

VMM3 high rate test in X-
rays

Goal of test

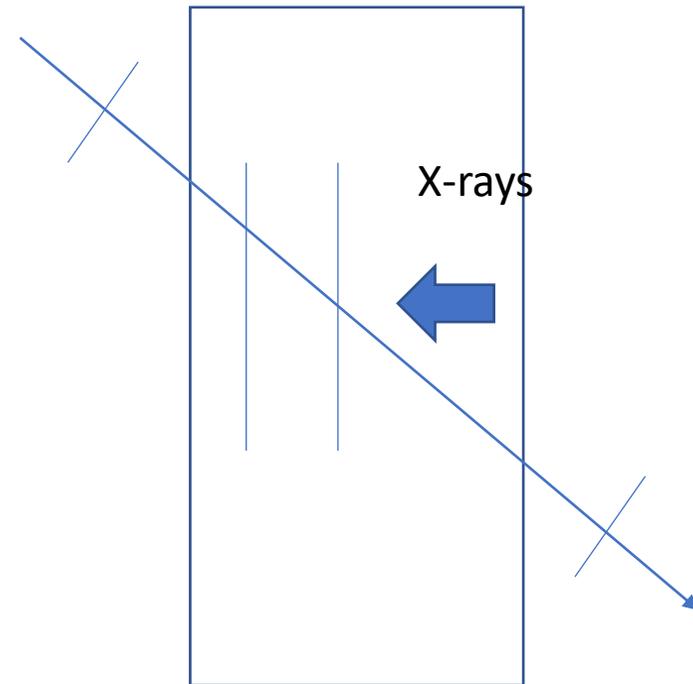
- Study behavior of VMM3 in high background environment

Test setup

- 2 GEM chambers
- 2 scintillator triggers
- X-ray source

- SBS chambers 50 cm x 60 cm
 - 2048 x 2048 strips

- 10 cm x 10 cm
 - 256 x 256 strips ?



VMM3 eval board

- 12 direct outputs
- Need 4 boards for 2 GEMs
- $12 \times 250 \text{ um} = 3 \text{ mm}$

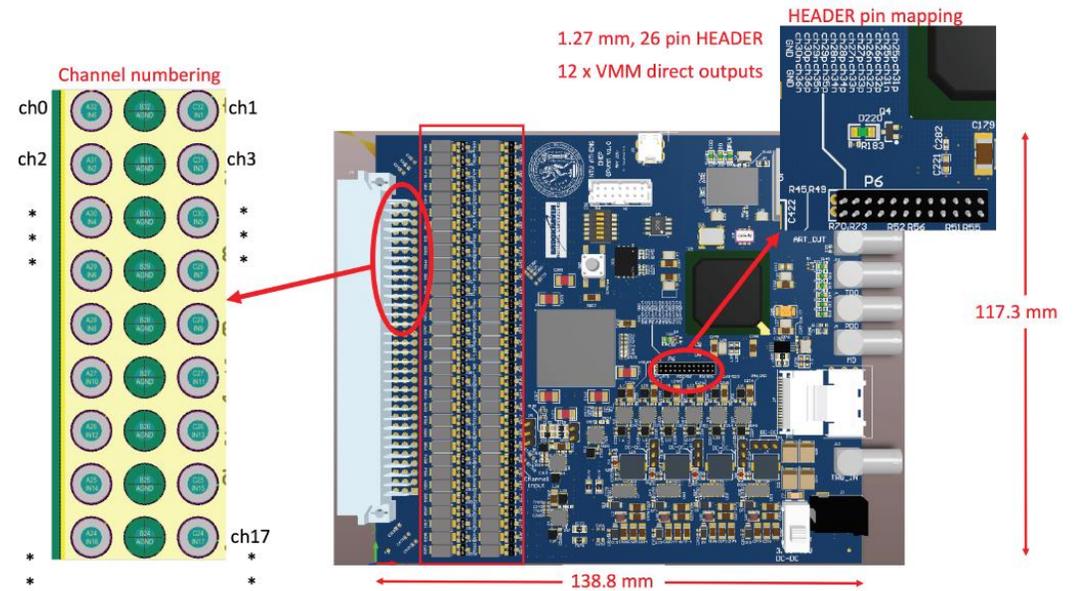


Figure 1.3: Input channel and header output mapping of GPVMM board

Other option

- VMM3 carrier board
- Start with MAROC3 design
 - 64 channels
 - Direct output to FPGA TDC
- 10 cm x 10 cm = 512 strips = 8 VMM3
- 50 cm x 60 cm = 4096 strips = 64 VMM3
- Is that realistic for November 2020 ?
- High rate test completion planned for April 2021 (2 months of float)