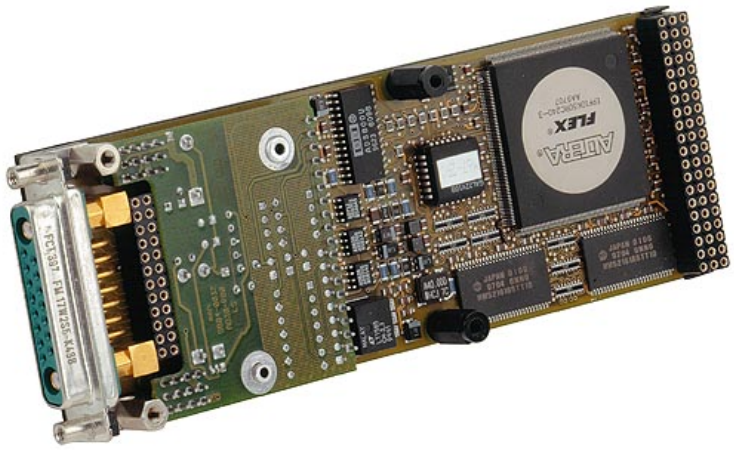
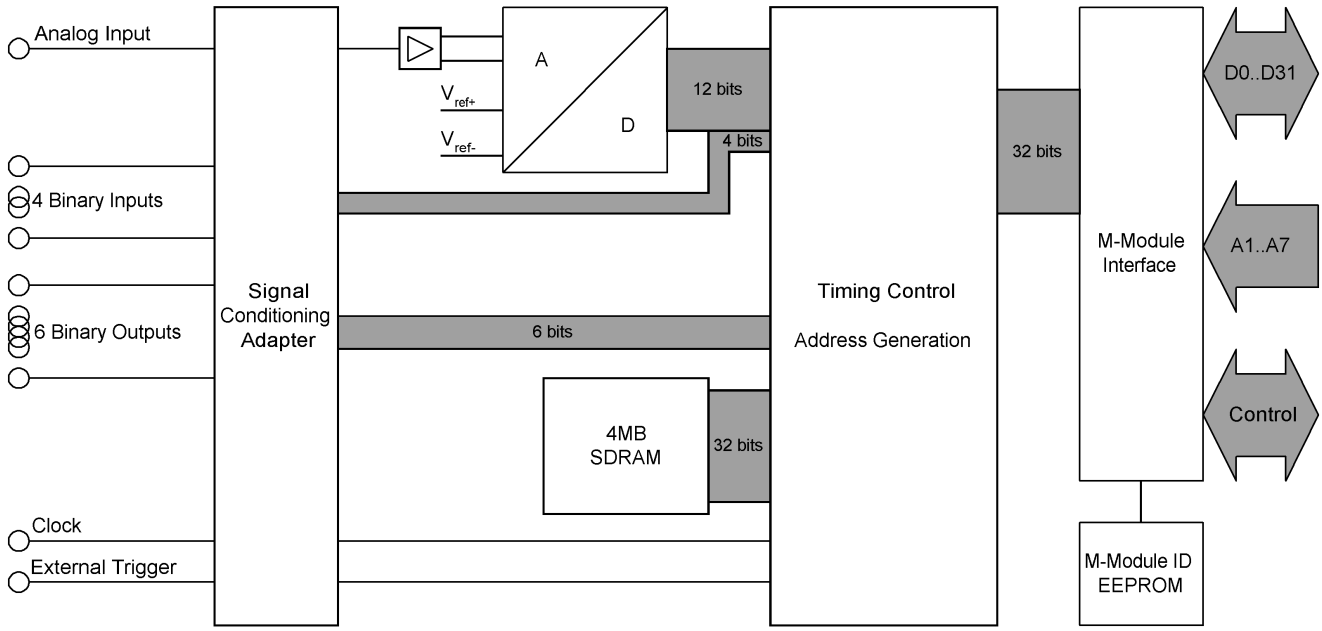
M67 – 1-Channel Digital Oscilloscope

- **1 analog voltage input 40 MS/s**
- **12 bits resolution**
- **25 ns acquisition/conversion time**
- **±1 V DC measuring range**
- **4 MB SDRAM**
- **Complex trigger logic**
- **Oversampling technology**
- **Flexible onboard signal conditioning**
- **Optical isolation**



The mezzanine card M67 is a board for acquisition of analog signals with a bandwidth of up to 10 MHz at a maximum resolution of 12 bits and a sampling frequency of up to 40 MHz. Variable trigger functions allow application of the M67 as a "digital storage oscilloscope" for measurement and analysis applications.
The sampling data is stored in an onboard memory buffer. After the sampling procedure this buffer can be processed by an external host.
Individual signal conditioning is made by the customer using a blank prototype PCB that is plugged directly on M67 and must be ordered separately. MEN can produce individual adapters on request.
The M67 is based on the M-Module ANSI mezzanine standard. It can be used as an I/O extension in any type of bus system, i.e. CPCI, VME or on any type of stand-alone SBC. Appropriate M-Module carrier cards in 3U, 6U and other formats are available from MEN or other manufacturers.

Diagram


Analog Input
4 Binary Inputs
6 Binary Outputs
Clock
External Trigger
Signal Conditioning Adapter
A
D
V_{ref+}
V_{ref-}
12 bits
4 bits
6 bits
4MB SDRAM
32 bits
Timing Control
Address Generation
32 bits
M-Module Interface
M-Module ID EEPROM
D0..D31
A1..A7
Control

Technical Data

Analog Input	■ ±1V max. input range, 75 Ohm ■ Input conditioning via adapter PCB
Trigger	■ Trigger at signal level, external signal or via software ■ Rising or falling edge ■ Trigger at start, middle, end
Clock	■ Internal or external clock, max. 40MHz ■ Divider 2n
Buffer	■ 4MB ■ Random access by the host possible
A/D Conversion	■ 12 bits, 40MSPS ■ 64dB SNR at 3.58MHz ■ Track/hold ■ Oversampling technology
Recording	■ 12 ADC bits and 4 external binary inputs
Binary Inputs/Outputs	■ 4 inputs ■ 6 outputs
Peripheral Connections	■ Via front panel on a shielded combined 15-pin D-Sub receptacle connector
M-Module Characteristics	■ A08, D16, D32, INTA, DMA, IDENT, TRIGI
Electrical Specifications	■ Isolation voltage: 500V DC ■ Supply voltage/power consumption: □ +5V (4.85V..5.25V), 700mA typ. (with sample adapter) □ +12V (±5%), +50mA □ -12V (±5%), -40mA ■ MTBF: tbd. (derived from MIL-HDBK-217F)
Mechanical Specifications	■ Dimensions: conforming to M-Module Standard ■ Weight: 112g (incl. adapter)
Environmental Specifications	■ Temperature range (operation): □ 0..+60°C □ Industrial temperature range on request □ Airflow: min. 10m³/h ■ Temperature range (storage): -40..+85°C ■ Relative humidity range (operation): max. 95% non-condensing ■ Relative humidity range (storage): max. 95% non-condensing ■ Altitude: -300m to + 3,000m ■ Shock: 15g/11ms ■ Bump: 10g/16ms ■ Vibration (sinusoidal): 2g/10..150Hz ■ Conformal coating on request
Safety	■ PCB manufactured with a flammability rating of 94V-0 by UL recognized manufacturers
EMC	■ Tested according to EN 55022 (radio disturbance), IEC1000-4-2 (ESD) and IEC1000-4-4 (burst)
Software Support	■ MEN Driver Interface System (MDIS for Windows®, Linux, VxWorks®, QNX®, OS-9®) ■ For more information on supported operating system versions and drivers see Downloads.

Ordering Information

Standard M67 Models	**04M067-00**	Digital oscilloscope, 0..+60°C
Miscellaneous Accessories	**05M000-17**	25 mounting screw sets to fix M-Modules on carrier boards
	08AD55-00	AD55, adapter for M67, DC signal conditioning, input voltage 0..+1V or 0..+10V, impedance 1MOhm, external triggering, 4 inputs, 5 outputs, temperature range: 0..+60° C
Software: Linux	This product is designed to work under Linux. See below for potentially available separate software packages from MEN.	
	13M067-06	MDIS4/2004 low-level driver sources (MEN) for M67
Software: Windows®	This product is designed to work under Windows®. See below for potentially available separate software packages from MEN.	
	13M067-70	MDIS4/2004 Windows® driver (MEN) for M67
Software: VxWorks®	This product is designed to work under VxWorks®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets.	
	13M067-06	MDIS4/2004 low-level driver sources (MEN) for M67
Software: QNX®	This product is designed to work under QNX®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets.	
	13M067-06	MDIS4/2004 low-level driver sources (MEN) for M67
Software: OS-9®	This product is designed to work under OS-9®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets.	
	13M067-06	MDIS4/2004 low-level driver sources (MEN) for M67

For operating systems not mentioned here contact MEN sales.

Documentation	Compare Chart instrumentation M-Modules » Download	
	20M000-00	M-Module Draft Specification, Rev. 3.0
	20M067-00	M67 User Manual

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