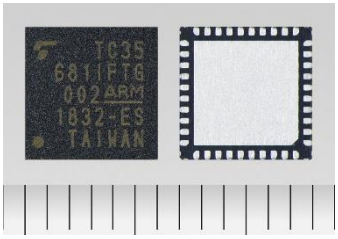
TC35681IFTG

Under development

Bluetooth LE IC compliant with Bluetooth® 5 for automotive applications

TC35681IFTG is added to Bluetooth® Low Energy v5.0 IC line-up for automotive applications. It is available for use in harsh automotive environments because it has wide operating temperature range, high RF transmission power and high RF reception sensitivity (the link budget is 113dB @125kbps in Long Range case). And also the mixed-signal TC35681IFTG contains both analog RF and baseband digital parts to provide a complete solution in a single.



Three features

- Supporting new functions of Bluetooth Low Energy v5.0 such as 2Mbps、Long Range、Advertising Extension etc..
- Realizing +8dBm output power by integrating high gain amplifier for long range communication.
- For automotive applications, planning to be compliant with AEC-Q100[Note1], adopting 'wettable flank' package to improve soldering quality and realizing -40°C to 125°C temperature range.

Applications

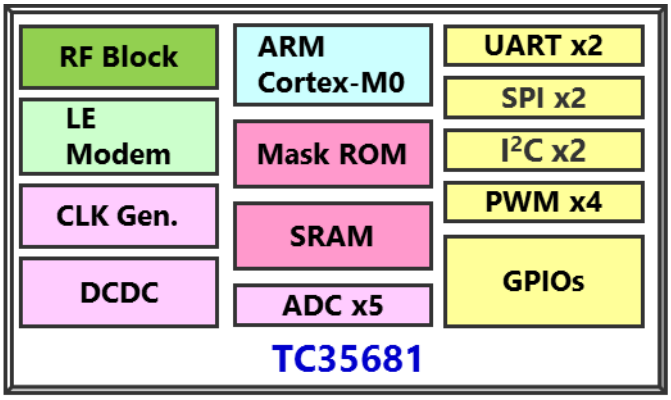
- Bluetooth Low Energy products for automotive & industrial applications.
  - Automotive application examples :
    Remote Key Entry system (RKE), On-Board Diagnosis (OBD), Tire Pressure Measurement System (TPMS) and so on.

Product specifications

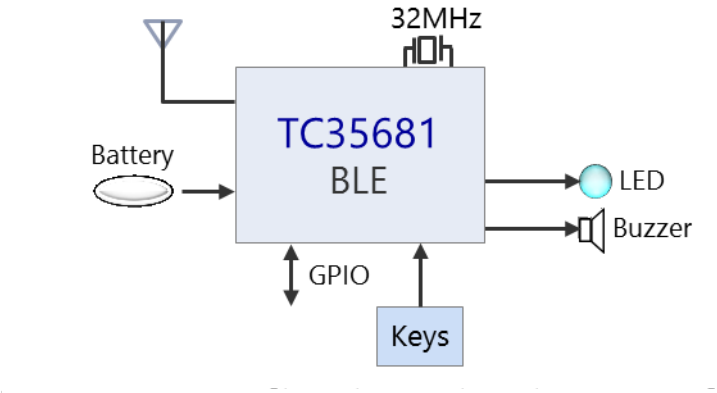
Specifications	TC35681IFTG
Operating voltage range	1.8V to 3.6V
Current consumption in TX operation	11.0 mA (@3.0 V, Output Power : +8 dBm, 1 Mbps)
Current consumption in RX operation	5.1 mA (@3.0V, 1Mbps)
Current consumption in deep sleep	50nA (@3.0V)
Operating temperature range	-40°C to 125 °C
Package	QFN40 6 mm x 6 mm 0.5 mm pitch, wettable flank
Wireless Communication	Bluetooth® Low Energy v5.0
CPU	ARM® Cortex®-M0
Transmitter output power	8 dBm to -20 dBm (8,7,6,4,0,-6,-20 dB)
Receiver sensitivity	-95.6 dBm (1 Mbps)
Profiles	HCI, GATT (Generic Attribute Profile), including server and client functions
Interfaces	UART, I^2C, SPI, GPIO, SWD
Other features	Planning to be compliant with AEC-Q100[Note1] Central and peripheral functions DC-DC Converter / regulator General purpose ADC / User program function Wake up signal for host device / PWM generation function

Note: The Bluetooth® word mark is registered trademarks owned by the Bluetooth SIG, Inc.
Note: Arm and Cortex are registered trademarks of Arm Limited (or its subsidiaries) in the US and/or elsewhere.
Note1: AEC-Q100 test will be finished in 2019 spring.

Block Diagram and Application circuit example



TC35681IFTG Block Diagram



TC35681IFTG Application Circuit Example

This product is under development as of the release date of this document. Please note that the development may stop or change without any prior notice for any reason. At this time, we are unable to provide samples or sell mass production versions of this product. Due to the ongoing development of the product, the product descriptions listed herein may differ from the specifications of sample or mass production versions of this product that may be released. In particular, we neither guarantee any of the characteristics, features and performance data outlined in this document nor shall any deviation between the information contained in this document and the final specifications of the product entitle you to any compensation claim. Please contact our sales representatives for details of development progress and the latest versions of relevant product information.