

Embedded Systems

NEW

VIA

ART-5450

Compact Fanless Embedded System with Nano™ E CPU, 2 Mini-PCIe Slots, 1 SIM Socket & DC-in 7~36V for Vehicle/ Fleet Management



Features

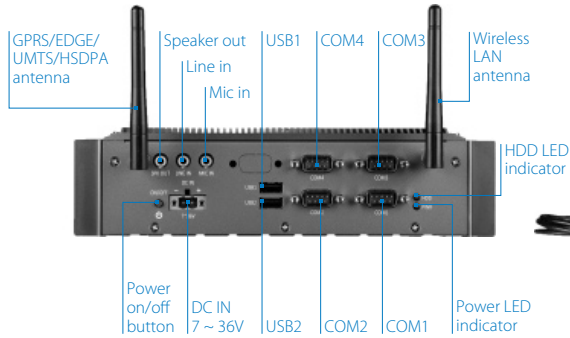
- Built in VIA Nano™ E processor (1MB L2 Cache)
- Compact, robust and sealed construction
- Vibration-resistant design to ensure maximum reliability
- Supports two LVDS and one CRT display interface with dual independent display
- Supports two Gigabit Ethernet and four USB 2.0 ports
- Supports four COM ports (two RS-232 and two RS-232/422/485, configurable via BIOS setup)
- Supports two Mini-PCIe interface sockets for optional WLAN/GPRS/EDGE/UMTS/HSDPA modules
- Supports one SIM socket
- Accepts a wide range of DC power inputs from DC 7 ~ 36V
- Optional in-vehicle power management adapter support ignition on/off delay function



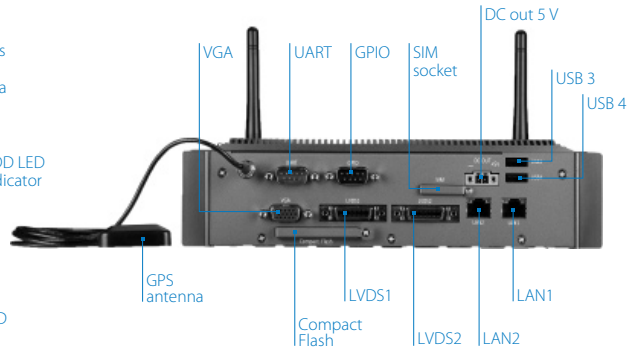
Specifications

Part Number	ART-5450-1N10A1	
Computing System	Processor	1.0GHz VIA Nano™ E
	Front Side Bus	800 MHz
	L2 Cache	1 MB
	Chipset	VIA VX800 Unified Digital Media IGP chipset
	BIOS	Award BIOS SPI 8Mbit Flash memory onboard
	System Power Management	Times Power on ACPI supported
	Memory	Technology 1 x DDR2 533/667, 200-pin SDRAM SODIMM socket Max. Capacity Up to 2GB memory size
Graphic	Controller	Integrated VIA Chrome 9™ HC3 DX9 3D/2D graphics with MPEG 2, WMV9 video decoding acceleration
	Display Memory	Optimized Unified Memory Architecture (UMA), supports up to 256 MB frame buffer using system memory
	CRT Interface	Onboard 1 x VGA connector Pixel resolution support up to 1920 x 1200
	LVDS Interface	Two 24 bit single channel LVDS interface connectors, up to 1280 x 1024 resolution Built in inverter control signals into the DB-26 connectors Onboard 5V/3.3V LCD power switch (default at 3.3V)
	Dual View	Supports CRT + LVDS2 and LVDS1 + LVDS2 at same resolution, same pixel depths, at same refresh rates
Ethernet	Controller	2 x Onboard VIA VT6130 Gigabit Ethernet controllers
	Interface	Support 2x RJ-45 connectors Supports Wake on LAN (WOL) Support Pre-boot Execution Environment (PXE)
HD Audio	Controller	VIA VT1708B High Definition Audio Codec
	Audio Amplifier	Built-in onboard TI TPA1517, dual 6 W stereo audio power amplifier
	Interface	Supports Line-in, Speaker-out, Mic-in connectors
Serial	USB	4 x USB ports, USB 2.0 compliant
	COM Ports	Built-in Fintek F81865 LPC I/O controller. Supports 4 COM ports of: • 2 x RS232/422/485 by 2xDB-9 connectors of COM 1 and COM2, configurable via BIOS setup • 2 x RS232 by 2xDB-9 connectors of COM 3 and COM4 Supports RS-485 AutoFlow control functions of COM1 and COM2
GPIO	Controller	Fintek F81865 LPC I/O Controller
	Interface	1 x D-Sub 9-pin connector 8-bit GPIO (4 GPI + 4 GPO)
	5V DC Output	1 x 2-Pole Phoenix connector (pitch=3.81 mm) with 5V@500mA DC output for external GPIO device
UART	Controller	Fintek F81865 LPC I/O Controller
	Interface	1 x D-sub 9-pin connector of UART port, supports Tx, Rx (2nd and 3rd pin) and GPO (9th pin) signal

Front Panel External IO



Rear Panel External IO



Specifications

Part Number	ART-5450-1N10A1	
Mini-PCIe Slot	Interface	2 x Mini-PCIe slots
SIM Socket	Interface	1 x SIM socket
Storage	Compact Flash	1 x Compact Flash socket support type I/II Compact Flash disk
System Indicator	Power Status LED	1 x Green color LED
	HDD Activity LED	1 x Red color LED
GPS Options (EMIO-1532)	Interface	Reserved UART serial interface socket supports optional EMIO-1532 module of SIRFstarIII® base 20-channel GPS receiver with external antenna
Bluetooth Options (EMIO-1531)	Interface	Reserved USB interface socket supports optional EMIO-1531 module of USB base Bluetooth core specification version 2.1 compliant + EDR supported module, with printed PCB antenna on board
	Others	Bluetooth Class 2 output power, multi-point operation with full 7 slave piconet support
Wireless LAN Options (EMIO-1530)	Interface	Reserved USB interface socket supports optional USB based VIA EMIO-1530 wireless module
	Others	Supports IEEE802.11b/g
3.5G/2G HSPA/WCDMA/EDGE/GPRS Module options (EMIO-1534, EMIO-1538)	Interface	Reserved Mini-PCIe interface slots, support mobile broadband module options of: <ul style="list-style-type: none"> EMIO-1534, Ericsson Mobile Broadband Module F3307, supports HSPA/WCDMA/EDGE/GPRS, data rates up to 7.2Mbps downlink and 2Mbps uplink, PCI Express Mini Card EMIO-1538, Motorola Mobile Broadband Module HTM1000, supports HSPA/WCDMA/EDGE/GPRS, data rates up to 10.1Mbps downlink and 5.56Mbps uplink, Half Size PCI Express Mini Card
	Front Panel External I/O Connectors	<p>LED Indicator 1 x PWR LED 1 x HDD LED</p> <p>Quad COM 2 x RS-232/422/485 ports as COM1 and COM2 by 2 DB-9 connectors 2 x RS-232 ports as COM3 and COM4 by 2 DB-9 connectors</p> <p>Dual USB 2.0 2 x Mini-DIN connectors as USB1 and USB2</p> <p>Audio 3 x 3.5Φ Audio Jack as Line-in, Speaker-out and Mic-in</p> <p>Power Input Connector 1 x 2-Pole Phoenix power input connector</p> <p>Power on/off Switch 1 x ATX Power on/off button</p> <p>Antenna Hole 1 x Antenna hole to support Wireless LAN antenna 1 x Antenna hole to support GPRS/EDGE/UMTS/HSDPA antenna</p>
Rear Panel External I/O Connectors	VGA	1 x VGA port by a DB-15 connector
	Dual LVDS	2 x DB-26 connectors as LVDS1 and LVDS2
	Dual Gigabit LAN	2 x RJ-45 connectors as LAN1 and LAN2
	Dual USB 2.0	2 x Mini-DIN connectors USB3 and USB4
	Digital I/O	1 x GPIO port by a DB-9 connector, supports 8-bit GPIO (4 GPI + 4 GPO)
	UART (Plus GPO/GND)	1 x UART plus GPO & GND signal port by a DB-9 connector
	SIM Slot	1 x SIM slot
Power Output Connector	1 x 2-pole Phoenix connector (pitch=3.81 mm) with 5V@500mA DC output supports power source for external GPIO device	
Antenna Hole	1 x Antenna hole to support GPS antenna	

Specifications

Part Number		ART-5450-1N10A1
Power Supply	Power Consumption	Typical 19.56W Maximum 31.15W
	Power Input Voltage	7 VDC @ 2.50A 12 VDC @ 1.50A 24 VDC @ 0.81A 36 VDC @ 0.58A
	Power Input Connector	1 x 2-Pole Phoenix connector
	Fuse Rating	7A @ 125V
In-Vehicle Power Management Adapter Options (PWM-1000)		Optional support of ignition on/off delay function by connecting with VIA PWM-1000 in-vehicle power management adapter
	Protection	OVP : Input Over Voltage Protection OCP : Over-Current Protection UVP : Input under Voltage Protection
	Operating Principle	Power on delay Power on delay Schedule the maintenance of power on / off time Ignition / ACC status notice Inform the "Input Under Voltage Protection" event
	Power Input/ Output Range	Input Voltage : DC 10~30V Input Current : 0~5A Output Voltage : +12V dc +/- 5% Output Current : 3.33A Output power : 40W
	Power Input connector	DC Power input connector by 2-pole Phoenix connector
Mechanical	Construction	Aluminum alloy
	Mounting	Default support wall/table mount Optional support VESA mount
	Weight	Net 1.6 kg
	System Dimension	232.6 mm (W) x 60 mm (H) x 124.8 mm (D)
Environmental Specification	Operating Temperature	With Compact Flash Disk Only: -20°C up to 70 °C, With EMIO-1532 GPS module and EMIO-1530 WLAN USB module: -20°C up to 60 °C
	Storage Temperature	-20°C ~75 °C@ 90%, non-condensing
	Relative Humidity	0 ~ 90% @ 45°C, non-condensing
	Vibration Loading During Operation	With Compact Flash disk only: 5Grms, IEC 60068-2-64, random, 5 ~ 500Hz, 1 Oct./min, 1hr/axis
	Shock During Operation	With Compact Flash disk only: 50G, IEC 60068-2-27, half size, 11ms duration
	EMC Approved	CE/FCC Class A, CCC
	Safety Approved	CB, CCC
	In-Vehicle Certificate	e-mark

Ordering Information

Part Number	CRT	LVDS 1,2	LAN	USB 2.0	Digital I/O	RS-232	RS-232/422/485	Expansion	GPS	Bluetooth	WLAN	PWM-1000	Operation Temp.
ART-5450-1N10A1									NO	NO	NO	NO	-20 up to 70°C
ART-5450-2N10A1									NO	NO	NO	YES	-20 up to 70°C
ART-5450-3N10A1	1	24-bit	2 GE	4	8-bit	2	2	2 Mini-PCle, 1 SIM	20-Ch	2.1	802.11b/g (US)	YES	-20 up to 60°C
ART-5450-4N10A1									20-Ch	2.1	802.11b/g (EU)	YES	-20 up to 60°C

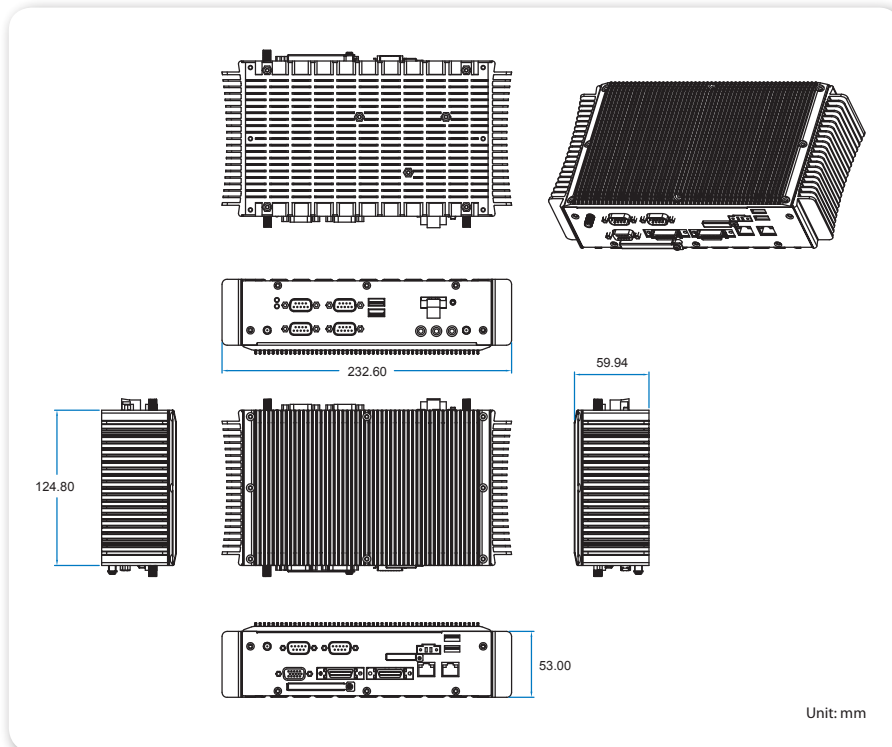
Optional Accessories

Optional Ordering Item	
Part Number	Description
EMIO-1530-A0A1	802.11 b/g Wireless LAN USB module , USA type
EMIO-1530-A1A1	802.11 b/g Wireless LAN USB module , Europe type
EMIO-1531-00A1	USB interface of Bluetooth 2.1 module
EMIO-1532-00A1	RS-232 interface, SiRFStarIII base, of 20-ch GPS receiver
PWM-1000-00A1	In-Vehicle Power Management adapter supports schedule and maintenance for power ignition on/off delay time, DC input 7~30V

External AC-to-DC Adapter and Power Cable	
Part Number	Description
99G63-020246	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

RAM Module, Compact Flash Disk	
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
99G06-010648	1GB DDR2 667MHz, 128M x8 SDRAM SODIMM, Industrial Grade , -40°C ~ 85°C
99G06-010578	2GB DDR2 667MHz, 128M x8 SDRAM SODIMM, Industrial Grade , -40°C ~ 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, Industrial Grade, -40°C ~ 85°C
99G61-060091	8GB Compact Flash Disk, Industrial Grade, -40°C ~ 85°C
99G61-060101	16GB Compact Flash Disk, Industrial Grade, -40°C ~ 85°C

Dimensions



Packing List

1 x ART-5450 unit
1 x Driver & Utility CD
1 x Wall mount bracket
1 x Power cable , 2-Pole Phoenix plug to DC-jack
1 x Screw pack