

# white bream

## UNIGO vehicle computer system



### Introduction:

**UNIGO** is a new way of mobile computing. By employing a split motherboard architecture combined with an industry-standard processor module, a very flexible system is realized.

Many configurations are possible on the processor side, from low cost Atom™ or Mobile Celeron® M processors up to high-performance Intel® Core 2 Duo processors running at 2GHz with 2GB of memory.

The split part of the **UNIGO** motherboard provides the I/O capabilities of the computer, except for the primary connections such as display, power, global positioning (GPS) and build-in wireless network or cellphone for wireless data communications.

The system contains a special programmable DC/DC power supply. This power supply allows **UNIGO** to operate from most common car, boat and truck board nets of 12 and 24V.

### Application specific connections:

Industrial and mobile computer solution often require specific interfaces like RS485 or CAN to connect with various peripheral devices.

Thanks to the modular structure of the I/O connections on the **UNIGO**, these specific requirements can be designed at relative low non-recurring engineering cost.

On the **UNIGO** motherboard a variety of interfaces is present, ready to be wired to outside connections. Among these interfaces are 2 or 4 RS232C, 4 x USB 2.0, CAN and I<sup>2</sup>C. In case these are not enough, there is still the possibility to add a dedicated MiniPCI-express-based extension board to implement additional interfaces.

The default board for industrial and logistic applications provides one standard serial port, USB ports, one switchable RS232 or RS485 port and ethernet.

### Applications:

- Data management in logistics,
- Industrial automation,
- Navigation computer,
- Mobile data acquisition.

### Software:

Since **UNIGO** is based on normal Intel processors, most Intel-compatible software and operating systems can be executed on **UNIGO**, including, but not limited to Microsoft® Windows® 7,8, Embedded, CE and Linux.

### Logistic opportunity:

1. collect data from truck or van,
2. merge this with GPS position information,
3. store data at hard drive or solid state storage,
4. send high-priority data to back-office with GSM/GPRS,
5. upload low-priority data at 5pm using wireless LAN.

At the same time the driver can be provided with navigation features, coordinated by GPS positioning data combined with TMC traffic information.

### Power management:

The on board power controller takes care of starting and shutting down **UNIGO**. When power is applied to the remote control input line, or the appropriate CAN message is received, the system is started.

After this remote signal is deactivated and the programmable delay has expired, a shutdown event is issued to the operating system. A watchdog forces system power off after three minutes when the system fails to shutdown inadvertently.

To safeguard the battery against drainage, the input voltage is monitored. When this voltage gets too low, the system is switched off completely. First gently by a system power event, later by cutting power if necessary.

Dedicated circuitry protects the circuitry against voltage spikes (ISO7637) that may occur in vehicle applications.

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Specifications and product appearance are subject to change.

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## Base unit specifications:

- AMD Embedded G Fusion processor, dual or single core with A55E chipset
- 1GB, 2GB (default) or 4GB DDR3 SODIMM memory
- 160GB up to 1TB 2.5" SATA hard disk storage or SSD
- Internal Compact Flash type I socket (typically up to 128GB)
- High speed mixed-mode GPS & Glonass receiver with high sensitivity (-165dBm) and instant-on
- Dead-reckoning using gyro sensor and vehicle speedpulse
- DVI analog/digital monitor out (digital optional)
- Power (regulated 12VDCmax), USB and audio over DVI technology
- Front high-retention USB 2.0 and MiniUSB 2.0
- Internal USB 2.0 dongle connection (for Wifi or Bluetooth)
- Mini PCI express expansion with dedicated SIM
- Two CAN interfaces with standby support \*
- LIN interface with standby support \*
- Remote control in- and output, 4 auxiliary inputs and 4 outputs (some signals shared with CAN and LIN)
- Heater for hard disk at sub 5 °C temperatures
- Gravity & shock sensor for hard disk protection \*
- Temperature controlled fans
- Geofencing during power down
- Programmable startup and shutdown control
- Flexible power-off delay behaviour
- Adjustable low battery protection for battery
- Secure hot-flashable system controller
- 9 to 33V input range (operating), 85 Watt max
- Short time input range 6.5V to >36V
- Average off power with GPS polling less than 20mW
- Operating temperature range: -10 to +50 °C
- Limited time temperature range: -20 to +80 °C
- Non-operating temperature range: -40 to +100 °C
- Humidity: 5% to 95%, non condensing
- 2-year limited warranty \*\*\*
- 2004/104/EC and R10/UN automotive certified \*
- 108 x 45 x 168 mm aluminum case
- System weight: 850 grams (without cables or options)
- Mounting flanges available
- Custom color and printing for OEM/ODM

## Options:

- Build-in GPRS, UMTS/HSDPA or WCDMA modem
- Build-in TETRA datamodem (special order) \*\*
- 3-Axis compass/acceleration/gyro module \*
- 2<sup>nd</sup> mSATA/USB Mini PCI express slot (OEM only) \*\*
- OS-independent 'black-box' data recorder \*

## Quad USB I/O configuration:

- RS232C serial port with 5/12V (Sub-D 9-pin male)
- RS232A/RS485 port with 12V (4-pin MicroFit)
- Quad USB 2.0 (high retention A-socket)
- 10/100Mbps Ethernet (RJ45)

## Custom connection possibilities:

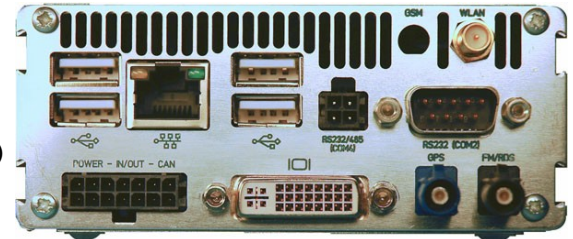
- 2 or 4 x RS232/RS422/RS485, 4 x USB 2.0, CAN, LIN
- 6 x ADC/GPIO, I<sup>2</sup>C, Audio line out, power
- Rear panel area 95 x ~13 mm max

\* Under development  
 \*\* At expense of other features like CF  
 \*\*\* Based on 8hr/365 day operation

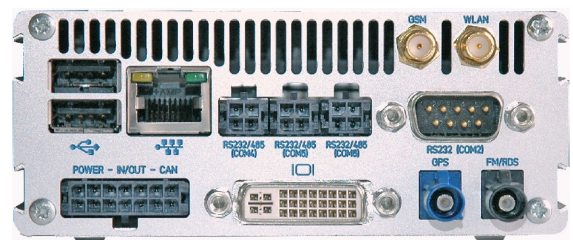
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Base unit rear panel connections (rectangle shows available area for custom connections)



Quad USB rear panel connections



Quad serial rear panel connections

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