

HT/PB3600 Family

Fanless Panel and Box IPCs based on Intel® Core i 7th gen. platform (Kaby Lake H)



DIGITAL AUTOMATION TECHNOLOGIES

HT/PB3600 - Highlights



- **Fanless Panel/Box IPCs** (Operating temperature 0÷50°C)
- **ASEM UBIQUITY Basic Win32/64** runtime included
- Intel® **Kaby Lake H** (35/45W) platform
 - Intel® Core™ **i3-7100E** 2,9Ghz, 2 cores – 4 threads – 3MB SmartCache
 - Intel® Core™ **i5-7440EQ** 2,9Ghz (3,6GHz Turbo), 4 cores – 4 threads – 6MB SmartCache
 - Intel® Core™ **i7-7820EQ** 3,0Ghz (3,7GHz Turbo), 4 cores – 8 threads – 8MB SmartCache
- **2 x SODIMM DDR4 RAM** system memory expandable up to **32GB**
- **1 x PCI** or **PCIe x4** slot (S1 – optional)
- Mass storage: **1 x CFast**, **1 x mSATA SSD** and **1 x 2,5" HDD/SSD** with SATA III interface
- **RAID 0, 1** configurations
- **Wireless communication** modules (optional)
- **DVI-D** video output and **Remote Video Link video output** for remotation of DVI-D and USB 2.0 (optional)
- **Isolated 24V DC power supply** input with optionally
 - UPS with external battery kit
 - Kit for ATX mode power supply functionality

HT3600

- **Wide range of 16 mln colors LED backlight TFT LCD displays**
 - 4:3 aspect ratio: 12,1", 15"
 - 5:4 aspect ratio: 17", 19"
 - 16:9 aspect ratio: 15,6", 18,5", 21,5", 24"
 - 16:10 aspect ratio: 12,1"



HT3600 – Features 1/2



	HT3600	HT3600-TF	HT3600-TFX	HT3600-TFM
LED backlight TFT LCD	12,1" (4:3) – 800x600 / 1024x768 12,1" W (16:10) – 1280x800 15.0" (4:3) – 1024x768 15.6" W (16:9) – 1366x768 / 1920x1080 17"(5:4) – 1280x1024 18.5" W (16:9) – 1366x768/ 1920x1080 19" (5:4) – 1280x1024 21.5" W (16:9) - 1920x1080 24" W (16:9) - 1920x1080		12,1" (4:3) – 800x600 12,1" (4:3) - 1024x768 15.0" (4:3) – 1024x768 17" (5:4) – 1280x1024 19" (5:4) – 1280x1024	12,1" W (16:10) – 1280x800 15.6" W (16:9) – 1366x768 15.6" W (16:9) – 1920x1080 18.5" W (16:9) – 1366x768 18.5" W (16:9) – 1920x1080 21.5" W (16:9) – 1920x1080
TOUCH-SCREEN	Resistive 5 wires	Resistive 5 wires	Resistive 5 wires	P-CAP Multitouch
FRONT PANEL	Aluminium	TrueFlat Aluminium	TrueFlat Stainless steel	TrueFlat Aluminium
PROTECTION GRADE	IP66 – front			
PROCESSORS (soldered)	Intel® Core i3-7100E 2.90GHz 64bit, 2 cores / 4 threads, 3MB Smart cache Intel® Core i5-7440EQ 2.90GHz (3.60GHz Turbo) 64bit, 4 cores / 4 threads, 6MB Smart cache Intel® Core i7-7820EQ 3.00GHz (3.70GHz Turbo) 64bit, 4 cores / 8 threads, 8MB Smart cache			
CHIPSET	Intel® HM175 PCH (Platform Controller Hub)			
VIDEO CONTROLLER	Intel® HD Graphics 630 integrated in Core i3 processor • 350MHz/950MHz Intel® HD Graphics 630 integrated in Core i5, Core i7processors • 350MHz/1,00GHz DirectX 12 and OpenGL 4.5 support			
SYSTEM MEMORY – RAM	4GB (1 x SODIMM DDR4 module) or 8GB or 16GB or 32GB (2 x SODIMM DDR4 modules)			
MASS STORAGE	1 x bootable CFast SATA III slot on board with external rear access 1 x onboard connector for direct insertion of mSATA SSD SATA III 1 x onboard connector for 2,5" SSD/HDD 24x7 SATA III with internal installation kit			
RAID CONTROLLER	Integrated into chipset Intel® HM175, RAID 0,1			

HT3600 – Features 2/2



	HT3600	HT3600-TF	HT3600-TFX	HT3600-TFM
LAN	4 x LAN 10/100/1000Mbps (3 x Intel® I210, 1 x Intel® I219-LM) 1 x LAN 10/100/1000Mbps (1 x Intel® I210, optional*)			
USB	3 x USB 3.0 (Type-A, rear) 2 x USB 2.0 (Type-A, rear) 1 x USB 2.0 (Type-A, front, protected)		3 x USB 3.0 (Type-A, rear) 2 x USB 2.0 (Type-A, rear)	
SERIAL	1 x RS232 (DB9M)			
VIDEO OUTPUT	1 x DVI-D 1 or 2 x RJ45 connectors Remote Video Link (DVI-D and USB 2.0 up to 100 m) (optional*)			
ADD-ON INTERFACES (optional – max 1)	1 x RS232/422/485 (DB15M)+ 1 x USB 2.0 (Type-A) 1 x RS232/422/485 (DB15M) isolated + 1 x USB 2.0 (Type-A) 2 x RS232 (DB9M) 2 x USB 2.0 (Type-A)			
FIELDBUS (optional)	1 x NETcore X fieldbus *			
WIRELESS COMMUNICATION (optional)	1 x carrier for WiFi module and/or 3G/4G modem *			
EXPANSION SLOT S1	1 x PCI or PCIe x4 (5 Gb/s) for boards with power consumption max 5W			
POWER SUPPLY UNIT	24VDC isolated 24VDC isolated with UPS with external battery kit (optional) ATX Mode push button (optional)			
CERTIFIED O.S.	Microsoft Windows 10 IoT Enterprise 2016 64bit, Linux			
OPERATING TEMPERATURE	0°- 50°C 0°- 45°C with 24x7 HDD or Core i7 processor			
APPROVALS	CE, cULus LISTED (61010) pending			

* Options cannot be installed together

PB3600 – Features 1/2



PB3600	
PROCESSORS (soldered)	Intel® Core i3-7100E 2.90GHz 64bit, 2 cores / 4 threads, 3MB Smart cache Intel® Core i5-7440EQ 2.90GHz (3.60GHz Turbo) 64bit, 4 cores / 4 threads, 6MB Smart cache Intel® Core i7-7820EQ 3.00GHz (3.70GHz Turbo) 64bit, 4 cores / 8 threads, 8MB Smart cache
CHIPSET	Intel® HM175 PCH (Platform Controller Hub)
VIDEO CONTROLLER	Intel® HD Graphics 630 integrated in Core i3 processor ▪ 350MHz/950MHz Intel® HD Graphics 630 integrated in Core i5, Core i7processors ▪ 350MHz/1,00GHz DirectX 12 and OpenGL 4.5 support
SYSTEM MEMORY – RAM	4GB (1 x SODIMM DDR4 module) or 8GB or 16GB or 32GB (2 x SODIMM DDR4 modules)
MASS STORAGE	1 x bootable CFast SATA III slot on board with external rear access 1 x onboard connector for direct insertion of mSATA SSD SATA III 1 x onboard connector for 2,5" SSD/HDD 24x7 SATA III with internal installation kit
RAID CONTROLLER	Integrated into chipset Intel® HM175, RAID 0,1

PB3600 – Features 2/2



		PB3600
LAN		4 x LAN 10/100/1000Mbps (3 x Intel® I210, 1 x Intel® I219-LM) 1 x LAN 10/100/1000Mbps (1 x Intel® I210, optional*)
USB		3 x USB 3.0 (Type-A, rear) 2 x USB 2.0 (Type-A, rear)
SERIAL		1 x RS232 (DB9M)
VIDEO OUTPUT		1 x DVI-D 1 or 2 x RJ45 connectors Remote Video Link (DVI-D and USB 2.0 up to 100 m) (optional*)
ADD-ON INTERFACES (optional – max 1)		1 x RS232/422/485 (DB15M)+ 1 x USB 2.0 (Type-A) 1 x RS232/422/485 (DB15M) isolated + 1 x USB 2.0 (Type-A) 2 x RS232 (DB9M) 2 x USB 2.0 (Type-A)
FIELDBUS		1 x NETcore X fieldbus *
WIRELESS COMMUNICATION (optional)		1 x carrier for WiFi module and/or 3G/4G modem *
EXPANSION SLOT	S1	1 x PCI or PCIe x4 (5 Gb/s) for boards with power consumption max 5W
POWER SUPPLY UNIT		24VDC isolated 24VDC isolated with UPS with external battery kit (optional) ATX Mode push button (optional)
CERTIFIED O.S.		Microsoft Windows 10 IoT Enterprise 2016 64bit, Microsoft Windows 8.1 Industry Pro 32/64bit, Microsoft Windows 7 Pro/Ultimate 32/64bit, Microsoft Windows Embedded Standard 7E/7P 32/64 bit (HT-TFM: no WES7E), Linux
OPERATING TEMPERATURE		0°- 50°C 0°- 45°C with 24x7 HDD or Core i7 processor
APPROVALS		CE, cULus LISTED (61010) pending

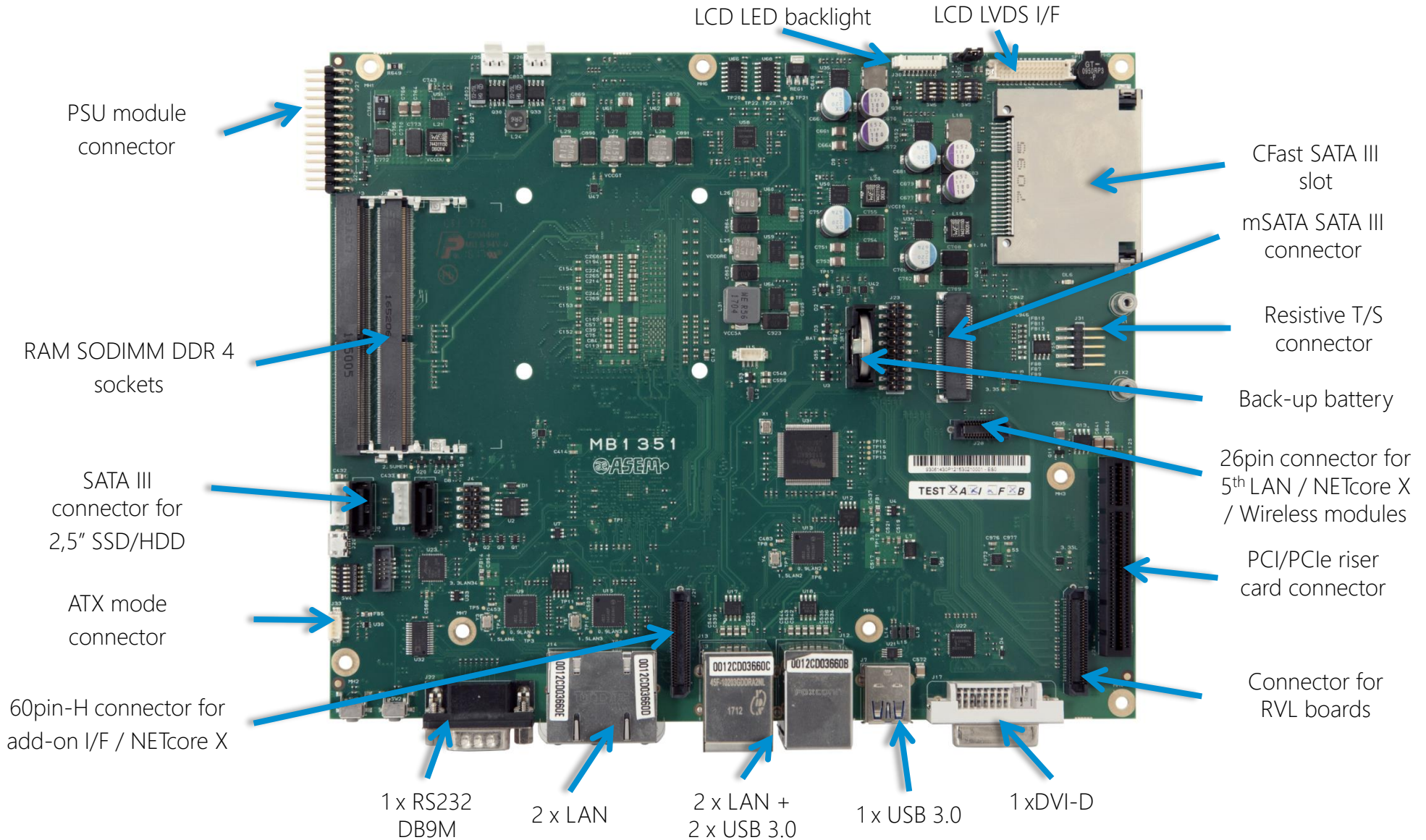
* Options cannot be installed together

HT/PB3600 – Wireless communication modules (optional)

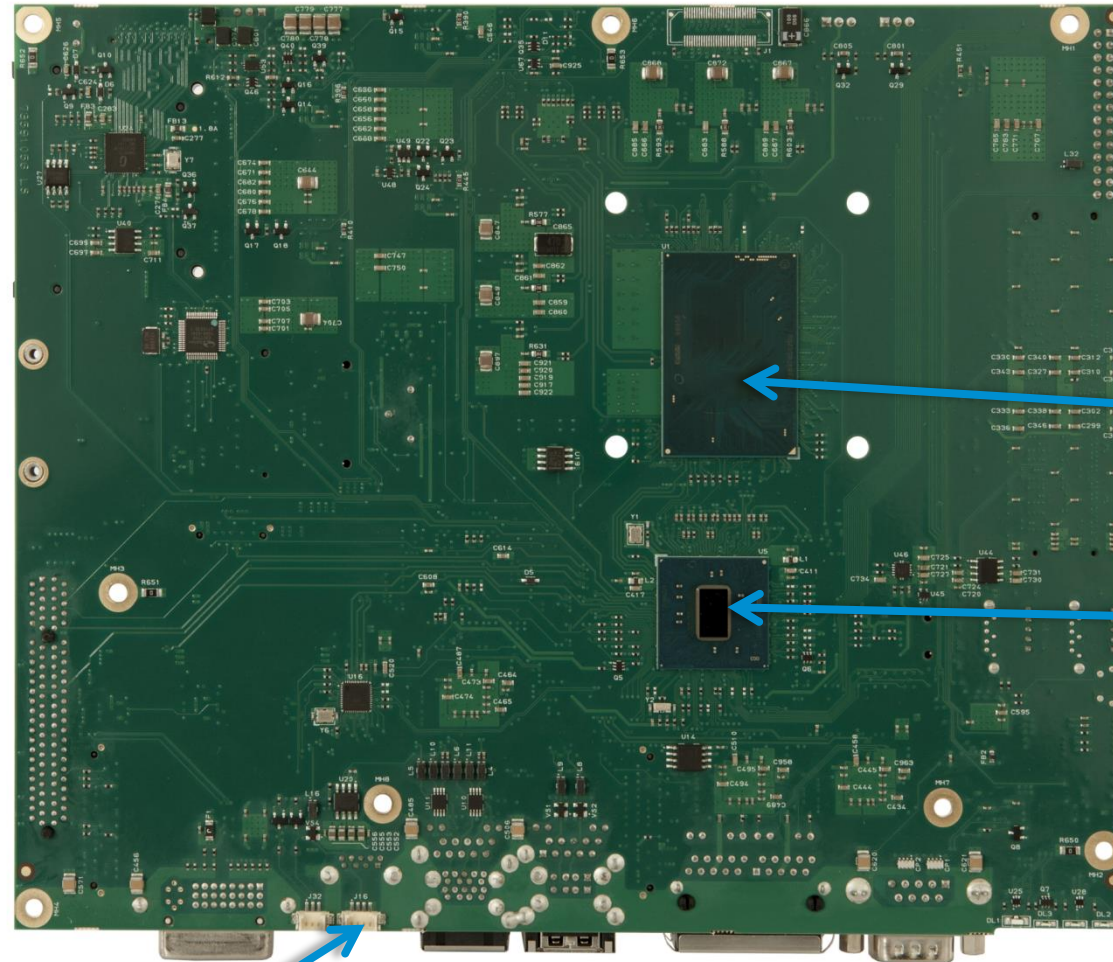


		HT3600 / PB3600
Wi Fi Module	Type	Half Mini PCIe module
	Standard	WiFi - IEEE 802.11a/b/g/n ▪ 2.400÷2.4835GHz / 5.15÷5.85GHz Data rate 802.11b: 11Mbps / 802.11a/g: 54Mbps / 802.11n: 300Mbps Bluetooth - V4.0 LE/ V3.0+HS/ V2.1+EDR
	Features	Client / Access point mode (Wi-Fi)
	Security	64/128-bits WEP, WPA, WPA2 (Wi-Fi)
	Sensitivity Rx	WiFi - 802.11a: -73dBm / 802.11g: -74dBm / 802.11n(2,4GHz): -72dBm@HT20, -69dBm@HT40 / 802.11n(5GHz): -69dBm@HT20, -68dBm@HT40 Bluetooth - <0.1% BER at -70dBm
	Antenna	2 x RP-SMA-F connector ▪ antenna not included
Modem 3G	Type	modem 2G/3G/3G+ EDGE/HSPA quadri band up to 5,76Mbps upload / 21,6Mbps download
	Bands	UMTS/HSPA+: B1/B2/B5 ▪ GSM/GPRS/EDGE: 850/900/1800/1900 MHz
	Antenna	1 x SMA-F connector ▪ antenna not included
Modem 4G/LTE	Type	modem 2G/3G/4G LTE pentaband up to 50Mbps upload / 100Mbps download
	Bands	FDD-LTE: B1/B3/B7/B8/B20 ▪ TDD-LTE: B38/B40 ▪ UMTS/HSPA+: B1/B8 ▪ GSM/GPRS/EDGE: 900/1800 MHz
	Antenna	1 x SMA-F connector ▪ antenna not included
Modem 4G/LTE - AM	Type	modem 3G/4G LTE quadri band up to 50Mbps upload / 100Mbps download
	Bands	FDD-LTE: B2/B4/B5/B17 ▪ UMTS/HSPA+: B2/B5
	Antenna	1 x SMA-F connector ▪ antenna not included

HT/PB3600 – Motherboard «All-in-one» 1351, top



HT/PB3600 - Motherboard «All-in-one» 1351, bottom



PSU module connector

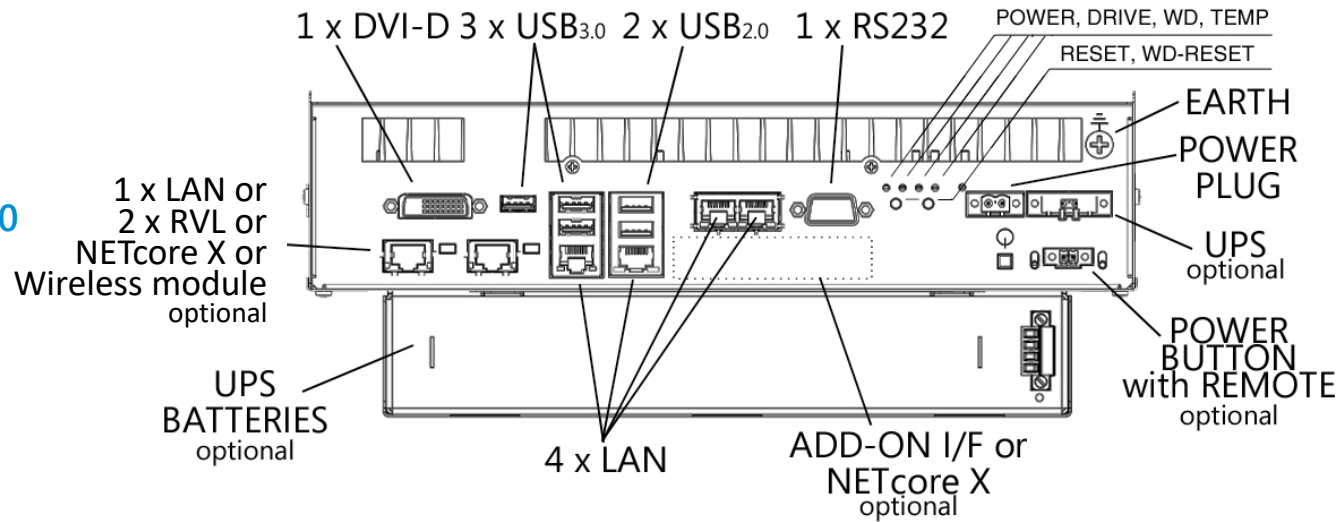
Intel® Kaby Lake H processor

Intel® HM175 chipset

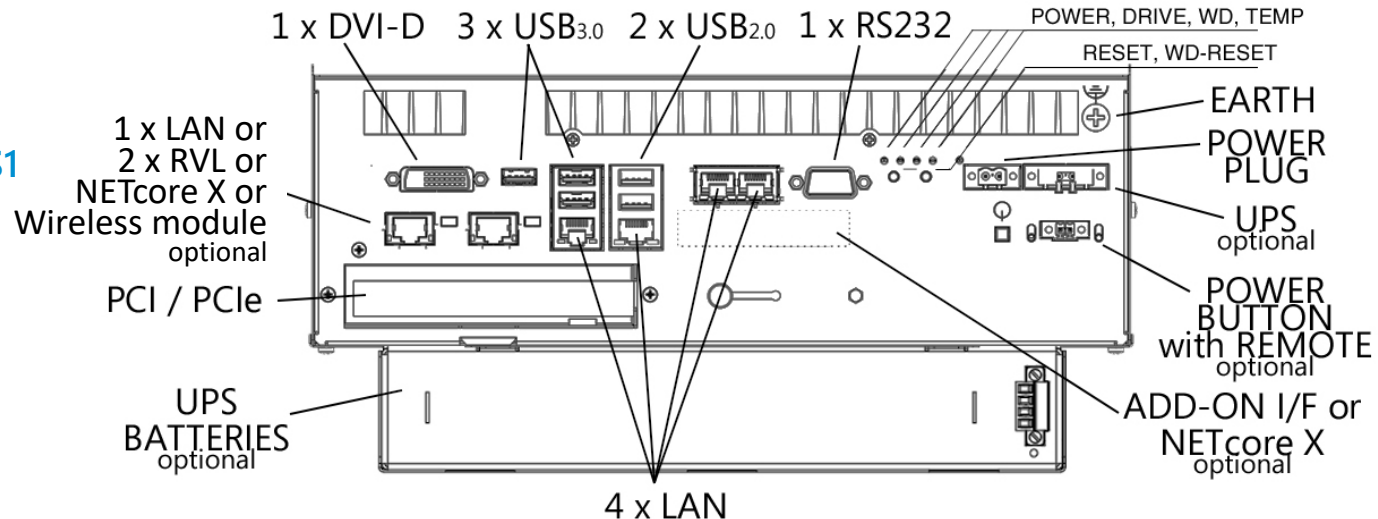
Front USB and P-CAP T/S connector

HT/PB3600 – Rear interfaces & connectors

HT/PB3600 S0



HT/PB3600 S1



HT/PB3600 - O.S. compatibility

- Operating systems **certified by ASEM**
 - Win 10 IoT Enterprise 2016 LTSB 64bit
 - Linux
- Intel[®] **Kaby Lake platform** does not support any Microsoft operating system prior to Windows 10
- The Intel platform can support other operating systems but they are not certified by ASEM

HT/PB3600 - Integrated UPS (optional)

UPS integrated in the internal power supply unit

- With external battery pack - rear of the system mounting
- With external battery pack - standalone wall mounting

UPS features

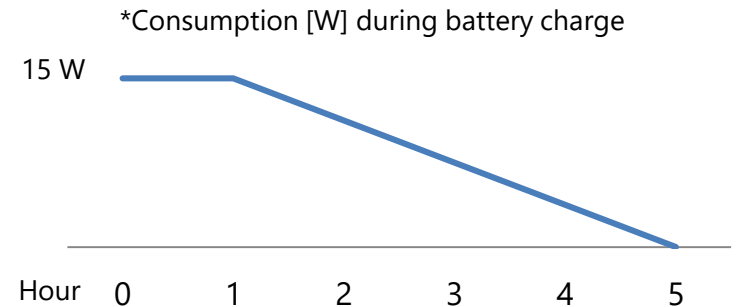
- 12V DC UPS battery backup system
- Input voltage intervention threshold 18V DC
- 10' nominal duration at 25°C, full charge, 5A load (estimated value)
- 15W max consumption during battery charge*

External battery pack

- 2500mAh 12V/6A max lead battery (Pb)
- Full charge in 5 hours
- Lifetime 10y at 25°C, full charge

Software Management Tools

- Smart battery management to extend lifetime
- Battery estimated duration for individual system configuration



HT/PB3600 - Mass Storage

CFast

- 1 x bootable CFast SATA III slot on board with external access



CFast card

SSD mSATA

- 1 x onboard connector for direct insertion of mSATA SSD SATA III



mSATA SSD

2,5" SSD/HDD

- 1 x onboard connector for 2,5" SSD/HDD SATA III with internal installation kit



SSD/HDD 2,5"
with installation kit

HT/PB3600 - Optional add-on boards for versions S0/S1

Position A

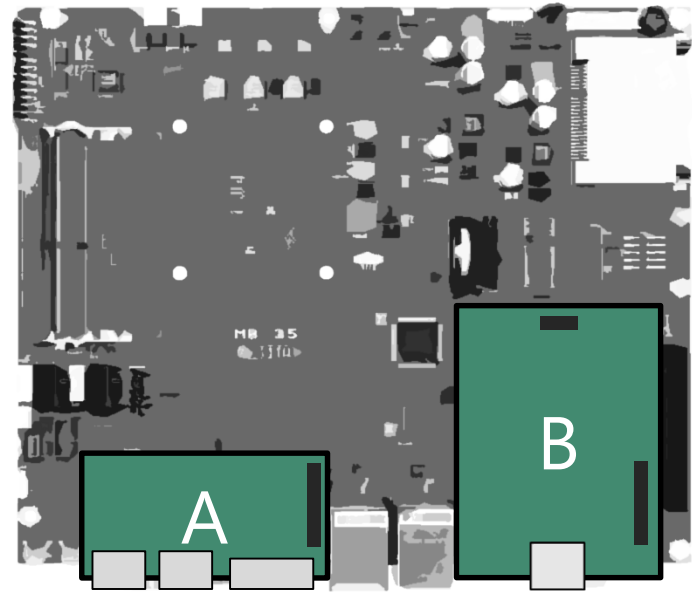
One board among:

- 1 x RS232/422/485 + 1 x USB 2.0
- 1 x RS232/422/485 isol.+ 1 x USB 2.0
- 2 x RS232
- 2 x USB 2.0
- 1 x NETcore X fieldbus board

Position B

One board among:

- 1 x LAN Gigabit
- 1 or 2 x RJ45 Remote Video Link (RVL OUT)
- 1 x NETcore X fieldbus board
- 1 x wireless modules carrier



Fieldbus available for NETcore X:
EtherCAT *Master/Slave*
PROFINET *Controller/Device*
EtherNet/IP *Scanner/Adapter*
PROFIBUS *Master/Slave*
CANopen *Master/Slave*

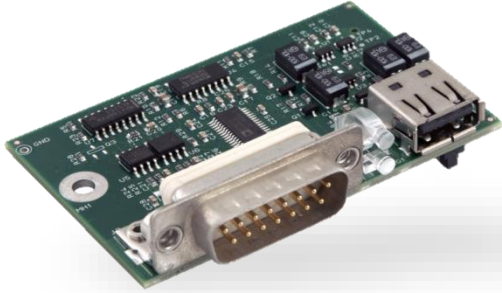
HT/PB3600 - Expansion slot & add-on

Add-on/Slot \ Version	S0	S1
Add-on	<p>Position A (60pin-H), one board among:</p> <ul style="list-style-type: none"> • 1 x RS232/422/485 + 1 x USB • 1 x RS232/422/485 isolated+ 1 x USB • 2 x RS232 • 2 x USB 2.0 • 1 x NETcore X fieldbus <p>Position B (26pin), one board among:</p> <ul style="list-style-type: none"> • 1 x LAN Gigabit (5° LAN) • 1 or 2 x RJ45 RVL OUT • 1 x NETcore X fieldbus • 1 x wireless modules carrier 	
PCI or PCIe x4	No slot	<p>One board among:</p> <ul style="list-style-type: none"> • NETcore X APCI • CAN RAW PCI • Customer PCI/PCIe*

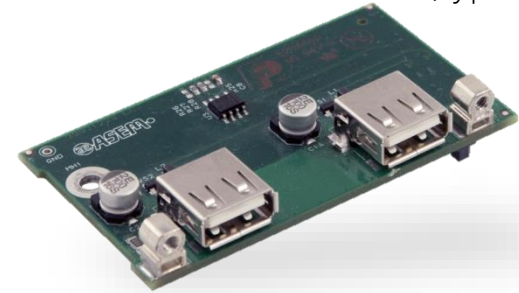
* max 5W

HT/PB3600 - Add-on interfaces Position A (optional)

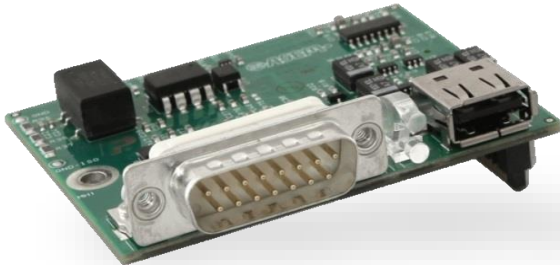
1 x RS232/422/485 (DB15M) + 1 x USB 2.0



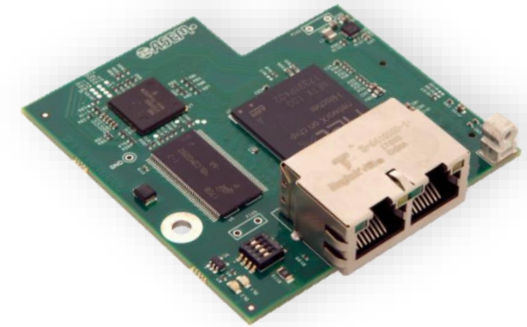
2 x USB 2.0 (Type A)



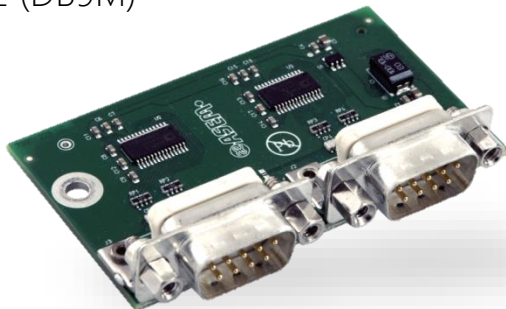
1 x RS232/422/485 optoisolated (DB15M) + 1 x USB 2.0



1 x NETcore X fieldbus

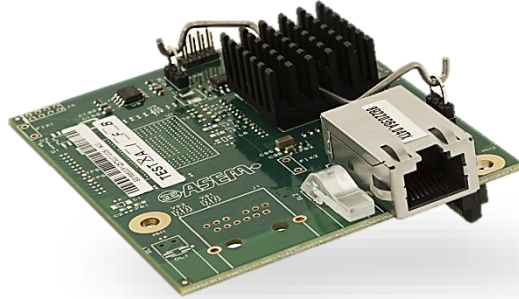


2 x RS232 (DB9M)

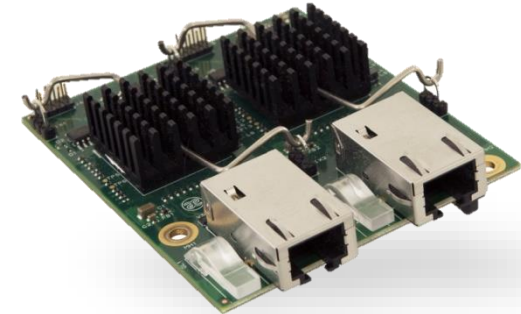


HT/PB3600 - Add-on interfaces Position B (optional)

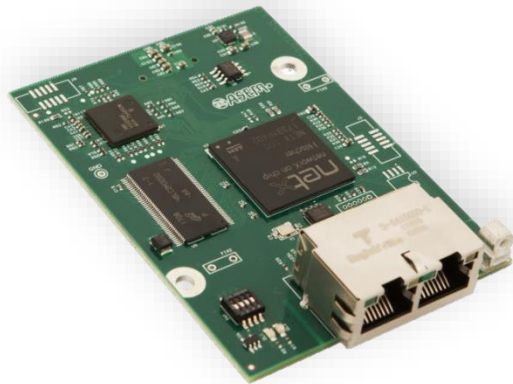
1 x RVL OUT (RJ45)



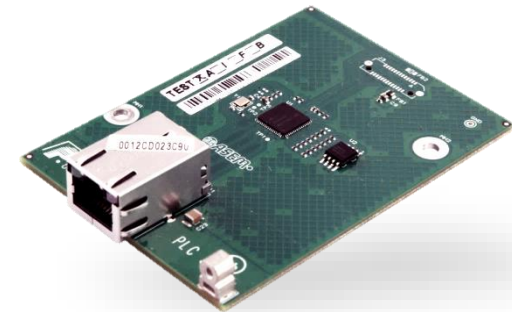
2 x RVL OUT (RJ45)



1 x NETcore X fieldbus



1 x 10/100/1000 Mbps Ethernet (RJ45)

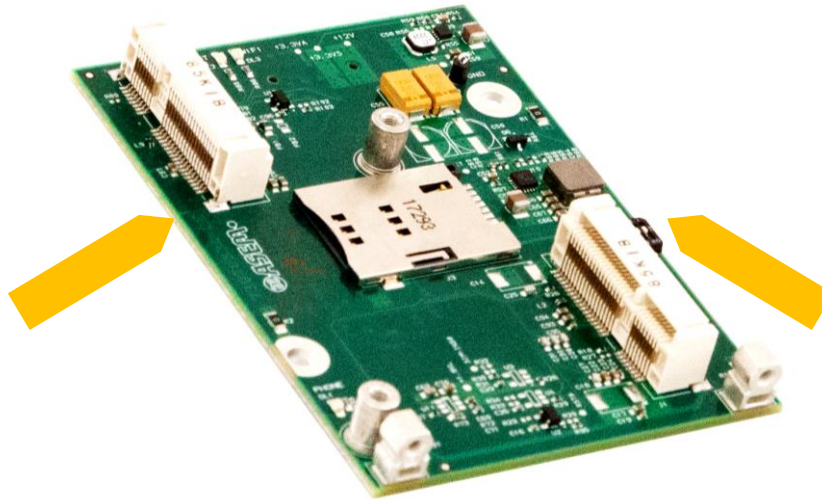


HT/PB3600 – Wireless communication modules (optional)

WiFi half MiniPCle module



Carrier board



Mobile network
2G/3G/4G modem
MiniPCle modules



		3G	4G/LTE	4G/LTE-AM
3G	Europe	✓	✓	-
	North/Latin America	✓	-	✓
	Asia	✓	✓	-
	Africa&Oceania	✓	✓	-
4G/LTE	Europe		✓	-
	North America		-	✓
	Latin America	n.a.	✓	✓
	Asia		✓	-
	Africa&Oceania		✓	-

HT/PB3600 - Long term availability



7/10 years

Product Availability

2017

6/12 months

End Of Life procedure

Support & Repairs

+ 5 years

ASEM S.p.A.
Via Buia 4
33011 Artegna (UD)
Italy
Tel. +39/0432-9671

industrialautomation@asem.it
www.asem.it

