Lanner

Intelligent Transportation

Rugged Platforms for Vehicles and Railway Computing




Innovating Transportation Solutions for a Connected World

Over the past ten years, Lanner has dedicated itself in supplying the state-of-the-art hardware solutions for IoT applications and millions of Lanner hardware platforms have been deployed worldwide. Strengthening this momentum, Lanner is expanding its technological fields by innovating transportation solutions for a connected world.

Built on our already established expertise and reliability in our vehicle computing systems, including fleet management, in-vehicle surveillance and infotainment, Lanner has founded its Intelligent Transportation Solution Business Unit, a newly established division dedicating in rolling stock and rail gateway systems. These systems will deliver robust operability to be deployed for train, high-speed rail, MRT (Mass Rapid Transit), and other public transit applications.

Lanner has rich expertise and experience through customization services for our clients in China, Europe, North America and Asia. We focus on developing intelligent platforms that can help our clients reduce their development efforts and cost. Our sole mission is to deliver a wide selection of platforms and gateways to meet your application demands.

Spencer Chou
Senior Director, ITS BU

Who is Lanner?

Lanner Electronics Inc. (TAIEX 6245) is a world-leading hardware provider in design, engineering, and manufacturing services for advanced network appliances and rugged industrial computers. With 30-year experiences, Lanner provides reliable and cost-effective computing platforms with high quality and performance. Today, Lanner has a large and dynamic manpower of over 900 well-experienced employees worldwide with the headquarters in Taipei, Taiwan and subsidiaries in the US, Canada, and China.

Global Manufacturing Capabilities

Taipei, Taiwan

- Area 30,000 m²
- 3 x SMT, DIP and assembly lines
- Production capacity: 30,000 system units/month

Beijing and Dongguang, China

- Area 15,200 m²
- 5 x Assembly lines
- Production capacity: 8,000 system units/month

Service Capabilities

- Custom design and production in board, chassis and system
- High mix low volume manufacturing
- Quality assurance services
- Global order fulfillment services

Certifications

- ISO 9001:2008
- ISO 14001:2004
- ISO 28000:2007
- QC 080000:2012
- OHSAS 18001:2007
- TL 9000:R5.5

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Why Lanner?

Lanner designs and manufactures a wide range of embedded computing systems for diversified applications. Our vehicle computers feature compact form factor, ruggedness, shock/vibration resistance, wireless connectivity and rich I/O connectors. We are committed to bringing reliability and high-performance intelligent transportation systems to meet today's strict demands for IoT applications.

Strong Allies

Intel®

Lanner Electronics is an Associate Member of the Intel IoT Solutions Alliance. This alliance is committed to developing scalable and interoperable platforms to reduce deployment efforts and costs. By leveraging processor architectures, services and technological benefits from Intel, Lanner provides reliable hardware and software solutions in meeting the rise of IoT applications.

Axis

Lanner is a member of Axis Technology Partner Program, a community of video surveillance developers, embedded developers and solution providers committed to the development of video surveillance solutions from Axis Communications. The alliance encourages its members to supply the market the products with enhanced performance, greater scalability, and maximum flexibility.

Milestone Systems

Lanner is a member of the Milestone Solution Partner Program, a community of video surveillance developers, embedded developers and solution providers committed to the development of video surveillance solutions on Milestone technologies.

Gemalto

Gemalto offers a broad portfolio of solutions, services and platforms that enable M2M and IoTapplications and allow enterprises and people to trust in our connected world. We offer the technology bricks customers need to simplify and speed development and ensure the security, reliability and long life of M2M and IoT solutions.

Microsoft

As a Windows Embedded Partner, Lanner is given early access to product plans, Microsoft events and the latest embedded operating system developments. In 2011 and 2012, Lanner was awarded the Windows Embedded Partner of the Year.

Sierra Wireless

Sierra Wireless is building the Internet of Things (IoT) with intelligent wireless solutions that empower organizations to innovate in the connected world.

u-blox

u-blox is a global leader in embedded wireless communications and positioning for industrial, automotive and consumer applications. u-blox delivers compact, low-power, high-performance chips and modules for consumer, professional and industrial machine-to-machine (M2M) applications.

Solution Overview


Fleet Management, see page 18
Waste Management
Rolling Stock Communication, see page 21
Ambulance Communication, see page 19

Vehicle & Rolling Stock Box PCs

Lanner's vehicle and rolling stock computers are specifically designed for versatile deployments in transportation vehicles, offering high levels of stability and reliability, as well as well-rounded balance of size, cost, performance and power consumption.

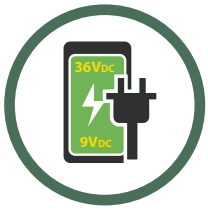
Lanner's vehicle computer line is consisted of the V Series and the R Series and their key features are listed below.

Onboard GPS+GLONASS & G-sensor

Offer an on-board GPS+GLONASS receiver for location tracking and a G-Sensor for driver alerts.

Power Ignition Control

A user-friendly Power Ignition Control is programmed to start and shut down the vehicle computer when the engine is started or turned off respectively.

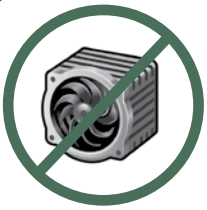


Wide Voltage Input Range

Offer compatibility with mostly adopted voltages, including 9~36 VDC for vehicle application and 16~160VDC (+24V/+36V/+48V/+72V/+96V/+110V)for railway application, ensuring compatible operations and reducing overheads.

Vehicle Standards Certified

All the V Series vehicle computers are designed to meet the requirements of the E-Mark Certification (E13).



Fanless Design

Without the most frequently replaced part, the systems can be widely deployed in various environments.

V7S

R6S

Wireless Communication

Support Wi-Fi, 3G, 4G/LTE modules and antenna for wireless network connectivity.

CAN Bus Support

Designed in J1939 and J1708 protocols, the CAN Bus module allows external devices to analyze driving behaviors for future references.

M12 Connectors

Lanner R Series come with M12 connectors for robust vibration-proof and reliable connections.

Multiple PoE Ports

The design of multiple PoE ports enables our systems to function as mobile NVRs when connected with IP surveillance cameras for real-time recording.

Military Standard Vibration & Shock Test

The V series is compliant with MIL-STD-810G and has passed vibration and shock tests. A suspension kit is also included in some models to assist in vibration resistance.

Rolling Stock Compliance

EN50155, EN50121, EN50125 and EN45545 are international standards regulating electronic equipment used on rolling stock for railway applications. The R Series is with above certified, and covers aspects of standards including temperature, humidity, shock, vibration and other parameters.

Introducing the V and R Series

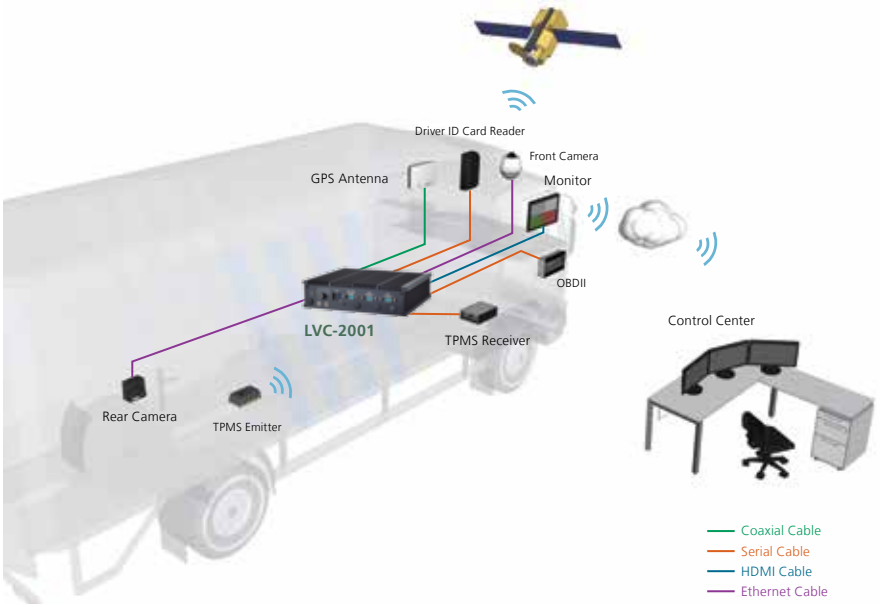
The V Series is designed for uses in public transit buses, commercial trucks, law enforcement and emergency vehicles, truly ideal for applications such as on-road tracking and monitoring, mobile video surveillance and passenger infotainment.

Built with the extreme ruggedness to meet EN50155, EN50121, EN50125 and EN45545, the R Series is engineered to fulfill rail system applications deployed in trains, massive rapid transit or high speed rail.

In-vehicle Application Scenarios

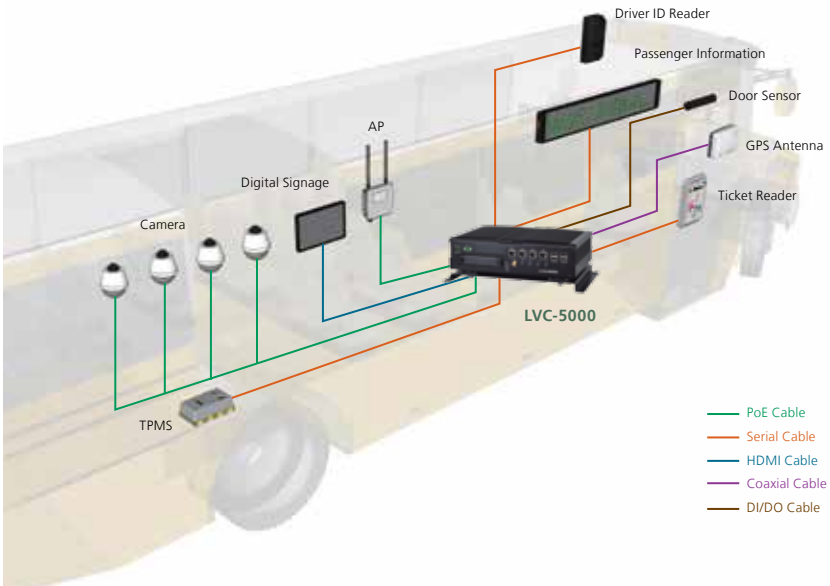
Fleet Management

To optimize transportation cost and secure driver's safety, Lanner LVC-2001 Series provide total solution for truck fleet management. As the center of truck applications, LVC-2001 Series provide rich I/O and expansion capability to connect front/rear IP Camera, RFID scanner, temperature sensor, monitor, TPMS receiver, anti-doze / alcohol detector and Wi-Fi/3G/4G interface cards. The whole management system makes driver and the company HQ a more efficient and safe work place.



Intelligent Bus

As a central control computer for buses, LVC-5000 connects various devices to form intelligent services to driver, passengers and communicate with head office. Through LVC-5000's rich I/O connection, including it's GPS/G-sensor, CAN bus, COM and multiple display capability, it can perform digital signage infotainment, fleet management, surveillance, recording, Wi-Fi hot spot, TPMS (Tire Pressure Measurement System) emitter, e-ticketing, audio intercom, door control and people counting, to provide secure and comfortable journey for bus transportation experience.



In-vehicle Control and Monitoring Gateway

E13 Certified, Fanless Design, Wide Voltage/ Temperature

On-board GPS/G-Sensor, Wi-Fi/3G/Lte, CAN Bus, Power Ignition

LVC-2000

LVC-2001

LVC-5000-A0

LVC-5570-7C

\+ **Analog Capture Card**

\+ **Analog Capture Card + PoE Port**

\+ **PoE Ports**

DVR

LVC-5000-A1
TW5866 Capture Card

LVC-5000-A2
S7100 Capture Card

LVC-5570D4-CA
YUAN SC330N4 Capture

DVR+NVR

LVC-5000-A5
TW5866 Capture Card & 4x PoE

LVC-5000-A6
S7100 Capture Card & 4x PoE

NVR

LVC-5000-B3
4x PoE w/ CAN

LVC-5770-7D
8x PoE

V7 Series
10x PoE

In-vehicle Video Surveillance Gateway

Fanless Vehicle Computers

Vehicle Gateway Controller

Vehicle Gateway Controller

Vehicle Gateway Controller

LVC Series		V3G NEW	LVC-2000	LVC-2001
Dimension (W x H x D)		198 x 62 x 165 mm (7.8"x 2.44"x 6.5")	198 x 52 x 165 mm (7.8"x 2"x 6.5")	198 x 52 x 185 mm (7.8"x 2"x 7.28")
Anti-vibration mounting kit		VESA and Basic wallmount bracket	Basic wallmount bracket	Basic wallmount bracket
Processor		Intel Atom x5-E3930 1.30 GHz	Intel Atom E3845 1.91 GHz	Intel Atom E3845 1.91 GHz
Chipset		N/A	N/A	N/A
System Memory	Technology	DDR3L SO-DIMM x 1	DDR3L SO-DIMM x 1	DDR3L SO-DIMM x 1
	Max. Capacity	Up to 8 GB	Up to 8 GB	Up to 8 GB
Storage	CF/ Onboard SSD	mSATA x 1	mSATA x 1	mSATA x 1
	HDD/SSD	Optional	Internal 2.5" 15 mm drive bay x 1	Internal 2.5" 15 mm drive bay x 1
Ethernet Controller		Intel i210IT x1	Intel i210IT x1	Intel i210IT x 2
Graphic Controller		Intel HD Graphics 505	Intel HD Graphics	Intel HD Graphics
Audio Controller		N/A	Realtek ALC886 HD codec	Realtek ALC886 HD codec
I/O	LAN	GbE RJ45 x 1	GbE RJ45 x 1	GbE RJ45 x 2
	PoE	N/A	N/A	N/A
	Display	DVI-D x 1	VGA x 1, HDMI x 1	VGA x 1, HDMI x 1
	Video Grabber	N/A	N/A	N/A
	Audio	N/A	Internal Mic-in and line-out pin-header	Mic-in x1 and line-out x1 3.5mm phone jack
	Serial I/O	COM1/COM2: RS-232/422/485 with RI/5V/12V	COM1/COM2: RS-232/422/485 with RI/5V/12V	COM1/COM2: RS-232/422/485 with RI/5V/12V
	GPS / G-sensor	u-blox MAX-M8 / ADXL 345	u-blox NEO-M8N / ADXL 345	u-blox NEO-M8N / ADXL 345
	CAN Bus	Optional support 2x J1939 / J1708 on COM 2 and COM3 port	Optional support 2x J1939 / J1708	Optional support J1939/J1708
	Digital I/O	10x DI(MCU DI x2) with 12V and 8x DO with 12V 1x dry relay	4x DI/5V and 4x DO with 12V 2x DI (from MCU) 3.3V level 2x 12V with 2A dry relay	4x DI/5V and 4x DO with 12V 2x DI (from MCU) 3.3V level
	USB	USB 3.0 Type A x 1, USB 2.0 Type A x 1	USB 3.0 Type A x 1	USB 3.0 Type A x 1, USB 2.0 Type A x 1
	Power Input	3-pin terminal block (+,-,ignition), support +12V and +24V vehicle power (+9~36VDC), ATX mode support ignition on/off and delay on/ off control	3-pin terminal block (+,-,ignition), +9~36VDC, ATX mode support ignition delay on/ off control	3-pin terminal block (+,-,ignition), +9~36VDC, ATX mode support ignition delay on/ off control
	Power Output	N/A	12V/1A DC out	12V/1A DC out
	Expansion	1x full-size Mini-PCIe socket for 3G/4G module, 1x half-size Mini-PCIe socket for Wi-Fi module	1x full-size Mini-PCIe socket with SIM card reader, 1x half-size Mini-PCIe socket	2x full-size mini-PCIe socket (1x USB+ PCIe+2x SIM; 1x USB+2 x SIM) 1x half-size mini-PCIe socket (USB+PCIe) ; 4x SIM card readers
	Others	4 x SMA antenna holes for GPS, Wi-Fi and WWAN	4 x SMA antenna holes	4 x SMA antenna holes
Hardware Monitoring		Fintek F81866 integrated watchdog timer 1~255 level	Fintek F81865 integrated watchdog timer 1~255 level	Fintek F81865 integrated watchdog timer 1~255 level
OS Support		Windows: Windows7 / WES2009 / 7 embedded /8/10 IoT Linux: Redhat Enterprise 5, Fedora 14, Linux Kernel 2.6.18 or later	Windows: FES WES7 (WS7E) / W7 Pro SP1 / WE8 STD, Linux: Redhat Enterprise 5, Fedora 14, Linux Kernel 2.6.18 or later	Windows: FES WES7 (WS7E) / W7 Pro SP1 / WE8 STD, Linux: Redhat Enterprise 5, Fedora 14, Linux Kernel 2.6.18 or later
Certifications		CE, FCC Class A, RoHS, E13	CE, FCC Class A, RoHS, E13, SAE J1455	CE, FCC Class A, RoHS, E13
Compliance		Vibration: MIL-STD-810G, Method 514.6 Shock:MIL-STD-810G, Method 516.6	Vibration: MIL-STD-810G, Method 514.6 Shock:MIL-STD-810G, Method 516.6	Vibration: MIL-STD-810G, Method 514.6 Shock:MIL-STD-810G, Method 516.6
Operating Temperature Range	Industrial	-40~70°C / -40~158°F	-20~60°C / -4~140°F	-20~60°C / -4~140°F
	Commercial	-5~45°C / 23~113°F	-5~45°C / 23~113°F	-5~45°C / 23~113°F
Net Weight (Kg)		TBD	1.5	1.8

Vehicle Gateway Controller

Vehicle Gateway Controller

Vehicle Gateway Controller

8ch Surveillance DVR

LVC-5000	LVC-5570-7C	LVC-5000-A0	LVC-5000-A1
273.8 x 64.8 x 190 mm (10.78" x 2.55" x 7.48")	277 x 95 x 190 mm (10.9"x3.74"x7.48")	273.8 x 72 x 188 mm (10.78" x 2.84" x 7.4")	273.8 x 72 x 190 mm (10.78" x 2.83" x 7.48")
Basic wallmount bracket	Advanced anti-vibration kit	Basic wallmount bracket	Advanced anti-vibration kit
Intel Celeron 847E or 1047UE	Intel Core i7-3517UE	Intel Celeron 847E or 1047UE	Intel Celeron 1047UE 1.4 GHz
Intel HM65	Intel HM65	Intel HM65	Intel HM65
DDR3 SO-DIMM x 1 (Factory default: 4 GB module pre-installed)	DDR3 SODIMM x 2	DDR3 SO-DIMM x 1 (Factory default: 4 GB module pre-installed)	DDR3 SO-DIMM x 1 (Factory default: 4 GB module pre-installed)
Up to 8 GB	Up to 16 GB	Up to 8 GB	Up to 8 GB
CF socket Type I/II x 1	mSATA socket x1	CF socket Type I/II x 1	CF socket Type I/II x 1
Internal 2.5" 9.5 mm drive bay x 1	Removable 2.5" 15 mm drive bay x 2	Internal 2.5" 9.5 mm drive bay x 1	Removable 2.5" 15mm drive bay x 1
Intel 82583V x 4	Intel 82574L x 2	Intel 82583V x 2	Intel 82583V x 4
Intel HD Graphics 3000	Intel HD Graphics 4000	Intel HD Graphics 3000	Intel HD Graphics 4000
Realtek ALC886 HD codec	Realtek ALC886 HD codec	Realtek ALC886 HD codec	Realtek ALC886 HD codec
GbE RJ45 x 4	GbE RJ45 x 2	GbE RJ45 x 2	GbE RJ45 x 4
N/A	N/A	N/A	N/A
DVI-D x 1, VGA x 1, HDMI x 1	DVI-D x 1, VGA x 1, HDMI x 1	VGA x 1, resolution:2048x1536	DVI-D x 1, VGA x 1, HDMI x 1
N/A	N/A	N/A	Techwell TW5866 8ch analogue inputs
Mic-in and line-out with 2 watt by terminal block MIO connector	1x Mic-in and line-out (PC) by DB-9 1x Mic-in and line-out (3G) by DB-9	Mic-in and line-out with 2 watt by terminal block MIO connector	Mic-in and line-out with 2 watt by terminal block MIO connector
1x RS-232/422/485 with RI/5V/12V 1x RS-232 with RI/5V/12V	2 x RS232/422/485 with RI/5V/12V	1x RS-232/422/485 with RI/5V/12V 1x RS-232 with RI/5V/12V	1 x RS-232/422/485 with RI/5V/12V 1 x RS-232 with RI/5V/12V
u-blox NEO-M8N / ADXL 345	u-blox NEO-M8N / ADXL 345	u-blox NEO-M8N / ADXL 345	u-blox NEO-M8N / ADXL 345
Optional support J1939/J1708	N/A	Optional support J1939/J1708	N/A
4x DI/5V and 4x DO with 12V 2x DI (from MCU) 3.3V level 2x 12V with 2A dry relay	4x DI 5V level, 3x DO 5V level, 2x DI (from MCU) 3.3V level 9V~36V with 10A dry relay	4x DI/5V and 4x DO with 12V 2x DI (from MCU) 3.3V level 2x 12V with 2A dry relay	4x DI and 4x DO with 12V level by jumper setting 2x DI (from MCU) 3.3V level 2x DO 12/24V with 2A relay
Type A x 4	Type A x 6	Type A x 4	Type A x 4
3-pin terminal block (+,-,ignition), +9~36VDC, ATX mode support ignition delay on/ off control	3-pin terminal block (+ , - , ignition), +9~36VDC, ATX mode support ignition delay on/ off control	3-pin terminal block (+,-,ignition), +9~36VDC, ATX mode support ignition delay on/ off control	3-pin terminal block (+,-,ignition), +9~36VDC, ATX mode support ignition delay on/ off control
12V/1A DC out	+9~36V/ Max. 10A DC out software On/Off controlable	12V/1A DC out	12V/1A DC out
2x Mini-PCIe with 2 SIM card readers	4x Mini-PCIe with 3 SIM card readers	2x Mini-PCIe with 2 SIM card readers	2x Mini-PCIe with 2 SIM card readers
4 x SMA antenna holes, reset button, remote power switch, Lanner proprietary Internal I/O	10 x SMA antenna holes, reset button, remote power switch	5 x SMA antenna holes, reset button, remote power switch, Lanner proprietary Internal I/O	5 x SMA antenna holes, reset button, remote power switch
Fintek F81865 integrated watchdog timer 1~255 level	Fintek F81865 integrated watchdog timer 1~255 level	Fintek F81865 integrated watchdog timer 1~255 level	Fintek F81865 integrated watchdog timer 1~255 level
Windows: FES WES7 (WS7E) / W7 Pro SP1 / WE8 STD, Linux: Redhat Enterprise 5, Fedora 14, Linux Kernel 2.6.18 or later	Windows: FES WES7 (WS7E) / W7 Pro SP1 / WE8 STD, Linux: Redhat Enterprise 5, Fedora 14, Linux Kernel 2.6.18 or later	Windows: FES WES7 (WS7E) / W7 Pro SP1 / WE8 STD, Linux: Redhat Enterprise 5, Fedora 14, Linux Kernel 2.6.18 or later	Windows: FES WES7 (WS7E) / W7 Pro SP1 / WE8 STD, Linux: Redhat Enterprise 5, Fedora 14, Linux Kernel 2.6.18 or later
CE, FCC Class A, RoHS, E13	CE, FCC Class A, RoHS, E13	CE, FCC Class A, RoHS, E13	CE, FCC Class A, RoHS, E13
Vibration: MIL-STD-810G, Method 514.6 Shock:MIL-STD-810G, Method 516.6	Vibration: MIL-STD-810G, Method 514.6 Shock:MIL-STD-810G, Method 516.6	Vibration: MIL-STD-810G, Method 514.6 Shock:MIL-STD-810G, Method 516.6	Vibration: MIL-STD-810G, Method 514.6 Shock:MIL-STD-810G, Method 516.6
-20~60°C / -4~140°F	-20~60°C / -4~140°F	-20~60°C / -4~140°F	-20~60°C / -4~140°F
-5~45°C / 23~113°F	-5~45°C / 23~113°F	-5~45°C / 23~113°F	-5~45°C / 23~113°F
3	6	2.8	4.2

Fanless Vehicle Computers

16ch Vehicle Surveillance DVR

8ch Vehicle Surveillance DVR+NVR

16ch Vehicle Surveillance DVR+NVR

4ch Vehicle Surveillance NVR

LVC Series		LVC-5000-A2	LVC-5000-A5	LVC-5000-A6	LVC-5000-B1
Dimension (W x H x D)		273.8 x 72 x 190 mm (10.78" x 2.83" x 7.48")	273.8 x 72 x 190 mm (10.78" x 2.83" x 7.48")	273.8 x 72 x 190 mm (10.78" x 2.83" x 7.48")	273.8 x 72 x 190 mm (10.78" x 2.83" x 7.48")
Anti-vibration mounting kit		Advanced anti-vibration kit	Advanced anti-vibration kit	Advanced anti-vibration kit	Advanced anti-vibration kit
Processor		Intel Celeron 1047UE	Intel Core i7-3517UE	Intel Core i7-3517UE	Intel Celeron 1047UE
Chipset		Intel HM65	Intel HM65	Intel HM65	Intel HM65
System	Technology	DDR3 SO-DIMM x 1 (Factory default: 4 GB module pre-installed)	DDR3 SO-DIMM x 1 (Factory default: 4 GB module pre-installed)	DDR3 SO-DIMM x 1 (Factory default: 4 GB module pre-installed)	DDR3 SO-DIMM x 1 (Factory default: 4 GB module pre-installed)
Memory	Max. Capacity	Up to 8 GB	Up to 16 GB	Up to 8 GB	Up to 8 GB
Storage	CF/ Onboard SSD	CF socket Type I/II x 1	CF socket type I/II x 1	CF socket Type I/II x 1	CF socket Type I/II x 1
	HDD/SSD	Removable 2.5" 15mm drive bay x 1	Removable 2.5" 15mm drive bay x 1	Removable 2.5" 15mm drive bay x 1	Removable 2.5" 15mm drive bay x 1, Internal 2.5" 15mm drive bay x 1
Ethernet Controller		Intel 82583V x 4	Intel 82583V x 4	Intel 82583V x 4	Intel 82583V x 5
Graphic Controller		Intel HD Graphics 4000	Intel HD Graphics 4000	Intel HD Graphics 4000	Intel HD Graphics 4000
Audio Controller		Realtek ALC886 HD codec	Realtek ALC886 HD codec	Realtek ALC886 HD codec	Realtek ALC886 HD codec
I/O	LAN	GbE RJ45 x 4	GbE RJ45 x 4 with PoE	GbE RJ45 x 4 with PoE	GbE RJ45 x 1, GbE RJ45 x 4 with PoE
	PoE	N/A	IEEE 802.3af PoE port x 4, internal PoE adapter	IEEE 802.3af PoE port x 4, internal PoE adapter	IEEE 802.3af PoE port x 4, internal PoE adapter
	Display	DVI-D x 1, VGA x 1, HDMI x 1	DVI-D x 1, VGA x 1, HDMI x 1	DVI-D x 1, VGA x 1, HDMI x 1	DVI-D x 1, VGA x 1, HDMI x 1
	Video Grabber	Stretch S7100 16ch Analogue Input	Techwell TW5866 8ch Analogue Inputs	Stretch S7100 16ch Analogue Input	N/A
	Audio	Mic-in and line-out with 2 watt by terminal block MIO connector	Mic-in and line-out with 2 watt by terminal block MIO connector	Mic-in and line-out with 2 watt by terminal block MIO connector	Mic-in and line-out with 2 watt by terminal block MIO connector
	Serial I/O	1 x RS-232/422/485 with RI/5V/12V	1 x RS-232/422/485 with RI/5V/12V	1 x RS-232/422/485 with RI/5V/12V	1 x RS-232/422/485 with RI/5V/12V 1 x RS-232 with RI/5V/12V
	GPS / G-sensor	u-blox NEO-M8N / ADXL 345	u-blox NEO-M8N / ADXL 345	u-blox NEO-M8N / ADXL 345	u-blox NEO-M8N / ADXL 345
	CAN Bus	N/A	N/A	N/A	Optional support J1939 / J1708
	Digital I/O	4x DI and 4x DO with 12V level by jumper setting 2x DI (from MCU) 3.3V level 2x DO 12/24V with 2A relay	4x DI and 4x DO with 12V level by jumper setting 2x DI (from MCU) 3.3V level 2x DO 12/24V with 2A relay	4x DI and 4x DO with 12V level by jumper setting 2x DI (from MCU) 3.3V level 2x DO 12/24V with 2A relay	4x DI and 4x DO with 12V level by jumper setting 2x DI (from MCU) 3.3V level 2x DO 12/24V with 2A relay
	USB	Type A x 4	Type A x 4	Type A x 4	Type A x 4
	Power Input	3-pin terminal block (+,-,ignition), +9~36VDC, ATX mode support ignition delay on/ off control	3-pin terminal block (+ , - , ignition), +9~36VDC, ATX mode support ignition delay on/ off control	3-pin terminal block (+,-,ignition), +9~36VDC, ATX mode support ignition delay on/ off control	3-pin terminal block (+,-,ignition), +9~36VDC, ATX mode support ignition delay on/ off control
	Power Output	12V/1A DC out	12V/1A DC out	12V/1A DC out	12V/1A DC out
	Expansion	2x Mini-PCIe with 2 SIM card readers	2x Mini-PCIe with 2 SIM card readers	2x Mini-PCIe with 2 SIM card readers	3x Mini-PCIe with 3 SIM card readers
	Others	5 x SMA antenna holes, reset button, remote power switch	5 x SMA antenna holes, reset button, remote power switch	5 x SMA antenna holes, reset button, remote power switch	5 x SMA antenna holes, reset button, remote power switch
Hardware Monitor		Fintek F81865 integrated watchdog timer 1~255 level	Fintek F81865 integrated watchdog timer 1~255 level	Fintek F81865 integrated watchdog timer 1~255 level	Fintek F81865 integrated watchdog timer 1~255 level
OS Support		Windows: FES WES7 (WS7E) / W7 Pro SP1 / WE8 STD, Linux: Redhat Enterprise 5, Fedora 14, Linux Kernel 2.6.18 or later	Windows: FES WES7 (WS7E) / W7 Pro SP1 / WE8 STD, Linux: Redhat Enterprise 5, Fedora 14, Linux Kernel 2.6.18 or later	Windows: FES WES7 (WS7E) / W7 Pro SP1 / WE8 STD, Linux: Redhat Enterprise 5, Fedora 14, Linux Kernel 2.6.18 or later	Windows: FES WES7 (WS7E) / W7 Pro SP1 / WE8 STD, Linux: Redhat Enterprise 5, Fedora 14, Linux Kernel 2.6.18 or later
Certifications		CE, FCC Class A, RoHS, E13	CE, FCC Class A, RoHS, E13	CE, FCC Class A, RoHS, E13	CE, FCC Class A, RoHS, E13
Compliance		Vibration: MIL-STD-810G, Method 514.6 Shock:MIL-STD-810G, Method 516.6	Vibration: MIL-STD-810G, Method 514.6 Shock:MIL-STD-810G, Method 516.6	Vibration: MIL-STD-810G, Method 514.6 Shock:MIL-STD-810G, Method 516.6	Vibration: MIL-STD-810G, Method 514.6 Shock:MIL-STD-810G, Method 516.6
Operating Temperature Range	with Industrial Components	-20~60°C / -4~140°F	-20~60°C / -4~140°F	-20~60°C / -4~140°F	-20~60°C / -4~140°F
	with Commercial Components	-5~45°C / 23~113°F	-5~45°C / 23~113°F	-5~45°C / 23~113°F	-5~45°C / 23~113°F
Net Weight (Kg)		4.2	4.5	4.5	4

4ch Vehicle Surveillance NVR

4ch Vehicle Surveillance NVR

8ch Vehicle Surveillance NVR

10ch Vehicle Surveillance NVR

LVC-5000-B2	LVC-5000-B3	LVC-5770-7D	V7 Series NEW
273.8 x 72 x 190 mm (10.78" x 2.83" x 7.48")	273.8 x 72 x 190 mm (10.78" x 2.83" x 7.48")	276.4 x 95 x 190 mm (10.88" x 3.7" x 7.8")	273.8 x 92 x 219 mm (10.78" x 3.62" x 8.62")
Advanced anti-vibration kit	Advanced anti-vibration kit	Advanced anti-vibration kit	Advanced anti-vibration kit
Intel Core i7-3517UE	Intel Core i7-3517UE	Intel Core i7-3517UE	Intel Core i7-6600U or Celeron 3955U
Intel HM65	Intel HM65	Intel HM65	N/A
DDR3 SO-DIMM x 1 (Factory default: 4 GB module pre-installed)	DDR3 SO-DIMM x 1 (Factory default: 4 GB module pre-installed)	DDR3 SO-DIMM x 2	DDR4 260-pin SO-DIMM x 2
Up to 8 GB	Up to 8 GB	Up to 16 GB	Up to 32 GB
CF socket Type I/II x 1	CF socket Type I/II x 1, mSATA x 1	mSATA x 1	mSATA x 1
Removable 2.5" 15mm drive bay x 1	Removable 2.5" 15mm drive bay x 1	Removable 2.5" 15mm drive bay x 2	Removable 2.5" 15mm drive bay x 2
Intel 82583V x 5	Intel 82583V x 5	Intel 82574L x 2, 82583 x 8	i219LM x 1, Intel I210IT x 10
Intel HD Graphics 4000	Intel HD Graphics 4000	Intel HD Graphics 4000	Intel Integrated HD Graphics 520
Realtek ALC886 HD codec	Realtek ALC886 HD codec	Realtek ALC886 HD codec	Realtek ALC886 HD codec
GbE RJ45 x 1, GbE RJ45 x 4 with PoE	GbE RJ45 x 5 with PoE	GbE RJ45 x 2, GbE RJ45 x8 with PoE	GbE RJ45 x 1, GbE RJ45 x10 with PoE
IEEE 802.3af PoE port x 4, internal PoE adapter	IEEE 802.3af PoE port x 5, internal PoE adapter with on/off control	IEEE 802.3af PoE port x 8, external PoE adapter	IEEE 802.3af PoE port x 10, external PoE adapter for total 160W power output
DVI-D x 1, VGA x 1, HDMI x 1	DVI-D x 1, VGA x 1, HDMI x 1	DVI-D x 1, VGA x 1, HDMI x 1	DVI-D x 1, VGA x 1
N/A	N/A	N/A	N/A
Mic-in and line-out with 2 watt by terminal block MIO connector	Mic-in and line-out with 2 watt by terminal block MIO connector	Mic-in and line-out with 2 watt by DB-9	Mic-in and line-out with 2 watt by DB-9
1 x RS-232/422/485 with RI/5V/12V 1 x RS-232 with RI/5V/12V	1 x RS-232/422/485 with RI/5V/12V 1 x RS-232 with RI/5V/12V	2 x RS232/422/485 with RI/5V/12V	2 x RS232/422/485 with RI/5V/12V 1 x RS-232 in MIO port
u-blox NEO-M8N / ADXL 345	u-blox NEO-M8N / ADXL 345	u-blox NEO-M8N / ADXL 345	u-blox NEO-M8N / ADXL 345
CAN bus 2.0B support J1939 / J1708	Optional support J1939 / J1708	N/A	Optional support J1939 / J1708
4x DI and 4x DO with 12V level by jumper setting 2x DI (from MCU) 3.3V level 2x DO 12/24V with 2A relay	4x DI and 4x DO with 12V level by jumper setting 2x DI (from MCU) 3.3V level 2x DO 12/24V with 2A relay	4x DI 5V level 3x DO 5V level 2x DI (from MCU) 3.3V Level 9V~36V with 10A dry relay	7x DI 5V or 12V level 7x DO 12V level by 1x 26-pin terminal block connector
Type A x 4	Type A x 4	Type A x 6	USB 3.0 Type A x 4, internal USB 2.0 x2 with pin header
3-pin terminal block (+,-,ignition), +9~36VDC, ATX mode support ignition delay on/ off control	3-pin terminal block (+,-,ignition), +9~36VDC, ATX mode support ignition delay on/ off control	3-pin terminal block (+,-,ignition), +9~36VDC, ATX mode support ignition delay on/ off control	4-pin terminal block (+,-,ignition), +9~36VDC, ATX mode support ignition delay on/ off control. Li-ion battery for 15-min. main system power backup
12V/1A DC out	12V/1A DC out	+9~36V/ max. 10A DC out software on/off controlable	+12V, 2A DC out software on/off controlable
3x Mini-PCIe with 3 SIM card readers	2x Mini-PCIe with 2 SIM card readers	2x Mini-PCIe with 1 SIM card readers	3x Mini-PCIe with 4 SIM card readers (1x removable bay for 1x mini-PCIe slot with two SIM card readers, 1x internal mini-PCIe slot with two SIM card readers)
5 x SMA antenna holes, reset button, remote power switch	5 x SMA antenna holes, reset button, remote power switch	6 x SMA antenna holes, reset button, remote power switch	7 x SMA antenna holes, reset button
Fintek F81865 integrated watchdog timer 1~255 level	Fintek F81865 integrated watchdog timer 1~255 level	Fintek F81865 integrated watchdog timer 1~255 level	Fintek F81866 integrated watchdog timer 1~255 level
Windows: FES WES7 (WS7E) / W7 Pro SP1 / WE8 STD, Linux: Redhat Enterprise 5, Fedora 14, Linux Kernel 2.6.18 or later	Windows: FES WES7 (WS7E) / W7 Pro SP1 / WE8 STD, Linux: Redhat Enterprise 5, Fedora 14, Linux Kernel 2.6.18 or later	Windows: FES WES7 (WS7E) / W7 Pro SP1 / WE8 STD, Linux: Redhat Enterprise 5, Fedora 14, Linux Kernel 2.6.18 or later	Windows: FES WES7 (WS7E) / W7 Pro SP1 / WE8 STD, Win10 IoT, Linux: Redhat Enterprise 5, Fedora 14, Linux Kernel 2.6.18 or later
CE, FCC Class A, RoHS, E13	CE, FCC Class A, RoHS, E13	CE, FCC Class A, RoHS, E13	CE, FCC Class A, RoHS, E13
Vibration: MIL-STD-810G, Method 514.6 Shock:MIL-STD-810G, Method 516.6	Vibration: MIL-STD-810G, Method 514.6 Shock:MIL-STD-810G, Method 516.6	Vibration: MIL-STD-810G, Method 514.6 Shock:MIL-STD-810G, Method 516.6	Vibration: MIL-STD-810G, Method 514.6 Shock:MIL-STD-810G, Method 516.6
-20~60°C / -4~140°F	-20~60°C / -4~140°F	-20~60°C / -4~140°F	-20~60°C / -4~140°F (Not including Li-ion battery)
-5~45°C / 23~113°F	-5~45°C / 23~113°F	-5~45°C / 23~113°F	-5~45°C / 23~113°F
4	3.9	6	6 (with external adapter)

Rolling Stock Computing

Lanner's newly launched rolling stock computing systems are purposely built for the increasing demand of today's digitalized and networked railway transportation systems. Through well-experienced custom services, Lanner has innovated its R series product line, all with EN50155, EN50121, EN50125 and EN45545 certified and military standard endurance per request, ideal for data communication and signal control, vehicle surveillance, and real-time information on railway environments.

Target Applications:

- Onboard Video Surveillance
- Audio Intercom
- GPS Location-Based Service
- Digital Signage and Infotainment
- Emergency Alarm System
- Passenger Information System
- Driver Advisor System
- Wi-Fi Hot Spot
- Communication Network

R6S

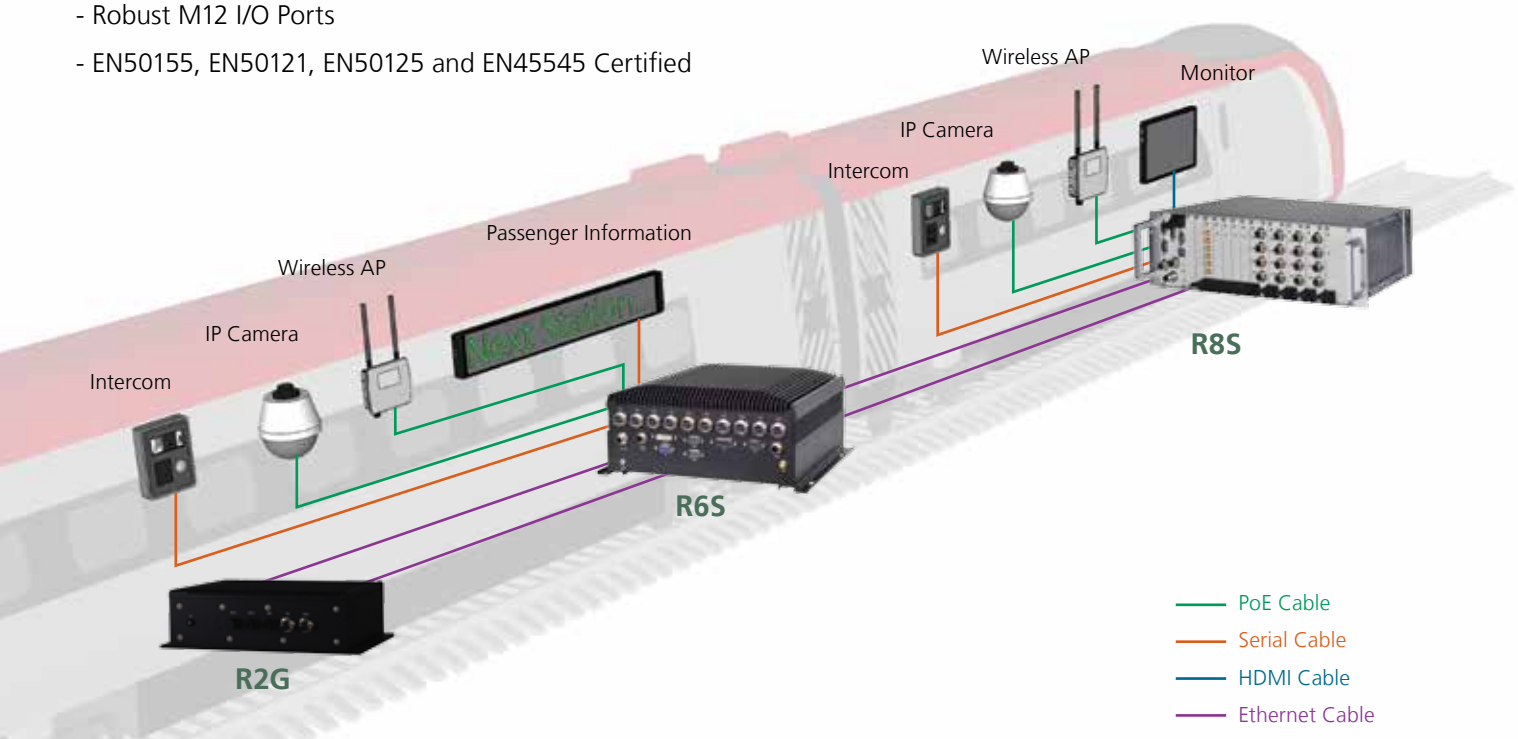
- Fanless IP50 Surveillance Computer
- Intel® Core™ i7 Skylake U / Kaby Lake U
- Support 10 x IEEE 802.11af PoE Ports
- Robust M12 I/O Ports
- EN50155, EN50121, EN50125 and EN45545 Certified

R8S

- Rackmount Rolling Stock Computer
- Intel® Core™ i7 Skylake U / Kaby Lake U
- Support 16 x IEEE 802.11af PoE Ports
- Robust M12 I/O Ports
- Flexible I/O Module Design for Customization
- EN50155, EN50121, EN50125 and EN45545 Certified

R2G

- Fanless IP67 Vehicle Control Unit
- Intel® Atom™ E3845 1.91 GHz
- Robust M12 I/O Ports
- EN50155, EN50121 Certified



Fanless Railway Computers

Rugged IP67 Vehicle Control Unit

Railway Surveillance Computer

Rackmount Railway Computer

Railway Solution		R2G Series	R6S Series NEW	R8S Series
Chassis	Dimensions (W x H x D)	268 x 86 x 210 mm (10.55" x 3.4" x 8.27")	272.4 x 121.3 x 228 mm (10.72" x 4.77" x 8.97")	482.6 x 132 x 282 mm (19" x 5.2" x 15.7")
	IP Rated	IP67	IP50	N/A
System	Processor Number	Intel Atom Bay Trail-I E3845 Processor	Intel Core i7-6600U Processor	Intel Core i7-6600U Processor
	Chipset	N/A	N/A	N/A
	Processor Graphics	Intel integrated HD Graphics	Intel integrated HD Graphics 520	Intel integrated HD Graphics 520
Memory	Technology	DDR3L 1333 SO-DIMM x 1	DDR4 1866/2133 SODIMM Socket x 1	DDR4 1866/2133 SODIMM Socket x 1
	Max. Capacity	Up to 4 GB (Factory default: 2 GB module pre-installed)	Up to 16 GB (Factory default: 8 GB module pre-installed)	Up to 16 GB (Factory default: 8 GB module pre-installed)
Storage	CF/ SD / mSATA Socket	mSATA socket x 1	mSATA socket x 1, SDXC Socket x1	mSATA socket x 1
	2.5" Drive Bay	Internal 2.5" drive bay x 1	Removable 2.5" drive bay x1 for 2x storages	Removable 2.5" drive bay x4 for 4x storages
Ethernet Controller		Intel i210-IT x 2	Intel i210-IT x 4	Intel i210-IT x 3
Audio Controller		Realtek ALC886 HD codec	Realtek ALC886 HD codec	N/A
I/O	Display	VGA x 1, resolution up to 2048 x 1536 HDMI/DP x 1, resolution up to 1920 x 1200	VGA x 1, resolution up to 2048 x 1536 DVI-D x 1, resolution up to 1920 x 1200	DVI-D x 2, resolution up to 1920 x 1200
	LAN	GbE RJ45 x 2	GbE RJ45 x1	GbE RJ45 x 2
	PoE	N/A	IEEE 802.3af standard PoE ports x10	IEEE 802.3af POE ports x 12 IEEE 802.3af POE ports x 4
	Audio	Mic-in and Line-out with 2-watt by HD Audio	Mic-in and Line-out with 2-watt by HD Audio	N/A
	Serial I/O	COM_A: RS232/422/485 x2 COM_B: RS232/422/485 x2 COM_C: RS232 (TX-RX only) x6	RS-232/422/485 x2 with RI/5V/12V	RS-232/422/485 x2 with RI/5V/12V
	GPS	u-blox NEO-M8N; 3 GNSS (GPS, Galileo, GLONASS, BeiDou), default @ GPS + GLONASS dual band	u-blox NEO-M8N; 3 GNSS (GPS, Galileo, GLONASS, BeiDou), default @ GPS + GLONASS dual band	u-blox NEO-M8N; 3 GNSS (GPS, Galileo, GLONASS, BeiDou), default @ GPS + GLONASS dual band
	G-sensor	ADXL 345	ADXL 345	ADXL 345
	CAN	CAN Bus J1939 / J1708 x1	CAN Bus J1939 / J1708 x1	N/A
	Digital I/O	4x DI 5V Level TTL and 4x DO 12V Level TTL 2x DI (from MCU) 3.3V Level TTL	7x DI 12V TTL selectable 7x DO 24V TTL, Max. 100mA 2x IGN-DI of ignition control to MCU	8x isolated DIO 5V/ 12V TTL selectable 2x relay out
	USB	USB 2.0 Type A x2 USB 3.0 Type A x1	USB 2.0 Type A x1 USB 3.0 Type A x4	USB 3.0 Type A x2
	Expansion	Full-size Mini-PCIe Socket x2 with 2 SIM card readers Half-size Mini-PCIe Socket x1	Full-size Mini-PCIe Socket x2 with dual SIM card readers on each	Full-size Mini-PCIe Socket x6 with 12x SIM card readers
	Antenna	SMA antenna hole x4 (includes GPS x1)	SMA antenna hole x4 (includes GPS+GLONASS x1)	SMA antenna hole x13 (includes GPS+GLONASS x1)
	Power Input	DC 9-36V (+ , - , ignition) with option at DC 12/ 24/ 36/ 48/ 52/ 72/ 96/ 110V level, ATX mode support ignition delay on/ off control	DC 16-160V (+ , - , ignition) supports DC 24/ 36/ 48/ 72/ 96/ 110V level, ATX mode support ignition delay on/ off control	DC 16-160V (+ , - , ignition) supports DC 24/ 36/ 48/ 72/ 96/ 110V level, ATX mode support ignition delay on/ off control
	Power Output	N/A	12V/2A DC out	N/A
Hardware Monitoring / WDT		Fintek F81865F integrated watchdog timer 1~255 level	Fintek F81866AD-1 integrated watchdog timer 1~255 level	Fintek F81866AD-1 integrated watchdog timer 1~255 level
OS Support		Windows: FES WES7 (WS7E) / W7 Pro SP1 / WE8 STD Linux: Redhat Enterprise 5, Fedora 14, Linux Kernel 2.6.18 or later	Windows: FES WES7 (WS7E) / W7 Pro SP1 / WE8 STD Linux: Redhat Enterprise 5, Fedora 14, Linux Kernel 2.6.18 or later	Windows: FES WES7 (WS7E) / W7 Pro SP1 / WE8 STD / W8.1 Linux: Redhat Enterprise 5, Fedora 14, Linux Kernel 2.6.18 or later
Certifications	EMC	CE, FCC Class A, RoHS	CE, FCC Class A, RoHS	CE, FCC Class A, RoHS
	Safety	N/A	N/A	N/A
Compliance	Ambient Internal Temperature	EN 50155 Tx (-40 ~ 70°C)	EN 50155 Tx (-40 ~ 70°C), EN 50125-3	EN 50155 Tx (-40 ~ 70°C), EN 50125-3
	Shock and Vibration	EN 61373 / MIL-STD-810G	EN 61373 / MIL-STD-810G	EN 61373
	Interruptions of Voltage Supply	EN 50155 Class S2	EN 50155 Class S2	EN 50155 Class S2
	Supply Over Change	EN 50155 Class C2	EN 50155 Class C2	EN 50155 Class C2
	EMC	EN 50121-3-2	EN 50121-3-2, EN 50121-4	EN 50121-3-2, EN 50121-4
	Fire protection	N/A	EN 45545-2	EN 45545-2
Environmental	Operating Temperature	-40~70°C / -40~158°F	-40~70°C / -40~158°F	-40~70°C / -40~158°F
	Storage Temperature	-40~85°C / -40~185°F	-40~85°C / -40~185°F	-40~85°C / -40~185°F
	Humidity	5%~95% @ 40°C / 104°F (Storage Level)	5%~95% @ 40°C / 104°F (Storage Level)	5%~95% @ 40°C / 104°F (Storage Level)
Net Weight (kg)		4	TBD	7.5

Networked Vehicles Improves Service Fleet Productivity

Background

Nowadays, service fleet managers have put a strong emphasis on vehicle-to-center networking and communications in order to improve their productivity, cost-effectiveness and customer satisfaction. They are mostly centered at driver safety, fuel-efficiency, usage-optimizations, and asset monitoring. In other words, fleet managers wish to establish more efficient communication and job-dispatch mechanisms between service fleets and operation centers. To optimize fleet-management serviceability, Lanner has identified several technical requirements:

- Asset Monitoring
- Networked Vehicles and Telematics
- Navigation
- Shock and Vibration

Lanner Solution

To strengthen communications between dispatched fleets and operation centers, Lanner's LVC- product lineups are designed with multiple mini-PCIe sockets for Wi-Fi and Cellular (3G/4G/LTE) modules. In addition, Lanner's LVC-2001 supports multiple SIM card function so that service fleets can automatically switch to different regional network service providers/carriers when traveling to another region/country. This will greatly save SIM roaming cost.

GPS is another necessary implementation in Lanner's vehicle computing line. With this navigation feature, vehicles on missions can optimize their traveling time with route planning, since time waste and fuel are the largest expense for fleet services.

Physical reliability is also taken into considerations. As vehicles are frequently on the road, sometimes unflat surfaces, Lanner's LVC-2000/2001 are all MIL-STD-810G certified for shock and vibration. In addition, all these models have passed E13 certifications.

For driving record analysis, Lanner offers optional CAN Bus design to connect OBDII (On-Board Diagnostic 2) for vehicle diagnose and predictive maintenance. Aside from CAN Bus, Lanner's LVC-2000/2001 (model dependent) are designed with G-sensor, providing further recorded data for physical impact of a vehicle.

Lanner's LVC-2000/2001 are all equipped with serial COM ports, with RS-232, RS-422 and/or RS-485 configurations for connections with TPMS (Tire Pressure Monitoring System), driver advisory system, temperature sensor or other instruments.

As designed for networked vehicles, LVC-2000/2001 comes with multiple LAN ports, connectable with networking devices or NVR for surveillance recording.

Regarding connections with extra sensors, Lanner's vehicle computing systems offer Digital I/Os or GPIO, depending on model selections. For video display, LVC-2000 and LVC-2001 provide VGA and HDMI output ports so that display can be established around the dashboard.

Featured Products

LVC-2000/2001

E-Mark Certified Fanless Vehicle Gateway Controller with CAN Bus support

Enabling Intelligent Ambulances Through Mobile Cloud System

Background

Today, many hospitals and health-care institutions are searching ways to improve survival rates for their emergency rooms. Most of the facilities used by current ambulances are below ideal. In fact, it has been reported that a considerable number of in-vehicle medical staff is still relying on radio systems to communicate with their hospital colleagues, which often fails to provide detailed communications so that hospital staff is frequently less-than-prepared when receiving the victim/patient.

Some medical institutions have begun using off-the-shelf computer systems to try to solve this problem but the benefit is limited due to their below-average performance and reliability in vehicle environments. Also the need for real-time unbroken communication with bus control centers over the city-wide 3G network.

A rugged mobile platform with flexible and scalable Intel x86 microprocessors and multiple peripheral connectivity is the economical solution to conduct emergent medical missions such as telemedicine, video-communication, treatment preparations and clinical image transmissions. Critical functions include:

- Digitalized Measurement Results
- Mobile Surveillance
- Driver Behavior Data
- Peripheral Connectivity
- GPS Route Management

Lanner Solution

Lanner's LVC-5000-B3 is a highly rugged and integrated vehicle computing platform built for mission critical applications. Built with Intel® Core™ i7 CPU, LVC-5000-B3 is capable of delivering high processing power and graphic presence required for video-communication and telemedicine so that detailed information can be conveyed with very low system latency.

To enable wireless network, LVC-5000-B3 offers both 3G and WiFi connectivity so that patient data can be linked to a MCA and enables the medical tablet to transfer data to hospital staff.

For in-vehicle monitoring purpose, LVC-5000-B3 is designed with 5 Ethernet LAN ports with PoE (Power-over-Ethernet) capability, ideal for installations with IP cameras to enable real-time surveillance.

Regarding connections with external devices to conduct medical operations, LVC-5000-B3 delivers 2 serial COM ports, GPIO, GPS sensor, and USB ports for purposes such as medical instruments and sensors, route and location tracking, and MCA connection.

Regarding audio support, LVC-5000-B3 provides Mic In/Line Out ports for sound transmitting devices like microphone and speaker to conduct voice calls or recording tasks. In case of controversies, there is an ODB-II interface to retrieve data logs of driver behaviors.

Featured Product

LVC-5000-B3

E-Mark Certified Fanless Vehicle NVR with 5 PoE ports and CAN Bus

In-vehicle Recorder for Evidence Collecting Vans

Background

A well-known solution provider in North America, one with 75 years experience in providing turnkey solutions for criminal investigation and forensic products, came to Lanner for an in-vehicle video recording solution intended for a fleet of evidence collecting vans. The hardware solution must be shock and vibration resistant in order to survive unfamiliar and unpredictable road conditions when coming across over the course of crime scene investigation and evidence collection. In addition, this in-vehicle computer must be able to connect up to 6 cameras at one time and provide quick data retrieval from computers to portable disks for submission, together with all collected evidence, at a speedy transmission.

Lanner Solution

Lanner's LVC-5770 was eventually selected as the ideal solution for these evidence collecting vans. The LVC-5770 features a powerful Intel® Core i7 processor, 2 SSD drives and 8 LAN ports with PoE support, collectively enabling multi-channels real-time video recording and data storage. The built-in suspension kit and E13 certification are a testament to the extensive vibration and shock testing the LVC-5770 has undergone, demonstrating its reliability for continuous video recording on even the roughest terrains. The LVC-5770's functionality is enhanced by the custom USB 3.0 support, allowing plug-n-play function for fast data retrieval from the SSD storage.

Featured Product

LVC-5770-7D

Fanless Vehicle NVR with 8 PoE Ports

- Intel® Core™ i7-3517UE
- Multiple PoE LAN ports to support transport surveillance
- Fanless design with corrugated aluminum
- Designed for MIL-STD-810G with extreme operating temperature and vibration resistance
- Vehicle ignition power management
- Convenient DC output
- Diversified digital input/output support

Enabling Intelligence in Train Control and Management

Background

Many governments and transportation companies in the world are seeking intelligent and secure rolling stock solutions to reduce traffic congestion, air pollution and commuting time between urban and rural areas. In fact, today's passengers and operators demand more than just reliability and efficiency, but also comfort, infotainment and environmental friendliness. To meet the ever complicated demands, a more integrated system with high degree of modular flexibility and scalability is required to integrate train-and-ground communication, air conditioning, door sensing/warning, passenger information system, and also surveillance and infotainment. A major Europe-based rolling stock manufacturer and provider came to Lanner with the following system requirements:

- Exceptional Computing Capability
- EN50155, EN50121, EN50125 & EN45545 Certified
- Digitalized Serviceability
- Modular Flexibility and Scalability
- Convenient Maintenance

Lanner Solution

Lanner's R8S is a highly-integrated 3U rail system packing high-processing CPU, sixteen M12 PoE ports, rolling stock certified endurance and multiple modular expansions to operate as the brain of intelligent rail systems.

R8S is built with a high-processing, 6th/7th Generation Intel® Core™ i7 Skylake U / Kaby Lake U CPU. The CPU is able to handle high-volume data transmissions and information flow, and process multimedia contents efficiently. Built with Intel x86 open-standard, the system structure can be easily diagnosed and maintained.

R8S offers up to sixteen M12 PoE Ethernet ports for connections with networking devices like WiFi access points and/or IP surveillance equipments. With M12 connectors, R8S's Ethernet ports can function reliably in rail environments.

R8S has been rolling stock certified for protections against shock, vibration, temperature, humidity and surge. Regarding hardware component reliability, R8S is designed with open-standard architecture and hardware monitoring capability for convenient diagnose and maintenance

R8S is a highly scalable system with multiple modular expansions providing I/O functions including serial COM ports, GPIO, NVR, SATA/mSATA storage space, and the mini-PCIe sockets with SIM card readers for WiFi/3G/4G connectivity. This high-scalability nature allows R8S to be adapted in various rolling stock environments, simply by applying function-specific modules.

Featured Product

R8S

High Performance Fanless Rackmount Railway Computer with Intel Core™ i7 Skylake U / Kaby Lake U **CPU**

Accessories

4G-LTE Modules

0TAW000136000 0TAW000137000	Gemalto LM_PLS8-E/US
	GEMALTO PLS8-E PCI EXPRESS MNI CARD LTE/UMTS MODULE for EU GEMALTO PLS8-US PCI EXPRESS MNI CARD LTE/UMTS MODULE for US

0TAW000001000 0TAWMC7354Z01	Sierra MC7304/MC7354
	SIERRA 4G-LTE Mini PCIe Module with GPS+Glonass for LTE, DC-HSPA+, HSPA+, HSDPA, HSUPA, WCDMA, GSM, GPRS, EDGE, and GNSS for EMEA & APAC SIERRA 4G/LTE PCI Express Mini Card for LTE, DC-HSPA+, HSPA+, HSDPA, HSUPA, WCDMA, GSM, GPRS, EDGE, and GNSS for North America/Multi operator

3G Modules

0TAW000138000	Gemalto LX-EHS6
	WIRELESS CARD EHS6 CINTERION 3G/LTE/HSPA+/EDGE/GPRS/GSM Module GSM/GPRS/EDGE 850/ 900/ 1800/ 1900/ HSPA/UMTS 800/ 850/ 900/ 1900/ 2100

0TAWMC8705Z01	Sierra MC8705
	SIERRA AirPrime MC8705 PCI Express Mini Card offers high performance to the user on 3.75G, Quad-band GSM/EDGE/UMTS/HSDPA networks - Coverage: 850/1900/2100 MHz - Interface: PCI Express - Form Factor: Mini PCIe Card Full Size

0TAWMC8705Z01	Huawei MU709-2
	Huawei MU709-2 Mini Card 3G module, support GSM/GPRS/EDGE/UMTS/HSPA, 800/850/900/ AWS1700/1800/1900/2100 MHz Standard Commercial Temperature Range

Wi-Fi/Bluetooth Modules

0TAWWPEA27000	WPEA-252NI 802.11a/b/g/n Industrial-grade Mini Card
	Dual band 802.11a/b/g/n 2.4G + 5GHz 2T2R Industrial-grade Mini PCIe module (-40~85°C)

0TAWWPER12Z01	WPEA-121N 802.11a/b/g/n Half Mini Card
	Dual band, 802.11a/b/g/n Half Mini Card, Atheros AR-9382, 2T2R with HMCE-101 (Half card extender)

0TAWWEPT23Z01	WPET-232ACN 802.11a/b/g/n Half Mini Card
	Dual band, 802.11ac/b/g/n Half Mini Card, RealtekRTL8812AE, 2T2R with HMCE-101 (Half card extender)

0TAW000026000	WPEA-152GN(BT) 802.11/b/g/n Wi-Fi+BT Half Mini Card

Single band, 802.11b/g/n Wi-Fi + BT Half Mini Card, Atheros AR3012 + AR9485, 1T1R with HMCE-101 (Half card extender)

External Antennas

0TZW000000136 0TZW000000137	4G External Antenna

4G External Antenna(Black),SMA PLUG for LTE(USA) 700MHz, 1710-2155MHz
4G External Antenna(Black),SMA PLUG for LTE(EU) 800~2700MHz

0TZW000000039	WiFi External Antenna

For both Mini-PCIe and Mini-PCI interface WiFi modules:
External Antenna: RP-SMA Female Body Female Inner Contact, Passive

0TZW000000072	3G External Antenna

RP-SMA Female Body Male Inner Contact, Passive

Internal Antenna Cables

10, 15, 20, 30, 35cm	3G/GPS/WiFi RP-SMA Antenna Cables

For Mini-PCIe interface WiFi/3G modules:

- P/N: 080W0Q0001001
  3G/GPS INTERNAL ANTENNA CABLE 10CM, RP-SMA Female Body Female Inner Contact
- P/N: 080W0Q0001501
  3G/GPS INTERNAL ANTENNA CABLE 15CM, RP-SMA Female Body Female Inner Contact
- P/N: 080W0Q0002001
  3G/GPS INTERNAL ANTENNA CABLE 20CM, RP-SMA Male Body Female Inner Contact
- P/N: 080W0Q0003001
  3G/GPS INTERNAL ANTENNA CABLE 30CM, RP-SMA Male Body Female Inner Contact
- P/N: 080W1Q0001501
  WiFi INTERNAL ANTENNA CABLE 15CM, RP-SMA Male Body Male Inner Contact
- P/N: 080W1Q0002001
  WiFi INTERNAL ANTENNA CABLE 20CM, RP-SMA Male Body Male Inner Contact
- P/N: 080W1Q0003001
  WiFi INTERNAL ANTENNA CABLE 30CM, RP-SMA Male Body Male Inner Contact
- P/N: 080W1Q0003501
  WiFi INTERNAL ANTENNA CABLE 35CM, RP-SMA Male Body Male Inner Contact

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