

Rx2 Device comparison table

This table helps you to distinguish between the different Philips Rx2 devices. The device comparison below lists the various features along with their descriptions. Please note that the P89C51Rx2Hxx has been discontinued.

Feature	P89C51Rx2xx/01	P89LV51Rx2 and P89V51Rx2	Comments
Part Number	P89C51Rx2xx(x) 5 V	P89V51Rx2 (5V) P89LV51Rx2 (3V)	LV devices are 3V parts
Parallel Programming Algorithm	When using a parallel programmer, be sure to select P89C51Rx2xx(x) device (no more letter 'H')	P89V51Rx2 or P89LV51Rx2 respectively. Bootloader needs to be reprogrammed when security bit is set and full-chip erase is being performed	Bootloader for V and LV devices can be obtained from the internet (www.semiconductors.philips.com/microcontrollers) Different Signature Bytes (for parallel programmer identification)
Signature Bytes	P89C51RD2 = 15h C2h 82h P89C51RC2 = 15h C2h 8Ah P89C51RB2 = 15h C2h 8Ch P89C51RA2 = 15h C2h 8Fh	P89V51RD2 = BFh 91h P89LV51RD2 = BFh 90h P89V51RC2 = BFh 9Bh P89LV51RC2 = BFh 9Ah P89V51RB2 = BFh 9Eh P89LV51RB2 = BFh 9Fh	
Clock Mode Default	12-clk default	12-clk default	
Clock Mode Selection Using Parallel Programmer	Flash configuration bit to program to 6-clk mode using parallel programmer (can be re-programmed back to 12-clk)	Flash configuration bit to program to 6-clk mode using parallel programmer (can only be re-programmed back to 12-clk via parallel programmer)	
Clock Mode Selection Using ISP/IAP	6-clock/12-clock mode programmable via ISP/IAP	12-clock mode programmable via ISP/IAP (can only be re-programmed back to 12-clk via parallel programmer)	
Clock Mode Selection Via Software	6-clock/12-clock mode programmable "on the fly" by SFR bit X2 (CKCON.0)	N/A	
Peripheral Clock Modes	Peripherals can run in 12-clk mode while CPU runs in 6-clk mode (software control)	N/A	
Flash Block Structure	2 to 16 4-Kbyte blocks	128 to 512 blocks of 128 bytes	More flexibility, shorter block erase times
ISP	2 modes of entry – 1. Status Byte not equal 0 2. PSEN = Low after Reset	On power-up reset, UART will attempt to auto baud. User code will be executed after 400 ms of auto baud failure	Simplified ISP entry on V and LV devices
Asynchronous Port Reset	Yes	No	
New Features	N/A	SPI On-Chip Debugger (SoftICE) Serial Number for serialization	Added serial peripherals and more software features on the V and LV devices

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