AVL-3000 New

Advanced Auto Data Server

- Intel® Atom™ N2600 1.6GHz CPU with Windows® 7 OS
- Built-in 2.5” 16 GB SATA SSD
- Built-in Wi-Fi, Bluetooth, HSUPA, and GPS with Dead Reckoning Support
- Built-in VGA Output and NTSC/PAL/SECAM Video Capture with Hardware/Software Compression Support
- Supports vehicle bus protocol (OBD-II/J1939/FMS)
- Optional UHF RFID reader module

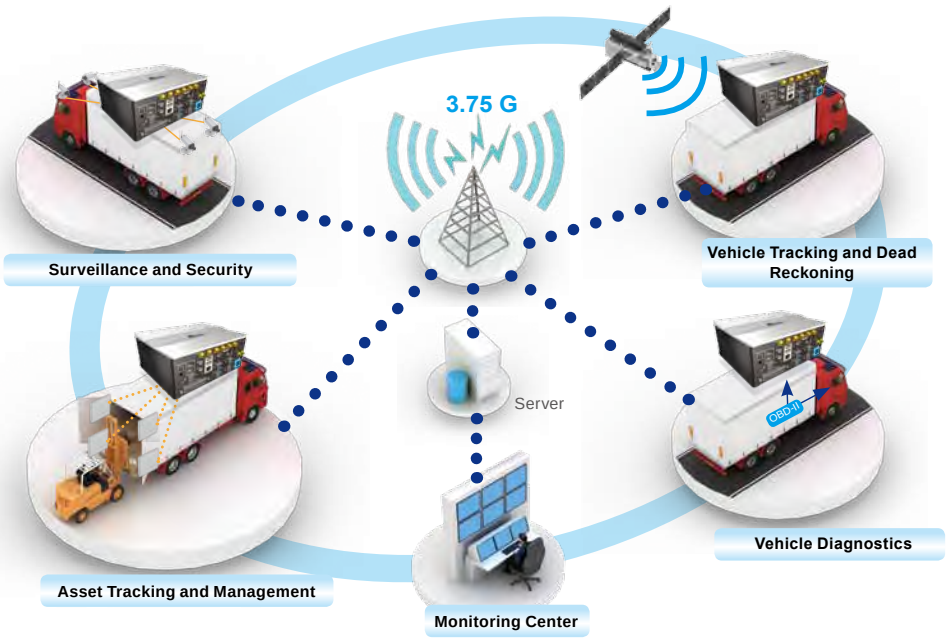
3.75G/ HSUPA | Bluetooth | Wi-Fi | Dead Reckoning | Power Management | Video Capture | UHF | GPS

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 optional hardware/software 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	D2700/N2800/ N2600
OS	Windows® XP Embedded	Windows® 7 Embedded
Memory	DDR2 533MHz (2 GB max.)	DDR3 1066MHz



2012 New Atom™ Dual Core Platform

Benefit

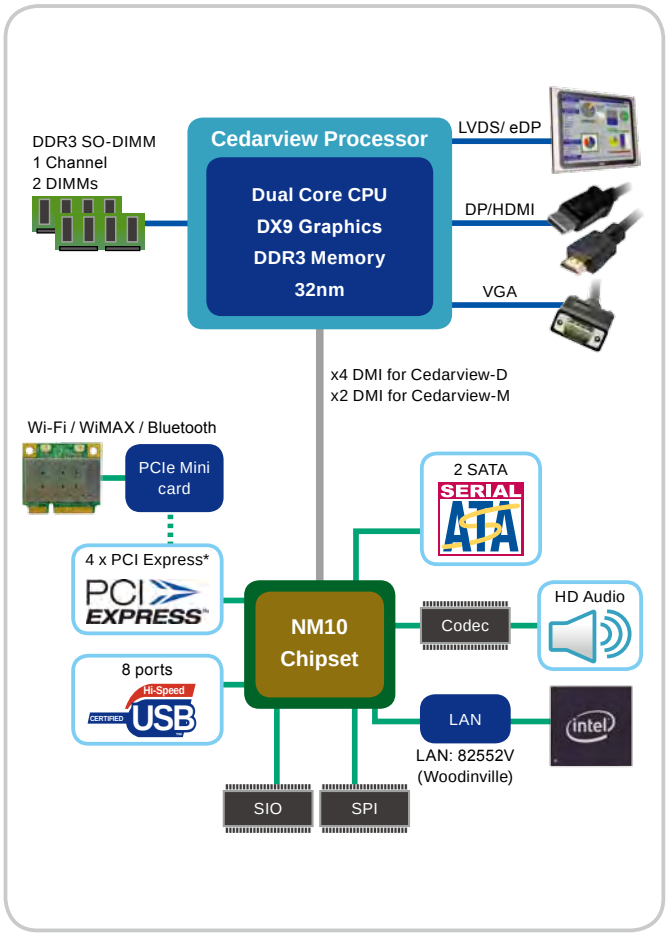
- CPU TDP (3.5/6.5/10W) and average power are lower than Pine Trail (6.5/10/13W)
- Display options including 2 digital ports supprot for extra LVDS/ HDMI/VGA options
- 2 times improved graphics with 2 HD video support
- Faster memory up to DDR3 1066MHz
- HD decoding with Blu-ray support

Specifications Comparison

	Navy Pier (N270)	Pine Trail (D525/D425/N455)	Cedar Trail (D2700/N2800/N2600)
Process	45nm	45nm	32nm
Processor Frequency	N270: 1.6GHz	D525/D524: 1.8GHz N455: 1.66GHz	D2700: 2.13GHz N2800: 1.86GHz N2600: 1.6GHz
CPU TDP	N270: 2.5W	D525: 13W D425: 10W N455: 6.5W	D2700: 10W 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 D2700/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 @ 400MHz (D525/D425)	Gfx @ 400 MHz (N2600) Gfx @ 640MHz (D2700/N2800)
Video Decode	MPEG2	Discrete 3rd part decoder	MPEG2, H.264, VC-1/ WMV9 Up to 1080p decoding

Note: Standard product is N2600, By customized can upgrade to N2800 and D2700.

Block Diagram



Microsoft® Windows® Embedded Standard 7

Benefit Category	Top Features
Performance/ Reliability	• 64/32-bit support • Less boot time • Improved power management • Aero glass
Compatibility/ Security	• 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	• 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	• 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 desinged 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

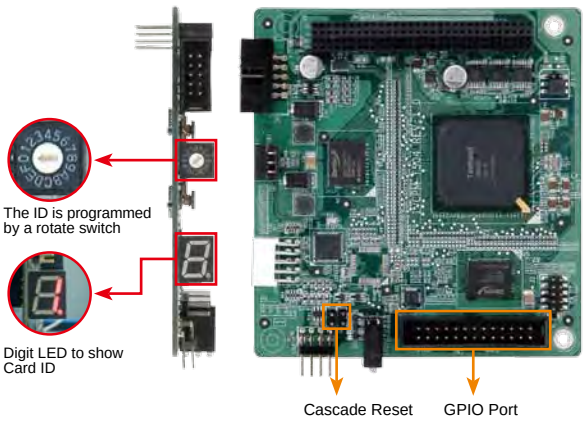
- Internal 4-channel video decoder and audio ADC
- High quality proprietary fast video locking system for non-real-time application
- Supports 4-channel D1 video plus 1-channel audio simultaneously with independent channel control
- Dynamic synchronization: video processing; multiple video format output 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

Two Compression Choices

Hardware Compression

The AVL-3000 utilizes a hardware compression card to capture, compress, and save audio/video information. The specialized hardware makes hardware compression faster than software compression that utilizes a general purpose processor for the job. When the speed at which captured data must be compressed is equal to, or faster, than the speed the storage media is able to accept, it is best to use hardware compression. Hardware compression does not add any additional burden to the host processor.

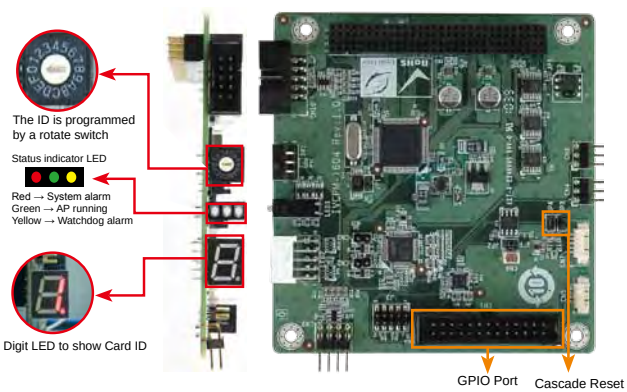
Video processing	
Video compression	Hardware compression, H.264 baseline profile@level 3 encoding, Real-time 4 D1 + 4 CIF dual stream @ 30 fps
Video engine	1 x Techwell 5864
Resolution / Frame rate	NTSC: 720 x 480/ PAL: 720x576
	NTSC: Total 120fps@D1 for 4 channels PAL/SECAM: Total 100fps@D1 for 4 channels



Software Compression

The AVL-3000 utilizes a software compression card to capture, compress, and save audio/video information.
The specialized hardware makes hardware compression faster than software compression that utilizes a general purpose processor for the job. When the speed at which captured data must be compressed is equal to, or faster, than the speed the storage media is able to accept, it is best to use hardware compression.

Video processing	
Video compression	Software compression
Video engine	1 x Conexant Fusion BT878A
Resolution / Frame rate	NTSC: 720x480/ PAL: 720x576
	NTSC: Total 120fps@D1 for 4 channels PAL/SECAM: Total 100fps@D1 for 4 channels
Audio processing	
Audio compression	+#
Sampling rate	8kHz,16kHz, 32kHz, 44.1kHz and 48kHz
Quantization	8-bit,16-bit



Rich Wireless Communication

Built-in Global Positioning System (GPS) with Dead Reckoning Support

Dead-Reckoning (DR) is a new feature implemented in some high-end automotive navigation systems in order to compensate the limitations of GPS technology. The solution ensures uninterrupted navigation and tracking when satellite signals are blocked or unavailable, such as near tall buildings, mountains, canyons, in tunnels or in underground parking. With Dead Reckoning support, the AVL-3000 can provide continuous position reporting even during GPS satellite blockage.

● 802.11b/g 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

- HSUPA/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:

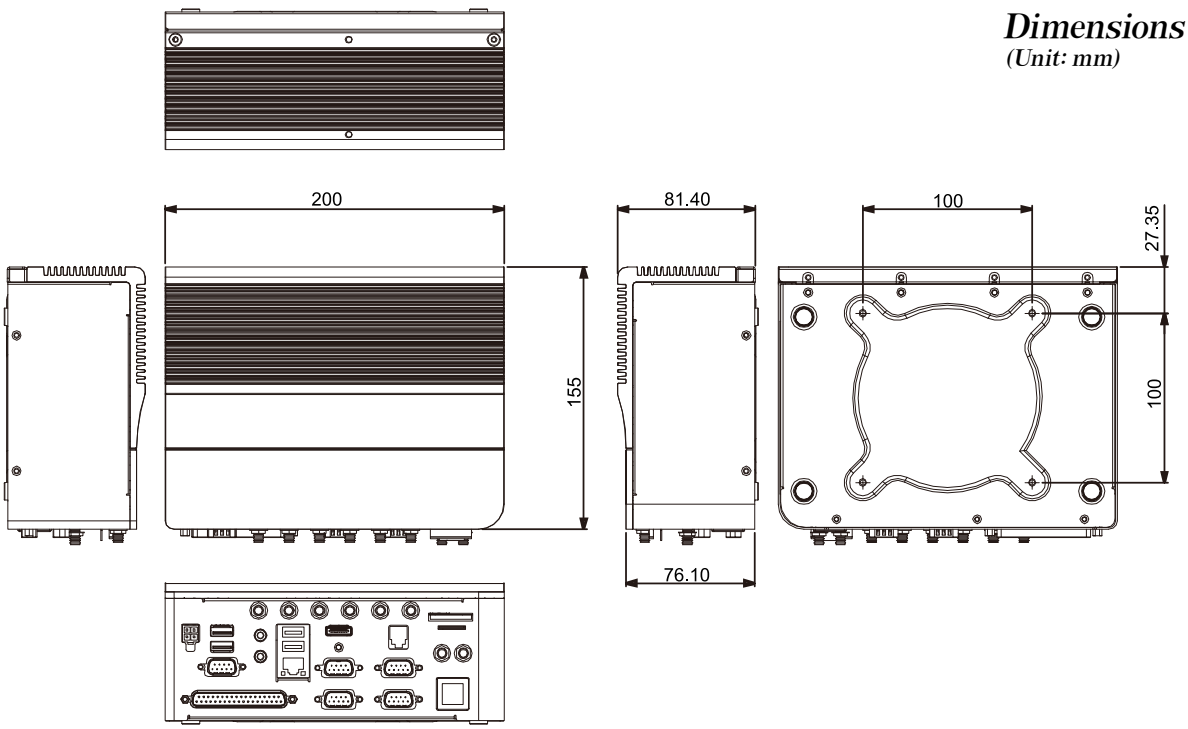
- It allows more information to be stored. This is a great significance for vehicle surveillance applications as video/audio information requires large storage space.
- It is more durable and is hardly to be damaged by vibrations and tough vehicle environment.

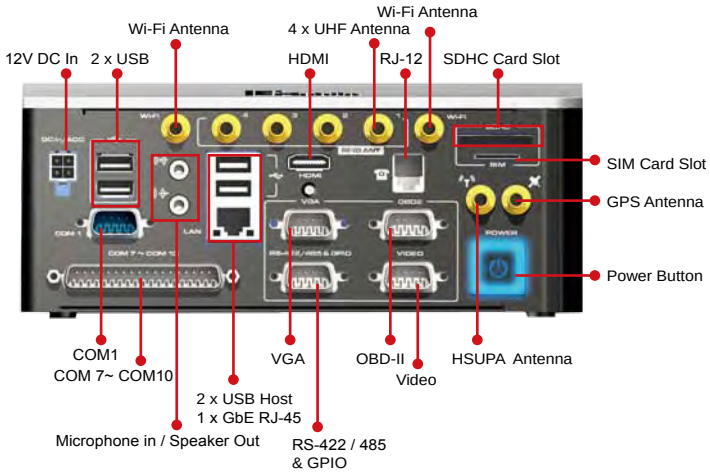
SSD vs HDD

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

	HDD	SDD
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
	Memory	2GB 800 MHz DDR3
	Storagy	1 x Built-in 16G 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
Data Collection	RFID	ISO18000-6C UHF module (option)
Multimedia	Audio	1 x MIC IN 1 x Line-out
	Camera	4 x Channel camera D1 120FPS
Compress	HW Compression	IVCPM-T504
	SW Compression	IVCPM-T604
LED Indicator		1 x Power LED

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
		1 x HDMI
Power	Power Input	Cigarette Lighter Power Cable
	Vehicle Power	ACC Power Cable
Environment	Operating Temperature	-20°C~70°C
	Storage Temperature	-30°C ~80°C
	Humidity	5%~95% non-condensing
	Drop Survival	ISO 16754
	Certification	CE/FCC/e-Mark
Physical Characteristics	Dimensions (LxWxH) (mm)	200 x 150 x 76
	Weight	2015 g

Ordering Information

Part No.	Description
AVL-3000-N26-HC-R10	Vehicle PC Box with Intel® Atom™ N2600 1.6GHz CPU, Windows® 7 OS, 2GB SDRAM, 16GB 2.5" SSD, 802.11 b/g/n Wireless, HSUPA, 4CH 120 FPS Video Capture, OBD-II, GPS, Hareware Codec, RoHS

Packing List

Item	Q'ty
GPS/3.75G Integrate Antenna	1
Wi-Fi Antenna	2
ACC Power Cable	1