

UltraHAWK Naval INEWT System

Integrated Naval Electronic Warfare Trainer

Features & Benefits

- **Realism:** INEWT is an actual ECM system, designed and optimized for training.
- **Integrated System Approach:** INEWT is an integrated EW system with ECM, ESM and Threat Generation capability.
- **Mobility:** INEWT is designed for shelter based deployment or permanent ship based installation.
- **Low Risk:** Ultra TCS has a proven record of delivering INEWT systems that eliminate risk.
- **Expandability:** INEWT is modular that allows for expansion and upgrades.
- **Programmability:** INEWT is fully programmable, allowing significant flexibility and repeatability.

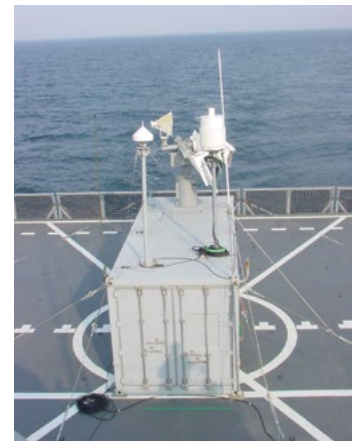
The Ultra Electronics TCS UltraHAWK INEWT combines the strengths of Electronic Counter Measures (ECM), Electronic Support Measures (ESM) and Radar Signals Simulation (RSS) into a world leading EW training solution. INEWT supports training of radar and ESM operators, and evaluation of ESM and ECCM in one dedicated system.

The UltraHAWK INEWT system design ensures independent functions so there are no performance compromises. It is an advanced and cost effective approach to EW training or test and evaluation at sea or in the harbor.

The system features integrated programming capability which enables it to simulate a wide variety of ECM and radar signals in a multitude of scenarios. A total anti-shipping scenario is easily produced using an array of high power transmitters. Major subsystems of the UltraHAWK INEWT system are based on existing NDI (Non-Developmental Item) technology.

The INEWT system supports testing of active (radar) and passive (ESM & Radar Warning Receiver) sensors currently deployed around the world.

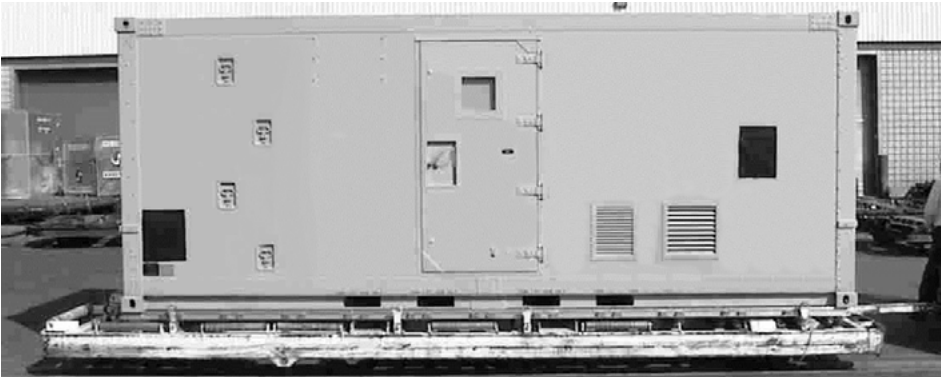
The system is designed for deployment into a self-contained shelter that can be fitted to any ship or used at dockside.



EW Training Concept

A training system should enable radar and ESM operators to handle a wide variety of EW scenarios. This can be expressed as three levels of training:

- 1 Training the radar and ESM operators to identify that their system is being subjected to ECM and radar signals.
- 2 Training the radar and ESM operators to recognize the type of ECM techniques and radar signals being intercepted by their sensor system.
- 3 Training the radar and ESM operators to utilize the assets of their sensor system to increase the combat effectiveness of their platform.



Specifications

| | Parameter | Specification | Remarks |
|-------------------------------|--|------------------------------|---------------------|
| Antenna System | Tx Antenna Gain | 9 – 39.9 dBi | Frequency dependent |
| | Rx Antenna Gain | 3.9 – 38.3 dBi | Frequency dependent |
| | Frequency Coverage | 0.5 – 40 GHz | Tx and Rx |
| | Isolation (Transmit to Receive Antennas) | 90 dB | |
| | Tracking Modes | Video, Radar, AIS and/or GPS | |
| RSS/Transmit System | Amplifier Types | Solid State <2.5 GHz | |
| | | TWT > 2.5 GHz | |
| | Output Power | 275 Watts CW <18 GHz | Minimum |
| | | 40 Watts CW > 18 GHz | Minimum |
| | Duty Cycle | CW or 50% duty cycle Pulsed | |
| | Frequency Coverage | 0.5 – 40 GHz | |
| | Simultaneous Emitters | 16 – 32 | |
| RJS | Frequency coverage (Input & output) | 0.5 – 40 GHz | 3 bands |
| | DRFM Clock frequency | 2 GHz | |
| | DRFM Instantaneous band width | 800 MHz | |
| | Through system latency delay | 1200 ns | |
| | DRFM memory length | 8.3 ms | |
| | Range Delay resolution | 0.5 ns | |
| | Input dynamic range | +10 to -50 dBm | |
| | Output dynamic range | 100 dB | |
| | Max Threshold windows | 32, frequency/amplitude | |
| | Max ECM techniques in a sequence | 32 | |
| | ECM Technique types | See ECM Techniques Table | |
| | | | |
| | ES Receiver | Frequency Coverage | 0.5 – 40 GHz |
| IF Centre Frequency | | 1 GHz & 160 MHz | |
| IF Pre-D Bandwidths (160 MHz) | | 100, 50, 25, 10 MHz | |
| IF Pre-D Bandwidths (1 GHz) | | 500, 250, 100, 50, 10 MHz | |
| PW Range | | 50 ns to 13.0 ms | |
| | PRI Range | <500 ns to 100 ms | |

ECM Techniques

| |
|---|
| Multiple False Targets |
| Range Gate Pull Off (In), RGPO(I) |
| Velocity Gate Pull Off (In), VGPO(I) |
| Range & Velocity Gate Pull Off (In), RVGPO(I) |
| Active Decoy |
| Passive Decoy |
| Spot Noise (pulse & CW) |
| Swept Spot Noise (pulse & CW) |
| Barrage Noise (pulse & CW) |
| Burst Noise |
| Velocity Noise |
| Range Bin Masking |
| Velocity Bin Masking |
| Range/Velocity Bin Masking |
| Audio Modulation |
| (Adaptive) Inverse Gain |
| Intra-PRI |
| Synthetic Signal |
| Simulated Target |
| Range Extents |
| Chaff |
| Clutter |
| Capture |

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