

AT32F415 USART DMA Transfer With Idle Interrupt

Introduction

This sample code demonstrates how to enable USART receive and transmit with idle interrupt and DMA. With this method, it is possible to receive data of various length using USART's DMA. But the number of data received at one time should not exceed the maximum threshold set by DMA.

Applicable products:

Product series	AT32F415xx
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List of major peripherals used:

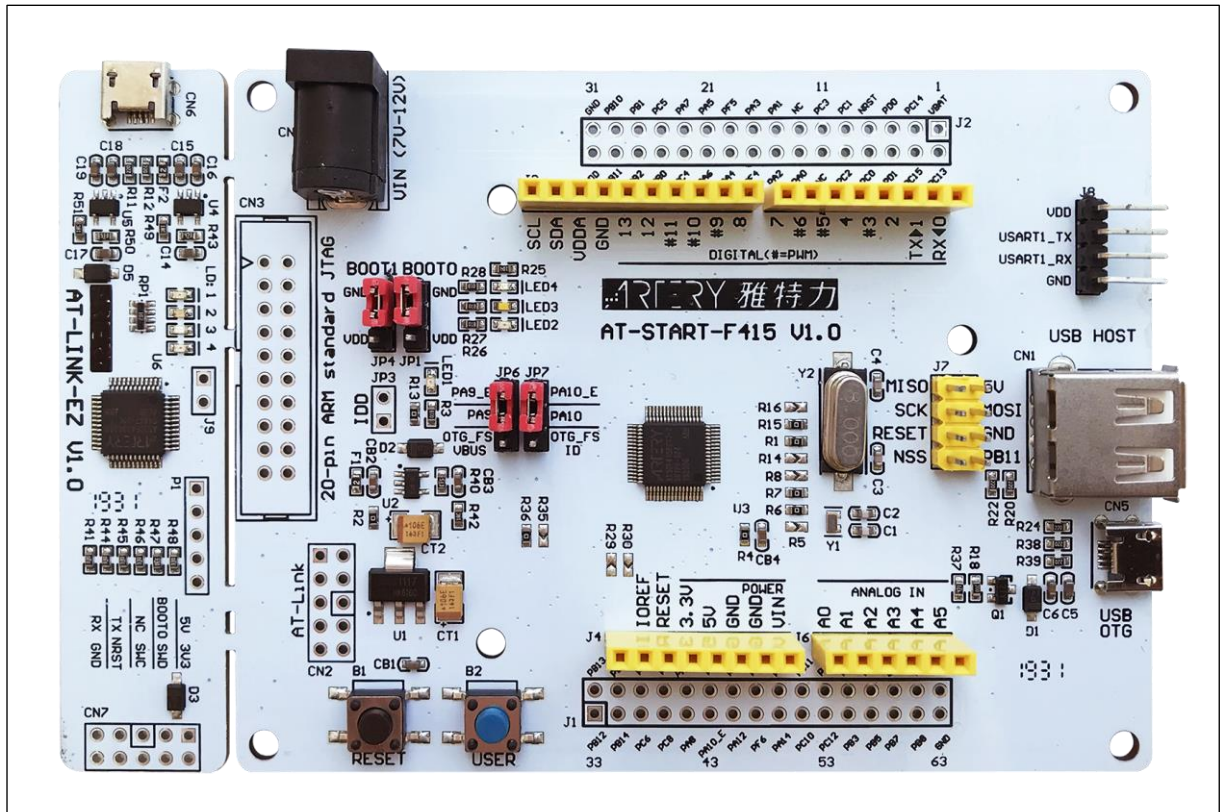
Peripherals	USART
	GPIO

1 Quick start

1.1 Hardware resources

- 1) AT-START-F415 V1.0 evaluation board
- 2) PA9 / PA10 are used as TX / RX of USART communications

Figure 1. AT-START-F415 V1.0 evaluation board



1.2 Software resources

- 1) SourceCode
 - USART_IDLE_DMA_V2.0.0

Note: All of projects are built based on Keil 5. For the need to run them in other compiling environments, user can make simple adjustments according to AT32xxx_Firmware_Library_V2.x.x\project\at_start_xxx\templates.

1.3 Example case

- 1) Open "USART_IDLE_DMA_V2.0.0 source code transfer_by_dma_with_idle_interrupt", compile and download it to the evaluation board
- 2) Cross link PA9 and PA10 to USB-to-serial interface tool that is connected with Host's USB. Open PC's serial interface assistant, print out information after MCU power-on reset. After receiving data from PC, MCU will return the same data. The serial interface assistant is used to verify test results.

Figure 2. Test result

串口设置

串 口 ATLink... (COM42)

波特率 115200

数据位 8

校验位 None

停止位 1

流 控 None

接收设置

☒ ASCII
 ☐ Hex

☐ 自动换行

☐ 显示发送

☐ 显示时间

发送设置

☒ ASCII
 ☐ Hex

☐ 重复发送 1000 ms

start test..
1234567890

1234567890

发送

1234567890

COM42 OPENED, 115200, 8, NONE, 1, OFF Rx: 26 Bytes Tx: 12 Bytes

2 Revision history

Table 1. Document revision history

Date	Revision	Changes
2022.01.06	2.0.0	Initial release

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