



3110A Capabilities

The following is a list of limits that will allow you to quickly determine if it is possible for a particular standard to be reproduced by a 3110A.

Waveform limits

Bandwidth

- Sine: DC – 20 kHz
- Square: DC – 100 kHz
- Ripple: DC – 1 MHz

Rise Time

-10V to +10V: 1 μ s

Minimum Rise Time for Load Dump

Waveforms: 1 ms

Duration Tolerance

$\geq 10 \mu$ s: $\pm 2 \mu$ s (typical)

Maximum Number of Segments in a Single Test (.swg file)

Different segment types are weighted according to the chart below. When added together, if the sum of all weighted segments in the test file is equal to or less than 400, the test sequence can be run in a single test on the 3110A.

Segment Type	Weighting
Scripted Loop	6.0
Wave Segments	2.5
Control Segments	1.5

Test Segment Limits Example:

Number of Wave Segments = $100 \times 2.5 = 250$

Number of Control Segments = $20 \times 1.5 = 30$

Total of Weighted Segments = 280

Summary: $280 < 400$, so the test sequence can be run in a single test.

Segment Limits

Minimum Average Segment Duration,

If 127 or fewer segments:

10 μ s per segment

If more than 127 segments:

Must average greater than 1 ms

Minimum Average Segment Example:

Segment 1 = DC Duration = 1 ms

Segment 2 = FL1 Loop Count = 100

Segment 3 = DC Duration = 20 μ s

Segment 4 = DC Duration = 1 ms

Segment 5 = DC Duration = 2.5 ms

Segment 6 = FL1 Return

Total Segments = Segment 1 + ((Segment 3 + Segment 4 + Segment 5) x 100) = 301

Segment Duration Average = $1 \text{ ms} + ((20 \mu\text{s} + 1 \text{ ms} + 2.5 \text{ ms}) \times 100) / 301 = 1.17 \text{ ms}$

Summary: Since the sequence totals more than 127 segments, the average segment duration must be more than 1 ms. The segment duration average is 1.17, which is greater than 1.0, so the sequence should run uninterrupted.

Maximum Test Sequence Duration

275 hours