

# Microwave Solutions Ltd.

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PRODUCT APPLICATION EXAMPLES

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# Product Applications

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Microwave Solutions Limited design, manufacture, sell and support a full range of X-Band (10GHz) and a selected range of K-Band (24GHz) microwave Doppler Motion Detector Units.

Microwave Solutions Ltd product range can be used in a number of different applications.

- [Intruder Alarm Systems](#)
- [Energy Management Systems & Building Automation](#)
- [Traffic Control Systems](#)
- [Automatic Door Opening Systems](#)
- [Vehicle Reversing Aids](#)
- [Human Vital Signs Sensing](#)
- [Energy Saving](#)
- [Object Detection, Flow Measurement](#)

# Intruder Alarm Systems

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The MDU range is used in a wide range of Global security customers.

They can be used in mixed technology PIR and Microwave or motion and intruder detectors.



# Energy Management Systems & Building Automation

## Motion detectors for lighting

- For domestic and industrial applications, the module and detectors would trigger an on off status once motion is detected.
- Examples of applications:
  - warehouse
  - offices
  - server rooms
  - car parks
  - domestic properties
  - intelligent street lighting
- Our MDU2000 is small enough to be incorporated into a light switch.

## Motion detectors for HVAC

- We could also trigger HVAC and heating systems based on motion detection.



# Traffic Control Systems

## Road Controls

- The MDU6220 can detect human motion at 100 metres making this the idea choice for pedestrian crossings and oncoming vehicles to switch the lights from red to green & speeding warning signs.

## Rail Controls

- It can also be used in rail trackside applications with a train detection range of 4km. It can trigger a level crossing to lights and gates and can also be used in trackside signage.



# Automatic Door Opening Systems

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The MDU range is ideal for any door entry system which opens based on a human approaching for example:

- Lifts
- Garage doors
- Shop entrances
- Office and commercial premises doors
- Tube station doors
- Hotels
- Airports
- Railway stations



# Vehicle Reversing Aids

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The MDU range can also be used in reversing aids in a multitude of different vehicles alerting drivers to any obstacle in their path.

## Large Industrial Vehicles

- The MDU sensors have been installed in very large vehicles used for the mining industry. Due to blind spots these vehicles can cause significant injury to humans or cause damage to other vehicles.

## High end vehicle alarms

- They can also be used in the car alarm market, specifically in truck cabins, and high end premium vehicles which need more sophisticated alarm systems than the usual ultrasonic.



# Human Vital Signs Sensing

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As populations get older there are housing complexes where elderly people are monitored in case they fall over or are taken ill.

Our technology takes it a step further and can detect heartbeat, breathing (life signs) which can alert a warden to go to the aid of an unwell occupant.





# Energy Saving

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In order to save energy machines are powered down but still need to show their customers they are still working by having some display or lights visible from a distance.

When a person approaches our sensors trigger the machine to full power ready for use.

## Examples

- Vending machines
- Gaming machines
- ATM & bank machines



# Object Detection, Flow Measurement

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The MDU Range can help detect the flow of certain liquids, chemicals and can be used in paper mills and effluent processing plants.



# Selector Guide

End Market		Typical MSL Devices
Security - intruder detectors		MDU2750
		MDU2750L
		MDU2000
		MDU1750
		MDU1750CM
		MDU2400
Energy - home and industrial building control products inc lighting		MDU4200
		MDU2750
		MDU2750L
		MDU2000
		MDU1750
		MDU1750CM
Lighting Controls	Stairwell, Ceiling	MDU2400
		MDU4200
		MDU2750
		MDU2750L
		MDU2000
		MDU1750
External Intruder Detectors and CCTV		MDU1750CM
		MDU2400
		MDU4200
		MDU1100T
		MDU2750
		MDU2750L
Vehicle Alarm Systems		MDU1750
		MDU2400
		MDU4200
		MDU4210
Street Lighting		MDU1100T
		MDU4210
		MDU4220
		MDU6220
Traffic Signals and Roadside Warning Lights/ Railway Signage and Level Crossing Warning Signs and Activators		MDU1100T
		MDU4200
		MDU4210
		MDU4220
	MDU6220	

# MDU2000 Success Stories

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## One-Lux

- Light sensor controller



## Microtel

- Light switch sensor



## AMC

- Curtain intruder detector



# Competing Technology

## Passive Infrared Sensors (P.I.R.)

### Companies

- Excelitas and Nippon Ceramic.
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### Advantages of microwave over P.I.R.

- Microwave is less prone to false alarms.
- More robust under extreme temperatures ie over 80 degrees as target temperature maybe same as ambient so P.I.R. may not detect under these conditions.
- Microwave gives longer distance detection capability.
- Microwave gives 100% coverage in its beam coverage pattern, P.I.R. beam is in 'fingers' so can miss target.

### Disadvantages of microwave over P.I.R.

- More expensive.
- Customer more at ease using P.I.R. technology

# Further Information

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We are a focussed small team based in an office manufacturing facility in Rotherham.

We offer tailored knowledgeable advice on how best to integrate our products to suit your requirements and give you excellent technical support throughout the progress of the project.

We also offer a range of complete detectors that provide digital outputs suitable for interfacing to your own system if you don't want to develop your own electronics

To trial out product and for more information visit our website: [www.microwave-solutions.com](http://www.microwave-solutions.com) or email: [simon.barber@microwave-solutions.com](mailto:simon.barber@microwave-solutions.com)