Fortis Zd* Line Replaceable Module (LRM)
Printed Circuit (PC) Board Connector System

1. INTRODUCTION

This instruction sheet covers the requirements for application and installation of the Fortis Zd LRM pc board connector system used in aerospace, defense, marine and similar industries requiring rugged connections. LRM is a circuit card component of an LRU (line replaceable unit) designed to be replaced in the field. The connector system provides an electrical connection between two perpendicular pc boards using a modular concept. The system utilizes industry proven reliability through design reuse of the Fortis Zd connector, high power contacts (MULTI-BEAM XL* connector) and low power contacts (UPM style) from the MULTI-BEAM XLE* connector.

When corresponding with personnel, use the terminology provided in this document to facilitate your inquiries for information. Basic terms and features of this product are provided in Figures 1 and 2.

The shells in these kits are configured to mate with each other when using the following modules:

— 2102427 Vertical/backplane shell
— 2102428 Right-angle/daughter card shell
— 2102436 Diff pair right-angle Fortis Zd module
— 2102436 Single-ended right-angle Fortis Zd module
— 2102438 Vertical Fortis Zd module
— 2102440 Low power right-angle module
— 2102442 Low power vertical module
— 2102444 High power right-angle module
— 2102446 High power vertical module
— 2102502 Guide pin
— 2102503 Female guide
— 208021 Female guide retention screw, cross-recessed head
— 2226170 Female guide retention screw, TORX T6 head

Figure 1
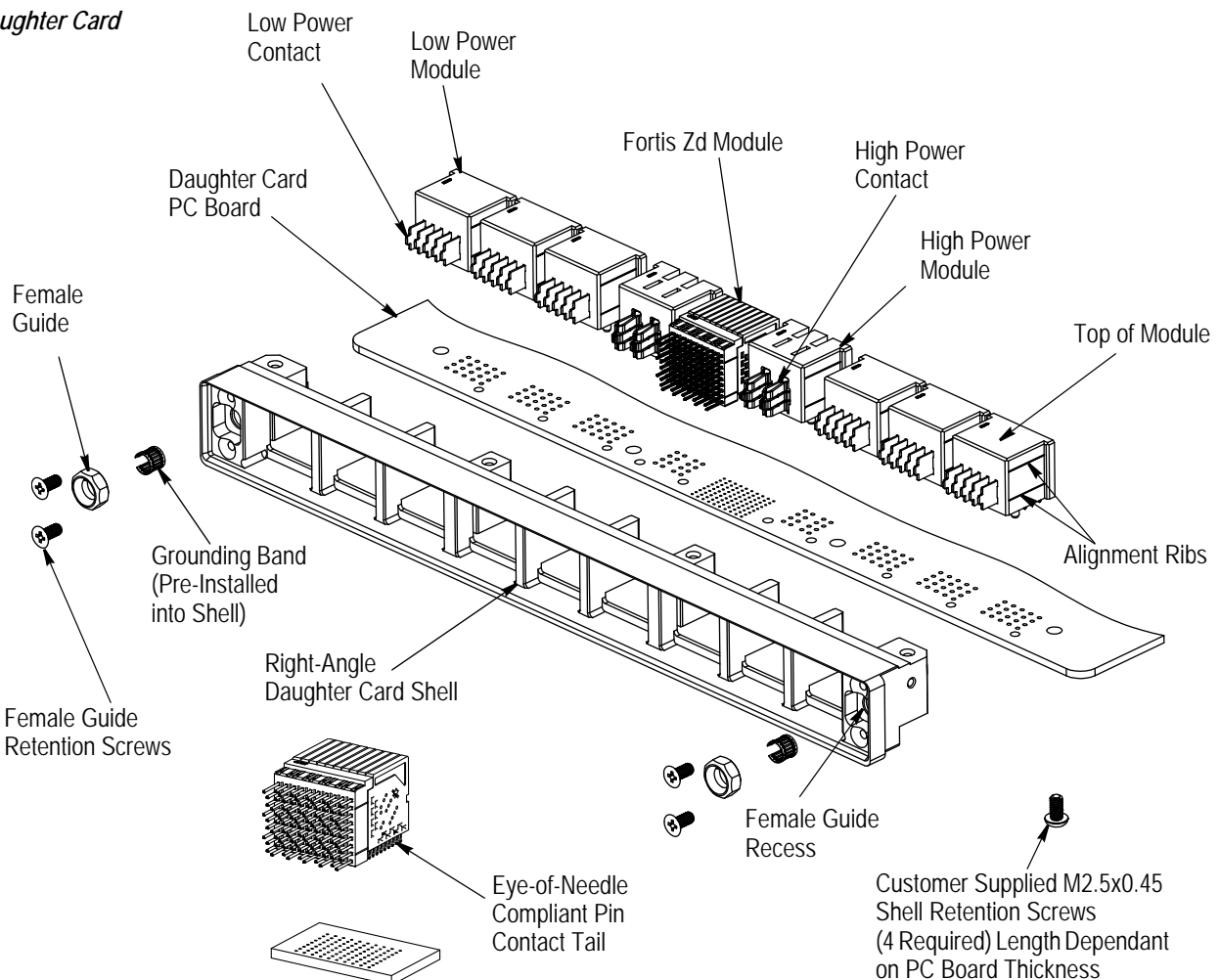
TORX is a trademark.

TOOLING ASSISTANCE CENTER 1-800-722-1111
PRODUCT INFORMATION 1-800-522-6752

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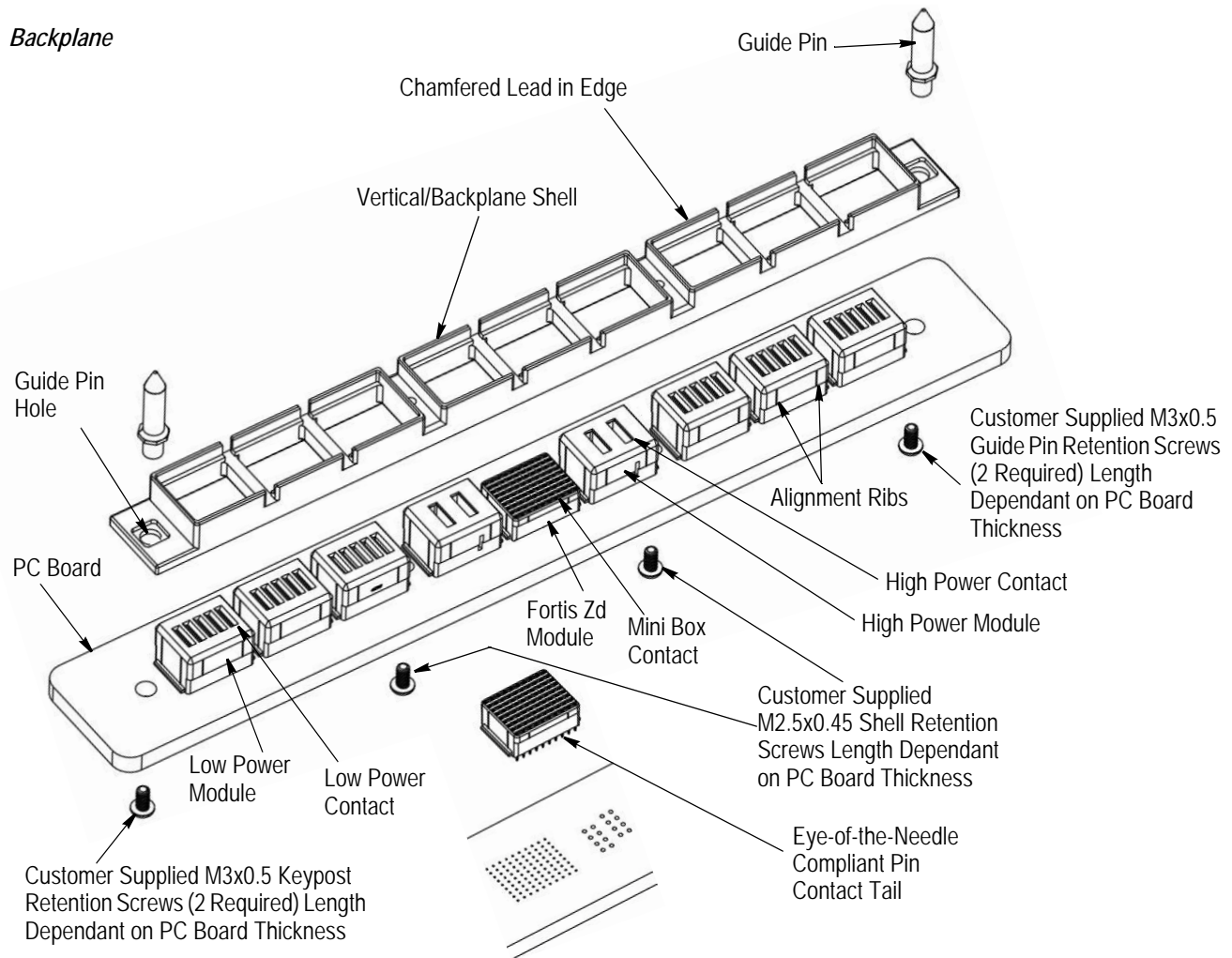visit our website at **www.te.com**

Backplane

Figure 2

2. DESCRIPTION

Each connector may consist of a combination of Fortis Zd modules and low power and high power modules that specifically meet customer requirements. In addition to modules, a shell, female guide retention screws, and female guides or guide pins are required.

3. INSTALLATION

Ensure that the pc board is prepared according to the customized customer drawings, then proceed as follows:

3.1. Daughter Card Connector Kit (Refer to Figure 1)

1. Seat the Fortis Zd module, and low power, high power, and MULTI-BEAM XL modules onto the pc board. Refer to application specifications 114-13251 (MULTI-BEAM XLE connectors) and 114-13267 (Fortis Zd connectors) for application requirements.

> **NOTE** **i** *Daughter card modules are polarized to prevent improper installation to the pc board.*

2. Insert a female guide (oriented in desired keying position) into the front of each female guide recess of the shell, then install female guide retention screws into the front of each female guide recess so the female guides are secured.

> **NOTE** **i** *Make sure that the keyed surface (inside the keying guide) will match the keyed surface of the keying guide pin (installed onto backplane). See Figure 4.*

3. Orient the shell so the shell aligns with the top of the modules. Guide the shell onto the alignment ribs; then apply an evenly distributed hand pressure to seat the shell over the modules and onto the pc board. Shell should bottom on the pc board.

4. Apply a thread sealant to the threads of the mounting screws (optional). Make sure that the mounting holes of the shell align with the mounting holes in the pc board. From the bottom of the pc board, install the mounting screws into the mounting holes of shell. Tighten the screws to 0.5 N•m [5 in.-lbs].
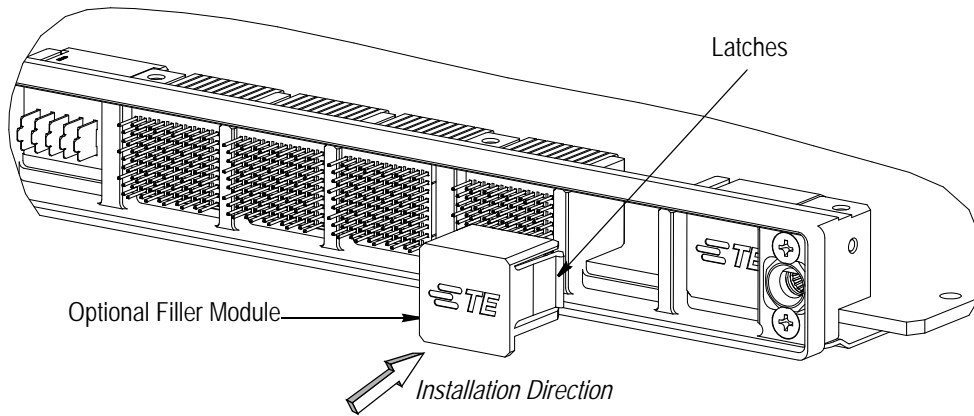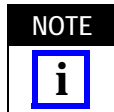
Figure 3

5. (Optional Filler Module) Orient the filler module as shown in Figure 3. Install filler module from the mating face. Apply force on the face of the filler module until the latches lock into place on the connector shell. To remove filler module, release latches from shell and remove in opposite direction.

3.2. Backplane Connector Kit (Refer to Figure 2)

1. Seat the modules (see important note for orientation) onto the pc board. Refer to application specifications 114-13251 and 114-13267 for application requirements.

2. (Optional Filler Module) if applicable, insert filler module into any unpopulated cavities of the right-angle shell.

> **NOTE** *The Fortis Zd modules and high power modules are reversible and can be installed in either orientation. However, the low power module is directional and must be matched with the drill pattern on the pc board.*

3. Orient the shell on top of the modules. Guide the shell onto the alignment ribs; then apply an evenly distributed hand pressure on the shell to seat the shell over the modules and onto the pc board.

4. Insert each guide pin (oriented in desired keying position) into the *front* of the guide pin hole of the shell.

> **NOTE** *Make sure that the flat surface of the guide pin will match the flat surface (inside) of the female guide (installed onto daughter card).*

5. Apply a thread sealant to the threads of the mounting screws (optional). Make sure that the mounting holes of the shell align with the mounting holes in the pc board. From the bottom of the pc board, the mounting screws install into the mounting holes of shell. Tighten the screws to 0.5 N•m [5 in.-lbs].

3.3. Keying

Female guides, female guide retention screws, and guide pins are sold separately. See Figure 4. Keying location and position is to be determined by the customer. Figure 5 shows possible keying orientations allowing up to 64 keying positions.
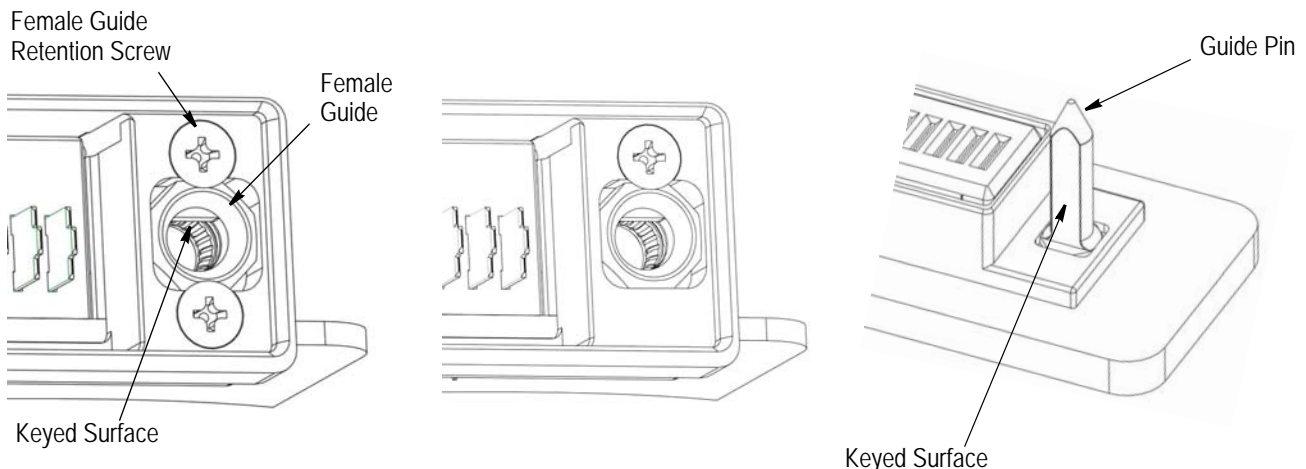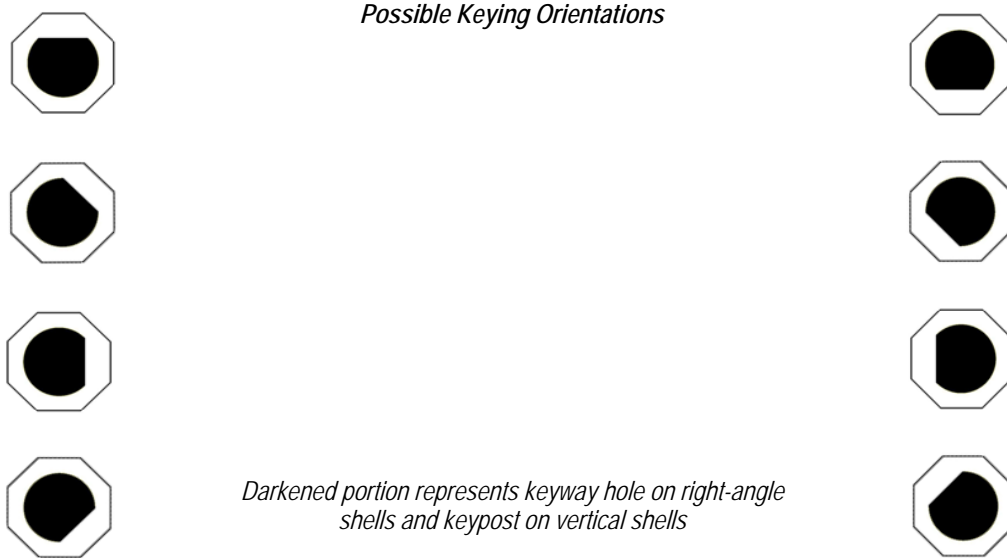

Figure 4

Possible Keying Orientations

Darkened portion represents keyway hole on right-angle shells and keypost on vertical shells

Figure 5

3.4. Inspection

Figure 6 shows the daughter card connector kit installed onto the daughter card and the backplane connector installed onto the backplane.

4. REPLACEMENTS AND REPAIR

Modules are not repairable. DO NOT use or attempt to repair any damaged components. Individual modules can be replaced if damaged.

If a module is damaged, reverse installation Steps 4, 3, and 2 under Section 3.2, to remove shell for backplane shell and Steps 4 and 3 under Paragraph 3.1 for the daughter card shell. Module can now be removed from the pc board. Inspect the pc board, then install a new module.

5. REVISION SUMMARY

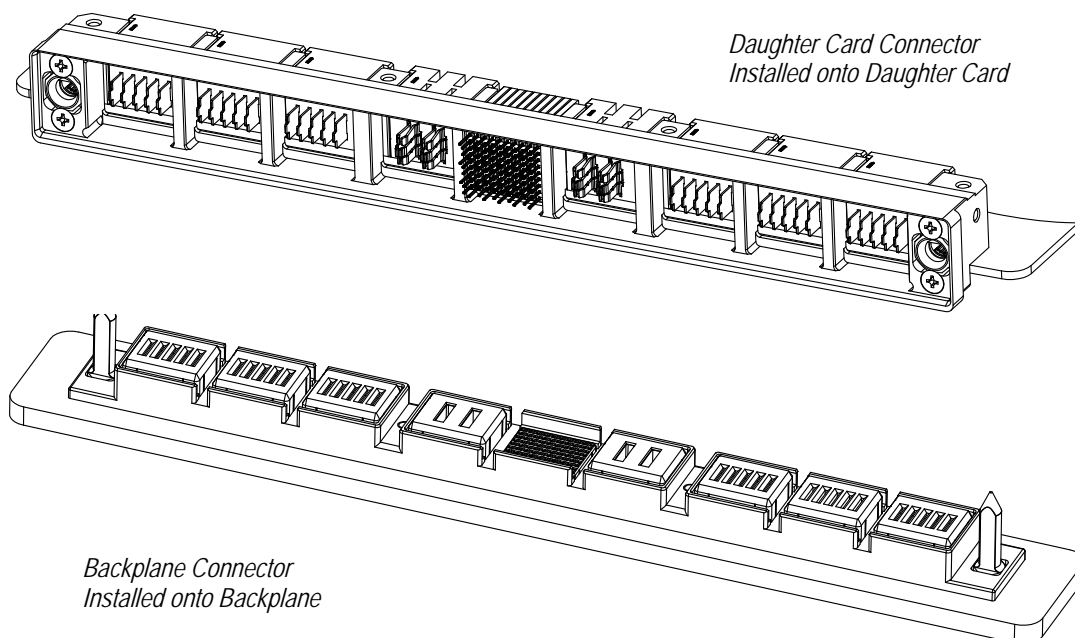- Changed terminology
- Added drawing to Figure 4

Daughter Card Connector Installed onto Daughter Card

Backplane Connector Installed onto Backplane

Figure 6