

致尊敬的顾客

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瑞萨电子公司网址：<http://www.renesas.com>

2010年4月1日
瑞萨电子公司

【发行】瑞萨电子公司（<http://www.renesas.com>）

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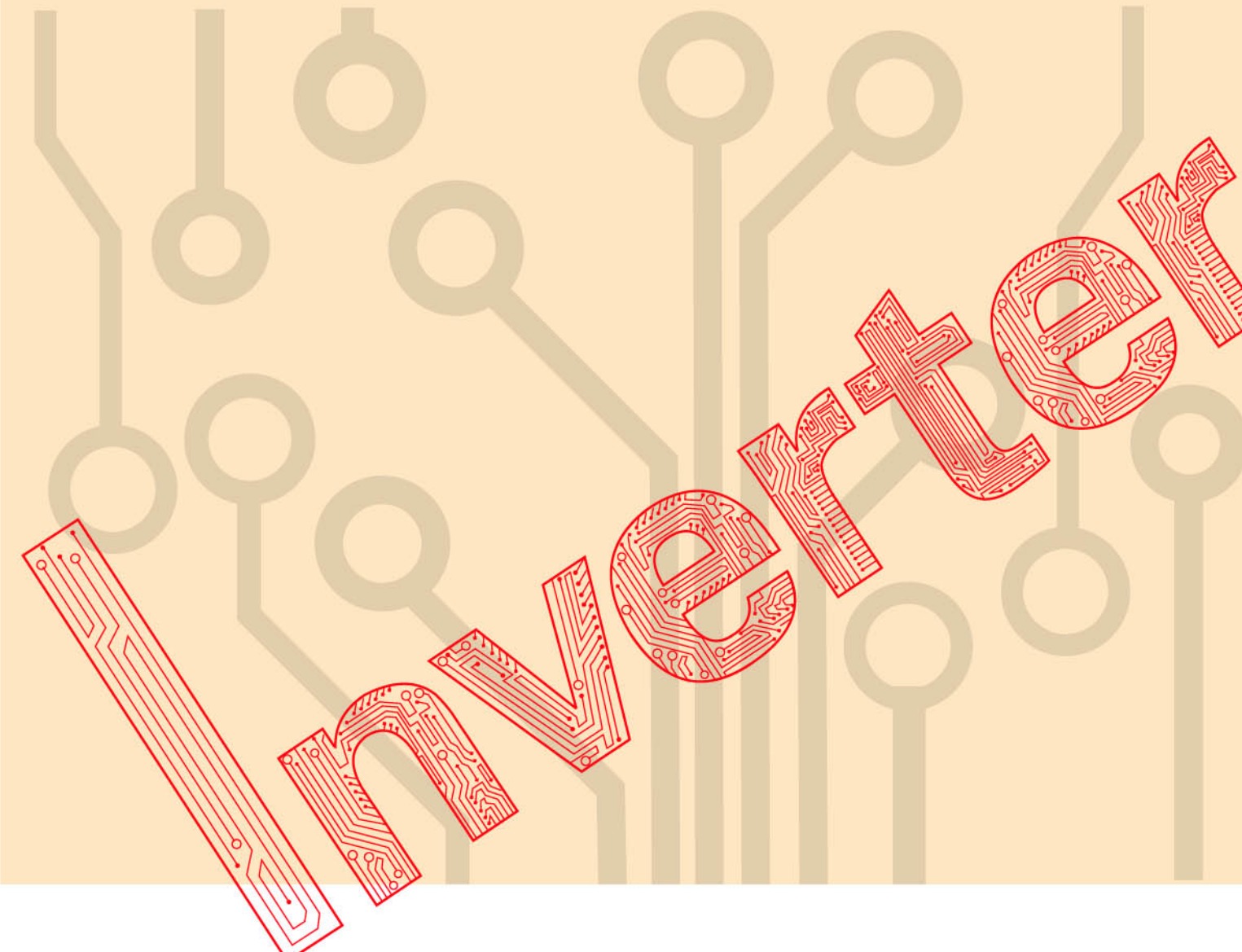
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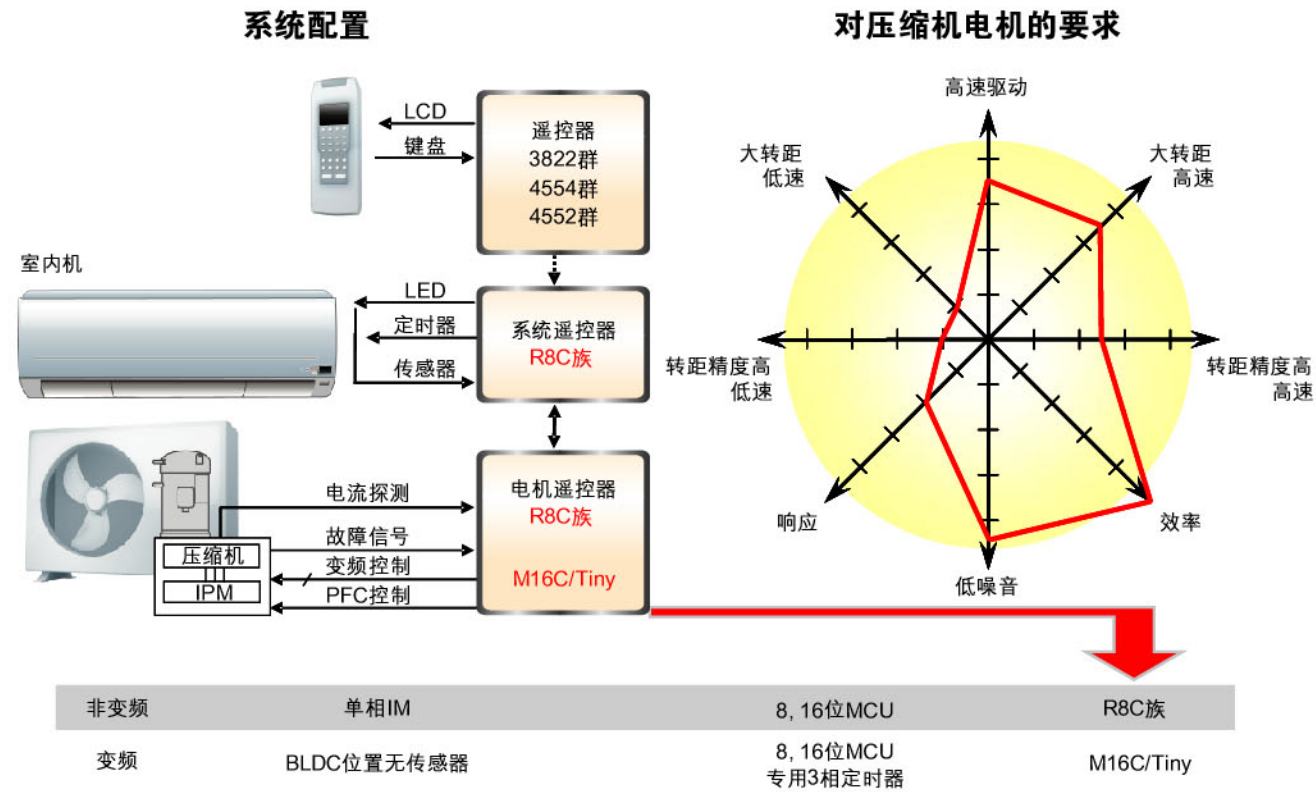
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瑞萨面向家用变频电器电机的
解决方案

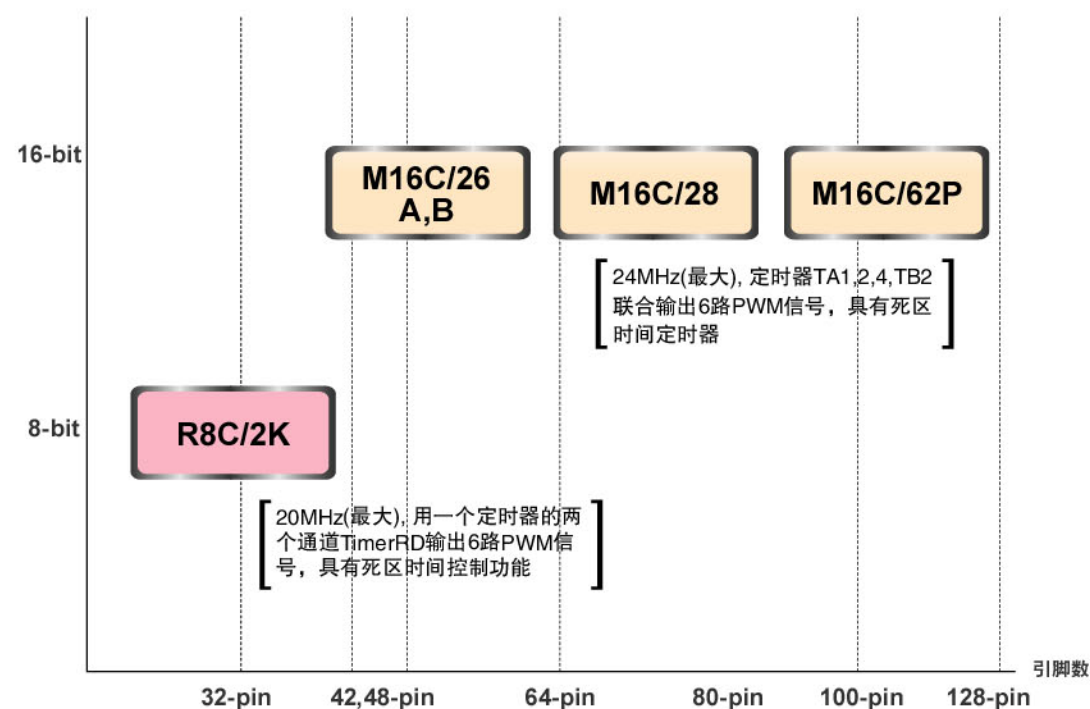


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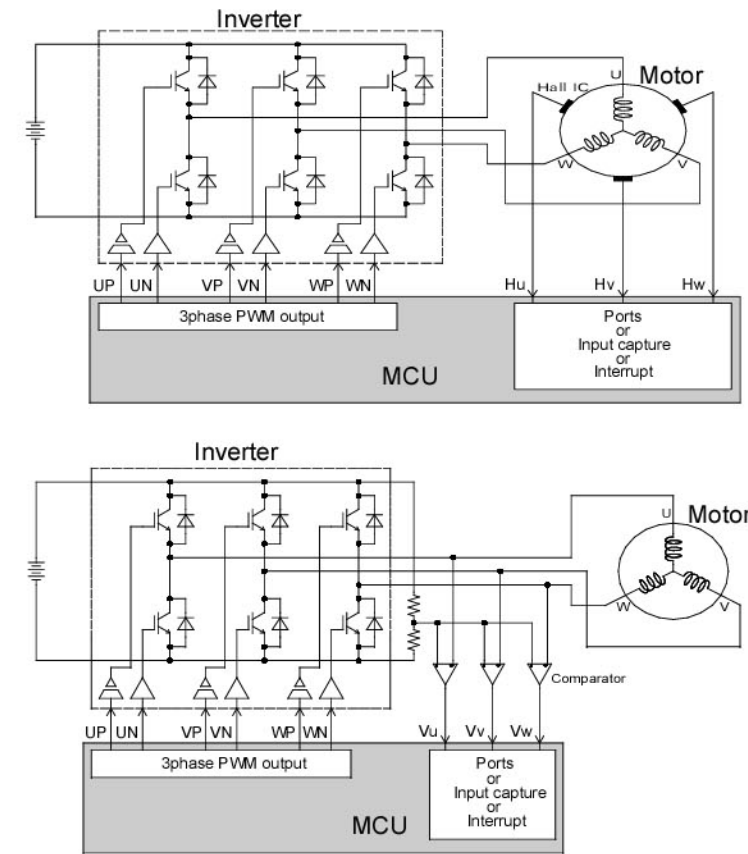
应用案例



瑞萨应用于直流无刷电机120度控制的MCU产品线



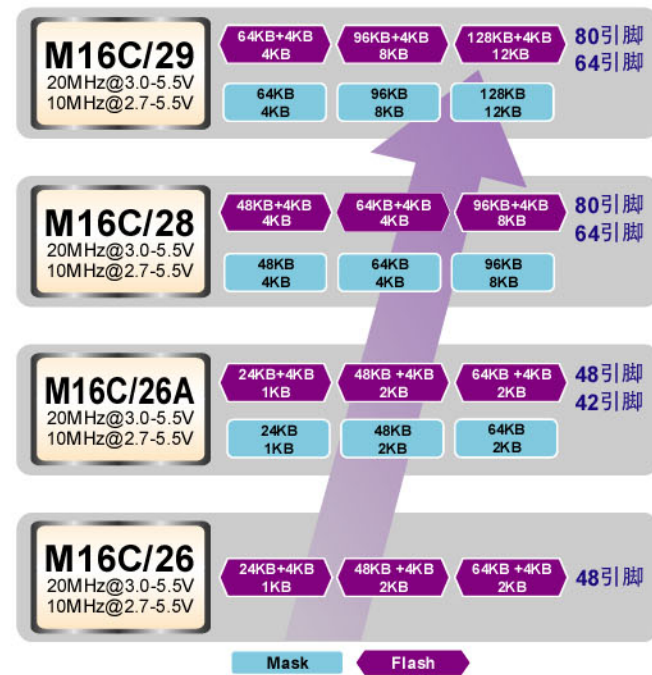
直流无刷电机控制系统框图



M16C/Tiny系列产品线

· 简化外围功能 · 更小的ROM/RAM · 少引脚封装

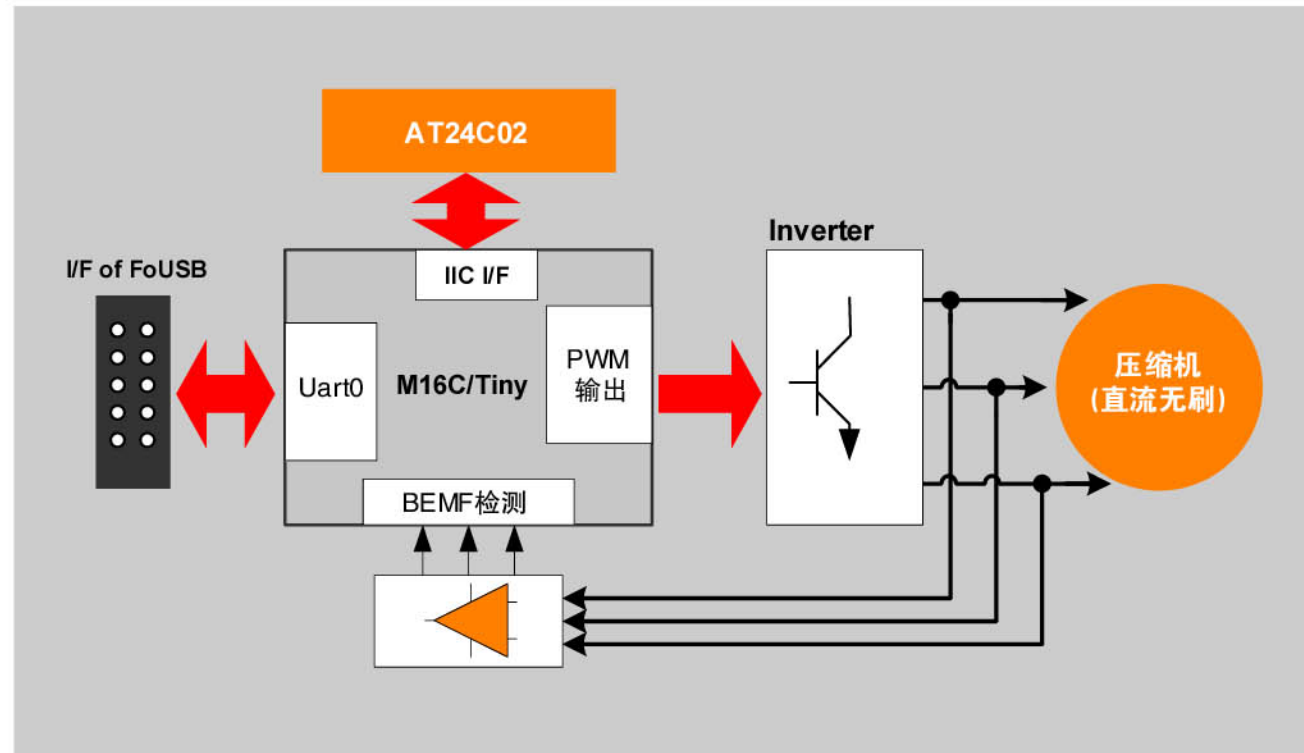
M16C/62, M16C/30, M16C/Tiny是下一个



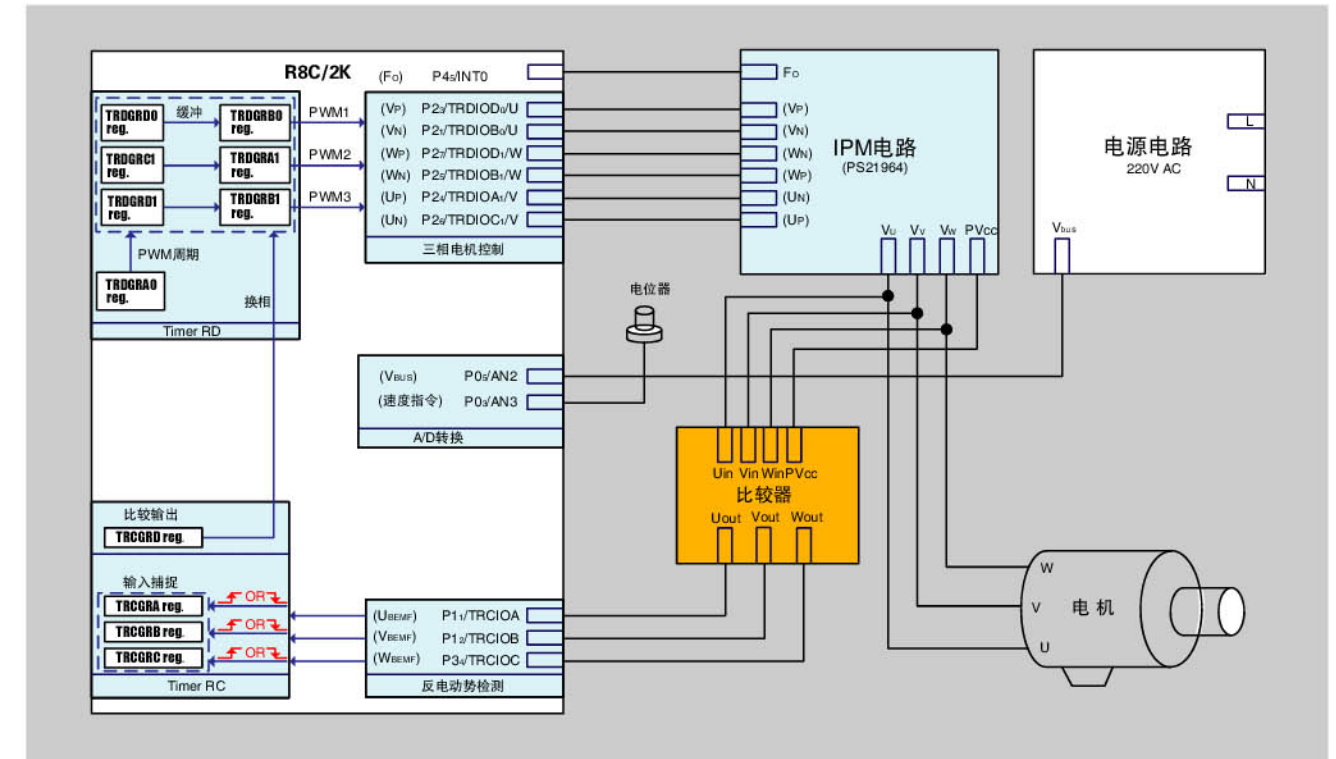
M16C/Tiny功能序列

- CAN(2.0B, 1ch) M16C/29附加功能
- 输入捕捉, 输出比较 M16C/28附加功能
- 硬件Multi-Master I²C
- 片内振荡器频率 M16C/26A附加功能
- 可选择分频比
- 系统硬件复位后默认时钟是片内时钟
- 数字防抖动(NMI, INT5)
- 位置数据保留功能
- Flash擦除及停止功能 M16C/26附加功能
- 新的复位功能** 继承M16C/62P功能
 - 振荡停止检测电路
 - 新的WDT功能(系统时钟不会停止) (WDT与单片振荡器运行)
 - 安全设计(选择监视定时器溢出后硬件复位) (时钟停止—系统时钟8分频)
 - 小容量闪存块
 - 用于存储数据 "Data Flash" (备选)

M16C/Tiny变频器功能框图



R8C/2K变频器功能框图

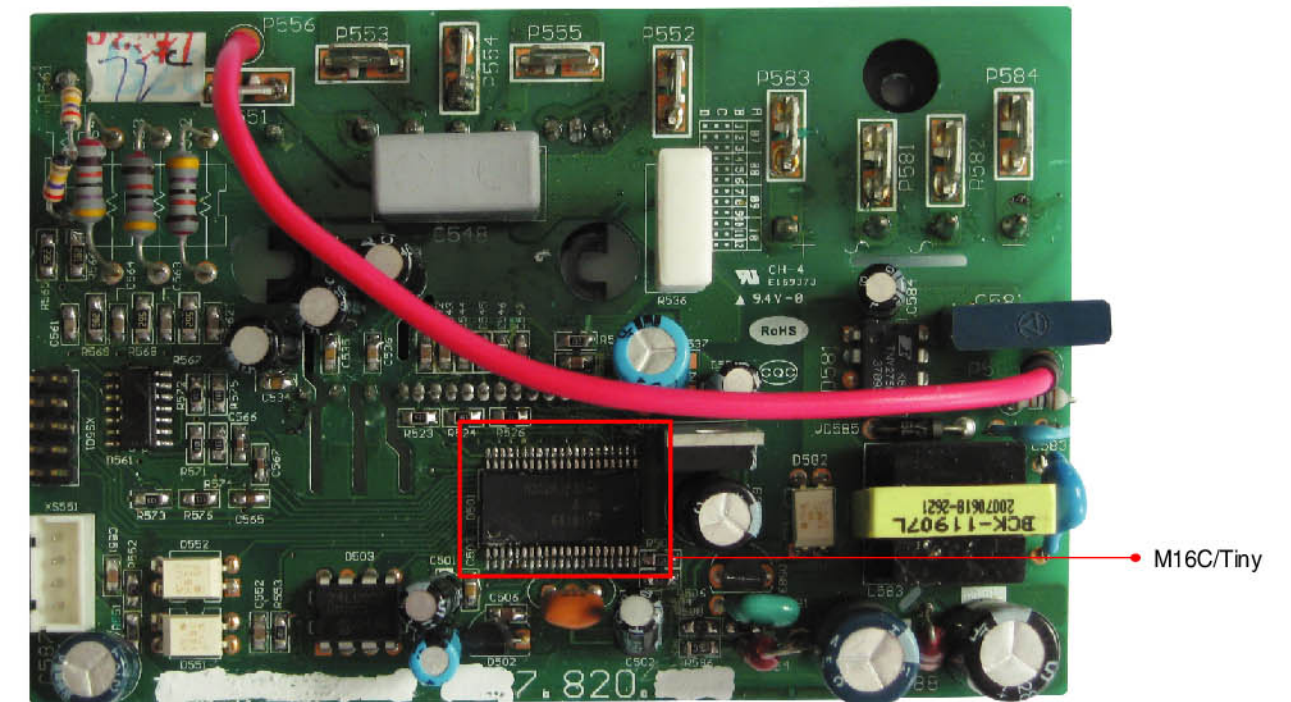


R8C/2K性能

R8C Core		
Flash	Data flash	RAM
High-speed on-chip oscillator (40 MHz)	Low-speed on-chip oscillator (125 kHz)	
Main clock oscillator	OSD	
LVD	POR	
Timer RA(8 bit)	Timer RB(8 bit)	Timer RC(16 bit)
Timer RD(16 bit 2ch)		
Serial Interface Clock synchronous serial I/O / UART x 2		
H/W-LIN		
A/D converter 10bit x 9ch		
LED Driver Interface	WDT(15 bit)	
I/O: 25, I: 3		

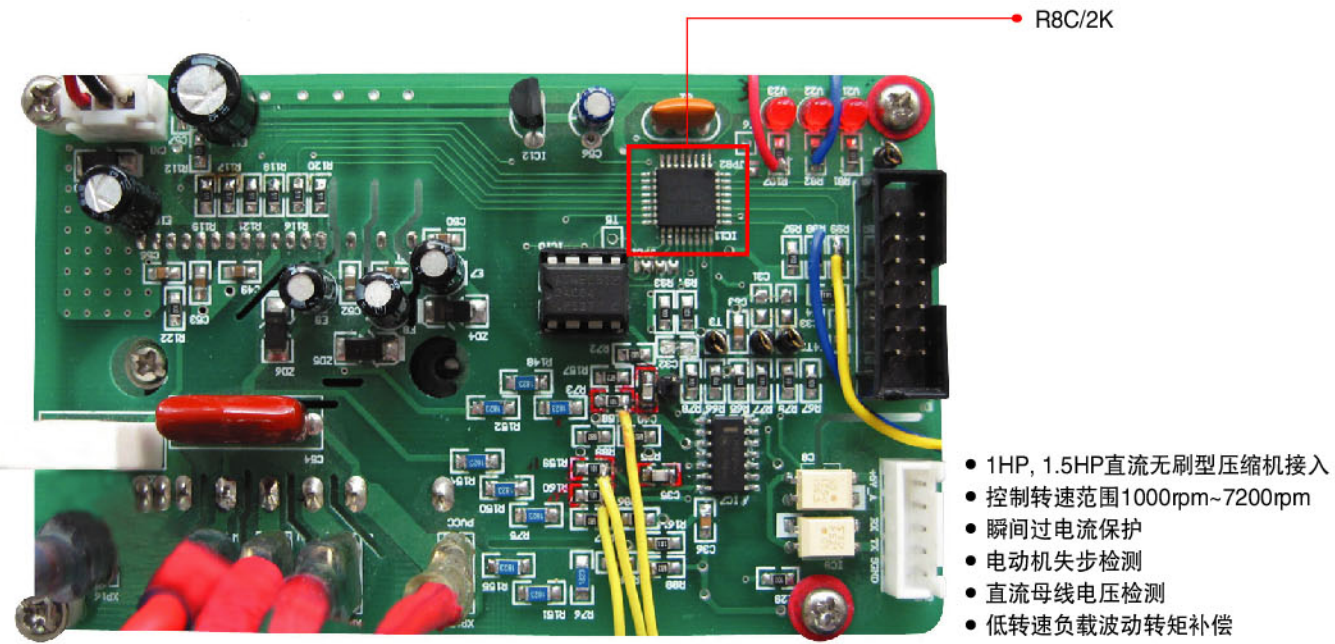
内核	R8C16位CPU内核
最短指令执行时间	50ns(当f(XIN)= 20MHz)
供电电压	3.0 to 5.5V/Max.20MHz 2.7 to 5.5V/Max.10MHz 2.2 to 5.5V/Max.5 MHz (AD工作电压2.7-5.5V)
ROM/RAM	8KB/1KB 16KB/1.5KB
内置Data flash	1KB data flash 2 blocks(对应R8C/2L群)
时钟生成电路	XIN-XOUT主时钟(具备主时钟停振检测功能) 高速片内时钟(40MHz) 低速片内时钟(125kHz)
电源掉电检测电路	3条
上电复位电路 (POR)	
多功能定时器	2个/2通道8位定时器(TimerRA, TimerRB) 2个/3通道16位定时器(TimerRC, TimerRD)
串行接口	2通道同步串口/异步串口 1通道H/W-LIN(复用TimerRA和一个异步串口)
A/D转换	10bit 9ch
I/O接口	输入/输出: 25(所有输入口具有可设定内部上拉电阻) 输入: 3
可驱动LED的接口	8
看门狗定时器	1通道(支持硬件复位)
封装	32引脚LQFP(7mm 7mm, 0.8mm pitch)

应用M16C/Tiny的驱动直流无刷型变频家用的空调压缩机方案



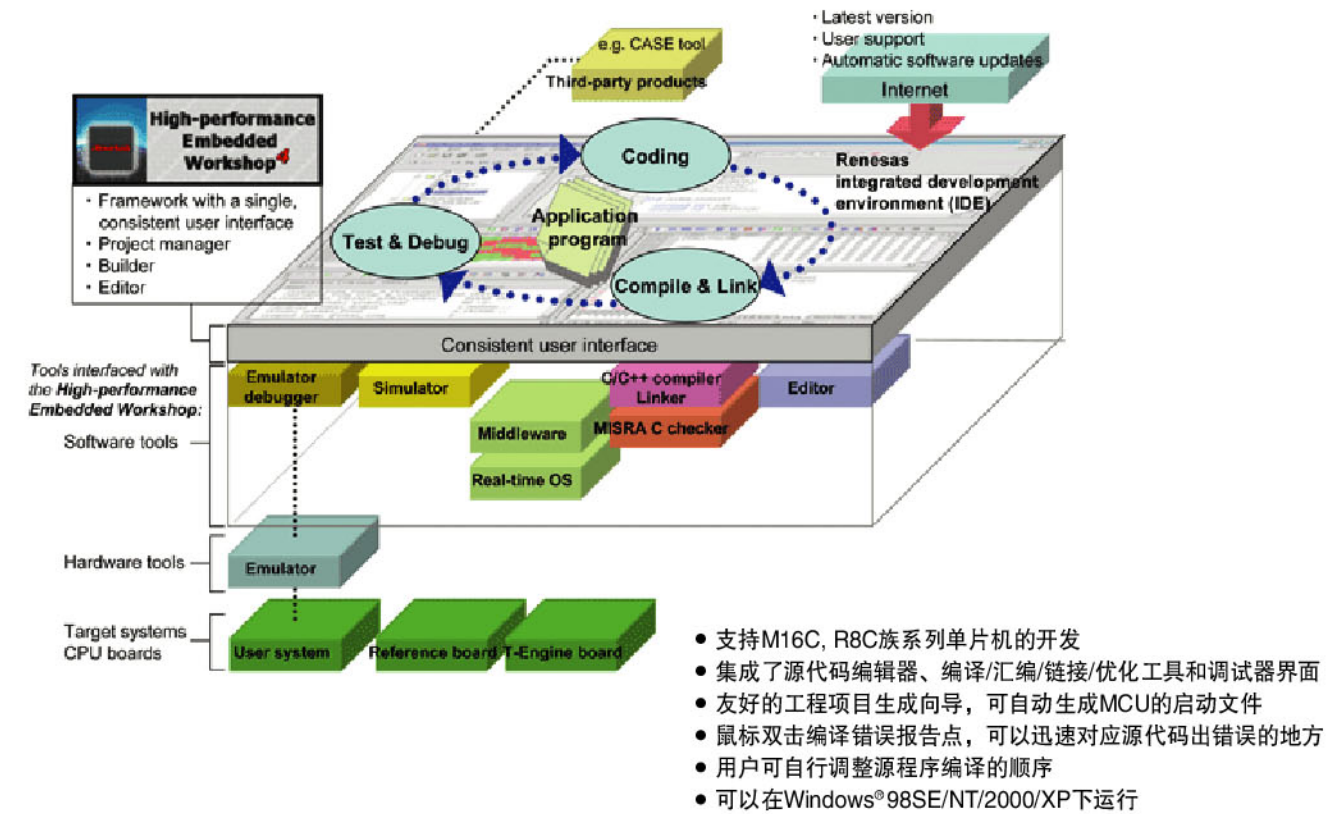
- 1HP, 1.5HP直流无刷型压缩机接入
- 控制转速范围1000rpm~7200rpm
- 瞬间过电流保护
- 电动机失步检测
- 直流母线电压检测
- 低转速负载波动转矩补偿

应用R8C/2K的驱动直流无刷型变频家用空调压缩机方案

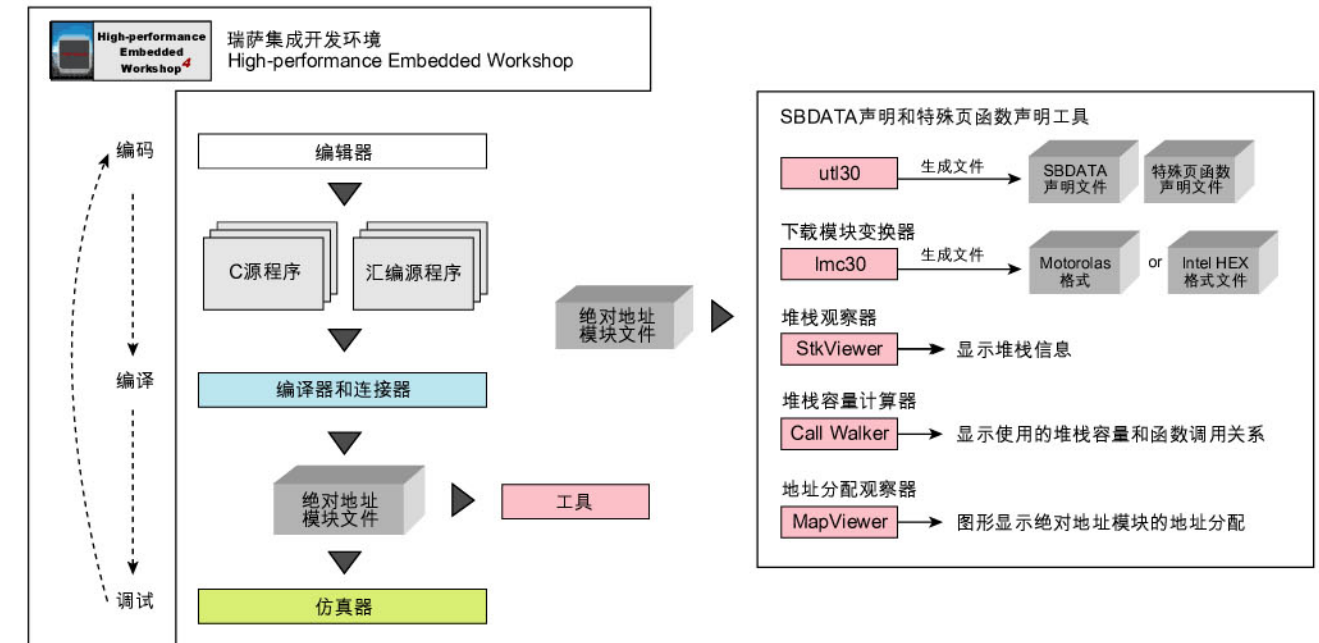


- R8C/2K
- 1HP, 1.5HP直流无刷型压缩机接入
- 控制转速范围1000rpm~7200rpm
- 瞬间过电流保护
- 电动机失步检测
- 直流母线电压检测
- 低转速负载波动转矩补偿

集成开发环境HEW



编译器NC30



开发工具产品线

