

## EAD-M1 ADC Mezzanine Board

### General Description:

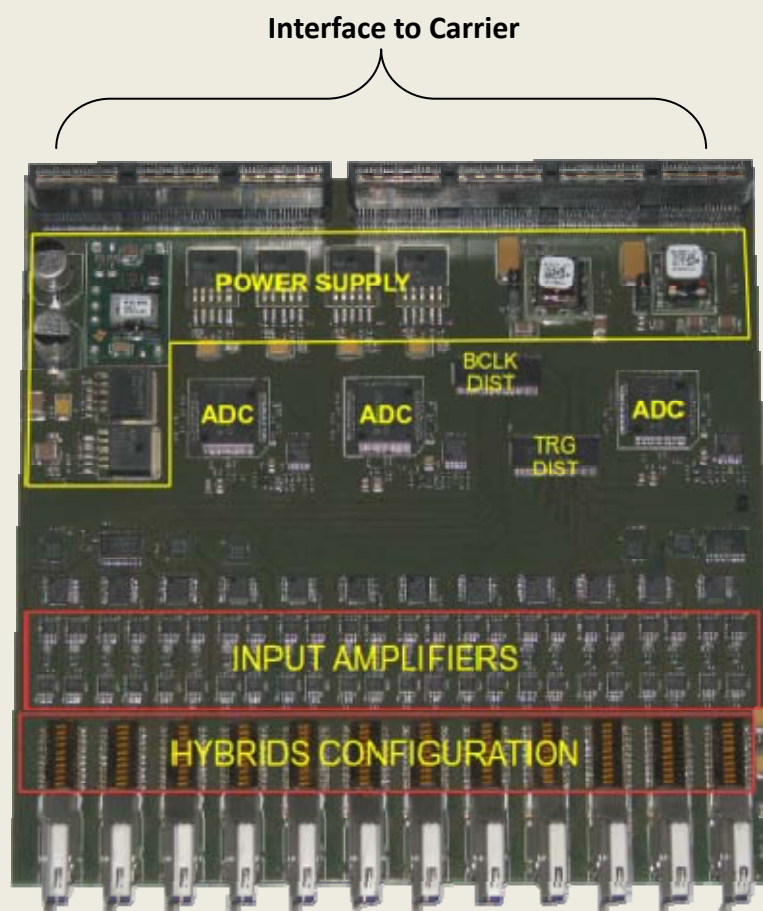
EAD-M1 mezzanine board is designed to acquire data from front-end electronics modules according to the requirements. It was designed to be installed in EATCA-100 carrier board and interface front-end electronics using HDMI cable on the front panel. The selection of maximum ADC sampling rate can be done during an order.

The input stage used for each out of 24 analog channels. It consists of two amplifiers/buffers connected in series. They provide proper common mode voltage matching, amplification and also introduce preemphasis filtering if required. The behavior of input stage can be adjusted by external controls.

The board accommodates 3 ADC chips (ADS5282). Each chip is equipped with 8 analog inputs and serial interface for fast data readout. The maximum sampling frequency is 80 MHz. The functionality of the ADC can be controlled via serial interface connected to carrier board via QSE connector. This includes test modes, output data format and standard, gain etc. For the full list of functions please refer to vendor's datasheet. In addition each ADC has two input signals: RST and PD, which are also connected to carrier board.

Each ADC is equipped with local VREF generation sub-circuits, which can be configured on an assembly stage with OR resistors.

### Picture:



HDMI Connectors, ADC Inputs

Interface to Hybrids

*Some technical changes are without prior notice*

**eicSys GmbH**, Sylvesterallee 2, 22525 Hamburg

Tel. 040-53339984; email: [contact@eicsys.eu](mailto:contact@eicsys.eu)

Description			
<b>Physical</b>	Dimensions	Customized Board fit to connect on ATCA Blade EATCA-100 Width: 145,33 mm Depth: 146,41 mm	
<b>Standards</b>		Custom Mezzanine Card	
<b>Compatibility</b>	Compatible to EATCA-100		
<b>Configuration</b>			
<b>Electrical Properties</b>	Power Consumption	<25 Watts	
<b>Chipset</b>	ADS5282	Frequency: 65MHz, 12bits, Bandwidth 550 MHz	
<b>Connectivity</b>			
<b>Frontpanel</b>	12 Interfaces	HDMI Standard	
	Debug interface	Front panel channel, Connector type Data throughput	3 booth FPGAs and MMC Micro USB 3 Mbps
<b>Input</b>	24 analog Channels	2V pp	
<b>Power</b>	Input	12 V DC	53 differential pairs LVDS < 10 <sup>14</sup> bit <sup>-1</sup>
	Output	5V 12A -5V 1A 6V 6A 6V 1A	
<b>Other Features</b>			
<b>Environmental</b>	Operating temperature Storage temperature Relative humidity Weight	0 – 50°C -40 – 90°C 5 to 90%, non-condensing 0.4 kg	

Datasheet – 31.03.2014, Rev. 1.0

Developed at eicSys, in collaboration with CERN,  
University of Valencia, Spain,  
IFIN Institut Bucharest, Romania

