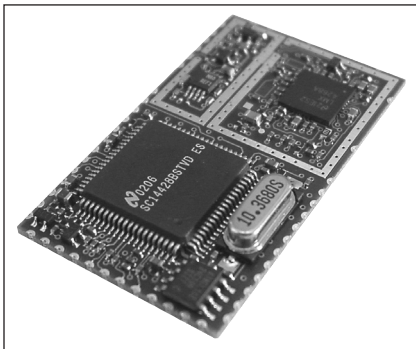


SC14CVM Cordless Voice Module

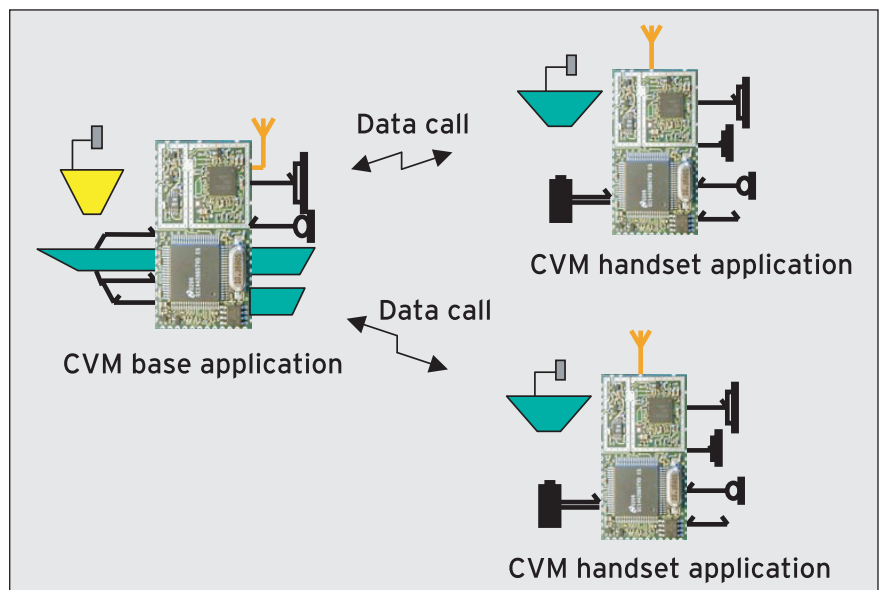
from National Semiconductor



Based on National Semiconductor's SC14428 baseband IC and LMX4168 or LMX4268, the Cordless Voice Module (CVM) is a combined RF and baseband unit for cordless voice and small data applications in the DECT (Digital Enhanced Cordless Telecommunications) and 2.4 GHz ISM band, respectively. The small size (45.6 x 26.6 x 5 mm) in combination with the embedded software makes it ideal for cordless phones, headsets, wireless data products and complex wireless networking applications. The CVM can act both as a traditional telephony base or handset depending on one EEPROM setting and the surrounding hardware. The CVM can work as a stand-alone base supporting a base configuration or as a high-end base by adding an external microprocessor for handling the man-machine interface (MMI) for a base

speakerphone application. As a handset, the CVM needs an external microprocessor for handling the normal handset MMI. For small data applications, the CVM supports a special data transfer mode, where up to 24 Kbits/s data can be transferred over the air interface. It is possible to establish a data link from any of four handsets to one base and to route the data via either the SPI or UART interface. The baud rate of the UART interface, however, is limited. If several data connections are active at the same time and exceed the capacity of the serial bus, the bandwidth of the bus is shared equally between the data connections. It is

not possible to send high-speed data directly from one handset to another either via the base or between handsets. With the CVM base MCU it is possible to route data from one handset to another. By multiplexing I/O pin functionality, the number of pins has been reduced to a bare minimum. This solution provides programming flexibility and a variety of features and functions. On top of the normal cordless software protocol, the CVM uses a brand new software interface called API (Application Programming Interface), suitable for both voice and data applications. The user thus does not have to be familiar with details of the DECT or WDCT



100-up price
SC14CVM2.4FL
€ 26.75

SC14CVM2.4DEVKT
€ 2780.-



EBVElektronik
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(Worldwide Digital Cordless Telecommunications) protocol to operate the module. The CVM is offered in two Flash/ROM versions (1.9 GHz and 2.4 GHz respectively). The module with the two-chip National chipset plus crystals and passives is already RF-certified. The need for external components is limited to the antenna circuit, the power supply and, eventually, the external MMI via MCU interface (because it can also operate as a stand-alone unit). Customers will need little time to certify their products with the CVM. Product testing does not require very expensive test tools. The antenna (or the two antennas for counteracting the fading via diversity) can be on the printed-circuit board or a single wire (an application note with guideline is available from National Semiconductor).

For more information on the DECT and WDTC specifications, refer to the literature or visit any of these websites:

- <http://www.national.com/appinfo/wireless/0,1822,589,00.html>
- <http://www.dectweb.com/sitemap.htm>
- <http://www.etsi.org/>

CVM Features

(supported by base station without external MCU)

- Registration of 6 handsets
- External call
- 2 internal calls (all 4 handsets active)
- Caller ID (FSK and DTMF)
- Call transfer/call back
- Call on hold
- 10 ringing melodies, 5 volume levels
- Paging
- Walkie-talkie functions possible

Software Interface to the CVM

- Supports both SPI and UART interfaces
- Flexible call set-up
- EEPROM access, including general-purpose user-defined area
- Handling of a data channel for user-defined data (FP<->PP)
- Direct access to selected parameters (eg, DSP data)
- Simple control/data protocol

Other Features

- 2.5 V low-voltage power supply
- Output power: 200 mW (typ.)

- Sensitivity: -93 dBm
- Range:
 - 350 m outdoor
 - 75 m indoor
- Operating temperature range: -10...+60 °C

Applications

- Voice and low data communication up to 350 m
- Cordless phones, walkie-talkies, baby phones
- POS terminals
- Lift/elevator intercom systems, intercom systems
- Set-top boxes
- Video surveillance
- Smoke detectors, burglar alarms
- PCMCIA cards
- Industrial control
- Wireless metering

Development Tools

A CVM development kit with the CVM used in the design of a cordless telephone and a base station is available. The kit includes comprehensive documentation with schematics and design files. It also includes simple source code examples for controlling the CVM with a standard PC via the serial interface.

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