

TrendForce：最后一块拼图完成，Intel CPU 有望今年在台积电正式下单

全球市场研究机构 TrendForce 旗下半导体研究处表示，近期 Intel 接连在 3Q20 Earnings Call、4Q20 IR Event 以及 2021 CES 新品发表会中，陆续谈到公司长期核心发展策略正逐步由以往的 CPU 处理器业务转往 xPU 数据运算服务，同时透露未来计划将部分 CPU 业务委外代工。根据 TrendForce 观察，Intel 长期以来主要以 IDM 模式主导 x86 架构为主的 Server 与 PC 处理器市场，同时扮演半导体产业中摩尔定律的制程微缩先驱，然而近年却接连在 10nm 与 7nm 的技术发展上发生重大延宕；同时，以 ARM 架构为主的 SoC 处理器市场，在 TSMC Foundry 于 10nm、7nm 与 5nm 不断的技术突破下，Fabless、Fab-lite 与 System Integration 品牌客户得以持续稳定地获得更高效能、更低功耗以及更具成本优势的 IC 设计制造服务。在 Fabless 与 Foundry 的分工合作模式下，配合 TSMC 主导的 OIP(Open Innovation Platform)、DTCO(Design & Technology Co-Optimization) 与 Advanced Back-end Packaging 等服务，Apple 与 HiSilicon 得以领先全球发布最先进的 AP-SoC 行动处理器，AMD 在 Client 端的 PC 处理器市占率亦逐步威胁到 Intel，同时 AMD 在 Graphic 与 Data Center 的供货稳定状况亦优于 Intel 与 Nvidia；此外，Apple 近期以 TSMC 5nm 技术自研的 M1 处理器，更是让 Intel 痛失 MacBook 与 Mac Mini 订单，也进而促使更多品牌厂商启动 Fabless 的发展策略，如：Microsoft、Amazon、Google、Facebook、Alibaba 等。

TrendForce 分析，Intel 目前在非 CPU 类的 IC 制造约有 15-20% 来自于委外晶圆代工，主要在 TSMC 与 UMC 投片，产品应用如：FPGA、GPU、SoC、ASIC、RFIC、PMIC 等。Intel 今年正着手将 Core i3 CPU 的产品释单至 TSMC，初步计划 5nm 产线的月产能约 3-5K，预计 2H21 开始量产；此外，中长期规划将以 Client 端中高阶 CPU 为主，预计会在 2H22 开始于 TSMC 量产 3nm 的相关产品，规划中的月产能约当 30K。

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