

### Highlights

- Rugged, Lightweight & Hand-Held Integrated T1/FT1 Test Set
- Full function T1, FT1 & DS0
- Monitors Signaling Bits on all 24 Channels
- DS0 Drop for Optional DDS and "Packet Mode" Stress Testing
- Remote PC Control through GUI Interface
- One keystroke setup for T1/FT1 Line Monitoring
- Automatic Configuration & Pattern Recognition
- Measures T1 Level, Frequency and Clock Slips
- CSU, ESF, NIU, V.54 & High bit-rate Digital Subscriber Line (HDSL) ADTRAN/PairGain Loop Codes with Automatic Arming
- Supports SF/ESF/SLC Framing with AMI/B8ZS Line Coding

### Unique Features

- LEDs provide "At-a-Glance" circuit analysis with automated setup
- Internal CSU Emulation
- One-touch Signaling BITS testing

### Additional Features

- Quick-view of T1 signal power level, all required BERT patterns and loopbacks, including HDSL
- Fractional T1 testing interface, jitter buffer and CSU line build-out
- DSX Equalizer, "At-a-Glance" circuit analysis
- Automatic Arming feature simplifies ADTRAN HDSL Looping operations

The **Halcyon 764A-024™ Integrated T1/FT1 Test Set** is a hand-held T1 Bit Error Rate Test (BERT) test set that integrates DS1/DS0 BERT test function with fractional T1 to provide testing of T1 channels and lines. The users for all models consists of DS0/DS1, Central Office (CO), Digital Operations Group (DOG), Special Services and CO/OSP Construction Technicians. The Test Set type is a digital full-service T1/FT1 Test Set. The 764A-024 is a favorite with technicians, managers and senior executives in many US Telcos. The 764A-024 is the most cost-effective T1 Test Set on the market with a very low learning curve. The unit can be up and testing before competing models boot up and configure.

### Applications

#### Services Tested

The 764A-024 service tests T1 and Fractional T1.

#### Facilities Tested/Qualified

The 764A-024 performs Facilities Testing/Qualified. These categories include the following: Cable Pairs, DS1 Crossconnects and HDSL Circuits.



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### Specifications

#### INTERFACES

Dual Bantam and RJ-48C. Two receivers for timing slip testing.

#### IMPEDANCES

100 Ohms Terminated, Monitor and Bridged.

#### PHYSICAL

- Dimensions (L x W x H): 9.5-in x 6.33-in x 1.7-in
- Weight: 2 lbs.
- Power Requirements: 4 Watts at 115 VAC, 60Hz nominal; Output 9 VDC external Power supply. Internal 7.2 VDC NiMH pack

#### TRANSMITTER

- T1 Interface: *SIDE A* - Bantam Transmit and Receive in parallel w/ RJ-45  
*SIDE B* - (Reference Input) Bantam jacks
- T1 Signal Format: DS1 PCM, 1.544MHz ±50Hz
- Operating Modes: Full T1 or Fractional T1 Nx56/64 DS0 DS1 Signal
- Waveshape: Meets T1.403 specifications
- DS1 Line Level: 0 ±0.2dBdsx (6.0 V p-p)
- Line Codes: AMI, B8ZS
- Clocksource: Recovered from Receiver or internally generated 1.544MHz ±30Hz
- Framing: SF, ESF, SLC-96, Unframed
- FT1 Fill Date: Idle code (7F) sent in unused DS9 time slots
- Test Patterns: QRSS, 2047, 2<sup>15-1</sup>, 2<sup>20-1</sup>, 2<sup>23-1</sup>, 3 in 24, All 1s, All 0s, Alt 1/0, 2 in 8, 1:7, 63 and 511
- Error Injection: Single bit or streamed BER at 1e-3, 1e-4, 1e-5, 1e-6, or 1e-7
- Line Build Out: 0, -7.5, -15, 22.5dB
- DSX Pre-Equalizer: 5 steps for cable lengths to 655 feet

#### ANALYSIS MODES

- BERT Analysis: Bit Errors (BE), Errored Seconds (ES), Bit Error Rate (BER), %Error Free Seconds (%EFS), Severely Errored Seconds (SES), %Severely Errored Seconds (%SES), Elapsed time
- LINE Analysis: T1 level, frequency, Frame Slips, Clock Slips, Framing Errors, Bipolar Violations (BPV), CRC Event Counts CRCs

# Halcyon 764A-024

## RECEIVER

- Input Impedance: 100 Ohms
- Input Signal Level: +6 to -32dB
- DS1 Level Monitor: 4 steps: 0 to -7.5, -7.5 to -15, -15 to -22dB, less than -22dB
- Clock Source: Recovered from received signal (from 0 to 6,000 feet)
- DS1 Alarm Reporting: Yellow, AIS
- DS1 Status Reporting: Frame Sync, Loop current, B8ZS, Framing Errors, CRC Events, BPV Errors, Excess Jitter, Excess Zeros
- Simple Current: Terminates 60mA nominal. Loop current indicator lights at 55 ±2mA or higher
- Simplex Voltage Drop: 16 volts nominal
- Loopbacks: Activates and responds to inband and out of band NIU, CSU/DSU

## RECEIVER (CONTINUED)

- Local Loopbacks: Provide near end self loopback or line or payload
- Remote Loopback: Transmit in band and out of band CSU, DSU, NIU, Line, Payload, HDSL, Adtran/PairGain

## DROP FUNCTIONS

- DS0 BERT Functions: Send test pattern, loop back channel
- Data Rate: 56/64Kbps
- DS0 Test: Individual DS0 Channel BERT in FT1 Mode mode: An contiguous combination up to 24 DS0 Channels
- DS0 Data Rates: 2.4, 4.8, 9.6, 19.2, 38.4, 56, 64, Nx56/64
- DS0 BERT Test Patterns: 2047, 511, DDS1 thru DDS4 (SP1-4) and all 1s and all 0s

## Ordering Configurations (T1/FT1 Functionality)

Model	Description
<b>764A-024</b>	Basic T1/FT1 Test Set with CSU Emulation.
<b>756A-02</b>	Basic DDS Test Set with T1/FT1 Test Functions.
<b>756A-07</b>	Enhanced DDS Test Set with OCU Emulation with T1/FT1 Test Functions.
<b>704A-PKG3</b>	Wideband 1.5MHz TMS & Signaling Package with enhanced DDS Test Functions.
<b>704A-NTS1</b>	Wideband 1.5MHz TMS & Signaling Package with enhanced DDS Test Functions and T1/FT1 Test Package.