

L-Band True Time Delay Phase Shifter

Space Applications Centre of ISRO has developed an integrated 6-bit GaAs MMIC digital phase shifter featuring two MMIC dies catering to 1024 ps delay requirement. It operates at 1.25 GHz with 250 MHz bandwidth, providing 1024ps of delay coverage, with a resolution of 16 ps. It features very low RMS delay error of 8 ps. This TTD Phase shifter requires an external driver circuit and works on negative control logic of 0/-5V. It is internally matched to 50 ohms and is ideal for integration into Multi chip Modules (MCMs)

due to its small size.

Typical Applications

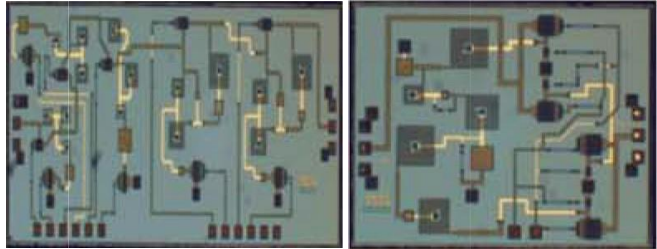
- EW Receivers
- Weather & Military ultra wideband Radars
- Beam Forming Modules

Salient Features

- 6 bit TTD-Phase Shifter
- Wide Dynamic range: 1024 ps
- Fine Resolution: 16 ps
- Novel Topology of self switched band pass network for 256 ps delay bit
- Novel topology of compensated network for 512 ps delay bit

LSB1-LSB5 bit

LSB6 Bit

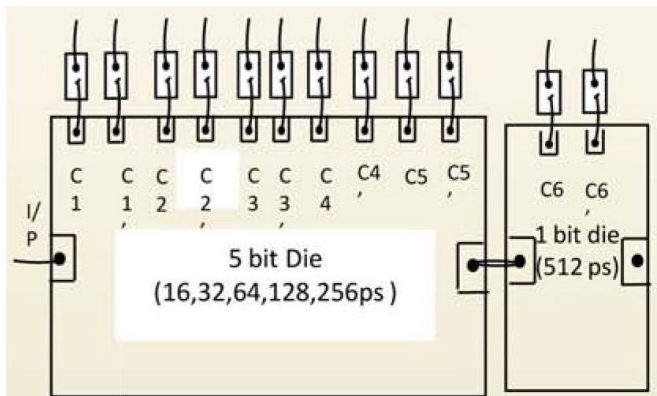


5.5 mm X 2.3 mm

3 mm X 2.3 mm

Interface Diagram

Switch Control from external TTL-MESFET driver
 -5V = OFF state 0V = ON state



Frequency (Ghz)	Max. Insertion Loss (dB)	Delay Range (ps)	I/o Return Loass Max. (dB)	Max. RMS error (ps)	Control Input
1.25 ± 0.125	15	16 to 1024	12	8	0/-5V

ISRO offers to license this technology of L band true time delay phase shifter to industries with adequate experience and facilities. Enterprises interested in obtaining knowhow may write giving details of their present activities, infrastructure and facilities to us.