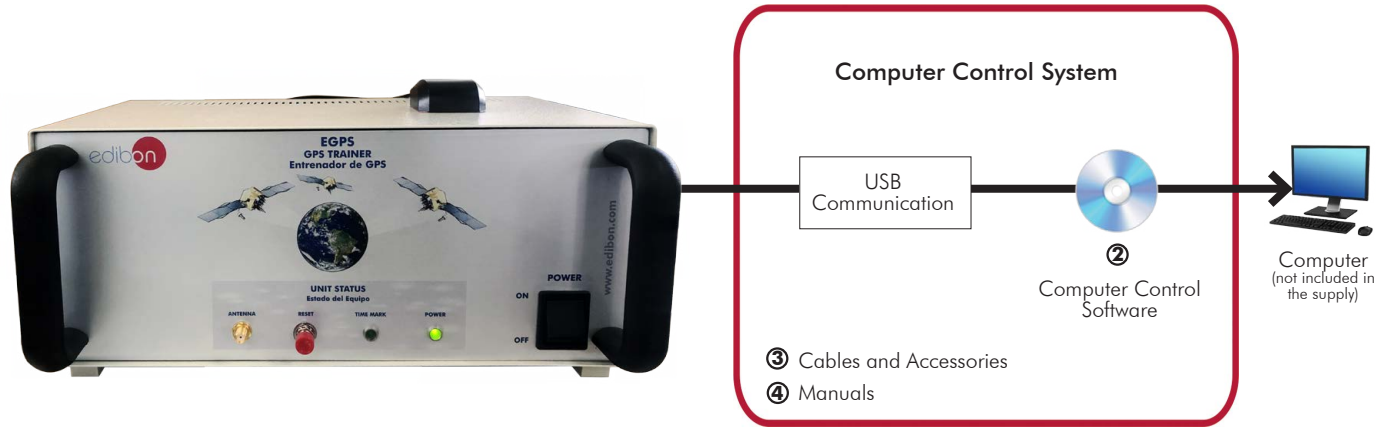
Engineering and Technical Teaching Equipment

GPS Unit

EGPS

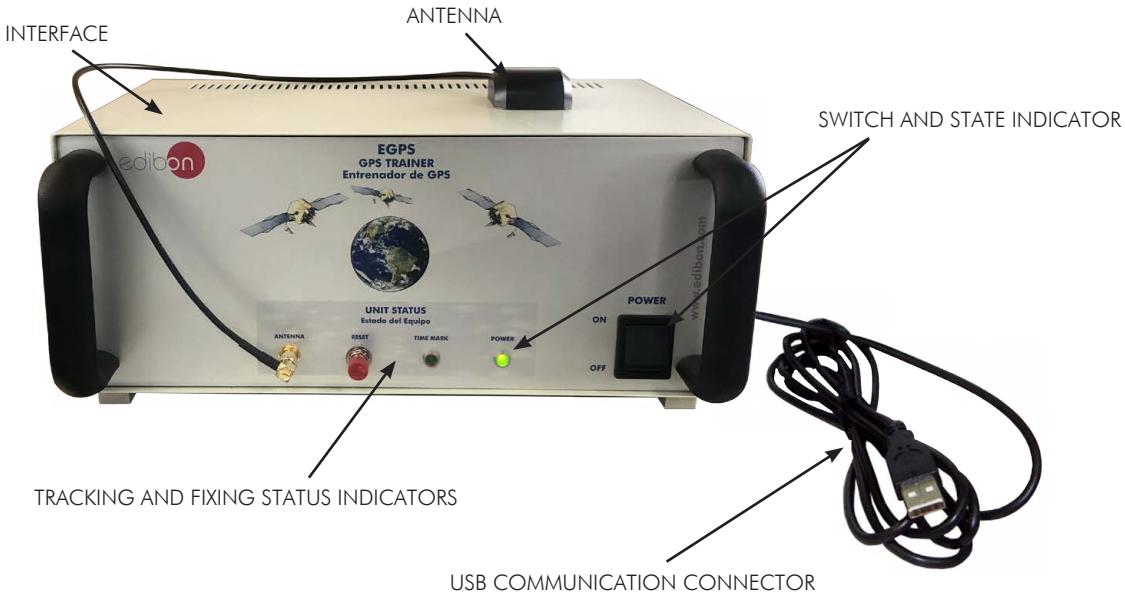
www.edibon.com
↳PRODUCTS
↳3.- COMMUNICATIONS



① Unit: EGPS. GPS Unit

*** Minimum supply always includes: 1 + 2 + 3 + 4**
(Computer not included in the supply)

UNIT ELEMENTS ALLOCATION



INTRODUCTION

Nowadays, there are many application fields for the positioning systems. They are used as an aid system to navigation, in the modelling of atmospheric and terrestrial spaces or applications that need high accuracy in the measurement of time. Some of the civil fields where GPS systems are currently used are the study of atmospheric phenomena and geological and topographic models, navigation and control of vehicles fleets, civil aviation systems and signals synchronization in the electrical industry.

GENERAL DESCRIPTION

The GPS Unit, "EGPS", designed by EDIBON, has been developed for the study of basic concepts about global positioning systems. The unit allows to acquire a solid knowledge about how a GPS receiver works, not needing any prior knowledge.

The "EGPS" allows the student to learn in an easy and practical way about the concepts and terms used in global positioning systems, such as trilateration, GPS starting modes, geographical azimuth, etc.

The unit mainly consists of two elements: the interface where the GPS receiver element is found, with a series of state indicators, and the antenna in charge of the reception of the signals from the satellites.

The communication between unit and computer is done through an USB connection. The unit is supplied with a cable of approximately two meters long which allows the student to place the "EGPS" receiver in an area far from the computer, where signals reception from satellites were suitable.

SPECIFICATIONS

①EGPS. Unit:

Metallic box with handles.

The "EGPS" unit mainly consists of two elements:

Unit-interface, which includes the GPS receiver element with a series of status indicators.

Antenna in charge of the satellites signals reception: antenna RF with magnetic base.

The communication between the unit and the PC is through a USB communication connector.

EGPS

The "EGPS" has a set of LEDs to indicate the unit status:

Switch and indicator of the unit status:

The ON switch serves to activate the unit. The LED indicates if the unit is operating. The "reset" button resets the receiver.

Tracking and positioning status indicators:

The "EGPS" has a LED to indicate the tracking and fixing status.

Active antenna with amplifier incorporated and magnetic base to be fixed to metallic elements. Anntena RF 50 Ohm with magnetic base. Gain: 28 dB.

Receptor 48 channels L1 Band (1575,42 MHz).

RF (Radio Frequency) sensibility reception:

Autonomous acquisition: -148 dBm.

Navigation: -163 dBm.

Tracking: -165 dBm.

Acquisition times:

Hot start TTFF < 1 sec.

Warm start TTFF < 35 sec.

Cold start TTFF < 35 sec.

Positional accuracy:

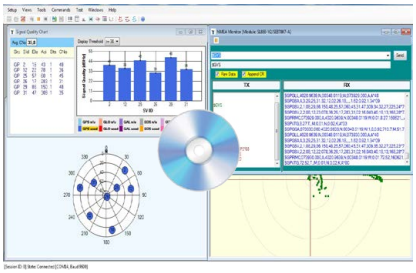
Autonomous positional error = 2.5 m.

②EGPS/CCSOF. Computer Control Software:

Compatible with the current Windows operative systems.

Intuitive and friendly environment.

Easy to use software to control and monitor the EGPS receiver. It uses the serial protocol of the National Marine Electronics Association (NMEA) version 1.83 to communicate with the unit.


EGPS/CCSOF

③Cables and accessories, for normal operation.

④Manuals:

This unit is **supplied with the following manuals:** Required services, Assembly and Installation, Interface and Control software, Starting-up, Safety, Maintenance & Practices manuals.

∗References 1 to 4: EGPS + EGPS/CCSOF + Cables and Accessories + Manuals are included in the minimum supply for enabling a normal and full operation.

EXERCISES AND PRACTICAL POSSIBILITIES

1.- Determination of the GPS state.
2.- Configuration of the communication parameters.
3.- Study of the signal-to-noise ratio (SNR).
4.- Study of NMEA sentences.
5.- Study of geographic azimuth.
6.- Basic concepts about navigation (measurement of longitude, latitude and altitude).
7.- Advanced concepts about the GPS receiver.

Additional practical possibilities:
8.- Study of the time.
9.- Study of the DOP effect.

REQUIRED SERVICES

- Electrical supply: single-phase 200 VAC – 240 VAC/50 Hz or 110 VAC – 127 VAC/60 Hz.
- Computer.

DIMENSIONS AND WEIGHTS

EGPS:
- Dimensions: 310 x 220 x 180 mm approx.
  (12.20 x 8.66 x 7.08 inches approx.)
- Weight: 3 Kg approx.
  (6.61 pounds approx.)

SIMILAR UNITS AVAILABLE

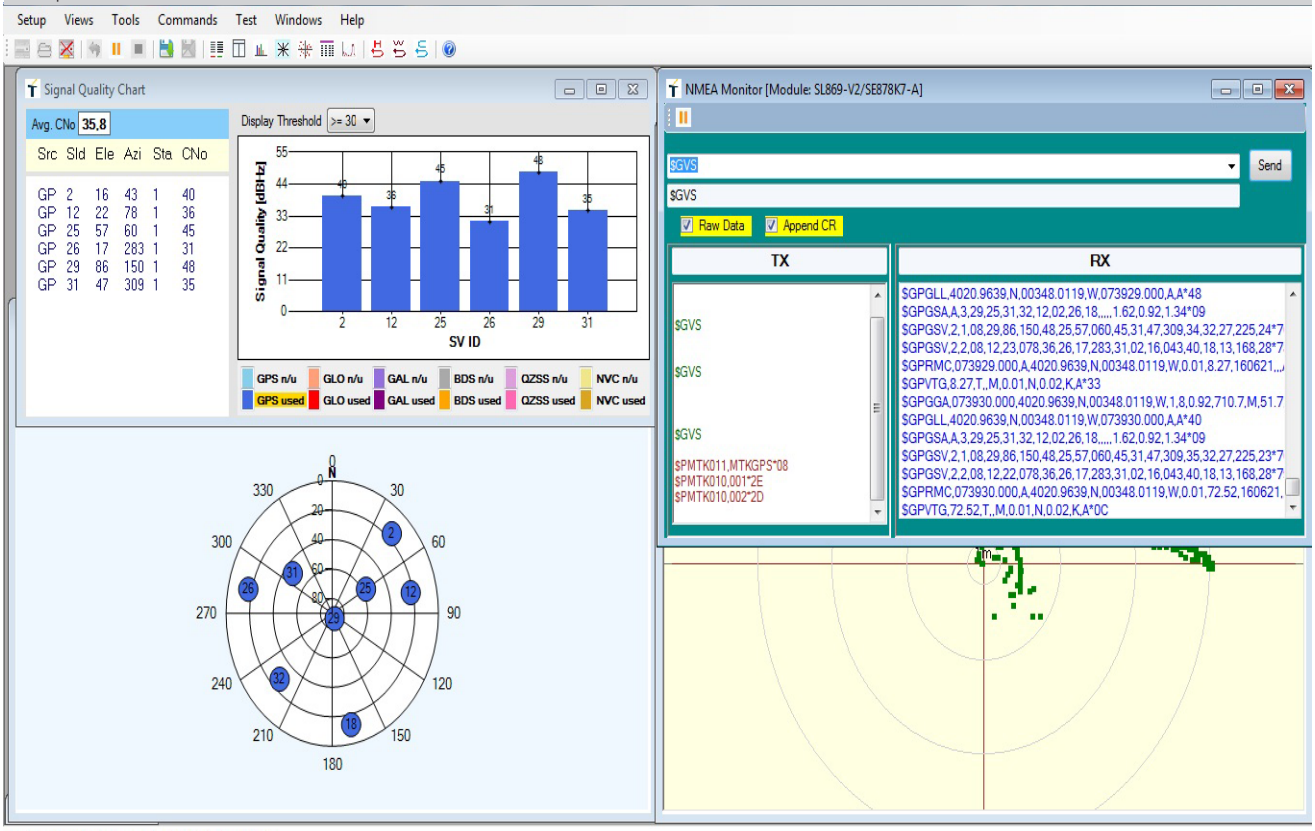
Offered in this catalog:

- EGPS. GPS Unit.

Offered in other catalogs:

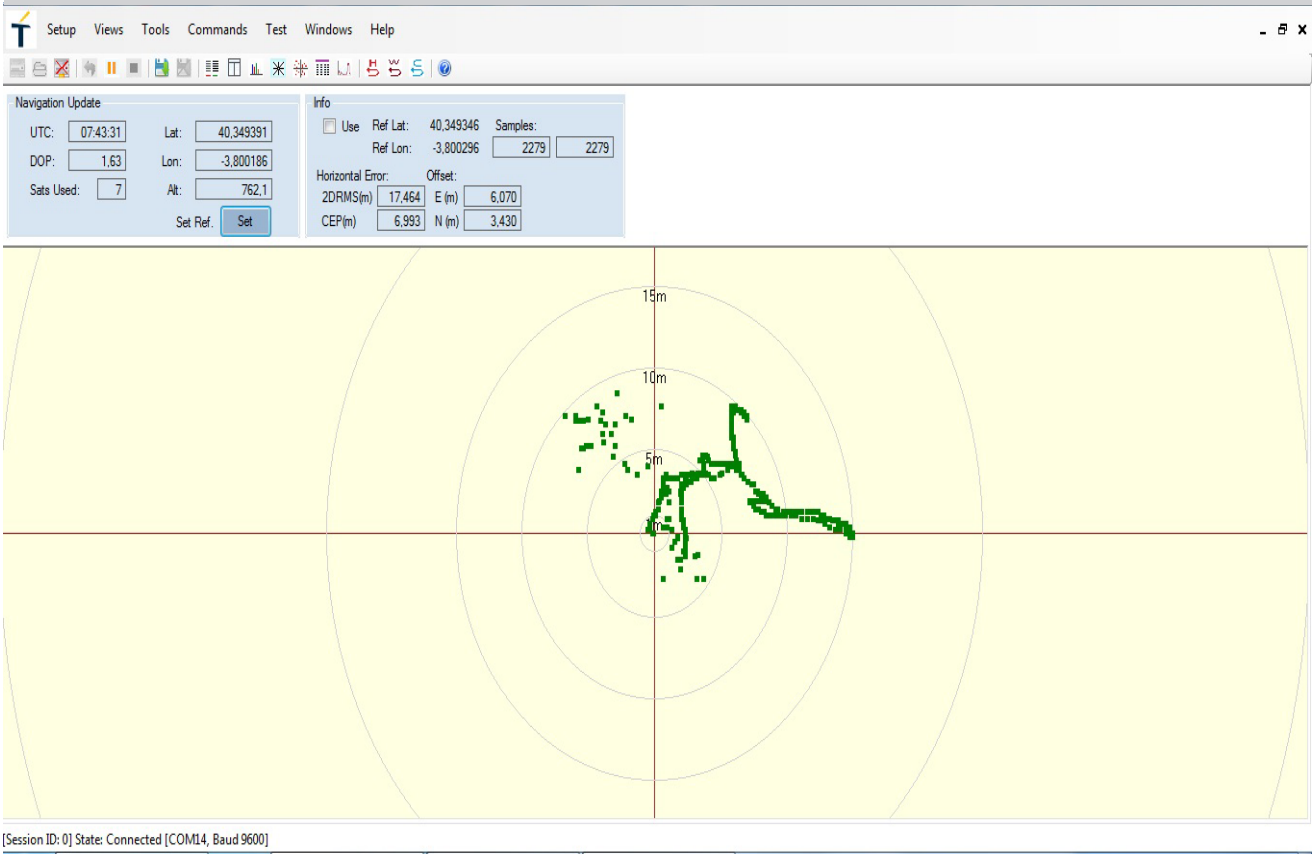
- ETM. Computer Controlled GSM Communications Unit.
- EBL. Bluetooth Unit.

Complete software visualization window.



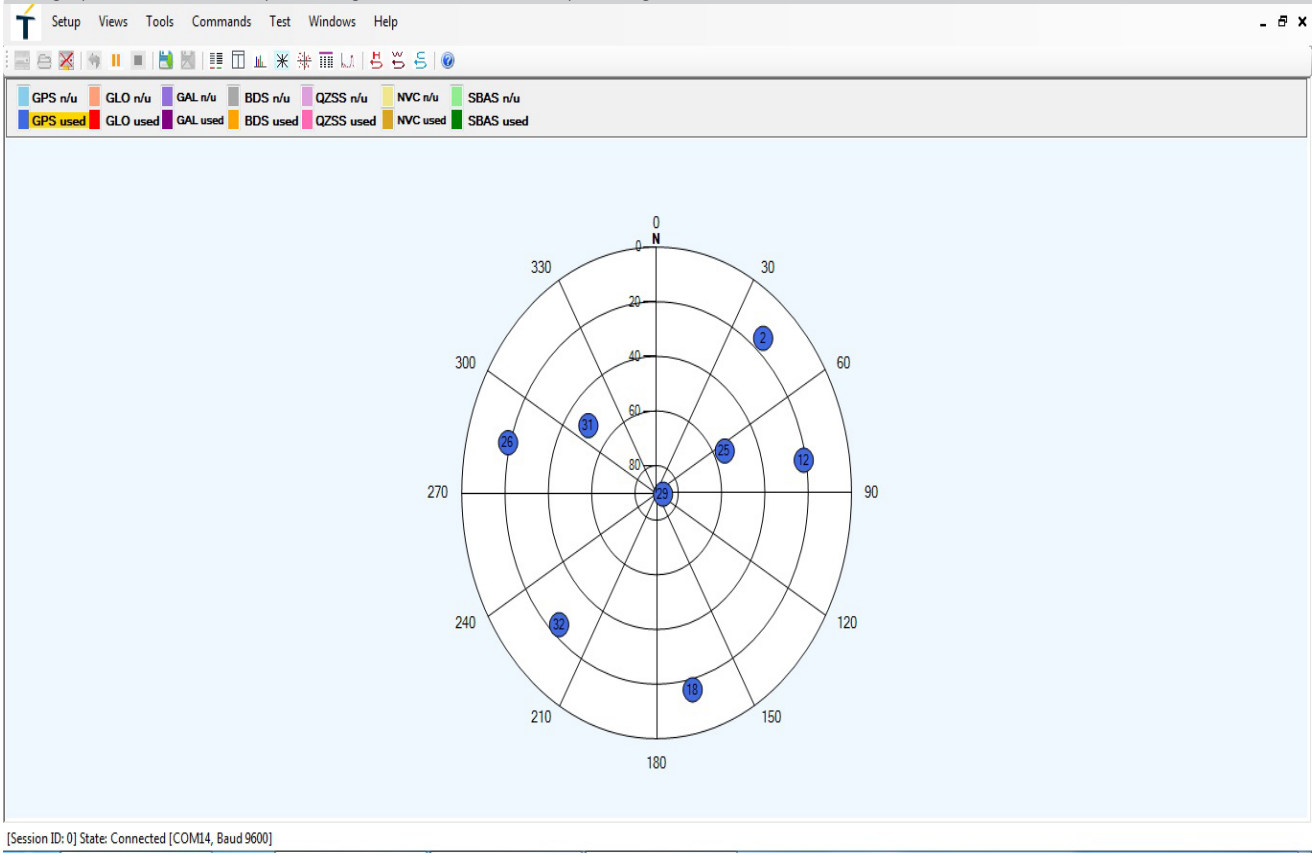
[Session ID: 0] State: Connected [COM14, Baud 9600]

Visualization of the detected satellites.

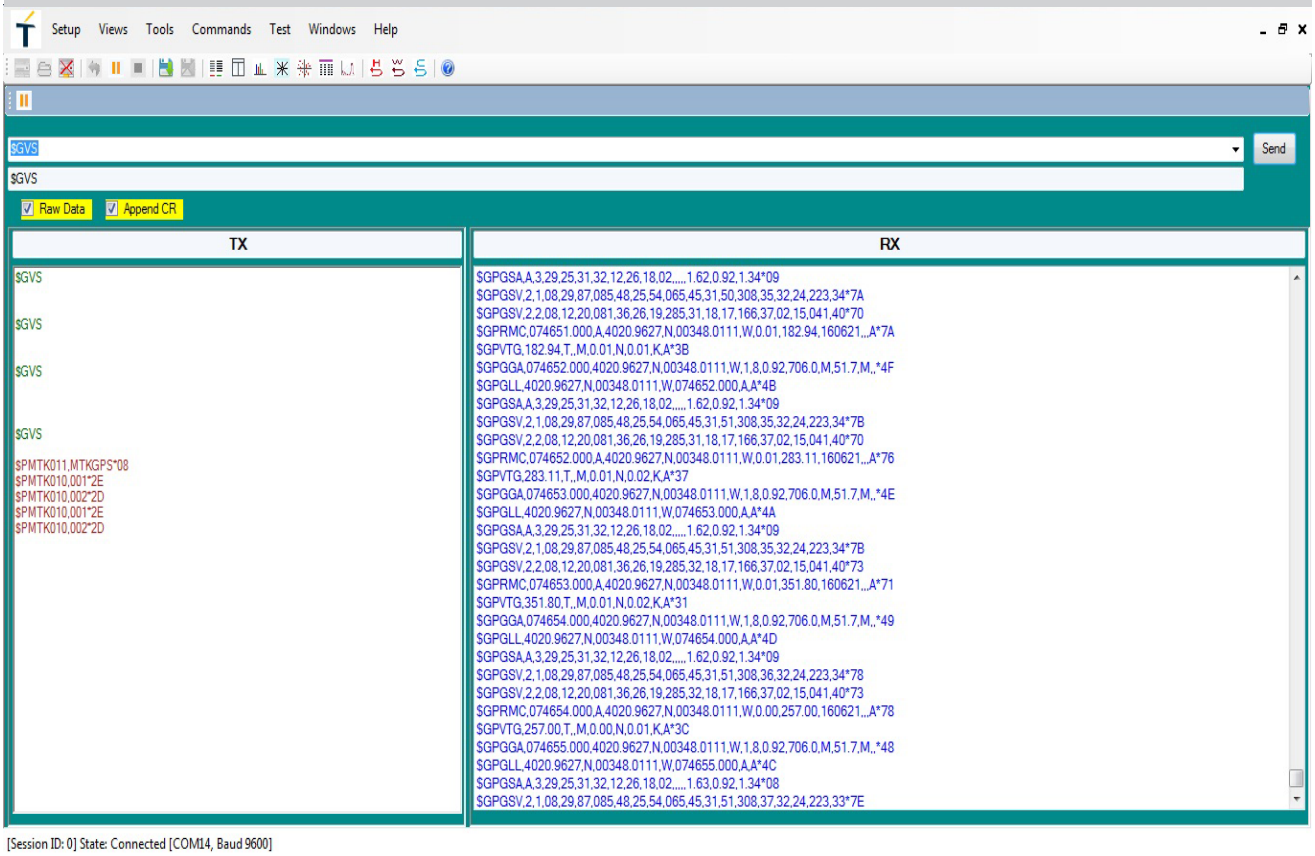


[Session ID: 0] State: Connected [COM14, Baud 9600]

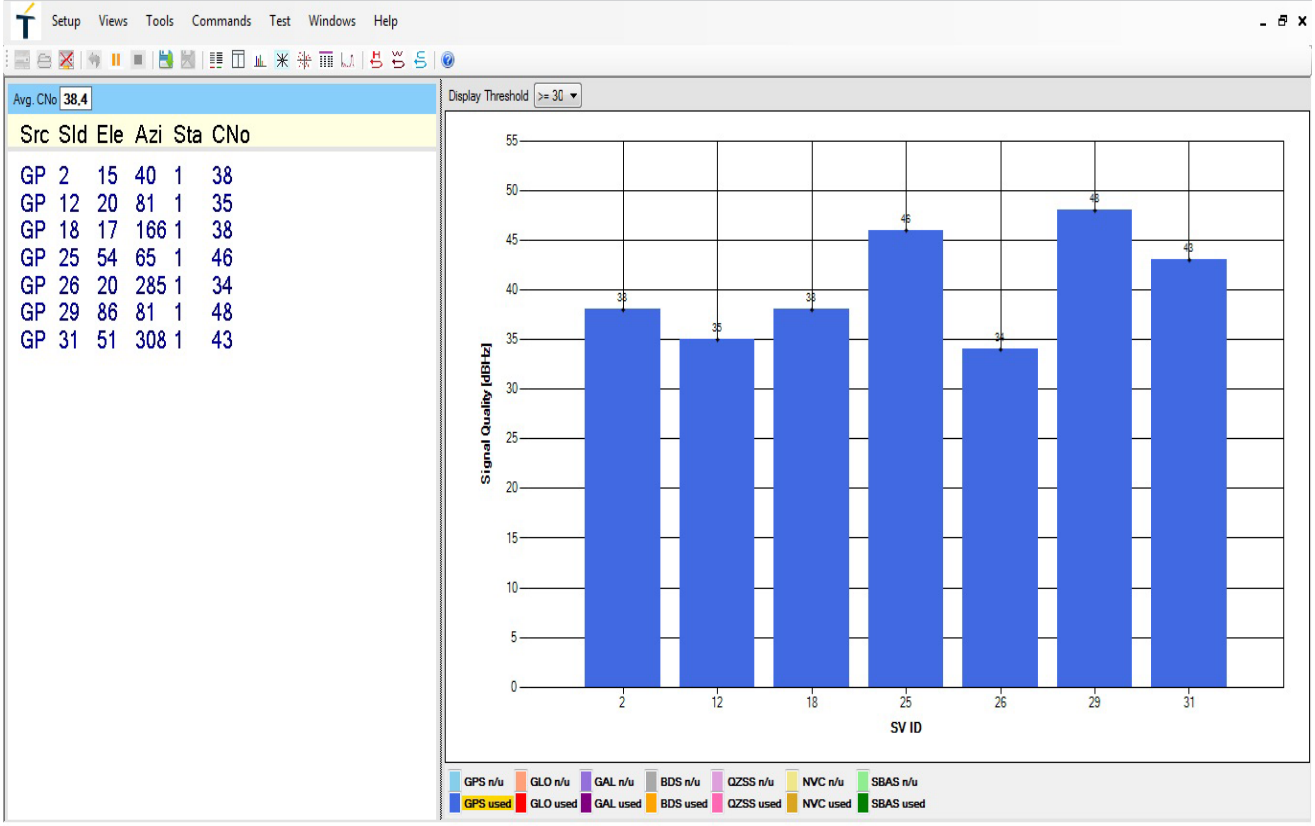
Geographic Azimuth for the positioning of the satellites on the plane together with its identifier, the Azimuth value and the altitude.



NMEA command window.

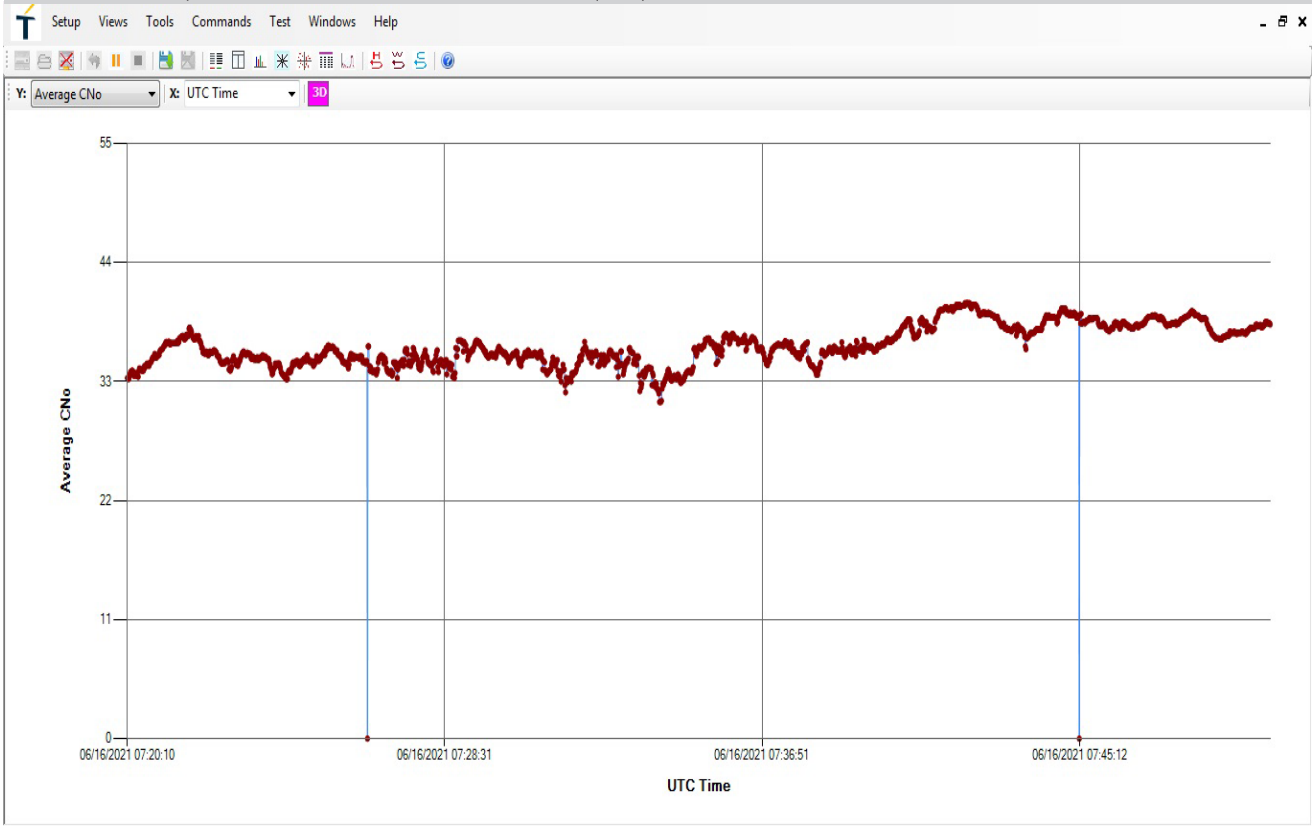


Display of the signal quality (dBHz) of the elements detected.



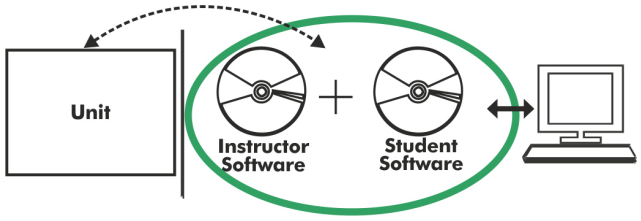
[Session ID: 0] State: Connected [COM14, Baud 9600]

Visualization and representation of saved data. The value of SNR (CNo) versus time.



[Session ID: 0] State: Connected [COM14, Baud 9600]

EGPS/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.

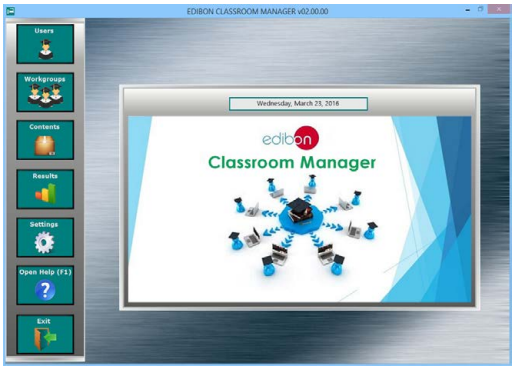
Instructor Software

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

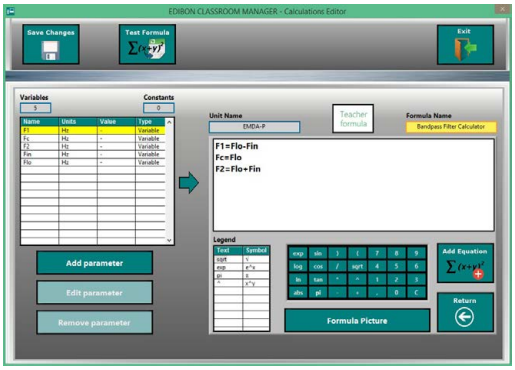
ECM-SOF is the application that allows the Instructor to register students, manage and assign tasks for workgroups, create own content to carry out Practical Exercises, choose one of the evaluation methods to check the Student knowledge and monitor the progression related to the planned tasks for individual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

Innovative features:

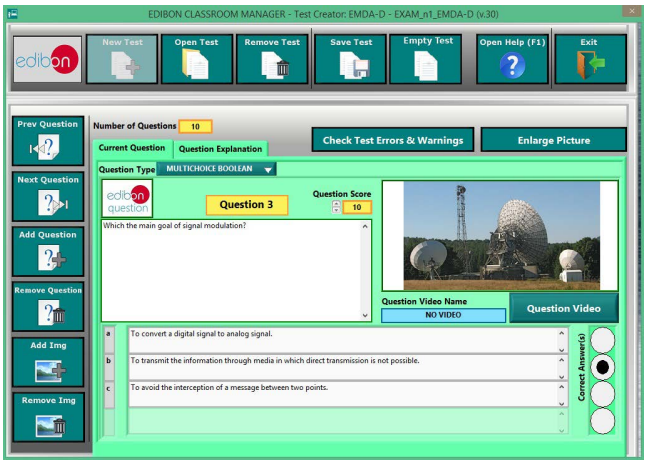
- **User Data Base Management.**
- **Administration and assignment of Workgroup, Task and Training sessions.**
- **Creation and Integration of Practical Exercises and Multimedia Resources.**
- **Custom Design of Evaluation Methods.**
- **Creation and assignment of Formulas & Equations.**
- **Equation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



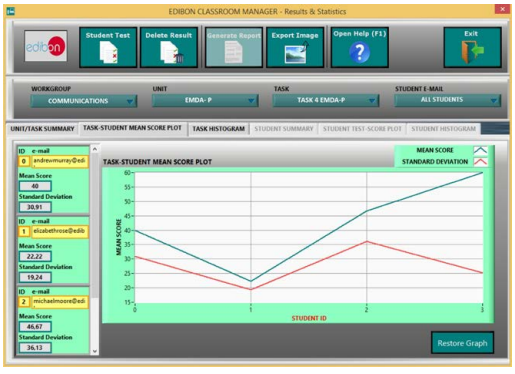
ECM-SOF. EDIBON Classroom Manager (Instructor Software) Application Main Screen



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.

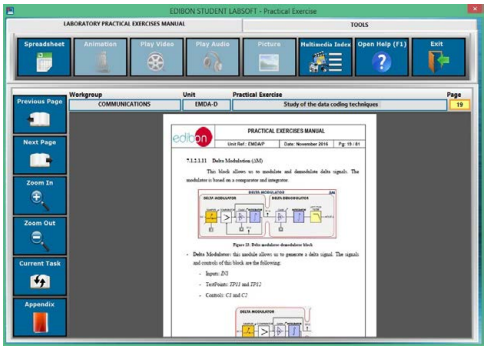
Innovative features:

- **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.**

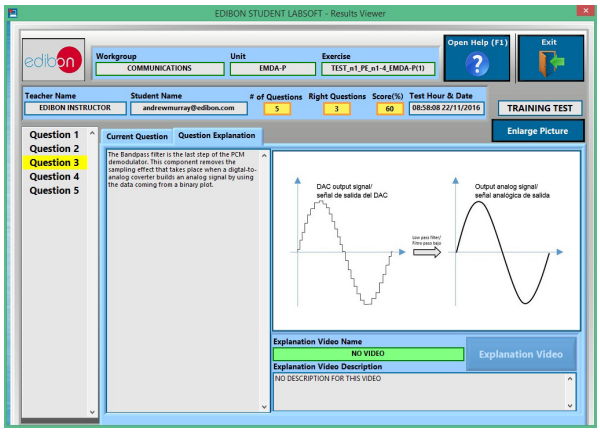
For more information see **ICAI** catalogue. Click on the following link:

www.edibon.com/en/interactive-computer-aided-instruction-software

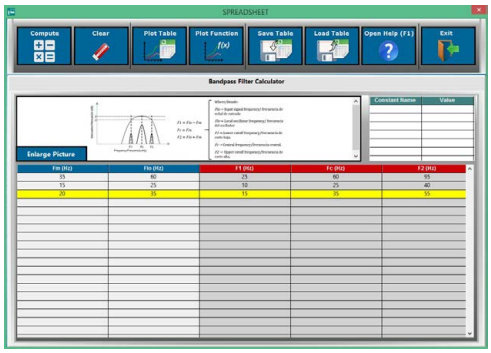
ESL-SOF. EDIBON Student LabSoft (Student Software) Application Main Screen



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.

C/ Julio Cervera, 10-12-14. Móstoles Tecnológico.
28935 MÓSTOLES. (Madrid). ESPAÑA - SPAIN.
Tel.: 34-91-6199363 Fax: 34-91-6198647
E-mail: edibon@edibon.com Web: **www.edibon.com**

Edition: ED01/24
Date: May/2024

REPRESENTATIVE: