

## Em-ITX Series

NEW

VIA

# EITX-3000

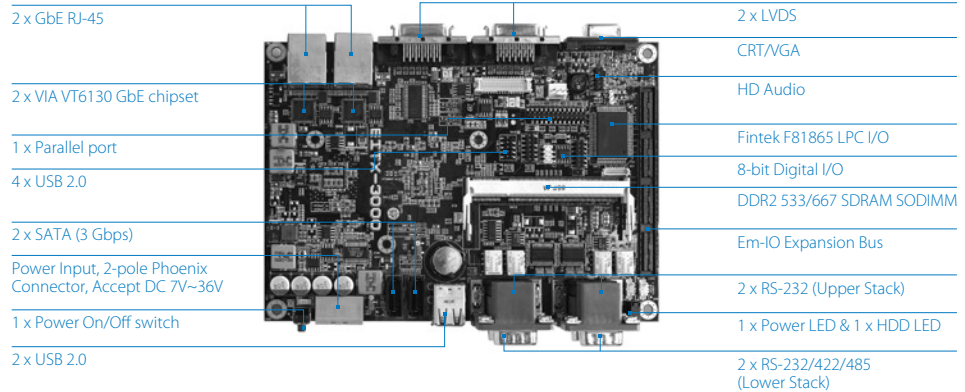
Nano™ Processor-based  
Em-ITX SBC, with VGA,  
2 Gigabit LAN, 2 LVDS,  
4 COM, 6 USB, with Built-in  
DC Power

## Features

- VIA Nano™ processor (1MB L2 Cache)
- Em-ITX form factor: 17 cm (W) x 12 cm (L)
- Dual-sided multiple I/O connector coastlines
- Em-IO expansion bus socket
- Integrated VIA Chrome9™ HC3, DX9 3D/2D graphics with MPEG-2/4 and WMV9 decoding acceleration
- Two single-channel LVDS display ports
- Two Gigabit Ethernet
- Two RS-232 and two RS-232/422/485
- Six USB ports
- Fanless and ultra low power consumption



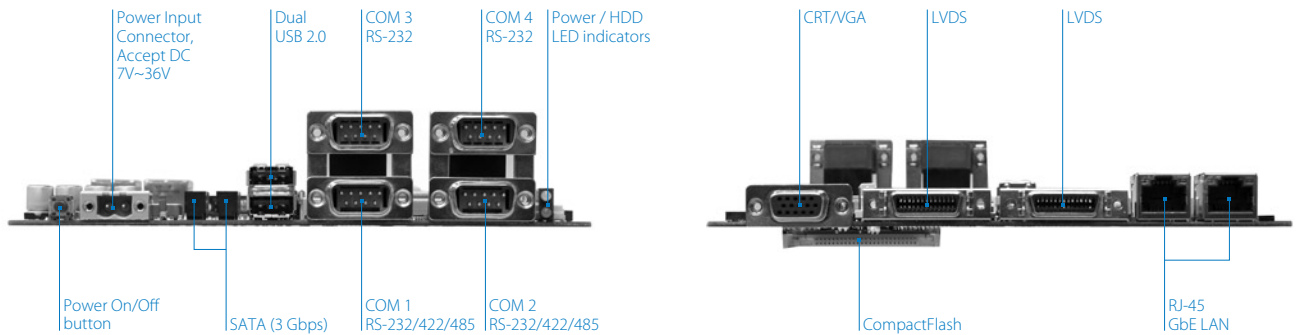
## Board Placement



## Specifications

Part Number		EITX-3000-1N13A1	EITX-3000-1N10A1
<b>Processor System</b>	<b>Processor</b>	1.3 GHz VIA Nano™	1.0 GHz VIA Nano™
	<b>Front Side Bus Speed</b>	800 MHz	800 MHz
	<b>L2 Cache</b>	1 MB	1 MB
	<b>Chipset</b>	VIA VX800 Unified Digital Media IGP chipset	
	<b>BIOS</b>	Award BIOS, 8 MBit SPI Flash BIOS	
<b>Memory</b>	<b>System Power Management</b>	Timers Power On ACPI supported	
	<b>Technology</b>	1 x DDR2 533/667 200-pin SDRAM SODIMM socket	
	<b>Max. Capacity</b>	Up to 2GB memory size	
	<b>Graphic</b>	<b>Controller</b>	Integrated VIA Chrome9™ HC3 DX9 3D/2D graphics with MPEG-2/4 WMV9 decoding acceleration
	<b>Display Memory</b>	Optimized Unified Memory Architecture (UMA), supports up to 256 MB frame buffer using system memory	
	<b>CRT Interface</b>	Onboard 1 x VGA connector Pixel Resolution support up to 1920 x 1200	
	<b>LVDS Interface</b>	Supports two 24-bit single-channel LVDS interface connectors Up to 1280 x 1024 panel resolution for single channel LVDS LCD Built-in Inverter control signals into the DB-26 connectors Onboard 5 V/3.3 V LCD power switch (default at 3.3 V)	
	<b>Dual Independent Display</b>	Supports CRT + LVDS2, and LVDS1 + LVDS2 at same resolutions, same pixel depths, and same refresh rates	
<b>Ethernet</b>	<b>Controller</b>	2 x Onboard VIA VT6130 Gigabit Ethernet controllers	
	<b>Interface</b>	Supports two RJ-45 connectors. Supports Wake On LAN (WOL) Supports Preboot Execution Environment (PXE)	
<b>HD Audio</b>	<b>Controller</b>	VIA VT1708B High Definition Audio Codec	
	<b>Interface</b>	Supports Line-in, Line-out, Mic-in by onboard 2x7-pin headers	
<b>Serial</b>	<b>USB</b>	Six onboard USB ports • 2 x USB ports (mini-DIN connector) • 4 x USB ports (pin headers with individual VCC power)	
	<b>Serial Ports</b>	Onboard Fintek F81865 LPC I/O controller Supports 4 COM ports of • 2 x RS-232/422/485 by 2 x DB-9 connectors as COM 1 and COM 2, configurable via BIOS setup • 2 x RS-232 by 2 x DB-9 connectors of COM 3 ~ 4 Supports RS-485 AutoFlow Control functions of COM1 ~ COM2	
	<b>Printer Ports</b>	1 x PS/2 compatible bi-directional parallel port by onboard 2 x 13-pin headers	
<b>DIO</b>	<b>Digital I/O</b>	Onboard 2 x 6-pin headers support 8-bit Digital I/O, and 5V/12V power source	
<b>Storage interface</b>	<b>Serial ATA</b>	2 x Onboard SATA II (3 Gbps) ports, Maximum data transfer rate up to 300MB/s Only support 2.5" of SATA Hard Disk (no support to 3.5" SATA HDD)	
	<b>Compact Flash</b>	1 x Onboard socket support type I/II CompactFlash disk	

## Back Panel I/O



## Specifications

Part Number		EITX-3000-1N13A1	EITX-3000-1N10A1
<b>H/W Monitoring</b>	<b>Temperature Sensor</b>	Built-in one Thermal Sensor by onboard 1 x 3-pin headers	
<b>System Indicator</b>	<b>Power Status LED</b>	One green color LED	
	<b>HDD Activity LED</b>	One red color LED	
<b>Watchdog Timer</b>	<b>Output</b>	System reset	
	<b>Interval</b>	Programmable 1 ~ 255 sec	
<b>System Expansion</b>	<b>Em-IO Bus Expansion Interface</b>	Onboard 160-pin Em-IO Bus Expansion interface socket	
<b>Onboard I/O Connectors</b>	<b>Front I/O Coastline</b>	1 x HDD & PWR LED 2 x RS-232/422/485 COM port connectors as COM 1 and COM2 2 x RS-232 COM port connectors as COM3 and COM4 2 x USB mini-DIN connectors 1 x 2-pole of Phoenix power input connector 1 x ATX power On/Off switch	
	<b>Rear I/O Coastline</b>	1 x VGA connector 2 x DB-26 connectors for dual 24-bit single channel LVDS interface, as LVDS1 and LVDS2 2 x RJ45 connectors for dual Gigabit Ethernet connection	
<b>Onboard I/O Pin-headers</b>	<b>Onboard I/O Pin-headers</b>	1 of 2 x 15-pin box headers for LVDS1 (co-lay with LVDS1) 2 of 1 x 3-pin headers for LCD Power 3.3V/5V selection 1 of 2 x 5-pin headers; plus a 2 x 6-pin headers, with individual VCC power support for 4 x USB 2.0 ports 1 of 2 x 13-pin headers for LPT port 1 of 2 x 5-pin headers for Line-out, Line-in and Mic-in 1 of 2 x 5-pin headers for thermal sensor 2 of SATA data connectors, only support connection with 2.5" HDD 2 of SATA power connectors, only support 5V power 1 of 1 x 3-pin headers for selecting the AT or ATX mode	
<b>Onboard DC to DC Power Supply</b>	<b>Input Voltage</b>	Built-in onboard DC-to-DC converter Accept wide range of Power Input of DC 7V ~ 36V Supports AT and ATX mode	
	<b>Power Input Connector</b>	1 x 2-pole Phoenix connector	
	<b>AT/ATX Selector</b>	Onboard AT/ATX switch by a 1 x 3-pin headers	
	<b>Fuse Rating</b>	7 A / 125 V	
<b>Heatsink</b>	<b>Construction</b>	Aluminum Alloy	
	<b>Dimensions (WxHxD)</b>	232.6 mm x 53 mm x 124.8 mm	
<b>Physical Characteristics</b>	<b>Form Factor</b>	Em-ITX	
	<b>Board Dimension</b>	17 cm (W) x 12 cm (L)	
	<b>Weight</b>	0.98 Kg (net weight of board plus heatsink only)	
<b>Environmental Specification</b>	<b>Operating Temperature</b>	From -10°C up to 70°C	
	<b>Storage Temperature</b>	-20°C ~ 70 °C	
	<b>Operating Humidity</b>	10% ~ 90%, relative humidity, non-condensing	

## Ordering Information

Part Number	CPU Frequency	Description
EITX-3000-1N13A1	1.3GHz Nano™	1.3GHz VIA Nano™ CPU based Fanless Em-ITX board, with 1xVGA, 2xLVDS, 2xRS-232/422/485, and 2xRS-232, 6xUSB, 2xGbE, 2xSATA, DC-in 7~36V, Em-IO expansion socket
EITX-3000-1N10A1	1.0GHz Nano™	1.0GHz VIA Nano™ CPU based Fanless Em-ITX board, with 1xVGA, 2xLVDS, 2xRS-232/422/485, and 2xRS-232, 6xUSB, 2xGbE, 2xSATA, DC-in 7~36V, Em-IO expansion socket
EITX-3000-2N13A1	1.3GHz Nano™	EITX-3000-1N13A1, with full cable kit
EITX-3000-2N10A1	1.0GHz Nano™	EITX-3000-1N10A1, with full cable kit

## Optional Accessories

External AC-to-DC Adapter and Power Cord	
Part Number	Description
99G63-020106	AC to DC power adapter, DC 19V/90W with 2-pole Phoenix Power Plug
99G33-02058C	Power Cord, 2-pin 180cm, USA
99G33-02057C	Power Cord, 2-pin 180cm, Europe

Functional I/O Cable	
Part Number	Description
99G33-290010	Thermal Sensor cable
99G33-100119	Dual USB ports cable
99G33-100266	Cable of 1 USB port, plus pin-headers for EMIO-1530 802.11b/g WLAN
99G33-050033	LPT Printer Port cable
99G33-090328	Line-In, Line-Out, Mic-In Audio cable
99G33-06021E	SATA DATA cable
99G33-020505	SATA PWR cable, Only Support 5V for 2.5" HDD
99G33-250073	Power cable, 2-pole Phoenix plug to DC-Jack
99G33-080185	Digital I/O cable

WLAN USB Module	
Part Number	Description
EMIO-1530-00A1	802.11 b/g Wireless LAN USB module for USA
EMIO-1530-10A1	802.11 b/g Wireless LAN USB module for Europe

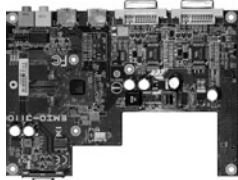
Embedded OS (Only available for OEM service)	
Part Number	Description
POS-MXPELI-ENS04	Windows XP Embedded SP3 Image & License For EITX-3000 English Version
POS-MCE6LI-ENS04	Windows CE 6.0 Professional Image & License For EITX-3000 English Version
VOS-UMELXI-ENS04	Linux, MID Edition, OS Image Only For EITX-3000 English Version

Certificated RAM Module, Flash Disk, and 2.5" Hard Disk Drive	
Part Number	Description
99G06-010408	2GB DDR2 667MHz, 128Mx8 SDRAM SODIMM, Industrial Grade, for using at environmental temperature up to 50°C
99G06-010398	1GB DDR2 667MHz, 128Mx8 SDRAM SODIMM, Industrial Grade, for using at environmental temperature up to 50°C
99G06-010338	1GB DDR2 667MHz, 64Mx8 SDRAM SODIMM, Industrial Grade, Tc of 0 ~ 85°C
99G61-060011	1GB Compact Flash Disk, Industrial Grade, -40°C ~ 85°C
99G61-060021	2GB Compact Flash Disk, Industrial Grade, -40°C ~ 85°C
99G61-060031	4GB Compact Flash Disk, Innodisk, Industrial Grade, -40°C ~ 85°C
99G61-020114	250GB, Fujitsu 2.5" SATA HDD 5400RPM

## Em-ITX I/O Cards

### EMIO-3110

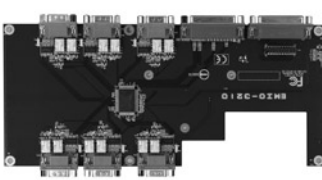
Multi Display Em-IO Card with 2 HDMI, 2 DVI, VGA, TV-Out, Audio



■ Applications: Digital signage, POI, gaming

### EMIO-3210

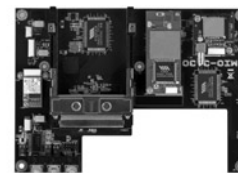
Em-IO Card with 6 COM Ports and 2 Parallel Ports



■ Applications: Kiosk, factory automation

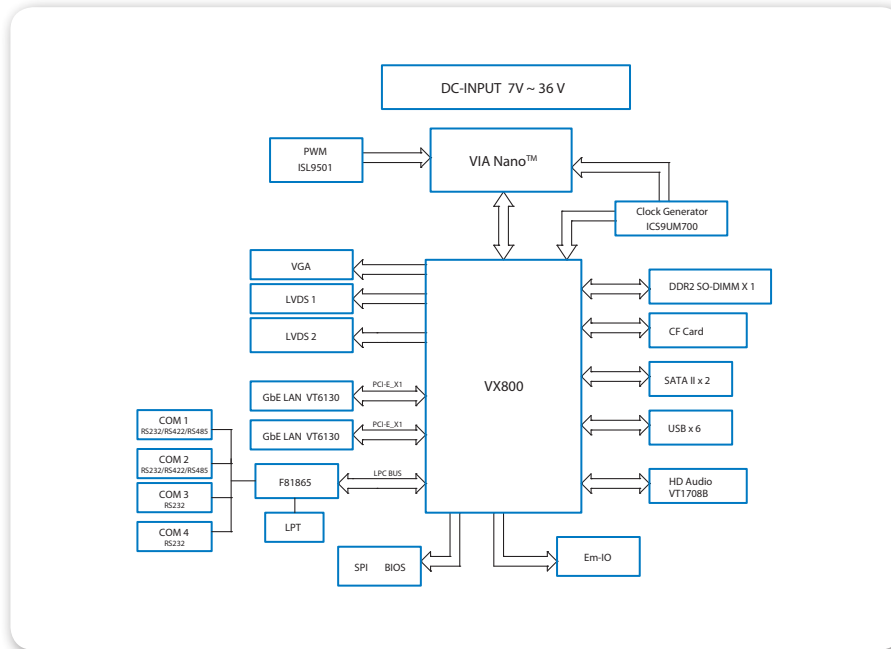
### EMIO-3430

Em-IO Card with 1 PC Card slot, GPS, Bluetooth, 802.11 b/g Wireless LAN



■ Applications: Vehicle/fleet management, logistic control

## Block Diagram



## Packing List

### Items for EITX-3000-1N13A1/1N10A1

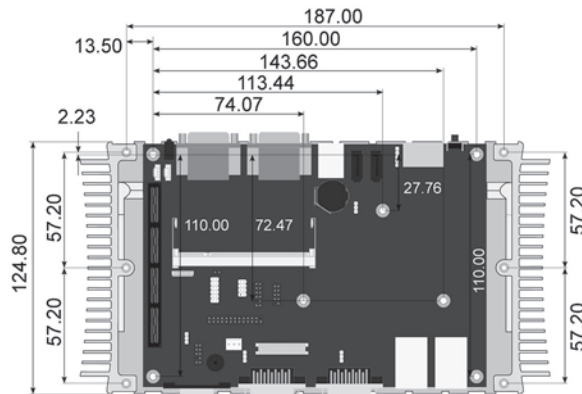
- 1 x EITX-3000 SBC
- 1 x Software driver and utility CD
- 1 x Mini-jumper pack
- 2 x Screw pack
- 1 x Power cable, 2-pole Phoenix plug to DC-Jack
- 1 x SATA data cable
- 1 x SATA power cable

### Items for EITX-3000-2N13A1/2N10A1

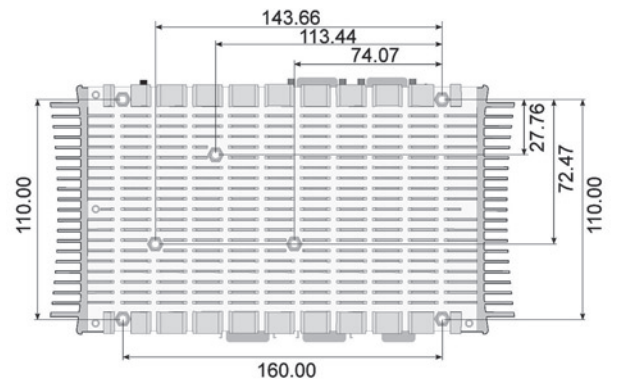
- 1 x EITX-3000 SBC
- 1 x Software driver and utility CD
- 1 x Mini-jumper pack
- 2 x Screw pack
- 1 x Power cable, 2-pole Phoenix plug to DC-Jack
- 2 x SATA data cable
- 2 x SATA power cable
- 2 x Dual USB cable
- 1 x Audio Cable
- 1 x Digitl I/O cable
- 1 x Thermal Sensor cable
- 1 x LPT cable

## Dimensions

Top Layer with heatsink



Bottom Layer with heatsink



## Em-ITX I/O Cards

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# EMIO-3110

Multi Display Em-IO Card  
with 2 HDMI, 2 DVI, VGA,  
TV-Out, Audio

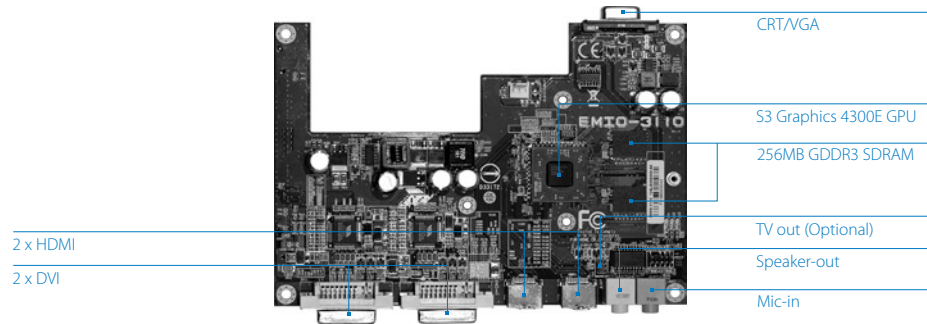
## Features

- S3 4300E GPU, plus Em-IO to DVP interface
- Supports two HDMI, two DVI, one CRT/VGA, one TV-out
- Supports Speaker-out, and Mic-in
- Em-IO interface
- Compatible with Em-IO based system board: EITX-3000

CE FC

ROHS  
COMPLIANT

## Board Placement



## Specifications

<b>Part Number</b>	<b>EMIO-3110-00A1</b>
<b>Bus Interface</b>	Em-IO
<b>Display Engine</b>	S3 Graphics 4300E GPU, and Em-IO DVP to DVI
<b>Engine Clock Speed</b>	300 MHz
<b>2D/3D API Graphic Core</b>	DirectX 10.1 , Shader Model 4.1
<b>Hardware Acceleration</b>	Built-in H.264/AVC, MPEG-4, MPEG-2, VC1 hardware acceleration Built-in HD Video Engine with H.264, MPEG-2 HD, WMV9-HD, AVS and VC1 acceleration
<b>Display Memory</b>	64-bit memory bus architecture Onboard 256 MB GDDR3 SDRAM
<b>Dual DVI Interface</b>	Em-IO DVP interface, plus VT1632A DVI Transmitter, supports one DVI port S3 Graphic 4300E supports one DVI port
<b>Dual HDMI Interface</b>	S3 Graphic 4300E Graphic Processor <ul style="list-style-type: none"><li>• Supports two HDMI ports</li><li>• Integrated HD Audio controller and codec</li></ul>
<b>TV-out (Optional)</b>	S3 Graphic 4300E Graphic Processor <ul style="list-style-type: none"><li>• Optional support Composite, S-Video and Component Video output via cable connection</li></ul>
<b>CRT Interface</b>	S3 Graphic 4300E Graphic Processor <ul style="list-style-type: none"><li>• Supports 1 x VGA/CRT interface</li><li>• With widescreen support</li><li>• Pixel Resolution support up to 2048 x 1536 @ 75 Hz</li></ul>
<b>Audio</b>	Onboard TI TPA1517, a 6-W amplifier. Supports HD Audio stereo sound by cable Supports Speaker-out, Mic-in connectors
<b>Dimensions</b>	170 mm (W) x 120 mm (L)
<b>Operating Temperature</b>	0 ~ 60°C
<b>Operating Humidity</b>	0% ~ 90% relative humidity, non-condensing

## Ordering Information

Part Number	Description
EMIO-3110-00A1	S3 4300E & Em-IO DVP, with 2 x DVI ,2 x HDMI, 1 x CRT, 256M GDDR3 Em-IO card

## Em-ITX I/O Cards

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# EMIO-3210

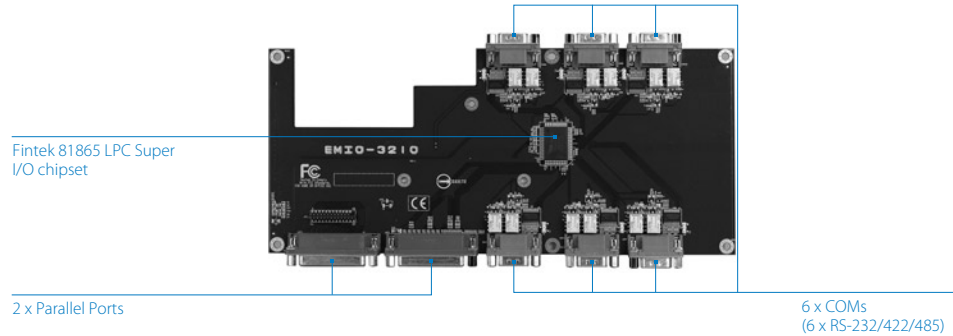
Em-IO Card with 6 COM Ports  
and 2 Parallel Ports

## Features

- Six serial ports supports RS-232/422/485, configurable by BIOS setup
- Two parallel ports
- Em-IO interface
- Compatible with Em-IO based system board: EITX-3000



## Board Placement



## Specifications

<b>Part Number</b>	EMIO-3210-00A1
<b>Bus Interface</b>	Em-IO
<b>Chipset</b>	Fintek F81865 LPC super I/O controller
<b>Serial Port</b>	Six of RS-232/422/485 ports (9-pin D-Sub connectors, configurable in BIOS setup) Six of 1 x 3-pin headers (with 5/12V selector)
<b>Parallel Port</b>	Two of Parallel ports (25-pin D-Sub connectors) <ul style="list-style-type: none"><li>• LPT1 is supported by Fintek F81865 LPC I/O controller on Em-ITX motherboard via cable connection, from Em-ITX motherboard to a 2 x 13-pin box headers of EMIO-3210</li><li>• LPT2 is supported by Fintek F81865 LPC I/O controller on EMIO-3210 board</li></ul>
<b>Dimension</b>	268 mm (W) x 120 mm (L)
<b>Operating Temperature</b>	0 ~ 60°C
<b>Operating Humidity</b>	0% ~ 90% relative humidity, non-condensing

## Ordering Information

Part Number	Description
EMIO-3210-00A1	6 COM, 2 Parallel Em-IO card

## Em-ITX I/O Cards

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# EMIO-3430

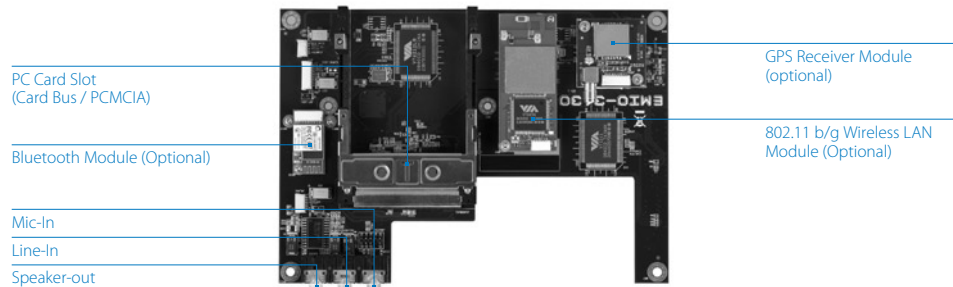
Em-IO Card with 1 PC Card slot, GPS, Bluetooth, 802.11 b/g Wireless LAN

## Features

- Supports one PC Card slot for PCMCIA or CardBus card
- Supports interface socket for optional 802.11b/g Wireless LAN card
- Supports interface sockets for optional GPS module
- Built-in 6-W stereo audio power amplifier
- Compatible with Em-IO based system board: EITX-3000



## Board Placement



## Specifications

<b>Part Number</b>	<b>EMIO-3430-00A1</b>
<b>Bus Interface</b>	Em-IO
<b>Bridge</b>	Tundra Tsi382 PCIe-to-PCI Bridge
<b>PC Card Interface</b>	Ricoh R5C803 PC card controller. Supports One PC card slot Supports CardBus (Card-32) card and 16-bit (PCMCIA 2.1/JEIDA4.2) card Supports +5 V, +3.3 V and +12 V @ 120 mA working power
<b>GPS Module (Optional)</b>	VIA VT1211 LPC UART controller <ul style="list-style-type: none"><li>• Reserved Interface Socket supports EMIO-1532, a Leadtek LR9102 20-channel GPS receiver</li><li>• Optional support of external antenna</li></ul>
<b>Bluetooth (Optional)</b>	VIA VT6212L PCI to 4 ports USB2.0 controller <ul style="list-style-type: none"><li>• Reserved Interface Socket supports EMIO-1531, a Qcom QBT400UB 01P Bluetooth core specification version 2.1 compliant + EDR supported module , with printed PCB antenna on board</li><li>• Bluetooth Class 2 output power, multi-point operation with full 7 slave piconet support</li></ul>
<b>WLAN (Optional)</b>	VIA VT6212L PCI to 4 ports USB 2.0 controller <ul style="list-style-type: none"><li>• Reserved Interface Socket supports VIA EMIO-1530 wireless USB module</li><li>• Support IEEE802.11b/g</li></ul>
<b>Audio</b>	Supports HD Audio stereo sound by cable Onboard TI TPA1517, a 6-W stereo audio power amplifier Supports Line-in, Speak-out, Mic-in connectors
<b>Dimension</b>	170 mm (W) x 120 mm (L)
<b>Operating Temperature</b>	0 ~ 60°C
<b>Operating Humidity</b>	0% ~ 90% relative humidity, non-condensing

## Ordering Information

Part Number	Description
EMIO-3430-00A1	1 PC card slot, GPS, Bluetooth, WLAN, Em-IO card