

Appendix C: Technical Info

Onyx 4•Bus Specifications

Frequency Response

Mic Input to Main Output (Gain @ Unity)
+0, -1 dB, <10 Hz to 80 kHz
+0, -3 dB, <10 Hz to 120 kHz

Distortion (THD & IMD)

Mic Input to Main Output (@ +4 dBu)
THD: < 0.007% 20 Hz to 20 kHz
0.003% @ 1kHz typical
SMPTE IMD: < 0.005% (7 kHz/60 Hz, 4:1)

Dynamic Range

>115 dB, Mic In to Main Out

Noise Floor

Signal-to-Noise Ratio:
-87 dBu (ref. +4 dBu, Mic In to Main Out,
32 channels and Main Mix levels at unity)
-89 dBu, (ref. +4 dBu, Mic In to Main Out,
24 channels and Main Mix levels at unity)
Equivalent Input Noise (E.I.N.), 20 Hz to 20 kHz Bandwidth,
150Ω source impedance
-129.5 dBu @ +60 dB gain
Mic Output Noise:
Direct Output: -100 dBu (minimum gain)
Residual Output Noise:
Main Out: -100 dBu (Channel and Main Mix levels off)
Main Out:
32•4: -83 dBu (32 channels and Main Mix
levels at unity)
24•4: -85 dBu (24 channels and Main Mix
levels at unity)

Common Mode Rejection Ratio (CMRR)

Mic In: >70 dB @ 1 kHz, Gain @ maximum

Crosstalk

Adjacent Inputs: < -95 dB @ 1 kHz
Input to Output: < -85 dB @ 1 kHz

Input Gain Control Range

Mic In: 0 dB to +60 dB
Line In: -20 dB to +40 dB, mono channels

Phantom Power

+48 VDC

Equalization

Mono Channel EQ:
High: ±15 dB @ 12 kHz
High Mid: ±15 dB, sweepable from 400 Hz to 8 kHz
Low Mid: ±15 dB, sweepable from 100 Hz to 2 kHz
Low: ±15 dB @ 80 Hz
Stereo Channel (Aux Input) EQ:
High: ±15 dB @ 12 kHz
High Mid: ±15 dB @ 2.5 kHz
Low Mid: ±15 dB @ 400 Hz
Low: ±15 dB @ 80 Hz

Mixer Rated Output

Main Outs: +4 dBu
Aux Send: +4 dBu
Group Send: +4 dBu
Monitor Out: +4 dBu
Matrix Out: +4 dBu
Maximum Rated Output:
+21 dBu @ Main XLR and TRS outputs

Maximum Input Levels

Mic Input: +21 dBu, Gain @ unity, pad out
Mic Input: +30 dBu, Gain @ unity, pad in
Line Input: +21 dBu, Gain @ -20 dB
Tape Input: +30 dBu
Stereo Return: +21 dBu

Maximum Voltage Gain

Mic Input to:
Main Out: 90 dB
Group Out: 80 dB
Aux Sends: 86 dB
Monitor Out: 103 dB
Matrix Out: 105 dB
Phones Out: 103 dB
Line Input to:
Main Out: 70 dB
Group Out: 60 dB
Aux Sends: 66 dB
Monitor Out: 83 dB
Matrix Out: 85 dB
Phones Out: 83 dB
Stereo Return to:
Main Out: 53 dB
Group Out: 43 dB
Aux Sends: 49 dB
Monitor Out: 66 dB
Matrix Out: 68 dB
Phones Out: 66 dB

Input Impedance

Mic Input: 3 kΩ, balanced
Mono Channel Line Input: 34 kΩ balanced
Stereo Returns: 20 kΩ balanced
Talkback Mic: 1 kΩ balanced

Output Impedance

Main Out: 100 Ω balanced, XLR outputs;
300 Ω TRS outputs
Direct Out: 300 Ω
Group Out: 300 Ω
Monitor Out: 300 Ω
Matrix Out: 300 Ω
Aux Sends: 300 Ω
Phones Out: 25 Ω

Channel Level LED (Sensitivity)

0 LED = 0 dBu (normal operating level)

VU Meters

Main Left and Right, Compressor Input, 12 segments:

Clip (+20), +15, +10, +6, +3, 0, -2, -4, -7, -10, -20, -30

0 LED = 0 dBu

Compressor Gain Reduction, 12 segments:

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15 dB

AC Power Requirements

Power Consumption:

Onyx 24•4 100 watts

Onyx 32•4 120 watts

Universal AC Power Supply:

100 VAC – 240 VAC, 50-60 Hz

Physical Dimensions and Weight

Onyx 24•4

Height: 7.3 in/185 mm

Width: 31.2 in/792 mm

Depth: 21.9 in/555 mm

Weight: 39.5 lb/17.9 kg

Onyx 32•4

Height: 7.3 in/185 mm

Width: 39.8 in/1011 mm

Depth: 21.9 in/555 mm

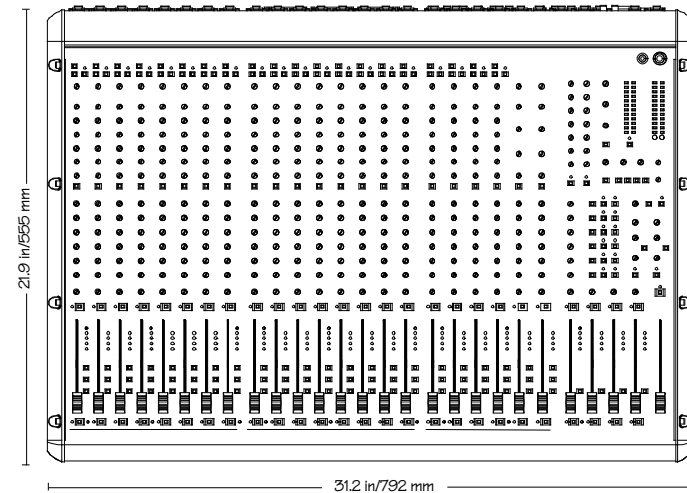
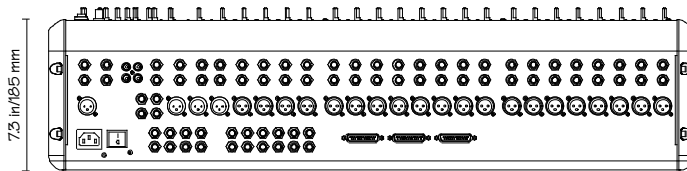
Weight: 48.0 lb/21.8 kg

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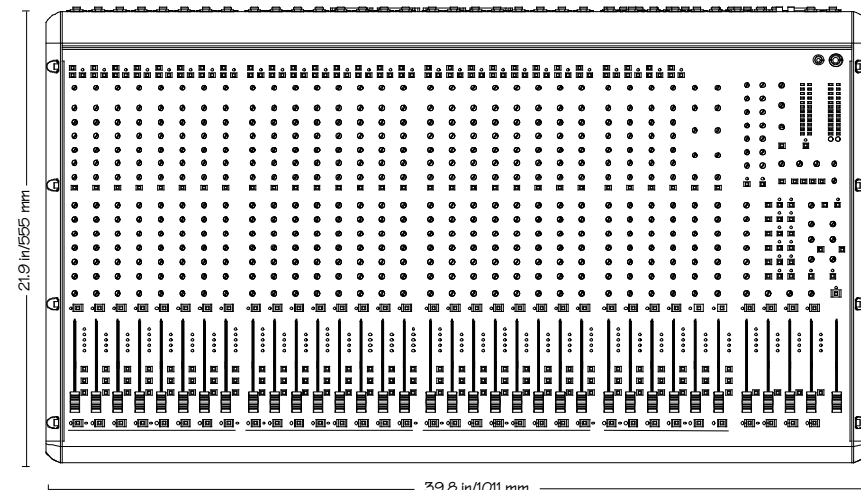
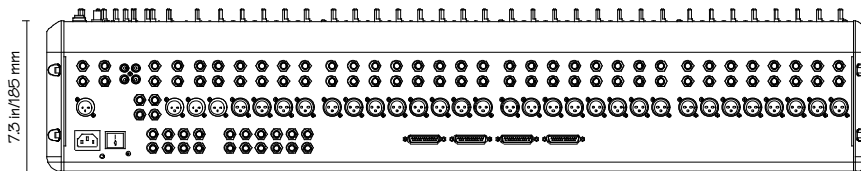
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Onyx 4•Bus Dimensions



Onyx 24•4



Onyx 32•4

