集邦市场咨询顾问

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集邦咨询

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价格信息																				
合约价/现货价信息	每日	◎	◎	◎	◎	◎	◎	◎	◎											
历史价格下载 (请联系业务)	每日	◎	◎	◎	◎	◎	◎	◎	◎											
合约价格预先通知	每月		◎	◎	◎	◎	◎	◎	◎											
服务器模组价格信息(可拆卖)	每月											◎	◎							
Mobile DRAM/eMMC/UFS合约价格(可拆卖)	每季度															◎				
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研究报告																				
研究报告	每季度			◎	◎	◎	◎	◎	◎	◎ 每两周	◎每半年	◎	◎			◎ Mobile DRAM	◎			
专题报告	不定期			◎	◎	◎	◎	◎	◎	◎		◎	◎	◎	◎	◎				
产业数据																				
内存白金产业数据	每月			◎	◎			◎	◎											
闪存白金产业数据	每月					◎	◎	◎	◎											
内存钻石	每季度				◎				◎											
闪存钻石	每季度						◎		◎											
服务器DRAM产业数据(可拆卖)	每季度											◎	◎							
Mobile 记忆体产业数据(可拆卖)	每季度															◎				
SSD产业数据(可拆卖)	每季度														◎					
企业级SSD产业数据(可拆卖)	每季度												◎	◎						
智能型手机市场关键数据	每季度																◎			
晶圆代工产业数据	每季度									◎										
SLC 产业数据	每季度																		◎	
Consumer 内存产业数据	每季度																			◎
Other Service																				
分析师电话会议	每季度			◎	◎	◎	◎	◎	◎	◎		◎	◎	◎	◎	◎				
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MLCC市场快讯 (RMB 26,000)	每两周	◎
研究报告 (RMB 29,500)	每季度	◎
产业数据		
MLCC产业数据 (RMB 26,000)	每月	◎
其他服务		
分析师电话会议/企业参访	季度预约制	◎
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MLCC报告内容简介

TRENDFORCE 集邦咨询

- **简介:**

TrendForce 研究团队长年深入研究内存市场，半导体市场以及光电产品市场后，将针对关键零组件MLCC产业市场进行研究，支撑我们研究的终端产品包括: smartphone, tablet, notebook, monitor, TVs, server, gaming, automotive, etc.，研究层面涵盖产业动态以及材料价格动态进行追踪与分析，进而提供各领域企业公司，从开发阶段到供应链管理上，能够完整掌握与超前部属的综效。

- **研究方法:**

本数据数据研究基础主要透过TrendForce研究团队，经由收集产业公开销售数据与财务讯息并加以分析，结合产业上下游的信息，定义出市场前10大MLCC供货商做为供给端的研究基底，建构供应端各制造商的资本支出、产能，订单与出货比、价格等等相关讯息，同时与终端应用的需求状态面进行信息的交叉比分析与验证，以确保各类MLCC产品之市场供需结构与趋势，提供客户最精准实时的决策信息。

- **研究基础:**

MLCC产品由于制程时间冗长以及规格品项众多等因素，制造商多朝计划性生产作为产能规划方向。而计划性生产的主要核心精神就是透过客户提供的Forecast以及过往的实际订单需求的基础下，作为生产规划目标，同时结合安全库存的建立与规划，在相互搭配之下来满足订单需求。

因此，MLCC供货商基本上会保持60天左右的安全库存数量，当市场处于供需稳定的状况下，各家供货商的BB Ratio大致介于0.85~1.0之间，一旦数值在1.0~1.5 时，即表示库存水位降低，出货数量与速度逐渐跟不上订单数量与速度，而当数值高于1.5时，就表示库存水位接近0，同时供货数量与速度已经跟不上订单数量与速度下，市场将会开始出现缺货现象。

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MLCC报告

MLCC报告服务内容如下:

- **MLCC 价格信息**

  TrendForce将提供每种尺寸关键商品规格的价格信息，所有价格将被持续跟踪并收集且于每月月底更新。

  (发布时间: 每月月初)

- **MLCC市场快讯**

  TrendForce将每两周提供关键零组件市场产业动态与价格趋势更新。

  *一年至少发表20篇发表报告。

- **MLCC 季度报告**

  針對該季度MLCC供應商各項數據指標差異進行分析與說明，以及下一季度MLCC產業狀況預測。

  (发布时间: 二、五、八、十一月)

- **MLCC产业数据**

  各家厂商的Capex、Capacity更新与各厂商的库存状态，还提供了材料价格预测与库存水位分析。

  (发布时间: 每月月底)

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4. 下载从2020年到最新的DXI (DRAM产值指标) 数据(Excel格式)，请联系业务。
5. 每日快报--浏览2009/08 至最新的每日内存/闪存现货市场动态 。

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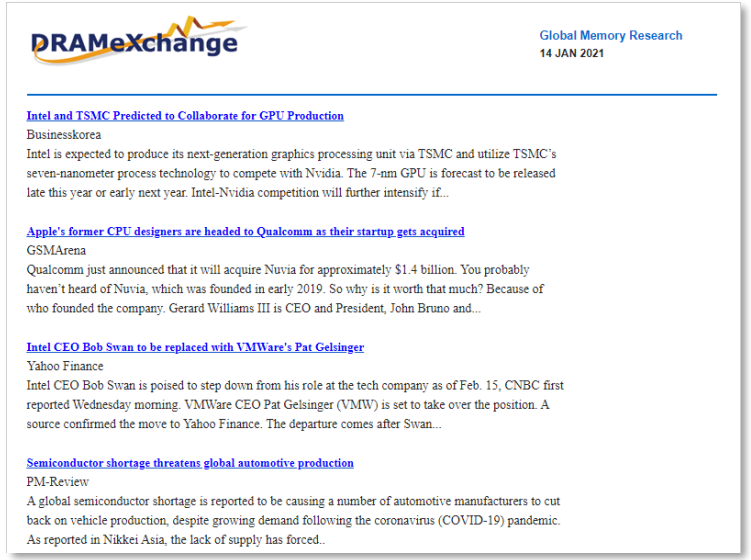
● 每日新闻快讯

提供会员每日最新内存、闪存、电脑、记忆卡等半导体产业相关新闻。



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Global Memory Research
14 JAN 2021

Intel and TSMC Predicted to Collaborate for GPU Production
Businesskorea
Intel is expected to produce its next-generation graphics processing unit via TSMC and utilize TSMC's seven-nanometer process technology to compete with Nvidia. The 7-nm GPU is forecast to be released late this year or early next year. Intel-Nvidia competition will further intensify if...

Apple's former CPU designers are headed to Qualcomm as their startup gets acquired
GSMArena
Qualcomm just announced that it will acquire Nuvia for approximately $1.4 billion. You probably haven't heard of Nuvia, which was founded in early 2019. So why is it worth that much? Because of who founded the company. Gerard Williams III is CEO and President, John Bruno and...

Intel CEO Bob Swan to be replaced with VMWare's Pat Gelsinger
Yahoo Finance
Intel CEO Bob Swan is poised to step down from his role at the tech company as of Feb. 15, CNBC first reported Wednesday morning. VMWare CEO Pat Gelsinger (VMW) is set to take over the position. A source confirmed the move to Yahoo Finance. The departure comes after Swan...

Semiconductor shortage threatens global automotive production
PM-Review
A global semiconductor shortage is reported to be causing a number of automotive manufacturers to cut back on vehicle production, despite growing demand following the coronavirus (COVID-19) pandemic. As reported in Nikkei Asia, the lack of supply has forced..

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Global Memory Research
14 Jan 2021

高通宣布以逾台幣 385 億元併購半導體新創企業 Nuvia
TechNews科技新報
根據《路透社》的報導，行動處理器大廠高通（Qualcomm）於台北時間 13 日晚間宣布，將以 14 億美元 (約新台幣 385.84 億元) 併購半導體新創企業 Nuvia Inc。而 Nuvia 是一家由科技大廠蘋果...

CPU 製造版圖大轉移，英特爾釋單台積電代工 CPU 將在下半年量產
TechNews科技新報
TrendForce 旗下半導體研究處表示，英特爾（Intel）目前在非 CPU 類的 IC 製造約有 15%~20% 委外代工，主要在台積電（TSMC）與聯電（UMC）投片。2021 年正著手將 Core i3 CPU 的產品...

半導體行業2021年的關鍵詞：漲價
北京新浪網
半導體行業2021年的關鍵詞就是——漲價。2020年四季度以來，已有超過20家半導體企業發佈「漲價函」，行業漲價幅度平均在10%-20%之間，個別企　業如得一微電子，其嵌入式存儲控制晶元上調...

市況熱 環球晶矽晶圓 全年看漲一成
中時電子報
晶圓代工廠及記憶體廠2021年第一季產能利用率維持滿載，訂單能見度已由第二季末延續到第三季下旬，矽晶圓需求同步回升。然而在下半年矽晶圓可能供不應求的預期下，矽晶圓大廠環球晶已順利...

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Global Memory Research
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下单台积电、换帅，Intel打响2021年的第一枪！
全球半导体观察
一个优秀的领导人对一家企业相当重要，比如AMD的苏姿丰，NVIDIA的黄仁勋，如今巨头Intel也要换帅了。13日晚间，英特尔宣布其现任CEO司睿博将在2月15日卸任，而公司新任CEO为帕特·基辛...

14亿美元，高通为什么看上这家半导体初创公司？
全球半导体观察
1月13日，手机芯片大厂高通在其官网发布新闻稿宣布，将以约14亿美元的价格收购半导体初创公司NUVIA。高通公司首席技术官吉姆·汤普森说，“创建高性能，低功耗处理器和高度集成的复杂...

坚持源头创新 解决集成电路“卡脖子”问题
中国电子报
按照党的十九届五中全会的精神和要求，在集成电路产业领域，我们需要充分发挥新型举国体制的优势，坚持源头核心技术创新，不断解决核心芯片“卡脖子”问题，实现核心技术产业化，推动产业...

英特尔CPU制造版图转移，预计台积电明年量产中高阶3nm产品
全球半导体观察
英特尔（Intel）目前在非CPU类的IC制造约有15~20%委外代工，主要在台积电（TSMC）与联电（UMC）投片。2021年正着手将Core i3 CPU的产品释单台积电的5nm，预计下半年开始量产；此...

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金级会员

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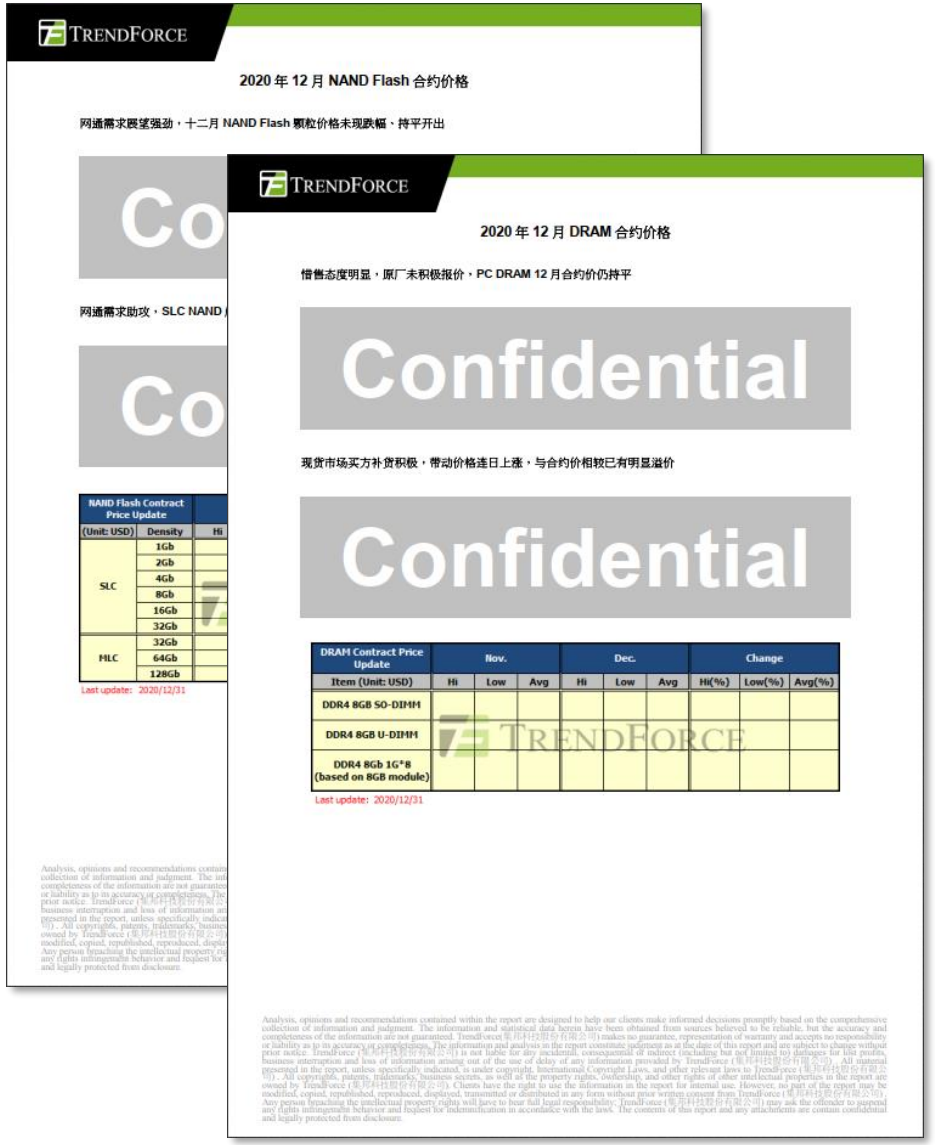
  DRAMeXchange 提供内存/闪存的合约和现货价格的下载，并可查看价格的最新信息。

- **内存/闪存合约价格预先通知**

  DRAMeXchange 提供每月内存/闪存合约价格预先通知。

  本通知提供最新的价格信息，并在我们的网站进行价格更新前，发送给金级以上的会员。

  (发布时间: 月底)



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- **内存每月产业数据**

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  (发布时间: 月中)

- **每季度研究报告**

  针对当季内存生产概述，出货量更新和预测的产业分析与价格趋势。

  (发布时间: 二、五、八、十一月)

- **不定期专题报告**

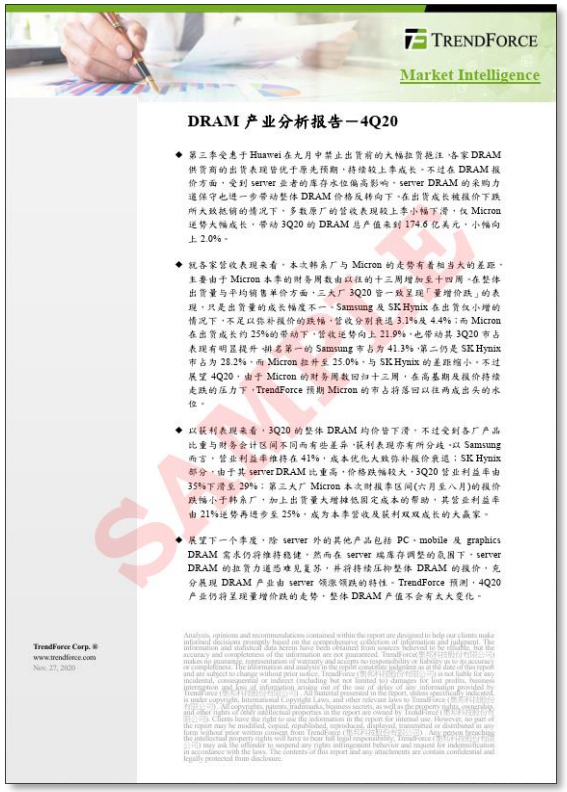
  针对时下热烈讨论的议题，如产能短缺、技术转型、新的产业成员加入/退出等时事撰写报告，DRAMeXchange 不定期提供专题报告给会员。

- **分析师咨询服务**

  会员可以安排与集邦科技分析师每季的电话会议。

- **企业参访**

  亲自与DRAMeXchange分析师会面！与DRAMeXchange的分析师安排业务访问。



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Market Intelligence

DRAM 产业分析报告－4Q20

◆ 第三季受惠于 Huawei 在九月中禁止出货前的大幅拉货挹注，各家 DRAM 供货商的出货表现皆优于原先预期，持续较上季成长，不过在 DRAM 报价方面，受到 server 业者的库存水位偏高影响，server DRAM 的采购方道保守也进一步带动整体 DRAM 价格反转向下，在出货成长被报价下跌所大致抵销的情况下，多数原厂的营收表现较上季小幅下滑，仅 Micron 逆势大幅成长，带动 3Q20 的 DRAM 总产值来到 174.6 亿美元，小幅向上 2.0%。

◆ 就各家营收表现来看，本次韩系厂与 Micron 的走势有着相当大的差距，主要由于 Micron 本季的财务周数由以往的十三周增加至十四周，在整体出货量与平均销售单价方面，三大厂 3Q20 皆一致呈现「量增价跌」的表现，只是出货量的成长幅度不一。Samsung 及 SK Hynix 在出货仅小增的情况下，不足以弥补报价的跌幅，营收分别衰退 3.1%及 4.4%；而 Micron 在出货成长的 25%的带动下，营收逆势向上 21.9%，也带动其 3Q20 市占表现有明显提升，但若第一的 Samsung 市占为 41.3%，第二的是 SK Hynix 市占为 28.2%，而 Micron 拉升至 25.0%，与 SK Hynix 的差距缩小，不过展望 4Q20，由于 Micron 的财务周数回归十三周，在高基期及报价持续走跌的压力下，TrendForce 预期 Micron 的市占将落回以往两成出头的水位。

◆ 以获利表现来看，3Q20 的整体 DRAM 均价皆下滑，不过受到各厂产品比重与财务会计区间不同而有些差异，获利表现亦有所分歧，以 Samsung 而言，营业利益率维持在 41%，成本优化大致弥补报价衰退；SK Hynix 部分，由于其 server DRAM 比重高，价格跌幅较大，3Q20 营业利益率由 35%下滑至 29%；第三大厂 Micron 本次财报季区间(六月至八月)的报价跌幅小于韩系厂，加上出货量大增抵销固定成本的帮助，其营业利益率由 21%逆势再提升至 25%，成为本季营收及获利双双成长的大赢家。

◆ 展望下一个季度，除 server 外的其他产品包括 PC、mobile 及 graphics DRAM 需求仍将维持稳健，然而在 server 端库存调整的氛围下，server DRAM 的拉货方道恐难见复苏，并将持续压抑整体 DRAM 的报价，充分展现 DRAM 产业由 server 领涨领跌的特性。TrendForce 预测，4Q20 产业仍将呈现量增价跌的走势，整体 DRAM 产值不会有太大变化。

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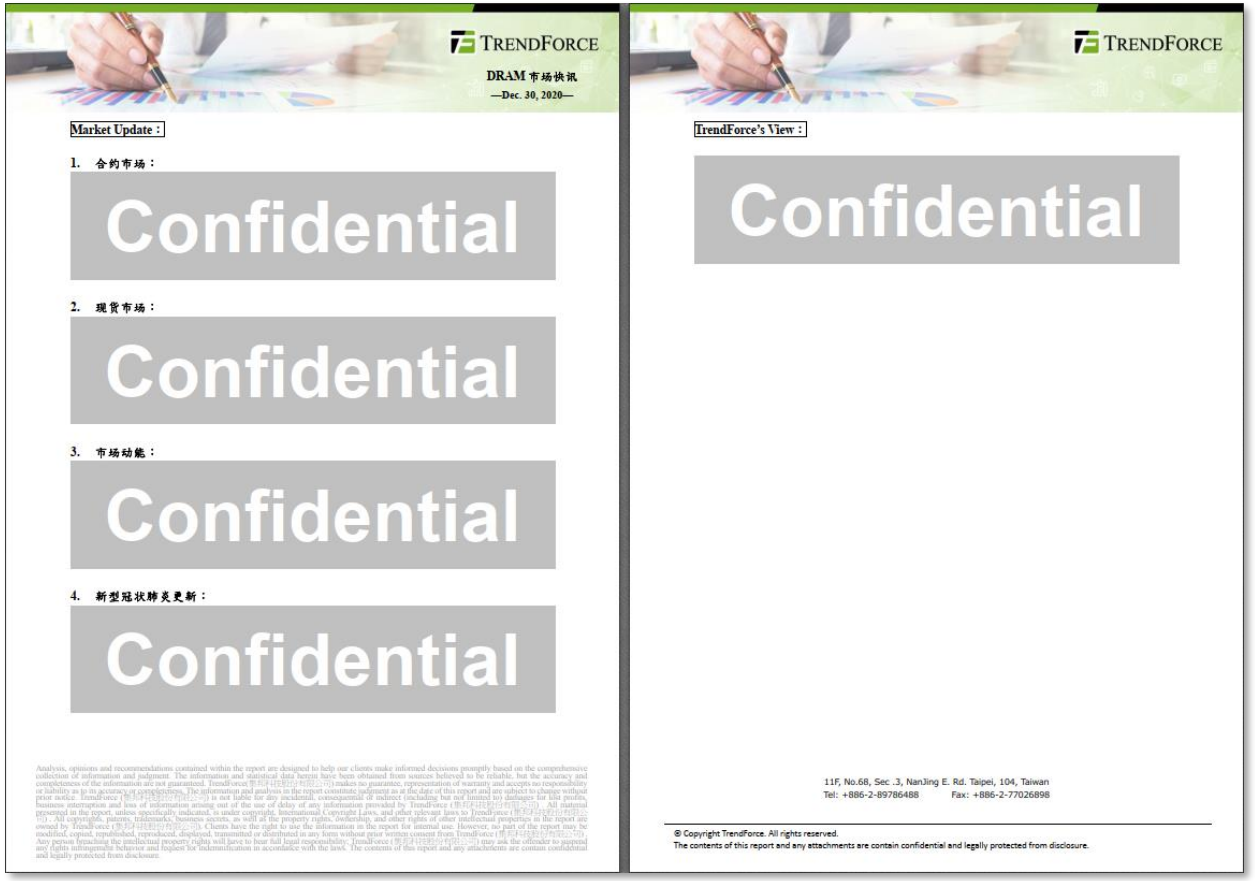
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Market Intelligence

NAND Flash 产业分析报告—4Q20

◆ 4Q20 NAND Flash 市场面检讨：需求端去化库存尚未结束，server 与 data center 客户采购量仍然疲软；同时，商务用的 PC 需求逐步放缓，仅以搭载容量较低的消费型机种以及 Chromebook 维持强势。在 smartphone 端，Apple 新机虽带来出货动能，且 Oppo、Vivo、Xiaomi 等客户因应 Huawei 禁令而提升备货，但无法扭转供过于求态势。整体来说，各类产品的合约价格于 4Q20 持续下跌。

◆ 从供给端来看，2020 年的产出计划与前次更新并无显著调整，12 吋约当晶圆投片量在 4Q20 成长 2.1%，放眼 2021 年的投产规划，在 YMTC 逐步崛起以及 Samsung 的积极扩产之下，竞争态势越发激烈，位元产出增长将远高于 2020 年，进而持续导致供过于求。在制程部分，2020 年的产出仍以 92/96 层为主流，全年占 50%以上，在 2021 年全年也仍是最大比重；至于 1XX 层，虽生产供货商已开始量产，但考虑到导入时程、放量的时间要等到 2021 年下半年。而在架构方面，今年 QLC 的产品占比维持在 5%以内，但相关 SSD 产品预计在中美以及美系厂商的推动之下，占比呈现缓慢上升的趋势，仍以 TLC 架构稳定居于主流，占有 90%以上的绝对比重。

◆ 从需求端来看，PC 表现稳强，但仍集中于容量需求较低的消费型机种以及 Chromebook 上，smartphone 需求自 3Q20 复苏，加上 Huawei 的备货需求，因此这方面的动能相对稳健，server 与 data center 所需的 enterprise SSD 则仍未拉升进入 3Q20 后的去化库存状态，也因此导致 NAND Flash 整体需求表现仍显疲弱，而在零售端的 UFD 与记忆卡等产品，第二波疫情的爆发则为后续需求带来隐忧，整体市场仍处于供过于求状态。根据 TrendForce 调查显示，4Q20 智能型手机生产量较前季增加逾 4%，notebook 及 server 则季增逾 3%。换算位元需求量预计将季增 10%。

◆ 观察 2020 年全年状况，TrendForce 最新的产出及需求成长率分别为 31.4% 与 29.3%，其中产出成长率与前次相比并无显著调整；需求端的调整则来自于 notebook 需求上修以及 smartphone 品牌端的备货动能，使得供需差距收敛，但并未导致市场迈向缺货。TrendForce 维持当前合约价持续走弱，且跌势延续到 2021 年的看法。

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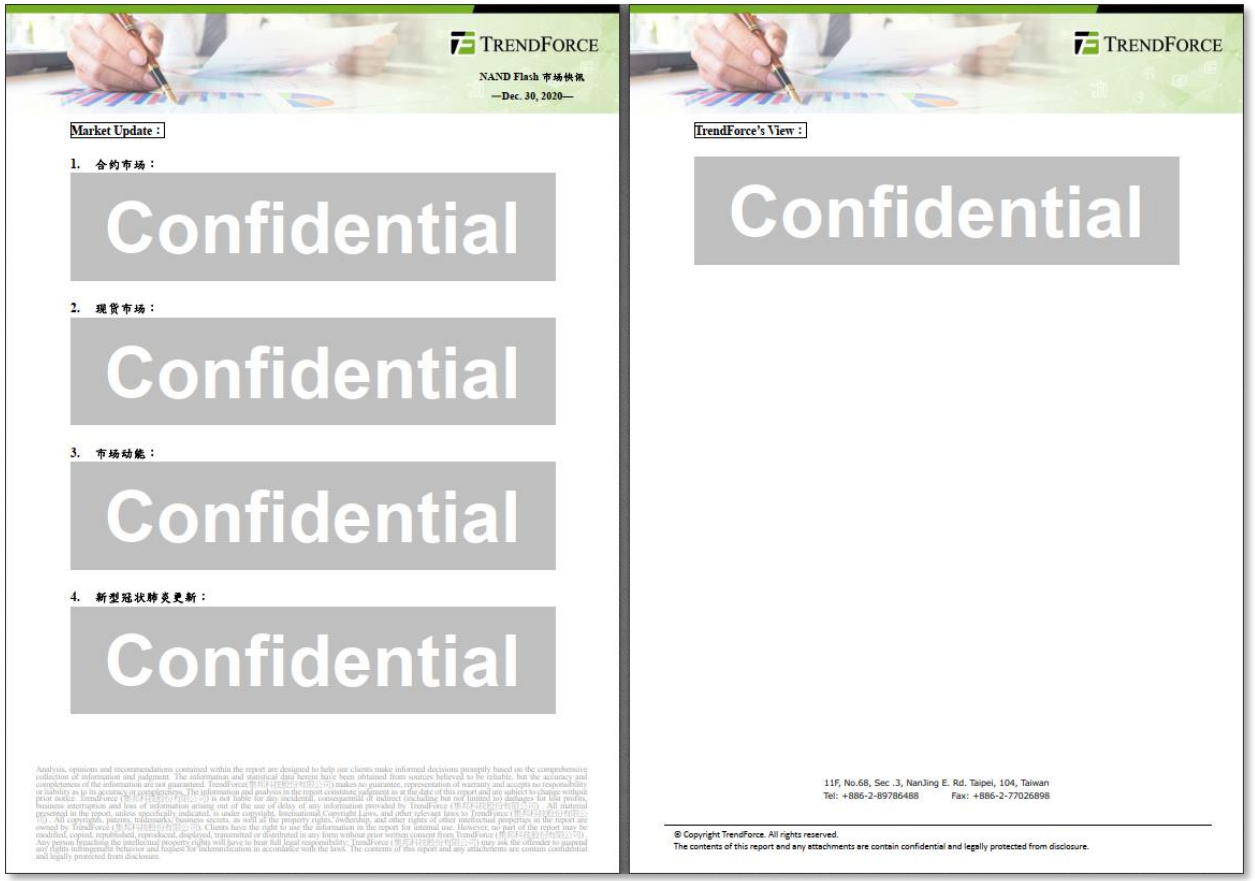
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  (发布时间: 月中)

- **闪存每季度产业数据**

  提供有关闪存产业每家公司晶圆的投入，产量，技术节点等完整的分析。

  (发布时间: 二、五、八、十一月)

- **每季度研究报告**

  针对当季闪存生产概述，出货量更新和预测的产业分析与价格趋势。

  (发布时间: 二、五、八、十一月)

- **专题报告**

  针对时下热烈讨论的议题，如产能短缺、技术转型、新的产业成员加入/退出等时事撰写报告，DRAMeXchange 不定期提供专题报告给会员。

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  会员可以安排与集邦科技分析师每季的电话会议。

- **企业参访**

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闪存钻石套餐 (闪存每月和每季度产业数据)

TRENDFORCE 集邦咨询

闪存白金每月产业数据

NAND Flash Market Financial update
Global NAND Flash Market Forecast
NAND Flash Makers' Revenue
Major NAND Flash Makers' Annual Capex Forecast
Major NAND Flash Makers' Quarterly OP Margin
Branded NAND Flash Makers' Quarterly Revenue Ranking

NAND Flash Worldwide Supply Update
NAND Flash Worldwide Wafer Start
Major NAND Flash Makers' Quarterly Capacity Breakdown by Fab
NAND Flash Monthly Worldwide Production Output
Major NAND Flash Makers' Annual Production Forecast
NAND Flash Production Output Breakdown by Region
Global NAND Flash Production Breakdown by Density Forecast
NAND Flash Production Breakdown by Type
NAND Flash Production Breakdown by Process Technology

NAND Flash Cost Analysis by Density
Mainstream NAND Flash Chip Cost Analysis & Forecast
NAND Flash Spot and Contract Prices Forecast

NAND Flash Worldwide Demand Update
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Worldwide Game Console Quarterly Shipments
Worldwide Tablet Quarterly Shipments
Worldwide USB Flash Drive Quarterly Shipments
Worldwide Memory Card Quarterly Shipments

Sufficiency Analysis
NAND Flash Supply vs Demand Sufficiency Ratio
Worldwide NAND Flash Market Supply/Demand Analysis & Forecast

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闪存钻石套餐 (闪存每月和每季度产业数据)

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闪存钻石每季度产业数据

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NAND Flash Makers' Production Breakdown by Architecture Type
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记忆体钻石套餐 (内存和闪存每月、每季产业数据)

TRENDFORCE 集邦咨询

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  (发布时间: 月中)

- **内存/闪存每季度产业数据**

  提供有关内存/闪存产业每家公司晶圆的投入，产量，技术节点等完整的分析。

  (发布时间: 二、五、八、十一月)

- **每季度研究报告**

  针对当季内存/闪存生产概述，出货量更新和预测的产业分析与价格趋势。

  (发布时间: 二、五、八、十一月)

- **专题报告**

  针对时下热烈讨论的议题，如产能短缺、技术转型、新的产业成员加入/退出等时事撰写报告，DRAMeXchange 不定期提供专题报告给会员。

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记忆体钻石套餐 (内存和闪存每月、每季产业数据)

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内存钻石每季度产业数据

DRAM Fab Capacity Update

DRAM Makers' Capex
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DRAM Makers' Capacity Breakdown by Fab
DRAM Makers' Output by Brand
DRAM Makers' Output by Fab
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SK hynix DRAM Fabs' Capacity/Output by Design Rule
Micron DRAM Fabs' Capacity/Output by Design Rule
Powerchip DRAM Fabs' Capacity/Output by Design Rule
Nanya DRAM Fabs' Capacity/Output by Design Rule
Winbond DRAM Fabs' Capacity/Output by Design Rule
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DRAM Production Output Update

Technology Breakdown by Company
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Prices Forecast

Spot and Contract Prices Forecast by Quarter

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记忆体钻石套餐 (内存和闪存每月、每季产业数据)

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闪存白金每月产业数据

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NAND Flash Wafer 价格信息

DRAMeXchange自2015年第四季开始提供全球TLC-Wafer合约价格，自2016年第二季也开始提供全球MLC-Wafer合约价格，由于主流的TLC/MLC-Wafer合约价格是每月经由主要的NAND Flash Wafer制造商和领导的模组厂商来进行，因此我们将于每一个月的月底确认买卖双方并且更新 TLC/MLC-Wafer合约价格，务求价格符合市场行情并提供给会员精准的价格与未来的方向。

*TLC Wafer现货价格已于2019/1/14日上线

NAND Flash Wafer 价格信息会员服务如下:

- **TLC Wafer现货价格(每周更新一次): 一般会员将有一周延迟**
- **Wafer合约价格(每月更新一次)**

Wafer Spot Price MORE Last Update:Jan.11 2021 14:20 (GMT+8) <Price Notice>

Item	Weekly High	Weekly Low	Session High	Session Low	Session Average	Average Change	History
512Gb TLC							
256Gb TLC							
128Gb TLC							

Wafer Contract Price Update		Dec.			Change		
(Unit: USD)	Density	Hi	Low	Avg	Hi(%)	Low(%)	Avg(%)
MLC	128Gb						
	64Gb						
	32Gb						
TLC	512Gb						
	256Gb						
	128Gb						
QLC	1Tb						

Last update: 2020/12/31

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Mobile 记忆体套餐

Mobile记忆体套餐会员服务如下:

- **Mobile记忆体价格资讯**

  Mobile内存及eMMC/UFS每季度合约价格更新。

  (发布时间: 一、四、七、十月)

- **Mobile记忆体每季度产业数据**

  提供Mobile DRAM及Mobile NAND Flash (eMMC) 最新的市场供应和需求信息。

  (发布时间: 二、五、八、十一月)

- **Mobile DRAM每季度研究报告**

  (发布时间: 二、五、八、十一月)

TRENDFORCE
Market Intelligence

Mobile DRAM 产业分析报告—4Q20

- 2020 年 smartphone 生产数量预测为 12.46 亿支，年衰退 11%；展望 2021 年，市场可望逐渐摆脱新冠疫情影响，年增长约 9%至 13.58 亿支。5G smartphone 的市占预测分别为 2020 年的 19%及 2021 年的 38%，主要为 AP 芯片大厂将 5G 应用向下扩及广大中阶市场所带动。
- 营收方面，受惠 Huawei 在冠状期内横扫市场库存，大量的需求抱注於是 ASP 下滑 3-8%的负面影响，支撑 3Q20 mobile DRAM 营收仅较上一季略降 2.0%，总产值来到 53.88 亿美元。展望 4Q20，OPPO、Vivo、Xiaomi 等因预期 Huawei 市占转让而加大备料数量，将弭平第四季合约价格下滑 0-5%的损失，营收产值可望持平第三季或较其略为增长。
- 同样受到 Huawei 事件的影响，预期受惠的品牌给拉加大 4Q20 采购总量，使得 mobile DRAM 供给由供过于求转为吃紧，合约价格跌幅因此收敛；预估 1Q20 将延续此态势，合约价格将大致持平 4Q20 表现，然而，new Honor 的加入，恐再恶化 mobile DRAM 的供给，不排除市场将出现淡季涨价的连锁反应。
- 制程技术方面，三大主流供货商皆已进入以 10nm 级为主的行动式存储器世代，今、明两年的位元成长主要仰赖制程转进贡献。有鉴于去年因市场供过于求导致合约价格大幅滑落，未来原厂在新制程的转进策略或是扩厂计划上，势必采取更为审慎的态度，以期在获利及营收市占间取得平衡。
- LPDDR5 已进入量产，以规格面而言，LPDDR5 提供更快的传输速率以及持续优化功耗表现，随着 LPDDR5 和 LPDDR4X 价差已快速收敛，2020 年的渗透率为 12%。明年将有 uMCP 的应用推出，渗透率可望来到 18%。
- 受到去年存储器市场跌价带动，品牌对于使用大容量存储器的意愿延续至今年，平均容量由去年的 3.8GB/box 提升至 4.5GB/box；明年预估将再有 10.4%提升至 5.0GB/box。以往由高阶市场驱动单机搭载容量向上，随着 Android 阵营将旗舰规格扩大到 12GB、16GB 已能完全满足市场所需，因此在没有创新应用的带动下，后续搭载容量增速也将逐步放缓，市场转由中低阶手机带动。

TrendForce Corp. ®
www.trendforce.com
Dec. 2, 2020

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Mobile DRAM Contract Price Update	4Q20			QoQ		
Item	High	Avg.	Low	High Change	Avg. Change	Low Change
LPDDR4X 8GB						
LPDDR4X 6GB						
LPDDR3 3GB						
LPDDR3 2GB						
eMCP LPDDR4X 128GB+64Gb						
eMCP LPDDR4X 128GB+48Gb						
eMCP LPDDR4X 128GB+32Gb						
eMCP LPDDR4X 64GB+48Gb						
eMCP LPDDR4X 64GB+32Gb						
eMCP LPDDR3 32GB+24Gb						
eMCP LPDDR3 32GB+16Gb						
eMCP LPDDR3 16GB+8Gb						
eMCP LPDDR3 8GB+8Gb						

Last update: 2020/10/27

eMMC/UFS Contract Price Update (Unit: USD)		3Q20			4Q20			Change		
Item		Hi	Low	Avg	Hi	Low	Avg	Hi(%)	Low(%)	Avg(%)
eMMC MLC	4GB									
	8GB									
	16GB									
	32GB									
	64GB									
	128GB									
eMMC TLC	16GB									
	32GB									
	64GB									
	128GB									
UFS	32GB									
	64GB									
	128GB									
	256GB									
	512GB									

Last update: 2020/10/23

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Mobile 记忆体套餐

TRENDFORCE 集邦咨询

Mobile记忆体每季度产业数据

Mobile DRAM

DRAM Worldwide Supply Update

DRAM Makers' DRAM Revenue & Mobile DRAM Revenue
DRAM Makers Quarterly Mobile DRAM Revenue Ranking
Mobile DRAM Quarterly Product Mix on Output
Mobile DRAM Quarterly Output
Mobile DRAM Output by Product (Package)
Mobile DRAM Output by Product (Generation)
Mobile DRAM Output by Product (Density)
Mobile DRAM Technology Breakdown by Company

DRAM Worldwide Demand Update

Mobile DRAM Demand - Application Production Volume
Mobile DRAM Demand - Application Content
Mobile DRAM Demand - WW Smartphone Production Volume
Mobile DRAM Demand - China Smartphone Production Volume
Worldwide Top 10 Branded Smartphone Production Volume

DRAM Market Forecast

Mobile DRAM Price Forecast

DRAM Supply v.s. Demand Sufficiency Analysis

Worldwide Mobile DRAM Market Supply/Demand Analysis & Forecast

Mobile NAND Flash

eMMC Market Status

Architecture Breakdown
Interface Breakdown
eMMC/UFS Market Revenue Review and Forecast
MLC-eMMC & UFS Average Selling Price
eMMC Shipment

eMMC Application

eMMC & UFS Consumption by Application
eMMC & UFS Consumption by Density
Smartphone in eMMC/UFS
Media Tablet in eMMC/UFS
Smart TV in eMMC
E-Reader in eMMC

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智能型手机市场关键报告

智能型手机市场关键报告会员服务如下:

- **每季度智能型手机追踪数据**

- **每季度智能型手机研究报告**

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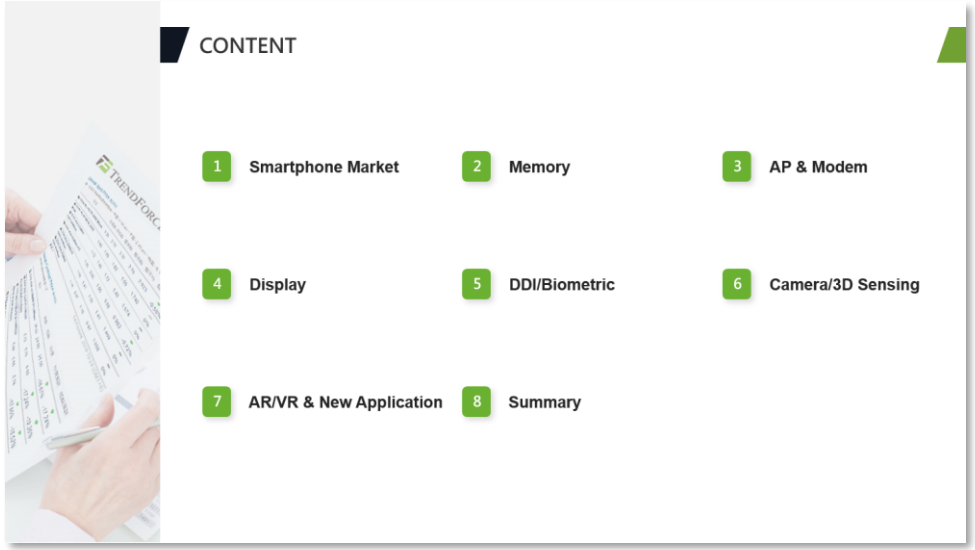
  报告内容除了涵盖第一手智能型手机生产数据以及关键零组件产业链最新动态外，智能型手机市场关键报告还提供相关技术和新科技发展议题，协助企业因应外部环境快速变迁的情况下，能够掌握最实时与最专业的产业情报，让企业客户内部做出最正确的营运决策！

Mobile Device Worldwide Demand Update

WW Handset Production Volume
WW Branded Smartphone Production Volume
Chinese Branded Smartphone Production Volume
WW Top 10 Branded Smartphone Production Volume



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服务器DRAM套餐

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- **服务器模块价格信息**

  提供每月服务器模组最新的市场价格信息。

  (发布时间: 月底)

- **服务器DRAM每季度产业数据**

  提供每季度服务器DRAM最新市场营收/产能更新。

  (发布时间: 二、五、八、十一月)

- **服务器DRAM每季度研究报告**

  针对当季服务器DRAM产业分析。

  (发布时间: 二、五、八、十一月)

  NEW 针对上一季度服务器DRAM市场产销状况更新与概述。

  (发布时间: 二、五、八、十一月)

Server DIMM Price Update	Dec.			Change		
Item	Hi	Low	Avg	Hi(%)	Low(%)	Avg(%)
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DDR4 2666Mbps 32GB RDIMM						
DDR4 2933Mbps 32GB RDIMM						
DDR4 2666/2933Mbps 64GB LRDIMM						
DDR4 2666/2933Mbps 64GB RDIMM						

Last update: 2020/12/31

TRENDFORCE
Market Intelligence

Server DRAM 产业分析报告—4Q20

◆ 回顾 2020 年第三季度市况，服务器产业链受 COVID-19 先前大力备货影响，以至于买方库存在第二季度显著提高，导致采购动能在第三季开始转为保守，进而 DRAM 原厂的获利，除此之外，DRAM 原厂更面临客户采购力道疲弱，将重新调置产能配置，将第一、二季度转移至 Server DRAM 的产能再配置回 Mobile DRAM。

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www.trendforce.com
Nov. 23, 2020

Server DRAM

DRAM Worldwide Supply Update

DRAM Makers' DRAM Revenue & Server DRAM Revenue

DRAM Makers Quarterly Server DRAM Revenue Ranking

Server DRAM Quarterly Product Mix on Output

Server DRAM Quarterly Output Shipment

Server DRAM Output by Product (Package)

Server DRAM Output by Product (Generation)

Server DRAM Output by Product (Density)

Server DRAM Technology Breakdown by Company

Server Demand- Server Unit Shipment by Brand,

Server DRAM Price Forecast

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- 全球与季度市场动态
- 中国与季度市场动态
- 影响因素

2 服务器品牌厂与云端服务商发展动态
- 服务器品牌厂
- 云端服务商发展动态

3 品牌厂与台湾服务器代工厂发展动态

4 市场关键议题与趋势

5 拓墣观点

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服务器DRAM钻石产业数据 NEW

服务器DRAM钻石产业数据内容如下:

● 服务器DRAM钻石每季产业数据

该产品结合TrendForce在内存领域的优势，延伸对server端的数个面向做研究调查，其中包含

1. CPU分布与竞争态势
2. 北美与中国地区cloud service provider对server采购量
3. storage出货预估
4. 本年度server出货动能预估
5. 关键server品牌代工厂分布
6. 对server DRAM采购量变化
7. 对SSD采购量变化与规格及接口预估
8. Enterprise与hyperscaler分别对存储器消耗量占比。

(发布时间: 二、五、八、十一月)

费用：

单购 RMB 259,700(含税) / 年

额外升级费用(自服务器DRAM套餐)

RMB 156,000(含税) / 年

CPU

Intel Server/Workstation CPU Units Shipment
AMD Server/Workstation CPU Units Shipment

Hyperscale Data Center Portfolio

Storage Server Shipment
Hyperscale Server Units
Hyperscale Server CPU Usage Mix
Hyperscale Server Barebone (L6) Portion (%)
China Hyperscale Server Set (L10) Portion (%)
Hyperscale RDIMM Consumption
Hyperscale SSD Consumption
ESSD Form Factor Breakdown
ESSD Interface Breakdown
Server DRAM & SSD Consumption Mix

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企业级SSD套餐

企业级SSD套餐会员服务如下:

- **企业级 SSD合约价格**

  企业级 SSD 的合同价格覆盖北美、 日本、 欧洲和其他市场，一般来自企业 SSD 市场季度谈判。

  (发布时间: 一、四、七、十月)

- **企业级 SSD每季度产业数据**

  企业级 SSD 产业数据提供最新的 SSD出货量、平均搭载容量预测于服务器设备和数据中心且包括企业级固态硬盘的接口，及主要使用的尺寸分布，以及企业级固态硬盘主要用于读取 / 读，写混合 / 及写入专门的比例。

  (发布时间: 二、五、八、十一月)

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Last update: 2020/10/23

Enterprise SSD

Enterprise SSD Revenue
Enterprise SSD ASP
Worldwide Enterprise SSD Shipment
Worldwide Enterprise SSD Shipment by brand
Enterprise SSD Contract Price Forecast
Enterprise SSD Architecture Breakdown
Enterprise SSD Interface Breakdown
Worldwide Enterprise SSD Capacity Breakdown by Capacity
Price Crossover Point for Enterprise HDD and Enterprise SSD-SATA
Price Crossover Point for Enterprise HDD and Enterprise SSD-SAS
SSD Shipment Breakdown by Type
SSD Revenue Breakdown by Type
NAND Flash Demand Portion

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服务器白金套餐

服务器白金套餐为服务器DRAM会员与企业级 SSD套餐的加值组合包，会员服务如下:

- **服务器模块价格信息**

  提供每月服务器模组最新的市场价格信息。

  (发布时间: 月底)

- **服务器DRAM每季度产业数据**

  提供每季度服务器DRAM最新市场营收/产能更新。

  (发布时间: 二、五、八、十一月)

- **服务器DRAM每季度研究报告**

  针对当季服务器DRAM产业分析。

  (发布时间: 二、五、八、十一月)

  NEW

  针对上一季度服务器DRAM市场产销状况更新与概述。

  (发布时间: 二、五、八、十一月)

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TRENDFORCE
Market Intelligence

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Nov. 23, 2020

Server DRAM

DRAM Worldwide Supply Update

DRAM Makers' DRAM Revenue & Server DRAM Revenue
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- 服务器品牌厂
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3 品牌厂与台湾服务器代工厂发展动态

4 市场关键议题与趋势

5 拓墣观点

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服务器白金套餐

服务器白金套餐为服务器DRAM会员与企业级 SSD套餐的加值组合包，会员服务如下:

- **企业级 SSD合约价格**

  企业级 SSD 的合同价格覆盖北美、 日本、 欧洲和其他市场，一般来自企业 SSD 市场季度谈判。

  (发布时间: 一、四、七、十月)

- **企业级 SSD每季度产业数据**

  企业级 SSD 产业数据提供最新的 SSD出货量、平均搭载容量预测于服务器设备和数据中心且包括企业级固态硬盘的接口，及主要使用的尺寸分布，以及企业级固态硬盘主要用于读取 / 读，写混合 / 及写入专门的比例。

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Last update: 2020/10/23

Enterprise SSD

Enterprise SSD Revenue
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Price Crossover Point for Enterprise HDD and Enterprise SSD-SATA
Price Crossover Point for Enterprise HDD and Enterprise SSD-SAS
SSD Shipment Breakdown by Type
SSD Revenue Breakdown by Type
NAND Flash Demand Portion

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SSD套餐

SSD套餐会员服务如下:

- **全球SSD终端价格(每两周更新)**

  收集北美、日本和欧盟等主要市场中，不同品牌和容量的产品价格。

  (发布时间: 月底)

- **PC-Client OEM SSD合约价格**

  全球PC客户端的OEM SSD合同价格来源于固态硬盘供应商和一线OEM/ODM厂商之间的季度谈判。

  (发布时间: 一、四、七、十月)

- **SSD每季度产业数据**

  SSD产业数据提供最新市场预测，包含SSD出货量、平均搭载容量于笔记本电脑、现货市场。

  (发布时间: 二、五、八、十一月)

PC-Client OEM SSD Contract Price Update (Unit: USD)		3Q20			4Q20			Change		
Item		Hi	Low	Avg	Hi	Low	Avg	Hi(%)	Low(%)	Avg(%)
TLC SATA	128GB-mSATA/M.2									
	256GB-mSATA/M.2									
	512GB-mSATA/M.2									
	128GB-2.5"inch									
	256GB-2.5"inch									
	512GB-2.5"inch									
TLC PCIe-Premium Grade	256GB-mSATA/M.2									
	512GB-mSATA/M.2									
	1TB-mSATA/M.2									
TLC PCIe-Value Grade	128GB-mSATA/M.2									
	256GB-mSATA/M.2									
	512GB-mSATA/M.2									

Last update: 2020/10/23

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SSD Street Price

TrendForce will start providing WW SSD street price from 2009. We will survey SSD street price from main markets in the world.

Brand	Class	Series	Capacity (GB)	Form Factor	Architecture	Model	Interface	Price High	Price Low	Price Avg.	Last Avg.
Intel	Mainstream	660P	512	M.2	3D-QLC	SSDPEKNW512G8X	PCIE				
Intel	Mainstream	660P	1024	M.2	3D-QLC	SSDPEKNW010T8X1	PCIE				
Intel	Mainstream	660P	2048	M.2	3D-QLC	SSDPEKNW020T8X1	PCIE				
Kingston	Mainstream	A400	120	2.5"	TLC	SA400S37/120G	SATA 3				
Kingston	Mainstream	A400	240	2.5"	TLC	SA400S37/240G	SATA 3				
Kingston	Mainstream	A400	480	2.5"	TLC	SA400S37/480G	SATA 3				
Kingston	Mainstream	A400	960	2.5"	TLC	SA400S37/960G	SATA 3				
Kingston	Mainstream	A2000	250	M.2	3D-TLC	SA2000M8/250G	PCIE				
Kingston	Mainstream	A2000	500	M.2	3D-TLC	SA2000M8/500G	PCIE				
Kingston	Mainstream	A2000	1000	M.2	3D-TLC	SA2000M8/1000G	PCIE				
Kingston	Mainstream	KC600	256	2.5"	3D-TLC	SKC600/256G	SATA 3				
Kingston	Mainstream	KC600	512	2.5"	3D-TLC	SKC600/512G	SATA 3				
Kingston	Mainstream	KC2500	250	M.2	3D-TLC	SKC2500M8/250G	PCIE				
Kingston	Mainstream	KC2500	500	M.2	3D-TLC	SKC2500M8/500G	PCIE				
Kingston	Mainstream	KC2500	1000	M.2	3D-TLC	SKC2500M8/1000G	PCIE				

SSD Market by Channel
SSD Revenue Breakdown by Type
SSD Shipment & Revenue
SSD Architecture Breakdown
SSD Interface Breakdown
Worldwide Personal Computer SSD Market Revenue
Worldwide Personal Computer SSD Shipment
SSD Shipment Forecast 2019-2024F
Worldwide Personal Computer SSD Capacity Breakdown by Capacity
SSD Capacity Forecast 2019-2024F
Worldwide Personal Computer SSD and HDD Adoption Rate
Price Crossover Point for HDD and SSD
NAND Flash Demand Portion
Cost Analysis – NAND Flash Price Trend
Client SSD Price Forecast
Portable SSD Shipment Forecast

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SLC 闪存产业数据

SLC 闪存产业数据服務如下:

- **SLC 闪存每季度产业数据**

  DRAMeXchange除针对主流闪存市场提供产业分析以外，亦针对较利基的SLC闪存市场提供完整的供给与价格分析。

NAND Flash Market Financial update
NAND Flash SLC Revenue Forecast

NAND Flash Worldwide Supply Update
Global NAND Flash SLC Production Breakdown by Density Forecast
Major SLC NAND Flash Makers' Quarterly Capacity Breakdown by Company
Major SLC NAND Flash Makers' Annual Production Forecast
Samsung's Production Breakdown by Density
SK hynix's Production Breakdown by Density
Kioxia's Production Breakdown by Density
Micron's Production Breakdown by Density
Winbond's Production Breakdown by Density
Macronix's Production Breakdown by Density
Powerchip's Production Breakdown by Density
SMIC's Production Breakdown by Density

NAND Flash Cost Analysis by Density
NAND Flash SLC Contract Prices Forecast

出刊频率:
季度 (三、六、九、十二月)

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Consumer 内存产业数据

Consumer 内存产业数据服务如下:

- **Consumer 内存每季度产业数据**

  除针对主流内存市场提供产业分析以外，亦针对较利基的Consumer内存市场(主要为*16颗粒)提供各家供货商完整的产品规划、产出数量、以及价格走势分析。

Consumer DRAM Worldwide Supply Update
Key Trends of Consumer DRAM Market
Consumer DRAM Production Breakdown by Type Forecast
Consumer DRAM Production Breakdown by Density Forecast
Consumer DRAM Makers' Quarterly Capacity Breakdown by Company
Consumer DRAM Makers' Annual Production Forecast
Samsung Consumer DRAM Production Output by Type
SK hynix Consumer DRAM Production Output by Type
Micron Consumer DRAM Production Output by Type
Nanya Consumer DRAM Production Output by Type
Powerchip Consumer DRAM Production Output by Type
Winbond Consumer DRAM Production Output by Type
JHICC Consumer DRAM Production Output by Type
CXMT Consumer DRAM Production Output by Type

Consumer DRAM Cost Analysis by Density
Specialty DRAM Contract Prices Forecast

出刊频率:
季度 (一、四、七、十月)

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晶圆代工专题

晶圆代工专题会员服务如下:

- **晶圆代工每季度产业数据**

  从DRAM及NAND Flash的终端需求变化延伸，往上游晶圆制造产能、技术演进以及产能利用率作分析，涵盖重点区域 (含中国、台湾、韩国、日本…等国) 的竞争力分析、以及主要客户于先进制程的投片变化；特别针对龙头晶圆厂 (含TSMC、UMC、Samsung、SMIC等公司) 提供对厂商之间竞合以及后续市况的展望与预估。

  (发布时间: 二、五、八、十一月)

- **晶圆代工市场快讯**

  我们将每两周提供各晶圆厂的状态更新。

  (发布时间: 出刊周的星期一)

- **晶圆代工专题报告**

  不定期更新关于市场上无预警发生的突发事件，完全掌握第一手的讯息与提供我们对市场消息更新的观点。

- **分析师咨询服务**

  会员可以安排与集邦科技分析师每季的电话会议。

- **企业参访**

  亲自与DRAMeXchange分析师会面！与DRAMeXchange的分析师安排业务访问。

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TRENDFORCE 集邦咨询

晶圆代工每季度产业数据: (发布时间: 二、五、八、十一月)

Foundry

Worldwide Market Update

Foundry Revenue
Quarterly Foundry Revenue Ranking
Foundry Makers' CAPEX 2018-2021
Foundry Makers' OP Margin
Foundry Makers' Wafer ASP
Foundry Main Customers' Wafer Input by Tech. Node
Foundry Makers' Revenue by Application
Foundry Makers' Revenue by Product

Fab Capacity Update

TSMC's Fab Capacity breakdown
UMC's Fab Capacity breakdown
VIS's Fab Capacity breakdown
PSMC's Fab Capacity breakdown
SMIC's Fab Capacity breakdown
HuaHong Group's Fab Capacity breakdown
Samsung's Fab Capacity breakdown
Foundry Makers' Installed Capacity
Foundry Makers' Utilization Rate

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TRENDFORCE 集邦咨询

晶圆代工每季度产业数据: Installed Capacity (发布时间: 二、五、八、十一月)

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Foundry Makers' Installed Capacity

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Update: Dec. 1st, 2020

Unit : KWPM

Company	W.Size	1Q18	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20E	1Q21F	2Q21F	3Q21F	4Q21F
TSMC	6" total																
	8" total																
	12" total																
	12" equiv.																
UMC	8" total																
	12" total																
	12" equiv.																
VIS	8" total																
	12" total																
	12" equiv.																
PSMC	8" total																
	12" total																
	12" equiv.																
SMIC	8" total																
	12" total																
	12" equiv.																
HuaHong Group	8" total																
	12" total																
	12" equiv.																
Samsung	8" total																
	12" total																
	12" equiv.																

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晶圆代工每季度产业数据: Demand - Foundry Main Customer (发布时间: 二、五、八、十一月)

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Foundry Main Customers' Wafer Input by Tech. Node

<Index>

Main Customers' monthly wafer Input by technology node (k units)

Update: Dec. 1st, 2020

5nm	1Q18	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20E	1Q21F	2Q21F	3Q21F	4Q21F
Apple																
Hisilicon																
Xilinx																
AMD																
Qualcomm																
nVIDIA																
MediaTek																
Intel																
Total																
UTR%																

6/7nm	1Q18	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20E	1Q21F	2Q21F	3Q21F	4Q21F
Apple																
HiSilicon																
Qualcomm																
Bitmain																
AMD																
Xilinx																
MediaTek																
nVIDIA																
Intel																
Others																
Total																
UTR %																

10nm	1Q18	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20E	1Q21F	2Q21F	3Q21F	4Q21F
Apple																
Hisilicon																
Bitmain																
MediaTek																
Total																
UTR %																

12/16nm	1Q18	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20E	1Q21F	2Q21F	3Q21F	4Q21F
Broadcom																
Apple																
nVIDIA																
HiSilicon																
MediaTek																
Qualcomm																
Bitmain																
Others																
Total																
UTR %																

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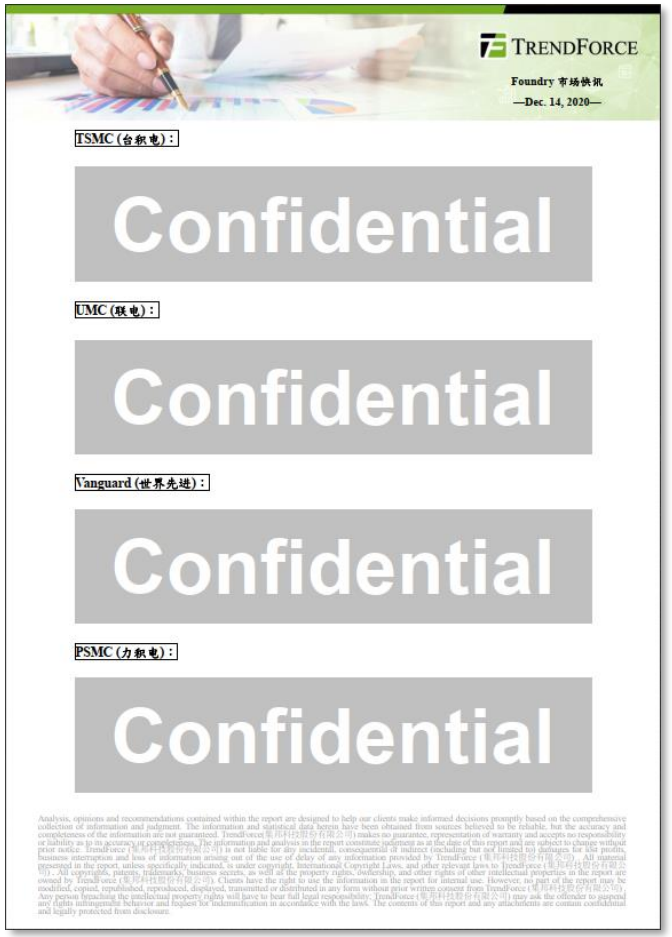
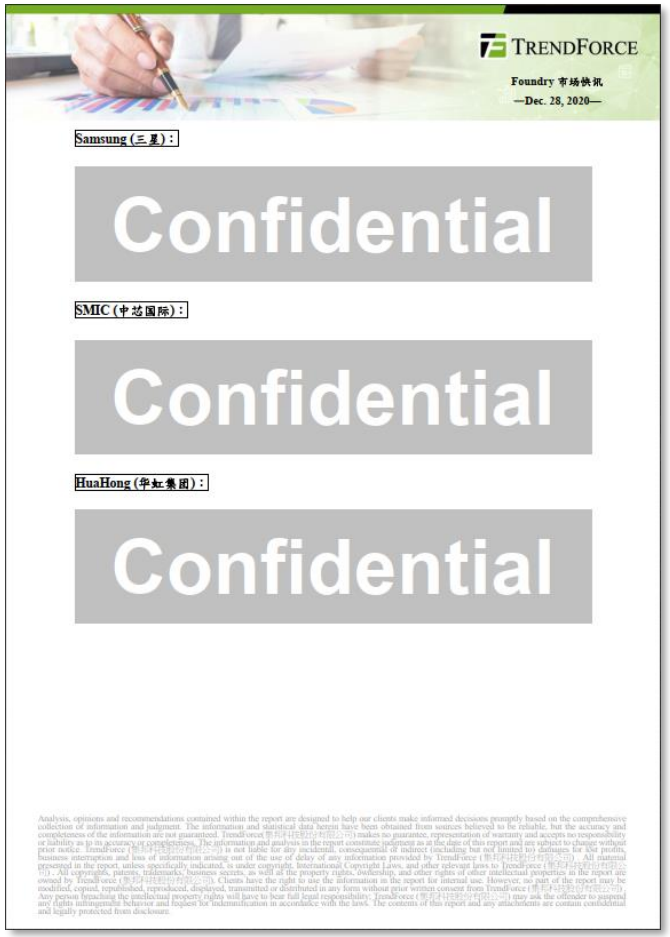
晶圆代工专题

晶圆代工市场快讯

我们将每两周提供各晶圆厂的状态更新。

*一年至少发表20篇发表报告。





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专题报告Special Report

不定期更新关于市场上无预警发生的突发事件，完全掌握第一手的讯息与提供我们对市场消息更新的观点。

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Market Intelligence

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 的产品移单至 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。

TrendForce Corp. ®
www.trendforce.com
Jan. 12, 2021

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Foundry Research Report

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