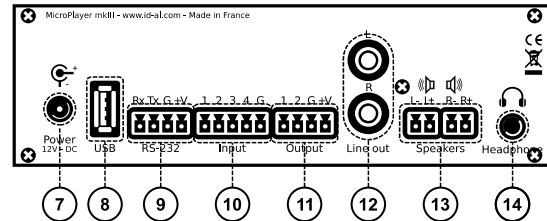
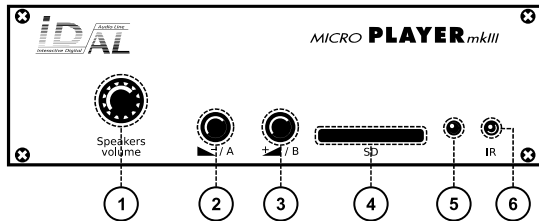


ID-AL MicroPlayer mkIII

Quick Start Guide V1.1

1 Introduction

The MicroPlayer mkIII is a standalone audio player supporting WAV and MP3 files stored on an SD card or a USB flash drive. Files can be played automatically according to an “AutoPlay” setting or a triggering by external events (input contacts, RS-232 commands, infrared remote control).



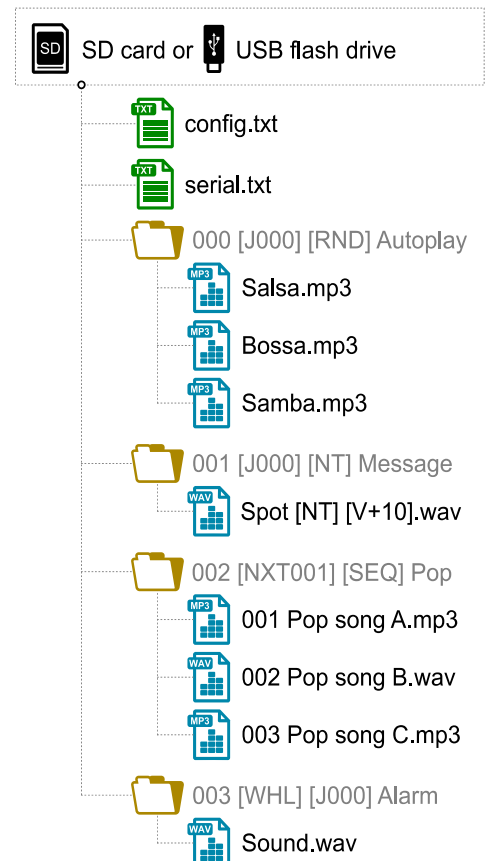
- 1 Volume knob for the amplified speaker output
- 2 Configurable button A (decreases the volume by default)
- 3 Configurable button B (increases the volume by default)
- 4 SD card slot
- 5 Status LED
- 6 Infrared sensor
- 7 External DC power supply chassis socket
- 8 USB Host 2.0 for USB flash drive, type-A receptacle
- 9 RS-232 serial link and power supply output, pluggable terminal block
- 10 4 opto-isolated input contacts and power supply output, pluggable terminal block
- 11 2 MOSFET outputs and power supply output, pluggable terminal block
- 12 0 dBu line-level stereo audio output, RCA connectors
- 13 Class D amplified speaker stereo audio output, pluggable terminal blocks
- 14 Headphone stereo audio output, standard 3.5 mm (TRS) jack

This guide explains how to quickly start up the player for the first use. For the firmware, additional software and the complete user guide of the product, see the support page of the MicroPlayer mkIII on www.id-al.com.

2 Preparation of the Storage Device

Choose a quality SD card or USB flash drive, and format it using FAT32. Store on it useful files according to the organization demanded by the player (see given opposite example). Do not use special or accented characters.

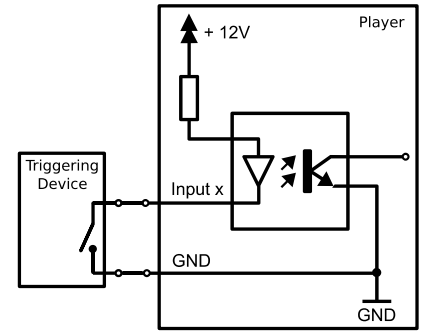
- Files at the root of the storage device:
 - `config.txt` (optional): configuration file of the player. See the chapter [Configuration File](#)
 - `serial.txt` (optional): file defining the serial frames to send. See the chapter [RS-232 Serial Link](#).
- Organization of the folders at the root:
 - No subfolders allowed.
 - Naming: `xxx [TAG1] [TAG2] Name`
 - `xxx`: folder no. from 000 to 999 used by the commands. The AutoPlay feature uses the 000 folder.
 - `[TAGx]` (optional): tags controlling the playback. See the chapter [Folder and File Tags](#).
 - `Name` (optional): folder name (free).
- Organization of the audio files in the folders:
 - Format: WAV or MP3.
 - Naming: `xxx [TAG1] [TAG2] Name.ext`
 - `xxx`: file no. from 001 to 999 defining the playback order in sequential mode. Optional and unused in random mode.
 - `[TAGx]` (optional): tags controlling the playback. See the chapter [Folder and File Tags](#).
 - `Name` (optional): filename (free).
 - `ext`: `wav` or `mp3` extension.



3 Connection of the Input Contacts

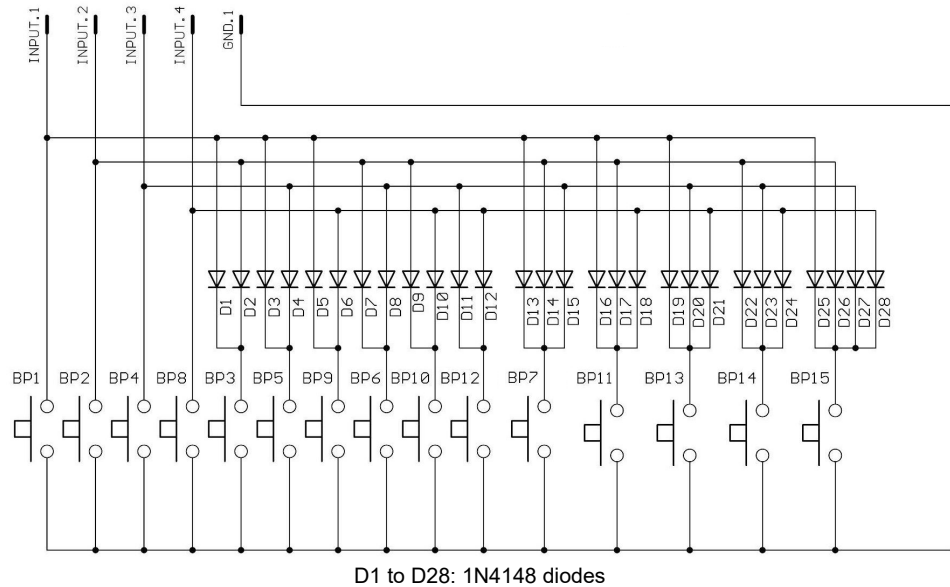
The 4 input contacts of the player are used to generate events. Triggering devices can be connected to these inputs (e.g.: push-button, presence sensor, relay, PLC, SensoPad, IRPad, etc.). These devices must behave like open or closed contacts between an input and the ground of the player, the activation being triggered by a closed contact. The activation states (0 for open or 1 for closed) of the input contacts are combined to form a binary code identifying the generated event:

$$xxx\ combination = Input_1 + Input_2 \times 2 + Input_3 \times 4 + Input_4 \times 8 + Input_5 \times 16 + Input_6 \times 32 + Input_7 \times 64 + Input_8 \times 128$$



A command is assigned to each event. By default, the `INPUTxxx` event resulting from the `xxx` combination value of the inputs is associated with the launch of the playback of the `xxx` folder. The `config.txt` file allows to change the commands assigned to the first 15 combinations. Up to 4 combinations (`001`, `002`, `004`, `008`), the triggering devices can be directly connected to the inputs. Beyond, a circuit based on diodes can be used to obtain up to 15 combinations (e.g.: the board ID-AL Ext15In providing up to 15 combinations).

Button	Event
BP1	INPUT001
BP2	INPUT002
BP3	INPUT003
BP4	INPUT004
BP5	INPUT005
BP6	INPUT006
BP7	INPUT007
BP8	INPUT008
BP9	INPUT009
BP10	INPUT010
BP11	INPUT011
BP12	INPUT012
BP13	INPUT013
BP14	INPUT014
BP15	INPUT015



Example circuit for 15 push-buttons mapped to 4 inputs

4 Connection of the Output Contacts

The MicroPlayer mkIII offers 2 outputs with MOSFET switches (up to 500 mA per output) to operate power relays, motor controllers, lights, players, and various devices. The states of the 2 output contacts can be controlled by the `[RLxy]` folder and file tag. x and y represent the activation states of the outputs 1 and 2, respectively:

Activation state	Description
0	Open the output contact at the beginning of the playback.
1	Close the output contact at the beginning of the playback and open it at the end of the playback.
2	Close the output contact at the beginning of the playback.

Examples:

- `001 [RL00]`: open both output contacts when the playback of the folder `001` starts.
- `002 [RL10]`: close the output contact 1 during the playback of the folder `002`, and open the output contact 2 when the playback of the folder `002` starts.
- `SongA [RL21] .mp3`: close the output contact 1 when the playback of the MP3 file starts and close the output contact 2 during the playback of the MP3 file.

5 First Startup

- Make sure that the player is off (mains adapter unplugged).
- Connect the audio outputs to the audio installation according to the needs.
- Connect the input and output contacts according to the needs. See the chapters [Connection of the Input Contacts](#) and [Connection of the Output Contacts](#).
- Connect the RS-232 serial link if needed.
- Insert the prepared storage device. See the chapter [Preparation of the Storage Device](#).
- Turn the player on by plugging the mains adapter.
- The player is operational.

6 Firmware Update

Start the player with an `MPMK2.bin` firmware file placed at the root of an SD card formatted using FAT32. The update by USB flash drive is not supported.

7 Reference

7.1 Folder and File Tags

Tag	Folder	File	Parameter			Description
			Min	Max	Default	
[Jxxx]	•	•	000	999		Jump to the <code>xxx</code> folder at the end of the playback.
[RET]	•					Return to the previous folder at the end of the playback.
[RND] and [SEQ]	•				[RND]	Random or sequential folder playback mode.
[V+xx] and [V-xx]	•	•	00	64	00	Relative volume of the folder or of the file.
[NT]	•	•				Block all the commands from the input contacts and the configurable buttons of the front panel, and the folder change commands from the serial link.
[RLxy]	•	•	0	2		Set the states of all the output contacts (<code>x</code> for the output 1 and <code>y</code> for the output 2): 0 = open, 1 = close during playback, 2 = close.
[RSxxx]	•	•	001	999		Send the <code>#xxx</code> RS-232 frame from the <code>serial.txt</code> file.
[WHL]	•					Play the folder <u>while</u> the assigned input combination remains activated.
[NXTxxx]	•		001	999		Play the next <code>xxx</code> files each time the folder is played.

7.2 Configuration File

The `config.txt` configuration file is a raw text file placed at the root of the storage device. Each line can define a parameter of the player according to the following table:

Parameter Definition	Valid Values	Default Value	Description
#ID:xxx	001 to 127	001	RS-232 serial link identifier of the player.
#VOLUME:xx	00 to 64	Last used value	Volume of the player on startup.
#RS_MONITORING:x	0: no monitoring 1: "Daisy Chain" mode 2: "Monitoring" mode 3: "Advanced Monitoring" mode	0	Monitoring mode of the RS-232 serial link.
#BOOT:xxx	000 to 999	000	Folder to play on startup.
#INPUTxx:cmd	xx: 01 to 15 cmd: see the commands table	FOLDER0xx	Commands assigned to the input contact combinations.
#BUTTONx:cmd	x: 1 or 2 cmd: see the commands table	BUTTON1:VOLUME_MINUS BUTTON2:VOLUME_PLUS	Commands assigned to the special buttons of the infrared remote control and of the front panel of the player.
#BAUDRATE:xxxxx	9600, 19200, 38400	19200	Baud rate of the RS-232 serial port.
#POWER:x	0: normal mode 1: power-saving mode	0	Power-saving mode activation.

Command	Parameter		Description
	Min	Max	
PLAY			Play the last played file.
STOP			Stop the playback.
NEXT_TRACK, PREV_TRACK			Play the next/previous file of the current folder.
NEXT_FOLD, PREV_FOLD			Play the next/previous folder.
FOLDERxxx	000	999	Play the xxx folder.
VOLUME_PLUS, VOLUME_MINUS			Increase/decrease the volume by one step.
RSxxx	001	999	Send the #xxx RS-232 frame from the serial.txt file.

7.3 RS-232 Serial Link

This link allows the player to receive commands, to send arbitrary frames, and to send status information. By default, it is configured as follows (can be changed with config.txt):

Baud Rate (bauds)	Start Bit(s)	Data Bit(s)	Parity Bit(s)	Stop Bit(s)	Handshake
19200	1	8	0	1	None

- The reception protocol is based on a 3-byte frame: "Status", "Command", and "Data":

Status	Description	Command	Description	Data	Description
80h	All the players.	01h, 11h, 21h, 31h, 41h, 51h, 61h, and 71h	Play a folder in a bank of 128 folders. command = bank × 10h + 1	00h to 7Fh	Number of the folder in the bank.
81h to FFh	Only the player with the ID from 1 to 127.	02h	Playback control.	01h	Play the last played file.
				02h	Stop the playback.
				03h	Play the next file of the current folder.
				04h	Play the previous file of the current folder.
				06h	Play the next folder.
		07h	Play the previous folder.		
		03h	Volume control.	00h to 40h	Volume value.

- Arbitrary frames can be sent with the [RSxxx] tag and the input contacts. These frames must be defined in the serial.txt file at the root of the storage device, as #xxx:tt tt tt..., with one definition per line (e.g.: #002:98 75 21 35 45 B2).
- The monitoring protocol is structured like the reception protocol. The status byte has the same meaning. This protocol sends the following command and data bytes, according to the mode selected by the config.txt file:

Mode	Description	Command	Data	Description
0	No monitoring	The player only sends the frames from the serial.txt file.		
1	Daisy Chain	The player forwards everything it receives.		
2	Monitoring	00h	00h	Player ready. Sent at power-on.
			03h	Start of playback.
			04h	End of playback.
3	Advanced Monitoring	00h	00h	Player ready. Sent at power-on.
			03h	Start of playback.
			04h	End of playback.
			01h	Stopped.
			02h	Playing.
				Sent every 250 ms, except if the player is unavailable because of some issue.