

Edge AI GPU Computing

# ABOX-5210G-M12X

Taiwan Patent No. M447854, M565941, M592609

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® GeForce GTX GPU/ 9-48V Input AI GPU Computing

## Features

- Intel GEN 10th 10 Cores Xeon W-1290TE / i9-10900TE
- NVIDIA® GeForce GTX GPU
- 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.: -40~70°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-5210(G)-M12X is powered by Intel GEN 10th 10 Cores Xeon W-1290TE / i9-10900TE AI GPU Computing. Specifically designed for railway rolling stock applications, it guarantees reliable performance, withstanding environmental disturbances such as severe shock and vibration in railway vehicle applications. ABOX-5210(G)-M12X features 8 x M12 X Coded Connectors for GbE and certified Rolling Stock EN50155 & EN 50121-3-2 that cater to rolling stock's application including traffic safety systems, passenger information systems, broadcasting systems as well as surveillance systems and more. Furthermore, with the new Intel Gen 10 Comet Lake and NVIDIA® GeForce GTX 1650 or GTX 1060 technology's outstanding performance, ABOX-5210(G)-M12X can effectively support smart public transit systems, offering solutions to enhance the operational efficiency of railways and railway station management.

## Specifications

| System                      |                                                                                                                                                                                                                  |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU                         | Intel Gen10 Xeon W-1290TE (20M Cache 2.0GHz up to 4.6GHz)*                                                                                                                                                       |
|                             | Intel Gen10 Core i9-10900TE (20M Cache 2.0GHz 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)                                                                                                                                                                       |
| * Use only with Intel W480E |                                                                                                                                                                                                                  |
| 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 (iAMT9.5 w/ i5, i7 only) 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 NVIDIA® GeForce GTX 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 |
|                             | Patent No. : M592609 - Automatic SIM Card Detection                                                                                                                                                              |

| Storage                 |                                                                                                                                                                                                                                      |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type                    | 2 x 2.5" Drive Bay for SATA Type HDD/SSD RAID 0, 1, 5<br>1 x M.2 M key 2280 slot supports NVMe and SATA SSD<br>* Thermal heatsink is required for M.2 storage. Please contact sales window for more information.                     |
| Graphics                |                                                                                                                                                                                                                                      |
| CPU Built-in Graphics   | Intel® UHD Graphics 630<br>Max Resolution (DP1.2) : 4096x2304@60Hz                                                                                                                                                                   |
| MXM Graphics            | NVIDIA® GeForce GTX 1060 GPU (1280 CUDA Cores) w/6GB GDDR5, Max Resolution (HDMI 2.0b) : 4096 x 2160 @ 60Hz<br>(Optional) NVIDIA® GeForce GTX 1650 GPU (896 CUDA Cores) w/4GB GDDR5, Max Resolution (HDMI 2.0b) : 4096 x 2160 @ 60Hz |
| Environmental           |                                                                                                                                                                                                                                      |
| Operating Temp.         | -40°C ~ 70°C w/0.6 m/s airflow<br>Patent No. : M565941 - Thermal Cooling                                                                                                                                                             |
| 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<br>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)<br>*UPS backup time varies depending on actual overall system power consumption.<br>Patent No. : M447854 - Build-in Battery               |

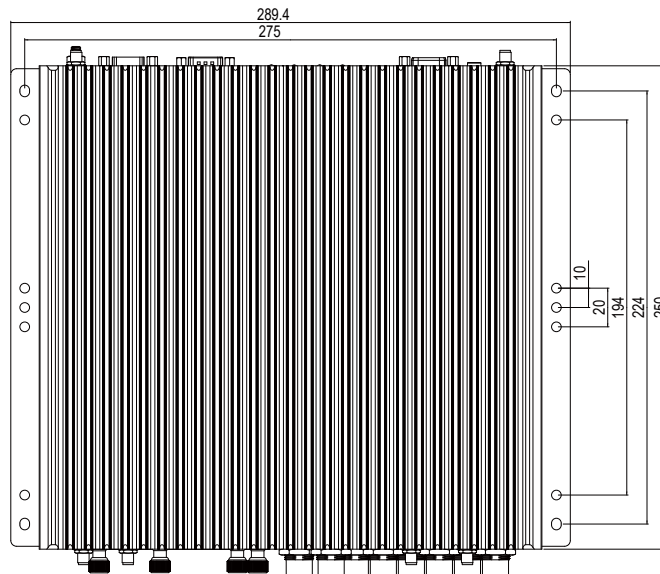
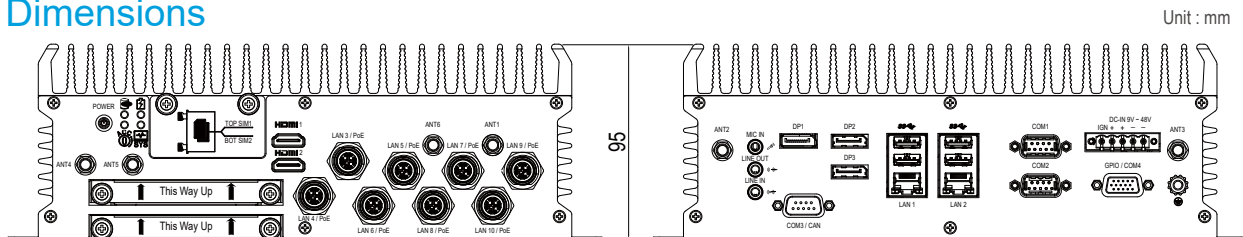
All specifications are subject to change without notice.

ABOX-5210G-M12X

## Specifications

| Mechanical   |                            |
|--------------|----------------------------|
| Construction | Aluminum Alloy             |
| Mounting     | Wall-mount                 |
| Weight       | 5300g (Barebone)           |
| Dimensions   | 260(L) x 250(W) x 95(H) mm |

## Dimensions



Please Scan The QR Code For More Information

## Ordering Information

|                 |                                                                                                                                                                                                         |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Part Number     | ABOX-5210xyy-M12X-zz (x= P= w/PoE, x= Empty= w/o PoE, yy=GB=GTX 1650, 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 1/ NVIDIA® GeForce GTX 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<br>M.2 2280 B-M key SATA TLC -40~85°C 64GB-1TB w/ Heatsink<br>2.5 inch SATA TLC -40~85°C 64GB-2TB |
| Wifi               | M.2 2230 A-E key 802.3 a/b/g/n/ac                                                                                                                         |
| 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                                                                                                                  |

All specifications are subject to change without notice.

## Assured Systems

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