# Profiler MIDI Parameter Documentation

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#### Introduction

This document reflects the state of the Profiler firmware version 4.2.1 or higher.

The Kemper Profiler features more than 800 parameters. Of course, you can't address them all with a standard MIDI controller message, where only 128 parameters can be reached.

Therefore, the Kemper Profiler supports the NRPN (Non-Registered Parameter Numbers) protocol additionally to the proprietary SYSEX protocol.

Though, there are also MIDI commands at the standard controller range for commonly used functionality.

# **MIDI Commands**

The Kemper Profiler supports several simple MIDI commands that can be sent from 3<sup>rd</sup>-Party MIDI-Devices that control effects of the current Rig and performance mode.

CC	Value	Remarks				
16	Any	Toggles all Stomps between On and Off setting.				
		Select Type "Empty" to disable a slot completely.				
17	Any	Toggles Stomp A between On and Off setting.				
18	Any	Toggles Stomp B between On and Off setting.				
19	Any	Toggles Stomp C between On and Off setting.				
20	Any	Toggles Stomp D between On and Off setting.				
22	Any	Toggles Stomp X between On and Off setting.				
24	Any	Toggles Stomp MOD between On and Off setting.				
26	Any	Toggles Stomp DELAY between On and Off setting.				
27	Any	Toggles Stomp DELAY between On and Off setting with tail.				
28	Any	Toggles Reverb between On and Off setting.				
29	Any	Toggles Reverb between On and Off setting with tail.				
30	1/0	Sets Tempo Tap				
		If your floorboard supports separate events on "pressing" and				
		"releasing" a button, send 1 when "pressed" and 0 when "released". If				
		the floorboard can only send one event, use value 0.				
		When value 1 has been sent and no value 0 for 3 seconds, the Beat				
		Scanner <sup>1</sup> is being activated.				
31	1/0	1: Show Tuner				
		0: Hide Tuner				
33	0/1	0: Rotary Speaker slow				
		1: Rotary Speaker fast				
34 <sup>2</sup>	0/1	0: Delay Feedback Infinity off				
		1: Delay Feedback infinity on				
35 <sup>3</sup>	0/1	0: Delay Hold off				
		1: Delay Hold on				
47	[0,124]	(Performance Mode only)				
		Preselected performance index <sup>4</sup> . Can be set directly or scrolled via				
		CC48/CC49. The performance will be loaded when a slot selection is				

<sup>&</sup>lt;sup>1</sup> Available in firmware 2.3.0 or later

<sup>&</sup>lt;sup>2</sup> Available in firmware 3.3.0 or later

<sup>&</sup>lt;sup>3</sup> Available in firmware 3.3.0 or later

<sup>&</sup>lt;sup>4</sup> Available in firmware 2.3.0 or later

Decrease performance index. Value triggers two different modes:  Value 0, increase performance n to n-1  Value 1 initially decreases performance index by 1, after a timeout the Kemper Profiler starts to scroll performances downwards. Value 0 stops scrolling.  Browse Mode Value 0 selects the previous Rig (current filter/sort applies), similar to "Rig Left"  Performance Mode Select Slot 1 of current performance. Browse Mode Select 1st out of current 5 rigs in list  Performance Mode Select Slot 2 of current performance. Browse Mode Select 2nd out of current 5 rigs in list  Performance Mode Select Slot 3 of current performance. Browse Mode Select Slot 3 of current 5 rigs in list  Performance Mode Select 3rd out of current 5 rigs in list  Performance Mode Select Slot 4 of current 5 rigs in list  Performance Mode Select Slot 5 of current 5 rigs in list  Performance Mode Select Slot 5 of current 5 rigs in list  Performance Mode Select Slot 5 of current 5 rigs in list  Select Slot 5 of current 5 rigs in list  Select Slot 5 of current 5 rigs in list  Select Slot 5 of current 5 rigs in list  Select Slot 5 of current 5 rigs in list  Select Slot 5 of current 5 rigs in list  Select Slot 5 of current 5 rigs in list  Select Slot 5 of current 5 rigs in list  Select Slot 5 of current 5 rigs in list  Select Slot 5 of current 5 rigs in list  Select Slot 5 of current 5 rigs in list  Select Slot 5 of current 5 rigs in list  Select Slot 5 of current 5 rigs in list  Select Slot 5 of current 5 rigs in list  Select Slot 5 of current 5 rigs in list  Select Slot 5 of current 5 rigs in list			
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Formance Mode Select Slot 3 of current performance. Browse Mode Select 3rd out of current 5 rigs in list  Ferformance Mode Select Slot 4 of current performance. Browse Mode only Select 4th out of current 5 rigs in list  Ferformance Mode Select Slot 5 of current performance. Browse Mode Select Slot 5 of current performance. Browse Mode Select 5th out of current 5 rigs in list  Sets Delay Mix to x  Sets Delay Feedback to x  Sets Reverb Mix to x  Sets Reverb Time to x  Sets Amplifier Gain to x			Browse Mode
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Browse Mode Select 3rd out of current 5 rigs in list  53 1 Performance Mode Select Slot 4 of current performance. Browse Mode only Select 4th out of current 5 rigs in list  54 1 Performance Mode Select Slot 5 of current performance. Browse Mode Select 5th out of current 5 rigs in list  68 x Sets Delay Mix to x  69 x Sets Delay Feedback to x  70 x Sets Reverb Mix to x  71 x Sets Reverb Time to x  72 x Sets Amplifier Gain to x	52	1	Performance Mode
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53 1 Performance Mode Select Slot 4 of current performance. Browse Mode only Select 4th out of current 5 rigs in list  54 1 Performance Mode Select Slot 5 of current performance. Browse Mode Select 5th out of current 5 rigs in list  68			Browse Mode
Select Slot 4 of current performance.  Browse Mode only Select 4th out of current 5 rigs in list  Performance Mode Select Slot 5 of current performance.  Browse Mode Select 5th out of current 5 rigs in list  Sets Delay Mix to x  Sets Delay Feedback to x  Sets Reverb Mix to x  Sets Reverb Time to x  Sets Amplifier Gain to x			
Browse Mode only Select 4th out of current 5 rigs in list  Performance Mode Select Slot 5 of current performance. Browse Mode Select 5th out of current 5 rigs in list  Sets Delay Mix to x  Sets Delay Feedback to x  Sets Reverb Mix to x  Sets Reverb Time to x  Sets Amplifier Gain to x	53	1	
Select 4th out of current 5 rigs in list  Performance Mode Select Slot 5 of current performance. Browse Mode Select 5th out of current 5 rigs in list  Sets Delay Mix to x  Sets Delay Feedback to x  Sets Reverb Mix to x  Sets Reverb Time to x  Sets Amplifier Gain to x			·
54 1 Performance Mode Select Slot 5 of current performance. Browse Mode Select 5th out of current 5 rigs in list  68			· ·
Select Slot 5 of current performance.  Browse Mode Select 5th out of current 5 rigs in list  88			
Browse Mode Select 5th out of current 5 rigs in list  68  x  Sets Delay Mix to x  69  x  Sets Delay Feedback to x  70  x  Sets Reverb Mix to x  71  x  Sets Reverb Time to x  72  x  Sets Amplifier Gain to x	54	1	
Select 5th out of current 5 rigs in list  Sets Delay Mix to x  Sets Delay Feedback to x  Sets Reverb Mix to x  X Sets Reverb Time to x  Sets Amplifier Gain to x			·
68 x Sets Delay Mix to x 69 x Sets Delay Feedback to x 70 x Sets Reverb Mix to x 71 x Sets Reverb Time to x 72 x Sets Amplifier Gain to x			
69 x Sets Delay Feedback to x 70 x Sets Reverb Mix to x 71 x Sets Reverb Time to x 72 x Sets Amplifier Gain to x			
70 x Sets Reverb Mix to x 71 x Sets Reverb Time to x 72 x Sets Amplifier Gain to x			,
71 x Sets Reverb Time to x 72 x Sets Amplifier Gain to x		X	·
72 x Sets Amplifier Gain to x		X	
	71	X	
73 X Sets Global Monitor Output Volume			
	73	X	Sets Global Monitor Output Volume

Table 1: MIDI commands

# Responses

With firmware 2.3.0, the profiler, if in performance mode, will send back the current performance number via CC47 and the appropriate slot selection. Example:

Floorboard (or another Client)	Kemper Profiler
B0 2F 03	Shows preselected performance 4
B0 31 00	Shows preselected performance 5
	B0 2F 04
B0 35 01	Selects and loads Performance 5, Slot 3
	B0 35 01

Table 2: Example communication for performance mode Preselection

#### **NRPN Definition**

NRPN supports 128 x 128 different parameters (which rounds up to an impressive total of 16384 parameters.) NRPN also supports a parameter resolution of 16384 values (14-bit) compared to only 128 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	
99	\$63	MSB* of the parameter number ("address page")	
98	\$62	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

Table 3: NRPN controller assignments

The MIDI specification requests that a manufacturer decides if the devices understand 7-bit or 14-bit values. All NRPN controllers in the Kemper Profiler are by definition 14-bit value controllers, so you'll need to send both MSB Control Change (or CC) 06 and CC38 in that order to apply a change. The actual value gets set after reception of CC38. The Kemper Profiler keeps the address selection present. So, if a pair of CC98+CC99 has been transmitted, it does not need to be sent again for a further value change on the same parameter.

To support generic, programmable floorboards/controllers that only support 7-bit values, Kemper Profiler Firmware version 2.0.0 introduces CC119 (\$77) to send a simple 7-bit value change instead of CC06 and CC38 combo. 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).

#### **Examples**

"Reverb/Mix" is at NRPN #9603, so MSB ("address page") is 75 (\$4B) and LSB ("address number") is 3 (\$03).

To send a 14-bit high resolution value to 8192:

```
$B0 $63 $4B
$B0 $62 $03
$B0 $06 $40
$B0 $26 $00
```

So, why \$40 and \$00? Because 8192 is \$2000 and:

```
a) ($2000 SHR 7) AND $7F = $40 The upper 7 of 14 bits.
b) ($2000 AND $7F) = $00; The lower 7 of 14 bits.
```

To send a 7-bit low resolution value (64 = \$40), so the parameter is actually set at 8192\*:

```
$B0 $63 $4B
$B0 $62 $03
$B0 $77 $40
```

<sup>\*</sup> Supported in Firmware 2.0.0 or later

\$B0 is the MIDI start byte for controllers at MIDI channel 1. You may use "running status" transmissions.

The Kemper Profiler 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<sup>5</sup>.

#### MIDI Channel vs. Instance

The global MIDI reception channel can be set up on the "MIDI Settings" page in the SYSTEM menu. Note, that the MIDI Channel and the instance mentioned in the SYSEX definition are not the same. The instance in the Profiler is always 0, since it has only one part ("mono timbral"). Assuming the global MIDI channel is set to 5, NRPN controller messages are only received on MIDI channel 5, but processed in instance 0.

# **Parameter Types**

There are two types of parameters in the Kemper Profiler and their properties:

# Continuous Parameters (e.g. 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 (e.g. Type, On/Off Switches)

- 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).
- If a 14-bit value is being used to set a controller to "On", then the MSB byte is \$00, the LSB byte is \$01

# **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

<sup>&</sup>lt;sup>5</sup> When set to OMNI, make sure the floorboard only sends on one channel. Some floorboards send 16 program changes (one to each channel) which causes 16 real rig switches then which might lag the Kemper Profiler a bit.

# **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
- 7 Pure Cabinet (Rig)

# 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
- 53 Ducking
- 55 Voice Mix
- 56 Voice 1 Pitch
- 57 Voice 2 Pitch
- 58 Detune
- 60 Smooth Chords
- 61 Pure Tuning
- 64 Key
- 65 Freeze Formants
- 66 Formant Offset
- 67 Low Cut
- 68 High Cut
- 69 Delay Mix

- 70 Delay Mix Pre/Post
- 71 Delay Time 1
- 72 Delay Time 2
- 73 Delay Ratio 2
- 74 Delay Ratio 3
- 75 Delay Ratio 4
- 76 Delay Note Value 1
- 77 Delay Note Value 2
- 78 Delay Note Value 3
- 79 Delay Note Value 4
- 80 To Tempo
- 81 Delay Volume 1
- 82 Delay Volume 2
- 83 Delay Volume 3
- 84 Delay Volume 4
- 85 Delay Panorama 1
- 86 Delay Panorama 2
- 87 Delay Panorama 3
- 88 Delay Panorama 4
- 89 Voice3 Pitch
- 90 Voice4 Pitch
- 91 Voice3 Interval
- 92 Voice4 Interval
- 93 Feedback
- 94 Infinity Feedback
- 95 Infinity
- 96 Feedback2
- 97 Feedback Sync Switch
- 98 Delay Low Cut
- 99 Delay High Cut
- 100 Delay Filter Intensity
- 101 Delay Modulation
- 102 Delay Chorus
- 103 Flutter Intensity
- 104 Flutter Shape
- 105 Grit
- 106 Reverse Mix
- 107 Swell
- 108 Smear
- 109 Ducking Pre/Post

#### **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

#### **Stomp DELAY (Address Page 60)**

#### **Delay (Address Page 74)**

With 4.0.0, Delays are part of the stomp types. Addressing them will result in no action.

- 0 Туре
- 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)
- 14 Ducking

# **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)
- 12 Ducking

#### System / Global (Address Page 125)

- 107 Stomp A Hold
- 108 Stomp B Hold
- 109 Stomp C Hold
- 110 Stomp D Hold
- 111 Stomp X Hold
- 113 Stomp MOD Hold
- 114 Stomp DLY Hold

# 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
- 52 Looper Volume
- 53 Looper Location

#### **SYSEX Definition**

# **General Message Layout**

The Kemper Profiler can also be addressed via MIDI SYSEX. A Kemper Profiler SYSEX message comprises of the following parts:

\$F0	\$00 \$20 \$33	\$02	\$7F	Message	\$F7
SYX	Access/Kemper	Product Type	Device ID	The actual	EOX
	Manufacturer	\$02 = Kemper	\$7F = OMNI	message	
	ID	Profiler	(See System		
			page)		

Table 4: structure of a Kemper Profiler SYSEX message

The message itself starts with a function code plus additional bytes depending on the given function code.

Function	Functionality				
Code					
\$01	Single Parameter Change				
\$02	Multi Parameter Change				
\$03	String Parameter				
\$04	BLOB				
\$05	*reserved*				
\$06	Extended Parameter Change				
\$07	Extended String Parameter Change				
\$41	Request Single Parameter Value				
\$42	Request Multi Parameter Values				
\$43	Request String Parameter				
\$47	Request Extended String Parameter				
\$7C	Request Parameter Value as Rendered String				
\$7E	*reserved*				
\$7F	*reserved*				

Table 5: function codes for Kemper Profiler SYSEX messages

#### **Single Parameter Change**

The "message" part for a single parameter change for parameter with 14bit NRPN address:

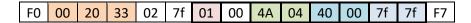
Function Code	Instance	Controller MSB	Controller LSB	SB Value MSB Value L	
The function	Addresses the	The upper 7-bit	The lower 7-bit	The upper 7-	The lower 7-
code for a	instance of the	of the 14-bit	of the 14-bit	bit of the 14-	bit of the 14-
single	parameter. The	NRPN address.	NRPN address.	bit value.	bit value.
parameter	Kemper				
change is \$01	Profiler only				
	supports one				
	instance which				
	is always 0.				

Table 6: message part for single parameter change

Example: To set the value of Delay Volume to 50% the controller \$4a04 (9476) needs to be set to a value of \$4000 (8192):

F0	00	20	33	02	7f	01	00	4A	04	40	00	F7
	00			-		-	-	., .	<b>.</b>		-	

Since the introduction of the Morphing Feature, there is a second value (called "B Value") that spans a range where a controller can morph between. So, the message is optionally extended by another 14 bit value. This example sets the parameter to be morphable from center value to maximum.



#### **Multi Parameter Change**

To change a whole bunch of parameters you can send multiple values for a whole range of parameters by using function code \$02 and repeating the value MSB/LSB bytes in a message:

Function	Instance	Controller	r Controller Value		Value LSB	Value	Value
Code		MSB	LSB			MSB*	LSB*
The	Addresses	The upper	The lower	The upper	The lower	The upper	The lower
function	the	7-bit of the	7-bit of the	7-bit of	7-bit of	7-bit of	7-bit of
code for a	instance of	14-bit	14-bit	the 14-bit	the 14-bit	the 14-bit	the 14-bit
single	the	NRPN	NRPN	value.	value.	. value of value of	
parameter	parameter.	address.	address.			the next the next	
change is	The					NRPN	NRPN
\$02	Kemper					address.	address.
	Profiler						
	only					Repeat with	Value
	supports					MSB/LSB for	r more
	one					values (up to 64 values	
	instance						
	which is						
	always 0.						

Table 7: message part for a multi parameter change

Example: To set the values for all (numeric) Reverb parameters (starting with \$4B00) send:

FO 00 20 33 02 7f 02 00 4B 00 00 03 00 01 00 01 4C 04
---

### **String Parameter Change**

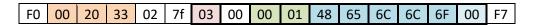
A number of parameters do present text ("string") values. These string parameters do have their own batch of controller numbers. They exist in parallel to the numeric parameters. E.g. there is one numeric controller 6400 ("Stomp 1/Type") and a string controller 6400 which represents the textual name of a preset loaded in Stomp 1.

The string controllers can be encoded using function code \$03 and character bytes using ASCII encoding:

Function Code	Instance	Controller MSB	Controller LSB	Characters	\$00
The function	Addresses the	The upper 7-	The lower 7-bit	A 7-bit value	A null byte
code for text	instance of the	bit of the 14-	of the 14-bit	representing	(\$00)
value: \$03	parameter.	bit NRPN	NRPN address.	an ASCII	terminating
	The Kemper	address (string		character.	the string.
	Profiler only	controller)		Concatenate	
	supports one			as much	
	instance which			characters	
	is always 0.			being	
				necessary.	
				Use only valid	
				characters	
				(see Appendix	
				A (valid ASCII	
				characters))	

Table 8: message part for a string parameter change

Example: To set the string "Hello" as current rig name (string #0001) send:



#### **BLOB Parameter Change**

A number of parameters do present binary objects ("BLOBs"). These BLOB parameters do have their own batch of controller numbers. They exist in parallel to the numeric and string parameters.

The content of a BLOB is per definition "off hands" and should not be altered.

N times a
7-bit value
where N is
the
number
given in
the size
attribute.

#### Table 9: message part for a BLOB parameter

Currently, only a start offset of 0 (null) is supported. If the content size is not matching the announced size, the message will be ignored.

# **Extended Parameter/Extended String Parameter Change**

The "extended" function codes 06/07 are equal to the 02/03 except that the controller number and value are not encoded in 2 but in 5 bytes to allow an address range of  $0^{31}$  and a value range of  $0^{32}$  for numeric controllers. The encoding is Big Endian, additional bits are ignored. The encoding looks like this:

#### Given a 32-bit value:

Bits 24-31	Bit 16-23	Bit 8-15	Bit 0-7
MSB			LSB

Figure 1: 32 bit values and their bytes

#### Will be encoded to 5 bytes:



Figure 2: 32 bit numbers encoded to 5 MIDI data bytes

This way, bit 7 (MSB) is kept clear for MIDI transmission.

#### **Request Single Parameter**

The function code \$41 can be used to request a single numeric value for an NRPN parameter. The requested value is being send back with function code \$01.

Function Code	Instance	Controller MSB	Controller LSB
The function code for a	Addresses the instance	The upper 7-bit of the	The lower 7-bit of the
single parameter	of the parameter. The	14-bit NRPN address.	14-bit NRPN address.
request is \$41	Kemper Profiler only supports one instance which is always 0.		

Table 10: message part for a single parameter request

Example: Request the value of Delay Volume \$4a04 (9476):

F	)	00	20	33	02	7f	41	00	4A	04	F7	
---	---	----	----	----	----	----	----	----	----	----	----	--

If a parameter is being request that does not exist, the request is being ignored and nothing is being sent back.

#### **Request Multi Parameter**

The function code \$42 can be used to request a number of numeric values for an NRPN parameter block. The requested value is being send back with function code \$02. You might notice that there is no size attribute defined. The response does cover all parameter of the requested unit. Expect up to 128 values.

Function Code	Instance	Controller MSB	Controller LSB
The function code for a	Addresses the instance	The upper 7-bit of the	The lower 7-bit of the
single parameter	of the parameter. The	14-bit NRPN address.	14-bit NRPN address.
request is \$42	Kemper Profiler only		
	supports one instance		
	which is always 0.		

Table 11: message part for a multi parameter request

Example: Request the current values for the Delay effect (starting with controller 94726).

F0	00	20	33	02	7f	42	00	4A	00	F7

In case the controller does not exist or the request does not address the first controller number in a unit, the request is being ignored. No data is being sent back.

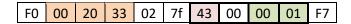
#### **Request String Parameter**

The function code \$43 can be used to request a textual value for a string parameter. The requested text value is being send back with function code \$03.

Function Code	Instance	Controller MSB	Controller LSB
The function code for a	Addresses the instance	The upper 7-bit of the	The lower 7-bit of the
single parameter	of the parameter. The	14-bit NRPN address.	14-bit NRPN address.
request is \$43	Kemper Profiler only		
	supports one instance		
	which is always 0.		

Table 12: message part for a string parameter request

Example: Request the current values for the current Rig name:



#### **Request Extended String Parameter**

The function code \$47 can be used to request a textual value for a string parameter. The requested text value is being send back with function code \$07 or \$03<sup>7</sup>. The controller number is being encoded with 5 bytes (instead of 2). Encoding can be found on Page 16.

<sup>&</sup>lt;sup>6</sup> The Kemper Profiler only responds to requests that encode the first controller number of a parameter block. Others might be ignored or the result might cover the whole block. You cannot request "snippets" of a unit. <sup>7</sup> If the encoded controller number is lower than 16384 (the range of 14-bit) the response might use function code \$03.

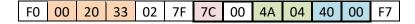
# **Request Parameter Value as Rendered String**

Function code \$7C is a bit special, it allows to retrieve the string representation for a specific value of a parameter. *Caution: This function can be expensive regarding CPU time.* 

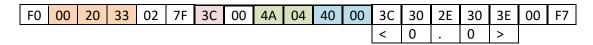
Function Code	Flags	Controller MSB	Controller LSB	Value MSB	Value LSB
The function	*reserved*	The upper 7-bit	The lower 7-bit	The upper 7-	The lower 7-
code \$7C		of the 14-bit	of the 14-bit	bit of the 14-	bit of the 14-
		NRPN address.	NRPN address.	bit value.	bit value.

Table 13: message part for a string render request

Example: To request the character string for a value of 8192 for Delay Volume, send:



The response will look like this:



Function code of the response is \$3C, after the flags, the controller MSB/LSB and value MSB/LSB the actual string is being available, terminated by a zero-byte. In this case, the rendered string is "<0.0>".

# Appendix A (valid ASCII characters)

Valid characters for strings parameters ("tags"). For rig and author names no space shall be followed by another space.

Character	ASCII Code
A-Z	\$41-\$5A
a-z	\$61-\$7A
0-9	\$30-\$39
!	\$21
\$	\$24
&	\$26
1	\$27
(SPACE)	\$20

Character	ASCII Code
(	\$28
)	\$29
*	\$2A
+	\$2B
-	\$2D
	\$2E
/	\$2F

Character	ASCII Code
١	\$5C
=	\$3D
:	\$3A
;	\$3B
_	\$5F
#	\$23
?	\$3F

Table 14: ASCII characters allowed in tags