

EPROM Version 6.001 Specification

Current EPROM Version: 6.001
EPROM Release Date: 9/30/99
Previous EPROM Version: 6.000

256XL EPROM Part Number: 5280303
1024XL EPROM Part Number: 5280304
1536XL EPROM Part Number: 5280305

Short Scan Improvements

Dynalab XL Series Analyzers have some of the fastest short scan times in the industry. Exceptionally long cable assemblies or harnesses using shielded wire, however can contain enough capacitance to cause problems with such a high speed test. For these circumstances, Dynalab has always offered the -FAST Sequence Command. EPROM version 6.001 allows the Analyzer to automatically adapt to capacitance found in a cable assembly and thus provides an improved solution to capacitance issues.

The Cause

All cable assemblies have capacitance. If the capacitance is large enough, the Circuit Analyzer will “charge” the assembly during the test. During the short scan, these elements discharge. The Analyzer sees this as a short. Of course these “Ghost Shorts” disappear as soon as the wires discharge and the Analyzer records them as Soft Shorts. Most Dynalab Test Sequences include a Branch on Soft Short Command that repeats the test if a Soft Short is found. This creates the Ghost Short all over again, leaving the Analyzer stuck in an endless test loop.

The Solution

The old solution for this condition was to use the -FAST Sequence Command. This slows down the test, often giving the capacitive element enough time to discharge. This EPROM improves the default test mode (+FAST) so that the -FAST Sequence Command is no longer necessary to avoid these Ghost Shorts.

Dynalab now recommends that any programs using the -FAST be changed to use the +FAST mode (remove the -FAST Sequence Command). This new short scan is not susceptible to Ghost Shorts but ALSO RUNS QUICKER THAN THE -FAST MODE. This new short scan operation takes only as much time as needed to avoid misinterpreting ghost shorts and can drastically improve short scan times over tests using the -FAST mode.

The new Short Scan operates as follows: If a short is detected, the Analyzer watches it to see if it naturally disappears (due to capacitive discharge). If the short disappears quickly, the Analyzer proceeds with the test as if nothing happened. If, after 100 ms, the short is still present, the short is then logged and, if the Stop On Error is enabled (default), is shown on the display. Once logged, if this short disappears, it is then logged as a Soft Short.

Note: The -FAST Sequence Command operates as before and does NOT use this new short scan.

Toggle Frequency Improvement

EPROM version 6.000 introduced the Color / Circuits toggle feature. Reducing the dwell time, however, was found to alter the toggle speed. Dwell speeds well below the normal setting can speed up the toggle speed of the display too fast to read. To fix this condition, this EPROM version 6.001 now uses the Analyzer clock to determine the toggle frequency. If the Analyzer does not have a clock chip, the method introduced with EPROM version 6.000 is used.