

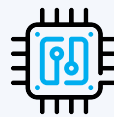
TMA Hardware Lab

TMA Hardware Lab has designed, integrated and tested hundreds of devices for IoT, telecom, network, healthcare, automotive, robotics, manufacturing and smart city.



200+

Embedded engineers



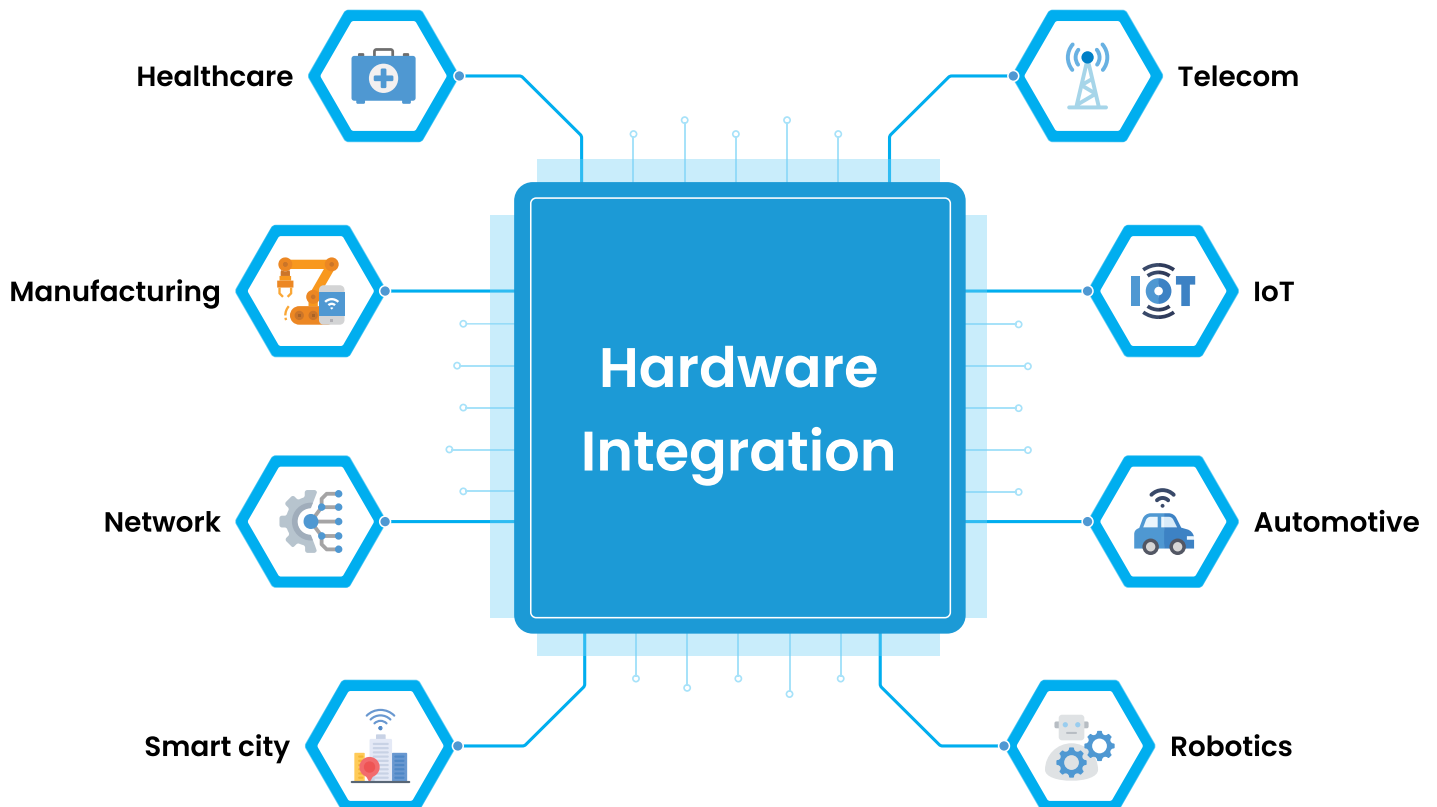
Integrated

200+ devices



Services:

design, test, integrate,
and maintain





Our Hardware Services

New Design

Hardware product prototyping

Testing

Functional and non-functional requirements verification

Integration

Integrating various kinds of devices (Cameras, Edge Computer, AI Server, Wearable & Medical Devices, IoT Devices,...) from multiple hardware vendors (Asus, Intel, NVIDIA, Adlink, ...) into our solutions (AI, Healthcare, Smart Building, Smart Factory)

Maintenance

- Fixing bugs
- Adding new features
- End-Of-Life component retrofit redesign



Skill Sets

Chipset

ESP, Raspberry, NXP, STM, PIC

Hardware Design

Capture schematics and drawing layout using Altium, Kicad, OrCAD

Microcontroller Unit

ESP32, NXP32, STM32, PIC32

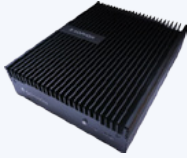
Domain

- IOT (4G, Wifi, Lora, BLE ...)
- Power electronics: Buck, boost, Flyback topology...



Hardware Integration Experiences

Server



Tablet



Embedded Computer



IoT Gateway



Access Control System



AI Vision System



AI Camera



Wearable & Medical Device



Monitor



Software Library version
compatible with different
GPU Cards

Convert the AI model
to compatible with
different AI HW from
different
manufacturers

Migrate Video
Analytics pipeline for
different HW

Reduce training time by
parallel training with
multiple GPUs
Reduced training time 4
times of people
detection training



Sample custom solutions



Infrastructure

- EV turbo charging station
- Solar powered building



Environment

- RF-energy-harvesting
wireless sensor
- Water resource monitor



Automation & Manufacture

- Server battery health
monitor
- Smart terminal block



Energy

- Solar farm predictive maintenance



Retail

- 1 minute checkout aisle



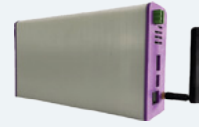
Devices designed by TMA



RMS-Bell



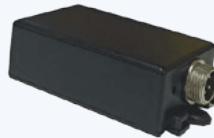
TC-GW01 IoT Gateway



RMS-G 4G
Container Monitoring Device



32-Port IO Box



TC-SVL Node Sensor



RMS-LN Node
LoRaWAN Container Monitor



TC-GW02 IoT Gateway



TC-SCLN Node
Street Light Controller



RMS-W Wifi
Container Monitoring Device



TC-WTC
Water Treatment Controller



RMS-LG LoRaWAN
Container Monitoring Gateway



RMS-DS Door Sensor



RMS-C Lite
Container Monitoring Device



TC-C485L



TC-SHT Sensor



TMA Hardware Lab





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