# PB5 Processor Card

The PB5 processor card is the latest generation of processor card developed for the RTDS Simulator. New simulators are being based exclusively on PB5 processor cards. The PB5 is also fully compatible with the GPC processor card and can be used to upgrade and enhance the capabilities of existing GTWIF – GPC based simulators.

Each PB5 contains two Freescale MC7448 RISC processors, each operating at a clock frequency of 1.7 GHz. The increased clock frequency provides increased computing capacity compared to the GPC card. One of the other significant new features provided by the PB5 is that it has eight GT fibre ports. These ports can be used interchangeably for connecting to high resolution digital and analog I/O cards or for direct communication between PB5/GPC processor cards.

Each PB5 card also includes 24 (i.e. 12 per processor) non-isolated 12-bit digital to analogue converters (d/a's). The d/a output range is +/- 10 Vpeak.
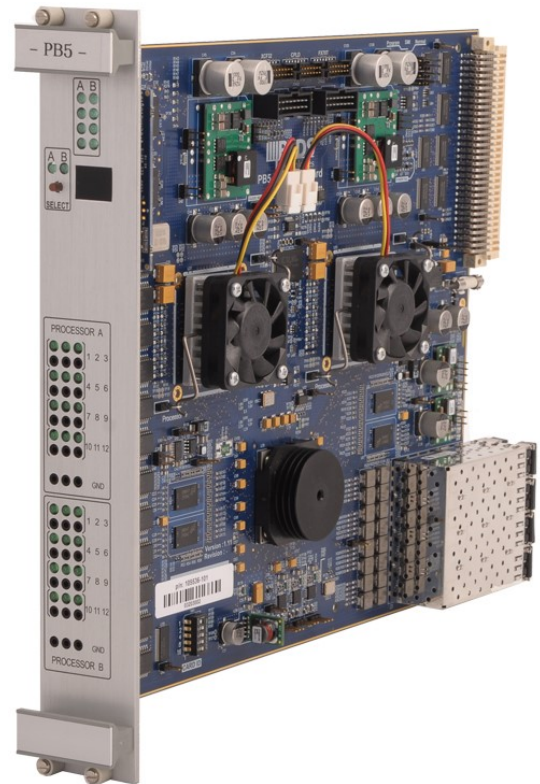
Network Solution Size

PB5 based racks allow up to two network solutions to be solved on one rack. **Each of those network solutions can include a maximum of 90 x single-phase nodes or 30 x 3-phase buses.** Therefore, 2 subsystems with 90 nodes each — a total of 180 nodes — can be included on one rack. However, other PB5 processors are required to solve the component models within the simulated network (i.e. transmission lines, generators, trans-formers, etc.). Signal exchange between the PB5 cards is accomplished through a common backplane to which all cards within a rack are connected. Direct communication between PB5 cards can also be accomplished using the optical ports.

Hardware Exchange Program

Customers covered under the extended warranty and maintenance program will benefit from the option to exchange old processor cards to receive a 50% reduction in the purchase price of PB5 cards.