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BoxPC Pro NPA-2009

Embedded Box PC with Intel Tiger Lake-U CPU and unique V-by-One / eDP / USB Docking Connector
for the direct connection of professional displays, USB Touch Controller and Webcam

PC-61-204, BoxPC Pro NPA-2009-1145G7E, 2x4GB, 128GB



Version 1.1

27.10.2022

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Revision History

Date	Rev.No.	Description	Page
26.10.2021	0.1	First draft	All
28.01.2022	1.0	First Version	All
27.10.2022	1.1	Update pictures, pinning	All

1 Description

This Embedded Box PC is specifically developed for industrial and low-cost applications and is designed for 24/7 operation. The 11th generation Intel® Tiger Lake-U UP3 Low Power Series processor is long-term available and designed for industrial applications. The Box PC is equipped with an Intel® i5-1145G7E. Optionally, a small MOQ required, the Box PC can be equipped with the Intel® i7-1185G7E, i3-1115G4E or Celeron® 6305E embedded processors.

The Box PC can be used as a **stand-alone** Boc PC solution or as a solution with used **docking connector**.

As I/O interface the SBC has a unique **docking connector** with **V-by-One, eDP** and USB. This allows the external connection of V-by-One or eDP displays. The docking connector supports USB signals, which makes it possible to connect other devices such as touch and/or webcam via the connector. Additionally, the Box PC could be powered via the docking connectors.

The Box PC comes with a variety of other interfaces, such as 2x Gigabit Ethernet, 3x M.2 socket, Audio, 3x USB 3.2, USB-C Alt mode, 2x USB 2.0, 1x RS232/422/485, 1x RS232. In addition to V-by-One and eDP docking connections, two DisplayPort connections (once via the USB-C) are available as graphics interfaces.

2 Features

- 11th Gen. Intel® Tiger Lake Core™ i5-1145G7E embedded processor
Optional Intel® i7-1185G7E, i3-1115G4E or Celeron® 6305E
- Unique docking connector (**V-by-One, eDP**, USB and power delivery for box pc)
- 2x DisplayPort (1x USB-C Alt mode)
- 2x Intel® Gigabit Ethernet
- 1x RS232/422/485, 1x RS232
- 24V DC-in* (external or via docking connector)

3 Specification

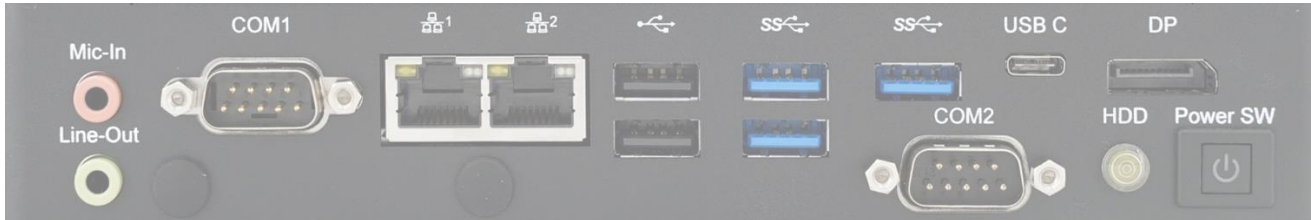
Processor	CPU	11th Gen. Intel® Core™ i5-1145G7E Optional: i7-1185G7E, i3-1115G4E or 6305E	
	Chipset	PCH integrated in 11 th Gen. processor	
	Frequency	1.5 GHz (i5-1145G7E), up to 4.1 GHz	
	Cores / Threads	4 / 8	
	Technology	vPro™ (i5,i7), iAMT 11.0	
	Embedded Version	Yes	
Memory	Max. capacity	64GB	
	Technology	DDR4-3200	
	Socket	2x SO-DIMM (1.2V)	
Graphics	Processor Graphics	Intel® Gen12 Graphics	
	DisplayPort	2x (1x USB-C Alt Mode)	
	V-by-one	Supports up to 4K@60Hz	
	eDP	1/2/4 Lanes up to 2K/4K/UHD	
Ethernet	LAN 1	Intel® 10/100/1000	
	LAN 2	Intel® 10/100/1000	
Storage/ Extension	M.2	1x M.2 2280 Key M (PCIe x4/SATAIII) 1x M.2 2230 Key E for Wifi/BT 1x M.2 2242/3042/3052 Key B for 4G LTE/5G	
	Rear I/O	USB	3x USB 3.2 Gen1 1x USB-C (DP Alt mode) 2x USB 2.0
	Serial Port	1x RS232/422/RS485, 1x RS232	
	Ethernet	2x	
	DisplayPort	2x (1x see USB-C)	
	Audio	1x Line-Out, 1x Mic-in	
	Front I/O	Docking Connector	V-by-One
eDP			eDP with Backlight Power
USB			4x USB 2.0 (2x on eDP and 2x on V-by-One Docking Con.)
DC in*			24V (power supply for box pc)
USB		2x USB 2.0 (only available if no Docking Board is connected)	
Right I/O	Power Supply	24V DC-in* (+/- 10%)	
Other	TPM	2.0	
	Watchdog Timer	Yes	
	Audio	ALC888s	
General	Operating Temperature	0°...+45°C	
	Storage Temperature	-20...+70°C	
	Operating humidity	0%...90% Relative Humidity, non-condensing	
	Storage humidity	5%...95% Relative Humidity, non-condensing	
	Dimensions	206 x 149 x 57 mm	
	Power consumption	tbd.	
	Weight	2,2kg	
	Certifications	CE, FCC	
Operating System	Windows 10, Ubuntu Linux		

Ordering Information

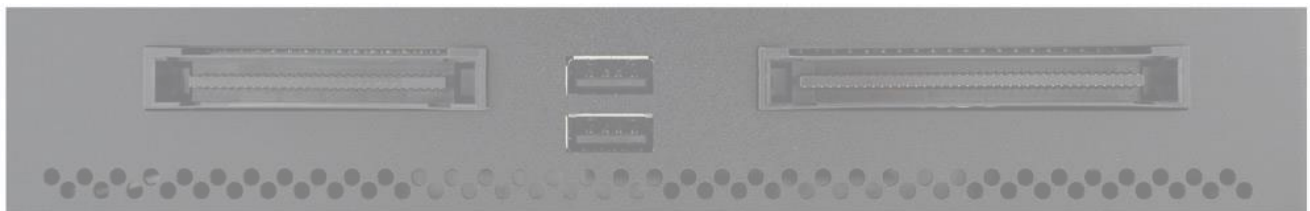
Order Nr.	Description
PC-61-204	Box PC Pro NPA-2009 with 11th Gen Tiger Lake-U Series i5-1145G7E, V-by-One and eDP via Docking Connector, 2x4GB Memory, 128GB TLC SSD
PC-61-205	Docking Board for NPA-2009

*Note that only one DC input may be connected to a power supply.

4 Connectors / Interfaces



Audio In/Out COM 2x GbE 2x USB2.0/3x USB3.0 COM USB-C DP



eDP

2x USB2.0

V-by-ONE

5 Operating System – Windows 10 IoT Enterprise

The Box PC comes optional with pre-installed "ready-to-use" Windows 10 IoT Enterprise 2021 LTSC Standard Image for worldwide use.



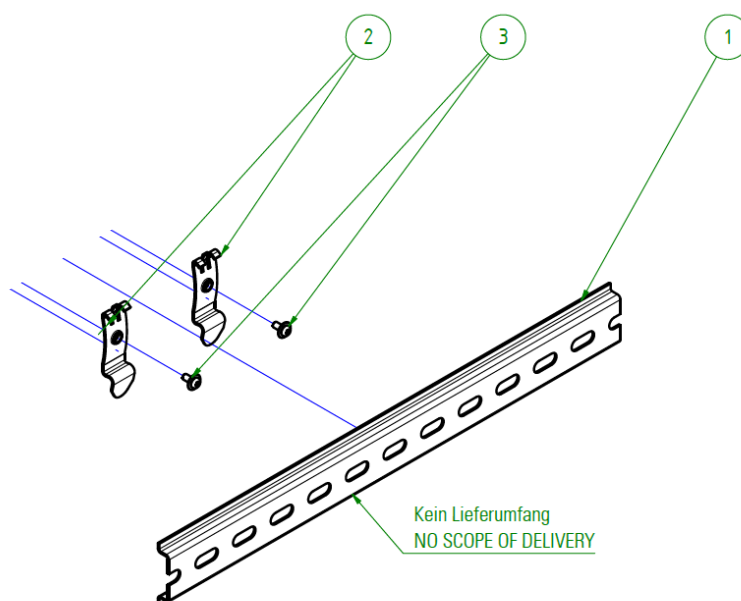
6 Docking Board

With the Docking Connector the internally used V-by-One, eDP signal or additional USB 2.0 can be easily routed to the outside and power the box PC. With this unique standard feature it is very easy to extend or add an external V-by-One or eDP TFT display to the PC and add e.g. Webcam / PCAP Touch etc..



Note: Maximum cable length for eDP Cable from docking Board to TFT-Display should be 38cm.

7 DIN Rail Mounting Kit (KI-90-033)



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