PICOTEST

J2120A Line Injector

Product specifications are subject to change without notice.

Measuring PSRR

While the injection transformer is a very wideband adapter, it is not useful for measuring the power supply rejection ratio (PSRR) of a power supply or even an opamp. This is because the attributes that make the injection transformer perform so well also result in a transformer that is intolerant of DC current. Even very small DC currents (5mA or less) can greatly reduce the signal capacity or even totally saturate the transformer. For this reason, the Picotest J2120A Line Injector is another essential test adapter.

The Line Injector allows the input DC supply voltage to be modulated by the network analyzer source signal, as in the case of a PSRR measurement. The J2120A allows the DC supply voltage to be modulated over a wide range of frequency, from below the minimum AC line frequency to above the bandwidth of most, if not all linear regulators.

The Line Injector is only capable of sourcing current, so that the output amplitude can be significantly impacted by the operating current and the total storage capacitance at the load. The OMICRON-Lab Bode 100 network analyzer has a very high selectivity so distortion at the output of the Line Injector generally does not influence the measurement. Again, this is a small signal measurement, so the oscillator signals should be kept as small as possible above the noise floor. In some cases you may need to attenuate the source signal even further using the Picotest J2140A attenuators. Some analyzers, such as the Bode 100 allow shaping of the injection amplitude as a function of frequency, which helps optimize the signal level.

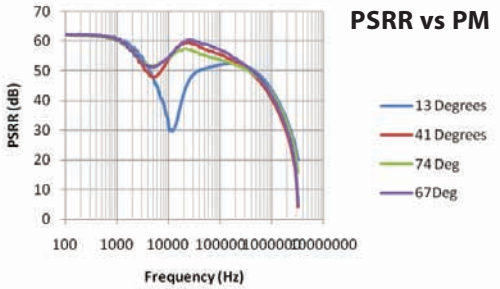
Measuring Input Impedance

The Line Injector can also be used in conjunction with a current probe to measure the input impedance of a power supply. The input impedance of a switching power supply or regulator is negative, which is a stability concern when combined with an EMI filter, making the Line Injector and the measurement an important part of the power supply design, analysis, and verification process.

KEY FEATURES:

J2120A Line Injector

- Enable PSRR measurement
- 10Hz-10MHz usable bandwidth
- Low loss design
- 5 Amps maximum current
- 50VDC maximum input
- Easily measure input filter Impedance, Q, transfer function
- Other Applications: PSRR clock sensitivity, LNA sensitivity and more



Accessories to Sharpen Your Analyzer's Focus

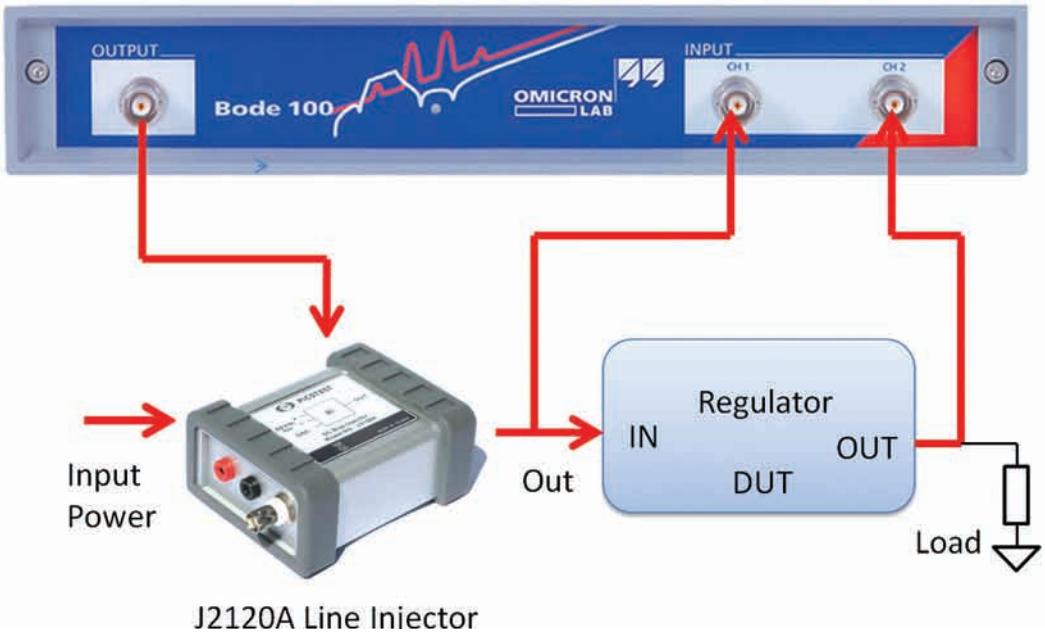
J2120A Line Injector

Specifications		
Characteristic	**Typical**	**Units**
Max DC input voltage	50	VDC
Max Continuous Current	5	A
Max Voltage Drop	3.25	VDC
3dB Frequency Response	15-5M	Hz
Useable Frequency Response	10-10M	Hz
Recommended Injection Signal	-20 -10	dBm
Temperature Range	0 - 50	C
Maximum Altitude	6000	Ft

Mechanical characteristics	
Dimensions (box only) (box + connectors)	109.22 mm x 89.66 mm x 50.80 mm 4.30″x3.53″x 2.00″ 122.68 mm x 89.66 mm x 50.80 mm 4.83″x3.53″x 2.00″
Weight	0.225 kg / 0.463 lbs

Connectors	
Input	Banana, MOD - BNC
Output	Banana

PSSR Measurement Test Setup



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