



L-BAND/SOLID STATE 3D AIR SURVEILLANCE RADAR

The RAT 31DL is an advanced L-band solid state phased array, 3D surveillance radar, effective to a range of over 500km. The RAT 31DL is a new state-of-the-art radar system designed to operate within modern military Air Defence systems. It is a direct derivative of the successful RAT 31SL.

The RAT 31DL rapidly adapts to a broad spectrum of changing operational scenarios where jammers coexists with heavy clutter. The RAT 31DL 3D early warning radar uses multiple simultaneous independently phase controlled pencil beams, which provide flexibility in scanning and very high data rate, effective for clutter processing.

Each beam provides monopulse altitude measurements with excellent accuracy, even in the frequency agility mode. Reduced peak power provides resistance against Anti Radiation Missile (ARM) and Electronic Counter Measures (ECM).

Fixed and adaptive notch Moving Target Indicator (MTI) filters are enabled by updated maps to increase the performance for ground and sea clutter, rain, chaff and clear conditions.

Excellent Electronic Counter Counter Measures (ECCMs) are provided by very low sidelobe antennas, reduced peak power, frequency agility, jam strobe reporting and by a separate receiver for ECM monitoring.

The radar can be controlled through the local radar management console or through a remote console. The mechanical configuration is designed to facilitate assembly/disassembly on battlefield, to provide an increased survivability. The RAT 31DL is highly reliable due to its total solid state technology and its graceful degradation characteristics.

RAT 31DL

TECHNICAL FEATURES

Primary Antenna

- Active array, phase scan, corporate feed
- 0°-20° electronic elevation scan 42 Tx/Rx modules
- 4 simultaneous independent pencil beams in elevation
- 5/6 rpm azimuth scale rate
- Linear horizontal polarization
- Monopulse in elevation with special low angle technique
- Fully transportable
- Sidelobe blanking.

Receiver

- Type: double conversion superheterodyne
- RF receivers: dual matched
- Frequency selection: manual, random, automatic
- Adaptive clutter attenuator: IF STC with steps controlled in azimuth and range
- IF receiver: linear
- Pulse compression: SAW matched filters, FM chirp in long range channels and digital for high PRF channel.

Signal Processor

- Type: digital with in-phase and quadrature processing
- Anticlutter filters: adaptive notch MTI cancellers, fixed and real-time automatic clutter mapper
- Azimuth correlator: moving window type
- Amplitude detectors: digital modulus extractor.

Plot Buffer

The programmable, control-flexible interface to remote centers is able to accept remote controls and orders.

