

2.2.6 AMC Test Dimensions

¶ 19

The test dimension for the depth of the assembly is the same as that in PICMG Rugged MicroTCA.1 R1.0. The projection of the Zone 3 ADF connector mating face beyond Datum J is an added dimension. The test dimensions from Datum L are to the edge of the ADF connector housing.

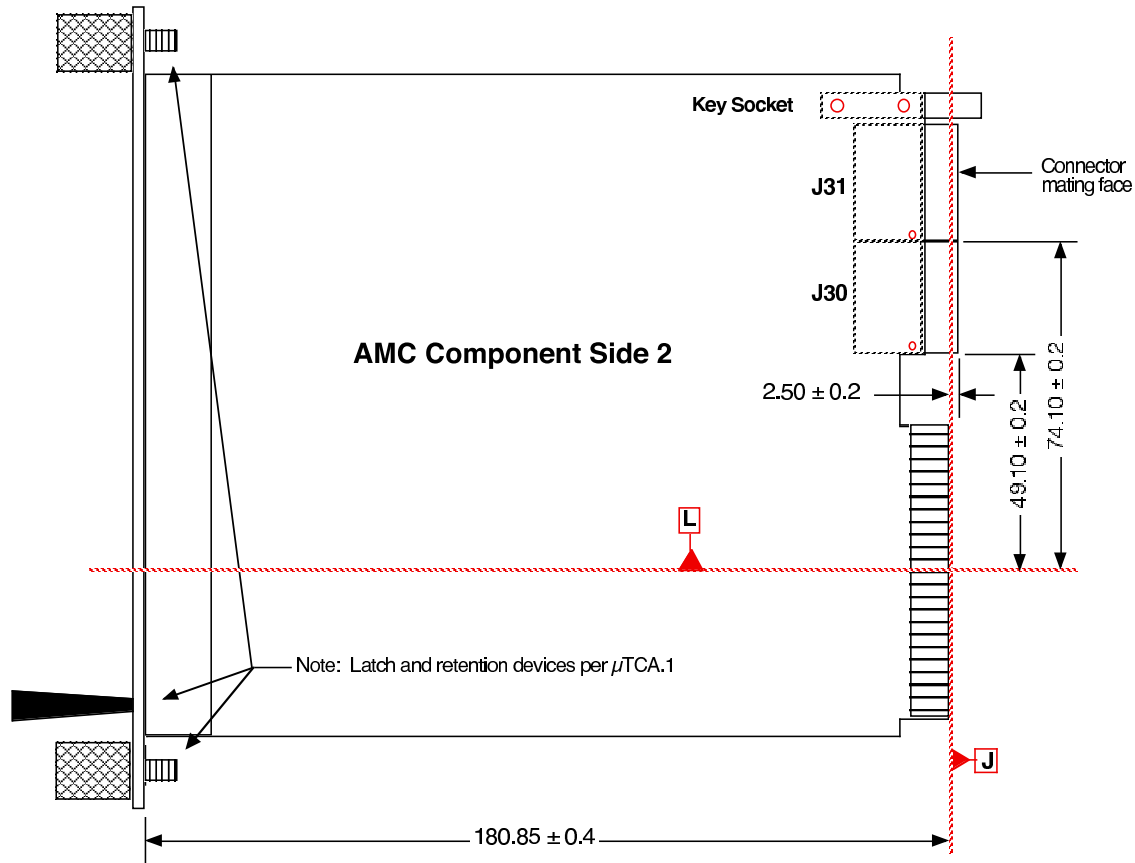


Figure 2-3: AMC Module Test Dimensions

2.3 μRTM Module

¶ 20

Construction of the μRTM is similar to the AMC in AMC.0 R2.0.

REQ 2-38: The panel and other hardware **shall** be rotated 180° about an axis perpendicular to the PCB so as to be compatible with existing hardware.

¶ 21

The 180° rotation places the latch in the upper left of the μRTM Module. Other hardware is similarly repositioned. All drawings are shown from side two of the PCB.

2.3.1 Printed Circuit Board

¶ 22 The μ RTM is similar to the AMC front board in size. Figure 2-4 shows the board outline and the location of Zone 3 ADF connectors and the male alignment/key pin. As in the AMC specification there are reserved areas for hot swap switch, faceplate mounting hardware, and ESD zone along the top and bottom edge.

REQ 2-39 The PCB outline and pin 1 locations in Figure 2-4 **shall** be for μ RTMs using ADF connectors.

REQ 2-40: Implementations using other connectors **may** have different positions for Pin 1 and different Zone 3 PCB edge details than those shown in Figure 2-4.

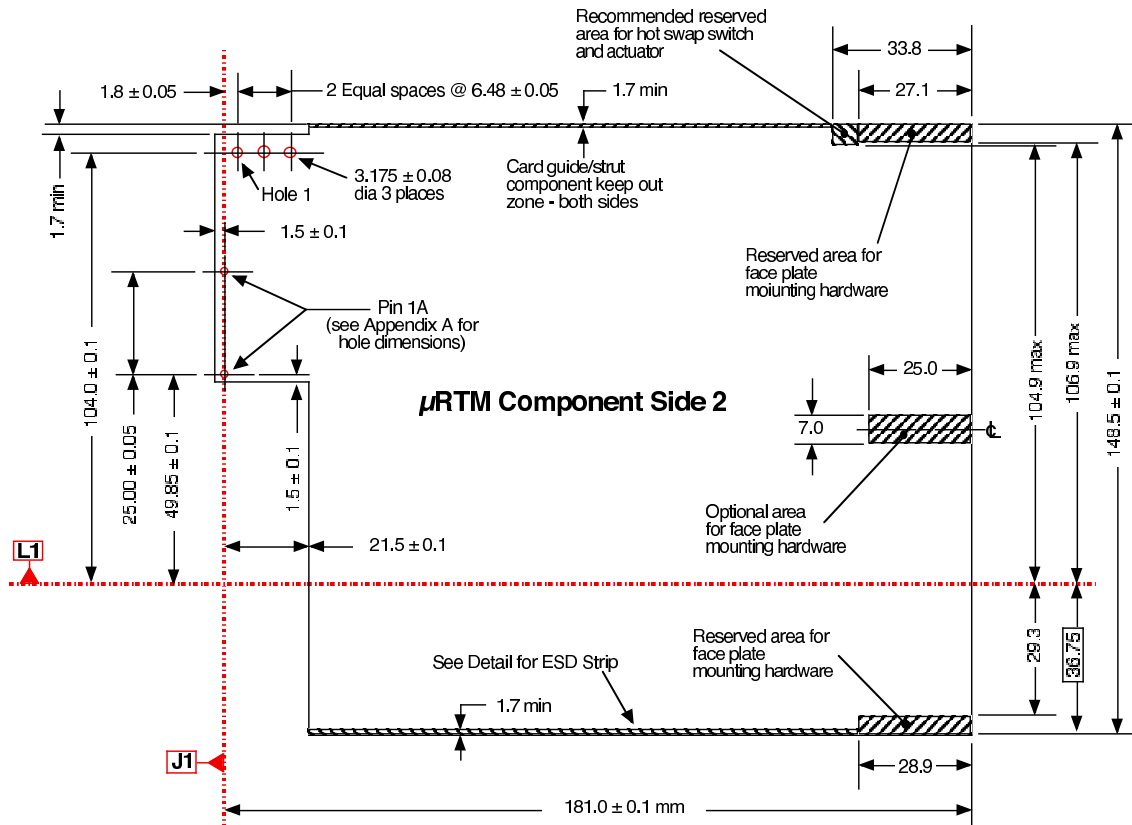


Figure 2-4: μ RTM PCB Dimensions

Note: Datum L1 is collinear with Datum L in Figure 2-1 and Datum J1 is parallel to Datum J in Figure 2-1.

¶ 23 Dimensions for keep out and for mounting hardware are similar to AMC.0 R2.0, Figure 2-5 except for rotation of pattern from lower (upper) left to upper (lower) right.

¶ 24 The ESD strip shown in Figure 2-5 is similar to that specified in AMC.0, Section 2.2.1.4. The ESD segments are located only on

component side 2 of the μ RTM. The difference is that the strip is at the bottom of the μ RTM rather than at the top as for the AMC Module.

REQ 2-41: The μ RTM **shall** have ESD protection as shown in Figure 2-5.

¶ 25 Figure 2-5 shows the general dimension of the ESD strip on the lower part of the μ RTM. Other dimensions of the PCB are in Figure 2-4. Segments 1, 2 and 3 are similar to those in AMC.0, Figure 2-8. More ESD data can be obtained from AMC.0, Section 2.2.1.4 and Section 4.4.

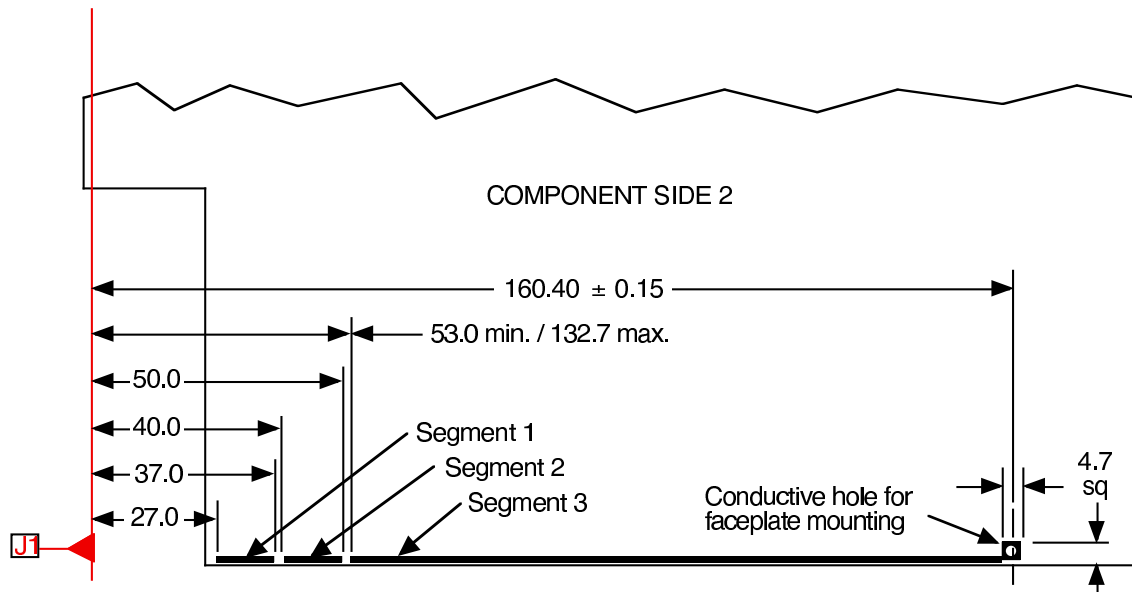


Figure 2-5: μ RTM ESD Strip Dimensions

2.3.2 Zone 3 Keying

¶ 26 See this document Section 2.2.2 and Appendix B for other Key Information.

REQ 2-42: The μ RTM Modules that mate with AMC Modules **shall** implement the male key/alignment mechanics as specified in Appendix B-1.

2.3.3 Zone 3 Connectors

2.3.3.1 ADF Connectors

REQ 2-43: The μ RTMs **shall** position the Zone 3 ADF connector(s) according to the pin 1 location for each connector as shown in Figure 2-4.

REQ 2-44: The mounting hole pattern on the μ RTM **shall** be as shown in Appendix A.

2.3.3.2 Non ADF Connectors and Zone 3 Interface Repository

- REQ 2-45: μ RTMs **may** use connectors other than ADF connectors in Zone 3.
- REQ 2-46: μ RTM designers that use connectors other than ADF connectors in Zone 3 **should** submit a μ RTM Zone 3 Interface repository entry to PICMG.
- REQ 2-47: μ RTM Zone 3 Interface repository entries **shall** specify what connectors are used in Zone 3 by the μ RTM.
- REQ 2-48: μ RTM Zone 3 Interface repository entries **shall** include mechanical drawings with Zone 3 connector locations for the μ RTM.
- REQ 2-49: μ RTM Zone 3 Interface repository entries **shall** specify the key/guide position used by the μ RTM.
- REQ 2-50: μ RTM Zone 3 Interface repository entries **shall** specify the μ RTMs Zone 3 connector pinout for the required management functions listed in Table 2-3.
- REQ 2-51: μ RTM Zone 3 Interface repository entries **shall** specify the electrical characteristics of other Zone 3 connector pins for the μ RTM.

2.3.4 μ RTM Face Plate

- REQ 2-52: μ RTM Modules **shall** have a faceplate, including the latch and retention device, as specified in MicroTCA.1 R1.0, Section 2.5.
- ¶ 27 See also PICMG Rugged MicroTCA.1 R1.0, Appendix B for implementations of the retention device. The hardware is the same as for the AMC.0 R2.0, however, the mounting is reversed top to bottom. Figure 2-6 shows the reversed mounting for the LEDs and handle. Bar code and vendor label area is the same as shown in AMC.0 R2.0, Figure 2-20.

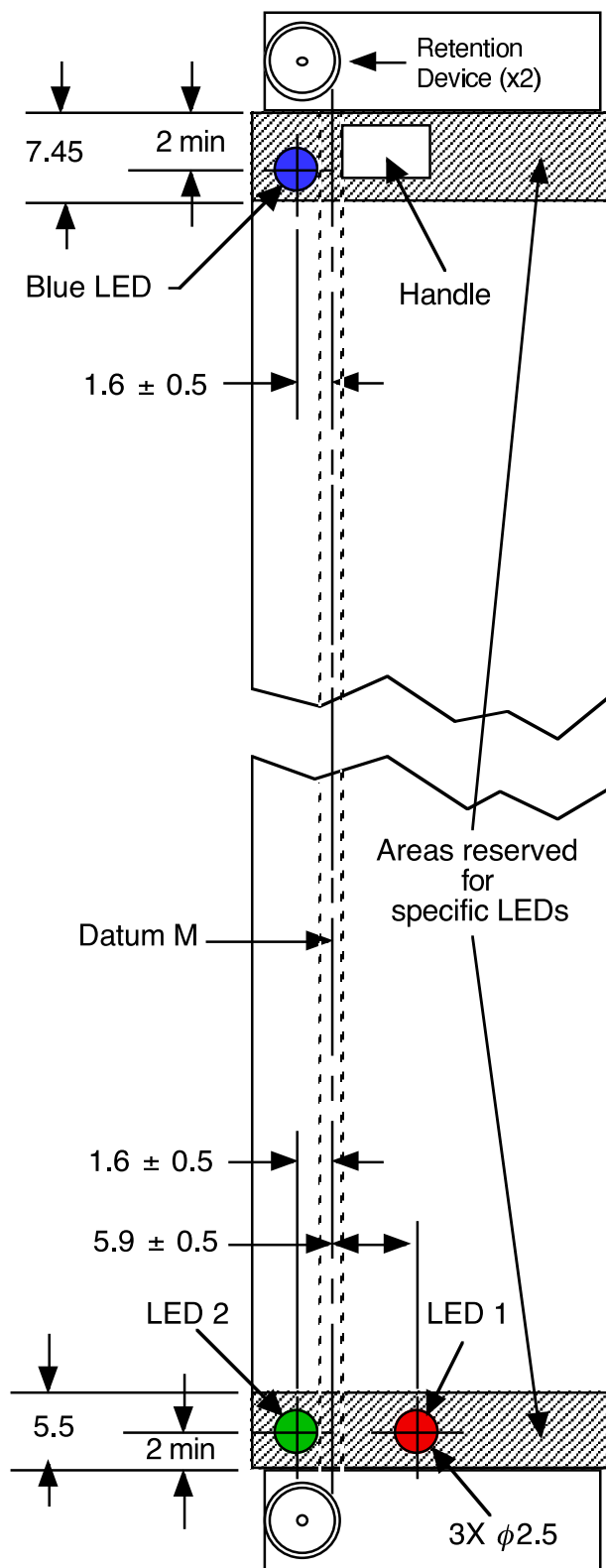


Figure 2-6: μ RTM Face Plate

Note: the color of LED1 and LED2 can vary per AMC.0 R2.0, Section 2.2.4.1.

2.3.5 μ RTM Module Component Envelope

REQ 2-53: μ RTM modules **shall** use the same component height outline as AMC.0 R2.0, Figure 2-14, Figure 2-16 and Figure 2-15 as modified by Figure 2-2 in this document.

¶ 28 The Figures cited in REQ 2-52 do not include the ADF connector outlines. The connector outlines can be determined from PICMG 3.0, PICMG 3.8 and this document Appendix A as appropriate for the use.

¶ 29 The male ADF connector plastic housing extends beyond the Module panel by a nominal 0.33 mm on component Side 2. Since there is no metallic contact possible this overhang has been deemed by the committee to be acceptable.

2.3.6 μ RTM Test Dimensions

REQ 2-54: μ RTMs that implement ADF connectors **shall** meet the test dimensions in Figure 2-7.

¶ 30 Test dimensions from Datum L1 are to the edge of the ADF connector housing.

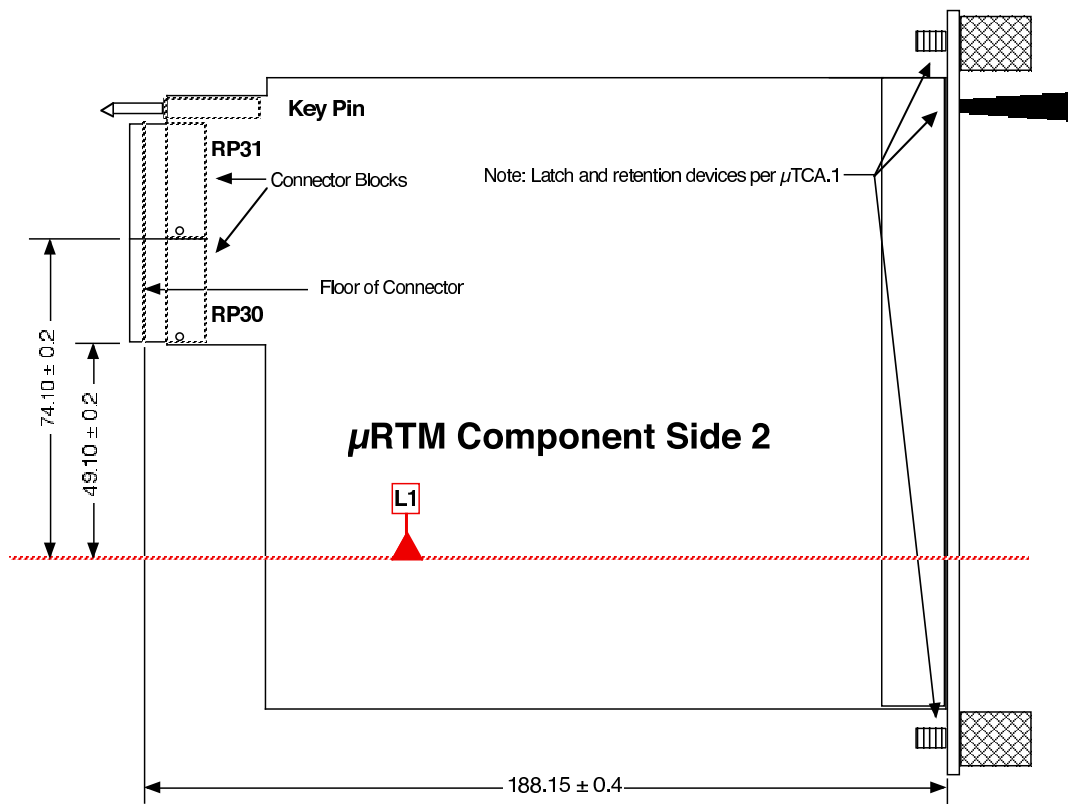


Figure 2-7: μ RTM Module Test Dimensions

2.4 μ TCA Subrack

¶ 31 In the broadest sense one can think of the μ TCA Subrack as two subracks mated back-to-back. Obviously there is more to the subrack but this gives the user a way of viewing this section of the document.

2.4.1 Subrack Dimensions

¶ 32 Subrack specifications follows the MTCA.0 R1.0 specification. The AMC Modules and the front part of the subrack are fully compatible with the Double Modules of this specification. The rear of the subrack accommodates μ RTM Modules specified in this document.

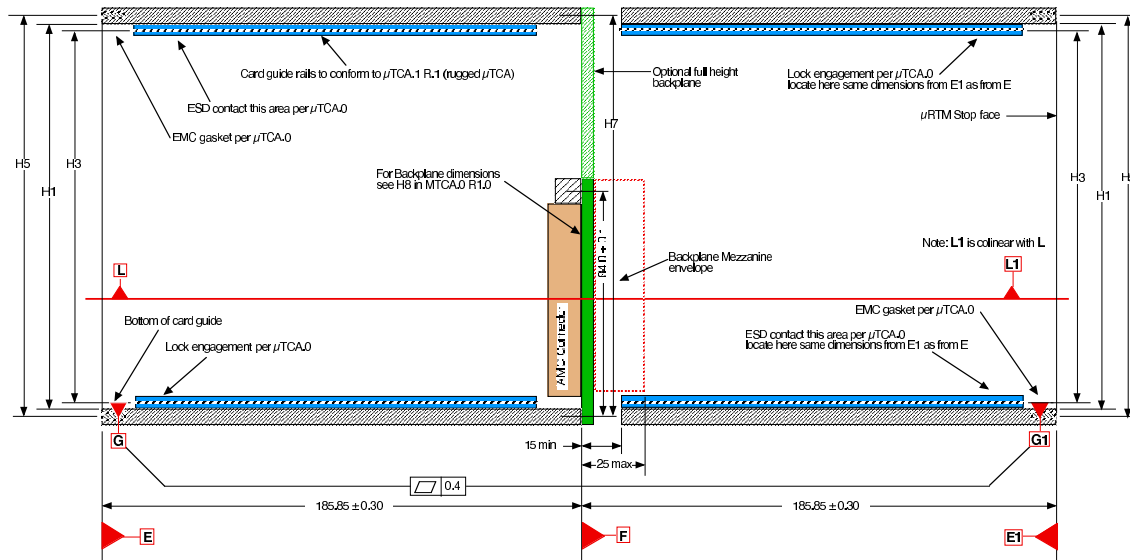


Figure 2-8: Side view of Subrack

Note: For missing dimensions see MTCA.0, Section 2.

REQ 2-55: Figure 2-8 side view drawing **shall** serve as the basis for designing the μ TCA subrack.

REQ 2-56: Other manifestations of the subrack such as Pico, half width rack mounted, *etc* **shall** conform to the dimensions of Figure 2-8.

¶ 33 Subbracks that have the modules mounted horizontally rather than vertically have certain constraints imposed by the module retention requirements. Such Subbracks are not described in this document and may prove difficult to manufacture.

REQ 2-57: The backplane printed circuit board thickness **should** be 5 mm.

¶ 34 The height of the backplane is detailed in MTCA.0 R1, Table 2-10. The distance from L or L1 to the top of the backplane is one half of H8 for the single width entry in Table 2-10 when the AMC connects

directly to the μ RTM. The top support bar is included in the maximum backplane height for the single width case.

2.4.2 Insertion of Front and Rear Boards

REQ 2-58: When initially configuring modules in the μ TCA subrack the following sequence **shall** be followed:

1. Insert the Front AMC Module of the AMC/ μ RTM pair
2. Fasten the retention device on the AMC panel to the subrack
3. Insert μ RTM
4. Fasten the retention device on the μ RTM panel to the subrack

¶ 35 After the initial configuration sequence specified in REQ 2-58, the removal and reinsertion of either the AMC Module or the μ RTM Module will not require this sequence to be repeated.

REQ 2-59: If both the AMC and μ RTM are removed then the insertion sequence in REQ 2-58 **shall** be repeated.

2.4.3 Subrack Test Dimensions

REQ 2-60: Subracks that conform to this specification **shall** meet the test dimensions in Figure 2-9.

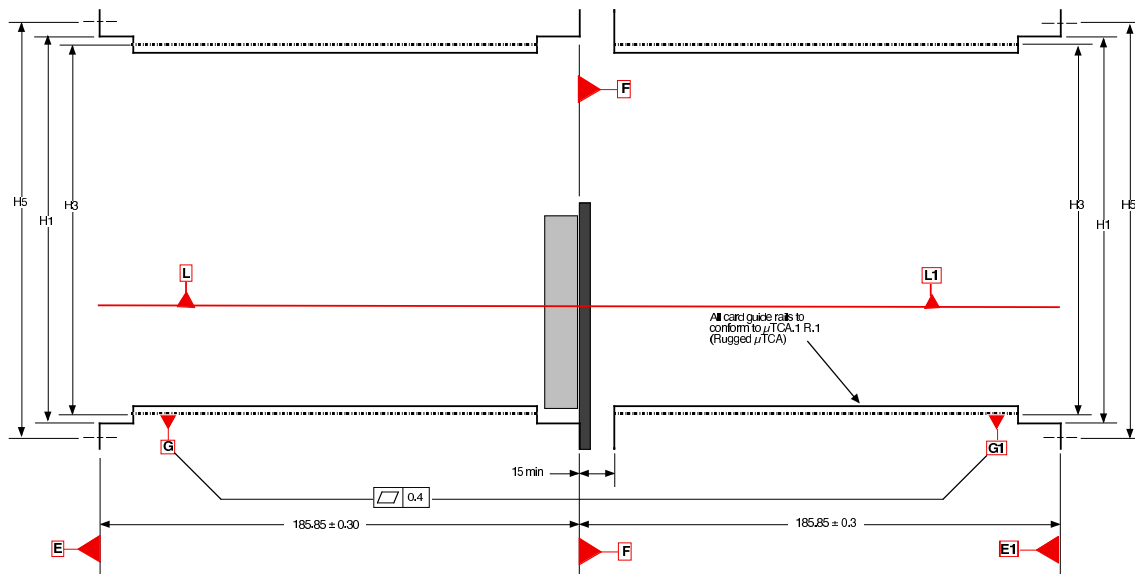


Figure 2-9: Test Dimensions for Subrack

¶ 36 Datum's L and L1 are collinear. For location of Datum L see MTCA.0, R1.0, Figure 2-29. The dimensions H1, H3 and H5 are defined in MTCA.0, R1.0, Section 2.7.1.

A.2 Technical information

A.2.1 Definitions

A.2.1.1 Contacts and terminations

¶ 134 See PICMG 3.0 R3.0 except on line 37 and change “Front Board” to “Front Board and μ RTM”.

A.3 30 Pair ADF Connectors

A.3.1 General isometric view and common features

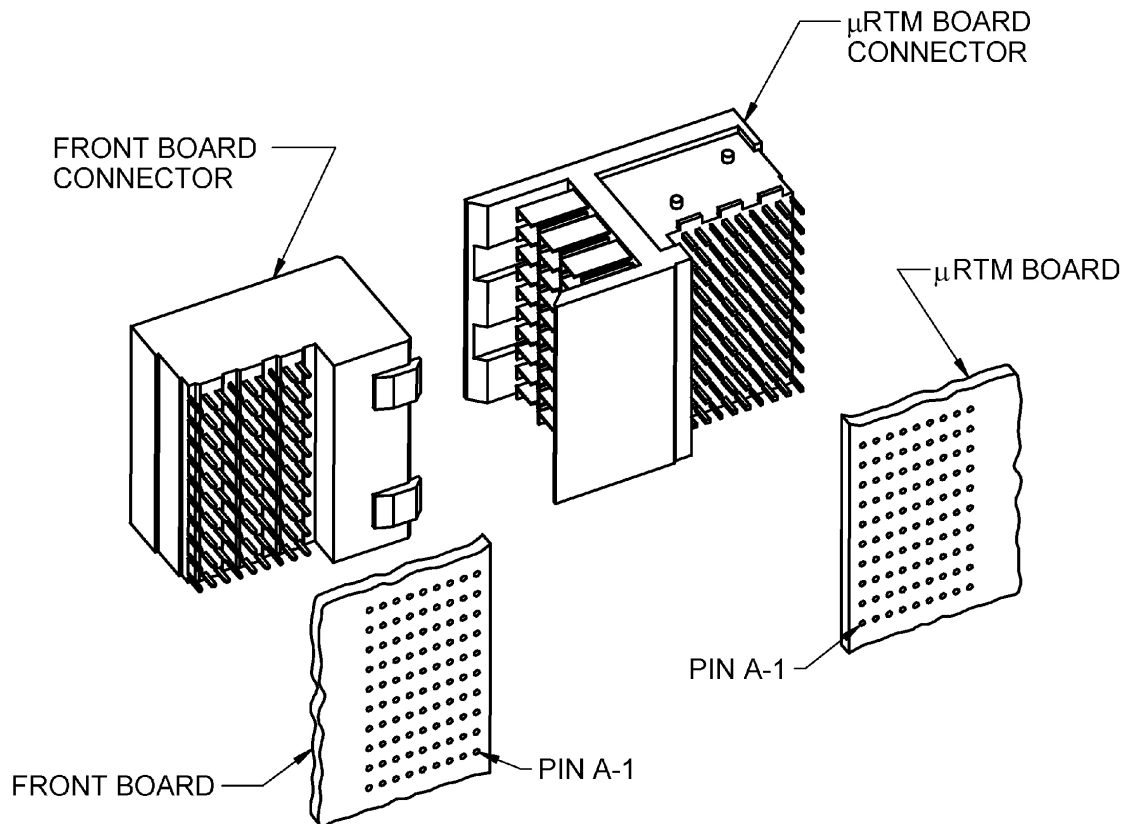


Figure A-1: Zone 3 front board and μ RTM mating illustration

A.3.2.2 Right Angle Pin Connector

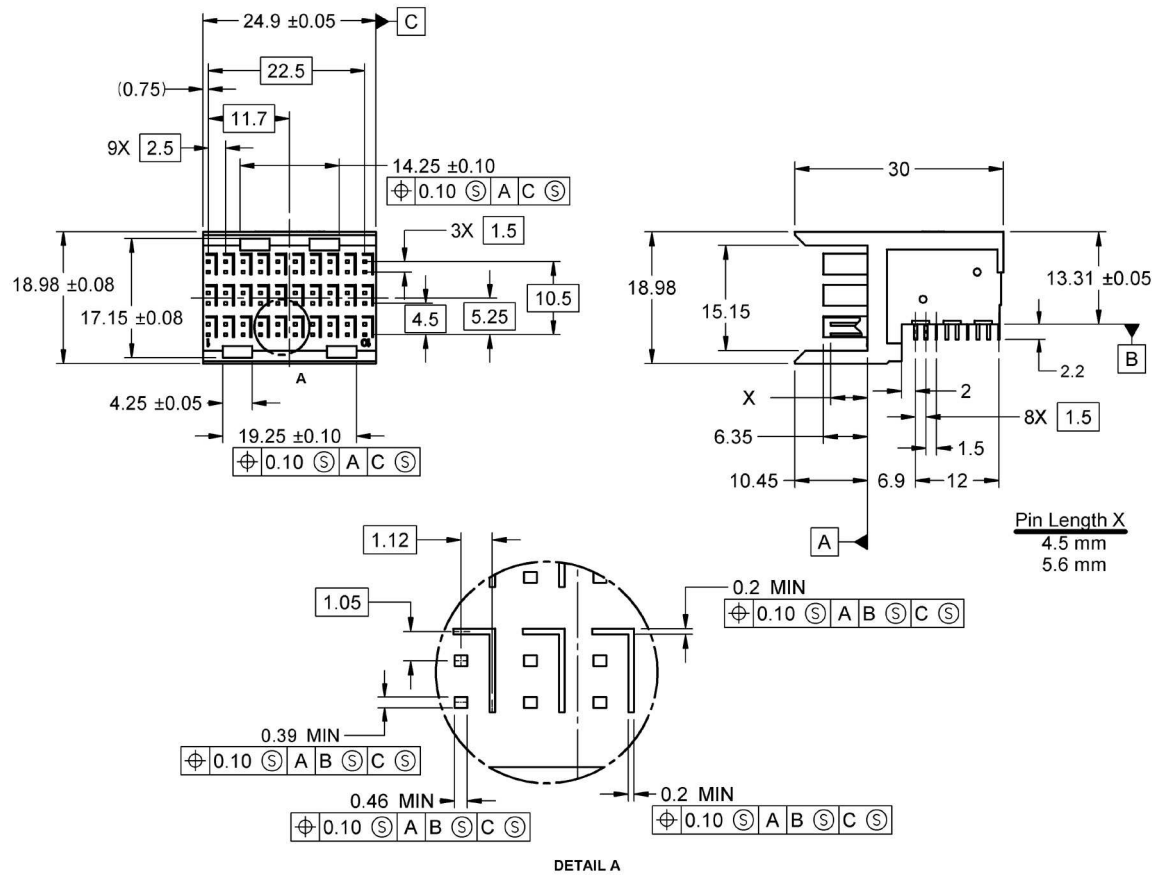


Figure A-3: Three row ADF male connector dimensions

A.3.2.2.1 Contacts

¶ 136 See PICMG 3.0, Section A.3.3.2

A.3.2.2.2 Contacts tip geometry

¶ 137 See PICMG 3.0, Section A.3.3.3

A.3.2.2.3 Terminations

¶ 138 See PICMG 3.0, Section A.3.3.4

A.6.2 PCB Layout for μ RTM Zone 3 ADF connectors

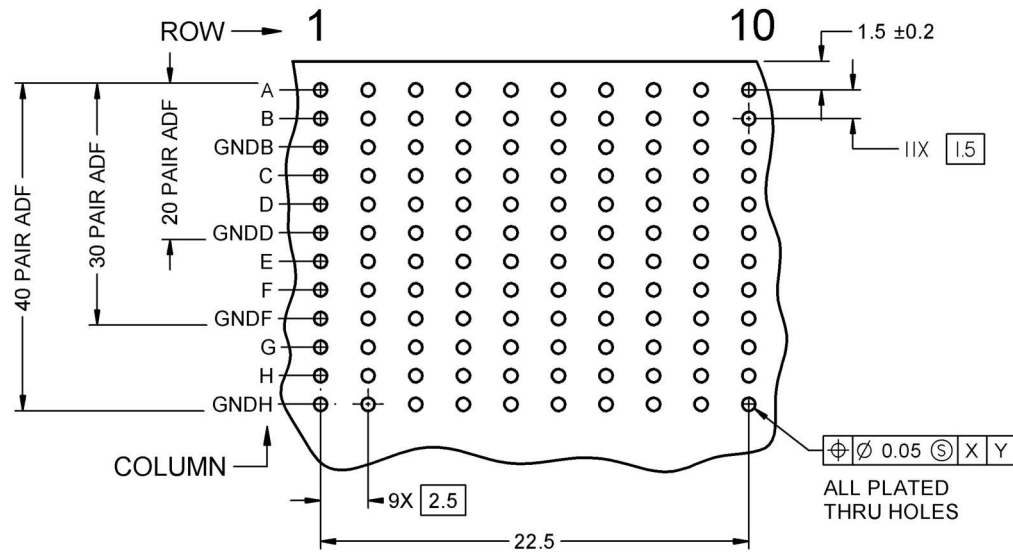


Figure A-9: ADF connector μ RTM PCB hole layout

Note: View from component side 2.

REQ A-2: The ADF right angle pin connector **shall** use the hole pattern in Figure A-9 sized appropriately.

¶ 147 The position of hole A1 on the μ RTM PCB is shown in Figure 2-4.

A.7 Characteristics

§ 148 Section A-7 is the same as PICMG 3.0 R3.0, Appendix A.4 except as noted in the following sections.

A.7.1 Propagation Delay

¶ 149 Remove G and H Pins from PICMG 3.0 R3.0 Table A-9 for three connectors and E, F, G, and H for the two-row connector. After the appropriate modification the table in PICMG 3.0 R3.0 can be used.

B. Keys

B.1 Male Key Dimensions

REQ B-1: The male key/alignment pin in Figure B-1 **shall** be used on the μ RTM module. Orientation codes are in Table B-1.

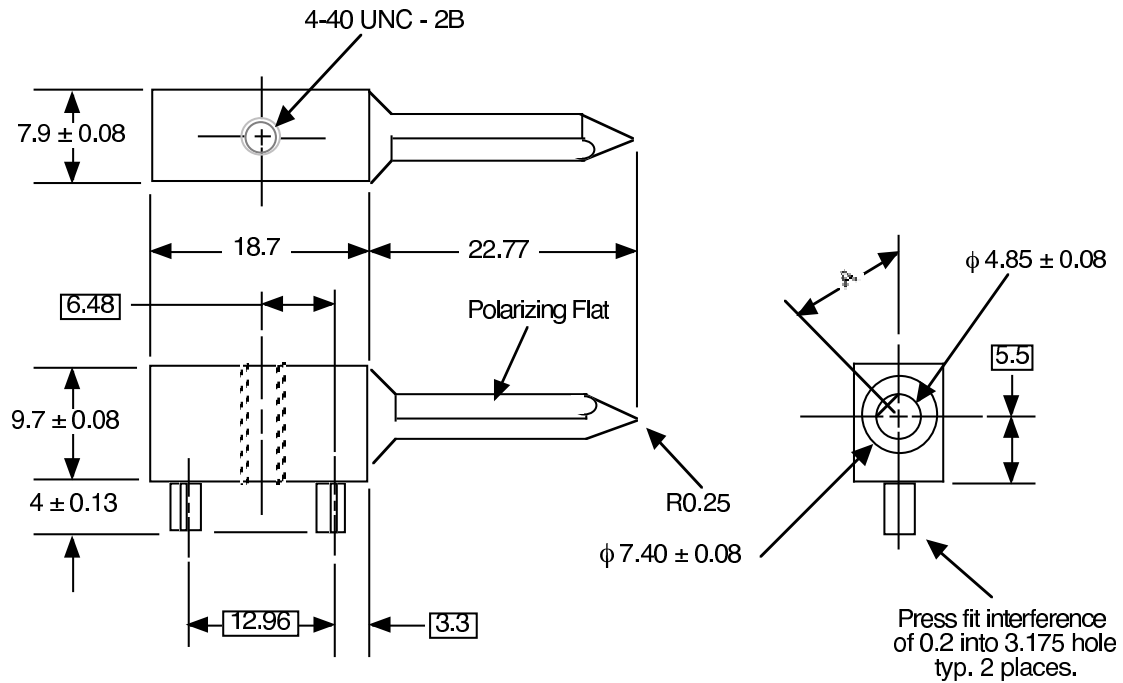





























Figure B-1: Male key

B.3 Key Orientation

¶ 151 Table B-1 indicates the orientation of the male and female keys. The meaning of the values is contained in Table 2-1 of this document.

Table B-1: Key positions (standard orientation)

N	A Rotation in degrees	View from front of Subrack		View from rear of Front Board
		Receptacle	Post	Receptacle
1	0			
2	45			
3	90			
4	135			
5	180			
6	225			
7	270			
8	315			
0	NA			

¶ 152 N = 0 has a unique position in the table. If the receptacle does not have a flat any post will fit into it. The receptacle might serves as an alignment mechanism. This feature might be of use in test fixtures. The user should be aware of the following:

- a) N = 0 posts cannot be inserted into N ≠ 0 receptacles.
- b) N ≠ 0 posts can be inserted into N = 0 receptacles.