

# 770153 Verification Tester Operation Instructions



Made in the  
United States of America



Figure 1. SCS 770153 Verification Tester

## Description

The SCS 770153 Verification Tester is used to perform periodic test limit verification of the SCS 770151 and 770152 SW Aware Monitor. Verification may be accomplished without removing the monitor from its workstation. The 770153 Verification Tester is National Institute of Standards and Technology (NIST) traceable. Frequency of verification is based on the critical nature of the ESD susceptible items handled. SCS recommends annual calibration of the SW Aware Monitor and 770153 Verification Tester.

The SCS SW Aware Monitor is defined in ESD TR1.0-01-01 as an impedance continuous monitor. Most metrology departments or companies specializing in calibration will not have the specialized test equipment needed for the calibration or verification of impedance continuous monitors. The SCS 770153 Verification Tester meets ANSI/ESD S20.20 and Compliance Verification ESD TR53.

## Packaging

- 1 770153 Verification Tester
- 1 Alligator Clip
- 1 10 mm Stacking Snap
- 1 Ground Plug Adapter
- 1 Ground Extension Cord, 5'

## Features and Components

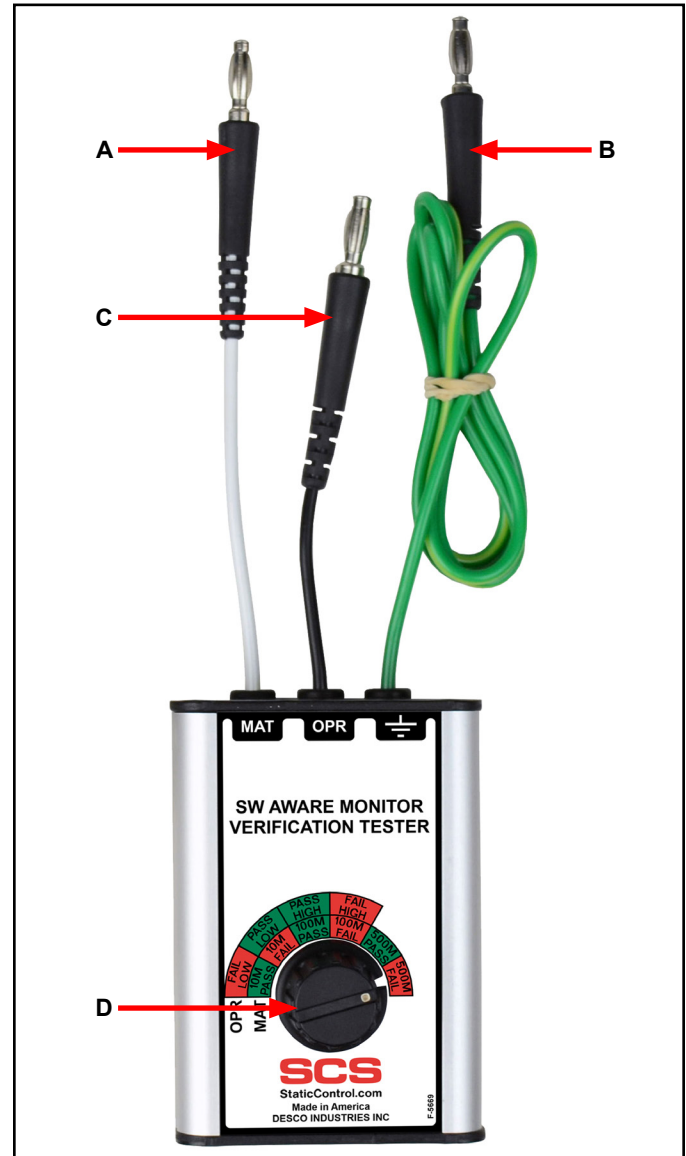


Figure 2. Features and components

**A. Mat Test Lead:** Connect to the monitor's mat terminal to verify its mat test circuit.

**B. Ground Lead:** Connect to equipment ground to provide a ground reference for the 770153 Verification Tester.

**C. Operator Test Lead:** Insert into the monitor's operator jack to verify its operator test circuit.

**D. Rotary Switch:** Selects the various pass and fail load values needed to verify the monitor's operator and mat test circuits.

## Operation

### VERIFYING THE OPERATOR CIRCUIT

1. Connect the Verification Tester's green ground lead to equipment ground. This may be done using the included ground plug adapter or alligator clip.

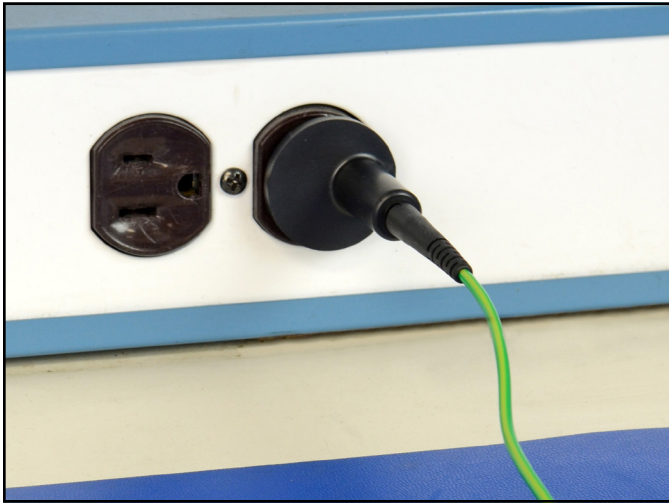


Figure 3. Using the Ground Plug Adapter to ground the 770153 Verification Tester

2. Insert the Verification Tester's black operator test lead into the SW Aware Monitor's operator jack.



Figure 4. Connecting the 770153 Verification Tester to the SW Aware Monitor's operator jack

3. Set the rotary switch to OPERATOR FAIL LOW. The monitor's operator LED should illuminate red, and its audible alarm should sound.
4. Set the rotary switch to OPERATOR PASS LOW. The monitor's operator LED should illuminate green.

5. Set the rotary switch to OPERATOR PASS HIGH. The monitor's operator LED should illuminate green.
6. Set the rotary switch to OPERATOR FAIL HIGH. The monitor's operator LED should illuminate red, and its audible alarm should sound.
7. Disconnect the operator test lead from the monitor.

### VERIFYING THE MAT CIRCUIT

8. Connect the included stacking snap to the Verification Tester's white mat test lead.
9. Disconnect the monitor's white mat monitor cord from its worksurface mat and turn it over to expose its 10 mm snap.
10. Connect the Verification Tester's white mat test lead to the mat monitor cord's 10 mm snap.

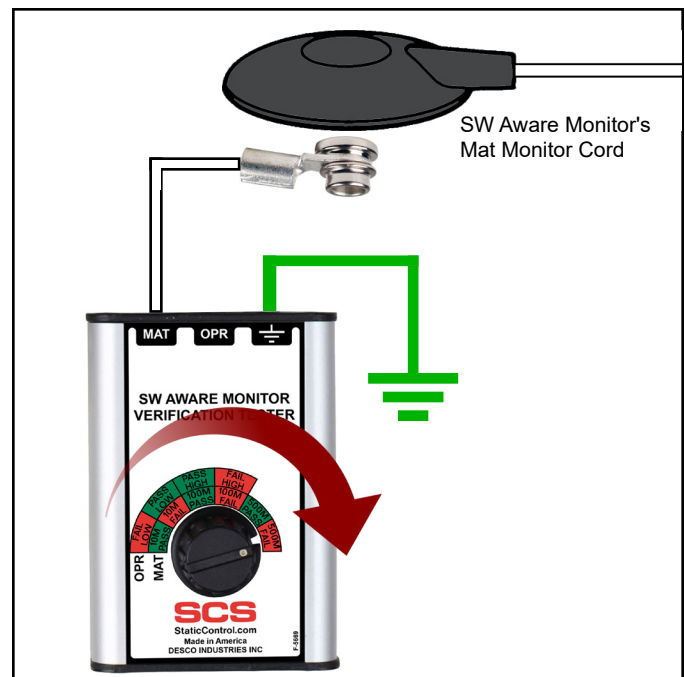


Figure 5. Connecting the 770153 Verification Tester to the SW Aware Monitor's mat monitor cord

11. Set the rotary switch to MAT 10M PASS. The monitor's mat LED should illuminate green.
12. Set the rotary switch to MAT 10M FAIL. The monitor's mat LED should illuminate red, and its audible alarm should sound.

## Calibration

Frequency of recalibration should be based on the critical nature of those ESD sensitive items handled and the risk of failure for the ESD protective equipment and materials. In general, SCS recommends that calibration be performed annually.

Use the information below to verify if the 770153 Verification Tester operates within its specifications.

### EQUIPMENT NEEDED

- RLC Bridge for testing operator circuit
- Digital Multimeter with 50-100V power supply for testing mat circuit

### SETTINGS

- @ 50 Hz  
Frequency = 1,000 Hz (20 x 50), 20th harmonic
- @ 60 Hz  
Frequency = 1,020 Hz (17 x 60), 17th harmonic
- Set function switch to read "Equivalent Parallel Circuit"

### RECORD THE FOLLOWING DATA

Operator Rotary Switch Setting	Equivalent Parallel Capacitance	Targeted Specification ( $\pm 10\%$ )
Fail Low		138.9 pF
Pass Low		118.6 pF
Pass High		49.0 pF
Fail High		44.7 pF

Operator Rotary Switch Setting	Dissipation Factor	Targeted Specification ( $\pm 10\%$ )
Fail Low		.158
Pass Low		.367
Pass High		.445
Fail High		.192

Mat Rotary Switch Setting	Resistance @ 50V	Targeted Specification ( $\pm 4\%$ )
10M Pass		8 megohms
10M Fail		12 megohms
100M Pass		80 megohms
100M Fail		120 megohms
500M Pass		400 megohms
500M Fail		600 megohms

## Specifications

Operating Temperature	50 to 95°F (10 to 35°C)
Environmental Requirements	Indoor use only at altitudes less than 6500 ft. (2 km) Maximum relative humidity of 80% up to 85°F (30°C) decreasing linearly to 50% @ 85°F (30°C)
Dimensions	3.17" L x 2.25" W x 1.26" H (81 mm x 57 mm x 32 mm)
Weight	0.3 lbs. (0.15 kg)
Country of Origin	United States of America

### Limited Warranty, Warranty Exclusions, Limit of Liability and RMA Request Instructions

See the SCS Warranty -

[StaticControl.com/Limited-Warranty.aspx](http://StaticControl.com/Limited-Warranty.aspx)