**MRB2 PC board Manufacturer’s Instructions**

University of Pennsylvania – Physics Dept and Radiology Dept

BOARD NAME: MRB2 (LaPET Module Readout Board, v2)

DATE: July 12th, 2016

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MANUFACTURING NOTES

1. This is a 20 layer board

Layer order:

1. TOP

2. GND1

2. Board contains Two types of vias.

Blind vias: TOP – SIGNAL4 (layers 1-10)

Blind vias: MISC1 - BOTTOM (layers 11-20)

Through vias: TOP - BOTTOM (layers 1-20)

3. Fill All Vias – (hole diameters:10, 12, 16 mils); cover all vias with solder mask.

4. BOARD THICKNESS: as proposed by manufacturer. We suggest 80 mils or greater.

5. Controlled differential impedances ~100 ohms on layers TOP, SIGNAL1, SIGNAL2, SIGNAL3, SIGNAL4, SIGNAL5, SIGNAL6, SIGNAL7, BOTTOM.

6. FINISH: Immersion Gold.

7. COPPER THICKNESSES:

GND1, GND2, GND3, GND4: 1 oz.

Other layers at manufacturer’s discretion.

8. All holes are plated through unless otherwise noted.

9. To aid assembly, add tabs along long (16.5”) edges, fiducial marks top and bottom, four mounting holes, scored for separation. Tabs should be 0.5” wide. Fiducial mark and mounting hole dimensions per vendor's discretion (suggest 0.120” diameter). Our preferred assembler will be Zentech, who also work with Elizabeth Foradori.

We welcome your feedback on minor changes that would improve manufacturability or reduce cost.