1. **FAN speed measurement**  
   Brand: Y.S Tech   
   Model: FD129225LL-N(1A3H-1800)  
   Spec: 92\*92\*25mm, 1800rpm, 3pin

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PWM | V00 | V10 | V20 | V30 | V40 | V50 | V60 | V70 | V90 | V99 |
| Fan 1 (RPM) | 0 | 815 | 1065 | 1210 | 1375 | 1479 | 1614 | 1703 | 1855 | 1893 |
| Fan 2 (RPM) | 0 | 794 | 1030 | 1155 | 1337 | 1437 | 1578 | 1652 | 1800 | 1843 |
| Fan 3 (RPM) | 0 | 754 | 1020 | 1163 | 1347 | 1456 | 1605 | 1691 | 1841 | 1889 |
| Avg. (RPM) | 0 | 788 | 1038 | 1176 | 1353 | 1457 | 1599 | 1682 | 1832 | 1875 |
| +10% | 0 | 886 | 1142 | 1294 | 1488 | 1603 | 1759 | 1850 | 2015 | 2063 |
| -10% | 0 | 709 | 935 | 1058 | 1218 | 1312 | 1439 | 1514 | 1649 | 1688 |

1. **FAN Table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **FAN PWM** | **Action** | **FAN Speed** | **Quiet Mode** | **Cool Mode  (shift 5℃)** |
| V20 W40 |  | 1038 | HDD < 46℃ (CPU < 70℃) | HDD < 41℃ (CPU < 65℃) |
| V30 W40 |  | 1176 | 46℃ ≤ HDD < 52℃ | 41℃ ≤ HDD < 46℃ |
| V50 W40 | ≤ | 1457 | 52℃ ≤ HDD < 55℃ (70℃ ≤ CPU < 75℃) | 46℃ ≤ HDD < 50℃ (65℃ ≤ CPU < 70℃) |
| V70 W40 |  | 1682 | 55℃ ≤ HDD < 58℃ | 50℃ ≤ HDD < 53℃ |
| V99 W40 |  | 1875 | 58℃ ≤ HDD < 61℃ (75℃ ≤ CPU < 90℃) | 53℃ ≤ HDD < 61℃ (70℃ ≤ CPU < 90℃) |
| V99 W40 | Shutdown | 1875 | 61℃ ≤ HDD (90℃ ≤ CPU) | 90℃ ≤ HDD (90℃ ≤ CPU) |

Shutdown when HDD > 61℃ or CPU > 90℃.

1. **Scemd**

<scemd>

<fan\_config period="20" threshold="6" type="DUAL\_MODE\_HIGH" hibernation\_speed="UNKNOWN">

<disk\_temperature fan\_speed="20%40hz" action="NONE">0</disk\_temperature>

<disk\_temperature fan\_speed="30%40hz" action="NONE">41</disk\_temperature>

<disk\_temperature fan\_speed="50%40hz" action="NONE">46</disk\_temperature>

<disk\_temperature fan\_speed="70%40hz" action="NONE">50</disk\_temperature>

<disk\_temperature fan\_speed="99%40hz" action="NONE">53</disk\_temperature>

<disk\_temperature fan\_speed="99%40hz" action="SHUTDOWN">61</disk\_temperature>

<m2\_temperature fan\_speed="20%40hz" action="NONE">0</m2\_temperature>

<m2\_temperature fan\_speed="50%40hz" action="NONE">56</m2\_temperature>

<m2\_temperature fan\_speed="99%40hz" action="NONE">65</m2\_temperature>

<m2\_temperature fan\_speed="99%40hz" action="SHUTDOWN">70</m2\_temperature>

<cpu\_temperature fan\_speed="20%40hz" action="NONE">0</cpu\_temperature>

<cpu\_temperature fan\_speed="50%40hz" action="NONE">65</cpu\_temperature>

<cpu\_temperature fan\_speed="99%40hz" action="NONE">70</cpu\_temperature>

<cpu\_temperature fan\_speed="99%40hz" action="SHUTDOWN">90</cpu\_temperature>

</fan\_config>

<fan\_config period="20" threshold="6" type="DUAL\_MODE\_LOW" hibernation\_speed="UNKNOWN">

<disk\_temperature fan\_speed="20%40hz" action="NONE">0</disk\_temperature>

<disk\_temperature fan\_speed="30%40hz" action="NONE">46</disk\_temperature>

<disk\_temperature fan\_speed="50%40hz" action="NONE">52</disk\_temperature>

<disk\_temperature fan\_speed="70%40hz" action="NONE">55</disk\_temperature>

<disk\_temperature fan\_speed="99%40hz" action="NONE">58</disk\_temperature>

<disk\_temperature fan\_speed="99%40hz" action="SHUTDOWN">61</disk\_temperature>

<m2\_temperature fan\_speed="20%40hz" action="NONE">0</m2\_temperature>

<m2\_temperature fan\_speed="50%40hz" action="NONE">56</m2\_temperature>

<m2\_temperature fan\_speed="99%40hz" action="NONE">65</m2\_temperature>

<m2\_temperature fan\_speed="99%40hz" action="SHUTDOWN">70</m2\_temperature>

<cpu\_temperature fan\_speed="20%40hz" action="NONE">0</cpu\_temperature>

<cpu\_temperature fan\_speed="50%40hz" action="NONE">70</cpu\_temperature>

<cpu\_temperature fan\_speed="99%40hz" action="NONE">75</cpu\_temperature>

<cpu\_temperature fan\_speed="99%40hz" action="SHUTDOWN">90</cpu\_temperature>

</fan\_config>

1. **Test result**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Ambient Temp** | **HDD Temp (max)** | **CPU Temp (max)** | **FAN Level (max)** | **FAN speed (rpm)** | **Condition** |
| 25℃ | 43℃ | 72℃ | 50%40hz | 1457 | Thermal script |
| 40℃ | 54℃ | 82℃ | 99%40hz | 1875 | Thermal script |

1. **Log**

25℃  
============================================================

Model : synology\_geminilake\_1520+

Version : 4.4.59+ #25389

HDD Model : Samsung\*2, ST6000NM0024-1HT17Z\*5

Start time : Tue Feb 18 10:52:33 CST 2020

============================================================

Min CPU MAX nvme0n1nvme1n1sata3sata4sata5sata1 sata2

0 48(100) 39 38 39 31 31 31 31 31

5 69(100) 40 40 39 33 34 34 34 34

10 72(100) 38 38 37 35 36 36 36 37

15 68(100) 38 35 35 36 37 38 38 38

20 68(100) 39 35 35 37 39 39 39 39

25 69(100) 39 35 35 37 39 39 39 39

30 68(100) 40 38 37 38 40 40 40 40

35 70(100) 41 40 40 39 41 41 41 41

40 70(100) 41 37 37 39 41 41 41 41

45 70(100) 42 35 35 39 41 42 42 41

50 72(100) 42 37 37 39 42 42 42 41

55 70(100) 42 35 35 39 42 42 42 41

60 70(100) 42 40 39 39 42 42 42 42

65 70(100) 42 42 42 39 42 42 42 42

70 70(100) 43 36 35 40 42 43 42 42

75 71(100) 43 37 37 40 42 43 43 42

80 69(100) 43 37 37 40 42 43 43 42

85 68(100) 43 35 35 40 42 43 43 42

90 70(100) 43 36 35 40 42 43 43 42

============================================================

Model : synology\_geminilake\_1520+

Version : 4.4.59+ #25389

HDD Model : Samsung\*2, ST6000NM0024-1HT17Z\*5

eth status : 1000,1000,1000,1000

ffmpeg : 2 process running

Fan mode : LOW

Cache Stat : cachedev\_0, md3 raid1, Read-write, skip\_seq\_io(Disable)

Start time : Tue Feb 18 10:52:33 CST 2020

============================================================

Min CPU(%) M.2(r/w) Host ebox vol[1 2](%) eth (PCIe) eth\_temp FAN

0 48(100) 38(100/99) 29 --- 32 83 PASS (---) -------- 20%40hz <disk>

5 69(100) 41(100/99) 34 --- 37 73 PASS (---) -------- 30%40hz <cpu>

10 72(100) 38(99/99) 36 --- 18 51 PASS (---) -------- 50%40hz <cpu>

15 68(100) 35(99/99) 38 --- 16 50 PASS (---) -------- 50%40hz <cpu>

20 68(100) 35(99/99) 38 --- 15 53 PASS (---) -------- 50%40hz <cpu>

25 69(100) 35(99/99) 39 --- 12 66 PASS (---) -------- 50%40hz <cpu>

30 68(100) 38(99/99) 40 --- 39 70 PASS (---) -------- 50%40hz <cpu>

35 70(100) 41(99/99) 41 --- 21 87 PASS (---) -------- 30%40hz <cpu>

40 70(100) 37(99/99) 41 --- 22 65 PASS (---) -------- 30%40hz <cpu>

45 70(100) 35(99/99) 42 --- 33 46 PASS (---) -------- 50%40hz <cpu>

50 72(100) 37(99/99) 42 --- 11 61 PASS (---) -------- 30%40hz <cpu>

55 70(100) 35(99/99) 42 --- 15 65 PASS (---) -------- 50%40hz <cpu>

60 70(100) 40(99/99) 42 --- 36 71 PASS (---) -------- 30%40hz <cpu>

65 70(100) 41(99/99) 42 --- 95 56 PASS (---) -------- 30%40hz <cpu>

70 70(100) 36(99/99) 43 --- 21 78 PASS (---) -------- 50%40hz <cpu>

75 71(100) 37(99/99) 43 --- 16 81 PASS (---) -------- 30%40hz <cpu>

80 69(100) 37(99/99) 43 --- 26 52 PASS (---) -------- 30%40hz <cpu>

85 68(100) 35(99/99) 43 --- 14 69 PASS (---) -------- 50%40hz <cpu>

90 70(100) 36(99/99) 43 --- 6 60 PASS (---) -------- 50%40hz <cpu>

40℃

============================================================

Model : synology\_geminilake\_1520+

Version : 4.4.59+ #25389

HDD Model : Samsung\*2, ST6000NM0024-1HT17Z\*5

Start time : Mon Feb 17 11:32:49 CST 2020

============================================================

Min CPU MAX nvme0n1nvme1n1sata3sata4sata5sata1 sata2

0 55(100) 50 48 50 28 28 28 28 28

5 76(100) 49 49 49 35 34 34 35 35

10 81(100) 48 48 48 40 39 39 40 40

15 81(100) 48 48 48 43 43 43 44 44

20 81(100) 48 48 48 46 46 46 46 47

25 81(100) 49 48 48 47 48 48 48 49

30 80(100) 50 50 50 49 49 50 50 50

35 80(100) 53 53 53 50 50 51 51 51

40 79(100) 52 49 49 50 51 52 52 52

45 80(100) 52 48 48 50 52 52 52 52

50 81(100) 53 48 48 51 52 53 53 53

55 81(100) 53 48 48 51 52 53 53 53

60 82(100) 53 51 50 51 52 53 53 53

65 81(100) 53 52 52 51 53 53 53 53

70 80(100) 54 49 49 51 53 53 54 53

75 82(100) 54 49 48 51 53 54 54 53

80 82(100) 54 49 48 51 53 54 54 53

85 81(100) 54 49 49 51 53 54 54 53

90 81(100) 54 51 50 51 53 54 54 53

95 73(100) 54 51 51 51 53 54 54 53

100 81(100) 54 49 48 51 53 54 54 53

105 79(100) 54 49 49 51 53 54 54 53

110 81(100) 54 49 48 51 53 54 54 53

115 82(100) 54 49 48 51 53 54 54 53

120 81(100) 54 50 50 51 53 54 54 53

============================================================

Model : synology\_geminilake\_1520+

Version : 4.4.59+ #25389

HDD Model : Samsung\*2, ST6000NM0024-1HT17Z\*5

eth status : 1000,1000,1000,1000

ffmpeg : 2 process running

Fan mode : LOW

Cache Stat : cachedev\_0, md3 raid1, Read-write, skip\_seq\_io(Disable)

Start time : Mon Feb 17 11:32:49 CST 2020

============================================================

Min CPU(%) M.2(r/w) Host ebox vol[1 2](%) eth (PCIe) eth\_temp FAN

0 55(100) 49(99/98) 26 --- 41 61 PASS (---) -------- 20%40hz <disk>

5 76(100) 49(99/98) 30 --- 39 57 PASS (---) -------- 99%40hz <cpu>

10 81(100) 48(99/96) 35 --- 16 53 PASS (---) -------- 99%40hz <cpu>

15 81(100) 48(99/96) 43 --- 13 50 PASS (---) -------- 99%40hz <cpu>

20 81(100) 48(99/96) 44 --- 15 56 PASS (---) -------- 99%40hz <cpu>

25 81(100) 48(99/96) 47 --- 27 65 PASS (---) -------- 99%40hz <cpu>

30 80(100) 50(99/97) 48 --- 34 95 PASS (---) -------- 99%40hz <cpu>

35 80(100) 53(99/97) 50 --- 24 88 PASS (---) -------- 99%40hz <cpu>

40 79(100) 49(99/97) 51 --- 65 99 PASS (---) -------- 99%40hz <cpu>

45 80(100) 48(99/97) 52 --- 24 50 PASS (---) -------- 99%40hz <cpu>

50 81(100) 49(99/97) 52 --- 15 65 PASS (---) -------- 99%40hz <cpu>

55 81(100) 48(99/97) 53 --- 15 69 PASS (---) -------- 99%40hz <cpu>

60 82(100) 51(99/97) 53 --- 31 81 PASS (---) -------- 99%40hz <cpu>

65 81(100) 53(99/97) 53 --- 12 89 PASS (---) -------- 99%40hz <cpu>

70 80(100) 49(99/97) 53 --- 22 77 PASS (---) -------- 99%40hz <cpu>

75 82(100) 49(99/97) 54 --- 25 72 PASS (---) -------- 99%40hz <cpu>

80 82(100) 49(99/97) 54 --- 12 69 PASS (---) -------- 99%40hz <cpu>

85 81(100) 49(99/97) 54 --- 13 63 PASS (---) -------- 99%40hz <cpu>

90 81(100) 50(99/97) 54 --- 37 77 PASS (---) -------- 99%40hz <cpu>

95 73(100) 51(99/98) 54 --- 85 63 PASS (---) -------- 99%40hz <cpu>

100 81(100) 49(99/98) 54 --- 9 94 PASS (---) -------- 99%40hz <cpu>

105 79(100) 49(99/98) 54 --- 18 85 PASS (---) -------- 99%40hz <cpu>

110 81(100) 49(99/98) 54 --- 11 91 PASS (---) -------- 99%40hz <cpu>

115 82(100) 49(99/98) 54 --- 25 70 PASS (---) -------- 99%40hz <cpu>

120 81(100) 50(99/98) 54 --- 37 82 PASS (---) -------- 99%40hz <cpu>