



# Sage 935AT and 930i Test Specifications **G.168 Echo Canceller Tests**

## Description

The G.168 test suite provides a comprehensive assessment of echo canceller performance.

G.168 is an International Telecommunication Union recommendation for digital network echo canceller tests. The Sage Instruments G.168 Echo Canceller test suite includes 14 discrete tests. Each test provides a different objective measure of echo as voice, data, and test signals pass through the echo canceller.

Signaling features of the 935AT and 930i test sets enable testing over a live VoP telephone network.

### G.168 Test Suite

Test 1- Steady State Test

Test 2A - Convergence with NLP Enabled

Test 2B - Convergence with NLP Disabled

Test 2C - Convergence Under Noise

Test 3A - Low Level Double Talk

Test 3B - High Level Double Talk

Test 3C - Double Talk Under Simulated Conversation

Test 4 - Leak Rate Test

Test 5 - Infinite Return Loss Convergence Test

Test 6 - Non-divergence on Narrow Band Signals

Test 7 - Stability Test

Test 9 - Comfort Noise Test

Test 10A - FAX Test at Calling Side

Test 10B - FAX Test at Called Side

### Test Setup

Use two 935AT or 930i test sets, one on the *line side* of the echo canceller, and the other on the *drop side* of the echo canceller. The tests can run in either analog or PCM mode from any four wire access point.

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## G.168 Test Suite Specifications

<b>G.168 Line Parameters</b>	<b>Range</b>	<b>Default</b>
Test Signal Level	-40.0 to -6.0 dBm	-16.0 dBm
Measurement Timing	.1 to 99.9 seconds	<i>per test</i>

<b>G.168 Drop Parameters</b>	<b>Range</b>	<b>Default</b>
Echo Level	-60 to +9 dB	-12 dB
Echo Delay (analog)	17 to 600 ms	17 ms
Echo Delay (PCM)	12 to 600 ms	12 ms
HOTH/DoubleTalk Level	-60 to -3 dBm	<i>per test</i>
HOTH/DoubleTalk Duration	.1 to 99.9 seconds	<i>per test</i>

<b>G.168 Measurements</b>	<b>Range</b>	<b>Accuracy</b>
Residual Level	-70 to 0 dBm	+/- 1 dB
Return Loss	-9 to +50 dB	+/- 1 dB
Fax Timing	0 to 9.99 seconds	+/- .02 seconds