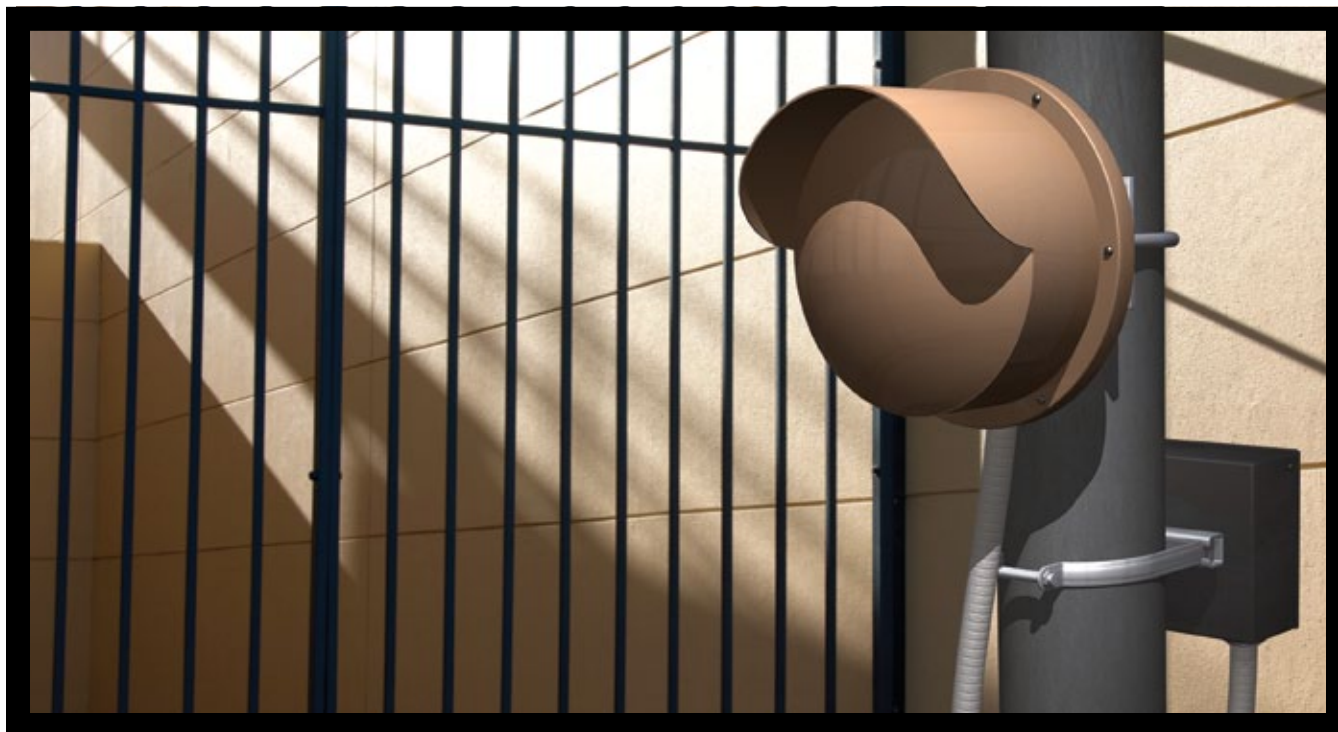


INTREPID™ MicroWave 330

DIGITAL MICROWAVE LINK



INTREPID™ MicroWave 330 is an integrated volumetric perimeter detection system for open areas, gates, entryways, wall and rooftop applications. Based on Southwest Microwave's field-proven microwave detection technology, it provides volumetric detection of human intruders with minimal environmental nuisance alarms. Advanced digital signal processing (DSP) allows continuous monitoring of intrusion alarm and tamper switch status, received signal strength and detection parameters.

MicroWave 330 operates at K-band (24.162 GHz) frequency, achieving superior performance to X-band sensors. Because K-band is 2.5 times higher than X-band, the multipath signal generated by an intruder is more focused, and detection of slow-moving intruders is correspondingly better. At K-band frequency, the unit also has low susceptibility to outside interference from air/seaport radar or other microwave systems.

Antenna beam width is approximately 3.5 degrees in the horizontal and vertical planes for long range operation and superior beam control within narrow corridors. Advanced receiver design increases detection probability by alarming on partial or complete beam interruption, increase / decrease in signal level or jamming by other transmitters. Automatic Gain Control (AGC) compensates for varying site or weather conditions.

Six field-selectable modulation channels with narrow band filtering allow multiple MicroWave 330's to operate simultaneously without mutual interference, and permit synchronous use with Southwest Microwave's microwave transceivers. Units can also be stacked for the ultimate in detection performance.

As part of the new-generation INTREPID™ family, MicroWave 330 networks seamlessly with MicroPoint™ II fence detection sensor and MicroTrack™ II buried cable detection sensor using a common, open architecture communications protocol.

KEY FEATURES

- SINGLE PLATFORM NETWORKING CAPABILITIES
- 800 FT (244 M) RANGE
- K-BAND MULTIPATH DETECTION
- 6 FIELD-SELECTABLE, CRYSTAL-CONTROLLED MODULATION CHANNELS
- BUILT-IN SYNCHRONIZATION PREVENTS INTERFERENCE BETWEEN SENSORS
- RF POWER MONITORING FOR PATH CHANGES
- DIGITAL SIGNAL PROCESSING FOR HIGH PD / LOW NAR



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PRINCIPLES OF OPERATION AND DETECTION

A typical system includes MicroWave 330 sensors networked via RS422 serial data interface using a universal INTREPID™ System Controller. Auxiliary inputs or relay outputs may also be integrated using an INTREPID™ I/O Module. A point to point communications network distributes data among network devices.

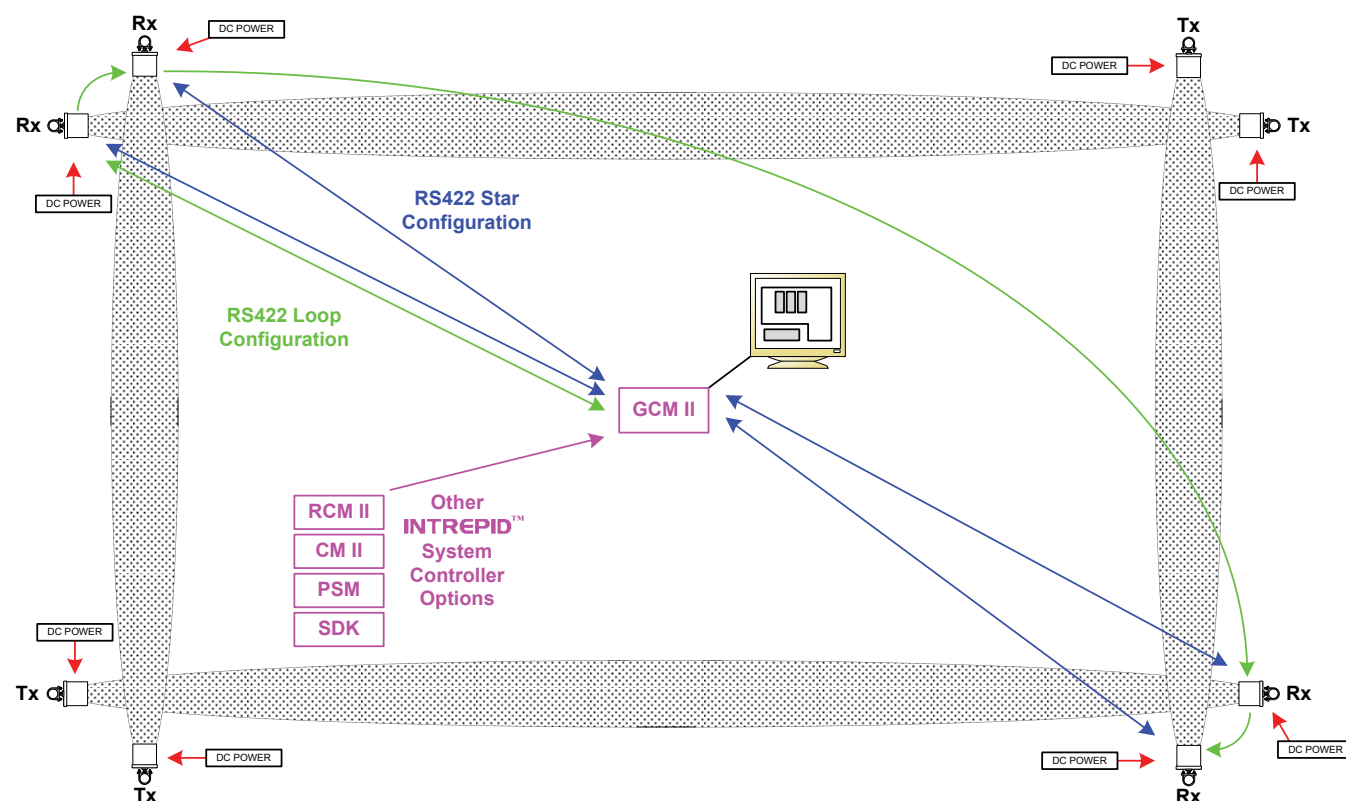
A microprocessor and proprietary algorithms provide powerful Digital Signal Processing to recognize the unique bi-static digital signatures of intruders walking, jumping or crawling through the detection field. Targets are classified and scored in real time at each sensor. 1000 events and alarms are stored in the receiver's flash memory.

Intrusion detection, using a modulated amplitude sensitive system (not Doppler), takes place within the invisible pattern of microwave energy existing between transmitter and receiver. Changes in signal amplitude at the receiver are directly related to the object's size and density, allowing the sensor to discriminate between objects. MicroWave 330 will alarm on average sized humans walking, running or crawling on hands and knees through the pattern. Field adjustments can provide alarm on larger or smaller targets, depending on the specific application.

The surface mounted electronics and parabolic antenna of MicroWave 330 are mounted on a rugged metal base-plate and covered by a molded ABS radome for all weather operation. Swivel mount permits precise setup and provides firm lock against movement.

For detailed information on application, installation and adjustment, consult MicroWave 330 Technical Manual.

TYPICAL MICROWAVE 330 CONFIGURATION DIAGRAM



INSTALLATION AND SET-UP

Microwave 330 transmitter and receiver are mounted on 4 ft (1.2m) posts. Connect each transmitter and receiver to a battery-backed 10.5 to 60 VDC power supply. Tamper terminals on each transmitter may be connected to any receiver. Connect a four-wire communication cable from the system controller to each receiver. No additional batteries, multiplex boards or exterior enclosures are required.

Universal Installation Service Tool II (UIST II) software graphically controls and monitors sensor status, control parameters, signal strength, and intrusion / tamper alarm history with laptop convenience at each module via RS232 connection. Sensor auto discovery, guided navigation and forward propagation simplify set-up. Unique configuration security allows lockdown of device settings, ensuring that only approved changes are implemented. Remote adjustment via TCP/IP connection is available, even while the system is operational*.



MicroWave 330 is ideal for detection in open areas, at gates or entryways, or for rooftop or wall applications.

PERFORMANCE FEATURES AND BENEFITS

■ DIGITAL SIGNAL PROCESSING (DSP)

Proprietary algorithms recognize the unique signatures of intruders walking, running or jumping through the detection field for superior probability of detection and a low nuisance alarm rate.

■ SEAMLESS NETWORKING CAPABILITIES

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

■ MICROWAVE PATH MONITORING

Detects received RF power changes and triggers a compromised path alarm.

■ K-BAND FREQUENCY

Sensor is inherently less susceptible than X band to outside interference from airport landing systems, air/seaport radar and other microwave detection systems.

■ SIMPLIFIED MAINTENANCE

Self-contained alignment circuits and LED troubleshooting indicators for easy sensor adjustment and diagnostics.

■ INTERFERENCE AND SURGE PROTECTION

Sensor is shielded against common sources of EMI and RFI and protected against lightning induced surges.

■ WEATHER-RESISTANT PACKAGING

Compact size provides optimal resistance to wind-loading. Rugged packaging withstands temperature extremes, rain, snow, ice and salt spray.

■ 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.

**Requires CM II or GCM II System Controller

INTREPID™ MicroWave 330 SPECIFICATIONS

Equipment Supplied: Model 330 Transmitter, Model 330 Receiver, universal swivel ball mounting brackets.

Frequency: Square wave modulated frequency of 24.162 GHz. Pending FCC Approval.

Output Power: +20 dBm peak EIRP.

Range: 100 to 800 feet (30.5 m to 244 m).

Target Size: 77 lbs (35 kg) human walking, running, hands and knees crawling or jumping. Prone crawling or rolling 77 lbs (35 kg) human, or simulated with a 30 cm diameter metal sphere detected at maximum range of 400 feet (122 m) with flat terrain.

Target Velocity: 0.1 ft/sec to 50 ft/sec (30 mm/sec to 15 m/sec).

Probability of Detection: 0.99 minimum.

Automatic Range Adjustment: Link automatically adjusts to slow changes in path loss due to rain, snow, etc. AGC range -60 dB.

Modulation Channels: Six switch selectable.

Path Alarm: Generated if RF power at Receiver is changed.

False Alarm Rate: 1/unit/year based on signal to noise ratio.

Operating Environment: -40° F to +150° F (-40° C to +66° C)
0-100% Relative Humidity.

DC Input: 10.5-60 VDC (Tx, Rx).

Current Draw (Tx/Rx):

12 VDC: 125 mA / 208 mA

24 VDC: 63 mA / 104 mA

48 VDC: 32 mA / 52 mA

Alarm Output: SPDT-Form C, 2 amps at 28 VDC.

Tamper Switch: SPDT- Form C, 2 amps at 28 VDC.

Self Supervision: Alarm on failure and remote test.

Mounting: Locking ball swivel mount. 20° adjustment in any direction.

Remote Test: Applying momentary voltage turns off Transmitter modulation to provide alarm at Receiver.

LED Indicators: Internally located LED's - Power On, Sync Detect and Channel Fault at Transmitter. Power On, Sync Detect, Channel Fault, Alarm, Pulse, Jamming Signal, Switch Error and Comm Status at Receiver.

Weight: 4.5 lbs (2.04 kg) each unit.

Shipping Weight: 18 lbs (8.2 kg) total.

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

Universal Installation Service Tool II (UIST II)

Universal installation service software configures INTREPID™ MicroWave 330 with laptop convenience at each module via RS232 connection.

System Connections

Communications Ports (2 x RS422), Configuration Port (1 x RS232), Auxiliary Device Input Contact (1), Tamper SPDT (1), Alarm Relay Output SPDT (1)

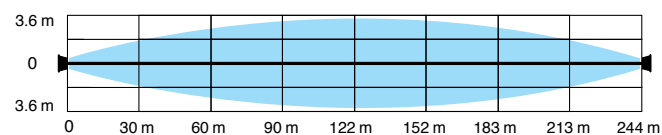
Options:

48C15529 - A01 Enhanced Reflector Antenna (Provides shorter dead zone).

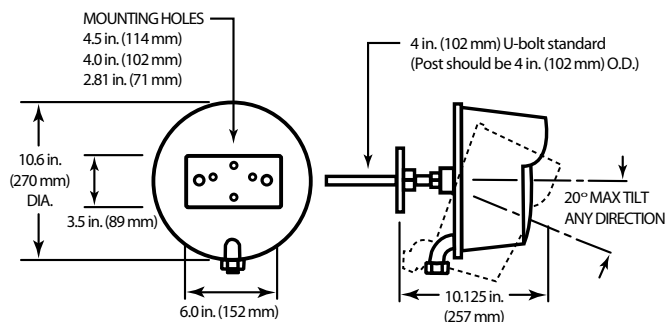
02A15483 - A01 Radome Latch Kit (Replaces screws).

Pattern

The detection pattern width is field adjustable from approximately 0.6 m to 6.7 m. Pattern height varies in conjunction with pattern width. The pattern width adjustment allows easy adaptation to the final installation site.



Dimensions



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