Soft modem

VOCAL Technologies, Ltd. Soft Modem software libraries include a complete range of ETSI / ITU / IEEE compliant modulations, optimized for execution on ANSI C and leading DSP architectures (ADI, ARM, DSP Group, LSI Logic ZSP, MIPS and TI). This software is modular and can be executed as a single task under a variety of operating systems or it can execute standalone with its own kernel.

Soft modems include all the ITU modulation up and including to V.92. These implementations have been optimized.

V.92 Soft Modem is a new dial-up modem standard from the International Telecommunications Union ITU. V.92 modem standard provides an increase in upload speeds, quicker connect times and a modem-on-hold feature that allows the modem to work in conjunction with call waiting provided by the phone company.

Depending upon V.90 configuration selected, the line interface may be an analog front end (codec and DAA) or a digital interface such as T1/E1, switched 56 and ISDN. The upper end of this software can provide PPP, V.14, HDLC or direct binary framing layers. Higher data protocol layers, V.42 (including MNP 2-4), V.44, V.42bis and MNP5 are options as well.

V.92 Soft Modem

V.92 Soft Modem Upstream: V.92 specification allows a PCM upstream at rate from 24,000bps to 48,000bps. Rate increments in steps of 1.33 kbps as in V.90 Modem. Upstream rates could be 24k, 25.3k, 26.6k, 28k, etc. This is a 30% increase over the 33.6K bps attainable by V.90 modem. This higher upstream speed offers numerous benefits including a reduction in the upstream data transfer time for large e-mails with attachments and for ftp site uploads, as well as improved operation for interactive applications. Due to the real conditions of the phone lines the 48 kbps upstream is very hard to obtain.

Modem On Hold: Allows modem to stay connected "on-hold" while you take an incoming call waiting call, or initiate an outgoing voice call (works only if V.92 server modem is configured to allow this feature). The amount of time you can place your Internet connection on hold while taking another call will be up to your Internet Service Provider (ISP).The V.92 recommendation permits ISPs to set their modem to wait for 0 to 16 minutes, or, to wait indefinitely. V.92 Soft Modem client modem may include software that will warn the user when the ISP determined timeout approaches, as well as to display call waiting caller ID info (requires telco call waiting/caller ID service). ISPs have an incentive to limit the use of this feature: when a call is placed on hold, the ISP modem remains unavailable to take other calls. The ISP may need to add more modem to maintain quality of service if this feature is enabled. The ISPs also have the possibility of do not accept modem-on-hold if the total time of modem-on-hold in the same session is greater that a determined value.

Quick Connect: In the ITU V.92 Soft Modem recommendation the time to establish a connection may be reduced with faster handshaking, using a short phase 1 and phase 2, reducing the connection time to about 20 seconds. It is also possible to reduce more this connection time to around 10 seconds using short phase 3 and phase 4 (this feature is not in the ITU V.92 recommendation) by forcing V.92 modem to remember line conditions and connect rates on past connections by storing data about those connections in a buffer. The modem will compare line quality variables as it dials in to a server modem with those in the buffer, and if a match is found, the handshake starts at the rate previously negotiated. Quick Connect will also be used with Modem On Hold: when a call is switched back to the modem after using the MOH feature, a retrain is required. When the V92 modem uses short phase 3 and phase 4 and the line conditions are different, the V.92 modem have to fall-back to a full retrain.

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http://www.vocal.com

Soft Modem-0004A

V.91/V.90 Modem

This modulation family can be combined with other data modulations (V.92, V.34, V.32bis/V.32, and V.22bis/ V.22/V.23/V.21). V.8/V.8bis startup procedures can be used. All data modulation software is fully compatible with VOCAL's facsimile, telephony, speech coder and multimedia systems.

V.90 Soft Modem (Determined February 1998) refers to procedures between a "digital modem" and an "analog modem". The analog modem, which may be connected to the PSTN through either an analog or digital interface, transmits V.34 signals and receives G.711 PCM signals. The digital modem, which is connected to the PSTN through a digital interface, transmits G.711 PCM signals and receives V.34 signals.

V.90 (Determined February 1998) refers to analog/digital configurations. Future ITU recommendations or extensions to V.90) may refer to digital/digital configurations and/or PCM transmit and receive for an analog/digital configuration.

V.34 Modem

The line interface may be an analog front end (codec and DAA) or a digital interface such as T1/E1, Switched 56, and ISDN. The upper end of this software can provide a PPP, HDLC, V.14 or a direct binary framing layer. Higher data protocol layers, V.42 (including MNP 24), V.44, V.42bis and MNP 5, are options as well.

This modulation family can be combined with other data modulations (V.92, V.90, V.32bis/V.32, and V.22bis/ V.22/V.23/V.21). Automatic modulation determination procedures (Automode) include those of V.8, V.8bis and PN-2330. All data modulation software is fully compatible with VOCAL's facsimile, telephony, speech coder and multimedia systems.

V.32bis

The line interface may be an analog front end (codec and DAA) or a digital interface such as T1/E1, Switched 56, and ISDN. The upper end of this software can provide a PPP, HDLC, V.14, or a direct binary framing layer. Higher data protocol layers, V.42 (including MNP 2-4), V.44, V.42bis and MNP 5, are options as well.

This modulation family can be combined with other data modulations (V.92, V.90, V.34, V.22bis/V.22/ V.23/V.21). Automatic modulation detection procedures (Automode) include those of PN-2330, V.8 and V.8bis. All data modulation software is fully compatible with VOCAL's facsimile, telephony, speech coder and multimedia systems.

It is fully compliant with ITU recommendations. Trellis coded modulations support data rates of 7200, 9600, 12000 and 14400 bps. Non-trellis coded modulations support data rates of 4800 and 9600 bps. All carriers are 2400 symbols per second. Modem MIB support (RFC 1696). Local and remote loopback diagnostics (V.54). Modular software suite available with controller code. Optimized for high performance on leading edge DSP architectures. Multi-tasking environment compatible.

VOCAL's Overall Model Controller (OMC) Layer provides coordinated data modulation/data protocol operation relative to startup, shutdown, modulation retrains and modulation renegotiations. System can be combined with V.110 rate adaptation software. System can be combined with other modulations (V.92, V.90, V.34, et al.) and automode procedures (PN-2330, V.8 and V.8bis). Data/Facsimile/Voice Distinction upon startup is available. Complete facsimile systems, modulations (V.34fax, V.17, et al.) and protocols (T.30), and speech coders available. Multiple modulation ports can be executed on a single DSP.

V.23/V.22bis/V.22/V.21 Modem

The line interface may be an analog front end (codec and DAA) or a digital interface such as T1/E1, Switched 56, and ISDN. The upper end of this software can provide a PPP, HDLC, V.14, asynchronous FSK, or a direct binary framing layer. Higher data protocol layers, V.42 (including MNP 2-4), V.44, V.42bis and MNP 5, are options as well.

This modulation family can be combined with other data modulations (V.92, V.90, V.34, V.32bis/V.32). Automatic modulation detection procedures (Automode) include those of PN-2330, V.8 and V.8bis. All data modulation software is fully compatible with VOCAL's facsimile, telephony, speech coder and multimedia systems.

VOCAL Technologies Ltd.

Custom Product Design Division
200 John James Audubon Parkway
http://www.vocal.com
Buffalo, New York 14228
716-688-4675

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