270 Mb/s SDI to Composite Converter & DA

FEATURES

- Broadcast quality, full 10-bit video conversion.

- 4 equalised, regenerated and re-clocked repeater outputs.

- 3 Composite analogue outputs with high quality 10 bit D to A.

- Component (RGB, YPbPr) or S-Video (Y/C) output.

- PAL or NTSC operation with auto or manual switching.

- SDI input loss and decoded video indicators on front panel.

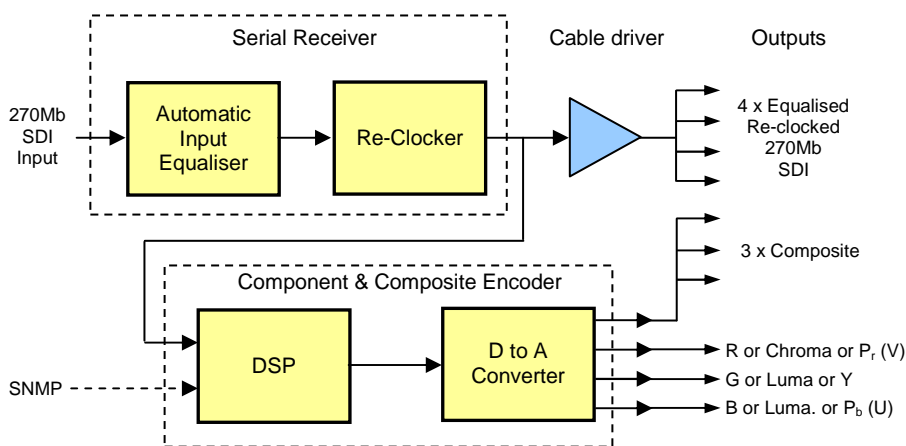- Simple Network Management Protocol (SNMP) capability.

GENERAL

The DVC-4112 is a high performance SDI 270 Mb/s serial digital video to analogue composite/component converter and distribution amplifier.

The DVC-4112 is designed to regenerate a link and provide a broadcast quality analogue composite or component signal.

The serial receiver section, shown in the block diagram above, automatically equalises and re-clocks the input serial video signal and the cable driver section retransmits the regenerated serial video.
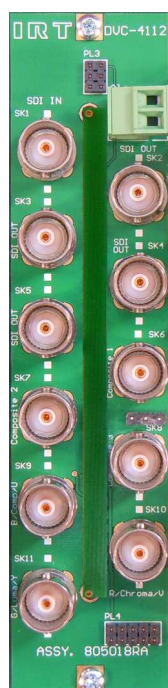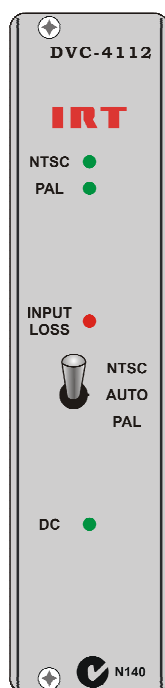
This configuration allows both an extension of the link and a jitter performance advantage over non re-clocking regenerators.

The DVC-4112 is primarily intended to operate in mixed (digital and analogue) environments allowing existing analogue monitoring equipment to be utilised without the need to purchase more expensive digital equipment.

The DVC-4112 provides component outputs for most requirements: RGB, YPbPr and S-VHS (Luma + Chroma). Three composite outputs are always available plus a choice of one of the remaining component formats.

Full 10 bit video processing and 10-bit digital to analogue converters are used in order to assure a high quality analogue signal suitable for broadcast and production monitoring applications.

Simple Network Management Protocol (SNMP) monitoring is possible if mounted in IRT's 4000 series frame fitted with SNMP capability.

BLOCK DIAGRAM DVC-4112 SIGNAL PATH

Serial Receiver — Cable driver — Outputs

270Mb SDI Input → Automatic Input Equaliser → Re-Clocker → [Cable driver] → 4 x Equalised Re-clocked 270Mb SDI

Component & Composite Encoder
SNMP → DSP → D to A Converter → 3 x Composite
R or Chroma or P_r (V)
G or Luma or Y
B or Luma. or P_b (U)

TECHNICAL SPECIFICATIONS

Input:

Connector	BNC.
Format	270 Mbit/s SDI (Serial CCIR601, 4:2:2).
Impedance	75Ω
Equalisation	Automatic, better than 200 metres at 270 Mb/s for Belden 8281 or equivalent cable.

Outputs - Digital:

Number	4.
Connectors	BNC.
Format	Re-clocked 270 Mb/s SDI (Serial CCIR601, 4:2:2).
Signal Level	800 mV ± 10%.

Outputs - Analogue:

Number	3 x composite; plus
	1 x RGB / YpbPr / YC component.
Connectors	BNC.

Performance:

Differential gain	< 0.5 %.
Differential phase	< 0.5°.
Luminance non linearity	< 1% p-p.
2T pulse K factor	K-2T < 0.5% KF
Noise level	< -80 dBrms (10 kHz - 5 MHz unified).
Hsync jitter in a frame	< 3 ns p-p.
Frame period jitter	< 5 ns p-p.

Power requirements:

Voltage	28 Vac CT (14-0-14) or ± 16 Vdc.
Power consumption	< 8VA.

Other:

Temperature range		0 - 50° C ambient.
Mechanical		Suitable for mounting in IRT 19" rack chassis with input output and power connections on the rear panel.
Finish:	**Front panel**	Grey background, black lettering & red IRT logo.
	Rear assembly	Detachable silk-screened PCB with direct mount connectors to Eurocard and external signals.
Dimensions		6 HP x 3 U x 220 mm IRT Eurocard.

Links	Component output selection (LK3 & LK4).
	RGB sync insertion (LK5).
	NTSC Pedestal insertion (LK6).
	Digital Noise Reduction (LK7).
	Digital Noise Shaping (LK8).
	Pass Vertical Blanking Information (LK9).