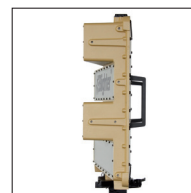


# Blighter<sup>®</sup> B202 Mk 2 Radar



**Blighter B202 Mk 2 Radar**  
(80° or 90° azimuth scan angle)

- Lightweight and compact medium range GSR
- Detects moving vehicles and persons
- Ruggedised for man portable applications
- Integrated Vortex fast-scan technology
- Fully electronic scanning (E-scan) using PESA technology for ultra-high reliability
- Unsurpassed ground clutter suppression with low false alarm rate
- Simultaneous Doppler and FMCW processing whilst fast-scanning (no mode change required)



**Blighter** Surveillance Systems (BSS) addresses a broad range of security requirements in the defence, homeland security and civil/commercial markets. Blighter radars are part of a range of advanced BSS technologies that provide class-leading protection against conventional and asymmetric/terrorist threats.

**The Blighter B202 Mk 2 man portable radar scans and detects moving vehicles and persons (including 'crawlers') over a wide area and provides exceptional detection performance out to 8 km.**

Detected targets are reported via a standard Ethernet TCP/IP network connection, allowing target recognition and identification through the automatic slew-to-cue of optional cameras or thermal imagers. Accurate positional information is reported, including target lat/long co-ordinates, range and bearing. The data bandwidth required for target output and radar control is very low.

#### **Electronic-scanning (E-Scan)**

The Blighter B202 Mk 2 is BSS's low cost e-scan ground surveillance radar (GSR). Blighter e-scan radars have no moving parts to wear out, maintain or replace and offer dramatic improvements in reliability over mechanically scanned radars. Blighter radars are all-in-one fully integrated units comprising antennas, signal processing, plot extractor, GPS and compass. Blighter radars are proven to withstand harsh environmental conditions and provide many years of maintenance free operation. The radar operates in all weather conditions and includes a built-in precipitation filter that suppresses

false detections from rain or snow. Day/night 24-hour operation is fully supported.

#### **Low-power FMCW Doppler Technology**

Blighter radars incorporate a unique combination of FMCW and Doppler processing technology, ensuring unsurpassed ground clutter cancellation with the ability to detect incredibly slow movement. Radio transmission power is very low, making the radar safe for human operation and difficult to intercept (i.e. electronically covert). Power consumption is low, allowing operation from battery, vehicle or mains.

#### **Man Portable Radar with Wide Elevation Beam**

In order to maximise long range detection performance, radars are typically mounted high on a tower or on top of a hill. However, when mounted in this way, the narrow vertical elevation beam of traditional radars results in the problem of 'dead ground' close to the radar. Blighter radars benefit from having a very wide vertical elevation beam, allowing them to detect targets in the distance as well as close-up simultaneously. In complex mountainous regions, the Blighter radar's wide elevation beam also ensures that hill tops and valleys can be scanned simultaneously, without the need to physically tilt the radar.

# Configuration



Blighter B202 Mk 2 Radar  
(80° or 90° azimuth scan angle)

## Specification

### Architectural Overview

- Radar type: E-scan Frequency Modulated Continuous Wave (FMCW) Doppler Ground Surveillance Radar (GSR)
- Frequency band: Ku band
- Scan type: fully electronic scanning in azimuth ('e-scan') using a Passive Electronically Scanned Array (PESA)
- Transmitter power (nominal): 1 Watt
- Multi-radar operation: supported and unlimited
- Embedded software and firmware: field upgradeable via network connection

### Target Detection Performance

- Maximum detection ranges:
  - Crawling person (RCS 0.1 m<sup>2</sup>): 1.5 km (0.9 mi.)
  - Walking person (RCS 1.0 m<sup>2</sup>): 3.3 km (2.1 mi.)
  - Moving vehicle (RCS 30.0 m<sup>2</sup>): 8.0 km (5.0 mi.)
  - Large moving vehicle (RCS 100.0 m<sup>2</sup>): 8.0 km (5.0 mi.)
- Maximum targets per scan: 700
- False Alarm Rate (FAR): 1 false alarm per day
- Minimum detectable target radial velocity: 0.37 km/h (0.23 mph)

### Coverage

- Instrumented maximum range: 5 km or 8 km (3.1 mi. or 5 mi.)
- Instrumented minimum range: less than 10 m (33 ft.)
- Azimuth scan angle: 80° or 90° horizontal e-scan\*
- Elevation beam: 20° vertical beamwidth
- Fastest scan time (for 90°): 0.66 s

\* Depends on market

### Target Output & Identification

- Data format: QZ (custom, open-standard data format) over TCP/IP
- Target output port: available for cueing of pan/tilt-mounted cameras and thermal imagers
- Doppler audio modes: optional

### Connectivity & Software

- Main I/O interface (for radar control and target data): 10/100 Ethernet network interface
- Auxiliary I/O interfaces: RS-232 and RS-422 control lines, opto-isolated control/status inputs and isolated switched contact outputs
- Software (SDK): API software library (Windows) and generic Interface Control Document (ICD) are both available to System Integrators

### Electrical

- Battery/regulated-PSU input range: from 12 V to 28 V (DC)
- Vehicle supply input range: from 12 V to 24 V (DC)
- Power consumption (from 12 V supply): 40 W (nominal)
- Endurance: 12 hours continuous operation from dual 2590-type batteries

### Physical, Environmental & Reliability

- External dimensions (W x H x D)\*: 474 mm x 442 mm x 157 mm (18.7 in. x 17.4 in. x 6.2 in.)
- Weight of radar unit\*: approximately 16 kg (35 lb.)
- Operating temperature: from -32° C to +60° C (from -25° F to +140° F)  
Note: extended operating temperature version available
- IP rating: IP66 (dust tight and protected against powerful water jets)
- MTBF: > 65,000 h

\* B202 Mk 2 radar unit (excluding mountings and solar shield)

Errors and omissions excepted. Blighter Surveillance Systems Ltd reserves the right to modify specifications without notice. Blighter radars are protected by a number of international patents. The Blighter name is an international registered trademark.

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