DTB-AV

Desk top box

USER MANUAL

Crystal Vision

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General Safety Summary

Use only power cords that meet the required specification for this product.

This product must be grounded through the grounding conductor of the power cord.

Do not operate the equipment with covers or panels removed.

To avoid fire hazard use only fuses of the type and rating specified.

To avoid electric shock do not operate this product in wet or damp conditions.

To avoid injury or fire hazard do not operate this product in an explosive atmosphere.

To avoid overheating provide proper ventilation.

Only use this rack in conjunction with Crystal Vision modules designed for that purpose.

Do not use the frame unless all the rear connector positions are filled, either with Crystal Vision Rear Modules, or with Crystal Vision blanking plates.

Only suitably trained personnel should perform service procedures.

Apart from procedures described in this manual there are no user serviceable parts within the frame. If the frame requires any other servicing it should be returned to the manufacturer or dealer.

CAUTION These servicing instructions are for use by qualified personnel only. To reduce risk of electric shock, do not perform any servicing other than that contained in the Operating Instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

Explanation of symbols used on the equipment

Protective ground connection.

Refer to the user manual.

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Introduction

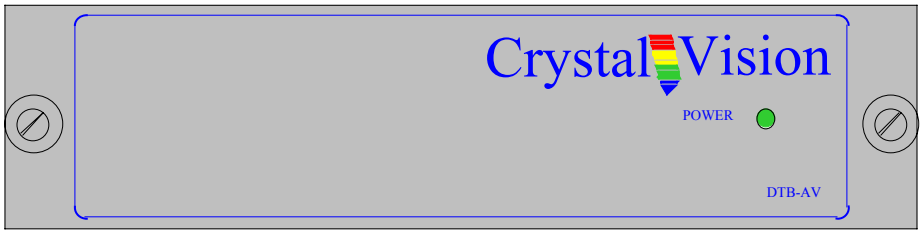
The DTB-AV Desk Top Box provide the connections and supplies for up to 2 Crystal Vision video or audio modules . The Desk Top Box provide configurable rear connections. A front panel provides access to the modules. Optional mounting ears can be fitted to allow easy installation in a console.

The inside of the Desk Top Box can be accessed to change the modules by unscrewing the two thumbscrews, one at each side, and pulling the panel forward. The panel can then be positioned down, giving access to the board slots inside the Desk Top Box. Although it is possible to operate the Desk Top Box with the front panel open this should not be done as the Desk Top Box may not meet electromagnetic compatibility (EMC) requirements in this condition.

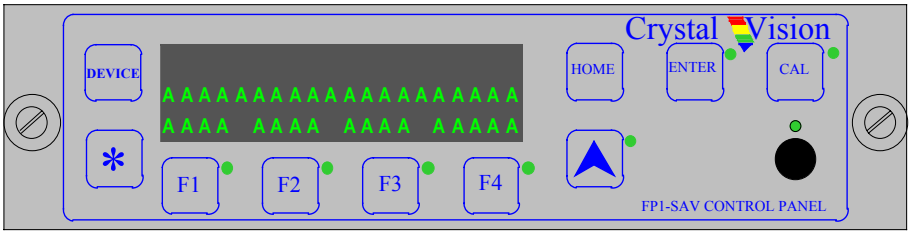
Signal modules can be removed simply by pulling on the handle and withdrawing them from the Desk Top Box. They are inserted by feeding the board into the appropriate guides and pushing it fully home.

A fused IEC mains input is provided for the power supply inside the Desk Top Box . The universal input power supplies used can accept voltages between 85 and 264V rms. Each mains input must include a protective ground connection. The fuse holder is part of each mains inlet connector and the relevant mains cord must be disconnected before the fuse can be accessed. Replace the fuse only with one of the same type and rating.

Standard Front Panel DTB-AV



An optional Front Panel Controls FP1-SAV allow easy user adjustment of suitable Crystal Vision modules with a menu driven user interface



Specification

Size (mm)	180 (w) X 44.5 (h) X 400 (d)
Weight	2.7 Kg
Supply Voltage	110 – 240V 47 – 400 Hz
Temperature Range	0 – 40 ^{O}C

Mains Connections

The Desk Top Box is connected to the mains supplies by means of one detachable power cords.

Any power cord used should be fitted with an IEC 320 female connector. It should have a minimum current rating of 6A. It should meet the relevant local safety standards.

Power Supplies.

The Desk Top Box has a fixed internal power supply.
There are no user serviceable parts inside the power supply. The Desk Top Box lid should not be removed .

Front Panel Indication of Supply Status

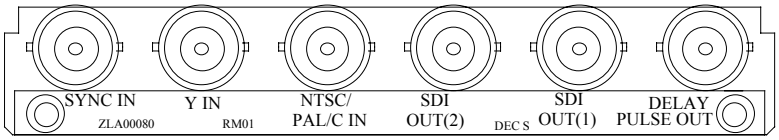
A signal from the power supply is routed through the Desk Top Box wiring to the front panel electronics. This allows an indication of status to the user. The fault condition indicated is a supply rail failure
With a DTB-AV front panel fitted the green power indication LED will unlight the power supplies develops a fault.

With an FP1-SAV front panel fitted the fault indication is the text “Warning Power Supply or Fan Problem” on the control panel display. This will be displayed for two seconds at twenty second intervals.

Video/Audio cards

The Desk Top Box has two slots for Crystal Vision video or audio cards. Only Crystal Vision cards should be fitted. The signal connections to these are made through rear modules. The operation and connections of each card and associated rear modules are described in the documentation relating to that card. All Crystal Vision cards can be inserted and removed while the Desk Top Box is powered without damage.

Typical Rear Module RM01 fitted with label for PAL/NTSC to SDI decoder



Rear Signal Connections

The signal connections to the cards are made through a range of rear modules. The Desk Top Box will be supplied with an appropriate selection of these for the cards installed in it. Unused slots will be fitted with blanking plates. Details of signal types and pin-outs are given the documentation supplied with each Crystal Vision video or audio card.

The rear modules are held in place by a retaining bar at each side. These run the height of the Desk Top Box and provide mechanical support as well as ensuring EMC compliance.

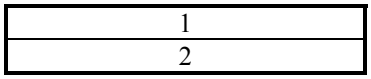
It is possible to move, add, or change the rear modules if new or different cards are to be used in the Desk Top Box. This should be done as follows: -

1. Disconnect all the mains power leads from the Desk Top Box.
2. Identify the rear modules or blanking plates to be removed. Using a cross-head screwdriver undo the two screws on the retaining bar on each side of these module(s). Remove the retaining bars.
3. Pull the rear module(s) straight off the rear of the Desk Top Box.
4. Check that the rear modules that will be fitted to the Desk Top Box have the relevant labels properly attached using the retaining pins.
5. Fit the new modules by pushing them straight on to the connectors.
6. Hold any blanking plates in place while the retaining bars are refitted. Ensure that both screws on each retaining bar are fully tightened to maintain mechanical integrity and EMC compliance.
7. To maintain product safety and EMC compliance the rear of the Desk Top Box should be filled with Crystal Vision connector units and blanking plates before power is reapplied.

Slot Numbers

The diagram below shows the positions of the slots in the Desk Top Box when viewed from the front.

Signal Card Slot Numbers



Remote Control via Statesman

The 26way high desity D-type connectors on the rear of the Desk Top Box contain an RS422 serial comms signal which connects to a comms port PC via a cable and RS422 to RS232 converter.
The PC would have the STATESMAN software installed on it.

Note suitable RS422 to RS232 converter can be supplied by Crystal Vision Ltd or by B & B electronics (model number 422PP9R)
The following tables should be used together with the card documentation to determine the signal connections. To maintain EMC compliance only good quality screened cable assemblies should be used.

Getting Started

Ensure the system is correctly installed.
On power up the Control Panel will display the following

a. The words ‘Crystal Vision’ and all the 8 LEDs will light up
b. The software version number
c. The words ‘Control Panel’ then all 8 LEDs will unlight
d. The following message is then seen (software version 1.5.0 or higher)

Statesman Mode Press Cal to Exit

Press the Cal button on the front of the Control panel
After a few seconds the following message will be seen

Available Cards 1 xxxxx Node xx

On the bottom line of the display is the plug-in card Type and its Node number. This assumes a card is fitted in one of the slots in the frame and is able to talk to the control panel.
Pressing Enter button will usually select the main menu page of that card
such as

ADC104F v3.00 Node00 Horiz Pos Other

If there are no plug-in cards in the Frame, the message

No cards present Please press device

will appear.
If there are plug-in cards in the Frame and communication is unsuccessful
The message

No cards present Please press device

will still appear. In this case recheck the Installation information. If necessary remove all cards in the Frame except for one which the Control Panel should communicating with. Press the Device key- the display should now show

Available Cards 1 xxxxx Node xx

On the bottom line of the display is the plug-in card Type and its Node number.
Now plug the remaining plug-in cards(with communication software EPROM fitted) one by one into the Frame and allow several seconds between plugging in each card, observe that the ' Available Cards' number increases by one each time. This procedure may lead to identifying where the problem is.

Selecting different plug-in cards

At any time pressing the DEVICE key will change the Control Panel to the mode for displaying a list of Available Cards in the system.
In the top right hand side of the display a number is shown for the total number of plug-in Cards in the system (which have the necessary software to communicate with the Control Panel).
On the bottom line of the display is the plug-in card Type and its Node number.
To access details on any other plug-in cards turn the shaft on the front of the unit. If the number of Available Cards is greater than 1 the display will change showing the other plug-in card details.
To **exit** the Available Cards mode press the ENTER key. The Control Panel will now 'lock on' and communicate with the plug-in card at the node number last displayed in the Available Cards list.

Note The Control Panel scans, every few seconds, the two plug-in card node addresses to keep the Available Cards list up to date.

DESK-TOP BOX REAR REMOTE CONNECTOR WIRING.

REMOTE 26 way D-type pulg (cable has socket on it)

D type pin No.	Signal name	Comments
6	Gnd (0V)	Connect to cable screen
8	TX-	Output from DTB
9	TX+	Output from DTB
18	RX+	Input to DTB
26	RX-	Input to DTB

Note if the remote connector is a 15way D-type socket (standard model of DTB-AV has this fitted) then it the DTB-AV is not Statesman compatible.

Front Panel Control Module

Using the Front Panel Controls

The fitting of the FP1-SAV LCD FRONT PANEL allows control of suitable Crystal Vision Audio/Video cards without opening the Desk Top Box front panel. Front panel control uses a two-line by twenty-character alphanumeric display to guide the user through the control process. The user has a number of buttons and an adjustment knob to select and adjust parameters.

The front panel module maintains a list of the boards available for control. Pressing the "DEVICE" button at any time will access this list. The display will give information about the number of cards available, and about the type and position of the card currently selected. The position is expressed as a "node number".

The node number is determined by the slot number. The node address will either be: the slot number minus one (giving a range of 0 to 1) .This assumes jumper labelled PL5on the small printed circuit is set in position 1 , away from the fan.

Turning the knob will scroll through the available cards. When the desired card is selected pressing the "ENTER" button will activate control for that card. The details of the menu structure depend on the card type and configuration. Consult the documentation supplied with the card for more detail.

Software Configuration of Control Panel Type

On power up the Control Panel hold down the DEVICE key.
The following message may be seen on the display.

Front Panel Type REM1U

Adjusting the shaft on the front panel allows the selection of the Front Panel Type.

Front Panel fitted on	Selection
FR2AV frame front or FR1AV frame front	Other
Rem1U or Rem1US	REM1U
Desk Top Box (when used with Statesman)	Other

After selection has been made press the ‘ENTER’ button. This selected Front Panel Type is now stored in the non-volatile memory on the front panel.

The display will now show ‘Serial Num Byte’ ignore this and press the ‘ENTER’ three more times.
The display will now show ’Reset pass word to all spaces’ and the words ‘Yes’ and ‘No’. Press the button labelled F3 to select ‘Yes’. (This will clear any pass word numbers/letters which may have been previously stored and used to lock-out the use of the buttons on the front of the Control Panel).
The unit will now reset showing the words ‘Crystal Vision’ followed by other start up messages.
Note if the selection ‘Other’ is made for the Rem1U unit then this could result in the display flashing the following message every few seconds.

Warning Power Supply or Fan Problem

Desktop box does not have any plug-in power supplies so this message does not apply .
To stop this message being shown, ensure that the correct selection is made for Front Panel Type.

Maintenance

CAUTION These servicing instructions are for use by qualified personnel only. To reduce risk of electric shock, do not perform any servicing other than that contained in the Operating Instructions

Unless you are qualified to do so. refer all servicing to qualified service personnel.

Replacing the mains input fuses

The mains input fuse are fitted inside the IEC 320 connectors at the rear of the Desk Top Box. A spare fuse is also stored inside the connector. The fuse can only be accessed when the power cord is disconnected. The sequence is as follows: -

1. Disconnect the power cords from the rear of the Desk Top Box.
2. Using a flat bladed screwdriver or similar tool gently lever out the fuse drawer from the relevant IEC connector using the tab visible at the bottom of the connector depression.
3. Remove the defective fuse and replace with either the spare fuse or with a 2A, 250V time delay fuse.
4. Replace the fuse drawer and reconnect the power cords.

If a fuse blows repeatedly this indicates a fault either in the internal power supply or elsewhere. Return the Desk Top Box to the manufacturer or dealer for repair.

End of document.