

Chapter 4

Setups and Zones

The full power of the PC88 is available when it is in the “**MIDI Setups**” (or just “Setups”) mode. In this mode, the PC88 can take on the identity of four distinct instruments and four distinct MIDI transmitters, all of which can use the same set of physical controllers, or any subset thereof. For example, you can create a keyboard which is split into four different regions, each of which has its own instrument (say, drums, bass, piano, and sax), and each of which also transmits on its own MIDI channel, so that four different external MIDI instruments can be played individually by playing on different parts of the PC88 keyboard.

Each region is called a “Zone”. Zones can be next to each other on the keyboard, or on top of each other, or overlap, or be nowhere near each other — there are no limitations. Zones can even be defined that aren’t on the keyboard — they are above or below the PC88’s 88-key range — but they will still produce non-note MIDI data.

Besides Voice and MIDI channel, each Zone can also have its own velocity characteristics, transposition (for internal sounds or for outgoing MIDI data), and definitions for each physical controller. Any controller — wheel, slider, button, or pedal — can perform up to four different functions in the four zones. For example, a slider may control volume in two different zones, but with opposite “senses”, so that moving the slider causes the sound in one zone to fade out while the other fades in. Or a pedal can control the pan position of two different synths, set in opposition to each other, so that moving the pedal causes the sounds to literally move past each other in the stereo field.

This ability to use a single set of physical controllers to independently and simultaneously address parameters on four internal sounds and/or MIDI channels gives the PC88 tremendous flexibility as a master keyboard for studio or live performance.

If your studio or performance rig includes synthesizers or processors that can respond to MIDI controllers to modify their timbre or effects parameters, the varieties of expression available with the PC88 are even greater: for example, a single pedal motion could simultaneously brighten one sound, increase its vibrato speed, and move it further back into a reverb space, and at the same time make the timbre of a second sound rougher, pan it hard to the right, lengthen the release segment of the envelope, and give it Doppler-effect pitch shift.

Analyzing a Setup

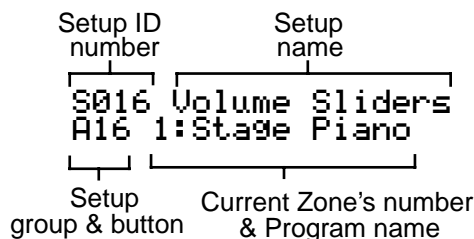
Before we start making Setups, let’s examine one and see what goes into it. The PC88 is shipped with 32 pre-programmed Setups (64 if the VGM board is installed), which are selected, like the Internal Voices, in groups of 16. The factory Setups make good templates for designing your own. To get to them, press the **MIDI Setups** button, then use one of the data entry methods to indicate the Setup you want.

For this example, press the **MIDI Setups** button followed by the **Synth Pad** button (#16).

The display (as shown below) now shows the name of the Setup, “Volume Sliders,” as well as its numbers. The top number (starting with “S”) is the number of the Setup. There are 128 slots for Setups altogether. All of them, even the ones that come with factory programs in them, are user-programmable. (Factory Setups will never be erased from ROM, however. What you are actually doing when you modify a Setup is saving over it into RAM with the same Setup number. If you later delete the Setup in RAM, the preset ROM program will again be stored at that number.) Next to the Setup number is the Setup name.

The bottom line of the display shows the group letter for the Setup (A-H), the number of the preset button that calls it, the Zone number (1); a colon (“:”); and then the name of the Voice (if

there is any) in the current Zone. Even though we are looking at only one Zone, we are hearing four instruments simultaneously, and so the sound coming from the PC88 is much thicker than we've heard previously. The Zone buttons 1, 2, 3, and 4 are all lit green, showing they are all playing.



Selecting Parameters

The Voice, or program, assigned to a Zone is just one of its parameters. Let's look at some of the others. Press **MIDI Transmit**. The upper half of the display shows the Zone number, the bank number, and the program number — this information is almost always there when you're editing zone parameters. The lower half of the display shows the MIDI channel that the Zone will transmit on: 1.

There are other MIDI parameters available on this menu, which are accessed by pressing the right cursor (>>>) button. The first parameter you come across is the "destination" of the notes played in the Zone: do they play the sounds within the PC88 ("Local"), or do they go out the MIDI jack ("MIDI"), or both. The next parameters accessed by the cursor button are Pitch Bend range, coarse and fine. You can get back to the first parameter by scrolling with the left cursor (<<<) button, or by pressing **MIDI Transmit** again — pressing a Zone Parameter button always gets you to the first item on its menu.

Another menu of parameters is accessed by pressing the **Program** button under Zone Parameters. The first parameter you see is the Voice assigned to the Zone, with its name and number. Press the *left* cursor button (<<<) and you can select the bank that the Voice belongs to. If you have the VGM board installed, you can use any sounds in Banks 1, 2, or 3 in a Zone — not just the Internal Voices from Bank 0.

You can also access an empty bank (or Voice): doing this means that the Zone will not produce any sound on the PC88, but it will still send a bank and program number, as well as notes and controllers, to an external MIDI synthesizer whose receive channel matches this Zone's.

Key Range accesses three parameters; **Transposition** only a single parameter; and **Velocity**, as we've seen earlier, five parameters. **Controllers** accesses many parameters. All of these are detailed in Chapter 5.

Selecting Zones

When you are looking at a parameter, you can look at the same parameter in another zone by pressing its button — **Zone 2**, **Zone 3**, or **Zone 4**. When you press a Zone button, that Zone becomes the "current Zone". This will happen even if the selected Zone is off. If a Zone is off, its button will be unlit.

Go back to an active Zone by pressing its button. Now press it again. When you press the button of a Zone that's already current, it turns orange, and the sound of the Zone is muted. The display shows a "-" next to the zone number, indicating it is silent. Press the same Zone button again (once), and it un-mutes. To mute a different Zone, press its button *twice*: once to make it current and once to mute it. You can have any combination of Zones muted or active at any time.

If you want to hear just one Zone, and temporarily mute the notes on all the others, use the “**Solo**” button. The button for the current Zone turns red, and the only sound you hear is that Zone’s. To solo a different Zone, just push that Zone’s button. To hear all of the Zones, turn off **Solo** by pressing it again. You can Solo a muted zone (make an orange zone red) which will turn it on, and will also turn off all of the others. However, if a Zone is soloed, you can’t mute it (make a red one orange); you would have to first un-solo it.

When one Zone is soloed, the other Zones are not completely dead: only their *notes* are muted. Any controller data associated with those Zones will still be generated.

I Don’t Hear a Zone: Is It Active (But Not Soloed), Muted, or Off?

There are important differences between a Zone that is silent because a different Zone has been soloed (green light, when another Zone is red); a Zone that is muted (orange light); and one that is off (no light).

- A Zone *not soloed* (but otherwise active) does everything except play notes — controllers are still sent out the MIDI Out jack.
- A *muted* Zone doesn’t do anything while it’s muted, except that it sends exit and entry values for its programs and controllers when you enter or leave the Setup (see Chapter 5). A muted Zone does have a program number and a MIDI channel, as well as a complete set of other parameters, all of which come into play when the Zone is un-muted.
- A Zone that is turned *off* has no MIDI channel. It generates no data until you give it a MIDI channel to make it active, or switch to a different Setup in which that Zone is active.

Color:	Green	Green (but another is Red)	Red	Orange	None
State:	Active	Active (not Soloed)	Soloed	Muted	Off
Data Generated:					
Notes	✓	x	✓	x	x
Controllers	✓	✓	✓	x	x
Program number	✓	✓	✓	✓	x
Entry and Exit values	✓	✓	✓	✓	x

You can quickly disable and enable an individual sound or a MIDI instrument by changing a Zone’s button from green to orange. This can be very useful for live performance, to bring layers of sound in and out quickly. When you save a Setup, the mute and solo statuses of the Zones are stored along with the rest of the parameters, and when you recall the Setup, those statuses are automatically enabled. So, you could call up a Setup that has one Zone Soloed, and instantly add instruments by turning off Solo. Or you can call up a Setup that has one or more muted Zones, and un-mute them as you play.

To turn off a Zone, press **MIDI Transmit** and move the alpha wheel counterclockwise (to the left), past “01”, until the MIDI Channel parameter changes to “Off”. The Zone is now completely disabled: the light in its button goes off. Press the **Program** button. Where you would normally see a program name, it now says “Zone Off”. Turn the wheel and it still says “Zone Off”. To turn a Zone back on again, simply assign it a MIDI Channel from the **MIDI Transmit** function.

Creating a Setup from an Internal Voice

There are two ways to create a Setup. One is to take an existing Setup and modify it. The other is to build one up from an Internal Voice. An Internal Voice, as you may have figured out by now, is in most respects a Setup with Zones 2, 3, and 4 turned off. Remember that the controllers on Zone 1 will by default have the assignments that they had in Internal Voices mode (slider A: Ctl 91, slider B: Ctl 93, etc.) Adding Zones to an Internal Voice will turn it into a Setup. Let's try it.

Press **Internal Voices** and then **Classical Piano**. Press the **Zone 2** button, and the display will show a program number for the Zone but the name will be "Zone Off". Go to **Zone Parameters** and press **MIDI Transmit**. The MIDI Channel is "Off". Use the alpha wheel to set the MIDI Channel to "2". The **Zone 2** button glows orange, indicating the Zone is now active, but muted. Press it to make it active. Press the **Program** button and then, on the numeric keypad, **1, 3, Enter**. This will bring the Acoustic Bass sound into Zone 2. (Or, if you have the VGM board, try **1, +/-, 3, 5, Enter**. This will put the Fretless Bass sound from Bank 1 — the General MIDI bank — into the Zone.)

Let's split this keyboard. Press **Key Range** under **Zone Parameters**. The display shows the range C-1 to G 9, which is the entire MIDI range (128 notes). We'll leave the low limit where it is, but we'll set the upper limit so that the bass sound only plays on the bottom 2-1/2 octaves of the keyboard. Press the right cursor button(>>>) so that the underline cursor is underneath the "G" in the display. Press the **Enter** button and hold it, and play E3 (below C4) on the keyboard. Now play the keyboard. From the bottom of the keyboard to two octaves and a fifth higher, you will hear the bass sound and the piano sound. Above that, you will hear only the piano sound.

To limit the low range of the piano sound, press **Zone 1** to make it current. Use the **left cursor** button to bring the underline below the "C" in the display. Again press and hold **Enter**, and play C3 (just below E3) on the keyboard. The notes at the bottom of the keyboard now belong only to the bass. The piano starts in at the third "C", and the bass stops above the third "E". We've created two Zones with different instruments, which overlap for a short interval on the keyboard.

Let's save the entire Setup—all two Zones. Press **Store** (also under **Zone Parameters**) and the display says "Save Setup 33?" (or 65 if you have the VGM board). This is the lowest-numbered Setup location that does not currently have a Setup in it. Press the right cursor button (>>>) and the display changes to "Rename Setup 33?". Press **Enter** on the numeric keypad, and you can now create a name for the Setup before you save it. (If you don't, the Setup will be named "Setup 33".) To change the letters in the name, first select which letter to change with the cursor keys, and then change each letter with the Alpha wheel. Press **Enter** when you're done, and the display again asks "Save Setup 33?". Press **Enter**, and the new Setup, with its new name, is stored as Setup 33. There's more about saving and naming in the next chapter.