

OPTICSENS (Pty) Ltd

**OPTICAL FIBER PERIMETER
SECURITY**

**Brochure
May 2008**

V2.0

Optical Fiber Perimeter Sensor

The Opticsens optical fiber perimeter sensor is a highly flexible sensor that can be used for most security solutions. The detection system works on the principle of change in fiber polarization with external induced vibration. The fiber sensor is a distributed sensor with detection on all parts of the sensing optical fiber.

An active programmable software algorithm reduces system false alarms that are caused by environmental effects like wind and hail. The sensor system is designed in such a way that it can be configured according to the client's specification and requirements.

Applications and installation of the Opticsens Perimeter Sensor

The Opticsens perimeter sensor is designed to be used with a variety of applications and installation possibilities and can be installed on, in and under a diverse range of perimeter fabric.

The optical sensing fiber can be buried underground or attached to any perimeter wall, palisade, wire mesh fence or pipeline to supply information to supply information on any attempt by an intruder to breach a perimeter, or provide any other relevant information to the control room.

The following pictures show examples of where the perimeter sensor has been installed. Care is taken to install the fibre optic cable in a covert manner.





Perimeter Sensor Hardware

The Opticsens perimeter hardware is designed in blocks for easy customization to the customers need and requirements.



The perimeter security system consists out of an enclosure, power supply, optical sensor unit, processor unit, alarm delivery unit and sensing optical fiber. Depending on the security application and site location the available setup options are as follows.

1.1 Enclosure unit.

- a) IP66 Galvanized Steel with IP66 breather feedthrus.
- b) IP66 Stainless Steel with IP66 breather feedthrus.

1.2 Power Supply.

- a) - 85 to 265VAC, 47-63HZ Input 12V, 3A Output UPS Power Supply
 - -25 to +70 °C Operating Temperature.
 - 200mA Max Battery charging current.
- b) - 12V, 2.9A Solar powered UPS Power Supply.

1.3 Optical Sensor Unit.

- Optical Sensors, 1-8 units.
- Power In: +12V, 150mA 2 Zones.
- Metal ST/PC optical connectors.
- Maximum zone length: 6400m.
- Working Range: -25 to +70°C.

1.4 Processor Unit.

- a) Embedded processor:
 - Input Optical Sensors, 1-8 units.
 - RS 232 / RS485 / Optical input for parameter setup.
 - Relay / RS232 / RS485 / Optical output for alarm delivery.
- b) 3.2 GHz Intel ITX (Mobile Phone, Radio Tower Protection):
 - 2 Zone optical sensor protection.
 - DVR Card with Day/Night CCTV Camera and motion detection software.

1.5 Alarm Delivery Unit.

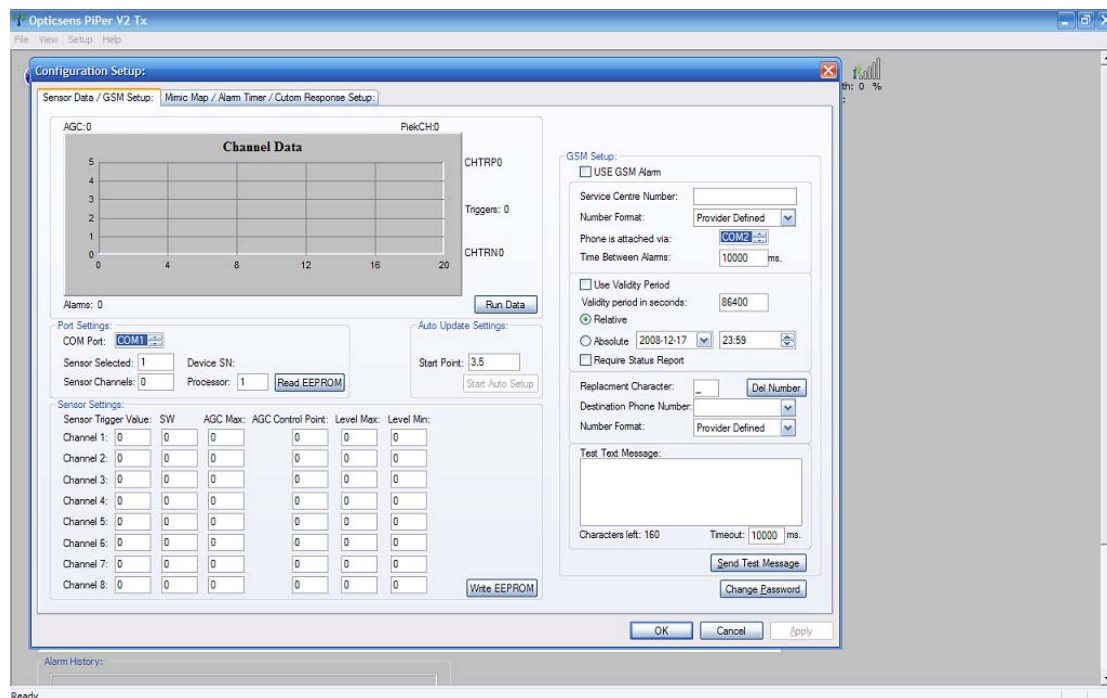
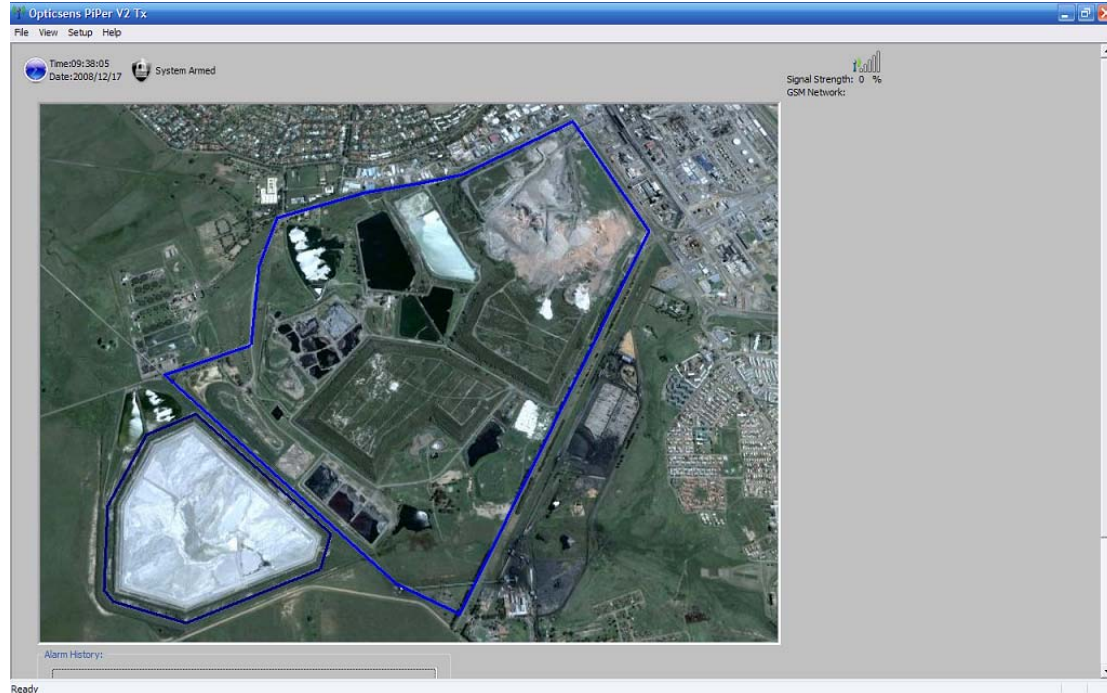
- a) Quad-Band 850/900/1800/1900 GSM Modem to control PC.
- b) RS232 to control PC.
- c) RS485 to control PC.
- d) Optical communication to control PC.
- e) 315, 433MHz Wireless to control unit (max distance: 4km without booster unit).

1.6 Sensing Optical Fiber.

- a) Standard optical fiber, 3.3mm diameter, black UV protected.
- b) Stainless Steel armored, 3.0mm diameter, blue UV protected.

Perimeter Sensor Software

The Opticsens perimeter software uses an active algorithm to adapt the signal to environmental fluctuations to reduce false alarms. Parameters on the embedded processor can be updated via RS232, RS245, optical communication or over the GSM network.



GSM alarm signals can also be send to more than one control room or even mobile control rooms.

For more information or additional customized setups please contact Opticsens (Pty) Ltd. <http://www.opticsens.com>