

**Sun City Summerlin
Computer Club**

**Digital Music
SIG
April 15, 2004**

Tom Burt

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Agenda

- Music Match 8.2 – Brief Overview
- Presentation – Back To Basics
 - Using MusicMatch to Record MP3 Files
From LP, FM Stereo or Tape
- Open discussion

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Presentation

Using MusicMatch Jukebox to Record Stereo LPs, Audio Tapes and FM Stereo Radio To MP3 Files on Your Hard Disk

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Digital Audio File Formats

- Microsoft WAVE (.WAV) Uncompressed
 - 44,100 samples per sec, two stereo tracks, 16-bit samples.
 - One minute of sound consumes about 10.6 MB of disk space.
($44,100 \times 2 \times 2 \times 60 = 10,584,000$ bytes per minute.)
 - CD Quality (same specs).
- Motion Picture Experts Group Level 3 (.MP3) Compressed
 - Size varies based on sample rate.
 - 128 Kbps (CD quality), 64 Kbps ("FM" quality).
 - At 128Kbps, uses about 1 MB / minute of sound.
 - Use 160Kbps for ultimate fidelity (for classical, symphony).

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Digital Audio File Formats (2)

- MP3Pro (.MP3) – New Standard Double compressed
 - Size varies based on sample rate.
 - 64 Kbps (CD quality), 48 Kbps (“near CD” quality).
 - At 64Kbps, uses about .5 MB per minute of sound.
- Microsoft Windows Media Audio (.WMA) Compressed
 - Size varies based on sample rate.
 - Supports Digital Rights Management standards.
 - MS claims files about half the size of .MP3 files.
- More Information
 - <http://ekei.com/audio>

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Sound Card / Chip Basics

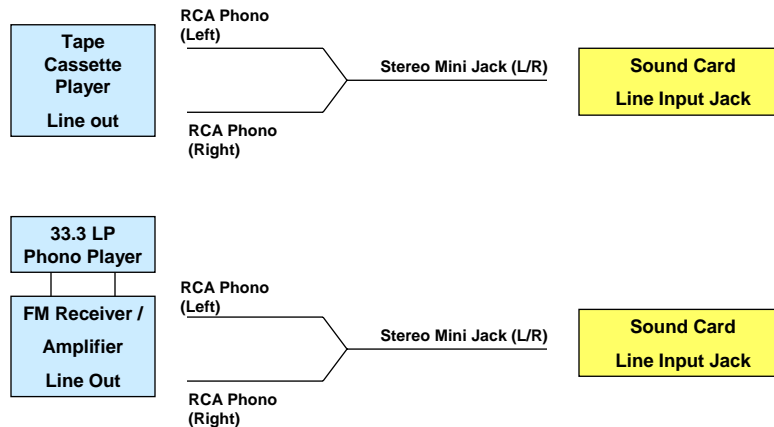
- Able to output analogue stereo sound from digital output stream (D to A conversion = numbers to an electronic wave form).
- Able to convert analogue stereo input to a digital sound stream (A to D conversion = an electronic wave form to numbers).
- Connects to CD drive so PC can “play” music CDs.
- Card has line in, line / speaker out, and microphone jacks.
- <http://www.howstuffworks.com/sound-card.htm>

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Converting Audio Tapes and LPs



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Preliminary Steps (1)

- Hook up equipment as per preceding diagram.
- Power on all the stereo equipment.
- Use Windows Volume Control to set levels and mute the Mic input.
- Clean the LP, tape heads, stylus, ...

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Preliminary Steps (2)

- “Play” the tape / LP to be recorded into the line-in jack (PC speakers will output the sound) to test reception.
- Rewind or re-queue the audio to be recorded.
- Launch MusicMatch recording software.
- Adjust program settings as needed to record from Line Input. (Set MP3 bit rate to 128 or 160 – no point in going higher)

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Recording (1)

- Best Approach:
 - Record entire LP or tape as two single MP3 files (easiest).
- Activate the recording window in MusicMatch.
- Set the artist name, album name and track title (e.g. “Side 1”).
- Start Recording in Musicmatch.
- Start playing the LP, tape or single song you want to record.

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Recording (2)

- Allow the album or tape side to play to completion.
- Stop the LP or tape on the player.
- Stop the MusicMatch recording software.
- Set up as above to record the second side using track title "Side 2".
- Set up for recording the next LP, tape or single song.

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Post-Processing a Full Album

- Use GoldWave, Nero WAVE editor, Roxio
- Clean up each "side" file with filters, mute and crop start / end noise.
- Optional - can break each side up into individual files:
 - Open the "full album" MP3 file for Side 1 or Side 2.
 - View the entire wave form.
 - Zoom in as needed.
 - Identify start / end of each song.
(short interval of 0 level between).
 - Highlight the song from start to end.
(include some silence at each end).
 - Save the highlighted segment as a separate MP3 file.

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Burning the MP3s to a CD

- Double-click each Side's song entry in the Music Library to place it in the playlist.
- Stop the first song from playing (click the stop button)
- Click the "burn" button under the play list window. The CD Burning Window will appear.
- Set the CD burning parameters for "Audio CD".
- Click the "burn" button in the Burn window to start the burn.

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Useful Web Links

- <http://www.howstuffworks.com>
- <http://www.zdnet.com>
- <http://www.cdfreaks.com>
- <http://www.roxio.com>
- <http://www.nero.com>
- <http://www.goldwave.com>
- Turntable repair parts:
 - www.TurntableBasics.com

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Web Music Sources

- <http://www.mp3.com/>
- <http://www.emusic.com/>
- <http://www.midikaraoke.com/>
- <http://www.half.com/products/music/index.cfm>
- <http://www.jumpmusic.com/>
- <http://www.secondspin.com>
- <http://www.winmx.com/>

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Round Table Questions and Answers

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