Communications

XRT3590

Single Chip V.35 Transceiver

Features
• Provides Three Receivers and Transmitters fully Compliant with V.35 Interface
• Supports all V.35 Clock and Data Signals in DTE and DCE Modes of Operation
• Maximum Data Rate of 10MBPS up to 100 meters
• Full Compliance with ITU-T V.35 Specification

Applications
• Bridges and Routers
• Modems
• Digital Service Units (DSUs)
• Multiplexers
• HDSL and ADSL Equipment
• Inverse Multiplexers
• Workstations

XRT3590 is a single chip device which contains three V.35 receivers and transmitters. This device by itself is sufficient to implement all the data and clock signals required for a V.35 interface. For the handshaking signals, separate RS-232 transceivers are necessary.

This device supports multiple modes of operation including DCE and DTE. Diagnostic loopbacks are supported in the DCE and DTE modes. To accommodate diagnostics in both directions, a mirrored loopback is implemented. Both clock and data paths are looped back during the diagnostics mode. This feature can be invoked by applying appropriate patterns to SEL lines. (See Table 1.) For power management flexibility, all of the drivers and receivers can be placed in a shut down mode. For applications where only receivers are required, all the drivers can be disabled and vice versa. During disable mode the output drivers are placed in Hi-Z state.

The differential V.35 output drivers of this device are implemented using a current mode type design. This minimizes the number of external resistors required. Due to low voltage swing required in the current mode of operation, the emission in a typical V.35 interface using this device is minimized. Each transmitter and receiver would require an external resistor network consisting of 3 resistors for termination. This device does not require any large capacitors in addition to two 0.1mF decoupling caps needed across the power supplies. In order to reduce the number of external components, resistor network can be used to realize both the driver and receiver termination.