Experimenting with Error Performance of Systems Employing Pulse Shaping Filters on a Software-Defined-Radio Platform

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Abstract : This paper presents experimental results on testing the symbol-error-rate (SER) performance of quadrature amplitude modulation (QAM) systems employing symmetric pulse-shaping square-root (SR) filters designed by minimizing the roughness function and by minimizing the peak-to-average power ratio (PAR). The device used in the experiments is the 'bladeRF' software-defined-radio platform. PAR is a well-known measurement, whereas the roughness function is a concept for measuring the jitter-induced interference. The experimental results show that the system employing minimum-roughness pulse-shaping SR filters outperforms the system employing minimum-PAR pulse-shaping SR filters in the sense of SER performance.