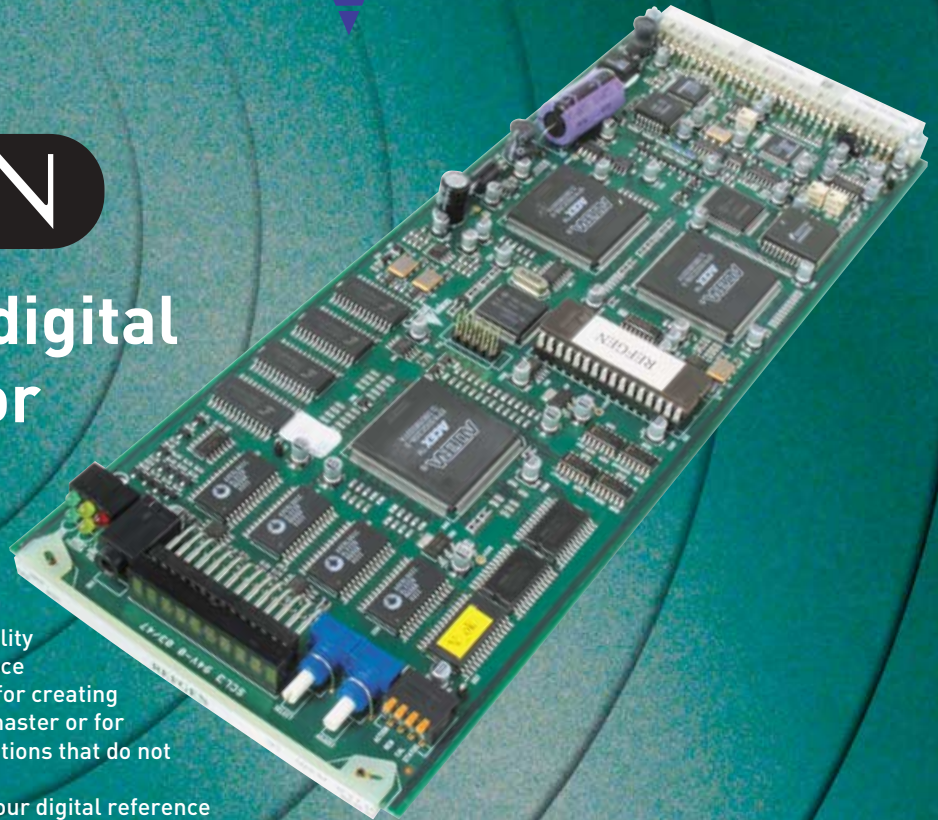


Crystal Vision

REFGEN

Analogue and digital black generator



REFGEN brings real flexibility. With the ability to output both analogue and digital reference signals at the same time, REFGEN is ideal for creating offset timing references from the station master or for generating the master reference in applications that do not require a broadcast accurate reference.

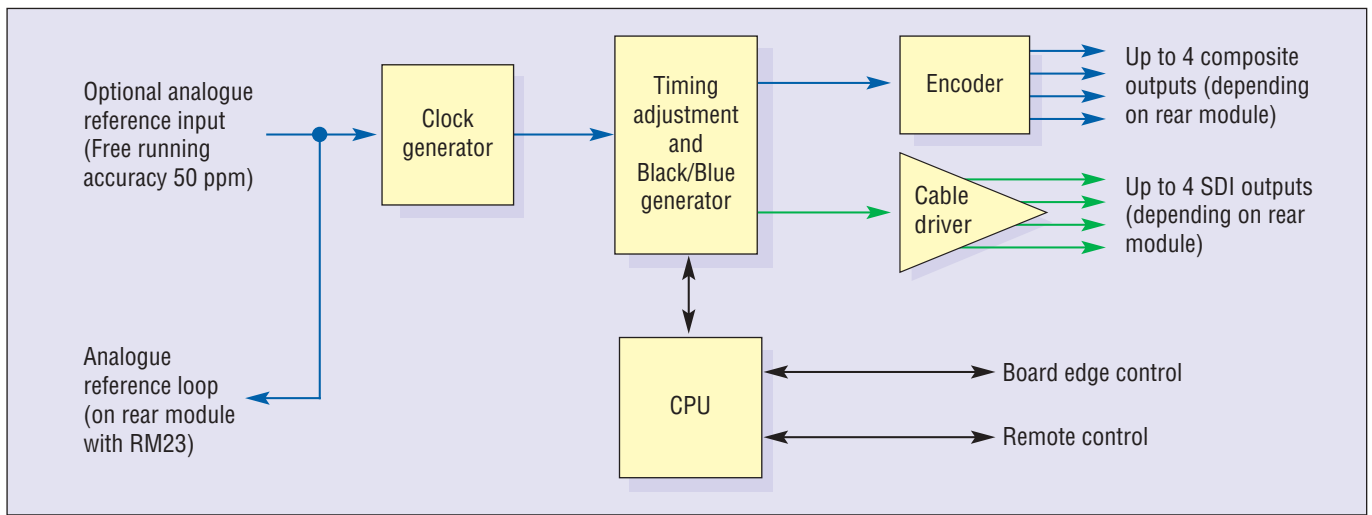
By producing up to four analogue and four digital reference signals simultaneously, REFGEN has the capability to send eight reference signals to a wide variety of broadcast equipment, including to those products that require a digital reference. The extensive number of outputs available also brings cost-savings by reducing the need for additional distribution amplifiers in the system.

REFGEN's reference signals are either free running or timed to an analogue input. When free running REFGEN does not have a reference and provides the fundamental system timing signal, with the output reference timed to an on board clock generator. When locked to an analogue input, REFGEN is used to either provide a digital reference or to provide a second analogue reference locked to the first but with a fixed delay. Many studio systems rely on multiple references with an offset between them and REFGEN provides a simple way of achieving this, with a full two fields of adjustment by line and pixel.

While a black reference output is the industry standard and set as REFGEN's default, a blue output can alternatively be selected by those engineers who like the more obvious signal present indication given by a blue screen. The quality of the SDI reference is excellent with virtually no output jitter when used both with and without an analogue reference.

The 100mm x 266mm module fits in the standard frames (available in 4U, 2U, 1U and desk top box) alongside any other product from the Crystal Vision interface and keying range. The outputs can be configured to suit you, with the opportunity to choose from four different frame rear modules. The RM01 gives two SDI and three composite outputs, while the RM02 gives four SDI with three composite. You'll get the maximum four SDI and four composite outputs if you use the RM18, while the RM23 provides two SDI and two composite outputs, along with an external reference loop-through which is not reliant on the board and will therefore still be present should REFGEN be removed. Control can be by board edge, an active frame front panel, a remote control panel or the Statesman PC software.

- Analogue and digital black generator
- Flexible: can output analogue and digital reference signals at the same time
- Ideal for creating offset timing references from the station master or for generating master reference in applications that do not require broadcast accurate reference
- Up to four composite and four SDI outputs
- Choice of blue or black outputs
- Reference signals are free running or timed to an analogue input
- Space-saving: 100mm x 266mm module allows 12 REFGEN in 2U (24 in 4U, six in 1U and two in desk top box)
- Flexible control, from board edge to PC software



SPECIFICATION

MECHANICAL

Standard Crystal Vision module 266mm x 100mm
 Weight: 225g
 Power consumption: 12 Watts

REFERENCE INPUT (OPTIONAL)

Analogue Black & Burst, mixed syncs or video
 Amplitude of syncs 100mV to 4V
 PCB link selects 750hm termination or high impedance with loop-through

TIMING

In synchroniser mode REFGEN takes its timing from the external analogue reference and will automatically lock its output to this. A delay of between 0 and 2 fields in lines and pixels can be added to the output reference with respect to the external reference
 In free running mode the output reference is timed to an on board clock generator. Free running accuracy of 50 ppm
 Switching between free running and synchroniser mode is automatic when external reference is added or removed

REFERENCE OUTPUTS

Selectable black or blue output
 Maximum of four SDI and four analogue composite outputs (two SDI and three composite with frame rear module RM01, four SDI and three composite with RM02, four SDI and four composite with RM18 and two SDI and two composite with RM23)
 SDI 270MBit to EBU Tech 3267-E and SMPTE-259M. Will drive >200m Belden 8281 or equivalent
 Reference rear module loop-through available with RM23 - loop does not need REFGEN to be fitted as rear module has all circuitry required. Reference board loop-through available with RM02 and RM18 - loop needs REFGEN to be fitted

LOCAL CONTROL

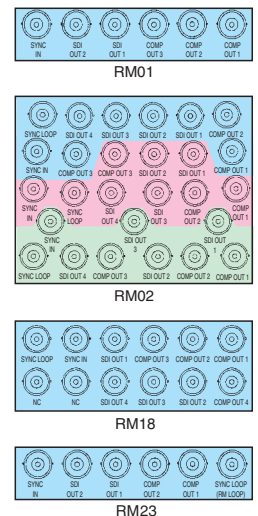
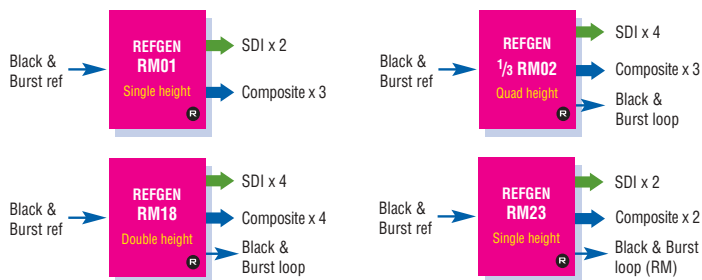
Board edge adjustment of output colour (black or blue), output standard, delay in lines and delay in pixels
 Ten character alphanumeric display

LED INDICATION OF:

External reference analogue sync input present
 Power supplies okay

REMOTE CONTROL AND MONITORING

RS422/485
 19200 baud, 8 bits, 1 stop no parity
 Control from frame active front panel and remote panel
 Statesman allows control and status monitoring from any PC on a network



ORDERING INFORMATION

REFGEN	Analogue and digital black generator
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 1A	1U frame with active front panel for up to six Crystal Vision modules
Indigo 1S	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 DTA	Desk top box with active front panel for up to two Crystal Vision modules
Indigo DTS	Desk top box with passive front panel fitted with Statesman CPU for up to two Crystal Vision modules
RM01	Single slot frame rear module. Allows maximum number of REFGEN in frame (24 in 4U, 12 in 2U, six in 1U, two in desk top box). Gives access to two SDI outputs and three composite outputs
RM02	Four slot frame rear module. One rear module used for three REFGEN, allowing 18 REFGEN in 4U and nine in 2U. Gives access to four SDI outputs, three composite outputs and a Black and Burst board loop-through
RM18	Two slot frame rear module. Allows 12 REFGEN in 4U, six in 2U, three in 1U and one in desk top box. Gives access to four SDI outputs, four composite outputs and a Black and Burst board loop-through
RM23	Single slot frame rear module. Allows maximum number of REFGEN in frame (24 in 4U, 12 in 2U, six in 1U, two in desk top box). Gives access to two SDI outputs, two composite outputs and a Black and Burst rear module loop-through
REMIND	19" remote control panel
Statesman	PC Control System

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