



IQDPS Parallel to Serial Converter

Module Description

The IQDPS converts parallel component or composite video to serial component or composite video

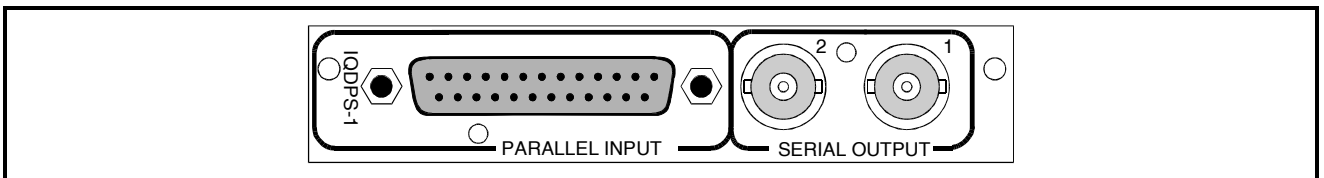
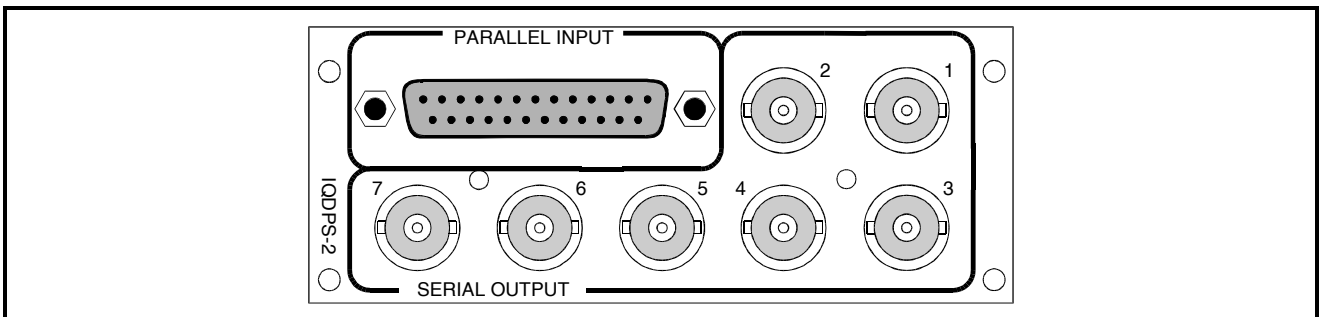
TTL converter. To allow for 8-bit sources resistors are employed to set the two LSB's to zero. For D2 signals TRS & ID codes are inserted in the appropriate places by locking to the incoming D2 composite data stream.

Functional Description

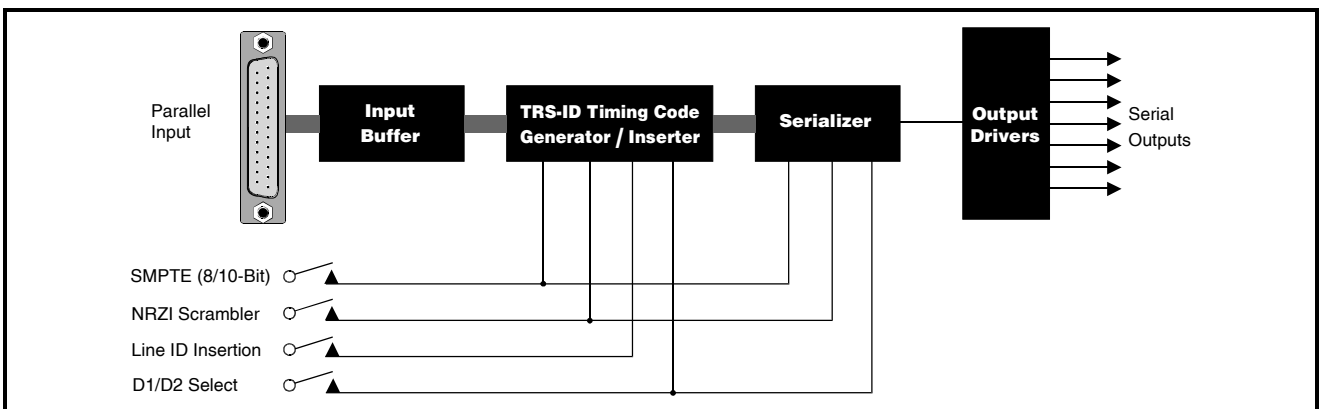
The complimentary parallel input signals are terminated in 100 Ohms and fed into an ECL-to-

The parallel video data is then serialised. This signal is then passed to the buffer IC to drive the serial outputs

REAR PANEL VIEWS



BLOCK DIAGRAM



Features

- Performs format conversion from parallel to serial.
- 8-bit or 10-bit parallel input (with automatic detection)
- 7 (2) buffered 10-bit D1/D2 outputs driving up to 200 metres of PSF1/2 cable
- Converts digital parallel 4:2:2 or 4fsc (NTSC or PAL) to serial component or composite

Versions of the module cards available are:

IQDPS-2	Parallel to serial converter D1/D2, 7 outputs	Double width module
IQDPS-1	Parallel to serial converter D1/D2, 2 outputs	Single width module

Technical Profile

Features

Signal Inputs

Parallel Digital D1 or D2 parallel digital via 25 way
D-type connector

Signal Outputs

Serial Up to 7 Serial Digital

Formatting Controls

SMPTE 8/10-bits (D1 and D2)
NRZI Scrambler On/Off (D1 and D2)
Line ID On/Off (D2 only)
Standard Select D1/D2

Specifications

Input Impedance 100 Ohms Resistive
Maximum Input Cable Length
10 m (Twisted pair ribbon + shield)
Output Level 800 mV \pm 10%
Output Return Loss better than 15 dB to 270 MHz

EMC Performance Information

Environment Commercial and light industrial E2

Peak Mains Inrush Current following a 5 second mains
interruption
No mains input
Performance Information.... No performance degradations or
cable length limitations

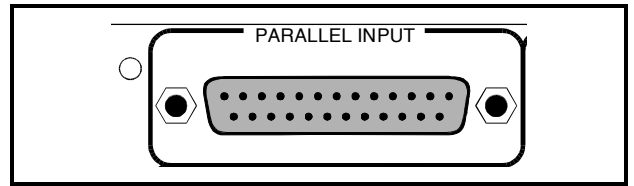
Power Consumption

Module Power Consumption
4.4W max

INPUTS AND OUTPUTS

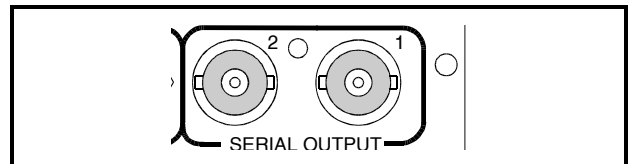
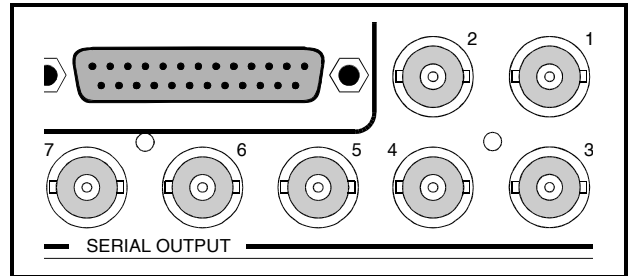
PARALLEL INPUT

The D1/D2 parallel digital input to the unit is made via this 25-way 'D' connector which terminates each signal in 100 Ohms.

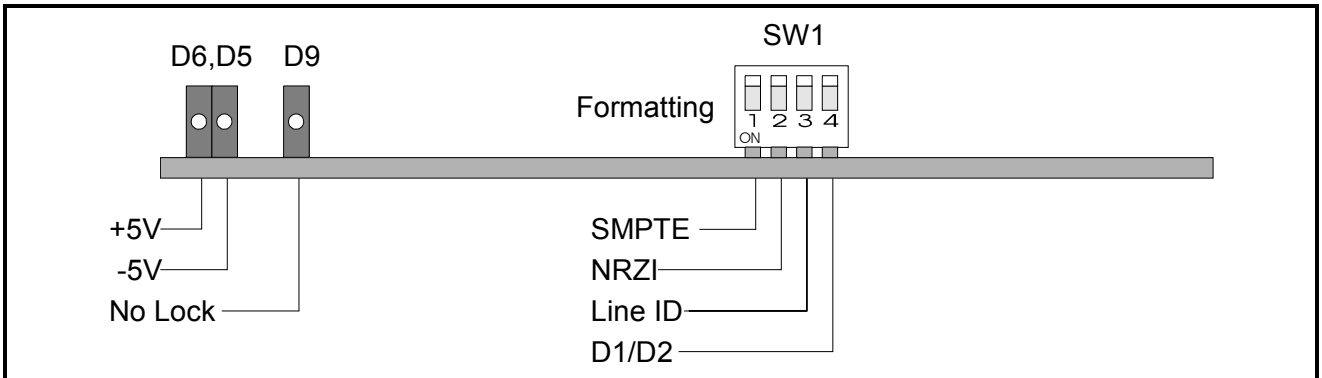


SERIAL OUTPUTS

These are the 7 (-2 version) or 2 (-1 version) isolated Serial Digital outputs of the unit via BNC connectors for 75 Ohms.



CARD EDGE CONTROLS



SW1 (FORMATTING)

By setting switches to the ON position the output signal format or coding may be set.

Position 1 SMPTE

The parallel video data arriving at the serialiser chip contains special sequences of codes which act as timing references. The serialiser detects these codes and sets/resets their least significant bits appropriately, thus ensuring that for both eight and ten-bit parallel input data the output serial stream complies with the SMPTE recommendations.

For special non-video applications the detector may be disabled and the LSBs will not be altered. For normal video operation this switch should be set to ON.

- ON Sync detector enabled
- OFF Sync detector disabled

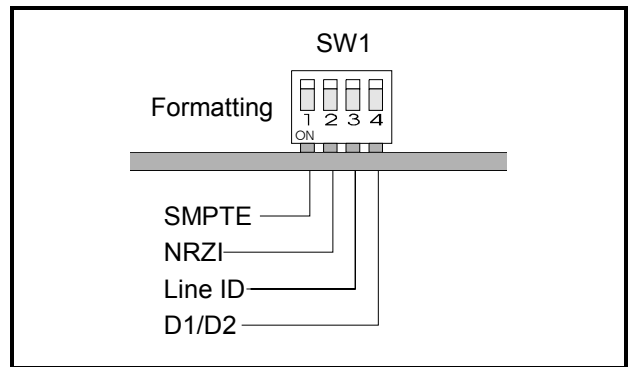
Position 2 NRZI

The D1 and D2 video standards require that the serialised bit streams are encoded using the 'Non Return to Zero' (NRZI) scheme, which removes any DC components and provides plenty of clock edges for deserialisers to lock to.

The NRZI scrambler in the serialiser chip used on this module can be disabled for use in special non-video applications, but for normal operation it should always be enabled and set to ON.

- ON NRZI scrambler enabled
- OFF Scrambler disabled

Note that for Video, positions 1 and 2 should always be set to ON.

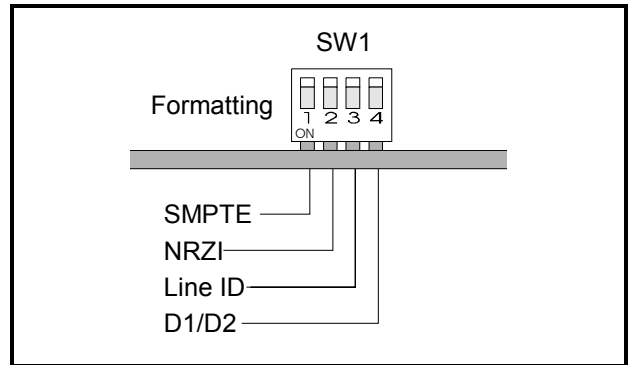


Position 3 Line ID

Parallel D2 video data is simply a digital representation of the analogue video waveform. When it is serialised special 'timing reference sequence' (TRS) codes have to be inserted in the position of the leading sync edge so that a deserialiser can lock up correctly. This TRS code is usually followed by a 'line identifier' (LINE ID) code which can be used to determine field sequence and vertical blanking.

This switch controls the insertion of this line identification code, and would normally be set to ON (enabled).

- ON Insert 'line ID' (D2 mode only)
- OFF Do not insert 'line ID'



Position 4 D1/D2

This switch selects between the D1 and D2 video standards.

- ON Serialise D2
- OFF Serialise D1

Note that the D2 position works for PAL and NTSC

LED INDICATORS

When LED D9 is illuminated this indicates that the input PLL is not locked. This normally means that there is no input signal present or wrong format selected.

When illuminated D5 and D6 indicate that the -5V and the +5V power supplies are present.

