BCF4MA2 - High Resolution BCF-2000 driver for grandMA2(tm) - © Hippy 2013

TFM

About BCF4MA2 Version 3

This software allows control of the faders in the grandMA2 software from a BCF-2000 - in high definition!

Rather than using plain MIDI note messages which offer a 0-127 (7-bit) resolution, BCF4MA2 encodes messages into Midi Show Control (MSC) formatted messages which offers a far greater 14-bit resolution.

BCF4MA2 also receives MSC messages from MA2 and processes them to position the BCF-2000 faders and encoder led rings. The encoders of the BCF-2000 are translated into increment/decrement commands which can be used to trigger macros or hard keys, and the BCF-2000 buttons are also programmable from within MA2.

BCF4MA2 Version 3 features page tracking (change a page on the MA, the faders will move – no longer need to change BCF-2000 presets) and the ability to FIX the first 15 faders on page 1.

An example default remote configuration file for MA2 ("`bcf4ma2-3.0.xml`") has been included, along with a MIDI SysEx ("`bcf4ma2-release.syx`") file containing pre-programmed presets for the BCF-2000.

The included configuration include 64 faders and associated buttons, though advanced users could potentially risk RSI and insanity by hand editing and extending the configurations to obtain 127 faders. 64 is enough for me.

It is highly recommend you use fantastic "BC Manager" software by Mark van den Berg (http://home.kpn.nl/f2hmjvandenberg281/bcman.html) to maintain your BCF-2000, as the original Behringer software is troublesome and error prone.

Support

Make sure read every word in this manual before asking for help from me, or you may get a reply which tells you to read every word in the manual. You will understand why once you have read every word of this manual.

Requirements

- grandMA2 software version 2.8.3 or higher (http://www.malighting.com/)
- MIDI Yoke (free) or LoopBe30 (cheap, hi-performance, win7)
- Behringer BCF-2000 (http://www.ebay.com.au/ :)

About Virtual MIDI Ports

Other MIDI patching utilities which may work (but are not officially supported), though I highly recommended LoopBe30 - http://nerds.de/en/loopbe30.html which seems to give me better performance and less hassles on Windows 7.

BCF4MA2 searches for the MIDI Yoke ports 1 and 2 by name, and if they cannot be found you are offered an opportunity to select your own ports with which to talk to your MA2 set-up. Once some ports are selected, they are saved in BCF4MA2.ini, and if you choose the wrong ports, you will need to delete BCF4MA2.ini (don't worry, it will recreate itself from defaults).

Using LoopBe30 is much the same as MidiYoke – though you will need to **disable "shortcut detection" in LoopBe30!** The free LoopBe1 is not suitable unfortunately, because it has permanent shortcut detection.

Set-up Steps

1. Install MIDI Yoke or LoopBe30.
2. Set-up MA2. (See Below)
3. Set-up your BCF-2000. (See Below)
4. With the BCF-2000 switched on, and grandMA2 running, start the application "`bcf4ma2.exe`".
5. A small window will appear, and hopefully you're now ready to roll.

BCF4MA2 uses the Telnet Remote function on MA, and needs to be configured accordingly. After the first run of BCF4MA2, a "bcf4ma2.ini" file is created.
Edit this to match your MA2 Network Configuration and User Profiles.

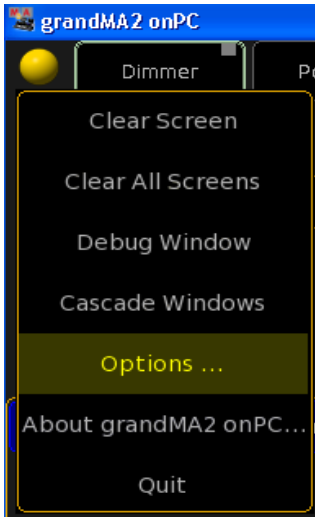
```
[BCF4MA2]
; (c) Hippy 2013 - licensed under the WTFPL
; ----------------------------------------
;
; Enter the IP address of the MA2 Console... (perhaps your
network card's address or 127.0.0.1 for local only)
IP_Address = 127.0.0.1
; Enter the username on the MA2 Console...
User = Administrator
; Enter the password for the said username on the MA2
Console...
Password = admin
```

BCF4MA2 will complain if it cannot connect, but should still work on the current page, though FIX and changing pages will not work.

Set-up MA2

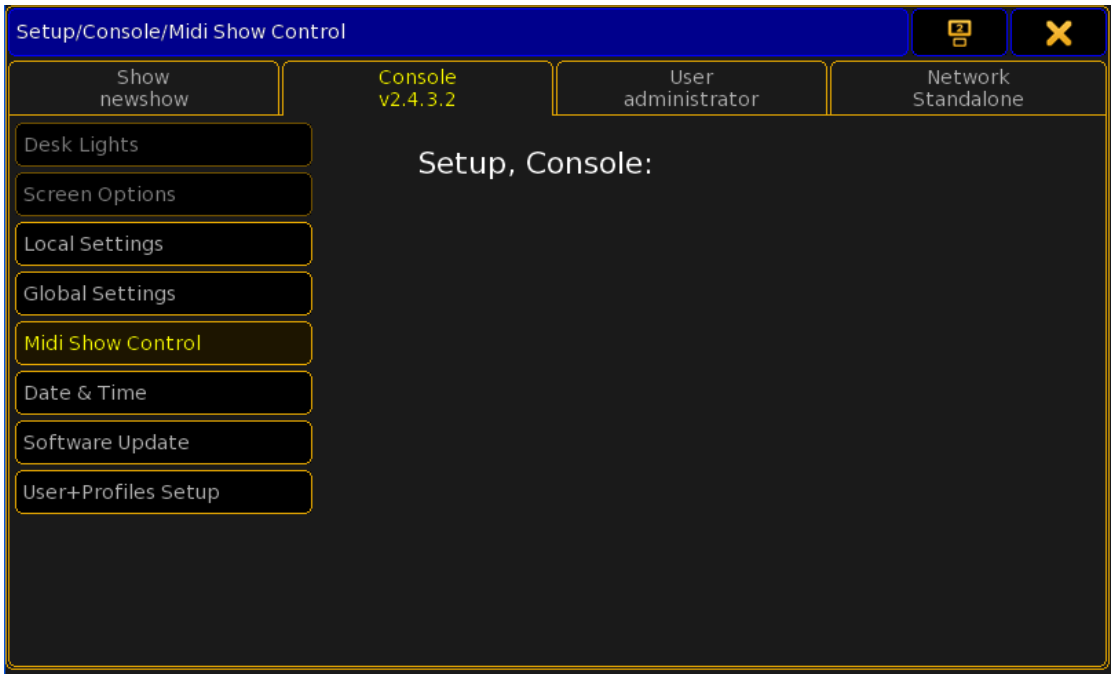
1. Set up MIDI devices in grandMA2 via the options menu.

Click on the Yellow ball in the top-left corner of the main window, then click "`Options...`" then click "`Midi`"



- Set the MIDI in device to "In From MIDI Yoke: 1"
- Set the MIDI out device to "Out To MIDI Yoke: 2"

2. Enter Setup, then click the "Console" tab, and click "Midi Show Control"



Then change the settings to match the following:



- Channel Midi In = 1
- Channel Midi Out = 2
- Midi Thru = No
- MSC In Device = 1
- MSC In Group = 1
- MSC In Port = 6004
- MSC In Mode = Midi
- MSC In Exec = Exec Page (note this is not Exec.Page)
- MSC In Command = All
- MSC Out Device = 2
- MSC Out Group = 2
- MSC Out Port = 6004
- MSC Out Mode = Midi
- MSC Out Exec = Exec Page (note this is not Exec.Page)
- MSC Out Command = All
- Send to = All
- Send Timecode = No

Also, in Setup\Console\Global settings → **ensure you have Telnet Enabled.**

3. Now it's time to import the default remote configuration file.

<u>Importing the default remote configuration file into MA2</u>

**** Warning ****
This will erase any MIDI Remote Input settings you may already have defined in your show. Be sure to backup your show before you proceed.

1. First, find your grandMA2 data directory:

This might be something like this:

```
C:\Documents and Settings\All Users\Application Data\MA
Lighting Technologies\grandma\gma2_V_2.4.3\importexport
```
(or)
```
C:\ProgramData\MA Lighting
Technologies\grandMA\gma2_V_2.4.3\importexport
```

Note: This will be different, depending on your version of Windows **and** grandMA2 on PC. You can search for the folder "`importexport`" using Windows search tool, though you will have to tick "Search hidden files and folders" in the advanced search options.

2. Copy the file "`bcf4ma2.xml`" into the "`importexport`" folder.

3. In grandMA2, load your favourite show, and then type in the command line:

[Channel]> `Import "bcf4ma2" At Remote 2`

(Don't type the [Channel]> part, this is the command line prompt!)

This loads the default button mapping into your show. You can confirm it has worked by checking for many new entries in *Setup -> Remote Input Setup -> MidiRemotes.*

If it doesn't work?

The default configuration file was created using grandMA on PC version 2.4.3.
Due to the XML encoding parameters of this file, it may be necessary to modify the file before loading it into versions other than 2.4.3.

The first two lines of the file "`bcf4ma2.xml`" are:

```
<?xml version="1.0" encoding="utf-8"?>
<MA xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://schemas.malighting.de/grandma2/xml/MA"
xsi:schemaLocation="http://schemas.malighting.de/grandma2/xml/
MA http://schemas.malighting.de/grandma2/xml/2.4.3/MA.xsd"
major_vers="2" minor_vers="4" stream_vers="3">
```

You will need to open this file with an editor, such as Notepad, and change the `major_vers="2" minor_vers="4" stream_vers="3"` parameters to match your version numbers before you import the file, otherwise it may not import at all. Do not change anything else in the file. It is highly recommended you use Notepad to edit the file, as other programs may reformat the file and corrupt it.

Set-up your BCF-2000

1. Install BC Manager.

2. Import the MIDI SysEx ("`bcf4ma2.syx`") file into your BCF-2000 (see below)

3. Switch the BCF-2000 off, wait 3 seconds, and turn it on again.

4. Exit BC Manager before proceeding.

Importing the MIDI SysEx file into your BCF-2000

**** Warning ****
This could erase any BCF-2000 presets you have previously set-up in the device. Be sure to backup your BCF-2000 presets before you proceed.

The MIDI SysEx presets supplied ("`bcf4ma2.syx`") are essential for this program to work correctly and should not be modified unless you know exactly what (and why) you are doing.

To import the presets, install an application like "BC Manager" and use it to send the "*`bcf4ma2.syx`*" to your BCF-2000.

For help in loading presets into the BCF, refer to the BCF-2000 Manual or BC Manager help files.

Using BCF4MA2

Faders:

Executors on grandMA2 are arranged in groups of 30 faders per page, broken into 1-15 and 16-30.

Obviously the BCF-2000 has 8 faders, which either meant only using 5 faders per preset, or having an overlap of presets and pages. Since having 5 executors per preset (wasting 3 faders on the BCF) seemed to be less useful than using all 8 BCF faders, the presets are arranged as described in the follows.

Preset 1 (P- 1)
1 – 8
Preset 2 (P- 2)
9 – 16
Preset 3 (P- 3)
17 – 24
Preset 4 (P- 4)
24 – 30

This is all dependant on the current fader page in MA2. Changing FaderPages in MA2 will move the faders on the BCF.

Even if a fader on a different page moves, BCF4MA2 is smart enough to record the levels of all the faders, so when you change pages it will be all good (hopefully!)

Fader Buttons:

The buttons on the BCF-2000 are assigned as follows:

BCF Button	MA Default	MA Button
Encoder Button	OFF	(Executor Button 3)
Top Button Row	ON	(Executor Button 2)
Bottom Button Row	GO	(Executor Button 1)

The buttons relate to the executor, so as you would expect, BCF Fader 2 buttons control Executor 2 buttons and so.

Other Buttons:
The buttons on the right of the BCF Faders are programmed to send on MIDI Channel 13, note on and off signals from 0 to 11, top-left to bottom-right excluding the Preset left and right buttons. The Preset left and right buttons are, as you probably guessed, used to change between presets.

These can be customised by editing the button assignment in *Setup -> Remote Input Setup -> MidiRemotes.*

The default layout is as follows:

"Encoder Group" Buttons (right side, top)

V1	V2
PAGE -	PAGE +

"Edit Buttons" (right side, middle)

STORE	LEARN
EDIT	ESC

"User Buttons" (right side, bottom)

CLEAR	DEF_GO_MINUS
OOPS	DEF_GO_PLUS

The functions of the Preset left and right buttons are not customisable.

Encoders

The default configuration file ("`bcf4ma2.xml`") has an encoder layout as follows:

Preset 1

Encoder 1	Dim
Encoder 2	Pan
Encoder 3	Tilt
Encoder 4	Gobo1
Encoder 5	Colour
Encoder 6	Focus
Encoder 7	Zoom
Encoder 8	* Resolution ← *fine* *coarse* →

Preset 2

Encoder 9	Iris

Note: Resolution when turned anti-clockwise will be *fine* as clockwise will be thus be *coarse.*

FIXing executors.

Executors 1-15 on Page 1 can be fixed, but this must be controlled in BCF4MA2, since there is no way of telling externally if MA2 has an executor fixed or not.

Simply tick the box of the executor you want to FIX, and pressing save will store that and recall it next time BCF4MA2 is started.

Limitations and Anomalies

- Due to the internal workings of MA2, some faders don't send movement commands when they move. This means, when moving the faders on the screen some special faders won't move the BCF fader whilst they do move on screen. This can be a problem because if you then move that fader on the BCF it will jump to the BCF fader position. You become “being un-synced”.

  It can be mostly avoided by not moving the executors with the mouse or macro commands, and only using the BCF to control the executors.

  A normal executor will behave normally; it is only some special function executors which may not move the faders on the BCF, though the BCF fader should still move the executor.

- If you have an executor with a width of two, and your second fader is XFade, you will find the first fader (Level) will temporarily “lock” while XFading, as moving the XFade sends the Level back to the BCF also.

  This is actually a feature more than a limitation, and handily prevents you from bumping the level accidently whilst XFading. If you need to move the Level and XFade at the same time, move the Level a tiny bit first and then begin to move the XFade simultaneously and you will avoid this locking

- Some macro commands like "`Executor 1 at 50`" will move the fader both on screen and the BCF, where as timed functions such as "`Executor 1 at 50 Time 10`" slowly moves the fader on the screen, but will not move the fader on the BCF.

- There is no way presently to control the MA2 encoders directly, so the BCF encoders are sending notes to execute macros which control the dim, pan, tilt encoders. Currently the macros don't work with the align function :(You will find these macros in the MidiRemotes list - *Setup -> Remote Input Setup -> MidiRemotes.*

Troubleshooting, FAQs and WTF’s?

I start “bcf4ma2.exe” and nothing happens.

- Did a small window appear? Have a look... If so, it’s working. This does not mean your configuration is correct though, triple check your setting in MA. RTFM in its entirety before trying to contact me for help.

- No window appears? It's possibly your MIDI devices are open in another program. Exit "BC Manager" if it's open. Make sure your BCF-2000 is connected and switched on. Ensure you have installed MIDI Yoke and have no other MIDI programs occupying MIDI Yoke devices 1 & 2.

I start "bcf4ma2.exe" and it asks me for devices?

- "bcf4ma2" automatically searches for the BCF-2000 MIDI in and out devices, then searches for the MIDI Yoke "In From MIDI Yoke: 1" and "Out To MIDI Yoke: 2" devices. If it cannot find these devices, it will ask you for them.
- Typically you should not see these windows unless the BCF or MIDI Yoke cannot be found. Check you have installed MIDI Yoke, and that your BCF is functional.
- Advanced users - This is your opportunity to route the data in and out to other sources. You could use an alternate MIDI surface for example – given the right patches are loaded, or ship the MSC data off to a different MSC device)

I see red coloured fader messages in the "MSC In Monitor" (In grandMA Set-up)?

- Messages will appear in red if the executor is empty. (You can't control an executor which is empty!)

How do the encoders function?

- The BCF encoders will send various MIDI Note messages to grandMA2 depending on the direction of travel of the encoder. These notes are sent to grandMA2 on Channel 16, interleaved as follows:

  Encoder 1 - Note 0 if turned anti-clockwise
  Encoder 1 - Note 1 if turned clockwise
  Encoder 2 - Note 2 if turned anti-clockwise
  Encoder 2 - Note 3 if turned clockwise
  Encoder 3 - Note 4 if turned anti-clockwise
  Encoder 3 - Note 5 if turned clockwise
  …
  Encoder 9 – Note 16 if turned anti-clockwise
  Encoder 9 – Note 17 if turned clockwise
  … and so on. (up to note 127)

  The default configuration file ("bcf4ma2.xml") has a working set of macros to control frequently used parameters on moving lights. Naturally you can modify or produce your own macros in
  Setup -> Remote Input Setup -> MidiRemotes.

All the BCF Faders after Preset 4 - Fader 6 don't work?

- RTFM – Specifically the "Using BCF4MA2" section.

YOU SHOULD READ THIS BIT TOO BEFORE ASKING FOR SUPPORT….

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“Behringer” is a word used by a company called Behringer to describe itself.
“grandMA” is a word with odd capitalization, used by MA Lighting to describe a product of theirs. Not to be confused with Nanna, Granny or Grand Mother

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```
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