

**ISL55180 Demo fixture**

**Rev A03: 02/05/2011**



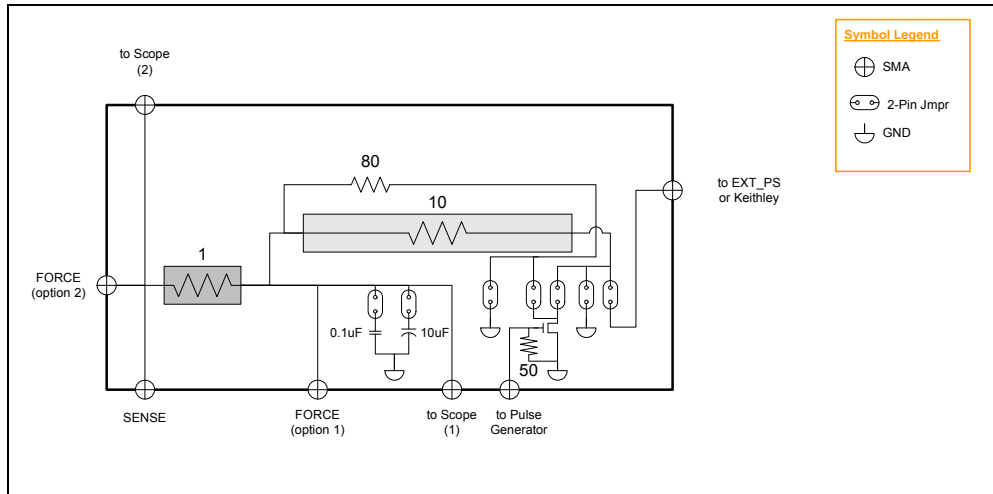
This document contains information on a product under development. The parametric information contains target parameters that are subject to change.

# 1 ISL55180 Demo Fixture

Figure 1 illustrates the ISL55180 Demo Fixture. This is used to demonstrate several ISL55180 features and performance capabilities:

- Dynamic Current Response
- Wireless Sense

**Figure 1: ISL55180 Demo Fixture Block Diagram**



Component	Description
10uF and Jumper to GND	Common DUT board decoupling values
0.1uF and Jumper to GND	Common DUT board decoupling values
80Ω and Jumper to GND	With a FV = 2V, this will provide a load current of 25mA (10% of Full-Scale)
10Ω and Jumper to GND	When placed in parallel of 80Ω, this will create an 8.889Ω load resistance. With a FV = 2V, this will provide a load current of 225mA (90% of Full-Scale)
80Ω and Jumper to FET Drain	Used to switch 80Ω on and off to ground using pulse generator and FET switch
10Ω and Jumper to FET Drain	Used to switch 10Ω on and off to ground using pulse generator and FET switch
1Ω	Used to simulate board and trace resistance when demonstrating Wireless Sense
10Ω and Jumper to EXT_PS (Keithley)	When demonstrating Wireless Sense, the EXT_PS can provide different termination voltages which produce different load currents.
50Ω	Termination resistor for pulse generator driving gate of FET
N-Channel MOSFET	Used to quickly connect and disconnect loads to ground

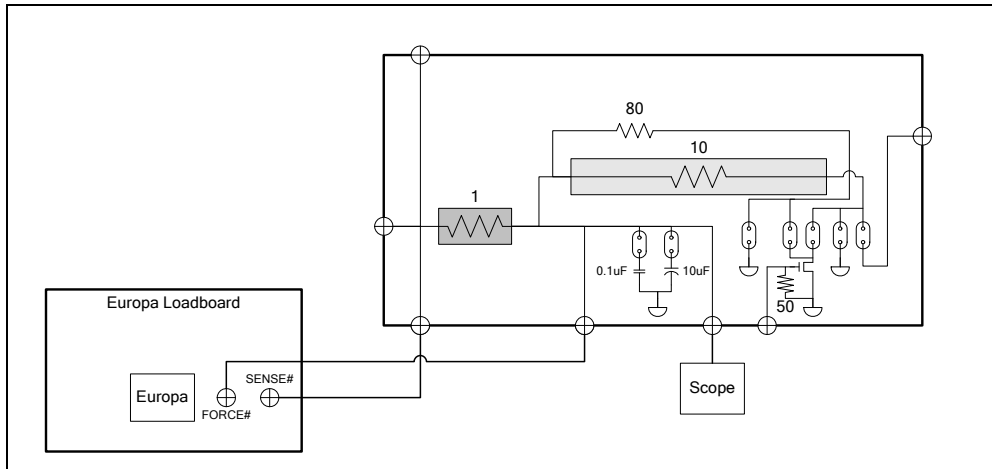
SMA	Description
FORCE (option 1)	Connect to ISL55180 FORCE output when demonstrating remote Kelvin Sense
FORCE (option 2)	Connect to ISL55180 FORCE output when demonstrating Wireless Sense
SENSE	Connect ISL55180 SENSE input for all demonstration modes
to Scope (1)	Connect to Scope (or DMM) to monitor the simulated DUT voltage
to Scope (2)	Connect to Scope (or DMM) to monitor the Wireless Sense voltage
to EXT_PS	Connect to Power Supply (Keithley) which provides different termination voltages.
to Pulse Generator	Connect to Pulse Generator to switch on and off FET switch connecting loads to ground

## 1.1 Remote Kelvin Sense

Figure 2 illustrates how to connect the ISL55180 Loadboard to the Demo Fixture to demonstrate ISL55180's transient response.

- Connect ISL55180 FORCE# output to Demo Fixture FORCE (Option 1)
- Connect ISL55180 SENSE# input to Demo Fixture SENSE
- Use the EVM GUI to toggle the FV between different voltage values
- Connect Scope to Demo Fixture 'to Scope (1)' to monitor output response

**Figure 2: Remote Kelvin Sense – Capacitive Load Only Configuration**

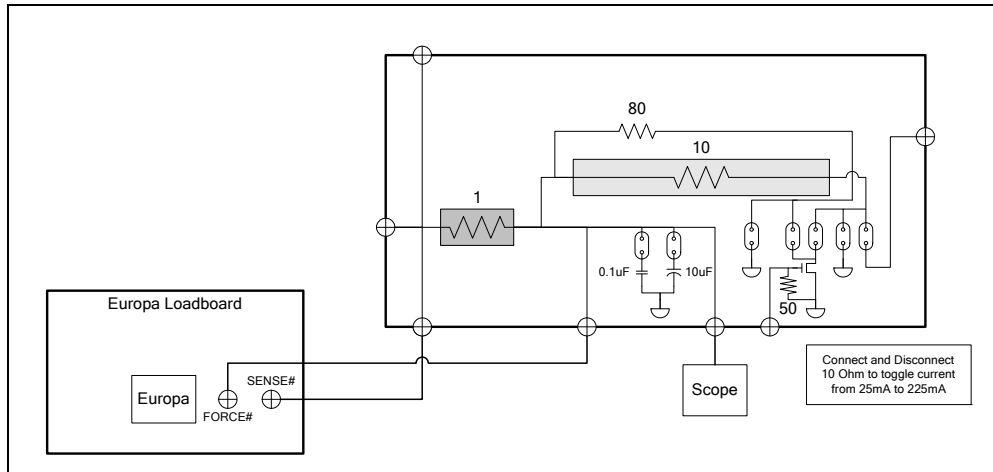


## 1.2 Remote Kelvin Sense – Dynamic Current Response

Figure 3 illustrates how to connect the ISL55180 Loadboard to the Demo Fixture to demonstrate ISL55180's dynamic current response between 25mA (10%) and 225mA (90%).

- Connect ISL55180 FORCE# output to Demo Fixture FORCE (Option 1)
- Connect ISL55180 SENSE# input to Demo Fixture SENSE
- Program FV = +2V
- Connect shunt from 80Ω to GND
- Connect/Disconnect shunt from 10Ω to GND to toggle current from 25mA to 225mA
- Connect Scope to Demo Fixture 'to Scope (1)' to monitor output response

**Figure 3: Remote Kelvin Sense – Dynamic Current Response Configuration**



### 1.3 Wireless Sense – Simple DC Demonstration

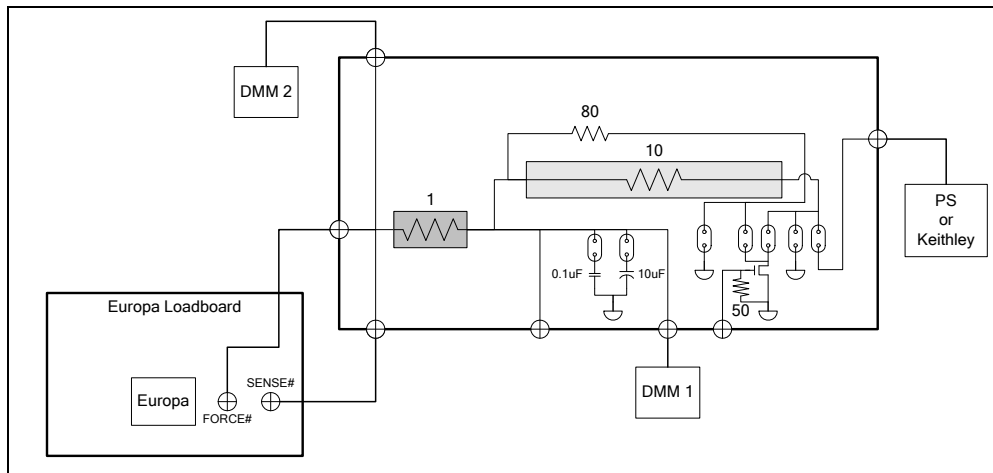
Figure 4 illustrates how to connect the ISL55180 Loadboard to the Demo Fixture to demonstrate ISL55180’s Wireless Sense feature.

- Connect ISL55180 FORCE# output to Demo Fixture FORCE (Option 2)
- Connect ISL55180 SENSE# input to Demo Fixture SENSE
- Connect shunt from 10Ω to EXT\_PS
- Connect DMM to Demo Fixture ‘to Scope (1)’ (simulated DUT voltage)
- Connect DMM to Demo Fixture ‘to Scope (2)’ (Wireless Sense voltage)
- Connect Power Supply (or Keithley) to Demo Fixture EXT\_PS
- Program Rseries = 61 (may vary depending on device/loadboard)

FV (V)	EXT_PS (V)	Current
+2.5V	+2.5V to 0V	0mA to +250mA
0V	0V to +2.5V	0mA to -250mA

The voltage at DMM 1 (DUT) should track the FV voltage regardless of current load. The voltage at DMM2 will vary to compensate for the IR drop across the 1Ω simulated trace resistance.

**Figure 4: Wireless Sense – Simple DC Configuration**



**2 Document Revision History**

Revision	Date	Description
A01	6/19/2009	Initial Draft
A02	1/13/2010	Added Capacitor Jumper to ground
A03	2/05/2011	Added FET to toggle loads on and off to ground