Modifications not authorized by the manufacturer may void users authority to operate this device.

Note:
This equipment has been tested and found to
comply with the limits for a Class B digital device,
pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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eKeys⁴⁹

User Guide

Introduction

Congratulations on your purchase of the Evolution eKeys ^{49} computer music package. The package contains the eKeys ^{49} USB music keyboard along with software covering diverse approaches to learning and making music on your PC computer.

PictureBoard is an exciting tool for general early learning and musical fun. You can play sounds and trigger pictures using the eKeys ^{49} keyboard which helps to teach essentials such as numbers, animal names and the alphabet. Comes with a huge collection of pictures and soundsets to keep everyone entertained.

Music Teacher contains lessons and practise guides so you can learn from scratch or simply run through a quick refreshment course. Use the software to grade your ability to play both notes and rhythm.

Sound Studio is your complete PC recording studio. Record tracks using both MIDI and audio, and use the extensive editing tools and other features to make professional sounding compositions.

We hope you will have as much fun playing and working with eKeys ^{49} as we had creating it. Now it's time to unleash your creativity.

Features List

Ports:
- MIDI OUT
- USB MIDI OUT/IN

Power:
- USB powered
- DC IN for external PSU

Keyboard:
- 49 note velocity sensitive keyboard
- Pitchbend wheel
- Modulation wheel
- Volume/control slider
- Sustain foot pedal socket
- Octave +/- buttons
- Advanced functions button

Software:
- PictureBoard
- Music Teacher
- Sound Studio II

What's In The Package?

Your Evolution eKeys [49] package should contain the following items:

- **Evolution eKeys [49] USB keyboard**
- **User Manual**
- **eKeys [49] Installer CD-ROM**
- **USB cable**

If any of the above listed items are missing, please contact the retailer you purchased the product from.

About The Manual

This instruction manual covers the operation of the eKeys [49] USB keyboard. We do not explain how to set it up, however with third party music software, most programs will work straight away with the eKeys [49] keyboard.

To learn about the included software PictureBoard, Music Teacher and Sound Studio, please insert the eKeys [49] Installer CD-Rom and click "Software Installation". Once installed you can read more about how to operate these great programs in their respective help menus.

Before You Connect Your Keyboard…

You are probably eager to plug in your eKeys [49] keyboard and get started, but it's sensible to check the installation documentation first.

You can power the keyboard either via USB or an optional external power supply. *Use only one method at a time.*

Power & Connection Via USB

1. **Check that the on/off button on the back of the unit is set to "Off".**
2. **Plug in the USB cable provided with the eKeys [49] keyboard to a free USB port on your computer.**
3. **Plug in the other end of the USB cable to the USB socket on the eKeys [49] keyboard.**

The single USB cable not only powers the keyboard but also sends MIDI data to and from your computer system.

Windows XP & Mac OS X

If you are using Windows XP or Mac OS X you can now simply switch the power position to "on". Because the eKeys [49] keyboard is class compliant it will work with out any further installation.

Standard MIDI Controller numbers (MIDI CC's)

No	Name	No	Name	No	Name
00	Bank Select	46	Controller 46	92	Tremelo Depth
01	Modulation	47	Controller 47	93	Chorus Depth
02	Breath Control	48	Gen Purpose 1 LSB	94	Celeste (De-tune)
03	Controller 3	49	Gen Purpose 2 LSB	95	Phaser Depth
04	Foot Control	50	Gen Purpose 3 LSB	96	Data Increment
05	Porta Time	51	Gen Purpose 4 LSB	97	Data Decrement
06	Data Entry	52	Controller 52	98	Non-Reg Param LSB
07	Channel Volume	53	Controller 53	99	Non-Reg Param MSB
08	Balance	54	Controller 54	100	Reg Param LSB
09	Controller 9	55	Controller 55	101	Reg Param MSB
10	Pan	56	Controller 56	102	Controller 102
11	Expression	57	Controller 57	103	Controller 103
12	Effects Controller 1	58	Controller 58	104	Controller 104
13	Effects Controller 2	59	Controller 59	105	Controller 105
14	Controller 14	60	Controller 60	106	Controller 106
15	Controller 15	61	Controller 61	107	Controller 107
16	Gen Purpose 1	62	Controller 62	108	Controller 108
17	Gen Purpose 2	63	Controller 63	109	Controller 109
18	Gen Purpose 3	64	Sustain Pedal	110	Controller 110
19	Gen Purpose 4	65	Portamento	111	Controller 111
20	Controller 20	66	Sostenuto	112	Controller 112
21	Controller 21	67	Soft Pedal	113	Controller 113
22	Controller 22	68	Legato Pedal	114	Controller 114
23	Controller 23	69	Hold 2	115	Controller 115
24	Controller 24	70	Sound Variation	116	Controller 116
25	Controller 25	71	Resonance	117	Controller 117
26	Controller 26	72	Release Time	118	Controller 118
27	Controller 27	73	Attack Time	119	Controller 119
28	Controller 28	74	Cut-off Frequency		
29	Controller 29	75	Controller 75	**Channel Mode Messages**	
30	Controller 30	76	Controller 76		
31	Controller 31	77	Controller 77	120	All Sound off
32	Bank Select LSB	78	Controller 78	121	Reset all Controllers
33	Modulation LSB	79	Controller 79	122	Local Control
34	Breath Control LSB	80	Gen Purpose 5	123	All Notes Off
35	Controller 35	81	Gen Purpose 6	124	Omni Off
36	Foot Control LSB	82	Gen Purpose 7	125	Omni On
37	Porta Time LSB	83	Gen Purpose 8	126	Mono On (Poly Off)
38	Data Entry LSB	84	Portamento Control	127	Poly On (Mono Off)
39	Channel Volume LSB	85	Controller 85		
40	Balance LSB	86	Controller 86	**Extra RPN Messages**	
41	Controller 41	87	Controller 87		
42	Pan LSB	88	Controller 88	128	Pitch Bend sensitivity
43	Expression LSB	89	Controller 89	129	Fine Tune
44	Controller 44	90	Controller 90	130	Coarse Tune
				131	Channel Pressure

Useful MIDI data

General MIDI Instruments

Piano	Bass	Reed	Synth Effects
0 Acoustic Grand Piano	32 Acoustic Bass	64 Soprano Sax	96 SFX Rain
1 Bright Acoustic Piano	33 Electric Fingered	65 Alto Sax	97 SFX Soundtrack
2 Electric grand Piano	Bass	66 Tenor Sax	98 SFX Crystal
3 Honky Tonk Piano	34 Electric Picked Bass	67 Baritone Sax	99 SFX Atmosphere
4 Electric Piano 1	35 Fretless Bass	68 Oboe	100 SFX Brightness
5 Electric Piano 2	36 Slap Bass 1	69 English Horn	101 SFX Goblins
6 Harpsichord	37 Slap Bass 2	70 Bassoon	102 SFX Echoes
7 Clavinet	38 Syn Bass 1	71 Clarinet	103 SFX Sci-Fi
	39 Syn Bass 2		
Chromatic Percussion	**Strings/Orchestra**	**Pipe**	**Ethnic**
8 Celesta	40 Violin	72 Piccolo	104 Sitar
9 Glockenspiel	41 Viola	73 Flute	105 Banjo
10 Music Box	42 Cello	74 Recorder	106 Shamisen
11 Vibraphone	43 Contrabass	75 Pan Flute	107 Koto
12 Marimba	44 Tremolo Strings	76 Bottle Blow	108 Kalimba
13 Xylophone	45 Pizzicato Strings	77 Shakuhachi	109 Bag Pipe
14 Tubular bells	46 Orchestral Harp	78 Whistle	110 Fiddle
15 Dulcimer	47 Timpani	79 Ocarina	111 Shanai
Organ	**Ensemble**	**Synth Lead**	**Percussive**
16 Drawbar Organ	48 String Ensemble 1	80 Syn Square Wave	112 Tinkle Bell
17 Percussive Organ	49 String Ensemble 2	81 Syn Sawtooth Wave	113 Agogo
18 Rock Organ	(Slow)	82 Syn Calliope	114 Steel Drums
19 Church Organ	50 Syn Strings 1	83 Syn Chiff	115 Woodblock
20 Reed Organ	51 Syn Strings 2	84 Syn Charang	116 Taiko Drum
21 Accordion	52 Choir Aahs	85 Syn Voice	117 Melodic Tom
22 Harmonica	53 Voice Oohs	86 Syn Fifths Sawtooth	118 Syn Drum
23 Tango Accordion	54 Syn Choir	Wave	119 Reverse Cymbal
	55 Orchestral Hit	87 Syn Brass & Lead	
Guitar	**Brass**	**Synth Pad**	**Sound Effects**
24 Nylon Acoustic	56 Trumpet	88 New Age Syn Pad	120 Guitar Fret Noise
25 Steel Acoustic	57 Trombone	89 Warm Syn Pad	121 Breath Noise
26 Jazz Electric	58 Tuba	90 Polysynth Syn Pad	122 Seashore
27 Clean Electric	59 Muted Trumpet	91 Choir Syn Pad	123 Bird Tweet
28 Muted Electric	60 French Horn	92 Bowed Syn Pad	124 Telephone Ring
29 Overdrive	61 Brass Section	93 Metal Syn Pad	125 Helicopter
30 Distorted	61 Syn Brass 1	94 Halo Syn Pad	126 Applause
31 Harmonics	62 Syn Brass 2	95 Sweep Syn Pad	127 Gun Shot

Installing Drivers For Windows 98/ME

1. **Power up your PC.**
2. **Insert the eKeys⁴⁹ Installer CD-ROM.**
   The installer should open automatically. If not, select run from the start menu and type d:\setup.exe where 'd' is your CD-ROM drive, then press ENTER.
3. **Click on 'install drivers'.**
4. **Follow instructions on screen.**
5. **When finished exit setup.**
6. **Switch on the eKeys⁴⁹.**

Windows will proceed with the installation of a USB driver and a MIDI driver. Once completed, you are ready to go. Windows will ask you to restart your computer.

Installing Drivers For Windows 2000

1. **Power up your PC.**
2. **Insert the eKeys⁴⁹ Installer CD-ROM.**
   The installer should open automatically. If not, select run from the start menu and type d:\setup.exe where 'd' is your CD-ROM drive, then press ENTER.
3. **Click on 'Driver Installer'.**
4. **Follow instructions on screen.**
5. **When finished exit setup.**
6. **Switch on the eKeys⁴⁹ keyboard.**
   Windows will automatically recognise the keyboard and ask for the E-Keys Installer CD-ROM.
7. **Select the CD-ROM drive and click OK.**
   Windows will then ask you to select the CD-ROM drive again for the MIDI driver.
8. **If Windows reports the drivers have not been digitally signed, click on 'Continue Installation'.**
9. **Select the drive once more.**
10. **Click OK and you are ready to go.**
11.
Once installation is complete, you will be asked to re-start your PC.

Using An External Power Supply

You can also use a mains adapter (not included) with the following specification: 9V DC output, 250-300mA, centre positive.

Make sure you are not powering the eKeys⁴⁹ keyboard already via USB, then simply plug in the power supply to the socket labelled DC 9V and switch the power on.

Note: Do not leave the adapter plugged in for long periods of time if the unit is not in use.

Getting Started

Assuming the installation process was completed successfully, it is now time to have a closer look at the eKeys⁴⁹ keyboard. However, at the moment, when you press a key you will not hear any sound. This is because when you press a key, the keyboard sends out MIDI data. MIDI data gives instructions on how a sound should play, but in order to hear that sound you need some software which can read this MIDI data, and play sound back accordingly. We have provided such software on the Evolution eKeys⁴⁹ Installer CD-ROM.

If you have not done so already, install 'PictureBoard' from the CD-ROM. To do this insert the CD-ROM and click on 'Software Installer'. Make sure 'PictureBoard' is selected for installation. When the installation is complete, open PictureBoard.

PictureBoard is a great piece of software that will play a sound, and trigger an image when a key is pressed.

The piano set should automatically have been opened for you. If not, click on 'Open' and select the 'Piano.MB' file.

Press a key on the keyboard. You should now hear a piano, and see a key on the on-screen keyboard in PictureBoard light up.

If you do not see this, click on the preferences menu and select 'MIDI devices'. Select the eKeys⁴⁹ as the MIDI input device.

The Piano set in PictureBoard enables you to play the keyboard like a grand piano. Go on – give it a try!

The Keys

Each white key on the eKeys⁴⁹ is labelled with a letter and a number. The letter represents the note you play, and the number represents the octave ('octave' is explained in the next section).

Although the black keys are not labelled, they also have names. The name of a black key will be something like F#4 or Eb2.

If a black key is expressed with a # sign, it is referring to the black key above the white note. For example F#3 refers to the black key above F3.

If a black key is expressed with a b sign, it is referring to the black key below the white note. For example Eb3 refers to the black key below E3.

So, as an example, the black Key between C3 and D3 is both C#3 and Db3.

Contact Details

For additional files, help or drivers for this product, it is best to look on our main website http://www.m-audio.com.

If you have any questions, comments or suggestions about this product, or any other M-Audio or Evolution product, we invite you to contact us directly by using the following information:

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Octave

An octave contains 12 notes. Each octave is marked out clearly on your eKeys[49] keyboard, by black and white sections starting on C. Each octave is given a number.

Play the bottom note on the keyboard, C1. You will see it lights up the bottom note on the onscreen keyboard in PictureBoard. Now press C2. The key that now lights up on the PictureBoard keyboard is 1 octave higher.

Now press the octave '+' button once. The light above the octave '-' button will go out, indicating the keyboard is now playing an octave higher.

Press the bottom note, C1 on the keyboard again. You will now see the key that lights up on the on-screen keyboard of PictureBoard, is the same key as when you pressed note C2 previously. If you press the Octave '+' key again, you will play the next C up, and so on. It is possible to shift the keyboard up 4 octaves or down 3 octaves from 0 octave shift. To shift the octave downwards, press the octave '-' key.

Now press both the octave '+' and '-' keys together. Both LED's will now be lit. This returns the octave shift to 0.

If both the lights are on above the Octave '+' or '-' buttons, you know you have an octave shift of 0. If the light is only above the octave '-' key, the octave shift is down. If the light is above the octave '+' key, the octave shift is up.

Pitchbend Wheel

As the name indicates, the pitch bend wheel is usually used to bend the notes played on the keyboard, up or down. Press and hold a key while moving the wheel and you will get the idea. This allows you to play phrases not normally associated with keyboard playing, including guitar style riffs.

Your sound source determines how far you can bend the note. Its typically set to 2 semitones but can be up to 2 octaves +/-.

Modulation Wheel

The modulation wheel is, as implied, typically used for modulation of the sound you are playing. This type of real-time controller was originally introduced on electronic keyboard instruments to give the performer the option of for instance adding vibrato just like players of acoustic instruments do.

Just like the pitch bend wheel, the modulation wheel is fully MIDI assignable. To find out how, read the section "Basic Programming Operations" on page 17.

Volume Slider

Now try adjusting the Volume slider as you play. This slider sends a MIDI message that controls the volume of the notes you are playing. You will hear the sound is louder as you move the slider upwards.

The volume slider can be assigned to different effects such as pan (balance), attack, reverb and chorus and many more. How to do this is explained in the 'Advanced Functions' Section.

Foot Switch

You can plug any polarity foot switch (not included) in to the foot switch socket on your Evolution keyboard. The keyboard will automatically detect the correct polarity on power up. If you want to reverse the polarity, just make sure the pedal is pressed when you switch on your keyboard.

The foot switch is normally used for sustaining the sound you are playing without having to keep your hands on the keyboard, just like a piano.

Setting up the Software

Before you use the software, it's a good idea to set it up so that it is communicating with the eKeys⁴⁹ properly. Once you have set this up, your settings will be saved so that each time you open the software, it will be communicating with the eKeys⁴⁹ straight away.

If you have not done so already, install Music teacher v3.0 and Sound Studio II. Open up Music Teacher or Sound Studio II by double-clicking on the icon on your desktop. Play the eKeys⁴⁹ keyboard. Can you hear any sound? If so all is good and you can go on to set up the other program.

If not select 'Devices...' from the Options menu ('MIDI Devices' in Sound Studio II). Here you have a list of MIDI inputs and outputs. Make sure the eKeys⁴⁹ is selected as the MIDI input device. If you plugged the eKeys⁴⁹ straight in to Windows XP and are not using Evolution's drivers, the eKeys⁴⁹ will be called 'USB Audio Device'. In all other cases, the eKeys⁴⁹ will be called 'USB MIDI in'.

In the MIDI Outputs you should select the output with 'synth' or 'synthesis' in the name. Make sure it is the only MIDI output that is selected. Selected devices are highlighted blue.

Click on 'OK' to save the settings. You should now be able to hear a piano sound when you play the eKeys⁴⁹. If not, go back in to Devices and select the next MIDI output. Click to de-select the previous MIDI output and click 'OK'. Try the eKeys⁴⁹ again. Repeat this process for each MIDI output in turn until you can hear sound.

Trouble-Shooting

My Evolution hardware suddenly stopped working after having performed fine since installation.
Switch off the unit and leave for 10 seconds. Then restart your computer and try again. If the problem persist you may have to re-install drivers for the unit.

My drivers are listed in the Device Manager and are said to be working OK, but the keyboard is not recognised in any software.
Win2000 and XP have a limitation to how many MIDI device drivers you can have installed at any one time. There is no indication that you are using the maximum number of drivers - the drivers will install as if there is not a problem.

To fix this problem: Go to http://www.evolution.co.uk/support/faq/index.html and locate the above question. You will find a link to an exe file that will solve this problem for you.

I have plugged in a sustain pedal to my Evolution keyboard, but it works the wrong way round.
The polarity of the sustain pedal is calculated by the keyboard when it is powered up. On power up, the sustain pedal is assumed to be in the OFF position. So, if you want the sustain pedal to be off when it is unpressed, make sure the pedal is unpressed when you power up.

When I press a key, there is a delay before I hear any sound.
This delay is known as latency.

Latency with MIDI signals is due to the soft-synth you are using. MIDI data is simply control data. The MIDI is read by the soft-synth. The soft-synth then completes a large number of complex calculations, in order to produce the sound you hear. All this takes time.

We recommend getting a proper soundcard. You can get a decent one these days for under £30. If you already have an adequate sound card, try re-installing the latest drivers for the sound card, or try reducing the buffer sizes of the audio drivers. You can do this in the Sound Studio II and Sound Studio Pro II programs by going to 'Audio' – 'Audio system settings' where you can reduce the buffer sizes of the MME or ASIO drives.

I can't get any sound from my Evolution Software.
In your software go to Options|Devices. Here you will see a list of MIDI Inputs and MIDI outputs.

If you have MIDI inputs available, if no driver names appear in the Output column, you need to re-install your soundcard or update the soundcard drivers.
The output column allows you to choose which output driver you want for generating the MIDI sounds. Most soundcards will have an option such as "FM synth" or "SBLive Synth". Click on these driver names to use the sounds of your soundcard for playback of MIDI data. If you just have a sound chip, the software synth to select may be like "Microsoft SW synth". Click on the driver name of your choice.

Rule of Thumb: If you have numerous output drivers enabled (highlighted in blue) and cannot hear any output, de-select all but one of them and try again. Repeat this process until you hear some sounds.

Reset All Controllers

If you find there is an effect on a voice that you do not want, rather than having to worry about what that effect may be, you can send a 'Reset all Controllers' MIDI message to set all effects to 0. To send a 'Reset all Controllers' message:

Press the 'Advanced Functions' button to get the keyboard into Edit mode.
Press the Black Key above C3 (named C#3), representing RESET ALL CONTROLLERS.
Edit mode will exit, and there will no longer be any effects on the voice, allowing you to start from scratch.

Using The eKeys⁴⁹ With Other MIDI Devices

The eKeys ⁴⁹ uses standard MIDI messages, and so it is not just limited to the software on the CD-ROM. You can use the E-Keys49 with any other device, or software you may have that is capable of receiving MIDI messages.

MIDI Out

On the back of the keyboard you find the MIDI output port which you can connect to an external sound module or MIDI keyboard. By default (I.e. when you switch the unit on), all controller data is sent out via the MIDI output as well as the USB out.

If you want the MIDI output to act like a traditional USB-to-MIDI interface, engage "MIDI out from USB" mode by carrying out the following instructions:

- Press the 'Advanced Functions' button to get the keyboard into Edit mode.
- Press the black key above D2 (named D#2), representing MIDI OUT FROM USB.
- Edit mode will finish.
- The keyboard is now able to send data received from the computer out of it's MIDI OUT socket, to whatever device is connected.
- You need to select the eKeys ⁴⁹ USB MIDI Out as the MIDI output device in your sequencer to use the MIDI output.

Advanced Functions

We will use Sound Studio II to learn about the advanced functions of the keyboard.

If you have not done so already, install Sound Studio II from the Evolution eKeys ⁴⁹ installer CD-ROM.

To do this, insert the CD-ROM, click on 'Software installer' and make sure Sound Studio II is selected for installation.

Open Sound Studio II.

Sound Studio II is a MIDI Sequencer. A MIDI sequencer can receive MIDI messages from the keyboard, but does not generate sound of it's own. Instead it is able to store the MIDI data and provide powerful editing to the MIDI data. It will then map the data received from the Keyboard to a MIDI output device. In most cases this MIDI output device will be the in-built MIDI synthesizer on your PC. This is called the 'MS Wavetable Synth'. If you have a special soundcard, it is better to use the MIDI synth of your soundcard.   Be advised that some soundcards do not have MIDI synths however, and in this case you can use the MS wavetable synth.

Play the keyboard. You should see the keys on the on-sceen keyboard in Sound Studio II light up, and hear a piano sound. If not, refer to the previous section, 'Setting up the software'.

## About The 'Advanced Functions' Button

The 'Advanced Functions' button is used to access all the advanced functions of the keyboard.

When the 'Advanced Functions' button is pressed, the keyboard goes in to 'Edit Mode'. In Edit mode, the keys on the keyboard are used for selecting functions and entering data.

The light above the 'Advanced Functions' button indicates whether Edit mode is engaged or not. In Edit mode, the Black keys of the Keyboard are used for selecting functions, while the white keys are used for data entry, and channel selection.

Edit mode will finish as soon as a function is selected, or the CANCEL or ENTER keys are pressed. This is indicated, since the light above the 'Advanced Functions' button will turn off. Then, the keyboard can be used to play notes again.

The diagram on the following page shows what each key on the keyboard represents in edit mode:
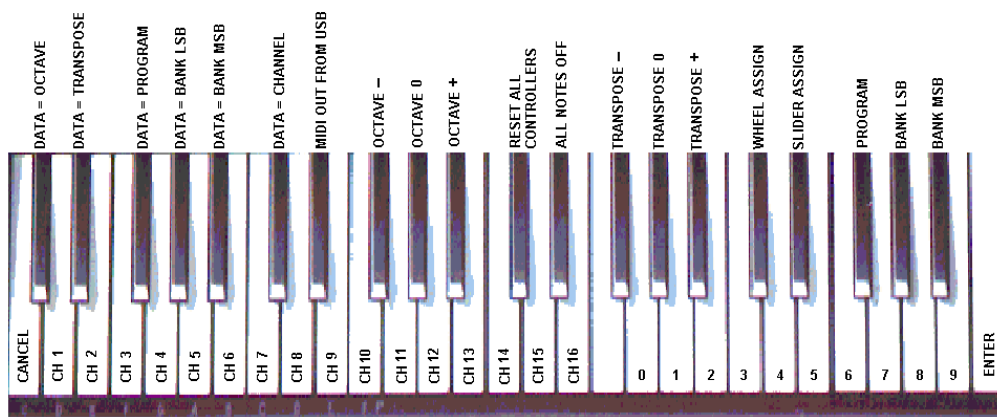
Advanced functions

The Octave '+' And '-' Keys

The Octave '+' and '-' Keys will '+1' or '-1' each time they are pressed. By default, the Octave '+' and '-' Keys control the octave shift either side of 0. This is the setting every time you turn the keyboard on. When both lights above the two octave buttons are on, you know the octave shift is set to 0. We have already seen the operation of these buttons for Octave control in the getting started guide section.

However, these two '+' and '-' buttons can also be used to control one of five more MIDI functions.

In the diagram above you see that the first 6 black keys are labelled 'DATA = -----'. These keys are used to select the function of the Octave '+' and '-' buttons. Some of the functions the '+' and '-' keys can be used for can not send out a value less than 0. In this case, the lights above the '+' and '-' buttons will remain on.

To select the function of these buttons:

- Press the 'Advanced Functions' button, which will put the keyboard into Edit mode.
- Press the black key that represents the function you want for the '+' and '-' keys.
- Edit mode will finish as soon as you have selected the function and you will be able to play notes again.

Definition Of Advanced Functions

Octave Shift

Octave shift can be achieved using two methods. The first has already been described in the 'Getting Started Guide' and involves using the octave '+' and '-' keys.

To assign the '+' and '-' keys to control the octave if they are not already:

The Volume Slider

As with the Modulation Wheel, the volume Slider can be assigned to any of the 131 effects at the back of this manual.

To assign the Volume Slider to an effect:

- Press the 'Advanced Functions' button to get the keyboard into Edit mode.
- Press the Black Key above D4 (named D#4), representing SLIDER ASSIGN.
- Use the Numerical Data Entry keys G3 – B4 to enter the number of the effect you want to assign to the Volume Slider.

Or

Alternatively, you can use the '+' and '-' buttons to change the value.

- Press the ENTER key (C5).
- Move the Volume Slider upwards to increase the value of the effect.

If you have made an error while entering the numerical data value, you can press the CANCEL key (C1) to exit Edit mode without changing the effect assigned to the Volume Slider.

Note that each time the keyboard is turned off, the data assigned to the Volume Slider will be lost. Each time the keyboard is powered up, the Volume Slider will default to being assigned to Volume(effect number 07).

Pitchbend Sensitivity

It is possible to alter the sensitivity of the Pitchbend wheel by assigning effect number 128 to the Modulation Wheel or Volume Slider. This will allow you to alter the pitchbend range up to 1 octave up and down.

Just In Case It All Goes Wrong!

The eKeys [49] has been designed to make MIDI on your computer as simple as possible. However, sometimes times things can go wrong. In many cases it is not the keyboard that is at fault, but the receiving device. To counter this, there are two useful MIDI functions:

All Notes Off

Use this if you find there are hanging notes that you can not stop playing. To send an 'all notes off' MIDI message:

- Press the 'Advanced Functions' button to get the keyboard into Edit mode.
- Press the Black Key above D3 (named D#3), representing ALL NOTES OFF.
- Edit mode will exit, and there will no longer be any hanging notes.

The Modulation Wheel

It is possible to assign MIDI effects to the Modulation wheel. Some useful effects are:

01 Modulation
07 Volume
10 Pan (balance)
05 Portamento

There are 131 effects in total. However, for these effects to have any affect on the sound, the receiving MIDI device has to be able to read and respond to these MIDI effect messages. Most devices will respond to volume, modulation, and pan data as a minimum.

The full list of effects is given at the back of this manual.

To assign an effect to the modulation Wheel:

- Press the 'Advanced Functions' button to get the keyboard into Edit mode.
- Press the Black Key above C4 (named C#4), representing WHEEL ASSIGN.
- Use the Numerical Data Entry keys G3 – B4 to enter the number of the effect you want to assign to the Modulation Wheel.

Or

Alternatively, you can use the '+' and '-' buttons to change the value.

- Press the ENTER key (C5).
- Move the Modulation Wheel upwards to increase the value of the effect.

If you have made an error while entering the numerical data value, you can press the CANCEL key (C1) to exit Edit mode without changing the effect assigned to the Modulation Wheel.

Note that each time the keyboard is turned off, the data assigned to the Modulation Wheel will be lost. Each time the keyboard is powered up, the modulation Wheel will default to being assigned to Modulation (effect number 01).

Let's give this a go:

We're going to assign effect number 10 to the modulation wheel. This means the modulation wheel will control the Pan or Balance.

- Press the 'Advanced Functions' button to get the keyboard into Edit mode.
- Press the Black Key above C4 (named C#4), representing WHEEL ASSIGN.
- Press A3 to enter '1'.
- Press G3 to enter '0', so you have entered '10'.
- Press C5 for ENTER.

Now when you move the modulation wheel up and down, you will hear the sound move from the left to the right speakers.

- Press the 'Advanced Functions' button to get the keyboard into Edit mode.
- Press the black key above C1 (named C#1), representing DATA = OCTAVE. Edit mode will finish as soon as C#1 has been pressed.

The second method will allow a quick octave change. It is useful if you are using the octave '+' and '-' buttons for a different MIDI function and do not want to have to change this:

- Press the 'Advanced Functions' button to get the keyboard into Edit mode.
- Press the black key below B2 (named Bb2), representing OCTAVE + to increase the octave by 1. Press it again to reduce the octave by 2 ...etc.

or

- Press the black key above F2 (named F#2), representing OCTAVE – to decrease the octave by 1. Press it again to decrease the OCTAVE by 2 ...etc.

or

- Press the black key above G2 (named G#2), representing OCTAVE 0 to set the Octave shift back to 0.

When you have chosen your Octave shift press C5, representing ENTER to leave Edit mode.

Transpose

In some cases it is useful to reduce, or increase the Pitch by a number of semitones rather than a whole octave. For example, you may be playing a song with a singer and the singer is having trouble hitting the top notes. In this case is a good idea to try reducing the pitch down one or two semitones*. This is achieved using a MIDI function called Transpose.

Transpose works in the same way as Octave shift above, except the shift is + or – 12.

As with Octave shift, there are two ways of transposing the keyboard. You can use the Octave '+' and '-' buttons, or the black keys F#3, G#3 and Bb3. These black keys represent TRANSPOSE -, TRANSPOSE 0 and TRANSPOSE + respectively.

To assign the octave '+' and '-' buttons to transpose:

- Press the 'Advanced Functions' button to get the keyboard into Edit mode.
- Press the black key above D1 (named D#1), representing DATA = TRANSPOSE.
- Edit mode will finish as soon as D#1 has been pressed.
- Press the '+' key and you will hear the pitch of the note you play go up.

*A semitone represents the change in pitch from one note to another. So, changing 2 semitones, is the same as playing a note 2 notes higher.

Channel

MIDI data from the keyboard is sent on 1 of 16 channels. With the software we provide in this package generally, the channel the keyboard is sending data on is not important, since the software will receive data on all channels.

However, some MIDI devices or MIDI software this keyboard can be used with require the keyboard to send data on a specified channel. If this is the case you can change the channel the data is sent on as follows:

- Press the 'Advanced Functions' button to get the keyboard into Edit mode.
- Press one of the 16 channel keys, D1 to E3 – the one that represents the channel you need.

As an example if a devices specifies you need to send data on Channel 10, press the Advanced Functions button, and then key F2 to select Channel 10.

The Channel can also be assigned to the Octave '+' and '-' buttons. This will increment through the channels. When Channel 16 is reached and '+' is pressed, Channel 1 will be selected. If the Octave '+' and '-' keys are selected to vary the Channel, the lights above the buttons will not change, since it is not possible to have a Channel with a negative value. Pressing both the '+' and '-' buttons together will recall Channel 1.

Program Change

Program changes are used to change the instrument or voice you are using. Let's change the instrument to a bass sound. To do this we need to send a program change of 32, which will select an acoustic Bass sound. There are two methods send a program change:

1. Incremental/Decremental Program change:

- Press the 'Advanced Functions' button.
- Press the black key above F1 (named F#1).
- Now the Octave '+' and '-' keys can be used to change the program.
- Press '+' and continue to play some notes until you find the instrument you want.

2. Quick select Program Change

- Press the advanced Functions button.
- Press the black key above F4 (named F#4),representing 'program'.
- Press keys C4, then E3 then C5. This enters the combination '3', '2', ENTER.

Or

Alternatively, you can use the '+' and '-' buttons to change the value, and then press ENTER. Now the keyboard will play a Bass sound.

Method 1 is useful if you want to cycle through different instruments, to see which sounds best in your song. Method 2 is more useful if you want to select a specific number, as is the case here.

If the Octave '+' and '-' keys are selected to vary the Program number (method 1), the lights above the buttons will not change, since it is not possible to have a Program with a negative value. Pressing both the '+' and '-' buttons together will recall Program 0, which selects a Grand Piano sound.

The full list of instruments accessible using program changes is given in Appendix ### at the back of this manual.

Bank LSB and Bank MSB

Program Changes are the most commonly used messages to change instruments and voices. However, the number of instruments accessible using Program changes is limited to 128. Some devices have more than 128 voices and require a further method to access these extra voices. Generally, these devices use Bank LSB and Bank MSB messages.

For more information on Bank LSB and MSB, please see the section on 'MIDI messages Explained'.

Like Program Changes, Bank LSB and Bank MSB can be assigned to the Octave '+' and '-' buttons. This is achieved as follows:

- Press the 'Advanced Functions' button.
- Press the black key above G1 (named G#1).
- Now the Octave '+' and '-' keys can be used to change the program.
- Press '+' and continue to play some notes until you find the instrument you want.

Bank LSB and Bank MSB can also be entered using the Quick Select method:

- Press the advanced Functions button.
- Press the black key above G4 (named G#4), or A$ (named A#4), representing Bank LSB or Bank MSB respectively.
- Press keys C4, then E3 then C5. This enters the combination '3', '2', ENTER.

or

Alternatively, you can use the '+' and '-' buttons to change the value, and then press ENTER. Now the keyboard will play a Bass sound.

As with Program change, if the Octave '+' and '-' keys are selected to vary the Bank LSB or MSB number (method 1), the lights above the buttons will not change, since it is not possible to have a Bank with a negative value. Pressing both the '+' and '-' buttons together will recall Bank 0.