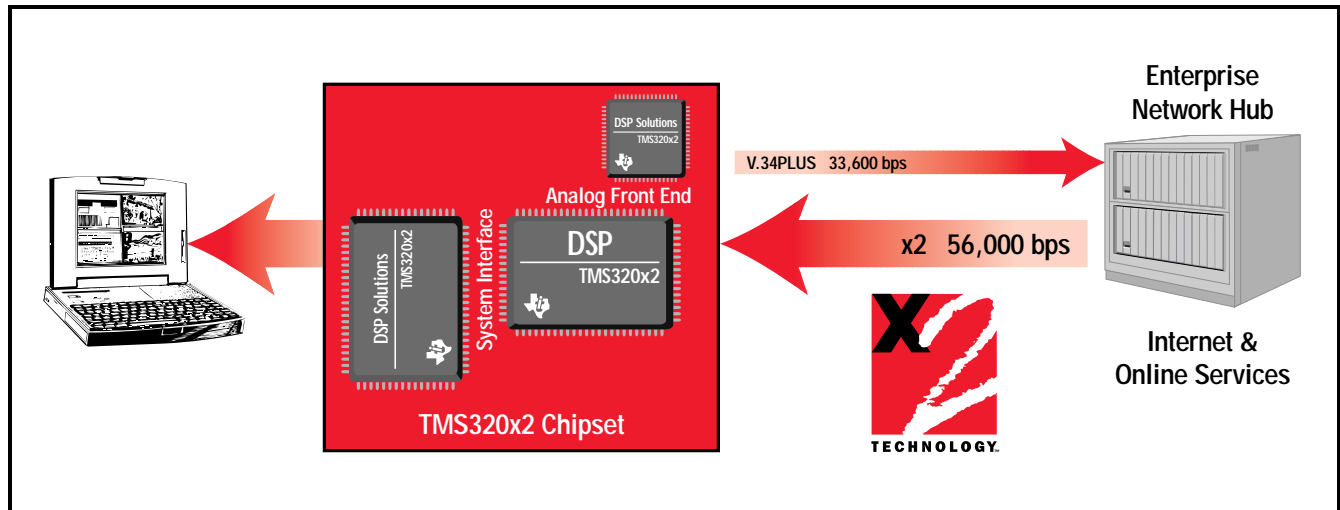


x2™ Modem Chipset

Product Brief



The TMS320x2 chipset from Texas Instruments brings a new level of Internet access to end users. TI's DSP Solution, complete with a TMS320 DSP, system interface, and analog front end, allows easy software upgrades and compatibility with international standards.

Introduction

New from Texas Instruments, the revolutionary TMS320x2 line of modem reference designs enables systems that deliver twice the performance of today's fastest modems to operate over conventional telephone lines. The reference designs are the first in the industry and the first in a line of TI products compatible with the x2 technology developed by U.S. Robotics®. With x2, manufacturers can effectively double current high-end transmission rates of 28.8 or 33.6 Kbits per second (Kbps) with modems that provide an asynchronous or "downstream" 56-Kbps connection to the end user.

Initially, TI will offer seven different DSP Solutions for x2 modem designs complete with all the hardware and software necessary to get up and running quickly. Each reference design has a unique feature and function set that makes it optimized for particular applications and end equipments. TI will continue to release other x2-based TMS320x2 reference designs that are optimized to address particular market needs.

Benefits

x2 opens a new realm of possibilities

Once thought architecturally impossible over conventional phone lines, the new x2 DSP-based modem reference design family creates new possibilities for end users. Networked applications like the Internet are exploding. But in order to make them truly valuable, users need ultra-fast data transmission to reduce the download time for complex graphical images. To date, specially-installed ISDN lines were one of the few alternatives for achieving this high performance. However, ISDN lines are still not widely available, and they can cost up to ten times as much as a standard telephone line. The TMS320x2 reference designs give users ISDN performance at a fraction of the cost.

Reference Design Specifics

The TMS320x2 chipset is designed to address a wide range of design requirements. Windows™-based and operating system (O/S) independent reference

Product overview of the x2 modem chipset

	x2	O/S Independent	Windows Based	Data/Fax	DTAD	Speakerphone	DSVD	PnP	ISA	RS-232	Power Management	Cellular	V.80
TMS320x2RQI	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>				
TMS320x2RQIT	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>
TMS320x2RQE	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>						<input type="checkbox"/>			
TMS320x2RQET	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>			<input type="checkbox"/>
TMS320x2RQW	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>				
TMS320x2RQWT	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>
TMS320x2RQWT	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

designs are available for modem designs that best meet system performance and cost goals. Both architectures ensure the software upgradability and DSP performance needed to address the rapid evaluation of Internet application requirements.

O/S-independent reference designs provide a completely self-contained modem subsystem that operates without offloading any modem tasks to the PC's host CPU. These robust, DSP-driven designs allow manufacturers to build Internet-access products for international markets in which slower CPUs are common and processing horsepower must be reserved for main system programs. OSI platforms also feature Flash upgradability for easy program upgrades.

TI's Windows-based reference designs allow manufacturers to build cost-effective modem subsystems that work in conjunction with the host CPU. These designs allow a hardware cost reduction by utilizing other PC processing elements. Windows-based designs are ready made for today's latest PC and Internet-access products.

The following features are standard on all reference designs:

- **Data Fax**—All TMS320x2 reference designs feature full data/fax capabilities including: x2 (56K–32K) speeds and V.34Plus (33.6K–4.8K) speeds; V.42 MNP 2-4 error correction; V.42bis data compression; V.17, V.29, and V.27ter fax modulations; and Class 1, 2.0, and Group 3 fax control/protocols.
- **Plug and Play**—Supports the Microsoft® and Intel™ Plug and Play specification for ISA cards.

The following features are available on selected TMS320x2 reference designs:

- **Digital Telephone Answering Device (DTAD)**—Using two compression schemes, ADPCM and GSM, the modem functions as a telephone answering machine, transmitting an audio outgoing message and receiving, digitizing, compressing and storing an incoming audio message.
- **Speakerphone**—Supports speakerphone functionality with acoustic echo cancellation (AEC) and allows various headset/microphone combinations.
- **Digital Simultaneous Voice Data (DSVD)**—Allows users to talk and receive data at the same time over one phone line. Software compatible with DSVD 1.2, the system will be upgradable to the V.70 ITU standard by mid-1997.
- **V.80**—For videoconferencing, allows compatibility with H.324 subsystems. V.80 will support bi-directional data transfer through the PC.

For More Information

The new TMS320x2 modem reference designs give customers a cost-effective way to achieve new levels of data transmission performance. To get a jump start on designing the latest TI DSP Solutions for modems, identify the chipset of interest and contact your local TI sales office for an evaluation unit. Or you can access TI's Worldwide Web page at <http://www.ti.com/sc/x2>.