



Delorean RF Player

USER MANUAL

VERSION 1

TABLE OF CONTENT

Introduction	2
Board Description	2
Characteristics	3
Wiring	4
Remote functions	5
Remote Learning mode	6
Sequencer	6
SD-Card format	7
Source code	7

Introduction

The Delorean RF Player is an electronic board which has been designed in order to extend the functionalities of the Delorean 1:8 model from Eaglemoss.

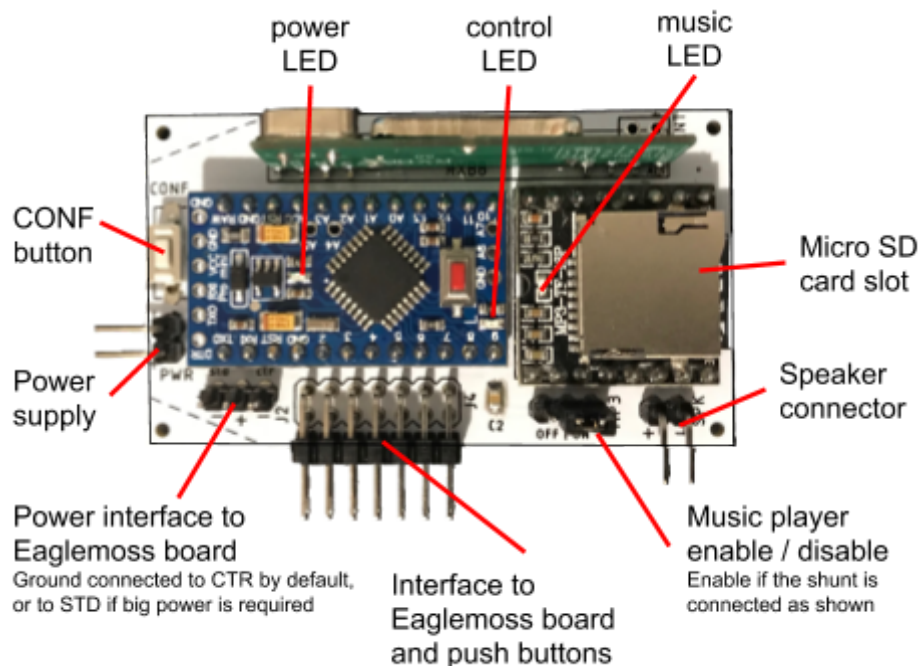
The objectives of this device are to:

- Enable **remote control** of the Delorean electronic devices
- Add a remote controlled **mp3 player** that can play your music and movie quote
- Add a **sequencer** to enable recording and playing of commands at the same time as your favorite song

Delorean RF Player has been developed to be plug and play. All functionalities are accessible using the remote control and the on-board configuration push button (for advance configuration only), so that it is useable by everyone without a single line of code.

This document presents the device characteristics and gives all the instructions you need to connect and use the Delorean RF Player.

Board Description



Characteristics

Electrical characteristics

<i>input power voltage:</i>	5V
<i>Maximum current:</i>	1A ¹
<i>Maximum interface current:</i>	2A ²
<i>Maximum standard current:</i>	10A (indicative)

RF characteristics

<i>Frequency:</i>	433MHz
<i>Remote power supply:</i>	2x AAA batteries (not included)
<i>Compatibility:</i>	most commercial remote (PT2262 / EV1527 / etc)

MP3 player characteristics

<i>On-board amplifier:</i>	3W
<i>Speaker impedance:</i>	4-8 ohms
<i>SD-card support:</i>	FAT16 / FAT32
<i>SD-card size:</i>	32GB maximum
<i>Number of files:</i>	up to 3000 songs + 3000 advertisements

Sequencer characteristics

<i>Recording duration:</i>	10min
<i>Recordable actions:</i>	300

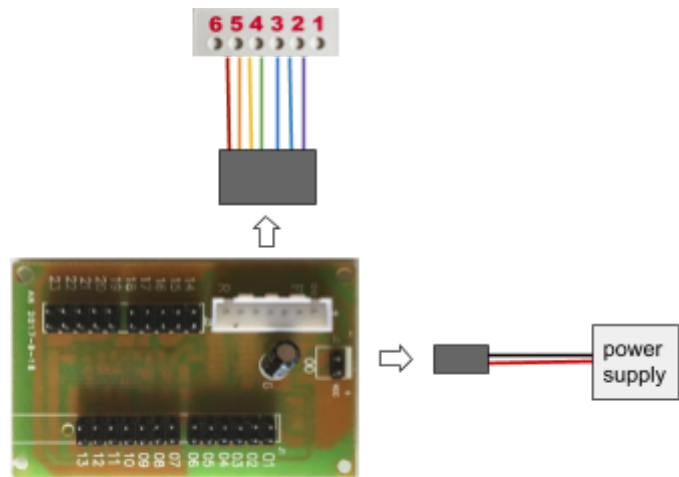
¹ Maximum current for the board alone. It does not include the current required for the devices plugged on the Eaglemoss board.

² Maximum current that can be delivered to Eaglemoss board in *control* mode. If more current is needed for your set-up, switch to *standard* mode by connecting *J2*- wire on *std* pin instead of *ctr* pin; button 6 long-press function might be impacted.

Wiring

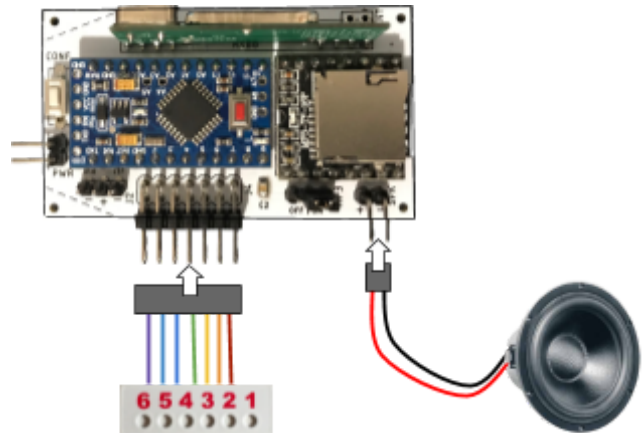
Step 1:

- Unplug power supply **J2** from Eaglemoss board
- Unplug Eaglemoss buttons **J4** from Eaglemoss board



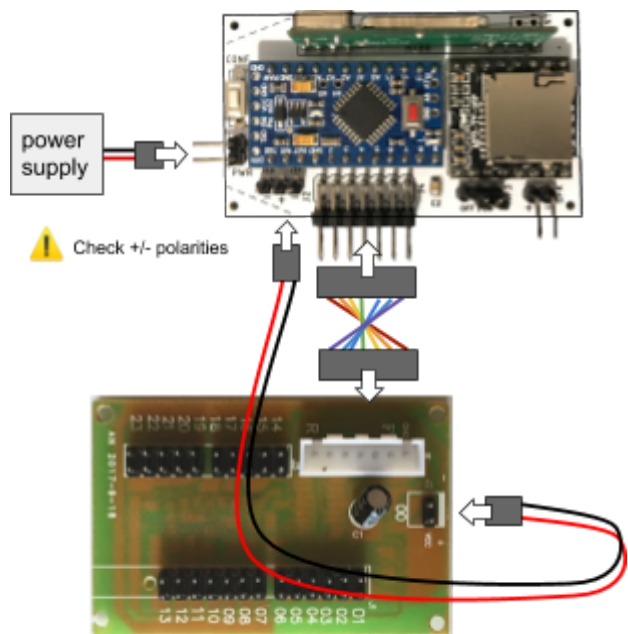
Step 2:

- Connect Eaglemoss buttons to Delorean RF Player **J4**
⚠ Respect wires order (GND F to R)
- Connect the speaker to Delorean RF Player **SPK**

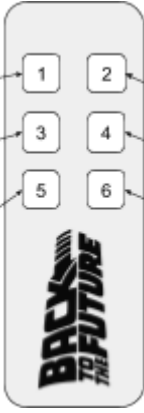



Step 3:

- Connect the 7 wires ribbon cable between Delorean RF Player **J4** and Eaglemoss board **J4**
⚠ Respect wires order (GND F to R)
- Connect Eaglemoss board **J2** to Delorean RF Player **J2 (+/-ctr)**
⚠ Be sure to respect polarities
- **After double check that all connections are correct,** Connect the power supply
⚠ Be sure to respect polarities



Remote Functions

 <p>command button 1 (R)</p> <p>command button 3</p> <p>command button 5</p> <p>command button 2</p> <p>command button 4</p> <p>command button 6 (F)</p>	 <p>play / stop music</p> <p>change volume (CONF: equalizer *)</p> <p>play sequence (CONF: record *)</p> <p>next track</p> <p>advertise</p> <p>All On / All Off (6 buttons + music)</p> <p>(*) hold down CONF button</p>
Short press (~0.5 sec)	Long press (~1 sec)

The long-press functions are :

1. **Play / Stop music:**
Start the playlist or stop the music
info: The playlist is played one time and then music and all devices are shutdown
2. **Next track:**
Go to next track of the playlist
3. **Change volume:**
Navigate between the 3 volume levels
info: The control LED will blink a number of times corresponding to selected level
Change equalizer (holding CONF):
Navigate between the 6 equalizer presets
info: The control LED will blink a number of times corresponding to selected preset
4. **Advertise:**
Play a random track from your ADVERT folder where you can put your favorite sentences and short tracks from the movies ! Random is used so that you always have the element of surprise
5. **Play sequence:**
Record sequence (holding CONF):
Please refer to [section Sequencer](#)
6. **All on / All off:**
Power or shutdown all devices and music
info: Eaglemoss board J2- must be connected to J2-ctr to ensure all is shutdown, see note 3 in [section Characteristics](#) for more info

If long presses are hesitant, please try with fully charged remote battery.

Remote Learning Mode

RF controller and its remote control are pre-programmed so that all is plug & play.

However, if you want to use your own remote or in case of part replacement, the remote can be paired again to the RF player. A learning mode has been implemented in the RF controller software so that you can do it easily.

In order to pair a new remote to the RF player, please follow these steps:

1. Hold down **CONF** button
2. Reboot the system (unplug the power supply, wait for 5 sec, then plug it back)
3. When the control LED starts blinking, release **CONF** button
4. After LED stops blinking, push remote button 1 for 0.5 sec
Note : LED blinks 5 times if pairing is successful, else it blinks 10 times
5. After LED stops blinking, push remote button 2 for 0.5 sec
6. And so on until button 6

Sequencer

The Delorean RF Player comes with a very simple sequence. But it will be much more fun to make your own sequence adapted to the onboard devices, mods, and music you have!

To record a sequence, here is how to proceed:

1. Play the target music for your sequence using long push on remote button 1 and 2 (just stop player if you don't want any music)
2. Hold down the **CONF** button
3. Long-press remote button 5 (keep **CONF** button down)
4. Control LED blinks 3 times to inform the entrance in the recorder mode, and recording starts once you release **CONF** button
5. The music restarts from beginning and you just need to play with the buttons of the **Eaglemoss TFC switch** to enable/disable your devices timely with the music
6. Press the **CONF** button to stop recording (control LED blinks 10 times)

Now, to play your sequence, just long-press remote button 5 !

The sequencer can record up to 300 actions on a duration of 10 minutes.

A minimum delay of 0.5 seconds is recommended between two consecutive actions.

Note that while sequence is played, the only RF command possible is the long-press on button 6 which will stop the sequence.

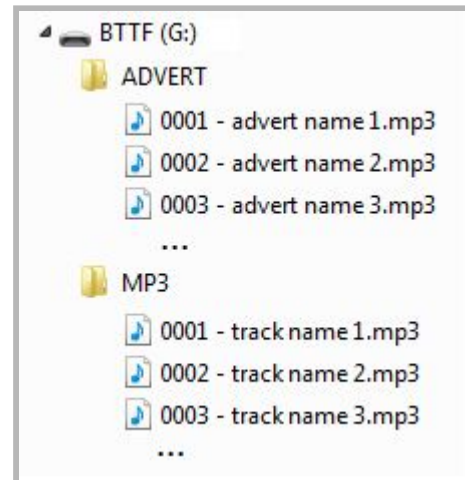
End of sequence play will be indicated by LED blinking.

SD-Card Format

SD-Card must be formatted in FAT16 or FAT32.

SD card file system must be as follows:

- SD card:
 - Folder: **ADVERT**
 - Up to 3000 files
 - mp3 or wav format
 - named as shown opposite
 - Folder: **MP3**
 - Up to 3000 files
 - mp3 or wav format
 - named as shown opposite



The files put in MP3 folder are the default playlist of the player.

The files put in ADVERT folder are for advertising (might be your favorite quotes or short tracks from the movie).

For OSX users, a dedicated user guide is available at the following link:

<https://github.com/henrio-net/dkmod-delorean/raw/master/docs/CarteSD-sous-MacOS.pdf>

Be sure to use a clean and freshly formatted SD card.

Source Code

While this product has been developed in order to be plug and play, people who knows about programming and want to customize more their RF Player can easily do it.

Delorean RF Player is based on the ATMEGA328P microcontroller and is fully Arduino compatible.

The software is under GNU v3 License and can be found at the following address:

<https://henrio-net.github.io/dkmod-delorean/>.

One must pay attention to the mode of the pins in contact with Eaglemoss buttons, as changing them could cause short-circuit and damage the board.