G-MAX – Super Sensor
Advanced concept in perimeter detection

WHITE PAPER

G-Max Security Tech Ltd. 100 Hadar st. Moshav Kidron 70795 Israel, Tel. 972-8-8594664 Fax. 972-8-8680172

Page **1** of **4**

G-MAX – Super Sensor

Introduction

Super Sensor is an advanced concept in perimeter detection, based on a unique sensor cable that can be mounted on a perimeter fence or wall. Mechanical stress on the sensor cable is converted to electronic signals processed by the digital and analog analyzers in the controller.

Overview

The system is programmed for indications in the control room in case of an attempt to breach by climbing over a fence, cutting the fence, breaking through using flame, digging under the fence. The sensor cable design to have a long life span for more than 25 years. The cable is based on copper conductor with a heavy duty outer black PVC jacket. The sensor cable attached to barrier by metal clips which will hold more than 20 years. The metal clips will not affect the performance of the sensor cable in any time. The sensor cable is used for more than 25 years without degradation.

Solution Details

The standard low-cost cable is sensitive to any deformation or cuts, allowing for flexibility and different applications:

- The SuperSensor cable can be installed on any type of fence without special requirements
- The SuperSensor cable can be installed with a barbed wire concertina on top of the fence for additional obstacle and warning, without false alerts.
- Due to a unique analog filtering, wind will not trigger false alarms nor affect the SuperSensor's sensitivity (which is common in vibration sensor cables).
- Rain and hail, as well as other acoustic noises, will not influence the SuperSensor and not lower its sensitivity.
- Plug and Play: the SuperSensor controller learns and calibrates itself automatically to the installation environment, adjusting its parameters automatically in order to maintain the best detection and eliminate false alerts. It keeps a 10 hour statistics log and optimizes itself accordingly.
- Under ground Applications: The SuperSensor cable can be buried underground and, since it is completely passive, will not interfere with other installed systems, and will not be detected remotely.
- The SuperSensor cable can be integrated in a concrete wall under the fence and detect any attempt at a breach.
- The SuperSensor is a low-cost alternative to a cement wall under the fence. Several lines of SuperSensor may be buried under the fence in order to signal any attempt to cross under the fence.
- Heartbeat testing: The fence system continuously checks the status of its electronic components:

Manual testing from the control room:

- The operator can manually test the status of the system's electronic components, without needing to personally travel to the site.

G-Max Security Tech Ltd. 100 Hadar st. Moshav Kidron 70795 Israel, Tel. 972-8-8594664 Fax. 972-8-8680172

Page **2** of **4**

Advanced communication:
- The controllers are connected to the control room via duplex RS485 or TCP/IP in a ring topology which provides solutions to large sites and prevents the "killing" of the system by cutting the communication lines.

No mechanical parts:
- A contributor to much higher MTBF and system durability

Long life:
- The SuperSensor cable can function more than 20 years without any deterioration of its sensitivity, even after cuts and reconnections - which are typical to Fiber Optic cables and other special cables.

Fence mounting:
- The Super Sensor cable is attached to the fence with metal clips that do not require maintenance.

Weather-proofing:
- Installation does not require glue or plastic bands that need to be periodically replaced due to weather.
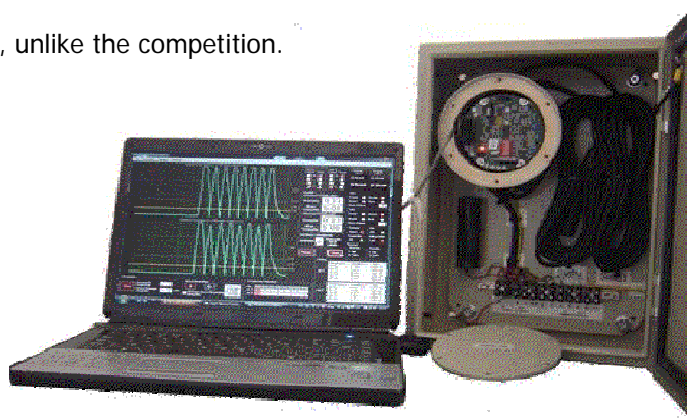
Low electrical requirement:
- 110V/220V electricity is required every 7KM.

The SuperSensor cable may be used as long as the fence exists:
- With minimal maintenance cost.

High performance:
- Very few false alarms (FAR), unlike the competition.

System Advantages
- Unique, smart perimeter detection system
- Cost effective operation
- Very low false alarm rate
- Easy to install on any mesh fence, concertina, barbed wire, wall or under ground
- HWS version connects to any standard alarm panel
- CMS version connects to G-MAX4000 software
- Simple to install and maintain

G-Max Security Tech Ltd. 100 Hadar st. Moshav Kidron 70795 Israel, Tel. 972-8-8594664 Fax. 972-8-8680172

Page **3** of **4**

System Applications

- Upgrading existing systems that have high maintenance costs or increasing the required security.
- Installation on existing fences.
- The possibility of detecting digging under the fence, substitute for concrete pouring at very low cost
- Providing solutions for special situations such as protection lighting and cameras poles, gates, etc and integration with existing systems.
- Add concertina as a delay barrier to any height of the fence
- Protection against heat-cutting upgrading existing systems and the level of protection

Technical Specifications

Part Number	1GSM016-C	1GSM018-C
Data Communication	Two Channels - HWS controller	Two Channels RS-485 CMS controller
Sensor cable #4CBL1041	Up to 1200 meters for each detection channel	Up to 1200 meters for each detection channel
Power requirement	11-28VDC 30 mA	11-28VDC 50 mA
Alarm Output	Two Relays dry contacts, one for each detection channel	Multiplex Data communication color graphic display with G-MAX4000 software
Operating temperature	-30°C to 55°C	-30°C to 55°C
Controller Dimensions	13 cm diameter, 9 cm height	13 cm diameter, 9 cm height
Humidity	Up to 100%	Up to 100%

G-Max Security Tech Ltd. 100 Hadar st. Moshav Kidron 70795 Israel, Tel. 972-8-8594664 Fax. 972-8-8680172

Page **4** of **4**