

Digital Communications and Laboratory

Third Homework

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The following system was considered. A stream of QPSK symbols is upsampled with period $T/4$ and filtered with a filter q_c which output is $s_c(n\frac{T}{4}) = \alpha s_c((n-1)\frac{T}{4}) + \beta a'_{n-5}$. This signal is transmitted through the channel, which introduces the noise component $w_c(n\frac{T}{4})$ with PSD $\mathcal{P}_{w_c}(f) = N_0$. Note that noise components are iid with $pmd \approx \mathcal{CN}(0, \sigma_{w_c}^2)$

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