General Description

The GOLD-SX is part of a complete chip set which covers all functions of a mobile radio for the Global System for Mobile communications, GSM. A mobile terminal which contains this chip set can meet all performance requirements set down in the Technical Specifications for GSM, PCN and PCS-1900.

GOLD-SX is used for advanced features. The function of the GOLD-SX is dependent on its firmware.

The first version of the GOLD-SX performs Half-Rate speech encoding including Voice Activity Detection (VAD) and Discontinuous Transmission (DTX), as well as Half-Rate speech decoding including Discontinuous Reception (DRX, Comfort Noise).

The second version performs Enhanced Full-Rate speech coding including all the DTX functions as in Half-Rate speech coding.

Features

Firmware:
The GOLD-SX is available in two versions with different mask programmed ROM code:

- Half-Rate Codec (GOLD-SXH):
  – GSM Half-Rate Speech Codec (GSM 6.02, 6.06, 6.07, 6.20)
  – Voice activity detection, VAD (GSM 6.42)
  – Discontinuous transmission, DTX (GSM 6.41)
  – Comfort noise generation, DRX (GSM 6.22)

Type	Package
PMB 2708_1-F (GOLD-SXH)	P-TQFP-64-1 (SMD)
PMB 2708_2-F (GOLD-SXE)	P-TQFP-64-1 (SMD)

  – Serial data exchange with Half-Rate Channel Codec and voiceband unit on GOLD-SP
  – Serial data exchange with system simulator interfacing box (GSM 11.10)
- Enhanced Full-Rate Codec (GOLD-SXE):
  – GSM Enhanced Full-Rate Codec (GSM 6.51, 6.53, 6.54, 6.60)
  – Voice activity detection, VAD (GSM 6.82)
  – Discontinuous transmission, DTX (GSM 6.81)
  – Comfort noise generation, DRX (GSM 6.62)
  – Serial data exchange with Enhanced Full-Rate Channel Codec and voiceband unit on GOLD-SP
  – Serial data exchange with system simulator interfacing box (GSM 11.10)

Hardware:
- DSP core of type SPCE (Siemens Signal Processor Core Enhanced) offering high performance (39 MIPS @ 39 MHz, 2.7 V) and current consumption (approx. 1.3 mA/MIPS)
- 12 K Program ROM and 0.25 K RAM, 8 K Data ROM on-chip
- PLL-based clock generation (13-MHz input)
- Package: P-TQFP-64, 10×10 mm^2, 0.50 mm pitch
- 3-V supply voltage ($\pm$ 10 %)
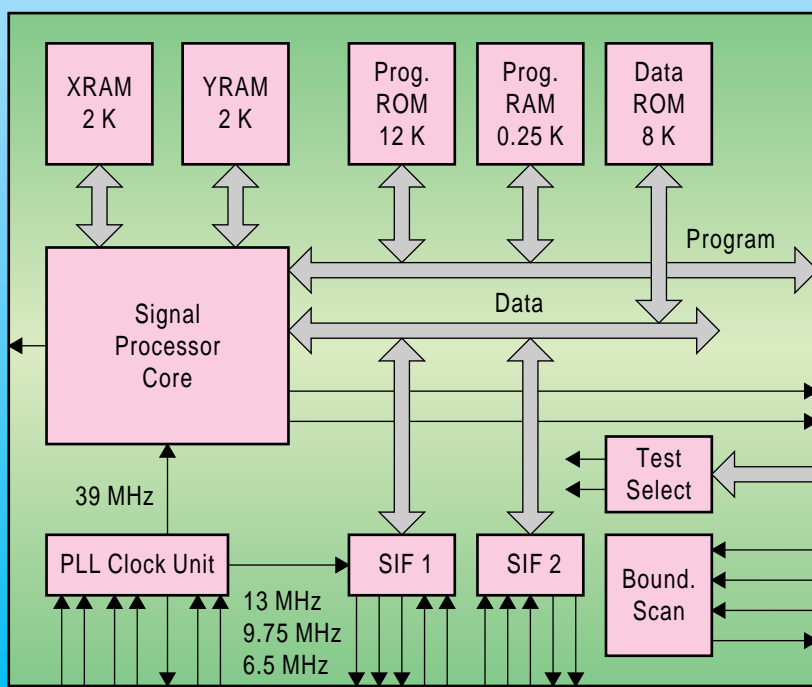
Block Diagram   to GOLD-SP   to DAI Test Box   ITB08488