



RTX1070/1

DECT CAT-IQ MODULE
DATA SHEET

The RTX1070/1 DECT module is a small, power-efficient, wireless communication module ideally designed to add HD voice and light data service to telephony, intercom & conference systems.

WIRELESS COMMUNICATION MODULE

THE DECT CAT-IQ ENABLER IN A MODULE

The RTX1070/1 DECT CAT-iq Module is the far most effective and easy way to implement DECT telephony services to your device with the support of HD voice. With the RTX1070/1 DECT CAT-iq module it is possible to develop end-to-end solutions without an extensive knowledge of the DECT radio frequency technology.

A LOOK INSIDE

The RTX1070/1 is based on Dialog Semiconductor's SC14493/SC14492 chip set respectively with the addition of 32 MBit flash memory, power regulators and fully integrated radio transceivers with RF power amplifier and antenna diversity. The baseband processor for DECT-based applications supports Zero Blind Slot (ZBS) DECT, DECT 6.0 CAT-iq and J-DECT (Japan).

The RTX1070 includes analogue frontend with codec and ClassD amplifier whereas RTX1071 is digital only

RAPID PRODUCT DEVELOPMENT

The module requires only a motherboard with antenna(s) and power supply in its basic form.

The RTX1070/1 DECT CAT-iq module can be integrated in different devices such as Broadband Access Gateways, cordless handsets, conference phone, cordless microphones, and high-end cordless voice equipment allowing for wireless transmission range of up to 50m indoor or 300 m outdoor depending on antenna design.

UTILIZING ALL 24 SLOTS

Most standard DECT radios are only capable of utilizing 50% of the DECT spectrum.

The RTX1070/1 module does not have this limitation, which brings the following advantages:

- The agility of the interference avoidance mechanism is increased, which improves performance especially in high-density applications with significant DECT interference
- The capacity of the system is greatly increased, as the FP (Fixed Part / Base station) can have double the number of active connections e.g. allowing more simultaneous channels in an intercom application.

AUDIO CAPABILITIES (RTX1070 ONLY)

The RTX1070 has a built in Class-D amplifier, microphone input pins and headphone output pins, which makes the RTX1070 ready for most wireless intercom applications without the need for external audio interfaces. The Class-D audio amplifier has two fully integrated 'Class-D' type audio amplifiers making it possible to use the RTX1070 in either mono or stereo mode.

Audio features

- 8, 16, 32 kHz 16-bit audio codec (AD + DA)
- 8, 16, 32 kHz 16-bit audio codec (AD only)
- Analog front end to differential and single-ended microphones and 28 Ω loudspeaker
- Class-D amplifier stereo (2 x 8 Ω) / Mono (4 Ω) up to 32/48 kHz
- Loudspeaker gain adjust in 8 steps of 2 dB
- Microphone gain 15 steps of 2 dB

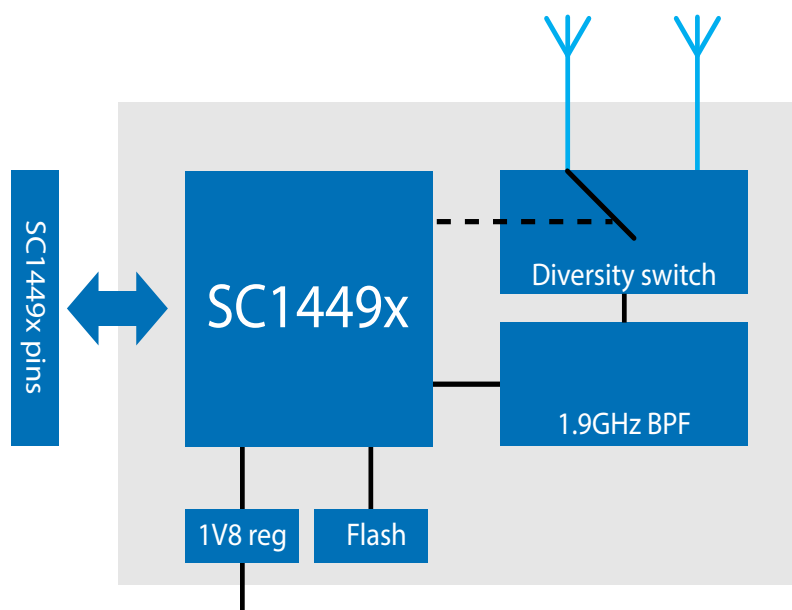


Figure 1: RTX1070/1 module components

APPLICATION EXAMPLES

The RTX1070 & RTX1071 modules are primarily targeted for HD voice applications and low-bandwidth data. The flexibility of the modules allows them to be used for a large range of wireless applications such as intercom and conferencing systems. RTX does not offer any standard product-specific software packages for the RTX1070 & RTX1071 but offers customized solutions instead.

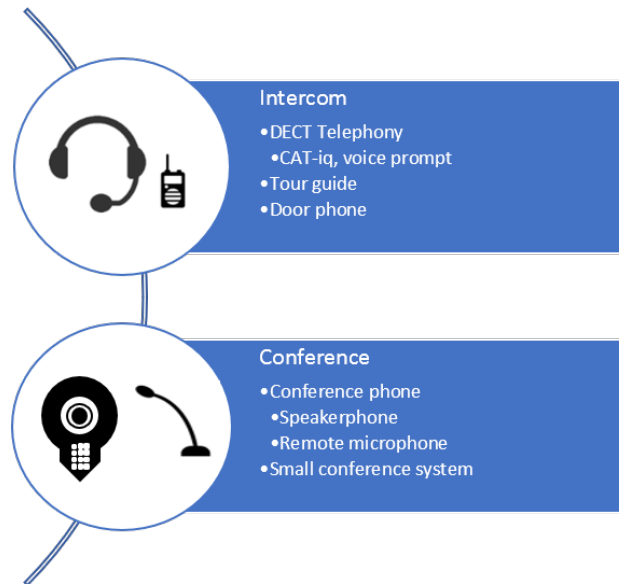


Figure 2: RTX1070 application examples

MANUFACTURING INTEGRATION

The 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 with specific focus on voice quality, latency or system capacity. 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.

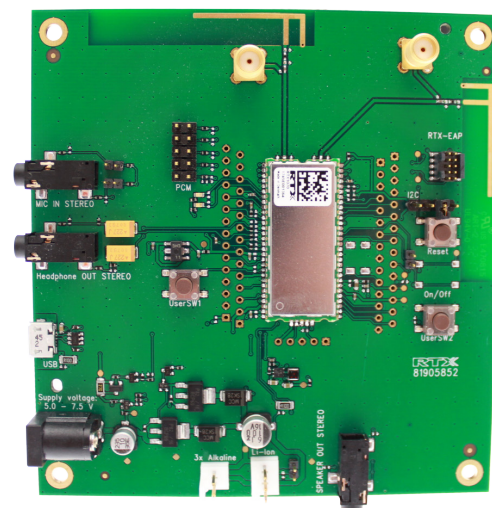


Figure 3: RTX1070/1 evaluation board

TECHNICAL SPECIFICATIONS

SUPPORTED COMPLIANCE	SPECIFICATIONS
PROTOCOLS*	<ul style="list-style-type: none">• DECT GAP, DECT 6.0, J-DECT ARIB STD-T101• CAT-iq v1, v2 and v3 compliant features• 1880 – 1900 MHz (Europe)• 1920 – 1930 MHz (USA & Canada)• 1893.5 – 1906.1 MHz (Japan)
EU STANDARDS*	<ul style="list-style-type: none">• Radio: ETSI EN 300 406, ETSI EN 300 175• EMC: EN 301 489-6, EN 301 489-1• Safety: IEC/EN 60950-1: 2010• ROHS: 2002/95/EC• SAR: EN 50385
US STANDARDS*	<ul style="list-style-type: none">• Radio & EMC: FCC Part 15, subpart D. (1920 – 1930 MHz)• SAR: FCC guideline (OET bulletin 65 suppl.c: 2001)
JAPAN STANDARDS*	<ul style="list-style-type: none">• Radio & EMC: ARIB STD T-101, TELEC-T254• SAR: ICNIRP
FEATURES	SPECIFICATIONS
SIMULTANEOUS CONNECTIONS*	<ul style="list-style-type: none">• Up to 10
CODECS*	<ul style="list-style-type: none">• Full codec negotiation in accordance w/ CAT-iq spec.can be applied• G722 (64 kbit/s voice service)• ADPCM G726 (32kbit/s voice service)• CELT 4.0• PAEC 6.0
STANDARD SOFTWARE PACKAGES AVAILABLE	<ul style="list-style-type: none">• Contact RTX for more details and offer at sales@rtx.dk
EXTERNAL INTERFACES	<ul style="list-style-type: none">• DECT/CAT-iq short-range wireless communication• UART, SPI, I2C, USB• I2S (PCM bus)• RTX test interface (UART and JTAG combo interface)• External antennas
GENERAL DATA	SPECIFICATIONS
PHYSICAL CHARACTERISTICS	<ul style="list-style-type: none">• 34 x 15.4 mm• Single-sided PCB assembly• Edge castellation mounting
POWER RANGE	<ul style="list-style-type: none">• 2.1 - 3.45 V using normal operation• 3.1 - 3.45 V using the Zero Blind Slot operation
POWER CONSUMPTION FP MODE, TYPICAL*	<ul style="list-style-type: none">• Off mode 36 uA• Active call, HD voice 115 mA• Active call, normal 90 mA• Idle, 78 mA
ENVIRONMENTAL CONDITIONS	SPECIFICATIONS
OPERATING TEMPERATURE RANGE	<ul style="list-style-type: none">• -20°C to 60°C
HUMIDITY	<ul style="list-style-type: none">• 30 - 95%, non-condensing
ORDERING DETAILS	SPECIFICATIONS
RTX1070 & RTX1071 DECT MODULES	Contact RTX for more details and offer at sales@rtx.dk

*Software dependent