

YRCN79F0C999-TB

R20AN0256CC0100

Rev.1.00

示例程序

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介绍

示例程序包括以下函数和功能:

- 微控制器的初始化
 - a. I/O端口初始化
- 主应用循环
 - a. I/O端口输入(按键)/输出(LED)控制

目标器件

用于中国产品/R7F0C011, R7F0C012, R7F0C013 (调试芯片型号: R7F0C999B)

当应用此示例程序于其他微控制器时, 请根据目标微控制器规格修改程序, 并对修改的程序充分进行评估。

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1. 执行示例程序

示例按以下顺序执行：

- (1) 打开工程” C999_test.mtpj”;
- (2) 连接YRCN79F0C999-TB 板到仿真器;
- (3) 连接仿真器到PC上;
- (4) 连接CS+内设硬件仿真器(Minicube2 或 EZ Emulator);
- (5) 下载程序;
- (6) 从新执行(Restart)程序;
- (7) 用户通过按钮SW1操作, 改变LED闪烁频率。

- 在使用仿真器仿真前, 请先明确Minicube2 /EZ-CUBE硬件设置和与目标连接是否正确。
- 具体细节请参见Minicube2 /EZ-CUBE用户手册。并请检查Minicube2 /EZ-CUBE是否使用了最新固件。

2. 操作环境

工作频率	内部时钟
综合开发环境	瑞萨电子综合开发环境 CubeSuite+ V1.03.00
示例工程	C999_test.mtpj

3. 函数说明

此节描述示例程序中的各个函数。

[函数名称] IO_Init	
概要	I/O端口初始化
头文件	无
声明	void IO_init(void)
说明	<ul style="list-style-type: none">- P01输出口, 驱动LED- P120为输入口, SW1按键输入
返回值	无
备注	无

[函数名称] Main	
概要	主应用循环
头文件	无
声明	void main(void)
说明	<ul style="list-style-type: none">- 用户通过按钮SW1操作, 改变LED闪烁频率
返回值	无
备注	无

4. 设置选项字节 (Option Byte)

uPD79F0C999B 闪存的0080H、0081H、0082H、0083H和0084H 为选项字节区域。打开电源或从复位状态重启器件时，器件将自动参考选项字节设置指定功能。使用本产品时，必须使用选项字节设置下列功能。

选项字节在CS+上, CA78K0R(Built Tool)里, Link Options选项卡上,'Device'选项里, 'Use on-chip debug'和'User option byte'中设置, 用户可按需求自行更改设置.以下是本示例使用的设置.

User option byte

0080	20H	; 看门狗定时器不操作
0081	00H	; 1.59V上电复位
0082	00H	; (默认值)
0083	00H	;
0084	02H	; On-chip 调试允许操作。

备注:

有关选项字节详情, 请参考微控制器的使用手册, 第十六章 选项字节

5. 示例程序操作

- i. 上电后, MCU使用内部时钟工作;
- ii. LED闪烁;
- iii. 可按SW1 (不放开);
- iv. LED闪烁频率改变;

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修订记录

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产品使用时的注意事项

本文对适用于单片机所有产品的“使用时的注意事项”进行说明。有关个别的使用时的注意事项请参照正文。此外，如果在记载上有与本手册的正文有差异之处，请以正文为准。

1. 未使用的引脚的处理

【注意】将未使用的引脚按照正文的“未使用引脚的处理”进行处理。

CMOS产品的输入引脚的阻抗一般为高阻抗。如果在开路的状态下运行未使用的引脚，由于感应现象，外加LSI周围的噪声，在LSI内部产生穿透电流，有可能被误认为是输入信号而引起误动作。

未使用的引脚，请按照正文的“未使用引脚的处理”中的指示进行处理。

2. 通电时的处理

【注意】通电时产品处于不定状态。

通电时，LSI内部电路处于不确定状态，寄存器的设定和各引脚的状态不定。通过外部复位引脚对产品进行复位时，从通电到复位有效之前的期间，不能保证引脚的状态。

同样，使用内部上电复位功能对产品进行复位时，从通电到达到复位产生的一定电压的期间，不能保证引脚的状态。

3. 禁止存取保留地址（保留区）

【注意】禁止存取保留地址（保留区）

在地址区域中，有被分配将来用作功能扩展的保留地址（保留区）。因为无法保证存取这些地址时的运行，所以不能对保留地址（保留区）进行存取。

4. 关于时钟

【注意】复位时，请在时钟稳定后解除复位。

在程序运行中切换时钟时，请在要切换成的时钟稳定之后进行。复位时，在通过使用外部振荡器（或者外部振荡电路）的时钟开始运行的系统中，必须在时钟充分稳定后解除复位。另外，在程序运行中，切换成使用外部振荡器（或者外部振荡电路）的时钟时，在要切换成的时钟充分稳定后再进行切换。

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Renesas Electronics America Inc.

2880 Scott Boulevard Santa Clara, CA 95050-2554, U.S.A.
Tel: +1-408-588-6000, Fax: +1-408-588-6130

Renesas Electronics Canada Limited

1101 Nicholson Road, Newmarket, Ontario L3Y 9C3, Canada
Tel: +1-905-898-5441, Fax: +1-905-898-3220

Renesas Electronics Europe Limited

Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K.
Tel: +44-1628-651-700, Fax: +44-1628-651-804

Renesas Electronics Europe GmbH

Arcadiastrasse 10, 40472 Düsseldorf, Germany
Tel: +49-211-65030, Fax: +49-211-6503-1327

Renesas Electronics (China) Co., Ltd.

7th Floor, Quantum Plaza, No.27 ZhiChunLu Haidian District, Beijing 100083, P.R.China
Tel: +86-10-8235-1155, Fax: +86-10-8235-7679

Renesas Electronics (Shanghai) Co., Ltd.

Unit 204, 205, AZIA Center, No.1233 Lujiazui Ring Rd., Pudong District, Shanghai 200120, China
Tel: +86-21-5877-1818, Fax: +86-21-6887-7858 / -7898

Renesas Electronics Hong Kong Limited

Unit 1601-1613, 16/F., Tower 2, Grand Century Place, 193 Prince Edward Road West, Mongkok, Kowloon, Hong Kong
Tel: +852-2886-9318, Fax: +852-2886-9022/9044

Renesas Electronics Taiwan Co., Ltd.

13F, No. 363, Fu Shing North Road, Taipei, Taiwan
Tel: +886-2-8175-9600, Fax: +886-2-8175-9670

Renesas Electronics Singapore Pte. Ltd.

80 Bendemeer Road, Unit #06-02 Hyflux Innovation Centre Singapore 339949
Tel: +65-6213-0200, Fax: +65-6213-0300

Renesas Electronics Malaysia Sdn.Bhd.

Unit 906, Block B, Menara Amcorp, Amcorp Trade Centre, No. 18, Jin Persiaran Barat, 46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia
Tel: +60-3-7955-9390, Fax: +60-3-7955-9510

Renesas Electronics Korea Co., Ltd.

11F., Samik Lavied' or Bldg., 720-2 Yeoksam-Dong, Kangnam-Ku, Seoul 135-080, Korea
Tel: +82-2-558-3737, Fax: +82-2-558-5141