

# ABOX-5210G6-M12X

Taiwan Patent No. M447854, M565941, M592609

Edge AI Inference Rugged System for Rolling stock and Intelligent Transportation System solutions

## Features

- Intel® GEN 10th 10 Cores Xeon® W-1290TE / i9-10900TE
- NVIDIA® Quadro® RTX 3000 GPU
- Supports 1920 CUDA Cores and 240 Tensor Cores
- 8 x DI, and 4 x DO and 3 x RS-232/422/485
- 1 x M.2 B key, 1 x M.2 A-E key & 3 x MiniPCIe expansion slots
- Dual Hot Swappable SATA Storage RAID 0,1,5
- 9-48V DC Input and Operating Temp.: -40~60°C
- 2 x RJ45 Ports and 8 x M12 X Coded Connectors for GbE (Optional 8 x PoE)
- Rolling Stock EN 50155 and EN 50121-3-2 certified



## Introduction

The ABOX-5210G6-M12X is powered by Intel® Gen 10th 10 Cores Xeon®, i9 CPU with 10 x GbE and NVIDIA® Quadro® RTX 3000 GPU AI GPU Computing. Designed for railway and in-vehicle applications, it includes 8 x M12 X Coded GbE and is Rolling Stock EN 50155 and EN 50121-3-2 certified. Features 1920 CUDA Cores, a superior GPU specification in the fanless computer realm and 240 Tensor Cores to accelerate deep learning processes. It is equipped with dual hot swappable SATA Storage RAID 0,1 and 5, 9-48V DC input and can resist operating temperatures from -40 to 60°C. Longevity support from NVIDIA® is included.

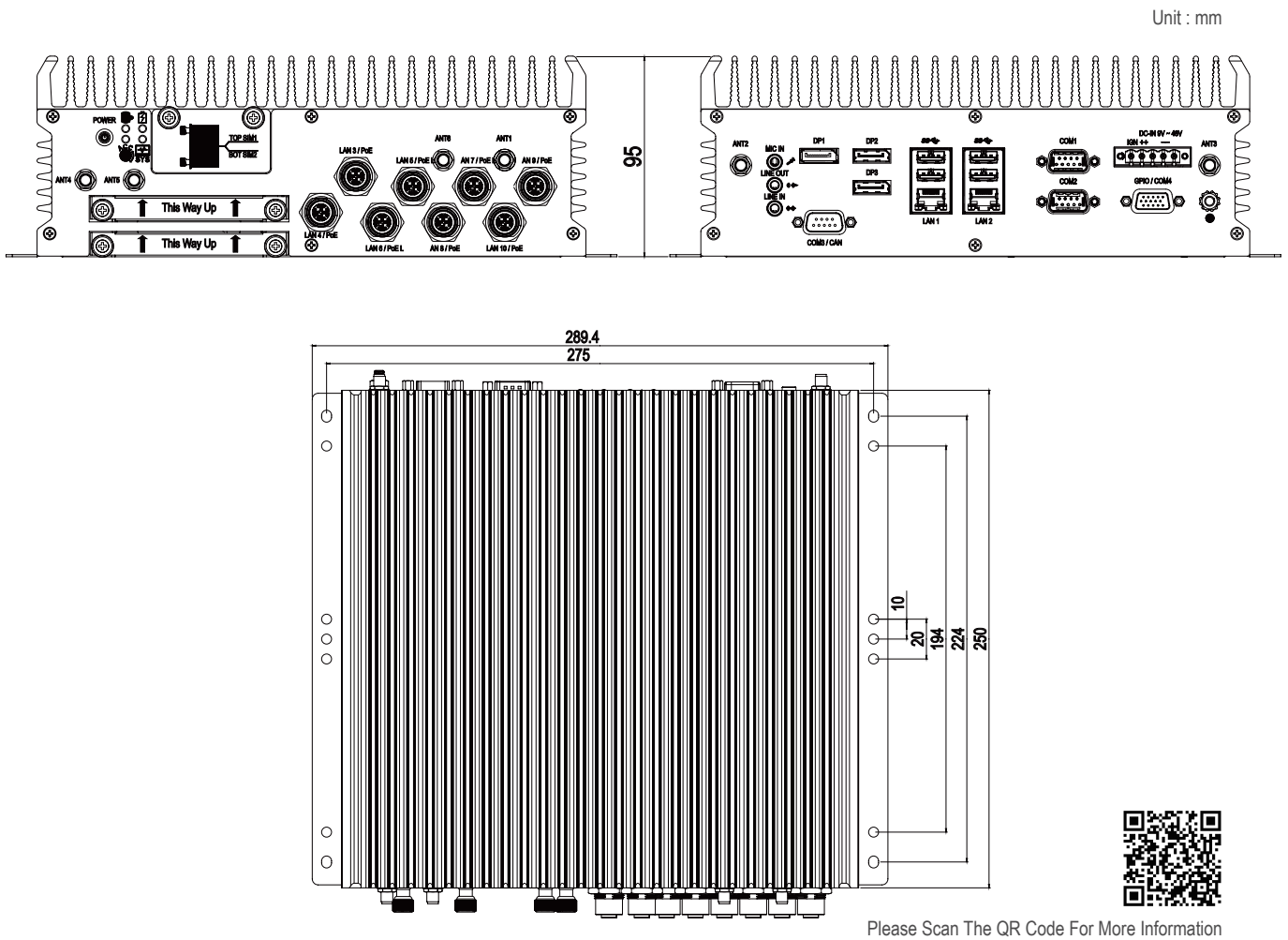
## Specifications

System	
CPU	Intel® Gen10 Xeon® W-1290TE (20M Cache 1.8GHz up to 4.6GHz)* Intel® Gen10 Core™ i9-10900TE (20M Cache 1.8GHz up to 4.5GHz) Intel® Gen10 Core™ i7-10700TE (16M Cache 2.0GHz up to 4.4GHz) Intel® Gen10 Core™ i5-10500TE (12M Cache 2.3GHz up to 3.7GHz) Intel® Gen10 Core™ i3-10100TE (6M Cache 2.3GHz up to 3.6GHz) Intel® Gen10 Core™ G5900TE (4M Cache 3.0GHz) <b>* Use only with Intel® W480E</b>
Chipset	Q470E / W480E
Memory	2 x DDR4 2666/2933 MHz SO-DIMM up to 64GB (Optional ECC support with Xeon® W-1290TE)
LAN Chipset	9 x Intel® i210-AT and 1 x i219LM (support iAMT) Gb/s Ethernet Controllers Onboard Support PXE and WOL
Watchdog	1 ~ 255 Level Reset
TPM	2.0
I/O	
Serial Port	3 x RS 232/422/485 (option additional 1 x RS 232/422/485)
USB Port	4 x USB 3.2 Gen 1x1 Ports
LAN	2 x RJ45 Ports and 8 x M12 X coded connectors for GbE (Optional with 8 x PoE total Max.120W)
Video Port	3 x DP, 2 x HDMI Ports from Quadro® RTX 3000 GPU
DIO Port	8 x DI (5~48VDC) and 4 x DO (5VDC, 100mA)
Audio	1 x Line-out, 1 x Line-in and 1 x Mic-in
Expansion Bus	2 x Full Mini-PCIe Slots, 1 x Mini-PCIe w/ USB interface only for WWAN sharing 2 x SIM Card Sockets with M.2 B Key 3042 slot 1x M.2 A-E Key 2230 slot, 1 x M.2 B Key 3042 slot w/ 2 x SIM Card Sockets for WWAN <b>Patent No. : M592609 - Automatic SIM Card Detection</b>
Storage	
Type	2 x 2.5" Drive Bay for SATA Type HDD/SSD RAID 0, 1, 5 1 x M.2 M key 2280 slot supports NVMe and SATA SSD * Thermal heatsink is required for M.2 storage. Please contact sales window for more information.

Graphics	
CPU Built-in Graphics	Intel® UHD Graphics 630 Max Resolution (DP1.2) : 4096x2304@60Hz
MXM Graphics	NVIDIA® Quadro® RTX 3000 GPU (1920 CUDA Cores & 240 Tensor Cores) w/6GB GDDR6 Max Resolution : 1920 x 1080 @ 60Hz w/o HDMI Audio
Environmental	
Operating Temp.	-40°C ~ 60°C w/0.6 m/S airflow <b>Patent No. : M565941 - Thermal Cooling</b>
Storage Temp.	-40°C ~ 80°C
Relative Humidity	10% RH – 90% RH (non-condensing)
Vibration (with SSD)	IEC60068-2-64, random, 2.5G@5~500Hz, 1hr/axis MIL-STD-810G, Method 514.6, Procedure I, Cat.4, Operating
Shock	Operating: MIL-STD-810G, Method 516.6, Procedure I, Trucks and semi-trailers=15G (11ms) with SSD
Certifications	CE, FCC Class A, E13, EN50155
Power Requirement	
Power Input	9V - 48V DC Power Input
Power Protection	Automatics Recovery Short Circuit Protection
Power Mgmt.	Vehicle Power Ignition for Variety Vehicle
Power Off Control	Power off Delay Time Setting by BIOS and Software
Battery Backup (Option)	Internal Battery Kit for 10 Mins Operating (P/N: BAT-5200 kit, Operating Temp. -20 ~ 60°C) * UPS backup time varies depending on actual overall system power consumption. <b>Patent No. : M447854 - Build-in Battery</b>
Mechanical	
Construction	Aluminum Alloy
Mounting	Wall-mount
Weight	5300g (Barebone)
Dimensions	260(L) x 250(W) x 95(H) mm

All specifications are subject to change without notice.

## Dimensions



## Ordering Information

Part Number	ABOX-5210xyy-M12X-zz (x= P= w/PoE, x= Empty= w/o PoE, yy=G6=RTX 3000, yy=G4=GTX 1060, zz=Z9= W-1290TE, zz= i9= i9-10900TE, zz= i7= i7-10700TE, zz= i5= i5-10500TE, zz= i3= i3-10100TE, zz= C1= G5900TE)
Description	Intel® Gen 10th 10 Cores Xeon®, i9 CPU w/ 10 x GbE (2 x RJ45 and 8 x M12 X Coded Connectors)/ 3 x COM/ 3 x DP/ 2 x HDMI/ 4 x USB 3.2 Gen 1x1/ NVIDIA® Quadro® RTX 3000 GPU/ 9-48V Input AI GPU Computing
State of Origin	Made in Taiwan

## Optional Accessories

DRAM	DDR4-2933 MHz SO-DIMM, 4GB~32GB, 0~70°C/40~85°C
SSD	M.2 2280 B-M key NVMe TLC -40~85°C 64GB~1TB w/ Heatsink
	M.2 2280 B-M key SATA TLC -40~85°C 64GB~1TB w/ Heatsink
	2.5 inch SATA TLC -40~85°C 64GB~2TB
Wifi	WiFi M.2 2230 A-E key module
Modem	M.2 3042 B key LTE module
GPS	MiniPCIe GPS module
CANBUS	MiniPCIe CANBUS module
Battery backup kit	BAT-5200 Battery Kit, 5200m/h, -30~60°C, discharge -20~60°C, operating about 10 mins
Power adapter	AC/DC 220W/24V or 280W/24V power adapter