REDNET®

RedNet Installation Guide

Focusrite®

www.focusrite.com

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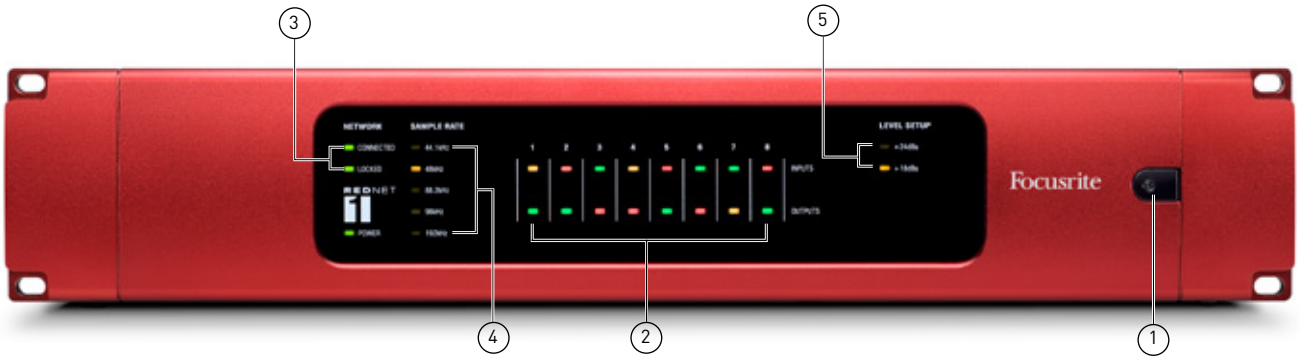
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REDNET 1

UNIT CONNECTIONS AND FEATURES

RedNet 1 - Front Panel



1. AC Power switch

2. Tricolour LEDs indicating signal level at each A-D and D-A converter:
   - Green – signal level above -42 dBFS
   - Yellow – signal level above -6 dBFS
   - Red – signal level is 0 dBFS (digital clipping)

3. **NETWORK** status flags – two green LEDs confirming network status:
   - **CONNECTED** – illuminates when the unit is connected to an active Ethernet network
   - **LOCKED** – illuminates when a valid sync is received via the network

4. **SAMPLE RATE** indication – five yellow LEDs; only one of these (**44.1 kHz**, **48 kHz**, **88.2 kHz**, **96 kHz**, **192 kHz**) will be lit at a time, to confirm the sample rate that the system is running at.

5. **LEVEL SETUP** indication – two yellow LEDs; one of these will be illuminated to confirm the analogue reference level set for the unit, **+24 dBu** or **+18 dBu**. This is the analogue level which equates to the internal maximum digital clip level of 0 dBFS.

RedNet 1 - Rear Panel



6. **ANALOGUE INPUTS 1-8** – 25-pin female Dsub connector for connecting up to 8 analogue sources to the RedNet system. All inputs are electronically balanced. See page 7 for connector details.

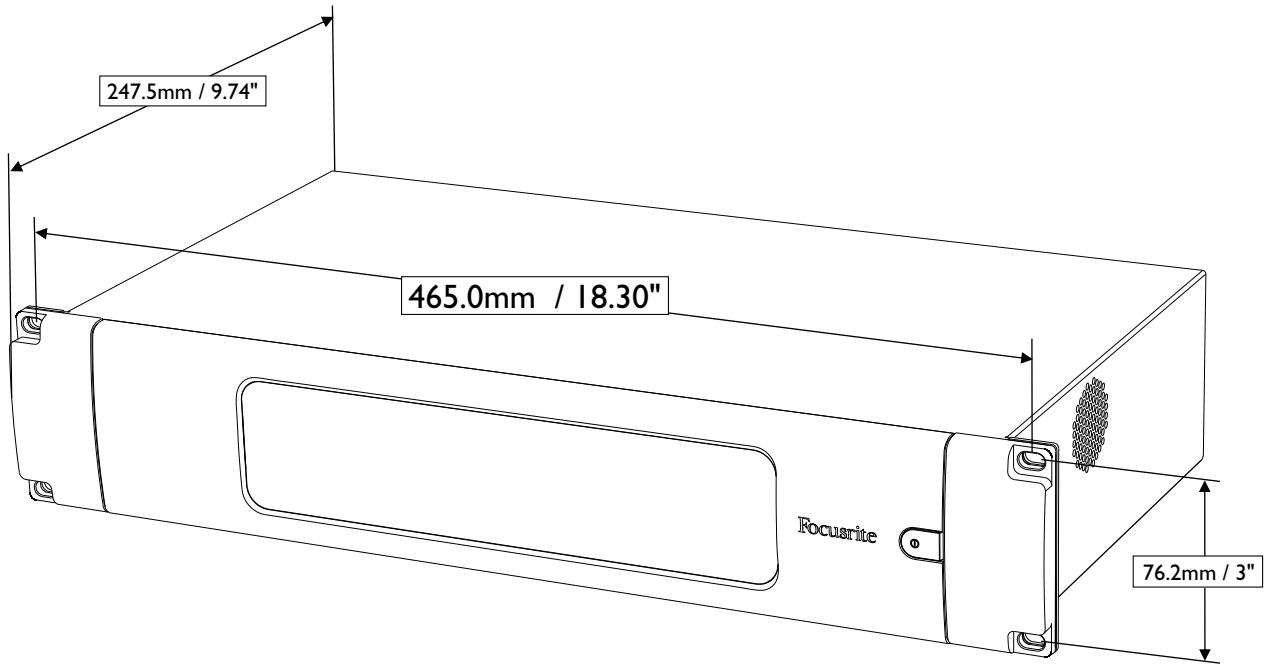
7. **ANALOGUE OUTPUTS 1-8** – 25-pin female Dsub connector with 8 analogue outputs from the RedNet system. All outputs are electronically balanced. See page 7 for connector details.

8. **ETHERNET** – RJ45 network socket. Use a standard CAT 6 cable to connect this socket to a local Ethernet switch to connect the RedNet 1 to the RedNet network. The socket has integral LEDs which illuminate to indicate connection to an active network port, and network activity. See page 8 for connector details.

9. AC mains – standard IEC receptacle for connection of AC mains. RedNet 1 has a 'Universal' PSU, enabling it to operate from any supply voltages between 100 V and 240 V.

PHYSICAL CHARACTERISTICS

RedNet 1's dimensions are shown in the diagram below:



RedNet 1 requires 2U of vertical rackspace and at least 350 mm of rack depth, to allow for cables. RedNet 1 weighs 4.12 kg and for installations in a fixed environment (e.g., a studio), the front panel mounting screws will provide adequate support. If the units are to be used in a mobile situation (e.g., flight-cased for touring, etc.), consideration should be given to using side support rails within the rack.

RedNet 1 generates no significant heat, and is normally cooled by natural convection, though an internal cooling fan is fitted. We recommend that the unit should not be used in locations where the ambient temperature is greater than 30°C(85°F). However, if this is unavoidable, the fan can be turned on and off from RedNet Control.

Ventilation is via slots in the enclosure at both sides. Do not mount RedNet 1 immediately above any other equipment which generates significant heat, for example, a power amplifier. Also, ensure that when mounted in a rack, the side vents are not obstructed.

POWER REQUIREMENTS

RedNet 1 is mains-powered. It incorporates a 'Universal' power supply, which can operate on any AC mains voltage from 100 V to 240 V. The AC connection is made via a standard 3-pin IEC connector on the rear panel. A mating IEC cable is supplied with the unit, which should be terminated with a mains plug of the correct type for your country.

The AC power consumption of the RedNet 1 is 45 VA.



Please note that there are no fuses in RedNet 1, or other user-replaceable components of any type. Please refer all servicing issues to the Customer Support Team (see "Customer Support and Unit Servicing" on page 55).

First Use and Firmware Updates

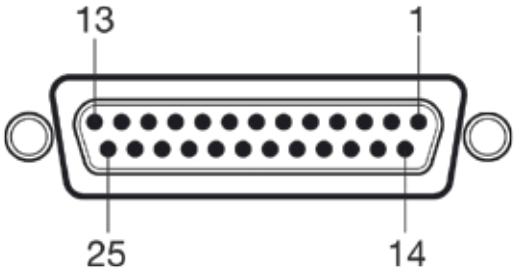
Your RedNet 1 will require a firmware update when it is first installed and switched on. Firmware updates are initiated and handled automatically by the RedNet Control application. It is important that the firmware update procedure is not interrupted, either by switching off the RedNet 6 or the computer on which RedNet Control is running or disconnecting either from the network.

From time to time Focusrite will release RedNet firmware updates with new versions of RedNet Control. We recommend keeping all RedNet units up to date with the latest firmware version supplied with each new version of RedNet Control.

CONNECTORS

8-channel analogue input and output connectors

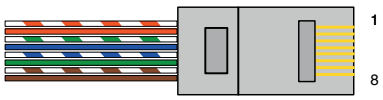
Connector type: 25-pin female Dsub
Applies to: ANALOGUE INPUTS 1-8
ANALOGUE OUTPUTS 1-8
Standard: AES 59 (AKA Tascam wiring)



Pin	Signal		Pin	Signal
1	Ch 8 'hot' (+)		14	Ch 8 'cold' (-)
2	Ch 8 screen		15	Ch 7 'hot' (+)
3	Ch 7 cold (-)		16	Ch 7 screen
4	Ch 6 'hot' (+)		17	Ch 6 'cold' (-)
5	Ch 6 screen		18	Ch 5 'hot' (+)
6	Ch 5 cold (-)		19	Ch 5 screen
7	Ch 4 'hot' (+)		20	Ch 4 'cold' (-)
8	Ch 4 screen		21	Ch 3 'hot' (+)
9	Ch 3 cold (-)		22	Ch 3 screen
10	Ch 2 'hot' (+)		23	Ch 2 'cold' (-)
11	Ch 2 screen		24	Ch 1 'hot' (+)
12	Ch 1 cold (-)		25	Ch 1 screen
13	n/c			

Ethernet connector

Connector type: RJ-45 receptacle
Applies to: ETHERNET
Cable type: CAT 5e or CAT 6



Pin	Cat 6 Core
1	White + Orange
2	Orange
3	White + Green
4	Blue
5	White + Blue
6	Green
7	White + Brown
8	Brown

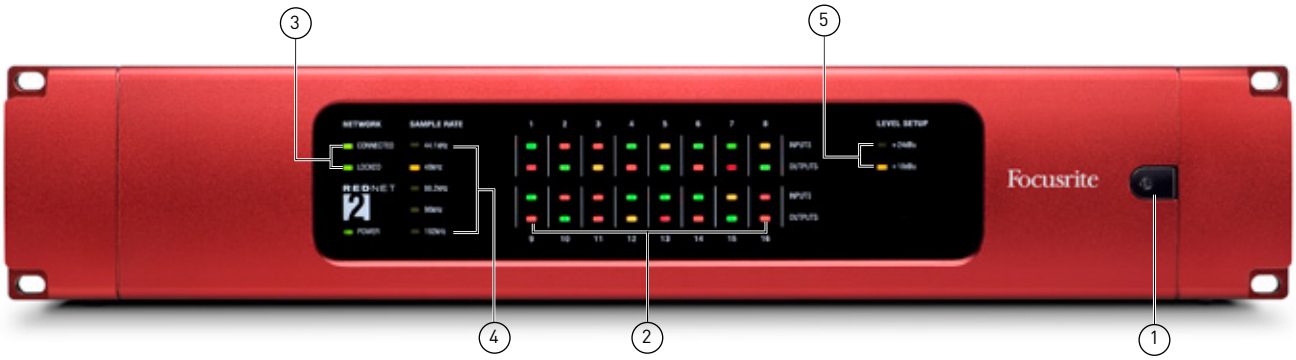
PERFORMANCE SPECIFICATIONS

Inputs	
Analogue line inputs	8
Connector	25-way female Dsub, wired to AES 59
0 dBFS reference levels	+18 or +24 dBu (switchable)
Frequency response	20 Hz – 20 kHz ±0.05 dB
THD+N	< 0.001% unweighted; -1 dBFS input, 20 Hz – 22 kHz
Dynamic range	119 dB 'A'-weighted (-60 dBFS method)
Converter dynamic range	120 dB
Signal-to-noise ratio	119 dB 'A'-weighted; 20 Hz – 20 kHz
Outputs	
Analogue line outputs	8
Connector	25-way female Dsub, wired to AES 59
0 dBFS reference levels	+18 or +24 dBu (switchable)
Frequency response	20 Hz – 20 kHz ±0.15 dB
THD+N	< 0.001% unweighted; -1 dBFS input, 20 Hz – 22 kHz
Dynamic Range	119 dB 'A'-weighted (-60 dBFS method)
Converter dynamic range	120 dB
Signal-to-noise ratio	119 dB 'A'-weighted; 20 Hz – 20 kHz
Crosstalk	
Input or Output to Input	<-90 dB (all other channels at 0 dBFS)
Input or Output to Output	<-100 dB (all other channels at 0 dBFS)
Digital Performance	
Supported sample rates	44.1 / 48 / 88.2 / 96 / 192 kHz
Clock sources	Internal or from network master device
Power	
PSU	Internal, Universal type, consumption 45 VA
Front Panel Indicators	
Power	Green
Network connected	Green
Sync lock	Green
Sample rate	Yellow x 5
Input/Output range	Yellow x 2
Input/Output signal level	Bi-colour x 16 (Green = -42 dBFS; Orange = -6 dBFS; Red = overload)

REDNET 2

UNIT CONNECTIONS AND FEATURES

RedNet 2 - Front Panel



1. AC Power switch

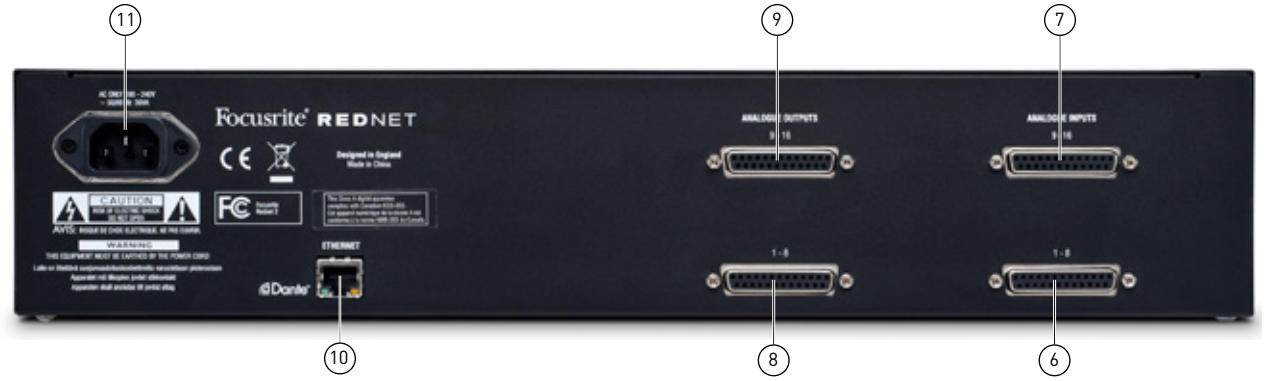
2. Tricolour LEDs indicating signal level at each analogue input and output:
   - Green – signal level above -42 dBFS
   - Yellow – signal level above -6 dBFS
   - Red – signal level is 0 dBFS (digital clipping)

3. **NETWORK** status flags – two green LEDs confirming network status:
   - **CONNECTED** – illuminates when the unit is connected to an active Ethernet network
   - **LOCKED** – illuminates when a valid sync is received via the network

4. **SAMPLE RATE** indication – five yellow LEDs; only one of these (**44.1 kHz**, **48 kHz**, **88.2 kHz**, **96 kHz**, **192 kHz**) will be lit at a time, to confirm the sample rate that the system is running at.

5. **LEVEL SETUP** indication – two yellow LEDs; one of these will be illuminated to confirm the analogue reference level set for the unit, **+24 dBu** or **+18 dBu**. This is the analogue level which equates to the internal maximum digital clip level of 0 dBFS.

RedNet 2 - Rear Panel



6. **ANALOGUE INPUTS 1-8** – 25-pin female Dsub connector for connecting up to 8 analogue sources to the RedNet system. All inputs are electronically balanced. See page 13 for connector details.

7. **ANALOGUE INPUTS 9-16** – as [6], for channels 9 to 16.

8. **ANALOGUE OUTPUTS 1-8** – 25-pin female Dsub connector with 8 analogue outputs from the RedNet system. All outputs are electronically balanced. See page 13 for connector details.

9. **ANALOGUE OUTPUTS 9-16** – as [8], for channels 9 to 16.

10. **ETHERNET** – RJ45 network socket. Use a standard computer network cable to connect this socket to a local Ethernet switch to connect the RedNet 2 to the RedNet network. The socket has integral LEDs which illuminate to indicate connection to an active network port, and network activity. See page 14 for connector details.

11. AC mains – standard IEC receptacle for connection of AC mains. RedNet 2 has a 'Universal' PSU, enabling it to operate from any supply voltages between 100 V and 240 V.

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