Version 4.2

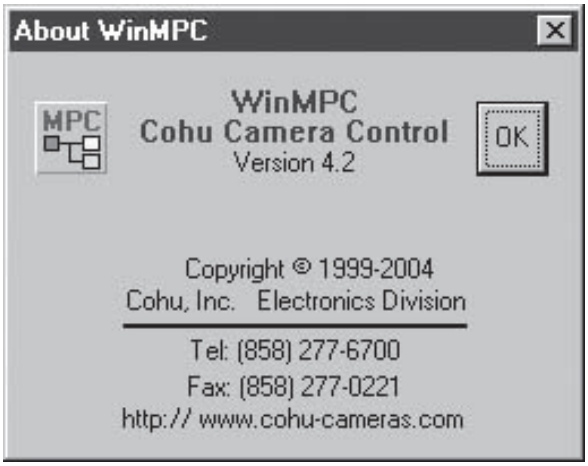
COHU, INC. ELECTRONICS DIVISION

Win MPC Graphical User Interface Manual

iView

iDome

9300 Local Control Unit



Win MPC Related Equipment

Win MPC Setup and Maintenance GUI

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1.0 GENERAL DESCRIPTION

Win MPC is a Graphical User Interface (GUI) intended for setup and testing of various Cohu cameras, pan/tilt units, and positioners. This GUI typically runs on a laptop computer that can be easily moved from location to location to perform these functions. The various windows and menus of the program offer many selections of control functions but if the related camera or related equipment do not have those features then, of course, those functions cannot be performed by the GUI.

Throughout this manual the term “camera” will often be used as a generic term to include the camera and a related pan/tilt unit or positioner if they are included with the camera.

The communications baud rate of a camera must be known before Win MPC can be used to communicate with it. Baud rate typically appears on the display monitor when a camera is turned on. Set this baud rate in the WinMPC communications setup window.

WinMPC communicates only with Cohu protocol. If a camera is set to some other protocol, it will have to be changed to Cohu protocol before WinMPC can be used to perform maintenance and setup operations. After these operations have been completed the camera then must be returned to the original protocol before returning the camera to service. Communications protocol is not password protected.

Table 1. Available Protocols

Cohu
American Dynamics
Pelco D
Javelin
Philips
Vicon
Telemetrics
Fast Field Device
Ernitec

But if WinMPC is being used to communicate with a camera through the front panel connector of a local control panel (such as the Cohu model 9300) no protocol change is necessary. The local control panel in this case communicates directly with the camera using Cohu protocol. Communications between WinMPC and the local control panel will always be 9600 baud.

Since the typical PC used to run the WinMPC software will likely have only an RS-232 serial port, communicating with any camera using RS-422 serial communications will require the use of a 232/422 converter. It is recommended that a B&B model 422PP9TB converter be used to ensure reliable communications. This is available from Cohu as part number 3010100-001.

1.1 ELECTRICAL CHARACTERISTICS

If a camera or pan/tilt unit does not have built-in serial communications capability, some version of serial interface receiver is required. This can be something like an MPC-D receiver mounted in an NEMA weatherproof box or perhaps a rack mounted receiver like the model 2221B.

“Positioner” refers to a pan/tilt unit having built-in serial communications. A pan/tilt unit without any built-in serial communications capability is referred to as just a pan/tilt unit. An integrated package consisting of a positioner and camera module can also be referred to as a “positioner.”

1.2 CONTROL OF CAMERAS AND RELATED EQUIPMENT

Many different cameras, pan/tilt units, and positioners can be controlled by WinMPC. They all have different capabilities and limitations, so using WinMPC requires some knowledge of the equipment being controlled. Some cameras have many features and others only a few. Even among similar models the feature set can be quite different. The following paragraphs will describe some of these characteristics.

1.2.1 iDome / iView Cameras

The iDome / iView series of cameras have many features that can be controlled by Win MPC. The

series offers two integrated camera/positioner units that combine a high performance digital signal processing camera, pan-and-tilt, and control receiver into one integrated package.

These assemblies will typically be referred to as the “Camera.” If the internal camera module is to be specifically referenced it will be addressed at “camera module.”

The camera uses digital signal processing. It has an internal source ID generator. Integration control together with built-in video storage provides full color continuous video even at very low light levels. During longer integration periods the scene is stored and provided at the normal frame rate of the camera.

The camera speeds are variable for pan and tilt. Pan range is a continuous 360 degrees while the tilt range is 0 to 90 degrees from the horizontal with auto-flip at the 90° point for the iDome. There are 64 preset positions with a preset accuracy of 0.1 degree.

The integrated receiver/driver, contained within the camera communicates using Cohu or other protocol formats to control the digital DSP camera functions. All camera functions are operable via RS-232 and/or RS-422 serial communications.

These cameras are fully compatible with existing Cohu controllers.

In case of power failure, all 64 preset positions are stored in nonvolatile memory.

1.2.2 Analog Cameras

Analog cameras typically do not have much to control beyond perhaps a lens or pan/tilt unit. They must be used with an interface receiver to translate the serial communication into analog control voltages for the camera. These interface receivers can include the model MPC-D, the model ER2221B and the model ER2222.

1.2.3 DSP Cameras

Digital Signal Processing (DSP) cameras typically have built-in serial communications capability and can be directly controlled by a laptop computer running WinMPC. These cameras can have many, varied internal features that cannot be controlled by WinMPC. Other protocols can be used to access many of these features.

Table 2. Receiver vs. Camera Selections

SELECTED RECEIVER	ASSOCIATED CAMERA TYPES			
	Standard	3500	38xx	Day / Night
MPC D	X			
ER2221B	X	X	X	
ER2222	X	X	X	
Dome			X	
Positioner			X	
iDome / iView				X
LCU			X	X

In addition to the cameras shown here, the DPS Camera selection on the Cohu - WinMPC window opens a new window for the DSP 383x series of cameras. See figure 9.

1.2.4 Pan/Tilt Units and Positioners

In many applications the camera is either mounted on or is an integral part of a pan/tilt unit or positioner. With a positioner the serial communications is built-in. Camera commands and pan/tilt commands are handles by the internal interface circuit board so that only a single cable is required for the serial communications link. This interface board is typically mounted in the positioner but it can be mounted in the camera, too.

1.3 CONTROL SOFTWARE

In addition to the WinMPC software (which is for maintenance and setup purposes) two other control software packages are offered by Cohu for overall operation of various cameras and related equipment. Cameras such as the iDome and iView can operate from a variety of alternative protocols. A summary description of the three Cohu software packages follows:

1.3.1 Win MPC (this manual)

Win MPC Graphical User Interface (GUI) software is available for setting the address and performing field tests for a single camera. Win MPC communicates only with Cohu protocol. It can be used to select other protocols available in the equipment to which it is connected to. Win MPC can be obtained at no cost from either the Cohu cctv web site or by mail on CD

ROM. This manual documents only Win MPC. Cams and Net Cams software listed below are discussed for reference only.

1.3.2 Cams

The Cams protocol software is intended for controlling multi-camera systems when the Cohu MPC Master Control Panel is the central control "intelligence" for the system. All control and response commands among the various equipment in the system pass through the Master Control Panel.

1.3.3 Net Cams

The Net Cams software is intended for controlling multi-camera systems when a Windows based PC is the central control "intelligence" for the system. All control and respond commands among the various equipment in the system pass through the Net Cams Server.

1.4 ALTERNATIVE CONTROL PROTOCOLS

These cameras can be made to operate from protocols other than Cohu's (table 1). Some features of them may not function, though, when using these alternate protocols.

Also, these alternate protocols typically do not provide for setting the address and certain other functions of the cameras. Thus, Win MPC should be used for setting functions such as the address, touring, and such.

Once the address is set, Win MPC then selects the desired alternate protocol and all functions after that must be controlled by that alternate protocol interface.

When a camera is operating under a non-Cohu protocol Win MPC can control only two functions:

1. Set Address
2. Select a protocol

Win MPC must always be used to set the camera address and also to change its operating protocol. It may also have to be used to set functions such as touring and presets in Cohu protocol format in the event that the operating protocol does not support that function.

1.5 RECEIVER SELECTIONS

WinMPC uses serial communications to set up and maintain a camera and related equipment. If this camera or its related equipment do not have built-in serial communications capability, some type of serial communications receiver must be used as an interface between WinMPC and the camera/ p&t unit, etc. Some types of receivers have local control functions on their front panel together with a serial interface connector for establishing local control with Win MPC.

(Newer digital signal processing (DSP) cameras or camera/positioner units usually have serial communications built-in. They do not require an interface receiver.)

Under the Special Functions area of the main Cohu - WinMPC window (figure 3) can be found two buttons providing entry to selections of the types of equipment that can be controlled. Clicking on Camera Setup opens a window with two areas related to control of equipment: one is a Receiver selection area and the other a Camera selection area. The distinction between these is that in one case communications passes through a serial interface board and in the other case the cameras themselves are directly handle the serial communications.

(Clicking the DSP Camera button opens a special window for the 383x, 385x, 392x, 393x, 395x, and 396x series of DSP cameras.)

Table 2 shows the camera types associated with each Receiver selection. Paragraphs 1.5.1 through 1.5.7 briefly describe these Receiver selections:

1.5.1 MPC-D

Use this selection to communicate through an MPC-D weather proof NEMA pole mounted box to an analog camera and pan & tilt unit. A serial communications circuit board inside the box provides commands to the camera and P/T unit.

1.5.2 ER2221B

Use this selection to communicate through an ER2221B rack mounted chassis to an analog camera and an analog pan & tilt unit. A serial

communications circuit board inside the chassis provides analog commands to the camera and P/T unit. This rack mounted unit has local control capabilities for testing and setting up the camera and P/T unit.

1.5.3 ER2222

Use this selection to communicate through a rack mounted chassis to a serially controlled camera and an analog pan & tilt unit. A serial communications circuit board inside the box passes serial commands to the camera but analog voltages to the P/T unit. This rack mounted unit has local control capabilities for testing and setting up the camera and P/T unit.

1.5.4 Dome

The Dome selection is intended to communicate with the model 3820 dome camera/positioner unit. The 3820 has a built-in serial communications.

1.5.5 Positioner

This selection should be used to establish communications with a model 3850 camera / positioner.

1.5.6 iDome / iView

When it is necessary to communicate with either a 3920 or 3950 iDome / iView, use this selection. This equipment has built-in serial communications.

Table 3. Typical iDome/iView Communications Settings

COMMUNICATIONS FUNCTION	SETTING
Port	COM 1 (Typical. Verify)
Baud Rate	9600
Pan/Tilt	Var Speed P/T
	Max Pan Speed = 15
	Max Tilt Speed = 15
Comm Mode	PC to MPC Receiver
Camera	Day/Night
Receiver	iDome/iView

1.5.7 LCU

This selection should be used when communications is required with equipment such as the model 9300 Local Control Unit (LCU). This rack mount panel typically mounts in an equipment cabinet located near the camera. It provides front panel switches for control of certain camera and pan/tilt functions. It also has a serial port on the front panel where a laptop computer running WinMPC can be connected. The LCU is used at a camera location for maintenance purposes. It must be placed in Local mode to be operational.

1.6 CAMERA SELECTIONS

Camera selections associated with the Camera Setup button are made on the Setup window. Some interactions occur when selections are made in the Setup window. Certain items will be grayed out and others activated as different selections are made.

1.6.1 Standard Camera

The Standard Camera selection should be used for an analog camera. But WinMPC cannot directly communicate with an analog camera. An interface is required. Typically a model MPC-D is used to provide serial communications with WinMPC and analog signals to control the camera and a pan & tilt unit is one is being used.

1.6.2 3500 Camera

The 3500 camera has digital signal processing (DSP) capabilities but it does not have built-in serial communications capability. It requires a serial communications interface to be controlled by WinMPC.

1.6.3 38xx Camera

This selection is typically used for a model 3850 camera/positioner unit.

1.6.4 Day / Night Camera

When a 3900 iDome or 3900 iView are to be controlled by WinMPC, select Day / Night Camera. Both versions of the 3900 have built in serial communications and can be directly connected to WinMPC.

2.0 WIN MPC CONTROL FUNCTIONS

Win MPC is intended as a control GUI for setup and maintenance functions. Two primary setup functions are setting the address of a camera and selecting an alternate protocol when the camera must operate in a system not using the Cohu protocol.

Win MPC also is used to set up tours and assign meaningful text lines for identification and alarm functions.

Certain of the settings for a camera can be saved to the hard drive of the PC running Win MPC so that they can later be uploaded again or perhaps transferred to another camera when this is necessary.

2.1 WIN MPC SETUP

When Win MPC (figure 2) is used for set up and testing, that camera must be isolated from all other cameras or other addressable equipment in the system. This generally is no problem since the camera setup is performed either at a test bench location or at the actual camera site itself. If the address setting function of Win MPC were to be sent to multiple cameras they would all have the same address programmed into their memory. Since all cameras (and other addressable equipment) in a system must have a unique address, this would result in an inoperative system.

2.2 iDOME/iVIEW COMMUNICATIONS SETUP

When first using WinMPC to communicate with any camera it is always best to first ensure that reliable communications has been established. This can be done by clicking on the Find button of the Win MPC home screen. Once it has been determined that communications is established it is then possible to perform any other required functions such as setting or verifying the address.

2.2.1 Establishing Communications with an iDome/iView Camera

Each camera in the system must have a unique address. It is probably best to set all camera addresses at a central distribution location prior to sending them out to the field installation sites.

Providing a central control location for all address assignments may ensure that no duplications occur.

Before the address can be set or any other setups made, it is necessary to establish communications with the camera. Figure 3 shows the home screen of Win MPC. Figure 4 shows the communications Setup window of Win MPC. Table 3 lists the required selections. Proceed as follows:

1. Under the Special Functions pane of the window, click on Camera Setup. The communications Setup window menu should appear.

    a. Receiver to iDome/iView

    b. Select the Port being used on the PC (Com1, Com2, Com3, Com4)

    c. Baud Rate to required rate, typically 9600 (Click Set Baud)

    d. Comm Mode to PC to MPC Receiver

    e. Camera to Day/Night (default)

    f. Receiver to iDome/iView Camera

2. Under the **Pan/Tilt** menu area:

    a. Select Var Speed P/T (default)

    b. Max Pan Speed to 15

    c. Max Tilt Speed to 15

3. Under the **Pan/Tilt Background** menu area, select **None**

4. At the bottom right of the window, click on OK to exit the setup window.

2.2.2 SETTING THE iDOME / iVIEW ADDRESS

After the initial setup, it is a good idea to allow Win MPC to search for the existing camera address. This will also verify that communications has been established.

On the Cohu - WinMPC home screen (figure 3) click on the **Find** button at upper left of the screen. A pop-up window will appear (figure 11) while Win MPC searches for all allowable camera addresses (1 to 223). The factory default setting is "1."

CAUTION: Win MPC is intended to be connected to one camera at a time. If it were to be connected into a system of cameras and the address Set Function used, all cameras (or other equipment) in the system would have their identifications set to the same address.

If this is not the required address for this camera, then change the address number to the required address and click on **Set Address**.

Click on the Find button again to confirm that this new address has been accepted.

2.2.3 iDome / iView Checkout Procedure

After communications has been established with the camera/positioner, various functions should be tested to verify proper operation. This can be done using the Win MPC interface. Check all the Momentary functions: zoom, focus, iris, color, and integration. Latch commands also should be tested: camera power, lens fast, manual iris, and color balance. Several presets should be set and then re-established to verify their operation. After presets are established, the tour function should be tested for proper operation.

Once it has been verified that the camera is operating properly it can be released for service. If its protocol must be changed for the system installation, that must be done first. Once the protocol has been changed to a non-Cohu protocol Win MPC can no longer operate most functions of the iDome or iView. (It will only be able to set the camera address and change protocols). Password access is not required to change the operating protocol.

2.3 TYPICAL SCREENS

This section describes control features of the various screens accessible with Win MPC. All these screen functions are also summarized in tables later in the manual. Various prompt messages may pop up over the screens. Figure 14 shows these messages together with additional information about their meaning or the action required.

2.3.1 Cohu WinMPC (home) Screen (figure 3)

This is the primary screen (figure 3) used to control the camera. From this screen multiple functions can be controlled - such as turning the camera on and off, setting the address, controlling lens functions, selecting tours, and others. Other screens are accessed from here to setup and control camera functions.

The large square area in the center controls pan and tilt. Various backgrounds can be selected for this area (figure 6).

At the bottom of this screen is a Log Functions area. This is a troubleshooting aid for use when problems are being experienced. A logging file name and its storage location on the hard drive must first be established. Then any series of camera commands selected from the various buttons on the screens and the response messages will be recorded as a text file. This text log of all commands and responses can be viewed for inspection or it can be played back as often as desired. A notepad function is included so that comments can be added into the log file at any time during recording.

2.3.2 Setup (communications) Screen (fig. 4)

The primary use of this screen is to set up communications parameters with the various types of equipment. It also includes a few other functions such as pan/tilt speeds, pan/tilt background, and elevation setting. Paragraph 2.3.2.1 describes the selections for setting up an iDome / iView camera.

2.3.2.1 iDome / iView Communications Setup

Communications with the camera starts with settings selected from this screen (figure 4). Most times **COM 1** will be selected together with **9600** baud. **Comm Mode** should be set to **PC to MPC Receiver** — unless WinMPC is connected to a Cohu Master Control Panel.

Select Day/Night as the Camera type. Receiver should be selected as iDome/iView Camera.

Pan/Tilt defaults to Var Speed P/T. Max Pan Speed and Max Tilt Speed typically should be set to 15 unless operational experience determines that a slower speed is preferable.

The Pan/Tilt Background has a drop down menu (figure 6). None or Plain old gray are good selections, but any of the backgrounds can be used.

Table 3 summarizes the settings for an iDome / iView camera.

2.3.3 Day/Night DSP Camera Control Screen

This screen (figure 7) is accessed by clicking on the **DSP Camera** button of the **Special Functions** pane of the home window.

Various functions related to the camera module are established from this DSP Camera window. Table 6 lists all the functions of this window.

Clicking on the **Status?** button will "fill" the window with all the current selections.

2.3.3.1 Shutter Pane

In the **Shutter** pane, selection of Auto establishes a variable rate of integration/shuttering for the sensor in the camera. Video output, though continues at the standard 30 (25 PAL) frames per second rate for the camera. This provides a large range of light control from the scene.

Selections from 1/2 to 1/15 place the sensor in what is typically called an "integration" mode. The result is to make the camera more sensitive to light but more prone to blurring if the scene is moving.

When the sensor is "integrating" (that is, collecting light from the scene for longer than the "normal" period), the camera stores the image and continues to output a video image at the standard 30 frames per second (PAL 25 fps) for the monitor until an updated scene is available from the sensor.

Selections from 1/60 (1/50 PAL) to 1/30000 place the sensor in what is commonly referred to as "shuttering" mode. The sensor is collecting light from the scene for less time than normal. This provides a stop action effect for fast moving objects and also can be used to make bright parts of a scene visible at the expense of darker areas.

2.3.3.2 Day/Night Cntrl Pane (figure 7)

When **Auto** is selected the camera determines when to switch to monochrome (black and white) operation for increased sensitivity. This would typically occur as the sun was setting or perhaps when lighting was turned off in a large building.

Selecting either Color or Mono locks the camera in the mode selected.

2.3.3.3 White Balance Pane

White Balance can be either Auto or Manual. When Manual is selected the pair of buttons located below provide for increasing or decreasing the red (left) and blue (right) in the scene.

2.3.3.4 Digital Zoom Range Pane

Off prevents the camera from performing any digital zooming. Other selections establish the maximum allowable digital zoom.

2.3.3.5 WDR (Wide Dynamic Range) Pane

Selecting **On** enhances scene details at the extreme ranges of black and white.

2.3.3.6 Camera Firmware Version Pane

Clicking Get Version displays the firmware version of the camera.

2.3.3.7 Line Lock Pane

When **Crystal** is checked the camera operates under control of its internal crystal oscillator.

Unchecked, the camera sync is referenced to the ac power line frequency. Selecting 0 through 5 in the accompanying window offsets the frame sync by 60 degree increments so that the camera can be locked to some system reference. These 60 degree offsets are required when cameras or other equipment operate from different phases of the power lines. It could also be required if various cameras were operated from isolation transformers or other phase-changing devices.

2.3.3.8 Video Freeze Pane

Clicking Video Freeze toggles between live video and a captured scene.

2.3.3.9 Elevation Set Pane

The internal pressure sensor must be offset for altitude differences at the installation location to ensure that the low pressure alarm properly alerts for low pressure. Altitudes from 0 to 10000 feet can be entered in the accompanying window.

2.3.3.10 OK Button

Clicking the OK button updates for any of the selections made.

2.3.4 Program Camera ID (figure 12)

This window (figure 12) is accessed by clicking on the **Special Functions** | **Camera ID** button on the home screen.

Two lines of 24 spaces are available to enter text that will appear in the video sent to the viewing monitor. The **Enable** box must be checked for these lines to appear. The **ID Gen in Cam** box does not function with the iDome and iView cameras.

In the **Alarm Text** pane, only the **Blink** box functions with these cameras. Check this box if it is desired to have the low pressure notification that is sent to the screen blink on and off.

Display at top should be checked if it is desired to have these messages appear at the top of the display on the viewing monitor.

2.3.5 Tour and Sector Setup (figure 13)

This window (figure 13) is accessible by clicking **Touring | Setup** on the Main Screen (figure 3).

Tour and sector entries are immediately sent to the camera as they are made.

Four basic functions are accessible:

1. Up to 16 sectors can be programmed for viewing

2. Up to 8 privacy zones can be programmed

3. Up to 8 tours can be programmed each with up to 32 views

4. All these selections can be saved as a file on the hard drive of the PC together with camera ID and presets that had been established. This file can later be uploaded to the camera if required. The file name contains the camera ID number.

Sector settings store the left and right pan limits. Tilt, zoom, and focus are not stored. A meaningful description can be entered into the text entry/read window. Maximum length is 24 spaces.

Privacy zones blank the video when the camera pans through a privacy area. This blanking occurs anytime the camera enters one of the privacy zones - whether under manual pan control, presets, or sectors.

Tours automatically step the camera through up to 32 stops for automatic viewing of different scenes. Eight different tour sequences can be programmed. Any of the 64 preset that had been established can be used as a stop in the tour sequence. Presets can be repeated during a tour as many times as desired.

2.3.5.1 DownLoad Button

Clicking the DownLoad button saves these selections to a unique file on the hard drive of the computer at the location where Win MPC is installed. A binary file with the name format “cam001.dat” is established (001 is camera 001). This file should be copied to a floppy disk or some other location on the hard drive for permanent availability. This can be important if the laptop operating Win MPC is used to maintain another camera system that would likely have duplicate camera addresses.

2.3.5.2 UpLoad Button

The UpLoad button retrieves the “cam001.dat” file (if it is for camera 001) and sends the stored selections to the camera. If a “dat” file for that camera address is not available, an error message will be displayed on the screen. When working on multiple systems great care must be taken to ensure that the “dat” files on the hard drive are the proper ones for the system being maintained.

2.3.6 Tour Setup Screen (figure 8)

Use the tour setup screen to establish the pause time allotted to each of the 10 presets. Dwell time can be set from 5 to 60 seconds.

2.3.7 DSP (38xx & 39xx Series) Camera Setup Screen (figure 9)

Table 7 briefly describes functions on this screen. Clicking on the Status ? button fills the screen selections with the current selections for various functions.

White balance can be selected for various types of scene lighting. Auto establishes automatic control of

log2.txt

```
****************************************
07/09/04  12:39 PM  Camera Test Results

07/09/04  12:39 PM  TxC:  F8 01 cPS 81          Tick: 60
07/09/04  12:39 PM  Rx:   ACK
07/09/04  12:39 PM  Rx:   F8 01 cP1711135772 81
07/09/04  12:39 PM  TxA:  ACK
07/09/04  12:39 PM  TxC:  F8 01 V? 88           Tick: 1002
07/09/04  12:39 PM  Rx:   ACK
07/09/04  12:39 PM  Rx:   F8 01 V484000 8F
07/09/04  12:39 PM  TxA:  ACK
07/09/04  12:40 PM  TxC:  F8 01 cPS 81          Tick: 1001
07/09/04  12:40 PM  Rx:   ACK
07/09/04  12:40 PM  Rx:   F8 01 cP1711135772 81
07/09/04  12:40 PM  TxA:  ACK
07/09/04  12:40 PM  TxC:  F8 01 r<TS 88         Tick: 131
07/09/04  12:40 PM  Rx:   ACK
07/09/04  12:40 PM  TxC:  F8 01 r<TS 88         Tick: 370
07/09/04  12:40 PM  Rx:   ACK
07/09/04  12:40 PM  TxC:  F8 01 r=TS 89         Tick: 60
07/09/04  12:40 PM  Rx:   ACK
07/09/04  12:40 PM  TxC:  F8 01 r=TS 89         Tick: 60
07/09/04  12:40 PM  Rx:   ACK
07/09/04  12:40 PM  TxC:  F8 01 r=TS 89         Tick: 60
07/09/04  12:40 PM  Rx:   ACK
07/09/04  12:40 PM  TxC:  F8 01 r=TS 89         Tick: 60
07/09/04  12:40 PM  Rx:   ACK
07/09/04  12:40 PM  TxC:  F8 01 r>TS 8A         Tick: 60
```

Figure 1. Typical Log File

white balance by the internal camera circuits. To lock the current white balance in place click the LOCK button.

Presets can be selected from factory default or 01 through 64.

The Digital Zoom Range selection can be used to either turn off any digital zoom or to limit it to either 2X, 4X, or 8X (or 2x, 5x, 10x for 39xx series cameras). This digital range comes into effect at the end of the optical zoom range. Resolution is reduced when digital zoom is used.

The Iris selections provide for either turning on or off automatic iris operation. When in manual, either a manual iris lens must be used to control the light level or auto shuttering can be used.

Auto integration can be used to enhance the ability of the camera to observe scene details at low light levels. The camera integrates the scene for longer than normal to capture more light. This can result in moving objects becoming blurred.

BkLite comp (Back Light Compensation) causes the camera to ignore bright areas of a scene (typically in the background) and show details of the foreground subjects.

2.3.8 DSP 3500 Control Screen (figure 10)

Various functions of a 3500 camera can be controlled from this screen. Table 8 lists these various functions and gives a brief description of their use. Color balance can either be set to automatic or manual. When manual is selected, a drop down menu below is activated to select various balance conditions.

Shutter and integration each can be set to either manual or automatic operation. Either manual selection activates a selection list directly below.

The screen also has zoom and scroll buttons to move around within the viewing area of the camera sensor.

2.4 PREPARATION FOR SHIPMENT AND STORAGE

For shipping to the factory by Common Carrier, use the following address:

Cohu Electronics
3912 Calle Fortunada
San Diego, CA 92123-1827

Please contact the Customer Service Department for a Return Authorization (RA) number before sending any shipments to the factory:

cst@cohu.com
or
858-277-6700 extension 261

Prominently display the RA number on the outside of the shipping container(s) and on paperwork contained inside. Give a brief description of why the equipment is being returned and list the symptoms of any problems being experienced with the equipment.

3.0 OPERATION

All functions of the camera are controlled by a software GUI interface. Some installations, though, have a local control panel installed near the camera for maintenance personnel to use when necessary.

3.1 LOCAL PANEL CONTROL

If the camera has been connected through a nearby Local Control Panel back to the central control facility, it is possible to connect a tv monitor to the Panel and control basic functions of the camera.

3.2 LOCAL LAPTOP PC CONTROL

A local laptop PC running Win MPC software can be used to connect to the camera and control a full range of functions including the setting of its address.

This laptop can either connect through an RS-232 connector on the front of a Local Control Panel (an optional item sometimes used at a camera location) or it can connect directly to the camera.

An iDome has input pins for both RS-232 and RS-422. A laptop connected directly to an iDome typically would use RS-232.

The iView, however, accepts only RS-422 input. (Special order units are available with RS-232 input in place of RS-422.)

Since laptop computers typically have an RS-232 serial output, connecting to RS-422 on a iView camera would require the use of an RS-232 to RS-422 converter.

3.3 CAMS OR NET CAMS CONTROL

Cams or Net Cams GUI features are nearly identical to those of Win MPC described in this manual.

The basic difference is that Win WPC is intended to be connected to only one camera at a time for installation and maintenance purposes whereas Cams and Net Cams are able to address multiple cameras and other equipment in a system setting.

4.0 TROUBLESHOOTING

If a camera does not appear to be operating as expected a troubleshooting log can be produced showing all commands and responses. This log is stored as a text file at a user selected location. It can be as large as the available space for storage.

It can be replayed as many times as desired so that identical camera actions can be observed multiple times. The log can also be printed out for inspection.

Figure 1 is an example of a log file. It shows typical commands sent and the responses received.

Note that “F8” leads off a transmitted command. If the command has been received an “ACK” is returned. A hex string can also be returned indicating the status of some functions.

Notes may also be added to the log file at the time of recording if desired.

-end-

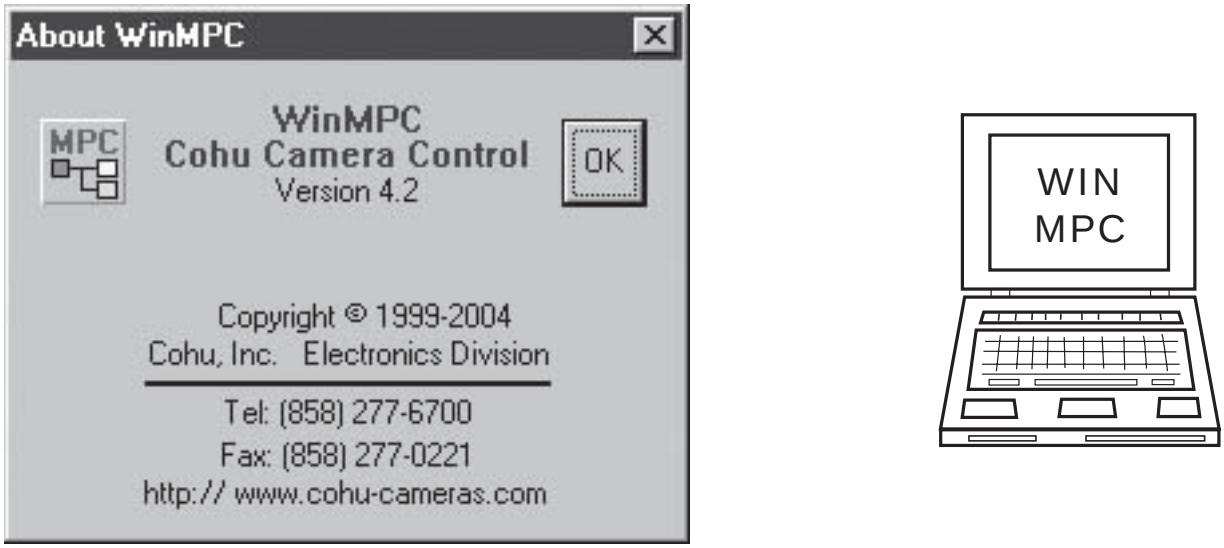


Figure 2. Win MPC Screen and Laptop

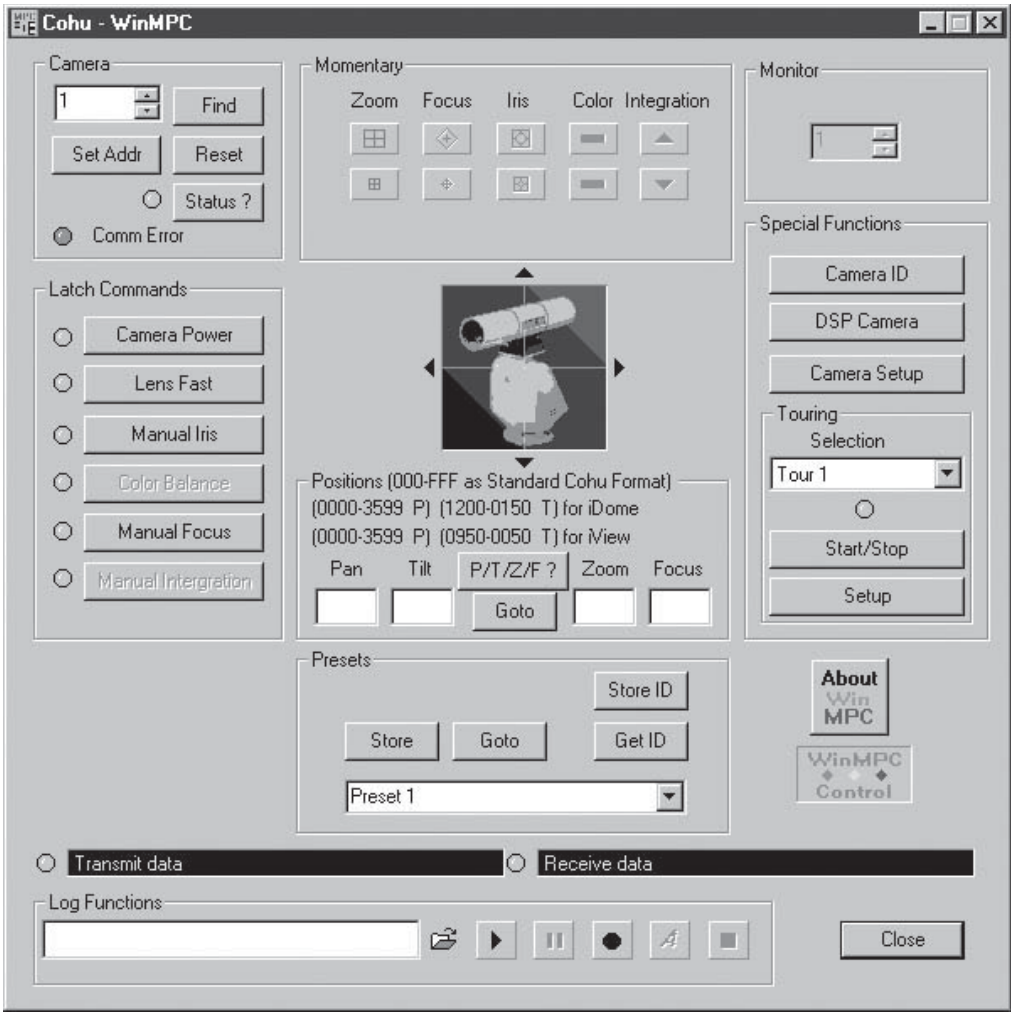


Figure 3. Win MPC Home Screen (See table 4)

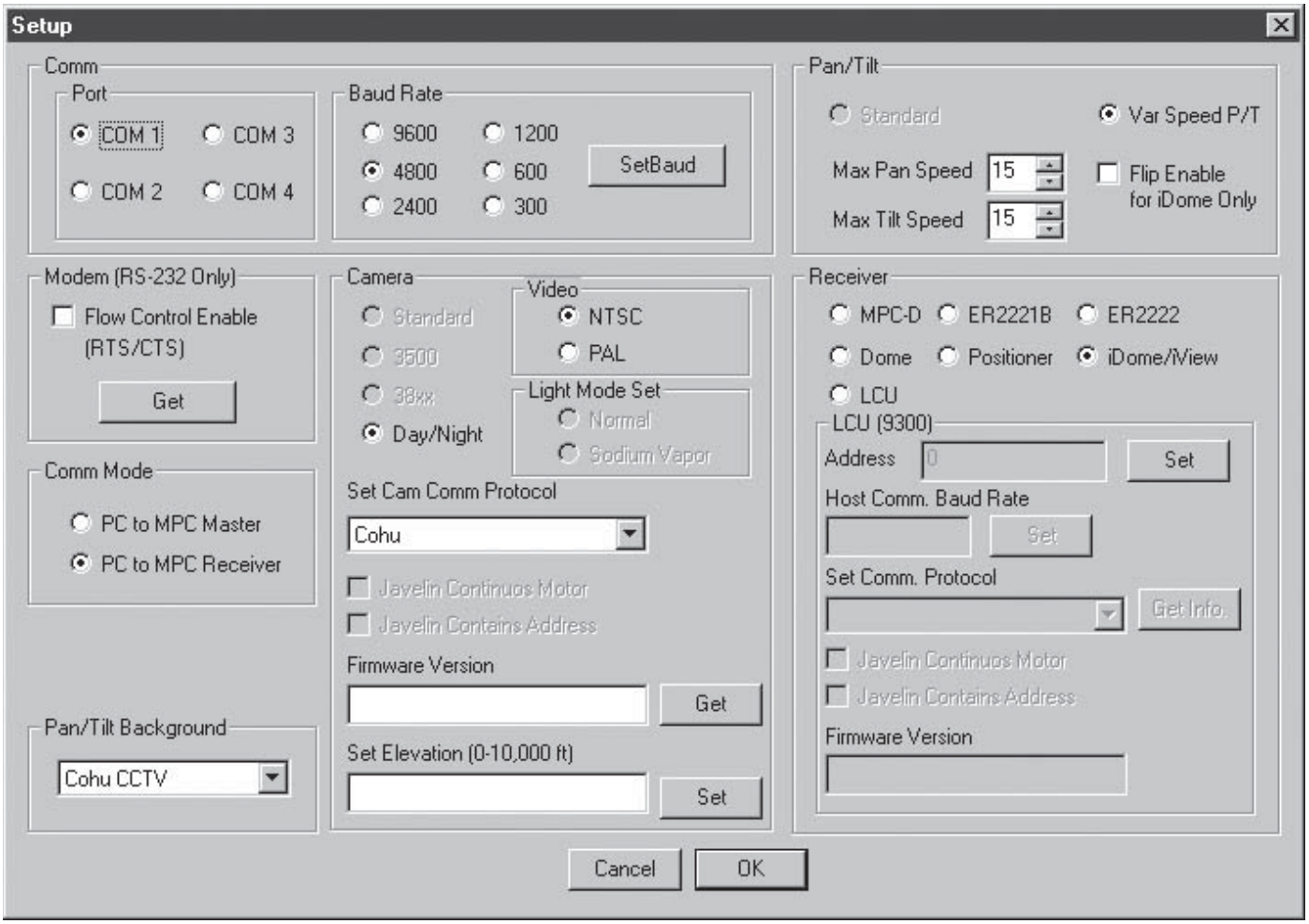


Figure 4. Win MPC Communications Setup Screen (See table 5)

Figure 5. Protocol Selection Menu

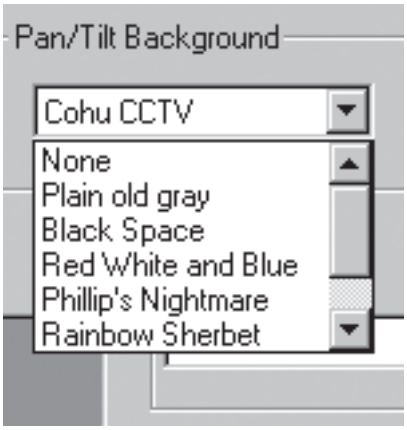


Figure 6. P/T Background Selection Menu

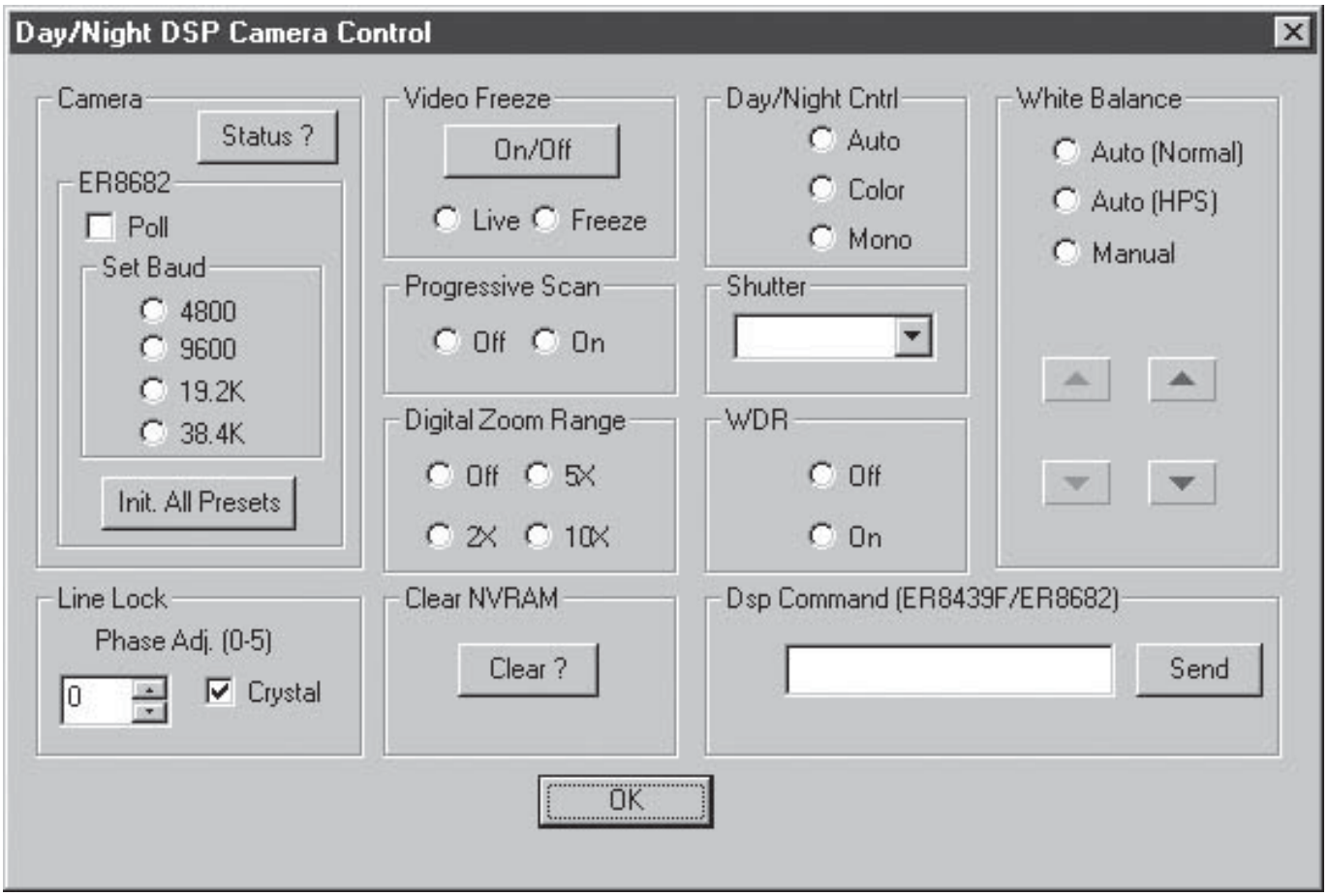


Figure 7. Day/Night DSP Camera Control Screen (See table 6)

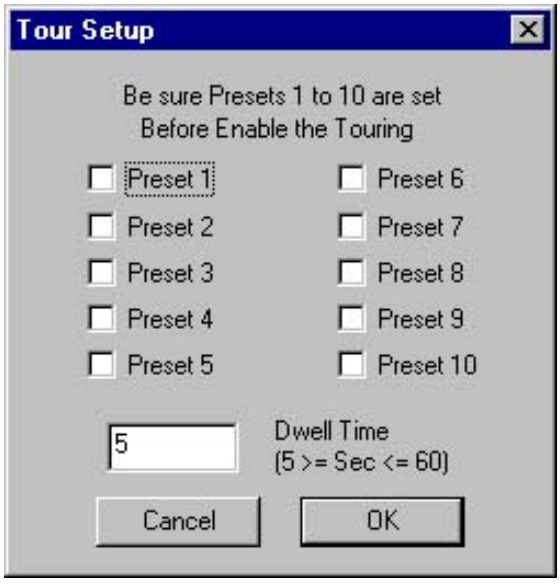


Figure 8. Tour Setup Screen

Figure 9. DSP 383x Camera Setup Screen (See table 7)

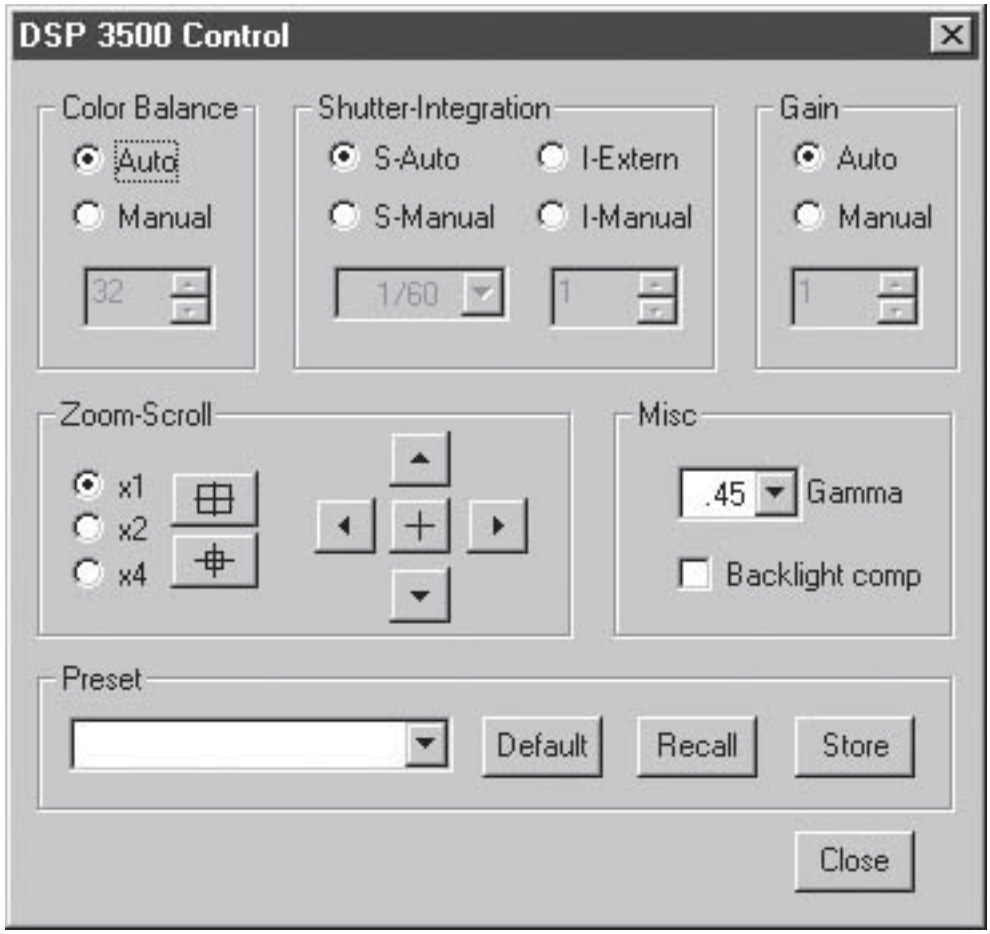


Figure 10. DSP 3500 Camera Control Screen (See table 8)

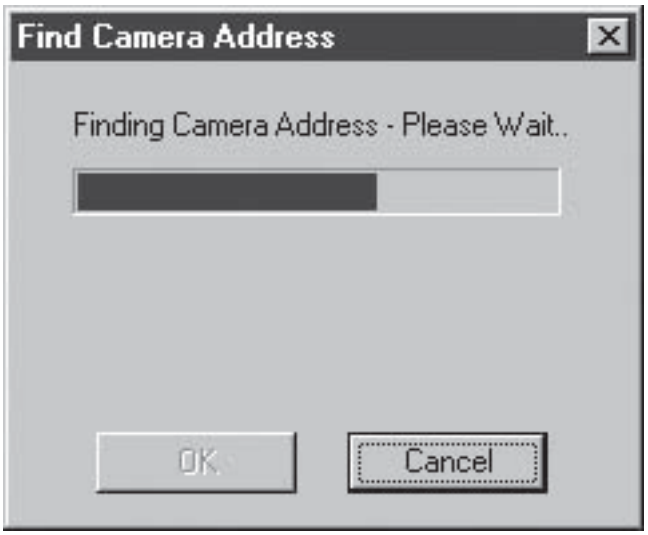


Figure 11. Find Address Window

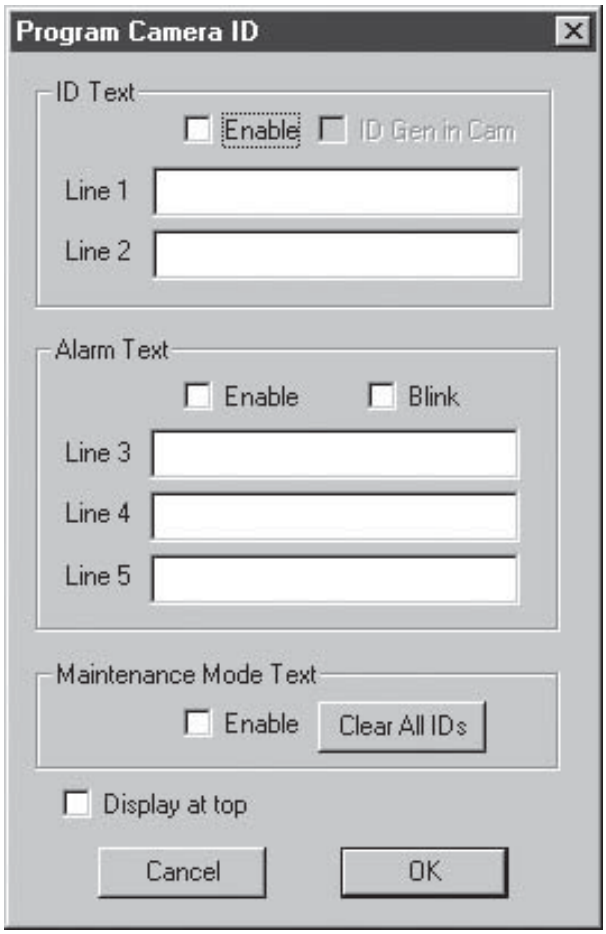


Figure 12. Program Camera ID Screen (See table 9)

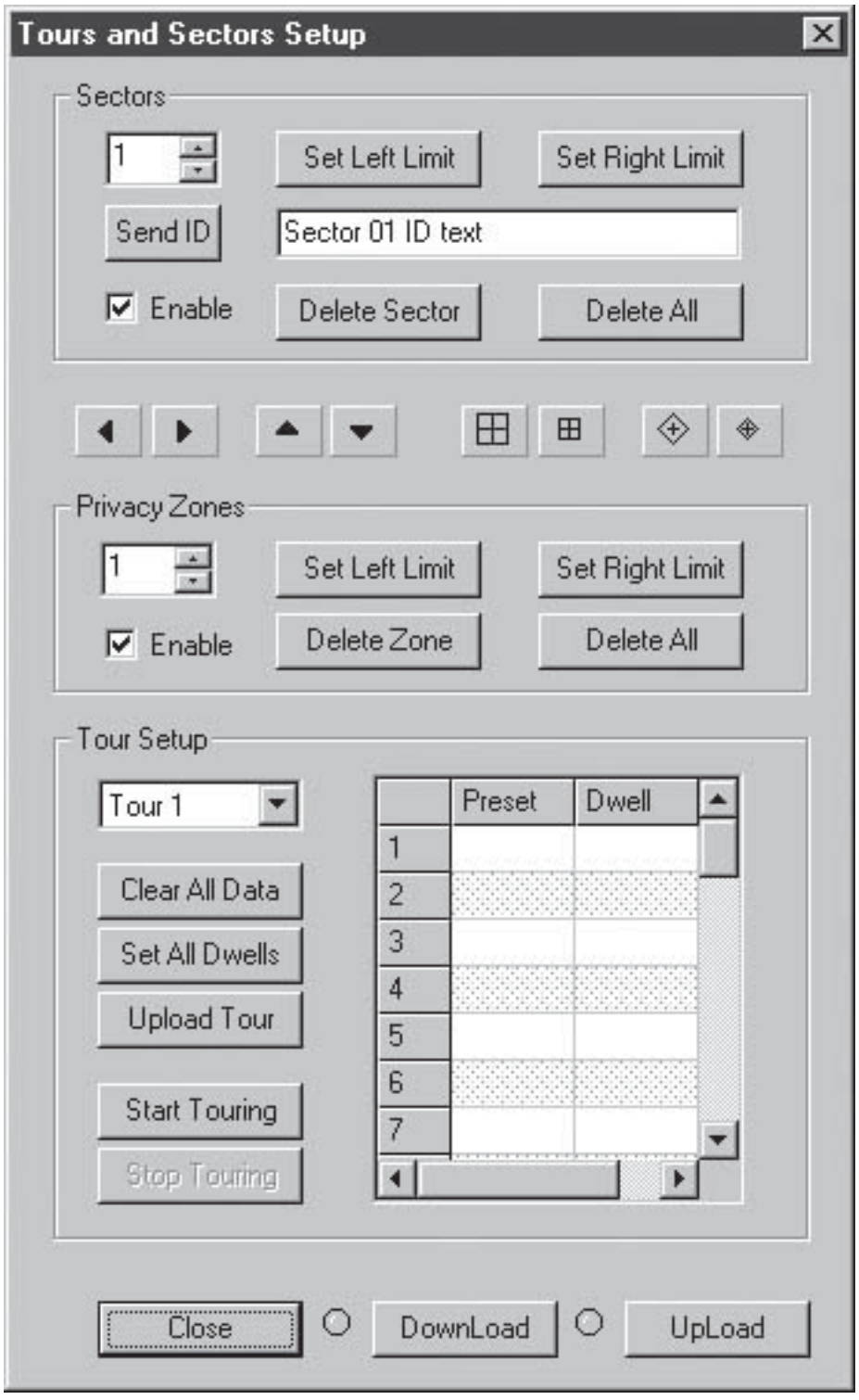
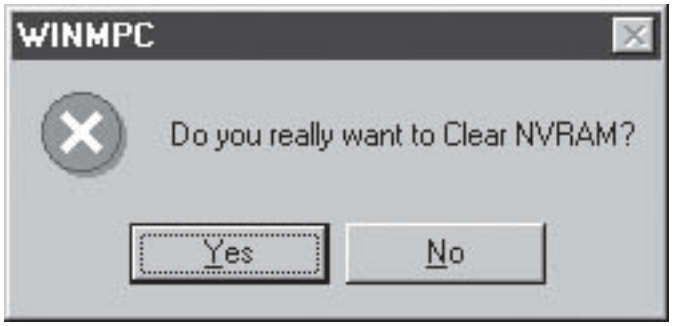
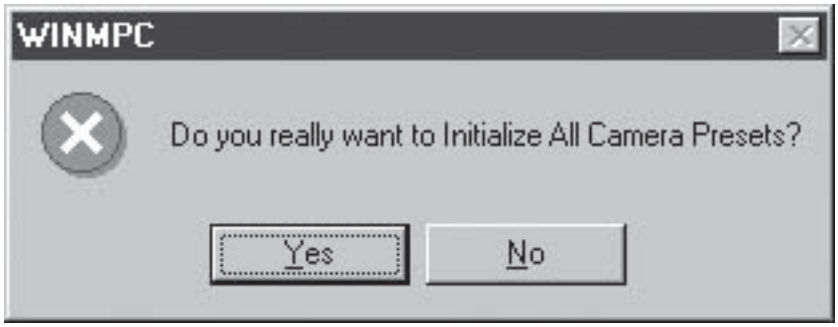


Figure 13. Tours and Sector Setup Screen (See table 10)

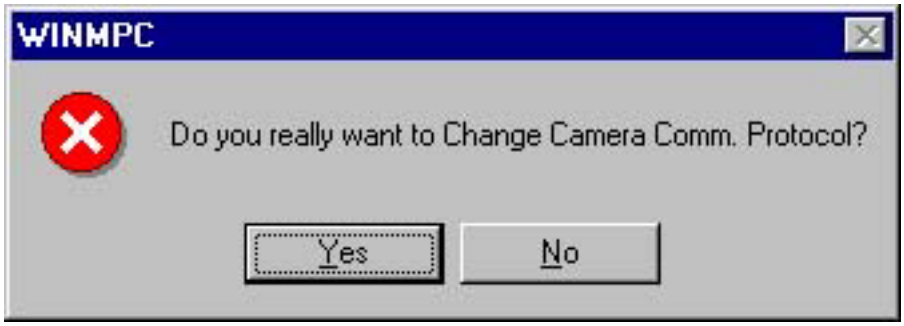


A A cautionary message that the NVRAM for this camera is about to be overwritten



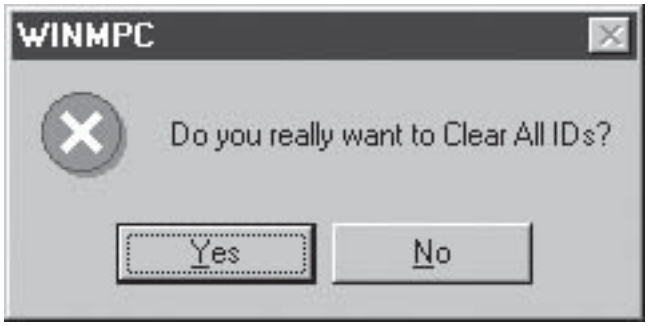
B

A cautionary message that the currently entered presets for this camera are about to be overwritten



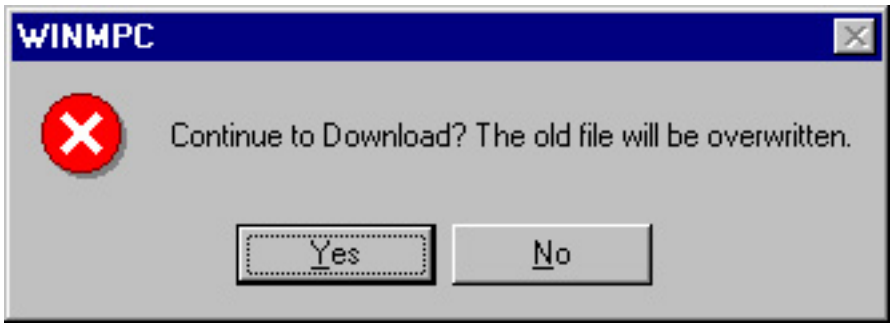
C

A cautionary message that the currently selected communications protocol is about to be changed



D

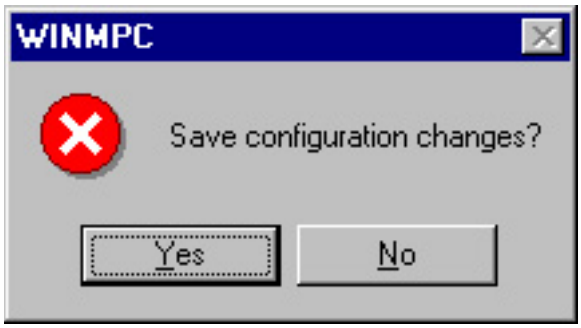
A cautionary message that the currently entered display identifications for this camera are about to be overwritten



E

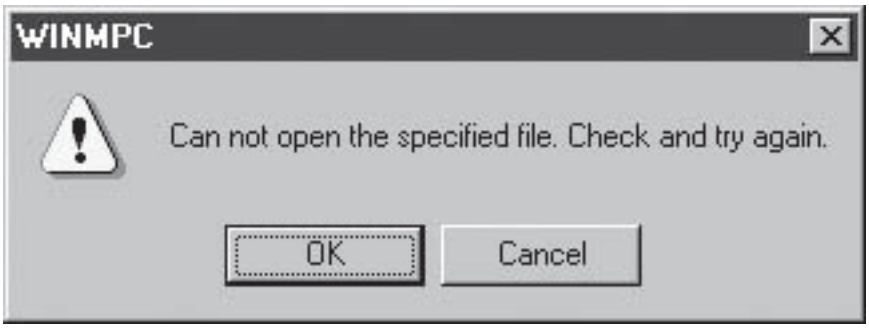
Prompt received when “Download” has been selected on the “Tours and Sectors” menu

Figure 14. Prompt Messages



F

Prompt received when “Close” has been selected on “Tours and Sectors” menu



G

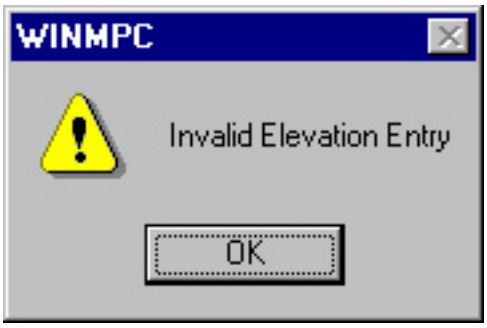
The file name does not exist at the location specified

H

Error message received when attempting to upload a “Tours and Sectors” file to a camera when a “*.dat” file for that camera address is not available

I

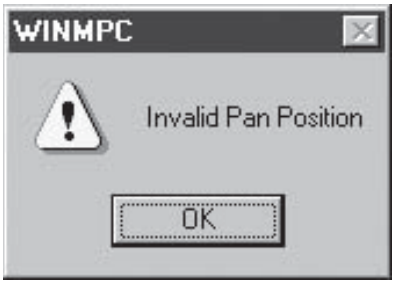
Communications could not be established with the camera



J

Elevation entries for altitude pressurization compensation must be in the range 0 to 10000 feet

Figure 14. Prompt Messages (continued)



K

The pan position entered is outside the allowable limits

L

Before a log file can be recorded for trouble-shooting and maintenance purposes a file name and storage location must be entered

Figure 14. Prompt Messages (continued)

Table 4. Home Screen Functions (See fig. 3)

REF	NAME	FUNCTION
	Camera	
1-1	(Select menu)	Scrolls up and down to select camera number
1-2	Set Addr	Click to set address selected above
1-3	Find	Searches communications link for the camera address
1-4	Reset	Re initializes the camera to clear any problems
1-5	Status?	Polls the camera to show Latch Commands status and also Pan Tilt and Zoom positions
1-6	Comm Error	Illuminated, indicates that camera not responding to commands
	Momentary	
1-7	Zoom	In/Out
1-8	Focus	Near/Far
1-9	Iris	Open/Close
1-10	Color	Not an iDome /iView function
1-11	Integration	Not an iDome / iView function
	Monitor	
1-12	(Select Menu)	Selects monitor addresses from 1 to 32
	Latch Commands	
1-13	Camera Power	Click to turn power on/off
1-14	Lens Fast	Click to turn fast lens response on/off
1-15	Manual Iris	Click to turn manual iris on/off
1-16	Color Balance	Click on the red or blue buttons to correct color response
1-17	Manual Focus	Click to turn manual focus on/off
1-18	Manual Integration	Click to increase or decrease integration period
	PAN Left/Right & Tilt Up/Down Control Buttons Positions (0000-FFF as Standard Cohu Format)	
1-19	Pan / Tilt Buttons	Clicking an area causes pan, tilt, or simultaneous pan/tilt
1-20	P/T/Z/F ?	Returns position data to fill out windows
1-21	Goto	Positions camera to the pan, tilt, zoom data entered
1-22	Pan window	Decimal data entry for pan location (0 to 3559)
1-23	Tilt window	Decimal data entry for tilt location (0to 1010)
1-24	Zoom window	Hex data entry for zoom location (0 to FFF)
1-25	Focus window	No focus data returned. Always 0

Continued on next page

Table 4. Home Screen Functions (continued) (See fig. 3)

REF	NAME	FUNCTION
Receiver Status		
1-26	Local Control	Illuminated red when serial control is at the local location
1-27	Video Loss	Illuminates red when video is not being received from camera
1-28	Pressure Loss	Illuminates red when camera/dome pressure is too low
Presets		
1-29	Store	Stores present positions as the Preset No. in window below
1-30	Goto	Sends camera to the preset location in window below
1-31	Store ID	Stores the name assigned to a preset number
1-32	Get ID	Recalls the name assigned to a preset number
1-33	Preset drop down menu	Data recall or entry window. Meaningful name can be entered here for a preset number. Store ID button saves it. Get ID recalls an ID name.
Special Functions		
1-34	Camera ID	Button to enter text entry window (figure 12)
1-35	DSP Camera	Button to enter DSP 383x functions window (figure 9)
1-36	Camera Setup	Button to enter communications setup window (figure 4)
Touring		
1-37	Tour drop down menu	Selects desired tour (tour 1 through tour 8)
1-38	Start/Stop	Button to start/stop a tour
1-39	Setup	Button to set up sectors, privacy zones, and tours (fig. 13)
1-40	**About Win MPC**	
	Opens window detailing software version and other information	
1-41	**Win MPC Control**	
	Window Identifier	
1-42	**CLOSE**	
	Closes Win MPC software	
Command Sent / Message Received Displays		
1-43	Command Sent (left) Display	Displays the command being sent to the camera
1-44	Message Received (right) Display	Displays the message returned by the camera
Log Functions		
1-45	(display line)	Enter or select name for the log file
1-46	(folder logo button)	Select location for log file
1-47	(right arrow button)	Play back the log file so camera goes through sequence
1-48	(circle / dot button)	Start and stop record function
1-49	(A button)	Enter text comments into the log file
1-50	(square button)	Stop log file sequence on playback
end table		

Table 5. Communications Setup (See fig. 4)

REF	NAME	FUNCTION
	Port	
2-1	COM 1	Selects the serial port on the computer to which the serial cable is connected This is typically Com 1
2-2	COM 2	
2-3	COM 3	
2-4	COM 4	
	Modem (RS-232 only)	
2-5	Flow Control Enable (RTS/CTS)	Click **Get** to get current flow control status when a modem is being used. If the modem requires flow control this box must be checked.
2-6	Get	Click to return the status of Flow Control Enable check box above
	Comm Mode	
2-7	PC to MPC Master	Establishes the protocol to communicate with a Cohu MPC master control panel
2-8	PC to MPC Receiver	Establishes the protocol to communicate with any device other than a Cohu master control panel
	Pan/Tilt Background	
2-9	(drop down menu)	Clicking on down arrow produces list of available backgrounds
	Baud Rate	
2-10	9600	Selects the baud rate at which the camera is to operated when installed into the system
2-11	4800	
2-12	2400	
2-13	1200	
2-14	600	
2-15	300	
2-16	Set Baud	Enters the baud rate selected
	Camera	
2-17	Standard	Select for an analog camera. Requires an an interface receiver
2-18	3500	A digital camera that requires an interface receiver for serial communications
2-19	38xx	Use for either a 3820 dome or 3855 camera/positioner
2-20	Day/Night	The iDome / iView is a day/night camera
	Set Cam Comm Protocol	
2-21	(drop down menu)	
2-22	Cohu	List of available protocols to choose from Selecting a protocol initiates a popup window to confirm the change
2-23	American Dynamics	
2-24	Pelco D	
2-25	Javelin	
2-26	Philips	
2-27	Vicon	
2-28	Telemetrics	
2-29	Fast Field Device	
2-30	Ernitec	
	(Javelin protocol Options)	
2-31	Javelin Continuous Motor	Check to have pan and tilt continue until a stop command is sent
2-32	Javelin Contains Address	Check to have the camera address in return messages

table continues on next page

Table 5. Communications Setup (continued) (See fig. 4)

REF	NAME	FUNCTION
	Firmware Version	
2-33	(display line)	
2-34	Get	Clicking the Get button returns the firmware version
	Set Elevation (0-10,000 ft)	
2-35	(data entry line)	Enter elevation at the installation location of a pressurized camera or dome
2-36	Set	Click this button to send the evevation entered
	Pan/Tilt	
2-37	Standard	Alternate selection for other cameras
2-38	Var Speed P/T	The iDome / iView is a variable speed pan/tilt camera
2-39	Max Pan Speed	Sets the maximum pan/tilt speed. Typically set to 15 unless operating experience determines that less is desired
2-40	Max Tilt Speed	
2-41	Flip Enable for iDome Only	Click this box to cause an iDome to reverse top-bottom video and maintain an upright image as the camera swings through 90° (toward floor)
	Receiver	
2-42	MPC D	Weatherproof outdoor receiver for analog cameras and analog pan/tilt units
2-43	ER2221B	Rack mount receiver for use with analog cameras and pan/tilt units
2-44	ER2222	Rack mount receiver for use with analog cameras and pan/tilt units
2-45	Positioner	Select for use with model 3855 positioners with a mounted camera
2-46	Dome	Select for use with model 3820 domes
2-47	iDome/iView	Select for controlling iDome / iView cameras
	LCU (9300)	
2-48	Address (entry line)	Enter an address from 0 to 223
2-49	Set	Click to enter the Address typed into the related address line
2-50	Host Comm. Baud Rate	Enter desired communications baud rate
2-51	Set	Click to enter the baud rate typed into the related baud rate line
2-52	Set Comm. Protocol (dropdown menu)	Choose from Cohu, American Dynamics, Pelco D, Javelin, Philips, or Vicon
2-53	Javelin Continuous Motor	Check to have pan and tilt continue until a stop command is sent
2-54	Javelin Contains Address	Check to have the camera address in return messages
2-55	Firmware Version	Version of protocol chosen displayed when Get Info. is clicked?
2-56	Cancel	Click to cancel selections
2-57	OK	Click to accept selections
	end table	

Table 6. Day/Night DSP Camera Control (See fig. 7)

REF	NAME	FUNCTION
	Camera (troubleshooting and maintenace use only)	
3-1	Status ?	Obtains status for all screen functions (Fills out screen)
3-2	Poll check box	Checking this box changes data rate flow
3-3	Set Baud	Sets baud rate selected below
3-4	4800, 9600, 19.2k, 38.4k	Baud rate selections for troubleshooting & maintenance
3-5	Init All Presets	Sets all 64 presets to the status of the currently selected preset
	Line Lock	
3-6	Phase Adj. (0-5)	When crystal box is not checked, camera sync is referenced to power line so that all cameras in system can have frames set to occur at same time
3-7	Scrolling select menu	Selects phase offsets in six 60 degree increments (0 to 5)
3-8	Crystal check box	When checked, camera sync is crystal referenced
	Video Freeze	
3-9	On/Off	Toggles between live video and a captured scene
	Digital Zoom Range	
3-10	Off	No digital zoom available at end of optical zoom range
3-11	2X	Amount of digital zoom available at end of optical zoom range
3-12	5X	
3-13	10X	
	Clear NVRAM	
3-14	Clear ?	Password protected factory function. Initializes RAM with meaningful default data during manufacturing (clears out junk data)
	Day/Night Cntrl	
3-15	Auto	Automatically selects either color or monochrome camera output depending on the available light level on the scene
3-16	Color	Sets the camera to color mode for all lighting levels
3-17	Mono	Sets the camera to monochrome for all lighting levels
3-18	**Shutter**	
3-19	Auto/(Manual) selection	Auto sets camera to the normal 1/60 (PAL 1/50) second frame rate. Otherwise selections from 1/2 to 1/30,000 second available
	WDR	
3-20	Off	Normal video gain response is used
3-21	On	Video gain response is modified to enhance scene details at the extreme areas of black and white
	White Balance	
3-22	Auto	Color response automatically determined by camera
3-23	Manual	Color response determined by red & blue buttons below
3-24	Up/Down Arrow (left is red)	Increases/decreases red in video
3-25	Up/Down Arrow (right is blue)	Increased/decreases blue in video
	Dsp Command (ER8439F/ER8682)	
3-26	(Window)	Enter command line instructions here that are not available otherwise
3-27	Send	Causes command in window to be sent to camera
	OK	
3-28	OK	Enters settings made and clears window
	end table	

Table 7. DSP 383x Camera Screen Functions (See fig. 9)

REF	NAME	FUNCTION
	Camera	
4-1	Status?	Request status of conditions found on the DSP 383x screen
4-2	Set Addr	Sends the currently displayed address to the camera
	White Balance	
4-3	Auto	Internal circuits automatically adjust white balance in response to scene
4-4	Set	White portion of scene sampled by sample/hold circuit for white balance
4-5	Lock	Click to store current white balance settings
4-6	Indoor	White balance is preset for typical incandescent lights found indoors
4-7	Outdoor	White balance is preset for typical outdoor conditions with full sun
4-8	Fluorescent	White balance is preset for typical fluorescent lighting conditions
	Digital Zoom Range	
4-9	Off	Locks out any digital zooming so that only optical zooming is available
4-10	2X	Selects a digital zooming of 2X
4-11	4X	Selects a digital zooming of 4X
4-12	8X	Selects a digital zooming of 8X
	Zoom	
4-13	Wide - Tele buttons	Causes the lens to zoom in and out . At end of zoom-in range any available digital zooming will then occur
	Focus	
4-14	Far - Near buttons	When in manual mode, buttons are activated to manually set focusing
4-15	Auto	Selects automatic focusing performed by the camera
4-16	Manual	Selects manual focusing so that the far - near buttons can be used
	Iris	
4-17	Auto	Iris opens and closes in response to scene lighting
4-18	Manual	Activates related open/close buttons so that iris is under manual control
4-19	Open/close buttons	When in manual mode, these buttons will open and close the iris
	BkLite Comp	
4-20	Off	Turns off backlight compensation
4-21	On	Turns on backlight compensation
	Auto Integration	
4-22	Off	Turns off automatic integration
4-23	On	Turns on automatic integration
	Shutter	
4-24	Selections drop down list	8 selections: 1/60, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
	Presets	
4-25	Drop down menu	Provides for selection of preset 1 to preset 8
4-26	Store	Stores current selections in the preset number highlighted in window
4-27	Goto	Causes the camera to go to the currently selected preset (1 to 8)
4-28	Close button	Closes the window
	end table	

Table 8. DSP 3500 Camera Screen Functions (See fig. 10)

REF	NAME	FUNCTION
	Color Balance	
5-1	Auto	Select either Auto or Manual color balance. Manual activates a scrolling window of manual color balance settings
5-2	Manual	
5-3	(drop-down menu)	0 to 63 manual color balance selections when in manual
	Shutter - Integration	
5-4	S-Auto	Selects automatic shuttering in response to light level
5-5	S-Manual	Selects manual shutter & activates drop down window below
5-6	(drop-down menu)	Selection of eight shutter speeds from 1/60 to 1/8000 second
5-7	I-External	Selects external control of integration
5-8	I-Manual	Selects internal control of integration & activates window below
5-9	(drop-down menu)	Selects integration periods from 1 to 99 seconds
	Gain	
5-10	Auto	Selects automatic gain control
5-11	Manual	Selects manual gain control and activates scrolling window below
5-12	(scrolling window)	Drop down selection of available manual gain settings
	Zoom-Scroll	
5-13	x1	Selects fixed zoom levels of 1, 2, or 3 times normal
5-14	x2	
5-15	x3	
5-16	Zoom out button (top)	Provides wider angle view of the scene which makes distant objects appear farther away
5-17	Zoom in button (bottom)	Brings distant parts of the scene closer at the expense of viewing angle
5-18	Pan right-left buttons	Moves through the scene in a right-left direction
5-19	Tilt up-down buttons	Moves through the scene in an up-down direction
	Misc	
5-20	Gamma (drop-down menu)	8 selections of gamma correction from 0.3 to 1.0
5-21	Backlight Comp	Selects backlight compensation
	Preset	
5-22	(drop-down menu)	Allows selections of either the factory default presets of 8 programmed presets from 01 to 09.
5-23	Default	Makes the current selection the factory default setting
5-24	Recall	Selects the preset currently selected in the drop-down window
5-25	Store	Stores the recalled preset data at the currently established location
	Close	
5-26	Close	Closes the DSP 3500 Control Window
	end table	

Table 9. Program Camera ID (See fig. 12)

REF	NAME	FUNCTION
ID Text		
6-1	Enable check box	Turns on any ID text for viewing on monitor
6-2	ID Gen in Cam check box	Check this box when the camera has an id generator
6-3	Line 1 entry window	24 character spaces available for each line
6-4	Line 2 entry window	
Alarm Text		
6-5	Enable check box	Allows low pressure message to display when activated
6-6	Blink check box	Causes any alarm message to blink when activate
6-7	Line 3	24 characteristic spaces available for each alarm message
6-8	Line 4	
6-9	Line 5	
Maintenance Mode Text		
6-10	Enable check box	Displays temperature & pressure for iDome, iView or enhanced 3855 cameras
6-11	Clear All IDs button	Click this button to clear all ID Text and Alarm Text
Display at top (check box)		
6-12	Display at top	Causes any ID or alarm text to appear at top of monitor
Cancel (select button)		
6-13	Cancel (select button)	Cancels window without making any selected changes
OK (select button)		
6-14	OK (select button)	Enters any changes made in window
Note: Accessing this screen does not cause the current selections to appear. (These messages are available on the viewing monitor)		

Table 10. Tours and Sectors Setup (See fig. 13)

REF	NAME	FUNCTION
Sectors		
7-1	(select menu)	Up to 16 sectors can be established .
7-2	Send ID	Sends settings for currently selected ID to camera
7-3	Enable	Enables or disables the sector currently displayed
7-4	Set Left Limit	Sets current pan position of camera as the sector left limit
7-5	Set Right Limit	Sets the current pan position of camera as the sector right limit
7-6	Delete Sector	Deletes the currently selected sector
7-7	Delete All	Deletes all sector (1 thru 16) settings
7-8	(text window)	Test entry/display window to identify the selected sector
7-9	Left/Right Buttons	Control buttons for pan, tilt, zoom, and focus during setup of sectors. Only pan (left/right) information is stored.
7-10	Up/Down Buttons	
7-11	Zoom In/Out Buttons	
7-12	Focus Near/Far Buttons	
Privacy Zones		
7-13	(select Menu)	Select menu for up to 8 privacy zones
7-14	Enable check button	Activates the privacy zone currently selected when checked
7-15	Set Left Limit button	Sets current pan position as the left limit of privacy zone
7-16	Set Right Limit button	Sets current privacy zone as the right limit of privacy zone
7-17	Delete Zone button	Deletes the currrently selected privacy zone
7-18	Delete All button	Deletes all privacy zones
Tour Setup		
7-19	(tour select menu)	Tour 1 through Tour 8 available for selection on this menu
7-20	Clear All Data button	Deletes all tours
7-21	Set All Dwells button	Makes all dwells the same when one dwell time is entered
7-22	Upload Tour button	Sends the tour selections to the camera
7-23	Start Touring button	Starts the tour sequence
7-24	Stop Touring button	Stops the tour sequence
7-25	Preset / Dwell (1-32) window	Data entry window for up to 32 tour selections and dwell time (5 to 60 seconds) at each selection. Presets can be repeated
Close		
7-26	Close button	Closes the window
DownLoad		
7-27	DownLoad button & indicator	Saves settings of this screen plus camera ID and presets to the Win MPC location on the hard drive (a binary file with the file name format of "cam001.dat"). A backup can they be copied elsewhere if desired.
UpLoad		
7-28	UpLoad button & indicator	Retrieves settings from the WinMPC location on the hard drive and loads them into camera

WARRANTY

Cohu, Inc., Electronics Division, warrants equipment manufactured to be free from defects of material and workmanship. Any part or parts will be repaired or replaced when proven by Cohu examination to have been defective within two years from date of shipment to the original purchaser for standard CCD cameras and one year from date of shipment to the original purchaser for intensified CCD cameras and all other Cohu manufactured products.

Pressurized camera products include a lifetime pressurizatin warranty. Cohu wll re-pressurize at no charge returned environmental cameras not exhibiting evidence of physical damage due to misuse.

All warranty repairs will be performed at the factory or as otherwise authorized by Cohu in writing. Transportation charges to Cohu shall be prepaid by purchaser.

This warranty does not extend to Cohu equipment subjected to misuse, accident, neglect, improper application, or repaired or altered by other than Cohu or those authorized by Cohu in writing.

Television image pickup tubes, image intensifiers, lenses, and products manufactured by companies other than Cohu are warranted by the original manufacturer.

This warranty is in lieu of all other warranties expressed, implied, or statutory, including warranties of fitness for a particular purpose and merchantability, and set forth buyers sole remedy in connection with such warranties.

Cohu, in no event, whether as a result of breach of contract or warranty, tort (including negligence) or otherwise, shall be liable for any penalties regardless of reason; collateral, consequential, incidental, or exemplary damages, including without limitation, any loss of profit or revenues, loss of use of any equipment or goods, or removal or re-installation of equipment withough prior written approval.

A Return Authorization (RA) number must be obtained from Cohu prior to returning any item for warranty repair or replacement.