



Use Case

Doing laundry

Smart washing machines

Washing machines have become an essential appliance that people can no longer imagine life without. Today, consumers seek quiet, highly efficient systems with the right feature set, such as stable and smooth starting, a wide range of programs and cycles, and vibration suppression. As commodities, washing machines require components for their designs that improve reliability and energy efficiency – with an attractive price-performance ratio. Furthermore, new features and security solutions are required to integrate washing machines into the network of smart homes.

Smart washing machines – easier and more energy-efficient

Of course, even an intelligent device does not relieve of the task of storing, removing, hanging, ironing and folding laundry. However, there are some interesting features that make life more convenient and more environmentally friendly. These already include simple functions such as remotely switching off the washing machine, which often remains unnecessarily in standby mode and consumes power. The energy-consumption can also be monitored and controlled. This makes it possible to derive optimized measures that are tailored to one's own consumption patterns. In the long term, energy and thus money can be saved. Additionally, it can be practical to monitor and control the washing process via app from any location.

Application example: When the washing machine calls the manufacturer

In a smart home, a washing machine is equipped with sensors that automatically detect the status of the machine and how it is running. The machine can be remotely monitored by the manufacturer through a secured communication channel. If it is about to break down the sensors will detect that and will send a notification to the manufacturer and the owner of the machine. An employee can be sent over to repair the washing machine before the damage occurs – if the owner is not at home, the door could even be opened via a smart lock system to the authorized employee by the housekeeper. A secured software update over the air would also be possible, if it is a software issue. Through a secured communication channel the installation of unauthorized software or firmware, which may be manipulative or even damaging, is prevented. So the damage of the washing machine can be avoided, even if the resident is not at home!

Market drivers

Energy saving

- › WiFi-enablement for remote monitoring & control
- › High-efficiency designs for less energy & water consumption

Convenience

- › Monitoring & control via app

Intelligent sensitization

- › Combination of different sensors to provide an intuitive user experience
- › Situational awareness with accuracy and reliability

Smart predictive maintenance

- › Connectivity and intelligent sensing that allow greater insights of usage for predictive maintenance purpose

Smart security

- › Secured identification of devices within a home automation system
- › Secured communication between the server and the cloud
- › Data privacy protection
- › Brand protection of accessories
- › Pre-provisioning of keys
- › Mutual authentication
- › Secured storage of keys and certificates
- › Device platform integrity
- › Secured firmware update







Leading components and products

Infineon's portfolio of right-fit and easy-to-use solutions

Infineon offers a comprehensive portfolio of power management, sensing, control and high-voltage semiconductor technologies for modern washing machines, allowing you to perfectly fulfill consumer demands. Ensure your design is secured with our OPTIGA™ family of products. It offers ready to use security solutions for appliances in the smart home network. Furthermore, iMOTION™, our top-quality digital motion controller, allows you to include all the advantages of inverterization, such as energy efficiency, less water consumption, less noise and longer lifetimes, in your washing machine design.

Turn to Infineon for design support in the form of application notes, design tips, technical papers and reference designs. And know that with us you can easily differentiate your washing machine systems by making them more reliable and energy efficient.

Infineon's offering:

		Washing machine		
		600 W	1000 W	1.5 kW
	Switches	TRENCHSTOP™ IGBT / RC Drives IGBTs / IGBT 3 / IGBT6		
	gate driver ICs	650 V SOI Level shift gate driver ICs		
		600 V JI Level shift gate driver ICs		
	IPM	Drum: CIPOS™ Tiny, Mini; Drain Pump: CIPOS™ Micro, Nano		
	Microcontrollers	iMOTION™/XMC™		
	Driver, AUX power & PFC supply	Low side gate drivers for PFC SOI HV Level shift gate drivers for totem pole PFC Integrated AC/DC power stage – CoolSET™ Linear voltage and DC/DC switching regulators		
	Sensors & Microphone	Hall Switches, 3D magnetic, current and angle sensors, radar sensors, pressure sensors, Mems Mic		
	Security	OPTIGA™ Trust family		

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