

Tektronix Test Methods of Implementation:

This Tektronix guide to measurements document is provided "AS IS" and without any warranty of any kind, including, without limitation, any express or implied warranty of non-infringement, merchantability or fitness for a particular purpose. In no event shall Tektronix, IEEE or any member IEEE be liable for any direct, indirect, special, exemplary, punitive, or consequential damages, including, without limitation, lost profits, even if advised of the possibility of such damages.

This material is provided for reference only.

Ethernet 100Base-TX PHY

100BaseTX otherwise known as Fast Ethernet, offers 10 times faster data rates than the Ethernet (10BaseT) signals.

The IEEE 802.3a and ANSI X.263 define an array of compliance tests for 100Base-TX physical layer. Here is a brief summary showing support for Tektronix equipment/software:

100BaseTX Core Tests

Template, Output Voltage, Jitter, Overshoot, Amplitude Symmetry, Rise/Fall time & Rise/Fall Symmetry

In order to perform any of these tests the following steps are needed:

1. Set the DUT to transmit random packets
2. Connect a fixture offering 100 ohm termination
3. Acquire signal through an oscilloscope for testing

The test is performed using following tools:

- Tektronix DPO7000 Series Oscilloscope
- Tektronix P6247, P6248 High Frequency Differential Probes
- Tektronix TDSET3 Ethernet Test Software (opt for DPO scope)
- TF-GBE - Ethernet Test Fixture (www.c-h-s.com)
TF-GBE-BTP – Basic Test Package

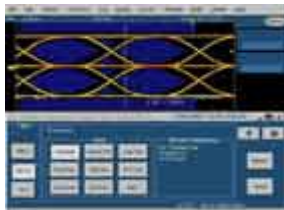


Fig. 6: 100BaseTX Template Test

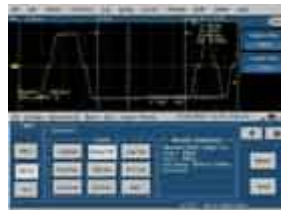


Fig. 7: 100BaseTX Output Voltage Test

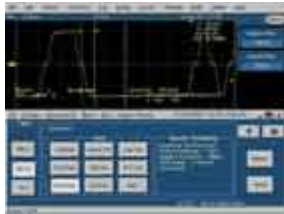


Fig. 8: 100BaseTX Overshoot Test

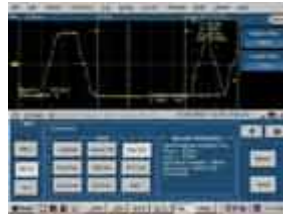


Fig. 9: 100BaseTX Amplitude Symmetry Test

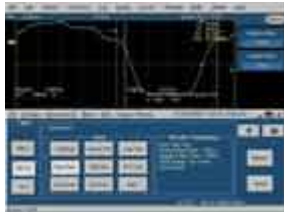


Fig. 10: 100BaseTX Rise/Fall Test

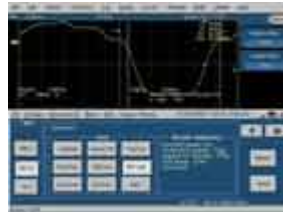


Fig. 11: 100BaseTX Rise/Fall Symmetry Test

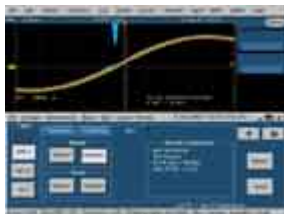


Fig. 12: 100BaseTX Jitter Test