



# INSTALLATION AND REMOVAL OF CONTACTS AND MODULES

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18 GHZ COAX CONTACTS AND MODULES

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The information contained herein is subject to change.  
For the most current information available, visit [vpc.com](http://vpc.com).*

## RECEIVER CONTACT INSTALLATION AND REMOVAL

PART # 610 102 108, 510 104 203, 910 112 115

### TOOLS/PARTS REQUIRED

2.92 mm, 3.5 mm, or SMA connector  
 $\frac{5}{16}$  Wrench

### INSTALLATION

1. Attach the cable to the rear of the contact via a 2.92 mm, 3.5 mm, or SMA connector and torque per the connector manufacturer's recommendations with a  $\frac{5}{16}$  wrench.
2. Insert the receiver contact into the receiver module (p/n 510104224) cavity (**Figure A**). Ensure the contact is fully seated by inserting until the retaining ring locks into place.

### REMOVAL

1. Remove the module from the receiver frame.  
*NOTE: For more information on removing the module from the receiver frame, see module installation and removal instructions in this manual.*
2. Firmly insert the 18 GHz contact extraction tool (p/n 910 112 115), over the contact by applying pressure with the shaft. Do not apply pressure with the handle area.
3. By applying pressure using only the handle area only, the tool will slide over and collapse the retaining ring (**Figure B**). Twisting the lower portion of the tool will ensure that the retaining ring has collapsed.
4. On the side of the module opposite of the extraction tool, grasp the contact with your fingers to prevent it from being pulled back into the module and locked position while removing the extraction tool.



**DO NOT DEPRESS THE PLUNGER ON THE BACK OF THE EXTRACTION TOOL UNTIL THE TIP OF THE EXTRACTION TOOL HAS FULLY SEATED INTO THE MODULE AND COMPRESSED THE RETAINING RING TABS ON THE CONTACT.**

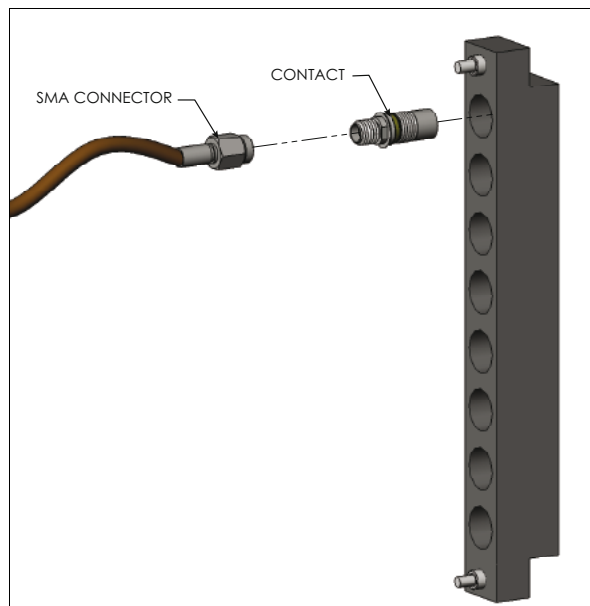


Figure A. Installation.

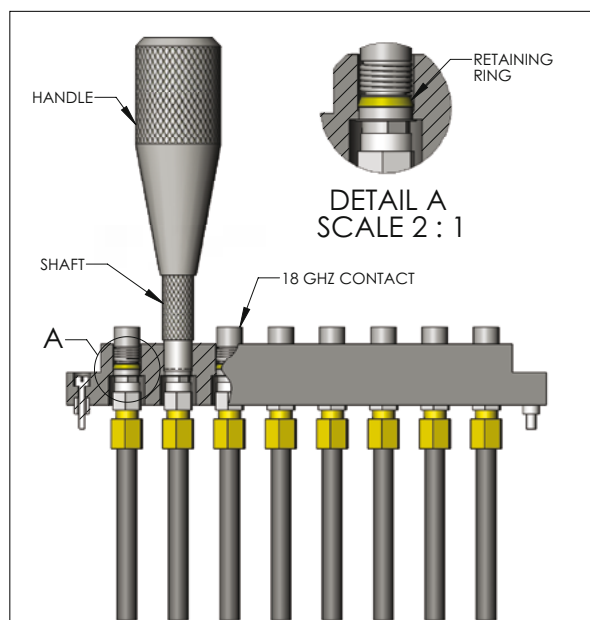


Figure B. Removal.

## ITA CONTACT INSTALLATION AND REMOVAL

PART # 610 102 107, 510 108 176, 910 121 165

### PARTS REQUIRED

2.92 mm, 3.5 mm, or SMA connector

### INSTALLATION

1. Attach the cable to the rear of the contact via a 2.92 mm, 3.5 mm, or SMA connector and torque per the manufacturer's recommendations with a  $\frac{5}{16}$  wrench.
2. Insert contact into the back (wiring side) of the module (**Figure A**).
3. Add lock washer.
4. Tighten nut using the VPC install/ extract wrench (p/n 910 121 165).
5. Place O-ring into groove of contact (**Figure B**).

### REMOVAL

1. Remove the module from the ITA frame.  
*NOTE: For more information on removing the module from the ITA frame, see module installation and removal instructions in this manual.*
2. Loosen the nut using the VPC install/ extract wrench, and remove contact from module (**Figure C**).

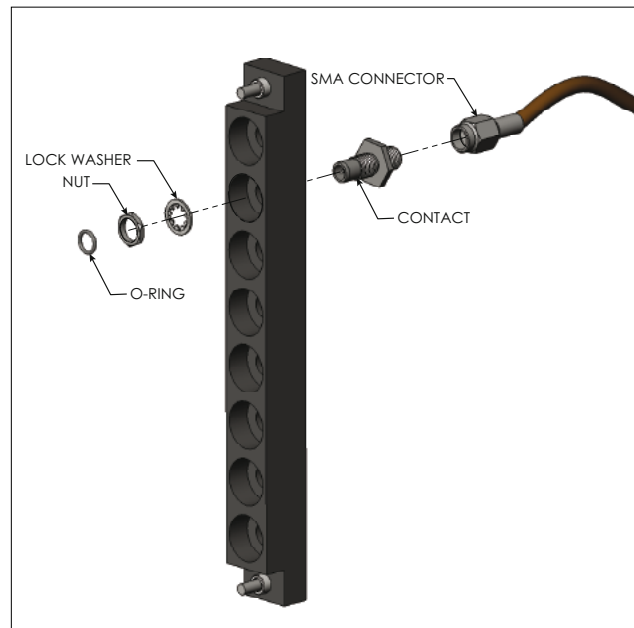


Figure A. Installation.

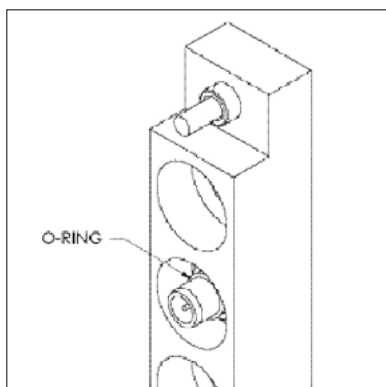


Figure B. The O-ring provides a bulkhead seal during receiver and ITA engagement.

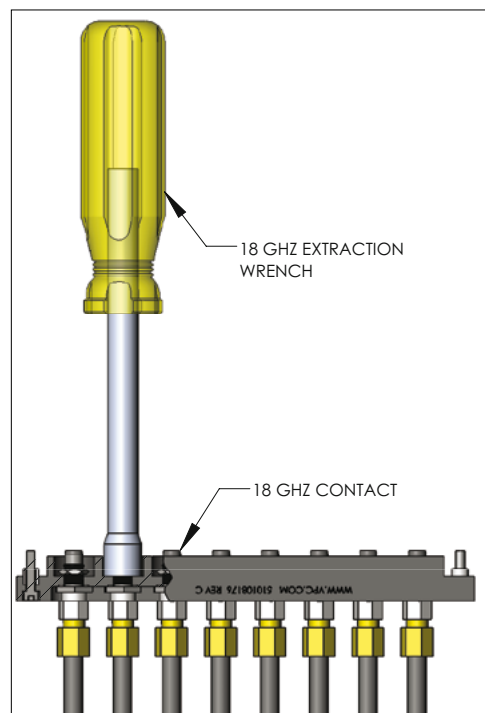


Figure C. Removal.

## 18 GHZ MODULE INSTALLATION AND REMOVAL

PART # 510 108 176, 510 104 203

### TOOLS REQUIRED

$\frac{3}{32}$  Allen Wrench

### INSTALLATION

1. Place the module in the receiver or ITA until the upper and lower module screws touch the mating holes in the inner frame. Ensure that Position 1 is located at the top for systems in which the modules are oriented vertically or to the left for systems in which the modules are oriented horizontally.
2. Using a  $\frac{3}{32}$  Allen wrench, tighten the top screw 1 to 2 full revolutions, while pushing lightly against the face of the module.
3. Maintain this pressure while tightening the bottom screw 1 to 2 full revolutions.
4. Repeat this sequence until the module is fully seated. Torque the screw to 4 in-lbs [0.45 Nm].

### REMOVAL

1. Loosen the top screw 1 to 2 full revolutions. Loosen bottom screw 1 to 2 full revolutions.
2. Repeat this sequence until the module is separated from the receiver or ITA.

**Note:** For optimum performance and system longevity, distribute the contact load evenly throughout the module.

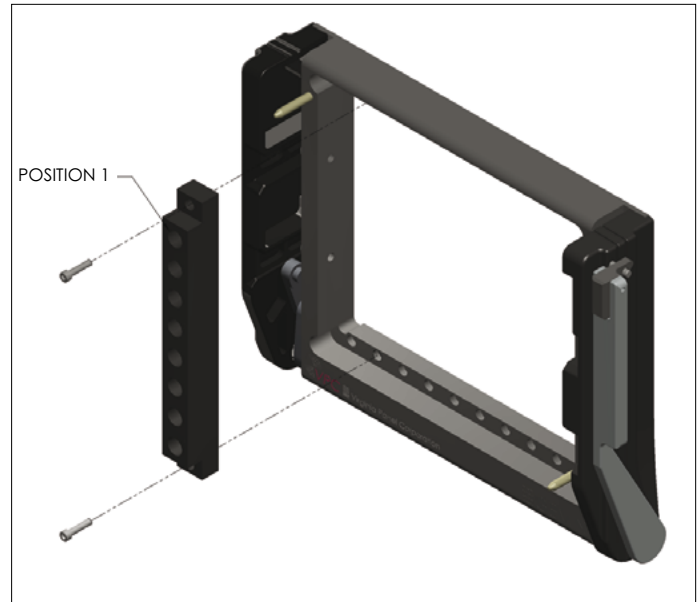


Figure A. Receiver Module.

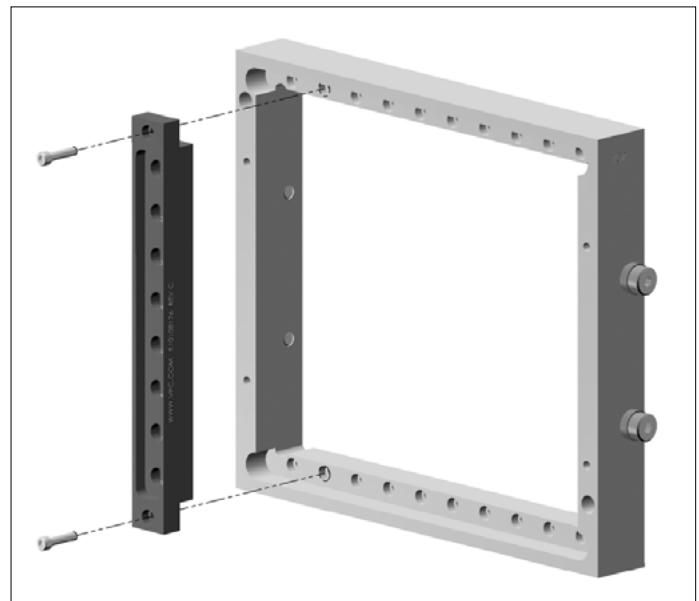
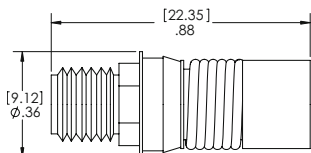
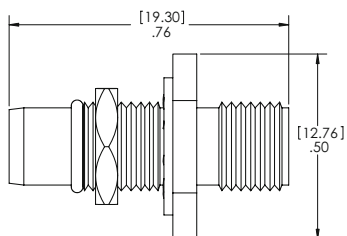


Figure B. ITA Module.

## CONTACT PERFORMANCE SPECIFICATIONS



**Receiver Contact**  
Part # 610 102 108



**ITA Contact**  
Part # 610 102 107

Dimensions shown: [millimeters]  
inches

### Electrical Specifications

<b>CHARACTERISTIC IMPEDANCE</b>	50 Ohms
<b>FREQUENCY RANGE</b>	DC to 18 GHz
<b>CONTACT RESISTANCE</b>	2 Milliohms max. on outer shield; 4 Milliohms max. on center conductor
<b>DIELECTRIC WITHSTANDING VOLTAGE (DWV)</b>	1000 V RMS min
<b>MAX VSWR</b>	1.05 + 0.005f(GHz) - up to 18 GHz
<b>INSERTION LOSS</b>	- 0.06x $\sqrt{f}$ (GHz) db
<b>RF LEAKAGE</b>	-60 dB min. @ 2-3 GHz
<b>RECOMMENDED TERMINATION</b>	2.92 mm, 3.5 mm, or SMA Plug

### Mechanical Characteristics

<b>CYCLE LIFE</b>	20,000
<b>MATING FORCE</b>	Insertion - 3 lbs max. [1.36 Kg] Extraction - 1.5 lbs max. [0.68 Kg]

### Material

<b>OUTER SHIELD (ITA)</b>	<b>Stainless Steel, Class 303</b> Passivated per ASTM-A380
<b>OUTER SHIELD (RCV)</b>	<b>Stainless Steel, Class 303</b> Passivated per ASTM-A380
<b>CENTER CONDUCTOR (ITA)</b>	<b>BeCu per ASTM - B196 or ASTM - B197</b> Au per MIL-G-45204
<b>CENTER CONDUCTOR (RCV)</b>	<b>BeCu per ASTM - B196</b> Au per MIL-G-45204 over Cu per MIL-C-14550
<b>SPRING</b>	<b>Stainless Steel</b>
<b>RETAINING RING (RCV)</b>	<b>BeCu per ASTM - B194</b> Au per MIL - C- 45204
<b>CONTACT RING</b>	<b>BeCu per ASTM - B194</b> Au per MIL - C- 45204 over Cu per MIL-C-14550
<b>DIELECTRIC</b>	<b>TFE Fluorocarbon</b>

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