ECT Tester – selection of currently available tests suites

G.168/97 Echo Canceller Conformance Test Suite

Despite being superseded by G.168/2002 this test suite can be used for testing legacy Echo Cancellers

G.168/2000 Echo Canceller Conformance Test Suite

Despite being superseded by G.168/2002 this test suite can be used for testing legacy Echo Cancellers. See detailed description of the features and table of available tests in the following paragraphs.

G.168/2000 Viewer

This software distributed free of charge to all ECT users allows viewing and analysis of G.168/2000 results (including plots) off line on any PC with Windows 9x operating system. These results can be easily sorted and pasted into any report format.

G.168/2002 Echo Canceller Conformance Test Suite

This test suite provides the latest up to date implementation of the G.168/2002 ITU-T Recommendation including changes made to the Implementer's Guide during the last ITU meeting in January 2003.

G.168/2002 Viewer

This software distributed free of charge to all ECT users allows viewing and analysis of G.168/2002 results (including plots) off line on any PC with Windows 9x or 2000 operating system. These results can be easily sorted and pasted into any report format.

G.164/165 Echo Canceller Tone Disable Conformance Test Suite

This fully automated Test suite performs extensive performance tests of the Tone Disabling feature of the Echo Canceller according to the G.164 and G.165 Recommendations. Parameters such as frequency, phase reversal period, and phase reversal angle, are tested to the limits of their specified range. Tests are also performed to ensure that disabling does not occur if the phase reversal angle is too far removed from 180 degrees, i.e. the angle lies within a range specified for non-activation of the tone disabler. All these tests are performed at both a high signal level and the specified minimum signal level for tone disabling, and with various signal-to-noise ratios.

G.169 Automatic Level Control Conformance Test Suite

This fully automated Test suite performs extensive tests of the performance of the Automatic Level Control Devices according to the G.169 Recommendation.

Subjective testing of Echo Cancellers using ITU-T or customer specified Network conditions

Subjective testing is arguably the most important factor in assessment of the Echo Canceller. This fact is very often underrated by the manufacturers and TELCO's partly due to the laborious testing process and partly to the lack of adequate skills and equipment.

The ECT Tester is unique in providing all necessary tools to perform this task.

Using the dialogue boxes the user can manipulate the echo path generator with its three independent branches, change gain, include network impairments and listen to the effects using the supplied calibrated four-wire telephones or a microphone and loudspeaker. A central office card can also be connected allowing subjective testing using standard two-wire telephones.

Subjective testing of Echo Cancellers and VQE devices in real Mobile and PSTN network condition

This extension of the subjective testing suite allows connection of the Echo Canceller under test to real PSTN or Mobile networks using a built-in ISDN interface.
This test mode can be specially useful to demonstrate the advantages of Echo Cancellation (EC), Noise Reduction (NR) or Voice Quality Enhancement (VQE) features almost in the boardroom environment.
The demonstration can be done in two primary ways for greatest effect of presentation.

- Mobile to Mobile call
- Mobile to PSTN call

The Tester will accept two incoming calls from the ISDN line, either from mobile to mobile or mobile to PSTN. The presenter would first have the Echo Canceller or Noise Reduction device in a bypass mode so the people present can hear the current voice quality of the network. The EC or NR device would then be switched on to show the improvement in the network quality.

PESQ/PAMS Voice quality Assessment Test Suite

This extension of the subjective testing suite allows an objective measure of perceived speech quality using perceptual measurement method such as the PESQ or PAMS.
The PESQ/PAMS test suite uses the same ECT hardware platform and can be configured to operate in four different modes:

- PESQ/PAMS analysis on Echo Cancellers,
- PESQ/PAMS analysis on Noise-Reduction Systems,
- PESQ/PAMS analysis on Analogue Systems (under development)
- PESQ/PAMS analysis on Primary Rate E1/T1 Trunks (under development).

Voice quality measurement in real PSTN or Mobile Networks

ECT Tester can be used for either intrusive or non-intrusive Voice Quality measurements in the PSTN or Mobile networks. Variable length (user selectable) digital recordings of both the transmitted and received signals at the selected monitoring point can be made and stored in the ECT hard disk. DSPG provided analysis software allows all standard voice quality performance measures such as level, delay, echo, etc.) to be derived semi-automatically.
The low cost alternative is the use of Voice Snap-shot Recorder (VSR). Detailed information on this products can be provided on request.