

ERTM D102

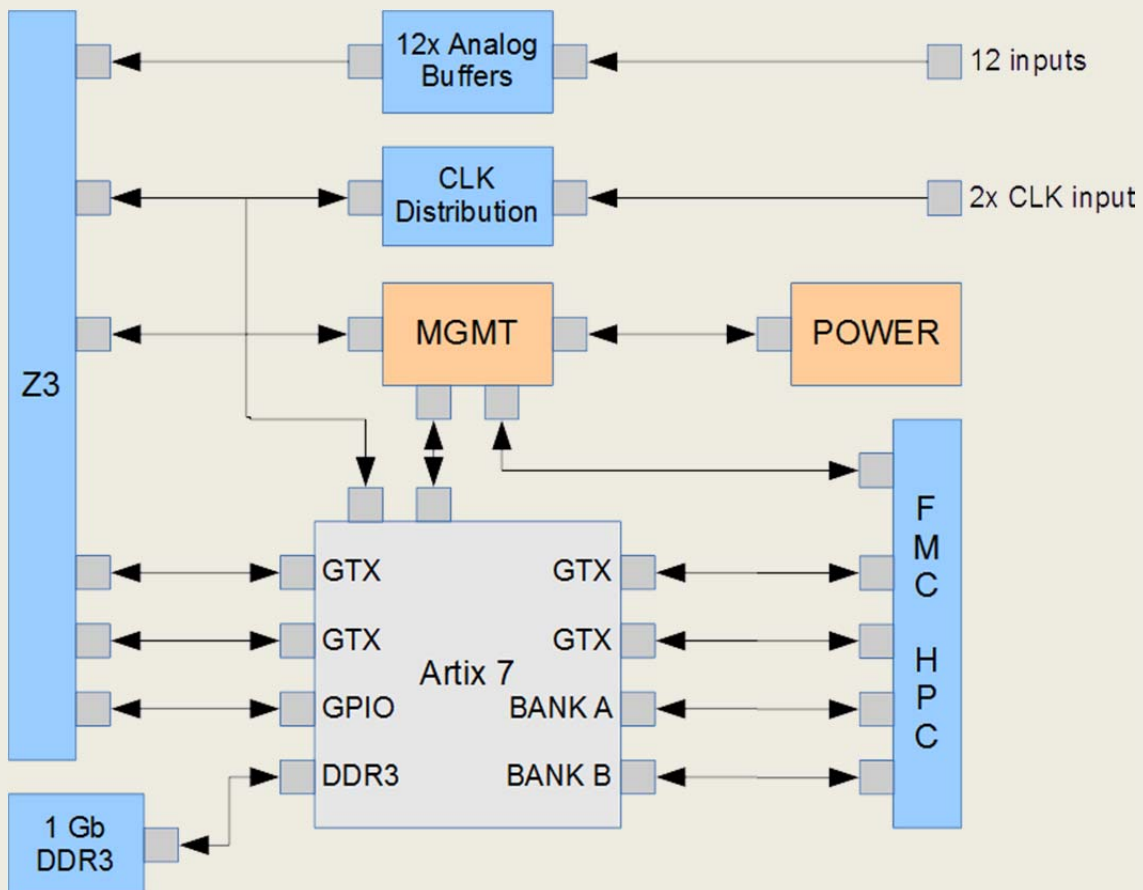
General Description:

The ERTM-D102 is a μ TCA for Instrumentation RTM device, which can be used to feed single-ended analog signals to the EAMC-D102 or SIS8300(L) digitizers. Inputs are configurable either as DC or AC. An AC path is equipped with programmable attenuators. In addition to its 10 analog channels, the board is equipped with High Pin Count (HPC) FMC slot, which allows to extend functionality of a front board, for example:

- slow ADC channels (8-12 channels, 14-bit, sampling rate 10MHz)
- DDS, 2 channel, 14-bit, 1 GHz
- Vector modulator
- Digital IOs

If the front board is running eicSys UniDAQ firmware, FMC devices are mapped into PCIe address space and can be easily accessed through the dedicated Linux device file.

Block Diagram:



Description		
Architecture		
Physical	Dimensions	Double width, mid size RTM module
Standards	PICMG Spec. MTCA.4	Zone 3, RTM
Combatibility	AMC Products	EAMC-D102; SIS8300, SIS8300 L
Configuration		
Electrical properties	Power consumption	< 50 Watt
Chipset	Xilinx	Artix 7
Connectivity		
Frontpanel	<ul style="list-style-type: none"> ➤ 10 x input signal, MMCX, ➤ AC or DC 2 x clock signal, MMCX ➤ FMC HPC 	
Zone 3	<ul style="list-style-type: none"> ➤ 10 x analog signal 2 x clock signals ➤ 2 x MGT interface ➤ 1 x I²C 	
Clock signals	CLK1, CLK2 : MMCX, 0 dBm	
Analog signals	AC version: <ul style="list-style-type: none"> ➤ impedance :50 Ohm ➤ bandwidth : 5-400 MHz, possibility to limit to 80 MHz ➤ power : 0 dBm DC version: <ul style="list-style-type: none"> ➤ impedance :50 Ohm ➤ bandwidth : DC-400 MHz, possibility to limit to 80 MHz ➤ input voltage : ±1Vpp default 	
FMC Slot	High Pin Count connector (HPC) 2 MGT Links	
Others		
Environmental	Temperature range	Operation : 0°C -55°C Storage: -40°C +85°C
	Humidity	5%-90% non condensing
	Weight	0,4 kg
Ordering information	ERTM-D102-AC-BM : AC version ERTM-D102-DC-BM : DC version where <i>BM</i> is requested, maximum bandwidth	

Datasheet – 07.11.2015, Rev. 1.4

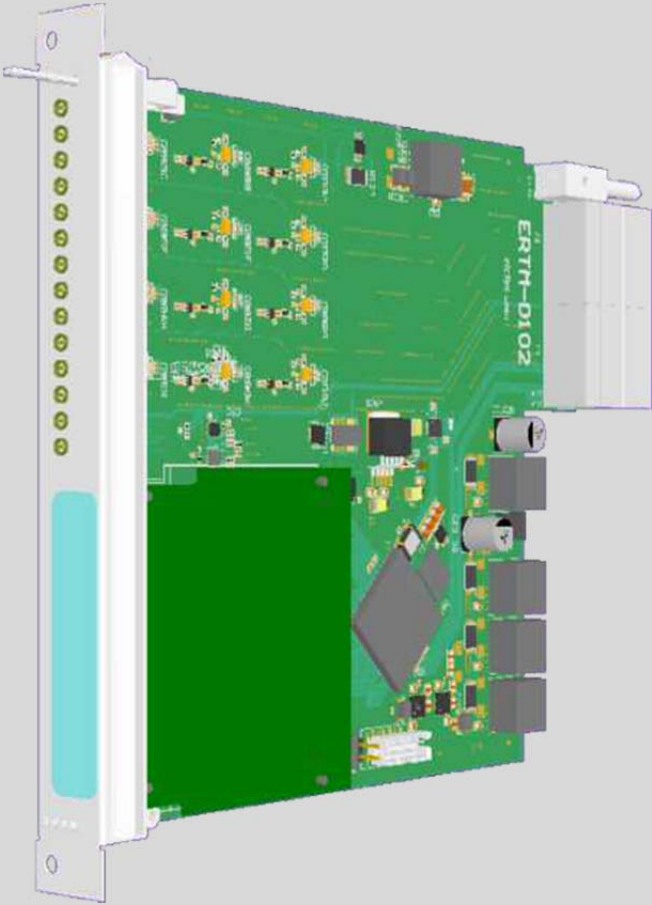
Developed by:
eicSys Hamburg

Example Applications

Specification is subject to change without further notice

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In addition to fast analog signals, all control and data acquisition systems have to gather data from slow control systems – voltage or current monitoring, pressure, digital IO, etc. The ERTM-D102 feeds fast analog single ended signals to AMC digitizer board and offers space for FMC modules. That allows to integrate FMC modules equipped with slow ADC or digital IO's to expensive systems and significantly reduce price per channel. If the front board is running eicSys UniDAQ firmware, FMC devices are mapped into PCIe address space and can be easily accessed through the dedicated Linux device file.

<p>clock signal for ADC trigger for data processing</p>			<p>AMC Modules:</p> <p>eicSys EAMC-D102;</p> <p>Struck SIS 8300 L</p>
<p>12 analog inputs</p>			
<p>FMC Slot (HPC)</p>			
<p>FMC slot:</p>	<p>EFMC-D081 -</p>	<ul style="list-style-type: none"> ➤ octal channel A/D, ➤ 12-bit, ➤ 40MHz sampling frequency 	
	<p>EFMC -D082 -</p>	<ul style="list-style-type: none"> ➤ octal channel A/D, ➤ 14-bit, ➤ 40MHz sampling rate 	
	<p>EFMC-DIO1 –</p>	<ul style="list-style-type: none"> ➤ 16 digital inputs and 16 digital outputs ➤ optically isolated; ➤ 3.3V/5V/12V 	
<p>ERTM-D102, RTM with FMC slot to feed single ended analog signals and clock signals to AMC digitizer board, 12 ch. 16-bit@125MHz sampling frequency</p>			