



VS1000 Audio Book Application

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Overview

- Uses high performance Ogg Vorbis codec
- Entire book can be just one file for highest compression
- Smart indexing to sample-exact position of audio file
- No delay in audio jumps from verse to verse
- Graphical multi-level menu fully configurable
- Browsing during playback
- EarSpeaker



Applications

Portable bible player

- Menu can be browsed during playback
- Bookmarks
- Current verse display
- Smart indexing

Audio book

- Content can be loaded via USB
- Huge amount of (free) Ogg Vorbis books available in internet

Tourist guide

- Combination of audio guide, audio book and souvenir

Features

- Flexible Ogg Vorbis decoder
- Millisecond accurate positioning
- Minimal header overhead
- Multi-level menu
- User interface

Flexible Ogg Vorbis Decoder

Variable bit rate

- Ogg Vorbis is variable bit rate codec

Quality vs bit rate encoding

- Quality vs bit rate can be compromised by setting quality parameter when encoding the Ogg Vorbis audio book file

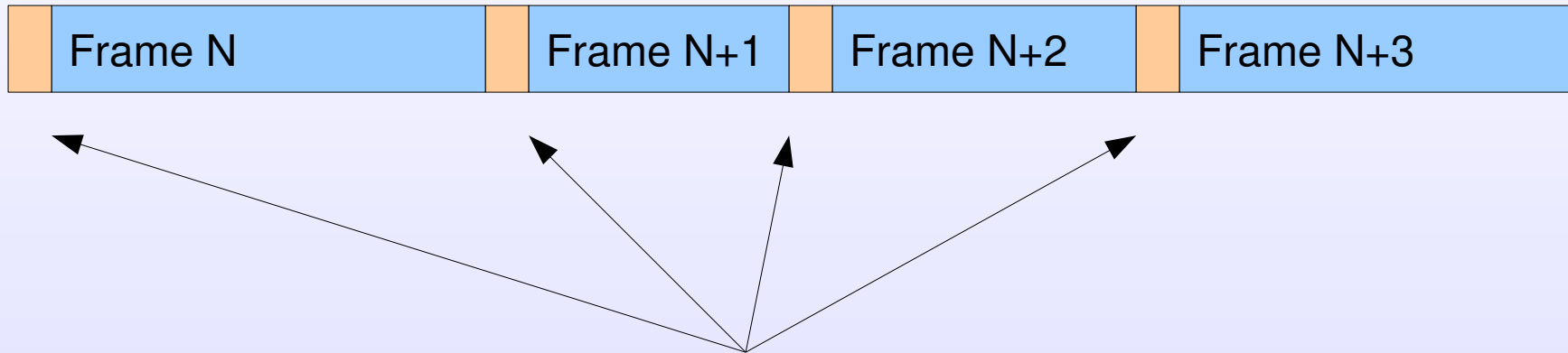
Sample rate

- Low bit rate (~ 8 kbits/s) speech quality at 6 kHz
- CD quality (~ 192 kbits/s) audio quality at 44.1 kHz
- Huge amount of other sample rates supported, too

License Free

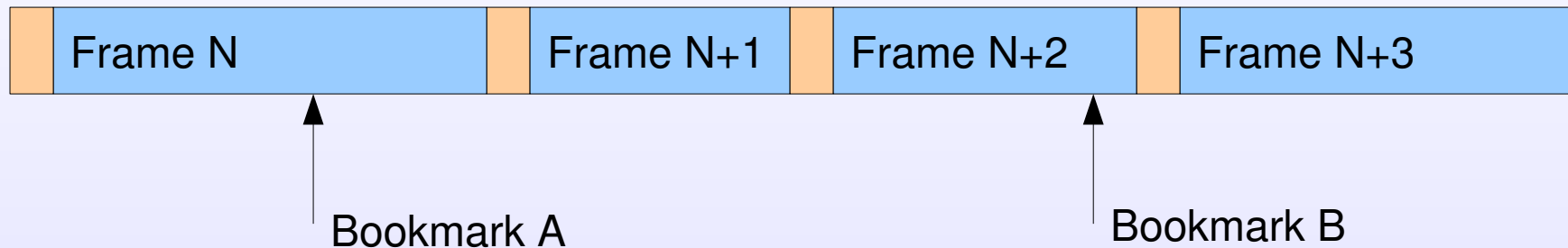
- No royalty payments

Minimal Header Overhead



- Ogg Vorbis frame header has time information
=>jumping and forward/rewind are easy

Millisecond Accurate Positioning

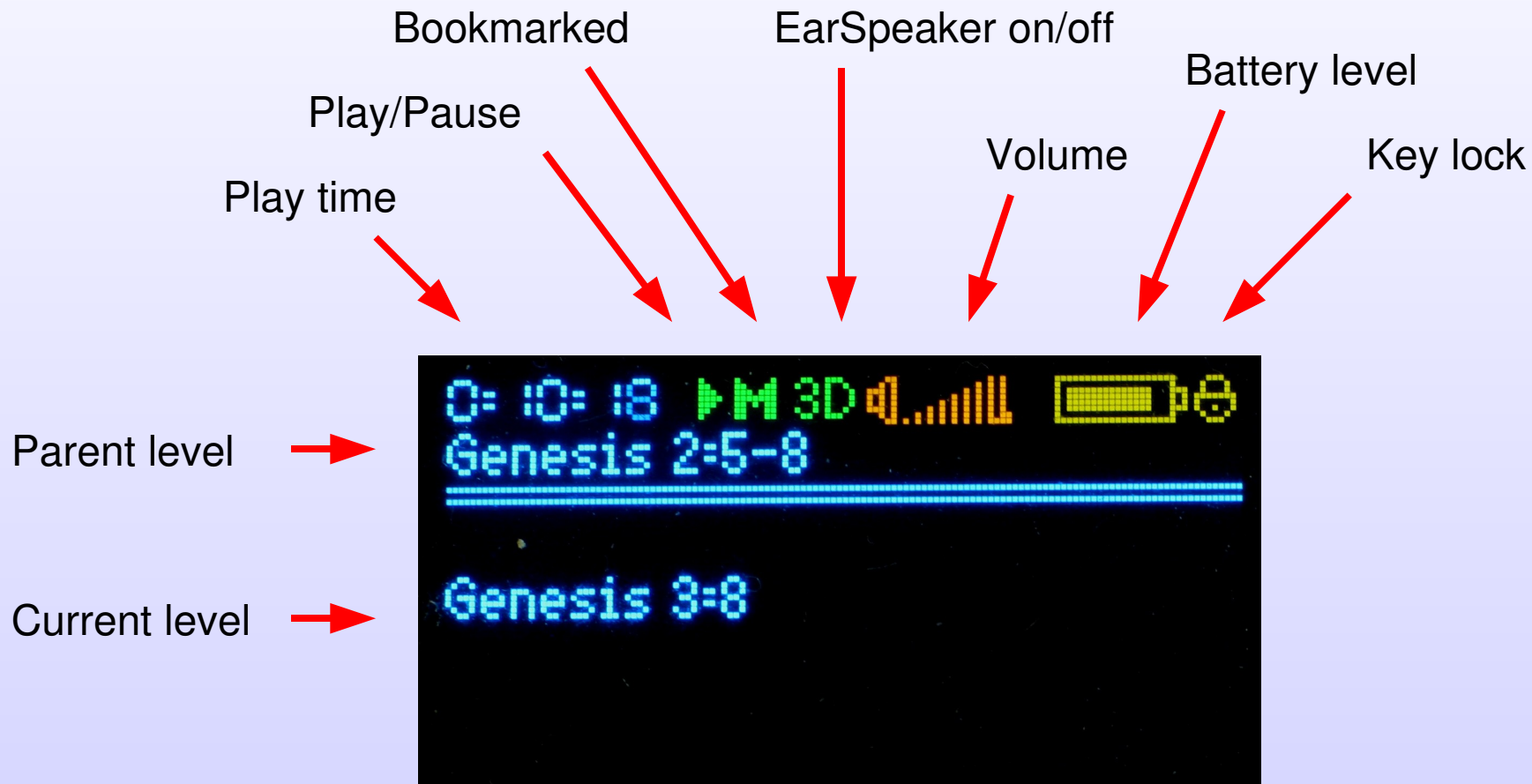


- The book can be just one file
 - Stories, chapters, verses are built by using time stamps to the audio content
 - Time stamp / Bookmark has accuracy of 1 ms
 - Directory structure becomes simple/obsolete
- => big difference compared to common “file per verse” approach

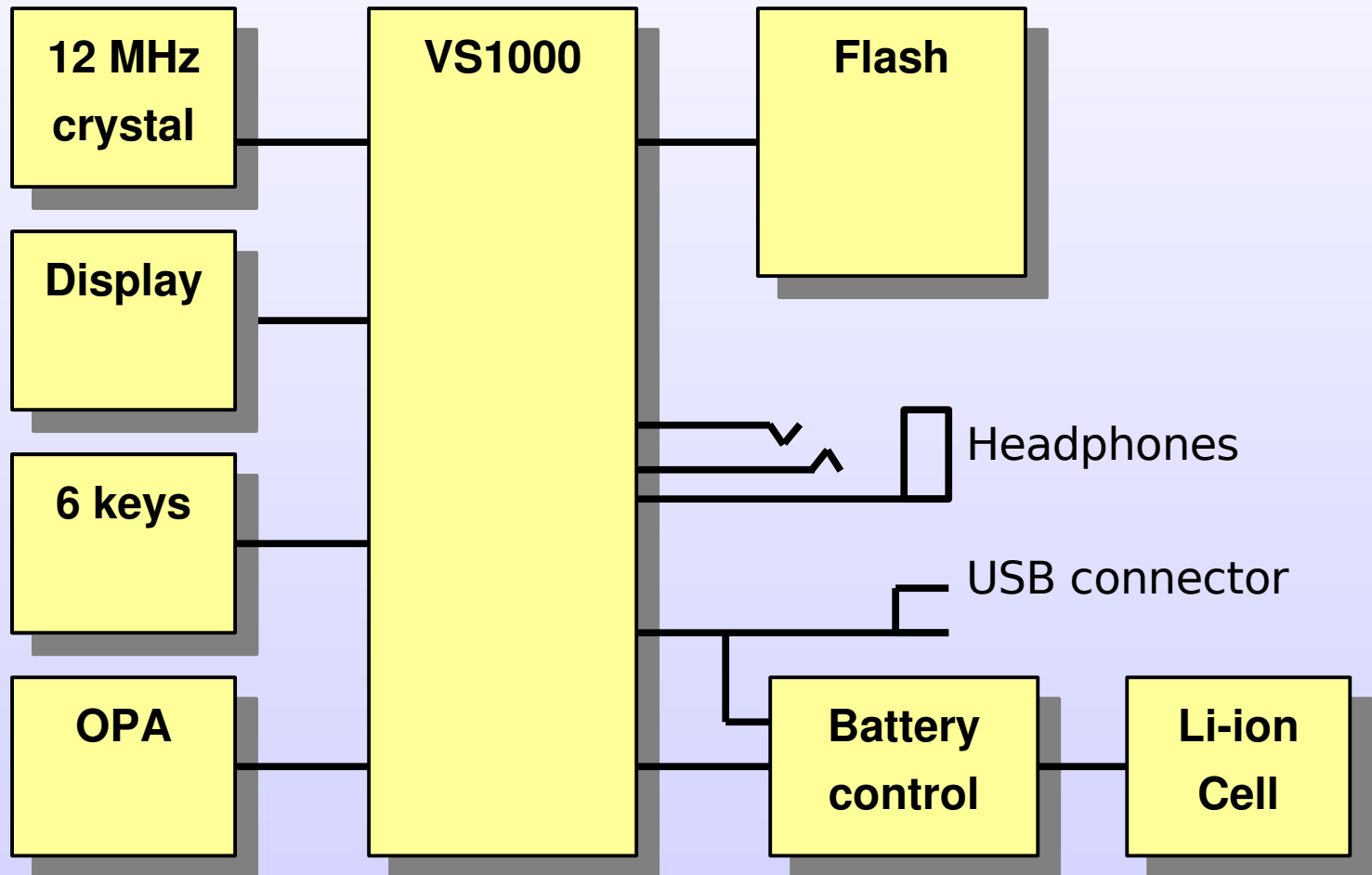
Multi-Level Menu



User Interface



Block Diagram



Features of VS1000 device

High performance analog

- 18-bit stereo DAC (92 dB SNR) + headphone drivers
- **Low Power**
- built-in linear regulators + dynamic power management

Peripherals

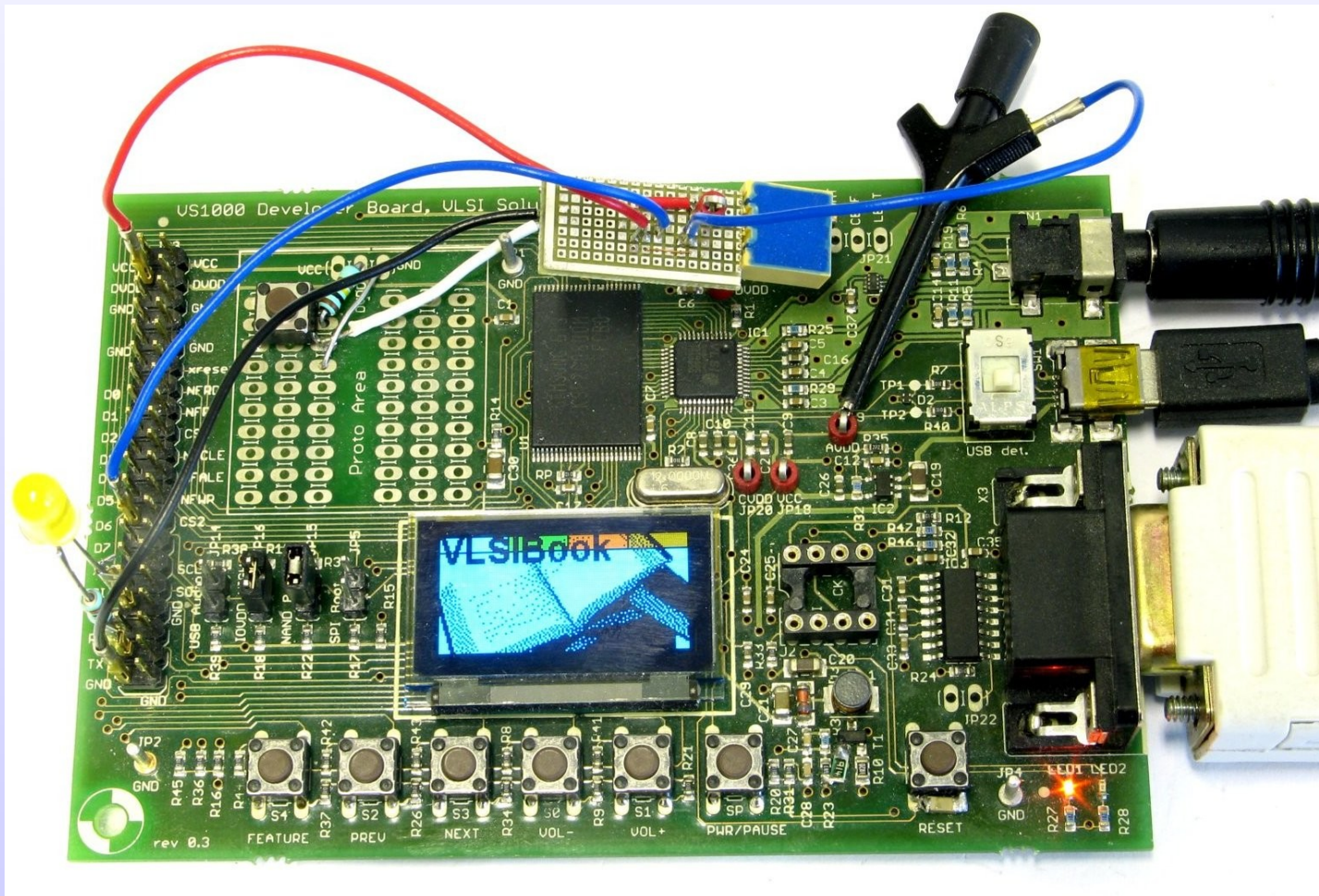
- USB 2.0 high speed
- Supports all memory architectures (NAND, NOR, OTP, ROM, ML)
- Supports both SPI and parallel memory interfaces

On-chip Firmware

- Complete 5-button player
- USB standard mass storage support (no drivers needed)
- EarSpeaker spatial processing

Evaluation Board

- Demonstration uses VS1000 Developer Board



Summary of VS1000 Audio book Application

- Excellent audio quality
- High audio compression
- Smart indexing / bookmarking
- Customizable graphical interface
- Supports all practical circuit memory technology
- Royalty-free Ogg Vorbis codec
- EarSpeaker spatial processing
- Low BOM

Do you have customization requirements?

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