



**THE DATASHEET OF  
MC33662JEFR2**



# MC33662

## LIN 2.1 / SAEJ2602-2, LIN Physical Layer

### Applications

- Automotive Market:
  - Body electronics (BCM, gateway, roof, door, lighting, HVAC)
  - Powertrain (EMS, Start&Stop), BMS
  - Safety & Chassis (TPMS, Seat Belt)

### Overview

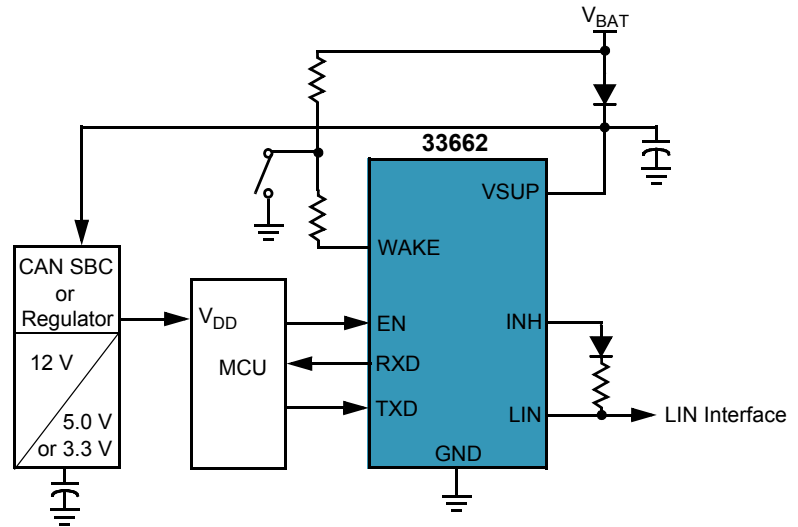
The Local Interconnect Network (LIN) is a serial communication protocol, designed to support automotive networks in conjunction with a Controller Area Network (CAN).

As the lowest level of a hierarchical network, LIN enables cost-effective communication with sensors and actuators when all the features of CAN are not required.

The three 33662 versions are designed to operate at different maximum baud rates. The MC33662LEF and MC33662SEF offer a normal baud rate (20 kbps), and the MC33662JEF, a slow baud rate (10 kbps).

They integrate a fast baud rate (above 100 kbps), as reported by the RXD pin for test and programming modes. They provide excellent EMC (Electromagnetic Compatibility) and Radiated Emission performance, ESD (Electrostatic Discharge) robustness, and safe behavior, in the event of a LIN bus short-to-ground, or a LIN bus leakage during low-power mode.

MC33662 Simplified Application Diagram



Performance	Typical Values
Bus Output	LIN
Data Rate	10 kbps to 100 kbps
<ul style="list-style-type: none"> <li>MC33662JEF</li> <li>MC33662LEF</li> <li>MC33662SEF</li> </ul>	20 kbps to 100 kbps 20 kbps to 100 kbps
Operating Voltage	7V to 18V
Sleep/Standby Current	6µA typ
ESD	± 2000V
Ambient Operating Temperature	-40 °C ≤ T <sub>A</sub> ≤ 125 °C
Junction Operating Temperature	-40 °C ≤ T <sub>J</sub> ≤ 150 °C
IEC61000-4-2 on LIN Bus	+/-15kV

## Features

- EMC / ESD:
  - Excellent EMI performance from bus active wave shaping
  - High EMC immunity & ESD robustness
  - Ultra low emissions: (50dB $\mu$ V max in low frequency, 7dB $\mu$ V max in high frequency)
- Fast slew rate selectable (>100kb)
- SAEJ2602-2 / LIN2.1 options part number selectable
- Automatic compatibility with 3.3 and 5.0V MCUs
  - Low sleep current (typical @ 6 $\mu$ A)
  - Short to ground proof
  - Single battery supply (no 5.0 Vdd required)
- Dedicated dual edge sensitive wake-up input
- Control of external voltage regulator through INH

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Freescale's analog and power ICs complement our broad portfolio of microcontrollers, microprocessors, ZigBee® technology, digital signal processors, sensors and development tools. Freescale offers superior support for system solutions to help customers.

Ordering Information		
Device (add R2 suffix for tape and reel)	Temperature Range	Package
MC33662LEF MC33662JEF MC33662SEF	-40 to 125°C	8 SOICN
Tools	Description	
KIT33662JEFEVBE	10 kbps baud rate	
KIT33662LEFEVBE	20 kbps baud rate	
Documentation	Description	
MC33662	LIN 2.1 / SAEJ2602-2, LIN Physical Layer Data Sheet	
AN2409	Application Note (SOIC - Fine Pitch Package)	
SG1002	Analog Product Selector Guide	
SG187	Automotive Product Selector Guide	

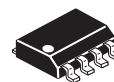
## Customer Benefits

- No need for external protection to support OEM specification requirements
- Fit for latest OEM requirements in terms of TXD permanent dominant timeout
- Specific part number for each product version (LIN / J2602 / Sharp symmetry) to secure baud rate usage, and avoid erratic switch
- High contributor to application low quiescent current requirements

## Questions

- Does your application require a LIN2.1 or a J2602 physical layer?
- Do you expect a plug and play physical layer with compliance to all OEM requirements?
- Do you need cost savings?
- Does your application require a high robustness against EMC and ESD stresses?

8 SOICN



1.27 mm Pitch  
4.0 x 5.0 mm Body

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