Data Converter - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-04-28 | 120 pages | Mordor Intelligence

AVAILABLE LICENSES:

- Single User License $4750.00
- Team License (1-7 Users) $5250.00
- Site License $6500.00
- Corporate License $8750.00

Report description:

The Data Converter Market size is estimated at USD 5.94 billion in 2025, and is expected to reach USD 7.99 billion by 2030, at a CAGR of 6.1% during the forecast period (2025-2030).

High-performance electronic systems use more and more high-performance data converters to improve and shape the architecture and open new application perspectives. The emerging circuits and systems techniques at the forefront of state-of-the-art modulators are pushing their performance forward and giving rise to new generations of data converters. Further, the current and future trend depends on old and new factors, including the global economy, technological evolution, and marketing.

Key Highlights
- Increasing adoption of technologically advanced data acquisition systems drives the market. The high rates of encoded information in multiple signals forced data acquisition (DAQ) systems to evolve from research work to modern engineering processes. The industry is evolving toward a trend of having a combination of modular hardware and flexible software, where these newer modular systems have appropriate signal conditioning and analog-to-digital conversion (ADC), with various interfacing sensors that support multiple data acquisition requirements.
- The traditional approach for performing specific DAQ tasks is not feasible, considering today's requirements. Thus, a market tends toward a more software-defined approach to DAQ and the emergence of high-speed USB-enabled DAQs.
- Furthermore, the growing demand for high-resolution images in scientific and medical applications is driving the market studied. Data converters constitute the most demanding challenge medical imaging imposes on the electronics design in terms of required dynamic range, resolution, accuracy, linearity, and noise. The ADC (analog to digital) must have a high resolution of at least 24 bits to achieve better and sharper images and a fast sampling rate to digitize detector readings that can be as short as 100 □s in a

CT (computed tomography) solution. The ADC sampling rate must also enable multiplexing, which would allow the use of fewer converters as well as the reduction of the size and power of the entire system.
- A company such as Analog Devices addresses these requirements and offer highly integrated solutions for the key signal chain functional blocks to enable best-in-class clinical imaging equipment. Its products, such as ADAS1256 (X-ray applications), ADAS1135, ADAS1134 (CT applications), and many more, drive the market in medical applications.
- Further, the development of low-power consumption data converters challenges the market's growth. Power consumption is one of the leading design constraints in today's integrated circuits. Conversion of the low-frequency bioelectric signals does not require high speed but requires an ultra-low-power operation. This, combined with the required conversion accuracy, makes designing such ADCs a major challenge.
- Further, due to the impact of the COVID-19 pandemic, there is a high effect internationally on supply-demand in the semiconductor industry. For the development of data converters, there is a need for ICs, resistors, capacitors, etc. The breakage in the distribution channel holds slow growth for the data converter market. However, many central and local governments have recognized the strategic importance of the semiconductor industry and prioritized uninterrupted operations for their domestic companies and suppliers in the midst of mandated business closures.

Data Converter Market Trends

Telecommunication to Account for Significant Market Share

- Telecommunication infrastructure is stimulating market growth owing to the advent of 4G communication and the emerging 5G communication. Manufacturers of wireless infrastructure, especially 4G and 5G, are constantly reducing the size and cost of newly installed wireless infrastructure while holding to high standards of performance, functionality, and quality of service. The data conversion block is a critical function in wireless infrastructure designs. The analog-to-digital converter (ADC) is the fundamental block that digitizes the incoming intermediate frequency (IF) signal and then passes the digital data to the digital downconverter.
- The wide bandwidth demands of the 5G solution can be met by moving frequency translation and filtering from the analog to the digital domain. Two RF converters are part of this digitization wave: the AD9081/AD9082 mixed-signal RF converters, which analog devices introduce. They have been engineered to install multi-band radios in the same footprint as single-band ones, which helps to increase call capacity three-fold, compared to the call capacity available in today's 4G LTE base stations.
- Further, the radio architecture core must be tightly integrated for a 5G solution to support small antenna deployments. One solution is the traditional approach combining multi-Giga sample ADCs and DACs with a System-on-Chip (SoC). This approach provides the ability to perform the embedded system design and to address the increased required operating bandwidths. Several data converters implement interfaces using JESD204B.
- Also, over the past ten years, FPGA manufacturers like Xilinx have been improving technology by reducing the silicon fabrication structure size and, as a result, the device's size, weight, and power (SWaP) values. The latest system-on-chip (SoC) device from Xilinx, the RFSoC, consists of FPGA fabric with arm processors, analog-to-digital converters (ADCs), and digital-to-analog converters (DACs) all on the same chip.
- This 16-nm technology has over 4.2K DSP slices, four 1.5-GHz A53 Arm processors, two 600-MHz R5 ARM processors, eight 4-GHz, 12-bit ADCs, and eight 6.4-GHz, 14-bit DACs per device. COTS (Commercial-off-the-shelf) manufacturers can use this game-changing technology to provide multichannel, SDR transceivers for engineers developing 5G radio products.

North America to Hold the Largest Market Share

- North America holds the highest share due to the growth in the telecom sectors and the use of FPGA (field-programmable gate

array). The rising demand for A2D converters in consumer electronics for high-resolution images has become an essential part of driving the market.
- Further, sensor applications in automotive that require data converters range from temperature sensors identifying different engine statuses to radar/LIDAR enabling automotive driver assistance systems (ADAS). Other data converters applications include wireless transceivers for communicating with other vehicles or fixed networks. The USD 7,500 per vehicle tax credit that has boosted EV sales in the United States is drafted to be repealed without any increment in the upper limit of the incentive.
- Also, tariff risk is compelling foreign companies to shop in North America. Volkswagen announced spending USD 800 million to build a manufacturing facility in Chattanooga, Tennessee. Further, Toyota and Mazda are joining forces to construct an assembly plant in Huntsville, Alabama. The factory, which costs about USD 1.6 billion, would have a production capacity of 300,000 units per year. These instances are expected to increase the data converter market's growth in the region's automotive segments.
- Further, IT and telecommunications applications were estimated to have the largest share of the data converter market in the United States. The growth is driven by the development of the 4G network, with superior modulation and antenna methods for improved voice and data services, which enhances the demand for the AMS blocks.
- Further, according to GSMA, in the United States, the 5G adoption rate as a share of mobile connections is expected to increase by 33%, 40%, and 46% in the coming three years, respectively. This further enhances the growth of applications in 5G for data converters.

Data Converter Industry Overview

The data converter market is fragmented as the global players integrate signals in various applications like consumer electronics and automotive, which gives an intense rivalry among the competitors. Key players are Analog Devices, Inc., Microchip Technology Inc., etc.

- May 2022: Analog Devices Inc. introduced a new portfolio of next-generation 16- to 24-bit, ultrahigh-precision SAR ADCs to simplify the complicated process of designing ADCs for instrumentation, industrial, and healthcare applications. The patented Easy Drive technology and the adaptable Flexi-SPI serial peripheral interface (SPI) of ADI are two aspects of the new high-performance SAR ADC series that address system design issues and increase the range of directly compatible companion products.
- September 2022: MaxLinear Inc. and RFHIC announced a collaboration to develop a 400MHz Power Amplifier (PA) solution for 5G Macrocell Radios that is production-ready. This solution will use MaxLinear MaxLIN Digital Predistortion (DPD) and Crest Factor Reduction (CFR) technologies to enhance the performance of RFHIC's newest ID-400W series GaN RF Transistors.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

Table of Contents:

1 INTRODUCTION
1.1 Market Definition and Scope
1.2 Study Assumptions

2 RESEARCH METHODOLOGY

3 EXECUTIVE SUMMARY

4 MARKET INSIGHTS
4.1 Market Overview
4.2 Industry Stakeholder Analysis
4.3 Industry Attractiveness - Porter's Five Forces Analysis
4.3.1 Bargaining Power of Suppliers
4.3.2 Bargaining Power of Consumers
4.3.3 Threat of New Entrants
4.3.4 Threat of Substitute Products
4.3.5 Intensity of Competitive Rivalry

5 MARKET DYNAMICS
5.1 Market Drivers
5.1.1 Increasing Adoption of Technologically Advanced Data Acquisition Systems
5.1.2 Growing Demand for High-Resolution Images in Scientific and Medical Applications
5.2 Market Challenges
5.2.1 Challenges in the Development of Low-power Consumption Data Converters
5.3 Impact of the COVID-19 Pandemic in Supply Chain Distribution of Semiconductors Globally

6 KEY TECHNOLOGY INVESTMENTS
6.1 Cloud Technology
6.2 Artificial Intelligence
6.3 Cyber Security
6.4 Digital Services

7 MARKET SEGMENTATION
7.1 By Type
7.1.1 Analog to Digital Converter
7.1.2 Digital to Analog Converter
7.2 By End User
7.2.1 Automotive
7.2.2 Telecommunication
7.2.3 Consumer Electronics
7.2.4 Industrial
7.2.5 Medical
7.2.6 Other End Users
7.3 Geography
7.3.1 North America
7.3.1.1 United States
7.3.1.2 Canada
7.3.2 Europe
7.3.2.1 Germany
7.3.2.2 United Kingdom
7.3.2.3 France
7.3.2.4 Italy
7.3.2.5 Rest of Europe

7.3.3 Asia-Pacific
7.3.3.1 India
7.3.3.2 China
7.3.3.3 Japan
7.3.3.4 Rest of Asia-Pacific
7.3.4 Rest of the World

8 COMPETITIVE LANDSCAPE
8.1 Company Profiles
8.1.1 Analog Devices Inc.
8.1.2 Microchip Technology Inc.
8.1.3 STMicroelectronics NV
8.1.4 NXP Semiconductors NV
8.1.5 Texas Instruments Incorporated
8.1.6 Mouser Electronics Inc.
8.1.7 DATEL Inc.
8.1.8 Synopsys Inc.
8.1.9 Cirrus Logic Inc.
8.1.10 Maxim Integrated Products Inc.

9 INVESTMENT ANALYSIS

10 MARKET OPPORTUNITIES AND FUTURE TRENDS

Data Converter - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-04-28 | 120 pages | Mordor Intelligence

To place an Order with Scotts International:

- - Print this form
- - Complete the relevant blank fields and sign
- - Send as a scanned email to support@scotts-international.com

ORDER FORM:

Select license	License	Price
	Single User License	$4750.00
	Team License (1-7 Users)	$5250.00
	Site License	$6500.00
	Corporate License	$8750.00
	VAT	
	Total	

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Email*		Phone*	
First Name*		Last Name*	
Job title*			
Company Name*		EU Vat / Tax ID / NIP number*	
Address*		City*	
Zip Code*		Country*	
		Date	2025-06-25
		Signature