Abstracts

A robust ultra broadband wireless communication system using SAW chirped delay lines

A. Springer, A. Pohl, W. Gugler, M. Huemer, L. Reindl, C.C.W. Ruppel, F. Seifert and R. Weigel. "A robust ultra broadband wireless communication system using SAW chirped delay lines." 1998 MTT-S International Microwave Symposium Digest 98.2 (1998 Vol. II [MWSYM]): 491-494.

Design and performance of SAW chirped delay lines on LiTaO/sub 3/-X112rotY for a wireless communication system are presented. Center frequency, bandwidth and chirp rate are 350 MHz, 80 MHz, and /spl plusmn/20 MHz/s, respectively. An optimized square-root weighting was chosen to reduce the sidelobes of the compressed pulse to -42 dB compared to the correlation peak. The chirp filters have been deployed in a hardware demonstrator for a wireless indoor communication system for data rates of a few Mbit/s. Limiting factors for the data rate according to simulations and measurements are mainly the intersymbol interference due to the time-overlapping of consecutive symbols and to a lesser extent the multipath propagation.

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