

# ispGDx Outperforms Standard Logic Functions

The ispGDx and ispGDxV devices support three similar, yet complementary classes of end-system applications: programmable data path (PDP), programmable random signal interconnect (PRSI) and programmable switch replacement (PSR).

## PDP

The PDP class supports integration of system datapath (transceiver, MUX, register and latch) functions and dynamic signal routing via the fast 4:1 or 16:1 multiplexers.

Multiple standard interface components can be replaced with a single programmable ispGDx component! With the ability to program the device as necessary to perform a variety of functions, only a single part is needed in inventory. The flexibility of the unique ispGDx architecture allows more efficient implementation of special-purpose functions (such as 14-bit buses) and less wasted logic. Integrating many functions into a single ispGDx device reduces valuable PCB space, while the addition of in-system programming and Boundary Scan Test reduces time-to-market, improves system testability and decreases overall costs.

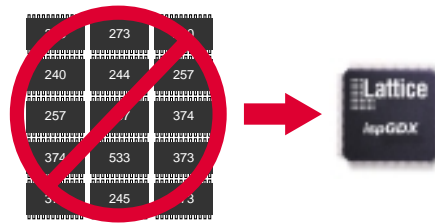
## PRSI

The PRSI class includes PCB-level programmable signal routing and is characterized by the need to provide a large number of statically configured 1:1 (or 1:many) pin connections. Used in this fashion, ispGDx devices speed up prototyping by supporting flexible connectivity between major system functional blocks or between systems (for example, between a hardware emulator and test environment).

## PSR

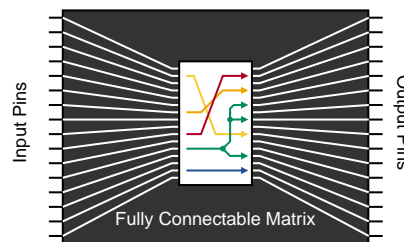
The PSR class provides a solid-state replacement for and integration of mechanical DIP switch and jumper functions. Systems commonly contain at least one DIP switch to configure PCB functions. In addition to bus interface logic, ispGDx device I/O pins can now be dedicated to DIP switch functions, providing a software-

## Programmable Data Path (PDP)



*The ispGDx replaces dozens of discrete interface devices, reducing PCB area and switching noise.*

## Programmable Random Signal Interconnect (PRSI)



*The ispGDx Global Routing Pool (GRP) is an in-system programmable wide signal switching matrix.*

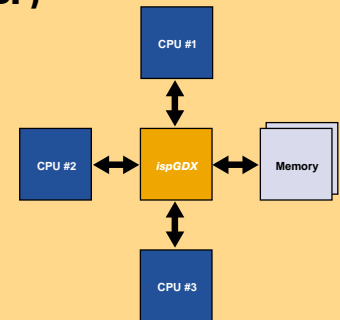
## Programmable Switch Replacement (PSR)



*I/O pins can be used for DIP switch emulation.*

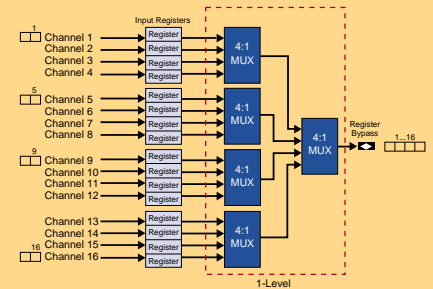
configurable replacement for mechanical DIP switches, eliminating the need to manually set DIP switches. With no

## Multi-Port Memory Interfaces (PDP)



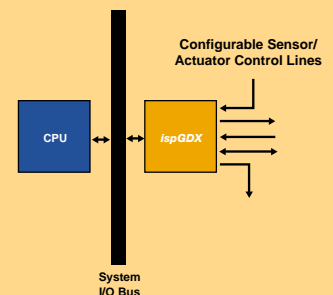
*The ispGDx functions as a single chip multi-bus multiplexer.*

## Telecom Applications (PDP)



*Multiplex 16 slow-speed channels into a single high-speed channel.*

## Industrial Control Applications (PRSI)



*The ispGDx provides an in-system programmable signal routing device for industrial control and instrumentation applications.*

moving parts, DIP switch functions are more reliable and easier to configure.