Chapter 10
MIDI Mode

Press the MIDI mode button to enter MIDI mode. Here you'll configure the K2500's response to incoming MIDI messages, as well as customize those that the K2500 sends to other MIDI devices in your system. MIDI mode is also where you choose the Control Setup, which sets the controller behavior for your programs.

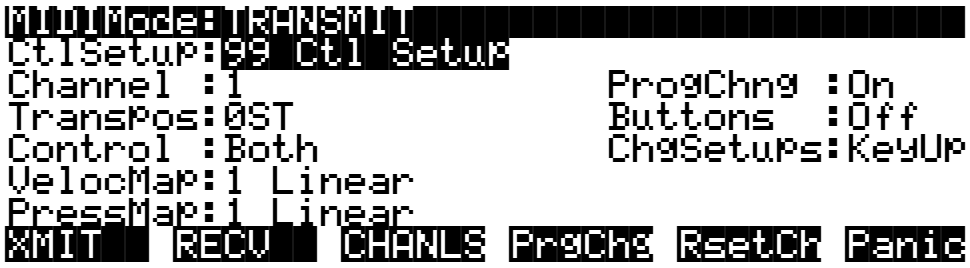
When you enter MIDI mode, you'll see one of the three available MIDI mode pages. When you exit MIDI mode, the K2500 remembers which page you were on. The next time you select MIDI mode, that page appears.

The Transmit (XMIT) Page

Note: a number of parameters that were on the MIDI XMIT page in pre-V2 versions of the K2500 software are now handled from with Setup mode. Refer to Chapter 7 for complete details on the new Setup mode features.

Press the XMIT soft button, and the MIDI XMIT page appears. Use these parameters to control how the K2500 sends MIDI information to its MIDI Out port. These settings will affect the K2500's response to your MIDI controller (like Mod Wheel messages, etc.). It also affects the responses of other MIDI devices receiving MIDI from the K2500, when the Local Keyboard Channel parameter is set to match the transmission channel of your MIDI controller.

It's important to remember that many of the settings of the XMIT page are in effect only when a *program* is selected, either in Program mode or in Quick Access mode. If a *setup* is selected, in Setup mode or in Quick Access mode, the setup's MIDI settings override the corresponding settings on the XMIT page. The XMIT page looks like this:



PARAMETER	RANGE OF VALUES	DEFAULT
CONTROL SETUP	Setup list	97 Control Setup
CHANNEL	1 to 16	1
TRANSPOSITION	±60 semitones	0
CONTROL	Both, MIDI, Local	Both
VELOCITY MAP	Velocity Map list	1 Linear
PRESSURE MAP	Pressure Map list	1 Linear
PROGRAM CHANGE	Off, On	On
BUTTONS	Off, On	On
CHANGE SETUPS	Immed, KeyUp	KeyUp

Keep in mind that only the Program Change Type, Program Change, and Buttons parameters will operate as programmed if the LocalKbdCh parameter does not match the transmit channel

of your MIDI controller. If you set them to match, the remaining parameters will take effect as well.

Control Setup

This is where you define the Control Setup, layer one of which is used by all K2500 programs. Refer to chapters 6 and 7 of this manual for more information on the Control Setup.

Channel

This defines which MIDI channel the K2500 uses to transmit MIDI messages. The value for this parameter matches the current MIDI channel displayed on the top line of the Program mode page. If you change the current MIDI channel while in Program mode, the setting of this parameter will change accordingly, and vice versa.

Transpose

This parameter affects the transposition that's applied to the MIDI data stream. Adjusting this parameter will transpose the K2500's notes, as well as notes on slaves receiving from the K2500. This transposition setting is not overridden when you use Setup mode, but is *added* to the transposition settings for the currently selected setup.

Control

Here you determine where the K2500 sends MIDI information. A value of MIDI sends the MIDI signal to the K2500's MIDI Out port, but not to the K2500 itself. This is also known as Local Control Off.

If you're using your K2500 with a MIDI sequencer and have the K2500's MIDI Out connected to the sequencer's MIDI In, and the sequencer's MIDI Out connected to the K2500's MIDI In a MIDI loop, you'll need to select a value of MIDI when your sequencer's Patch Thru feature (also known as Play Thru, Soft Thru, etc.) is on. This will prevent the K2500's MIDI signal from looping back on itself, which can cause problems. If you deactivate your sequencer's Patch Thru feature, set the Control parameter's value to Both, and the K2500 will play normally. Also, you may want to set the value of the LocalKbdCh parameter to None when you have a MIDI loop, because you can have problems with doubled notes and MIDI overload. You won't have problems, however, as long as the channels transmitted by the K2500 are all different from the incoming MIDI channel.

A value of Local disables the MIDI Out port. Use this setting when you want to play the K2500, but not to send any MIDI information to other MIDI instruments (local control only). A value of Both (the default) enables you to play the K2500 and send MIDI information from its MIDI Out port.

Velocity Map—Transmit (VelocMap)

The transmit velocity map affects the way the K2500 sends velocity information to its MIDI Out port. Different maps generate different velocity values for the same attack velocity—that is, they apply different curves to the attack velocities the K2500 receives and remap them to new velocities before transmitting them to the MIDI Out port.

Important: The MIDI velocity maps affect only those MIDI velocity values transmitted via the K2500's MIDI Out port, and are used exclusively to adjust the response of MIDI devices connected to the Out port. If you have a DX7 connected to your K2500, for example, and the DX is distorting, selecting a transmit Velocity Map like "Hard2" should handle the problem. Changing the velocity map on this page will not affect the response of the K2500's sound engine to your MIDI controller. That's done on the RECV page. See Chapter 17 if you're interested in editing velocity maps.

Also important: Both the transmit and receive velocity maps should be left at values of Linear unless you really need to change them. The linear maps will give you the most consistent results.

If you have a keyboard model of the K2500, keep in mind that the setting of the Veltouch parameter in Master mode also has an effect on the transmit velocity map.

Pressure Map—Transmit (PressMap)

This is like the VelocMap, but it controls the aftertouch values sent by the K2500 to its MIDI Out port. Use this exclusively to adjust the response of MIDI devices connected to the K2500's MIDI Out port. Changing the pressure map on this page will not affect the response of the K2500's sound engine to your MIDI controller. That's done on the RECV page. See Chapter 17 for information about editing pressure maps.

Program Change (PChng)

When On, the K2500 will send program change commands to its MIDI Out port when you select programs or setups from the front panel or from your MIDI controller. Select a value of Off when you want to change programs on the K2500 but don't want to send program change commands to the MIDI Out port. This parameter doesn't affect the type of program change command that's sent; it just determines whether any command is sent at all.

Buttons (Bttns)

If you set the value of the Buttons parameter to On, the System Exclusive (SysEx) messages generated by your button presses are sent to the MIDI Out port. This enables you to do two things: control a remote K2500 (or K2000), and record sequences of programming button presses to a sequencer or SysEx software package.

If you have the MIDI In port of another K2500 (or K2000) connected to the first one's MIDI Out port, the second K2500 (or K2000) will respond to every button press on the first K2500 (or K2000), just as if you were pressing the buttons of the second one. Keep in mind that both devices must be in exactly the same state (the same page in the same mode, with identical lists of RAM objects) when you start. Otherwise the button presses you make on the first device may execute other functions on the second device.

Much more useful is to send streams of button presses to your sequencer. When you dump them from your sequencer back to the K2500, the K2500 responds as if the buttons were actually pressed. This enables you to set up a variety of "macros," which are strings of commands that can be executed all at once by a single initial command. For example, you can record a sequence of button presses that enters Disk mode, selects a specific SCSI device, and loads one or more banks of samples while you do something more entertaining. Again, it's important to keep in mind that the state of your K2500 must be identical to its state when you recorded the sequence of button presses. If you've added or deleted any objects stored in RAM, for example, the sequence of button presses will select different objects when you play back the button press sequence.

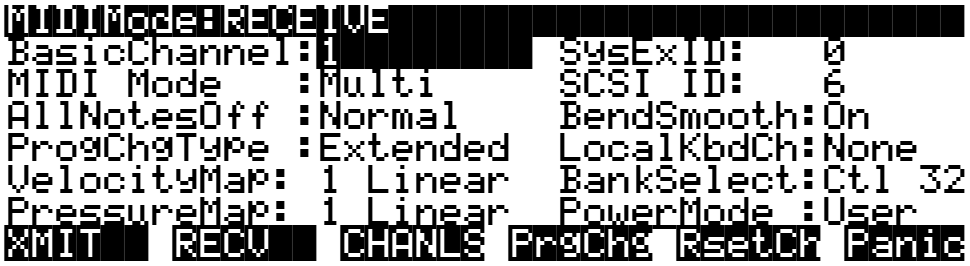
Note: Make sure this parameter is set to Off before you initiate a SysEx dump of any kind. If this parameter is On when you start a dump, the buttons you press to begin the dump will also generate SysEx messages, which will probably corrupt the SysEx dump.

Change Setups (ChgSetups)

Choose KeyUp to indicate that you only want setup changes to take place when you've released all currently held notes. Choose Immed to indicate that you want such changes to happen immediately.

The Receive (RECV) Page

Press RECV to select the Receive page, where you define the K2500's response to incoming MIDI signals.



PARAMETER	RANGE OF VALUES	DEFAULT
BASIC CHANNEL	1 to 16	1
MIDI MODE	Omni, Poly, Multi	Multi
ALL NOTES OFF	Normal, Ignore	Normal
PROGRAM CHANGE TYPE	(See below)	Extended
VELOCITY MAP	Velocity Map list	1 Linear
PRESSURE MAP	Pressure Map list	1 Linear
SYSTEM EXCLUSIVE ID	0 to 126	0
SCSI ID	0 to 7	6
BEND SMOOTH	On, Off	On
LOCAL KEYBOARD CHANNEL	None, 1 to 16	None
BANK SELECT	0 only, 32 only, Ctl 0, Ctl 32	Ctl 32
POWER MODE	User, Demo	User

Basic Channel

The basic channel determines which channel will always be available to receive MIDI information. Depending on the MIDI receive mode (below), the Basic channel may be the only receiving channel, or one of several.

MIDI Receive Mode (MIDI Mode)

The MIDI Mode parameter determines the MIDI receiving capabilities of the K2500. When set to Omni, the K2500 responds to incoming MIDI events on all MIDI channels, and plays them on the current channel. This is normally used for diagnostic purposes only.

At a setting of Poly, the K2500 will respond only to events that are sent on the same channel as the K2500's current MIDI channel (the one displayed on the top line of the Program mode page). In Poly mode, the currently selected channel is always the basic channel, so if you change channels, the basic channel changes accordingly.

With a value of Multi (the default), the K2500 will respond to events on all active channels. This is the mode you'll use when you're driving the K2500 with a sequencer, since you can play a different program on each channel. At this setting, you can turn individual channels on and off (on the CHANLS page, described later in this chapter).

All Notes Off

If this parameter's value is set to Normal, the K2500 will respond to All Notes Off messages received over MIDI. Set to Ignore, these messages will be ignored. If you're using a Roland product as a MIDI controller for your K2500, you'll want to set the value of this parameter to Ignore. This is because Roland products occasionally send an All Notes Off message even when notes should normally be sustained. You might find all your sustains missing from your

sequence, for example, if you're driving your K2500 from one of Roland's hardware sequencers. Setting this parameter to Ignore will take care of this problem.

Regardless of the setting for this parameter, the K2500 will always respond to its own Panic button by shutting off all active notes and controllers.

Program Change Type (ProgChgType)

This determines how the K2500 will respond to program change commands received via MIDI. The value of this parameter automatically matches the value of PChgType on the XMIT page; changing it on one page will change it on the other. See "Program Change Formats" at the end of this chapter for an explanation of the various values available for this parameter.

Velocity Map—Receive

The velocity map applies a preset curve to incoming velocity messages. It maps incoming velocity levels to new levels that correspond to the eight dynamic levels used by the VTRIGs and keymaps for velocity level selection. See Chapter 17. Normally you'll leave this set to 1 Linear. Adjust this parameter's value only when you need to alter the K2500's response to the velocity messages from your MIDI controller, for example, if you're getting too much or too little volume when you play, or when you're using a sequencer to drive the K2500.

Pressure Map—Receive

Like the velocity map, this determines how the K2500 responds to incoming pressure (aftertouch) messages.

System Exclusive ID (SysExID)

The SysExID parameter differentiates between more than one MIDI device of the same model. You won't need to change the default setting of 0 unless you have multiple K2500s receiving SysEx messages from a single source. In that case, make sure each K2500 has a different SysExID. Then you can direct SysEx messages to the appropriate K2500 with the SysExID byte that's included with every SysEx message. A value of 127 specifies "Omni Receive." That is, at this value, a K2500 will respond to a SysEx message regardless of the SysEx ID of the message (as long as the manufacturer and device IDs match—see the *Reference Guide* for more information on System Exclusive messages).

SCSI ID

Use this parameter to change the SCSI ID of your K2500. You can ignore this parameter unless you've connected a SCSI device (external SCSI disk or CD-ROM drive) to the K2500's SCSI port. You can use either or both SCSI ports to chain up to seven SCSI devices to the K2500 (a total of eight devices can be chained together); just be sure to set each one to a different SCSI ID. Most SCSI devices available today make it easy to change their SCSI IDs, so you may not have to adjust this parameter even if you have several SCSI devices connected. See Chapter 13 for more information about using SCSI devices.

Bend Smooth

This parameter can improve your K2500's performance when you're driving it from a MIDI guitar controller. Its default value is On.

You may find that pitch bending seems to carry over from the previous note to the next note, causing it to start on the wrong pitch. This is probably due to the automatic pitch smoothing provided by the K2500. If this is happening, try setting the BendSmooth parameter to a value of Off.

Local Keyboard Channel (LocalKbdCh)

Note: *You won't generally want to change the setting of the Local Keyboard Channel parameter unless you are using the rack version of the K2500.*

The available values for this parameter are None, and 1–16. The default is None, which disables the local keyboard feature, since you may not want to send your MIDI controller's MIDI information to devices connected to the K2500's MIDI Out port. If you want to use Setup mode on the K2500, however, you will have to change the setting of this parameter. This is because LocalKbdCh enables you to take advantage of the K2500's three setup zones, even if your MIDI controller transmits on only one MIDI channel at a time.

It is important to understand that a Setup is a control oriented function. On the keyboard version of the 2500, the keyboard itself will transmit on up to three channels when in Setup mode. But with the rack, if your keyboard only sends information on one MIDI channel, you need a way to turn that information on one channel into three channels. This is what the Local Keyboard Channel parameter does. It takes the signal coming in one channel and turns it into different information, depending on where you are in the 2500.

The Local Keyboard Channel will change the way the 2500 performs in other modes as well. It changes the incoming information depending on what you have displayed in the 2500. For instance, if you are in Program Mode with Channel 5 in the display, then the information coming in on channel 1 will be turned into channel 5 and you will hear the program assigned to channel 5. But if you turn Local Keyboard Channel off by setting it to None, then if you send on channel 1, you will hear the program that is assigned to channel 1, even if you are looking at channel 5.

Local Keyboard does more than just change the MIDI channel. When Local Keyboard Channel is set to None, you will notice that the **Octav-** and **Octav+** soft buttons found in Program, Setup, Quick Access, and Effects Mode do not function. If you use the Local Keyboard Channel parameter, however, they will function correctly. And you can even use it to change one type of MIDI controller to another.

Here's how it works. The K2500 will receive MIDI information on the channel that corresponds to the value you set for this parameter, and will relay it to its MIDI Out port, using the MIDI channels currently shown in the display. If you're in Program mode (or in Quick Access mode with a program selected), the K2500 will relay the LocalKbdCh MIDI information to the channel to which the program is assigned. If you're in Setup mode (or in Quick Access mode with a setup selected), the K2500 will relay the LocalKbdCh MIDI information to all the channels currently shown in the display.

The K2500 will also remap the six controller messages found on the MIDI XMIT page (and in the Setup Editor). This enables you to receive Modulation (01), Foot (04), Data (06), Mono Pressure, Sustain (64), and Sostenuto (66) messages from your controller and remap them to any available value on the K2500's Control Source List. The chart below will clarify.

The control message received from your controller…	**…gets sent to the MIDI control number assigned as the value for this parameter on the MIDI XMIT page**
Modulation (01)	**ModWhl**
Sustain (64)	**FtSw1**
Sostenuto (66)	**FtSw2**
Foot (04)	**CPedal**
Data (06)	**Slider**
Mono Pressure	**Press**

The controllers listed in the second column correspond to the control source parameters on the MIDI XMIT page and in the Setup Editor. When you're in Program mode, the values that you've set for these six parameters on the MIDI mode XMIT page determine what control message gets sent to the K2500 and to its MIDI Out port when the K2500 receives the control messages in the first column. When you're in Setup mode, the values for these same six parameters on the Setup Editor page determine which control signal is sent.

Here's a more specific example. Suppose your MIDI controller transmits on MIDI channel 1, and you've set the LocalKbdCh parameter to a value of 1. You've also set the value of the ModWhl parameter on the Setup mode page to a value of Volume (MIDI 07) for each setup zone. Then you've selected a setup that uses MIDI channels 1, 2, and 3. When you send a Modulation message (MIDI 01) from the MIDI controller, you'll affect the K2500's volume (unless the VolLock parameter for Channel 1 is on), and the K2500 will send a Volume message to its MIDI Out port, on channels 1, 2, and 3.

Bank Select

"BankSelect" allows you to choose between having the K2500 respond to Controller 0 or Controller 32 or both. The reason for this is that various manufacturers have chosen one method or the other. The four possible values for this parameter are:

0 only - transmits and responds to controller 0 only.

32 only - transmits and responds to controller 32 only.

Ctl 0 - transmits 0 and responds to 0 or 32.

Ctl 32 - transmits 32 and responds to 0 or 32.

Power Mode

"Power Mode" has two possible values: User and Demo. When set to User, the user's parameter settings are retained. When set to Demo the parameters are returned to default values when the unit is powered up. The default value for the Power Mode parameter is User.

The following parameters are reset when Power Mode is set to Demo; default values for the parameters are shown in parentheses.

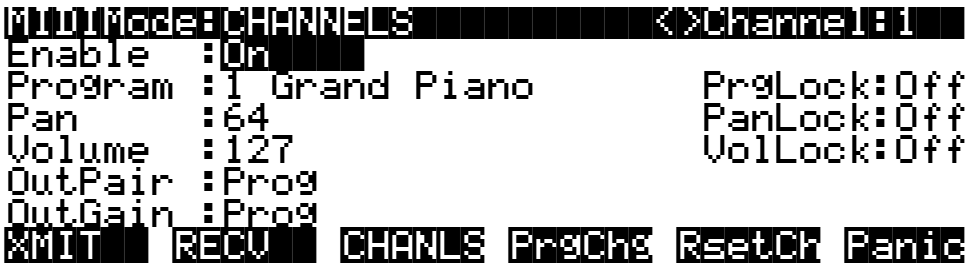
Master Mode -	Drum Channel (1)
MIDI Transmit -	Control (Both)
Effects Mode -	FX Mode (Auto)
	FX Chan (Current)
Disk Mode -	Current Disk (Floppy)

The unit also remembers what channel you were on and any octave transpose value (it used to return to channel 1 and 0 transpose).

The Channels Page

Press the CHANLS soft button to select the CHANLS page, where you can define numerous parameters for each MIDI channel independently. Use the CHAN/BANK buttons to select the MIDI channel you wish to work on.

The CHANLS page is very useful when you're doing multi-timbral sequencing, with programs assigned to numerous MIDI channels. The CHANLS page lets you set several control characteristics for each MIDI channel. This makes it easy to adjust the playback of the sequence without editing the sequence itself. For example, you might turn off the Enable parameter for one or more channels to mute the tracks on those channels. You could also set the VolLock parameter to On, to ignore any MIDI volume messages the K2500 receives on a given MIDI channel.



PARAMETER	RANGE OF VALUES	DEFAULT
ENABLE	Off, On	On
PROGRAM	Program list	Program ID 1
PAN	0 to 127	64 (centered)
VOLUME	0 to 127	127 (maximum)
OUTPUT PAIR	Prog, A (FX), B (DRY), C(DRY), D(DRY)	Prog
OUTPUT GAIN	Prog, –12 to 30 dB in 6 dB increments	Prog
PROGRAM LOCK	Off, On	Off
PAN LOCK	Off, On	Off
VOLUME LOCK	Off, On	Off

Enable

Use this parameter to turn the currently selected channel on or off. When on, the channel will receive MIDI information, and the settings of the parameters on the MIDI CHANLS page will be in effect. When off, the channel will ignore all MIDI information.

Program

Use this parameter to assign a program to the currently selected channel. The channel will still respond to program change commands received via MIDI, unless the PrgLock parameter (described below) is set to On.

Pan

This will offset the pan position of the current program as set on the OUTPUT page in the Program Editor. A value of 0 is maximum offset to the left, 64 is no offset, and 127 is maximum offset to the right. Changing the value of this parameter is like inserting a MIDI pan message. MIDI Pan (MIDI 10) messages will change the value of this parameter, unless the PanLock Parameter (described below) is set to On.

Volume

This sets the volume for any program assigned to the currently selected channel. A value of 0 is silence, and a value of 127 is full volume. The value of this parameter will change in response to MIDI Volume (MIDI 07) messages, unless the VolLock parameter (described below) is set to On.

Output Pair (OutPair)

This parameter sets the audio output group for the program assigned to the currently selected channel. The default value of Prog means that the output group is determined by the program's value for the Pair parameter on the OUTPUT page in the Program Editor. In this case, the channel's output group will change depending on the program assigned to it, with the output group being routed on a per layer basis within the program. Values of A B, C, or D fix the output group regardless of the program that's assigned to the channel.

Output Gain (OutGain)

OutGain will boost or cut the level at the audio outputs for any program assigned to the currently selected channel. This allows you to make a program louder or softer without having to edit the program.

Parameter Locks

Program (PrgLock), Pan (PanLock), Volume (VolLock)

When the parameter locks are set to On, the three parameters they control will not respond to their respective MIDI controller messages. In that case, you could change the Program, Pan, and Volume settings from the front panel, but not via MIDI.

Program Change Formats

Straight out of the box, the K2500 has more programs than the MIDI program change specification can handle (MIDI lets you send program change numbers from 0 to 127 or 1 to 128 only). So we've designed a system that makes program selection more flexible. This is true whether you're selecting programs from the K2500's front panel, or via MIDI.

Program Change Type	For use with:
0–127	Older MIDI devices that accept program change commands in the range from 0–127 only.
Extended	Other K2500s (or K2000s) similarly set, plus all other instruments that use the Bank Change controller
Kurzweil	K1200s, and 1000s with version 5 software
QA Bank E	Other K2500s (or K2000s) similarly set, when in Quick Access mode
QA Bank K	K1200s and v5 1000s, when in Quick Access mode
QA 0–127	With the K2500 in Quick Access mode, when using it with older MIDI devices

First of all, the K2500's programs (and all of its objects) are numbered and grouped according to a decimal system, that is, in multiples of ten. This is much easier to keep track of than the binary-oriented groupings of many synths, which feature banks of 8, 16, or 64 programs.

Next, the K2500 gives you 999 program change numbers to work with. These are organized into ten banks of 100 each (the memory banks). A program's object ID is its program change number, as discussed in Chapter 5. This makes it easy to keep track of your programs. The K2500 can use several different formats for interpreting Program change commands. The values for the program change Type parameters on the XMIT and RECV page determine which format is used, and the one you should select depends on your MIDI system.

If you expect you'll always change programs from your K2500's front panel, you can finish this paragraph and skip the next few sections. In this case, selecting programs is as simple as entering the program change number (the program's object ID) on the alphanumeric pad, and pressing ENTER. Even program numbers above the usual MIDI limit of 127 can be selected this way.

0-127 Program Change Type

The next simplest system involves connecting your K2500 to an "old" MIDI device—one that was built before the MIDI Controller 0 program change format was developed. If your MIDI controller is one of these (if its manual doesn't mention MIDI Controller 0 program changes, it's an "old style" machine), you might want to set the program change Type parameter to a value of 0–127. This will enable you to select programs 0–127 from the controller. This limits your range of program selection, but it configures the K2500 to respond predictably to the controller. (You'll have to select higher-numbered programs from the K2500's front panel) Of course, you can still use the Extended format explained below, but in many cases you'll have to send two program change commands to get the program you want.

Note: you can define how the K2500 will respond to and transmit MIDI Controller commands using the Bank Select parameter, described on page 10-7.

Extended and Kurzweil Program Change Types

In the early days of MIDI, most instruments had small numbers of memory locations, usually 32, 64, or 128. As instruments began to have more memory locations, however, users ran against the limitation of only 128 values for program changes in the MIDI spec. Because of this, Bank Change Controller was added, allowing users to switch between banks of up to 128 programs per bank.

Previous to the addition of the Bank Change Controller, Kurzweil had developed their own method of switching banks by using two program changes, one to switch the bank, the second to call up the program within the bank (as described below). The K2500 can respond to either the Bank Change controller or the double program change method. In a nutshell, the difference between the Extended setting and the Kurzweil setting is this: In Extended, the K2500 will receive and respond to both the Bank Change controller and double program change method, but it will always transmit the Bank Change controller. When set to Kurzweil, the K2500 will receive and transmit only the double program change method.

Extended Program Changes

If you're connected to a MIDI device that can handle the MIDI Controller 0 program change format, your flexibility increases considerably. We'll discuss first how the K2500 receives program change commands in this format, then how it transmits. In a system of this sort, you'll set the program change Type parameter to a value of Extended (or QA Bank E, but that explanation comes later).

First, the receiving end. When you're using the extended program change format, the K2500 will respond to either MIDI controller 0 program change commands, or standard program change commands, but only within certain ranges, as follows:

Program change command type	Range of values	Result
MIDI controller 32 (MC 32)	0 to 9	Selects memory bank 0s–900s
	10 to 127	Ignored
Standard (PCH)	0 to 99	Selects correspondingly numbered program in current memory bank
	100 to 109	Selects memory bank 0s–900s
	110 to 127	Ignored

If your K2500 is already in the memory bank you want to use, you can send it single PCHs from 0 to 99, to select programs within that memory bank. If you want to change the memory bank, the K2500 must receive either an MC 32 message with value 0–9, or a PCH with value 100–109. This will select the new memory bank, but will not change the current program. The next PCH in the range 0–99 will select the correspondingly numbered program in the newly selected bank. The following table of examples should help make it clear.

1st program change command received:	2nd program change command received:	Result:
PCH: value 64	None	64th program in current bank selected (e.g. program 264 if in 200s bank)
PCH: value 99	PCH: value 27	27th program in current bank selected (99 is selected, then overridden by 27)
PCH: value 102	PCH: value 16	Program 216 (200s bank, 16th program)
PCH: value 127	PCH: value 99	99th program in current bank (1st PCH is ignored, since it's above 109)
PCH: value 127	PCH: value 104	No change in current program; 400s bank selected pending next PCH
MC 32: value 0	PCH: value 99	Program 99 (0s bank, 99th program)
MC 32: value 1	PCH: value 42	Program 142 (100s bank, 42nd program)
MC 32: value 9	PCH: value 0	Program 900 (900s bank, 0th program)
MC 32: value 9	None	900s bank selected, no change in current program (bank selection is pending for next PCH)
MC 32: value 10	PCH: value 99	MC 32 message ignored; 99th program in current bank selected (e.g. program 199 if in 100s bank)

That's the receiving end of extended program changes. On the transmitting side, the rules are similar; if you select a program in the current or another memory bank, two commands are sent. The first selects the memory bank, and is always an MC 32 type. The second is always a PCH. Some examples follow. They assume you use the alphanumeric pad, but you could use the other data entry methods as well.

Front panel selection:	Program change commands sent:
9 9 ENTER	MC 32: value 0; PCH: value 99
2 1 6 ENTER	MC 32: value 2; PCH: value 16
9 1 1 ENTER	MC 32: value 9; PCH: value 11

Kurzweil Program Changes

When you use the Kurzweil program change format, the rules are similar to the extended format, but when two Program change commands are sent, the first is necessarily of the PCH type. The receiving end works as follows:

1st program change command received:	2nd program change command received:	Result:
PCH: value 39	None	39th program in current bank selected
PCH: value 99	PCH: value 27	27th program in current bank selected (99 is selected, then overridden by 27)
PCH: value 102	PCH: value 16	Program 216 (200s bank, 16th program
PCH: value 105	PCH: value 44	Program 544
PCH: value 109	PCH: value 0	Program 900
PCH: value 127	PCH: value 99	99th program in current bank (1st PCH is ignored, since it's above 109)
PCH: value 127	PCH: value 104	No change in current program; 400s bank is selected pending next PCH

When you *send* Kurzweil program changes via MIDI, the K2500 always sends two PCHs. A few examples:

Front panel selection:	program change commands sent:
2 7 ENTER	PCH: value 100, PCH: value 27
9 9 ENTER	PCH: value 100, PCH: value 99
2 1 6 ENTER	PCH: value 102, PCH: value 16
9 1 1 ENTER	PCH: value 109, PCH: value 11

Quick Access Banks—Extended (QA BANK E)

Using this setting is similar to using the Extended program change format, but it goes one step further. When receiving, the incoming program change commands are interpreted just as they are in the normal Extended format. But the resulting program change number, instead of selecting a program, selects a Quick Access bank entry (you must be in Quick Access mode for this to work). There are two advantages to using this format. First, it allows you to select both programs and setups using program changes, without having to switch modes. Second, you can remap incoming program change commands to select programs or setups with different IDs. This is handy if the sending unit can't send program change commands higher than 127.

First, a brief review of Quick Access bank structure. Each Quick Access bank can store ten entries, each of which can be a program or a setup. Each of the K2500's 10 memory banks can store 20 Quick Access banks (except the Zeros bank, which can store 75). Therefore when you're in Quick Access mode, you have access to 200 (or 750 in the Zeros bank) programs or setups without leaving the currently selected bank. The QA Bank E program change format lets you select any one of those programs or setups via MIDI. If you select another memory bank, you have a different set of 200 programs and setups at your disposal. The programs and setups aren't selected by their IDs, as they normally would be. They're selected in terms of their location within the Quick Access banks.

We'll discuss the receiving side first. When you're using this format, the K2500 will respond to either MC 32s or PCHs. The acceptable ranges of values are different, however, as is the interpretation the K2500 makes. Instead of responding by selecting programs, the K2500 responds by selecting entries within the currently selected Quick Access bank. These selections are made according to their "chronological" listing within the QA bank without regard for the IDs of the objects in the QA bank. In most of the *memory* banks, there are 20 *QA* banks of 10 entries each, for a total of 200 entries. The program change values the K2500 receives correspond to the sequential numbering of the entries in the QA banks.

Program change command type	Range of values	Result
MIDI controller 32 (MC 32)	0 to 7	Selects QA bank 0n, 1n, 2n, 3n, 4n, 5n, 6n, 7n in current memory bank
	10–127	Ignored
Standard (PCH)	0–99	Selects last digit (n above) of QA bank, and entry within that bank
	100–107	Selects QA bank 0n, 1n, 2n, 3n, 4n, 5n, 6n, 7n in current memory bank
	110–127	Ignored

Depending on the QA bank entry you want to select, you'll send the K2500 one or two program change commands. Sending a single command will let you select from a range of 10 QA banks and select an entry within that bank (see the table below). To select a different range of QA banks, send two program change commands.

If you send a single command, it should be a PCH with a value of 0 to 99. If you send two commands, the first can be either an MC 32 with value 0 to 7, or a PCH with value 100 to 107. The second command should be a PCH with a value of 0 to 99.

Within the QA Bank E format, the first program change command specifies the range of Quick Access banks that will be selected. It does **not** select a different memory bank. In fact, you can't change the memory bank via MIDI when using this format. All program and setup selections are made within the currently selected memory bank. You'll know which memory bank is selected by looking at the ID of the currently selected Quick Access bank in the top line of the Quick Access mode page. Several examples follow.

If the Zeros Memory Bank is Currently Selected

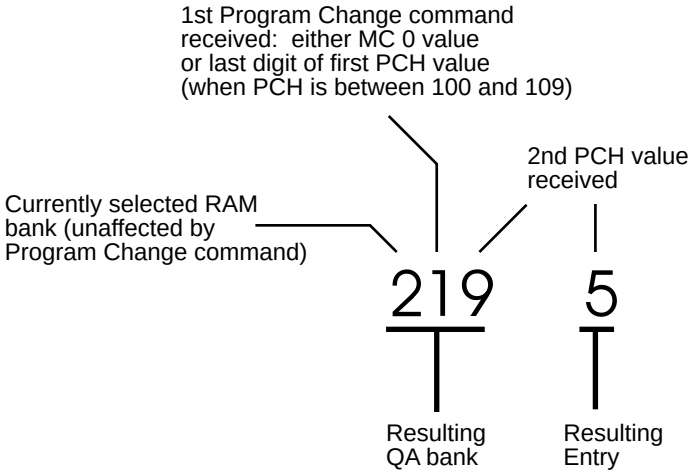
1st program change command received:	2nd program change command received:	Resulting selection:
MC 32: value 0	PCH: value 6	No change (the K2500 interprets this as QA bank 0, entry 6. There is no QA bank 0. The lowest valid PCH value in this particular case is 10, which would select QA bank 1, entry 0)
PCH: value 9	None	Entry 9 in current QA bank
MC 32: value 0	PCH: value 32	QA bank 3, entry 2
MC 32: value 1	PCH: value 4	QA bank 10, entry 4
MC 32: value 1	PCH: value 28	QA bank 12, entry 8
MC 32: value 2	PCH: value 44	QA bank 24, entry 4
PCH: value 100	PCH: value 9	No change (QA bank 0 doesn't exist)
PCH: value 100	PCH: value 99	QA bank 9, entry 9
PCH: value 102	PCH: value 27	QA bank 22, entry 7

Remember that in the Zeros memory bank, the Quick Access bank IDs go through 75. So if the Zeros memory bank is the current memory bank, you can enter MC 32 values as high as 7, and PCH values as high as 107 for the first program Change command. And you can enter PCH values as high as 59 for the second program change command.

If the 200s Memory Bank is Currently Selected

1st program change command received:	2nd program change command received:	Resulting selection:
MC 32: value 0	PCH: value 6	QA bank 200, entry 6
MC 32: value 0	PCH: value 32	QA bank 203, entry 2
MC 32: value 0	PCH: value 99	QA bank 209, entry 9
MC 32: value 1	PCH: value 4	QA bank 210, entry 4
MC 32: value 1	PCH: value 28	QA bank 212, entry 8
MC 32: value 2	PCH: value 44	No change; MC 32 value 2 is invalid in 200s bank.
PCH: value 44	None	QA bank 204, 214, 224, 234, 244, 254, 264, or 274 (tens digit doesn't change); entry 4
PCH: value 100	PCH: value 0	QA bank 200, entry 0
PCH: value 100	PCH: value 99	QA bank 209, entry 9
PCH: value 100	PCH: value 127	No change; PCH value 127 is invalid for QA Bank E format
PCH: value 101	PCH: value 8	QA bank 210, entry 8
PCH: value 101	PCH: value 36	QA bank 213, entry 6
PCH: value 102	PCH: value 27	No change; PCH value 102 is invalid in 200s bank

There are two more ways to describe the QA Bank E format: one verbal, one visual. The first (hundreds) digit of the QA bank that gets selected is always the same as the currently selected memory bank. The QA bank's second (tens) digit is equal to the value of the first program change command: either the value of the MC 32 message, or the third (ones) digit of the PCH. The QA bank's third (ones) digit is equal to the tens digit of the second PCH. The QA bank entry that gets selected is equal to the ones digit of the second PCH. The following diagram will clarify:

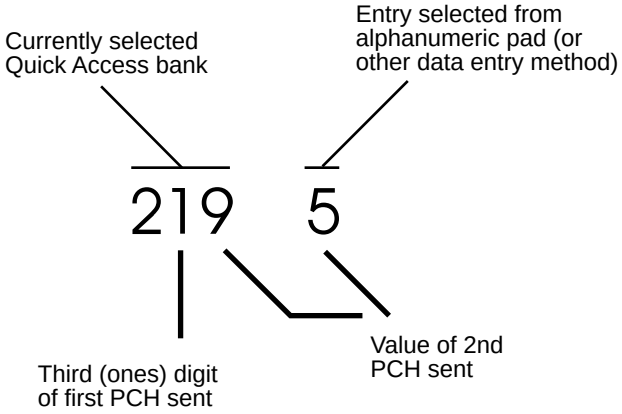


That takes care of the receiving end of the QA Bank E format. The diagram above also explains the transmitting side. If, for example, you're currently in Quick Access bank 219, and you press 5 on the alphanumeric pad, the K2500 selects for itself whatever program or setup is programmed for that bank and entry. The K2500 then sends the following two program change commands to its MIDI Out port—MC 32: value 1, followed by PCH: value 95. The first program change command is always of the MC 32 type. The currently selected memory bank is not included the program change command.

Quick Access Banks—Kurzweil (QA BANK K)

In terms of receiving program change commands, this works almost exactly like the QA Bank E format. The only exception is that within the QA Bank K format, the K2500 expects the first program change command to be of the standard program change command type. MIDI Controller 32 messages will not be recognized.

The transmitting side of this format is similar to the QA Bank E format as well, as the following diagram shows. The banks and entries you select are translated into two standard program change commands sent in rapid succession.



Current QA Bank	Entry from alphanumeric pad	Program change commands sent	
1	0	100	10
1	9	100	19
2	0	100	20
2	9	100	29
9	9	100	99
10	0	101	0
19	9	101	99
20	0	102	0
29	9	102	99
75	9	107	59
100	0	100	0
105	9	100	59
110	9	101	99
119	9	101	99
48	4	104	84
117	7	101	77

QA 0–127

Finally, there's the QA Bank format for use with older MIDI devices (Program change commands 0–127 only). It works similarly to the other QA formats, but the allowable range of values is limited to 0–107. The K2500 expects to receive PCHs of value 0–99 to select a bank and entry, or a pair of PCHs, the first having a value of 100–107 to select a different 10-bank range.

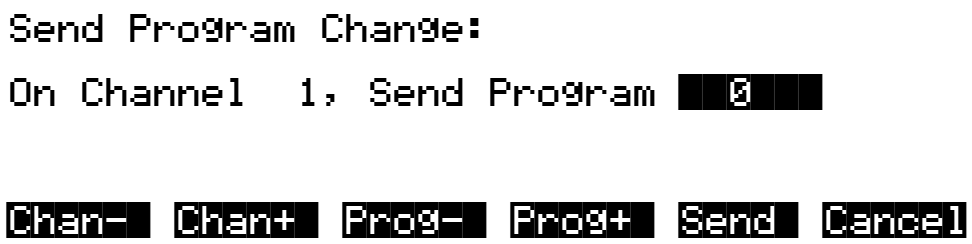
When you select an entry with the alphanumeric pad while in QA mode, the K2500 sends two PCHs, the first with a value of 100–107, the second with a value of 0–99.

The Soft Buttons in MIDI Mode

The first three soft buttons select the three MIDI mode pages. The **PrgChg** soft button lets you send a program change command on any MIDI channel. The **RsetCh** soft button lets you return all channel parameters to their default values. The **Panic** soft button sends an All Notes Off and an All Controllers Off messages to the K2500 and on all 16 MIDI channels.

Program Change (PrgChg)

When you press this soft button, a dialog appears:



This dialog lets you send program changes out the MIDI Out port, but does not change internal programs.

The CHAN/BANK buttons, the Up/Down cursor buttons, and the **Chan-** and **Chan+** soft buttons can all be used to change the channel on which the program change command will be sent. The Left/Right cursor buttons, the Plus/Minus buttons, the Alpha Wheel and the **Prog-** and **Prog+** soft buttons can all be used to change the program change number that will be sent. When you've set the channel and the program change number, press the **Send** soft button to send the program change command. Or press the **Cancel** soft button if you don't want to send it.

You can change the channel and the program number as many times as you want before you press **Send**. You also can use the alphanumeric pad to select a program number directly.

Reset Channels (RsetCh)

When you press this soft button, the K2500 will ask you if you want to reset all channels, and a pair of **Yes**/**No** soft buttons will appear. If you press the Yes soft button, all settings on the CHANLS page will return to their default values. For example, you may have set several MIDI channels to route their audio to Output Group B for a special project. When the project's over, you can reset the Channels to restore the audio routing to each individual program (a value of Prog), rather than selecting each channel's page and setting the Pair parameter back to a value of Prog. Press the **No** soft button if you decide not to reset the channels.

Panic

This soft button sends an All Notes Off and All Controllers Off message both to the K2500 and over all MIDI channels.