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(19) **United States**(12) **Patent Application Publication**
Raihn(10) **Pub. No.: US 2022/0376674 A1**(43) **Pub. Date: Nov. 24, 2022**(54) **COMPOSITE TRANSVERSELY-EXCITED
FILM BULK ACOUSTIC RESONATOR
CIRCUITS HAVING A CAPACITOR FOR
IMPROVED REJECTION**(71) Applicant: **Resonant Inc.**, Austin, TX (US)(72) Inventor: **Kurt Raihn**, Grass Valley, CA (US)(21) Appl. No.: **17/702,679**(22) Filed: **Mar. 23, 2022****Related U.S. Application Data**

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(57)

ABSTRACT

A filter circuit has a cascaded resonator circuit with a first acoustic resonator and a second acoustic resonator connected in series on a printed circuit board (PCB). The admittances as functions of frequency of the first and second acoustic resonators are substantially identical. The filter circuit also has a composite resonator circuit formed by a capacitor connected in parallel with the second acoustic resonator on the PCB. The capacitor improves a steepness of an upper bandpass edge of the filter circuit.

