

# Board Support Package

for Cirrus Logic EP7212

## Overview

As the number of embedded consumer products increases, processor and board manufacturers are creating market and product specific development platforms to address the unique needs of developers. One such processor architecture is ARM. Cirrus Logic has used the ARM architecture to create numerous board development platforms suitable for product development in the consumer products space.

The Cirrus Logic (CL) EP7212 development board is a low-power, high-performance, system-on-chip with a LCD controller and digital audio interface (DAI). It is ideally suited for power-sensitive applications such as personal organizers (PDAs), two-way pagers, smart cellular phones or any vertical PDA device with digital audio decompression (MP3 players).

The BlueCat™ Linux® 3.1 cross-development based board support package (BSP) has been developed to support this platform and provide a “quick start” tool set for developers. The quick start approach enables developers to minimize the start up time and reduce the overall time required to bring a product to market.

## Board Features

The Cirrus Logic EP7212 development board is based on the ARM720T processor. The ARM720T processor has 8 K-bytes of cache, a write buffer and enhanced memory management unit (MMU) that allows support for sophisticated embedded operating systems like BlueCat Linux. The listed features provide an overview of the board's capability.

- ARM720T processor
- Thumb code enabled applications
- Dynamically programmable clock speeds
- Ultra low power
- Advanced audio decoder/decompression capability (MP3)

- LCD controller
- DRAM controller
- Memory controller
- 38,400 bytes of on-chip SRAM
- Synchronous serial interface
- On-chip ROM

For more detailed information, visit the Cirrus Logic web site at [www.cirruslogic.com](http://www.cirruslogic.com).

## Software Advantages

BlueCat Linux is a cross-development system for accelerated embedded development and rapid deployment of custom operating systems. BlueCat Linux contains numerous pre-built tools and samples supporting the ARM architecture family (ARM7, ARM9, and StrongARM). These tools and samples allow developers to configure a kernel, add applications and make kernels for download to a specific target board. As open source, the tools and sample sources are included and may be customized, re-compiled and re-used in your embedded product. BlueCat Linux for ARM includes:

- Support for Thumb extensions
- Source and binaries for ARM architecture
- Compiler for ARM
- Utilities for loading Linux kernels on the target
- Utilities for loading root file system on the target
- Support on Windows or Linux Host
- Comprehensive User's Guide

BlueCat Linux can be used to develop a customer's own board support package, or in conjunction with one of many LynuxWorks architecture and board specific pre-built packages, such as the EP7212 TSP, to provide a “quick start” package for board development.

## Board Features

- Target  
Cirrus Logic EP7212
- Development Board Architecture  
ARM7
- Microprocessor  
ARM720T
- Embedded OS  
BlueCat Linux 3.1
- Market/Consumer Devices  
PDA, cell phones, set-tops  
and pagers

## Board Support Package: EP7212

The EP7212 board support package includes the necessary tools and utilities to easily and quickly establish a development environment for the EP7212 development board. These tools and utilities are customized to the unique development requirements for the EP7212 development board. In conjunction with the BlueCat Linux tool set, the EP7212 TSP provides a complete development system. The EP7212 TSP includes:

- Pre-configured kernels with the appropriate devices and drivers
- Pre-built utilities for loading the development kernel and root file system
- Detailed instructions on how to use these utilities
- Comprehensive user documentation

The Cirrus Logic EP7212 TSP includes support for the following board functionality:

### General

- On-chip timer
- On-chip real time clock (RTC)
- On-chip interrupt controller
- On-chip cache
- Power management

### Memory

- NOR Flash (16MB on board)
- DRAM (16MB on board EDO)
- NAND Flash (16MB on board)

### Peripherals

- On-chip UART (2)
- On-chip modem control signals
- CS 8900 on-board Ethernet
- Audio (CS 434x on-board audio out and in FIQ supported)

## Boot Support

- NOR Flash (compressed kernel and root file system)
- Network (TFTP)

## Sample Kernels

The EP7212 TSP includes two pre-built sample kernels (Showcase and Developer) that can be quickly downloaded to flash and easily demonstrate specific board functionality relative to the target markets. Sources are included for both samples, which allows developers to easily customize, rebuild and download kernels specific to their application needs while saving considerable development time.

*Showcase* – Demonstrates headless boot from flash and Apache web server with three web pages.

*Developer* – Demonstrates the use of tools such as Shell, FTP, GDB, Ping and support for LynuxWorks' VisualLynux IDE.

## Summary

In today's competitive consumer products market, time-to-market may be the most critical factor for success. Quick-starting development with the use of flexible tools can make the difference in meeting or falling short of your strategic goals.

To learn more about BlueCat Linux and target support boards that can help you, visit our web site at [www.lynuxworks.com](http://www.lynuxworks.com).

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