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(71) Applicant: **RAYTHEON COMPANY** [US/US]; 870
Winter Street, Waltham, MA 02451-1449 (US).

(72) Inventor: **ESSENWANGER, Kenneth A.**; 19563 Empty
Saddle Road, Walnut, California 91789 (US).

(74) Agent: **ALKOV, Leonard, A.**; c/o Raytheon Company,
2000 E. El Segundo Boulevard, P.O. Box 902 (E4/N119),
El Segundo, CA 90245-0902 (US).

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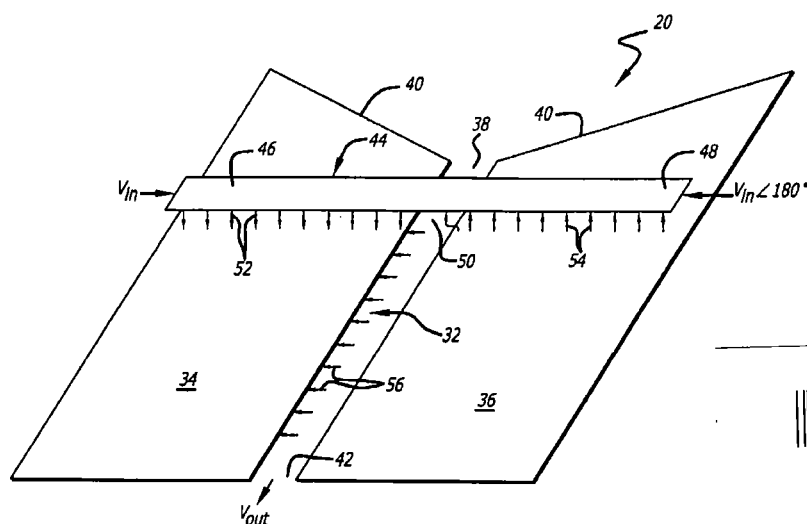
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(54) Title: **COMPACT BALUN FOR REJECTING COMMON MODE ELECTROMAGNETIC FIELDS**



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(57) **Abstract:** A space-efficient broadband balun (20). The balun (20) includes a first mechanism (44, 80, 82, 94, 96) for receiving an input signal (52, 54) having an undesirable component. A second mechanism (50) rejects the undesirable component via a waveguide transition (50). In a specific embodiment, the undesirable component is a common mode component. The first mechanism (44) includes an input microstrip waveguide (44). The waveguide transition (50) is a single microstrip-to-slotline transition (50) from the input microstrip waveguide (44) and to a slotline (32) in a ground plane (34, 36) of the microstrip waveguide (44). The slotline (32) is terminated at a first end (38) via a wedge (40) in the ground plane (34, 46). A second end (42) of the slotline (32) provides an output of the balun (20). The input signal (52, 54) includes a first input signal (52) and a second input signal (54), which are input at opposite ends (38, 42) of the input microstrip waveguide (44). The first input signal (52) and the second input signal (54) have a desired differential mode component and an undesired common mode component.

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