

## YRCNR7F0C3056-BE

开发套件

Rev.1.00  
May 16, 2014

### 1. 介绍

#### 1.1 目的

YRCNR7F0C3056-BE开发套件是一个用于评估瑞萨微控制器的工具套件，包括在线调试器EZ-CUBE和YRCNR7F0C3056-TB。

#### 1.2 特点

此开发套件可用于评估以下内容：

- (1) 瑞萨R7F0C3056的编程
- (2) 用户代码的调试
- (3) 用户电路，如按键，LED

YRCNR7F0C3056-BE开发套件包含所有微控制器R7F0C3056操作所需的电路。

### 2. 电源提供

#### 2.1 需求

YRCNR7F0C3056-BE开发套件附带一个EZ-CUBE调试器。调试器可以给开发套件提供100mA 5V的供电。如果不使用调试器，需要单独供电。

#### 2.2 供电行为

当购买YRCNR7F0C3056-BE开发套件，预编程了示例程序到R7F0C3056。在板通电后，用户LED指示灯将会开始进行闪烁。

### 3. 电路板布局

图3-1列出了电路板的顶层元器件布局。

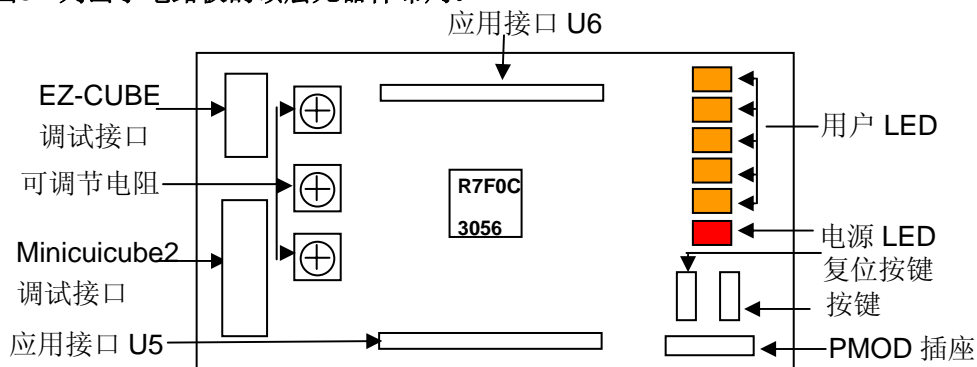


图3-1 电路板布局

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## 4. 调试器连接

下图显示了开发套件，调试器EZ-CUBE和PC机之间的连接。

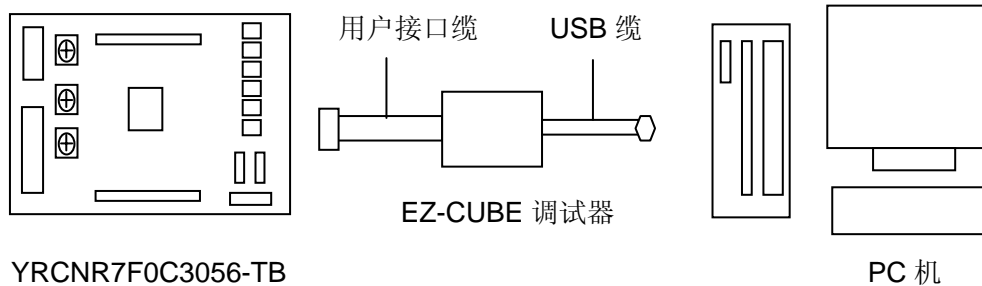


图4-1 调试接口框图

## 5. 用户电路

### 5.1 复位电路

YRCNR7F0C3056-BE开发套件使用R7F0C3056芯片上的复位信号，并也可以通过RESET按键进行触发。请参阅R7F0C3056硬件手册关于复位部分。

### 5.2 时钟电路

YRCNR7F0C3056-BE开发套件有安装时钟电路，如需使用请短接J1和J2。详情，请参阅R7F0C3056的硬件手册有关时钟的描述和YRCNR7F0C3056-TB原理图。

### 5.3 按键

YRCNR7F0C3056-BE开发套件有两个按键，SW1用于INTP0输入，RESET用于芯片复位。更多信息请查看YRCNR7F0C3056-TB原理图。

### 5.4 LED

有6个LED在板上，每个LED，它的颜色和功能如下表所示。

LED	颜色	功能	MCU 连接
POWER	红色	指示电源上电状态	没有连接
LED1(D6)	黄色	用户操作LED	P33
LED2(D7)	黄色	用户操作 LED	P34
LED3(D8)	黄色	用户操作 LED	P25
LED4(D9)	黄色	用户操作 LED	P26
LED5(D10)	黄色	用户操作 LED	P27

表5-1 LED连接

### 5.5 可调电阻

YRCNR7F0C3056-BE开发套件有三个可调节电阻，ADC可用于调节AD输入，AMPLIFIER可用调节放大器输入和COMPARATOR可用于比较器的输入。更多信息请查看YRCNR7F0C3056-TB原理图。

## 6. 外设接口

开发套件有外设连接接口（2.54mm pitch）2\*10pin插头，可以轻松连接配置MCU管脚。

### 6.1 描述

表6-1表示外设连接接口

外设连接接口			
Pin	MCU pin	Pin	MCU pin
1	P31/TxD0/CMPCOM	11	AVREF
2	P32/RxD0/CMPIN	12	ANI0/P20/AMP0-
3	P33/TI000/INTP1	13	ANI1/P21/AMP0OUT
4	P34/TO00/TI010/CMPOUT	14	ANI2/P22/AMP0+
5	RESET/P125	15	ANI3/P23
6	P122/X2/EXCLK/TOOLD0	16	ANI4/P24
7	P121/X1/TOOLC0	17	P25/AMP1-
8	REGC	18	P26/AMP1OUT
9	VSS	19	P27/AMP1+
10	VDD	20	P30/TOH1/TI51/INTP0

表6-1 外设接口

## 7. 代码开发

### 7.1 概述

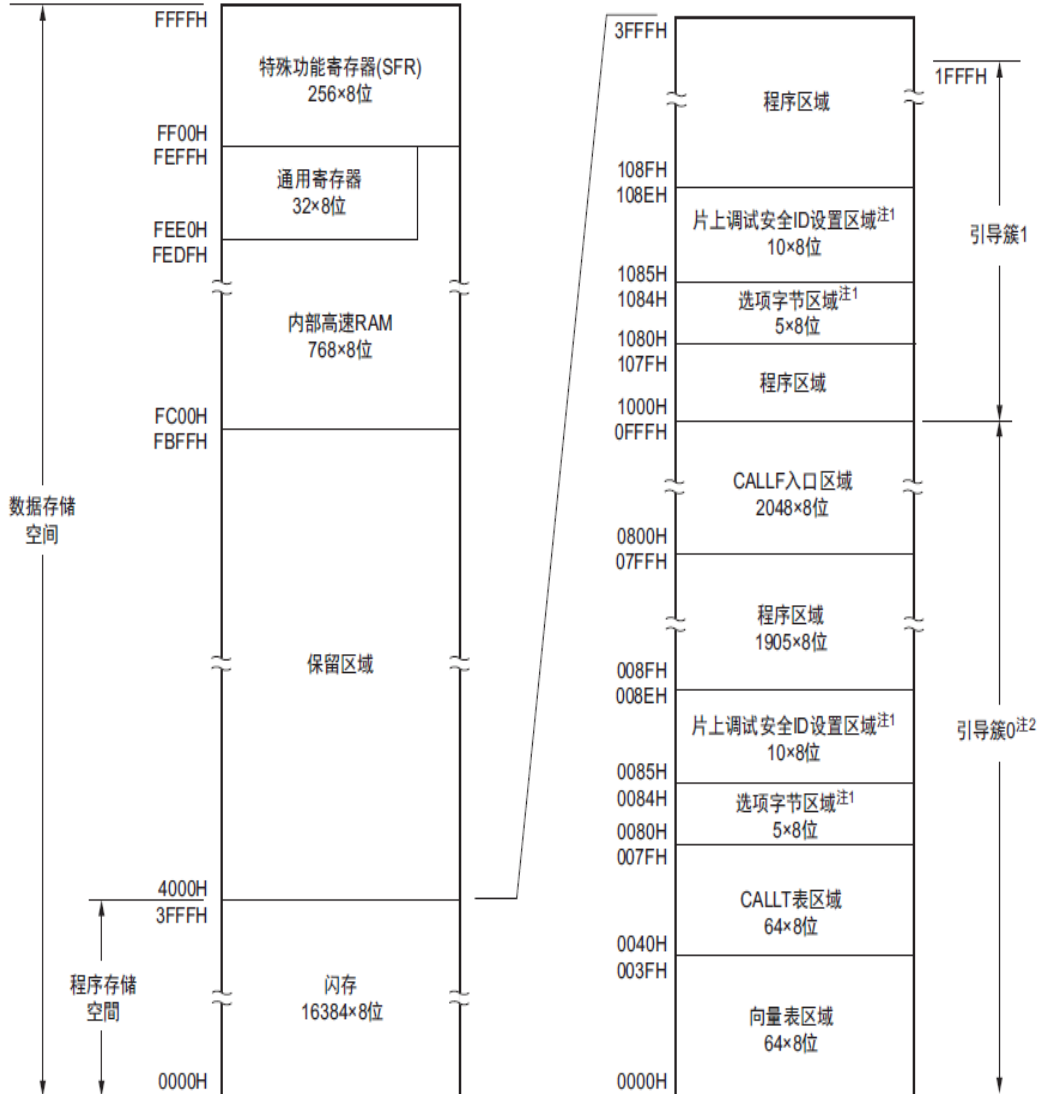
所有的代码调试使用瑞萨软件工具，开发套件必须连接调试器，如EZ-CUBE。有关调试器的功能，请参阅调试器的用户手册。

### 7.2 调试支持

该EZ-CUBE调试器（本开发套件提供）支持调试的基本功能。有关详细信息，请参阅EZ-CUBE的用户手册。

## 8. 地址空间

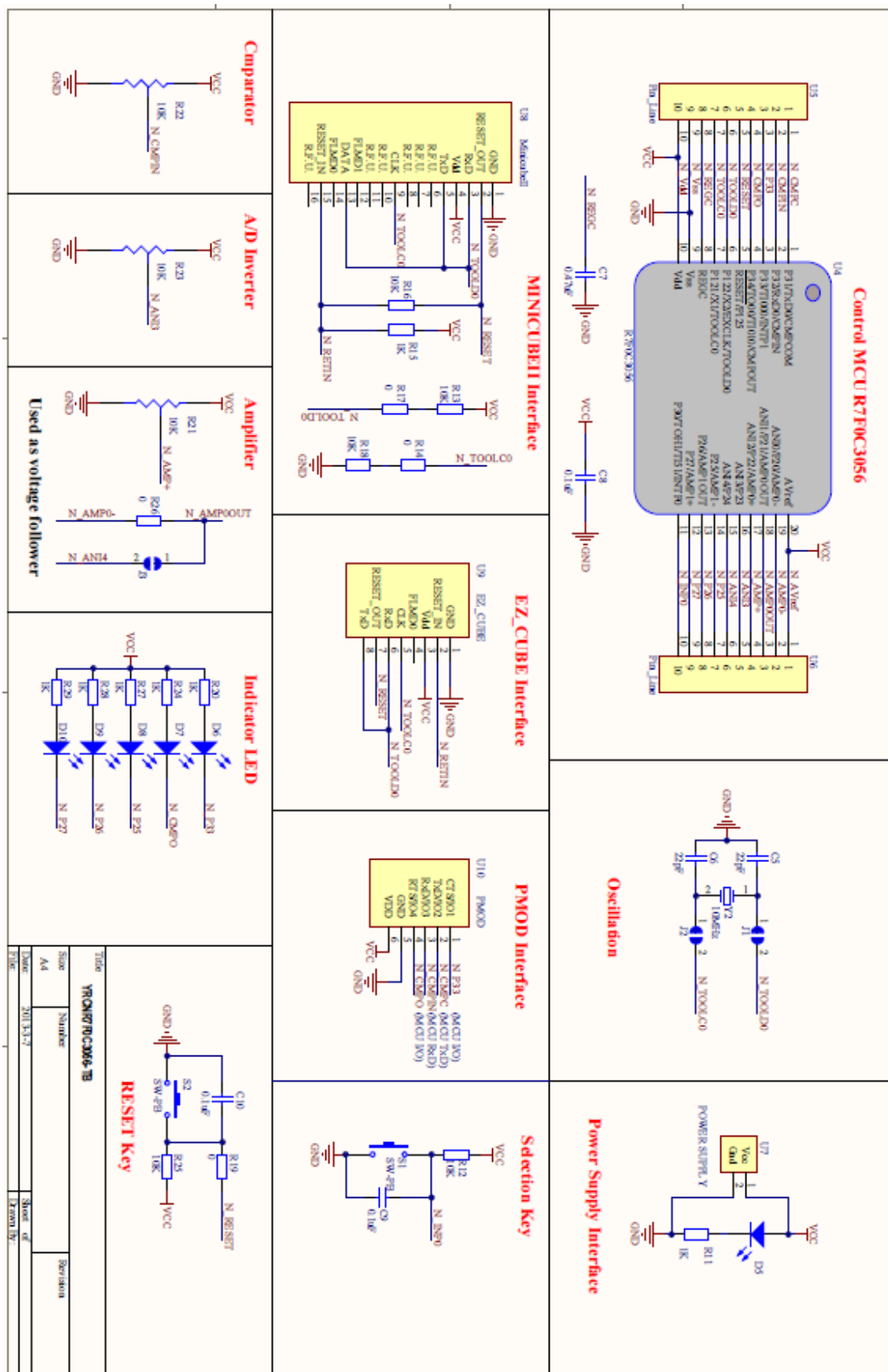
R7F0C3056存储器映射图如图8-1。详细内容，请参阅R7F0C3056硬件手册。



- 注 1. 不使用引导交换功能时：在 0080H ~ 0084H 设置选项字节，在 0085H ~ 008EH 设置片上调试安全 ID。  
使用引导交换功能时：在 0080H ~ 0084H 和 1080H ~ 1084H 设置选项字节，在 0085H ~ 008EH 和 1085H ~ 108EH 设置片上调试安全 ID。
2. 可通过安全设置，禁止改写引导簇 0（请参照“安全设置”）。

图8-1 R7F0C3056存储器映射图

### 9. YRCNR7F0C3056-TB原理图



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YRCNR7F0C3056-TB

[http://cn.renesas.com/applications/platform\\_cn/index.jsp#page=targetboard](http://cn.renesas.com/applications/platform_cn/index.jsp#page=targetboard)

修订记录	YRCNR7F0C3056-BE 说明文档
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Rev	发行日	修订内容	
		页	修订处
1.00	2014.05.16	—	初版发行

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### 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）

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**【注意】**复位时，请在时钟稳定后解除复位。

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