

TELEPHONY TRAINING SYSTEM

The Telephony Trainer ET-836 is an educational integral system destined to the learning of the theory and the practise of PABX stations, the indoor telephony networks and the telephony systems, as well as to the development of the skills of installation and assembly.

This is a fully configurable trainer, based on a white slate support with removable universal panels of fast fixation, composed by the following elements:

- Last generation of PABX station, with 2 external analogue lines, 4 indoor analogue lines and 4 ISDN lines (basic access So: B+B+D).
- Urban Central module (which incorporates tariffication circuits controlable the user) that provides 2 external lines, simulating an urban analogue central telephone office, and allows the generation of failures.
- Canalisation Module that allows the generation of failures on the internal telephone lines and the variation of its parameters.
- Telephone distributor, for the interconnection and allocation of lines.

Also telephone bases for the connexion of the analogue terminals and RDSI are included, cables, connectors and tools to implement any typology of telephony network.

The fast fixation universal panels have their surface grooved, of



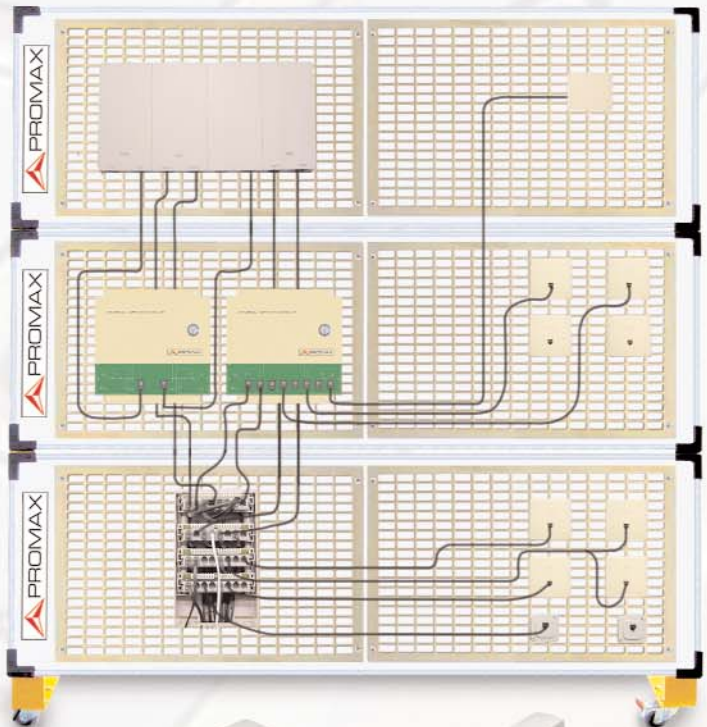
such form that the disposition of the drills combined with the positioning of the nuts allows the fixation of all the provided elements, with the exception of the telephone terminals.

Each one of the ET-836 modules has an active block diagram, with telephone connectors and points of test, that allow the connexion of telephone lines and the terminals. In the test points the telephone signals can be observed, to analyse their different states and to measure their parameters. Also they allow the study of the typical errors of wiring.

PABX station can be connected to a PC, via modem or directly, through Software of Programming and Configuration. From the PC, running under Windows OS, the student can manage, analyse and set the operation of PABX station. Software also can run off-line so that they can be made practices of programming in any PC with no need of the trainer.

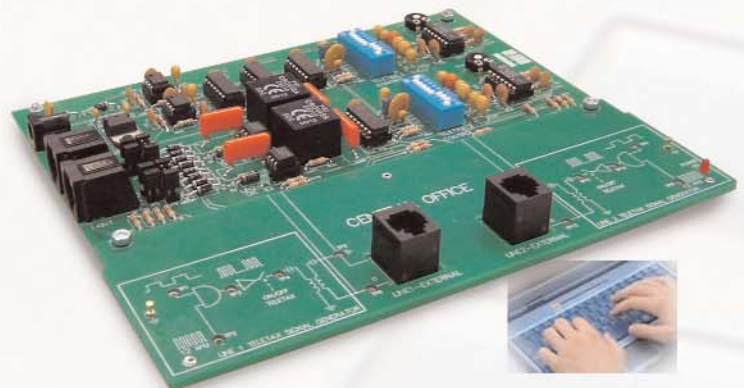
The Urban analogue telephone station module, simulates the external analogue lines of a public telephone station, so that they can be generated external calls or to receive outer calls independently, with no need to require of the hiring of real telephone lines. This module incorporates two circuits of impulses generation

for the management of the tariffication of the external calls and in which different situations are simulated, also diverse parameters can be altered so that the student observes the effects.



The Canalisation module allows generating failures on the analogue lines and ISDN, of the indoor telephony network, as well as to vary its parameters and to enter diaphonies.

In addition, from a PC, also different failures in PABX station can be introduced. The software provided also allows that the teacher can design new failures.



The trainer is provided with an installation mounted and set, so that the equipment is fully operative from the first day, with no need to carry out neither connexions nor commissioning.

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GENERAL FEATURES

Last generation of telephone station ISDN/analogue.

No. external analogue lines: 2.

No. internal analogue lines: 4.

No. internal basic accesses So (B+B+D): 4 (it allows the connexion up to 8 independent ISDN extensions).

Programming and configuration of the telephone station through PC.

Simulation of an Urban analogue telephone station and the circuits of tariffication.

Telephone terminals:

- 1 ISDN terminal with alphanumeric display.
- 2 analogue terminals.

Distributor.

- Composed of 5 circuits, equipped each one of them with 8 connectors RJ-11 (of 6 contacts) and 2 strips for inserting with 8 contacts, allowing the connexion of 20 ports.

Active block diagrams with test points and telephone connectors, including:

- Urban analogue telephone station (2 lines).
- Tariffication circuits.
- Canalisation.

Simulation of failures in the following subsystems:

- Urban analogue telephone station.
- Tariffication circuits.
- Telephone station ISDN/analogue.
- Canalisation.
- Telephone terminals.

Composition of Telephone station ISDN/analogue

- Process Unit (CU):

- CPU 80186 ES 16Bit Processor at 40 MHz
- 4 MB Flash EPROM (program memory).
- 1.5 MB Flash EPROM (data memory).
- 4 MB SRAM (work memory).
- Modem according to CCITT V21.

Power supply: 220-240 V, 50-60 Hz.

ISDN Internal lines

- 4 Basic Accesses So (CCITT I.430) stimulus mode (B+B+D).
- Possibility of connexion to a same basic access of 2 RDSI terminals with different subscriber number.
- Power supply for terminals (- 40 V).

Internal Analogue lines.

- 6 analogue lines (4 available for the user and other 2 lines are used to internal effects).
- Dialing by impulses or multifrequency.
- Supply current 20..40 mA.
- Calling voltage 35..42 Vef
- Polarity inversion of the power supply.
- Detection of loop current (flash, hung, active).

External Analogue lines.

- 2 analogue lines.
- Dialing by impulses or multifrequency.
- Temporary Commutation from impulses to multifrequency.
- Flash signaling.
- Detection of polarity reversion a/b with evaluation of loop current.
- Tariffication 12 kHz.
- Detection of calling current with frequency evaluation and level.
- Galvanic Isolation towards the network.
- Protection against polarity reversion and over voltages.
- Network failure circuit with direct connexion of the subscriber to the urban line.

Included elements

- Telephone terminals:

- 1 ISDN terminal with alphanumeric display.
- 2 analogue terminals.

- Documentation (in CD-ROM).

- User's Manual.
- Exercise Manual.
- Teacher's Manual.
- Technical Documentation about telephone station analogue/ISDN.

- Accessories:

- Tool for connector's assembly.
- Telephone Cable.
- RJ11 and RJ45 connectors.
- Insertion tool.
- Set of interconnection cables.
- Telephone Bases of wall type RJ11 and RJ45.
- Cable connexion series telephone station-PC
- Nuts and screws of fixation for the universal panels of fast fixation.
- Labelling.

- Software.

- Software of Programming and Configuration of PABX station - for Windows (available in the following languages: Spanish, English or French).
- Setup Software.
- Software of Failures.