

Overview

DVF99 is the next generation of DSP Group's IP Phone and ATA SoC (System on a Chip). Designed to meet the needs of Tier 1 enterprise vendors, the DVF99 is based on a multi-core architecture and provides excellent audio experience, robust security, enhanced graphics and advanced peripherals.

The DVF99 is built with two ARM926 cores which provide a combined 1,100 MIPS of processing power - an application processor running at 600 MHz together with 500 MHz communication co-processor. Combined with a smart multi-bus architecture and large dedicated on-chip TCM (Tightly Coupled Memory), the DVF99 can support IP phone processing needs from low end single line IP phone up to mainstream Gigabit Ethernet multi-line IP phones with graphical color display and advanced multi-port ATA gateways.

Leveraging DSP Group's high quality Enhanced Acoustics Echo Cancellation (EAEC) algorithm, together with other high definition voice technologies, the DVF99 provides exceptional, market-leading voice quality. The DVF99 features an integrated Audio Front End which includes super-wideband ADCs and DACs, a Class-D amplifier, and multiple microphone inputs for superior audio performance.

The DVF99's hardware security engine enables new class of secure IP phones, delivering robust security for media privacy, secure phone and user identification, secure firmware, data storage and control. An LCD controller, a 2D graphics engine, a high-speed USB2.0 port and a wide range of standard chip interfaces are also included.

The DVF99 meets the needs of low power green phones by providing low power-capable peripherals (such as low voltage DDR3), and by incorporating a low power management scheme in the firmware to minimize power consumption during low-usage periods.

The DVF99 complements existing XciteR solutions, including the DVFD818x VoIP processor, which enables cost-optimized low end VoIP solutions, and the DMW96 media processor, which enables high end VoIP and Video Media Terminals.

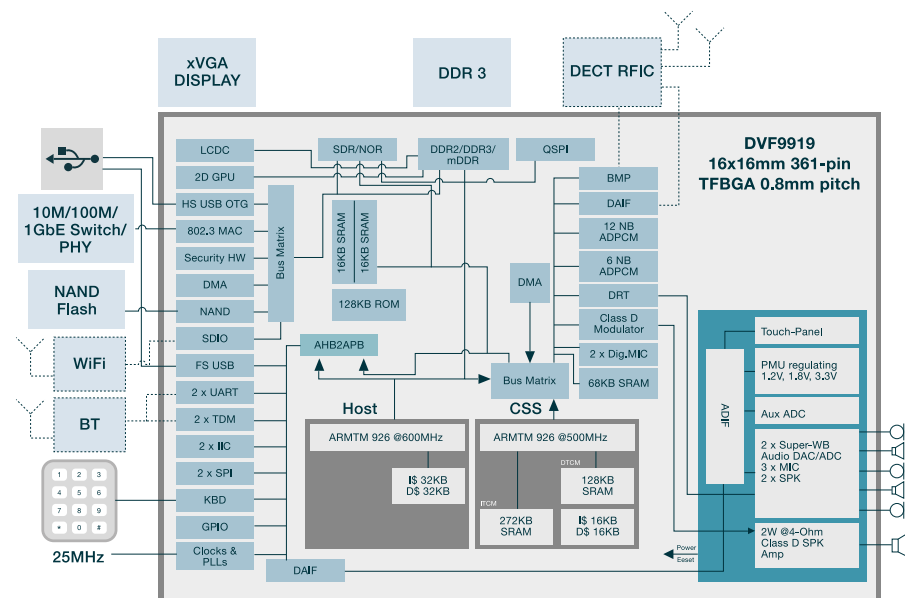
Features

- Dual-core processing power
 - Applications processor ARM 926EJ-S™ up to 600 MHz
 - 32KB instruction and 32KB data caches
 - Runs Linux
 - Communications subsystem (CSS) ARM 926EJ-S™ up to 500 MHz
 - 16KB instruction and 16KB data caches
 - 272KB instruction, 128KB data TCMs
 - 68KB AHB RAM
 - Runs RTOS for real-time low-latency operations, including voice processing and DECT communication
- Boot options
 - NAND/NOR/QSPI Flash, JTAG, UART
- External memory support
 - DDR3, DDR3L, DDR2, Mobile DDR (mDDR) and SDRAM
- Flash storage
 - SLC and MLC NAND including hardware-accelerated ECC (up to 16-bit)
 - Quad SPI and Parallel NOR flash options
- Ethernet
 - 802.3 (G)MAC with MII, RMII and RGMII interface options
- Security hardware accelerator
 - Secured boot using Boot ROM
 - AES, DES/3DES, RC4 encryption/decryption
 - SHA-1 (160), SHA-2 (224, 256)
 - OTP (Fuse) handling and usage
- LCD controller
 - TFT LCD (digital RGB), up to 24-bit display, up to WVGA resolution
 - CPU type (TFT LCD), 16-bit RGB interface
- 2D graphics engine
 - Raster GPU with a smart cache technology
 - Full function 2D rendering solution designed to accelerate system performance by offloading CPU
- 2 USB ports controller
 - USB 2.0 OTG host/device supports high-speed (480Mbps) and full-speed (12Mbps)
 - USB 2.0 host/device supports full-speed
- Serial communications interfaces
 - Two fast UART ports
 - Two TDM buses with support for I2S, AC97, PCM
 - SPI Master (SPIM) and SPI master/slave (SPI) interfaces
 - Two I2C buses
 - Secure Digital Interface (SDIO), version 2.0
 - Secure Digital memory (SD mem), version 3.0
- Power Management Unit (PMU)
 - Embedded Power on Reset (POR)
 - 3.3 V regulation control with external transistor
 - 1.8 V embedded linear regulator
 - 1.2 V embedded programmable DCDC for DPU core voltage
- GPIO
 - GPIO multiplexed with digital interfaces
 - 16 dedicated GPIOs that can be used as interrupt trigger
- Keyboard and touch panel
 - Keyboard controller with interruptible keyboard matrix: 10x8 keys
 - Resistive touch panel supported by dedicated controller
 - Capacitive touch panel supported by external IC connected via I2C/SPI

DVF99

A new member of DSP Group's XciteR VOIP processor family, the DVF99 is addressing a broad range of VOIP products in the enterprise segment. The DVF99 delivers outstanding cost/performance for ODMs and Brands looking to build scalable VOIP phones with superb voice quality, low power, and low price.

- Analog Front End (AFE)
 - 2 high-quality audio DAC/ADC
 - Supports audio sampling rates of 8, 16 and 32 kHz for narrowband, wideband and super wideband voice
 - 3 differential microphone input amplifiers
 - 2 clean microphone power outputs
 - 2 differential or 4 single-ended output amplifiers
 - Support stereo and mono speakers/ headsets and/or line outputs
 - Class-D loudspeaker amplifier
 - Dedicated digital modulator (third DAC channel)
 - Drives 4 Ohm/2 W output power
 - Short-circuit detection/hardware protection
- Digital microphones support
- Hardware-controlled mute
- Debug
 - JTAG-based debug port for both CPUs
 - CoreSight with Embedded Trace Macrocell (ETMv3) and 16-bit ETM port
- Packaging
 - 361-ball TFBGA, 16x16 mm, 0.8 mm pitch, 0.3 mm ball diameter



Benefits

- Strong processing power with dual-ARM architecture, ensuring high application and GUI processing with low delay audio performance
- Superior SoC integration
 - Enables high performance, enterprise-class terminals
 - Enables lower total system bill of materials (BOM) costs
 - Reduces system power consumption
- Superb voice quality
 - Integrated support for wideband and super wideband audio
- Extensibility to DECT, Bluetooth and Wi-Fi® enabling low-cost, scalable platforms.

DSP Group®, Inc. (NASDAQ: DSPG) is a leading global provider of wireless chipset solutions for converged communications. Delivering semiconductor system solutions with software and reference designs, DSP Group enables OEMs/ODMs, consumer electronics (CE) manufacturers and service providers to cost-effectively develop new revenue-generating products with fast time to market. At the forefront of semiconductor innovation and operational excellence for over two decades, DSP Group provides a broad portfolio of wireless chipsets integrating DECT/CAT-iq, DECT ULE, Wi-Fi, PSTN, HDClear™, video and VoIP technologies. DSP Group enables converged voice, audio, video and data connectivity across diverse mobile, consumer and enterprise products – from mobile devices, connected multimedia screens, and home automation & security to cordless phones, VoIP systems, and home gateways. Leveraging industry-leading experience and expertise, DSP Group partners with CE manufacturers and service providers to shape the future of converged communications at home, office and on the go.

Copyright © 2013, DSP Group, Inc. All rights reserved. DSP Group, Inc. and DSP Group Logo are trademarks of DSP Group, Inc. Other third party trademarks are property of their respective owners. All product information, dates and figures are not warranted as accurate or complete, and may be revised based on further information without notice.

For more information, visit www.dspg.com

DSP GROUP
at home in your wireless world