

Control Component Capability

Millitech offers a complete line of solid-state control components for use in the 18 to 140 GHz range. These include products that make use of PIN diodes in waveguide-based circuits. Please click on the Product Descriptions and Datasheets button in the Products tab for more information.

Millitech produces a wide range of millimeter wave solid-state PIN switches complemented by a selection of manual and motorized waveguide switches.

PIN diode switches are available from 18 to 140 GHz in waveguide as single-pole, single-throw (SPST) or single-pole, multiple-throw configurations. These components are broadband devices capable of high on/off ratios and fast switching speeds. The planar transmission line technique used in the design and fabrication of these PIN diode switches permits them to be readily integrated into larger switching arrays or subassemblies. Millitech produces an extremely high speed PIN switch that utilizes GaAs PIN devices and a high speed driver circuit. Switching speeds of a few nanoseconds can be obtained up to 100 GHz. A version with larger power handling capacity and high switching speed is also offered for applications with high CW and pulsed power.

Millitech has developed a number of designs for multi-throw switches ranging from SP3T to SP32T using appropriate switch matrices and associated driver circuits.

Waveguide-based, as well as printed circuit versions, are available. Millitech has also developed monolithic PIN switches as some commonly used frequencies. These switches have low loss and are very small in size.

Millitech offers a wide selection of PIN diode driver circuits designed to mate optimally with these switches. To meet varying requirements for cost, size and power consumption, we offer a selection of three driver types. These drivers are of hybrid construction with maximum toggle rates as high as 20 MHz and switching speeds as fast as 2 nanoseconds. The small size of these drivers enables Millitech to provide its switches in very compact packages.

For those applications requiring lower loss and higher power handling capability than that provided by solid-state switches, Millitech has a complete line of manual and motorized rotary waveguide switches covering the WR-42 through WR-08 waveguide bands. These units provide a straight-through position as well as the left and right channels. The motorized models use either a controller panel with four pushbuttons or an optional GPIB interface. Switching speeds range from 250 milliseconds for a single switching step to 750 milliseconds for a complete rotation of the unit. Advanced design, material selection and manufacturing techniques ensure that these switches will maintain their low loss and low VSWR through many thousands of operation cycles.