NOTE

All numerical values are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters. Unless otherwise specified, dimensions have a tolerance of ±0.13 [±.005] and angles have a tolerance of ±2°. Figures and illustrations are for identification only and are not drawn to scale.

1. INTRODUCTION

This specification covers the requirements for application of MultiGig signal connectors used to interconnect printed circuit (pc) boards. These connectors consist of interlocking left end and right end signal modules (half or full), center signal modules, and stand–alone modules available in vertical receptacles (backplane application) and right–angle plugs (daughtercard application), and complementary mechanical guide assemblies (available in size 10.8mm or 7.2mm). The guide assembly provides blind mating and misalignment for the connectors. The 10.8mm guide assembly also provides keying and is available with or without an internal contact for electrostatic discharge (ESD) protection.

The modules are capable of being stacked in any configuration within the limitations given in this document to a maximum length of 120 between guide assemblies. These connectors perform at two separate density levels: Tier 1 and Tier 2. The connectors are placed on the pc board by manually–operated or automatic machines.

The modules have 6, 8, or 10 rows of signal contacts with 20.3, 25.4, or 30.5 centerline spacing (profile size). A right–angle plug module having 7 rows with 20.3 centerline spacing is also available for Tier 2 only to accommodate special applications used by the VMEbus International Trade Association (VITA). The signal contacts, along with the ground contacts (in Tier 1 modules only) and ESD contacts (if using the 10.8mm guide assembly with ESD contact) provide sequencing for each *group* of modules.

When corresponding with personnel, use the terminology provided in this specification to facilitate your inquiries for information. Basic terms and features of this product are provided in Figure 1.

Vertical Receptacle (Backplane) Connector

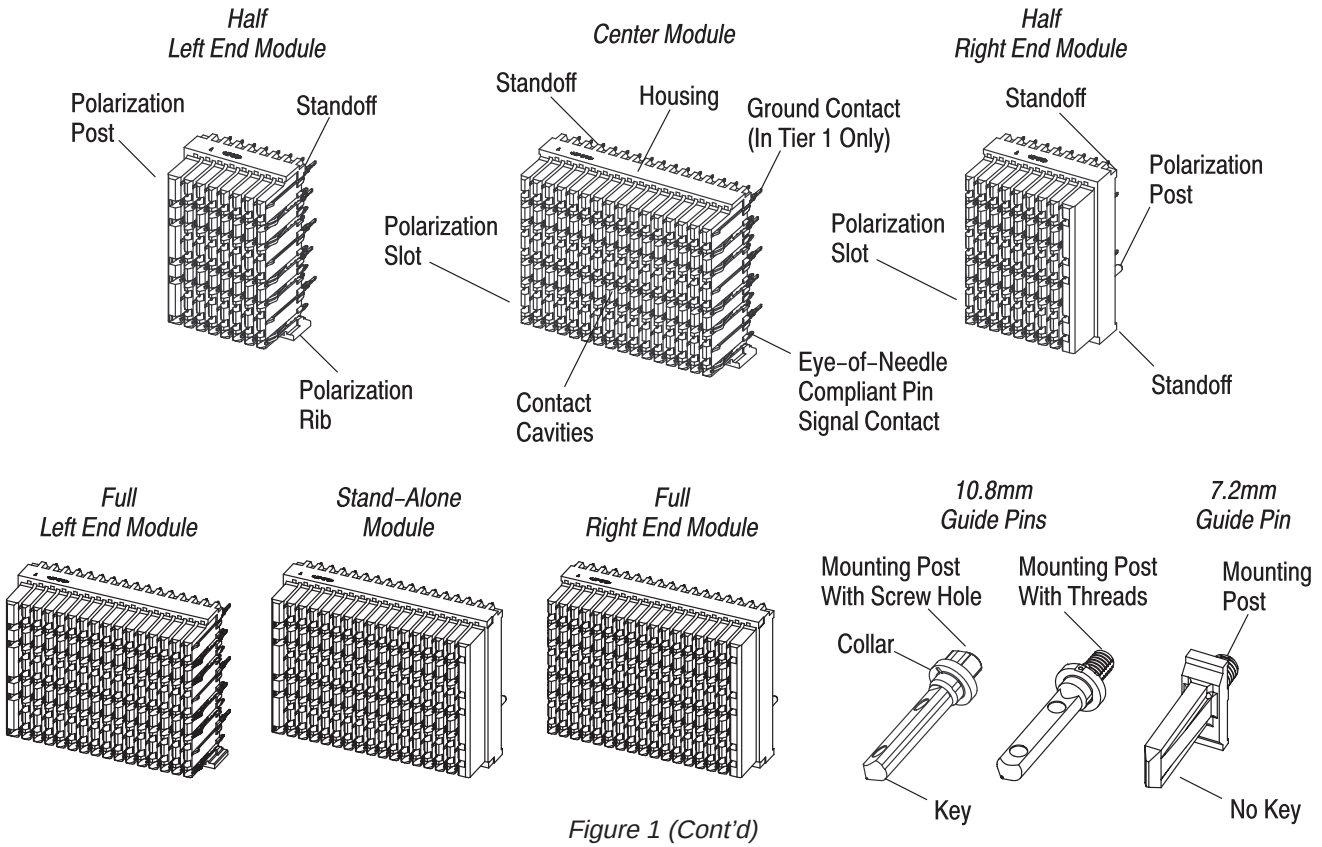


Figure 1 (Cont'd)

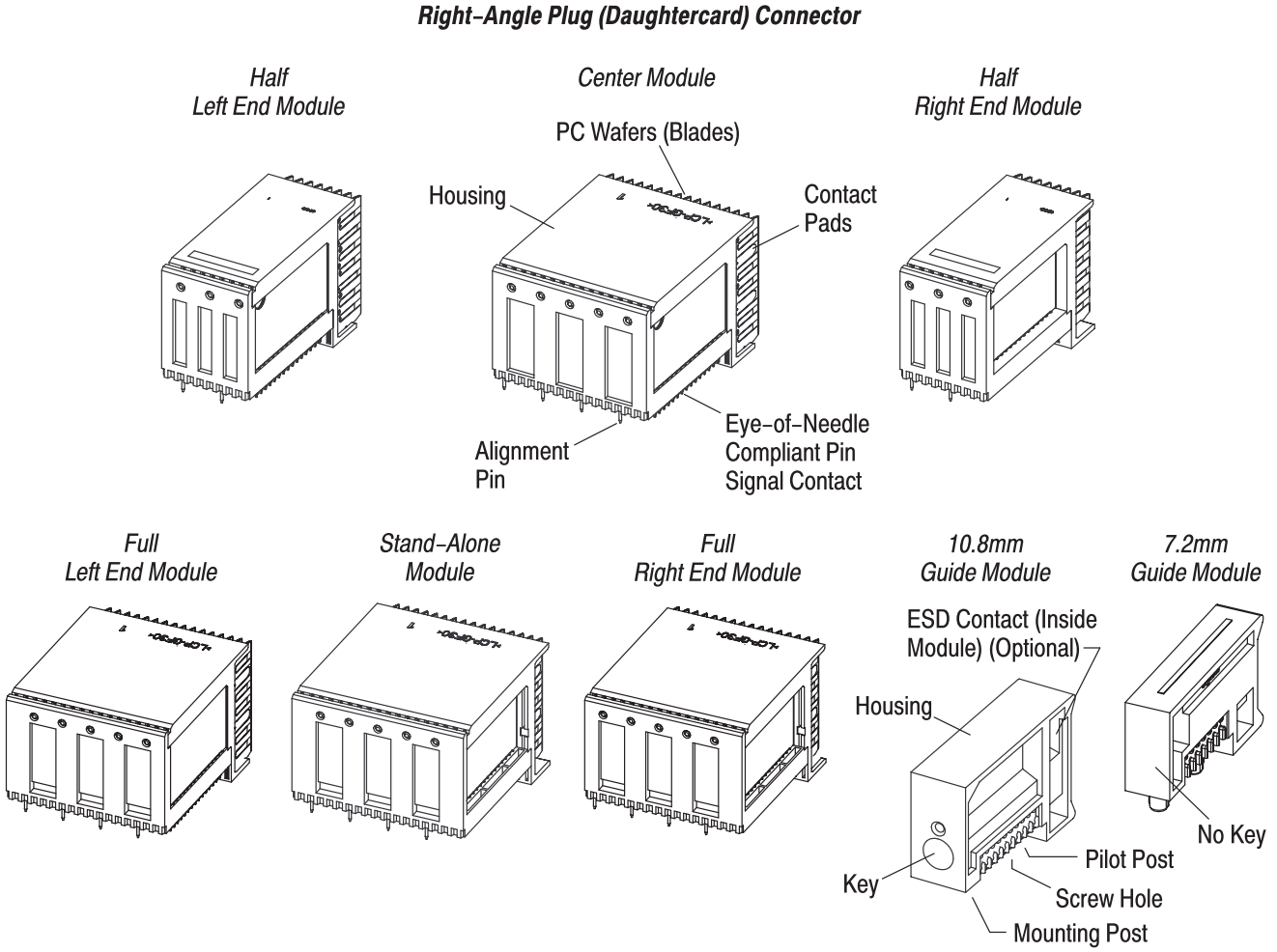


Figure 1 (End)

1.1. Features

A. Signal Modules

Tier 1 and Tier 2 receptacles contain eye–of–needle compliant pin signal contacts; the Tier 1 receptacle also contains ground contacts. Each housing features standoffs for thermal venting, polarization ribs (on end modules) and polarization slots (on the center module) for proper stacking of the modules, and polarization posts to ensure correct orientation on the pc board.

Plugs contain eye–of–needle compliant pin signal contacts and pc wafers (blades). The housing features alignment pins to ensure correct orientation on the pc board.

B. Guide Assemblies

The guide assembly consists of a guide pin (used with receptacles) and a guide module (used with plugs).

The guide pin features a collar and mounting post (having a screw hole or threads) with or without a key. The guide pins are available with various–length mounting posts. The mounting post is used with customer–supplied hardware to attach the guide pin to the pc board. Guide pins must be chosen according to thickness of pc board being used; otherwise, interference with proper mating or damage to system components will occur. Guide pins with keys are available in various keying positions.

The guide module features a housing with or without a key and with a screw hole, mounting post, and pilot post. The mounting post and pilot post are used to position the guide module on the pc board, and the screw hole is used with customer–supplied hardware to attach the module to the pc board. The 10.8mm guide module is available with or without an ESD contact located inside the module.

1.2. Density Levels

Although electrical performance and signal transmission varies between the tiers, the same application requirements apply to both. The density level (tier), defined as a combination of the amount of rows and contacts per module of a given pitch, for each module profile size is provided in Figure 2.

NOTE

For the 7–row right–angle plug module for Tier 2 only, refer to the customer drawing and applicable VITA specifications (available from VITA).

TIER	MODULE PROFILE SIZE (Pitch)					
	20.3 mm		25.4 mm		30.5 mm	
	Rows	Contacts▪	Rows	Contacts▪	Rows	Contacts▪
1	8	128	10	160	NA	NA
2	6	96	8	128	10	160

▪ Per 28.8 (Length of Module)—Count Does Not Include Ground Contacts

Figure 2

1.3. Compatible Modules

MultiGig power modules can be stacked with these modules. Proper module configuration as stated in this document must be followed.

NOTE

Application Specification 114–13062 contains description and application requirements for MultiGig power connectors.

1.4. Organizer

The organizer is a strip of tape that holds a properly configured group of modules. Each module in the group is chosen by the customer. The organizer is only available for same profile–sized (20.3, 25.4, or 30.5 mm) plug modules. The customer has the option of stacking a combination of signal and power modules and guide assemblies up to a length of 150. The organizer allows single–step application of multiple plug modules onto the daughtercard.

2. REFERENCE MATERIAL

2.1. Revision Summary

- Updated document to corporate requirements

2.2. Customer Assistance

Reference Product Base Part Numbers 1410210, 1410215, and 1410147 (7–row right–angle plug module for Tier 2 only) and Product Code E998 are representative of MultiGig signal connectors. Use of these numbers will identify the product line and expedite your inquiries through a service network established to help you obtain product and tooling information. Such information can be obtained through a local Representative or, after purchase, by calling PRODUCT INFORMATION at the number at the bottom of page 1.

2.3. Drawings

Customer Drawings for product part numbers are available from the service network. If there is a conflict between the information contained in the Customer Drawings and this specification or with any other technical documentation supplied, call PRODUCT INFORMATION at the number at the bottom of page 1.

2.4. Specification

Product Specification 108–2072 provides product performance and test information.

Qualification Test Report 501–544 confirms successful qualification of the information in 108–2072.

3. REQUIREMENTS

3.1. Safety

Do not stack product shipping containers so high that the containers buckle or deform.

3.2. Limitations

The connectors are designed to operate in a temperature range of –55° to 105°C [–67° to 221°F].

3.3. Material

The housing is made of liquid crystal polymer (LCP) thermoplastic rated 94 V–0 by Underwriter Laboratories, Inc. (UL). The contacts (signal and ground) are made of phosphor bronze underplated with nickel; the contact areas are plated with gold and the contact tails are plated with tin–lead or tin. Alignment posts are made of brass wire plated with nickel.

The guide assembly (module and pin) is made of zinc alloy die casting plated with chromate.

NOTE

The contact area of all contacts is covered with a protectant to ensure low and stable contact resistance for the life of the system.

3.4. Storage

A. Ultraviolet Light

Prolonged exposure to ultraviolet light may deteriorate the chemical composition used in the module material.

B. Shelf Life

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

C. Chemical Exposure

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

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

3.5. Special Assembly Considerations

A. System Design

The system into which the connectors are installed must support the weight of the drawer when modules are engaged (for example, the drawer must bottom on a built–in stop, not on the modules).

B. Soldering Exposure

If modules are exposed to a soldering process from other components or pc board repair or rework, the following precautions must apply to the modules:

1. It is imperative that the contact interface be kept clean of flux and residue, even when using a “no clean” solder paste.

2. Make certain that temperature limitations are not exceeded during drying: –55° to 105°C [–68° to 221°F]. Excessive temperatures may cause housing degradation.

3. After exposure, a Telcordia Technologies–approved protectant (or lubricant) must be applied to the contact area (gold surface) of the contacts.

NOTE

TELCORDIA GR–1217, “Generic Requirements for Separable Electrical Connectors Used in Telecommunications Hardware” provides industry testing of acceptable lubricants.

3.6. Module Configuration

The following criteria must apply when arranging modules on the pc board. These criteria are reflected in Figure 3.

- together, the half left end module and half right end module make a full module,
  together, the full left end and full right end module make two full modules, and
  together, a full end module with a half end module makes one and a half modules
  (end modules can be separated in a group of modules but each cannot be used without the other in that group)
- the center module is a full module but cannot be used without a full left end or half left end module *and* a full right end or half right end module (combinations of half end or full end modules can be used without a center module)
- the stand–alone module is a full module and must be used by itself
- full modules must be used in a group of modules
- a guide assembly (meaning a guide pin *or* guide module) can be used between end modules, but must be used at each end of a group of signal modules

NOTE

Guide assemblies cannot be used between center modules or a center module and an end module.

- a power module can be used anywhere in a group of signal modules except between center modules or a center module and end module

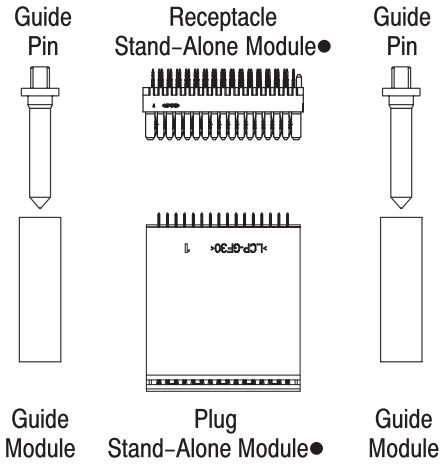
Based on the criteria, the minimum module configuration used must be guide assembly, left end module, right end module, and guide assembly *or* guide assembly, stand–alone module, and guide assembly; the maximum module configuration used must be guide assembly, four full modules (signal or power), and guide assembly. For the latter, the length in a configuration must equal no more than 120 (approximately) between guide assemblies; therefore, selection of the four full modules is dependent on the overall maximum length. Refer to Figure 3.

Note: Top View Shown

10.8mm Guide Assembly Shown
7.2mm Guide Assembly Can Be Used With the Same Configurations

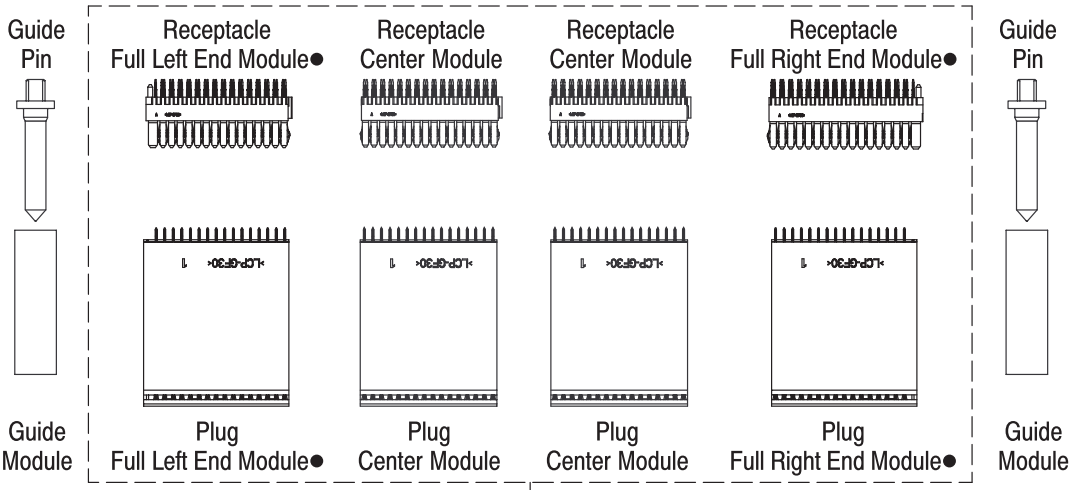
Minimum Module Configuration

Full Module



Recommended Maximum Module Configuration

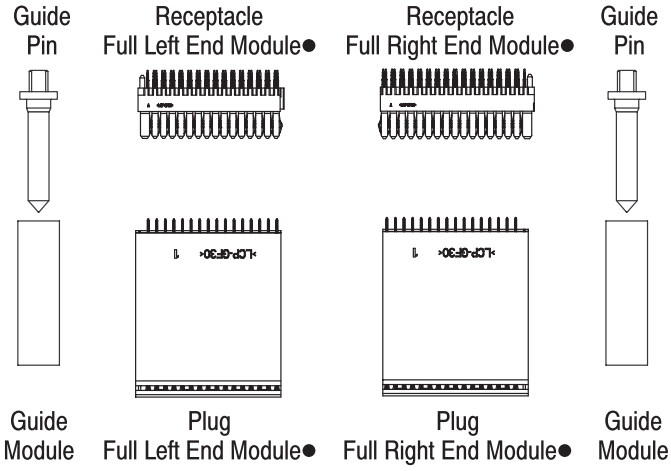
Four Full Modules



Other possible module selection depends on overall maximum length of 120 (approximately) between guide modules.

Possible Module Configuration

Two Full Modules

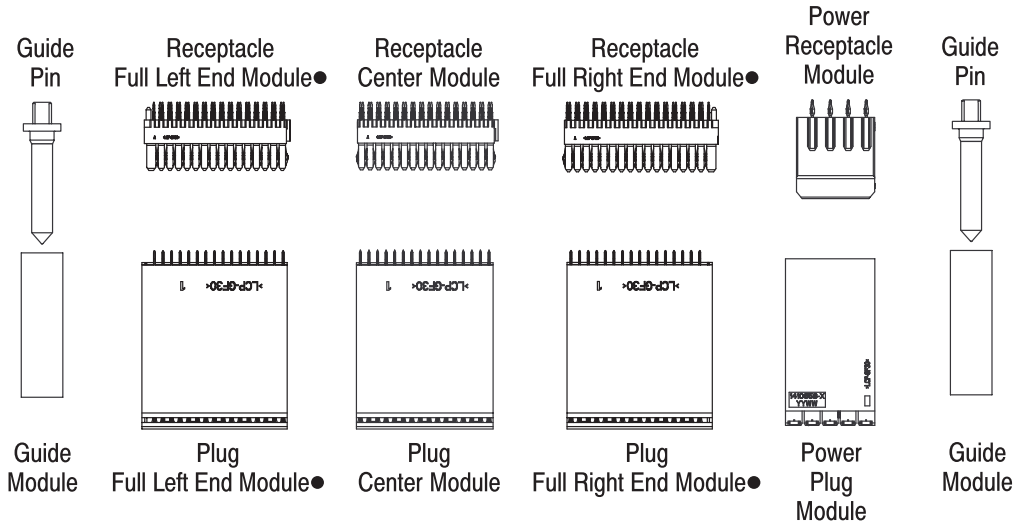


● A Half Left End Module and A Half Right End Module Can Be Used Instead

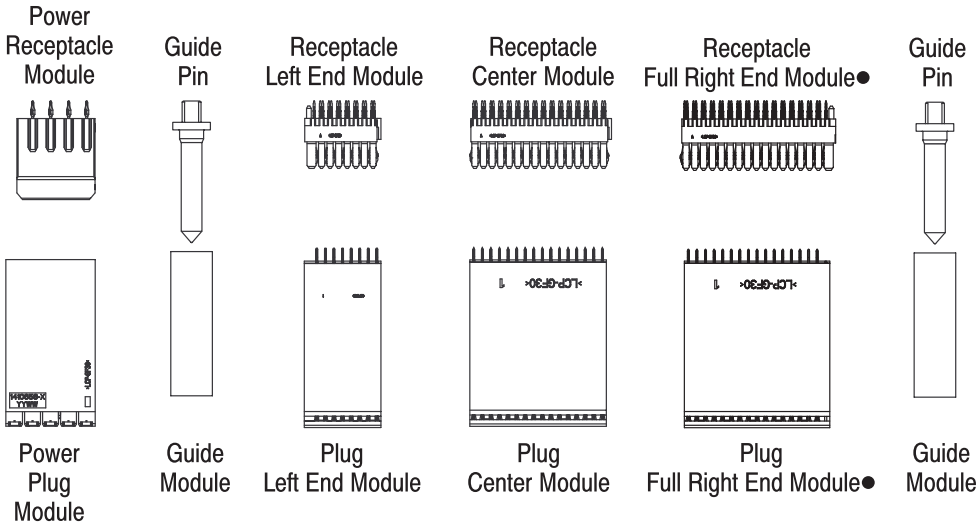
Figure 3 (Cont'd)

Possible Module Configurations Used with Power Modules

Three Signal Modules and One Power Module



Two and One–Half Signal Modules and One Power Module



Four Signal Modules with One Power Module

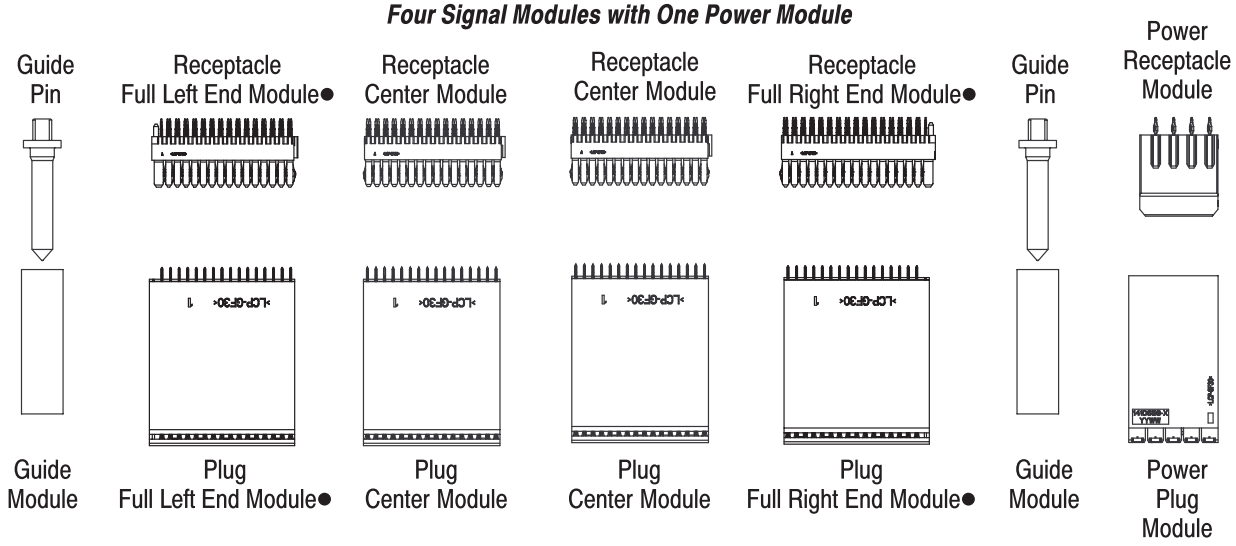


Figure 3 (End)

3.7. PC Board

A. Material and Thickness

The pc board material shall be glass epoxy (FR–4). The pc board thickness shall be a minimum of 1.60.

B. Tolerance

Maximum allowable bow of the pc board shall be 0.03 over the length of any one module.

C. Pads

The pad width must be as stated in Figure 4.

D. Hole Dimensions

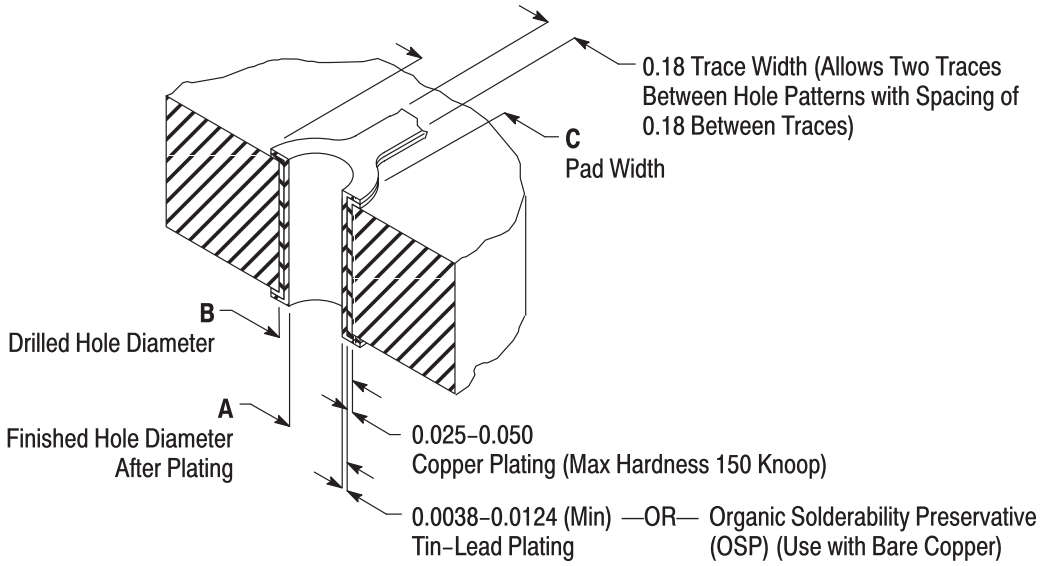
The contact holes must be drilled and plated through to specific dimensions. The plating type and thickness and finished hole size must be as stated to provide unrestricted insertion of the contacts. See Figure 4.

NOTE

Contact PRODUCT INFORMATION at the number at the bottom of page 1 for suitability of other plating types and thicknesses.

Plug module alignment posts and guide assembly hardware can be used with or without plated through holes. These holes must be drilled to the dimensions provided on the customer drawing for the module or guide module or guide pin.

PC Board Contact Hole Dimensions



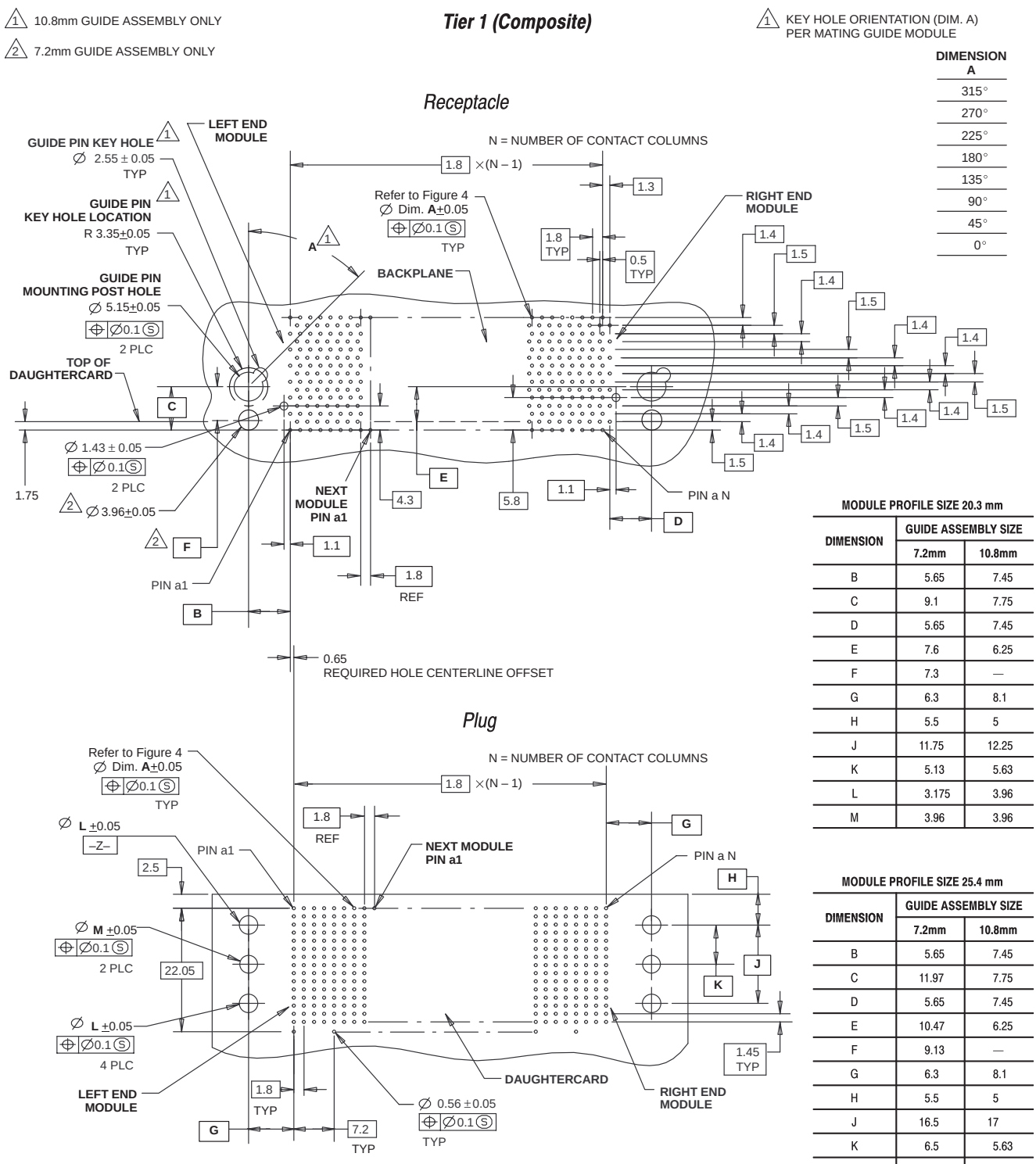
TIER	CONNECTOR	PLATING	DIMENSION			
			A		B	C
			Nominal	Range		
1	Plug and Receptacle	Tin–Lead	0.56	0.51–0.61	0.63–0.67	1.02
		Bare Copper	0.575	0.525–0.625		
2	Receptacle	Tin–Lead	0.56	0.51–0.61	0.63–0.67	1.02
		Bare Copper	0.575	0.525–0.625		
	Plug	Tin–Lead	0.46	0.41–0.51	0.53–0.57	0.92
		Bare Copper	0.475	0.425–0.525		

Figure 4

E. Layout

All holes in the pc board must be precisely located to ensure proper placement and optimum performance. The pc board layout must be designed using the dimensions provided on the customer drawing for the module or guide assembly. Reference *sample* of recommended pc board layouts are shown in Figure 5.

Sample Recommended PC Board Layout
(Connector Side of PC Board)



MODULE PROFILE SIZE 20.3 mm

DIMENSION	GUIDE ASSEMBLY SIZE	
	7.2mm	10.8mm
B	5.65	7.45
C	9.1	7.75
D	5.65	7.45
E	7.6	6.25
F	7.3	—
G	6.3	8.1
H	5.5	5
J	11.75	12.25
K	5.13	5.63
L	3.175	3.96
M	3.96	3.96

MODULE PROFILE SIZE 25.4 mm

DIMENSION	GUIDE ASSEMBLY SIZE	
	7.2mm	10.8mm
B	5.65	7.45
C	11.97	7.75
D	5.65	7.45
E	10.47	6.25
F	9.13	—
G	6.3	8.1
H	5.5	5
J	16.5	17
K	6.5	5.63
L	3.175	3.96
M	3.96	3.96

Figure 5 (Cont'd)

Tier 2 (Composite)

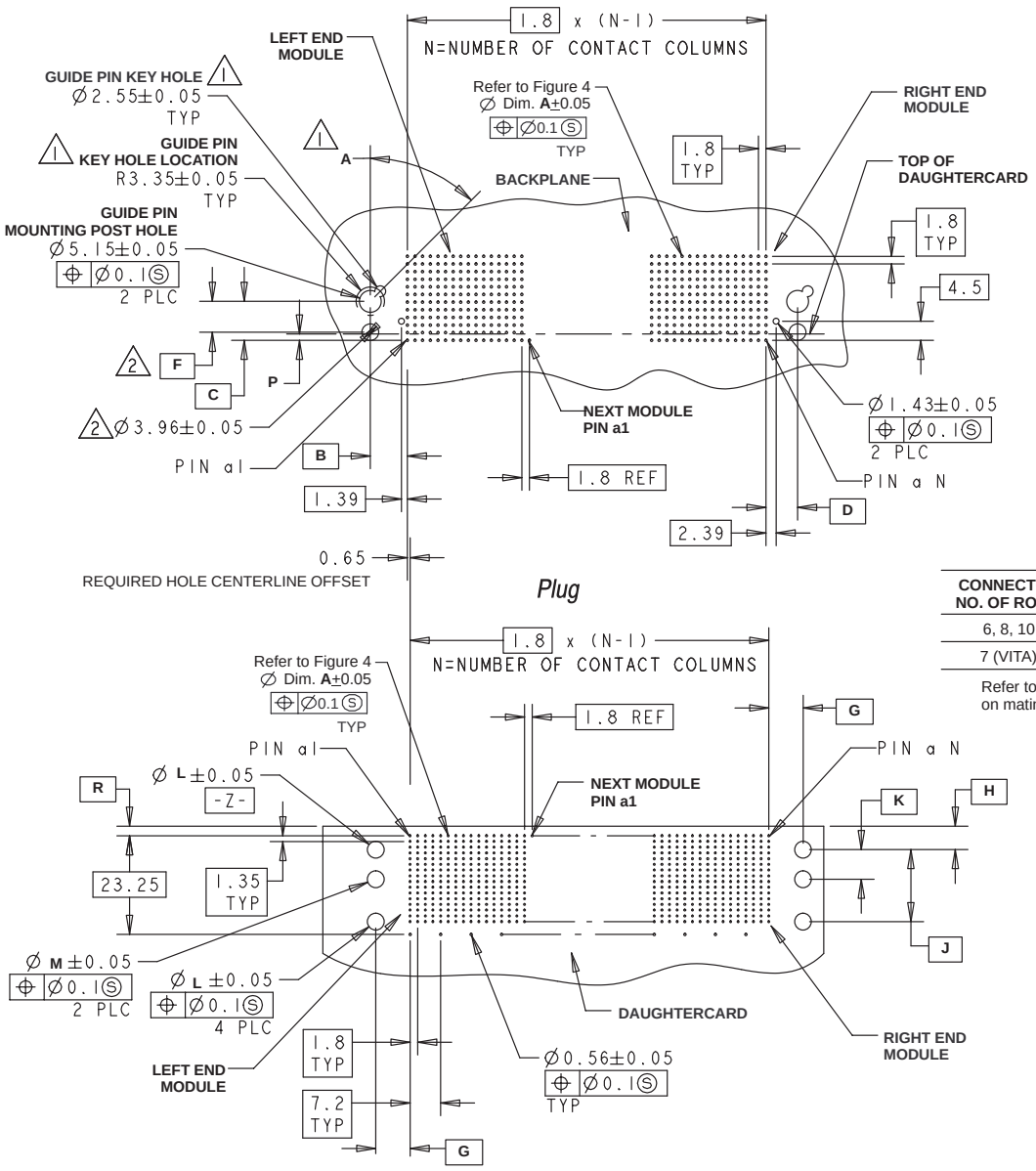
1 10.8mm GUIDE ASSEMBLY ONLY

2 7.2mm GUIDE ASSEMBLY ONLY

1 KEY HOLE ORIENTATION (DIM. A) PER MATING GUIDE MODULE

DIMENSION A
315°
270°
225°
180°
135°
90°
45°
0°

Receptacle



Plug

CONNECTOR NO. OF ROWS	DIMENSION R
6, 8, 10	2.25
7 (VITA)	1.50

Refer to Figure 12 for impact on mating height.

DIMENSION	MODULE PROFILE SIZE					
	20.3mm for GUIDE ASSEMBLY SIZE		25.4mm for GUIDE ASSEMBLY SIZE		30.5mm for GUIDE ASSEMBLY SIZE	
	7.2mm	10.8mm	7.2mm	10.8mm	7.2mm	10.8mm
B	5.65	7.45	5.65	7.45	5.65	7.45
C	9.05	7.7	8.85	7.5	8.85	7.45
D	6.95	8.75	6.95	8.75	6.95	8.75
F	7.3	—	9.13	—	7.3	—
G	6.3	8.1	6.3	8.1	6.3	8.1
H	5.5	5	5.5	5	5.5	5
J	11.75	12.25	16.5	17	11.75	17
K	5.13	5.63	6.5	5.63	5.13	5.63
L	3.175	3.96	3.175	3.96	3.175	3.96
M	3.96	3.96	3.96	3.96	3.96	3.96
P	1.7	1.7	1.5	1.5	1.5	1.5

Figure 5 (End)

3.8. Module and Guide Assembly Placement

A. Spacing

Care must be used to avoid interference between adjacent connectors and other components. The allowable distance between adjacent connectors to ensure proper mating is provided in Figure 6.

NOTE

Application Specification 114–13062 provides information concerning spacing in relation to power modules. For the 7–row right–angle plug module for Tier 2 only, refer to the customer drawing and applicable VITA specifications (available from VITA).

B. Polarization

Polarization for stacking receptacle modules on the pc board is provided by fitting the module polarization rib into the polarization slot of the adjacent module.

Polarization for stacking plug modules on the pc board is provided by matching plug module alignment pins to appropriate pc board holes.

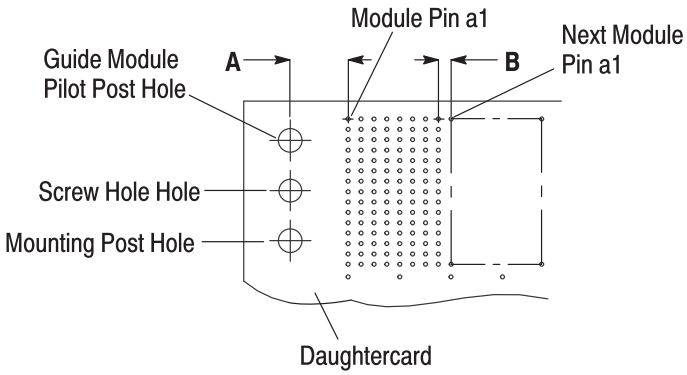
C. Registration

CAUTION

Modules should be handled only by the housing to avoid deformation, contamination, or damage to the contacts.

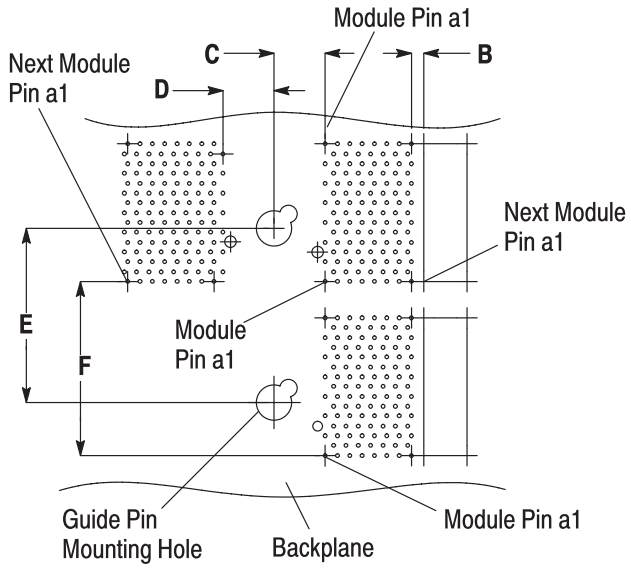
The module number one position (Pin a1) must be aligned with the number one position pc board hole.

Plug Spacing — Tier 1 and Tier 2



Note: Connectors Shown with 10.8mm Guide Assembly

Receptacle Spacing — Tier 1



Receptacle Spacing — Tier 2

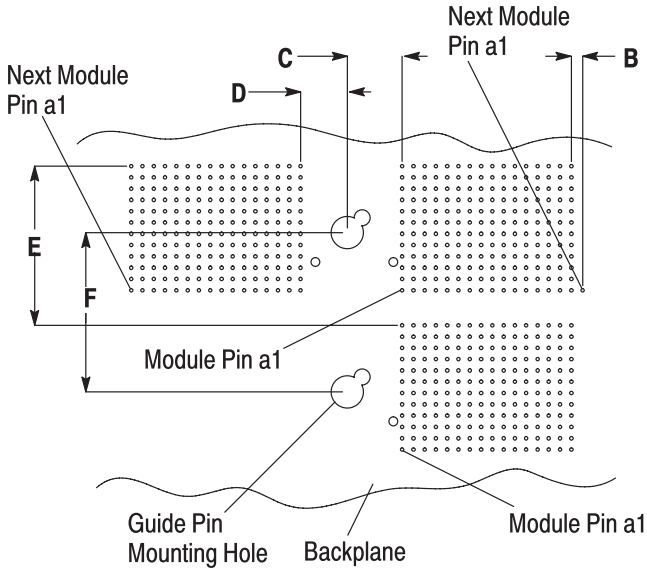


Figure 6 (Cont'd)

DIMENSION	MEASUREMENT	TIER	End-to-End Spacing For Module Profile Size			Side-to-Side Spacing For Module Profile Size		
			20.3mm	25.4mm	30.5mm	20.3mm	25.4mm	30.5mm
A	10.8mm Guide Module Pilot Hole Centerline to Left End▪ Module Pin a1 Centerline or Right End▪ Module Last Pin Row Centerline	1, 2	8.1	8.1	8.1	—	—	—
	7.2mm Guide Module Pilot Hole Centerline to Left End▪ Module Pin a1 Centerline or Right End▪ Module Last Pin Row Centerline	1, 2	6.3	6.3	6.3	—	—	—
B	Center or Left End Module First or Last Pin Row Centerline to Adjacent Module Nearest Pin Row Centerline	1, 2	1.8	1.8	1.8	—	—	—
	Center Module Pin a1 Centerline to Right End▪, or Center Module Pin a1 Centerline	1, 2	28.8	28.8	28.8	—	—	—
C	Left End▪ Module Pin a1 Centerline to 10.8mm Guide Pin Pilot Hole Centerline	1	7.45	7.45	—	—	—	—
		2	7.45	7.45	7.45			
	Left End▪ Module Pin a1 Centerline to 7.2mm Guide Pin Pilot Hole Centerline	1	5.65	5.65	—	—	—	—
		2	5.65	5.65	5.65			
D	Right End▪ Module Nearest Pin Centerline to 10.8mm Guide Pin Pilot Hole Centerline	1	7.45	7.45	—	—	—	—
		2	8.75	8.75	8.75			
	Right End▪ Module Nearest Pin Centerline to 7.2mm Guide Pin Pilot Hole Centerline	1	5.65	5.65	—	—	—	—
		2	6.95	6.95	6.95			
E	Left End▪, Right End▪, or Center Module Pin a1 Centerline to Left End▪, Right End▪, or Center Module Pin a1 Centerline	—	—	—	—	20.32	25.4	30.48
F	Guide Pin Pilot Hole Centerline to Guide Pin Pilot Hole Centerline	—	—	—	—	20.32	25.4	30.48

▪ Applies to Half and Full Modules

Figure 6 (End)

When placing modules on the board, contacts, alignment pins (plugs only), and polarization posts (receptacle end modules only) must be aligned and started into the matching holes before seating the module onto the board. The contacts and alignment posts must be inserted simultaneously to prevent twisting or bending of components.

The guide pin key must be aligned with the key hole orientation on the pc board. The key hole orientation is specified on the customer drawing for the specific guide pin.

The guide module pilot post, mounting post, and screw hole must be aligned with the appropriate holes in the pc board.

D. Seating

The module maximum insertion force per contact is 31 N [7 lb–force]. The force required to seat the module onto the pc board can be calculated by:

Number of module contacts × maximum insertion force per contact = module insertion force

The module housing (plugs) or standoffs (receptacles) must be seated on the pc board not exceeding the dimension shown in Figure 7.

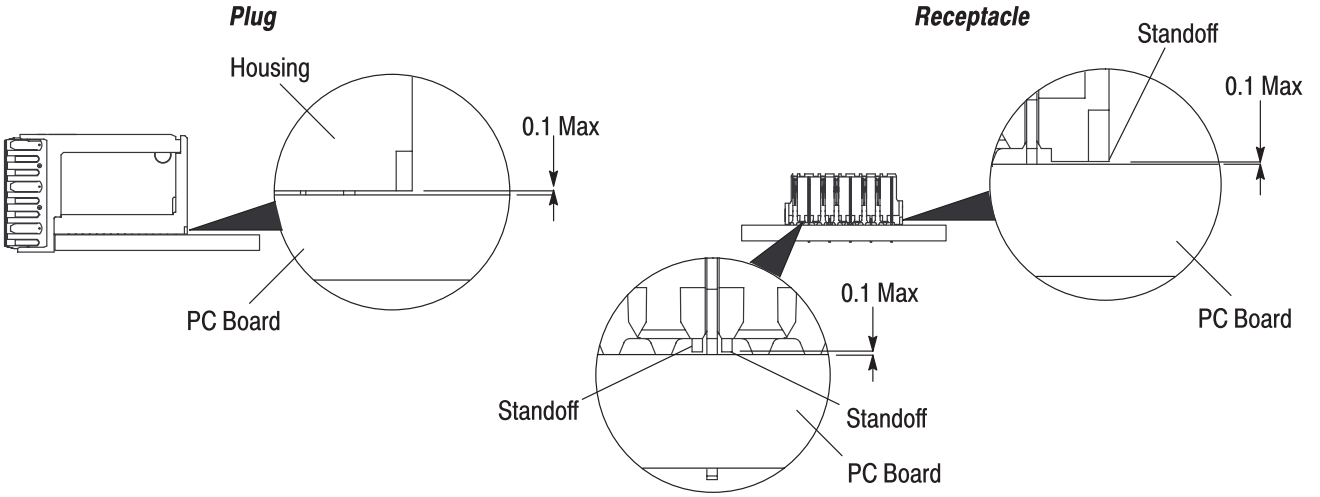


Figure 7

E. Mounting Hardware

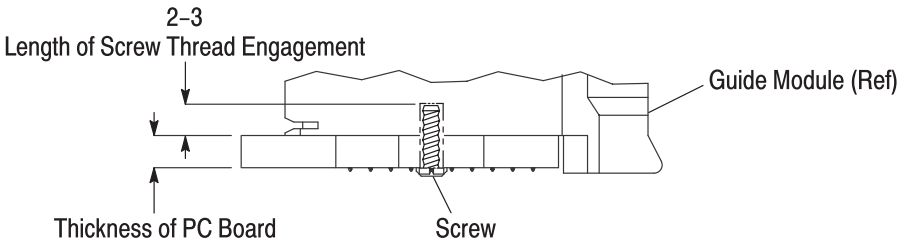
Guide assemblies must be mounted to the pc board using commercially–available hardware. The exposed part of the hardware must not interfere with connector mating. The type of hardware and recommended length of the screw is given in Figure 8.

The recommended torque for hardware is 0.51 N–m [4.5 in.–lbs].

CAUTION

Using hardware other than specified may cause damage to system components.

Recommended Length of Screw



TYPE OF HARDWARE			
10.8mm GUIDE PIN		7.2mm GUIDE PIN	GUIDE MODULE
With Screw Hole	With Threads		
M3.5 Screw	M5 Nut	M5 Nut	M3 Screw

Figure 8

3.9. Checking Installed Module

After installation of the modules, the following requirements must apply.

1. The plug housing and all receptacle standoffs are fully seated on the pc board.
2. The housing of the guide module and the collar of the guide pin are fully seated on the pc board.
3. All contacts are straight.
4. The widest section of each contact is inside the pc board hole.
5. Each guide assembly mounting hardware is secure.

3.10. Mating and Unmating

NOTE

Modules will mate only with the appropriate modules; for example, a size 25.4mm plug will only mate with a size 25.4mm receptacle.

A. Keying

When mating modules, the guide assemblies ensure positive mating of modules. Interaction of the guide pin and guide module provides error–free mating and prevents damage to the housings and contacts. Guide pins must be in the compatible keying position for the guide modules.

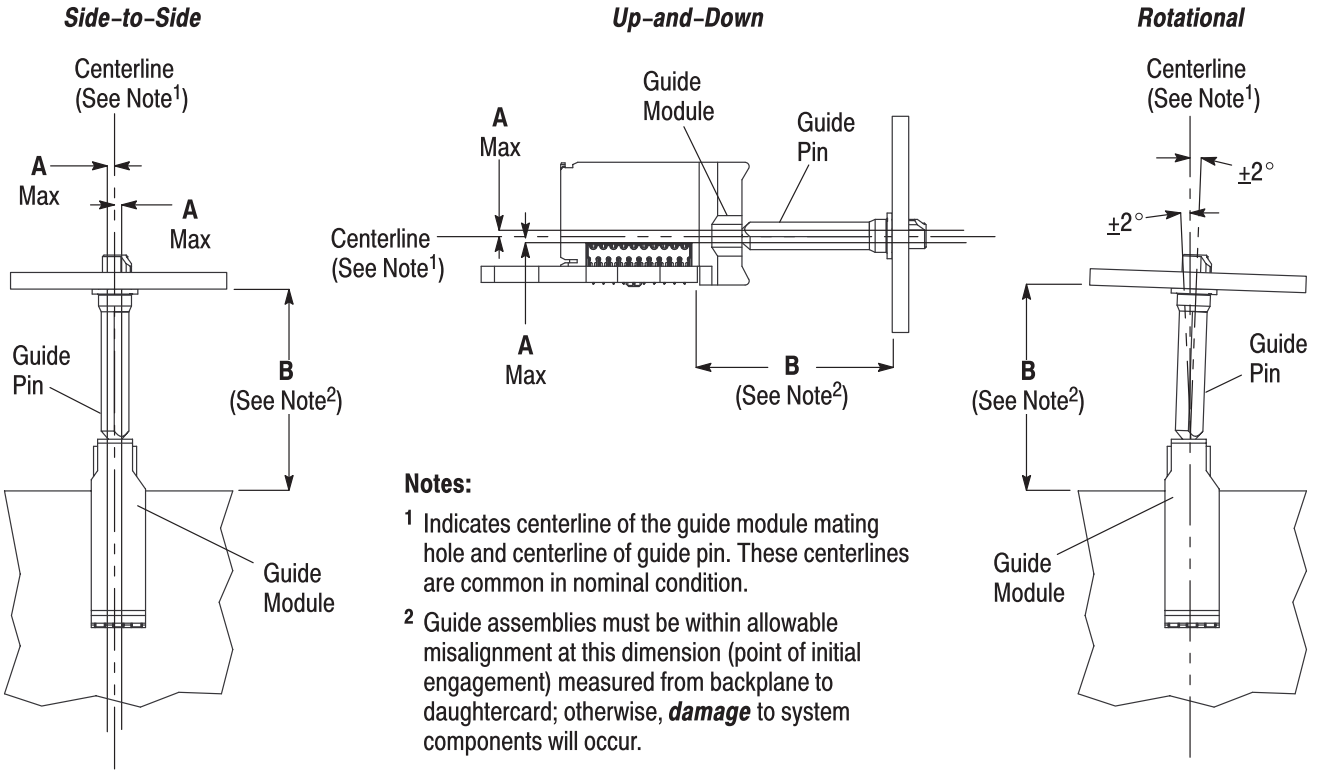
These modules require mechanical assistance for mating and unmating. The force applied to the modules must only take place *after* the guide pin engages the guide module with the assurance that the keys are properly matched. Guide assemblies are designed to prevent connectors with improperly matched keys from mating beyond this point of initial engagement (Mating Sequence 1), *except* when any force greater than 145 N [32 lb–force] is used. Mating Sequence 1 is described in Paragraph 3.10,C.

CAUTION

Forcing modules to mate with improperly matched keys will cause damage to system components.

B. Misalignment

When mating modules, the guide assemblies allow blind mating with side–to–side, up–and–down, and rotational misalignment to the dimensions given in Figure 9.



Notes:

1 Indicates centerline of the guide module mating hole and centerline of guide pin. These centerlines are common in nominal condition.

2 Guide assemblies must be within allowable misalignment at this dimension (point of initial engagement) measured from backplane to daughtercard; otherwise, ***damage*** to system components will occur.

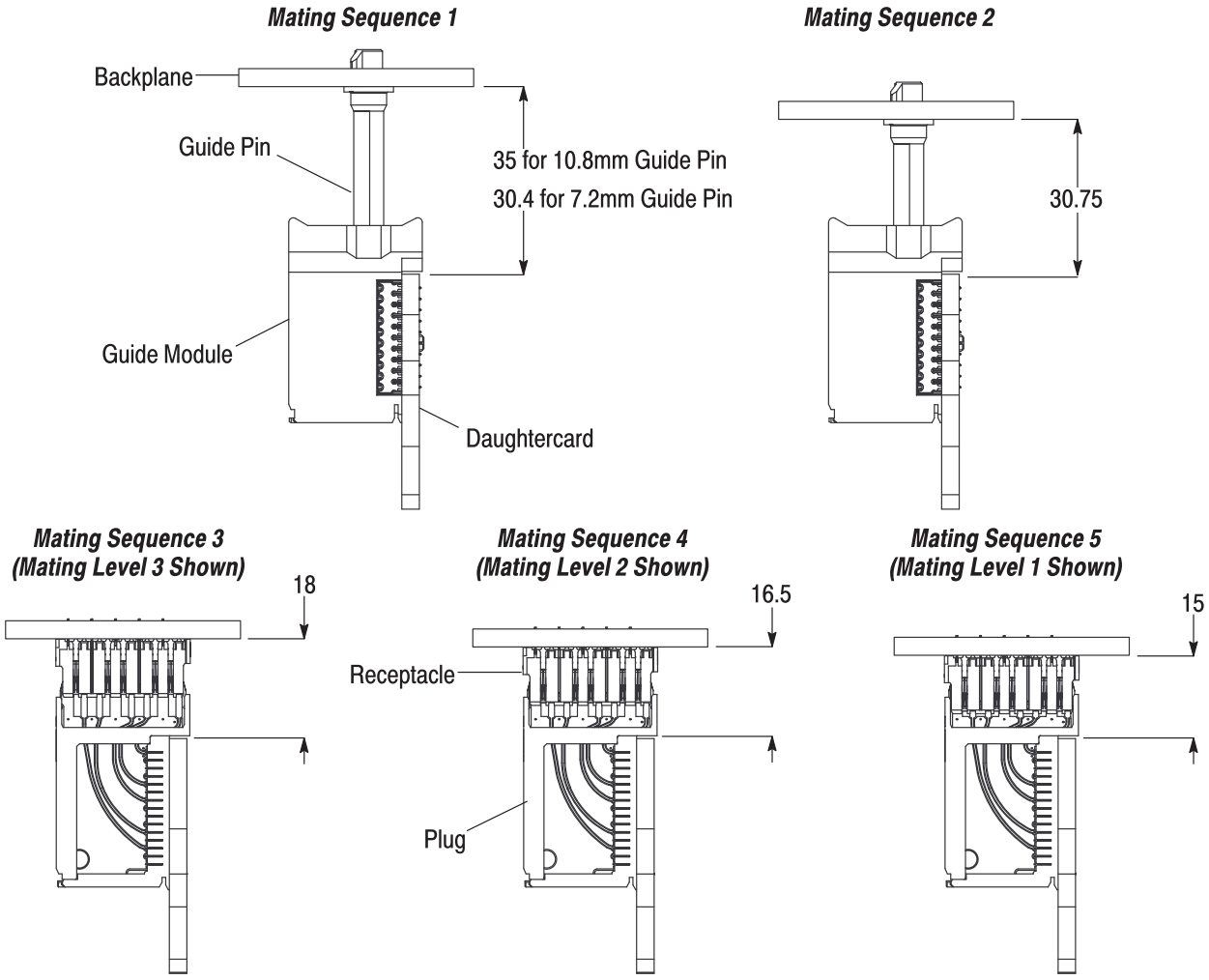
GUIDE ASSEMBLY SIZE	DIMENSION	
	A (Max)	B
10.8mm	3.5	40.75
7.2mm	2.5	34.08

Figure 9

C. Sequencing

These modules provide a maximum of five mating sequences. In addition, signal modules provide three mating levels each being a distance of 1.5 apart. The distance, measured from backplane to daughtercard, depends on the mating sequence. The distance at each mating sequence is given in Figure 10.

Note: Connectors Shown with 10.8mm Guide Assembly



MATING SEQUENCE●	DESCRIPTION
1	Guide Pin (Receptacle) Engages Guide Module (Plug) **Important:** Engagement includes guide pin key properly oriented to guide module key. Damage to system components will occur if modules with improperly matched keys are forced beyond this dimension.
2	ESD Contact Inside Guide Module (Optional for 10.8mm Guide Module Only) Engages Guide Pin
3	CUSTOMER DETERMINED Ground Contacts Engage —OR— Ground Contacts and Signal Contacts Mating Level 3 Engage
4	Signal Contacts Mating Level 2 Engage
5	Signal Contacts Mating Level 1 Engage

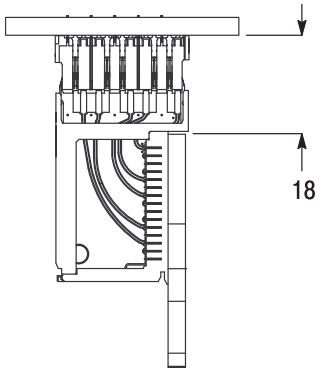
● Without Power Modules (Mating Sequence Changes When Power Modules Are in the Group)

Figure 10

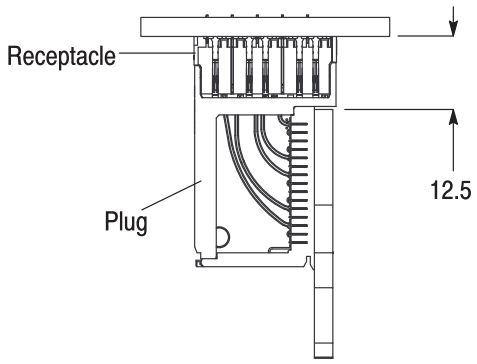
D. Wipe Length

Wipe length for these modules is defined as that portion (length) of the mating contacts that touches (wipes) from the point of engagement to the point of being fully mated. The wipe length depends on the contact (signal or ground) and mating sequence of each *individual* contact. The minimum wipe length according to mating sequence for signal and ground contacts is given in Figure 11.

Mating Modules at Point of Engagement for Wipe Length



Modules Fully Mated



CONTACT	STARTING AT MATING SEQUENCE▪	WIPE LENGTH (Min)
Signal	5	2.5
	4	4
	3	5.5
Ground	3	5.5

▪ Figure 10 Describes Each Mating Sequence At Each Tier

Figure 11

E. Mating Dimension

The required dimension between mated modules to ensure full mating of modules is provided in Figure 12.

F. Mating and Unmating Forces

The maximum force required for mating modules is 0.75 N [2.7 oz–force] per contact.

The minimum force required for unmating modules is 0.15 N [.54 oz–force] per contact.

3.11. Removal

A. Guide Assembly

The customer supplied hardware must be removed from the guide assembly. Guide modules must be pushed out from the *back* of the pc board (the end of a pen, for example, can be inserted into the pc board pilot hole to push the module off of the pc board, taking care not to mar the pc board).

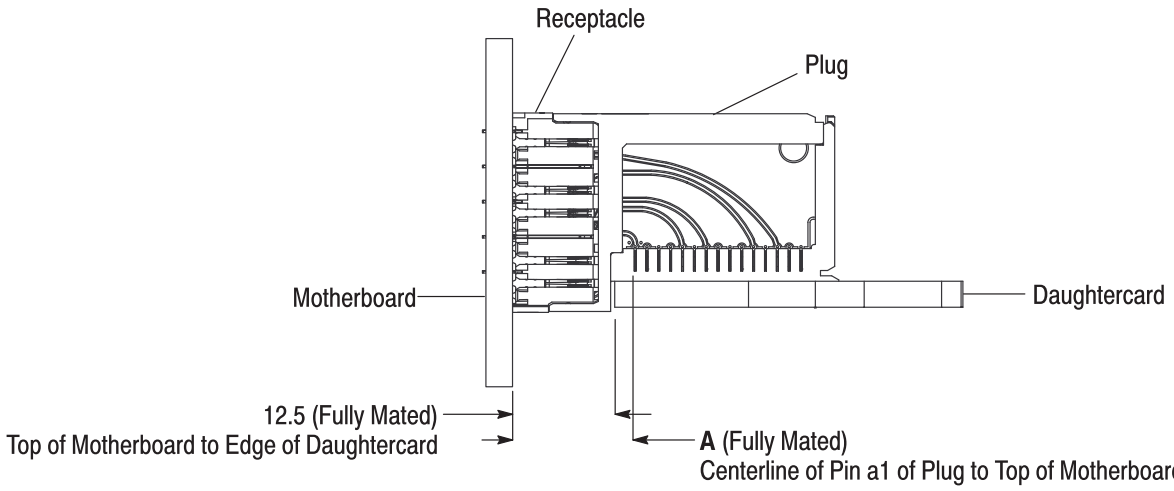
B. Left End and Right End (Includes Half and Full) Modules and Center Module

Modules must be removed from the pc board using a pc board support and the appropriate extraction tool fitted with the proper plate (push pin pattern must match module pc board layout).

The force required to remove the modules from the pc board must be no more than the maximum insertion force and more than the minimum retention force for the module. The minimum retention force for the module is 13.35 N [3 lb–force] per contact. The minimum force required to remove a module from the pc board can be calculated by:

Number of module contacts $\times$ minimum retention force per contact = module minimum removal force

Mating Dimensions



CONNECTOR NO. OF ROWS	DIMENSION A	
	TIER 1	TIER 2
6, 8, 10	15	14.75
7 (VITA)	—	14

Figure 12

C. Individual Module from Organizer

The tape must be separated from all sides of the module to be removed (a utility knife can be used to slice the tape, taking care not to mar the pc board). The module must be removed from the pc board in accordance with Paragraph 3.11, B.

3.12. Repair

Damaged or defective modules must not be used. Contacts cannot be removed from modules.

4. QUALIFICATION

No qualifying support for MultiGig signal connectors was defined at the time of publication of this document.

5. TOOLING

Tooling part numbers and instructional material packaged with the tooling are shown in Figure 13.

NOTE

Modified designs and additional tooling concepts may be available to meet other application requirements. For assistance in setting up prototype and production line equipment, call the TOOLING ASSISTANCE CENTER at the number at the bottom of page 1.

5.1. Application Tooling

The application tooling used to seat the modules (except guide assemblies) must provide sufficient amount of downward force to drive the tooling to insert the contacts into the pc board holes.

A. Manual Arbor Frame

Arbor frames are manually–operated and actuated by a handle. They are designed to be bench mounted and provide for low to medium volume production.

B. Power Unit

These power units are automatic, stand alone machines provide for high volume, heavy duty production requirements.

NOTE

For more information on these power units, call the TOOLING ASSISTANCE CENTER at the number at the bottom of page 1.

5.2. Push Bar (Flat Rock)

Commercially available bar stock with a flat surface sized to the width and length of the module must be used with the manual arbor frame.

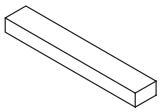
5.3. PC Board Support

For machine placement of modules (except guide assemblies), a pc board support must be used to prevent bowing of the pc board during the placement of modules on the board. The board support must have a flat surface with holes or a channel large enough and deep enough to receive any components protruding from the housing. The pc board must be secured to the pc board support to prevent movement of the board during seating.

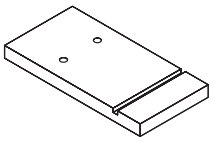
The board support must also be used when removing modules (except guide assemblies) from the pc board. The pc board support should be secured to a flat and stable surface.

5.4. Extraction Tool

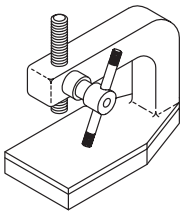
An extraction tool must be used to remove a module (except guide assemblies) from the pc board without damage to the pc board, or adjacent modules or components. Call PRODUCT INFORMATION at the number at the bottom of page 1 for information on extraction tools.



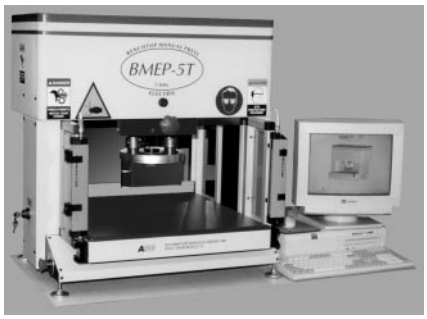
Push Bar
(Customer Supplied)



PC Board Support
(Must Be Custom Made)
(Refer to 408–6927)



Typical Manual Arbor Frame
(Commercially Available)



BMEP–5T Benchtop
Manual Press 1585696–1
(No Document Available)

MEP–6T Manual Press
1585699–1
(No Document Available)

AP3 Main Assembly
1585280–1
(No Document Available)

Figure 13

6. VISUAL AID

The illustration below shows a typical application of MultiGig signal connectors. 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.

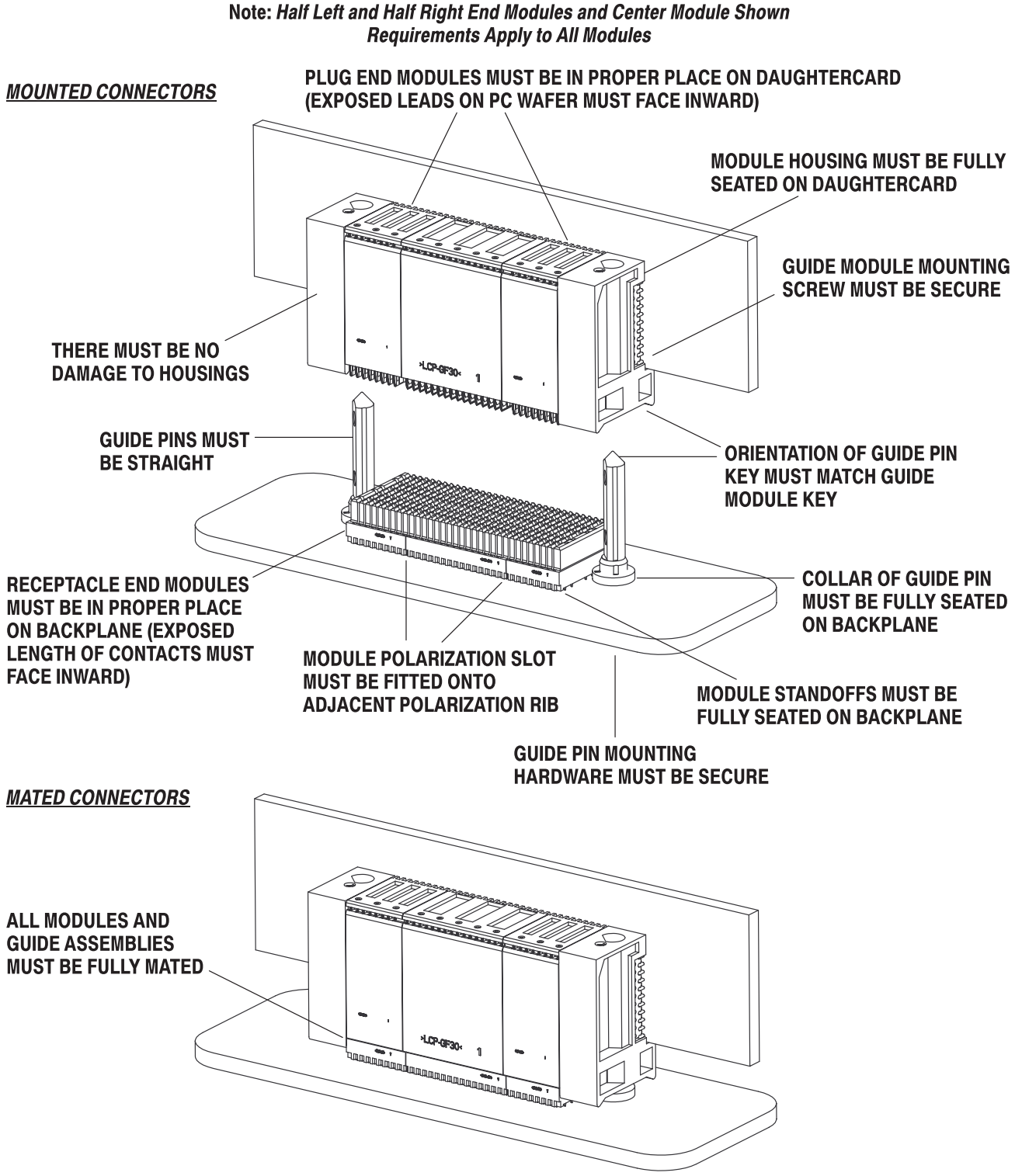


FIGURE 14. VISUAL AID