

**32 bit microcontroller**

**HC32L130 / HC32L136 / HC32F030 series (L) UART single line communication**

**Suitable**

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| --- | --- |
| Series | Product number |
| **HC32L130** | HC32L130E8PA  HC32L130F8UA  HC32L130J8TA |
| **HC32L136** | HC32L136J8TA  HC32L136K8TA |
| **HC32F030** | HC32F030E8PA  HC32F030F8UA HC32F030F8TA HC32F030J8TA  HC32F030K8TA |

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# Summary

This application note focuses on the (L)UART single-wire communication application of the HC32L130 / HC32L136 / HC32F030 series (the HC32F030 series only supports UART). This application note mainly includes：

 (L) UART serial port working mode and transceiver data configuration

 (L) UART software simulation single line communication implementation method

Note：

－ This application note supplements the application of the HC32L130 / HC32L136 / HC32F030 series and is not a substitute for the user's hand.

Please refer to the user manual for specific functions and operation of registers.。

# Function introduction

This article can be used to understand the (L)UART single-line communication application method of HC32L130 / HC32L136 / HC32F030 series MCUs.

Note：

－ **HC32F030** Series only supported **UART.**

# (L)UART single line communication

## (L)UART Software simulation single line communication implementation method

The HC32L130 / HC32L136 / HC32F030 series serial ports do not have a single-wire hardware internal interconnection mechanism, so software simulation is required to achieve single-line communication to meet the actual application needs of customers.。

The actual hardware connection method is as follows：

1. Short the SlaveMcu's TXD and RXD, MasterMcu's TXD and RXD；
2. Connect the SlaveMcu and MasterMcu serial ports together via a single wire and add a pull-up resistor.

The master-slave transceiver data software implementation method is as follows：

1. In receive mode, set the RXD pin to the RXD function input state and TXD to the GPIO input mode；
2. In the transmit mode, set the TXD pin to the TXD function input state and RXD to the GPIO input mode.

# 4 Reference examples and drivers

Through the above introduction, with the user manual of this series, we have further mastered the function and operation method of the (L)UART module of this series of MCUs.

Huada Semiconductor (HDSC) officially provides the application examples and driver libraries of the module. Users can further familiarize themselves with the application of the module and the driver library by opening the sample project. In actual development, you can also directly refer to the sample. And use the driver library to quickly implement the operation of the module.

* Sample reference：~/HC32L130\_DDL/example/uart
* Driver Library Reference：~/HC32L130\_DDL/driver/…/uart

# Summary

The above sections briefly introduce the basic functions of the serial port module of the HC32L130 / HC32L136 / HC32F030 series, and explain the single-line communication function and operation steps of the serial port module in detail. In the actual application development process, users need to know more about how to use the module. And the operation items shall be subject to the corresponding user manual. The examples and driver libraries mentioned in this chapter can be used as further experiments and learning by users, or directly in actual development.

# Additional information

Technical support information： [www.hdsc.com.cn](http://www.hdsc.com.cn/)

# Version Information & Contact

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| Date | Version | Modify record |
| 2018/6/25 | Rev1.0 | First release. |
| 2018/9/3 | Rev1.1 | Update supported product models. |
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If you have any opinion or suggestions, please feel free to contact us:

during the purchase and use process

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