

# **Sun City Summerlin Computer Club**

## **Digital Music SIG**

**9:00 AM October 17, 2002**

Tom Burt

### **Agenda**

- Introduction
- Presentation
  - Recording MP3 Files From:  
LP, FM Stereo or Tape
- Open discussion

### **DM SIG Charter**

- The Sun City Summerlin Computer Club Digital Music SIG will provide a recurring forum for members interested in all aspects of computer based digital music to meet, discuss and learn more about the topic.
- The SIG will meet at 9:00AM the third Thursday of each month for 60 to 90 minutes. Each meeting will feature a topical discussion, followed by a "round table" question and answer session.
- The SIG's target audience will be intermediate to advanced digital music users, but all members are welcome.

### **DM SIG Areas of Interest**

- Software tools for capturing analog and digital music into PC file formats, for converting files from one format to another, and for creating audio and MP3 CDs.
- Software tools for mixing and editing digital sound and music.
- Peer to Peer file sharing tools.
- General purpose "jukebox" programs for organizing and playing music on the PC hard disk.
- Basics of digital music technologies, such as sound cards, music file formats, hardware and software synthesizers.
- MIDI and Karaoke technologies and MIDI music composing systems.
- Configuring a PC-based digital music home entertainment system.

## **Presentation**

### **Recording Stereo LPs, Audio Tapes and FM Stereo Radio**

#### **as MP3 Files on Your Hard Disk**

Tom Burt

## **Sound Card Basics**

- Able to synthesize analogue stereo sound from digital output stream (D to A).
- Able to convert analogue stereo in to a digital sound input stream (A to D).
- Contains a programmable sound synthesizer.
  - Number and richness of voices varies.
  - Used for MIDI music output.
- 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>

## **Digital Audio File Formats**

- Microsoft WAVE (.WAV)
  - 44.1KHz/sec stereo, 16-bit samples
  - Uncompressed, consumes about 10.6 MB / minute of sound.
  - CD Quality (same specs).
- Motion Picture Experts Group Level 3 (.MP3)
  - Compressed, size varies based on sample rate.
  - 128 Kbps (CD quality), 64 Kbps (“near CD” quality).
  - At 128Kbps, uses about 1 MB / minute of sound.

## **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 / 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>

## **Converting Audio Tapes and LPs** **Preliminary Steps**

- 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, ...
- “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 the recording software.  
(MusicMatch or GoldWave)
- Adjust program settings as needed to record from Line Input  
(Set MP3 bit rate to 128 or 160 – no point in going higher)

## **Recording**

- Two Approaches:
  - Record entire LP or Tape as a single MP3 (easiest).
  - Record individual songs / pieces as individual MP3s.  
( start / stop between each piece)
- Activate recording on the PC recording software.  
(Normally it will ask for a path \ file name to save to)
- Start playing the LP, tape or single song you want to record.
- Stop the LP, tape or single song.
- Stop the recording software.
- Save the MP3 file, if necessary.
- Set up for recording the next LP, tape or single song.

## **Post-Processing a Full Album**

- Use GoldWave or Nero WAVE editor (or equivalent)
  - <http://www.goldwave.com>
- If recorded the entire tape or LP, can break it up:
  - Open the “full album” MP3 file.
  - 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.

## **Post-Processing Single Songs**

- Use GoldWave or Nero WAVE editor (or equivalent)
  - <http://www.goldwave.com>
- Open the “single song” MP3 file.
- View the entire wave form – look for spikes.
- “Play” the song listen for scratches, pops, tape hiss, etc.
- Try the various automatic filters.
- Adjust recorded volume level as needed.
- Trim off any start / end garbage.
- Apply fades in or out if desired.
- Save the cleaned up file back as a separate MP3 file.  
(Name it as: “<Artist> - <Title>.mp3”)

## **Adding Finished Songs to Music Library**

- Launch your favorite music jukebox program  
(MusicMatch, WMP, ...)
- Move the converted songs to your standard music library folder.
- Invoke the “Add file(s) to Music Library” function.
  - Select the converted .MP3 files for each song
  - Click the “Add” button
  - Find the newly added songs
  - Invoke the “Edit Track Tags” function (MusicMatch 7.2)
  - Add tags for Artist, Album and Title
  - Use the “Rename Files” function
- The .MP3 files are now cataloged in the Music Library.
- They can be played, added to play lists and burned to audio CDs

## **Useful Web Links**

- <http://www.howstuffworks.com>
- <http://www.zdnet.com>
- <http://www.cdfreaks.com>
- <http://www.roxio.com>
- <http://www.nero.com>

## **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.secondspin.com>
- <http://www.jumpmusic.com>
- <http://www.musiccity.com/> (Morpheus)
- <http://www.limewire.com/>
- <http://www.winmx.com/>
- <http://www.gnutella.wego.com/> (Gnutella)
- <http://www.bearshare.com/>

## Digital Music SIG

Round Table  
Questions and Answers