



INTRODUCTION

The radar (Radio Detection And Ranging) system is an electronic device used to detect the presence, direction and speed of a target (aerial, terrestrial or maritime). The radar device is a main component in many systems of navigation, air traffic control, meteorological monitoring, military surveillance, astronomy, etc.

The radar sends a high frequency signal pulses and detects the reflected signal (echo) from a radar target in the detection zone.

The Radar Unit "ERA" is a radar unit, designed by EDIBON, to study the basic principles about the radar technology.

The ERA unit uses a compact radar which allows students to acquire solid formation about the operation, configuration and installation of a radar system without any previous knowledge. In addition to this, ERA unit allows students to operate and manage a professional radar system.

Students will be able to know different radar concepts such as radar antenna, range and bearing measurement, rain suppressor, sensitivity control, guard zone, etc.

This unit is fully provided with a set of practices, that has to be done at the outdoor, that allow students to understand how works the radar technology and allows the student to learn, in a simple and practical way, the terms and concepts used in radar system such as distance measurements of static and moving objects, operation modes, sensitivity control, suppressing clutters, communication with the a GPS module, etc.



ISO 9001: Quality Management (for Design, Manufacturing, Commercialization and After-sales service)



European Union Certificate (total safety)



Certificates ISO 14001 and ECO-Management and Audit Scheme (environmental management)



"Worlddidac Quality Charter" and Platinum Member of Worlddidac

GENERAL DESCRIPTION

The ERA unit consists of different elements: interface unit, radar antenna, GPS module, extendable tripod stand and mobile cart.

Interface unit:	It contains the display and the radar control system. The interface unit is the main element of the ERA unit and controls and shows the information provided by the outdoor devices: the radar antenna and the GPS module. It contains the display unit that shows all the navigation data and the radar PPI (Plan Position Indicator). The display unit also includes the buttons to configure the many options of the radar system (setting alarms, sensitivity adjustment, suppressing the clutter, etc). The interface unit includes a battery with a battery charger to facilitate the outdoor operation of the unit. The interface unit also includes two indicator leds to show the battery status and the connectors to the GPS module and the radar antenna in the front panel.
Radar Antenna:	It contains the directional antenna, the microwave generator and the microwave receiver. The directional antenna can rotate to scan the horizontal plane. It also includes a connection cable to the interface unit, with approximately 10 m. of long, which allows the users to place the radar antenna at safe distance from the interface unit. The radar antenna is mounted on an extendable tripod stand which hold the antenna at an appropriate height. The radar antenna has to be placed at outside of the laboratory in a large and open area.
GPS module:	It is a device that shows the current location, altitude, speed and UTC time information anywhere on the earth using the Global Positioning System (GPS). The GPS module includes a cable to connect to the interface unit, for power supply of the GPS module and communicating with the display unit.
Extendable tripod stand:	Extendable tripod stand to hold the radar antenna at appropriate height. The tripod stand contains a bull's eye level for the radar antenna leveling in uneven grounds.
Mobile cart:	It is a mobile structure to hold the elements of the ERA unit. It allows user to operate with the ERA unit at the outdoor. The mobile cart incorporates wheels (strong tires) to facilitate its mobility and the operation in uneven grounds.

SPECIFICATIONS

The Radar Unit "ERA" consists of:

Interface unit:

It contains the display and the radar control system.

Display unit:

High definition 6" rectangular monochrome LCD display.

Display resolution: 240x320 pixels.

Markers: Heading Line, Bearing Scale, Range Rings, Variable Range Marker (VRM), Electronic Bearing Line (EBL), Tuning Bar, Cursor, Parallel Cursor, Alarm Zone, Waypoint Mark*, North Mark*.

Alphanumeric indications: Range, Range Ring Interval, Display Mode (HU), Interference Rejection (IR), Variable Range Marker (VRM), Electronic Bearing Line (EBL), Stand-By (ST-BY), Guard Alarm (G (IN), G (OUT), UP RANGE), Echo Stretch (ES), Range and Bearing to Cursor, Bearing or L/L Position, Echo Tailing (TRAIL), Trailing Time, Trailing Elapsed Time, Watchman (WATCHMAN), Zoomed Display (ZOOM), Navigation Data*, Heading* (HDC).

*:external data required.

Battery system:

Battery charger (included inside the interface unit).

Battery: nominal voltage: 12 VDC, capacity: 24 AH.

Connector to the GPS module.

Connector to the Radar Antenna.

Radar Antenna:

Outdoor operation.

Directional antenna: Micro-strip patch array antenna.

Horizontal polarization.

Frequency 9.4 GHz (X-band).

Antenna rotation speed 24/31/41 rpm nominal (auto-select according to range).

Horizontal Beamwidth less than 6.2°. Vertical Beamwidth 25°.

Connection cable to the interface unit.

GPS module:

High contrast display with gray scale. Display resolution: 120 x 160 pixels.

GPS Accuracy: 15 m. DGPS (WAAS) Accuracy: 3 m.

Connection cable to the interface unit.

Extendable tripod stand:

Telescopic tripod stand, of anodized aluminum, to hold the radar antenna at the appropriate height. It includes a bull's eye level indicator. Operation range: 1.20 m – 3.05 m. Maximum supported weight: 7.5 kg.

Mobile cart:

Mobile cart to hold the elements of the ERA unit. It incorporates wheels (strong tires) to facilitate its mobility and the operation in uneven grounds.

Cables and Accessories, for normal operation.

Manuals:

This unit is supplied with the following manuals: Required Services, Assembly and Installation, Starting-up, Safety, Maintenance & Practices Manuals.

EXERCISES AND PRACTICAL POSSIBILITIES

- 1.- Familiarization with the unit.
- 2.- Establish communication with GPS module.
- 3.- Configuration of the radar range.
- 4.- Sensitivity adjustment.
- 5.- Range measurement.
- 6.- Bearing measurement.
- 7.- Setting of the suppressing interference function.
- 8.- Setting of the suppressing rain clutter function.
- 9.- Analysis of the guard alarm function and establish a guard zone.
- 10.-Analysis of the watchman function.

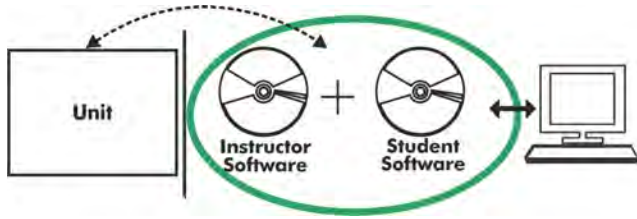
REQUIRED SERVICES

- Electrical supply: single-phase 200 VAC – 240 VAC/50 Hz or 110 VAC – 127 VAC/60 Hz, for the battery charger.

DIMENSIONS AND WEIGHTS

- Dimensions: 600 x 900 x 1700 mm approx.
(23.62 x 35.43 x 66.93 inches approx.).
- Weight: 50 Kg approx.
(110 pounds approx.).

ERA/ICAI. Interactive Computer Aided Instruction Software:



With no physical connection between unit and computer, this complete software package consists of an Instructor Software (EDIBON Classroom Manager -ECM-SOF) totally integrated with the Student Software (EDIBON Student Labsoft -ESL-SOF). Both are interconnected so that the teacher knows at any moment what is the theoretical and practical knowledge of the students.

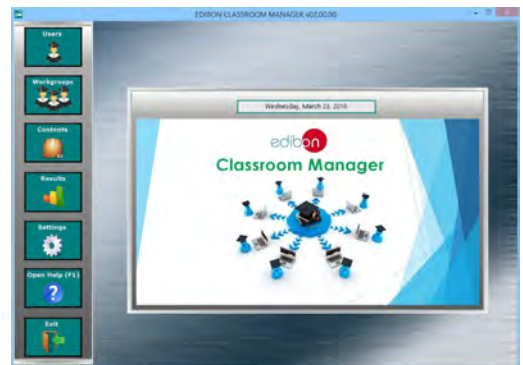
Instructor Software

- ECM-SOF. EDIBON Classroom Manager (Instructor Software).

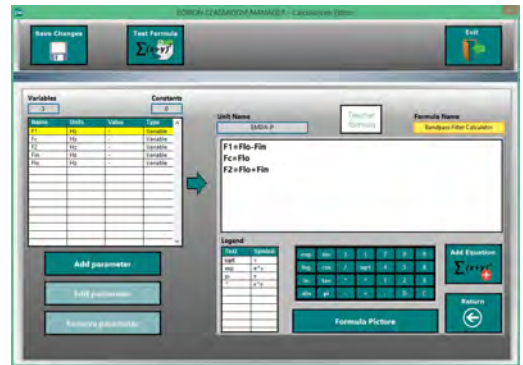
ECM-SOF is the application that allows the Instructor to register students, manage and assign tasks for workgroups, create own content to carry out Practical Exercises, choose one of the evaluation methods to check the Student knowledge and monitor the progression related to the planned tasks for individual students, workgroups, units, etc... so the teacher can know in real time the level of understanding of any student in the classroom.

Innovative features:

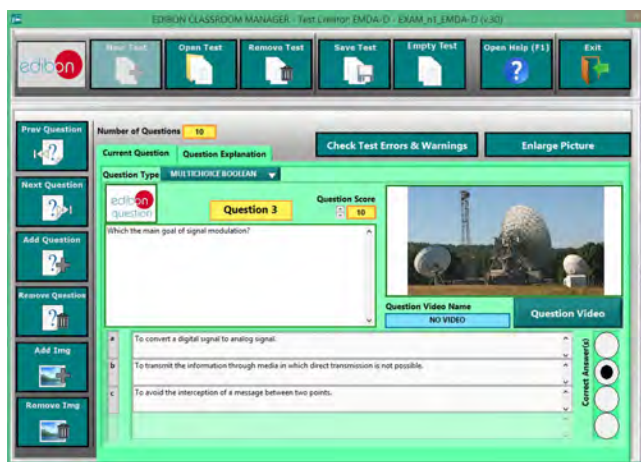
- User Data Base Management.
- Administration and assignment of Workgroup, Task and Training sessions.
- Creation and Integration of Practical Exercises and Multimedia Resources.
- Custom Design of Evaluation Methods.
- Creation and assignment of Formulas & Equations.
- Equation System Solver Engine.
- Updatable Contents.
- Report generation, User Progression Monitoring and Statistics.



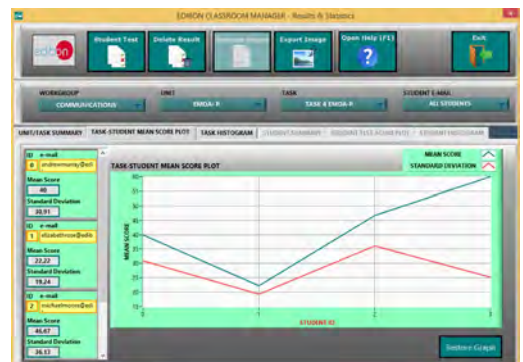
ECM-SOF. EDIBON Classroom Manager (Instructor Software) Application Main Screen



ECAL. EDIBON Calculations Program Package - Formula Editor Screen



ETTE. EDIBON Training Test & Exam Program Package - Main Screen with Numeric Result Question



ERS. EDIBON Results & Statistics Program Package - Student Scores Histogram

Optional
Student Software

- ESL-SOF. EDIBON Student Labsoft (Student Software).

ESL-SOF is the application addressed to the Students that helps them to understand theoretical concepts by means of practical exercises and to prove their knowledge and progression by performing tests and calculations in addition to Multimedia Resources. Default planned tasks and an Open workgroup are provided by EDIBON to allow the students start working from the first session. Reports and statistics are available to know their progression at any time, as well as explanations for every exercise to reinforce the theoretically acquired technical knowledge.

Innovative features:

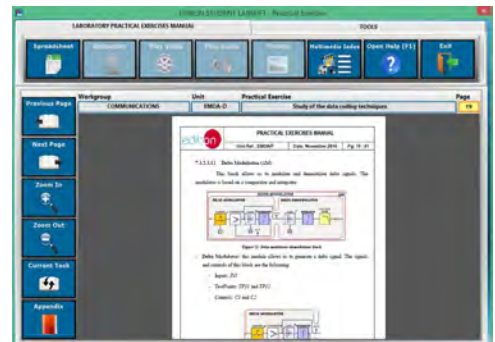
- Student Log-In & Self-Registration.
- Existing Tasks checking & Monitoring.
- Default contents & scheduled tasks available to be used from the first session.
- Practical Exercises accomplishment by following the Manual provided by EDIBON.
- Evaluation Methods to prove your knowledge and progression.
- Test self-correction.
- Calculations computing and plotting.
- Equation System Solver Engine.
- User Monitoring Learning & Printable Reports.
- Multimedia-Supported auxiliary resources.

For more information see ICAI catalogue. Click on the following link:

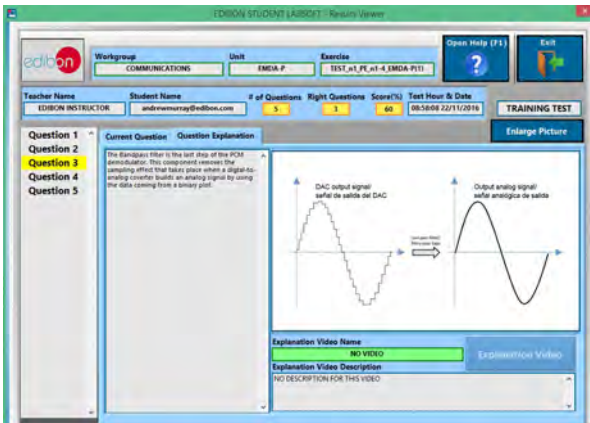
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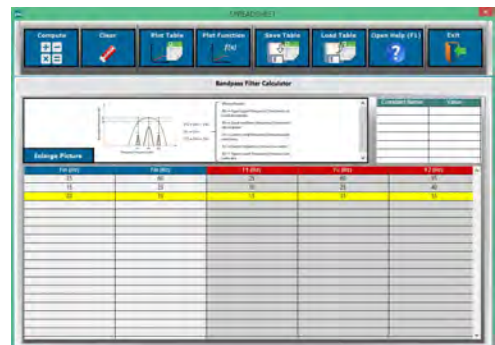
ESL-SOF. EDIBON Student LabSoft (Student Software) Application Main Screen



EPE. EDIBON Practical Exercise Program Package Main Screen



ERS. EDIBON Results & Statistics Program Package - Question Explanation



ECAL. EDIBON Calculations Program Package Main Screen

* Specifications subject to change without previous notice, due to the convenience of improvement of the product.



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REPRESENTATIVE:

