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| Page | Details / Software Name |
| CPU Burn-In & Load test | * CAUSE: if pc hangs within 10 minutes of running, then the motherboard bus transfer isn’t coping with the data transfer. Monitor Temperature fluctuation, if fan is started to decrease the temperature or not. 1-hour burn test every three hours for about 12 hours should be sufficient. * Resolution: Good motherboard will not hang. Intel CPU do not crash, AMD/Cyrix/TransMeta Efficion does. |
| CPU Fan test | * Cause: Observe FAN Speed increasing & decreasing over time. * Resolution: Though brushless, increasing fan speed could make sharp noise, if not then the fan is operational. |
| HDD R/W speed & consistency test | * Cause: Observe if pc hangs within 10 minutes of running, then the motherboard bus transfer isn’t coping with the data transfer. Watch out for rattling noise. Remove the HDD and shake it against your ears, if noise can be heard, better to replace the HDD, avoid data loss. * Resolution: Though brushless, increasing rotation speed could make sharp noise, CPU Fan should be acting up with increased speed to cool down the whole unit. Observe data read/write while its being tested. If data transfer halts in a regular interval and then starts again, meaning the HDD cache is working @ a lower speed. Replace HDD, to check if the situation improves, if performance does not improve, then motherboard faulty. |
| Data throughput test | * Cause: Observe data being copied onto other partitions of the drive for read/write consistency. Look out for read errors by HDD or Bus transfer. Initiate tests once every 3 hours. If passes, motherboard is healthy. * Resolution: If data transfer halts in a regular interval and then starts again, meaning the HDD cache is working @ a lower speed. Replace HDD, to check if the situation improves, if not motherboard faulty. |
| RAM Consistency Check - BIOS | * Cause: RUN it from BIOS first, if CRC fails on any hex value, replace the RAM. If test is being conducted within OS, then the high mem cannot be tested. No need to run multiple tests of tested RAM. * Resolution: Faulty High Memory area meaning RAM is faulty, could lead to an unsuccessful boot operation of OS. |
| Video flicker test | * Cause: Observe color changes. Find out if any square blocks are distorted or not, or any horizontal/vertical are broken. Blink rate should be tested on 640\*480 with 60Hz speed frequency. * Resolution: If the screen gets flooded with distorted color, change the LCD/LED panel of the laptop or the ribbon. Either or both could be faulty. |
| WiFi Consistency Check | * Cause: use a spectrum analyzer to check if the WiFi Miniport Driver can detect the radio channels accordingly. * Resolution: If any channel band is missing, replace the unit. Standard is 11 to 13 channels for an a/b/g/n WiFi unit. |
| Malware | Check if any malware/keylogger is latched onto the WebCam/keyboard. |
| OS Profile Delete/re-load, and reconnect AD user | Rejoin the user to Link3 AD after everything passes. |
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| Confirmation | The laptop is a GO? or NO GO? |
| Summary | Proper power adapter (rated-original) be connected during all tests. Otherwise if the power rating is incorrect, every test may result inconclusive outcome. |

**Additional considerations**

* Update the BIOS if possible with latest binary file, before conducting any tests.
* WD Blue, Seagate HDD’s are better performer than any other. Avoid using any other brand of items like Toshiba/Samsung.
* Use certified/classified RAM, cheap RAM would yield poor performance.
* Motherboard BIOS always needs updating to cater to 1TB hard drives.
* 1TB laptop HDD is knowingly slow and comes in 5400rpm’s. Performance HDD’s comes with 7200rpm; though costly; running rigorous testing could lead to an unresponsive hard drive, as they are quite fragile.
* SSD’s are static memory banks which are NAND chips. Do not run any rigorous tests meant for rotational HDD’s. SSD’s are quite different than the mechanical drives.
* For desktop HDD running rigorous testing would not be a problem, as its MTBF would hold its reputation.

SOFTWARE:

1. 3DMark-v2-1-2973
2. Acrylic\_WiFi\_Home\_v3.1.5995.18048
3. CrystalDiskMark5\_1\_2
4. Intel\_Processor\_IPDT\_Installer\_3.0.0.25.W\_x86\_3.0.0.25.W.MP\_x64
5. Lizard\_WiFi\_Scanner\_setup
6. memtest86-usb
7. Microsoft\_USB Test Tool\_muttV2
8. PassMark\_BurnIn Test\_bitpro
9. PassMark\_PerformanceTest\_petst
10. cpu-z\_1.77-en

**NOTE:**

* **Laptops that are more than one and a half years old must be tested before providing the unit to staffers.**
* **Laptops that are covered within warranty do not need to check, claim warranty.**