



# LIN Transceiver ATA6661



The ATA6661 is a fully integrated LIN transceiver complying with the LIN specification 2.0. It interfaces the LIN protocol handler and the physical layer.

The device is designed to handle the low-speed data communication in vehicles, for example, in convenience electronics with data transmissions up to 20 Kbaud. In order to comply with the 42V PowerNet requirements, the bus output is capable of withstanding high voltages. Sleep mode guarantees minimal current consumption.

## Features

- Operating Range 5V to 18V
- Baud Rate up to 20 Kbaud
- Improved Slew Rate Control in Compliance with LIN Specification 2.0
- Fully Compatible to 3.3V and 5V Devices
- Wake-up Capability via LIN Bus or WAKE Pin
- Wake-up Source Recognition
- Control of External Voltage Regulator via INH Pin
- 60V Load Dump Protection at LIN Pin (42V PowerNet)
- Bus Pin Short-circuit Protected versus GND and Battery
- Overtemperature Protection



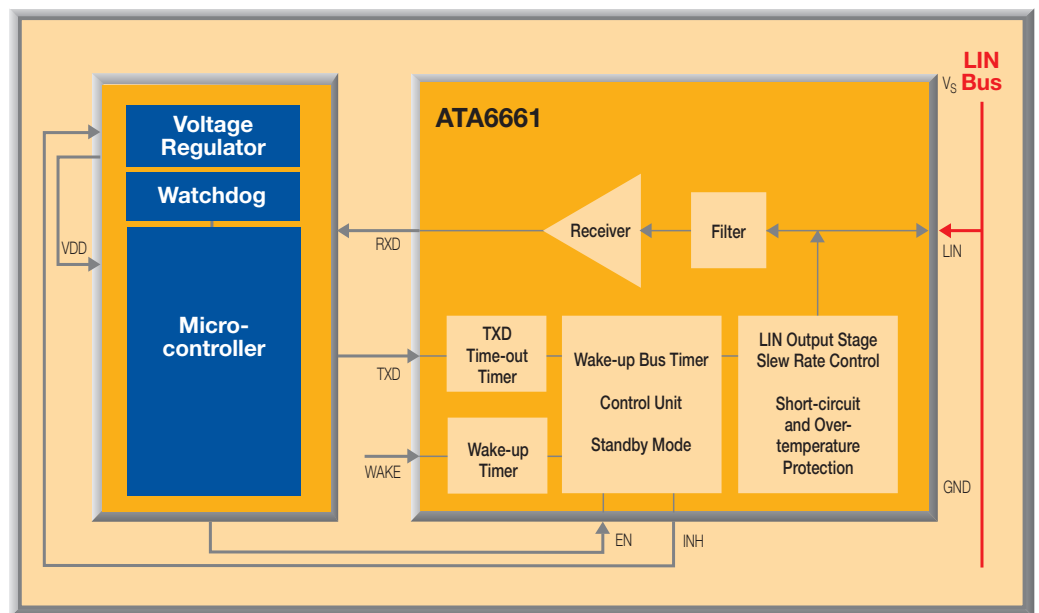


## Benefits

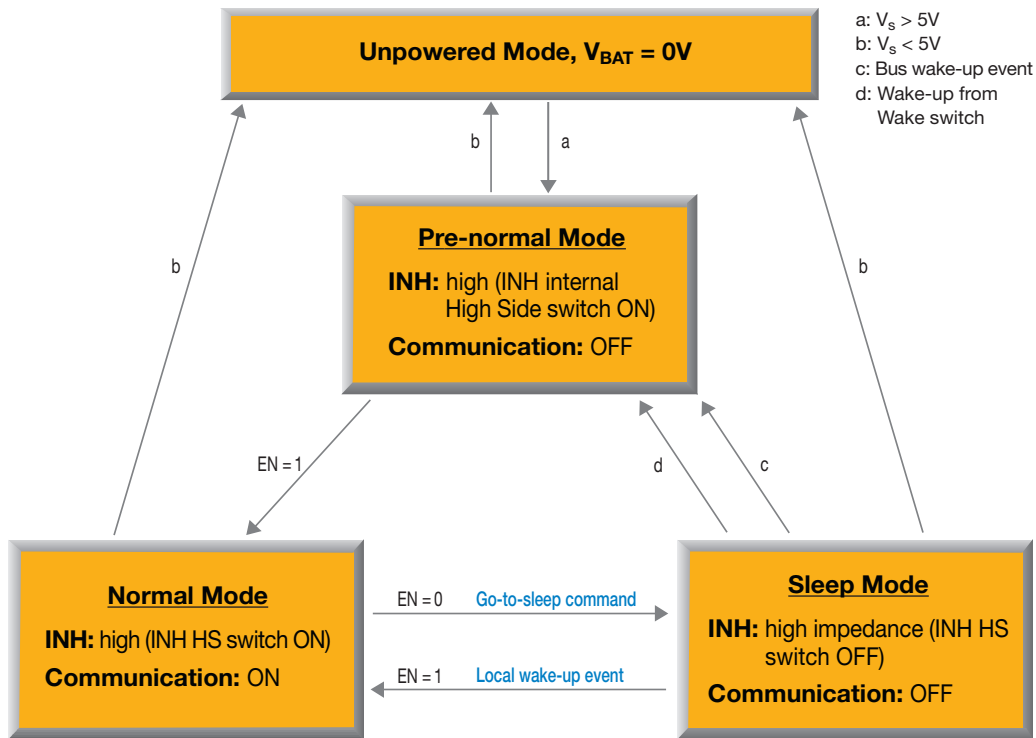
- Industry-leading ESD Protection
- Extended ESD Level (6 kV) at LIN Bus Pin and Supply VS Pin
- Very Low Standby Current During Sleep Mode (10  $\mu$ A)
- Complies with the New LIN2.0 Standard

## Applications

- Automotive: Body, Safety, Powertrain
- Industrial
- Standard MUX Interface for all Areas



## Modes of Operation



### 1. Normal Mode

This is the normal transmitting and receiving mode. All features are available.

### 2. Sleep Mode

In this mode, the transmission path is disabled and the device is in low-power mode. Supply current from  $V_{BAT}$  is typically  $10 \mu A$ . When a wake-up signal from the LIN bus or via pin WAKE is detected, the device switches to pre-normal mode. If EN switches to high, normal mode is activated.

### 3. Pre-normal Mode

At system power-up, the device automatically switches to pre-normal mode. It switches the INH pin to a high state, to the  $V_s$  level. The microcontroller of the application will then confirm the normal mode by setting the EN pin to high.





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## Literature Requests

[www.atmel.com/literature](http://www.atmel.com/literature)

## Web Site

[www.atmel.com](http://www.atmel.com)

## Ordering Information

Extended Type Number	Package	Remarks
ATA6661-TAQY	SO8	4k Tape & reel, Pb-free
ATA6661-TAPY	SO8	1k Tape & reel, Pb-free

## LIN Family Overview

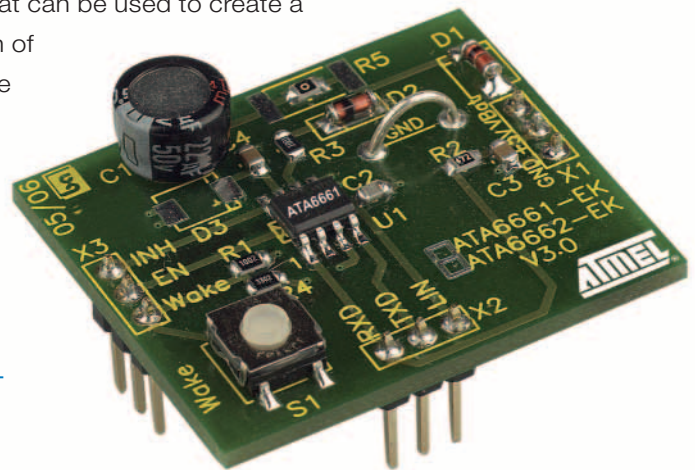
Part Number	Description	Features	Supply/Operating Voltage (V)	Load-dump Protection at LIN Pin (V)	Operation Modes	Package	Tools
ATA6661	Stand-alone LIN Transceiver	LIN Interface	40/18 <sup>1</sup>	60	Pre-normal mode Normal mode Sleep mode	SO8	Datasheet Appnote Software Development Board
ATA6620	System Basis Chip (SBC)	LIN Interface + Voltage Regulator	40/18 <sup>1</sup>	60	Pre-normal mode Normal mode Sleep mode Silent mode	SO8	Datasheet Appnote Software Development Board
ATA6621	System Basis Chip (SBC)	LIN Interface + Voltage Regulator + Watchdog	40/18 <sup>1</sup>	60	Pre-normal mode Normal mode Sleep mode Silent mode	QFN20	Datasheet Appnote Software Development Board
ATA660x	System MCM ATA6621 + AVR Microcontroller	LIN-Interface + Voltage Regulator + Watchdog + AVR (ATmega 88/164/ 324/644)	40/18 <sup>1</sup>	60	Pre-normal mode Normal mode Sleep mode Silent mode	QFN48/64	Datasheet Appnote Software Development Board Standard AVR Tools

<sup>1</sup> with restrictions, operating voltage as high as 40V is possible (lower baud rate, etc., see application note)

## Tools

Atmel® provides various cost-effective support tools to ease the development of a LIN network. A development board for the ATA6661 is available. It has been designed to give designers a quick start with the IC and for prototyping and testing of new designs. There are some placeholders on the board, so the designer can easily adapt various parameters to individual requirements. Furthermore, a LIN2.0 ANSI C software library, including an AVR® microcontroller, is available for LIN slave nodes. Atmel also provides ActiveX components that can be used to create a simple PC program for emulation of the LIN master node. Using these hardware and software components, it is very easy to create and test a LIN network without much (financial) effort. The tools can be downloaded at

[http://www.atmel.com/dyn/products/tools.asp?family\\_id=606](http://www.atmel.com/dyn/products/tools.asp?family_id=606).



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