

Keysight 16380V Option 001  
10  $\mu$ F Capacitance Standard  
Upgrade Kit

Operation and  
Service Manual

# Notices

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## Manual Part Number

16380-90111

## Edition

Edition 3, August 16, 2019

Printed in Malaysia

Published by:

Keysight Technologies International  
Japan G.K,  
1-3-3 Higashikawasaki-cho  
Chuo-ku  
Kobe-shi, Hyogo, Japan

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## Safety Notices

### CAUTION

A **CAUTION** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood and met.

### WARNING

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## Contents

# 1 General Information

## Introduction

This chapter lists the contents of the kit.

## The Option 001 Upgrade Kit

The purpose of the kit is to add one precision capacitor 10  $\mu\text{F}$  (16388A) to the 16380C which consists of three precision capacitors 0.01  $\mu\text{F}$  (16385A), 0.1  $\mu\text{F}$  (16386A), and 1  $\mu\text{F}$  (16387A).

## Contents of the 16380V Option 001

See **Table 1-1** for the kit contents. If anything is missing, contact the nearest Keysight Technologies office.

Table 1-1

**Contents of the 16380V Option 001 Upgrade Kit**

Description	Keysight PN	Qty.
16388A (10 $\mu\text{F}$ )	Not Assigned	1
Pad <sup>1</sup>	16380-25001	1
Label	7120-0381	1
Calibration Report	Not Assigned	1
Upgrade Manual (This Manual)	16380-90111	1

1. For modification of your 16380C's case. See Chapter 4.

General Information  
Introduction

## 2 Specifications and Supplemental Performance Characteristics

### Specifications for 16388A

Table 2-1

Model	16388A
Nominal Value <sup>1</sup>	10 $\mu$ F
Nominal Accuracy <sup>1</sup>	$\pm 0.05\%$
Dissipation Factor <sup>1</sup>	$\leq 5 \times 10^{-4}$

1. Specified at 1kHz under the following ambient conditions:  
Temperature:  $23 \pm 5$  °C

#### Operating Conditions

Ambient Temperature:  $23 \pm 5$  °C

Relative Humidity: Less than 70% RH

#### Dimensions

142(W)  $\times$  88(D)  $\times$  112(H) mm

#### Weight

Approximately 1.7 kg

## Supplemental Performance Characteristics for 16388A

### Capacitance Temperature Coefficient

-20 to 35 ppm/°C

### Capacitance Stability

<50 ppm/year @ 1 kHz, 23±5 °C

### Maximum Allowable Voltage/Current

40 V peak (ac+dc)/100 mA rms

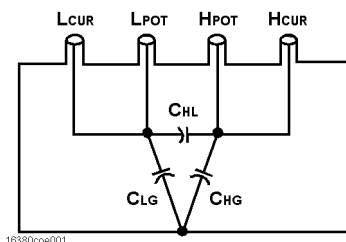
### Residual Capacitance

Table 2-2

16388A	
$C_{HG}^1$	<50 pF
$C_{LG}^1$	<50 pF

1. : See figure below.

Figure 2-1



$C_{HL}$ : 4 terminal capacitance

$C_{HG}$ ,  $C_{LG}$ : Stray capacitance to guard

### Storage Conditions

Temperature: -10 °C to +55 °C

Relative Humidity: Less than 85% RH at 40 °C



## 3 Service

### Calibration

Keysight Technologies will calibrate the 16380C together with the 16388A (10  $\mu$ F). For complete information (price, time required, etc.) on how to have the 16380C and the 16388A (10  $\mu$ F) calibrated, contact the nearest Keysight Technologies Sales and Service Office. When your 16380C and 16388A (10  $\mu$ F) requires calibration, all four capacitors should be returned to Keysight Technologies.

### Recommended Calibration Cycle

The 16380C and the 16388A (10  $\mu$ F) should be calibrated at least once a year. More frequent calibration may be required if the capacitors are used in very hot or very cold environments.

### Repair

The 16380C and the 16388A (10  $\mu$ F) contains no replaceable components. If one of the capacitors becomes damaged, or if its capacitance value is outside specified Limits, the capacitor must be replaced. For complete information on service, contact the nearest Keysight Technologies Sales and Service Office.

Service  
Repair

## 4 Modification of 16380C's Case

### Introduction

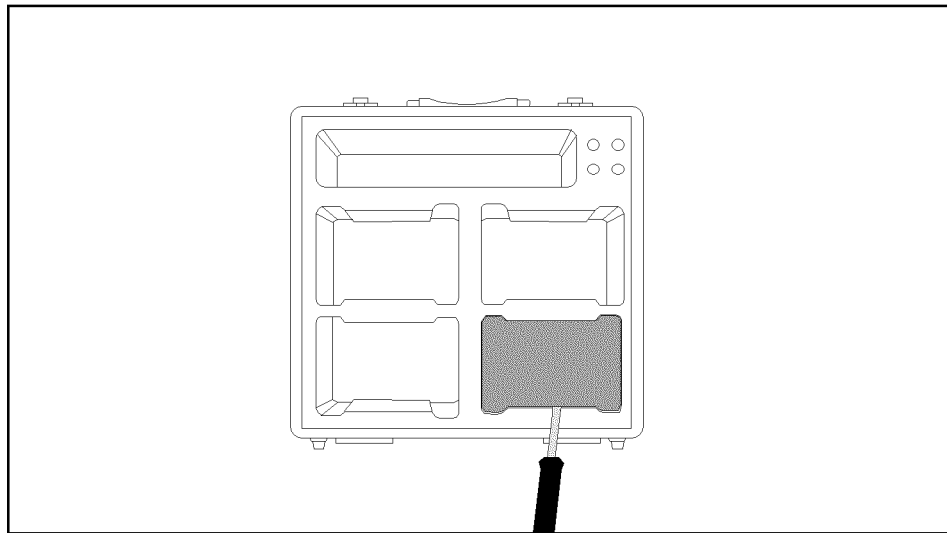
This chapter describes the procedure to modify your 16380C's case for the 16388A (10  $\mu$ F).

### Modification Procedure

Perform the following steps :

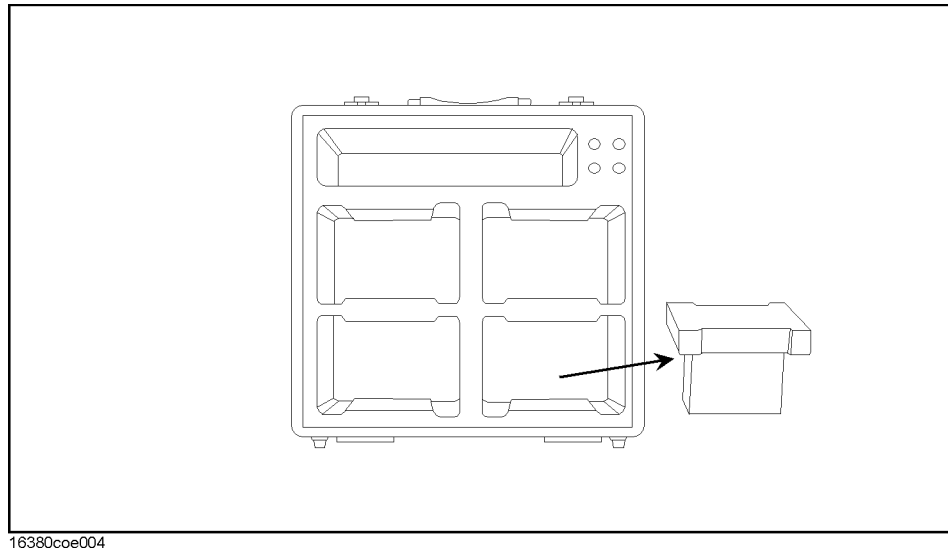
1. Remove a pad of your 16380C's case using a flat-blade screwdriver. See **Figure 4-1** and **Figure 4-2**.

Figure 4-1 Removing the pad (step1)



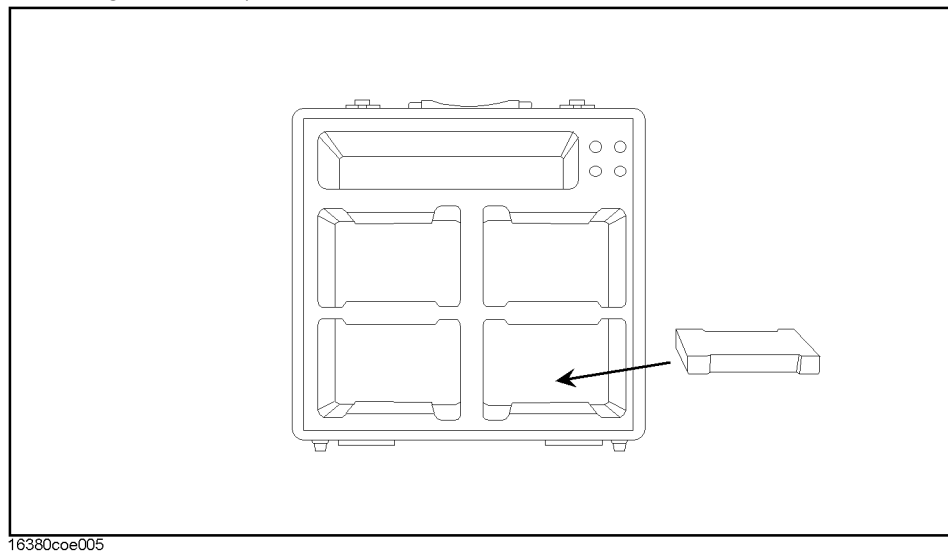
16380coe003

Figure 4-2 Removing the pad (step2)



2. Install the Pad (p/n 16380-25001) furnished with this kit in your 16380C's case. See **Figure 4-3**.

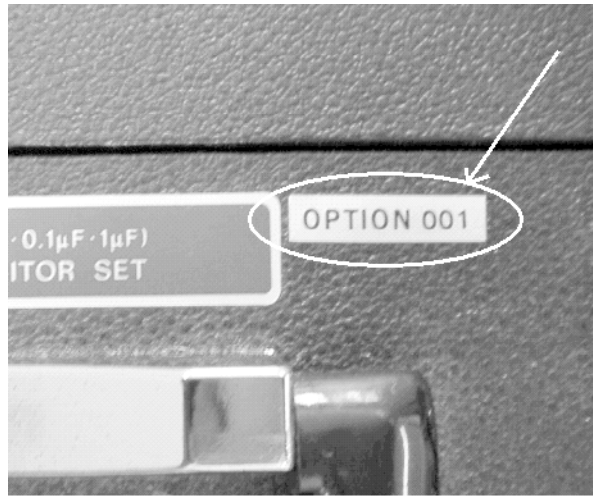
Figure 4-3 Installing the Pad (p/n 16380-25001)



3. Paste a label (p/n 7120-0381) of "OPTION 001" on the position shown in **Figure 4-4**.

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Introduction

Figure 4-4 Position of the "OPTION 001" label



Modification of 16380C's Case  
Introduction

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Edition 3, August 16, 2019



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