



indra

LOGISTICS SERVICES & SYSTEMS

EWE-8000 EMULATOR SERIES

Indra's experience in the maintenance of electronic warfare systems
at your disposal

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EWE-8000 SERIES

ELECTRONIC WARFARE EMULATORS



EWE-8000 Series

State-of-the-Art Electronic Warfare Emulation technology

Introduction

INDRA has unified the previous EWE series (1000, 2000, 3500, etc.) and has recently launched the EWE8000 emulator series, which focuses on training and the analysis, diagnosis and validation of Electronic Warfare Systems, including ECM and ESM/RWR. We offer the possibility of faithfully emulating any radar, tracking system, beacon (TACAN, Sonobuoys, etc.) and even project or missile launching systems.

The EWE8000 series groups a series of high-end units developed around a central core that can be expanded in the form of modules for field or laboratory work.

The basic function of these units is based on the controlled Generation, Reception and multi-emission of complex signals, from a low frequency to up to 36GHz. Any system can acquire new advanced functions with the use of the accessories available for this series. The matrix technology of the EWE8000 series can also be applied to inhibition systems, eco radar emulation or any other application requested.

There are 3 entry ranges, which provide a basic expandable structure, with optional modules installed internally or external accessories (Front-Ends) that can expand the capacity of each basic unit. We supply accessories to operate the unit with different power ratings and at different distance, while facilitating work and improving user safety.

Units can be deployed in open fields, as well as in laboratories or hangars, or even be integrated in aerial, naval or land platforms.

INDRA also offers you its test and training service with specialised operators and tailor-made reports to certify any type of system.

Customised software solutions are offered (fully developed by INDRA), with two approaches:

Configuration in the "TEST POINT" mode: performs automatic and pre-programmed validations. Validates and finds faults in the system and/or wiring elements being tested, guiding INEXPERIENCED operators. Avoids the disassembly of faulty LRUs, checks the wiring elements, assesses the % operativity of a System with a partial malfunction, monitors the avionics/electronic warfare buses, etc.



Advanced configuration: It can be used to define the signals and tests with the maximum level of detail, including trajectories and advanced dynamic scenarios, working with real and global geographical data.

We offer both solutions under GNU/Linux, Windows or Android systems.



Basic Technical Specifications

RF Stimulation Characteristics:

- Number of RF outputs: up to 8 DOA outputs (+1 omnidirectional output) per band.
- No. of simultaneous emitters: up to 32 pulsed wave emitters (expandable to 128) or 1 continuous wave emitter.
- Dynamic range of the carrier: +0 -60 dBm.
- Dynamic range accuracy: ± 1 dB.
- Working frequency:
 - 0.5-2 GHz (Optional)
 - 2-18 GHz (expandable to 20 GHz)
 - 18-36 GHz (Optional, expandable to 40 GHz)
- Spurious Signals/Harmonics: -40 dBc.
- Phase noise: -80dBc/Hz (Multi-emitter mode) -90dBc/Hz (Continuous wave mode).
- Instantaneous bandwidth: 150 Mhz.
- Frequency change speed: 1us for +/1 MHz in bands C/D and E/J.
- PRI Range: 1us - 1s (45ns resolution).
- PW Range: 1ns - 10ms (1ns resolution).
- AM Dynamic range: 60 dB.

RF Measurement Characteristics:

- Working frequency: 0.5 - 40 GHz.
- Dynamic range: +10 dBm -60 dBm.
- Dynamic range accuracy: ± 1 dB.
- PW Range: 100 ns - 10 ms.
- PRI Range: 1us - 10 ms.

Wave Shapes:

- Continuous or pulsed radar.
- Frequency, with agility (uniform random, Gaussian random, sweeps, user per pulse and user per time) or w/o agility.
- SCAN (circular, sector (horizontal and vertical), helicoidal, spiral, raster, conical, palmer helicoidal, palmer spiral and palmer raster).
- Fixed or agile PRI (uniform Jitter or Gaussian Jitter)
- Fixed or agile PW (maximum of 8 positions and 10 pulses per position)
- INTRAPULSE Modulation: chirp (ascending, descending, in V and in A), Barker, Frank, Huffman and pseudo-random. Optional configuration of excursions, code lengths,

Transmission line measurement characteristics:

- Working frequency: 2 - 18 GHz (expandable to 20 GHz)
- Dynamic range: 60 dB

Laser Spectrum

- Spectrum 525 / 905 / 1550 nm
- Laser class 1, 2, 3R (eye safe at 25 cm / 10" distance)
- Modulation:
 - PRI: 18 μ s - 2 s
 - PW: 10 ns - 10 ms

Electrical Characteristics:

- Power Supply: 115/230 VDC (90-132/184-264), 47-440 Hz
- Consumption: < 1Kw




Missile

- UV Spectrum (solar blind)

Environmental & mechanical characteristics:

- Operating temperature: -10 to +50 °C
- Transport: MIL-STD 810
- Storage: MIL-STD 810



SETUPS	PORTABLE UNIT	BASIC UNIT	AVANCED UNIT
INTERNAL OPTIONS			
	C/D Band TX Tray	–	Δ
	E/J Band TX Tray	–	Δ
	K Band TX Tray	–	Δ
	C/D Band RX Tray	–	Δ
	E/J Band RX Tray	–	Δ
	K Band RX Tray	–	Δ
FRONT-ENDS (EXTERNAL OPTIONS)			
	TACAN	–	√
	Radar Low Distance	√	√
	IR Estimator	√	√
	UV Estimator	√	√
	Cable Tester	√	√
	Communication Band	–	√
	Sonobuoy	–	√
	Mobile Unit	–	–
	End to End Accesories	–	–
CONTROL UNITS			
	Tablet Android/Windows	√	√
	Tablet ruggedizado	√	√
	Portátil	√	√
	Control Táctil integrado	–	√
	Control concurrente	–	local +1 ud remota

Portable Unit

The Portable Unit offers mono-emitter signal generation features, from HF to Band K signals, emulating both communications and radar emitters. All of these features are built in the core of the main unit. **Miniature EWE8000 system with battery, ready for first line testing.**

It can be expanded with many FRONT-ENDS of the series.

Basic Unit

The Basic or Standard Unit **has a computer with a built-in touch screen from which all of the unit's features can be controlled**, i.e., mono-generation and reception of signals, from HF to 3GHz. It can emulate any emitting or receiving system in this frequency range.

It can acquire signal emission and reception capacities with signals of up to 36GHz, turning it into an advanced unit with optional modules.

It can be expanded with many FRONT-ENDS of the series.

Advanced Unit

The Advanced Unit features a computer with a built-in touch screen that can be used to exploit all of the unit's features. This is the only unit that supports a scalable configuration, with both internal (trays) and external options (FRONT-ENDS).

It supports reception and transmission configurations, from HF to 36 GHz. This is one of the options offered, **designed to meet the most discerning requirements, since it can integrate all features of the EWE8000 series** in an IP65 assembly that is prepared to work under the most adverse weather conditions and be expanded to an AMU (Advanced Mobile Unit).



Case studies:

EWE8000RTG RADAR THREAT GENERATOR

Validation of ESM/RWR Systems (0.5 at 2 GHz // 2 at 18 GHz // 18 at 40 GHz)

Used for the creation and validation of electronic warfare libraries. Acquired by the Army and Air Forces for the maintenance of systems installed in C15 airplanes (EF18) or the TIGER HAD/E helicopter. Participation in the system tests and validations of the German Navy.

EWE8000ETE END TO END

System used for the validation of "System On The Loop" platforms with radiation containment accessories

Used by the Air Forces to maintain and assess the systems installed on C15 airplanes (EF18), with radiation containment accessories that allow safe work to be undertaken.

EWE8000MLT MISSILE LAUNCH THREAT

Validation of ESM/ECM Systems within the UV, IR and Laser spectrums

Used by INDRA to assess and fine tune MWS/LWS systems, such as MANTA or the systems integrated in ALR400's RWRs.

EWE8000TBV TACAN BEACON VALIDATOR

Validation of TACAN Navigation Systems

Used by the Navy for the validation of TACAN systems installed on the frigates and ships of the Spanish Navy.

EWE8000CMV COUNTER MEASURES VALIDATOR

Validation of ECM Systems

Used by the Air Forces to maintain and assess the ECM systems installed on C15 airplanes (EF18), with radiation containment accessories that allow safe work to be undertaken.

EWE8000SRV SONOBUOY RECEPTOR VALIDATOR

Validation of Beacon systems based on Sonobuoys

Used by the Navy for the validation of the systems installed on the naval platforms of the Spanish Navy.

EWE8000CBG COMMUNICATIONS BAND GENERATOR

Validation of COMINT Systems (HF at 3 GHz)

Used by Indra for its maintenance and fine-tuning work in many different defense systems and by the Army to assess its stations and train units specialising in communications signals.

EWE8000PTG PORTABLE THREAT GENERATOR

Inherited from the successful EWE1000 system, used to validate many different platforms around the world, directly on the apron (F-1, NH90, C15/F-18, TIGER, CHINOOK, COUGAR...),

This version unifies the three series of its predecessor, combining the generation of radar, IR and UV threats from a light battery-powered portable unit. Perfect for direct verifications on the apron or prior to a flight.

EWE8000AMU ADVANCED MOBILE UNIT

Autonomous mobile unit with all of the series' functionalities.

Used for IN-FLIGHT fine tuning, validation and training of the systems installed in the platforms of Airbus Helicopters, such as TIGER HAD/E and NH90



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