

V.22

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

<http://www.vocal.com>

VOCAL Technologies, Ltd. modem software libraries include a complete range of ETSI / ITU / IEEE compliant modulations, optimized for execution on ANSI C and leading DSP architectures (ADI, AMD-Alchemy, 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.

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.

V.22 Features:

- Fully compliant with ITU recommendations
- Automatic V.22/Bell 212, V.21/ Bell 103 and V.23/Bell 202 determination upon answer
- Programmable ITU or Bell protocol selection for origination
- Modem MIB support (RFC 1696)
- Local and remote loopback diagnostics (V.54 and V.22 RDL)
- Modular software suite available with controller code
- Optimized for high performance on leading edge DSP architectures
- Multi-tasking environment compatible

V.22 Configurations:

- DAA interface using linear codec at 7.2 kHz, 8.0 kHz or 16.0 kHz sample rate
- Direct interface to 8.0 kHz PCM data stream (A-law or u-law)
- PPP (RFC 1662), HDLC, V.14, asynchronous FSK, and direct binary framing layers
- North American and International Dialing/Telephony dialing functions available
- Data protocol layer (V.44, V.42, MNP 2-4, V.42bis, and MNP 5) available
- System can be combined with V.110 rate adaptation software
- V.23/Bell 202 based Caller ID available
- System can be combined with other modulations (V.92, V.90, V.34, V.32bis, 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 modulations can be executed on a single DSP

V.22 Example Resource Requirements (ADSP-21xx):

- V.22bis using a 7.2 kHz codec on an ADSP-2105 requires 3.4 MIPS
- V.22bis requires 332 internal + 4855 external words of program memory
- V.22bis requires 102 internal + 1027 external words of data memory
- V.22 requires 332 internal + 4628 external words of program memory
- V.22 requires 102 internal + 832 external words of data memory
- V.22bisV.21 requires 404 internal + 5970 external words of program memory
- V.22bisV.21 requires 103 internal + 1217 external words of data memory
- An 8.0 kHz sample rate interface requires an additional 0.5 MIPS

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