MUKAS
COMMUNICATION JAMMING AND DECEPTION SIMULATOR

EFFECTIVE ELECTRONIC ATTACK (EA) IN HF AND V/UHF FREQUENCY BANDS
HIGH SENSITIVE AND ACCURATE ELECTRONIC SUPPORT (ES) IN HF AND V/UHF FREQUENCY BANDS
REMOTE CONTROLLED, UNATTENDED V/UHF JAMMERS ON THE FIELD
SUITABLE FOR TACTICAL ENVIRONMENTS
INTEROPERABILITY IN A SINGLE SYSTEM FOR BOTH EA AND ES SUBSYSTEMS
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MUKAS is a simulator system and designed for training of Electronic Warfare and Communication operators.

MUKAS is mainly composed of Communication Electronic Support System (MEDSIS), Communication Electronic Attack Simulator (METSIM) and Remote Controlled EW System (OPKAR).

MEDSIS and METSIM Subsystems are integrated on the same vehicle and OPKAR Field Units can be deployed across an area, the units have capability to communicate with each other and the vehicle to perform various jamming and deception scenarios.

MUKAS System with the system shelter, air conditioner, antennas and the main generator units is integrated ergonomically on a highly-mobile 8x8 vehicle platform.

All the system units are carried by the system vehicle hence the MUKAS System has a high mobility capability.

According to the customer’s needs, the System could be integrated on different platforms.

MEDSIS Subsystem: Provides measurement, monitoring, direction finding, narrowband and wideband signal analysis of signals in HF and V/UHF bands.

Provides and transfers necessary parameters to METSIS, for the application of effective Electronic Attack techniques.

METSIM Subsystem: Enables the training of communication operators under the jamming/deception conditions.

Enables the evaluation of the jamming and deception techniques developed for threat/target communication systems.

OPKAR Subsystem: Remote controlled Electronic Warfare System which is composed of field units, operated individually or in coordinated groups in V/UHF bands, and the main control unit, mounted in the MUKAS system vehicle.

Main Features:
- Communications ES (including DF and Signal Analysis) capabilities
- Communications EA capabilities
- Automatic antenna elevation and rotating structures
- Detailed Built in Test
- Operation capability with multifunction Systems of Systems structure in a single shelter
- Pre-Mission Planning Software
- Mission Software
- After-Mission Record Analysis Software
- Target and Jamming Techniques Libraries

Technical Specifications – Communication ES
- Main Features: Spectrum Search, Signal Detection, Direction Finding, Spectrum Monitoring, Narrow Band and Wide Band Digital Recording, Narrow Band Signal Analysis, Wide Band Signal Analysis
- Frequency Range: HF and V/UHF
- DF Accuracy: ≤ 5° RMS (V/UHF), ≤ 10° RMS (HF)
- Scan Rate: 20 GHz/s (V/UHF), 200 MHz/s (HF)
- Measured Signal Parameters: RF, Modulation Type (Manual), Signal Amplitude, Bandwidth, Direction
- Parameter detection for Frequency Hopping signals
- Recording Modes: Audio and IF Signal Record Modes
- Demodulation Capability: FM, AM, LSB, USB, CW
- Automatic Modulation Recognition: AM, FM, CW, LSB, USB, DSB, MSK, 2FSK, 4FSK, 6FSK, 8FSK, 2ASK-BPSK, 4ASK, 8ASK, QPSK-4QAM

Technical Specifications – Communication EA
- Frequency Range: HF and V/UHF
- Jamming Types: Continuous, Look-through, Signal-initiated
- Jamming Modes: Spot, Sequential, Multiple, Barrage, Reactive(Responsive)
- Jamming Source: Tone, Multi-tone, Triangle, Ramp, Noise, Audio Record
- Deception Capability: Analog deception sources (Microphone, audio record, IF record)
- Effective jamming against FHSS (Frequency-Hopping Spread Spectrum) signals
- Effective jamming against DS/DS (Direct Sequence Spread Spectrum) signals
- Effective jamming against GNSS signals and satellite hand terminals
- Technical Specifications – Remote Controlled Electronic Warfare Systems
- Frequency Range: V/UHF
- Jamming Types: Continuous, Look-through, Signal-initiated
- Jamming Modes: Spot, Sequential, Multiple, Barrage, Responsive
- Networking and deception features
- Mission distribution by operating in the mesh-network
- Out-of-band communication
- Increment of the communication range by use of the relay ability

Environmental Specifications
- Operational Temperature: -30° / +50°C
- Storage Temperature: -30° / +60°C
- Humidity: 90% (non-condensing)
- System/Unit Design to Comply with MIL-STD-810F and MIL-STD 461/464 military standards for Land Platforms