RS8973
ZipWire™ – 2B1Q

High Speed, Low Power Single-Chip SDSL/HDSL Transceiver

The RS8973 is Conexant's latest addition to the ZipWire family of 2B1Q xDSL modems. It offers up to 2.32 Mbps operation, ultra-low power consumption and an integrated frequency synthesizer, while maintaining pin-for-pin compatibility with the Bt8970. The integrated frequency synthesizer is ideal for variable rate SDSL applications. Via software control, the RS8973 can be programmed to operate at data rates from 144 Kbps to 2320 Kbps, while requiring only a single crystal as a clock reference. The transmission distance will increase as the data rate decreases — reaching as far as 21,000 ft (or 7 Km) at 144 Kbps and 8,200 ft (or 3.1 Km) at 2.32 Mbps (over 26AWG wire, in absence of noise). In addition, power consumption has been significantly reduced, allowing the RS8973 to dissipate about 850mW when operating at 2.3 Mbps. The power consumption decreases with lower data rates.

The RS8973 is fully compliant with standards for HDSL 2B1Q transmission, and it meets the power spectral density (PSD) and pulse template requirements as specified in ETSI TS 101 135 with the same support circuit. This enables a single design utilizing the RS8973 to be configured through a simple software command to operate at either 784, 1168 or 2320 Kbps, and still meet the ETSI requirements. No changes to the hardware are needed.
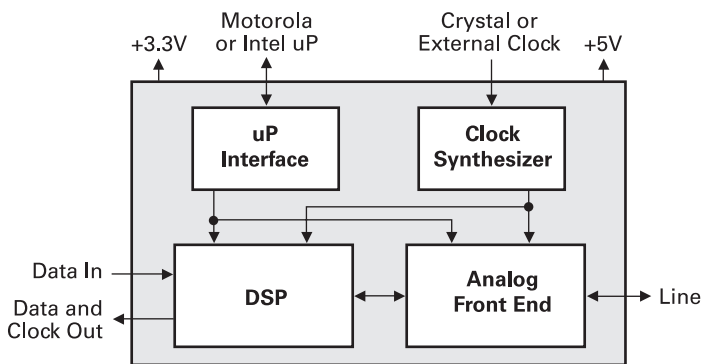
Distinguishing Features

- Extensive suite of flexible software driver features for a variety of applications

- Integrated single chip transceiver (DSP + AFE + LD + VCXO + CLAD)

- Multi-rate operation, 144 Kbps – 2320 Kbps

- Low power dissipation (about 850mW at 2.32 Mbps rate)

- Meets ETR152 pulse template PSD specifications for 784, 1168, 2320 Kbps with single hybrid circuit components

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Legendary Performance Heritage

The RS8973 is Conexant's fifth generation full-duplex 2B1Q transceiver. Its predecessors include the very popular ZipWire Bt8970 and Bt8960 devices, as well as the earlier generation Bt8952, Bt8921 and Bt8920 transceivers. Conexant also offers a family of "8953" HDSL/SDSL framers which seamlessly mate with these transceivers. A single set of software application programming interface (API) commands supports all of the Rockwell HDSL/SDSL devices — greatly simplifying upgrades to the next generation devices.

The software driver provided with the RS8973 has been expanded and tailored to support variable rate applications. This software includes an API command for rate adaptation, which automatically determines the maximum data rate achievable on a given loop. Conexant's ZipStartup algorithm is also available — significantly decreasing the time required to establish a link between the transceivers.

Product Features

- Low power dissipation (about 850mW at 2.32 Mbps operation)
- Supports data rates from 144 Kbps to 2320 Kbps
- Integrated frequency synthesizer
- Meets ETR152 pulse template and PSD specs with same support circuit
- Pin-for-pin and software compatible with Bt8970
- Supports automatic rate adaptation
- Single-chip transceiver
- Glueless interface to Motorola and Intel processors
- Flexible monitoring and control
- ZipStartup available for faster link establishment
- RS8953 companion SDSL/HDSL framers available
- JTAG/IEEE standard 1149.1 compliant
- 100-pin PQFP package
- -40C to +85C operation

Targeted Market Applications

- Data access concentrators
- E1 and T1 HDSL transport
- Next generation DLC/FLC
- Internet connectivity
- N x 64 data access
- Cellular base station
- Campus modems

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