

Kleine Superhelden!

EM USB-I/O-Module

E.E.P.D. 
...just embedded!



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HIGH QUALITY
MADE IN GERMANY



Maßgeschneiderte Lösungen sind unsere Spezialität. Kundenspezifische Systemlösungen im Embedded Computing Bereich planen und realisieren wir individuell nach Ihren Bedürfnissen und Vorstellungen.

Unsere Erfahrung – Ihr Gewinn

Seit 1988 verlassen sich Kunden verschiedenster Branchen auf uns. Um Ihnen das für Sie optimale Produkt zu liefern, legen wir großen Wert auf eine intensive Beratung und eine zielgerichtete Anforderungsanalyse. Wir garantieren Ihnen zudem die Güte jedes einzelnen E.E.P.D. Produkts durch die stetige Optimierung unseres Qualitätsmanagements.



Schenken auch Sie uns Ihr Vertrauen und profitieren Sie von unserer Erfahrung.

MADE IN GERMANY zu wettbewerbsfähigen Preisen

Flexibles und schnelles Handeln sowie Unabhängigkeit sichert Ihnen unsere eigene Entwicklung und Produktion am Standort Weichs bei München. Profitieren Sie von kurzen Wegen und schnellen Entscheidungsprozessen.

Eigene EMV- und Umweltlabore unterstützen bei Produktzertifizierungen und komplettieren unsere Dienstleistungen.

Globales Know-how für zahlreiche Einsatzgebiete

Sie benötigen ARM® oder x86-basierte PC-Baugruppen oder Komplettsysteme? Sie möchten ein Rundum-Sorglos-Paket von der kompletten Entwicklung bis zur Serienfertigung? Oder nur eine einzelne Dienstleistung wie z.B. Produktion? Aber gerne!

Robustheit in rauen Umgebungen? Verlässlichkeit in sensiblen Bereichen? Andere Spezialanforderungen an Ihre Produkte? Alles kein Problem!

APPLICATIONS

The **EM MODULE MGPI** is the perfect USB module for free programmable inputs and outputs. The interface is designed for an absolute maximum voltage of 30 V. It is a german engineered and high quality USB extension module, offering the highest performance in tough environments.

- _ Rugged Industrial Module
- _ Automatic Control Panels
- _ Information Systems
- _ Measurement & Quality Control
- _ Automotive



MGPI



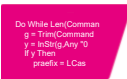
DIGITAL AND ANALOG ALL COMBINED IN ONE MODULE

IEC61131-2

I/O +
ANALOG
INPUT



Connect up to 7 modules per TB-M/TB-H to your system. For up to 224 inputs and 224 outputs with a TB-M + 3x TB-H system.



Easy programmable, API interface or direct control. Configure your system to your individual requirements.



Two analog inputs 500 kHz/10-Bit.



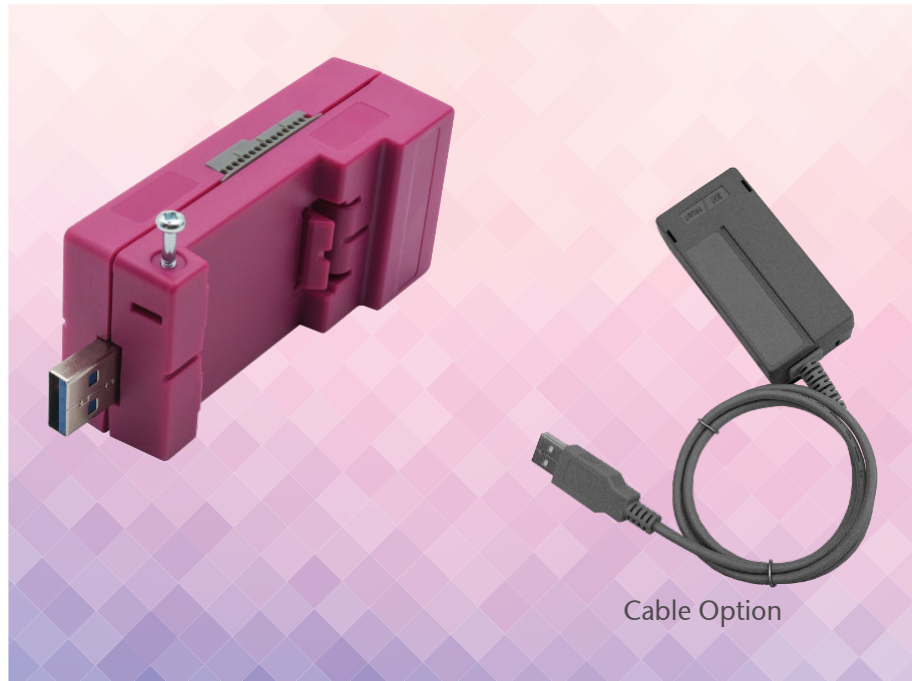
Extreme temperatures from -40°C to +85°C are supported.



16 status LED's, I/O synchronized or independently controlled.



Designed for hat rail / DIN rail mounting.



OVERVIEW

The EM MODULE MGPI is the perfect USB to GPIO adapter to connect various I/Os according to the IEC61131-2 standard. 8 inputs and 8 outputs are available. Outputs are open drain with max. 1 A / 30 V switching capability. Input voltage is 30 V max. In addition two analog inputs are provided.

SUMMARY

- ▶ 2 analog inputs 500 kHz/10-Bit
- ▶ 8 inputs and 8 outputs
- ▶ 1 A high current per output

Ordering Code System	Type
IMGPIAA0	8x Digital Input 8x Digital Output 2x Analog Input Rail Mounting GREY
IMGPIAA30	8x Digital Input 8x Digital Output 2x Analog Input Rail Mounting MAGENTA
IMGPIAC0	8x Digital Input 8x Digital Output 2x Analog Input Hat rail or stand alone mounting GREY USB cable 80 cm

SPECIFICATIONS

Digital input	8 inputs max. 30 V high impedance
Digital output	8 outputs max. 30 V max. 1 A OC
Analog input	2 inputs max. Vin Vin max. 30 V 500 kHz 10-Bit
Connector	Molex 26-pin MicroClasp™
Status LEDs	Yes, for each digital port
USB client port	1 USB 2.0 USB 1.1 Type A
Power supply	USB VCC (+5 V supply, current limited to 500 mA)
Fanless	Designed for fanless operation
Max. operating temp.	-40°C to +85°C ambient
Max. storage temp.	-40°C to +85°C ambient
Max. rel. humidity	95 % @ 40°C, non-condensing
Housing	ABS-PC
Mounting	TB-M and TB-H module mounting Hat rail Stand alone
Dimensions approx.	93 x 39 x 27 mm
Weight approx.	40 grams
Conformity	CE, ROHS, REACH
OS support	Microsoft® Windows® 10; Microsoft® Windows® 10 IoT; Linux Kernel 3.4 or later;
Control Type	Virtual Com Port

APPLICATIONS

The **EM MODULE MREL** is the perfect USB module for high power switching applications. The relays are designed for an absolute maximum of 5 A. It is a german engineered and high quality USB extension module, offering the highest performance in tough environments.

- _ Rugged Industrial Module
- _ Automatic Control Panels
- _ Information Systems
- _ Measurement & Quality Control
- _ Automotive



MREL



SWITCH IT ON HIGH POWER RELAYS

5A SWITCHING



Connect up to seven modules per TB-M/TB-H to your system. For up to 28 relays and LED's.



Extreme temperatures from -40°C to +85°C are supported.



Four green status LED's to indicate a current flow.



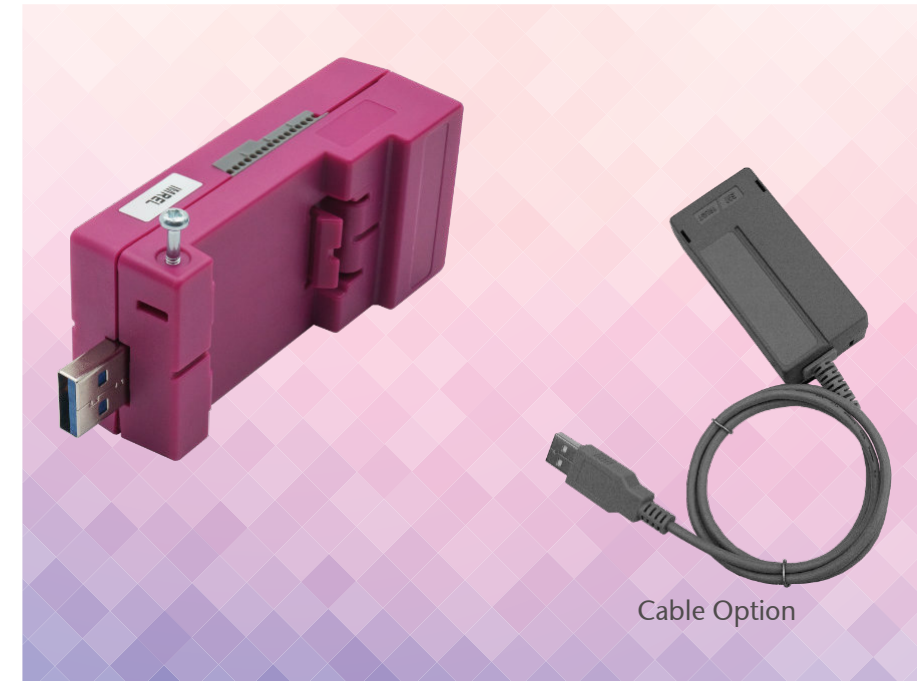
Four change over Finder relays with 5 A maximum current.



Small installation depth.



Designed for hat rail / DIN rail mounting.



OVERVIEW

The EM MODULE MREL is the perfect USB to relay adapter with up to four electrical switches. 5 A is the maximum switching capability.

SUMMARY

- Four relays
- Four status LED's
- High current relays

Ordering Code System	Description	Type
IMRELA0	USB Module	4x Change over relay Rail Mounting GREY
IMRELA30	USB Module	4x Change over relay Rail Mounting MAGENTA
IMRELAC0	USB Module	4x Change over relay Hat rail or stand alone mounting GREY USB cable 80 cm

SPECIFICATIONS

Relays	4 change over Finder relays
Relay power	Max. 60 V / max. 5 A (AC)
Connector	Molex 12-pin Micro-Fit™
Status LED's	4 green LED's to indicate relay status
USB client port	1 USB 2.0 USB 1.1 Type A
Power supply	USB VCC (+5 V supply, current limited to 500 mA)
Fanless	Designed for fanless operation
Max. operating temp.	-40°C to +85°C ambient
Max. storage temp.	-40°C to +85°C ambient
Max. rel. humidity	95 % @ 40°C, non-condensing
Housing	ABS-PC
Mounting	TB-M and TB-H module mounting Hat rail Stand alone
Dimensions approx.	93 x 39 x 27 mm
Weight approx.	40 grams
Conformity (adapter only)	CE, ROHS, REACH
OS support	Microsoft® Windows® 10; Microsoft® Windows® 10 IoT; Linux Kernel 3.4 or later; Android;
Control Type	Virtual COM Port

APPLICATIONS

The **EM MODULE MADC** is the perfect USB analog/digital converter module. It is a german engineered and high quality USB extension module, offering the highest performance in tough environments.

- _ Rugged Industrial Module
- _ Automatic Control Panels
- _ Information Systems
- _ Measurement &
- _ Quality Control
- _ Automotive



MADC

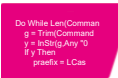


THE WORLD IS ANALOG
INTERFACE TO THE REAL WORLD

IEC61131-2
ANALOG
IN AND OUT



Connect up to seven modules per TB-M/TB-H to your system.



Easy programmable. Configure your system to your individual requirements.



12 control LED's for monitoring. Each LED is individual programmable.



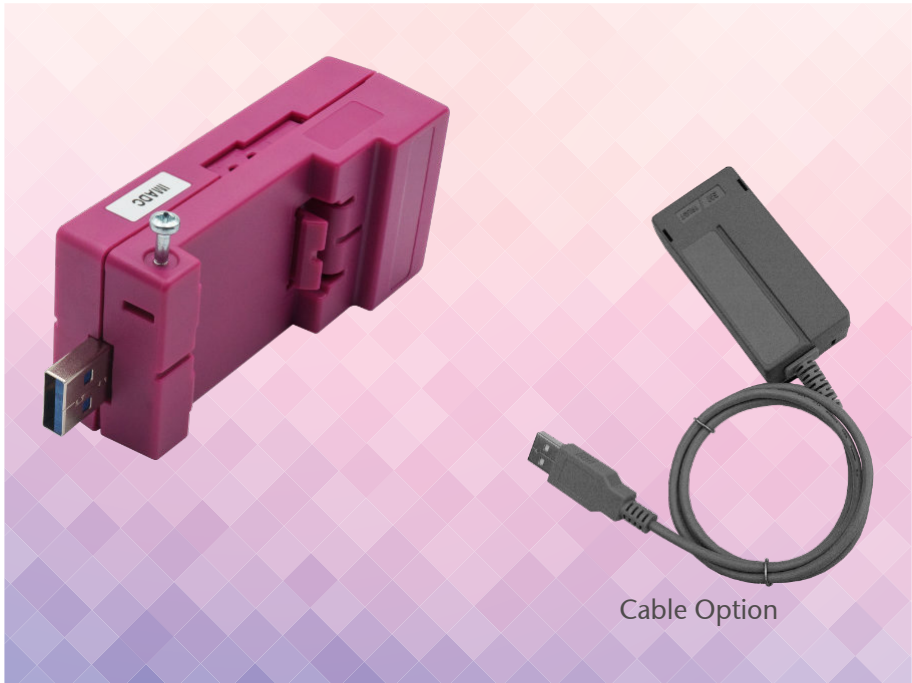
Extreme temperatures from -40°C to +85°C are supported.



8 analog inputs (12 Bit) and 2 analog outputs (10 Bit).



Designed for hat rail / DIN rail mounting.



OVERVIEW

The EM MODULE MADC is the perfect analog to digital and digital to analog USB module. The 12 Bit analog inputs and 10 Bit analog outputs, conforming to DIN EN 61131-2.

SUMMARY

- ▶ 8 analog inputs
- ▶ 2 analog outputs
- ▶ 12 status LED's
- ▶ Selectable power and current ranges

Ordering Code System	Description	Type
IMADCAA0	USB Module	8x 12-Bit analog IN 2x 10-Bit analog OUT Rail Mounting GREY
IMADCAA30	USB Module	8x 12-Bit analog IN 2x 10-Bit analog OUT Rail Mounting MAGENTA
IMADCAC0	USB Module	8x 12-Bit analog IN 2x 10-Bit analog OUT Hat rail or stand alone mounting GREY USB cable 80 cm

SPECIFICATIONS

Analog inputs	8x 12 Bit; 4 to 20 (mA) or 0 to 5 / 0 to 10 / -10 to 10 (V)
Analog outputs	2x 10 Bit; 0 to 10 / -10 to 10 (V)
Connector	Molex 26-pin Microclasp™
Status LED's	12 LED's
USB client port	1 USB 2.0 USB 1.1 Type A
Power supply	USB VCC (+5 V supply, current limited to 500 mA)
Fanless	Designed for fanless operation
Max. operating temp.	-40°C to +85°C ambient
Max. storage temp.	-40°C to +85°C ambient
Max. rel. humidity	95 % @ 40°C, non-condensing
Housing	ABS-PC
Mounting	TB-M and TB-H module mounting Hat rail / DIN rail Stand alone
Dimensions approx.	93 x 39 x 27 mm
Weight approx.	40 grams
Conformity	CE, ROHS, REACH
OS support	Microsoft® Windows® 10; Microsoft® Windows® 10 IoT; Linux Kernel 3.4 or later
Control Type	Virtual Com Port

APPLICATIONS

The **EM MODULE M232** is the perfect RS232 module solution.

These are german engineered and high quality USB extension modules, offering the highest performance in tough environments.

- _ Rugged Industrial Module
- _ Long Term Availability
- _ Easy Installation



M232



HIGHLY COMPATIBLE
INDUSTRIAL TEMP -40°C TO +85°C

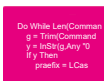
RS-232



Connect up to seven modules per TB-M/TB-H to your system.



Small installation depth.



Easy installation. Wide software compatibility.



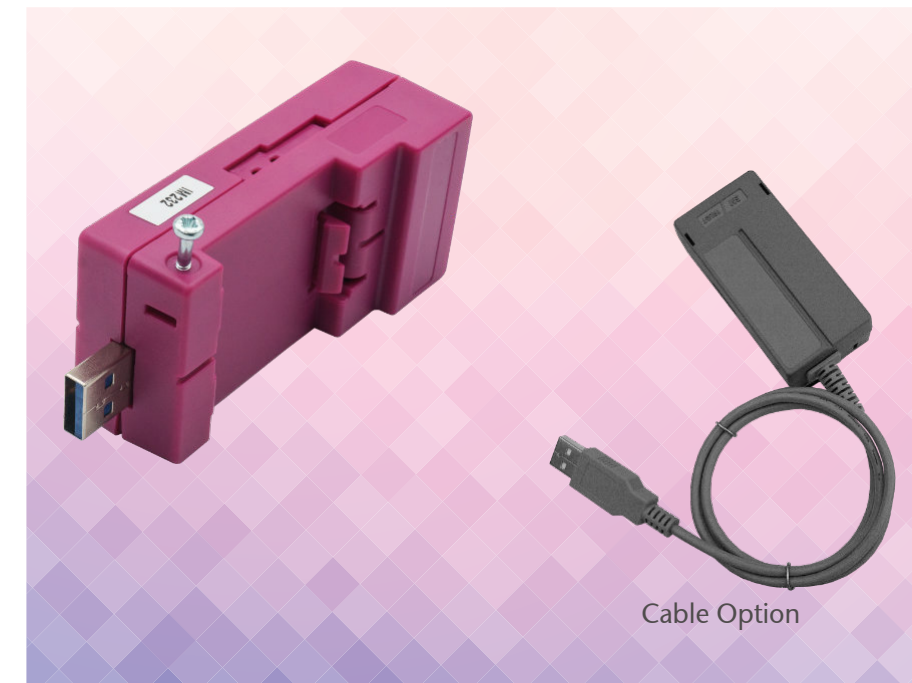
Use the M232 in harsh and tough environments.



9-pin male D-SUB with standard RS232 functionality.



Designed for hat rail / DIN rail mounting.



OVERVIEW

The EM MODULE M232 is powered by proven technology. The module is ready for USB 2.0/1.1 and supports one RS232 port.

SUMMARY

- Support for RS232 interfaces
- USB 2.0 ready
- Hat rail / DIN rail mounting

Ordering Code System	Description	Type
IM232AA0	USB Module	RS-232 Rail Mounting GREY
IM232AA30	USB Module	RS-232 Rail Mounting MAGENTA
IM232AC0	USB Module	RS-232 Hat rail or stand-alone mounting GREY USB cable 80 cm

SPECIFICATIONS

Serial port	9-pin male D-SUB connector with standard RS232 pinout max. bit rate 1 MBit/s
USB client port	1 USB 2.0 USB 1.1 Type A
Power supply	USB VCC (+5 V supply, current limited to 500 mA)
Fanless	Designed for fanless operation
Max. operating temp.	-40°C to +85°C ambient
Max. storage temp.	-40°C to +85°C ambient
Max. rel. humidity	95 % @ 40°C, non-condensing
Housing	ABS-PC
Mounting	TB-M and TB-H module mounting Hat rail Stand alone
Dimensions approx.	93 x 39 x 27 mm
Weight approx.	40 grams
Conformity	CE, ROHS, REACH
OS support	Microsoft® Windows® 10; Microsoft® Windows® 10 IoT Enterprise; Linux Kernel 3.2 or later
Control Type	Virtual Com Port

APPLICATIONS

The **EM MODULE M485** is the perfect RS485 module solution.

These are german engineered and high quality USB extension modules, offering the highest performance in tough environments.

- _ Rugged Industrial Module
- _ Half-Duplex and Full-Duplex versions available
- _ Long Term Availability
- _ Easy Installation



M485



HIGHLY COMPATIBLE
INDUSTRIAL TEMP -40°C TO +85°C

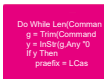
RS-485



Connect up to seven modules per TB-M/TB-H to your system.



Small installation depth.



Easy installation. Wide software compatibility.



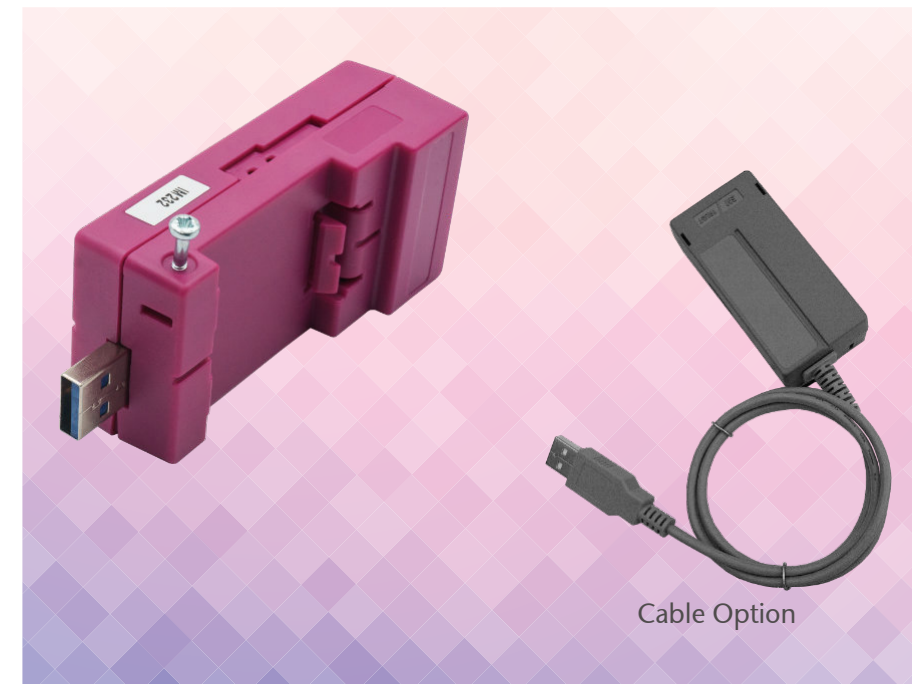
Use the M485 in harsh and tough environments.



9-pin male D-SUB with standard RS485 functionality.



Designed for hat rail / DIN rail mounting.



Ordering Code System	Description	Type
IM485AA0	USB Module	RS-485 HDX Rail Mounting GREY
IM485AA30	USB Module	RS-485 HDX Rail Mounting MAGENTA
IM485AC0	USB Module	RS-485 HDX Hat rail or stand alone mounting GREY USB cable 80 cm
IM485BA0	USB Module	RS-485 FDX Rail Mounting GREY
IM485BA30	USB Module	RS-485 FDX Rail Mounting MAGENTA
IM485BC0	USB Module	RS-485 FDX Hat rail or stand alone mounting GREY USB cable 80 cm

OVERVIEW

The EM MODULE M485 is powered by proven technology. The module is ready for USB 2.0/1.1 and supports one RS485 port.

SUMMARY

- Support for RS232 interfaces
- Half-Duplex (HDX) and Full-Duplex (FDX)
- USB 2.0 ready
- Hat rail / DIN rail mounting

SPECIFICATIONS

Serial port	9-pin male D-SUB connector RS485 half duplex support (HDX) RS485 full duplex support (FDX) max. bit rate 3 MBit/s
USB client port	1 USB 2.0 USB 1.1 Type A
Power supply	USB VCC (+5 V supply, current limited to 500 mA)
Fanless	Designed for fanless operation
Max. operating temp.	-40°C to +85°C ambient
Max. storage temp.	-40°C to +85°C ambient
Max. rel. humidity	95 % @ 40°C, non-condensing
Housing	ABS-PC
Mounting	TB-M and TB-H module mounting Hat rail Stand alone
Dimensions approx.	93 x 39 x 27 mm
Weight approx.	40 grams
Conformity	CE, ROHS, REACH
OS support	Microsoft® Windows® 10; Microsoft® Windows® 10 IoT Enterprise; Linux Kernel 3.2 or later
Control Type	Virtual Com Port

APPLICATIONS

The **EM MODULE METH** is the perfect ethernet module solution. It is designed for tethered data networks possibilities. It is a german engineered and high quality USB extension module, offering the highest performance in tough environments.

- _ Rugged Industrial Module
- _ Automatic Control Panels
- _ Information Systems
- _ Measurement &
- _ Quality Control
- _ Automotive



METH



ADD FAST AND EASY NETWORK PORTS TO YOUR SYSTEM

1 GBIT



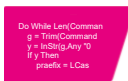
Connect up to seven modules per TB-M/TB-H to your system.



Small installation depth.



Status LED's to display various operating modes.



Easy installation. Wide software compatibility.



Full 1 GBit speed with USB 3.0 bus support.



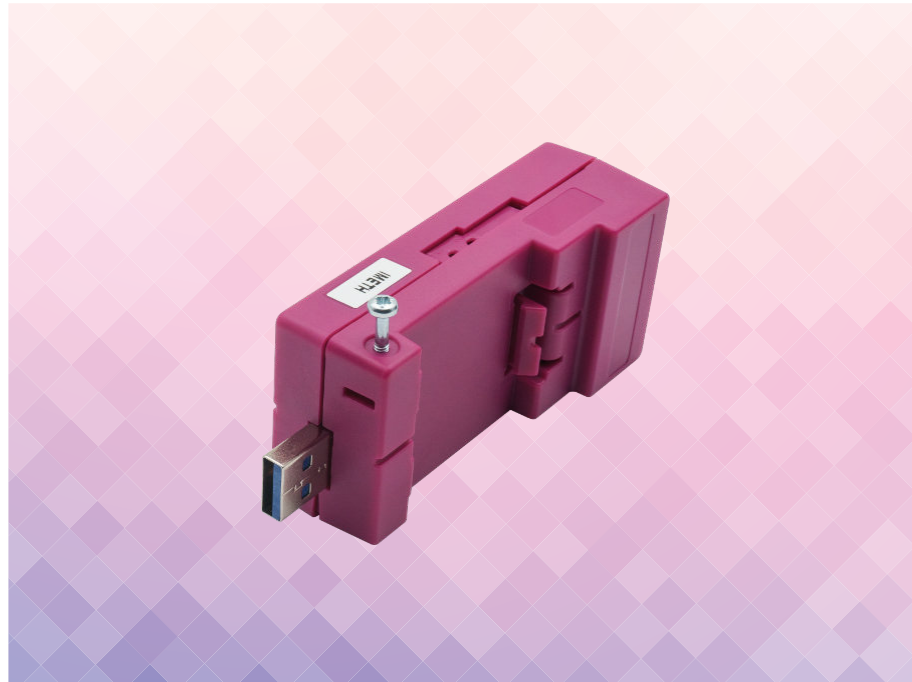
Designed for hat rail / DIN rail mounting.

OVERVIEW

The EM MODULE METH is the perfect USB to 1 GBit adapter for your applications, powered by proven technology. It is designed for safety networking to control different devices, sensor units and servers. The module is ready for USB 3.0/2.0/1.1 and supports one 1 GBase-T port.

SUMMARY

- USB to GBit Ethernet adapter
- 10/100/1000 MBit/s data rate
- USB 3.0 support
- RJ-45 connector



Ordering Code System	Description	Type
IMETHAA0	USB Module	1x GBit/s Ethernet Rail Mounting GREY
IMETHAA30	USB Module	1x GBit/s Ethernet Rail Mounting MAGENTA

SPECIFICATIONS

Gigabit Ethernet	RJ-45 connector 10/100/1000 MBit/s data rate MAC and PHY IEEE 802.3, IEEE 802.3u and IEEE 802.3ab compatible
Status LED's	3 LED's
USB client port	1 USB 3.0 2.0 1.1 Type A
Power supply	USB VCC (+5 V supply, current limited to 500 mA)
Fanless	Designed for fanless operation
Max. operating temp.	0°C to +70°C ambient
Max. storage temp.	0°C to +70°C ambient
Max. rel. humidity	95 % @ 40°C, non-condensing
Housing	ABS-PC
Mounting	TB-M and TB-H module mounting Hat rail Stand alone
Dimensions approx.	93 x 39 x 27 mm
Weight approx.	40 grams
Conformity	CE, ROHS, REACH
OS support	Microsoft® Windows® 10; Microsoft® Windows® 10 IoT; Linux Kernel 2.6.25 or later; Android
Control Type	Virtual Com Port

APPLICATIONS

The **EM MODULE MCAN** is the perfect controller area network module solution. It is designed for safety networking to control different devices and sensor units. It is a german engineered and high quality USB extension module, offering the highest performance in tough environments.

- _ Rugged Industrial Module
- _ Automatic Control Panels
- _ Information Systems
- _ Measurement &
- _ Quality Control
- _ Automotive



MCAN



HIGHLY COMPATIBLE
INDUSTRIAL TEMP -40°C TO +85°C

CAN 2.0
A/B
2 PORTS



Connect up to seven modules per TB-M/TB-H to your system.



Small installation depth.



Two independent CAN ports with status LED's to support various applications.



Use the MCAN in harsh and tough environments.



Galvanic isolation optional available for both CAN ports.



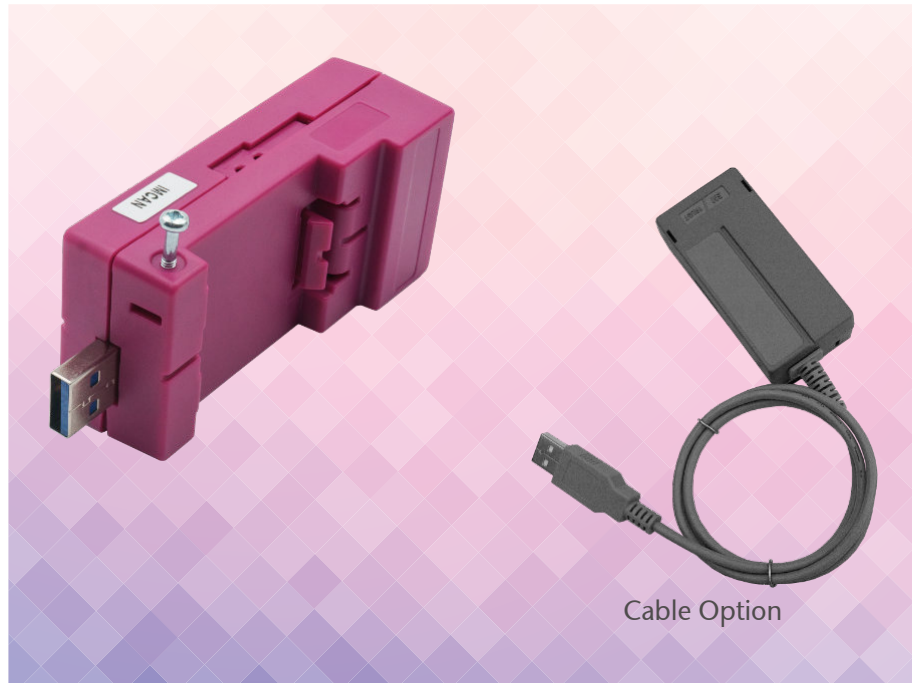
Designed for hat rail / DIN rail mounting.

OVERVIEW

The EM MODULE MCAN is the perfect USB to CAN adapter for your applications, powered by proven technology. It is designed for safety networking to control different devices and sensor units. The module is ready for USB 2.0/1.1 and s two CAN ports.

SUMMARY

- ▶ 2 independent CAN ports
- ▶ CAN 2.0A/2.0B
- ▶ Max. bit rate 1 MBit/s
- ▶ Galvanic isolation optional



Ordering Code System	Type
IMCANAA0	2x CAN 1 MBit/s Rail Mounting GREY
IMCANAA30	2x CAN 1 MBit/s Rail Mounting MAGENTA
IMCANAC0	2x CAN 1 MBit/s Hat rail or stand alone mounting GREY USB cable 80 cm
IMCANBA0	2x CAN 1 MBit/s 500 V galvanic isolated Rail Mounting GREY
IMCANBA30	2x CAN 1 MBit/s 500 V galvanic isolated Rail Mounting MAGENTA
IMCANBC0	2x CAN 1 MBit/s 500 V galvanic isolated GREY Hat rail or stand alone mounting USB cable 80 cm

SPECIFICATIONS

Serial port	9-pin female D-SUB connector
2 CAN ports:	
Standard CAN (Version 2.0A)	
Extended CAN (Version 2.0B)	
Bit rate 20 kBit/s up to 1 MBit/s	
CAN transceiver	NXP TJA 1042TK
Status LED's	2 LED's
Galvanic isolation	500 V Only on "B" versions See ordering codes
USB client port	1 USB 2.0 USB 1.1 Type A
Power supply	USB VCC (+5 V supply, current limited to 500 mA)
Fanless	Designed for fanless operation
Max. operating temp.	-40°C to +85°C ambient
Max. storage temp.	-40°C to +85°C ambient
Max. rel. humidity	95% @ 40°C, non-condensing
Housing	ABS-PC
Mounting	TB-M and TB-H module mounting Hat rail Stand alone
Dimensions approx.	93 x 39 x 27 mm
Weight approx.	40 grams
Conformity	CE, ROHS, REACH
Driver Support	SocketCAN; CANopen®
OS support	Microsoft® Windows® 10; Microsoft® Windows® 10 IoT Enterprise; Linux Kernel 3.4 or later
Control Type	Virtual Com Port

APPLICATIONS

The **EM MODULE MMCM** is the perfect MiniCard carrier module solution. It is a german engineered and high quality USB extension module, offering the highest performance in tough environments.

- _ Rugged Industrial Module
- _ Automatic Control Panels
- _ Information Systems
- _ Measurement & Quality Control
- _ Automotive



MMCM



DIGITAL AND ANALOG ALL COMBINED IN ONE MODULE

MINI PCIE (USB ONLY)



Connect up to seven modules per TB-M/TB-H to your system.



Small installation depth.



Connect your Mini-PCle board to USB. For various different applications such as I/O, CAN, 2G, 3G, 4G and much more.



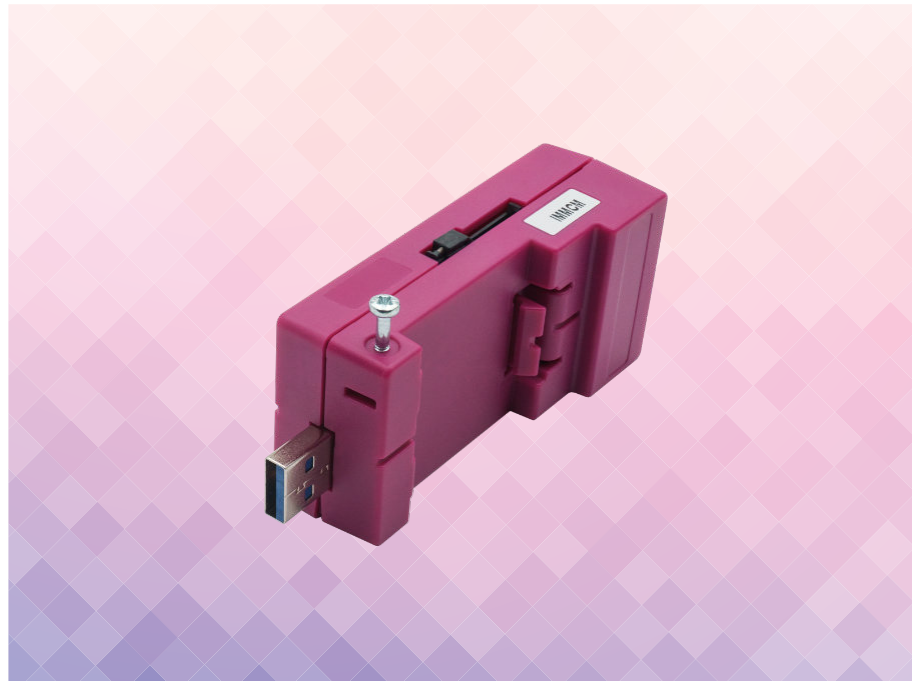
Extreme temperatures from -40°C to +85°C are supported.



Supports fast USB 2.0 boards.



Designed for hat rail / DIN rail mounting.



OVERVIEW

The EM MODULE MMCM is the perfect USB to Mini-PCle adapter for USB only applications. It is designed to connect your own USB connected Mini-PCle board and provide easy installation as well as SIM Card access for compatible cellular boards.

SUMMARY

- USB 2.0 to Mini-PCle, USB only, adapter
- SIM card socket
- Custom options available

Ordering Code System	Type
IMMCMMAA0	MiniPCle USB only module carrier Rail Mounting GREY
IMMCMMAA30	MiniPCle USB only module carrier Rail Mounting MAGENTA

SPECIFICATIONS

MiniCard	MiniCard carrier module for various USB modules with Mini-PCle form factor and USB only connectivity
SIM card	1 SIM card socket for compatible cellular modem cards
USB client port	1 USB 2.0 USB 1.1 Type A
Power supply	USB VCC (+5 V supply, current limited to 500 mA)
Fanless	Designed for fanless operation
Max. operating temp.	-40°C to +85°C ambient
Max. storage temp.	-40°C to +85°C ambient
Max. rel. humidity	95% @ 40°C, non-condensing
Housing	ABS-PC
Mounting	TB-M and TB-H module mounting Hat rail Stand alone
Dimensions approx.	93 x 39 x 27 mm
Weight approx.	40 grams
Conformity (adapter only)	CE, ROHS, REACH
OS support	Depends on Mini-PCle module used
Control Type	Virtual Com Port

APPLICATIONS

The **EM TB-H** is the perfect self powered Plug&Play USB 3.0 Hub controller solution. It is designed for different USB 3.0/2.0 modules. It is a German engineered and high quality industrial hub system, offering the highest performance in tough environments.

- _ Rugged Industrial Systems
- _ Medical Solutions
- _ Automatic Control Panels
- _ Information Systems
- _ Measurement & Quality Control



TB-H



FANLESS
40 W SELF POWERED

TOUGH USB HUB



Module rail holder and USB module are optional



Rugged aluminum housing for optimized cooling.



Supports all major operating systems. Easy installation and maintenance free.



Expand your system with various USB adapter options.



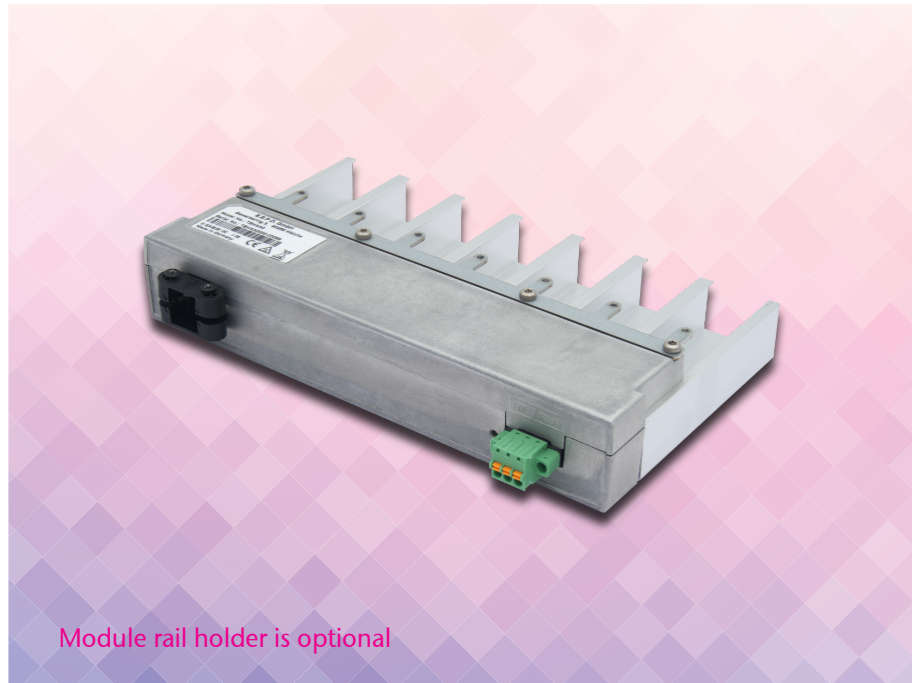
Wide input range internal 40 W power supply with status LED.



Use the TB-H in harsh and tough environments.



Designed for hat rail / DIN rail mounting.



Module rail holder is optional

OVERVIEW

The EM TB-H is the perfect self powered industrial USB 3.0 Hub. Ready for multiple USB 3.0 devices. With the optional modular USB mounting carrier up to seven modules can safely connect to the system.

SUMMARY

- Fanless operation
- Self powered
- Ready for multiple USB 3.0 devices

SPECIFICATIONS

USB client port	1 USB 3.0 type B (upstream)
USB host port	4 USB 3.0 type A with USB 3.0 data rate capability 3 USB 3.0 type A with USB 2.0 data rate capability
USB hub type	Self powered USB hub
Status LEDs	Power LED
Power supply	Min. 8 V / Max. 32 V (DC)
Fanless	Designed for fanless operation
Max. operating temp.	0°C to +70°C ambient
Max. storage temp.	-40°C to +85°C ambient
Max. rel. humidity	95 % @ 40°C, non-condensing
Housing	Aluminum case
Mounting	Stand alone or hat rail
Dimensions approx.	194 x 35 x 62 mm
Weight approx.	320 grams + options
Conformity	CE, ROHS, REACH
OS support	Microsoft® Windows® 10; Windows® 10 IoT Enterprise; Linux hub drivers

Ordering Code System	Description	Type
TBHAA0	USB Hub	Self powered industrial USB Hub
KITBMMH1	Expansion	Module holder rail option

APPLICATIONS

The **modular EM ToughBox** is the perfect Plug&Play system solution, especially designed for low-power and noiseless applications since no fans or other rotating devices are used. It is a german engineered and high quality industrial computer system, offering the highest performance in tough environments.

- _ Rugged Industrial Systems
- _ Medical Solutions
- _ Automatic Control Panels
- _ Information Systems
- _ Measurement & Quality Control
- _ Public Terminal



TB-M



MODULAR



Module rail holder are optional



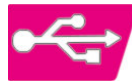
Use the TB-M in harsh and tough environments. An optional extended temperature version is available.



Configure your system for different purposes. It works with a wide range of USB components.



The TB-M system is designed for hat rail mounting and can be expanded with an optional modular USB mounting carrier.



Expand your system with various USB adapter options.



Seven control LEDs allow to display various operating states.



Operate and control your processes.

MODULAR DESIGN

ABUNDANT USB CONNECTIVITY



Module rail holder are optional

Ordering Code System	Description	Type
TBMA	Modular	GX-415GA / 4C / 4T / 1.5 GHz / 15 W
TBML	Modular	GX-210HA / 2C / 2T / 1.0 GHz / 9 W 2x Eth / 3x USB
TBML (industrial temp.)	Modular	GE-209HA / 2C / 2T / 1.0 GHz / 9 W
2GB-TBM	Main Memory	2 GB
4GB-TBM	Main Memory	4 GB
8GB-TBM	Main Memory	8 GB
KITBMMH1	Expansion	Module holder rail option

OVERVIEW

The modular EM ToughBox is powered by proven technology, including AMD G-series processors. The system is ready for multiple USB 3.0 devices.

Our optional modular USB mounting carrier can safely connect up to seven modules with the system.

SUMMARY

- Fanless operation
- 3 GBit Ethernet ports
- Ready for multiple USB 3.0 devices
- Extended temperature option

OPTION	Description
SSA	SATA SSD 64 - 512 GB
LTE	LTE/4G Modem
WBT	WiFi/BT card
W10	Microsoft® Windows® 10
WIE	Microsoft® Windows® 10 IoT Enterprise
LNx	Linux Ubuntu 18.04 LTS

SSA	LTE	WBT
X	X	-
X	-	X
-	X	X

SSA, LTE, WBT combination matrix

SPECIFICATIONS

CPU	AMD G-Series eKabini ¹
Max. memory	8 GB DDR3L / 1600 MHz
Gigabit Ethernet	Up to 3 Intel® I210 with IEEE1588
LTE/4G (OPTIONAL)	300 Mbps max./EMEA, APAC/ Diversity/GNSS
WiFi/BT (OPTIONAL)	802.11 AC with diversity/ Bluetooth Version 5
SSD (OPTIONAL)	mSATA / 64 GB - 512 GB
SD-Card	1 MicroSD-Card socket
USB ports	Up to 6 USB 3.1 Gen1 4 USB 2.0
DVI-I connector	1 DVI-I with VGA support
Sound	3.5 mm MIC In / headphone Out / line In
Health management	Hardware monitoring and Watchdog
Other	1 power and 6 status LEDs
Power supply	Min. 8 V / Max. 32 V (DC)
Fanless	Designed for fanless operation
Max. operating temp.	0°C to +60°C ambient commercial grade -40°C to +85°C ambient industrial grade
Max. storage temp.	-20°C to +85°C commercial grade -40°C to +8 °C industrial grade
Max. rel. humidity	95 % @ 40°C, non-condensing
Housing	Aluminum case
Mounting	Stand alone or hat rail
Dimensions approx.	194 x 128 x 42 mm
Weight approx.	900 grams + options
Conformity	CE, ROHS, REACH
OS support	Microsoft® Windows® 10; Microsoft® Windows® 10 IoT Enterprise; Linux Ubuntu 18.04 LTS

¹10 years availability according to CPU manufacturers specification

Hauseigenes EMV-Umwelt & Klimalabor

In unserem eigenen EMV-, Umwelt- und Klimalabor stehen uns zum Testen zur Verfügung:

- _ EMV-Messzelle, Schaffner GTEM-1000
- _ Temperaturschockschrank, Weiss Umwelttechnik TS130
- _ Temperaturschrank, Weiss Umwelttechnik WK-600/70/5
- _ Diverse weitere Temperatur- und Klimaschränke
- _ Shaker, LDS V650
- _ ESD-Simulator, EM Test
- _ Infrarot-Kamera

Qualitätsmanagement - Kontinuierlicher Verbesserungsprozess

- _ Zentraler Bestandteil unseres QM-Systems nach 8-D Strategie
- _ Hauptziele: höchste Kundenzufriedenheit, beste Qualität, optimale Kosten
- _ DIN EN ISO 9001:2015 durchgehend seit 1997 zertifiziert
- _ internes Qualitätsmanagementsystem (Audits, Online-Monitoring)
- _ RoHS-konform seit 2004
- _ Teilnehmer Global Compact seit 2011

EOL Management – für einen „runden“ Produktlebenszyklus

Wir helfen Ihnen, die Lebenszeit Ihrer Produkte auf den optimalen Verfügbarkeitszeitraum für Ihre Kunden zu verlängern.

In der Entwicklungs-Phase:

- _ Bauteile der Embedded Roadmap führender Hersteller
- _ Komponenten von bewährten Herstellern
- _ Beurteilung der Lebensdauer und der Verfügbarkeit jedes einzelnen Bauteils

In der Serien-Phase:

- _ Test und Qualifizierung von Ersatzbauteilen bei Bauteil- Abkündigungen
- _ Serienänderung des CPU-Boards

In der Produkt-Auslaufphase:

- _ Information über Abkündigungen von Bauteilen
- _ Verlängerung der Produktlebenszeit
- _ Bevorratung von abgekündigten Bauteilen für platzierte Aufträge
- _ Einlagerung von kundenseitig bereits gekauften Bauteilen
- _ Stickstofflagerung von sensiblen Bauteilen

Standardprodukt oder OEM/ODM? Wir fertigen ganz nach Ihrem Bedarf

Ein Standardprodukt deckt nicht alle Anforderungen für Ihre Lösung ab? Dann sind Sie bei uns genau richtig!

Wir entwickeln und produzieren Ihr OEM/ODM-Produkt ganz nach Ihren Vorgaben. Unsere Mitarbeiter stehen Ihnen in jeder Phase des Produkts, von der Entwicklung bis zur Auslieferung kompetent zur Seite.



Gewerbering 3
85258 Weichs - Germany
Phone +49 8136 2282-0
Fax +49 8136 2282-109
www.eepd.de
sales@eepd.de

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