

## IMPORTANT!!!

If the sensors need to be packed away, leads should be LOOSELY coiled as tight coiling (wrapping the cables around the sensor shaft for example) can damage the core which may eventually result in the sensor working intermittently and eventually failing altogether.





## CONTENTS

	page
Contact and technical support details	2
Assembly	3
Navigation buttons	5 - 6
Soundsets	7 - 31
Beam / switch	32 - 33
Range	34
Sound	35 - 36
Trigger Modes – beams	37 - 38
Trigger Modes – switches	39
Divisions	40
Pitch Transpose	41
Note Sequence	42 - 43
MIDI	44
Volume	45
Record / Preview - sampling	46 - 52
Appendix 1: Soundbeam 5 sample library	53 - 55
Appendix 2: MIDI controllers	56 - 59
Appendix 3: Soundbeam 5 sound list	60 – 62
Appendix 4: Soundbeam 5 note sequence list	63
Appendix 5: drum/percussion sound list	64
Troubleshooting	65 -66
Glossary	67 - 68
Credits	69

*Soundbeam - brainchild of composer Edward Williams - was first introduced at the Frankfurt International Music Fair in 1988. Over twenty years later, and with approaching 4000 enthusiastic user organisations worldwide, we are proud to announce the arrival of the latest version of the technology: SOUNDBEAM 5 - a fully integrated Soundbeam-plus-synthesiser with many exciting new features.*

*Whatever your interest – education, therapy or just (just!) music making – Soundbeam offers a fabulous way of exploring sound and music which enables and empowers people with differing levels of dexterity and cognitive ability to express themselves creatively and to play together as musical equals.*

The Soundbeam Project

Unit 3

Highbury Villas

Bristol BS2 8BY

For technical support and other information including details of training courses and workshops please phone:

0117 974 4142

0117 923 7075

or email

[tim@soundbeam.co.uk](mailto:tim@soundbeam.co.uk)

[adrian@soundbeam.co.uk](mailto:adrian@soundbeam.co.uk)

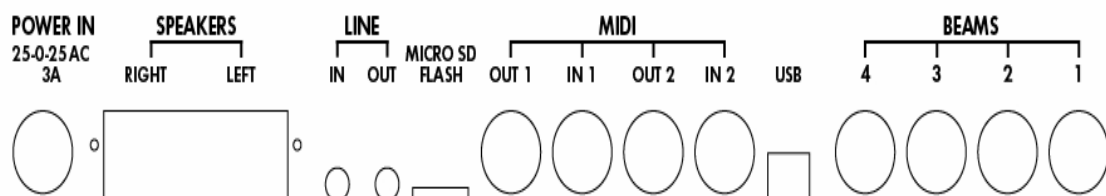
[cindy@soundbeam.co.uk](mailto:cindy@soundbeam.co.uk)

## ASSEMBLY

You should have:

- Soundbeam 5 Controller
- 1-4 beam sensors with holders and stands
- speakers
- speaker cables
- power supply unit
- Switchbox
- 1 – 8 switches
- microphone

1. Assemble the boom stand/s supplied and screw on the sensor holder clips. Fit the sensor/s to the clip/s.
2. Connect the sensor/s to the beam output socket/s on the rear panel of the Soundbeam Controller (if you have one beam, use output 1, two beams, outputs 1 and 2, etc.)

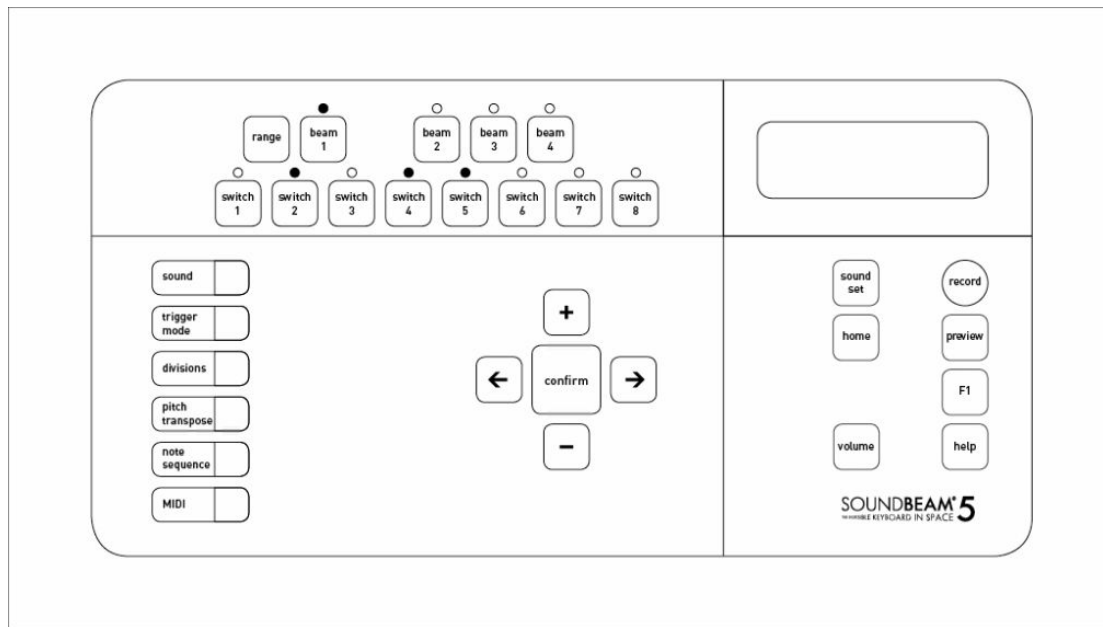


3. Connect your speakers to the outputs on the rear panel of the Soundbeam Controller. To achieve satisfactory sound quality it is important that you follow the colour coding on your speaker cables with the red marked leads connected to the red terminals on Soundbeam 5 and the two speakers.
  
4. Plug your switches into the (wireless) Switchbox. Switches should be connected left to right.
  
5. Connect the power supply unit to the Soundbeam Controller and plug into the room's electricity supply. (Note: there is no on/off switch on Soundbeam itself. Use the switch on the power supply unit. The remote Switchbox is battery powered and is activated using the 'on' button. This unit will power down after 20 minutes of non use to preserve battery life. Press 'on' to reactivate if you want to keep playing).

***IMPORTANT!!!***

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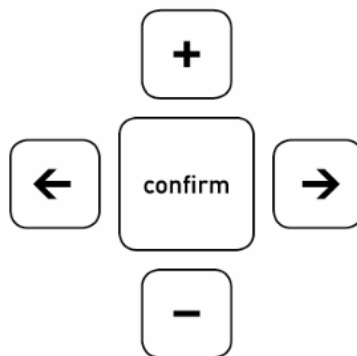
## NAVIGATION BUTTONS



Each button on the control panel has a special function. The feature that you are most likely to want to change, with its currently selected setting, will appear on the display when the button is pressed. This value can be changed by using the + or – buttons. Successive short clicks on the + or – buttons allows for more detailed ‘fine tuning’ up and down; holding the + or – button down allows for fast scrolling.

The ← and → buttons are used to navigate through the sub-menus available for each function.

**It is critical that the functions of these + - ← and → buttons is understood!**



Example: Changing the sound on switch 1.

Ensure that the Switchbox is active by pressing the button on the unit . Operate switch 1 and listen to the sound. Now press the 'switch 1' button, then the 'sound' button, then use the + button to scroll through the different instruments and select a new MIDI program (sound/instrument). Operate switch 1 again in order to audition the new sound you have selected.

Example: Changing the transpose (high/low pitch) on all beams and switches.

Listen to the music on the beams and switches. Press the 'pitch transpose' button, then the → button. Use the + or - button to enter a different value and listen to the change in tuning which this effects.

**If you have never used any version of Soundbeam before we strongly recommend that the following section on *Soundsets* and the section on *Trigger Modes* (pp. 37-39) are read and understood.**

## SOUNDSET

A Soundset is a global function: a collection of musical instructions – combinations of different instrumental sounds, musical scales, melodies and harmonies, playing styles (see section on ‘trigger modes’), rhythm loops and other settings.

Your Soundbeam contains 128 Soundsets. 30 of these are pre-composed into your machine.

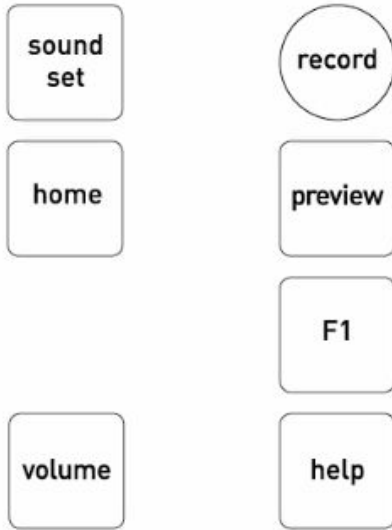
Soundbeam starts to get *really* interesting when you move beyond the 30 demonstration Soundsets and start composing and arranging your own music using the more advanced functions available on Soundbeam 5 which allow you to experiment with the essential building blocks of music: timbre (sound), pitch, melody, harmony and so forth, as well as exploring the sampling (record) function in order to assemble your own original sonic environments.

But, these 30 soundsets should give you plenty to get along with as you familiarise yourself with Soundbeam 5.

The pre-composed Soundsets do not contain parts for all of the potentially full array of four beams and eight switches, but if you wish to add to them you can do so by copying to a user Soundset.

To select a Soundset press the 'Soundset' button, then the + or – button. Whilst navigating through the soundsets in this way you can audition the one currently displayed on the screen by holding down the 'preview' button to hear how it might sound. Once the desired Soundset is displayed on the screen, press the 'confirm' button to load it.

(Note: if the previously loaded Soundset has been modified, the display will prompt you to save your changes before loading the new Soundset with successive presses of the 'confirm' button. If you are happy to discard the changes you made to the Soundset you were using before, press the 'home' button to bypass this saving routine and load in the new Soundset).



**SOUNDBEAM® 5**  
THE INVISIBLE KEYBOARD IN SPACE

# SOUNDBEAM 5 SOUNDSETS

## Improvisations

1. Windy Night
2. April Blues
3. Outer Isles
4. That's Jazz!
5. Buddha
6. Tabla
7. Far Horizon
8. Far Horizon 2
9. Galaxy
10. Club Time
11. Festival
12. Wild Blues
13. Funky House
14. Drums
15. Bells

## Tunes

16. Morning Has Broken
17. Twinkle Twinkle Little Star
18. Old MacDonald Had A Farm
19. London's Burning (round)
20. Three Blind Mice (round)
21. Air on a G String

## Environments

(Note: with all soundsets which utilise samples – and all of the following themed soundsets do - Soundbeam will only allow two samples to be played simultaneously. This prevents the piece from getting too busy and confusing, and also encourages players to listen, take turns and possibly to sequence sounds correctly alongside a narrative structure such as a poem or story).

- 22. Space
- 23. War
- 24. Countryside
- 25. City
- 26. House of Horror
- 27. Sport
- 28. Transport
- 29. Humour
- 30. Jungle

## 1. WINDY NIGHT

Combining chimes on beam 1, an ethereal choir on beam 2, a glacial sound on switch 1, a whistling wind sample on switch 2 and bass drones on switches 3 and 4, this is an atmospheric soundset that could equally be used as part of a narrative structure or on its own as a musical exploration.

### **Soundset summary: Windy Night**

#### **Beam 1:**

Sound: Tinkle bell (229)  
Trigger mode: multi

#### **Beam 2:**

Sound: Synth voice (55)  
Trigger mode: sustain: multi

#### **Switch 1:**

Sound: Bowed glass (255)  
Trigger mode: cyclic single

#### **Switch 2:**

Sound: sample WIND looped  
Trigger mode: latching on/off

#### **Switch 3:**

Sound: FX7 Echoes (103)  
Trigger mode: latching on/off

#### **Switch 4:**

Sound: FX7 Echoes (103)  
Trigger mode: latching on/off

## 2. APRIL BLUES

Smoochy blues with switch 1 kicking off the backing on slide guitar, bass and drums with brushes. Harmonica solo on beam 1 with vibes on beam 2. There's additional percussion on switches 2 – 5.

### Soundset summary: April Blues

#### Beam 1:

Sound: Harmonica (23)  
Trigger mode: multi

#### Beam 2:

Sound: Vibraphone (12)  
Trigger mode: sustain: multi

#### Switch 1:

Sound: sample BTAPRIL looped  
Trigger mode: latching on/off

## 3. OUTER ISLES

Harp, accordion and choir are used in this Soundset to create a traditional mood. Turn taking between the two melody players using beam 1 and switch 1 could be encouraged. Breaking waves played on beam 3 and seagulls on switch 2 add atmosphere.

Switch 7 might be effectively deployed here for key changes.

### Soundset summary: Outer Isles

#### Beam 1:

Sound: Orchestral harp (47)  
Trigger mode: multi

#### Beam 2:

Sound: Synth Voice (55)  
Trigger mode: multi

#### Beam 3:

Sound: sample WAVES looped  
Trigger mode: single

#### Switch 1:

Sound: French accordion (144)  
Trigger mode: cyclic single

#### Switch 2:

Sound: sample SEAGULL  
Trigger mode: on/off

## 4. THAT'S JAZZ

There's a definite jazz/blues swing to this Soundset composed for bass, organ and drums.

Beam 1 gives the double bass using cyclic single trigger requiring a 'plucking' playing style, switch 4 kicks off the drums and beam 2 provides the solo organ (this beam uses sustain; multi but with a polyphony – two → clicks from the main 'divisions' screen – of 1. This means that the player can improvise melodically and also experiment with held notes without having to stay in the beam). There's an alternative melody instrument (sawtooth lead) on beam 3. A cheering crowd lend enthusiastic support on beam 4.

Switches 1, 2 and 3 each have two chords which play cyclically. These switches should be played sequentially (in any sequence) rather than together.

Switch 7 may be effectively used for key changes.

### Soundset summary: That's Jazz

**Beam 1:**

Sound: Acoustic bass (33)  
Trigger mode: cyclic sustain

**Beam 2:**

Sound: Percussive organ (18)  
Trigger mode: multi

**Beam 3:**

Sound: lead 2 (sawtooth) (82)  
Trigger mode: multi

**Beam 4:**

Sound: sample CHEERING once  
Trigger mode: sustain-single

**Switch 1:**

Sound: Rock organ (19)  
Trigger mode: cyclic single

**Switch 2:**

Sound: Rock organ (19)  
Trigger mode: cyclic single

**Switch 3:**

Sound: Rock organ (19)  
Trigger mode: cyclic single

**Switch 4:**

Sound: sample 124 BEAT looped  
Trigger mode: latching on/off

(Note: Switches 1-3 contain the same material but each one is accessing two different chords from different sections of a 13 chord note sequence using the 'start note sequence' function which is one → click from the main 'divisions' screen.)

## 5. BUDDHA

A sample of Buddhist monks chanting on switch 1 is combined with a melodic improvisation with the koto using cyclic trigger on beam 2, with beam 1 providing a harmonic bridge between the two solo parts. This lends itself to a turn-taking duet, with the bell on switch 2 giving extra colour. Starting and stopping the chant on switch 1 effectively will require concentration and listening as the phrasing is not simple.

### Soundset summary: Buddha

**Beam 1:**

Sound: Pad 2 (warm) (90)  
Trigger mode: sustain - multi

**Beam 2:**

Sound: Taisho koto (235)  
Trigger mode: cyclic sustain

**Switch 1:**

Sound: sample BUDDHA looped  
Trigger mode: latching on/off

**Switch 2:**

Sound: sample BELL looped  
Trigger mode: on/off

## 6. TABLA

Switch 1 kicks off a lively Indian tabla rhythm with beams 1 and 2 adding spice with accordions. Beam 1 provides a sustaining chord and beam 2 a melodic improvisation using multi trigger mode with sustain. Switch 7 can be used here for key changes. (Note: keep the rhythm going whilst navigating key changes in this way, otherwise the tabla sample will be mapped to the changing note values causing it to play faster or slower).

### Soundset summary: Tabla

**Beam 1:**

Sound: French accordion (22)  
Trigger mode: sustain - multi

**Beam 2:**

Sound: Tango accordion (24)  
Trigger mode: sustain-multi

**Switch 1:**

Sound: sample TABLA looped  
Trigger mode: latching on/off

## 7. FAR HORIZON

This improvisation could evoke a sense of distance, of an arduous journey through an awe-inspiring landscape or of meeting a challenge.

It can be played with the percussion loop on Switch 1 to anchor the chord changes, or in a more free style without the percussion. Switch 1 triggers the percussion sample; it is latched – to stop the percussion press the switch again.

Switch 7 can be used for key changes (don't do this whilst Beam 2 is in play or the two beams will be out of key).

There are three chords on beam 1, played using cyclic-sustain (the chord continues playing until the next chord is triggered).

There is a melodic improvisation on beam 2, using cyclic-single (the notes only play when you are in the beam, to play the different notes you need to move in and out of the beam).

Beams 3 and 4 contain the same music with alternative instrumentation to beams 1 and 2 using piano and bass guitar.

### Soundset summary: Far Horizon

**Beam 1:**

Sound: FX2 (soundtrack) (98)

Trigger mode: cyclic sustain

**Beam 2:**

Sound: lead 3 (calliope) (83)

Trigger mode: cyclic single

**Beam 3:**

Sound: piano (1)

Trigger mode: cyclic sustain

**Beam 4:**

Sound: fretless bass (36)

Trigger mode: cyclic sustain

**Switch 1:**

Sound: Sample TABLA 75 looped

Trigger mode: latching on/off

## 8. FAR HORIZON 2

This variation might be used for players who find the control and accuracy needed to play beam 2 in the original version too challenging. Here beam 2 is set to 'multi' trigger mode so that movement *within* rather than *in and out* of the beam plays the different notes.

Beams 3 and 4 contain the same music with alternative instrumentation.

### Soundset summary: Far Horizon 2

**Beam 1:**  
Sound: Pad 2 (warm) (90)  
Trigger mode: cyclic sustain

**Beam 2:**  
Sound: Pad 1 (fantasia) (89)  
Trigger mode: multi

**Beam 3:**  
Sound: FX1 (rain) (97)  
Trigger mode: cyclic sustain

**Beam 4:**  
Sound: vibraphone (12)  
Trigger mode: multi

## 9. GALAXY

A similar theme to 'Space' (see *environments*) but with a stronger musical element. Big chords on beam 2 and switch 1 are complemented by melodic lines on beams 1, 3 and 4, with spacy sound effects on switches 2-5.

### Soundset summary: Galaxy

**Beam 1:**  
Sound: Vibraphone (12)  
Trigger mode: sustain - single

**Beam 2:**  
Sound: lead 7 (fifths) (87)  
Trigger mode: sustain - single

**Beam 3:**  
Sound: pad 1 (fantasia) (89)  
Trigger mode: single

**Beam 4:**  
Sound: bowed glass (255)  
Trigger mode: multi

**Switch 1:**  
Sound: pad 8 (sweep)

Trigger mode: cyclic single

**Switch 2:**  
Sound: sample GAMESFX4 looped  
Trigger mode: on/off

**Switch 3:**  
Sound: sample GAMESFX1 looped  
Trigger mode: on/off

**Switch 4:**  
Sound: sample GAMESFX1 looped  
Trigger mode: on/off

**Switch 5:**  
Sound: sample UFO looped  
Trigger mode: on/off

## 10. CLUB TIME

Ibiza here we come! Switch 1 triggers a disco backing with big chords cycling on beam 1, a bass line cycling on beam 2 and a funky solo improvisation on beam 3.

### Soundset summary: Club time

**Beam 1:**

Sound: string ensemble 2 (50)  
Trigger mode: cyclic sustain

**Beam 2:**

Sound: electric guitar (clean) (28)  
Trigger mode: cyclic sustain

**Beam 3:**

Sound: synth brass (63)  
Trigger mode: multi

**Switch 1:**

Sound: sample 120 EGL4 looped  
Trigger mode: latching on/off

## 11. FESTIVAL

A summer music festival feel is conjured with happy crowds on switch 3. Switch 1 triggers the backing loop and there's a simple bass line cycling on switch 2. Four chords cycle on beam 1, with a melody improvisation accompaniment on beam 2.

### Soundset summary: Festival

**Beam 1:**

Sound: Pad 8 (sweep) (96)  
Trigger mode: cyclic sustain

**Beam 2:**

Sound: pad 1 (fantasia) (89)  
Trigger mode: multi

**Switch 1:**

Sound: sample 120FULFT loop  
Trigger mode: latching on/off

**Switch 2:**

Sound: electric guitar (clean) (28)  
Trigger mode: cyclic single

**Switch 3:**

Sound: sample TALKING looped  
Trigger mode: on/off

## 12. WILD BLUES

Solo blues with a laid-back feel. The backing is triggered on switch 1 with solo organ and synth leads on beam 1 and 2. Additional percussion on switches 2-5.

### Soundset summary: Wild Blues

**Beam 1:**

Sound: rock organ (19)  
Trigger mode: cyclic sustain

**Beam 2:**

Sound: synth brass 1 (63)  
Trigger mode: multi

**Switch 1:**

Sound: sample BTWILD loop  
Trigger mode: latching on/off

## 13. FUNKY HOUSE

A nice groove is triggered by switch 1 with chords on beam 1. Melodic improvisations with a 'mysterious east' flavour are available on beams 2, 3 and 4. Switch 2 adds a bass line.

### Soundset summary: Funky House

**Beam 1:**

Sound: synth strings (52)  
Trigger mode: cyclic sustain

**Beam 2:**

Sound: celesta (9)  
Trigger mode: multi

**Beam 3:**

Sound: shanai (112)  
Trigger mode: multi

**Beam 4:**

Sound: bowed glass (255)  
Trigger mode: multi

**Switch 1:**

Sound: sample DEMO081 loop  
Trigger mode: latching on/off

**Switch 2:**

Sound: atmosphere (166)  
Trigger mode: cyclic single

## 14. DRUMS

Drum and percussion sounds are available on all beams and switches in this soundset. Experimentation with different 'note transpose' and 'trigger mode' settings will access different percussion instruments and make different playing styles possible.

## 15. BELLS

Various bell sounds are available on beams 1-4 and switches 1-4

## 16. MORNING

A simple arrangement for clarinet of the traditional song 'Morning Has Broken'.

The melody is played on BEAM 1 using cyclic single.

The chords are played on beam 2 using cyclic sustain. They should be played on the first syllable of the last word in each line (*bro-ken, mor-ning, spo-ken, etc.*)

(For copyright reasons it is not possible for the lyrics to be reproduced here but they can easily be found on the internet).

The same music using different instrumentation (flute and voices) is available on beams 3 and 4.

Switch 1 gives a sample of birdsong.

As with all tunes using cyclic trigger, if you make a mistake and the two beams or switches get out of phase, the easiest thing to do is reload the Soundset (by pressing 'Soundset' and 'confirm') and start again.

### Soundset summary: Morning

**Beam 1:**

Sound: clarinet (72)

Trigger mode: cyclic single

**Beam 2:**

Sound: pad 2 (warm) (90)

Trigger mode: cyclic sustain

**Beam 3:**

Sound: flute (74)

Trigger mode: cyclic single

**Beam 4:**

Sound: synth voice (55)

Trigger mode: cyclic sustain

**Switch 1:**

Sound: sample BIRDS 1 looped

Trigger mode: latching

## 17. TWINKLE

'*Twinkle Twinkle Little Star*' arranged for flute and accordion with the melody on beam 1 and chords on beam 2, both cyclic.

<i>Beam 1</i>	Twin-kle	twin-kle	litt-le	star
<i>Beam</i>	2	2	2	2
	how I	won-der	what you	are
	2	2	2	2
	up	above the	world so	high
	2	2	2	2
	like a	dia-mond	in the	sky
	2	2	2	2
	twin-kle	twin-kle	little	star
	2	2	2	2
	how I	won-der	what you	are
	2	2	2	2

Beams 3 and 4 replicate beams 1 and 2 respectively with the song arranged for tunes percussion (marimba and steel drums).

### Soundset summary: Twinkle

#### Beam 1:

Sound: flute (74)

Trigger mode: cyclic sustain

#### Beam 2:

Sound: French accordion

Trigger mode: cyclic sustain

#### Beam 3:

Sound: marimba (13)

Trigger mode: cyclic sustain

#### Beam 4:

Sound: steel drums (115)

Trigger mode: cyclic sustain

(Note: in common with some of the other soundsets both parts are using different portions of the same note sequence by using the 'Start note sequence at note number' function (Divisions and click → once) Here, the melody on beam 1 uses notes 1-42 starting at note 1 and the chords are notes 43-66 starting at note number 43).

## 18. OLD MACDONALD

A simple tune which will require some practice to play using all four switches. Rehearse it slowly to begin with. Switch 1 cycles through the melody with switches 2, 3 and 4 giving a piano accompaniment. There's a cow on beam 1, a horse on beam 2, cock-a-doodle-doo on beam 3, pigs on beam 4, a dog on switch 5 and a duck on switch 6.

<i>Switch 1</i>	Old	Mac	Don-	ald	had	a	farm	
<i>Switch</i>	2	2	2	2	4	4	2	2
	Ee	aye	ee	aye	oh!			and
	2	2	3	3	2	2	2	2
	on	that	farm	he	had	a	cow	
	2	2	2	2	4	4	2	2
	Ee	aye	ee	aye	oh!			with a
	2	2	3	3	2	2	2	2
	moo	moo	here	and a	moo	moo	there	
	2	2	2	2	2	2	2	2
	Here a	moo	there a	moo	everywhere a		moo	moo
	2	2	2	2	2	2	2	2
	Old	Mac	Don-	ald	had	a	farm	
	2	2	2	2	4	4	2	2
	Ee	aye	ee	aye	oh!			
	2	2	3	3	2	2	2	

### **Soundset summary: Old MacDonald**

#### **Beam 1:**

Sound: sample COW looped  
Trigger mode: single

#### **Beam 2:**

Sound: sample HORSE looped  
Trigger mode: single

#### **Beam 3:**

Sound: sample ROOSTER looped  
Trigger mode: single

#### **Beam 4:**

Sound: sample PIGS looped  
Trigger mode: single

#### **Switch 1:**

Sound: harmonica (23)  
Trigger mode: cyclic single

#### **Switch 2:**

Sound: piano (1)  
Trigger mode: cyclic single

#### **Switch 3:**

Sound: piano (1)  
Trigger mode: cyclic single

#### **Switch 4:**

Sound: piano (1)  
Trigger mode: cyclic single

#### **Switch 5:**

Sound: sample DOG BARK  
Trigger mode: on/off

#### **Switch 6:**

Sound: sample DUCK  
Trigger mode: on/off

## 19. LONDON'S BURNING (round)

A very simple brass arrangement for two switches designed to be played as a round.

#### **Switch 1:**

Sound: tuba (59)  
Trigger mode: cyclic single

#### **Switch 2:**

Sound: trombone (58)  
Trigger mode: cyclic single

## 20. THREE BLIND MICE (round)

A very simple arrangement for marimba and harmonica using two switches designed to be played as a round.

#### **Switch 1:**

Sound: marimba (13)  
Trigger mode: cyclic single

#### **Switch 2:**

Sound: harmonica (23)  
Trigger mode: cyclic single

## 21. AIR ON A G STRING

A short arrangement based on the well-known air by JS Bach for one beam and one switch. The beam plays the melody on the 'cello with the switch providing the bass line.

**Beam 1:**

Sound: cello (43)

Trigger mode: cyclic sustain

**Switch 1:**

Sound: acoustic bass (33)

Trigger mode: cyclic single

## Environments

*All of the soundsets in this section require planning and organisation to make sense. They could be best used to accompany a narrative structure such as a story, poem or song, or to reinforce concepts from other various curriculum areas. The key is to enable players to **sequence** the sounds in an appropriate and logical way, to **combine** pairings of sounds effectively, and to **listen and take turns** appropriately. Having a 'conductor' and using cues and objects of reference or pictures can help teachers and others to approach the material methodically.*

## 22.SPACE

This Soundset combines sampled sound effects on switches 2 – 8 and beams 3-4 with musical material on the beams 1 and 2 and switch 1, to create an 'outer space' or science fiction theme. The chords on beam 1 create a feeling of vastness, with 'aliens' on beam 2 complimented by UFO sound effects on beams 3 and 4. There is a melody improvisation on switch 1 with robot/gadget/UFO sounds on switches 2 - 8. Switches 3 and 4 have the same sound but are slightly detuned resulting in an interesting in-and-out-of-phase effect.

### **Soundset summary: Space**

#### **Beam 1:**

Sound: Pad 8 (sweep) (96)  
Trigger mode: cyclic sustain

#### **Beam 2:**

Sound: FX7 (echoes) (103)  
Trigger mode: multi

#### **Beam 3:**

Sound: sample UFO looped  
Trigger mode: sustain - single

#### **Beam 4:**

Sound: sample UFO looped  
Trigger mode: sustain - single

#### **Switch 1:**

Sound: FX1 (rain) (97)  
Trigger mode: cyclic single

#### **Switch 2:**

Sound: sample MACHINE looped  
Trigger mode: on/off

#### **Switch 3:**

Sound: sample MACHINE looped  
Trigger mode: on/off

#### **Switch 4:**

Sound: sample Games FX4 looped  
Trigger mode: on/off

#### **Switch 5:**

Sound: sample LASER looped  
Trigger mode: on/off

#### **Switch 6:**

Sound: sample GAMES FX4 looped  
Trigger mode: on/off

#### **Switch 7:**

Sound: sample MAD LAB looped  
Trigger mode: on/off

#### **Switch 8:**

Sound: sample UFO looped  
Trigger mode: on/off

## 23. WAR

This Soundset might be used to provide incidental music and sound for a wider project around the theme of war and conflict. Beam 1 contains a string sound using sustain – single, allowing the player to build up brooding chords creating a sense of drama and menace. There is a sample of gunfire on beam 2, a missile on switch 1 (this is actually a sample of footsteps with a low transpose setting) and a helicopter on switch 2.

### Soundset summary: War

**Beam 1:**

Sound: String ensemble 2 (50)  
Trigger mode: sustain: single

**Beam 2:**

Sound: sample WAR looped  
Trigger mode: single

**Switch 1:**

Sound: sample MISSILE looped  
Trigger mode: latching on/off

**Switch 2:**

Sound: sample HELICOPTER looped  
Trigger mode: latching on/off

## 24. COUNTRYSIDE

This soundset consists entirely of samples with a rustic theme. There is no musical material, but the soundset might be effectively sequenced with 'Morning has broken' or 'Old MacDonald'.

### Soundset summary: Countryside

**Beam 1:**

Sound: sample BIRDS looped  
Trigger mode: sustain - single

**Beam 2:**

Sound: sample COW once  
Trigger mode: single

**Switch 1:**

Sound: sample HORSE once  
Trigger mode: on/off

**Switch 2:**

Sound: sample PIG looped  
Trigger mode: on/off

**Switch 3:**

Sound: sample GEESE looped

Trigger mode: on/off

**Switch 4:**

Sound: sample DUCKS looped  
Trigger mode: on/off

**Switch 5:**

Sound: sample ROOSTER looped  
Trigger mode: on/off

## 25.CITY SOUNDS

This soundsset is made up of samples with an urban theme: traffic, crowds, a noisy street café, car horns and a building site.

### **Soundset summary: City sounds**

**Beam 1:**

Sound: sample TRAFFIC looped  
Trigger mode: sustain - single

**Beam 2:**

Sound: sample CROWD looped  
Trigger mode: single

**Switch 1:**

Sound: sample TALKING looped  
Trigger mode: latching on/off

**Switch 2:**

Sound: sample CROWD looped  
Trigger mode: latching on/off

**Switch 3:**

Sound: trumpet (57) (car horn)  
Trigger mode: on/off

**Switch 4:**

Sound: sample CONSTRUCTION looped  
Trigger mode: latching on/off

## 26. HOUSE OF HORROR

*IMPORTANT!!! Some users – adults as well as children – may find this soundsset disturbing. Try it out before using it with a group/class.*

A set of twelve parts for 4 beams and 8 switches all with a horror theme. Monsters on beams 1 and 2 may be combined with low sustaining notes on beam 3 to build chords with a menacing flavour. A solemn bell tolling on beam 4 adds to the scary atmosphere. Switches 1-7 each have various spooky samples (there is a very realistic vomiting sound on switch 7 which may be considered inappropriate). The timpani on switch 8 is given a low transpose setting and may be used to simulate a heartbeat.

### **Soundset summary: House of Horror**

#### **Beam 1:**

Sound: sample MONSTER looped  
Trigger mode: single

#### **Beam 2:**

Sound: sample DOG GROWL looped  
Trigger mode: single

#### **Beam 3:**

Sound: Synth Strings (52)  
Trigger mode: sustain - single

#### **Beam 4:**

Sound: sample BELLS looped  
Trigger mode: sustain - single

#### **Switch 1:**

Sound: sample LAUGH looped  
Trigger mode: on/off

#### **Switch 2:**

Sound: sample MACHINE looped  
Trigger mode: on/off

#### **Switch 3:**

Sound: sample SLURPS looped  
Trigger mode: on/off

#### **Switch 4:**

Sound: sample THUNDER looped  
Trigger mode: on/off

#### **Switch 5:**

Sound: sample PSYCHO looped  
Trigger mode: on/off

#### **Switch 6:**

Sound: sample HEHEHE looped  
Trigger mode: on/off

#### **Switch 7:**

Sound: sample VOMIT looped  
Trigger mode: on/off

#### **Switch 8:**

Sound: timpani (241)  
Trigger mode: on/off

## 27. SPORT

A set of sport-related samples with football sounds on switches 1-3 and the less boisterous ambience of Wimbledon on switches 4-5.

### Soundset summary: Sport

**Switch 1:**

Sound: sample CHANT (football crowd chanting) loop

Trigger Mode: on/off

**Switch 2:**

Sound: sample CHEER (what a save!!) once

Trigger mode: on/off

**Switch 3:**

Sound: sample FOOTBALL once

Trigger mode: on/off

**Switch 4:**

Sound: sample AAH- CLAP (match point!) once

Trigger mode: on/off

**Switch 5:**

Sound: sample TENNIS once

Trigger mode: on/off

## 28. TRANSPORT

Beams 1-2 and switches 1-4 giving a set of transportation-related samples.

**Beam 1:**

Sound: sample CAR RACE once

Trigger Mode: sustain - single

**Beam 2:**

Sound: sample AIRLANE (flight attendant announcement) once

Trigger mode: sustain - single

**Switch 1:**

Sound: sample TRACTOR once

Trigger mode: on/off

**Switch 2:**

Sound: sample TRUCKS once

Trigger mode: on/off

**Switch 3:**

Sound: helicopter (254)

Trigger mode: on/off

**Switch 4:**

Sound: sample TRUCKS once

Trigger mode: on/off

## 29. HUMOUR

Comedy sounds.

**Beam 1:**

Sound: sample OAAAOAAA (tickle sound) loop  
Trigger Mode: single

**Beam 2:**

Sound: sample OO LA LA! once  
Trigger mode: single

**Switch 1:**

Sound: sample TV SHOW once  
Trigger mode: on/off

**Switch 2:**

Sound: sample SNORE loop  
Trigger mode: on/off

**Switch 3:**

Sound: sample LAUGH loop  
Trigger mode: on/off

**Switch 4:**

Sound: sample WOBBLE loop  
Trigger mode: on/off

**Switch 5:**

Sound: sample PLAYER (comedy piano) loop  
Trigger mode: on/off

**Switch 6:**

Sound: sample OPERA loop  
Trigger mode: on/off

**Switch 7:**

Sound: sample NOSEBLOW once  
Trigger mode: on/off

**Switch 8:**

Sound: sample SPIT once  
Trigger mode: on/off

## 30. JUNGLE

An evocative collection of jungle/rainforest samples.

**Beam 1:**

Sound: sample JUNGLE loop  
Trigger Mode: sustain - single

**Beam 2:**

Sound: sample FROGS loop  
Trigger mode: sustain - single

**Switch 1:**

Sound: sample TIGER once  
Trigger mode: on/off

**Switch 2:**

Sound: sample LION once  
Trigger mode: on/off

**Switch 3:**

Sound: sample LAUGH (monkeys) loop  
Trigger mode: on/off

**Switch 4:**

Sound: sample JUNGLE RAIN loop  
Trigger mode: on/off

## Soundset sub menus

(Note: If you get lost here press 'soundset' to return to the main screen).

Press 'soundset' then

Press → (once): Copy/Save Soundset.

Soundbeam 5 will already have prompted you to save any new or modified soundsets. What this sub-menu allows you to do is to copy and save a soundset to a specified location (soundset number). You may for example want to make changes to existing preset or user-composed soundsets by playing the music using different sounds. Use the + or - buttons to select the new soundset location number and confirm.

Press → → (twice): Rename Soundset.

Press 'confirm' to start. Use the + and - buttons to scroll through and select from the alphabet and other characters, and the → button to move the cursor along to the next space. Confirm to complete.

Press → → → (three) times: Lock User Soundset.

Use the + and - buttons to toggle on/off. Lock 'on' to prevent accidental overwriting of the Soundset (note: if changes have been made to the Soundset, these need to be saved before the Soundset is locked 'on').

Press the 'soundset' button to return to main screen.

Press ← ← (twice): Default power up.

When Soundbeam 5 is switched on it will normally load Soundset 1. To change this use the +/- buttons to select Soundsets between 1 and 128 (or, between 128 and 1, 'last used').

Press ← (once): Soundset Sequence Using Switch 8.

You can use Switch 8 to navigate through a series of Soundsets. This (along with 'Transpose Sequence Using Switch 7' – see 'Pitch transpose sub-menus' below) – gives the Soundbeam player virtually total control over the changing musical material available to them, doing away with the need for a 'pilot' supervising the controls.

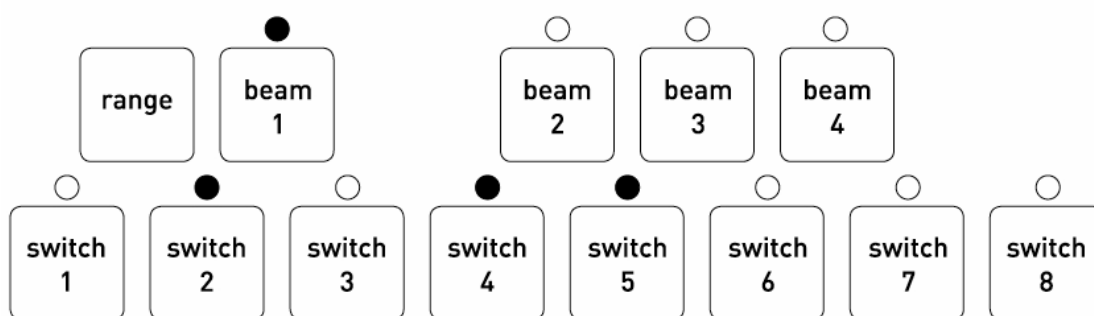
Use the +/- buttons to toggle between on/off. If this function is 'off' switch 8 will function in the same way as other switches (as a trigger for sounds). If it is 'on' the switch will not play in the usual way but will rather allow you to load a sequence of Soundsets with successive presses of the switch.

With this function 'on' use the +/- buttons and the → button to compose your soundset list. Press 'confirm' to finish editing the list. This feature is automatically disabled on power-up so that users are not confused by silent switches.

## HOME

Pressing 'home' returns you to the main Soundset screen.

## BEAM/SWITCH



Use these to change settings for a specified beam or switch. For example to change the musical scale, melody or chords on beam 3, press the 'beam 3' button, then the 'note sequence' button, and use the + or – button. Any other adjustment you make will be applied to beam 3 specifically, until another beam or switch is selected.

The lights flash to indicate when the beams/switches are in play.

## **Sub menus**

Soundbeam 5 allows for the articulation of selected sounds assigned to different notes or chords using beams and switches, plus additional effects such as vibrato and reverb. In technical parlance these are usually referred to as MIDI controllers or effects.

You are unlikely to want or need to investigate these possibilities until your confidence with Soundbeam is quite advanced, possibly when you are ready to explore the new things that can be done by using Soundbeam alongside external hardware synthesisers and software.

## RANGE

Variations in the length of the beams are possible using this feature. This means that you can define the active playing area in space in accordance with the requirements of your performance or in order to accommodate the physical capabilities or limitations of the player.

Press the 'beam' button corresponding with the beam you want to change, then the 'range' button. The + and – buttons now allow you to extend or reduce the active playing length of the beam. 'End at' on the display refers to the furthest point away from the sensor at which sounds will be activated by interruptions of the beam. (The ← / → buttons can be used to select the 'start at' feature which allows you to define the closest point to the sensor at which sounds will be triggered).

To use Soundbeam at long range (over 2 metres) the playing space needs to be as open and uncluttered as possible. Under normal conditions the beams should perform reliably up to 2 metres away from the sensor though care always needs to be taken to ensure that there are no objects along the path of the beam. It is best to start with the shortest range and then extend it as required by the player.

Note: 'chord clear' function (see 'sustain' trigger modes).

The 'chord clear' area between the sensor and the 'start at' point can be made larger or smaller by adjusting the 'start at' setting.

## SOUND

Soundbeam 5's internal synthesiser contains a library of 128 sounds (with some additional variations between 129 and 256). (See appendix). The sound selected on the display (via the + or – button) will be assigned to the currently selected beam or switch (as identified on the display and also by the flashing light).

sound	
trigger mode	
divisions	
pitch transpose	
note sequence	
MIDI	

## Sub menus

The unit's SD card also contains rhythm loops in various styles and can be used to record samples.

To assign a rhythm loop or sample to a beam or switch, press the beam or switch button corresponding the one you want to trigger the sample, press the 'sound' button, then the **—** button to select 'Midi program off' (this disables the internal synthesiser chip). Now press **→** to get into the sample sound library, and use the **+/-** buttons to select the sample.

Press **→** again then **+/-** to toggle between 'loop' (for continuous play) or 'once'.

## TRIGGER MODE - BEAMS

**Single:** to play a note, break the beam. To play another note, come out of the beam and re-enter it. The note heard will depend on the point along the beam's path at which the interruption occurs

**Multi:** movement within the beam will trigger a continuous succession of notes with movement towards and away from the sensor. Sensitivity/note activity can be varied by adjusting 'range' and 'divisions'.

**Sustain – single:** like single, but the sound (providing it's a 'long' sound like an organ or violin, or a sound with a slow decay like a piano, but not a 'short' sound like a xylophone) will continue to play even when you move out of the beam. Enter and exit the beam at other points along its path to create a sustaining chord. Use the 'note clear' area directly in front of the sensor to stop the sound.

**Sustain – multi:** like multi, with the notes held until cleared as in 'sustain – single' above. Use the 'note clear' area directly in front of the sensor to stop the sound.

**Single – clipped:** single notes will sound for a fixed duration which is set by using the → button from the 'Single-clipped' screen and then using the + or - button to select the clip time.

**Multi – clipped:** movement within the beam will trigger a continuous succession of notes which will sound for a fixed duration set by using the → button from the 'Multi-clipped' screen and then using the + or - button to select the clip time.

**Cyclic – single:** successive interruptions of the beam, irrespective of where it is interrupted along its path, will play a sequential series of notes or chords in the correct order assigned to the note sequence (see section on 'note sequence') used. The sound will stop when the beam is exited.

**Cyclic – sustain:** successive interruptions of the beam, irrespective of where it is interrupted along its path, will play a sequential series of notes or chords in the correct order assigned to the note sequence used, with the note or chord held until the next one is triggered. Use the 'note clear' area directly in front of the sensor to stop the sound.

**Trigger off:** this has the effect of muting the sensor and also silences its 'buzz'.

## TRIGGER MODES – SWITCHES

**On – off:** the sound plays when the switch is operated.

**Latching On-Off:** the sound (long sound or sample loop – see ‘sampling’) plays when the switch is operated and stays on. Operate switch a second time to switch off.

**Cyclic:** press the switch repeatedly to play a sequential series of notes or chords in the correct order assigned to the note sequence used.

**Controller only:** instead of using the switch to play sounds, it can be used like an effects pedal to change the qualities (e.g. vibrato) of sounds being played on other beams or switches. See Appendix 1 for a full explanation of this.

**Trigger off:** mutes the switch.

## DIVISIONS

Each beam or switch can contain up to 250 single notes and/or chords (containing up to ten notes). Use the + and – buttons to increase or decrease the number of divisions.

### **Sub menus**

Press → (once): Start Note Sequence at Note Number.

This allows you to utilise different portions of a note sequence. For example, you might have a progression of nine chords in your note sequence and want to use, perhaps for composing a new soundset, the fourth, fifth and sixth ones in the sequence in cyclic trigger on a switch. Selecting three divisions and using the + button to start the note sequence at number 4 will achieve this.

Press → → (twice): Max Polyphony.

In 'sustain' and 'sustain – multi' trigger modes, this function determines the number of notes that can be played simultaneously. A low value (e.g. 3 or 4), using the +/- buttons, will make for clean distinct chords, higher values will give a denser harmonic texture.

## PITCH TRANSPOSE

The note sequence can be transposed in pitch independently for each beam and switch by up to three octaves up or down. Use the + and – buttons to transpose in semitonal increments. For example an adjustment to the pitch transpose setting from +0 to +12 will raise the pitch of the note sequence by one octave.

### **Sub menus**

Press → (once): Global Transpose

This shifts the pitch for all beams and switches together.

Press → → (twice): Transpose Sequence using Switch 7.

Use the +/- buttons to select 'off' (between 128 and 1) to use the switch in the normal way. Alternatively, to use the switch in order to effect a sequence of global key changes, choose a note sequence and select the number of divisions that corresponds with the number of key changes you want. If the note sequence contains chords the lowest note of the chord will be used to determine the key (transpose number). This feature is automatically disabled on power-up so that users are not confused by silent switches.

## NOTE SEQUENCE

Soundbeam 5 contains 128 *note sequences* – musical scales, chord sequences and tunes. Note sequences which are named are preset in Soundbeam 5's memory and cannot be erased. User note sequences can be programmed in by the user either using an external MIDI keyboard or by using the 'range', 'beam' and 'switch' buttons which are arranged on the control panel like a simple keyboard.

### **Sub menus**

#### ***In preset note sequences***

Press → (once): Replay Division

Hold down the 'confirm' button and press the +/- buttons to audition the selected note sequence.

#### ***In user note sequences***

Press ← (once): Lock user note sequence.

In order to make all the edit functions available the note sequence needs to be unlocked. Use the +/- button to select 'off'.

Having done this press the 'note sequence' button to return to the main screen.

Press → (once): Record Division

From here you can record your own sequence of notes and/or chords. Use a MIDI lead to connect MIDI IN 1 from Soundbeam 5 to the MIDI OUT socket on a piano-style keyboard (not a qwerty keyboard). Play notes or chords with clear separation between divisions (if you play too smoothly with a 'legato' style individual notes will be recorded as chords).

To record simple material without the need for an external keyboard use the 'range', 'beam' and 'switch' buttons (in combination with the ← and → buttons to move up and down the octaves). Notes are arranged as follows:

C	switch 1
C#	range
D	switch 2
Eb	beam 1
E	switch 3
F	switch 4
F#	beam 2
G	switch 5
G#	beam 3
A	switch 6
Bb	beam 4
B	switch 7
C	switch 8

If you make a mistake use the — button to scroll back to the division containing the mistake and re-record.

On completion use the 'confirm' key and the +/- buttons to save and name the note sequence, following the prompts on the screen.

Press → → (twice): Replay Division

Hold down the 'confirm' button and press the +/- buttons to audition the selected note sequence.

Press → → → (three times): Play Direction.

With a linear low-to-high note sequence you might wish the higher notes to be closest to the sensor, or the lower ones. Use +/- to toggle between 'forward' and 'reverse'. (Note: if using cyclic trigger with play direction set to 'reverse' the note sequence will play backwards). This feature is not available in locked note sequences including all preset note sequences.

## MIDI

This feature allows you to choose to use Soundbeam 5 alongside external MIDI or USB devices instead of or in addition to the internal synthesiser, to change MIDI channel defaults, and to transfer your Soundset data onto a computer or another Soundbeam 5 unit.

### Sub menus

Press → (once): MIDI to (global)

Information from all beam and switches can be sent - using the +/- buttons - to Soundbeam 5's internal synthesiser, MIDI OUT 1, MIDI OUT 2, USB, or any combination of these.

Press → → (twice): Beam/Switch MIDI to

Information from specified beams and switches can be sent - using the +/- buttons - to Soundbeam 5's internal synthesiser, MIDI OUT 1, MIDI OUT 2, USB, or any combination of these. For example to play a sound from Soundbeam 5's internal sound library on beam 1 and a sound from an external keyboard or sound module (via MIDI OUT 1) on beam 2, set beam 1 to 'int' and beam 2 to '01'

Press → → → (three times): Beam/Switch MIDI channel

Use this to change the MIDI channel default settings for beams and switches (see *'Advanced Projects: MIDI Controllers'*).

Press → → → → (four times): MIDI Bulk Dump

Use +/- to select all soundsets, a specified soundset, all note sequences or a specified note sequence for transfer (dump) into another Soundbeam 5 unit or onto a computer. Press 'confirm' to implement.

## VOLUME

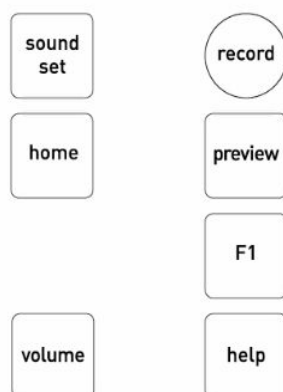
This button accesses Soundbeam 5's internal amplifier functions. Use the ← and → buttons to navigate through the following functions:

- volume
- bass
- treble
- balance
- reverb level
- input volume (for recording samples)
- internal synth volume (for balancing levels with sampler volume)
- beam/switch volume levels with graphic display

and use the + and – buttons to increase or decrease the selected value.

To MUTE all sound press 'volume' then F1. To resume play press any key.

## RECORD / PREVIEW



SOUNDBEAM® 5  
THE INVISIBLE KEYBOARD IN SPACE

What is a sample?

A sample is an audio recording – usually with a short duration.

How to make a sample using a microphone.

1. Insert powered condenser microphone into the rear of the soundbeam 5 unit 'line in'.

Hold the microphone as far as possible from the speakers to avoid feedback. Switch on microphone.

2. Press the record button and use the + - and confirm buttons to select sample (not session).

3. Check that meter levels are active and that a visible response is seen on the display screen when talking or singing into the microphone, and when ready press the record button to begin recording.

4. Now make your sounds (vocal, instrumental, percussive, experimental etc.)

5. When you wish to stop the recording press the record button again. Note that as soon as the recording is stopped it is automatically given a number (example – 005) and allocated a place on the SD card - it will be found at the end of the list of samples already on the SD card.

6. You can listen to the sample immediately by pressing the preview button, and as prompted you can use the F1 button, ← → + - to rename the sample. It is advisable to name samples as you build your library. They will be listed on the card alphabetically and numerically.

**To delete the sample** if you're not happy with it – press the F1 button, page right and follow onscreen instructions

The sample is now created and ready to be assigned to a beam or switch.

To assign a sample to a beam, a few settings will need to be changed.

Select beam1 (by pressing the beam1 button), then press the 'sound' button and select midi program OFF (*This disables any sound coming from the internal synthesiser*) then page right → to select sample.

Use the + - buttons scroll through the list of available samples until you find the one you require.

*TIP – Unless renamed the most recently recorded sample will be at the very bottom of the list – and the quickest way to reach the end of the list is to use the + (page up) button.*

Page right again → will call up the Sample play mode,

There are two options here: either play once or loop.

If 'play once' is selected the sample will stop when it reaches the end.

If 'loop' is selected the sample will immediately start again once it reaches the end. Fine adjustments can be made to the start and end points of a sample, this is a very important and useful feature in two main ways.

1. to remove silence from the beginning
2. to give precision to a rhythmic loop.

## Editing the sample

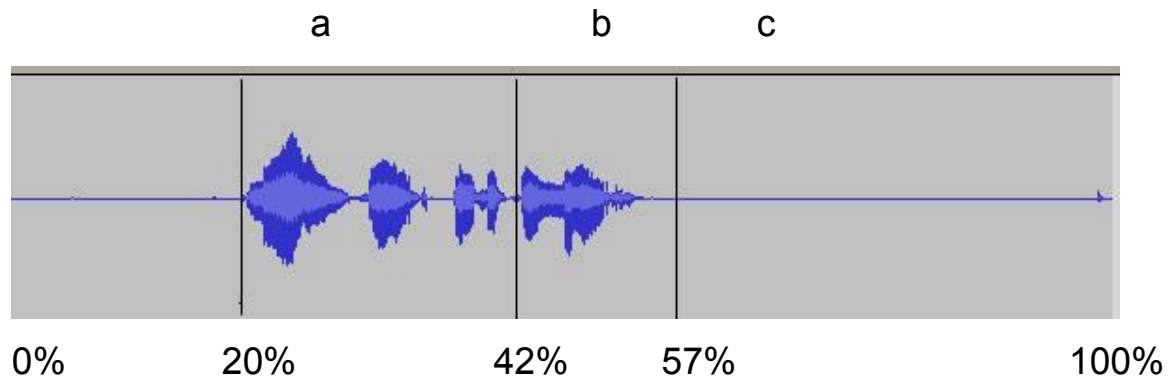
It is usually important to remove any silence from the beginning of a sample, so that when it is played using a beam or switch there is no pause before the sound is heard. If the silence is not removed it is likely that the player will not have the best opportunity to have control of the sound, and in some instances the user may mistakenly believe that there is no sound on the beam or switch.

Page right → from the play sample mode takes us to the sample start at page, here adjustments to the percentage % value enable us to select where in the recording we want our selection to begin.

A further page right → takes us to the 'end at' page. Here adjustments to the percentage % value enable us to select where in the recording we want our selection to end.

In the illustration you can see a visualisation of a recording of someone saying "Mary had a little lamb".

Notice how the start point (a) might be used to remove the silence at the beginning of the recording, and how point (b) might be used to select "Little Lamb" and how point (c) might be selected to remove excessive silence from the end.



(Note: When applied - these settings are assigned for the beam (or switch) and if a different sample is allocated to the same sensor / switch the start / end points will be applied to the new sample.

### What notes to use?

Once the sample has been selected and trimmed in this way, some consideration should be given as to how the sample is to be triggered in the beam.

The trigger mode, divisions, transpose, and range will all have some effect on the way the sample behaves in the beam. For example – if the trigger mode selected is 'multi' the number of divisions 64, the note sequence chromatic, and “Mary had a little lamb” is selected, you might find that at one end of the beam it sounds like Mickey Mouse is talking and at the other end a giant.

### True Note (or Root Note).

To hear the sample played back at the same pitch as it was recorded, the note C3 should be played. There are many ways to assign C3 to a beam or switch and perhaps the easiest is to select note sequence 29 'sample note C3'. Subsequent adjustments can be made to the pitch of the sample using the transpose button and + / -. Note that alteration of the pitch will also effect the speed at which it is played.

### Looping a percussive sample.

Several of the samples supplied with the Soundbeam 5 unit work effectively as a backing drum loop. And often in many of the factory sound sets supplied with the unit samples are triggered using a switch set up so that the first press starts the sample (which will continue (looped) until the second press which will stop the loop.

Of course the sample needs to be set to loop in the sample play mode – but also the trigger mode for the switch (or beam) will need to be set to 'latching on / off'.

In this way 1 division (C3) can be used to trigger the loop at its natural pitch and the same division (C3) can be used to stop the loop.

Adjustment to the loudness or volume for the sample can be achieved via the volume button and by pressing ← or → and navigating to the page which shows a visual representation of the levels for each beam and switch, so by selecting the beam or switch to which the sample

has been allocated, and adjusting the level using the + - buttons, the volume of the sample can be altered.

### Record Session.

This function allows you to record an entire performance as played using the beams switches and microphone.

Press the 'record' button and use the + - and confirm buttons to select 'session' (not 'sample').

Check that the meter levels are active and that a visible response is seen on the display screen when beams and switches are activated, press the record button to begin recording.

Now perform the piece using the beams and switches and microphone (if wanting to add a vocal part to the piece).

When you wish to stop the recording press the record button again as prompted on the display.

Note that as soon as the recording is stopped it is automatically given a number (example: 006) and allocated a place on the SD card. It will be found at the end of the list of samples already on the SD card.

You can listen to the sample immediately by pressing the 'preview' button, and as prompted you can use the F1 button, ←→ + - to rename or delete the sample.

## SD card reading.

The samples on the SD card can be reviewed, added to, renamed or deleted on a computer if a suitable card reader is used.

The sample name can only be 8 characters long and made up of numbers, letters or a limited number of symbols.

Format: (at time of print – Spring 2010) the Soundbeam 5 unit can only make use of samples that are Stereo, 16 bit wav files and can only support micro SD cards up to 2GB capacity

## **Appendix 1 Soundbeam 5 sample library**

The samples are organised alphabetically on Soundbeam 5's SD card. For ease of identification and retrieval they are arranged here in subsets based on various themes. Note that some sounds can work well in more than one category. For example, a lot of the 'bell' samples have an exotic or 'ethnic' feel, the applause sounds in the 'human' category can also work well in 'sport', etc.

All samples which start with a number are rhythm loops. The number refers to beats per minute (BPM) of the loop. The following samples are also musical

### **Backing tracks/Drum loops:**

BLIPBLOOP  
BTAPRIL  
BTATUNE4  
BTBREEZE  
BTCLSKY  
BTRAINY  
BTTULSA  
BTWILD  
HOUSE 1  
HOUSE 2  
HOUSE 3  
HOUSE 4  
HOUSE 5  
HOUSE 6  
UTTEROT

**BELLS**

BELLAMBI  
BELLS 1  
BELLS 2  
BELLS 3  
BELLS 4  
BELLS 5  
BELLS 6  
BELLS BIG

**CONFLICT SOUNDS**

MISSILE  
PLANEW 2  
PLANEWAR  
WAR

**ETHNIC SOUNDS/FESTIVALS**

CHANT  
CHANTING  
CHANT 2  
CHINESNY  
CHINES 1  
EHTNIC 1  
ETHNIC 2  
GAMELAN 1  
GAMELAN 2  
GAMELAN 3  
GAMELAN 4

**HUMAN SOUNDS**

AHH  
AHH-CLAP  
APPLAUSEL  
APPLAU>1  
APPLAU>2  
CHICKID  
CHOIRD>1  
CIRCUS-1  
COUGH  
CROWDRM  
CROWD>1  
EXCITED1  
FOOTSTEPS

GROAN  
HEHEHE  
LAUGH1  
LAUGH2  
NOSEBLOW  
OOAAOOAA  
OOLALA  
OPERA AH  
SNORE  
SPIT  
TALKING  
VOMIT 1-7

**ENVIRONMENT/NATURAL  
SOUNDS**

BIRDS1  
BIRDS2  
BIRDS3  
BIRDS4  
BIRDTR-1  
BROOK  
COW 1-2  
DOGGRO>1  
DOG BARK  
DUCK1-2  
FROGNITE  
FROGS1  
GEESE1-2  
HOOTNI>1  
HORSE  
JUNGLE 1-3  
LION 1  
OWLS  
PIGS  
RAINJU 1  
RAIN 1-2  
ROOSTER  
SEAGULL 1-2  
SEASIDE 1-2  
SEAWAVES  
SHEEP 1-2  
SPLASH  
THUNDER 1-3  
TIGER 1-2  
WAVES  
WHALES  
WIND

### **SPORT SOUNDS**

CHANTF 1  
CHEERBIG  
CHEERS 2  
CHEERSB 2  
FOOTBALL  
SWIMLAPS  
TENNIS  
WHOACR 1

### **INDUSTRIAL SOUNDS**

BIGTH 1  
BUSY-C 1  
CONSTR 1  
FACTORY 1  
FACTORY 2  
FACTORY 3  
FACTORY 4  
FACTORY 5  
FACTORY 6  
FACTORY 7  
METAL 1  
PAPERS 1

### **SCARY SOUNDS**

MONSTER 1  
MONSTER 2  
PSYCHO1  
SCARYS 1  
SLURPS 1

### **SCI-FI SOUNDS**

BLAST 1  
LASERB 1  
LASER 2  
LASER 3  
MADLAB 1  
UFOLAN 1  
UFOSLOW  
UFOVISIT  
UFO 1-6  
WOBBLE

### **TRANSPORT**

CARRACE 1  
CAR REV  
AIRPLA 1  
HELICOP 2  
HELICOP 1  
RACINCAR  
TRACTOR  
TRAFFIC  
TRUCKS 3  
TRUCKS 1  
TRUCK 1-2

### **MISCELLANEOUS SOUNDS**

DOOR  
FIREWORK 1  
GAMES FX 1  
GAMES FX 4  
TV SHOW  
PIANOOLD  
PL50FD1  
PLAYER 1-4

## Appendix 2:

### MIDI controllers

#### Example: adding a chorus effect

- *Select beam 1 and press 'sound'. Select program 20 'church organ'.*
- *Press 'note sequence' and choose Chords-horizon*
- *Press divisions and choose 4 divisions.*
- *Press trigger mode and choose 'cyclic sustain'.*
- *Press 'beam 1' then → and use +/- to select 'air fader'*
- *Press → and use +/- to select 093 'chorus level'*
- *Press → and use +/- to select Depth +100*
- *Press → and use +/- to select Minimum 0*

*Now trigger the chords by breaking the beam, then stay in the beam and move towards and away from the sensor. You should hear the chorus effect increase and decrease.*

*Experiment with different control sources and destinations.*

#### Explanation of MIDI controllers

There are several ways in which continuous expressive modifications - known as MIDI Controllers - can be applied to musical notes. Examples of these are

##### *Volume*

- loudness and softness

##### *Pan Position*

- the apparent source of the sounds - left or right - relative to the listener

For example, the changing speed or varying distances from the sensor of the player's movements in the beam might be used to control the volume of the sounds those movements are generating.

A control chain consists of four different Soundbeam settings.

**Source (FROM)** - what kind of information from beams or switches is to be used.

**Destination (TO)** - which of the MIDI Controllers is to be controlled from this source.

**Control Depth** - the maximum level of the effect.

**Control Minimum** - the minimum level of the effect.

To use a Controller select the beam or switch to which it is to be assigned, then use the → button to navigate through the four settings described above, using the +/- buttons to select the values you want to use. There are two control chains available (A and B) so you could use a combination of volume and chorus, or pan position and pitchbend, for example.

Press → to navigate through:

Controller A source

Controller A destination

Controller A depth

Controller A minimum

Controller B source

Controller B destination

Controller B depth

Controller B minimum

(Note: The two control chains cannot be set to the same destination. For example, if Speed were selected as the source for control chain A, and Relative Length for control chain B, sending them both to Pitchbend would cause a very confusing signal - since both would be modifying the pitch independently. The software has therefore been designed to prevent this, by removing the destination from the list of functions available to other sources, once it has been selected).

Four different categories of control information based on the information derived from interruptions of the beam can be assigned as sources (FROM).

They are:

### **Gate**

Any interruption of the beam - and its withdrawal. If an object moves into the beam, then the Control Depth setting is sent to the Controller. If an object leaves the beam, then the Control Minimum setting is sent to the Controller.

### **Absolute Length**

A number between 0 and 127 relative to the changing distance from the Sensor of an interruption of the beam. The effect assigned will increase to its maximum as the interruption gets nearer the sensor, and decrease to its minimum as it moves further away.

### **Air Fader**

The changing position of an interruption of the beam relative to the sensor - acts as a virtual fader on the MIDI Controller it is being sent to. For example, if the Destination setting is MIDI Controller No 7 - Channel Volume - with a Control Minimum setting of 0, and a Control Depth setting of +100 - an interruption of the beam at the furthest point from the sensor would transmit a Channel Volume of 000 (silence).

Moving the interruption along the beam towards the sensor would offer a steady increase in the volume of the sound - to its maximum at the point nearest the sensor.

If at any point in its movement the interruption ceases, the volume of the sound will remain constant at that level, until another interruption passes through the point in the beam at which the previous interruption had ceased, when the volume of sound will again start changing up or down in accordance with the direction of the interruption's movement towards or away from the sensor.

### **Speed**

A number between 0 and 127 relative to the speed of the movement of an interruption within the beam. The faster the movement, the more of the effect will be applied.

With **switches** simple on/off controller information can be used.

The following Midi Controller effects can be used with Soundbeam 5's internal synthesiser:

### **Pitch Bend**

**001 Modulation Wheel (coarse)**

**007 Volume (coarse)**

**010 Pan Position (coarse)**

**011 Expression (coarse)**

**064 Hold Pedal (on/off)**

**066 Sostenuato Pedal (on/off)**

**093 Chorus Level**

If using an external synthesiser or software the following Controllers may also be available (Note. Not all MIDI sound modules, keyboards and samplers will respond to MIDI Controllers in the same way. Some instruments may not respond at all, others to certain controllers only. If in doubt, users should consult the MIDI implementation section of their instrument's manual).

000 Bank Select	073 Sound Attack Time
002 Breath Controller (coarse)	074 Sound Brightness
004 Foot Pedal (coarse)	075 Sound Control 6
005 Portamento Time	076 Sound Control 7
006 Data Entry	077 Sound Control 8
008 Balance (coarse)	078 Sound Control 9
012 Effect Control 1 (coarse)	079 Sound Control 10
013 Effect Control 2 (coarse)	080 General Purpose Button 1 (on/off)
016 General Purpose Slider 1	081 General Purpose Button 2
017 General Purpose Slider 2	082 General Purpose Button 3 (on/off)
018 General Purpose Slider 3	083 General Purpose Button 4
019 General Purpose Slider 4	091 Effects Level
032 Bank Select (fine)	092 Tremolo Level
033 Modulation Wheel (fine)	094 Celeste Level
033 Breath Controller (fine)	095 Phaser Level
036 Foot Pedal (fine)	096 Data Button Increment
037 Portamento Time (fine)	097 Data Button Decrement
038 Data Entry (fine)	098 Non-registered Parameter (fine)
039 Volume (fine)	099 Non-registered Parameter (coarse)
040 Balance (fine)	100 Registered Parameter (fine)
042 Pan Position (fine)	101 Registered Parameter (coarse)
043 Expression (fine)	120 All Sound Off
044 Effect Control 1 (fine)	121 All Controllers Off
045 Effect Control 2 (fine)	122 Local Keyboard (on/off)
065 Portamento (on/off)	123 All Notes Off
067 Soft Pedal (on/off)	124 Omni Mode Off
068 Legato Pedal (on/off)	125 Omni Mode On
069 Hold 2 Pedal (on/off)	126 Mono Mode Operation
070 Sound Variation	127 Poly Mode Operation
071 Sound Timbre	The numbers not listed here have not been defined.
072 Sound Release Time	

## Appendix 3

### Soundbeam 5 sound library

Off (select this if using a sample)

- 1 Grand Piano
- 2 Bright Piano
- 3 Piano 3
- 4 Honky-tonk Piano
- 5 E. Piano 1
- 6 E. Piano 2
- 7 Harpsichord
- 8 Clavinova
- 9 Celesta
- 10 Glockenspiel
- 11 Music Box
- 12 Vibraphone
- 13 Marimba
- 14 Xylophone
- 15 Tubular Bells
- 16 Dulcimer
- 17 Drawbar Organ
- 18 Percussive Organ
- 19 Rock Organ
- 20 Church Organ
- 21 Reed Organ
- 22 Accordion
- 23 Harmonica
- 24 Tango Accordion
- 25 Acoustic Guitar (nylon)
- 26 Acoustic Guitar (steel)
- 27 Electric Guitar (jazz)
- 28 Electric Guitar (clean)
- 29 Electric Guitar (muted)
- 30 Overdriven Guitar
- 31 Distortion Guitar
- 32 Guitar harmonics
- 33 Acoustic Bass
- 34 Finger Bass
- 35 Picked Bass
- 36 Fretless Bass
- 37 Slap Bass 1
- 38 Slap Bass 2
- 39 Synth Bass 1
- 40 Synth Bass 2
- 41 Violin
- 42 Viola
- 43 Cello
- 44 Contrabass
- 45 Tremolo Strings
- 46 Pizzicato Strings
- 47 Orchestral Harp
- 48 Timpani
- 49 String Ensemble 1
- 50 String Ensemble 2
- 51 Synth Strings 1
- 52 Synth Strings 2
- 53 Choir Aahs
- 54 Voice Oohs
- 55 Synth Choir
- 56 Orchestra Hit
- 57 Trumpet
- 58 Trombone
- 59 Tuba
- 60 Muted Trumpet
- 61 French Horn
- 62 Brass Section
- 63 Synth Brass 1
- 64 Synth Brass 2
- 65 Soprano Sax
- 66 Alto Sax
- 67 Tenor Sax
- 68 Baritone Sax
- 69 Oboe
- 70 English Horn
- 71 Bassoon
- 72 Clarinet
- 73 Piccolo
- 74 Flute
- 75 Recorder
- 76 Pan Flute
- 77 Blown Bottle
- 78 Shakuhachi
- 79 Whistle
- 80 Ocarina
- 81 Lead 1 (square)
- 82 Lead 2 (sawtooth)
- 83 Lead 3 (calliope)
- 84 Lead 4 (chiff)
- 85 Lead 5 (charang)
- 86 Lead 6 (voice)
- 87 Lead 7 (fifths)
- 88 Lead 8 (bass + lead)
- 89 Pad 1 (new age)
- 90 Pad 2 (warm)

91 Pad 3 (polysynth)	140 Detuned Organ 1
92 Pad 4 (choir)	141 Church Organ 2
93 Pad 5 (bowed)	142 Church Organ
94 Pad 6 (metallic)	143 Church Organ
95 Pad 7 (halo)	144 Accordion French
96 Pad 8 (sweep)	145 Harpsichord
97 FX 1 (rain)	146 Coupled Harps
98 FX 2 (soundtrack)	147 Coupled Harps
99 FX 3 (crystal)	148 Clavinova
100 FX 4 (atmosphere)	149 Clavinova
101 FX 5 (brightness)	150 Clavinova
102 FX 6 (goblins)	151 Celesta
103 FX 7 (echoes)	152 Celesta
104 FX 8 (sci-fi)	153 Synth Brass 1
105 Sitar	154 Synth Brass 2
106 Banjo	155 Synth Brass 3
107 Shamisen	156 Synth Brass 4
108 Koto	157 Synth Brass 1
109 Kalimba	158 Synth Brass 2
110 Bag pipe	159 Synth Brass 3
111 Fiddle	160 Synth Brass 4
112 Shanai	161 Fantasia
113 Tinkle Bell	162 Syn Calliope
114 Agogo	163 Choir Aahs
115 Steel Drums	164 Bowed Glass
116 Woodblock	165 Soudtrack
117 Taiko Drum	166 Atmosphere
118 Melodic Tom	167 Crystal
119 Synth Drum	168 Bagpipe
120 Reverse Cymbal	169 Tinkle Bell
121 Guitar Fret Noise	170 Ice Rain
122 Breath Noise	171 Oboe
123 Seashore	172 Pan Flute
124 Bird Tweet	173 Saw Wave
125 Telephone Ring	174 Charang
126 Helicopter	175 Tubular Bells
127 Applause	176 Square Wave
128 Gunshot	177 Strings
129 Piano 1	178 Tremolo Strings
130 Piano 2	179 Slow Strings
131 Piano 3	180 Pizzicato Strings
132 Detuned EP 1	181 Violin
133 E. Piano 1	182 Viola
134 E. Piano 2	183 Cello
135 Detuned EP 2	184 Cello
136 Honky Tonk	185 Contrabass
137 Organ 1	186 Harp
138 Organ 2	187 Harp
139 Organ 3	188 Nylon String Guitar

189 Steel String Guitar  
190 Chorus Guitar  
191 Funk Guitar  
192 Sitar  
193 Acoustic Bass  
194 Fingered Bass  
195 Picked Bass  
196 Fretless Bass  
197 Slap Bass 1  
198 Slap Bass 2  
199 Fretless Bass  
200 Fretless Bass  
201 Flute  
202 Flute  
203 Piccolo  
204 Piccolo  
205 Recorder  
206 Pan Flute  
207 Soprano Sax  
208 Alto Sax  
209 Tenor Sax  
210 Baritone Sax  
211 Clarinet  
212 Clarinet  
213 Oboe  
214 English Horn  
215 Bassoon  
216 Harmonica  
217 Trumpet  
218 Muted Trumpet  
219 Trombone  
220 Trombone  
221 French Horn  
222 French Horn  
223 Tuba

224 Brass  
225 Brass 2  
226 Vibraphone  
227 Vibraphone  
228 Kalimba  
229 Tinkle Bell  
230 Glockenspiel  
231 Tubular Bell  
232 Xylophone  
233 Marimba  
234 Koto  
235 Taisho Koto  
236 Shakuhachi  
237 Whistle  
238 Whistle  
239 Bottle Blow  
240 Pan Flute  
241 Timpani  
242 Melo Tom  
243 Concert BD  
244 Synth Drum  
245 Melo Tom  
246 Taiko  
247 Taiko  
248 Reverse Cymbal  
249 Castanets  
250 Tinkle Bell  
251 Orchestra Hit  
252 Telephone  
253 Bird  
254 Helicopter  
255 Bowed Glass  
256 Ice Rain

## Appendix 4

### Soundbeam 5 Note Sequence library

1. Arpeggio major triad
2. Arpeggio minor triad
3. Major triad + 7, 9, 11
4. Minor triad + 7, 9, 11
5. Major triad + 6
6. Major triad + 7
7. Pentatonic scale
8. Whole tone scale
9. Gapped hexatonic
10. Diatonic major
11. Harmonic minor
12. Aeolian mode
13. Dorian mode
14. Lydian mode
15. Mixolydian mode
16. Blues scale
17. Chromatic scale
18. Chord sequence
19. Pentaset 1
20. Pentaset 2
21. Snowy Night
22. Bristol blues
23. Jazz 01 scale
24. Tintagel octave
25. Blueming scale
26. Synth dream
27. Cine dream
28. User default sequence
29. Sample note C3
30. Blank scale
31. Chords- horizon
32. Horizon
33. Air
34. 3 Blind Mice
35. London
36. Twinkle
37. Old MacDonald
38. Morning melody
39. Morning chords
40. Tim chords 19
41. Tangy
42. Tangmel
43. Tangchordz
44. A bit rushy
45. Rusty
46. Bass4
47. Am Em
48. Artherial
49. Ndmel
50. Club brass

## Appendix 5: Drum and percussion sounds

- Select beam or switch to which the drum is to be assigned.
- Select note sequence 29
- Select 1 division
- Select Midi channel 10 (press MIDI and right arrow twice. Note: this is the default setting for switch 6)
- Press 'pitch transpose' and use the +/- buttons to select the instrument using the settings listed below

-25 Bass Drum 2  
-24 Bass Drum 1  
-23 Side Stick/Rimshot  
-22 Snare Drum 1  
-21 Hand Clap  
-20 Snare Drum 2  
-19 Low Tom 2  
-18 Closed Hi-hat  
-17 Low Tom 1  
-16 Pedal Hi-hat  
-15 Mid Tom 2  
-14 Open Hi-hat  
-13 Mid Tom 1  
-12 High Tom 2  
-11 Crash Cymbal 1  
-10 High Tom 1  
-9 Ride Cymbal 1  
-8 Chinese Cymbal  
-7 Ride Cymbal 2  
-6 Tambourine  
-5 Crash Cymbal 2  
-4 Cowbell  
-3 Crash Cymbal 3  
-2 Vibraslap

-1 Ride Cymbal 3  
0 High Bongo  
+1 Low Bongo  
+2 Mute High Conga  
+3 Open High Conga  
+4 Low Conga  
+5 High Timbale  
+6 Low Timbale  
+7 High Agogô  
+8 Low Agogô  
+9 Cabasa  
+10 Maracas  
+11 Short Whistle  
+12 Long Whistle  
+13 Short Güiro  
+14 Long Güiro  
+15 Claves  
+16 High Wood Block  
+17 Low Wood Block  
+18 Mute Cuíca  
+19 Open Cuíca  
+20 Mute Triangle  
+21 Open Triangle

## Troubleshooting -

### Switchbox doesn't communicate?

- Press reset on the switchbox, if this doesn't work – reboot Soundbeam 5 controller, select Soundset 1 and press reset on switch box again, you should see a small green light on switch box flicker when button is pushed.
- Check a switch is plugged into socket 1 on the Switchbox, press the switch and look for the corresponding red LED light flashing on the Soundbeam 5 controller, you should also hear a sound. If this fails,
- change the batteries (3xD cells) in the Switchbox .

### No sound is coming out?

- Check the power is on.
- Check that the speakers are connected.
- Check volume is turned up ( volume button) and then page left for individual beam and Switch volumes, then left again to int. Synth volume.
- Check to see that the sensors are connected and a red light flashes on the controller when you move in the beam.
- Try Selecting Soundset 1 and press confirm and then move in beam to see if it now works.
- Check the internal midi routing (to the soundchip etc.) by pressing the yellow MIDI button, display should then read: **MIDI Set up** - Midi to (global) **Int+1+2+USB**, if it doesn't say this ( maybe it shows just 2+usb) use the +or- buttons to select **Int+1+2+USB**.

### Sensor triggers when there is no obvious interruption?

Adjust position of sensor, avoid aiming at reflective surfaces, even if they are further away than the beams set range, as it can still be affected beyond the active section.

### Sensor doesn't work until 30cm away from it?

The sensors have been designed to have this 'blank ' area for chord clearing etc. (when you swish your hand through this blank area to stop a sustaining note or chord from playing).

### The sensors emit a loud buzz - it gets louder if the beam is above 2m.

As the sensors active range is increased, it needs more energy to work properly and this in turn makes the ticking sound louder.

### Sample record is very quiet?

You may need to increase the input volume and global volume – see page 45.

### Session record is very quiet?

You need to increase the Global volume – see page 45.

### Can't find the sample I just recorded?

The sample will be listed at the end of the sample library. The next time you power on the SB5, it will be listed alphabetically/numerically in the Sample Library

### Delete a Sample/Session

Press F1 then page right and follow instructions (see page 47)

### Can't playback the sample I just made?

- Try pressing the preview button
- Select the beam or switch you want to play it back on (see page 47 no.6)
- Press 'Note Sequence' button, use +/- keys to select no. 29: Sample Note C3 (you can change this note sequence to something else later if you want to use it on a beam).
- Check Transpose is set to 0
- Check Start Note Sequence is set to 1 by pressing Division button and paging right (see page 40).

### Midi doesn't get to external computer/sound module?

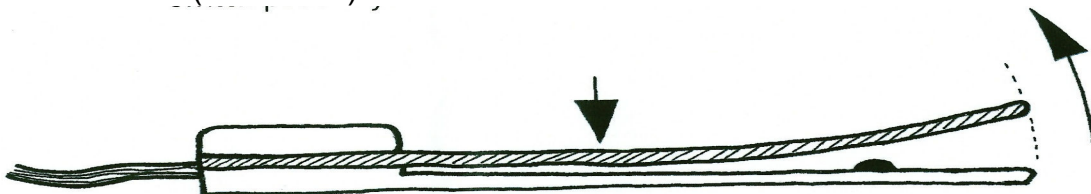
Check the internal midi routing (to the soundchip etc.) by pressing the yellow MIDI button, display should then read: **MIDI Set up** - Midi to (global) **Int+1+2+USB**, if it doesn't say this ( it might be showing maybe 2+usb etc.), use the + or - buttons to select **Int+1+2+USB**. See page 44 for more details.

### Chord clear doesn't work?

Try increasing the 'Start at' range setting to 30cm and increase 'End at' to greater than 70cm. See page 34.

### Switch doesn't click / work?

To remedy this, simply press your thumb down firmly on the middle of the plate whilst pulling the end up with your fingers. Flex the plate a few times until the switch works (see below).



### When I change the volume of switch 3, switches 5, 6, 7 also change - why?

Because all these switches are assigned to the same midi channel (see page 44). To enable individual volume control, change midi channel for switch or beam.

### When I play the sample on switch 3 - the sample on switch 2 stops.

If you already have a sample playing on switch 1, the above will happen as you can only have up to two samples playing at the same time.

### When the beam is at 3.5m or so it doesn't pick up my movement.

As this is at the very edge of the sensors playing range, it will play best with larger, bolder movements.

**Glossary** – terms used in this manual. (*thanks to Wikipedia for some of this*).

**Chord clear** – in any of Soundbeam's *sustain* trigger modes, interruption of the chord clear area between the sensor and the range 'start at' point will silence the sound.

**Divisions** – this determines the number of separate notes or chords available on a given switch or beam. A divisions setting of 1 on beam will give one note regardless of the length (range) of the beam or where it is interrupted along its active length. A divisions setting of, for example, 5 will make 5 notes or chords available to be played either sequentially (cyclic trigger), together at the same time (sustain) or with continuous movement in the beam (multi) (see *Trigger mode*).

**Feedback** – audio feedback (also known as the Larsen effect after the Danish scientist, Søren Larsen, who first discovered its principles) is a special kind of feedback which occurs when a sound loop exists between an audio input (for example, a microphone or guitar pickup) and an audio output (for example, a loudspeaker). Most audio feedback results in a high-pitched squealing noise familiar to those who have listened to bands at house parties, and other locations where the sound setup is less than ideal. Usually this occurs when live microphones are pointed in the general direction of the output speakers.

**Loop** – samples may be "looped" by defining points at which a repeated section of the sample starts and ends, allowing a relatively short sample to play endlessly. The default setting for the loop points are 0% (start at) and 100% (end at).

**MIDI - (Musical Instrument Digital Interface)** - is an industry-standard protocol defined in 1982 that enables electronic musical instruments such as keyboard controllers, computers, and other electronic equipment to communicate, control, and synchronize with each other and to exchange system data.

**Note sequence** – a series of notes and/or chords.

**Polyphony** –The polyphony value when assigned to a beam or switch will govern the maximum number of notes which can be played at the same time using that beam or switch.

**Range** – defines the active length of a beam, ‘start at’ being the point closest to the sensor at which sounds will be triggered and ‘end at’ being the point furthest from the sensor at which sounds will be triggered.

**Sample** – samples, individual recordings of any sound, recorded using microphone or loaded onto SD card using a computer. A reference centre pitch (true note / root note) indicates the actual frequency of the recorded note.

**Session** – in Soundbeam, a *session* recording (as opposed to a *sample* recording) will contain everything played on all beams and switches during a performance, possibly for transfer to disc via Soundbeam’s SD card connected to a computer.

**Soundset** – an assembly of between one (for example for one beam) and twelve (for four beams and eight switches) musical or sampled parts either preset or user composed which allow for ensemble or group play using musically or thematically compatible material.

## **SOUNDBEAM 5: CREDITS**

Cindy Crossland, Soundbeam Project  
Penny Delmon, Mammal Create  
Simon Headford, BOLA  
Kjell Karlsson, [www.datamusic.org](http://www.datamusic.org)  
Mark Newbold, Soundbeam Project  
Adrian Price, Soundbeam Project  
Maff Scott, The Egg  
Tim Swingler, Soundbeam Project  
Nye Williams, Soundbeam Project  
Edward Williams, Soundbeam Project  
Judy Williams, Soundbeam Project

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