

Title (en)

COUPLER HAVING ARBITRARY IMPEDANCE TRANSFORMATION RATIO AND ARBITRARY COUPLING RATIO

Publication

**EP 0066015 B1 19870318 (EN)**

Application

**EP 81302294 A 19810522**

Priority

EP 81302294 A 19810522

Abstract (en)

[origin: EP0066015A1] An impedance transforming coupler (27, 28) is disclosed which may be used as a power divider or power combiner at microwave frequencies. The power division or power combination ratio is arbitrary, and the impedance transformation ratio is arbitrary. These couplers may be used in a circuit to power-combine amplifiers (11, 12). The insertion loss of the circuit is low and the bandwidth is improved by an order to two to one over prior art systems which had separate circuits for matching the impedance and providing power combining. The coupler is optimally a branch line coupler having four curved branches a quarter wavelength long at the center frequency. The output ports are 90 DEG out of phase. Simple formulas are given relating the desired admittances of each of the four branches to k, the desired power coupling ratio, and Y, the desired admittance transformation ratio.

IPC 1-7

**H01P 5/18**

IPC 8 full level

**H01P 5/18** (2006.01)

CPC (source: EP)

**H01P 5/225** (2013.01); **H01P 5/227** (2013.01)

Citation (examination)

US 3772616 A 19731113 - IMOTO K

Cited by

GB2160024A; GB2380616A; GB2161991A; GB2389715A; GB2389715B; EP0180011A1; EP0169124A1; FR2567695A1; US7385461B2; US11011815B2; WO2019210070A1

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

**EP 0066015 A1 19821208; EP 0066015 B1 19870318; DE 3176026 D1 19870423**

DOCDB simple family (application)

**EP 81302294 A 19810522; DE 3176026 T 19810522**