AT91RM9200 Pins

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| Pin | Active | Direction | Connection | Use |
| VDDCORE | N/A | IN | 1.65-1.95 V | Supply power to core logic |
| VDDIOM | N/A | IN | 3.0-3.6 V | Supply power to Memory I/O Lines |
| VDDIOP | N/A | IN | 3.0-3.6 V | Supply power to peripheral I/O lines |
| VDDOSC | N/A | IN | 1.65-1.95 V | Supply power to oscillator |
| VDDPLL | N/A | IN | 1.65-1.95 V | Supply power to oscillator and PLL |
| GND | N/A | IN | Ground | Ground |
| GNDOSC | N/A | IN | Ground | Ground |
| GNDPLL | N/A | IN | Ground | Ground |
| RESET |  |  |  |  |
| XIN32 | N/A | IN | 32 kHz oscillator | Monitoring 32 kHz oscillator |
| XOUT32 | N/A | OUT | 32 kHz oscillator circuit | Driving 32 kHz oscillator |
| XIN | N/A | IN | Main oscillator | Monitoring main oscillator |
| XOUT | N/A | OUT | Main oscillator | Driving main oscillator |
| PLLRCA | N/A | IN | 2nd order filter for PLL | PLL A Filter |
| PLLRCB | N/A | IN | 2nd order filter for PLL | PLL B Filter |
| NRST | LOW | IN | Reset circuitry | Power on reset and system reset |
| NTRST | LOW | IN | Reset circuitry | Power on reset and debugger interface resets (ICE/JTAG) |
| TST0 | N/A | IN | Pull-down GND | Manufacturer tests, don’t use |
| TST1 | N/A | IN | Pull-down GND | Manufacturer tests, don’t use |

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| Pin | Active | Direction | Connection | Use |
| A0/NBS0 | N/A | OUT | Address Bus (through buffer) | Used for sending address to chip selected by chip select |
| A1/NBS2/ NWR2 | N/A | OUT | Address Bus (through buffer) | Used for sending address to chip selected by chip select |
| A2-A15 | N/A | OUT | Address Bus (through buffer) | Used for sending address to chip selected by chip select |
| A16/BA0 | N/A | OUT | Address Bus (through buffer) | Used for sending address to chip selected by chip select |
| A17/BA1 | N/A | OUT | Address Bus (through buffer) | Used for sending address to chip selected by chip select |
| A18-A22 | N/A | OUT | Address Bus (through buffer) | Used for sending address to chip selected by chip select |
| D0-D15 | N/A | Bidirectional | Data bus (through buffer) | Sending and receiving data from data bus |
| NCS0/BFCS | LOW | OUT | None | None |
| NCS1/SDCS | LOW | OUT | SRAM chip select | Select SRAM Chip when accessing SRAM |
| NCS2 | LOW | OUT | DRAM chip select | Select DRAM Chip when accessing DRAM |
| NCS3/SMCS | LOW | OUT | LCD Display chip select | Selecting LCD Display. |
| NRD/NOE/ CFOE | LOW | OUT | Chips on data bus | Enable output to data bus on selected chip |
| NWR0/NEW/ CFWE | LOW | OUT | Chips on data bus | Enable input from data bus on selected chip |
| NWR1/NBS1/ CFIOR | LOW | OUT | Chips on data bus | Enable input from data bus on selected chip |
| NWR3/NBS3/ CFIOW | LOW | OUT | Chips on data bus | Enable input from data bus on selected chip |
| RAS | LOW | OUT | SDRAM | Row Select Signal |
| CAS | LOW | OUT | SDRAM | Column Select Signal |
| SDCK | N/A | OUT | SDRAM clock | SDRAM Clock |
| SDCKE | HIGH | OUT | SDRAM clock enable | SDRAM Clock enable |
| SDWE | LOW | OUT | SDRAM | SDRAM Write Enable |
| SDA10 | N/A | OUT | SDRAM | SDRAM address 10 Line |

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| Pin | Active | Direction | Connection | Use |
| HDMA | N/A | N/A | Not Used | USB (not used) |
| HDPA | N/A | N/A | Not Used | USB (not used) |
| DDM | N/A | N/A | Not Used | USB (not used) |
| DDP | N/A | N/A | Not Used | USB (not used) |
| PA0/MISO/  PCK3 | N/A | IN | Audio DAC/ADC | Audio DAC/ADC SPI |
| PA1/MOSI/  PCK0 | N/A | OUT | Audio DAC/ADC | Audio DAC/ADC SPI |
| PA2/SPCK/  IRQ4 | N/A | OUT | Audio DAC/ADC | Audio DAC/ADC SPI Clock |
| PA3/NPCS0/  IRQ5 | LOW | OUT | Audio DAC | Select audio DAC chip |
| PA4/NPCS1/  PCK1 | LOW | OUT | Audio ADC | Select audio ADC chip |
| PA5/NPCS2/  TXD3 | LOW | OUT | None | None |
| PA6/NPCS3/  RXD3 | LOW | OUT | None | None |
| PA7/ETXCK/  EREFCK/PCK2 | N/A | IN | Ethernet jack | Ethernet clock |
| PA8/ETXEN/  MCCDB | N/A | OUT | Ethernet jack | Ethernet transmit enable |
| PA9/ETX0/  MCDB0 | N/A | OUT | Ethernet jack | Ethernet transmit data |
| PA10/ETX1/  MCDB1 | N/A | OUT | Ethernet jack | Ethernet transmit data |
| PA11/ECRS/  ECRSDV/MCDB2 | N/A | IN | Ethernet jack | Ethernet carrier sense |
| PA12/ERX0/  MCDB3 | N/A | IN | Ethernet jack | Ethernet receive data |
| PA13/ERX1/  TCLK0 | N/A | IN | Ethernet jack | Ethernet receive data |
| PA14/ERXER  /TCLK1 | N/A | IN | Ethernet jack | Ethernet receive data |
| PA15/EMDC/  TCLK2 | N/A | IN | Ethernet jack | Ethernet management data clock |
| PA16/EMDIO  /IRQ6 | N/A | IN/OUT | Ethernet jack | Ethernet management data input/output |
| PA17/TXD0/  TIOA0 | N/A | Not used | Not used | Not used |
| PA18/RXD0/  TIOB0 | N/A | Not used | Not used | Not used |

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| Pin | Active | Direction | Connection | Use |
| PA19/SCK0/  TIOA1 | N/A | Not used | Not used | Not used |
| PA20/CTS0/  TIOB1 | N/A | Not used | Not used | Not used |
| PA21/RTS0/  TIOA2 | N/A | Not used | Not used | Not used |
| PA22/RXD2/  TIOB2 | N/A | Not used | Not used | Not used |
| PA23/TXD2/  IRQ3 | N/A | Not used | Not used | Not used |
| PA24/SCK2/  PCK1 | N/A | Not used | Not used | Not used |
| PA25/TWD/  IRQ2 | N/A | I/O | Bootloader | I2C data line to bootloader |
| PA26/TWCK/  IRQ1 | N/A | I/O | Bootloader | I2C clock line to bootloader |
| PA27/MCCK/  TCLK3 | N/A | Not used | Not used | Not used |
| PA28/MCCDA  /TCLK4 | N/A | Not used | Not used | Not used |
| PA29/MCDA0/  TCLK5 | N/A | Not used | Not used | Not used |
| PA30/DRXD/  CTS2 | N/A | IN | Debugger | Debug receive data |
| PA31/DTXD/  RTS2/BMS | N/A | OUT | Debugger | Debug transmit data |
| PB0/TF0/  RTS3 | N/A | Not used | Not used | Not used |
| PB1/TK0/  CTS3 | N/A | Not used | Not used | Not used |
| PB2/TD0/  SCK3 | N/A | Not used | Not used | Not used |
| PB3/RD0/  MCDA1 | N/A | Not used | Not used | Not used |
| PB4/RK0/  MCDA2 | N/A | Not used | Not used | Not used |
| PB5/RF0/  MCDA3 | N/A | Not used | Not used | Not used |
| PB6/TF1/  TIOA3 | N/A | Not used | Not used | Not used |
| PB7/TK1/  TIOB3 | N/A | Not used | Not used | Not used |
| PB8/TD1/  TIOA4 | N/A | Not used | Not used | Not used |
| PB9/RD1/  TIOB4 | N/A | Not used | Not used | Not used |

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| Pin | Active | Direction | Connection | Use |
| PB10/RK1/  TIOA5 | N/A | Not used | Not used | Not used |
| PB11/RF1/  TIOB5 | N/A | Not used | Not used | Not used |
| PB12/TF2/  ETX2 | N/A | Not used | Not used | Not used |
| PB13/TK2/  ETX3 | N/A | Not used | Not used | Not used |
| PB14/TD2/  ETXER | N/A | Not used | Not used | Not used |
| PB15/RD2/  ERX2 | N/A | Not used | Not used | Not used |
| PB16/RK2/  ERX3 | N/A | Not used | Not used | Not used |
| PB17/RF2/  ERXDV | N/A | IN | Ethernet jack | Ethernet receive data valid |
| PB18/RI1/  ECOL | N/A | Not used | Not used | Not used |
| PB19/DTR1/  ERXCK | N/A | IN | Ethernet jack | Ethernet receive clock |
| PB20/TXD1 | N/A | Not used | Not used | Not used |
| PB21/RXD1 | N/A | Not used | Not used | Not used |
| PB22/SCK1 | N/A | Not used | Not used | Not used |
| PB23/DCD1 | N/A | Not used | Not used | Not used |
| PB24/CTS1 | N/A | Not used | Not used | Not used |
| PB25/DSR1/  EF100 | N/A | Not used | Not used | Not used |
| PB26/RTS1 | N/A | Not used | Not used | Not used |
| PB27/PCK0 | N/A | Not used | Not used | Not used |
| PB28/FIQ | N/A | Not used | Not used | Not used |
| PB29/IRQ0 | N/A | Not used | Not used | Not used |
| PC0/BFCK | N/A | IN | Buttons | PC0 Button input (1,1) |
| PC1/BFRDY/  SMOE | N/A | IN | Buttons | PC1 Button input (1,2) |
| PC2/BFAVD | N/A | IN | Buttons | PC2 Button input (1,3) |

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| Pin | Active | Direction | Connection | Use |
| PC3/BFBAA/  SMWE | N/A | IN | Buttons | PC3 Button input (1,4) |
| PC4/BFOE | N/A | IN | Buttons | PC4 Button input (2,1) |
| PC5/BFWE | N/A | IN | Buttons | PC5 Button input (2,2) |
| PC6/NWAIT | N/A | IN | Buttons | PC6 Button input (2,3) |
| PC7/A23 | N/A | IN | Buttons | PC7 Button input (2,4) |
| PC8/A24 | N/A | IN | Buttons | PC8 Button input (3,1) |
| PC9/A25/  CFRNW | N/A | IN | Buttons | PC9 Button input (3,2) |
| PC10/NCS4/  CFCS | N/A | IN | Buttons | PC10 Button input (3,3) |
| PC11/NCS5/  CFCE1 | N/A | IN | Buttons | PC11 Button input (3,4) |
| PC12/NCS6/  CFCE2 | N/A | IN | Buttons | PC12 Button input (4,1) |
| PC13/NCS7 | N/A | IN | Buttons | PC13 Button input (4,2) |
| PC14 | N/A | IN | Buttons | PC14 Button input (4,3) |
| PC15 | N/A | IN | Buttons | PC15 Button input (4,4) |
| PC16/D16 | N/A | IN | Buttons | PC16 Button input (Hangup button) |
| PC17/D17 | N/A | Not used | Not used | Not used |
| PC18/D18 | N/A | Not used | Not used | Not used |
| PC19/D19 | N/A | Not used | Not used | Not used |
| PC20/D20 | N/A | Not used | Not used | Not used |
| PC21/D21 | N/A | Not used | Not used | Not used |
| PC22/D22 | N/A | Not used | Not used | Not used |
| PC23/D23 | N/A | Not used | Not used | Not used |
| PC24/D24 | N/A | Not used | Not used | Not used |
| PC25/D25 | N/A | Not used | Not used | Not used |