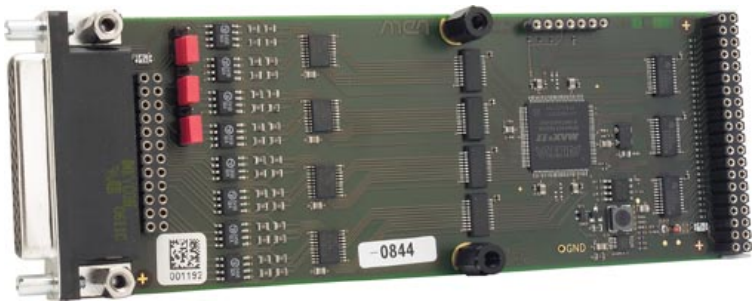
M58 – 32-bit TTL I/O Interface

- **32 TTL inputs/outputs**
- **Output current per pin: max. 25 mA**
- **Active terminators**
- **Same line interface as SCSI**
- **Fast 16-bit host access**
- **-40 to +85°C screened versions**

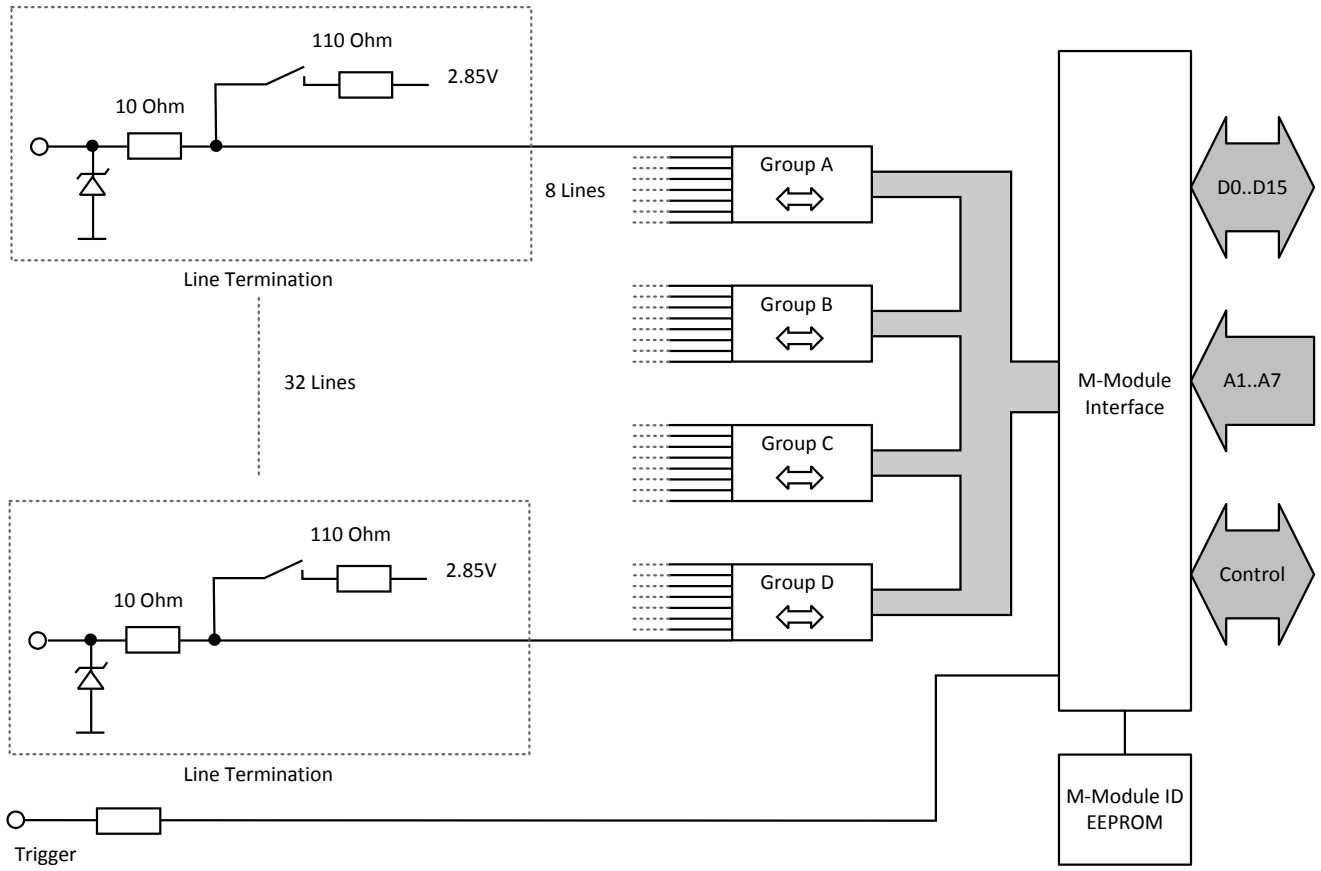


The mezzanine card M58 is a TTL I/O M-Module which is used for fast and trouble-free transmission of binary signals. It is organized in four 8-bit groups, where each group can be programmed as an input or output. Every group supports active termination, which can be activated by software.

A trigger line allows simultaneous acquisition of the inputs of several groups - also on several modules - at a specific point of time.
All port lines are ESD-protected, but not optically isolated.

The M58 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


110 Ohm
2.85V
10 Ohm
8 Lines
Group A
Group B
Group C
Group D
D0..D15
A1..A7
Control
M-Module
Interface
Line Termination
32 Lines
110 Ohm
2.85V
10 Ohm
Line Termination
Trigger
M-Module ID
EEPROM

Technical Data

Input/Output	■ 32-bit TTL I/O ■ Output current permanent per pin: max. 25mA ■ 4 groups, alternatively input or output ■ Active terminators can be activated for each group ■ Output low current (VOL max. 0.55V): sink min. 25mA ■ Output high current (VOH min. 2.0V): source min. 25mA ■ Input high current: max. 100µA ■ Input low current: max. -100µA ■ Input voltage: min. -0.5V, max. 6V ■ Switching times: □ Output low-to-high: tbd. □ Output high-to-low: tbd. □ Input: tbd.
Miscellaneous	■ Trigger line with interrupt capabilities
Peripheral Connections	■ Via front panel on a shielded 44-pin HD-Sub receptacle connector ■ Via carrier board (rear I/O)
M-Module Characteristics	■ A08, D16, INTA, IDENT
Electrical Specifications	■ Supply voltage/power consumption: +5V (-3%/+5%), 230mA typ. (idle), 1000mA max. ■ MTBF: 1,058,309h @ 40°C according to IEC/TR 62380 (RDF 2000)
Mechanical Specifications	■ Dimensions: conforming to M-Module Standard ■ Weight: 68g
Environmental Specifications	■ Temperature range (operation): □ 0..+60°C or -40..+85°C (screened) □ 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 M58 Models	**04M058-00**	32-bit TTL I/O, 0..+60°C
	04M058-02	32-bit TTL I/O, -40..+85°C screened
Miscellaneous Accessories	**05M000-14**	M-Module cable, 2.5m, with 44-pin HD-Sub plug/housing to pig tail
	05M000-17	25 mounting screw sets to fix M-Modules on carrier boards
	05M000-25	M-Module cable, 2m, with 44-pin half-pitch D-Sub plug/housing to 50-pin D-Sub receptacle/housing, (connecting 1:1)
Software: Linux	This product is designed to work under Linux. See below for potentially available separate software packages from MEN.	
	13M058-06	MDIS4/2004 / MDIS5 low-level driver sources (MEN) for M58
Software: Windows®	This product is designed to work under Windows®. See below for potentially available separate software packages from MEN.	
	13M058-70	MDIS4/2004 / MDIS5 Windows® driver (MEN) for M58
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.	
	13M058-06	MDIS4/2004 / MDIS5 low-level driver sources (MEN) for M58
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.	
	13M058-06	MDIS4/2004 / MDIS5 low-level driver sources (MEN) for M58
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.	
	13M058-06	MDIS4/2004 / MDIS5 low-level driver sources (MEN) for M58

For operating systems not mentioned here contact MEN sales.

Documentation	Compare Chart binary I/O M-Modules » Download	
	20M000-00	M-Module Draft Specification, Rev. 3.0
	20M058-00	M58 User Manual

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