Questions & Answers

SC14CVMDECTDEVKT

Questions & Answers

All about DECT, Modules and the Development Kit

Introduction

This document contains questions and answers that are related to the SC14CVMDECT project and are relevant for customers (both Sales/Marketing and Engineers). The document is divided into following sections:

- o General Questions and Answers
- o Technical Questions and Answers

Contents

1.   References

1. SC14CVMDECT Datasheet, Dialog Semiconductor
2. SC14CVMDECT Hardware Manual, Dialog Semiconductor
3. SC14CVMDECT Feature list
4. AN-D 211 Application Note Leveraging Modular Approval for CVMDECT
5. AN-D 212 Application Note External Antenna Design and Leveraging Modular Approval

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2.   General Questions and Answers

Q: **What is DECT? How is it different from other wireless technologies?**

A: Digital Enhanced Cordless Telecommunications technology broadcast short data packages in a Time Division Multiple Access (TDMA) system with 10 frequency carriers in the 1880-1900 MHz band on FDMA. The complete frame is 10 ms with 24 time slots per carrier in Time Division Duplex (TDD). The first 12 slots are allocated for transmission from a base station (Fixed Part - FP) to one or more handsets (Portable Parts - PP) and 12 slots are allocated from PP's to the FP (Cell). The data rate is 1.152Mb/s.

Difference:

- The PP selects a continually interference free channel by signal strength and bit error rate monitoring.

- Possible configurations: "Start"-network (FP to multi PP) as well as "Mesh"- (FP to FP) and "Tree"-network (FP to FP and multi PP's).

- Voice, Data and Repairer functions possible on the same Hardware

- Worldwide standard for interference free (DECT only) frequently band with dynamic channel allocation

- Range = >> 50m indoors and >> 300m outdoor range

Q: **What is the history of DECT?**

A: DECT is originally developed by Ericsson for a multi FP (Cell) enterprise network having hand-over and roaming on the PP's. The technology is standardized for residential use by the European standard organization, ETSI, and later approved by the FCC for US.

Q: **When did you/ your company get involved with the technology?**

A: After developing ASIC's for Telephone applications we decided for standard product designs just when DECT became an ETSI (European Telecommunications Standards Institute) standard. In 1992 we developed the first DECT telephone.

Q: **What is the biggest misconception about DECT? (I.e. what do you wish people knew about it?)**

A: DECT has been installed worldwide and proven to be easy to install and used in a licensed interference free band with coverage range of more than 300m. So far, it has been used mainly for voice, as this is the strong point of DECT. However, DECT can also be used for (low rate) data transmission.

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Q: **Where is the technology most commonly deployed now?**
A: This is for Cordless phones all over the world for residential and business applications.

There is of course DECT in Europe, DECT6.0 in North America, 1.7GHz DECT in Korea and JDECT in Japan since March 2011.
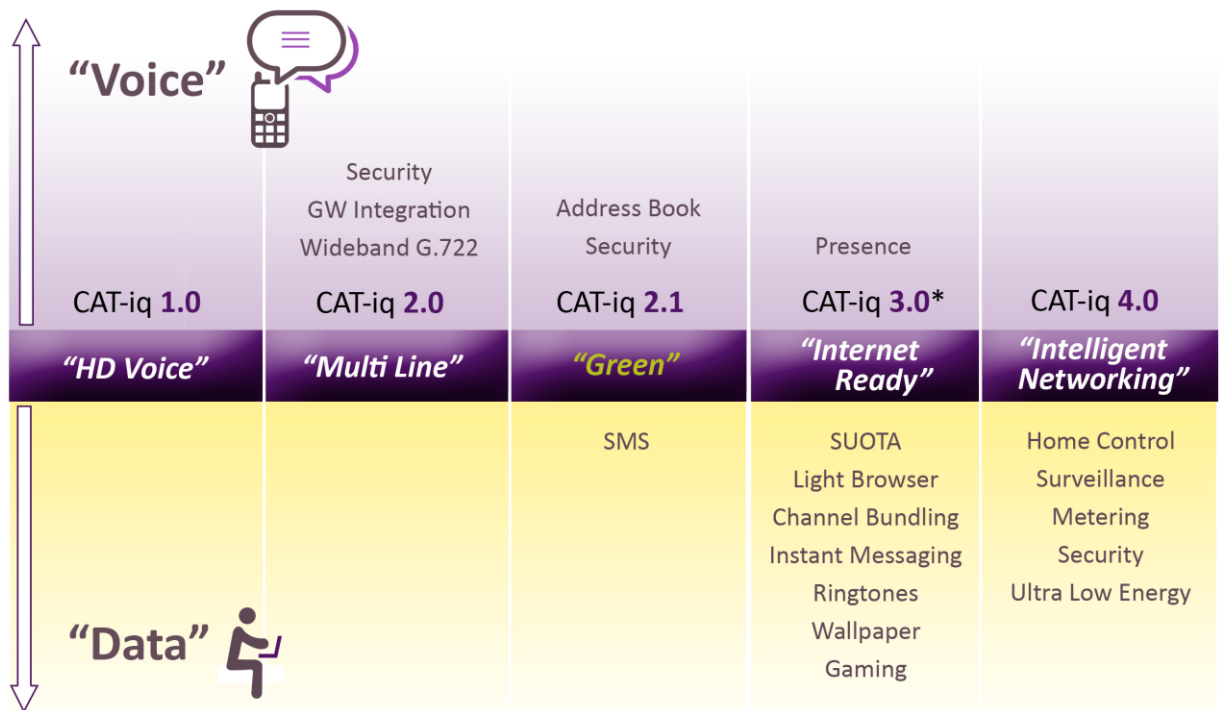
Only China is still operating in the 2.4GHz band.

Q: **I hear a lot about DECT NG or CAT-iq. What does this mean?**

A: The Next Generation DECT (DECT NG) or as it is officially called CAT-iq (Cordless Advanced Technology – Internet and Quality) CAT-iq is the global technology for wireless broadband home connectivity. This technology supports new and exciting products for wireless home communication and infotainment.

Q: **There are different versions of CAT-iq. What do they mean?**

A:

"Voice"				
	Security GW Integration Wideband G.722	Address Book Security	Presence	
CAT-iq 1.0	CAT-iq 2.0	CAT-iq 2.1	CAT-iq 3.0*	CAT-iq 4.0
"HD Voice"	"Multi Line"	"Green"	"Internet Ready"	"Intelligent Networking"
"Data"		SMS	SUOTA Light Browser Channel Bundling Instant Messaging Ringtones Wallpaper Gaming	Home Control Surveillance Metering Security Ultra Low Energy

* Note that some data devices may incorporate voice services

Q: **What version of CAT-iq is supported by the CVMDECT Module?**

A: Version 2.0 is supported by the module, added with features from versions V2.1 and V3.0, like SUOTA and Low Data Services. (Refer to document ref [3])

Q & A   **Version 3.0**   **24-Oct-2014**

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Q: **Why is CAT-iq important for the industry?**

A: With the development of IP telephony and a host of operator based services on offer, it is important for the marketplace to have a standard solution for the next generation of cordless handsets, transmitting wideband audio and for ensuring better compatibility between handsets. CAT-iq has been defined towards this purpose.

Q: **CAT-iq is presently available only for Europe. Will it be extended to other regions, USA for example?**

A: Yes, it will be. CAT-iq has been introduced first in Europe, where many operators are in the transition phase between traditional (TDM) telephony and VOIP. This technology will likely be extended to other regions, as demand determines.

Q: **Will CAT-iq replace DECT?**

A: CAT-iq is an enhancement for DECT, to be used for IP based devices. It is not intended to replace DECT for standard PSTN phones. DECT will still be in co-existence with CAT-iq.

Q: **What are the technical differences between DECT and CAT-iq?**

A: DECT and CAT-iq share the same radio characteristics. They differ in how this radio is used: DECT uses a 32kbit/s, which transmits an ADPCM signal.
CAT-iq uses a 64kbit/s transmission, which enables the use of a G.722 voice codec (Coder/Decoder), this enabling also the use of wideband audio.

Q: **Is the Module fully certified?**

A: Yes. As the module offers the total solution, including protocol, audio and radio, the Module can be fully tested and certified.

A certification body, on behalf of the DECT forum grants the TBR6 certification, as Dialog is a full member and has signed a (for CAT-iq) license agreement, as well as paid the certification fee, before getting it certified.

The same applies for the FCC certification. To be able to get the Module certified, you have to pay $50k to become a UTAM member and then we were able to get our Module ready for certification after paying the certification fee.

There are some strict rules for you as a user of the Module on how to deal with this certification.

All info can be found in the Module datasheet.

3. Technical Questions and Answers

3.1 General

Q: What other modules does Dialog supply besides SC14CVMDECT?

A: Wireless Sensor Module (SPNODE) and the Wireless Audio Module (WAMDECT), see our website.

Q: What platforms are supported as host platform?

A: The host-code is platform independent, so any platform with a C-compiler can be used.

Q: What should be available on my host platform to support SC14CVMDECT?

A: Your hardware should have a UART interface and you should have a UART driver that provides the required functionality along with an operating system.

3.2 Customer-site Production Related

Q: Is it possible to upgrade the SC14CVMDECT stack in the module during production or in the field?

A: Yes, technically this is possible using the flash loader tool (FL7).

Q: I am a customer that uses its own DECT stack. Do I have to certify?

A: Yes, you have to certify the module and/or your complete solution and use your own ID (IPEI / RFPI).

Q: Is there a readable module (hardware) production date stored in the flash (EEPROM or OTP)

A: No, this information can only be deduced from the markings on the module.

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3.3   Development (kit) related

Q: Can the development board be used as a reference design?
A: The development board is not meant as a reference design, but the schematics are available.

Q: Is it possible to download newer versions from the internet?
A: Updated documentation can be found on the CVM ftp server:

Username: cvmdect-sf02
Password: to get a password, please contact support: support@diasemi.com
Host name: **diasemi.download.akamai.com**

Q: Is it possible for customers to use part of the EEPROM for their application?
A: Yes, there are bytes in EEPROM available for this, see also the datasheet.

Q: For my development environment I need more than two development units. Can the development units be ordered separately?
A: No, you have to order additional development kits.

Q: Can I debug my embedded application on the module, using my PC?
A: Yes, but only with the use of a NEXUS® debugger. This debugger is not part of the development kit

Q: I cannot communicate to my development board from my PC
A: This can have several causes:

- Check the jumpers on the board (see also document ref [2])
- Check the used comport
- Check whether the (correct) stack is loaded into the module
- If you are running a cola application on the pc then the cola on the module must be off.
- Make sure that you are using the correct virtual comport driver, check the FTP server for the correct (FTDI) driver

Q: Compilation on Athena fails
A: Check section 3.1 of the Quick Start Guide

Q: On the FTP server the following examples of COLA applications can be found: conferencing, Pp2Pp and intercom. Will there be more examples in the future?
A: There are currently no plans for additional examples.

Q: Is it possible to request additional examples?
A: In time there might be more examples in the kit. If a customer needs design services there might be possibilities to use one of our partners.
Please contact cvm.support@diasemi.com or your local sales representative for options.

Q: The MMI boards of my kit are different from the pictures in the documentation, is this board compatible?
A: The first version of the MMI board contained 7 buttons and 7 LEDs. The new version contains 8 buttons and 8 LEDs for additional application purposes. This new board is backward compatible with the first version.

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