

# MUSIC 3000 EXPANDER

## INSTALLATION GUIDE

Check that you have received the following:

- \* this document
- \* Music 3000 Expander unit
- \* Studio -3 Issue Disc

You will also need:

- \* BBC Micro Model B, B+, or Master 128, with disc drive and TV or monitor
- \* Music 5000 Synthesiser, installed and tested
- \* Audio amplifier system, with audio lead to the Music 5000
- \* Music 3000 adapter lead OR audio lead to mixable input on amplifier
- \* unaltered Studio 5000 System Disc (any variety e.g. 5000-4, 5000-4C)

You may also have other Hybrid Music System components, such as

- \* Music 4000 Keyboard, installed and tested
- \* Music 2000 Interface, installed and tested

### Making a System Disc

The Studio -3 Issue Disc supplied with this package adapts an existing System Disc to provide the additional facilities of the Music 3000 Expander.

You will need a System Disc which, though may have been adapted for another additional system unit such as the Music 2000 Interface, should have no additional user files. If it is your only copy, make a back-up copy before proceeding. Uncover the System Disc's write-protect notch.

The Studio -3 Issue Disc will operate on both 40 and 80-track disc drives. On a drive with a '40/80' switch, the switch must be set to suit your System Disc. In the case of a dual drive with switches, both must be set

To generate a Music 3000-equipped System Disc, insert the Studio -3 Issue Disc into drive 0, tap the BREAK key while holding down the SHIFT key, and follow the instructions that appear on the screen. When the system asks you to enter a passcode, read it from the top of this page, and before pressing RETURN check that the passcode you have entered and the disc title and ROM ID shown at the top of the screen are the same as those printed at the top of this page.

As generation proceeds, you may see messages telling you that the Issue Disc is deleting some example programs from the System Disc. This happens only if required to make sufficient free catalogue or disc space.

When the message 'Generation complete' appears, remove the System Disc, add a write-protect label to it, and write '-3' after the printed title, to indicate that this disc has the Music 3000 facility.

If 'Generation complete' fails to appear, see 'fault-finding' below.

### **fitting the hardware**

With the computer system turned off, plug the ribbon cable connector of the Music 3000 unit into the socket on the back of the Music 5000. Plug the Music 3000 power cable into a mains supply socket. A Music 2000 (or any other 1MHz bus device) may be connected at the socket on the back of the Music 3000 unit.

If you are using a Music 3000 adapter lead, remove the audio lead from the Music 5000 and plug it into the adapter lead's socket, and plug the adapter lead's two plugs into the output sockets of the Music 5000 and Music 3000 units respectively.

If instead you are using an amplifier system with a second, mixable input, connect the Music 3000 to this input with a suitable standard audio lead, and set the level controls for the two inputs to be equal.

### **testing**

Turn the system on, insert the new System Disc into drive 0, and tap BREAK while holding down SHIFT. When the main menu appears, select 'Mixing Desk'. When the new display appears, enter:

READY 12 VOICES CLEAR

and press TAB to enter edit mode. If you now press and hold RETURN, you should hear a note sound on the Music 5000, as normal. Now tap the left cursor key until, after passing column 8, the display changes to show four additional voices in columns 9, A, B and C. With the cursor on one of these columns, press and hold RETURN to sound a note on the Music 3000.

### **fault-finding**

If the Studio -3 Issue Disc fails in any way, it displays an error message followed by 'Generation aborted'.

If the 'Disc fault' error message appears, check that any '40/80' switches on your drive are all set to suit your System Disc (which should be marked '40 track' or '80 track'), and try again with the same System Disc.

'Disc fault' may also mean your System Disc is faulty. Similarly, 'Disc full' and 'Cat full' indicate your System Disc has extra files on it, and various other messages mean that it is incomplete. If any of these occur, try again with a System Disc newly made from its Issue Disc.

'Disc fault' during access to the Issue Disc means the drive or disc is faulty. If this or any other problem persists, contact your supplier.

On starting a successfully generated System Disc, the '! Bad module' message will appear if the wrong passcode was entered. You should repeat the process from the beginning, using a new System Disc copy.

If the Main Menu appears but the test sequence fails to produce a sound from the Music 3000, check that all connections are in place, the unit is turned on (power switch 'up'), and the amplifier controls are set correctly. If you are not using a Music 3000 adapter lead, check the connections and control settings on the mixer/amplifier in particular. If there is still no sound, you can verify that the Music 3000 itself is operational by plugging its 1MHz bus cable directly into the computer, and connecting the amplifier directly to its output socket.

If the problem persists, contact your supplier.

## Instructions for use

### system disc compatibility

Your original, non-Music 3000, System Disc will continue to operate exactly as before, ignoring the Music 3000, should you need to use it.

The new System Disc with Music 3000 capability (the '-3' disc) carries out all the functions of the original System Disc in exactly the same way, and programs created using the original disc may be loaded using the -3 disc. The only restriction is that the amount of user memory is reduced by around 1000 bytes, so that the largest programs created using the original disc cannot be loaded using the -3 disc. On the Model B computer, insufficient memory is available for using the Staff Editor unless shadow RAM is fitted. Also, when using the Mixing Desk, user memory is further reduced by up to around 500 bytes.

Note that some example files may have been removed from the System Disc.

Any program created under the -3 System Disc may be loaded under the original System Disc, but the error message '! Too many channels' will appear if it tries to use more than the 16 channels of the Music 5000.

You should NOT change between an original System Disc and the new -3 System Disc within a session - if you need to change, you should start the system from the appropriate disc using SHIFT-BREAK, saving your work first if necessary.

## using the additional channels

The AMPLE system applies the 16 Music 3000 channels to simply increase the total number of available channels to 32, so the existing facilities that assign channels automatically take advantage of the expansion. This means that you can make use of the extra channels in your programs by simply using the existing facilities in the normal way. For example, you may use more channels in each instrument and more voices on each player. The 'Too many channels' message will now not appear until 32 channels have been used.

With 32 channels available, more of the system's full voice and player capacities may be used. These are:

range of voices per player:	1-12	e.g. 12 VOICES Upright
range of players using PLAY:	1-9	e.g. "123456789"PLAY
range of players using P(:	1-10	e.g. 10 P( ... )P

These facilities are described fully in the 'AMPLE Nucleus Programmer Guide'.

The maximum number of channels per voice is also increased to 32.

## mixing desk capacity

The '-3' System Disc includes a new version of Mixing Desk with 16-voice capacity. All existing facilities operate as before, but the control panel is effectively two screenfuls wide, with the first showing voice columns 1-8 and the second showing 9-16, labelled '9,A,B,C,D,E, and F'. The display moves automatically when you move between columns 8 and 9 using the left and right cursor keys as normal.

## mixing desk enhancements

The Mixing Desk contains a number of additional enhancements to simplify control of voices:

Each voice using 4 or more channels is displayed in only one column position, giving a clearer and more compact display. This is particularly useful with the Music 3000, since mixes of up to 8 voices remain visible on one screenfull regardless of the number of channels per voice.

The COPY key adds a new voice to the mix. If the cursor is on an existing voice, a new voice with the same settings is added to the same part. If the cursor is on a blank column, a voice with default settings ('Simpleins', maximum volume, centre pan) is added to the next unused part, counting up from part 1. This offers a

much easier way of setting-up a mix for a new piece:

- 1 Select 'New program' from the Main Menu
- 2 Select 'Mixing Desk' from the Main Menu, and tap TAB
- 3 Tap COPY once for each voice you want on part 1
- 4 Move the cursor to a blank voice column
- 5 Tap COPY once for each voice you want on part 2
- 6 Repeat steps 4 and 5 for further parts
- 7 Tap TAB, then tap f3 to make the mix.

The SHIFT COPY key acts just as the COPY key, but adds a voice to part 0 (if on a blank column), rather than the next unused part above 1. Though not often required, this allows voices to be added for keyboard playing for example.

The DELETE key removes the voice at the cursor position. It is used to remove voices that are not required so that voices are free for adding to other parts, and is a more-direct alternative to the UNUSED word. It is useful for rearranging the voices in an example mix such as those provided for recording on the Studio 5000-4 jukebox menu. For example, using the 'Recorder - advanced mix', to remove the voice from part 5 and add one to the three already on part 6, so that player 6 could play 4-note chords, you would:

- 1 Select 'Mixing Desk' from the Main Menu and tap TAB
- 2 Tap 'r' to start the music, then tap the space bar to pause
- 3 Move to voice 5-1 in column 5, and tap DELETE
- 4 Move to voice 6-1 in column 6, and tap COPY
- 5 Tap TAB, then tap f3 to make the mix.

Note that the voices are correctly re-ordered on the screen when the music is next played.

### keyboard capacity

The Music 4000 Keyboard facilities on Studio 5000-4 and Studio 5000-4C discs are fully compatible with the Music 3000, but retain the existing limit of 8 keyboard voices and, on the Keyboard panel only, 16 channels. These limits have been increased on the Studio 5000-4D disc, as follows:

	old	new
KEYS setting:	1-8	1-12
Keyboard panel KEYS/VOICES value:	1-8	1-12
Keyboard panel chans-per-voice value:	2-16	1-32
Recorder 'Voices:' control:	1-8	1-12

Music 3000 users may obtain a Studio 5000-4D Issue Disc free-of-charge by sending their Studio 5000-4 or Studio 5000-4C Issue Disc enclosing return label, postage and packing, to Hybrid Technology.

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