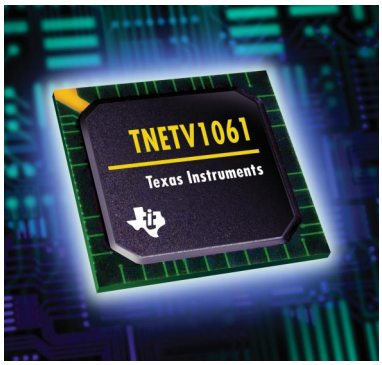
*Product Bulletin*

# Residential VoIP Customer Premises Solution TNETV1061




The TNETV1061 residential VoIP solution from Texas Instruments (TI) provides a complete, cost-effective VoIP solution for products targeted for consumer phone service. By leveraging TI's strength in DSPs for real-time signal processing and the market leadership of Telogy™ software, the TNETV1061 meets the demands of consumers while minimizing the risks to ODMs, OEMs and service providers rolling out VoIP-based platforms and services. The dual processor architecture integrates a TMS320C55x™ DSP core technology and MIPS RISC processor, providing an ideal solution for simultaneously supporting voice and data traffic for consumers and home office users.

The TNETV1061 is the newest member of TI's full range of VoIP solutions that offer optimized density and faster time-to-market for manufacturers. With the industry's largest installed base of VoIP-based products and field-proven technology, TI's VoIP solutions provide customers with the security of experience that comes from leading a rapidly growing and dynamic market.

The TNETV1061 optimizes the core software and functionality of TI's industry leading TNETV1060 solution to fully address the needs of the cost-sensitive residential market. The TNETV1061 provides more than a 20 percent performance improvement and a complete suite of voice and data features at the right price point for consumer deployments.

The scalability and flexibility of the TNETV1061 solution allows manufacturers to use a single software solution with different build options to meet the needs of multiple residential products and markets, such as:

- Analog terminal adapters
- Broadband cordless phones
- Wired VoIP gateways/routers
- VoIP-enabled 802.11b/g access point/routers

***Key Features:***

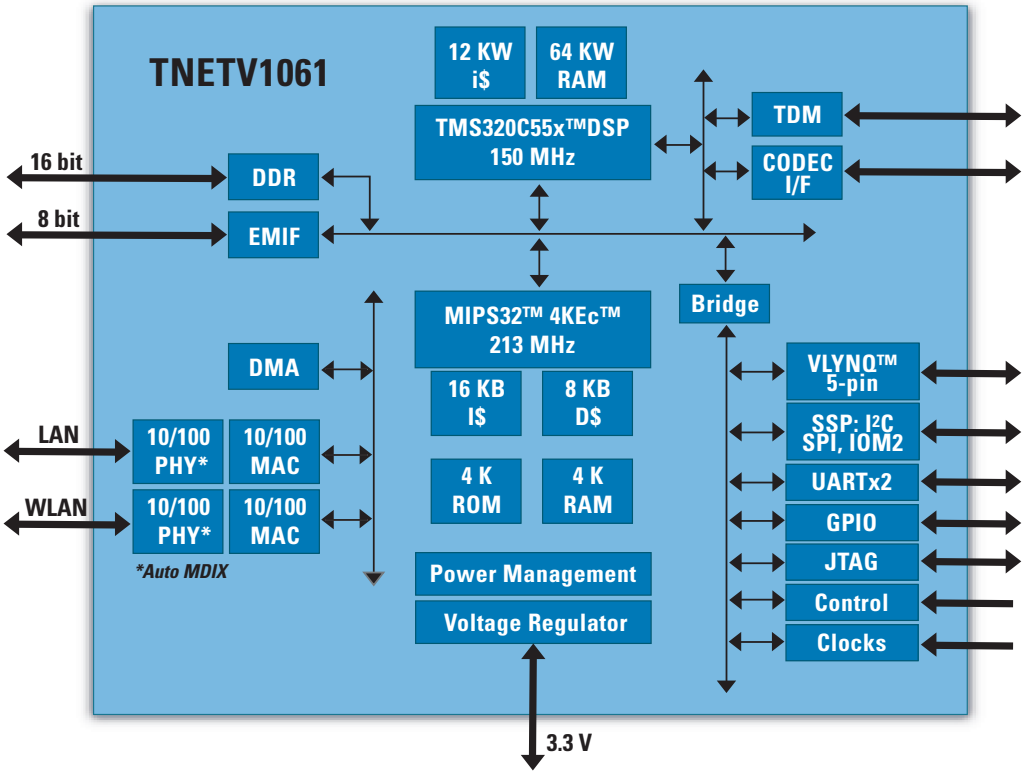
- Dual-core processor architecture optimized to simultaneously support voice and data traffic
- Greater than 20 percent improvement in processor performance
- Complete residential software package:
  - PIQUA™ technology enables VoIP processing and QoS monitoring features
  - SIP protocol stack and SIP supplemental services
  - Security for voice traffic and signaling
  - Full suite of call features
  - Network support package
  - High performance routing
  - 802.11b/g access point software
- Reduce risk of large scale deployment through remote configuration and management, dual image support, remote firmware upgrades and security features
- Ideal solution for residential applications that require superior voice quality, scalability, and reliability at a consumer price point

### *TNETV1061 Residential VoIP Solution*

To assist manufacturers in bringing products to market quickly, the TNETV1061 solution couples a VoIP system-on-a-chip with a complete software suite supporting voice and network protocols, call features, and remote configuration and management.

The TNETV1061 also includes improved memory interfaces targeted at reducing the overall system bill of material cost. The solution supports a Double Data Rate (DDR) memory interface, and NOR or NAND flash memory, giving manufacturers the option of providing value-added features such as local voicemail storage. Support for more cost-effective telephony interface solutions has been added and advanced software support for some GR-909 line tests such as foreign voltage detection are pre-integrated.

The Ethernet 10/100 WAN and LAN interfaces support AutoMDIX, further reducing the system bill of materials costs. The TNETV1061 supports an interface to TI's TNETW1350A




solution and pre-integrates the software to support a VoIP-enabled 802.11b/g access point product. TI's TNETW1350A with G++™ technology provides twice the range and 50 percent greater throughput over previous WLAN solutions, while minimizing interference from products in the home such as microwaves, cordless phones and neighboring wireless networks.

### TNETV1061 VoIP SoC Specifications

- 150-MHz C55x DSP providing up to 300 MIPS
- 213-MHz MIPS32™ 4KEc™ 32-bit RISC providing up to 287-Dhrystone MIPS
- ENET 10/100 Phys integrate support for AutoMDIX
- DDR EMIF supports DDR1 SDRAM
- Asynchronous EMIF supports external SRAM, NAND Flash, NOR Flash and ROM
- 5-pin VLYNQ™ serial communications port
- Two UART interfaces, SSP, JTAG
- Integrated voltage regulator
- 3.3V I/O supply input voltage
- 255-Terminal Plastic Ball Grid Array (PBGA)
- Pb-Free/RoHS compliant package available

With the largest installed base of field-hardened VoIP-specific solutions, TI offers worldwide communications equipment manufacturers and designers the broadest range of voice and fax over IP solutions built around TI's award-winning software for VoIP.

### Key Software Capabilities Include:

- PIQUA technology – Voice quality monitoring, serviceability, manageability and network management
- Embedded Quality of Service (QoS) data collection, monitoring and reporting
- Telchemy v2.2 support
- RTCP-XR packet support

### VoIP Features:

- Full range of wireline codecs: G.711 (PCM), G.723.1A, G.726(ADPCM), G.729AB
- Support for wireless codecs: GSM-FR, GSM-AMR
- T.38 Fax Relay: T.30, V.17,V.29, V.27ter, V.21
- V.34 Fax Support
- Voice activity detection (VAD)
- Comfort noise generation (CNG)
- Gain control
- Line echo cancellation: G.168-2002
- Adaptive jitter buffer
- Packet playout, adaptive jitter buffer and lost packet compensation/recovery
- RTP packet protocols
- Tone detection and generation: DTMF, MF, Call Progress, etc
- Caller ID: Bellcore, ETSI, NTT, China

### Security Features:

- Secure RTP for voice traffic
- SIP TLS for signaling
- Multi-level password protection

**SIP Protocol Stack**

**SIP Supplemental Services:**

- 3-way conferencing
- Message waiting indicator
- Call forward
- Call return
- Repeat call, repeat dial on busy
- Call waiting with Caller ID
- Caller ID blocking
- Anonymous call block
- Do not disturb
- Call transfer
- Distinctive ringing
- Fax PCM fallback

**Telephony Support:**

- Support multiple telephony interfaces
- Up to 4 FXS ports
- Optional FXO port supported
- Foreign voltage detection line test

**Provisioning, Remote Configuration and Management:**

- XML-based configuration
- Single or dual image support
- Remote firmware upgrade
- Generic network-based provisioning scheme
- Framework for TR-104 VoIP provisioning

**Network Support Package:**

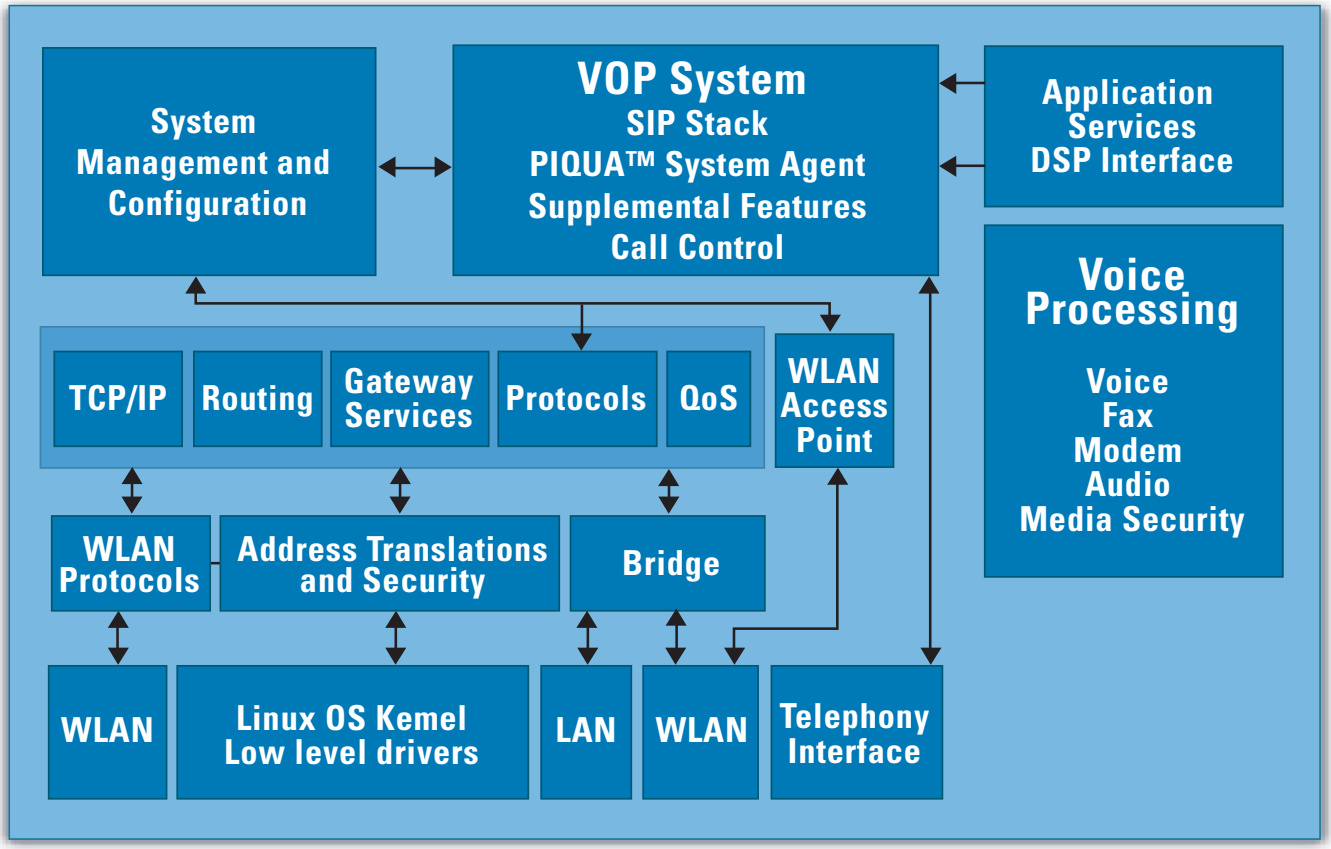
- LAN bridging, LAN routing (Ethernet and WLAN)
- Routing (RIP v1/2, IGMP Proxy, IP Forwarding)
- Router backup/restore
- Digital signatures
- WAN Protocols (PPPoE, DHCP, Static IP)
- Address Translation and Security
  - NAP/NATP
  - UPnP NATP Transversal
  - Application Layer Gateway (ALGs)
- Stateful inspection firewall
- Denial of service
- Web filtering

**802.11b/g Access Point Software:**

- Wi-Fi Certified
- Enable/Disable support
- WMM/WME
- WPA2/AES
- WEP, TKIP cipher suites
- 802.11i WPA authenticator
- WEP key lengths 40, 104, 256 bits with Open, Shared or Both authentication methods
- 802.1x, PSK authentication protocol
- Multiple BSSID support

Multiple instances of each software component can exist to facilitate support of concurrent, multi-channel operation. Each instance shares common program memory and has unique channel-specific data

***Residential Gateway Software Architecture with WLAN***



memory to maintain information regarding the state of the channel, including network management and diagnostic information.

### *PIQUA™*

The TNETV1061 also incorporates PIQUA, TI's embedded IP quality management technology, offering real-time monitoring of IP services. PIQUA allows service providers to proactively assess voice quality parameters and dynamically adapt to changing network conditions to enhance the subscriber experience.

### *For More Information*

Please contact your TI sales representative or visit **www.ti.com/tnetv1061**



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TEXAS INSTRUMENTS

**SPAT166**