FLASH mpx Manual Version 1.0

INTRODUCTION:
The mpx player is a self-contained Solid State Mpeg4 Video/MP3 Audio player housed in a small aluminum enclosure. The mpx player utilizes the latest development in custom design single chip to decode various Mpeg compression systems including Mpeg4 video, Mpeg4 Audio and Mp3 audio. Mpeg4 video is the latest video compression that gives similar or better video quality than Mpeg2 video (DVD video) at less than half the bit rate. The mpx player has two drives, Compact Flash Card and USB Flash drive. It has16 digital input and is configured to provide a very fast reaction time so that the video/audio playback is instantaneous. The mpx player has been pre-programmed to play a multi stage interactive multimedia presentation and to support push buttons and sensors. The mpx player is a solid state device that will give you years of trouble free operation, superb video quality and at a much lower cost.

THE mpx player DUAL DRIVES:
The mpx player reads from a Compact Flash card OR USB flash drive, but not both. The mpx player is a video/audio playback device only, it is not configured for direct connection into a PC. The USB port on the mpx player is configured strictly for reading the USB Flash drive only. It can not communicate with your PC and/or download files from it.
If you are using Compact Flash Card, use a USB card reader for PC to copy the files into the CF card. If you are using USB Flash drive, plug it directly into the USB port of your PC and copy the files into it.

TYPE of COMPACT FLASH CARD and USB FLASH DRIVE:
If you are using a compact flash card for Audio or Low bit rate Video (under 4 Mbit/s), you can use any standard Sandisk Compact Flash card. For higher bit rate video (over 4 Mbit/s) use Sandisk Ultra II Compact Flash card only. If you are using USB flash drive for Audio or Low bit rate video (under 2 Mbit/s), you can use any standard USB Flash drive. For higher bit rate video (over 1 Mbit/s) use USB Flash drive with USB 2.0 interface only.
The mpx player reads Compact Flash card and USB Flash drive that uses Windows (98 to XP) DOS (FAT) format only, not NTSF. Do not format a new drive. However if you have to format a used drive, format it with DOS (FAT) format only (not NTFS). The Sandisk compact flash cards including the Ultra II and the USB Flash drive are available at www.Techdepot.com OR www.Buy.com. E-bay is also a very good source for both drives. USB flash drive is also sold as Jump Drive, Cruiser Mini, Stick Drive or Flash drive.

VIDEO file types:
Mpeg2: The mpx player plays Mpeg2 (program stream only) video files at full D1 resolution up to 9 mBit/sec (limited by the CF card bandwith). The ideal bit rate for Mpeg2 is VBR 4.5 mbps OR CBR 6 mbps program stream.
VOB (DVD): The mpx player will play only the video portion of a std VOB file, it will not play the Audio portion. To play the audio you have to move (or copy) the DVD audio track from C0 to track 80.
The best way is simply to extract the VOB file into video and audio stream and then multiplexed it to Mpeg2 program file. (not Mpeg2 transport file).
Note: There are many conversion programs available in the internet that can do this task.
Mpeg4: The mpx player plays Mpeg4-2 ASP video files up to 4 mBit/sec. It will not play Mpeg4-10 video (h.264) file. The ideal bit rate for Mpeg4-2 ASP is 3 mbps.

AUDIO file types:
MP3: The mpx player plays MP3 audio file at up to 320 kbps.
MP4: The mpx player will play Mpeg4 audio including AAC, MP3, WMA and MP4 audio that is compliant with the Mpeg4 audio stream.
JPEG File PLAYBACK:
The mpx player plays Jpeg file at up to 680 X 480 (NTSC).
The mpx player will automatically go into a slide mode when playing Jpeg files. In slide mode, it will superimpose the new Jpeg file over the one being played, fade out the Jpeg file being played and fade in the new Jpeg file.

FILE FOLDER NAME:

All file folders have to be named using 2 numbers (numerical) only. Eg: 01, 20, 32 etc.

Maximum number of file folder is 97. File folders 00, 99 and 98 are exclusive and they are used for specific instruction only.

File folder that does not have 2 numbers will be ignored.

Example:

File folder 01 is accessible by input 1.

File folder 02 is accessible by input 2.

File folder 08 is accessible by input 8.

File folder 16 is accessible by input 16.

INPUTS:

The Flash mpx has 8 input and 1 UP input for a total of 16 input.

HOW to trigger an INPUT:

To trigger input 1 to 8, short it momentarily to ground.

To trigger input 9, short both 1 and UP momentarily to ground.

To trigger input 10, short both 2 and UP momentarily to ground.

To trigger input 15, short both 7 and UP momentarily to ground.

To trigger input 16, short both 8 and UP momentarily to ground.

HOW TO JUMP INTO (ENTER) A FILE FOLDER:

After powering up the player will loop all files in the root directory, relay is OFF. If there is no file in the root directory, then the player will simply idle and wait for an input.

This is the Home position of the mpx player. From this home position you can select 16 input.

From home position, if input#1 is triggered, the mpx player will immediately go to file folder 01 and plays the first file in that file folder.

From home position, if input#2 is triggered, the mpx player will immediately go to file folder 02 and plays the first file in that file folder.

From home position, if input#16 is triggered, the mpx player will immediately go to file folder 16 and plays the first file in that file folder.

HOW TO PLAY A FILE WHILE INSIDE A FILE FOLDER:

After entering a file folder the mpx player will automatically play the first file in that file folder. While inside a file folder you can set the mpx player to play 16 more files.

For example while playing the first file inside a file folder, if input #1 is triggered then the mpx player will play the file with a file name that starts with 01. If input #2 is triggered then the mpx player will play the file with a file name that starts with 02.

After finish playing a file and depending on the file name, the mpx player will read characters 5 and 6 (file name) and stay or jump into this file folder.

Example: 000122Lion.mp4. After entering this file folder, mpx player will play this file. After finish playing this file, mpx player will jump to file folder 22.

If file folder 22 does not exist, the mpx player will go into default mode and returns to home position.

Below is the definition of the first six numbers of a file name.

First and Second number, 16 possibilities + 00:

ASSIGN AN INPUT TO PLAY A FILE NAME,

020101Horse.mp4, this file will play when input 2 is triggered.

030101Lion.mp4, this file will play when input 3 is triggered.

080101Cat.mp4, this file will play when input 8 is triggered.

160101Tiger.mp4, this file will play when input 16 is triggered.

Third number, 2 possibilities:
TURN RELAY ON or OFF while playing a file.
The third number has 2 possibilities number 0 and number 1.
If the number is 1, Relay is ON.
Example:011022cats.mpg
Turn relay ON while playing this file.
If the number is 0, Relay is OFF.
Example:010022cats.mpg
Relay is OFF while playing this file.

Fourth number, 2 possibilities:
INTERRUPT or NO INTERRUPT while playing a file.
The fourth number has 2 playback possibilities number 0 and number 1.
Standard play with interrupt (number is 0).
Example: 011022cats.mpg
Abort playback if another input is triggered and immediately play the other file.
Play with no interrupt (number is 1).
Example: 011122cats.mpg
Ignore input, no interrupt is allowed while playing this file.

Fifth and Sixth number, 96 possibilities + numbers 00, 99,98 and 97:
JUMP to FILE FOLDER after playing a file.
The fifth and the sixth number refer to a file folder name.
Example:
001022dogs.mp4 after finish playing this file the mpx player will jump to file folder 22.
121118horses.mpg after finish playing this file the mpx player will jump to file folder 18
091143lion.mp3 after finish playing this file the mpx player will jump to file folder 43

STAY inside a FILE FOLDER after playing a file.
The fifth and the sixth number is the same as the file folder name (where the file resides).
Example:
If the mpx player is inside file folder 32 and then play 220032Cats.jpg, then after finish playing this file the
mpx player will stay inside file folder 32 and play the first file again.

Fifth and Sixth number is NUMBER 00:
RETURN TO HOME POSITION after playing a file.
The Fifth and the Sixth number is 00.
Number 00 is for Home position, eg. 011000cats.mpg.
After finish playing 011000cats.mpg, go to home position.

Fifth and Sixth number is NUMBER 99:
STOP after playing a file and WAIT for Input.
The Fifth and the Sixth number is 99.
Number 99 is for Stop after playing a file and wait for input. eg. 011099cats.mpg.
After finish playing 011099cats.mpg, Stop after playing this file and wait for another input.

Fifth and Sixth number is NUMBER 98:
LOOP this file.
The Fifth and the Sixth number is 98.
Number 98 is for Loop playing. eg. 011098cats.mpg.
Loop file 0110998cats.mpg.

Fifth and Sixth number is NUMBER 97:
Identical to 99 except screen is DARK after playing and while waiting for input

The Fifth and the Sixth number do not exist in the CF or USB drive.
If the Fifth and the Sixth number do not belong to any file folder name (does not exists in the CF), then go to HOME position after finish playing this file.

The first inside a file folder does not have six numbers in front of the file name:
The Flash mpx will play the first file in a file folder even if the file does not have six numbers. While playing it will disregard other input. After playing it will return to Home and loop.

DEFAULT MODE:
In default mode player plays a file to the end with interrupt (standard mode) and relay is ON except in Home position where Relay is Off. After playing the file, player will automatically go to Home and loop.

EXAMPLE OF A FILE NAME:
001022dogs.mp4
00 First 2 number is 00, first file in directory. Play it when entering this folder.
1   the third number refers to Relay ON. Turn relay ON while playing this file.
0   the fourth number refers to Interrupt while playing. Abort playback if another input is triggered and immediately play the other file.
22 the fifth and sixth number is 22, jump to file folder. Jump to file folder 22 after playing this file.

And here is another example:
120199dogs.mp4
12 the first two numbers is 12. Play this file if input 12 is triggered.
0   the third number refers to Relay OFF. Relay is OFF while playing this file.
1   the fourth number refers to NO Interrupt while playing. Play this file to the end, no interrupt is allowed.
99 the fifth and sixth number is 99. After playing this file stop and wait for another input.

DARK SCREEN for mpx player:
If possible use Code97 to automatically play the dark screen. However to play a dark screen file, you can use Black.mpg files. These files can be downloaded from our web site. There are several Blck.mpg files, the main difference is the length of time. Copy it into the root directory if you want a dark screen after powering up. Copy it into a file folder (and add 00 into the name) if you want a dark screen after entering a file folder.

IDLING with no sound:
If you are using the mpx player as an MP3 player only and you want it to idle (no sound) after powering up or after playing a file, then you can use use any Jpeg file (still picture) from your video camera or download silent.mp3 files from our web site. Another option is to leave the root directory empty (no files in home position).

HOW TO PROGRAM the mpx player
The mpx player's operation is determined by the File folder structure and the first six number of the file name. The easiest way to "program" the mpx player is by creating the entire file folder structure in your PC first. After testing the logic, then you can copy the entire file folder structure from your PC directly into the CF or USB drive.

Tip: To test your program's logic, use mp3 files only and hook up the video out of the Flash mpx into a monitor. The screen will show info about the content of the drive and also the content of the file folder. You can download a CF structure containing MP3 sample sound (ZIP) from our website. The file name is CF-USB.zip.
Below are examples that might apply to your exhibit. These examples assume that your PC reads the CF/USB drive as F:\(F drive). Remember, create the entire file folder structure in your PC first and then copy the entire content into the CF or USB drive.

xample 1: (LOOP MODE)
A video exhibit with continuous playback after powering up. After powering up, loop a series of video clips to be played continuously all day.

The structure of the CF/USB drive is as follows:

F:\…
Main.mp4   (Loop all files after powering up).
Lion.mp4

Explanation:
Copy Main.mp4 and Lion.mp4 video clips into the root directory (F:\).
After powering up, the mpx player will automatically loop Main.mp4 and Lion.mp4.

NOTES:
The above is an example of a video exhibit. For Audio exhibit, replace the video files with mp3 audio files.
For Jpeg slide show, replace the video files with Jpeg files (from your video camera).

Example 2: (SIMPLE PUSH BUTTON MODE)
A video exhibit with 1 push button. After powering up, a loop video (Main.mp4) will be played. If push button 1 is triggered a horse video clip will be played. After playing the video, the player will return to play the loop video (Main.mp4).

The structure of the CF/USB drive is as follows:

F:\…
Main.mp4   (Loop this file after powering up)
01
Horse.mp4   (Input 1 plays this file and return home)

Explanation:
For the loop video, copy Main.mp4 video clip into the root directory (F:\).
Create File Folder 01.
Prepare the Horse video clip and copy this file to file folder 01.
NOTES:
The above is an example of a video exhibit. For Audio exhibit, replace the video files with mp3 audio files.

Example 3: (Simple push button mode)
A video exhibit with 4 push button. After powering up, a loop video (Main.mp4) will be played. If push button 1 is triggered a horse video clip will be played. After playing the video, the player will return to play the loop video (Main.mp4). If push button 2 is triggered a Lion video clip will be played. After playing the video, the player will return to play the loop video (Main.mp4). If push button 3 is triggered a Tiger video clip will be played. After playing the video, the player will return to play the loop video (Main.mp4). If push button 4 is triggered a Cat video clip will be played. After playing the video, the player will return to play the loop video (Main.mp4)

The structure of the CF/USB drive is as follows:
F:\…
Main.mp4   (Loop this file after powering up)
01
 Horse.mp4   (Input 1 plays this file and return home)
02
 Lion.mp4   (Input 2 plays this file and return home)
03
Tiger.mp4   (Input 3 plays this file and return home)
04
Cat.mp4   (Input 4 plays this file and return home)

Explanation:
For the loop video, copy Main.mp4 video clip into the root directory (F:\).
Create File Folder 01,02,03 and 04.
Prepare the Horse, Lion, Tiger and Cat video clips. Copy Horse video clip into File folder 01. Copy Lion video clip into File folder 02. Copy Tiger video clip into File folder 03. Copy Cat video clip into File folder 04.

NOTES:
The above is an example of a video exhibit. For Audio exhibit, replace the video files with mp3 audio files.

EXAMPLES 4 and up are samples of interactive mode.

Example 4:
A video exhibit with 1 push button. After powering up, a loop video (Main.mp4) will be played. If push button 1 is triggered a horse video clip will be played. While playing no interrupt is allowed. After playing the video, the player will return to play the loop video (Main.mp4).

The structure of the CF/USB drive is as follows:
F:\…
Main.mp4   (Loop this file after powering up)
01
000100Horse.mp4   (Input 1 plays this file and return home)

Explanation:
For the loop video, copy Main.mp4 video clip into the root directory (F:\).
Prepare the Horse video clip and rename it as follows:
Horse.mp4 video clip, add 6 digit numbers. The new name is 000100horse.mp4.
Copy this file to file folder 01. Since the first 2 digits is 00, this file will automatically be played when mpx player is inside file folder 01.
The third digit is 0, relay is OFF while playing this file.
The fourth digit is 1, interrupt is not allowed while playing this file.
The fifth and sixth digit is 00, mpx player will return to home position (00) after playing this file.

NOTES:
The above is an example of a video exhibit. For Audio exhibit, replace the video files with mp3 audio files.

Example 5:
A video exhibit with 2 push button and no interrupt while playing. After powering up, a loop video (Main.mp4) will be played. If push button 1 is triggered a horse video clip will be played. While playing no interrupt is allowed. After playing the video, the player will return to play the loop video (Main.mp4). If push button 2 is triggered a lion video clip will be played. While playing no interrupt is allowed. After playing the video, the player will return to play the loop video (Main.mp4).

The structure of the CF/USB drive is as follows:
F:\…
Main.mp4   (Loop this file after powering up)
01
00100Horse.mp4   (Input 1 plays this file and return home)
02
000100Lion.mp4   (Input 2 plays this file and return home)

Explanation:
For the loop video, copy Main.mp4 video clip into the root directory (F:\).
Prepare the Horse and Lion video clip and rename them as follows:

Horse.mp4 video clip, add 6 digit numbers. The new name is 000100horse.mp4.
Copy this file to file folder 01. Since the first 2 digits is 00, this file will automatically be played when mpx player is inside file folder 01.
The third digit is 0, relay is OFF while playing this file.
The fourth digit is 1, interrupt is not allowed while playing this file.
The fifth and sixth digit is 00, mpx player will return to home position (00) after playing this file.
Lion.mp4 video clip, add 6 digit numbers. The new name is 000100lion.mp4.
Copy this file to file folder 02. Since the first 2 digits is 00, this file will automatically be played when mpx player is inside file folder 02.
The third digit is 0, relay is OFF while playing this file.
The fourth digit is 1, interrupt is not allowed while playing this file.
The fifth and sixth digit is 00, mpx player will return to home position (00) after playing this file.

NOTES:
The above is an example of a video exhibit. For Audio exhibit, replace the video files with mp3 audio files. For the dark screen, use Black.mpg and replace the Main.mp4. For Audio exhibit only and to idle with no sound during loop, instead of the dark screen Black.mpg you can also use any Jpeg file from your digital camera or silent.mp3. Black.mpg and silent.mp3 are available from our web site.

Example 6:
An Audio exhibit with 2 push button and no interrupt while playing. Exhibit is silent after powering up. After powering up, audio is silent. If push button 1 is triggered a horse audio will be played. While playing no interrupt is allowed. After playing the audio, the player will stop and wait. If push button 2 is triggered a lion audio will be played. While playing no interrupt is allowed. After playing the audio, the player will stop and wait.

The structure of the CF/USB drive is as follows:
F:\…

000100Horse.mp3   (Input 1 plays this file, return home and wait)
02
000100Lion.mp3   (Input 2 plays this file, return home and wait)

Explanation:
For the silent, leave the root directory (F:\) blank.
Prepare the Horse and Lion mp3 audio and rename them as follows:

Horse.mp3 audio clip, add 6 digit numbers. The new name is 000100horse.mp3.
Copy this file to file folder 01. Since the first 2 digits is 00, this file will automatically be played when mpx player is inside file folder 01.
The third digit is 0, relay is OFF while playing this file.
The fourth digit is 1, interrupt is not allowed while playing this file.
The fifth and sixth digit is 00, mpx player will return to home and wait for another trigger after playing this file.
Lion.mp3 audio clip, add 6 digit numbers. The new name is 000100lion.mp3.
Copy this file to file folder 02. Since the first 2 digits is 00, this file will automatically be played when mpx player is inside file folder 02.
The third digit is 0, relay is OFF while playing this file.
The fourth digit is 1, interrupt is not allowed while playing this file.
The fifth and sixth digit is 00, mpx will return home and wait for another trigger after playing this file.

Example 7:
A video exhibit with 2 push button and switching between the 2 video clips while playing the video clip. After powering up, a loop video will be played. If push button 1 is triggered a horse video clip will be played. While playing horse video clip if push button 2 is triggered, then lion video clip will be played. While playing Lion video clip, if push button 1 is triggered horse video clip will be played again. After finish playing the video clip, the loop video will be played again.

The structure of the CF/USB drive is as follows:

F:\…
Main.mp4   (Loop this file after powering up)
01
000020Black.mpg   (In1 plays this file and jump to folder 20)
02
000020Black.mpg   (In1 plays this file and jump to folder 20)
20
000098Main.mp4   (Automatically loop this file)
010020Horse.mp4   (In1 plays this file and jump to folder 20)
020020Lion.mp4   (In2 plays this file and jump to folder 20)

Explanation:
You have to create a separate file folder that contains the loop, the horse and lion video clips. In this example we are using file folder 20. When a push button is pressed after powering up, you want the mpx player to temporarily go into file folders 01 or 02, play a "dummy" short file and then jump it directly into the file folder 20 that has all 3 clips. For this dummy file, you can use a short Black.mpg. Initially you have to double trigger to play the file. This will happen only once and only after powering up. After jumping to file folder 20, the mpx player will stay inside this file folder. It will remain there until power is turned off.
Create "Dummy" file Black.mpg for file folder 01 and 02:
File folders 01 and 02 are temporary file folders only and will be used to jump either push buttons 1 or 2 into file folder 20. Create a short 1 second silent Mp3 audio and rename it as follows: 000020Black.mpg and copy it into file folder 01 and 02.

Rename the Main.mp4 loop file :
You will be using the same Main.mp4 loop video in 2 separate locations, the root directory and inside file folder 20.
For the root directory:
You do not have to rename Main.mp4, simply copy it as is.
For file folder 20:
Rename Main.mp4 as follows:
Main.mp4 , add 6 digit numbers. The new name is 000098Main.mp4.
The first 2 digits is 00. This file will automatically loop after the mpx player is inside this file folder.
The third digit is 0, relay is OFF while playing this file.
The fourth digit is 0, interrupt is allowed while playing this file.
The fifth and sixth digit is 98, mpx player will loop this file.
Prepare the Horse and Lion video clips and rename them as follows:
Horse.mp4 video clip, add 6 digit numbers. The new name is 010020horse.mp4.
The first 2 digits is 01. This file will be played when mpx player is inside this file folder and push button 1 is triggered..
The third digit is 0, relay is OFF while playing this file.
The fourth digit is 0, interrupt is allowed while playing this file.
The fifth and sixth digit is 20, After finish playing this file, the mpx player will return to it's own file folder 20 and loop the first file again (000098Main.mp4).
Lion.mp4 video clip, add 6 digit numbers. The new name is 020020lion.mp4.
The first 2 digits is 02. This file will be played when mpx player is inside this file folder and push button 2 is triggered..
The third digit is 0, relay is OFF while playing this file.
The fourth digit is 0, interrupt is allowed while playing this file.
The fifth and sixth digit is 20, After finish playing this file, the mpx player will return to it's own file folder 20 and loop the first file again (000098Main.mp4).
The above is an example of a video exhibit. For Audio exhibit, replace the video files with mp3 audio files.
For Audio exhibit only and to idle with no sound during loop, instead of the Black.mpg you can also use any Jpeg file from your digital camera or Silent.mp3. Silent.mp3 is also available for download from our web site.

Example 8:
Similar to the 2 push button exhibit, but after powering up screen is dark. If push button 1 is triggered a horse video clip will be played. While playing horse video clip if push button 2 is triggered, then lion video clip will be played. While playing Lion video clip, if push button 1 is triggered horse video clip will be played again. After finish playing the video clip, screen is dark again.

The structure of the CF/USB drive is as follows:

F:\…
Black.mpg   (Loop this file after powering up)
01
000020Black.mpg   (play this file and jump to file folder 20)
02
000020Black.mpg   (play this file and jump to file folder 20)
20
000097Black.mpg   (loop this file)
010097Horse.mp4   (In 1 plays this file and stay in folder 20)
020097Lion.mp4   (In 2 plays this file and stay in folder 20)

Explanation:
Similar to example 2, but replace the Main.mp4 with a dark screen black.mpg. Stop and dark it using code 97.
The above is an example of a video exhibit. For Audio exhibit, replace the video files with mp3 audio files. Black.mpg is available from our website. For Audio exhibit only and to idle with no sound during loop, instead of the dark screen Jpeg you can also use any Jpeg file from your digital camera or Silent.mp3. Silent.mp3 is also available for download from our web site.

Example 9:
An exhibit using motion detector (or a push button) to sequentially play a set of video clips. The motion detector will play horse video clip and after playing the screen is dark. If the motion detector is triggered again, the lion video clip will be played and after playing the screen is dark. If the motion detector is triggered again, the cat video clip will be played and after playing the screen is dark. If the motion detector is triggered again, the tiger video clip will be played and after playing the screen is dark. If the motion detector is triggered again, it will return to play horse video clip again and after playing the screen is dark.

The structure of the CF/USB drive is as follows:

F:\…
Black.mpg
01
000097Black.mpg   (Play this file and wait for input)
010197Horse.mpg   (In 1 plays this file and jump to folder 20)
20
000097Black.mpg   (Play this file and wait for input)
010121Lion.mpg   (In 1 plays this file and jump to folder 21)
21
000097Black.mpg   (Play this file and wait for input)
010122Cat.mpg   (In 1 plays this file and jump to folder 2).
22
000097Black.mpg   (Play this file and wait for input)
010120Tiger.mpg   (In 1 plays this file and return to folder 20)

Explanation:
For the dark screen, use a black screen video Black.mpg, Black.mpg video is available from our web site. You can use any input of the mpx player for the motion detector trigger, the example below is using input 1 as trigger input. Create File Folder 01 and copy 000097Black.mpg and 010120Horse.mp4.

After entering file folder 01, the mpx player will play 000097Black.mpg. Code (97) is for stop and dark If motion detector triggers input 1, 010120Horse.mpg will be played. After finish playing, the mpx player will jump to file folder 20 and play 000097Black.mpg. Code (97) is for stop and dark If motion detector triggers input 1 again, 010121Lion.mpgwill be played. After finish playing, the mpx player will jump to file folder 21 and play 000097Black.mpg. If motion detector triggers input 1 again, 010122Cat.mpgwill be played. After finish playing, the mpx player will jump to file folder 22 and play 000097Black.mpg. If motion detector triggers input 1 again, 010120Tiger.mpg will be played. After finish playing, the mpx player will return to file folder 20 and play 000097Black.mpg.

Example 10:
An AUDIO exhibit using a push button to sequentially play a set of Audio clips. After playing a file the player will stop and wait for an input. If the push button is triggered again, the player plays the next file. However if while playing the push button is triggered, then it will abort the current playback and immediately play the next sound.

The structure of the CF/USB drive is as follows:
F:\…
Silent.mp3
01
000099Horse.mp3   (Play this file, stop and wait for input)
010020Silent1.mp3 (In 1 abort playback and jump to folder 20)
20
000099Lion.mp3   (Play this file, stop and wait for input.)
010021Silent1.mp3 (In 1 abort playback and jump to folder 21)

21
000099Cat.mp3   (Play this file, stop and wait for input)
010022Silent1.mp3 (In 1 abort playback and jump to folder 22)
22
000099Tiger.mp3   (Play this file, stop and wait for input)
010020Silent1.mp3 (In1 abort playback and return to folder 20)

Explanation:
For root directory use Silent.mp3 audio. Silent.mp3 audio is available from our web site.
Create File Folder 01 and copy 000099Horse.mp3 and 010020Silent1.mp3. Silent1.mp3 is a very short mp3 audio file and is available from our web site. Silent1.mp3 file is used only to jump to the next file folder After entering file folder 01, the mpx player will play 000099Horse.mp3, stop and wait for an input. Code (99) is for play a file, stop and wait for an input. If input 1 is triggered, 010120Silent1.mp3 will be played. After jumping to file folder 20 the player will immediately play 000099Lion.mp3, stop and wait again.

Example 11:
An exhibit using a motion detector and 4 push buttons. After powering up, the screen is dark. When a visitor enters a room, the motion detector will trigger the mpx player and starts the attract video. The visitor has a choice to trigger the 4 push buttons. Each push button plays a specific video clip. After playing a video clip, the attract video will play again. After finish playing the attract video, screen will go dark again and wait for the motion detector to trigger again.

The structure of the CF/USB drive is as follows:
F:\…
Black.mpg
01
000000Info.mp4   (Play this file and return home)
020101Horse.mp4   (Input 2 plays this file and stay in folder 01)
030101Lion.mp4   (Input 3 plays this file and stay in folder 01)
040101Cat.mp4   (Input 4 plays this file and stay in folder 01)
050101Tiger.mp4   (Input 5 plays this file and stay in folder 01)

Explanation:
For the dark screen, use Black.mpg We will use input 1 for the motion detector and inputs 2 to 5 for push buttons 1 to 4.
The motion detector will trigger the mpx player, enters file folder 1 and plays Info.mp4 attract video file. If nobody press the push button, it will simply return to home position and screen is dark again. However if while playing Info.mp4, push button 2 is triggered, then 020101Horse.mp4 will play. While playing no interrupt is allowed. After playing it will return to it's own file folder 01 and plays Info.mp4 again.
If push button 2 is triggered, then 030101Lion.mp4 will play. While playing no interrupt is allowed. After playing it will return to it's own file folder 01 and plays Info.mp4 again.
If push button 2 is triggered, then 040101Cat.mp4 will play. While playing no interrupt is allowed. After playing it will return to it's own file folder 01 and plays Info.mp4 again.
If push button 2 is triggered, then 050101Tiger.mp4 will play. While playing no interrupt is allowed. After playing it will return to it's own file folder 01 and plays Info.mp4 again.
For Audio exhibit only and to idle with no sound during loop, instead of the dark screen Jpeg you can also use any Jpeg file from your digital camera or silent.mp3. Silent.mp3 and Black.mpg can be downloaded from our web site.

Example 12:
A mall info system using 8 push buttons. After powering up, a mall info video will loop. The visitor can choose 8 areas of the mall by selecting the 8 push buttons. When a push button is selected, an area info video will play. The visitor can then select another 4 or more push buttons (depends on the area) to hear the info about the specific feature of this area. After playing this info, the mpx player will return to play the area info video and then return back to mall info video. At any time during the video, the visitor can press a button to abort the playback and return to home position again.

The structure of the CF/USB drive is as follows:
F:\…
MallInfo.mp4
01
000000Area1info.mp4   (Play this file and return home)
010001RestaurantA.mp4   (In1 plays this file stay in folder 01)
020001RestaurantB.mp4   (In2 plays this file stay in folder 01)
030001RestaurantC.mp4   (In3 plays this file stay in folder 01)
090000Black.mpg   (Input 9 returns to home position)
02
000000Area2info.mp4
010002RestaurantK.mp4
020002RestaurantL.mp4
030002RestaurantM.mp4
090000Black.mpg   (Input 9 returns to home position)
03
000000Area3info.mp4
010003Store1.mp4
020003Store2.mp4
030003Store3.mp4
090000Black.mpg   (Input 9 returns to home position)
etc, etc, etc………………..
08
000000Area8info.mp4
010008Kiosk1.mp4
020008 Kiosk 2.mp4
030008 Kiosk 3.mp4
040008 Kiosk 4.mp4
050008 Kiosk 5.mp4
060008 Kiosk 6.mp4
090000Black.mpg   (Input 9 returns to home position)

Explanation:
Copy the mall info video into the root directory of the flash card.
Create 8 file folders and copy the video files into each file folder. Rename it so that it matches the assigned input.
We will assign push button 9 to abort the playback. For this we will use a Black.mpg dark screen video clip or you can create a short ABORT video clip.

Example 13:
A quiz video game using 4 push buttons for selecting the answers and a push button for abort. After powering up, an attract video will loop. When any of the 4 push button is pressed the first quiz screen will appear. The visitor can answer by selecting one of the push button. If the answer is correct, a screen will appear and congratulate the visitor and then plays the next screen. If the answer is not correct a screen will appear and remind the visitor to try again and return again to the same screen.
At any time during the quiz, the visitor can press a button to abort the playback and return to home position again.
If the push button is not triggered after playing the quiz, the player will return to the attract loop again.

The structure of the CF/USB drive is as follows:
F:\…
QuizAttract.mp4
01
  000000Quiz1.mp4   (Play this once and return to home)
  010020Correct.mp4   (In 1, if correct go to file folder 20)
  020001Wrong.mp4   (In 2, if wrong stay in this file folder)
  030001Wrong.mp4   (In 3, if wrong stay in this file folder)
  040000Wrong.mp4   (In 4, if wrong stay in this file folder)
  050000Abort.mp4   (abort playback if input 5 is triggered)

02
  000000Quiz1.mp4
  010020Correct.mp4
  020001Wrong.mp4
  030001Wrong.mp4
  040000Wrong.mp4
  050000Abort.mp4
03
  000000Quiz1.mp4
  010020Correct.mp4
  020001Wrong.mp4
  030001Wrong.mp4
  040000Wrong.mp4
  050000Abort.mp4
04
  00000Quiz1.mp4
  010020Correct.mp4
  020001Wrong.mp4
  030001Wrong.mp4
  040000Wrong.mp4
  050000Abort.mp4
20
  000000Quiz2.mp4
  010020Wrong.mp4
  020021Correct.mp4   (In 2, if correct go to file folder 21)
  030020Wrong.mp4
  040020Wrong.mp4
  050000Abort.mp4

```
21
   000000Quiz3.mp4
   010021Wrong.mp4
   020021Wrong.mp4
   030021Wrong.mp4
   040022Correct.mp4      (In 4, if correct go to file folder 22)
   050000Abort.mp4
22
   000000Quiz4.mp4
   010022Wrong.mp4
   020022Wrong.mp4
   030023Correct.mp4      (In 3, if correct go to file folder 23)
   040022Wrong.mp4
   050000Abort.mp4
23
   000000Quiz5.mp4
   010024Correct.mp4      (In 1, if correct go to file folder 24)
   020023Wrong.mp4
   030023Wrong.mp4
   040023Wrong.mp4
   050000Abort.mp4
24
   000000Quiz6.mp4
   010024Wrong.mp4
   020024Wrong.mp4
   030024Wrong.mp4
   040025Correct.mp4      (In 4, if correct go to file folder 25)
   050000Abort.mp4
etc, etc, etc………………..
```

Explanation:
Copy the attract video into the root directory of the flash card. Create 4 file folders 01,02,03 and 04 and copy identical files into it. The idea is so that at start the visitor can push any of the 4 buttons to start the quiz game. Create a file folder starting from file folder 20 and up for each quiz. If you have 20 quiz, then create 20 file folders. When creating the quiz video clip, allow enough playtime for the visitor to read and answer the quiz. If the visitor does not response during the quiz video clip, it will automatically return to home position. We will be using input 5 to abort the playback. For abort, create a short video clip "ABORT" or you can use Black.mpg.

CONVERTING VIDEO FILES:
The Flash mpx plays Mpeg4-2 ASP video only, it will not play Mpeg4-10 video.
The Flash mpx is set to play Mpeg4 video file that has mp3 audio only. Currently it does not play Mp4 video file that has AAC or AC3 audio.
The Flash mpx has been optimized to play Mpeg2 files, it is ideal for seamless looping etc. However if you want to play Mpeg4 video file, then you have to convert your DVD or Mpeg2 file into Mpeg4 file (xxx.avi). Please note that you will not have the seamless loop capability when using the Mpeg4 video.
VOB file (from DVD):
A DVD file (vob) most likely consists of Mpeg2 Video stream and MP2 (Mpeg1 Audio) or AC3 audio stream. If the vob file plays on the mpx but no sound, then most likely the audio portion is AC3. To play it on the Flash mpx, you have to convert the VOB file into Mpeg2 video file and MP2 audio (Mpeg1 audio) stream. Please see ImTOO encoder software below.
MPEG2 file:
An Mpeg2 file most likely consists of Mepg2 Video stream and MP2(Mpeg1 Audio) audio stream. This file should be readily played by the Flash mpx.
MPEG4 file:
If you have a Mpeg4 file that does not play on the Flash mpx, most likely the file is Mpeg4-10 AVC video

(h.264). This file is currently not supported by the Flash mpx. However if the Mpeg4 file plays but no sound (mute), then most likely the audio stream is AAC or AC3, but NOT MP3. To play it on the Flash mpx you have to convert the audio portion into MP3 audio first. Please see ImTOO encoder software below.

SOFTWARE CONVERSION:

The easiest way to convert your DVD file (VOB), Mpeg2 file and Mpeg4 (AAC) file is by using the Mpeg4 converter software such as from Divx or ImToo Mpeg4 converter (recommended).

ImTOO SOFTWARE COVERTER:

The ImTOO Mpeg4 converter software is very easy to use and can be purchased and downloaded from their website at : www.Imtoo.com.

When using the Imtoo Mpeg4 converter software, the setting for the Flash mpx is as follows:

PROFILE:

Set profile to AVI.

VIDEO:

Video Codec: Mpeg4

Video size: Auto

Bit Rate: Type in a bit rate that is at least half or more of the original bit rate.

Frame rate: Type in a frame rate to match the original frame rate. (25 or 29.97)

AUDIO:

Audio Codec: MP3

Audio bit rate: Type in a bit rate to match the original bit rate.

Note: You can also use the ImTOO software to convert your VOB file (from DVD) into a std Mpeg2 file. To convert without any loss, type in to match the Video bit rate, Frame rate and audio bit rate.

TECHNICAL SPECIFICATIONS:

Video format:

--Mpeg4 video, MP4-2 Advance Simple Profile.

--Mpeg1 and Mpeg2 Programmed video files.

--JPEG – JPG still pictures

Audio format:

MP4-Mpeg4 audio files.

MP3 – MP3 audio files

AAC- Advance Audio coding format.

CF card and USB Drive:

For Audio application and low bit rate video (less than 2 mbit/sec) use any Sandisk Compact Flash Card or USB Flash drive.

For higher bit rate video application (up to 9 mbit/sec) use only Sandisk Ultra II Compact Flash Card or USB2.0 Flash drive.

Bit Rate:

Mpeg2 Video bitrate VBR or CBR is maximum 9 Mbps.

Mpeg4 Video bit rate is max 4 Mbps, VBR or CBR.

MP3 audio bitrate is maximum 320 kbps.

OUTPUT Flash mpx:

Video Composite out is standard Yellow RCA jack

S Video (Y/C) out is standard mini 4 pin din connector.

Headphone out, stereo100 mWatt, 36 Ohm on 3.5 mm jack.

Audio line out, 2 V p/p stereo on 2 RCA jacks (red and white).

14 Watt speaker output, 8 ohm on 4 mini screw on terminal.

Audio line out and speaker out are simultaneously controlled by the volume up/down.

Relay output is available on Busy and Common terminals. The output is Dry Contact, Normally Open rated at 1 Amp.

INPUT Flash mpx:
8 + 1 UP input on screw on terminals, plug in removable.
Input 1 to 8, to trigger short momentarily to ground.
Input 9 to 16, to trigger short both an Input and UP input momentarily to ground.
Volume UP and Volume Down input, to adjust the volume short it momentarily to ground. Volume is
adjustable from 0 to 31. Default setting is 12.

ENCLOSURE Flash mpx:
Aluminum enclosure (desktop), 7.25" W X 4.25" D X 1.2" H.
Weight is approximately 1.2 lbs.
UPS/Fedex shipping weight with Power Supply & cord is 3 lbs.
Optional: NEMA (weatherproof) enclosure for outdoor application is also available.

Power supply Flash mpx:
120 – 240VAC Universal switching power supply complete with a detachable PC style power cord.
Power output is 12VDC, 30 watt.

Available downloads from our web site:
Dark screen (Black.zip):
Black05.mpg …. 1/2 second dark screen video
Black1.mpg …. 1 second dark screen video
Black3.mpg …. 3 second dark screen video
Black5.mpg …. 5 second dark screen video
Black10.mpg …. 10 second dark screen video

Silent Audio (Silent.zip):
Silent 05.mp3 …… 1/2 second silent audio file.
Silent1.mp3 …… 1 second silent audio file.
Silent3.mp3 …… 3 second silent audio file.
Silent5.mp3 …… 5 second silent audio file.
Silent10.mp3 …… 10 second silent audio file.
Silent30.mp3 …… 30 second silent audio file.
Silent1M.mp3 …… 1 minute silent audio file.

Dark picture:
Black.jpg ….. Black jpeg picture

CF-USB drive structure file:
CF-USB.ZIP ….. CF/USB drive structure for testing.

MP4 video file:
Cat.mp4 ….. Mpeg4 Home video Cat for testing only.
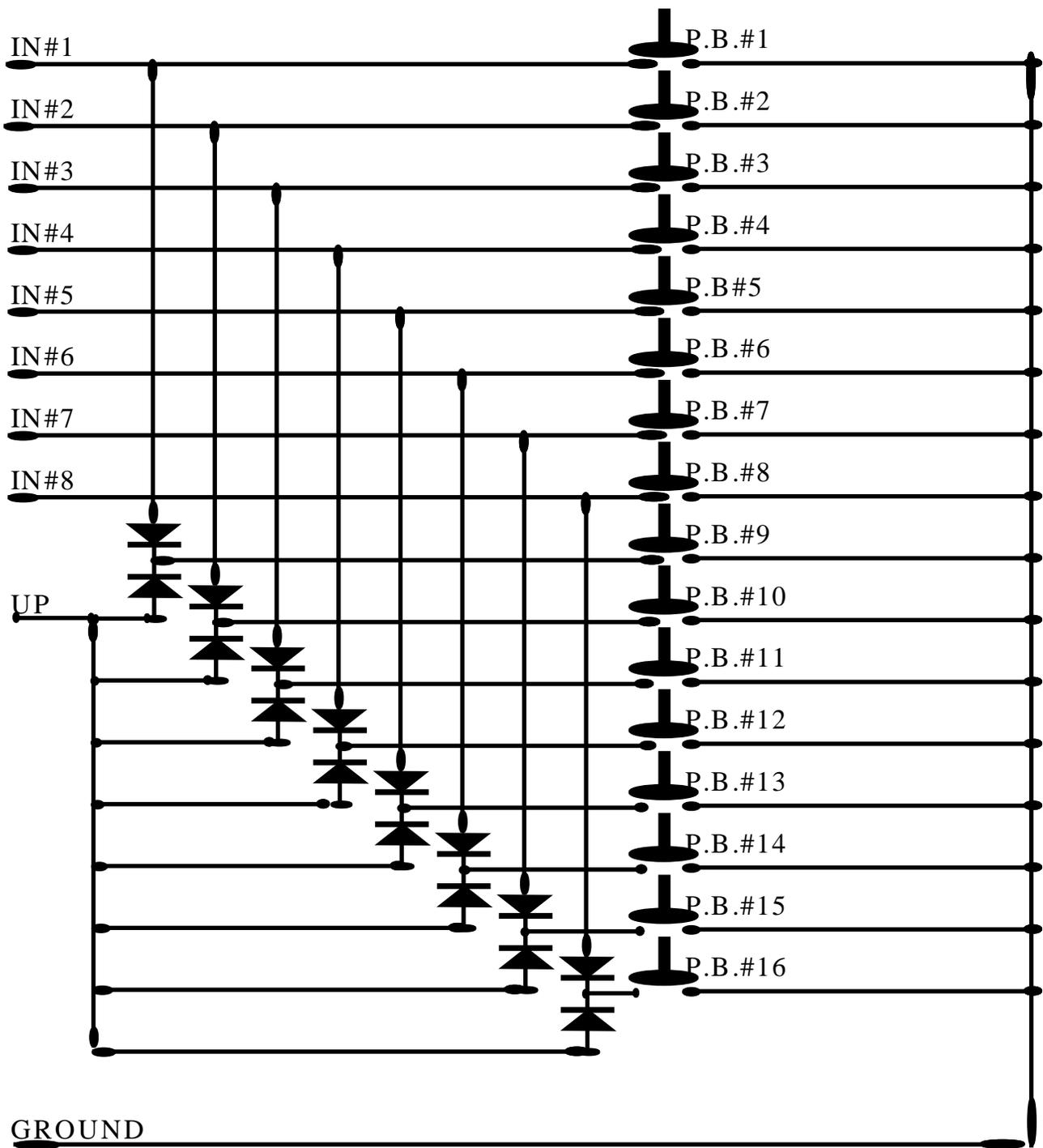Various xxx.avi and xxx.dvx video files.

For technical support contact:
Akman Inc
Tel: (407) 948 0562 & (407) 847 3998
Fax: (321) 459 1086
Web site: http://www.akman.com

IN#1

IN#2

IN#3

IN#4

IN#5

IN#6

IN#7

IN#8

UP

GROUND

P.B.#1

P.B.#2

P.B.#3

P.B.#4

P.B#5

P.B.#6

P.B.#7

P.B.#8

P.B.#9

P.B.#10

P.B.#11

P.B.#12

P.B.#13

P.B.#14

P.B.#15

P.B.#16

Diode

Push Button

Flash mpx input wiring diagram