

REAL TIME IMPLEMENTATION OF FULL RATE GSM 06.10 SPEECH CODEC ON TMS320C6713 DSP KIT AND ITS ANALYTICAL EVALUATION OF PERFORMANCE IN SIMULINK

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Abstract

Factors serving as constraints in today's wireless communication system include bandwidth and power. In wireless systems that require the transmission of speech, these goals are addressed by developing efficient methods of reducing the amount of information required to transmit and receive quality speech. For this reason, speech coding has been, and remains, the topic of aggressive research. This paper presents real time analysis of Full Rate GSM 06.10 Speech Codec by implementing it on TMS320C6713 DSP Kit using Simulink RTW (Real Time Workshop) which explains simulink model of Full Rate GSM 06.10 speech codec, LPC analysis, LPC synthesis, RPE-LTP analysis & synthesis and Full Rate GSM 06.10 Speech Codec for real time implementation on DSP Kit. The Full Rate GSM 06.10 Speech Codec shares advantages like moderately high speech quality, medium computational complexity, moderate coding delay and moderate compression ratio in comparison with other standard coders.

Keywords: Speech Coding, GSM, RPE-LTP Method, MATLAB 7.0, Simulink, Code Composer Studio, Linear Predictive Coding, LPC analysis, LPC synthesis