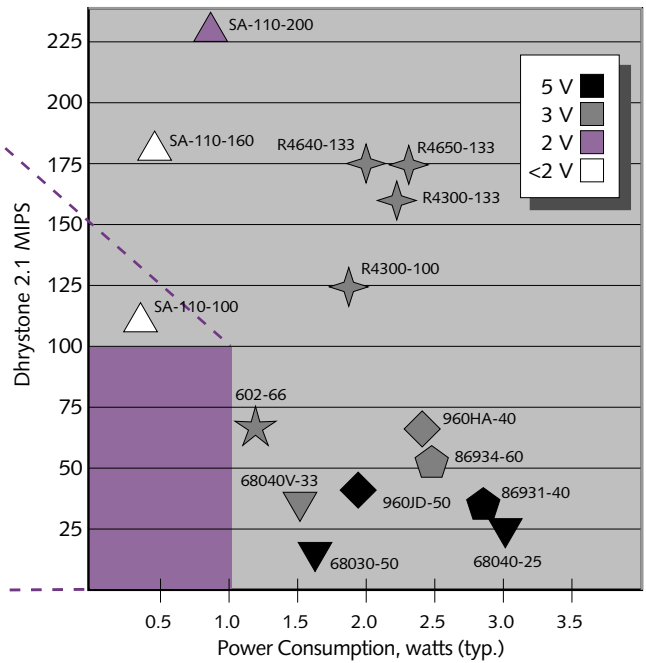
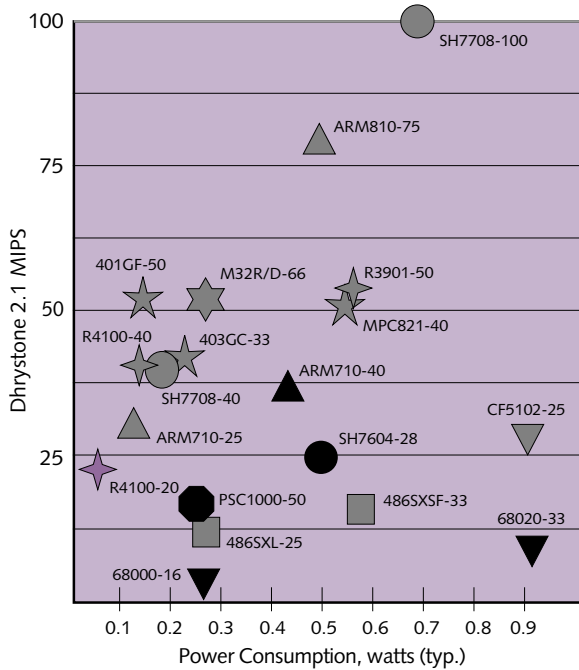
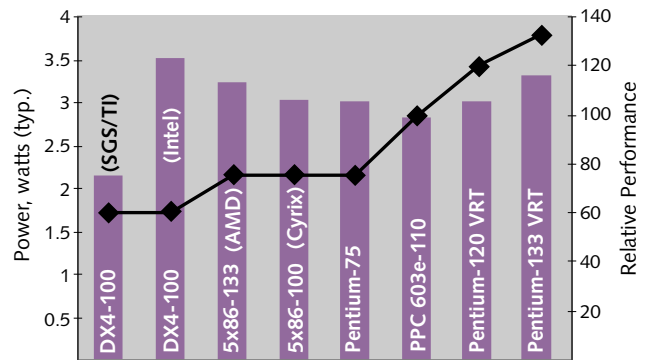


CHART WATCH: MOBILE PROCESSORS



This Chart Watch covers low-power processors for portable and battery-powered systems. The table and the chart in the upper right show the performance/power ratio for a number of embedded CPUs and notebook processors; the chart above is an inset for the lowest power of these processors.

The chart on the right compares x86 and PowerPC processors for notebooks, including relative performance (diamonds) and typical power consumption (bars).



	SA-110	ARM710	SH7604	SH7708	PPC 403GA	R4100	CF5102	960SA	486SXL
Vendor	Digital	VLSI	Hitachi	Hitachi	IBM	NEC	Motorola	Intel	National
Clock rate	200 MHz	40 MHz	20 MHz	100 MHz	33 MHz	40 MHz	25 MHz	20 MHz	25 MHz
I/D cache	16K/16K	8K	4K	8K	2K/1K	2K/1K	2K/1K	512/0K	1K/0K
FPU?	No	No	No	No	No	No	No	No	No
MMU?	Yes	Yes	No	Yes	No	Yes	No	No	No
Bus width	32 bits	32 bits	32 bits	32 bits	32 bits	32 bits	32 bits	16 bits	16 bits
Bus frequency	66 MHz	40 MHz	20 MHz	25 MHz	33 MHz	20 MHz	25 MHz	20 MHz	25 MHz
MIPS	230 MIPS	36 MIPS	20 MIPS	100 MIPS	41 MIPS	40 MIPS*	27 MIPS	9 MIPS	12 MIPS
Voltage§	2.0/3.3 V	5 V	3.3 V	3.3 V	3.3 V	3.3 V	3.3 V	5 V	3.3 V
Power (typ)	900 mW	424 mW	200 mW	700 mW	265 mW	120 mW	900 mW	1,100 mW	260 mW
MIPS/watt	239	85	100	143	155	333	30	8	46
MIPS/mm²	4.30	1.04	0.24	2.37	1.05	1.60	n/a	0.17	0.41
Transistors	2,100,000	570,295	450,000	800,000	585,000	450,000	n/a	346,000	256,000
IC process	0.35µ 3M	0.6µ 2M	0.8µ 2M	0.5µ 3M	0.5µ 3M	0.5µ 3M	0.6µ 3M	1.0µ 2M	0.65µ 3M
Die size	50 mm ²	34 mm ²	82 mm ²	44 mm ²	39 mm ²	25 mm ²	n/a	51 mm ²	30 mm ²
Est mfg cost	\$18*	\$9*	\$7*	\$12*	\$14*	\$8*	\$9*	\$4*	\$8*
Availability	2Q96	Now	Now	Now	Now	Now	Now	Now	Now
Price (10K)	\$49	\$28	\$27	\$50	\$28	\$25‡	\$25	\$13	\$15

‡list price in 100,000s

Score/bus voltage

n/a: information not available

(Source: vendors except *MDR estimates)