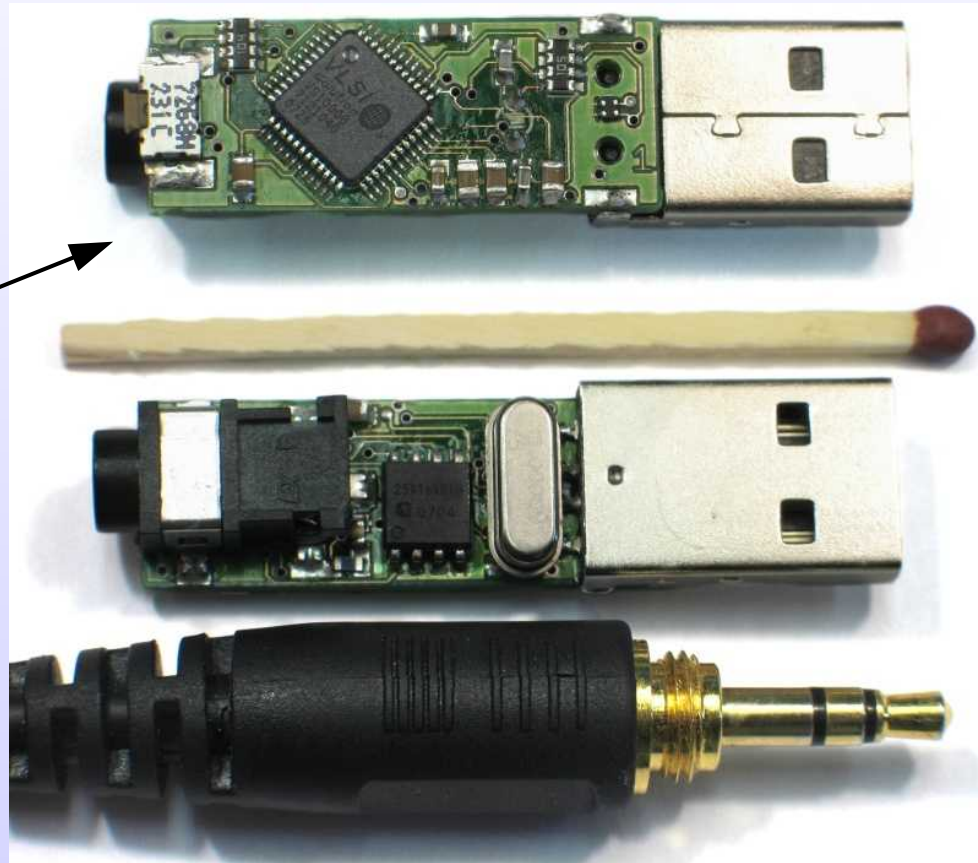# VS1000 TinyPlayer

USB Memory Stick +
USB Headphones +
Music Player

Features small size, high performance and low cost

48 x 12 mm

Three- in- one functionality

1) Low cost USB memory stick

    - supports SPI Serial Flash from 8 kbytes to 16 Mbytes

    - supports standard USB Mass Storage Device *

    - no driver required

2) Standard USB Audio Device

    - USB stereo headphones

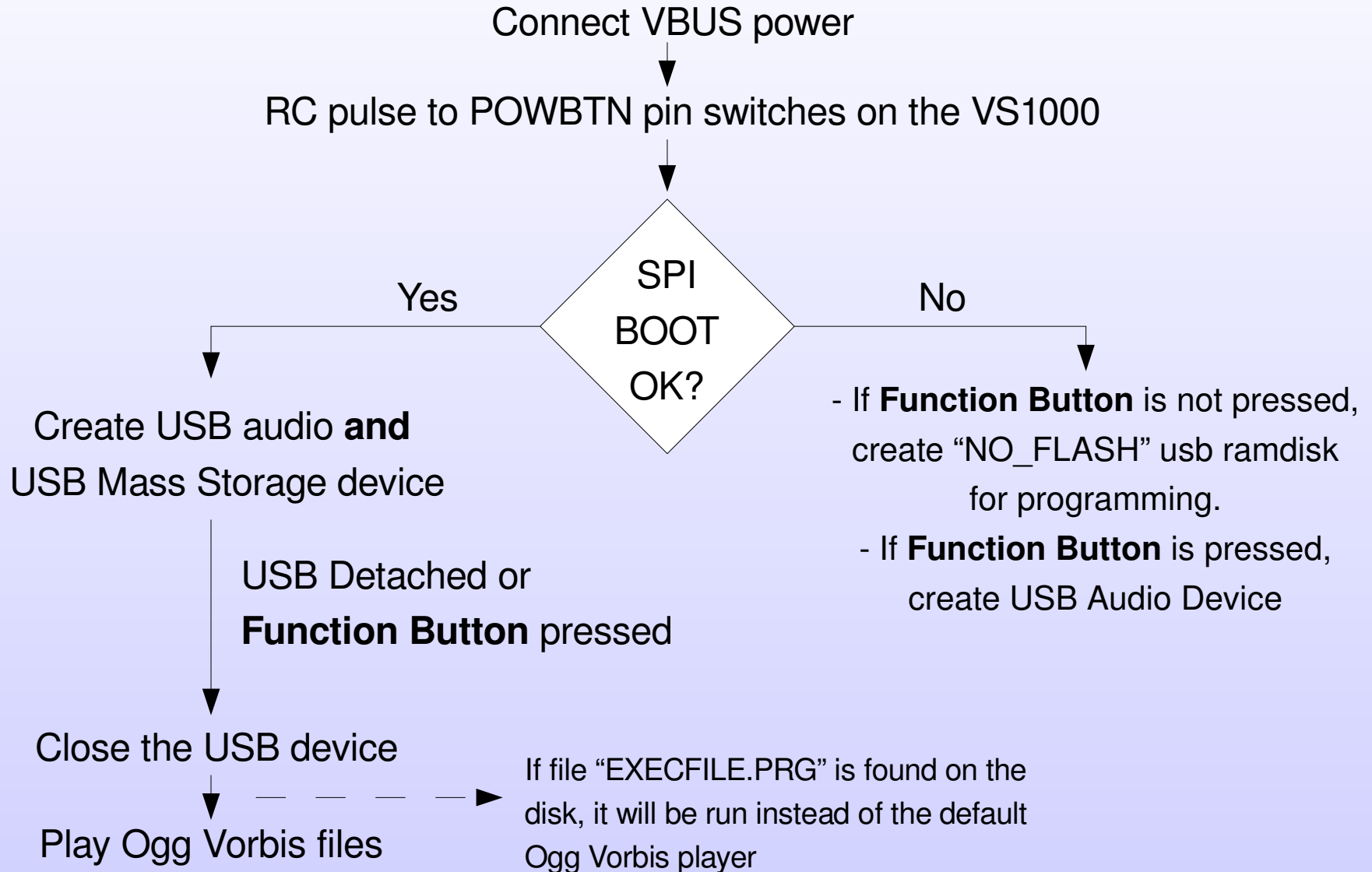   - no driver required

3) Ogg Vorbis audio player

*) For writable USB disk a SPI flash with 4K erasable sector size is needed
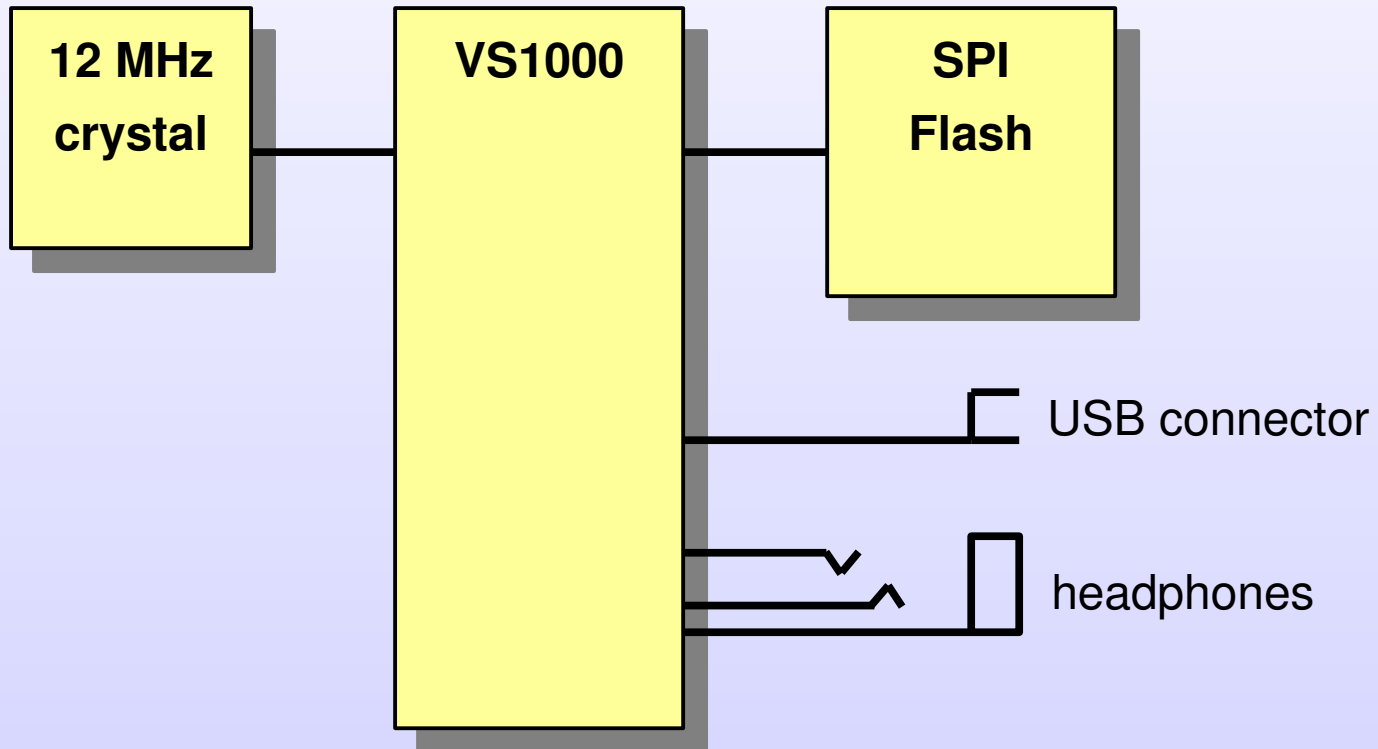
Applications

- Can be embeded in a product to support
  - plug-and-play drivers
  - manuals
  - audio
- Sales of audio content
  - new records
  - tourist guide
  - interactive toy
  - miniature music player
- Other
  - Configuration data storage
  - USB Headphones
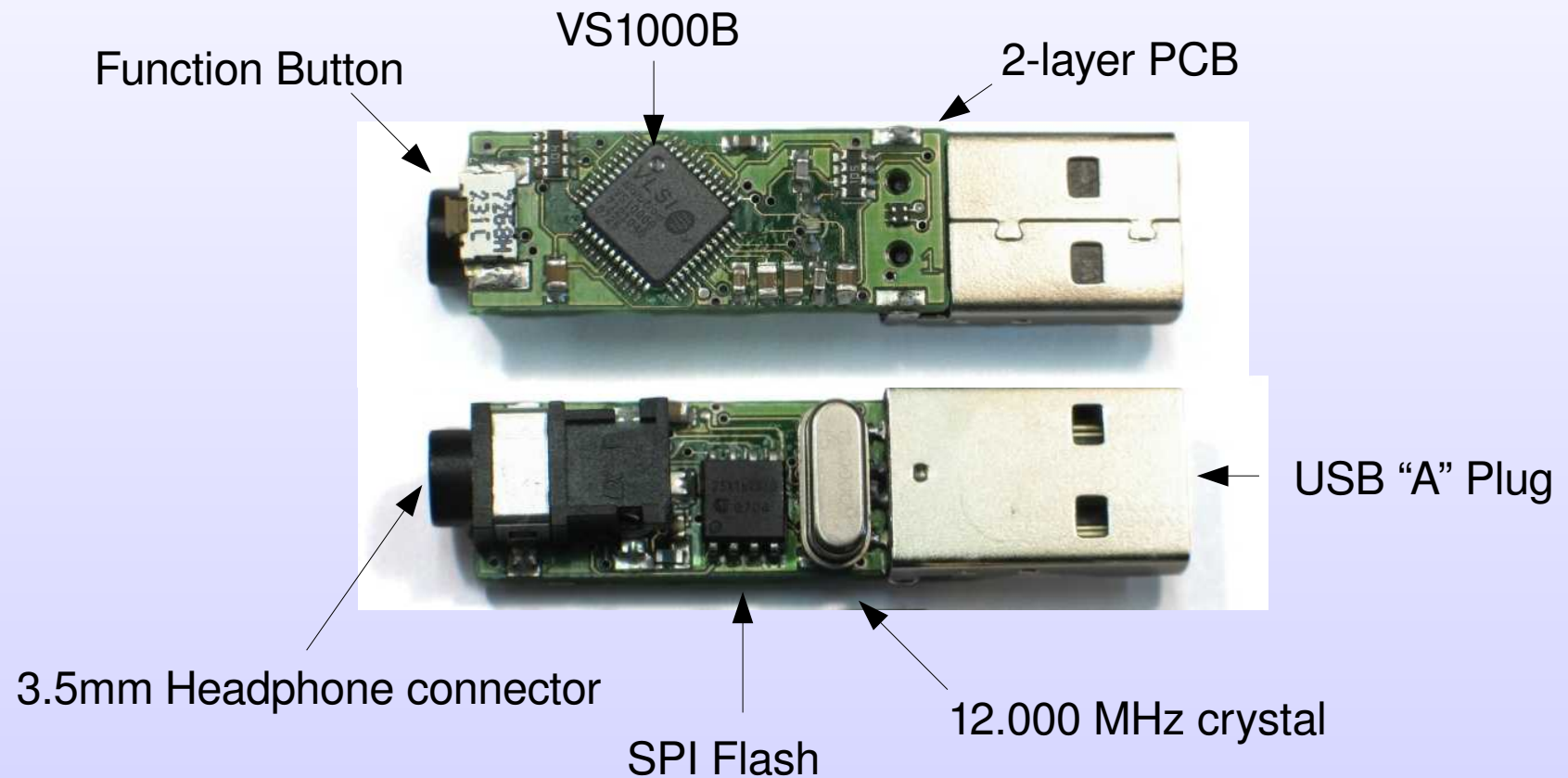 - USB Desktop Speakers
  - VOIP Phones

Operation

Connect VBUS power

RC pulse to POWBTN pin switches on the VS1000

SPI BOOT OK?

Yes → Create USB audio **and** USB Mass Storage device

USB Detached or **Function Button** pressed

Close the USB device

Play Ogg Vorbis files

If file "EXECFILE.PRG" is found on the disk, it will be run instead of the default Ogg Vorbis player

No →
- If **Function Button** is not pressed, create "NO_FLASH" usb ramdisk for programming.
- If **Function Button** is pressed, create USB Audio Device

Block Diagram

Board layout

Function Button

VS1000B

2-layer PCB

USB "A" Plug

3.5mm Headphone connector

SPI Flash

12.000 MHz crystal

Technical support

- Circuit schematic, Gerber files and boot image of TinyPlayer are available at
  http://www.vlsi.fi/en/support/evaluationboards/vs1000TinyPlayer.html

- VS1000 Developer Board can be used to develop **custom** boot image for TinyPlayer.

- Technical support is helping you at support@vlsi.fi

- Code examples and programming tools of VS1000 are available at
  http://www.vlsi.fi/en/support.html

- IDE available soon

VS1000 Developer Board