

A&E SPECIFICATIONS

MICROPROCESSOR BASED MICROWAVE PERIMETER INTRUSION DETECTION DEVICE USING DIGITAL SIGNAL ANALYSIS AND ON-BOARD REAL TIME CLOCK DRIVEN EMBEDDED CPU REFERENCING REAL TIME EVENTS BEING MONITORED TO STORED WAVEFORMS OF 256 BEHAVIORAL MODELS AND FINGERPRINTS OF INTRUDER PROFILES

The perimeter protection system shall HAVE ON-BOARD A BUILT-IN EMBEDDED CPU with a real time clock built inside each receiver and transmitter head.

The CPU shall be accessed by an RS-485 connection from the central monitoring location/center locally at the receiver and transmitter head using a laptop remotely via telephone line using a laptop connected to a telephone line modem.

Alarms generated:

The CPU shall contain 256 digital profiles of the various wave and behavioral characteristics of actual intruders crawling, running, slow walking, for shuffling, etc. An alarm is generated when the system sees a real time waveform detected and seen at the time of the intrusion and is compared as a positive match to one of the 256 pre-stored, factory defaults inside the receiver's on board microprocessor.

Alarm outputs are found at each receiver:

Using three separate relay outputs.

Using an RS-485 data highway connection used either at the receiving head, or remotely at the central monitoring station (terminating end of the RS-485 data highway)

Upon alarm, the corresponding relay and alarm information shall be created, with the profile and the identification of the alarm will be stored in the respective receiver or transmitter's individual CPU memory 256 alarms shall be stored in each head with time, date stamped 100 of the last received alarm/tamper/masking waveforms received by the receiver shall be stored in the respective receiver head with time and date stamp. The user may consult either at the head or at the security center or remotely via telephone line the last 256 alarms and corresponding last 100 wave patterns for signal analysis as well as programming into the head the "disturbance seen" based on the waveform stored, fine tuning the adjustment of the intrusion system based on fact rather than intuition.

MINIMUM SYSTEM PERFORMANCE SPECIFICATIONS

Digital Signal Processing Microwave Barrier (TX/RX Pair)

The Active Encoded Digital Signal Processing Bistatic Microwave sensor shall be both CE, IC, and FCC listed and made for use outdoors.

The system shall feature digital signal processing with built in on board CPU with memory and real time clock using Fuzzy Logic Signal Analysis and will compare signals received to 256 internally stored profiles of intruder behavior. Analog or digital signal processing models without on board CPU and 256 stored waveforms are not to be accepted.

The system shall have an Operating Temperature Range from -40 deg. F to + 160 deg. F (-40 deg. C to +75 deg. C.)

Operating relative Humidity shall be 0 to 100%

The system shall operate on X-Band Frequency.

Each microwave barrier shall have a minimum of 16 modulation frequencies available that must start at 700 Hz. The single channel amplitude shall be 50 Hz, switch selectable.

The system shall feature Fuzzy Side Discrimination target Analysis allowing installation alongside metal fences without any disturbances from these areas affecting microwave operation.

The Microwave Barrier Range's range shall be a maximum of 656' per device. Various models with specific antenna configurations may be used as needed to cover 164', 262', 393' or 656' ranges.

The Microwave Transmitters shall have a Synchronization Input/Output Terminal in each transmitter, allowing for 2 or more barriers to be synchronized together.

The heads shall incorporate a temperature control, and temperature sensor, producing a fault condition every time that the prescribed Manufacturer's low or high temperature limits are exceeded. Alarms will be signaled to the fault relay output and will also be logged into the unit's historical event memory buffer.

System detects target speed form 0 cm/sec to 15 m/sec (0 in/sec to 5.9"/sec)

System has adjustments for:

Pre-Alarm Threshold

Alarm Threshold
Masking Threshold
Fuzzy Side Target Discrimination (FSTD)

The barriers feature an RS-485 output for connection to a PC or Laptop either at the head or remotely via an RS-485 bus loop. With a PC or laptop loaded with the Manufacturer's Maintenance/Installation/Monitoring software suite, one may perform advanced adjustments to the system as well as read the alarm and event history memory contained in the barrier.

The system shall feature dynamic masking analysis to avoid any tunneling or masking of the detector. Standby power using an internal battery in every receive and transmitter head shall provide no less than 20 hours of battery standby power.

The system shall feature two rotary switches allowing the installer to create a unique ID number, identifying the receivers and transmitters, allowing for 99 individual addresses (ID Numbers). This allows the Laptop/PC connected either locally or remotely to the equipment to communicate with each unit individually.