The theory of the anti-maser: coherent perfect absorption of RF
MICHAEL AVILES, ANTHONY MAZZOCCO, JIM ANDREWS, NATHAN DAWSON, MICHAEL CRESCIMANNO, Dept of Physics and Astronomy, Youngstown State University — The radio frequency (RF)-analogue of the anti-laser is developed using four terminal network theory combined with the telegrapher’s equation. We describe solutions of the Coherent Perfect Absorption (CPA) condition that are interpretable as the slab dielectric anti-laser. We find a host of other solutions, some of which have no simple optical analogue. Broadband solutions are found which hint at the possibility of a new type of asymmetric transient CPA phenomenon, and point out that this study suggests a potentially new low loss, reversible RF devices.

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