

**Integrated GPS receiver and digital cellular MODEM for vehicle location and wireless communication.**

The DMD GPSMV4 is a compact, integrated hardware solution that enables system integrators to develop rugged, accurate and cost-effective vehicle location, tracking and communication systems.

Fleet managers and vehicle owners can use the GPSMV4 to collect real-time information on the activities of vehicles including accurate start and stop times, time spent on sites, customer visits and routes taken. Notification can also be sent when vehicles leave pre-defined geographical areas.

The 2 power output and 2 digital or analogue input ports provide the flexibility to monitor additional vehicle sensors such as: light, door or temperature sensors or information from PLC's or external readers.

For communications, the GPSMV4 include a option of wireless LPR radio module in European ICM band: WM11 at 868Mhz by DMD.

The GPSMV4 includes a high quality, 20-channel NavMan's Jupiter 30 GPS receiver module, designed for low power consumption in reduced signal areas at a very competitive price. GPSMV4 acquires GPS position faster under low signal conditions than other available GPS engines. Tracking continues in areas of dense foliage or built-up inner city environments and even indoors down to -159dBm. It is supplied with a quad band GSM/GPRS digital modem in 900/1800Mhz & 850/1900Mhz, wavecom GR64.

The GPSMV4 has been designed with a optional battery back up capability allowing the unit to be powered from NiMh battery should then vehicles power be disconnected. As well, the GPSMV4 is capable of detecting and report when the GPS antenna as been disconnected both vital feature to counter deliberate tampering.

Set-up is easy with the GPSMV4's always-on connection, simple hardware installation and flexible configuration options. It easily connects with devices such as wireless data terminals to form a complete messaging and tracking system.

CPU M128L based in DmdOpen Technology. Programmable in Bascom\_AVR.

Then 128Kb Flash memory in ATmega128 or 64Kb in ATmega64 allows then system integrator to store larger an complex programs and data structures.

The 128Kb battery-backed RAM enables larger amount of data to be stored and retained, even in the case of power loss. 256Kb data flash is optional. Memory Card to 128Gb is possible to store large data (optional).

The GPSMV4 is fully contained in a rugged metal enclosure designed to withstand the harsh environment found in vehicles.

**Wireless Systems****Features**

- Compact, rugged, integrated unit
- I/O's - 2 x power output and 2 x Digital in or Analogue in.
- Anti-tampering features
- Software Development Kit (SDK) for easy system integration
- Compatible with DMD wireless data terminals for two-way text messaging.
- Available custom versions for high-volume OEM customers

**Gps receiver**

- High quality 20-channel NavMan's Jupiter 30 receiver.

**Modem**

- Quad band Wavecom GR64.

**Communications**

- WM11: Low Power Radio module in European ICM band at 868Mhz.



**GPS Receiver: NavMan Jupiter 30**

**Receiver architecture**

- 20-channel, 200 000 effective correlators, L1 1575.42 MHz
- C/A code (1.023 MHz chip rate)
- Code-plus-carrier tracking (carrier-aided tracking)
- Velocity, up to 500 m/s
- Acceleration, up to 4 G

**Tracking capability**

- 20 satellites simultaneously

**Accuracy**

- horizontal accuracy: 2.2 m (CEP), 5.5 m 2dRMS
- PPS accuracy: typically better than 1 s

**Antenna input**

- integral LNA for use with passive antenna
- active antenna powered through receiver (50 mA max at 12 VDC max)

**Datums**

- supports selection of datum, default: WGS-84

**Environmental**

- operating temperature: -40oC to +85oC
- humidity: up to 95% non-condensing
- altitude: -305 m to 18 000 m

**On-board filtering**

- L1 -75 MHz, -30 dB
- L1 +50 MHz, -20 dB

**Acquisition performance @ -125 dBm**

Mode	Typical	90%
hot start TTFF	500 ms	<1 s
warm start TTFF	32 s	38 s
cold start TTFF	34 s	42 s

**Acquisition performance @ -140 dBm**

Mode	Typical	90%
hot start TTFF	<1 s	<1 s
warm start TTFF	49 s	59 s
cold start TTFF	52 s	66 s

**GSM/GPRS Radio Modem: Wavecom GR64**

**Radio Features**

- Quad Band GSM/GPRS Radio Device
- GSM 850/900MHz power class 4 (33dBm)
- GSM 1800/1900MHz power class 1 (30dBm)
- Mobile class B
- Extended measurement reporting
- Compliant with 3GPP release 99 protocol stack

**Data / GPRS Features**

- GPRS class 10
- Multiple simultaneous PDP contexts
- GPRS coding schemes CS1-CS4
- Transparent and non-transparent CSD up to 9.6kbps
- Modem type; V21, V22, V23, V22bis, V26ter, V32, V34, V24
- V42bis compression
- GSM supplementary services supported
- GSM 27.010 multiplexing protocol
- USSD

**Internet Protocol**

- TCP/UDP/IP protocol stack
- Extensive AT command access to TCP/IP stack
- Multi sockets (up to 15) through AT commands
- Non blocking listening/server capability
- IPv4 protocol
- Dynamic & static IP address allocation
- PPP protocol (PAP)

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**Digital Micro Devices**

**Wireless Systems**

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? Digital Micro Devices 2007.

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