

PERCEIVE MULTI-ROLE®

Next generation integrated wideband sensor

MEDIUM WEIGHT ELECTRONIC SURVEILLANCE

PERCEIVE Multi-Role (MR) is an advanced Electronic Support system in a rapidly deployable lightweight format, proven for use in complex electromagnetic environments operating from 2MHz to 6GHz. It uses Super Resolution Direction Finding (SRDF) and Adaptive Digital Beam Forming (ADBF) to operate seamlessly against nations deploying sophisticated electromagnetic effects.

ACCURACY

PERCEIVE MR SRDF is highly accurate. Elevation and Azimuth Angle of Arrival are provided for targets, even during co-channel interference such as jamming, or in the presence of multipath making it suited to contested urban environments including tower blocks. TDoA capable using VITA49.2 timestamped data feeds.

MULTI-ROLE

Dismounted, Mounted and Static modes of operation are all supported. Transition between modes can be accomplished in 5 minutes by trained personnel, offering operational flexibility. SRDF removes the need for calibration or platform configuration with this system.

RF TO INTELLIGENCE

The VIPER/PREFIX software suite is common to the suite of Roke products. It provides cutting edge signals analysis capability with a common look and feel. Workflow based operations provide mission planning, execution and reporting. EW information can be rapidly processed and disseminated in support of tactical decision making.

SUPPORT AND TRAINING

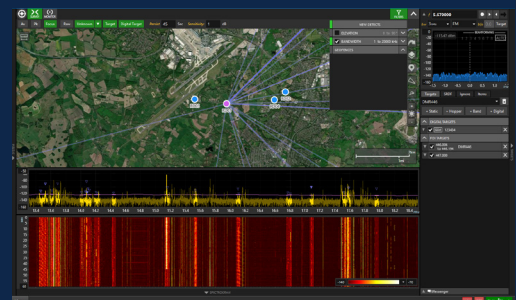
PERCEIVE MR is operationally deployed accompanied by training and support delivered by our EW specialists. Roke delivers bespoke packages optimised to our user requirements and delivered by domain experts. The CEMA simulator enables offline training.

FEATURES

- Lightweight 11kg radio head
- 2MHz to 6GHz operation
- Azimuth (1.2° RMS) and Elevation SRDF
- SRDF through multipath, interference and jamming
- ADBF to monitor through jamming
- 100MHz Instantaneous Bandwidth
- 32 digital drop channels to monitor and record everything in the IBW
- In-built Resilient Position, Navigation and Timing
- VITA49.2 interface for TDoA

BENEFITS

- Multi-Role deployment, rapid transition, no platform calibration
- Fully operational in contested environments, operating through jamming and interference
- Open WebAPI for integration into national infrastructure
- Cutting edge RF performance and capabilities



PERCEIVE MULTI-ROLE SPECIFICATIONS

Performance

Intercept Frequency Range	2MHz to 6GHz
Direction Finding Frequency Range	30MHz to 6GHz
Instantaneous Bandwidth	100MHz
High Rejection Filter Mode	20MHz IBW, available from 2MHz to 500MHz
Direction Finding Technique	Super-Resolution Direction Finding (MUSIC)
Direction Finding Accuracy	≤1.2° RMS > 500MHz ≤2.5° RMS < 500MHz
Elevation Direction Finding	Above 500 MHz
Sensitivity	Frequency dependent from -5 to +50 dBuV/m
Scan Speed	Fast Scan: 3GHz/sec DF Scan: 1GHz/sec
Frequency Hopper Operation	Up to 1000 Hops/sec

Environmental

AECTP Environmental Qualification	Storage: +71 °C to -40°C - Methods 302 and 303. Operating: +49 °C to -40°C – Methods 303 and 305. 95% Humidity, Driven Rain, Blown Dust & Sand, Altitude - Methods 306, 310, 313, 312.
AECTP EMC Qualification	NRE01, NRE02, NRS01, NRS02, CE102, NCS01, NCS02, NCS07, NCS09, NCS12 (relaxed)
Product Certifications	UKCA / CE

Technical

Adaptive Digital Beam Forming (ADBF)	Gain: Up to +9dB Cancellation: Up to -25dB
Co-channel Signal Separation	Up to 4 signals
Position, Navigation, Time	Integral GNSS receiver with IMU and electronic compass 1° RMS static self-orientation accuracy NMEA compliant for 3rd party inputs
Production Channels	32 Independent ADBF tuning channels, monitoring and recording up to 10MHz wide
Modal Behaviour (Scan, DF, Monitor)	Independent scanner with handoff for DF/Monitor Continuous Scan/DF with Independent handoff for Monitor
Mission Information System	VIPER supporting Mission Planning, Range Estimation, and Analysis
EW Application	PREFIX supporting Live Mapping, Wideband DF
Detection & handoff Method	Wideband with SNR threshold & automated handoff
Automatic Position Fixing	Collaborative PF via Radios or IP network Single system (moving)
Build in Test	Yes
VITA49.2 Stream	1x Wideband 100MHz channel and production channels, linked to GPS 1PPS

Physical

Power Consumption	<140 Watts
Weight	11kg Radiohead, 23kg complete system (including battery, laptop and ancillaries)
System Dimensions	79 litres Radiohead 460mm diameter, 300mm depth