STMicroelectronics

Automotive and Discrete Group (ADG)

Dedicated Automotive ICs

We are a top automotive semiconductor vendor supplying solutions to the automotive industry worldwide. We combine an unparalleled platform of advanced technologies with an unswerving commitment to quality, and a thorough understanding of the automotive market gained through close collaboration with leading customers. Our automotive-solutions portfolio covers all key application areas in the car: Powertrain, Chassis, Safety and Security, including ADAS, Body Electronics, Telematics & Infotainment and Connectivity.

For Powertrain, we provide silicon solutions for the full range of engine-management systems: from motorbikes and scooters to the most advanced drive-by-wire solutions. Developments in engine management are driven by both government emission regulations and energy concerns. We continue to work closely with major automotive OEMs, as we have for decades, to reduce fuel consumption and CO2 emission via advanced technologies such as Variable Valve Timing and Gasoline Direct Injection and Battery Management for hybrid and full electric cars. Due to the cooperation with certain leading car makers, our microcontrollers are currently in the electrical engines of leading hybrid and electric cars. The first automotive microcontrollers to feature multiple Arm® Cortex®-R52 cores with on-chip non-volatile memory for safe, real-time performance, our Stellar microcontrollers provide advanced connectivity and security features to support the transition to service oriented automotive system architectures.

With regards to Chassis, we provide a broad range of solutions to increase vehicle-occupant safety, including devices for airbags, anti-lock brakes, traction control, electric power steering and active suspension systems. We are a leading supplier of chips for automotive airbags and anti-lock braking systems, which currently represent the largest portion of automotive safety electronics.

We are a leading player in ADAS that help avoid or minimize the severity of traffic accidents. We manufacture leading-edge products for vision and radar (both short range 24GHz and long range 77GHz) based systems that assist the driver with capabilities such as lane-departure warning, forward-collision warning, vision/radar fusion and pedestrian detection including specific modular solutions for the mass market. We are also working on our first-generation modular offering for V2X (vehicle-to-vehicle and vehicle-to-infrastructure) as society progresses toward semi- and fully-autonomous vehicles.

Today’s car body electronics involve a myriad of inter-networked electronic systems, from dome and door-zone controls, HVAC (heating, ventilation, and air-conditioning) systems, and seat controls to wiper and lighting controls. The penetration of electronics in the car is increasing all the time, as are the requirements for improved reliability and diagnostic capabilities. We address the concept of the “smart” junction box, which is an intelligent power and switching center for the vehicle that integrates functions and features from exterior and

cabin lighting to wipers, with a comprehensive architecture that consists of upgradable hardware and software modules. With our proprietary VIPower silicon technology and thorough application knowledge, we have become a market leader in automotive lighting electronics, offering solutions for both exterior and interior lighting, from incandescent bulbs to LED- or HID -based systems.

Our car infotainment and telematics portfolio includes complete turnkey solutions for digital radio, navigation and telematics, and wireless connectivity in the car. We have leveraged our experience of more than 30 years, at the forefront of AM/FM radio technology to lead in digital radio. We produce all of the semiconductor components for car radios — from the tuner through the baseband to multimedia processing and playback. Our car-radio systems are optimized for harsh reception environments and minimized power consumption. Our portfolio of products for navigation also includes a family of System-on-Chip solutions capable of receiving signals from multiple satellite navigation systems, including BeiDou, GPS, GALILEO, GLONASS, QZSS and NavIC, to improve user position accuracy and navigation in poor satellite visibility conditions, such as in urban canyons.

Discrete and Power Transistor

Discrete and power transistors families include both power products and protection devices serving our strategic end markets (automotive, industrial, personal electronics and communications equipment, computers and peripherals).

Leading-edge power technologies for both high-voltage and low-voltage applications combined with a full package range and innovative die bonding technologies exemplify our innovation in power transistors. Our portfolio includes silicon MOSFETs ranging from 12 to 1700 V, SiC MOSFETs from 650 to 2200 V featuring the industry's highest temperature rating of 200 °C, IGBTs with breakdown voltages ranging from 300 to 1700 V and a wide range of power bipolar transistors. Following our acquisition of a majority stake in GaN innovator Exagan in 2020, we have accelerated our offer to include a full range of GaN-based power device solutions for all markets. Our portfolio of protection devices supports all industry requirements for electrical overstress and electrostatic surge protection, lightning surge protection and automotive protection. Our protection devices have passed all certifications, meeting or exceeding international protection standards for electrical hazards on electronics boards found in the demanding automotive, industrial, personal electronics and communications equipment, computers and peripherals.

Content is from 2021 Annual Report (Form 20-F), available here: https://investors.st.com/