Crystal Vision

THINK INTERFACE...

THINK INDIGO

THE NEW COLOUR OF INTERFACE

FRAMES AND CONTROL

THE FRAMES

Crystal Vision offers a range of low-cost frames and control options to suit all applications.

Indigo is a new state-of-the-art frames system, combining stylish looks with effortlessly easy access and maintenance. Nine Indigo frames are available in three sizes - 2U, 1U and desk top box - and offer different levels of control. The flexible Indigo is a fully compatible frames system, with every Crystal Vision board fitting in every frame. Video and audio boards requiring different rear connectors can be housed in the same frame in any combination thanks to the wide range of removable rear modules, selected depending on how many inputs and outputs are required and whether you need BNC or D-Type connectors. Ethernet hardware is fitted to all frames and can be made to work by new software released at the end of 2003.

Control options are equally as flexible: take your pick from board edge operation on the module itself, an active panel fitted to the front of the frame, a remote control panel placed in any convenient studio location of your choice, a dedicated control panel for certain products, or even use any PC running on your network.

2U FRAMES

Crystal Vision offers three versatile 2U frames. If you only ever use board edge control, you need the Indigo 2 which is fitted with a passive front panel. Where remote control is required, Indigo 2A comes with an active front panel which allows easy menu-driven control of all products with RS422 inside any two frames as well as Statesman control. The 'S' in Indigo 2S refers to Statesman: this 2U frame has a passive front panel fitted with a CPU featuring RS422 and Ethernet connection to allow network access to Crystal Vision's PC Control System. A second RS422 port allows one passive frame to share the Statesman CPU, meaning that in a large system only half the frames need to be active.


Front view of Indigo 2

The Indigo 2 range has an extremely high-packing density and can house up to 12 boards from the company's full interface and keying ranges, depending on the rear module fitted. The 2U frames can take any of the quad, double and single slot rear modules. The rear module retaining brackets have captive screws which hold them securely in place.

Everything about the frame has been devised to make daily operation easy. The compact rear section has been designed specifically to make wiring into a rack simple. The front panel is attached to the frame by a carefully designed hinge which offers the ultimate in smooth operation, making it very easy to open and close. This has particular benefit for the Indigo 2A as it allows the active front panel to face forwards and be operated in the open position. Maintenance is easy too: boards, power supplies and fans can all be easily removed while the unit is still powered.

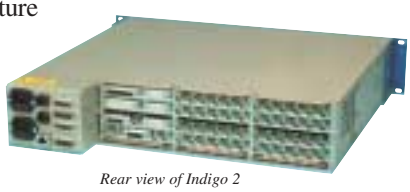

Internal view of Indigo 2A

Indigo 2 offers flexible power options. Two sizes of power supply are available: the PSU-75i (75 Watts) and PSU-150i (150 Watts). You choose your power supplies depending on the number and power consumption of the boards housed within the 2U frame and whether you opt for a second redundant power supply. The power supplies have been designed exclusively for Indigo and feature an internal micro controller meaning they can be remotely monitored by Statesman, with a readable serial number, supply voltage and alarms. The power supplies fit neatly behind the PSU fan, and are easily accessed by removing this fan.

Indigo's exceptional cooling system means any boards can be combined in one frame. There are two easily accessible front fans - one located on the front panel and the other just in front of the power supply - making them very simple to change as they just pull out of position. One of the fans is redundant - this means that should a fan fail the closed frame can still operate indefinitely with an ambient temperature of 40 degrees. In normal operation both operate at reduced power to keep the unit cool but quiet. If the front panel is opened an optical sensor switches the PSU fan to fast operation and the panel fan off. A wire on the fan gives a reliable indication of its speed, and if it was to fail, or to operate too slowly, the other fan is automatically switched to full power and an alarm raised. There is additionally a separate temperature sensor on the frame, while Statesman users can remotely monitor the frame temperature and fan speed.

The Indigo 2 frames feature sophisticated status monitoring. There are six LEDs on an active or passive front panel. Five of the LEDs show the status of the front fan, PSU fan, upper power supply, lower power supply and frame temperature. The two fan indications will show green if the fans are working correctly and red if they are turning too slowly or have stopped, while the PSU fan LED will additionally flash green when this fan has stopped with the front panel open. The two PSU indications will be off if a power supply is not fitted, green if okay and red if there is a fault or the output voltage is too low. The Temp LED is normally green but goes red if the frame temperature goes above the alarm threshold. The sixth LED is for Comms: it monitors external RS422 activity and will flash yellow if there are any external communications with the frame - very useful for checking the remote cabling of systems.

The frames have an excellent connection to control systems using CAT-5 cabling. RS422 control can now be wired using RJ45 connectors, while there is an additional RJ45 connector dedicated for future direct Ethernet connection to the frame. Six individual connections are available at the frame remote sockets, normally for GPI but they may also be used for secondary serial control by dedicated remote control panels such as the Safire Controller.


Rear view of Indigo 2

THE FRAMES

Front view of Indigo 2A

1U FRAMES

Where space and cost are at a premium the Indigo 1 frames are ideal, taking up a mere 1U of rack space for up to six boards.

Once again there are three frames. Indigo 1 has a passive front panel for board edge control only, while the Indigo 1A has an active front panel able to control all boards with RS422 in up to two frames as well as allowing Statesman control. Indigo 1S is the Statesman only version, featuring a passive front fitted with a CPU for connecting to Crystal Vision's PC control software.

Front view of Indigo 1A

The Indigo 1 range shares many of the excellent features of the 2U frames, including a compact rear section for easy wiring, two intelligent fans providing sophisticated cooling and a substantial hinge allowing the Indigo 1A to be operated in the open position. The 1U frames can be used with any of the single and double slot frame rear modules. Boards are hot swappable, while one PSU-75i (75 Watts) power supply is sufficient to power any combination of six boards. The Indigo 1 front panels have four status monitoring LEDs (front fan, PSU fan, power supply and frames temperature) along with the Comms LED for monitoring external RS422 activity.

Front view of Indigo 1

Rear view of Indigo 1

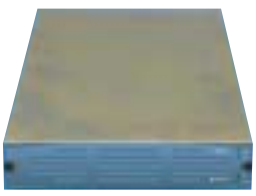
DESK TOP BOXES

Crystal Vision's desk top boxes have reached a new level of sophistication with Indigo. These compact boxes are suitable for non-rack mounted installations requiring a maximum of two modules - such as non-linear editing PCs.

There are three versions depending on the control required. The Indigo DT comes with a passive front panel, the Indigo DTA has an active front panel to control all boards with RS422 in up to two desk top boxes, while the Indigo DTS has a CPU fitted to a passive panel for operation using the Statesman PC Control System.

The best value solution when buying only one or two boards, the Indigo DT range can house any of the video and audio products and can be used with either the single or double slot rear modules. Offering hot swappable boards, it is fitted with a fixed power supply to handle any two boards, while the single fan - located on the side of the box - features the sophisticated cooling system found in the larger frames. The desk top box front panels do not have a hinge, but are simply removed, while 1U ears can be fitted to facilitate mounting in a control desk. There are four front panel LEDs, monitoring the fan, power supply, frame temperature and communications activity. As with the other frames, direct Ethernet connection to the desk top box will be available at the end of 2003.

Front view of Indigo DTA



Front view of Indigo DT

Rear view of Indigo DT

CONTROL

REMOTE CONTROL PANEL

REMIND is a 1U remote control panel which can be used when a requirement exists for the panel and equipment to be located in different rooms. 482mm (19 inches) wide and 90mm deep, it plugs into the frame remote control sockets and can control up to two frames at once.

DIGITAL KEYERS CONTROL PANEL

The Safire Controller is a state-of-the-art control panel for both the Safire digital chroma keyer and LKEY211 digital linear keyer. Ideal for live use and controlling up to seven keyers, it offers extensive information on a large, clear display, a simple menu structure and dedicated buttons for many functions.

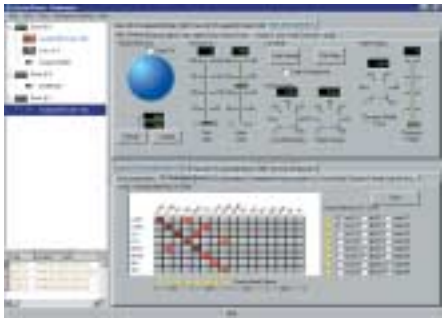
ROUTING SWITCH CONTROL PANEL

The SW808 Controller is a dedicated 1U panel for simple and tactile control of the SW808 8 x 8 routing switch in an attractive and familiar style. Offering dedicated buttons for each of the eight sources and eight destinations, it also allows the programming and recall of salvos. The SW808 Controller - which fits easily in a control desk - is ideal for live operation and when the SW808 has regular adjustment.

COLOUR CORRECTOR CONTROL PANEL

The CoCo Controller is a dedicated 1U control panel for up to eight CoCo colour correctors and legalisers. It has separate shaft encoders for the main adjustments (video gain, chroma gain, black level, RGB gain and gamma) with a display showing the value. Also allows easy adjustment of many other parameters including picture cropping, timing adjustments, soft clipping and legalising.

PC CONTROL SOFTWARE



The Statesman PC Control System allows effortless and flexible control and status monitoring of Crystal Vision's RS422-enabled boards from any PC on a network. When used in conjunction with the GPI36 GPI card it can also be used for simple control and monitoring of non-RS422 boards (with GPI capability) as well as other manufacturers' equipment.

It is ideal for use with large and complex installations or for controlling those products with powerful features.

SPECIFICATION

POWER REQUIREMENT OF ALL FRAMES
85 to 264 volts, 47 to 400Hz

OPERATING CONDITIONS
0 to 40°C non-condensing
Ventilation front to rear, without filters

REMOTE CONTROL
Six control lines per module. Assigned on module (eg. GPI or RS422/RS232)
Contact open/closure for any power supply or frame fault condition (supply out of range or failure, fan too slow or fail, over-heat)
RS485 loop system from front panel to all modules and rear connection (rear connection by way of 26-pin high density D-Type connector and RJ45 connector)
For shared control, frame address selectable on front panel for first or second frame in a pair
Second serial port available for Statesman control (connection via 26-pin high density D-Type connector and RJ45 connector)
Ethernet control capable (for future upgrade)
Statesman and active frame can control a second passive frame
One or two passive frames can be controlled via a remote active panel

MECHANICAL DIMENSIONS

Indigo 2/2A/2S
482mm wide (19 inches), 89mm high (2U), 425mm deep.
Weight 5 kg

Indigo 1/1A/1S
482mm wide (19 inches), 44.5mm high (1U), 425mm deep.
Weight 3.5 kg

Indigo DT/DTA/DTS
223mm wide, 44.5mm high (1U), 365mm deep. Weight 2.5 kg

REMIND
482mm wide (19 inches), 44.5mm high (1U), 90mm deep.
Weight 1.5 kg

Safire Controller
482mm wide (19 inches), 89mm high (2U), 90mm deep.
Weight 2 kg

SW808 Controller
482mm wide (19 inches), 44.5mm high (1U), 90mm deep.
Weight 1.5 kg

CoCo Controller
482mm wide (19 inches), 44.5mm high (1U), 90mm deep.
Weight 1.5 kg

POWER SUPPLIES
Rack mounted frames have plug-in power supplies fitted which are ordered separately
Indigo DT/DTA/DTS, REMIND, SW808 Controller and CoCo Controller have built-in power supplies
The Safire Controller is supplied with a mains power adapter
Both 75 Watts and 150 Watts power supplies available (PSU-75i and PSU-150i)
The PSU-75i and PSU-150i have on-board processors to report to the frame both PSU status and PSU fan status. The frames also monitor and report frame fan status and temperature. If any parameter should fall outside its range, the frame status will indicate a fail condition on both the front panel indicators and by the change over relay contacts accessible from the rear interface connectors. The fail condition will also be diagnosable via Statesman on Statesman-capable frames

REAR MODULES

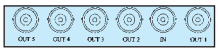
Crystal Vision offers the choice of 26 rear modules which slot onto the back of the frames. Designed to provide the answer to customers' exacting needs, they offer varying numbers of inputs, outputs and loop-through options along with the choice of BNCs or D-Types. The single and double slot rear modules can be used with all three frame sizes, while the quad slot just fit the Indigo 2 range. **Each rear module has a selection of labels suitable for different products.**

In the two slot rear modules (RM06, RM07, RM13, RM15, RM16, RM18, RM20, RM22 and RM26) the board is always placed in the upper of the two slots. These rear modules must occupy either the upper or lower pair of frame slots.

In the quad slot 'video' rear modules (RM02, RM10 and RM25) the boards should be placed in the top slot, the next slot down and the bottom slot, while in the quad slot 'routing switch' rear module (RM19) the board should be placed in the top slot. In the quad slot 'audio' rear modules (RM05, RM08 and RM14) the boards are placed in the top three slots.

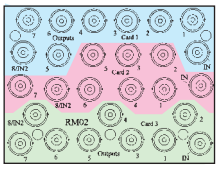
RM01

Used for: Video products
Connectors: 6 BNCs
Frame slots used: 1
Boards in 2U: 12
Boards in 1U: 6
Boards in DTB: 2


RM01

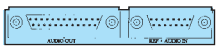
RM02

Used for: Video products
Connectors: 27 BNCs
Frame slots used: 4 (for 3 boards)
Boards in 2U: 9


RM02

RM03

Used for: Audio converters and AES DAs
Connectors: 25-way standard density D-Type and 15-way standard density D-Type
Frame slots used: 1
Boards in 2U: 12
Boards in 1U: 6
Boards in DTB: 2


RM03

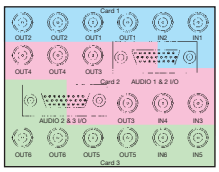
RM04

Used for: TANDEM, TAD202 and SYNNER144
Connectors: 4 BNCs and 26-way high density D-Type
Frame slots used: 1
Boards in 2U: 12
Boards in 1U: 6
Boards in DTB: 2


RM04

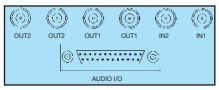
RM05

Used for: TANDEM and SYNNER144
Connectors: 18 BNCs and 2 26-way high density D-Types
Frame slots used: 4 (for 3 boards)
Boards in 2U: 9


RM05

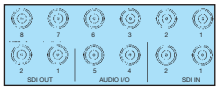
RM06

Used for: TANDEM
Connectors: 25-way standard density D-Type and 6 BNCs
Frame slots used: 2
Boards in 2U: 6
Boards in 1U: 3
Boards in DTB: 1


RM06

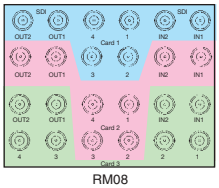
RM07

Used for: TANDEM, TAD202 and SYNNER144
Connectors: 12 BNCs (for both SDI and 75ohm digital audio)
Frame slots used: 2
Boards in 2U: 6
Boards in 1U: 3
Boards in DTB: 1


RM07

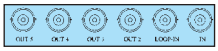
RM08

Used for: TANDEM and SYNNER144
Connectors: 24 BNCs (for both SDI and 75ohm digital audio)
Frame slots used: 4 (for 3 boards)
Boards in 2U: 9


RM08

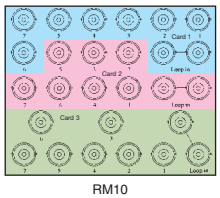
RM09

Used for: Single analogue video DAs
Connectors: 6 BNCs
Frame slots used: 1
Boards in 2U: 12
Boards in 1U: 6
Boards in DTB: 2


RM09

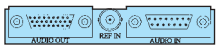
RM10

Used for: Single analogue video DAs
Connectors: 27 BNCs
Frame slots used: 4 (for 3 boards)
Boards in 2U: 9


RM10

RM11

Used for: Audio converters and AES DAs
Connectors: 26-way high density D-Type, 15-way standard density D-Type and BNC for A/D ref
Frame slots used: 1
Boards in 2U: 12
Boards in 1U: 6
Boards in DTB: 2


RM11

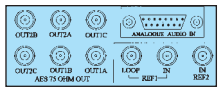
RM12

Used for: Audio converters and AES DAs
Connectors: 2 BNCs and 25-way standard density D-Type (75ohm digital audio on BNCs)
Frame slots used: 1
Boards in 2U: 12
Boards in 1U: 6
Boards in DTB: 2


RM12

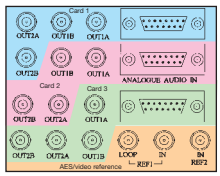
RM13

Used for: Audio converters and AES DAs
Connectors: 9 BNCs and 15-way standard density D-Type (75ohm digital audio on BNCs)
Frame slots used: 2
Boards in 2U: 6
Boards in 1U: 3
Boards in DTB: 1


RM13

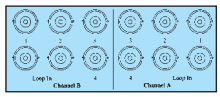
RM14

Used for: A to D audio converter
Connectors: 15 BNCs and 3 15-way standard density D-Types (75ohm digital audio on BNCs)
Frame slots used: 4 (for 3 boards)
Boards in 2U: 9


RM14

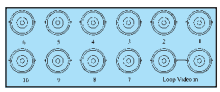
RM15

Used for: Dual analogue video DAs
Connectors: 12 BNCs
Frame slots used: 2
Boards in 2U: 6
Boards in 1U: 3
Boards in DTB: 1


RM15

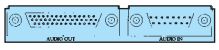
RM16

Used for: Analogue video DAs
Connectors: 12 BNCs
Frame slots used: 2
Boards in 2U: 6
Boards in 1U: 3
Boards in DTB: 1


RM16

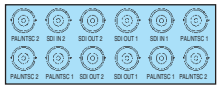
RM17

Used for: Analogue audio DAs
Connectors: 44-way high density D-Type and 15-way standard density D-Type
Frame slots used: 1
Boards in 2U: 12
Boards in 1U: 6
Boards in DTB: 2


RM17

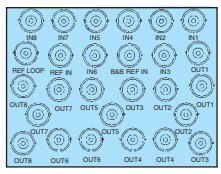
RM18

Used for: Video products
Connectors: 12 BNCs
Frame slots used: 2
Boards in 2U: 6
Boards in 1U: 3
Boards in DTB: 1


RM18

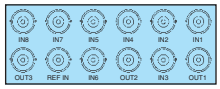
RM19

Used for: SW808 switch
Connectors: 27 BNCs
Frame slots used: 4 (for 1 board only)
Boards in 2U: 3


RM19

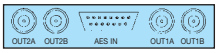
RM20

Used for: SW808 switch
Connectors: 12 BNCs
Frame slots used: 2
Boards in 2U: 6
Boards in 1U: 3
Boards in DTB: 1


RM20

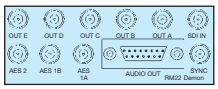
REAR MODULES

RM21
Used for: AES DAs and A to D audio converter
Connectors: 4 BNCs and 15-way standard density D-Type
Frame slots used: 1
Boards in 2U: 12
Boards in 1U: 6
Boards in DTB: 2



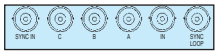
RM21

RM22
Used for: Demon
Connectors: 10 BNCs and 15-way standard density D-Type
Frame slots used: 2
Boards in 2U: 6
Boards in 1U: 3
Boards in DTB: 1



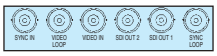
RM22

RM23
Used for: Video products with Black & Burst loop
Connectors: 6 BNCs
Frame slots used: 1
Boards in 2U: 12
Boards in 1U: 6
Boards in DTB: 2

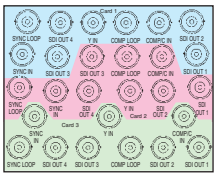


RM23

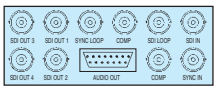
RM24
Used for: DEC104S
Connectors: 6 BNCs
Frame slots used: 1
Boards in 2U: 12
Boards in 1U: 6
Boards in DTB: 2


RM24

RM25
Used for: DEC104S
Connectors: 27 BNCs
Frame slots used: 4 (for 3 boards)
Boards in 2U: 9


RM25

RM26
Used for: SYNNER144
Connectors: 10 BNCs and 15-way standard density D-Type
Frame slots used: 2
Boards in 2U: 6
Boards in 1U: 3
Boards in DTB: 1



RM26

PRODUCT SELECTOR SOFTWARE

System Builder will inform the customer which rear modules he needs. This revolutionary step-by-step product selector tool runs from a standard Internet web browser and walks the user through a series of screens where he selects boards, sub PCBs, rear modules, accessories and frames. At each stage System Builder only gives the options that are applicable for the currently selected board. This free software is available on the main Crystal Vision website at www.crystalvision.tv

System Builder

THE PRODUCTS

KEYING
Safire
LKEY211

VIDEO CONVERSION
(SDI, Component, Composite, Y/C)
ADC104F
ADC104N
ADC104FK
DAC102F
DAC102N
DEC101S
DEC102
DEC102S
DEC103S
DEC103SL
DEC104S
ENC116
MON210
DDAA132
DDAA132P
DDAA246
Demon

VIDEO DISTRIBUTION
VDA110R
VDA110M
VDA210R
VDA210M
DDA108
DDA108A
DDA208A

SYNCHRONISATION
SYN102
SYNAD124
SYNNER144

ASPECT RATIO CONVERSION
ARC102
ShARC102
ShARC204

ROUTING
SW222
SW808

TEST PATTERN GENERATION
TPG102
GEN104

SCAN REVERSING
Flip

PICTURE PROCESSING AND CORRECTION
ViPA102
ViPA204
CoCo104

GPI MONITORING & CONTROL
GPI36

VIDEO DELAY
ViViD124

EMBEDDED AUDIO
TANDEM-110
TANDEM-200
TANDEM-300
Demon
SYNAD124
SYNNER144

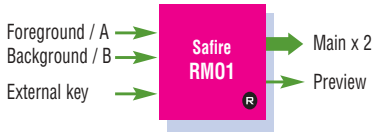
AUDIO CONVERSION
ADCA412
DACA214

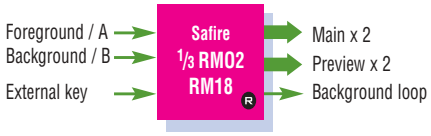
AUDIO DISTRIBUTION
DADA208
DADA208N
DADA208D
AADA416R
AADA416FM

AUDIO DELAY
TAD202
DADA208D

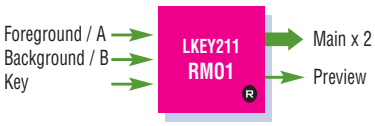
Digital Keyers

Safire
9.5 Watts





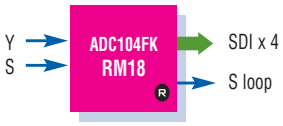
LKEY211
10 Watts



Component To SDI Converters

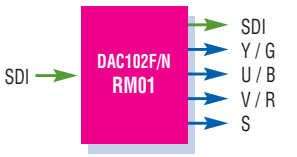
ADC104F
ADC104N
6.25 Watts

ADC104FK
6.25 Watts

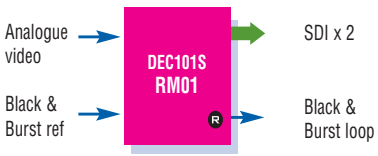


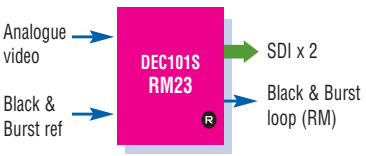
SDI To Component Converters

DAC102F
DAC102N
6 Watts



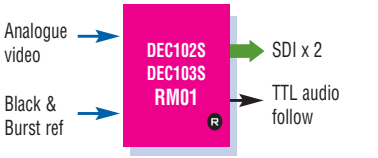
DEC101S
6.25 Watts

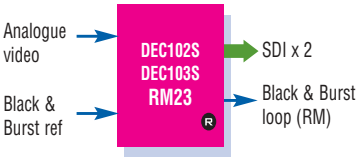




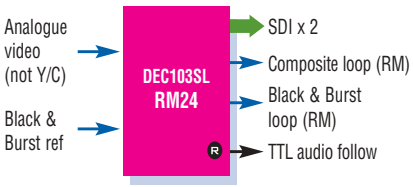
DEC102
6.25 Watts

DEC102S
DEC103S
8 Watts

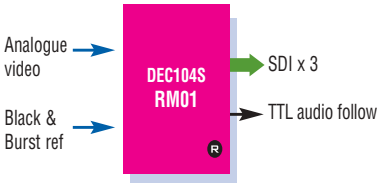


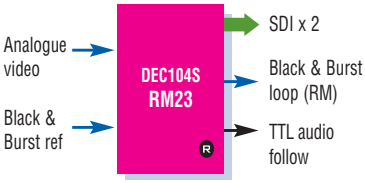


DEC103SL
8 Watts

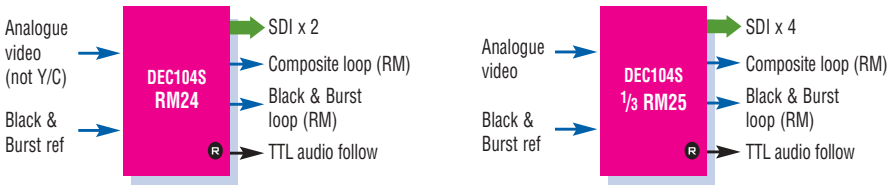


DEC104S
8 Watts



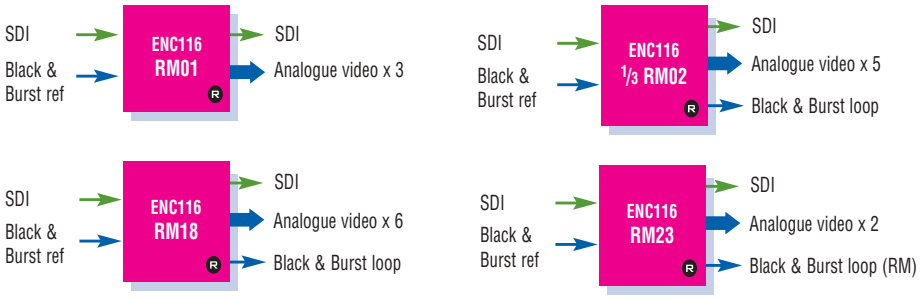


Decoders (continued)



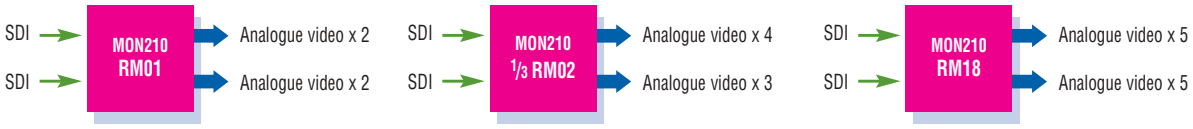
Broadcast Encoder

ENC116
7.4 Watts



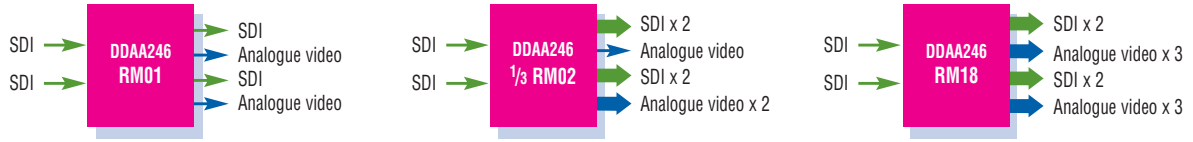
Monitoring Encoders

MON210
7 Watts

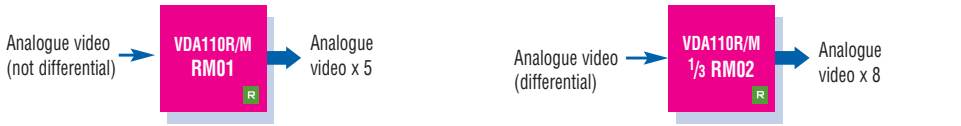


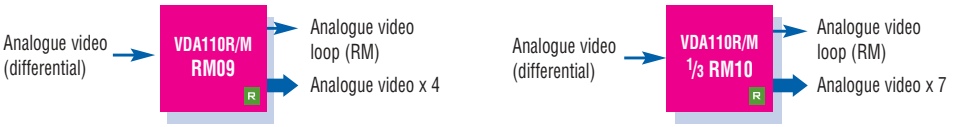
DDAA132
DDAA132P
5 Watts

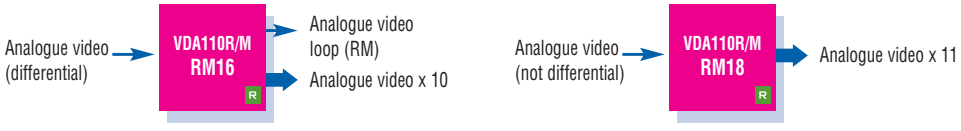
DDAA246
8 Watts



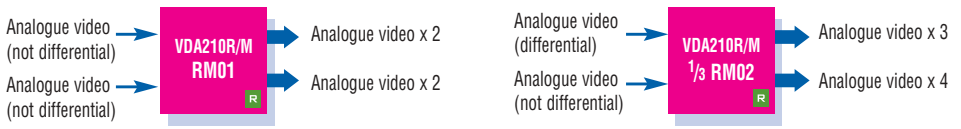
VDA110R
VDA110M
4 Watts

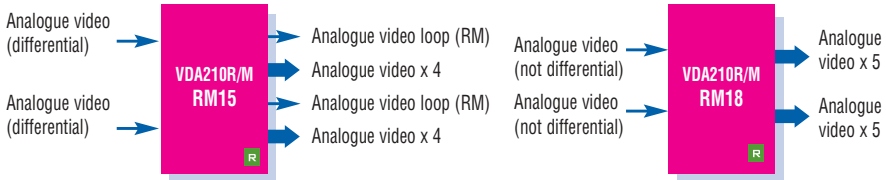






VDA210R
VDA210M
4 Watts





SDI Distribution Amplifiers

DDA108
DDA108A
4 Watts

DDA208A
4 Watts

Aspect Ratio Converters

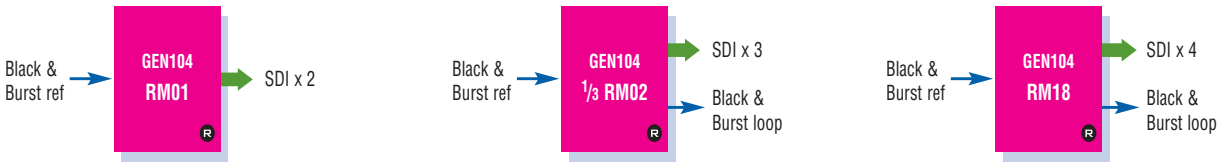
ARC102
8.3 Watts

ShARC102
8 Watts

ShARC204
8.4 Watts

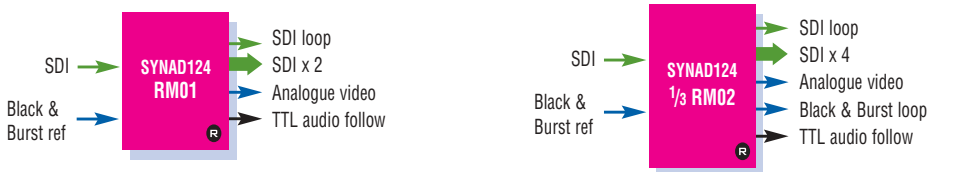
TPG102
6.25 Watts

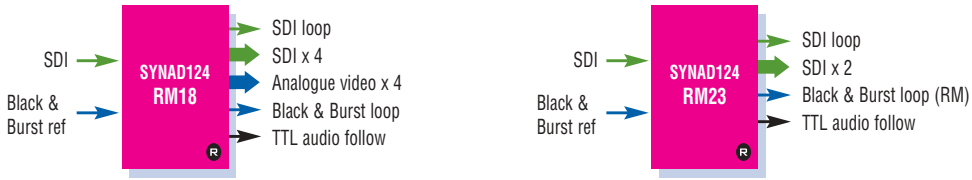
GEN104
5 Watts



SYN102
6 Watts

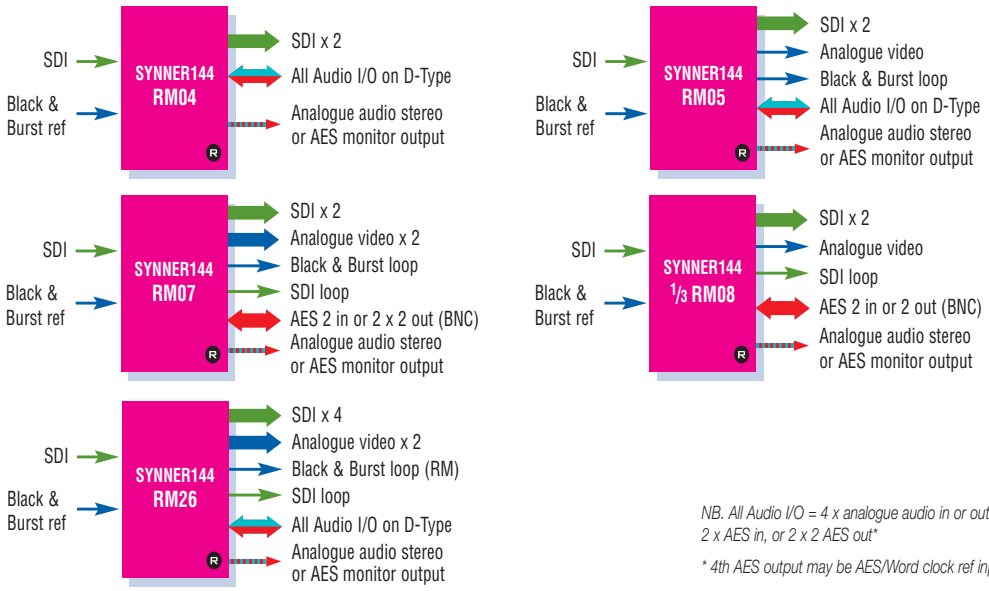
SYNAD124
11 Watts





Synchronisers (continued)

SYNNER144
12.5 Watts



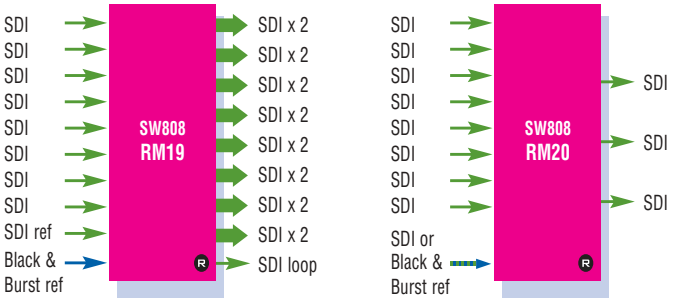
*NB. All Audio I/O = 4 x analogue audio in or out, or 2 x AES in, or 2 x 2 AES out**

** 4th AES output may be AES/Word clock ref input*

Routing Switches

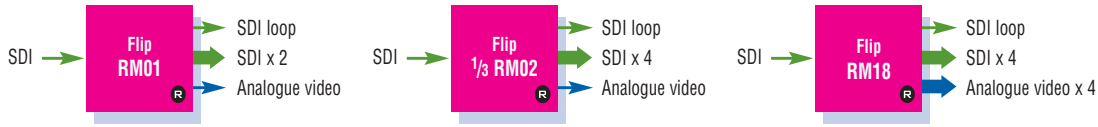
SW222
5 Watts

SW808
10.5 Watts



ViViD124
5 Watts

Flip
6 Watts



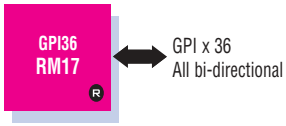
ViPA102
8 Watts

ViPA204
8.4 Watts

CoCo104
10 Watts

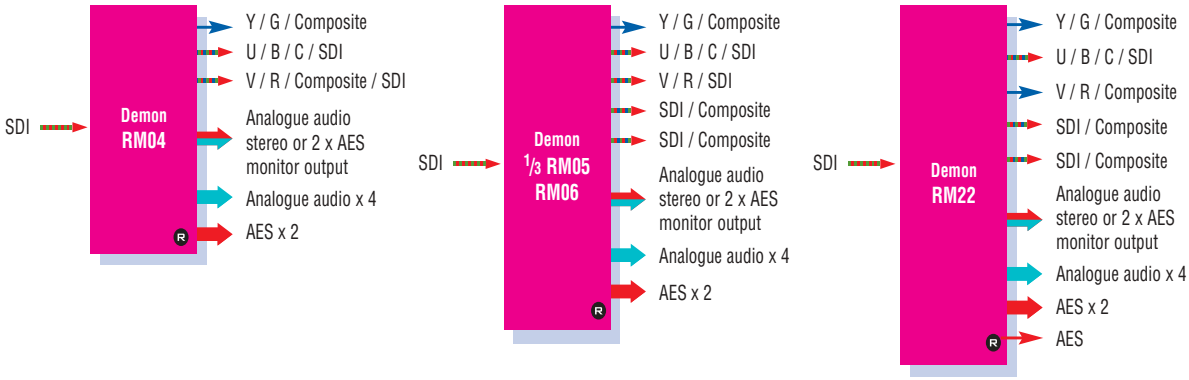
GPI Card

GPI36
1 Watt



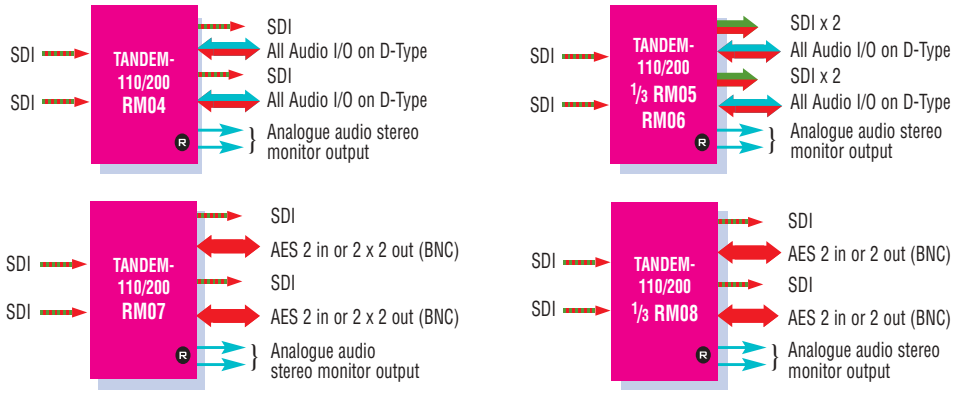
De-embedding Monitor

Demon
11 Watts

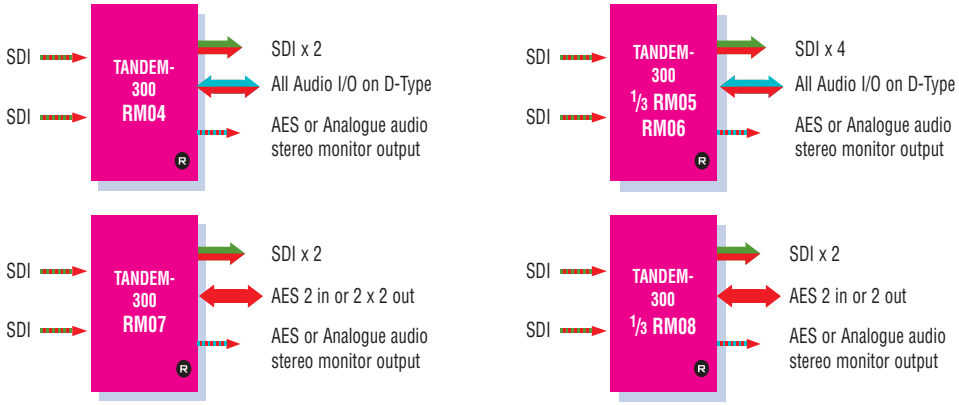


AUDIO

TANDEM-110
TANDEM-200
11 Watts



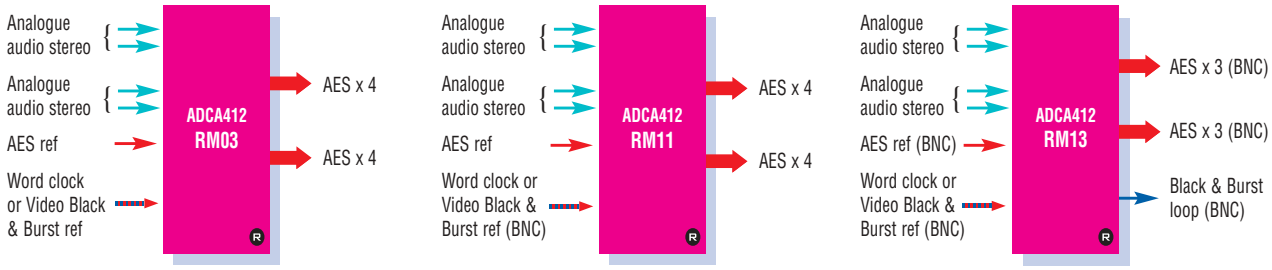
TANDEM-300
11 Watts

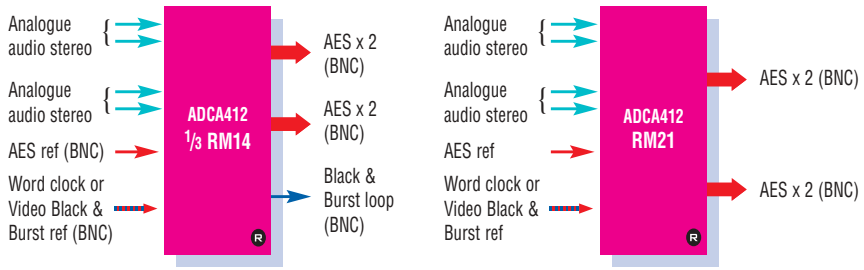


*NB. All Audio I/O = 4 x analogue audio in or out, or 2 x AES in, or 2 x 2 AES out**
** 4th AES output may be AES/Word clock ref input*
Analogue audio stereo monitoring output can be AES on TANDEM-200

Audio Converters

ADCA412
6.25 Watts





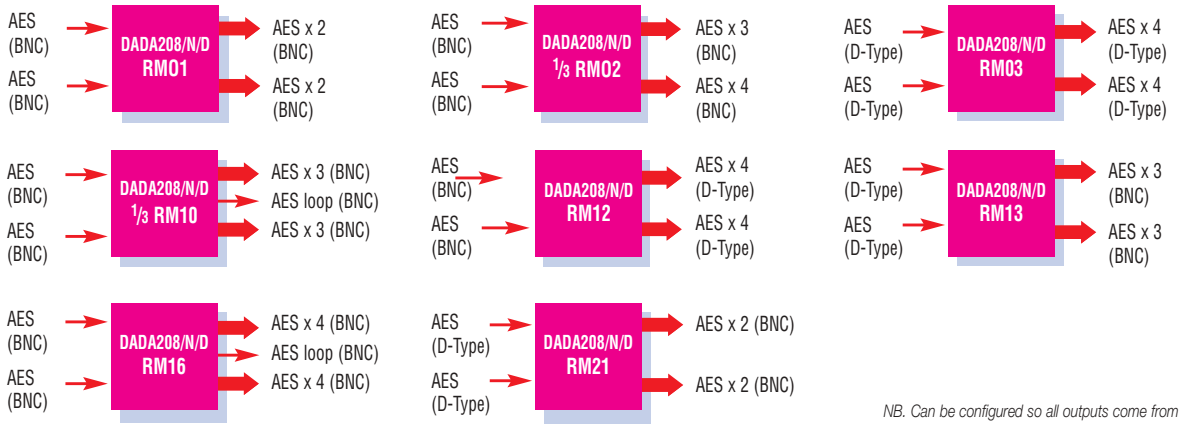
DACA214
6.25 Watts

NB. References shared between 3 ADCA412s

DADA208
0.6 Watts

DADA208N
0.8 Watts

DADA208D
2.1 Watts

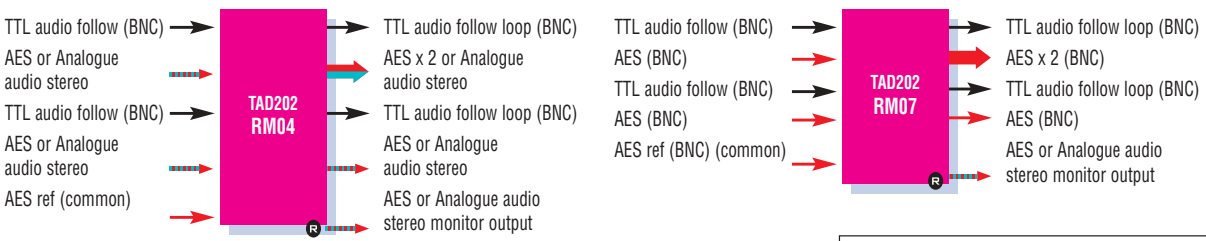


NB. Can be configured so all outputs come from single input

AADA416R
AADA416FM
3.8 Watts

NB. Can have 8 outputs of 1 stereo pair or 16 outputs of 1 mono

TAD202
12 Watts



KEY

- Remote control
- R Remote control available on R versions of product only
- RM Rear module loop still available when board is removed.

Crystal Vision Ltd.

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