

AVL-3000

Advanced Auto Data Server

- Intel® Atom™ N2600 1.6GHz CPU
- Powered by Windows® Embedded Standard 7 E (WES7E)
- Built-in 2.5" 16 GB SATA SSD
- Built-in Wi-Fi, Bluetooth, HSUPA, and GPS
- Built-in VGA Output and NTSC/PAL/SECAM Video Capture with Software Compression Support
- Supports On-Board Diagnostics (OBD)
- Optional UHF RFID reader module

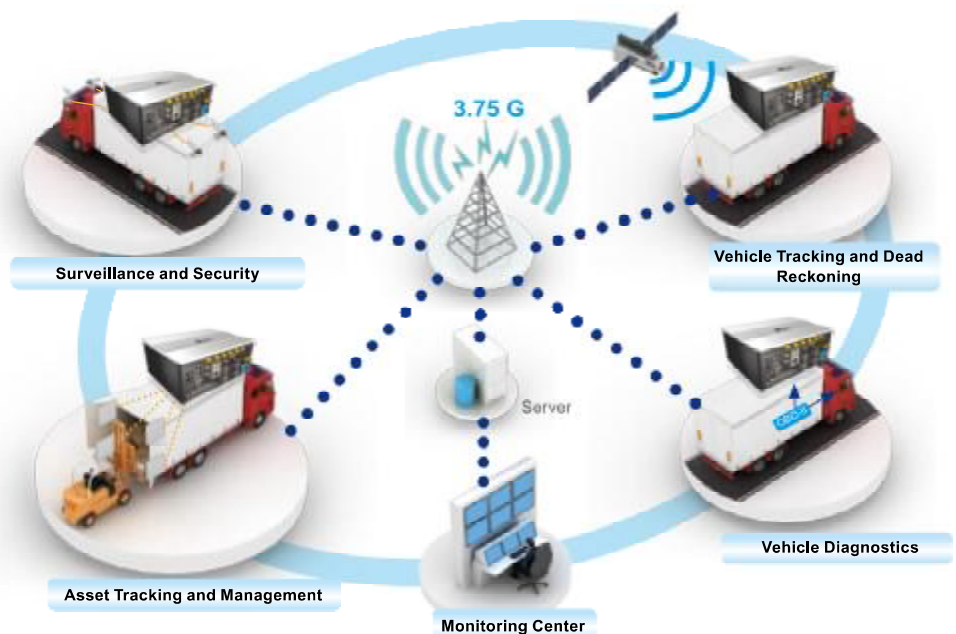


Advanced Auto Data Server with Upgraded Tracking and Surveillance Function

The AVL-3000 comes integrated with a remote on-line and real time diagnostic system for vehicles via HSUPA/GPRS/GSM, Global Position System (GPS) and On-Board Diagnostics System (OBD) technologies.

The AVL-3000 provides video/audio capture and recording functions. With the codec solution, the AVL-3000 offers enhanced data streaming performance. Optional functions include UHF RFID Readers for a wide range of industrial and commercial applications, including supply chain management, asset tracking, authentication and access control. These complete advanced functions make an Auto Data Server suitable for accurate vehicle tracking, security, monitoring, and data collection.

	AVL-2000	AVL-3000
CPU	eMenlow	Cedarview
	Z510 1.1 GHz	N2800 (optional) N2600
OS	Windows® XP Embedded	Windows® 7 Embedded
Memory	DDR2 533MHz (2 GB max.)	DDR3 1066MHz



2012 New Atom™ Dual Core Platform

Benefit

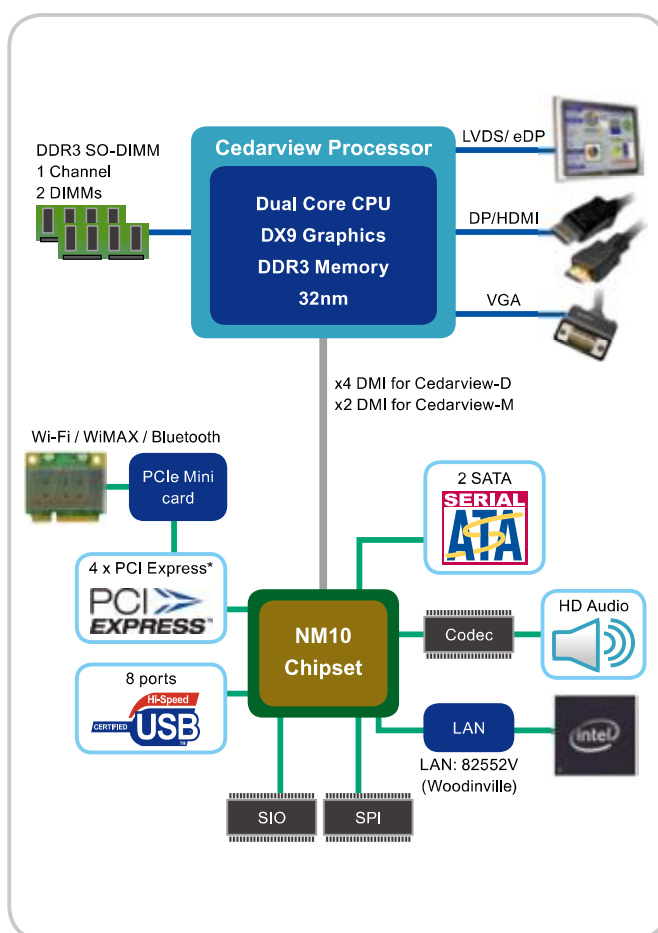
- CPU TDP (3.5/6.5/10W) and average power are lower than Pine Trail (6.5/10/13W)
- Display options including 2 digital ports support for extra LVDS/ HDMI/VGA options
- 2 times improved graphics with 2 HD video support
- Faster memory up to DDR3 1066MHz
- HD decoding with Blu-ray support

Specifications Comparison

	Navy Pier (N270)	Pine Trail (D525/D425/N455)	Cedar Trail (N2800/N2600)
Process	45nm	45nm	32nm
Processor Frequency	N270: 1.6GHz	D525/D524: 1.8GHz N455: 1.66GHz	N2800: 1.86GHz N2600: 1.6GHz
CPU TDP	N270: 2.5W	D525: 13W D425: 10W N455: 6.5W	N2800: 6.5W N2600: 3.5W
Chipset/ PCH TDP	945GSE: 5.5W ICH7M: 1.9W	ICH8M: 2W	Intel® NM10: 1.5W
Memory	DDR2 400/533MHz (2GB max.)	DDR2/DDR3 up to 667 for N455 800MHz for D525/D425 (4GB max.)	DDR3 1066MHz for N2800 (4GB max.) DDR3 800MHz for N2600 (2GB max.)
Graphics	DX9, OGL 1.4	DX9, OGL 1.5	DX9, OGL 3.0
	Gfx @ 133 MHz	Gfx @ 200 MHz (N455) Gfx @ 400 MHz (D525/D425)	Gfx @ 400 MHz (N2600) Gfx @ 640 MHz (N2800)
Video Decode	MPEG2	Discrete 3rd part decoder	MPEG2, H.264, VC-1/ WMV9 Up to 1080p decoding

Note: Standard product is N2600. By customization can upgrade to N2800.

Block Diagram



Microsoft® Windows® Embedded Standard 7

Benefit Category	Top Features
Performance/ Reliability	<ul style="list-style-type: none"> • 64/32 bit support • Less boot time • Improved power management • Aero glass
Compatibility/ Security	<ul style="list-style-type: none"> • Enhanced driver compatibility • Enhanced application compatibility • Credential manager (allows you to maintain all your credentials related to websites or when you connect to another computer)
Connectivity	<ul style="list-style-type: none"> • Sensor and location platform • Bluetooth 2.1+EDR and Extended Inquiry Response (EIR) (Windows® XP only supports Bluetooth 2.0+EDR; EIR is not supported by Windows® Vista)
Development/Deployment/ Serving	<ul style="list-style-type: none"> • Simplified installation (2 tools vs. 4 tools compared with previous versions of wes/xpe); installation wizard (ibw) is also available. • Supports imagex/dism for easier recovery and service solutions • Supports Windows® update

Extended Connectivity

Multi-Channel Real Time Video and Audio Capture Applications

The AVL-3000, featuring multi-channel real time video and audio capture capabilities, is designed to meet the requirements of modern security systems in the transportation industry. It can reduce loss and damage to goods and assets while increasing the safety of drivers at the same time. The AVL-3000 SDK contains a library of four active channels video demo program, allowing for quick and easy customization of audio/video preview and capture application.

Key Features

- Internal 4-channel video decoder and audio ADC
- High quality proprietary fast video locking system for non-real-time application
- Supports 4-channel D1 video plus 1-channel audio simultaneously with independent channel control
- Dynamic synchronization: video processing; multiple video format output support Y422, Y420, IYUI/Y411, Y41P, RGB555 and RGB565
- Dual support for Direct Show and Direct Draw
- Accepts all NTSC(M/N/4.43) / PAL(B/D/G/H/I/ K/L/M/N/60) / SECAM standards with auto detection



UHF RFID Readers

The AVL-3000 extends the benefits of UHF RFID technology to in-vehicle applications via the long range UHF RFID readers which are ISO 18000-6C standard compliant and suitable for industrial warehouse management. It can be used in any harsh environment or temperature. It also supports error-free read performance in vehicles. The non line-of-sight tag reading is effectively used in item level identification, warehouse logistics, and security access management. The AVL-3000 SDK contains libraries to read, write, lock and kill RFID tags, which can be easily integrated into software applications.

Key Features :

- High Gain, high performance
- Easy installation
- UV resistance
- IP 65 waterproof and dustproof
- Pole mount & wall mount available



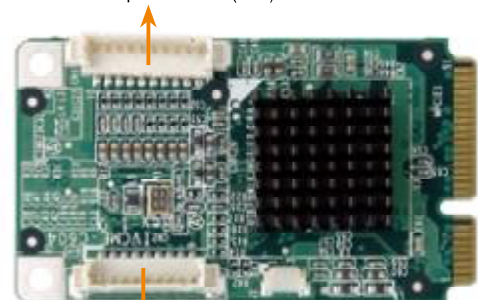
Optional Advanced Video Processing

Software Compression

The AVL-3000 utilizes a software compression card to capture, compress, and save audio/video information. This quality software compression card ensures the smooth processing of video/audio information during advanced video capturing applications.

Video processing	
Video compression	Software compression
Video engine	1 x Conexant CX25854
Frame rate	NTSC: Total 120fps @ D1 for 4 channels (30fps per channel) PAL: Total 100fps @ D1 for 4 channels
Resolution	320 x 240
Audio processing	
Audio compression	Software compression
Sampling rate	8kHz, 16kHz, 32kHz, 44.1kHz and 48kHz
Quantization	16-bit

Video/Audio Input Connector (CN1)



GPIO Connector (CN2)

Rich Wireless Communication

Built-in Global Positioning System (GPS)

The built-in GPS allow drivers to perform real-time navigation and access Location Based Services (LBS) while on the road. On the other hand, this information can be transmitted through 3G wireless, which enables the management center to track their vehicles on the road.

802.11 b/g/n Wi-Fi

Delivers broadband-speed browsing and connectivity, compared to traditional wired LAN connections. Best for near field or ad-hoc data communications.

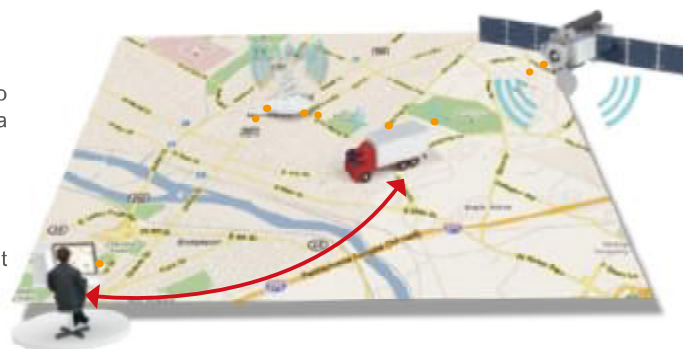
Leading the Wireless Revolution

WWAN 2.5G/3.5G/3.75G

Receives the localization coordinate of each vehicle through efficient mobile connectivity.

Technology/Bands

- HSPA/HSPA+/UMTS-800/850/900/1900/2100 MHz
- Quad-band EDGE/GPRS/GSM-850/900/1800/1900 MHz
- Dual-band EV-DO/CDMA-800/1900 MHz



Solid and Expansion Storage

The AVL-3000 uses a 16 GB 2.5" SATA SSD for storage. This design has 2 benefits:

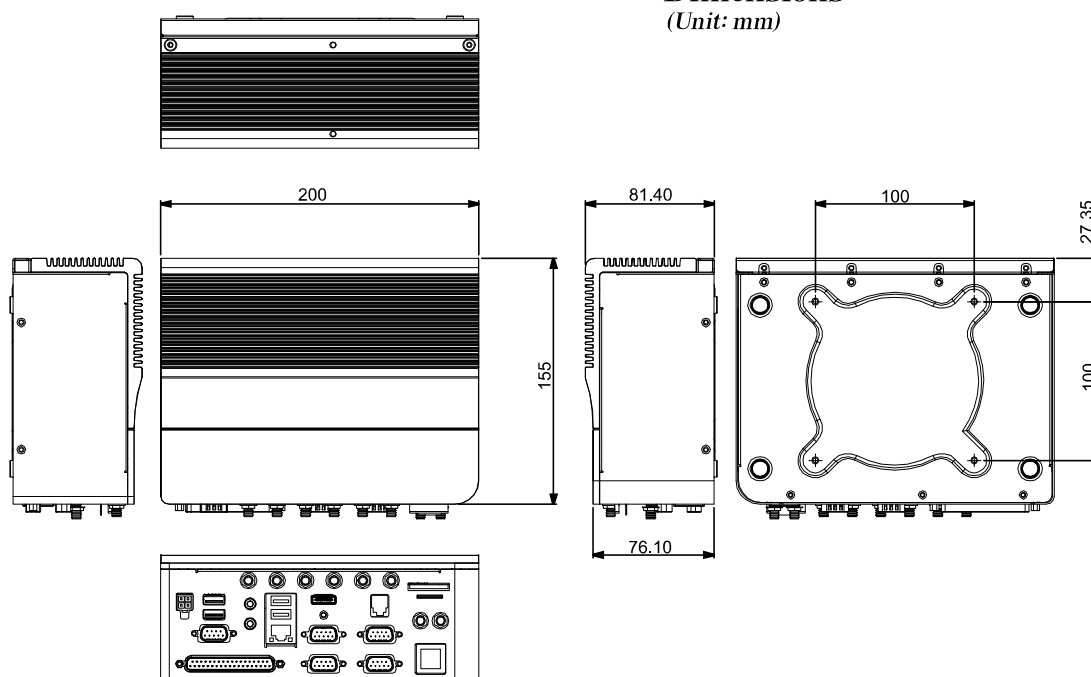
- It allows more information to be stored. This is a great significance for vehicle surveillance applications as video/audio information requires large storage space.
- It is more durable and is hardly to be damaged by vibrations and tough vehicle environment.

SSD vs HDD

SSD is more suitable for IVI solutions as it can pass the tests of operating shock and vibration.

	HDD	SSD
Life Expectancy
Operating Temperature
Storage Temperature
Operating Shock
Operating Vibration
Humidity
Altitude
Power Read/Write
Capacity

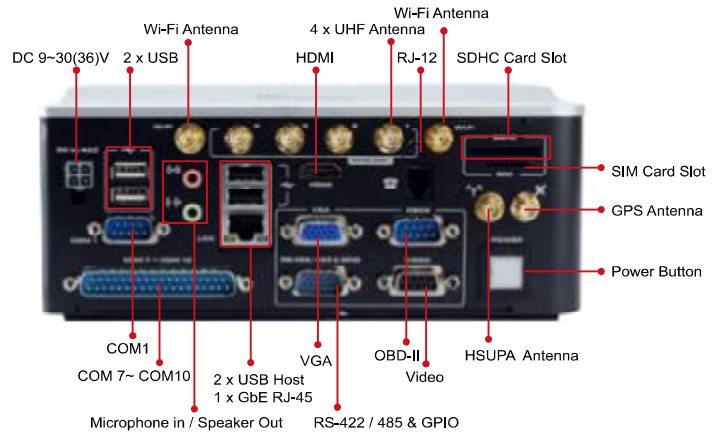
Dimensions (Unit: mm)





Specifications

Model	AVL-3000	
System	CPU	Intel® Atom™ processor N2600 1.6GHz
	Chipset	Intel® NM10
	Operating System	Windows® Embedded Standard 7 E (WES7E)
	Memory	2GB 800 MHz DDR3
	Storage	1 x Built-in 16G 2.5" SATA SSD 1 x SDXC Slot for data storage
Communication	Wireless LAN	802.11b/g/n
	Bluetooth	Bluetooth V2.0+EDR (class I)
	3.75G	HSUPA/UMTS-800/850/900/1900/2100 MHz Quad-band EDGE/GPRS GSM-850/900/1800/1900 MHz Dual-band EV-DO/CDMA
	GPS	GPS
	RFID	Read-Write Capable ISO18000-6C UHF module ETSI/FCC
Multimedia	Audio	1 x MIC IN 1 x Line-out
	Camera	4 x Channel camera D1 120FPS
	SW Compression	1 x Software Compression Card (option)
LED Indicator	1 x Power LED	
Power	Power Input	Cigarette lighter power cable DC 9~30(36)V
	Vehicle Power	ACC Power Cable
I/O Interface	4 x USB	
	1 x OBD-II	
	6 x COM port: DB-9 (COM1), RS-422/485 (COM4, 4-PIN), DB-37 (COM7~COM10)	
	1 x GIGA LAN	
	1 x VGA support up to 1920 x 1200	
	4 x VIDEO IN	
	1 x 8 bit Digital I/O (selectable by software)	
	4 x DI	
	4 x DO	
	1 x Line in	
	1 x Line out	
	1 X RJ11 3.5G Voice	
Environment	1 x HDMI	
	Operating Temperature	-20°C~70°C
	Storage Temperature	-30°C ~80°C
	Humidity	5%~95% non-condensing
	Drop Survival	ISO 16754
Physical Characteristics	Certification	CE/FCC/e-Mark
	Dimensions (LxWxH) (mm)	200 x 150 x 76
	Weight	2kg



Ordering Information

Part No.	Description
AVL-3000-N26-SC-R10	Vehicle PC Box with Intel® Atom™ N2600 1.6GHz CPU, WES7E OS, 2GB SDRAM, 16GB 2.5" SSD, 802.11 b/g/n Wireless, HSUPA, 4CH 120 FPS Video Capture, OBD-II, GPS, Software Compression, RoHS
AVL-3000-N26-R10	Vehicle PC Box with Intel® Atom™ N2600 1.6GHz CPU, WES7E OS, 2GB SDRAM, 16GB 2.5" SSD, 802.11 b/g/n Wireless, HSUPA, OBD-II, GPS, RoHS

Packing List

Item	Part Number	Quantity
GPS/3.75G Integrate Antenna	32506-000100-100-RS	1
Wi-Fi Antenna	32505-000400-100-RS	2
ACC Power Cable	32002-001900-100-RS	1

Optional Accessory List

Item	Part Number
Cigarette Lighter Power Cable	32002-001800-100-RS
RS-232 Cable	32005-000200-200-RS
Capture Cable	32007-001400-100-RS
OBD-II Cable	32025-000300-100-RS
J1939 Cable	32025-000400-100-RS
User Manual CD-ROM	7B000-000568-RS
IEI One Key Recovery CD	IEI-7B000-000478-RS
UHF RFID Antenna w/Cable (PATCH Antenna 915MHZ)	AVL-2000PLUS-FCC01-R10
UHF RFID Antenna w/Cable (PATCH Antenna 867.5MHZ)	AVL-2000PLUS-ETSI01-R10
Power Adapter	IVIPOWER-4PIN-R10

