

## **RTX1040**

DECT CAT-IQ MODULE  
**DATA SHEET**

The RTX1040 DECT module is a power-efficient, wireless communication module ideally designed to add standard voice and light data service to telephony, intercom & conference system products.

# WIRELESS COMMUNICATION MODULE

## THE DECT CAT-IQ ENABLER IN A MODULE

The RTX1040 DECT CAT-iq module is the far most effective and easy way to implement DECT telephony service to your device with the support of standard voice. With the RTX1040 DECT CAT-iq module it is possible to develop an end-to-end solution without having an extended knowledge of the DECT radio frequency technology.

## END-TO-END SOLUTION WITH ONE MODULE

An end-to-end solution can be designed using this DECT CAT-iq module. The firmware loaded onto the module can emulate either as the fixed part or as the portable part. The RTX1040 DECT CAT-iq module can be integrated in different devices such as Broadband Access Gateways, cordless handsets, conference phones or wireless microphones. Input can either be analog or digital (PCM). For analog input, a switch between line or microphone level is available.

## A FLEXIBLE AND RELIABLE COMMUNICATION PLATFORM

Standard DECT and CAT-iq software platforms as well as proprietary RTX solutions can be carried out using the RTX1040 module.

The reference hardware is designed to relieve design efforts by having a USB port, a serial connector, a sensor interface and a peripheral interface.

The RTX1040 hardware module is a generic DECT hardware module which must be controlled by an external host processor through UART or SPI. Audio is transferred as PCM on the fixed part and analog audio on the portable part. Furthermore, a power supply and antenna must be connected to the module.

The RTX1040 module can be used with a standard DECT/CAT-iq software from RTX or with a custom firmware developed to provide specific features.

## EVALUATION KIT

An evaluation kit is available which includes all what is needed to create a DECT CAT-iq based telephony system. The kit includes a board which can emulate the portable part of the DECT CAT-iq protocol and another development board representing the fixed part of the DECT CAT-iq protocol.

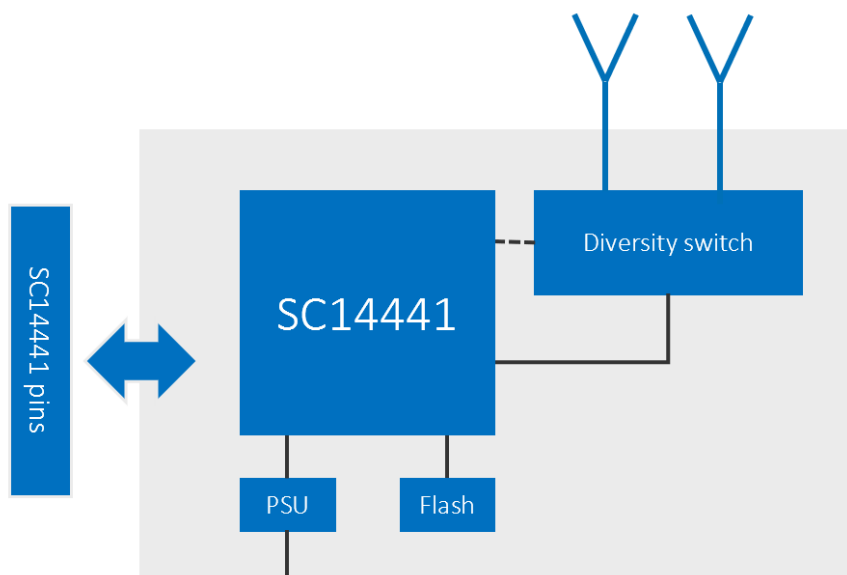


Figure 1: RTX1040 module components

# APPLICATION EXAMPLES

The RTX1040 module is primarily targeted for voice applications and low-bandwidth data.

Two different software packages are available for the RTX1040 each targeting different application areas:

**Cordless Voice:** this solution includes all CAT-iq required functions including options for voice prompt functionality, thus, it fully covers the functionality needed for residential telephony devices, simple conference systems and admittance systems (e.g. door phones). It might also be used as a simple and power-efficient data communication module using the 128 kbp data channel only.

**Wireless Audio:** this solution has a reduced functionality compared with the Cordless Voice software package but it is specifically optimized for single-path audio products such as PA, tour guide and microphone systems.

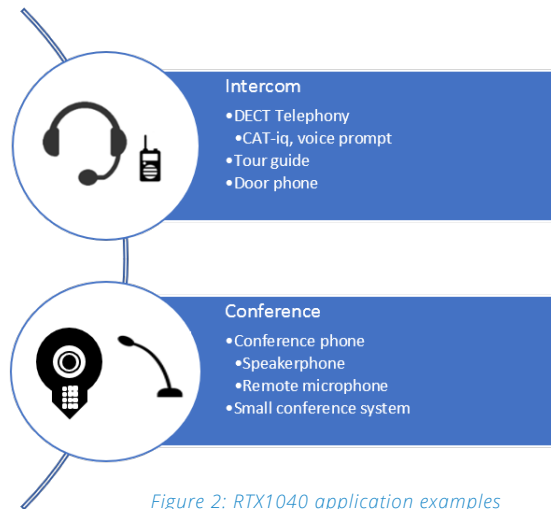


Figure 2: RTX1040 application examples

# MANUFACTURING INTEGRATION

The RTX1040 module is delivered pretested on Tape & Reel. After being mounted in your manufacturing, the module is flash-loaded with a dedicated firmware. The firmware is either a derived configuration of one of our standard platforms, or a more tailored design done to fit exactly your requirements.

Platform options spread across traditional DECT/CAT-iq applications (headsets, handsets, modems, routers etc.) to semi-professional audio and intercom solutions. Contact us regarding your exact software needs, and we will find a good solution.

Having the programming done in your factory brings you maximum flexibility and the ability to adapt immediately to changing market needs. This simplifies logistics to the benefit of product manufacturer and the end users.

The module has a variety of external interfaces and is designed to relieve design efforts by minimizing the need of external components. You can find the list of interfaces in the technical specifications.

An evaluation board is available, with full pin-out exposed on connectors. This also minimizes the effort when building Proof-of-Concept prototypes early in the design process.

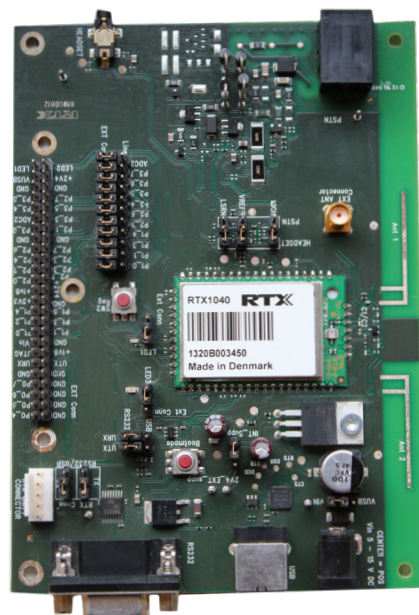


Figure 3: RTX1040 evaluation board

# TECHNICAL SPECIFICATIONS

SUPPORTED COMPLIANCE	SPECIFICATIONS
PROTOCOLS*	<ul style="list-style-type: none"><li>• DECT GAP, DECT 6.0, J-DECT ARIB STD-T101</li><li>• CAT-iq v1, v2 and v3 compliant features</li><li>• DECT ULE base station (FP) features</li><li>• 1880 – 1900 MHz (Europe)</li><li>• 1920 – 1930 MHz (USA &amp; Canada)</li><li>• 1893.5 – 1906.1 MHz (Japan)</li></ul>
EU STANDARDS*	<ul style="list-style-type: none"><li>• Radio: ETSI EN 300 406 , ETSI EN 300 175</li><li>• EMC: EN 301 489-6, EN 301 489-1</li><li>• Safety: IEC/EN 60950-1: 2010</li><li>• ROHS: 2002/95/EC</li><li>• SAR: EN 50385</li></ul>
US STANDARDS*	<ul style="list-style-type: none"><li>• Radio &amp; EMC: FCC Part 15, subpart D. (1920 – 1930 MHz)</li><li>• SAR: FCC guideline (OET bulletin 65 suppl.c: 2001)</li></ul>
JAPAN STANDARDS*	<ul style="list-style-type: none"><li>• Radio &amp; EMC: ARIB STD T-101, TELEC-T254</li><li>• SAR: TBD</li></ul>
FEATURES	SPECIFICATIONS
SIMULTANEOUS CONNECTIONS	<ul style="list-style-type: none"><li>• Up to 5</li></ul>
CODECS*	<ul style="list-style-type: none"><li>• Full codec negotiation in accordance w/ CAT-iq spec. can be applied</li><li>• G722 (64 kbit/s voice service)</li><li>• ADPCM G726 (32kbit/s voice service)</li></ul>
STANDARD SOFTWARE PACKAGES AVAILABLE	<ul style="list-style-type: none"><li>• Cordless Voice: DECT telephony (CAT-iq compliant) &amp; conference sys.</li><li>• Wireless Audio: Public address &amp; tour guide sys. (up to 128 pecievers)</li></ul>
EXTERNAL INTERFACES	<ul style="list-style-type: none"><li>• DECT/CAT-iq short-range wireless communication</li><li>• UART, SPI, I2C</li><li>• I2S (PCM bus)</li><li>• RTX test interface (UART and JTAG combo interface)</li><li>• External antenna</li></ul>
GENERAL DATA	SPECIFICATIONS
PHYSICAL CHARACTERISTICS	<ul style="list-style-type: none"><li>• 42 x 27 mm</li><li>• Single-sided PCB assembly</li><li>• Edge castellation mounting</li></ul>
POWER RANGE	<ul style="list-style-type: none"><li>• 2.1 - 3.5 V</li></ul>
POWER CONSUMPTION PP MODE, TYPICAL*	<ul style="list-style-type: none"><li>• Standby 1.2 mA</li><li>• Active call, HD voice 70 mA</li><li>• Active call, normal 46 mA</li></ul>
ENVIRONMENTAL CONDITIONS	SPECIFICATIONS
OPERATING TEMPERATURE RANGE	<ul style="list-style-type: none"><li>• -20 °C to 60 °C</li></ul>
HUMIDITY	<ul style="list-style-type: none"><li>• 30-95%, non-condensing</li></ul>
ORDERING DETAILS	SPECIFICATIONS
RTX1040 DECT MODULE	Contact RTX for more details and offer at <a href="mailto:sales@rtx.dk">sales@rtx.dk</a>

\*Software dependent