

Semiconductor WEEK:

April 29, 2022

An overview of results and conclusions from recent reports at TechInsights

Chip Market Research Services

Supply-chain clouds are still hanging over the industry

- Order activity for semiconductor equipment fell slightly, drifting at 112 degrees
- Capacity Utilization by Node

Semiconductor Analytics

Last Week in the Semiconductor Market:

Semiconductor sales jumped >15% W/Y again last week. Sales are closing in on 2021 levels. The IC weather cooled another 1°F last week. Zooming in on Analog & Power growth this week, 13-wk MA growth remains above 2021 levels. Growth is forecast to finish 2022 around +17% Y/Y, reaching \$111B.

TechInsights' IC Supply/Demand indices moved to Balanced. Chip demand is cooling as inflation, COVID lockdowns in China, and Russia's war work to accelerate the shortage's steady easing. GPU prices are dropping signaling the chip shortage is starting to improve.

Inflation is affecting Electronics' Retail Prices

Chip History Center

People: Mark Bohr, Intel Fellow discusses process technology development on Intel's 65nm Process in this 2003 interview.

Exhibits: The Near Impossibility of Making a Microchip:

This superb article, about the birth of the Perkin Elmer Projection Scanning Aligner, was first published in the Fall 1999 issue of American Heritage of Information & Technology.

The Chip Insider

Strategy and Tactics: SEMI ISS Takeaways Continued

Semiconductor Stocks

- *TechInsights' Semiconductor Stock Indices ended the week mixed*
- *Semiconductor Stock Index was flat*
 - *MagnaChip Semiconductor was this week's biggest winner*
- *Semiconductor Equipment Stock Index sunk*
- *EDA Stock Index increased*
- *Electronics Materials Stock Index was led up by SOITEC*
- *Hottest Stocks: MagnaChip Semiconductor, SOITEC, MaxLinear, Western Digital, Silicon Laboratories, and Advantest*

TechInsights

The Chip Insider[®]'s Graphics File



April 2022

Supply-chain clouds are still hanging over the industry

- Order activity for semiconductor equipment continued to trend lower, slipping a slight 0.5 points
- The backlog for equipment has surged to record highs and visibility is stretching into 2023
- TechInsights' Chip Price Performance Index continued to decline

Forecast as of April 2022:	2021	2022
Semi Equipment (\$B):	\$ 126.6	\$ 152.4
Sequential Change	36.6%	20.3%
Capacity Utilization:	97.2%	96.9%
ICs (\$B):	\$ 492.3	\$ 570.5
Sequential Change	27.4%	15.9%
IC Units (BU):	394.2	439.0
Sequential Change	23.7%	11.4%
Electronics (\$B) :	\$ 2,574	\$ 2,758
Sequential Change	18.9%	7.1%



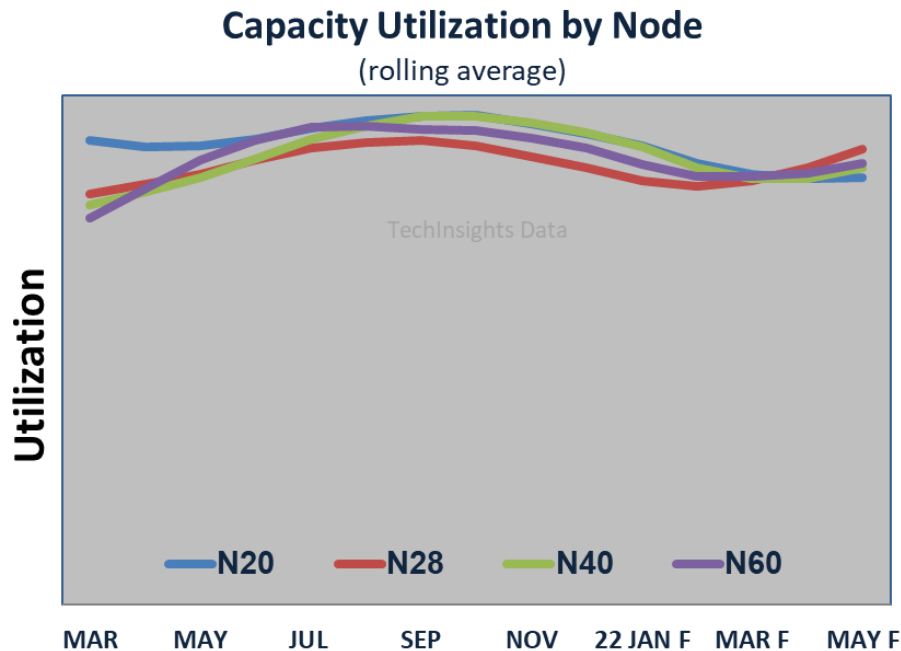
[Contact us to access more details](#)

The Chip Insider[®] Graphics

Capacity Utilization by Node:

- Utilization rates remain at high levels

Fab Capacity Utilization by Node: chart gives rolling averages for 20nm 22nm 28nm 32nm 40nm 45nm 60nm 65nm and larger



Approved for public release with attribution.
Copyright © TechInsights Inc. All rights reserved.

Insights Interview:

Workforce Development Solutions...

with Ajit Manocha of SEMI



What the conversation is about:

- Labor shortages have become the echo pandemic from the ravages COVID has had on the economy.
- This is no truer than in the semiconductor industry, where Workforce Development has long been on the To-Do lists of many.
- Most industry efforts appear to be more about lobbying others to do something about workforce development.
- It's really hard to do something substantive about it but SEMI is.

[Click here to watch online](#)

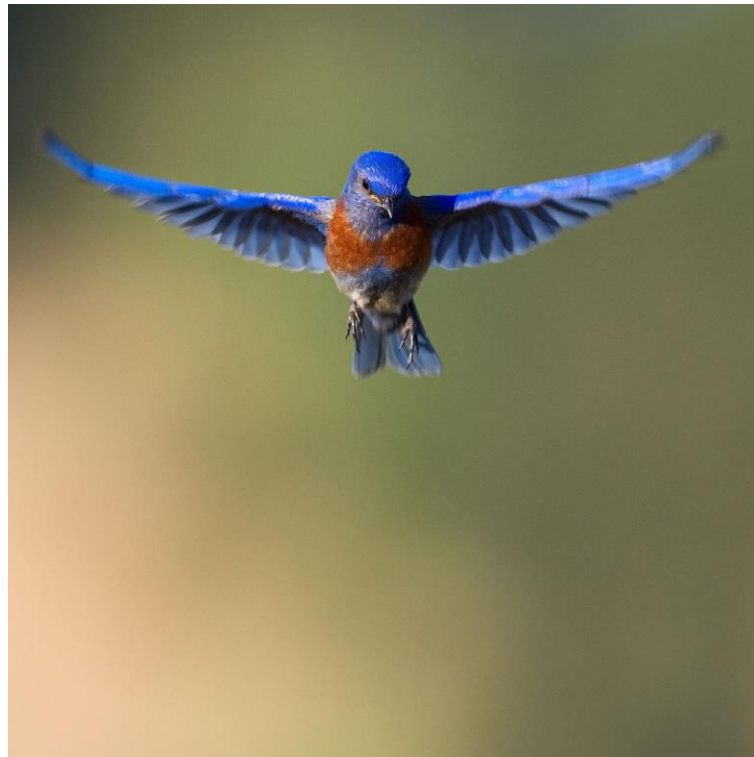
Semiconductor Analytics

Last Week in the Semiconductor Market:

Semiconductor sales jumped >15% W/Y again last week. Sales are closing in on 2021 levels. The IC weather cooled another 1°F last week. Zooming in on Analog & Power growth this week, 13-wk MA growth remains above 2021 levels. Growth is forecast to finish 2022 around +17% Y/Y, reaching \$111B.

TechInsights' IC Supply/Demand indices moved to Balanced. Chip demand is cooling as inflation, COVID lockdowns in China, and Russia's war work to accelerate the shortage's steady easing. GPU prices are dropping signaling the chip shortage is starting to improve.

Inflation is affecting Electronics' Retail Prices.



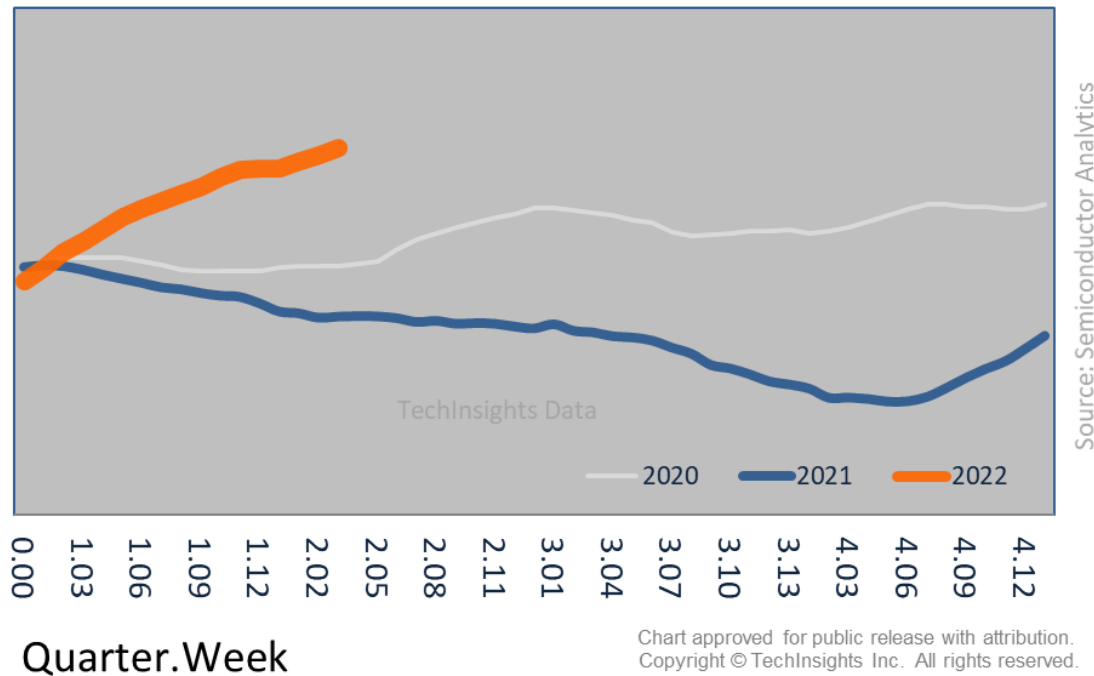
1: Measures Order Activity 2: Measures Pricing Power

Electronics Retail Pricing Trends:

for PC notebooks Tablets Smartphones Cell phones Digital Cameras Appliances TVs

Inflation is affecting
Electronics' Retail
Prices

Electronics Pricing Barometer
indexed 13 week moving average



Source: Semiconductor Analytics

Chart approved for public release with attribution.
Copyright © TechInsights Inc. All rights reserved.

Insights Interview:

Innovation in Memory ...

with Scott DeBoer of Micron
Technology



What the conversation is about:

- Scott DeBoer of Micron Technology has a conversation with Dan Hutcheson about what it takes to innovate in Memory today. Scott leads Micron's global technology development and engineering efforts – from silicon design to high-value system solutions.

[Click here to watch online](#)



Strategy and Tactics: SEMI ISS Takeaways Continued

Summaries:

SEMI ISS Takeaways Continued: Last week I promised to move on to sake and jenever. As for sake, some of the most interesting bits you learn at a conference are in the networking time... Tom Tsuneishi of TEL. Tom is a great strategic thinker, which is one reason why he was awarded SEMI's Sales and Marketing Excellence trophy. Recently, he told investors that "the semiconductor market will grow for the next 300 years." Now that's strategic to the extreme. His proof point: "Think about cars... The first one was steam powered, around the 1700s'...'Next was an electric car ... Then the internal combustion engine car"

Ivo Raaijmakers of ASM International took a historical perspective ... that showed how executing Moore's Law would continue to be more of a materials play... Going forward, Ivo sees an increasing shift from 2D to 3D scaling approaches with a need for... More takeaways from SEMI ISS: William Dally from Nvidia and WOICs, Siva Yerramilli on Synopsys' SysMoore, Ram Viswanath of Intel on ... "an explosion of metal layers," Nate Baxter on TEL's ICE growth engine, Tom Sonderman of SkyWater on the resurgence of 200mm manufacturing, Inna Skvortsova of SEMI on fab construction growth, Bindiya Vakil of supply-chain disruptive event tracker Resilinc, Scotten Jones of IC Knowledge on why Intel is catching up to TSMC – Though I disagree with his comments about Paul Otellini.

Moore's Law and Sanjay Natarajan: I must apologize to Sanjay for not mentioning he was the first one to recognize from Gordon's paper that "It may prove to be more economical to build large systems out of smaller functions, which are separately packaged and interconnected" pointed all the way to what is happening today with STCO, or System-Technology Co-Optimization. As I recall, he used it on an IEDM panel in 2019 when he was still at Applied Materials. I was skeptical. Sanjay reads Moore's paper at least once a year, making him a true Moore's Law scholar. His contribution in recognizing how the sentence "It may prove to be more economical to build large systems out of smaller functions, which are separately packaged and interconnected" is fundamental to the future of our industry, because Moore's Law is so important a tool to express at a public level how our industry delivers value growth to the world. Thank you, Sanjay.

Dan's Book Shelf: Keeping At It: The Quest for Sound Money and Good Government by Paul Volker and Christine Harper. Money: The True Story of a Made-Up Thing, by Planet Money cohost Jacob Goldstein.

"If you don't like what's being said, change the conversation"

— Don Draper, Mad Men

[Contact us to get the full report and more](#)



THE CHIP HISTORY CENTER

The Virtual Museum of Semiconductors

Section

Search...



www.chiphistory.org

[Home](#) [Time Line](#) [Exhibits](#) [People](#) [Organizations](#) [Learn](#)

LOGIN

PUBLISH

Semiconductors are to the information age what engines are to the industrial age. Chips are the steam engine, the internal combustion engine, and the fractional horsepower engine rolled up into one. The Chip History Center is dedicated to preserving that history for future generations.

People: [Mark Bohr](#), Intel Fellow discusses process technology development on Intel's 65nm Process in this 2003 interview. It marks the first fully integrated 65nm process flow. The process was a fully featured process for MPUs including copper interconnect, second generation strained silicon, HKMG and more including their new D1D manufacturing fab...



Exhibits: [The Near Impossibility of Making a Microchip:](#)

This superb article, about the birth of the Perkin Elmer Projection Scanning Aligner, was first published in the Fall 1999 issue of American Heritage of Information & Technology. It describes a birth that was almost stillborn, but without which, today's step-and-scan exposure systems might not exist; nor would the super-complex chips at the heart of almost all electronic devices. Read the full article below to get a feel for the industry's struggles and how close it might have come to utter failure, but how it was saved by some of our industry's brightest stars.

Supporters:

ADVANTEST

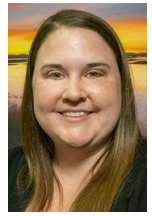


exyte



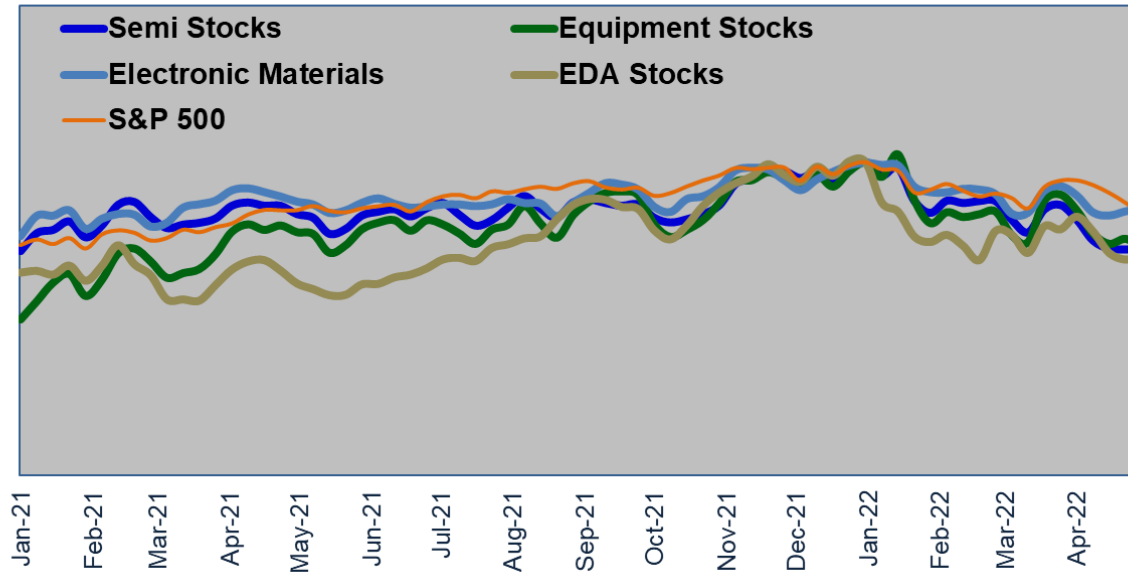
semiStockWEEK:

TechInsights' Semiconductor Stock Indices ended the week mixed, Semiconductor Equipment stock index sunk to a new yearly low along with the S&P 500. Electronic Materials and EDA indices both squeezed out a gain while the Semiconductor index was flat.



Semiconductor Industry Stock Performance Indices

(Stock Prices Indexed to 100 in last week of 2021)



Approved for public release with attribution.
Copyright © TechInsights Inc. All rights reserved.

TechInsights' Stock Indices:

Semiconductors +0.0%
Equipment -2.9%
Electronic Materials +0.9%
EDA +0.7%

Semiconductor Stocks:

Weekly Growth and Forward P/E Ratios by Company

Weekly Gains			4/29/2022		
Semiconductor Stocks	Price Change	Forward P/E	Semiconductor Stocks	Price Change	Forward P/E
IDM			Fab-lite to Fabless		
Intel	-6.3%	13	AMD	-3.0%	19
Micron	-1.8%	5	Analog Devices	-0.6%	17
ON Semiconductor	0.6%	12	Broadcom	-5.5%	15
Samsung Electronics	0.6%	-	IBM	-4.4%	13
SK hynix	1.8%		Infineon	-6.1%	14
STMicroelectronics	-2.3%	11	MagnaChip Semiconductor	21.1%	10
Western Digital	7.3%	6	MaxLinear	8.5%	11
Foundry & OSAT			MediaTek	-2.8%	-
Amkor	-2.3%	7	NVIDIA	-5.0%	29
ASE	-3.3%	9	Panasonic	0.1%	10
GLOBALFOUNDRIES	3.1%	19	Qualcomm	5.2%	11
JCET	-5.0%	12	Silicon Laboratories	6.0%	38
SkyWater Technology	-2.2%	-	Skyworks	-1.6%	9
SMIC	3.3%	10	Texas Instruments	-1.8%	19
TSMC	-3.0%	15			
UMC	0.5%	8			

Above Avg
Top 4-6
Top 1-3

TechInsights' Semiconductor Stock Index was flat this week. MagnaChip Semiconductor was this week's biggest winner with strong gains due to promising acquisition rumors. MaxLinear, Western Digital, and Silicon Laboratories were also top performers this week.

IDM +0.0%
Foundry & OSAT -1.1%
Fabless & Fablite +0.7%

AMD^{AMD} Analog Devices^{ADI} Amkor^{AMKR} ASE
ASX Broadcom^{AVGO} GLOBALFOUNDRIES^{GFS}
IBM^{IBM}
Infineon^{IFNNY.PK} Intel^{INTC} JCET^{600584.SS}
Micron Technology^{MU} On Semiconductor^{ON}
Panasonic^{PC} MagnaChip Semiconductor^{MX}
MaxLinear^{MXL} MediaTek^{2454.TW}
NVIDIA^{NVDA} Qualcomm^{QCOM}
Samsung Electronics^{005930.KS} Silicon
Laboratories^{SLAB} SkyWater Technology^{SKYT}
Skyworks^{SWKS} SMIC^{SMI}
STMicroelectronics^{STM} Texas Instruments^{TXN}
TSMC^{TSM} UMC^{UMC} STMicroelectronics^{STMicroelectronics} Western Digital
WDC

Chip Equipment & Related Stocks:

Weekly Growth and Forward P/E Ratios by Company

TechInsights' Semiconductor Equipment Stock Index sunk this week. Advantest, FormFactor, ASM Pacific Technology, Lam Research, and Tokyo Electron being the only five companies to finish in positive territory.

WFE -3.0%
 Test +2.2%
 Assembly -5.0%

Applied Materials ^{AMAT} Advantest ^{ATEYY}
 ASM International ^{ASMIY}
 ASM Lithography ^{ASML} ASM Pacific ^{0522.HK}
 BE Semiconductor ^{BESII.PK}
 FormFactor ^{FORM} KLA ^{KLAC}
 Kulicke & Soffa ^{KLIC} Lam Research ^{LRCX}
 Onto Innovation ^{ONTO} Nikon ⁷⁷³¹
 Teradyne ^{TER} Tokyo Electron Limited ⁸⁰³⁵
 Veeco ^{VECO}

Weekly Gains			4/29/2022		
Equipment Stocks	Price Change	Forward P/E	Equipment Stocks	Price Change	Forward P/E
Wafer Fab:			Test:		
Applied Materials	-2.2%	12	Advantest	5.5%	-
ASM International	-12.0%	24	Teradyne	-3.4%	16
ASML	-7.2%	29	FormFactor	4.4%	18
KLA	-1.5%	14			
Lam Research	0.6%	12	Assembly:		
Onto Innovation	-0.5%	-	BESI	-14.9%	-
Nikon	-2.0%	-	Kulicke & Soffa	-3.4%	8
TEL	0.0%	-	ASM Pacific Technology	3.2%	
Veeco Instruments	-2.4%	12			

Above Avg Top 4-6 Top 1-3

Electronic Materials Stocks:

Weekly Growth and Forward P/E Ratios by Company

Weekly Gains			4/29/2022		
EDA & Electronic Materials Stocks	Price Change	Forward P/E	EDA & Electronic Materials Stocks	Price Change	Forward P/E
EDA			DNP	1.2%	–
Cadence	1.9%	35	DuPont de Nemours	-1.9%	5
Synopsys	0.6%	31	JSR	-0.7%	–
Ansys	-0.3%	31	Shin-Etsu	1.2%	–
Electronic Materials			SOITEC	11.5%	–
BASF	-5.5%	2	Tokyo Ohka	1.7%	–
CMC Materials	-0.4%	22			

Above Avg
Top 4-6
Top 1-3

TechInsights' EDA Stock Index increased this week.

TechInsights' Electronic Materials Stock Index was led up by SOITEC.

Ansys, Inc. ^{ANSS} BASF ^{BASFY}
 CMC Materials ^{CCMP} Cadence ^{CDNS}
 DNP ⁷⁹¹² DuPont ^{DD} JSR ⁴¹⁸⁵
 Shin-Etsu ⁴⁰⁶³ SOITEC ^{SOI.PA}
 Synopsys ^{SNPS} Tokyo Ohka ⁴¹⁸⁶

The Prior Week's Close	TechInsights' Indices of Chip Industry Stocks				Weekly Growth				Companies Up	Max Growth	Companies Down	Min Growth	Range of Growth	S&P 500	S&P 500 Growth
	Semi Stocks	Equipment Stocks	Materials Stocks	EDA Stocks	Semi Stocks	Equipment Stocks	Materials Stocks	EDA Stocks							
24-Sep-21	89.2	91.7	93.1	88.1	0.3%	-1.0%	-1.3%	-0.5%	22	5.8%	-30	-5.2%	11.0%	93.5	0.5%
01-Oct-21	85.8	84.2	88.6	82.6	-3.8%	-8.2%	-4.8%	-6.2%	6	4.3%	-48	-14.7%	19.0%	91.4	-2.2%
08-Oct-21	84.7	81.0	87.3	80.3	-1.4%	-3.8%	-1.5%	-2.8%	15	2.9%	-39	-14.3%	17.2%	92.1	0.8%
15-Oct-21	85.5	82.8	90.6	83.9	1.0%	2.2%	3.8%	4.4%	39	8.1%	-14	-11.8%	19.9%	93.8	1.8%
22-Oct-21	86.8	85.3	91.3	88.9	1.5%	3.0%	0.8%	5.9%	40	15.7%	-14	-11.6%	27.3%	95.4	1.6%
29-Oct-21	89.0	89.6	93.7	92.2	2.6%	5.0%	2.6%	3.8%	38	24.6%	-16	-8.3%	32.9%	96.6	1.3%
05-Nov-21	94.4	95.0	98.0	94.6	6.1%	6.1%	4.6%	2.5%	45	30.5%	-8	-29.8%	60.3%	98.6	2.0%
12-Nov-21	95.9	95.5	98.7	96.4	1.5%	0.4%	0.7%	1.9%	31	8.5%	-16	-12.1%	20.6%	98.3	-0.3%
19-Nov-21	98.3	97.5	98.2	99.4	2.6%	2.1%	-0.4%	3.2%	39	12.2%	-16	-16.8%	29.0%	98.6	0.3%
26-Nov-21	97.7	96.0	95.5	96.8	-0.6%	-1.6%	-2.8%	-2.7%	16	11.8%	-39	-9.6%	21.4%	98.6	0.1%
03-Dec-21	95.9	94.5	92.9	95.0	-1.9%	-1.6%	-2.7%	-1.9%	12	6.0%	-44	-11.1%	17.1%	95.2	-3.5%
10-Dec-21	97.5	96.9	95.7	98.8	1.6%	2.6%	3.0%	4.0%	40	13.2%	-15	-7.5%	20.7%	98.9	3.8%
17-Dec-21	94.7	93.8	97.7	96.5	-2.9%	-3.2%	2.1%	-2.3%	12	25.6%	-43	-15.6%	41.2%	96.9	-1.9%
24-Dec-21	98.6	97.7	99.3	100.2	4.1%	4.2%	1.7%	3.8%	50	13.8%	-6	-2.8%	16.6%	99.2	2.3%
31-Dec-21	100.0	100.0	100.0	100.0	1.5%	2.3%	0.7%	-0.2%	44	8.1%	-11	-2.7%	10.8%	100.0	0.9%
07-Jan-22	96.6	96.3	99.4	89.7	-3.4%	-3.7%	-0.6%	-10.3%	10	7.4%	-45	-17.5%	24.9%	98.1	-1.9%
14-Jan-22	98.5	102.0	99.3	87.4	2.0%	5.9%	-0.1%	-2.5%	36	23.7%	-20	-4.9%	28.6%	97.8	-0.3%
21-Jan-22	90.1	90.4	93.8	81.0	-8.5%	-11.4%	-5.6%	-7.3%	3	5.1%	-53	-20.3%	25.4%	92.3	-5.7%
28-Jan-22	87.1	84.5	92.4	79.7	-3.4%	-6.6%	-1.5%	-1.7%	11	5.0%	-45	-21.8%	26.8%	93.0	0.8%
04-Feb-22	90.2	87.3	92.3	81.5	3.5%	3.3%	-0.1%	2.3%	41	17.5%	-13	-4.3%	21.8%	94.4	1.6%
11-Feb-22	89.6	86.1	93.2	78.7	-0.7%	-1.4%	1.0%	-3.4%	20	10.6%	-33	-8.9%	19.5%	92.7	-1.8%
18-Feb-22	90.1	86.8	93.0	75.0	0.6%	0.8%	-0.2%	-4.7%	28	12.2%	-26	-7.0%	19.2%	91.2	-1.6%
25-Feb-22	90.1	87.5	91.9	82.5	0.0%	0.8%	-1.3%	9.9%	30	14.7%	-25	-9.5%	24.2%	92.0	0.8%
04-Mar-22	85.3	81.4	86.8	81.5	-5.3%	-6.9%	-5.5%	-1.2%	7	6.4%	-48	-18.6%	25.0%	90.8	-1.3%
11-Mar-22	82.1	79.7	87.1	76.9	-3.7%	-2.2%	0.3%	-5.7%	9	9.7%	-45	-11.1%	20.8%	88.2	-2.9%
18-Mar-22	87.9	90.3	92.7	83.7	7.1%	13.3%	6.5%	8.8%	53	31.3%	-2	-5.9%	37.2%	93.6	6.2%
25-Mar-22	89.1	91.8	94.0	82.9	1.3%	1.7%	1.3%	-0.9%	36	9.2%	-16	-5.5%	14.7%	95.3	1.8%
01-Apr-22	85.4	87.8	91.5	86.1	-4.2%	-4.3%	-2.6%	3.9%	5	5.0%	-50	-23.1%	28.1%	95.4	0.1%
08-Apr-22	80.1	81.9	87.1	82.3	-6.2%	-6.8%	-4.8%	-4.4%	2	5.5%	-53	-17.6%	23.1%	94.2	-1.3%
15-Apr-22	78.1	79.2	86.4	76.9	-2.5%	-3.3%	-0.9%	-6.6%	6	4.2%	-49	-10.9%	15.1%	92.2	-2.1%
22-Apr-22	77.8	80.5	87.4	75.2	-0.3%	1.6%	1.3%	-2.2%	30	9.3%	-25	-18.8%	28.1%	89.6	-2.8%
29-Apr-22	77.8	78.2	88.2	75.7	0.0%	-2.9%	0.9%	0.7%	22	21.1%	-32	-14.9%	36.0%	86.7	-3.3%

Links to Conference Call Transcripts

April 29th

[MaxLinear, Inc. \(MXL\) CEO Kishore Seendripu on Q1 2022 Results - Earnings Call Transcript](#)

[Qualcomm, Inc. \(QCOM\) CEO Cristiano Amon on Q2 2022 Results - Earnings Call Transcript](#)

[FormFactor, Inc. \(FORM\) CEO Michael Slessor on Q1 2022 Results - Earnings Call Transcript](#)

[MKS Instruments' \(MKS\) CEO John Lee on Q1 2022 Results - Earnings Call Transcript](#)

[Teradyne, Inc. \(TER\) CEO Mark Jagiela on Q1 2022 Results - Earnings Call Transcript](#)

[STMicroelectronics N.V. \(STM\) CEO Jean-Marc Chery on Q1 2022 Results - Earnings Call Transcript](#)

[United Microelectronics Corporation \(UMC\) on Q1 2022 Results - Earnings Call Transcript](#)

April 22nd and before

[ASM International NV \(ASMIY\) CEO Benjamin Loh on Q1 2022 Results - Earnings Call Transcript](#)

[Lam Research Corporation \(LRCX\) CEO Tim Archer on Q3 2022 Results - Earnings Call Transcript](#)

[ASML Holding N.V.'s \(ASML\) CEO Peter Wennink on Q1 2022 Results - Earnings Call Transcript](#)

[International Business Machines Corporation's \(IBM\) CEO Arvind Krishna on Q1 2022 Results - Earnings Call Transcript](#)

[Taiwan Semiconductor Manufacturing Company Limited \(TSM\) CEO C. C. Wei on Q1 2022 Results - Earnings Call Transcript](#)

[Western Digital Corporation \(WDC\) Presents at Morgan Stanley 2022 Technology, Media & Telecom Conference \(Transcript\)](#)

[Cisco Systems, Inc. \(CSCO\) Management Presents at Morgan Stanley Technology, Media and Telecom Conference 2022 Transcript](#)

Links to Conference Call Transcripts

[International Business Machines Corporation \(IBM\) Management Presents at Morgan Stanley Technology, Media and Telecom Brokers Conference 2022 \[Transcript\]](#)

[Texas Instruments Incorporated \(TXN\) CEO Rich Templeton Presents at Morgan Stanley 2022 Technology, Media & Telecom Conference \(Transcript\)](#)

[IDT Corporation \(IDT\) CEO Shmuel Jonas on Q2 2022 Results - Earnings Call Transcript](#)

[Lam Research Corporation's \(LRCX\) Management Presents at Morgan Stanley Technology, Media and Telecom Conference 2022 \(Transcript\)](#)

[NXP Semiconductors N.V. \(NXPI\) Presents at Morgan Stanley Tech Conference, San Francisco Conference \(Transcript\)](#)

[Intel Corporation \(INTC\) CEO Patrick Gelsinger Presents at Morgan Stanley Technology, Media and Telecom Conference 2022 \(Transcript\)](#)

[NVIDIA Corporation \(NVDA\) Presents at Morgan Stanley 2022 Technology, Media and Telecom Conference \(Transcript\)](#)

[Thermo Fisher Scientific Inc. \(TMO\) CEO Marc Casper on 42nd Annual Cowen Health Care Conference \(Transcript\)](#)

[Qorvo \(QRVO\) CEO, Bob Bruggeworth Presents at Raymond James 43rd Annual Institutional Investors Conference - Company Call Transcript](#)

[Broadcom's \(AVGO\) CEO Hock Tan on Q1 2022 Results - Earnings Call Transcript](#)

[VAT Group AG \(VACNY\) CEO Mike Allison on Q4 2021 Results - Earnings Call Transcript](#)

[Dell Technologies Inc. \(DELL\) Management on Q4 2022 Results - Earnings Call Transcript](#)

[AIXTRON SE \(AIXXF\) CEO Felix Grawert on Q4 2021 Results - Earnings Call Transcript](#)

[ChipMOS TECHNOLOGIES INC. \(IMOS\) Q4 2021 Results - Earnings Call Transcript](#)

Links to Conference Call Transcripts

[ASM International NV \(ASMIY\) CEO Benjamin Loh on Q4 2021 Results - Earnings Call Transcript](#)

[SkyWater Technology, Inc. \(SKYT\) CEO Thomas Sonderman on Q4 2021 Results - Earnings Call Transcript](#)

[Lenovo Group Limited \(LNVGY\) CEO Yang Yuanqing On Q3 2022 Results - Earnings Call Transcript](#)

[ASM Pacific Technology Limited \(ASMFV\) CEO Robin Gerard Ng on Q4 2021 Results - Earnings Call Transcript](#)

[Agilent Technologies, Inc.'s \(A\) CEO Mike McMullen on Q1 2022 Results - Earnings Call Transcript](#)

[BE Semiconductor Industries N.V. \(BESY\) CEO Richard Blickman on Q4 2021 Results - Earnings Call Transcript](#)

[Keysight Technologies, Inc. \(KEYS\) CEO Ronald Nersesian on Q1 2022 Results - Earnings Call Transcript](#)

[NVIDIA Corporation's \(NVDA\) CEO Jensen Huang on Q4 2022 Results - Earnings Call Transcript](#)

[Magnachip Semiconductor Corporation \(MX\) CEO YJ Kim on Q4 2021 Results - Earnings Call Transcript](#)

[Synopsys, Inc. \(SNPS\) CEO Aart de Geus on Q1 2022 Results - Earnings Call Transcript](#)

TechInsights recent uploads

Chip Market Research Services Uploads:

ForecastPro Module:

- [TCI Graphics – V22.04](#)
- [Reticles – V22.04](#)
- [Electronics & Macroeconomy – V22.03](#)
- [Utilization Rates – V22.03](#)
- [Diffusion Rates – V22.03](#)
- [Silicon Demand – V22.03](#)
- [CapEx Distribution – V22.03](#)
- [Semiconductor Forecast – V22.03](#)
- [Semi, Silicon, and Equip L-T Forecast – V22.02](#)
- [Design Completions – V21.11](#)

Equipment Database Module:

- [Scanner & Stepper Shipments – V22.04](#)
- IC Equipment Forecast:
 - [Yearly – V22.01](#)
 - [Quarterly – V22.01](#)
- [WFE by Applications – V22.01](#)
- IC Equipment Market Shares:
 - [Yearly – V21.05](#)
 - [Quarterly – V21.12](#)

Customer Satisfaction Survey Uploads:

- [2021 CSS Databases](#)
- [2022 Survey Documents](#)

Critical Subsystems Uploads:

- [Critical Subsystems – V21.12](#)
- [Forecast Overview – V21.12](#)
- [Graphics File: December 2021](#)
- [Semiconductor Forecast– V21.12](#)
- [Devices – V21.09](#)
- [Substrate Processing Equipment – V22.02](#)
- [Manufacturing Equipment Revenues – V21.09](#)
- [Vendor Shares – V21.04](#)

Test Connectivity Reports:

- [Test and Burn-In Socket Report : V21.04](#)
- [Probe Card Report: V21.04](#)
- [Device Interface Board Report: V20.05](#)

Terms and Conditions, Notices, and Disclaimers, etc.

By accepting this report, opening it, or using it you are agreeing to these terms. This report contains valuable data, intellectual property, and trade secrets developed or acquired by TechInsights. You have a limited license to hold these materials but do not become the owner of any material. The materials provided are protected by copyright, trade secret, and trademark law. This presentation has been approved by TechInsights for public release with attribution. The information in the materials may be used by you on a limited basis in your own documents provided that those documents are not-for-sale; TechInsights' name, brand, or trademarks are not used to endorse a product or company for sales purposes; TechInsights is clearly referred to as the source of such information; and you obtain written approval prior to use.

This report is provided on an "AS IS," "WHERE IS," "WHERE AVAILABLE," "WITH ALL FAULTS" basis. TechInsights does not warrant these materials or the information provided therein, either expressly or impliedly, for any particular purpose and TechInsights specifically disclaims any express or implied warranties, including but not limited to, any express or implied warranties of TITLE, ACCURACY, NON-INFRINGEMENT, MERCHANTABILITY or FITNESS FOR ANY PARTICULAR PURPOSE OR USE.

The sources of the information in this report include numerous individual reports, memos and bulletins from various segments of the industry, annual reports, financial reports, interviews, questionnaires, surveys, technical symposia, trade journals, technical journals and individual assessments by knowledgeable company or industry representatives as well as our own analysis and judgment. Some companies are more cooperative about providing information than others and some companies decline to provide or validate the accuracy of any information. Although the information provided is obtained or compiled from sources TechInsights believes to be reliable given the oftentimes difficult circumstances under which it is collected, TechInsights cannot and does not warrant or guarantee the accuracy, validity, truthfulness, timeliness, or completeness of any information or data made available to you for any particular purpose. In no event will TechInsights be liable to you or any third party, whether in contract, tort or under any other legal theory, for any direct, indirect, special, consequential or incidental damages, or any other damages of any kind even if TechInsights has been advised of the possibility thereof.

We receive letters and e-mails on current topics covered in our services and/or reports that are of interest to our subscribers, as well as comments on our reports. We value that subscriber input and like to use it. By submitting such material to us, unless you tell us specifically not to publish it, or except to the extent that you give us an embargo date before which you instruct us not to publish it, you authorize us to publish and republish it in any form or medium, to edit it for style and length, and to comment upon or criticize it and to publish others' comments or criticisms concerning it, as the case may be.

This report may contain information concerning stocks that is obtained from the opinions of industry analysts. Quoted past results are not necessarily indicative of future performance. None of the information should be seen as a recommendation to buy or sell any securities. We are not stock analysts or investment advisors. You should contact a registered investment advisor as to the nature, potential, value or suitability of any particular investment action. No information provided is investment advice and any such information is just an opinion and is not tailored to the investment needs of any specific person. Certain statements in this report, other than statements of historical fact, and other written or oral statements made by TechInsights may be forward-looking. In some cases, you can identify forward-looking statements by terminology such as "may", "will", "should", "expects", "intends", "plans", "anticipates", "believes", "thinks", "estimates", "seeks", "predicts", "potential", and similar expressions. Although TechInsights believes that these statements are based on reasonable assumptions, they are subject to numerous factors, risks and uncertainties that could cause actual results and outcomes to be materially different from those stated or projected. Those factors, among others, could cause actual results and outcomes to differ materially from the results and outcomes stated or projected in, or implied by, the forward-looking statements. You should understand that forward-looking statements are not guarantees of results or outcomes. New risks and uncertainties arise from time to time, and TechInsights can not predict those events or how they may affect you, the reader. TechInsights Inc does not have any intention or obligation to update forward-looking statements after the date of this report.

No part of this report may be used in any legal proceedings nor may any of these materials or the information contained therein be disclosed to any third party, including investors or affiliated firms belonging to investors, outside directors or to your affiliated companies, or reproduced or transmitted to any third party, in any form or by any means – mechanical, electronic, photocopying, duplication, microfilming, videotape, verbally or otherwise – without the prior written permission of TechInsights.

The Chip Insider® and the CSS 10 BEST logo are registered trademarks of TechInsights Inc. All other trademarks, service marks, and logos are the property of their respective owners.