

# RTM AD and DA Converter Board with 8+4 16-bit Channels

DRTM-AD84

## HIGHLIGHTS

Eight analog input channels

Four analog output channels

LEMO connectors on front panel

10 MSPS ADC / 1 MSPS DAC  
sampling frequency at 16 bits

Software-configurable termination,  
gain and signal filtering options

Supported by all digital DESY AMCs



## FEATURES

### Inputs:

8-channel ADC, 16-bit, 10 MSPS

$\pm 1\text{V}$  and  $\pm 10\text{V}$  input range (hardware option)

Impedance:  $50\Omega$  or  $1\text{k}\Omega$  (software-selectable)

2 MHz butterworth filter (software-selectable)

### Outputs:

4 channel DAC, 16-bit, 1 MSPS

$\pm 1\text{V}$  and  $\pm 10\text{V}$  output range (dual connector)

Remotely switchable anti-aliasing filter

The DRTM-AD84 is an eight channel ADC, four channel DAC rear-transition module compliant to the MTCA.4 specification.

The ADC channels operate with 10 MSPS and have a bandwidth of 5 MHz with switchable antialiasing filters at 2.5 MHz corner frequency. Each input can operate at  $\pm 1\text{V}$  or at  $\pm 10\text{V}$  with  $100\text{k}\Omega$  or  $50\Omega$  (remotely switchable).

Each DAC has 1 MSPS output rate with up to 16x output interpolation. Each DAC has a high gain ( $\pm 10\text{V}$  at  $50\Omega$ ) and a low gain ( $\pm 1\text{V}$  at  $50\Omega$ ) output.

All ADC and DAC channels have independent digital control signals. This allows individual timing of each channel.

DESY offers the DRTM-AD84 for licensing to industry. DESY can modify this product to meet special customer requirements.

# DRTM-AD84: 8Ch. ADC + 4Ch. DAC

## TECHNICAL SPECIFICATIONS

### ARCHITECTURE

Physical properties	Dimensions	Single-width, mid-height
		Width: 5.486 in. (148.5 mm)
Standards	MicroTCA4 / MicroTCA4.1	Depth: 7.110 in. (180.6 mm)
		Rear-Transition-Module (RTM)
Compatibility	Module management	IPMI Version 2.0
		Zone3 classification
	Compatible AMC products	Class D1.0
		DAMC-FMC1Z7IO, DAMC-FMC2ZUP, DAMC-UNIZUP, DAMC-MOTCTRL, DAMC-TCK7, DAMC-FMC20, DAMC-FMC25

### CHANNELS

Type	ADC	Number of ADC channels	8
		Analog bandwidth	DC – 5 MHz
		Analog bandwidth with filter	DC – 2.5 MHz
		Channel-to-channel crosstalk	-70 dBFS
		SNR	-100 dBFS
		Input impedance	100kΩ or 50Ω (remotely switchable)
		ADC sampling frequency	0.1 MSPS up to 10 MSPS
	DAC	Number of DAC Channels	4
		Frequency range	DC to 1 MHz
		Output High Gain	+/- 10V
		Output Low Gain	+/- 1V
		Output impedance	50Ω
		Output data rate	1 MSPS to 10 MSPS
		Electrical properties	Power consumption
			< 24W

### OTHER FEATURES

On board	User I2C interface	Yes
	LEDs	IPMI management control
Interface	Mechanical	Hot swap ejector handle
	Operating temperature	0 ... 50°C
Environmental	Storage temperature	- 40 ... + 90°C
	Relative humidity	5 ... 90%, non-condensing
	Weight	0.3kg

### OTHER

Compliance	RoHS
Licensing to industry	Yes / Deutsches Elektronen-Synchrotron - Notkestr. 85, 22607 Hamburg - Germany - Email: mtca-techlab@desy.de

DESY

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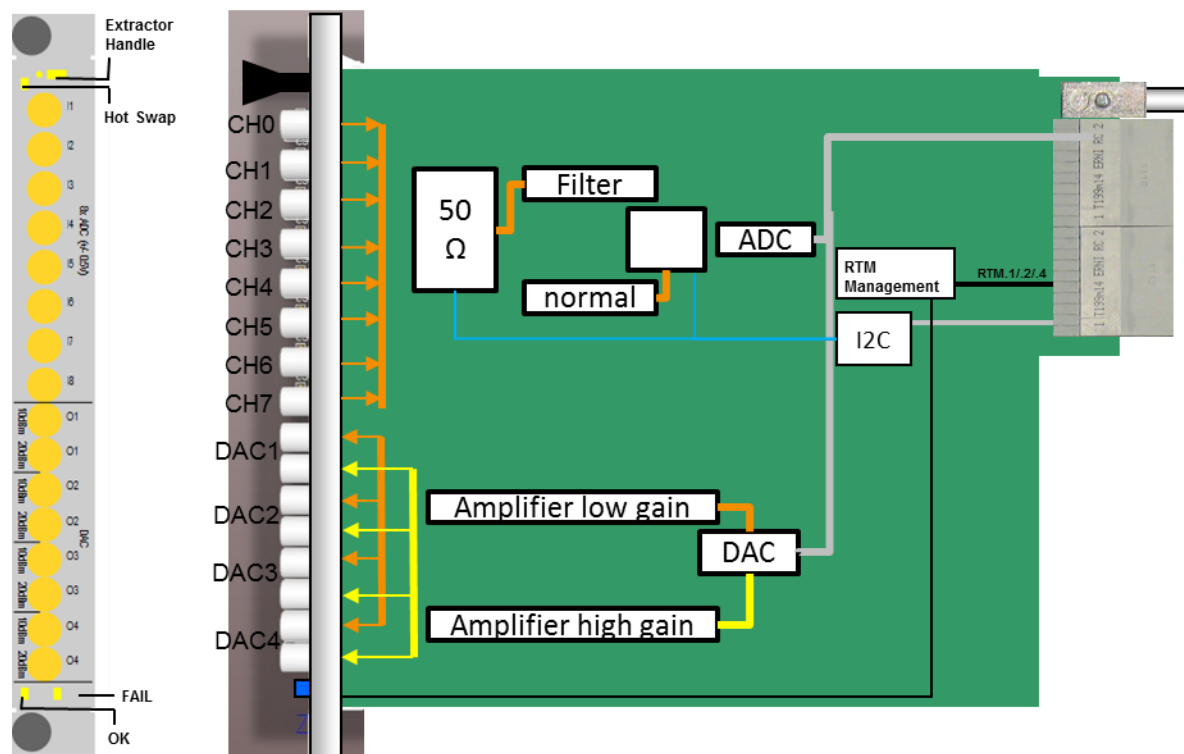
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## FUNCTIONAL BLOCK DIAGRAM AND FRONT PANEL



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