



FusionTech specialized in the R&D and design of embedded systems, delivering highquality products such as embedded motherboards, computing systems, panel pc, modular computers, and IoT solutions tailored to diverse industry needs. With expertise in ARM-Based, X86, and MCU architectures, we provide innovative and integrated solutions that empower our customers to excel in dynamic markets.

Guided by our philosophy of "Innovation, Professionalism, and Excellence," we are committed to market-driven development and customer satisfaction. Through continuous technological innovation and unwavering dedication to quality, we meet immediate needs, anticipate future trends, and maintain our competitive edge.



We excel in delivering tailored solutions across a diverse range of platforms, including:

- **ARM Platforms-NXP, Mediatek, Rockchip, Allwinner :** Versatile and efficient solutions for embedded and IoT applications.
- MCU Platforms-NXP, Allwinner, Expressif: Lightweight, low-power systems optimized for edge devices.
- X86 Platforms-Intel: High-performance computing for industrial and commercial applications.
- FreeRTOS with LVGL Integration: For seamless UI/UX design and real-time applications.

We are dedicated to advancing the embedded systems industry and collaborating with global partners to shape a brighter, more innovative future. Together, let's redefine technology and unlock extraordinary possibilities.

Our Value & Core Technology



Beyond Hardware Design

Offering tailor-customized APIs, software development, even the system integration, we provide full-spectrum service support for your innovation.



Versatile Development Platforms

Embracing everything from classic x86, ARM to cutting-edge MCU+ FreeRTOS+ LVGL technologies, we offer tailored solutions for your unique requirements.



One-Stop Total Solution Services

From board design crafting to system and software integration or tailoredmade, our comprehensive services accelerate your innovation journey, turns the concepts into reality.



Expert-experienced in Diverse Operating System

Proficient across various platform operating systems, ensuring optimal performance of your system.



Top Service & Advantages

- 15+ years cross-platform expertise across ARM Based, MCU, X86 and various mainstream/emerging chipsets.
- Full-stack embedded integration from BSP to UI/API.— all in-house, all optimized.
- Modular design enabling fast iteration and pilot production.
- Ultra-compact design for easy deployment and integration.
- Balanced high performance and low power consumption
- beyond single-brand constraints reducing risk, increasing supply flexibility.
- Flexible design options tailored to specific product requirements and application scenarios. Time to market!



- One-stop customized development services.
- Provide professional development kit to help customer developing and solving the issues.
- Low-volume customization and fast delivery.
- Co-development with clients as technical partners.

Highly adaptable across diverse verticals.

- Smart Retail
- Self-Service Kiosk
- Intelligent Signage
- Face Recognition
- Smart PLC System
- Passenger Information Display System
- Smart Industry Automation



Smart City

Artificial Intelligence (AI) has become a driving force behind smart city development, empowering urban services to be more intelligent and efficient through data learning and edge computing. AI plays a critical role in applications such as medical appointment systems, self-service banking, access control, smart home management, beverage automation, ticketing kiosks, smart vending, and parcel lockers. It optimizes crowd management, enhances service efficiency, and enables real-time decision-making based on behavioral data—bringing true human-machine collaboration into reality. With AI-powered analytics and sensor network integration, smart cities can rapidly evolve in areas like transportation, retail, healthcare, and everyday living—building a more convenient, secure, and sustainable urban environment.





Smart Retail & Self-Service Kiosk

Artificial Intelligence (AI) is revolutionizing retail by reshaping operations and enhancing customer experience. From self-order kiosks and smart scales to self-checkout and POS systems, AI enables real-time product recognition, customer flow analytics, and dynamic pricing and inventory adjustment. With edge computing and vision-based AI, businesses can optimize shelf management, predict popular items, and deliver contactless or semi-assisted services. AI applications are rapidly expanding across smart retail environments such as convenience stores, supermarkets, pop-up counters, self-service food kiosks, unmanned shops, and retail logistics—driving transformation through operational efficiency and improved user engagement. Additionally, AI empowers personalized marketing by analyzing shopping behavior, recommending targeted products, and adapting displays based on real-time demand. These capabilities help retailers not only reduce operational costs but also create immersive and responsive retail experiences that resonate with modern consumers.



Smart Retail Scale



Self-Ordering Kiosk

Smart E-Labeling



Self-Service Kiosk





AI-Powered Retail Revolution:

MBX-A527 Leads POS Systems into the New Era of Smart Applications

AI Applications in POS Systems

Al enhances transaction efficiency, customer engagement, and operational optimization through data analytics, machine learning, and automation. The major applications include:

AI-Powered Checkout & Self-Service Payments

- Al automates product recognition and transaction processing, accelerating check checkout speed and reducing human intervention.
- Unmanned stores and AI-powered smart cameras enable seamless, autonomous checkout experiences.

AI-Driven Inventory Optimization & Workforce

- Al analyzes sales data and market trends to forecast demand, reducing stock shortages and overstocking, thereby enhancing inventory turnover.
- AI can also optimize staff resource allocation, ensuring the right personnel are deployed to meet demand fluctuations and enhance customer service efficiency.

AI-Powered Digital Signage & Interactive Kiosks

- AI dynamically adjusts digital advertisements based on customer data, improving marketing precision.
- Retailers using AI chatbots during promotional periods have seen a 15% increase in conversion rates, demonstrating AI's impact on smart marketing.

Fraud Prevention & Secure Transactions AI monitors transaction data in real time.

 Al monitors transaction data in real time, detecting suspicious activities and preventing fraud, enhancing payment security and reducing risks of credit card fraud and chargebacks.

Personalized Shopping Experience

 40% of consumers are open to AI-powered shopping recommendations, with AI-driven promotions and product suggestions increasing conversion rates.











AI-Powered Retail Revolution : MBX-A527 Empowing AI-POS Application

FusionTech's MBX-A527 is a high-performance embedded solution designed specifically for Alpowered POS applications, helping retailers transition to a smarter retail ecosystem effortlessly.

High-Performance Al Processing

Octa-Core ARM Cortex-A55 processor with ARM G57 GPU, Enhances AI inference, accelerates image processing, and powers high-resolution digital signage and interactive kiosks. Enables real-time facial recognition, customer behavior analysis, and personalized promotions.

Seamless & High Speed Connectivity

Dual Gigabit Ethernet, Wi-Fi 6, and Bluetooth 5.2 ensure real-time data transmission and cloud integration.

Flexible and Devise Display Out Options

Support HDMI, MIPI-DSI, LVDS, and eDP for dual-screen and extended display output application. Ideal for digital signage and interactive kiosk.

Support Android 15 & Linux

Runs on Android 15, with support for Linux (Debian, Ubuntu), offering a flexible environment for POS software development and AI-driven retail applications.

Comprehensive I/O Epansion for Sealess Peripheral Integration

8x USB, 2x RS232, 2x UART, RJ12 cash drawer port, Easily connects to barcode scanners, receipt printers, and payment terminals.



MBX-A527

AI-Driven Future of Smart Retail

Al applications in Point-of-Sale (POS) systems and smart retail are expected to experience significant growth, driving the expansion of the POS industry market size and enabling businesses to enhance transaction efficiency and customer experience.

With powerful AI computing, flexible I/O expansion, and stable network connectivity, FusionTech's MBX-A527 is the ideal choice for AI-powered POS applications. Whether for smart checkout, self-service kiosks, digital signage, or transaction security, FusionTech empowers customers to achieve digital transformation and maintain a competitive edge in the evolving retail landscape.

Your smart charging station solution Linux & Windows support by MBP-NX93

As technology rapidly advances, the growing demand for electric vehicles has driven the rapid expansion of the charging station market. MBP-NX93, a pico-ITX motherboard powered by NXP i.MX93 processor, offers low power consumption and high computational efficiency, making it particularly suitable for smart charging stations. This board supports both Linux and Windows operating system, ensuring stable operation in various charging environments.



MBP-NX93 system utilizes LVGL (Lightweight Embedded Graphics Library) to design an intuitive user interface, fully leveraging the graphical processing power of the i.MX93's built-in GPU. This provides a smooth, low-power user experience, with the GPU driving the touchscreen to display real-time data such as charging progress, costs, and estimated completion time. LVGL also supports multimedia functionality, allowing charging stations to display ads or push notifications in public spaces, enhancing their value.

These charging stations offer plug-and-play functionality and support remote monitoring via mobile apps, enabling users to easily track charging progress and costs. The flexible architecture of the MBP-NX93 allows for customization based on customer needs, displaying real-time data and relevant information on the screen. Smart charging stations have wide-ranging applications in communities, office buildings, shopping centers, and public parking areas, providing stable and fast charging services. They support green transportation and contribute to the development of smart cities.



Features

100x72mm, pico-ITX Embedded Board

ARM Cortex®-M33 run up to 250 MHz for real-time and low-power processing.

NPU for Machine learning capability to 0.5TOPS

Multi-Media support: 1x MIPI DSI w/1080p60, 1x LVDS w/720p60, 1x 1080P60 MIPI CSI for camera

2 x Gigabit Ethernet and 6x GPIO supported

Power Supply via USB-C PD, from 9V~15V

Dual OS platform support: Linux, Windows

Use the LVGL Rich Library design a user-friendly interface for easy and intuitive operation

MBM-T113, Your Budget-Friendly Solution Compact Multimedia Terminals Empowering Digital Retail

As the retail and food service industries accelerate digital transformation, the need for compact, cost-effective, and interactive devices grows rapidly. From self-order kiosks in restaurants to point-of-purchase advertising screens and mini POS terminals, the demand for small-scale intelligent systems is reshaping how customers interact with businesses.

These environments require devices that are low-cost, easy to integrate, and capable of delivering smooth video playback, intuitive user interfaces, and reliable 24/7 operation. This is where FusionTech's embedded platform based on the Allwinner T113-S3 processor finds its niche.

Market Needs at a Glance Retail-focused embedded terminals require:

- 1080p video decoding for promotional content, ideal for 7" to 10" compact displays
- Compact TFT panel compatibility (RGB, LVDS, MIPI DSI)

Why MBM-T113 for Retail & Signage?

- Ultra cost-efficient: Integrated memory, high-function SoC in small form factor
- Display + control in one: Runs UI, decodes video tailored for 7to 10 displays, prints receipts, controls GPIO
- Ready to deploy: Supports Linux, LVGL with open SDKs
- · Fanless, compact, reliable: Perfect for harsh or space-limited retail environments

MBM-T113 Features



MIPI-DSI (1920x1200), I2C touch, 1x headphone/Line-out and 1x MIC-in for rich audio and display integration



4x USB 2.0 HS, USB Type-C for debugging, and 3x UART with flow control



G2D graphics acceleration with SmartColor 2.0 and 1080p video decode



5~15V Type C Power Input Support

Linux OS with LVGL, Qt, GTK+ support for fast GUI development

Typical Field applications are...

- Compact Mini POS terminals with integrated touchscreen and thermal printer
- Smart retail signage for promotions, product videos, and menu displays leveraging 1080p video decoding capability
- Interactive kiosks for self-ordering, quick checkout, and dynamic pricing presentations

MBM-T113 platform redefines what's possible in budget-conscious smart retail and signage solutions. Its powerful media, UI, and I/O capabilities empower brands and system integrators to build smart terminals that are interactive, affordable, and efficient.



- Thermal printer support via UART or USB
- Voice/audio prompts via I2S/DMIC
- Smooth UI with LVGL + G2D acceleration

PK200-ES3 Compact Design for Small HMI application Empowering Embedded Innovation with Size, Speed, and Simplicity

Small Size Touch Display Market

The demand for touch-enabled displays under 6 inches is rapidly growing across industries such as smart retail, EV charging stations, self-service kiosks, and compact industrial control panels. These applications prioritize space efficiency, intuitive interaction, and low system cost, making compact, reliable, and wireless-enabled solutions essential.

PK200-ES3 is a 3.5-inch open frame touch panel kit designed specifically for space-constrained embedded applications.

Product Features



Powered by Xtensa® 32-bit L7, Dual -Core, low-power Microprocessor,, optimized for efficient system performance



Consists with 8MB PSRAM and 16MB NOR Flash

MicroSD card support and USB Type-C debug port, enhancing storage and development convenience

Key Advantages

- Low cost, ideal for budget-conscious projects
- FreeRTOS providing stable, real-time control for responsive operation
- Support for Arduino framework, enabling quick and easy development for R&D teams
- LVGL support, allowing fast, intuitive UI/UX development with lightweight resources
- Compact mechanical design with flexible I/O options, simplifying integration into customized enclosures

Application Fields are....

- Smart Retail Displays (POS Terminal, Touch Panel Cash Register)
- EV Charging Station HMI for payment display, charger status
- Ticketing and payment kiosk (Parking and vending HMI)
- Smart Control Panel for Home Automation (Building access, Home Control Panel)

PK200-ES3 helps developers deliver efficient, budget-friendly innovation for small-size display applications.



Built-in 802.11b/g/n Wi-Fi and Bluetooth 5.0 for connectivity

Operating system: FreeRTOS, develops with LVGL Library for friendly UI/UX Design









Model	MBM-T113	MBP-NX93
Form Factor	Mobile-ITX	Pico-ITX
Processor	ARM Dual-core Cortex-A7 @ 1.2GHz	ARM Dual Core Cortex A55 up to 1.7GHz
Memory	DDR3 128MB (on-chip)/256MB	LPDDR4 onboard, from 128MB to 2GB
Storage	Onboard eMMC 8GB	onboard eMMC, 8/16/32GB
Ethernet	1x10/100Mbps	2x10/100/1000M Gigabit Ethernet
Wi-Fi+BT	-	-
Display	1x MIPI-DSI, 1080p60;	1x MIPI-DSI, 1080p60; 1x LVDS, 720p60
Camera	-	1x 1080p60 MIPI-CSI
Touch	Support I2C Touch	support USB/I2C Touch controller
Ethernet	1x RJ45 Connector w/ LED indicator	2x RJ45 Connector w/ LED indicator
USB	2x USB 2.0 Type A (USB 1/2);4x USB 2.0 HSUSB2x USB 2.0 w/ 4-Pin Header;(U2x USB 2.0 Type A, 2x USB 21x Type C for Debug/FW update1x Type-C OTG for Debug/FW update	
UART	3x UART with Flow control4x UART(2x 4-Pin Header, 1x 6-Pin Header)4x UART	
GPIO	Support, 1 for external extention	Support, 6x GPIO (I2C/UART)
RTC	Support, via 1x PH 1.25mm	Support, via 1x PH 1.25mm
Audio	1x Headphone/Line-out; 1x MIC-in;	-
Expansion	1x Micro SD Slot	1x Micro SD Slot
Power	5~15V Type C PD Power Input	USB-C PD (9V/12V/15V)
Operating Temperature	g -10°C ~ 70°C -10°C ~ 70°C Ire (0% to 90% RH, non-condensing) (0% to 90% RH, non-condensing)	
Dimension	60 x 60 mm	100 x 72 mm
Operating System	Linux w/ LVGL, Qt, GTK+ support	Windows/Linux with LVGL













Model	MBx2-A527	MBX-A527
Form Factor	3.5" SBC	225x90mm
Processor	8x ARM Cortex-A55 up to 2.0GHz	8x ARM Cortex-A55 up to 2.0GHz
Memory	Onboard LPDDR4 4GB	Onboard LPDDR4 4GB
Storage	32GB eMMC (Option to 64GB/128GB)	32GB eMMC (Option to 64GB/128GB)
Ethernet	1x 10/100/1000Mbps	2x 10/100/1000Mbps
Wi-Fi+BT	WiFi 6+ BT 5.4 for Option	WiFi 6+ BT 5.4 for Option
Display	MIPI DSI, eDP (eDP1/eDP2), LVDS, HDMI; select any 2 from the 5 available interfaces.	MIPI-DSIx 4 lanes, eDP, LVDS, HDMI; select any 2 from the 4 available interfaces.
Touch	Support, via I2C Signal 1x 6-Pin Connector (PH 2.0mm)/ 1 x 6-Pin FFC Connector, P=0.5mm	I2C with RST/INT For 10.1" LCD
USB	Edge I/O: 4x USB 3.0 Type-A Internal: 7x USB 2.0 (PH 2.0mm, 4P)	Edge I/O: 4x USB 2.0 Type-A , 1x USB 3.0 Type A Internal: 3x USB 2.0 (PH 2.0mm,4P)
UART	1x RJ11 (6P4C) for RS232; 2x RS232 (PH 2.0mm, 4P), 3x TTL UART (PH 2.0mm, 4P)	2x RS232, DB9 connector with CTS/RTS, PIN9 supports 5V/12V (selectable by jumper); 2x 4-Pin Header, PH2.5mm, 3.3V level w/ 5V output
Audio	1x 1W speaker stereo Amp 4 Ω	1x 1W speaker stereo Amp 4 Ω
Cash Drawer	1x RJ12 6P/6C	1x RJ12 6P/6C, 12V/24V selectable by jumper
RTC Battery	Support, via 1x PH 1.25mm	support via a Battery Socket (CR2032)
Others	1x 12V IN Conn.(PH 2.5mm, 4P); 1x 12V Out conn. (PH 2.5mm, 4P); 1x Type-C for ADB; 1x Power Key/LED conn. (PH 2.0mm, 4P); 1x Reset KEY/GPIO (PH 2.0mm, 4P); 1x SPI Conn. (PH2.0mm, 6P); 1x RST Button, 1x DWN Button	1x 24V IN Conn., 1x 24V OUTPUT Conn. 1x Type-C for ADB, 1x RST Button, 1x DWN Button,
Expansion	1x TF Card Slot	1x Micro SD slot, support SDXC up to 256GB
Power	1x 12V DC Jack, 5.5/2.5mm	1x24V DC Jack 5.5/2.5mm; Passthrough 24V output for printer
Operating Temperature	0°C ~ 70°C (0% to 90% RH, non-condensing)	0°C ~ 70°C (0% to 90% RH, non-condensing)
Dimension	148.2 x101.6mm (in temporary)	225x 90mm
Operating System	Android 15, Linux-Debian, Ubuntu	Android 15, Linux-Debian, Ubuntu



ARM-BASED SERIES Embedded Board







Model	MTB-613	MTB-710B	MTB-720
Form Factor	3.5" SBC	3.5" SBC	3.5" SBC
Processor	MT8370(Genio510) Dual-Core A78@2GHz+ Quad-Core A55@2GHz	ARM Quad-Core Cortex-A55, up to 2.0GHz	ARM Quad-Core Cortex-A55, up to 2.0GHz
Memory	Onboard LPDDR4X 8GB	LPDDR4X, up to 4GB	2GB DDR3 onboard, up to 4GB
Storage	64GB eMM onboard and 1x TF Card slot	16GB eMMC onboard, up to 128GB	16GBeMMC onboard, up to 64GB
Ethernet	2x10/100/1000Mbps	1x 10/100/1000Mbps	1x 10/100/1000Mbps
Wi-Fi+BT	Wi-Fi6(2T2R) +BT5.2(1T1R)	Wi-Fi 2.4GHz& 5GHz +BT 4.2 (1T1R)	Single Band Wi-Fi +BT 4.2 (1T1R)
Display	1xHDMI Type A, 1x Display Port, 1xeDP, 1xDual 8-bit LVDS	1x HDMI, 1xeDP, 1x MIPI-DSI, 1x Dual 8-bit LVDS	1x HDMI, 1xeDP, 1x MIPI-DSI, 1x Dual 8-bit LVDS
Camera	1xMIPI CSI	-	-
Touch	Support I2C (6P PH 2.0mm Header)	-	-
USB	2x USB3.0 Type-A, 1x USB Type-C for OTG, 1x USB 3.0 Type-C w/ Alt DP mode; 1x USB 2.0 w/ 4P PH 2.0 header; 5x USB 2.0 w/ 4P GH 1.25mm	1x OTG Type-C, 4x USB 3.0 Type A, 4x USB 2.0 Type C (PH 2.0, 4-pin connector)	1x USB 3.0 Type A for OTG, 1x USB 3.0 Type A (Host), 2x USB 2.0 Type A (Host), 2x USB 2.0 Pin Header
UART	1x RS232, 9P GH 1.25mm socket; 1x RS232, 6P GH 1.25mm socket; 1x TTL Debug Port, 4P PH 2.0 socket	4x RS232/485 Multiplexed interfaces	2x RS232, 2x RS485, 1x TTL debug serial port (3.3V/5V/12V power supply)
Audio	2x5W/8Ω speaker out,w/ 4P PH 2.0 socket; 1x Line-out w/ 3.5mm, 1x MIC w/ 2Pin header	1x MIC-in (2P,PH 2.0 header); 1x 5W/8Ω speaker out w/ 4P header ; 1x 3.5mm headphone socket	1x 5W/8Ω speaker out (Left & right channel) w/ 4P PH 2.0 socket; 1x Line-out + MIC-in w/ 3.5mm headphone Jack; 1x Line-out + MIC-in w/ 4P PH 2.0 socket (onboard); 1x reserved MIC onboard w/ 2P PH 2.0 socket
LED Indicator	Support	1x dual-color LED indicator (Red-green)	1x dual-color LED indicator (Red-green)
GPIO	Support	12xGPIO (including SPI, I2C, ADC)	8xGPIO, 4CH are multiplexed w/ SPI, 2CH are multiplexed with I2C
Others	I2C, 1x Reset Button	3x CAN BUS, 1x SATA, 1x Reset Button	1x Reset Button, 1x Recovery Button, 1x Power ON/OFF Button
Expansion	1x MiniPCIe socket, 1x SIM Slot	1x MiniPCle slot (optional LLC) for 4G LTE module, 1x SIM Card slot (Top side); 1x Standard TF Card slot (on the rear)	1x MiniPCle slot (optional LLC) for 4G LTE module, 1x SIM Card slot (Top side); 1x Standard TF Card slot (on the rear)
Power	12V DC, 1x 2.5mm DC Jack , 1x Type-C PD	12V DC, 1x 2.5mm DC Jack	12V DC, 1x 2.5mm DC Jack
Operating Temperature	0°C ~ 60°C (0% to 90% RH, non-condensing)	0°C ~ 60°C (0% to 90% RH, non-condensing)	0°C ~ 60°C (0% to 90% RH, non-condensing)
Dimension	140 x 110mm	150x110 x25mm	146 x 102mm
Operating System	Android 13, Linux	Android 11, Linux	Android 11. Linux



Open-Frame HMI Series

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Model	PK100-ES3	РК200-ЕS3	
Panel Size	2 inch	3.5 inch	
Processor	Xtensa [®] Dual-core 32-bit LX7 Microprocessor, 240MHz	Xtensa [®] Dual-core 32-bit LX7 Microprocessor, 240MHz	
Memory	8MB PSRAM	8MB PSRAM	
Storage	16MB NOR Flash	16MB NOR Flash	
Ethernet	10/100/1000Mbps, GbE	10/100/1000Mbps, GbE	
Wi-Fi+BT	-	802.11b/g/n + Bluetooth 5.0	
Display	2 inch LCD, 240x320 pixels	3.5 inch LCD, 320x 480 pixels	
Brightness	300cd/m2	300cd/m2	
Touch	PCAP Touch Screen	PCAP Touch Screen	
Camera	1x 2MP OV2640	-	
USB	1x USB Type C for Debug	1x USB Type C for Debug	
UART/COM	1x RS485 w/ Terminal register for ON/OFF	1x UART, 4-pin Header	
LED Indicator	4x programmable LED, Blue color (SMD Type)	-	
DI	24V, 4x Digital INPUT@20mA	-	
DO	24V, 4x Digital OUTPUT, Max 30V/each	-	
ADC	2-channel, 12-bit, max 10V	-	
RTC	Support, via 1x PH 1.25mm	Support, via 1x PH 1.25mm	
Others	I2C, 1x Reset Button	1 x 12-Pin FFC Socket, supports 8x GPIO/I2C/UART/PWM and 5~12V Power In & Out	
Expansion	-	1x Micro SD Slot	
Power	24V via 2 Terminal Block Phoenix Contact	5~12V Power Input, via 1x 2P Terminal Block Phoenix Contact	
Operating Temperature	0°C ~ 60°C (0% to 90% RH, non-condensing)	0°C ~ 50°C (0% to 90% RH, non-condensing)	
Dimension	54.5mm x 45.8mm	92.44 x 77mm (w/ Frame); 60x 54.5mm (Board only)	
Operating System	FreeRTOS w/ LVGL	FreeRTOS w/ LVGL	



FusionTech Co., Ltd

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All specifications and photos are subject to change without notice.