



**CEVA Xpert-Teak
DSP platform for SoC Designs**

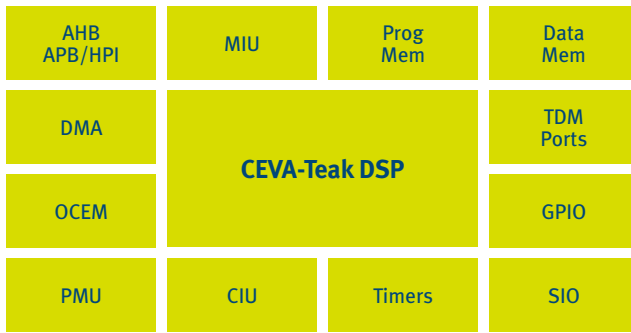
Target Markets

- › Image and Video processing
- › Cellular applications
- › Consumer/professional Audio Markets
- › Enterprise/residential applications
- › VoIP/VoCables/VoDSL applications
- › IP-PBX

Overview

Xpert-Teak™ is a complete licensable IP platform of a low power, low cost, programmable DSP based System-on-a-Chip (SoC), designed for the embedded application markets. As a licensable design—fully synthesizable and process independent, it can be furthered incorporated into a highly integrated SoC. Xpert-Teak is based on Ceva’s programmable CEVA-Teak® DSP Core with all required hardware peripherals. It incorporates on-chip data and program memories, high performance Direct Memory Access (DMA) controller, Buffered Time Division Multiplexing Port (BTDM), high throughput Host Port Interface (HPI), standard AMBA bridges (AHB & APB), and more. With the addition of off-the-shelf software provided by CEVA and by its technology partners, Xpert-Teak suits a variety of DSP applications such as Voice over Packets, Image, Video, Audio, Speech and Cellular.

Xpert-Teak is offered as a complete DSP platform licensable IP, which can be embedded into highly integrated SoC designs.



Xpert-Teak Functional Block Diagram

Highlights

- › Xpert-Teak is available as a complete DSP platform licensable IP
- › Embedded programmable dual MAC CEVA-Teak DSP Core
- › Low power design
- › Open architecture allows future upgradability, feature enhancements and customer-specific proprietary features in software and hardware
- › Fully synthesizable, soft core and process-independent DSP platform.
- › Advanced and comprehensive SW development tools and HW development environment, supporting the Xpert-Teak platform

Xpert-Teak™ Features

- › High-Performance, Low-Power, Fixed Point CEVA-Teak DSP Core based Platform
- › On-chip memories composed of:
 - 128K word on-chip program RAM
 - 128K word on-chip data RAM
- › On-chip programmable PLL
- › Eight channels of Direct Memory Access (DMA) for data and program transfers
- › Two Buffered Time Division Multiplexing Ports (BTDM)
- › AHB and APB standard bridges allows easy integration of Xpert-Teak and ARM based SoC
- › Flexible 8/16-bit host port interface
- › Power management Unit, Serial Input Output, Interrupt Control Unit, TIMERS, CRU, JTAG, On Chip Emulation Module and other on chip peripherals
- › Evaluation board and complete SW development tools supporting the Xpert-Teak platform

- › Silicon chip is available in two formats:
 - 576-pin Ball Grid Array (BGA)
 - 208-pin Low profile Fine pitch Ball Grid Array (LFBGA)

CEVA-Teak DSP Core Highlights

- › 16-bit Fixed point programmable DSP
- › Dual MAC in a single cycle
- › Parallel instruction capabilities
- › High code density, using 16-bit instruction width
- › Four 40-bit Accumulators
- › Split 3 input ALU
- › Barrel Shifter
- › Single cycle Exponent Unit
- › Bit Field Operations
- › Built-in Algorithm acceleration such as: Viterbi decoder, FFT, codebook search and others.
- › Broad set of addressing modes including Direct, Indirect, Base/Index, Stack and Bit reversed
- › Ultra-low power dissipation

Optional DSP SW Available for:

- › Image and Video processing (including MPEG and JPEG)
- › Home Theater (including AC3/AAC)
- › Internet audio and CD players (Including MP3/AAC/WMA)
- › Fully compliant with applicable standards Speech, Audio and Cellular Vocoders
- › Cable Set-Top Boxes
- › VoDSL/VoIP/VoCables
- › All telephony functions with Fax support

Xpert-Teak Development Board



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