

## APPLICATIONS

The **EM BOX® PC NUCD** is a german engineered and produced high quality BoxPC System. Designed as a flexible energy efficient system with an excellent performance-per-watt ratio, it is optimized for:

- \_ Rugged Industrial Systems
- \_ Real-Time Sensor Processing
- \_ Robotics
- \_ Healthcare
- \_ Factory Automation
- \_ Data Acquisition and Measurement
- \_ Machine Vision
- \_ Human-Machine Interfaces
- \_ Public Terminals
- \_ Vending Machines



HIGH QUALITY  
  
MADE IN GERMANY

**AMD**  
**RYZEN**  
Embedded

 10 years availability  
according to CPU  
manufacturers  
specification

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

Specification	
CPU / GPU	AMD Ryzen™ Embedded R2000 series, max. 35 W supported   AMD Radeon™ Graphics
BIOS	UEFI
Max. memory	Up to 2x 32 GB dual channel up to DDR4 3200 SO-DIMM memory (R2312 DDR4 2400 SO-DIMM) with ECC support
Ethernet ports	2x Intel® I225-LM with 2,5 Gbit/s with IEEE1588, TSN-support, Wake-On-Lan supported by one port
SD-card	1x microSD XC Card Slot, supports A1 Application Performance Class, UHS-Class 1
M.2 socket	1x Key M, 2242, PCIe Gen3 x1 NVMe or SATA 1x Key B, 3042, PCIe Gen3 x1 / USB 2.0, e.g. WWAN with micro SIM-Card socket 1x Key E, 2230, PCIe Gen3 x1 / USB 2.0, e.g. WLAN/Bluetooth
Display output	2x Mini Display Port, up to 4096 x 2160 @ 60 Hz
USB-A port	Front: 2x USB 3.2 Gen2 (10 Gb/s, OCP = 1500 mA each)   Rear: 1x USB 3.2 Gen2 (10 Gb/s, OCP = 1500 mA)
Serial port	Optional 1 x RS-232/485 (HDX/FDX) on D-Sub DE-9   Optional 1 x RS-232 on D-Sub DE-9
fTPM / TPM	AMD firmware Trusted Platform Module   TPM 2.0 support (Infineon SLB 9670) (R2312 variants OEM only)
Status / control LEDs	Power and status LEDs
Hardware monitoring and management	Controllable FAN (PWM and Tacho); Temperature Sensor, Power Supply Voltage Monitoring, Watchdog
Power Connector	Nexus Series 2300, 3.00 mm Micro MF connector with lock
Power supply	Min. 8 V / max. 32 V (DC) / max. 5A, automotive grade   KL15 (ignition), min. 60 W / recommended 90 W, fused to: 8 A
Operating temperature	0 °C to +50 °C ambient commercial grade, adequate cooling provided, depending on variant and cooling system, CPU throttling may occur at higher ambient temperatures
Storage temperature	-40 °C to +85 °C; non-condensing
Max. relative humidity	95% @ 40 °C, non-condensing while stored   89% while working
Cooling	CPU fan, 5 V / 12 V (depends on variant)   Optional SSD fan, 5 V / 12 V (depends on variant)
Housing	Sturdy metal case
Mounting	Stand alone   optional VESA   optional hat rail
Size approx.	117 x 115 x 51 mm
Weight approx.	700 g + options
OS support	Microsoft® Windows® 11   Microsoft® Windows® 10 & 10 IoT Enterprise   Linux Ubuntu 22.04 LTS

Supported CPU types (Operating temperature 0 °C to +60 °C)
R2312 2C   4T   2.7 GHz - 3.5 GHz   12 W - 25W
R2314 4C   4T   2.1 GHz - 3.5 GHz   12 W - 35W
R2514 4C   8T   2.1 GHz - 3.7 GHz   12 W - 35 W
R2544 4C   8T   3.35 GHz - 3.7 GHz   35 W - 54* W

\*Max. 35 W TDP supported

OCP = Overcurrent Protection

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LIFE SUPPORT APPLICATIONS

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