KE26XXB DC Sweeps

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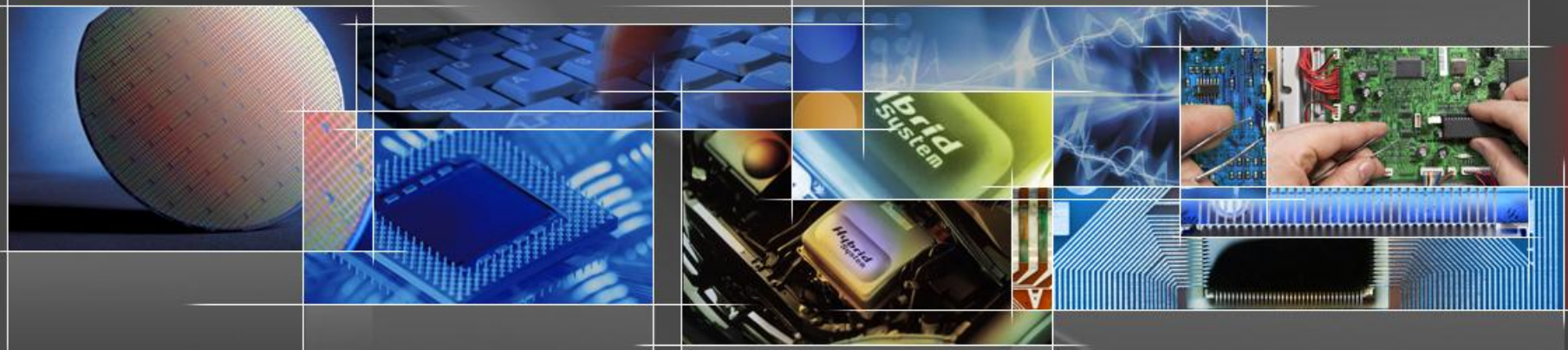
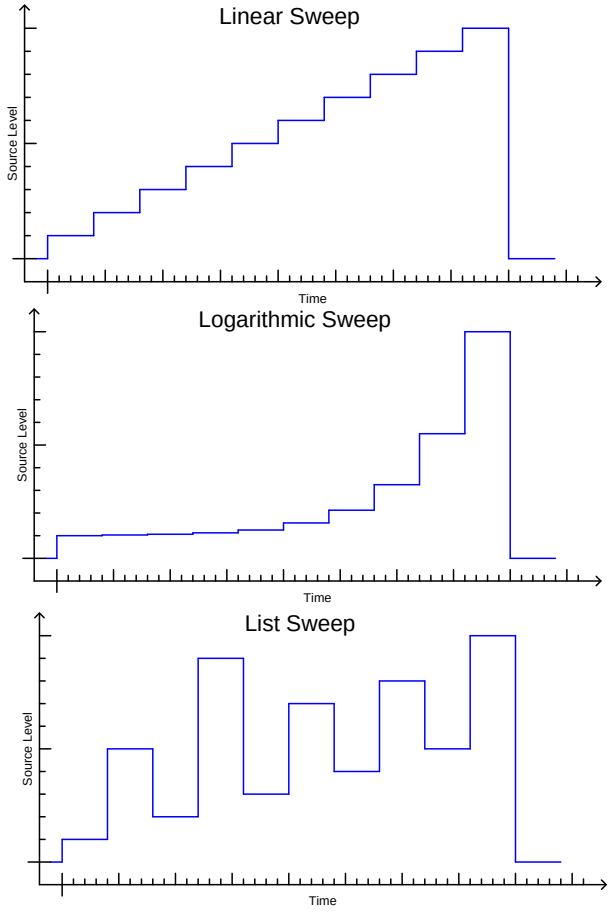


This example demonstrates the DC sweep capabilities of the Keithley Series 2600B SourceMeter instruments.

Example Overview

This script demonstrates how to output simple auto-ranged DC sweeps with the Series 2600B System SourceMeter instruments. This script contains functions to perform linear, log and list sweeps. For each sweep type there are two functions. One function performs the sweep sourcing voltage while the other performs the sweep sourcing current.

At the conclusion of the sweeps the data is returned to the instrument console in a format that is compatible for copy and paste into Microsoft Excel.



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Example Requirements

- Equipment Needed:
  - 1x Series 2600B SourceMeter instrument

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Script Functions

This script's functions allow the parameters of the test to be adjusted without rewriting and re-running the script. To execute the test, call the test function from the instrument console, passing in the appropriate values as parameters.

Functions Contained in this script:

`DCSweepVLinear(start, stop, numPoints, limitI, nplc)`

- Outputs a DC linear sweep sourcing voltage

`DCSweepILinear(start, stop, numPoints, limitV, nplc)`

- Outputs a DC linear sweep sourcing current

`DCSweepVLog(start, stop, numPoints, limitI, nplc)`

- Outputs a DC logarithmic sweep sourcing voltage

`DCSweepILog(start, stop, numPoints, limitV, nplc)`

- Outputs a DC logarithmic sweep sourcing current

`DCSweepVList(sweepList, numPoints, limitI, nplc)`

- Outputs a DC list sweep sourcing voltage

`DCSweepIList(sweepList, numPoints, limitV, nplc)`

- Outputs a DC list sweep sourcing current

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DCSweepVLinear()

```
DCSweepVLinear(start, stop, numPoints, limitI, nplc)
```

Parameter	Units	Description
start	Volts	The source level of the first step in the sweep
stop	Volts	The source level of the last step in the sweep
numPoints	n/a	The number of points in the sweep
limitI	Amps	The source limit value
nplc	n/a	The number of power line cycles over which the measurement will be integrated

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DCSweepILinear()

```
DCSweepILinear(start, stop, numPoints, limitV, nplc)
```

Parameter	Units	Description
start	Amps	The source level of the first step in the sweep
stop	Amps	The source level of the last step in the sweep
numPoints	n/a	The number of points in the sweep
limitV	Volts	The source limit value
nplc	n/a	The number of power line cycles over which the measurement will be integrated

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DCSweepVLog()

```
DCSweepVLog(start, stop, numPoints, limitI, nplc)
```

Parameter	Units	Description
start	Volts	The source level of the first step in the sweep
stop	Volts	The source level of the last step in the sweep
numPoints	n/a	The number of points in the sweep
limitI	Amps	The source limit value
nplc	n/a	The number of power line cycles over which the measurement will be integrated

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DCSweepILog()

```
DCSweepILog(start, stop, numPoints, limitV, nplc)
```

Parameter	Units	Description
start	Amps	The source level of the first step in the sweep
stop	Amps	The source level of the last step in the sweep
numPoints	n/a	The number of points in the sweep
limitV	Volts	The source limit value
nplc	n/a	The number of power line cycles over which the measurement will be integrated

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DCSweepVList()

```
DCSweepVList(sweepList, numPoints, limitI, nplc)
```

Parameter	Units	Description
sweepList	Volts	A table of values to source during the sweep
numPoints	n/a	The number of points in the sweep
limitI	Amps	The source limit value
nplc	n/a	The number of power line cycles over which the measurement will be integrated

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DCSweepIList()

```
DCSweepIList(sweepList, numPoints, limitV, nplc)
```

Parameter	Units	Description
sweepList	Amps	A table of values to source during the sweep
numPoints	n/a	The number of points in the sweep
limitV	Volts	The source limit value
nplc	n/a	The number of power line cycles over which the measurement will be integrated

KE26XXB AC Waveform Sweep

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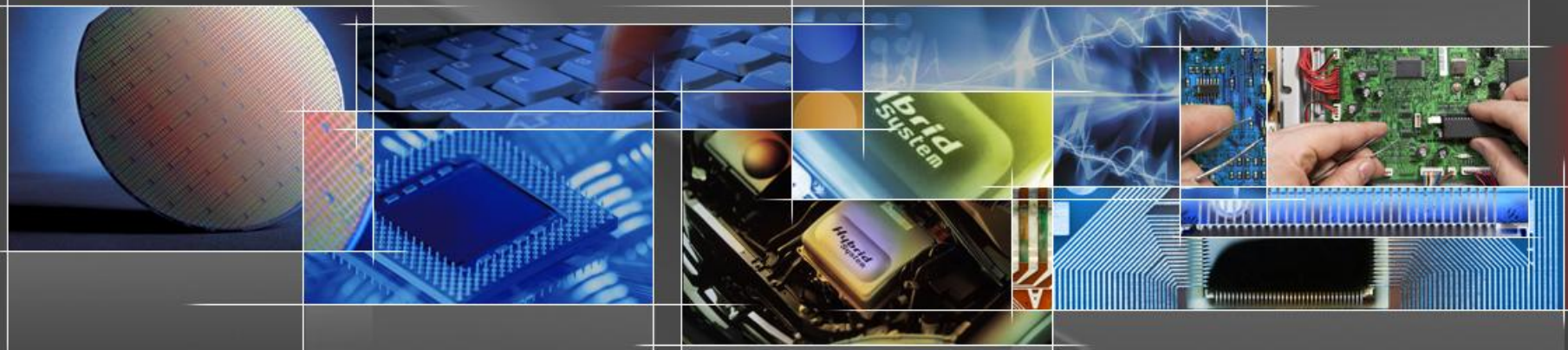

This example demonstrates the arbitrary waveform capabilities of the Keithley Series 2600B SourceMeter instruments to output an AC sine wave.

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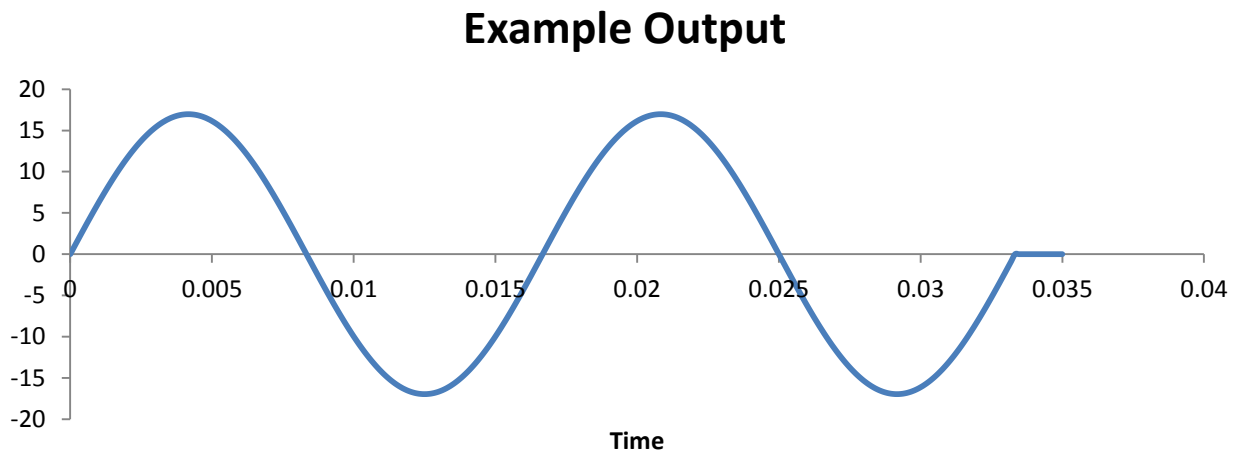
Example Overview

This example demonstrates how to output an AC Waveform with the Series 2600B System SourceMeter instruments. This example script shows how to use the math capabilities of the TSP scripting engine to generate a table of source values representing a sine wave to use as the list values for a list sweep. This script also shows how to configure the Series 2600B trigger model to output this waveform with consistent timing.

At the conclusion of the sweeps the data is returned to the instrument console in a format that is compatible for copy and paste into Microsoft Excel.



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Example Requirements

- Equipment Needed:
  - 1x Series 2600B SourceMeter instrument

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Script Functions

This script's functions allow the parameters of the test to be adjusted without rewriting and re-running the script. To execute the test, call the test function from the instrument console, passing in the appropriate values as parameters.

Functions Contained in this script:

```
AC_Waveform_Sweep(Vrms, numCycles, frequency, limitI)
```

- Outputs an AC sine wave waveform sourcing voltage

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AC_Waveform_Sweep()

```
AC_Waveform_Sweep(Vrms, numCycles, frequency, limitI)
```

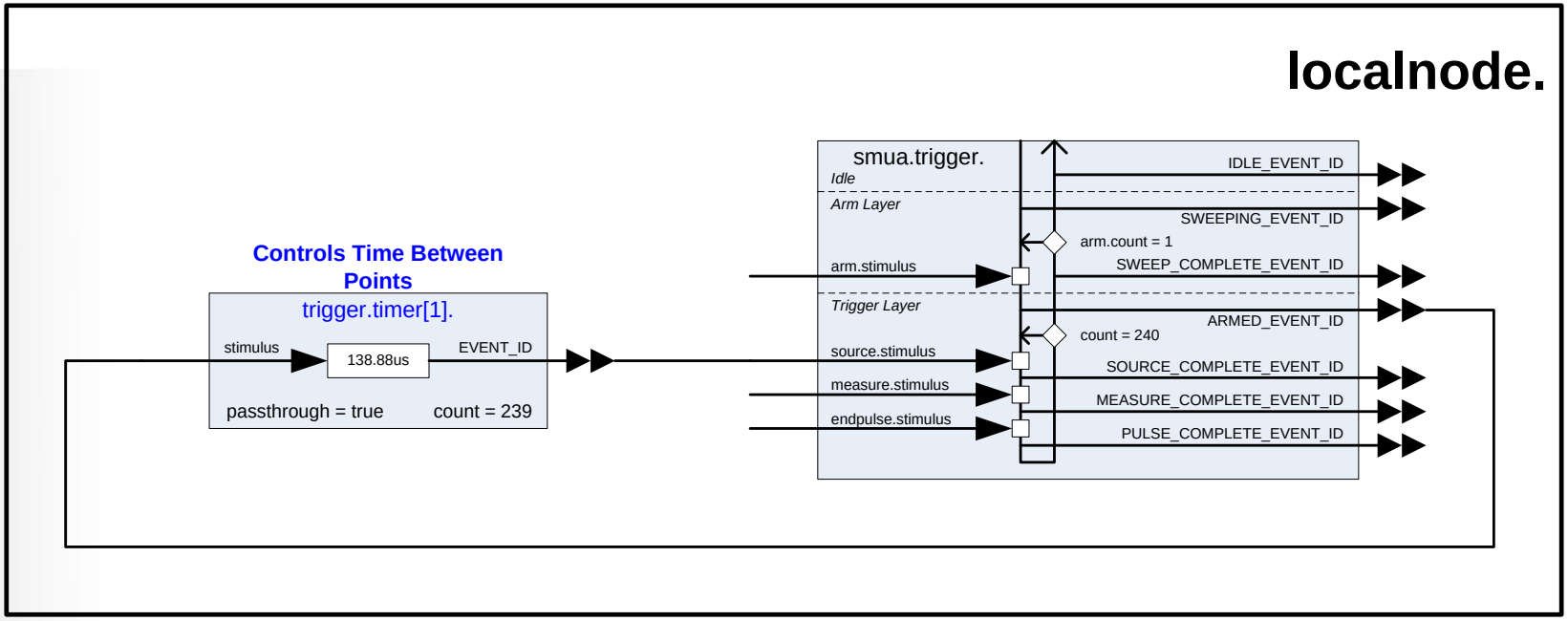
Parameter	Units	Description
Vrms	Volts	The RMS voltage of the AC sine wave
numCycles	n/a	The number of AC sine wave cycles to output
frequency	Hz	The frequency of the AC sine wave
limitI	Amps	The source limit value

Notes:

- RMS voltage is smaller than peak voltage. RMS voltage must be set low enough that peak voltage fits within the maximum voltage source range of the SourceMeter instrument.
- Maximum frequency is approximately 1000 Hz depending on the quality of sine wave desired.

AC Waveform Sweep
Trigger Model Diagram

The following trigger model was used to implement the AC Waveform Sweep



- Timer 1 - Controls the time between source points

Example Output

```
AC_Waveform_Sweep(12, 2, 60, 100e-3)
```