Wave-Guard

RADIO FREQUENCY INTRUSION DETECTION SYSTEMS

FSP-100, FSP-200 & FSP-400
Intrusion Detection Systems

Designed for:
- Correctional Institutions
- Police and Protection Services
- Communications Towers
- Utility Installations
- Governmental Buildings
- VIP Residences
- Military Bases and Camps
- Hazardous-Materials Sites
- Storage Compounds
- Airports
Versatile
Wave-Guard can be buried in concrete, asphalt, gravel or soil. It can be installed on a wall, along a surface, on a rooftop, underground, on a nonmetallic support or even on top of a fence.

Discreet
Wave-Guard’s design offers maximum protection with a minimum change to the outward appearance of property.

Covert
This assures an increased chance of detection and a decreased chance of the system being defeated.

Reliable
The system is calibrated to resist alarm activation by small animals or weather.

Adaptable
Over hills, through dense bush, around corners – it can follow the contour of any terrain without leaving blind spots.

Introduction
Combining ease of installation with unequalled versatility, Wave-Guard perimeter protection by AuraTek Security LLC offers you the security and peace of mind you deserve.

- Versatile
- Reliable
- Discreet
- Simple to Install
- Easy to Maintain

AuraTek Security LLC is affiliated with DeTekion Security Systems, Inc., a manufacturer of perimeter security systems.

Its strength is in its simplicity
The Wave-Guard coaxial cable is simply installed around the perimeter of the building, property or assets being protected – it can be installed on a wall, along a surface, on a rooftop, underground, on a non-metallic support or even on top of a fence. This cable emits, or “leaks” multiple radio-frequency signals.

A strategically placed receiver – a single antenna, a series of small antenna or even another cable placed in parallel – monitors the signal. If there are any disturbances within a one-meter (3.3 ft.) range of the transmitting cable, receiving cable or receiving antenna, an alarm is triggered.

Disturbances along the perimeter are analyzed by a sophisticated, digital signal-processing algorithm, a system that is able to compensate for most environmental instabilities such as wind movement and small animals. Nuisance alarms are virtually eliminated.

The Ideal Solution
**FSP-100** – Each processor can protect up to 100 meters (330 ft.) with two, 50-meter (165 ft.) zones.

**FSP-200** – Each processor can protect up to 200 meters (660 ft.) with four, 50-meter (165 ft.) zones.

**FSP-400** – Each processor can protect up to 400 meters (1,320 ft.) with 8, 50-meter (165 ft.) zones.

For lengthy perimeters, Wave-Guard is the ideal blend of versatility, discretion, system performance and cost.
**Frequently asked questions**

**Who uses the Wave-Guard system?**
The Wave-Guard system is widely used by the utilities sector (hydro, nuclear sites, water treatment plants and reservoirs), correctional facilities and law enforcement agencies. The Wave-Guard system is also very popular in the VIP sector. The systems are also used in military applications.

**How does the Wave-Guard system work?**
The technology uses a leaky coaxial cable, also called ported coax, to create an electromagnetic volumetric detection field of 1 m (3.3 ft.) in radius around the coaxial sensor cable.

**Are false alarms affected by weather conditions?**
No. The Wave-Guard system is not affected by rain, snow, wind, falling debris, or temperature fluctuations.

**Can wildlife (small animals or birds) trigger nuisance alarms?**
No. The Wave-Guard system is designed to detect intruders weighing more than 30 kg. (70 lbs.) and the system can be calibrated according to your needs.

**How is the system installed on metal fences?**
The system can be mounted to the inside of the fence using non-metallic PVC stand-offs. It is recommended that the sensor cable be installed on the surface inside the fenced area.

**Is routine maintenance required?**
No. The Wave-Guard system does not require ongoing maintenance. One preventive site visit per year is recommended.

**Can moving branches cause false alarms?**
Wave-Guard can be used in wooded areas. In general, it is recommended that the system be set back from bushes, often a few meters are sufficient.

**Will humidity cause problems for the components of the system?**
No. The Wave-Guard system’s printed circuit boards (PCB) are coated with a protective silicon layer that resists humidity. The cable is outdoor rated, direct burial type.

**Is test equipment required?**
No. A PC or laptop computer is only required for the first-time calibration of the Wave-Guard system.

**Will the Wave-Guard system be affected by lightning strikes?**
No, the Wave-Guard system can withstand a 5 kilovolt surcharge, without damaging the system or giving out false alarms.

**Options**

**SURENET-V**
The SURENET-V is an economical and informative software package designed to integrate multiple Wave-Guard processors to provide alarm monitoring and control, signal plotting, diagnostic tools and report generation.

**Graphic User Interface**
The GUI is an effective and affordable PC based graphic display of the site. The GUI provides a top view image of the protected area which allows users to define and monitor zones with just a click of a button. In addition, the overlay photograph can be changed to an Autocad drawing or any bitmap file. The GUI can be used with a touch screen display to simplify the process of interfacing with the SURENET-V.

**Fast-Guard**
AuraTek’s Fast-Guard Portable Detection System is a rapidly deployable intrusion detection system designed to protect your personnel and property at a moments notice. The overall increase in the need for security has fostered a demand for effective electronic detection that is both rapidly deployable and portable. Fast-Guard is an application that provides protection for people and assets that are not in conventional stationary locations. The Fast-Guard Portable Detection System is lightweight, simple to set up and easy to carry and store while maintaining the reliability, versatility and covertness of the Wave-Guard “RF” Intrusion Detection System.
Specifications
Systems (FSP-100, FSP-200 and FSP-400)

Zone Lengths*
Zone lengths are per processor, each up to:
2 x 30 m (100 ft) typical, FSP-100
2 x 50 m (165 ft) maximum, FSP-100
4 x 30 m (100 ft) typical, FSP-200
4 x 50 m (165 ft) maximum, FSP-200
8 x 30 m (100 ft) typical, FSP-400
8 x 50 m (165 ft) maximum, FSP-400

Zone Sizes
Buried and surface 2 m (6.5 ft) wide x 1 m (3.5 ft) high
Roof-top and wall 1.5 m (5 ft) wide x .75 m (2.5 ft) high

Speed Crossing Range
Minimum 60 seconds/meter
Maximum 15 meters/second

Power Requirements
DC Voltage range 12-48 Vdc, typical 24 Vdc
AC Voltage range 12-36 Vac, typical 16 Vac

Internal DC Current Consumptions
For all power out = 20dBm 600mA 1100mA 2200mA
For all power out = 10dBm 400mA 600mA 1200mA

Operating Temperatures
-40 degrees C to 70 degrees C
(-40 degrees F to + 160 degrees F)

Storage Temperatures
-50 degrees C to 85 degrees C
(-58 degrees F to 185 degrees F)

Dimensions (NEMA-4 PVC box)
35 cm x 15 cm x 40 cm (14” x 6” x 16”)

Weight (with NEMA box)
FSP-100 10 kg (20 lbs)
FSP-200 10 kg (20 lbs)
FSP-400 10 kg (20 lbs)

Cable
Sensor Cable RG-11 60% copper braid shield coverage with flooding compound, or Flexrad
Lead-in Cable RG-11 triple shield (foil, braid and foil) with flooding compound

Life Time 10 years typical (function of handling practice)

Connector TNC male (thread-type)
Rating Direct burial outdoor rated

Receiver (Processor)
Input Impedance 75 Ohm nominal
Sensitivity Level -100dBm
Input Connectors TNC female (thread-type)
Dimensions (nema) 38 cm x 28 cm x 10 cm (15” x 11” x 4”)

Transmitter
Input Impedance 75 Ohm nominal
Frequency Range (must be specified in advance)
FM Band 88 to 108 MHz
TV band 66 to 88 MHz
TV band (Europe) 47 to 68 MHz

Output Powers
Low power transmitter 10 dBm (100 mA at 24 Vdc)
High power transmitter 20 dBm (250 mA at 24 Vdc)

Radiated Field Strength (with low power transmitter)
Transmit in dipole Antenna 60 mV/m@3m
Transmit in sensor Cable 200 mV/m@3m

Output Connectors TNC female (thread-type)
Dimensions 42 cm x 5.5 cm dia. (16” x 2” dia.)
Rating Direct burial outdoor rated

User Interface
Inputs
Sensitivity adjustments per zone
Number of frequencies to alarm per zone

Outputs
(via form C relay 2A@30Vdc)
Zone alarm; 2 for FSP-100, 4 for FSP-200, and 8 for FSP-400
Box Tamper Alarm
System Failure

RS-232 (9 pins female D-sub)
All of the above inputs/outputs features, plus
Selection of 2 transmitter frequencies for FSP-100
Selection of 4 transmitter frequencies for FSP-200
Selection of 8 transmitter frequencies for FSP-400
Crossing speed adjustments per zone
Time response trace for each frequency used
Monitoring of system operations and diagnostics
Remote access via modem

Options
Host Software (SURENET) Software to monitor up to 32 FSP
GUI Software (GUI-KIT) Graphic User Interface Software
Backup Batteries (BAT-12/7) 2x12Vdc@7Amp/Hour

Coaxial Stand-Off (CSO-CLIP-90) PVC Stand-Off for roof
Coaxial Tamper (CTM-2) Dual Coaxial Tamper Module

Surge Protection (LTN-COAX) Single Coaxial Suppressor
(LTN-RS-232) Single RS-232 Suppressor

Approvals
Function of configuration (see Application Notes)
FCC Certification (USA FCC No: NQD300)
Part 15 subpart 239 Class B & C
IC Certification (Canada) IC No: 2948102847A
Specification RSS 210 Issue 2

Regulations
Regulations limit the maximum radiated power. Please consult your local regulatory agency for more information. Transmission via sensor cable is license-free and not restricted in application. (FCC-15.239 in USA and RSS 210 in Canada) Transmission via antenna is license-free under RSS 123 in Canada and may be restricted in application.

* Zone length can be limited by configuration
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