COHU, INC. ELECTRONICS DIVISION

Installation and Operation Manual

Figure 1. iControl

iCONTROL 9300 SERIES LOCAL CONTROL PANEL

November 15, 2005

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COHU
Cohu Inc. Electronics Division

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FCC STATEMENT

Changes or modifications to this equipment not expressly approved by Cohu Electronics could void the users authority to operate the equipment.

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FCC STATEMENT

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

LIST OF FIGURES

FCC STATEMENT

NOTE: 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.

1.0 GENERAL DESCRIPTION

The 9300 iControl Panel (figure 1) is an interface between a host control system and a camera. The Panel also provides local control functions at the camera site during installation and maintenance operations.

This Panel typically operates at 115 V ac (model 9305) for use with a model 3925 iDome, a model 3955 iView camera, or an 3965 iView II camera (figure 2).

However, the internal power module is capable of operates from 90 V ac to 264 V ac, 47 to 63 Hz. Panels modified with a different power plug may operate at other voltages in this range. These modified versions would be identified with different model numbers.

The camera interconnected with this iControl Panel receives the same operating voltage as is applied to the Panel. Be sure that camera is intended to operate at this voltage.

1.1 Electrical Characteristics

The Panel normally operates in Host mode, but for control during setup or maintenance operations the Local mode used. This requires a local viewing monitor that connects to a video output connector on the front panel. When in Host mode, all control takes place from an operator's console located some distance from the iControl and camera location.

In Host mode, communications between a Panel and the control system can be any of various protocols.

NTCIP protocol requires a version of the Control Panel offering this feature.

The host system protocol always get converted to Cohu protocol for communications between the Panel and camera.

The 9305 iControl Panel is programmed with a site address for use by the host system. The camera address is irrelevant to the host system

3925 iDome

3955 iView

3965 iView II

Figure 2. Typical Cameras

Table 1. Specifications

ELECTRICAL		
Input Voltage		115 V ac with line cord provided. 90 to 264 V ac, 47 to 63 Hz; NEMA TS-2 Standard 2.1.2 when modified with other appropriate line cord (Attached camera must operate from input voltage used)
Input Power		20 VA for Panel alone; a typical attached camera/dome with heaters on may draw an additional 70 W. Check camera/dome specifications for actual power
MECHANICAL / ENVIRONMENTAL		
Finish		Black anodized front panel with white lettering
Dimensions		19.00 wide x 1.75 high x 8.00 deep (See figure 3)
Mounting		EIA Standard 19 inch cabinet, 1Rack Unit (RU)
Weight		5 lb (11 kg)
Ambient Temperature, Operating		-34 to 74 °C (-30 to 165 °C) NEMA 2.1.5.1 standard TS-2 (1998)
Ambient Temperature, Storage		-45 to 85 °C (-50 to 185 °C) NEMA 2.1.5.1 standard TS-2 (1998)
Humidity		Up to 90 percent relative humidity
Rear Panel Features	Camera	Single multi-pin AMP for camera video, RS-422 data, & ac power (see note)
	Video Output	BNC male, for host system connection
	RS-232 & RS-422	DB9 connectors for system data connections
	Power Input	Permanently attached line cord with NEMA 5-15P plug, 6 foot long
	Power Switch	Two position (On, Off) with front panel indicator of On state
Front Panel Features	Pan	3 position momentary switch (pan right, stop, pan left)
	Tilt	3 position momentary switch (tilt down, stop, tilt up)
	Zoom	3 position momentary switch (telephoto, stop, wide angle)
	Focus Mode	2 position momentary switch (auto/manual) with LED indication of manual mode
	Focus Control	3 position momentary switch (near, stop, far)
	Iris Mode	2 position momentary switch (auto/manual) with LED indication of manual mode
	Iris Control	3 position momentary switch (open, stop, close)
	Local/Remote	2 position momentary toggle switch (local, remote) with LED indicator of current mode. 5 minute timeout of local mode function. Timer resets with each command issued.
	PC Control	1 RS-232 serial port (DB9M)
	Video Output	BNC, male, 75 ohm
	Power Indicator	LED

Note: Camera receives same ac power as the ac input power applied to the iControl Panel. This is 115 V ac for a standard Panel, but a Panel modified with a different line cord could operate at any voltage in the range from 90 to 264 V ac, 47 to 63 Hz. Be sure the camera is capable of operating from the Panel input power.

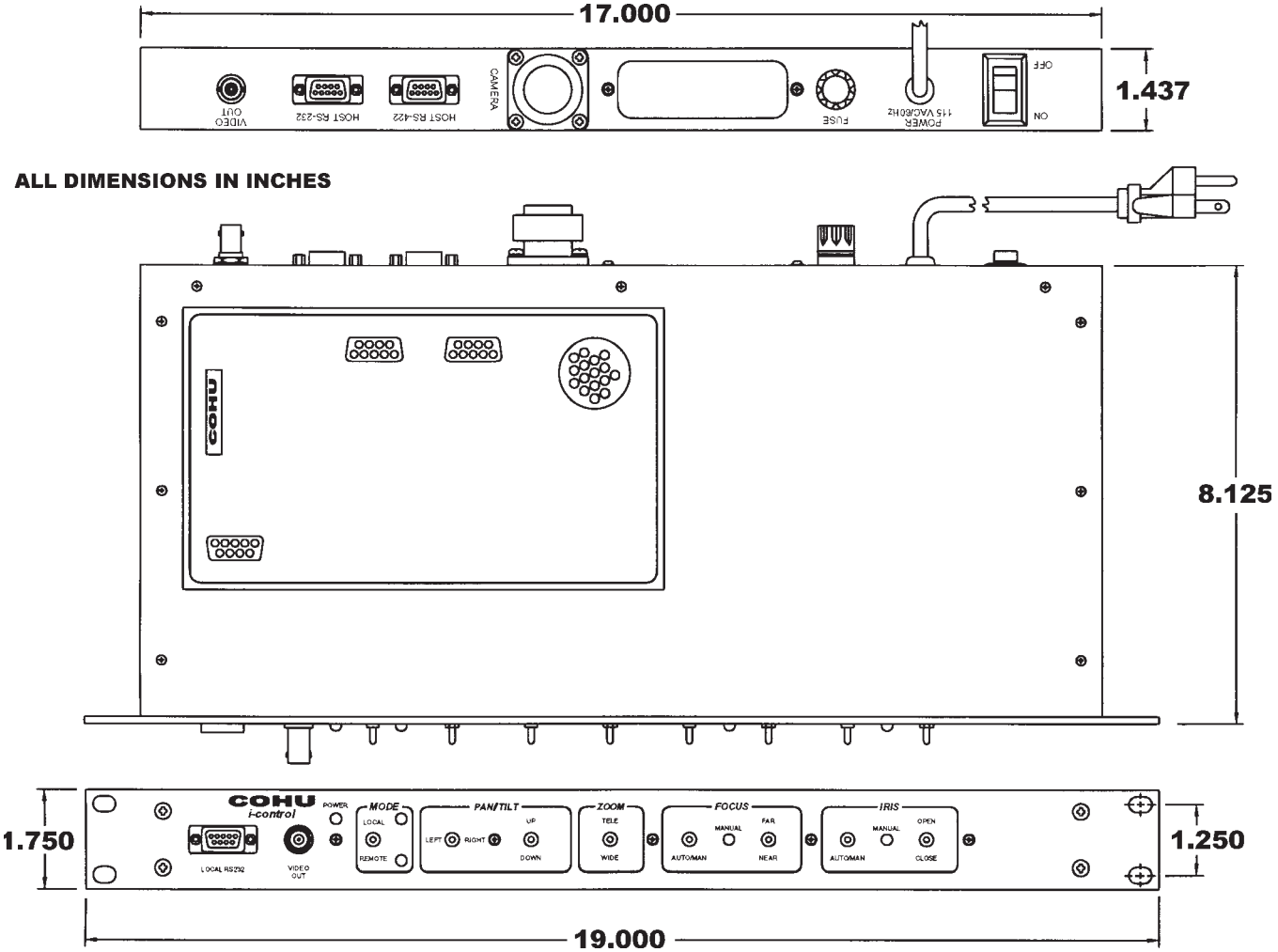


Figure 3. Dimensions

and to the Panel. The Panel communicates with the camera using a broadcast address. The camera address is irrelevant.

Communications between the 9305 iControl Panel and the camera is always 9600 baud Cohu protocol.

When in Local mode, all host communications, and thus host control, is terminated. Front panel control features on the Panel become active.

The front panel RS-232 connector can then be used to communicate with a local PC — typically a laptop model. This Local data communications is always with Cohu protocol.

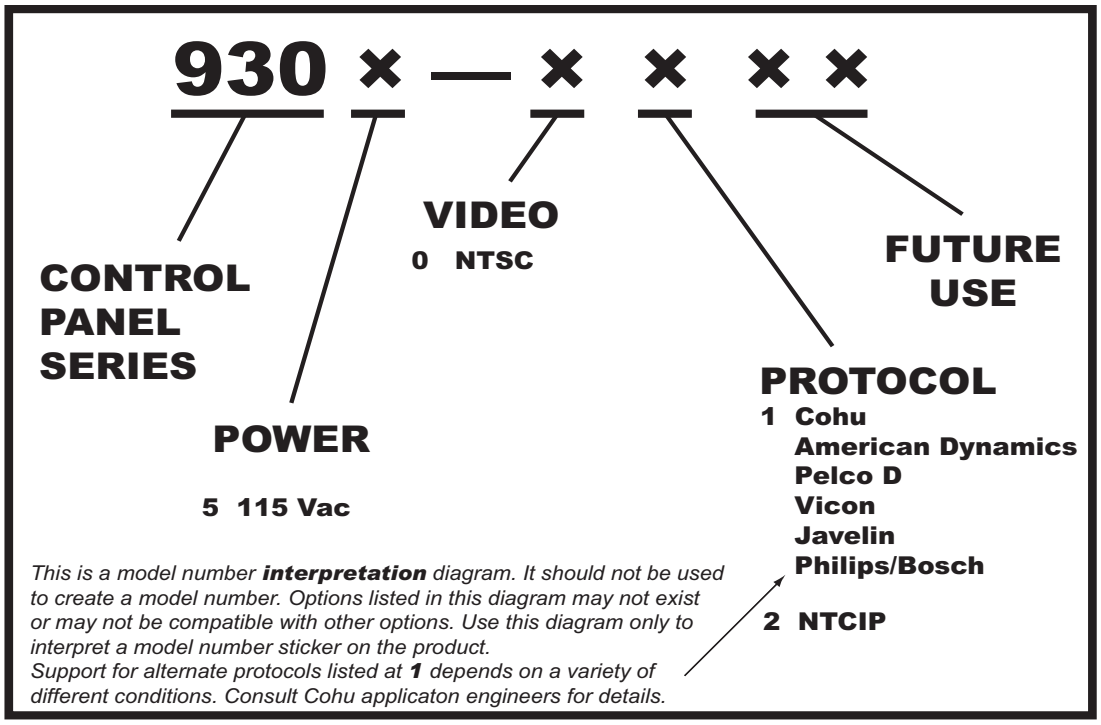
A tv monitor must be connected to the 75-ohm video output on the front panel.

Local control reverts to the host after 5 minutes of inactivity.

Because this version of the iControl Panel operates from a permanently attached line cord with an NEMA 5-15P plug attached, it is specified for 115 V ac, 60 Hz operation. However when special ordered from the factory a line cord and plug is available to operate it at any voltage throughout the specified range.

Be aware that the camera/dome must also operate at the input voltage being applied to the iControl Panel.

Figure 4 is a model number interpretation diagram for standard products. Modified products and special orders use additional designations.



NOTE: This model number interpretation diagram is for standard versions of the iControl Panel. Specially modified Panels use a different model number structure.

Figure 4. Model Number Interpretation Diagram

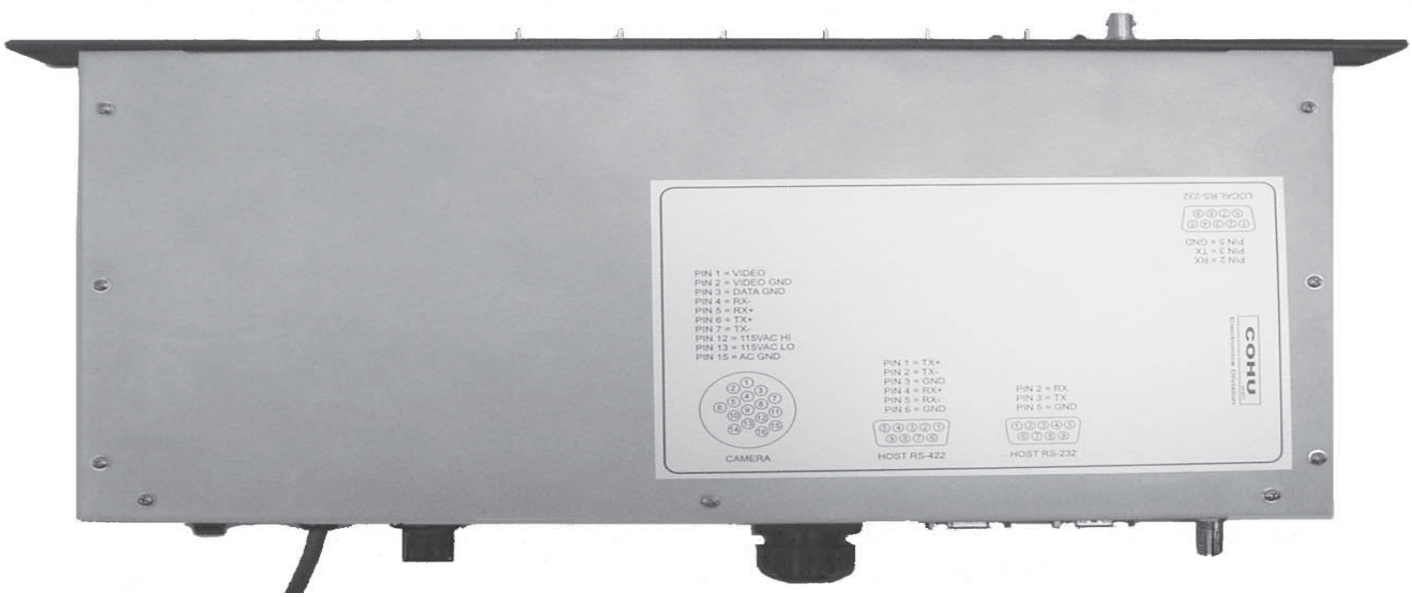


Figure 5. Top View

1.1.1 Protocols

Various protocols can be used with the Control Panel. System (Host) protocols can communicate with the Panel using either the rear panel RS-232 connector or RS-422 connector — except for NTCIP which only communicates through the RS-232 connector.

Local control with the panel during setup and maintenance functions uses the front panel RS-232 connector and Cohu Win MPC software.

WIN MPC Protocol Software

Win MPC Graphical User Interface (GUI) software is available for setting the address and performing field tests for each camera site. This can be obtained at no cost from either the Cohu cctv web site or by mail on CD. This software is typically loaded onto a laptop PC when intended for field use at camera locations.

Host Mode Protocols

Various protocols can be used to communicate with the iControl Panel. This protocol is converted within the Panel to Cohu protocol for communications with the camera. The model number interpretation diagram, fig. 4, lists typical protocols currently available with the Panel. Be aware that various versions of these protocols are in use and not all versions or features may be implemented in this Panel or by the attached camera. Contact a Cohu applications engineer for further information.

Host Mode NTCIP Protocol

A Local Control Panel with a **2** in the sixth digit position of the model number (930x-x**2**xx) offers NTCIP protocol communications at the rear panel RS-232 connector.

When the panel powers up, this RS-232 input initially accepts the Cohu protocol. Only when it senses the NTCIP protocol does it switch to that mode.

It will continue to accept only NTCIP until either of two conditions occur:

1. The panel is turned off and back on again, or

2. The NTCIP internal module is switched back to Cohu protocol using the Win MPC setup software.

Resetting it with WinMPC requires connecting a local laptop computer to the front panel RS-232 connector. The front panel LOCAL/REMOTE switch must be set to LOCAL. Then with the WinMPC GUI running on the laptop it is possible to switch between Cohu and NTCIP protocols by clicking on the **Disable NTICP** mode button and the **Enable NTCIP** Mode button.

It is important to distinguish between the basic protocol mode that the panel is set to and the operating mode at the rear panel RS-232 connector when an NTCIP module is installed in the Panel:

1. The Panel must be set to operating in the Cohu protocol mode when the NTCIP module is installed.

2. The Enable NTCIP Mode and Disable NTCIP Mode buttons on the Win MPC screen simply turn the NTCIP module on and off. (The module will also be placed into the NTCIP mode when the NTCIP protocol is applied at the rear panel RS-232 connector.)

RS-422 Connector and NTCIP Operation

The RS-422 connector should not be used when a Panel has an NTCIP module installed for the RS-232 connector.

When the Panel is placed in the internal Cohu protocol mode to condition it for NTCIP operation the RS-422 connector on the rear panel would then be able to communicate with Cohu protocol — but this port must not be used when NTCIP is being used on the RS-232 port.

Only one of the two rear panel serial ports can be used at any one time.

If it were desired to use this RS-422 port with some other available protocol the Panel could be set to that mode, but then the NTCIP RS-232 port would not function.

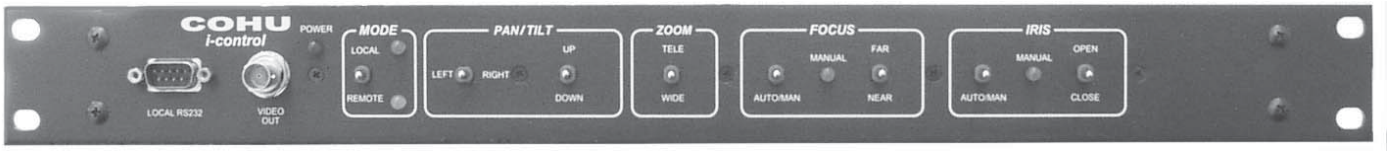


Figure 6. Front Panel Features

Table 2. Front Panel Features

ITEM	GROUP	NAME	FUNCTION
1	—	**LOCAL RS232**	9600 baud serial input for a laptop computer running Cohu Win MPC GUI software to set up and maintain a camera. Must be Cohu protocol.
2		**VIDEO OUT**	75 ohm video output for a use with a local monitor while operating the camera with the laptop computer
3		**POWER** indicator	Illuminates red when the rear panel power switch is set to the on position
4	**MODE**	**LOCAL**	Activates the panel for local control of the camera. Reverts to remote control after 5 minutes of inactivity
5		**REMOTE**	Sets the panel so that the remote system cable has control of the camera
6	**PAN/TILT**	**LEFT / RIGHT**	Pans a camera mounted to a pan/tilt unit left and right
7		**UP / DOWN**	Tilts a camera mounted to a pan/tilt unit up and down
8	**ZOOM**	**TELE / WIDE**	Causes the camera zoom lens to telephoto and wide angle on the scenes
9	**FOCUS**	**AUTO/MAN**	Switches between automatic focusing and manual focusing for a camera lens
10		**MANUAL** indicator	Illuminates green when focusing is set to MANUAL mode.
11		**FAR / NEAR**	When FOCUS in in MANUAL mode, causes the lens to focus farther away (FAR) and closer in (NEAR)
12	**IRIS**	**AUTO/MAN**	Selects either automatic iris operation or manual (fixed) operation
13		**MANUAL** indicator	Illuminates green when IRIS mode is set to MANUAL
14		**OPEN / CLOSE**	Causes the iris to pass more light (OPEN) or less light (CLOSE) when this switch is activated
Functions described above assume the camera has the capability described. *All switches are momentary contact*			

Table 3. Pinout, Front and Rear Panel RS-232 Connectors

PIN	FUNCTION
1	Not Used
2	Rx
3	Tx
4	Not Used
5	Ground
6	Not Used
7	RTS
8	CTS
9	Not Used
RS-232 D9 Male Pins	

Using the RS-422 connector on an NTCIP Panel is not a standard operating condition and this information is provided only for troubleshooting and maintenance purposes.

1.2 MECHANICAL CHARACTERISTICS

The Local Control Panel is constructed as a standard 1.75 inch panel in a 19 inch rack mount configuration (figures 5 and 6). All operator controls appear on the front panel. Standard system interconnections are located on the rear panel.

During local control operations, a tv monitor must be connected to a BNC connector located on the front panel and a laptop must be connected to an RS-232 nine pin D connector also on the front panel.

2.0 INSTALLATION

NOTE

A camera/dome must be set to Cohu protocol before connecting to the 9305 iControl Panel. The CAMERA connector of an iControl Panel communicates only in Cohu protocol.

Table 4. Pinout, Rear Panel RS-422 Connector

PIN	FUNCTION
1	Tx+
2	Tx–
3	Ground
4	Rx+
5	Rx–
6	Ground
7	Not Used
8	Not Used
9	Not Used
RS-422 D9 Female Sockets	

Installing the Panel is straightforward. It bolts into a standard 19-inch rack or console.

Figure 6 shows the front of an iControl Panel. Setup functions and local control occur via the front panel. All system connections take place on the rear panel (figure 7).

Operating power is applied via a permanently attached 115 V ac line cord at the rear panel (figure 8). Additional installation details follow this introduction. Figure 9 shows the rear panel connectors. All system interconnections with the host occur here. Figure 10 is a close-up shot of the CAMERA connector.

Figure 11 is a label that appears on the top cover of the iControl panel. It illustrates both front and rear panel connectors — including pinout information.

2.1 UNPACKING AND RECEIVING INSPECTION

This item was thoroughly tested and carefully packed in the factory. Upon acceptance by the carrier, they assume responsibility for its safe arrival. Should you receive this item in a damaged

Table 5. Rear Panel Features

ITEM	NAME	FUNCTION
1	Power Switch	Depressed on the top is power on. Depressed on the bottom is power off. A red front panel indicator illumitates when power is on
2	Line Cord	A permanently attached 6-foot line cord has a 3-wire grounded type plug for 115 V ac power.
3	16-pin Connector	The camera cable connects here. It provides the same power to the camera as is supplied to the Panel (typically 115 V ac), accepts 75-ohm video back, and maintains serial data communications.
4	RS-422 Connector	D9 female sockets. This is the system Host interconnection for RS-422 communications
5	RS-232 Connector	D9 male pins. This is the system Host interconnection for RS-232 communications. On an NTCIP version of the Panel this is the port that must be used.
6	BNC Connector	75 ohm video out. This connector supplies video from the camera. This video would typically be applied to a fiber optic or other type converter device for sending the camera video long distances back to an operator console.
Features are described left to right on the rear panel		

Figure 7. Rear Panel Features

condition, apparent or concealed, a claim for damage must be made to the carrier.

To return the product to the factory for service, please contact the Customer Service Department for a Return Authorization Number.

If a visual inspection shows damage upon receipt of this shipment, it must be noted on the freight bill or express receipt and the notation signed by the carrier's agent. Failure to do this can result in the carrier refusing to honor the claim.

When the damage is not apparent until the unit is unpacked, a claim for concealed damage must be made. Make a mail or phone request to the carrier for inspection immediately upon discovery of the concealed damage. Keep all cartons and packing materials.

Since shipping damage is the carrier's responsibility, the carrier will furnish you with an inspection report and the necessary forms for filing the concealed-damage claim

2.2 STATIC DISCHARGE PROTECTION

CAUTION

This Control Panel contains sensitive devices that can be damaged by static discharge. Use appropriate static control methods when working inside the housing.

Components used in modern electronic equipment, especially solid state devices, are susceptible to damage from static discharge. The relative susceptibility to damage for semiconductors varies from low with TTL to high with CMOS. Most other

Figure 8. Power Input Features

semiconductors fall between TTL and CMOS in susceptibility to static discharge." As a minimum, therefore, observe the following practices when working inside this or any other electronic equipment:

1. Use conductive sheet stock on the work bench surface.

2. Connect the sheet stock to ground through a 1 megohm or greater value resistor.

3. Use a wrist strap connected to ground through an 1 megohm or greater value resistor when working at the bench.

4. Maintain relative humidity of the room above 30 percent. This may require a room humidifier. Working on circuits with relative humidity below 30 percent requires extraordinary procedures not listed here.

5. Use antistatic bags to store and transport an exposed chassis, circuit boards, and components. Use new antistatic bags. Old, used bags loose their static protection properties.

This list serves as a reminder of the minimum acceptable practices. Be sure that all static discharge devices at the work bench are properly installed and maintained. Standard grounding mats and wrist straps purchased for use at work benches are supplied with leads having current limiting resistors for safety. Never substitute with a grounding lead not having the resistor.

2.3 EQUIPMENT SUPPLIED

The equipment supplied consists of:

1. iControl Panel

2. Camera AMP mating connector

2.4 EQUIPMENT REQUIRED BUT NOT SUPPLIED

Depending on the installation requirement, items from the following list may be required:

1. Rack cabinet into which the panel installs

2. Cable, CA-295H (for 3925) or CA-297H (for 3955 or 3965) of appropriate length

3. Laptop PC with RS-232 port (or USB to RS-232 adapter)

4. Serial cable, 232, null modem (crossover cable) — Laptop to front port of Local Control Panel

5. Cohu Win MPC Software (for local control during setup and maintenance). Available at no cost.

2.5 POWER REQUIREMENTS

The Control Panel model number 930**5** defines a version of the Panel for 115 V ac 60 Hz operation. The attached line cord is a standard North

Figure 9. Data and Video Related Connections

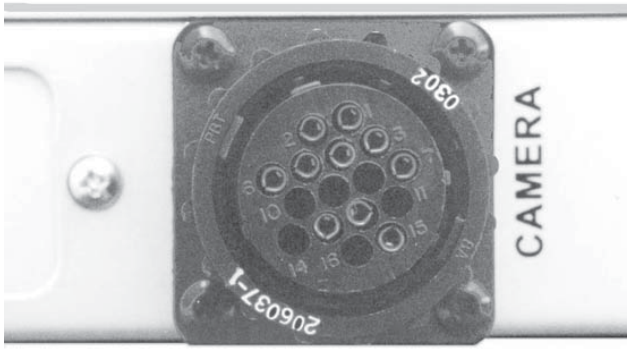


Figure 10. Camera Connector

American USA three prong plug (NEMA 5-15P) intended for 115 V ac 60 Hz operation.

However, the internal power module is capable of operates from 90 V ac to 264 V ac, 47 to 63 Hz (figure 8). Specially modified versions of this panel may operate from any voltage in this range. These modified versions would be identified with a different model numbers.

It is important to remember that the interconnected camera will receive whatever voltage is applied to the Panel.

This camera must be able to operate from the voltage applied to the Panel line cord. Line cord input voltage is routed directly back out of the Panel on the rear panel **Camera** connector for use by the camera.

The attached camera also adds to the power draw of the Panel. This could typically be 70 watts additional when the heaters in a camera turn on during cold weather.

Other inputs voltages can be used with the Panel when it is modified with an appropriate line cord for those voltage sources. These are special orders.

WARNING

This Panel operates from 115 V ac but if it has been special ordered from the factory may operate at a voltage from 90 to 264 V ac. Use all appropriate care when installing and maintaining the equipment.

CAUTION

The power applied to the Control Panel is directly hard wired back out to the Camera connector on the rear panel. Be sure the Camera/Dome will operate from this power and not be damaged.

Table 6. Important Communications Characteristics

ITEM	FEATURE	CHARACTERISTIC
1	Site Identification (ID) Number	The identification (ID) number/address for a camera site is contained in the iControl Panel. The camera number/address is not used.
2	iControl Panel to Camera Communications	Communications between the iControl Panel and a camera is always RS-232, 9600 baud using Cohu protocol. The Panel communicates with the camera using a broadcast address. The actual camera address is ignored.
3	Local laptop PC to front panel RS-232 Communications (setup & maintenance operations)	Communications between a local laptop computer and the front panel **LOCAL RS232** connector is always 9600 baud using Cohu protocol. A null modem cable is required.
4	Host control system to iControl Panel Communications	RS-232 and RS-422 serial data ports are available on the rear panel. Both are active, but only one can be use at a time. Baud rate can be set in increments from 300 to 9600 using the Win MPC software. Various protocols can be used to communicate with these two ports (figure 4 - protocols).

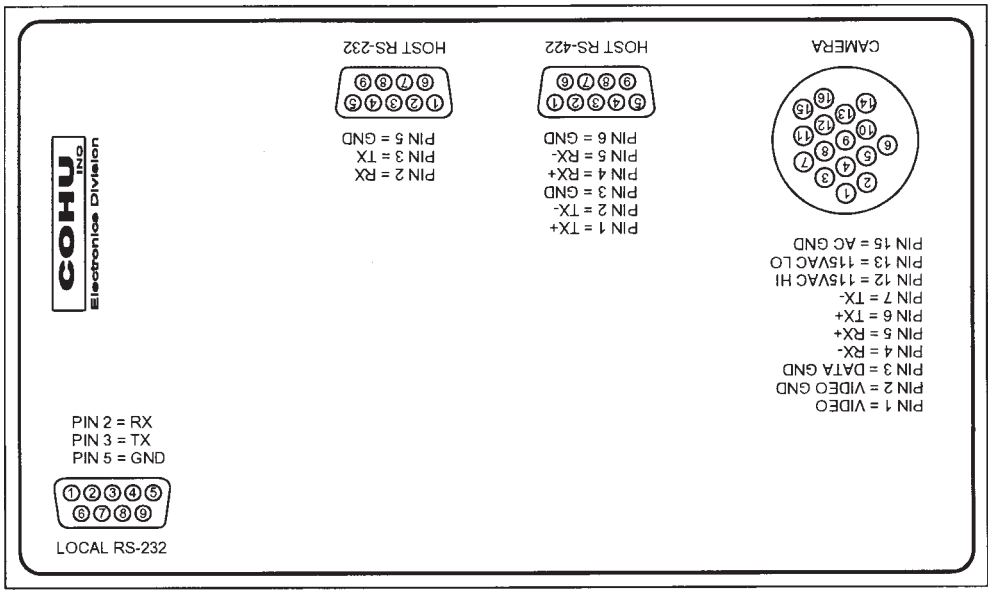


Figure 11. Connector Identifications Label

3. A 75 ohm coaxial cable is required to connect video to the system interface device (fiber optic interface shown for this typical installation).

4. For setup and maintenance operations via the front panel, an RS-232 null modem serial cable is required to connect between the LOCAL RS232 connector and a laptop PC. This cable must have DB9 female (socket) connector to mate with the LOCAL 232 connector on the front panel and typically also a DB9 female (socket) connector at the laptop PC 232 serial connector port.

Table 8 lists the required characteristics of individual cable functions.

2.6 CABLING REQUIREMENTS

Figure 12 illustrates system cabling for a typical installation. Using this Panel can require that two different cables be available during installation:

1. One cable is required to connect between a camera and the **CAMERA** connector of the iControl Panel.

Figure 13 is the wiring diagram for a type CA-295H cable (for a 3925 iDome).

Figure 14 is the wiring diagram of a type CA-297H cable (for a 3955 iView or 3965 iView II).

Each of these cables has a connector at each end — one for mating with the camera connector and the other for mating with the iControl.

2. Either an RS-232 or RS-422 cable is required for host serial communications with the Panel. Only one is required. Both rear panel connectors are active at all times, but only one can be used. Never connect serial data to both connectors simultaneously.

2.6.1 Connector Tx and Rx Conventions

Table 4 and table 7 list pin functions for RS-422 connectors. The Tx+ Tx- and Rx+ Rx- notations for these RS-422 connectors and all other RS-422 connectors in a system using this notation cause much confusion for field installers. There is a tendency to want to connect Tx to Tx and Rx to Rx. This almost always is wrong.

The Tx+ output of one piece of hardware should go to the Rx+ input of another. And Tx- goes to Rx-.

To add to the confusion Tx and Rx are not universally used notations for the same functions. Some times Command Out is used for Tx and Command In for Rx. Other naming conventions are also used among different equipment manufacturers and their cables.

Because RS-422 provides bidirectional communications over the cable a connector can be an input at one moment and then an output milliseconds later (RS-422 half-duplex). Thus, the identifying

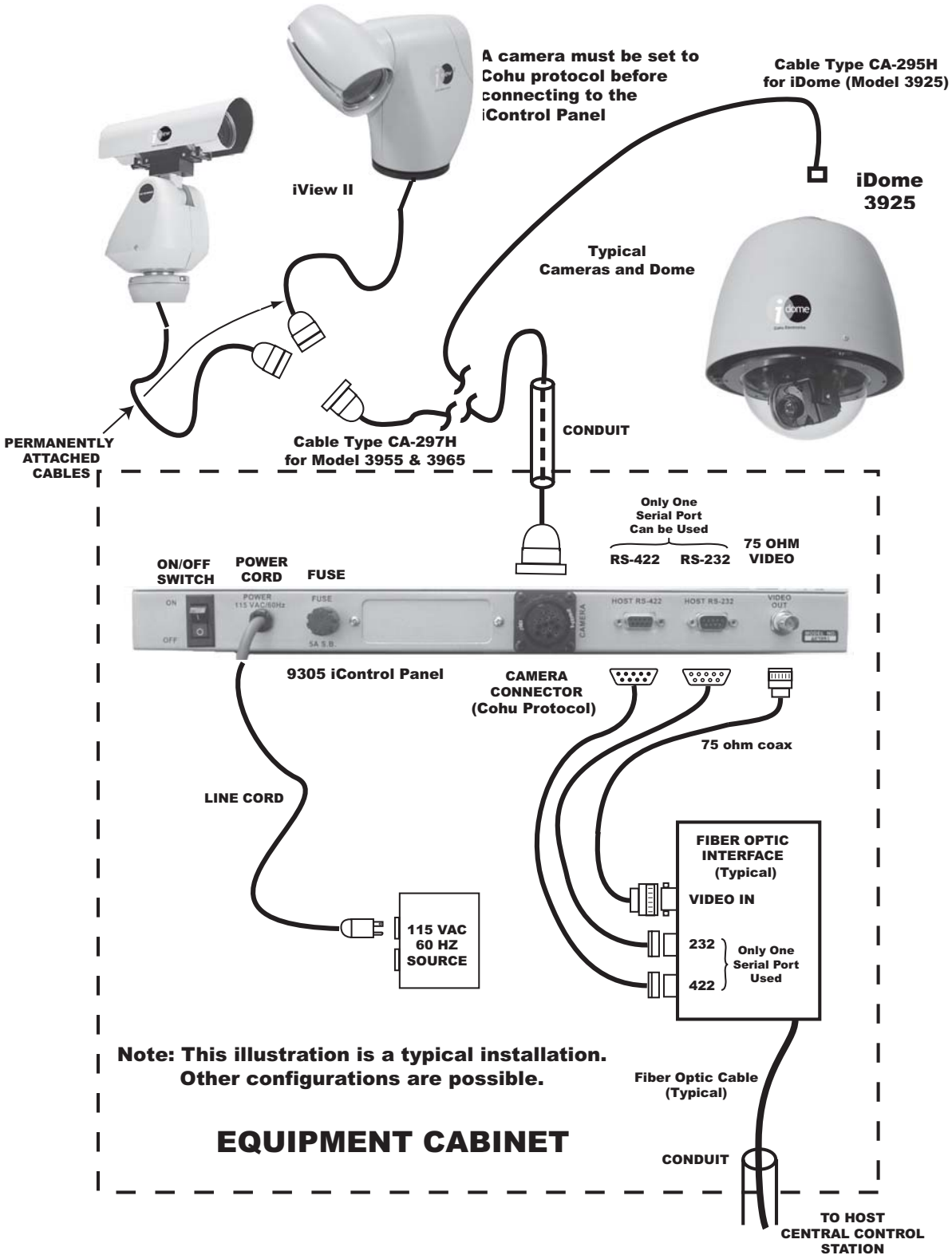


Figure 12. Typical Rear Panel Connections

Table 7. Pin Functions, Rear Panel Camera Connector

PIN	FUNCTION	
1	Video, 75 ohm	
2	Video Ground	
3	Data Ground	
4	Rx–	RS-422
5	Rx+	
6	Tx+	
7	Tx-	
8	Not Used	
9	Not Used	
10	Not Used	
11	Not Used	
12	115 V ac Line (Hot)	
13	115 V ac Neutral	
14	Not Used	
15	115 V ac Ground	
16	Not Used	

labels that connectors and wires area assigned can be somewhat arbitrary.

Wiring for RS-232 has the same situation. Tx typically goes to Rx and at the other end Rx to Tx.

If any confusion exists it is best to contact the Customer Support department at Cohu or your local Cohu representative.

2.7 OPERATING MODES

The Panel can be used in either of two modes: Local or Host. Local mode is for temporary operation of a camera on-site. The Panel drops out of this mode after 5 minutes of inactivity. Host mode is the normal operating mode of a Panel. It implements communications between the host control system and a camera. Figure 15 shows the left portion of the front panel of the iControl. The **MODE** function switch can be toggled up to **LOCAL** and down to **REMOTE.**

2.7.1 Local Mode

This Panel must be placed into the Local mode to activated local functions.

Local mode terminates communications with the host system protocol and activates features on the front panel. Switches on the front panel can be used for selected local control functions of a camera (figure 16) or alternately a laptop PC can be connected to the BNC connector for a more full featured set of controls using Win MPC software.

During installation of a camera site this Panel will be used with a laptop PC to set or verify the iControl Panel address and various other functions — including various communications parameters. The laptop PC running Win MPC software provides control functions not available with Panel alone.

Figure 17 is an interconnection diagram showing the laptop computer and a local tv monitor. For more information about the Panel control functions when in Local mode, refer to section 3, Operation.

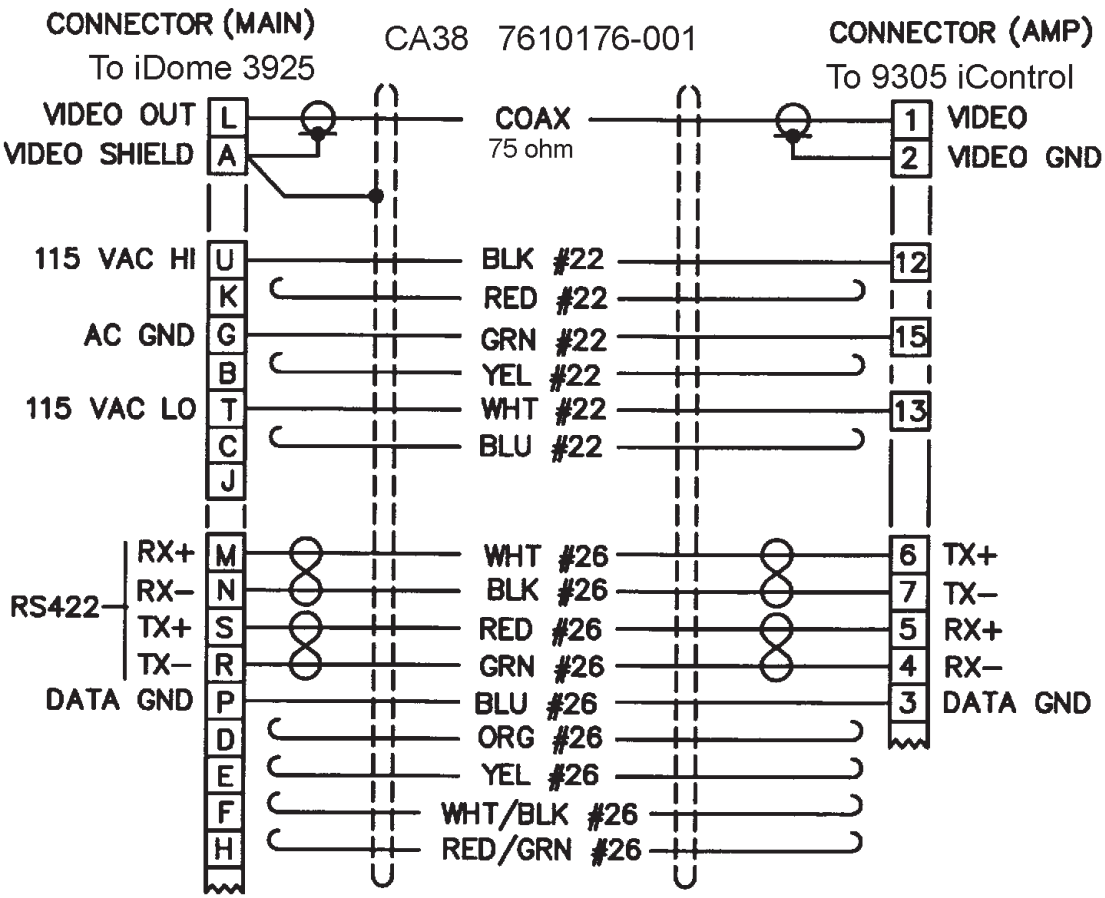
2.7.2 Host Mode

In Host mode, the Panel translates a system control protocol to Cohu protocol for communications with the camera. When in Host mode, all front panel controls are inactive except for the MODE switch. It can still be used to activate LOCAL control.

2.8 GUI INTERFACE

The Win MPC Graphical User Interface (GUI) interface (figure 18) must be available for use with the local laptop to set up the site for communications with both the camera and the host system.

Win MPC is used to control a single camera during installation or maintenance operations. This can be done either at a central shop facility or at the site location of the camera.



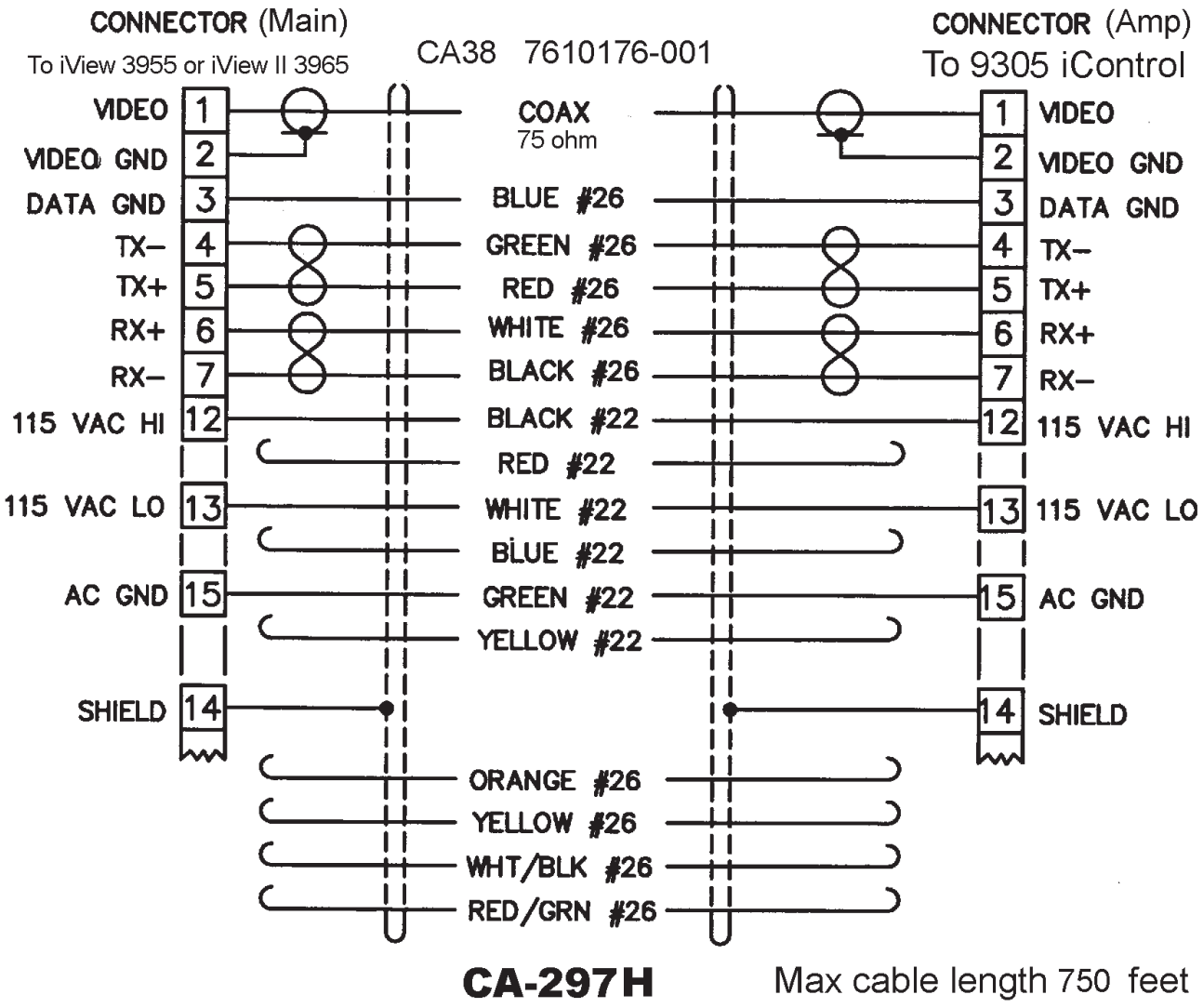
CA-295H Max cable length is 750 feet

CA 295	CONNECTOR (MAIN)	ACCESSORY	CONNECTOR (AMP)	ACCESSORY	ACCESSORY
H	1310230–011	–	1310306–010	1310307–103 (CLAMP)	1310308–001 (CONTACTS)

Figure 13. Cable CA295H, 9305 iControl Panel to 3925 iDome Camera

Table 8. Required Cable Characteristics

CONDUCTOR FUNCTION	MINIMUM CHARACTERISTICS
VIDEO	RG-59/U (75 ohm), 100 % copper conductor, 95% minimum braided shield
DATA	2 pair, twisted with overall shield, 26 AWG minimum (Belden 8723 or equivalent)
POWER	3-conductor, 22 AWG
NOTE: For distances exceeding 750 feet, please contact an Application Engineer at Cohu Electronics.	



CA 297	CONNECTOR (MAIN)	ACCESSORY	ACCESSORY	CONNECTOR (AMP)	ACCESSORY	ACCESSORY
H	1310307–009	1310307–103 (CLAMP)	1310308–002 (11 CONTACTS)	1310306–010	1310307–103 (CLAMP)	1310308–001 (11 CONTACTS)

Figure 14. Cable CA297H, 9305 iControl Panel to 3955 or 3965 Cameras

Table 9. Front Panel Operator Controls

NAME		FUNCTION
CONNECTORS		
LOCAL RS-232		9600 baud local connection point for Cohu protocol to setup and test a camera.
VIDEO OUT		Supplies video for a local monitor during setup and testing of a camera.
SWITCHES		
LOCAL-HOST	**Switch**	Takes the panel "off line" so that the camera can be controlled locally. Operators at the distant remote control location lose all control when this panel is in local mode. Reverts to "on line" again after 5 minutes of inactivity.
	Indicator	Illuminates when "local" mode has been selected
IRIS	**OPEN-CLOSE**	Opens and closed the camera lens when MAN iris has been selected
	AUTO/MAN	When in MAN (manual) mode (indicator on) activates the OPEN/CLOSE switch immediately to the left
	Indicator	Illuminates when MAN (manual) IRIS has been selected
FOCUS	**NEAR-FAR**	When FOCUS is in MAN (manual) mode, gives local control of the zoom lens focusing closer and more distant
	AUTO/MAN	Changes FOCUS between automatic and manual mode when depressed. (Indicator to right illuminates when in manual mode)
	Indicator	Illuminates when MAN (manual) focus has been selected
ZOOM	**TELE-WIDE**	Causes the zoom lens to change between telephoto (bring distant subjects closer) and wide angle (obtain a wider angle view of the subject area)
TILT	**UP-DOWN**	Causes the camera to angle up toward the sky or down toward the ground
PAN	**RIGHT-LEFT**	Causes the camera to move around the horizon in the left-right directions

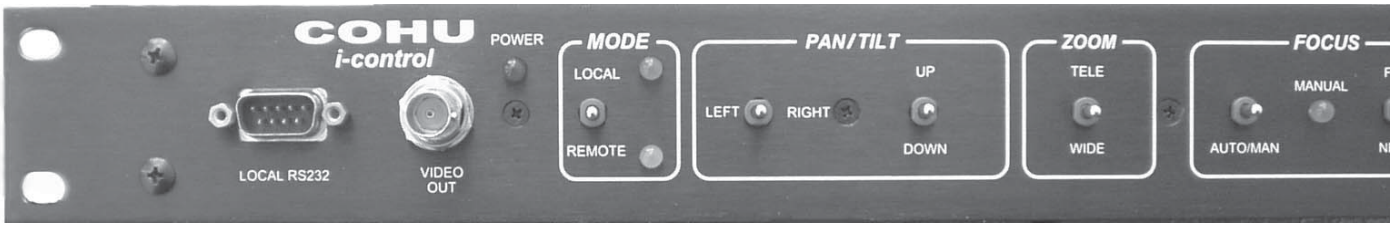


Figure 15. Front Panel Left Side Features

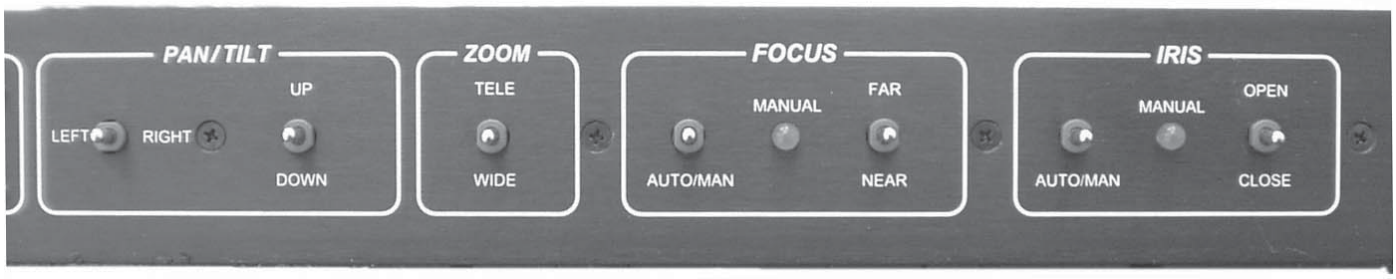


Figure 16. Front Panel Right Side Features

2.8.1 Win MPC Setup

When Win MPC is used to set up the iControl Panel and camera they must be isolated from all other equipment in the system. If the address setting function of Win MPC were to be sent to multiple iControl Panels, cameras, or other addressable equipment, they would all be set to an identical addresses. An identical address would be programmed into all their memories. Since all equipment in a system must have a unique address, this would result in an inoperative system.

2.8.2 Establishing Communications

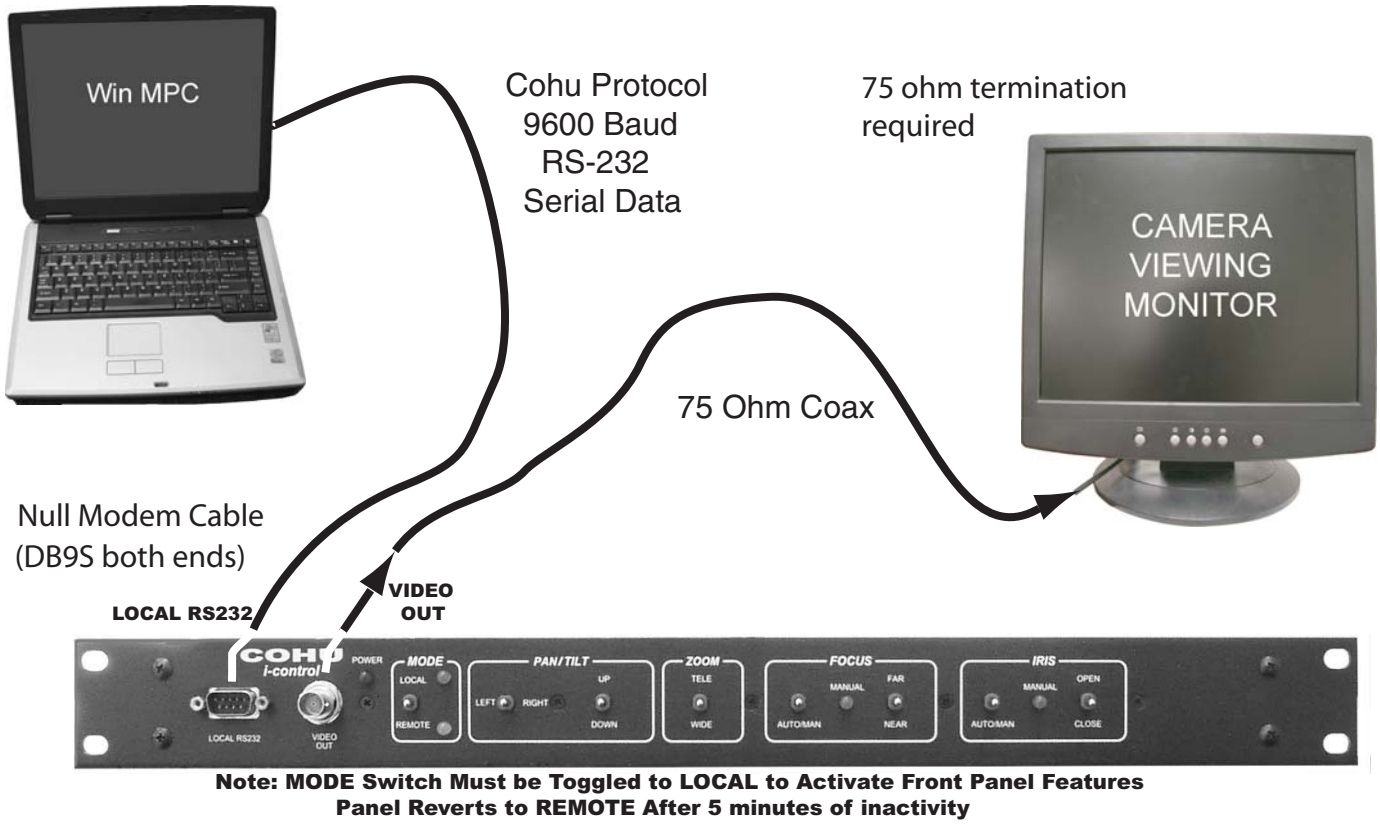
Table 6 is a summary of important communications characteristics of an iControl Panel. It covers both the front panel local control port and the rear panel host ports.

Since each iControl Panel in the system must have a unique address, it may be best to set all addresses at a central distribution location prior to sending each of the Panels out to the field installation sites. This ensures that no addresses are duplicated — and it provides a central control for all address assignments.

Before the address can be set or any other setups made, it is necessary to establish communications with the iControl Panel.

Figure 19 is the home screen of the Win MPC software. To enter the communications setup mode, click on the Camera Setup button, in the Special Functions group, on the right side of the home window. A step-by-step procedure appears below beginning with step 1.

Figure 20 shows the communications setup window of the Win MPC software. Table 10 is a summary of required communications settings. They assume that either an iDome or iView camera is to be controlled.



Note: MODE Switch Must be Toggled to LOCAL to Activate Front Panel Features
Panel Reverts to REMOTE After 5 minutes of inactivity

Figure 17. Interconnections Setup with Win MPC Local Control

The first three selections in table 10 set parameters for the front panel RS-232 connector. A laptop PC connects to this 232 port for setup and maintenance operations.

The rear panel **CAMERA** connector communicates only at 9600 baud using Cohu protocol. These selections do not change fixed conditions for the **CAMERA** connector. The selections are related to system host communications only. Proceed as follows:

1. Under the Special Functions menu area of the window, click on Camera Setup. The Setup window should appear. Then make the following selections:

   a. Receiver to “LCU” (Right side of screen. Note: Additional functions under the “LCU” selection will be covered later)

   b. Select the Port being used on the laptop PC (Top left of screen)

   (Com1, Com 2, Com 3, Com 4)

   c. Baud Rate for laptop PC to “9600” (Change to 9600 if it had been left at some other baud rate)

   d. Comm Mode “PC to MPC Receiver”

   e. Camera to “day/night” (default)

2. Under the Pan/Tilt area:

   a. “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:

   a. Select “Plain old gray” (or any other if desired)

4. Click on “OK” to exit the setup window.

2.8.3 Get System Communications Information

“Get Info” under the LCU Receiver selection returns the current settings of three key host communications selections:

1. iControl Panel address
2. Host Communications Baud Rate
3. Communications Protocol

The iControl Panel address cannot be set from this screen. It is set on the “home” (Cohu - Win MPC) screen under the Camera portion of the window (top left). The current address can be determined at this location, too, using the “Find” button. The Panel address is set with the “Set Addr” button.

The host communications baud rate (Host Comm. Baud Rate) can be set under the Setup window “Receiver” / “LCU” sub window. This selection must be 300, 600, 1200, 2400, 4800, or 9600. Any other entry will return an error message pop up window.

The “Set Communications Protocol” has a drop down menu showing available selections for the host port. This function is not password protected.

Figure 18. Laptop with Win MPC

NTCIP Operation

A Control Panel offering NTCIP communications at the rear panel RS-232 connector must be set to Cohu Protocol. The internal NTCIP module then automatically senses NTCIP protocol at the RS-232 connector to establishes the NTCIP communications mode. The module remains in that mode until the Panel is turned off and back on or until it is set back to the Cohu protocol with the Win MPC setup software. WinMPC connects to the front panel RS-232 port on the Control Panel (this port is not related to the rear panel RS-232 port; they serve different functions.)

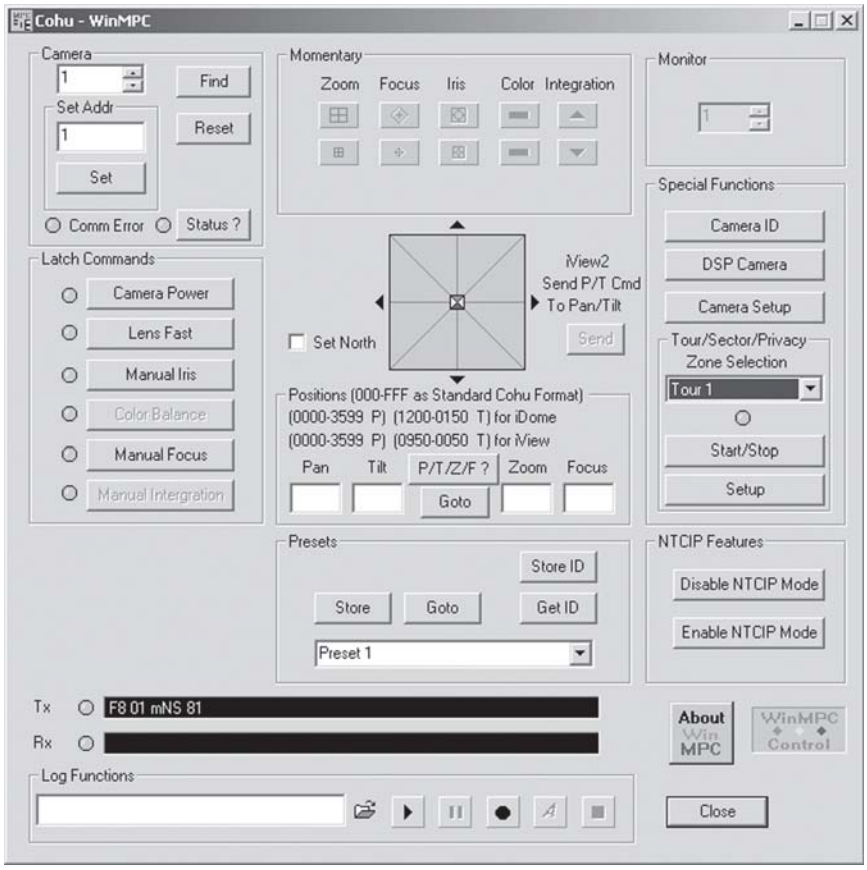


Figure 19. Win MPC Home Screen

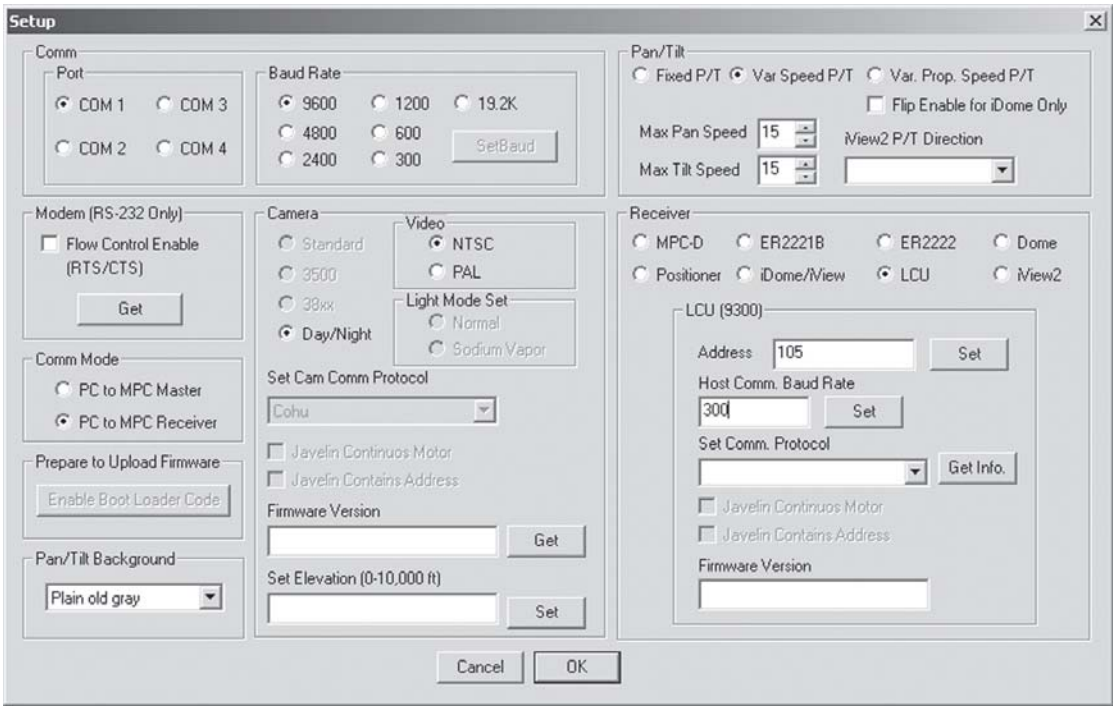


Figure 20. Win MPC Setup Communi-cations Functions Screen

Table 10. Communications Settings

COMMUNICATIONS FUNCTION	SETTING
Port (laptop PC)	COM 1 (Typical - Verify)
Comm Mode (laptop PC)	PC to MPC Receiver
Baud Rate (laptop PC)	9600
Receiver	LCU
Pan/Tilt	Max Pan Speed = 15
	Max Tilt Speed = 15
Comm Mode	PC to MPC Receiver
Camera	Day/Night
Set Cam Comm Protocol	Cohu (only - cannot be changed)
Video	NTSC
Address	(site address: 105 illustrated)
Host Comm Baud Rate	(set required host baud rate: 300 illustrated)
Set Comm. Protocol	(Selects required host communications protocol)
Note: Communications between the iControl Panel and a camera is always Cohu protocol. The protocol set in this table is the system (host) protocol. The Panel translates this host protocol to Cohu protocol for communications with the camera. Protocol selection is not password protected, but a cautionary prompt will appear.	

2.8.4 Setting the iControl Panel Address

After the initial setup, it is a good idea to allow Win MPC to search for the existing Panel ID number/address: This will verify that communications has been established.

Click on the FIND button at upper left of the "home" screen (Cohu Win MPC screen). A pop-up window will appear while Win MPC searches for all allowable ID addresses (0 to 223). The factory default setting is "1."

CAUTION

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

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

Click on the FIND button again to conform that this new address has been accepted.

2.9 PREPARATION FOR SHIPMENT AND STORAGE

For storage periods exceeding about a month, seal the iControl Panel in a vapor-proof bag containing a fresh desiccant pack.

Maintain the Panel storage environment within arrange of -45 to 85 °C (-50 to 185 °F).

For shipment, package with enough foam padding or other packing material to prevent damage that can occur during shipping. The original shipping carton is a good container if it has not been damaged or subjected to excessive moisture.

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 this 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

Before this Panel is placed in local mode, an RS-170 TV monitor must be connected to the front panel **BNC VIDEO** connector. The Panel can be operated either with or without an accompanying laptop PC running Win MPC software. These front panel switches do not provide full operational capability of the camera. The laptop PC must be used if a full range of operation function are required.

3.1 Local Panel Control

Refer to table 9 for a list of front panel connector and switch functions.

3.2 Local Laptop PC Control

When the Panel is used with a laptop PC connected to the front panel DB9M RS-232 connector all control functions are then via the Win MPC software interface. In particular, the address of the iControl Panel can be verified or set using the laptop PC.

-end text-

COHU ELECTRONICS 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 Housings: Pressurized camera products include a lifetime pressurization warranty. Cohu will 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. Purchaser shall prepay transportation charges to Cohu.

Extended IR Cameras: Cameras utilizing extended infrared (extended IR) sensors found to exceed acceptable white blemish specifications within one month of delivery shall be repaired without charge.

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. Cameras utilizing extended IR sensors are not warranted for use in areas of elevated levels of cosmic radiation. 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, express, 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 without prior written approval.

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

4/03