



# Sage 925VST Test Specifications SMOS Test Line



## Sage Mean Opinion Score Test Line

The Sage Instruments Mean Opinion Score (SMOS) test line provides an accurate assessment of how telephone users perceive speech quality over a live VoP network. SMOS provides a comprehensive set of measurements that pertain to all aspects of voice quality.

The SMOS test uses a robust algorithm to deliver accurate results in the presence of jitter, band limitations, and dropouts, producing both near-to-far and far-to-near measurements in a test line director/responder format.

### SMOS Measurements

**Clarity** - Mean Opinion Score (MOS)

**Effective Bandwidth** - percentage of bandwidth available in the 300 Hz to 3400 Hz range

**Voice Frame Slips** - compressive and expansive jitters in milliseconds

**Comfort Noise Level** - measured in dBnrc during silent period

**Gain** - audio level change measured in dB

**Codec Type** - detects and reports codec type used

**Delay** - round trip measured in milliseconds

**Call Completion Time** - completion time measured in seconds

## SMOS Specifications

### SMOS Signal

Artificial Voice per ITU-T P.50  
Active Speech Level -20 dBTLp

SMOS Measurement	Range	Accuracy
MOS	1.00 to 5.00	± 0.05
Noise	0 to 90 dBnrc	± 1 dB
Frame Slips	0 to 2000 msec	± 1 msec
Effective Bandwidth	0.0 to 99.9%	± 0.2%
Gain	-80 to +20 dB	± 1 dB
Delay	0.0 to 5000.0 msec	± 0.2 msec
Codec	see "Codec Types Detected"	tolerates up to 15% packet loss

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## SMOS Specifications, continued

### Codec Types Detected

#### SMOS Test Result

#### Codec Type Description

VCD4K	Sub-4kbs vocoders
VCD8K	5-8kpbs vocoders
VCD16K	12-16kpbs vocoders
ADPCM16	16kpbs G.726 ADPCM
ADPCM24	24kpbs G.726 ADPCM
ADPCM32	32kpbs G.726 ADPCM
ADPCM40	40kpbs G.726 ADPCM
ADPCM	G.726 ADPCM with unknown data rates
PCM	G.711 $\mu$ /A-law PCM or pure analog
UNSURE	Distortion prevents codec type detection

### SMOS Test Parameters

#### Range

#### Default

Test Duration	3 to 60 seconds	9 seconds
Send TLP	-30.0 to +10.0 dBm	0.0 dBm
Receive TLP	-30.0 to +10.0 dBm	0.0 dBm