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Product Specifications

HIGH-REL DUAL STACKED X AND K BAND

HIGH SECURITY MICROWAVE INTRUSION LINK

SPECIFICATIONS

RANGE: 80 feet (24m) to 600 feet (183m).

BEAM DIAMETER: 2 feet to 40 feet (0.6m to 12.2m) depending on link length, antenna pattern element and sensitivity setting.

TARGET: 77 pound (35 kg) human - walking, running, hands and knees crawling, jumping, rolling or prone crawling (30cm diameter metal sphere).

TARGET SIZE: 0.2 to 0.8 square meter (man/woman).

TARGET VELOCITY: 0.1 ft/sec to 50 ft/sec (3cm/sec to 15m/sec).

PROBABILITY OF DETECTION: 0.99 minimum.

SELF SUPERVISION (Alarm on Failure): Fully self-supervised (inherent in design).

AUTOMATIC RANGE ADJUSTMENT: Link automatically adjusts to slow changes in path loss due to rain, snow, etc. AGC range - 54 dB.

SENSITIVITY ADJUST: Field adjustable by means of internal potentiometer.

OUTPUT POWER: X-band, 10 milliwatts peak, 5 milliwatts average, square wave modulated.
K-band, 6 milliwatts peak, 3 milliwatts average, square wave modulated.

CARRIER FREQUENCY: X-band (U.S.A. 10.525 GHz ± 15 MHz).
K-band (U.S.A. 24.125 GHz ± 25 MHz).

MODULATION FREQUENCY: 2.83, 4.21, 5.56, 15.45 kHz ± 1% - field selectable.

SPURIOUS EMISSIONS: All spurious signals including harmonics at least 50 dB below fundamental when measured at 100 feet from transmitter.

SIGNAL SOURCE: X-band, mechanically tuned GaAs FET transistor oscillator and K-band, mechanically tuned Gunn oscillator.

APPLICABLE SPECIFICATION (USA): Radiation characteristics conform to F.C.C. Rules & Regulations, Part 15.

POWER REQUIREMENTS:

	X-BAND	K-BAND
Voltage:	10.5 to 14.0 VDC	11.0 TO 14.0 VDC
Current:	20 mA (transmitter) 20 mA (receiver)	150 mA (transmitter) 20 mA (receiver)
Fuses:	.25 amp (transmitter) .25 amp (receiver)	.50 amp (transmitter) .25 amp (receiver)

ALARM INDICATION: By set of alarm contacts, one normally open, one normally closed, and one common available on each receiver. Contact rating 2 amps at 28 VDC (Form-C).

TAMPER SWITCH: Protects radome - one normally open, one normally closed, and one common available on each transmitter and receiver. Contact rating 10 amps at 28 VDC (Form-C).

INDICATION LIGHTS:

Transmitter: One internally located LED indicates power is on.

Receiver: Three internally located LED's:

One LED indicates an intrusion alarm.
One LED indicates a jamming signal.
One LED indicates wrong modulated channel.

DIAMETER EACH UNIT: 10.6 in. (27cm)

DEPTH EACH UNIT: 8.8 in. (23cm)

WEIGHT EACH UNIT: 4.5 lbs. (2.04kg)

SHIPPING WEIGHT: 9 lbs. (4.08kg) each transmitter or receiver.

MOUNTING: Model MB65 - Universal heavy-duty position locking non-corrosive mounting bracket. Includes U-bolt, plate and jackscrews for mounting to 4" O.D. post or flat surface.

TEMPERATURE: -40°F to +150°F (-40°C to +66°C)

RELATIVE HUMIDITY: 0 to 100%

ALIGNMENT: Alignment voltage available may be monitored with RM83 or RM82 performance monitor or equivalent high impedance (100,000 ohm/volts) meter. Alignment voltages ranges from .5 to 5 VDC.

TEST FUNCTION: Remote test on transmitters. Activated by 5 to 15 VDC. Changes RF and modulated signal causing receiver to alarm. Remote reset on receiver. Activated by 5 to 15 VDC. Will reset receiver after alarm has been initiated.

WIRE ACCESS: Supplied with ½" conduit entry to terminal strip area.

EQUIPMENT SUPPLIED: Transmitters (2), receivers (2), RFI/EMI shielded radomes (4), MB65 mounting brackets (4), BX20 weatherproof enclosures (2) with PS40 power supplies (2), LF215 line filters (2), extended elevated temperature burn-in and full temperature test data.

DUAL STACK MICROWAVE

1.1 Outdoor microwave intrusion system shall be a combination of Southwest Microwave Model 300B-33257 and Model 310B-33259 or approved equal, having a maximum range of 600-feet.

1.2 The system shall include X-band and K-band transmit/receive sources, and field changeable (X-band) antenna elements to allow the system to be operated at very short ranges up to 100 feet, and medium ranges up to 350 feet.

1.3 The units shall operate at a frequency of 10.525 GHz generated by a GaAs FET (Gallium Arsenide Field Effect Transistor) oscillator and 24.125 GHZ generated by a Gunn oscillator and must be certified by the Federal Communications Commission.

1.4 The devices shall be bistatic and detect intrusion by sensing changes (increase or decrease) in the amplitude of the received signal.

1.5 An automatic gain control (AGC) circuit shall be incorporated which will adjust the receiver gain, as needed, for various distances from the transmitter and changes in path loss from rain, snow, fog, etc. The range of the AGC circuit should be approximately 50 dB.

1.6 A phase-locked loop (PLL) detector shall be used as a narrow bandpass filter. The sensor shall be fully self-supervised and will alarm if component failure causes the link to be incapable of detection.

1.7 Four transmitter and receiver modulation frequencies shall be available to minimize or eliminate interference between adjacent units.

1.8 The equipment must operate over a temperature range of -40°F to +150°F and relative humidities up to 100%.

1.9 A means will be provided to adjust the relay hold-in time between ½ and 30 seconds. The units will also incorporate a means of latching the alarm relay into a constant alarm state, and electronic reset circuit will be provided in the latch mode.

1.10 An electronic remote test feature will be incorporated into the transmitters to allow manual remote testing.

1.11 The receivers will incorporate an interference detector circuit, which will either cause an alarm in the presence of a jamming signal, or be able to ignore the interference and operate normally. Indicators will be provided in the receivers to indicate an alarm, to indicate jamming signal present, and to indicate that the receiver is on the wrong channel.

1.12 An indicator will be provided in the transmitters to indicate that power is on.

1.13 The units will operate from a low voltage DC source, and will require 250 mA or less to operate the transmitters and receivers.