Features	CSM32RV003	CSM32RV20	CH32V003	CH32V103
RISC-V core	RV32IMAC	RM32IMAC	RV32EC	RM32IMAC
Max. frequency	32MHz	32MHz	48MHz	80MHz
SRAM	4K	4K	2K	20K
Flash	32K	40K	16K	64K
NVM	4.5K	512B	64B	128B
SPI	1	2	1	2
I2C	1	1	1	2
UART	2	4	1	3
USB	-	-	-	USBHD 2.0FS
ADC bits	13/14/15/16	13/14/15/16	10	12
ADC channels	10	11	8	16
Touch keys	-	9	-	16
Comparators	-	3	1	-
Advanced timer with compl. outputs	2 x 4 channels	2 x 4 channels	1 x 4 channels	1 x 4 channels
General purpose timer	-	-	1 x 4 channels	3 x 4 channels
SysTick	64-bit	64-bit	32-bit	64-bit
Wake-up timer	yes	yes	-	-
Independent watchdog	yes	yes	yes	yes
Window watchdog	-	-	yes	yes
Low voltage detector	yes	yes	-	yes
RTC	yes	yes	-	yes
32-bit TRNG	yes	yes	-	-
Low-power modes	4	4	2	3
Lowest power consumption	< 0.6µA	< 1µA	9.6µA	1.6µA
Max. GPIO	18	30	18	51
External interrupts on GPIO lines	15	16	1	16
1-wire serial debug interface	-	-	yes	-
2-wire serial debug interface	-	-	-	yes
cJTAG 2-wire debug interface	yes	yes	-	-
Serial port ISP	-	yes	-	-
Wireless ISP	-	with external Si24R1	-	-
Working voltage range	1.8 ~ 5.5V	1.8 ~ 5.5V	2.7 ~ 5.5V	2.7 ~ 5.5V
Working temperature range	-40 ~ 105°C	-40 ~ 105°C	-40 ~85°C	-40 ~85°C
SOP8	-	-	yes	-
SOP16	-	-	yes	-
TSSOP20	yes	yes	yes	-
QFN20	-	yes	yes	-
QFN32	-	yes	-	-
QFN48	-	-	-	yes
LQFP48	-	-	-	yes
LQFP64	-	-	-	yes