

Signal Sense

Tactical identification and geolocation of mobile devices



Roke's Signal Sense provides fast and accurate tactical geolocation of specific mobile devices and cellular modems. It enables surveillance teams to locate and identify individuals carrying a mobile device easily, safely and rapidly, or unattended devices left for malicious reasons.

BENEFITS

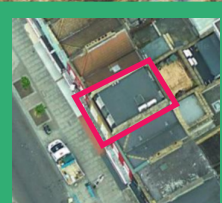
- Reduced operational risk and time required at close access
- Protection of surveillance teams due to greater stand-off range (hundreds of metres)
- Allows location to be fixed even when full visual identification is not possible
- Deployable at fixed locations such as airport, ports, motorways or large event locations for automatic identification of known cellular devices

FEATURES


- Devices can be pinpointed with a few degrees of accuracy in azimuth and elevation for both mapping and live scene video overlay views
- Super-resolution direction finding on 4G, 3G, 2G and CDMA2000
- Intuitive user interface with video footage of device identification, which can be recorded for evidence and streamed to a control room or standoff location
- Operate standalone or from the host equipment via an Application Programming Interface



1. SURVEY
Multi-antenna covert vehicle fit



2. DETECT
Accurate azimuth & elevation mapping



3. PINPOINT
Direction fix overlay onto HD video



Requirement	Performance
External Interfaces	DC power (12V & 60W), GPS antenna, Ethernet interfaces for command and control, and transfer of DF results. Can operate from a host equipment via an API
Radio Access Technology (RAT)	4G LTE FDD, 3G WCDMA FDD, 2G GSM, CDMA2000, with enhanced GSM and WiFi planned, TDD in prospect
Frequency Bands	European Array, GSM-1800 (3), IMT-2000 (1), LTE-2700 (7), ISM (2.4 WiFi), LTE-800 (20), GSM-900 (8) North American Array, Band 66 (inc. 4 & 10), 25 (inc. 2 & C1), 30, 12, 13 & 26 (inc. 5 & C0) Contact us to discuss other band options
DF Accuracy & Rate	Typ. +/- 1.5 degrees instrumentation with up to 100 results per second depending on RAT & averaging
Time to DF	Time to calibrate ≈ 2 secs; every frequency retune or cellular standard change requires a calibration Time to 1st DF (find signal, synchronise and process) ≈ 0.5 secs, time to 2nd DF = 10ms (depending on RAT) Time switch between RAT's = 20 secs
Antennas General	Up to 6 frequency bands within the antenna array bandwidth, with self-calibration. Design options available to suit application, frequency bands and size
• Roof Array Specifics	Position & Heading provided by an integrated GPS-Aided Inertial Navigation System (GPS/INS), for robust and precise location
• Video Array Specifics	Colour Video Camera, with 1280 x 1025 resolution with a ±30° viewing angle (visual cone)
Operating Bandwidth & Range	High Band Array covers 1700MHz to 2700MHz, but note the High Band Roof Array operates at bands below 1700MHz with a reduction of accuracy, whilst the High Band Video array does not operate below 1700MHz Wide Band Antenna Array that covers 700MHz to 2700MHz is available Extension up to higher frequencies is also possible with antenna variants Range is dependent on deployment scenarios and operating frequency, but is typically up to 500m
Temperature Range	0°C to +50°C (operating, ground vehicular environment). Passively cooled Wider temperature range antenna options are available
High Band Antenna, Size & Weight (approx. extent)	1.7GHz to 2.7GHz. Side Facing array 375mm square x 72mm thick & 6.5kg Roof array 379mm square x 59mm thick & 5.5kg
Processing Unit, Size & Weight (approx. extent)	310 mm x 270 mm x 110 mm & 5.4kg

Roke are Changing Worlds

Roke is a world-leading UK technology company and a pioneer in science and engineering. For over 60 years we've been improving the world through innovation by combining the physical and digital in new ways. We create technologies and products to solve real world technical challenges and help deliver critical missions for our customers. Our deep knowledge of sensors, communications, cyber and AI means our 600+ engineers are uniquely placed to combine and apply these technologies to solve real world technical challenges and help deliver critical missions for our customers.

As a trusted partner, we welcome any problem, and are confident that our consulting, research, innovation and product development will keep people safe.

For more information on the items discussed in this document you can contact us:

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