



i1 USER MANUAL

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i1 RECEIVER PART IDENTIFICATION

PART # 310 128 XXX

The guide bushings on the i1 receiver are different sizes to prevent the ITA from being engaged with the receiver upside down. **Figure A** points out distinguishing features of the i1 receiver so that the top and bottom can be determined. Features to look for are the alpha keying receptacle on the top side and the numeric keying receptacle on the bottom. The larger bushing is also found on the bottom. By holding the i1 receiver, the top can be determined by the letters and numbers of the keying receptacles being readable.

The front and rear of the i1 receiver are shown in **Figure B**. The front of the i1 receiver can be determined as the side with the latching feature. The module used with the i1 will mount from the rear side.

The front side mates with the i1 ITA. The modules mount from the rear side; wires exit the i1 receiver from this side.

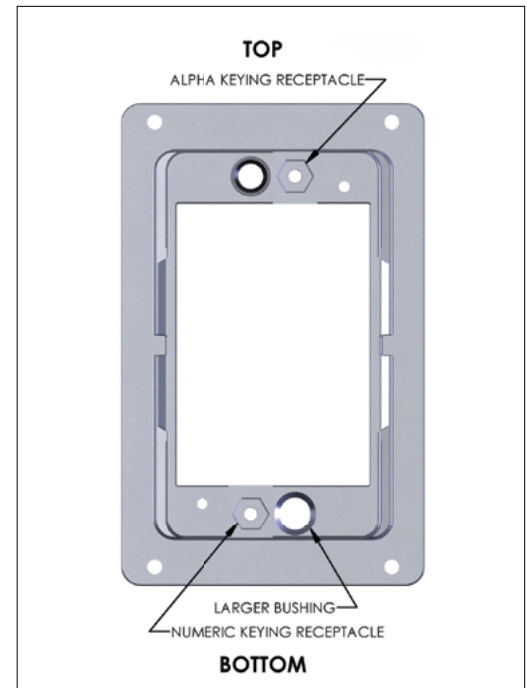


Figure A. i1 receiver front view.

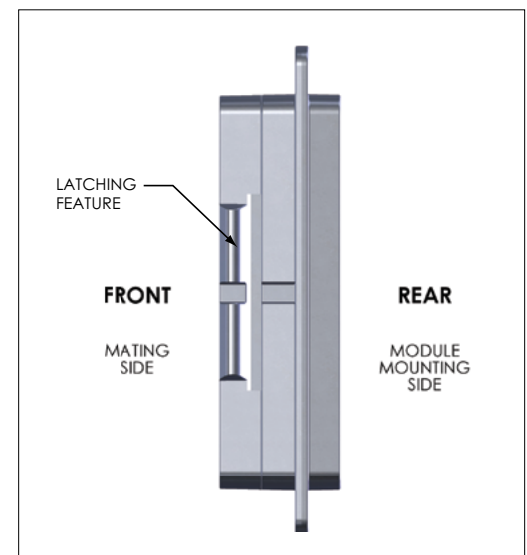


Figure B. i1 receiver side view.

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i1 ITA PART IDENTIFICATION

PART # 410 128 XXX

The guide pins on the i1 ITA are different sizes to prevent the ITA from being engaged with the receiver upside down. **Figure A** points out distinguishing features of the i1 ITA so that the top and bottom can be determined. Features to look for are the alpha keying receptacle on the top side and the numeric keying receptacle on the bottom. The larger bushing and cable exit is also found on the bottom. By holding the i1 ITA, the top can be determined by the letters and numbers of the keying receptacles being readable.

The front and rear of the i1 ITA are easily distinguished as shown in **Figure B**. The front has the guide pins protruding from the ITA frame and the rear has the handle.

The front is the side which mates with the i1 receiver. The modules mount from the rear side (with cover removed) and wires exit the i1 ITA through the 30° cable exit.

A rectangular indentation on the top side of the ITA has been made to fit labels measuring 0.75"x0.5" for marking the ITAs.



Figure A. i1 ITA front view.

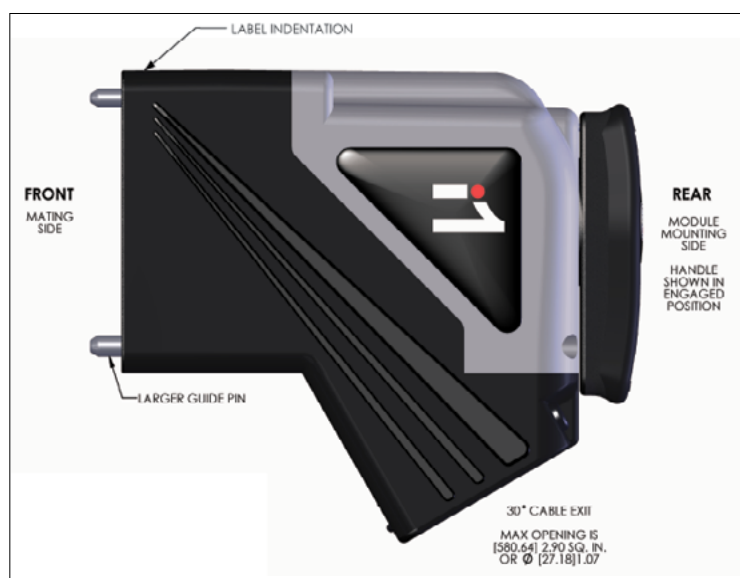


Figure B. i1 ITA side view.

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i1 RECEIVER & ITA ENGAGEMENT

RECEIVER • PART # 310 128 XXX

ITA • PART # 410 128 XXX

INSTRUCTIONS

1. Turn the engagement handle to the open, disengaged position (**Figure A**).
2. Align the alignment pins and push the ITA onto the receiver.
There will be about a 0.20" [5.08 mm] gap.
NOTE: The i1 connector is polarized; the ITA will not align if it is upside down.

NOTE: The i1 ITA can be left in this position without engaging the system.

3. Rotate the handle 180° clockwise to engage (**Figure B**).

For optimum performance and system longevity, distribute the load evenly.

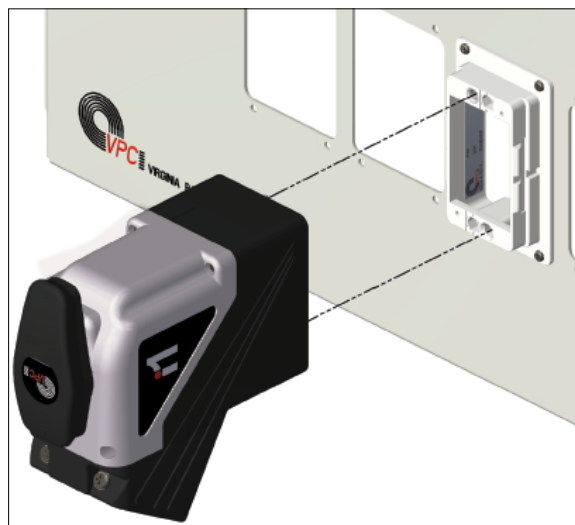


Figure A. When the engagement handle is disengaged, the triangle will point straight down.

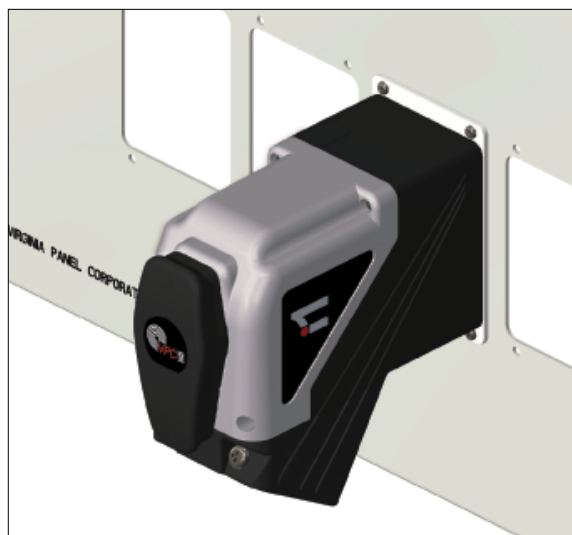


Figure B. When the engagement handle is engaged, the triangle will point straight up.

i1 RECEIVER MOUNTING

PART # 310 128 XXX / 410 128 101 / 410 128 102 / 410 128 103

TOOLS REQUIRED

Phillips Head Screwdriver

INSTRUCTIONS

1. Prepare the mounting surface using the dimensions provided in **Figure A**.
2. Attach the i1 receiver to the panel with the provided 2-56 Phillips head screws and nuts (**Figure B**). Torque screws to 2 in-lbs [0.23 Nm].
NOTE: If the mounting surface is thicker than 0.125" [3.18 mm], longer screws may be needed.
NOTE: If the mounting surface has threaded holes, the nuts will not be needed.
NOTE: M2.5 hardware can be used in place of the provided 2-56 hardware.

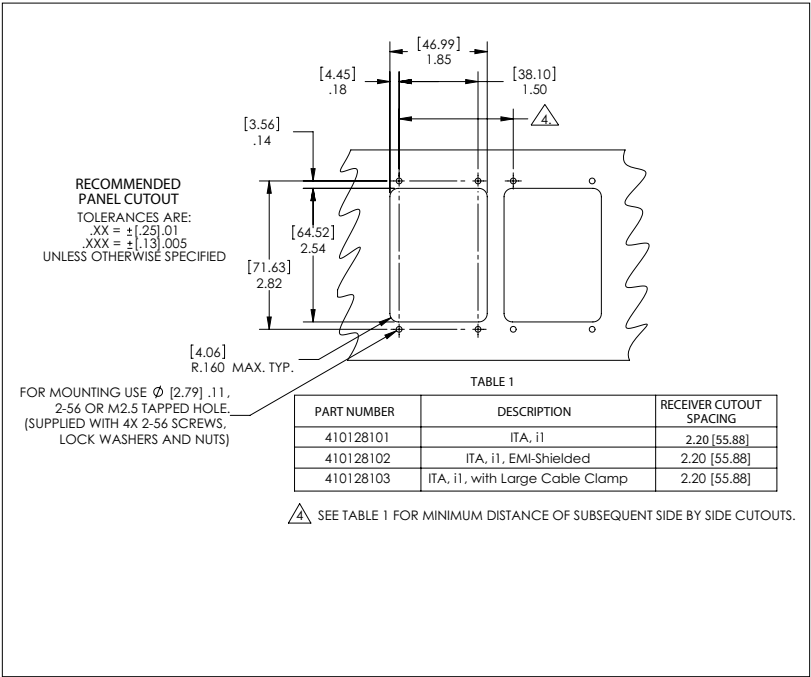


Figure A. Recommended panel cutout.

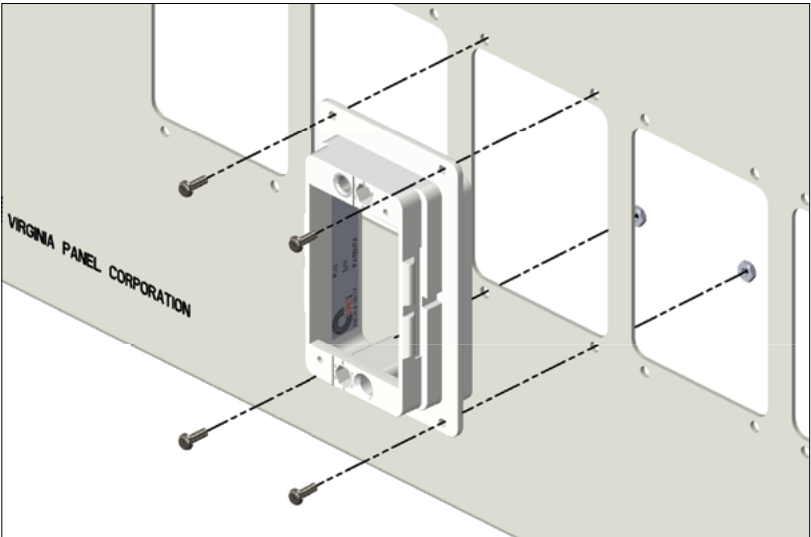


Figure B. If you prefer metric hardware, you can replace the supplied 2-56 hardware with M2.5 hardware.

i1 ITA COVER REMOVAL AND INSTALLATION

PART # 410 128 XXX

The i1 ITA is designed with a removable cover to allow the test technician access to probe signal points while troubleshooting the test set up.

TOOLS REQUIRED

Phillips Head Screwdriver

REMOVAL INSTRUCTIONS

1. Disengage the ITA from the receiver.
2. Rotate the ITA handle clockwise to the closed position.
3. Using a Phillips head screwdriver, loosen the 4 captive screws (**Figure A**).
NOTE: The screws will be removed from the ITA frame but will remain captive in the ITA cover.
4. With the 4 screws removed from the ITA frame slide the ITA cover with engagement mechanism away from the ITA frame (**Figure B**).

INSTALLATION INSTRUCTIONS

1. Make sure the engagement mechanism is properly installed in the ITA cover (see *Troubleshooting* in this manual).
2. Slide the cover onto the ITA frame. The engagement fingers should pass through the openings (**Figure C**).
3. Tighten the 4 Phillips head screws (**Figure A**) in a crisscross. Do not over-tighten. Each screw should be tightened to 2 in-lbs [0.23 Nm].

**MAKE SURE THAT THE ITA HAS BEEN COMPLETELY
DISENGAGED FROM THE RECEIVER BEFORE
REMOVING THE ITA COVER.**



**WITH THE COVER REMOVED IT IS POSSIBLE
FOR THE ENGAGEMENT MECHANISM TO UNTHREAD
FROM THE COVER IF THE HANDLE IS
ROTATED COUNTER CLOCKWISE. IF THIS
OCCURS FOLLOW THE INSTRUCTIONS IN
TROUBLESHOOTING TO RE-INSTALL THE
ENGAGEMENT MECHANISM.**



Figure A. Rear view of i1 ITA.

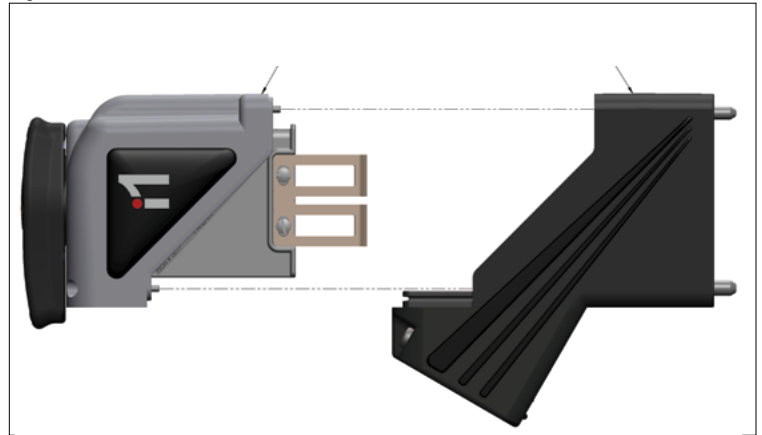


Figure B. Separate the ITA cover from the ITA frame.

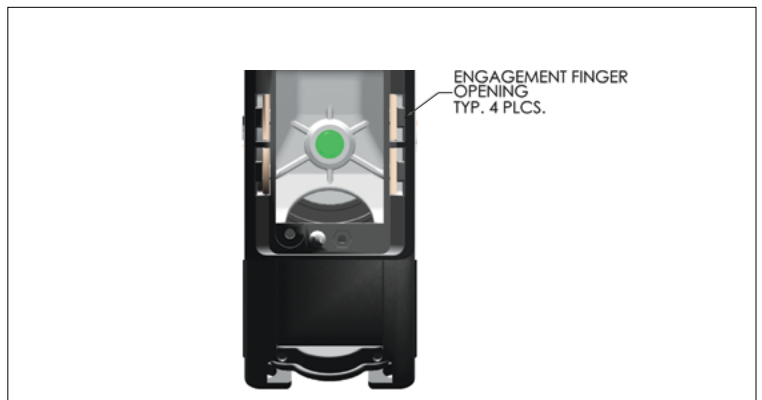


Figure C. Engagement fingers pass through ITA frame.

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i1 CABLE CLAMP REMOVAL AND INSTALLATION

PART # 410 128 XXX

TOOLS REQUIRED

Phillips Head Screwdriver

CABLE CLAMP REMOVAL INSTRUCTIONS

NOTE: Due to interlocking component features, the cable clamp cannot be removed unless the ITA cover is removed first (see Section 4 for cover removal instructions).

1.

Remove the 6-32 x 1.50" screws and the strain relief bar (Figure A).
2.

Loosen the 4-40 x 0.75" captive screws that hold the strain relief clamp to the ITA frame (Figure B).
3.

Slide the filler plate away from the clamp.

NOTE: The U-shaped cable clamp is adjustable to accomodate the amount of wires in your cable bundle.

FORMULA TO CALCULATE THE MAXIMUM NUMBER OF WIRES IN A CABLE BUNDLE

$$B = 1.2 \sqrt{(N_1 d_1^2 + N_2 d_2^2 + \dots + N_n d_n^2)}$$

B = Wire Bundle Diameter	N ₁ = Quantity of first wire type	d ₁ = Outside Diameter of first wire type
	N ₂ = Quantity of second wire type	d ₂ = Outside Diameter of second wire type
	N _n = Quantity of n th wire type	d _n = Outside Diameter of n th wire type

WIRE TYPE	Ø [in]	# WIRES	BUNDLE Ø [in]
26AWG 16878/4	0.043	430	1.07
24AWG 16878/4	0.048	345	1.07
22AWG 16878/4	0.054	272	1.07
M27500-26ml2t08	0.114	61	1.07
M27500-24ml2t08	0.126	50	1.07
M27500-22ml2t08	0.140	40	1.07
M27500-22ml1t08	0.087	105	1.07
22AWG 16878/4 T/P	0.108	68	1.07
24AWG 16878/4 T/P	0.096	86	1.07

NOTE: Acceptable bundle dimension must be reduced when using sleeving and shrink tubing.

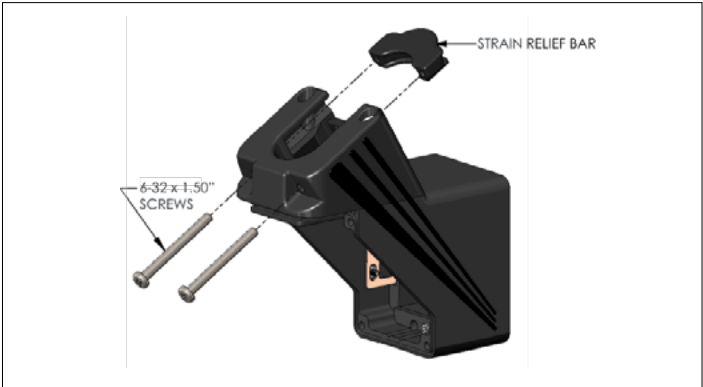


Figure A. Removal of the strain relief bar.

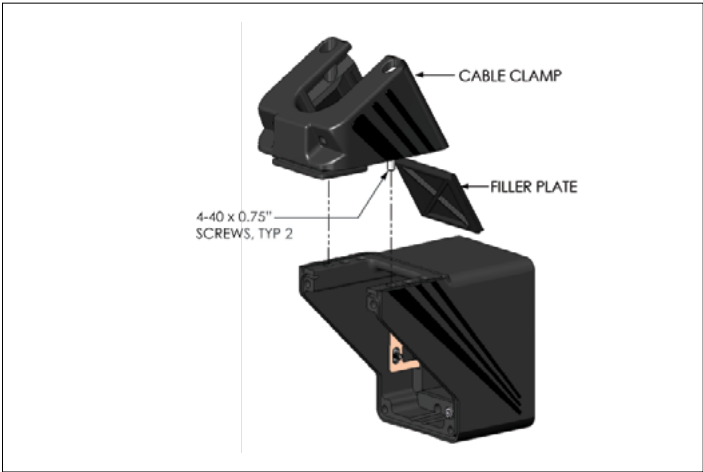


Figure B. Removal of the cable clamp.

RECOMMENDED SLEEVING INSTRUCTIONS

In order to prevent protective sleeving slippage for cable assemblies, VPC recommends lacing to secure the wire to sleeve or wrapping with silicone tape. We have internal procedures to resolve these types of issues in order to provide optimal outcomes for your system. Please contact us with any questions. Below are VPC best practices for securing protective sleeving.

TOOLS REQUIRED

Blunt Sewing Needle
Wax Lacing Tape
Cable Sleeving
Silicone Tape (optional)

OPTIONAL CABLE SLEEVING INSTRUCTIONS

1. Fold the end of the sleeving under.
2. Sew the sleeving to the wires using lacing tape (**Figure A**); using a 'figure 8' pattern around the wires is recommended for a better hold.
3. Use silicone tape to increase cable diameter, if necessary, for a secure clamp (**Figure B & C**).
4. When possible, place sleeving under the inside of the clamp.

NOTE: The preferred method is to place sleeving inside clamp regardless of tape use.

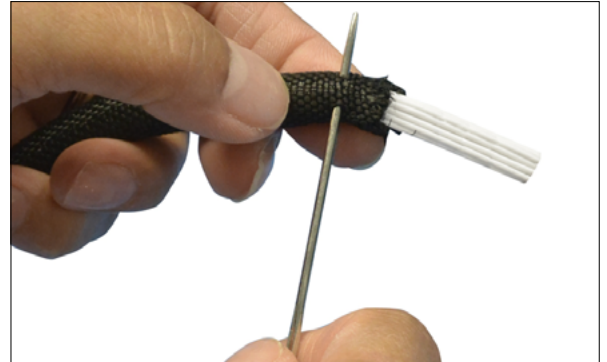


Figure A. Lacing.



Figure B. Example of silicone tape usage.



Figure C. Example of silicone tape on circular connector.

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i1 CABLE CLAMP REMOVAL AND INSTALLATION

PART # 410 128 XXX

CABLE CLAMP INSTALLATION INSTRUCTIONS

- 1. After removing the cable clamp, mount the module into the ITA frame. See Section 6 for module mounting instructions.
- 2. Next, place the wires or cables into the U-shaped section of the clamp. The filler plate of the cable clamp can be removed temporarily, if necessary (Figure A).
- 3. Replace the filler plate, if it was removed (Figure B).
- 4. Mount the U-shaped clamp to the ITA frame using the 4-40 x 0.75" captive screws. Torque the screws 4-5 in-lbs [0.45 to 0.56 Nm].
- 5. Slowly alternate tightening the 6-32 x 1.50" screws until the strain relief bar has tightly closed on the cable bundle. See Figure C for completed assembly.

NOTE: Reverse the orientation of the strain relief bar to accommodate smaller cable bundles.

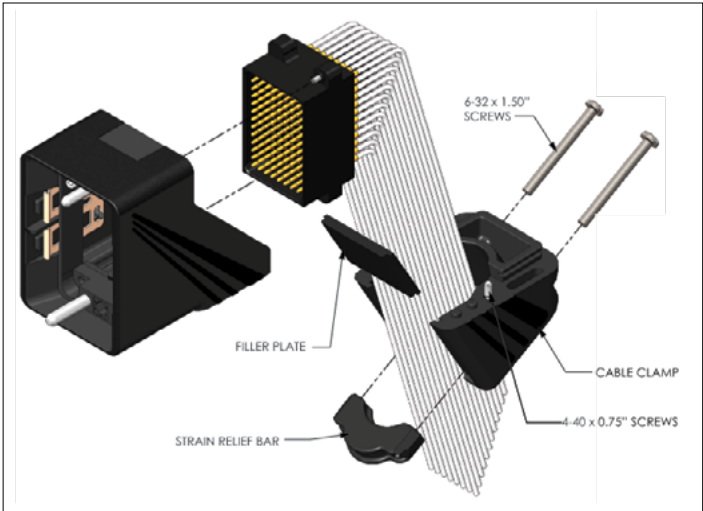


Figure A. Installation of the wire bundle.

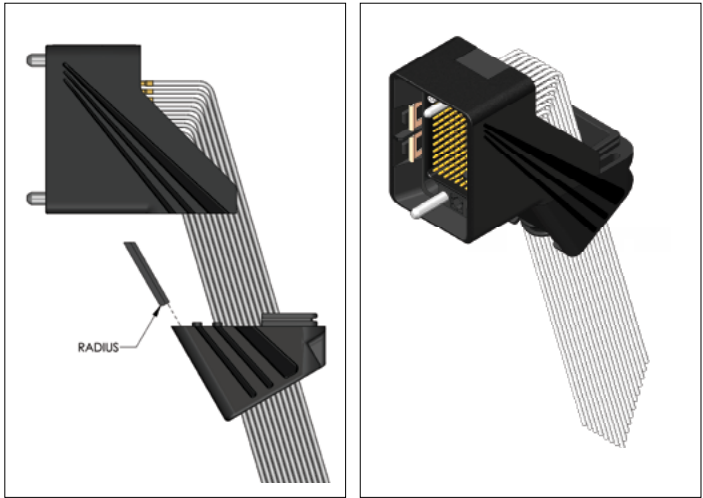


Figure B. Proper orientation of filler plate.

Figure C. Wire bundle installed with strain relief.

FORMULA TO CALCULATE THE MAXIMUM NUMBER OF WIRES IN A CABLE BUNDLE

$$B = 1.2 \sqrt{(N_1 d_1^2 + N_2 d_2^2 + \dots + N_n d_n^2)}$$

B = Wire Bundle Diameter	N ₁ = Quantity of first wire type	d ₁ = Outside Diameter of first wire type
	N ₂ = Quantity of second wire type	d ₂ = Outside Diameter of second wire type
	N _n = Quantity of n th wire type	d _n = Outside Diameter of n th wire type



WIRE IS NOT LIMITED BY GAUGE. WIRE IS LIMITED BY TOTAL OVERALL OUTSIDE DIAMETER.

EXAMPLE:

STANDARD 22 AWG, MIL-W-22759/45 OD=0.043"
STANDARD 22 AWG, MIL-W-81044/11 OD=0.049"
SHIELDED TWISTED PAIR, 22 AWG, M27500-22RC2S06 OD=0.136"

i1 MODULE INSTALLATION AND REMOVAL

RECEIVER • PART # 310 128 101

ITA • PART # 410 128 101

The i1 receiver is designed so the modules mount from the rear. This allows the test technician to easily mount wired cable assemblies without having to route the connectors through the receiver frame.

TOOLS REQUIRED

Phillips Head Screwdriver

NOTE: The receiver strain relief plate or the ITA cover may need to be removed prior to installing or removing an i1 module. Refer to the appropriate section for instructions on how to perform these steps.

NOTE: If the application requires, receiver modules can be installed in the ITA and ITA modules in the receiver. If this is done, you must be sure to switch the contacts as well (receiver contacts in a receiver module and ITA contacts in an ITA module). You should also use the keying kit to prevent attempted mating to a receiver or ITA that has a standard module orientation.

WHEN USING THE i1 IN THIS CONFIGURATION, THE ALIGNMENT PINS CAN DAMAGE THE ITA CONTACTS IF THE ITA IS NOT PROPERLY ALIGNED WITH THE RECEIVER. USE CAUTION WHEN ENGAGING THE ITA TO AVOID DAMAGING PINS.



MODULE 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. Install the module such that Position 1 is located at the top of the receiver/ITA 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 both screws 1.5 in-lbs [0.16 Nm].

MODULE REMOVAL

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

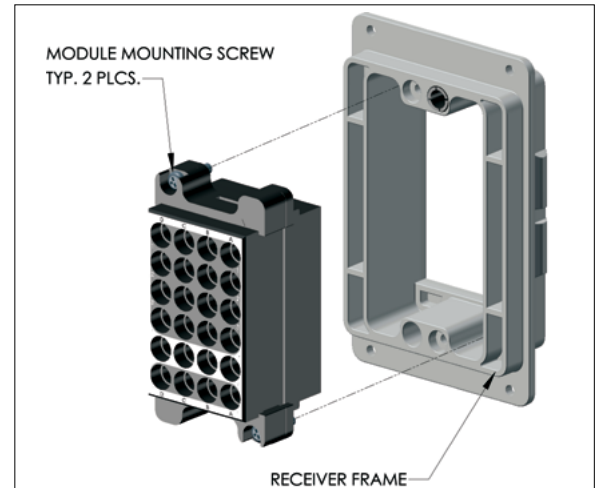


Figure A. i1 receiver and receiver module.

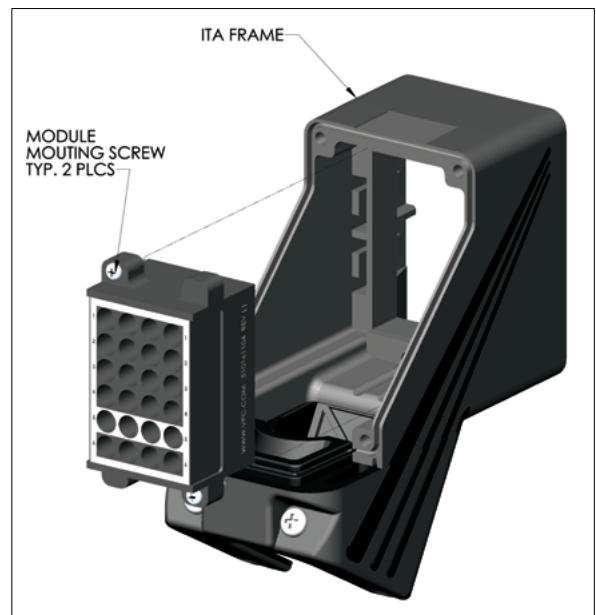


Figure B. i1 ITA and ITA module.

i1 ACCESSORIES • RECEIVER PROTECTIVE COVER REPLACEMENT

PART # 310 113 524

The i1 receiver protective cover is included with the i1 receiver.

INSTALLATION AND REMOVAL INSTRUCTIONS

1. Press the cover onto the receiver until the cover is held firmly in place.
2. To remove, grasp both sides of the cover and pull backwards with even force.

Figure B shows the protective cover with the 6" [152.4mm] lanyard that can be used to secure the cover to a panel. This can be achieved using a pan head 4-40 or M3 screw (not included).

INSTALLATION OF THE RECEIVER PROTECTIVE COVER CHAIN

1. Attach one end of the chain to one of the supplied eyelets.
2. Attach the eyelet to the mounting hole in the protective cover (**Figure B**).
3. Attach the other end of the chain to the mounting hole on the Receiver Frame (**Figure C**).

NOTE: Max temperature for protective cover is 40°C.

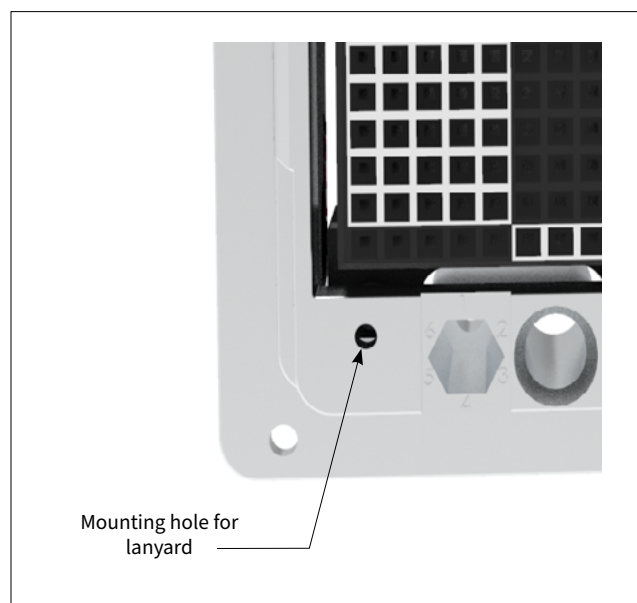


Figure C. Mounting hole for lanyard to attach receiver cover to the receiver frame.



Figure A. i1 receiver protective cover.



Figure B. Assembled i1 receiver with protective cover. A 6" service loop is provided for panel mounting the cover's lanyard.

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i1 ACCESSORIES • i1 ITA PROTECTIVE COVER REPLACEMENT

PART # 410 112 864

The ITA protective cover is included with the i1 ITA.

INSTALLATION AND REMOVAL INSTRUCTIONS

1. Press the cover onto the ITA until the cover is held firmly in place.
2. To remove, grasp both sides of the cover and pull backwards with even force.

NOTE: Max temperature for protective cover is 40°C.



Figure A. i1 ITA protective cover.



Figure B. The eyelet coupling can be used to attach the protective cover to the ITA using the 6-32 screw on the cable clamp.

i1 ACCESSORIES • i1 RECEIVER STRAIN RELIEF ASSEMBLY

PART # 310 113 531 / 310 113 582

TOOLS REQUIRED

Phillips Head Screwdriver

ASSEMBLY INSTRUCTIONS

1. Using the Phillips head screwdriver, fasten the strain relief to the back (wiring) side of the i1 receiver with the 2-56 screws and nuts provided (**Figure A**). Place the nuts in the keying positions from the front side of the receiver.

*NOTE: If using the keying features, replace the 2-56 nuts with the keying pins (**Figure B**) and use the longer screws that come with the strain relief kit.*

2. Torque screws to 2 in-lbs [0.23 Nm].

NOTE: Four wiring ties are included with the strain relief for restraining wires.

NOTE: If using 8AWG or 10AWG wire, the iCon Strain Relief Kit, Part # 310 113 582, will be required. Install patchcords into module before attaching strain relief.

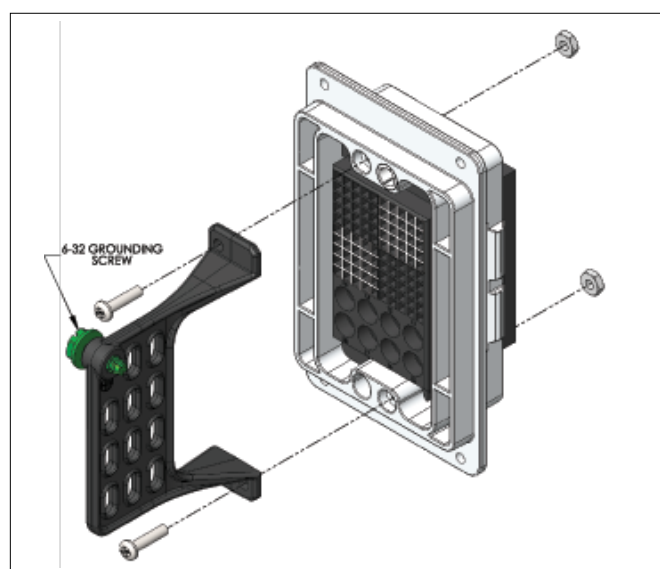


Figure A. i1 receiver strain relief.

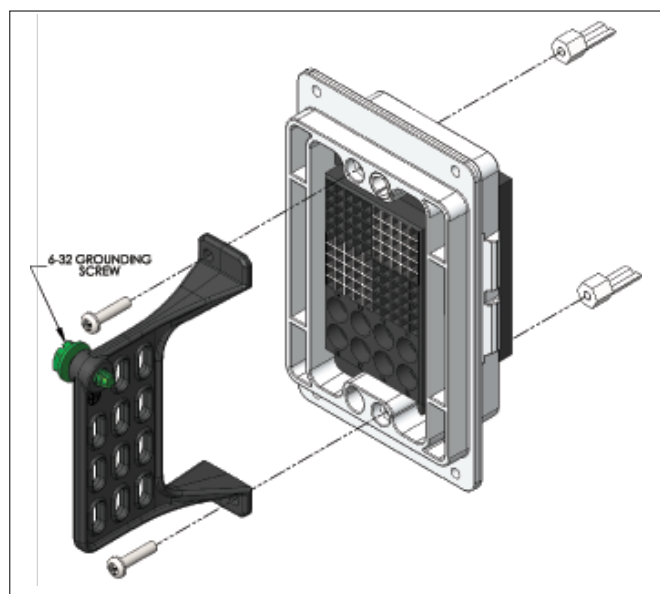


Figure B. i1 receiver strain relief with keying pins.

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i1 ACCESSORIES • KEYING PIN KIT, RECEIVER AND ITA ASSEMBLY

PART # 310 113 461 / 310 113 531

The iSeries keying kit includes two pins and screws which provide six different keying options. The i1 system is designed to accept two kits which increase the keying options to 36.

TOOLS REQUIRED

Phillips Head Screwdriver

ASSEMBLY INSTRUCTIONS

1. Determine the keying pin's desired orientation (**Figure A**).
2. Using a Phillips head screwdriver, secure a keying pin in the i1 receiver with the 2-56 screws provided with the receiver (**Figure B**). Torque screws to 2 in-lbs [0.23 Nm].
NOTE: The screws used to secure the keying pins must be replaced with the screws included with the strain relief plate, Part # 310 113 531, if it is being used.
3. Remove the ITA rear cover.
4. Using a Phillips head screwdriver, secure a keying pin in the i1 ITA with the 2-56 screws provided (**Figure C**). Torque screws to 2 in-lbs [0.23 Nm].
5. Replace the i1 ITA cover, per Section 4 of this manual.

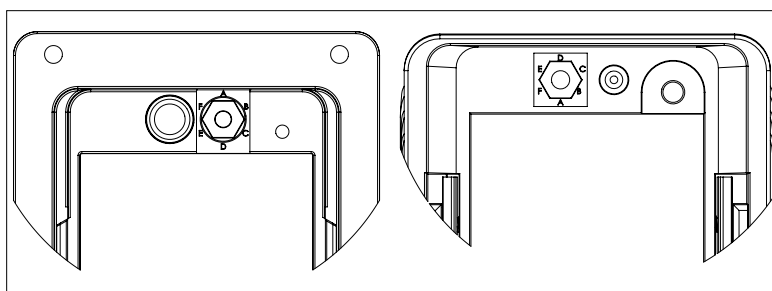


Figure A. i1 receiver and ITA mating faces. In order to mate the connector, the keying pin must be in the same alphabetical position in both the receiver and ITA.

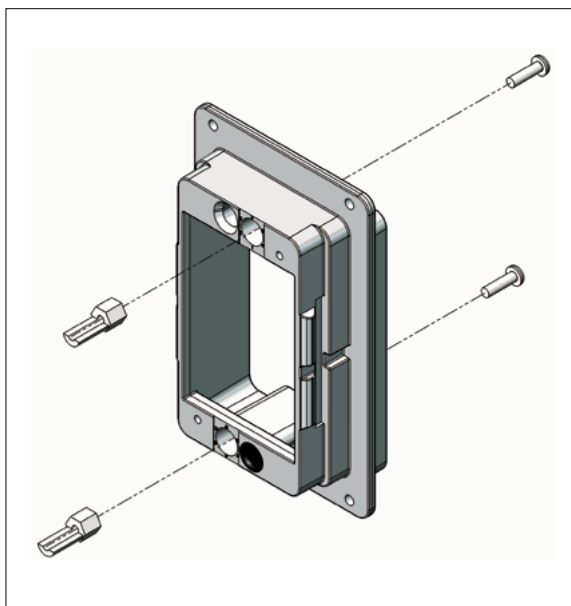


Figure B. i1 receiver with keying pins.

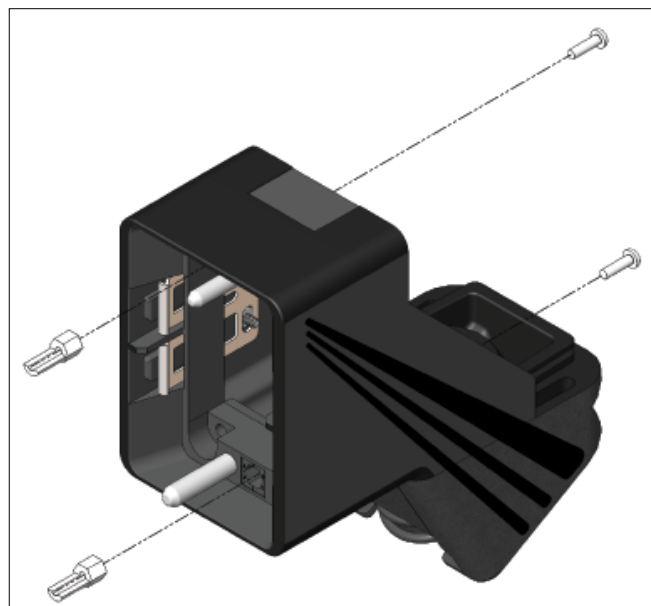


Figure C. i1 ITA with keying pins.

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i1 ACCESSORIES • i1 RECEIVER BACKSHELL ASSEMBLY

PART # 310 113 727

The i1 receiver backshell provides protection for exposed wiring and is ideal for use with the i1 receiver and ITA when used in a cable-to-cable application.

TOOLS REQUIRED

Phillips Head Screwdriver
3/32" hex Allen Key

ASSEMBLY INSTRUCTIONS

1. Using the ball end of a 3/32" hex Allen key, attach the cable clamp to the upper backshell using four 4-40 x .25" socket head screws. (**Figure A**).
2. Using four 2-56 x .25" Phillips head screws, attach the receiver to the mounting frame (**Figure B**).
3. Secure the i1 module in the receiver frame using the two captive screws located in corners of the module. (**Figure C**).

NOTE: Reverse the orientation of the strain relief bar to accommodate smaller cable bundles.

Instructions continued on next page ...

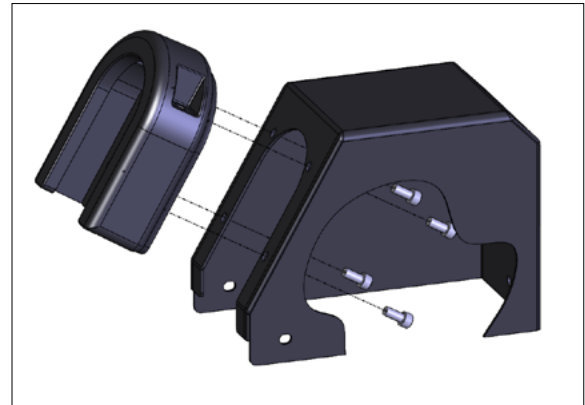


Figure A. Mount the cable clamp to the backshell.

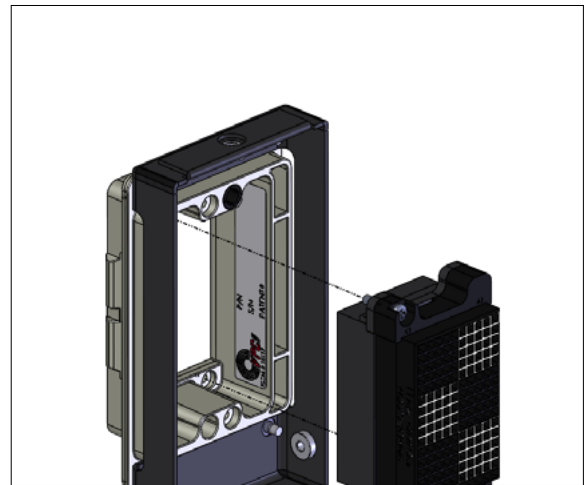


Figure B. Secure the i1 receiver frame to mounting frame.

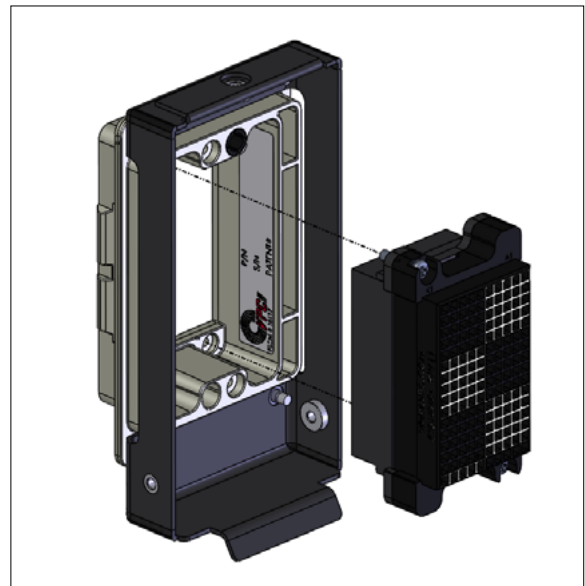


Figure C. Attach the receiver module to the receiver frame.

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i1 ACCESSORIES • i1 RECEIVER BACKSHELL ASSEMBLY

PART # 310 113 727

ASSEMBLY INSTRUCTIONS (CONTINUED)

4. Using a Phillips head screwdriver, secure the receiver and mounting frame assembly to the backshell using three 4-40 x .25" screws (Figure D).
5. Attach the clamp bar and slowly alternate tightening the 6-32 x 1.50" screws until the clamp has closed on the wires or cables securely (Figure E).

FORMULA TO CALCULATE THE MAXIMUM
NUMBER OF WIRES IN A CABLE BUNDLE

$$B = 1.2 \sqrt{(N_1 d_1^2 + N_2 d_2^2 + \dots + N_n d_n^2)}$$

B = Wire Bundle Diameter	N ₁ = Quantity of first wire type	d ₁ = Outside Diameter of first wire type
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WIRE IS NOT LIMITED BY GAUGE. WIRE IS LIMITED BY TOTAL OVERALL OUTSIDE DIAMETER.

EXAMPLE:
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STANDARD 22 AWG, MIL-W-81044/11 OD=0.049"
SHIELDED TWISTED PAIR, 22 AWG, M27500-22RC2S06 OD=0.136"

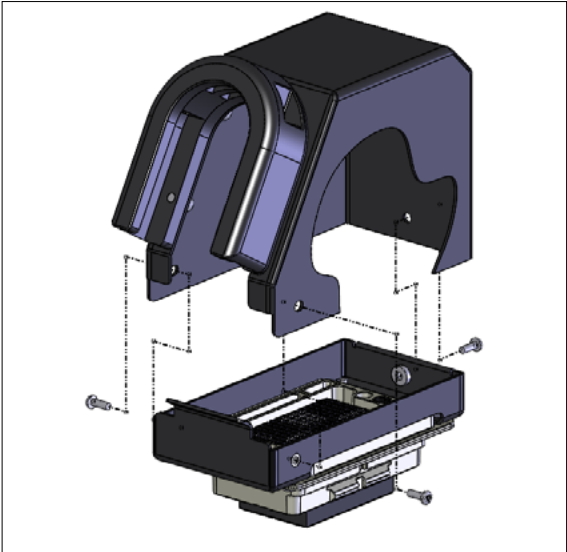


Figure D. Mount the receiver and mounting frame assembly to the backshell.



Figure E. Slowly alternate tightening the screws until the clamp has closed the wires or cables securely.

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PCB LAYOUT AND MOUNTING

PART # 510 160 105 / 610 138 117

The 510 160 105 module is designed with VPC's unique Twin Female QuadraPaddle™ contacts. "Twin-Female" meaning both ends of the contact accept male pins (**Figure A**). They are used to mate with the male pins of the i1 ITA as well as male pins on a PCB. This allows the i1 receiver and module to be separated from the PCB without having to de-solder each contact.

Design your PCB to include an area for 160 male posts in a 10 wide by 16 tall pattern with 0.10" [2.54 mm] spacing. For full dimensional detail, see page 8-2.

This area will be staked with adapter pins from VPC, Part # 610 138 117 or a standard PCB header which is available from multiple manufacturers (**Figure B**). The pins will need to extend long enough to mate with the QuadraPaddle contacts in the module. The pins should have a minimum engagement of 0.22" [5.59 mm] and a maximum of 0.45" [11.43 mm] with the rear of the VPC module. The overall length of the pins for your application can be affected by panel thickness and the length of standoffs used.

The overall post length required for each application needs to take into account the minimum/maximum required engagement and the thickness of the mounting plate, as well as any standoffs used. When mounted to a panel, the rear of the VPC module will be recessed 0.20" [5.11 mm] from the front side of the panel.

The following numbers need to be used when determining the total required post length (Y):

0.22" [5.59 mm] / 0.45" [11.43 mm] minimum/maximum engagement
0.20" [5.11 mm] mounting surface of i1 receiver to mating surface of module

(X) thickness of mounting plate and length of standoffs

NOTE: Minimum spacer height = 0.24" + header carrier height - panel thickness (if used).
Any additional height beyond this minimum must be added to the header post limits shown in Figure C.

NOTE: Several manufacturers offer the twin male header: Samtec, TE, MultiComp, Molex. The specific part number required is dependant on the distance the i1 will be located from the PCB, the thickness of the PCB, and the plating type required.

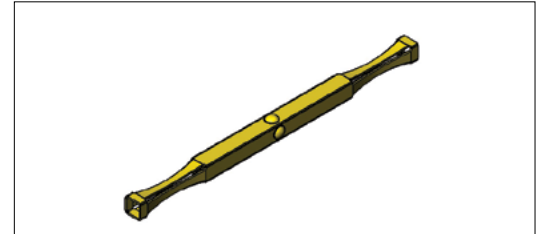


Figure A. Twin female QuadraPaddle contact.

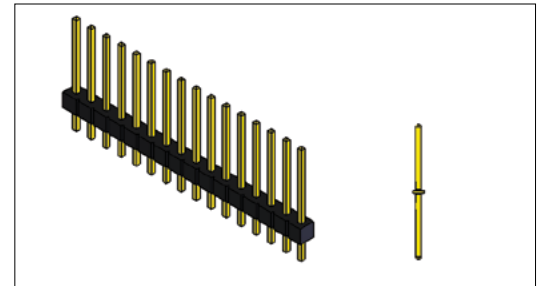


Figure B. Staked male adapter pins.

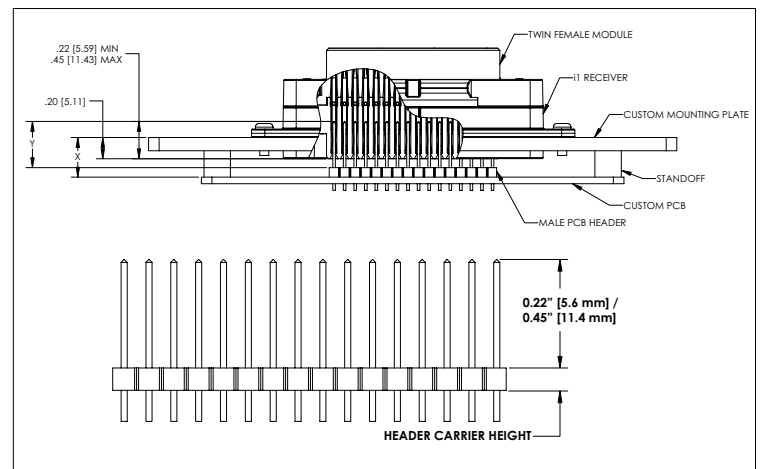
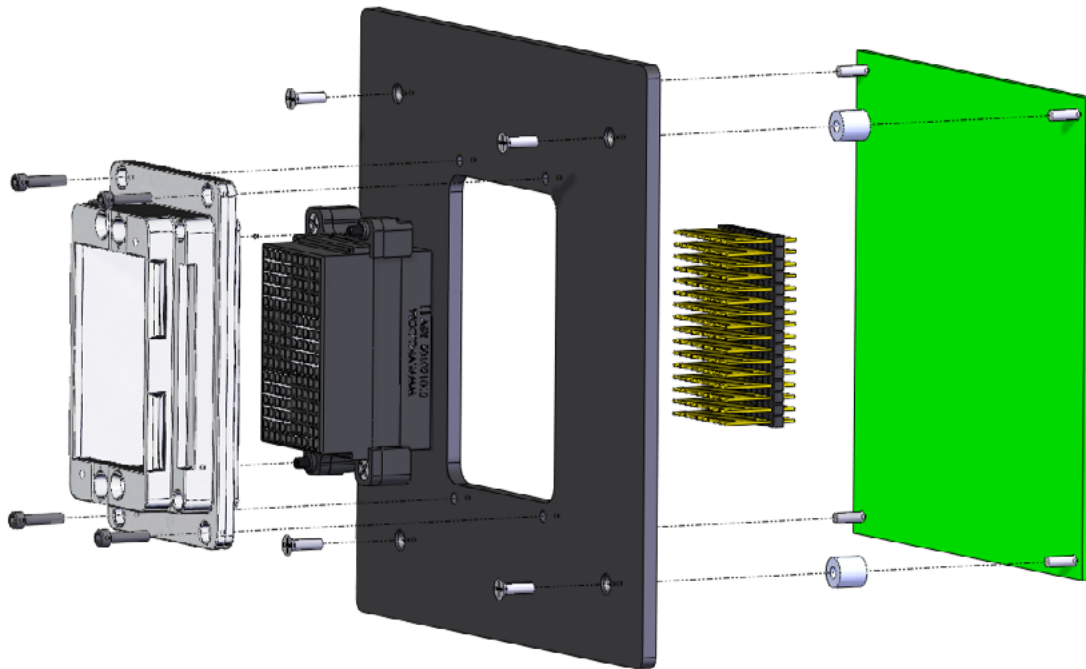


Figure C. Measurements for total required post length.

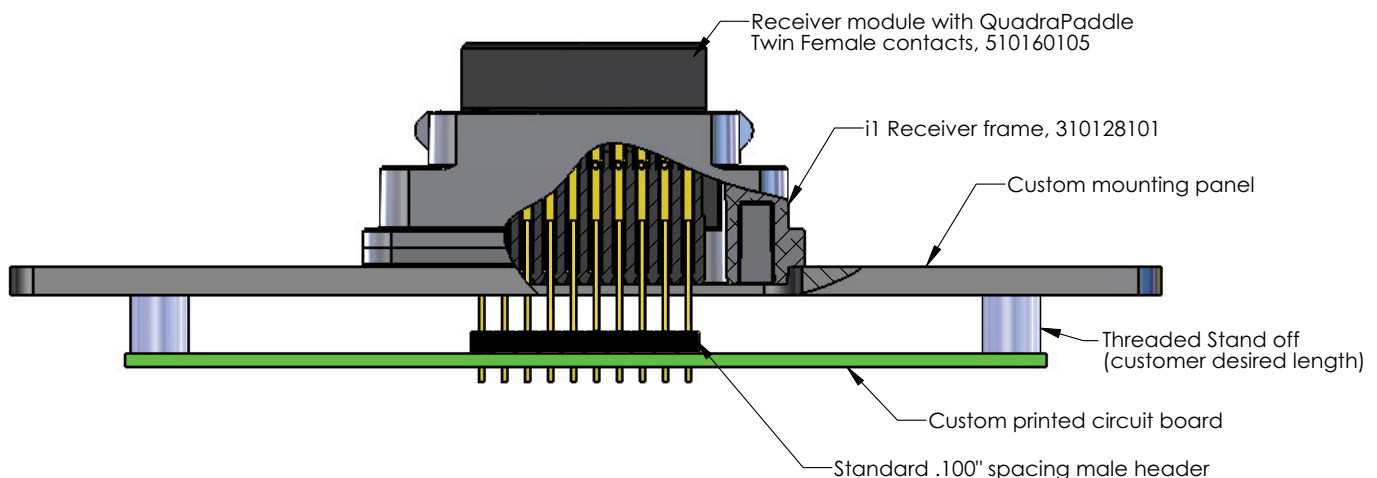
i1 PCB LAYOUT AND MOUNTING OVERVIEW

PART # 510 160 105 / 310 128 101



The i1 receiver is designed as a rack and panel mount connector that can have a PCB attached on the rear side. While it is capable of being mounted directly to a PCB without an intermediary panel, VPC recommends mounting the i1 receiver to a panel and then mounting the PCB to the other side of the panel using stand-offs. This will reduce the amount of stress the PCB endures when the i1 is mated and un-mated. See the example below.

EXAMPLE: Mount the QuadraPaddle™ Twin Female Module, Part # 510 160 105, to the i1 Receiver, Part # 310 128 101. Mount the i1 receiver to your custom panel or surface. Be sure to follow VPC's recommended cutout pattern for the i1 in section 3 of this user manual and to include mounting holes to secure the PCB to the other side of the surface.

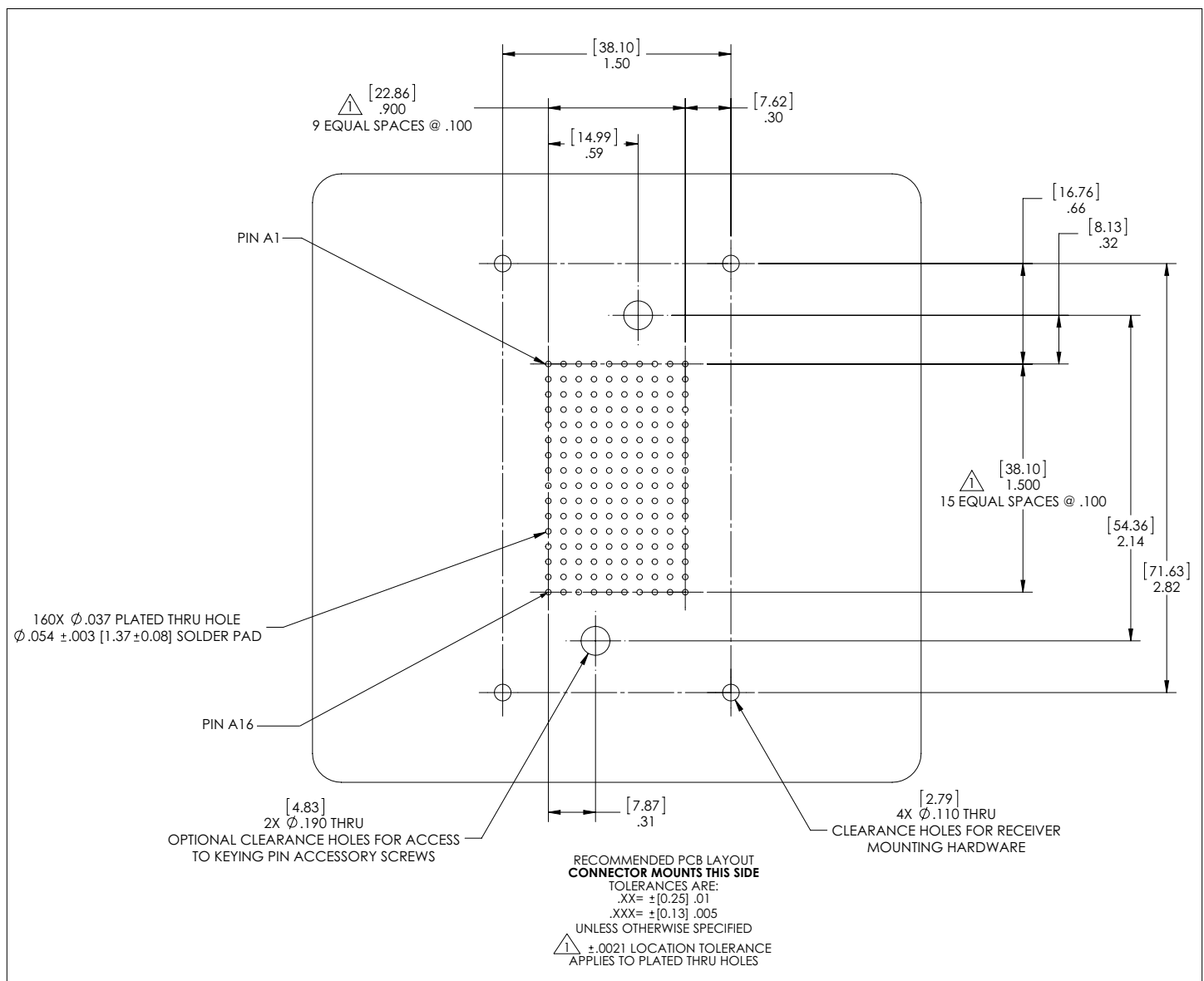


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PCB LAYOUT AND MOUNTING

PART # 310 128 101 / 510 160 105 / 610 138 117

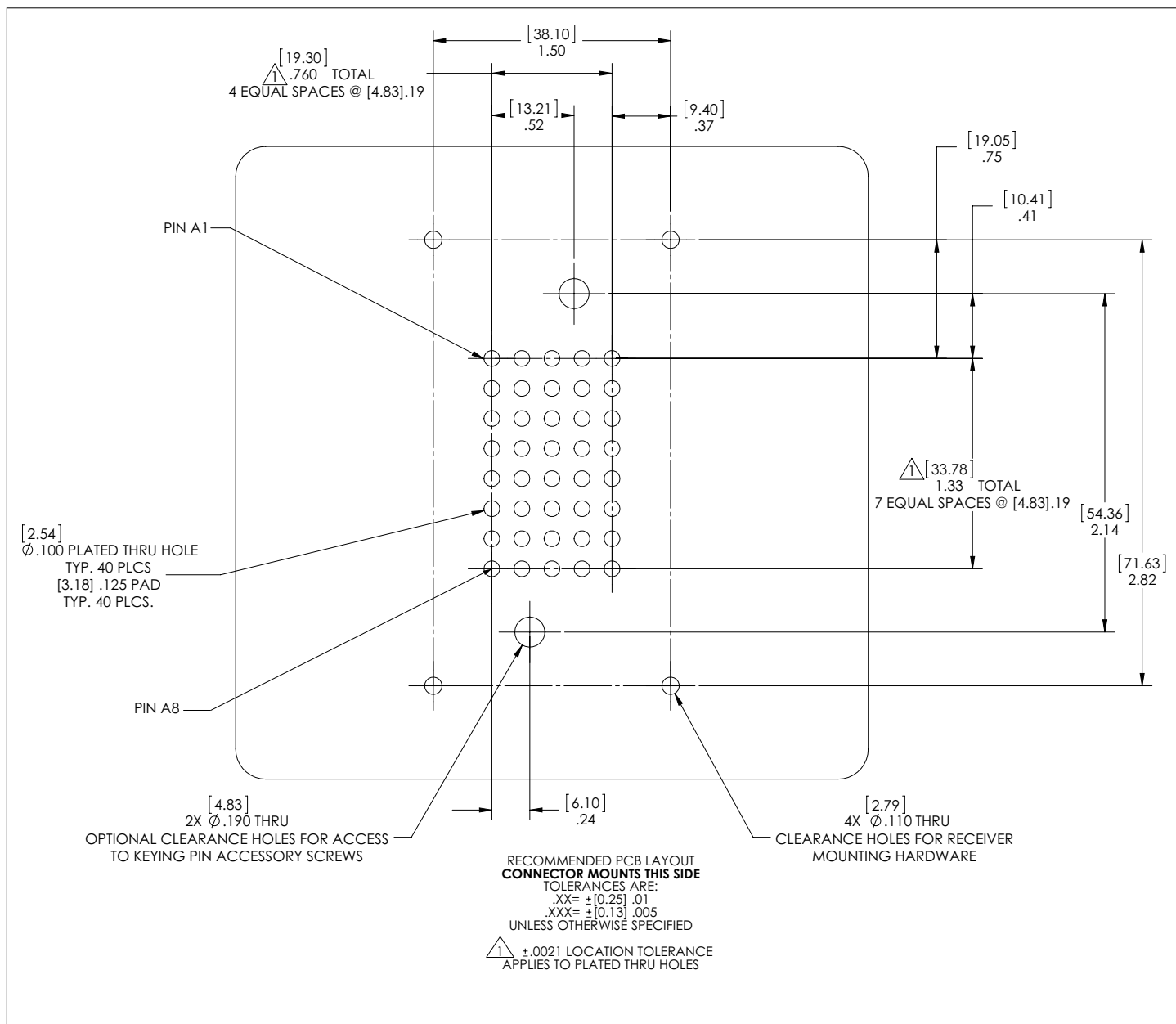
Figure A. PCB layout for the i1 Receiver, Part #310 128 101 loaded with a 510 160 105 module.
Thru hole and pad diameters are for VPC QuadraPaddle Adapter Contact, Part #610 138 117, The size of these holes may be different if a header from a different manufacturer is used. Also shown are optional clearance holes.



PCB LAYOUT AND MOUNTING

PART # 310 128 101 / 510 160 106 / 610 142 102

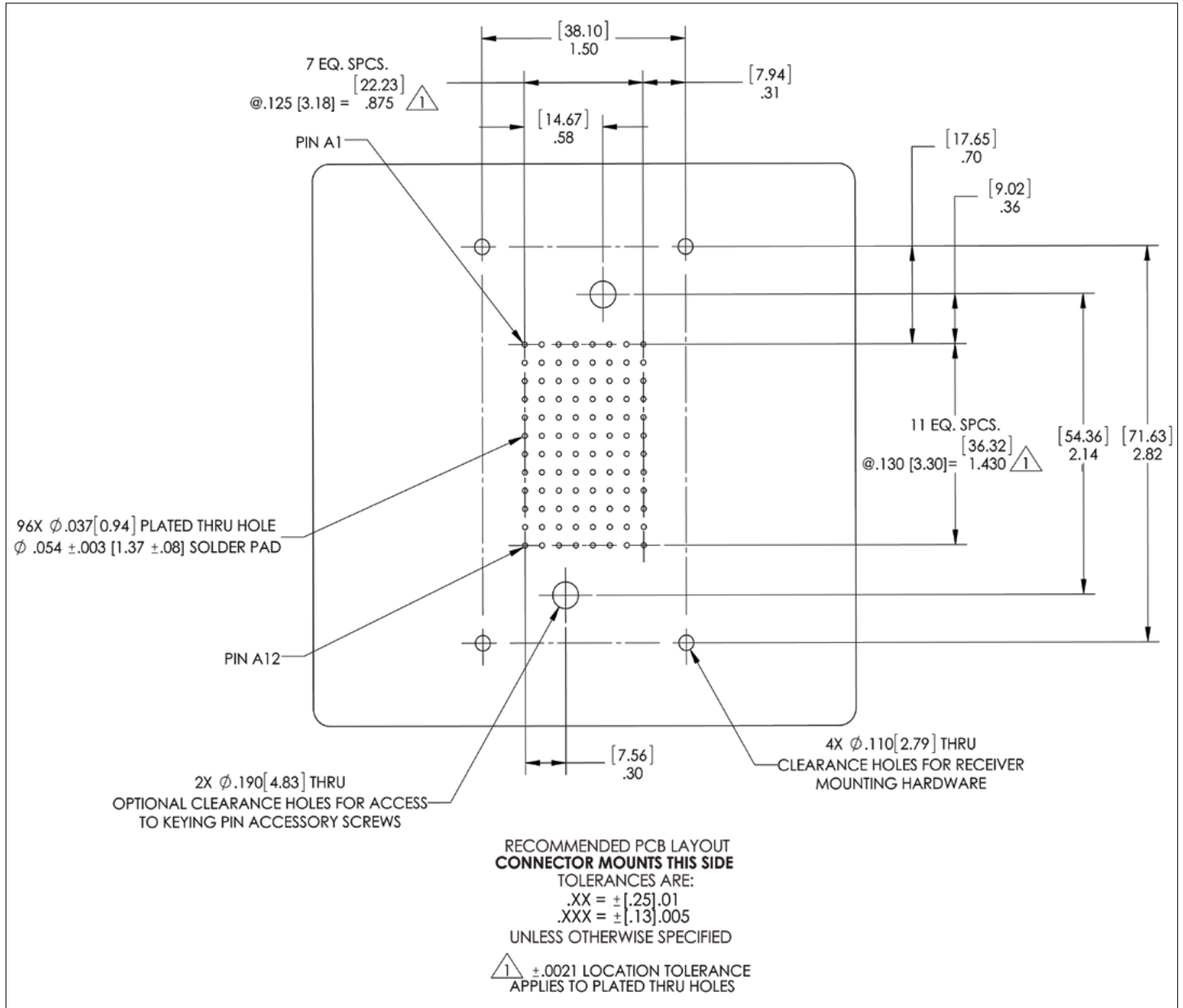
Figure B. PCB layout for the i1 Receiver, Part #310 128 101 loaded with a 510 160 106 module, and for Micro Power contacts, Part #610 142 102. The size of these holes may be different if a header from a different manufacturer is used. Also shown are optional clearance holes.

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PCB LAYOUT AND MOUNTING

PART # 310 128 101 / 510 160 108 / 610 110 179

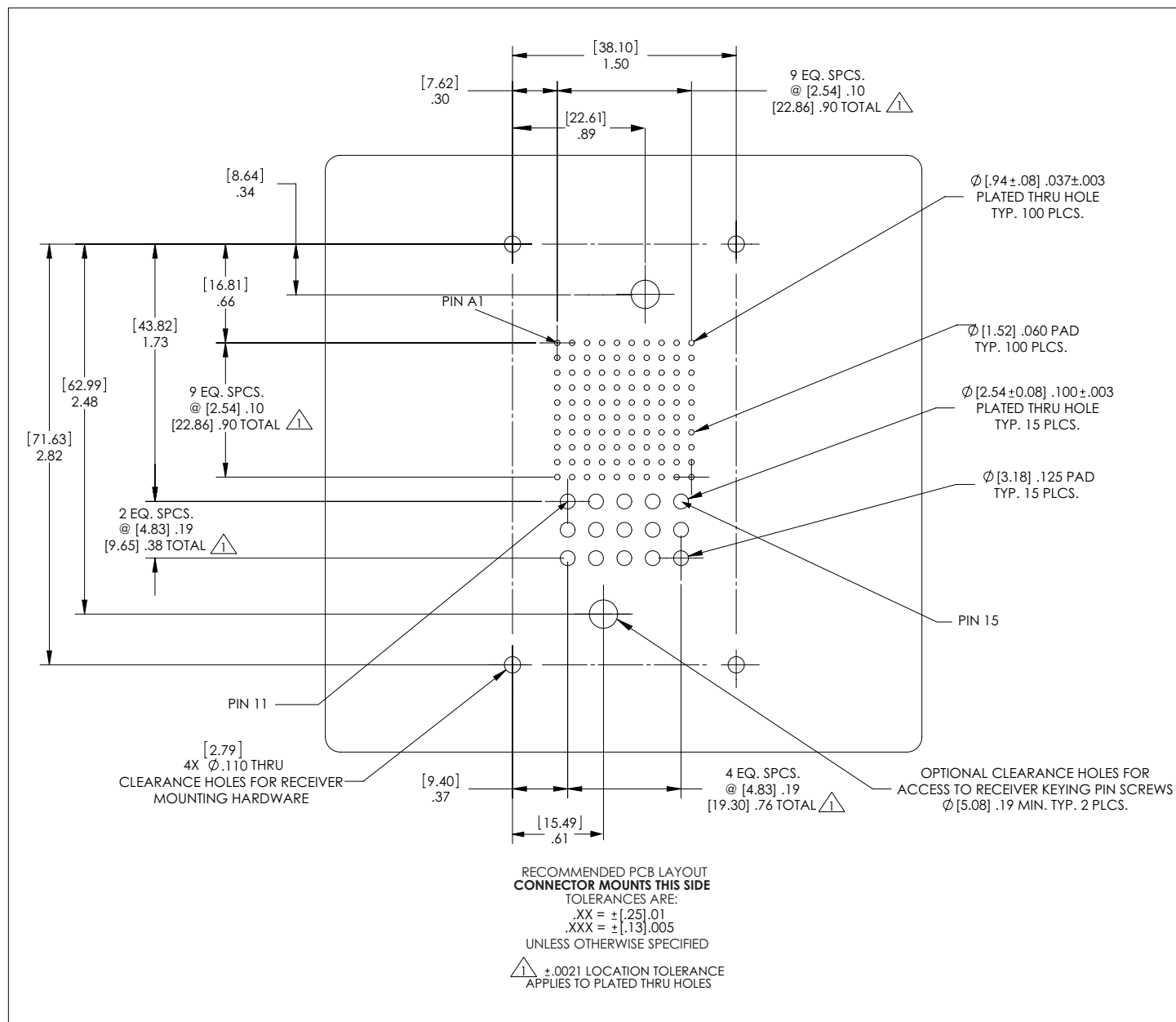
Figure C. PCB layout for the i1 Receiver, Part # 310 128 101 loaded with a 510 160 108 module. Thru hole and pad diameters are for VPC TriPaddle adapter contacts, Part # 610 110 179. The size of these holes may be different if a header from a different manufacturer is used. Also shown are optional clearance holes.

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PCB LAYOUT AND MOUNTING

PART # 310 128 101 / 510 160 112 / 610 138 117

Figure D. PCB layout for i1 receiver, Part # 310 128 101, loaded with a 510 160 112 module. Thru hole and pad diameters are for VPC QuadraPaddle Adapter Contacts, Part # 610 138 117, and for Micro Coax and/or Micro Power contacts. The size of these holes may be different if a header from a different manufacturer is used. Connector mounts this side. Also shown are optional clearance holes.

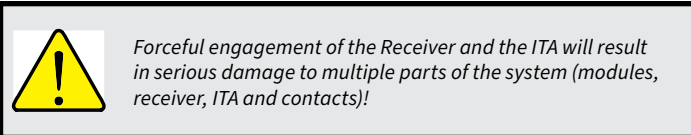


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TROUBLESHOOTING

ITA frame is not lined up when in the process of engagement with receiver

- This may indicate that the ITA was dropped and is out of alignment or that a module is not mating with its intended module.
- Remove and inspect the ITA for alignment
- Check for foreign objects/tools
- Inspect the matching of modules - Power ITA Module to mate with Power Receiver Module, etc.
- The keying pin locations do not mate.
- The handle is installed wrong ("ITA I1 COVER INSTALLATION").



CAGE INSTALLATION

The following instructions should be used to install the engagement cage should it be removed from the ITA cover.

1. Rotate the handle 90° counter-clockwise from the closed position (**Figure A**).
2. Position the cage so that the open side is toward the bottom of the cover.
3. Insert the cage into the ITA cover (**Figure B**).
4. While holding the cage in position, rotate the ITA handle clockwise. It is important to keep slight pressure on the cage by pressing it into the threaded hole of the handle to start the threads. Rotate the handle 2 full rotations to fully install the cage. The handle should now be in the open position.

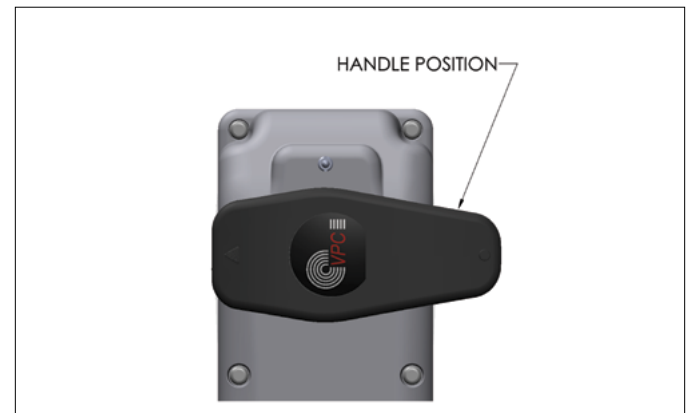


Figure A. Rotate the handle to the open position.

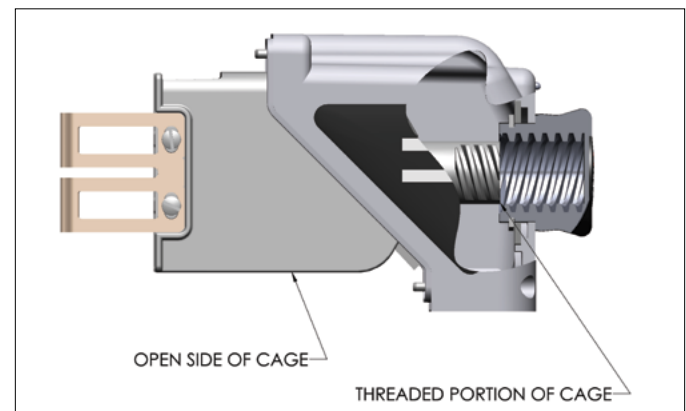


Figure B Insert the cage into the cover.