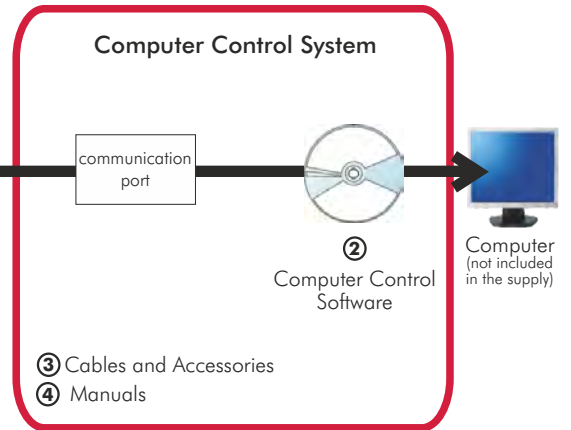




① Unit: ETM. Cellular Mobile Trainer



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

Key features:

- ▶ **Specialized EDIBON Control Software based on Labview.**
- ▶ **Projector and/or electronic whiteboard compatibility allows the unit to be explained and demonstrated to an entire class at one time.**
- ▶ **Capable of doing applied research, training courses, etc.**
- ▶ **Remote operation and control by the user and remote control for EDIBON technical support, are always included.**
- ▶ **Totally safe, utilizing 4 safety systems (Mechanical, Electrical, Electronic & Software).**
- ▶ **Designed and manufactured under several quality standards.**
- ▶ **This unit has been designed for future expansion and integration. A common expansion is the EDIBON Scada-Net (ESN) System which enables multiple students to simultaneously operate many units in a network.**

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INTRODUCTION

Mobile telephony is one of the most important development of the modern civilization. The Mobile telephony has a big impact in all fields of society; economy, human relationships, security, information, etc. The mobile technology increases the impact capability every time that a mobile service is available to the public. It is important to know how the operation of the main services that offers the Mobile telephony.

Cellular Mobile Trainer "ETM" is a complete unit to study the basic services of the mobile telephony. The ETM allows to perform the practical exercises with the local GSM network in order to understand how a real mobile network works.

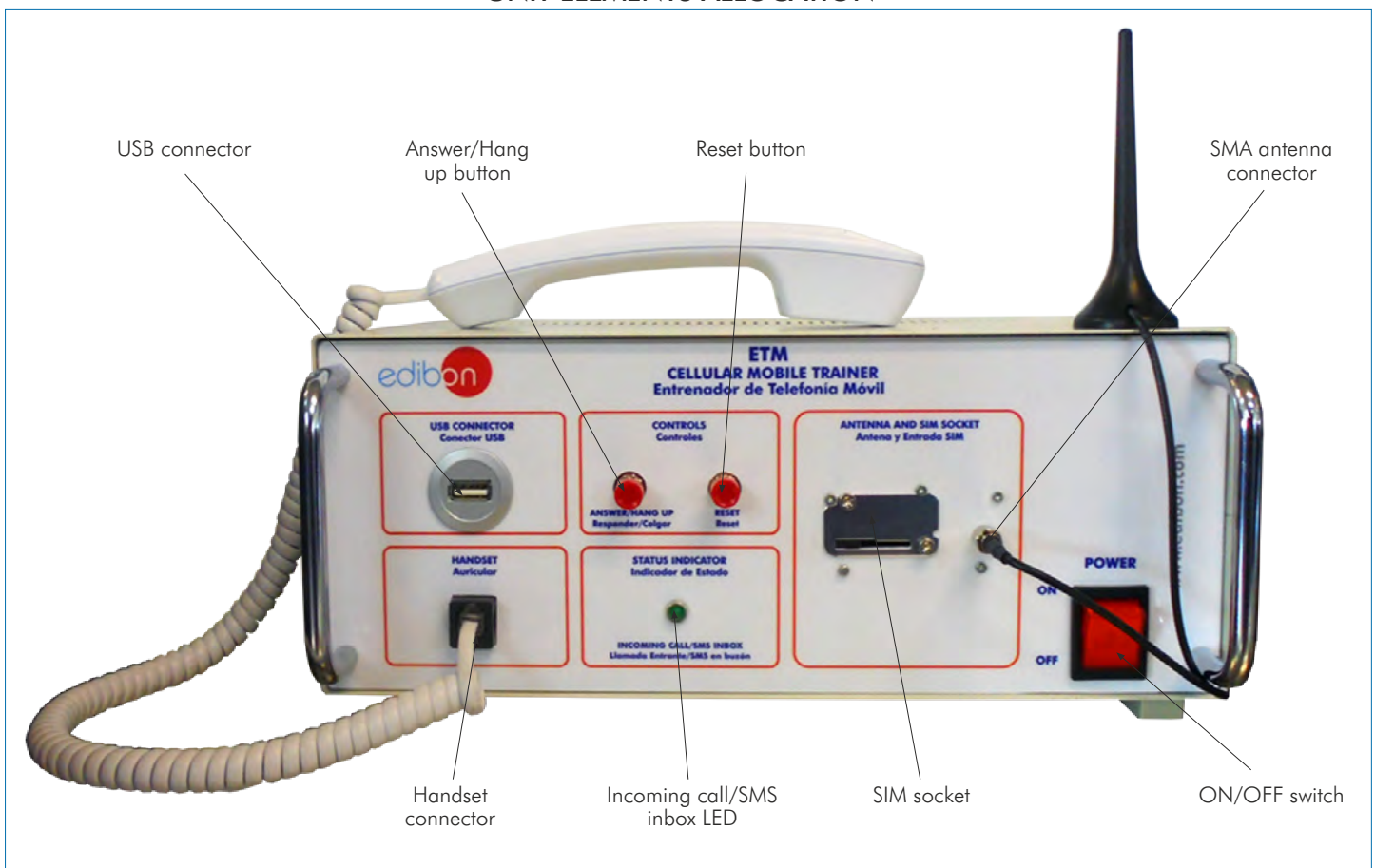
The ETM unit is provided with a set of practical exercises, through which the students will familiarize with the basic concepts of the mobile telephony. The students will understand the steps to use the basic mobile services as SMS technology, mobile call service, steps to connect and disconnect the GSM network, AT commands, etc.

GENERAL DESCRIPTION

The Cellular Mobile Trainer "ETM" operates in conjunction with a computer, which is connected with the ETM interface box through a USB connector. The ETM software allows the students to visualize in an easy way the AT commands sent and received to the SIM card to perform the different mobile phone services.

The ETM unit allows to use the basic mobile services and visualize the steps needed to it, through the computer. The ETM unit also allows to study the management of the SIM card memory for SMS inbox, phonebook, etc.

UNIT ELEMENTS ALLOCATION



① **ETM. Trainer:**

GSM transceiver:

850 MHz/900MHz:

E-GSM.

Out power: class 4 (2W).

Fully compliant with ETSI GSM phase 2 + normal MS.

1800MHz/1900MHz:

Out power: class 1 (1W).

Fully compliant with ETSI GSM phase 2 + normal MS.

GPRS class 10.

SIM interface 1.8/3V.

SMA main antenna.

Antenna and SIM socket:

SIM slot to SIM card.

SMA connector to GSM antenna.

GSM antenna:

GSM 900/1800.

Cable 2.6 mts.

Phone:

RJ-11 connector to telephone handset.

Telephone handset.

Two Controls buttons and status led indicator.

USB connector to computer.

The complete unit includes as well:

Specialized EDIBON Control Software based on Labview.

Projector and/or electronic whiteboard compatibility allows the unit to be explained and demonstrated to an entire class at one time.

Capable of doing applied research, training courses, etc.

Remote operation and control by the user and remote control for EDIBON technical support, are always included.

Totally safe, utilizing 4 safety systems (Mechanical, Electrical, Electronic & Software).

Designed and manufactured under several quality standards.

This unit has been designed for future expansion and integration. A common expansion is the EDIBON Scada-Net (ESN) System which enables multiple students to simultaneously operate many units in a network.



ETM. Trainer

② **ETM/CCSOF. Computer Control + Data Acquisition+ Data Management Software:**

Compatible with actual Windows operating systems. Graphic and intuitive simulation of the process in screen. **Compatible with the industry standards.**

Flexible and open software, developed with actual windows graphic systems.

Management, processing, comparison and storage of data.

It allows to visualize the communication with the SIM card through the command console of the ETM/CCSOF.

The software allows to configure the SIM card to establish the initial configuration, PIN code, speaker and microphone volume, etc.

The ETM/CCSOF allows to send and receive calls and to send and receive SMS.

This unit allows the 30 students of the classroom to visualize simultaneously all the results and the manipulation of the unit, during the process, by using a projector or an electronic whiteboard.



ETM/CCSOF

③ **Cables and Accessories**, for normal operation.

④ **Manuals:** This unit is **supplied with the following manuals:** Required Services, Assembly and Installation, Control Software, Starting-up, Safety, Maintenance & Practices Manuals.

* References 1 to 4 are the main items: ETM + ETM/CCSOF + Cables and Accessories + Manuals are included in the minimum supply for enabling normal and full operation.

EXERCISES AND PRACTICAL POSSIBILITIES

- 1.- Familiarization with the trainer.
- 2.- Configuration and study of the mobile phone parameters.
- 3.- Study of the call process.
- 4.- Study of the answer and hang up processes.
- 5.- Study of the SMS reception and SMS reading processes.
- 6.- Study of the SMS sending process.
- 7.- Configuration of the audio and frequency bands.
- 8.- Knowledge of AT commands using the command console.
- 9.- Analysis of a mobile phone status and SIM card.

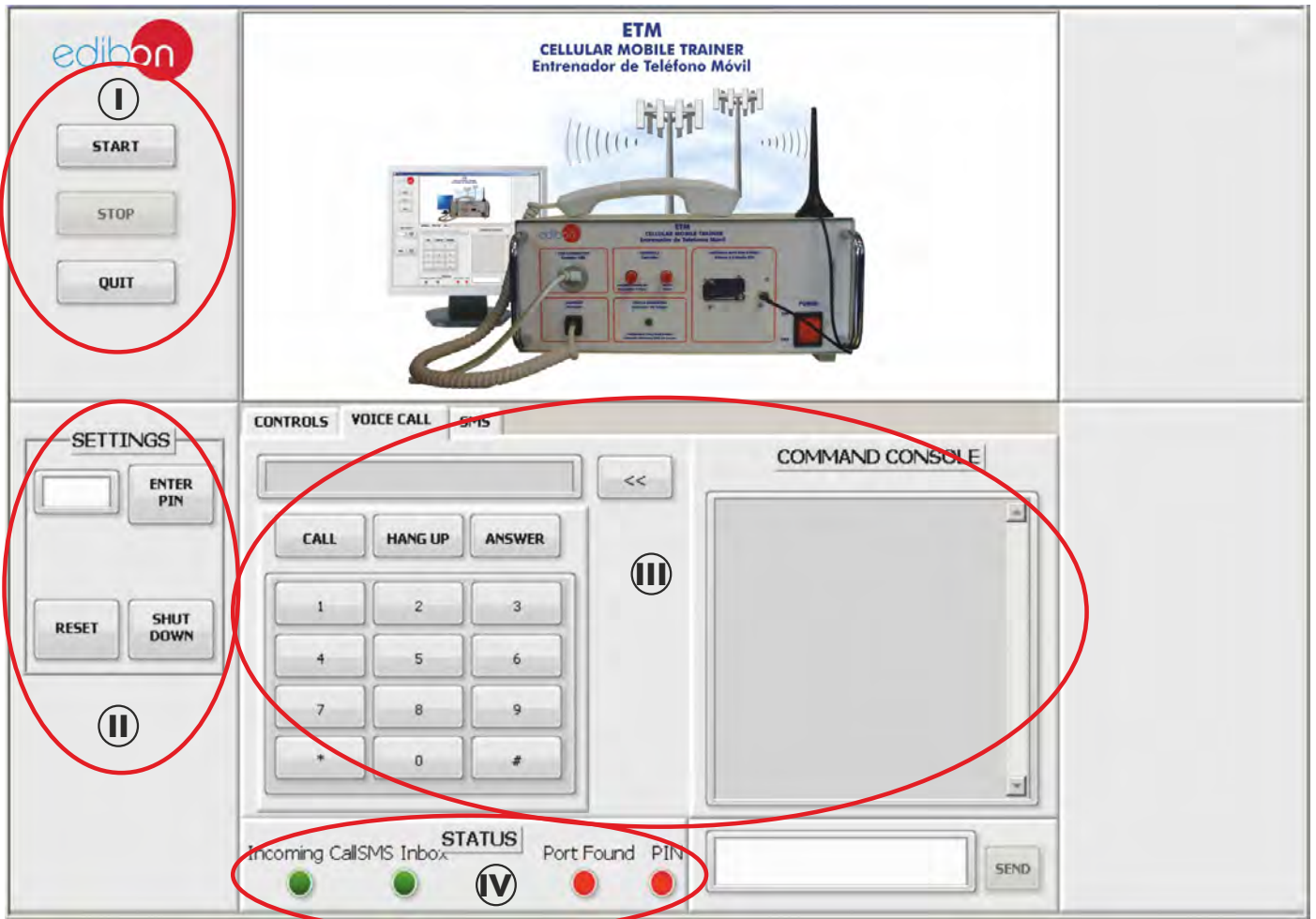
REQUIRED SERVICES

- Electrical supply: single-phase, 220V./50Hz or 110V./60Hz.
- Computer.
- SIM card: GSM TS 11.11.

DIMENSIONS & WEIGHTS

- Dimensions: 310 x 220 x 145 mm. approx.
(12.20 x 8.66 x 5.70 inches approx.).
- Weight: 3 Kg. approx.
(6.6 pounds approx.).

Main screen



- ① Main software operation buttons.
- ② Pin box, Reset button and Shut Down button of the SIM card.
- ③ Operation buttons and the command console for controls, voice call and SMS.
- ④ Status indicators.

SOME REAL RESULTS OBTAINED FROM THIS UNIT

The screen below shows the AT commands in the incoming call procedure.



The screen below shows the AT commands to send a SMS.



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



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