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WO 2000/074036 A WO 1995/024776 A
US 5890108 A
BURNETT I S ET AL: "A mixed prototype
waveform/ CELP coder for sub 3 kbit/s". Proc.
International Conference on acoustics, speech &
Signal Processing (ICASSP), New York, IEEE, US, VOI
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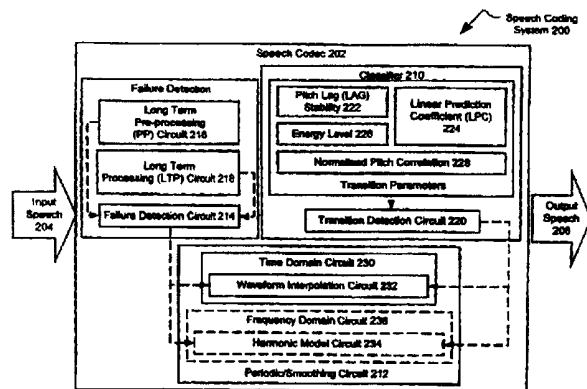
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(54) Abstract Title: **Voiced speech preprocessing employing waveform interpolation or a harmonic model**

(57) Voiced speech preprocessing employs waveform interpolation or a harmonic model circuit to smooth a transition region and simplify speech coding. At low bit rates, the speech is coded by a system that maintains a high perceptual quality in the transition region from a voiced (quasi-periodic) portion of the speech signal to an unvoiced (non-periodic) portion of the speech signal. Similarly, the transition region from an unvoiced portion to a voiced portion is conditioned to maintain a high perceptual quality at a low bandwidth. The transition region from one type of voiced region to another type of voiced region is also smoothed. The transition region is smoothed to create a quasi-periodic speech signal.



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