

Profiler Midi Parameter Documentation

The Kemper Profiling Amplifier features more than 400 parameters. Of course, you can't address them all with a standard MIDI controller message, where only 128 parameters can be reached.

Therefore we support the NRPN (Non Registered Parameter Numbers) protocol.

NRPN Definition

NRPN allows addressing 16384 different parameters (that is 128 x 128) and even have a parameter resolution of 16384 values (14 bit) compared to 128 distinct values (7 bit) with regular controller messages.

NRPN messages consist of a set of four controllers being sent in a sequence. These four controllers are:

Decimal	Hex	Remark	
98	\$62	MSB* of the parameter number ("address page")	
99	\$63	LSB* of the parameter number ("address number")	
06	\$06	MSB* of the parameter value	
38	\$26	LSB* of the parameter value	
*MSB: most significant byte, the upper 7 bit of the 14 bit number			
*LSB: least significant byte, the lower 7 bit of the 14 bit number			

The MIDI specification demands that a manufacturer needs to decide if the devices understand 7 bit or 14 bit values. All NRPN controllers in the Kemper Profiling Amplifier are by definition 14 bit value controllers, so you'll need to send both MSB cc06 and cc38 to apply a change. The actual value gets set after reception of cc38. The KPA keeps the address selection present. So, if a pair of cc98/cc99 is being sent it does not need to be sent again for a further value change on the selected parameter.

To support generic, programmable floorboards/controllers that only support 7 bit values, KPA Firmware version 1.5.1 introduces cc119 (\$77) to send 7 bit value changes instead of cc06 and cc38. In this case, the values are mapped internally to the correspondent 14 bit value (e.g. value 127 is internally 16383, 64 is internally 8192) properly.

Examples

The parameter "Delay/Mix" is at NRPN #9475, so MSB ("address page") is 74 and LSB ("address number") is 3.

To send a 14 bit high resolution value to 8192:

```
$B0 $62 $4A
$B0 $63 $03
$B0 $06 $40
$B0 $38 $00
```

To send a 7 bit low resolution value (64), so parameter is actually at 8192.*:

\$B0 , \$62 , \$4A

\$B0 , \$63 , \$03

\$B0 , \$77 , \$40

* Supported in Firmware 1.5.1 or later

\$B0 is the Midi Start Byte for controllers at Midi Channel 0. You can use “running status” transmissions.

The Kemper Profiling Amplifier will listen to the Midi Channel that is set as the Midi Global Channel in the System Menu. The standard setting is “OMNI”, saying it responds to every channel.

Parameter Types

There is two types of parameters in the Kemper Profiling Amplifier and their properties:

Continuous Parameters (like Gain, Volume,)

- Are fractional numbers and will always cover the whole value range.
- Will be smoothed upon reception of multiple continuous values. Thus, high resolution (14 bit) values are not necessary for a smooth parameter movement, only for accurate target values.

Switch or Section Parameters (like Type, On/Off)

- Are integer numbers and will start counting from the least significant bit.
- Values out of range will activate the highest value in the range, but should not be used due to future compatibility
- Switches are "Off" at the value 0 (zero) and "On" at value 1 (one).

Parameter List

Rig (Address Page 4)

0 Rig Tempo
1 Rig Volume
2 Rig Tempo Enable

Input (Address Page 9)

3 Noise Gate Intensity
4 Input Clean Sense
5 Input Distortion Sense

Amplifier (Address Page 10)

2 On/Off
4 Gain
6 Definition
7 Clarity
8 Power Sagging
9 Pick

10 Compressor
11 Tube Shape
12 Tube Bias
15 Direct Mix

Equalizer (Address Page 11)

2 On/Off
4 Bass
5 Middle
6 Treble
7 Presence

Cabinet (Address Page 12)

2 On/Off
3 Volume
4 High Shift
5 Low Shift
6 Character

Stomp A (Address Page 50)

0 Type
3 On/Off
4 Mix
6 Volume
7 Stereo

8 Wah Manual
9 Wah Peak
10 Wah Range
12 Wah Pedal Mode
13 Wah Touch Attack
14 Wah Touch Release
15 Wah Touch Boost

16 Distortion/Shaper Drive
17 Distortion/Booster Tone

18 Compressor/Gate Intensity
19 Compressor Attack

20 Modulation Rate
21 Modulation Depth
22 Modulation Feedback
23 Modulation Crossover
24 Modulation HyperChorus Amount
25 Modulation Manual
26 Modulation Phaser Peak Spread
27 Modulation Phaser Stages

30 Rotary Speed (Slow/Fast)
31 Rotary Distance
32 Rotary Balance

33 Compressor Squash

34 Graphic EQ Band 1
35 Graphic EQ Band 2
36 Graphic EQ Band 3
37 Graphic EQ Band 4
38 Graphic EQ Band 5
39 Graphic EQ Band 6
40 Graphic EQ Band 7
41 Graphic EQ Band 8

42 Parametric EQ Low Gain
43 Parametric EQ Low Frequency
44 Parametric EQ High Gain
45 Parametric EQ High Frequency
46 Parametric EQ Peak Gain
47 Parametric EQ Peak Frequency
48 Parametric EQ Peak Q-Factor
49 Parametric EQ Peak Gain 2
50 Parametric EQ Peak Frequency 2
51 Parametric EQ Peak Q-Factor 2

52 Wah Peak Range

Stomp B (Address Page 51)

Same parameters and Address Numbers as Stomp A

Stomp C (Address Page 52)

Same parameters and Address Numbers as Stomp A

Stomp D (Address Page 53)

Same parameters and Address Numbers as Stomp A

Stomp X (Address Page 56)

Same parameters and Address Numbers as Stomp A

Stomp MOD (Address Page 58)

Same parameters and Address Numbers as Stomp A

Delay (Address Page 74)

0 Type
2 On/Off (cuts tail)
3 Mix
4 Volume

- 5 Time
- 6 Ratio
- 7 Clock Left
- 8 Clock Right
- 9 Feedback
- 10 Bandwidth
- 11 Center Frequency
- 12 Modulation
- 13 On/Off (keeps tail)

Reverb (Address Page 75)

- 0 Type
- 2 On/Off (cuts tail)
- 3 Mix
- 4 Volume
- 5 Del/Rev Balance
- 6 Time
- 7 Damping
- 8 Bandwidth
- 9 Center Frequency
- 10 Pre-delay
- 11 On/Off (keeps tail)

System / Global (Address Page 127)

- 0 Main Output Volume
- 1 Headphone Output Volume
- 2 Monitor Output Volume
- 3 Direct Output Volume

- 11 S/PDIF Input Enable

- 12 Main Output EQ Bass
- 13 Main Output EQ Middle
- 14 Main Output EQ Treble
- 15 Main Output EQ Presence

- 17 Monitor Output EQ Bass
- 18 Monitor Output EQ Middle
- 19 Monitor Output EQ Treble
- 20 Monitor Output EQ Presence