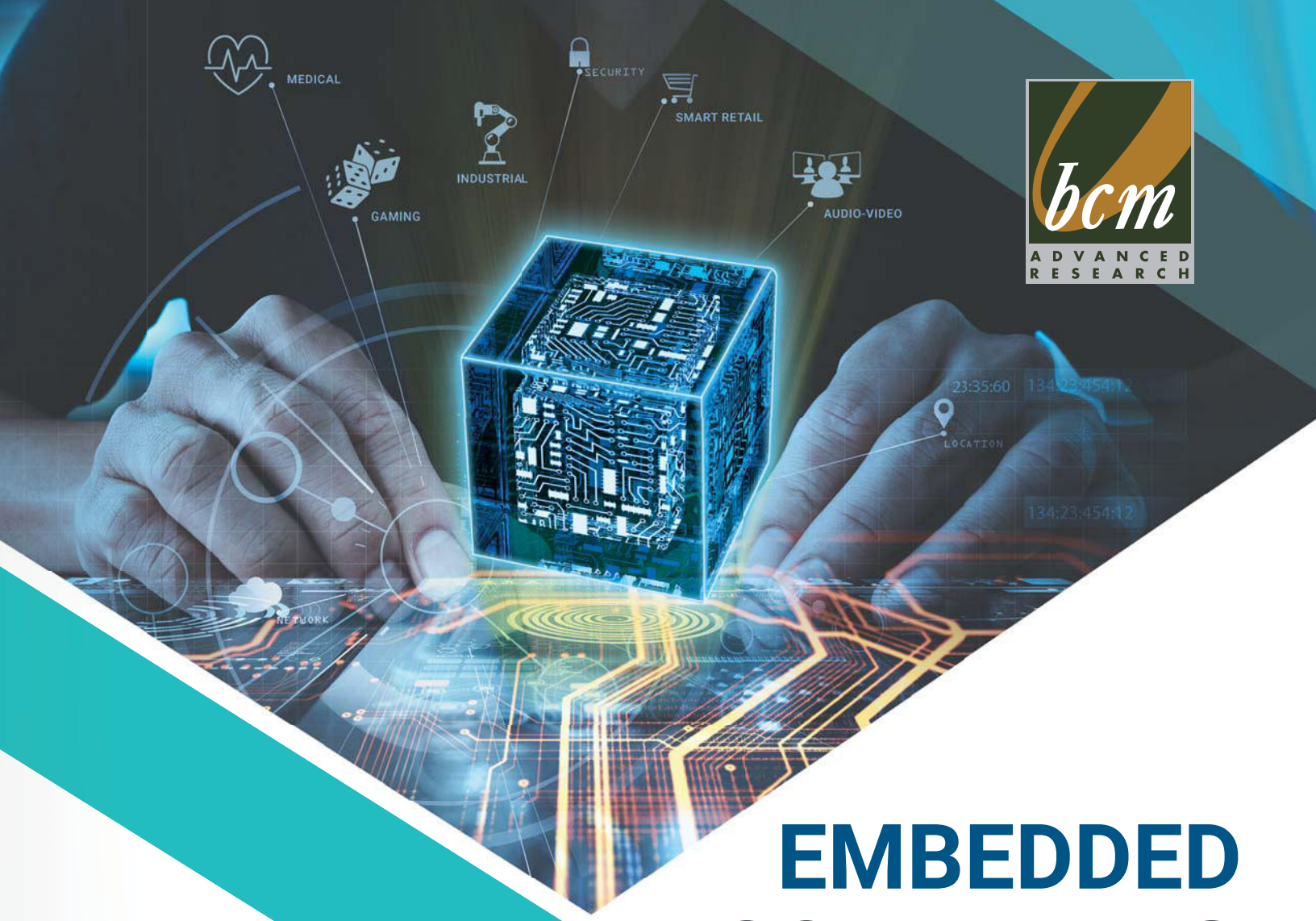


bcm ADVANCED RESEARCH

EMBEDDED COMPUTING

PRODUCT SOLUTIONS GUIDE

Your One Stop Shop for Embedded Computing

- Gaming
- Healthcare & Medical
- Smart Retail
- Audio-Video
- Automation
- Transportation
- Surveillance
- Robotics

EMBEDDED | LONG LIFE | CUSTOM DESIGN

About BCM

A Leading Supplier in Industrial Motherboards & Embedded Computing Systems Since 1990

Our Main Focus & Product Line

Intel® x86 Motherboards

From small form factor to desktop platform including COM Express, Q7 Module, Pico-ITX, 3.5 in SBC, mini-ITX, uATX, ATX and custom form factors.

NXP ARM (RISC) Motherboards

Low power, cost effective, ultra compact ARM motherboards, ARM development kits, support Android, Linux OS, LCD touch panel.

Industrial Computers

DC or ATX power operated. Fan or fanless design. mini-ITX barebone computer. Rich I/O & expansion interfaces. Ultra compact BOX computer.

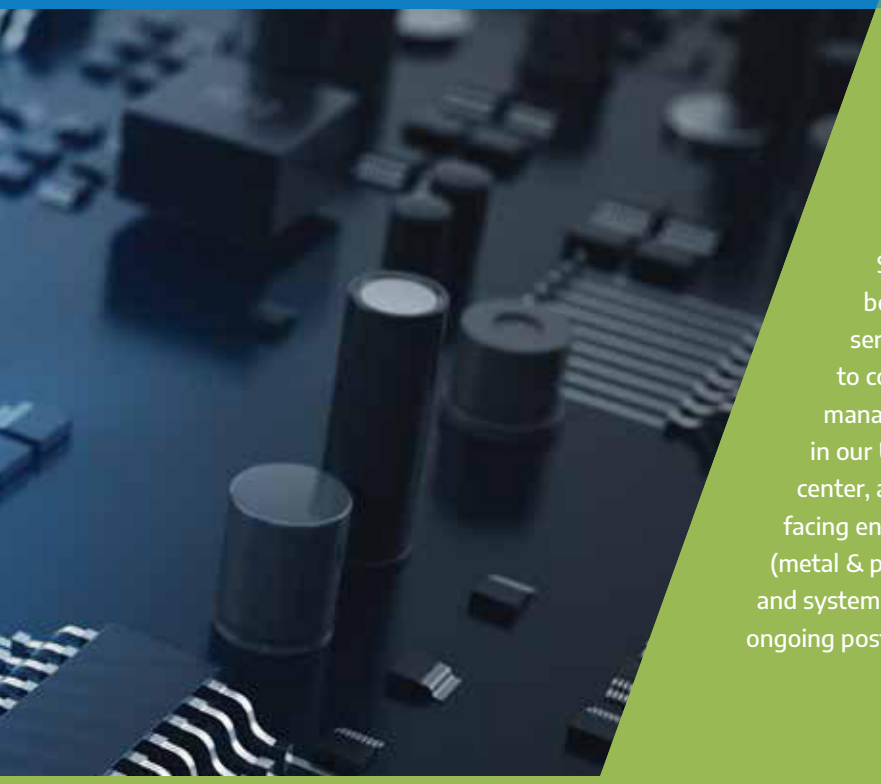
Simplified Design Process & Faster Time-to-Market

Custom Design, In-house R&D Team in Irvine, CA

Superior Customer Centric Support

28

Years Serving ODM & OEM Customers



Who We Are & What We Do

BCM Advanced Research (BCM) is a U.S. based Embedded Systems & PCBA designer and manufacturer. We provide both off-the-shelf and custom turnkey design & manufacturing services. Our production facilities (from motherboards to complete systems) are based in Taiwan, but our project management and customer facing engineering resources are based in our USA corporate office complete with engineering labs, a repair center, and our main U.S. logistics warehouse. Our U.S. customer facing engineers are experts in electrical PCBA design, mechanical (metal & plastics), thermal engineering, firmware & BIOS, O/S support, and system engineering. We also have U.S. based QA engineers for ongoing post-production support.

Open Frame Tablets

Including open frame tablets, semi-rugged tablet with PCAP touch screen, onboard CPU, memory, storage, Wi-Fi and Bluetooth. Optional card reader & scanner. Easy mounting kits available.

Industrial Panel Computer

Industrial grade all-in-one panel PC, HMI interface, stainless steel splash proof panel PC, medical grade panel PC, healthcare panel PC, POS and more.

Custom Design

Custom design for industrial motherboards and embedded computing solutions. Our goal is to make it easy and simplified process when customers are doing the business with us.

U.S. **In-house R&D Engineering, QC, RMA**

TAIWAN ISO

ISO 13485 (Medical) & TS 16949 (Automotive) Certified Factory

intel IoT Solutions Alliance

NXP

Intel® IoT Alliance & NXP Connect Member

24|7

Product Life cycle Management

Original Design & Manufacturing

We Make Your Concept A Reality

We provide ODMs (Original Design & Manufacturing) services for our clients by creating new product designs based on their product specifications. We ensure our clients receive the quality products that not only meet their spec requirements but also with faster time-to-market while reducing the development time and cost.

Computing Products We Design

x86 and ARM (RISC)

- Intel® x86 Platform
- NXP ARM RISC Platform
- Custom form factors (Dimension)

Open Frame & PPC

- LCD size, CPU performance, I/O
- Touch screen
- Plastics housing and tooling
- Mounting design

Industrial Computer

- Fanless ultra compact BOX PC
- Ruggedized BOX PC
- Heavy-duty steel / aluminium chassis and enclosures

Mechanical & ID Design

- CAD drawing
- 3D modeling
- Thermal simulations

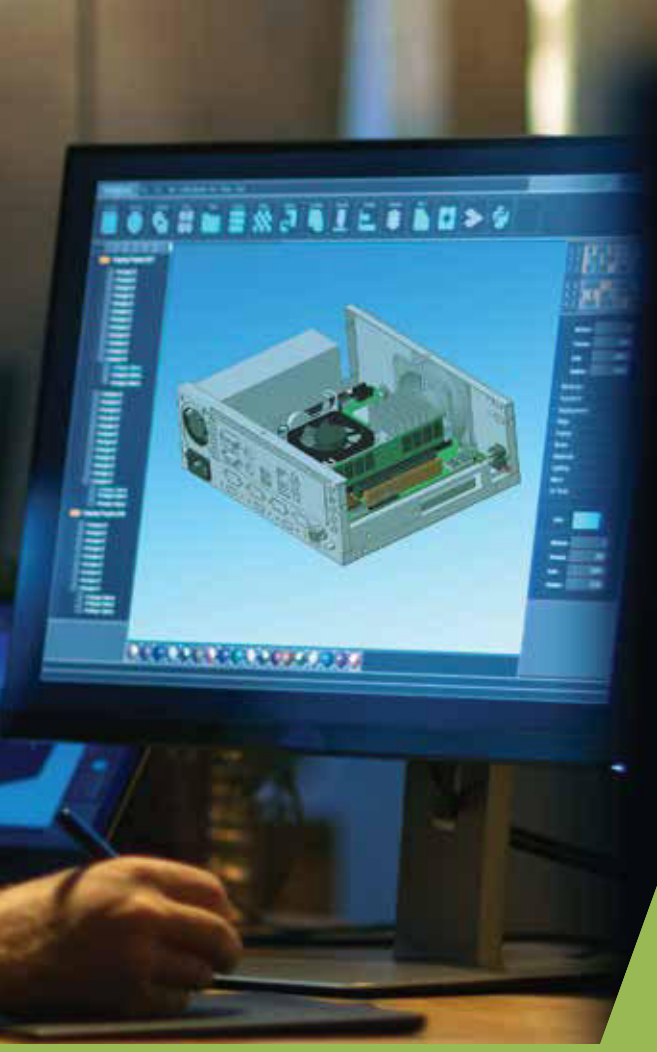
ODM Design Process

P1	Phase 1		P2	Phase 2	P3
	Project Initiation & Evaluation			Product Design	

Check Point

During Each Design Phase

C1	Check Point 1		C2	Check Point 2	C3
	Development and Review			Engineering Samples Test and Review	



Your One Stop Shop

You define the specifications, we make it for you, whether it is motherboards, BOX PC, open frame or any computing solution.

Professional R&D Team

We have large U.S. based in-house R&D and Project Management teams to support local OEMs in addition to our core R&D resources located in Taiwan.

Intel® & NXP Partner

We are a partner of Intel® IoT Alliance and NXP Proven Connect. We have early access to new CPU & technology platforms.

Competitive Design Fees

We accept high or low volume manufacturing orders with competitive engineering design fees

Win

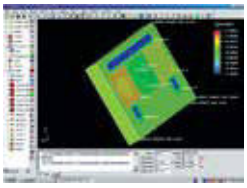
Software Engineering Support

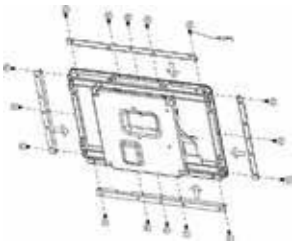
BIOS, Microsoft, Android and Linux BSP support

FC CE

Regulatory Compliance

Our industrial motherboard products are FCC, CE certified. UL or other regulatory certification can be achieved via custom design services.





Phase 3	P4	Phase 4	P5	Phase 5	P6	Phase 6	
Design Verification EVT		**Design Validation Testing DVT**		**Manufacturing Verification PVT**		**Mass Production**	
Check Point 3	C4	Check Point 4	C5	Check Point 5			
Compatibility Test Review & Production Evaluation		**Functional and Reliability Verification**		**Mass Production Preparation, Pilot-Run, and Final Production Release Documentation**			

World Class Manufacturing

We design and manufacturing in our ISO certified factories in Taiwan

Our Capabilities and Facilities

ISO Certified Factories

Our factories are ISO 9000 & ISO 14001, ISO 13485 (Medical device), and TS 16949 (Automotive electronics) certified.

Factory QC, QA

100% factory functional testing for each board or system prior to shipping. This quality measure minimizes the chance out of box failures and reduces RMA overhead.

Product Life Cycle Management (PLM)

Designed for 24/7. A minimum 5-7 years life cycle prior to last-time-buy

Strict ECO/ECN Process

Strict policy restricting any hardware, firmware, component, or driver change without official notification.

For the past 28 years, BCM has been a leading embedded / smart solutions provider for many global Tier 1 companies with U.S. and Taiwan based R&D. As an OEM/ODM partner to our customers, we provide exceptional design and manufacturing services to complement our OEM customers' key development efforts allowing their engineers to remain focused on their core products' development. This balance has worked well for many of our key customer segments such as gaming, medical, healthcare, industrial control & automation, smart retail, test & measurement, robotics, audio-video, and automotive.

Gaming Industry | Medical & Healthcare | Smart Retail | Industrial Control | Audio & Video | Automotive Industry

Global Logistic and RMA Support

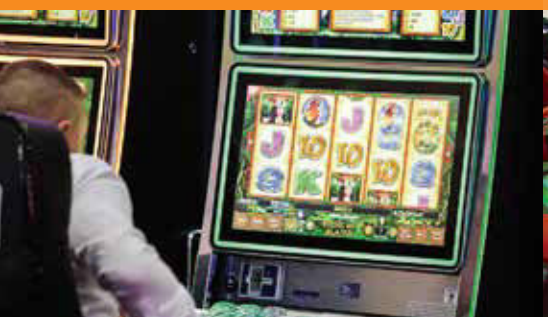
Global sourcing, strategic logistic warehouses, quality control, quality assurance, local support & RMA management.

Contract Manufacturing (CM)

Competitive value-added Contract Manufacturing services.

Gaming & Casino

Custom Computing Solutions Designed and Manufactured for Gaming & Casino Applications



Video Lottery Terminals (VLT) / Slot Machines

The next generation VLT and slot machines have been transformed to adopt super-sized or triple displays, curved displays, for high definition HD video and digital audio effects. Touch and multi-touch screen technology enables players to enjoy exceptional game experiences in the casino. We serve our VLT customers by providing high performance and secure hardware computing platforms with secure remote access capability and world class customer support.

Multiplayer Game Systems

Multiplayer game systems enable multiple players who prefer electronic games over live dealers to interact with the game and other players simultaneously. These systems require high-end processing and 4K/3D/ HD video performance for handling complex data as well as the ability to support multiple touch displays and zero performance hiccups. BCM can be your partner for providing exceptional performance and value with our custom or off-the-shelf products.

Lottery Vending Terminal & Bingo Machines

Lottery and Bingo terminals require responsive touch screens and rich I/O ports to access peripherals such as card readers, bill acceptors, barcode scanners, and receipt printers. BCM provides various levels of cost effective Logic Boxes and All-in-One POS solutions with integrated display sizes ranging from 7 to 19 inches.

The player tracking systems not only keep the playing records of the game players, but also provide a medium for promotional messages from the casino or retailers. These systems require rich high speed I/O ports including LAN, USB/COM for card reader/touch interface, LCD displays, and secure communications between the host and the game. Contact BCMSales@bcmcom.com for more information.

Mobile Device for Mobile Gaming & Casino Management

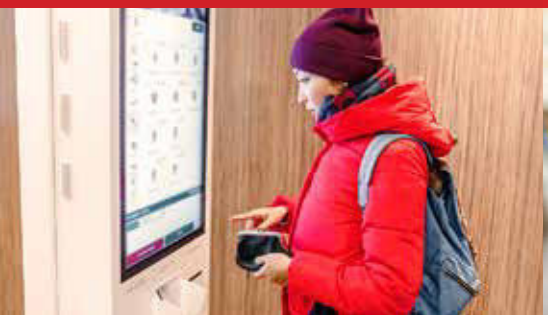
We can provide both custom and off-the-shelf battery operated computing devices for mobile gaming and POS applications including accessories such as charging stations, docking systems, and handle or shoulder straps.

Arcade Game Amusement Machines

Arcade games are seen in many of the large indoor entertainment centers and movie theaters. The newer generation arcade game machines such as the car racing game stations play 4K/3D/HD video on curved HD displays, double player dancing stations, and multi-player digital game tables. We provide entry level to high graphic intensive computing solutions for our gaming clients to choose from.

Smart Retail & Automated Vending

Custom Computing Solutions Designed and Manufactured for Smart Retail Applications



Boost Vending Machine Renovation with BCM's 7"/10"/15"/21" Fanless & Slim Open Frame Tablet (OFT) Series

The new generation vending machines are equipped with 7"/10"/15"/21" single or dual digital touch displays, credit card terminals, receipt printers and bill acceptors allowing versatile payment options as well as offering a wider ranges of merchandise for customers to choose from. BCM's OFT series are off-the-shelf, easy to install, and fast-time-to-market solutions for the new generation of automated vending machines. They are an all-in-one and ready-to-go tablet-like multi-touch LCD computer offering many essential features such as serial, USB, Ethernet, Wi-Fi, Bluetooth, and GPIO. They come standard with a quad-core CPU, 2GB DDR3, 32GB eMMC and come installed with Android, Linux, or Windows 10 making application compatibility a breeze.

We provide customer-oriented and customized computing solutions for entry-level to advanced-level POS and Kiosk machines. To meet the rapidly increasing demands of this smart retail market, we develop a new generation of POS terminals, self-service kiosks, EPOS solutions to keep our customers stay ahead of their competitors.

Self-Serve Kiosk Systems (ATM, Ticketing Systems etc)

We provide wide range of standard off the shelf long life cycle industrial motherboards, panel computers, and barebone systems ready to be integrated into the self-serve kiosk machines for quick time-to-market solutions. Typical applications include, ATM terminals, DVD/movie rental kiosks, ticketing payment and dispensing machines, self-checkout cashier, coin exchange machines, or any other self-service HMI.

Next Generation Beverage Dispenser with Touch Interface

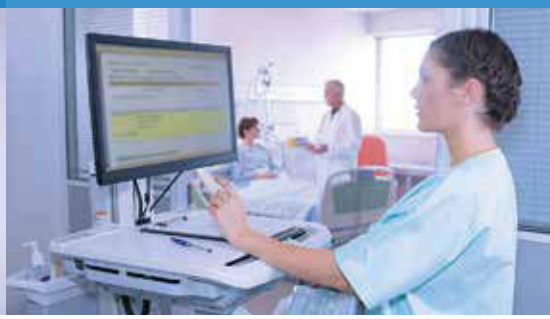
New generation self-serve beverage dispensers are developed with modern designs and high-tech features in mind. Software touch buttons and rich product presentation via bright LCD multi-touch displays raises the bar for acceptable customer users experiences. BCM's OFT product series is a drop-in upgrade that immediately brings the ease of smart phone and tablet user functionality to your product but in 7"/10"/15"/21" display sizes. The OFT with have an immediate modernization effect on you product and when coupled with endless functionality and presentation enhancements a smart system can provide the possibilities are endless. BCM's open frame tablet is a game changing, ready to use solution.

Electronic Weight Scale Systems for Supermarkets

In addition to POS systems, BCM provides solutions for many other electronic retail devices. We've helped custom design the next generation digital weight scales with touch screen and customer facing display technologies, rugged inventory mobile tablet devices with integrated scanning technology, portable end-cap POS devices, smart refrigeration systems, in-store digital signage, and store security systems, and even autonomous robots for warehouses.

Medical & Healthcare

Custom Computing Solutions Designed and Manufactured for Medical & Healthcare Applications



Computing Systems for Medical Imaging Devices

Medical imaging systems require powerful computing, mobility in some cases, stunning graphics support, rich I/O interfaces, low heat and power consumption. BCM is an experienced partner and supplier for the top medical imaging OEMs. Either using our medical grade off-the-shelf products or purpose designed custom ODM motherboards and systems built to spec, BCM has the right solution for medical imaging customers. Our professional engineering and PM teams to provide sound solutions, fast development time, and are ideally suited to partner with your core engineering teams.

Advanced Medical Imaging Scanning Systems

Medical imaging scanning systems such as CT scan, MRI, 3D dental scanners, and high resolution X-ray equipment, require high processing performance often with extended graphics. Our RD and PMs work closely to provide the most reliable and long life cycle solutions for OEMs to meet the most stringent computing requirements.

Mobile Medical Carts & Point-of-Care Systems

Point-of-Care systems enable nurses and healthcare professionals to optimize patient care more efficiently as well as improve hospital management capabilities. Requirements include mobility, modular design, smart power consumption, wireless data communication, and RFID or other peripheral devices.

BCM has been dedicated to serving the medical and healthcare industries by providing leading edge, high quality, purpose designed, high performance, and long life cycle medical computing solutions since 1990. Please contact BCMSales@bcmcom.com if you are interested in our off-the-shelf or ODM custom designed products for your medical device projects.

Patient Bedside Infotainment Systems

These ready to use devices are equipped with the computing and software configurations to allow patients to stream media, connect to the internet, web chat with relatives, and even make phone calls right from their bedside. Pre-configured with user friendly, tablet-like touch screen and interfaces, they are an excellent launchpad for OEMs to overlay their requirement specific application on top of. Designed with IP-65 front panel sealing and anti-bacterial plastic housing along with fanless silent acoustics, these units are purpose built for the hospital environment.

Medical & Pharmacy Instruments

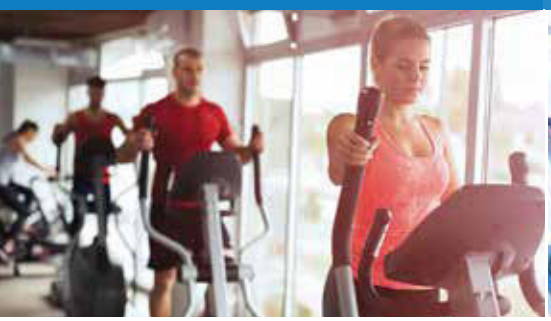
High-end medical instrument, such as the sterilize machine and the automated medicine dispensing systems, are equipped with touch panel computers offering the nurses and pharmacist new user experience while improving work flow efficiency. Our OFT open frame tablet series panel computer is a fast time-to-market solution for these types of instrument.

Mobile Medical Devices

We help customer design battery operated medical imaging computing device. From ID design, hardware performance, external I/O interface, light weight and fanless to anti-biotic, splash-proof design, we are a one stop shop for custom mobile medical imaging computing devices.

Smart Fitness

Custom Computing Solutions Designed and Manufactured for Smart Fitness Applications



Faster Time-to-Market Integration with Open Frame Tablets

Available in 7"/10"/15" and 21 inch screen size, the OFT open frame tablet series is a drop-in, turn-key solution optimized for fitness equipment computer consoles. With bright, PCAP touch LCDs, quad-core processing performance with only 2W of power consumption, integrated memory, storage, Wi-Fi & Bluetooth, Ethernet, USB, serial, and GPIO, this complete solution provides enormous value. This unique x86 tablet-like unit also supports Android, Linux, and WIndows 10 with ready to use images and BSP support.

BCM has over a decade of helping customers design and manufacture fitness console applications. We were a pioneer as a founding member of the Intel Fitness Council and have successfully helped customers incorporate the right computing solution while reducing development cost and speeding time-to-market with innovative motherboard and turn-key system products. Please contact BCMSales@bcmcom.com for more information.

Multi-OS Android, Linux, & Windows 10 Support

The 10.1”/15.6”/18.5”/21.5” OFTs are available pre-loaded with Android, Linux, or Windows 10 with BSP support.

Support Multimedia

OTT VOD, Android / iOS, Social Media Multi Media App

IoT Connectivity

Health monitoring Wearable, external medical devices with blue tooth or MEMS

7" 10" 15" 21"

Custom Touch Glass:
AG/AR/AF Coating

Win 10 Supported

Linux Supported

Android Supported

Audio & Visual

Custom Computing Solutions Designed for Digital Audio, Visual & Multimedia Applications

Video Conferencing Devices & Meeting Room Scheduler

We help customers design desktop and wall mount video conferencing devices. Contact us for more detail. Our OFT (open frame tablets) product series are turn-key, fast time-to-market solutions for meeting rooms or smart office applications. The OFT is available in 7"/10"/15"/21" display sizes and provides onboard Intel® Atom CPU, memory, storage, Wi-Fi/ Bluetooth and PCAP touch screens. OS support includes Win 10, Linux and Android. Wall mounting kits are available.

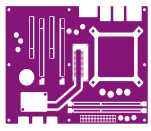
In-Flight, In-Vehicle Interactive Entertainment Systems

We help customers custom design complete compact fanless computer boards with touch screen and multiple IO interfaces for in-flight entertainment systems. Contact us for more detail.

Interactive Digital Signage Display and Systems

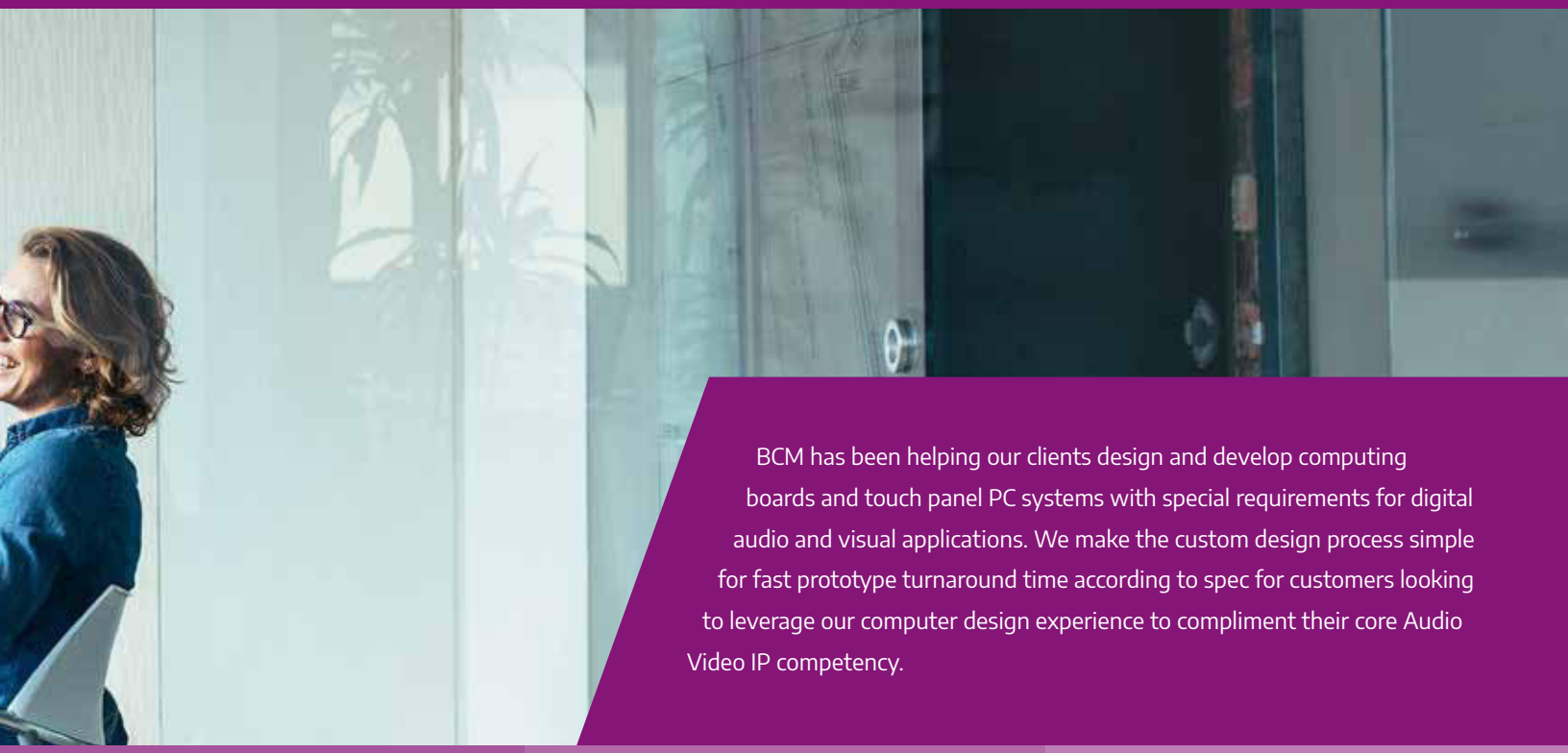
Today many fast food, food court, and other order-at-counter restaurants have replaced their traditional static menu boards with bright and colorful, easy to update digital display menu boards. BCM provides a variety of options for digital signage for lower power computing boards to turn-key solutions such as our open frame tablets.

Custom Motherboards Designed for Video Conferencing Devices

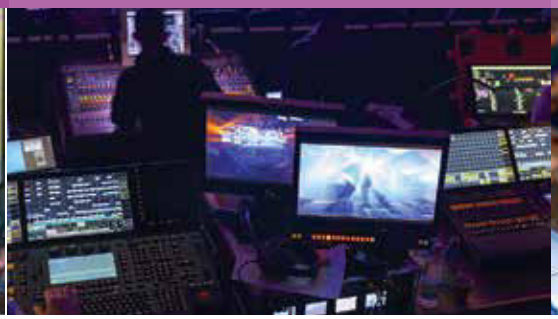


Custom Motherboards

Integration with Gateway & Enclosures



BCM has been helping our clients design and develop computing boards and touch panel PC systems with special requirements for digital audio and visual applications. We make the custom design process simple for fast prototype turnaround time according to spec for customers looking to leverage our computer design experience to compliment their core Audio Video IP competency.



Digital White Boards & Presentation Devices

The new generation of white board and presentation devices are digitized delivering high-tech conference and classroom experiences for both the presenter and the audiences. Contact us for more details.

Digital Video Audio Recording & Production Devices

Digital AV devices require powerful processing and stable performance for handling HD content recording, editing, transferring, and live streaming broadcasts. We provide a wide range of computer boards and systems to meet those requirements.

Stage Lighting and AV Control Interfaces

We help customers custom design motherboards for the control interfaces based on their requirements. Contact us for more detail.

Touch Control Interface

Wi-Fi/ WAN Cloud Computing

Supports HD Video Camera & Audio

Supports HD Video Output Devices

Multi-Software O/S & BSP Support

Industrial Control & Automation

Custom Computing Solutions Designed and Manufactured for Industrial Applications

OFT Series Made Easy Integration for 3D Printers

The OFT series are equipped with an onboard x86 CPU, memory, storage, Wi-Fi, Bluetooth, touch screen, serial, LAN, USB, GPIO, and support Android, Win, and Linux O/S. These features enable easy hardware and software integration. Our customers are benefit by reduced cost, turn-key integration, and fast time-to-market.

Computer Board Design for Industrial Controller Systems

Custom designed to meet your performance, I/O, environmental, and life cycle requirements.

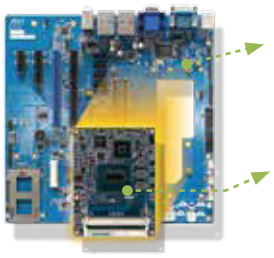
Industrial Computers or Panel PC for Industrial Machinery

Industrial machines such as CNC and automated milling equipment can convert a digital design into an object with a click of a button or press of a touch screen.

BCM provides industrial grade motherboards, industrial computers, and industrial panel PCs in various form factors with options for scalable processing performance for our clients to develop their applications within the required time frame and budget.

Industrial Computer for Testing Instrument

BCM offers high-reliability industrial boards with gold plated connectors on all high-speed signal buses for signal integrity to meet the requirements of industrial test instrument OEMs.



BCM has been helping our clients design and develop computing boards and touch panel pc systems with special requirements for industrial control applications. We make the custom design process simple for fast development and quick prototype delivery. Customers can often start software development using our off-the-shelf products speeding and reducing design risk.

Industrial Control Interface for Industrial Automation

BCM's off-the-shelf industrial motherboards are found successfully serving in a broad range of factory machines in many industries such as food & beverage, automotive, packaging, textile, energy, steel, and oil refining. These machines require high reliability and high MTBF ratings which BCM's industrial motherboards offer as standard. BCM designs its products with high margin tolerance and adds additional reliability features such as gold plating on high speed bus connectors, locking connectors, industrial grade capacitors, and adequate PCB layering to ensure reliability is baked into our products from design. We offer these high reliability products across our Q-Series motherboards in mini-ITX, Micro-ATX, and ATX from factors.

Industrial Control for Food Processing & Packaging Machines

Food and pharmaceutical factories require semi-rugged computers that are capable of running fanless and 24/7 within extended temperature environments. Splash proof and washable surfaces are required for producing such non-contamination products. BCM is dedicated to help our clients design computing systems with suitable components that meet these environmental conditions.

Automotive & Transportation

Designing your automotive and transportation applications with Intel® and NXP technology

Intelligent Transportation Systems (ITS)

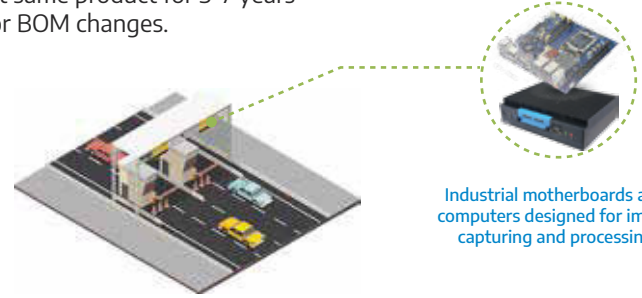
ITS benefits travelers and providers by delivering state-of-the-art transportation management and a smarter travel experience. We help customers design computing hardware with cutting-edge technologies to achieve their goals.

In-Vehicle Applications

In-vehicle applications we focus on include fleet management, Vehicle diagnostics, Asset tracking, Video analytic.

Electronic Toll Collection (ETC) & License Plate Imaging Systems

The ETC systems require intensive computing performance in order to handle multiple complicated tasks simultaneously. The license plate recognition (LPR) system, captures data from rapidly moving vehicles then converts those images into usable data. BCM's powerful and extended life cycle industrial motherboards provide the ideal off-the-shelf solution for customers to invest their IP around finding comfort in BCM's track record and promise to provide that same product for 5-7 years with no major design or BOM changes.

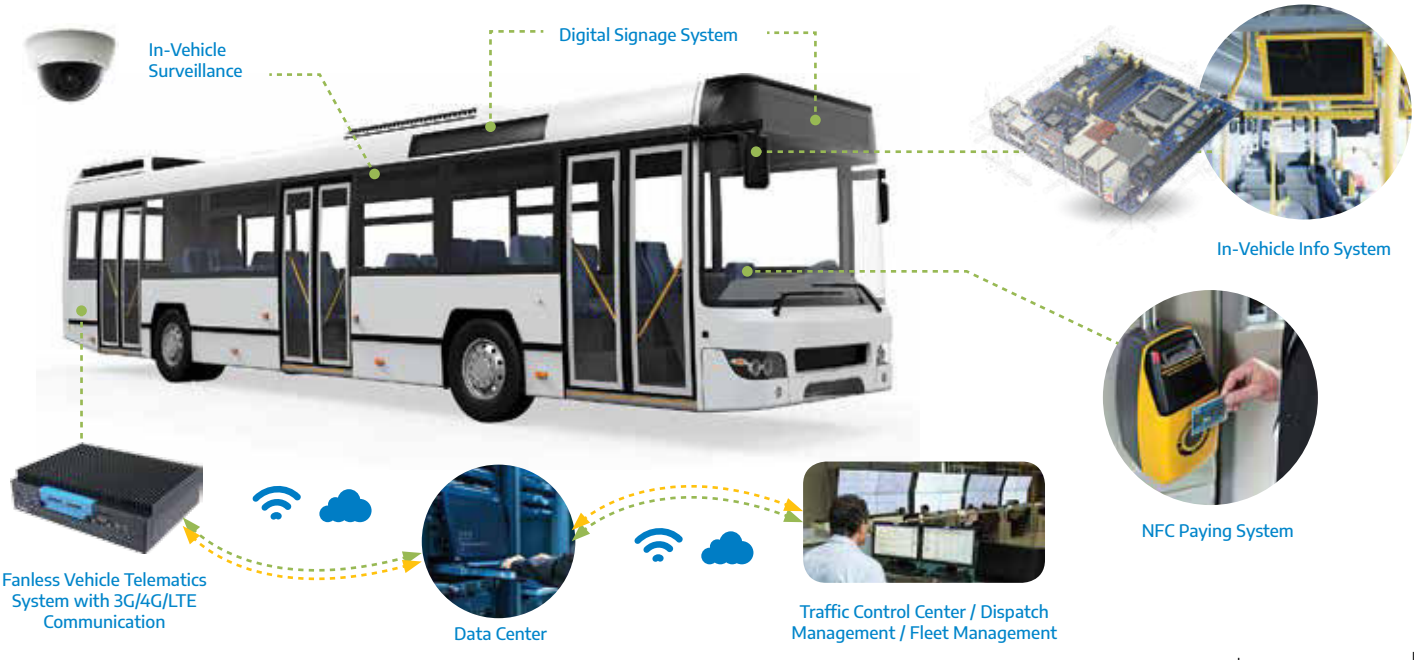


Industrial motherboards and computers designed for image capturing and processing

Other Transportation Applications

- Roadside Radar Signs
- Traffic Data Collection
- Traffic Security Monitoring
- Truck Weighing Systems
- Parking Lot Gate Control
- Metro Gate Access Systems

The transportation market covers many segments including ground, subway, ocean, and air. There are wide ranges of transportation applications that involve computing systems such as self-serve ticketing kiosks, parking meters, car charging, toll booth systems, in-flight entertainment systems, digital signage systems for public transportation stations, in-vehicle system, fleet management systems, ocean/air cargo control rooms, and management systems. The hardware requirements of computing systems vary for each kind of application. With experienced in-house R&D and engineering teams, BCM can help our clients to select the most suitable solution based on a their specifications and project requirements.



Thin mini-ITX (Fanless)




mini-ITX Motherboards (SoC)

Product Name	MX3965U	MX3350N	MX3160N	MX1900J
Special Features	• Thin mini-ITX • Fanless	• Thin mini-ITX • Fanless	• Thin mini-ITX • Fanless	• Thin mini-ITX • Fanless
Supported Processors	Intel® Kaby Lake 3965U Celeron Processor Onboard 2.2 GHz	Intel® Apollo Lake N3350 CPU Onboard 2.40 GHz (Max Speed)	Intel® Braswell Celeron N3160 Quad Core 2.40 GHz (Max Speed)	Intel® Bay Trail-D Celeron J1900 2.0 GHz Quad Core SoC
CPU Type	CPU Onboard	CPU Onboard	CPU Onboard	CPU Onboard
# of Ind. Display	3	3	3	2
System Chipset	SoC	SoC	SoC	SoC
System Memory	2 x SoDIMM Sockets up to 32 GB DDR4	2 x SoDIMM Sockets up to 8 GB DDR3L 1600MH	2 x SoDIMM Sockets up to 8 GB Dual Channel 1600 MHz DDR3L	2 x SoDIMM DDR3L 1333 MHz up to 8 GB
Audio Codec	Realtek ALC887 HD	Realtek ALC887 HD	Realtek ALC892 HD	Realtek ALC892 HD
Ethernet Chip	Intel® i219-LM Intel® i211-AT	Intel® i211-AT Intel® i211-AT	Intel® i211-AT Intel® i211-AT	Intel i211-AT Intel i211-AT
Expansion Slot	1 x M.2 Type E 2230 Key 1 x M.2 Type M 2280 Key 1 x PCIe x4	1 x M.2 Type E 2230 Key 1 x M.2 Type M 2280 & 2242 Key 1 x PCIe x1	1 x PCIe x1 1 x mini-PCIe with mSATA 1 x Mini PCIe	1 x Full Size mini-PCIe with mSATA support 1 x Half Size Mini PCIe
Graphic Engine	Intel® HD Integrated Graphics	Intel® HD Integrated Graphics	Intel® HD Integrated Graphics	Intel® HD Integrated Graphics
Video Output	1 x DisplayPort 2 x HDMI 1 x LVDS Optional eDP	1 x DisplayPort 2 x HDMI 1 x 18/24-bit LVDS Optional eDP	2 x DisplayPort 1 x HDMI 1 x 18/24-bit LVDS Optional eDP	1 x DP 1 x VGA 1 x LVDS
COM (Serial)	1 x RS-232/422/485 3 x RS-232	1 x RS-232/422/485 3 x RS-232	1 x RS-232/422/485 3 x RS-232	1 x RS-232
USB	6 x USB 3.0 and 4 x USB 2.0	6 x USB 3.0 and 2 x USB 2.0	7 x USB 3.0 and 2 x USB 2.0	4 x USB 3.0 and 4 x USB 2.0
SATA & eSATA	2 x SATAIII	1 x SATAIII	1 x SATA III	2 x SATA
GPIO	1 x 8-bit GPIO	1 x 8-bit GPIO	1 x 8-bit GPIO	1 x 8-bit GPIO
Audio Interface	Line-out, Mic-in	Line-out, Mic-in	Line-out, Mic-in	Line-out, Mic-in
LAN Port	2 x RJ-45	2 x RJ-45	2 x RJ-45	2 x RJ-45
TPM	Optional TPM 2.0	TPM 2.0	TPM 2.0	N/A
Power Type	12V - 24V DC-in	12V DC-in	12V DC-in	12V DC-in
Operating Temp	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
Dimensions	6.7" x 6.7" (170mm x 170mm)	6.7" x 6.7" (170mm x 170mm)	6.7" x 6.7" (170mm x 170mm)	6.7" x 6.7" (170mm x 170mm)
Weight	0.88lbs (0.4kg)	0.88lbs (0.4kg)	0.88lbs (0.4kg)	0.88lbs (0.4kg)

* All product specifications and product images are subject to change without notice.

Pico-ITX

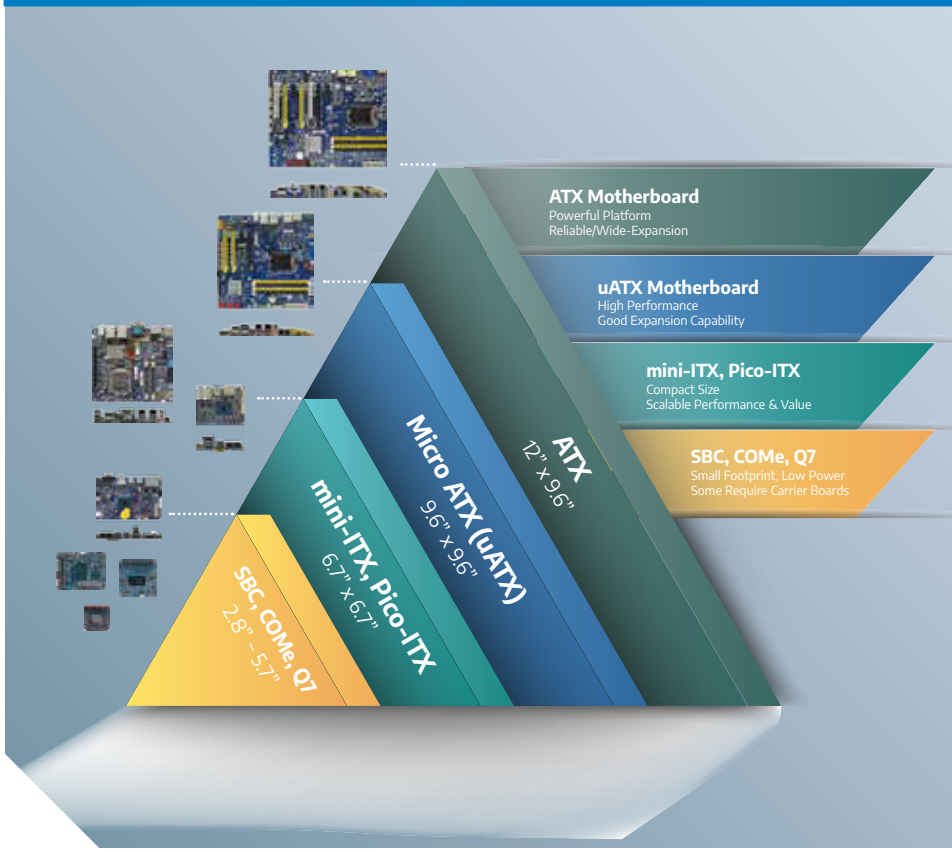
Pico-ITX

EPX-APLP
• Ultra Small Form Factor
Intel® Celeron® N3350 (2M Cache, up to 2.4 GHz)
CPU Onboard
3
SoC
1 x SoDIMM Socket up to 8GB 1600MHz DDR3L
Realtek ALC662
Intel i211-AT Intel i211-AT
1 x M.2 Type B 3042/2242/2260 1 x M.2 Type A 2230, (*Micro SIM card to SIM card adapter by optional)
Intel® HD Integrated Graphics
1 x DP++ 1 x HDMI 1 x LVDS
1 x RS232
4 x USB 2.0 and 2 x USB 3.0
1 x SATA Power, 1 x SATA III
1 x 8-bit GPIO
2 x Stereo Class-D 3W Audio Amplifier
2 x RJ-45
N/A
AT/ATX
-5 ~ 60°C (23 ~ 140°F)
3.94" x 2.83" (100mm x 72mm)
0.66lbs (0.3Kgs)

BCM is a leading supplier of Industrial Motherboards & Embedded Computers

We Provide High Quality Computing Products for Gaming, Medical, Industrial Control, Smart Retail and Digital Audio & Visual Applications

- Scalable performance and a wide range of products from industrial grade motherboards to complete computing systems for various markets
- Various form factors: ATX, uATX, mini-ITX, Pico-ITX, 3.5" SBC, COMe, QSeven, SMARC, Custom Form Factor
- Intel® x86 and NXP ARM (RISC) computing platforms
- Advanced hardware roadmap for ongoing migration to newer platforms
- Long product life cycle capable for 24/7 operation
- Excellent engineering & technical support at a local level



Small Form Factor

* Subject to change

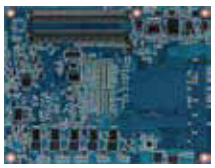
mini-ITX Motherboards (Socket)

Product Name	MX370QD	MX310HD	MX1000V	MX170QD
Special Features	• High Reliability Gold Plated Connectors • USB 3.1 Gen 1 and Gen 2	• DC Power • TPM 2.0	• AMD Processor • Support 4 Displays*	• High Reliability Gold Plated Connectors • TPM 2.0
Supported Processors	Intel® Coffee Lake Core i7/i5/i3 and Celeron Processors up to 65W TDP	Intel® Coffee Lake Core i7/i5/i3 and Celeron Processors up to 65W TDP	AMD® V1605B 2.0GHz Quad Core SoC	Intel® Kaby Lake/ Skylake Core i7/i5/i3 and Celeron Processors up to 65W TDP
CPU Type	LGA 1151 Socket	LGA 1151 Socket	CPU Onboard	LGA 1151 Socket
# of Ind. Display	3	2	4	3
System Chipset	Intel® Q370 PCH	Intel® H310 PCH	N/A	Intel® Q170 PCH
System Memory	2 x SoDIMM Sockets up to 32 GB Dual Channel DDR4 2400 MHz	2 x SoDIMM Sockets up to 32 GB Dual Channel DDR4 2400 MHz	2 x SoDIMM up to 32 GB Dual Channel DDR4 2400MHz Horizontal Type	2 x SoDIMM Sockets up to 32 GB Dual Channel DDR4 2133 MHz
Audio Codec	Realtek ALC892 HD	Realtek ALC892 HD	Realtek ALC892	Realtek ALC892
Ethernet Chip	Intel® i219-LM Intel® i211-AT	Intel® i219-LM Intel® i211-AT	2 x Realtek® RTL8111H	Intel® i219-LM Intel® i211-AT
Expansion Slot	1 x PCIe x16 1 x M.2 Type M 2242, 2280 1 x M.2 Type A/E 2230	1 x PCIe x 4 1 x M.2 Type M 2242, 2280 1 x M.2 Type A/E 2230	1 x PCIe x 8 1 x M.2 Type M 2242, 2280 1 x M.2 Type A/E 2230	1 x PCIe x16 1 x mini-PCIe with mSATA 1 x M.2 (2280 or 2242)
Graphic Engine	Intel® HD Integrated	Intel® HD Integrated	AMD® Radeon Vega	Intel® HD Integrated
Video Output	2 x DisplayPort, 1 x HDMI, 1 x LVDS, 1 x eDP (Optional)	1 x DisplayPort, 1 x HDMI, 1 x LVDS, 1 x eDP (Optional)	2 x HDMI 2 x DisplayPort 1 x LVDS, 1 x eDP (Optional)	2 x DisplayPort, 1 x HDMI, 1 x LVDS 1 x eDP (Optional)
COM (Serial)	1 x RS-232/422/485 1 x RS-232	2 x RS-232	1 x RS-232/422/485 1 x RS-232	1 x RS-232/422/485 1 x RS-232
USB	4 x USB 3.1 Gen 1 4 x USB 3.1 Gen 2 1 x USB 3.1 Gen 2 Type-C 2 x USB 2.0	4 x USB 3.1 Gen 1 4 x USB 2.0	4 x USB 3.1 Gen 2, 2 x USB 2.0, 2 x USB 3.1 Gen 1	6 x USB 3.0 4 x USB 2.0
SATA & eSATA	2 x SATA III	2 x SATA III	2 x SATA III	4 x SATA III
GPIO	1 x 8-bit GPIO	1 x 8-bit GPIO	1 x 8-bit GPIO	1 x 8-bit GPIO
Audio Interface	Line-in, Line-out, Mic-in	Line-out, Mic-in	Line-in, Line-out, Mic-in	Line-in, Line-out, Mic-in
LAN Port	2 x RJ-45	2 x RJ-45	2 x RJ-45	2 x RJ-45
TPM	Infineon® SLB 9665 TPM 2.0	Infineon® SLB 9665 TPM 2.0	Infineon® SLB 9665 TPM 2.0	Infineon® SLB 9665 TPM 2.0
Power Type	12V-24V Wide Range DC-In	12V-24V Wide Range DC-In	12V-24V Wide Range DC-In	12V, 16 - 24V DC-in
Operating Temp	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
Dimensions	6.7" x 6.7" (170mm x 170mm)	6.7" x 6.7" (170mm x 170mm)	6.7" x 6.7" (170mm x 170mm)	6.7" x 6.7" (170mm x 170mm)
Weight	0.88lbs (0.4kg)	0.88lbs (0.4kg)	0.88lbs (0.4kg)	0.88lbs (0.4kg)

* All product specifications and product images are subject to change without notice.

Product Name	MX110HD	MX110H	MX87QD	MX81H
Special Features	• DC Version • Thin mini-ITX • Cost Effective mini-ITX	• High performance, cost effective value line product	• Rich I/O and expansion interfaces	• High performance, cost effective value line product
Supported Processors	Intel® Kaby Lake/ Skylake Core i7/i5/i3 and Celeron CPU up to 65W TDP	Intel® Kaby Lake/ Skylake Core i7/i5/i3 and Celeron Processors up to 91W TDP	22nm Intel® Haswell Core i7/i5/i3 and Celeron Processors	22nm Intel Core i7/i5/i3 and Celeron Processors
CPU Type	LGA 1151 Socket	LGA 1151 Socket	LGA1150 Socket	LGA1150 Socket
# of Ind. Display	2	2	3	2
System Chipset	Intel® H110 PCH	Intel® H110 PCH	Intel® Q87 PCH	Intel® H81 PCH
System Memory	2 x SoDIMM Sockets up to 16 GB Dual Channel DDR4 2133 MHz	2 x SoDIMM Sockets up to 32 GB Dual Channel DDR4 2133 MHz	2 x SoDIMM Sockets up to 16 GB Dual Channel 1600/1333 MHz DDR3	2 x SoDIMM Sockets up to 16 GB Dual Channel DDR3 1333/1600 MHz
Audio Codec	Realtek ALC662	Realtek ALC887 HD	Realtek ALC892 HD	Realtek ALC892 HD
Ethernet Chip	Intel® i219-LM PHY Intel® i210-AT PCIe	Intel® i219-LM Intel® i211-AT	Intel® i217-LM Intel® i210-AT	Intel i217-LM Intel i210-AT
Expansion Slot	1 x PCIe x4 slot 1 x Half Size mini PCIe & 1 x Full Size mini-PCIe w/ mSATA	1 x PCIe x 16 1 x mini-PCIe 1 x mini-PCIe with mSATA	1 x PCIe x16 1 x Half Size mini PCIe & 1 x Full Size mini-PCIe w/ mSATA	1 x PCI Express x16 1 x Full Size Mini PCIe 1 x Half Size Mini PCIe (back)
Graphic Engine	Intel® HD Integrated	Intel® HD Integrated	Intel® HD Integrated	Intel® HD Integrated
Video Output	1 x DisplayPort, 1 x HDMI, 1 x LVDS, 1 x eDP (Optional)	2 x DisplayPort 1 x LVDS 1 x eDP (Optional)	2 x DisplayPort, 1 x DVI-D 1 x VGA, 1 x LVDS	2 x DisplayPort 1 x VGA
COM (Serial)	2 x RS-232	3 x RS-232 1 x RS-232/422/485	3 x RS-232 1 x RS-232/422/485	3 x RS-232 1 x RS-232/422/485
USB	4 x USB 3.0 4 x USB 2.0	4 x USB 3.0 4 x USB 2.0	4 x USB 3.0 6 x USB 2.0	2 x USB 3.0 6 x USB 2.0
SATA & eSATA	3 x SATA III	4 x SATA III	4 x SATA III (Red)	2 x SATA III and 1 x SATA II
GPIO	1 x 8-bit GPIO	1 x 8-bit GPIO	1 x 8-bit GPIO	1 x 8-bit GPIO
Audio Interface	Line-out, Mic-in	Line-in, Line-out, Mic-in	Line-in, Line-out, Mic-in	Line-in, Line-out, Mic-in
LAN Port	2 x RJ-45	2 x RJ-45	2 x RJ-45	2 x RJ-45
TPM	Infineon® SLB 9665 TPM 2.0	Infineon® SLB 9665 TPM 2.0	Optional TPM 1.2	Through TPM Pin Header
Power Type	12V - -24V DC-in	AT/ATX	12V or 16V-24V DC	AT/ATX
Operating Temp	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
Dimensions	6.7" x 6.7" (170mm x 170mm)	6.7" x 6.7" (170mm x 170mm)	6.7" x 6.7" (170mm x 170mm)	6.7" x 6.7" (170mm x 170mm)
Weight	0.88lbs (0.4kg)	0.88lbs (0.4kg)	0.88lbs (0.4kg)	0.88lbs (0.4kg)


Front


Back


Front


Back

COM Express

Product Name	ESM-KBLA	ESM-KBLH	ESM-SKLH	ESM-KBLU	ESM-SKLU	ESM-APLC
Supported Processors	Intel Xeon E3-1505M v6 4-Core 3GHz Intel Xeon E3-1505L v6 4-Core 2.2GHz Intel Core i3-7100E, 2-Core, 2.9GHz Intel Core i3-7102E, 2-Core, 2.1 GHz	Intel Core i7-7820EQ 4-Core 3.0GHz Intel Core i5-7440EQ 4-Core 2.9GHz Intel Core i3-7100E, 2-Core, 2.9GHz	Intel Core i7-6820EQ 4-Core 2.8GHz Intel Core™ i5-440EQ 4-Core 2.7GHz Intel Core i3-6102E 2-Core 1.9GHz	Intel Core i7-7600U, 2-Core, 2.8GHz Intel Core i5-7300U, 2-Core, 2.6GHz Intel Core i3-7100U, 2-Core, 2.4GHz Intel Celeron 3965U, 2-Core, 2.2GHz	Intel Core i7-6600U, 2-Core, 2.6GHz Intel Core i5-6300U, 2-Core, 2.4GHz Intel Core i3-6100U, 2-Core, 2.3GHz Intel Celeron 3955U 2-Core, 2.0GHz	Intel Pentium N4200 1.1GHz Intel Celeron N3350 1.1 GHz
System Chipset	Intel® CM238 PCH	Intel® QM175 PCH	Intel QM170 PCH	Intel® Kaby Lake SoC	Intel® Skylake SoC	Intel® Apollo Lake SoC
System Memory	2 x 260-pin DDR4 2400 / 2133MHz SoDIMM up to 32GB, CM238 Support ECC Function			2 x 260-pin SoDIMM DDR4 2133 SDRAM up to 32 GB		1 x 204-pin DDR3L 1866 SoDIMM up to 16 GB
Expansion Slot	8 x PCIe x1			8 x PCIex1		3 x PCIe x1
USB	8 x USB 2.0, 4 x USB 3.0			8 x USB 2.0 4 x USB 3.0		8 x USB 2.0, 4 x USB 3.0
SATA	4 x SATA III			3 x SATAIII		2 x SATA III
UART (COM)	2 x UART			2 x UART		1 x UART
MIO	1 x SMBus, 1 x LPC, 1 x I2C, 1 x 8bit GPIO			1 x LPC, 1 x I2C, 1 x SPI, 1 x SMBus, 1 x 8-bit GPIO		1 x LPC, 1 x SMBus, 1 x I2C, 1 x 8bit GPIO
Display Chipset	Intel® Kaby Lake Integrated Graphics			Intel® Skylake Integrated Graphics		Intel® Apollo Lake SoC Integrated Graphics
Display	(VGA + DP) + HDMI + DDI, LVDS + (VGA + DP) + DDI, LVDS + (VGA + DP) + HDMI, LVDS + HDMI + DDI			LVDS(eDP) + VGA(HDMI) + DDI(HDMI or DP)		VGA/ LVDS/ HDMI/ DP
Audio Chipset	Intel® HD Audio			Intel® HD Audio		Intel® HD Audio
Ethernet Chipet	1 x Intel®I219LM			1 x Intel® i219LM		1 x Intel® WGI211AT
OS Support	Win 10, Linux			Win 10, Linux		Win 10, Linux
Certification	CE, FCC Class B					
Power Requirement	+9V ~ +19V					
Operating Temp	0°C ~ 60°C (32°F ~ 140°F)					0°C ~ 60°C (32°F ~ 140°F)
Dimensions	5" x 3.7" (125mm x 95mm)			3.7" x 3.7" (95mm x 95mm)		3.7" x 3.7" (95mm x 95mm)
Weight	0.44lbs (0.2kg)			0.44 lbs (0.2kg)		0.44lbs (0.2kg)

* All product specifications and product images are subject to change without notice.

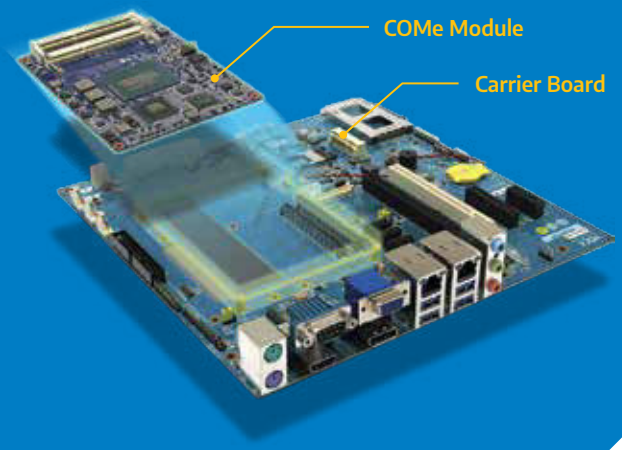
Q7 Modules		Carrier Board
Product Name	EQM-APL	REV-Q703
Supported Processors	Intel® Pentium® Processor N4200 4C 1.1 GHz Intel® Celeron® Processor N3350 2C 1.1 GHz Intel® Atom™ Processor x7 E3950 4C 1.6 GHz Intel® Atom™ Processor x5 E3940 4C 1.6 GHz Intel® Atom™ Processor x5 E3930 2C 1.3 GHz	N/A
System Memory	Onboard DDR3L 4GB, up to 8GB E3900 series support ECC (Factory option)	N/A
Expansion Slot	3 x PCIex1	1 x PCIe x1 1 x mPCIe x1 (w/ SIM Socket)
Storage	eMMC5.0 onbaord flash up to 64 GB (optional)	1 x SD socket
USB	6 x USB 2.0, 2 x USB 3.0	4 x USB 2.0, 2 x USB 3.0 (2 x USB on board, 2 x USB 3.0 / 1 x USB external)
SATA	2 x SATA III	2 x SATA (On board)
UART (COM)	1 x UART	1 x RS-232
MIO	1 x SMBus, 1 x LPC, 1 x I2C, 1 x SPI	1 x OTG, 1 x CAN, 1 x SD socket for version A, 1 x Micro SD socket for version B, 1 x LPC, 1 x 16-bit GPIO
Display Chipset	Intel® Apollo lake SoC integrated Graphics	N/A
Display Interface	(HDMI or DP) + (eDP or LVDS)	1 x HDMI, 1 x LVDS, 1 x DP, 1 x eDP (1 x LVDS & 1 x eDP on board)
Audio Chipset / Interface	Intel® HD Audio	Mic-In, Line-In, Line-Out
Ethernet Chipet / Interface	1 x Intel® I211AT (N4200/ N3350) or I210IT(E3900)	1 xRJ-45
OS Support	Win 10, Linux, Android	N/A
Certification	CE, FCC Class B	CE, FCC Class B
Power Requirement	+5V	DC +12V
Operating Temp	Standard: -20° C ~ 70° C (-40° F ~ 158° F) Extended: -40° C ~ 85° C (-40° F ~ 185° F)	-40°C ~ 85°C (-40°F ~ 185°F)
Dimensions	2.8" x 2.8" (70mm x 70mm)	6.69" x 6.69" (170mm x 170mm)
Weight	1.0 oz	

Modularize Design

COM Express Core Logic Board

Upgradeable CPU while maintaining the use of the custom carrier board

- Reduced engineering design risk
- Industry standard
- Much faster time-to-market
- Lower design cost
- Allows customer specific I/O interfaces and expandability



Q7 Solution

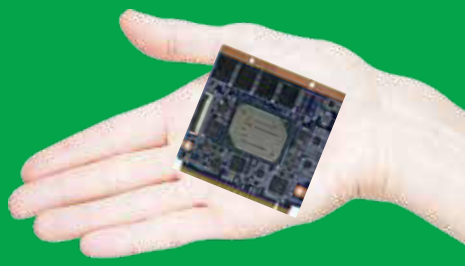
Small Form Factor for Ultra Mobile Applications

- Perfect for new low power chipsets & processors
- Defined for low cost
- High performance interfaces
- Fast serial interfaces
- Compact size

Low Cost

Low Power

Small Size



3.5" SBC

3.5" Single Board Computers (SBC)

Product Name	ECM-CFS	ECM-KBLH	ECM-SKLH	ECM-SKLU	ECM-APL2
Supported Processors	Intel Core i7-8700T 4.00GHz Intel Core i5-8500T 3.50GHz Intel Core i3-8100T 3.10GHz Intel Pentium Gold G5400T 3.10GHz Intel Celeron G4900T 2.90GHz	Intel Core i7-7820EQ 4-Core 3.0GHz Intel Core i5-7440EQ 4-Core 2.9GHz Intel Core™ i3-7100E 2-Core 2.9GHz	Intel Core i7-6820EQ 4-Core 2.8GHz Inte Core i5-6440EQ 4-Core 2.7GHz Intel Core i3-6100E 2-Core 2.7GHz	Intel Core i7-6600U, 2-Core, 2.6GHz Intel Core i5-6300U, 2-Core, 2.4GHz Intel Core™ i3-6100U, 2-Core, 2.3GHz	Intel Pentium N4200 1.1GHz Intel Celeron N3350 1.1 GHz
# of Ind. Display	3	3	3	3	3
System Chipset	Intel® Q370 PCH	Intel® QM175 PCH	Intel® QM170 PCH	N/A	N/A
System Memory	1 x 260-pin SoDIMM Socket Up to 16GB DDR4 2400/2666MHz	1 x 260-Pin DDR4 2400MHz SoDIMM up to 16 GB	1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB	1 x 260-Pin DDR4 2133MHz SoDIMM up to 16 GB	1 x 204-Pin DDR3L 1866MHz SoDIMM,supports 4G/8G, up to 8GB DDR3L 1866MTs SDRAM (Non-ECC)
Audio Chipset	Realtek ALC892 Mic-In, Line-In, Line-Out	Realtek ALC233 Audio Amp.:2W		Realtek ALC892 Mic-In, Line-In, Line-Out	Realtek ALC892 Mic-In, Line-In, Line-Out
Ethernet Chipset	1 x Intel I211AT, 1 x Intel I219LM	1 x Intel I210AT, 1 x Intel I219LM		1 x Intel I211AT, 1 x Intel I219LM	2 x Intel I211AT
Ethernet	2 x RJ-45	2 x RJ-45		2 x RJ-45	2 x RJ-45
Expansion Interface	1 x Mini PCIe Supports mSATA	1 x Mini PCIe Supports mSATA 1 x M.2 (B-Key, 2242)		1 x Mini PCIe Supports mSATA, 1 x M.2 (B-Key, 224 2 with uSIM card connector for 3G/4G)	2 x Mini PCIe (1 x Full-size Mini PCIe with mSATA Supported,1 x Half-size Mini PCIe)
Storage	1 x mSATA Supported from Mini PCIe	1 x mSATA from Mini PCIe 1 x M.2 (SATA)		1 x mSATA from Mini PCIe 1 x M.2 (SATA)	1 x mSATA Supported from Mini PCIe
Display Chipset	Intel® Coffee Lake Processor Integrated Graphics	Intel® Kaby lake SoC Integrated Graphics		Intel® Skylake U SoC Integrated Graphics	Intel® Apollo Lake SoC Integrated Gen9 LP Graphics
Resolution	2 x HDMI: Max.4096x2304 @ 30Hz LVDS: Max. 1920x1080 @ 60Hz	2 x HDMI: Max. 4096x2160 @ 24Hz LVDS: Max. 1920x1080 @ 60Hz			HDMI: Max. 3840x2160 @ 30Hz VGA: Max. 1920x1200 @ 60Hz
I/O	2 x USB 2.0, 4 x USB 3.1, 2 x SATA III, 2 x RS-232, 1 x 8-bit GPIO, 1 x LPC, 1 x SPI	2 x USB 2.0, 4 x USB 3.0, 1 x RS-232/422/485, 1 x RS-232, 2 x SATA III, 1 x 8bit GPIO, 1 x LPC, 1 x SPI		2 x USB 2.0, 4 x USB 3.0, 1 x RS-232/422/485, 5 x RS-232, 1 x SATA III, 1 x 8bit GPIO, 1 x LPC, 1 x SPI	4 x USB 3.0, 2 x USB 2.0, 1 x SATA III, 2 x RS-232/422/485, 1 x 8bit GPIO, 1 x LPC, 1 x SPI
Supported OS	Win 10, Linux	Win 10, Linux		Win 10, Win 8.1, Win 7, Linux	Win 10, Linux
PW Requirement	+12V	+12V		+12V ~ +26V	+12V ~ +26V
Power Type	AT/ATX				
Operating Temp	0°C ~ 60°C (32°F ~ 140°F)				0°C ~ 60°C (32°F ~ 140°F) -40°C ~ 85°C (-40°F ~ 185°F) (Optional for Wide Temp.)
Certification	CE, FCC Class B				
Dimensions	5.7" x 4" (146mm x 101mm)				
Weight	0.44lbs (0.2kg)				

* All product specifications and product images are subject to change without notice.



3.5" SBC Series

Compact, Full Featured, Small Form Factor Solutions

The 3.5" Single Board Computer (SBC) embedded board is the ideal solution for applications that are space constrained and require compact, full featured, rich I/O interfaces, and capable of expansion. Unlike the COM Express and Q7 modules, the 3.5" SBC is a single board computer measuring 5.7" x 4" and provides full functionality in a small-sized PCBA. Features include fanless, ultra-low power, compact, rich I/O, high shock and vibration resistance, with optional extended temperature range available in some models.

ECM-APL	ECM-BYT	ECM-BYT2
Intel Pentium N4200 1.1GHz Intel Celeron N3350 1.1 GHz	Intel Atom E3845 4-Core 1.91GHz Intel Celeron J1900 4-Core 2.0GHz	Intel Atom E3845 4-Core 1.91GHz Intel Celeron J1900 4-Core 2.0GHz
3	2	
N/A	N/A	
1 x 204-Pin DDR3L 1866MHz SoDIMM,supports 4G/8G, up to 8GB DDR3L 1866MTs SDRAM (Non-ECC)	1 x 204-Pin DDR3L 1066/1333MHz SoDIMM up to 8 GB	
Realtek ALC892 Mic-In, Line-In, Line-Out	Realtek ALC892 Mic-In, Line-In, Line-Out	
2 x Intel I211AT, (Intel I210IT for WT)	2 x Intel® I211AT	2 x Realtek 8111E
2 x RJ-45	2 x RJ-45	2 x RJ-45
1 x Mini PCIe (for PCIe & USB2.0) 1 x M.2 (B-Key, 2242) (M.2 support SATA/PCIex1/USB interface & with Micro SIM card connector) for SSD/3G/4G	1 x Mini PCIe Supports mSATA	2 x Mini PCIe 1 x Full-size Mini PCIe with mSATA Supported 1 x Half-size Mini PCIe
1 x M.2	1 x CompactFlash Type I/II Socket	1 x mSATA Supported from Mini PCIe
Intel® Apollo Lake SoC integrated Gen9 LP Graphics	Intel® Valleyview SoC Integrated Graphics	
HDMI: Max. 3840x2160 @ 30Hz LVDS: Max. 1920x1080 @ 60Hz	VGA: Max. 2560x1080 @ 60Hz HDMI: Max. 1920x1200 @ 60Hz LVDS: Max. 1920x1080 @ 60Hz	
1 x USB 2.0, 4 x USB 3.0, 1 x SATA III, 1 x RS-232/422/485, 5 x RS-232, 1 x LPC, 1 x SPI, 1 x Micro SIM Card Slot, 1 x 8bit GPIO	5 x USB 2.0, 1 x USB 3.0, 3 x RS-232, 1 x RS-232/422/485, 1 x SATA II, 1 x 8bit GPIO, 1 x LPC, 1 x PS2/ KB & MS	7 x USB 2.0, 1 x USB 3.0, 1 x RS-232, 1 x RS-232/422/485, 1 x SATA II, 1 x 8bit GPIO, 1 x LPC
Win 10, Linux	Win 10, Win 8, Win 7, Linux	
+12V ~ +26V		
AT/ATX		
0°C ~ 60°C (32°F ~ 140°F) -40°C ~ 85°C (-40°F ~ 185°F) (Optional for Wide Temp.)	0°C ~ 60°C (32°F ~ 140°F) -40°C ~ 85°C (-40°F ~ 185°F) (Optional for Wide Temp.)	0°C ~ 60°C (32°F ~ 140°F)
CE, FCC Class B		
5.7" x 4" (146mm x 101mm)		
0.44lbs (0.2kg)		

uATX and ATX




Micro ATX (uATX) Motherboards

Product Name	RX370Q	RX170Q	RX110H	RX87Q
Special Features	• Gold Plating Connectors • USB 3.1 Gen 1 & Gen 2	• High Reliability Gold Plated Connectors • Kaybe Lake/ Skylake	• Cost Effective Micro ATX • Kaybe Lake/ Skylake Platform	• High Reliability Gold Plating Connectors • 6 x COM
Supported Processors	8th Gen 14nm Intel® Core-i/ Pentium/ Celeron Coffee Lake Processors up to 95W TDP	14nm Intel® Core i7/i5/ i3, Pentium and Celeron Processors up to 95W TDP	14nm Intel® Core i7/i5/ i3, Pentium and Celeron Processors up to 95W TDP	22nm Intel® Core i7/i5/i3 and Pentium Processors
CPU Type	LGA1151 Socket	LGA1151 Socket	LGA1151 Socket	LGA1155 Socket
# of Ind. Display	3	3	2	3
System Chipset	Intel® Q370 PCH	Intel® Q170 PCH	Intel® H110 PCH	Intel® Q87 PCH
System Memory	4 x DIMM Sockets up to 64 GB Dual Channel DDR4 2400 MHz	4 x DIMM Sockets up to 64 GB Dual Channel DDR4 2133 MHz	2 x DIMM Sockets up to 32 GB Dual Channel DDR4 2133 MHz	4 x DIMM Sockets up to 32 GB Dual Channel1600 MHz DDR3
Audio Codec	Realtek® ALC892	Realtek ALC892 HD	Realtek ALC887 HD	Realtek ALC887 HD
Ethernet Chip	Intel® I219-LM + I211-AT	Intel® I219-LM + I211-AT	Intel® I219-V + I211-AT	Intel® I217-LM + I210-AT
Expansion Slot	1 x PCIe x 16 Slot (Gold Plated) 2 x PCIe x4 (Gold Plated) 1 x PCIe x1 (Gold Plated) 1 x M.2 Type M 2242, 2260, 2280 1 x M.2 Type A/E 2230	1 x PCIe x16 1 x PCIe x4 2 x PCIe x 1 1 x mini-PCIe 1 x M.2 (2280)	1 x PCIe x 16 3 x PCIe x 1	1 x PCIe x16 1 x PCIe x4 1 x PCIe x1 1 x PCI
Graphic Engine	Intel® HD Integrated Graphics	Intel® HD Integrated Graphics	Intel® HD Integrated Graphics	Intel® HD Integrated Graphics
Video Output	1 x LVDS (Opt. eDP), 1 x HDMI 2 x DisplayPort (All Gold Plated)	2 x DP, 1 x DVI-D 1 x LVDS (Optional eDP)	2 x DP 1 x DVI-D	2 x DisplayPort 1 x DVI-D, 1 x VGA
COM (Serial)	1 x RS-232/422/485 (Gold Plated) 5 x RS-232	1 x RS-232/422/485 5 x RS-232 Headers	1 x RS-232/422/485, 1 x RS232 (Opt. additional 4 COM)	6 x RS-232
USB	4 x USB 3.1 Gen 1 1 x USB 3.1 Gen 2 Type-C 6 x USB 2.0	4 x USB 3.0 8 x USB 2.0	4 x USB 3.0 6 x USB 2.0	4 x USB 3.0 10 x USB 2.0
SATA & eSATA	6 x SATA III	6 x SATA III	4 x SATA III	6 x SATA III
RAID	RAID 0, 1, 5 and 10	RAID 0, 1, 5 and 10	N/A	RAID 0, 1, 5 and 10
GPIO/LPT/PS2	1 x 8-bit GPIO / 1 / 0	1 x 8-bit GPIO / 1 / PS/2 KB	1 x 8-bit GPIO / 1 / PS/2 KB/MS	1 x 8-bit GPIO / 1 / PS/2 KB
Audio Interface	Line-in, Line-out, Mic-in	Line-in, Line-out, Mic-in	Line-out, Line-in, Mic-in	Line-in, Line-out, Mic-in
LAN Port	2 x RJ-45	2 x RJ-45	2 x RJ-45	2 x RJ-45
TPM	Infineon® SLB 9665 TPM 2.0	Optional TPM 2.0	Infineon® SLB 9665 TPM 2.0	Infineon® SLB 9665 TPM 2.0
Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX
Operating Temp	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
Dimensions	9.6" x 9.6" (243.84mm x 243.84mm)	9.6" x 9.6" (243.84mm x 243.84mm)	9.6" x 9.6" (243.84mm x 243.84mm)	9.6" x 9.6" (243.84mm x 243.84mm)
Weight	1.45lbs (0.66kg)	1.45lbs (0.66kg)	1.45lbs (0.66kg)	1.35lbs (0.6kg)

* All product specifications and product images are subject to change without notice.

ATX Motherboards

Product Name	BC370Q	BC246C
Special Features	• USB 3.1 Gen 1 & Gen 2 • TPM 2.0	• Supports Error-Correcting Code (ECC) when using the Intel® Xeon E3 or compatible processors • TPM 2.0
Supported Processors	8th Gen Intel® Core-i/ Pentium/Celeron Coffee Lake CPU up to 95W TDP	8th Gen 2C/4C/6C Intel® Xeon E3, Core-i, Pentium®, Celeron® up to 95W TDP
CPU Type	LGA1151 Socket	LGA1151 Socket
# of Ind. Display	3	3
System Chipset	Intel® Q370 PCH	Intel® C246 PCH
System Memory	4 x DIMM Sockets up to 64 GB Dual Channel DDR4 2400 MHz	4 x DIMM Sockets up to 64 GB Dual Channel DDR4 2400 MHz
Audio Codec	Realtek ALC892	Realtek ALC892
Ethernet Chip	Intel® I219-LM + Intel® I211-AT	Intel® I219-LM + Intel® I211-AT
Expansion Slot	1 x PCIe x 16 Slot 2 x PCIe x4 2 x PCIe x1 2 x PCI 1 x M.2 Type M 2242, 2260, 2280 1 x M.2 Type A/E 2230	1 x PCIe x 16 Slot 2 x PCIe x4 2 x PCIe x1 2 x PCI 1 x M.2 Type M 2242, 2260, 2280 1 x M.2 Type A/E 2230
Graphic Engine	Intel® HD Integrated Graphics	Intel® HD Integrated Graphics
Video Output	1 x VGA, 1 x HDMI 2 x DisplayPort	1 x VGA, 1 x HDMI 2 x DisplayPort
COM (Serial)	1 x RS-232/422/485 5 x RS-232	1 x RS-232/422/485 5 x RS-232
USB	4 x USB 3.1 Gen 1 4 x USB 3.1 Gen 2 1 x USB 3.1 Gen 2 Type-C 8 x USB 2.0	4 x USB 3.1 Gen 1 4 x USB 3.1 Gen 2 1 x USB 3.1 Gen 2 Type-C 8 x USB 2.0
SATA & eSATA	6 x SATA III	6 x SATA III
RAID	RAID 0, 1, 5 and 10	RAID 0, 1, 5 and 10
GPIO/LPT/PS2	1 x 8-bit GPIO / 1 / 0	1 x 8-bit GPIO / 1 / 0
Audio Interface	Line-in, Line-out, Mic-in	Line-in, Line-out, Mic-in
LAN Port	2 x RJ-45	2 x RJ-45
TPM	Infineon® SLB 9665 TPM 2.0	Infineon® SLB 9665 TPM 2.0
Power Type	AT/ATX	AT/ATX
Operating Temp	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
Dimensions	12" x 9.6" (304.80mm x 243.84mm)	12" x 9.6" (304.80mm x 243.84mm)
Weight	1.35lbs (0.6kg)	1.35lbs (0.6kg)

uATX & ATX

Powerful & Reliable Platform with Rich Expansion Capability

These full feature industrial motherboards are optimized for high system performance, graphic card expandability, large emory and storage configurations, and multiple expansion card capability. Typical applications are healthcare, image processing, security, robotics, simulation, and test equipment where reliability, 24/7 operation, and expandability are a must. Key benefits:

- Scalable system performance
- Rich I/O and expansion interfaces
- High Reliability
- Comparatively cost effective
- 5-7 years life cycle support

ARM (RISC) Platform

Front View

Back View

SMARC Modules (RISC)

Product Name	SMA-IMX8M *		SMA-IMX6		REV-SA01
Processor	NXP i.MX 8M Cortex A53/ Cortex M4, Quad Core, Dual Core, QuadLite up to 1.5 GHz		NXP i.MX Cortex A9, Solo 800M Hz NXP i.MX 6 Quad Core 1.0G Hz , Optional Quad core 1.2G Hz		N/A
System Memory	1 GB Onboard DDR4 Memory up to 4GB		4 x DDR3-1600 128Mx16 FBGA96(9x14) MICRON 1G 4 x DDR3L-1600 128Mx16 FBGA96(9x14) MICRON 2G		N/A
Storage	eMMC 4GB ~ 64GB		eMMC 4GB ~ 64GB		N/A
Display Chipset	Vivante® GC7000Lite Integrated Graphic		Dual Display HD 1080p Encode and Decode 2D and 3D Acceleration		N/A
OS Support	Android, Linux, Yocto		Android, Linux, Yocto		N/A
I/O	1 x USB 3.0, USB OTG 2 x RX/TX (Ser1/3) 2 x UART (Ser0/2) 2 x PCIex1 1 x MLB150 12 x GPIOs, 1 x SDIO, eMMC 2 x SPI, 3 x I2C, 1 x SPDIF, 1 x WDT, 2 x CAN, 1 x JTAG		2 x USB 2.0 Port (One OTG) 2 x RX/TX (Ser1/3) 2 x UART (Ser0/2) 1 x PCIex1 1 x MLB150 12 x GPIOs, 1 x SDIO, 1 x SATA eMMC, 2 x SPI, 3 x I2C, 1 x SPDIF, 1 x WDT, 2 x CAN, 1 x JTAG		**External I/O:** 1 x HDMI 1 x VGA 2 x RJ45 1 x DB9 1 x Mini-USB 2 x USB Type A **Internal I/O:** 1 x LVDS, 1 x Backlight, 1 x SD Socket, 1 x USB Connector, 2 x CAN BUS, 1 x Speaker-out/ Mic-in, 1 x RS-232, 1 x GPIO, 1 x SATA, 1 x RTC Battery, 1 x 2 Cell Li Battery Connector
Power Requirement	3V to 5.25V - Operates Directly from Single Level Lithium Ion Cells, or Fixed 3.3V or 5V Power Supplies		3V to 5.25V - Operates Directly from Single Level Lithium Ion Cells, or Fixed 3.3V or 5V Power Supplies		+9V ~ 36V DC-in (REV-SA01-02-A1R) +9V ~ 24V DC-in (REV-SA01-03-A1R)
Operating Temp	Commercial Temperature: 0°C ~ 60°C (32°F ~ 140°F)	Industrial Temperature: -40°C ~ 85°C (-40°F ~ 185°F)	Commercial Temperature: 0°C ~ 60°C (32°F ~ 140°F)	Industrial Temperature: -40°C ~ 85°C (-40°F ~ 185°F)	0°C ~ 60°C (32°F ~ 140°F)
Storage Temp	-40°C ~ 85°C (-40°F ~ 185°F)				-20°C ~ 80°C (-40°F ~ 176°F)
Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing				
Certification	CE, FCC Class B				CE, FCC Class B
Dimensions	3.23" x 1.97" (82mm x 50mm)				5.7" x 4" (146mm x 101mm)
Weight	0.8 oz (0.06kg)				0.88lbs (0.4kg)

* All product specifications and product images are subject to change without notice.

* Subject to change

* Subject to change

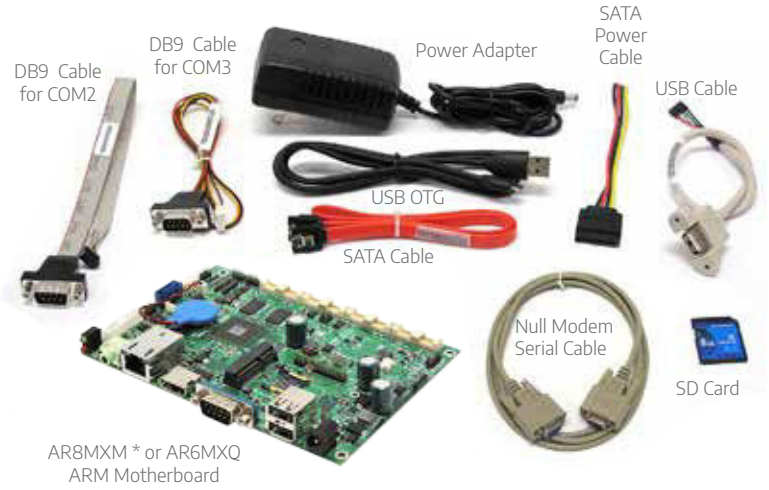
RISC Motherboards

Name	AR8MXM *	AR8MXC *	AR6MXQ	AR6MXS	AR6MXCS
Processor	NXP i.MX 8M Cortex A53/ Cortex M4, Quad Core, Dual Core, QuadLite up to 1.5 GHz	NXP i.MX 8M Cortex A53/ Cortex M4, Dual Core up to 1.5 GHz	NXP i.MX 6 Quad Core	NXP i.MX 6 Solo Core	NXP i.MX 6 Solo Core
System Memory	2 GB DDR4 Expandable up to 4GB	1 GB DDR4 Expandable up to 4GB	1 GB DDR3	1 GB DDR3	512 MB DDR3 Optional 1 GB DDR3
Graphics	Vivante® GC7000Lite Integrated Graphic		OpenGL® ES 2.0 and OpenVG™ 1.1 Hardware Accelerators& Multi-Format HD1080p Video Decoder and HD720p Video Encoder Engine		
Ethernet	1 x Micrel® KSZ9031 1 x Realtek® RTL8119G	1 x Micrel® KSZ9031	1 x Micrel® KSZ9031	Micrel® KSZ9031	Micrel® KSZ9031
OS	Android, Linux				Linux Android (1 GB DDR3 Only)
Expansion	1 x MicroSD Card Slot 1 x 2230 M.2 for Wi-Fi/BT 1 x 3042 M.2 for 3G/4G Module 1 x SIM Socket for 3G/4G Module	1 x uSD Card Slot (Bootable) Onboard eMMC Flash (Optional) 1 x 2230 M.2 for Wi-Fi/BT	1 x SD Card Slot 1 x mini-PCIe		1 x uSD Card Slot (Bootable) Onboard eMMC Flash (Optional) 1 x Half Size mini-PCIe
Storage	Onboard 8GB eMMC	Through uSD Card	Onboard 4 GB eMMC	Optional eMMC	Through uSD Card
External I/O	1 x HDMI 2 x RJ-45 2 x USB 3.0 Type A 1 x USB OTG Type C 1 x RS-232 DB9 COM Port 1 x Line-out 1 x Barrel Type Connector	1 x Line-Out 2 x USB 3.0 1 x USB OTG Type C 1 x HDMI 1 x RJ-45 1 x Barrel Type Connector	1 x Line-Out 2 x USB Connectors 1 x RS-232 1 x HDMI Connector 1 x RJ-45 Connector 1 x Barrel Type Connector		1 x Line-Out 2 x USB 2.0 1 x Micro USB (USB OTG) 1 x HDMI 1 x RJ-45 1 x Barrel Type Connector
Internal I/O	2 x MIPI-CSI Header 1 x LVDS Header 1 x CAN Bus Header 2 x I2C Headers 1 x I2S Header 1 x SPI Header 1 x 8-bits GPIO Header 1 x Front Panel Pin Header 1 x Mic-In Header 1 x Line-Out Header 1 x DC-In Header (Optional)	1 x LVDS Header 1 x MIPI-CSI Header 1 x USB 2.0 Headers (2 Ports) 1 x TTL 1 x RS-232 COM 1 x 8 bits GPIO 1 x I2C Header 1 x CAN Bus Header 1 x Front Panel Pin Header 1 x Mic-in Header	2 x LVDS Header 1 x MIPI-CSI Header 1 x MIPI-DSI Header 1 x 2x5 USB Headers (2 Ports) 1 x Micro USB OTG connector 1 x RS-232 and 1 x TTL 1 x 2x5 GPIO Pin Header 1 x Front Panel Pin Header 1 x SATA 1 x SATA Power Connector	1 x LVDS Header 1 x MIPI-CSI Connector 1 x 2x5 USB Headers (2 Ports) 1 x Micro USB OTG connector 1 x RS-232 1 x TTL 1 x 2x5 GPIO Pin Header 1 x Front Panel Pin Header	1 x LVDS 1 x Inverter Control Header 1 x USB 2.0 Headers (2 Ports) 1 x TTL 1 x 8 bits GPIO 1 x I2C Header 1 x CAN Bus Header 1 x Front Panel Pin Header 1 x Mic-in Header
Power Requirement	12V ~ 24V DC Input	5V DC Input	9V ~ 24V DC Input		5V DC Input
Operating Temp	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 50°C (32°F ~ 122°F)	0°C ~ 60°C (32°F ~ 140°F)	0°C ~ 60°C (32°F ~ 140°F)
Storage Temp	-20°C ~ 80°C (-40°F ~ 176°F)				
Certification	CE, FCC Class B				
Dimensions	5.7" x 4" (146mm x 101mm)	4.72" x 3.07" (120mm x 78mm)	5.7" x 4" (146mm x 101mm)	5.7" x 4" (146mm x 101mm)	4.72" x 3.07" (120mm x 78mm)
Weight	7 oz	3.5 oz	7 oz	7 oz	3.5 oz

ARM Development Kit

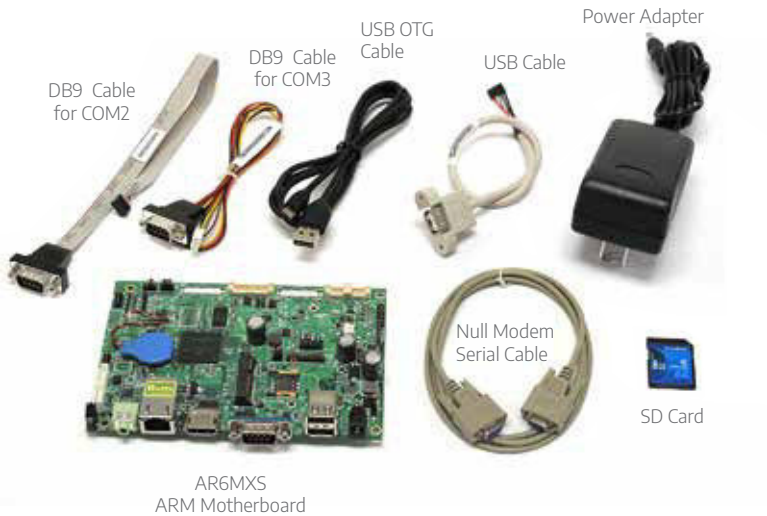
3.5" ARM Quad-Core SBC Development Kit

Product Name	AR8MXM-DEV Series *	AR6MXQ-DEV Series
Part No.	Item Description	
63808	Linux or Android OS Pre-loaded on Micro SD Card	
Motherboard	AR8MXM i.MX 8M Cortex A53 Quad Core 1.5 GHz	AR6MXQ Motherboard i.MX6 Cortex A9 Quad Core 1.0 GHz
65731	12V / 3A Power Adapter	
182000000069	DB9 cable for COM2 (RS-232, 10P to DB9 female)	
182000000072	DB9 cable for COM3 (RS-485, JST 4P to DB9 female)	
183000000070	USB OTG Cable, Type A male to Micro USB male	
182000000068	USB Cable for USB3 or USB4 (5P to Type A female)	
183000000070	SATA Power Cable	
181100000006	SATA Data Cable	
Model Cable	Null Modem Serial Cable	



AR6MXS Development Kit

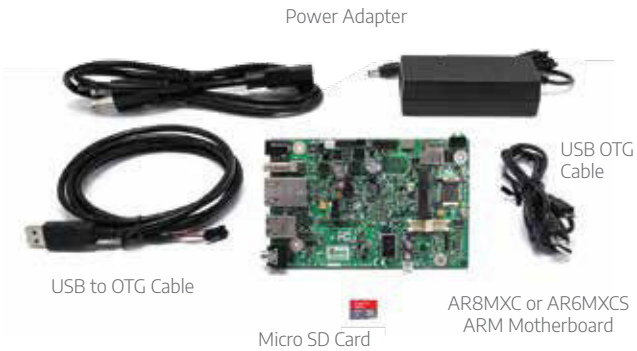
Product Name	AR6MXS-DEV-AN	AR6MXS-DEV-LX
Part No.	Item Description	
63808	Android OS Pre-loaded on SD Card	Linux Pre-loaded on SD Card
Motherboard	AR6MXS RISC Motherboard i.MX6 Cortex A9 Solo Core 1.0 GHz	
65731	12V / 3A Power Adapter	
182000000069	DB9 cable for COM2 (RS-232, 10P to DB9 female)	
182000000072	DB9 cable for COM3 (RS-485, JST 4P to DB9 female)	
183000000070	USB OTG Cable, Type A male to Micro USB male	
182000000068	USB Cable for USB3 or USB4 (5P to Type A female)	
Model Cable	Null Modem Serial Cable	



* All product specifications and product images are subject to change without notice.

Compact ARM Board Development Kit

Product Name	AR8MXC-DEV * Series	AR6MXCS-DEV-LX
Item	Description	
Micro SD	Linux or Android OS Pre-loaded on Micro SD Card	
Motherboard	AR8MXM RISC Motherboard i.MX8M Cortex A53 Dual Core 1.5 GHz	AR6MXCS RISC Motherboard i.MX6 Cortex A9 Solo Core 1.0 GHz
Power Adapter	5V Power Adapter	5V Power Adapter
Cables	USB to OTG Cable USB to TTL Cable	USB to OTG Cable USB to TTL Cable



SMARC Development Kit

Product Name	SMA-IMX8M * Series	SMA-IMX6 Series
OS (Pre-loaded on SD Card)	Linux, Android or Yocto OS	
Motherboard	NXP i.MX 8M Cortex A53 Quad Core 1.5 GHz SMARC Module	SMA-IMX6 i.MX6 Cortex A9 Quad Core 1.0 GHz SMARC Module
Carrier Board	REV-SA01 SMARC Evaluation Board in 3.5" SBC	
Power Adapter	AC Input: 100 - 240V DC Output: 5.0V	
Cable	1 x Power Cable 1 x mini-USB Cable	

ARM (RISC) Platform Features

Space-Saving

Ultra small form factor design with rich onboard I/O and mini-PCIe expansion. Ideal for ultra compact or mobile devices.

Energy-Saving

ARM platform products are designed with low TDP and estimated power consumption is 1~2W (with conditions).

Cost-Saving

By design ARM based products are more cost effective due to their simplistic design requirements and low power consumption.

BOX Computer

Industrial Computers

Product Name	BI260-370QD	BI255-3350N	BI255-1900J	BI260-170QD	BI260-110HD
Board Inside	MX370QD mini-ITX	MX3350N mini-ITX	MX1900J mini-ITX	MX170QD mini-ITX	MX110HD mini-ITX
Supported Processors	8th Gen Intel Core i7/i5/i3, Pentium, Celeron CPU	Intel Celeron N3350 Dual Core 2.40 GHz CPU Onboard	Intel BayTrail Celeron J1900 Quad Core CPU Onboard	6th/7th Gen Intel Core i7/i5/i3, Celeron/Pentium CPU	6th/7th Gen Intel Core i7/i5/i3, Celeron/Pentium CPU
CPU Type	LGA 1151 Socket	CPU Onboard		LGA 1151 Socket	LGA 1151 Socket
System Chipset	Intel® Q370 PCH	SoC	SoC	Intel® Q170 PCH	Intel® H110 PCH
System Memory	2 x (Gold Plated) SoDIMM up to 32 GB 2400 MHz DDR4	2 x SoDIMM up to 8 GB 1600 MHz DDR3L	2 x SoDIMM Sockets up to 8 GB 1333 MHz DDR3L	2 x (Gold Plated) SoDIMM up to 32 GB 2133 MHz DDR4	2 x SoDIMM up to 16 GB 2133 MHz DDR4
Display Chip	Intel® Integrated Graphic Engine	Intel® Integrated Graphic Engine	Intel® Integrated Graphic Engine	Intel® Integrated Graphic Engine	Intel® Integrated Graphic Engine
Audio Chip	Realtek ALC892/887	Realtek ALC887	Realtek ALC892	Realtek ALC892/887	Realtek ALC662/ ALC886
Ethernet Chip	1 x Intel® i219-LM 1 x Intel® i211-AT	2 x Intel® i211-AT	2 x Intel® i211-AT	1 x Intel® i219-LM 1 x Intel® i211-AT	Intel® i219-LM PHY Intel® i210-AT PCIe
Expansion	1 x PCIe x16, 1 x M.2 Type A/E 2230, 1 x M.2 Type M 2242, 2280	1 x PCIe x1 , 1 x 2230 M.2 E Key, 1 x 2280 & 2242 M.2 M Key	1 x Full Size mini-PCIe 1 x Half Size mini-PCIe	1 x Full/Half Size mini-PCIe 1 x M.2 Slot (2280 and 2242)	1 x PCIe x4, 1 x mini-PCIe, 1 x mini-PCIe with mSATA III
Storage	1 x 2.5" HDD Bay	1 x 2.5" HDD Bay	1 x 2.5" HDD Bay	1 x 2.5" HDD Bay	1 x 2.5" HDD Bay
System Fan	1 x 60mm	1 x 60mm	1 x 60mm	1 x 60mm	1 x 60mm
External I/O					
USB	2 x USB 3.1 Gen 1, 1 x USB Type-C (USB 3.1 Gen 2), 4 x USB 3.1 Gen 2	4 x USB 3.0	4 x USB 3.0	4 x USB 3.0 and 2 x USB 2.0 2 x USB 3.0 OR 2 x USB 2.0	4 x USB 3.0 2 x USB 2.0
COM Port	1 x COM	1 x COM	1 x COM	2 x COM	2 x COM
Display	1 x HDMI (Gold Plated) 2 x DisplayPort (Gold Plated)	1 x DisplayPort 2 x HDMI	1 x DisplayPort 1 x VGA	2 x DisplayPort (Gold Plated) 1 x HDMI (Gold Plated)	1 x DisplayPort 1 x HDMI
LAN	2 x RJ-45	2 x RJ-45	2 x RJ-45	2 x RJ-45	2 x RJ-45
Audio	Line-out, Line-in, Mic-in	Mic-in, Line-out	Mic-in, Line-out	Line-out, Line-in, Mic-in	Mic-in, Line-out
Other	1 x DC-In Jack (Gold Plated)	DC-in	DC-in	DC-in, 1 x PS/2 Mouse	DC-in
Power Requirement	12V-24V Wide Range DC-In	12V DC	12V DC	12V, 16 - 24V DC	19V DC
Adapter	Input: 100~240V / 50~60Hz Output: 90W Adapter (19V @ 4.73A)	Input: 100~240V / 50~60Hz Output: 60W Adapter (12V @ 5A)	Input: 100~240V / 50~60Hz Output: 60W Adapter (12V @ 5A)	Input: 100~240V / 50~60Hz Output: 90W Adapter (19V @ 4.73A)	Input: 100~240V / 50~60Hz Output: 90W Adapter (19V @ 4.73A)
Operating Temp	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)
Dimensions	8.6" L x 8" W x 3" H	8" L x 7.1" W x 2.5" H	8" L x 7.1" W x 2.5" H	8.6" L x 8" W x 3" H	8.6" L x 8" W x 3" H
Weight	4.25 lbs	3.14 lbs	3.14 lbs	4.25 lbs	4.25 lbs
Certification	FCC, CE	FCC, CE	FCC, CE	FCC, CE	FCC, CE

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Fanless Compact Computers

Product Name	EPC-SKLU	EPC-APL	EPC-BTCR	EPC-BTCRP
Supported Processors	Intel i7-6600U, Intel i5-6300U Intel i3-6100U, Intel Celeron 3955U	Intel® N4200 Intel® N3350	Intel® Atom™ Z3735F 1.33GHz SoC	
System Memory	1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB	1 x 204-Pin DDR3L 1866MHz SO-DIMM up to 8 GB	2GB DDR3L Memory on board	
Display Chip	Intel® HD Graphics 520/ 510	Intel® HD Graphics 505/500	Intel® HD Graphic	
Display Resolution	2 x HDMI: Max. 4096x2160 @ 24Hz	VGA: Max. 1920x1200 @ 60Hz 2 x HDMI: Max. 3840x2160 @ 30Hz	HDMI up to 1080p@60FPS	
Audio Chip	Realtek ALC892	Realtek ALC892	Realtek ALC5645-CGT	
Ethernet Chip	1 x Intel® I211AT and Intel® I219LM	2 x Intel® I211AT	Microchip LAN9512 10/100 Ethernet	
Expansion	1 x Full Size Mini PCIe (mSATA) 1 x M.2 (B-KEY, 2242)	1 x Full size Mini PCIe Supports mSATA 1 x Half size Mini PCIe Supports Wi-Fi Module	1 x Micro SD card slot	
Storage	1 x 2.5" Drive Bay (7mm) 1 x M.2 (B-KEY, 2242) 1 x mSATA	1 x mSATA, 1 x 2.5" Drive Bay	32GB eMMC on board	
USB	2 x USB 2.0, 4 x USB 3.0	4 x USB 3.0	2 x USB 2.0 (Type A)	
COM Port	1 x RS-232 1 x RS-232/422/485	1 x RS-232/422/485	N/A	1 x RS232, 1 x RS422, 2 x RS485
Display	2 x HDMI	2 x HDMI, 1 x VGA	1 x HDMI	1 x HDMI
LAN	2 x RJ-45	2 x RJ-45	1 x RJ-45	2 x RJ-45
Other	2 x Knockouts for Antenna Mounting 1 x DC-in	2 x Knockouts for Antenna Mounting 1 x DC-in	1 x Line out, 1 x MicroSD, 1 x Micro USB (Android Only) , 1 x PWR Switch w/LED (default: on) 1 xSMA Antenna, GPIO	
Power	+12V ~ +26V	+12V ~ +26V	12 ~ 24VDC	
Power Mode	AT/ATX (ATX is default setting)	AT/ATX (ATX is default setting)	AT	
Adapter	Input: 100 ~ 240Vdc/ 50 ~ 60Hz Output: 12V/5A AC-DC 60W	Input: 100 ~ 240Vdc/ 50 ~ 60Hz Output: 12V/5A AC-DC 60W	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 40W Adapter (19V @ 2.1A Adapter)	
Operating Temp	With extended temperature peripherals w /air flow: -10°C ~ 50°C (14°F ~ 122°F)	With extended temperature peripherals w /air flow: -10°C ~ 50°C (14°F ~ 122°F)	0°C ~ 55°C (32°F ~ 131°F)	
Dimensions	7" x 4.8" x 2.0" (177mm x 123mm x 50mm)	7" x 4.8" x 1.7" (177mm x 123mm x 43.5 mm)	6.63" x 4.14" x 0.69" (168.5 x 105.2 x 17.5 mm)	6.63" x 4.14" x 1.38" (168.5 x 105.2 x 35 mm)
Weight	2.65 lbs (1.2KG)	2.65 lbs (1.2KG)	1.18 lbs (535g)	1.69 lbs (765g)
Certification	UL Certified, CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	
Construction	Aluminum + Metal		Aluminum housing	
Mounting Kit	Stand (Default), VESA Mount kit (Factory Option), Din Rail kit (Factory Option)		VESA/DIN-rail/Wall mounting kits (optional)	
Vibration Test	With SSD: 5Grms, IEC 60068-2-64, Random, 10 ~ 500Hz, 30min/3 Axis		Random, 5Grms 5-500Hz, 10Oct./min, 1hr/axis, (IEC 60068-2-64 compliance)	
Shock Test	With SSD : 50G, IEC 60068-2-27, Half Sine, 11ms		Half sine, 50G, 11ms, (IEC 60068-2-27 compliance)	

BI360-110H
MX110H mini-ITX
6th/7th Gen Intel Core i7/i5/i3, Celeron/Pentium CPU
LGA 1151 Socket
Intel® H110 PCH
2 x 260-pin SoDIMM up to 32 GB DDR4 2133 MHz
Intel® Integrated Graphic Engine
Realtek ALC892
1 x Intel® i219-LM 1 x Intel® i211-AT
1 x PCIe x16, 1 x mini-PCIe, 1 x mSATA/mini-PCIe
1 x 2.5" HDD Bay
1 x 80mm
2 x USB 3.0, 2 x USB 2.0 2 x USB 2.0
4 x COM
2 x DisplayPorts
2 x RJ-45
Line-out, Line-in, Mic-in
PS/2 KB/MS
ATX
Input: 100-240V~, 4-2A, 60-50 Hz Output: 250W
0 ~ 40°C (32 ~ 104°F)
8" L x 9.3" W x 4.4" H
7.50 lbs
FCC, CE

Open Frame Series

Fanless /Slim-Flat/ PCAP/Easy Mounting

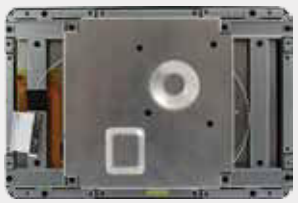
- Intel® Atom ™ processor onboard, memory, eMMC storage, Wi-Fi, Bluetooth all included
- Slim type design for any attractive decoration
- Fully flat touch screen can be cleaned and operated easily
- Efficient integration into any embedded applications
- Projected capacitive touchscreen, with multi touch

Fanless Full Flat Open Frame Tablets (16:9, Intel® Atom ™ Inside)

Product Name	OFT-10W03	OFT-07W01	OFT-10W01	OFT-15W01	OFT-21W01
LCD Size	10.1"	7"	10.1"	15.6"	21.5"
Resolution	1280 x 800	1280 x 800	1280 x 800	1920 x 1080	1920 x 1080
Luminance	350	300	350	220	250
Viewing Angle	170° (H/V)	160° (H/V)	170° (H/V)	178° (H/V)	178° (H/V)
Touch Type	PCAP Touch				
Processor	Intel® Atom™ x5-Z8300/ Z8350 1.44GHz Quad Core CPU	Intel® Atom™ Processor Z3735F 1.33GHz Quad Core CPU			
System Memory	4 GB DDR3L RAM	2 GB DDR3L RAM			
Wireless	802.11 b/g/n Wi-Fi				
Storage	32GB eMMC				
Supported OS	Windows 10	Windows 10/ Android 4.4/ Android 5.1/ Ubuntu 16.04			
External I/O	1 x 10/100 Ethernet port 2 x USB 2.0 type A connector 1 x Micro USB Client (Android only) 1 x HDMI 1.4a connector 1 x Head Phone Jack 1 x Micro SD socket				
Internal I/O	1 x USB interface 1 x RS-232(Tx/Rx) or RS-485 2 x Speaker connectors (1.2W stereo) 1 x A-Mic connector 1 x Power button interface 1 x Backlight/volume control interface 1 x 16bit GPIO interface 1 x I2C interface (optional)				
Power Type	1 x DC-in Jack, 1 x DC-in	1 x DC-in Jack, 1 x DC-in header	1 x DC-in Jack, 1 x DC-in	1 x DC-in Jack, 1 x DC-in header	1 x DC-in Jack, 1 x DC-in header
Power Requirement	DC 12 ~ 24V	12V DC	12V, 16 - 24V DC	19V DC	19V DC
Operating Temp	0 ~ 40°C (32 ~ 104°F)				
Storage Temp	-20 ~ 60°C (-4 ~ 140°F)				
Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing				
Dimensions	9.92" x 6.53" x 1.32" (252 x 166 x 38 mm)	7.21" x 4.56" x 0.96" (184 x 116 x 25 mm)	9.92" x 6.53" x 1.32" (252 x 166 x 38 mm)	15.24" x 9.25" x 1.5" (387 x 235 x 38 mm)	19.67" x 11.47" x 1.85" (500 x 292 x 47 mm)
Weight	2.6 lbs (1.18 kg)	0.73 lbs (0.33 kg)	2.6 lbs (1.18 kg)	3.29 lbs (1.49kg)	7.94 lbs (3.6 kg)

* All product specifications and product images are subject to change without notice.

OFT-07W01



OFT-10W01

OFT-15W01

OFT-21W01

External I/O Interfaces

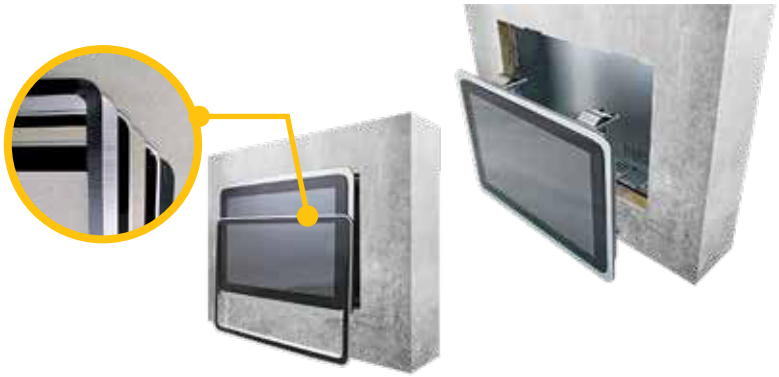
1. DC-in
2. LAN
3. USB 1
4. USB 2
5. HDMI
6. Line-out
7. Micro USB
8. Micro SD Card Slot

Internal I/O Interfaces

GPIO, USB, RS485 (COM), RS282 (COM), Touch Button, Speaker, A-Mic

Mounting Kits make installation easy and fast

Kits are available in wall mount and panel mount formats. Both provide easy installation steps and deliver a clean surface, space saving, and professional finish. There are cost-effective bezel overlays in various color and material options to surround the frame for a professional finish.



Adding a back cover or battery power

Our team of professionals can help you turn an OFT into a light weight Panel PC or a mobile tablet by adding a custom or pre-designed (10" and 7" only) plastic back cover or customize to add battery power. Whether customized or using an existing housing design we've got you covered.

Semi-Rugged Tablet

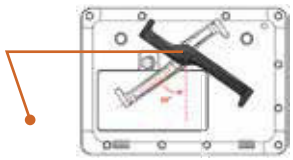
Semi-Rugged Tablet

Product Name	Ritab-10T1
Processor	Intel® Atom™ Z3735F 1.33GHz Processor
System Memory	Onboard 2GB DDR3L
Storage	Onboard 32GB eMMC, Optional 64GB
Operation System	Win 10 / Android 4.4
LCD Size/Resolution	10.1", WXGA/1280x800
Luminance	350 cd/m$_2$
Touch Screen	10 Points Projective Capacitive
Wireless LAN	802.11 b/g/n
Bluetooth	Bluetooth 4.0 Dual Mode
Camera	5MP Rear Camera with Auto Focus
NFC	ISO/IEC 14443 A/B, 15693/18092
Barcode Scanner	Full: 2D Barcode Scanner (Support 1D, PDF417 and 2D Bar Codes); Basic: N/A
Smart Card Reader	Full: Half-Slot, Reads ISO 7816-1,2,3&4, T=0 & T=1; 5V Smart Card; Basic: N/A
MSR	Full: 3 Track Reader, Triple DES and AES Encryption, DUKPT Key Management; Basic: N/A
Downside I/O Connectors	1 x Audio Jack,1 x USB 2.0 Type A, 1 x Micro SD, 1 x DC Jack, 1 x Micro HDMI Output, 1 x Micro SIM Card Slot
Control Button	1 x Power Button, 1 x G Sensor Lock Button, 2 x Barcode Scanner Trigger
LED Indicator	1 x Power/Battery
Power Requirement	DC Jack +19V
Battery	Hot-Swappable 27.75W Li-Polymer Battery (3S1P) Internal 3.7W Li-Polymer Battery (2S1P)
Battery Operating Time	8 hours
Construction	Rubber + Plastic
Dimensions	11" x 7.9" x 0.82" (281.9x 201 x 20.8mm)
Weight	2.21 lbs (1kg)
Operating Temperature	0°C ~ 40°C (32°F~104°F)
Storage Temperature	-10°C ~ 60°C (14°F~140°F)
IP Rating	IP54 (Without MSR & SCR)
Certifications	CE, FCC Class B, VCCI

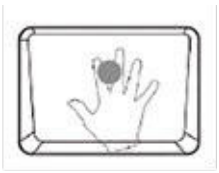
Desktop Cradle

Hand Strap

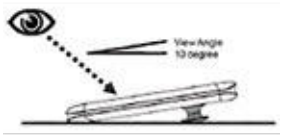
PU Hand Strap : Softer Material for User Comfortability and as Cushion when Dropped



Mushroom Handle



Flexibility and Stability for Easy-Holding and Viewing



Charging Station

* All product specifications and product images are subject to change without notice.

Mini POS

Mini POS Terminal

Product Name	RiPac-10P1
Processor	Intel® Atom™ Z3735F 1.33GHz Processor
System Memory	2GB DDR3L SDRAM
Storage	32G (Default)/64G (Optional) eMMC
Operation System	Windows 10, Android 4.4 / 5.1
LCD Panel	10.1" LCD, 5" LCD (customer facing)
Resolution	1280 x 800 (10.1"), 1280 x 720 (5")
Touch Screen	Projected Capacitive Touch
Wireless LAN	Built-in IEEE 802.11 b/g/n
Bluetooth	Built-in Bluetooth 4.0 + Class 1
Serial Port	2 x RS-232 in DB9, Powered with 5/12V
USB Port	4 x USB2.0
LAN Port	1 x RJ45
Cash Drawer	1 x RJ11
NFC	ISO/IEC 14443 A/B, 15693/18092
Thermal Printer	Printing Method: Thermal Dot Line Printing Resolution: (W) 8 Dots/mm, (H) 8 Dots/mm Maximum Print Speed: 200mm/s Maximum Print Width: 72mm Maximum Paper Width: 80mm Type of Paper Cutting: Full Cut & Partial Cut
Power Type	19.5V/6.15A 120W
Dimensions	11.77" x 12.45" x 5.86" (299 L x 316.2 W x 148.9 H mm)
Weight	6.7 lbs ±10% (3kg±10%)
Operating Temperature	5°C ~ 40°C (41°F~104°F)
Storage Temperature	-10°C ~ 60°C (14°F~140°F)
Operating Humidity	0~95% non-condensing
Certifications	CE/FCC

Stylish Design

Customer Facing Display

- 5" 2nd Display for Customer Use
- Adjustable for Best View Angle

Integrated Printer

- Support 58/80mm with Auto Cut Thermal Printer
- Pain-free Paper Roll Change
- Accessible Printer Module for Easy Replacement

Point of Sale (POS)

Designed for the Retail market and POS industry, the Rity series Point-of-Sale solution delivers an elegant appearance and excellent user experience with features like multiple service/ upgrade windows for quick maintenance. Its mounting design supports desk mount, wall mount, and VESA (75x75) mount to meet most retail space requirements.

Durability and Reliability

BCM understands that POS is a heavy-use environment with extended hours of operation and repetitive touch-screen and MSR use. Durability and reliability are a hard industry requirements as retailers cannot afford to lose the ability to complete their most fundamental task which is the retail transaction. BCM's Rity series is built on reliability from its fanless design to using our own heavy duty industrial motherboards. Anti-scratch screen technology is standard. Dust and water resistance is engineered into each design. We understand retail and POS technology.

Customized Functions

Ther Rity POS series touch panel ranges in size from 8"/ 10"/ 12"/ 15"screen sizes allowing customers to select the optimal size for different applications. MSR, VFD, customer facing display and Camera are offered either standard or optional ready for quick system integration. If you require items not listed, we may be able to provide ODM customization services for qualifying opportunities.

Product Name	Rity152	Rity102
LCD Size /	15", 4:3, XGA	10.1", WXGA
Resolution	1024 x 768	1024 x 600
Pixel Pitch	16.2M	262K color by 6 bit RGB signal
Luminance	400 cd/m2	350 cd/m2
Contrast Ratio	700	500
Viewing Angle	80(H) X 70(V)	70(H) x 70(V)
Response Time	8 ms	16 ms
Backlight	LED	
Touch Type	5-Wire Resistive/ Projective Capacitive Touch	
Touch Light Transmission	RES 75 % / PCT 90%	
Touch Controller	Onboard USB touch (PenMount)/ USB touch (EETI)	
Processor	Intel® Atom™ E3845 4-Core 1.91GHz	
System Chipset	Intel® Valleyview SoC	
System Memory	1 x 204-Pin DDR3L 1066MHz SO-DIMMup to 8 GB	
Expansion	1 x Mini PCIe Supports mSATA	
Storage	1 x 2.5" Drive Bay 1 x mSATA	1 x optional SATA Slim SSD 1 x mSATA
USB	3 x USB 2.0, 3 x USB 3.0	1 x USB 2.0, 3 x USB 3.0
COM Port	2 x RS-232/422/485, 1 x RS-232	2 x RS-232/422/485, 1 x RS-232
Display Chipset	Intel® Valleyview SoC integrated Graphics Supports Dual Display	
Audio Interface	Line-Out, 2 x 2W Speaker Output	2 x 2W Speaker Output
Power Connector	Mini-DIN 4P for DC in w/ lock type, +19V ~ +24V	
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter)	
Construction (Front, Rear)	Black Coverlens, Black	
Dimension	14.26" x 11.45" x 2" (362.1 X 290.08 X 51mm)	10.24" x 7" x 1.65" (260 X 178 X 42mm)
Weight	13.23 lbs (6kg/with Stand)	10.8 lbs (4.9kg)
Operating Temperature	0°C ~ 35°C (32°F ~ 95°F)	
Storage Temperature	-10°C ~ 60°C (14°F ~ 140°F)	

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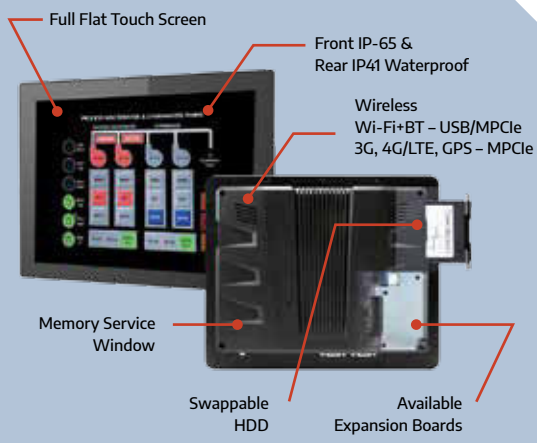
Expandable Panel PC



Panel Technology

- SAA (Super Anti-Abrasion) Panel Glass on Top Technology
- LED Backlight with PWM
- Sunlight Readable
- Privacy Filter upon Request

Outstanding EE Design

- Low Power Consumption
- Scalable System Performance
- Wide Temperature: -10~60°C
- Single 12V Power Input
- Onboard CPU/RAM

Mechanical Design Features

- Panel Size from 8~17”
- IP-65 Front Panel
- Fanless Operation
- VESA/Versatile Installations
- Panel Mount/Open Frame

Custom Design

- Optional Extra 3 COMs
- Wi-Fi, 3G, GPS Modules
- Whole System IP-65
- Various Panel Sizes

Front View

Back View

with Mounting Kit

Product Name	ARC-1209-B	ARC-1232-B
LCD Size	12.1" / 4:3	
Display Type / Resolution	XGA / 1024 x 768	
Pixel Pitch	0.240mm(H) x 0.240mm(V)	0.1905 mm (H) x 0.1905 mm (V)
Luminance / Contrast Ratio	600 cd/m_2 / 700	
Viewing Angle	80 (U), 80 (D), 80 (L), 80 (R)	70 (U), 70 (D), 80 (L), 80 (R)
Response Time / Backlight	16 ms / LED	
Touch Type	Projective Capacitive Multi-Touch up to 10 points	
Touch Light Transmission	89%	
Touch Controller	USB touch (EETI)	
Processor	Intel® Celeron® J1900 4-Core 2.0GHz	Intel® Core™ i5-6300U, 2-Core, 2.4GHz
System Memory	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB	1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB
Expansion	1 x mini-PCIe Support mSATA 1 x 80-pin IET interface	
Storage	1 x 2.5" Drive Bay (7mm HDD Restricted)	
USB	1 x USB 3.0, 3 x USB 2.0	4 x USB 3.0
COM Port	1 x RS-232/422/485, 1 x RS-232	1 x RS-232/422/485, 1 x RS-232
Other	3 x Knockouts for Antenna Mounting, 1 x SATA III	
Display Chipset	Intel® Valleyview Integrated Graphics	Intel® Skylake Integrated Graphics
Display Resolution	HDMI: Max. 1920x1200 @ 60Hz (Optional by IET module)	HDMI: Max. 4096x2160 @ 24Hz (Optional by IET module)
Audio / Audio Interface	Realtek ALC892, 2 x 0.6W Speaker out	
Ethernet / LAN Port	2 x Intel® I211AT / 2 x RJ-45	1 x Intel® I210AT and I219LM / 2 x RJ-45
Power Connector	Lockable DC Jack, +12V ~ +26V	
Adapter	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter) AC-DC Adapter	
Construction (Front / Rear)	Metal with Cover Lens / Black Diet Casting	
Certification	CE, FCC Class B	
IP Rating	Front IP65 and Rear IP41	
Vibration Test	With SSD/mSATA : 3Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 1hr/axis	
Shock Test	Operating with SSD/CFast/mSATA : MIL-STD-810G, Method 516.6, Procedure I, functional shock=20G	
Operating Temperature	-10°C ~ 50°C (-14°F ~ 122°F)	
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)	
Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing	
Weight / Dimension	5.5 lbs / 2.5 Kgs / 11.5" x 6.89" x 2.03" (292.86 x 225.4 x 51.5 mm)	
OS Information	Win 7, Win 8.1, Win 10, Linux	

Cloud Connection Display (CCD)

Product Name	CCD-07W01	CCD-10W01
Panel		
LCD Size / Type	7 inch SVGA	10.1 inch SXGA
Resolution	1024x600	1280 x 800
Pixel Pitch		0.1695 (H) x 0.1695 (V) mm
Luminance		350 cd/m_2
Viewing Angle		85 (U), 85 (D), 85 (L), 85 (R)
Contrast Ratio		800
Backlight	LED	
Touch Light Transmission	86%	
Touch Controller / Type	Projective Capacitive Multi-Touch	
System		
Processor	Intel® Atom™ Z3735F 1.33GHz Quad Core	
System Memory / Storage	2 GB DDR3L RAM / 32GB or 8GB eMMC	
Display Chipset	Intel® Baytrail SoC Integrated Graphics, Supports Dual Display	
Resolution	HDMI: Max. Resolution 1920x1080 @ 60Hz LVDS: Max. Resolution 1024x600 @ 60Hz	HDMI: Max. resolution 1920x1080 @ 60Hz LVDS: Max. resolution 1280x800 @ 60Hz
Ethernet Chip	LAN9514	
Audio Chip	Realtek ALC5645	
Wi-Fi	Onboard Wi-Fi IEEE802.11 b/g/n	
Camera	2MP camera build-in	
System Fan	Fanless	
External I/O		
USB	2 x USB 2.0	
Display	1 x HDMI	
Audio	1 x Line-out	
LAN	1 x RJ-45	
Power	DC-in	
Mechanical and Environment		
Power Connector / Type	DC Jack / +12V ~ +24V	
Adapter	Input: 100~240 Vac/50~60 Hz Output: 40W Adapter (19V @ 2.1A Adapter)	
Construction (Front / Rear)	White Plastic / White Plastic	
Dimension	7.52" x 4.88" x 1.18" (191 x 124 x 30 mm)	9.92" x 6.53" x 1.32" (252 x 166 x 38 mm)
Weight	1.32 lbs / 0.6 Kgs	10.8 lbs (4.9kg)
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	
Storage Temperature	-20 ~ 60°C (-4 ~ 140°F)	
Certification	CE, FCC Class B	
OS Information	Win10 IoT 32bit / Android 5.1 64bit / Linux Ubuntu 16.04	

* All product specifications and product images are subject to change without notice.

Multi-Touch PCAP Panel PC

VNS-15W01 backview

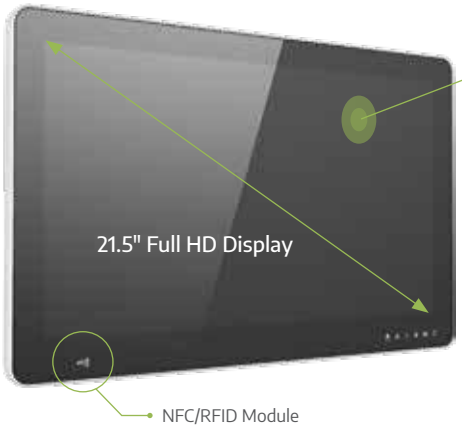
Product Name	VNS-10W01	VNS-15W01
Panel		
LCD Size / Type	10.1" / PCAP / 1024x600	15.6" / PCAP / 1920x1080
Luminance / Viewing Angle	350 cd/m2 / 170° (H/V)	220 cd/m$_2$ / 178° (H/V)
System		
Processor	Intel® Atom™ x5-Z8350: 2M Cache, up to 1.92 GHz	
System Memory / Storage	2GB / 4GB DDR3L RAM / 32GB eMMC or 64GB eMMC	
Multiple Display	Windows support extended mode	
Resolution	LVDS: Max. resolution 1280x800 @ 60Hz	LVDS: Max. resolution 1920x1280 @ 60Hz
Ethernet Chip	Realtek RTL8723BS	
Audio Speaker Output	4Ω 2.0W/2.5W(MAX)	
Wi-Fi	802.11 b/g/n	
System Fan	Fanless	
Touch Button	Power/ Brightness/ Volume/ LED	
LED Indicating Light Bar	Light color: Green and Red, Illuminating area: 70*8mm(front),70*5mm(side)	
Data Collection		
Camera	2.0MP Camera	
NFC	NFC Reader	
External I/O		
USB	2 x USB 2.0 Type A	
Audio	1 x 4-Pin 3.5mm Audio Jack	
LAN	1 x RJ-45	
Power	DC-in	
Internal I/O Connector	1 x Touch Button interface, 1 x eDP & Dual channel 24bit LVDS, 1 x I2C interface for PCAP, 5 x USB interface for PCAP, Camera and others, 1 x Micro, USB2.0 client (reserved), 1 x Micro SD connector, 2 x LED Bar interface, 1 x AMIC	
Mechanical and Environment		
Power	DC Input, 12~24V, DC Jack	
Adapter	Input: 100~240 Vac/50~60 Hz Output: 60W Adapter (12V @ 5A Adapter)	
Mounting	VESA 75x75mm	
Dimension	10.63" x 7.6" x 1.1" (270 x 193 x 28 mm)	18.63" x 10.6" x 2.76" (472.1 x 269 x 70.1 mm)
Weight	2.43 lbs/ 1.1 Kgs	5.5 lbs/ 2.5 Kgs
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	
Storage Temperature	-10°C ~ 60°C (14°F ~ 140°F)	
Certification	CE, FCC Class B	
OS Information	Windows 10 IoT (64 bit), Android 5.1(64 bit)	

Multi-Touch Fanless Panel PC

Product Name	HID-2132 (Medical Panel PC)	APC-2132
LCD Size / Type / Resolution	21.5" / Full HD / 1920x1080	
Pixel Pitch / Viewing Angle	248.25um (H) x 248.25um (V) / 89 (U), 89 (D), 89 (L), 89 (R)	
Luminance / Contrast Ratio	250 cd/m_2 / 5000	
Response Time / Backlight	18 ms / LED / 89% Light Transmission	
Touch Type / Controller	Projective Capacitive / USB Touch (EETI) Controller	
Processor / Chipset	Intel® Core™ i7/ i5/ i3/ Celeron® Processor / Intel® Skylake U SoC integrated	
System Memory	1 x 260-Pin DDR4 2133MHz SO-DIMM up to 16 GB	
Other Features	Infineon TPM2.0 iAMT 11.0 support (for i7/i5 CPU)	
Expansion	1 x Full size mini PCIe slot (for mSATA & PCIe & USB2.0 signal)	1 x Full size Mini PCIe supports mSATA, PCIe & USB signal 1 x half size Mini PCIe supports PCIe & USB signal by IET module
Storage	1 x 2.5" Drive Bay	1 x 2.5" Drive Bay, 1 x mSATA (by mini PCIe)
USB	4 x USB 3.0, 2 x USB 2.0 (by pin header), 1 x Isolation 5-kV USB2.0 (by IET module)	4 x USB 3.0, 2 x USB 2.0 (by IET module)
COM Port	1 x RS-232/422/485, 1 x RS-232, 1 x Isolation 5-kV RS-232/422/485 (by IET Module)	1 x RS-232/422/485, 1 x RS-232
Other	Dual LED Reading Light Bar I/O Cover Optional MSR/SCR/NFC/RFID Module Optional Smart Backup Battery Module Optional Wi-Fi/BT module (by mini PCIe) Optional Handset & 1D Barcode Scanner	1 x HDMI (by IET board) 1 x SATA III Multi function front OSD touch key Optional NFC/ LED reading light bar/ Smart battery Optional Wi-Fi/BT module Optional Expansion I/O port by IET module
Audio	Realtek ALC892, supports 5.1-CH	
Ethernet	1 x Intel® I211AT, 1 x Intel® I219LM 1 x Isolation 5-kV Intel® I210AT (by IET Module) 2 x RJ-45	1 x Intel® I211AT, 1 x Intel® I219LM 2 x RJ-45
Adapter	Medical Grade Input: 100~240 Vac/50~60Hz Output: 90W Adapter (19V/4.74A Adapter)	Input:100 ~ 240Vac/ 50 ~ 60Hz Output: 72W Adapter (19V @ 3.78A Adapter) AC-DC Adapter
Battery and Operating Time	1100mAh 4S1P (by optional), max. 20 mins backup operation	Optional
Construction (Front, Rear)	White Plastic, Anti-Microbial Finishing	Black Plastic
Dimension / Weight	21.24" x 13.49" x 1.8" (539.6 x 342.6 x 45.5 mm) / 13.89 lbs / 6.3 Kgs	
Operating / Storage Temperature	0°C ~ 40°C (32°F ~ 104°F) / -30°C ~ 70°C (-22°F ~ 158°F)	0°C ~ 40°C (32°F ~ 104°F) / -10°C ~ 60°C (14°F ~ 140°F)
IP Rating / System Fan	Front IP65 / Fanless	
Shock Test	With SSD/mSATA: 1.5Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 30min/axis	
System Fan	With CF/SSD : 10Grms, IEC 60068-2-27, Half Sine, 11ms	
Certification	CE : IEC/EN60601-1-2 FCC : Part 15 Class B UL60601-1: AAMI /ANSI ES60601-1:2005/(R)2012 and A1:2012,C1:2009/(R)2012 and A2:2010/(R)2012 CB:IEC 60601-1/A1:2012 & EN 60601-1/A1:2013 (Ed 3.1) EN 60601-1:2006+A11:2011+A1:2013+A12:2014	CE FCC Class B
OS Information	Windows 7, 8.1, 10, Linux	

* All product specifications and product images are subject to change without notice.

Healthcare HID-2132



Full Flat PCAP Multi-Touch supports up to 10 points.

IP-65 Front Bezel

Medical Grade Features

- Optional SCR/ MSR/ Wi-Fi/ Bluetooth module
- Optional Headset + 1D barcode scanner
- Optional internal Backup battery module
- Fanless Operation Design
- Full flat Front Panel IP-65 Rating
- Anti-Microbial Finishing
- Optional I/O Cover for cable arrangement
- Service windows design for HDD replacement
- Super slim design (only 45.5mm for system thickness)
- UL60601-1 4th edition/ CE/ FCC Class B