

**Southwest Microwave, Inc.**

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# Product Specifications

## **INTREPID™ UniZone™ Fence Detection Sensor**

**System Type:** Perimeter Intrusion Detection Sensor

**Installation:** By Contractor

**Project:** Sample "XYZ" Project

### **1.0 General**

It is the intent of the [XYZ Company] to purchase a complete and operable outdoor perimeter detection sensor for the [XYZ Facility] as specified below and on referenced drawings and documents.

- 1.0.1 The following specifications are for a perimeter fence mounted intrusion detection sensor.
- 1.0.2 The performance criteria required for this project shall meet or exceed that provided by the INTREPID™ UniZone™ Sensor as manufactured by Southwest Microwave, Inc., Tempe, Arizona (+1-480-783-0201).
- 1.0.3 The contractor shall provide all installation labor, hardware, and electronics for the sensor.
- 1.0.4 The contractor shall furnish a complete perimeter intrusion detection sensor to include necessary interface/connection of alarm outputs.

### **1.1 System Description**

The complete perimeter detection system shall consist of:

- INTREPID™ UniZone™ Fence Detection Sensor
  - MicroPoint Cable (MC 115-220)
  - Termination Unit (TU11)
  - UniZone Installation Service Tool Software. (IST)

### **1.2 System Devices**

The alarm communication network shall be capable of supporting the following devices:

- **INTREPID™ UniZone™ Fence Detection Sensor.** Each sensor shall be capable of protecting 200 meters (656ft) of linear fence. An acceptable product that meets or exceeds these requirements is the UniZone Fence Detection Sensor.

# Procurement Specifications

## INTREPID™ UniZone Fence Intrusion Detection Sensor

### 1.3 System Capabilities

1.3.1 The system shall have the capability to operate over a common voltage input from 10.5 to 60 VDC.

### 1.4 System Setup

1.4.1 The system shall have an installation service tool, referred to as the Installation Service Tool (IST), to allow setup of the UniZone Sensor from a laptop or desktop computer.

1.4.2 The IST will provide intuitive setup, guided navigation and forward propagation to simplify setup and calibration in real time.

1.4.3 The IST shall support serial or network communications, with converter, for diagnostics of the system sensors devices both locally or remotely.

## 2.0 INTREPID™ UniZone™ Fence Detection Sensor

2.0.1 The fence-mounted system shall detect vibrations from cut or climb attempts to the fence fabric.

2.0.2 Each UniZone Fence Detection Sensor shall monitor up to 200 meters (656ft) of linear fence with MicroPoint™ cable.

2.0.3 Detection of intrusions shall be performed by Digital Time Domain Reflectometry (DTDR) methodology. The DTDR function shall reside in the UniZone Sensor and not in a centralized processor or computer.

2.0.4 The length of each zone can be any length up to 220 meters (722ft) by simply cutting the cable to length.

2.0.5 The fence sensor shall provide "Sensitivity Leveling" on a meter by meter basis which automatically compensates for fence variations making each meter (3ft) of fence equally sensitive to intrusions. Sensitivity Leveling™ is a calibration technique which sets thresholds for each and every cell along the sensor cable.

2.0.6 The fence sensor shall employ Point Impact Discrimination, made possible by DTDR technology, which detects activity (climbing or cutting the fence) while rejecting other distributed environmental conditions (wind, rain, or other environmental disturbances). The digital signal processing (DSP) shall utilize both temporal and spatial filtering.

2.0.8 The system shall allow for the disabling in software of any section of the sensor cable (gate areas, etc.) eliminating the necessity for spliced non-sensitive cable.

## **Procurement Specifications**

### **INTREPID™ UniZone Fence Intrusion Detection Sensor**

- 2.0.9 The "Sensitivity Leveling" function (as described in paragraph (2.0.5) shall be calibrated with the use of system software and automatically calibrated for every 1 meter (3.3ft) of cable.
- 2.0.10 The fence system shall detect climbing intruders with a weight of 35 kilograms (77lbs) with a Probability of Detection (Pd) of 95% at a 99% confidence level.
- 2.0.11 The system input power shall be capable of accepting standard DC voltage power supplies of 12, 24 or 48 VDC power. The system shall allow for DC power input from 10.5 to 60 VDC.

#### **2.1 INTREPID™ MicroPoint™ Cable**

- 2.1.1 Sensor cable shall be available in lengths of 100 meters (328ft) and 220 meters (722ft) rugged construction to allow bending at gates without use of gate connect kits and with UV resistant jacket.
- 2.1.2 The fence sensor cable shall be attached at 23 centimeter (9 in) intervals to the fence fabric with UV resistant cable ties at a mounting height determined by the manufacturer.
- 2.1.3 The MicroPoint™ cable shall be capable of being cut on site during installation to any length up to a maximum of 220 meters (722ft).
- 2.1.4 The sensor cable shall be easily and quickly field-repairable with simple hand tools if damaged by replacing the damaged section with a spare sensor cable section and a Splice Unit (SU).

#### **2.2 UniZone Fence Detection Sensor**

- 2.2.1 Detection processing shall be performed by the UniZone™ Fence Detection Sensor installed around the perimeter which shall provide processing for up to 220 meters (722ft) of sensor cable.
- 2.2.2 Detection criteria shall reside in non-volatile memory in each UniZone™ Fence Detection Sensor and not lost due to power loss.
- 2.2.3 Positioning of the UniZone™ Fence Detection Sensor shall be determined by such factors as perimeter length, operational convenience, and physical security concerns.
- 2.2.4 UniZone™ Fence Detection Sensor shall operate continuously within specification at temperatures between -40°C (40°F) and +70°C (+159°F), without assistance from cooling or heating apparatus.
- 2.2.5 UniZone™ Fence Detection Sensor shall be hardened to operate within all specifications when continuously exposed to 0 - 100% relative humidity with minimum 1mm conformal coated electronics.
- 2.2.6 The UniZone™ Fence Detection Sensor shall be housed in ABS weatherproof UV stabilized non corrosive enclosure fitted with tamper switch.

**Procurement Specifications**  
**INTREPID™ UniZone Fence Intrusion Detection Sensor**

- 2.2.7 UniZone™ Fence Detection Sensor shall include transorb and gas discharge devices to protect against lightning and electrostatic discharge on all power and data connections.
- 2.2.9 The installation locations of the UniZone™ Fence Detection Sensor shall be governed by the 220 meter (722ft) maximum distance of supported cable and is not governed by detection zoning.
- 2.2.10 The UniZone™ Fence Detection Sensor shall communicate alarms with SPDT Form C 2 amp@28VDC relays for Alarm, Fault, and Tamper.
- 2.2.11 The UniZone™ Fence Detection Sensor shall utilize a software-based installation tool with graphic display in real time, referred to as the UniZone Installation Service Tool (IST), to setup and control sensor parameters with a laptop PC.
- 2.2.12 Remote adjustment with UniZone IST will be available via RS422 connection.

**3.0 Installation/Documentation/Services**

- 3.0.1 Contractor shall provide the necessary documentation to confirm that the system is installed in accordance with on-site requirements and manufacturer's installation instructions. The contractor shall perform all wire hook-ups.
- 3.0.2 After installation of the system, the contractor shall make provisions for manufacturer's technical representative to perform final on-site inspection and installation certification.
- 3.0.3 The supplier shall provide technical support and warrant that spare parts and assemblies shall be available for a minimum of 10 years.

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