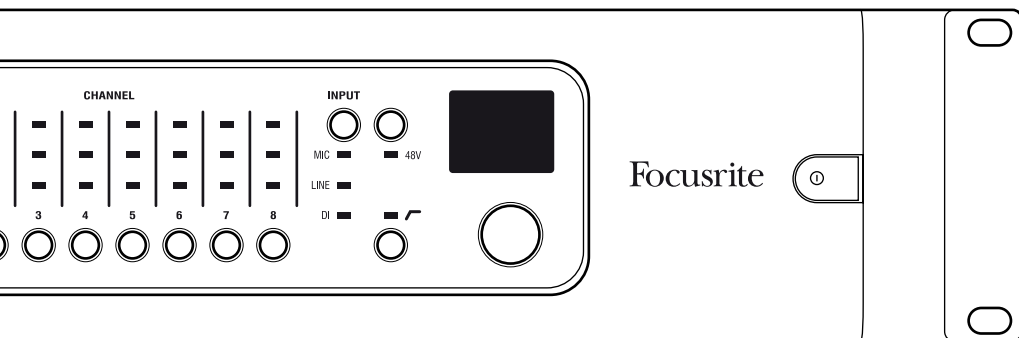# REDNET®

MIDI Control for RedNet 4 and RedNet MP8R

Focusrite®

Prerequisites

- Supported Mac or Windows PC
- RedNet 4 or RedNet MP8R hardware device
- Compatible MIDI controller (see MIDI Controllers)
- RedNet Control must be running to send and receive MIDI messages

MIDI Controllers

RedNet Control supports two different MIDI message types:

- Controller Change (CC)
- System Exclusive (SysEx)

A compatible controller must be able to send user-programmable CC or SysEx messages.

Since the CC protocol used is that of the Avid PRE (formerly known as Digidesign PRE), RedNet 4 and RedNet MP8R can be controlled from Pro Tools.

Setup in RedNet Control

There are five settings to consider:

- MIDI Input Device
- MIDI Output Device
- MIDI Input Protocol
- MIDI Output Protocol
- RedNet 4 / RedNet MP8R MIDI Channel allocation

On Mac OSX, select the Settings menu in RedNet Control, and choose the MIDI Control sub menu.

On Windows, click on the MIDI tab.

The following options or submenus are available:

MIDI Input Device

"RedNet Control" is a software MIDI device that can receive MIDI messages from other software.

All other MIDI input devices will be displayed here. The available devices will vary depending on what MIDI devices you have installed.

Choose the input device you would like to receive MIDI messages from.

MIDI Output Device

"RedNet Control" is a software MIDI device that can send MIDI messages to other software.

All other MIDI output devices will be displayed here. The available devices will vary depending on what MIDI devices you have installed.

Choose the out device you would like to send MIDI messages to.

MIDI Input Protocol

Choose the input protocol RedNet Control shall receive.

MIDI Output Protocol

Choose the input protocol RedNet Control shall send.

RedNet 4 / RedNet MP8R MIDI Channel Allocation

By clicking on the "spanner" menu of any RedNet 4 or RedNet MP8R, a MIDI channel can be selected to which the unit will respond.

Note:

- The default is "Off"
- 16 channels are available, allowing a maximum of 16 independent RedNet 4 / RedNet MP8R control paths
- Two devices should not be set to the same MIDI channel
- MIDI channel selection is saved with the computer, not the device. Therefore when controlling the same unit from a different computer, the MIDI channel allocation may no longer be the same

Setup with Pro Tools

RedNet Control must be installed on the same computer as Pro Tools.

The following settings must be set within RedNet Control:

Setting	Selection
MIDI Input Device	RedNet Control
MIDI Output Device	RedNet Control
MIDI Input Protocol	Avid Pre (CC)
MIDI Output Protocol	Avid Pre (CC)
RedNet 4 / RedNet MP8R MIDI Channel Allocation	1–16

Now set up Pro Tools for PRE control:

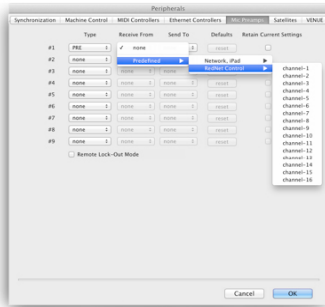1. Click Setup → MIDI → Input Devices... and ensure the box next to RedNet Control is checked
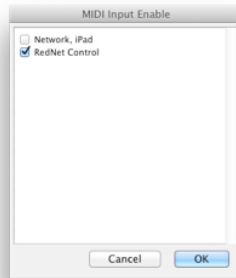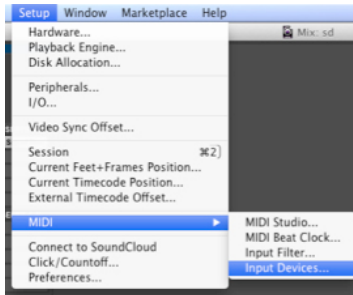
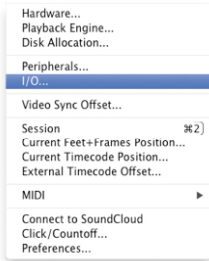2. Click Setup→Peripherals and click the Mic Preamps tab
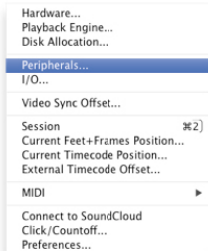
Here you can connect up to nine units

Choose Type = PRE

"Receive From" and "Send To" must be set to "RedNet Control" and the same channel
number set in RedNet Control.

3. Click Setup→I/O and click the Mic Preamps tab

Here, assign the mic pres to the corresponding input channels.
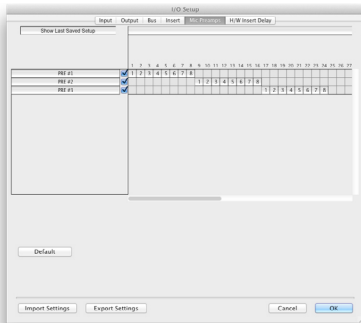
Setup with Pro Tools continued

4. Pro Tools will now control RedNet 4 and RedNet MP8R units

Note, if you do not see the PRE controls at the top of the mixer window, click the "Mix Window View Selector" in the bottom left corner and select Mic Preamps
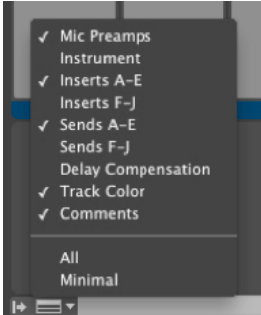
For best operation, it is recommended that RedNet 4 / RedNet MP8R and RedNet Control are running before Pro Tools is launched.

CC Protocol

The CC protocol is that of the Avid PRE. Note that the protocol provides 3dB steps for control of RedNet 4 and RedNet MP8R.

CC messages take the format:

Ba cc vv

Where:

>   a is the zero-indexed MIDI channel number in hex

>   cc is the control number in hex

>   vv is the value in hex

>   For example: B4h 19h 0Fh will set the following:

>   RedNet 4 / RedNet MP8R unit on MIDI channel 5
>   Input gain of mic pre channel 2
>   to a value of 45dB

Table A – Control numbers and values

CC Hex	CC Decimal	RedNet Mic Pre Function	RedNet Mic Pre Channel	Values (Hex)	RedNet 4	RedNet MP8R
00h	0	Input Source	1	00h=mic, 01h=line, 03h=inst	Yes	
01h	1	Input Impedance	1	00h=2.4K, 01h=10K		Yes
02h	2	Pad	1	00h=off, 7Fh=on		Yes
04h	4	+48V	1	00h=off, 7Fh=on	Yes	Yes
05h	5	Phase	1	00h=off, 7Fh=on		Yes
06h	6	High Pass Filter	1	00h=off, 7Fh=on	Yes	Yes
09h	9	Input Gain	1	See Table B	Yes	Yes
10h	16	Input Source	2	00h=mic, 01h=line, 03h=inst	Yes	
11h	17	Input Impedance	2	00h=2.4K, 01h=10K		Yes
12h	18	Pad	2	00h=off, 7Fh=on		Yes
14h	20	+48V	2	00h=off, 7Fh=on	Yes	Yes
15h	21	Phase	2	00h=off, 7Fh=on		Yes
16h	22	High Pass Filter	2	00h=off, 7Fh=on	Yes	Yes
19h	25	Input Gain	2	See Table B	Yes	Yes
20h	32	Input Source	3	00h=mic, 01h=line, 03h=inst	Yes	
21h	33	Input Impedance	3	00h=2.4K, 01h=10K		Yes
22h	34	Pad	3	00h=off, 7Fh=on		Yes
24h	36	+48V	3	00h=off, 7Fh=on	Yes	Yes
25h	37	Phase	3	00h=off, 7Fh=on		Yes
26h	38	High Pass Filter	3	00h=off, 7Fh=on	Yes	Yes
29h	41	Input Gain	3	See Table B	Yes	Yes
30h	48	Input Source	4	00h=mic, 01h=line, 03h=inst	Yes	
31h	49	Input Impedance	4	00h=2.4K, 01h=10K		Yes
32h	50	Pad	4	00h=off, 7Fh=on		Yes
34h	52	+48V	4	00h=off, 7Fh=on	Yes	Yes
35h	53	Phase	4	00h=off, 7Fh=on		Yes
36h	54	High Pass Filter	4	00h=off, 7Fh=on	Yes	Yes
39h	57	Input Gain	4	See Table B	Yes	Yes

Table A – Control numbers and values continued

CC Hex	CC Decimal	RedNet Mic Pre Function	RedNet Mic Pre Channel	Values (Hex)	RedNet 4	RedNet MP8R
40h	64	Input Source	5	00h=mic, 01h=line, 03h=inst	Yes	
41h	65	Input Impedance	5	00h=2.4K, 01h=10K		Yes
42h	66	Pad	5	00h=off, 7Fh=on		Yes
44h	68	+48V	5	00h=off, 7Fh=on	Yes	Yes
45h	69	Phase	5	00h=off, 7Fh=on		Yes
46h	70	High Pass Filter	5	00h=off, 7Fh=on	Yes	Yes
49h	73	Input Gain	5	See Table B	Yes	Yes
50h	80	Input Source	6	00h=mic, 01h=line, 03h=inst	Yes	
51h	81	Input Impedance	6	00h=2.4K, 01h=10K		Yes
52h	82	Pad	6	00h=off, 7Fh=on		Yes
54h	84	+48V	6	00h=off, 7Fh=on	Yes	Yes
55h	85	Phase	6	00h=off, 7Fh=on		Yes
56h	86	High Pass Filter	6	00h=off, 7Fh=on	Yes	Yes
59h	89	Input Gain	6	See Table B	Yes	Yes
60h	96	Input Source	7	00h=mic, 01h=line, 03h=inst	Yes	
61h	97	Input Impedance	7	00h=2.4K, 01h=10K		Yes
62h	98	Pad	7	00h=off, 7Fh=on		Yes
64h	100	+48V	7	00h=off, 7Fh=on	Yes	Yes
65h	101	Phase	7	00h=off, 7Fh=on		Yes
66h	102	High Pass Filter	7	00h=off, 7Fh=on	Yes	Yes
69h	105	Input Gain	7	See Table B	Yes	Yes
70h	112	Input Source	8	00h=mic, 01h=line, 03h=inst	Yes	
71h	113	Input Impedance	8	00h=2.4K, 01h=10K		Yes
72h	114	Pad	8	00h=off, 7Fh=on		Yes
74h	116	+48V	8	00h=off, 7Fh=on	Yes	Yes
75h	117	Phase	8	00h=off, 7Fh=on		Yes
76h	118	High Pass Filter	8	00h=off, 7Fh=on	Yes	Yes
79h	121	Input Gain	8	See Table B	Yes	Yes

Setup with Pro Tools continued

Table B – CC gain values

Hex	Decimal	Pro Tools dB	RedNet 4 dB (Mic)	RedNet 4 dB (Line & Inst)	RedNet MP8R dB
00h	0	0	0	0	10
01h	1	3	8	3	10
02h	2	6	8	6	10
03h	3	9	9	9	10
04h	4	12	12	12	12
05h	5	15	15	15	15
06h	6	18	18	18	18
07h	7	21	21	21	21
08h	8	24	24	24	24
09h	9	27	27	27	27
0Ah	10	30	30	30	30
0Bh	11	33	33	33	33
0Ch	12	36	36	36	36
0Dh	13	39	39	39	39
0Eh	14	42	42	42	42
0Fh	15	45	45	45	45
10h	16	48	48	48	48
11h	17	51	51	51	51
12h	18	54	54	54	54
13h	19	57	57	54	57
14h	20	60	60	54	60
15h	21	63	63	54	63
16h	22	66	63	54	65
17h	23	69	63	54	65

When RedNet Control receives a MIDI message from Pro Tools, which is not supported by RedNet 4 or RedNet MP8R, the same message will be returned with the value set to "Off"

SysEx Protocol

Many devices can send and receive programmable SysEx messages. Please configure your controller according to the manufacturer's instructions using the following protocol.

The following tables show the format of each control message.

Table C – SysEx message format

Func.	Start SysEx	Manufacturer ID (Focusrite / Novation)			S/W	RedNet Control	Version	Device Type	Device Index	Mic Pre Channel	Parameter	Parameter value	End SysEx
Byte value (Hex)	F0h	00h	20h	29h	7Eh	02h	00h	04h/ 08h	00h – 0Fh (corresponds to MIDI channel 1 – 16 assigned to unit in RedNet Control	00h – 07h for channels 1–8 7Fh – for unit-wide parameters			F7h
Byte value (Dec)	240	0	32	41	126	2	0	4/8	0 – 15 (corresponds to MIDI channel 1 – 16 assigned to unit in RedNet Control	0 – 7 for channels 1–8 127 for unit-wide parameters	See table D		247
Notes	This will form the beginning of all messages												This will end each message

Notes:

- The Manufacturer ID used (00h 20h 29h) is that of Novation, the sister brand to Focusrite

- The version field may change in future RedNet Control releases. Compatibility between different versions is not guaranteed

- 04h is the device type needed to use a RedNet 4 and 08h must be used for the MP8R

SysEx Protocol continued

Table D – SysEx channel parameters and parameter values

Parameter	Parameter Byte (hex)	Parameter Value (hex)	Parameter Value (dec)
Gain	00h	RedNet 4: 00h-3Fh, RedNet MP8R: 0Ah-42h	RedNet 4: 0-63dB, RedNet MP8R: 10-65dB
Input Source	01h	00h = mic, 01h = line, 02h = inst	0 = mic, 1 = line, 2 = inst
Phantom Power	02h	00h = Off, any other value = On	0 = Off, any other value = On
High Pass Filter	03h	00h = Off, any other value = On	0 = Off, any other value = On
Input Impedance	05h	00h = 2.4K, any other value = 10K	0 = 2.4K, any other value = 10K
Pad	07h	00h = Off, any other value = On	0 = Off, any other value = On
Phase	09h	00h = Off, any other value = On	0 = Off, any other value = On
Gain Compensation	0Eh	00h = Off, any other value = On	0 = Off, any other value = On

Table E – SysEx unit-wide parameters

Parameter	Parameter Byte (hex)	Parameter Value
Restore Defaults	00h	Any
Identify Unit	01h	Any
Clear Overs	02h	Any
Gain Compensation Headroom	04h	00h = 0dB, 03h = 3dB, 06h = 6dB
Device Lock	05h	00h = unlock, 01h = lock

For example, to send a message of:

Set gain

To 45 dB

On channel 8

Of RedNet 4 assigned MIDI channel 2

The following message would be sent:

F0h 00h 20h 29h 7Eh 02h 00h 04h 01h 07h 00h 2Dh F7h

Or to Identify RedNet MP8R assigned MIDI channel 6, the following message would be sent:

F0h 00h 20h 29h 7Eh 02h 00h 08h 05h 7Fh 00h 01h F7h

Troubleshooting

For a list of FAQs and general troubleshooting tips, our Answerbase is a valuable resource. This can be found here: www.focusrite.com/answerbase

If any problem cannot be resolved, or if you have a query, please contact our Customer Support team using the contact details found here.

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