



The wide utilization of communication entities in present day military systems made COMINT very crucial in Electronic Warfare (EW). The military communication systems are designed with Low Probability of interception (LPI) waveforms, frequency and time hopping techniques, wide band signals such as T1, T2, T3, E1, E2 and E3 etc.,

Testing and validating of the communication EW system under realistic signal and channel conditions is crucial. The UTS offered Communication EW Scenario Simulator is real time EW scenario generator consists of multiple communication entities which are capable of simulating real EW entities.

Key configurable modules in EW scenario simulator unit are

- a) RF Generation Module
- b) Digital base band generation module
- c) Source encoding & TDM , Analog & Digital Modulation FPGA firmware
- d) GUI for scenario creation.

The following are EW entity parameters that can be configured

- Spatial properties
 - Azimuth and elevation radiation pattern
 - 3dB beamwidth
 - Antenna orientation
- Trajectory
 - Trajectory profile
 - Velocity profile
 - Endurance
- Electrical properties
 - Waveform
 - Analog modulated
 - Digital modulated
 - LPI and Spread spectrum signals
 - TDM
 - Source encoding
 - Data source

By selecting suitable values for the above parameters it is possible to build the model of any existing EW system.

Antenna orientation, azimuth elevation radiation patterns and 3dB beamwidth are the configurable spatial properties of the SUT

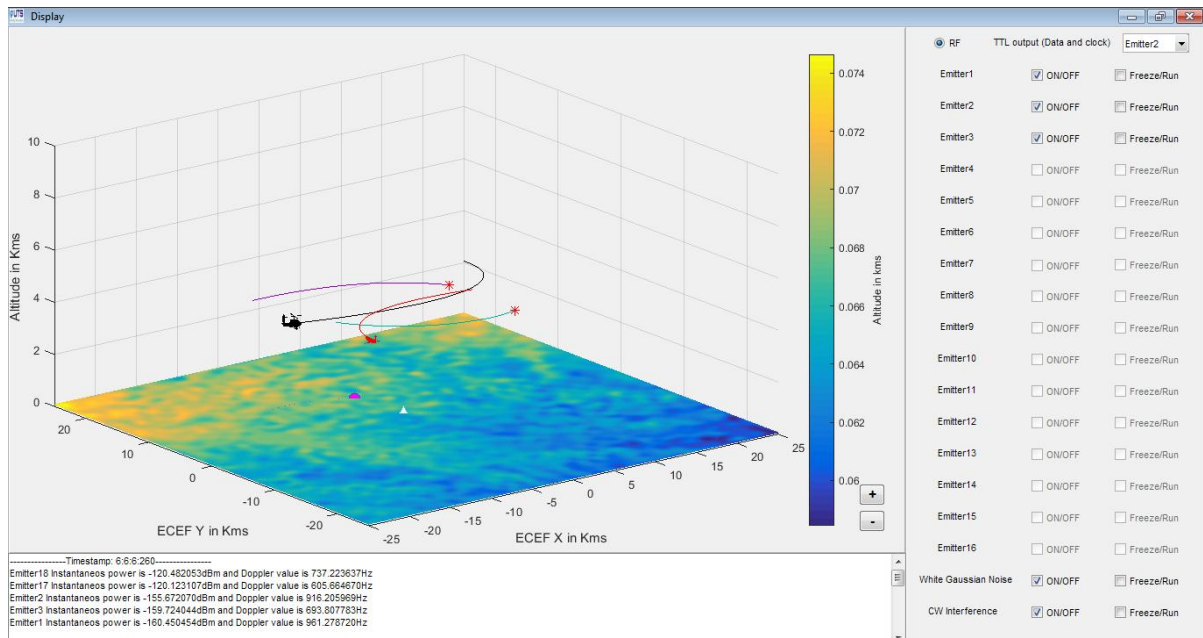
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Email: Info@unistring.com

Key Features

- Frequency range from 100 MHz to 6000 MHz
- Configurable instantaneous bandwidth 5/10/20/40 MHz
- Output channel 1 (configurable)
- Dynamic range 100dB
- Instantaneous dynamic range 60dB
- Maximum output power 0dB
- Maximum number of emitters that can be configured 16 and active in a scenario 4 (extendable)
- Supported analog modulation signal AM-SSB, AM-DSB, FM-NB, FM-WB and PM
- Supported Digital modulation signals BPSK, QPSK, 8-PSK, 8QAM, 16QAM, 32 QAM, 64 QAM, 4FSK, 2FSK, MSK and GMSK
- Burst, FHSS and DSSS are supported
- T1, T2, T3, E1, E2, E3 as per ITU standards are supported
- Source encoding such as PCM, AD-PCM, CVSD and DM are supported
- CW interference and white Gaussian noise source and also be modelled
- Windows based application provides intuitive graphical interface for its operation and for scenario creation, scenario saving and loading.
- Entities can move in predefined trajectory with 6 DOF. Entities can be airborne or ground based



Applications

- Monitoring and analysis RX testing
- Search and DF testing
- Follow on jammer testing
- LF testing
- COMINT

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