

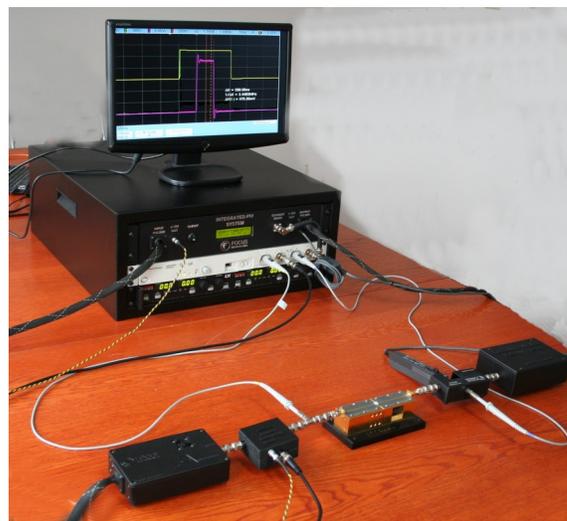


Integrated Pulsed I-V

Solutions for Pulsed I-V / RF Measurements

General

The performance of wide band gap (WBG) high frequency nonlinear RF devices is affected by conditions like temperature, bias point, modulation and power. For this reason, new and existing Load Pull setups must be flexible enough to support CW, Pulsed and Modulated measurements. Pulsed measurements are used to avoid the effects of self-heating, which greatly affect the devices performance. The IPIV pulse generator is designed for pulsed I-V (current voltage) and RF characterization extraction of semiconductor devices. It is well suited for other applications requiring high current and precision current and voltage pulses. The drain pulser uses an external high current supply while the gate pulser has an internal high precision voltage supply. The IPIV can also be synchronized with either external or an internal triggers. The modular architecture of Load Pull Explorer (LPEX) makes it easy to customize and take advantage of the advanced signal generation capabilities of modern instruments. The user has full control over frame structure, positive duty cycle and period. The user can measure parameters like Rise time, Falltime, Pulse width, Average voltage, vBase, vMax, vMin, peak-to-peak voltage, vRMS, vTop, EVM, ACPR, NPR, TOI, IMD, CCDF and much more.



Features

- Handles up to 200V, 18A pulsed and 50V, 5A continuous.
- Minimum pulse rate of 300ns for Drain and Gate.
- Integrated design, combines DC sources and oscilloscope.
- Shared library. The IPIV can be used as a standalone instrument using an ActiveX library, which easily integrates into existing test software.
- Flexible Input/Output. Choose between high power and high precision pulse modules to create a customized setup for your specific application.

Specifications in pulse mode

IPIV Specs		OUTPUT	INPUT
Pulse Voltage	Max Voltage	200V	±15V
	Resolution	15mV	5mV
	Max Current	20A	100mA
Pulse Width	Min Pulse	300ns	300ns
	Resolution	33ns	33ns
	Duty Cycle	0.02%	0.02%
Quiescent	Max Voltage	200V	±15V
	Resolution	15mV	5mV
	Max Current	20A	100mA
	Max Error	15%	5%

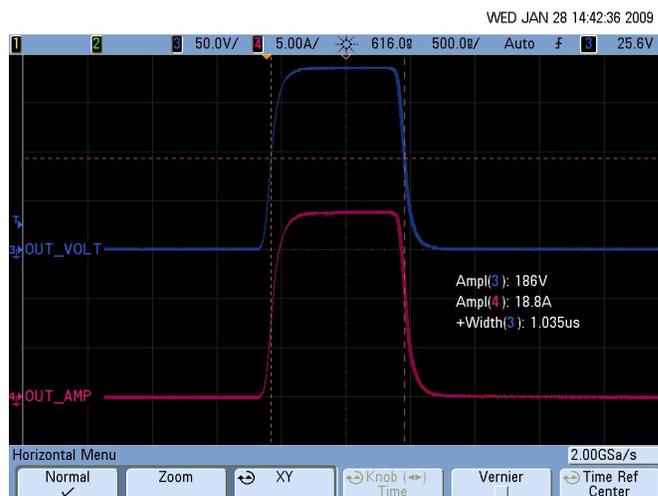
Power Supply Specifications
Input (AC) 100-240V, 1.8A

Output Pulser Module (OPM)

The OPM is the core of the system. Its internal microcontroller uses precision Pulse Width Modulation (PWM) modules with complementary outputs and programmable dead-time in order to generate and synchronize the pulses for both drain and gate bias. The pulse width is adjustable from 300ns to 1ms; pulse repetition rate from 500Hz to 1MHz, with a maximum duty cycle of 100%. An N-channel MOSFET within the Output module supports voltages up to 200V and currents up to 20A. Both the pulse and quiescent bias voltages are delivered via the integrated DC power supplies thereby making the IPIV a turn key solution. The OPM is controlled via TCP-IP interface.

Input Pulser Module (IPM)

The IPM operates as a slave module controlled by the OPM. Internal precision Digital Analog Converters (DAC) are used to adjust the Input voltage in the range of ±15V, with a 5mV resolution. The output buffer amplifier delivers up to 100mA.



Typical 1000ns Output Waveform, 186V 18.8A
500ns/Div Horizontal Scale, 50V/Div & 5A/Div Vertical Scale



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