

Digitizing Your Vinyl Records

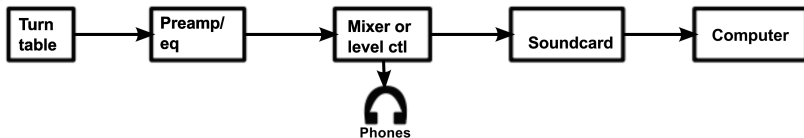
Steve Litt

<http://www.troubleshooters.com>

Your source for troubleshooting courseware and books on troubleshooting, rapid learning, and human performance.

Given at LEAP 6/17/2010

Digitization Demo



- Play record
- Record record
- Why there's more to this presentation
 - Two Principles of Digitization
 - Troubleshooting

Two Principles of Digitizing

(We'll Cover This In More Detail Later)

- You're recording LOTS of tunes
- You'll remember for years compromises you make digitizing today

What We'll Cover

- Advantages of Digitization
- Two principles of digitizing
- Media, equipment and software
- Hardware Configurations
- Troubleshooting

Advantages of Digitization

- No further wear on records or needles
- No record handling
- Space savings
- Easy and versatile playlist handling
- B sides, non-hits off albums

Types of Records

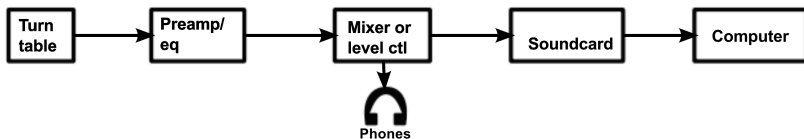
- 78
 - Needs different kind of needle
- 45
- 33



Two Principles of Digitizing

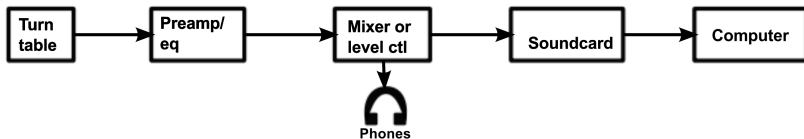
- You're recording LOTS of tunes
 - Go for speed
 - Concurrency: Hustle while you wait
 - Script driven
- You'll remember for years compromises you make digitizing today
 - Go for quality
 - Use headphones
 - Use sufficient bits
 - Compare source with digital tune
 - Use the right turntable ...

The Right Turntable



- Good speed control
- Magnetic cartridge
- Good cueing
- Known good components

Well It SEEMED Like a Good Idea

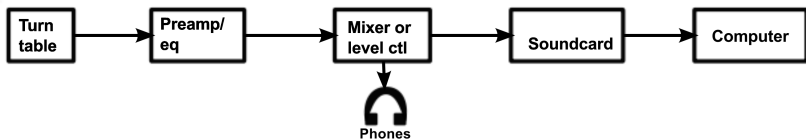


- De-noising
- USB turntables
- Spinning records faster
- Selling/giving away your records after digitization
- Downloading

Local Vendors

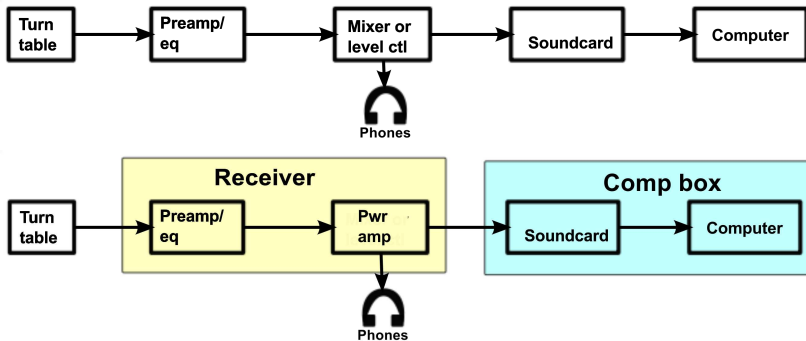
- Rock and Roll Heaven (Orange Ave Orlando)
 - Turntables
 - Receivers
 - Needles
 - Cleaning solution
 - Misc vinyl needs
 - Records
- Sam Ash (Lee Road Orlando)
 - Mixers
 - Quality microphones
- Radio Shack
 - Cords
 - Gender benders
- Best Buy
 - Record cleaners???
- Walmart
 - Cheap mikes, headphones, cords, etc

The Generic Setup



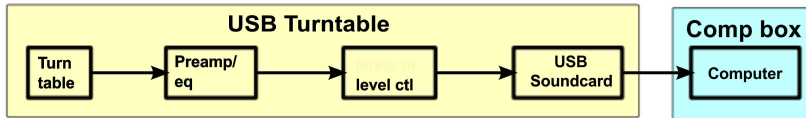
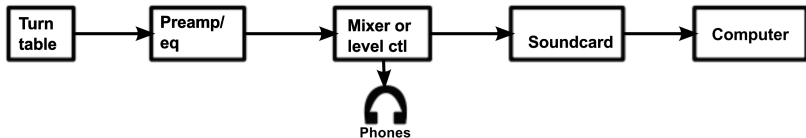
- Foundation of all record digitizing
- Mixer and/or level control sometimes missing
- Power amp sometimes in the mix

The Receiver Setup



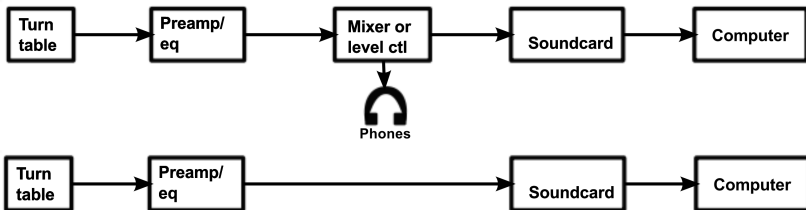
- Benefits
 - Costs almost nothing if you already have the equipment
- Disadvantages
 - No hardware level control (without additional equipment)
 - Receiver big, clunky, and hard to connect

The USB Turntable Setup



- Benefits
 - Cheap
 - Easy
 - Minimal footprint
- Disadvantages
 - Cheap, low quality turntable mechanics
 - No hardware monitor (headphones)
 - Compromised sound
 - Unknown quality USB soundcard

The Standalone EQ/preamp Setup



- Benefits

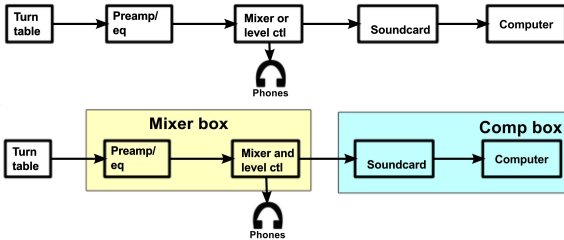
- Dirt cheap
- Reasonably easy

- Disadvantages

- No hardware monitor (headphones)
- No hardware level control



The Mixer Setup



• Benefits

- Hardware monitoring via headphones
- Hardware mixing, level control and tone control
- Individual components yield highest quality
- Useful for other audio tasks
- Reasonably compact

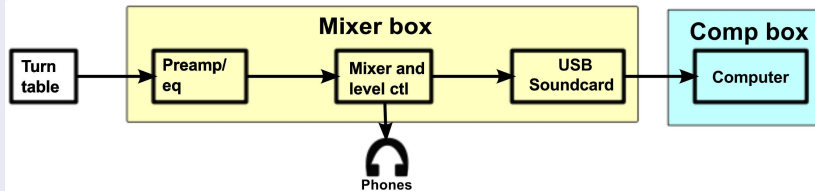
• Disadvantages

- Costly (\$100 for the mixer)
- Somewhat complex to hook up and operate

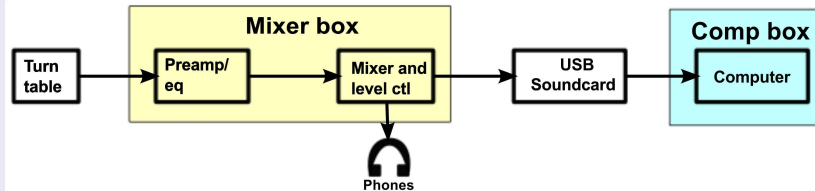


Other Setups

Mixer connected via USB

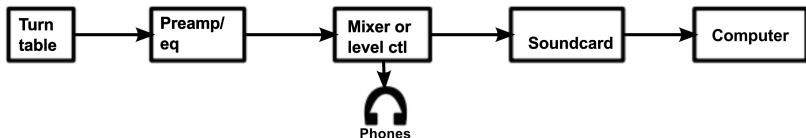


External USB Soundcard



Troubleshooting

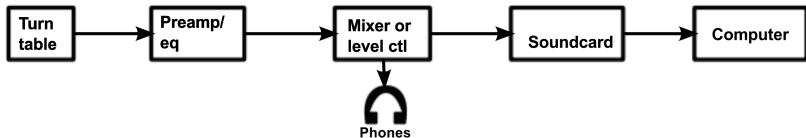
Get Hardware Working First



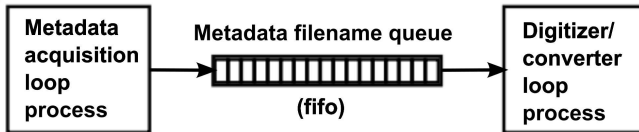
- More variables = Harder troubleshooting
- Have all necessary gender benders
- Play .wav through soundcard output
- Play record through monitor (if exists)
- Connect Soundcard input to soundcard output, play record

Troubleshooting

Get Software Working

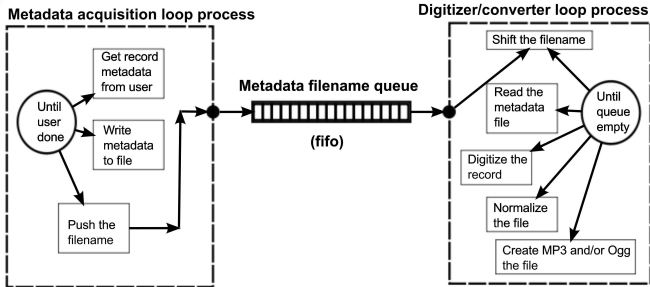


- More variables = Harder troubleshooting
- Verify correct soundcard plug/jack connections
- Set system sound properties
- Set alsamixer
- Set application sound settings
- Have alternative soundcard
 - USB soundcard simplest for troubleshooting
 - But USB may not sound the best



- Go for speed
- Concurrency
- Singles

Software Setup for 45's



- Bash queue push:
 - `#!/bin/bash`
 - `echo $1 >> queue.queue`
- Bash queue shift:
 - `#!/bin/bash`
 - `test -s queue.queue || exit 1`
 - `head -n1 queue.queue`
 - `tail -n+2 queue.queue > queue.tmp`
 - `mv -f queue.tmp queue.queue`

Possible Album Setups

- Split tracks realtime
 - Similar to Singles
- Record whole side then split
 - While this album plays and records:
 - Acquire whole side's metadata for next album
 - Split up previous album and run script

What We Covered

- Advantages of Digitization
- Two principles of digitizing
- Media, equipment and software
- Hardware Configurations
- Troubleshooting