

## ARM-based Pico-ITX Series

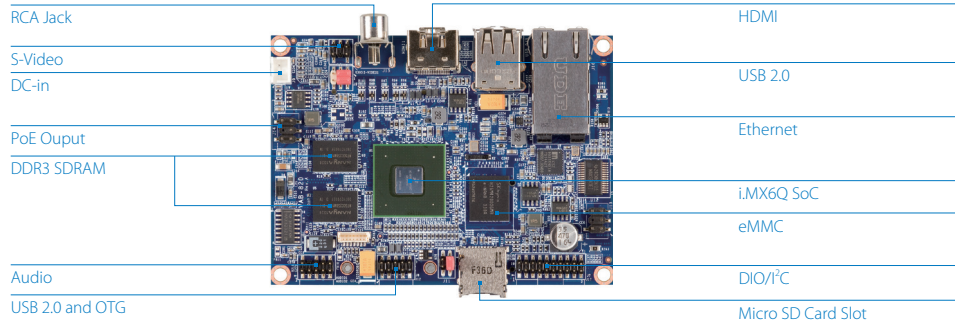
### VIA VAB-820

Low power quad-core platform with advanced multimedia capabilities for a wide variety of industrial applications

#### Features

- Compact 10cm x 7.2cm Pico-ITX form factor
- 1.0GHz NXP i.MX 6Quad Cortex-A9 quad-core SoC
- Flawless HD video performance up to 1080p
- Wide operating temperature range, -20°C ~ 70°C
- Linux and Android solution packs available

#### Board Placement

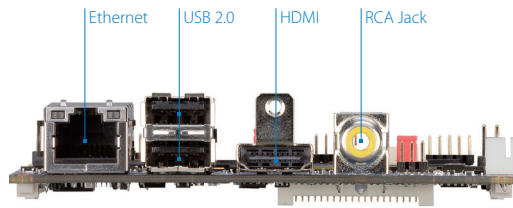


#### Specifications

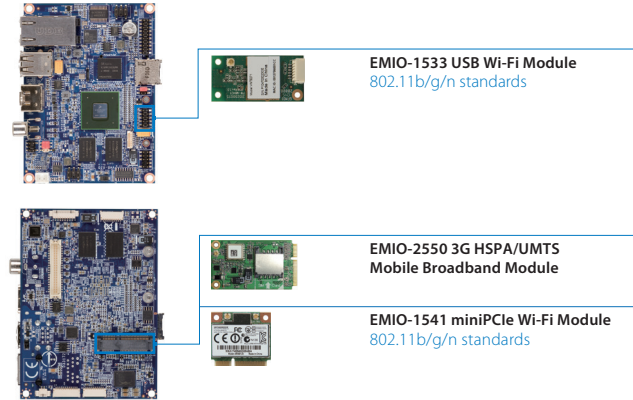
Model Name	VAB-820
<b>Processor</b>	1.0GHz NXP i.MX 6Quad Cortex-A9 quad-core SoC
<b>System Memory</b>	1GB DDR3 SDRAM onboard
<b>Storage</b>	4GB eMMC Flash memory
<b>Boot Loader</b>	4MB SPI Flash ROM
<b>Graphics</b>	Vivante GC2000 GPU 3 integrated, independent 3D/2D and video graphics processing units Graphics engine supporting OpenGL® ES 2.0, OpenCL and OpenVG™ 1.1 hardware acceleration Supports MPEG-2, VC-1 and H.264 video decoding up to 1080p Supports SD encoding
<b>LAN</b>	Micrel KSZ9031RNX Gigabit Ethernet transceiver with RGMII support
<b>Audio</b>	NXP SGT5000 low power stereo codec
<b>HDMI</b>	Integrated HDMI 1.4 transmitter
<b>USB</b>	SMSC USB2514 USB 2.0 high speed 4-port hub controller
<b>Expansion I/O</b>	1 miniPCIe slot
<b>Onboard I/O</b>	1 USB 2.0 host port, and 1 USB2.0 OTG port pin header 1 COM port connector with power supply (supports 8-wire DTE mode) 1 COM/CAN port connector with power supply (supports 1 RS-232 (TX/RX) and 2 FlexCAN TX/RX ports) 1 Dual-channel 18/24-bit LVDS panel connector 1 Miscellaneous pin header for 1 I²C pair, 1 Digital I/O (4 GPI + 4 GPO), system reset button and LEDs for power/WPAN/Wi-Fi/WWAN 1 RTC battery connector 1 MIPI CSI-2 connector (supports 2 data lanes) 1 SPI master pin header (supports 2 SPI slave devices) 1 S-video input pin header 2 Power pin headers (support optional PD power board) 1 Boot Flash select pin header (for SPI or micro SD) 1 Front audio pin header for Line-in, Line-out, Mic-in 1 DC-in connector 1 miniPCIe slot (supports multiple connections and buses including JTAG)
<b>Front Panel I/O</b>	1 Micro SD card slot
<b>Back Panel I/O</b>	2 USB 2.0 ports 1 HDMI port 1 Composite input RCA jack 1 Gigabit Ethernet port (supports optional IEEE 802.3 at type 2)
<b>Power Supply</b>	12V DC-in
<b>Operating System</b>	Android 4.4.2, Linux kernel 3.14.28
<b>Watch Dog Timer</b>	Integrated watch dog timer supports two comparison points. Each comparison point can interrupt ARM core, 2nd comparison point capable of generating external interrupts on WDOG line
<b>Operating Temperature</b>	-20°C ~ 70°C (3G & WiFi not included)
<b>Operating Humidity</b>	0% ~ 95% (non-condensing)
<b>Form Factor</b>	Pico-ITX (10cm x 7.2cm, 3.9" x 2.8")
<b>Compliance</b>	CE, FCC



## Back Panel I/O



## Accessories



## Ordering Information

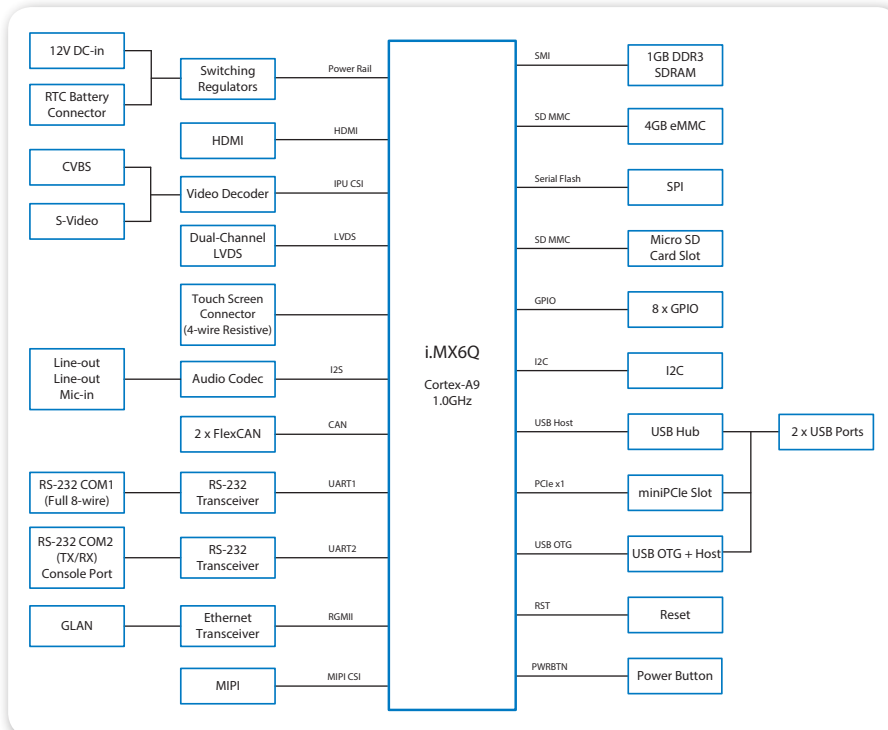
Part Number	SoC Frequency	Description
10GBF105000A0	NXP i.MX 6Quad Cortex-A9 quad-core SoC @ 1.0GHz	Pico-ITX board with 1.0GHz NXP i.MX 6Quad Cortex-A9 SoC, 4GB eMMC, 4MB SPI Flash ROM, 1GB DDR3 SDRAM, HDMI, LVDS, 4 USB 2.0, OTG USB 2.0, COM, Gigabit Ethernet, S-video, Micro SD card slot, miniPCIe slot, 2 CAN bus, 12V DC-in

## Optional Accessories

### Wireless Modules

Part Number	Description
EMIO-1533-00A2	VNT9271 IEEE 802.11 b/g/n USB Wi-Fi module with assembly kit
EMIO-1541-00A1	VNT9485 IEEE 802.11 b/g/n miniPCIe Wi-Fi module with assembly kit and antenna
EMIO-2550-00A1	3.75G HSPA/UMTS mobile broadband full size miniPCIe module with GPS and SIM card slot

## Block Diagram



## Packing List

Items
VAB-820 board
DC power cable
Console cable
Audio cable
USB cable