

## New design

- 16 channel GPS receiver
- Extra low power consumption
- Digital I/O integrated.
- Remote configuration of functionality and firmware code
- Communication with external data terminals based on Windows Mobile Pocket PC® .
- 16 bits Microcontroller to 22MHz
- Communication system TETRA

**U**nit **K8v7 GPS-TETRA SAIR** is the KNOSOS designed high performance GPS positioning unit designed in 2006. It allows GPS positioning of a vehicle and transmission to a control center optimizing the TETRA communications channel, using the most suitable carrier TETRA service.

## **Versatile unit**

K8v7 GPS-TETRA has been designed for use with the Spanish Home Affairs Ministry SAIR platform and MPS software, or any other GIS based software. Data is transmitted on real time by use of short datagrams.

K8 unit sends GPS frames to be drawn on the map of the control centre software. The information transmitted is position, speed, heading and GPS time.

The unite integrates digital inputs/output that can be extended with additional digital/analogic inputs/outputs, with the purpose of making telemetering, sensorization and telecontrol in the vehicles.

K8v7 is connected to the TETRA mobile terminal using a RS-232 port. K8v7 unit power supply can be controlled directly for the TETRA terminal.



## *Tracking K8 v7 unit TETRA*

K8 v7 GPS TETRA unit supports periferical devices plugging by serial port, like printers, data terminal, or specific PLC. And is programable toin dual communications mode with GSM/GPRS, TETRAPOL, WIFI and Bluetooth option.

## **Adaptable to any vehicle**

Thanks to its small size and compact structure K8 v7 GPS TETRA unit is the ideal equipment for the most demanding conditions. It combines last generation technology and ease installation.

KNOSOS can customize functionality load in unit K8 GPS-TETRA, implementing necessary particularization and adapting to communications channel.

## **Highest functionality**

K8 can be remotely programmed from control center in order to send GPS data depending on covered distance, elapsed time or combination of both. Configuration personalization. It also allows the memorization and overturned of routes over the communication channel and the generation of warnings towards the control center when the vehicle arrives at the predefined crossing sites.

It allows, as a standard option, the connection to the KNOSOS data Terminal **K10-NET®**.

## CHARACTERISTICS

- Wide power supply range: 9 - 30 V controlled directly by the TETRA terminal. Extra low power consumption.
- Resistant and adaptable to any vehicle.
- Firmware to choose based on the communication system.
- For use with SAIR, MPS platform or any other software.
- Excellent behaviour inside cities.
- Ideal for high efficiency and secure systems.

## ESPECIFICACIONES

<b>General</b>	GPS receiver in L1 frequency and C/A codes of 16 channels in continuous tracking. 1 Hz positioning.
<b>Frequency</b>	Max. 1 pos/s, depending on the Communication system.
<b>Accuracy</b>	Position: 10 m (90%) without S/A Speed: 0.1 m/s without S/A Time: 1µs synchronized to GPS time Velocidad: 0.05 m/s
<b>Acquisition Rate</b>	Cold Start: <46 s Warm start: <35 s Hot Start: <8 s
<b>Reacquisition</b>	0,1 s
<b>Altitude</b>	18.000 m
<b>Speed</b>	500m/s
<b>Acceleration</b>	4g
<b>Jerk</b>	20 m/s <sup>3</sup>
<b>DGPS</b>	RTCM SC104 accepted
<b>GPS Antenna</b>	Active 3V3 -5V 13 mA SC and OC protected
<b>GPS connector</b>	Female SMA
<b>Power supply</b>	9 - 30 V
<b>Consumption</b>	75 mA @ 12,4 V Low power : 0,5 mA @ 12,4 V
<b>Back-up battery</b>	Supercap 1F
<b>Operating temp.</b>	-40°C a 85°C
<b>Storage</b>	-40°C a 85°C
<b>Humidity</b>	5% a 95% non-condensing at 60°C
<b>Serial ports</b>	4 RS232 configurable ports (2 external 2 internal)
<b>Inputs/outputs</b>	8 digital input/output
<b>Power connector</b>	Minifit JR
<b>Serial connector</b>	1 DB9 and 2 DB15
<b>Processor</b>	16 bits H8/3029 22MHz
<b>Memory</b>	FLASH: 512KB, RAM: 512KB, EEPROM: 32KB
<b>Programming</b>	Remote access by GPRS and In-circuit serial programming flash memory. (with option GPRS)
<b>State control</b>	4 LEDs for visual control. (Power, GPS, test and communication)
<b>Directive</b>	CE and automotive

## PHYSICAL CHARACTERISTICS

<b>Size</b>	89 x 50 x 160 mm without connectors
<b>Weight</b>	470 g
<b>Connectors</b>	GPS: female SMA. GPRS: FME. I/O: DB9 male/DB15 female /DB15 male
<b>Box</b>	Aluminium
<b>Case</b>	Mat blue anodised with Guardia Civil logo
<b>Internal mechanics</b>	2 layers: mother board + exchangeable extension board.
<b>K8 GPS unit installation</b>	By using 4 metric screws and lock washers



## HARDWARE OPCIONAL

<b>Communications</b>	Communications GSM/GPRS, TETRAPOL, WIFI or Bluetooth.
<b>Inputs/outputs</b>	External modules by bus: 71 /8C Digital and 8I Analogical
<b>Serial Ports</b>	Optional serial port configurable RS232, RS485 o 1 wire.

## OPCIONES DE PROGRAMACION

<b>Base programming</b>	K8v7 GPS-TETRA SAIR unit is directly compatible with the systems developed in SAIR and MicroNAV® environments, as much in simple as in client-server structure.  However, it is 100% open to reprogramming to be used in external applications, or developed by third parts.
<b>Protocols</b>	K8 GPS/TETRA unit uses KNOSOS standard protocol, fully compatible with MPS platform or available to integrate into other control centre software systems.
<b>Personalized development</b>	KNOSOS offers its experience for integration of K8 GPS in external systems, as well as for connection of data terminals, hand-held terminals, PDA's, or printers.

KNOSOS. GPS tracking systems, data transmission and Mobility.

Calle Álava, 140, Planta 7 – 08018 Barcelona (Spain)

Tel. (34) 933 208 305 Fax (34) 933 208 306

e-mail: [knosos@knosos.es](mailto:knosos@knosos.es) web: [www.knosos.com](http://www.knosos.com) / [www.amper.es](http://www.amper.es)

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