

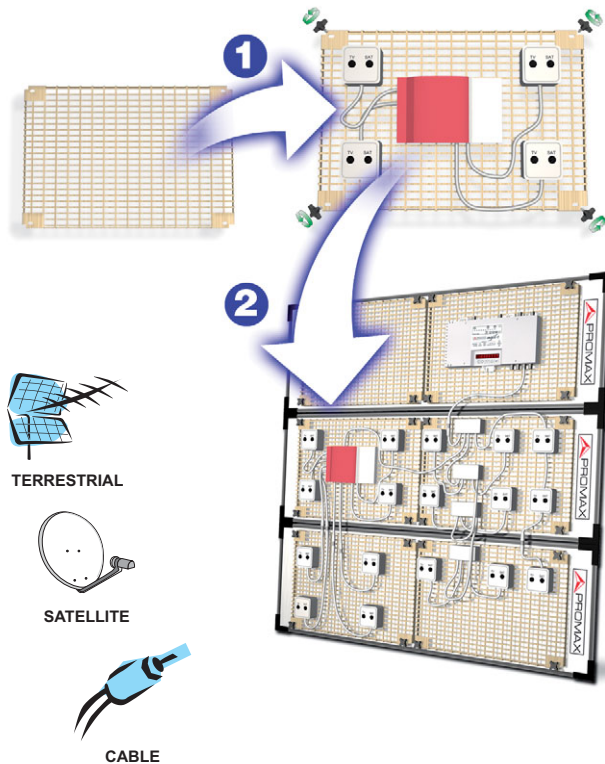
Universal Advanced Antenna Trainer

The Antenna Trainer **EA-817A** is a comprehensive education system designed for teaching, demonstration and experimentation about the theory and practice of telecommunications infrastructure installations:

- **MATV** (Master Antenna Television) Digital
- **SMATV** (Satellite Master Antenna Television) Digital

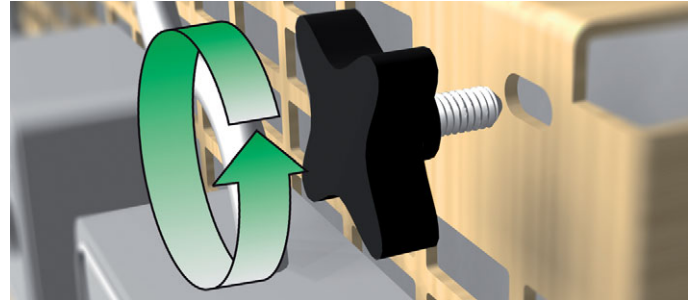
and the development of skills to install and assembly.

It is a fully configurable trainer, based on a structure with whiteboard panels, each one consisting of two universal boards quick-fixing and removable. It allows the student to install, configure, adjust, modify and analyse any kind of actual **MATV** and **SMATV** installation.



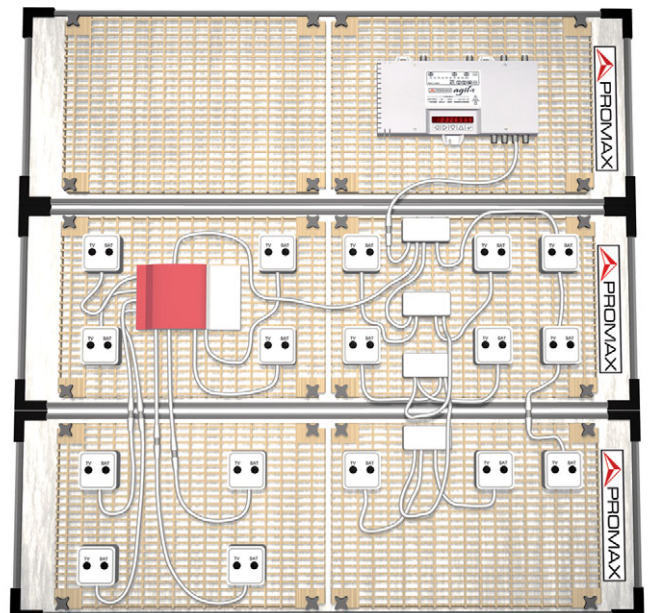
The universal boards are easily removable from panels, so the installation proposed by the teacher can be divided among several groups of students. Then, each group can assemble a different part of the installation in his workstation, allowing the simultaneous use of the trainer by numerous students, without interfering with each other. After assembling the various elements that comprise the proposed installation, boards are fixed on the whiteboard support and then remaining interconnections are made, and if it is necessary, the headend equipment is programmed.

The dry-erase whiteboard panels allow the teacher to draw the system configuration (for receiving, amplifying and distributing) that he wants to be implemented by the students and also he can write down some interesting observations. On the other hand, the students can write down the measures obtained directly on the whiteboard in order to make easy the collection of intuitive parameters such as the attenuation.



The universal quick-fixing boards have a grooved surface. Thanks to this surface and the position of its holes and special supplied locking nuts it is easy to fix different elements that make up an installation. After finishing the practice, the implemented installation can be taken apart quickly, so the trainer will be ready to assemble again another installation.

The trainer is supplied with a real installation, which is assembled and configured, so the equipment is operative from the first day, without having to make connections or settings.



The flexibility of the trainer allows the student to test and verify the effectiveness of different solutions to the proposal installation. The trainer can also simulate failures, errors and the most common problems that a student will find in a real installation.

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Together with the trainer a high definition (HD) terrestrial television and satellite receiver is provided, which also allow going further with subjects related to high definition and video compression (MPEG-2 and MPEG-4). A signal generator for the analysis of the IF band at installations and some accessories to point antennas are also included.

Coaxial cable, a tool for coaxial cable, connectors and fasteners are included in order to implement other types of installations or to modify the existing one. It is also provided the Theory and Practice Manuals and a technical manual about the elements that make up the trainer.

The trainer, if desired, can be expanded in the future with other modules to explore in more detail the new technologies and ultrafast access infrastructures (DVB-S2, transmodulation, TDT Premium, IPTV, Fiber Optics, FTTx ...). It can also be completed with an advanced transmission unit that has very interesting practices about DTT real signal transmission, such as TDT signals propagation, Gap-Fillers, transport stream (TS) creation, familiarity with PID, PMT NID, configuration and testing of modulation parameters and so on.

ANTENNAS

- UHF Antenna
- Off-set Antenna composed by:
 - Reflector
 - 4 outputs LNB (H/L, V/L, H/H, V/H) with polariser
 - Accessories: LNB and fasteners

MECHANICAL ACCESSORIES

- 150 cm mast for terrestrial antenna
- 80 cm mast for off-set antenna
- Mobile support for antennas

HEADEND EQUIPMENT

- MATV (integrated into a single module):
 - Set of 10 UHF programmable filters
 - VHF and FM amplifier
 - Power supply unit

COLLECTIVE and INDIVIDUAL MATV DISTRIBUTION

- Splitter
- Taps
- User Access Point
- Terminal box
- Terminal box cover
- Socket divider

COLLECTIVE and INDIVIDUAL SMATV DISTRIBUTION VIA IF

- Switchable splitter, with internal amplifier
- IF sockets

USER EQUIPMENT

- High Definition Terrestrial and Satellite digital television receiver (COFDM, QPSK) with MPEG-2 and MPEG-4 combo

ACCESSORIES FOR ANTENNA POINTING

- Inclinometer
- Compass

ACCESSORIES, CABLES AND TOOLS

- Reel of coaxial cable (25 m.)
- F male connectors (100 pcs)
- TV male connectors (25 pcs)
- TV female connectors (25 pcs)
- Tool for coaxial cables
- Whiteboard markers (2 pcs)
- Nuts and screws for quick mounting on universal panels

INSTRUMENTATION

- Simulator for Intermediate Frequency (**RP-050**)

DOCUMENTATION (on CD-ROM):

- Theory and Practice Manual for Intermediate Cycle
- Trainer's User's Manual
- Technical Documentation
- Assembly Instructions

RECOMMENDED INSTRUMENTATION

- Signal generators (GV-998, GV-898+, GV-798, GV-698+)
- Field Meters (TV EXPLORER, TV EXPLORER **IIII+**, **HD** and **HD+**)
- Test signal Generator (RP-110)
- COFDM Modulators (MO-170)
- DTTV Headend (Digital to TV)