

MDU1020 Series
Operation

The basic principle of operation consists of detecting the frequency shift between a transmitted and a received signal reflected back from a moving object within the field of view of the unit.

The unit produces a low level output signal which can be amplified and processed to provide an audible or visual alarm signal and employs low cost surface mount manufacturing techniques which are field proven as being rugged and reliable.

Electrical Characteristics
Transmitter

Frequency : see table
 Frequency Setting Accuracy : 3MHz
 Power Output (Min.) : 13dBm EIRP
 Operating Voltage : +5V \pm 0.25V
 Operating Current (CW) : 60mA max.
 : 40mA typ.
 Harmonic Emissions : < -7dBm

Pulse Mode Operation

Average Current (5% DC) : 2mA typ.
 Pulse Width (Min.) : 5 μ Sec
 Duty Cycle (Min.) : 1%

Receiver

Sensitivity (10dB S/N ratio) : -86dBm
 Noise : 10 μ V
 (Both in 3Hz to 80Hz bandwidth)

Antenna

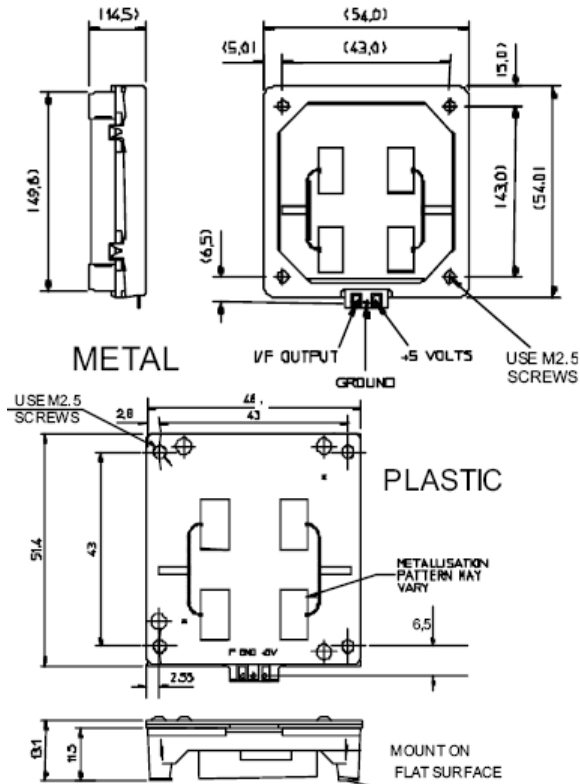
Gain : 8dBi
 -3dB Beamwidth
 E Plane : 72°
 H Plane : 36°

Mechanical Characteristics

Weight : see table
 Tab Connections : 0.1" spacing

Environmental Characteristics

Power/Temp. Coefficient
 (over operating temp. range) : 3dB
 Frequency/Temp. Coefficient
 (over operating temp. range) : 6.5MHz
 Operating Temperature : -10°C to +55°C
 Storage Temperature : -30°C to +70°C

Outline Drawings


NOTES Detection range is dependent on size and reflectivity of target and S/N ratio
 Doppler shift at 10.687GHz is 31Hz/m.p.h.
 Unit functions over -30°C to +70°C but harmonics may exceed specified levels.

Model	Application	Order Code	Frequency	Weight	Comments
MDU1020	USA, Canada etc.	C900505 C900503 C900506	10.515GHz 10.525Ghz 10.535GHz	80 grams	USA FCC Part 15 Indoors Metal Housing
MDU1020	USA, Canada etc.	C900605 C900603 C900606	10.515GHz 10.525Ghz 10.535GHz	15 grams	USA FCC Part 15 Indoors Plastic Housing