

## Features

- Intelligent Vehicle Ignition Interface**  
A SoC-based monitoring reacts to turn on/off the system according to predefined on/off delays based on ignition status.
- Certification**  
CE/FCC Class A, EMC-EN 55022 & 55024, Shock-IEC600858-2-27 and Vibration IEC60068-2-64 certificates for in-vehicle usage.
- Versatile I/O Functions**  
Triple Monitor Output, Up to 5 x Gigabit Ethernet Ports, Digital Inputs and Outputs, Multiple Serial Ports and USB Ports provide a host of functionalities.
- Dual mPCIe and USIM sockets**  
Sockets support 3G, 4G, LTE, WLAN and GPS cards.
- Solid State CFast drive**  
Operating System and applications run on Solid Status vibration proof internal CFast disk drive.
- 2.5" HDD**  
One (1) internal Hard Drive bay.
- Broad Temperature Range**  
-25C~60C at 100% CPU Processing level setting and HDD temperature specifications.
- Compact Size**  
240mm x 225mm x 90mm
- PCIe Slot**  
PCIe 3.0 x16 slot a x8 speed. Supports 4 channels, HD-SDI(No Audio), 8 or 16 channels NTSC/PAL(With Audio).
- Standardized Compression**  
H.264 compression of analog video and ONVIF support for IP Encoders and IP Cameras.
- Full Motion Recording with Audio**  
Record between 1-30 frames per second per channel (up to 480fps in 16 channel systems) from analog cameras with perfectly synchronized audio.
- Vehicle Application Specific Recording Software**  
PATRONUS LABORATORIES **Concert II Hybrid DVR/NVR Software** supports many vehicle specific functionalities such as: Touch Screen Interface, GPS Tracking, Automatic Wireless archive and system shut-down, Rebroadcast Streaming Server, Multi-Channel Audio Monitoring.
- Power on Record Mode**  
The **Concert II Hybrid DVR/NVR Software** supports Power on record mode to prevent operator error. When the system is powered it is recording with no operator interaction required. This guarantees recording without failure.

# FIRMUS II RUGGED PC - PCIe Series

...From Patronus Labs



## Applications

The Small PCIe model *FIRMUS II RUGGED PC* is one in a series of 11 *FIRMUS II RUGGED PC* models. The series can be used for any application fixed or mobile where high reliability, high vibration or broad temperatures are required. Patronus Labs typically uses this series as: Rugged DVR/NVR servers, Rugged Work Stations, High-End Digital Signage appliances, GPS tracking device, Wi-Fi, 3G/4G/LTE gateway or a combination of all the above.

Custom software development is available to meet customer specific needs. Contact us for more details.

## Models

Part Number	Description
CSRU0260	Rugged PC, Intel® Core™ i5, Fanless, PCIe, 1x2.5" HDD, ignition control, 8-35 V DC
CSRU0261	Rugged PC, Intel® Core™ i7, Fanless, PCIe, 1x2.5" HDD, ignition control, 8-35 V DC

## Options

Part Number	Description
CCCC0957	4GB DDR3 RAM, 0°C to 85°C
CCCC1294	8GB DDR3 RAM, 0°C to 85°C
CCCC1295	64GB Cfast MLC, 0°C to 70°C for Operating System
CCCC0271	110/220VAC to 20VDC, 160W Power Supply
CCSW0178	Windows 7-Pro 64-bit
CCSW0267	Windows Embedded Standard 64-bit
CCAC0262	Accessory, isolated 8 digital inputs / 8 digital outputs ( supports Interrupt IO ), for CSRU0260-261

## Model Images



## Specifications

Model	CSRU0260	CSRU0261
Audio	1x mic-in and 1x speaker-out	
Certifications	CE/FCC Class A, according to EN 55022 & EN 55024	
CFast	1x CFast socket	
Chipset	Intel® HM76 Platform Controller Hub	
DC Input	1x 4-pin power connector for 8~25V DC input	
Dimension	240 mm (W) x 225 mm (D) x 90 mm (H)	
Ethernet	5x Gigabit Ethernet ports	
Graphics	Integrated Intel® HD Graphics 4000 Controller	
Humidity	10%~90% , non-condensing	
Ignition Control	1x 3-pin pluggable terminal block for ignition signal input (IGN/GND/V+)	
Isolated DIO	8x isolated digital input channels with COS interrupt and 8x isolated digital output channels (optional)	
KB/MS	1x 6-pin mini-DIN connector for PS/2 keyboard/mouse	
Memory	2x 204-pin SO-DIMM sockets, up to 16 GB DDR3 1333/1600 MHz SDRAM	
Mini PCI-E	1x internal mini PCI Express socket with USIM socket and 1x internal mini PCI Express socket	
Mounting	Wall-mounting (standard) or DIN-Rail mounting (optional)	
MTBF	93,732 hours	
Operating Temperature	-25°C ~ 70°C */**	-25°C ~ 60°C */**
PCI Express	1x PCIe x8 slot via x16 connector in Cassette	
Processor	Intel® Core™ i5-3610ME (2.7/3.3 GHz, 3 MB cache)	Intel® Core™ i7-3610QE (2.3/3.3 GHz, 6 MB cache)
Remote Ctrl. & Status Report	1x 10-pin (2x5) wafer connector for remote on/off control and status LED output	
SATA HDD	1x Internal SATA port for 2.5" HDD/SSD installation	
Serial Port	2x software-programmable RS-232/422/485 (COM1 & COM2)	
Shock	Operating, 50 Grms, Half-sine 11 ms Duration (w/ SSD, according to IEC60068-2-27)	
Storage Temperature	-40°C ~ 85°C	
USB	4x USB 3.0 ports and 4x USB 2.0 ports	
Vibration	Operating, 5 Grms, 5-500 Hz, 3 Axes(w/ SSD, according to IEC60068-2-64)	
Video Port	1x DB-15 connector for analog RGB, supporting 2048x1536 resolution 2x DVI-D connectors for DVI/HDMI outputs, supporting 1920x1080 resolution (Supporting dual independent display outputs)	
Weight	4.4 Kg (including 2.5" HDD and DDR3 SODIMM)	

*\*The 100% CPU loading is applied using Intel® Thermal Analysis Tool. For detail testing criteria, please contact Patronus Labs.*

*\*\*For sub-zero operating temperature, a wide temperature HDD drive or Solid State Disk (SSD) is required.*