RSF Europe

OneDAP

USER MANUAL

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Chapter 1

Overview

The OneDAP is a compact audio player specially designed for easy installation in stand alone or centrally-controlled situations. Its small size and simple connectivity enables an easy and fast installation.

The latest single audio player in the RSF ProDAP product line, the OneDAP benefits from RSF's long experience of offering extreme reliability, flexibility, and ease of programming.

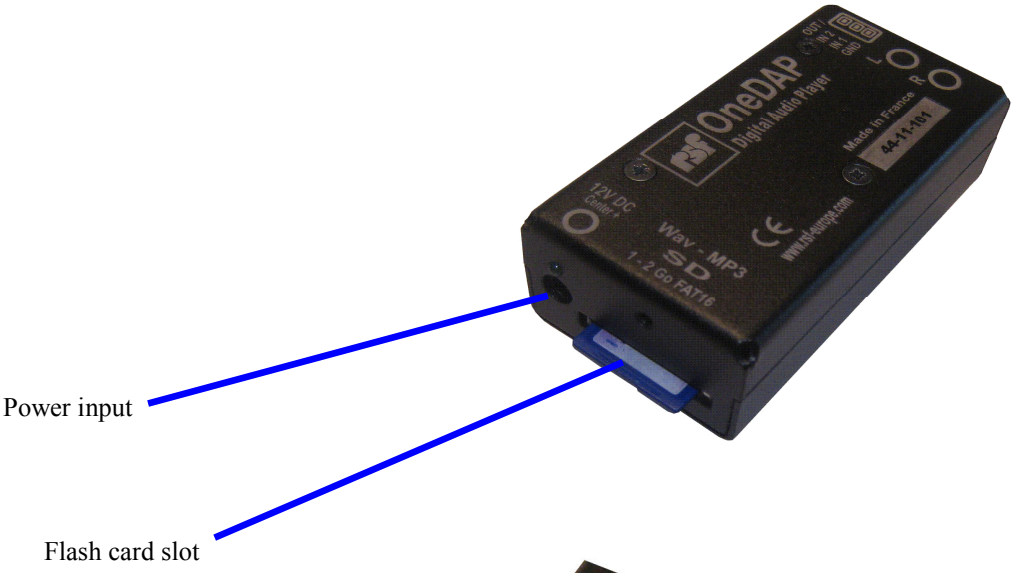
The OneDAP is designed to replace CD players wherever reliability is a requirement and can read 16 bit uncompressed WAV files at up to 48kHz sampling rate for audio quality better than a CD

By putting a single WAV file on the memory card, the OneDAP will simply play in a perfect loop. Other connfigurations can be setup however, by adding a config file and further audio files.

Chapter 2

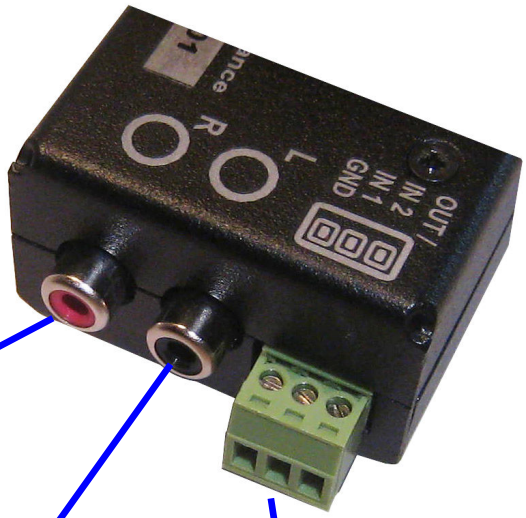
Connections

The OneDAP has 2 input contacts that can be multiplexed for 3 discrete triggers. One input can be changed to an output for instances where an external device needs to be triggered.



Power input

Flash card slot



Audio output Right

Audio output Left

3 port terminal block:

Ground
Input 1
Input 2/Output

Chapter 3

Configuration

Configuration Method

The OneDAP is configured through a combination of the filenames of the audio tracks, and a text file found on the flash card, called Config.txt The firmware of the OneDAP can be found in the file OneDAP.PGS and is not intended for user-editing.

Looping a file

When switched on, if there is one single audio file on the SD card, the OneDAP will automatically start playing it in a loop. If there are multiple files on the card, the file that is to be looped while awaiting other triggers should be called Loop.wav (for an uncompressed wave file) or Loop.mp3 (for an MP3 file). A OneDAP should not have both Loop.wav and Loop.mp3 on its SD card at the same time. When the loop file is Loop.wav it will play in a perfect loop, i.e. the listener will not be able to hear where the file starts and ends (obviously content dependent!).

GPIO setup

The two GPIO ports on the OneDAP as shown on page 4 can be used in 3 different modes:

- One input, and one output
- Two inputs
- Two inputs multiplexed to give three discrete selection options

These 3 different modes can be determined according to the required configuration and operating modes as described below.

When the output is used, it can either be normally high (NH) at +3V DC or normally low (NL) at 0V. No more than 2mA of current can be drawn from the output.

Direct selection mode

In this configuration up to 3 separate audio tracks can be individually selected through the use of one or both input contacts. If there is only one audio track to be triggered, the OneDAP will have one input, and one output. If there are two audio tracks to be triggered the OneDAP will have two inputs, and no outputs. If there are three audio tracks to be triggered the OneDAP will use both inputs in a multiplexed format (In1 = track 1, In2 = track 2, In1&2 = track 3) and no output. The inputs can be triggered by connecting them with the ground contact.

In direct selection mode the audio track can play once the contact is closed, or only while the contact is being held closed. This will be explained in further detail later.

Sequential mode

In sequential mode, each time the input is closed, the OneDAP will play the next track in the list as defined by the filenames of the tracks. The second GPIO port is used as an output. The configuration of the output will de described in greater detail later in this manual. In sequential mode a maximum of 99 audio tracks can be on the OneDAP. Sequential mode can be selected through the naming of track one, as described below.

Random mode

In random mode, each time the input is closed, the OneDAP will play a random track from the SD card as defined by the filenames of the tracks. The second GPIO port is used as an output. The configuration of the output will de described in greater detail later in this manual. In random mode a maximum of 99 audio tracks can be on the OneDAP. Random mode can be selected through the naming of track one, as described below.

Forwards / Backwards mode

In forwards / backwards mode the OneDAP has two inputs, and no outputs. Closing the contact of input 1 will trigger the next track on the card as defined by their filenames, and closing input 2 will trigger the previous track in the list. In forwards / backwards mode a maximum of 99 tracks can be on the SD card. Forwards / backwards mode can be selected through the naming of track one, as described below.

Please note that where specific filenames are prescribed, the case (UPPERCASE / lowercase) should be respected at all times!!

Naming audio files

The name of each audio track has a big influence on how it will be played and the GPIO ports used on the OneDAP

With the exception of the loop file, described earlier, each filename should follow the format:

nnXYtttt_XXX.wav *or* **nnXYtttt_XXX.mp3**

The XXX part of the filename can be used for comments, or the original name of the file, but should not contain any non-alphanumerical characters with the exception of _ and - The total number of characters (including the .wav or .mp3) cannot exceed 65 characters.

Filenames - nn

nn should be a two-digit number to signify the place of this audio tracks in a sequential list. Leading zeros should be used i.e. 01 rather than simply 1 etc. 00 is not a valid number for the OneDAP.

Filenames - X

The next character in the audio filename is used to define the playback and triggering mode of this track. In the case of Sequential, Random, or Forwards / Backwards modes the settings from track 01 are used for all tracks in the OneDAP however it is recommended practise to include this configuration also in subsequent tracks. The following table explains the different options for position X and the corresponding setting.

X is...	Result
I	Direct selection mode. The track can‘t be interrupted or restarted.
i	Direct selection mode. The track can be interrupted or restarted.
m	Direct selection mode.the track is played as long as the contact is maintained closed
S	Sequential mode. The track can‘t be interrupted or restarted.
s	Sequential mode. The track can be interrupted or restarted.
A	Random mode. The track can‘t be interrupted or restarted.
a	Random mode. The track can be interrupted or restarted.
U	Forwards / backwards mode. The track can‘t be interrupted or restarted.
u	Forwards / backwards mode. The track can be interrupted or restarted.

Filenames - tttt

tttt is used to define either the length of time that the output will be triggered for, or the delay between an event happening and the output triggering. This is explained in further detail in the table below. tttt represents the time in 100ths of a second (e.g. tttt=0250 would mean 2.5s). Four digits must be used, even if the first 1, 2, or 3 digits are 0. The maximum amount of time is 99.99s.

Filenames - Y

The Y part of the filename is used to define the use of the output contact of the OneDAP. Y is used in conjunction with the part tttt to allow fuller control over the OneDAP. The following table shows the different ways that the output can be configured. (NH = Normally High, NL = Normally Low to describe the native state of the output). If the output is not to be connected to anything, the Y part of the filename can optionally be omitted.

Y is...	Result
P	Output NL. Output goes high for 0.5s either at beginning of file, or time tttt after beginning.
p	Output NH. Output goes low for 0.5s either at beginning of file, or time tttt after beginning.
V	Output NL. Output goes high until the end of the track, starting either at the beginning of the file, or time tttt after the beginning.
v	Output NH. Output goes low until the end of the track, starting either at the beginning of the file, or time tttt after the beginning.
F	Output NL. Output goes high for time tttt at the end of the file.
f	Output NH. Output goes low for time tttt at the end of the file.
N	Output not used. Remains in permanent state, NL.
n	Output not used. Remains in permanent state, NH.

Status LED

There is a status LED above the power input port of the OneDAP. When this is off, the OneDAP either has no power, or is not playing an audio file. If this is flashing, it signifies the OneDAP reading data from the SD card, and when it is on constantly this means an audio file is playing.

Settings controlled by text file Config.txt

When delivered new, the file Config.txt is found on the SD card and contains the following data:

OneDap Config V1.5:

FastTrig=0; *;binary value used to resolve triggering issues. If multiple OneDAPs are to be started together in synch-start mode, changing this value to „1“ will improve synch accuracy. (NB to guarantee accurate synchronisation the RSF MultiDAP-IP multi channel audio player should be used)*

TrigLoop=0; *;0=Does not loop selected track if contact is still pressed when track comes to its end*
;1=Restarts selected track if contact is still pressed when track comes to its end

LeftLevel=80 *;Left channel volume 0 to 100*
RightLevel=80 *;Right channel volume 0 to 100*

TrebleBand=10 *;Semi-parametric EQ - selection of treble audio band in 1kHz steps from 1 to 15 KHz (integer values only)*
TrebleLevel=0 *;volume of treble band using integer values from 0 to 15 in 1.5dB steps 0=off -12dB to +9dB*

BassBand=10 *;Semi-parametric EQ - selection of bass audio band in 10 Hz steps from 20 to 150 Hz (integer values only)*
BassBoost=0 *;volume of bass band using integer values from 0 to 15 in 1dB steps - 0=off +1dB to +15dB*

These settings can be changed to adapt the OneDAP to the needs of the installation, however in most cases this is not necessary.

In each line comments can be added after a semicolon (;) which will have no effect on the operation of the OneDAP.

Chapter 4

Technical Specification

Audio Parameters

Audio Format	16 bit WAV or up to 320kb/s MP3
Sampling rate	32kHz, 44.1kHz, or 48kHz
Bandwidth	20Hz to 20KHz
Distortion	less than 0,01%
Dynamic range	92 dB
Output Level	Line level

General Parameters

Max storage	2GB
Storage medium	SD card (FAT16 formatting)
Number of messages	99 (maximum)
Audio refinement	2-band semi-parametric EQ

Connectors

Audio output	RCA cinch (2X)
Control	3 port phoenix-type connector
Power supply	12V DC (included)

Indicator	Status LED
Configuration	Text file on SD card
Maximum consumption	45mA, 5-12V DC
Maximum output on GPIO2	3V 2mA
Enclosure	Black metal box
Dimensions	110 x 50 x 30 mm (L x D x H)
Weight	195 Gr

Environment

Temperature	0°C(32°F) to 50°C(122°F)
Relative humidity	0-90%

Warranty	3 years

Optional accessories

MicroAMP .....Miniature audio amplifier 2x10W

MiniAMP.....Miniature digital audio amplifier with 3-band EQ 2 x 30W

MicroRAD .....PIR presence detector

MicroTaCAP3 .Capacitance sensor for non-contact switch