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7546/7547 群与 7542 群

7546/47 群与 7542 群的区别

1. 7546/47 群与 7542 群的区别

	7546群	7547群	7542群	
			掩模型 ROM 版本	快速擦写存储器版本
产品名	M37546G2GP/SP/HP M37546G4GP/SP/HP M37546G2-XXXGP/SP/HP M37546G4-XXXGP/SP/HP	M37547G2FP M37547G4FP M37547G2-XXXFP M37547G4-XXXFP	M37542M2-XXXGP/SP/HP/FP M37542M4-XXXGP/SP/HP/FP	M37542F8GP/SP/FP/HP *HP 封装仅限工程样片 M37542F4GP/SP/FP
封装	PLQP0032GB-A (旧名称32P6U-A) : 32管脚LQFP PRDP0032BA-A (旧名称32P4B) : 32管脚SDIP PWQN0036KA-A (旧名称36PJW-A) : 36管脚WQFN	PRSP0036GA-A (旧名称36P2R-A) : 36管脚SSOP	PLQP0032GB-A (旧名称32P6U-A) : 32管脚LQFP PRSP0036GA-A (旧名称36P2R-A) : 36管脚SSOP PRDP0032BA-A (旧名称32P4B) : 32管脚SDIP PWQN0036KA-A (旧名称36PJW-A) : 36管脚WQFN	
ROM 类型: ROM/RAM 容量 (字节)	QzROM: 8K/384, 16K/512		掩模: 8K/384, 16K/512	快速擦写: 32K/1024, 16K/1024
可编程 I/O 端口	25个	29个	29个 (36管脚版本), 25个 (32管脚版本)	
A/D 转换器 (分辨率×通道)	10 位分辨率×6个 通道	10 位分辨率×8个 通道	10 位分辨率×8个 通道 (36管脚版本) 10 位分辨率×6个 通道 (32管脚版本)	
加电复位电路	内置		非内置	
低电压检测电路	内置		非内置	
快速擦写存储器 ID 码区	无		无	地址 FFD416 -FFDB16
功能设定 ROM 区	地址 FFD416-FFDB16		无	
功能设定 ROM 数据	内置 (请参照第3页)		非内置	
振荡器选择	复位解除时有效		由程序设定	
内部振荡器控制	有		无	
STP 指令功能控制	复位解除时有效		由程序设定	
监视定时器H计数源选择	复位解除时有效		由程序设定	
监视定时器时钟源选择	可选择		时钟源固定	
监视定时器启动控制	复位后由程序自动启动		由程序启动	
电源电压	1.8 V ~ 5.5 V		2.2 V ~ 5.5 V	2.7 V ~ 5.5 V

注: 7546/47 群与 7542 群管脚兼容。

7546/47 群的电特性与 7542 群不同。

2. 功能设定 ROM 区

作为新功能之一，功能设定 ROM 被添加到了 7546/47 群中，而 7542 群中则没有此功能。

功能设定 ROM 区包括以下内容：

- 地址 FFD4₁₆ ~ FFD7₁₆ 为 Renesas 出货检查区，在 Renesas 出货检查时，给 Renesas 出货检查区写随机数。不能改写此区域的数值。在如用户程序取得校验和的情况时，需要避开此区域。
- 地址 FFD8₁₆ ~ FFDA₁₆ 的功能设定 ROM 数据 0 ~ 2 是用 QzROM 的写数据设定外围功能的区域。设定在此区域中的数据在单片机复位解除时有效。
- ROM 代码保护分配在地址 FFDB₁₆，用于禁止读取 QzROM 区。

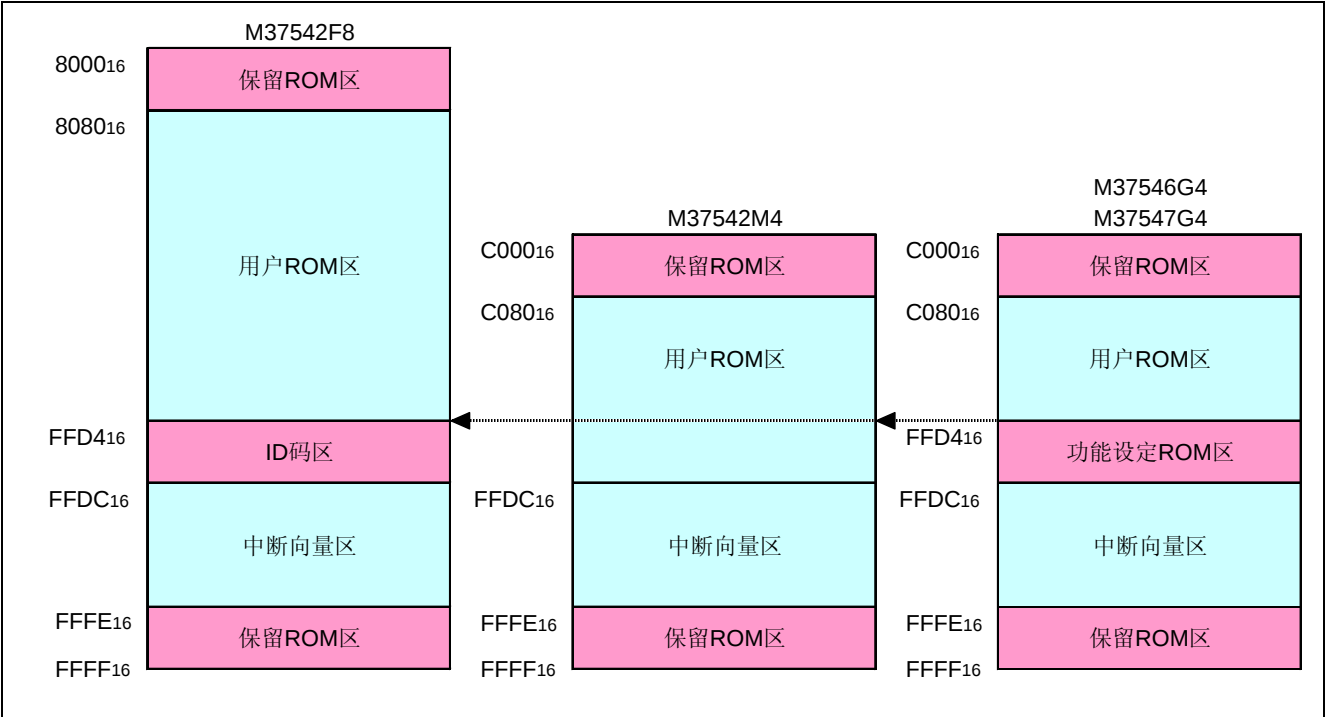


图 2.1 存储器图

地址	
FFD4 ₁₆	Renesas出货检查区
FFD5 ₁₆	Renesas出货检查区
FFD6 ₁₆	Renesas出货检查区
FFD7 ₁₆	Renesas出货检查区
FFD8 ₁₆	功能设定 ROM 数据0
FFD9 ₁₆	功能设定 ROM 数据1
FFDA ₁₆	功能设定 ROM 数据2
FFDB ₁₆	ROM 代码保护

图 2.2 功能设定 ROM 区的分配图

3. 功能设定 ROM 数据 0, 1, 2

功能设定 ROM 数据 0 ~ 2 (地址 FFD8₁₆ ~ FFDA₁₆) 是设定外围功能模式的区域。如果给此区域设定值, 就在单片机复位解除时设定各自的外围功能运行模式。有关外围功能的具体运行, 请参照数据手册中对各外围功能的说明。

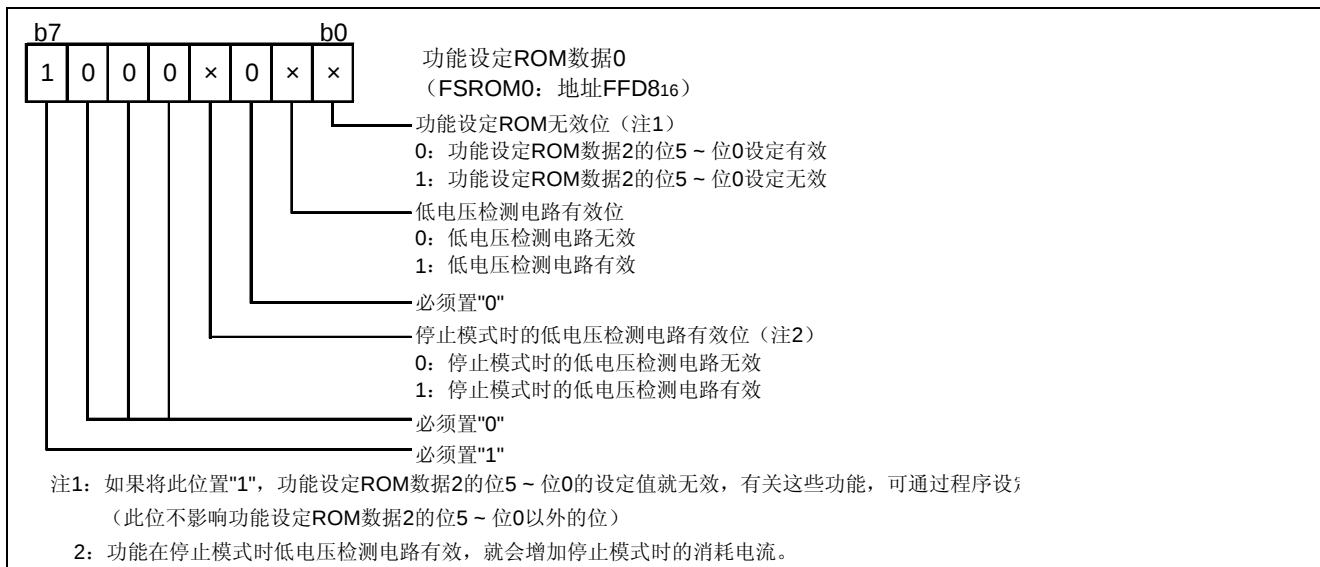


图 3.1 功能设定 ROM 数据 0 的结构



图 3.2 功能设定 ROM 数据 1 的结构

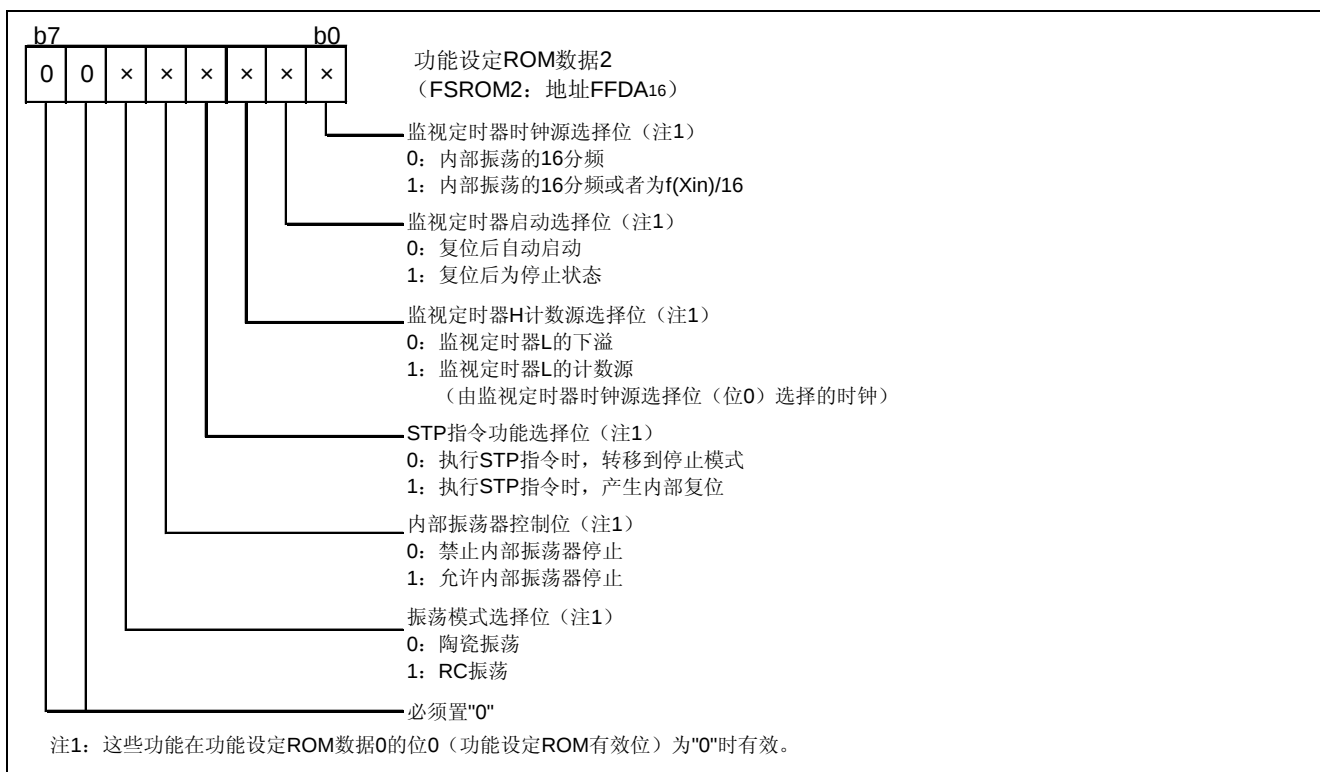


图 3.3 功能设定 ROM 数据 2 的结构

4. CPU 模式寄存器

7546/47 群与 7542 群管脚兼容。

7546/47 群中增加了加电复位电路、低电压检测电路和功能设定 ROM 数据区。

7546/47 群的功能设定 ROM 区（地址 FFD4₁₆ ~ FFDB₁₆）相当于 7542 群快速擦写存储器版本的 ID 码区。该区域与掩模 ROM 版本的用户 ROM 区域相重叠。

在 Renesas 出货检查时，给地址 FFD4₁₆ ~ FFD7₁₆ 的 Renesas 出货检查区写随机数。此区域的数据不能改写。另外，在如用户程序取得校验和的情况时，需要避开此区域。

无论是否使用附加功能，在功能设定 ROM 数据 0 ~ 2 中设置与系统匹配的数值。如果该设定没有被执行，该区域会被识别为 ROM 保护区域，程序会因此产生错误。

设置如下数值，使 7546/47 群具有与 7542 群同样的功能。

FSROM0: 81₁₆, FSROM1: 00₁₆, FSROM2: 00₁₆

功能设定 ROM 数据 0 ~ 2 的设定会对 CPU 模式寄存器和监视定时器寄存器产生影响。详细信息请参考数据手册。

尽管 7546/47 群在设计时针对特性考虑到了兼容性，但是由于制造工艺等的不同，其电特性的特性值、运行容限、A/D 转换精度、噪声耐量、噪声辐射量等还是存在区别。

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由于使用振荡器时的电容等常数因振荡器不同而不同，所以请根据振荡器制造厂商的推荐值，选择振荡器和振荡电路常数，以保证产品在大规模量产时能够在用户系统下获得稳定的时钟。

5. 参考文献

硬件手册

7546 群数据手册

7547 群数据手册

7542 群数据手册

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1.01	2008.03.17	5	更新咨询邮箱地址，删去硬件手册版本号
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