Abstracts

Design of SAW expander and compressor on LiTaO/sub 3/ for a TCDMA spread spectrum system

R. Weigel, F. Kalabic, G. Ostermayer, A. Pohl, F. Seifert and L. Reindl. "Design of SAW expander and compressor on LiTaO/sub 3/ for a TCDMA spread spectrum system." 1997 Transactions on Microwave Theory and Techniques 45.12 (Dec. 1997, Part II [T-MTT] (1997 Symposium Issue)): 2486-2492.

We report on the design and performance of surface-acoustic wave (SAW) minimum shift keying (MSK) tapped delay lines using pseudonoise code sequences with a length of 128 chips. As a substrate, X112/spl deg/rotY-LiTaO/sub 3/ has been used due to the system requirements of a given CDMA/TDMA (TCDMA) radio communication system. System IF frequency, bandwidth of the major lobe, and integration time of the SAW devices were, respectively, 360 MHz, 63.5 MHz, and 3 /spl mu/s. We used SAW tapped delay lines employing nonweighted as well as cosine-weighted input interdigital transducers incorporating split-fingers. We designed both expander as well as compressor filters attaining very similar experimental results. We found insertion loss values down to 16 dB and amplitude ripples of less than 2 dB. The close-in selectivity was 28 dB.

❑ Return to main document.