# Portable Music Technology Kit

# Manual

**Warning**

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

# Contents

# 1. Introduction

Congratulations on your purchase of an Immersive Media Spaces (IMS) Portable Music Kit.

At the heart of the kit is the MIDIcreator, a compact unit that takes signals from sensors and switches, turning them into music and sound. These sensors can detect movements from a squeeze to rolling on the floor, waving a hand to sitting down. This manual contains all the information you need to get started, from setting up to recording your own sounds.

The kit was originally developed in June 2000, whilst working with one of our customers in the North East. The idea was to increase accessibility to music for all, using the unique IMS technology in a compact and mobile system. A month after delivering a prototype, a group of children performed in their town centre with the kit plugged into a lamppost!

The success and feedback gained led us to believe that many other people could benefit from this unique mobile system. Three years and several revisions later, we are proud to present you with the latest robust, compact and easy to use portable music kit, designed in response to all our customers' needs.

As well as the popular portable music kit, IMS provides a range of design and development packages for more complex installations. From sensory rooms, to interactive soft play areas and custom designs, we are happy to talk through your ideas. Please feel free to contact us with any questions, or if you are in the York area, visit us for a chat. We'd love to know how you are getting on.

Good Luck and thank you again for choosing IMS.

Mark Hildred, Managing Director

# 2. System Overview

This section gives a brief overview of the musical equipment used and how it is connected.

**MIDIcreator**

The key to the system is the box with the coloured front panel called MIDIcreator. This takes the inputs from the switches and sensors, and converts them to the information needed to drive the sound generating boxes (via MIDI). The slot on the left hand side accepts *smart cards* called Theme Cards, which tell the MIDIcreator to send signals to the sound boxes and set the equipment up ready for use. Each card is labelled with the theme name.



**Boss SP-303 Sampler**

Allows the use of recorded sounds, music loops etc. for the main themes.  Also provides the facility for you to record your own sounds to be used with MIDIcreator, and functions as a simple vocal effects unit.

**Edirol MA-10 Speakers**

High quality music speakers, with independent volume controls for the sound module and sampler. You can also plug headphones in for private practice!
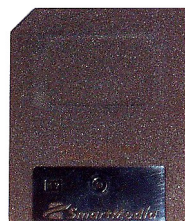


**Sennheiser e835 Microphone**

Used to record sounds from the environment for use as themes or with the sampler as an effects unit.

**Smart Media Cards**

Stores the samples for the different sample based themes. These should be inserted when the sampler is switched off, with the gold contacts facing down.

# 3. About MIDIcreator

MIDIcreator takes electrical signals from switches and sensors and converts them to MIDI data. Very simply, MIDI allows electronic musical instruments to talk to each other.

## 3.1 Switches & sensors

MIDIcreator takes two different types of sensors – switched & proportional. A switch is just like a light switch; it has two states, on and off. Proportional sensors are like dimmer controls for lights with lots of positions between on and off.

## 3.2 What can it do?

There are two rows of eight sockets on the front panel of MIDIcreator. The top row can only produce switched output responses, whilst the bottom can produce both switched and proportional outputs i.e. you can't play a series of notes with a sensor plugged into the top row.

**Switched sockets can play:**

- Single notes
- Chords – on one or several instruments
- Drums
- Trigger samples

**Proportional sockets can play:**

- Single notes
- Chords – on one or several instruments
- Drums
- Trigger samples
- Scales – different types in different keys
- Series of notes – notes played in any order
- Multiple chords – up to four chords
- Effects controls – change volume, reverb (echo) and other effects

## 3.3 Smart Cards

MIDIcreator uses Smart Cards to tell it what to play when it receives a signal from a socket. Smart Cards are programmed by connecting a PC to the MIDIcreator using the MIDI sockets. For details, refer to either section 7 or the MIDIcreator manual.

## 3.4 Triggering methods for playing back sound

| Method | Description |
|---|---|
| One Hit | A one hit sample triggered by a sensor or switch will play for the duration of the sample and then end. If the sample is triggered again before it has time to finish, it will start immediately again from the beginning. |
| Gated | This refers to a one hit sample that will only play whilst the sensor or switch is being operated. For example; the sound will be heard whilst you are standing on a floorpad, or within the triggering point of a beam and will stop when you step off the floorpad or out of the beam. |
| Loop | A Loop is a sample that once triggered by a sensor or switch, will continue playing and repeating until triggered again to stop. |
| Gated Loop | Combining both the loop and Gated methods of triggering, the gated loop will continue playing and repeating only whilst the sensor or switch is in operation. |

# 4. About The Portable Kit

The portable kit can be used in a range of ways, most of which will become clear through experimentation and practical experience. Whilst providing a variety of options for the exploration of music making, the kit is adaptable and suited to many situations such as classroom teaching, inclusive workshops, music therapy and ensemble performance.

Applications
- Provides a means for exploring musical parameters such as pitch, tempo and harmony.
- Makes music accessible to individuals of all abilities.
- Initiates creativity, improvisation and composition.
- Provides access to instrument sounds from around the world.
- Motivates participation, communication and recognition of achievements.
- Encourages response to musical events and sound.
- Is a musical instrument that can be shared and played by up to sixteen people at a time.
- Can be used for inclusive projects whilst facilitating individuals with the opportunity to participate on an equal level to other musicians without prior experience or recollection of previous musical events.
- Supplies an alternative to traditional instruments whilst providing a wide range of sounds and methods for playing music.
- Can be used as a method for teaching and learning with the opportunity to gain skills in producing and controlling musical parameters.
- Can be used for public performance of pre-composed pieces or as part of a dance routine or drama production.
- Helps to increase confidence and social skills in an interactive environment.

The portable kit houses three pieces of electronic musical equipment, a MIDIcreator, sound module and sampler. Connections made within the case allow the equipment to communicate with each other through MIDI messages. These MIDI messages are stored on Configuration Cards, which are inserted into the front panel of MIDIcreator.

Switches and sensors plugged into MIDIcreator are used to trigger the MIDI messages, resulting in a unique method for playing musical notes, chords, sounds and sequences. A collection of sounds that have been configured onto a card is called a 'Theme'. There are two main types of theme available, although you can combine both methods at the same time.

## 4.1 MIDI Theme

MIDI themes use pre-recorded musical instrument and special effect sounds stored on the sound module. 127 different sounds are available from pianos and strings to brass and percussion (see section 8 for a full list). Configuration cards define which sounds are played by each sensor and control settings such as volume, pitch and reverb. By using the software provided with MIDIcreator, you can configure your own cards to make themes. Refer to section 7 for further details.

## 4.2 Sample Theme

A sample theme uses a Smart Media memory card to store samples that are accessed through the SP-303 sampler. You can record your own sound samples using the microphone to make themes or use one of the IMS pre-recorded themes provided. Refer to section 6 for further details.

Templates are included in the Theme pack section of the folder for you to photocopy and use to record the details of your themes.

# 5. How to use the Portable Kit

## 5.1 Playing back a pre-composed Theme

1. Ensure that there is no card in the MIDIcreator unit.



2. Connect the power lead to the case, but do not switch on the power socket at this point!
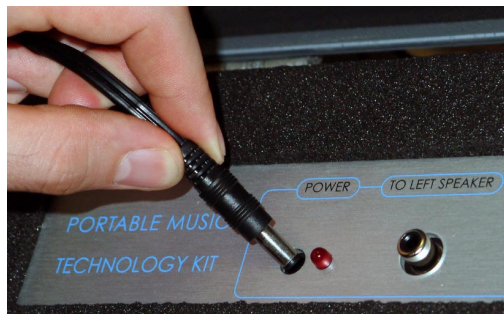


3. Connect the left hand speaker to the socket on the connection panel using the single phono cable with gold connectors.



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4. Connect the right hand speaker to the connection panel using the cable with the three phono connectors, following the colour coding.



5. Connect the other end of the cable to the speaker. Ensure that the cables are connected to their corresponding coloured socket. Connect the power lead to the back of the speaker.



**Note:** Some kits are shipped with MA-10D digital speakers. If using these, please ensure you make connections to the sockets marked 'Line In' and 'Output'.

6. Switch on the mains power. Switch on the power button on the front of the right speaker.

7. Insert the Theme Card required into the slot on MIDIcreator.



8. Insert the Smart Media Card into the slot in the front of the sampler (if required).



Whilst removing or inserting a card into the SP-303 sampler, hold down the 'Reset' button on the right hand side of the connection panel, above the sampler. This temporarily removes the power from the sampler, protecting the Smart Media card from damage.

9. Adjust the volumes on the connection panel to balance the sampler and MIDI volumes. Adjust the 'Line 2' volume on the right hand speaker to the correct level.
10. Connect the sensors and switches required. Switches to the top row and proportional sensors to the bottom row.
11. Start playing!

## 5.2 When you have finished using the kit

1. Remove the Theme Card from MIDIcreator and put it back in the card wallet.
2. Turn down the volume controls on the speaker.
3. Switch off the speakers and the power to the case.
4. Remove the speaker cables and any Smart Media Card.

# 6. Using the SP-303 sampler

The sampler is split into four banks of eight sounds. Sounds recorded into Banks A & B are held inside the sampler, with the total recording time across both banks limited to 30 seconds. To record longer sounds, insert a Smart Media card into the slot in the front of the unit. This allows much more sound to be recorded into Banks C & D (see table below). Blank 32MB cards are included with the kit.

| Smart Media | Sampling Time |
| --- | --- |
| 8MB | 4 min |
| 16MB | 8 min |
| 32MB | 16 min |
| 64MB | 33 min |

N.B. Only use 3.3V Smart Media between 8MB & 64MB in size.

Before use, a new Smart Media card must be formatted in the following way:

1. Hold down the [Cancel] button then press [Remain].
2. Press one of the flashing [C] or [D] pads.
3. Press the flashing [DEL] pad to begin formatting. The pads will stop flashing when formatting is complete.

**Note:** Do not turn off the power or remove the card whilst formatting as this could damage the card. If you wish to cancel the process, press [Cancel].

Smart Media cards are supplied with write protect stickers. Affix one of these onto the indentation on the reverse of any cards that you would like to protect. You will be unable to record onto, delete or overwrite a card that is protected.

## 6.1 Recording your own sounds into the sampler

The microphone allows you to record your own sounds into the sampler. The description below is for using Banks A & B, but is identical for Banks C & D.

1. Ensure that all samples in the internal memory have been deleted (*see below*).
2. Connect the microphone to the socket on the front of the sampler marked MIC.
3. Turn the control next to it (marked MIC Level) all the way to the right.
4. Press the [REC] button on the sampler.
5. Press BANK [A] or [B] button. The button should light up.
6. Press the pad to record the sample to. The pad should light up and [REC] start flashing.
7. Press [REC] to start.
8. Make the sound!
9. Press [REC] again to stop.
10. Press the pad and listen to the sound.

## 6.2 Deleting a sound from a pad

1. Press the [DEL] key.
2. Select the pad you wish to delete the sound from.
3. Press the [DEL] key again.

## 6.3 Deleting all the sounds

1. Hold down [CANCEL] and press [DEL].
2. Select the bank to delete samples from (either A or B).
3. Press [DEL]. Deleting is finished when the dots on the display stop blinking.

## 6.4 Triggering sampled sounds with MIDIcreator

1. Insert the Theme Card called 'SP-303 Banks A&B' into MIDIcreator.
2. Now the switched sockets, numbered 1 to 8 (top row), trigger sounds recorded into Bank A.
3. The proportional sockets, numbered 1 to 8 (bottom row), can now trigger sounds recorded into Bank B.

For a more detailed explanation of the sampler's various operations, please see the manual for the Boss SP-303 Sampler.

**Note:** When designing your own themes for the set-up:

- MIDI Channel 16 is used exclusively for triggering the sampler. Please avoid using this MIDI Channel in music-based themes.
- To ensure that only the sampler plays on Channel 16, the Internal Sound Module must be MUTED. You can do this by setting the Channel Volume to 0 (on Channel 16) on the MIDIcreator Configuration card.

## 6.5 Adding Effects to your own sounds

Once you have recorded your own sounds/samples, you can experiment with altering them using the built in effects bank contained within the SP-303 sampler. The Effects bank consists of 26 different effects, which can be used one at a time.

Five of the effects have their own buttons- Filter + Overdrive, Pitch Shifter, Delay, Vinyl Simulator and Isolator. You can press these effects directly to activate them. When pressed, the button will light to indicate that the effect is on.

The MFX (multi-effects) button contains the other 21 effects which can be accessed by holding down the MFX button whilst turning the CTRL 3/MFX knob to select an effect number, shown on the display panel.

1. Ensure that none of the effect buttons are lit. Press any that are to turn them off.
2. Select the sample you wish to add the effect to by pressing its pad. This will play the sample and the pad will remain lit.
3. Press your chosen effect button.
4. Adjust the 3 CTRL knobs to change the sound of the effect.

The 3 control knobs have different uses for each effect. The display above them gives you an abbreviation of its use, which will change every time a different effect is chosen. The effects list overleaf will guide you through the different sounds that can be created by using the effects and their CTRL knobs.

## 6.6 Using the sampler as an Effects unit

In the right hand corner of the SP-303, is a button called the 'Ext Source'. By using an external source, such as a microphone, it is possible to experiment with the different effects without having to record anything. It is important to note here that the effects cannot be recorded with your samples.

1. Connect the microphone to the socket on the front of the sampler marked MIC.
2. Turn the control level next to it (marked MIC Level) all the way to the right.
3. Press the Ext Source button. This will remain lit when it is on.
4. Press the effects buttons one at a time whilst making sounds into the microphone.

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## 6.7 Table Of Effects

| EFFECT | CTRL 1 | CTRL 2 | CTRL 3 |
|--------|--------|--------|--------|
| **FILTER & DRIVE** | (CoF) | (rES) | (drV) |
| Distorts the sound and boosts the bass. | Adjusts the sound quality/ tone of the effect. | Adjusts the amount of boost on the bass. | Adjusts the amount of distortion to be added. |
| **PITCH** | (Pit) | (Fdb) | (dAL) |
| Changes the pitch of the sound. | Adjusts the sound to go either higher or lower in pitch. | Adjusts the level of feedback given by the effect. | Controls the amount of effect being added to the sound. |
| **DELAY** | (t32-t1) | (Fdb) | (LEV) |
| Repeats the sound | Controls speed of the delay. Left for a quick delay, right for a slow delay. | Adjusts how many times the sound is repeated. | Controls the volume of the effect. |
| **VINYLSIM** | (CMP) | (noS) | (Flu) |
| Adds the sound qualities of a vinyl record. | Adjusts the amount of effect to be added to the sound. | Adjusts the volume of the effect. | Adjusts the various irregularities, which are characteristic of the vinyl sound. |
| **ISOLATOR** | (LOW) | (Mid) | (Hi) |
| Controls the low, middle and high ranges of the sound. | Adjusts the low range of the sound. | Adjusts the middle range of the sound. | Adjusts the high range of the sound. |
| **1. REVERB** | (tiM) | (ton) | (LEV) |
| Adds reverberation (extra sound reflections) to the sound. | Adjusts amount of reverb (or reflections) to be added to the sound. | Changes the sound quality / tone of the sound. | Adjusts the volume of the effect. |
| **2. TAPE ECHO** | (rAt) | (int) | (LEV) |
| Adds a vintage tape echo effect to the sound. | Controls speed of the echo. Left for a fast echo, right for a slow echo. | Adjusts how many times the sound is echoed. | Adjusts the volume of the effect. |
| **3. CHORUS** | (dPt) | (rAt) | (LEV) |
| Adds depth and spaciousness to the sound. | Adjusts the depth of the chorus effect. | Adjusts the speed of vibrato, which is characteristic of this effect. | Adjusts the volume of the effect. |

| 4. FLANGER | (dPt0 | (rAt) | (rES) |
|---|---|---|---|
| Adds an aeroplane-like sound effect. | Adjusts the depth of the effects sound. | Adjusts the speed of the effects sound. | Offers different versions of the effects characteristics. |
| 5. PHASER | (dPt) | (rAt) | (rES) |
| Adds vibrato and a circling effect to the sound. | Adjusts the depth of the effects sound. | Adjusts the speed of vibrato | Offers different versions of the effects characteristics. |
| 6. TREMOLO / PAN | (dPt) | (rAt) | (trM/PAn) |
| Makes repeated changes to the volume or pan (left & right) | Adjusts the amount that the effect changes the volume or pan. | Controls the speed at which the changes are made to the volume or pan. | Turn to the left to change the volume and to the right to change the pan. |
| 7. DISTORTION | (drV) | (ton) | (LEV) |
| Heavily distorts the sound. | Adjusts the depth of distortion. | Adjusts the tone of the effect. | Adjusts the volume. |
| 8. OVERDRIVE | (drV) | (ton) | (LEV) |
| Lightly distorts the sound. | Adjusts the depth of distortion. | Adjusts the tone of the effect. | Adjusts the volume. |
| 9. FUZZ | (drV) | (ton) | (LEV) |
| Distorts the sound and adds harmonics. | Adjusts the depth of distortion. | Adjusts the tone of the effect. | Adjusts the volume. |
| 10.WAH | (SnS) | (Frq) | (rES) |
| Adds a wah-wah effect. | Adjusts the amount of wah effect | Adjusts the pitch of the wah sound. | Adjusts the volume of the wah sound at its loudest point. |
| 11.OCTAVE | (oC2) | (oC1 | (dir) |
| Adds sound in lower octaves (ranges). | Adds sound two octaves lower than the original sound. | Adds sound one octave lower than the original sound. | Adjusts the volume of the original sound. |
| 12. COMP | (SuS) | (Att) | (LEV) |
| Makes the sound the same volume throughout. | Adjusts the amount of the effect that is to be added. | Adjusts the attack of the original sound. | Adjusts the volume. |
| 13. EQUALIZER | (Lo) | (Mid) | (Hi) |
| Adjusts the volumes of the low, middle and high ranges of the sound. | Adjusts the volume of the low range. | Adjusts the volume of the middle range. | Adjusts the volume of the high range. |

| 14. LO-FI | (rAt) | (bit) | (FLt) |
|---|---|---|---|
| Gives the sound a grainy and low quality effect. | Adjusts the amount of the effect to be added to the sound. | Adjusts the amount of graininess given to the sound. | Adjusts the Various characteristics of the sound. |
| **15.NOISE GEN** | (CoL) | (qLt) | (LEV) |
| Adds noise to the sound. | Controls the pitch of the hissing noise. | Controls the regularity of the scratch noise. | Adjusts the volume of the effect. |
| **16. RADIO TUNING** | (ton) | (noS) | (Frq) |
| Adds sound like that of a radio. | Adjusts the amount of 'radio noise' to be added to the sound. | Adjusts the volume of the noise effect. | Adjusts the volume of the original sound. |
| **17. SLICER** | (PO1-16) | (rAt) | (Fdb) |
| Adds a flanger effect and repeatedly cuts the sound. | Adjusts the regularity of the cut. | Adjusts the speed at which the cut occurs. | Adjusts the amount of flanger effect that is to be added to the sound. |
| **18. RING MOD** | (Frq) | (EFF) | (dir) |
| Adds a metallic sound. | Adjusts the pitch of the metallic sound. | Adjusts the volume of the effect. | Adjusts the volume of the original sound. |
| **19. CHROMATIC PS** | (-C-CC) | (-C-CC) | (bAL) |
| Adds two extra pitches to the sound, which can each be adjusted. | Controls pitch 1 up and down. | Controls pitch 2 up and down. | Adjusts the balance between the sound and the effect. Turn to the left for mainly the original sound. Turn to the right for mainly the effect. |
| **20. VOICE TRANS.** | (For) | (EFF) | (dir) |
| Produces a variety of different vocal characteristics. | Adjusts the pitch of the vocal characteristics. | Adjusts the volume of the effect. | Adjusts the volume. |
| **21. C. CANCELLER** | (bAL) | (Lo) | (Hi) |
| Cuts out the middle range of the sound. | Adjusts the various points in the sound that are to be cut out. | Boosts the low characteristics of the sound. | Boosts the high characteristics of the sound. |

# 7. Advanced Use Of MIDIcreator

## 7.1 Installing the MIDIcreator Configuration Builder software

To begin programming your own configuration cards for MIDIcreator, you will need to install the software provided.

1. Insert the MIDIcreator CD as provided into a PC.
2. The CD should autorun on insertion. Alternatively, click the 'Start' button and select 'Run'.
   a. When the 'Run' window appears, type 'a:\setup' into the space provided, and press return.
3. The MIDIcreator configuration builder setup program will start. Follow the on-screen instructions to complete the installation.

Once the Configuration Builder has been installed, you can begin to configure your own themes using MIDI. Refer to section 8 of this manual, for a guide to the MIDIcreator+ instruments available for you to access. Alternatively, you can use your own MIDI device such as a sound module, keyboard or synthesiser.

## 7.2 Connecting another MIDI device to the Portable Kit

The supplied MIDI cable can be used to connect the MIDI OUT of the portable kit to the MIDI IN of an alternative MIDI device. This MIDI output comes directly from the MIDIcreator, allowing MIDIcreator to control over MIDI devices.

## 7.3 Composing Themes For MIDIcreator

### 7.3.1 Drums

1.  Select a socket from the front panel image of MIDIcreator by clicking on it.
2.  Click on Drum Configuration in the drop down window marked 'Configuration:'
3.  Select the drum sound by either clicking on a note from the keyboard image or from the drop down window underneath.
4.  Select the volume by dragging the slider that controls the note velocity.
5.  When you have completed your selection, click on the 'Apply' button to save the changes you have made.

### 7.3.2 Chords

1.  Select a socket from the front panel image of MIDIcreator by clicking on it.
2.  Click on 'Chord Builder' in the configuration window.
3.  The chord of C major will be highlighted automatically, which you can deselect by clicking on the individual notes.
4.  You can either click on a pre-defined chord using the drop down windows, or click on the notes of the chord that you would like to apply. You can use a maximum of eight notes from any of the 16 MIDI channels, which are selectable by clicking on a number, 1-16 in the row marked 'Channel'. Red notes indicate that they are on the current channel and blue notes show that they have been selected from another channel.
5.  Click 'Apply' when you have selected the desired chord for that socket.

### 7.3.3 Scales

1. Select a socket on the front panel image of MIDIcreator by clicking on it.
2. Click on 'Scale Selection' in the configuration window.
3. Click on a pre-defined scale from the drop down windows provided.
4. Select the position in which you would like the scale to play by holding the left mouse button on the lowest note of your desired scale and dragging the cursor along to the highest note. Notes that appear red are those belonging to the pre-defined scale. When configuring scales, you can only use one MIDI channel per socket.
5. Click 'Apply' when you have selected the desired scale for that socket.

### 7.3.4 Sequences

1. Select a socket on the front panel image of MIDIcreator by clicking on it.
2. Click on 'User defined scale' in the configuration window.
3. Sequences will be highlighted on the keyboard and also listed in order in the window. To remove the pre-settings, click on the notes within the window and press 'Delete'.
4. To begin and add to a sequence, click on the individual notes in the desired order.
5. When configuring your own sequences, you can only use one MIDI channel per socket.
6. Click 'Apply' when you have selected the desired sequence for that socket.

## 7.3.5 Saving a theme onto a card

In order to programme a configuration card with a new theme, you will need access to a PC with a soundcard with MIDI output or a separate USB MIDI interface. The MIDIcreator comes with a cable to connect it to a 15-way socket on a standard sound card.

1. Connect the PC MIDI lead to MIDIcreator and a PC, as in the diagram.
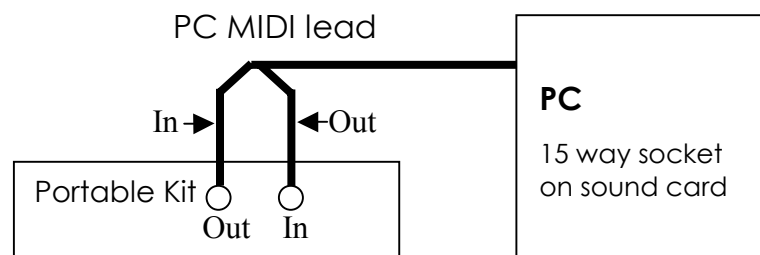


2. Run the MIDIcreator Configuration Builder software.
3. Check the 'Setup/Input' and 'Setup/Output' menu options. They should specify the appropriate MIDI devices connected to MIDIcreator.
4. Load up the theme configuration that you want to write to the card.
5. Insert a formatted or blank memory card into the slot on the front panel of MIDIcreator.
6. Select the 'Programming/Write configuration to card' menu option. Click 'Yes' to confirm writing to the memory card.
7. The red LED on MIDIcreator will flash to show that it is communicating.
8. Click 'OK' when the configuration has been successfully written to the MIDIcreator memory card.

# 8. MIDIcreator+ Instrument Maps

| No. | Instrument Name | No. | Instrument Name |
|-----|-----------------|-----|-----------------|
| | **Piano** | | **Bass** |
| 1 | Acoustic Grand Piano | 33 | Acoustic Bass |
| 2 | Bright Acoustic Piano | 34 | Electric Bass (finger) |
| 3 | Electric Grand Piano | 35 | Electric Bass (pick) |
| 4 | Honky Tonk Piano | 36 | Fretless Bass |
| 5 | Electric Piano 1 | 37 | Slap Bass 1 |
| 6 | Electric Piano 2 | 38 | Slap Bass 2 |
| 7 | Harpsichord | 39 | Synth Bass 1 |
| 8 | Clavi | 40 | Synth Bass 2 |
| | **Chromatic Percussion** | | **Solo Strings** |
| 9 | Celesta | 41 | Violin |
| 10 | Glockenspiel | 42 | Viola |
| 11 | Music Box | 43 | Cello |
| 12 | Vibraphone | 44 | Contrabass |
| 13 | Marimba | 45 | Tremolo Strings |
| 14 | Xylophone | 46 | Pizzicato Strings |
| 15 | Tubular Bells | 47 | Orchestral Harp |
| 16 | Dulcimer | 48 | Timpani |
| | **Organ** | | **Ensemble** |
| 17 | Drawbar Organ | 49 | String Ensemble 1 |
| 18 | Percussive Organ | 50 | String Ensemble 2 |
| 19 | Rock Organ | 51 | Synth Strings 1 |
| 20 | Church Organ | 52 | Synth Strings 2 |
| 21 | Reed Organ | 53 | Choir Aahs |
| 22 | Accordion | 54 | Voice Oohs |
| 23 | Harmonica | 55 | Synth Voice |
| 24 | Tango Accordion | 56 | Orchestra Hit |
| | **Guitar** | | **Brass** |
| 25 | Acoustic Guitar (nylon) | 57 | Trumpet |
| 26 | Acoustic Guitar (steel) | 58 | Trombone |
| 27 | Electric Guitar (jazz) | 59 | Tuba |
| 28 | Electric Guitar (clean) | 60 | Muted Trumpet |
| 29 | Electric Guitar (muted) | 61 | French Horn |
| 30 | Overdriven Guitar | 62 | Brass Section |
| 31 | Distortion Guitar | 63 | Synth Brass 1 |
| 32 | Guitar Harmonics | 64 | Synth Brass 2 |

# General MIDI Melodic Instrument Map
(MIDI channels 1-9, 11-16)

| No. | Instrument Name | No. | Instrument Name |
|---|---|---|---|
| | **Reed** | | **Synth Effects** |
| 65 | Soprano Saxophone | 97 | FX 1 (rain) |
| 66 | Alto Saxophone | 98 | FX 2 (soundtrack) |
| 67 | Tenor Saxophone | 99 | FX 3 (crystal) |
| 68 | Baritone Saxophone | 100 | FX 4 (atmosphere) |
| 69 | Oboe | 101 | FX 5 (brightness) |
| 70 | English Horn | 102 | FX 6 (goblins) |
| 71 | Bassoon | 103 | FX 7 (echoes) |
| 72 | Clarinet | 104 | FX 8 (sci-fi) |
| | **Pipe** | | **Ethnic** |
| 73 | Piccolo | 105 | Sitar |
| 74 | Flute | 106 | Banjo |
| 75 | Recorder | 107 | Shamisen |
| 76 | Pan Flute | 108 | Koto |
| 77 | Blown Bottle | 109 | Kalimba |
| 78 | Shakuhachi | 110 | Bag Pipe |
| 79 | Whistle | 111 | Fiddle |
| 80 | Ocarina | 112 | Shanai |
| | **Synth Lead** | | **Percussive** |
| 81 | Lead 1 (square) | 113 | Tinkle Bell |
| 82 | Lead 2 (sawtooth) | 114 | Agogo |
| 83 | Lead 3 (calliope) | 115 | Steel Drums |
| 84 | Lead 4 (chief) | 116 | Woodblock |
| 85 | Lead 5 (charang) | 117 | Taiko Drum |
| 86 | Lead 6 (voice) | 118 | Melodic Tom |
| 87 | Lead 7 (fifths) | 119 | Synth Drum |
| 88 | Lead 8 (bass + lead) | 120 | Reverse Cymbal |
| | **Synth Pad** | | **Sound Effects** |
| 89 | Pad 1 (new age) | 121 | Guitar Fret Noise |
| 90 | Pad 2 (warm) | 122 | Breath Noise |
| 91 | Pad 3 (polysynth) | 123 | Seashore |
| 92 | Pad 4 (choir) | 124 | Bird Tweet |
| 93 | Pad 5 (bowed) | 125 | Telephone Ring |
| 94 | Pad 6 (metallic) | 126 | Helicopter |
| 95 | Pad 7 (halo) | 127 | Applause |
| 96 | Pad 8 (sweep) | 128 | Gunshot |

# General MIDI Melodic Instrument Map
(MIDI channels 1-9, 11-16)

| Note No. | Drum Sound | Note No. | Drum Sound |
|---|---|---|---|
| 35 | Acoustic Bass Drum | 59 | Ride Cymbal 2 |
| 36 | Bass Drum 1 | 60 | Hi Bongo |
| 37 | Side Stick | 61 | Low Bongo |
| 38 | Acoustic Snare | 62 | Mute Hi Conga |
| 39 | Hand Clap | 63 | Open Hi Conga |
| 40 | Electric Snare | 64 | Low Conga |
| 41 | Low Floor Tom | 65 | High Timbale |
| 42 | Closed Hi-Hat 1 | 66 | Low Timbale |
| 43 | High Floor Tom | 67 | High Agogo |
| 44 | Pedal Hi-Hat 1 | 68 | Low Agogo |
| 45 | Low Tom | 69 | Cabassa |
| 46 | Open Hi-Hat 1 | 70 | Maracas |
| 47 | Low Mid Tom | 71 | Short Whistle |
| 48 | Hi-Mid Tom | 72 | Long Whistle |
| 49 | Crash Cymbal 1 | 73 | Short Guiro |
| 50 | High Tom | 74 | Long Guiro |
| 51 | Ride Cymbal 1 | 75 | Claves |
| 52 | Chinese Cymbal | 76 | Hi Wood Block |
| 53 | Ride Bell | 77 | Low Wood Block |
| 54 | Tambourine | 78 | Mute Cuica |
| 55 | Splash Cymbal | 79 | Open Cuica |
| 56 | Cowbell | 80 | Mute Triangle |
| 57 | Crash Cymbal 2 | 81 | Open Triangle |
| 58 | Vibraslap | | |

# General MIDI Drum Map
(MIDI Channel 10)

# 9. In Need Of Assistance?

## 9.1 Glossary

**Connection panel**

This is the long metallic panel embedded in the foam behind the MIDIcreator and sampler. It contains an audio mixer and MIDI thru unit to allow you to connect the speakers to the case and talk to other MIDI devices. All connections to the portable kit are made through this panel.

**Configuration**

This refers to the set up of the theme cards used in MIDIcreator. They are programmed or 'configured' using computer software with information about how each socket will respond to a sensor plugged in to it. The card also contains information about the instruments used and volume levels.

**MIDI**

This is an abbreviation for 'Musical Instrument Digital Interface'. MIDI can be described as a language that allows electronic musical devices such as keyboards and other sound modules to communicate with each other.

**Sample**

This term refers to sounds that are recorded using the sampler. A single sample is contained on a numbered pad on the sampler or has been recorded onto a smart media card. The sound can be triggered by a MIDI device. Themes are made up of a number of samples.

**Sensor**

Also known as a 'proportional sensor', these can be likened to a light dimmer switch as there are lots of different levels or degrees between on and off. Like a switch, the sensor translates a gesture into a MIDI message. It can allow a sequence of notes to be played during movement and also vary other parameters such as volume or reverb.

**Switch**

Switches are like light switches with only two positions, on or off. A single gesture such as stepping on a floorpad or hitting a block will trigger a sample or single note, sound or chord.

## 9.2 Frequently Asked Questions

1. **What are switch adapters for?**

   Switch adapters are used for converting switches that are not traditionally used with MIDIcreator into suitable inputs e.g. standard assistive technology switches. They are supplied with either a ¼" or 3.5mm jack input.

2. **What happens if I plug one of my own assistive technology switches into MIDIcreator without using a switch adapter?**

   Switches, other than those supplied by IMS, will only work with MIDIcreator when using a switch adapter. If you plug a switch into an input without one, the display light for that row of inputs will go out, indicating a fault. Some sounds may be heard but operation will be random.

3. **Can I record sounds into MIDIcreator from a microphone?**

   With the use of a sampler it is possible to record sounds for use with MIDIcreator. By plugging a microphone into the sampler you can record your own sounds and immediately trigger them using sensors.

4. **How can I record the musical output from a group to make a composition?**

    The most effective way of doing this, so as to capture the acoustics and atmosphere of a room as well as instrumentation and vocals, is by using a minidisc or CD recorder and an omni-directional microphone.

5. **How can I help someone relate their sound to their switch?**

    LEDs are available in different colours, which can be plugged into a switch socket (on the top row) and then triggered by another sensor. The light can then be mounted in front of the player to indicate when their sound is being played. To set up a socket to light an LED, see the section on digital outputs in the MIDIcreator manual (on the CD).

6. **How do I program cards from a laptop computer?**

    The configuration software used to programme cards is the same on a laptop as it is on a PC. However, you will require a USB MIDI interface in order to connect to MIDIcreator, rather than plugging straight into a sound card port as you would with a desktop PC.

7. **I am using a proportional sensor as a switch. How can I change the point at which the sound is triggered?**

    The programming software contains an 'Advanced Properties' window where you can adjust the points at which a sound is triggered. This only applies if the sensor is plugged into the bottom row.

8. **What does 'Filter' do on a digital output?**

    A filter on a digital output will prevent the trigger note being used from creating a sound i.e. only the light will be activated.

9. **I'm using an SP-303 connected to a sound module and MIDIcreator. How can I stop the sound module making sounds when I trigger a sample?**

If you are setting up a configuration card, set the 'Channel Volume' to '0' on the 'Programme Map' on channel 16.

10. **Why are there two power sockets at the back of MIDIcreator and on the Portable Kit?**

The additional power socket is for use with sensors such as the MIDIgesture, which requires it's own power source. Instead of one lead plugging into a MIDIcreator input, the MIDIgesture has two, one of which can be plugged into one of the power sockets on the back of MIDIcreator.

11. **How can I extend sensor cables?**

There are cable extensions available to allow you more freedom of movement with a sensor. Most standard 3.5mm stereo jack extension leads will work, but it is best to check before buying in quantity.

12. **What does positive and negative triggering mean?**

Positive triggering is when a sample or MIDI sound is triggered by activating a switch or sensor. Negative triggering is when the sensor is set to play the sound on releasing the switch or moving away from the sensor.

13. **When I hit my MIDIblock, the sound doesn't stop. How can I set it to trigger differently so that it does?**

In the 'Advanced Properties' window you will find a 'Trigger Threshold' box used for adjusting the trigger points of a sensor. Simply change this from 'Falling' to 'Rising'.

### 14. What is 'Time Out'?

When a sound is activated, it will continue sounding until the user removes their hand from the sensor or switch. Musically this may not be desirable, so the 'Time Out' function allows you to specify the maximum length of a note in seconds. The length of a note or sound can be altered in the 'Advanced Properties' window from 0.5 to 5.0 seconds.

## 9.3 Troubleshooting!

If you have any problems operating the system, first check through the following points. If after trying these, the system still does not operate correctly, please contact the vendor.

**There is no sound!**
- Are the volume controls turned up on the right hand speaker?
- Is the power on the right hand speaker switched on?

**The sample sounds don't work when I insert the Theme Cards!**
- Are the contacts on the Theme Card clean?
  - Try cleaning the gold contacts using a plastic rubber.
- Is the associated Smart Media Card in the front of the sampler?
- Is the small light to the left of the card slot on MIDIcreator flashing intermittently?
  - Remove the card and reinsert it.
- Is the small light to the left of the card slot on MIDIcreator on permanently?
  - Switch off the power for a few seconds and then start up the system again.

**The sensors and switches are not triggering any sounds!**

- Are all the switches and sensors plugged into MIDIcreator?
    - o Push all the plugs in firmly
- Has a Theme Card been inserted into the front of MIDIcreator?
- Are the volume controls on the speaker turned up?

**Sounds are only coming out of one speaker!**

- Is the *left hand speaker* connected to the connection panel?

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# 10. Other Information

## 10.1 Equipment Serial Numbers

| Equipment | Serial Number |
|---|---|
| MIDIcreator | |
| Boss Dr Sample SP-303 | |
| Edirol MA-10 Speakers | |

## 10.2 Switch and Sensor Serial Numbers

| Switch / Sensor | Serial Number |
|---|---|
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## 10.3 Contact Details

This portable kit was designed and built by Immersive Media Spaces Ltd. Please send any queries or questions to:

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inspiring technology for sensory experiences

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