This document contains user scenarios and a general explanation of the device and its workings. Both parts are showcased and explained separately. The schematics and component placement section of this document give the user a complete overview of the selected module.

Contents

1. Revision History .................................................................................................................. 2
2. References ............................................................................................................................ 2
3. Introduction .......................................................................................................................... 3
4. User scenarios ....................................................................................................................... 4
   4.1 Applications ...................................................................................................................... 4
   4.2 Serial connection with PC ................................................................................................. 4
   4.3 Loading an application into the SC14CVMDECT module .................................................. 4
   4.4 Powering options .............................................................................................................. 4
   4.5 Applications ...................................................................................................................... 5
5. SC14CVMDECT_DB_SF01 .................................................................................................... 6
   5.1 Connectors ....................................................................................................................... 6
   5.2 Buttons ............................................................................................................................. 7
   5.3 LEDs ................................................................................................................................. 7
   5.4 Jumpers ............................................................................................................................. 7
6. SC14CVMDECT_DB_MMI .................................................................................................... 8
   6.1 Connectors ....................................................................................................................... 8
   6.2 Buttons ............................................................................................................................. 8
   6.3 LED’s ............................................................................................................................... 8
   6.4 Speaker .............................................................................................................................. 8
7. Designs ................................................................................................................................... 9
   7.1 Schematics ....................................................................................................................... 9
Terms and definitions
See SC14CVMDECTDEVKT_Terms and Definitions

1. Revision History

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>15-06-2012</td>
<td>Initial version.</td>
</tr>
<tr>
<td>2.0</td>
<td>20-11-2012</td>
<td>Revised to company standard</td>
</tr>
<tr>
<td>2.2</td>
<td>24-07-2013</td>
<td>Revised to match development kit release 2.2</td>
</tr>
<tr>
<td>3.0</td>
<td>24-10-2014</td>
<td>Updated to match development kit release 3.0</td>
</tr>
</tbody>
</table>

2. References

1. SC14CVMDECT-SF Datasheet, Dialog Semiconductor
2. SC14CVMDECTDEVKT_Terms and Definitions
3. Introduction

The SC14CVMDECT development hardware consists of two boards:

1. SC14CVMDECT_DB  Development board containing the SC14CVMDECT module
2. SC14CVMDECT_DB_MMI  Board that contains the MMI (buttons, LEDs, speaker).

From development kit perspective these boards are considered one SC14CVMDECT development unit. This means that the boards cannot be ordered separately. There is only one order ID: SC14CVMDECTDEVKT.

The SC14CVMDECT development unit can be used to develop and evaluate applications targeting the SC14CVMDECT module. Both hosted and embedded applications are supported. The MMI board (SC14CVMDECT_DB_MMI) can be used for user-interaction.

This document describes how to use the SC14CVMDECT Unit and the interfaces of both boards:

- Connectors
- Buttons
- LEDs
- Jumpers
- Speaker
4. User scenarios

This section describes the user scenarios of the development. Following scenarios are described:

- Serial connection with PC
- Loading an application into the module
- Powering options
- Applications

4.1 Applications

An application can either be (programmed) in the module itself (see section 4.3) or it can be in the host. In case the application is located in the host it will communicate with the module over the serial connection (over UART pins P0.0 and P0.1). (See SC14CVMDECT-SF Datasheet Ref [1])

4.2 Serial connection with PC

There are two interfaces that enable a serial connection between the module and a PC; USB and FTDI. Both interfaces can be connected at the same time, but only one can be selected for communication using the jumpers on the development board. Default (factory) setting: USB.

It is also possible to let the module communicate through two pins on header J7 (See SC14CVMDECT Datasheet Ref [1]). The serial connections can be used for two scenarios:

- Programming an application into the module (See SC14CVMDECT-SF Datasheet Ref [1])
- Communicate with the build-in software stack (See SC14CVMDECT-SF Datasheet Ref [1])

4.3 Loading an application into the SC14CVMDECT module

To load the hex-file of an application into the module a serial connection with a PC is required (See SC14CVMDECT-SF Datasheet Ref [1]). Before loading can be started the module must be in boot-mode. This is done by pressing the boot-button while the module is started (power-up or release the reset button).

A flash loader (FL7) is used on the PC to take care of the actual loading. This tool is part of the SC14CVMDECT development kit.

More information on this subject can be found in SC14CVMDECT-SF Datasheet.

4.4 Powering options

The SC14CVMDECT_DB allows following powering options:

- Powering using serial cable
- Powering using 5 Volt connector (only on AF module)
- Battery powered
Powering using serial cable
In this case the serial cable (either USB or FTDI or both) is used to power the boards. The LEDs D6 and D7 indicate which of these is used:

- J7 USB cable is powering the unit (default)
- J6 FTDI cable is powering the unit

When one of these (or both) cables are plugged in the module starts up. This is because the charge-pin of the module is active in that case. Either charge-pin or PON-pin will start the module.

Battery powered
Header J1 can be used to connect a battery. The SC14CVMDECT_DB is designed such that it is possible to charge the battery. State of charge (SOC) can be measured by the stack. When battery powered the PON button is used to start the module.

4.5 Applications
An application can either be (programmed) in the module itself or it can be in the host. In case the application is located in the host it will communicate with the module over the serial connection (over UART pins P0.0 and P0.1). See SC14CVMDECT-SF Datasheet for more information.
5. **SC14CVMDECT_DB_SF01**

Figure 1 shows the top side of SC14CVMDECT_DB_SF_02. All relevant interfaces are indicated.

![Figure 1 Overview of the SC14CVMDECT_DB_SF01](image)

5.1 **Connectors**

- **(Mini) USB**
  Powers the board (5Volt) and assigns a virtual com port to the development board (using on-board FTDI chip that converts from USB to UART, so FTDI driver must be installed). To be able to communicate over this interface the jumpers must be set as in figure 2 (at the side of the LED D7).

- **FTDI**
  FTDI cable is required for this interface. When using this FTDI cable the board is powered (5Volt) and a virtual comport is assigned to the development board (FTDI driver must be installed). To be able to communicate over this interface the jumpers must be shifted one position (see section 5.4 Jumpers).

- **Headset**
  Headset connector (headsets are delivered with the development kit SC14CVMDECTDEVKT).

- **J6**
  Earpiece connector (connects to the MIC and LSR pins of the module). It allows the user to connect a telephone handle.

- **J7, J8**
  General Purpose connectors, these connectors can be used to solder wires or components or to piggy bag the development board onto another board (in case of development kit the SC14CVMDECT_DB is piggy bagged on top of SC14CVMDECT_DB_MMI).
5.2 Buttons
There are four buttons on the SC14CVMDECT_DB; in following order:

- **PON**: Power-ON button
- **Reset**: Reset button
- **Reg/GP**: General Purpose (usually used to start registration process)
- **Boot**: Boot button
- **SW5**: Button added for the pendant project

5.3 LEDs
There are three red LEDs and one green LED on the board. The red ones are power LEDs:

- **D4**: Indicating that the Module is powered
- **D7**: Indicating that the USB connector is powered
- **D6**: Indicating that the FTDI connector is powered

The green LED (D5) is general purpose.

5.4 Jumpers
The jumpers are used to select the UART-communication port. There are three options:

- Jumpers on the side of LED D7: USB port selected
- Jumpers on the side of LED D6: FTDI port selected
- No jumpers: only communication with “daughter board” is possible (Module-Tx = J7.3, module-Rx = J7.4).
6. **SC14CVMDECT_DB_MMI**

![Image of SC14CVMDECT_DB_MMI](image)

**Figure 3 Part of SC14CVMDECT_DB_MMI (lower PCB)**

6.1 **Connectors**

J7, J8 these headers are used to piggy bag the two boards.

6.2 **Buttons**

There are 8 general purpose buttons. Some of them share the GPIO port with a LED (See fig 4).

6.3 **LED’s**

There are 8 general purpose LED’s. All of them share the GPIO port with a button (See fig 4).

6.4 **Speaker**

The speaker is connected to the CLASSD outputs of the SC14CVMDECT module. This allows the user to produce loud audio for ringer sounds, hands free calling, etc…
7. Designs

This section describes the designs of both SC14CVMDECT_DB and SC14CVMDECT_DB_MMI.

7.1 Schematics

The schematics of the two boards that make up a SC14CVMDECT development unit can be found on the DVD/USB.
Status Definitions

<table>
<thead>
<tr>
<th>Status</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRAFT</td>
<td>The content of this document is under review and subject to formal approval, which may result in modifications or additions.</td>
</tr>
<tr>
<td>APPROVED or unmarked</td>
<td>The content of this document has been approved for publication.</td>
</tr>
</tbody>
</table>

Disclaimer

Information in this document is believed to be accurate and reliable. However, Dialog Semiconductor does not give any representations or warranties, expressed or implied, as to the accuracy or completeness of such information. Dialog Semiconductor furthermore takes no responsibility whatsoever for the content in this document if provided by any information source outside of Dialog Semiconductor.

Dialog Semiconductor reserves the right to change without notice the information published in this document, including without limitation the specification and the design of the related semiconductor products, software and applications.

Applications, software, and semiconductor products described in this document are for illustrative purposes only. Dialog Semiconductor makes no representation or warranty that such applications, software and semiconductor products will be suitable for the specified use without further testing or modification. Unless otherwise agreed in writing, such testing or modification is the sole responsibility of the customer and Dialog Semiconductor excludes all liability in this respect.

Customer notes that nothing in this document may be construed as a license for customer to use the Dialog Semiconductor products, software and applications referred to in this document. Such license must be separately sought by customer with Dialog Semiconductor.

All use of Dialog Semiconductor products, software and applications referred to in this document are subject to Dialog Semiconductor's Standard Terms and Conditions of Sale, unless otherwise stated.

© Dialog Semiconductor GmbH. All rights reserved.

RoHS Compliance


Contacting Dialog Semiconductor

Germany Headquarters
Dialog Semiconductor GmbH
Phone: +49 7021 805-0

United Kingdom
Dialog Semiconductor (UK) Ltd
Phone: +44 1793 757700

The Netherlands
Dialog Semiconductor B.V.
Phone: +31 73 640 88 22
Email: enquiry@diasemi.com

North America
Dialog Semiconductor Inc.
Phone: +1 408 727 3200

Japan
Dialog Semiconductor K. K.
Phone: +81 3 5425 4967

Taiwan
Dialog Semiconductor Taiwan
Phone: +886 226 580 388

Web site:
www.dialog-semiconductor.com

Singapore
Dialog Semiconductor Singapore
Phone: +65 6484 5419

China
Dialog Semiconductor China
Phone: +862 2607 4271

Korea
Dialog Semiconductor Korea
Phone: +82 2 569 2301

© 2014 Dialog Semiconductor B.V.