

## Edge AI Computer

RV2-T2FM / X2FM

210 mm x 176 mm x 116 mm

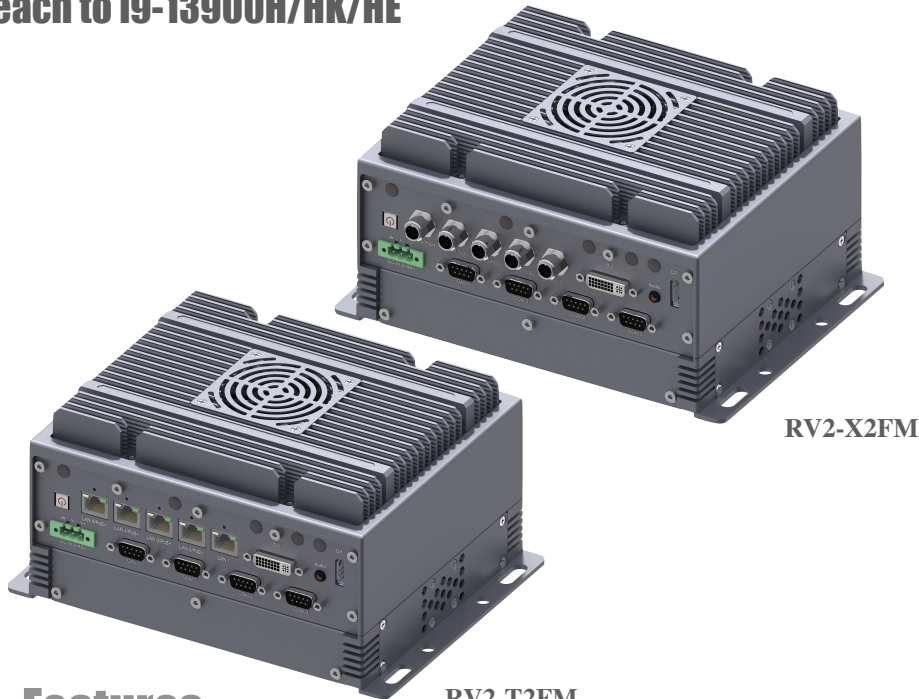
Reach I9

I9-13900H/HE/HK

MXM GPU



Reach to i9-13900H/HK/HE



RV2-X2FM

RV2-T2FM

## Features

- ✓ 5x LAN with 4x PoE+ support , RV2-X2FM with M12 connectors
- ✓ 2x Isolated CANBus
- ✓ 4x RS232/422/485, 2x RS232
- ✓ 6x USB ( 2x USB3.2 Gen2 , 1x USB3.0)
- ✓ 1x Mic In/Line Out
- ✓ 4 Channel isolated DI, 4 Channel isolated DO
- ✓ 2x Display (DP+DVI-D)
- ✓ 2x M.2 2280 SATAIII , support Raid 0/1
- ✓ 1x M.2 2242/3052 B key with SIM for 4G/5G/LTE
- ✓ 1x Full Size Mini-PCle with SIM for 4G/5G/LTE/WIFI
- ✓ 3x M.2 Key E Type 2230 for WIFI/BT/GPS
- ✓ Optional for 2x M.2 Key M Type 2280 ( PCIE x4 GEN4 ) especially for AI Card or NVME SSD
- ✓ Wide voltage 6~48V DC input,
- ✓ 1x DC Output Voltage 12V
- ✓ Ignition /remote power control

## SPECIFICATION

|                    |                                                                                                                                                                                                                                                                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name       | RugCon Series , RV2-T2FM ( RJ45 LAN ) / RV2-X2FM (M12 )                                                                                                                                                                                                                                                                                     |
| Generation         | Intel® 13th/ 12th-Gen Core™ i9 / i7 /i5 ( H_45W )                                                                                                                                                                                                                                                                                           |
| Memory             | Max. Capacity : 64GB DDR5 with 2x SO-DIMM                                                                                                                                                                                                                                                                                                   |
| Display            | 2x Display : 1x Display Port (4096*2304@60Hz) , 1x DVI (1920*1200@60Hz)                                                                                                                                                                                                                                                                     |
| LAN                | 1x 2.5 GbE with TSN support , 4x 2.5GbE , M12 X-coded connector for LAN Ports (RV2-X2FM)<br><a href="#">Optional for 4 PoE power supply , 802.11 af/at mode</a>                                                                                                                                                                             |
| CAN                | 2x CAN 2.0 (Isolation)                                                                                                                                                                                                                                                                                                                      |
| COM                | 1x Isolated RS232/422/485 ( COM5 ) , 3x RS232/422/485 (COM 1/4/6), 2x RS232 (COM 2/3)                                                                                                                                                                                                                                                       |
| USB                | 2x USB 3.2 Gen2 / 1x USB3.0 / 3x USB 2.0,                                                                                                                                                                                                                                                                                                   |
| Audio              | 1x 3.5mm jack for Mic-In and Line-out                                                                                                                                                                                                                                                                                                       |
| DIO                | 4 Channel isolated DI, 4 Channel isolated DO                                                                                                                                                                                                                                                                                                |
| Storage            | 2x M.2 2280 M key ( SATA III ) , support Raid 0/1                                                                                                                                                                                                                                                                                           |
| Internal Expansion | 1x M.2 2242/3052 B key with SIM slot supporting 4G/5G/LTE<br>1x Full Size Mini-PCle with SIM slot supporting 4G/5G/LTE<br>3x M.2 Key E Type 2230 for BT/GPS<br><a href="#">1x M.2 Key M Type 2280 ( PCIE x4 GEN4 ) when using H series CPU, for NVME SSD or M.2 Card</a>                                                                    |
| MXM Expansion      | Support TYPE A : 82 x 70 mm , TYPE B : 82 x 105 mm MXM GPU Module                                                                                                                                                                                                                                                                           |
| Mechanical         | Dimension : 210.6 (W) x 176 (D) x 116 (H), Weight : 2.9 Kg , Mounting : Wall Mount                                                                                                                                                                                                                                                          |
| Temperature        | Operating :Standard : -25° C~70 °C , Extended Option : -40° C~85 °C<br>Storage Temperature : -40°C to 85°C                                                                                                                                                                                                                                  |
| Humidity           | 10% to 90% , non-condensing                                                                                                                                                                                                                                                                                                                 |
| Power              | 1x 3-pin pluggable terminal block for 6~48V DC Input<br><a href="#">200V/1ms Surge Protection, Reverse-Voltage, Over-Voltage, Under-Voltage, Over-Current Protection</a><br>1x Power Button<br>1x 4-pin pluggable terminal block for <a href="#">Ignition/Remote</a><br>1x 2-pin pluggable terminal block for <a href="#">12V DC output</a> |
| Vibration / Shock  | Vibration test according to MIL-STD-810H, Method 514.8, Category 4<br>Shock test according to MIL-STD-810H, Method 516.8, Procedure I                                                                                                                                                                                                       |
| EMC                | CE/FCC Class A , according to EN 55032 & EN 55035, E-Mark / EN50155 / EN45545-2 by request                                                                                                                                                                                                                                                  |



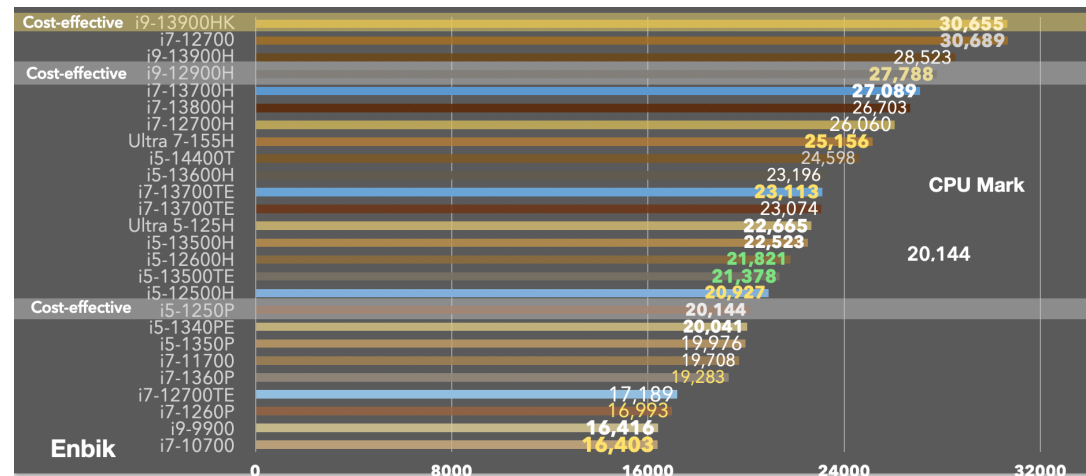
**RugCon RV2-T2FM**  
210 mm x 176 mm x 116 mm

**TYPEA / TYPEB**

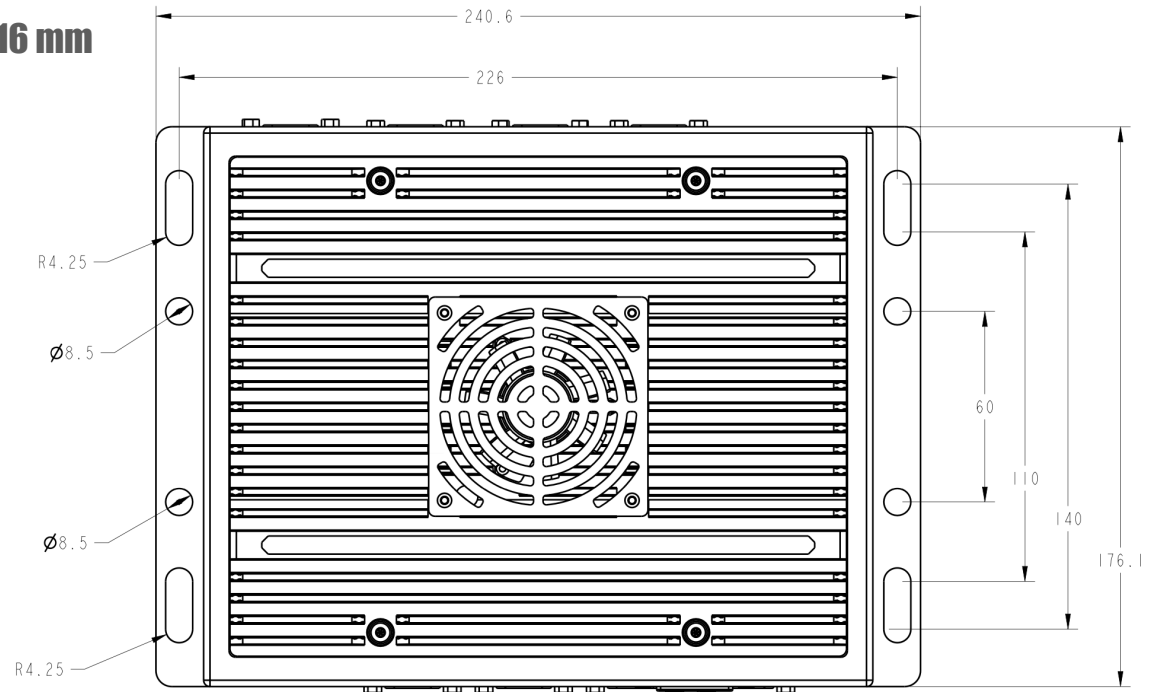
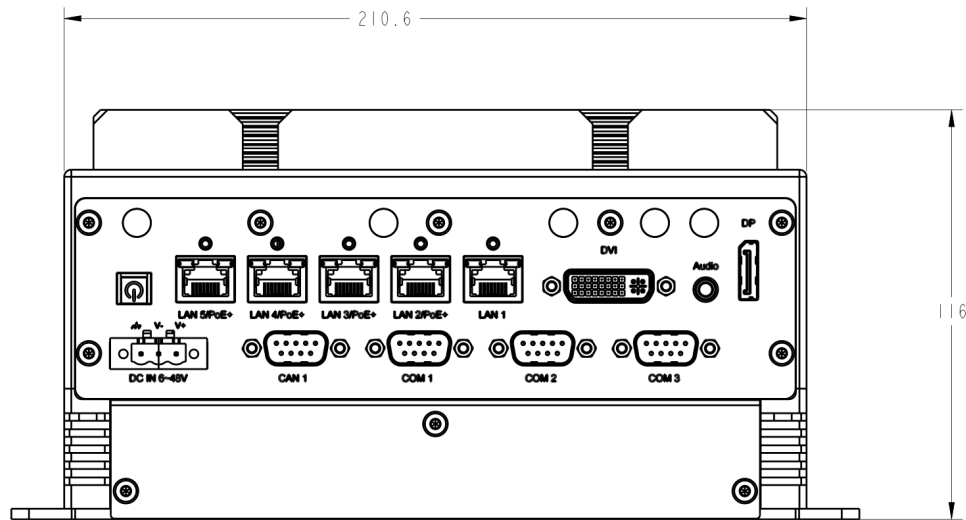
**AI Edge AI Computing BOX MXM GPU**

- 1. Intel® Core I 12th/13th**  
i9 / i7 / i5 (45W), Ultra 9 (45W)
- 2. 5 RJ45 LAN**  
1x 2.5 GbE with TSN support, 4x 2.5 GbE  
Optional 4 Power Over Ethernet Supply, 802.11 af/at mode
- 3. 2x M2. 2280 SSD**  
M.2 2280 M key, SATA III, Raid 0/1 protection
- 4. M.2 Expansion for 5G/4G/LTE/WIFI / GPS**  
1x M.2 2242/3052 B key with SIM slot supporting 4G/5G/LTE  
1x Full Size Mini-PCle with SIM slot supporting 4G/5G/LTE  
3x M.2 Key E Type 2230 for BT/GPS
- 5. Power Module 180W or 300W**  
6~48V DC INPUT & 12V DC OUTPUT  
Ignition & Remote Power Control  
Surge Protection, Reverse-Voltage, Over-Voltage, Under-Voltage, Over-Current Protection
- 6. 2 Display**  
1x DVI (1920\*1200@60Hz),  
1x DP (4096\*2304@60Hz)
- 7. 6 USB**  
2x USB 3.2 Gen2 / 1x USB3.0 /  
3x USB 2.0,
- 8. 6 COM**  
4x RS232/422/485, 2x RS232
- 9. 2x CAN 2.0 ( Isolation )**
- 10. 4x DI & 4x DO ( Isolation )**
- 11. 1x M.2 2280 ( PCIE x4 ) for AI Accelerating card or NVME SSD**  
Supported by equipped with H series CPU
- 12. M12 X-code Connectors for LAN Ports**  
**RugCon RV2-X2FM**

## Performance



**Dimension : Compact Size : 210 mm x 176 mm x 116 mm**



## CPU Support :

### Intel 12th CPU Support List

12th Gen Intel® Core™ mobile processors (formerly Alder Lake-P)

| CPU Module       | Description                                                                                                                                                                                             |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>i9-12900H</b> | Intel® Core™ i9-12900H processor with 6 P-cores and 8 E-cores up to 5.0GHz   24MB Intel® Smart Cache   Intel® Iris® Xe Graphics architecture with 96 EUs   Intel® code name Alder Lake-P (H-Series,45W) |
| <b>i7-12700H</b> | Intel® Core™ i7-12700H processor with 6 P-cores and 8 E-cores up to 4.7GHz   24MB Intel® Smart Cache   Intel® Iris® Xe Graphics architecture with 96 EUs   Intel® code name Alder Lake-P (H-Series,45W) |
| <b>i5-12600H</b> | Intel® Core™ i5-12600H processor with 4 P-cores and 8 E-cores up to 4.5GHz   18MB Intel® Smart Cache   Intel® Iris® Xe Graphics architecture with 80 EUs   Intel® code name Alder Lake-P (H-Series,45W) |

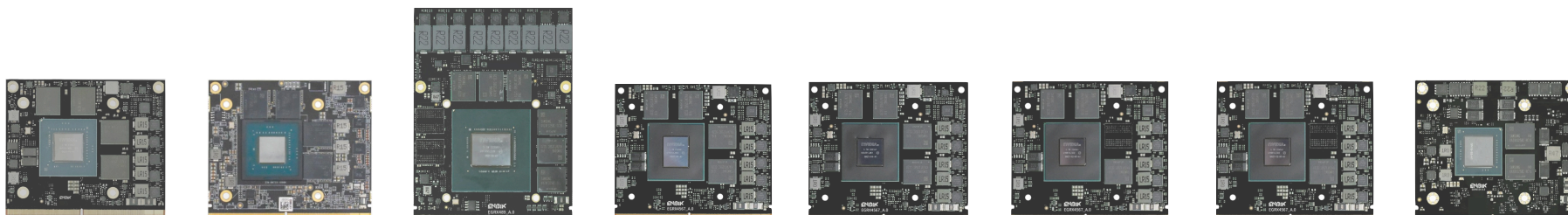
### Intel 13th CPU Support List

13th Gen Intel® Core™ mobile processors (formerly Raptor Lake-P)

| CPU Module        | Description                                                                                                                                                                                               |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>i9-13900HK</b> | Intel® Core™ i9-13900HK processor with 6 P-cores and 8 E-cores up to 5.4GHz   24MB Intel® Smart Cache   Intel® Iris® Xe Graphics architecture with 96 EUs   Intel® code name Raptor Lake-P (H-Series,45W) |
| <b>i7-13800H</b>  | Intel® Core™ i7-13800H processor with 6 P-cores and 8 E-cores up to 5.2GHz   24MB Intel® Smart Cache   Intel® Iris® Xe Graphics architecture with 96 EUs   Intel® code name Raptor Lake-P (H-Series,45W)  |
| <b>i5-13600H</b>  | Intel® Core™ i5-13600H processor with 4 P-cores and 8 E-cores up to 4.8GHz   18MB Intel® Smart Cache   Intel® Iris® Xe Graphics architecture with 80 EUs   Intel® code name Raptor Lake-P (H-Series,45W)  |

**Note : We also supply embedded CPU version , so if you need HE(45W) CPU , please contact our sales channel .**

## Select the artificial intelligence capability to be installed



| Product Name     | EGMA2008P50                   | EGMR2008P56                   | EGRX4812P80                   | EGRX4708P65                   | EGRX4608P60                    | EGRX4506P65                    | EGRX4506P35                    | EGMX554P35                     |
|------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| AI Chip          | A2000-8G                      | RTX2000-8G                    | RTX4080-12G                   | RTX4070-8G                    | RTX4060-8G                     | RTX4050-6G                     | RTX4050-6G                     | MX550-4G                       |
| Generation       | Ampere                        | Ada Generation                | Ada Generation                | Ada Generation                | Ada Generation                 | Ada Generation                 | Ada Generation                 | Turing                         |
| Chip Clock       | <b>1087MHz(Boost 1552MHz)</b> | <b>1635MHz(Boost 2115MHz)</b> | <b>795MHz (Boost 1350MHz)</b> | <b>735MHz (Boost 1230MHz)</b> | <b>1140MHz (Boost 1470MHz)</b> | <b>1140MHz (Boost 1605MHz)</b> | <b>1140MHz (Boost 1605MHz)</b> | <b>1260MHz (Boost 1500MHz)</b> |
| Memory           | GDDR6 8 GB 128bit             | GDDR6 8GB 128bit              | 12GB GDDR6 192bit             | 8GB GDDR6 128bit              | 8GB GDDR6 128bit               | 6GB GDDR6 96bit                | 6GB GDDR6 96bit                | 4GB GDDR6 64bit                |
| Memory Clock     | 1375 MHz                      | 1250 MHz                      | 2250 MHz                      | 2000 MHz                      | 2000 MHz                       | 2000 MHz                       | 2000 MHz                       | 1500 MHz                       |
| Memory Bandwidth | <b>176.0 GB/s</b>             | <b>256.0 GB/s</b>             | <b>432.0 GB/s</b>             | <b>256.0 GB/s</b>             | <b>256.0 GB/s</b>              | <b>192.0 GB/s</b>              | <b>192.0 GB/s</b>              | <b>96 GB/s</b>                 |
| Single Precision | <b>8.958 TFLOPS</b>           | <b>14.176 TFLOPS</b>          | 30 TFLOPS                     | <b>15.71 TFLOPS</b>           | <b>12.22 TFLOPS</b>            | <b>11.835 TFLOPS</b>           | <b>8.218 TFLOPS</b>            | <b>4.5 TFLOPS</b>              |
| TOPS             | -                             | 232                           | 542                           | 321                           | 232                            | 194                            | 194                            | -                              |
| CUDA             | 2560                          | 3072                          | 7424                          | 4608                          | 3072                           | 2560                           | 2560                           | 1024                           |
| Tensor Core      | 80                            | 96                            | 232                           | 144                           | 96                             | 80                             | 80                             | 32                             |
| RT core          | 20                            | 24                            | 80                            | 36                            | 24                             | 20                             | 20                             | 16                             |
| TGP              | <b>50W</b>                    | <b>56.5W</b>                  | <b>80W</b>                    | <b>65W</b>                    | <b>60W</b>                     | <b>65W</b>                     | <b>35W</b>                     | <b>35W</b>                     |
| Dimension        | TYPE A : 82 x 70 mm           | TYPE A : 82 x 70 mm           | TYPE B : 82 x 105 mm          | TYPE A : 82 x 70 mm           | TYPE A : 82 x 70 mm            | TYPE A : 82 x 70 mm            | TYPE A : 82 x 70 mm            | TYPE A : 82 x 70 mm            |