

Half-Duplex Speakerphone

<http://www.vocal.com>

VOCAL Technologies, Ltd. modem and telephony software libraries include Half-Duplex Speakerphone functions in ANSI-C and optimized assembly language for 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 with its own kernel

The line interface for the half-duplex speakerphone may be an analog front end (codec and DAA) or a digital interface such as T1/E1, Switched 56, and ISDN.

This half-duplex speakerphone software can be combined with telephony functions, DSVD voice compression, data modulations (V.92, V.90, V.34, V.32bis/V.32 and V.22bis/V.22/V.23/V.21) and facsimile modulations (V.17, V.29, V.27ter and V.21 channel 2). Compatible with VOCAL controller firmware for data protocols and command set controls.

Duplex means you're able to send and receive data from the same device whether that is with your phone, 2-way radio, or PC.

Half-duplex devices let you send and receive, but only one-way at a time. If you've ever used a walkie-talkie, then you know what half-duplex conversations sound like. You have to push the TALK button to send your message. But as long as you are holding the TALK key, you can't hear what anyone else is saying. You must release the button to receive.

In Full-duplex both transmit and receive channels are active simultaneously, is the conversation. Full duplex for hands-free communications is achieved using Echo Cancellation. Echo Cancellation reduces overall loop gain and the acoustic coupling between speaker and microphone. This coupling reduction prevents the annoying effect of hearing one's own delayed speech, which is worsened when there is delay in the system, such as vocoder delay.

Features:

- Half-Duplex Speakerphone operation.
- Lower MIPS Half-Duplex version available.
- Automatic Gain Controls.
- Frequency response (+/-3 dB referenced to 1kHz) of 300 Hz to 3.4 kHz.
- 2048 coefficients.
- Train on voice (no training tones) for the Full-Duplex Speakerphone operation.
- Convergence Time of 300 ms maximum.

Configurations:

- Seamlessly integrates into VOCAL's kernel.
- Can be combined with North American and International telephony platforms. These platforms feature voice activity detection, international call progress, caller ID.
- Half-Duplex Speakerphone operation can be combined with data modulations and protocols (modulations through V.92 and V.44/V.42/V.42bis and MNP 1-5 data protocols).
- Can be combined with facsimile modulations and protocols (modulations through V.34 fax and T.4/T.30 facsimile protocols).
- Half-Duplex Speakerphone can be combined with data, facsimile and voice command sets.
- Can be combined with speech coders including iLBC, MELP, G.723.1, G.723.2, G.728, G.729 Annex A, Annex B etc.

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