

5 A5. Detailed Results of ACR-Agent in Analog Circuit Design

Detailed results of ACR-Agent in analog circuit design are shown in Table 4. According to the design of Analogcoder and its benchmark, tools are exclusively utilized for hard tasks. In the experiment, we performed 10 tests each task ($n = 10$) and set the temperature to 0.5.

Table 4: ACR-Agent Application in Circuit Designing on Analogcoder Benchmark

Model	Task type	Metrics	Analogcoder(w/o tools)		Analogcoder	
			Base	ACR-Agent	base	ACR-Agent
GPT4.1	Easy	Pass@1	0.86	0.90	0.86	0.90
		Pass@5	0.94	0.97	0.94	0.97
	Medium	Pass@1	0.86	0.88	0.86	0.88
		Pass@5	1.00	1.00	1.00	1.00
	Hard	Pass@1	0.22	0.23	0.46	0.51
		Pass@5	0.34	0.36	0.83	0.94
	Total	Pass@1	0.57	0.59	0.69	0.72
		Pass@5	0.68	0.70	0.90	0.96
		#Solved	17	17	23	24
Deepseek-V3	Easy	Pass@1	1.00	0.99	1.00	0.99
		Pass@5	1.00	1.00	1.00	1.00
	Medium	Pass@1	0.70	0.80	0.70	0.80
		Pass@5	0.80	1.00	0.80	1.00
	Hard	Pass@1	0.14	0.22	0.34	0.43
		Pass@5	0.25	0.36	0.70	0.75
	Total	Pass@1	0.54	0.60	0.63	0.69
		Pass@5	0.62	0.71	0.82	0.88
		#Solved	15	17	22	22