

Paper title: Frequency Selective IQ Phase and IQ Amplitude Imbalance Adjustments for OFDM Direct Conversion Transmitters

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Abstract – Low power and low cost analog front-end architectures are required to provide competitive applications based on e.g. the IEEE802.11a Wireless LAN standard. Direct conversion analog front-end architectures can fulfill these demands but may introduce unwanted imperfections like IQ amplitude and IQ phase errors. This paper presents a fully digital solution to eliminate frequency selective IQ phase and IQ amplitude imbalance errors caused by the analog modulator in conjunction with low cost analog base-band filters. This paper covers additionally the relevant hardware and software partitioning of the related error detection and error correction blocks.

Index Terms – OFDM, direct conversion, frequency selective IQ phase imbalance, frequency selective IQ amplitude imbalance