

# Music Player Module

## Hardware

This music player module is completely self-contained unit and has 6 buttons for use as its own MP3 player. It can also be connected to a serial device and accept commands.

This device needs an SD card to operate, such as [XC4989](#), and must be formatted as **FAT32**.

## Connected to computer

When the XC3748 is plugged into the computer through USB port, it will automatically open up as a File-storage device to put music onto the attached SD card.

## Indicator LED

Use *Device Switch* button to change between Sleep, Play, and File Storage Mode.

<i>Green Indicator</i>	<i>Mode</i>
<i>Fast Flashing</i>	File Storage Mode (Connected to Computer)
<i>Solid Off</i>	Standby Mode (Sleep)
<i>Solid On</i>	Play Mode (paused)
<i>Medium Flashing</i>	Play Mode (auto progression, loops after all tracks played)
<i>Slow Flashing</i>	Play Mode (single file, pauses after)

## Physical Buttons

Most buttons rely on the player being in Play Mode.

<b>Button</b>	<i>Function</i>
<b>Work Mode</b>	Play Mode: Change between Auto / Single.
<b>Prev / -</b>	Previous song, or hold for <b>Volume Down</b>
<b>Next / +</b>	Next song, or hold for <b>Volume Up</b>
<b>Play/Pause</b>	Play and Pause song
<b>Play Mode</b>	Loops single song
<b>Device Switch</b>	Switch between FS, Sleep, and Play

## Playing on Startup

If you want to configure the device to play music as soon as you power it on, short out the PLAY/PAUSE button. You can also hold it down while turning it on for the same effect.

## Serial Communication (Arduino Libraries)

The following code (overpage) is using a library called "MD\_YX5300" by *MajicDesigns* on github and in the Arduino Library Manager. You can install this library to use the below code and control it via serial. More information would be best left to the Library's documentation, here: [https://majicdesigns.github.io/MD\\_YX5300/](https://majicdesigns.github.io/MD_YX5300/)

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More serial information is presented on page 3, and if you really want to test your programming ability, try making your own library / management code; we can put it under the Jaycar github account and source more contributions to make a better product overall.

```
#include <MD_YX5300.h> //MD_YX5300 by MagicDesigns 1.2.3
// or alternative library: SerialMP3Player by Salvador Rueda 1.0.0

// Connections for serial interface to the YX5300 module
const short rx = 10;    // connect to TX of MP3 Player module
const short tx = 11;    // connect to RX of MP3 Player module

MD_YX5300 mp3(rx, tx);

void setup()
{
  Serial.begin(9600);
  Serial.println("XC3748 Serial Command Example");

  // Initialise player
  mp3.begin();
  mp3.setSynchronous(true); // return after sending command.
  mp3.playNext();

  // You can also use the below, if all of your files are in a folder.
  //mp3.playFolderRepeat(1);
  // 1 = "first folder copied onto SD card", 2 = "second folder" etc.
}

void loop()
{
  mp3.check();
  // check the status of mp3; visit the library readme for more.
  // https://majicdesigns.github.io/MD_YX5300/
}
```

## Serial Data for custom implementations

Data structure is in the form of:

```
{0x7E, 0xFF, LEN, CMD, FB, Data, ..., 0xEF}
```

Where LEN is the length of the command, FB is whether you want feedback or not, and CMD is the command. Have a look at some simple examples below:

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<i>Command</i>	<i>Hex (without CHECKSUM)</i>	<i>Notes</i>
<i>Next Song</i>	7E FF 06 01 00 00 00 EF	Play Next Song
<i>Previous Song</i>	7E FF 06 02 00 00 00 EF	Play Previous Song
<i>Play with Index</i>	7E FF 06 03 00 00 01 EF	Play the first song
	7E FF 06 03 00 00 02 EF	Play the second song
<i>Volume up</i>	7E FF 06 04 00 00 00 EF	Volume increased one
<i>Volume down</i>	7E FF 06 05 00 00 00 EF	Volume decrease one
<i>Set volume</i>	7E FF 06 06 00 00 1E EF	Set the volume to 30 (0x1E is 30)
<i>Single cycle play</i>	7E FF 06 08 00 00 01 EF	Single cycle play the first song
<i>Select device</i>	7E FF 06 09 00 00 02 EF	Select storage device to TF card
<i>Sleep mode</i>	7E FF 06 0A 00 00 00 EF	Chip enters sleep mode
<i>Wake up</i>	7E FF 06 0B 00 00 00 EF	Chip wakes up
<i>Reset</i>	7E FF 06 0C 00 00 00 EF	Chip reset
<i>Play</i>	7E FF 06 0D 00 00 00 EF	Resume playback
<i>Pause</i>	7E FF 06 0E 00 00 00 EF	Playback is paused
<i>Play with folder and file name</i>	7E FF 06 0F 00 01 01 EF	Play the song with the directory: /01/001xxx.mp3
	7E FF 06 0F 00 01 02 EF	Play the song with the directory: /01/002xxx.mp3
<i>Stop play</i>	7E FF 06 16 00 00 00 EF	Stop and "reset" file pointer
<i>Cycle play with folder name</i>	7E FF 06 17 00 01 02 EF	01 folder cycle play
<i>Set single cycle play</i>	7E FF 06 19 00 00 00 EF	Start up single cycle play
	7E FF 06 19 00 00 01 EF	Close single cycle play
<i>Set DAC</i>	7E FF 06 1A 00 00 00 EF	Start up DAC output
	7E FF 06 1A 00 00 01 EF	DAC no output
<i>Play with volume</i>	7E FF 06 22 00 1E 01 EF	Set the volume to 30 (0x1E is 30) and play the first song
	7E FF 06 22 00 0F 02 EF	Set the volume to 15(0x0f is 15) and play the second song

XCB748

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