

# VITA 66.5 STYLE D, 3 MT OPTICAL MODULES

## ULTRA HIGH DENSITY RUGGED BACKPLANE / CARD CONNECTOR FOR USE IN MILITARY AND AEROSPACE APPLICATIONS

TE Connectivity's (TE) Ruggedized Optical Backplane VITA 66.5 interconnect system provides a high-density, high-bandwidth, blind-mate optical interconnect in a backplane/daughtercard configuration. The fiber optic ribbon cable interconnect feeds through the backplane to removable system modules using MT ferrules. Designed for rugged embedded computing applications, the fiber optic connectors are compatible with OpenVPX. Connector module designs support half and full size modules, with new higher density variants now available.

### FEATURES AND BENEFITS

#### Easy to Use

- Common mounting interface requirements for the various fiber-optic interconnects within 3U and 6U VPX applications
- Quickly and confidently implement the best solution for specific applications

#### Rugged

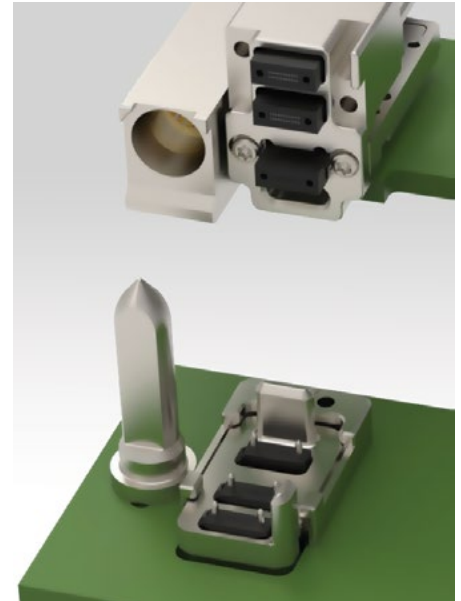
- The module varieties are based upon proven optical termini for military and aerospace applications

#### Versatile

- Full-size connectors
- Half-size connectors
- Locating post features ensures proper position on the backplane and daughtercard

#### High Performance

- Connectors designed to maximize optical performance, accommodating up to three MT ferrules per insert
- Receptacle connector insert floats relative to the shell, providing  $\pm 0.25$  mm planar floating alignment capability



### TARGET MARKETS

- Military air
- Defense
- Commercial air

### APPLICATIONS

- Embedded computing
- Processing
- Secure communications
- Avionics and vetronics
- Radar
- Imaging and targeting

# VITA 66.5 Optical Modules

Style D, 3 MT

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## STANDARDS AND SPECIFICATIONS

<b>Application Specification</b>	114-163023
<b>Product Specification</b>	108-163028 (PN: 2388438-1 and 2388442-1) / 108-163033 (PN: 2388440-1 and 2388444-1)
<b>Qualification Test Report</b>	501-163042 (PN: 2388438-1 and 2388442-1) / 501-163043 (PN: 2388440-1 and 2388444-1)

## MECHANICAL/ENVIRONMENTAL

<b>Mating Force</b>	
<b>Per 12-Fiber MT Ferrule</b>	Min: 7.8 N (1.75 lb) / Max: 11.8 N (2.65 lb)
<b>Per 24-Fiber MT Ferrule</b>	Min: 18.0 N (4.05 lb) / Max: 22.0 N (4.95 lb)
	100 cycles, tested per EIA-455-21
<b>Durability</b>	250 cycles (PN: 2388438-1 and 2388442-1)
	75 cycles (PN: 2388440-1 and 2388444-1)
<b>Shock</b>	50 g, sawtooth, 11 ms pulse duration, tested per TIA/EIA-455-14, condition E
<b>Random Vibration</b>	11.95 g <sub>rms</sub> , 50 Hz to 2000 Hz, 1 hour per plane. Tested per TIA/EIA-455-11, test condition VI-D
<b>Sinusoidal Vibration</b>	1.5 mm amplitude (peak-to-peak), 10 Hz to 55 Hz, 2 hours per plane Tested per TIA/EIA-455-11, test condition 1
<b>Bench Handling Shock</b>	32 total drops per connector half. Tested per MIL-STD-810, Method 516.6, Procedure VI.
<b>Storage Temperature</b>	-55°C to +85°C
<b>Operating Temperature</b>	-40°C to +85°C
<b>Temperature Cycling</b>	21 cycles between -40°C to +85°C

## MATERIALS

<b>Connector Shell and Housing</b>	Aluminum alloy, clear-chromate conversion-coated (RoHS compliant)
<b>Alignment Posts and Screws</b>	Stainless steel, passivated (RoHS compliant)
<b>Dust Cover</b>	Thermoplastic elastomer

## OPERATING TEMPERATURE RANGE

<b>Standard-Grade MT Ferrule Kits</b>	-20°C to +85°C
<b>Low-Loss-Grade MT Ferrule Kits</b>	-40°C to +85°C


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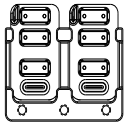
## VITA 66.5 STYLE D, 3 MT TRANSCEIVER KITS

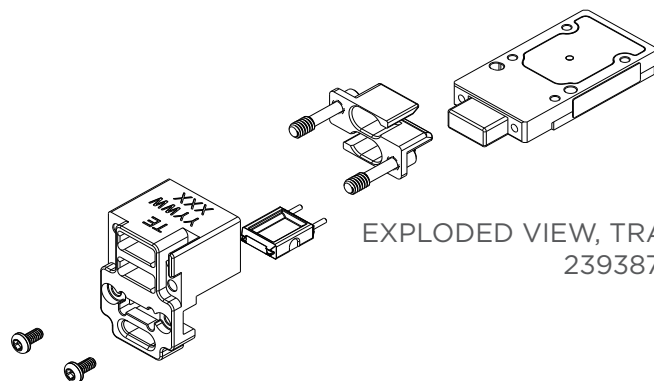
Transceiver Kit TE Part Number*	Channel Count	Tx/Rx	Rx Sens (dBm)	Max Data Rate G	VITA 66.5			TE Interposer Kit Part Number***
					Plug Kit Part Number: Included in Transceiver Kit Part Number**	Mating Backplane Connector Part Number Half Width**	Mating Backplane Connector Part Number Full Width**	
2393875-1	4	TxRx	-7.5	28	2388440-1	2388438-1	2388444-1	2373526-1
2393875-3	12	Tx	—	28	2388440-1	2388438-1	2388444-1	2373526-1
2393875-4	12	Rx	-7.5	28	2388440-1	2388438-1	2388444-1	2373526-1
2394055-1	4	TxRx	-12	10	2388440-1	2388438-1	2388444-1	2343893-1
2394055-2	4	TxRx	-9	10	2388440-1	2388438-1	2388444-1	2343893-1
2394055-3	12	Tx	—	10	2388440-1	2388438-1	2388444-1	2343893-1
2394055-4	12	Rx	-12	10	2388440-1	2388438-1	2388444-1	2343893-1

## HALF MODULE VITA 65 APERTURE J BACKPLANE PER VITA 67.3D

VITA 65 Module Designation	Backplane Module Layout		Connector Module Part Number**	MT Ferrule Kit Part Number***	Optical Plug-In Card Interface	
6.4.5.7.6		Style D 66.5 Insert (3 MT)				Plug-In Module
			2388440-1	24-Fiber: 2375154-2		
			Backplane	2388440-1	12-Fiber: 2375154-1	2 Cabled MT and 1 Transceiver
				2388438-1	24-Fiber: 2375154-2	

## FULL MODULE VITA 65 APERTURE H BACKPLANE PER VITA 67.3C

VITA 65 Module Designation	Backplane Module Layout		Connector Module Part Number**	MT Ferrule Kit Part Number***	Optical Plug-In Card Interface	
6.4.5.6.11		6 Optical				Plug-In Module
			2388440-1 (2 ea)	24-Fiber: 2375154-2		
			Backplane	2388440-1	12-Fiber: 2375154-1	2 Cabled MT and 1 Transceiver per Insert
				2388444-1	24-Fiber: 2375154-2	



EXPLODED VIEW, TRANSCEIVER KIT (TYPICAL),  
2393875-1 SHOWN

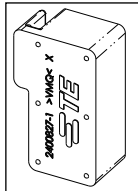
\* Non-disclosure agreement (NDA) required for details datasheets for the kit PNs  
 \*\* Refer to separate TE product specifications and customer drawings for the TE connectors/kits.  
 \*\*\* Interposer kits, MT Ferrule kits and cable assemblies all sold separately

## DUST COVERS

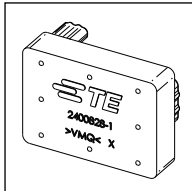
Dust Cover	Used on Connector Kits	Used on Transceiver Kits
2400827-1	2388438-1 2388444-1	—
2400828-1	2388440-1 2388442-1	2393875-X 2394055-X

Included with connector kits, available separately for replacement

2400827-1



2400828-1

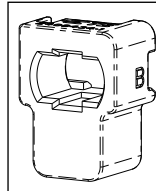


## CLEANING ADAPTERS

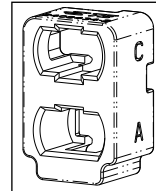
Cleaning Adapter	Used on Cavities	Used on Connector Kits	Used on Transceiver Kits
2408434-1	B	2388438-1 2388444-1	—
2408434-2	A and C		
2408435-1	B	2388440-1 2388442-1	2393875-X 2394055-X
2408435-2	A and C		

Available separately

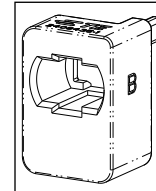
2408434-1



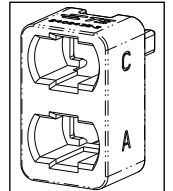
2408434-2



2408435-1

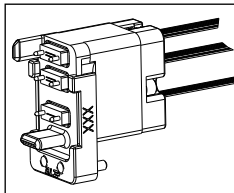


2408435-2

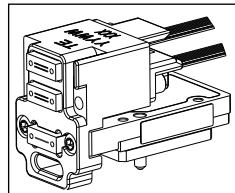


## CONNECTOR KITS

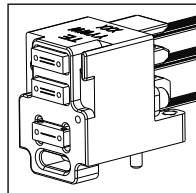
2388438-1



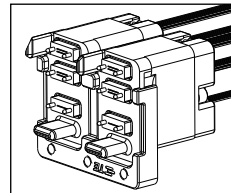
2388440-1



2388442-1



2388444-1



Shown populated with cable assemblies, sold separately

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