

TECHNICAL NOTE

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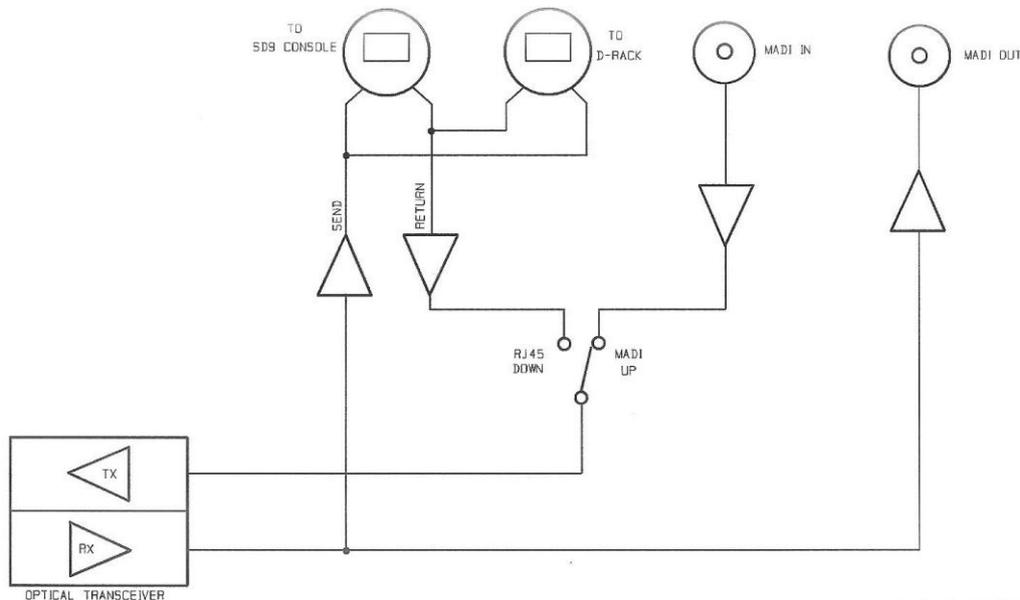
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PURPLE BOX OPERATING NOTES

The Digico Purple Box (PB) is a format converter for extending MADI or Digico RJ45 based digital audio connections over optical fibre. The block diagram for 1 channel is shown. The PB is normally equipped with 2 channels (1 optionally)



The unit is equipped the RJ45 mixer and rack connections (i.e. in/out or out/in) to suit the D-Rack family of interfaces and the SD9 / SD11 series of mixers

It also equipped with standard madi (AES10 standard) using 75ohm BNC connections. It does not provide signal recovery / clocking and is therefore passes all data and channel counts unchanged.

It should be noted Digico Solutions systems such as Purple Box are NOT compatible with mixer Optocore systems and cannot be directly connected to any Digico mixer optical port and are a "stand alone" system.

Power

The units is equipped with dual redundant IEC mains inputs rated 100-240V 50-60 Hz. There is no power switch. The unit will automatically operate from either one or both power supplies. Each PSU has an indicator showing it is active.

Optical Connections

PB can be provided with ST, Neutrik OpticalCON Duo (which can also directly connect to LC duplex connectors) or HMA (MIL spec standard) expanded beam connectors.

The external cables used for the standard system are 50um multimode, using 50/125 cable. The operating wavelength is 1300nm.

Single mode, using 9/125 cable is available as an option. Single mode equipped units have coloured collar around the optical connector (usually yellow) to indicate this option is fitted. The operating wavelength is 1300nm.

Multimode cable cannot be used with single mode equipped units and vice versa.

Connecting a matching cable with the suitable connector is straightforward. Ensure non polarised connectors (i.e. ST) inputs are connected to corresponding outputs. Note LC connections are to the parallel wired convention.

Refer to Digico Technical Bulletin 101 regarding maximum allowable optical distances and intermediate connection loss calculations. A typical multimode system can operate in excess of several hundreds of metres.

Audio Connections

Standard MADI is connected with 75ohm BNC.

Refer to Digico Technical Bulletin 106 regarding maximum allowable distances for MADI connected systems. PB is suitable for extending any AES-10 MADI systems up to 64 channels as well as Digico products. As a 2 circuit device, PB can also be used to connect 96KHZ dual connected MADI signals.

Digico Cat5 systems (as used on SD9, D-Rack and compatible products) are connected with factory standard RJ45 Neutrik EtherCON plugs and STP cable.

Refer to Digico Technical Note 227 regarding maximum allowable distances and cable specifications. Note this is NOT Ethernet and therefore general Ethernet standards do not apply to these cables.

IMPORTANT NOTE:

PB cannot extend the range of the electrically connected parts of the system.

For example, a SD9 is limited to 100m of Cat5 cable. If using 75m cable on 1 side of a PB system it is not possible to connect a further 75m on the other side of the system. This would be limited to 25m. This also applies to BNC connected systems.

Switches on the PB select the appropriate RJ45 or BNC input connections. It is possible to connect using RJ45 at one end of the optical system and BNC at the other, effectively acting as a format converter overall.

Note that the outputs from the PB are permanently connected in parallel, not switched. Therefore this can be used as an active signal splitter.

For example a signal from a D-Rack output to a SD9 input can be split off so the same signal is sent to a MADI recording interface.

Panel Indicators

The PB is equipped with signal present indicators on both channels

DIGICO CAT 5 indicates the presence of incoming signal on the RJ45 connection

MADI indicates the presence of incoming signal on the BNC connection

In both cases it does not indicate the validity (signal integrity) of the signal.

OPTIC indicates the presence of incoming data (audio) signal on the optical connection.

However it should be noted that the optical transceivers are very sensitive and may have slight hysteresis. Therefore this indicator may sometimes indicate the presence of an optical connection being made but without data (i.e. no audio signal connected at the remote end) or may not show subsequent loss of audio data whilst the optical connection is still in place. It will not light when no optical connection is present.