![AuraTek logo]

Wave-Guard
RADIO FREQUENCY INTRUSION DETECTION SYSTEMS

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

Designed for:

- Correctional Institutions
- Police and Protection Services
- Communication Towers
- Utility and Energy Installations
- Governmental Properties
- VIP Residences
- Military Bases and Camps
- Technology and Sensitive Information Sites
- Zoos and Museums
- Airports

Wave-Guard

YOUR FIRST CHOICE IN PERIMETER PROTECTION

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 ten, 50-meter (165 ft.) zones.

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

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.

Rooftop Installation

Wall-mount Installation

Covert

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

Surface Installation

Adaptable

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

Cable to Antenna Installation

Discreet

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

Underground Installation

Reliable

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

Cable to Cable Installation

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 maintenance 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.

Featuring

Wave-Guard Tool

The Wave-Guard Tool employs state of the art technology to provide a simple network-based user interface available via any web browser including tablets. Alarm monitoring, system status, transmitter assignment, frequency scans, trigger settings, real time signal plotting and diagnostic tools are easily accessed through the web interface. Report generation and remote configuration are also design features which are readily accessible from this platform.
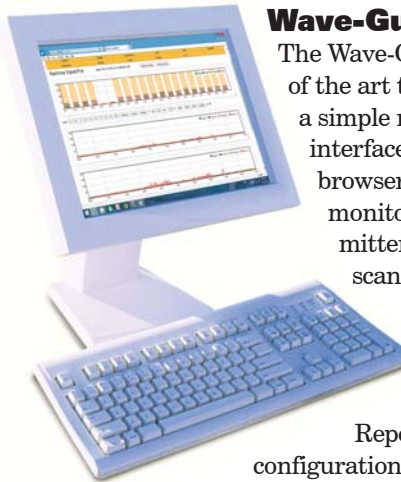
The Wave-Guard identifies zone alarm points, tamper alarms and failure alarms with the capabilities to monitor other sensors using dry contact inputs. The Wave-Guard continuously monitors multiple processors and triggers and alarm instantly upon receiving signals from any of the processors.

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 interfacing process.
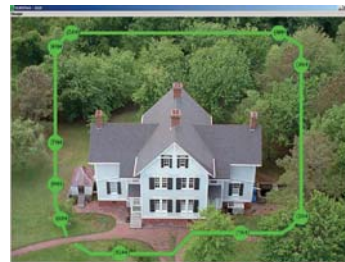
Fast-Guard

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
10 x 30 m (100 ft) typical, FSP-400
10 x 50 m (165 ft) maximum, FSP-400

Detection Area
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	1 meter / 60 seconds
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
	FSP-100	FSP-200	FSP-400
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
Lead-in Cable	RG-11 triple shield or fluid shield with flooding compound
Life Time	20 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 70 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 uv/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
User Inputs - 6

Outputs
(via form C relay 2A@30Vdc)
Zone alarm; 2 for FSP-100, 4 for FSP-200, and 10 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 4 transmitter frequencies for FSP-100
Selection of 8 transmitter frequencies for FSP-200
Selection of 20 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

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
Processors (FSP-100 / 200 / 400)	Unlimited number of networked processors

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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AuraTek

DeTekion

AuraTek Security LLC

Corporate Headquarters
200 Plaza Drive • Vestal, NY 13850
Phone 607-729-7178 • Fax 607-729-5149
www.auratek.net