DT5550AFE
Single– Ended to Differential Input Adapter for DT5550
Data Sheet

The **DT5550AFE** is a useful single-ended to differential adapter, specifically designed to interface with the DT5550 board, the CAEN Data Acquisition System with User Programmable FPGA and Sequencer.

It has 32 analog inputs on MCX connectors with 2 V_{pp} input dynamic, programmable DC offset, fixed 1x gain and input selectable impedance between 1 kΩ and 50 Ω. The DT5550AFE receives the single-ended signals on the 32 MCX connectors available on the front panel and provides the differential analog outputs and control lines on a single VHDCI connector, on the rear panel. The converted signals can be carried out by a single VHDCI cable to the DT5550 analog differential input.

The DT5550AFE does not use programmable components: it can be placed near the detectors even in high radiation regions, in order to easily connect the single-ended signals to the DT5550 board for digitization and pulse processing purposes .

- **Single-Ended to Differential signals compact converter**
- **32 analog input channels on MCX connectors**
- **Positive or negative input signals**
- **Input Dynamic: 2 V_{pp}**
- **Programmable DC offset**
- **Differential Output on a single 68-pin VHDCI connector, carrying converted signals and control lines.**
- **Radiation Hardness compliant**

Specification

Gain
1x fixed

Polarity
Positive or negative input signals

Offset
Programmable DC offset, range ±2 V.
Regulation through the SCI-5550 Readout Software.

Full Scale Range
2 V_{pp}

Power Consumption
3 A @ 12 V

Packaging
Alloy Box
Dimensions (WxHxD):
160 x 160 x 56 mm^3

Inputs

ANALOG IN
Analog signals input (single-ended)
Input impedance: selectable 50 Ω / 1 kΩ
Selection through the SCI-5550 Readout Software
32 MCX connectors.

Outputs

TO DT5550 ANALOG PORT
Analog Output (differential)
Z_{diff} : 100 Ω
68-pin VHDCI connector
Suggested cable: SCSI-5 type

Power Requirements
Power supply voltage: + 12 V
DC 2.1mm Power Socket connector

The module is powered by an external AC-DC stabilized power supply provided with the amplifier and included in the delivered kit.

Note:
Using a different power supply source, like battery or linear type, it is recommended to provide +12V and, at least, 3A.
The power jack is a 2.1mm type, a suitable cable is the RS 656-3816 type (or similar).
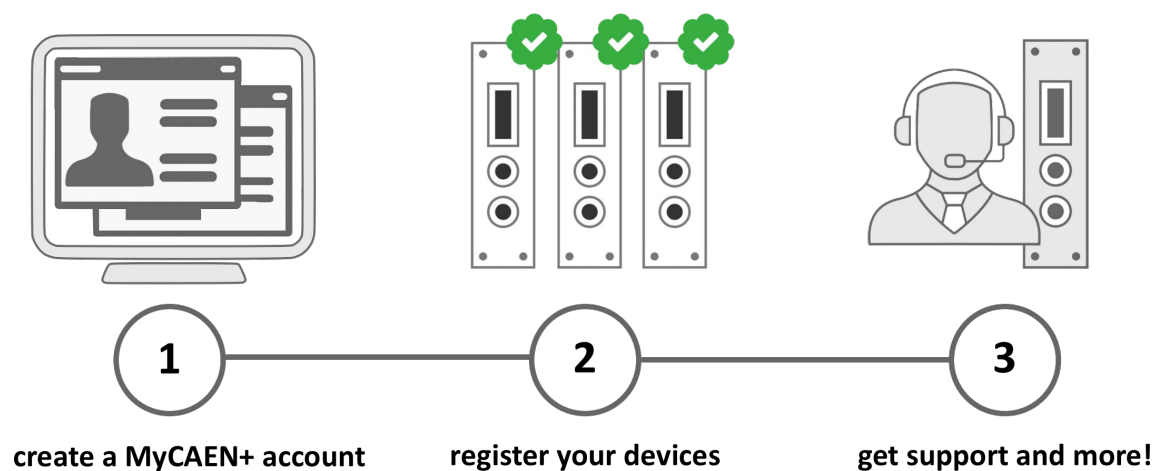
Safety Notices

The DT5550AFE board can operate in the temperature range -20 + 50 °C.

On the alloy box is installed a fan on top face. The user must take in care to provide a proper cooling to the board with external fan if the board is used in an enclosure or if the board is installed in a setup with poor air flow. Excessive temperature will, in first instance, reduce the performance and the quality of the measure and can also damage the board. If the board is stored in cold environmental, please check for water condensation before power on.

Ordering Option

Ordering code	Description
WDT5550AFEXA	DT5550AFE - Single-Ended to Differential Input Adapter for DT5550

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