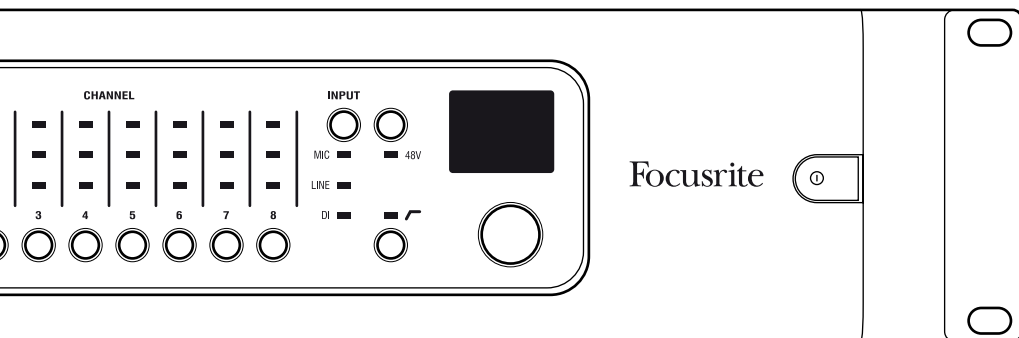


# REDNET®

MIDI Control for RedNet 4, RedNet MP8R and RedNet X2P



# Prerequisites

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- Supported Mac or Windows PC
- RedNet 4, RedNet MP8R or RedNet X2P 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 one of the CC protocol options available is that of the Avid PRE (formerly known as Digidesign PRE), RedNet 4, RedNet MP8R and RedNet X2P 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 / RedNet X2P MIDI Channel allocation

In RedNet Control, select RedNet Control 2 and choose the Preferences sub menu.

The following options 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 / RedNet X2P MIDI Channel Allocation**

By clicking on the “spanner” menu of any RedNet 4, RedNet MP8R or RedNet X2P, 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 / RedNet X2P 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

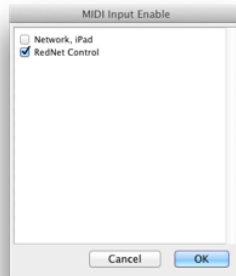
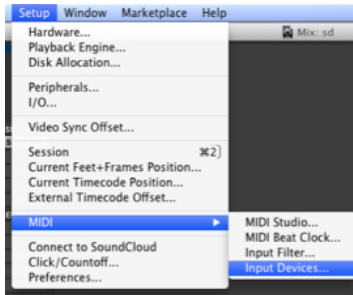
RedNet Control must be installed on the same computer as Pro Tools.

The following settings must be set within RedNet Control:

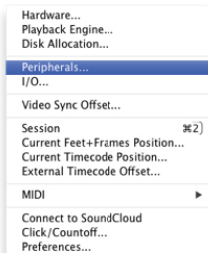
Setting	Selection
MIDI Input Device	RedNet Control
MIDI Output Device	RedNet Control
MIDI Input Protocol	Avid Pre (CC)
MIDI Output Protocol	Avid Pre (CC)
RedNet 4 / RedNet MP8R / RedNet X2P MIDI Channel Allocation	1-16

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

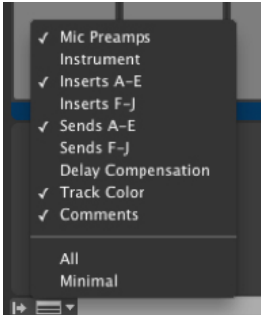




## Setup with Pro Tools continued

4. Pro Tools will now control RedNet 4, RedNet MP8R and RedNet X2P devices.

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 / RedNet X2P and RedNet Control are running before Pro Tools is launched.

## CC Protocol

There are two CC protocol options available:

Avid PRE (CC) - 3dB steps. See Table A and B.

1dB Step (CC) - 1dB steps. See Table A and C.

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 / RedNet X2P 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	RedNet X2P
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 / Air	1	00h=off, 7Fh=on		Yes	Air
04h	4	+48V	1	00h=off, 7Fh=on	Yes	Yes	Yes
05h	5	Phase	1	00h=off, 7Fh=on		Yes	Yes
06h	6	High Pass Filter	1	00h=off, 7Fh=on	Yes	Yes	Yes
09h	9	Input Gain	1	See Table B	Yes	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 / Air	2	00h=off, 7Fh=on		Yes	Air
14h	20	+48V	2	00h=off, 7Fh=on	Yes	Yes	Yes
15h	21	Phase	2	00h=off, 7Fh=on		Yes	Yes
16h	22	High Pass Filter	2	00h=off, 7Fh=on	Yes	Yes	Yes
19h	25	Input Gain	2	See Table B	Yes	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 / Air	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 / Air	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	RedNet X2P
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 / Air	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 / Air	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 / Air	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 / Air	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 – Avid PRE (CC) Gain Values

Hex	Decimal	Pro Tools dB	RedNet 4 dB (Mic)	RedNet 4 dB (Line & Inst)	RedNet MP8R dB	RedNet X2P dB (Mic/Line/Inst)
00h	0	0	0	0	10	0
01h	1	3	8	3	10	3
02h	2	6	8	6	10	6
03h	3	9	9	9	10	9
04h	4	12	12	12	12	12
05h	5	15	15	15	15	15
06h	6	18	18	18	18	18
07h	7	21	21	21	21	21
08h	8	24	24	24	24	24
09h	9	27	27	27	27	27
0Ah	10	30	30	30	30	30
0Bh	11	33	33	33	33	33
0Ch	12	36	36	36	36	36
0Dh	13	39	39	39	39	39
0Eh	14	42	42	42	42	42
0Fh	15	45	45	45	45	45
10h	16	48	48	48	48	48
11h	17	51	51	51	51	51
12h	18	54	54	54	54	54
13h	19	57	57	54	57	57
14h	20	60	60	54	60	60
15h	21	63	63	54	63	63
16h	22	66	63	54	65	66
17h	23	69	63	54	65	68

When RedNet Control receives a MIDI message from Pro Tools, which is not supported by RedNet 4, RedNet MP8R or RedNet X2P, the same message will be returned with the value set to "Off"

Table C – 1dB Step (CC) Gain Values

Hex	Decimal	RedNet 4 dB (Mic)	RedNet 4 dB (Line & Inst)	RedNet MP8R dB	RedNet X2P dB (Mic/Line/ Inst)
00h	0	0	0	10	0
01h	1	1	1	11	1
02h	2	2	2	12	2
03h	3	3	3	13	3
04h	4	4	4	14	4
05h	5	5	5	15	5
06h	6	6	6	16	6
07h	7	7	7	17	7
08h	8	8	8	18	8
09h	9	9	9	19	9
0Ah	10	10	10	20	10
0Bh	11	11	11	21	11
0Ch	12	12	12	22	12
0Dh	13	13	13	23	13
0Eh	14	14	14	24	14
0Fh	15	15	15	25	15
10h	16	16	16	26	16
11h	17	17	17	27	17
12h	18	18	18	28	18
13h	19	19	19	29	19
14h	20	20	20	30	20
15h	21	21	21	31	21
16h	22	22	22	32	22
17h	23	23	23	33	23
18h	24	24	24	34	24
19h	25	25	25	35	25
1Ah	26	26	26	36	26
1Bh	27	27	27	37	27
1Ch	28	28	28	38	28
1Dh	29	29	29	39	29
1Eh	30	30	30	40	30
1Fh	31	31	31	41	31
20h	32	32	32	42	32
21h	33	33	33	43	33
22h	34	34	34	44	34

Table C – 1dB Step (CC) Gain Values

Hex	Decimal	RedNet 4 dB (Mic)	RedNet 4 dB (Line & Inst)	RedNet MP8R dB	RedNet X2P dB (Mic/Line/ Inst)
23h	35	35	35	45	35
24h	36	36	36	46	36
25h	37	37	37	47	37
26h	38	38	38	48	38
27h	39	39	39	49	39
28h	40	40	40	50	40
29h	41	41	41	51	41
2Ah	42	42	42	52	42
2Bh	43	43	43	53	43
2Ch	44	44	44	54	44
2Dh	45	45	45	55	45
2Eh	46	46	46	56	46
2Fh	47	47	47	57	47
30h	48	48	48	58	48
31h	49	49	49	59	49
32h	50	50	50	60	50
33h	51	51	51	61	51
34h	52	52	52	62	52
35h	53	53	53	63	53
36h	54	54	54	64	54
37h	55	55	54	65	55
38h	56	56	54	65	56
39h	57	57	54	65	57
3Ah	58	58	54	65	58
3Bh	59	59	54	65	59
3Ch	60	60	54	65	60
3Dh	61	61	54	65	61
3Eh	62	62	54	65	62
3Fh	63	63	54	65	63
40h	64	63	54	65	64
41h	65	63	54	65	65
42h	66	63	54	65	66
43h	67	63	54	65	67
44h	68	63	54	65	68

# 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 D – 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	02h/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	See table D	F7h	
Byte value (Dec)	240	0	32	41	126	2	0	2/4/8	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		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
- 02h is the device type needed to use a RedNet X2P
- 04h is the device type needed to use a RedNet 4
- 08h is the device type needed to use a RedNet MP8R

# SysEx Protocol continued

Table E – SysEx channel parameters and parameter values

Parameter	Parameter Byte (hex)	Parameter Value (hex)	Parameter Value (dec)
Gain	00h	RedNet X2P: 00h-44h, RedNet 4: 00h-3Fh, RedNet MP8R: 0Ah-42h	RedNet X2P: 0-68dB, 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
Air	08h	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 F – SysEx unit-wide parameters**

<b>Parameter</b>	<b>Parameter Byte (hex)</b>	<b>Parameter Value</b>
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

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