



WallboxPlayer – Installation – 3WA-3W1

www.wallboxplayer.com

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This WallboxPlayer is a device that turns your wallbox into a music player. This QuickStart manual provides basic instructions on how to install and operate the WallboxPlayer. For complete instructions and options, refer to the full manual. In case you have any questions, contact me anytime.

WallboxPlayer Features

- **Have your wallbox play your favorite music with or without a jukebox**
- **Song queue and/or random play**
- **Can be used to connect to wallbox and/or jukebox**
- **Wireless/remote control capabilities**
- **Audio (3.5mm jack) and 2 speaker or BT outputs**
- **Range of compatible wallboxes**

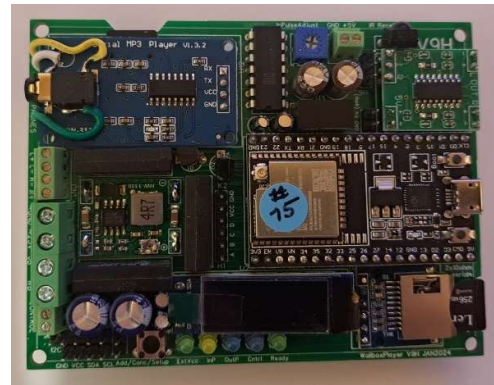
Specifications

Compact 75 * 90mm
State-of-the-art onboard processor
Can use wallbox 24VAC (or 5VDC)
MicroSD (FAT32 max 32GB): max 999 MP3/WAV songs
Optional jukebox control
Board version V9 E...M

1 General Description

The WallboxPlayer supports a range of Seeburg, AMI, Rockola and Wurlitzer pulse-controlled jukeboxes. Tuning and customization is possible. Power to the player is provided from the wallbox, reducing the need for an extra power supply. Music is stored on a microSD card and can be filled matching the wallbox titles.

The WallboxPlayer board has connectors for most of the connections to be made to jukebox, wallbox, and speakers. The on-board MP3 player accepts a user-filled microSD card. It has a jack plug for headphones or external audio. The board has a second microSD for supporting functions. The board has optional WiFi /remote App capabilities. There are buttons for HW reset on the microprocessor and 'select' to do the setup, cancel or add a play. LEDs indicate pulses coming in or going out and an optional credit pulse being made. The board features header connectors for an external 16x2 I2C LCD display, a DEC wallbox or additional driver for jukebox functions. All settings are done in the setup through software and stored. It has one trimmer to tune the sensitivity/speed of the incoming pulse signal. The on-board processor can be programmed through a micro-USB connector (or updated over-the-air). Stand-alone, the board is powered through the external 24VAC and converts this to 5V through the on-board voltage converter. The board is 7.5 cm x 9 cm and can be mounted in a 3W100, 3WA/160, 3W1, DEC, Consolette or other popular wallboxes, or outside in a separate housing.



The device has been designed for and tested on most wallboxes. Other wallboxes will be added to the compatibility list when verified.

The 24VAC power from the wallbox is used, either through the jukebox or a separate widely available 24VAC, alternating current output, (48VA; 2A) transformer or adapter. Use a fuse in primary and/or secondary power lines to avoid short circuit issues. The WallboxPlayer can also be powered by the 24VAC transformer installed in a jukebox.

The music MP3/WAV SD card slot can be found on the top left under the music player. The contacts should be on your side and visible before inserting. The music files are stored on a micro-SD card. Ensure the card is



clicked in. The microSD card must be formatted as FAT32 (max 32GB)! The number of (.MP3 .WAV) files can be as many selections as the wallbox can select. The best place for the music files is in the root folder of the card. When copying files from the PC onto the SD card, windows can hustle the order that then does not match the file/selections. A foolproof way to get the numbering and order right is as follows:

- Format the SD card
- Copy files from computer to SD with drag and drop, one at a time starting with the first one
- Wait until each file is copied, then copy the next (every time just one at a time)

This way, windows will not change the order as every file can only be added and has a later timestamp than the previous one. There is a second microSD (FAT32) slot for configuration settings and songname information. Refer to the full manual for details. When during startup, the music files cannot be read, the status LED will blink twice, and the red MP3 player LED will not be on.

To get a matching listing of the order of the songs on the SD, use DOS command:

```
DIR /B /A: -D *.MP3 > SONGS.TXT
```

Speaker output is via the (optional) onboard amplifier, two speakers (max 2*3W) can be connected. These speakers can be within the wallbox or external. The speaker output is via the connector labeled SpL+ SpL-, SpR+ and SpR-. Note the difference between wiring two separate speakers or a 3-lead consolette (see further below in this doc)!

LEDs onboard are used to display status:

- ExtVcc [green] Lights when an external 24V is connected (converted to 5V), supplying the board
- InP [yellow] – lights up when a wallbox pulse is detected
- OutP [blue] – optional: when a pulse is given that drives the stepper/receiver in the jukebox.
- Cntrl [blue] – indicates enabling ‘make selection’ lightbulb or external on/off.
- Ready [green] – shows that system is listening/ready to accept inputs (from wallbox or app).

The MP3 player mounted on the board has a red light that lights when the player is ready and blinks when playing a song. The microprocessor mounted on the board has an onboard red light that is on when the system is ready.

Adjustments are not required. In case of issues the blue potentiometer can be used to tune the sensitivity of the input pulse from the wallbox, detected by the system. It allows for either slower turning motors or 60Hz to work properly.

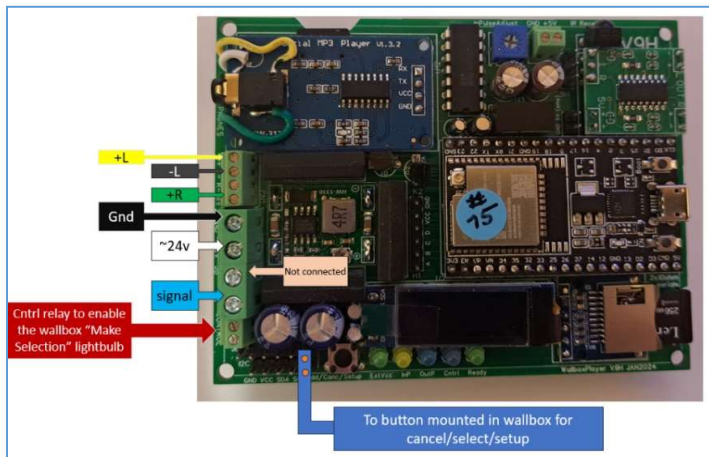
2 Installation

Setup, tools, and materials required for the installation:

- Screwdriver set, soldering iron (to extend cables if required), screws and isolation materials
- WallboxPlayer board V9 or higher
- Mounting materials and cables for WallboxPlayer
- Optional enclosure case if not installed in wallbox
- Audio device or speakers
- Optional Jack cable for connection with amplifier or cables to internal or external speakers
- 24V AC power supply or power through jukebox (optional 1500mA fuse)
- Shrink tubing (optional) to make or extend cable connections

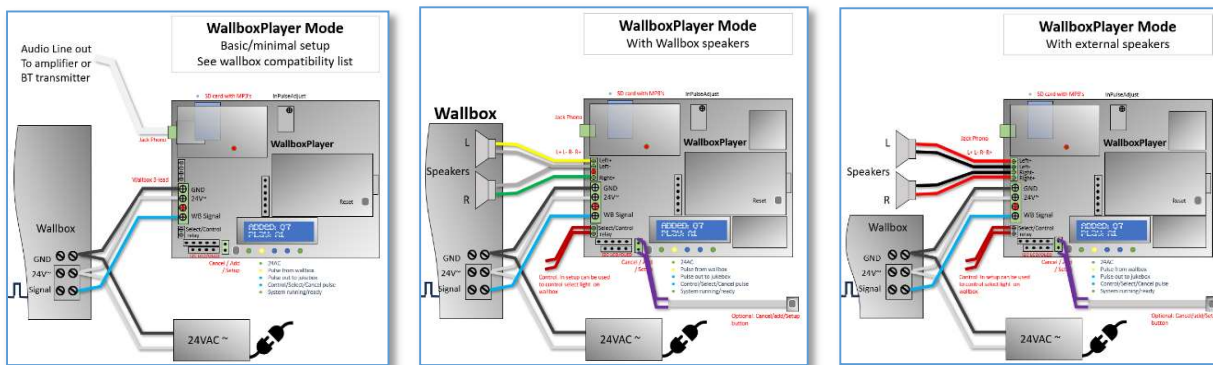


As a WallboxPlayer, connected to the wallbox only, make connections to the board as shown. Depending on the installation, connect to the wallbox as shown below.



After connections have been made, powering up should show screen startup messages with release version, jukebox and wallbox type (including number of selections), operating mode and number of MP3 files on card, volume and equalizer setting, idle time before random play, selections before credit pulse, and number of plays/selections. After a few seconds the system will show the green status light and be available for selections and will display 'Make Selection'. If the control relay is set up to enable the lightbulb, the blue led will also be on. When during startup, the MP3 files cannot be read, the status LED will blink twice, and the red MP3 player LED will not be on.

Overview of wiring to wallbox:



The onboard 'select' button to perform setup serves two functions, its primary function is to cancel the currently playing song or add a song when nothing is playing. The secondary function of this button is used within the setup menu which follows. The setup menu is accessed by pressing the 'select' button for 5 seconds. After the instruction, which will be displayed for a few seconds, subsequent settings will be shown to be modified. Pressing the button will change the value of the item, waiting will show the next configuration item.

The setup menu allows you to configure the following settings:

Tools: This menu choice will allow system updates, reset values, restart and a measure/listen utility mode. "RESTART" will restart the device. Note that the music player will keep playing until early in the startup process. Selecting "DEFAULTS" will set values of settings back to factory defaults. Choices: NO, RESTART, DEFAULTS, UPDATEMODE, LISTEN, (SPOTIFYTOKEN).

Wallbox In: This will configure what input signal is detected by the board, the type of wallbox the board is connected to. Compatible choices: NONE, MP3, Sb_3W1, Sb_3W100, Sb_3W160, Sb_3WA, Sb_SC1, Seeburg_DEC, Seeb_DEC-direct, Ami_W40, Ami_W80, Ami_W120, Ami_W200, Roc_1544, Roc_1555, Roc_1558, Wur_5207, Wur_5210, Wur_5220, Wur_5225, Wur_5250, WiFiControl, (Spotify).

Jukebox Out: for WallboxPlayer mode and audio output, this must be MP3. For other selections, it will send out a pulse to a connected jukebox. If output is Spotify (beta), and settings are correctly entered in the config, songs will be played on the linked Spotify account/device.



AutoPlay: This value sets the time in seconds until a random song is added to the queue. Selecting 0 will disable this function. Setting it to 60 will add song after one minute of idle time. Choices: 0, 15, 60, 300, 3600.

Volume: This will determine the output volume of the MP3 player (jack output and speakers). It can be adjusted from 0 to 24. Choices: 0...24.

Equalizer: This will select one of the available equalizers (jack output and speakers). Choices: FLAT, POP, ROCK, CLASSIC, BASS. Suggested are Pop or Bass.

AutoPlay_number: If selecting this number with the buttons, (1=A1 etc.) will select autoplay and play random songs until selected again. (0, 1 ... 159, 160, 200 (default is 0). Suggested is the highest number selectable (100 or 160 or 200).

Control_mode: determines the function of the additional on-board relay: NONE, JBCANCEL, WBCOIN, WBCREDIT, SELECT, ON-OFF (default is ON-OFF). The "Select mode" can be used to enable the "Make selection" lightbulb in the wallbox. WBCOIN (3WA) to generate a coin drop after a selection is made.

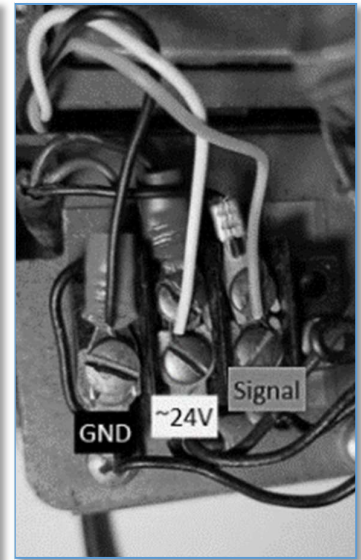
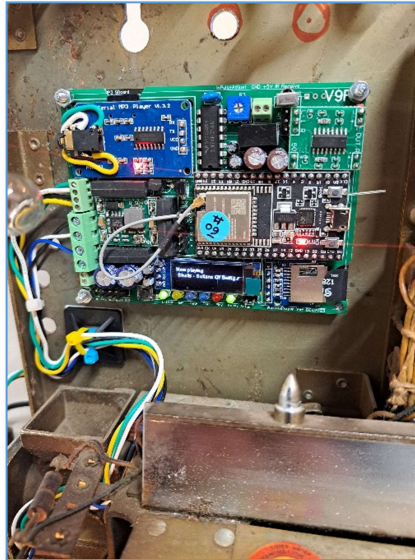
3 INSTALLATION:

Seeburg 3WA:

The best place is replacing the coin unit and putting the unit on Freeplay.

Alternatively, the board will just fit underneath the title pages flip, below the coin unit. Ensure there is an isolation layer or plate below the unit. Connect the three wires to the wallbox (black = ground; white = 24V; blue = wallbox signal). The wallbox needs to be powered by 24V on the black and white connector slugs. Two other connections will greatly enhance the functionality:

- An optional external 'select' button will allow cancel and adding random songs.
- The control relay can be used to enable the lamp that lights up to select a song once the player is ready.



⚠ Ensure there is an isolation layer or plate below the unit!

3.1 Prepare to mount the board

- Remove coin unit
- Remove any old cables that may have been cut
- Mark position for WallboxPlayer

3.2 Preparing the wallbox

- Enable Freeplay (depends on 3WA Wallbox type). Alternatively, use 2nd relay as "WBCOIN" and provide a coin drop pulse shorting the coin flippers. Freeplay on 3W1 looks tricky, the option to add a coin-drop pulse after each song is selected can be used to add a credit.

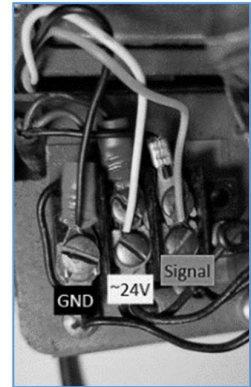


3.3 Mounting the board and button

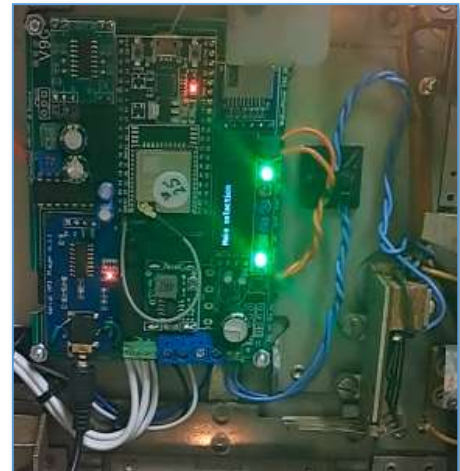
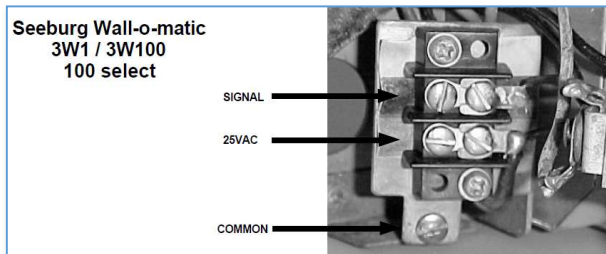
- Make 4 M3 holes, use screws to mount the board isolated from the back cover (the black cover board can be used underneath)
- Mount the select/cancel/setup button in a (drilled) hole on the back or bottom
- Optional: if the select lightbulb is to be enabled, cut one of the leads and prepare to connect to the relay

3.4 Making connections

- 3WA: Connect the 2 power leads (BLK and WHT) and the signal lead (BLU) from wallbox to WallboxPlayer (large middle screw connector, only 3 of 4p will be used)



- 3W1: Connect the 2 power wires (BLK/COMMON and WHT 25VAC) and the signal lead (BLU/SIGNAL) from wallbox to WallboxPlayer (large middle screw connector, only 3 of 4p will be used). For coindrop optional relay may be used. For this, use the control relay and connect 2 wires parallel to one of the coin flipper contacts (blue wires in picture).



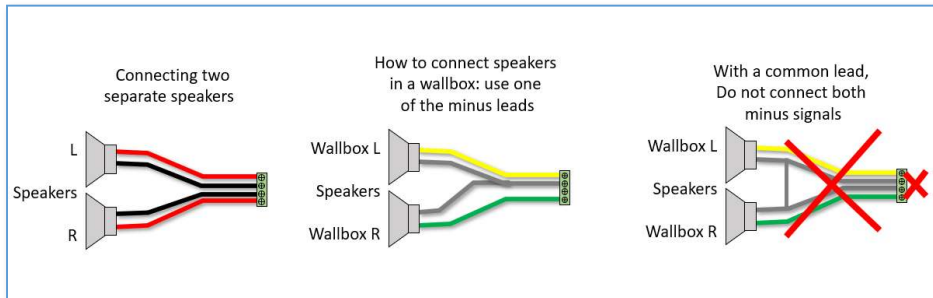
- Note: If 24/25V and GND are reversed, the display will mention this at startup (and indicate the pulse signal is already high).
- Connect the speaker wallbox leads to external speakers. Or audio jack plug to your audio device (see note).



- Connect the select/cancel/setup button (pin header on the board next to the button) – middle in picture
- Optional, connect the relay to enable the Wallbox “Make selection” lightbulb or as extra coin-drop for systems where Freeplay is difficult. Behavior can be changed in setup. (bottom 2p small screw connector) top-left in picture



Important: Connecting the speakers in a wallbox (or a set of 2 speakers)



3.5 Connecting the 24VAC transformer and powering up

- Connect the 24VAC (2A) transformer to connector BLK (=gnd) and WHT (the first two screws from the left) on top of leads already in place.
- After powering up, the WallboxPlayer will also power up and the display will show relevant information on status and number of songs etc. After starting up, “Make selection” will show.
- Press the “Select/Cancel/Setup button on the board to test if song will start. Press again to cancel.
- Make selection on the Wallbox with the buttons A-V, 1-8. If blue lead is correctly connected, the yellow lamp will flash during rotor movement. Song will start and number played will be shown.

3.6 Pairing optional Bluetooth

- When paired and connected, the red Bluetooth LED blinks twice at ~5 sec interval.
- When idle and unpaired the red LED flashes slowly (~1sec interval)
- Short-press the button for unpairing.
- To pair with a Bluetooth device, ensure it is not paired (with other device) and put the Bluetooth speaker in pairing mode and press (2sec) the pair button, the red LED will blink slowly (at ~2sec interval) and start pairing
- For more information look at the KCX BT module documentation.



4 OPERATION:

The **WallboxPlayer** in the wallbox (or an enclosure) has the following functions available

- Songs can be selected on the wallbox, play will start after selection or when a song is playing, song will be added to the queue
- If an MP3 song is playing, the ‘select’ button will cancel the song (and play next in queue)
- If no song is playing, pressing the ‘select’ button will add a random song to the queue



- After choosing the AutoPlay number/selection (as set in the setup, 1,2,159,160), random songs will automatically be added and played (even MP3's on the SD beyond the selection limit of 160 or 200 – see instructions further below for how to do this.), select AutoPlay number again to switch off the function
- Optional if set up: After choosing the Random Play number/selection (as set in the setup, 1,2,159,160), one random song will automatically be added and played, even MP3's on the SD beyond the selection limit (of 160 or 200) – see instructions further below for how to do this.

(Re)loading songs, playing more than 160/200 and making listing

The MP3 files are stored on a micro-SD card. Ensure the card is clicked in. The microSD card must be formatted as FAT32 (max 32GB)! The number of (MP3/WAV) files can be as many selections as the wallbox can select. The best place for the MP3 files is in the root folder of the card. When copying files from the PC onto the SD card, **Windows can hustle the order that then does not match the file/selections**. A foolproof way to get the numbering and order right is as follows:

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This way, windows will not change the order as every file can only be added and has a later timestamp than the previous one. There is a second microSD (FAT32) slot for configuration settings and songname information.

The best way to get a matching listing of the order of the songs on the SD, use DOS command:

```
DIR /B /A:-D *.MP3 > SONGS.TXT
```

This will create a file that you can read and use for song titles.

Some configurations have a second SD card, this will store song titles that are displayed on the display (and web browser). A file **SONGS.TXT** with titles for each song will then be used.

```
F:\>DIR /B /A:-D *.MP3 > SONGS.TXT

F:\>DIR /B /A:-D *.MP3
0001 - Queen - Bohemian Rhapsody.mp3
0002 - Eagles - Hotel California.mp3
0003 - Deep Purple - Child In Time.mp3
0004 - Led Zeppelin - Stairway To Heaven.mp3
0005 - Meat Loaf - Paradise By The Dashboard Light.mp3
0006 - Alan Parsons Project - Old And Wise.mp3
0007 - Animals - House Of The Rising Sun.mp3
0008 - Dire Straits - Brothers In Arms.mp3
0009 - Beatles - Hey Jude.mp3
0010 - John Lennon - Imagine.mp3
```

The WallboxPlayer will also play songs that go beyond the selectable numbers (160/200). This is great for random play and hearing (random/surprise) songs other than the ones on the labels. For this, the best way is to create an extra folder (after having put the 160/200 songs on the SD) and simply fill it with the songs you want to hear in random play mode. In below, the folder “extra songs” contains (up to ~800) songs.

Name	Status	#
Extra songs	●	
0001 - Queen - Bohemian Rhapsody.mp3	●	1
0002 - Eagles - Hotel California.mp3	●	2
0003 - Deep Purple - Child In Time.mp3	●	3
0004 - Led Zeppelin - Stairway To Heaven.mp3	●	4
0005 - Meat Loaf - Paradise By The Dashboard Light.mp3	●	5
0006 - Alan Parsons Project - Old And Wise.mp3	●	6
0007 - Animals - House Of The Rising Sun.mp3	●	7
0008 - Dire Straits - Brothers In Arms.mp3	●	8

Name	Status	Date
01. Camel - Left Luggage.mp3	●	12/2
01. Camel - Slow Yourself Down.mp3	●	1/1
02. Camel - Echoes.mp3	●	12/2
02. Camel - Hymn To Her.mp3	●	12/2
04. Camel - Highways of the Sun.mp3	●	12/2
05. Camel - Never Let Go.mp3	●	1/1
05. Camel - Song Within A Song.mp3	●	12/2
05. Camel - Stationary Traveller (Instrum...	●	12/2
06. Camel - Hymn To Her.mp3	●	12/2
06. Camel - Song Within A Song.mp3	●	12/2
06. Camel - West End.mp3	●	1/1

Troubleshooting

If for a consolette, the number selected by the MP3 player is higher than selected with the buttons, not enough pulses are received. Check if the rotor contacts are clean. You can try to adjust the blue potentiometer on the board and turn more to the left or right, but this should not be needed.

Options:

- WiFi and Infrared control options are available – please inquire.



- WiFi requires a 2nd SD card. The network SSID and password need to be put in, an optional static IP address can be set up.
- Spotify – please inquire

Please contact me in case of questions or inquiries or items not described here.

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Pictures: 3W1, 3W160, 3WA (2x).

