

Reference

Tektronix

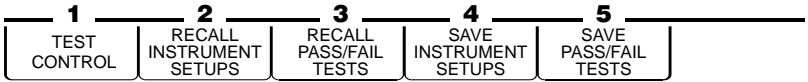
CTS 710 SONET Test Set

070-9336-00

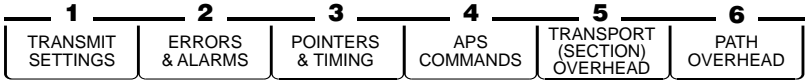
Copyright © Tektronix, Inc., 1995. All rights reserved.



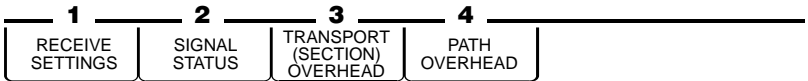
070933600

**TEST
SETUPS**

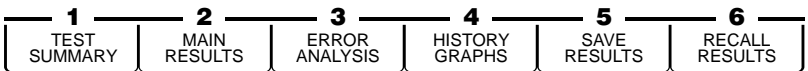
- 1 Set test duration and resolution.
- 2 Load setups from memory or disk.
- 3 Load pass/fail tests from disk.
- 4 Save setups to memory or disk.
- 5 Create and save pass/fail tests to disk.

TRANSMIT

- 1 Set line rate, clock, mapping and test patterns.
- 2 Set error type and rate. Set alarm type and failure type.
- 3 Set pointer value and movement, or frequency offset.
- 4 Set K1 and K2 bytes for APS protocol.
- 5 & 6 Edit overhead bytes, set external address for DCC and user channel.

RECEIVE

- 1 Set line rate, mapping and test patterns.
- 2 Show extended signal status.
- 3 & 4 View overhead bytes, set external drop for DCC and user channel.

RESULTS

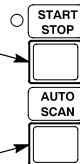
- 1 Show test status and most common errors (TroubleScan).
- 2 Show errors, alarms and pointer movements, and failures.
- 3 Show error analysis by section, line, path, tributary and payload.
- 4 Graph of errors, alarms and failures over time.
- 5 Save test results to disk.
- 6 Load results from memory or disk.

UTILITY

- 1 Set display brightness, audible alarm, date and time.
- 2 Set print control parameters.
- 3 Set GPIB and RS-232 parameters.
- 4 Display firmware version, installed options and serial number.
- 5 Run internal diagnostic routines.

Insert single error or burst of errors.
(Error set in TRANSMIT→ERRORS & ALARMS).

Start and stop measurements.
(Test duration set in
TEST SETUPS→TEST
CONTROL).

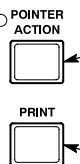


Autoset to signal and scan
and display signal structure.



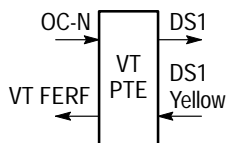
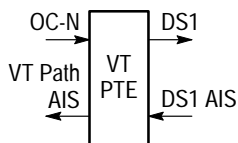
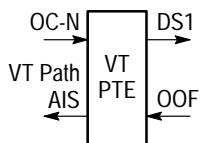
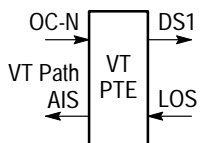
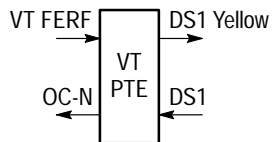
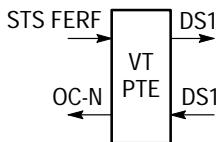
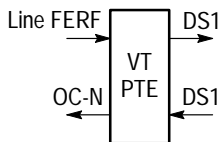
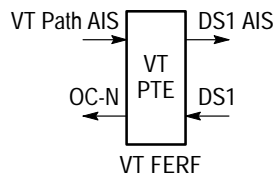
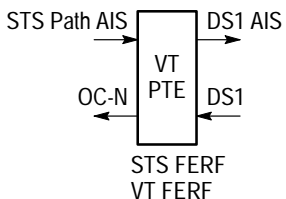
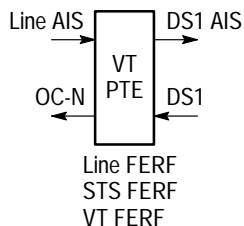
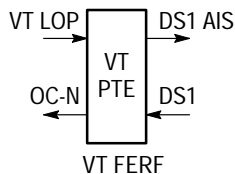
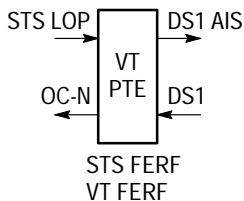
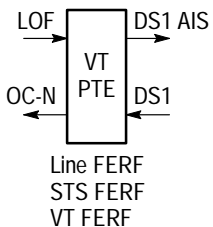
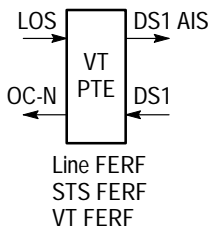
Display on-line help.

Insert pointer movement.
(Controlled from
TRANSMIT→POINTERS
& TIMING).

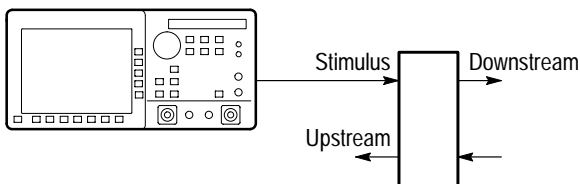


Select and print.

Example Alarm Response



Legend



Glossary

AIS—An Alarm Indication Signal alerts downstream equipment that an upstream failure has been detected.

BER—A Bit Error Ratio (or Rate) is the principal measure of quality of a digital transmission system.

BIP—Bit Interleaved Parity is a method to monitor errors in the transmitted signal.

Coding Violation (CV)—An error detected by Bit Interleaved Parity (BIP) checks.

EFS—Error Free Seconds.

ES—An Errored Second is a second with at least one error.

FEBE—A Far End Block Error is an indication returned to the transmitting line terminating equipment (LTE) that an errored block has been detected at the receiving LTE.

FERF—A Far End Receive Failure indicates to the transmitting LTE that the receiving LTE has detected an incoming line failure or is receiving a Line AIS.

Line Alarm Indication Signal—A Line AIS is generated by Section Terminating Equipment upon Loss of Signal or Loss of Frame.

Line Coding Violation (CV)—The sum of the BIP errors detected at the Line layer. Line CVs are collected using the BIP codes in the B2 bytes of the Line Overhead.

Line Errored Second (ES)—A second during which at least one Line CV occurred, or a second during which the line was in the Line AIS state.

Line Far End Receive Failure (FERF)—An indication returned to a transmitting LTE from the receiving LTE that a Line AIS or incoming line failure has been detected.

Line Severely Errored Second (SES)—A second with N or more Line CVs, or a second during which the line was in the Line AIS state. The value of N varies with the transmit rate, but corresponds to a 2×10^{-7} BER.

LOF—Loss of Frame.

LOP—Loss of Pointer.

LOS—Loss of Signal.

OC—Optical Carrier.

PTE—A Path Terminating Element is a network element (NE) that terminates either an STS or VT path.

Section Coding Violation (CV)—A BIP error that is detected at the Section layer. CVs for the Section layer are collected using the BIP-8 in the B1 byte located in the Section overhead of STS-1 number 1.

Section Errored Second (ES)—A second during which at least one Section CV or OOF/COFA event occurred, or a second during which the NE was (at any point during the second) in the LOS state.

Severely Errored Seconds (SES)—A second with more than N CVs. N varies with the transmit rate but corresponds to a BER of 2×10^{-7} .

STS—Synchronous Transport Signal.

VT—A Virtual Tributary is a structure (not a signal) designed for transport and switching of sub-STS payloads. The sizes of VT currently in use are VT1.5, VT2, VT3, and VT6.

Yellow Signal—A code sent upstream to indicate that a failure condition has been declared downstream.