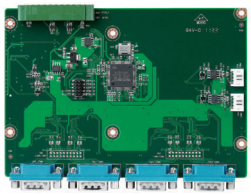
MI/O Extension Modules

MIOe-210

4 x RS232/422/485, 2 x RS422/485, 8-bit GPIO



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Specifications

General	
Bus Interface	MIOe LPC
Ports	4 x RS232/422/485, 2 x RS422/485
GPIO	8-bit with 3.3V level
Communications	
Data Bits	5, 6, 7, 8
Data Signals	RS-422: TxD+, TxD-, RxD+, RxD- RS-485: DATA+, DATA- RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND
IRQ	Depends on MI/O CPU Board
Parity	even, odd, sticky or no
Speed	50 to 115.2k Baud
Stop Bits	1, 1.5, 2
Protection	
EFT Protection	Air gap ±15kV, contact ±8kV
Compatibility	
Rear I/O	MI/O-Compact
Mechanical	MI/O-Compact
Function	MI/O-Compact*, MI/O-Ultra*
Environment	
Dimensions	146 x 102 mm (5.7" x 4")
Weight	0.186 kg (0.41 lb)
Operating Humidity	0 ~ 90 % relative humidity, non-condensing
Operating Temperature	0 ~ 60° C (32 ~ 140° F)
Storage Temperature	-40° C ~ 85° C and 60° C @ 95% RH Non-Condensing
Power	
Power Supply Voltage	Supported by MI/O Extension SBC

* Requires customized BIOS for MI/O CPU board support.

Ordering Information

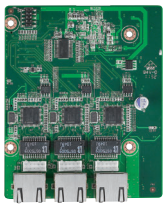
P/N	Description
MIOe-210-D6A1E	4 x RS232/422/485, 2 x RS422/485, 8-bit GPIO

Accessories

Part No.	Description	Quantity
1703040157	RS-422/485 W/D-SUB COM 4P 15 cm	2

MIOe-220

3 x Intel® Gigabit Ethernet



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Specifications

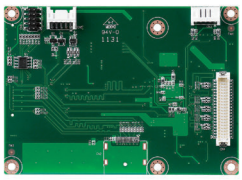
General	
Bus Interface	MIOe PCI Express
Chipset	Intel® 82583V Gigabit Ethernet Controller
PCIe Switch	PLX PEX8605
Port	3 x RJ45
Speed	10/100/1000 Mbps
Compatibility	
Rear I/O	MI/O-Compact
Mechanical	MI/O-Compact
Function	MI/O-Compact, MI/O-Ultra
Mechanical and Environmental	
Dimensions (L x W)	102 x 83 mm (4" x 3.2")
Weight	0.182 kg (0.401 lb)
Operating Temperature	Standard operating: 0 ~ 60° C (32 ~ 140° F)
Operating Humidity	0% ~ 90% relative humidity, non-condensing
Storage Temperature	-40° C ~ 85° C and 60° C @ 95% RH Non-Condensing
Power	
Power Supply Voltage	Supported by MI/O Extension SBC

Ordering Information

P/N	Description
MIOe-220-L3A1E	3 x Intel® Gigabit Ethernet without PCIe Switch
MIOe-220-B3A1E	3 x Intel® Gigabit Ethernet with PCIe Switch (for MIO-5250 /MIO-5251/ MIO-5271)

MIOe-230

48-bit LVDS or DisplayPort[1], 2 x USB 2.0



CE FCC

Specifications

General	
Bus Interface	MIOe Displayport & USB 2.0
Controller	Chrontel CH7511
Brightness Control	Supported
USB	2 x USB 2.0
Compatibility	
Rear I/O	MI/O-Ultra
Mechanical	MI/O-Compact, MI/O-Ultra
Function	MI/O-Compact[2], MI/O-Ultra[2]
Mechanical and Environmental	
Dimensions (L x W)	100 x 72 mm (3.9" x 2.8")
Weight	0.084 kg (0.185 lb)
Operating Temperature	0 ~ 60° C (32 ~ 140° F)
Operating Humidity	0% ~ 90% relative humidity, non-condensing
Power	
Power Supply Voltage	Supported by MI/O Extension SBC

[1] Support by request
[2] Requires customized BIOS or HW adjustment for MI/O CPU board support.

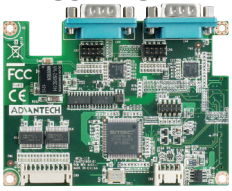
Ordering Information

P/N	Description
MIOe-230-L0A1E	48-bit LVDS or DisplayPort, 2 x USB 2.0

All product specifications are subject to change without notice

MIOe-110

2 x RS-232, 2 x RS-232/422/485 (with power and isolation), 2 x USB 2.0



CE FCC

Specifications

General	
Bus Interface	MIOe LPC/USB
Super I/O	SCH3106
Rear I/O	
COM port	COM1/2: Both at coastline and internal box wafer, simultaneously COM1: RS-232/422/485 (With isolation. RS-485 with auto flow control). COM2: RS-232/422/485 (Supports wake on ring. Supply 5V/12V power selected by jumper. RS-485 with auto flow control).
Internal I/O	
COM port	COM3/4: RS-232 (Support wake on ring)
USB 2.0	2
Communications	
Data Bits	5, 6, 7, 8
Data Signals	RS-422: TxD+, TxD-, RxD+, RxD- RS-485: DATA+, DATA- RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND
IRQ	Depends on MI/O CPU Board
Parity	even, odd, sticky or no
Speed	50 to 115.2k Baud
Stop Bits	1, 1.5, 2
Protection	
ESD	Air gap ±15kV and contact ±8kV for all COM ports
Isolation	2.5kV for COM1
Compatibility	
Rear I/O	MI/O-Ultra
Mechanical	MI/O-Ultra
Function	MI/O-Compact*, MI/O-Ultra*
Environment	
Dimensions	100 x 72 mm (3.9" x 2.8")
Weight	0.04 kg (0.09lb), only for board
Operational Temperature	0 ~ 60° C (32 ~ 140° F)
Operational Humidity	40° C @ 95% RH Non-Condensing
Storage Environment	-40° C ~ 85° C and 60° C @ 95% RH Non-Condensing
Power	
Power Supply Voltage	Supported by MI/O Extension SBC

* Requires customized BIOS for MI/O CPU board support

Ordering Information

P/N	Description
MIOe-110F-00A1E	2 x RS-232/422/485, 2 x RS-232, w/ isolation, 2 x USB
MIOe-110L-00A1E	1 x RS-232/422/485, 2 x RS-232, w/o isolation, 2 x USB

Accessories

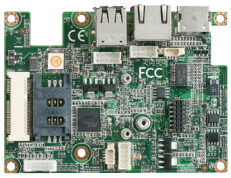
P/N	Description	Quantity
1700018999	COM3/4 cable 22cm	1

Optional Accessories

P/N	Description
1700019414	COM1/2 internal cable 30cm
1700019071	2 ports USB cable w/o bracket, 12cm

MIOe-120

2 x GbE, HDMI, Mini PCIe, SIM holder, speaker out, LPC, 2 x USB 2.0



CE FCC

Specifications

General	
Bus Interface	MIOe PCI Express/ USB/ LPC/ Audio line-out
Ethernet controller	GbE Intel® 82583V
PCIe Switch	PLX PEX8605
USB Hub Controller	Terminus FE1.1 USB 2.0 4-port hub
Rear I/O	
GbE	1 (10/100/1000 Mbps), both at coastline and internal box wafer, simultaneously
USB 2.0	2 (Both at coastline and internal box wafer, simultaneously)
HDMI	1 (by request, only for MIO-2261)
Internal I/O	
GbE	1 (10/100/1000 Mbps)
Speaker out	1 with amplifier (Max 2.2W/ch stereo into a 3Ω load)
LPC	1 (support extra four COM ports by PCA-COM232-00A1E or PCA-COM485-00A1E, TPM module by PCA-TPM-00A1E)
Expansion	
Mini PCIe	1 (full size, with SIM holder, including of USB interface)
Compatibility	
Rear I/O	MI/O-Ultra
Mechanical	MI/O-Compact, MI/O-Ultra
Function	MI/O-Compact*, MI/O-Ultra*
Mechanical and Environmental	
Dimensions (L x W)	100 x 72 mm (3.9" x 2.8")
Weight	0.04 kg (0.09lb), only for board
Operational Temperature	Standard operating: 0 ~ 60° C (32 ~ 140° F)
Operational Humidity	40° C @ 95% RH Non-Condensing
Storage Temperature	-40° C ~ 85° C and 60° C @ 95% RH Non-Condensing
Power	
Power Supply Voltage	Supported by MI/O Extension SBC

* 1. HDMI: Only for MIO-2261, supported by request
2. LPC: Supported by OEM BIOS for PCA-COM232-00A1E, PCA-COM485-00A1E, and PCA-TPM-00A1E
3. MIO-5250 doesn't support MIOe-120L

Ordering Information

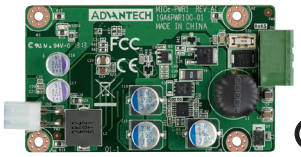
P/N	Description
MIOe-120F-00A1E	2 x GbE w/ PCIe switch, 2 x USB, Mini PCIe, SIM holder, speaker-out with amplifier, LPC
MIOe-120L-00A1E	1 x GbE w/o PCIe switch, 2 x USB, Mini PCIe, SIM holder, speaker-out with amplifier, LPC

Optional Accessories

P/N	Description
1700019001	1 x LAN cable, 15cm
1700019071	2 ports USB cable w/o bracket, 12cm
PCA-COM232-00A1E	4 x RS-232 extension module, 31.5x48mm
PCA-COM485-00A1E	4 x RS-422/485 extension module, 31.5x48mm
PCA-TPM-00A1E	TPM module, 31.5 x 48 mm

MIOe-PWR1

12-24V DC to DC Power Module MI/O-Chassis compliant



CB CE FCC

Specifications

General	
Input Voltage	12 to 24 V_{DC} ±5%
Output Voltage	12V ±10%
Output Current	Max. 5A
Protection	OVP, OCP, Anti-reverse
Connector type	Input: Phoenix 2pin Output: ATX 2x2pin
Mechanical and Environmental	
Dimensions (L x W)	90 x 53 mm (3.5" x 2.1")
Operating Temperature	0 ~ 60° C (32 ~ 140° F)
Weight	0.084 kg (0.185 lb)
Operating Humidity	0% ~ 90% relative humidity, non-condensing

Ordering Information

P/N	Description
MIOe-PWR1-00A1E	12-24V DC to DC power module
MIOe-PWR1Z-00A1E	12-24V DC power module -20 ~80 ° C

Accessories

Part No.	Description
1700021072-01	Power cable 2*2P-4.2/2*2P-4.2, 10cm

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MIOE-230-L0A1E MIOE-210-D6A1E