Abstracts

Cryogenically Cooled C-Band p-i-n Diode Integrated Switch Matrix for Radio Astronomy Applications

G.H. Behrens, Jr.. "Cryogenically Cooled C-Band p-i-n Diode Integrated Switch Matrix for Radio Astronomy Applications." 1978 Transactions on Microwave Theory and Techniques 26.9 (Sep. 1978 [T-MTT]): 629-635.

A low-loss cryogenically coded (20 K) eight port C-band p-i-n diode switch has been developed for radio astronomy applications. The switching functions are achieved through the use of eight p-i-n diodes in a stripline package. Maximum measured loss and VSWR over the 4.4-5.1-GHz band are 0.75 dB and 1.5:1, respectively. The average measured noise temperature is 9.8 K. The switch provides operational versatility for a dual-channel dual-band (C- and L-bands) radiometer by simultaneously performing as a Dicke switch a feed/load selector switch and a band selector switch. The switch performs these functions at a noise temperature unobtainable with commercially available switches.

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