

Systems & Projects

CATV automatic measurement system

System description

The goal of this CATV test system is to measure certain parameters of CATV equipment. This equipment can be active (amplifier) or passive (cable, cable splice, equaliser, filter, galvanic isolator, power injector, receiver lead, splitter, subscriber tap, system outlet, terminating resistor, transfer point).

The measurement equipment required for these tests are a network analyser (ZVRE), a spectrum analyser (FSEA30), an NRVS power meter including a probe NRV-Z3 and a noise source (NC 346). Additionally needed are 50/75 ohm matching PADs (RAM). Two separate DC-power supplies are integrated for powering the DUT, the RF relays and noise source.

To ensure easy operation, a dedicated RF-path switchbox has been designed and build. In this way, the Device Under Test has to be connected only once to the measurement system. All needed connections to the measuring equipment are then switched automatically.

A temperature logger handles temperature dependent noise-source corrections.

For measurement automation, an industrial controller type PSP2, with external VGA-screen PMC4 is built in.



Hardware

The system is built into a 19" rack. The DUT can be placed on the easy retractable slide table, which is integrated in the rack.

On the backside of the rack, a 220V-inlet, with a fuse, an RCD and an emergency stop is foreseen. Both external RS-232 and IEEE488 connections are foreseen for controlling external measurement equipment (e.g. a multi-carrier generator).

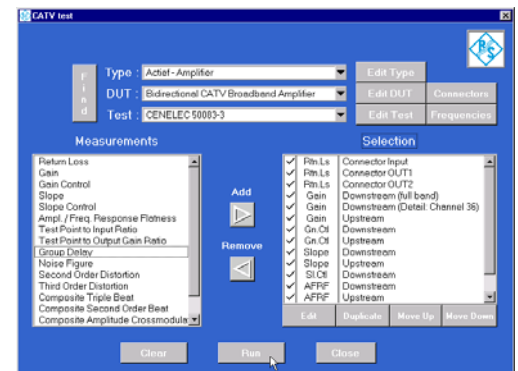


Software

The software has been written in Labwindows/CVI and provides a graphical user interface. The software has all the functionality for automated testing of CATV-equipment according to the EN50083-3 and EN50083-4 standards (gain, return loss, slope, amplitude/frequency response, group delay, noise figure, TOI, SOI, cross-modulation, ...).

All measurement parameters and test set-ups are put in an ODBC database. New measurement equipment definitions can always be added, including pre-set parameters.

The test-result is a text-file for each test that has been completed. These results can later be imported in a standard word processing tool.



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