

FORTIS Zd LRM

CONNECTOR SYSTEM

Rugged Next-Generation Packaging Made Flexible
with Lightweight, Modular System

FORTIS Zd LRM CONNECTOR SYSTEM

The Next Generation of Rugged, Flexible Embedded Computing



HIGH PERFORMANCE

- Performance to 12+ Gb/s
- Controlled impedance design
- Low crosstalk and excellent electrical characteristics
- Low noise board footprint

WEIGHT-SAVING MODULAR DESIGN

- Lightweight aluminum shell
- 3, 4, 8 or 9 bays standard, with other sizes possible
- Easy mixing and matching of modules

RUGGED RELIABILITY

- M55320 four-point box contact design
- High-temperature, space-compatible materials
- Shell's integral guide keys align and minimize micromotion between boards

FULL RANGE OF MODULES

- Single-ended signals
- Differential signals
- Power
- RF
- Fiber optics

The Fortis Zd LRM Connector System is an innovative modular connector system for rugged next-generation packaging, from avionics boxes to military ground vehicles. It features a rugged, lightweight, multibay shell that accepts high-speed digital signal, power, RF and optical modules.

Based on Well-Established Technology

Some of the latest tried and true technical solutions from TE Connectivity (TE) are brought together in this versatile package.

- M55320 box contacts, with four points of contact, provide electrical stability in high-vibration environments
- Compliant pin board attach for manufacturing efficiency, reparability, and superior electrical performance
- Precision guide hardware and shell features ensure reliable plug-in and excellent stability under extreme vibration
- Optical and RF modules are based on VITA 66 and 67

Flexible Configurations

The connector modules and shells are sold separately, for flexibility in design customization and component supply.

APPLICATIONS

- Avionics
- Electronic Warfare
- Radar Interface and Processing
- Communications Hubs and Processing
- Vehicle Mission Computers and Navigation
- Weapons Control and Targeting

MATERIALS

- **Contacts:** High-performance copper alloy, plated 50 μm gold in mated contact area. Tin-lead and RoHS-compliant finish options for press-fit tails.
- **Housings:** High-temperature thermoplastic
- **Shells:** Aluminum with trivalent chromate conversion coating

ENVIRONMENTAL

- **Operating Temperature:** -65°C to +125°C

MECHANICAL

- **Durability:** 500 mating cycles

TE SPECIFICATIONS AND TEST REPORTS

- **Instruction Sheet:** 408-10464
- **Product Specification:** 108-2474
- **Qualification Test Report:** 501-134028
- **Electrical Performance Report:** 505-1

APPLICATION TOOLING

- No special tooling required; flat rock tooling for press-fit mounting to pc board

TE Components . . . TE Technology . . . TE Know-how . . .

AMP | Agastat | CII | Hartman | Kilovac | Microdot | Nanonics | Polamco | Raychem | Rochester | DEUTSCH
SEACON Phoenix | L.L. Rowe | Phoenix Optix | SEACON

Get your product to market faster with a smarter, better solution.



Shells

Rugged and Lightweight

- Precision machined from aluminum for light weight
- Chromate finished

Modular Flexibility

- Identical bays for flexibility in mixing and matching modules and positioning them optimally

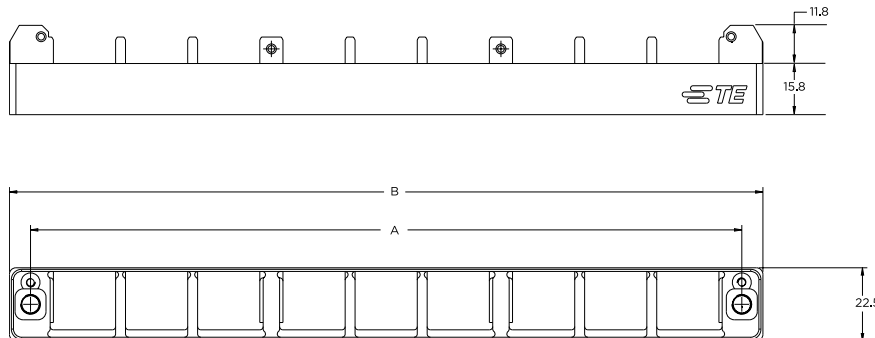
3U and 6U Solutions

- 3 and 4-bay shells support 3U boards
- 8 and 9-bay shells support 6U boards
- Other sizes can be made available
- Custom shell features possible, including integrated covers



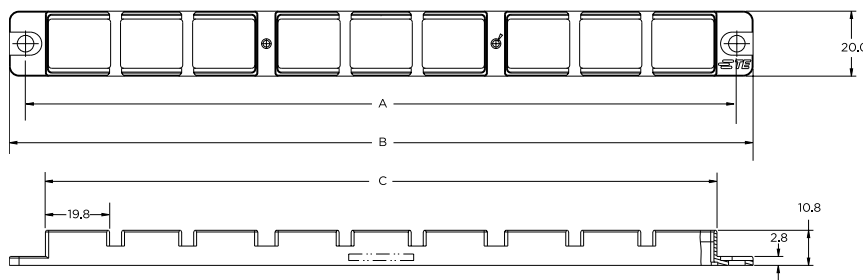
Size	Part No.	
	Daughtercard	Backplane
3 bay	2226783-1	2226784-1
4 bay	2226783-2	2226784-2
8 bay	2226783-4	2226784-4
9 bay	2226783-3	2226784-3

Daughtercard



Bays	A	B
3	77.6	90.7
4	99.8	112.9
8	192.7	205.7
9	219.0	232.0

Backplane



Bays	A	B	C
3	77.6	87.7	65.4
4	99.8	109.9	87.6
8	192.7	202.7	180.5
9	219.0	229.0	206.8



Signal Modules

Flexible

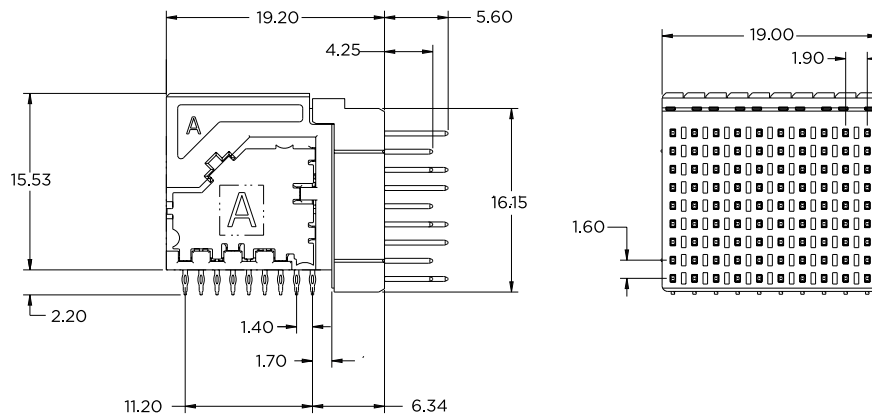
- Differential and single-ended signal daughtercard modules
- Universal backplane module for both differential and single-ended signals
- 90 contacts per module
- Differential module supports 30 pairs, with ground shields for isolation

Reliable

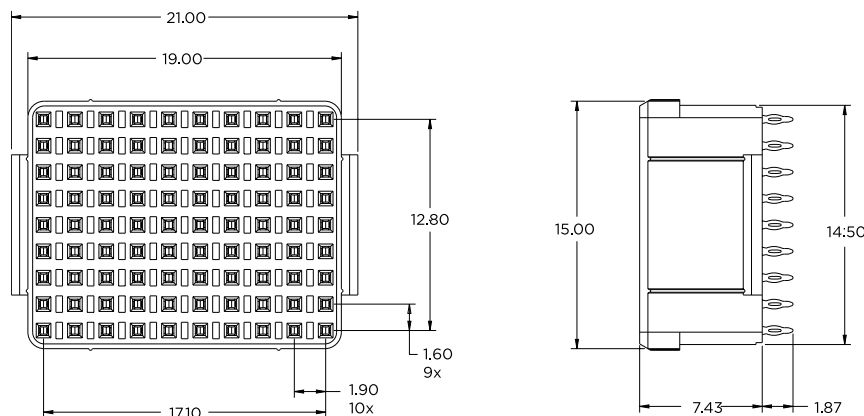
- Reliable box contacts with four points of contact
- RoHS compliant

Type	Signal Type	Part No.
Daughtercard	Differential	2102436-1
	Single Ended	2102436-2
Backplane	Either	2102438-1

Differential Pair Daughtercard Module 2102436-1



Backplane Module 2102438-1





High-Power Modules

High Current

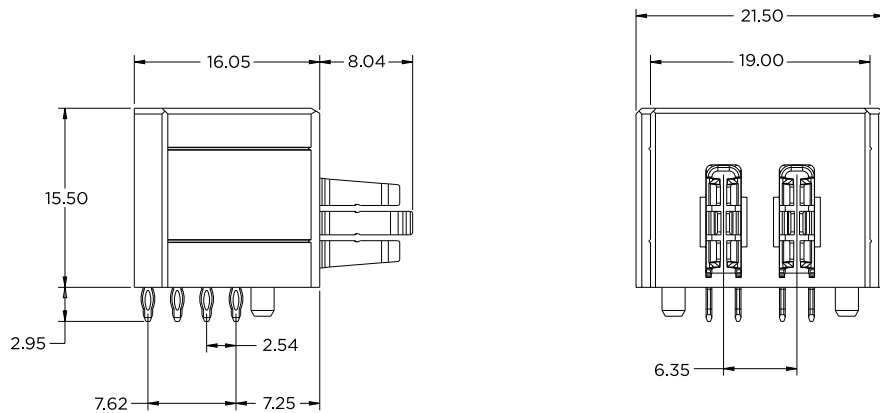
- 55 A contacts
- Two contacts per module
- 3-beam high-conductivity contacts
- Vented housing for thermal dissipation

Tried and True Technology

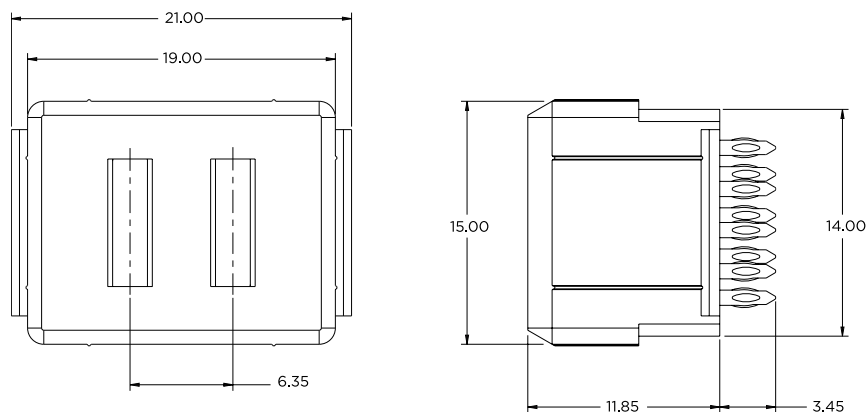
- Based on MULTI-BEAM XLE connector design
- Same interface as used in VITA 62 power supply modules for VPX

Type	Part No.
Daughtercard	2102440-1
Backplane	2102442-1

High-Power Daughtercard Module 2102440-1



High-Power Backplane Module 2102442-1





Low-Power Modules

Flexible Current Handling

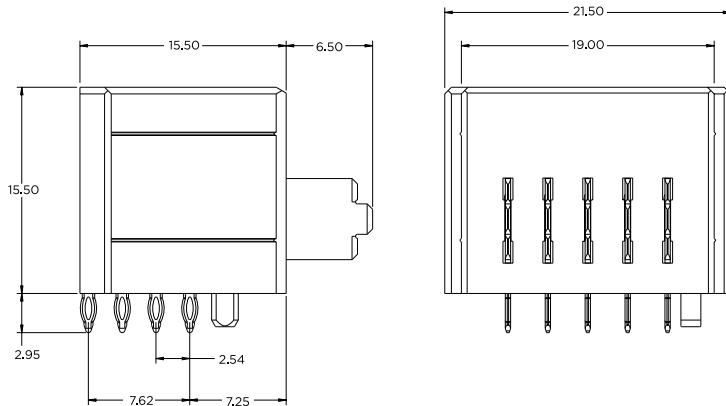
- 15 A contacts
- Five contacts per module

Tried and True Technology

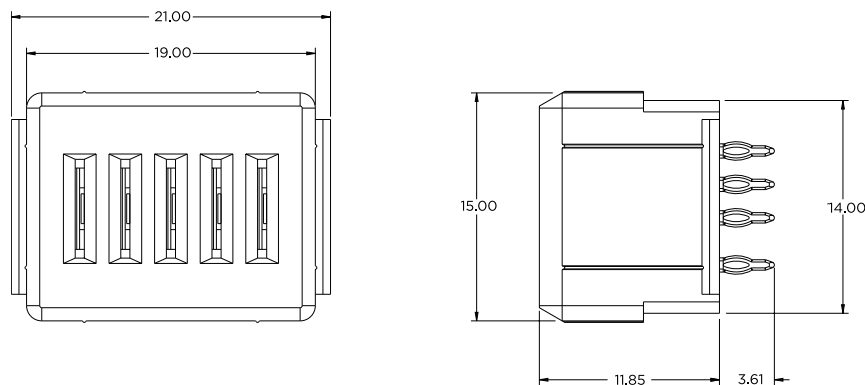
- Based on TE's Universal Power Module

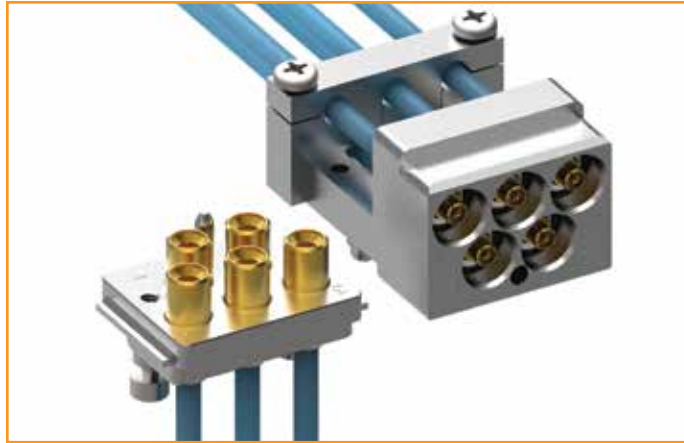
Type	Part No.
Daughtercard	2102444-1
Backplane	2102446-1

Low-Power Daughtercard Module 2102444-1



Low-Power Backplane Module 2102446-1





RF Modules

Rugged Performance

- Excellent RF performance to 40 GHz
- Float-mounted contacts ensure mated contacts bottom, for excellent isolation and low VSWR

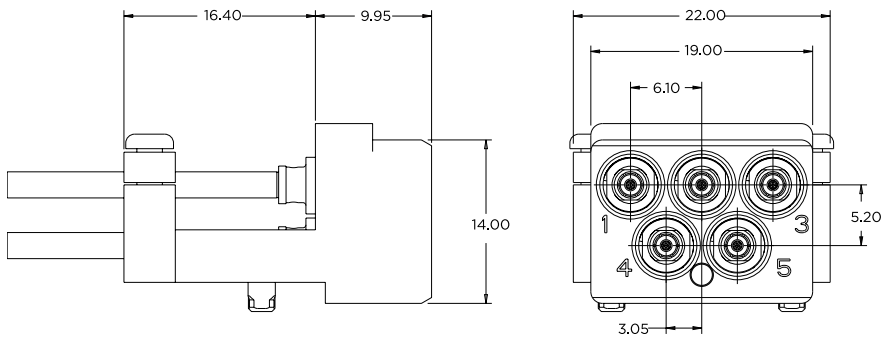
Tried and True Technology

- Based on TE's VITA 67 modules for VPX
- SMPM contacts
- Five position modules

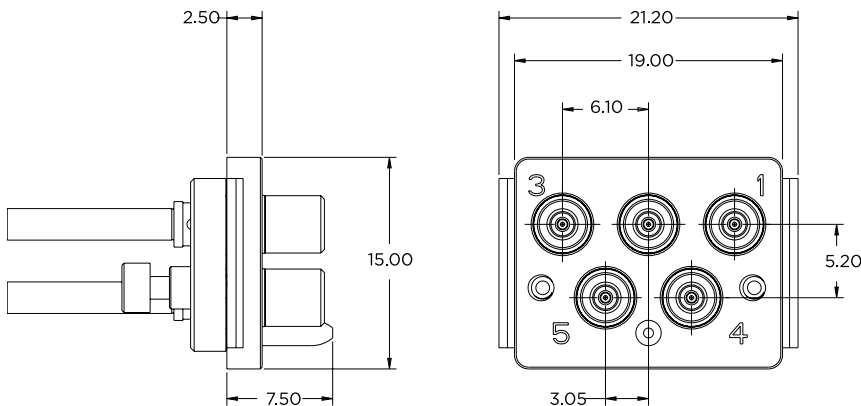
Item	Cable Type	Backplane	Daughtercard
Module	—	2226512-1	2226511-1
SMPM Contacts	.047" Semi-Rigid or Flex Equivalent	2157248-1	1996771-1
	.086" Semi-Rigid or Flex Equivalent	2101012-1	1996390-1

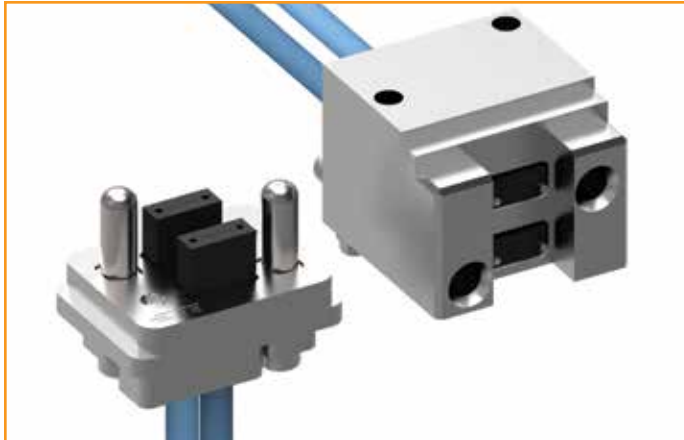
Contact TE for RF cable assembly requirements. Custom module configurations are also possible.

SMPM Daughtercard Module 2226511-1



SMPM Backplane Module 2226512-1





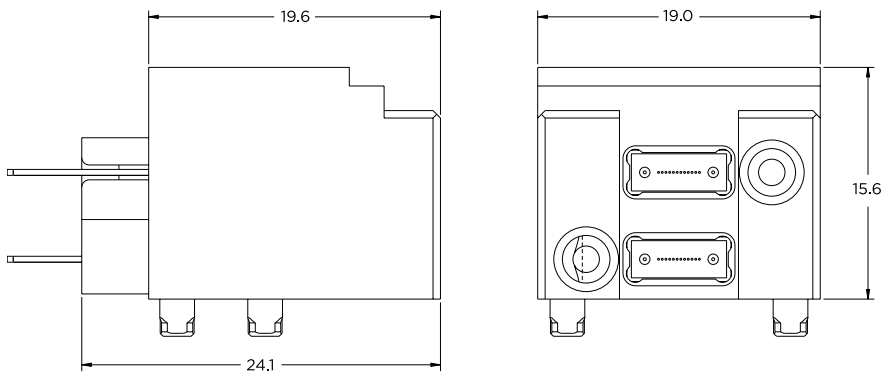
Optical Modules

Tried and True Technology

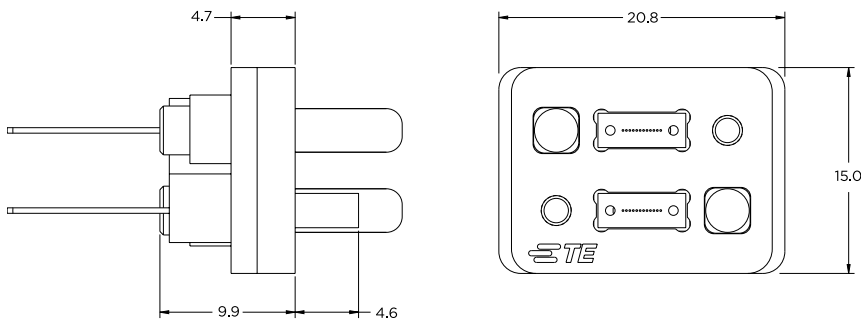
- MT ferrule inserts
- Up to 24 fibers (12 per ribbon)
- Based on VITA 66

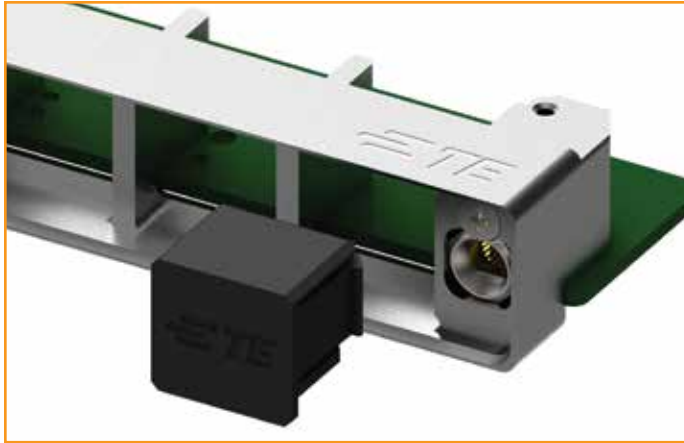
Type	Part No.
Daughtercard	2226790-1
Backplane	2226789-1

Optical Daughtercard Module 2226790-1



Optical Backplane Module 2226789-1



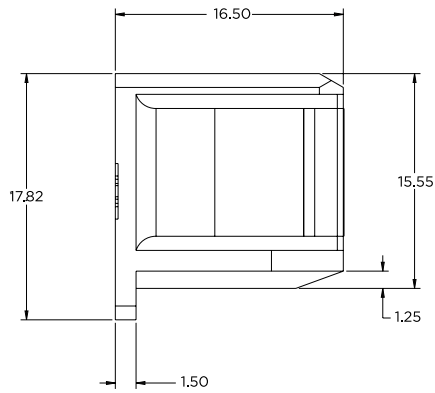
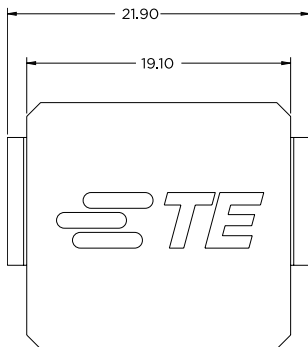


Filler Modules

- Helps protect unused bays from dust or contamination
- Snaps into place on daughtercard shell

Type	Part No.
Daughtercard Filler Module	2102449-1

Filler Module 2102449-1









Guide Hardware

Precision Machined

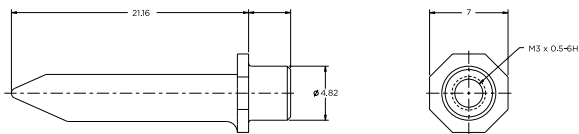
- Tightly tolerated to minimize micromotion between boards
- Lightweight aluminum

Flexible Keying

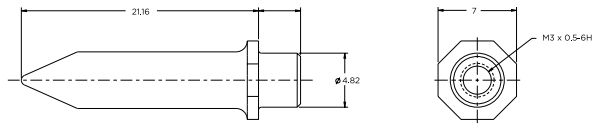
- 8 key orientations per pin
- 64 key combinations per assembly
- ESD springs in daughtercard shell's guide sockets

			Part No.
Backplane Guide Pins		Keyed	2102502-2
		Non-Keyed	2102502-4
Daughtercard Guide Sockets		Keyed	2102503-2
		Non-Keyed	2102503-4

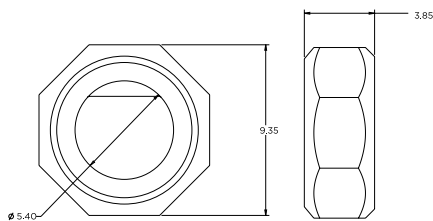
2102502-2 Backplane Guide Pin Keyed



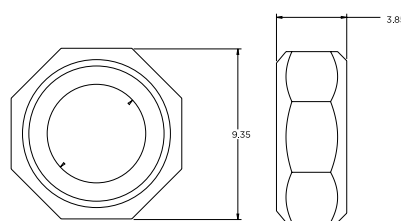
2102502-4 Backplane Guide Pin Non-Keyed



2102503-2 Daughtercard Guide Socket Keyed



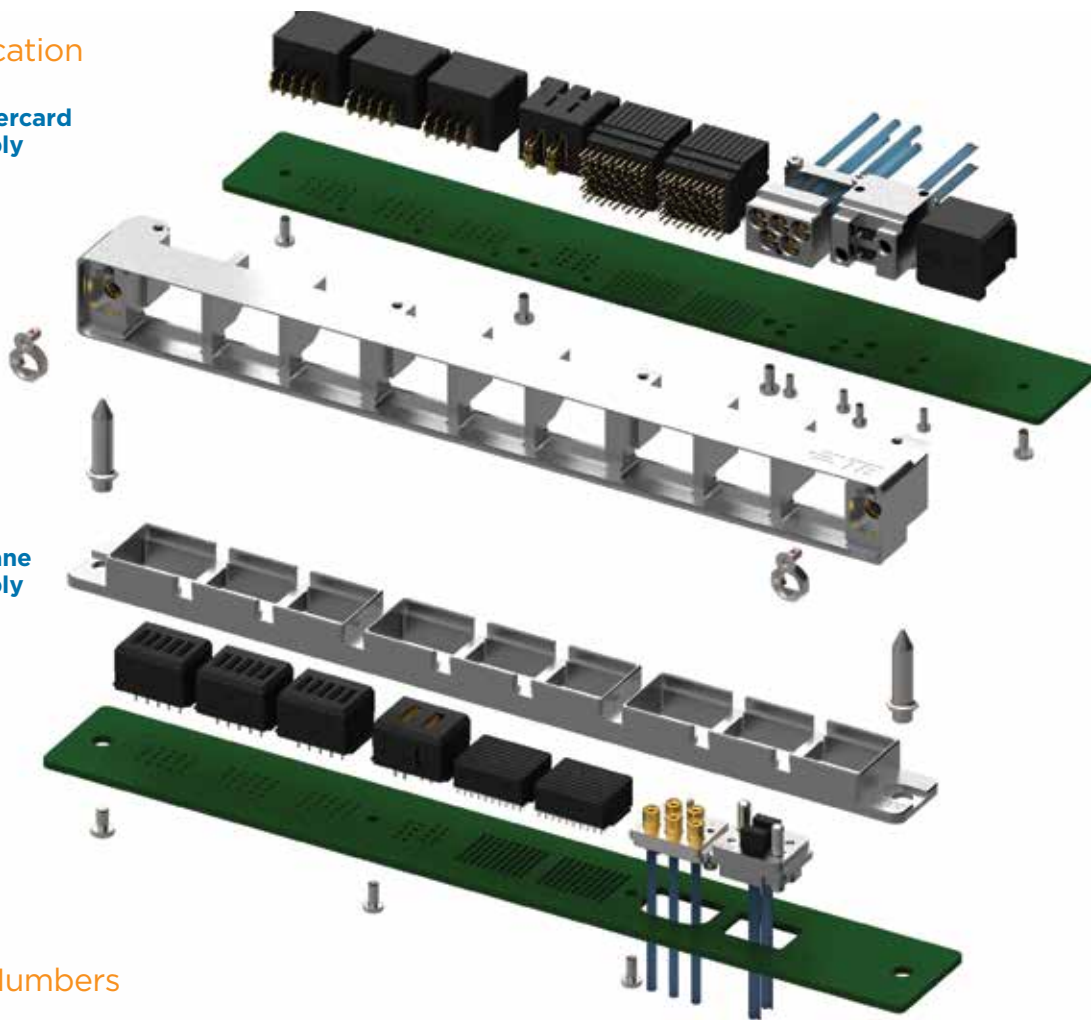
2102503-4 Daughtercard Guide Socket Non-Keyed



Application

Daughtercard Assembly

Backplane Assembly



Part Numbers

Part	Type	Part No.	
		Daughtercard	Backplane
Connector Shells	3 bay	2226783-1	2226784-1
	4 bay	2226783-2	2226784-2
	9 bay	2226783-3	2226784-3
	8 bay	2226783-4	2226784-4
Modules	Differential Pair	2102436-1	2102438-1
	Single Ended	2102436-2	2102438-1
	Low-Power Module	2102444-1	2102446-1
	High-Power Module	2102440-1	2102442-1
	RF (SMPM) Module	2226511-1	2226512-1
	Optical (MT) Module	2226790-1	2226789-1
Guide Hardware	Filler	2102449-1	—
	Guide Socket, Keyed	2102503-2	—
	Guide Socket, Non-Keyed	2102503-4	—
	Screw, Guide Module, Phillips Head	208021-1	—
	Screw, Guide Module, Torx	2226170-1	—
	Guide Pin, Keyed	—	2102502-2
Guide Pin, Non-Keyed	—	2102502-4	

For More Information

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Consult TE for the latest dimensions and design specifications.