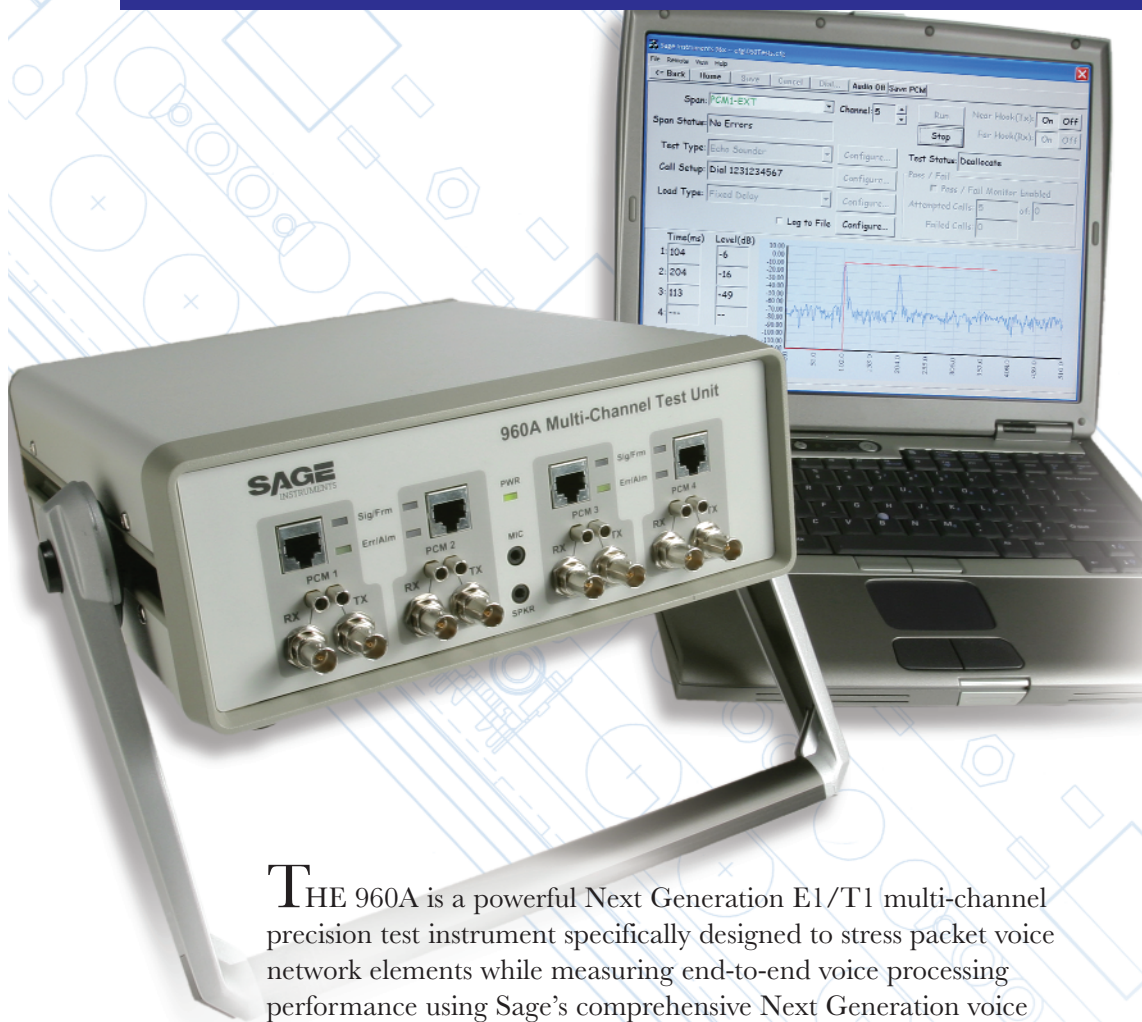


# 960A

## NEXT GENERATION E1/T1 MULTI-CHANNEL TEST INSTRUMENT



THE 960A is a powerful Next Generation E1/T1 multi-channel precision test instrument specifically designed to stress packet voice network elements while measuring end-to-end voice processing performance using Sage's comprehensive Next Generation voice test suite.

With the 960A, developers and operators can place multiple test calls into their networks to flush out real-time, bearer channel performance issues with ECHO CANCELLERS, VADs, JITTER BUFFERS, and overall packet VOICE QUALITY before they become in-service issues.

- Qualifies Echo Canceller performance over multiple channels
- Quantifies packet voice impairments over multiple channels
- Stores unlimited number of test scenarios for regression, or QA testing

Whether you are a Next Generation operator or designer, the 960A reduces rollout and design cycle time for new packet voice services.

### 960A FEATURES A POWERFUL NEXT GENERATION VOICE SUITE

#### CAPABILITIES

##### Echo Cancellation Performance

- Multi-Echo Detection
- Echo Level, Echo Delay
- Echo Canceller Disabler Tone(s)
- Dispersive Echo Emulation
- Double Talk Test and Emulation
- Echo Cancellation Convergence Testing
- Echo Cancellation Depth
- G.168 Test Suite and Echo Can Control

##### Voice Quality and Processing Validation

- Mean Opinion Score (MOS)
- One-way and Round Trip Delay
- Comfort Noise Level (CNG)
- Audio Level (Gain/Attenuation)
- Jitter Buffer Performance
- Packet/Frame Loss (% Average burst length)
- Silence Suppression Performance
- Voice Activity Detector Performance
- Codec Type Detection

##### Digital Facility Turn-up & Validation

- Multi-Channel BERT and Fractional E1/T1

##### Test Configurations

- Two T1/E1 - 48/64 Simultaneous Tests
- Four T1/E1 - 96/124 Simultaneous Tests
- Supports Mixed T1-E1 Combinations
- Modes: Terminate, D&I, Monitor

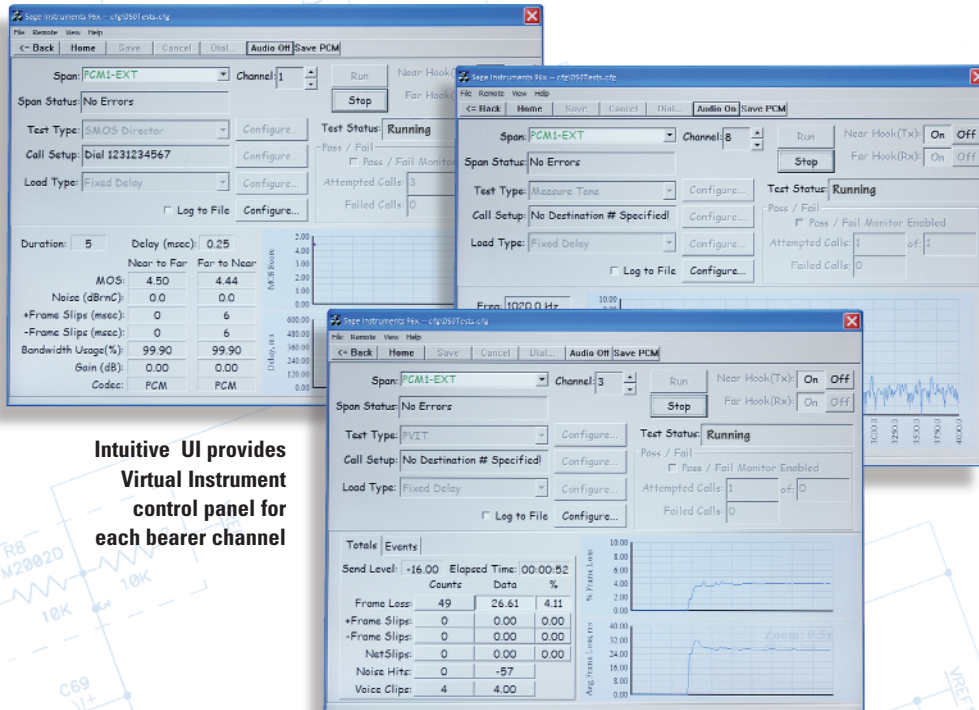
##### Call Setup Signaling

- CAS
- PRI-ISDN

*continued*

# 960A

## POWERFUL NEXT GENERATION MULTI-CHANNEL TEST UNIT



Intuitive UI provides Virtual Instrument control panel for each bearer channel

MAKING  
COMMUNICATIONS  
BETTER

### CAPABILITIES *continued*

#### STANDARD FEATURES

- Send/Measure Tone, Spectrum Analyzer
- Graphical UI PC Software
- PCM Data Capture
- Channel Selectable Remote and Local Audio Monitor
- Programmable Pass/Fail Parameters

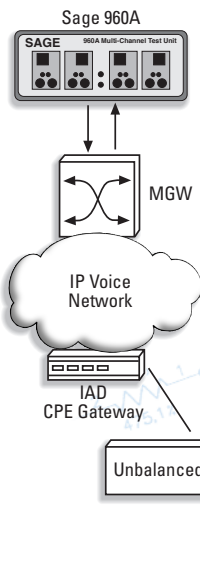
#### PHYSICAL CHARACTERISTICS

- Test Interface: 2/4 T1 or E1 Ports RJ-45, Bantam, BNC
- T1/E1 Port Status LEDs
- Com Port: Single USB, Series B Receptacle
- Power 120VAC
- Size 9"x4"x12", wt. 5 lbs.

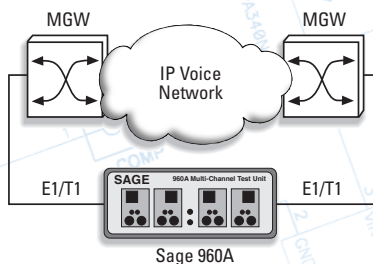
#### 960A OPTIONS

- 7960-0000-01 2 Port Base Unit
- 7960-0400-02 4 Port Upgrade
- 7960-5500-01 Next Gen Voice Pack [SMOS, PIVIT, Echo Sounder & Generator]
- 7960-5600-01 G.168 Package
- 7960-5400-01 BERT suite
- 7960-1000-01 PRI-ISDN Signaling
- 7960-0800-01 TCP/IP Remote Interface

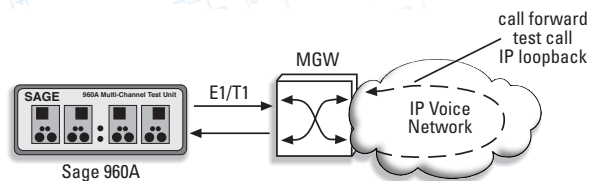
### 960A APPLICATIONS



CPE Test Configuration



Packet Tandem Configuration



Class V Packet Configuration