



# **ASSEMBLY, INSTALLATION, AND REMOVAL OF CONTACTS AND MODULES**

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FOR TWINAXIAL CONTACTS AND MODULES

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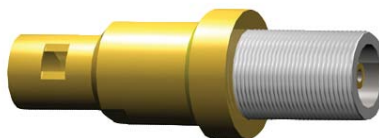
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## TWINAXIAL RECEIVER CONTACT ASSEMBLY

PART # 610 113 144



### TOOLS NEEDED

Soldering Iron (with thin tip)  
Heat Gun

### ASSEMBLY INSTRUCTIONS

1. Install 0.25" [6.35 mm] diameter clear tubing 0.75" [19.05 mm] long on wire. Install backshell on wire (**Figure A**).
2. Strip wire (**Figure A**).
3. Install one piece of 0.062" [1.57 mm] diameter clear tubing 0.25" [3.17 mm] long onto each wire (**Figure B**).
4. Solder white wire onto center conductor (**Figure C**). VPC solders per IPC's J-STD-001.
5. Solder blue wire onto inner shield contact. Check for shorts (**Figure C**).
6. Clean terminals and push both pieces of shrink tubing over the solder joints and shrink.
7. Screw backshell onto connector until tight. Check dimension to make sure backshell is seated properly. Solder backshell to braid through hole on backshell and clean (**Figure D**).
8. Push clear tubing over backshell inspection hole and shrink (**Figure E**).

Dimensions shown: [millimeters]  
inches

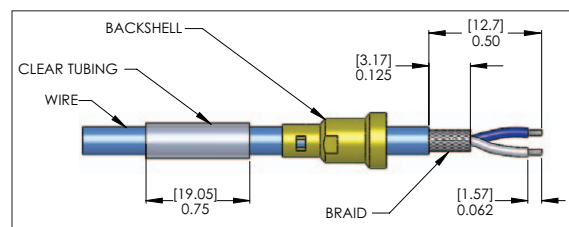


Figure A. Install tubing and backshell. Strip wire.

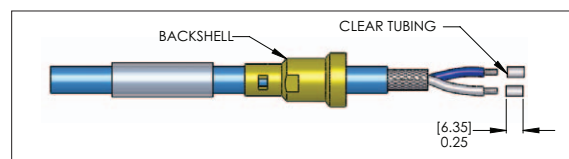


Figure B. Install two pieces of tubing.

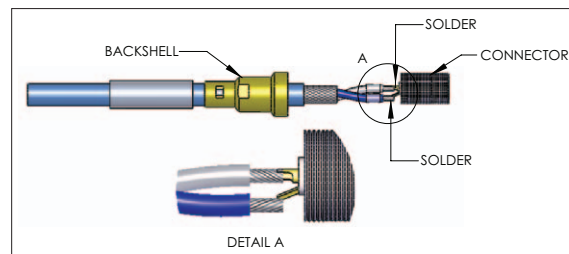


Figure C. Solder white wire on to center conductor. Solder blue wire onto inner shield contact.

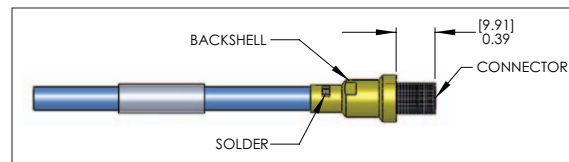


Figure D. Ensure backshell is seated properly.

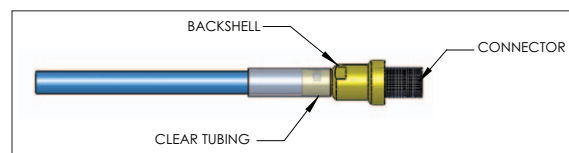
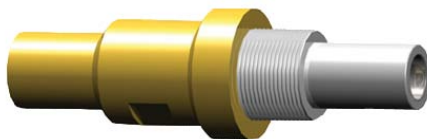


Figure E. Ensure clear tubing covers backshell inspection hole.

## TWINAXIAL ITA CONTACT ASSEMBLY

PART # 610 113 145



### TOOLS NEEDED

Soldering Iron (with thin tip)  
Heat Gun

### ASSEMBLY INSTRUCTIONS

1. Install 0.25" [6.35 mm] diameter clear tubing 0.75" [19.05 mm] long on wire. Install backshell on wire (**Figure A**).
2. Strip wire (**Figure A**).
3. Install one piece of 0.062" [1.57 mm] diameter clear tubing 0.25" [6.35 mm] long onto each wire (**Figure B**).
4. Solder white wire onto center conductor (**Figure C**). VPC solders per IPC's J-STD-001.
5. Solder blue wire onto inner shield contact. Check for shorts (**Figure C**).
6. Clean terminals and push both pieces of shrink tubing over the solder joints and shrink.
7. Screw backshell onto connector until tight. Check dimension to make sure backshell is seated properly. Solder backshell to braid through hole on backshell and clean (**Figure D**).
8. Push clear tubing over backshell inspection hole and shrink (**Figure E**).

Dimensions shown: [millimeters]  
inches

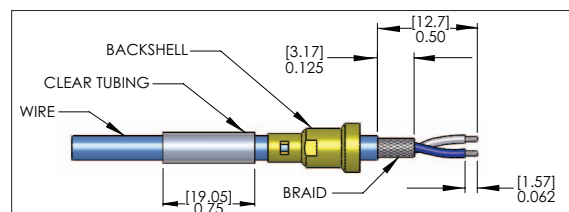


Figure A. Install tubing and backshell. Strip wire.

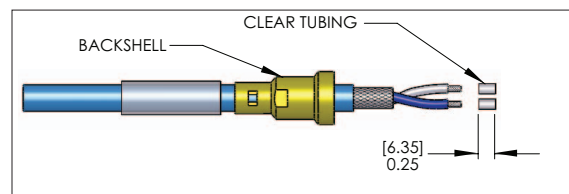


Figure B. Install two pieces of tubing.

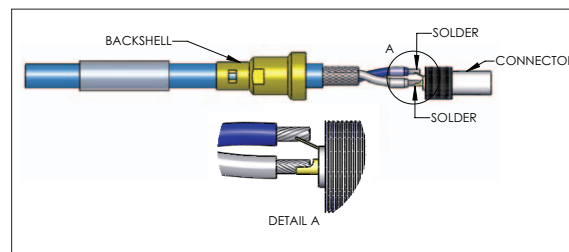


Figure C. Solder white wire on to center conductor. Solder blue wire onto inner shield contact.

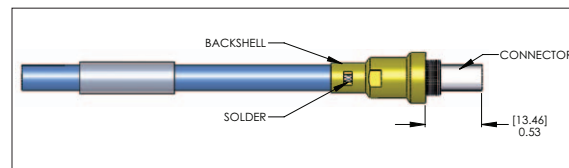


Figure D. Ensure backshell is seated properly.

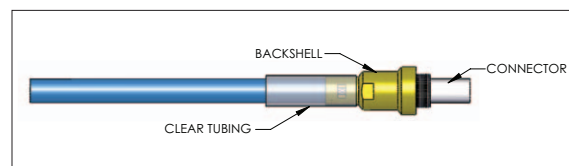


Figure E. Ensure clear tubing covers backshell inspection hole.

## TWINAXIAL RECEIVER CONTACT INSTALLATION AND REMOVAL

PART # 610 113 144

### TOOLS REQUIRED

$\frac{3}{8}$ " Wrench

### CONTACT INSTALLATION INSTRUCTIONS

1. Assemble the contact to the respective wire.  
*NOTE: For more information concerning the contact assembly process please see contact assembly instructions in Section 1 of this User's Manual.*
2. Install the contact into the module and insert lock washer (**Figure A**).
3. Use the  $\frac{3}{8}$ " wrench to tighten nut to 8 in-lbs [0.90 Nm] (**Figure B**).

### CONTACT REMOVAL INSTRUCTIONS

1. Remove the module from the receiver frame.  
*NOTE: For more information concerning the process of removing the module from the receiver frame, see module installation and removal instructions in Section 4 of this User's Manual.*
2. Loosen nut using  $\frac{3}{8}$ " wrench.
3. Pull contact away from module.

*NOTE: The process shown here uses standard/90 series modules. The same process is used for modules from other series.*

*NOTE: If you are using a hybrid module, you may need to reference the User's Manual for the other contact type for extraction instructions.*

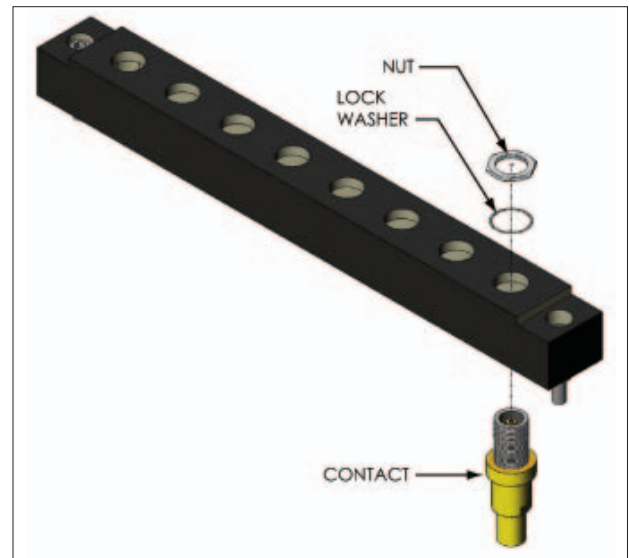


Figure A. Assemble contact, lock washer, and nut.



Figure B. Installed contact.

## TWINAXIAL ITA CONTACT INSTALLATION AND REMOVAL

PART # 610 113 145

### TOOLS REQUIRED

$\frac{3}{8}$ " Wrench

### CONTACT INSTALLATION INSTRUCTIONS

1. Assemble the contact to the respective wire.  
*NOTE: For more information concerning the contact assembly process please see contact assembly instructions in Section 2 of this User's Manual.*
2. Install the contact into the module and insert lock washer (**Figure A**).
3. Use the  $\frac{3}{8}$ " wrench to tighten nut to 8 in-lbs [0.90 Nm] (**Figure B**).

### CONTACT REMOVAL INSTRUCTIONS

1. Remove the module from the receiver frame.  
*NOTE: For more information concerning the process of removing the module from the ITA frame, see module installation and removal instructions in Section 4 of this User's Manual.*
2. Loosen nut using  $\frac{3}{8}$ " wrench.
3. Pull contact away from module.

*NOTE: The process shown here uses standard/90 series modules. The same process is used for modules from other series.*

*NOTE: If you are using a hybrid module, you may need to reference the User's Manual for the other contact type for extraction instructions.*

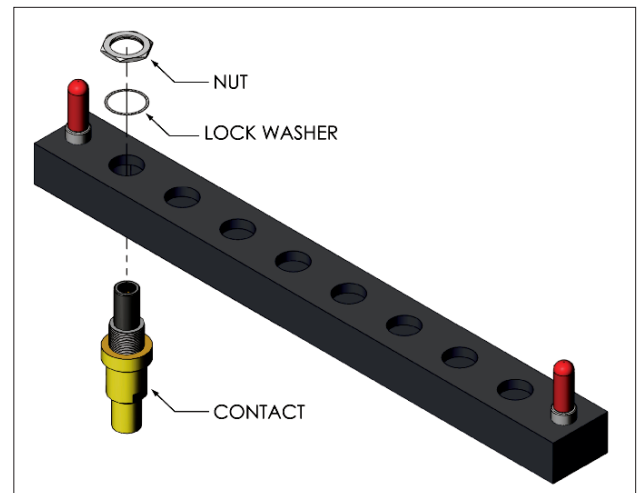


Figure A. Assemble contact, lock washer, and nut.



Figure B. Installed contact.

## TWINAXIAL STANDARD/90 SERIES MODULE INSTALLATION AND REMOVAL

### TOOLS REQUIRED

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

### INSTALLATION INSTRUCTIONS

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 seated. Torque the screw to 4 in-lbs [0.45 Nm].

### REMOVAL INSTRUCTIONS

1. To remove, 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.*

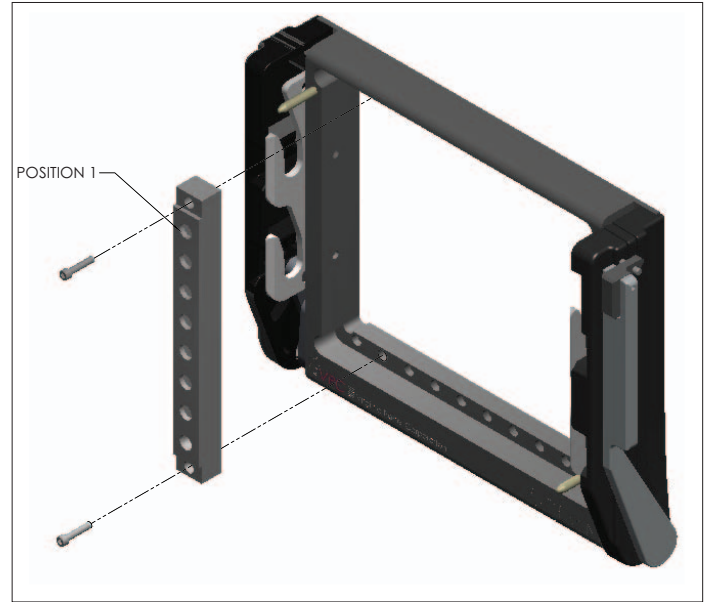


Figure A. Receiver Module.

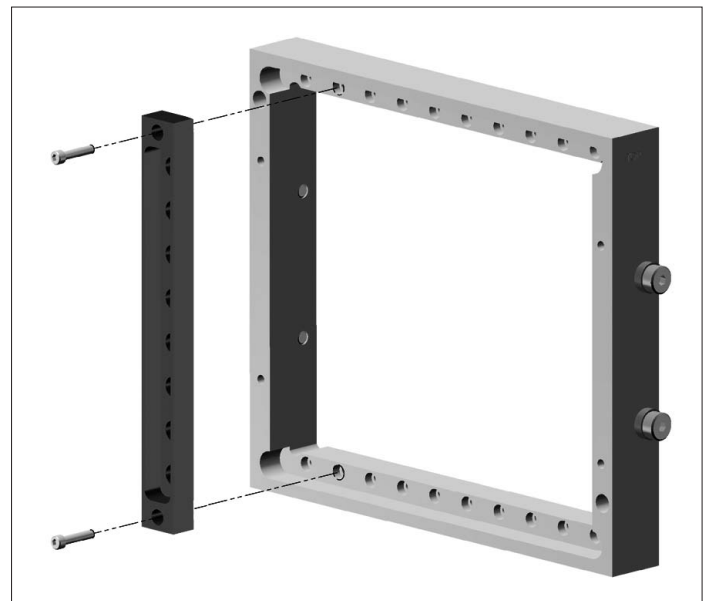


Figure B. ITA Module.

## TWINAXIAL ICON MODULE INSTALLATION AND REMOVAL

### TOOLS REQUIRED

Phillips Head Screwdriver

### INSTALLATION INSTRUCTIONS

*NOTE: The receiver strain relief plate or the ITA cover may need to be removed prior to installing or removing an iCon module. Please refer to the appropriate User's Manual for instructions on how to perform these steps.*

1. Place the module in the receiver or ITA until the upper and lower module screws touch the mating holes in the inner frame. Install modules such that Position 1 is located at the top of the ITA/ receiver frame.
2. Using a Phillips head screwdriver, 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 seated. Torque the screw to 1.5 in-lbs [0.16 Nm].

### REMOVAL INSTRUCTIONS

1. To remove, 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 load evenly throughout the module.*

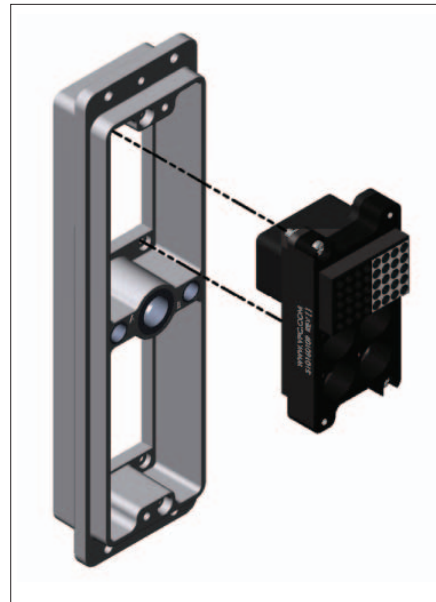


Figure A. Receiver Module.

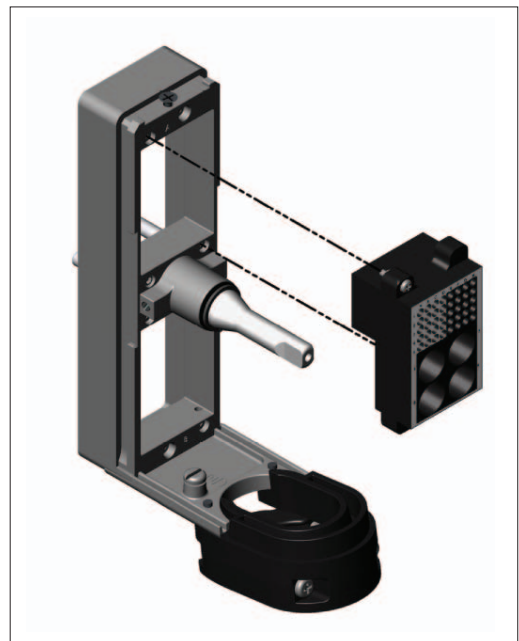


Figure B. ITA Module.

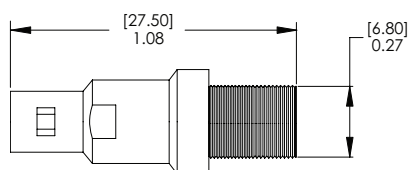
## CROSS REFERENCE TABLES

RECEIVER CONTACT	STANDARD/ 90 SERIES RECEIVER MODULE	ICON RECEIVER MODULE
	510 104 155	510 160 109
610 113 144	X	X

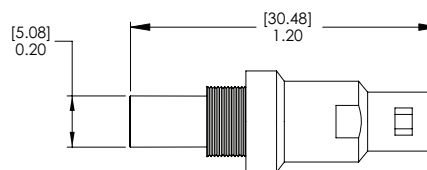
ITA CONTACT	STANDARD/ 90 SERIES ITA MODULE	ICON ITA MODULE
	510 108 138	510 161 109
610 113 145	X	X



## TWINAXIAL CONTACT ELECTRICAL SPECIFICATIONS



**Receiver Contact**  
Part # 610 113 144



**ITA Contact**  
Part # 610 113 145

Dimensions shown: [millimeters]  
inches

### Electrical Specifications

<b>IMPEDANCE</b>	50 Ohms
<b>FREQUENCY RANGE</b>	0 - 2 GHz
<b>CONTACT RESISTANCE</b>	Center - less than 6.5 mOhms Intermediate - less than 3 mOhms Outer Contact - less than 3.5 mOhms
<b>DIELECTRIC BREAKDOWN</b>	600 V RMS
<b>MAX VSWR</b>	1.1 : 1 @ 100 MHz
<b>CROSSTALK</b>	Down less than 60 dB @ 500 MHz
<b>INSERTION LOSS</b>	0.044 dB @ 200 MHz

### Mechanical Characteristics

<b>CYCLE LIFE</b>	20,000
<b>MATING FORCE</b>	3.5 lbs [1.59 kg]

### Material

<b>BACKSHELL ITA/RCVR</b>	<b>Brass (UNS C 385)</b> 0.000020 Au over 0.0001 Ni MIL-G-45204C, Type I, Class 00
<b>INSULATORS (RCVR)</b>	<b>Polyether Etherketone</b> (PEEK) (MIL-P-46183)
<b>CENTER CONDUCTOR (ITA)</b>	<b>Brass (UNS C 385)</b> 0.000040 Au over 0.0001 Ni MIL-G-45204C, Type I, Class I
<b>CENTER CONDUCTOR (RCVR)</b>	<b>Bronze (UNS C 544)</b> 0.0000780 Au over 0.0001 Ni MIL-G-45204C, Type I, Class I
<b>LOCKING WASHER</b>	<b>Bronze (UNS C 521)</b> 0.0001 Ni FS-QQ-N-290A
<b>CENTER SHIELD (RCVR)</b>	<b>Bronze (UNS C 544)</b> 0.0001 Ni over 0.000060 AU FS-QQ-N-290A
<b>CENTER SHIELD (ITA)</b>	<b>Bronze (UNS C 544)</b> 0.0001 Ni over 0.000040 AU FS-QQ-N-290A
<b>HEXAGONAL NUT</b>	<b>Brass (UNS C 385)</b> 0.0001 Ni FS-QQ-N-290A
<b>SHIELD RCVR</b>	<b>Brass (UNS C 385)</b> 0.0001 Ni
<b>SHIELD ITA</b>	<b>Brass (UNS C 385)</b> 0.0001 Ni