



A Tektronix Company

# Model 2110 5½ Digit Multimeter

## Version 1.02 Firmware Release Notes

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## General Information

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### Supported models

This firmware is used on the following Keithley Instruments product models:

Model 2110

### Installation instructions

Firmware installation instructions for the Model 2110 are included with the firmware zip file. The latest firmware can be downloaded from the [Keithley Instruments website \(http://www.keithley.com\)](http://www.keithley.com).

### Upgrade considerations for Model 2110

The following table outlines the considerations that should be made when deciding whether or not to upgrade your Model 2110 firmware to version 1.02.

Consideration for upgrade	From version 1.01
Recalibration Required	No
Re-qualification Suggested	Yes
Should you upgrade?	Yes

## Version 1.02 Release

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### Overview

Version 1.02 is a maintenance release of the Model 2110 firmware. This release resolves one critical issue and does not require hardware modification or recalibration. ACV and ACI measurements made with the REPEAT AVG digital filter enabled will take longer than with the 1.01 firmware. The increase in measurement time will be approximately  $(N-1) \times [\text{trigger delay}]$ , where N is the value of the READINGS setting. Note that when the trigger delay is set to AUTO, the AC BANDWIDTH setting will affect the trigger delay time.

### Critical fixes

**PR46526 Models affected:**

2110

**Symptom:**

When the REPEAT AVG digital filter is used with the ACV or ACI functions, the trigger delay setting is ignored after the first reading in the N-reading average. The remaining N-1 readings are taken at one millisecond intervals, severely limiting the effectiveness of the AC REPEAT AVG filter.

**Resolution:**

This issue has been corrected.

### Enhancements

There are no enhancements included in this release.

### Non-critical fixes

**PR47931 Models affected:**

2110

**Symptom:**

When SAMP:COUNT is 1 and TRIG:COUNT is greater than 1, issuing an INIT::FETC? SCPI query will cause the resulting measurements to be delimited with semicolons instead of commas.

**Resolution:**

This issue has been corrected.

### Known issues

**PR47714 Models affected:**

2110

**Symptom:**

When the ACV range is set for 750V, issuing a :SENS:VOLT:AC:RANGE? SCPI query will return +1.000000E+03

**PR47834 Models affected:**

2110

**Symptom:**

In TEMP mode, the NTCT sensor coefficients cannot be set or queried via SCPI.

**Workaround:**

NTCT sensor coefficients can be set from the front panel before sending SCPI commands. As long as the Model 2110 is not powered off, it will retain the NTCT coefficients until they are changed again from the front panel.