

digital keying modular
interface audio
converters analogue video

FTX 3G

Dual channel 3G
fibre optic transmitter

USER MANUAL



Contents

Warning	2
1 Introduction	3
FTX 3G	4
2 Hardware installation	5
Handling	5
2.1 Universal rear connectors	6
Rear module connections with RM56	7
2.2 General purpose interface	7
3 Card edge operation	11
Card edge controls and indicators	11
4 Using the active front panel	12
4.1 Module selected	12
Updating the display	13
The FTX 3G menu structure	14
Active control panel menu tree	15
Channel Status	15
Miscellaneous information	18
5 Statesman	19
5.1 Statesman operation	19
Status	20
6 Trouble shooting	21
6.1 Card edge status LEDs	21
Basic fault finding guide	22
7 Specification	23

Warning



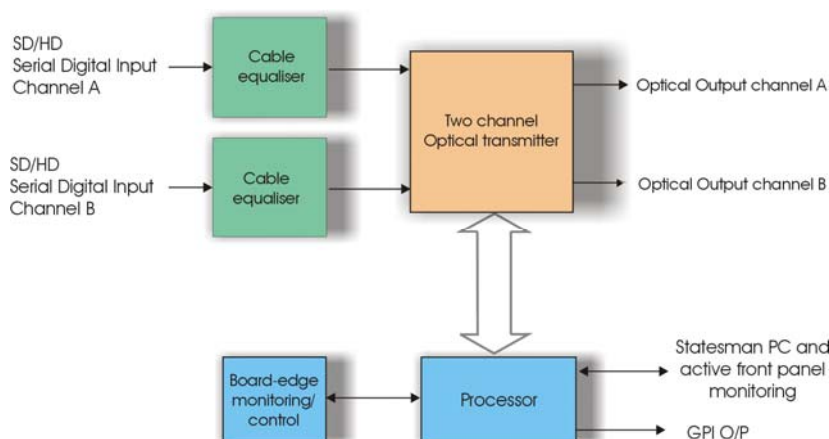
Note: Caution must be taken when removing optical cabling from the rear of the frame when an optical signal is present due to the possible damaging nature of high intensity light to the naked eye.

Although Crystal Vision optical products contain class 1 devices that have been designed to be safe under all circumstances, you are advised not to look directly into any vacant optical outlet.

1 Introduction

The FTX 3G is a two-channel serial digital video optical transmitter that will accept both 1.5G and 3G High Definition video as well as Standard Definition video.

The universal connection system allows a mixture of Crystal Vision modules in the frame. The modules plug in the front and the rear connectors plug in the back. A removable front panel reveals LED indication of input and PSU status when opened.



FTX 3G two channel SDI optical transmitter

The FTX 3G is from the range of Crystal Vision optical boards which have been designed to fit in all of the Crystal Vision range of 4U, 2U, 1U frames of issue 2 and above, as well as the desk top box also of issue 2. The board may be plugged into any of the PCB slots, the only proviso being where it needs to be placed below a Standard Definition board. The rules governing frame configuration are explained in the Installation chapter.

The RM56 single slot rear connector provides two serial digital inputs and two optical outputs with up to 24 modules in 4U of rack space.

Note: You can find the issue number of a frame on the inside front.

The Indigo frames have been designed to accept any selection of boards from our range of Standard Definition, High Definition, 3G audio, video and optical products. The high packing density allows up to six modules in 1U, up to 12 modules in 2U, up to 24 modules in 4U and up to two modules in the desk top box.

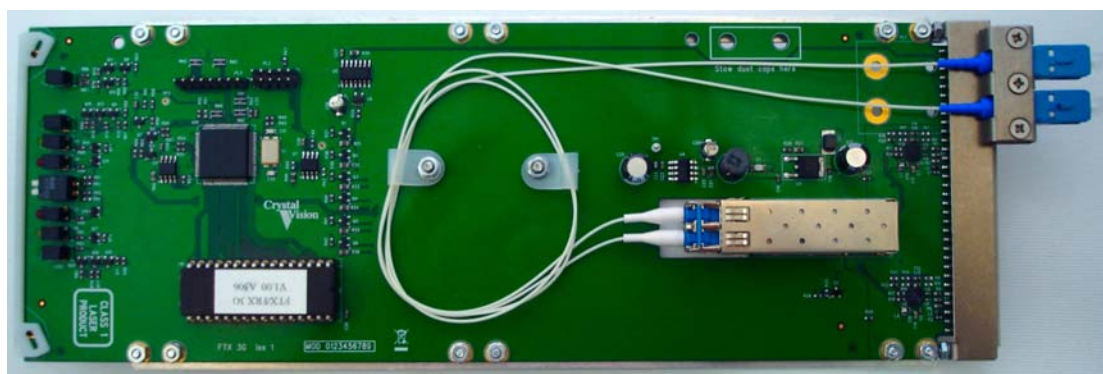
The main features of the FTX 3G are as follows:

- 2 channel 3G/HD/SD serial digital optical transmitter
- Handles pathological test pattern
- 1310nm class 1 compliant two channel laser module
- LED SDI input present indication
- Indication of laser near end of life and shutdown
- Automatic and manual laser shutdown
- Single-mode fibre system

FTX 3G

The two identical channels of the FTX 3G optical transmitter are completely independent of each other. Each channel consists of a serial digital input section, which equalises the input signal for cable length, a driver module and laser diode. Both channels are under the control of a CPU, which monitors and reports their status.

At the heart of the FTX 3G is a two-channel state-of-the-art laser driver module incorporating automatic power control, which gives the laser diode emitters a stable performance throughout their lifetime. Safety circuitry within the laser module monitors the operation of the laser driver and forces a shutdown should any critical parameters be exceeded. Warning is also given once the laser is considered to have reached near to the end of its expected lifetime. This warning is triggered after approximately 85% of its expected lifetime has expired.



FTX 3G dual channel 3G/HD/SD optical transmitter

The FTX 3G is designed to work into single-mode optical cable and is capable of achieving distances in excess of 30km depending on cable quality and number of connectors and splices. The FTX 3G will also work into multi-mode optical cable in some circumstances and distances of approximately 1km are achievable with a Standard Definition video input. Distances of 200-300m may be achievable with a High Definition video input, but performance with multi-mode fibre is not guaranteed.

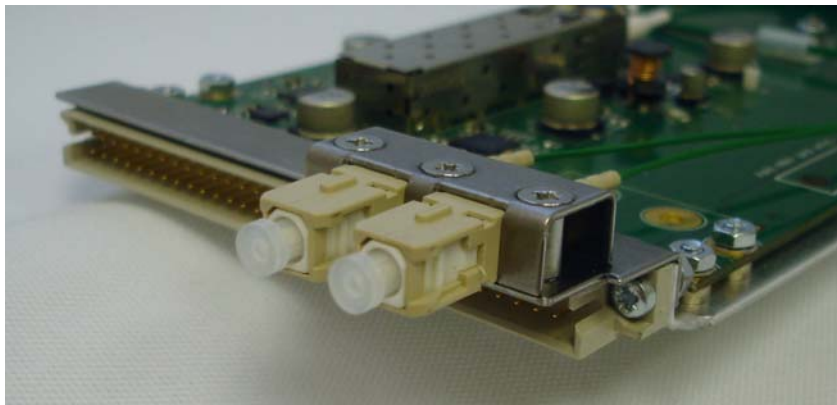
2 Hardware installation

The Crystal Vision optical boards have been designed to work in conjunction with the 4U and 2U CoolFlow frames, Indigo 4 frames, or Indigo 1 and 2 frames of issue 2 or higher, and the issue 3 desk top box. All modules can be plugged in and removed while the frame is powered without damage.

Note: You can find the issue number of a frame on the inside front.

Handling

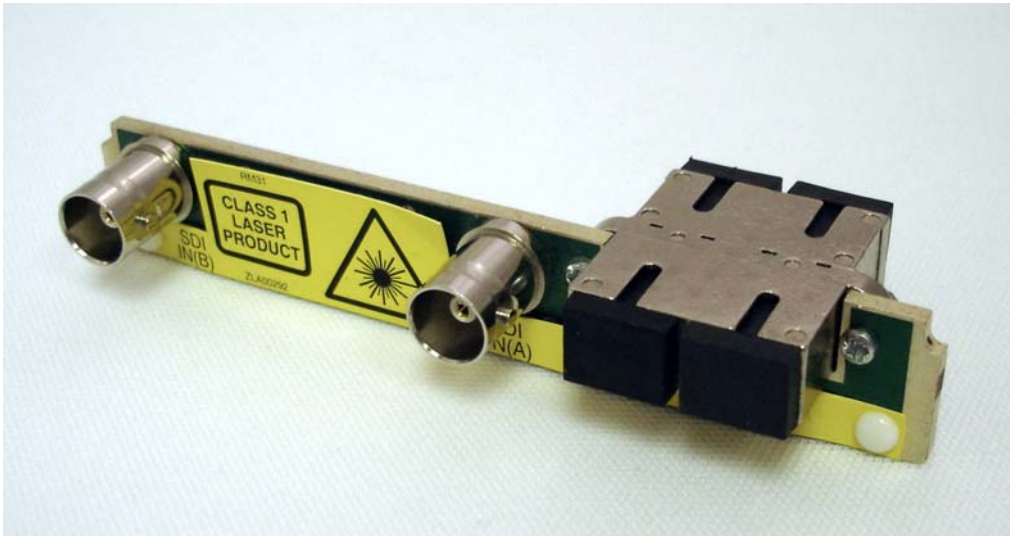
Due to its fragile nature fibre optic equipment must be handled with care. Sharp blows or snagging the fibre pigtails will fracture the internal glass filament and destroy its light carrying ability. A degraded performance will also result if a build-up of dust and dirt film on the connector ferrules is allowed to occur. It is strongly recommended that the supplied dust caps are replaced whenever the transmitter card or rear modules are de-mounted for any reason.



FTX 3G connectors with the dust caps fitted

When the FTX 3G is fitted in a frame, the dust caps can be stored on the board by pushing into the holes provided.

The RM56 rear module is fitted with dust caps on both sides of the optical connector. The pair of dust caps that will be internal to the frame must be removed before the rear module is fitted. The external pair can then be removed when the fibre tails are connected. It is also recommended that dust caps should be re-fitted if the fibre tails are to be removed for any length of time. Should the FTX 3G be removed for any length of time it is recommended that the rear module should also be removed and stored with the dust caps fitted.



RM56 rear module with dust caps fitted to both sides of the optical connector

2.1 Universal rear connectors

When using the RM56 single height rear connector, the 4U frame will house up to 24 modules and four power supplies. The 2U frame will house up to 12 modules and dual power supplies, while the 1U Indigo 1 frame will house six modules and a single or dual power supply. The Indigo DT desk top box will house up to 2 modules.

All frames have hinged front panels giving access to the PSU and all modules. The universal frame wiring system allows any interface range modules to be fitted in any position ⁽¹⁾ with the use of pluggable rear modules.

⁽¹⁾ Due to height restraints, there are restrictions when mixing optical modules with other Crystal Vision modules.


Loading restrictions

The FTX 3G can be loaded into any compatible frame's slot but due to the extra height of the FTX 3G module it is not possible to place cards from the Crystal Vision Standard Definition or audio range directly above in certain positions. High Definition boards do not share this restriction and can be placed in any slot position.

Frame type			
Indigo 4	xxxxxxx	xxxxxxx	xxxxxxx
	Optical module	Optical module	Optical module
	xxxxxxx	xxxxxxx	xxxxxxx
Indigo 2	Optical module	Optical module	Optical module
	xxxxxxx	xxxxxxx	xxxxxxx
	Optical module	Optical module	Optical module
Indigo 1	xxxxxxx	xxxxxxx	xxxxxxx
	Optical module	Optical module	Optical module

Optical cards loaded in these slots will not allow Standard Definition or audio cards to be fitted in the slots immediately above.

Rear module connections with RM56

RM56 fits in all frames	Description
	RM56 <ul style="list-style-type: none"> • 24 modules in 4U, 12 modules in 2U & 6 in 1U • All frame slots can be used

BNC	I/O assignment
Optical Input (B)	Optical serial digital video output (B)
Optical Input (A)	Optical serial digital video output (A)
SDI IN(A)	Channel A HD/SD Serial digital input
SDI IN(B)	Channel B HD/SD Serial digital input

2.2 General purpose interface

The external GPI control lines 'a' to 'f' at the frame remote connectors are provided to allow remote control and/or remote status indication. The FTX 3G has six GPI output lines assigned for status reporting.

GPI Connections

	High (+5V)	Low (less than 1V)
'a'	Serial digital input present on Input A	No serial digital input present on Input A
'b'	Serial digital input present on Input B	No serial digital input present on Input A
'c'	Channel A laser functioning within normal tolerances	Channel A laser has reached its near end of life point
'd'	Channel B laser functioning within normal tolerances	Channel B laser has reached its near end of life point
'e'	Channel A laser operating	Channel A laser shut down
'f'	Channel B laser operating	Channel B laser shut down

Each GPI output line is pulled up to the frame +5V with a 6k8 Ohm resistor; they are also protected by a 270 Ohm current limiting series resistor.

4U frame GPI Connections

GPI lines 'a' to 'f' of each card connect to two of eight rear remote connectors as follows:

Slot no.		'a' pin	'b' pin	'c' pin	'd' pin	'e' pin	'f' pin
1	Upper	8 (1)	9 (1)	18 (1)	26 (1)	19 (2)	20 (2)
2		7 (1)	16 (1)	17 (1)	25 (1)	10 (2)	11 (2)
3		8 (3)	9 (3)	18 (3)	26 (3)	19 (4)	20 (4)
4		7 (3)	16 (3)	17 (3)	25 (3)	10 (4)	11 (4)
5		5 (1)	6 (1)	15 (1)	24 (1)	1 (2)	2 (2)
6		4 (1)	14 (1)	13 (1)	23 (1)	3 (2)	4 (2)
7		5 (3)	6 (3)	15 (3)	24 (3)	1 (4)	2 (4)
8		4 (3)	14 (3)	13 (3)	23 (3)	3 (4)	4 (4)
9		3 (1)	12 (1)	22 (1)	21 (1)	12 (2)	13 (2)
10		10 (1)	11 (1)	19 (1)	20 (1)	21 (2)	22 (2)
11		3 (3)	12 (3)	22 (3)	21 (3)	12 (4)	13 (4)
12		10 (3)	11 (3)	19 (3)	20 (3)	21 (4)	22 (4)
		'a' pin	'b' pin	'c' pin	'd' pin	'e' pin	'f' pin
1	Lower	8 (5)	9 (5)	18 (5)	26 (5)	19 (6)	20 (6)
2		7 (5)	16 (5)	17 (5)	25 (5)	10 (6)	11 (6)
3		8 (7)	9 (7)	18 (7)	26 (7)	19 (8)	20 (8)
4		7 (7)	16 (7)	17 (7)	25 (7)	10 (8)	11 (8)
5		5 (5)	6 (5)	15 (5)	24 (5)	1 (6)	2 (6)
6		4 (5)	14 (5)	13 (5)	23 (5)	3 (6)	4 (6)
7		5 (7)	6 (7)	15 (7)	24 (7)	1 (8)	2 (8)
8		4 (7)	14 (7)	13 (7)	23 (7)	3 (8)	4 (8)
9		3 (5)	12 (5)	22 (5)	21 (5)	12 (6)	13 (6)
10		10 (5)	11 (5)	19 (5)	20 (5)	21 (6)	22 (6)
11		3 (7)	12 (7)	22 (7)	21 (7)	12 (8)	13 (8)
12		10 (7)	11 (7)	19 (7)	20 (7)	21 (8)	22 (8)

Table shows pin number (Remote number)

Note: Remote 1, Remote 3, Remote 5 and Remote 7 are 26 way high-density D-Type female sockets. Frame ground is pin 2 and +5V @500mA is pin 1 in each case.
Remote 2, Remote 4, Remote 6 and Remote 8 are 26 way high-density D-Type male plugs and frame ground is pin 6 in each case and +5V @500mA is pin 15 on Remote 2 and Remote 6.
The +5V is protected by self-resetting thermal fuses, which limit the total output current available from Remotes 1-4 to approximately 1A. Remotes 5-8 are similarly protected.

2U frame GPI Connections

GPI lines 'a' to 'f' of each card connect to two of four rear remote connectors as follows:

Slot no.	'a' pin	'b' pin	'c' pin	'd' pin	'e' pin	'f' pin
1	8 (1)	9 (1)	18 (1)	26 (1)	19 (2)	20 (2)
2	7 (1)	16 (1)	17 (1)	25 (1)	10 (2)	11 (2)
3	8 (3)	9 (3)	18 (3)	26 (3)	19 (4)	20 (4)
4	7 (3)	16 (3)	17 (3)	25 (3)	10 (4)	11 (4)
5	5 (1)	6 (1)	15 (1)	24 (1)	1 (2)	2 (2)
6	4 (1)	14 (1)	13 (1)	23 (1)	3 (2)	4 (2)
7	5 (3)	6 (3)	15 (3)	24 (3)	1 (4)	2 (4)
8	4 (3)	14 (3)	13 (3)	23 (3)	3 (4)	4 (4)
9	3 (1)	12 (1)	22 (1)	21 (1)	12 (2)	13 (2)
10	10 (1)	11 (1)	19 (1)	20 (1)	21 (2)	22 (2)
11	3 (3)	12 (3)	22 (3)	21 (3)	12 (4)	13 (4)
12	10 (3)	11 (3)	19 (3)	20 (3)	21 (4)	22 (4)

Table shows pin number (Remote number)

Note: Remote 1 and Remote 3 are 26 way high-density D-Type female sockets. Frame ground is pin 2 and +5V @500mA is pin 1 in each case.
Remote 2 and Remote 4 are 26 way high-density D-Type male plugs and frame ground is pin 6 in each case and +5V @500mA is pin 15 on Remote 2.
The +5V output is protected by self-resetting thermal fuses, which limit the total output current available from Remotes 1-4 to approximately 1A.

1U frame GPI connections

GPI lines 'a' to 'f' of each card connect to the two rear remote connectors as follows:

Slot no.	'a' pin	'b' pin	'c' pin	'd' pin	'e' pin	'f' pin
1	8 (1)	9 (1)	18 (1)	26 (1)	19 (2)	20 (2)
2	7 (1)	16 (1)	17 (1)	25 (1)	10 (2)	11 (2)
3	5 (1)	6 (1)	15 (1)	24 (1)	1 (2)	2 (2)
4	4 (1)	14 (1)	13 (1)	23 (1)	3 (2)	4 (2)
5	3 (1)	12 (1)	22 (1)	21 (1)	12 (2)	13 (2)
6	10 (1)	11 (1)	19 (1)	20 (1)	21 (2)	22 (2)

Table shows pin number (Remote number)

Note: Remote 1: 26 way high-density D-Type female socket. Frame ground is pin 2 and +5V @500mA is pin 1.
Remote 2: 26 way high-density D-Type male plugs and frame ground is pin 6 and +5V @500mA is pin 15.
The +5V output is protected by self-resetting thermal fuses, which limit the total output current available from Remotes 1-2 to approximately 1A.

Indigo DT desk top box GPI connections

GPI lines 'a' to 'f' of each card connect to the rear remote connector as follows:

Slot no.	'a' pin	'b' pin	'c' pin	'd' pin	'e' pin	'f' pin
1	8 (1)	9 (1)	18 (1)	26 (1)	19 (2)	20 (2)
2	7 (1)	16 (1)	17 (1)	25 (1)	10 (2)	11 (2)

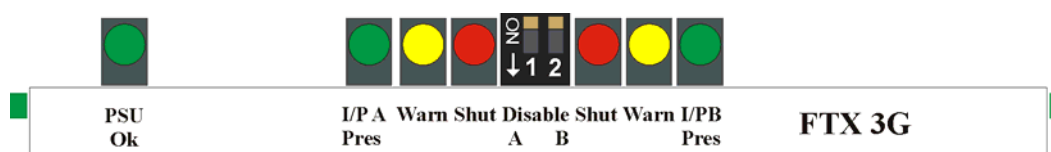
Table shows pin number (remote number)

Note: Remote 1: 26 way high-density D-Type female socket. Frame ground is pin 2 and +5V @500mA is pin 1.
 Remote 2: 26 way high-density D-Type male plugs and frame ground is pin 6 and +5V @500mA is pin 15.
 The +5V output is protected by self-resetting thermal fuses, which limit the total output current available from Remotes 1-2 to approximately 1A.

3 Card edge operation

Card edge controls and indicators

The front edge of the FTX 3G card provides power rail monitoring and status.



FTX 3G front edge view

LED	Location/colour	Meaning when lit
PSU Ok	Green	All PSU voltages are within range.
Input A Present	Green	There is a serial digital video input on Channel A.
Warning	Amber	Channel A laser has reached its near end of life.
Shutdown	Red	Channel A laser is not emitting light or has been disabled.
Shutdown	Red	Channel B laser is not emitting light or has been disabled.
Warning	Amber	Channel B laser has reached its near end of life.
Input B Present	Green	There is a serial digital video input on Channel B.

Switch	Up	Down
A shutdown	Laser shutdown is under auto control	The Channel A laser is manually shutdown preventing light emission.
B shutdown	Laser shutdown is under auto control	The Channel B laser is manually shutdown preventing light emission.

Note: A laser module is considered to be near end of life when its bias current has reached approximately 85% of its maximum.

4 Using the active front panel

4.1 Module selected

This operational guide assumes that the panel has been set up according to the panel setup procedure described in the Crystal Vision Control Panel manual.

Note: It is **ESSENTIAL** that the panel setup procedure is followed and any old or unknown passwords cleared prior to using the panel for the first time.

At power up all eight control panel keys LEDs will illuminate briefly. Once the panel has completed its power up and configuration sequence the panel will enter Statesman mode and the message 'Press Cal to Exit' will be displayed.



Statesman mode is entered by default

To continue with control panel operation or configuration, press the CAL key once. A second press of the CAL key will return to Statesman control.

The control panel will display the name of the card that first responds to the polling request together with its location number.

The location number consists of the frame number plus the card position in the frame.

Navigating the display

The functions assigned to control panel keys are:

- DEVICE – enters Device menu to select a card or show cards available / enters Panel Set up when held down during power up / shows frame status when pressed from Statesman mode
- CAL – enters or leaves Statesman mode / enters Panel Diagnostics mode when held down during power up / updates the display
- Asterisk – enters Board Rename menu from the Device menu
- F1 to F4 – soft keys, function assigned within each menu
- HOME – moves the display to the Home menu
- ENTER – accept current selection
- Upward arrow – used to move up the menu structure / enter Lock Panel menu from the Device menu

- Rotary control – shaft encoder used to select options or variable data

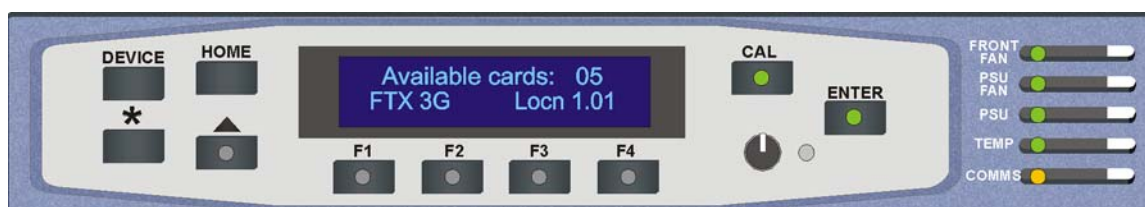
Note: Please refer to the Crystal Vision Control Panel manual for details of the Panel Set up, Lock Panel and Diagnostic menus.

Selecting a FTX 3G

To select a particular card in a frame, press the DEVICE key to go to the Device menu.

Note: There may be a delay whilst the frame is interrogated during which time the 'No cards Found' could be displayed.

The top line of the display will show 'Available Cards X', where X is the number of cards that have responded so far to the polling request.

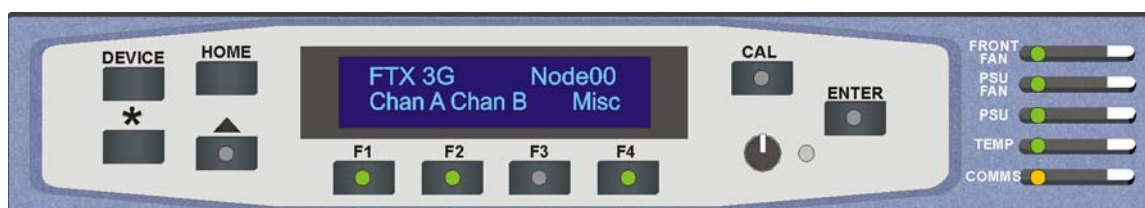


The Available cards menu

Rotate the shaft encoder and the bottom row will display the successfully polled cards by name and location or slot number.

In the example above, the card displayed is located in the first frame in slot number 1.

When the desired card is selected press the ENTER key to access that card's HOME menu. The message shows that a FTX 3G has been selected.



The FTX 3G Home menu

Updating the display

The values displayed on an active front panel are only updated when an adjustment is made and when changing menu level. If changes occur through the use of card edge controls or other remote control, the text displayed on the active front panel will not be updated immediately. If necessary, use the upward arrow to leave and then re-enter a menu to update the display.

To continue with control panel operation or configuration, press the CAL key once. A second press of the CAL key will return to Statesman control.

The control panel will display the name of the card that first responds to the polling request together with its location number.

The location number consists of the frame number plus the card position in the frame.

Navigating the display

The functions assigned to control panel keys are:

- DEVICE – enters Device menu to select a card or show cards available / enters panel set up when held down during power up / shows frame status when pressed from Statesman mode
- CAL – enters or leaves Statesman mode / enters Panel Diagnostics mode when held down during power up / updates the display
- Asterisk – enters Board Rename menu from the Device menu
- F1 to F4 – soft keys, function assigned within each menu
- HOME – moves the display to the Home menu
- ENTER – accepts current selection
- Upward arrow – used to move up the menu structure / enters Lock Panel menu from the Device menu
- Rotary control – shaft encoder used to select options or variable data

Note: Please refer to the Crystal Vision Control Panel manual for details of the Panel Set up, Lock Panel and Diagnostic menus.

The FTX 3G menu structure

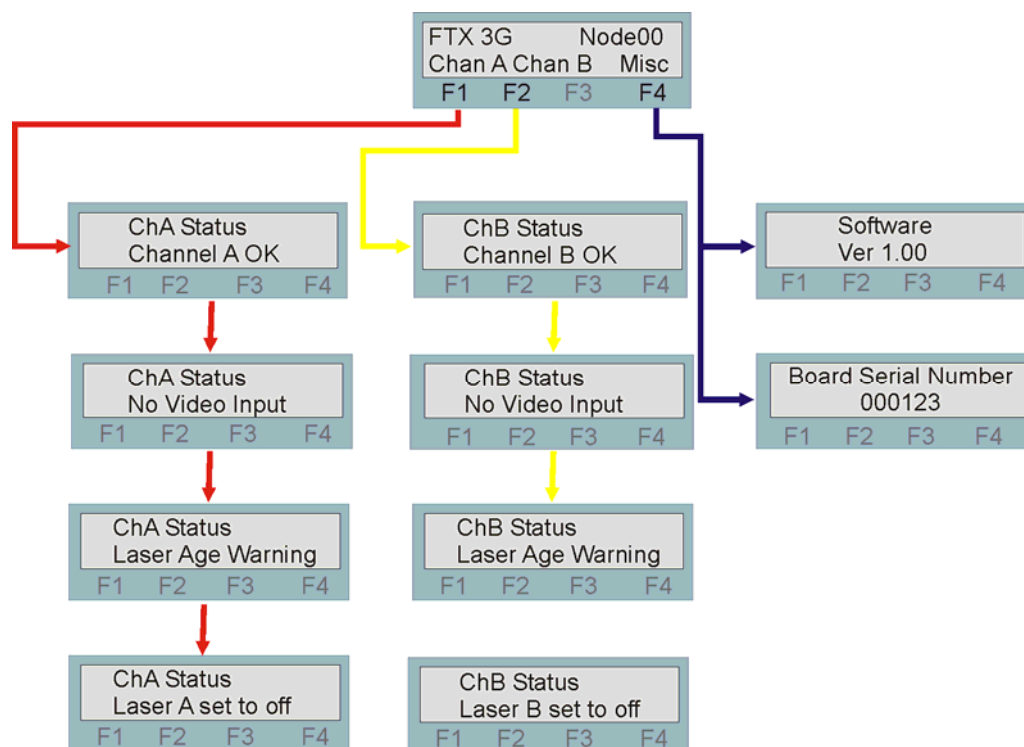
The main top-level menu is obtained by pressing the HOME button. Menu keys are illuminated when active and when further menus are available. There are three menu selections available:

- Channel A – press F1
- Channel B – press F2
- Miscellaneous – press F4

When a sub menu has been selected, further options may be obtained by using the Shaft control to scroll through them.

The following chart shows the available FTX 3G menus. The actual menus available may vary slightly as software is updated.

Active control panel menu tree



Note: Function key LEDs are illuminated when active.

Channel Status

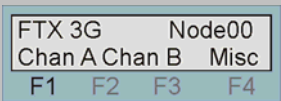
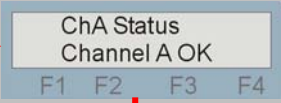

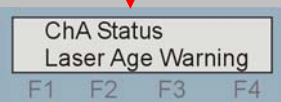
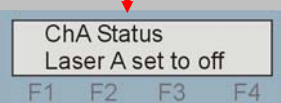
The FTX 3G will display the presence of a Serial Digital input signal and whether that particular channel laser is emitting light. The absence of SDI input is also indicated along with a laser shutdown.

Note: There can be several reasons for the laser to shut down, apart from it being manually disabled for maintenance purposes or through a lack of video input. An automatic shutdown will result if the laser's working parameters become out of specification. For example, reaching the end of its working life or for a transitory transgression of design limits. Once the laser has been shut down, as a safety feature it will latch in this condition. If it is suspected that the shutdown has been the result of a transitory condition this latched shutdown condition may be reversed by moving the channel shutdown switch to down then up again.

Both channel A and Channel B are independent in operation of each other.

Channel A status

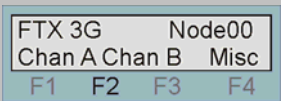
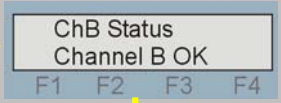
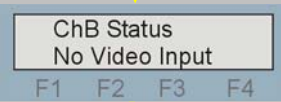
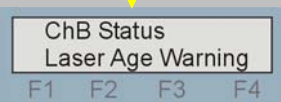
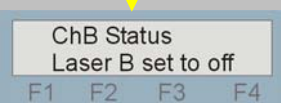
Press button F1 from the Home menu to show Channel A status information. The message present will be dependent on the condition of the input video and laser status.

FTX 3G Channel A status menu	Description
	<p>From the Home menu, press F1 to select Channel A status menu.</p>
	<p>Channel A input status. Video input present and Laser active.</p>
	<p>Channel A video input not present and laser disabled.</p>
	<p>Channel A laser has reached 85% of expected life.</p>
	<p>Channel A laser is shut down either by the board edge piano switch being set to down or by an internal fault condition.</p>

Note: If the laser has shutdown due to a transitory fault condition, reset by toggling the board edge shutdown piano switch.

Channel B status

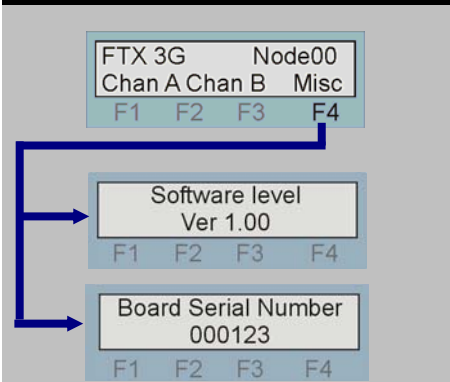
Press button F2 from the Home menu to show Channel A status information. The message present will be dependent on the condition of the input video and laser status.

FTX 3G Channel B status menu	Description
	<p>From the Home menu, press F2 to select Channel B status menu.</p>
	<p>Channel B input status. Video input present and Laser active.</p>
	<p>Channel B video input not present and laser disabled.</p>
	<p>Channel B laser has reached 85% of expected life.</p>
	<p>Channel B laser is shut down either by the board edge piano switch being set to down or by an internal fault condition.</p>

Note: If the laser has shutdown due to a transitory fault condition, reset by toggling the board edge shutdown piano switch.

Miscellaneous information

Pressing button F4 (Miscellaneous) from the Home menu will show the board serial number and software version fitted.

FTX 3G Miscellaneous menu	Description
	<p>From the Home menu, press F4 to select the Miscellaneous menu, which is then traversed by rotating the shaft control.</p> <p>Rotate the shaft control to view the currently fitted software version.</p> <p>Rotate the shaft control to view the electronically stored board serial number.</p>

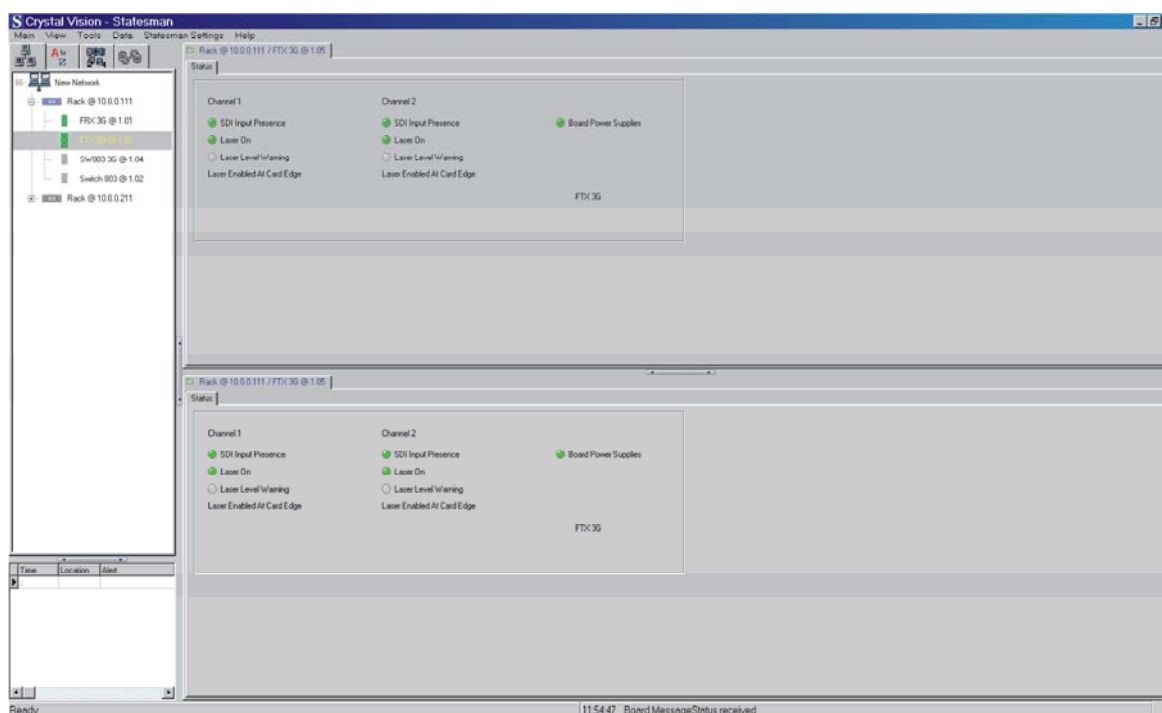
5 Statesman

The Crystal Vision Statesman PC control software is designed to control a range of Crystal Vision modules via serial control from a PC. Statesman provides a user friendly means of configuring and operating Crystal Vision modules with the benefit of “see-at-a-glance” status monitoring.

The main Statesman application communicates with each module in a frame through a Statesman capable or active control panel. An active panel or REMIND remote control panel must be fitted to allow for Statesman control.

5.1 Statesman operation

The initial view will show an Explorer style view of the connected frames and modules. Double clicking on a module will enable the display of the main application menus.



The Statesman main application window

The menu display is repeated for convenience to allow dual-control display of modules with duplicate signal paths or to allow two functions to be viewed at the same time.

FTX 3G has only one Statesman menu tab that provides status information by way of simulated LEDs and text information.

Status

The Status tab provides access to the following:

Channel A

- HD/SD SDI input present
- Laser On
- Laser Level Warning (Near end of life)
- Card edge shutdown status

Channel B

- HD/SD SDI input present
- Laser On
- Laser Level Warning (Near end of life)
- Card edge shutdown status

Board power supply status



Status monitoring

Channel Status

Status indication is as follows:

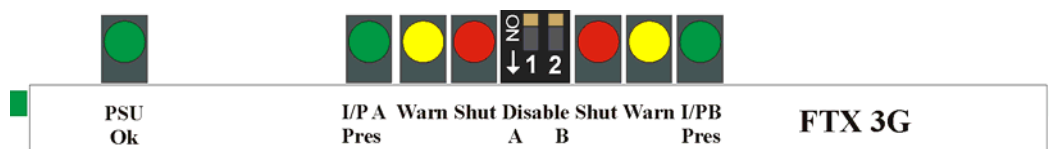
Input setting	Description
SDI Input Present	Green when input detected. Red when no input detected.
Laser On	Green indicates that the laser is emitting light. Greyed out indicates that the laser is not emitting light.
Laser Level Warning	Greyed out, no warning. Amber, the laser has reached its near end of life point.
Card edge switch status	Indicates the status of the card edge shutdown switch.

6 Trouble shooting

Simple trouble shooting can be performed by using either the card edge or a remote status panel display.

6.1 Card edge status LEDs

Board edge LEDs provide status reporting and may be useful when fault finding.



The following table summarises the card edge switches, LED functions and colours:

LED	Location/colour	Meaning when lit
PSU Ok	Green	All PSU voltages are within range.
Input A Present	Green	There is a serial digital video input on Channel A.
Warning	Amber	Channel A laser has reached its near end of life.
Shutdown	Red	Channel A laser is not emitting light or has been disabled.
Shutdown	Red	Channel B laser is not emitting light or has been disabled.
Warning	Amber	Channel B laser has reached its near end of life.
Input B Present	Green	There is a serial digital video input on Channel B.

Switch	Up	Down
A shutdown	Laser shutdown is under auto control	The Channel A laser is manually shutdown preventing light emission.
B shutdown	Laser shutdown is under auto control	The Channel B laser is manually shutdown preventing light emission.

Basic fault finding guide

The Power OK LEDs are not illuminated

Check that the frame PSU is functioning – refer to the appropriate frame manual for detailed information.

Check that the card is seated correctly in the frame.

There is no video input present

Check that valid video input is present and that any cabling is intact.

There is no optical output

Check that the laser disabled/error LED is not illuminated.

Laser disable/error LED illuminated

Check that SDI input is present.

Check that the card edge shutdown switch is not in the down position.

Toggle the shutdown switch to reset the laser driver. If reset is not successful there is likely to have been a catastrophic fault.

Laser level warning LED illuminated

Near end of life. The laser emitter is reaching its life expectancy and will require replacement.

The video output is low quality

Check that the maximum cable length has not been exceeded for both the video input or optical output

Check that the optical connectors have not become contaminated.

Re-setting the card

If required the card may be reset by simply removing the card from the frame and then re-inserting it or, if practical, briefly remove the power to the frame.

It is safe to re-insert the card whilst the rack is powered.

7 Specification

General

Dimensions	100mm x 266mm module with DIN 41612 connector
Weight	200g
Power consumption	3 W

Inputs

Video	HD or SD SDI 270Mb/s to 2.97Gb/s serial digital compliant to SMPTE 259M, SMPTE 292M and SMPTE 424M
Cable equalisation	3G up to 80m and HD up to 140m with Belden 1694 or equivalent (Belden 8281 or equivalent up to 60 and 100m) SD (270Mb/s) >250 metres

Outputs

Number and type:	2 Optical Outputs. 3G, HD or SD SDI 270Mb/s to 2.97Gb/s serial digital compliant to EBU 3267-E, SMPTE 259M and SMPTE 424M
Average Optical power	max -0.0dBm, min -5.0dBm (typical -2.0dBm or 630uW)
Fibre pigtail	Single mode 8/125uM
Optical wavelength	1290-1330nm, 1310 typical
Extinction Ratio	7.5dB
Connector type	SC/PC

GPI Outputs

Number and type:	6 off indicating for both channels: input present, laser ageing and laser shutdown
------------------	--

Status monitoring

LED display	Front of card edge visual monitoring with LED indicators to indicate: PSU rail present, SDI input present, laser near end of life, laser error/disabled
2-way piano level switch	Manual laser shutdown