XX087-30

Instruction Manual

NOVA™ 1500

V1500 Host Computer Interface Protocol

CE FC

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Contents

Introduction

Vicon's NOVA 1500 Control System (V1500) incorporates LAN communication in a standard, open-architecture design that lends itself to simple expansion. This permits the easy addition of keypads, receivers, alarm devices, video switching units and host RS-232 controllers. The V1500 supports operational features currently found in Vicon's V1400 system, such as tours and salvos. Before a CPU can control the CCTV site, the operating parameters and system specifications must be defined in the configuration file. Refer to Instruction Manual XX093 to choose the appropriate settings for your site using the V1500 Configurator software.

After the equipment is installed and the configuration file is defined, remote keypads and host computers may be used to operate the CCTV equipment. The host computer may use any of the following software to interact with the V1500 control system:

- Vicon's RS-232 command codes
- Other RS-232 drivers.

This manual covers the use of RS-232 command codes to control CCTV sites using a host computer in a V1500 system.

Prerequisite Procedures

Referring to Installation Manual XX087, perform the following:

- Design your system, and
- Make the proper connections, including connecting the host computer to the serial module.

Referring to Instruction Manual XX093, perform the following:

- Define the operating parameters using the Host Port screen.
- Use the same operating parameters at the host computer. Consult the host computer and/or operating system manual(s) if required.

Command Codes

V1500 RS-232 command codes are used to operate CCTV equipment from a host computer. An extensive set of report commands may be used to provide status information to the host computer operator. Command codes are discussed in the following sections. Each section includes a table which explains the elements of the code and provides an example. If the command performance can be verified, the table will include the name of the command which can be used. Where applicable, the table includes the reference number of the failure conditions that can occur when a command is sent to the V1500. These reference numbers and the description of failure conditions are listed in Table 1.

Table 1
Command Failure Conditions

Ref. No.	Description
1	Command syntax error
2	Invalid monitor number
3	Invalid camera number
4	Invalid preset number
5	Invalid dwell time
6	No prior monitor assignment made
7	Monitor displaying active alarm video
8	Monitor displaying active com/fail video
9	Monitor sequencing alarm videos
10	Monitor in tour
11	Tour not loaded
12	Monitor seized by another keypad

Ref. No.	Description
13	Camera station not equipped for function
14	Communications failure
15	Camera station storing preset
16	Camera station seized by another keypad
17	Autoiris control engaged - manual iris control not available
18	Autopan cannot be engaged while panning
19	No communication failures pending
20	Alarms pending
21	No alarms pending
22	Invalid keypad number
23	Invalid tour number
24	Invalid salvo number

Commands associated with the receiver give the operator control of the pan-and-tilt drive, the motorized lens, and the receiver auxiliary functions. Because the receiver can control concurrent tasks, it can accept multiple commands in the same command transmission (e.g., the receiver can pan-left, tilt-up, zoom-out, and focus-far simultaneously). To send multiple commands in the same command transmission, “chain” commands together as follows:

<SOH>IMNQ<CR>

This chained command would cause the selected camera station to pan left, tilt up, zoom out and focus far (these commands are discussed in the appropriate sections).

Note: Each command MUST be framed by the start of heading character <SOH> and carriage return <CR> commands (0x01 and 0x0D, respectively), as shown in the following sections. Communications failure will occur if this requirement is not met.

Note: To output a list of all supported input commands for the host port, enter the command <SOH>?<CR>.

Selecting a Monitor

Before the video from a camera may be viewed on a monitor, the camera and monitor must be selected. Select a monitor by sending the command code shown below. Select a camera as discussed in the next section.

A###	command syntax
A	*monitor select* command
###	2- or 3-digit monitor number
Example:	<SOH>A004<CR> assigns monitor 4 to the host computer.
Failure conditions:	1, 2,12
Verification:	Keypad Assignment Report

Selecting a Camera Station

Selecting a camera station displays that camera's video on the currently selected monitor. All keypad control commands will affect the currently selected camera station. The camera's dial-up number must be used to identify the camera to be selected.

Note: In the sections that follow, it is assumed that a monitor has already been selected.

B####	command syntax
B	*camera select* command
####	3- or 4-digit dial-up number
Example:	<SOH>B0001<CR> routes video from camera 1 to the selected monitor output.
Failure conditions:	1, 3, 6, 7, 8, 9, 12
Verification:	Monitor Assignment Report

Titles

Camera Titles

A camera title of up to 40 characters may be defined for each camera in your system.

Note: The title input using the command codes is not permanently stored in the configuration database. The title will be valid until the V1500 Application is restarted and the stored title from the configuration database is reloaded.

st####,char	command syntax
st	*camera title* command
####	3- or 4-digit dial-up number
char	40 alphanumeric characters
Example:	<SOH>st0001,front lobby<CR> defines "front lobby" as the title for camera 1.
Failure conditions:	3
Verification:	

Camera Title (First Line Only)

sta####,char	command syntax
sta	*first line camera title* command
####	3- or 4-digit dial-up number
char	20 alphanumeric characters
Example:	<SOH>sta0001,front lobby<CR> defines "front lobby" as the first line of the title for camera 1.
Failure conditions:	3
Verification:	

Camera Title (Second Line Only)

stb####,char	command syntax
stb	*second line camera title* command
####	3- or 4-digit dial-up number
char	20 alphanumeric characters
Example:	<SOH>stb0001,front lobby<CR> defines "front lobby" as the second line of the title for camera 1.
Failure conditions:	3
Verification:	

All Monitors Broadcast Titles

The broadcast title command is used to send a temporary message display to one or all monitors, overwriting the monitor status message line. This message display is in addition to the normal titles displayed on the monitor. The broadcast title remains onscreen until it is overwritten by another broadcast title or cleared using the broadcast message clear command.

mbs0,char	command syntax
mbs0	*all monitors broadcast title* command
char	20 alphanumeric characters
Example:	<SOH>mbs0,Front Door Locked<CR> sends the message "Front Door Locked" to all monitors.
Failure conditions:	2
Verification:	

All Monitors Clear Broadcast Title

mbr0	command syntax
mbr0	*clear broadcast title* command
Example:	<SOH>mbr0<CR> clears the broadcast message from all monitors.
Failure conditions:	
Verification:	

Single Monitor Broadcast Title

mbs###,char	command syntax
mbs	*single monitor broadcast title* command
###	3-digit monitor number
char	20 alphanumeric characters
Example:	<SOH>mbs100,Front Door Locked<CR> sends the message "Front Door Locked" to monitor 100.
Failure conditions:	2
Verification:	

Single Monitor Clear Broadcast Title

mbr###	command syntax
mbr	*clear single monitor broadcast title* command
###	3-digit monitor number
Example:	<SOH>mbr100<CR> clears the broadcast title from monitor 100.
Failure conditions:	2
Verification:	

Salvo Operation

A salvo is defined as the simultaneous display of video from various camera stations on various monitors. Salvos may be used to define the steps in salvo tours, as discussed in Instruction Manual XX093, or they may be executed as an independent function. Salvo video displays may be activated by using the following command code.

Note: Salvos must be defined in the Configurator software before they can be executed, as discussed in Instruction Manual XX093. Presets must be defined before they may be used as salvo parameters.

The number used to identify the salvo is its dial-up number.

B####	command syntax
B	*salvo* command
####	3- or 4-digit dial-up number
Example:	<SOH>B8201<CR> activates salvo 1.
Failure conditions:	1, 6, 7, 8, 9, 12, 24
Verification:	Monitor Assignment Report

Tour Operation

A tour is a series of preprogrammed video displays from various camera stations. This series may be comprised of video from cameras on a monitor (monitor tour) or video from various cameras on various monitors (salvo tour). Preset positions, preset lens settings, and dwell times may be associated with each step in a tour. A step is defined as a salvo for salvo tours or one particular camera, preset, and dwell combination for a monitor tour. For example, a monitor tour might be defined to display the video from camera 01's preset 01 and then camera 02's preset 10, both on monitor 01. This would be a two-step tour. An

example of a salvo tour might be defined to perform salvo 01 then salvo 03. Salvo 01 could be programmed to display camera 01's preset 01 on monitor 01 simultaneously with camera 02's video at preset 10 on monitor 02. This video might be replaced during the second step of the tour, depending upon the programming of salvo 03.

Note: Referring to Instruction Manual XX093, specify the parameters necessary to define the tour. Presets used in tours may be defined using the host computer as discussed in Storing a Preset.

Running a Tour

The *run tour* command is used to begin the tour specified in the command syntax. The number used to specify a tour is its dial-up number. Dial-up tour numbers may be user-defined as discussed in Instruction Manual XX093.

C####	command syntax
C	*run tour* command
####	4-digit tour number
Example:	<SOH>C0001<CR> runs tour 1.
Failure conditions:	1, 6, 7, 8, 9, 11, 12, 23
Verification:	Monitor Status Report

Sequence to the Next Step in a Tour

Use this command to proceed to the next step in a tour, disregarding the dwell time. The tour must already be in progress. Steps of a tour are programmed using the Configurator, as discussed in Instruction Manual XX093.

F	*tour step* command
Example:	<SOH>F<CR> causes the tour to go to the next step in a tour.
Failure conditions:	1, 6, 7, 8, 9, 12
Verification:	Monitor Status Report

Resetting Video Crosspoints

If distorted video, rolling video, multiple video images, or ghosting (a hazy outline of an image) occur, the video crosspoints may need to be reset using the video crosspoint reset command. Resetting the crosspoints eliminates these problems by resetting all monitors in the system and restoring the last video selections.

E9900	*video crosspoint reset* command
Example:	<SOH>E9900<CR> resets the video crosspoints for all monitors in the selected card cage.
Failure conditions:	1, 5, 6, 7, 8, 9, 10, 12

Preset Operation

The preset function commands are used in conjunction with specially equipped lenses, pan-and-tilt drives, and receivers. The preset options provide the ability to store and recall up to 99 selected pan/tilt/zoom/focus positions for each receiver, depending on receiver model.

Recalling a Preset

This command returns a pan-and-tilt drive and lens to a previously-stored position.

Note: A preset recall command automatically engages the autoiris function. Any manual pan/tilt/zoom/focus command overrides the preset recall command.

G##	command syntax
G	*preset recall* command
##	2-digit preset number (01-99)
Example:	<SOH>G02<CR> recalls preset position 2.
Failure conditions:	1, 4, 6, 9, 10, 12, 13, 14, 15, 16
Verification:	Receiver Status Report

Storing a Preset

The *preset store* command is used to store the current position of the pan/tilt/zoom/focus.

H##	command syntax
H	*preset store* command.
##	2-digit number (01-99) identifies the preset
Example:	<SOH>H02<CR> stores preset position 2.
Failure conditions:	1, 4, 6, 9, 10, 12, 13, 14, 15, 16
Verification:	Receiver Status Report

Using the Null Command

The *null* command is used to terminate momentary functions such as the pan, tilt, autopan, zoom, iris, autoiris, and auxiliary function commands. The *null* command is also used when it is necessary to stop one or more of these functions without initiating some other action and is required as the intermediate step in push-push type
latching functions. This command consists of the ASCII <SOH> and <CR> characters without any other characters.

<SOH><CR>	*null* command
Example:	<SOH><CR> stops momentary functions in progress.
Failure conditions:	not applicable

Controlling a Pan-and-Tilt Drive

Pan-and-tilt drives may be controlled from the host computer using the following commands. The speed at which the pan-and-tilt drives move is dependent upon the capabilities of the receiver and the pan-and-tilt. Vicon receivers and pan-and-tilt drives are either fixed speed or variable speed. Variable-speed receivers sold by Vicon allow the pan-and-tilt drive to move at either 4 or 256 speeds. The following sections discuss the various commands which may be used to control pan-and-tilt drives from fixed-speed receivers. To control the pan-and-tilt drives from four-speed receivers, chain the speed commands listed in Table 2 to the

fixed-speed commands. For example, to pan left at medium fast speed, use the following code: <SOH>IW<CR>.

For 256-speed receivers, the command code includes a number from 000 to 255 which describes the relative speed. A higher number corresponds to a faster speed. To direct a pan-and-tilt drive to pan right at speed 112, the following command code would be used: <SOH>J112<CR>. If none of the command codes in Table 2 are used, the default speed will be used. The default speed is typically the slowest speed.

Table 2
Variable-Speed Command Codes

4-Speed Receivers		
Pan Speed Command Codes	**Description**	**Tilt Speed Command Codes**
(no speed code)	Slow speed	(no speed code)
X	Medium-slow speed	Z
W	Medium-fast speed	Y
WX	Fast speed	YZ
256-Speed Receivers		
###	Three-digit speed number	

Note: Table 2 is not applicable for the autopan function's speed controls. Refer to Autopanning for more information on this feature.

Panning Left

The *pan left* command may be sent from the host computer using the following command. Any command string that does not include the pan left command halts the pan left motion.

Note: The command code shown below will direct the pan-and-tilt drive to move at slow speed (variable-speed receivers only), unless the code is modified as shown in Table 2.

I	*pan left* command
Example:	<SOH>I<CR> causes the pan-and-tilt unit to pan to the left.
Failure conditions:	1, 6, 9, 10, 12, 13, 14, 15, 16

Panning Right

The *pan right* command may be sent from the host computer using the following command. Any command string that does not include the *pan right* command halts the pan right motion.

Note: The command code shown below will direct the pan-and-tilt drive to move at slow speed (variable-speed receivers only), unless the code is modified as shown in Table 2.

J	*pan right* command
Example:	<SOH>J<CR> causes the pan-and-tilt unit to pan to the right.
Failure conditions:	1, 6, 9, 10, 12, 13, 14, 15, 16

Autopanning

The *autopan* command may be sent from the host computer using the following command. If the V1300R-PV or V1301R-PV variable-speed option has been installed in the V1300R or V1301R receivers, these receivers can increase the speed of the pan-and-tilt drive during autopanning by sending additional autopan commands, for a total of four speed steps. The first K command is used to engage the autopan at the slow speed. The second, third, and fourth K commands will step up the speed through the medium-slow, medium-fast, and fast speeds, respectively. The fifth K command will disengage the autopan for V1300R and V1301R receivers with the variable-speed option installed; the second K command will disengage the function for other receivers.

K	*autopan engage/disengage* command
Examples:	<SOH>K<CR> engages autopan at slow speed (if it is currently disengaged; subsequent K commands increase speed for V1300R or V1301R receivers which have the V1300R-PV or V1301R-PV variable-speed option installed) or disengages autopan (if it is currently engaged). <SOH>K<CR><SOH>K<CR> engages autopan at slow speed (if it is currently disengaged) and then increases the speed to medium-slow speed.
Failure conditions:	1, 6, 9, 10, 12, 13, 14, 15, 16, 18
Verification:	Receiver Status Report

Tilting Down

The *tilt down* command may be sent from the host computer using the following command. Any command string that does not include this command halts the tilt down motion.

Note: The command code shown below will direct the pan-and-tilt drive to move at slow speed (variable-speed receivers only), unless the code is modified as shown in Table 2.

L	*tilt down* command
Example:	<SOH>L<CR> causes the pan-and-tilt unit to tilt the camera down.
Failure conditions:	1, 6, 9, 10, 12, 13, 14, 15, 16

Tilting Up

The *tilt up* command may be sent from the host computer using the following command. Any command string that does not include this command halts the motion.

Note: The command code shown below will direct the pan-and-tilt drive to move at slow speed (variable-speed receivers only), unless the code is modified as shown in Table 2.

M	*tilt up* command
Example:	<SOH>M<CR> causes the pan-and-tilt drive to tilt the camera up.
Failure conditions:	1, 6, 9, 10, 12, 13, 14, 15, 16

Controlling a Lens

Zooming Out

The *zoom out* command may be sent from the host computer using the following command. Any command string that does not include this command halts the zoom out action.

N	*zoom out* command
Example:	<SOH>N<CR> causes the motorized lens to zoom out for a wider angle of view.
Failure conditions:	1, 6, 9, 10, 12, 13, 14, 15, 16

Zooming In

The *zoom in* command may be sent from the host computer using the following command. Any command string that does not include this command halts the zoom in action.

O (ASCII capital letter o)	*zoom in* command
Example:	<SOH>O<CR> causes the motorized lens to zoom in for a close-up view.
Failure conditions:	1, 6, 9, 10, 12, 13, 14, 15, 16

Focusing Near

The *focus near* command may be sent from the host computer using the following command. Any command string that does not include this command halts the focus near motion.

P	*focus near* command
Example:	<SOH>P<CR> causes the lens to focus near.
Failure conditions:	1, 6, 9, 10, 12, 13, 14, 15, 16

Focusing Far

The *focus far* command may be sent from the host computer using the following command. Any command string that does not include this command halts the focus far motion.

Q	*focus far* command
Example:	<SOH>Q<CR> causes the lens to focus far.
Failure conditions:	1, 6, 9, 10, 12, 13, 14, 15, 16

Closing the Iris

The *iris close* command may be sent from the host computer using the following command. Any command string that does not include this command halts the iris close motion.

Note: This command will adjust the auto iris level on the Surveyor series of domes.

R	*iris close* command
Example:	<SOH>R<CR> causes the lens to close the iris.
Failure conditions:	1, 6, 9, 10, 12, 13, 14, 15, 16, 17

Opening the Iris

The *iris open* command may be sent from the host computer using the following command. Any command string that does not include this command halts the iris open motion.

Note: To protect the camera video pickup device from damage due to overexposure, the receiver defaults to an autoiris engaged condition both on power-up and upon receipt of a preset recall command. The autoiris command overrides any manual iris command. To utilize the manual iris controls, the autoiris must be disengaged (refer to the following section).

This command will adjust the auto iris level on the Surveyor series of domes.

S	*iris open* command
Example:	<SOH>S<CR> causes the lens to open the iris.
Failure conditions:	1, 6, 9, 10, 12, 13, 14, 15, 16, 17

Enabling/Disabling the Autoiris

The *autoiris* command may be sent from the host computer using the following command. The autoiris must be used with a motorized lens and the autoiris must be receiver-controlled. If the autoiris is currently disengaged (manual iris commands are currently being used), sending the autoiris command will engage the autoiris. Manual iris commands may not be fulfilled while the autoiris is engaged. If the autoiris is currently engaged, sending this command will disengage the autoiris.

Note: This command is not applicable for the Surveyor series of domes because the auto iris is always enabled. The auto iris LED on the keypads/consoles will always be illuminated.

T	*autoiris engage/disengage* command
Example:	<SOH>T<CR> engages autoiris (if it is currently disengaged), or disengages it (if it is currently engaged).
Failure conditions:	1, 6, 9, 10, 12, 13, 14, 15, 16
Verification:	Receiver Status Report

Changing the Lens Speed

Motorized lenses typically have two speeds available for zoom, focus and iris motion. The Surveyor series of domes has three speeds (low, medium and high). The *lens speed* command toggles between the available speeds. The receiver defaults to the slow speed setting on power-up. The null command must be used after sucessive lens speed settings, as shown in the second example.

[(ASCII left-hand square bracket)	*lens speed* command
Example:	<SOH>[<CR> causes the lens speed to toggle from fast to slow or slow to fast. <SOH>[<CR><SOH><CR><SOH>[<CR><SOH><CR> changes the lens speed from low speed to high speed on the Surveyor Mini Dome (a *null* command is used after each speed command).
Failure conditions:	1, 6, 9, 10, 12, 13, 14, 15, 16

Auxiliary Operation

Auxiliary relays control latching or momentary functions at the receiver site. The number of latching and/or momentary auxiliary functions available depends upon the receiver, with a maximum of six auxiliary relays. The functionality of auxiliary devices also depends upon the receiver model. For example, the state of auxiliary relays may be fixed or defined as momentary or latching using switches or programming menus, depending upon the capabilities of specific receiver models.

Latching auxiliary devices are activated when an *aux* command is sent followed by the *null* command. The latching auxiliary device deactivates when the *aux* command is sent again, followed by the *null* command. Note that the *null* command must be sent after each *aux* command is sent to a latching auxiliary device. Alternatively, any command that does not include the *aux* command may be sent instead of the *null* command. For example, to activate a latching auxiliary (aux2) device, send the commands <SOH>V<CR><SOH><CR>. To deactivate the device, send the *aux2* and *null* commands again.

If the *aux* command is sent for a momentary auxiliary device, the device remains activated until the *null* command is sent. For example to activate a momentary aux6 device, send <SOH>Z<CR>. To deactivate the device, send the *null* command <SOH><CR> or any command that does not include the *aux* command.

U, V, W, X, Y, Z	*aux1, 2, 3, 4, 5, 6* commands, respectively
Examples:	<SOH>W<CR> <SOH><CR> engages latching auxiliary function 3 (if it is currently disengaged) or disengages it (if it is currently engaged). <SOH>Z<CR> engages momentary auxiliary device 6. <SOH><CR> disengages momentary auxiliary device 6 if it is currently engaged.
Failure conditions:	1, 6, 9, 10, 12, 13, 14, 15, 16
Verification:	Receiver Status Report

Alarm Operation

Alarm operation in the V1500 system depends upon the alarm stack mode chosen during programming. Instruction Manual XX093 describes how to select the alarm stack mode and illustrates the alarm processing (i.e., which alarms will be viewed on which alarm monitors) when each stack mode is chosen. Command codes may be sent from the host computer in order to acknowledge, view, enable/disable, and simulate alarms via the RS-232 port.

Viewing Next Alarm in the Stack

When multiple alarms are active, the *view next alarm* command may be used to "step" through the alarm stack. For example, if alarms 1, 2, 3, and 4 are activated (in that order), and alarm 1 video is currently displayed, sending the *view next alarm* command would display video from alarm 2. If alarm 2 is currently displayed, the *view next alarm* command would display alarm 3's video. This command does not acknowledge an alarm or remove it from the alarm stack.

F	command syntax
F	*view next alarm* command
Example:	<SOH>F<CR> displays the video from the next active alarm in the stack.
Failure conditions:	1, 3, 6, 7, 8, 9, 11, 12

Viewing Previous Alarm in the Stack

When multiple alarms are active, the *view previous alarm* command may be used to "step" backwards through the alarm stack. For example, if alarms 1, 2, 3, and 4 are activated (in that order), and alarm 2 video is currently displayed, sending the *view previous alarm* command would display video from alarm 1. This command does not acknowledge an alarm or remove it from the alarm stack.

D	command syntax
D	*view alarm video* command
Example:	<SOH>D<CR> displays the video from the previous active alarm in the stack.
Failure conditions:	1, 3, 6, 7, 8, 9, 12

Acknowledging Alarms

The host computer can be used to acknowledge any alarm. The V1500 outputs an alarm message for each alarm when it is detected and when it is cleared. The message formats are as follows:

####R detected MM/DD/YY HH:MM:SS
####X detected MM/DD/YY HH:MM:SS

cleared by monitor MON MM/DD/YY HH:MM:SS
cleared by xia MM/DD/YY HH:MM:SS

where:

is the alarm number.
"R" indicates that the alarm was detected by a receiver.
"X" indicates that the alarm was detected by an XIA.
MM/DD/YY HH:MM:SS are month/day/year and hours:minutes:seconds.
MON is the monitor from which the alarm was cleared.

\	*alarm acknowledge* command
Example:	<SOH>\<CR> initiates a step in the current alarm mode's alarm acknowledgment procedure.
Failure conditions:	1, 21
Verification:	Monitor Status Report

Disabling X-IA Alarms

This command disables the reporting and processing of X-IA alarms (V1200X-IA or V1300X-IA alarms only, not receiver alarms) in the system. The default condition sets all X-IA alarms enabled. The command can be used to disable one alarm or a range of consecutively numbered alarms. To disable multiple alarms, the command must include the lowest numbered alarm and the highest numbered alarm separated by a comma.

_ASTART, ASTOP	command syntax
_ (ASCII underline)	*X-IA alarm disable* command
ASTART	4-digit alarm number (lowest in the range)
ASTOP	4-digit alarm number (highest in the range)
Examples:	<SOH>_0001<CR> disables alarm 1. <SOH>_0030,0032<CR> disables alarms 30 through 32.
Failure conditions:	1, 3
Verification:	Alarm Enable Status Report

Enabling X-IA Alarms

This command re-enables X-IA alarms previously disabled by the host computer. The command can be used to re-enable one alarm or a range of consecutively numbered alarms. To re-enable a range of alarms, the command must include the lowest numbered alarm and the highest numbered alarm separated by a comma.

^ASTART, ASTOP	command syntax
^ (ASCII caret)	*X-IA alarm enable* command
ASTART	4-digit alarm number (lowest in the range)
ASTOP	4-digit alarm number (highest in the range)
Examples:	<SOH>^0001<CR> re-enables alarm 1. <SOH>^0016,0032<CR> re-enables alarms 16 through 32.
Failure conditions:	1, 3
Verification:	Alarm Enable Status Report

Disabling Alarm Notification

This command disables the alarm report printout by the V1500.

p	*alarm notification disable* command
Example:	<SOH>p<CR> disables notification to the host computer of an active alarm.
Failure conditions:	1

Enabling Alarm Notification

This command re-enables the alarm report printout. Once enabled, the system resumes notifying the host computer when an alarm is detected.

o (ASCII lowercase O)	*alarm notification enable* command
Example:	<SOH>o<CR> resumes notification to the host computer of an active alarm.
Failure conditions:	1

Setting Alarms

This command is used to set an alarm. If there is no physical connection to the alarm input specified in the command syntax, the specified alarm input must be set to "normally open" in the V1500 Configurator. Refer to Instruction Manual XX093.

Note: An alarm set via the host computer must be reset by the host computer. Refer to Resetting Alarms.

u####S	command syntax
U	specifies alarm action
####	4-digit alarm number
S	*alarm point set* command
Example:	<SOH>u0017S<CR> causes the system to act as though alarm 17 is active.
Failure conditions:	1

Resetting Alarms

This command is used to reset alarms. An active alarm set via the host computer can only be reset by the host computer.

u####R	command syntax
U	specifies alarm point action
####	4-digit alarm point number.
R	*alarm point reset* command
Example:	<SOH>u0017R<CR> causes the system to act as though alarm 17 has been reset.
Failure conditions:	1

Acknowledging Communications Failures

The V1500 does not initiate a communications failure announcement to the host computer. Use the active com/fail report if a communications failure is suspected. Note that when communications fail between a receiver and the V1500, the video from that receiver's camera will display on the host computer's monitor if the procedure discussed in the following paragraph is performed.

The first *com/fail acknowledge* command sent selects the camera station experiencing a communications failure. This displays that camera's video on the monitor. The second com/fail command acknowledges that the failure has taken place. If there are several communications failures active at the same time, the system maintains them in a queue. As one is acknowledged, the next is displayed on the selected monitor. This continues until all are acknowledged.

Note: Acknowledging communications failures does not restore communications between the receiver(s) and the V1500; it only acknowledges the announcement of the failures.

] (ASCII right-hand square bracket)	*com/fail acknowledge* command
Example:	<SOH>]<CR> sending this command the first time selects the failed camera station, the second command acknowledges that a communications failure has taken place.
Failure conditions:	1, 19, 20
Verification:	Active Com/Fail Report

Keypad Commands

These commands allow the host to enable and disable keypads and to make keypad/monitor assignments.

Enabling Keypads

This command instructs the system to re-enable a keypad previously disabled by the host computer. Also use this command to activate new keypads without waiting for a background poll.

a###	command syntax
A	*keypad enable* command
###	3-digit keypad number
Example:	<SOH>a002<CR> causes the system to enable keypad 2.
Failure conditions:	1, 22
Verification:	Keypad Status Report

Disabling Keypads

This command instructs the system to disable the specified keypad. This effectively takes the keypad off-line. This command has many uses both for its direct effect and for its indirect effect. For example, it can limit receiver control from a keypad. It could also be used indirectly to force the release of a seized receiver.

⚠ *Caution: If the host computer disables a keypad, it can only be brought back on-line by the host computer. Do NOT disable all keypads at once, as the system would be totally dependent on the RS-232 link.*

b###	command syntax
b	*keypad disable* command
###	3-digit keypad number
Example:	<SOH>b003<CR> causes the system to disable keypad 3.
Failure conditions:	1, 22
Verification:	Keypad Status Report

Assigning Monitors to Keypads

This command assigns a monitor to a keypad. Although the host computer may be used to force keypad/monitor assignments (ignoring the partitioning definitions created in the V1500 Configurator), this is not advisable. This command should only be used to assign monitors to keypads within the partitioning definitions developed during system programming.

> ⚠ *Caution: If a keypad operator sees an invalid monitor number (a monitor that has not been assigned to the keypad during system programming) in the monitor number display, the host computer has forced an invalid monitor assignment to this keypad. This monitor must not be selected from the keypad, as this action will produce keypad errors. Note that if the monitor is inadvertently selected, the keypad must be taken off-line and then brought back on-line again, or the host computer must perform a valid monitor assignment to this keypad.*

cKKK,MMM	command syntax
c	*keypad/monitor assignment* command
KKK	3-digit keypad number
MMM	3-digit monitor number
Example:	<SOH>c007,001<CR> assigns monitor 1 to keypad 7.
Failure conditions:	1, 2, 22
Verification:	Keypad Assignment Report

Real-Time Clock Commands

These commands allow the host computer to set the time and date of the V1500 real-time clock. They also let the host computer request time and date information from the system. The real-time clock operates in the 24-hour mode.

Reading the Current Time and Date

When requested for time/date data, the V1500 responds with the time in hours:minutes:seconds followed by the date in month/day/year format.

t	*read current time and date* command
Example:	<SOH>t<CR> causes the system to respond with the current time and date: e.g., 13:47:10 09/19/91.

Setting the Time

The host computer uses this command to set the V1500 time in hour:minute:second format. Leading zeros must be used for values less than 10.

thh:mm:ss	command syntax
t	specifies real-time clock action
hh:mm:ss	*set time* command
Example:	<SOH>t15:05:00<CR> sets the system's real-time clock to 3:05 P.M.

Setting the Date

The host computer uses this command to set the V1500 date in month/day/year format. Leading zeros must be used for values less than 10.

tmm/dd/yy	command syntax
t	specifies real-time clock action
mm/dd/yy	*set date* command
Example:	<SOH>t06/23/91<CR> sets the system's date to June 23, 1991.

Setting the Time and Date

The host computer uses this command to set the V1500 time and date in hour:minute:second and month/day/year formats. The ASCII space character " " must be included to separate the date and time. Leading zeros must be used for values under 10.

tmm/dd/yy hh:mm:ss or thh:mm:ss mm/dd/yy	command syntax
t	specifies real-time clock action
mm/dd/yy	sets date segment of the command.
hh:mm:ss	sets time segment of the command.
Example:	<SOH>t06/23/95 15:05:00<CR> sets the system's date to June 23, 1995 and the time to 3:05 P.M.

Reports

Note: To output a list of all supported input commands for the host port, enter the command <SOH>?<CR>.

Active Alarm Report

This command requests a report which lists the cameras displaying alarm video for all monitors in the V1500 system.

d	*active alarm report* command
ALARM MONITOR #MMM = CCCC	report format
#MMM	# followed by three-digit monitor number
CCCC	four-digit camera number
0000 $	no alarms
Example:	<SOH>d<CR> requests active alarm report, returning: ALARM MON #001 = 0001,ALARM MON # 002 = 0003,…,ALARM MON # 032 = 0031 $
Failure conditions:	1

In the example in the table above, the report indicates that monitor 1 is displaying alarm video from camera 1, monitor 2 is displaying alarm video from camera 3, etc.

Active Com/Fail Report

This command returns a report which lists all of the active com/fails in the system. If no communications failures are active, the response is 000.

e	*active com/fail report* command
CCC1,...,CCCn	report syntax
CCC1	first four-digit receiver number
CCCn	last four-digit receiver number
0000	No com/fails
$	End of report
Example:	<SOH>e<CR> requests com/fail report, returning 0001,0002,0003,…0031 $
Failure conditions:	1

Monitor Assignment Report

This command is used to determine the camera that is assigned to each monitor. The command has single and group formats. The single format returns the camera assignment of the specified monitor. The group format returns a group of consecutive monitors and cameras. In the group format, a comma must be used to separate the two numbers.

fMSTART,MSTOP	command syntax (for single monitor, use fMSTART only)
f	*monitor assignment report* command
MSTART	first 3-digit monitor number
MSTOP	last 3-digit monitor number
CCC1,CCC2, ...,CCCn$	report syntax
CCC1, CCC2,...CCCn	4-digit camera numbers assigned to monitors
$	end of report
Examples:	<SOH>f002<CR> requests report for monitor 2, returning 0018 $ (camera 18 is assigned to monitor 2). <SOH>f003,005<CR> requests report for monitors 3-5, returning 0029,0011,0012 $ (cameras 29, 11, and 12 are assigned to monitors 3, 4, and 5.
Failure conditions:	1, 2

Receiver Status Report

This command returns a report which indicates the status of receiver functions.

g#####	command syntax
g	*receiver status report* command
#####	4-digit receiver number
(see table below)	report syntax
$	end of report
Examples:	<SOH>g0062<CR> requests report for receiver 62, returning 001100000 $
Failure conditions:	1, 3

Receiver status report format is nine digits. Each of the nine digits indicates the receiver status or function, and may be 1 or 0. If the digit is 1 then the condition is true, if the digit is 0 the condition is false.

0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1
Off-line	In alarm	Moving to preset	Aux 1 on	Aux 2 on	Aux 3 on	Aux 4 on	Autoiris on	Autopan on

For example, a report of 001100000 might be returned, indicating the receiver is on-line, is not in an alarm state, is moving to a preset, auxiliary equipment denoted AUX1 is on and aux 2-4 are off, the autoiris is off and the pan-and-tilt drive is not autopanning.

Keypad Assignment Report

This command is used to determine keypad/monitor assignments. The command has single and group formats. The single format returns the monitor assignment of the specified keypad. The group format returns a group of consecutive keypads and monitors. In this format, a comma must be used to separate numbers.

hKSTART,KSTOP	command syntax (for single report, use hKSTART only)
h	*keypad assignment report* command
KSTART	first 3-digit keypad number
KSTOP	last 3-digit keypad number
MM1,MM2,...MMn$	report syntax
MM1,MM2,...MMn	3-digit monitor numbers, each corresponding to a keypad number.
$	end of report
Examples: Failure conditions:	<SOH>h007,009<CR> requests report for keypads 7-9, returning 002,007,004 $ (monitors 2, 7, and 4 are assigned to keypads 7, 8, and 9. 1, 22

Tour Report

The *tour report* command outputs the parameters which define each step in the tour (camera, preset, speed, dwell time). Tour report format depends upon the tour type (monitor or salvo). Use the following command syntax to request a report on a tour.

i###P	command syntax
i	*tour report* command
###	tour number
TOUR NO.: TTT TOUR TYPE: XXX NUMBER OF STEPS: ## LAST STEP ACTION: data1 TOUR DATA: data2	report syntax
TTT XXX ## data1 data2	tour number Single Monitor Salvo 01 to 32 (number of steps in the tour) CHAIN TO TOUR NO. xxx (xxx = tour number) REPEAT HALT If Single Monitor Tour: STEP xx = CAM: xxxx, PRE: xx, SPD: xx, DWL: xx (where xx = number in acceptable range) If Salvo Tour: STEP xx = SALVO: xxx, DWL: xx (where xx = number in acceptable range) (not applicable if Tour Type = Not Configured)
Failure conditions:	1, 2, 11, 23

Note that if a tour had not been defined for the selected tour number, the following report would be sent to the host computer instead of the report format shown in the previous table:

TOUR NO.: TTT
TOUR TYPE: NOT CONFIGURED
NUMBER OF STEPS: 00
NO TOUR DATA

where TTT represents the tour number.

Monitor Status Report

This command returns status information on a monitor or range of monitors.

j###	command syntax
j	*monitor status report* command
###	3-digit monitor number
(see table below)	report syntax
$	end of report
Examples:	<SOH>j007<CR> requests report for monitor 7, returning 01000000 $
Failure conditions:	1, 2

The report consists of eight digits, each digit representing the status of one monitor condition (1 = true, 0 = false). The command may used to request a report for one monitor or a range of monitors, returning one camera number per monitor. Commas separate the camera numbers for a range of monitors.

0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1
Monitor busy with alarm	Monitor busy with comm. failure	Monitor in tour	N/A	N/A	Reserved	Reserved	Monitor idle

For example, a report of 01000000 might be returned for the command <SOH>j007<CR>, indicating that monitor 7 is displaying video from a camera station experiencing a communications failure.

Keypad Status Report

This command returns a report which indicates the status of a keypad.

k###	command syntax
k	*keypad status report* command
###	3-digit keypad number
(see table below)	report syntax
$	end of report
Example:	<SOH>k007<CR> requests report for keypad 7, returning 01000000 $
Failure conditions:	1, 22

Keypad status report format is eight digits, each signifying a keypad condition. Each digit may be 1 or 0. If the digit is 1 then the condition is true, if the digit is 0 the condition is false.

0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1
Keypad off-line	Keypad disabled by host computer	Display busy	Receiver control in use	Reserved	Reserved	Reserved	Reserved

Camera Seize Report

This command is used to determine if a camera has been seized by a keypad. If no seize exists, the monitor and keypad digits are zero.

l#### (ASCII lowercase L)	command syntax
l	*camera seize report* command
####	4-digit camera number
####,MMM,KKK	report syntax
MMM	3-digit number of monitor on which the camera displays
KKK	3-digit number of keypad that seized the camera
$	end of report
Example:	<SOH>l0027<CR> requests report for camera 27, returning 0027,005,011 $ indicating that camera 27 is displaying on monitor 5 and is seized by keypad 11.
Failure conditions:	1, 3

Monitor Seize Report

This command is used to determine if a monitor has been seized. If no seize exists, the camera and keypad digits are zero.

m###	command syntax
m	*monitor seize report* command
###	3-digit monitor number
CCCC,###,KKK	report syntax
CCCC	4-digit number of camera displaying on the monitor
KKK	3-digit number of keypad that seized the camera
$	end of report
Example:	<SOH>m005<CR> requests report for monitor 5, returning 0017,005,011 $ indicating that monitor 5 is displaying camera 17 and is seized by keypad 11.
Failure conditions:	1, 2

Keypad Seize Report

This command is used to determine if a keypad has seized any camera/monitor combination. If no seize exists, the camera and monitor fields are zero.

n###	command syntax
n	*keypad seize report* command
###	3-digit keypad number
CCCC,MMM,###	report syntax
CCCC	4-digit number of camera seized by the keypad
MMM	3-digit number of monitor on which the camera displays
KKK	3-digit number of keypad
$	end of report
Example:	<SOH>n001<CR> requests report for keypad 1, returning 0017,005,001 $ indicating that keypad 1 has seized camera 17 which is displaying on monitor 5.
Failure conditions:	1, 22

Alarm Enable Status Report

This command returns a report which indicates the status of all of the X-IA alarms (V1200X-IA or V1300X-IA alarm interface devices) in the system (enabled or disabled). This command is not applicable for receiver alarms. The numbers are transmitted in groups of eight digits separated by commas. The first digit represents the status of the first alarm input, the second digit represents status of the second alarm input, and so on.

q	*alarm enable status report* command
########,########,...,#######n	report syntax
#	1 = enabled, 0 = disabled
n	alarm input 32's enable status
$	end of report
Example:	11111111,11111111, 11110000,11110101 $ (X-IA alarms 1-20, 25-28, 30 and 32 are enabled, 21-24, 29 and 31 are disabled).
Failure conditions:	1

System Specification Report

This command queries the V1500 for a list of operating parameters.

' (ASCII single quote character)	*system specification report* command
	report syntax
Copyright Vicon Industries Inc. 2001	Copyright data
MXK=###	3-digit number of keypads
MXC=####	4-digit number of cameras
MXM=###	3-digit number of monitors
MXA=####	4-digit number of alarms
AML=ALL	all monitors are alarm monitors
SML=ALL	disregard this entry
OF1=V1500	disregard this entry
OF2=00000000	disregard this entry
TDC=####	camera assigned to host computer (4-digit number)
TDM=###	monitor assigned to host computer (3-digit number)
$	end of report
Failure conditions:	1

V1500 Responses

The V1500 acknowledges each host command string with a status character. There are four responses:

- An ASCII asterisk (*) indicates a transmission error (e.g., parity, framing, etc.).
- An ASCII question mark (?) indicates a command error (e.g., syntax errors, parameter errors, etc.).
- An ASCII (@) indicates that there is a transmission error (not specific).
- An ASCII dollar sign ($) indicates commands have been accepted for processing.

Note: Acknowledgment of a command does not automatically mean that it has been executed. There are conditions under which the V1500 fails to execute or overrides a command (e.g., alarm acknowledge command when there are no alarms pending or preset command to a receiver that is not equipped with preset option). Table 1 lists the possible reasons for command failure or override. The description of each command indicates which conditions apply.

The host should not transmit a new command until the preceding command has been acknowledged with an ASCII dollar sign ($). In the event of an error, the host computer should retransmit the command.

Reference

Hexadecimal Value of ASCII Codes

The hexadecimal value of each commands ASCII character is listed in the following table.

Table 3
ASCII Codes and Hexadecimal Values

Command Code	Hexadecimal Value	Command Code	Hexadecimal Value	Command Code	Hexadecimal Value
A	041	S	053	e	065
B	042	T	054	f	066
C	043	U	055	g	067
E	045	V	056	h	068
F	046	W	057	i	069
G	047	X	058	j	06A
H	048	Y	059	k	06B
I	049	Z	05A	l	06C
J	04A	[	05B	m	06D
K	04B	\	05C	n	06E
L	04C	]	05D	o	06F
M	04D	^	05E	p	070
N	04E	_ (underline)	05F	q	071
O	04F	'	060	t	074
P	050	a	061	u	075
Q	051	b	062	<SOH>	0x01
R	052	c	063	<CR>	0x0D

Shipping Instructions

Use the following procedure when returning a unit to the factory:

1. Call or write Vicon for a Return Authorization (R.A.) at one of the locations listed below. Record the name of the Vicon employee who issued the R.A.

   Vicon Industries Inc.
   89 Arkay Drive
   Hauppauge, NY 11788
   Phone: 631-952-CCTV (2288); Toll-Free: 1-800-645-9116; Fax: 631-951-CCTV (2288)

   For service or returns from countries in Europe, contact:

   Vicon Industries Ltd
   Brunel Way
   Fareham, PO15 5TX
   United Kingdom
   Phone: +44 (0) 1489 566300; Fax: +44 (0) 1489 566322

2. Attach a sheet of paper to the unit with the following information:

   a. Name and address of the company returning the unit
   b. Name of the Vicon employee who issued the R.A.
   c. R.A. number
   d. Brief description of the installation
   e. Complete description of the problem and circumstances under which it occurs
   f. Unit's original date of purchase, if still under warranty

3. Pack the unit carefully. Use the original shipping carton or its equivalent for maximum protection.
4. Mark the R.A. number on the outside of the carton on the shipping label.

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