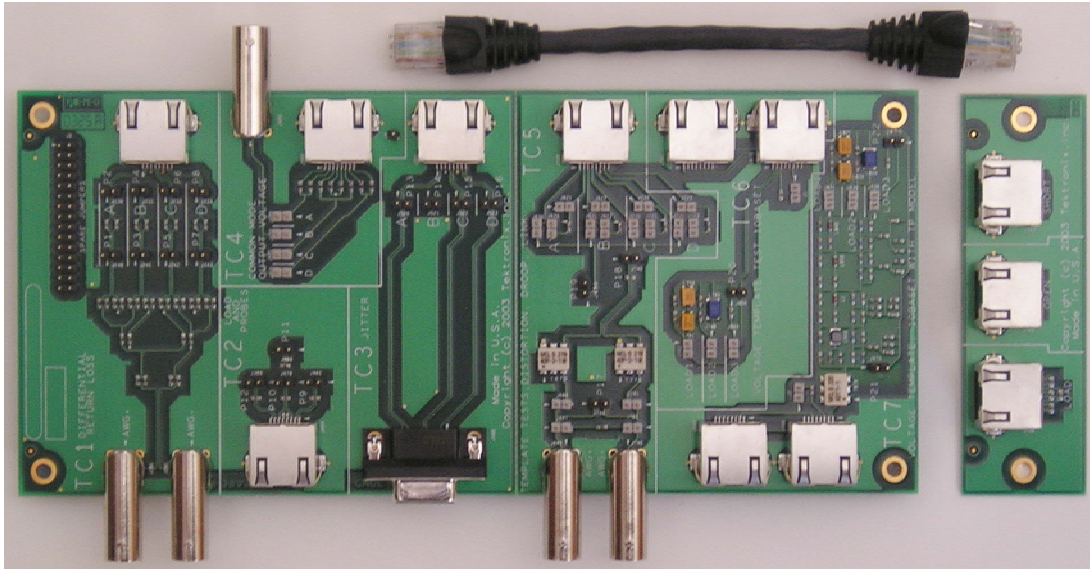


# TF-GBE

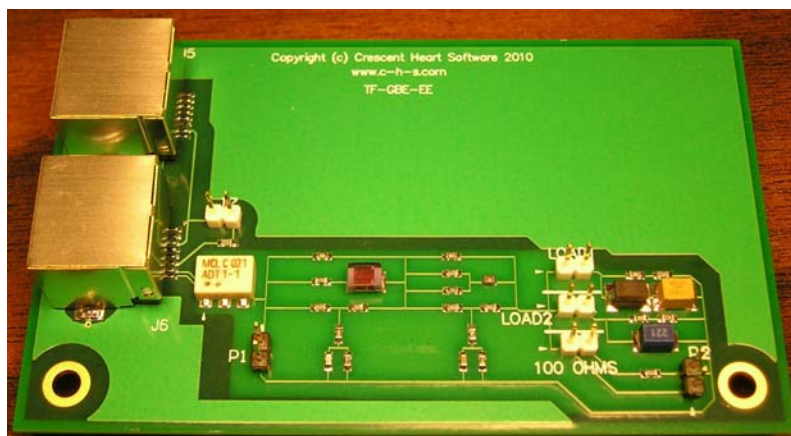
## Gigabit Ethernet Compliance Test fixture



TF-GBE main circuit board, companion Return Loss Calibration PCB & RJ45 interconnect cable

### Salient Features

- Supports 1000/100/10BaseT technologies
- Facilitates performing a wide spectrum of compliance tests
- Separate Return Loss Calibration circuit board reduces time to test
- Test Channel for 1000BaseT Jitter tests ensures testing per the Standard
- Cross-connect circuits simplify connection to traffic generators and link partners
- On-board test points for removal of disturbing signals ensure dependable results
- Twisted-Pair-Model and Loads (per IEEE802.3) enable complete transmitter testing of 10BaseT Physical Layer
- Tektronix-designed test fixture for use with Tektronix DPO7000 and DPO/DSA70000 oscilloscopes and TDSET3 Ethernet Compliance Test software



TF-GBE-EE circuit board for Energy Efficient Ethernet testing

## **Product Hallmarks**

### **Comprehensive Test Range**

The full spectrum of 10BaseT, 100BaseTX and 1000BaseT technologies is addressed by the TF-GBE. The range of tests supported includes Template, Amplitude, Jitter, Common Mode Output, Return Loss, as well as other core transmitter tests. Twisted pair models and loads are available, facilitating an expansive range of 10BaseT tests.

### **Reliable Results**

The TF-GBE has been Tektronix designed to meet the extremely tight margins mandated by the Standards. Onboard test points are provided for 1000BaseT template tests for accurate removal of the disturbing signal and any inaccuracies in the acquisition path. The unique JigMatch capability of the TDSET software makes use of these specially provided test points to deliver dependable results. Open, Short and Load circuits are provided for reliable return loss testing.

### **Extreme Efficiency**

The TF-GBE test fixture was designed with shrinking test times and reducing expensive workarounds in mind. The Sub-D connector to RJ45 interface circuit makes connecting link partners simple while maintaining signal integrity. Cross-connect circuits enable quick and easy connections to traffic generators or link partners, and eliminate the need for clumsy cable assemblies.

## **TF-GBE Specifications**

### **• 1000BaseT Tests Supported**

- ✓ Templates – all pairs
- ✓ Peak Voltage – all pairs
- ✓ Level Accuracies – all pairs
- ✓ Jitter - Test Channel; SubD connector to RJ45 interface
- ✓ Distortion – all pairs
- ✓ Common Mode Output Voltage – all pairs
- ✓ Return Loss – all pairs; Calibration Circuits included

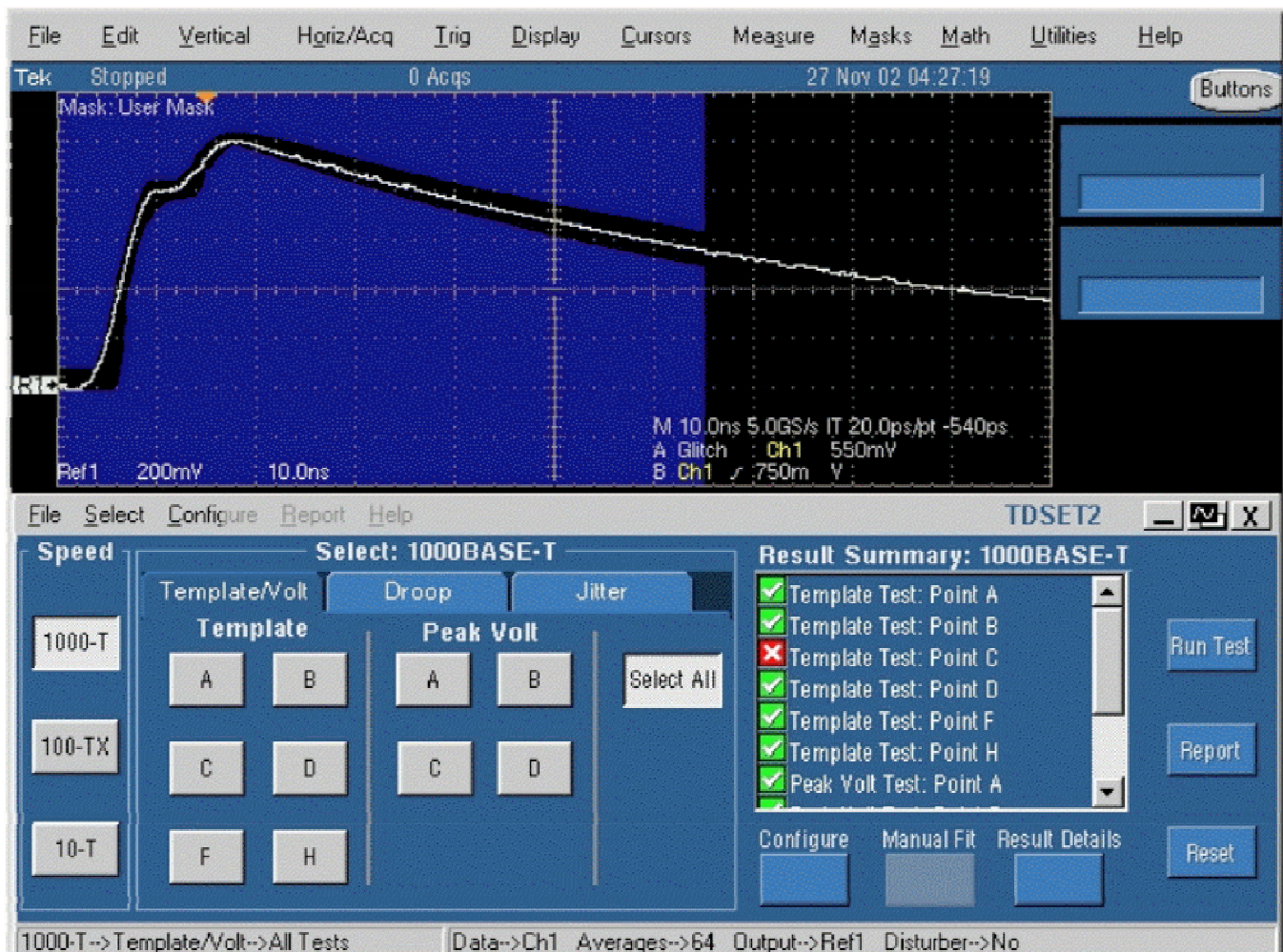
### **• 100BaseTX Tests Supported**

- ✓ Template
- ✓ Amplitude Domain – Output Voltage, Amplitude Symmetry, Overshoot
- ✓ Time Domain – Rise Time, Fall Time, Rise/Fall Symmetry
- ✓ Jitter Domain – Total Jitter, Duty Cycle Distortion
- ✓ Common Mode Output Voltage
- ✓ Return Loss – TX, RX; Calibration Circuits included

### • 10BaseT Tests Supported

- ✓ Link Pulse Template – with and without TPM; Loads 1, 2 and 100 Ohms
- ✓ TP\_IDL Template – with and without TPM; Loads 1, 2 and 100 Ohms
- ✓ Mau Template – with TPM (Twisted Pair Model)
- ✓ Output Voltage Amplitude
- ✓ Harmonic of Ones or Zeros
- ✓ Jitter
- ✓ Common Mode Output Voltage
- ✓ Return Loss – TX, RX; Calibration Circuits included

## Tektronix TDSET3 Ethernet Compliance Test Software



Screen shot of TDSET3 display following 1000BaseT Voltage Template test

## **Tektronix TDSET3 Software General Capabilities**

- Wide range of tests for 1000/100/10BaseT enables complete validation to Standards
- Ingenious "Select All" feature ensures faster testing with improved reliability
- Automatic Pass/Fail notification delivers quick results
- Auto-fit process minimizes time for testing
- "Locate and Flash Hits" pinpoints mask hits in results display for efficient debug
- Automated jitter measurements eliminate human intervention for faster and more reliable measurements
- Sophisticated "one-button" report generator saves time by archiving test results

## **TF-GBE Test Fixture Ordering Summary**

- TF-GBE-BTP – 1000/100/10BaseT Basic Test Package (includes PCB set and TF-GBE-SIC) (main PCB overall dimensions 6.85" x 5.2" (17,4 cm x 13,2 cm); Return Loss Calibration PCB dimensions 4.0" x 1.25" (10,2 cm x 3,2 cm))
- TF-GBE-ATP – 1000/100/10BaseT Advanced Test Package (includes TF-GBE-BTP and TF-GBE-JTC)
- TF-GBE-EE – Energy Efficient Ethernet test fixture (PCB dimensions 4.0" x 2.4" (10,2 cm x 6,1 cm))
- TF-GBE-BTP-EE – Combination of TF-GBE-BTP and TF-GBE-EE test fixture
- TF-GBE-ATP-EE – Combination of TF-GBE-ATP and TF-GBE-EE test fixture
- TF-GBE-JTC – 103-meter 1000BaseT Jitter Test Channel cable (shipping weight 10 lbs (4,5 kg); dimensions 12" diameter x 5.75" height (30,5 cm x 14,6 cm))
- TF-GBE-SIC – short (4-inch (0,1-meter)) RJ45 interconnect cable

## **Contact Crescent Heart Software**

- Internet: [www.c-h-s.com](http://www.c-h-s.com); E-mail: [sales@c-h-s.com](mailto:sales@c-h-s.com); Telephone: (+1)503-232-2232
- Crescent Heart Software, a Tektronix® Embedded Systems Tools Partner and a member of the Tektronix® Logic Analyzer Third Party Developer team, is head-quartered in Portland, Oregon USA
- Information presented herein is subject to change without notice (datasheet Revision I, June 2015: typographical error correction and miscellaneous editing)
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