IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

GREENTHREAD, LLC, **Plaintiff,** **v.** **INTEL CORPORATION, DELL INC., AND DELL TECHNOLOGIES INC.,** **Defendants.**	**Case No. 6:22-cv-00105-ADA**

GREENTHREAD'S AMENDED PRELIMINARY INFRINGEMENT CONTENTIONS

Plaintiff Greenthread, LLC ("Greenthread") hereby provides its amended infringement contentions, including identification of asserted claims, the priority date for each asserted claim, accused products, and accompanying document production. Claim charts are attached as Exhibits A-1 through A-6, B-1 through B-6, C-1 through C-6, D-1, D-2, D-3, and D-6, and E-1 through E-6.

Greenthread has thus far received only the initial document production of August 22, 2022 from Intel Corporation ("Intel"), Dell Inc., and Dell Technologies Inc. (Dell Inc. and Dell Technologies Inc. are collectively "the Dell Defendants" or "Dell," and Intel Corporation and the Dell Defendants are collectively "Defendants"). Greenthread has procured limited physical testing to the extent practicable, of certain products believed to be representative of, and similar to, the accused infringing products in pertinent respects. Greenthread explicitly reserves the right to supplement or alter its disclosures herein, as a matter of right, as permitted by the Court, based on

the Court's claim constructions, based on additional information obtained through formal discovery or other means, and/or based on other circumstances.

I. ASSERTED CLAIMS AND PRIORITY DATE

Based on the information presently available to it, Greenthread identifies the asserted claims of each asserted patent that Greenthread alleges is infringed by Defendants, and the priority date of those claims, as set forth in the table below. Based on the information presently available to it, Greenthread alleges that all asserted claims of each particular asserted patent are entitled to the same priority date.

Patent	Asserted Claims	Priority Date of Asserted Claims
10,510,842 ("the '842 patent")	1, 2, 4-10, 12-18	September 3, 2004
10,734,481 ("the '481 patent")	1-9, 13, 15-20, 22-27, 31-36	September 3, 2004
11,121,222 ("the '222 patent")	1-9, 13, 15- 21, 23-28, 32-42, 44	September 3, 2004
8,421,195 ("the '195 patent")	1-3, 5-6	September 3, 2004
9,190,502 ("the '502 patent")	7-9, 11	September 3, 2004
11,316,014 (the "'014 Patent")	1-9, 13, 15-21, 23-28	September 3, 2004

Greenthread notes that the claims identified in the table reflect the asserted claims in this case, and the absence of a claim from the list does not imply that the claim is not infringed. Greenthread explicitly reserves the right to supplement or alter its identification of asserted claims and priority dates, as a matter of right, as permitted by the Court, based on any further claim constructions, additional information obtained through formal discovery or other means, and/or based on other circumstances.

II. ACCUSED PRODUCTS

Based upon information presently available to it, Greenthread asserts infringement by the accused products set forth below in this section. For each accused product identified below, Greenthread's contentions apply to the accused product and any other similar past, present, or future products, as well as systems incorporating the accused products or other products with the same or substantially similar features.

A. Intel Accused Products

As described further in Exhibits A-1 through A-6 and Exhibits B-1 through B-6 below, Intel's CPU products and Intel's flash memory products infringe one or more asserted claims of each of the asserted patents.

Intel Accused CPUs include all CPUs designed or manufactured (in whole or in part) by Intel, that have the same or similar structures, features, or functionalities as the exemplary Intel Core i7 11800H CPU shown in Exhibits A-1 through A-6. As shown in Exhibits A-1 through A-6, Intel Accused CPUs each infringe one or more claims of U.S. Patent Nos. 8,421,195 (claims 1-3, 5-6), 9,190,502 (claims 7-9), 10,510,842 (claims 1-2, 4-10, 12-18), 10,734,481 (claims 1-9, 13, 15, 17-18, 20, 22-27, 31-32, 34-35), 11,121,222 (claims 1-9, 13, 15, 17-18, 20-21, 23-28, 32-33, 35-36, 38-42, 44), 11,316,014 (claims 1-9, 13, 15, 17-18, 20-21, 23-28). Intel Accused CPUs include the 12th generation semiconductor products labeled as "Alder Lake," the 11th generation semiconductor products labeled as "Tiger Lake," the 10th generation semiconductor products labeled as "Comet Lake," and certain Intel Atom processors. The following listing of Intel 10th, 11th, and 12th generation and Atom semiconductor products is derived from publicly available information at Intel's website, e.g., as noted in Exhibit G to Greenthread's Complaint (Dkt. 1-7), and also from https://www.cpu-world.com/CPUs/Atom/index.html.

Greenthread reserves the right to supplement the list of Intel Accused Products as discovery proceeds.

Intel Atom Processors

1. Intel Atom C2308
2. Intel Atom C2316
3. Intel Atom C2338
4. Intel Atom C2350
5. Intel Atom C2358
6. Intel Atom C2508
7. Intel Atom C2516
8. Intel Atom C2518
9. Intel Atom C2530
10. Intel Atom C2538
11. Intel Atom C2550
12. Intel Atom C2558
13. Intel Atom C2718
14. Intel Atom C2730
15. Intel Atom C2738
16. Intel Atom C2750
17. Intel Atom C2758
18. Intel Atom C3308
19. Intel Atom C3336
20. Intel Atom C3338
21. Intel Atom C3338R
22. Intel Atom C3436L
23. Intel Atom C3508
24. Intel Atom C3538
25. Intel Atom C3558
26. Intel Atom C3558R
27. Intel Atom C3708
28. Intel Atom C3750
29. Intel Atom C3758
30. Intel Atom C3758R
31. Intel Atom C3808
32. Intel Atom C3830
33. Intel Atom C3850
34. Intel Atom C3858
35. Intel Atom C3950
36. Intel Atom C3955
37. Intel Atom C3958
38. Intel Atom C5115
39. Intel Atom C5125
40. Intel Atom C5310
41. Intel Atom C5315
42. Intel Atom C5320
43. Intel Atom C5325
44. Intel Atom P5322
45. Intel Atom P5332
46. Intel Atom P5342
47. Intel Atom P5352
48. Intel Atom P5362
49. Intel Atom P5721
50. Intel Atom P5731
51. Intel Atom P5742
52. Intel Atom P5752
53. Intel Atom P5942B
54. Intel AtomP5931B
55. Intel Atom P5962B
56. Intel Atom P5921B
57. Intel Atom T5700
58. Intel Atom x6200FE
59. Intel Atom x6211E
60. Intel Atom x6212RE
61. Intel Atom x6413E
62. Intel Atom x6414RE
63. Intel Atom x6425E
64. Intel Atom x6425RE
65. Intel Atom x6427FE

12th Generation "Alder Lake" Intel Products

1. Intel Core i5-12400
2. Intel Core i5-12400F
3. Intel Core i5-12400T
4. Intel Core i5-12450H
5. Intel Core i5-12500
6. Intel Core i5-12500E
7. Intel Core i5-12500H
8. Intel Core i5-12500T
9. Intel Core i5-12500TE

10. Intel Core i5-12600
11. Intel Core i5-12600KF
12. Intel Core i5-12600H
13. Intel Core i5-12600HE
14. Intel Core i5-12600T
15. Intel Core i5-12600K
16. Intel Core i5-12600KF
17. Intel Core i7-12650H
18. Intel Core i7-12700
19. Intel Core i7-12700E
20. Intel Core i7-12700F
21. Intel Core i7-12700H
22. Intel Core i7-12700T
23. Intel Core i7-12700TE
24. Intel Core i7-12800H
25. Intel Core i7-12800HE
26. Intel Core i7-12700K
27. Intel Core i7-12700KF
28. Intel Core i9-12900
29. Intel Core i9-12900E
30. Intel Core i9-12900F
31. Intel Core i9-12900H
32. Intel Core i9-12900HK
33. Intel Core i9-12900T
34. Intel Core i9-12900TE
35. Intel Core i9-12900K
36. Intel Core i9-12900KF
37. Intel Core i9-12900KF

11th Generation "Tiger Lake" Intel Products

1. Intel Core i3 11100HE
2. Intel Core i3 1115G4E
3. Intel Core i3 1115GRE
4. Intel Core i3 1120G4
5. Intel Core i3 1125G4
6. Intel Core i3 1110G4
7. Intel Core i3 1115G4
8. Intel Core i5 11500HE
9. Intel Core i5 11320H
10. Intel Core i5 1155G7
11. Intel Core i5 11260H
12. Intel Core i5 11400H
13. Intel Core i5 11500H
14. Intel Core i5 11600
15. Intel Core i5 11600
16. Intel Core i5 11600T
17. Intel Core i5 11500
18. Intel Core i5 11600KF
19. Intel Core i5 11600K
20. Intel Core i5 11400T
21. Intel Core i5 11500T
22. Intel Core i5 11400F
23. Intel Core i5 11400
24. Intel Core i5 11300H
25. Intel Core i5 1140G7
26. Intel Core i5 1145G7
27. Intel Core i5 1145GZE
28. Intel Core i5 1145GRE
29. Intel Core i5 1135G7
30. Intel Core i5 1130G7
31. Intel Core i7 11850HE
32. Intel Core i7 11600H
33. Intel Core i7 11390H
34. Intel Core i7 1195G7
35. Intel Core i7 11800H
36. Intel Core i7 11850H
37. Intel Core i7 11700KF
38. Intel Core i7 11700F
39. Intel Core i7 11700
40. Intel Core i7 11700T
41. Intel Core i7 11700K
42. Intel Core i7 11370H
43. Intel Core i7 1180G7
44. Intel Core i7 11375H
45. Intel Core i7 1185GRE
46. Intel Core i7 1185G7E
47. Intel Core i7 1167G7
48. Intel Core i7 1185G7
49. Intel Core i7 1165G7
50. Intel Core i7 1160G7
51. Intel Core i9 11950H
52. Intel Core i9 11980HK
53. Intel Core i9 11900H
54. Intel Core i9 11900
55. Intel Core i9 11900F
56. Intel Core i9 11900T
57. Intel Core i9 11900KF
58. Intel Core i9 11900K

10th Generation "Comet Lake" Intel Products

1. Intel Core i3 10105
2. Intel Core i3 10105F
3. Intel Core i3 10105T
4. Intel Core i3 10305
5. Intel Core i3 10305T
6. Intel Core i3 10325
7. Intel Core i3 10100Y
8. Intel Core i3 10100F
9. Intel Core i3 10100
10. Intel Core i3 10100E
11. Intel Core i3 10100T
12. Intel Core i3 10100TE
13. Intel Core i3 100300
14. Intel Core i3 100300T
15. Intel Core i3 10320
16. Intel Core i3 10110U
17. Intel Core i3 10110Y
18. Intel Core i3 1000G1
19. Intel Core i3 1000G4
20. Intel Core i3 1005G1
21. Intel Core i5 10505
22. Intel Core i5 10500H
23. Intel Core i5 10200H
24. Intel Core i5 10310U
25. Intel Core i5 1038NG7
26. Intel Core i5 10400
27. Intel Core i5 10400F
28. Intel Core i5 10400T
29. Intel Core i5 10500
30. Intel Core i5 10500E
31. Intel Core i5 10500T
32. Intel Core i5 10500TE
33. Intel Core i5 10600
34. Intel Core i5 10600K
35. Intel Core i5 10600KF
36. Intel Core i5 10600T
37. Intel Core i5 10300H
38. Intel Core i5 10400H
39. Intel Core i5 10210U
40. Intel Core i5 10210Y
41. Intel Core i5 10310U
42. Intel Core i5 1030G4
43. Intel Core i5 1030G7
44. Intel Core i5 1035G1
45. Intel Core i5 1035G4
46. Intel Core i5 1035G7
47. Intel Core i7 10870H
48. Intel Core i7 10610U
49. Intel Core i7 10810U
50. Intel Core i7 1068NG7
51. Intel Core i7 10700
52. Intel Core i7 10700E
53. Intel Core i7 10700F
54. Intel Core i7 10700K
55. Intel Core i7 10700KF
56. Intel Core i7 10700T
57. Intel Core i7 10700TE
58. Intel Core i7 10750H
59. Intel Core i7 10850H
60. Intel Core i7 10875H
61. Intel Core i7 10510U
62. Intel Core i7 10710U
63. Intel Core i7 1060G7
64. Intel Core i7 1065G7
65. Intel Core i9 10850K
66. Intel Core i9 10885H
67. Intel Core i9 10900
68. Intel Core i9 10900E
69. Intel Core i9 10900F
70. Intel Core i9 10900KF
71. Intel Core i9 10900T
72. Intel Core i9 10900TE
73. Intel Core i9 10900HK

"Intel Accused Flash Memory Products" include flash memory products designed or manufactured (in whole or in part) by Intel that have the same or similar structures, features, or functionalities as the exemplary Micron 16 nm node NAND flash memory analyzed in Exhibits

B-1 through B-6 regardless of how they are branded. That exemplary product was manufactured by Intel and bears Intel die marks.

Figure 1.1.2: Die markings (optical), 16 nm MLC NAND flash memory of IMFT

On information and belief, Intel designs and/or fabricates flash memory products using similar designs according to a limited number of processes, many or all of which utilize substantially similar process steps, including process steps for creating regions with graded dopant concentrations. Accordingly, statements in Exhibits B-1 through B-6 referring to Micron's flash memory products are equally applicable to Intel Accused Flash Memory Products.

As shown in Exhibits B-1 through B-6, Intel Accused Flash Memory Products each infringe one or more claims of U.S. Patent Nos. 8,421,195 (claims 1-3, 5-6), 9,190,502 (claims 7-8, 11), 10,510,842 (claims 1-2, 4-5, 7-10, 12-13, 15-18), 10,734,481 (claims 1-4, 6-9, 13, 15-16, 20, 22-24, 26-27, 31-33), 11,121,222 (claims 1-4, 6-9, 13, 15-17, 20-21, 23-25, 27-28, 32-34, 38-42, 44), 11,316,014 (claims 1-4, 6-9, 13, 15-17, 20-21, 23-25, 27-28).

Intel Accused CPU Products and Intel Accused Flash Memory Products are collectively the "Intel Accused Products."

B. Dell Accused Products

Dell's products infringe one or more asserted claims of the asserted patents ("Dell Accused Products"). Dell Accused Products include Dell Products (as defined in the First Amended Complaint, Dkt. 38) that incorporate or comprise Intel Accused Products ("Dell-Intel Accused Products"), Dell-Micron Accused Products (defined in the First Amended Complaint), Dell-Micron-Flash Accused Products (defined below), Dell-WD Accused Products (defined in the First Amended Complaint), Dell-Sony Accused Products (defined in the First Amended Complaint), and Dell-Micron-DRAM Accused Products (defined below).

1. Dell-Intel Accused Products

Dell Products comprising or containing Intel Accused Products are Dell-Intel Accused Products and infringe the same claims of the Greenthread Patents as the Intel Accused Products for the same reasons. The following listing of Dell-Intel Accused Products is derived from publicly available information at Dell's website, as noted in Exhibit G to Greenthread's Complaint (Dkt. 1-7). Greenthread reserves the right to supplement the list of Dell Accused Products, e.g., as discovery proceeds.

1. New XPS Desktop
2. Alienware Aurora R13 Gaming Desktop
3. New XPS Desktop
4. Alienware x17 Gaming Laptop
5. Alienware x15 Gaming Laptop
6. XPS 17 Touch Laptop
7. Alienware m15 R6 Gaming Laptop
8. XPS 15 Laptop
9. XPS 15 Touch Laptop
10. XPS 13 Touch Laptop
11. G15 Special Edition Gaming Laptop
12. XPS 13 Laptop
13. XPS 13 2-in-1 Laptop
14. Inspiron 15 2-in-1 Laptop
15. XPS 13 Touch Laptop
16. New Inspiron 16 Plus Laptop
17. G15 Gaming Laptop
18. XPS 17 Laptop
19. XPS 13 Laptop
20. Inspiron 17 2-in-1 Laptop
21. Inspiron 14 2-in-1 Laptop
22. Inspiron 13 Laptop
23. Inspiron 13 2-in-1 Plus Laptop

24. Inspiron 15 Laptop
25. Inspiron 14 Laptop
26. Inspiron 15 3000 Laptop
27. New Inspiron 15 1300 Laptop
28. Alienware m15 R4 Gaming Laptop
29. Inspiron Desktop
30. XPS Desktop
31. Other Dell products incorporating Intel Accused Products.

This identification of Dell-Intel Accused Products is based upon Greenthread's investigation to date, which has included limited physical testing to the extent practicable and has been undertaken at significant expense to Greenthread.

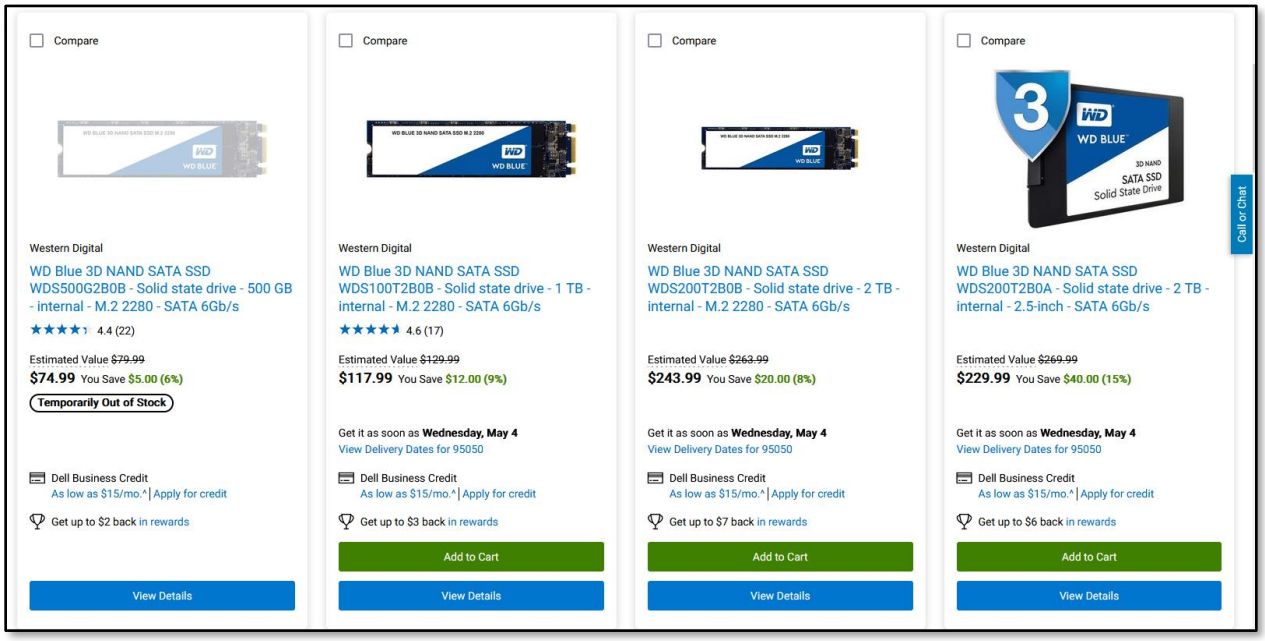
2. Dell-Micron-Flash Accused Products

Dell-Micron-Flash Accused Products include all Dell Products containing or comprising flash memory designed or manufactured (in whole or in part) by Micron Technology, Inc., Micron Semiconductor Products, Inc., Micron Technology Texas, LLC and/or their affiliates ("Micron"), that have the same or similar structures, features, or functionalities as the exemplary product shown in Exhibits B-1 through B-6, regardless of how such products are branded. Flash memory products include SSDs, microSD/SD cards, and thumb drives. As described in Exhibits B-1 through B-6, Dell-Micron-Flash Accused Products each infringe one or more claims of U.S. Patent Nos. 8,421,195 (claims 1-3, 5-6), 9,190,502 (claims 7-8, 11), 10,510,842 (claims 1-2, 4-10, 12-18), 10,734,481 (claims 1-9, 13, 15-16, 20, 22-27, 31-33), 11,121,222 (claims 1-9, 13, 15-17, 20-21, 23-28, 32-34, 38-42, 44), 11,316,014 (claims 1-9, 13, 15-17, 20-21, 23-28). Dell-Micron-Flash Accused Products include Precision Fixed Workstations, Precision Mobile Workstations, Latitude, Optiplex, XPS Desktops, XPS Notebooks, Vostro Desktops, Inspiron Desktops, Inspiron Netbooks, Alienware Desktops, and Alienware Notebooks.

3. Dell-WD Accused Products

"Dell-WD Accused Products" include all Dell Products containing or comprising flash memory designed or manufactured (in whole or in part) by Western Digital Corporation, Western Digital Technologies, Inc., HGST, Inc., SanDisk LLC, SanDisk Holdings LLC, SanDisk

Technologies LLC and/or their affiliates ("Western Digital" or "WD") that have the same or similar structures, features, or functionalities as the exemplary product shown in Exhibits C-1 through C-6, regardless of how such products are branded, regardless of how such products are branded. As described in Exhibits C-1 through C-6, Dell-WD Accused Products each infringe one or more claims of U.S. Patent Nos. 8,421,195 (claims 1-3, 5-6), 9,190,502 (claims 7-11), 10,510,842 (claims 1-2, 4-10, 12-18), 10,734,481 (claims 1-9, 13, 15-16, 20, 22-27, 31-33), 11,121,222 (claims 1-9, 13, 15-17, 20-21, 23-28, 32-34, 38-42, 44), 11,316,014 (claims 1-9, 13, 15-17, 20-21, 23-28). Flash memory products include SSDs, microSD/SD cards, and thumb drives. Exemplary Dell-WD Accused Products are listed below. All images were taken from dell.com.



Compare

SanDisk

SanDisk SSD PLUS - Solid state drive - 120 GB - internal - 2.5-inch - SATA 6Gb/s

$91.99

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Western Digital

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Western Digital

WD Black SN850 NVMe SSD WDS500G1X0E - Solid state drive - 500 GB - internal - M.2 2280 - PCI Express 4.0 x4 (NVMe)

Estimated Value ~~$137.99~~
$122.99 You Save **$15.00 (11%)**

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Compare

SanDisk

SanDisk Extreme Portable - Solid state drive - 500 GB - external (portable) - USB 3.1 Gen 2

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WD Black SN850 NVMe SSD WDS100T1X0E - Solid state drive - 1 TB - internal - M.2 2280 - PCI Express 4.0 x4 (NVMe)

Estimated Value ~~$237.99~~
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Western Digital

WD Red SA500 NAS SATA SSD WDS200T1R0A - Solid state drive - 2 TB - internal - 2.5-inch - SATA 6Gb/s

Estimated Value ~~$356.99~~
$249.99 You Save **$107.00 (30%)**

Temporarily Out of Stock

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Compare

Western Digital

WD Red SA500 NAS SATA SSD WDS100T1R0B - Solid state drive - 1 TB - internal - M.2 2280 - SATA 6Gb/s

Estimated Value ~~$175.99~~
$119.99 You Save **$56.00 (32%)**

Temporarily Out of Stock

Dell Business Credit
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View Details

Compare

Western Digital

WD Red SA500 NAS SATA SSD WDS500G1R0A - Solid state drive - 500 GB - internal - 2.5-inch - SATA 6Gb/s

Estimated Value ~~$93.99~~
$79.99 You Save **$14.00 (15%)**

Temporarily Out of Stock

Dell Business Credit
As low as $15/mo.^ | Apply for credit

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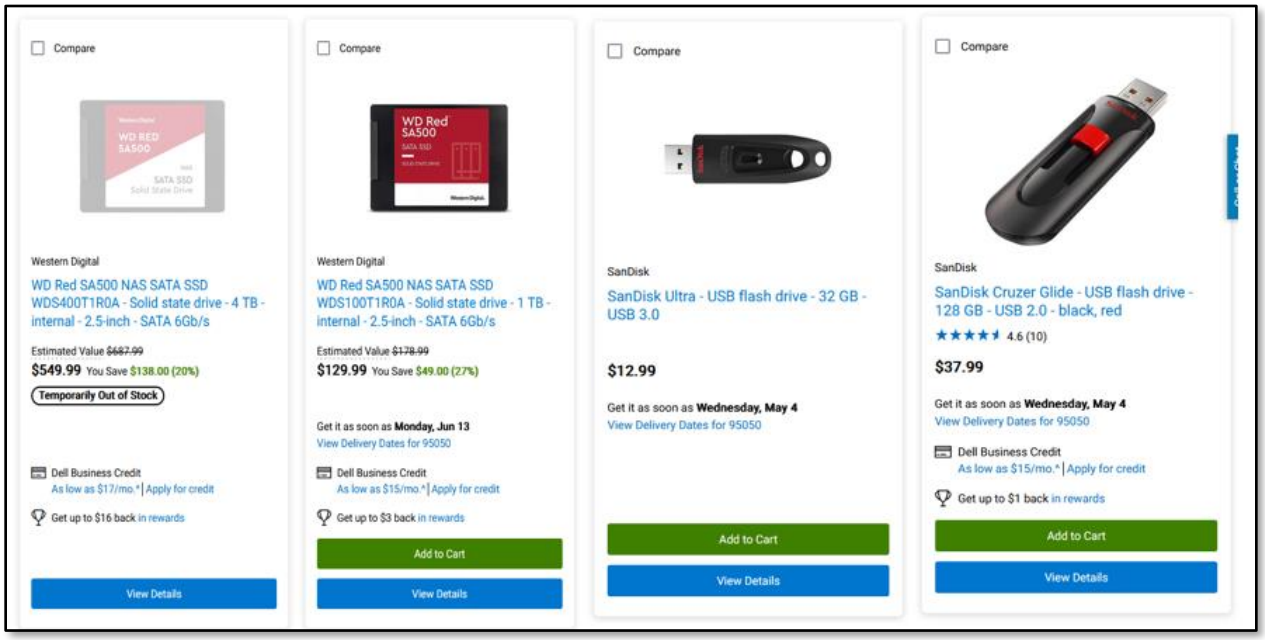
Compare
Western Digital
WD Red SA500 NAS SATA SSD WDS400T1R0A - Solid state drive - 4 TB - internal - 2.5-inch - SATA 6Gb/s
Estimated Value $687.99
$549.99 You Save $138.00 (20%)
Temporarily Out of Stock
Dell Business Credit
As low as $17/mo.* | Apply for credit
Get up to $16 back in rewards
View Details
Compare
Western Digital
WD Red SA500 NAS SATA SSD WDS100T1R0A - Solid state drive - 1 TB - internal - 2.5-inch - SATA 6Gb/s
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$129.99 You Save $49.00 (27%)
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Dell Business Credit
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Get up to $3 back in rewards
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View Details
Compare
SanDisk
SanDisk Ultra - USB flash drive - 32 GB - USB 3.0
$12.99
Get it as soon as Wednesday, May 4
View Delivery Dates for 95050
Add to Cart
View Details
Compare
SanDisk
SanDisk Cruzer Glide - USB flash drive - 128 GB - USB 2.0 - black, red
4.6 (10)
$37.99
Get it as soon as Wednesday, May 4
View Delivery Dates for 95050
Dell Business Credit
As low as $15/mo.* | Apply for credit
Get up to $1 back in rewards
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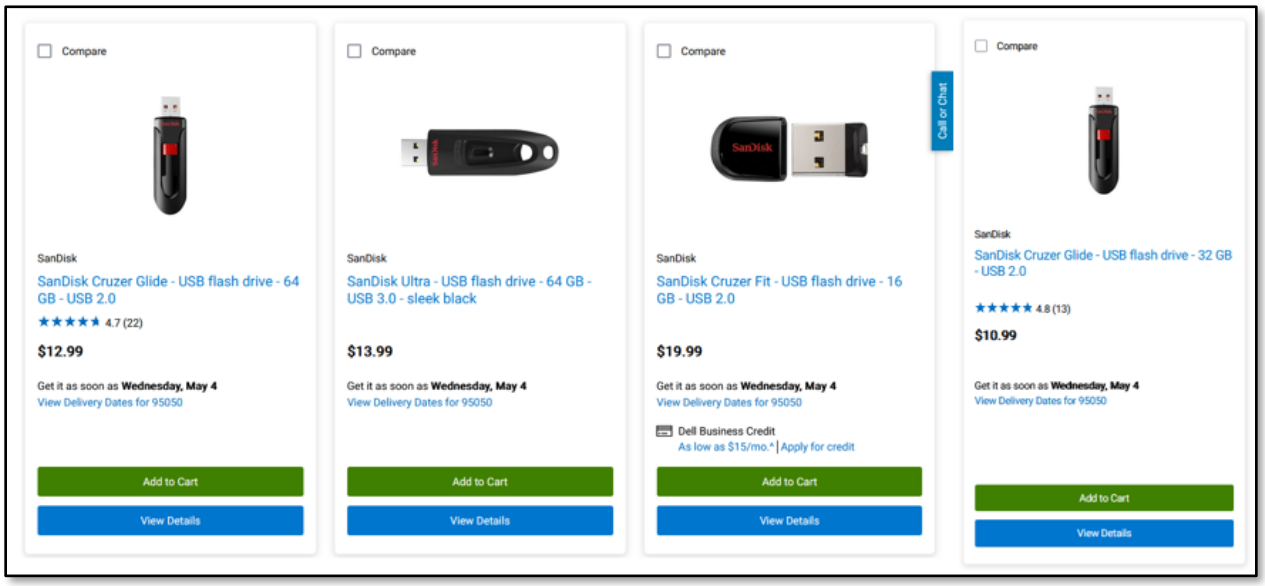
Compare
SanDisk
SanDisk Cruzer Glide - USB flash drive - 64 GB - USB 2.0
4.7 (22)
$12.99
Get it as soon as Wednesday, May 4
View Delivery Dates for 95050
Add to Cart
View Details
Compare
SanDisk
SanDisk Ultra - USB flash drive - 64 GB - USB 3.0 - sleek black
$13.99
Get it as soon as Wednesday, May 4
View Delivery Dates for 95050
Add to Cart
View Details
Compare
Call or Chat
SanDisk
SanDisk Cruzer Fit - USB flash drive - 16 GB - USB 2.0
$19.99
Get it as soon as Wednesday, May 4
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Dell Business Credit
As low as $15/mo.* | Apply for credit
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View Details
Compare
SanDisk
SanDisk Cruzer Glide - USB flash drive - 32 GB - USB 2.0
4.8 (13)
$10.99
Get it as soon as Wednesday, May 4
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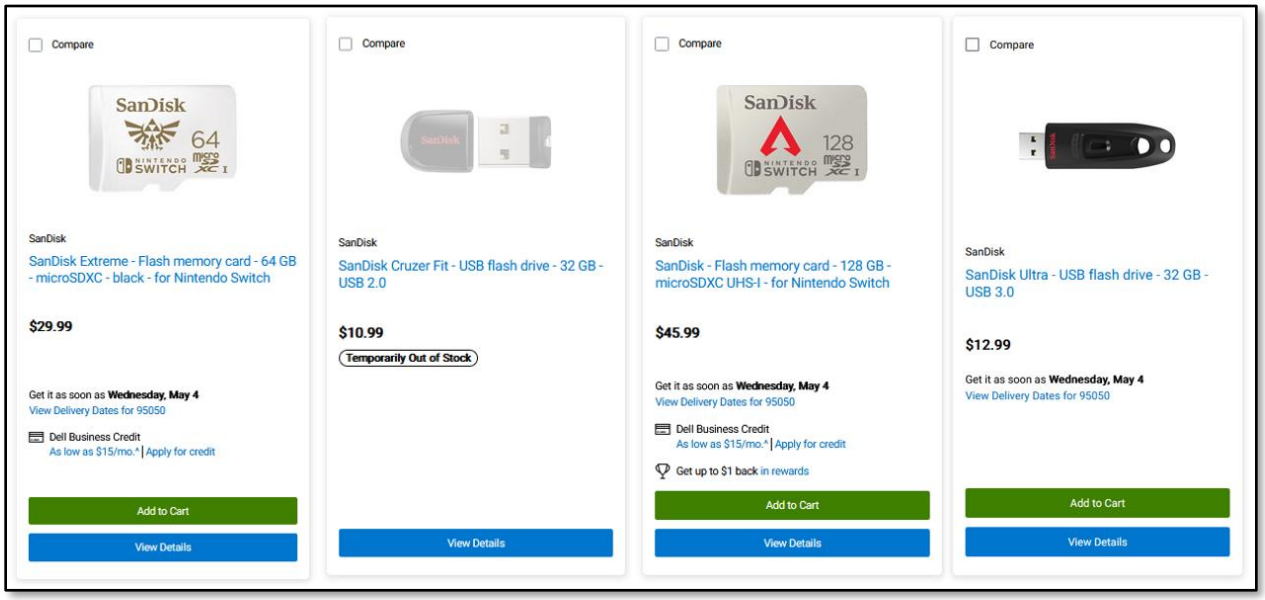
Compare
SanDisk
SanDisk Extreme - Flash memory card - 64 GB - microSDXC - black - for Nintendo Switch
$29.99
Get it as soon as Wednesday, May 4
View Delivery Dates for 95050
Dell Business Credit
As low as $15/mo.^ | Apply for credit
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View Details
Compare
SanDisk
SanDisk Cruzer Fit - USB flash drive - 32 GB - USB 2.0
$10.99
Temporarily Out of Stock
View Details
Compare
SanDisk
SanDisk - Flash memory card - 128 GB - microSDXC UHS-I - for Nintendo Switch
$45.99
Get it as soon as Wednesday, May 4
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Dell Business Credit
As low as $15/mo.^ | Apply for credit
Get up to $1 back in rewards
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SanDisk
SanDisk Ultra - USB flash drive - 32 GB - USB 3.0
$12.99
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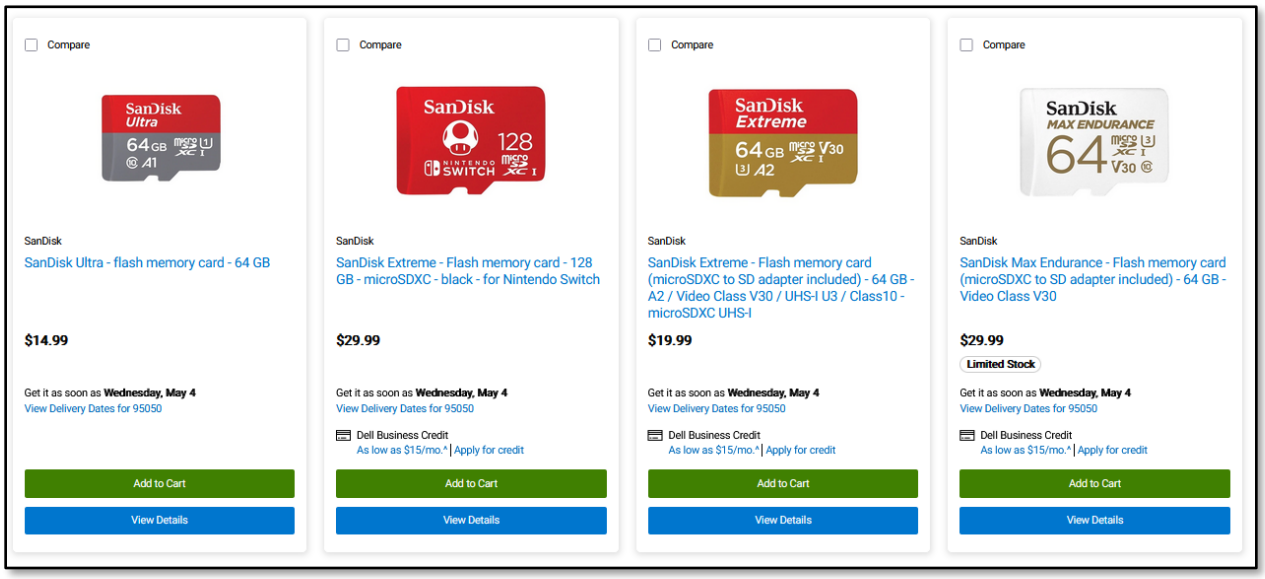
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SanDisk Ultra - flash memory card - 64 GB
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SanDisk
SanDisk Extreme - Flash memory card - 128 GB - microSDXC - black - for Nintendo Switch
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SanDisk Extreme - Flash memory card (microSDXC to SD adapter included) - 64 GB - A2 / Video Class V30 / UHS-I U3 / Class10 - microSDXC UHS-I
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SanDisk Max Endurance - Flash memory card (microSDXC to SD adapter included) - 64 GB - Video Class V30
$29.99
Limited Stock
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SanDisk Ultra Dual Drive Luxe - USB flash drive - 32 GB - USB 3.1 Gen 1 / USB-C

$13.99

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SanDisk Ultra Dual Drive Go - USB flash drive - 256 GB - USB 3.1 Gen 1 / USB-C

$59.99

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SanDisk Extreme Portable - Solid state drive - 2 TB - external (portable) - USB 3.1 Gen 2

$319.99

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SanDisk Ultra Dual Drive Go - USB flash drive - 64 GB - USB 3.1 Gen 1 / USB-C

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SanDisk

SanDisk Ultra Dual Drive Go - USB flash drive - 128 GB - USB 3.1 Gen 1 / USB-C

$22.99

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SanDisk Cruzer Fit - USB flash drive - 32 GB - USB 2.0

$10.99

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SanDisk Cruzer Fit - USB flash drive - 64 GB - USB 2.0

$10.99

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SanDisk

SanDisk - Flash memory card - 128 GB - microSDXC UHS-I - for Nintendo Switch

$45.99

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SanDisk Ultra Luxe - USB flash drive - 128 GB - USB 3.1

$17.99

Temporarily Out of Stock

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SanDisk

SanDisk Ultra - flash memory card - 64 GB

$14.99

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SanDisk

SanDisk Ultra Dual Drive Luxe - USB flash drive - 32 GB - USB 3.1 Gen 1 / USB-C

$13.99

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SanDisk

SanDisk Ultra - flash memory card - 32 GB

$10.99

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SanDisk

SanDisk Max Endurance - Flash memory card (microSDXC to SD adapter included) - 128 GB - Video Class V30

$59.99

Limited Stock

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SanDisk

SanDisk Max Endurance - Flash memory card (microSDHC to SD adapter included) - 32 GB - Video Class V30

$18.99

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SanDisk

SanDisk Ultra Dual Drive Luxe - USB flash drive - 64 GB - USB 3.1 Gen 1 / USB-C

$16.99

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Dell Business Credit
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SanDisk

SanDisk Ultra Dual Drive Luxe - USB flash drive - 1 TB - USB 3.1 Gen 1 / USB-C

$149.99

Temporarily Out of Stock

Dell Business Credit
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Get up to $4 back in rewards

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SanDisk

SanDisk Ultra Luxe - USB flash drive - 16 GB - USB 3.1 Gen 1

$10.99

Limited Stock

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SanDisk

SanDisk Ultra - USB flash drive - 64 GB - USB 3.0 - sleek black

$26.99

Limited Stock

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Dell Business Credit
As low as $15/mo.^ | Apply for credit

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SanDisk

SanDisk Ultra - USB flash drive - 128 GB - USB 3.0 - sleek black

$44.99

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Dell Business Credit
As low as $15/mo.^ | Apply for credit

Get up to $1 back in rewards

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SanDisk

SanDisk Ultra Fit - USB flash drive - 512 GB - USB 3.1 Gen 1

$109.99

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Dell Business Credit
As low as $15/mo.^ | Apply for credit

Get up to $3 back in rewards

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SanDisk

SanDisk Ultra Luxe - USB flash drive - 32 GB - USB 3.1

$10.99

Limited Stock

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SanDisk

SanDisk - Flash memory card - 128 GB - microSDXC UHS-I - for Nintendo Switch

$45.99

Get it as soon as **Wednesday, May 4**
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Dell Business Credit
As low as $15/mo.^ | Apply for credit

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SanDisk

SanDisk Ultra Luxe - USB flash drive - 128 GB - USB 3.1

$17.99

Temporarily Out of Stock

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SanDisk

SanDisk Ultra - flash memory card - 64 GB

$14.99

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SanDisk

SanDisk Ultra - USB flash drive - 128 GB - USB 3.0

$23.99

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SanDisk

SanDisk Ultra Luxe - USB flash drive - 128 GB - USB 3.1

$17.99

Temporarily Out of Stock

Dell Business Credit
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SanDisk

SanDisk Ultra - flash memory card - 64 GB

$14.99

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SanDisk

SanDisk Extreme - Flash memory card - 128 GB - microSDXC - black - for Nintendo Switch

$29.99

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SanDisk

SanDisk iXpand Luxe - USB flash drive - 128 GB - USB-C / Lightning

$69.99

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Dell Business Credit
As low as $15/mo.^ | Apply for credit

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SanDisk

SanDisk iXpand Luxe - USB flash drive - 64 GB - USB-C / Lightning

$58.99

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Dell Business Credit
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SanDisk

SanDisk High Endurance - Flash memory card (microSDXC to SD adapter included) - 32 GB

$13.99

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SanDisk

SanDisk Ultra Dual Drive Go - USB flash drive - 128 GB - USB 3.1 Gen 1 / USB-C

$22.99

Get it as soon as **Wednesday, May 4**
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Dell Business Credit
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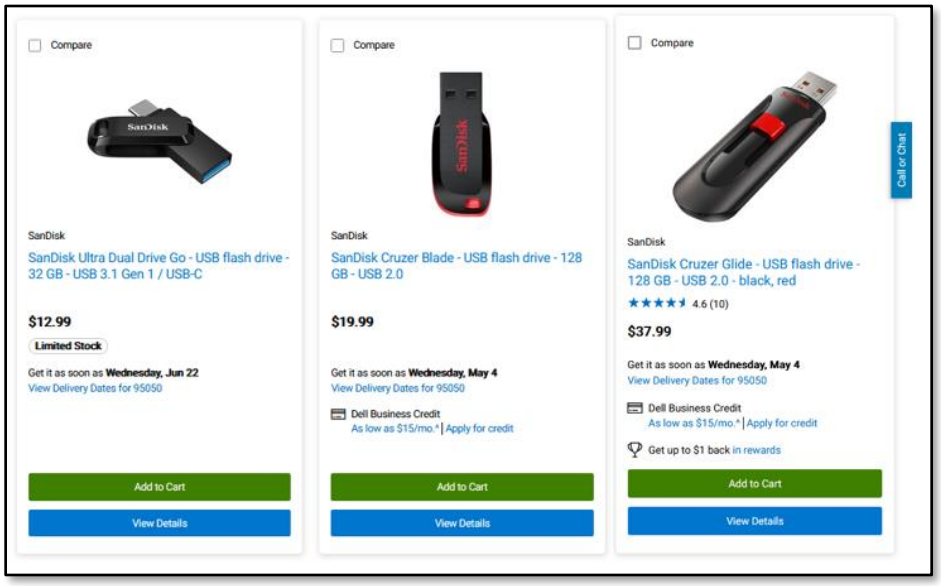
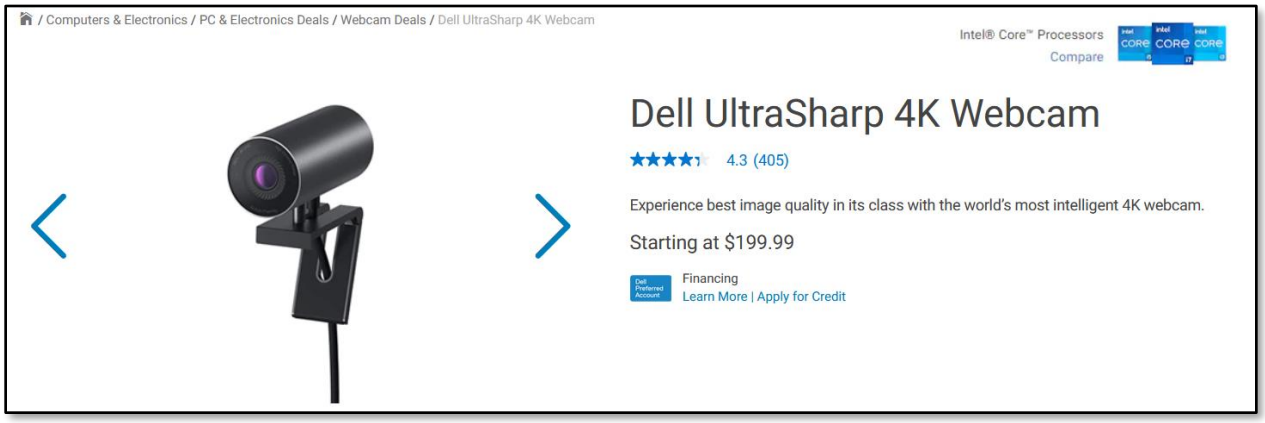
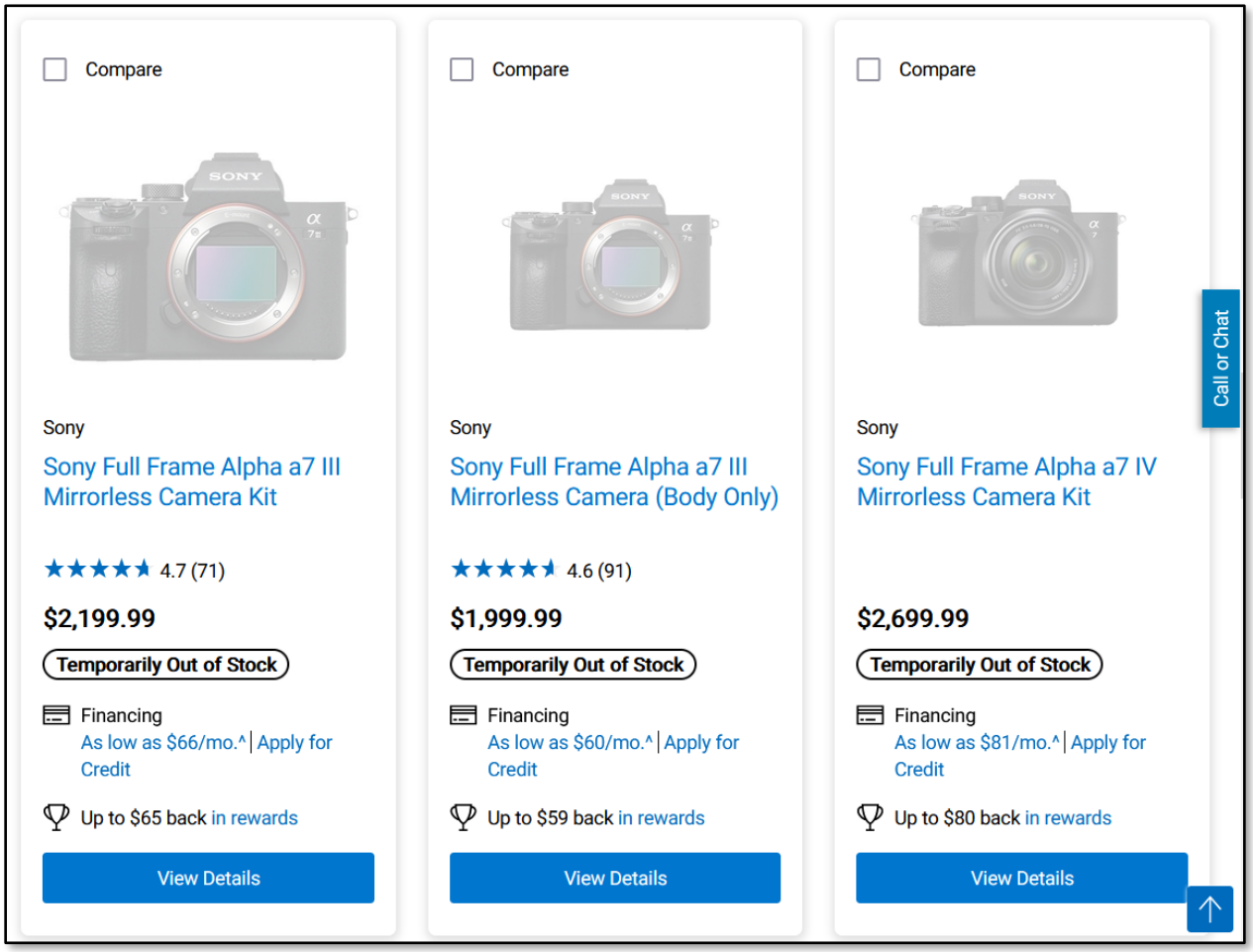


4. Dell-Sony Accused Products

Dell-Sony Accused Products include all Dell Products containing or comprising image sensors designed or manufactured (in whole or in part) by Sony Corporation, Sony Semiconductor Solutions, Sony Global Manufacturing & Operations, Sony Electronics Inc., Sony Corporation of America or their affiliates ("Sony"), that have the same or similar structures, features, or functionalities as the exemplary product shown in Exhibits D-1, D-2, D-3 and D-6, regardless of how such products are branded. As described in Exhibits D-1, D-2, D-3, and D-6, Dell-Sony Accused Products each infringe one or more claims of U.S. Patent Nos. 10,510,842 (claims 1-2, 5, 7-10, 13, 15-18), 10,734,481 (claims 1-2, 4, 6-9, 13, 19-20, 22, 24, 26-27, 31, 36), 11,121,222 (claims 1-2, 4, 6-9, 13, 19-21, 23, 25, 27-28, 32, 37-39, 41), 11,316,014 (claims 1-2, 4, 6-9, 13, 19-21, 23, 25, 27-28). Exemplary Dell-Sony Accused Products are listed below. All images are taken from dell.com.





Upon information and belief, Dell also incorporates further Sony image sensors into other Dell Products, such as webcams that Dell integrates into Dell laptops, desktops, and other computing

devices. Greenthread reserves the right to amend its list of Dell-Sony Accused Products, including based on information learned in discovery.

5. Dell-Micron-DRAM Accused Products

Dell-Micron-DRAM Accused Products include all Dell Products containing or comprising dynamic random access memories (DRAMs) designed or manufactured (in whole or in part) by Micron), that have the same or similar structures, features, or functionalities as the exemplary discussed in Exhibits E-1 through E-6, regardless of how such products are branded. The identities of such products are in the possession of the Dell Defendants and are expected to be learned over the course of this litigation, e.g., obtained through discovery. As described in Exhibits E-1 through E-6, Dell-Micron-DRAM Accused Products each infringe one or more claims of U.S. Patent Nos. 8,421,195 (claims 1-3, 5-6), 9,190,502 (claims 7-11), 10,510,842 (claims 1-2, 4-10, 12-18), 10,734,481 (claims 1-9, 13, 15-16, 20, 22-27, 31-33), 11,121,222 (claims 1-9, 13, 15-17, 20-21, 23-28, 32-34, 38-42, 44), 11,316,014 (claims 1-9, 13, 15-17, 20-21, 23-28). Greenthread reserves the right to amend its infringement contentions and claim charts regarding Dell-Micron-DRAM Accused Products, including based on information learned in discovery.

6. Additional Dell Accused Products

Upon information and belief, Dell products infringe one or more asserted claims of the asserted patents through their incorporation of dynamic random access memories (DRAMs), flash memory devices (e.g., in solid-state drives) and image sensors that meet the limitations of one or more asserted claims. The identities of such DRAMs, flash memory devices, and image sensors, their specifications, and their manufacturers and/or suppliers (if other than Dell) are in the possession of the Dell Defendants and are expected to be learned over the course of this litigation, e.g., obtained through discovery. More complete information about the Accused Products is in the possession of Defendants and is expected to be obtained through discovery. Greenthread

explicitly reserves the right to supplement or alter its identification of accused products, as a matter of right, as permitted by the Court, based on the Court's claim constructions, based on additional information obtained through formal discovery or other means, and/or based on other circumstances.

III. CLAIM CHARTS FOR LITERAL INFRINGEMENT

Based upon information presently available to it, Greenthread's preliminary infringement claim charts are provided as attached Exhibits A-1 through A-6, B-1 through B-6, C-1 through C-6, and D-1, D-2, D-3, and D-6, and E-1 through E-6. In each claim chart, the discussion for dependent claims should be read as incorporating by reference the discussion corresponding to the claims from which they depend. In addition, the discussion for each row in the chart should be read within the context of the discussion for the entire claim to which that row pertains. Where the charts incorporate excerpts of particular documents, the reference to those excerpts is exemplary and not to the exclusion of any other excerpt or version of the document or any versions of related documents.

These infringement claim charts are based upon Greenthread's investigation to date. More complete information about the Accused Products is in the possession of Defendants and is expected to be obtained through discovery. Greenthread explicitly reserves the right to supplement or alter its preliminary infringement claim charts, as a matter of right, as permitted by the Court, based on the Court's claim constructions, based on additional information obtained through formal discovery or other means, and/or based on other circumstances.

IV. DOCTRINE OF EQUIVALENTS

Unless otherwise noted in the claim charts, Greenthread alleges that Defendants infringe literally all asserted claims. To the extent any differences are alleged to exist between the asserted claims and Defendants' Accused Products, such differences are insubstantial and Defendants'

Accused Products perform substantially the same function, in substantially the same way, to yield substantially the same result, and therefore Defendants infringe under the doctrine of equivalents.

Greenthread explicitly reserves the right to supplement or alter its disclosure concerning the doctrine of equivalents, as a matter of right, as permitted by the Court, based on the Court's claim constructions, based on additional information obtained through formal discovery or other means, and/or based on other circumstances. In the event that a claim limitation is deemed to be missing under a literal infringement analysis, Greenthread also reserves the right to demonstrate the presence of a substantial equivalent of such limitation and to pursue infringement under the doctrine of equivalents.

V. DOCUMENT PRODUCTION

Greenthread has produced documents pursuant to § II, page 2 of the Court's Standing Order Governing Proceedings (OGP) 4.1—Patent Cases dated April 14, 2022 in the production range GREENTHREAD-WDTX-000001-002065, including (1) documents evidencing conception and reduction to practice for each claimed invention at GREENTHREAD-WDTX-000349-000367, GREENTHREAD-WDTX-000741-000759, GREENTHREAD-WDTX-001061-001095, GREENTHREAD-WDTX-001249-001283, GREENTHREAD-WDTX-001378-001416, GREENTHREAD-WDTX-001727-001857, GREENTHREAD-WDTX-002026-002051; and (2) a copy of the file history for each patent in suit at the following:

Patent	File History Production Range
’842 patent	GREENTHREAD-WDTX-001059-1246
’481 patent	GREENTHREAD-WDTX-001247-1375
’222 patent	GREENTHREAD-WDTX-001376-1649
’195 patent	GREENTHREAD-WDTX-000349-739
’502 patent	GREENTHREAD-WDTX-000740-905
’014 patent	GREENTHREAD-WDTX-001866-2065

Dated: August 29, 2022

MCKOOL SMITH, P.C.

/s/ *Alan L. Whitehurst*

Alan L. Whitehurst
D.C. Bar No. 484873
awhitehurst@mckoolsmith.com
Nicholas J. Matich
D.C. Bar No. 1024907
nmatich@mckoolsmith.com
Arvind Jairam
D.C. Bar No. 1017133
ajairam@mckoolsmith.com
MCKOOL SMITH, P.C.
1999 K Street NW Washington, DC 20006
Telephone: 202-370-8300
Telecopier: 202-370-8344

John B. Campbell
Texas Bar No. 24036314
jcampbell@mckoolsmith.com
MCKOOL SMITH, P.C.
303 Colorado Street, Suite 2100
Austin, Texas 78701
Telephone: 512-692-8700
Telecopier: 512-692-8744

Kaitlyn M. Dawson
Texas Bar No. 24101683 (*admission pending*)
kdawson@mckoolsmith.com
MCKOOL SMITH, P.C.

600 Travis Street, Suite 7000
Houston, Texas 77002
Telephone: 713-485-7300
Telecopier: 713-485-7344

Attorneys for Plaintiff Greenthread, LLC

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing document was served on the following counsel of record on August 29, 2022 via electronic mail using the following contact information.

J. Stephen Ravel Texas State Bar No. 16584975 **KELLY HART &HALLMAN LLP** Email: steve.ravel@kellyhart.com	Gregory S. Arovas (*Pro Hac Vice* filed) Robert A. Appleby (*Pro Hac Vice* filed) Todd M. Friedman (*Pro Hac Vice* filed) Leslie M. Schmidt (*Pro Hac Vice* filed) Jon R. Carter (*Pro Hac Vice* filed) Christopher DeCoro (*Pro Hac Vice* filed) **KIRKLAND & ELLIS LLP** 601 Lexington Avenue New York, NY 10022 Email: greg.arovas@kirkland.com Email: robert.appleby@kirkland.com Email: todd.friedman@kirkland.com Email: leslie.schmidt@kirkland.com Email: jon.carter@kirkland.com Email: christopher.decoro@kirkland.com Nyika O. Strickland (*Pro Hac Vice* filed) **KIRKLAND & ELLIS LLP** 300 North LaSalle Street Chicago, IL 60654 Email: nyika.strickland@kirkland.com Abigail Lauer Litow (*Pro Hac Vice* filed) John R. Rhine (*Pro Hac Vice* filed) **KIRKLAND & ELLIS LLP** 1301 Pennsylvania Avenue, N.W. Washington, D.C. 20004 Email: abigail.litow@kirkland.com Email: john.rhine@kirkland.com Bao Nguyen (*Pro Hac Vice* filed) **KIRKLAND & ELLIS LLP** 555 California Street 27th Floor San Francisco, CA 94104 Email: bao.nguyen@kirkland.com Abhishek Bapna (*pro hac vice* filed) George S. Soussou (admitted *pro hac vice* filed) Ryan Joseph Sheehan (*pro hac vice* filed)

	Lupco (Lewis) V. Popovski (*pro hac vice* filed) **PATTERSON BELKNAP WEBB & TYLER LLP** 1133 Avenue Of The Americas New York, NY 10036 Email: abapna@pbwt.com Email: gsoussou@pbwt.com Email: rsheehan@pbwt.com Email: lpopovski@pbwt.com

/s/ *Alan L. Whitehurst*
Alan L. Whitehurst