Abstract - A group delay equalizer consisting of a composite right/left handed (CRLH) circuit in parallel with a right handed (RH) circuit is proposed for UWB RF components. Dispersion characteristics and group delay characteristics for the proposed circuit are described. A group delay compensation circuit was designed for the developed InGaP/GaAs HBT MMIC amplifier with an active balun. It is demonstrated that the measured group delay variation is reduced.

CRLH in parallel with RH

The group delay has a convex curve. Usually UWB RF devices have a concave group delay. Therefore this circuit can equalize it.

Group delay compensation

Photographs

Fabricated GD compensation circuit

Fabricated broadband amplifier with an active balun

Gain and group delay characteristics

The group delay variation is reduced.