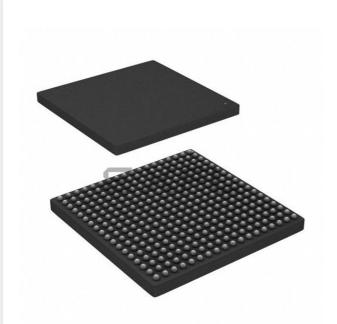
E·X Renesas Electronics America Inc - UPD60510BF1-HN4-M1-A Datasheet



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What is "Embedded - Microcontrollers"?

"Embedded - Microcontrollers" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

Applications of "<u>Embedded -</u> <u>Microcontrollers</u>"

Details

| Product Status | Active |
|----------------------------|---|
| Core Processor | ARM® Cortex®-M3 |
| Core Size | 32-Bit Single-Core |
| Speed | 100MHz |
| Connectivity | CANbus, CSI, Ethernet, I ² C, UART/USART |
| Peripherals | DMA, WDT |
| Number of I/O | 96 |
| Program Memory Size | - |
| Program Memory Type | ROMIess |
| EEPROM Size | - |
| RAM Size | 512K x 8 |
| Voltage - Supply (Vcc/Vdd) | 0.9V ~ 3.6V |
| Data Converters | - |
| Oscillator Type | Internal |
| Operating Temperature | -40°C ~ 85°C (TA) |
| Mounting Type | Surface Mount |
| Package / Case | 324-BGA |
| Supplier Device Package | 324-BGA (19x19) |
| Purchase URL | https://www.e-xfl.com/product-detail/renesas-electronics-america/upd60510bf1-hn4-m1-a |

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UPD60510BF1-HN4-M1-A

| a . | | 12-bit | |
|---|-------------|---|-----|
| Star Product | - | A/D Converter (ch) | 0 |
| Price | - | Over 14-bit A/D Converter (ch) | 0 |
| Bit Size | 32 | Delta-Sigma A/D Converter | NO |
| Family | R-IN | 8-bit D/A Converter (ch) | 0 |
| Series | R-IN32M3 | 10-bit D/A Converter (ch) | 0 |
| Group | R-IN32 | 12-bit D/A Converter (ch) | 0 |
| Program Memory (KB) | 768 | Over 14-bit D/A Converter (ch) | 0 |
| RAM (KB) | 512 | CAN (ch) | 2 |
| Data Flash (KB) | 0 | Ethernet | YES |
| Program Memory Type | ROMIess | Ethernet Remarks | 2ch |
| Cache Memory | NO | USB Host | - |
| Cache Memory Remarks | - | USB Peripheral | - |
| Pin Count | 324 | USB Ports (ch) | - |
| CPU | Cortex-M3 | USB Hi-Speed Support | - |
| Max. Freq (MHz) | 100 | USB Endpoints | - |
| Sub-clock (32.768 kHz) | NO | USB Isochronous Transfer Support | - |
| On-chip Oscillator | YES | USB Remarks | - |
| On-chip Oscillator Freq. (MHz) | 100 | USB MCU/ USB ASSP | - |
| PLL | YES | Clocked Serial Interface (ch) | 2 |
| RTC | NO | SPI (ch) | 0 |
| Power-On Reset | - | UART (ch) | 2 |
| Low Voltage Detection Memory Management Unit | - | I2C (ch) | 2 0 |
| Floating Point Unit | NO | IEBus (ch) | 0 |
| DMA | YES | Serial Interface Remarks | - |
| DMA Remarks | DMAC x 4 ch | LCD Segment Count | 0 |
| External Bus Expansion | NO | LCD Remarks | 0 |
| External Interrupt Pins | 29 | Display Function | NO |

| I/O Ports | 96 | Display Function Remarks | - |
|--------------------------------------|----|--------------------------------------|---|
| 8-bit Timer (ch) | 0 | Operating Voltage Max (V) | 1.1 |
| 16-bit Timer (ch) | 0 | Operating Voltage Min (V) | 0.9 |
| 32-bit Timer (ch) | 1 | Power Supply | "VDD = 0.9 to 1.1 V, VDDIO = 3.0 to 3.6V" |
| Watchdog Timer (ch) | 1 | Operating Temperature Max (°C) | 85 |
| Other Timers | - | Operating Temperature Min (°C) | -40 |
| PWM Output | 0 | Operating Temperature Remarks | - |
| 3-phase PWM Output Function | NO | Remarks | "Industrial communication, include CC-Link IE Field slave IP" |
| 8-bit A/D Converter (ch) | 0 | Production Status | Under Development |
| 10-bit A/D Converter (ch) | 0 | | |

Please inquire.

Package & Packing

Packing

| Package | |
|-----------------------------|---------------------|
| Renesas code | PRBG0324FB-A |
| Previous code | P324F1-100-HN4-1 |
| JEITA code | P-BGA324-19x19-1.00 |
| Name | BGA |
| Terminal count | 324 |
| Terminal pitch (mm) | 1 |
| Dimensions (mm) | 19x19 |
| Mass (g)[TYP,] | 1.28 |
| Mounting height (mm)[MAX] | 1.95 |
| Terminal material - Base | Sn-Ag-Cu |
| Terminal material - Surface | - |
| Drawing Link | 🔁 p324f1-100-hn4 |
| Mount pad | 🔁 fig0013e |
| Remarks | B-PBGA,PWB:0.53t |
| | |
| Packing | |
| Container JEDEC tray | 🔁 H8027 |

🔁 H8513

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JEDEC Tray Complete dry pack