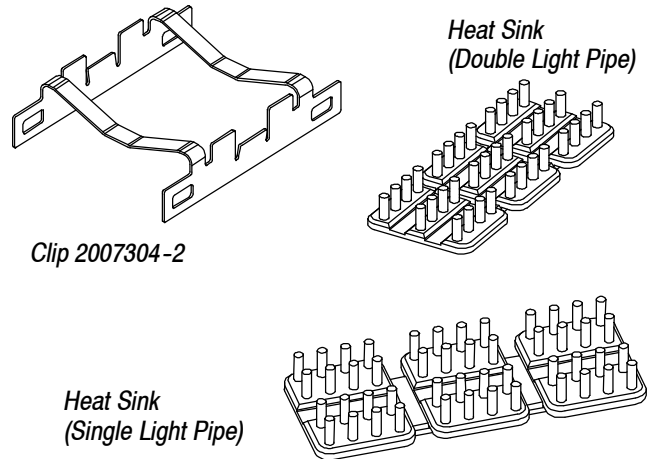


Figure 1

**1. INTRODUCTION**

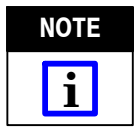
QSFP Connector 1761987-9 and Cage Assemblies 1888617-1 or 1888674-1 are used to interconnect QSFP fiber optic or copper transceiver modules to host printed circuit (pc) boards. The EMI/dust cover 1888810-2 is used to prevent contaminants from entering the chassis and confine any EMI emissions when the transceiver is not installed. See Figure 1.

In applications where heat dissipation is necessary, a heat sink can be used. Choose a heat sink that meets the needs of the specific application. A sample of available heat sinks for the cage assembly is shown in Figure 2. These heat sinks are designed to be attached to the cage assembly using a clip.



LIGHT PIPE TYPE	HEAT SINK PART NUMBER		
	PCI	SAN	NETWORKING
Single	1963702-2	1963703-2	1963704-2
Double	1963782-2	1963783-2	1963784-2

Figure 2



*All dimensions on this document are in metric units. Figures and illustrations are for identification only and are not drawn to scale.*

Light pipes can be added to the cage assembly 1888674-1. Two light pipes for thru bezel QSFP cages are shown in Figure 3. Both light pipes can be used either with heat sinks or without, to transmit LED light from the host pc board through the bezel.

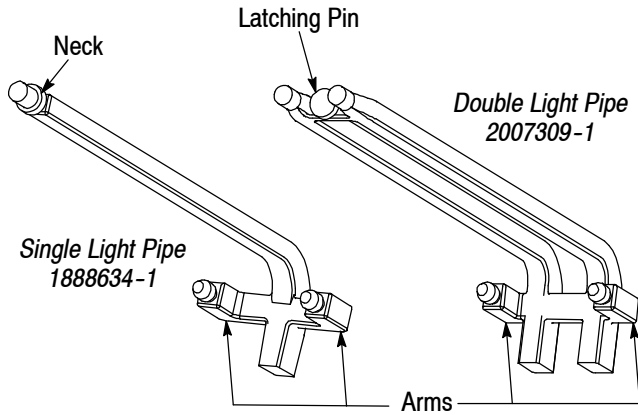


Figure 3

**2. DESCRIPTION**

The connector contains right-angle surface mount contacts and features a card entry slot that accepts the 1.0 ±0.1 mm thick integrated circuit card housed in the transceiver.

The cage assembly is a frame with compliant pins for mounting onto the host pc board. The transceiver locking latches hold the transceiver in place, and the hard stop controls the insertion depth of the transceiver. The cage assembly is designed to fit through openings in the bezel. Springs attached to the perimeter of the cage opening maintain electrical contact with the inside surfaces of the bezel opening to prevent EMI emissions.

**3. ASSEMBLY PROCEDURE**

1. Install the connector onto the host pc board according to Application Specification 114-13217. Refer to Figure 4. Solder the connector to the pc board before seating the cage assembly.



*The soldering process will cause damage to the cage assembly.*

2. Design a pc board support fixture having a flat surface with holes or a channel wide and deep enough to receive any protruding components during seating of the cage assembly on the host pc board.

3. Place the host pc board on the pc board support fixture.

*Seated Connector*

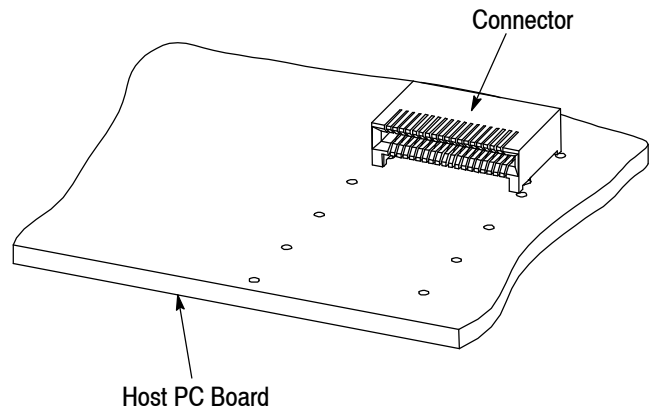


Figure 4



*A pc board support fixture must be used to provide proper support for the host pc board, and to prevent damage to the host pc board and its adjacent components.*

4. Align the compliant pins of the cage assembly with the applicable holes in the host pc board. Using even pressure across the cage assembly, apply only that force necessary to seat the shoulders of the compliant pins onto the host pc board. Then remove the pc board support fixture.

5. Inspect the seated cage assembly according to Figure 5.

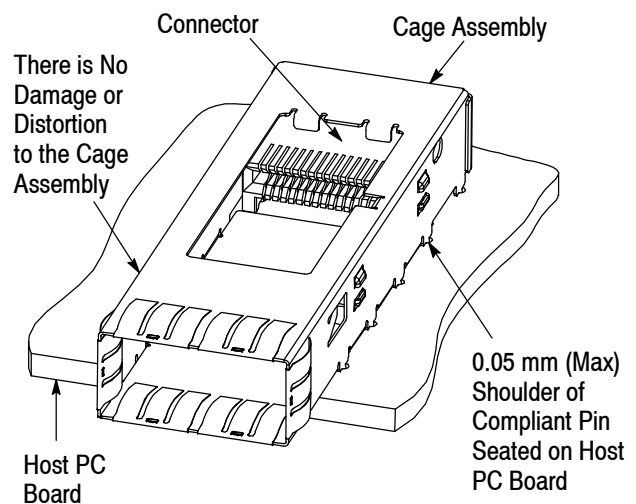


Figure 5

6. If applicable, secure the heat sink to the cage assembly as follows (see Figure 6):

- a. Place the heat sink on the cage assembly so that the raised boss of the heat sink is

centered in the cavity of the cage assembly and the perimeter of the heat sink is flush with the top of the frame of the cage assembly.

b. Position the cross bars of the clip above the slots in the top of the heat sink. Then seat the clip onto the heat sink.

c. Using the tip of a tool (such as a small screwdriver), push down upon the raised sections on the rails of the clip until the corresponding locking windows latch onto the attachment latches of the cage assembly. Make sure that all four locking windows have engaged the attachment latches. A raised stop is positioned beneath each latch to prevent excessive strain on the clip.

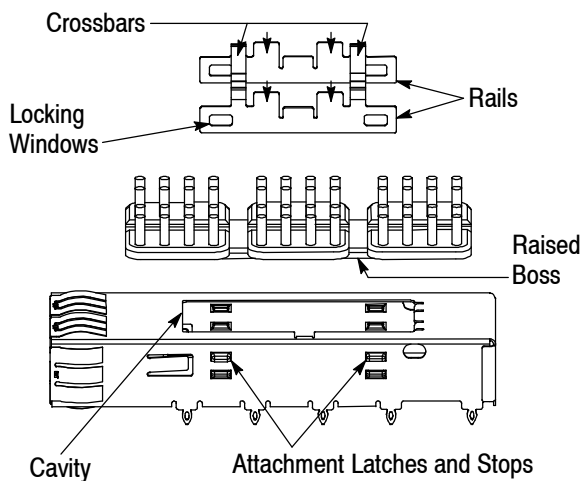


Figure 6

7. If applicable, mount the light pipe so that the pins on each arm fit inside the holes on the rear of the cage. This will require applying slight pressure on the arms to pinch the pins inward. The light pipe should be aligned with the length-wise slots in the heat sink, if a heat sink is installed. The single light pipe, 1888634-1, has a neck that snaps down into the light pipe bracket on cage assembly 1888668-1. The double light pipe, 2007309-1, has a latching pin on the front crossbar that serves the same purpose. The pc board end of the pipe should sit above the indicator LED on the board as shown in Figure 7.

8. Design the bezel according to 114-13217.

9. Mount the cage assembly (with the host pc board) onto the bezel. Make sure that the opening of the cage assembly is centered within the cutout of the bezel and the light pipe, if one is used, fits through the hole in the bezel. The bezel should compress the EMI springs on all four sides of the cage. See Figure 8.

10. Install the transceiver or module. If a transceiver or module is not being installed, install the EMI/dust cover into the opening of the cage assembly.

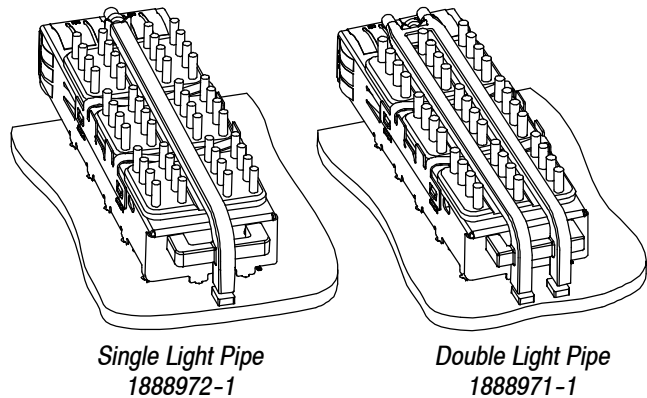


Figure 7



To avoid interference with the insertion and extraction of the transceiver, IT IS IMPORTANT that the bezel and pc board be positioned in relation to each other according to Figure 8.

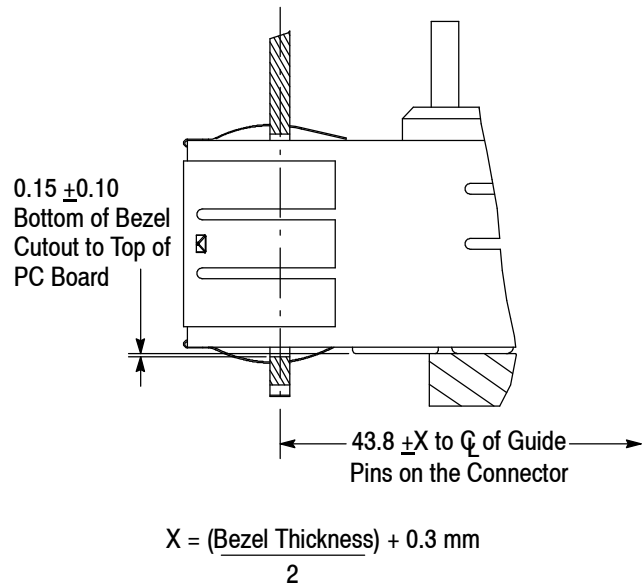


Figure 8

## 4. REMOVAL

### 4.1. Light Pipe

The cage assembly and host pc board must be detached from the bezel before removing the light pipe from the cage assembly. To remove the light pipe, proceed as follows:

1. Unlatch the front end of the light pipe from the light pipe bracket near the front of the cage assembly by gently pulling upward on the front of the light pipe.

2. When the front of the light pipe has cleared the light pipe bracket, squeeze the arms of the light pipe toward each other until the arms can easily be pulled clear of the mounting holes on the rear of the cage assembly.

**4.2. Heat Sink**

The light pipe (optional) must be removed from the bezel before removing the heat sink from the cage assembly. To remove the heat sink, proceed as follows:

1. Insert the tip of a tool (such as a small screwdriver or hobby knife) behind either release aperture of the clip, and rotate the tool until the corresponding locking windows are released from the attachment latches of the cage assembly. Repeat this step for the remaining release aperture. Refer to Figure 9.
2. Lift the clip and heat sink from the cage assembly.

**4.3. Cage Assembly**

1. Partially insert the dust cover or a flat metal bar (or similar object) into the front of the cage assembly.



*DO NOT allow the object to touch the connector, otherwise, damage to the contacts could occur.*

2. Lift the cage assembly off of the host pc board.



*DO NOT re-use the cage assembly after removal.*

**4.4. Connector**

1. Remove the cage assembly according to Paragraph 4.2. (The cage assembly must be removed before removing the connector.)
2. Use standard de-soldering methods to remove the connector from the host pc board.



*DO NOT re-use the connector after removal.*

**5. REPLACEMENT AND REPAIR**



*The connector and cage assembly are not repairable. DO NOT use any defective or damaged products.*

**6. REVISION SUMMARY**

- Updated document to corporate requirements.

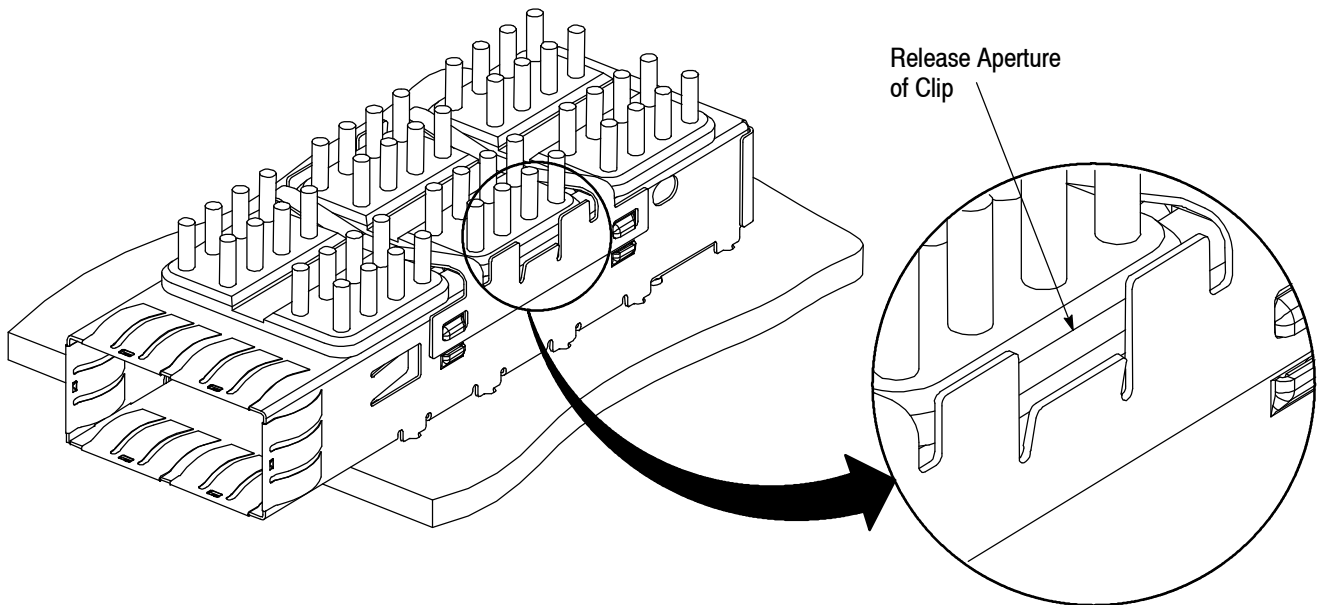


Figure 9