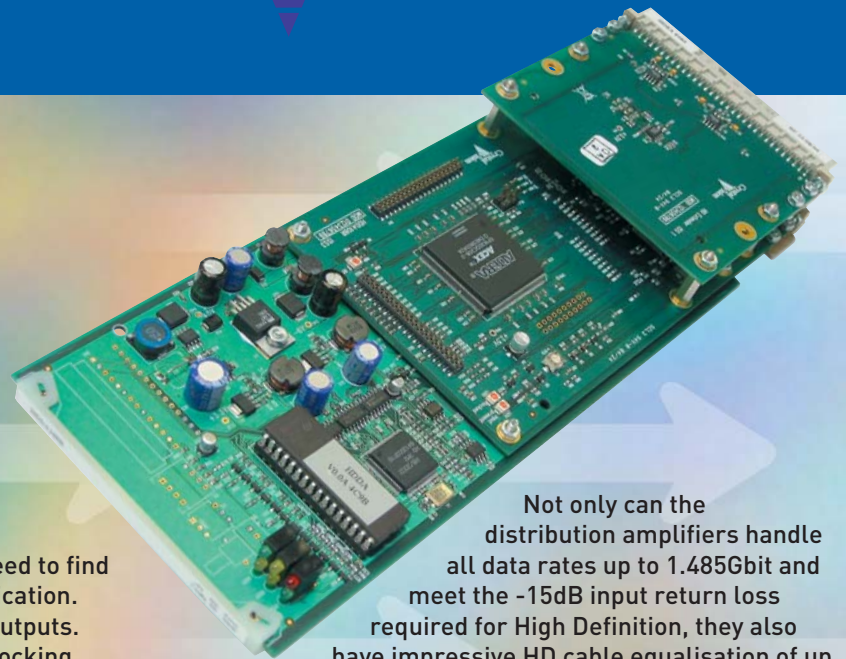


Crystal Vision

HD/SDI Distribution Amplifiers



It's all about choice with Crystal Vision's HD distribution amplifiers.

A choice of eight means you are guaranteed to find the right distribution amplifier for your application. Select from four, five, eight or even eleven outputs. Protect your performance with our four reclocking DAs or opt for lower cost and go for non-reclocking. (We have four of those too.) Choose a product that suits the material you're working with both now and in a year's time: as well as distributing all High Definition formats, the DAs all work with SDI and some even work with ASI too.

All this choice could be bewildering, but not with Crystal Vision. This brochure clearly explains the features on offer, allowing you to quickly pinpoint the product for you.

Not only can the distribution amplifiers handle all data rates up to 1.485Gbit and meet the -15dB input return loss required for High Definition, they also have impressive HD cable equalisation of up to 140m using Belden 1694A.

These space-saving 100mm x 266mm boards fit in all of the company's standard frames (available in 4U, 2U, 1U and desk top box), meaning they can be easily integrated with any other HD or SD product from the Crystal Vision range.

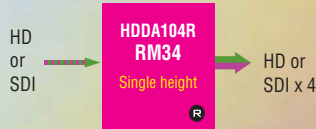
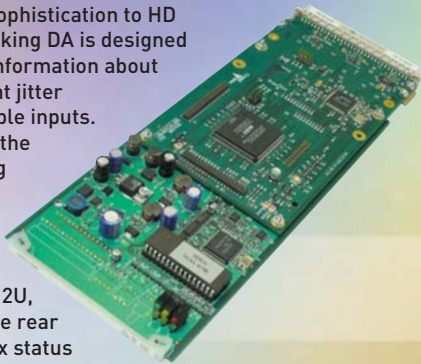
The HD DAs are ideal for multi-standard environments, for those who need to distribute High Definition now or in the near future, and for engineers who want to 'future proof' their SD installations. Which one will you choose?

CHOOSING THE RIGHT DISTRIBUTION AMPLIFIER FOR YOU

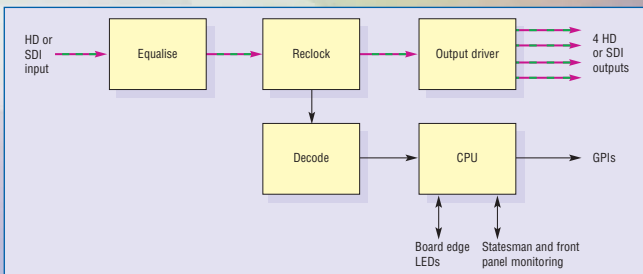
FEATURE	HDDA104R	HDDA108R	HDDA105C	HDDA111C	HDDA105N	HDDA111N	HDDA105NA	HDDA111NA
Number of outputs	4	8	5	11	5	11	5	11
Number of boards in 2U	12	6	12	6	12	6	12	6
Reclocking	●	●	●	●				
Non-reclocking					●	●	●	●
Suitable for HD	●	●	●	●	●	●	●	●
Suitable for SDI	●	●	●	●	●	●	●	●
Suitable for ASI							●	●
Auto slew rate switching	●	●	●	●				
Statesman and front panel monitoring	●	●						
Rear modules used	RM34	2 x RM34	RM34	2 x RM34	RM34	2 x RM34	RM34	2 x RM34

HDDA104R

The HDDA104R brings sophistication to HD distribution. This reclocking DA is designed for those seeking both information about their signal and excellent jitter performance on long cable inputs. Automatically detecting the standard of the incoming video, it provides four reclocked HD or SDI outputs. The module fits in one frame slot allowing up to 12 DAs in 2U, and uses the RM34 frame rear module. In addition to six status LEDs on the board edge, the HDDA104R's strength lies in providing comprehensive signal information through either a frame active front panel or the Statesman PC control software.



The video standard is shown through indications of line rate, frame rate and pixels per line, and signal validity is shown through indications of input present, valid High Definition and valid Standard Definition. Statesman alarms can be set for board lost and loss of input.

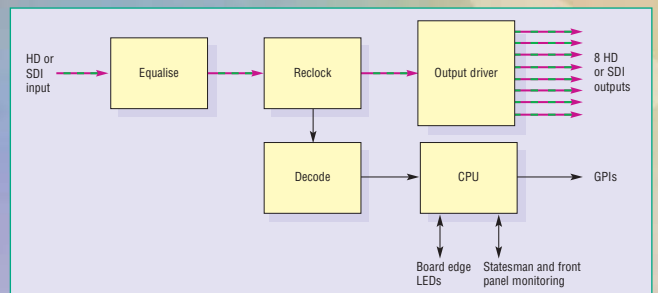
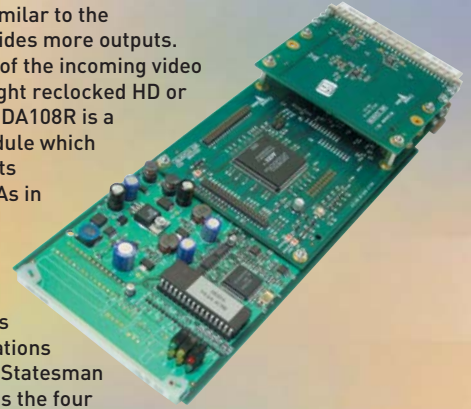


Choose HDDA104R when...

you need signal reporting and four reclocked outputs.

HDDA108R

The HDDA108R is similar to the HDDA104R but provides more outputs. With auto detection of the incoming video standard, it gives eight reclocked HD or SDI outputs. The HDDA108R is a 'double decker' module which takes two frame slots allowing up to six DAs in 2U, and uses two RM34 frame rear modules together to access the inputs and outputs. It offers the same LED indications and front panel and Statesman signal information as the four output version. Only slightly more expensive than the HDDA104R, it is the product to choose if you need those extra outputs.

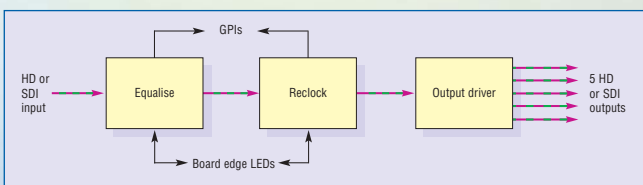
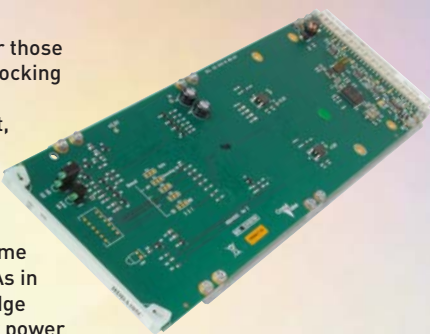


Choose HDDA108R when...

you need signal reporting and eight reclocked outputs.

HDDA105C

The HDDA105C is a distribution amplifier for those who need a simpler reclocking product. Automatically detecting HD or SD input, it provides five reclocked HD or SDI outputs using the RM34 frame rear module. It fits in one frame slot allowing up to 12 DAs in 2U, while three board edge LEDs illuminate to show power supplies present and whether the signal is HD or SD.

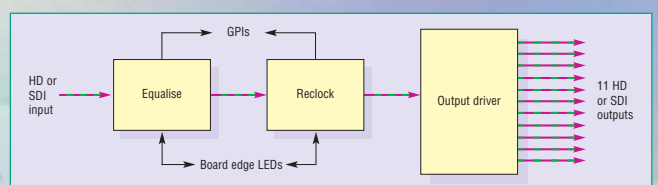
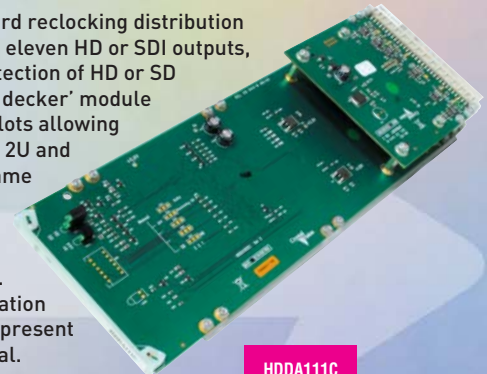


Choose HDDA105C when...

you want five reclocked outputs but don't need signal reporting.

HDDA111C

This straightforward reclocking distribution amplifier provides eleven HD or SDI outputs, with automatic detection of HD or SD input. The 'double decker' module fits in two frame slots allowing up to six boards in 2U and uses two RM34 frame rear modules together to provide the reclocked outputs. There is LED indication of power supplies present and HD or SD signal.

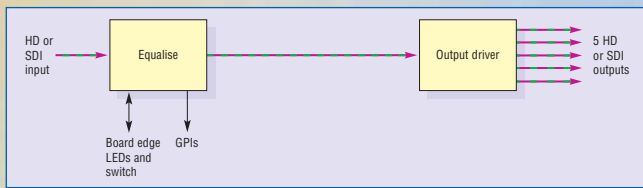
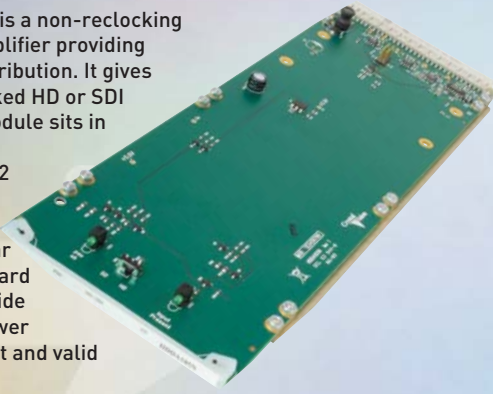


Choose HDDA111C when...

you want eleven reclocked outputs but don't need signal reporting.

HDDA105N

The HDDA105N is a non-reclocking distribution amplifier providing economical distribution. It gives five non-reclocked HD or SDI outputs. The module sits in one frame slot allowing up to 12 DAs in 2U and uses the RM34 frame rear module. Two board edge LEDs provide indication of power supplies present and valid signal present.

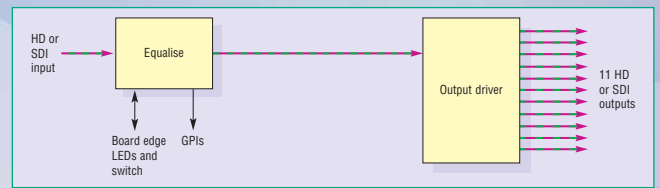
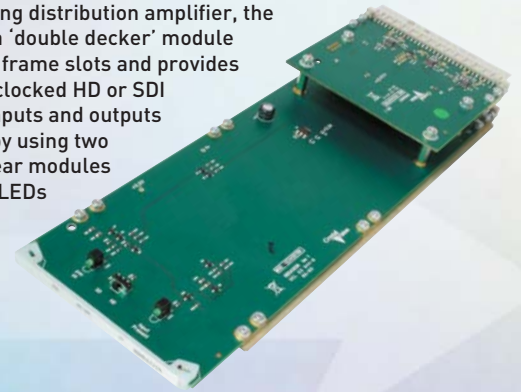


Choose HDDA105N when...

you want the most economical answer to HD distribution (and five non-reclocked outputs).

HDDA111N

A non-reclocking distribution amplifier, the HDDA111N is a 'double decker' module which fills two frame slots and provides eleven non-reclocked HD or SDI outputs. The inputs and outputs are accessed by using two RM34 frame rear modules together. Two LEDs indicate the presence of power supplies and a valid signal.

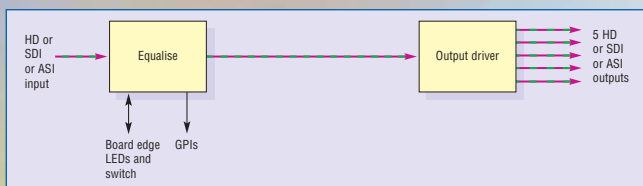
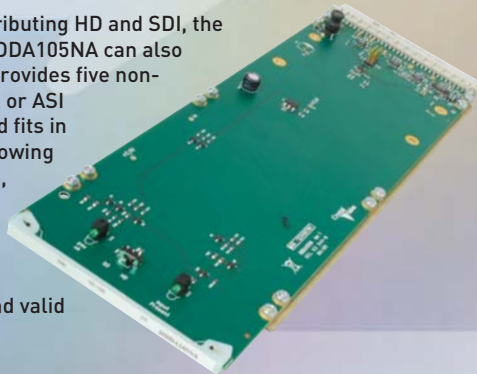


Choose HDDA111N when...

you need eleven non-reclocked outputs.

HDDA105NA

In addition to distributing HD and SDI, the non-reclocking HDDA105NA can also distribute ASI. It provides five non-reclocked HD, SDI or ASI outputs. The board fits in one frame slot allowing up to 12 DAs in 2U, uses the RM34 frame rear module and gives LED indication of power supplies and valid signal present.

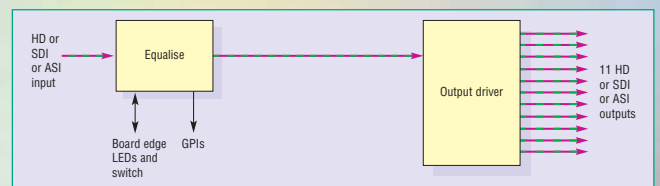
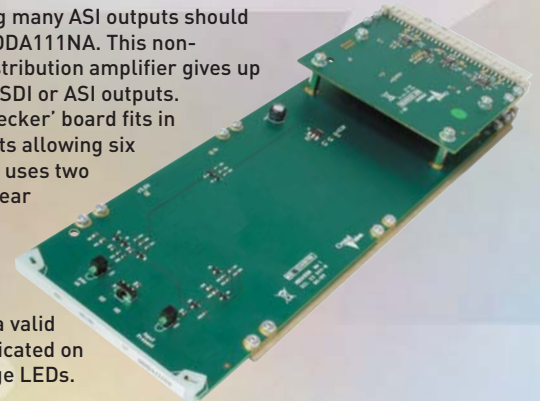


Choose HDDA105NA when...

you want to distribute ASI and only need five outputs.

HDDA111NA

Those needing many ASI outputs should choose the HDDA111NA. This non-reclocking distribution amplifier gives up to eleven HD, SDI or ASI outputs. The 'double decker' board fits in two frame slots allowing six DAs in 2U and uses two RM34 frame rear modules together. The presence of power supplies and a valid signal are indicated on two board edge LEDs.



Choose HDDA111NA when...

you want to distribute ASI and you need eleven outputs.

SPECIFICATION

HDDA104R AND HDDA108R

MECHANICAL

HDDA104R: Standard Crystal Vision module 266mm x 100mm
 HDDA108R: 'Double decker' module 266mm x 100mm (uses two frame slots)
 Weight: 230g (HDDA104R); 290g (HDDA108R)
 Power consumption: 3 Watts (HDDA104R); 4 Watts (HDDA108R)

VIDEO INPUT

One HD or SDI input with auto locking and reclocking 270Mbit to 1.485Gbit compliant to SMPTE 259M and SMPTE 292M
 All High Definition formats supported
 HD cable equalisation up to 140m with Belden 1694 or equivalent (approx. 100m with Belden 8281)
 SD cable equalisation >200m Belden 8281 or equivalent
 Input return loss: -15dB for 50MHz to 1.5GHz

VIDEO OUTPUTS

HDDA104R: Maximum of four reclocked HD or SDI outputs using RM34 frame rear module
 HDDA108R: Maximum of eight reclocked HD or SDI outputs using two RM34 frame rear modules together

DELAY THROUGH BOARD

50ns max

LED INDICATION OF:

Power supplies okay
 HD signal present
 SD signal present
 Error
 Input present

GPI OUTPUT LEVELS

Electrically: Open collector transistors 30V, 3300hm current limit resistors. Pulled up to +5V through 22k0hm

GPI OUTPUTS

Input present
 HD or SD signal

REMOTE MONITORING

Front panel monitoring from frame active panel and remote panel
 Statesman allows monitoring from any PC on a network
 Monitoring of input present, valid Standard Definition input, valid High Definition input, interlaced scan input, progressive scan input, reclocker active, video standard, active lines per frame and active pixels per line

HDDA105C AND HDDA111C

MECHANICAL

HDDA105C: Standard Crystal Vision module 266mm x 100mm
 HDDA111C: 'Double decker' module 266mm x 100mm (uses two frame slots)
 Weight: 140g (HDDA105C); 200g (HDDA111C)
 Power consumption: 3.2 Watts (HDDA105C); 5.6 Watts (HDDA111C)

VIDEO INPUT

One HD or SDI input with auto locking and reclocking 270Mbit to 1.485Gbit compliant to SMPTE 259M and SMPTE 292M
 All High Definition formats supported
 HD cable equalisation up to 140m with Belden 1694 or equivalent (approx. 100m with Belden 8281)
 SD cable equalisation >200m Belden 8281 or equivalent
 Input return loss: -15dB for 50MHz to 1.5GHz

VIDEO OUTPUTS

HDDA105C: Maximum of five reclocked HD or SDI outputs using RM34 frame rear module
 HDDA111C: Maximum of eleven reclocked HD or SDI outputs using two RM34 frame rear modules together

DELAY THROUGH BOARD

50ns max

LED INDICATION OF:

Power supplies okay
 HD or SD signal

GPI OUTPUT LEVELS

Electrically: Open collector transistors 30V, 2700hm current limit resistors. Pulled up to +5V through 6.8k0hm

GPI OUTPUTS

Input present
 Power supplies okay
 HD or SD signal

HDDA105N, HDDA111N, HDDA105NA AND HDDA111NA

MECHANICAL

HDDA105N and HDDA105NA: Standard Crystal Vision module 266mm x 100mm
 HDDA111N and HDDA111NA: 'Double decker' module 266mm x 100mm (uses two frame slots)
 Weight: 140g (HDDA105N and HDDA105NA); 200g (HDDA111N and HDDA111NA)
 Power consumption: 2.8 Watts (HDDA105N and HDDA105NA); 5.2 Watts (HDDA111N and HDDA111NA)

VIDEO INPUT

One HD or SDI input (HDDA105N and HDDA111N)
 One HD or SDI or ASI input (HDDA105NA and HDDA111NA)
 270Mbit to 1.485Gbit compliant to SMPTE 259M and SMPTE 292M
 All High Definition formats supported
 HD cable equalisation up to 140m with Belden 1694 or equivalent (approx. 100m with Belden 8281)
 SD cable equalisation >200m Belden 8281 or equivalent
 Input return loss: -15dB for 50MHz to 1.5GHz

VIDEO OUTPUTS

HDDA105N: Maximum of five non-reclocked HD or SDI outputs using RM34 frame rear module
 HDDA111N: Maximum of eleven non-reclocked HD or SDI outputs using two RM34 frame rear modules together
 HDDA105NA: Maximum of five non-reclocked HD, SDI or ASI outputs using RM34 frame rear module

HDDA111NA: Maximum of eleven non-reclocked HD, SDI or ASI outputs using two RM34 frame rear modules together

DELAY THROUGH BOARD

50ns max

LED INDICATION OF:

Power supplies okay
 Valid signal present

LOCAL CONTROL

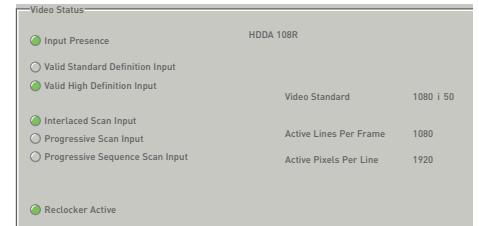
Board edge switch selects HD or SD output slew rate. HD position is used in mixed HD/SD applications

GPI OUTPUT LEVELS

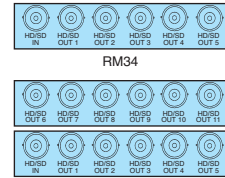
Electrically: Open collector transistors 30V, 2700hm current limit resistors. Pulled up to +5V through 6.8k0hm

GPI OUTPUTS

Input present
 Power supplies okay



Statesman GUI (HDDA104R and HDDA108R only)



2 x RM34

ORDERING INFORMATION

HDDA104R	HD/SDI reclocking distribution amplifier with four outputs and signal reporting
HDDA108R	HD/SDI reclocking distribution amplifier with eight outputs and signal reporting
HDDA105C	HD/SDI reclocking distribution amplifier with five outputs
HDDA111C	HD/SDI reclocking distribution amplifier with eleven outputs
HDDA105N	HD/SDI non-reclocking distribution amplifier with five outputs
HDDA111N	HD/SDI non-reclocking distribution amplifier with eleven outputs
HDDA105NA	HD/SDI/ASI non-reclocking distribution amplifier with five outputs
HDDA111NA	HD/SDI/ASI non-reclocking distribution amplifier with eleven outputs
Indigo 4	4U frame with passive front panel for up to 24 Crystal Vision modules
Indigo 4SE	4U frame with passive front panel fitted with Statesman CPU for up to 24 Crystal Vision modules
Indigo 2	2U frame with passive front panel for up to 12 Crystal Vision modules
Indigo 2AE	2U frame with active front panel for up to 12 Crystal Vision modules
Indigo 2SE	2U frame with passive front panel fitted with Statesman CPU for up to 12 Crystal Vision modules
Indigo 1	1U frame with passive front panel for up to six Crystal Vision modules
Indigo 1AE	1U frame with active front panel for up to six Crystal Vision modules
Indigo 1SE	1U frame with passive front panel fitted with Statesman CPU for up to six Crystal Vision modules
Indigo DT	Desk top box with passive front panel for up to two Crystal Vision modules
Indigo DTAE	Desk top box with active front panel for up to two Crystal Vision modules
Indigo DTSE	Desk top box with passive front panel fitted with Statesman CPU for up to two Crystal Vision modules
RM34	Single slot frame rear module used for HDDA104R, HDDA105C, HDDA105N and HDDA105NA. Allows maximum number of boards in frame (24 in 4U, 12 in 2U, six in 1U, two in desk top box). Gives access to four HD or SDI outputs (HDDA104R), five HD or SDI outputs (HDDA105C and HDDA105N) or five HD, SDI or ASI outputs (HDDA105NA)
2 x RM34	Two single slot frame rear modules used together for HDDA108R, HDDA111C, HDDA111N and HDDA111NA. Allows 12 boards in 4U, six in 2U, three in 1U and one in desk top box. Gives access to eight HD or SDI outputs (HDDA108R), eleven HD or SDI outputs (HDDA111C and HDDA111N) or eleven HD, SDI or ASI outputs (HDDA111NA)
REMIND	19" remote control panel
Statesman	PC Control System

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