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Comcerto™ GSM/W-CDMA Software

Package Release 1.0

Mindspeed's highly integrated and comprehensive Comcerto system-on-chip (SoC) hardware and software solution offers telecommunications equipment manufacturers the convenience and performance of a single device that transmits carrier-class quality voice across wireline and wireless networks supporting the IMS architecture. Integrating both packet and signal processing provides an extremely robust and flexible architecture combined with Mindspeed's industry proven software suite and enables equipment manufacturers to speed time-to-market for next-generation products.

In addition to the feature-rich suite of standard wireline software features, the GSM/W-CDMA software package incorporates the full range of GSM & W-CDMA codecs including AMR, GSM EFR and G.711 along with support for IuUP, NbUP packet processing for both ATM and IP. The complete IuUP state machine including rate control, time alignment and error event, is implemented on the packet processor to minimize the MIPs requirements of a control processor. Unlicensed mobile access (UMA) protocol support, including redundancy, ensures reliable VoIP transport over WiFi and WiMax networks. The software includes the state machine implementation for tandem-free operation (TFO) over TDM, ATM and IP, as well as support of in-pass equipment (IPE) to monitor TFO traffic.

KEY FEATURES

- AMR, GSM EFR
- IuUP & NbUP
- Unlicensed mobile access (UMA)
- Voice quality enhancements (VQE)
- Transcoder-free operation (TrFO)
- Tandem-free operation (TFO) including IPE
- Music detection
- Circuit switched data (CSD)

The transcoder-free operation (TrFO) protocols stacks also incorporate IuUP and NbUP as well as the interworking with UMA traffic. Data services for GSM networks can be terminated using the circuit switched data (CSD) feature. To allow Lawful Interception in converging wireline and wireless networks, Comcerto's Media Forking implementation also allows NbUP & IuUP packets.

To further enhance the voice quality of wireless calls, noise reduction, automatic gain control (AGC) and acoustic level control (ALC), voice quality enhancement features (VQE) are incorporated in the W-CDMA software package.

Applications for Comcerto series processors include IMS media gateways, mobile switching centers (MSC)s, session border controllers (SBC), radio network controllers (RNCs), base station controllers (BSCs), base stations and node-Bs.

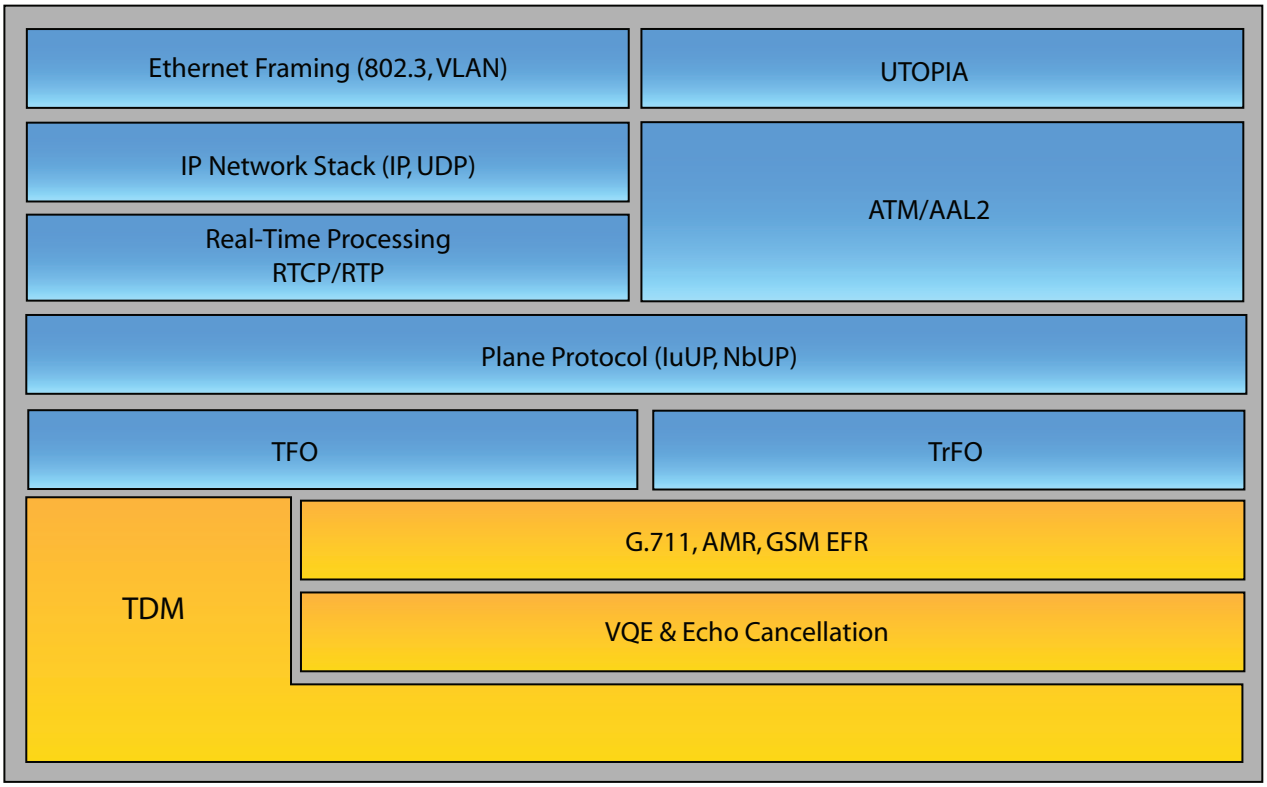

Figure 1: Comcerto GSM/W-CDMA software diagram

Product Highlights

Voice Codecs and Modulations

- Echo canceller
  - G.168-2004 compliant
  - Echo tail up to 128 ms
- G.711
- AMR, GSM EFR

Voice Quality Enhancements (VQE)

- Noise reduction
- Noise compensation
- Automatic gain control (AGC)
- Acoustic level control (ALC)

Packet & Protocol Processing for ATM & IP

- IuUP (3GPP TS25.415)
- NbUP (3GPP TS29.415)

Media Forking for NbUP & IuUP

Unlicensed Mobile Access (UMA)

- RFC 3267 including redundancy
- Interworking between UMA, PSTN and W-CDMA

Tandem-Free Operation (TFO)

- 3GPP TS 28.062 compliant state
- In-pass equipment (IPE) for TFO traffic monitoring

Transcoder-Free Operation (TrFO)

- 3GPP TS 23.153 up to release 6

Circuit Switched Data (CSD)

- A-TRAU framing
- BS20-NT terminals (14.4, 28.2, 57.6 Kbps)
- BS30T terminals (28.8, 32, 33, 64 Kpbs)

Ordering Number: #SW0-003-WCDMA

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