CD-less Audio Design Kit Enables Low-Power, Low-Cost Digital Audio Systems for Vehicles

Fujitsu Semiconductor America, Inc. (FSA) recently introduced a new CD-less Audio Design Kit, a complete reference solution featuring decoding and playback of popular digital audio files such as MP3, Windows Media Audio (WMA), Ogg Audio and Advanced Audio Coding (AAC) formats. The design kit also offers available support for a full range of connectivity options, including radio tuner, Bluetooth, USB mass-storage, SD/SDHC Card and iPod devices.

Designed for rapid development and prototyping, the kit is built around the Fujitsu MB9G711 SoC Series, a new low-cost, ARM-based System-on-a-Chip (SoC) for audio systems that do not require a CD player. The kit comes with a complete Board Support Package (BSP) providing hardware design, schematic, and Gerber files, along with guidelines for low BOM cost implementation. The BSP includes software libraries and application source code for rapid development and prototyping. Eliminating the CD player enables the design of low-cost audio systems that require a minimum of power, fit into a small form factor, and are free from mechanical failure.

The Audio Design Kit features digital audio playback via a USB memory, SD/SDHC card and MMC memory card, as well as Apple iPod audio playback via USB. The kit also includes an LCD with 2-line, 16-segment characters; +/-14dB bass and treble control; an AM/FM/RDS tuner support; and 10-band, real-time, audio spectrum indicator functions. In addition, the kit incorporates a full array of Bluetooth capabilities including A2DP (wireless audio transmission), HFP (hands-free speakerphone), PBAP (phonebook access) and AVRCP (AV remote control.)

The Fujitsu MB9G711 SoC series supports MP3, WMA, Ogg Audio, and AAC digital audio formats and direct media interfaces for USB memory and SD cards and MMC memory cards. The SoC features an ARM946 core operating at up to 164 MHz with an integrated SD/SDHC/MMC card controller and USB 2.0 host interface.

The SoC incorporates 288KB on-chip SRAM for data RAM and ROM area mapping. Other features include built-in 2-channel, 24bit, 48KHz audio DACs; support for automotive application bus interfaces including UART, CAN, and I2C; and integrated RTC functionality. Available in four configurations, the series is well-suited for various grades of audio applications.

The MB9G711 integrates various parts of the licensed technologies. Final products require licenses from respective licensors. Audio decoders are subject to licensing agreements with Thomson (MP3), Microsoft (WMA) and Via Licensing (MPEG2-AAC). The SD card interface is subject to licensing agreement with the SD Association (SDA).The MB9G711 does not integrate any licensed technology for iPod connections. Final products, including software to connect iPod devices, require a

license from Apple.

Samples and reference solutions are available now for evaluation and development.

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