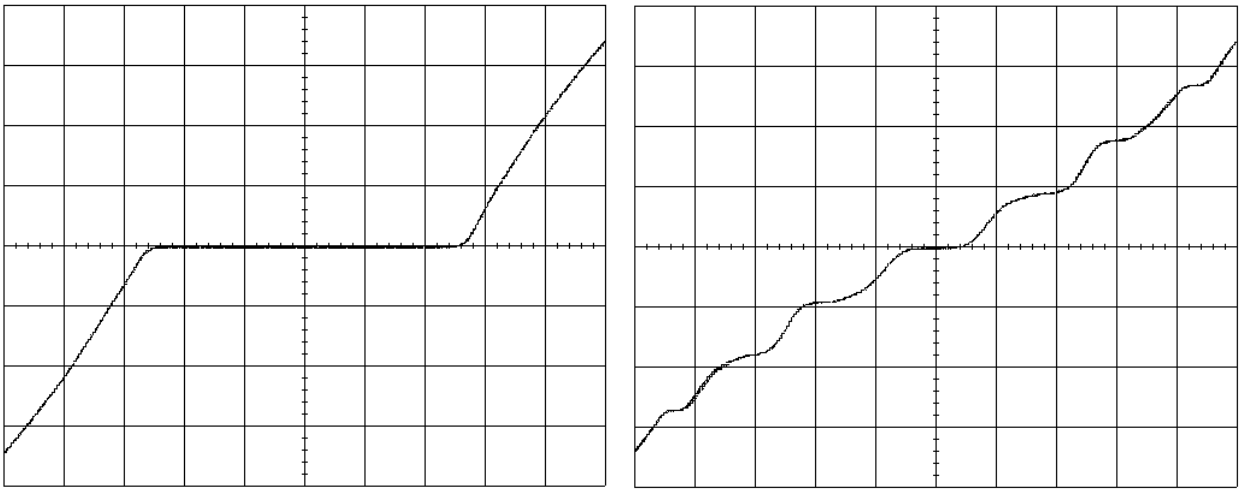
1 DESCRIPTION



The Model MS-OSC Mr. SQUID Oscillator accessory for STAR Cryoelectronics' Mr. SQUID Educational Demonstration System is a 44 GHz microwave oscillator for the Mr. SQUID Shapiro step experiment. The Mr. SQUID Oscillator accessory is compatible with all STAR Cryoelectronics' Mr. SQUID probes and MS-EB03 control electronics.

The Mr. SQUID Oscillator is powered using the DC power source provided with the Mr. SQUID control electronics box. A 5-pin DIN cable included with the Oscillator accessory is used to power the Mr. SQUID electronics box through the Oscillator box. A coaxial cable with 1/4-wave antenna is included to couple the 44 GHz microwave signal to Mr. SQUID. To set up the Shapiro step experiment, the Mr. SQUID voltage-current (*V-I*) characteristic is displayed using an oscilloscope or data acquisition unit, then the microwave power can be turned on using a switch on the front panel of the Oscillator box. The step positions on the *V-I* characteristic can then be recorded. To revert back to the original *V-I* characteristic, simply switch off the power to the Oscillator box.



Mr. SQUID® *V-I* curves without (left) and with (right) 44 GHz microwave signal provided by STAR Cryoelectronics' Model MS-OSC oscillator (50 µA/div horizontal, 100 µV/div vertical).

2 SPECIFICATIONS

Parameter	Value
Oscillator	44 GHz Gunn diode
Output Connector	2.92 mm (F) connector
Power Requirements	±12, +5 V DC
Size	5.40" × 4.18" × 1.33" (137 × 106 × 34 mm)
Weight	8.8 oz (249 g)

Specifications subject to change without prior notice.