

TOBY-R201

Standard Professional Automotive

CELLULAR

Performance optimised LTE/DC-HSPA module

Highlights

- LTE/DC-HSPA modem in LGA package, for easy manufacturing
- LTE Cat. 1 (10 Mb/s download, 5 Mb/s upload)
- Voice over LTE (VoLTE)
- Full IP Stack embedded
- Bearer Independent Protocol (BIP)
- Easy migration from u-blox LTE, W-CDMA, CDMA, GSM modules



TOBY-R201:
24.8 x 35.6 x 2.6 mm

Product description

The TOBY-R201 module supports multi-band LTE-FDD along with DC-HSPA+ in a very small LGA package.

The modules are ideal for applications that are transitioning to LTE from 2G and 3G, due to the long term availability and scalability of LTE networks. At the same time in areas with marginal LTE coverage, they also provide 3G fallback.

With a range of interface options and an integrated IP stack, the module is designed to support a wide range of datacentric applications. The unique combination of performance and flexibility make the module ideally suited for medium speed M2M applications, such as smart energy gateways, remote access video cameras, digital signage, telehealth and telematics.

It also supports Voice over LTE (VoLTE) for applications where voice is required such as in security and surveillance systems.

The temperature range of -40 to $+85$ °C guarantees operation in harsh environments and in very compact designs.

The compact LGA package enables straightforward automated manufacturing. Easy migration from u-blox GSM/GPRS, CDMA, and UMTS/HSPA maximizes the investments of customers, simplifies logistics, and enables very short time-to-market.

TOBY-R201 modules are manufactured in ISO/TS 16949 certified sites, with the highest production standards and the highest quality and reliability. Each module is fully tested and inspected during production. Modules are qualified according to ISO16750 – for systems installed in vehicles.

USB drivers and RIL software for Android are free of charge.

Product selector

Model	Region	Access Technology					GNSS	Interfaces					Audio	Features							Grade			
		3GPP Release Baseline	LTE FDD Category	LTE Bands	UMTS Bands	Rx Diversity	GNSS receiver	UART	USB 2.0	DDC	SDIO (Master/Slave)	GPIO	Analog audio	Digital audio	Antenna Supervisor	Jamming Detection	Embedded TCP/UDP	Embedded HTTP, FTP, SSL	Assistnow software	CellLocate®	Dual stack IPv4 / IPv6	Standard	Professional	Automotive
TOBY-R201	North America	9	1	2, 4, 5, 13, 17	850/1900	•		1	1	1	1	10	1		•	•	•	•	•	•	•			

Features

LTE	Cat. 1 (10 Mb/s DL, 5 Mb/s UL) 3GPP Release 9 FDD bands: 2, 4, 13, 17 (N. America) All channel bandwidths: 1.4 - 20 MHz Rx Diversity
UMTS/DC-HSPA+	Bands (in MHz): 850/1900
SMS	MT/MO PDU/Text mode SMS over IMS and via SMS-C
Voice ¹	VoLTE Codec: HR/FR/EFR/AMR/AMR-WB Audio-over-USB Echo cancelation & noise reduction

¹ Available in FW version 015

Software features

Protocols	Dual stack IPv4 / IPv6 Embedded TCP/IP, UDP/IP HTTP/FTP/SSL (Secure Socket Layer) Bearer Independent Protocol (BIP)
GNSS Interfaces ²	Direct access to u-blox GNSS via TOBY AssistNow software for fastest GNSS Time-To-First-Fix CellLocate® & Hybrid Positioning
Firmware upgrade	Via UART and USB

² Available in FW version 015

Electrical data

Power supply	3.8 V nominal, range 3.3 V to 4.4 V
Power consumption	TBD

Interfaces

Serial	1 UART 1 USB 2.0 (high-speed, 480 Mb/s) 1 SDIO (Master)
GPIO	Up to 10 configurable GPIOs
(U)SIM	Supports 1.8 V and 3 V, SIM toolkit
Audio	1 digital

Legal Notice

u-blox reserves all rights to this document and the information contained herein. Products, names, logos and designs described herein may in whole or in part be subject to intellectual property rights. Reproduction, use, modification or disclosure to third parties of this document or any part thereof without the express permission of u-blox is strictly prohibited.

The information contained herein is provided "as is". No warranty of any kind, either express or implied, is made in relation to the accuracy, reliability, fitness for a particular purpose or content of this document. This document may be revised by u-blox at any time. For most recent documents, please visit www.u-blox.com.

Copyright © 2015, u-blox AG

Package

152 pin LGA (Land Grid Array): 24.8 x 35.6 x 2.6 mm, < 7 g

Environmental data, quality & reliability

Operating temperature –40 to +85 °C (extended range)
RoHS compliant (lead-free)
Qualification according to ISO 16750
Manufactured in ISO/TS 16949 certified production sites

Certifications and approvals

TOBY-R201 PTCRB, GCF, FCC, IC, AT&T, Verizon

Support products

EVK-R2x	Evaluation Kits for TOBY-R2 and LARA-R2 series
RIL software	Available for Android 4.2
USB driver	Available for Embedded Windows 6.x 7.x, Windows 7, 8

Product variants

TOBY-R201 LTE modules for North America
Cat. 1; Bands 2, 4, 13, 17

Further information

For contact information, see www.u-blox.com/contact-us.

For more product details and ordering information, see the product data sheet.