

[0005] Accordingly, there is a need for a pluggable I/O assembly that can provide a sufficient level of EMI containment while reducing at least one of the cost or complexity of the pluggable I/O assembly.

[0006] Embodiments of the present invention seek to solve this problem by providing a pluggable connector according to claim 1.

[0007] A pluggable connector according to an aspect of the present invention comprises a connector housing having a leading end, a trailing end, and a central axis that extends between the leading and trailing ends. The connector housing includes interior sidewalls that face the central axis. The interior sidewalls define a receiving space and an opening to the receiving space at the leading end. A contact array of electrical contacts is disposed in the receiving space and is configured to engage corresponding electrical contacts of a mating connector. An inner electromagnetic interference (EMI) gasket is coupled to the interior sidewalls and surrounds a portion of the receiving space about the central axis. The connector housing is configured to receive the mating connector into the receiving space when the connector housing is moved in a mating direction along the central axis. The inner EMI gasket engages the mating connector in the receiving space to electrically couple the mating connector to the connector housing.

[0008] The invention will now be described by way of example with reference to the accompanying drawings wherein:

[0009] Figure 1 is a side view of a communication system formed in accordance with an embodiment that includes a pluggable connector and a mating connector.

[0010] Figure 2 is a perspective view of a portion of the pluggable connector that may be used with the communication system of Figure 1.

[0011] Figure 3 is a front end view of the pluggable connector of Figure 1.

[0012] Figure 4 is an isolated front-perspective view of an inner electromagnetic interference (EMI) gasket that may be used with the pluggable connector of Figure 1.

[0013] Figure 5 is an isolated perspective view of a communication sub-assembly that may be positioned within the pluggable connector of Figure 1.

[0014] Figure 6 is a perspective view of the communication system of Figure 1 in which the pluggable connector and the mating connector are mated to each other.

WHAT IS CLAIMED IS:

1. A pluggable connector comprising a connector housing having a leading end, a trailing end, and a central axis that extends between the leading and trailing ends, the connector housing including interior sidewalls that face the central axis, the interior sidewalls defining a receiving space and an opening to the receiving space at the leading end, a contact array of electrical contacts disposed in the receiving space, the contact array configured to engage corresponding electrical contacts of a mating connector, characterized by:

an inner electromagnetic interference (EMI) gasket coupled to the interior sidewalls and surrounding a portion of the receiving space about the central axis, wherein the connector housing is configured to receive the mating connector into the receiving space when the connector housing is moved in a mating direction along the central axis, the inner EMI gasket engaging the mating connector in the receiving space to electrically couple the mating connector to the connector housing.

2. The pluggable connector of claim 1, wherein the inner EMI gasket includes spring members that are coupled to corresponding interior sidewalls and project into the receiving space, the spring members being deflected by the mating connector toward the corresponding interior sidewalls when the mating connector is received in the receiving space.

3. The pluggable connector of claim 1, further comprising an outer EMI gasket that is coupled to an exterior of the connector housing and surrounds the connector housing about the central axis, the inner and outer EMI gaskets being electrically coupled to each other through the connector housing.

4. The pluggable connector of claim 3, wherein the inner and outer EMI gaskets are separated by an axial distance along the central axis.

5. The pluggable connector of claim 1, further comprising a communication sub-assembly having a circuit board that includes the contact array, the circuit board being disposed within the receiving space.

6. The pluggable connector of claim 5, wherein the communication sub-assembly includes one or more processing units coupled to the circuit board.

7. The pluggable connector of claim 1, wherein the connector housing includes a leading edge that defines the opening to the receiving space, the EMI gasket being coupled to or located proximate to the leading edge.

8. The pluggable connector of claim 1, wherein the pluggable connector includes at least one of a guide rail or a guide channel along an exterior of the connector housing that is configured to engage a complementary alignment feature to guide the pluggable connector during the mating operation.

9. The pluggable connector of claim 1, further comprising a communication cable that is coupled to the trailing end, the communication cable configured to transmit electrical signals or optical signals.

10. The pluggable connector of claim 1, wherein the pluggable connector is a high-speed connector capable of transmitting data signals at 10 gigabits per second or more.