



## IANZ Endorsed Certificate of Calibration

Certificate Number: 13610

|                             |                  |                                 |  |
|-----------------------------|------------------|---------------------------------|--|
| <b>Manufacturer:</b>        | Keysight         | <b>Description:</b>             | Digital Multimeter   |
| <b>Model No:</b>            | 34461A           |                                 |  |
| <b>Serial No:</b>           |                  | <b>Options Installed:</b>       | nil  |
| <b>Customer:</b>            |                  | <b>Customer Asset No:</b>       |  |
|                             |                  | <b>Location of Calibration:</b> | RF Test Solutions Ltd<br>409 Cuba Street<br>Alicetown<br>Lower Hutt<br>New Zealand |
| <b>Date of Calibration:</b> | 22-Aug-2018      | <b>Received Date:</b>           | 21-Aug-2018  |
| <b>Temperature:</b>         | 23°C ± 5°C       | <b>Humidity:</b>                | 20 - 80 % RH   |
| <b>Procedure:</b>           | STE/9000 B.00.02 |                                 |  |

This calibration certificate documents that the instrument was calibrated for the parameters and at the points specified in the relevant RF Test Solutions calibration procedure as defined for this instrument, in accordance with the manufacturer's current recommended procedure. **Note:** This calibration certificate may reference instruments manufactured by HP, Agilent and Keysight as being manufactured by Keysight Technologies, Inc.

Based on the manufacturer recommended calibration interval or user defined calibration interval, the next calibration is due on: 22-Aug-2019. The user should determine the suitability of this instrument for its intended use.

This certificate contains a summary of calibration information and the measurement uncertainty values attributed to the performance test results. The results of the performance test results are retained for a period of six years and are included in Appendix A of this report.

No adjustment were performed on this instrument.

**Remarks or Special Requirements:**




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**Michael Taylor**

**Authorised IANZ Signatory**



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### Traceability Information:

**Technician ID:** M Taylor

The measurements made in support of this certificate are traceable to the SI via one or more of the following National Metrology Institutes: Measurement Standards Laboratory New Zealand, National Measurements Institute (Australia), National Institute of Standards and Technology (USA) and the National Physical Laboratory (UK).

At planned intervals, our measurement standards are calibrated by comparison to, or measurement against national or international standards, natural physical constants, consensus standards or by ratio type measurements using self calibrating techniques.

Endorsement: The tests, calibrations or measurements covered by this document have been performed in accordance with IANZ (International Accreditation New Zealand) requirements which include the requirements of ISO/IEC 17025 and are traceable to national standards of measurement.

This certificate shall not be reproduced, except in full.

The statement of compliance to manufacturers specifications does not include the associated measurement uncertainties.

### Calibration Equipment Used:

| Model Number: | Model Description:        | Trace Number: | Cal due date: |
|---------------|---------------------------|---------------|---------------|
| 33250A        | 80 MHz Function Generator | RFT2568       | 20-Dec-2018   |
| 5700A         | Calibrator                | RFT4050       | 31-Jan-2020   |
| 5725A         | Amplifier                 | RFT4051       | 31-Jan-2020   |

|   |   |  |
|---|---|--|
|  | <p>RF Test Solutions Ltd<br/> 409 Cuba Street<br/> Alicetown<br/> Lower Hutt 5010<br/> NEW ZEALAND<br/> Phone: +64 4 570 2483</p> |  |
|---|---|--|

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### Uncertainty Annex

| Test Parameter      | Range          | Expanded Uncertainty | k   |
|---------------------|----------------|----------------------|-----|
| AC Voltage Accuracy |                |                      |     |
| Range               | Applied        |                      |     |
| 0.1 V               | 0.1 V, 1 KHz   | +/- 15.43 uV         | 2.0 |
| 0.1 V               | 0.1 V, 50 KHz  | +/- 39.26 uV         | 2.0 |
| 0.1 V               | 0.1 V, 300 KHz | +/- 120.01 uV        | 2.0 |
| 1 V                 | 1 V, 1 KHz     | +/- 85.45 uV         | 2.0 |
| 1 V                 | 1 V, 50 KHz    | +/- 145.1 uV         | 2.0 |
| 1 V                 | 1 V, 300 KHz   | +/- 536.6 uV         | 2.0 |
| 10 V                | 0.03 V, 1 KHz  | +/- 4.63 uV          | 2.0 |
| 10 V                | 1 V, 1 KHz     | +/- 85.7 uV          | 2.0 |
| 10 V                | 10 V, 10 Hz    | +/- 1.9 mV           | 2.0 |
| 10 V                | 10 V, 100 Hz   | +/- 0.9 mV           | 2.0 |
| 10 V                | 10 V, 20 KHz   | +/- 0.9 mV           | 2.0 |
| 10 V                | 10 V, 50 KHz   | +/- 1.5 mV           | 2.0 |
| 10 V                | 10 V, 100 KHz  | +/- 2.9 mV           | 2.0 |
| 10 V                | 10 V, 300 KHz  | +/- 6.6 mV           | 2.0 |
| 100 V               | 100 V, 1 KHz   | +/- 9.3 mV           | 2.0 |
| 100 V               | 100 V, 50 KHz  | +/- 26.1 mV          | 2.0 |
| 750 V               | 750 V, 1 KHz   | +/- 69.3 mV          | 2.1 |
| 750 V               | 210 V, 50 KHz  | +/- 54.8 mV          | 2.0 |
| Frequency           |                |                      |     |
| Range               | Applied        |                      |     |
|                     | 10 Hz          | +/- 7.1 uHz          | 2.0 |
|                     | 300 KHz        | +/- 70.8 mHz         | 2.0 |



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| DC Voltage Accuracy |             |               |     |
|---------------------|-------------|---------------|-----|
| Range               | Applied     |               |     |
| 0.1 V               | 0.1 V       | +/- 7.1 nV    | 2.0 |
| 0.1 V               | -0.1 V      | +/- 7.1 nV    | 2.0 |
| 1 V                 | 1 V         | +/- 7.9 uV    | 2.1 |
| 1 V                 | -1 V        | +/- 7.9 uV    | 2.1 |
| 10 V                | 4 V         | +/- 35.5 uV   | 2.0 |
| 10 V                | 10 V        | +/- 87.3 uV   | 2.0 |
| 10 V                | -10 V       | +/- 87.3 uV   | 2.0 |
| 100 V               | 100 V       | +/- 810.6 uV  | 2.0 |
| 100 V               | -100 V      | +/- 810.6 uV  | 2.0 |
| 1000 V              | 1000 V      | +/- 9.1 mV    | 2.0 |
| 1000 V              | -500 V      | +/- 4.6 mV    | 2.0 |
| Resistance Accuracy |             |               |     |
| Range               | Applied     |               |     |
| 100 Ohm             | 100 Ohm     | +/- 3 mohms   | 2.0 |
| 1 Kohm              | 1 Kohm      | +/- 18 mohms  | 2.0 |
| 10 Kohm             | 10 Kohm     | +/- 161 mohms | 2.0 |
| 100 Kohm            | 100 Kohm    | +/- 2 ohms    | 2.1 |
| 1 Mohm              | 1 Mohm      | +/- 30 ohms   | 2.3 |
| 10 Mohm             | 10 Mohm     | +/- 493 ohms  | 2.1 |
| 100 Mohm            | 100 Mohm    | +/- 37 kohms  | 2.8 |
| AC Current          |             |               |     |
| Range               | Applied     |               |     |
| 10 A                | 10 A, 5 KHz | +/- 9.49 mA   | 2.0 |
| 3 A                 | 2 A, 1 KHz  | +/- 1.12 mA   | 2.6 |
| 3 A                 | 2 A, 5 KHz  | +/- 1.79 mA   | 2.0 |
| 1 A                 | 1 A, 1 KHz  | +/- 561.76 uA | 2.6 |
| 1 A                 | 1 A, 5KHz   | +/- 895.47 uA | 2.0 |



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|                      |                 |                |     |
|----------------------|-----------------|----------------|-----|
| 0.1 A                | 0.1 A, 1 KHz    | +/- 19.12 uA   | 2.1 |
| 0.1 A                | 0.1 A, 5 KHz    | +/- 91.31 uA   | 2.0 |
| 0.01 A               | 0.0001 A, 1 KHz | +/- 181.53 nA  | 2.0 |
| 0.01 A               | 0.001 A, 1 KHz  | +/- 743.94 nA  | 2.0 |
| 0.01 A               | 0.01 A, 1 KHz   | +/- 1.78 uA    | 2.0 |
| 0.01 A               | 0.01 A, 5 KHz   | +/- 9.07 uA    | 2.0 |
| 0.001 A              | 0.001 A, 1 KHz  | +/- 743.94 nA  | 2.0 |
| 0.001 A              | 0.001 A, 5 KHz  | +/- 1851.02 nA | 2.0 |
| 0.0001 A             | 0.0001 A, 1 KHz | +/- 181.53 nA  | 2.0 |
| 0.0001 A             | 0.0001 A, 5 KHz | +/- 437.61 nA  | 2.0 |
| DC Current           |                 |                |     |
| Range                | Applied         |                |     |
| 10 A                 | 5 A             | +/- 1.48 mA    | 2.4 |
| 10 A                 | 10 A            | +/- 2.95 mA    | 2.4 |
| 3 A                  | 2 A             | +/- 264.35 uA  | 2.1 |
| 1 A                  | 1 A             | +/- 132.43 uA  | 2.1 |
| 0.1 A                | 0.1 A           | +/- 8.97 uA    | 2.1 |
| 0.01 A               | 0.01 A          | +/- 0.72 uA    | 2.0 |
| 0.001 A              | 0.001 A         | +/- 96.89 nA   | 2.0 |
| 0.0001 A             | 0.0001 A        | +/- 1.66 nA    | 2.2 |
| Revision Number 1.00 |                 |                |     |

For a confidence level of 95 %

|   |  |  |
|---|--|--|
|  | <p>RF Test Solutions Ltd<br/>409 Cuba Street<br/>Alicetown<br/>Lower Hutt 5010<br/>NEW ZEALAND<br/>Phone: +64 4 570 2483</p> |  <p>IANZ<br/>ACCREDITED CALIBRATION LABORATORY<br/>ACCREDITATION Nº: 492</p> |
|---|--|--|

## **IANZ Endorsed Certificate of Calibration**

Certificate Number: 13610

### **Appendix A Performance Test Results**

# Measurement Report

RF Test Solutions Limited  
409 Cuba Street Alicetown  
Lower Hutt  
New Zealand

## As Received and As Completed Data

**Report Number:** 13610

**Customer:**

**Model Number:** 34461A

**Serial Number:**

**Tested Options:**

**Test Date:** 22 Aug 2018

**Tested By:** M Taylor

**Temperature:** (23.0±5) °C

**Humidity:** (20 to 80)% RH

**Test Program Name:** AGT\_3446XA Part No. 5011-4595

**Test Program Version:** B.00.02

**Test Executive:** STE/9000 C.08.96W (MENDOR B.06.34)

### Specification Limits:

Unless indicated otherwise, the units for minimum and/or maximum specification limits are the same as the units stated for the measured value.

Report Number: 13610  
 Model Number: 34461A

Test Date: 22 Aug 2018  
 Serial Number:

PERFORMANCE TEST RESULTS SUMMARY

| <u>Test Name</u>              | <u>As Received</u> | <u>As Completed</u> |
|-------------------------------|--------------------|---------------------|
| INITIAL SETUP                 | DONE               | DONE                |
| ZERO OFFSET - FRONT TERMINALS | PASSED             | <b>*NOT DONE*</b>   |
| ZERO OFFSET - REAR TERMINALS  | PASSED             | <b>*NOT DONE*</b>   |
| DC VOLTS                      | PASSED             | <b>*NOT DONE*</b>   |
| AC VOLTS                      | PASSED             | <b>*NOT DONE*</b>   |
| FREQUENCY                     | PASSED             | <b>*NOT DONE*</b>   |
| OHMS                          | PASSED             | <b>*NOT DONE*</b>   |
| DC CURRENT                    | PASSED             | <b>*NOT DONE*</b>   |
| AC CURRENT                    | PASSED             | <b>*NOT DONE*</b>   |
| HIGH CURRENT                  | PASSED             | <b>*NOT DONE*</b>   |



# Measurement Report (As Received)

**Report Number:** 13610  
**Model Number:** 34461A

**Test Date:** 22 Aug 2018  
**Serial Number:**

## ZERO OFFSET - FRONT TERMINALS

**PASSED**

Pre-Repair/Adjustment Data:

| <u>TEST CONDITIONS</u>  | <u>MINIMUM</u> | <u>MEASURED</u> | <u>MAXIMUM</u>    |          |
|-------------------------|----------------|-----------------|-------------------|----------|
| DC Volts Zero Offset    |                |                 |                   |          |
| Range                   | Input (Front)  |                 |                   |          |
| -----                   | -----          |                 |                   |          |
| 100 mV                  | 0 V            | -3.50           | -0.76 $\mu$ V     | 3.50     |
| 1 V                     | 0 V            | -7.00           | -0.73 $\mu$ V     | 7.00     |
| 10 V                    | 0 V            | -50.0           | -0.3 $\mu$ V      | 50.0     |
| 100 V                   | 0 V            | -0.600          | 0.024 mV          | 0.600    |
| 1000 V                  | 0 V            | -10.00          | 0.01 mV           | 10.00    |
| 4-Wire Ohms Zero Offset |                |                 |                   |          |
| Range                   | Input (Front)  |                 |                   |          |
| -----                   | -----          |                 |                   |          |
| 100 $\Omega$            | 0 $\Omega$     | -4.00           | -0.55 m $\Omega$  | 4.00     |
| 1 k $\Omega$            | 0 $\Omega$     | -10.00          | -0.48 m $\Omega$  | 10.00    |
| 10 k $\Omega$           | 0 $\Omega$     | -100.0          | -2.7 m $\Omega$   | 100.0    |
| 100 k $\Omega$          | 0 $\Omega$     | -1.000          | -0.005 $\Omega$   | 1.000    |
| 1 M $\Omega$            | 0 $\Omega$     | -10.00          | -0.28 $\Omega$    | 10.00    |
| 10 M $\Omega$           | 0 $\Omega$     | -100.0          | 2.1 $\Omega$      | 100.0    |
| DC Current Zero Offset  |                |                 |                   |          |
| Range                   | Input (Front)  |                 |                   |          |
| -----                   | -----          |                 |                   |          |
| 100 $\mu$ A             | 0 A            | -0.025000       | -0.003066 $\mu$ A | 0.025000 |
| 1 mA                    | 0 A            | -0.06000        | -0.00082 $\mu$ A  | 0.06000  |
| 10 mA                   | 0 A            | -2.0000         | -0.0032 $\mu$ A   | 2.0000   |
| 100 mA                  | 0 A            | -5.000          | 0.023 $\mu$ A     | 5.000    |
| 1 A                     | 0 A            | -0.10000        | 0.00092 mA        | 0.10000  |
| 3 A                     | 0 A            | -0.6000         | 0.0015 mA         | 0.6000   |
| 10 A                    | 0 A            | -1.0000         | 0.0008 mA         | 1.0000   |

## ZERO OFFSET - REAR TERMINALS

**PASSED**

Pre-Repair/Adjustment Data:

| <u>TEST CONDITIONS</u> | <u>MINIMUM</u> | <u>MEASURED</u> | <u>MAXIMUM</u> |      |
|------------------------|----------------|-----------------|----------------|------|
| DC Volts Zero Offset   |                |                 |                |      |
| Range                  | Input (Rear)   |                 |                |      |
| -----                  | -----          |                 |                |      |
| 100 mV                 | 0 V            | -3.50           | -0.33 $\mu$ V  | 3.50 |

Report Number: 13610  
 Model Number: 34461A

Test Date: 22 Aug 2018  
 Serial Number:

ZERO OFFSET - REAR TERMINALS

CONTINUED

| TEST CONDITIONS         |            | MINIMUM   | MEASURED          | MAXIMUM  |
|-------------------------|------------|-----------|-------------------|----------|
| 1 V                     | 0 V        | -7.00     | -0.24 $\mu$ V     | 7.00     |
| 10 V                    | 0 V        | -50.0     | 0.0 $\mu$ V       | 50.0     |
| 100 V                   | 0 V        | -0.600    | -0.011 mV         | 0.600    |
| 1000 V                  | 0 V        | -10.00    | 0.01 mV           | 10.00    |
| 4-Wire Ohms ZERO Offset |            |           |                   |          |
| Range Input (Rear)      |            |           |                   |          |
| -----                   | -----      |           |                   |          |
| 100 $\Omega$            | 0 $\Omega$ | -4.00     | -0.16 m $\Omega$  | 4.00     |
| 1 k $\Omega$            | 0 $\Omega$ | -10.00    | -0.10 m $\Omega$  | 10.00    |
| 10 k $\Omega$           | 0 $\Omega$ | -100.0    | -2.5 m $\Omega$   | 100.0    |
| 100 k $\Omega$          | 0 $\Omega$ | -1.000    | -0.002 $\Omega$   | 1.000    |
| 1 M $\Omega$            | 0 $\Omega$ | -10.00    | 0.08 $\Omega$     | 10.00    |
| 10 M $\Omega$           | 0 $\Omega$ | -100.0    | 1.9 $\Omega$      | 100.0    |
| DC Current Zero Offset  |            |           |                   |          |
| Range Input (Rear)      |            |           |                   |          |
| -----                   | -----      |           |                   |          |
| 100 $\mu$ A             | 0 A        | -0.025000 | -0.001288 $\mu$ A | 0.025000 |
| 1 mA                    | 0 A        | -0.06000  | -0.00115 $\mu$ A  | 0.06000  |
| 10 mA                   | 0 A        | -2.0000   | 0.0658 $\mu$ A    | 2.0000   |
| 100 mA                  | 0 A        | -5.000    | 0.102 $\mu$ A     | 5.000    |
| 1 A                     | 0 A        | -0.10000  | 0.00264 mA        | 0.10000  |
| 3 A                     | 0 A        | -0.6000   | 0.0026 mA         | 0.6000   |

DC VOLTS

PASSED

Pre-Repair/Adjustment Data:

| TEST CONDITIONS |               | MINIMUM    | MEASURED     | MAXIMUM    |
|-----------------|---------------|------------|--------------|------------|
| Range           | Input (Front) |            |              |            |
| -----           | -----         |            |              |            |
| 100 mV          | 100 mV        | 99.9915    | 99.9975 mV   | 100.0085   |
| 100 mV          | -100 mV       | -100.0085  | -100.0005 mV | -99.9915   |
| 1 V             | 1 V           | 0.9999530  | 0.9999953 V  | 1.0000470  |
| 1 V             | -1 V          | -1.0000470 | -0.9999991 V | -0.9999530 |
| 10 V            | 4 V           | 3.999810   | 3.999982 V   | 4.000190   |
| 10 V            | 10 V          | 9.999600   | 9.999948 V   | 10.000400  |
| 10 V            | -10 V         | -10.000400 | -9.999963 V  | -9.999600  |
| 100 V           | 100 V         | 99.99490   | 100.00055 V  | 100.00510  |
| 100 V           | -100 V        | -100.00510 | -100.00063 V | -99.99490  |
| 1000 V          | 1000 V        | 999.9450   | 1000.0008 V  | 1000.0550  |

# Measurement Report (As Received)

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**Model Number:** 34461A

**Test Date:** 22 Aug 2018  
**Serial Number:**

**DC VOLTS**

**CONTINUED**

| TEST CONDITIONS  | MINIMUM   | MEASURED    | MAXIMUM   |
|------------------|-----------|-------------|-----------|
| 1000 V    -500 V | -500.0325 | -500.0020 V | -499.9675 |

**AC VOLTS**

**PASSED**

Pre-Repair/Adjustment Data:

| TEST CONDITIONS                                    | MINIMUM  | MEASURED   | MAXIMUM  |
|--|----------|------------|----------|
| Input            Freq.<br>(Front)            ----- |          |            |          |
| 100 mV Range                                       |          |            |          |
| 100 mV    1 kHz                                    | 99.910   | 99.982 mV  | 100.090  |
| 100 mV    50 kHz                                   | 99.830   | 100.025 mV | 100.170  |
| 100 mV    300 kHz                                  | 95.50    | 100.19 mV  | 104.50   |
| 1 V Range  |          |            |          |
| 1 V    1 kHz                                       | 0.999100 | 0.999980 V | 1.000900 |
| 1 V    50 kHz                                      | 0.998300 | 1.000378 V | 1.001700 |
| 1 V    300 kHz                                     | 0.95500  | 1.00166 V  | 1.04500  |
| 10 V Range   |          |            |          |
| 0.03 V    1 kHz                                    | 0.02699  | 0.03004 V  | 0.03301  |
| 1 V    1 kHz                                       | 0.996400 | 0.999993 V | 1.003600 |
| 10 V    10 Hz                                      | 9.9910   | 10.0013 V  | 10.0090  |
| 10 V    100 Hz                                     | 9.99100  | 9.99968 V  | 10.00900 |
| 10 V    20 kHz                                     | 9.99100  | 10.00068 V | 10.00900 |
| 10 V    50 kHz                                     | 9.98300  | 10.00410 V | 10.01700 |
| 10 V    100 kHz                                    | 9.9320   | 10.0076 V  | 10.0680  |
| 10 V    300 kHz                                    | 9.5500   | 10.0192 V  | 10.4500  |
| 100 V Range  |          |            |          |
| 100 V    1 kHz                                     | 99.9100  | 99.9950 V  | 100.0900 |
| 100 V    50 kHz                                    | 99.8300  | 100.0370 V | 100.1700 |
| 70 V    300 kHz                                    | 66.700   | 70.149 V   | 73.300   |
| 750 V Range  |          |            |          |
| 750 V    1 kHz                                     | 749.325  | 749.959 V  | 750.675  |
| 210 V    50 kHz                                    | 209.373  | 210.093 V  | 210.627  |
| 70 V    300 kHz                                    | 63.450   | 70.236 V   | 76.550   |

# Measurement Report (As Received)

**Report Number:** 13610  
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**Test Date:** 22 Aug 2018  
**Serial Number:**

## FREQUENCY

**PASSED**

Pre-Repair/Adjustment Data:

| <u>TEST CONDITIONS</u>       | <u>MINIMUM</u> | <u>MEASURED</u> | <u>MAXIMUM</u> |
|------------------------------|----------------|-----------------|----------------|
| Input Freq.<br>(Front) ----- |                |                 |                |
| 1 V Range                    |                |                 |                |
| 0.1 V 10 Hz                  | 9.99700        | 10.00015 Hz     | 10.00300       |
| 0.1 V Range                  |                |                 |                |
| 0.01 V 300 kHz               | 299.70000      | 299.99999 kHz   | 300.30000      |

## OHMS

**PASSED**

Pre-Repair/Adjustment Data:

| <u>TEST CONDITIONS</u>                      | <u>MINIMUM</u> | <u>MEASURED</u> | <u>MAXIMUM</u> |
|---|----------------|-----------------|----------------|
| 4-Wire Ohms<br>Range Input<br>(Front) ----- |                |                 |                |
| 100 Ω 100 Ω                                 | 99.9860        | 99.9996 Ω       | 100.0140       |
| 1 kΩ 1 kΩ                                   | 0.9998900      | 1.0000120 kΩ    | 1.0001100      |
| 10 kΩ 10 kΩ                                 | 9.998900       | 10.000058 kΩ    | 10.001100      |
| 100 kΩ 100 kΩ                               | 99.9890        | 100.0001 kΩ     | 100.0110       |
| 1 MΩ 1 MΩ                                   | 0.999890       | 1.000016 MΩ     | 1.000110       |
| 10 MΩ 10 MΩ                                 | 9.99590        | 10.00031 MΩ     | 10.00410       |
| 2-Wire Ohms<br>Range Input<br>(Front) ----- |                |                 |                |
| 100 MΩ 100 MΩ                               | 99.190         | 100.089 MΩ      | 100.810        |

## DC CURRENT

**PASSED**

Pre-Repair/Adjustment Data:

| <u>TEST CONDITIONS</u> | <u>MINIMUM</u> | <u>MEASURED</u> | <u>MAXIMUM</u> |
|------------------------|----------------|-----------------|----------------|
| DC CURRENT             |                |                 |                |

# Measurement Report (As Received)

**Report Number:** 13610  
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**Serial Number:**

**DC CURRENT**

**CONTINUED**

| <u>TEST CONDITIONS</u> |                  | <u>MINIMUM</u> | <u>MEASURED</u> | <u>MAXIMUM</u> |
|------------------------|------------------|----------------|-----------------|----------------|
| Range                  | Input<br>(Front) |                |                 |                |
| -----                  | -----            |                |                 |                |
| 3 A                    | 2 A              | 1.99540        | 2.00034 A       | 2.00460        |
| 1 A                    | 1 A              | 0.998900       | 1.000100 A      | 1.001100       |
| 100 mA                 | 100 mA           | 99.9450        | 100.0058 mA     | 100.0550       |
| 10 mA                  | 10 mA            | 9.99300        | 10.00103 mA     | 10.00700       |
| 1 mA                   | 1 mA             | 0.999440       | 1.000006 mA     | 1.000560       |
| 100 µA                 | 100 µA           | 99.925         | 99.998 µA       | 100.075        |

**AC CURRENT**

**PASSED**

Pre-Repair/Adjustment Data:

| <u>TEST CONDITIONS</u> |       | <u>MINIMUM</u> | <u>MEASURED</u> | <u>MAXIMUM</u> |
|------------------------|-------|----------------|-----------------|----------------|
| Input<br>(Front)       | Freq. |                |                 |                |
| -----                  | ----- |                |                 |                |
| 3 A Range              |       |                |                 |                |
| 2 A                    | 1 kHz | 1.99420        | 1.99927 A       | 2.00580        |
| 2 A                    | 5 kHz | 1.9942         | 2.0000 A        | 2.0058         |
| 1 A Range              |       |                |                 |                |
| 1 A                    | 1 kHz | 0.99860        | 1.00006 A       | 1.00140        |
| 1 A                    | 5 kHz | 0.99860        | 0.99998 A       | 1.00140        |
| 100 mA Range           |       |                |                 |                |
| 100 mA                 | 10 Hz | 99.860         | 100.004 mA      | 100.140        |
| 100 mA                 | 1 kHz | 99.860         | 99.998 mA       | 100.140        |
| 100 mA                 | 5 kHz | 99.860         | 100.013 mA      | 100.140        |
| 10 mA Range            |       |                |                 |                |
| 100 µA                 | 1 kHz | 0.09590        | 0.10004 mA      | 0.10410        |
| 1 mA                   | 1 kHz | 0.99500        | 1.00019 mA      | 1.00500        |
| 10 mA                  | 1 kHz | 9.9860         | 10.0000 mA      | 10.0140        |
| 10 mA                  | 5 kHz | 9.9860         | 10.0006 mA      | 10.0140        |
| 1 mA Range             |       |                |                 |                |
| 1 mA                   | 1 kHz | 0.99860        | 0.99995 mA      | 1.00140        |
| 1 mA                   | 5 kHz | 0.99860        | 0.99967 mA      | 1.00140        |
| 100 uA Range           |       |                |                 |                |
| 100 µA                 | 1 kHz | 99.860         | 99.991 µA       | 100.140        |
| 100 µA                 | 5 kHz | 99.860         | 99.974 µA       | 100.140        |

Measurement Report (As Received)

Report Number: 13610  
Model Number: 34461A

Test Date: 22 Aug 2018  
Serial Number:

HIGH CURRENT

PASSED

Pre-Repair/Adjustment Data:

| <u>TEST CONDITIONS</u> |                  | <u>MINIMUM</u> | <u>MEASURED</u> | <u>MAXIMUM</u> |
|------------------------|------------------|----------------|-----------------|----------------|
| DC HIGH CURRENT        |                  |                |                 |                |
| Range                  | Input<br>(Front) |                |                 |                |
| -----                  | -----            |                |                 |                |
| 10 A                   | 5 A              | 4.9930         | 4.9973 A        | 5.0070         |
| 10 A                   | 10 A             | 9.9770         | 9.9924 A        | 10.0230        |
| AC HIGH CURRENT        |                  |                |                 |                |
| Input<br>(Front)       | Freq.            |                |                 |                |
| -----                  | -----            |                |                 |                |
| 10 A                   | 5 kHz            | 9.971          | 9.987 A         | 10.029         |

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