position: fixed;  
font-family: -apple-system,SF UI Text,Arial,PingFang SC,Hiragino Sans GB,Microsoft YaHei,WenQuanYi Micro Hei,sans-serif;  
bottom: 24px;  
right: 24px;  
width: 368px;  
padding: 24px 16px;  
background: #fff;  
color: #555666;  
box-shadow: 0px 0px 10px 2px rgba(0,0,0,0.06);  
border-radius: 4px;  
z-index: 9999;  
}  
.passport-login-tip-container.dark { background: #404041; color: #fff; }   
.passport-login-tip-container p.tit { margin-bottom:16px; font-size: 14px; font-weight: 500;color: #222226; line-height: 22px;}   
.passport-login-tip-container.dark p.tit { color: #fff; }   
.passport-login-tip-container ul { display: flex; flex-wrap: wrap; }   
.passport-login-tip-container ul li { flex: 0 0 50%; margin-bottom: 16px; font-size: 0; }   
.passport-login-tip-container ul li span { font-size: 14px; font-weight: 400; line-height: 22px; vertical-align: middle; }  
.passport-login-tip-container ul li img { margin-right: 3px; width: 16px; height: 16px; vertical-align: middle; }  
.passport-login-tip-container button { border: none;margin-top: 8px; width: 100%; height: 40px; background: #FC5531; border-radius: 20px; font-size: 14px; font-weight: 500; color: #FFFFFF; transition: all .2s; line-height: 40px;}  
.passport-login-tip-container button:hover { background: #FC1944; }  
  
.blog\_extension\_box.night .blog\_weixin\_box\_title>span,.blog\_extension\_box.night .blog\_weixin\_box\_cont .title{  
color:#D3D3D3 !important;  
}  
.blog\_extension\_box.night .blog\_weixin\_box{  
background: #2E2E32 !important;  
}  
.blog\_extension\_box.night .blog\_weixin\_box\_cont .desc{  
color: #999999 !important;  
}  
.blog\_weixin\_box{  
width :300px;  
height :380px;  
background :#fff;  
padding:24px;  
display :flex;  
flex-direction :column;  
border-radius: 4px;  
}  
.blog\_extension\_box.wap .blog\_weixin\_box{  
width: 260px;  
height: 350px;  
}  
.blog\_extension\_box.wap .blog\_weixin\_box .blog\_weixin\_box\_cont{  
padding-top:24px;  
}  
.blog\_weixin\_box\_title{  
display :flex;  
justify-content :space-between;  
align-items: center;  
}  
.blog\_weixin\_box\_title>span{  
font-size: 18px;  
font-weight: 500;  
color: #222226;  
}  
.blog\_weixin\_box\_title>img{  
width :12px;  
height :12px;  
cursor: pointer;  
}  
.blog\_weixin\_box\_cont>img{  
width :120px;  
height:120px;  
}  
.blog\_weixin\_box\_cont{  
flex: 1;  
display :flex;  
padding-top:40px;  
flex-direction :column;  
align-items: center;  
}  
.blog\_weixin\_box\_cont .title{  
font-size: 14px;  
text-align: center;  
font-weight: 400;  
color: #222226;  
margin-bottom :4px;  
margin-top :16px;  
overflow: hidden;  
text-overflow: ellipsis;  
display: -webkit-box;  
-webkit-line-clamp: 2;  
-webkit-box-orient: vertical;  
word-break: break-all;  
}  
.blog\_weixin\_box\_cont .desc{  
font-size: 14px;  
font-weight: 400;  
color: #999AAA;  
}  
.blog\_weixin\_box\_btn{  
display :flex;  
justify-content :flex-end;  
}  
.blog\_weixin\_box\_btn>span{  
padding:0 12px;  
height: 32px;  
background: #FC5531;  
border-radius: 16px;  
font-size: 14px;  
color: #FFFFFF;  
font-family:'Microsoft YaHei','SF Pro Display',Roboto,Noto,Arial,'PingFang SC',sans-serif;  
line-height:32px;  
text-align:center;  
cursor: pointer;  
}  
.blog\_extension\_box{  
position: fixed;  
display: none;  
left: 50%;  
top: 50%;  
z-index: 8991;  
-webkit-transform: translate(-50%, -50%);  
-ms-transform: translate(-50%, -50%);  
-o-transform: translate(-50%, -50%);  
-moz-transform: translate(-50%, -50%);  
transform: translate(-50%, -50%);  
border-radius: 4px;  
}  
.blog\_extension\_mask{  
position: fixed;  
top: 0;  
left: 0;  
z-index: 8990;  
background-color: rgba(0, 0, 0, 0.5);  
width: 100%;  
height: 100%;  
display: none;  
}  
.blog\_extension.blog\_extension\_type3 .blog\_extension\_card\_left img{  
border: none;  
}  
.blog\_extension.night .text{  
color:#D3D3D3 !important;  
}  
.blog\_extension.night .blog\_extension\_card\_left img{  
border-color:rgba(240, 240, 242, 0.1) !important;  
}  
.blog\_extension.night .blog\_extension\_card\_cont\_r span,.blog\_extension.night .style{  
color:#999999 !important;  
}  
.blog\_extension.night {  
background: #242429 !important;  
box-shadow:none !important;  
border:1px solid rgba(240, 240, 242, 0.1) !important;  
}  
  
.blog\_extension{  
width :100%;  
border:1px solid #e8e8ed;  
border-radius: 2px;  
background :#fff;  
cursor: pointer;  
}  
.blog\_extension\_card{  
display :flex;  
text-align :start;  
padding :16px;  
cursor: pointer;  
}  
.blog\_extension\_card a {  
text-decoration: none;  
}  
.blog\_extension\_card:hover .text{  
color:#FC5531;  
}  
.blog\_extension\_card\_left{  
height :48px;  
}  
.blog\_extension\_card\_left img{  
width: 46px;  
height: 46px;  
border-radius: 2px;  
border: 1px solid #E8E8ED;  
margin-right:8px;  
}  
.blog\_extension\_card .blog\_extension\_card\_cont{  
flex:1;  
display :flex;  
flex-direction :column;  
justify-content :space-between;  
}  
.blog\_extension\_card .blog\_extension\_card\_cont .text{  
font-size: 16px;  
font-weight: 500;  
flex:1;  
color: #555666;  
overflow: hidden;  
text-overflow: ellipsis;  
display: -webkit-box;  
-webkit-line-clamp: 1;  
-webkit-box-orient: vertical;  
word-break: break-all;  
}  
.blog\_extension\_card .blog\_extension\_card\_cont .style{  
font-size: 14px;  
font-weight: 400;  
color: #999AAA;  
overflow: hidden;  
text-overflow: ellipsis;  
display: -webkit-box;  
-webkit-line-clamp: 1;  
-webkit-box-orient: vertical;  
word-break: break-all;  
}  
.blog\_extension\_card .blog\_extension\_card\_cont\_l{  
display :flex;  
justify-content :space-between;  
}  
.blog\_extension\_card .blog\_extension\_card\_cont\_r{  
display :flex;  
align-items :center;  
width:90px;  
}  
.blog\_extension\_card .blog\_extension\_card\_cont\_r .weixin{  
height :16px;  
width :16px;  
margin-right:2px;  
}  
.blog\_extension\_card .blog\_extension\_card\_cont\_r span{  
font-size: 12px;  
font-weight: 400;  
line-height: normal;  
color: #999AAA;  
margin-right:2px;  
}  
.blog\_extension\_card .blog\_extension\_card\_cont\_r\_type3 {  
width: unset;  
}  
.blog\_extension\_card .blog\_extension\_card\_cont\_r\_type3 a {  
display :flex;  
align-items :center;  
white-space: nowrap;  
width: unset;  
}  
.blog\_extension\_card .blog\_extension\_card\_cont\_r .go{  
width :6px;  
}  
.extension\_official:hover .text{  
color:#FC5531;  
}  
.extension\_official{  
display :flex;  
padding:12px 16px;  
text-align :start;  
align-items :center;  
cursor: pointer;  
}  
.extension\_official .blog\_extension\_card\_left{  
height :40px;  
}  
.extension\_official .blog\_extension\_card\_left img{  
width: 40px;  
height: 40px;  
border-radius: 2px;  
border: 1px solid #E8E8ED;  
}  
.extension\_official .blog\_extension\_card\_cont{  
flex:1;  
display :flex;  
flex-direction :column;  
justify-content :space-between;  
padding-right:20px;  
}  
.extension\_official .blog\_extension\_card\_cont .text{  
font-size: 16px;  
font-weight: 500;  
color: #555666;  
overflow: hidden;  
text-overflow: ellipsis;  
display: -webkit-box;  
-webkit-line-clamp: 1;  
-webkit-box-orient: vertical;  
word-break: break-all;  
}  
.extension\_official .blog\_extension\_card\_cont\_r{  
height :16px;  
display :flex;  
align-items :center;  
}  
.extension\_official .blog\_extension\_card\_cont\_r .weixin{  
width :16px;  
height :16px;  
margin-right:2px;  
}  
.extension\_official .blog\_extension\_card\_cont\_r span{  
font-size: 12px;  
font-weight: 400;  
color: #999AAA;  
overflow: hidden;  
text-overflow: ellipsis;  
display: -webkit-box;  
-webkit-line-clamp: 1;  
-webkit-box-orient: vertical;  
word-break: break-all;  
}  
.extension\_official .blog\_extension\_card\_right{  
width :8px;  
height :12px;  
}

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**STM32C0开发(1)----概述**

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**概述**

STM32C0系列[微控制器](https://so.csdn.net/so/search?q=%E5%BE%AE%E6%8E%A7%E5%88%B6%E5%99%A8&spm=1001.2101.3001.7020)是意法半导体公司推出的一款低功耗、高性能的微控制器产品。它们被设计用于需要小型、低功耗和高度可集成的应用程序，如传感器、消费品、电池供电设备、家庭自动化和安全等应用。该系列的微控制器采用ARM Cortex-M0内核，具有丰富的外设。  
最近在弄ST和GD的课程，需要样片的可以加群申请：6\_15061293。

**样品申请**

<https://www.wjx.top/vm/PpC1kRR.aspx>

**框架**

**产品列表**

STM32C031最大支持48-pin 管脚，同时flash和RAM可以达到32 K /12 K。  
STM32C011最大支持20-pin 管脚，同时flash和RAM可以达到32 K /6 K。  
STM32C031比STM32C011功能更强大，但也更昂贵。对于需要更高性能的应用，STM32C031是更好的选择，而对于需要更低成本的应用，STM32C011则更加适合。

**引脚分布**

C0只有1个电源对(VDD/VSS)  
没有Vbat引脚 • 在小于48引脚的封装中，HSE和LSE引脚复用，可以通过选项字节中的 “HSE\_NOT\_REMAPPED”位进行选择  
由于电源脚比较少，易于布局，引脚更加灵活，因此可以使STM32C0系列微控制器的布局变得更加简单。设计人员可以将引脚分布在最方便的位置，以便更好地满足设计需求。

**STM32C0 系统架构**

需要注意的是不带USB,CAN

**RCC**

STM32C0复位和时钟控制器管理系统和外围时钟  
• 两个内部振荡器  
• 高速内部48mhz RC振荡器(HSI48)  
• 低速内部32khz RC振荡器(LSI)  
• 两个外部振荡器(晶振或谐振器)，在较小的封装上共享引脚  
• 带有时钟安全系统(CSS)的高速外部4~48MHz振荡器(HSE)  
• 带有时钟安全系统(CSS)的低速外部32.768 kHz振荡器(LSE)  
• 一些外设具有独立的时钟  
• 1个音频时钟源I2S\_CKIN引脚  
• 用于 I2S1 外设的直接时钟输入引脚  
• RCC管理各个系统和外设复位

• 高度灵活的时钟源选择，以满足功耗和精度要求  
• 许多独立的外设时钟允许在不影响通信波特率的情况下调整功耗，并使一些外设在低功耗模式下保持活跃  
• 安全灵活的复位管理

**复位的主要特性**

管理三种类型的复位:  
• 系统复位  
• 电源复位  
• RTC域复位

**系统复位**

重置RCC控制/状态寄存器2 (RCC\_CSR2)和RTC域中的寄存器中的重置标志之外的所有寄存器  
• 复位源  
• NRST引脚低电平(外部复位)  
• 窗口看门狗事件（WWDG 复位）  
• 独立看门狗事件（IWDG 复位）软件复位(通过NVIC)  
• 低功耗模式安全复位  
• 选项字节加载器复位。  
• 上电复位  
• 可通过查看 RCC\_CSR 寄存器中的复位标志确定复位源

**电源复位**

源  
• 上电复位(POR) 或欠压复位(BOR)  
• 复位所有的寄存器  
退出Standby模式  
• VCORE 域的所有寄存器都设置为其复位值  
• VCORE 域外的寄存器（备份寄存器、 WKUP、IWDG 以及待机/Shutdown 模式控制）不受影响。  
• 退出 Shutdown 模式时，会产生欠压复位，将所有寄存器全部复位。

**RTC域复位**

两个特定的复位  
• 通过RTCRST控制位进行软件复位  
• VDD 上电

**高速内部(HSI48)时钟**

1%的精度和快速唤醒时间  
分频(HSIDIV)后的HSI48可用做Stop模式唤醒时钟和时钟安全系统(CSS)的备份时钟  
I2C1, U(S)ART1-2可以使能HSI48在Stop模式时检测他们的唤醒序列，在Stop模式时，除了外设唤醒序列检测外，HSI48保持关闭状态  
不同温度下晶振的精度是不一样的。

**高速外部(HSE)时钟**

HSE 4-48MHz，带时钟安全系统(CSS)，自动检测HSE故障并且自动切换到HSI48(HSIDIV后的)

**低速内部(LSI)时钟**

超低功率内部32khz振荡器，除Shutdown模式外，可在所有模式下使用

**HSE / LSE共享引脚**

HSE振荡器引脚可以通过控制HSE\_NOT\_REMAPPED 选项位进行重映射  
• HSE振荡器可以连接到  
• 任一OSC\_IN, OSC\_OUT专用引脚(仅48pin封装)  
• 或与LSE振荡器OSCX\_IN和OSCX\_OUT共享的引脚

**系统时钟**

• 在LSI、LSE、HSI48(可能是预分频后的)和HSE时钟源之间选择  
• 系统时钟，AHB和APB最大频率:48 MHz  
• 单一的电压范围

**STM32F0 和 STM32G0的主要区别**

要注意C0没有PLL，F0没有css，g0和c0有

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STM32C0系列微控制器是意法半导体公司推出的一款低功耗、高性能的微控制器产品。它们被设计用于需要小型、低功耗和高度可集成的应用程序，如传感器、消费品、电池供电设备、家庭自动化和安全等应用。该系列的微控制器采用ARM Cortex-M0内核，具有丰富的外设。

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*[STM32CUBE](https://download.csdn.net/download/hwytree/86015384" \t "_blank)*[IDE采用RT-THREAD NANO实现UART和LED闪灯的例程。非KEIL例程。例程所用芯片为](https://download.csdn.net/download/hwytree/86015384" \t "_blank)*[STM32C011](https://download.csdn.net/download/hwytree/86015384" \t "_blank)*[J4M3。介绍： https://blog.csdn.net/hwytree/article/details/125705471?spm=1001.2014.3001.5502 。](https://download.csdn.net/download/hwytree/86015384" \t "_blank)

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[所以BMI055的编程稍微复杂点,需要两个spi,如果共用GPIO的话那就至少需要一个IO口模拟的spi(1硬件1模拟或者2个模拟)。 代码如下: #include"imu.h"void IMU\_init(void) {u8imu\_data[12] = {0};u16imu\_dat[6] = {0}; my\_spi\_io\_init();](https://blog.csdn.net/a379039233/article/details/73732956" \t "_blank)

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[要将子模块添加到你的 Git 项目中，可以使用 `git submodule add` 命令。这个命令的语法如下： ``` git submodule add <repository> <path> ``` 其中，`<repository>` 是子模块的仓库 URL，`<path>` 是将子模块放置在你的项目中的路径。 例如，如果你想将名为 `submodule-repo` 的仓库作为子模块添加到你的项目中的 `submodules` 目录下，可以运行以下命令： ``` git submodule add https://github.com/example/submodule-repo.git submodules/submodule-repo ``` 这样，Git 会将子模块的仓库克隆到指定路径，并在父项目中记录子模块的相关信息。记得要提交父项目的变更，以便其他人能够获取到子模块。 希望这能回答你的问题！如果还有其他问题，请随时提出。](https://wenku.csdn.net/answer/121wamh52c" \t "_blank)

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[飞翔的佩奇:](https://flypeppa.blog.csdn.net/) 在万千网络的交汇点上，您的支持如同一缕春风，拂过我创作的心田。感谢您的光临，您的每一句赞赏都是我前行的动力，如同晨露滋养着娇花，使之更加绚烂夺目。愿我们共同在文字的海洋里，寻找那一份属于心灵的慰藉

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