Technovision Inc.

TM18

Quick Reference Guide

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Technical Specifications

Sound File Format:	Windows WAV
	Uncompressed PCM
	6/8/16/22 KHz sampling
	8 bit resolution
	monaural
Memory Type:	**SD / SDHC**
Max. Memory Capacity	*2* GB (SD FAT/FAT16)
	32GB (SDHC FAT32)
Supply Voltage	12 ~ 30 VDC
Standby Current	60 mA
Max.Output	MONO*:* 15W (4 ohm load)
Serial Interface	RS-232
Parallel Interface	8 inputs, CMOS level logic
Physical Dimensions	Case 4.6''x 3.25''x 1.25"

UPDATE: 02-2017

Descriptions of the connectors

Parallel Interface Terminals: T1 - T8
Audio files can be TRIGGERED by grounding (connect to GD terminal) these terminals using a button or motion sensor.

NOTE: When testing trigger inputs, do not simply touch the terminal screws together since they do not touch the terminal block contacts if turned completely counter clockwise.

Power Input Terminals: GD and V+
Connect the power supply's GROUND to terminal GD, and the POSITIVE output to terminal V+.

Speaker Output Terminals: S1 & S2 (mono channel).
Not polarized, but S2 is tied to ground internally.

Line Output (LINE): 1/8" MONO Phone Jack
This jack provides line output for external amplification. The output is not affected by the volume control.

Volume Control:
Controls the volume level for the speaker output only.

Serial Interface Connector: DB9 Female
RS232 is 9600,8,N,1 with pin 3 as the RS232 INPUT to the TM18. Pin2 is the transmit and 5 is the GROUND. Port is enabled in the MODE.TXT file.

Setup of the SD/SDHC card
The SD/SDHC card should have nothing on it except for the WAV files and the MODE.TXT file.

File Number Assignment
The filename must always start with 3 numbers ranging from 001 to 999. For example "start.wav" has to be renamed "001start.wav". This will be file 1 on the system.

The typical contents of the SD/SDHC card would be:
001_file1.wav
002_sample2.wav
003_audio3.wav
004_playback.wav
MODE.TXT

The Configuration mode File (MODE.TXT)
By default, the system works in the following mode (DNC):

*D*irect Trigger
*N*on-Interruptible Playback
*C*losed trigger activation.

To operate the system in other modes, you need to create an ASCII text file named **"MODE"** with one of the following two-letter words on the first line: (where the first character is the trigger mode and the second character is the playback mode. A option third letter is the trigger type – C,O,M or B.

For example:
DN is **D**irect trigger mode and **N**on-interruptible. Other modes are:

DI (Direct, Interruptible)
DH (Direct, Holdable)
DS (Direct, Script)

BN (Binary, Non-interruptible)
BI (Binary, Interruptible)
BH (Binary, Holdable)
BS (Binary, Script)

SN (Sequential, Non-interruptible)
SI (Sequential, Interruptible)
SH (Sequential, Holdable)

RN (Round-Robin, Non-interruptible)
RS (Round-Robin, Script)

Trigger Modes (first letter in MODE.TXT)

(D) Direct Trigger (most popular)
In this mode each input directly triggers a corresponding file: T1 =File 001, T2 = File 002, ... T8 = File 008.
A trigger is valid when the input is shorted to the ground for at least 50 ms.

(S) Sequential Trigger
Use the Sequential Trigger to sequentially trigger up to 99 different files per input, as defined below:
T1 triggers File 001,002 ~ 099, 001, 002…
T2 triggers File 201,202 ~ 299, 201, 202…
T3 triggers File 301,302 ~ 399, 301, 302…
…
T8 triggers File 801,802 ~ 899, 801,802…
Each trigger on the same input activates the next file in the sequence until it does not find a file. It will then sequence back to the first file.

(B) Binary Trigger
To trigger a particular file, the first step is to signal the file number on T1 (LSB) ~ T7 (MSB). and T8 being the data latch.

(R) Round-Robin Trigger
This mode is very similar to the Direct Trigger mode except that the inputs are not prioritized - if multiple inputs are tied to ground then their files will be played one after another, instead of just the highest priority one.

Playback Modes (second letter in MODE.TXT)

The Playback Mode defines how the playback is to proceed. The Playback Mode does not apply when the system is controlled via the Serial Interface.

(N) Non-interruptible Playback
The file is played once per trigger. The playback is not interruptible except by the system reset. Looping is possible by applying a constant trigger on the input.

(I) Interruptible Playback
The file is played once per trigger if not interrupted (can not interrupt itself unless in DIM mode). The playback does not start until the trigger is removed (input returns to +5V.

(H) Holdable Playback
The file is played for as long as the input is triggered, looping if necessary. It is not interruptible except by the system reset.

(S) Script Playback
Format for the script file is:
?nnn=command,command where ? is either "**N**"on-interruptible or "**I**" nterruptible, nnn = trigger number and the commands are:
Fnnn - play File #nnn
Wnnnnn - wait nnnnn units of 0.1 second
Jnnn - jump to trigger #nnn
END

Example (plays file 1, wait 2 seconds and plays file2):
DS
I001=F001,W00020,F002
END

More detailed information can be found in the Full User Manual.

Trigger Type (third letter in MODE.TXT)

(C) Closed ..Keep triggering when contact closed
(O) Open..Trigger when contact opened
(M) Make..Trigger **once** when closed
(B) Break..Trigger **once** when opened

RS232 Serial Control
For serial control, replace the two-letter word in MODE.TXT with "00". Direct (button) input mode is disabled when the player is in RS232 control mode.

RS232 Commands:
F### (play file ###)
L### (loop file ###)
S (Stop file)
P (Pause file)
R (Resume file)
B (busy enquiry), "b" is busy and "s" is not

Application Samples:
- To loop a file, put "DNO" in the MODE.TXT file and name the file 001.wav
- To allow button pressed during playback, put "DI" in the MODE.TXT file.
- Have the file play once, even if the button is held down, put "DNM" in the MODE.TXT file.

ADDITIONAL MANUAL ALSO AVAILABLE ONLINE
www.technovision.com/manuals.html