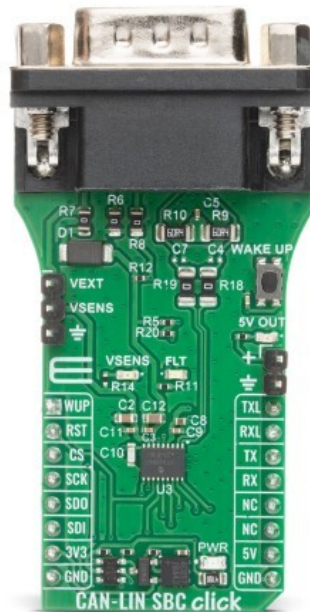


## CAN-LIN SBC Click



PID: MIKROE-6530

**CAN-LIN SBC Click** is a compact add-on board that provides high-speed communication over both Controller Area Network (CAN) and Local Interconnect Network (LIN) interfaces, ensuring connectivity between automotive and industrial subsystems. It is based on the [ATA6586](#), a System Basis Chip (SBC) from [Microchip](#) that integrates a high-speed CAN transceiver compliant with ISO 11898-2:2016 supporting up to 5 Mbit/s (CAN FD) and a LIN transceiver compliant with LIN 2.2A, ISO 17987-4, and SAEJ2602-2 standards. The device supports Partial Networking, low-power operation with local and remote wake-up, bus biasing, diagnostic and protection features, and robust EMC/ESD performance for reliable operation in harsh environments. CAN-LIN SBC Click is ideal for automotive body electronics, industrial automation, and other embedded systems that require dual CAN and LIN communication with advanced power management and fault protection.

For more information about **CAN-LIN SBC Click** visit the official [product page](#).

### How does it work?

CAN-LIN SBC Click is based on the ATA6586, a System Basis Chip (SBC) from Microchip that combines a CAN transceiver with Partial Networking support, a LIN transceiver, and multiple voltage regulators in a single package. This board is designed to provide reliable high-speed communication over both Controller Area Network (CAN) and Local Interconnect Network (LIN) interfaces. The ATA6586 includes a high-speed CAN transceiver fully compliant with ISO 11898-2:2016, supporting standard CAN data rates up to 1 Mbit/s and CAN FD data rates up to 5 Mbit/s. It features a differential bus receiver with a wide common-mode range, a transmit data (TXD) dominant time-out function, and autonomous bus biasing according to ISO

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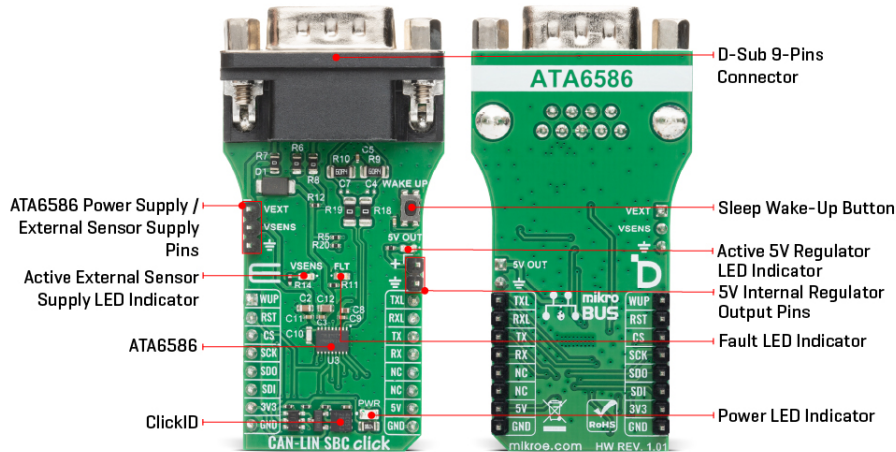


ISO 27001: 2013 certification of informational security management system.  
 ISO 14001: 2015 certification of environmental management system.  
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ISO 9001: 2015 certification of quality management system (QMS).

11898-2:2016 standards. With its automotive-grade qualification (AEC-Q100) and versatile feature set, CAN-LIN SBC Click represents a communication interface solution for advanced embedded systems, particularly those in automotive, industrial control, and networked automation environments where mixed CAN and LIN communication is required.



The CAN interface offers excellent EMC and ESD performance and exhibits ideal passive behavior when the supply voltage is OFF, while allowing direct interfacing with 5V microcontrollers. The device supports advanced low-power management with both local and remote wake-up functionality via a dedicated WAKE-UP button or WUP pin, providing maximum flexibility in system design. In addition, the transceiver automatically disengages from the bus in overtemperature or low power supply conditions, ensuring reliable system protection. Diagnostic and protection features include bus line short-circuit detection, battery connection detection, and RXD recessive clamping detection for enhanced safety.

Complementing the CAN channel, the integrated LIN transceiver (TXL and RXL pins) is designed according to LIN specification 2.2A, ISO 17987-4, and SAEJ2602-2 standards, supporting data communication speeds up to 20Kbaud, making it suitable for body electronics and other low-speed in-vehicle subsystems. It features improved slope control for secure and low-emission data transmission, low electromagnetic emission (EME), and high electromagnetic immunity (EMI). The LIN transceiver supports wake-up capability via the LIN bus, a TXD time-out timer, and robust ESD protection on all bus pins.

CAN-LIN SBC Click features an integrated 4Mbit/s SPI interface that enables direct communication with a host MCU, allowing complete configuration and operation of the ATA6586 System Basis Chip. Through the SPI interface, commands, data, and status information are exchanged, providing control over the device's functionality and enabling software-based configuration of the output voltage level. To ensure system reliability, the Click board also includes a red FLT LED indicator designed to signal unexpected system faults or error conditions, allowing users to quickly identify operational anomalies during runtime. In addition, the RST pin is provided for hardware resetting of the chip, offering a way to reinitialize the device and restore it to its default state after configuration changes or fault events.

The board also incorporates two header connectors to support both power input and regulated power output. The right-side header provides access to the integrated 5V, 150mA low-dropout (LDO) voltage regulator output from the ATA6586. This output can be used to supply power to external circuitry, and its activity is visually indicated by a green 5V OUT LED, which lights up whenever the regulator is active and delivering voltage. On the left-side header, two additional

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pins are available: the VEXT pin, used for connecting an external power supply required for the proper operation of the ATA6586, and the VSENS pin, which provides a secondary voltage regulator output capable of delivering up to 30mA at either 3.3V or 5V, depending on configuration. This auxiliary output is intended to power external sensors or low-power peripherals, simplifying system integration by eliminating the need for additional power rails.

This Click board™ can operate with either 3.3V or 5V logic voltage levels. This way, both 3.3V and 5V capable MCUs can use the communication lines properly. Also, this Click board™ comes equipped with a library containing easy-to-use functions and an example code that can be used as a reference for further development.

## Specifications

Type	CAN
Applications	Ideal for automotive body electronics, industrial automation, and other embedded systems that require dual CAN and LIN communication
On-board modules	ATA6586 - CAN-LIN System Basis Chip (SBC) from Microchip
Key Features	High-speed CAN transceiver compliant with ISO 11898-2:2016 supporting up to 5Mbit/s CAN FD data rates, integrated LIN transceiver compliant with LIN 2.2A, ISO 17987-4, and SAEJ2602-2 standards, 4Mbit/s SPI interface for configuration and control, Partial Networking support, advanced low-power management with local and remote wake-up capability, and more
Interface	CAN,LIN,SPI
Feature	ClickID
Compatibility	mikroBUS™
Click board size	L (57.15 x 25.4 mm)
Input Voltage	3.3V,5V,External

## Pinout diagram

This table shows how the pinout on CAN-LIN SBC Click corresponds to the pinout on the mikroBUS™ socket (the latter shown in the two middle columns).

Notes	Pin					Pin	Notes
Sleep Wake-Up Control	<b>WUP</b>	1	AN	PWM	16	<b>TXL</b>	LIN TX
Reset / ID SEL	<b>RST</b>	2	RST	INT	15	<b>RXL</b>	LIN RX
SPI Select / ID COMM	<b>CS</b>	3	CS	RX	14	<b>TX</b>	CAN TX
SPI Clock	<b>SCK</b>	4	SCK	TX	13	<b>RX</b>	CAN RX
SPI Data OUT	<b>SDO</b>	5	MISO	SCL	12	NC	
SPI Data IN	<b>SDI</b>	6	MOSI	SDA	11	NC	
Power Supply	<b>3.3V</b>	7	3.3V	5V	10	<b>5V</b>	Power Supply

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Ground	<b>GND</b>	8	GND	GND	9	<b>GND</b>	Ground
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## Onboard settings and indicators

Label	Name	Default	Description
LD1	PWR	-	Power LED Indicator
LD2	FLT	-	Power LED Indicator
LD3	5V OUT	-	Active 5V Regulator LED Indicator
LD4	VSENS	-	Active External Sensor Supply LED Indicator
T1	WAKE-UP	-	Sleep Wake-Up Button

## CAN-LIN SBC Click electrical specifications

Description	Min	Typ	Max	Unit
Supply Voltage	3.3	-	5	V
CAN Data Rate	-	1/5	-	Mbit/s
LIN Data Rate	-	-	20	Kbaud
LDO Output Voltage	-	3.3/5	-	V
LDO Output Current	-	-	150	mA
Sensor Supply Voltage (VSENS)	3.3/5	-	-	V
Sensor Supply Current (VSENS)	-	-	30	mA

## Software Support

[CAN-LIN SBC Click](#) demo application is developed using the [NECTO Studio](#), ensuring compatibility with [mikroSDK](#)'s open-source libraries and tools. Designed for plug-and-play implementation and testing, the demo is fully compatible with all development, starter, and mikromedia boards featuring a [mikroBUS™](#) socket.

## Example Description

This example demonstrates the use of an CAN-LIN SBC Click board by showing the communication between the two Click boards.

### Key Functions

- canlinsbc\_cfg\_setup Config Object Initialization function.
- canlinsbc\_init Initialization function.
- canlinsbc\_default\_cfg Click Default Configuration function.
- canlinsbc\_generic\_write This function writes a specified number of bytes to the CAN LIN SBC device using UART communication.
- canlinsbc\_generic\_read This function reads a specified number of bytes from the CAN LIN SBC device using UART communication.

### Application Init

Initializes the driver and logger, and performs the Click default configuration.

### Application Task

Depending on the selected application mode, it reads all the received data or sends the desired

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message once per second.

## Application Output

This Click board can be interfaced and monitored in two ways:

- Application Output - Use the "Application Output" window in Debug mode for real-time data monitoring. Set it up properly by following [this tutorial](#).
- UART Terminal - Monitor data via the UART Terminal using a [USB to UART converter](#). For detailed instructions, check out [this tutorial](#).

## Additional Notes and Information

The complete application code and a ready-to-use project are available through the NECTO Studio Package Manager for direct installation in the [NECTO Studio](#). The application code can also be found on the MIKROE [GitHub](#) account.

## Resources

[mikroBUS™](#)

[mikroSDK](#)

[Click board™ Catalog](#)

[Click boards™](#)

[ClickID](#)

## Downloads

[CAN-LIN SBC click example package](#)

[CAN-LIN SBC click 2D and 3D files v101](#)

[ATA658x datasheet](#)

[CAN-LIN SBC click schematic v101](#)

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