The third generation of Function/Generation Controller (FGC3) is the latest platform for the control, monitoring and diagnostics of power converters. The FGC3 encapsulates three cards: a mainboard with an RX610 microcontroller, a TI TMS320C6727 floating point DSP with a 10 kHz interrupt-driven task and a Xilinx FPGA for glue logic and peripheral handling; an analog card with four high precision ADC channels and two 16-bit DACs; and an Ethernet-based communication card.

FGC3 at Linac4

FGC3s are used to control four types of fast-pulsed power converters. Currently, 29 circuits are operational. When complete, Linac4 will require 115.