Sales Brief

New V.92 Standard Improves 56Kbps Modem Technology and Performance[1]
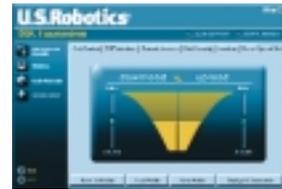
When to Sell

An enhancement to the current V.90 standard, the new V.92 offers a variety of advances in modem technology, all designed to improve and maximize the Internet experience. The V.92 standard-based modem enables three major advancements, which will eliminate many of the current challenges modem users have faced.

• Modem On Hold[2] — Enables the user to take an incoming telephone call without losing the modem connection on the same phone line

• Quick Connect — Reduces dial-up connection time by up to 50% from V.90

• V.PCM Upstream Technology — Facilitates faster upstream loading, permits faster and smoother transmission of data for improved Internet performance

Key Features and Benefits[1]

Feature	Benefit
Modem on Hold[2]	Modem can alert the user to an incoming telephone call, which can be taken or ignored – if the user chooses to take the inbound call, the Internet session is temporarily suspended, then re-established when the call is concluded
Quick Connect	Modem remembers the connection conditions for the dial-up service provider; connects more quickly the next time without going through the training sequence again, reducing initial connection time
V.PCM Upstream	Upload speeds can now reach up to 48,000 bits per second versus current V.90 standard limit of 31,200 bits per second; user can change settings for 56K* downloads or "balanced" communication (up to 48K both directions); enables faster, smoother operation; facilitates sending email, spreadsheets, presentations, photos and uploading files

Why U.S. Robotics?

U.S. Robotics is the world's #1 selling modem brand. Consumers and business users throughout the world depend on U.S. Robotics products for excellent performance, reliability and ease of operation.

• For three decades, U.S. Robotics has been at the forefront of modem technology, and in the 1990s was the first to boost analog modem speeds to the V.90 56K standard.

• U.S. Robotics has been instrumental in the push for faster and better technology, leading the way to the ratification of the V.92 standard.

• This year U.S. Robotics has re-emerged as an independent company and will continue its tradition of making the most reliable, simple and innovative Internet access solutions available.

• U.S. Robotics is committed to making your time online more productive and enjoyable.

• All U.S. Robotics resources – from engineering to customer support – are dedicated to fulfilling that commitment.

V.92

1. V.92 features require V.92 ITU standard capable service provider.
2. Requires Call Waiting service from your local phone company.

U.S.Robotics®

V.92 Technology

Q. What is V.92?

A. V.92 is a new standard in 56K modem technology that was determined by the International Telecommunications Union in June, 2000. This standard is an enhancement of the existing V.90 standard, and will enhance the Internet experience of millions of customers throughout the world by allowing faster upload speeds, quicker connection times, and streamlined call handling.

Q. What is the ITU?

A. The International Telecommunications Union (ITU) is a formal, worldwide telecommunications standards body. The ITU is a charter organization of the United Nations (UN), and is based in Geneva, Switzerland.

Q. What does it mean for a standard to be determined by the ITU?

A. At the ITU, standards development occurs via a two-stage process. First, the active participants agree on, or "determine," a technical specification. Traditionally, modem manufacturers develop and ship products based on the determined standard, because at that time, all technical aspects are agreed upon. The V.92 standard was announced as "determined" on July 4, 2000.

Second, agreement is sought among all the member countries of the UN. Once agreement is reached, the standard is considered "decided," or "ratified." Final ratification for V.92 is expected in November, 2000.

Q. What options does V.92 allow that V.90 does not?

A. In addition to an overall refinement of V.90 technology, V.92 enables three major new functions: "Modem on Hold," "Quick Connect," and "V.PCM upstream." To receive the full benefit of each of these features, both the user's modem and the ISP's server equipment need V.92 upgrades.

"Modem on Hold" allows a modem user to suspend a data call, answer an inbound voice call, then re-establish the data call without ever losing the connection. This permits less intrusive use of a modem in the home and fuller utilization of a single phone line. (Note: This feature requires Call Waiting service from your local phone company.)

"Quick Connect" enables the modem to shorten the initial connect time on a call. The modem can compare the new call to the previous call, and if the line conditions are similar (as will often be the case when calling the same POP on the same phone line), it can bypass portions of the training sequence. This may reduce connect time by 50% or more in some cases.

"V.PCM Upstream" facilitates faster upstream communication with upload speeds reaching 48,000 bits per second (V.90 upstream speeds were limited to 31,200 bps.) The modem user can choose to favor fast downstream communication, or to favor a more "balanced" communication flow which will increase upstream data rates while slightly reducing downstream rates. This extra flexibility is ideal for sending large e-mails, spreadsheets, presentations or photos, or uploading files.

Q. When will V.92 products be available?

A. U.S. Robotics expects to ship V.92 products by the end of the third calendar quarter, 2000. The company will only ship these products when interoperability testing between U.S. Robotics and major head-end providers has been accomplished.

Q. Will current V.90 products be upgradable?

A. Yes. Many U.S. Robotics products will be upgradable to the new V.92 standard via software download from the U.S. Robotics site at www.usr.com.

Q. Will upgrades to V.92 be free?

A. In most cases, the V.92 upgrade will be free for current V.90 U.S. Robotics customers. More complete product upgrade information will be available at launch.