

# ROBO GLOBAL ETFS: Q4 IN REVIEW

*ROBO, HTEC, and THNQ*

## SUMMARY

The Robotics & Automation ETF (NYSE: ROBO) weathered the sell-off in many disruptive technology stocks: It outperformed global equities and rose 9.04% in Q4, to close the year 2021 up 15.34%. The Artificial Intelligence ETF (NYSE: THNQ) was up 9.11% in 2021, and the Healthcare Technology & Innovation ETF (NYSE: HTEC) was nearly flat at -0.29%. While investors debate the near-term growth and inflation outlook, we remain focused on the innovators and market leaders driving these technology trends. In this report, we discuss key developments and big movers across our innovation portfolios.

## PERFORMANCE (%)

ROBO Global ETFs	Date of Inception	SI	4Q2021	1-year	3-year	5-year
ROBO @ NAV	10/21/2013	13.64%	8.52%	15.28%	29.82%	19.82%
ROBO @ MKT PRICE	10/21/2013	13.67%	9.04%	15.34%	29.83%	19.83%
THNQ @ NAV	5/11/2020	40.25%	2.25%	9.30%	---	---
THNQ @ MKT PRICE	5/11/2020	40.27%	2.36%	9.11%	---	---
HTEC @ NAV	6/25/2019	26.11%	-4.17%	-0.20%	---	---
HTEC @ MKT PRICE	6/25/2019	26.08%	-4.36%	-0.29%	---	---

*The performance data quoted represents past performance and does not guarantee future results. Investment return and principal value of an investment will fluctuate so that an investor's shares, when sold or redeemed, may be worth more or less than their original costs. Current performance may be higher or lower than the performance quoted. For performance data current to the most recent month end, please call 1-855-456-7626 or visit [www.roboglobaletfs.com](http://www.roboglobaletfs.com). (SI) since inception*

### Expense ratios –

**ROBO: 0.95%, HTEC: 0.68%\*, THNQ: 0.68%\***

*High short-term performance of the fund is unusual and investors should not expect such performance to be repeated.*

*\*The advisor has contractually agreed to waive fees through August 31, 2022.*

*Beginning September 1, 2020, market price returns are based on the official closing price of an ETF share or, if the official closing price isn't available, the midpoint between the national best bid and national best offer ("NBBO") as of the time the ETF calculates current NAV per share. Prior to September 1, 2020, market price returns were based on the midpoint between the bid and ask price. Market price returns. NAVs are calculated using prices as of 4:00 PM Eastern Time. The returns shown do not represent the returns you would receive if you traded shares at other times.*

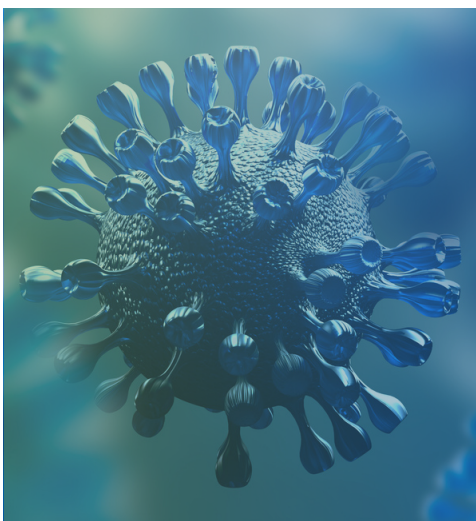
## MARKET COMMENTARY

Global equities gained in the fourth quarter of 2021, with double-digit gains in the United States being offset by declines in emerging markets and Japan. Corporate earnings remained on a strong and better-than-expected trajectory. While growth and tech did relatively well in Q4 overall, this rise masks strong underlying currents and a dramatic decline in long duration tech stocks as well as the more speculative areas of the markets.

Our view that 2021 would be a boom year has largely played out: The global economic rebound continues with significant momentum despite the renewed flare-up in COVID-19 cases in the United States and Europe. Investors are worried about a possible hit to U.S. economic growth from fiscal tightening in response to multi-decade high inflation and the wind down of COVID-related subsidies. However, according to Gavekal Research, these concerns likely underestimate the dramatic increase in U.S. consumers' buying power over the past two years, with a \$34 trillion increase in net worth, which is an increase of nearly 30% since COVID-19 started. Meanwhile, capital expenditures around the world have yet to reach new highs, and we think the combination of strong consumer demand and supply chain challenges is likely to keep investments on an upward trajectory.

And where are corporate leaders investing? They are striving to accelerate digitization and are deploying automation at a record pace. The immediate bottleneck is the increasingly pressing shortage of workers across much of the western world and China. Whatever the causes, the immediate corporate answer is productivity, and we believe this will continue to provide a strong tailwind to the demand for automation and AI solutions.

While our robotics, AI, and healthcare technology portfolios certainly would not be immune to a more pronounced rotation in equity markets from growth to value, we note that the three products are very diversified, across geographies, across business models from products to services to software, and across end markets, from enterprise to consumer, technology, healthcare, and industrials. And while some fast-growing ETF holdings trade on high multiples and are sensitive to changes in interest rate expectations, they are a minority among broad portfolios.





## ROBO: ROBOTICS & AUTOMATION ETF

The ROBO ETF outperformed global equities for a second consecutive quarter in Q4, up 9.04%\* in the quarter. For the year 2021, ROBO returned a total of 15.34%, slightly trailing global equities.

**ROBO GLOBAL® ROBOTICS & AUTOMATION ETF - Growth of \$10,000**



Data as of ETF inception on October 21, 2013 through December 31, 2021. Source: ROBO Global®, SEI.  
The Growth of \$10,000 chart reflects a hypothetical \$10,000 investment and assumes reinvestment of dividends and capital gains.  
Fund expenses, including management fees and other expenses were deducted.  
Past performance does not guarantee future results.

### % Weight by Subsector



Application	59%
Manufacturing & Industrial	16%
Healthcare	13%
Logistics Automation	13%
Food & Agriculture	5%
Business Process Automation	5%
3D Printing	4%
Autonomous Systems	2%
Technologies	41%
Computing & AI	14%
Actuation	13%
Sensing	9%
Integration	6%

ROBO Subsector (Total Return)	Q4 2021	Past 12 mo.
3D Printing	4.6%	25.0%
Actuation	5.4%	-10.7%
Autonomous Systems	-16.1%	-14.2%
Business Process Automation	5.8%	7.1%
Computing & AI	17.0%	40.3%
Food & Agriculture	5.5%	39.5%
Healthcare	25.6%	34.1%
Integration	-0.1%	20.3%
Logistics Automation	4.2%	18.5%
Manufacturing & Industrial Automation	8.5%	20.4%
Sensing	5.7%	1.1%
<b>ETF TOTAL</b>	<b>8.5%</b>	<b>15.3%</b>

## MARKET COMMENTARY

The ROBO portfolio's outperformance of global equities is a stark contrast to the significant underperformance of many disruptive technology portfolios that suffered from the violent rotation out of high multiple, long duration tech stocks in Q4. We believe that this resilience reflects ROBO's diversification across the entire value chain of robotics and automation, including not only technology stocks but also significant exposure to more cyclical areas such as industrials, consumer, and healthcare.

\*Data as of Dec. 31, 2021, Source: ROBO Global®, S&P CapitalIQ. For standardized performance data current to the most recent month end, please visit [www.roboglobaletf.com](http://www.roboglobaletf.com).

With supply chains under tremendous stress, a boom in U.S. consumer demand, and the rapid shift to e-commerce, we are particularly optimistic about logistics automation.

We believe that the cyclical recovery in industrial automation remains in full swing. This is important because many industrial automation stocks have lagged in 2021, especially in Japan, which remains a powerhouse in industrial robotics and factory automation equipment.

We expect the pace of M&A to remain brisk after a boom year in 2021 when five ETF holdings received takeover offers. Looking forward, we believe we will continue to see a long runway for strong, double-digit earnings growth across the portfolio, driven by Logistics and Warehouse Automation, Healthcare, Industrial Automation, Business Process Automation, and Computing & AI.

## HTEC: HEALTHCARE TECHNOLOGY & INNOVATION ETF

The ROBO Global Healthcare Technology and Innovation ETF (NYSE: HTEC) posted a loss of -4.36%\*[CJ1] [EA2] in Q4 2021. The Delta variant phase of the pandemic drove headwinds for much of the healthcare industry, particularly healthcare tech companies, and it had a greater impact on HTEC than on other funds with less focus on healthcare innovation and more on value stocks.

**ROBO GLOBAL® HEALTHCARE TECHNOLOGY AND INNOVATION ETF - Growth of \$10,000**



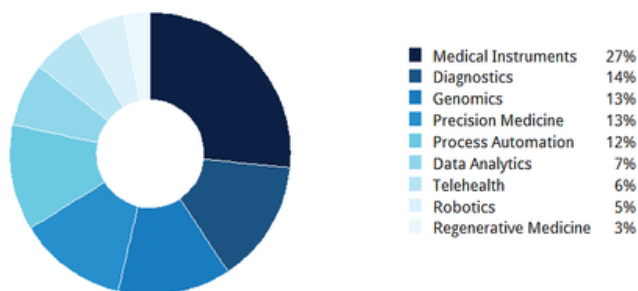
Data as of ETF inception on June 25, 2019 through December 31, 2021. Source: ROBO Global®, SEI.  
The Growth of \$10,000 chart reflects a hypothetical \$10,000 investment and assumes reinvestment of dividends and capital gains.  
Fund expenses, including management fees and other expenses were deducted.  
Past performance does not guarantee future results.

\*Data as of Dec. 31, 2021, Source: ROBO Global®, S&P CapitalIQ. For standardized performance data current to the most recent month end, please visit [www.roboglobaletf.com](http://www.roboglobaletf.com).



HTEC Subsector (Total Return)	Q4 2021	Past 12 mo.
Data Analytics	-8.3%	-14.9%
Diagnostics	-2.5%	6.1%
Genomics	-11.4%	-2.2%
Medical Instruments	-7.1%	1.3%
Precision Medicine	-4.1%	-8.5%
Process Automation	8.2%	46.0%
Regenerative Medicine	-21.3%	-29.2%
Robotics	9.4%	33.7%
Telehealth	1.0%	-57.4%
<b>ETF TOTAL</b>	<b>-4.2%</b>	<b>-0.2%</b>

% Weight by Subsector



## MARKET COMMENTARY

HTEC's performance was largely driven by COVID-related healthcare staffing shortages and delays in procedure volumes, which directly impacted companies that sell medical instruments and diagnostics for non-COVID applications, like orthopedics and trauma, and caused multiple compression in some of the high-growth sectors that led 2020 gains, such as genomics and telehealth.

However, many companies in the HTEC ETF still thrived in 2021. We expect strong momentum in data analytics in the coming year to drive efficiencies amid healthcare worker staffing shortages.

Staff shortages and non-COVID procedural decline have driven lower volumes and overall demand for regenerative medicine and genetic testing, impacting companies. On the other hand, the continuance of COVID variants continues to drive revenue across other HTEC members whose business covers testing, treatments, specimen tracking, and lab process automation, which will allow continued investment in opportunities beyond and after COVID-19 or share repurchases and dividends to shareholders.



We believe the Omicron variant will trigger a significant turning point in the pandemic and potentially drive it toward endemic status. Companies that thrived over the last few years on COVID testing volumes will be able to leverage their incremental cash toward further innovation and their new client footprints to cross-sell other products. Other companies that experienced headwinds due to depressed non-COVID patient volumes should potentially start to ramp back up. And therapeutic innovators will be able to apply their successes in recent breakthroughs to advance the numerous other therapies in their pipelines.

## THNQ: ARTIFICIAL INTELLIGENCE ETF

Q4 was a challenging quarter for THNQ ETF versus the global equity indices, as rotation out of high-growth technology companies began in November. While there were many strong performers during the quarter, THNQ gained just 2.36% for the quarter and 9.11% for the year 2021.

**ROBO GLOBAL® ARTIFICIAL INTELLIGENCE ETF - Growth of \$10,000**



Data as of ETF inception on May 11, 2020 through December 31, 2021. Source: ROBO Global®, SEI.  
The Growth of \$10,000 chart reflects a hypothetical \$10,000 investment and assumes reinvestment of dividends and capital gains.  
Fund expenses, including management fees and other expenses were deducted.  
Past performance does not guarantee future results.

THNQ Subsector (Total Return)	Q4 2021	Past 12 mo.
Big Data/Analytics	0.2%	-5.9%
Business Process	-5.1%	1.4%
Cloud Providers	-3.7%	15.5%
Cognitive Computing	14.1%	32.6%
Consulting Services	30.0%	61.9%
Consumer	-3.9%	-5.0%
Ecommerce	-10.5%	-4.3%
Factory Automation	5.5%	24.2%
Healthcare	-15.6%	-10.9%
Network & Security	17.2%	43.8%
Semiconductor	23.3%	53.8%
<b>ETF TOTAL</b>	<b>2.2%</b>	<b>9.3%</b>

**% Weight by Subsector**



<b>Applications &amp; Services</b>	<b>49%</b>
Business Process	20%
Ecommerce	11%
Consumer	8%
Healthcare	6%
Factory Automation	3%
Consulting Services	1%
<b>Infrastructure</b>	<b>51%</b>
Semiconductor	14%
Big Data/Analytics	13%
Network & Security	11%
Cloud Providers	10%
Cognitive Computing	3%

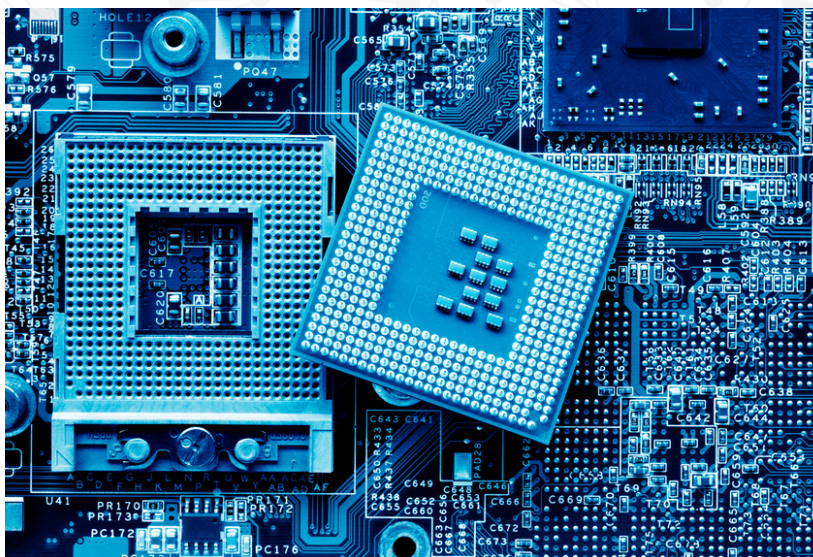
\*Data as of Dec. 31, 2021, Source: ROBO Global®, S&P CapitalIQ. For standardized performance data current to the most recent month end, please visit [www.roboglobaletf.com](http://www.roboglobaletf.com).



## MARKET COMMENTARY

Specifically, Consulting Services, Semiconductor, and Network & Security subsectors posted solid gains for the third consecutive quarter, driven by strong secular drivers around work-from-home technologies, massive cloud deployments, and demand for next-generation cybersecurity solutions.

Many of the demand drivers we experienced last year will remain in play as we enter 2022, despite some concerns around macro trends. Overall, corporate commentary around IT spending trends remains optimistic around data center expansion and workflow automation software. Additionally, the current semiconductor shortage continues to provide a tailwind and strong visibility to our chip holdings. We anticipate that cloud, data security, and AI-powered solutions will remain a priority in 2022. Despite the multiple compression we witnessed in some of our software and cloud technology companies, many of our emerging disruptors and innovators are seeing strong demand for their solutions. We anticipate that some volatility may continue, but our global holdings with sustainable growth rates and strong cash flow dynamics will recover more quickly from this correction.



In the semiconductor world, THNQ chipmakers outpaced the broader market during Q4 2021. With multiple secular drivers such as autonomous vehicles and high-performance computing, semiconductor companies in THNQ appear very well positioned for 2022. Over the long term, we see a long runway for growth in utilizing artificial intelligence to help underwrite loans, insurance, and assist in risk management for the financial services sector. Increasingly, financial services companies are turning to AI and predictive analytics for fraud management, lowering credit and loan defaults, cashless payments, digital insurance, mortgages, and personal loans, to name a few, in order to increase user engagement and loan volume. The market opportunity and penetration of these new services are growing at a rapid clip and disrupting the financial service industry.

*This material represents an assessment of the market environment at a specific time and is not intended to be a forecast of future events, or a guarantee of future results. This information should not be relied upon by the reader as research or investment advice regarding the funds or any security in particular. Diversification does not ensure a profit or guarantee against a loss.*

# ROBO

## ROBO Global Robotics & Automation Index ETF

Ticker: ROBO  
Fund Launch Date: 10/21/2013  
Fund Type: Passive ETF  
CUSIP: 301505707  
Primary Exchange: NYSE Arca

[funds.roboglobal.com/robo](https://funds.roboglobal.com/robo)

SUBSECTOR	EXPOSURE
<b>Application</b>	<b>58.67%</b>
3D Printing	4.15%
Autonomous Systems	1.51%
Business Process Automation	5.21%
Food & Agriculture	5.26%
Healthcare	13.49%
Logistics Automation	13.09%
Manufacturing & Industrial Automation	15.96%
<b>Technologies</b>	<b>41.18%</b>
Actuation	12.75%
Computing & AI	13.66%
Integration	5.68%
Sensing	9.10%

TOP 10 HOLDINGS	WEIGHT
INTUITIVE SURGICAL INC	1.86%
AIRTAC INTERNATIONAL GROUP	1.71%
KARDEX HOLDING AG	1.70%
HARMONIC DRIVE SYSTEMS INC	1.69%
IRHYTHM TECHNOLOGIES INC	1.67%
ILLUMINA INC	1.64%
IPG PHOTONICS CORP	1.64%
FANUC CORP	1.63%
COGNEX CORP	1.62%
SERVICENOW INC	1.61%
<b>TOTAL</b>	<b>16.78%</b>

Subject to change. Current and future holdings subject to risk.

# HTEC

## ROBO Global Healthcare Technology & Innovation ETF

Ticker: HTEC  
Fund Launch Date: 06/24/2019  
Fund Type: Passive ETF  
CUSIP: 301505723  
Primary Exchange: NYSE Arca

[funds.roboglobal.com/htec](https://funds.roboglobal.com/htec)

SUBSECTOR	EXPOSURE
Data Analytics	7.24%
Diagnostics	14.07%
Genomics	12.99%
Medical Instruments	26.56%
Precision Medicine	12.50%
Process Automation	12.14%
Regenerative Medicine	3.08%
Robotics	5.34%
Telehealth	6.01%

TOP 10 HOLDINGS	WEIGHT
TABULA RASA HEALTHCARE INC	1.82%
ABIOMED INC	1.56%
PENUMBRA INC	1.51%
IRHYTHM TECHNOLOGIES INC	1.50%
VERACYTE INC	1.49%
FULGENT GENETICS INC	1.48%
INTUITIVE SURGICAL INC	1.46%
AKOYA BIOSCIENCES INC	1.45%
GLAUKOS CORP	1.44%
ILLUMINA INC	1.43%
<b>TOTAL</b>	<b>15.14%</b>

Subject to change. Current and future holdings subject to risk.

# THNQ

## ROBO Global Artificial Intelligence ETF

Ticker: THNQ  
Fund Launch Date: 05/11/2020  
Fund Type: Passive ETF  
CUSIP: 301505731  
Primary Exchange: NYSE Arca

<https://funds.roboglobal.com/thnq>

SUBSECTOR	EXPOSURE
<b>Applications &amp; Services</b>	<b>48.92%</b>
Business Process	19.51%
Consulting Services	1.08%
Consumer	8.07%
Ecommerce	11.20%
Factory Automation	2.93%
Healthcare	6.14%
<b>Infrastructure</b>	<b>51.11%</b>
Big Data/Analytics	13.13%
Cloud Providers	9.66%
Cognitive Computing	3.48%
Network & Security	11.02%
Semiconductor	13.82%

TOP 10 HOLDINGS	WEIGHT
ARISTA NETWORKS INC	1.90%
FAIR ISAAC CORP	1.86%
MERCADOLIBRE INC	1.85%
INTERNATIONAL BUSINESS MACHINES CORP	1.84%
ILLUMINA INC	1.79%
ATLASSIAN CORP PLC	1.79%
BAIDU INC	1.77%
MICROSOFT CORP	1.70%
ALPHABET INC	1.67%
ALIBABA GROUP HOLDING LTD	1.67%
<b>TOTAL</b>	<b>17.84%</b>

Subject to change. Current and future holdings subject to risk.



<sup>1</sup> Data as of December 31, 2021, Source: ROBO Global®, S&P CapitalIQ, For standardized performance data current to the most recent month end, please visit [www.roboglobaletf.com](http://www.roboglobaletf.com).

## RISK DISCLOSURE AND IMPORTANT INFORMATION

Exchange Traded Concepts, LLC serves as the investment advisor of the funds. The Funds are distributed by SEI Investments Distribution Co. (SIDCO), which is not affiliated with Exchange Traded Concepts, LLC or any of its affiliates. Check the background of SIDCO on FINRA's BrokerCheck.

**Carefully consider the Funds' investment objectives, risk factors, charges and expenses before investing. This and additional information can be found on the Funds' full or summary prospectuses, which may be obtained at [www.roboglobaletf.com](http://www.roboglobaletf.com). Read the prospectus carefully before investing.**

Investing involves risk, including the possible loss of principal. International investments may also involve risk from unfavorable fluctuations in currency values, differences in generally accepted accounting principles, and from economic or political instability. Emerging markets involve heightened risks related to the same factors as well as increased volatility and lower trading volume. Narrowly focused investments and investments in smaller companies typically exhibit higher volatility. There is no guarantee the funds will achieve their stated objective. THNQ is non-diversified.

The liquidity of the A-shares market and trading prices of A-shares could be more severely affected than the liquidity and trading prices of other markets because the Chinese government restricts the flow of capital into and out of the A-shares market. The funds may experience losses due to illiquidity of the Chinese securities markets or delay or disruption in execution or settlement of trades.

The risks associated with investments in Robotics and Automation Companies include, but are not limited to, small or limited markets for such securities, changes in business cycles, world economic growth, technological progress, rapid obsolescence, and government regulation. Robotics and Automation Companies, especially smaller, start-up companies, tend to be more volatile than securities of companies that do not rely heavily on technology. Rapid change to technologies that affect a company's products could have a material adverse effect on such company's operating results. Robotics and Automation Companies may rely on a combination of patents, copyrights, trademarks and trade secret laws to establish and protect their proprietary rights in their products and technologies. There can be no assurance that the steps taken by these companies to protect their proprietary rights will be adequate to prevent the misappropriation of their technology or that competitors will not independently develop technologies that are substantially equivalent or superior to such companies' technology.

The risks associated with Artificial Intelligence (AI) Companies include, but are not limited to, small or limited markets, changes in business cycles, world economic growth, technological progress, rapid obsolescence, and government regulation. Rapid change to technologies that affect a company's products could have a material adverse effect on such company's operating results. AI Companies also rely heavily on a combination of patents, copyrights, trademarks and trade secret laws to establish and protect their proprietary rights in their products and technologies. There can be no assurance that the steps taken by these companies to protect their proprietary rights will be adequate to prevent the misappropriation of their technology or that competitors will not independently develop technologies that are substantially equivalent or superior to such companies' technology. AI Companies typically engage in significant amounts of spending on research and development, and there is no guarantee that the products or services produced by these companies will be successful.

The risks associated with Medical Technology Companies include, but are not limited to, small or limited markets for such securities, changes in business cycles, world economic growth, technological progress, rapid obsolescence, and government regulation.

Diversification may not protect against market risk.