Product Brief

TNETC621: DOCSIS® 2.0 Wireless LAN Gateway Cable Modem Reference Design
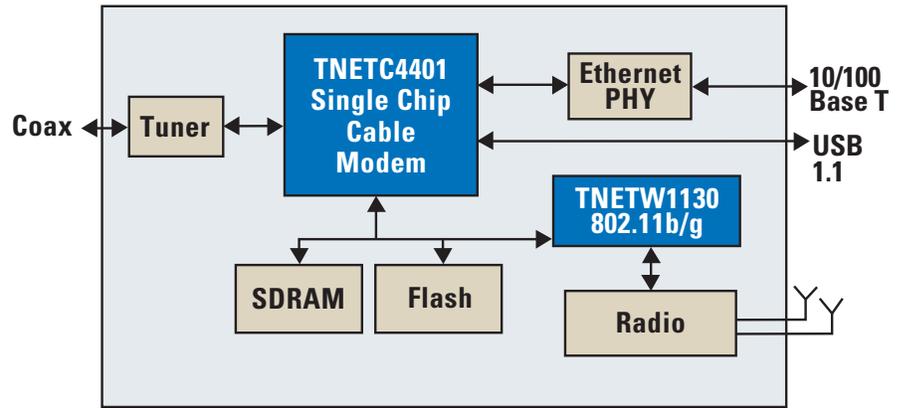

Key Benefits

- Integrated, on-board 802.11b/g
- Fully supports the DOCSIS® 2.0 standard
- Provides high confidence in deployability due to solution's robust and field-proven hardware and software technology
- Enables easy customization and product differentiation with highly-optimized, modular software drivers and application program interfaces (APIs)
- WLAN data rates higher than 100 megabits per second (Mbps) in 802.11g+ mode
- Dynamic Adaptive Equalization™ (DAE) extends effective reach with higher data rates
- Secondary Transceiver option extends WLAN's effective range
- Maintains the full speed potential of the broadband connection and improves the consumer experience with TurboDOX™ bandwidth optimization software

The TNETC621 cable modem from Texas Instruments (TI) provides cable modem developers with a quick time-to-market and low-risk certification platform for a DOCSIS® 1.0/1.1/2.0 wireless LAN (WLAN) gateway solution. The TNETC621 combines a cable modem with the ease and convenience of wireless LAN home networking in one product. This platform accelerates customer-development efforts by providing a reference platform utilizing the TNETC4401 integrated cable modem chip with proven DOCSIS 1.0/1.1/2.0 software.

The TNETC621's DOCSIS 2.0-compliant cable WAN interface supports downstream/upstream speeds of up to 38 Mbps/30 Mbps. The TNETC621 is a Wi-Fi CERTIFIED™ cable modem, providing customers with the confidence to deploy with the knowledge that the reference platform's access point will interoperate with any other Wi-Fi CERTIFIED networking products in the marketplace.

The TNETC621 broadband-enabled wireless home networking solution is based on a combined hardware design kit (HDK) and software design kit (SDK) platform. The HDK is composed of TI's TNETC4401 DOCSIS cable modem chip and the TNETW1130 802.11b/g (Wi-Fi®) single-chip MAC/baseband processor integrated on the motherboard offering high-performance, standards compliant wireless networking operation.

Key Features

- Fully compliant with DOCSIS® 1.0, 1.1, and 2.0
- Complete hardware and software reference design kit (RDK)
- Pre-integrated with third-party residential gateway software components
- Wi-Fi CERTIFIED™ cable modem
- Software upgradeable to support the CableHome™ specification
- 802.11b/g (Wi-Fi®) interface with extended data rate and range capabilities
- 10/100 BaseT Ethernet Interface
- USB 1.1 Interface
- Supports optional TurboDOX™ software for enhanced data throughput

TNETC621 Block Diagram

Items Included in Software Design Kit (SDK)

Item	Description
Software Files	DOCSIS® 1.0/1.1/2.0 source code, Access Point software drivers, 802.11b/g Access Point drivers, Residential gateway software, Third-party pre-integrated sample code images; Features include: NAT (Network Address Translation), Firewall, dynamic host configuration protocol (DHCP), and Web-based management
Collateral	1. Software User's guide, installation guide, release note, and test reports 2. Complete Access Point software and Residential Gateway integration documentation

Items Included in Hardware Design Kit (HDK)

Item	Description
Packaged Modem	Includes all packing material, manuals, and wrapping
Cables	Serial Cable and Adaptor, WLAN antenna
Power Supply	9-V DC external power supply
Collateral	User's guide, device documentation, test reports, and WLAN card product specification
Board Design	Board schematics and PCB production files

Additional (optional) Software Packages

Item	Description
TurboDOX™	Bandwidth optimization software package for boosting modem performance; runs on top of TI DOCSIS 1.0/1.1/2.0 software stack

Real World Signal Processing, the black/red banner, Dynamic Adaptive Equalization and TurboDOX are trademarks of Texas Instruments. DOCSIS is a registered trademark and CableHome is a trademark of Cable Television Laboratories, Inc. Wi-Fi is a registered certification mark and Wi-Fi CERTIFIED is a certification mark of the Wi-Fi Alliance.

TEXAS INSTRUMENTS

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