***NOTE***
*All numerical values are in metric units. Dimensions are in millimeters. Unless otherwise specified, dimensions have a tolerance of ±0.13 and angles have a tolerance of ±2°. Figures are not drawn to scale.*

## 1. INTRODUCTION

This specification covers the requirements for application of the 3.9-mm 100-ohm STRADA Whisper cable system. The cable system interfaces with the 3.9-mm 100-ohm STRADA Whisper connector system. Differential pairs are arranged pair in-row (PiR).

When mating, connector alignment features help to align the contacts prior to engagement of the connectors. For PiR connectors, the header alignment bosses fit into the receptacle alignment slots, which have a guide feature. Basic terms and features of this product are provided in Figure 1.

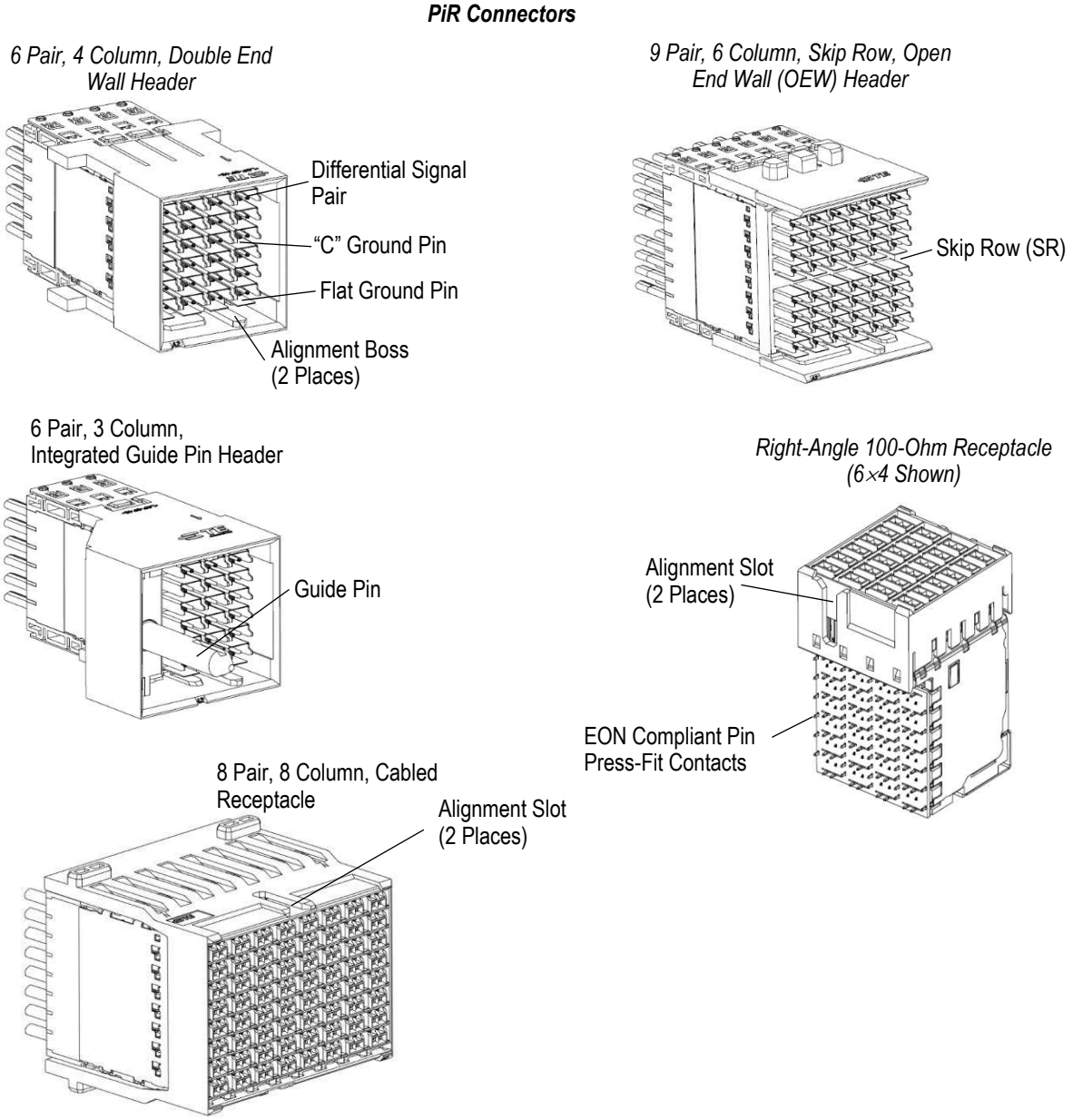



*Figure 1*

## 2. REFERENCE MATERIAL

### 2.1. Revision Summary

| Revision Title | Date | Summary |
|---|---|---|
| REV A | 08AUG2017 | Original Release |
| REV B | 29NOV2017 | Deleted mated and wipe length table |
| REV C | 27MAR2018 | Corrected figure numbering |
| REV D | 14AUG2019 | Add cable receptacle, major revision, see last revision for “was” condition. |
| | | |
| | | |

### 2.2. Customer Assistance

Visit www.te.com or call the number at the bottom of page 1 if customer assistance is required.

### 2.3. Drawings

Customer drawings for product part numbers are available from www.te.com. Information contained in the customer drawing takes priority.

### 2.4. Specifications

Application Specification 114-32029 provides application details for the STRADA Whisper Connector System.

Product Specification 108-130001 provides expected product performance and test results.

## 3. REQUIREMENTS

### 3.1. Storage

#### A. Environment

The product should be stored in a cool area with a low relative humidity. The storage temperature for the product should be between -5°C and 70°C.

#### B. Shelf Life

The product should remain in the shipping containers until ready for use to prevent deformation to components. The product should be used on a first in, first out basis to avoid storage contamination that could adversely affect performance.

Connectors that are removed from the shipping container, but not used, must be carefully placed back into the original container as soon as possible.

### C. Chemical Exposure

Do not store product near any chemical listed below as they may cause stress corrosion cracking in the material.

| | | | | |
|---|---|---|---|---|
| Alkalies | Ammonia | Citrates | Phosphates Citrates | Sulfur Compounds |
| Amines | Carbonates | Nitrites | Sulfur Nitrites | Tartrates |

## 3.2. Material

The housings are molded of high-temperature, UL94V-0 rated thermoplastic. The contacts are made of copper alloy and plated with a nickel underplate. The contact interface area is also plated with precious metal. Refer to the specific customer drawing for details.

## 3.3. Mating

### A. Alignment

Proper alignment is essential to ensure full engagement of mating connectors and to ensure that contacts are not bent or otherwise damaged during mating and unmating. Utilize the connector alignment features on the header housing and receptacle housing to properly locate the connector. For tolerance limitations, see

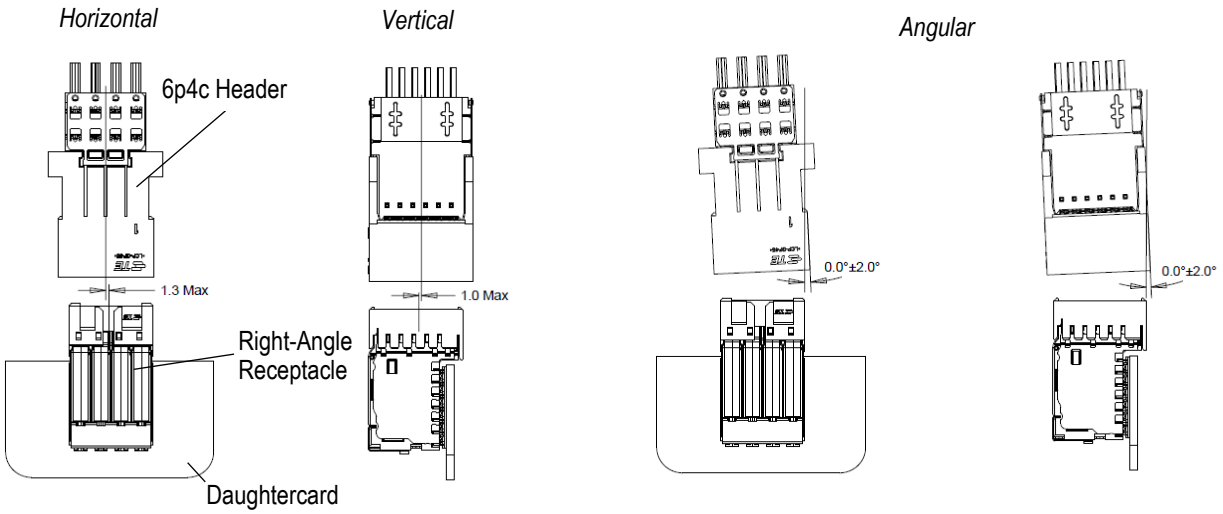



Figure  (tolerances apply when connectors are free-floating and allowed to gather).  Do not hold or use the cable while mating or unmating the connector.

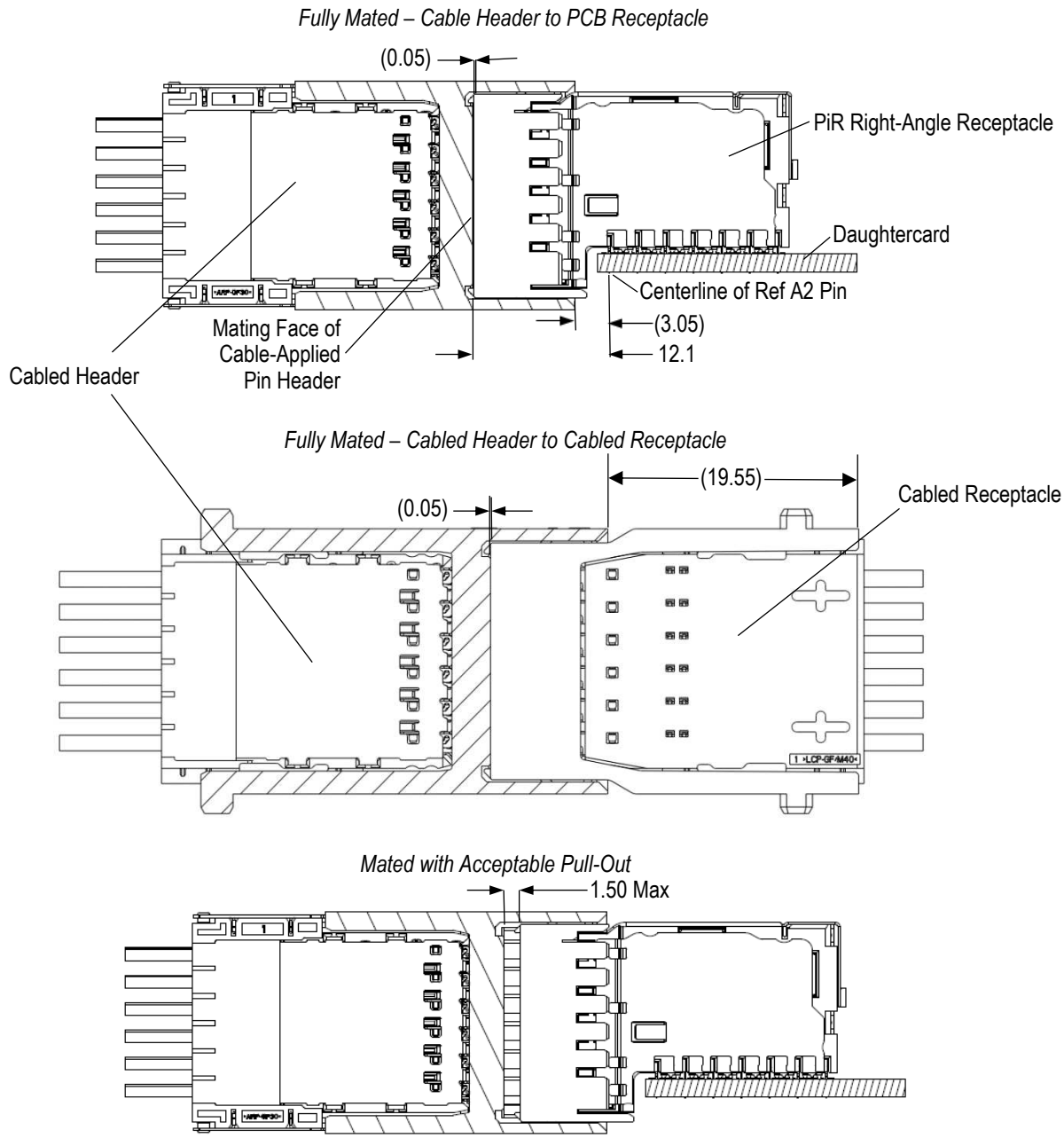
*Figure 2*

### B. Guide Hardware

Guide hardware is recommended whenever possible to eliminate the risk of connector damage.  UPM guide hardware is recommended and has been proven to work well with the STRADA Whisper platform.  In special applications, custom guide hardware is also available.  Please contact TE Engineering for part number recommendations or help with specifying guide hardware for your specific application.

### C. Sequences and Wipe Length

This connector system has two basic levels of sequencing during mating. The order of mating is: ground shield and signal pin. The relative distances between connectors in a typical configuration are shown below in Figure .




**Note:** The first mate, last break sequencing point is the first and last instance in a mating cycle where the pin comes in contact with the beam, but has not deflected the beam. The reliable mating point is the first and last instance in a mating cycle where the pin has completely deflected the beam and the beam is supplying full normal force to the pin.

**Note:** Dimensions are calculated using nominal connector conditions. PCB Connectors are assumed to be seated flush with the pc board.

*Figure 3*

Full mating of connectors is necessary to ensure a good connection and to obtain the maximum signal transmission performance. The dimensions shown for the fully mated condition are recommended; however, the maximum pull-out dimension given in Figure 3 is acceptable.

Connector wipe length is calculated by subtracting the fully mated condition from the reliable mating point data. Wipe lengths are given in Figure 3.

***NOTE***
*For circuit routing concerns or applications with sense pins, call the number at the bottom of page 1.*

### 3.4. Unmating

#### A. Connector

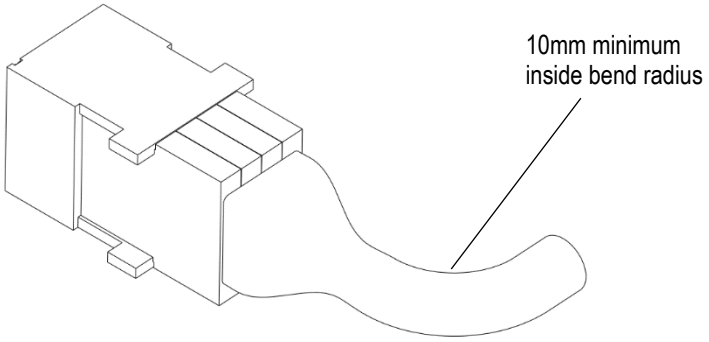
All mating conditions apply to unmating. While unmating hold the connector by the header housing. Do not utilize the cables to remove the connector.

### 3.5. Repair and Rework

Damaged or defective connectors must not be used. STRADA Whisper Cable assemblies are not field repairable and must be returned to TE for repair or replacement.

### 3.6. Cable Bend Radius

Cable assemblies should follow the below recommendations for minimum bend radius.



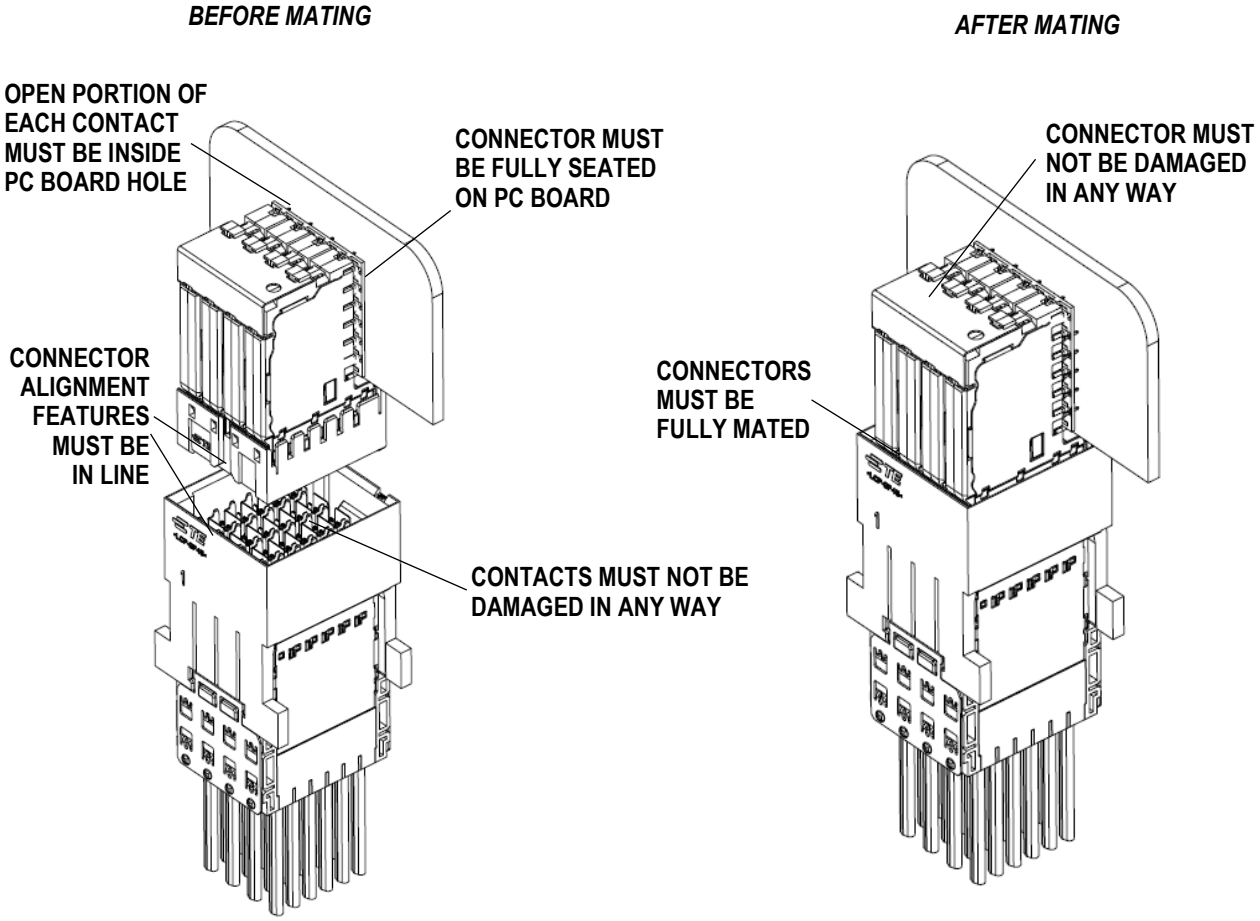

## 4. QUALIFICATION

STRADA Whisper Connector Systems are Recognized by Underwriters Laboratories Inc. (UL) in File E28476, Vol.85, section 4.

## 5. VISUAL AID

The illustration below shows a typical application of 3.9-mm pitch, 100-ohm STRADA Whisper cable system. This illustration should be used by production personnel to ensure a correctly applied product. Applications which do not appear correct should be inspected using the information in the preceding pages of this specification and in the instructional material shipped with the product or tooling.

*PiR CONNECTORS*




**Note:** The visual aids above are the same for cabled header to cabled receptacle (not shown), except for PCB related requirements.

***FIGURE 4. VISUAL AID***