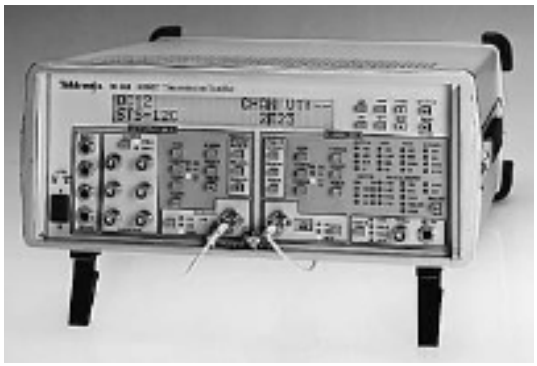
SONET Test Sets



ST112.

Features

Specs

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ST112

Characteristics

Synchronization Interfaces

Internal -
SONET: 51.84 MHz ±10 ppm.
DS3: 44.736 MHz ±10 ppm.
DS1: 1.544 MHz ±50 ppm.

External -
SONET: 51.84 MHz ±20 ppm; 155.52 MHz ±100 ppm.

Loop Timing - Recovered Rx Clock to Transmitter.

BITS Timing - DSX-1 Input used as Tx Timing Reference.

Payloads

DS3 Payload -
General: A single internally or externally generated asynchronous DS3 signal is mapped into an STS-1 payload.
Frame Patterns: M13, C-Bit, unframed.
Payload Patterns: 2^{23} - 1, 2^{15} - 1, AIS, Idle, All Ones.

Tributary VT1.5 Payload -
General: A single internally or externally generated asynchronous DS1 signal is mapped into a specified STS-1 payload virtual tributary.
Active channel pattern: PRBS 2^{23} - 1, QRW, 3/24, 55 Octet, All Ones.
Framing: Unframed, SF, ESF, SLC96.
Modes: Floating, Bit Asynchronous, Simplified H4 Coding, Bit Synchronous Locked, Byte Floating, Byte Locked.
VT Pointer Justification: Positive and negative single justifications.
New Data Flag (NDF) operations cause the pointer to jump to a new location.
Payload structure: DS1 payload is mapped into one channel or all 28 channels.

STS-3c/12c Payloads - An internally generated 2^{23} - 1 PRBS sequence with valid path overhead.

Alarm and Error Generation

Section - Loss of Signal (LOS), Loss of Frame (LOF), BER, Single error inject.

Line - Alarm Indication Signal (AIS), Far End Receive Failure (FERF), Bit Error Rate (BER), Single error inject.

Path - Loss of Pointer (LOP), STS Path Yellow, STS Path AIS, BER, Single error inject, Far End Block Error (FEBE).

VT - VT LOP, VT Path Yellow, VT Path AIS, BER.

Alarm Type - Burst or continuous, external TTL event trigger when alarm is activated.

Random Bit Error Injection - 1.5×10^{-3} to 10^{-9} Rate or single.

Bipolar Pulse Violation - 1.5×10^{-3} to 10^{-9} Rate or single.

Editing

Transport and Path Overhead Byte Modification - All of the overhead bytes except B1-B3 and H1-H3.

Pointer Control - Single positive and negative pointer justifications and NDF pointer changes to any valid value for both SPE and VT.

General

Frame Detection -
STS-1: Detection based on A1, A2.
STS-3/12: Detection based on A1, A2, A2.

Indicator Lamps - LEDs provide current and history status for Section, Line, Path, SPE, VT, DS1 and DS3 status.

NOTE: CLASS 1 LASER PRODUCT. This product conforms to the applicable requirements of 21 CFR 1040 at the date of manufacture.

Measurements

SONET Alarms -
Section: B1 Code Errors OOF (Out-of-frame), LOF, Frame pattern errors, LOS.
Line: B2 Code Errors, LOP, FEBE, AIS.

Path: B3 Code Errors, AIS, Yellow, FEBE, RDI.
VT: BIP-2, AIS, RDI, FEBE.

Payload Parameters -
VTI.5 Payload to DS1 payload: Parity and frame errors, bit errors, AIS, Idle and All Ones, X-Bit.
VT1.5 payload: Bit Errors (PRBS or fixed word), AIS, Yellow, CRC-6, Frame errors, LOF.
STS-3c payload: Bit Errors.

T-carrier Parameters -
DS3: BPV, Parity, Bit and Status parameters.
DS1: BPV, CRC, Bit and Status parameters.

Performance Statistics

Parameters -
Section (B1): Total, Rate, ES, SES Total.
Line (B2): Total, Rate, ES, SES Total.
STS Path (B3): Total Rate, ES, SES.
VT Path (BIP-2): Total, Rate, ES, SES Total.
Payload/DS3 (Bit and Parity): Rate, Total, ES, SES.
Payload/DS1 (Bit Error): Rate, Total, ES.
Payload/3c (Bit Error): Rate, Total, ES.

Data Communications Channel

Section - D1-D3, 192 Kb/s.

Line - D4-D12, 576 Kb/s.

Orderwire

Local and Express handset interface.

Remote Interfaces

Ports - RS-232-C, GPIB, parallel printer.

Drivers - VT100 terminal.

Optical Specifications

OC-1/3 Tx Power Out - -9 dBm Typical.

OC-12 Tx Standard Power Out - -8 dBm.

OC-12 TX High Power Out - -4 dBm.

OC-1/3/12 Rx Sensitivity - -30 dBm.

Power

AC Line - 115/220 V AC ±10%.

Power Consumption - -250 W maximum.

Safety - UL1244, CSA231.

Physical Characteristics

Dimensions	mm	in.
Height	152	6
Width	366	14.4
Depth	419	16.5
Weight	**kg**	**lbs.**
Net	10	22

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Product(s) not available in Europe

Tektronix Measurement products are manufactured in ISO registered facilities.

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