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Design and Realization of a Combined FPGA and Software Solution for Implementing Chinese Digital Radio in a General Purpose Signal Generator.

ABSTRACT - Masterthesis

This report describes the implementation of a digital audio broadcasting system that transmits digital audio and data services signals via a terrestrial wireless coverage approach in 87 MHz - 108 MHz frequency range. This implementation follows the channel coding and the modulation techniques and the signal frame structure described by the digital radio standard, called the Chinese Digital Radio, made in 2013 by the authority of State Administration of Press, Publication, Radio, Film and Television of the People's Republic of China (SAPPRFT), in the paper GY IT 268.1, 2013.

The main aspects covered in this report are the data structure of the CDR system, the algorithms of the channel coding techniques, and the data arrangement within the sub-carriers of an OFDM system. Other aspects include the interfacing between the CDR transmitter and the multiplexer and the input data format / encapsulation.