



PCIe Card	macOS Windows Linux VMWare	M1/M2 Mac Com- patible Driver	Echo Express SEL	Echo Express SE I	Echo Express SE II	Echo Express SE III/ IIIe <sup>25</sup>	Echo I, Breakaway Box	Echo IIDV, Echo III <sup>25</sup> , Echo Express III <sup>25</sup> , xMac Studio, xMac Pro Server	xMac mini Server
			TB2 or TB3	TB2 or TB3	TB2	TB3	TB3	TB2 or TB3	TB2 or TB3
			1 Low Profile	1 Full Height Half Length + 1 AUX	2 Full Height Half Length + 1 AUX	3 Full Height Half Length+	1 Full Height Full Length	3 Full Height Full Length	1 FHHL + 1 AUX <sup>1</sup>
<b>ADC</b>									
<a href="#">Acquiris U5309A</a>	WL	-	-	-	-	√ SE IIIe only <sup>1,2</sup>	√	√	-
<a href="#">Acquiris U5310A</a>	WL	-	-	-	-	-	√	√	-
<a href="#">Acquiris U5303A</a>	WL	-	-	-	-	√ SE IIIe only <sup>1,2</sup>	√	√	-
<a href="#">Acquiris SA220P</a>	WL	-	-	-	-	√ SE IIIe only <sup>1,2</sup>	√	√	-
<b>Audio Pro Cards</b>									
Apogee Symphony 64 PCIe Card <sup>d,2</sup>	M	Yes	-	-	√	√	√	√	√
Avid HD Native <sup>d,2</sup>	M	Yes <sup>27</sup>	-	-	√	-	√ BB Only	√ <sup>3</sup>	√
<a href="#">Avid Pro Tools   HDX<sup>28</sup></a>	MW	Yes	-	-	-	-	√ BB Only	√ <sup>3</sup>	√ <sup>3</sup>
BSS Audio BLU-PCI 64-channel PCIe BLU Link Card <sup>d,4</sup>	W	-	√	√	√	√	√	√	√
<a href="#">Creative Sound Blaster AE-9</a>	W	-	-	√	-	√	√	√ EE III TB3 Only	-
<a href="#">Dante PCIe-R Soundcards<sup>d,5</sup></a>	MW	No	-	√	√	√	√	√	√
Audinote PCIe-R Soundcard <sup>d,5</sup>	MW	No	-	√	√	√	√	√	√
<a href="#">Focusrite RedNet Dante PCIe-R Soundcard<sup>d,5</sup></a>	MW	No	-	√	√	√	√	√	√
Solid State Logic Dante PCIe-R Soundcard <sup>d,5</sup>	MW	No	-	√	√	√	√	√	√
<a href="#">Yamaha Dante Accelerator PCI-R Audio Soundcard<sup>d,5</sup></a>	MW	No	-	√	√	√	√	√	√
<a href="#">Focusrite PCIeNX Dante Interface</a>	MW	Yes	-	√	√	√	√	√	√
<a href="#">Lynx AES16e</a>	MW	Yes	-	√	√	√	√	√	√
<a href="#">Lynx AES16e-SRC</a>	MW	Yes	-	√	√	√	√	√	√
<a href="#">Lynx AES16e-S0</a>	MW	Yes	-	√	√	√	√	√	√
<a href="#">Lynx E22</a>	MW	-	-	√	√	√	√	√	√
<a href="#">Lynx E44</a>	MW	-	-	√	√	√	√	√	√
<a href="#">RME HDSPe AES</a>	MW	Yes	-	√ <sup>26</sup>	√	√	√	√	√
<a href="#">RME HDSPe AIO<sup>d</sup></a>	MW	-	-	√ <sup>26</sup>	√	√	√	√	√
<a href="#">RME HDSPe MADI</a>	MW	Yes	-	√ <sup>26</sup>	√	√	√	√	-
<a href="#">RME HDSDe MADI FX</a>	MW	Yes	-	√ <sup>26</sup>	√	√	√	√	-
<a href="#">RME HDSPe RayDAT</a>	MW	Yes	-	√ <sup>26</sup>	√	√	-	√	-
RME HDSPe PCI <sup>d</sup>	MW	No	√	√ <sup>26</sup>	√	√	√	√	-
Solid State Logic MadiXtreme 64 <sup>d</sup>	-	No	-	-	-	-	-	-	-
Solid State Logic MadiXtreme 128 <sup>d</sup>	-	No	-	-	-	-	-	-	-
Universal Audio UAD-2 Solo, Duo DSP Accelerator <sup>6</sup>	MW	Yes	-	√	√	√	√	√	√
Universal Audio UAD-2 Quad, Octo DSP Accelerator <sup>2,6</sup>	MW	Yes	-	-	√	√	√	√	√
<b>Ethernet Adapters (Gigabit)</b>									
<a href="#">Sijg CN-GP1211-S1 LB-GE0014-S1</a>	W	-	√	√	√	√	√	√	√
<a href="#">Sijg CN-GP1211-S1 LB-GE0114-S1</a>	W	-	√	√	√	√	√	√	√
Small Tree GbE <sup>d</sup> P2EGS-1T, P2EGS-2T, PEGS-4T	MW	No	√	√	√	√	√	√	√
Small Tree GbE <sup>d</sup> P2EGS-6T	MW	No	-	√	√	√	√	√	√
Sonnet Presto Gigabit Pro PCIe GE1000IAB-F <sup>d,7</sup>	MW	Yes	√	√	√	√	√	√	√
<b>Ethernet Adapters (10 GbE)</b>									
<a href="#">ASUS XG-C100C</a>	WL	-	√ TB3 Only	√ TB3 only	-	√	√	√ TB3 Only	-
<a href="#">ATTO Fast Frame NT11<sup>d</sup>, NT12</a>	MWLV	Yes	-	-	-	√	√	√ TB3 Only	√ TB3 Only
<a href="#">ATTO Fast Frame NS11<sup>d</sup>, NS12, NS14<sup>d</sup></a>	MWLV	Yes	-	-	-	√	√	√ TB3 Only	√ TB3 Only
<a href="#">QNAP QXG-10G1T</a>	WL	-	√ TB3 Only	√ TB3 only	-	√	√	√ TB3 Only	-
Sijg CN-GP1211-S1 <sup>d</sup>	W	-	-	-	-	-	-	-	-
<a href="#">Small Tree 10GbE P2E10G-[1-T, 1-SR]</a>	MW	No	-	-	-	√	√	√	√
<a href="#">Small Tree 10GbE P2E10G-[2-T, 4-T]<sup>22</sup>, P3E10G-[4-SR, 6-SR]<sup>22</sup></a>	MW	No	-	-	-	√	√	√ TB3 Only	√ TB3 Only
<a href="#">Small Tree 10GbE P2E10G-2-XR, P3E10G-[4-XR, 6-XR]<sup>22</sup></a>	MW	No	-	-	-	-	√	√ TB3 Only	√ TB3 Only
<a href="#">Sonnet Solo10G G10E-2X-E3 1-Port Card (10GBASE-T)</a>	MWL	Yes	√	√	√	√	√	√	√
<a href="#">Sonnet Solo10G SFP+ G10E-SFP-1X-E3 1-Port Card (SFP+)</a>	MWL	Yes	√	√	√	√	√	√	√
<a href="#">Sonnet McFiver</a>	MW <sup>25,L</sup>	Yes	-	√	√	√	√	√	√
<a href="#">Sonnet Twin10G (Presto) 10GbE G10E-2X-E3 2-Port Card</a>	MWLV	Yes	√	√	√	√	√	√	√
<a href="#">Sonnet Twin10G (Presto) 10GbE SFP+ 2-Port Card (SFP+)</a>	MWLV	Yes	√	√	√	√	√	√	√
<b>Ethernet Adapters (25 GbE)</b>									
NVIDIA ConnectX-4 MCX4111A-[ACAT, ACUT], MCX4121A-ACUT <sup>22</sup>	WL	-	√ TB3 Only	√ TB3 only	-	√	√	√ TB3 Only	√ TB3 Only
NVIDIA ConnectX-5 MCX512A-[ACAT, ACUT, ADAT] <sup>22</sup>	WL	-	√ TB3 Only	√ TB3 only	-	√	√	√ TB3 Only	√ TB3 Only
NVIDIA ConnectX-6 MCX631102AS-ADAT <sup>22</sup>	WL	-	√ TB3 Only	√ TB3 only	-	√	√	√ TB3 Only	√ TB3 Only
NVIDIA ConnectX-4 MCX4121A-ACAT	WL	-	-	-	-	-	√	√ TB3 Only	√ TB3 Only
NVIDIA ConnectX-5 MCX511F-ACAT, MCX512F-ACAT <sup>22</sup>	WL	-	-	-	-	-	√	√ TB3 Only	√ TB3 Only
NVIDIA ConnectX-6 MCX623102AC-ADAT <sup>22</sup>	WL	-	-	-	-	-	√	√ TB3 Only	√ TB3 Only
<a href="#">Sonnet Twin25G PCIe Card</a>	MWL	Yes	√ TB3 Only	√ TB3 only	-	√	√	√ TB3 Only	√ TB3 Only

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			TB2 or TB3	TB2 or TB3	TB2	TB3	TB3	TB2 or TB3	TB2 or TB3
			1 Low Profile	1 Full Height Half Length + 1 AUX	2 Full Height Half Length + 1 AUX	3 Full Height Half Length+	1 Full Height Full Length	E3/EEIII/xMPS: 3 FHFL BB: 1 DWFHFL	1 FHFL + 1 FHHL + 1 AUX <sup>1</sup>
<b>Fibre Channel</b>									
ATTO Celerity FC-81EN <sup>d</sup>	MWLV		✓	✓	✓	✓	✓	✓	✓
ATTO Celerity FC-82EN <sup>d</sup>	MWLV		✓	✓	✓	✓	✓	✓	✓
ATTO Celerity FC-84EN <sup>d</sup>	MWLV		-	✓	✓	✓	✓	✓	✓
<a href="#">ATTO Celerity FC-161E</a>	MWLV	Yes	✓	✓	✓	✓	✓	✓	✓
<a href="#">ATTO Celerity FC-162E<sup>8</sup></a>	MWLV	Yes	✓	✓	✓	✓	✓	✓	✓
<a href="#">ATTO Celerity FC-164E<sup>8</sup></a>	MWLV	Yes	-	✓	✓	✓	✓	✓	✓
<a href="#">ATTO Celerity FC-321E<sup>8</sup></a>	MWLV	Yes	✓	✓	✓	✓	✓	✓	✓
<a href="#">ATTO Celerity FC-322E<sup>8</sup></a>	MWLV	Yes	✓	✓	✓	✓	✓	✓	✓
<a href="#">ATTO Celerity FC-324E<sup>8</sup></a>	MW <sup>25</sup> V	Yes	✓	✓	✓	✓	✓	✓	✓
<b>FireWire</b>									
Sonnet Allegro FW400 PCIe <sup>d</sup>	M		-	✓	✓	✓	✓	✓	✓
Sonnet Allegro FW800 PCIe <sup>d</sup>	M		-	✓	✓	✓	✓	✓	✓
Sonnet Tango 3.0 PCIe USB3 FW800 Combo <sup>d</sup>	M		-	✓	✓	✓	✓	✓	✓
Startech PEX1394A2V FW800	M		-	✓	✓	✓	✓	✓	✓
Startech PEX1394B3LP FW800	M		✓	✓	✓	✓	✓	✓	✓
<b>GPU Cards</b>									
<a href="#">AMD Radeon Pro WX7100</a>	MW	No	-	-	-	-	✓	✓ TB3 Only	✓ TB3 Only
<a href="#">AMD Radeon Pro W5500</a>	MW	No	-	-	-	-	✓	-	-
<a href="#">AMD Radeon Pro W6600</a>	MW	No	-	-	-	-	✓	-	-
<a href="#">NVIDIA Quadro P4000</a>	W	-	-	-	-	-	✓	-	-
<a href="#">NVIDIA Quadro RTX 4000<sup>19</sup></a>	W	-	-	-	-	-	✓	-	-
<b>PCIe Bus Extender</b>									
<a href="#">Accusys ExaSAN Single Port QSFP to PCIe HBA Card</a>	MW	No	✓	✓	✓	✓	✓	✓	✓
<a href="#">Accusys ExaSAN Dual Port QSFP to PCIe HBA Card</a>	MW	No	✓	✓	✓	✓	✓	✓	✓
Avid Mojo DX (with PCIe Host Interface Board) <sup>15</sup>	MWL	No	✓	✓	✓	✓	✓	✓	✓
Avid Nitris DX (with PCIe Host Interface Board) <sup>15</sup>	MWL	No	✓	✓	✓	✓	✓	✓	✓
<b>SAS/SATA</b>									
<a href="#">Areca ARC-1883x 8-port 12Gb SAS RAID adapter<sup>8</sup></a>	MWLV	Yes	✓	✓	✓	✓	✓	✓	✓
<a href="#">ATTO ExpressSAS H680</a>	MWLV		✓	✓	✓	✓	✓	✓	✓
ATTO ExpressSAS H1280 <sup>d</sup>	MWLV		✓	✓	✓	✓	✓	✓	✓
ATTO ExpressSAS H12F0 <sup>d</sup>	MWLV		✓	✓	✓	✓	✓	✓	✓
<a href="#">ATTO ExpressSAS H1280GT</a>	MWLV		✓	✓	✓	✓	✓	✓	✓
<a href="#">ATTO ExpressSAS H12F0GT</a>	MWLV		✓	✓	✓	✓	✓	✓	✓
ATTO ExpressSAS R680 RAID Adapter <sup>d, 9</sup>	MW	No	✓	✓	✓	✓	✓	✓	✓
CalDigit FASTA-2e <sup>d</sup>	-	No	-	-	-	-	-	-	-
CalDigit FASTA-6GU3 <sup>d</sup>	-	No	-	-	-	-	-	-	-
CalDigit FASTA-6GU3 PRO <sup>d</sup>	MW	No	-	✓	✓	✓	✓	✓	✓
HighPoint Rocket RAID SAS 2711/2722 <sup>d</sup>	-	No	✓	✓	✓	✓	✓	✓	✓
<a href="#">HighPoint Rocket RAID SAS 3742A</a>	MW	No	-	-	-	-	-	-	-
HighPoint Rocket RAID SAS 4522SGL <sup>d</sup>	-	No	✓	✓	✓	✓	✓	✓	✓
HighPoint Rocket RAID SATA 644L/644LS <sup>d</sup>	-	No	-	✓	✓	✓	✓	✓	✓
NewerTech MAXPower USB/eSATA 2x2 Host Adapter <sup>d</sup>	-	No	-	✓	✓	✓	✓	✓	✓
Sonnet Tempo Duo PCIe <sup>d</sup>	MW	No	-	✓	✓	✓	✓	✓	✓
Sonnet Tempo SATA E2P <sup>d</sup>	-	No	-	-	-	-	-	-	-
Sonnet Tempo SATA Pro 6Gb PCIe 2.0 <sup>d</sup>	MWL	Yes	✓	✓	✓	✓	✓	✓	✓
Sonnet Tempo SATA 6Gb Pro 4-port <sup>d</sup>	MWL	Yes	-	✓	✓	✓	✓	✓	✓
<b>SSD</b>									
ASUS Hyper M.2 x16 PCIe 3.0 Expansion Card	-	-	-	-	-	-	-	-	-
Dell Ultra-Speed Drive Quad NVMe M.2 PCIe x16 Card	-	-	-	-	-	-	-	-	-
HP Turbo Drive Quad Pro	-	-	-	-	-	-	-	-	-
<a href="#">Icy Dock MB987M2P-B NVMe M.2 SSD Adapter</a>	MWL	Yes	✓ <sup>23</sup>	✓	✓	✓	✓	✓	✓
<a href="#">Icy Dock MB987M2P-1B NVMe M.2 SSD Adapter with heat sink</a>	MWL	Yes	✓ <sup>23</sup>	✓	✓	✓	✓	✓	✓
<a href="#">Icy Dock MB840M2P-B Removable M.2 Adapter</a>	-	-	-	-	-	-	-	-	-
Intel SSD 750 Series <sup>d</sup>	M <sup>10</sup> W		✓	✓	✓	✓	✓	✓	✓
<a href="#">Intel Optane 900P_905P PCIe SSD</a>	MW		✓	✓	✓	✓	✓	✓	✓
<a href="#">OWC Accelsior 1M2</a>	MWL	Yes	✓	✓	✓	✓	✓	✓	✓
<a href="#">OWC Accelsior 4M2</a>	M	Yes	-	✓	✓	✓	✓	✓	✓
<a href="#">OWC Accelsior 8M2</a>	M	Yes	-	-	-	-	✓	✓	✓
<a href="#">QNAP QM2-2P-344</a>	M	Yes	✓	✓	✓	✓	✓	✓	✓
<a href="#">Sonnet M.2 2x4 PCIe Card</a>	MW <sup>25</sup> L	Yes	✓	✓	✓	✓	✓	✓	✓
<a href="#">Sonnet M.2 4x4 PCIe Card</a>	MW <sup>25</sup> L	Yes	-	-	-	-	✓	✓	✓ (FHFL slot)
<a href="#">Sonnet McFiver</a>	MW <sup>25</sup> L	Yes	-	✓	✓	✓	✓	✓	✓
<a href="#">Sonnet Fusion Dual U.2 PCIe Card</a>	MW <sup>25</sup> L	Yes	-	-	-	-	✓	✓	✓ (FHFL slot)
<a href="#">Sonnet Fusion Dual 2.5 inch SSD RAID</a>	MWL	Yes	-	-	-	-	✓	✓	✓ (FHFL slot)
Sonnet Tempo PCIe SSD <sup>d</sup>	MW	Yes	✓	✓	✓	✓	✓	✓	✓
<a href="#">Sonnet Tempo SSD</a>	MWL	Yes	-	✓ <sup>11</sup>	✓ <sup>11</sup>	✓ <sup>11</sup>	✓	✓	✓
Sonnet Tempo SSD Pro <sup>(d)</sup>	MW	Yes	-	-	-	-	✓	✓	✓ (FHFL slot)
Sonnet Tempo SSD Pro Plus <sup>(d)</sup>	MW	Yes	-	-	-	-	✓	✓	✓ (FHFL slot)
<a href="#">Western Digital BLACK AN1500 NVMe SSD Card</a>	MWL		-	✓	✓	✓	✓	✓	✓ (FHFL slot)

PCIe Card	macOS Windows Linux VMWare	M1/M2 Mac Com- patible Driver	Echo Express SEL	Echo Express SE I	Echo Express SE II	Echo Express SE III, IIIe	Echo I, Breakaway Box	Echo III <sup>2</sup> , Echo Express III <sup>2</sup> , xMac Studio, xMac Pro Server	xMac mini Server
			TB2 or TB3	TB2 or TB3	TB2	TB3	TB3	TB2 or TB3	TB2 or TB3
			1 Low Profile	1 Full Height Half Length + 1 AUX	2 Full Height Half Length + 1 AUX	3 Full Height Half Length+	1 Full Height Full Length	E3/EEIII/xMPS: 3 FHFL BB: 1 DWFHFL	1 FHFL + 1 FHFL + 1 AUX <sup>1</sup>
<b>Video Capture &amp; Processing</b>									
<a href="#">Acasis Dual 4K60 HDMI Video Capture Card</a>	W		-	√	√	√	√	√	-
<a href="#">Acasis Quad 1080p60 HDMI Video Capture Card</a>	W		-	√	√	√	√	√	-
<a href="#">Acasis Quad 1080p60 SDI Video Capture Card</a>	W		-	√	√	√	√	√	-
AJA Corvid 3G <sup>d</sup>	MWL		-	√ TB2 only	√	√	√	√	√
AJA Corvid 3G LP <sup>d</sup>	MWL		√ TB2 only	√ TB2 only	√	√	√	√	√
AJA Corvid 3G Fibre <sup>d</sup>	MWL		-	√ TB2 only	√	√	√	√	√
<a href="#">AJA Corvid</a>	MWL		-	√	√	√	√	√	√
<a href="#">AJA Corvid LP</a>	MWL		√	√	√	√	√	√	√
<a href="#">AJA Corvid 22</a>	MWL		-	√	√	√	√	√	√
<a href="#">AJA Corvid 24</a>	MWL		-	√	√	√	√	√	√
<a href="#">AJA Corvid 44/44LP</a>	MWL	Yes	-	√ TB3 only	-	√	√	√ TB3 only	NR <sup>21</sup>
<a href="#">AJA Corvid 44 12G</a>	MWL	Yes	-	√ TB3 only	-	√ SE IIIe only <sup>12</sup>	√	√ TB3 only	NR <sup>21</sup>
<a href="#">AJA Corvid 44 BNC</a>	MWL	Yes	-	√ TB3 only	-	√	√	√ TB3 only	NR <sup>21</sup>
<a href="#">AJA Corvid 88/88LP</a>	MWL	Yes	-	√ TB3 only	-	√	√	√ TB3 only	NR <sup>21</sup>
<a href="#">AJA Corvid HEVC</a>	MWL		-	-	-	√ SE IIIe only <sup>12</sup>	√	√ TB3 only	NR <sup>21</sup>
<a href="#">AJA Corvid HB-R</a>	MWL		-	√	√	√	√	√	√
<a href="#">AJA Kona LHe Plus</a>	MWL	Yes	-	√ TB2 only	√	√	-	√	√
<a href="#">AJA Kona LHi</a>	MWL	Yes	-	√ TB2 only	√	√	-	√	√
<a href="#">AJA Kona 1</a>	MWL	Yes	-	√	√	√	√	√	√
AJA Kona 3G <sup>d</sup>	MWL		-	√	√	√	√	√	√
<a href="#">AJA Kona HDMI</a>	MWL	Yes	-	√ TB3 only	-	√	√	√ TB3 only	NR <sup>21</sup>
<a href="#">AJA Kona 4</a>	MWL	Yes	-	√ TB3 only	-	√	√	√ TB3 only	NR <sup>21</sup>
<a href="#">AJA Kona IP</a>	MWL	Yes	-	-	-	√	√	√ TB3 only	NR <sup>21</sup>
<a href="#">AJA Kona 5<sup>5,18</sup></a>	MWL	Yes	-	-	-	√ SE IIIe only <sup>12</sup>	√	√ TB3 only	-
<a href="#">Blackmagic DeckLink 4K<sup>d</sup></a>	MW	No	√	√	√	√	√	√	√
<a href="#">Blackmagic DeckLink 4K Extreme<sup>d,13</sup></a>	MW	Yes	-	√	√	√	√	√	√
<a href="#">Blackmagic DeckLink 4K Extreme 12G<sup>13</sup></a>	MWL	Yes	-	-	-	√ SE IIIe only <sup>12</sup>	√	√	NR <sup>21</sup>
<a href="#">Blackmagic DeckLink 4K Pro<sup>d</sup></a>	MW	Yes	-	√	√	√	√	√	√
<a href="#">Blackmagic DeckLink 8K Pro<sup>8</sup></a>	MWL	Yes	-	-	-	√ SE IIIe only <sup>12</sup>	√	√ TB3 only	NR <sup>21</sup>
<a href="#">Blackmagic DeckLink Duo 2</a>	MWL	Yes	-	√	√	√	√	√	√
<a href="#">Blackmagic DeckLink Duo 2 Mini</a>	MWL	Yes	√	-	-	-	-	-	-
<a href="#">Blackmagic DeckLink Mini Monitor</a>	MWL	No	√	√	√	√	√	√	√
<a href="#">Blackmagic DeckLink Mini Monitor 4K</a>	MWL	Yes	√	√	√	√	√	√	√
<a href="#">Blackmagic DeckLink Mini Recorder</a>	MWL	Yes	√	√	√	√	√	√	√
<a href="#">Blackmagic DeckLink Mini Recorder 4K</a>	MWL	Yes	√	√	√	√	√	√	√
<a href="#">Blackmagic DeckLink HD Extreme 3D<sup>d</sup></a>	MW	No	-	√	√	√	√	√	√
<a href="#">Blackmagic DeckLink Quad<sup>d</sup></a>	MW	No	-	√	√	√	√	√	√
<a href="#">Blackmagic DeckLink Quad 2</a>	MWL	Yes	-	-	-	√	-	√ TB3 only	NR <sup>21</sup>
<a href="#">Blackmagic DeckLink Quad HDMI Recorder<sup>8</sup></a>	MWL	Yes	-	√ TB3 only	-	√	√	√ TB3 only	NR <sup>21</sup>
<a href="#">Blackmagic DeckLink SDI<sup>d</sup></a>	MW	No	-	√	√	√	√	√	√
<a href="#">Blackmagic DeckLink SDI 4K</a>	MWL	Yes	-	√	√	√	√	√	√
<a href="#">Blackmagic DeckLink Studio<sup>d</sup></a>	MW	No	-	√	√	√	√	√	√
<a href="#">Blackmagic DeckLink Studio 2<sup>d</sup></a>	MW	No	-	√	√	√	√	√	√
<a href="#">Blackmagic DeckLink Studio 4K<sup>4,4</sup></a>	MWL	Yes	-	√	√	√	√	√ TB3 only	√
<a href="#">Blackmagic Intensity Duo<sup>d</sup></a>	MW	No	-	√	√	√	√	√	√
<a href="#">Blackmagic Intensity Pro<sup>d</sup></a>	MW	No	-	√	√	√	√	√	√
<a href="#">Blackmagic Intensity Pro 4K</a>	MWL	Yes	-	√	√	√	√	√	√
<a href="#">Bluefish444 2K Core<sup>d</sup></a>	M		-	-	-	-	√	√	-
<a href="#">Bluefish444 2K Ultra<sup>d</sup></a>	M		-	-	-	-	√	√	-
<a href="#">Bluefish444 Create HD<sup>d</sup></a>	M		-	-	-	-	√	√	-
<a href="#">Bluefish444 Create 3D<sup>d</sup></a>	M		-	-	-	-	√	√	-
<a href="#">Bluefish444 Create 3D Ultra<sup>d</sup></a>	M		-	-	-	-	√	√	-
<a href="#">Bluefish444 Epoch 2K Horizon<sup>d</sup></a>	M		-	-	-	-	√	√	-
<a href="#">Bluefish444 Epoch Neutron</a>	MWL		-	√	√	√	√	√	√
<a href="#">Bluefish444 Epoch Neutron LP</a>	MWL		√	√	√	√	√	√	√
<a href="#">Bluefish444 Epoch 4K Neutron</a>	MWL		-	√	√	√	√	√	√
<a href="#">Bluefish444 Epoch 4K Neutron LP</a>	MWL		√	√	√	√	√	√	√
<a href="#">Bluefish444 Epoch 4K Neutron Turbo (2 cards)</a>	MWL		-	√	√	√	√	√	-
<a href="#">Bluefish444 Epoch 4K Neutron Turbo LP (2 cards)</a>	MWL		-	√	√	√	√	√	√
<a href="#">Bluefish444 Epoch 4K Supernova</a>	MWL		-	-	-	-	√	√	√
<a href="#">Bluefish444 Epoch 4K Supernova EX (2 cards)</a>	MWL		-	-	-	-	√	√	-
<a href="#">Bluefish444 Epoch 4K Supernova Turbo (2-3 cards)</a>	MWL		-	-	-	-	√	√	-
<a href="#">Bluefish444 Epoch 4K Supernova S+</a>	MWL		-	√	√	√	√	√	√
<a href="#">Bluefish444 Epoch 4K Supernova S+ Turbo (2 cards)</a>	MWL		-	-	-	-	√	√	-
<a href="#">Bluefish444 Epoch 4K Supernova S+ Ex (2 cards)</a>	MWL		-	-	-	-	√	√	-
<a href="#">Bluefish444 Epoch Supernova CG</a>	MWL		-	√	√	√	√	√	√
<a href="#">Bluefish444 KRONOS elektron</a>	MWL		-	√	√	√ SE IIIe only <sup>12</sup>	√	√	√
<a href="#">Bluefish444 KRONOS optós</a>	MWL		-	√	√	√ SE IIIe only <sup>12</sup>	√	√	√

PCIe Card	macOS Windows Linux VMWare	M1/M2 Mac Com- patible Driver	Echo Express SEL	Echo Express SE I	Echo Express SE II	Echo Express SE III, IIIe	Echo I, Breakaway Box	Echo III <sup>2</sup> , Echo Express III <sup>2</sup> , xMac Studio, xMac Pro Server	xMac mini Server
			TB2 or TB3	TB2 or TB3	TB2	TB3	TB3	TB2 or TB3	TB2 or TB3
			1 Low Profile	1 Full Height Half Length + 1 AUX	2 Full Height Half Length + 1 AUX	3 Full Height Half Length+	1 Full Height Full Length	E3/EEIII/xMPS: 3 FHFL BB: 1 DWFHFL	1 FHFL + 1 FHHL + 1 AUX <sup>1</sup>
<b>Video Capture &amp; Processing (continued)</b>									
Deltacast Delta-3G-elp-d 8c	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp-d 8b	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp-d 80	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp-d 84	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp-d 4c	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp-2key-d 22	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp-key-d 2K	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp-2key-d 44	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp -01	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp -02	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp -10	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp -11	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp -key-11	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp -20	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp -40	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp -d 01	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp -d 02	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp -d 04	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp -d 10	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp -d 11	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp -d 12	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp -d 20	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp -d 21	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp -d 22	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-elp -d 40	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G40-hd40-elp-d	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-h3k2-elp 20	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-h4k-elp 20	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-asi-elp-d 8C	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G4c-ASI4c-elp-d	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-asi-elp-d 4C	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-asi-elp 11	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-asi-elp 40	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-HD-E XX	MW		-	-	-	-	✓	✓	-
Deltacast Delta-HD-E-KEY 22	MW		-	-	-	-	✓	✓	-
Deltacast Delta-3G-ELP 40	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-ELP 20	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-ELP-KEY 11	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-E-KEY 22	MW		-	✓	✓	✓	✓	✓	✓
Deltacast Delta-HD-ELP-D 80	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-HD-ELP-D 44	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-HD-ELP-D 62	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-ELP-D 22	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-ELP-D 04	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-H4K-ELP 20	MW		✓	✓	✓	✓	✓	✓	✓
Deltacast Delta-3G-DVI-E 20	MW		-	✓	✓	✓	✓	✓	✓
<a href="#">Elgato 4K60PRO</a>			-	-	-	-	-	-	-
Matrox Mojito MAX <sup>d</sup>	W <sup>15</sup>		-	-	-	-	✓	✓	-
Matrox Morphis	W <sup>15</sup>		-	✓	✓	✓	✓	✓	✓
<a href="#">Magewell Pro Capture HDMI</a>	MWL		✓	✓	✓	✓	✓	✓	✓
<a href="#">Magewell Pro Capture Dual HDMI</a>	MWL		✓	✓	✓	✓	✓	✓	✓
<a href="#">Magewell Pro Capture Quad HDMI<sup>2</sup></a>	MWL		-	-	✓	✓	✓	✓	✓
<a href="#">Magewell Pro Capture HDMI 4K</a>	MWL		✓	✓	✓	✓	✓	✓	✓
<a href="#">Magewell Pro Capture HDMI 4K Plus</a>	MWL		✓	✓	✓	✓	✓	✓	✓
<a href="#">Magewell Pro Capture HDMI 4K Plus LT</a>	MWL		✓	✓	✓	✓	✓	✓	✓
<a href="#">Magewell Pro Capture Dual HDMI 4K Plus LT</a>	MWL		-	✓	✓	✓	✓	✓	✓
<a href="#">Magewell Pro Capture SDI</a>	MWL		✓	✓	✓	✓	✓	✓	✓
<a href="#">Magewell Pro Capture Dual SDI</a>	MWL		✓	✓	✓	✓	✓	✓	✓
<a href="#">Magewell Pro Capture Quad SDI</a>	MWL		-	✓	✓	✓	✓	✓	✓
<a href="#">Magewell Pro Capture SDI 4K Plus</a>	MWL		✓	✓	✓	✓	✓	✓	✓
<a href="#">Magewell Pro Capture Dual SDI 4K Plus</a>	MWL		-	✓	✓	✓	✓	✓	✓
<a href="#">Magewell Pro Capture AIO</a>	MWL		-	✓	✓	✓	✓	✓	✓
<a href="#">Magewell Pro Capture AIO 4K</a>	MWL		✓	✓	✓	✓	✓	✓	✓
<a href="#">Magewell Pro Capture AIO 4K Plus</a>	MWL		✓	✓	✓	✓	✓	✓	✓
<a href="#">Magewell Pro Capture DVI</a>	MWL		✓	✓	✓	✓	✓	✓	✓
<a href="#">Magewell Pro Capture Dual DVI</a>	MWL		-	✓	✓	✓	✓	✓	✓
<a href="#">Magewell Pro Capture DVI 4K</a>	MWL		✓	✓	✓	✓	✓	✓	✓
<a href="#">Magewell Pro Capture Hexa CVBS</a>	WL	-	✓	✓	✓	✓	✓	✓	✓
MOTU PCIe-424 <sup>d</sup>			-	-	-	-	-	-	-
RED ROCKET <sup>d,16</sup>	MW		-	-	-	-	✓	✓	✓
RED ROCKET X <sup>d,17</sup>	MW		-	-	-	-	✓	✓	✓

PCIe Card	macOS Windows Linux VMWare	M1/M2 Mac Com- patible Driver	Echo Express SEL	Echo Express SE I	Echo Express SE II	Echo Express SE III, IIIe	Echo I, Breakaway Box	Echo III <sup>25</sup> , Echo Express III <sup>25</sup> , xMac Studio, xMac Pro Server	xMac mini Server
			TB2 or TB3	TB2 or TB3	TB2	TB3	TB3	TB2 or TB3	TB2 or TB3
			1 Low Profile	1 Full Height Half Length + 1 AUX	2 Full Height Half Length + 1 AUX	3 Full Height Half Length+	1 Full Height Full Length	E3/EEIII/xMPS: 3 FHFL BB: 1 DWFHFL	1 FHFL + 1 FHHL + 1 AUX <sup>1</sup>
<b>USB 3</b>									
<a href="#">Sonnet Allegro USB 3.2 PCIe 4-Port</a>	MWL	Yes	-	✓	✓	✓	✓	✓	✓
<a href="#">Sonnet Allegro Pro USB 3.2 PCIe (4-Port)</a>	MWL	Yes	-	✓	✓	✓	✓	✓	✓
<a href="#">Sonnet Allegro USB-C PCIe (2-Port)</a>	MWL	Yes	✓	✓	✓	✓	✓	✓	✓
<a href="#">Sonnet Allegro USB-C 4-Port</a>	MWL	Yes	-	✓	✓	✓	✓	✓	✓
<a href="#">Sonnet Allegro USB-C 8-Port</a>	MWL	Yes	-	-	-	-	✓	✓	-
<a href="#">Sonnet McFiver</a>	MW <sup>25</sup>	Yes	-	✓	✓	✓	✓	✓	✓

**Technical Notes**

- These cards has been discontinued. Continuing OS support may be limited.
  - Only 2nd Generation Thunderbolt 2 xMac mini Server, part number XMAC-MS-A, supports an AUX card. All Thunderbolt 3 models support an AUX card.
  - These cards draw more than 3 Amps at 3.3V, exceeding the specification for the single PCIe slot Echo Express SE I chassis.
  - Echo III Desktop and Rackmount chassis (introduced Dec. 2020): supports three HDX cards.  
Echo Express III chassis (discontinued Dec. 2020): only TB2 and TB3 HDX support HDX cards; TB3 Edition not compatible with HDX cards.  
xMac Pro Server: compatible with HDX Cards.  
xMac mini Server: supports one HDX card.  
Breakaway Box: supports one HDX card  
Sonnet Power Adapter Cable for one HDX card, P/N TCB-HDXB supports EI, E III, EE III, xMPS and xMMS (but not BB); sold separately.
  - BSS Audio believes that BLU-PCI 64-channel PCIe BLU Link Card is Thunderbolt compatible, but they have not tested it. Worst case is that the card may not be hot-pluggable.  
[5. Requires firmware version 4.0.10.5+ & hardware version 4.2.0.9+. Supports macOS 10.14-11 \(except M1 Macs\) and Windows 10 and 11 with Rednet Control software 2.8.5+.](#)
  - Mac Pro 6,1 (Late 2013) computers require UAD v9.6.1 Build 62772 or higher.
  - Only Sonnet Presto Gigabit Pro PCIe model number GE1000LAB-E (shipping on or after January 1, 2014) is Thunderbolt compatible.
  - These are PCIe 3 x8 cards, and they may not achieve maximum bandwidth or number of video channels over Thunderbolt 3, which provides PCIe 3 x4.  
For example, a card that captures four 4k@60Hz channels may capture only two channels in a Thunderbolt chassis; or possibly four channels but at only @30Hz.
  - Cooling Kit for ATTO R680 RAID Card (Sonnet Part No. CK-R680) required for Echo Express III or xMac mini Server chassis.  
Ambient temperature limited to 30°C in Echo Express SE series chassis.
  - Requires macOS 10.13.6+
  - Single SSD in this chassis.
  - These cards require PCIe auxiliary power. The Echo Express SE IIIe provides a total power of 80W to the auxiliary power and PCIe connectors.  
Please make sure that the combined power requirements of all installed cards fit within this power budget.
  - This is a single slot but doublewide PCIe card that occupies two slot spaces. Fits in Breakaway Box.
  - This card has a cabled daughter card that can be installed in the SE I or SE II AUX card space, and takes two slots in other chassis. Does not fit in Breakaway Box.
  - Matrox cards do not support Windows 10 Fast Startup. Please disable this feature if you are using a mobile workstation.  
After every Windows Update you may have to disable Fast Startup again.
  - Uses beta driver. Hot plug not supported.  
In Sonnet tests, RED ROCKET with a Thunderbolt 2-equipped Echo Express III supported:
    - 24 fps @ 5K, full-frame, 8-bit
    - 11 fps @ 5K, full-frame, 16-bit
These results may vary depending on configuration and are provided for information purposes. Sonnet does not guarantee any particular performance of third-party cards.
  - In Sonnet tests, RED ROCKET X with a Thunderbolt 2-equipped Echo Express III supported:
    - 32 fps @ 5K, full-frame, 8-bit (note: should be sufficient for playback of dailies in the field)
    - 16 fps @ 5K, full-frame, 16-bit
    - 22 fps @ 6K, full-frame, 8-bit
    - 12 fps @ 6K, full-frame, 16-bit
    - 64.5 fps @ 6K, full-frame, 8-bit, exporting to 1080
    - 58.5 fps @ 6K, full-frame, 8-bit, exporting to 1080 (note: should be able to do 3D 1080 in real time)
These results may vary depending on configuration and are provided for information purposes. Sonnet does not guarantee any particular performance of third-party cards.
  - In Sonnet tests, a Kona 5 card in an Echo Express SE IIIe with AJA Device Test, we have achieved
    - 103 FPS to capture and 105 FPS to playback footage at a resolution of 4096x2160 4K-2160 and a pixel format of 10 bit YUV.
These results may vary depending on configuration and are provided for information purposes. Sonnet does not guarantee any particular performance of third-party cards.
  - 6-pin to 8-pin PCIe power adapter cable required, sold separately.
  - Requires macOS 10.15+
  - Not Recommended. These cards are supported, but the resolution and/or number of video streams may be limited.
  - Thunderbolt 3 has the bandwidth to support at full bandwidth 1) two 10GbE connections ; or 2) a single 25GbE connection.
  - With optional 3rd party low profile bracket, not included
  - These cards are PCIe 4.0 x8 and they will not be able to achieve maximum simultaneous bandwidth across four or more ports in a Thunderbolt expansion chassis.
  - Windows 11 requires version 22H2+ to support the Echo Express SE III/ IIIe, Echo Express III TB3, Echo III, or any PCIe card with a Gen 3.0 or 4.0 PCIe Switch.
  - Adding an HDSP TCO Timecode Option Module, an RME HDSPe MADI FX OPTO-X ; or an RME Word Clock Module (WCM) requires a 3-slot chassis.
  - [27. On June 8, 2023, Avid released verion 2023.06 of ProTools which reportedly fixes Avid Native issue with Mac Studio and MacBook Pro 2021.](#)
  - [28. Avid's latest ProTools Thunderbolt Chassis Compatibility linked here](#)
- Sonnet provides this table as a courtesy based on the information made available to Sonnet by the card manufacturers. Sonnet has tested Sonnet cards; but has not tested every 3rd-party card, and we cannot guarantee their compatibility. For most current information, contact the PCIe card manufacturer. Specifications are subject to change without notice.  
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