

Title (en)

Method and apparatus for fast-switching dual-toroid microwave phase shifter.

Title (de)

Schnellschaltverfahren und -vorrichtung für einen mit zwei Ringkernen versehenen Mikrowellenphasenschieber.

Title (fr)

Méthode et dispositif de commutation rapide d'un déphaseur à micro-ondes à deux tores.

Publication

EP 0139800 A1 19850508 (EN)

Application

EP 83306646 A 19831101

Priority

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Abstract (en)

The present invention is for an apparatus and method of fast-switching a dual-toroid microwave ferrite phase shifter. A first circuit 23,24 is provided for controllably switching the ferrite in one of the toroids 9 between a saturated and partially saturated states. A second circuit 25,26 is provided for controllably switching the ferrite in the other of the toroids 12 between a saturated and partially saturated states. A control circuit 19 is provided for controlling the first and second circuits such that the ferrite in at least one of the toroids is maintained in the saturated state at any given time such that any desired phase shift may be achieved with only one switching operation for each toroid. The present invention provides new reference states such that there are two reciprocal phase states for any given phase state such that a reciprocal phase state may always be achieved with only one switching operation for each toroid.

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H01P 1/195

IPC 8 full level

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CPC (source: EP)

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Citation (search report)

- [A] DE 1940987 A1 19710225 - PHILIPS PATENTVERWALTUNG
- [AD] US 4042831 A 19770816 - LENHOFF JR JOHN G
- [AD] US 3988686 A 19761026 - BEALL DONALD L, et al
- [A] US 3835397 A 19740910 - D ANTONIO N
- [A] US 3754274 A 19730821 - AUGER E
- [A] US 3510675 A 19700505 - JOHNSON DOUGLAS A, et al
- [A] US 3811099 A 19740514 - MASON R, et al
- [A] US 3555463 A 19710112 - OGASAWARA NAOYUKI, et al
- [A] US 3425003 A 19690128 - MOHR MAX C
- [A] US 3401361 A 19680910 - SCHLOEMANN ERNST F R A
- PATENT ABSTRACTS OF JAPAN, vol. 4, no. 28 (E-1)[510], 8th March 1980, page 135 E 1; & JP-A-55 003 218 (NIPPON DENSHIN DENWA KOSHA) 11-01-1980
- ELECTRONICS, vol. 43, no. 24, 23rd November 1970, pages 77-80; H.C. GOODRICH et al.: "Flux monitoring boosts accuracy of phased array radar systems"
- IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES, vol. MTT-22, no. 6, June 1974, pages 617-625, New York, US; N.R. LANDRY et al.: "Practical aspects of phase-shifter and driver design for a tactical multifunction phased-array radar system"
- MICROWAVE JOURNAL, vol. 26, no. 8, August 1983, pages 105,106,108,110,112,114,116, Horizon House-Microwave, Inc., Dedham, MA., US; T.E. SHARON: "Beam forming networks for mm-wave satellite communications"

Cited by

CN115498380A; CN115498381A; EP0272907A3; GB2200256A; GB2200256B

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