

November 26, 2012

Product Specifications of the R-IN32M3 Series

Item	Specifications
CPU core	ARM Cortex-M3 32-bit RISC CPU + HW-RTOS (Hardware Real-Time OS) 100 MHz
Internal RAM	Instruction RAM: 768 KB, data RAM: 512 KB, buffer RAM: 64 KB
Internal system bus	<ul style="list-style-type: none"> • 100 MHz 32-bit system bus • 100 MHz 128-bit communication bus
DMA controller	4 ch + 1 ch (for real-time port) Software trigger, interrupt triggers
Boot mode	<ul style="list-style-type: none"> • External serial flash ROM boot • External memory boot (external NOR flash ROM) • External host CPU boot
External memory access function	SRAM/page ROM memory controller <ul style="list-style-type: none"> • Bus sizing (16 bits or 32 bits) • Chip select outputs x4 • External memory area: Total 256 MB (max) • Programmable wait, data wait, address setup wait, idle state, write recovery wait • Serial flash ROM interface (directly bootable)
External CPU interface	<ul style="list-style-type: none"> • Bus sizing (16 bits or 32 bits) • SRAM like interface • Address area: 2 MB (instruction RAM + data RAM + internal register area)
Serial flash ROM controller	<ul style="list-style-type: none"> • Supports a serial interface compatible with SPIs of different companies. • Directly bootable from a serial memory device. • Supports the fast read, fast read dual output, and fast read dual I/O modes.

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	<ul style="list-style-type: none"> Directly memory mapping
External interrupt inputs	29 interrupts
Internal peripheral functions	
I/O port	CMOS I/O 96 ports (max)
Timer (3 functions)	Hardware real-time OS timer
	CPU built-in timer
	4 channels timer array (countable external event)
Watchdog timer	1 channel
UART	2 channels, double duplex, with TX/RX FIFO
I2C bus	2 channels
Clocked serial interface (CSI)	2 channels, master mode / slave mode
CAN controller	2 channels
3 modes Ether MAC (10/100/1000)	1 channel <ul style="list-style-type: none"> Switch function (2 ports)
CC-Link	1 channel
CC-Link IE field controller	R-IN32M3-CL
EtherCAT slave controller	R-IN32M3-EC
Low power operation	Sleep mode / Stand-by mode
On-chip debug function	JTAG port or serial wire debug (SWD) port Full trace function (built-in ETM)
Internal PLL	<ul style="list-style-type: none"> 25 MHz Input Generate internal each clocks
Supply voltage	For pin power: 3.0 V to 3.6 V For internal power: 0.9 V to 1.1 V
Operating temperature	-40°C–85°C
Package	324-pin PBGA (19 mm x 19 mm, 1.0 mm pitch)