CLASSVIEW

ROSE.COM

INSTALLATION AND OPERATIONS MANUAL

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System introduction

Thank you for choosing ClassView™. Designed for plug and play operation, your new ClassView will simplify your job by helping you organize your multiple computer applications. ClassView is especially designed for classroom applications. It allows the instructor to view, share, or control student's workstations.

Figure 1. ClassView unit (Front view)

Features

- Instructor can access any student's computer in three modes:
  - View mode – See student's station without disturbing their keyboard or mouse
  - Share mode – See student's station with interactive keyboard and mouse sharing
  - Control mode – See student's station with complete control over their keyboard and mouse
- Instructor can enable and disable student's computer in two modes:
  - Disable – Student's screen is blanked and keyboard and mouse are locked out
  - Freeze – Student's screen remains on, but all keyboard and mouse activity is locked out
- Show mode allows instructors to send their screen to any or all students
- Scan mode allows instructor to sequentially view each students computer
- Connect up to 255 stations
- Single cable connection between units simplifies installation
- Connection between units uses high quality 13W3 video connectors for crystal clear video even at long distances
- Data on bus connection uses packetized network format for fast and highly reliable delivery of keyboard, mouse, and control information
- Front panel dip switch determines port numbers and establishes network address
- Keyboard timeout feature allows sharing of CPUs
- Drives video, keyboard, & mouse up to 100' away
- Select CPU from keyboard or optional keypad
- Video resolution supports up to 1280 x 1024
- LEDs show bus status and video sending state
- Screen blank function turns off video after 1 – 999 seconds of inactivity
- Previous channel command for easy back and forth access to 2 CPUs
- All settings can be saved in non-volatile memory
- Available in 117 VAC or 230 VAC models
- 19" and 24" rack mount kits available
- Made in USA

GETTING STARTED

To acquaint you with your ClassView unit, this manual first describes ClassView's front and rear panels. Installation and operation instructions begin with the Quick setup system wiring guide. This easy-to-understand diagram illustrates how to connect ClassView to your CPUs, monitor, keyboard, and mouse.

Package Contents

Your Class View package includes the ClassView unit, a power transformer, this manual, and a keyboard template. Cables are generally ordered and shipped separately.

Cable requirements

ClassView connects to a CPU with a CPU adapter cable and to the keyboard, monitor, and mouse with a Keyboard-Monitor-Mouse adapter cable. These cables are most commonly purchased with the ClassView and will provide quick and trouble-free operation. If you wish to build your own cables, refer to the pin out information in *Appendices A, B, and C. Appendix F* Describes the cable part number based on the type of equipment you wish to connect. *Appendix F* lists the most common cables.

To interconnect the units together you use coax bus cables between each box and terminators at the first unit on the bus and the last unit on the bus. Cables and accessories are available from where you purchased your ClassView.

Most installations use a cable for the CPU and monitor, keyboard, and mouse which are no longer than 20 feet in length. Cable length will affect the quality of the video, depending upon which resolution you will be using. You can improve the video resolution and distance by ordering coax cables for your CPU and monitor connections, see *Appendix F and G and Table 6 Video Distance Capability.*

Locating the unit

The ClassView unit is best located near the CPU and associated keyboard, monitor, and mouse. This will reduce the length of the cables and provide a more cost-effective and neater installation. The total length of bus cable should not exceed 200 feet, depending upon the resolution of video used. Typically you should leave the front panel accessible in order to view the status and send signals, though once all is installed you will probably not need to see these LEDs.

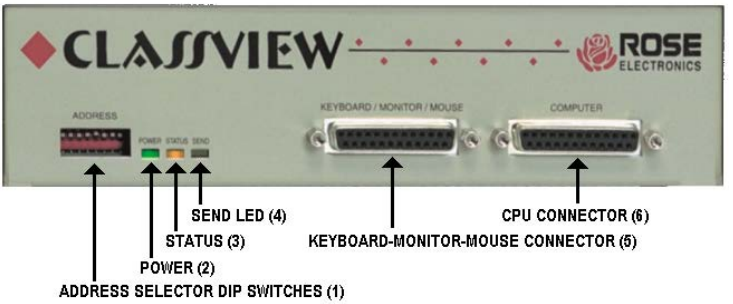


Figure 2. Front panel, model # CVT-CMB

1	Address	Defines the number of the CPU attached to the unit. Address 0 is reserved for diagnostics. Address 255 is reserved for the instructor's unit.
2	Power LED	When lit indicates that unit is powered on.
3	Status LED	Flashes once a second to show bus connection. Also flashes when keyboard or mouse activity occurs.
4	Send LED	When lit unit is sending video over the coax bus, one or more monitors may be receiving the video.
5	Keyboard-Monitor-Mouse Connectors	Keyboard, monitor, and mouse are connected at this port using a Keyboard-Monitor-Mouse adapter cable. The cable has a DB-25 male at one end and appropriate connectors at the other end, depending upon your video, keyboard, and mouse type. Only one adapter cable is needed.*
6	CPU Connector	Your computer is connected at this port using a CPU adapter cable. The cable has a DB25 male at one end and appropriate connectors at the other end, depending upon your video, keyboard, and mouse type.*
** See Appendix F and G for further cable information*		

Table 1. The front panel

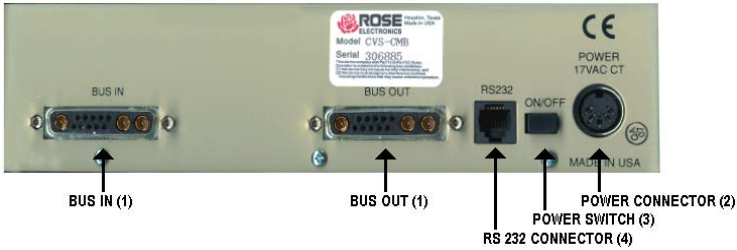


Figure 3. Rear panel, model #CVT-CMB

1	BUS in/ BUS out	Bus cable to next unit or terminator is connected here. Terminator or bus cable may be connected to either bus in or bus out.
2	RS232	RS232 serial port for factory diagnostics only.
3	Power switch	Pressing the switch turns the unit on, provided supplied power transformer is properly connected.
4	Power	Power transformer included in package connects here. This is not a keyboard input. Power transformers are available for U.S or International use. Input voltage is 17VAC with center tap.

Table 2. The rear panel

QUICK SETUP SYSTEM WIRING GUIDE

The following diagrams offer a basic example of how to connect your CPUs, keyboard, monitor, and muse and the ClassViews to one another. Connectors will vary depending upon the types of equipment being installed.

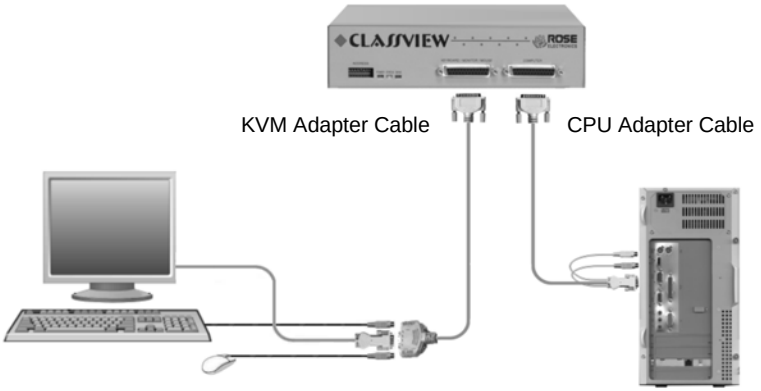


Figure 4. Connecting CPUs, keyboard, monitor, and mouse

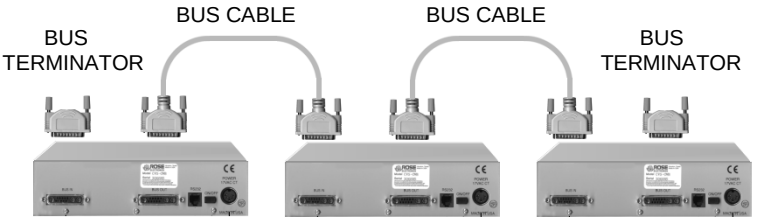


Figure 5. Connecting the bus

Installing the ClassView

Please refer to the safety section prior to installing ClassView. This section provides instructions for the setup or your ClassView. For an illustrated example, see the Quick setup system wiring guide on the previous page.

> **NOTE:** Be sure that **all** computers you are connecting to your ClassView will support the monitor, keyboard, and mouse you plan to use.

Step 1. Connecting the keyboard, monitor, and mouse

The Keyboard-Monitor-Mouse adapter cable connects your keyboard, monitor, and mouse equipment to the ClassView. Various styles of electrical connectors are used by different classes of equipment, so you should have the correct cable to match your equipment's connectors. Adapter cables are available where you purchased your ClassView. Should you prefer to build your own cables, however, pin out information is shown in *Appendices A & B*.

1.1 Plug the DB-25 male connector of the adapter cable into the connector labeled "Keyboard/Monitor/Mouse" on the ClassView front panel.

1.2 Plug the adapter cable's keyboard, monitor, and mouse connectors into your equipment's corresponding connectors.

Step 2. Connecting the CPU

A CPU adapter cable connects your computer to the ClassView. CPU adapter cables are available where you purchased your ClassView. Should you prefer to build your own cable, pin out information is shown in *Appendices A and B.*

2.1 Plug the DB-25 male connector of the CPU adapter cable into the connector labeled "Computer" on the ClassView front panel.

2.2 Plug the CPU adapter cable's monitor, keyboard, and mouse connectors into the CPU's corresponding ports.

> **Warning:** Avoid routing cable near fluorescent lights, air conditioning compressors, or machines that may create electrical noise. For best quality video, when exceeding 20 feet use coax cable. See Table 6 Video Distance Capability and Appendix F and G for further cable information.

Step 3. Connecting the bus

3.1 Connect the units together with the coax bus cables by connecting either bus in or out to either bus in or bus out of the next unit.
3.2 Install terminators on the first unit on the bus and the last unit on the bus.
3.3 Set the dip switch address to identify the CPU numbers. The teacher's station must be set to address 255. The students are usually set to start with address 1, the next would be 2 and so on. See *Appendix D* for further dip switch information.

Step 4. Powering up the system

4.1 Plug in the power transformer's power jack into the power plug located on the back of the ClassView unit, then plug the transformer into a power strip or wall outlet.
4.2 Push the On/Off switch on the back of the ClassView to power it up.
4.3 Upon power-up the yellow status light will light briefly and go out. After a few seconds the status light will flash irregularly as it talks to the keyboard and mouse attached. Then if other units are on the bus, the LED will flash at a stead one second interval. Fi it flashes at a faster rate, about 3/second, this indicates either a hardware error or a duplicate address. See the troubleshooting section for more information.
4.4 Boot up the CPUs. ClassView emulates all keyboard and mouse functions for automatic boot-up. You do not have to re-boot a CPU, if it is inconvenient. In this case you may need to issue the mode command, see page 15 to have proper keyboard communication.

Step 5. Testing the installation

Your ClassView is now ready for operation using its default settings. To take full advantage of the ClassView features, refer to the Operation section beginning on page 10. The Operation section gives detailed information about each of the ClassView commands, describing its application and giving the keyboard command sequence. For your convenience, this information is summarized in the keyboard commands summary on page 19. To begin switching immediately, however, use the following instructions.

5.1 Locate the keyboard template provided with the unit. Put it on the upper function keys of your keyboard. The template has commands at the top and station numbers at the bottom. Commands are carried out by pressing and releasing the left control key, hitting the function key corresponding to the command desired, and hitting another function key corresponding to the station(s) to which the function will apply.

5.2 For example:

To view the screen of student #2;
Press and release the left control key, hit view (F1) and hit 2 (F2).

To share the CPU of student #1;
Press and release the left control key, hit share (F2) and 1 (F1).

To disable all student's screens;
Press and release the left control key, hit disable (F6) and All (F12).

To show the instructor's screen to student #3;
Press and release the left control key, hit show (F4) and hit 3 (F3)

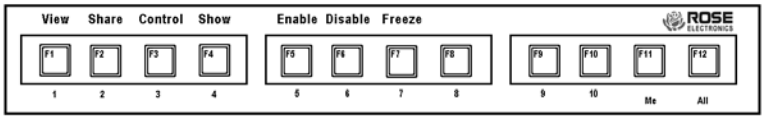


Figure 6. Keyboard template

NOTE: Before entering any ClassView keyboard command, you must press and release the **left** Control key. This activates ClassView to look for commands from the keyboard. You then have two seconds in which to start entering a valid command.

NOTE: When entering numeric commands, use only the numeral keys located at the top of the alpha-numeric keyboard. Numbers entered from the numeric keypad to the right will not be recognized as valid commands.

Operating the ClassView

ClassView is simple to operate. Port selection and function commands are entered from the keyboard. This section details each ClassView function. Also see the Keyboard command summary.

All commands apply only to the teacher's station. No commands can be entered from a student station.

IMPORTANT OPERATION NOTE: To send ClassView keyboard commands, you must first press and release the **left** Control key ([Ctrl]). Pressing and releasing [Ctrl] activates ClassView to look for commands from the keyboard. You have two seconds between each keystroke to enter a valid command, otherwise ClassView aborts the command.

NOTE: When entering numeric commands from the keyboard, use only the numeric keys located at the top of your keyboard. Numbers entered from the numeric keypad on the right of the keyboard will not be recognized as valid commands.

NOTE: ClassView commands ignore case. All command letters are shown capitalized for clarity only. Don't use the shift key though.

NOTE: All non-switching commands which require a numeric operand must use the **[Enter]** key to complete the command.

NOTE: The CPU number may be entered as a function key or as a numeric value. The numeric value is required if there are more than 10 ports in the system.

View command

The view command is used to observe a student's screen. The command is issued b pressing and releasing the control key, hitting the F1 key, and then hitting a CPU number (see Note). All keyboard and mouse data will be discarded when this mode is entered. Hitting view with an operand of All (F12) will enable the scan mode. Hitting view with an operand of Me (F11) will restore normal connection of the instructor back to their own CPU.

Share command

The share command is used to interact with a student. The command is issued by pressing and releasing the control key, hitting the F2 key, and then hitting a CPU number (See Note). All keyboard and mouse data is shared according to the keyboard timeout setting. If the student is currently using the keyboard and mouse when first switched to, the student will retain control. After two seconds of inactivity the instructor can gain control. The instructor will retain control until there is no keyboard or mouse activity for the period of the keyboard timeout setting. Hitting share with an operand of ALL (F12) will enable the scan mode. Hitting share with an operand of ME (F11) will restore normal connection of the instructor's keyboard and mouse back to their own CPU.

Control command

The control command is used to gain full control of a student's computer. The command is issued by pressing and releasing the control key, hitting the F3 key, and then hitting a CPU number (See Note). The student's keyboard and mouse will be locked out and the instructor will have exclusive use of the student's CPU. Hitting control with an operand of ME (F11) will restore normal connection of the instructor's keyboard and mouse back to their own CPU.

Show command

The show command is used to show the instructor's screen to any or all students. The command is issued by pressing and releasing the control key, hitting the F4 key, and then hitting a CPU number (See Note). The teacher will retain control of their own CPU. The student's keyboard and mouse will be locked out. Hitting show with an operand of All (F12) will send the teacher's screen to all students. Hitting show with an operand of ME (F11) will restore normal connection of the instructor's keyboard and mouse back to their own CPU.

Enable command

The enable command restores any or all student's CPUs to the normal mode of being connected to their own CPU. The command is issued by pressing and releasing the control key, hitting the F5 key, and then hitting a CPU number (See Note). Hitting enable with an operand of All (F12) will restore all students' CPUs.

Disable command

The disable command blanks any or all student's screens and locks their keyboard and mouse. The command is issued by pressing and releasing the control key, hitting the F6 key, and then hitting a CPU number (See Note). Hitting disable with an operand of All (F12) will disable all students CPUs. Hitting disable with an operand of Me (F11) will have no effect.

Freeze command

The freeze command keeps the students screen active but locks their keyboard and mouse. The command is issued by pressing and releasing the control key, hitting the F7 key, and then hitting a CPU number (See NOTE). Hitting freeze with an operand of All (F12) will freeze all students' CPUs. Hitting freeze with an operand of Me (f11) will have no effect.

Entering station numbers by numeric value

When entering a numeric value of a station number there are certain rules on how to properly do it. After you press and release you keyboard's **left** control key **([Ctrl])**, and then enter the command desired, type in the port number as described below. Remember to use the numbers located at the top of our keyboard. **Do not** use the numeric keypad. The maximum scan port is also used to determine the number of keys required to enter a port number. If the maximum scan port is set to 99 or less, then only two digits are required to enter the port number. If the maximum scan port is set to 100 or greater, then three digits are required to enter the port number to select.

16 – 99 Ports: ClassView will execute the command on the desired station when you enter the two-digit number. For single-digit ports, you can enter the number with a leading zero (such as 01) or enter the single-digit number and press **[Enter]**. If you enter only one digit, and do not follow it with **[Enter]**, ClassView will wait two seconds for you to enter another digit, then, if no additional number is entered, will execute the command on the single-digit port.

100 – 256 Ports: ClassView will execute the command on the desired station when you enter the three-digit number. For single-and-double-digit ports, you can enter the number with one or two leading zeros (such as 027 or 001), or enter the single-or-double-digit number and press **[Enter]**. As noted above, ClassView will wait two seconds for a second or third number to be entered, then will execute the command on the port number entered.

Going to the next highest or lowest port

From the keyboard you can switch forward or backward through the CPUs by using the + and – keys. To go to the numerically next higher port, press and release the **left** control key **([Ctrl])**, then press the "+ /-" (plus) key. To go to the next numerically lower port, press and release **([Ctrl])**, then press the '+/-" (minus) key. The command is not case sensitive. Use the keys at the top of your keyboard, **not** those on the numeric pad.
The count wraps around. If follows the ports as defined by the scan minimum and maximum settings, described later.

Keyboard timeout command

This is a very powerful feature that controls when two or more keyboards are sharing a CPU. The setting of this interval value determines after what amount of time a CPU becomes available for use by another keyboard.

This value is loaded upon connecting to a CPU and when any keyboard or mouse activity occurs. If there is no keyboard or mouse activity for this time interval the CPU is available for connection by another port. Each ClassView unit can have a different timeout value set. If another keyboard connects to a CPU on a particular unit, the timeout is set by that remote keyboard and not the local one.

If the timeout is set for zero this is an instant timeout. Two keyboards each set for a zero timeout and connected to the same CPU will appear to both be connected to the CPU. If the timeout is set for 255 this is an infinite timeout. A CPU will not be released, until another port is switched to from the keyboard with the infinite timeout or the timeout is changed.

The default setting is 2 seconds. To set another interval, press and release the left Control Key, type "H", enter the new keyboard timeout interval (in seconds), and press [Enter]. Remember to use the upper numeric keys, not the numeric keypad to the right. Follow with the Keep command to save the setting. All student stations have a timeout of 2 seconds.

Previous port command

This setting is intended to provide a convenient method to alternate between two CPUs. You can rapidly and easily switch to the previous port that you were on. This especially useful when you have many CPUs and entering the multi-digit-port number can be tedious. To set another interval, press and release the **left** Control Key and then press the "**Backspace**" key.

Scan mode commands

To enable scanning from the keyboard, press and release the left Control Key, then type "S". ClassView will begin scanning sequentially from its current port through the remaining ports up to the maximum scan port and begin again at the minimum scan port. The time between switching to the next higher port is the scan time interval (see below) and is programmable from 1 – 15 seconds.
To stop scanning, press and release the left Control Key, then type "X". Scanning is also disabled by entering a port selection command. You can program the unit to start scanning upon power-up by enabling the scan mode and issuing the keep command.

Scan time interval command

The scan time interval command sets the time, in seconds, that ClassView will pause at each of the ports when scanning. The allowable scan time is from 1 to 15 seconds. The default setting is 5 seconds. To set another time interval, press and release the **left** Control Key, type "**I**", enter the new scan time interval (in seconds), and press **[Enter]**.

Minimum / maximum scan port commands

The scan minimum and maximum port commands set the range of ports for which scanning occurs. The default minimum port is 1, the default maximum port is 16. To set the minimum scan port, press and release the **left** Control Key, type "<", enter the new minimum scan port and press **[Enter]**. To set the maximum scan port, press and release the **left** Control Key, type ">", enter the new maximum scan port and press **[Enter]**.

The maximum scan port is also used to determine the number of keys required to enter a port number. If the maximum scan port is set to 99 or less, then only two digits are required to enter the port number. If the maximum scan port is set to 100 or greater, then three digits are required to enter the port number to select.

Screen blanking command

This feature reduces the wear on your screen and provides security for your system by blanking the screen when there has been no keyboard or mouse activity for a specified length of time. To set the screen blank interval time, press and release the left Control key, type "V", enter the interval time in seconds (0 – 999), and press [Enter] (an interval time of 0 disables this screen blank feature). Follow with the Keep command to save the new setting in the unit's non-volatile memory.

When in the Screen Blank state, all ClassView select LEDs will be off. To restore the video screen, press any key or move the mouse. To disable the screen blank feature, press and release the left Control Key, type "V", enter "0" as the interval time, and press [Enter]. Follow with the Keep command if desired to save it.

Mode command

ClassView supports keyboard modes 1, 2, and 3. the keyboard mode is set by commands from the CPU. Mode 2 is the most common mode and is also the power-up state of all 101 type and PS/2 keyboards. Mode 1 is used primarily by most models of the latest PS/2s. Mode 3 is used by certain specialized servers.

ClassView automatically detects a CPU's keyboard mode upon CPU boot-up and thus learns which mode the CPU uses. If the CPU has already booted and is then connected, ClassView cannot detect the CPU's keyboard mode and uses the setting stored in the ClassView's non-volatile memory. The mode command can be issued to change the keyboard mode for any port and can be saved in non-volatile memory with the Keep command. If a port was previously set to mode 1 and you connect a mode 2 CPU to that port, it probably will not communicate correctly and you will need to issue the mode command.

To issue the Mode command, press and release the left Control Key, type "M", and enter the mode number "1", "2", or "3" followed by [Enter]. Follow with the Keep command. To change the mode on another port, you must first switch to that port and then issue the mode command.

Typematic value command

ClassView can be configured to control the keyboard typematic rate and delay. This setting is used to adjust the user preference of the way the keyboard acts when holding a key down to repeat the key, such as when moving a cursor across a line. The rate is the speed at which the keys are sent in keys/second. The delay is the wait time in milliseconds after the key is initially pressed, before additional keystrokes are sent. To issue the command press and release the left Control Key, then type "A", then enter the 1-3 digit decimal typematic value followed by {Enter]. The typematic value is defined as shown in the below table. Use the Keep command to save the value.

The typematic value to be used is determined by using the equation: Typematic Value = Rate value + Delay value. Pick the desired rate in keys/sec. (32 choices) and delay in milliseconds (4 choices) from the below table. Add the values to the right of the desired settings. For example to use a Rate of 16.0 keys/sec, and a 500 millisecond delay, the typematic value would be 7 + 32 =39, so to set this value, type Ctrl A, 39 {Enter}.

Rate Keys/sec	Rate Value	Rate Keys/sec	Rate Value	Rate Keys/sec	Rate Value	Rate Keys/sec	Rate Value
30.0	0	15.0	8	7.5	16	3.7	24
26.7	1	13.3	9	6.7	17	3.3	25
24.0	2	12.0	10	8.0	18	3.0	26
21.8	3	10.9	11	5.5	19	2.7	27
20.0	4	10.0	12	5.0	20	2.5	28
18.5	5	9.2	13	4.6	21	2.3	29
17.1	6	8.6	14	4.3	22	2.1	30
16.0	7	8.0	15	4.0	23	20.	31

Table 3. Typematic rate

Delay	Value	Delay	Value	Delay	Value	Delay	Value
250	0	500	32	750	64	1000	96

Table 4. Typematic delay

Keep command

The Keep command saves the current state of the ClassView's custom settings. These settings are scan state upon power up, scan time interval, scan minimum and maximum ports, screen blank time interval, CPU mode, and keyboard LED state, keyboard timeout interval, and the keyboard typematic value. These settings are saved in non-volatile memory and become the power-up settings. To enter the command, press and release the left Control Key, then press "K",

Null command

This command is used to re-synchronize an out-of-sync PS/2 mouse. Such a condition can result due to transients, spurious power-up effects, or plugging and unplugging of cables with live equipment. The command may need to be entered once or twice, depending if the mouse is out-of-sync by one or two bytes. Microsoft mouse driver version 9.01 corrects this inadequacy of previous drivers and renders this command unnecessary. At publishing time, it is believed this mouse driver is only available for DOS and Window. To issue the command, press and release the left Control Key, they type "N".

Rom identification command

This command is used to identify the revision level of ClassView firmware currently installed. Before entering this command, your currently selected CPU should be at a command prompt, so that when the ClassView sends the ROM revision level that the results will be displayed. To issue the command, press and release the left Control Key, then type "I", ClassView will send back its current firmware revision level, in the format *majorlevel, minorlevel*.

Reset command

This command is used to re-boot the mouse and keyboard without removing power from the ClassView. This is most useful to reset a PS/2 mouse which has been unplugged and plugged back in. This command is also useful to enable mouse data to be sent to a CPU which has not enabled the mouse. This may be the case if the ClassView was not connected or powered off after a CPU was booted up. To issue the command, press and release the left Control Key, then type "R". This command should not be issued to a CPU which has a PS/2 muse connected, but no mouse driver is loaded, since many CPUs will crash if you send them unexpected mouse data.

Video distance capability

The limitation on driving distance is usually due to the quality of the video. The table below shows the distances, resolution, and quality of video that can be expected. The table uses a letter which shows the cable type and a number which refers to the quality of the video, as described below. This table applies to the base unit without chaining. There will be some degradation when ClassViews are chained together. Rose Electronics does not support systems where the video quality is 1 or 2. There are further capabilities not listed here in order to send the higher resolution video longer distances. Please contact Rose Electronics technical support for more details.

N – Normal cabling
C – Coax cabling
4 – Perfect or near perfect; unable to easily detect defects in screen
3 – Very acceptable; images clear, small reflections around lettering depending upon color; if you examine the screen closely you will find defects
2- Acceptable; slightly fuzzy images; readable text, acceptable for casual use, but not for prolonged viewing as this will cause eye fatigue
1- Unusable; images smeared, text not easily readable

	5'	10'	20'	30'	50'	75'	100'	125'	150'	200'
640X480 60 Hz refresh	N4 C4	N4 C4	N4 C4	N4 C4	C4	C4	C4	C4	C3	C3
640x480 72-75Hz refresh	N4 C4	N4 C4	N4 C4	N3 C4	C4	C4	C4	C3	C3	C3
800x600 non-interlaced	N4 C4	N4 C4	N3 C4	N3 C4	C4	C4	C4	C3	C3	C3
1024x768 interlaced	N4 C4	N3 C4	N3 C4	N3 C4	C4	C4	C3	C3	C3	C3
1024x768 non-interlaced	N4 C4	N3 C4	N3 C4	N3 C4	C4	C3	C3	C3	C3	
1280x1024 interlaced	N3 C4	C4	C3	C3	C3	C3				
1280x1024 non-interlaced	N3 C4	C4	C3	C3						

Table 5. Video distance capability

Power interruption to the ClassView

Certain keyboards are sensitive to rapid cycling of the power. Since power to the keyboard is provided from the ClassView, you should not interrupt power to the ClassView for less than three seconds. The ClassView is immune to such transients, but the keyboard may not reset correctly.

Rackmount kit

The Rackmount kit is an optional item that can be ordered at any time. Your ClassView unit is pre-drilled to accept the rack-mounting screws. There are two sized available, 19" x 5.25" and 24" by 5.25".

Keyboard commands

To enter a keyboard command, first press and release the left Control Key, represented by [Ctrl]. Then enter the command followed by ay parameters you wish to specify, for example the port number. Letter/symbol commands are not case sensitive, and are shown in upper case for clarity only. **Do not** use the shift key when entering a command. **Do not** use the numeric keypad to enter any commands.

All ClassView commands use a two second time-out between characters, to abort the command. This is a feature that restores the keyboard to normal operation, so the keyboard is not put into a command mode which might lock it up from normal operation. The [Ctrl] character is not passed through to the CPU when it is pressed and released. The command characters and command operands are absorbed by the ClassView and not sent to the CPU.

All non-switching commands which require a numeric operand must use the [Enter] key to complete the command.

Refer to Table 7 for a complete list of all available keyboard commands.

Keyboard Command Summary

Command	Key Sequence	Description
View	[Ctrl] F1 station #*	View student's station
Share	[Ctrl] F2 station #*	Share student's station
Control	[Ctrl] F3 station #*	Control student's station
Show	[Ctrl] F4 station #*	Show instructors screen to students
Enable	[Ctrl] F5 station #*	Enable keyboard, mouse, and monitor at student's station
Disable	[Ctrl] F6 station #*	Disable keyboard, monitor, and mouse to the selected CPU port
Freeze	[Ctrl] F7 station #*	Disables keyboard and mouse at student's station
Go to selected port	[Ctrl] xxx xxx=port number (1-3 digits)	Connects your keyboard, monitor, and mouse to the selected CPU port
Go to next higher port	[Ctrl] +	Selects the next higher sequential port
Go to next lower port	[Ctrl] -	Selects the next lower sequential port
Scan On	[Ctrl] S	Turns Scan mode on, causing ClassView to start scanning sequentially from the current port through the remaining ports until scan max is reached and then switching to scan min. If local only is enabled then scanning is local port 1-16 only. If scan is on when a Keep command is issued then upon power up the unit will start scanning.
Scan Off	[Ctrl] X	Turns Scan mode off. Scan can also be stopped by entering a port selection command
Scan time interval	[Ctrl] T xx [Enter] xx=time in sec. (1-15 secs)	Sets the time, in seconds, that ClassView will pause at each port when scannin g
Minimum scan port	[Ctrl] < xxx [Enter] where xxx = port number	Sets port number which is the lowest port for scanning. When scanning and maximum scan is reached, the next port will be minimum scan. Note: Follow with keep command
Maximum scan port	[Ctrl] > xxx [Enter] where xxx = port number	Sets port number which is the highest port for scanning. When scanning and maximum scan is reached, the next port will be minimum scan. Note: Follow with keep command
Previous port	[Ctrl] BS (backspace)	Switches to the previous port you were on

Keyboard command summary (continued)

Command	Key Sequence	Description
Keyboard timeout	[Ctrl] H xxx [Enter] where xxx = time in seconds (0 – 255 seconds)	Determines after what amount of time a CPU becomes available for access by another keyboard. Value of 255 is infinite timeout. Value of 0 is instant timeout. Note: follow with keep command
Reset command	[Ctrl] R	Resets and enables mouse and keyboard, enables PS/2 mouse on currently selected port
Send null to mouse	[Ctrl] N	Used to re-synchronize PS/2 mouse which has gotten out-of-sync
Identify ROM version	[Ctrl] i	Identifies ROM version, CPU must be at a command prompt to receive value
Keep settings	[Ctrl] K	Tells ClassView to save custom settings of various commands
Set screen blank time interval	[Ctrl] V xxx [Enter] where xxx = time in seconds (0 – 999 seconds)	Sets time in seconds with no keyboard or mouse activity after which video will be turned off. Video is turned back on when any key is pressed or mouse is moved. Note: Follow with keep command
Set keyboard mode	Select port, ten enter command: [Ctrl] M x [Enter] where x = 1, 2, or 3	Sets ClassView CPU's keyboard mode. Will change the keyboard to the new mode and update its internal value. Switching to this port will se the new mode. Note: Follow with keep command
Set typematic value	[Ctrl] A xxx [Enter] where xxx is a number from 0 to 127 indicating Keyboard typematic value	Sets power-on keyboard typematic action which is controlled by the ClassView. This can be used to adjust the key stroke rate and delay to the user preferred settings. See Tables 4 and 5 for how the typematic value is determined. Note: Follow with keep command

* Station # can be either F1-F10 to mean student 1-10, F11 to mean the instructor's CPU, F12 to mean all students, or a two-digit or three digit numeric value corresponding to the student's station number. The number of digits to enter is determined by the maximum scan port. If the maximum scan port is set <9 only one digit is necessary. If the maximum scan port is set to <99 then two digits are needed. If the maximum scan port is set >99 then three digits are required.

ClassView troubleshooting guide

1. **CPU does not boot, keyboard error received**
   CPU does not boot, mouse error received
   a. Cable is loose, reseat cable and hit F1 to continue or reboot computer
   b. Wrong cable plugged in, keyboard and mouse cables reversed
   c. Cable is defective, try using cable from another CPU. If problem goes away cable is defective
   d. Port on ClassView is defective, try using another port on ClassView. If problem goes away port is defective
   e. Port on CPU is defective, try plugging in keyboard or mouse directly if problem remains CPU port is defective. If CPU power status LED not lit, fuse on motherboard ma be blown
2. **Mouse drives does not load**
   a. If PS/2 type mouse, CPU must be connected to ClassView or mouse at boo-up time in order for muse to be recognized by CPU. Reboot computer with ClassView powered on and cable attached
   b. If RS-232 type mouse, make sure right COM port is being used and syntax of mouse driver is correct to search for the correct port
   c. Incompatible or old mouse driver being used, try latest driver. At time of this publishing Microsoft 9.01 driver is best one available
3. **Can't switch ports from keyboard**
   a. Power to ClassView was removed for less than three seconds possibly causing keyboard to lock up. Disconnect keyboard and plug it back in
   b. The mode of the keyboard does not match that of the CPU. Issue the mode command, usually 1 for IBM PS/2's and 2 for all others. The default setting of the ClassView is mode 2. Sometimes an incorrect mode will confuse the CPU or keyboard and require re-booting the CPU or resetting the keyboard by unplugging and plugging it back in
   c. If try to reach a remote port, that port is busy. Try again later
   d. If trying to reach a remote port, the bus cable is disconnected, or the remote box is powered off. Check status LED on local unit, if it is not flashing at a one-second interval then bus cable has been disconnected or no other units are attached to the network. Check remote unit for activity also.
   e. KB port or CPU port cable disconnected. Typing in characters to the KB should cause the status LED to flash more rapidly. Use this to test if you have a good KB or mouse connection to the unit

4. **Wrong or missing characters from those typed**
   a. The keyboard mode is incorrect. See item 3c above
5. **Can't access all functions of mouse**
   a. If Microsoft BallPoint mouse, get latest Microsoft revision 9.01 driver
6. **Mouse does not move**
   a. ClassView turned off after or not connected when CPU booted or application using mouse run. Exit and re-enter application using mouse or issue reset command
   b. PS/2 mouse was not connected when ClassView powered up or has been disconnected and reconnected. Issue the reset command
7. **PS/2 mouse gets out of sync**
   a. Cabling was disturbed during mouse movement. Issue the null command once or twice to re-sync the mouse. Get a later mouse driver which does not exhibit this problem, such s Microsoft rev 9.01
8. **Video fuzzy**
   a. Cable too long or wrong type. Verify that resolution and distance match Video Distance Capability table. Upgrade cable if necessary
9. **Video not synchronized or wrong color**
   a. Cable is loose, reseat cable
   b. Wrong CPU cable used. If you have a 9515, 9517, 9518, XGA mono or similar monitor, you must use special cables or adapters. See previous section, XGA video, model 9515, 9517, 9518 monitors
   c. Cable is defective, try using cable from another CPU if problem goes away cable is defective
   d. Port on ClassView is defective, try using another port on ClassView. If problem goes away port is defective
10. **Lower resolution video OK, but can't enter high resolution mode**
   a. Wrong CPU cable used. If you have a XGA, XGA-2, or other high resolution video card you should probably be using the CAB-Y… cable to connect your CPUs
   b. Driver has not been setup. Windows, OS/2, or other driver has not been configured for this resolution. Configure the driver
11. **Status LED flashes at steady 3/second rate, unit does not respond**
   a. Duplicate address is present. Some other ;unit has same address as this unit. Change address from DIP switch and power unit off an on
   b. Unit has a defective component and fails self test. Unit must be serviced.

Maintenance and repair

This unit does not contain any internal user-serviceable parts. In the event a unit needs repair or maintenance, you must first obtain a Return Authorization (RA) number from Rose Electronics or an authorized repair center. This Return Authorization number must appear on the outside of the shipping container. See Limited Warranty for more information.

When returning a Unit, it should be double-packed in the original container or equivalent, insured and shipped to:

Rose Electronics
Attn: RA_____
10707 Stancliff Road
Houston, Texas 77099 USA

Technical support

If you are experiencing problems, or need assistance in setting up, configuring or operating your ClassView, consult the appropriate sections of this manual. If, however, you require additional information or assistance, please contact the Rose Electronics Technical Support Department at:

Phone: (281) 933-7673
E-Mail: TechSupport@rose.com
Web: www.rose.com

Technical Support hours are from: 8:00 am to 6:00 pm CST (USA), Monday through Friday.

Please report any malfunctions in the operation of this unit or any discrepancies in this manual to the Rose Electronics Technical Support Department.

Safety

This ClassView has been tested for conformance to safety regulations and requirements, and has been certified for international use. Like all electronic equipment, the ClassView should be used with care. To protect yourself from possible injury and to minimize the risk of damage to this Unit, read and follow these safety instructions.

- Follow all instructions and warnings marked on this Unit.
- Do not attempt to service this Unit yourself.
- Do not use this Unit near water.
- Assure that the placement of this Unit is on a stable surface or rack mounted.
- Provide proper ventilation and air circulation.
- Keep the power cord and the connection cables clear of obstructions that might cause damage to them.
- Use only the power cords, power transformer and connection cables designed for this Unit.
- Use only a grounded (three-wire) electrical outlet.
- Keep objects that might damage this Unit and liquids that may spill, clear from this Unit. Liquids and foreign objects might come in contact with voltage points that could create a risk of fire or electrical shock.
- Operate this unit only when the cover is in place.
- Do not use liquid or aerosol cleaners to clean this Unit. Always unplug this Unit from its electrical outlet before cleaning.
- Unplug this Unit from the electrical outlet and refer servicing to a qualified service center if any of the following conditions occur:
  - The power cord or connection cables are damaged or frayed.
  - The Unit has been exposed to any liquids.
  - The Unit does not operate normally when all operating instructions have been followed.
  - The Unit has been dropped or the case has been damaged.
  - The Unit exhibits a distinct change in performance, indicating a need for service.

Safety and EMC regulatory statements

Safety Information

Documentation reference symbol. If the product is marked with this symbol, refer to the product documentation to get more information about the product.

WARNING A WARNING in the manual denotes a hazard that can cause injury or death.

CAUTION A CAUTION in the manual denotes a hazard that can damage equipment.

Do not proceed beyond a WARNING or CAUTION notice until you have understood the hazardous conditions and have taken appropriate steps.

Grounding

These are Safety Class I products and must have an un-interruptible earth ground from the main power source to the product's input wiring terminals, power cord, supplied power cord set, or chassis. Whenever it is likely that the protection has been impaired, disconnect the power cord until the ground has been restored.

Servicing

There are no user-serviceable parts inside these products. Only service-trained personnel may perform any servicing, maintenance, or repair. The user may adjust only items mentioned in this manual.

Appendix A. Cable pinout information

You can, if you prefer, build your own adapter cables. The following tables give you all pertinent information for cable construction.

Pin-to Pin wiring
Keyboard-Monitor-Mouse Adapter

PS/2 Keyboard with MiniDin-6M

ClassView DB-25M	Keyboard MiniDin-6F	Signals
4	3	Digital Ground
7	5	Keyboard Clock
8	1	Keyboard Data
11	4	+ 5V

PS/2 Mouse with MiniDin-6M

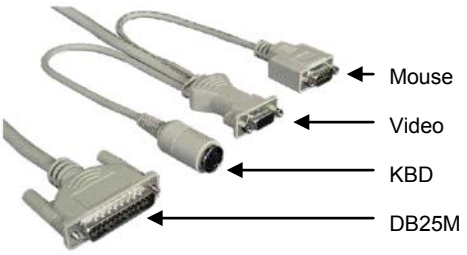
ClassView DB-25M	Mouse MiniDin-6F	Signals
4	3	Digital Ground
9	5	Mouse Clock
10	1	Mouse Data
11	4	+ 5V

PC Keyboard with Din-6M

ClassView DB-25M	Keyboard DIN-5M	Signals
4	4	Digital Ground
7	1	Keyboard Clock
8	2	Keyboard Data
11	5	+5V

Serial Mouse with DB-9F

ClassView DB-25M	Mouse DB-9M	Signals
23	5	Digital Ground
21	3	TxD
12	2	RxD
13	7	RTS
24	4	DTR



KVM adapter Cable

Mouse – DB9M
Video – HD15F
Keyboard – Din-5F

Serial Mouse with DB-25F

ClassView DB-25M	Mouse DB-25M	Signals
23	7	Digital Ground
21	2	TxD
12	3	RxD
13	4	RTS
24	20	DTR

VGA Monitor with HD-15M

ClassView DB-25M	Monitor HD-15F	Signals
1,2,3	6,7,8	Analog Ground
4	5,10	Digital Ground
5	13	Hor. Sync
6	14	Vert. Sync
14	1	Red
15	2	Green
16	3	Blue

Pin-to Pin wiring
CPU Adapter

PS/2 Keyboard port with MiniDin-6F

ClassView DB-25M	Keyboard MiniDin-6M	Signals
4	3	Digital Ground
7	5	Keyboard Clock
8	1	Keyboard Data
11	4	+ 5V

PS/2 Mouse port with MiniDin-6F

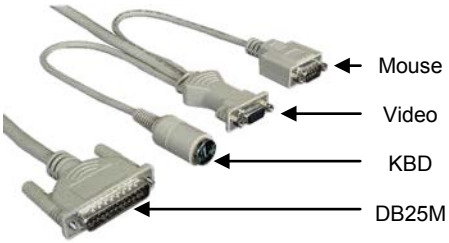
ClassView DB-25M	Mouse MiniDin-6M	Signals
4	3	Digital Ground
9	5	Mouse Clock
10	1	Mouse Data
11	4	+ 5V

CPU Keyboard port with Din-5F

ClassView DB-25M	Keyboard DIN-5M	Signals
4	4	Digital Ground
7	1	Keyboard Clock
8	2	Keyboard Data
11	5	+5V

Serial Mouse port with DB-9M

ClassView DB-25M	Mouse DB-9M	Signals
23	5	Digital Ground
12	2	RxD
13	7	RTS



CPU adapter cable

Mouse – DB9F
Video – HD15F
Keyboard – Din5M

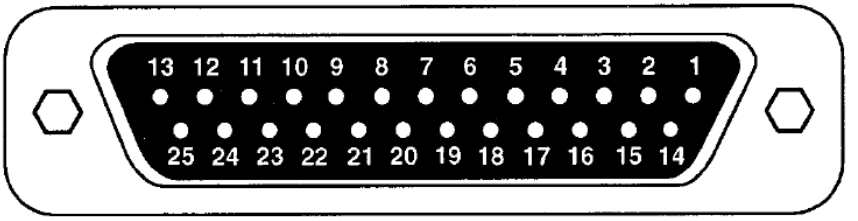
Serial Mouse port with DB-25M

ClassView DB-25M	Mouse DB-25M	Signals
23	7	Digital Ground
12	3	RxD
13	4	RTS

VGA Video port with HD-15F

ClassView DB-25M	Monitor HD-15M	Signals
1,2,3	6,7,8	Analog Ground
4	5,10	Digital Ground
5	13	Hor. Sync
6	14	Vert. Sync
14	1	Red
15	2	Green
16	3	Blue

Appendix B. CPU/KB-Monitor-Mouse pinout



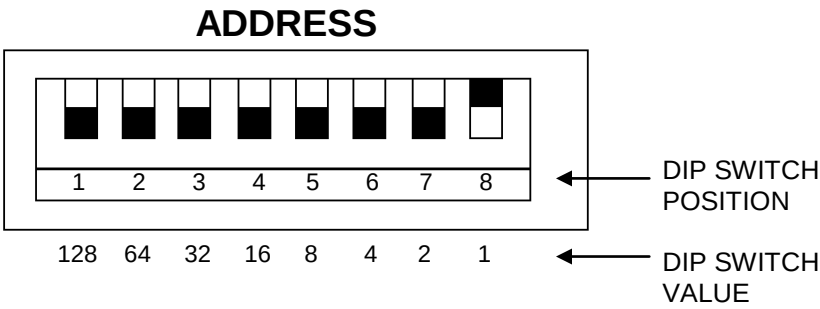
DB-25 Female Connector

Pinouts for ClassView DB-25 Female Connectors			
Pins	**Numbered CPU Ports**	**Keyboard-Monitor-Mouse Port**	**Description**
1	Ground	Ground	Analog Ground
2	Ground	Ground	Analog Ground
3	Ground	Ground	Analog Ground
4	Ground	Ground	Digital Ground
5	HSync-in	HSync-out	Video Control
6	VSync-in	VSync-out	Video Control
7	KBClk	KBClk	Keyboard Clock
8	KBData	KBData	Keyboard Data
9	MSCLK	MSCLK	Mouse Timing
10	MSData	MSData	Mouse Data
11	+5V-in	+5V-out	Power for LEDs, Peripherals
12	RS232-TXD	RS232-TXD	Serial Data
13	RS232-RTS	RS232-RTS	Serial Data
14	Red-in	Red-out	VGA Color
15	Green-in	Green-out	VGA Color
16	Blue-in	Blue-out	VGA Color
17	Reserved	Reserved	Reserved
18	Reserved	Reserved	Reserved
19	Reserved	Reserved	Reserved
20	Reserved	Reserved	Reserved
21	Reserved	Reserved	Reserved
22	Ground	Ground	Digital Ground
23	Ground	Ground	Digital Ground
24	V+	V+	8-10V, 10ma only
25	RS232-RXD	RS232-RXD	RS232-RXD

Appendix C. Factory default settings

Setting	Default
Scan enable	Off
Scan time Interval	5 seconds
Scan minimum port	1 (local)
Scan Maximum port	16 (local)
Keyboard timeout	2 seconds
Caps/Numlock/Scroll	Numlock On
Keyboard mode	2
Screen Blank time Interval	0 (Off)
Typematic Value	43 (Rate=10.9chars/sec, delay = 500 millisec.)

Appendix D. Dip switch description



A Unit's address is determined from the settings of the dip switch upon power up. The dip switch forms a standard binary number with up being a "one" and down being a "zero". Each position has a value corresponding to it. From left to right the values are 128, 64, 32, 16, 8, 4, 2, and 1. When the dip switch is up add the values of the position to form the address value.
The most common values and positions are:

1 (8 up – shown above)
2 (7 up)
3 (7, 8 up)
4 (6 up)
5 (6, 8 up)
6 (6, 7 up)
7 (6, 7, 8 up)
8 (5 up)
9 (5, 8 up)
10 (5, 7 up)

Appendix E. General specifications

SIZE / WEIGHT	8.8"W x 2.25"H x 4.9"D / 3 lbs
INPUT POWER	117 VAC power adapter, 230 VAC optional
OUTPUT POWER	17 VAC CT, 700ma
POWER CONNECTOR	DIN5
CPU/KEYBOARD/MOUSE CONNECTORS	DB25F
BUS IN/OUT CONNECTORS	13W3F
CHASSIS	Fully shielded, black painted steel
CONTROLS	Power on/off, 8 position dip switch
INDICATORS	Power LED (green) / Status LED (yellow) Send LED (yellow)

Appendix F. Cable part numbers

Part Number	Description
Monitor/Keyboard/Mouse Adapter Cables	
CAB-VX0509M1	VGA-AT keyboard-Serial (9) mouse to DB-25M
CAB-VX0606M1	VGA-PS/2 keyboard-PS/2 mouse to DB25M
CPU Adapter Cables	
CAB-VX0509Cxx*	VGA-AT keyboard-Serial (9) mouse to DB-25M
VX0606Cxx*	VGA/XGA – PS/2 keyboard-PS/2 mouse to DB25M
CAB-C0509Cxx**	VGA/XGA Coax – AT keyboard-Serial (9) mouse to DB-25M
CAB-C0606Cxx**	VGA/XGA Coax – PS/2 keyboard-PS/2 mouse to DB25M
CAB-SMxx***	Coax bus cable 13W3M to 13W3M
(xx=length in feet)	* Standard lengths of 5, 10, and 20 feet ** In 30, 50, 75, 100, 125, 150, and 200 foot lengths

Appendix G. Accessories part numbers

Part Number	Description
ACC-SMT	Bus terminator, two required per system
RM-SV16	Rackmount: kit - installation in 19-inch racks
RM-SV16/24	Rackmount: kit - installation in 24-inch racks

10707 Stancliff Road
Houston, Texas 77099

Phone: (281) 933-7673
WWW.ROSE.COM