Application Report
DLPA067–July 2016

Mounting Hardware and Quick Reference Guide for DLP® Advanced Light Control Digital Micromirror Devices

ABSTRACT

This Application Note is a reference guide for the Mounting Hardware of DLP® Advanced Light Control (ALC) digital micromirror devices (DMD) currently on www.ti.com/alc.

This guide briefly describes the DMD mounting hardware, including figures and tables for each DLP® DMD. The figures show mounting concepts with their associated DMD mounting hardware parts. The tables list the individual mounting hardware parts, weblinks to the supplier's ordering page (if applicable), and weblink to the dedicated "System Mounting Concepts" Application Report. This Quick Reference Guide comprehensively addresses the DMD Specifications and System Mounting Concepts and includes important application design considerations.

NOTE: Each DLP® DMD has unique mounting hardware. Some parts are available for purchase from distributors and manufacturers with Minimum Order Quantities (MOQ). Some of them may be in stock and available for immediate delivery, or may require several weeks of lead time. Some parts may not be listed on a manufacturer's web page hence the manufacturer should be contacted directly. Other parts require a custom design that meets a customer's specific product requirements. CAD information provided by TI is available to begin the design of these custom machined parts.

A common obstacle that delays development schedules is the availability of all parts. Customers are encouraged to communicate with their suppliers and mechanical shop in order to mitigate schedule surprises for the production of prototypes and final products.

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1 DLP2010FQJ, DLP2010NIRFQJ - DLP® 0.2 WVGA DMD - Series-244

Group of Parts	Mounting Hardware Description	Manufacturer, Part Number, and Additional Information	Contact Information
1	Board-to-Board Mating Connector	Series-244 40 contact connector, 0.4 mm pitch, 1.0 mm mated height PANASONIC AXT540124 or AXT540124DD1.	Panasonic
2	Optical Interface and Related Hardware	Figure 1 shows a mounting concept with numbers for each group of parts. Please work with your mechanical shop on the custom design that meets your specific requirements, and to find MOQ and Leadtimes.	
3	DMD	Application Report: DLP® Series-244 DMD and System Mounting Concepts Mechanical and Thermal Application Report.	
4	FFC, FPC or PCB	Design file example. Please work with your PCB shop on your custom design.	

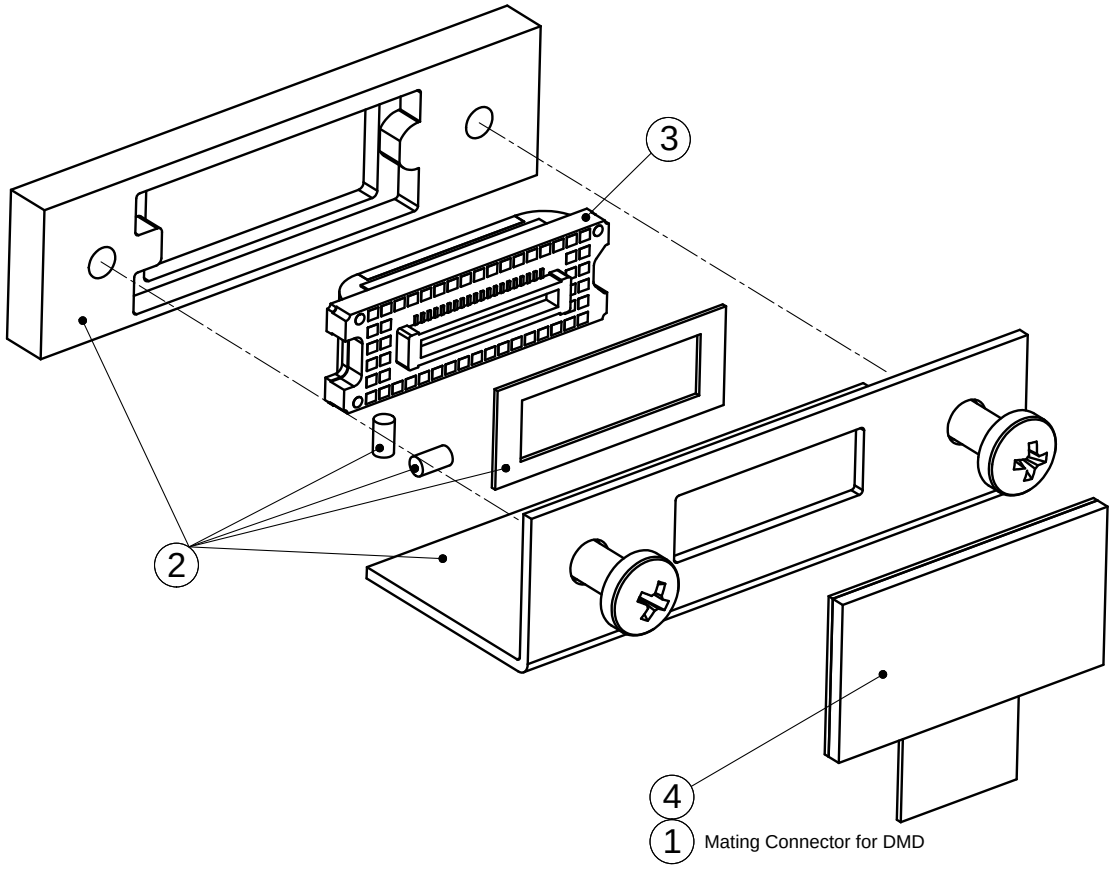


Figure 1. Exploded View of Mounting Concept for Series-244

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2 DLP3000FQB - DLP® 0.3 WVGA DMD – Series-220

Group of Parts	Mounting Hardware Description	Manufacturer, Part Number, and Additional Information	Contact Information
1	Board-to-Board Mating Connector	Series-220 50 contact connector, 0.4 mm pitch, 1.2 mm mated height PANASONIC AXT550224 or AXT550224DD1.	Panasonic
2	Optical Interface and Related Hardware	Figure 2 shows a mounting concept with numbers for each group of parts. Please work with your mechanical shop on the custom design that meets your specific requirements, and to find MOQ and Leadtimes.	
3	DMD	Application Report: DLP® Series-220 DMD and System Mounting Concepts.	
4	FFC, FPC or PCB	Design file example. Please work with your PCB shop on your custom design.	

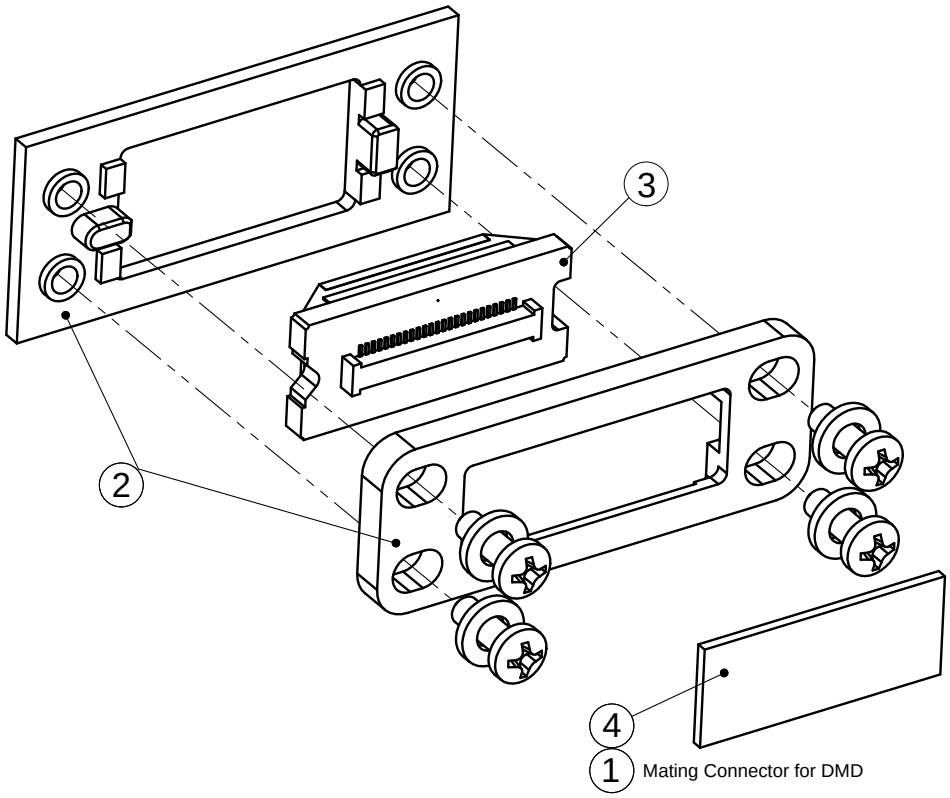


Figure 2. Exploded View of Mounting Concept for Series-220

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3 DLP4500FQE, DLP4500NIRFQE - DLP® 0.45 WXGA DMD – Series-241

Group of Parts	Mounting Hardware Description	Manufacturer, Part Number, and Additional Information	Contact Information
1	Board-to-Board Mating Connector	Series-241 80 contact connector, 0.4 mm pitch, 1.0 mated height PANASONIC AXT580124 or AXT580124DD1.	Panasonic
2	Optical Interface and Related Hardware	Figure 3 shows a mounting concept with numbers for each group of parts. Please work with your mechanical shop on the custom design that meets your specific requirements, and to find MOQ and Leadtimes.	
3	DMD	Application Report: DLP® Series-241 DMD and System Mounting Concepts.	
4	FFC, FPC or PCB	Design file example. Please work with your PCB shop on your custom design.	

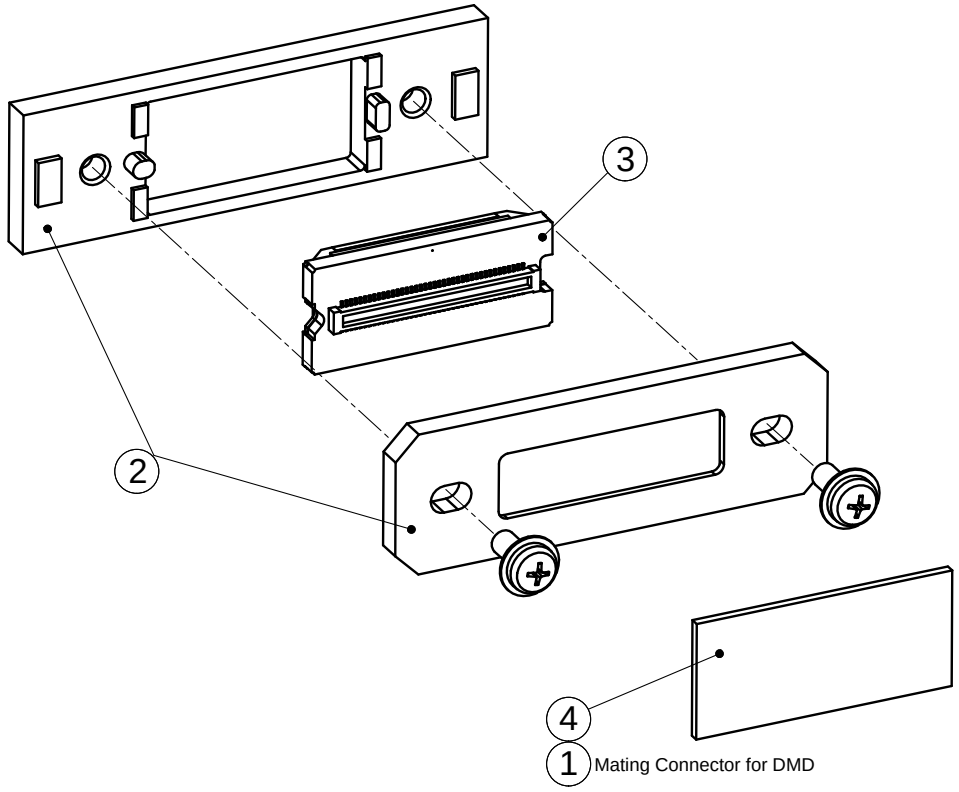


Figure 3. Exploded View of Mounting Concept for Series-241

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4 DLP4500FQD, DLP4500NIRFQD - DLP® 0.45 WXGA DMD – Series-310

Group of Parts	Mounting Hardware Description	Manufacturer, Part Number, and Additional Information	Contact Information
1	Board-to-Board Mating Connector	Two 40 contact interposers are required, 0.7424 mm pitch LGA Neoconix Part Number: FBX0040CMFF6AU00.	http://www.neoconix.com/ lloyd@neoconix.com
2	Optical Interface and Related Hardware	Figure 4 shows a mounting concept with numbers for each group of parts. Please work with your mechanical shop on the custom design that meets your specific requirements, and to find MOQ and Leadtimes.	
3	DMD	Application Report: DLP® Series-310 DMD and System Mounting Concepts.	
4	FFC, FPC or PCB	Please work with your PCB shop on your custom design.	

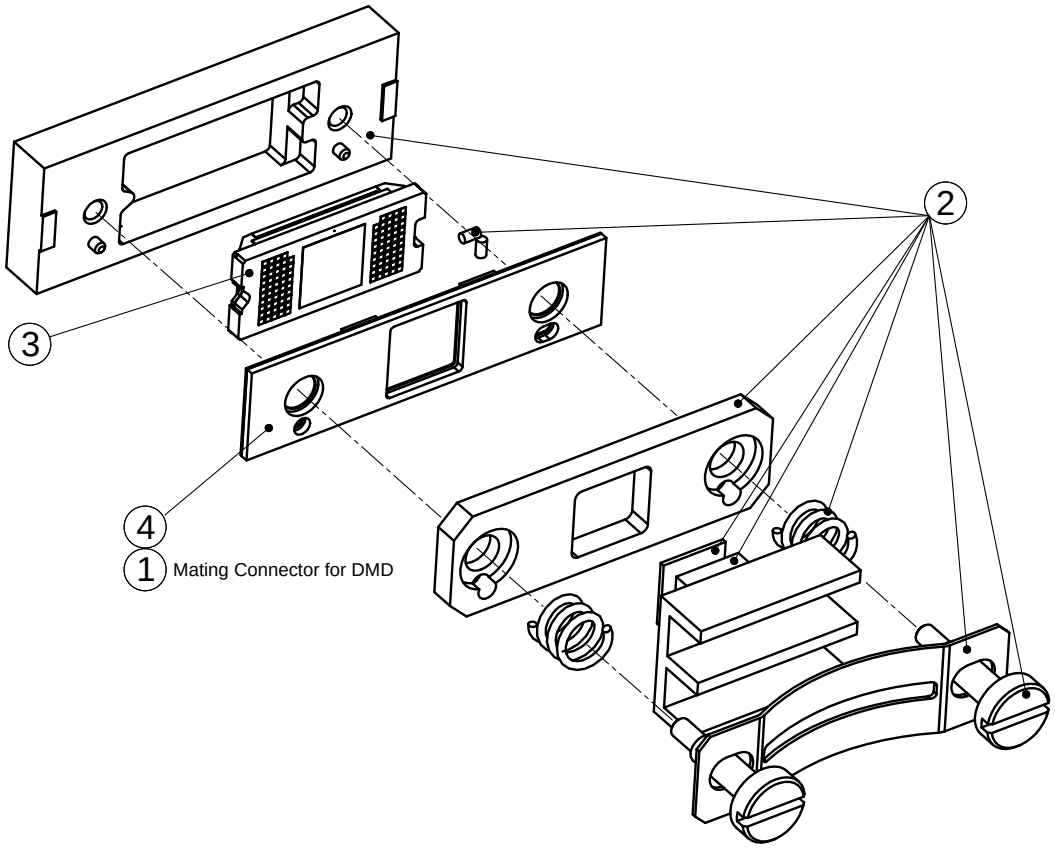


Figure 4. Exploded View of Mounting Concept for Series-310

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5 DLP5500BFYA - DLP® 0.55 XGA DMD – Series-450

Group of Parts	Mounting Hardware Description[1]	Manufacturer, Part Number, and Additional Information	Contact Information
1	ZIF Style Socket Mating Connector	149 contact micro-PGA socket, 1.27 mm pitch Foxconn PL14927-1541-01F	http://www.fit-foxconn.com/ mick.mulcuck@fit-foxconn.com
	LIF Style Socket Mating Connector	149 contact micro-PGA socket, 1.27 mm pitch Foxconn PL14927-1542-01F	http://www.fit-foxconn.com/ mick.mulcuck@fit-foxconn.com
		Amphenol 9735-002	http://www.interconsystems.com/ jwalden@interconsystems.com
2	Optical Interface and Related Hardware	Figure 5 shows a mounting concept with numbers for each group of parts. Please work with your mechanical shop on the custom design that meets your specific requirements, and to find MOQ and Leadtimes.	
3	DMD	Application Report: DLP® Series-450 DMD and System Mounting Concepts.	
4	FFC, FPC or PCB	Please work with your PCB shop on your custom design.	

(1) NOTE: Customer should choose the appropriate (LIF or ZIF) socket for their design, based on the minimum expected number of insertions.

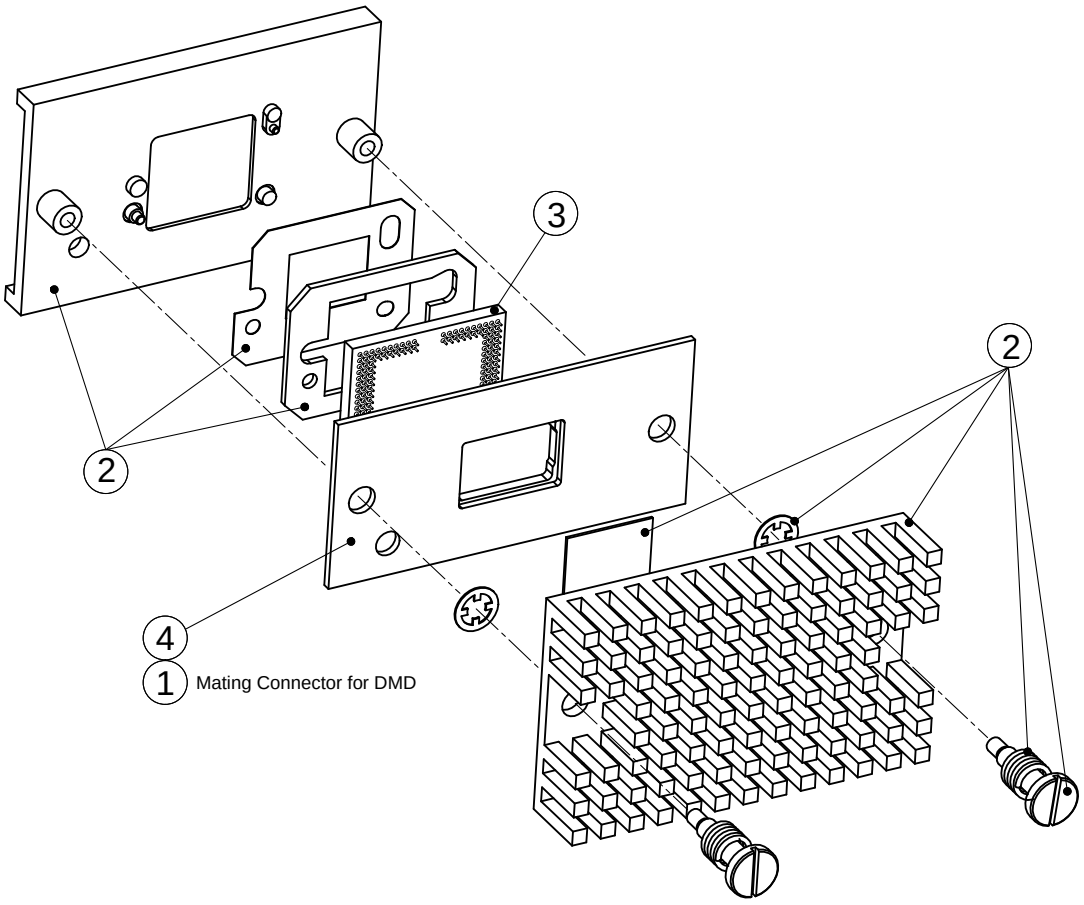


Figure 5. Exploded View of Mounting Concept for Series-450

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6 DLP6500FLQ - DLP® 0.65 1080p Type-A DMD

Group of Parts	Mounting Hardware Description	Manufacturer, Part Number, and Additional Information	Contact Information
1	Interposer Assembly & Contact Housing Mating Connector	Amphenol 7500-103 (203 contacts)	http://www.interconsystems.com/ jwalden@interconsystems.com
2	Optical Interface and Related Hardware	Figure 6 shows a mounting concept with numbers for each group of parts. Please work with your mechanical shop on the custom design that meets your specific requirements, and to find MOQ and Leadtimes.	
3	DMD	System Mounting Concepts for the DLP® Type-A DMD.	
4	FFC, FPC or PCB	Please work with your PCB shop on your custom design.	

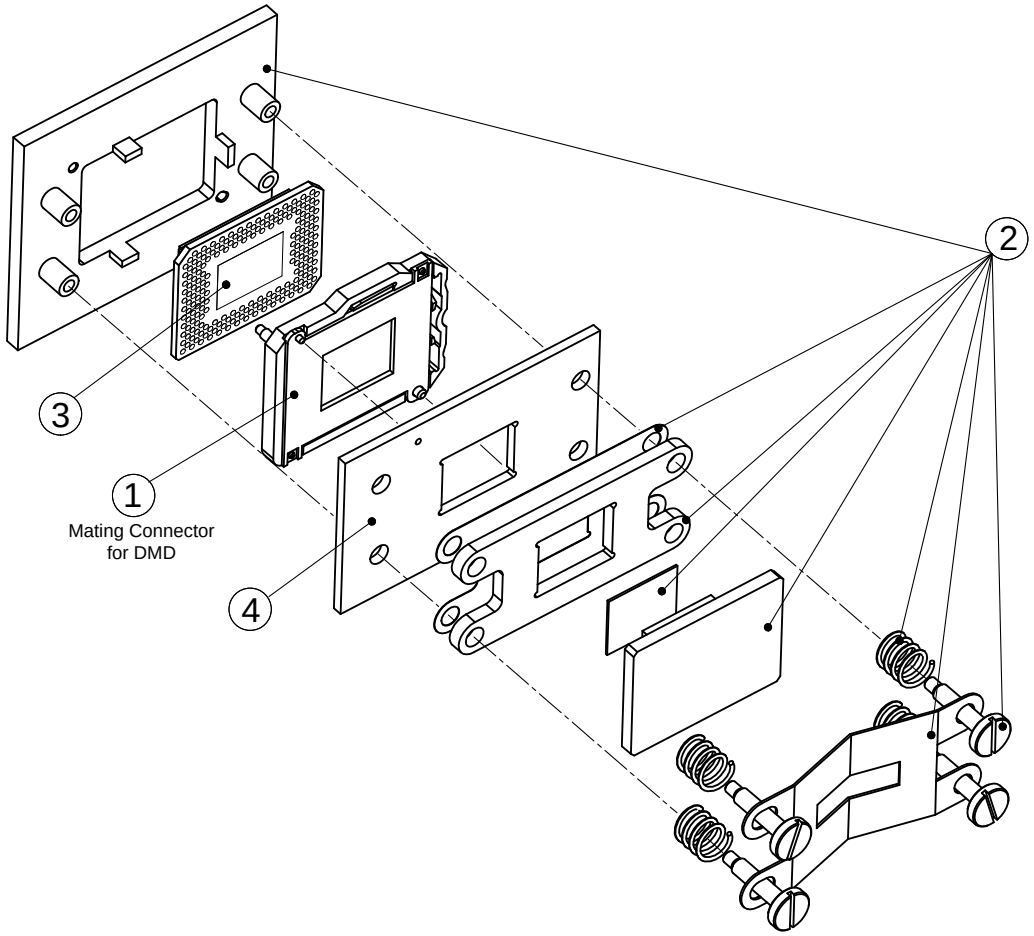


Figure 6. Exploded View of Mounting Concept for .7” Size Ceramic Type-A

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7 DLP6500FYE - DLP® 0.65 1080p Series-600 DMD

Group of Parts	Mounting Hardware Description	Manufacturer, Part Number, and Additional Information	Contact Information
1	ZIF Style Socket Mating Connector	Series-600 350 contact micro-PGA socket, 1.27 mm pitch Foxconn PZ35021-2641-01H (ZIF-Style)	http://www.fit-foxconn.com/ mick.mulcuck@fit-foxconn.com
2	Optical Interface and Related Hardware	Figure 7 shows a mounting concept with numbers for each group of parts. Please work with your mechanical shop on the custom design that meets your specific requirements, and to find MOQ and Leadtimes.	
3	DMD	Application Report: DLP® Series-600 DMD Mechanical, Thermal, and Systems Mounting Concepts.	
4	FFC, FPCor PCB	Design file example. Please work with your PCB shop on your custom design.	

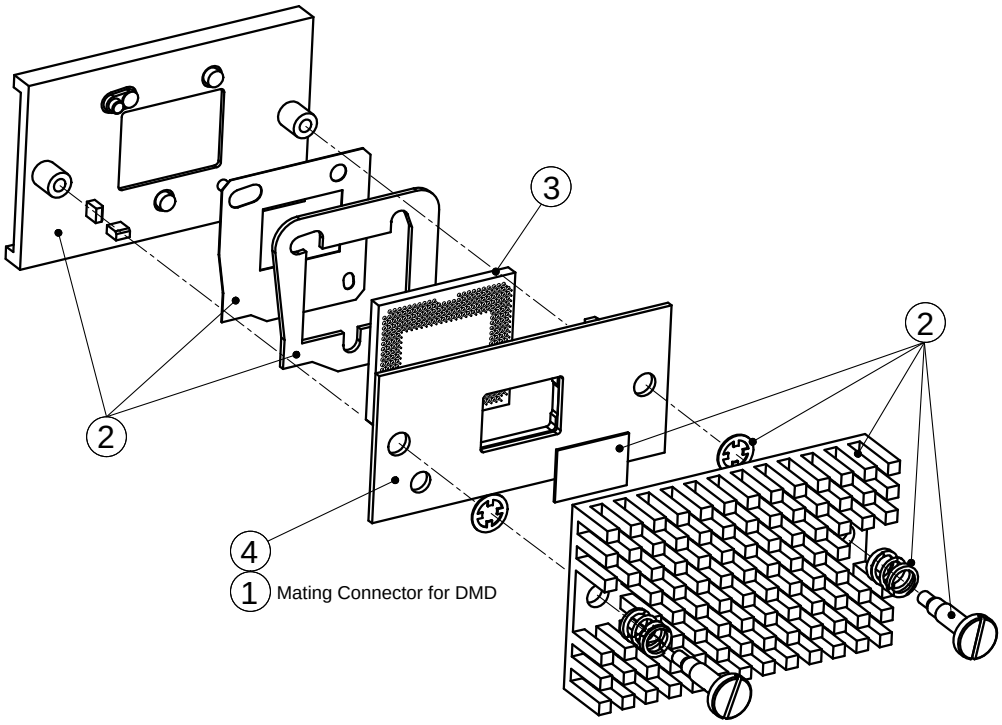


Figure 7. Exploded View of Mounting Concept for Series-600

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8 DLP7000FLP, DLP7000BFLP, DLP7000UVFLP - DLP® 0.7 XGA Ceramic (UV) Type-A DMD

Group of Parts	Mounting Hardware Description	Manufacturer, Part Number, and Additional Information	Contact Information
1	Interposer Assembly & Contact Housing Mating Connector	Amphenol 7500-103 (203 contacts)	http://www.interconsystems.com/ jwalden@interconsystems.com
2	Optical Interface and Related Hardware	Figure 8 shows a mounting concept with numbers for each group of parts. Please work with your mechanical shop on the custom design that meets your specific requirements, and to find MOQ and Leadtimes.	
3	DMD	System Mounting Concepts for the DLP® Type-A DMD.	
4	FFC, FPC or PCB	Design file example. Please work with your PCB shop on your custom design.	

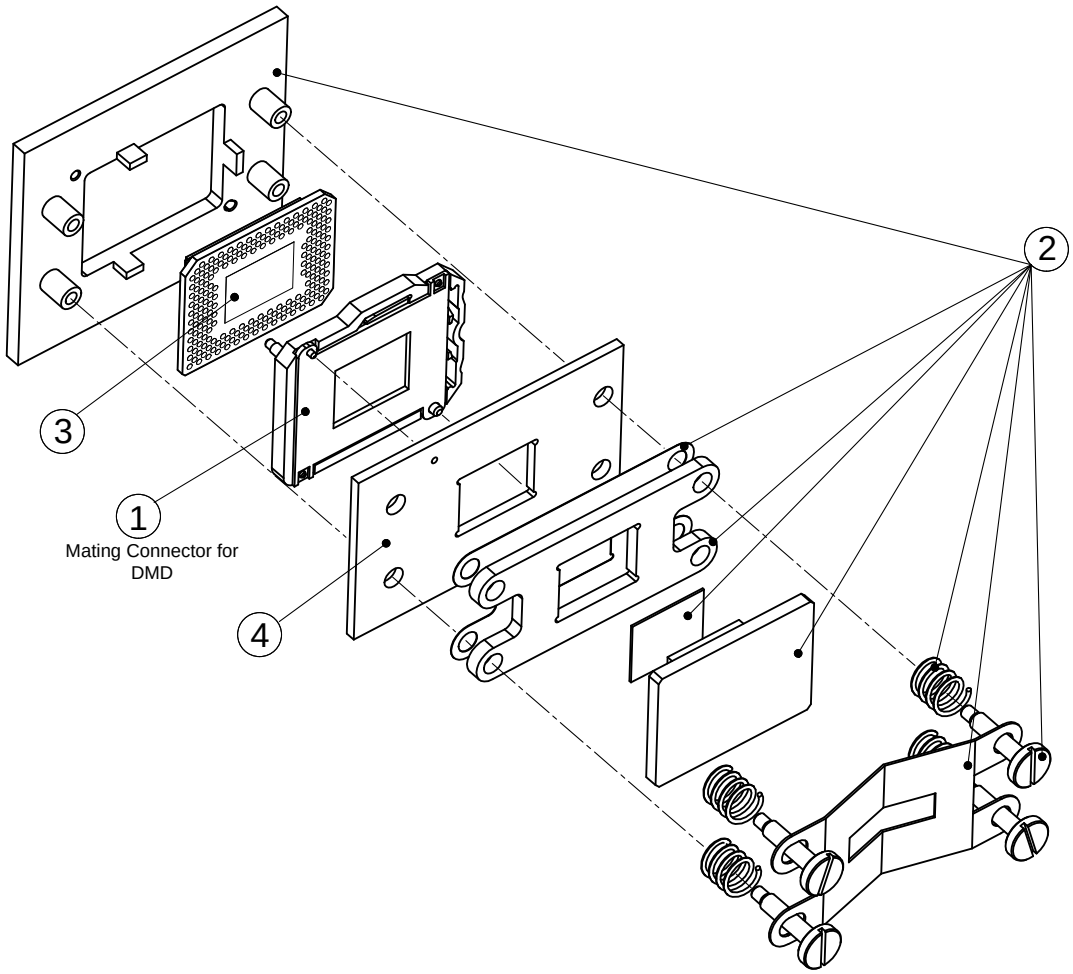


Figure 8. Exploded View of Mounting Concept for .7” Size Ceramic Type-A

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9 DLP9000FLS, DLP9000XFLS - DLP® 0.9 WQXGA Type-A DMD

Group of Parts	Mounting Hardware Description	Manufacturer, Part Number, and Additional Information	Contact Information
1	Interposer Assembly & Contact Housing Mating Connector	Amphenol 8448-001 (335 contacts)	http://www.interconsystems.com/ jwalden@interconsystems.com
2	Optical Interface and Related Hardware	Figure 9 shows a mounting concept with numbers for each group of parts. Please work with your mechanical shop on the custom design that meets your specific requirements, and to find MOQ and Leadtimes.	
3	DMD	System Mounting Concepts for the DLP® Type-A DMD.	
4	FFC, FPC or PCB	Design file example. Please work with your PCB shop on your custom design.	

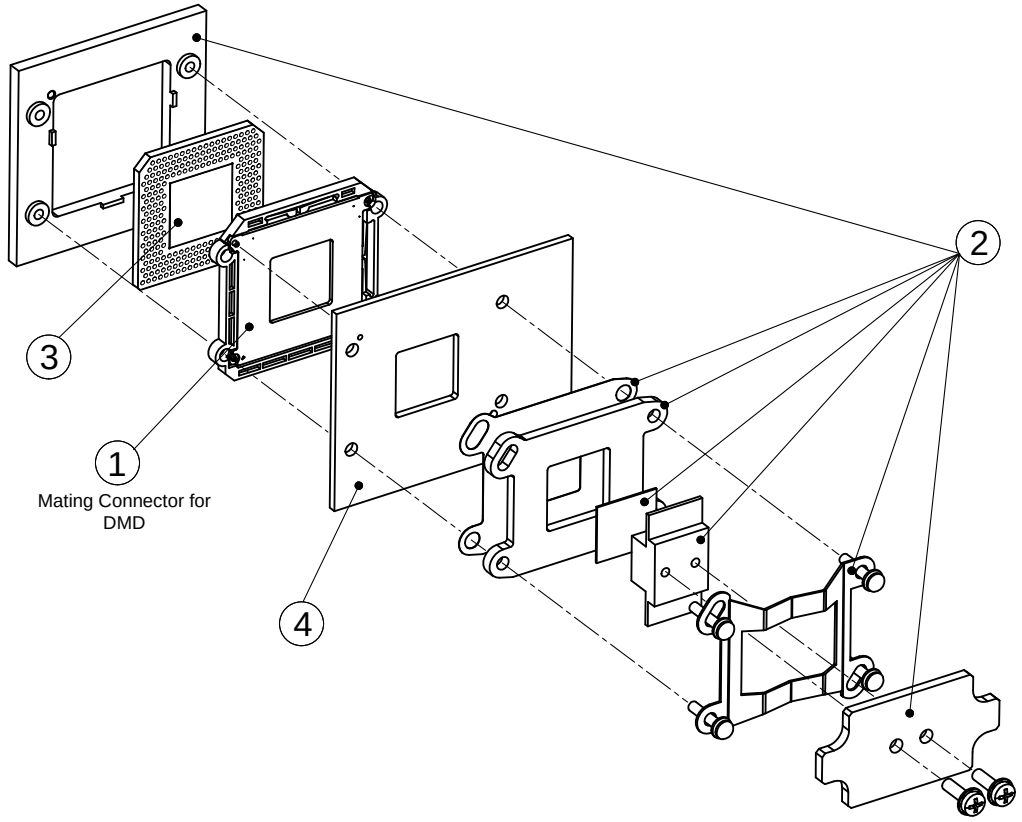


Figure 9. Exploded View of Mounting Concept for .9” Size Ceramic Type-A

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10 DLP9500FLN, DLP9500BFLN, DLP9500UVFLN - DLP® 0.95 (UV) 1080p Type-A DMD

Group of Parts	Mounting Hardware Description	Manufacturer, Part Number, and Additional Information	Contact Information
1	Interposer Assembly & Contact Housing Mating Connector	Amphenol 8448-001 (335 contacts)	http://www.interconsystems.com/ jwalden@interconsystems.com
2	Optical Interface and Related Hardware	Figure 10 shows a mounting concept with numbers for each group of parts. Please work with your mechanical shop on the custom design that meets your specific requirements, and to find MOQ and Leadtimes.	
3	DMD	System Mounting Concepts for the DLP® Type-A DMD.	
4	FFC, FPC or PCB	Design file example. Please work with your PCB shop on your custom design.	

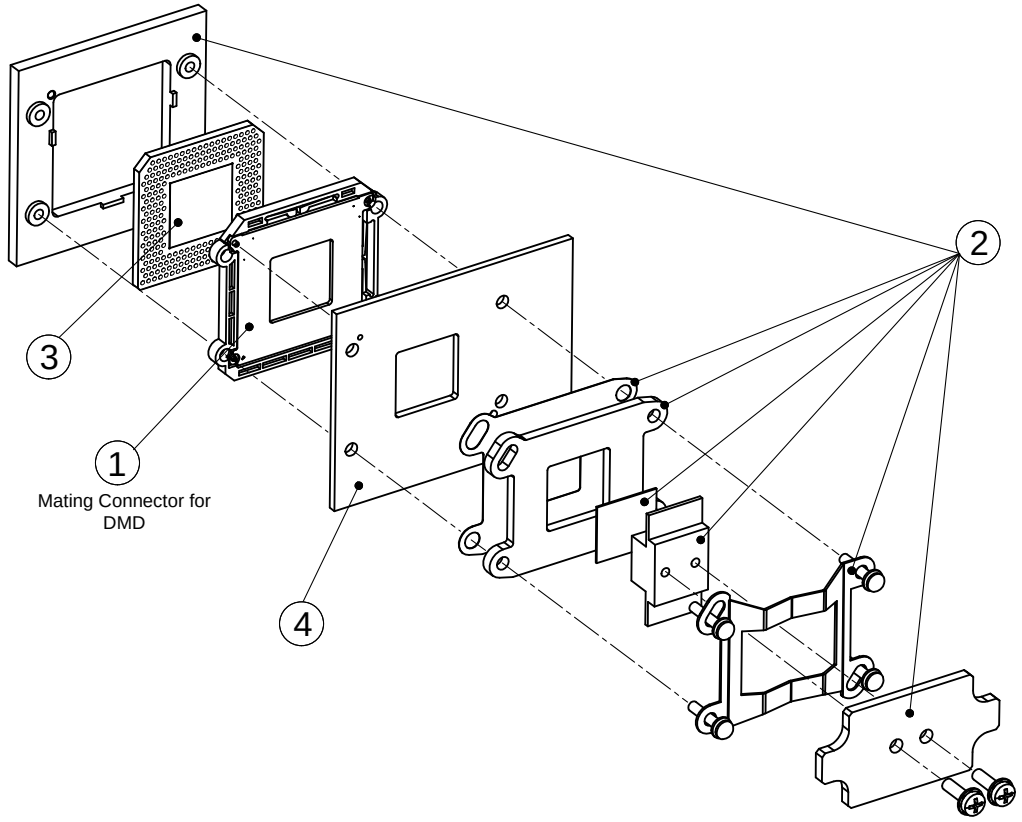


Figure 10. Exploded View of Mounting Concept for .9” Size Ceramic Type-A

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11 Glossary

BTB— Board to Board

FFC— Flat Flexible Cable

FPC— Flexible Printed Circuits

LGA— Land Grid Array

LIF— Low Insertion Force

MOQ— Minimum Order Quantity

PCB— Printed Circuit Board

ZIF— Zero Insertion Force

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