CopperGold™ Multi-rate

MC145660 CopperGold™ ADSL Transceiver

Put the pedal to the metal.✳

Applications

- Central Office - Line Cards and Digital Subscriber Line Access Multiplexers (DSLAM)
- Remote Terminals - Routers/Set-top boxes

Benefits

- Higher integration drives greater port densities at the central office
- Superior performance reaches more customers
- Standards compliance ensures fast road to interoperable solutions
- Comprehensive system solutions/reference designs enhance time-to-market

Key Features

- Upgradeable 24-bit DSP architecture
- Single-chip ADSL DMT transceiver including AFE, DSP, and DI circuitry
- Supports non-overlapped (FDM) and overlapped (Echo Cancellation) spectrum
- Designed for worldwide standards compliance: ANSI T1.413 Issues 1 and 2 Category I & II, ETSI ETR-328, and ITU recommendations G.992.1/G.992.2
- Designed to support rates greater than 9 Mbps downstream/1 Mbps upstream
- UTOPIA Level 2 ATM bus interface
- ATM TC sublayer with two independent ATM data paths
- OAM buffering to minimize host processing requirements
- Four independent data interfaces (two serial, two ATM)
- Reed Solomon, FEC, Interleaving, and Trellis Encoding

Product Overview

The MC145660 CopperGold Transceiver combines the analog front end (AFE), DSP, and digital interface (DI) circuitry necessary for implementing a standards-compliant ADSL modem based on the discrete multitone (DMT) line code. The high integration of the CopperGold Transceiver offers significant power and board-space savings while providing superior performance in transmitting data over twisted-pair copper telephone lines. The rich feature set of the CopperGold Transceiver supports such diverse applications as Internet access, video-on-demand, online gaming, and IP telephony/voice over DSL.

Motorola's next generation MC145660 CopperGold Transceiver enhances the functionality of the previous CopperGold Transceiver (MC145650) by adding an ATM UTOPIA Level 2 bus interface designed to support an ATM transmission rate greater than 9 Mbps downstream and 1 Mbps upstream. The MC145660 is designed for compliance with standards such as ANSI T1.413 Issue 1 and Issue 2 Category I & II, ETSI ETR-328, and ITU recommendations G.992.1 (G.dmt) and G.992.2 (G.lite). To support non-ATM applications and to maintain backward compatibility with the MC145650, two high-speed, duplex, serial data ports are supported.

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Digital DNA™ from Motorola

Block Diagrams

The following diagrams illustrate the MC145660 in both remote (ATU-R) and central office (ATU-C) solutions:

CopperGold Multi-Rate ATU-R Solution

CopperGold Multi-Rate ATU-C Solution
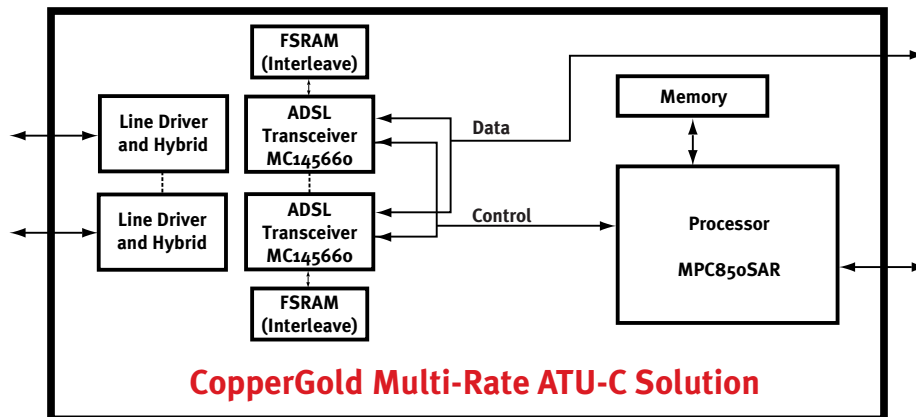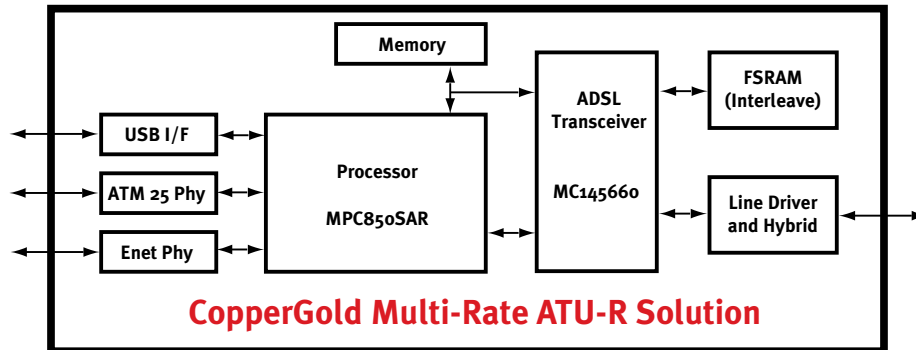
Ordering Information

Chipset Part Number: MC145660RTGC (Remote), MC145660COGC (Central Office)

Product Brief Order Number: MC145660PP/D (available for download at www.motorola.com/coppergold)

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