

# INTREPID™ MicroTrack™ II

BURIED CABLE INTRUSION DETECTION SYSTEM



INTREPID™ MicroTrack™ II is the new-generation of Southwest Microwave's field-proven buried cable intrusion detection system for applications where covert perimeter protection is essential. It is a volumetric, terrain-following sensor that reliably detects and precisely locates walking, running or crawling intruders along a facility's perimeter. MicroTrack™ II incorporates enhanced digital signal processing for even higher detection performance in challenging site conditions.

With a coverage range of 400 meters (1312 ft) per processor, the system consists of a MicroTrack™ II processor unit and two sensor cable pairs that may be buried along a facility's perimeter in soil, asphalt or concrete. A detection field is created around the sensor cable pair, enabling the detection of intrusions.

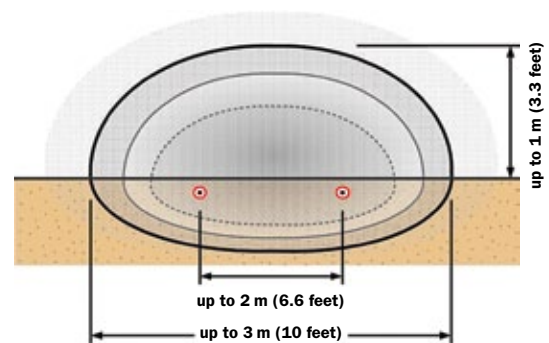
MicroTrack™ II is the industry's highest performing buried cable sensor, designed to fully adapt to its installed environment, setting new standards for performance by providing covert, terrain-following detection that is uniform along a site's perimeter. It pinpoints the location of perimeter disturbances using a target's spatial and time signatures to discriminate legitimate intrusions from harmless disturbances caused by small animals or environmental factors such as wind, rain or snow. The system's high signal-to-noise ratio and precise target location produce superior probability of detection and a very low false/nuisance alarm rate (FAR/NAR).

With MicroTrack™ II, detection zones are set in software, to cost-effectively tailor zoning to suit a site's unique requirements.

As part of the new-generation INTREPID™ family, MicroTrack™ II networks seamlessly with the MicroPoint™ II Fence Detection Sensor and MicroWave 330 Digital Microwave Link, using a common, open-architecture communications protocol.

## KEY FEATURES

- SINGLE PLATFORM NETWORKING CAPABILITIES
- INTRUSION LOCATION TO 3 M (10 FT)
- ADVANCED DIGITAL SIGNAL PROCESSING (DSP)
- TERRAIN FOLLOWING CAPABILITY
- SITE-ADAPTIVE SENSITIVITY LEVELING™
- SOFTWARE-CONTROLLED ZONING
- UNIFORM DETECTION ALONG COVERAGE AREA
- FOUR SYSTEM CONTROLLER OPTIONS PLUS AVAILABLE SDK



MicroTrack™ II detection field dimensions

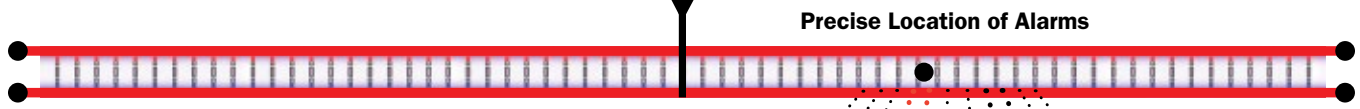
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## PRINCIPLES OF DETECTION AND LOCATION

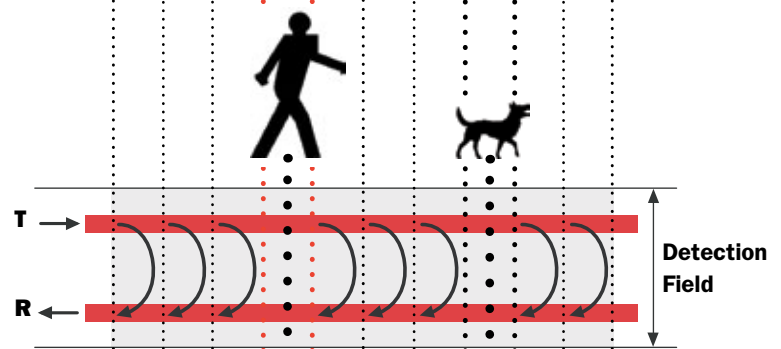
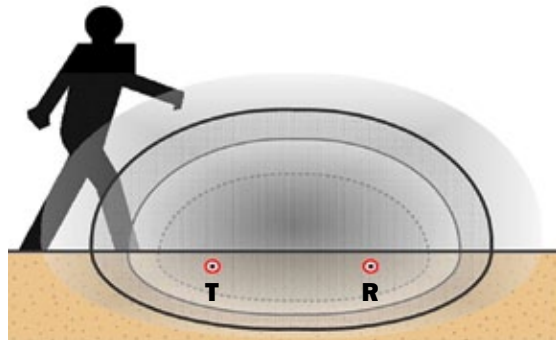
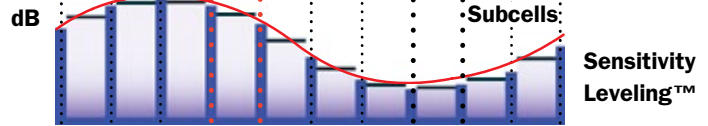
MicroTrack™ II sensor cables are divided into subcells via system software. There are typically 100 subcells per 200 m (656 ft) cable pair.

To initiate detection, the MicroTrack™ II processor sends out ultra wide-band, coded RF signals via the transmit cable. As these signals couple with the receive cable, an invisible electromagnetic detection field is generated above and below the ground surface and along the cable pair.



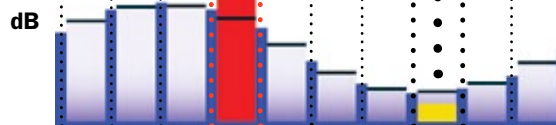
A calibration walk is performed to optimize detection capabilities within each 2 m (6.6 ft) subcell. A sensitivity profile is then generated across all subcells, and the alarm threshold set.

Alarm Threshold



When a target enters the detection field, the receive cable picks up the altered signal in the disturbed field and transmits it to the processor. The processor analyzes the phase and amplitude of the altered signal and compares this with the calibrated threshold.

If the target exceeds the threshold, an alarm is declared and its precise location identified.



Intruder Exceeds Threshold

Animal Does Not Exceed Threshold

# PERFORMANCE BENEFITS

■ **INVISIBLE DETECTION FIELD**  
Unobtrusive and covert with low vulnerability to defeat.

■ **WIDE DETECTION FIELD PATTERN**  
For volumetric high-security detection with dual cables.

■ **FACTORY-INSTALLED CONNECTORS**  
Provide high reliability and eliminate the need for field installation of cable connectors.

■ **FREE FORMAT ZONING**  
Zones are controlled via system software for maximum flexibility.

■ **UNIFORM SENSOR CABLE**  
Sensor cable is identical from one end to the other for easy repair.

■ **SCALABLE SYSTEM CONTROLLERS:**  
A universal INTREPID™ system controller conveniently manages all new-generation INTREPID™ sensors and I/O modules. Four available controller options offer scalable security management solutions to suit any site parameters. An SDK is available for high level integration of new generation INTREPID™ sensors into custom control applications.\*

■ **TERRAIN FOLLOWING CAPABILITY**  
Follows ground contours and goes around tight corners.

■ **PRECISE TARGET LOCATION**  
The ability to locate intruders to within 3m / 10 ft.

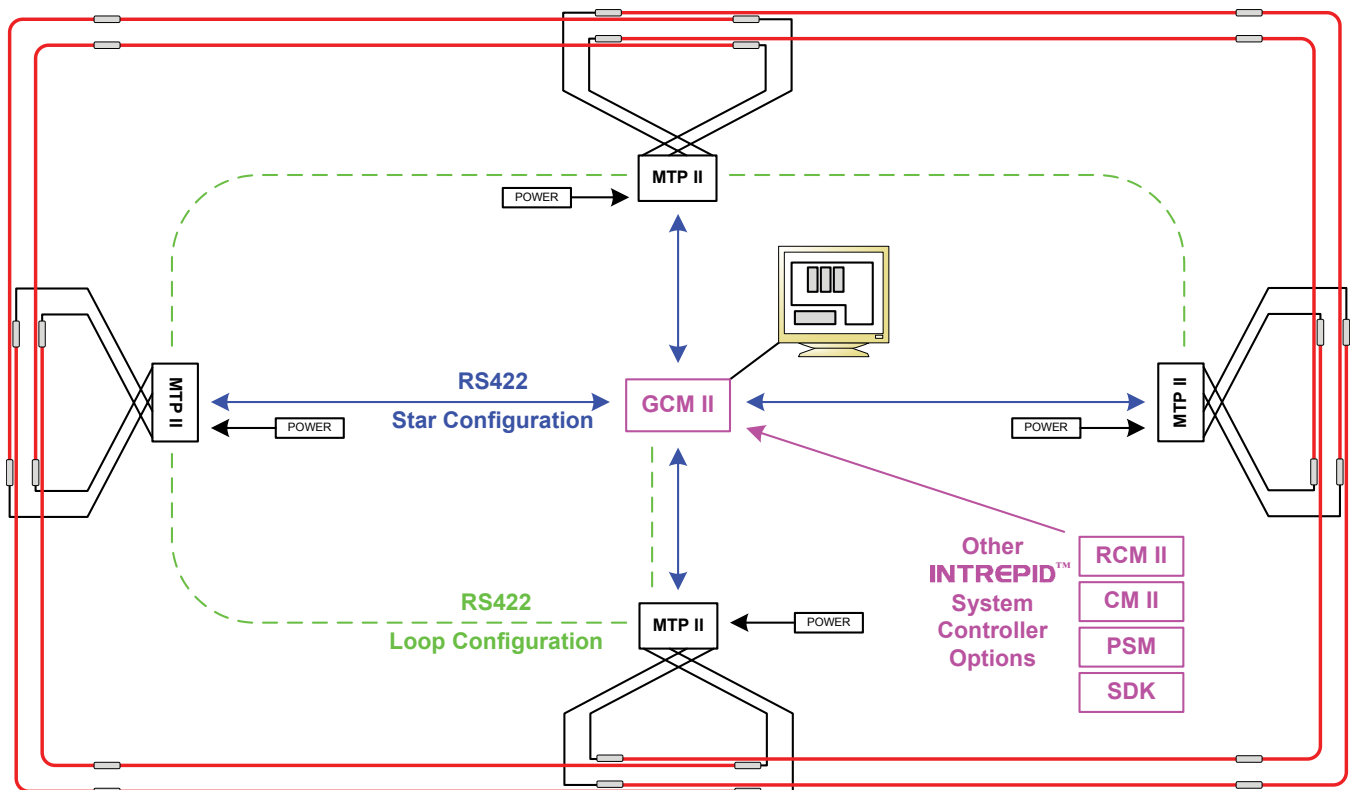
■ **SENSITIVITY LEVELING™**  
A proprietary calibration process accounts for variations in burial medium, cable depth or site characteristics to provide uniform detection sensitivity across the protected area.

■ **SEAMLESS NETWORKING CAPABILITIES**  
MicroTrack™ II sensors are networked via standard RS422 serial data interface using a common open-architecture communications protocol - the INTREPID™ Polling Protocol II (IPP II). INTREPID™ MicroPoint™ II, MicroWave 330 and I/O modules may also be networked within the system.\*

■ **INTEGRATED I/O MODULES**  
Auxiliary input modules\* can be used to incorporate auxiliary devices, such as Southwest Microwave's conventional sensors, gate and door contacts or other alarm contacts. 8 or 16-port relay output modules\* provide simple interface to CCTV, legacy alarm panels, perimeter lighting or other relays if high-level interface is not available.

\* See INTREPID™ System Controllers data sheet and Configuration Diagrams for complete specifications.

## TYPICAL MICROTRACK™ II CONFIGURATION DIAGRAM



# INTREPID™ MicroTrack™ II

## SYSTEM COMPONENTS & SPECIFICATIONS



### MICROTRACK™ II PROCESSOR (MTP II)

The MTP II provides electronic processing for up to two 200 m (656 ft) sensor cable sets for a total perimeter length of 400 m (1312 ft). The MTP II is packaged in a black metal EMI/RFI housing which is installed in a weather-tight enclosure for outdoor use. MTP II can communicate with all INTREPID™ Polling Protocol II devices using RS422 serial data interface and use any INTREPID™ System Controller\* for command and control.

**Size:** 337 H x 216 W x 102 D mm (13.25 H x 8.5 W x 4 D in)

**Weight:** 2.5 kg (5.5 lbs)

**Operating Temperature:** -40°C to +70°C (-40°F to +159°F)

**Power:** 10.5 to 60 VDC @ 9 Watts

**Current Draw:** 12v @ 750 mA, 24v @ 375 mA, 48v @ 188 mA

**Inputs:** 2 MicroTrack™ II Cable Pairs (A and B), External Tamper Switch Input

**Ports:** RS232 (1), RS422 (2)

**Enclosure Options:** NEMA 4, NEMA 4X

### UNIVERSAL INSTALLATION SERVICE TOOL II (UIST II)

Universal installation service software configures INTREPID™ MicroTrack™ with laptop convenience at each module via RS232 connection. Sensor autodiscovery, guided navigation and forward propagation simplify set-up and calibration. Configuration security allows lockdown of device settings, ensuring implementation of approved changes only. Remotely adjust via TCP/IP\*\* connection, even when the system is operational.

\* See INTREPID™ System Controllers data sheet and Configuration Diagrams for complete specifications.

\*\* Requires CM II, GCM II controllers

### MICROTRACK™ TERMINATION KIT (MTT)

The MTT kit terminates the detection field at the end of a sensor cable. Two kits are required per sensor cable pair.

### MICROTRACK™ IN-LINE TERMINATION KIT (MTI)

The MTI kit terminates the detection field between two sensor cable pairs. Two kits are required per sensor cable pair.

### INTREPID™ SYSTEM CONTROLLERS

Four system control options, optional I/O modules and available SDK offer scalable security management solutions for virtually any site parameters\*.

### MICROTRACK™ SENSOR CABLE ASSEMBLIES (MTC400-110, MTC400-210)

An MTC400 sensor cable assembly consists of a sensor cable, factory-spliced with 20 m (66 ft) of lead-in cable.† MicroTrack™ II sensor cable assemblies are available in two detection lengths: 110 m (361 ft) MTC400-110, and 210 m (689 ft) MTC400-210. (5 m of each sensor cable pair are overlapped to provide for detection field startup.)

**Size:** 10.3 mm (0.405 in) diameter

**Jacket:** Heavy duty polyethylene with water-proofing compound

**Operating Temperature:** -40°C to +70°C (-40°F to +159°F)

**Packaged Size:** 110 m (361 ft), 210 m (689 ft)

**Packaged Weight (on reel):** 20.4 kg (45 lbs), 34 kg (75 lbs)

**Reel:** 27.9 W x 60.9 D cm (11 W x 24 D in)

† Ferrites and TNC connector are factory-installed



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