

Task: Replacing EMC Front End Electronics Components

Routine

Non-routine

Retention: Completed Routine JHAMs are retained by the employee and supervisor. Non-routine JHAMs are retained until the task is fully closed out. In the case of an accident, the form is to be retained for use by the review team.

Complete instructions and supporting information is available at <https://www-internal.slac.stanford.edu/esh/SLACsafety/jham/>. Enter information into boxes which will expand to accommodate whatever length of text is entered. Once this JHA is complete, all participants should sign in the Acknowledgment section. Add rows by placing cursor in the right box of the last row and entering a tab.

Sequence of Basic Job Steps	Potential Hazards	Controls & Recommended Actions
<ul style="list-style-type: none"> <li>• Replacing low voltage power supplies</li> </ul>	<ul style="list-style-type: none"> <li>• Trapping of fingers</li> <li>• Minor electrical hazards</li> <li>• Burning fingers on heat sinks</li> </ul>	<ul style="list-style-type: none"> <li>• Keep fingers clear when replacing supplies</li> <li>• Turn off PS and neighbour, or whole crate</li> <li>• Keep fingers out of crate. Take care when handling recently removed PS</li> </ul>
<ul style="list-style-type: none"> <li>• Connection/disconnection of bias voltage cables in electronics house</li> </ul>	<ul style="list-style-type: none"> <li>• Minor electrical hazards (voltage &lt; 50V, low current)</li> </ul>	<ul style="list-style-type: none"> <li>• Switch off bias voltage before work</li> <li>• Keep fingers out of PS</li> </ul>
<ul style="list-style-type: none"> <li>• Replacing front end electronics boards:                             <ul style="list-style-type: none"> <li>○ Working with low voltage electrical devices</li> <li>○ Working on manlifts and other elevated platforms</li> <li>○ Handling/removing component boards</li> <li>○ Use of hand tools</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Minor electrical hazards</li> <li>• Falls</li> <li>• Pinch/amputation hazards from moving manlift</li> <li>• Crushing hazard from moving manlift</li> <li>• Bruising and scrapes</li> <li>• Stabbing hazard when using screwdriver to remove ADB's</li> </ul>	<ul style="list-style-type: none"> <li>• Switch off both low voltage and bias power to entire crate being worked on</li> <li>• Wear harness where required</li> <li>• Take training in use of harnesses in IR-2 hall</li> <li>• Do not stand on top step of a ladder</li> <li>• Do not work unaided</li> <li>• Ensure area below is clear before operating manlift</li> <li>• Give verbal warning to those below before operating manlift</li> <li>• Keep all body parts away from manlift mechanism at all times</li> <li>• Read manual before use of manlift and follow all posted and manufacturer's instructions</li> </ul>

		<ul style="list-style-type: none"> <li>• Take care with sharp edges/connectors</li> <li>• Wear protective gloves when removing ADB's</li> <li>• Take Regular breaks during repetitive work</li> </ul>
<ul style="list-style-type: none"> <li>• Care &amp; preservation of front end electronics components</li> </ul>	<ul style="list-style-type: none"> <li>• Shearing cables when replacing boards</li> <li>• Overheating of boards during testing</li> <li>• Damage to boards and connectors due to use of excessive force</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure all cables are clear when replacing ADB's/IOB's/TRB's</li> <li>• Replace copper heat sink over minicrate when testing recently installed boards</li> <li>• Boards should connect easily. The need for force implies an obstacle. Check for bent pins and obstructing cables</li> </ul>
<ul style="list-style-type: none"> <li>• Controlled Access to IR-2</li> </ul>	<ul style="list-style-type: none"> <li>• Failure to follow procedures properly can lead to serious personal injury by radiation or to delays in accelerator operation</li> </ul>	<ul style="list-style-type: none"> <li>• Complete required training (on mock-up in Bldg.3 or in IR-2 with an experienced person) Follow entry and exit procedures detailed in chapter 3 of the Care &amp; Feeding Manual (see <a href="http://www.slac.stanford.edu/BFROOT/www/Detector/Operations/CareAndFeeding/care/care.html">http://www.slac.stanford.edu/BFROOT/www/Detector/Operations/CareAndFeeding/care/care.html</a>)</li> </ul>
<ul style="list-style-type: none"> <li>• Various activities in IR-2</li> </ul>	<ul style="list-style-type: none"> <li>• Multiple hazards in common with those described in EMC system worker and BABAR shifter JHAM's and IR-2 AHA</li> </ul>	<ul style="list-style-type: none"> <li>• See EMC worker and BABAR shifter JHAM's and IR-s AHA</li> </ul>

<b>Acknowledgments</b>	<b>Print Name</b>	<b>Signature or Initialed</b>	<b>Date</b>
<b>Supervisor:</b>			
<b>Participants:</b>			