

# Datasheet

## FORTEC Integrated

### BoxPC Pro NPA-2009

Embedded Box PC with Intel Tiger Lake and V-by-One / eDP / USB for the direct connection of professional displays.



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INTEGRATED



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UNITED KINGDOM



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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
20.09.2024	1.2	Update PN, Accessories and mechanical design; Update Design	All

## 1 Description

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

The Box PC is equipped with a **docking connector** featuring **V-by-One, eDP** and USB. This allows an external connection to a display. The docking connector offers an USB signal, supporting additional functionalities such as touch and/or webcam. The Box PC can be powered using the docking connector, there is no need for a second external power source.

The Box PC comes with a variety of interfaces, such as 2x Gigabit Ethernet, 3x M.2 sockets, Audio, 3x USB 3.2, USB-C Alt mode, 2x USB 2.0, 1x RS232/422/485 and 1x RS232. Displays can be connected by V-by-One, eDP or 2x DisplayPort.

## 2 Features

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

### 3 Specification

<b>Processor</b>	CPU	11th Gen. Intel® Core™ i5-1145G7E Optional: i7-1185G7E, i3-1115G4E or 6305E	
	Chipset	PCH integrated in 11 <sup>th</sup> 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	
<b>Memory</b>	Max. capacity	64GB	
	Technology	DDR4-3200	
	Socket	2x SO-DIMM (1.2V)	
<b>Graphics</b>	Processor Graphics	Intel® Gen12 Graphics	
	DisplayPort	2x	
	V-by-one	Supports up to 4K@60Hz	
	eDP	1/2/4 Lanes up to 2K/4K/UHD	
<b>Storage/ Extension</b>	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	
<b>Rear I/O</b>	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 Intel® 10/100/1000	
	DisplayPort	1x	
	Audio	1x Line-Out, 1x Mic-in	
<b>Front I/O</b>	<b>Docking Connector</b>	V-by-One	V-by-One with Backlight Power
		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)	
<b>Right I/O</b>	Power Supply	24V DC-in* (+/- 10%)	
<b>Other</b>	TPM	2.0	
	Watchdog Timer	Yes	
	Audio	ALC888s	
<b>General</b>	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 IoT, Windows 11 IoT, Ubuntu Linux	

## 4 Ordering Information

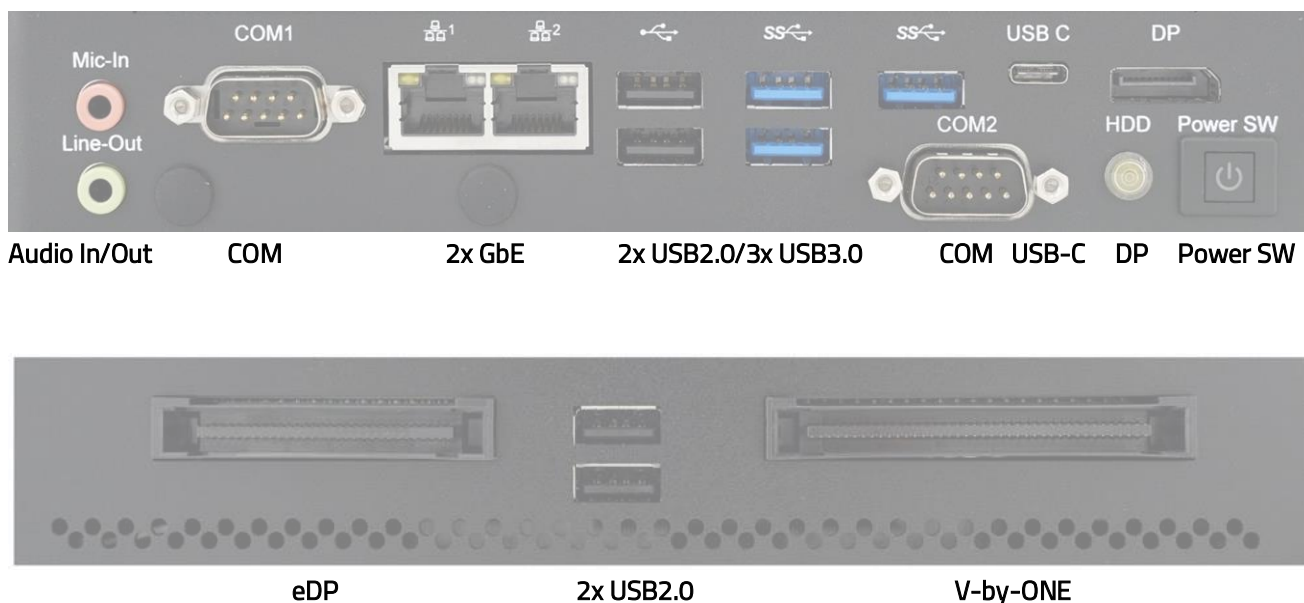
Order Nr.	Description
PC-61-204	<b>BoxPC Pro NPA-2009-1145G7E</b> , with 11th Gen Tiger Lake-U Series i5-1145G7E, V-by-One and eDP via Docking Connector, 2x4GB Memory, 128GB TLC SSD
KI-60-275	<b>BoxPC Pro NPA-2009-i5-8GB/128GB-WIN10IoT</b> , with 11th Gen Tiger Lake-U Series i5-1145G7E, V-by-One and eDP via Docking Connector, <b>2x4GB</b> Memory, <b>128GB</b> TLC SSD, <b>Windows 10 IoT Enterprise LTSC 2021</b>
PC-61-476 - on request	BoxPC Pro NPA-2009- <b>1115G4E</b> , 2x4GB, 128GB
PC-61-475 - on request	BoxPC Pro NPA-2009- <b>6305E</b> , 2x4GB, 128GB

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

## 5 Accessories

ZU-02-516	<b>V-by-One</b> Docking Board IF449 for BoxPC Pro NPA-2009
PC-61-205 - MOQ	<b>V-by-One</b> and <b>eDP Docking</b> Board for BoxPC Pro NPA-2009
NT-01-059	AC Power Supply 24V 3A (for NPA-1904/2009) - Only to power Box PC
KA-31-283	Adapter Cable DC Jack to Box PC (Mandatory if you buy AC Power Supply)
DB-07-225	-> Power Cord (EU-C13) IEC 3x0,75 black 1,8m
DB-07-226	-> Power Cord (UK-C13) 5A CPC PL13305 IEC
DB-07-238	-> Power Cord (US-C13) IEC black 1,8m/6 feet

## 6 Connectors / Interfaces

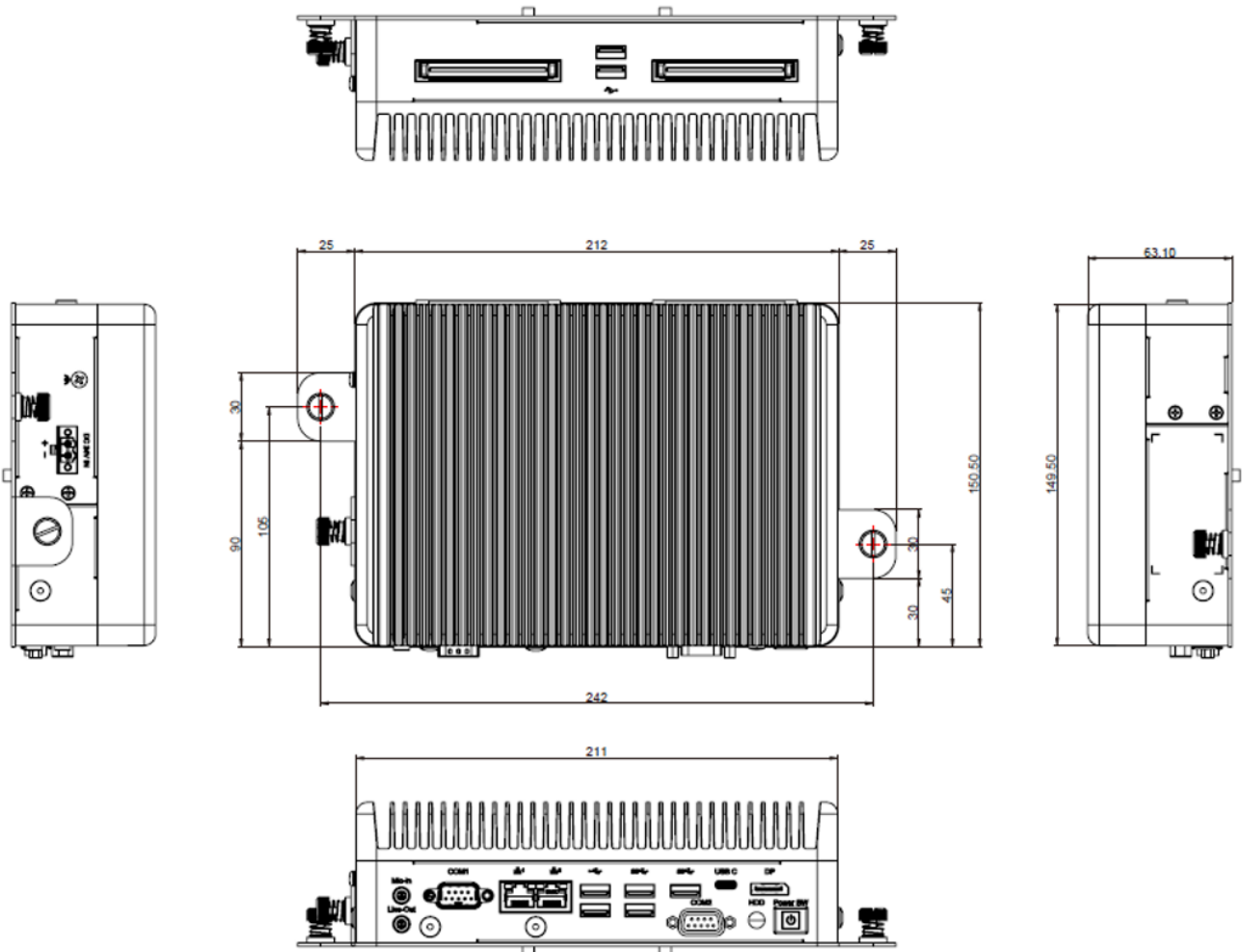


## 7 Operating System – Windows 10/11 IoT Enterprise

The Box PC can be pre-installed with **Windows 10 IoT Enterprise 2021 LTSC** or **Windows 11 IoT Enterprise 2024 LTSC** Standard Image for worldwide use.

# Microsoft Windows Embedded

## 8 Mechanical Dimensions



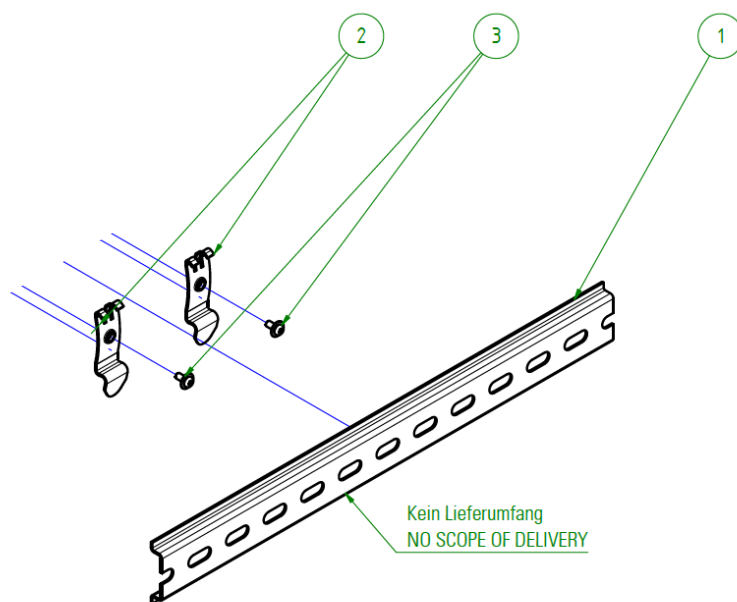
## 9 Docking Board

Docking Board featuring V-by-One, eDP and USB 2.0. This Board easily allows to extend or add an external V-by-One, eDP TFT display, Webcam, PCAP Touch, or others to the PC.



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

## 10 DIN Rail Mounting Kit (KI-90-033)



Our company network supports you worldwide with offices in Germany, Austria, Switzerland, the UK and the USA.  
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