ACQ400-TERM11 Module
User Guide

High Performance Simultaneous Data Acquisition

Product Description

Part number 2010-5235--001, Revision A
Designed and manufactured by D-Tacq Solutions Ltd. in Scotland, UK.

The ACQ400-TERM11 Module interfaces SYNC, TRIG, GPIO and CLK input signals from optical fibre to the HDMI input sync bus of ELF/FMC carriers ACQ2106, ACQ3102, ACQ1001 at data rates from DC to 50 MBd.

The standard ACQ400-TERM11 Module build uses vertically orientated Avago Technologies (Broadcom) AFBR-2634Z Versatile Link receivers that are designed to couple fibre-optic signaling from Polymer Optical Fibre (POF) with a bit error rate (BER) < $1x10^{-9}$ when meeting ideal coupling conditions at the maximum data rate.

A build option is available populated with horizontally orientated Avago Technologies AFBR-2418Z Miniature Link fiber optic receivers that are designed to couple with Plastic Clad Silica (PCS) optical fibre.

The maximum fibre-optic cable length and data rates are fibre dependent. Avago Technologies state figures in their data sheets of:

50 metres with 1 mm POF @ 50MBd.
Up to 200 metres @ 10 MBd and 120 metres @ 50 MBd with 200um PCS.

Fig1. Image of the ACQ400-TERM11 Module fitted with “Versalink” fibre optic connectors installed in an 88mm wide DIN rail carrier.

Connector part numbers

The following part numbers are provided as a reference for customers when sourcing connector and cables accessories.

HDMI connector:

Molex 47659 series HDMI receptacle 476591010

Fibre-optic connector:

Fibre-optic connectors and fibre-optic cable accessories can be sourced from Avago Technologies and their distributors.

There are two build options

- Standard build with Broadcom DC-50MBd Versatile Link fibre-optic receivers.
  Connector p/n: AFBR-2634Z. Mating part p/n: HFBR-45xxZ

- Build option with Avago Technologies DC-50MBd miniature link fibre-optic receivers.
  Connector p/n: AFBR-2418Z. Mating part: Any ST 953-10x-5xxxx series fibre connector.

Fig.2 AFBR_2634Z “Versalink” connector.

Fig.3 AFBR_2418Z ST connector.

Installation

D-TACQ ACQ2106, ACQ1001 and ACQ1002 carriers have the 4 key digital input and output signals SYNC, TRIG, GPIO and CLK available on their rear panel HDMI Sync connectors. These can be connected to the corresponding HDMI connector on (a range of) TERM

boards using customer sourced HDMI cable assemblies.
On early carrier revisions power for TERM cards is provided only on the carrier's HDMI 'Out' connector. On later revisions power is provided on both the carrier's HDMI 'Out' and 'In' connectors.
The TERM11 board interfaces input signals, delivered via optical fibre from control devices, to the rear panel HDMI sync "In" connector of a carrier. An HDMI cable assembly must therefore be used to connect the input signals received by the TERM11 to the carrier.
If the carrier does not provide power on pin 18 of its HDMI Sync "In" connector, power for the TERM11 board must be connected using a second HDMI cable assembly between the carrier's HDMI Sync "Out" and the TERM11 HDMI "OUTPUT CARRIER" connectors.
The TERM11 LED power indicator (D1) indicates when power is applied to the board.
Recommendation: Connect INPUT, if the PWR LED lights, then it is ready to use, else connect OUTPUT. If the PWR LED still does not light, then there's a fault.

Because the TERM11 board is strictly an input device it must be connected as the first device in any chain of carriers. (For detailed information regarding chaining of multiple carriers please refer to the *ACQ2106 Hardware Installation Guide, section 3.2, Sync Bus* or the *ACQ1001, ACQ1002 Hardware Installation Guide, section 4.1.6 Sync Bus*.)

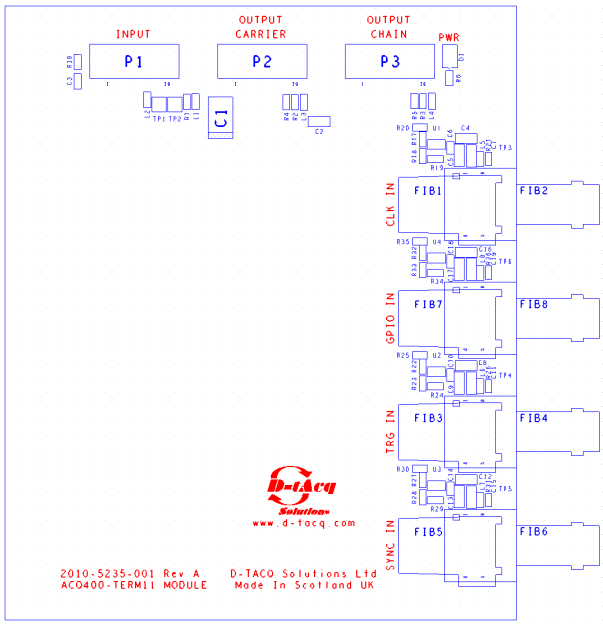

Fig.2 TERM11 PCB layout.

Figure 2 above identifies and shows the position of all Sync and fibre optic connectors.