



DRAMeXchange Market Intelligence Membership Services-2021

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DRAMeXchange Market Intelligent Service



Membership Service		General		DRAM		NAND		DRAM+NAND	
Item	Frequency	Silver	Gold	DRAM Platinum	DRAM Diamond	NAND Platinum	NAND Diamond	Memory Platinum	Memory Diamond
Price Information									
Spot Price Early Notice	Daily	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
Historical Price Download	Daily	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
DRAM/NAND Contract Early Notice	Monthly		⊙	⊙	⊙	⊙	⊙	⊙	⊙
Server DIMM Contract Price	Monthly								
Mobile Contract Prices Info.	Quarterly								
NAND Flash Wafer Spot Prices Info.	Weekly								
NAND Flash Wafer Contract Prices Info.	Monthly								
WW SSD Street Price	Biweekly								
Enterprise SSD Contract Price	Quarterly								
PC-Client OEM SSD Contract Price	Quarterly								
Report									
Research Report	Quarterly			⊙	⊙	⊙	⊙	⊙	⊙
Special Report	Aperiodically			⊙	⊙	⊙	⊙	⊙	⊙
Datasheet									
DRAM Platinum Datasheet	Monthly			⊙	⊙			⊙	⊙
NAND Platinum Datasheet	Monthly					⊙	⊙	⊙	⊙
DRAM Diamond Datasheet	Quarterly				⊙				⊙
NAND Diamond Datasheet	Quarterly						⊙		⊙
Server DRAM Datasheet	Quarterly								
Mobile Datasheet	Quarterly								
Enterprise SSD Datasheet	Quarterly								
SSD Datasheet	Quarterly								
Smartphone Market Decode Datasheet	Quarterly								
Foundry Datasheet	Quarterly								
SLC Datasheet	Quarterly								
Consumer DRAM Datasheet	Quarterly								
Other Service									
Analyst Con. Call	Quarterly			⊙	⊙	⊙	⊙	⊙	⊙
Business Visiting	Arrange			⊙	⊙	⊙	⊙	⊙	⊙
Price(USD) – Excluded Tax		2,000	6,000	11,000	20,000	11,000	20,000	20,000	37,000

DRAMeXchange Market Intelligent Service



Membership Service		Single Purchase												
Item	Frequency	Nor Flash Report	Foundry Project	Mobile Package	China's Semiconductor Development Report	Server DRAM Package	Server Platinum	Enterprise SSD Package	SSD Pro Package	SSD Package	Smartphone Market Decode	NAND Flash Wafer	SLC Datasheet	Consumer DRAM Datasheet
Price Information														
Spot Price Early Notice	Daily													
Historical Price Download	Daily													
DRAM/NAND Contract Early Notice	Monthly													
Server DIMM Contract Price	Monthly					⊙	⊙							
Mobile Contract Prices Info.	Quarterly			⊙										
NAND Flash Wafer Spot Prices Info.	Weekly											⊙		
NAND Flash Wafer Contract Prices Info.	Monthly											⊙		
WW SSD Street Price	Biweekly								⊙	⊙				
Enterprise SSD Contract Price	Quarterly						⊙	⊙	⊙	⊙				
PC-Client OEM SSD Contract Price	Quarterly								⊙	⊙				
Report														
Research Report	Quarterly		⊙ Biweekly	⊙ Mobile DRAM	⊙	⊙	⊙				⊙			
Special Report	Aperiodically	⊙ Once Only	⊙	⊙		⊙	⊙	⊙	⊙	⊙				
Datasheet														
DRAM Platinum Datasheet	Monthly													
NAND Platinum Datasheet	Monthly													
DRAM Diamond Datasheet	Quarterly													
NAND Diamond Datasheet	Quarterly													
Server DRAM Datasheet	Quarterly					⊙	⊙							
Mobile Datasheet	Quarterly			⊙										
Enterprise SSD Datasheet	Quarterly						⊙	⊙	⊙					
SSD Datasheet	Quarterly								⊙	⊙				
Smartphone Market Decode Datasheet	Quarterly										⊙			
Foundry Datasheet	Quarterly		⊙											
SLC Datasheet	Quarterly												⊙	
Consumer DRAM Datasheet	Quarterly													⊙
Other Service														
Analyst Con. Call	Quarterly		⊙	⊙		⊙	⊙	⊙	⊙	⊙				
Business Visiting	Arrange		⊙	⊙		⊙	⊙	⊙	⊙	⊙				
Price(USD) – Excluded Tax		1,500	50,000	8,000	10,000	15,000	25,000	12,000	18,500	8,500	12,000	5,000	6,000	6,000

Silver Membership

As DRAMeXchange Silver Membership, you are allowed to assess our services below:

● DRAM/NAND Contract/Spot Price Information

Authorize to **download** price on DRAMeXchange Price Database, and:

1. Download DRAM / NAND Flash daily spot prices or monthly contract prices from 2017 to current in excel format
2. View DRAM / NAND Flash spot / contract price trend in chart format on a weekly, monthly, quarterly and yearly basis, or on customized basis
3. Download DXI (DRAMeXchange Index) from 2020 to current in excel format
4. Compare the price trend between different densities in chart format (only for mainstream chips, and also on a weekly, monthly, quarterly and yearly basis)
5. Historical Daily Express - a quick look at daily DRAM / NAND Flash spot markets from Nov. 28th, 2003 to current

Historical Price Download Center

DRAM Spot DRAM Contract Flash Spot Flash Contract Memory Card

Item	Please Select Item					
Duration	2017	/	1	/	1	TO 2021 / 1 / 15

(Please select item first)

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Any questions regarding historical prices, please [contact us](#)

Please provide your login ID in the comment section for membership verification. Thank you.

Historical DXI Download Center

DXI	2020	/	1	/	1	TO 2021 / 1 / 15
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(Please select a period)

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Silver Membership

- DRAM/NAND Market View

An overall and latest updated on DRAM, NAND Flash, PC and SSD industry

- DRAM/NAND Learning Center

Learning Center: an introduction of memory industry, separated into DRAM and NAND Flash.

- Daily News Alert

Provides Silver members daily update of DRAM, NAND FLASH, PC, Memory Card, etc. semiconductor industry news

- SSD Performance Test

View our result of performance test on different SSD products

DRAMeXchange 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...

DRAMeXchange 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
北京新網網
半導體行業2021年的關鍵詞就是一個漲價。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，訂單能见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...

DRAMeXchange 全球半導體觀察
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更方便!

DRAMeXchange Global Memory Research 14 Jan 2021

下單台积电、換帥，Intel打響2021年的第一槍！
全球半導體觀察
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科睿博将在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？
全球半導體觀察
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
全球半導體觀察
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年正著手将Core i3 CPU的产品释单台积电的5nm，预计下半年开始量产；此...

DRAMeXchange 全球半導體觀察
DX APP
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- 趋势分析
- 产业资讯
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Gold Membership

Gold membership is the value-added membership that advances from Silver membership, Gold membership will enjoy **all Silver membership Package** and **other services** as below :

- **DRAM/NAND Contract/Spot Price Download**

DRAMeXchange offers DRAM/NAND Contract and Spot Prices download, and as members, you can view the latest price information on the website.

- **DRAM/NAND Flash Contract Price Early Notice**

DRAMeXchange offers a monthly DRAM/NAND Flash contract price early notice. This notice provides the latest price information and send to members before our website is updated.

(Publish time: The end of the month)

NAND Flash Contract Price Dec. 2020

Strong Demand for Networking Devices Kept Contract Prices of NAND Flash Chips Steady in December

Co

DRAM Contract Price Dec. 2020

Co

PC DRAM Contract Prices Held Steady in December as Suppliers Waited for Higher Prices and Were Passive in Quote Offering

Confidential

Spot Prices of PC DRAM Products Are Rising Daily Due to High Demand and Their Difference with Contract Prices Is Now Substantial

Confidential

NAND Flash Contract Price Update		Nov.			Dec.			Change		
Item (Unit: USD)	Hi	Low	Avg	Hi	Low	Avg	Hi(%)	Low(%)	Avg(%)	
DDR4 8GB SO-DIMM										
DDR4 8GB U-DIMM										
DDR4 8Gb 16" 8 (based on 8Gb module)										

Last update: 2020/12/31

NAND Flash Contract Price Update		Nov.			Dec.			Change		
Item (Unit: USD)	Hi	Low	Avg	Hi	Low	Avg	Hi(%)	Low(%)	Avg(%)	
SLC										
MLC										

Last update: 2020/12/31

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DRAM Platinum Membership

DRAM Platinum member will receive all data including Silver and Gold membership coverage.
DRAM Platinum Service covers as below :

- **DRAM Monthly Datasheet**

DRAMeXchange offers you a complete analysis on DRAM industry supply/demand sufficiency, cost analysis and price forecast.

(Publish time: The mid of the month)

- **DRAM Quarterly Research Report**

DRAMeXchange Research report covers DRAM production overview, shipment update and forecast, new product and technology roadmap, industry and pricing trend.

(Publish time: The end of Feb., May, Aug., Nov.)

- **Analyst Consulting Service**

Members could schedule quarterly conference call with DRAMeXchange Analysts.

- **Business Visiting**

Meet DRAMeXchange Analysts by person! Schedule business visiting with DRAMeXchange Analysts.



DRAM Platinum Membership

DRAM Platinum Monthly Datasheet

DRAM Worldwide Supply Update

- DRAM Market Forecast
- DRAM Makers' Revenue
- DRAM Makers Quarterly Revenue Ranking
- DRAM Operating Margin By Each Vendors
- DRAM Makers' Capex
- DRAM Worldwide 12" Quarterly Wafer Starts
- DRAM Makers' Fab Capacity Breakdown by Brand
- DRAM Makers' Fab Capacity Breakdown by Fab
- DRAM Worldwide Monthly Production Summary
- DRAM Worldwide Monthly Production Breakdown by Type
- DRAM Worldwide Monthly Production Breakdown by Region
- DRAM Worldwide Process Ratio by Quarter
- Technology Breakdown by Company
- DRAM Makers' Quarterly Production Output Breakdown by Density

DRAM Supply v.s. Demand Sufficiency Analysis

- DRAM Supply v.s. Demand Sufficiency
- DRAM Supply and Demand Model

DRAM Worldwide Demand Update

- Worldwide Monthly Desktop Shipment
- Worldwide Monthly Notebook Shipment
- Worldwide Monthly PC Shipment
- Worldwide Quarterly Server & Workstation Shipment
- Worldwide Quarterly Graphics Shipment
- Worldwide Quarterly Handset Production Volume
- DRAM Content Per Box in DT, NB

DRAM Market Forecast

- DRAM Spot and Contract Prices Forecast by Month
- Worldwide DRAM Production Forecast
- DRAM Cost Structure Update

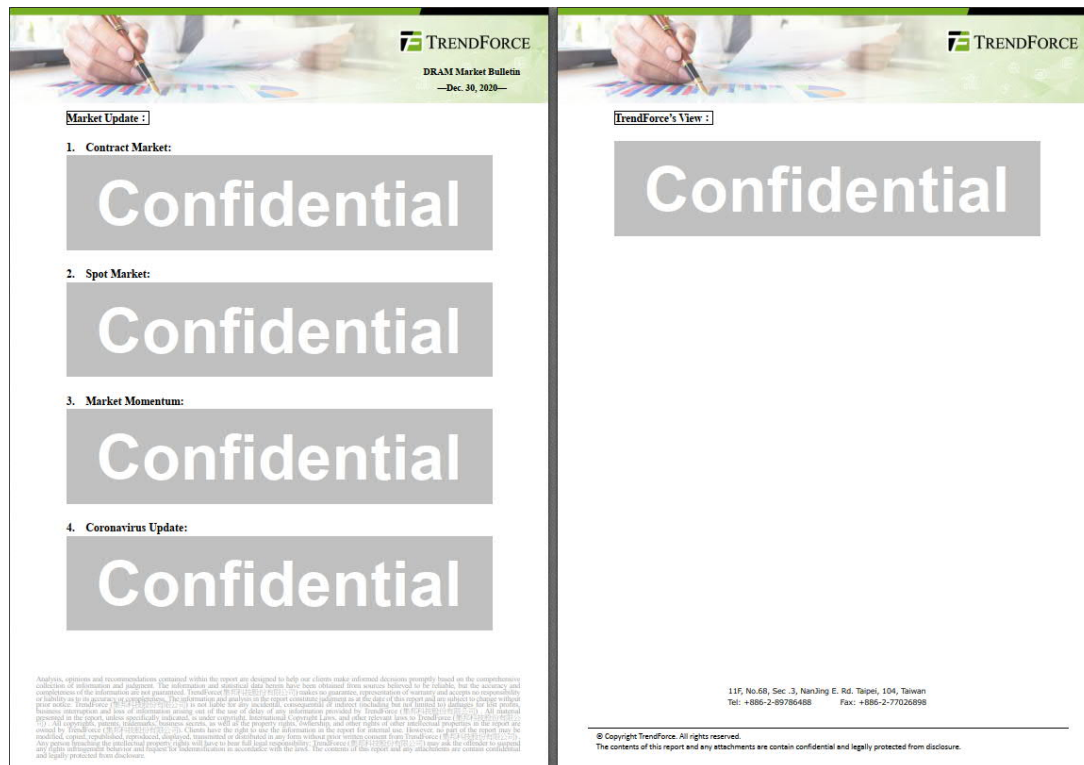
DRAM Market Bulletin Membership – Additional purchase



DRAMeXchange offers an additional purchase which only applies to the above DRAM Platinum members, a comprehensive market update on the Contract, Spot and the DRAM market momentum.

We also provide our point of view on the instant hot topic analysis on the weekly basis.

***At least 40 publication reports in a year.**



Additional fee:
USD 3,500/year
Language:
English / Chinese / Simple Chinese
Format:
PDF
Frequency:
Wednesday of the published week

DRAM Longer Term Projection – Additional purchase

DRAMeXchange offers an additional purchase which only applies to the above Platinum members, a longer-term projection extending into 2022 on Supply/Demand Section.

We also provide our Key Projections on Demand/Supply Bit Growth, Sufficiency and price on the quarterly basis.

Service covers as below :

Supply Section

- Capacity – Limited Incremental Growth Persists in Each Quarter of 2022
- Capacity – Major Suppliers Continue to Convert Obsolete Capacity Away
- DDR5 Penetration – by Each Application in 2022
- DDR5 Penetration – Die Size Differences Between DDR5 and Current Ones
- 2022 Geometry – Major Nodes Are Shifting to 1Znm and 1anm Nanometers with EUV Involved
- Bit Growth Calculation – by Each Suppliers in 2022
- New Entrance – Update on Chinese Players
- New Entrance – Chinese Production and Market Share
- Supply Side Round Up

Demand Section

- Application Productions – Server Continues to be Consumption Drivers with Blooming New Applications
- Momentum among Contending Applications – Server/Automotive Show Strength
- Server CPU Platform Transition Drives DRAM Growth
- Demand Bit Growth – Comparison between Each Application
- Demand Side Round Up

Key Projections

- Over Time Demand/Supply Bit Growth and TrendForce's Forecast
- Sufficiency – Tight Supply Expected in 2022
- Price Projection – Limited Supply Continues to Drive ASP to Increase
- Conclusions and Summaries



Additional fee:
USD 6,000/year
Language:
English Only
Format:
PDF
Frequency:
Quarterly (Mar., Jun., Sep. and Dec.)

NAND Flash Platinum Membership

NAND Flash Platinum member will receive all data including Silver and Gold membership coverage. NAND Flash Platinum Service covers as below :

● NAND Flash Monthly Datasheet

DRAMeXchange offers you a complete analysis on NAND Flash industry supply/demand sufficiency, cost analysis and price forecast.

(Publish time: The mid of the month)

● NAND Flash Quarterly Research Report

DRAMeXchange Research report covers NAND Flash production overview, shipment update and forecast, new product and technology roadmap, industry and pricing trend.

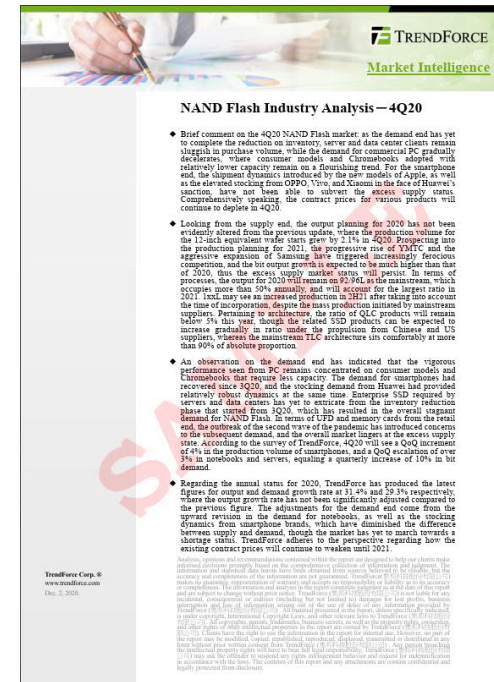
(Publish time: The end of Feb., May, Aug., Nov.)

● Analyst Consulting Service

Members could schedule quarterly conference call with DRAMeXchange Analysts.

● Business Visiting

Meet DRAMeXchange Analysts by person! Schedule business visiting with DRAMeXchange Analysts.



NAND Flash Platinum Membership

NAND Flash Platinum Monthly Datasheet

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

NAND Flash Worldwide Demand Summary
NAND Flash Demand breakdown by Application
NAND Flash Worldwide Quarterly Consumption Summary
Worldwide Handset Quarterly Shipments
Worldwide PC SSD Quarterly Shipments
Worldwide Enterprise SSD Quarterly Shipments
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

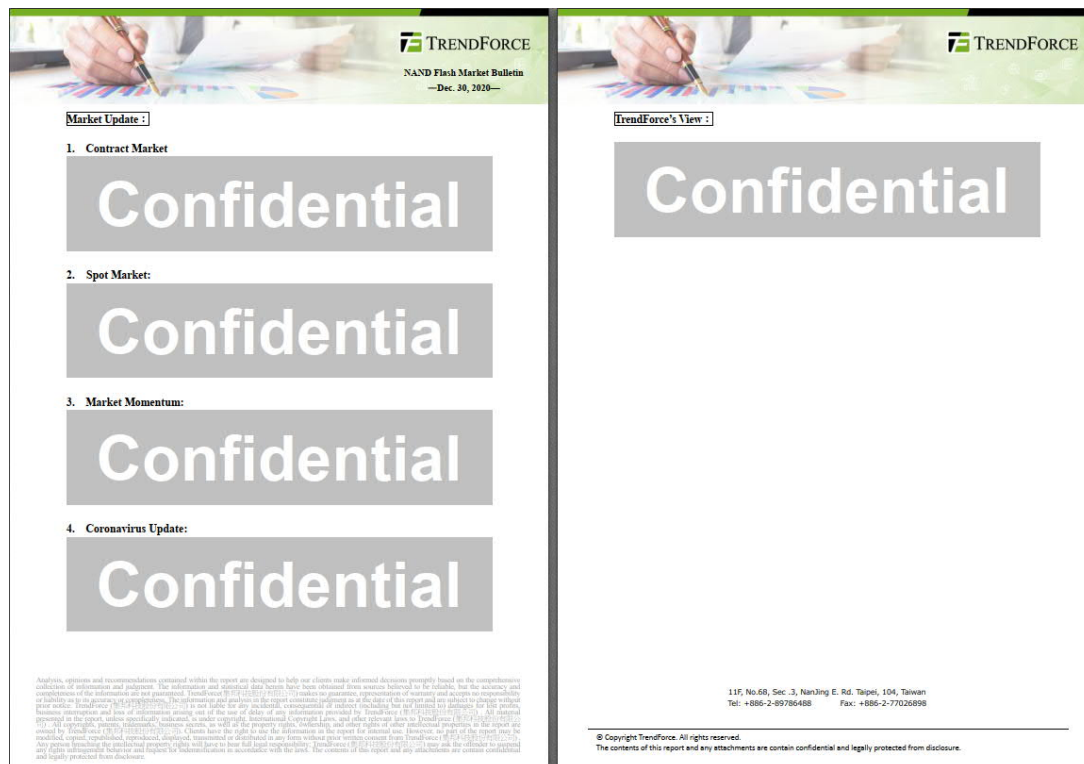
NAND Flash Market Bulletin Membership – Additional purchase



DRAMeXchange offers an additional purchase which only applies to the above NAND Flash Platinum members, a comprehensive market update on the Contract, Spot and the NAND Flash market momentum.

We also provide our point of view on the instant hot topic analysis on the weekly basis.

***At least 40 publication reports in a year.**



Additional fee:
USD 3,500/year
Language:
English / Chinese / Simple Chinese
Format:
PDF
Frequency:
Wednesday of the published week

Memory Platinum Membership (DRAM & NAND Flash Package)

Memory Platinum member will receive all data including Silver and Gold membership coverage. Memory Platinum Service covers as below :

● DRAM/NAND Flash Monthly Datasheet

DRAMeXchange offers you a complete analysis on DRAM and NAND Flash industry supply/demand sufficiency, cost analysis and price forecast.

(Publish time: The mid of the month)

● DRAM/NAND Flash Quarterly Research Report

DRAMeXchange Research report covers DRAM/NAND Flash production overview, shipment update and forecast, new product and technology roadmap, industry and pricing trend.

(Publish time: The end of Feb., May, Aug., Nov.)

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Memory Platinum Membership (DRAM & NAND Flash Package)

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DRAM Market Forecast

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- Worldwide DRAM Production Forecast
- DRAM Cost Structure Update

Memory Platinum Membership (DRAM & NAND Flash Package)

NAND Flash Platinum Monthly Datasheet

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
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NAND Flash Worldwide Supply Update

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- Worldwide Enterprise SSD Quarterly Shipments
- 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

DRAM Diamond Package (DRAM Monthly & Quarterly Datasheet)

DRAM Diamond member will receive all data including DRAM Platinum membership coverage. DRAM Diamond Service covers as below :

- **DRAM Monthly Datasheet**

DRAMeXchange offers you a complete analysis on DRAM industry supply/demand sufficiency, cost analysis and price forecast.

(Publish time: The mid of the month)

- **DRAM Quarterly Datasheet**

DRAMeXchange Offers you a complete analysis on DRAM industry wafer input, production output, technology node...etc. by each company.

(Publish time: The end of Feb., May, Aug., Nov.)

- **DRAM Quarterly Research Report**

DRAMeXchange Research report covers DRAM production overview, shipment update and forecast, new product and technology roadmap, industry and pricing trend.

(Publish time: The end of Feb., May, Aug., Nov.)

- **Analyst Consulting Service**

Members could schedule quarterly conference call with DRAMeXchange Analysts.

- **Business Visiting**

Meet DRAMeXchange Analysts by person! Schedule business visiting with DRAMeXchange Analysts.

DRAM Diamond Package (DRAM Monthly & Quarterly Datasheet)

DRAM Platinum Monthly Datasheet

DRAM Worldwide Supply Update

- DRAM Market Forecast
- DRAM Makers' Revenue
- DRAM Makers Quarterly Revenue Ranking
- DRAM Operating Margin By Each Vendors
- DRAM Makers' Capex
- DRAM Worldwide 12" Quarterly Wafer Starts
- DRAM Makers' Fab Capacity Breakdown by Brand
- DRAM Makers' Fab Capacity Breakdown by Fab
- DRAM Worldwide Monthly Production Summary
- DRAM Worldwide Monthly Production Breakdown by Type
- DRAM Worldwide Monthly Production Breakdown by Region
- DRAM Worldwide Process Ratio by Quarter
- Technology Breakdown by Company
- DRAM Makers' Quarterly Production Output Breakdown by Density

DRAM Supply v.s. Demand Sufficiency Analysis

- DRAM Supply v.s. Demand Sufficiency
- DRAM Supply and Demand Model

DRAM Worldwide Demand Update

- Worldwide Monthly Desktop Shipment
- Worldwide Monthly Notebook Shipment
- Worldwide Monthly PC Shipment
- Worldwide Quarterly Server & Workstation Shipment
- Worldwide Quarterly Graphics Shipment
- Worldwide Quarterly Handset Production Volume
- DRAM Content Per Box in DT, NB

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- DRAM Spot and Contract Prices Forecast by Month
- Worldwide DRAM Production Forecast
- DRAM Cost Structure Update

DRAM Diamond Package (DRAM Monthly & Quarterly Datasheet)

DRAM Diamond Quarterly Datasheet

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- 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
- JHICC DRAM Fabs' Capacity/Output by Design Rule
- CXMT DRAM Fabs' Capacity/Output by Design Rule

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- Nanya DRAM Production Output by Type
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- Winbond DRAM Production Output by Type
- JHICC DRAM Production Output by Type
- CXMT DRAM Production Output by Type

Prices Forecast

- Spot and Contract Prices Forecast by Quarter

NAND Flash Diamond Package (NAND Flash Monthly & Quarterly Datasheet)

NAND Flash Diamond member will receive all data including NAND Flash Platinum membership coverage. NAND Flash Diamond Service covers as below :

- **NAND Flash Monthly Datasheet**

DRAMeXchange offers you a complete analysis on NAND Flash industry supply/demand sufficiency, cost analysis and price forecast.

(Publish time: The mid of the month)

- **NAND Flash Quarterly Datasheet**

DRAMeXchange Offers you a complete analysis on NAND Flash industry wafer input, production output, technology node...etc. by each company.

(Publish time: The end of Feb., May, Aug., Nov.)

- **NAND Flash Quarterly Research Report**

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(Publish time: The end of Feb., May, Aug., Nov.)

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NAND Flash Diamond Package (NAND Flash Monthly & Quarterly Datasheet)

NAND Flash Platinum Monthly Datasheet

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

- NAND Flash Worldwide Demand Summary
- NAND Flash Demand breakdown by Application
- NAND Flash Worldwide Quarterly Consumption Summary
- Worldwide Handset Quarterly Shipments
- Worldwide PC SSD Quarterly Shipments
- Worldwide Enterprise SSD Quarterly Shipments
- 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

NAND Flash Diamond Package (NAND Flash Monthly & Quarterly Datasheet)

NAND Flash Diamond Quarterly Datasheet

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Major NAND Flash Makers's Capacity Breakdown by Fab
Worldwide Annual NAND Flash Capacity Forecasts

NAND Flash Fab Capacity Update

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Forecast of Intel's Capacity/ Output Breakdown by Fab
Forecast of YMTC's Capacity/ Output Breakdown by Fab

NAND Flash Fab Production Output Update

Forecast of NAND Flash Makers' Output Breakdown by Type & Density
Forecast of Samsung's NAND Flash Output Breakdown by Type & Density
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Production Breakdown Analysis

Global NAND Flash Production Breakdown by Makers
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KIOXIA/WD's Production Breakdown by Node Technology
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Micron's Production Breakdown by Node Technology
Intel's Production Breakdown by Node Technology
PSC's Production Breakdown by Node Technology
Winbond's Production Breakdown by Node Technology
MXIC's Production Breakdown by Node Technology
YMTC's Production Breakdown by Node Technology
SMIC's Production Breakdown by Node Technology

NAND Flash Makers' Production Breakdown by Architecture Type
Samsung's Production Breakdown by Architecture Type
KIOXIA/WD's Production Breakdown by Architecture Type
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PSC's Production Breakdown by Architecture Type
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YMTC's Production Breakdown by Architecture Type
SMIC's Production Breakdown by Architecture Type

Memory Diamond Package (DRAM & NAND Flash Monthly & Quarterly Datasheet)

Memory Diamond member will receive all data including Memory Platinum membership coverage. Memory Diamond Service covers as below :

- **DRAM/NAND Flash Monthly Datasheet**

DRAMeXchange offers you a complete analysis on DRAM and NAND Flash industry supply/demand sufficiency, cost analysis and price forecast.

(Publish time: The mid of the month)

- **DRAM/NAND Flash Quarterly Datasheet**

DRAMeXchange Offers you a complete analysis on DRAM/NAND Flash industry wafer input, production output, technology node...etc. by each company.

(Publish time: The end of Feb., May, Aug., Nov.)

- **DRAM/NAND Flash Quarterly Research Report**

DRAMeXchange Research report covers DRAM/NAND Flash production overview, shipment update and forecast, new product and technology roadmap, industry and pricing trend.

(Publish time: The end of Feb., May, Aug., Nov.)

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Memory Diamond Package (DRAM & NAND Flash Monthly & Quarterly Datasheet)

DRAM Platinum Monthly Datasheet

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- Worldwide Quarterly Handset Production Volume
- DRAM Content Per Box in DT, NB

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- Worldwide DRAM Production Forecast
- DRAM Cost Structure Update

Memory Diamond Package (DRAM & NAND Flash Monthly & Quarterly Datasheet)

NAND Flash Platinum Monthly Datasheet

NAND Flash Market Financial update

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Sufficiency Analysis

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

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- CXMT DRAM Production Output by Type

Prices Forecast

- Spot and Contract Prices Forecast by Quarter

Memory Diamond Package (DRAM & NAND Flash Monthly & Quarterly Datasheet)

NAND Flash Diamond Quarterly Datasheet

Wafer Output Breakdown Analysis

Major NAND Flash Makers's Capacity Breakdown by Fab
Worldwide Annual NAND Flash Capacity Forecasts

NAND Flash Fab Capacity Update

Forecast of NAND Flash Makers' Output Breakdown by Type & Density
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NAND Flash Fab Production Output Update

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Winbond's Production Breakdown by Node Technology
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SMIC's Production Breakdown by Node Technology

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PSC's Production Breakdown by Architecture Type
Winbond's Production Breakdown by Architecture Type
MXIC's Production Breakdown by Architecture Type
YMTC's Production Breakdown by Architecture Type
SMIC's Production Breakdown by Architecture Type

NAND Flash Wafer Price

Starting from Q4 of 2015, DRAMeXchange will begin to cover the contract prices for TLC-Wafers and starting from Q2 of 2016, we will also begin to cover the contract prices for MLC-Wafers, which will be negotiated on a monthly basis between the NAND Flash industry's suppliers and module makers. We will be providing updates each month to ensure members receive the most accurate and timely information.

*TLC wafer spot price had been published since 2019/01/14.

We do ensure members receive the most accurate and timely information.

NAND Flash Wafer Price Service covers as below :

- TLC Wafer Spot Price (Weekly updated)
 - Normal member has a week lag relatively
- Wafer Contract Price (Monthly updated)

Wafer Spot Price <small>MORE</small>		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
T 512Gb TLC							
T 256Gb TLC							
T 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

Mobile Package

Mobile Package Service covers as below :

● Mobile Contract Price Update

Mobile DRAM Contract Price Quarterly Update; eMMC/UFS Contract Price Quarterly Update.

(Publish time: The end of Jan., Apr., July, Oct.)

● Mobile Quarterly Datasheet

Quarterly Mobile DRAM and Mobile NAND Flash latest market supply/demand update.

(Publish time: The end of Feb., May, Aug., Nov.)

● Mobile DRAM Quarterly Research Report

(Publish time: The end of Feb., May, Aug., Nov.)

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

Mobile DRAM Industry Analysis—4Q20

- TrendForce predicts the production volume of smartphones for 2020 to be 1.246 billion units, with a YoY deterioration of 11%, and a YoY growth of roughly 9% for 2021 at 1.318 billion units under the anticipation that the market gradually recovers from the impact of the COVID-19 pandemic. The production on the market share of 5G smartphones for 2020 and 2021 is 19% and 31% respectively, which is primarily navigated by the downward extension of 5G applications to the vast mid-end market by major AP chipset suppliers.
- In terms of revenue, Huawei's aggressive sweep of market inventory within the grace period had derived a substantial degree of demand that complemented the negative impact from the 3-4% reduction in the ASP and provided support for the mere 2.0% QoQ depletion in the 3Q20 revenue of mobile DRAM, with a total market value of US\$ 558 billion. Prospecting into 4Q20, the profound extent of stocking in materials by OPPO, Vivo, and Xiaomi from anticipating Huawei's transferred market share will compensate for the 0-5% declination in the contract prices of 4Q20, whereas the revenue and market share are expected to remain constant to 3Q20 or slightly improve.
- Similarly, the consecutive amplification on the total volume of procurement for 4Q20 by smartphone brands that are expected to benefit from the incident of Huawei has subdued mobile DRAM from the initial status of excess supply to a strained supply state, and the reduction of contract price has subsided accordingly. This particular tendency is expected to persist until 1Q21, where contract prices are estimated to be predominantly constant to that of 4Q20. However, the entry of new Honor may further exacerbate the supply of mobile DRAM, and the chain reaction regarding an inflation market of the off-season may likely occur in the market then.
- Regarding the technology on the processes, the three mainstream suppliers have all entered the mobile DRAM generation that is focused on the 10nm grade, and process progression will contribute to the bit growth of both 2020 and 2021. Given that the drastic reduction in contract prices resulted from the excess supply market last year, OEMs will implement a prudent evaluation on the progression strategy of DR expansion for new processes in the future, while also obtain a balance between stable profit and revenue market share.
- LPDDR5 has entered mass production. LPDDR5 offers faster transmission rate and a continuous optimization on power performance in terms of specifications, and had a penetration rate of 1.7% in 2020 under the rapidly diminished price difference between the product and LPDDR4X. The penetration rate is expected to arrive at 18% next year with the release of 5G applications.
- Smartphone brands are still willing in adopting large capacity per bit this year as a result of the decline of the memory market in 2019, and the average content has escalated from 3 GB to 6 GB last year to 8 GB box, with another 10% of ascension to 5 GB box expected for next year. The content of a single unit had been propelled by the high-end market through the expansion to 12GB and 16GB for the flagship specifications of Android is now able to comprehensively satisfy the market demand, and the subsequent adoption of content will gradually decelerate under no investigation from innovative applications, and the market growth will be limited to the ascension of mid-to-low-end smartphones.

TrendForce Corp. © www.trendforce.com Dec. 1, 2020

Mobile Package

Mobile Quarterly Datasheet

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

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

eMMC Application

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- eMMC Consumption by Density
- Smartphone in eMMC
- Media Tablet in eMMC
- Smart TV in eMMC
- E-Reader in eMMC

Smartphone Market Decode

Smartphone Market Decode covers as below :

- [Smartphone Market Quarterly Datasheet](#)
- [Smartphone Market Quarterly Research Report](#)

TrendForce, a global market intelligence firm for the technology sector, proudly presents “Smartphone Market Decode” – a quarterly research report that draws from the best resources and analyses from the company’s elite researchers. This work represents the synergy of the following teams under our wings: the Department of Semiconductor Research, the Department of Display Research, and the divisions at TRI for the study of advanced technologies.

In addition to first-hand data on the smartphone production volumes of the major electronics brands and the latest intelligence on the markets for key components, “Smartphone Market Decode” offers in-depth analyses on the developments of a wide range of mobile-related technologies. This report assists enterprises in adapting to the rapidly changing market environment by providing the most real-time and professional knowledge that can be used to make the best operational decisions.

- 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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- 3 AP & Modem
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- 7 AR/VR & New Application
- 8 Summary

Server DRAM Package

Server DRAM Package Service covers as below :

- **Server DIMM Monthly Contract Price**
(Publish time: The end of the month)
- **Server DRAM Quarterly Datasheet**
Quarterly Server DRAM latest market revenue/output update.
(Publish time: The end of Feb., May, Aug., Nov.)
- **Server DRAM Quarterly Research Report**
Current Server DRAM industry analysis on quarterly updated basis.

NEW Last quarter Server DRAM market status overview and summary on quarterly updated basis.
(Publish time: The end of Feb., May, Aug., Nov.)

Server DIMM Price Update	Dec.			Change		
	Hi	Low	Avg	Hi(%)	Low(%)	Avg(%)
DDR4 2666/2933Mbps 16GB RDIMM						
DDR4 2666Mbps 32GB RDIMM						
DDR4 2933Mbps 32GB RDIMM						
DDR4 2666/2933Mbps 64GB LRDIMM						
DDR4 2666/2933Mbps 64GB RDIMM						

Last update: 2020/12/31

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)

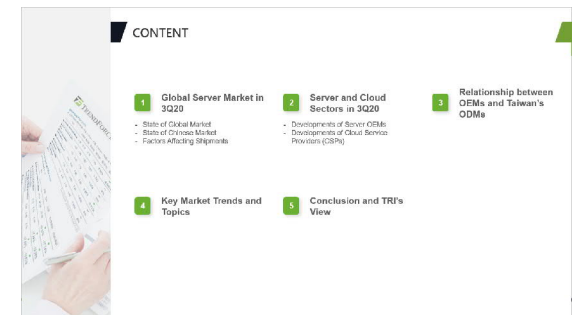
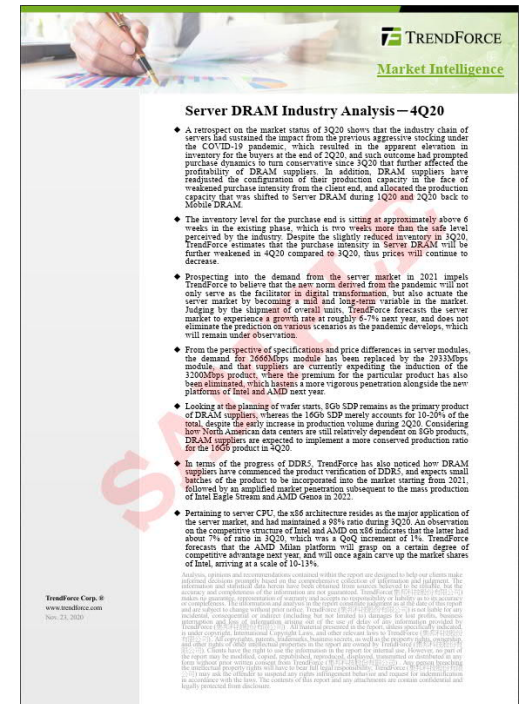
Server DRAM Output by Product (Generation)

Server DRAM Output by Product (Density)

Server DRAM Technology Breakdown by Company

Server Demand- Server Unit Shipment by Brand,

Server DRAM Price Forecast



Enterprise SSD Package

Enterprise SSD Package Service covers as below :

- **Enterprise SSD Contract Price**

The Enterprise SSD contract prices are covering North America, Japan, Europe, and other markets and generally derived from the quarterly negotiations between enterprise SSD markets.

(Publish time: The end of Jan., Apr., July, Oct.)

- **Enterprise SSD Quarterly Datasheet**

Enterprise SSD Datasheet provides you with the latest SSD density and shipment forecast for server equipment and data centers. Also, enterprise SSD interface, form factor breakdown, and read / mixed read / write load / write intensify Enterprise SSD breakdown.

(Publish time: The end of Feb., May, Aug., Nov.)

Enterprise SSD

- [Enterprise SSD Revenue](#)
- [Enterprise SSD ASP](#)
- [Worldwide Enterprise SSD Shipment](#)
- [Worldwide Enterprise SSD Shipment by brand](#)
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- [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](#)

EnterPrise SSD Contract Price Update (Unit: USD)		3Q20			4Q20			Change		
Item		Hi	Low	Avg	Hi	Low	Avg	Hi(%)	Low(%)	Avg(%)
PCIe NVMe Gen3X4 2.5"	960GB									
	1920GB									
	3840GB									
	7680GB									
SATA3 read intensive 2.5"	480GB									
	960GB									
	1920GB									
	3840GB									
	7680GB									

Last update: 2020/10/23

SSD Package

SSD Package Service covers as below :

- **WW SSD Street Price**

WW SSD Street Price collected by diverse brands and densities in major markets, including NA, Japan and EU.

(Publish time: The end of biweekly of the month)

- **PC-Client OEM SSD Contract Price**

The worldwide PC-Client OEM SSD contract prices are generally derived from the quarterly negotiations between SSD suppliers and top tier OEM/ODMs.

(Publish time: The end of Jan., Apr., July, Oct.)

- **SSD Quarterly Datasheet**

SSD Datasheet provides you with latest SSD density and shipment forecast in PC, server, disk on module and MID market.

(Publish time: The end of Feb., May, Aug., Nov.)

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

TRENDFORCE		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	SSDPEKNW512C8X	PCIe				
Intel	Mainstream	660P	1024	M.2	3D-QLC	SSDPEKNW10178X1	PCIe				
Intel	Mainstream	660P	2048	M.2	3D-QLC	SSDPEKNW020178X1	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

SLC NAND Flash Datasheet

SLC NAND Flash Datasheet Service covers as below :

- **SLC NAND Flash Quarterly Datasheet**

Besides the mainstream market segments, DRAMeXchange also provides price and supply/demand analyses for SLC solutions that belong to the more niche area of the NAND Flash market.

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

Frequency:

Quarterly (Mar., Jun., Sep. and Dec.)

Consumer DRAM Datasheet

Consumer DRAM Datasheet Service covers as below :

- **Consumer DRAM Quarterly Datasheet**

Besides the mainstream product segments of the DRAM market, DRAMeXchange's research now encompasses specialty (consumer) DRAM products as well. Analyses in this area pertain to product development plans and production outputs of suppliers, price trends, etc.

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

Frequency:

Quarterly (Jan., Apr., Jul. and Oct.)

Foundry Project

Foundry Project Service covers as below :

- **Foundry Project Quarterly Datasheet**

The industry's latest market revenue updates, capacity utilization rates, and technological developments. Including the world's major regions (China, US, Taiwan, Korea, Japan, etc.) and leading wafer manufacturers (including, but not limited to: TSMC, UMC, Samsung and SMIC etc.). Also provides you major foundry client's wafer input in advanced technology process.

(Publish time: The end of Feb., May, Aug., Nov.)

- **Market Bulletin Report**

We will provide an update on each wafer manufacturers status on the biweekly basis.

(Publish time: Monday of the published week)

- **Special Report**

First-hand information for un-expecting issue and our point of view on the market news update.

- **Analyst Consulting Service**

Members could schedule quarterly conference call with DRAMeXchange Analysts.

- **Business Visiting**

Meet DRAMeXchange Analysts by person! Schedule business visiting with DRAMeXchange Analysts.

Foundry Project

- Foundry Project Quarterly Datasheet - (Publish time: The end of Feb, May, Aug, Nov)

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

Foundry Project

- Foundry Project Quarterly Datasheet - Installed Capacity

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.																

Foundry Project

- Foundry Project Quarterly Datasheet - Demand-Foundry Main Customer

TRENDFORCE		Foundry Main Customers' Wafer Input by Tech. Node																																																															
Main Customers' monthly wafer input by technology node (k units)		Update: Dec. 1st, 2020																																																															
		1Q18				2Q18				3Q18				4Q18				1Q19				2Q19				3Q19				4Q19				1Q20				2Q20				3Q20				4Q20E				1Q21F				2Q21F				3Q21F				4Q21F			
5nm																																																																	
Apple																																																																	
Hisilicon																																																																	
Xilinx																																																																	
AMD																																																																	
Qualcomm																																																																	
nVIDIA																																																																	
MediaTek																																																																	
Intel																																																																	
Total																																																																	
UTR%																																																																	
6/7nm																																																																	
Apple																																																																	
Hisilicon																																																																	
Qualcomm																																																																	
Bitmain																																																																	
AMD																																																																	
Xilinx																																																																	
MediaTek																																																																	
nVIDIA																																																																	
Intel																																																																	
Others																																																																	
Total																																																																	
UTR %																																																																	
10nm																																																																	
Apple																																																																	
Hisilicon																																																																	
Bitmain																																																																	
MediaTek																																																																	
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UTR %																																																																	
12/16nm																																																																	
Broadcom																																																																	
Apple																																																																	
nVIDIA																																																																	
Hisilicon																																																																	
MediaTek																																																																	
Qualcomm																																																																	
Bitmain																																																																	
Others																																																																	
Total																																																																	
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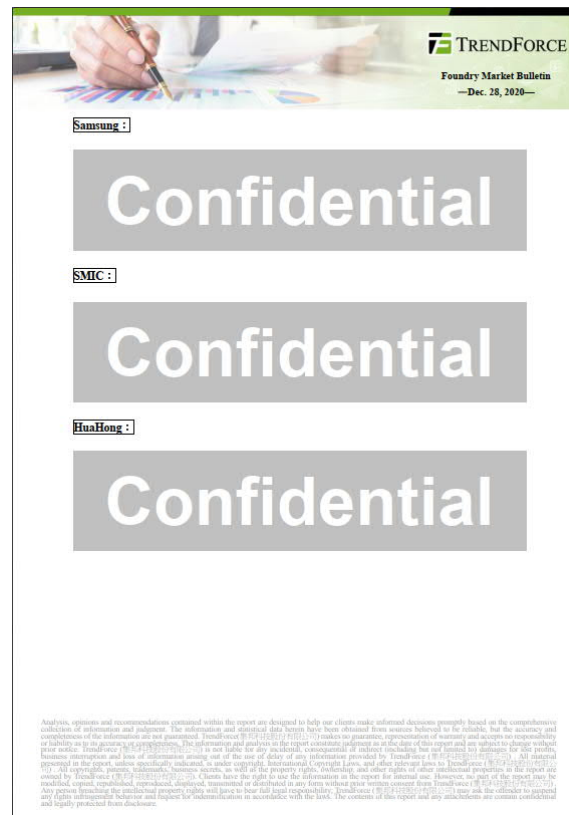
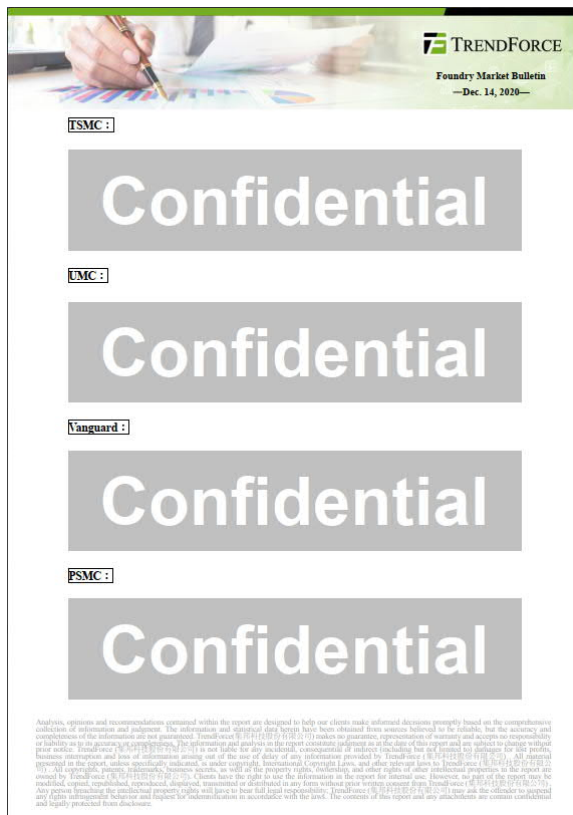
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Foundry Project

- Market Bulletin Report

We will provide an update on each wafer manufacturers status on the biweekly basis.

*At least 20 publication reports in a year.



Language:
English / Chinese / Simple Chinese
Format:
PDF
Frequency:
Monday of the published week

Foundry Project

- Special Report

First-hand information for un-expecting issue and our point of view on the market news update.

TrendForce
Market Intelligence

TrendForce : Final Piece of the Puzzle Obtained; Intel Expected to Place Official CPU Orders from TSMC This Year

As indicated by the Semiconductor Research Department under the global market intelligence firm TrendForce, Intel has successively mentioned how the long-term core development strategy of the company is gradually shifting from the business of CPU processors in the past to xPU data computing services, and disclosed that partial CPU businesses will be outsourced in the future, during the Earnings Call in 3Q20, IR Event in 4Q20, and the product launch at CES 2021.

TrendForce has observed that Intel has been leading the market of servers and PC processors that is primarily focused on the x86 architecture through an IDM pattern, and portraying the pioneer in the shrink process from the Moore's law of semiconductors, though the company has experienced sequential hindrances in the technical development of 10nm and 7nm processes in recent years. Simultaneously, fabless, fab-lite, and system integration clients are able to continuously obtain IC design and manufacturing services that are higher in computing performance, lower in power consumption, and more in line with cost advantages, under the device scaling breakthrough from TSMC foundry at 10nm, 7nm, and 5nm nodes for the SoC processor market that is based on the ARM architecture.

Under the collaborations between fabless and foundry, paired with OIP (Open Innovation Platform), DTCO (Design & Technology Co-Optimization), and Advanced Back-end Packaging services led by TSMC, Apple and HiSilicon managed to announce the most advanced AP-SoC mobile processor. Intel is progressively threatened by the market share of AMD in the PC processor market on the client end, and the latter has also surpassed both Intel and Nvidia in terms of the supply stability of graphics and data centers. In addition, the MI processor autonomously developed by Apple through the 5nm process of TSMC has resulted in Intel losing the major CPU orders from MacBook and Mac Mini, which also initiated the development of fabless strategy for additional client or enterprise suppliers, e.g. Microsoft, Amazon, Google, Facebook, Alibaba, etc.

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

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Foundry Research Report

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China's Semiconductor Development Report

China's Semiconductor Development Report covers as below :

- [Quarterly Research Report](#)

The analysis for Chinese makers capacity on the DRAM and NAND Flash markets, and their technology development status on the DRAM and NAND Flash industry.

(Publish time: The end of Mar., June, Sep., Dec.)

Nor Flash Special Report

Analysis of Global NOR Flash Market :

Supply

- Analysis of Existing Capacity
- Analysis of Existing Players – Cypress, Macronix, Micron, Winbond...etc
- Forecast for Output Expansion

Demand

- AMOLED
- TDDI
- IOT

Conclusion

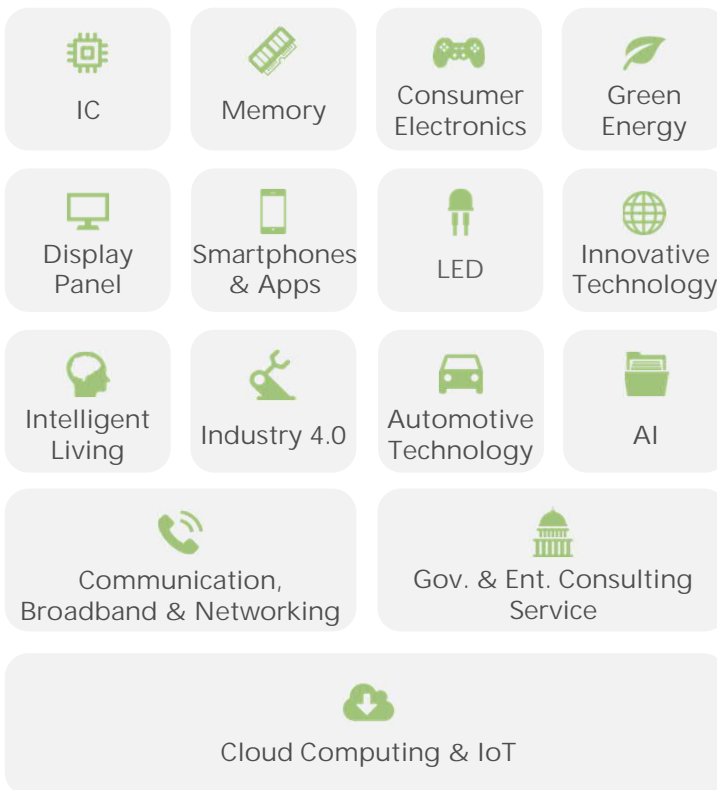


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