all active alarms in order. Thus, if alarms 1, 3, and 4 are active, the HD6 would display 'AL-1 34'. If an alarm number is blinking, that means that the contact is still closed. When the contact is opened, the number will stop blinking. There is no on-screen indication as to which alarm is currently being processed. That can be determined by what function is active.

Notes:

SECTION 7:
PROGRAMMING USING STANDARD HONEYWELL DIAMOND PROTOCOL

7.1 INTRODUCTION

1. The scan unit being programmed must be the primary control camera on the controller.

2. The video from the scan unit being programmed must be displayed on the control monitor. The character generator on the Scan receiver board generates the programming menus. To view the programming menus, the video from the scan unit must be called up on the monitor.

3. The controller being used for programming must have manual control (pan, tilt, zoom, etc.) of the scan unit.

4. The scan unit must be able to find its home position. To find home, the pan, tilt, and zoom feedback connections must all be functional. If a unit has not found home and an attempt is made to program the Scan unit, the unit will first try to find home. If the unit does not find home, it cannot be programmed. The HD6 will not do anything - automatic or manual - until it finds home.

7.2 PROGRAMMING PRESHOTS

A PreShot is a predefined scan and lens position (including the pan, tilt, zoom, and focus settings, and, in some modes, iris settings).

- A PreShot can be saved with a number and title.
- The operator uses the PreShot number to send the scan unit to the PreShot.
- The PreShot title can be enabled or disabled.
- The location of the PreShot title on the monitor display is programmable.
- If the camera ID is enabled, the letter A for automatic operation appears next to the camera number display on the monitor whenever the scan has been sent to a PreShot.

A total of 98 (00-97) PreShot positions are programmable per unit with the PreShots stored on the receiver board. If an 843216-1011, 843216-1013 , 843216-0984, or 843216-0985 camera is installed, PreShot 99 is reserved for toggling the NightShot mode on and off. PreShot 98 is reserved for the scan and camera reset function.

7.2.1 Programming PreShots (Views) with Titles

The following is an example of the programming procedure using an **HJZTP controller**. Refer to your specific controller manual for programming PreShots (Views).

1. Adjust the pan, tilt, zoom, and focus of the unit until the desired scene is displayed on the monitor.
2. Press and **hold lock and** press **F6** (menu).
3. Move the joystick right until **PRES** is flashing on the LCD and then press the **aux** key.
4. Move the joystick until **PROGRAM** is flashing and then press the **aux** key. The Preshot programming prompts are displayed on the monitor.
5. Enter the PreShot # (**0-99**).
6. Press **Enter (F5)**.
7. Enter the PreShot **title**.
    a. Press the camera and preset keys to scroll through all available characters. When the **desired character is flashing** on the LCD, press the **aux** key.
    b. Continue step a. until the desired title is displayed on the monitor.
    c. Press **Enter (F5).**

The following menu is displayed on the monitor.

'C' to **Change**
'E' to **Edit**
'D' to **Delete**
'S' to **Save**
'N' to **Save Name**

8. Press the camera and preset keys to scroll through all available characters. When the **desired character is flashing** on the LCD, press the **aux** key.

   a. **C** to change the location of the PreShot title.

   b. **E** to **edit** the title prior to saving the PreShot coordinates.
   Perform the procedure in step 7 above to program the title. Once the title is changed, press **Enter (**F5). Then perform step c below. Note: If the PreShot position has already been saved, perform step e below.

   c. **S** to **save** the PreShot number, title, and camera scene displayed on the monitor. Go to step 10 below.

   d. **D** to **delete** the PreShot. Go to step 9 below.

   e. **N** to **Save Name** saves only the title of the PreShot (coordinates are <u>not</u> saved). Go to step 9 below.

9. Program another PreShot or press **Esc (F6)** to exit PreShot programming.

10. Press **lock** to exit menu on LCD controller.

7.2.2 Programming PreShots (Views) Without Titles

The following is an example of the programming procedure using an **HJZTP controller**. Refer to your specific controller manual for programming PreShots (Views).

To program and save a PreShot (View) without programming a title, perform the following procedure.

1. Adjust the pan, tilt, zoom, and focus of the unit until the desired scene is displayed on the monitor.

2. Press and **hold the preset** key and **enter** the PreShot number (**0-99**).

3. Release the **preset** key.

The current position of the HD6 has been defined for the PreShot number entered.

7.2.2 Programming PreShots (Views) Without Titles, Continued

Example: To define PreShot 1:

1. Position the PTZ to the desired position using the joystick, zoom, focus, and iris keys.

2. Press and **hold the preset key** and press the **1** key.

3. Release the **preset** key.

7.3 PROGRAMMING VECTORSCANS

VectorScans are one or more PreShots, from the same unit, grouped together and saved with a number and title. The speed at which the scan travels to each PreShot and the amount of time the scan remains at each PreShot can be programmed and saved in the VectorScan. A total of ten (0-9) VectorScans are programmable per scan unit. Each VectorScan File can contain a maximum of 64 PreShots.

Perform the following procedure to program and store a VectorScan using an HJZTP controller (in the control camera displayed on the LCD display on the controller):

1. Press and **hold lock** and press **F6** (menu). The LCD displays the menu selections available. Setup will be flashing to indicate that Setup is the currently selected option.

2. Move the joystick left or right or press F3 (◀) and F4 (▶) or camera (left) and preset (right) keys until **VECT** is flashing, and then press the **aux** key.

3. Move the joystick left or right until **PRG** is flashing and press the **aux** key.

4. Enter the VectorScan# (**0-9**) and press **Enter** (**F5**).

5. Enter the VectorScan **title.**

   a. Press the camera and preset keys to scroll through all available characters. When the **desired character is flashing** on the LCD, press the **aux** key.

   b. Continue step a. until the desired title is displayed on the monitor.

   c. Press **Enter (F5).** The table for programming the VectorScan is displayed on the monitor.

NUM	PRESHOT	VELOCITY	DWELL
0	••	•.•	••
.	••	•.•	••
.	••	•.•	••
.	••	•.•	••
63	••	•.•	••

6. Enter the first PreShot number in the PreShot Column in the 0 row. Use the F1 (▲), F2 (▼), F3 (◀), or F4 (▶) keys to move between the fields.

7. Enter the velocity from **1 to 400 (degrees per second)** in the VELOCITY column of the 0 row.

8. Enter the dwell time from **0-99 seconds**.

9. Continue entering PreShots, up to 64, by repeating steps 6 through 8. PreShots will be performed in the order listed when the VectorScan is run.

   To rearrange the order of the PreShots, use the F1 (▲), F2 (▼), F3 (◀), or F4 (▶) keys to move the cursor to any field in the display:

   Press the **wash** key to insert a line above the line the cursor is on.
   Press the **wipe** key to delete the line the cursor is on.

10. Press **Enter (F5)** when finished programming the VectorScan. The following options are displayed on the monitor.

    'E' to Edit
    'S' to Save
    'D' to Delete

11. Press the **camera or preset** keys until the letter for the desired option is flashing on the LCD and press the **aux** key.

    a. Select **E** to edit the VectorScan title and/or the contents before saving.

    b. Select **S** to save the VectorScan title and programmed PreShots. You can also press the **sequence** key to send the save command to the HD6.

    c. Select **D** to delete the VectorScan entirely.

12. Program another VectorScan by performing steps 4-11 or press **Esc (F6)** to end programming.

13. Press **lock** to exit the menu on the controller LCD.

7.4 PROGRAMMING SECTOR IDs

Sector IDs are used for labeling specific areas that the scan views. Whenever a scan unit is under manual control and it is viewing a programmed sector, the name given that sector is added to the video signal.

Note: The camera ID display must be enabled. When an operator is viewing the monitor or a video recorder is recording a specific dome, this labeling provides a quick reference for the area being displayed. Up to 16 Sector IDs can be programmed for each Scan Unit.

To program a Sector ID (in the control camera displayed on the controller), when using an HJZTP controller, perform the following steps.

1. Press and **hold lock** and press **F6** (menu). The LCD displays the menu selections available. Setup will be flashing to indicate that Setup is the currently selected option.

2. Move the joystick left or right or press F3 (◀) and F4 (▶) or camera (left) and preset (right) keys until **SECT** is flashing, and then press the **aux** key.

3. Move the joystick left or right until **PRG** is flashing and press the **aux** key.

4. Enter the Sector ID # (**0-15**) and press **Enter** (**F5**).

5. Enter the Sector **title.**

   a. Press the camera and preset keys to scroll through all available characters. When the **desired character is flashing** on the LCD, press the **aux** key.

   b. Continue step a. until the desired title is displayed on the monitor.

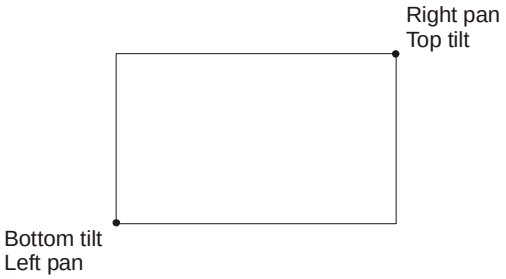
   c. Press **Enter (F5).**

   The following options are displayed on the monitor
   E to Edit Sector
   D to Delete Sector
   S to Save Sector Coordinates
   N to Save Name Only

5. Press the **camera or preset** keys until the character for the desired option is flashing on the LCD display.

7.4 PROGRAMMING SECTOR IDs, CONTINUED

a. Select **Save** to program and save sector coordinates. Refer to the diagram for programming coordinates.



b. Using the joystick, move the scan so the **lower left corner** of the sector is positioned at the center of the monitor, then press **Enter (F5)**. (The crosshair function may be helpful in determining the center of the monitor.)

c. Using the joystick on the controller, move the scan so the **upper right corner** of the sector is positioned at the center of the monitor, then press **Enter (F5)**. If the upper right tilt position is below the lower left tilt position, the message "Illegal Tilt Direction" is displayed. Readjust the tilt position until the message disappears or press **Esc (F6)** to cancel the operation and return to manual operation.

8. Repeat steps 4-7 to continue programming sectors or press **Esc (F6)** to return to manual operation.

7.5 PROGRAMMING PRIVACY ZONES

All privacy zone programming is password protected. The password is user programmable up to 14 alphanumeric characters. If the HD6 has an 18x color or 18x True Day/Night camera, up to 10 (0-9) privacy zones can be programmed with a unique 24-character alphanumeric title. If the HD6 has a 23x Wide Dynamic Range and True Day/Night camera, 2 privacy zones can be programmed

7.5.1 Programming Privacy Zones, 18x Color and True/Day Night, 23x Color, and 25x True/Day Night Cameras

To program privacy zones in a HD6 with an 18x camera:

- The HD6 to be programmed must be the control camera on the controller.
- The video from the camera must be viewed on a monitor (to view the programming menus).
- The operator must have manual control of the Scan.

Note: the following procedure is using an HJZTP controller.

7.5.1 Programming Privacy Zones, 18x Color and True/Day Night, 23x Color, and 25x True/Day Night Cameras, Continued

1. Press and **hold lock** and press **F6** (menu). The LCD displays the menu selections available. Setup will be flashing to indicate that Setup is the currently selected option.

2. Move the joystick left or right, press F3 (◀) or F4 (▶), or camera (left) or preset (right) keys until **SECT** is flashing, and then press the **aux** key.

3. Move the joystick left or right until **PRG** is flashing and press the **aux** key.

4. Press **camera** or **preset** until the character **P** is flashing on the LCD and press the **aux** key.

Factory set password

5. Enter the **password**. (The factory set password is blank. Press **Enter (F5)** to submit a blank password.)

   a. Press the **camera** and **preset** keys to scroll through all available characters. When the **desired character is flashing** on the LCD, press the **aux** key.

   b. Continue step a. until the entire password is sent to the HD6.

   c. Press **Enter (F5).**

6. Enter a **Privacy zone number** (**0-9**) and press **Enter (F5)**.

7. Enter a **Privacy zone title** (up to 24 characters).

   a. Press the **camera** and **preset** keys to scroll through all available characters. When the **desired character is flashing** on the LCD, press the **aux** key.

   b. Continue step a. until the desired title is sent to the HD6.

   c. Press **Enter (F5).** The following options are displayed on the monitor.

      E to edit the title
      S to program zone coordinates
      D to delete zone coordinates
      N to save privacy zone title only

8. Press the **camera** or **preset** keys until the character for the desired option is flashing on the controller LCD. If you want to program zone coordinates, you can also press the **Sequence** key to send the save command to the HD6.

9 If you selected **S** (or **Sequence**) to program zone coordinates, perform the following steps.

   a. Use the joystick to move the scan so the lower left corner of the privacy zone is positioned at the lower left corner of the monitor, then press **Enter (F5)**.

7.5.1 Programming Privacy Zones, 18x Color and True/Day Night, 23x Color, and 25x True/Day Night Cameras, Continued

b. Using the joystick move the scan so the upper right corner of the privacy zone is positioned at the upper right corner of the monitor, then press Enter. If the upper right tilt position is below the lower left tilt position, the message “Illegal Tilt Direction” is displayed. Readjust the tilt position until the message disappears or press **Esc (F6)** to cancel the operation and return to manual operation.

10. The privacy zone is programmed for all points between the selected coordinates. When the camera is viewing any area within these coordinates, the video is blanked.

11. Program another privacy zone or press **Esc (F6)** to exit programming.

7.5.2 Programming Privacy Zones, 23x Wide Dynamic Range/True Day/Night Camera

To program privacy zones in a HD6 with a 23x Wide Dynamic Range and True Day/Night camera:

- The HD6 to be programmed must be the control camera on the controller.
- The video from the camera must be viewed on a monitor (to view the programming menus).
- The operator must have manual control of the Scan.

Note: the following procedure is using an HJZTP controller.

1. Press and **hold lock** and press **F6** (menu). The LCD displays the menu selections available. Setup will be flashing to indicate that Setup is the currently selected option.

Factory set password

2. Move the joystick left or right, press F3 (◀) or F4 (▶), or camera (left) or preset (right) keys until **SECT** is flashing, and then press the **aux** key.

3. Move the joystick left or right until **PRG** is flashing and press the **aux** key.

4. Press **camera** or **preset** until the character **P** is flashing on the LCD and press the **aux** key.

5. Enter the **password**. (The factory set password is blank. Press **Enter (F5)** to submit a blank password.)

   a. Press the **camera** and **preset** keys to scroll through all available characters. When the **desired character is flashing** on the LCD, press the **aux** key.

   b. Continue step a. until the password is sent to the HD6.

   c. Press **Enter (F5).**

6. Enter a **Privacy zone number** (0-9) and press **Enter (F5)**.

7.5.2 Programming Privacy Zones, 23x Wide Dynamic Range/True Day/Night Camera, Continued

7. Enter a **Privacy zone title** (up to 24 characters).

   a. Press the **camera** and **preset** keys to scroll through all available characters. When the **desired character is flashing** on the LCD, press the **aux** key.

   b. Continue step a. until the title is sent to the HD6.

   c. Press **Enter (F5).** The following options are displayed on the monitor.

      E to edit the title
      S to program zone coordinates
      D to delete zone coordinates
      N to save privacy zone title only

8. Press the **camera** or **preset** keys until the character for the desired option is flashing on the controller LCD. Note: If you want to program zone coordinates, you can also press the **Sequence** key to send the save command to the HD6.

9 If you selected **S** (or **Sequence**) to program zone coordinates, perform the following steps.

   a. Using the joystick, move the block over the area to be hidden.

   b. Press the F1 (▲), F2 (▼), F3 (◀), and F(▶) to increase or decrease the height and width of the privacy block.

   Note: the zoom function is disabled while programming a privacy zone.

   c. Press **Enter (F5)** when done. When the camera is positioned within the defined block, the block is displayed on the video to conceal the video.

10. Program another privacy zone or press **Esc (F6)** to exit programming.

7.5 PROGRAMMING PRIVACY ZONES, CONTINUED

7.5.3 Changing the Privacy Zone Password

1. Press and **hold lock** and press **F6** (menu). The LCD displays the menu selections available. Setup will be flashing to indicate that Setup is the currently selected option.

2. Move the joystick left or right, press F3 (◀) or F4 (▶), or camera (left) or preset (right) keys until **SECT** is flashing, and then press the **aux** key.

3. Move the joystick left or right until **PRG** is flashing and press the **aux** key.

4. Press **camera** or **preset** until the character **P** is flashing on the LCD and press the **aux** key.

Factory set password

5. Enter the **password**. (The factory set password is blank. Press **Enter (F5)** to submit a blank password.)

   a. Press the **camera** and **preset** keys to scroll through all available characters. When the **desired character is flashing** on the LCD, press the **aux** key.

   b. Continue step a. until the password is sent to the HD6.

   c. Press **Enter (F5).**

6. Press the **camera** or **preset** keys until the character **P** is flashing on the controller LCD and press the **aux** key.

7. Enter the new password. Perform step 5 above.

8. Perform step 7 to **Re-enter the new password** for verification and press **Enter (F5)**. If you enter a different password the second time, an invalid message is displayed and you must start again.

9. After programming the password, you can program a privacy zone or press **Esc (F6)** twice to exit.

7.6 PROGRAMMING PTZ TOURS

Three (3) PTZ tours can be programmed using on-screen menus. Refer to Section 5.7.1 for programming tours. Each tour is a maximum of 2 minutes (120 seconds). When a PTZ tour is run, the scan performs the pan, tilt, zoom, and focus commands that were performed during the PTZ tour programming mode.

Some controllers such as the HEGS5000 feature LCD menus that allow the operator to start tours from the controller without accessing the HD6 on-screen menus. Refer to your specific controller manual for starting tours.

7.7 PTZ TOUR OPERATION

A PTZ tour can be started from the on-screen menu (refer to Section 5.7.1). Some controllers such as the HEGS5000 feature LCD menus that allow the operator to start tours from the controller without accessing the HD6 on-screen menus. Refer to your specific controller manual for starting tours.

SECTION 8:
OPERATION USING HONEYWELL MAXPRO MODE, HONEYWELL VCL, PELCO P CODE, OR PELCO D CODE SYSTEM

8.1 INTRODUCTION

NOTE:

- Refer to Section 6 (operation) and Section 7 (programming) when using standard Honeywell Diamond protocol.
- Refer to Section 10 (operation) and Section 11 (programming) when using an American Dynamics control system.

This section provides information on any differences to the material provided for standard Honeywell Diamond protocol and provides information specific to operation with Honeywell Maxpro mode, Honeywell VCL, Pelco P, or Pelco D control systems. Operation of the unit is the same as described in Section 6, with the following statements. The section number corresponds to the numbering in Section 6 (i.e., Section 8.3 provides additional or replacement information to that in Section 6.3.)

8.2 RESET HD6

The HD6 must be reset through the setup menu. Send the HD6 to PreShot 90 to access the setup menus, then access the diagnostics menu, the select the Reset Scan and Camera option. Refer to Section 5.4.7.

8.3 CONTROLLING SCAN ASSEMBLIES

- The lens iris is automatically controlled by the camera, but can be controlled manually from a controller.
- The camera lens auto exposure mode can be enabled or disabled using the controller. PreShot 92 toggles the unit between auto and manual exposure. A message “AUTO EXPOSURE ON” or “AUTO EXPOSURE OFF” is displayed on the video when the scan executes PreShot 92.
- Auto lens exposure control is the factory default for scans set for Honeywell Maxpro mode, Honeywell VCL, Pelco P code, or Pelco D code control.
- If the auto exposure mode is enabled and the video is dark, the camera first opens the lens iris. Once the lens iris is fully open, it increases the video gain. Once the video gain is at a maximum, it will slow down the shutter. The slow shutter mode increases the light integration time and the sensitivity.

8.3 CONTROLLING SCAN ASSEMBLIES

- The 18X True Day/Night and 23X Wide Dynamic Range & True Day/Night cameras also have a NightShot mode that can be set to auto or manual mode of operation. If the camera goes into the slow shutter mode as described above and reaches the programmed auto NightShot setting, the camera automatically pulls the IR filter and goes to black and white to increase the video sensitivity.
- The IR block filter in the cameras can be controlled manually through the setup menus or by sending the scan to a preprogrammed PreShot reserved for the NightShot mode.

  PreShot 94 is reserved for Honeywell Maxpro mode, Honeywell VCL, Pelco P Code, or Pelco D Code Control Systems.

If:	Then:
The scan is set to manual control	Iris Open on the controller lightens the scene. Iris Close on the controller darkens the scene. In manual exposure control mode, the shutter first goes from 1/10000s to 1/60s (1/50s). The iris then goes from F22 to F1.4 (F3.1) and the gain goes from 0dB to 28dB. Finally, the shutter goes from 1/60s (1/50s) to 1.0s.
The unit is powered down then back up	The scan comes back up in the iris mode it was in when it was powered down.

8.4 FREEZE / UNFREEZE VIDEO

The freeze/unfreeze video function described in Section 6.4 can be invoked using **PreShot 95**.

8.5 FLASHBACK OPERATION

The flashback function described in Section 6.5 can be invoked using **PreShot 96**.

8.6 PRESHOTS

When using a Honeywell Maxpro Mode, Honeywell VCL, Pelco P code, or Pelco D code control system, there are several PreShots (views or presets) reserved for controlling the scan. Refer to Table 4 for a listing of the preprogrammed PreShots and their functions.

- Refer to your specific controller's users manual for programming PreShots. PreShots are referred to as Views in the Maxpro Controller manuals.
- To program a PreShot, you must be able to manually control the scan.
- To send a scan to a PreShot or to program a PreShot on a scan, the scan must be the control camera on the system controller.
- An operator can send a scan to a PreShot by entering the PreShot number and the PreShot command on the system controller. Refer to your controller manual for the PreShot command. To view the PreShot video, the scan must be called up on a monitor. Refer to your controller manual for the PreShot (View) command.
- When a scan receives a command to go to a PreShot number, it goes to the programmed PreShot pan and tilt coordinates at 400° per second. While a scan is going to a PreShot position, the character generator adds the title of the PreShot to the video signal and adds the letter A (automatic) with the camera ID to the video signal. The camera ID display must be enabled to view the camera number and letter A. **PreShot titles are not programmable using a Maxpro controller.** In this case the PreShot titles are PS 001, PS 002, etc.

If:	Then:
PreShot title ON	PreShot title is displayed.
Camera ID title ON	Camera ID and the letter A are displayed.
Operator sends the scan to a PreShot that has not been programmed	The message "DOES NOT EXIST" is displayed on the video.

There are several PreShots reserved for scan setup, programming, and control functions. **These PreShots cannot be programmed and cannot be included in VectorScans.**

The HD6 has a Still PreShot feature that can be enabled or disabled.
If the Still PreShot feature is on, the video is frozen between PreShots. The video and current PreShot title remains on the current PreShot until the scan arrives at the next PreShot then switches the video and displays the PreShot title. While the video is frozen an asterisk (*) appears on the display on the same line as the camera ID. Refer to Section 5.5.5 for enabling and disabling the Still PreShot feature.

8.6 PRESHOTS, CONTINUED

Table 5: Preprogrammed Preshots (Honeywell Maxpro Mode, Honeywell VCL, Pelco P Code, and Pelco D Code Control Systems)	
PreShot 80	Run PTZ Tour 1
PreShot 81	Run PTZ Tour 2
PreShot 82	Run PTZ Tour 3
PreShot 83	Program PTZ Tour 1
PreShot 84	Program PTZ Tour 2
PreShot 85	Program PTZ Tour 3
PreShot 86	Terminate PTZ Programming Mode
PreShot 87	Start VectorScan 1
PreShot 88	Start VectorScan 2
PreShot 89	Start VectorScan 3
PreShot 90	Setup the Scan and Camera
PreShot 91	Toggles the error table display
PreShot 92	Toggles auto exposure ON and OFF. (Factory default is ON.)
PreShot 93	Toggles backlight compensation ON and OFF. The unit must be in auto exposure mode for backlight compensation to function.
PreShot 94	Toggles between standard operation and NightShot mode. (Camera models 843216-1011, 843216-1013, 843216-0984, and 843216-0985 only.)
PreShot 95	Toggles between freeze and unfreeze video
PreShot 96	Invokes the Flashback Function
PreShot 97	Reserved
PreShot 98	Camera/Scan Reset
PreShot 99	Reserved

8.7 VECTORSCANS (VIDEO TOUR)

CAUTION: Continuous VectorScan operation for extended periods of time (> 8 hours) is not recommended. Continuous operation results in increased zoom lens failure and maintenance expense.

Using a Honeywell Maxpro, Honeywell VCL, Pelco P code, or Pelco D Code Controller, ten (0-9) VectorScans can be programmed using the setup menu accessed by the **PreShot 90** command. Refer to Section 5.7.2 for programming VectorScans.

8.7.1 List Programmed VectorScans

VectorScans must be programmed through the setup menu. Refer to Section 5.7.2.

8.7.2 List Contents of a VectorScan

VectorScans must be programmed through the setup menu. Refer to Section 5.7.2.

8.7.3 Run VectorScan

VectorScans 1, 2, and 3 can be started from the system controller using **PreShot** commands **87**, **88**, and **89**.

Example: To start VectorScan 2, send a **PreShot 88** command.

VectorScans 0 and 4 - 9 can be assigned to alarms or the default function.

When a scan receives a command to run a VectorScan, the scan goes to the first PreShot programmed in the VectorScan at maximum velocity (400°/second) for the programmed dwell time, then goes to the next PreShot in the VectorScan at the programmed velocity for the specified dwell time, etc. When a VectorScan is running continuously, the unit goes from the last PreShot to the first PreShot at the programmed velocity. The amount of time the scan takes to go to each PreShot depends on the programmed velocity and the distance to the next PreShot's pan and tilt coordinates. The velocity is programmable between 1° to 400° per second.

If:	Then:
VectorScan auto focus is ON	If the VectorScan auto focus feature is ON, the lens auto focuses when going to each PreShot (and for a short time afterwards) then it does not auto focus until the HD6 goes to the next PreShot.
VectorScan auto focus is OFF	The lens focuses to the focus setting programmed for each PreShot.

8.7.4 Run VectorScan Continuously

No changes or supplemental instructions are required. Refer to information in Section 8.7.3 and Section 6.7.4.

8.7.5 Stop a VectorScan

- Take manual control (pan, tilt, zoom, focus, or iris) of the scan.
- Send the scan to a PreShot.
- Start a PTZ tour or a different VectorScan.
- Execute any other command addressed to that HD6.

SECTION 9:
PROGRAMMING USING HONEYWELL MAXPRO MODE, HONEYWELL VCL, PELCO P CODE, OR PELCO D CODE CONTROL SYSTEM

9.1 INTRODUCTION

This section provides information on any differences to the material provided for standard Honeywell Diamond protocol and provides information specific to operation with Honeywell Maxpro mode, Honeywell VCL, Pelco P, or Pelco D control systems. Programming of the unit is the same as described in Section 7, with the following statements. The section number corresponds to the numbering in Section 7. Therefore, Section 9.6 provides additional or replacement information to that in Section 7.6.

9.2 PROGRAMMING PRESHOTS

Refer to your controller's user manual for programming presets or views

9.3 PROGRAMMING VECTORSCANS

VectorScans must be programmed through the setup menu. Send the HD6 to PreShot 90 to access the setup menu. Refer to Section 5.7.2.

9.4 PROGRAMMING SECTOR IDS

Sector IDs cannot be programmed when using a Honeywell Maxpro Mode, Honeywell VCL, or Pelco control systems.

9.5 PROGRAMMING PRIVACY ZONES

Privacy zones cannot be programmed when using a Honeywell Maxpro Mode, Honeywell VCL, or Pelco control systems.

9.6 PROGRAMMING PTZ TOURS

PreShots 83, 84, and 85 have been reserved for programming PTZ tours 1, 2, and 3.

1. Enter a **PreShot 83** command on the system controller to program **PTZ tour 1**. (Enter a PreShot 84 command for PTZ tour 2 or PreShot 85 command for PTZ tour 3.)

2. During the 120 second countdown, pan and tilt the scan and adjust the lens zoom setting. The scan scores the PTZ commands in the order they were performed during the 120 seconds.

3. Wait for the countdown to reach 0 or send a **PreShot 86** command to end the programming mode. The message “PTZ Tour Complete” is displayed. The scan stores the PTZ commands in the order you entered them between the time you started the programming mode until you entered the PreShot 86 command.

9.7 PTZ TOUR OPERATION

PreShot commands 80, 81, and 82 are reserved for running **PTZ tours 1, 2, and 3**, respectively. The scan, where the PTZ tour is stored, must be the control camera on the system controller. The scan continues to run the PTZ tour from beginning to end.

1. Enter a **PreShot 80** command on the system controller to run **PTZ tour 1.** (Enter a PreShot 81 command to run PTZ tour 2 or PreShot 82 command to run PTZ tour 3.)

2. Stop the PTZ tour by manually controlling the scan or by sending the scan a PreShot, VectorScan, or other command.

SECTION 10:
OPERATION USING AMERICAN DYNAMICS CONTROL SYSTEM

10.1 INTRODUCTION

NOTE:

- Refer to Section 6 (operation) and Section 7 (programming) when using standard Honeywell Diamond protocol.
- Refer to Section 8 (operation) and Section 9 (programming) when using Honeywell Maxpro mode, Honeywell VCL, Pelco P Code, or Pelco D Code control systems.

This section provides information on any differences to the material provided for standard Honeywell Diamond protocol and provides information specific to operation American Dynamics control systems. Operation of the unit is the same as described in Section 6, with the following statements. The section number corresponds to the numbering in Section 6. Therefore, Section 10.3 provides additional or replacement information to that in Section 6.3.

10.2 RESET HD6

No changes or supplemental instructions are required. Refer to Section 6.2.

10.3 CONTROLLING SCAN ASSEMBLIES

- When using an American Dynamics control system, there are several PreShots (views or presets) reserved for controlling the scan. Refer to Table 3 for a listing of the preprogrammed PreShots and their functions.
- The lens iris is automatically controlled by the camera, but can be controlled manually from a controller.
- The camera lens auto exposure mode can be enabled or disabled using the controller. **PreShot 64** toggles the unit between auto and manual exposure. A message “AUTO EXPOSURE ON” or “AUTO EXPOSURE OFF” is displayed on the video when the scan executes PreShot 64.
- Manual lens exposure control is the factory default for scans set for an American Dynamics control system.

10.4 FREEZE / UNFREEZE VIDEO

The freeze/unfreeze video function described in Section 6.4 is not available

10.5 FLASHBACK OPERATION

The flashback function described in Section 6.5 is not available.

10.6 PRESHOTS

- Refer to your specific controller's users manual for programming PreShots (presets). To program a PreShot, you must be able to manually control the scan.
- To send a scan to a PreShot, the scan must be the control camera on the system controller. An operator can send a scan to a PreShot by entering the PreShot number and the PreShot command on the system controller. To view the PreShot video, the scan must be called up on a monitor. Refer to your controller manual for the PreShot command.
- When a scan receives a command to go to a PreShot number, it goes to the programmed PreShot pan and tilt coordinates at 400° per second. While a Scan is going to a PreShot position, the character generator adds the title of the PreShot to the video signal and adds the letter A (automatic) with the camera ID to the video signal. PreShot titles are not programmable using an American Dynamics or Maxpro controller. The PreShot titles are PS 001, PS 002, etc.

If:	Then:
PreShot title ON	PreShot title is displayed.
Camera ID title ON	Camera ID and the letter A are displayed.
Operator sends the scan to a PreShot that has not been programmed	The message "DOES NOT EXIST" is displayed on the video.

The HD6 has a Still PreShot feature that can be enabled or disabled.
If the Still PreShot feature is on, the video is frozen between PreShots. The video and current PreShot title remains on the current PreShot until the scan arrives at the next PreShot then switches the video and displays the PreShot title. While the video is frozen an asterisk (*) appears on the display on the same line as the camera ID. Refer to Section 5.5.5 for enabling and disabling the Still PreShot feature.

There are several PreShots reserved for scan setup, programming, and control functions. **These PreShots should not be programmed and cannot be included in VectorScans.**

Table 6: Preprogrammed Preshots (American Dynamics Control Systems)	
PreShot 11	Run PTZ Tour 1
PreShot 12	Run PTZ Tour 2
PreShot 13	Run PTZ Tour 3
PreShot 21	Program PTZ Tour 1
PreShot 22	Program PTZ Tour 2
PreShot 23	Program PTZ Tour 3
PreShot 24	Terminate PTZ Programming Mode
PreShot 30	Start VectorScan 1
PreShot 40	Start VectorScan 2
PreShot 50	Start VectorScan 3
PreShot 60	Toggles between standard operation and NightShot mode. (18X True Day/Night and 23X Wide Dynamic Range &True Day/Night cameras only).
PreShot 61	Main Setup Menu
PreShot 62	Toggles the error table display
PreShot 63	Toggles backlight compensation on or off. Scan must be in auto exposure (iris) mode for backlight compensation to function.
PreShot 64	Toggles between manual and auto exposure (iris). The scan defaults to manual.

10.7 VECTORSCAN (VIDEO TOUR)

CAUTION: Continuous VectorScan operation for extended periods of time (> 8 hours) is not recommended. Continuous operation results in increased zoom lens failure and maintenance expense.

Using an American Dynamics controller, nine (1 -9) VectorScans can be programmed using the setup menu accessed by **PreShot 61.**
VectorScan 0 is reserved for the American Dynamics Control System.
Refer to Section 5.7.2 for programming VectorScans.

10.7.1 List Programmed VectorScans

VectorScans are programmed and viewed through the setup menu. Send the HD6 to PreShot 61 to access the setup menus. Refer to Section 5.7.2.

10.7.2 List Contents of a VectorScan

VectorScans are programmed and viewed through the setup menu. Send the HD6 to PreShot 61 to access the setup menus. Refer to Section 5.7.2

10.7.3 Run VectorScan

VectorScans 1, 2, and 3 can be run from the controller using **PreShots 30, 40,** and **50**, respectively. To start a VectorScan stored in a scan unit, the scan must be the control camera on the system controller.

Example: To start VectorScan 2, send a **PreShot 40** command.

When a scan receives a command to run a VectorScan, the scan goes to the first PreShot programmed in the VectorScan at maximum velocity (400°/second) for the programmed dwell time, then goes to the next PreShot in the VectorScan at the programmed velocity for the specified dwell time, etc. When a VectorScan is running continuously, the unit goes from the last PreShot to the first PreShot at the programmed velocity. The amount of time the scan takes to go to each PreShot depends on the programmed velocity and the distance to the next PreShot's pan and tilt coordinates. The velocity is programmable between 1° to 400° per second.

If:	Then:
VectorScan auto focus is ON	If the VectorScan auto focus feature is ON, the lens auto focuses continuously throughout the operation of the VectorScan
VectorScan auto focus is OFF	The lens focuses to the focus setting programmed for each PreShot.

10.7.4 Run VectorScan Continuously

No changes or supplemental instructions are required. Refer to information in Section 10.7.3 and Section 6.7.4.

10.7.5 Stop VectorScan

To stop a VectorScan

- Take manual control (pan, tilt, zoom, focus, or iris) of the scan.
- Send the scan to a PreShot.
- Start a PTZ tour or a different VectorScan.

Notes:

SECTION 11:
PROGRAMMING USING AMERICAN DYNAMICS CONTROL SYSTEM

11.1 INTRODUCTION

This section provides information on any differences to the material provided for standard Honeywell Diamond protocol and provides information specific to operation with American Dynamics control systems. Programming of the unit is the same as described in Section 7, with the following statements. The section number corresponds to the numbering in Section 7. Therefore, Section 11.6 provides additional or replacement information to that in Section 7.6.

11.2 PROGRAMMING PRESHOTS

Refer to the American Dynamics Controller user's manual for programming views.

11.3 PROGRAMMING VECTORSCANS

VectorScans must be programmed through the setup menu. Send the HD6 to PreShot 61 to access the setup menu. Refer to Section 5.7.2.

11.4 PROGRAMMING SECTOR IDS

This feature is not available when using an American Dynamics control system.

11.5 PROGRAMMING PRIVACY ZONES

This feature is not available when using an American Dynamics control system.

11.6 PROGRAMMING PTZ TOURS

PreShots 21, 22, and **23** have been reserved for programming **PTZ tours 1, 2,** and **3.**

1. Enter a **PreShot 21** command on the system controller to program **PTZ tour 1**. (Enter a PreShot 22 command for PTZ tour 2 or PreShot 23 command for PTZ tour 3.)

2. During the 120 second countdown, pan and tilt the scan and adjust the lens zoom setting. The scan scores the PTZ commands in the order they were performed during the 120 seconds.

11.6 PROGRAMMING PTZ TOURS, CONTINUED

3. Wait for the countdown to reach 0 or send a **PreShot 24** command to end the programming mode. The message “PTZ Tour Complete” is displayed.
   The scan stores the PTZ commands in the order you entered them between the time you started the programming mode until you entered the PreShot 24 command.

11.7 PTZ TOUR OPERATION

PreShot commands 11, 12, and **13** are reserved for running **PTZ tours 1, 2,** and **3,** respectively. The scan, where the PTZ tour is stored, must be the control camera on the system controller. The scan continues to run the PTZ tour from beginning to end

1. Enter a **PreShot 11** command on the system controller to run **PTZ tour 1.**
   (Enter a PreShot 12 command to run PTZ tour 2 or PreShot 13 command to run PTZ tour 3.)

2. Stop the PTZ tour by manually controlling the scan or by sending the scan a PreShot or VectorScan command.

SECTION 12:
TROUBLESHOOTING

12.1 TROUBLESHOOTING PROCEDURES

Refer to Figure 1 and the drawings in Section 14 for assistance in locating and identifying parts discussed in the following list of issues.

Refer to Section 13 for removing the lower dome and the HD6 from the housing. If the solutions listed do not fix the problem, consult the factory for technical assistance at 1-800-796-2288.

Any equipment returned to Honeywell for warranty or service repair must have a Return Material Authorization (RMA#) for its repair. The RMA# must be clearly marked on all return packages.

12.2 NO VIDEO

Possible solution:

1. Verify power to all pieces of equipment in the system.
   There is a green LED on the circuit board in the housing that is lit when the board is receiving 24V ac power.

2. If multiple scans and a video switcher are in the system:

   a. Make sure the camera is called up on a monitor at the controller.

   b. Bypass the switcher and connect the video from the HD6 to the monitor.
      If video is present, verify correct video connections to switcher

3. Power down all system components for 15 seconds and then return power.

4. Check fuse F1: 1.6A, 250V, Slo-Blo, 5mm x 20mm (located on circuit board in the housing).

5. On standard units, make sure the video cabling is connected properly at the BNC connector in the housing. If the Unshielded Twisted Pair (UTP) option is installed, verify wiring is connected properly at terminal strip TB3 in the housing.

6. If the Unshielded Twisted Pair (UTP) option is installed in housing, verify jumpers W3 and W4 on housing interface board are set properly.

7. If Unshielded Twisted Pair (UTP) option is installed in housing, verify DIP switch SW1 is set for correct cable length.

8. If the Unshielded Twisted Pair (UTP) option is installed in the housing, verify that jumper W8 and P10 on the scan video board, 519 539-1020, are in the correct positions.

12.2 NO VIDEO, CONTINUED

9. If multiple scans are in the system, exchange one of the scan units from another housing. Set the address of the exchange unit to the existing unit. Call up the scan using the controller (each unit has a unique address). If video is present, the problem is isolated to the scan assembly.

12.3 VIDEO PROBLEMS (UNSHIELDED TWISTED PAIR (UTP) OPTION ONLY)

Possible solution:

Inverted Video: Swap the video+ and video - leads of UTP cabling on video connections at one end only.

Poor Video: Make sure DIP switch SW1 in the housing is set for the proper cable length. Refer to the installation guide provided with your housing.

12.4 VIDEO, BUT NO CONTROL

Possible solution:

1. Make sure the controller is addressed to the correct scan (camera).

2. Ensure the three rotary switches on the receiver board are set to the proper camera number (address).
   S1 = Ones Digit,
   S2 = Tens Digit,
   S3 = Hundreds Digit.

   Note: If scan is set to address 000, the scan responds to all address commands.

3. Ensure DIP switch S4 is set for the correct control system.

4. **Diamond Series Controllers** - Ensure LED or LCD display is lit on the controller. Unplug the controller, wait 30 seconds, and plug it back in.

5. Power down all system components for 15 seconds and then return power. Allow the scan to count down. The red LED lights briefly when the HD6 is first powered up - it will then turn off.

   When the HD6 receives valid data for the set protocol, it will light for 5 seconds then turn off. The LED will often flash if the HD6 receives invalid data. Some controllers do not transmit any data unless a key is pressed, a joystick moved, etc. In that case the HD6 should be manually controlled for more than 5 seconds to cause the LED to light.

   Systems Operating at 9600 Baud – Verify the red LED (D5) on the receiver board lights for 5 seconds upon power up.

12.4 VIDEO, BUT NO CONTROL, CONTINUED

Systems Operating at 19.2K Baud (MUX-100 protocol) – Manually control the scan for 5 seconds. Verify the scan responds and the red LED (D5) on the receiver board lights for 5 seconds.

Systems Operating with Pelco P or D Protocol – Manually control the scan for 5 seconds. Verify the scan responds and the red LED (D5) on the receiver board lights for 5 seconds. If the red LED (D5) is flashing, faulty data is being received.

System Operating with Honeywell VCL Protocol or Pelco P or D Protocol – Check the wiring to make sure the polarity is correct (TX+ to RX+ and TX- to RX-).

6. If you are using the HD6 with a Pelco P code control system, verify the baud rate of the control unit is set at 4800.

7. If you are using the HD6 with a Pelco D code control system, the baud rate of the control unit must is set at 2400. Verify this value.

8. The baud rate of the HD6 can be selected using the S4 DIP switches. Verify that the HD6 and the controller are set for the same baud rate. The same is true of parity (no parity or even parity).

9. **Wiring -** Make sure the data wiring is connected at the terminal strip in the housing. Make sure bare wires are not touching each other. Make sure the wire insulation is stripped back far enough for a good connection.

10. If multiple scans are in the system, exchange the scan in question with a scan from another dome. Set the address of the exchange scan to the existing unit. Call up the scan (camera) using the controller. If control returns, the problem is isolated to the scan.

12.5 SCAN OPERATES BY ITSELF

Possible solution:

1. Remove power from all system components and then return power.

2. This can be caused by very noisy control data, incorrect control data, or having the scan set for the wrong protocol. Verify protocol settings.

12.6 ERRATIC SCAN OPERATION

Possible solution:

1. Verify that communication termination jumpers on the board in the housing are set properly.

   Home-Run Wiring – one scan per control output
   - Jumpers W1 and W2 are installed in the TERM position.

   Daisy-Chain Wiring – more than one scan per control output
   - Jumpers W1 and W2 are installed in the TERM position on the last housing on the data run.
   - Jumpers W1 and W2 are installed in the UNTERM position on all intermediate housings.

2. Verify data lines are not broken and are connected properly at the terminal strip in the housing.

   Unshielded Twisted Pair (UTP) Option – verify jumpers W3 & W4 in housing are in positions 1 & 2.

3. See 12.4, possible solution 8.

12.7 LENS OUT OF OPTICAL FOCUS

Possible solution:

1. A function has been added to reset the camera lens (zoom and focus). Pre-programmed PreShots activate this function:

If using:	Activate with:
Honeywell Diamond, Honeywell Maxpro mode, Honeywell VCL, or Pelco protocols	PreShot 98
American Dynamics and American Dynamics switcher using Pelco protocol	PreShot 20

2. This can also be caused by dirt, oil, grease, fingerprints, etc. on the lens or dome. Check the lens and dome and clean if needed.

3. Verify that the lens cap is not on the camera. A translucent cap may be in place and will blur the camera if not removed.

12.8 CANNOT FIND HOME OR DOES NOT GO TO PRESHOT

Possible solution:

1. Verify that the pan and the tilt rotates freely with no interference from lanyard (if installed) or inner dome brackets.

2. Verify the pan and tilt belts are on their associated sprockets and are not loose.

3. Verify the sensor tab moves freely through the optical sensor. (Tab and sensor are under the video board.)

4. Verify the pan motor connector is secured to connector J1 on the power supply board, part number 518241-1030.

5. Verify the tilt motor connector is secured to connector J2 on the camera adapter board, part number 518107-1020.

12.9 SCAN IS JERKY

Possible solution:

1. Verify both data lines are connected – polarity on the data is not required.

2. A motor may be defective or the wiring to the motor may be broken.

Notes:

SECTION 13:
MAINTENANCE

13.1 MAINTENANCE SCHEDULE

Every three months, perform the following:

1. Make sure the mount is secured.
2. Make sure the dome is secured to the mount.
3. Inspect all connecting cabling for deterioration or other damage.
4. Clean the domes (only if required) using the procedure defined for your dome type.
5. Clean the camera lens (only if required). Honeywell recommends purchasing an optical lens cleaning kit and following the procedures provided with the kit. **Do not use facial tissues, paper toweling, or clothing to clean the lens. Use only a lens cleaning tissue**.

13.2 REMOVING LOWER DOME

13.2.1 Indoor Housings

NOTE: Handle the dome from the flange or trim ring.

1. Remove power to the unit.
2. If the lower dome was installed with the 2-56 lock screw, remove the 2-56 lock screw on the lower dome trim ring using a 5/64” hex key.
3. Rotate the lower dome counterclockwise and lower the lower dome.
4. Remove the nut and washer that secures the safety lanyard cable to the lower dome.
5. Remove the safety cable eyelet from the mounting screw on the lower dome.
6. Replace the nut and washer on the screw.

13.2 REMOVING LOWER DOME, CONTINUED

13.2.2 Indoor Housing with Digital Interface

NOTE: Handle the dome from the flange or trim ring.

1. Remove power to the unit.
2. If the lower dome was installed using the 2-56 lock screw, remove the 2-56 lock screw on the lower dome trim ring using a 5/64” hex key.
3. Rotate the lower dome counterclockwise and lower the lower dome.
4. Slide the ball on the safety lanyard (between the top and lower dome) up and out of the clip on the housing.

13.2.3 Weather Dome

1. Remove power to the unit.
2. Using a Phillips screwdriver, turn the fasteners on the lower dome ¼-turn counterclockwise and lower the lower dome.
3. Loosen and remove the screw that secures the safety lanyard cable to the lower dome.

13.3 REMOVING THE HD6 SCAN FROM THE HOUSING

1. Remove power to the unit.
2. Remove the lower dome. Refer to Section 13.2 and follow the instructions for your equipment.
3. Remove the inner dome by turning the two ¼-turn fasteners counterclockwise. Slide the liner out of the “U-bend” on the liner mounting bracket.

   NOTE: It is not necessary to remove the inner dome in order to remove the scan from the housing, etc. It may, however, make the task easier to remove the inner dome.
4. Hold the scan with one hand and pull down on the two release latches (one at a time) with the other hand. **DO NOT LET GO OF THE SCAN AT ANY TIME.**
5. Pull the scan assembly out of the housing.

13.4 DOME CLEANING PROCEDURE

13.4.1 Clear Dome And Smoked Dome

The inside and outside surface of the dome can be cleaned with any non-abrasive cleaning cloth and cleaning agent that is safe for use on acrylic plastic such as Windex, Glass Plus, or lens cleaner. To polish the dome, Meguiar's Mirror Glaze 6 Professional Cleaner/Wax or equivalent mirror cleaner/wax is recommended.

Notes:

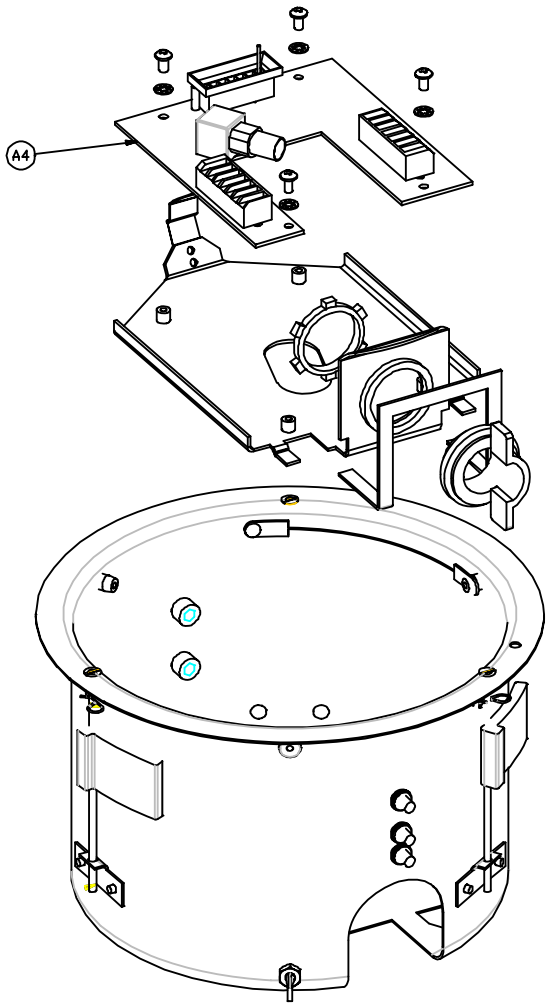
SECTION 14:
REPLACEMENT PARTS

14.1 INTRODUCTION

The following drawings and partial material lists are provided to assist in installing and servicing the HD6. Qualified technicians who have attended a Honeywell training course must perform all servicing.

14.2 HD6 INDOOR HOUSING

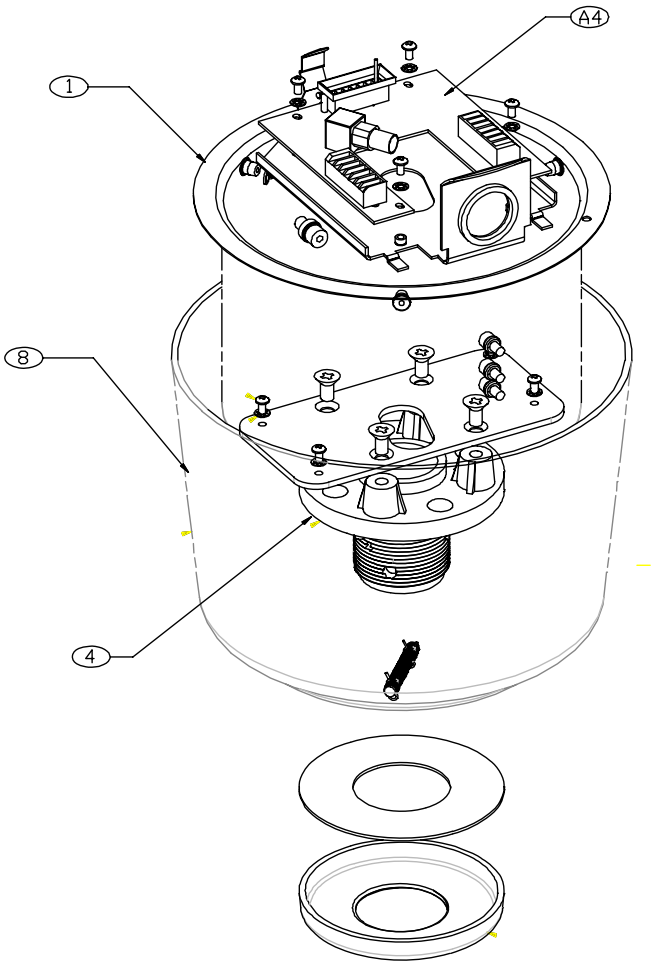
HDT0D000	Housing for Drop Ceiling (includes drop ceiling mount)
HDT0D003	Housing with Unshielded Twisted Pair (UTP) Option
HDT0D00D	Housing with Digital Interface Board



Replacement Parts		
Item	**Part Number**	**Description**
18	517082-7130	Dropped Ceiling Mount (not shown - used on 518563-2040 only)
A4	518245-1030	Interface Board (Standard – shown)
A4	518753-1030	Interface Board (Unshielded Twisted Pair (UTP) Option – not shown)
F1	842805-0052	Fuse, Slo-Blo, 1.6A, 250V, 5x20mm, Littelfuse #288-01.6 (located on interface board)

14.3 HD6 INDOOR PENDANT HOUSING

HDT0P000	Standard
HDT0P003	HD6 with Unshielded Twisted Pair (UTP) Option
HDT0P00D	HD6 with Digital Interface



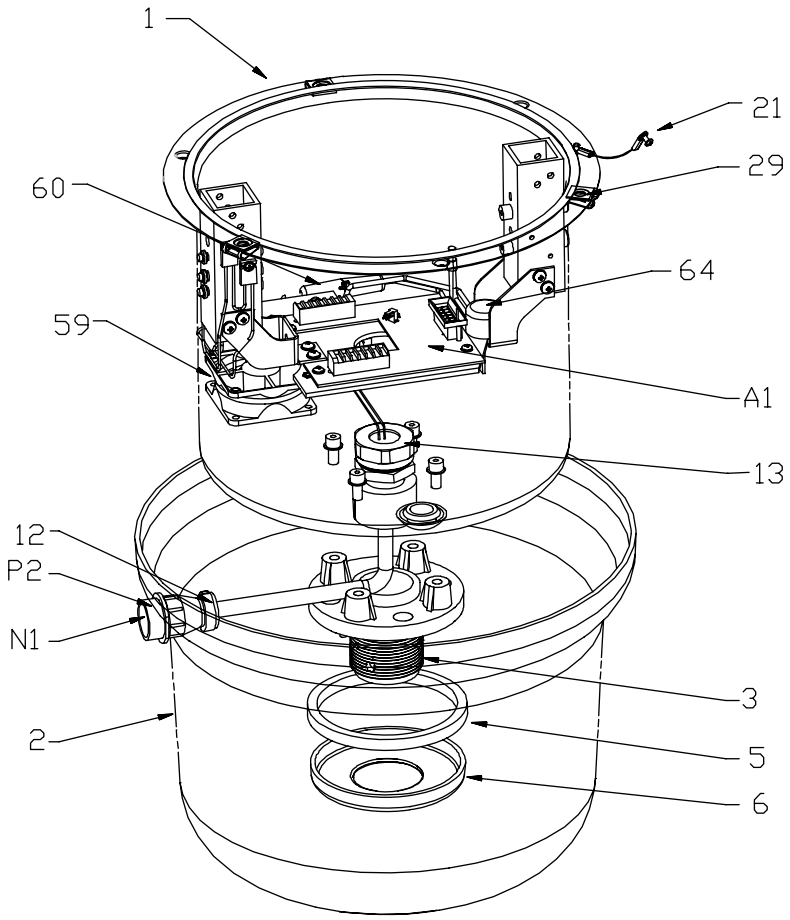
Replacement Parts		
Item	**Part Number**	**Description**
1	518466-1140	Housing
4	515676-1130	Slip Ring Support
8	518462-1120	Shroud
A4	518245-1030	Interface Board (Standard - shown)
A4	518753-1030	Interface Board (Unshielded Twisted Pair (UTP) option – not shown)
F1	842805-0052	Fuse, Slo-Blo, 1.6A, 250V, 5x20mm, Littelfuse #218-01.6 (located on interface board)

14.4 HD6 INDOOR LOWER DOME

Replacement Parts	
Part Number	**Description**
HDB0DJ00	Lower Dome, Smoked with Black Trim Ring
HDB0DH00	Lower Dome, Smoked with White Trim Ring
HDB0D400	Lower Dome, Clear with Black Trim Ring
HDB0D500	Lower Dome, Clear with White Trim Ring
700502-4130	Black Trim Ring
700502-3130	White Trim Ring
700515-2130	Smoked Lower Dome
700515-1130	Clear Lower Dome
518562-1140	Inner Dome
941508-0053	Tool, Hex Key 5/64”

14.5 HD6 OUTDOOR TOP WEATHER DOME

Part Number	Description
HDT0W000	HD6 Weather Housing (fly-lead connections)
HDT0W00A	HD6 Weather Housing with 14-Pin Connector
HDT0W003	HD6 Weather Housing (Unshielded Twisted Pair (UTP) Option)



14.5 HD6 OUTDOOR TOP WEATHER DOME, CONTINUED

REPLACEMENT PARTS

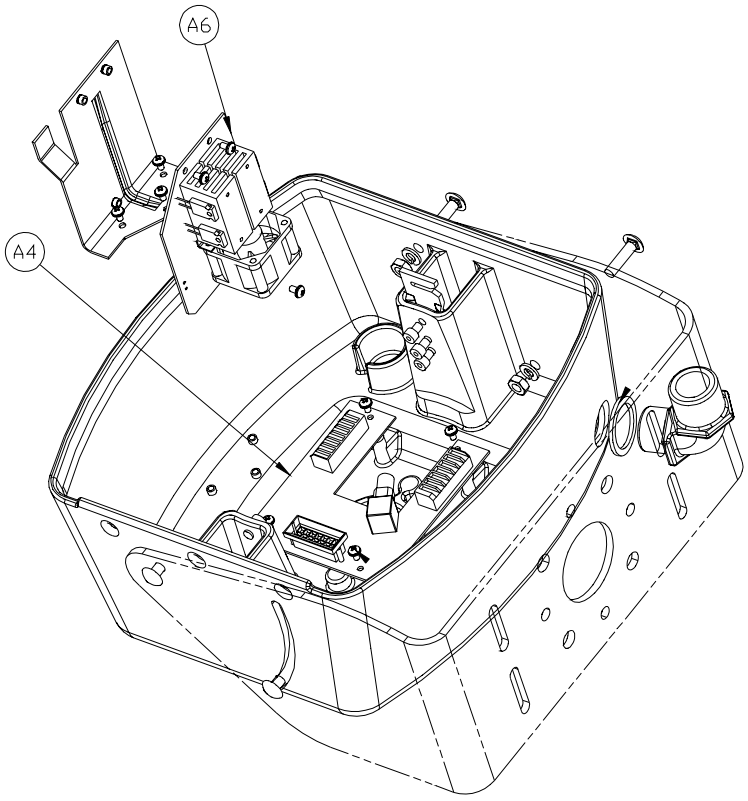
Item	Part Number	Description
1	517923-7140	Housing for HD6 with Rails
2	518425-2130	Shroud, White Weather Top
2	518425-4130	Shroud, Black Weather Top
3	515676-1130	Slip Ring Support
5	518634-1120	Seal Dome Cap
6	515991-2120	Dome Cap
12	842376-0173	Clamp, Cable
13	518479-1120	Vacuum Seal Fitting & Jam Nut with Wires
21	517024-1120	Dome Safety Cable
29	861807-0011	Clip for ¼-Turn Fastener
59	842701-0028	Blower, 24Vdc
60	842805-0010	Fuse, Slo-Blo, 5A, 250V (located on the heater/blower assembly)
64	848475-0043	Thermostat, SPST, Open 90°F Close 70°F
A1	518245-1030	Interface Board (Standard – shown)
A1	518753-2030	Interface Board (Unshielded Twisted Pair (UTP) Option – not shown)
F1	842805-0052	Fuse, Slo-Blo, 1.6A, 250V, 5x20mm, Littelfuse #288-01.6 (located on interface board)
N1	842376-0307	Contacts for 14-Pin Connector
P2	842376-0262	Connector, Housing 14-Pin
-	517395-2020	Dome Mating Cable Kit (14-Pin)

14.6 HD6 OUTDOOR LOWER WEATHER DOME

Part Number	Description
HDB0W200	Smoked Lower Dome
HDB0W400	Clear Lower Dome

14.7 HD6 RUGGED DOME TOP

Part Number	Description
HDT0R000	Ruggedized Housing
HDT0R00F	Ruggedized Housing w/Fan Only
HDT0R00H	Ruggedized Housing w/Heater & Blower
HDT0R003	Ruggedized Housing w/Unshielded Twisted Pair (UTP) Interface
HDT0R00J	Ruggedized Housing w/Unshielded Twisted Pair (UTP) & Heater/Blower



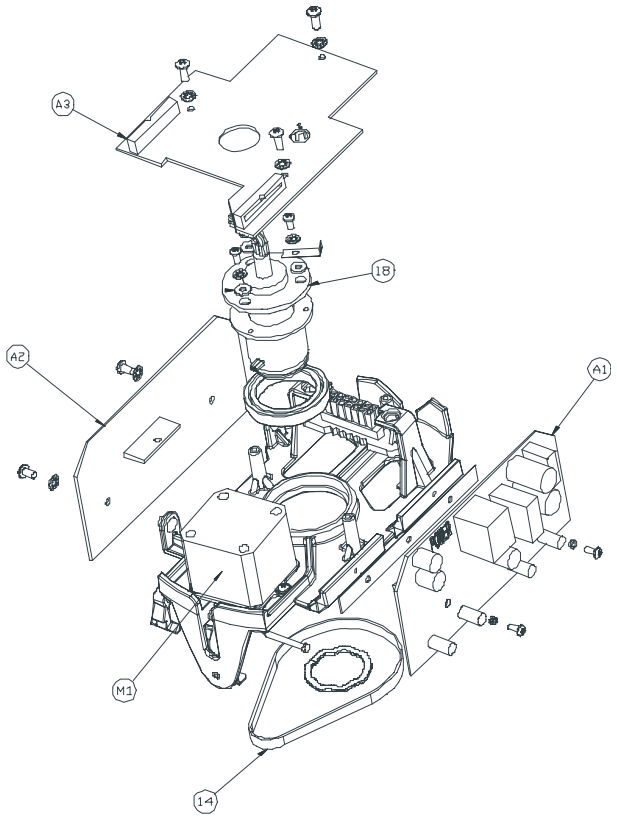
Item	Part Number	Description
A4	518245-1030	Can Interface Board Assembly, Standard Wiring
A4	518753-1030	Interface Board for HD6 w/ Unshielded Twisted Pair (UTP) option
A6	518088-3030	Heater/Blower Assembly, 24V ac
A6	518088-4030	Blower Assembly, 24V ac

14.8 HD6 RUGGED LOWER DOME

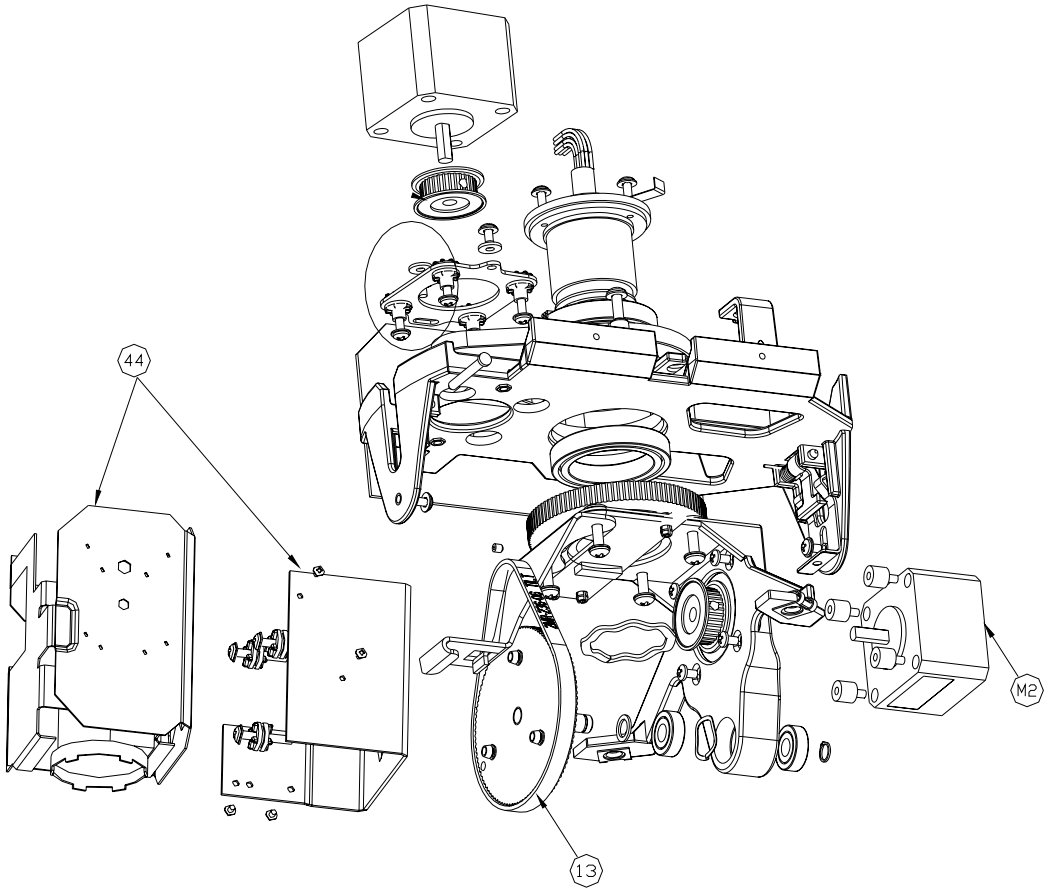
Part Number	Description
HDB0R400	Clear Lower Dome , Ruggedized Dome for HD6
HDB0R200	Smoked Lower Dome, Ruggedized Dome for HD6

14.9 HD6 SCAN

Part Number	Description
HDSA00N1	Scan Assembly, 18x NTSC Camera, Standard Firmware
HDSB00N1	Scan Assembly, 18x NTSC IR Camera, Standard Firmware
HDSA00P1	Scan Assembly, 18x PAL Camera, Standard Firmware
HDSB00P1	Scan Assembly, 18x PAL IR Camera, Standard Firmware
HDSC00N1	Scan Assembly, 23x NTSC IR Camera, Standard Firmware
HDSC00P1	Scan Assembly, 23x PAL IR Camera, Standard Firmware
HDSD00N1	Scan Assembly, 23x NTSC Camera, Standard Firmware
HDSD00P1	Scan Assembly, 23x PAL Camera, Standard Firmware
HDSE00N1	Scan Assembly, 25x NTSC IR Camera, Standard Firmware
HDSE00P1	Scan Assembly, 25x PAL IR Camera, Standard Firmware



14.9 HD6 SCAN, CONTINUED



14.9 HD6 SCAN, CONTINUED

Item	Part Number	Description
13	901200-0009	Belt for tilt sprocket part number 518875-1120
13	901200-0006	Belt for tilt sprocket part number 518320-1120
14	901200-0008	Belt for pan sprocket part number 518872-1120
14	901200-0007	Belt for pan sprocket part number 518561-1120
18	518418-2030	Slip Ring and Camera Interface Board
44	120.0064	Replacement Camera, (18x color) NTSC w/4.1-73.8mm
44	120.0065	Replacement Camera, (18x True Day/Night) NTSC w/4.1-73.8mm, IR
44	120.0066	Replacement Camera, (18x color) PAL w/4.1-73.8mm
44	120.0067	Replacement Camera, (18x True Day/Night) PAL w/4.1-73.8mm, IR
44	843216-0984	Replacement Camera (23x Wide Dynamic Range & True Day/Night) Color NTSC w/3.6-82.8mm, IR
44	843216-0985	Replacement Camera (23x Wide Dynamic Range & True Day/Night) PAL w/3.6-82.8mm, IR
44	120.0060	23x Color NTSC Camera w/3.8-87mm (23x)
44	120.0061	23x Color PAL Camera w/3.8-87.4 (23x)
44	120.0062	25x NTSC True Day/Night NTSC Camera w/3.8-05mm (25x)
44	120.0063	25x PAL True Day/Night PAL w/3.8-95mm (25x)
A1	518241-1030	Power Supply Board
A2	519541-1020	Digital Receiver Board, Flash
A3	519539-1020	Video Interconnect Board, Flash (NTSC)
A3	519539-2020	Video Interconnect Board, Flash (PAL)
M1	518688-5020	Replacement Pan Motor
M2	518688-6020	Replacement Tilt Motor
-	519543-1980	Firmware
-	518691-1030	Inner Liner (Not shown)

SECTION 15:
SPECIFICATIONS

15.1 HOUSING / LOWER DOMES

Power Requirements	HD6 Scan: 24V ac @ 1.3A	
	Weather Dome Heater: 24V ac @ 4A	
Pan and Tilt Angular Travel	Horizontal:	360° continuous slip ring design
	Vertical:	0° horizontal to 90° down
Pan and Tilt Speed*	Pan:	Continuously variable 0.1° to 400° per second. Maximum manual speed selectable between 100°, 200°, and 400°/second.
	Tilt:	Automatic Operation: Continuously variable 0.1°/s to 400°/s. per second Manual Operation: Maximum speed is ½ the maximum pan speed.
Braking	<0.1° accuracy	
Installation in Dome	Mechanical:	Rail Mount
	Electrical:	Terminal Block
Mounting	Dropped Ceiling, Hard Ceiling, Indoor or Outdoor Pendant	
Weight (including pan and tilt with camera assembly)	Pendant Dome:	6.6 lbs. (3.0 kg)
	Hard Ceiling/ Dropped Ceiling:	5.5 lbs. (2.50 kg)
	Weather Dome:	15 lbs. (6.8 kg)
	Rugged Dome:	14.75 lbs. (6.69 kg)

* Pan and tilt speeds may vary when used with a Maxpro or Pelco Control system. Refer to your Maxpro Control or Pelco Control Equipment manuals.

15.2 SCAN, 18X COLOR AND TRUE DAY/NIGHT CAMERAS

Image Sensor	1/4" IT CCD (EXview HAD)	
Picture elements (pixels)	NTSC	approx. 380K pixels (768H x 494V)
	PAL	approx. 440K pixels (752H x 582V)
Resolution	NTSC	470 TV lines
	PAL	460 TV lines
Sync System	Internal/External (Vertical Lock) – Selected in Camera Menu	
Minimum Illumination (all with clear lower dome)	0.7lux (F1.4, 1/60s (NTSC) or 1/50s (PAL))	
	0.05lux (F1.4, 1/4s (NTSC) or 1/3s (PAL))	
	0.01lux (F1.4, 1/4s (NTSC) or 1/3s (PAL)), ICR on (IR block filter removed, True day/night Camera only)	
S/N ratio	50dB	
Backlight compensation	ON/OFF (Selected in Camera Menu)	
Focal Length	4.1mm (wide) to 73.8mm (tele) (18x optical zoom) 1X, 2X, 4X, 8X, and 12X digital zoom selectable	
Focal Range	Infinity to 1m near	
Angle of view (H)	48 degrees (optical wide) to 2.8 degrees (optical tele)	

15.3 SCAN, 23X WIDE DYNAMIC RANGE AND TRUE DAY/NIGHT CAMERA

Image Sensor	1/4" (4.5mm Dia.)	
Picture elements (total pixels)	NTSC	approx. 380K pixels (758H x 504V)
	PAL	approx. 450K pixels (758H x 592V)
Resolution Normal (1/60s, 1/50s)	NTSC	470 (400) TV lines
	PAL	470 (550) TV lines
Sync System	Internal/Line-Lock – Selected in Camera Menu	
Minimum Sensitivity (all with clear lower dome)	3 lx [color - IR-cut ON (1/60s, 1/50s)] 0.2 lx [color - IR-cut ON (1/4S, 1/3s)] 0.1 lx (color - 1/2s, 1/1.5s)	
	0.02 lx [B/W – IR-cut OFF (1/4s, 1/3s)]	
S/N ratio	More than 50dB	
Wide Dynamic Range	ON/OFF (Selected in Camera Menu)	
Focal Length	3.6mm (wide) to 82.8mm (tele) (23x optical zoom) 1X, 2X, and 4X digital zoom selectable in Camera Menu.	
Focal Range	Infinity to 1m near	
Angle of view (H)	54 degrees (optical wide) to 2.5 degrees (optical tele)	

15.4 SCAN, 23X COLOR CAMERA

Image Sensor	1/4" Ex-view HAD CCD	
Picture elements (total pixels)	NTSC	410K pixels (811H x 508V)
	PAL	470K pixels (795H x 596V)
Resolution Normal (1/60s, 1/50s)	NTSC	>470 TV lines
	PAL	>450 TV lines
Sync System	Internal / VD Pulse Lock (Auto Detect)	
Minimum Sensitivity (all with clear lower dome)	0.8 lux (30 IRE)	
S/N ratio	More than 49dB	
Focal Length	3.8mm (wide) to 87.4mm (tele) (23x optical zoom) 1X, 2X, and 4X digital zoom selectable in Camera Menu.	
Focal Range	Infinity to 1m near	
Angle of view (H)	56.2 degrees (optical wide) to 2.4 degrees (optical tele)	

15.5 SCAN, 25X TRUE DAY/NIGHT CAMERA

Image Sensor	1/4" Ex-view HAD CCD	
Picture elements (total pixels)	NTSC	410K pixels (811H x 508V)
	PAL	470K pixels (795H x 596V)
Resolution Normal (1/60s, 1/50s)	NTSC	>470 TV lines
	PAL	>450 TV lines
Sync System	Internal / VD Pulse Lock (Auto Detect)	
Minimum Sensitivity (all with clear lower dome)	0.8 lux (30 IRE) Color Camera 0.05 lux (IR filter OFF) True day/night Camera 0.008 lux (IR filter ON, 128 fields) True day/night Camera	
S/N ratio	More than 50dB	
Focal Length	3.8mm (wide) to 95mm (tele) (25x optical zoom) 1X, 2X, and 4X digital zoom selectable in Camera Menu.	
Focal Range	Infinity to 1m near	
Angle of view (H)	56.2 degrees (optical wide) to 2.2 degrees (optical tele)	

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Document 900.679 06/06 Rev 1.02