

Blue are new market stabilizing or positive leaning information. **Orange** are new neutral to slightly negative information.

Device	Company	Production Profile	Comments	
NAND	Overall NAND	172-196L	products being announced, capacity ramping in 2021	
	Samsung	Vol.: 128L	- Adding production line in Pyeongtaek, production to start 2H'21. - 2H'21 ramp of 176L product; will use double stack process	
	Kioxia (Toshiba)	Ramp: 128L	- Fab 7, Phase 1 construction starting 2021, production 2023E	
	SK Hynix	Ramp: 128L	- Starting 176L production; 128L to be >50% of bit production in H1'21	
	Micron	Vol.: 128L	- Ramping 176L product with replacement gate product.	
	Intel	Est: 9xL	- Selling Dalian fab to SK Hynix; expected 2021 close, full transition by 2025	
	YMTC	Vol: 64L	- Limited CapEx impact expected from parent co Tsinghua bond defaults	
DRAM	Overall DRAM	1 α -layer	product announcements, production late 2021.	
	Samsung	1z nm	- Accelerating migration to 1z and expanding application of EUV (1a).	
	SK Hynix	1z nm	- M16, June'21 production, capacity to ramp aligned to demand through 2022 - Initial EUV for 1a in 2H'21, broader use for 1b node.	
	Micron	1z nm	- Beginning volume production of 1 α node H1'21.	
	ChangXin Mem. Tech. (CXMT)	1x ramp	- Raised ~\$2.4B equity. Capacity expansion expected to continue.	
	Nanya	1x	- Announced new fab, production start 2024 and will be EUV capable.	
	Tsinghua DRAM	TBD	- No update on impact of parent company debt default on investment plans - Breaking ground for first DRAM Fab. Production starting 2022.	
Foundry/Logic	Foundry/Logic	Foundries operating at high capacity across all nodes. Leading and trailing edge investments announced.		
	≤16nm	TSMC	5nm	- CapEx \$30B for 7nm+ and 5nm; multi-year capital intensity of ~50% possible to support 10-15% CAGR targets. Will spend \$100B through 2023. - Arizona site sized for multiple fabs; announced fab for 5nm, 20K wspm.
		Intel	10nm	- 2021 CapEx of \$20B. Additional multi-year \$20B investment for 2 AZ fabs. - IDM 2.0 strategy has internal capacity, foundry provider and foundry customer elements. Partnership with IBM for development.
		Samsung	5nm	- CapEx targeted at 5nm and growing capacity, with 2H'21 Pyeongtaek ramp - Reaffirmed \$100B foundry investment through 2030. - Continued rumors of new US fab, but
		GlobalFoundries	14nm	- Exercised option to purchase additional NY land, no expansion announced - Seeking certification as "Trusted Foundry" by US government
		SMIC	14nm	- Shenzhen fab, joint government investment. 2022 for 40K wspm, 28nm
		≥20nm	TSMC	28nm
	UMC		28nm	- Utilization at ~100% (all nodes); CapEx \$1.5B with 85% allocated to 28nm - 28nm capacity to increase 20%; seeking 200mm→300mm migration opps.
	SMIC		28nm	- Announced new Shenzhen 40K wspm fab, production to start 2022.
	GlobalFoundries		28nm, FDSOI	- No updates
	Powerchip		45nm	- Groundbreaking for new fab, Phase 1 25K wspm starting 2023.
	TI		>28nm	- New Texas Fab under construction, initial output expected 2H'22.
	Pkg		TSMC	-