MISSION-CRITICAL
INTERCONNECT SOLUTIONS

Glenair®

STAGGERED GRID

LRM INTERMATEABLE

LRM / Backplane Brush Contact Connectors

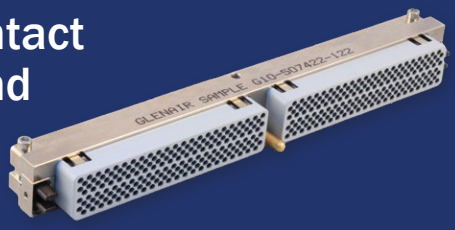
Qualified · Intermateable · Harsh-Environment

MAY 2025

STAGGERED GRID

LRM AND BACKPLANE CONNECTOR SERIES

Compliant pin brush contact connectors for legacy and new design LRM module-to-backplane applications



Glenair Line Replaceable Module (LRM) connectors are drop-in solutions for military and commercial avionics, missile systems, C4ISR, and other harsh-environment LRM module-to-backplane interconnect applications. Available in single bay, dual bay, and triple bay packaging, Glenair LRM brush contact connectors support both standard SEM-E size modules as well as custom design requirements. Fully qualified and intermateable with Amphenol Staggered Grid LRM products, the Glenair LRM solution introduces important performance improvements including precision-machined, gold-plate over nickel compliant pins and zero-FOD / zero electrical discontinuity weld-in-place brush contacts. Digital signal LRM module and backplane blind-mate connectors as well as mixed contact support for power, GPPO coax (SMPM), fiber optic (MT) inserts, and 270VDC power inputs available.

- **Low mating and unmating forces**
- **High mating cycles**
- **Compliant pin board terminations on PC tails**
- **Single, dual, and triple-bay staggered-grid layouts: digital signal, power, RF, MT optical, and 270VDC contact**
- **Mechanical features include polarization keys, ESD shrouds, straddle-mount lead frames, and guide/ground pins**

LOW INSERTION FORCE, HIGH DENSITY

LRM Brush Contact Connectors

Staggered Grid Backplane and Module Solutions
Qualified · Intermateable · Harsh-Environment

ABOUT GLENAIR LRM AND BACKPLANE CONNECTORS

Glenair has fully qualified its Staggered Grid LRM interconnect series for reliable interoperability with existing industry products. LRM and backplane connectors manufactured by Glenair are equipped with superior performance brush contacts with precision-machined compliant pin terminations and zero-FOD weld-in-place brush contacts. The connectors are manufactured to standard SEM-E size formats with accommodation for common PWB and heat sink widths and thicknesses.

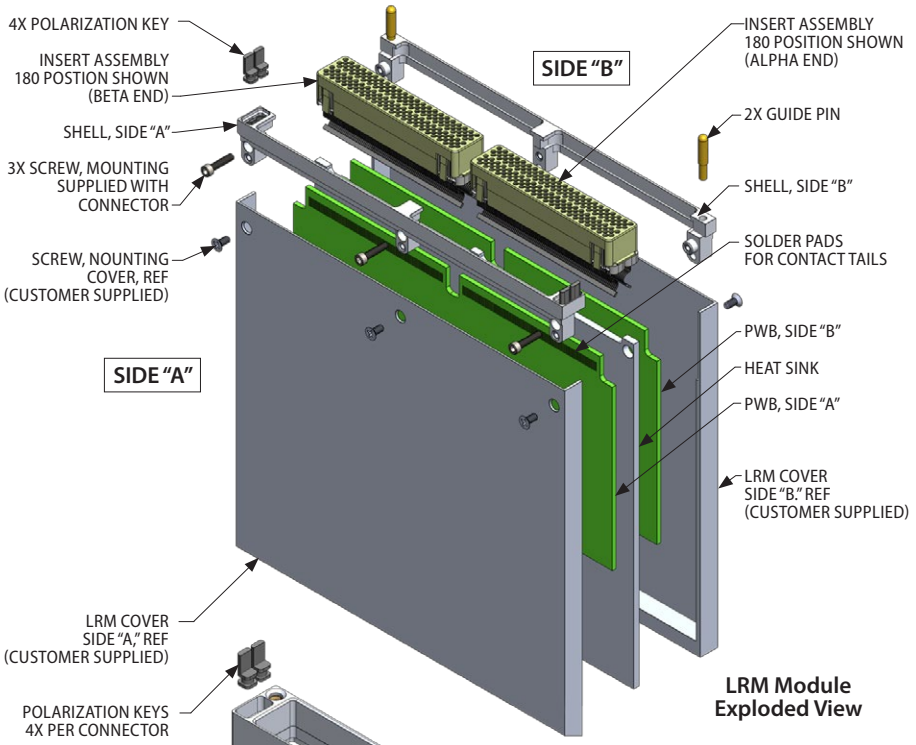
EMI SHIELD: Aluminum alloy 6061-T6 per AMS 4150; finish is hardcoat anodize per MIL-A-8625 with epoxy final coat. Ground tabs are chromate treated (iridite).

POLARIZATION KEYS: Stainless steel per AMS 5640; finish is black oxide per MIL-DTL-13924. Key retaining ring is Polyamide (nylon 12) with 50% glass filled fibers.

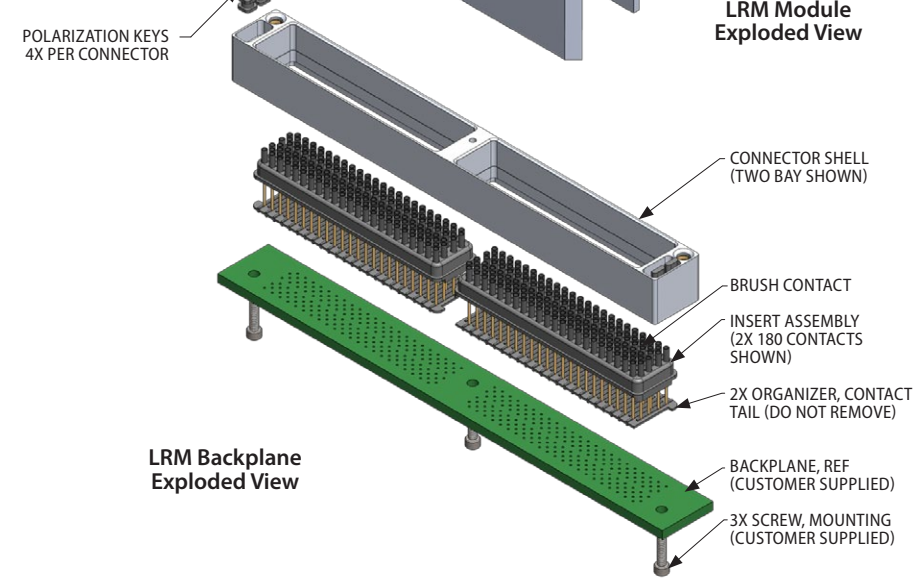
GUIDE PINS: Beryllium copper alloy per ASTM B196, finish is gold per ASTM B 488 over nickel per AMS-QQ-N-290.

ABOUT BRUSH CONTACTS

- **Virtually zero fretting corrosion**
- **Long service life: tested to 200 mating cycles**
- **No micro-arching**
- **Zero FOD / zero electrical discontinuity welded brush construction**
- **Precision-machined compliant pin backplane termination**
- **Straddle-mount termination (module connector)**
- **Intermateable with Amphenol LRM**

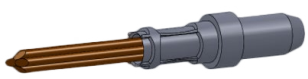


LRM Module Exploded View



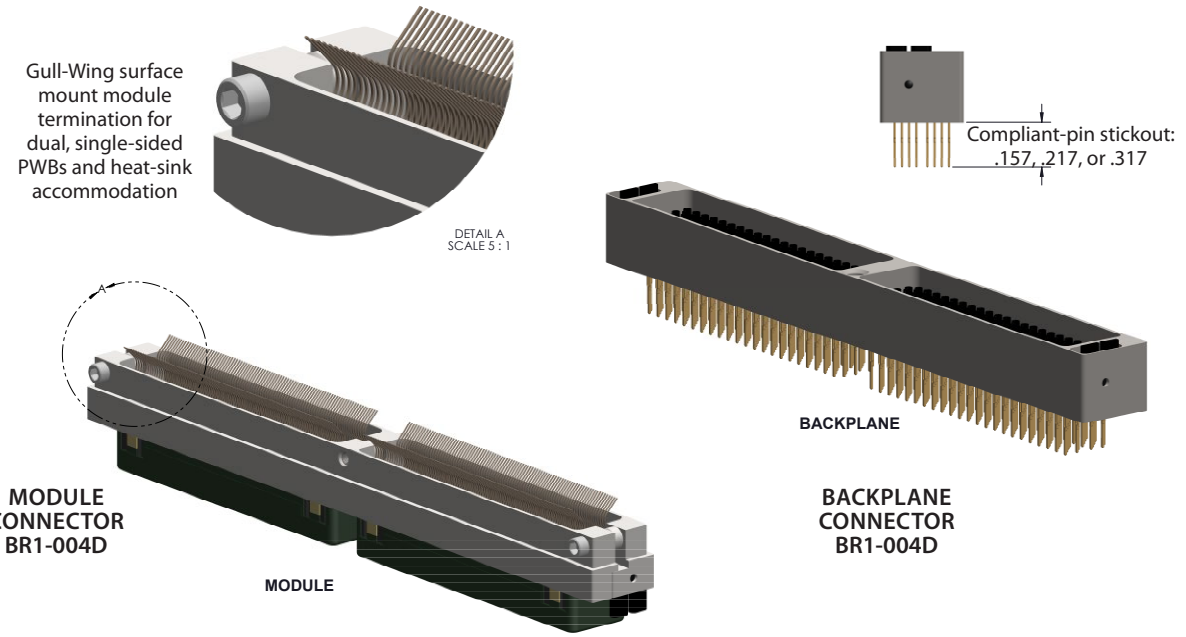
LRM Backplane Exploded View

Backplane (compliant) hooded brush socket



Module (lead frame) brush pin

SEM-E Standard Module (surface-mount) and Board (compliant pin) connectors — Brush Contact Module Performance Specifications



ELECTRICAL		
Parameters	**Requirements**	**Test Procedure**
Contact Resistance	20 mΩ Max at 2A	EIA-364-06
Low Signal Level Contact Resistance	20 mΩ Max	EIA-364-23
DWV (Sea Level)	100 VAC RMS at 60 Hz	EIA-364-20
DWV (Altitude)	100 VAC RMS at 60 Hz (70,000 ft)	EIA-364-20
Insulation Resistance	1 MΩ min. at 100 VDC	EIA-364-21
Inductance	No greater than 15 nH	EIA-364-33
Capacitance	No greater than 3 pF	EIA-364-30
Shell to Shell Resistance	2.5 mΩ Max	EIA-364-83
MECHANICAL		
Parameters	**Requirements**	**Test Procedure**
Random Vibration (20 hrs in Each Axis)	No Electrical Discontinuity >1 Microsecond	EIA-364-28
Shock (50G, 11 millisecond shock pulse)	No Electrical Discontinuity >1 Microsecond	MIL-STD-810
Random Vibration (20 hrs in Each Axis)	No Electrical Discontinuity >10 Nanoseconds	EIA-364-28 & EIA-364-87
Shock (50G, 11 millisecond shock pulse)	No Electrical Discontinuity >10 Nanoseconds	MIL-STD-810 & EIA-364-87
Solderability	95% Min Solder Coverage	MIL-STD-202
Resistance to Solder Heat	260°C Dip for 10 Seconds	EIA-364-56
Contact Gas Tightness	Continue to Meet LLCR After Exposure	EIA-364-36
Intermittence (During Shock and Vibration)	No Electrical Discontinuity >10 Nanoseconds	EIA-364-87
ENVIRONMENTAL		
Parameters	**Requirements**	**Test Procedure**
Durability #1	200 Cycles, Blind Mate Misalignment Simulation	MIL-M-28787
Durability #2	200 Cycles, Thermal Clamp Simulation	
Salt Fog	48 Hrs, 5% Solution at 35°C	EIA-364-26
Thermal Cycling	100 cycles from -65°C to +125°C	EIA-364-32
Humidity	240 Hrs at 90% to 95% Humidity Exposure	EIA-364-31
Flammability	Non-Burning or Self-Extinguished After 5 Seconds	MIL-STD-202
COMPLIANT CONTACT TO BACKPLANE (CONFORMAL COATED) PTH INTERFACE		
Parameters	**Requirement**	
Compliant Component Insertion	Initial Insertion shall be 1.5 lbs min and 40 lbs max	
Compliant Component Retention	After third Insertion, the Push Out Force shall be 1.5 lbs min and 40 lbs max	
Radial Hole Deformation	PTH Deformation <0.015 in when Measured from Drilled Hole	
Axial Hole Deformation (Hole Wall damage)	Min Avg Copper Thk <0.0003 in. No Copper Cracks or Separations	
Backplane to Compliant Resistance	< 17 mV	

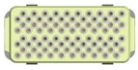
Insert Arrangements: High-Density, Staggered-Grid

INSERT CONFIGURATIONS (MODULE)

Connector Size A

A1

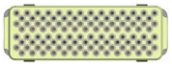
80 Digital



Connector Size B

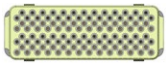
B1

108 Digital



B2

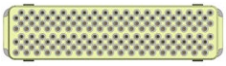
108 Digital



Connector Size C

C1

152 Digital



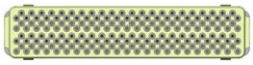
Connector Size D

D1

180 Digital

D2

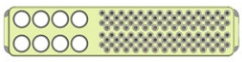
180 Digital



Connector Size D

E1

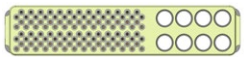
8 GPPO



108 Digital

E2

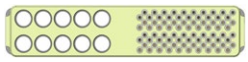
108 Digital



8 GPPO

F1

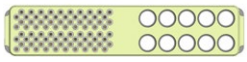
10 GPPO



80 Digital

F2

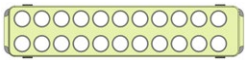
80 Digital



10 GPPO

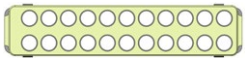
G1

22 GPPO



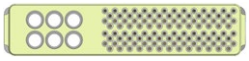
G2

22 GPPO



H1

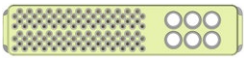
6 Power



108 Digital

H2

108 Digital

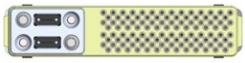


6 Power

Connector Size D

J1

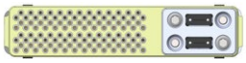
Dual MT



108 Digital

J2

108 Digital



Dual MT

K1

PIS, 270 VDC
#22 Contacts

108 Digital

K2

108 Digital

PIS, 270 VDC
#22 Contacts

K3

PIS, 270 VDC
#16 Contacts

108 Digital

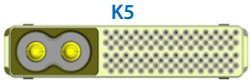
K4

108 Digital

PIS, 270 VDC
#16 Contacts

K5

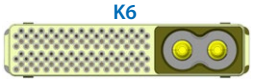
PIS, 40 AMP
#8 Contacts



108 Digital

K6

108 Digital



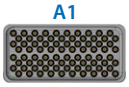
PIS, 40 AMP
#8 Contacts

INSERT CONFIGURATIONS (BACKPLANE)

Connector Size A

A1

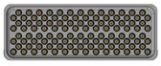
80 Digital



Connector Size B

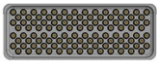
B1

108 Digital



B2

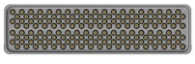
108 Digital



Connector Size C

C1

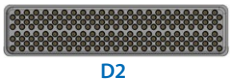
152 Digital



Connector Size D

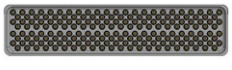
D1

180 Digital



D2

180 Digital



Connector Size D

E1

8 GPPO

108 Digital

E2

108 Digital

8 GPPO

F1

10 GPPO

80 Digital

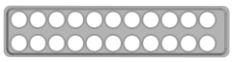
F2

80 Digital

10 GPPO

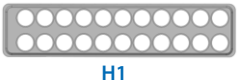
G1

22 GPPO



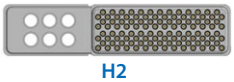
G2

22 GPPO



H1

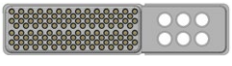
6 Power



108 Digital

H2

108 Digital

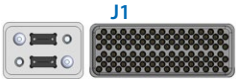


6 Power

Connector Size D

J1

Dual MT



108 Digital

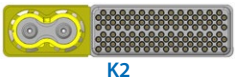
J2

108 Digital

Dual MT

K1

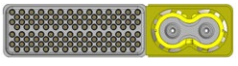
PIS, 270 VDC
#22 Contacts



108 Digital

K2

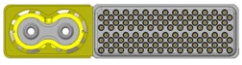
108 Digital



PIS, 270 VDC
#22 Contacts

K3

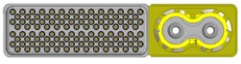
PIS, 270 VDC
#16 Contacts



108 Digital

K4

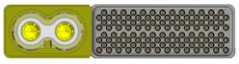
108 Digital



PIS, 270 VDC
#16 Contacts

K5

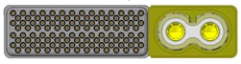
PIS, 40 AMP
#8 Contacts



108 Digital

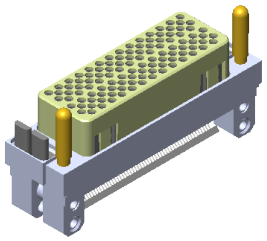
K6

108 Digital



PIS, 40 AMP
#8 Contacts

Module connector
BR1-001 Staggered-Grid, Single-Bay, Standard Width



Single-bay module connector shown with straddle-mount (gull wing) surface-mount terminations

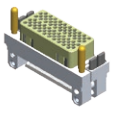
HOW TO ORDER

Sample Part Number	BR1 - 001	X	-XX	-X	X

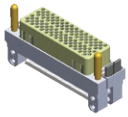
Basic Part Number	LRM module connector, staggered-grid, single-bay, standard width
Connector Size	**A** = 80 Position **B** = 108 Position **C** = 152 Position **D** = 180 Position and Mixed
Insert Config	See Insert Arrangements
Heat Sink Thickness and Dimension ZZ	**Heat Sink Thickness** ±.005 / **Dimension ZZ** ±.0025 **1** .125 .222x5 **2** .100 .2350 **3** .075 .2475 **4** .062 .2540
Board Package Thickness	**1** = 090-.130 **2** = .130-.190 **3** = .190-.250 **4** = .060-.100

NOTES

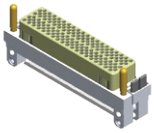
- Brush contact termination leads finish: tin/lead SN60 or SN63
- Marking: "Glenair", "06324", part number and date code. Location optional.
- Rear surface of inserts are sealed in brush contact area only. Contacts are not removable.
- Configuration of termination leads varies with board package thickness
- Three (3) connector mounting screws are supplied with the connector
- Four polarizing keys and two retaining ring, shown assembled, are supplied with the connector packaged in a separate plastic bag. Retaining rings are not reusable and must be replaced when re-keying the connector.
- For Size D connector part numbers, with mixed insert configurations, request sales drawing from Glenair.
- Indicated dimension is to point of electrical engagement.
- Noted dimensions apply when connector is mounted to selected heat sink thickness.
- For mating backplane connector see drawing BR1-002.



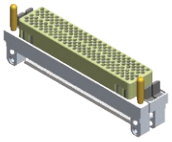
BR1-001A
80 DIGITAL
INSERT CONFIG



BR1-001B
108 DIGITAL
INSERT CONFIG

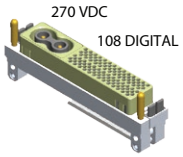


BR1-001C
152 DIGITAL
INSERT CONFIG

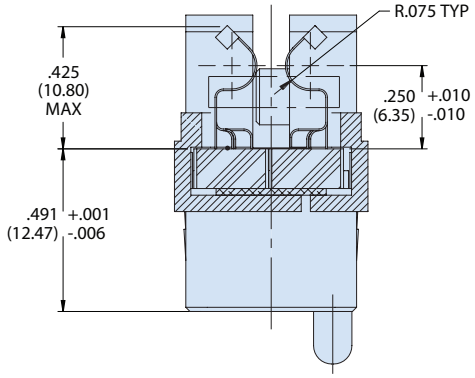


BR1-001D
180 DIGITAL
INSERT CONFIG

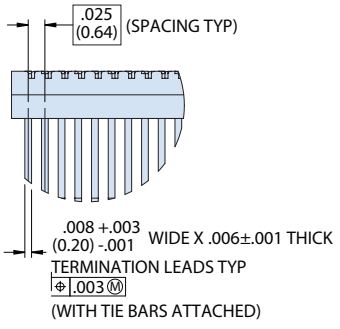
MIXED CONNECTOR EXAMPLE



BR1-001D
MIXED
INSERT CONFIG



SECTION A-A



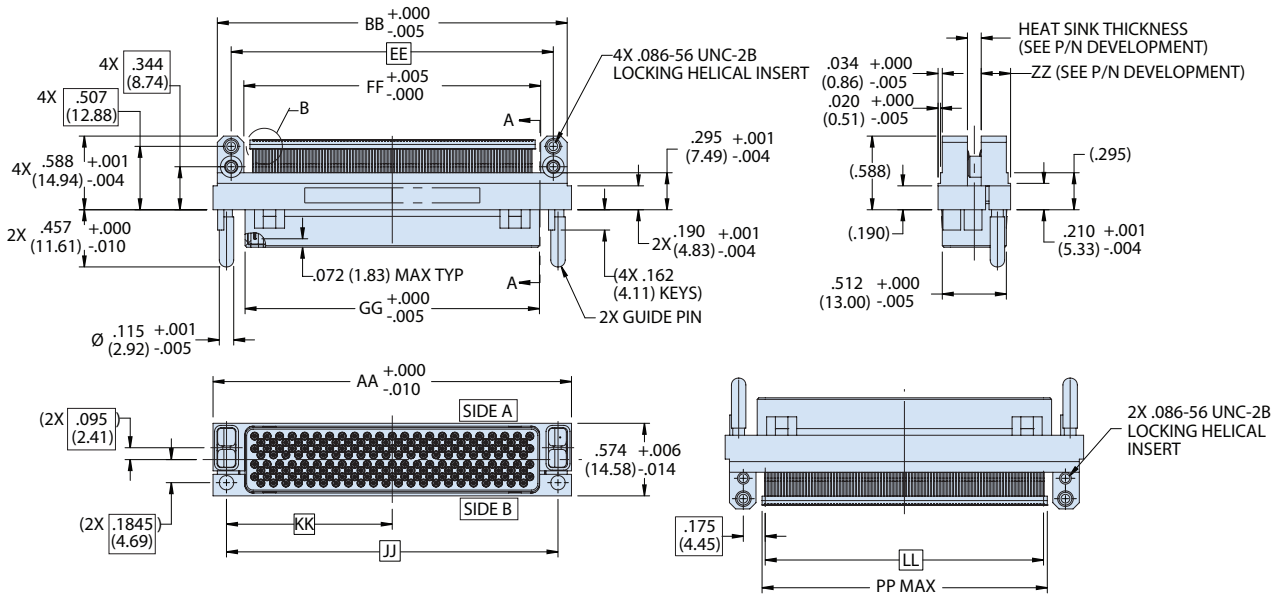
DETAIL B

INSERT CONFIGURATIONS TABLE

Connector Size A • Digital Contacts	Connector Size D • Coax and Mixed Arrangements	
A1 80 Digital	**E1** 8 GPPO / 108 Digital	**J1** Dual MT / 108 Digital
Connector Size B • Digital Contacts	**E2** 108 Digital / 8 GPPO	**J2** 108 Digital / Dual MT
B1 108 Digital	**F1** 10 GPPO / 80 Digital	**K1** #22 270 VDC / 108 Digital
B2 108 Digital	**F2** 80 Digital / 10 GPPO	**K2** 108 Digital / #22 270 VDC
Connector Size C • Digital Contacts	**G1** 22 GPPO	**K3** #16 270 VDC / 108 Digital
C1 152 Digital	**G2** 22 GPPO	**K4** 108 Digital / #16 270 VDC
Connector Size D • Digital Contacts	**H1** 6 Power / 108 Digital	**K5** PIS, 40A, #8 / 108 Digital
D1 180 Digital	**H2** 108 Digital / 6 Power	**K6** 108 Digital / PIS, 40A, #8
D2 180 Digital	Refer to Insert Arrangements, High Density, Staggered Grid on page 3 for illustrations of each Insert Config	

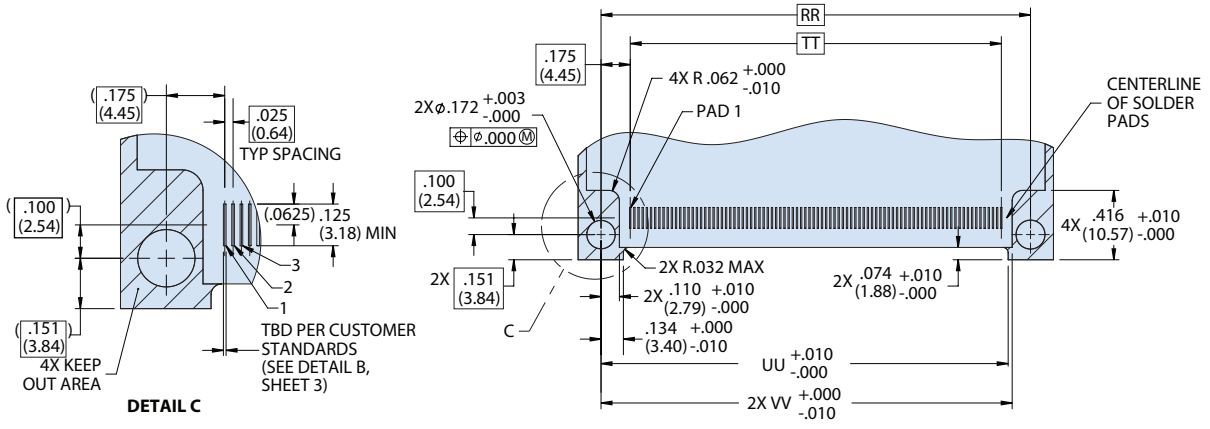
Module connector
BR1-001 Staggered-Grid, Single-Bay, Standard Width

CONNECTOR DIMENSIONS



Connector Part Number	AA	BB	EE	FF	GG	JJ	KK	LL	PP
BR1-001A	1.615 (41.02)	1.547 (39.29)	1.325 (33.65)	1.123 (28.52)	1.103 (28.02)	1.400 (35.56)	.700 (17.78)	.975 (24.76)	1.050 (26.67)
BR1-001B	1.965 (49.91)	1.897 (48.18)	1.675 (42.55)	1.473 (37.41)	1.453 (36.91)	1.750 (44.45)	.875 (22.23)	1.325 (33.65)	1.400 (35.56)
BR1-001C	2.515 (63.88)	2.447 (62.15)	2.225 (56.52)	2.023 (51.38)	2.003 (50.88)	2.300 (58.42)	1.150 (29.21)	1.875 (47.63)	1.950 (49.53)
BR1-001D	2.865 (72.77)	2.797 (71.04)	2.575 (65.41)	2.373 (60.27)	2.353 (59.77)	2.650 (67.31)	1.325 (33.65)	2.225 (56.52)	2.300 (58.42)

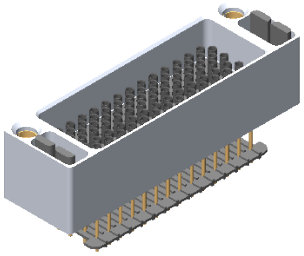
PC BOARD/HEAT SINK INTERFACE DIMENSIONS



CONNECTOR SIZE	RR	TT	UU	VV
BR1-001A	1.325 (33.65)	.975 (24.76)	1.191 (30.25)	1.215 (30.86)
BR1-001B	1.675 (42.55)	1.325 (33.65)	1.541 (39.14)	1.565 (39.75)
BR1-001C	2.225 (56.52)	1.875 (47.63)	2.091 (53.11)	2.115 (53.72)
BR1-001D	2.575 (65.41)	2.225 (56.52)	2.441 (62.00)	2.465 (62.61)

Note: Table is applicable to all connector sizes with digital insert configs only. For PC board/heat sink interface dimensions for assigned Size D part numbers with mixed insert configs, refer to individual sales drawings to be requested from Glenair.

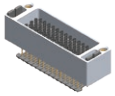
Backplane connector
BR1-002 Staggered-Grid, Single-Bay, Standard Width



Single-bay backplane connector shown with compliant-pin contact organizer

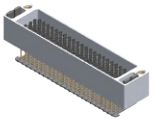
HOW TO ORDER						
Sample Part Number		**BR1-002**	**X**	**-XX**	**-X**	**X**
Basic Part Number	LRM backplane connector, staggered-grid, single-bay, standard width					
Connector Size	**A** = 80 Position **B** = 108 Position **C** = 152 Position **D** = 180 Position and Mixed					
Insert Config	XX: See Insert Arrangements					
Termination Style	**5** = Compliant					
Termination Stickout	**C** = .157±.020 **D** = .217±.020 **E** = .317±.020					

BR1-002A
80 DIGITAL
INSERT CONFIG



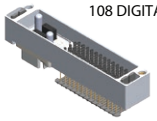
BR1-002B
108 DIGITAL
INSERT CONFIG

BR1-002C
152 DIGITAL
INSERT CONFIG



BR1-002D
180 DIGITAL
INSERT CONFIG

MIXED CONNECTOR EXAMPLE
DUAL MT
108 DIGITAL



BR1-002D
DIGITAL AND MIXED
INSERT CONFIG

NOTES

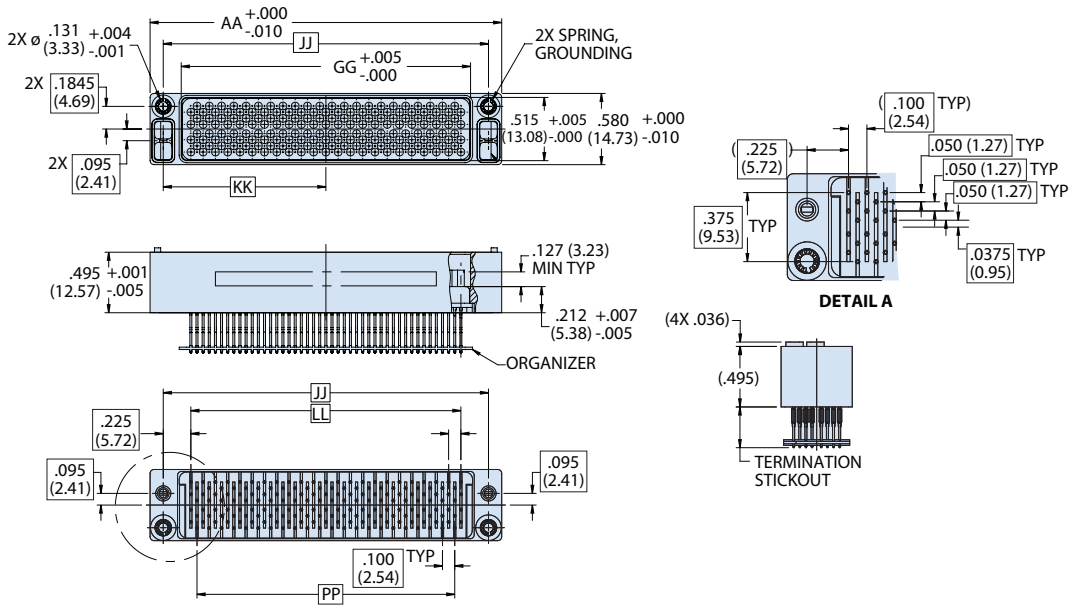
- Brush contact compliant termination finish is gold plate per ASTM B488 .000050 minimum thick over nickel per QQ-N-290 .000050 minimum thick.
- Marking: "Glenair", "06324", part number and date code. Location optional.
- Four Polarizing keys and two retaining ring, shown assembled, are supplied with the connector packaged in a separate plastic bag. Retaining rings are not reusable and must be replaced when re-keying the connector.
- For Size D connector part numbers, with mixed insert configs, request sales drawing from Glenair.
- For mating module connector see drawing BR1-001.

INSERT CONFIGURATIONS TABLE		
Connector Size A • Digital Contacts	**Connector Size D • Coax and Mixed Arrangements**	
A1 80 Digital	**E1** 8 GPPO / 108 Digital	**J1** Dual MT / 108 Digital
Connector Size B • Digital Contacts	**E2** 108 Digital / 8 GPPO	**J2** 108 Digital / Dual MT
B1 108 Digital	**F1** 10 GPPO / 80 Digital	**K1** #22 270 VDC / 108 Digital
B2 108 Digital	**F2** 80 Digital / 10 GPPO	**K2** 108 Digital / #22 270 VDC
Connector Size C • Digital Contacts	**G1** 22 GPPO	**K3** #16 270 VDC / 108 Digital
C1 152 Digital	**G2** 22 GPPO	**K4** 108 Digital / #16 270 VDC
Connector Size D • Digital Contacts	**H1** 6 Power / 108 Digital	**K5** PIS, 40A, #8 / 108 Digital
D1 180 Digital	**H2** 108 Digital / 6 Power	**K6** 108 Digital / PIS, 40A, #8
D2 180 Digital	Refer to Insert Arrangements, High Density, Staggered Grid on page 3 for illustrations of each Insert Config	

PLATED THRU HOLE DIMENSIONS	
Suggested PTH Dimensions for Compliant Contacts	
Drilled Hole	.0282 -.0296 (0.72 - 0.75)
Copper Underplating Thickness	.0010 - .0020 (0.03 - 0.05)
Tin/Lead Plating Thickness	.0003 -.0006 (0.01 - 0.02)
Finished PTH Diameter	.023 -.027 (0.58 - 0.69)

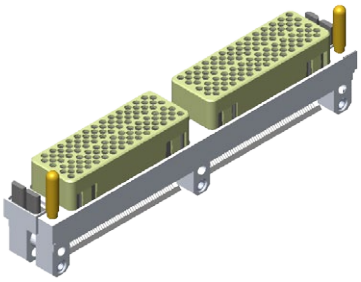
Backplane connector
BR1-002 Staggered-Grid, Single-Bay, Standard Width

CONNECTOR DIMENSIONS



Connector Size	AA	GG	JJ	KK	LL	PP
BR1-002A	1.615 (41.02)	1.107 (28.12)	1.400 (35.56)	.700 (17.78)	.950 (24.13)	.850 (21.59)
BR1-002B	1.965 (49.91)	1.457 (37.01)	1.750 (44.45)	.875 (22.23)	1.300 (33.02)	1.200 (30.48)
BR1-002C	2.515 (63.88)	2.007 (50.98)	2.300 (58.42)	1.150 (29.21)	1.850 (46.99)	1.750 (44.45)
BR1-002D	2.865 (72.77)	2.357 (59.87)	2.650 (67.31)	1.325 (33.65)	2.200 (55.88)	2.100 (53.34)

Module connector
BR1-003 Staggered-Grid, Dual-Bay, Standard Width



Dual-bay module connector shown with straddle-mount (gull wing) surface-mount terminations

HOW TO ORDER

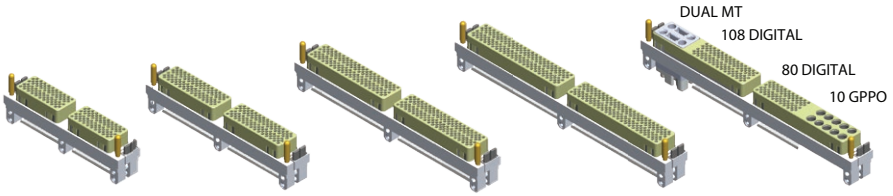
Sample Part Number	BR1-003	X	-XX	YY	-X	X

Basic Part Number	LRM module connector, staggered-grid, dual-bay, standard width
Connector Size	**A** = 2X 80 Position **B** = 2X 108 Position **C** = 2X 152 Position **D** = 2X 180 Position and Mixed
Insert Config Bay A	**XX** = See Insert Arrangements
Insert Config Bay B	**YY** = See Insert Arrangements
Heat Sink Thickness and Dimension ZZ	**Heat Sink Thickness** ±.005 / **Dimension ZZ** ±.0025 **1** .125 .2225 **2** .100 .2350 **3** .075 .2475 **4** .062 .2540
Board Package Thickness	**1** = .090-.130 **2** = .130-.190 **3** = .190-.250 **4** = .060-.100

NOTES

- Brush contact termination leads finish: tin/lead SN60 or SN63
- Marking: "Glenair", "06324", part number and date code. Location optional.
- Rear surface of inserts are sealed in brush contact area only. Contacts are not removable.
- Configuration of termination leads varies with board package thickness
- Three (3) connector mounting screws are supplied with the connector.
- Four polarizing keys and two retaining ring, shown assembled, are supplied with the connector packaged in a separate plastic bag. Retaining rings are not reusable and must be replaced when re-keying the connector.
- For Size D connector part numbers, with mixed insert configurations, request sales drawing from Glenair.
- Noted dimensions apply when connector is mounted to selected heat sink thickness.
- For mating backplane connector see drawing BR1-004.

MIXED CONNECTOR EXAMPLE



BR1-003A 80 DIGITAL INSERT CONFIG
BR1-003B 108 DIGITAL INSERT CONFIG
BR1-003C 152 DIGITAL INSERT CONFIG
BR1-003D 180 DIGITAL INSERT CONFIG
BR1-003D DIGITAL AND MIXED INSERT CONFIG

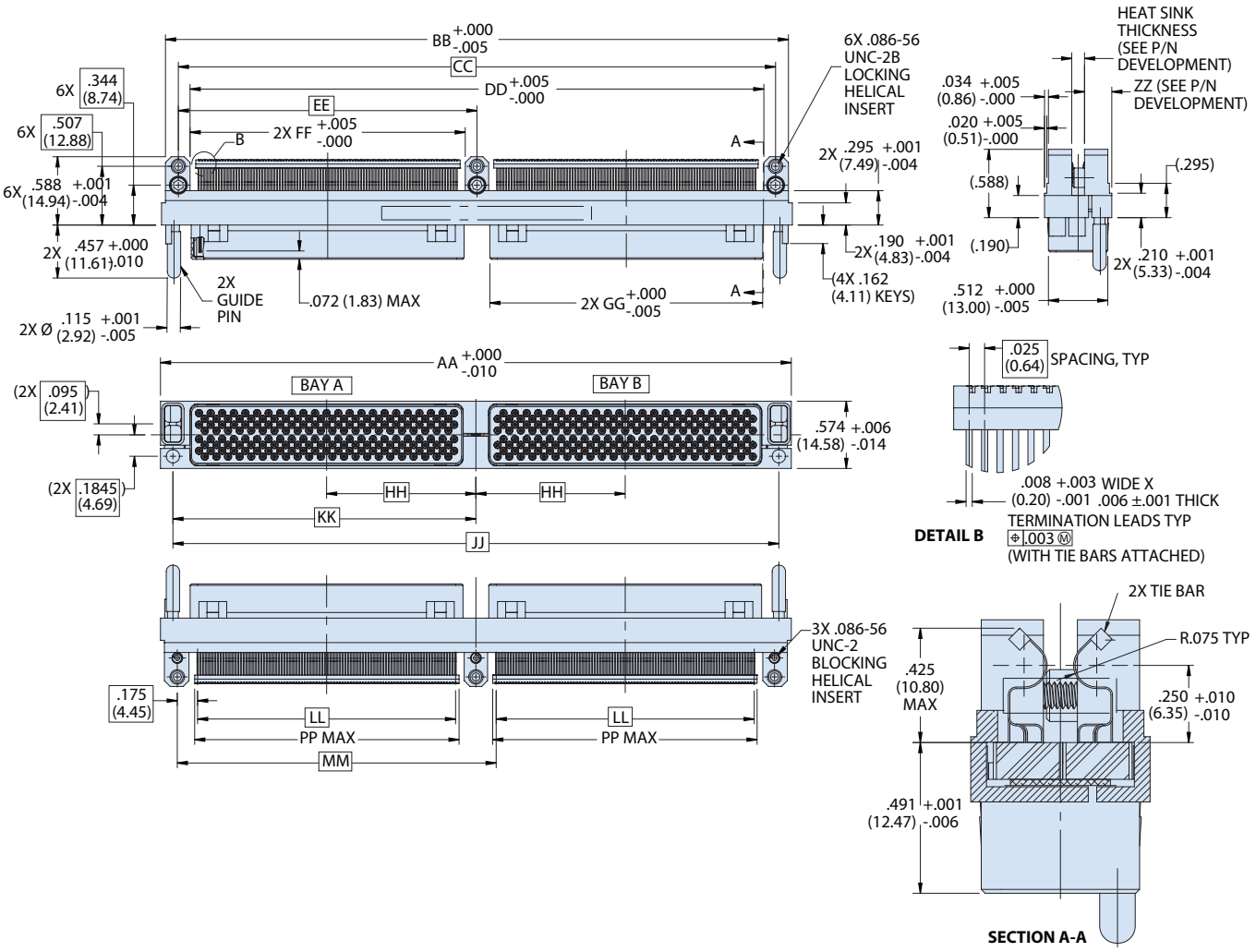
INSERT CONFIGURATIONS TABLE

Connector Size A • Digital Contacts	Connector Size D • Coax and Mixed Arrangements	
A1 80 Digital	**E1** 8 GPPO / 108 Digital	**J1** Dual MT / 108 Digital
Connector Size B • Digital Contacts	**E2** 108 Digital / 8 GPPO	**J2** 108 Digital / Dual MT
B1 108 Digital	**F1** 10 GPPO / 80 Digital	**K1** #22 270 VDC / 108 Digital
B2 108 Digital	**F2** 80 Digital / 10 GPPO	**K2** 108 Digital / #22 270 VDC
Connector Size C • Digital Contacts	**G1** 22 GPPO	**K3** #16 270 VDC / 108 Digital
C1 152 Digital	**G2** 22 GPPO	**K4** 108 Digital / #16 270 VDC
Connector Size D • Digital Contacts	**H1** 6 Power / 108 Digital	**K5** PIS, 40A, #8 / 108 Digital
D1 180 Digital	**H2** 108 Digital / 6 Power	**K6** 108 Digital / PIS, 40A, #8
D2 180 Digital		

Refer to Insert Arrangements, High Density, Staggered Grid on page 3 for illustrations of each Insert Config

Module connector
BR1-003 Staggered-Grid, Dual-Bay, Standard Width

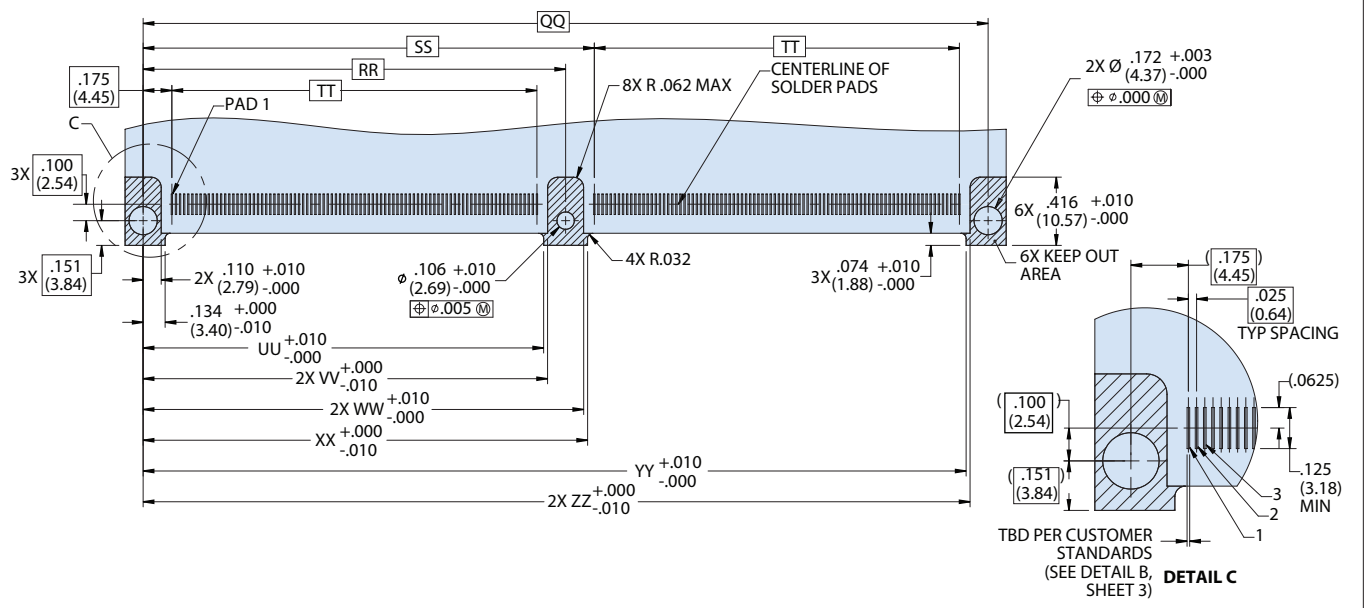
CONNECTOR DIMENSIONS



Connector Size	AA	BB	CC	DD	EE	FF	GG	HH	JJ	KK	LL	MM	PP
BR1-003A	2.940 (74.68)	2.872 (72.95)	2.650 (67.31)	2.448 (62.18)	1.325 (33.65)	1.123 (28.52)	1.103 (28.02)	.6625 (16.83)	2.725 (69.22)	1.3625 (34.61)	.975 (24.76)	1.500 (38.10)	1.050 (26.67)
BR1-003B	3.640 (92.46)	3.572 (90.73)	3.350 (85.09)	3.148 (79.96)	1.675 (42.55)	1.473 (37.41)	1.453 (36.91)	.8375 (21.27)	3.425 (86.99)	1.7125 (43.50)	1.325 (33.65)	1.850 (46.99)	1.400 (35.56)
BR1-003C	4.740 (120.40)	4.672 (118.67)	4.450 (113.03)	4.248 (107.90)	2.225 (56.52)	2.023 (51.38)	2.003 (50.88)	1.1125 (28.26)	4.525 (114.94)	2.2625 (57.47)	1.875 (47.63)	2.400 (60.96)	1.950 (49.53)
BR1-003D	5.440 (138.18)	5.372 (136.45)	5.150 (130.81)	4.948 (125.68)	2.575 (65.41)	2.373 (60.27)	2.353 (59.77)	1.2875 (32.70)	5.225 (132.71)	2.6125 (66.36)	2.225 (56.52)	2.750 (69.85)	2.300 (58.42)

Module connector
BR1-003 Staggered-Grid, Dual-Bay, Standard Width

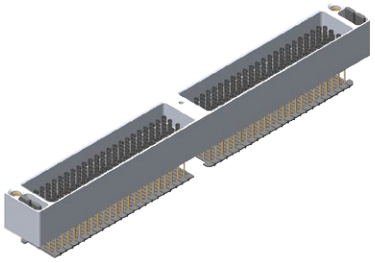
PC BOARD/HEAT SINK INTERFACE DIMENSIONS



Connector Size	QQ	RR	SS	TT	UU	VV	WW	XX	YY	ZZ
BR1-003A	2.650 (67.31)	1.325 (33.65)	1.500 (38.10)	.975 (24.76)	1.191 (30.25)	1.215 (30.86)	1.435 (36.45)	1.459 (37.06)	3.766 (95.66)	3.790 (96.27)
BR1-003B	3.350 (85.09)	1.675 (42.55)	1.850 (46.99)	1.325 (33.65)	1.541 (39.14)	1.565 (39.75)	1.785 (45.34)	1.809 (45.95)	4.116 (104.55)	4.140 (105.16)
BR1-003C	4.450 (113.03)	2.225 (56.52)	2.400 (60.96)	1.875 (47.63)	2.091 (53.11)	2.115 (53.72)	2.335 (59.31)	2.359 (59.92)	4.316 (109.63)	4.340 (110.24)
BR1-003D	5.150 (130.81)	2.575 (65.41)	2.750 (69.85)	2.225 (56.52)	2.441 (62.00)	2.465 (62.61)	2.685 (68.20)	2.709 (68.81)	5.016 (127.41)	5.040 (128.02)

Note: PC Board/Heat Sink Interface Dimensions table is applicable to all connector sizes with digital insert configs only.
For PC board/heat sink interface dimensions for assigned size d part numbers with mixed insert configs, refer to individual sales drawings to be requested from Glenair.

Backplane connector
BR1-004 Staggered-Grid, Dual-Bay, Standard Width



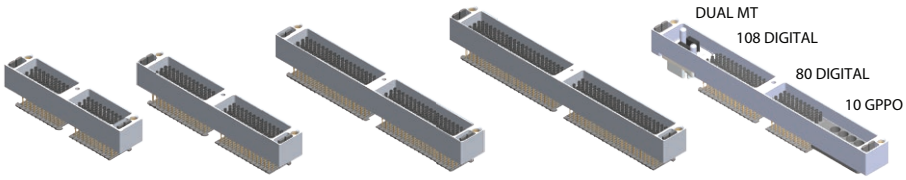
Dual-bay backplane connector shown with compliant-pin contact organizer

HOW TO ORDER						
Sample Part Number	**BR1-004**	**X**	**-XX**	**YY**	**-X**	**X**
Basic Part Number	LRM backplane connector, staggered-grid, dual-bay, standard width					
Connector Size	**A** = 2X 80 Position **B** = 2X 108 Position **C** = 2X 152 Position **D** = 2X 180 Position and Mixed					
Insert Config Bay A	**XX** = See Insert Arrangements					
Insert Config Bay B	**YY** = See Insert Arrangements					
Termination Style	**5** = Compliant					
Termination Stickout	**C** = .157 .020 **D** = .217 .020 **E** = .317 .020					

NOTES

- Brush contact compliant termination finish is gold plate per ASTM B488 .000050 minimum thick over nickel per QQ-N-290 .000050 minimum thick.
- Marking: "Glenair", "06324", part number and date code. Location optional.
- Four polarizing keys and two retaining rings, shown assembled, are supplied with the connector packaged in a separate plastic bag. Retaining rings are not reusable and must be replaced when re-keying the connector.
- For Size D connector part numbers, with mixed insert configs, request sales drawing from Glenair.
- For mating module connector see drawing BR1-003.

MIXED CONNECTOR EXAMPLE



BR1-004A
80 DIGITAL
INSERT CONFIG

BR1-004B
108 DIGITAL
INSERT CONFIG

BR1-004C
152 DIGITAL
INSERT CONFIG

BR1-004D
180 DIGITAL
INSERT CONFIG

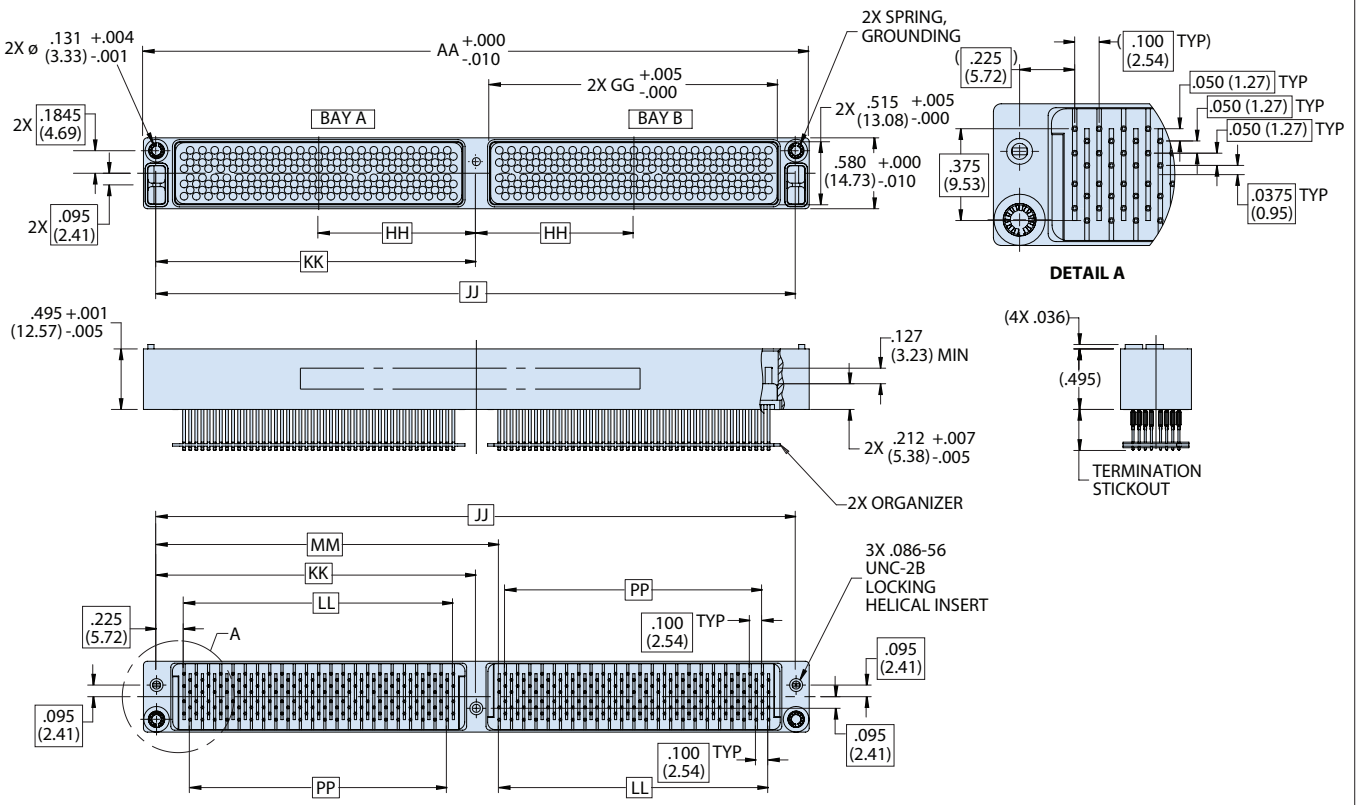
BR1-004D
DIGITAL AND MIXED
INSERT CONFIG

INSERT CONFIGURATIONS TABLE		
Connector Size A • Digital Contacts	**Connector Size D • Coax and Mixed Arrangements**	
A1 80 Digital	**E1** 8 GPPO / 108 Digital	**J1** Dual MT / 108 Digital
Connector Size B • Digital Contacts	**E2** 108 Digital / 8 GPPO	**J2** 108 Digital / Dual MT
B1 108 Digital	**F1** 10 GPPO / 80 Digital	**K1** #22 270 VDC / 108 Digital
B2 108 Digital	**F2** 80 Digital / 10 GPPO	**K2** 108 Digital / #22 270 VDC
Connector Size C • Digital Contacts	**G1** 22 GPPO	**K3** #16 270 VDC / 108 Digital
C1 152 Digital	**G2** 22 GPPO	**K4** 108 Digital / #16 270 VDC
Connector Size D • Digital Contacts	**H1** 6 Power / 108 Digital	**K5** PIS, 40A, #8 / 108 Digital
D1 180 Digital	**H2** 108 Digital / 6 Power	**K6** 108 Digital / PIS, 40A, #8
D2 180 Digital	Refer to Insert Arrangements, High Density, Staggered Grid on page 3 for illustrations of each Insert Config	

PLATED THRU HOLE DIMENSIONS	
Suggested PTH Dimensions for Compliant Contacts	
Drilled Hole	.0282 -.0296 (0.72 - 0.75)
Copper Underplating Thickness	.0010 - .0020 (0.03 - 0.05)
Tin/Lead Plating Thickness	.0003 -.0006 (0.01 - 0.02)
Finished PTH Diameter	.023 -.027 (0.58 - 0.69)

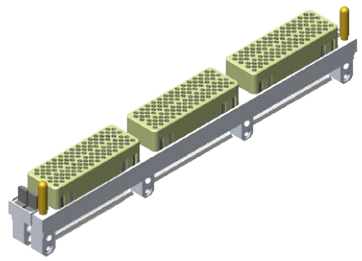
Backplane connector
BR1-004 Staggered-Grid, Dual-Bay, Standard Width

CONNECTOR DIMENSIONS



Connector Size	AA	GG	HH	JJ	KK	LL	MM	PP
BR1-004A	2.940 (74.68)	1.107 (28.12)	.6625 (16.83)	2.725 (69.22)	1.3625 (34.61)	.950 (24.13)	1.550 (39.37)	.850 (21.59)
BR1-004B	3.640 (92.46)	1.457 (37.01)	.8375 (21.27)	3.425 (86.99)	1.7125 (43.50)	1.300 (33.02)	1.900 (48.26)	1.200 (30.48)
BR1-004C	4.740 (120.40)	2.007 (50.98)	1.1125 (28.26)	4.525 (114.94)	2.2625 (57.47)	1.850 (46.99)	2.450 (62.23)	1.750 (44.45)
BR1-004D	5.440 (138.18)	2.357 (59.87)	1.2875 (32.70)	5.225 (132.71)	2.6125 (66.36)	2.200 (55.88)	2.800 (71.12)	2.100 (53.34)

Module connector
BR1-005 Staggered-Grid, Triple-Bay, Standard Width



Triple-bay module connector shown with straddle-mount (gull wing) surface-mount terminations

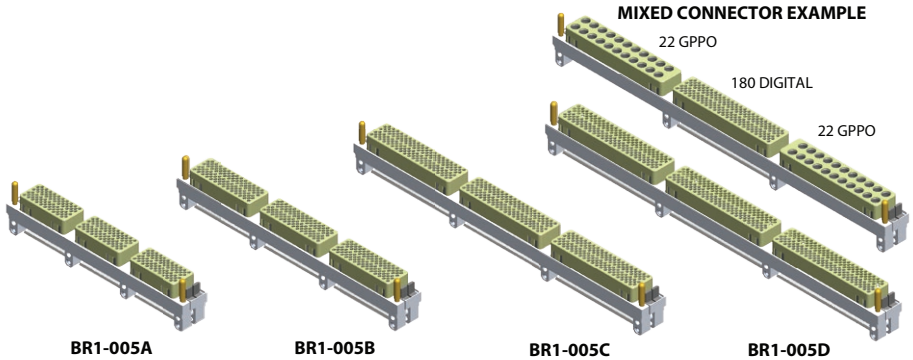
HOW TO ORDER

Sample Part Number	BR1-005	X	-XX	YY	ZZ	-X	X

Basic Part Number	LRM module connector, staggered-grid, triple-bay, standard width
Connector Size	**A** = 3X 80 Position **B** = 3X 108 Position **C** = 3X 152 Position **D** = 3X 180 Position and Mixed
Insert Config Bay A	**XX** = See Insert Arrangements
Insert Config Bay B	**YY** = See Insert Arrangements
Insert Config Bay C	**ZZ** = See Insert Arrangements
Heat Sink Thickness and Dimension ZZ	**Heat Sink Thickness** ±.005 / **Dimension ZZ** ±.0025 **1** .125 / .2225 **2** .100 / .2350 **3** .075 / .2475 **4** .062 / .2540
Board Package Thickness	**1** = .090-.130 **2** = .130-.190 **3** = .190-.250 **4** = .060-.100

NOTES

- Brush contact termination leads finish: tin/lead SN60 or SN63
- Marking: "Glenair", "06324", part number and date code. Location optional.
- Rear surface of inserts are sealed in brush contact area only. Contacts are not removable.
- Configuration of termination leads varies with board package thickness
- Three (3) connector mounting screws are supplied with the connector.
- Four polarizing keys and two retaining ring, shown assembled, are supplied with the connector packaged in a separate plastic bag. Retaining rings are not reusable and must be replaced when re-keying the connector.
- For Size D connector part numbers, with mixed insert configurations, request sales drawing from Glenair.
- Noted dimensions apply when connector is mounted to selected heat sink thickness.
- For mating backplane connector see drawing BR1-006.

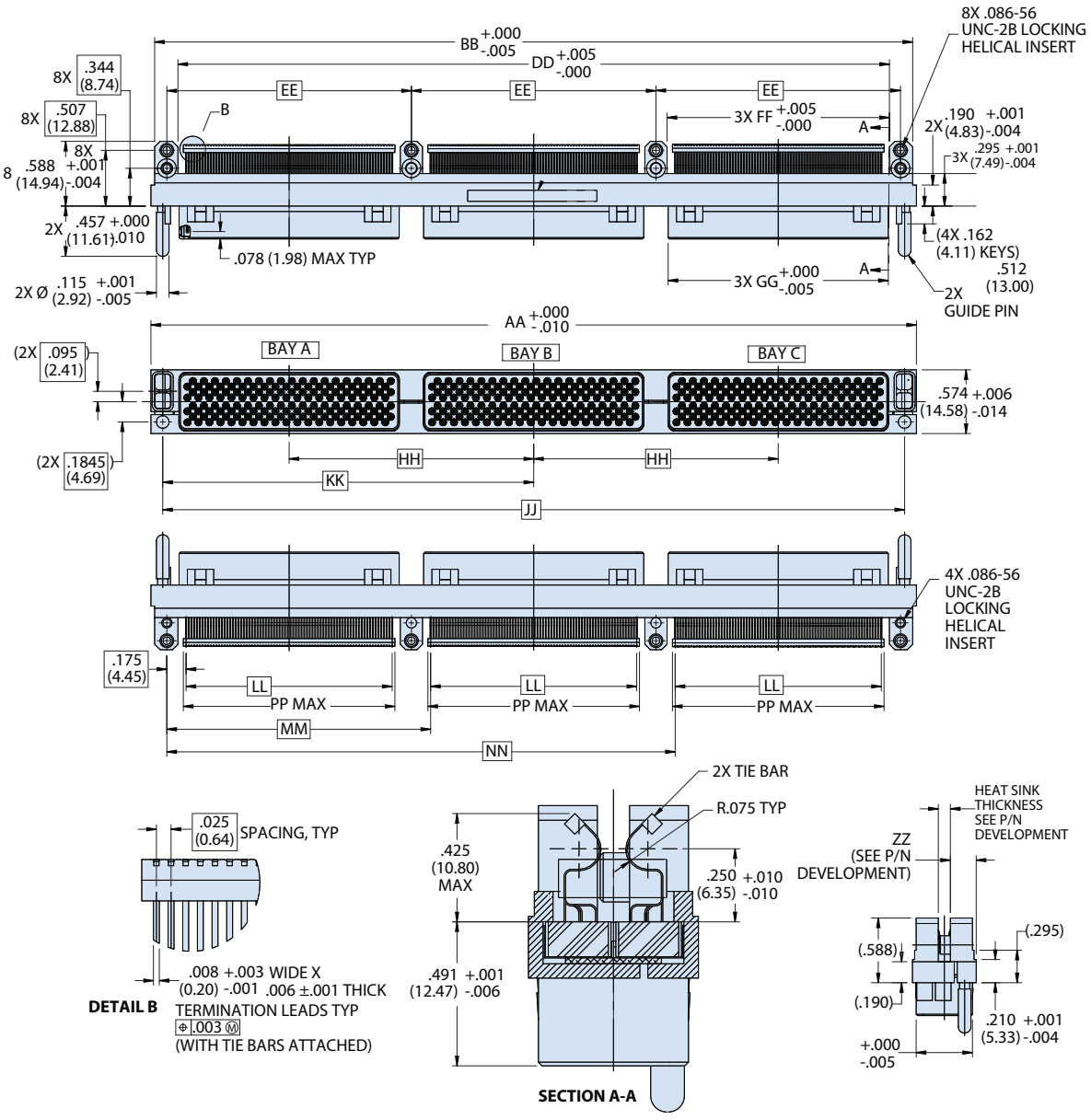


INSERT CONFIGURATIONS TABLE

Connector Size A • Digital Contacts	Connector Size D • Coax and Mixed Arrangements	
A1 80 Digital	**E1** 8 GPPO / 108 Digital	**J1** Dual MT / 108 Digital
Connector Size B • Digital Contacts	**E2** 108 Digital / 8 GPPO	**J2** 108 Digital / Dual MT
B1 108 Digital	**F1** 10 GPPO / 80 Digital	**K1** #22 270 VDC / 108 Digital
B2 108 Digital	**F2** 80 Digital / 10 GPPO	**K2** 108 Digital / #22 270 VDC
Connector Size C • Digital Contacts	**G1** 22 GPPO	**K3** #16 270 VDC / 108 Digital
C1 152 Digital	**G2** 22 GPPO	**K4** 108 Digital / #16 270 VDC
Connector Size D • Digital Contacts	**H1** 6 Power / 108 Digital	**K5** PIS, 40A, #8 / 108 Digital
D1 180 Digital	**H2** 108 Digital / 6 Power	**K6** 108 Digital / PIS, 40A, #8
D2 180 Digital	Refer to Insert Arrangements, High Density, Staggered Grid on page 3 for illustrations of each Insert Config	

Module connector
BR1-005 Staggered-Grid, Triple-Bay, Standard Width

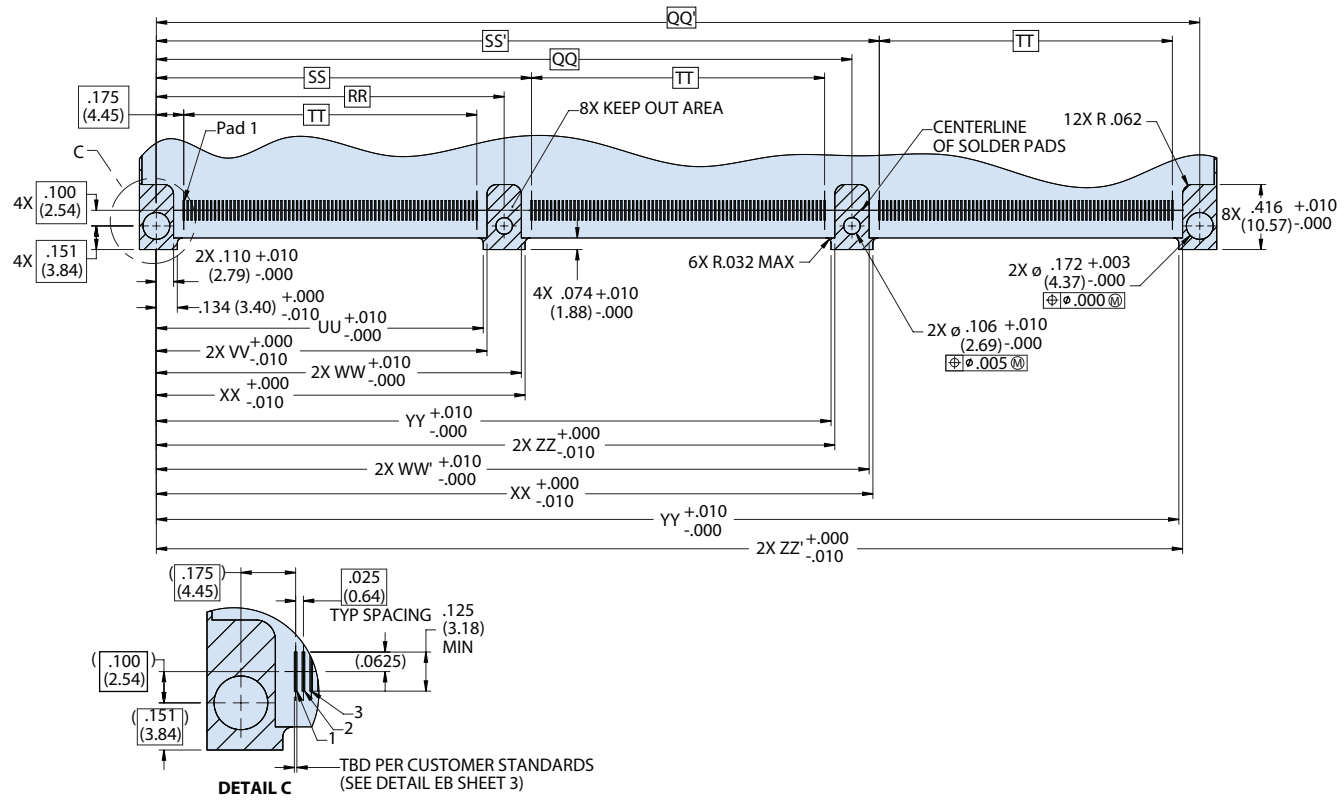
CONNECTOR DIMENSIONS



Connector Size	AA	BB	DD	EE	FF	GG	HH	JJ	KK	LL	MM	NN	PP
BR1-005A	4.265 (108.33)	4.197 (106.60)	3.773 (95.83)	1.325 (33.65)	1.123 (28.52)	1.103 (28.02)	1.325 (33.65)	4.050 (102.87)	2.025 (51.43)	.975 (24.76)	1.500 (38.10)	2.825 (71.76)	1.050 (26.67)
BR1-005B	5.315 (135.00)	5.247 (133.27)	4.823 (122.50)	1.675 (42.55)	1.473 (37.41)	1.453 (36.91)	1.675 (42.55)	5.100 (129.54)	2.550 (64.77)	1.325 (33.65)	1.850 (46.99)	3.525 (89.54)	1.400 (35.56)
BR1-005C	6.965 (176.91)	6.897 (175.18)	6.473 (164.41)	2.225 (56.52)	2.023 (51.38)	2.003 (50.88)	2.225 (56.52)	6.750 (171.45)	3.375 (85.73)	1.875 (47.63)	2.400 (60.96)	4.625 (117.48)	1.950 (49.53)
BR1-005D	8.015 (203.58)	7.947 (201.85)	7.523 (191.08)	2.575 (65.41)	2.373 (60.27)	2.353 (59.77)	2.575 (65.41)	7.800 (198.12)	3.900 (99.06)	2.225 (56.52)	2.750 (69.85)	5.325 (135.26)	2.300 (58.42)

Module connector
BR1-005 Staggered-Grid, Triple-Bay, Standard Width

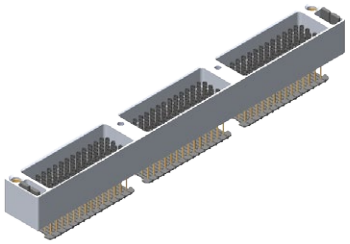
PC BOARD/HEAT SINK INTERFACE DIMENSIONS



Connector Size	QQ	RR	SS	TT	UU	VV	WW	XX	YY	ZZ	QQ′	SS′	WW′	XX′	YY′	ZZ′
BR1-003A	2.650 (67.31)	1.325 (33.65)	1.500 (38.10)	.975 (24.76)	1.191 (30.25)	1.215 (30.86)	1.435 (36.45)	1.459 (37.06)	3.766 (95.66)	3.790 (96.27)	3.975 (100.97)	2.825 (71.76)	2.760 (70.10)	2.784 (70.71)	5.091 (129.31)	5.115 (129.92)
BR1-003B	3.350 (85.09)	1.675 (42.55)	1.850 (46.99)	1.325 (33.65)	1.541 (39.14)	1.565 (39.75)	1.785 (45.34)	1.809 (45.95)	4.116 (104.55)	4.140 (105.16)	5.025 (127.64)	3.525 (89.54)	3.460 (87.88)	3.484 (88.49)	5.791 (147.09)	5.815 (147.70)
BR1-003C	4.450 (113.03)	2.225 (56.52)	2.400 (60.96)	1.875 (47.63)	2.091 (53.11)	2.115 (53.72)	2.335 (59.31)	2.359 (59.92)	4.316 (109.63)	4.340 (110.24)	6.675 (169.55)	4.625 (117.48)	4.560 (115.82)	4.584 (116.43)	6.541 (166.14)	6.565 (166.75)
BR1-003D	5.150 (130.81)	2.575 (65.41)	2.750 (69.85)	2.225 (56.52)	2.441 (62.00)	2.465 (62.61)	2.685 (68.20)	2.709 (68.81)	5.016 (127.41)	5.040 (128.02)	7.725 (196.21)	5.325 (135.26)	5.260 (133.60)	5.284 (134.21)	7.591 (192.81)	7.615 (193.42)

Note: The PC Board/Heat Sink Interface Dimensions table is applicable to all connector sizes with digital insert configs only.
For PC board/heat sink interface dimensions for assigned size d part numbers with mixed insert configs, refer to individual sales drawings to be requested from Glenair.

Backplane connector
BR1-006 Staggered-Grid, Triple-Bay, Standard Width



Triple-bay backplane connector shown with compliant-pin contact organizer

HOW TO ORDER

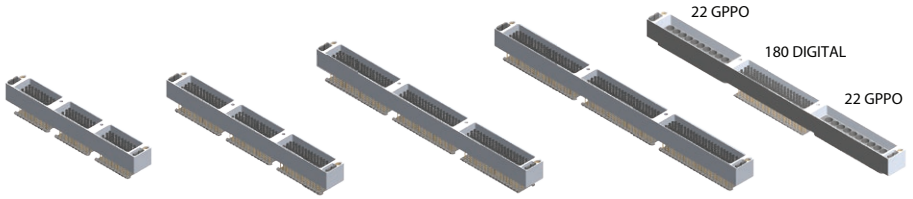
Sample Part Number	BR1-006	X	-XX	YY	ZZ	-X	X

Basic Part Number	LRM backplane connector, staggered-grid, triple-bay, standard width
Connector Size	**A** = 3X 80 Position **B** = 3X 108 Position **C** = 3X 152 Position **D** = 3X 180 Position and Mixed
Insert Config Bay A	**XX** = See Insert Arrangements
Insert Config Bay B	**YY** = See Insert Arrangements
Insert Config Bay C	**ZZ** = See Insert Arrangements
Termination Style	**5** = Compliant
Termination Stickout	**C** = .157±.020 **D** = .217±.020 **E** = .317±.020

NOTES

- Brush contact compliant termination finish is gold plate per ASTM B488 .000050 minimum thick over nickel per QQ-N-290 .000050 minimum thick.
- Marking: "Glenair", "06324", part number and date code. Location optional.
- Four polarizing keys and two retaining rings, shown assembled, are supplied with the connector packaged in a separate plastic bag. Retaining rings are not reusable and must be replaced when re-keying the connector.
- For Size D connector part numbers, with mixed insert configs, request sales drawing from Glenair.
- For mating module connector see drawing BR1-003.

MIXED CONNECTOR EXAMPLE



BR1-006A
80 DIGITAL
INSERT CONFIG

BR1-006B
108 DIGITAL
INSERT CONFIG

BR1-006C
152 DIGITAL
INSERT CONFIG

BR1-006D
180 DIGITAL
INSERT CONFIG

BR1-006D
DIGITAL AND MIXED
INSERT CONFIG

INSERT CONFIGURATIONS TABLE

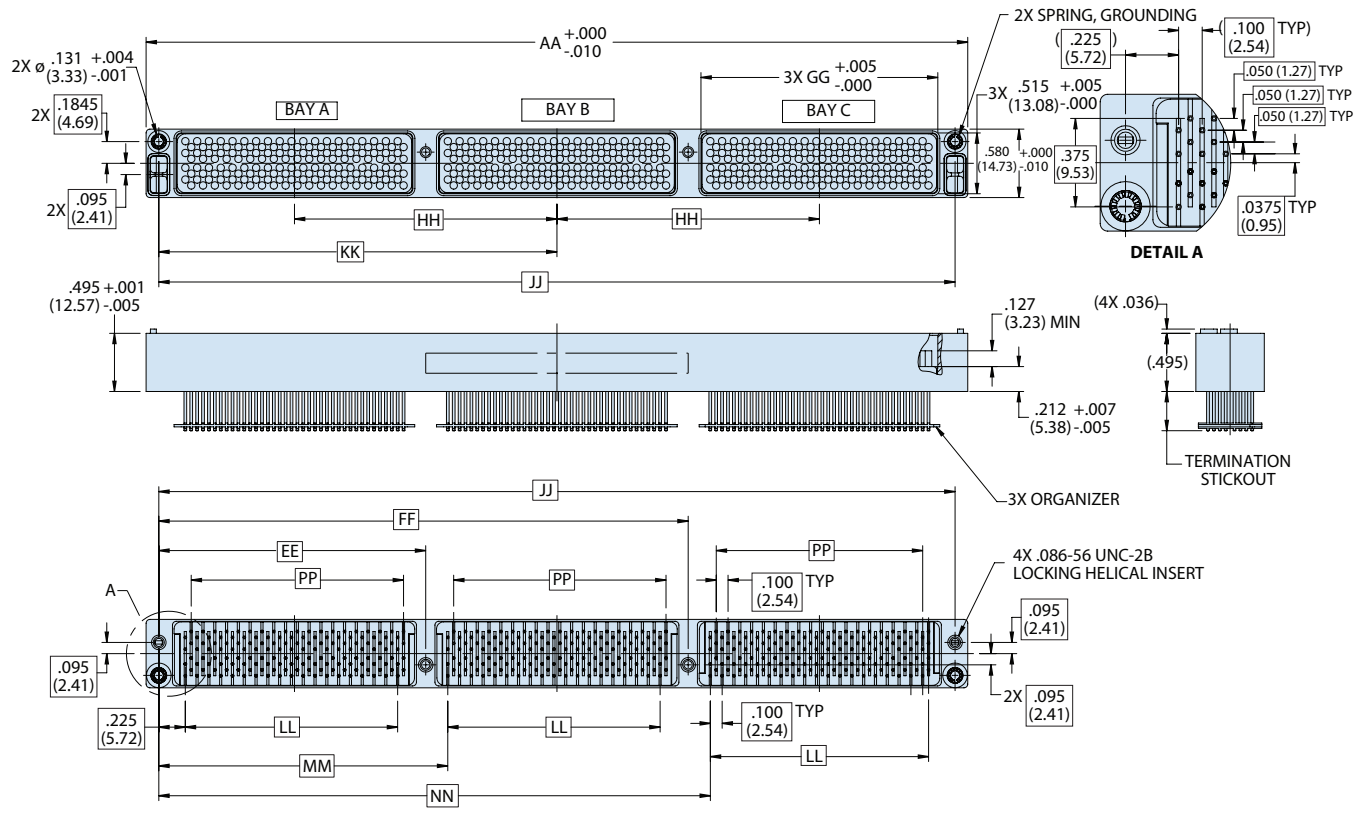
Connector Size A • Digital Contacts	Connector Size D • Coax and Mixed Arrangements	
A1 80 Digital	**E1** 8 GPPO / 108 Digital	**J1** Dual MT / 108 Digital
Connector Size B • Digital Contacts	**E2** 108 Digital / 8 GPPO	**J2** 108 Digital / Dual MT
B1 108 Digital	**F1** 10 GPPO / 80 Digital	**K1** #22 270 VDC / 108 Digital
B2 108 Digital	**F2** 80 Digital / 10 GPPO	**K2** 108 Digital / #22 270 VDC
Connector Size C • Digital Contacts	**G1** 22 GPPO	**K3** #16 270 VDC / 108 Digital
C1 152 Digital	**G2** 22 GPPO	**K4** 108 Digital / #16 270 VDC
Connector Size D • Digital Contacts	**H1** 6 Power / 108 Digital	**K5** PIS, 40A, #8 / 108 Digital
D1 180 Digital	**H2** 108 Digital / 6 Power	**K6** 108 Digital / PIS, 40A, #8
D2 180 Digital	Refer to Insert Arrangements, High Density, Staggered Grid on page 3 for illustrations of each Insert Config	

PLATED THRU HOLE DIMENSIONS

Suggested PTH Dimensions for Compliant Contacts	
Drilled Hole	.0282 -.0296 (0.72 - 0.75)
Copper Underplating Thickness	.0010 - .0020 (0.03 - 0.05)
Tin/Lead Plating Thickness	.0003 -.0006 (0.01 - 0.02)
Finished PTH Diameter	.023 -.027 (0.58 - 0.69)

Backplane connector
BR1-006 Staggered-Grid, Triple-Bay, Standard Width

CONNECTOR DIMENSIONS



Connector Size	AA	EE	FF	GG	HH	JJ	KK	LL	MM	NN	PP
BR1-006A	4.265 (108.33)	1.3625 (34.61)	2.6875 (68.26)	1.107 (28.12)	1.325 (33.65)	4.050 (102.87)	2.025 (51.43)	.950 (24.13)	1.550 (39.37)	2.875 (73.02)	.850 (21.59)
BR1-006B	5.315 (135.00)	1.7125 (43.50)	3.3875 (86.04)	1.457 (37.01)	1.675 (42.55)	5.100 (129.54)	2.550 (64.77)	1.300 (33.02)	1.900 (48.26)	3.575 (90.81)	1.200 (30.48)
BR1-006C	6.965 (176.91)	2.2625 (57.47)	4.4875 (113.98)	2.007 (50.98)	2.225 (56.52)	6.750 (171.45)	3.375 (85.73)	1.850 (46.99)	2.450 (62.23)	4.675 (118.74)	1.750 (44.45)
BR1-006D	8.015 (203.58)	2.6125 (66.36)	5.1875 (131.76)	2.357 (59.87)	2.575 (65.41)	7.800 (198.12)	3.900 (99.06)	2.200 (55.88)	2.800 (71.12)	5.375 (136.53)	2.100 (53.34)

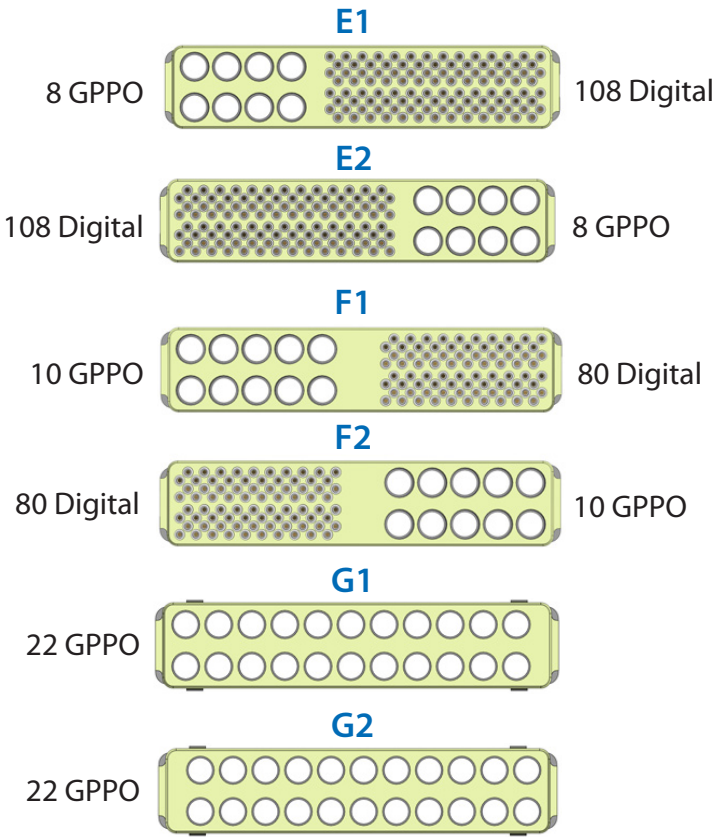
Layouts for Mixed Insert Assemblies

RF MODULES WITH STAGGERED-GRID DIGITAL AND GPPO (SMPM) RF CONTACTS

GPPO Male Catcher's MITT, Snap-in to 0.086 S/R Cable

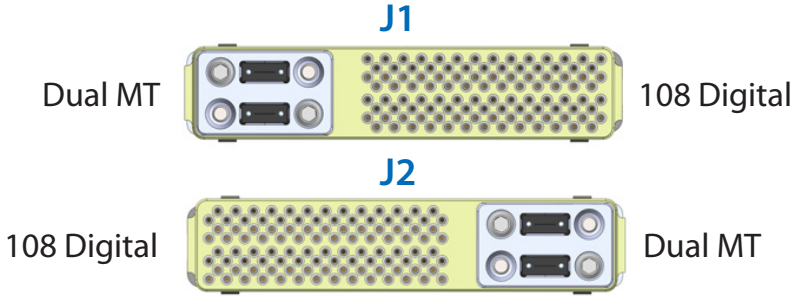
GPPO Female Cable Connector, Snap-in to 0.086 S/R Cable, 0.524 Length

Mixed insert assemblies are available with up to 22 GPPO (SMPM) high-frequency RF connectors. Two basic configurations are supplied: male and female cable connectors for use with .086 semi-rigid cable, as well as male and female module and backplane blind-mate connectors for direct termination to printed wiring board assemblies. Glenair is also able to supply fully-terminated sealed cable assemblies with Glenair 50 Ohm low-loss BluMark RF cable.



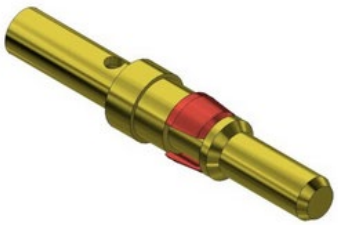
MT FIBER OPTIC

Mixed Insert arrangements are available with 108 digital brush contacts and dual MT ferrules supporting up to 48 lines of fiber.



Layouts for Mixed Insert Assemblies

SIZE #12 NON-MAGNETIC POWER CONTACT

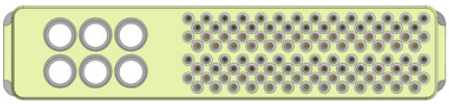


Non-Magnetic size 12 power contact for custom and LRM housings straight plug connector, crimp termination

16, 18, 20 AWG stranded wire

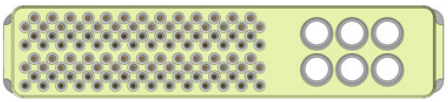
H1

6 Power — 108 Digital



H2

108 Digital — 6 Power

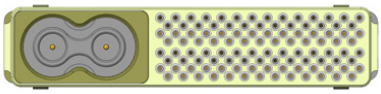


PIS (POWER INPUT SUPPLY) MODULES - 270 VDC

270 VDC module provides corona-free operation at 75,000 ft. Available with size 22 and size 16 contacts. High current, up to 40 AMP, module with size 8 crimp contacts.

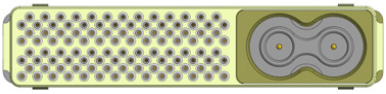
K1

PIS, 270 VDC #22 Contacts — 108 Digital



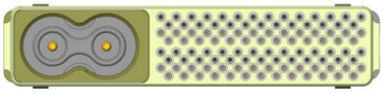
K2

108 Digital — PIS, 270 VDC #22 Contacts



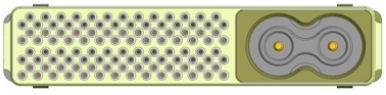
K3

PIS, 270 VDC #16 Contacts — 108 Digital



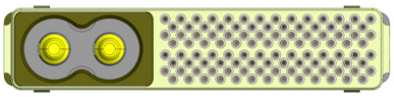
K4

108 Digital — PIS, 270 VDC #16 Contacts



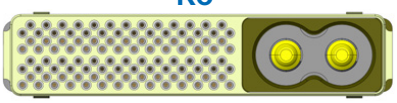
K5

PIS, 40 AMP #8 Contacts — 108 Digital



K6

108 Digital — PIS, 40 AMP #8 Contacts



MISSION-CRITICAL

INTERCONNECT SOLUTIONS

Glenair, Inc.

1211 Air Way • Glendale, California • 91201-2497

Telephone: 818-247-6000 • Fax: 818-500-9912 • sales@glenair.com

www.glenair.com

Glenair East
20 Sterling Drive
Wallingford, CT
06492

Telephone:
203-741-1115
Fax:
203-741-0053
sales@glenair.com

Glenair UK Ltd
40 Lower Oakham Way
Oakham Business Park
Mansfield, Notts
NG18 5BY England

Telephone:
+44-1623-638100
sales@glenair.co.uk

Glenair Microway Systems
7000 North Lawndale Avenue
Lincolnwood, IL
60712

Telephone:
847-679-8833
Fax:
847-679-8849

Glenair Nordic AB
Gustav III:s Boulevard 42
SE-169 27 Solna
Sweden

Telephone:
+46-8-50550000
sales@glenair.se

Glenair GmbH
Schaberweg 28
61348 Bad Homburg
Germany

Telephone:
06172 / 68 16 0
Fax:
06172 / 68 16 90
info@glenair.de

Glenair Iberica S.L.
Av. De Manoteras, 24 – 2º
28050 Madrid
Spain

Telephone:
+34 915 562 687
sales@glenair.es

Glenair Italia S.p.A.
Via Del Lavoro, 7
40057 Quarto Inferiore –
Granarolo dell'Emilia
Bologna, Italy

Telephone:
+39-051-782811
Fax:
+39-051-782259
info@glenair.it

Glenair France SARL
7, Avenue Parmentier
Immeuble Central Parc #2
31200 Toulouse
France

Telephone:
+33-5-34-40-97-40
Fax:
+33-5-61-47-86-10
sales@glenair.fr

Glenair Korea
6-21Tapsil-ro 58beon-gil
Giheung-gu, Yongin-si
Gyeonggi-do
Republic of Korea

Telephone:
+82-07-5067-2437
Fax:
+82-504-375-4549
sales@glenair.kr

Glenair Japan
40F, Nagoya Lucent Tower,
6-1, Ushijima-cho,
Nishi-ku, Nagoya, 451-6040
Japan

Telephone:
+81-52-569-2521
Fax:
+81-52-569-2523
sales@glenair.jp

Printed in U.S.A.