

RTM LEMO / SMA Breakout Board

DRTM-LEMOBO

HIGHLIGHTS

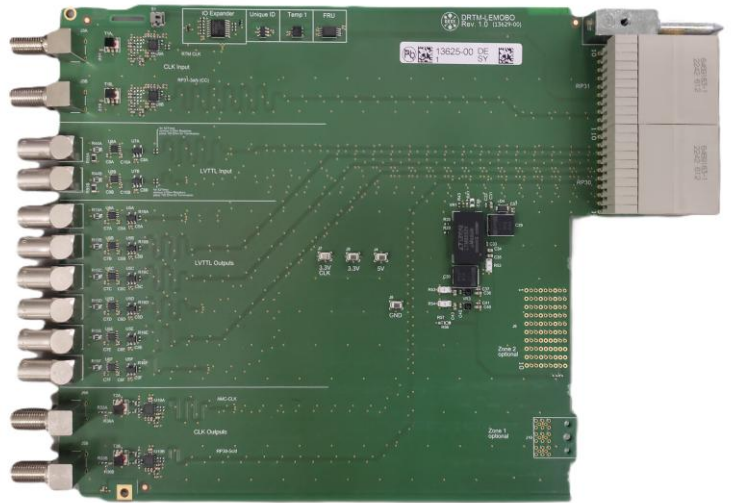
LEMO and SMA Input / Output RTM

RTM Class D1.0 – D1.3 compatible

Direction and Termination can be configured via Software

5V TTL I/Os

100 mA drive capability



FEATURES

MicroTCA.4 Rear-Transition Module (RTM)

8 x LEMO: user-configurable Inputs and Outputs
50 Ω or high-impedance configurable

2 SMA Clock Inputs

2 SMA Clock Outputs

SMA Clock bandwidth up to 725 MHz

Fully differential AMC interface via LVDS

Compatible with a broad range of AMC modules

Length-matching on all LEMO I/Os

Applications: Timing and general-purpose I/O
breakout

The DRTM-LEMOBO is a Rear Transition Module (RTM) developed by DESY for use in MTCA.4 (MicroTCA.4) systems. It is designed as a breakout board to provide high-accuracy timing and signal distribution for accelerator control, beam diagnostics, and experimental physics setups. By extending the I/O capabilities of an AMC (Advanced Mezzanine Card), it offers a range of LEMO and SMA connectors that support clock lines, trigger signals, and synchronization pulses with low jitter and high reliability. In addition to its role in precision timing networks, the module can also serve as a flexible interface for general user I/O, making it suitable for a broad variety of custom instrumentation and control tasks.

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TECHNICAL SPECIFICATIONS

ARCHITECTURE

Physical	Dimensions	Double-Width, Mid-Height with Full-Height option Width: 148.5 mm [5.486 inch] Depth: 180.6 mm [7.110 inch]
Standards	MTCA.4	Rear-Transition-Module (RTM)
	Module management	IPMI Version 2.0
Compatibility	Zone3 classification	Class D1.0 – D1.3
	Compatible products	DAMC-FMC1Z7IO, DAMC-FMC2ZUP, DAMC-X3TIMER, DAMC-UNIZUP and others

CONNECTIVITY

LEMO I/O	LEMO-Input	Zone 3	8 differential Inputs
		Type	LVDS, 100 Ω
		Front panel	Up to 8 inputs (configurable via AMC)
		Connector type	LEMO EPL.00.250.NTN, single-ended
		Termination / Coupling	50 Ω or High Impedance (configurable via AMC) / DC
		Input level	TTL max. 5V
		Frequency range	DC ... 100 MHz
	LEMO-Output	Zone 3	8 differential Outputs
		Type	LVDS, 100 Ω
		Front panel	Up to 8 Outputs (configurable via AMC)
		Connector type	LEMO EPL.00.250.NTN, single-ended
		Impedance / Coupling	50 Ω / DC
		Output level	TTL max. 5V, 100mA
SMA Clocks	Clock-inputs	Zone 3	2 differential Inputs: RTM_CLK, CC user I/O
		Type	LVDS, 100 Ω
		Front panel	2 inputs
		Connector type	SMA type, single-ended
		Impedance / Coupling	50 Ω / AC
		Power level	0 ... 13 dBm
		Frequency range	10 ... 750 MHz
	Clock-Outputs	Zone 3	2 differential Outputs: AMC_CLK, user I/O
		Type Zone 3	LVDS, 100 Ω
		Front panel	2 Outputs
		Connector type	SMA type, single-ended
		Impedance / Coupling	50 Ω / AC
		Power level	Typ. +3 dBm
OTHER FEATURES	On board	Temperature monitor	Yes, readout via MMC I2C Zone 3
		FRU EEPROM	Yes, R/W via MMC I2C Zone 3
		Single-ended IO voltage	Adjustable by digital potentiometer via MMC I2C Zone 3
		Unique ID	Yes, readout via MMC I2C Zone 3
	IPMI	LEDs	IPMI management control
		Mechanical	Hot swap ejector handle
	Environmental	Operating temperature	0 °C ... 50 °C
		Storage temperature	-40 °C ... +85 °C
		Relative humidity	5% ... 90%, non-condensing
		Weight	0.3 kg

OTHER

Compliance RoHS

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FUNCTIONAL BLOCK DIAGRAM

AND FRONT PANEL

