

MICRO-CONTROLLER

Eight USART ports for in-car audio

STMicroelectronics has introduced its latest STM32F091 ARM Cortex-M0 micro-controller. With built-in CAN support, it is suitable for in-car applications connected to the vehicle network, such as car radios.

THE MICRO-CONTROLLER OVERCOMES THE RESOURCE constraints imposed by similar devices positioned for cost-sensitive applications by providing large on-chip memories and up to eight USART ports that save multiplexing communication ports in applications such as in-car audio or three-phase power metering. With up to 256 KiB of Flash on-chip and a 32 KiB SRAM – enough to implement a Java stack – the micro-controller can host applications that deliver user experiences normally associated with larger or more expensive devices.

The CAN networks brings further communication capability for industrial or in-car audio applications (Photo: STMicroelectronics)

All variants, including those in 48-pin packages, have at least six USART ports. Three of the USARTs are able to support smartcard, LIN, IrDA, and Modbus modes. The device has a power architecture that allows analog circuitry, including the 12-bit 1,0 μ s ADC and two-channel 12-bit DAC, to be operated at up to 3,6 V for maximum dynamic range. Digital circuits run at a lower voltage to minimize power consumption. Moreover, device I/Os can be powered independently, allowing direct connection to a low-voltage companion device such as an application processor without using level shifters.

With built-in CAN support, the STM32F091 can address consumer in-car applications connected to the vehicle network, such as car radio, and industrial-control applications. In addition, designers can take advantage of an integrated touch-sensing controller, as well as a SysTick timer and a real-time clock that aid real-time performance and deliver time-of-day or calendar functions.

The product is available in different packages including 48-pin and 64-pin styles, as well as a salt-atmosphere-compatible QFP100 suitable for smart utility meters in China. Prices start from \$1,59 for the STM32F091CBT6 with a 128 KiB Flash in the QFP48 package, for orders of 10 000 pieces.