KEYSIGHT TECHNOLOGIES (AGILENT HP)

# 37721A

The HP Keysight 37721A is a portable, rugged digital transmission analyzer designed for bit and code error testing on PDH networks. It operates at transmission rates of 704 kb/s, 2 Mb/s, 8 Mb/s, 34 Mb/s, and 140 Mb/s. Featuring a large graphics screen, nine stored setups, and autosetup capabilities, it simplifies telecom link verification and troubleshooting. It also offers frequency offset generation and measurement up to 100 ppm, multiple simultaneous transmitter outputs, and optional RS-232 or HP-IB remote interfaces.

## SPECIFICATIONS

### General

| | |
|---|---|
| Interfaces | HP-IB (GPIB) / RS-232 (option dependent) |
| Display | Large graphics CRT display showing text and results |

### Receiver and Transmitter Interfaces

| | |
|---|---|
| Supported Bit Rates | 2.048 Mb/s (2 Mb/s), 8.448 Mb/s (8 Mb/s), 34.368 Mb/s (34 Mb/s), 139.264 Mb/s (140 Mb/s) |
| Line Coding Formats | HDB3, CMI, AMI |
| Unbalanced Impedance | 75 Ω |
| Balanced Impedance | 120 Ω (for 2.048 Mb/s) |
| Connector Types | BNC (75 Ω), Siemens 3-pin (120 Ω) |

### Clocking and Synchronization

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|---|---|
| Frequency Offset Generation Range | ±100 ppm |
| Frequency Offset Measurement | Supported (up to ±100 ppm) |

### Test Pattern Generation

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|---|---|
| PRBS Patterns | 2^15-1, 2^23-1 |
| Word Patterns | 16-bit user-programmable word |
| Pattern Inversion | Supported |
| Test Framing Selection | Framed or unframed data |

### Error Insertion and Measurement

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|---|---|
| Tested Error Types | Bit errors, Code errors |
| Measured Parameters | Error counts, error seconds, alarms |
| Error Analysis Standards | ITU-T G.821 |
| Logging Options | Print results to hard copy, multiple logging modes |

### Framing and Overhead Analysis

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|---|---|
| Supported Framing Standards | ITU-T G.704, G.742, G.751 |
| Alarm Generation & Detection | LOS (Loss of Signal), LOF (Loss of Frame), AIS (Alarm Indication Signal), RDI (Remote Defect Indication) |

### System Control & Ease of Use

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|---|---|
| Stored Setups | 5 setups |
| Autosetup Feature | Automatic configuration based on incoming signal parameters |

### Transmitter

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|---|---|
| Transmitter Clock Sources | Internal, Loop (recovered from Rx), External |

### Receiver

| | |
|---|---|
| Monitor Level Compatibility | 20 dB to 30 dB resistive loss with automatic gain compensation |

### Standards & Compliance

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|---|---|
| Physical Layer Compliance | ITU-T G.703 |

### Inputs & Outputs

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|---|---|
| External Clock Input | 2.048 MHz (or 2.048 Mb/s data) G.703 or TTL levels |

### Receiver Performance

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|---|---|
| 2.048 Mb/s Receiver Equalization | Automatic, up to 6 dB of cable loss (at 1024 kHz) |
| 34.368 Mb/s Receiver Equalization | Automatic, up to 12 dB of cable loss (at 17.184 MHz) |
| 139.264 Mb/s Receiver Equalization | Automatic, up to 12 dB of cable loss (at 69.632 MHz) |

## TECHNOLOGY

PDH (Plesiochronous Digital Hierarchy) Testing

## APPLICATIONS

Telecom network installation, maintenance, and troubleshooting