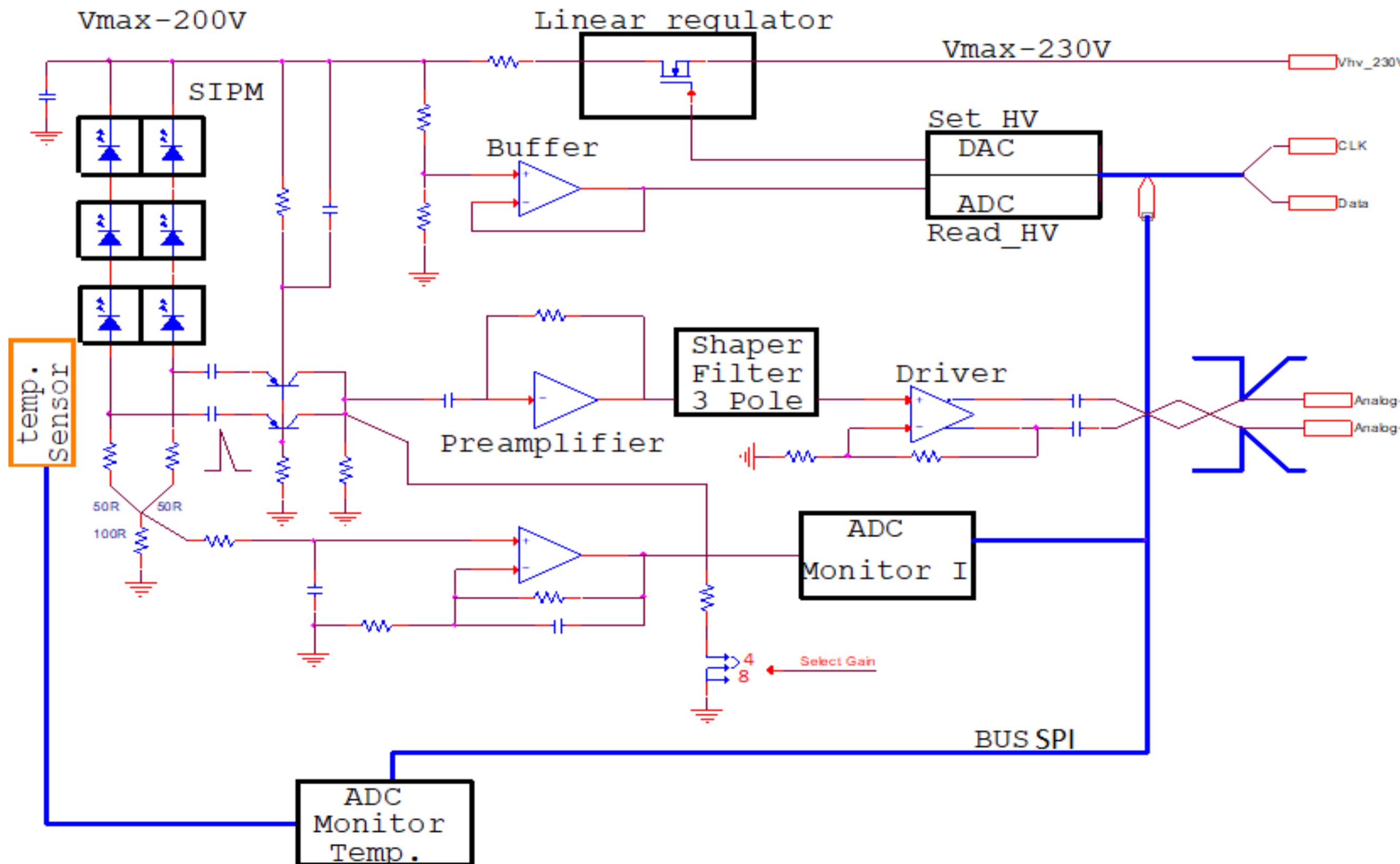
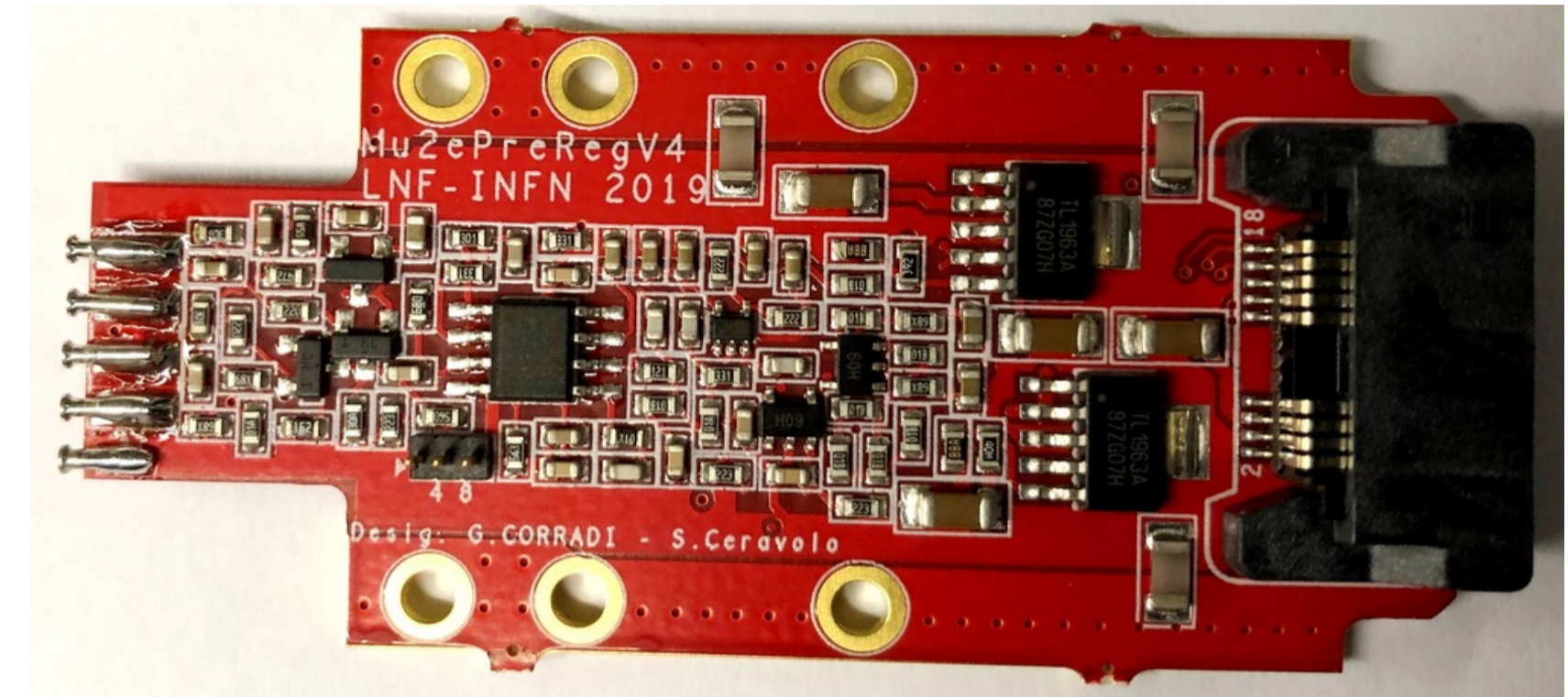


Requirements

- Signal rise time > 25 ns for appropriate time reconstruction
- Rate capability up to 1 MHz, short fall time
- High stability SiPM management
- Rad-hardness (100 krad TID, 10^{12} 1MeV-neq/cm²)



Signal chain

- 2 x 3-series SiPM connection to decrease MPPC capacitance
- Common-base BJT fast current adder with low input Z
- Selectable gain (1 or 2) w/ 2 V dynamic range
- Pole-zero cancellation
- 3-pole pulse stretcher
- Differential line driver

Slow control

- on-board high-stability, low-ripple HV linear regulator
- Programmable bias up to 200V via 12-bit DAC (50 mV/l_{sb})
- 2 mA SiPM current capability w/ OCP
- Integrated SiPM bias, current and temperature monitor via 12-bit SPI ADC